Analytical Resources, LLC
Analytical Chemists and Consultants

21 July 2023

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

RE: Lower Duwamish AOC4

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

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

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

Associated Work Order(s)	Associated SDG ID(s)
23F0536	N/A

Susan Dunnihoo

Digitally signed by Susan Dunnihoo
Date: 2023.07.21 17:06:36 -07'00'

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

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

Analytical Resources, LLC

Susan Dunnihoo, Director, Client Services

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

Cert# 100006-012

20 Fe160 23F0536

1 of

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Tier 2

№ 3849

Project/Client Name: Duwamish AOC4
Project Number: 180067.02.02
Contact Name: A Vanderhoff
Sampled By: Windward

Ship to: ARI
Attn: Amanda Johnson
Shipper: Courier
Form filled out by: AV

Shipping Date: 6/8/20
Airbill Number: NA
Turnaround requested: Std

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required) Archive							Comments / Instructions [Jar tag number(s)]
6/8/20	0841	LDW20-SC148A	6	Sediment	X							
	0841	LDW20-SC148B	6		X							
	1036	LDW20-SC155A	6		X							
	1036	LDW20-SC155Z	6		X							
	1237	LDW20-SC166A	6		X							
	1237	LDW20-SC166B	6		X							
	1237	LDW20-SC166Z	6		X							
6/8/20	1438	LDW20-SC208Z	6		X							
6/8/20	1435	LDW20-SC208A	6	Sediment	X							
			AV 6/8/20									
		Total Number of Containers	54	Purchase Order / Statement of Work # CLF-042720a								

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name: A. Vanderhoff		Print name:	
Signature: A Vanderhoff	Company: ARI	Signature:	Company:
Company: Windward		Company:	
Date/Time: 6/8/20 1620	Date/Time: 6/8/2020 16:20	Date/Time:	Date/Time:

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

Windward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: (206) 378-1364
Fax: (206) 217-9343

To be completed by Laboratory upon sample receipt:

Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Anchor | Project Name: Acoh Duwamish

COC No(s): (NA) | Delivered by: Fed-Ex UPS Courier Hand Delivered Other:

Assigned ARI Job No: 20F0160/23F0536 | Tracking No: (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1645 | 5.5 | 4.5 | 5.9 | | | |

If cooler temperature is out of compliance fill out form 00070F | Temp Gun ID#: D00 5200

Cooler Accepted by: KD | Date: 5/8/2020 | Time: 1620

Complete custody forms and attach all shipping documents

Log-In Phase:

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

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JM | Date: 06/10/2020 | Time: 0949 | Labels checked by: JM

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

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

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Anchor QEA, LLC	Project: Lower Duwamish AOC4	
1201 3rd Ave, Suite 2600	Project Number: 180067-02.02 Task 705	**Reported:**
Seattle, WA 98101	Project Manager: Ali Judkins	07/21/2023 16:41

ANALYTICAL REPORT FOR SAMPLES

Laboratory ID	Sample ID	Matrix	Date Sampled	Date Received
23F0536-01	LDW20-SC148A	Solid	06/08/20 08:41	06/08/20 16:20

Anchor QEA, LLC	Project: Lower Duwamish AOC4	
1201 3rd Ave, Suite 2600	Project Number: 180067-02.02 Task 705	**Reported:**
Seattle WA, 98101	Project Manager: Ali Judkins	21-Jul-2023 16:41

Case Narrative

Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Work Order: 23F0536

Sample receipt

Samples as listed on the preceding page were pulled from frozen archive and logged 22-Jun-2023 14:10 under ARI work order 23F0536. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Polynuclear Aromatic Hydrocarbons (PAH) - EPA Method SW8270E

The sample(s) were extracted and analyzed outside the recommended holding times for samples stored frozen and have been "H" flagged to note the excursion.

The sample was reanalyzed at dilution due to results above the calibrated range of the instrument.

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

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

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

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

The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries outside advisory control limits are flagged and attributed to high concentrations in the parent sample. The relative percent differences (RPD) were within advisory control limits.

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

PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted and analyzed outside the recommended holding times for samples stored frozen and have been "H" flagged to note the excursion.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

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

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

The matrix spike (MS) recovery for aroclor 1016 was low of control limits and flagged on the summary sheet. The matrix spike duplicate MSD) percent recoveries and relative percent differences (RPD) were within advisory control limits.

Anchor QEA, LLC	Project: Lower Duwamish AOC4	
1201 3rd Ave, Suite 2600	Project Number: 180067-02.02 Task 705	**Reported:**
Seattle WA, 98101	Project Manager: Ali Judkins	21-Jul-2023 16:41

Case Narrative

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

Total Metals - EPA Method 6020B

The sample(s) were extracted and analyzed outside the recommended holding times for samples stored frozen and have been "H" flagged to note the excursion.

SLF0398-IFA and -IFB were noted to have high response for chromium 53. For SLF0398-HCV1 the chromium 52 was low. Sample results were all well below the high standard and no action was required. SLF0398-HCV2 showed chromium 52 and barium 137 low. Barium and selenium were reanalyzed in sequence SLG0051 where BLF0652-MSD2 was noted to have barium %R low.

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

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

The duplicate (DUP) relative percent difference (RPD) outside advisory control limits are flagged on the summary sheet.

The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and the relative percent differences (RPD) outside advisory control limits are flagged on the summary sheet. The post spike had acceptable recoveries for lead and silver.

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

Total Mercury - EPA Method 7471B

The sample(s) were extracted and analyzed outside the recommended holding times for samples stored frozen and have been "H" flagged to note the excursion.

Initial and continuing calibrations were within method requirements.

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

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

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

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

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

Wet Chemistry (Total Organic Carbon and Total Solids)

The sample(s) were extracted and analyzed outside the recommended holding times for samples stored frozen and have been "H" flagged to note the excursion.

Initial and continuing calibrations were within method requirements.

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

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

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

Anchor QEA, LLC	Project: Lower Duwamish AOC4	
1201 3rd Ave, Suite 2600	Project Number: 180067-02.02 Task 705	**Reported:**
Seattle WA, 98101	Project Manager: Ali Judkins	21-Jul-2023 16:41

Case Narrative

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

QUALIFIERS AND NOTES

Qualifier	Definition
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
P1	The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.
L	Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to +/- RL instead of 20% RPD
J	Estimated concentration value detected below the reporting limit.
H	Hold time violation - Hold time was exceeded.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
D	The reported value is from a dilution
*	Flagged value is not within established control limits.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Form I

ORGANIC ANALYSIS DATA SHEET

EPA 8270E

Semivolatiles (20ug/kg - 0.2ug/L SepF)

Laboratory:	Analytical Resources, LLC				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	23F0536-01 A	SDG:	23F0536
Sampled:	06/08/20 08:41	Prepared:	06/28/23 15:16	File ID:	NT1407062355.D
% Solids:	62.38	Preparation:	EPA 3546 (Microwave)	Analyzed:	07/07/23 23:11
Batch:	BLF0718	Sequence:	SLG0081	Initial/Final:	16.08 g Wet / 1 mL
Instrument:	NT14	Column:	ZB-5MS	Calibration:	GF00097
Cleanups:	GPC				

CAS NO.	COMPOUND	DILUTION	CONC: (ug/kg dry)	Q	DL	RL
91-20-3	Naphthalene	1	26.7	H	4.2	19.9
91-57-6	2-Methylnaphthalene	1	35.9	H	4.5	19.9
208-96-8	Acenaphthylene	1	140	H	6.2	19.9
83-32-9	Acenaphthene	1	149	H	5.2	19.9
86-73-7	Fluorene	1	189	H	14.5	19.9
85-01-8	Phenanthrene	1	4660	H, E	8.7	19.9
120-12-7	Anthracene	1	129	H	7.2	19.9
206-44-0	Fluoranthene	1	5020	H, E	6.1	19.9
129-00-0	Pyrene	1	3940	H, E	5.7	19.9
56-55-3	Benzo(a)anthracene	1	179	H	5.9	19.9
218-01-9	Chrysene	1	999	H	6.0	19.9
	Benzofluoranthenes, Total	1	1020	H	20.9	39.9
50-32-8	Benzo(a)pyrene	1	240	H	4.2	19.9
193-39-5	Indeno(1,2,3-cd)pyrene	1	86.1	H, Q	14.6	19.9
53-70-3	Dibenzo(a,h)anthracene	1	28.9	H	17.2	19.9
191-24-2	Benzo(g,h,i)perylene	1	77.0	H, Q	13.5	19.9

SURROGATES	ADDED: (ug/kg dry)	FOUND: (ug/kg dry)	% REC	QC LIMITS	Q
1,2-Dichlorobenzene-d4	498.47	332	66.5	32 - 120	
Nitrobenzene-d5	498.47	398	79.8	30 - 120	
2-Fluorobiphenyl	498.47	404	81.0	35 - 120	
p-Terphenyl-d14	498.47	467	93.7	37 - 120	

Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062355.D

Page 1

Date : 07-JUL-2023 23:11

Client ID:

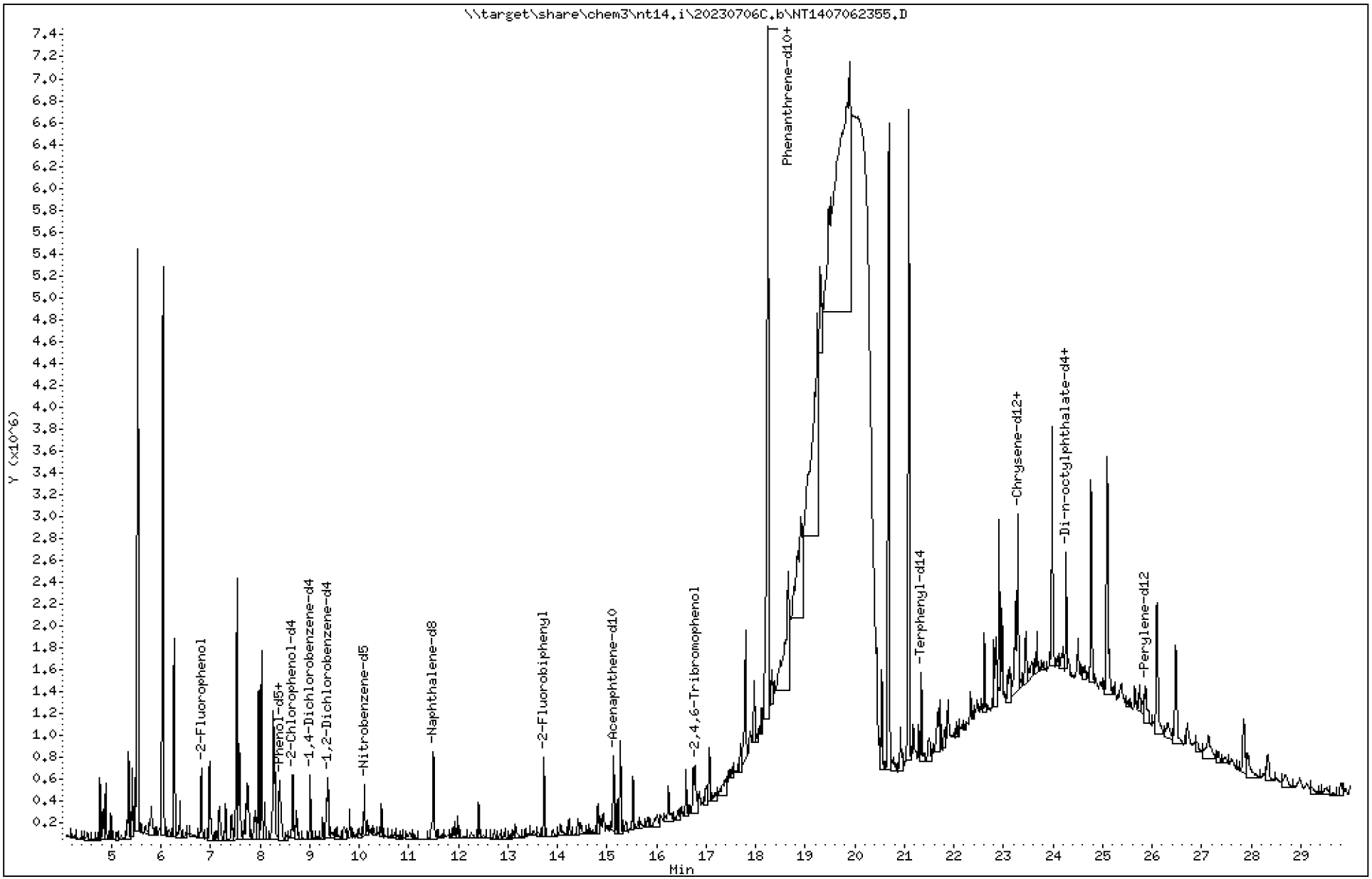
Instrument: nt14.i

Sample Info: 23F0536-01

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

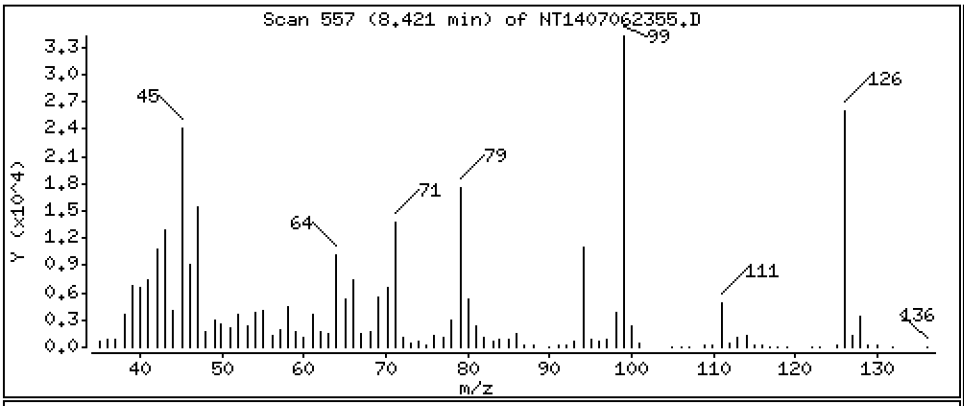
Operator: JGR

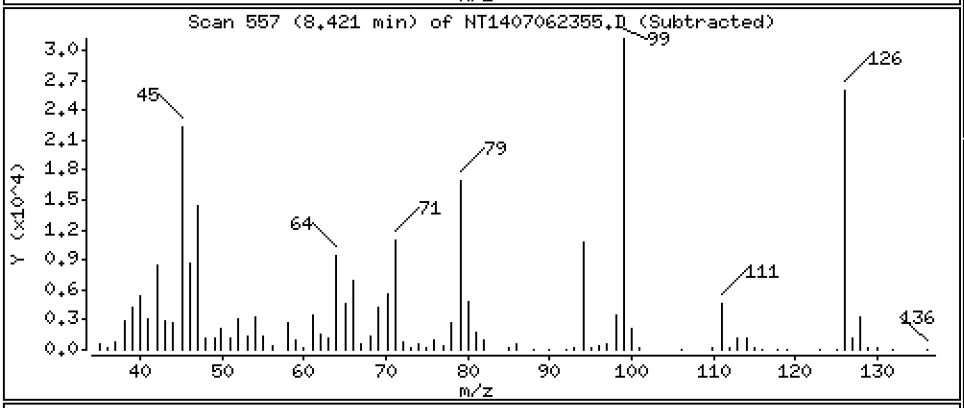
Column phase: ZB-5msi

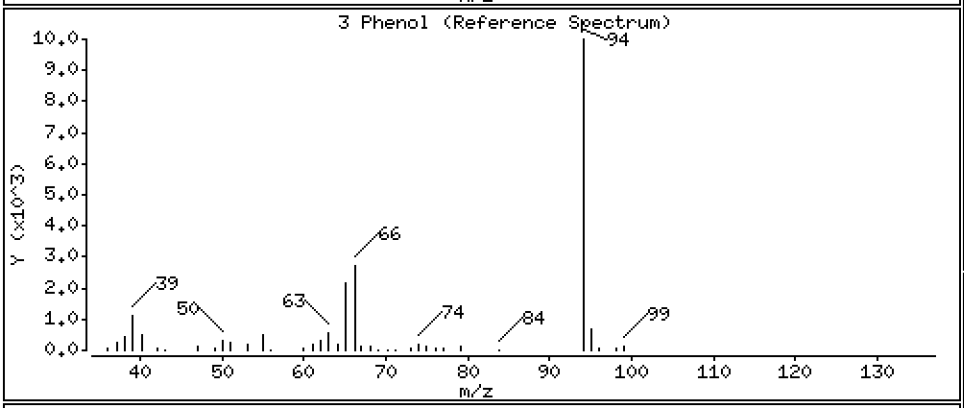
Column diameter: 0.25

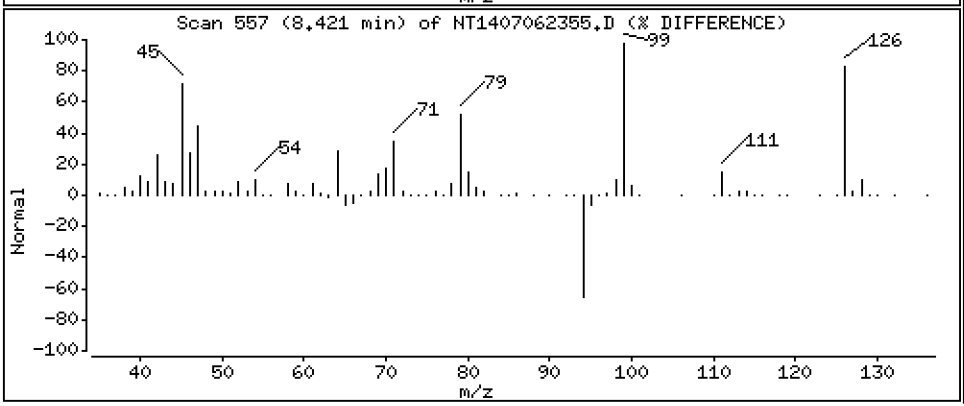
3 Phenol

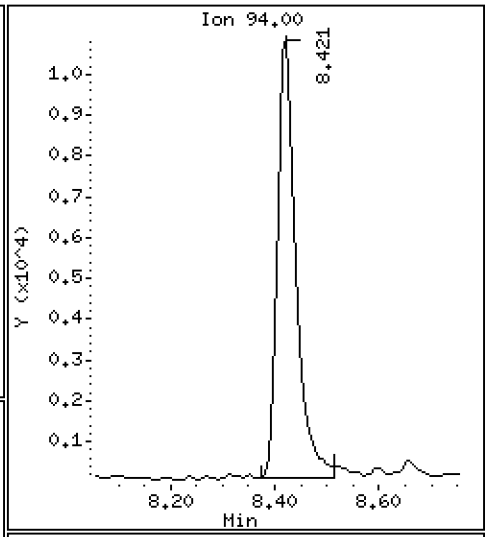
Concentration: 0.3574 ug/mL

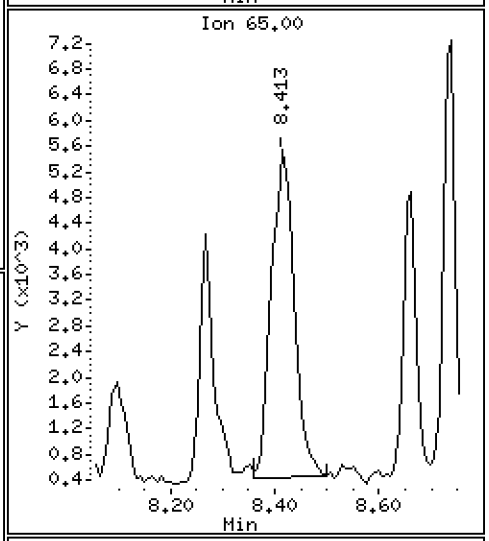


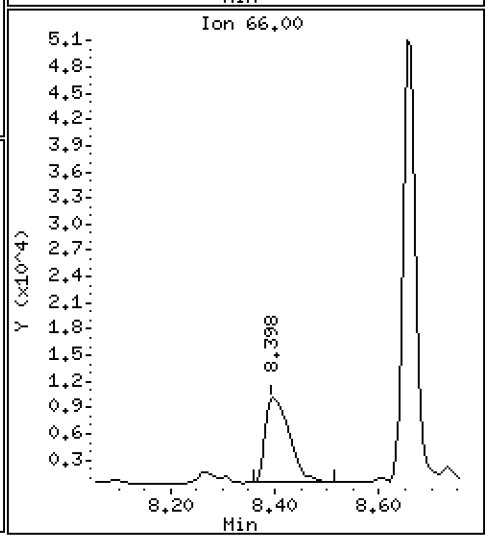












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

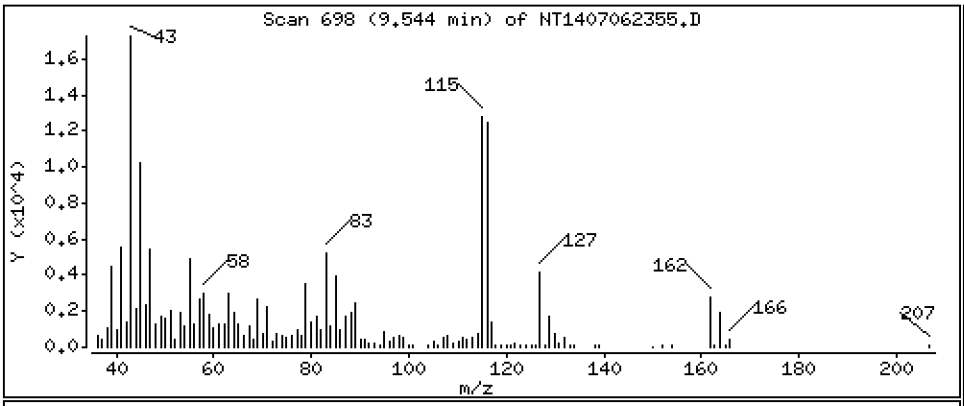
Operator: JGR

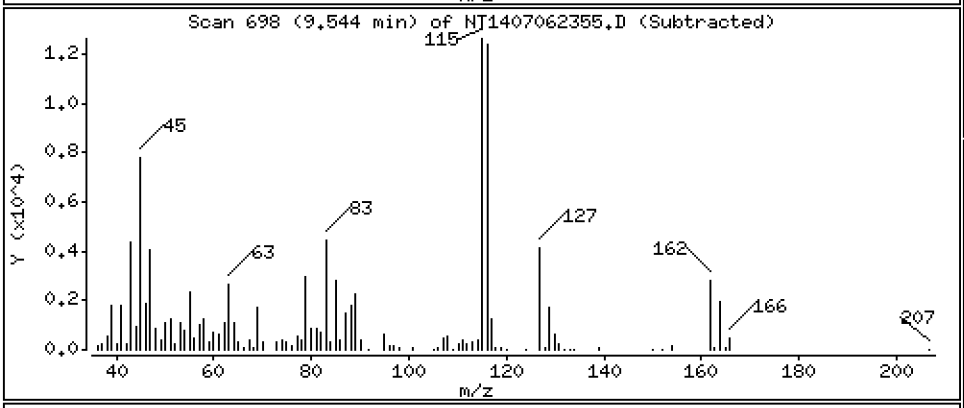
Column phase: ZB-5msi

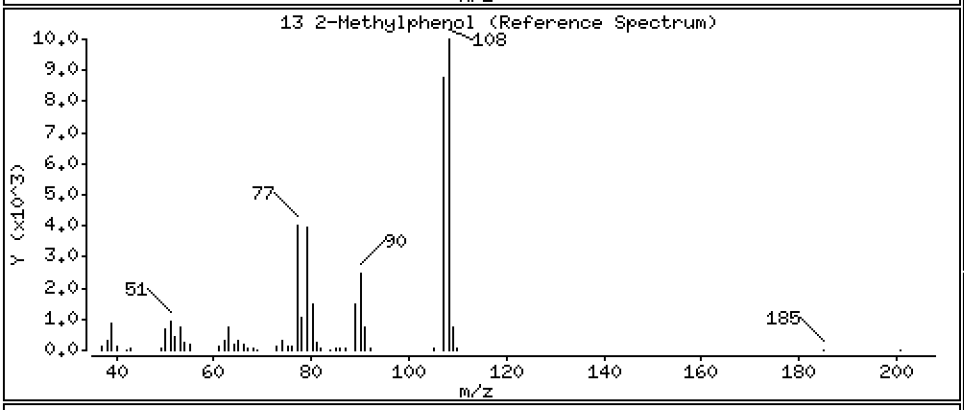
Column diameter: 0.25

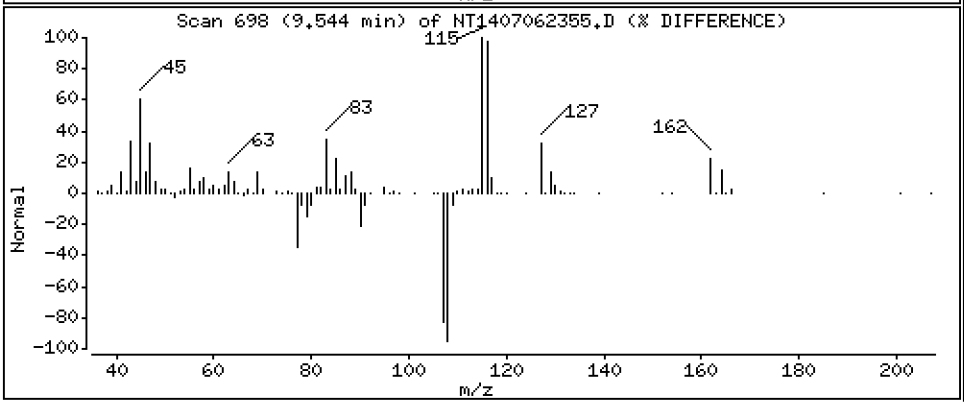
13 2-Methylphenol

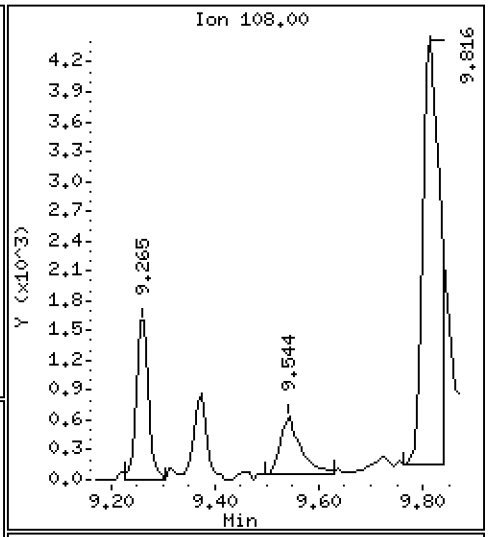
Concentration: 0.03250 ug/mL

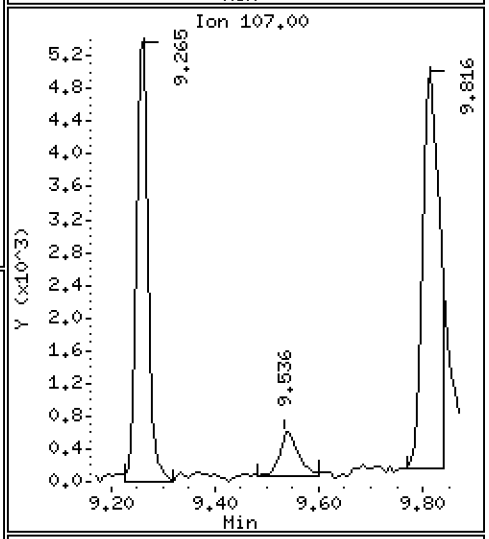


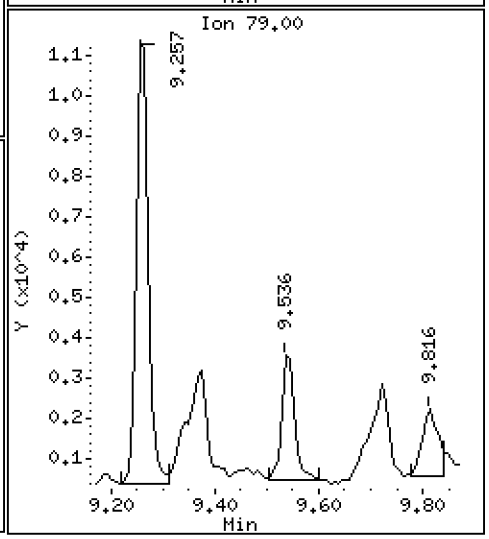












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

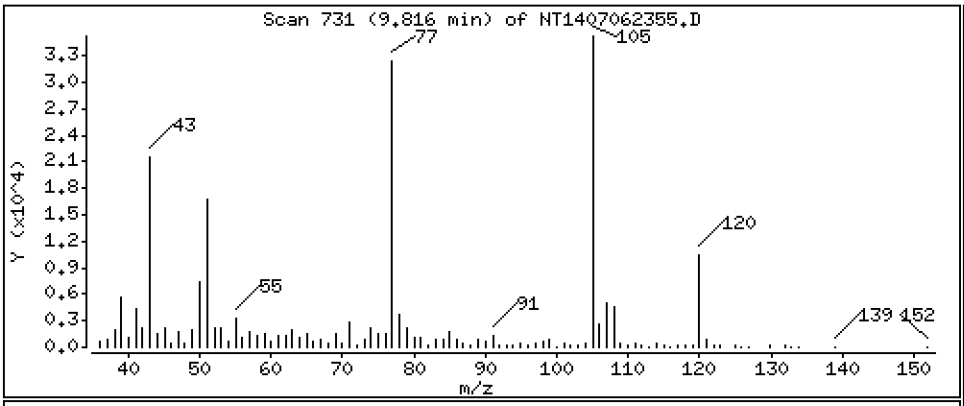
Operator: JGR

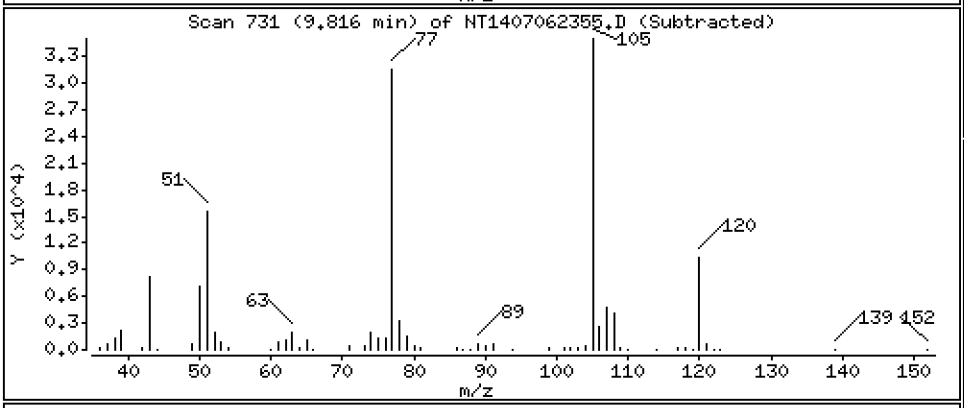
Column phase: ZB-5msi

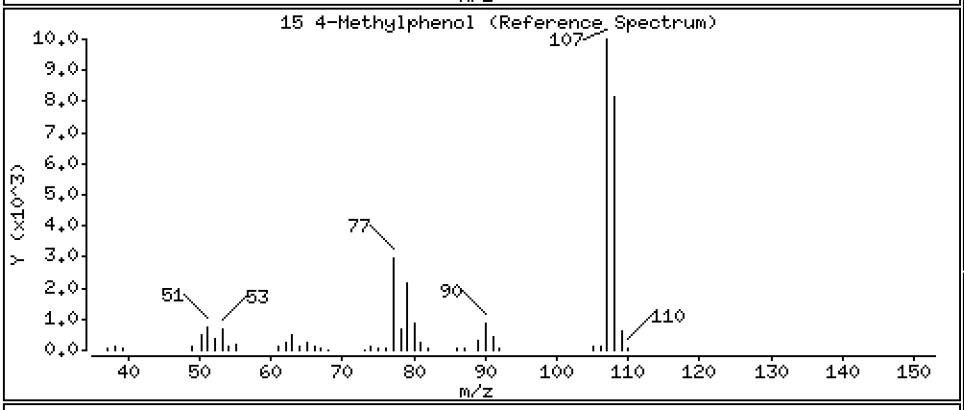
Column diameter: 0.25

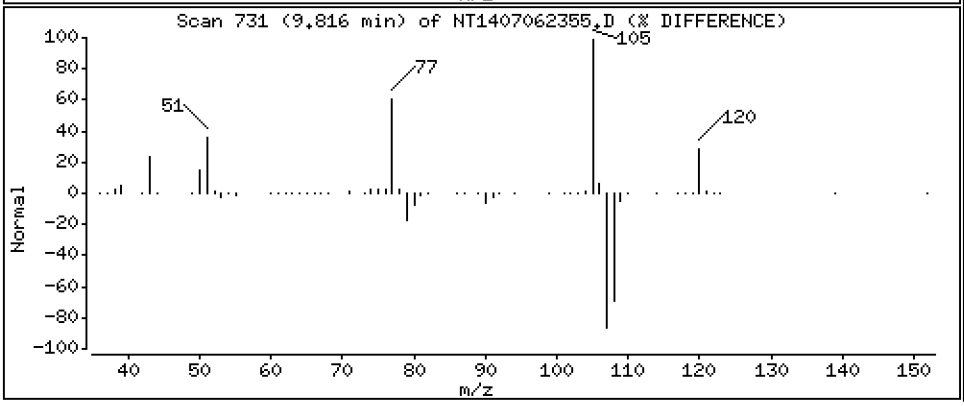
15 4-Methylphenol

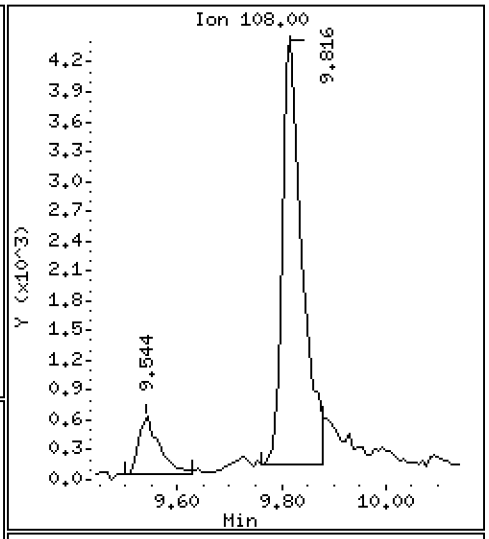
Concentration: 0.2201 ug/mL

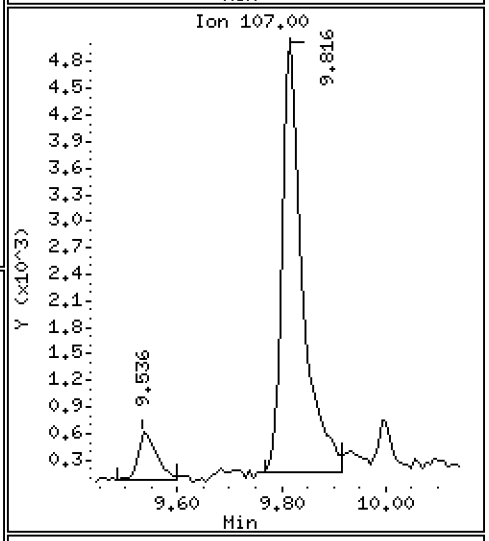


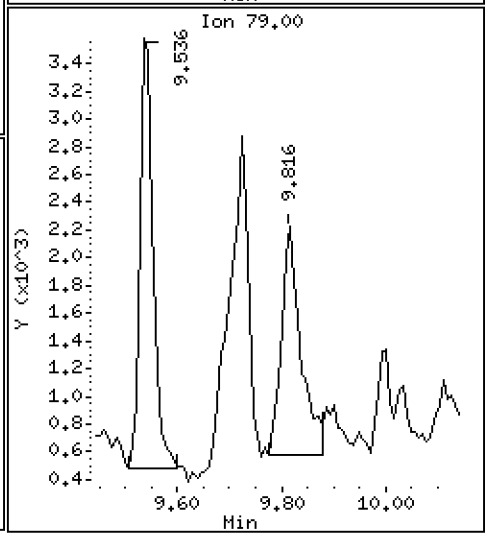












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

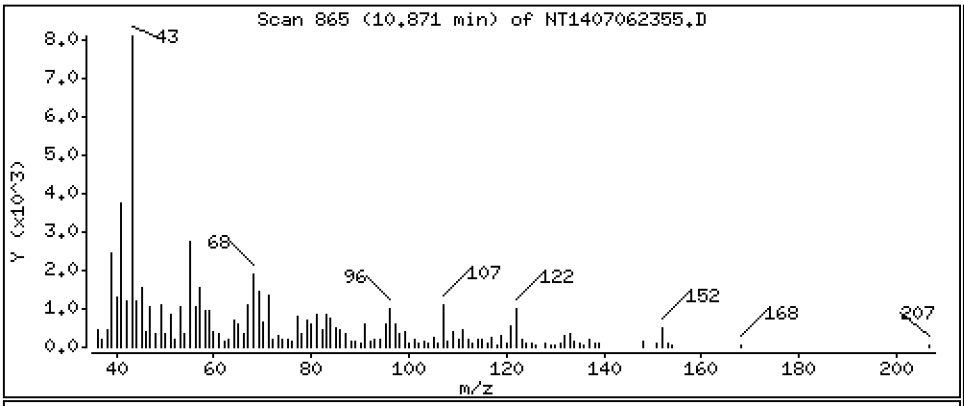
Operator: JGR

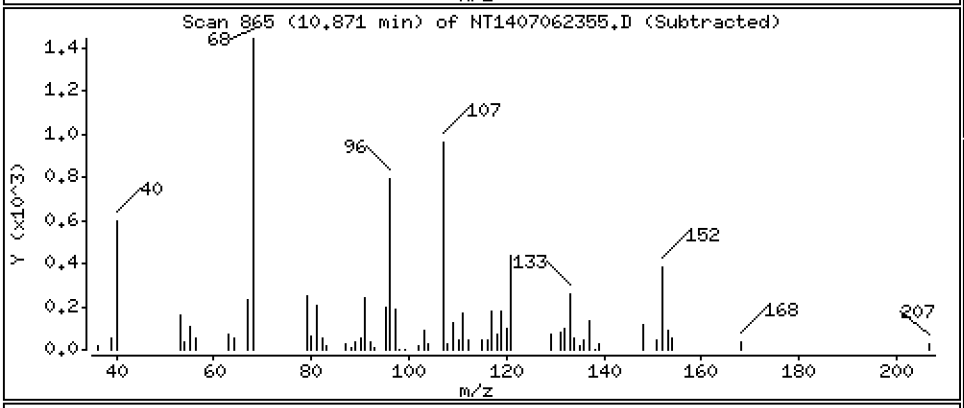
Column phase: ZB-5msi

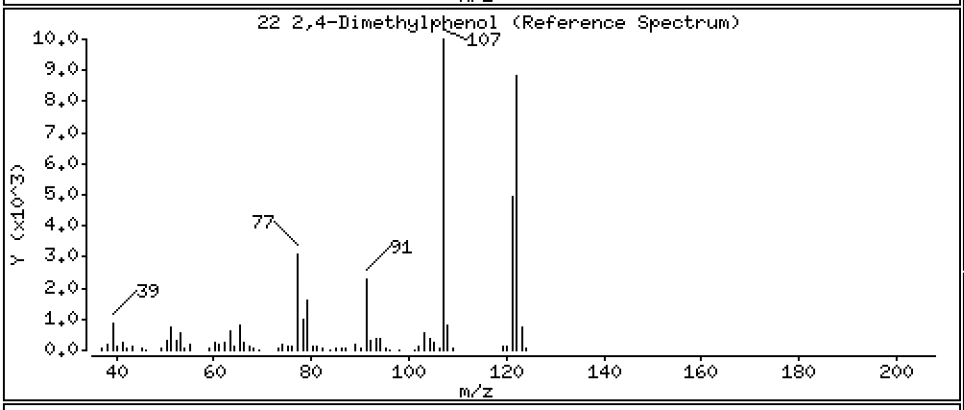
Column diameter: 0.25

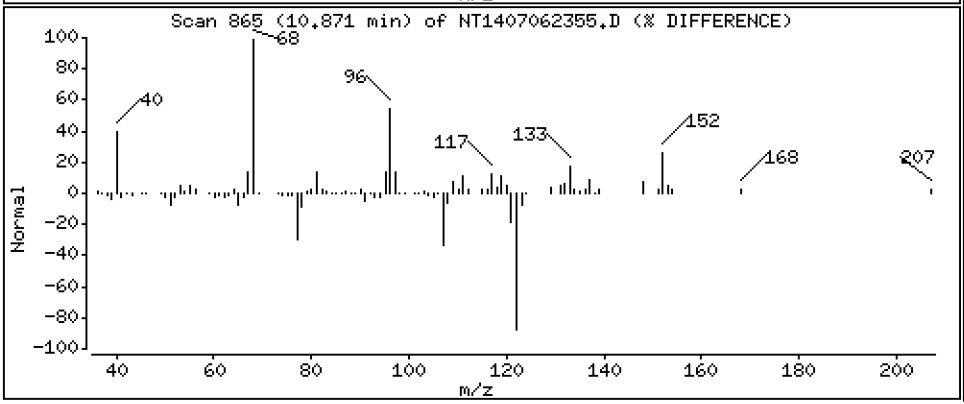
22 2,4-Dimethylphenol

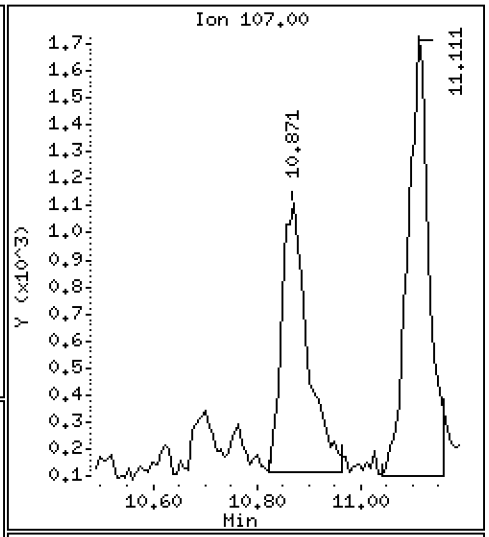
Concentration: 0.07159 ug/mL

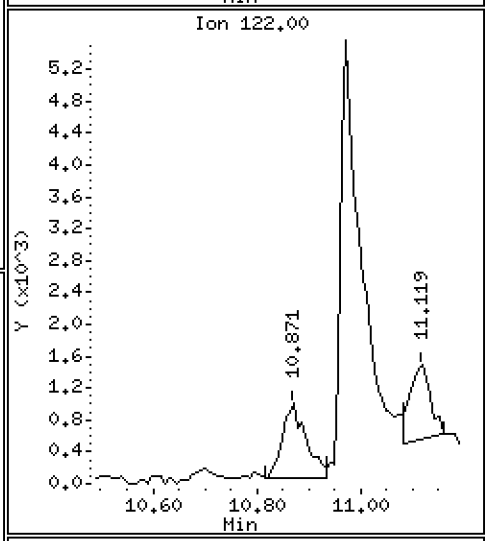


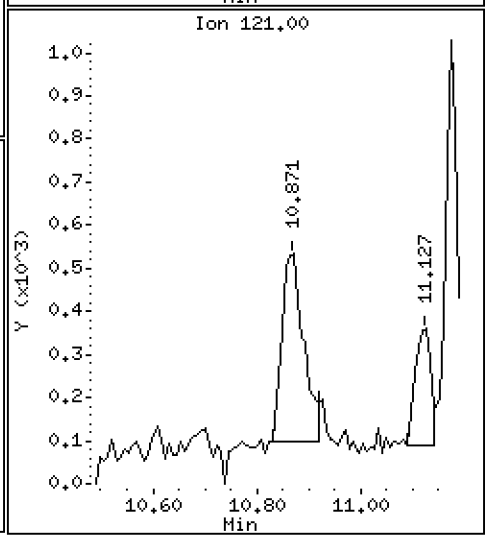












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

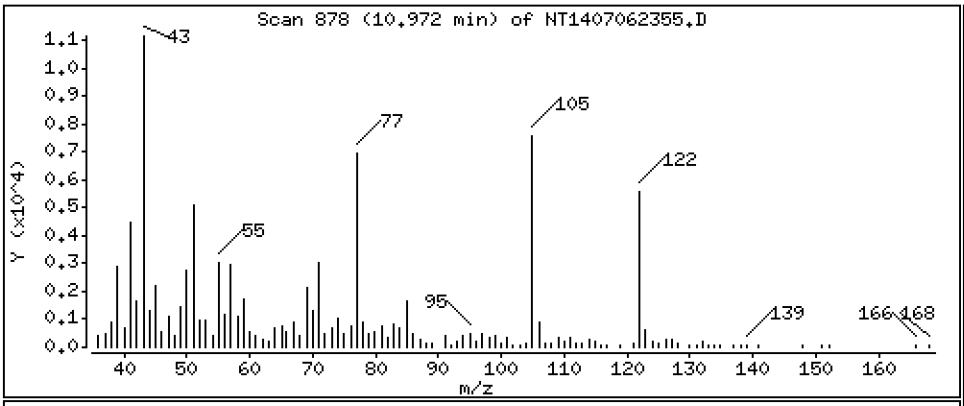
Operator: JGR

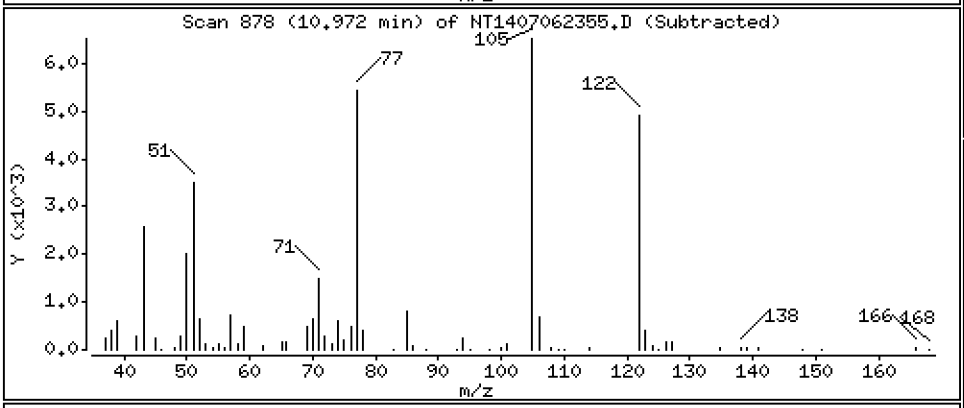
Column phase: ZB-5msi

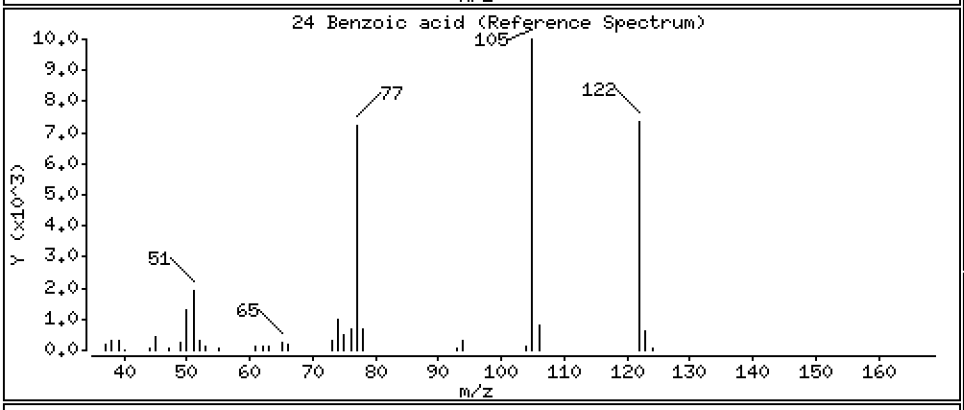
Column diameter: 0.25

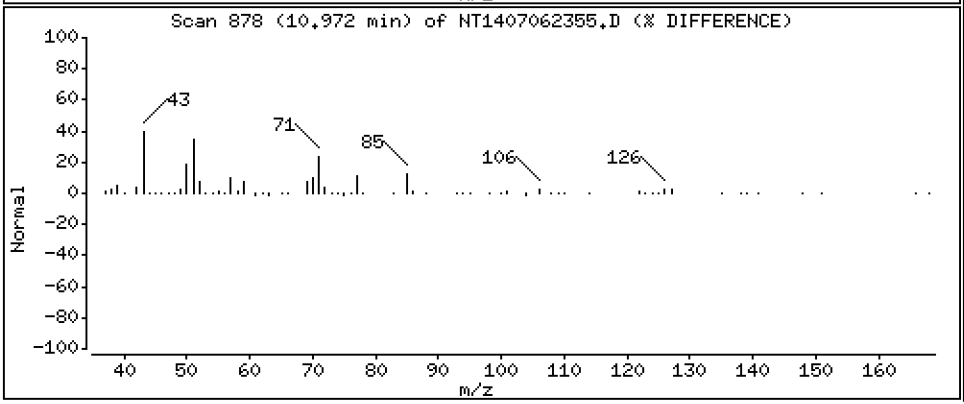
24 Benzoic acid

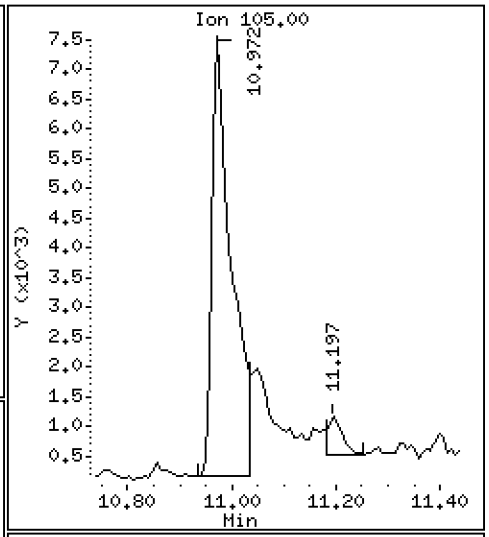
Concentration: 0.6579 ug/mL

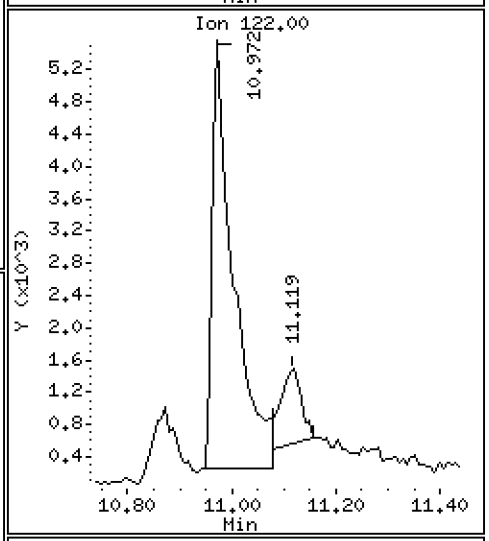


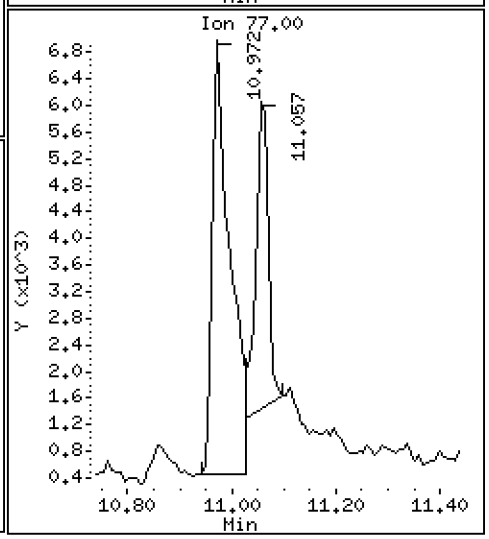












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

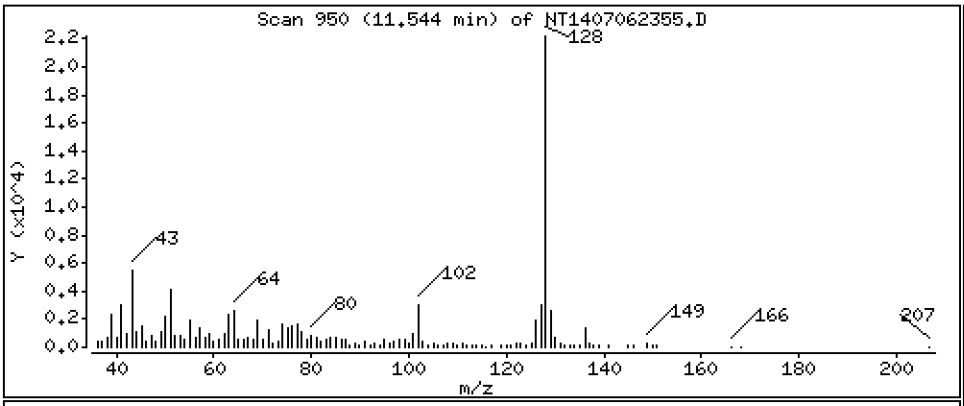
Operator: JGR

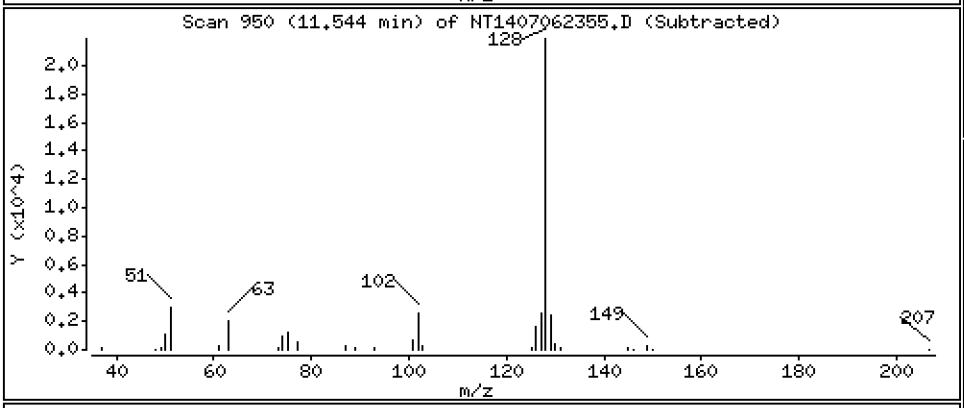
Column phase: ZB-5msi

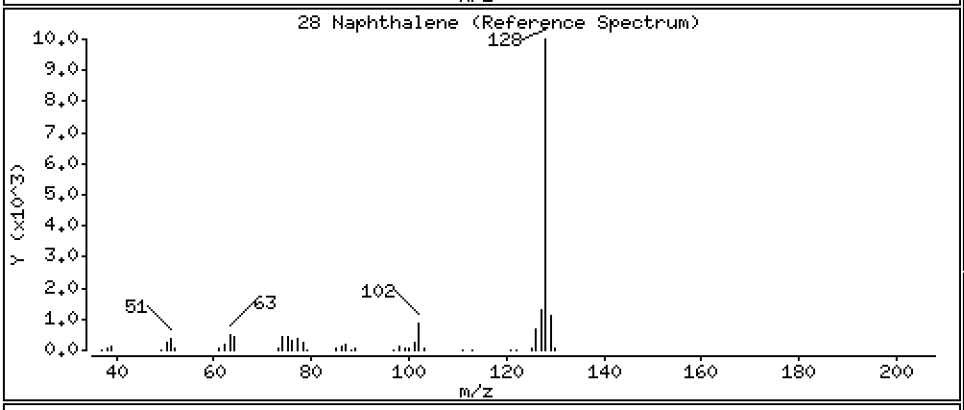
Column diameter: 0.25

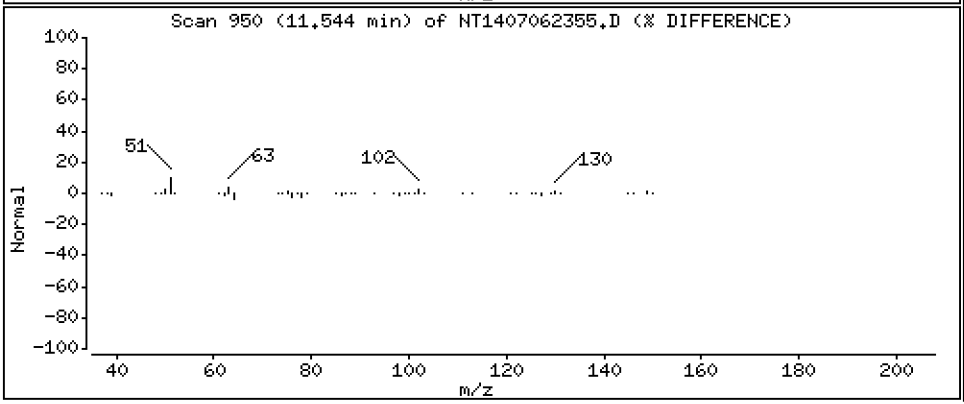
28 Naphthalene

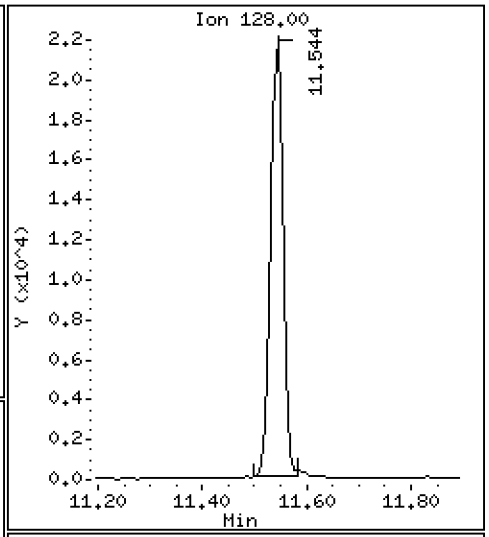
Concentration: 0.2680 ug/mL

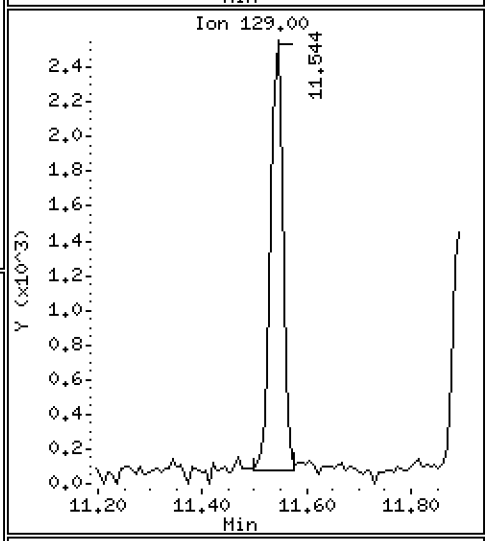


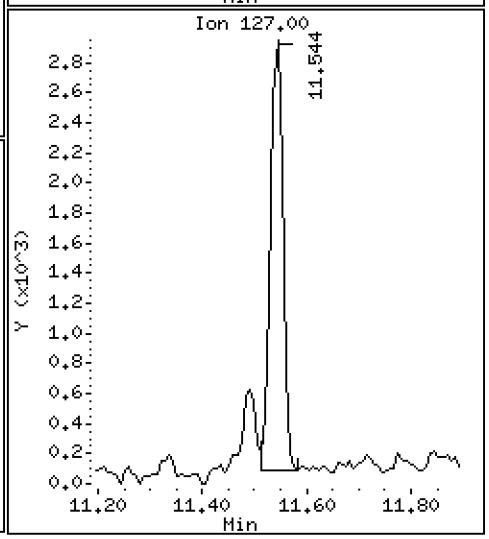












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

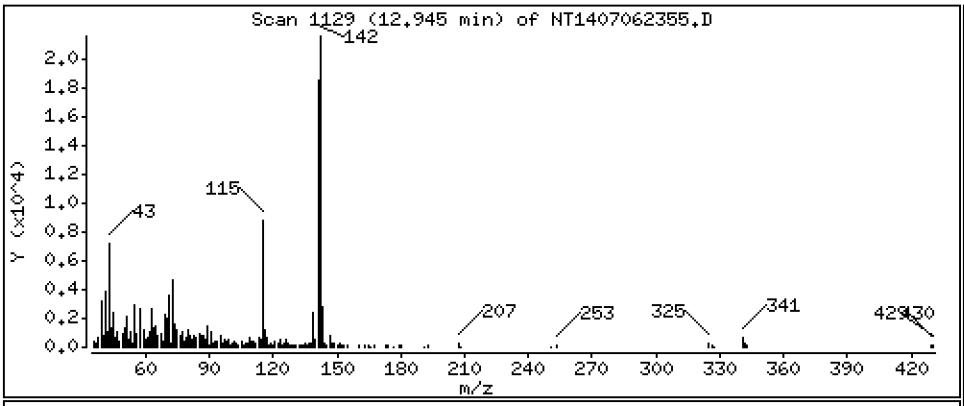
Operator: JGR

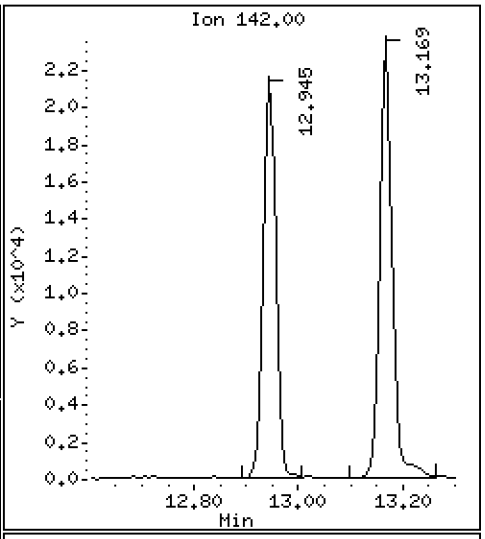
Column phase: ZB-5msi

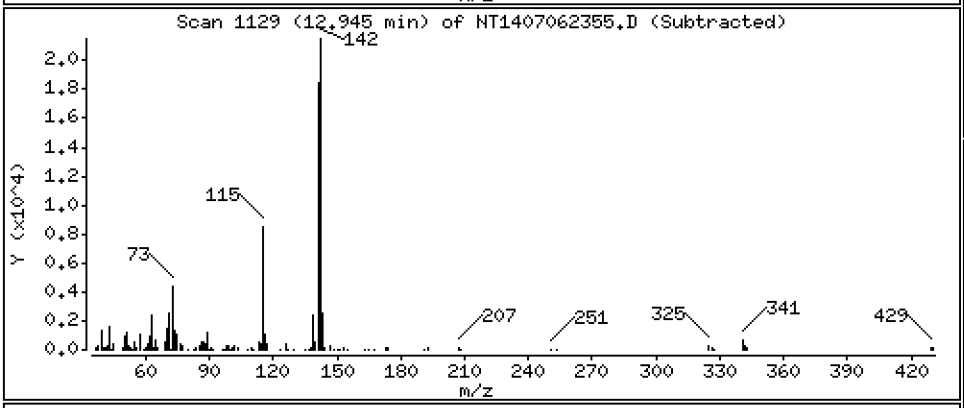
Column diameter: 0.25

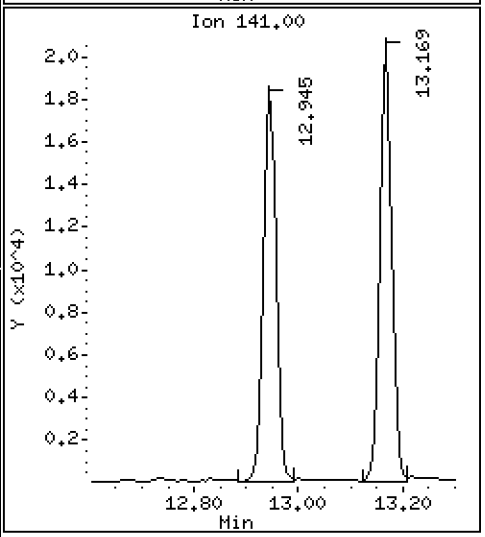
32 2-Methylnaphthalene

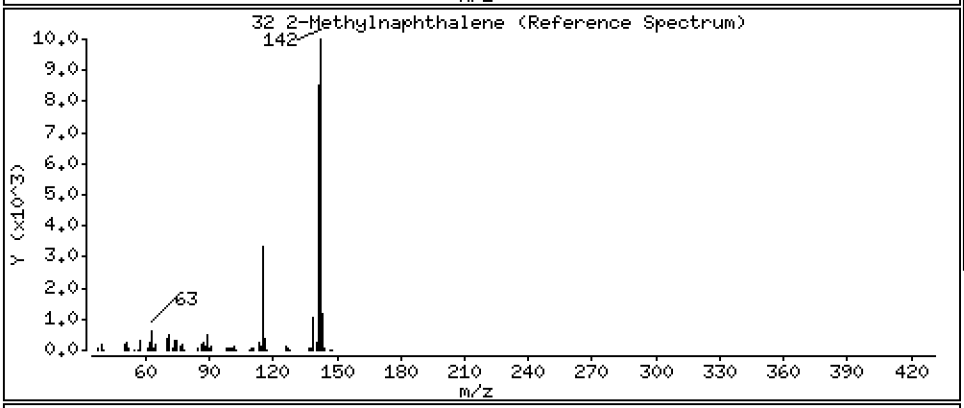
Concentration: 0.3601 ug/mL

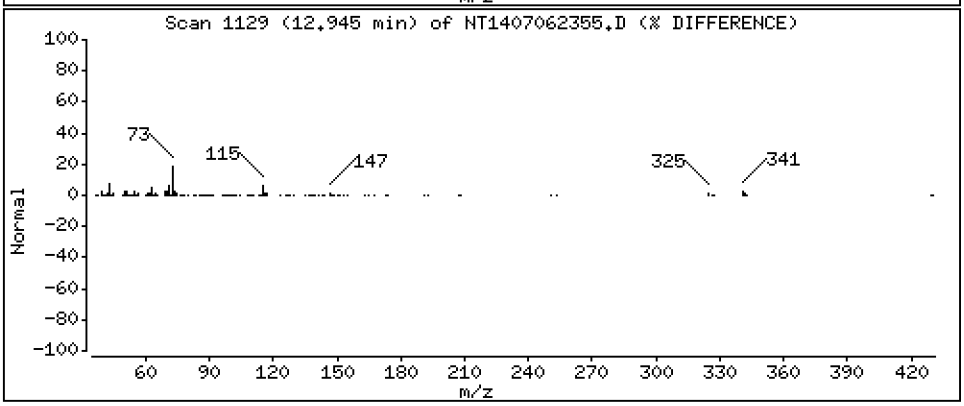












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

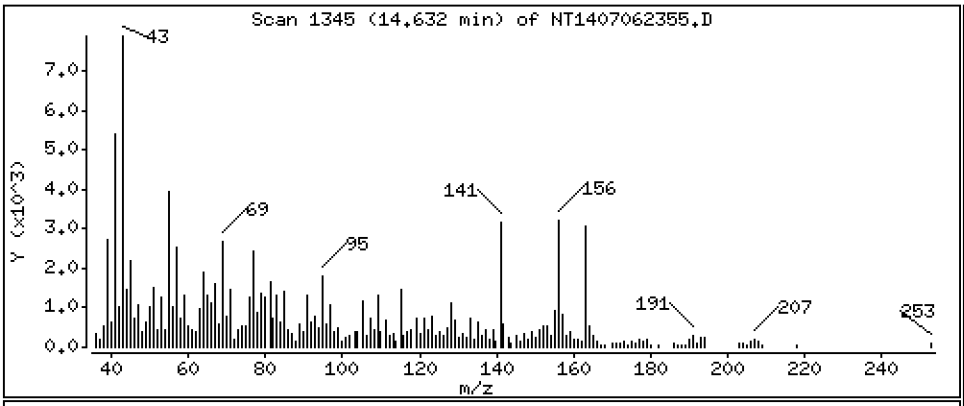
Operator: JGR

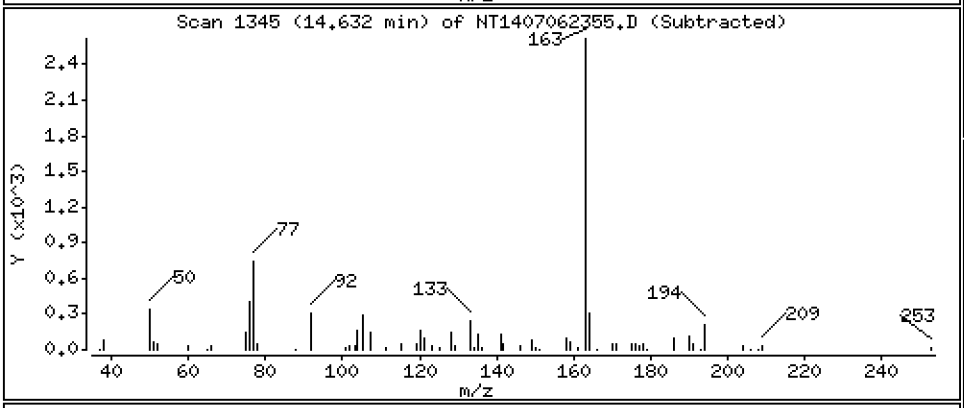
Column phase: ZB-5msi

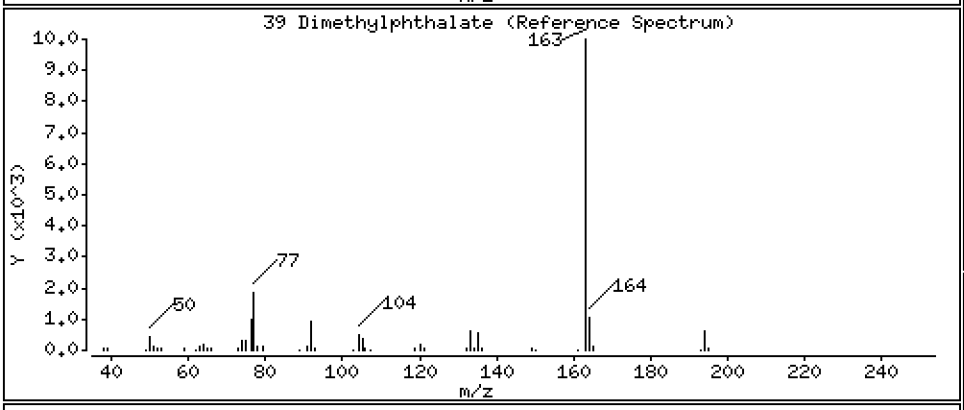
Column diameter: 0.25

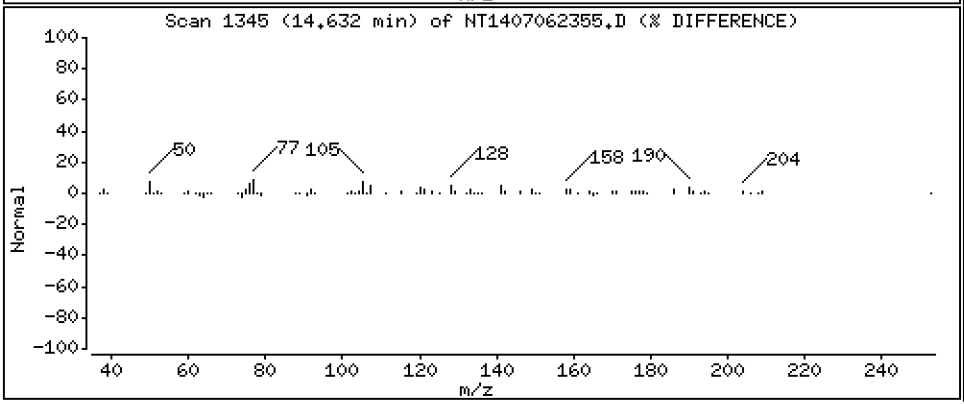
39 Dimethylphthalate

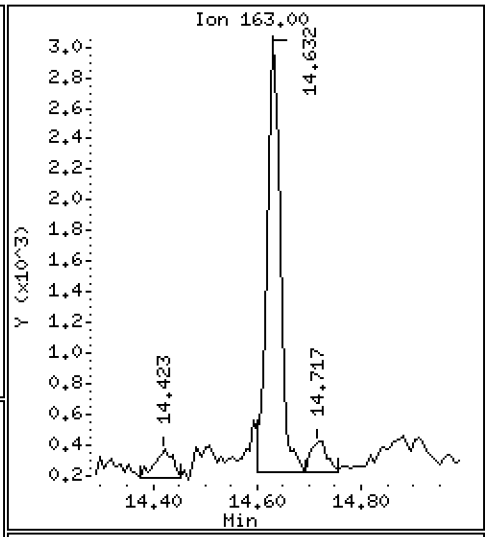
Concentration: 0.05806 ug/mL

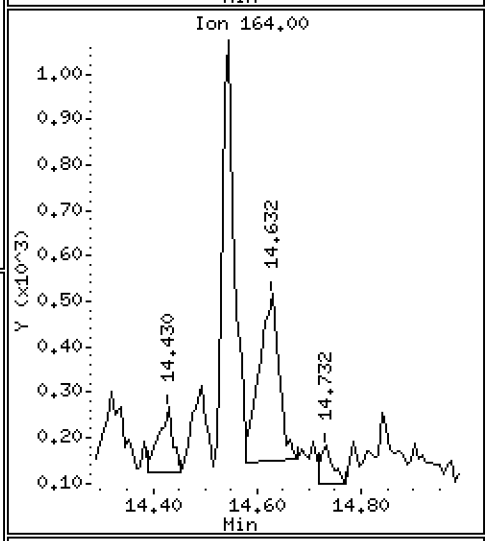


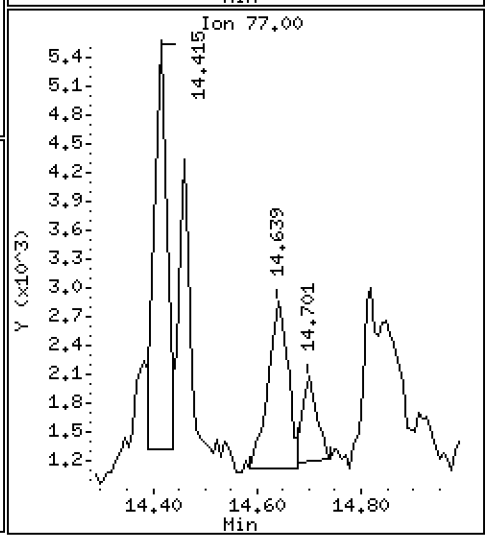












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

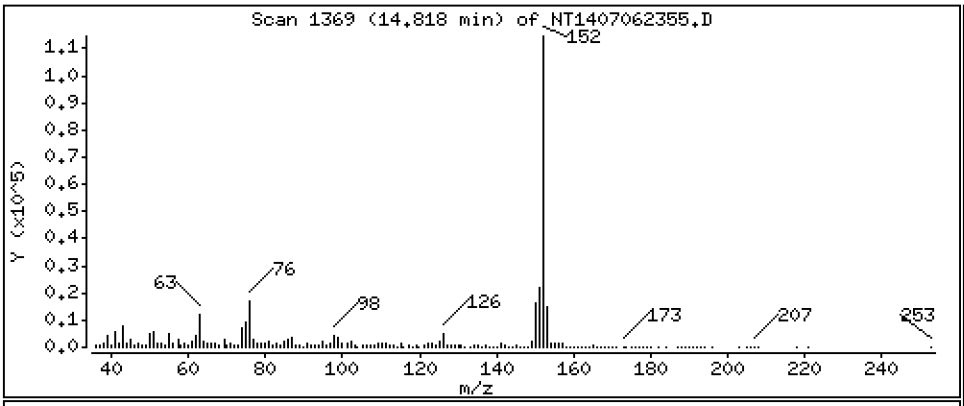
Operator: JGR

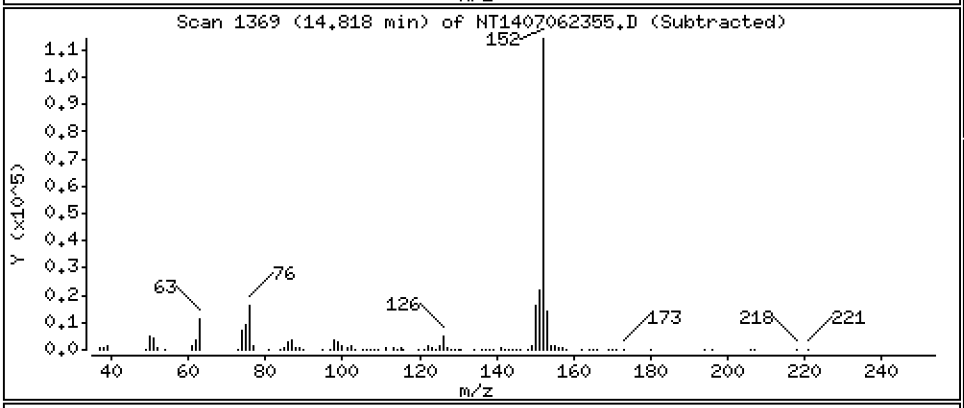
Column phase: ZB-5msi

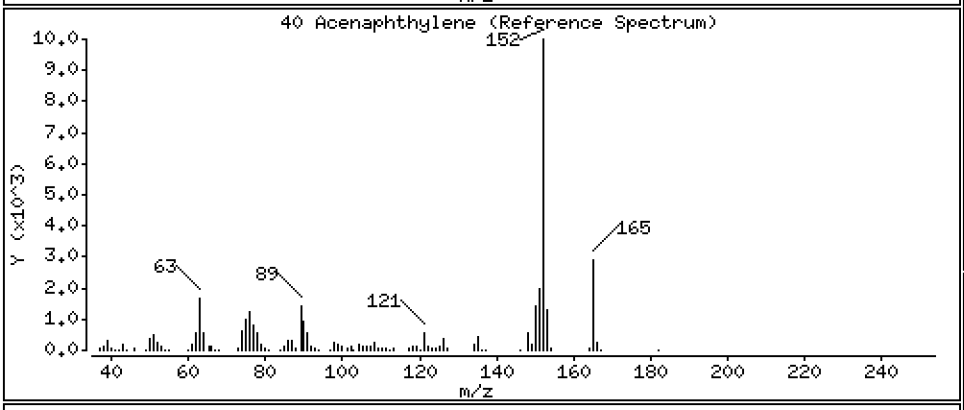
Column diameter: 0.25

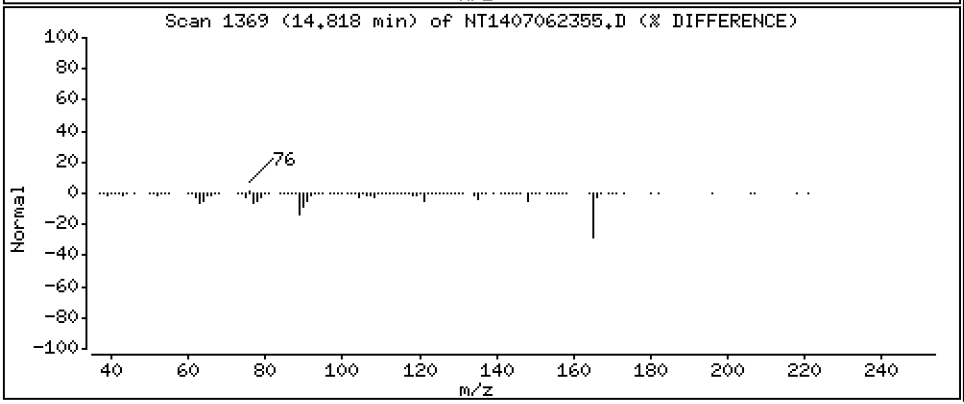
40 Acenaphthylene

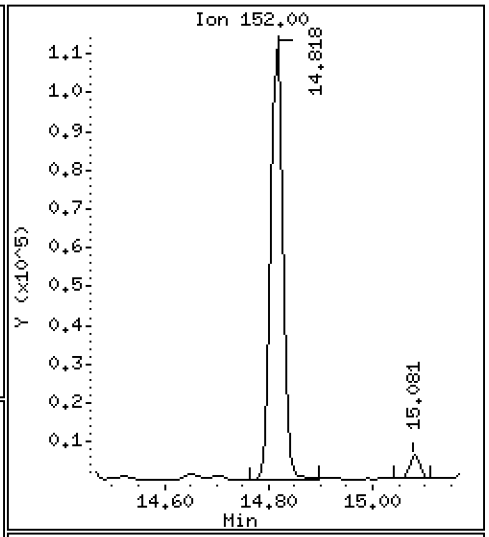
Concentration: 1.405 ug/mL

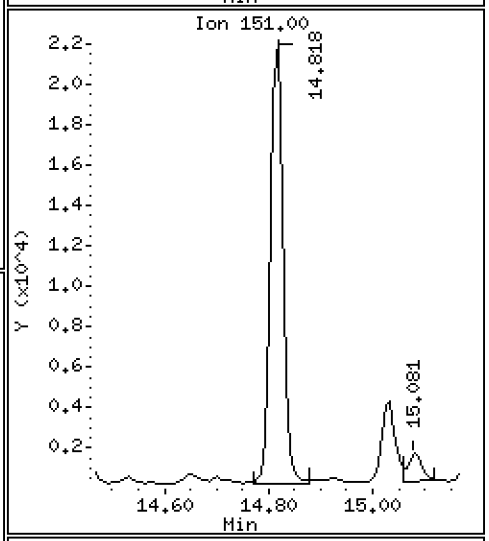


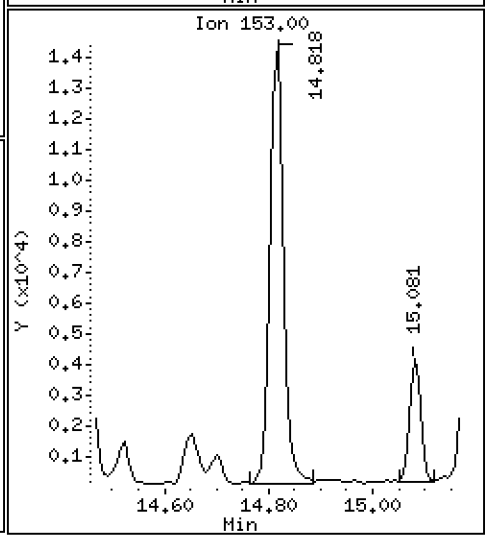












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

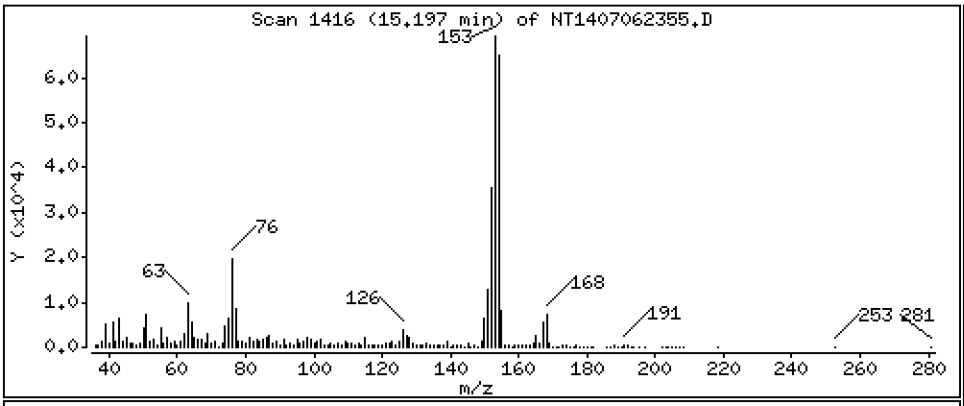
Operator: JGR

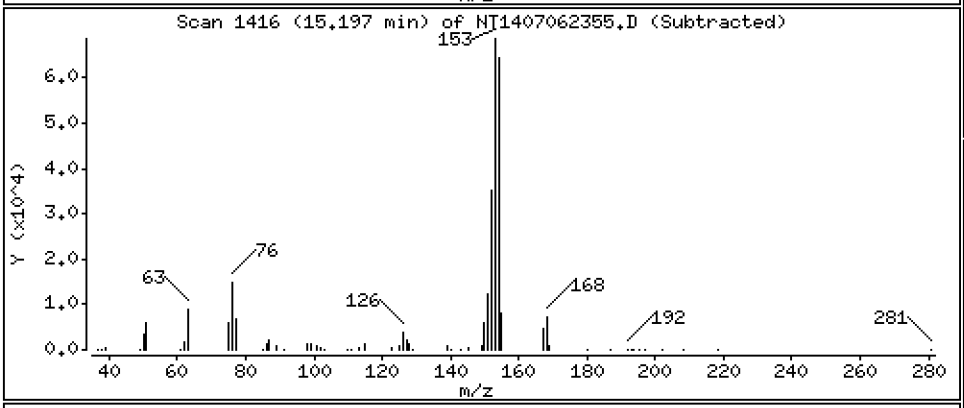
Column phase: ZB-5msi

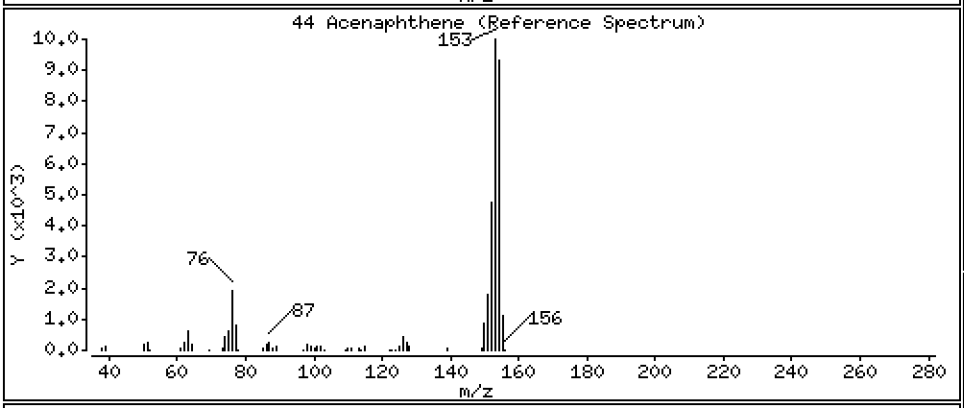
Column diameter: 0.25

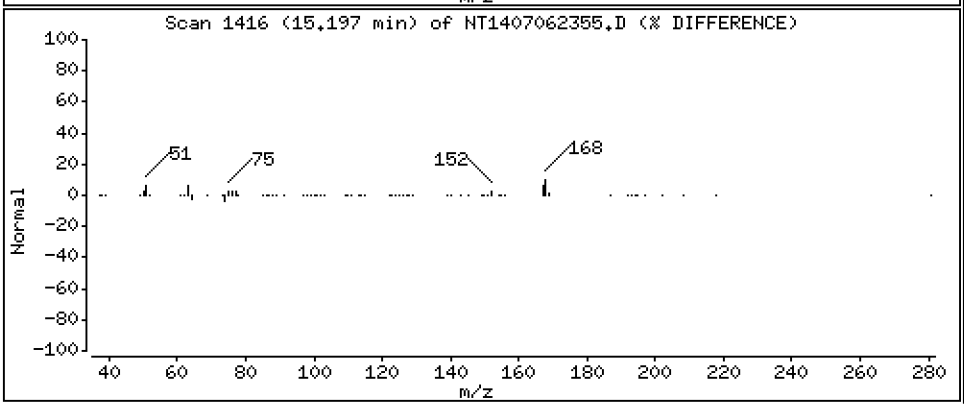
44 Acenaphthene

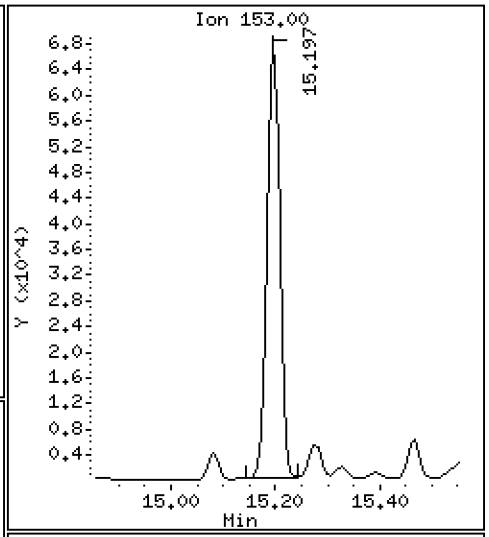
Concentration: 1.497 ug/mL

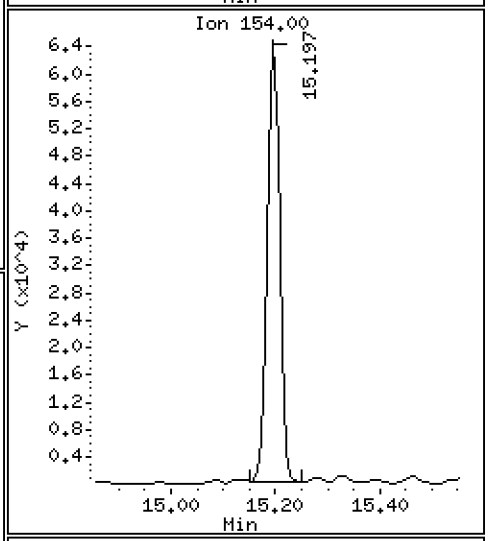


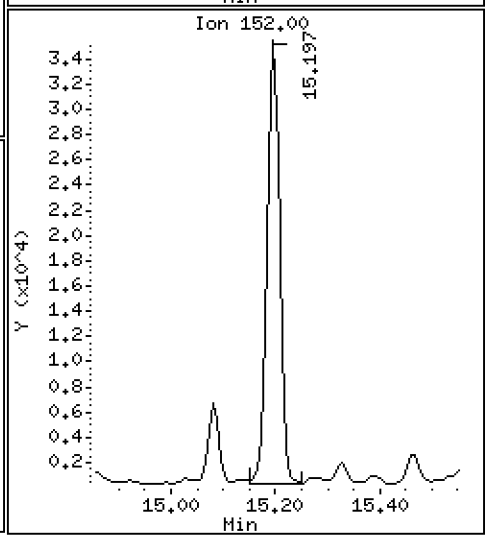












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062355.D

Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

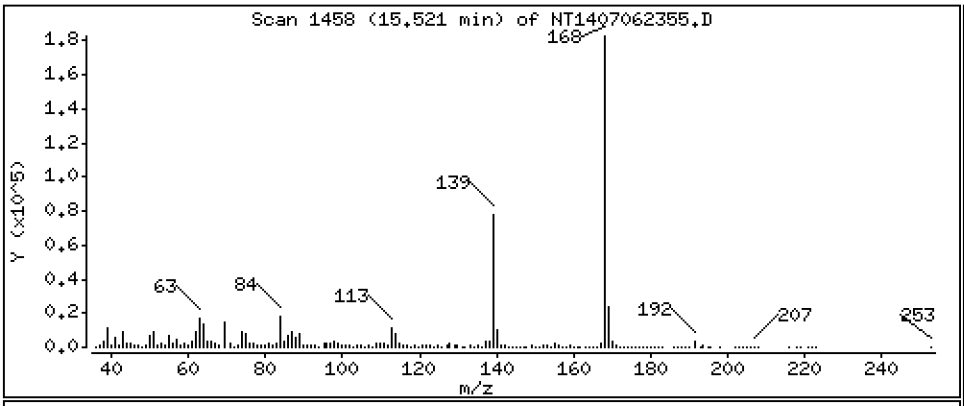
Operator: JGR

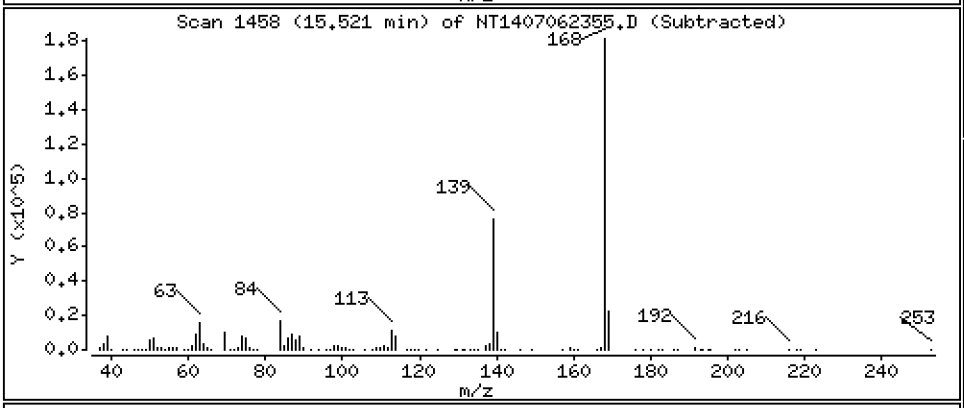
Column phase: ZB-5msi

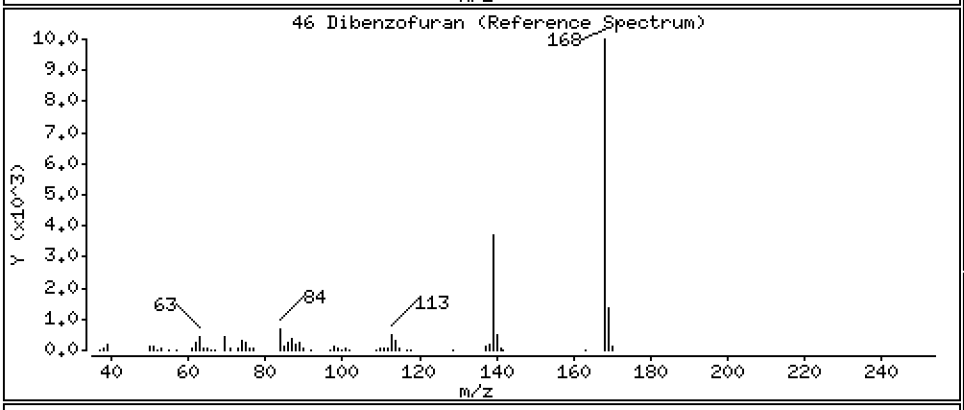
Column diameter: 0.25

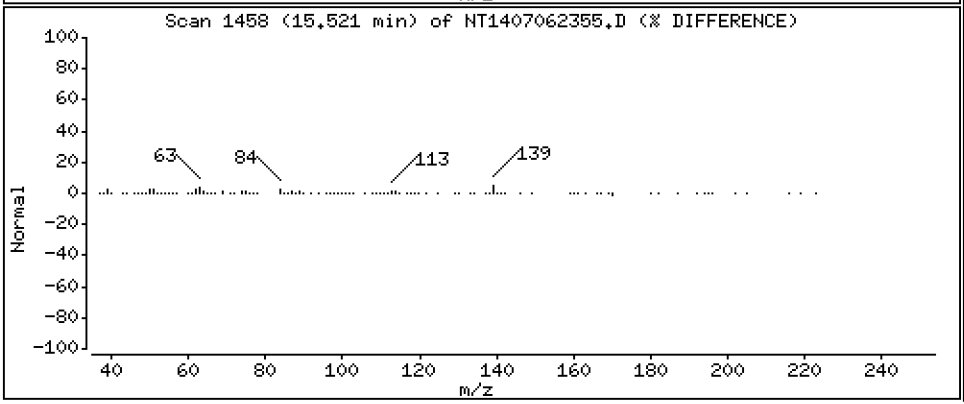
46 Dibenzofuran

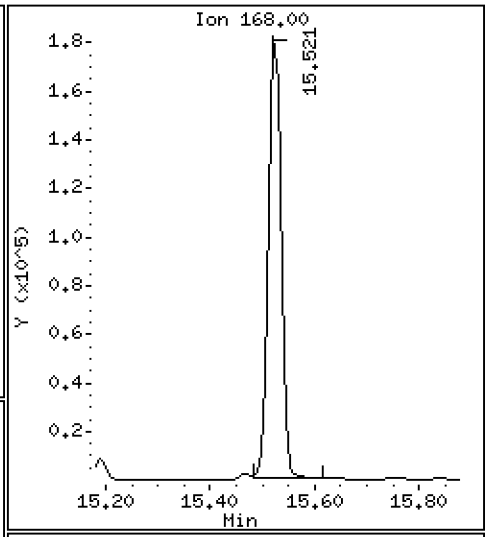
Concentration: 2.747 ug/mL

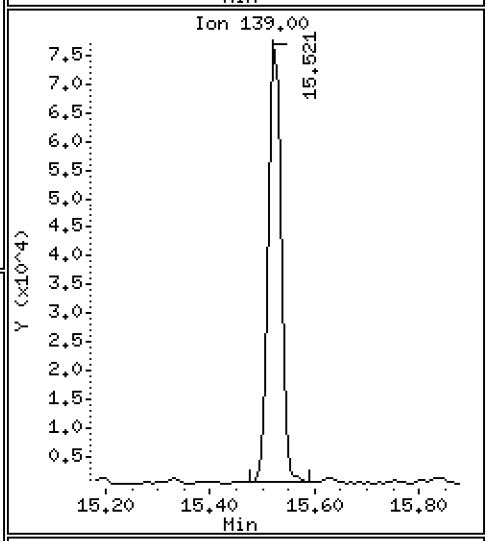


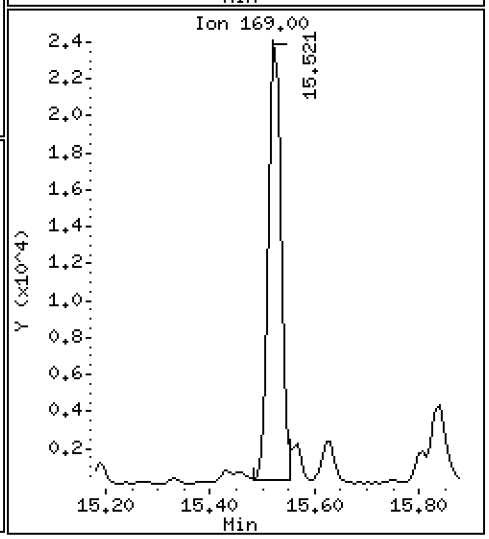












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

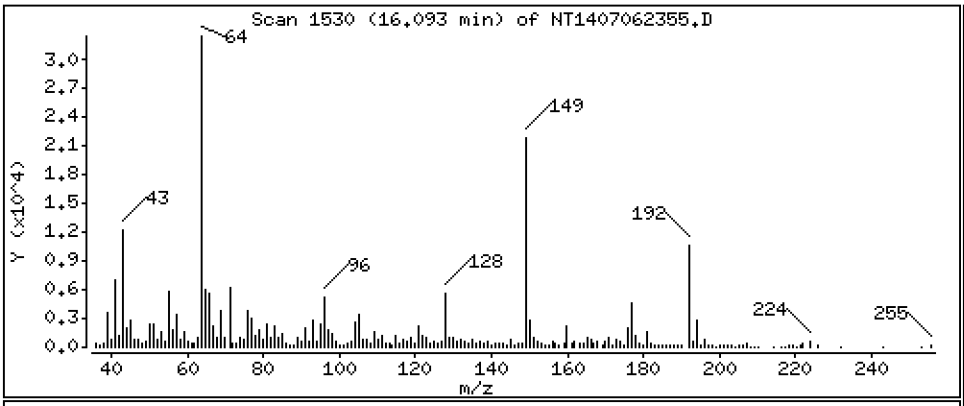
Operator: JGR

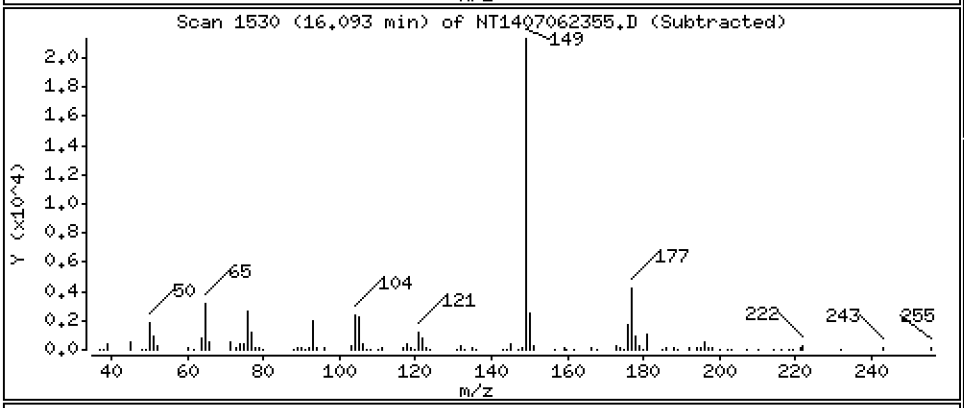
Column phase: ZB-5msi

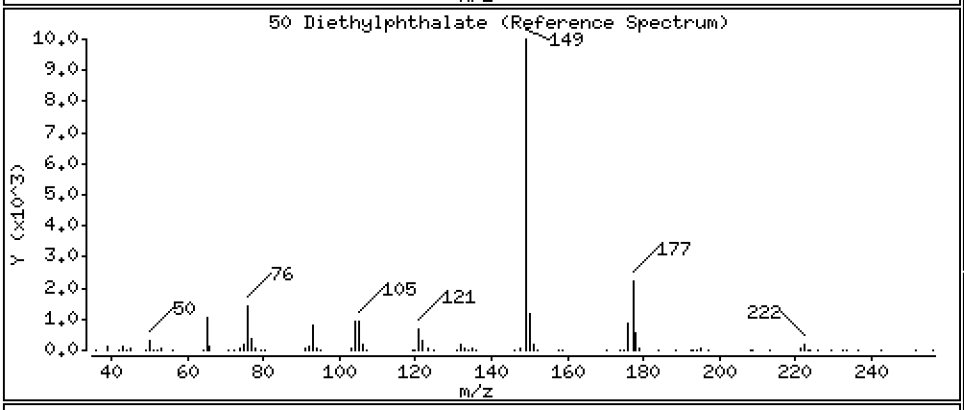
Column diameter: 0.25

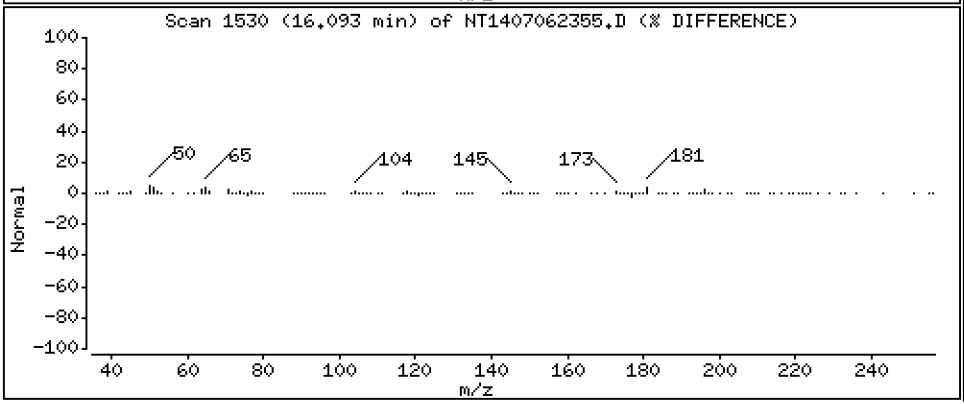
50 Diethylphthalate

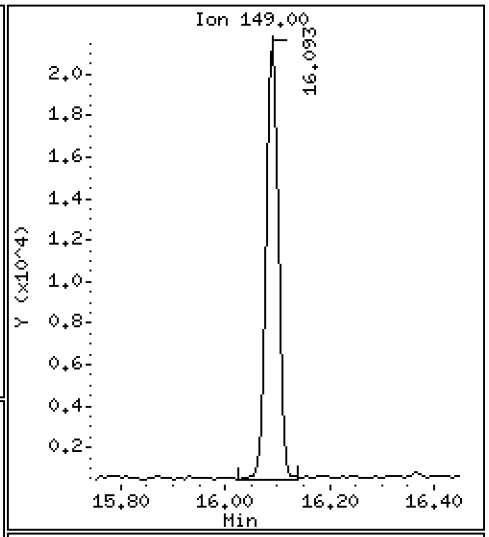
Concentration: 0.3461 ug/mL

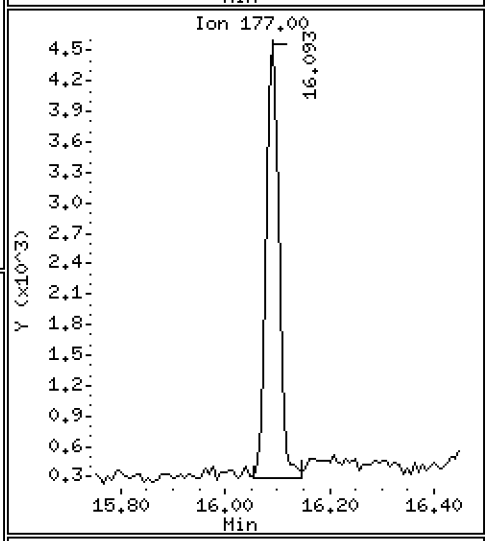


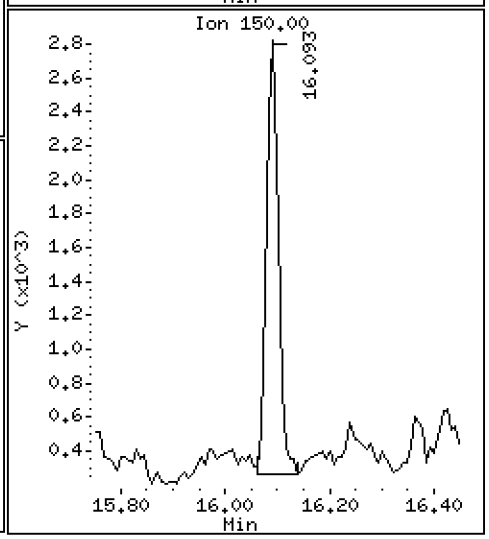












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062355.D

Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

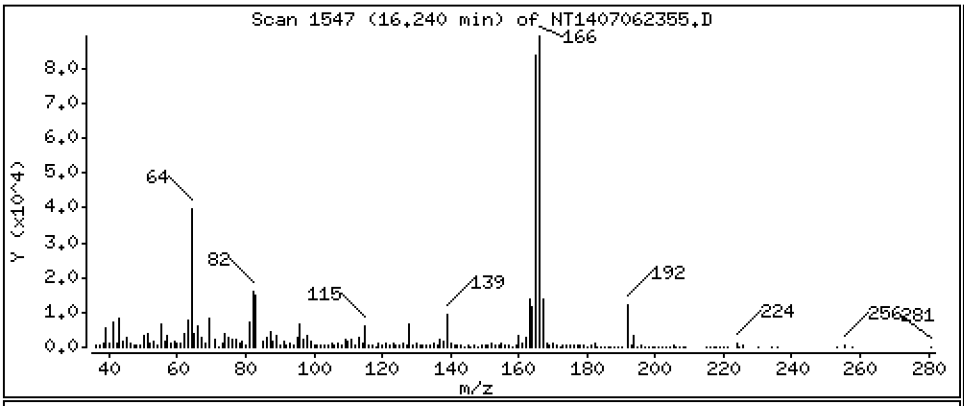
Operator: JGR

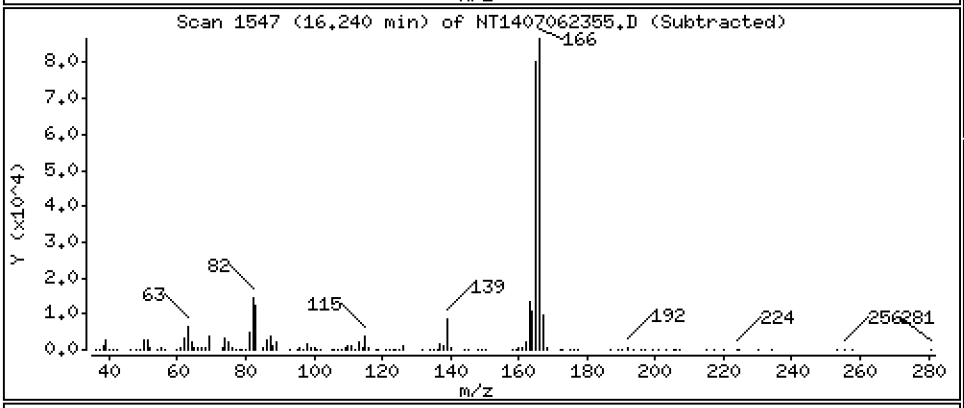
Column phase: ZB-5msi

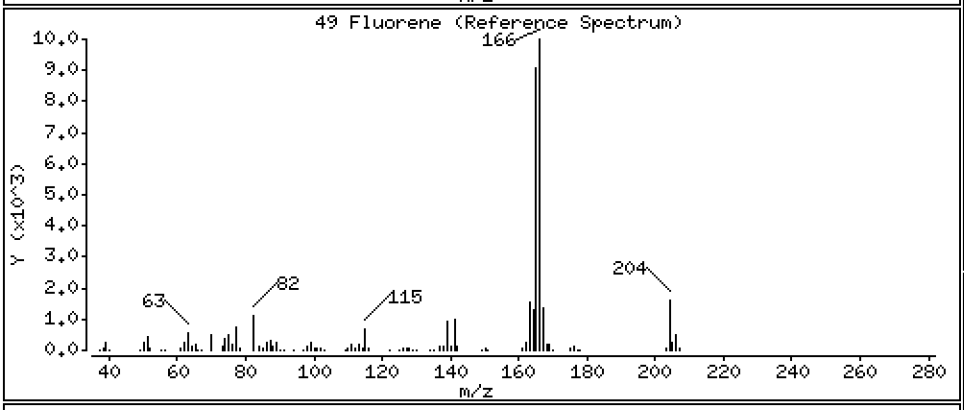
Column diameter: 0.25

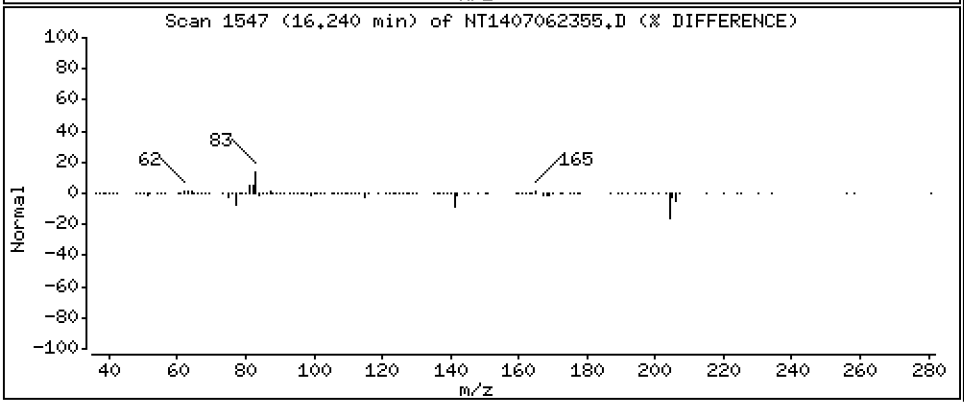
49 Fluorene

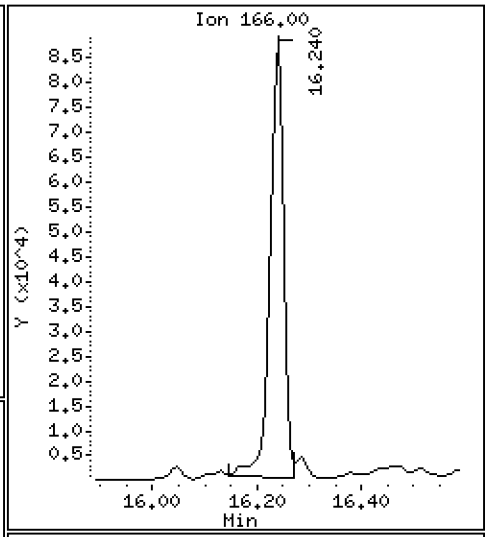
Concentration: 1.893 ug/mL

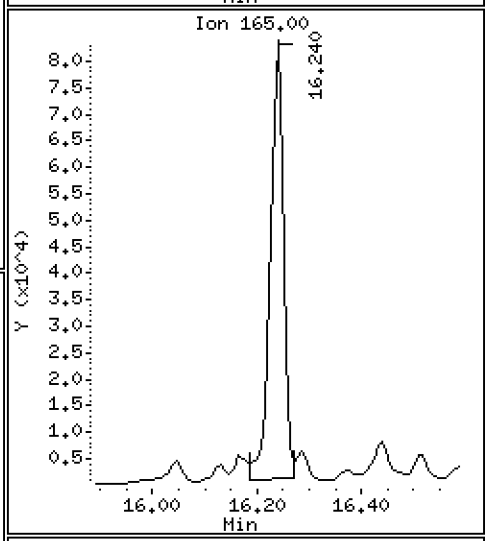


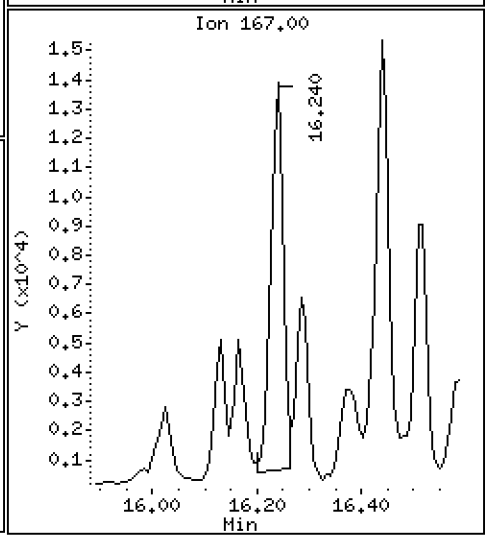












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

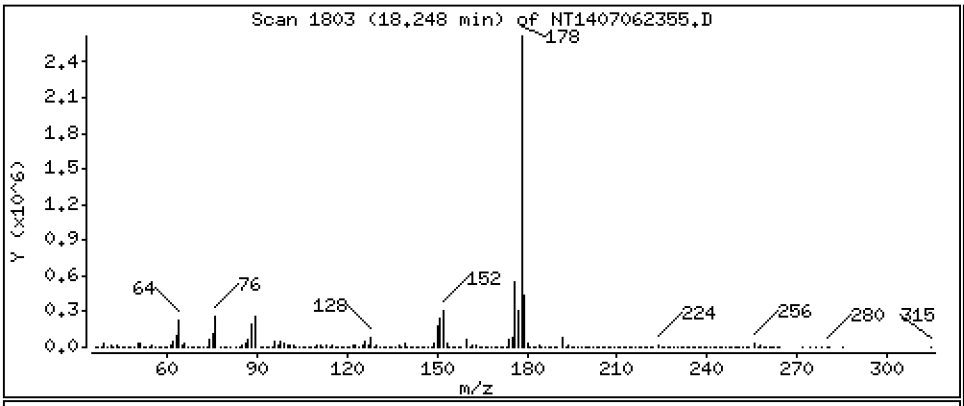
Operator: JGR

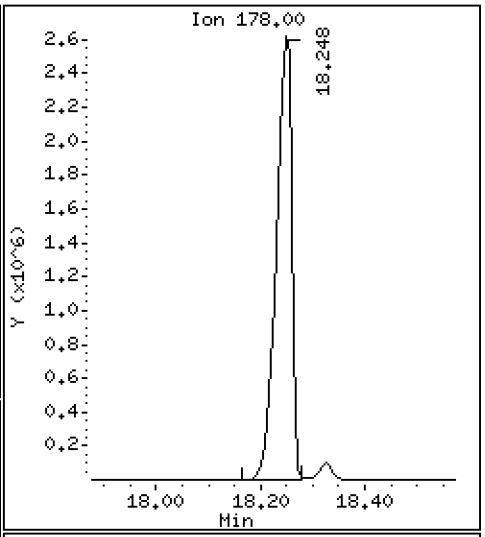
Column phase: ZB-5msi

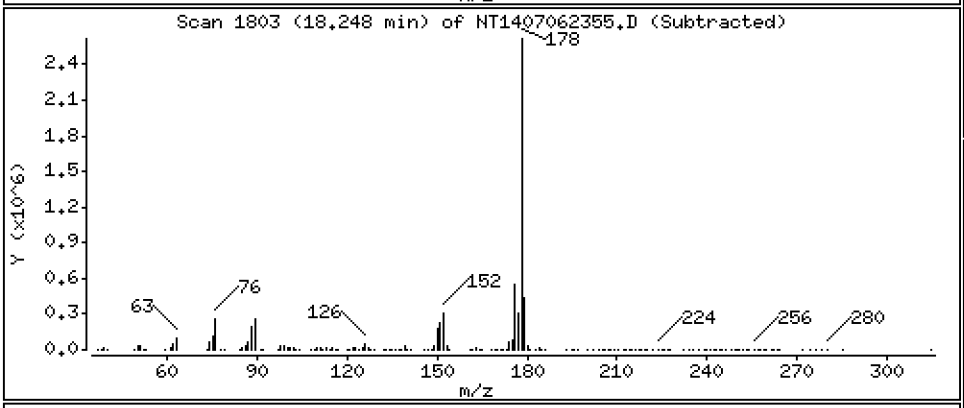
Column diameter: 0.25

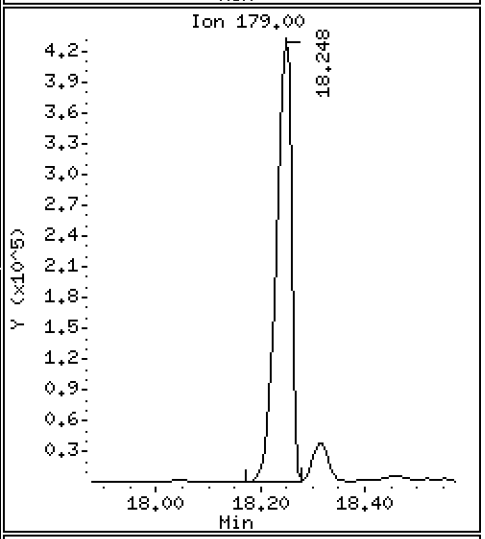
60 Phenanthrene

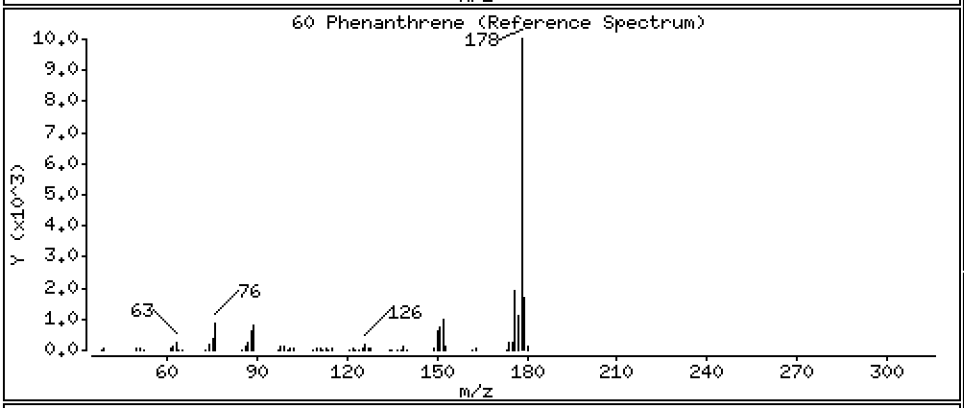
Concentration: 46.77 ug/mL

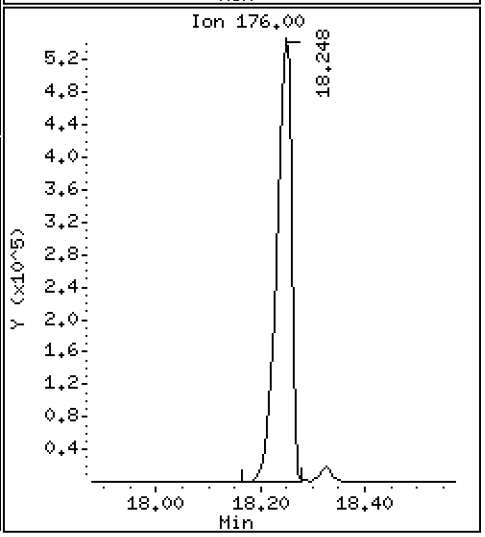


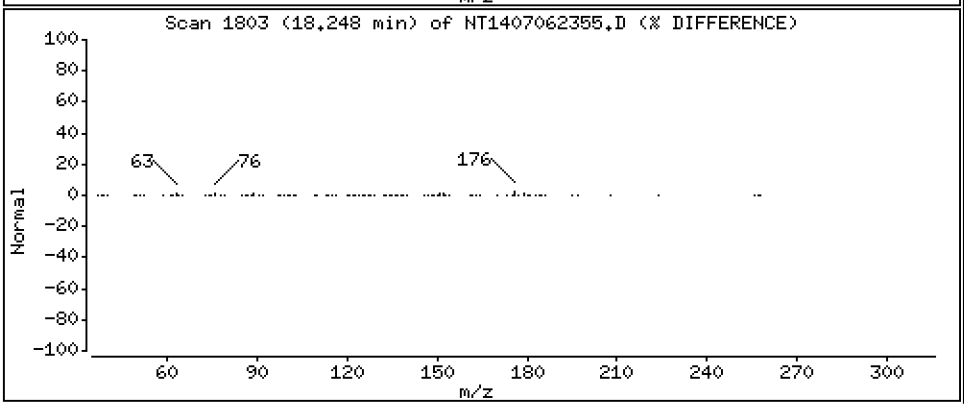












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

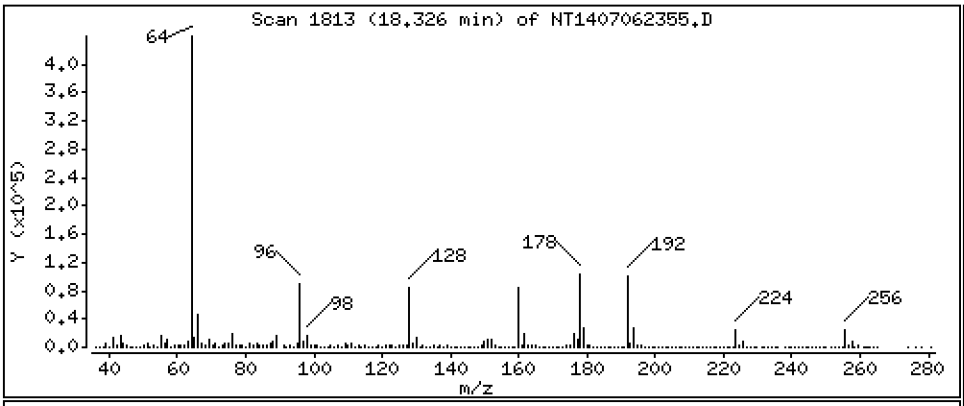
Operator: JGR

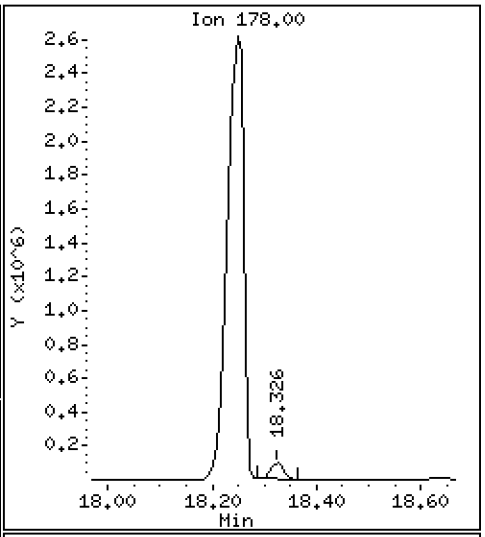
Column phase: ZB-5msi

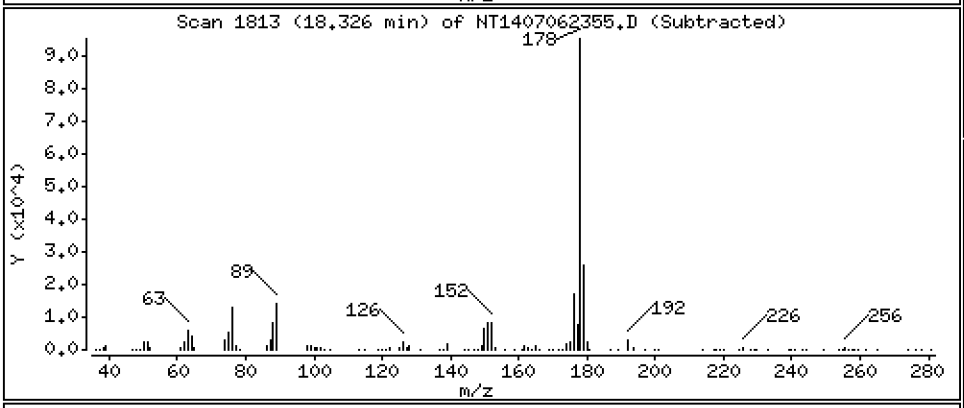
Column diameter: 0.25

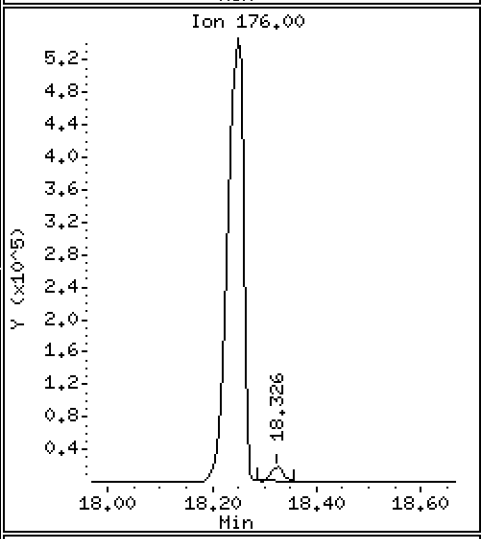
61 Anthracene

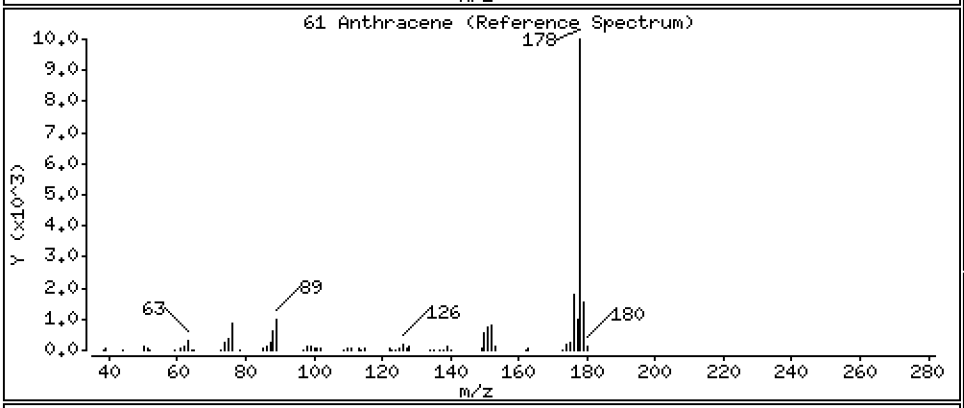
Concentration: 1.299 ug/mL

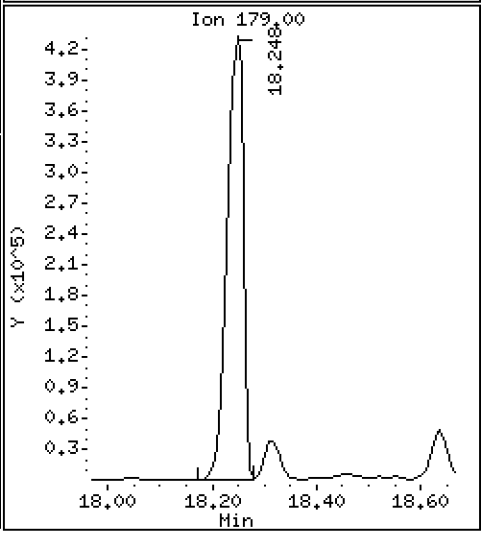


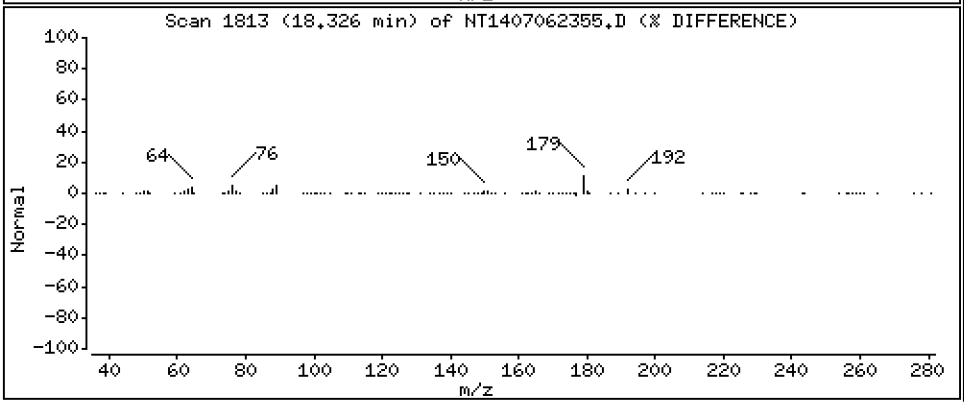












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

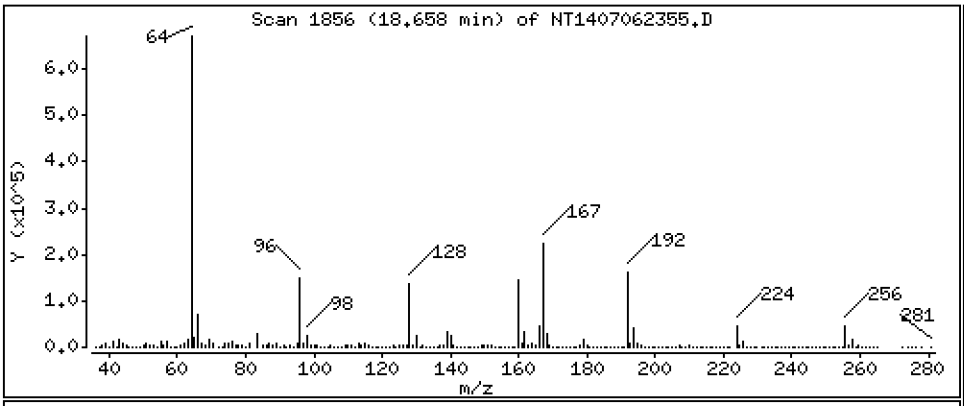
Operator: JGR

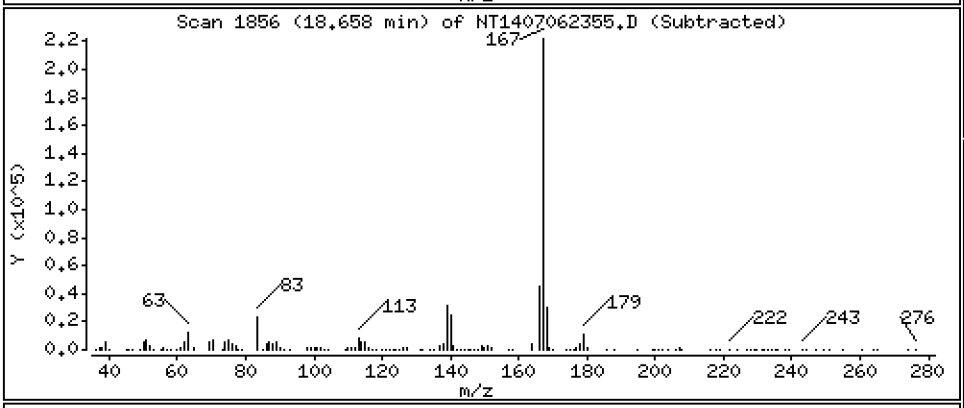
Column phase: ZB-5msi

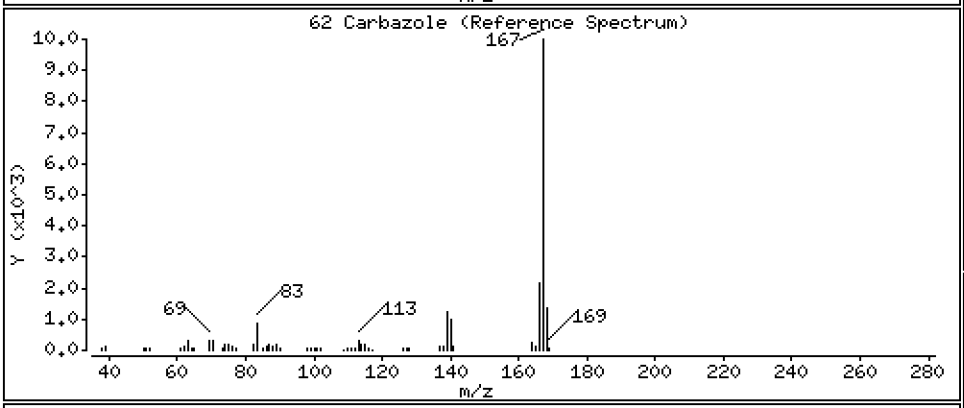
Column diameter: 0.25

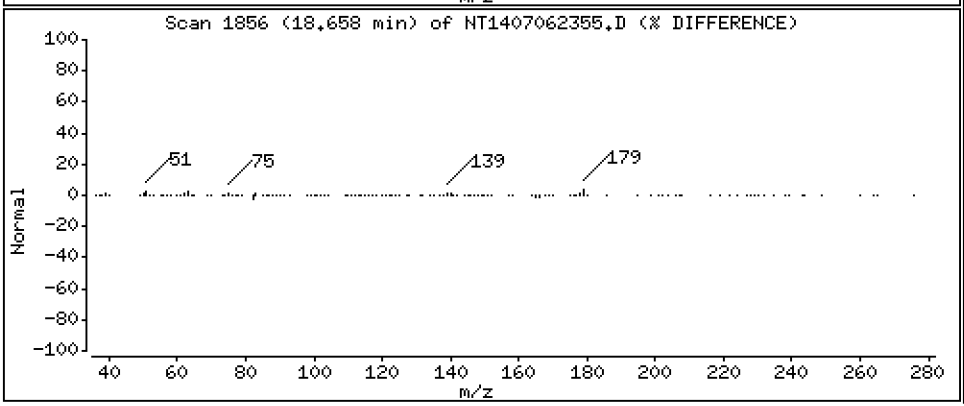
62 Carbazole

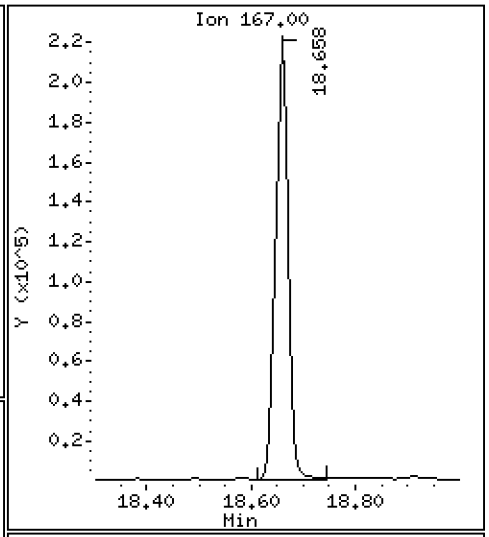
Concentration: 3.135 ug/mL

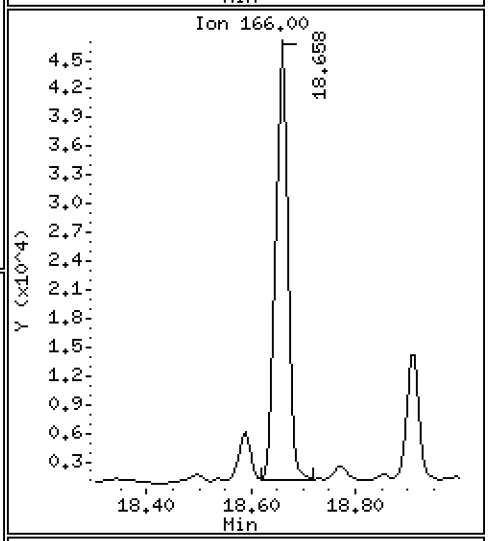


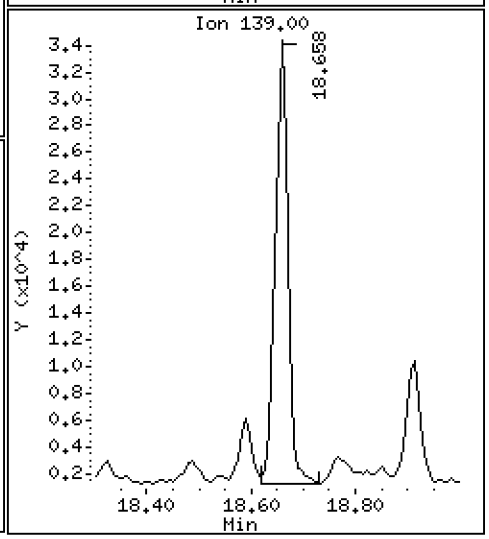












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062355.D

Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

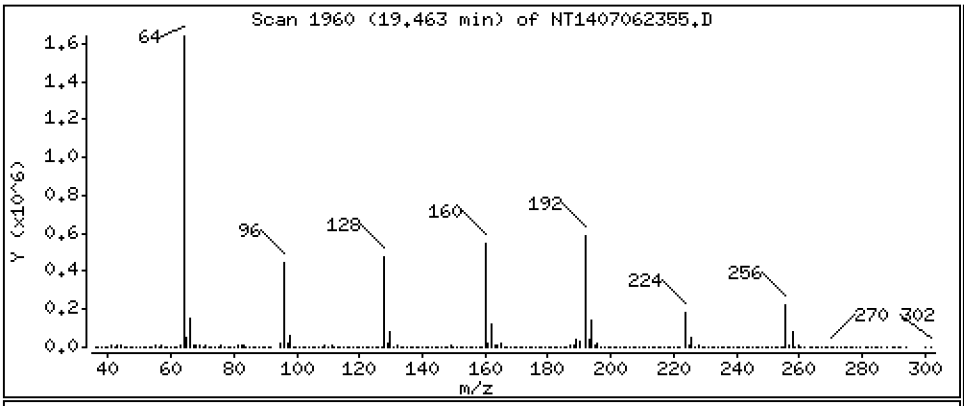
Operator: JGR

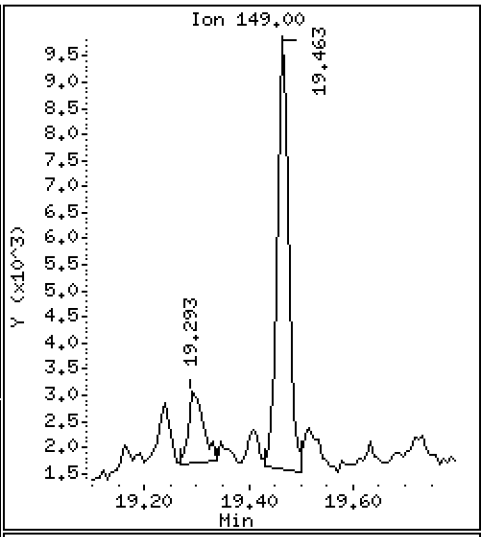
Column phase: ZB-5msi

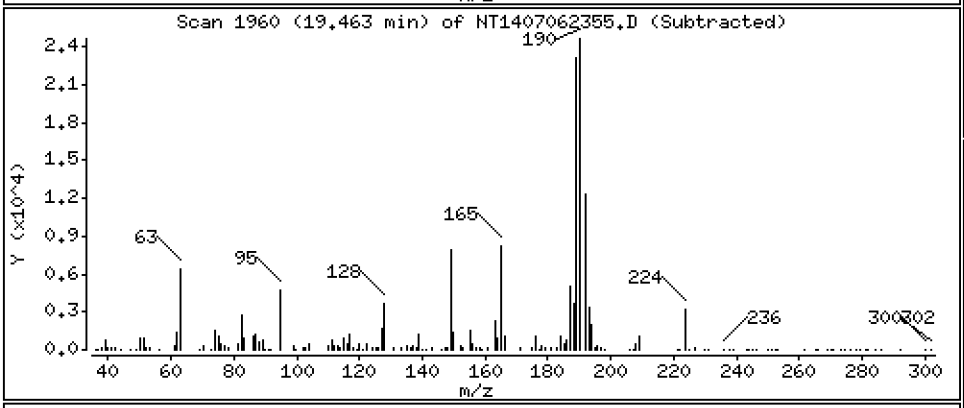
Column diameter: 0.25

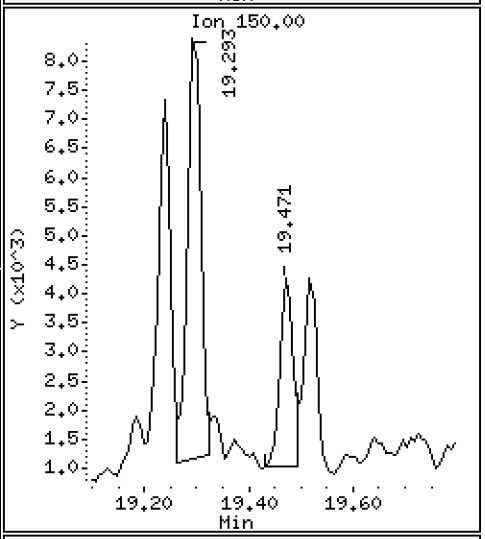
63 Di-n-butylphthalate

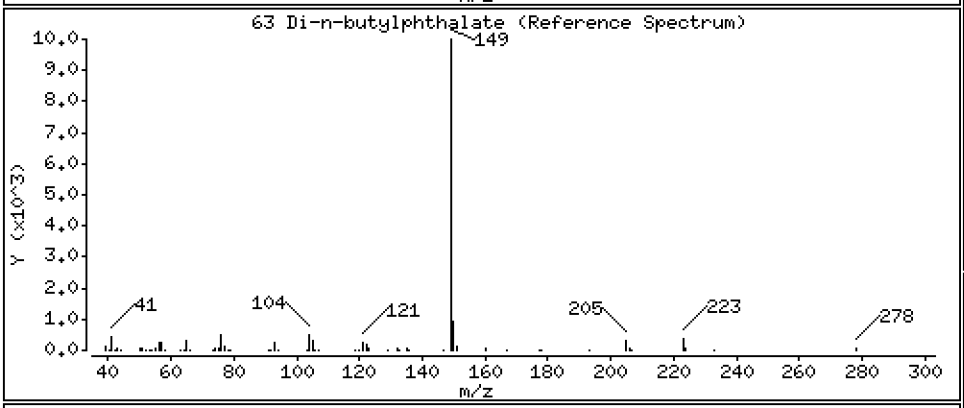
Concentration: 0.08769 ug/mL

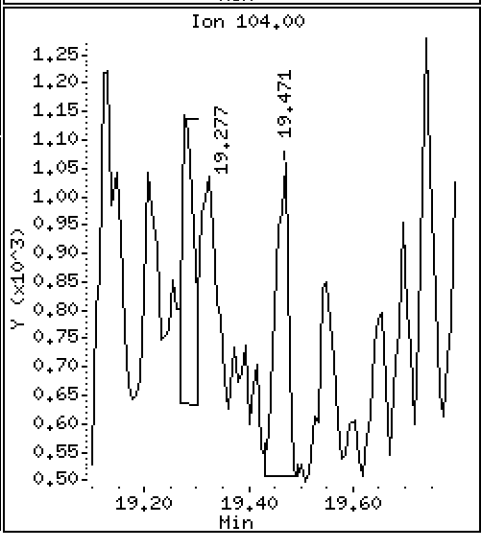


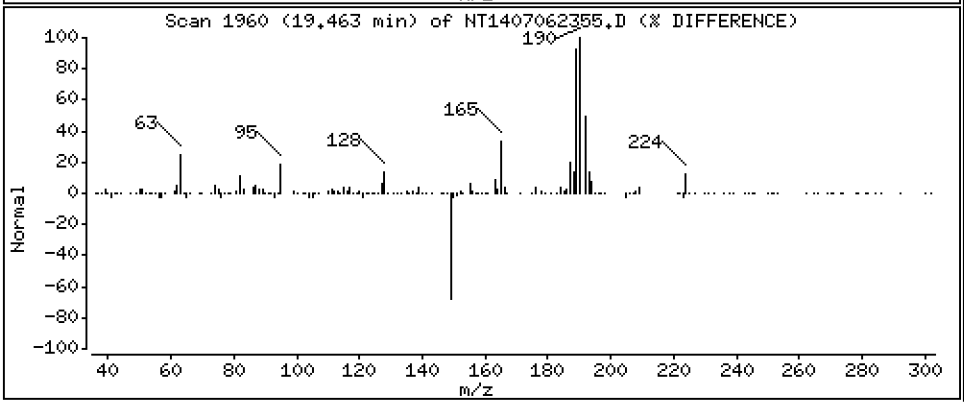












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

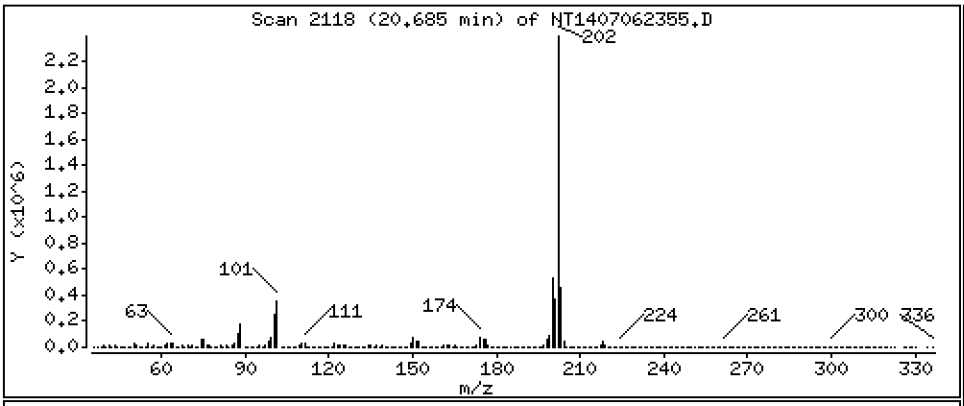
Operator: JGR

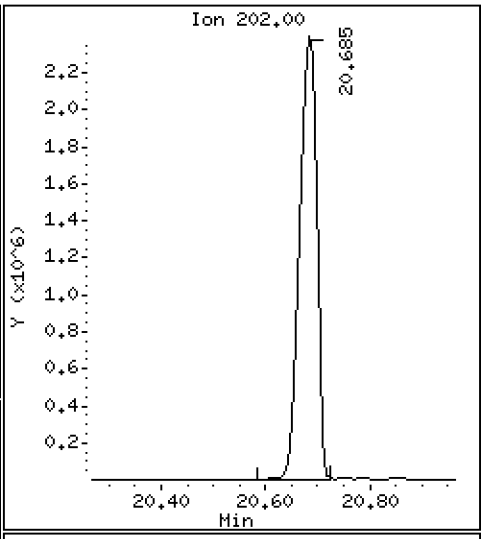
Column phase: ZB-5msi

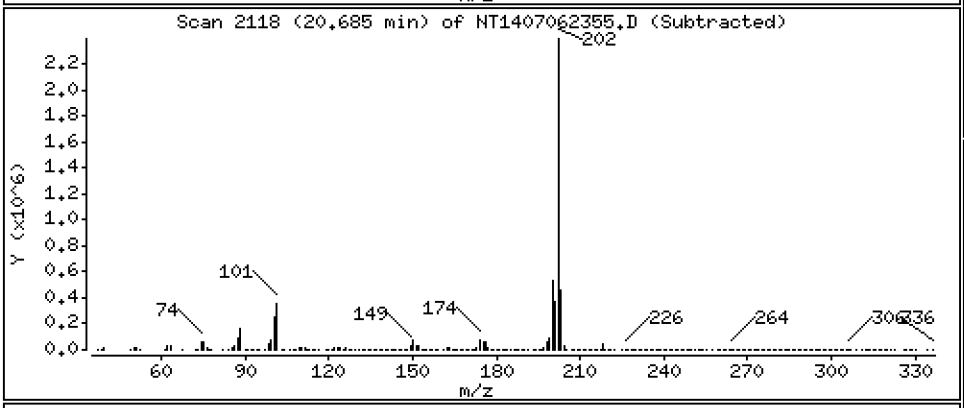
Column diameter: 0.25

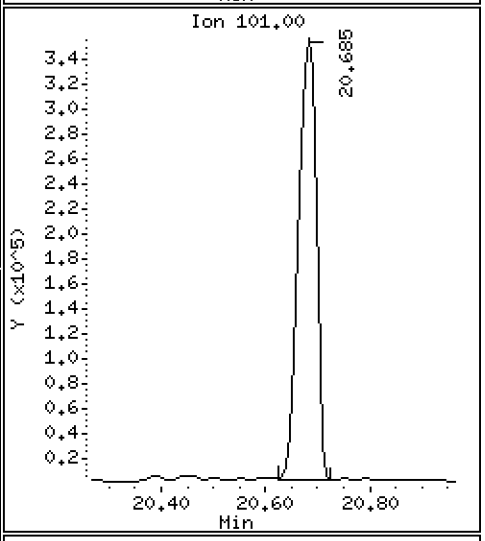
64 Fluoranthene

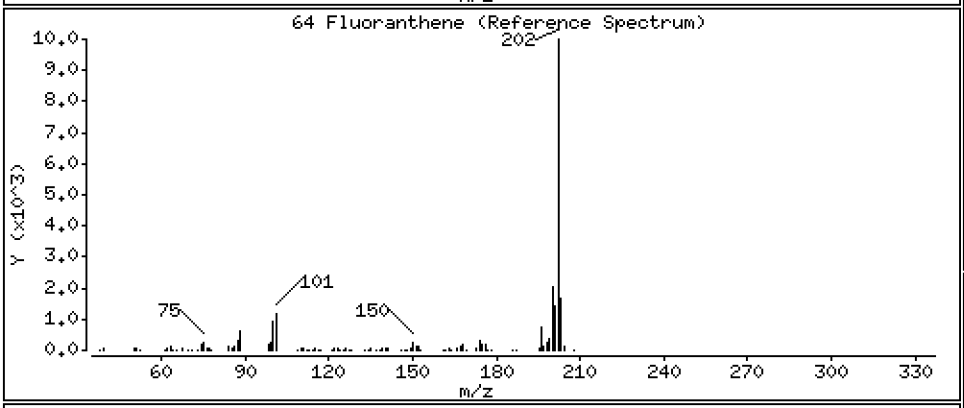
Concentration: 50.31 ug/mL

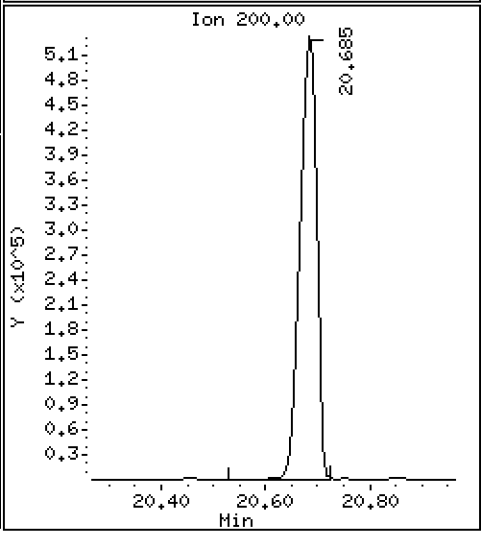


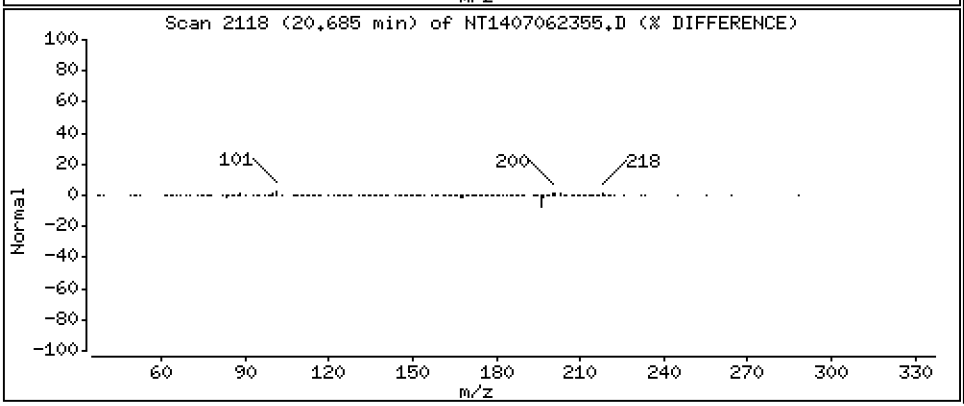












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

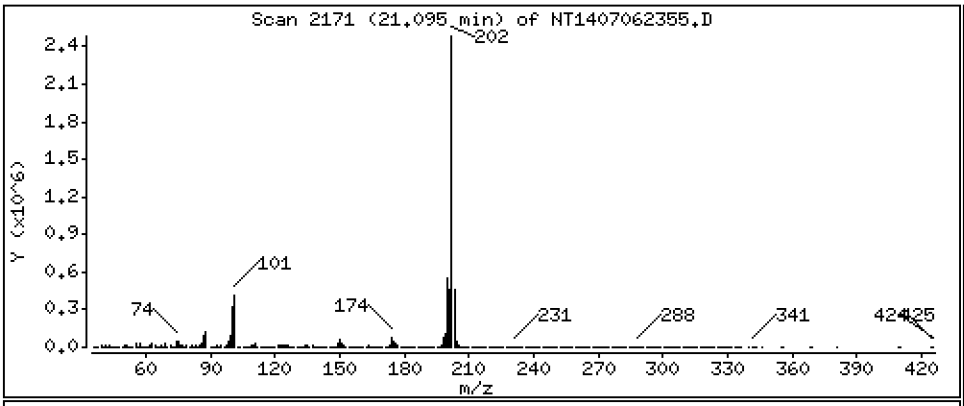
Operator: JGR

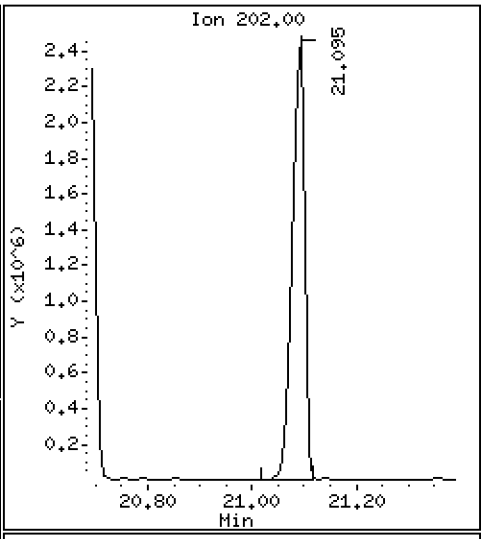
Column phase: ZB-5msi

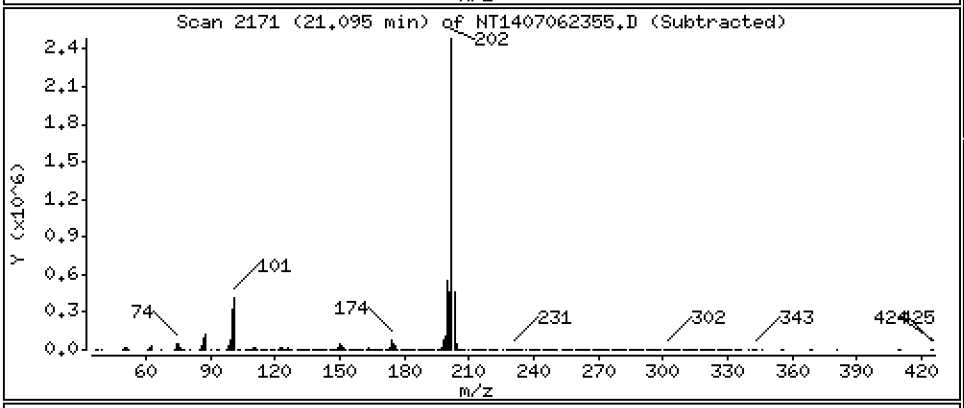
Column diameter: 0.25

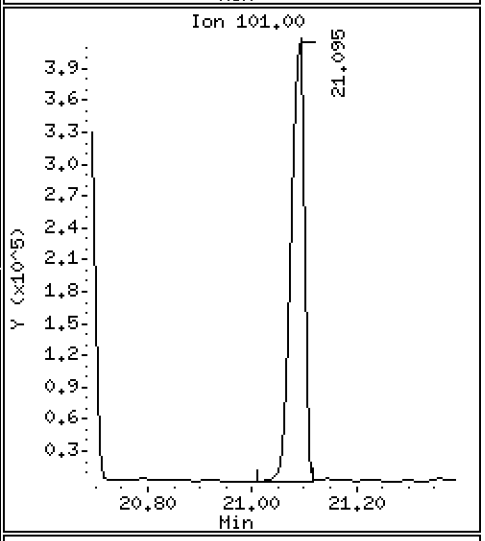
65 Pyrene

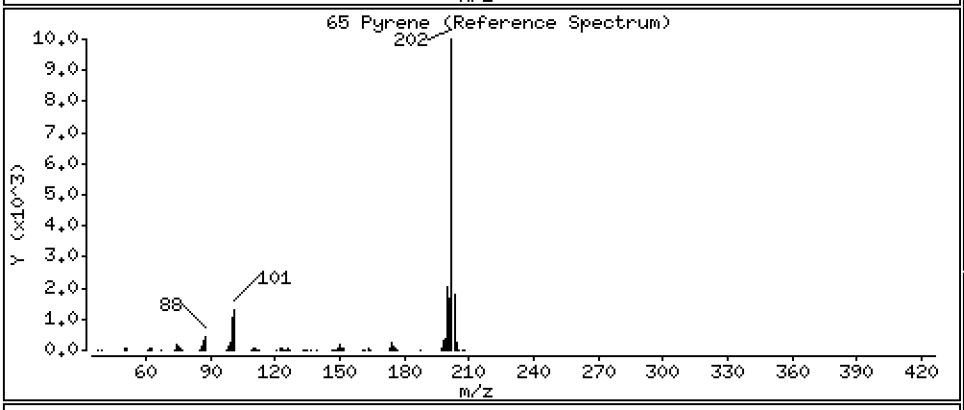
Concentration: 39.53 ug/mL

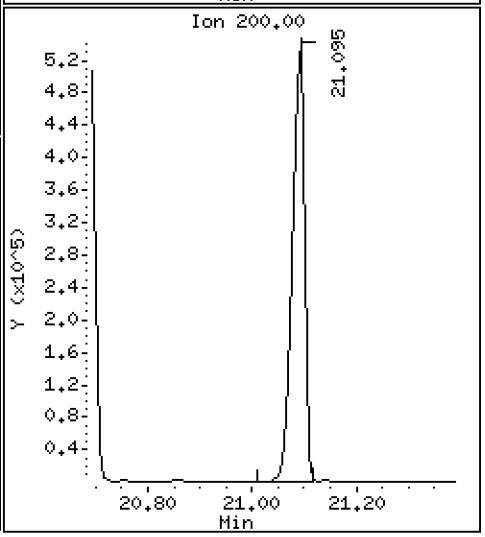


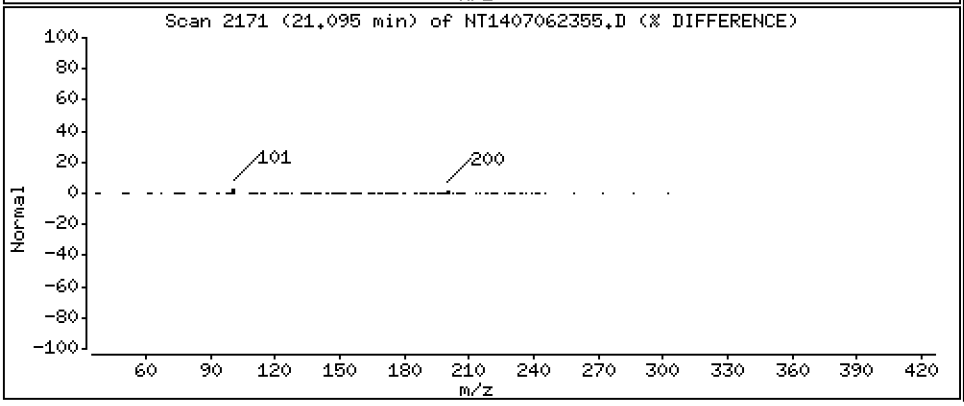












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

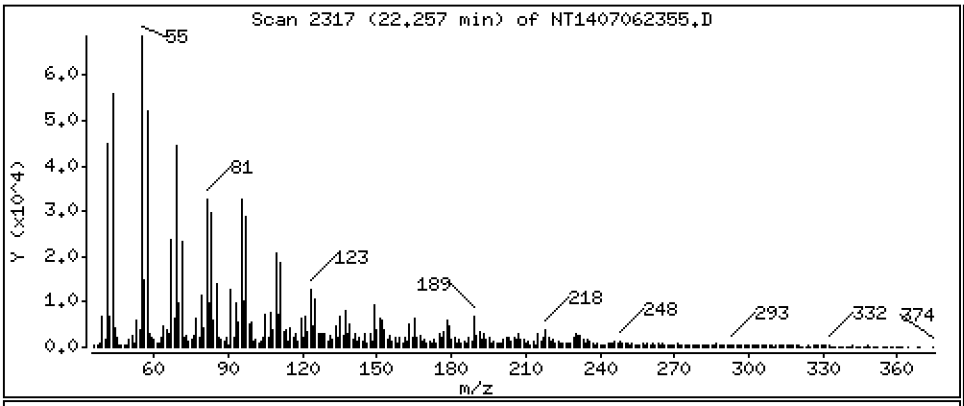
Operator: JGR

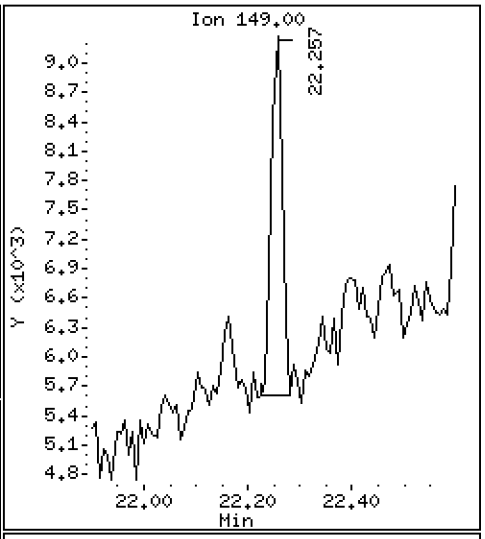
Column phase: ZB-5msi

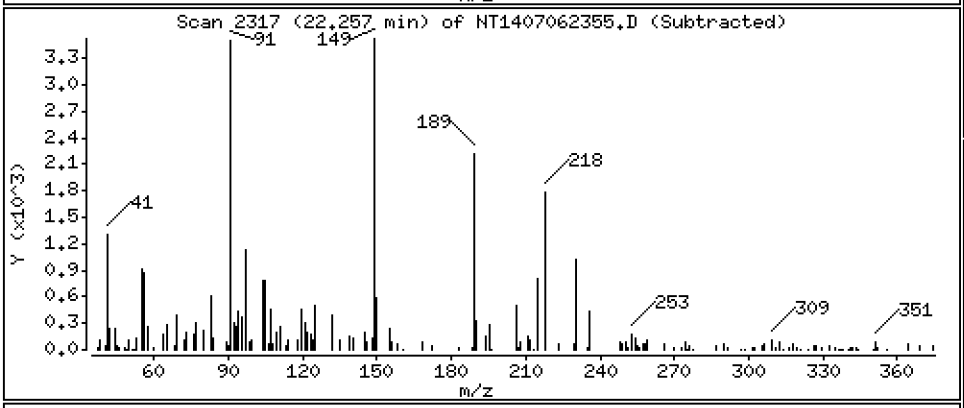
Column diameter: 0.25

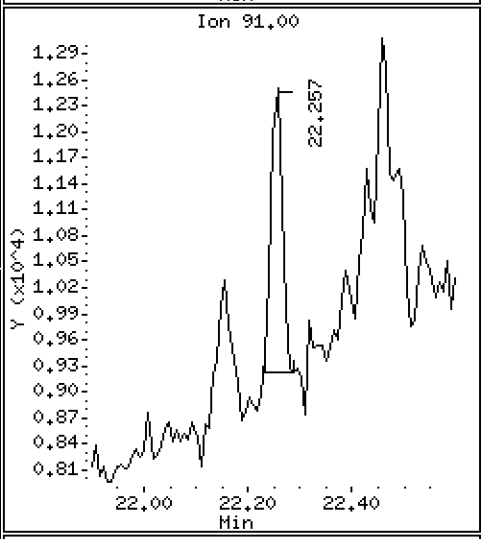
67 Butylbenzylphthalate

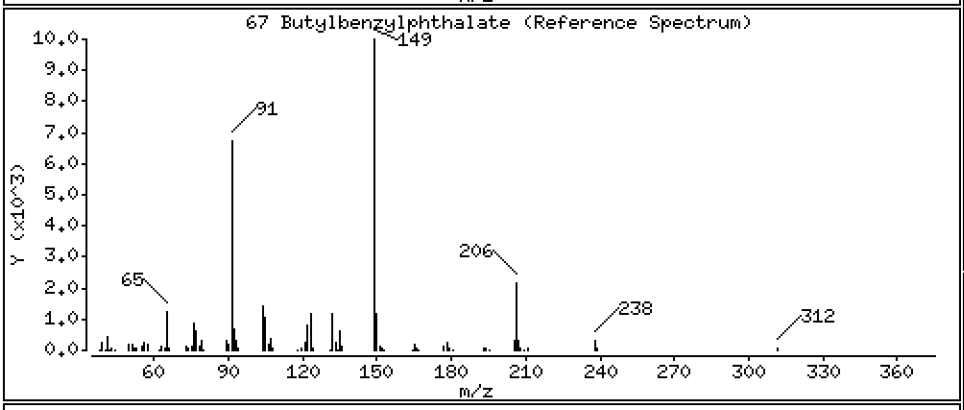
Concentration: 0.09783 ug/mL

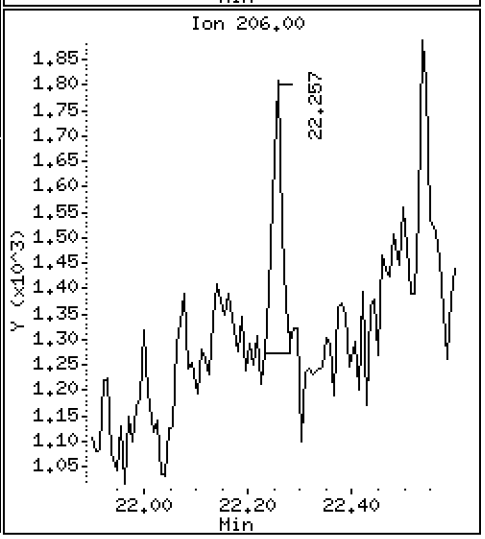


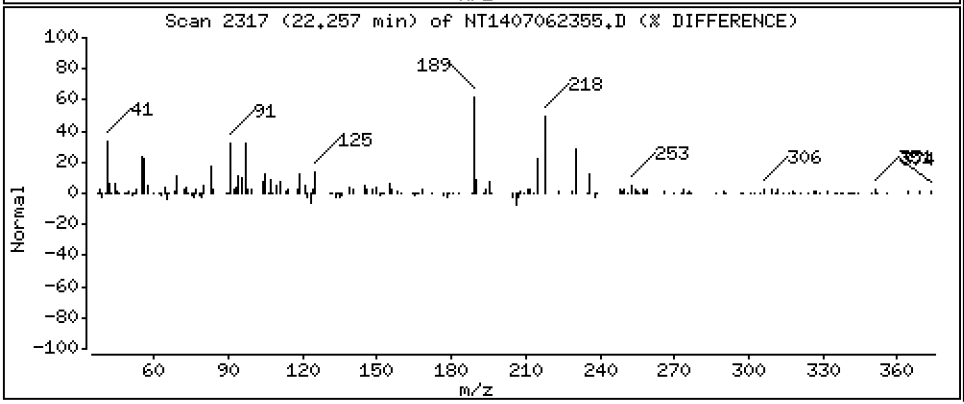












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

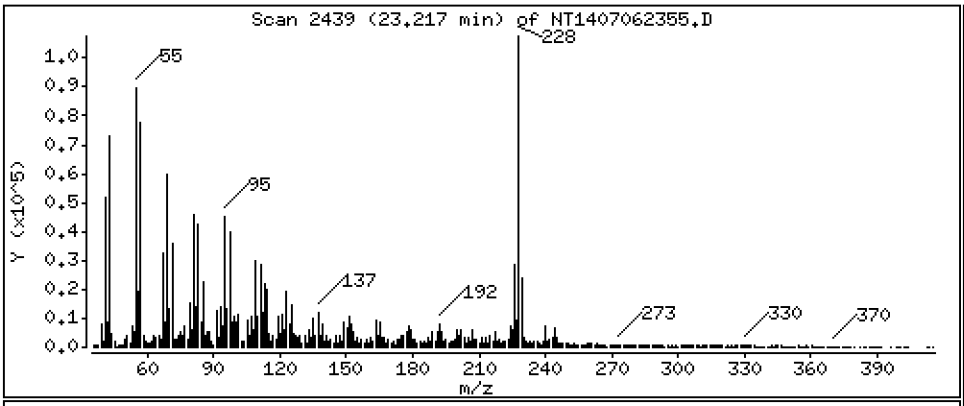
Operator: JGR

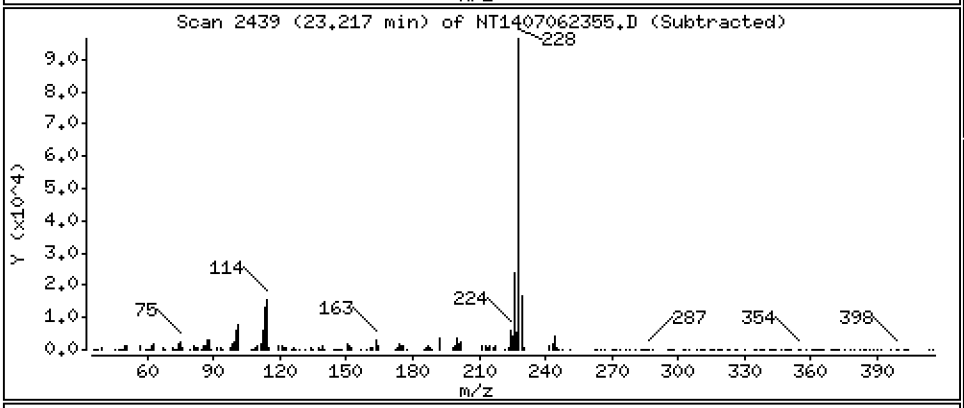
Column phase: ZB-5msi

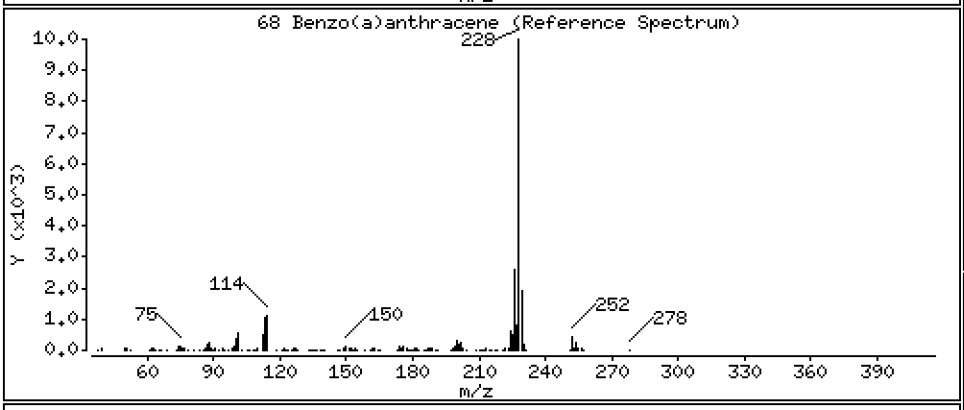
Column diameter: 0.25

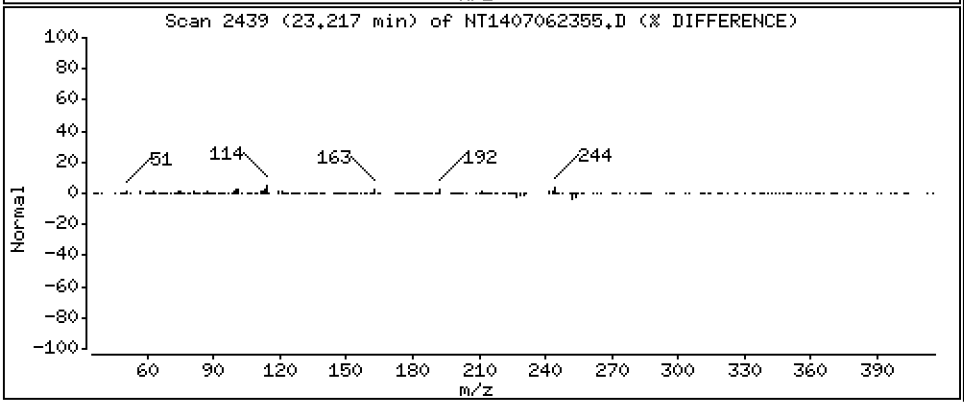
68 Benzo(a)anthracene

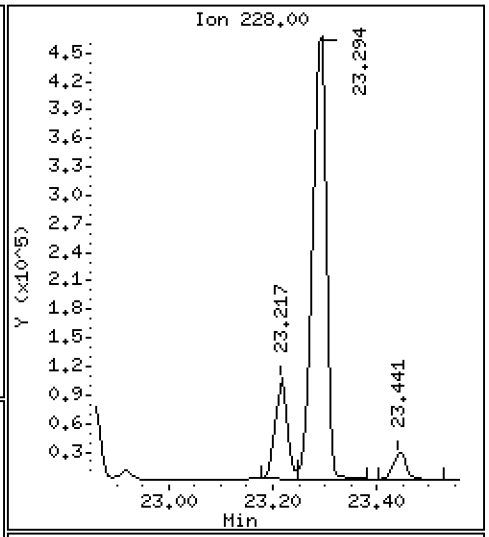
Concentration: 1.791 ug/mL

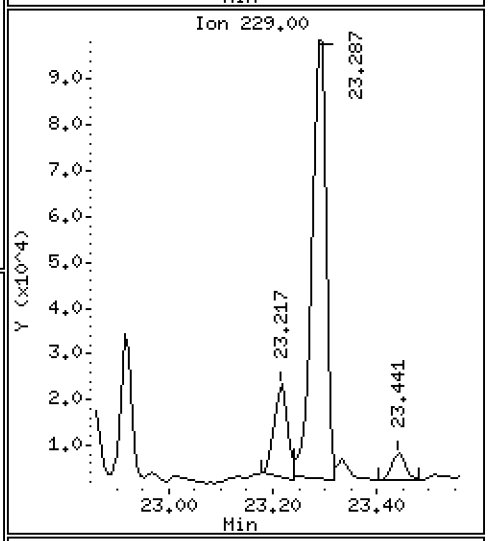


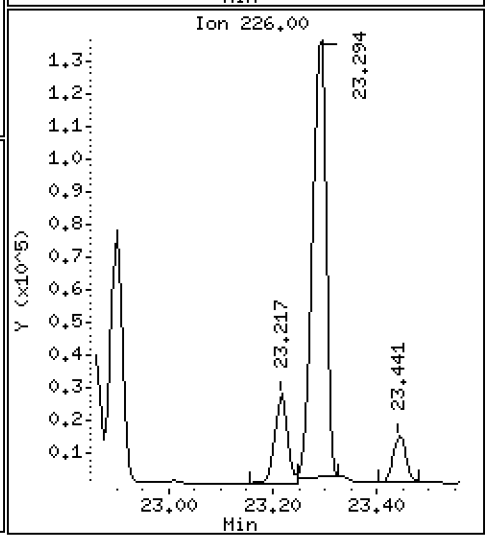












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

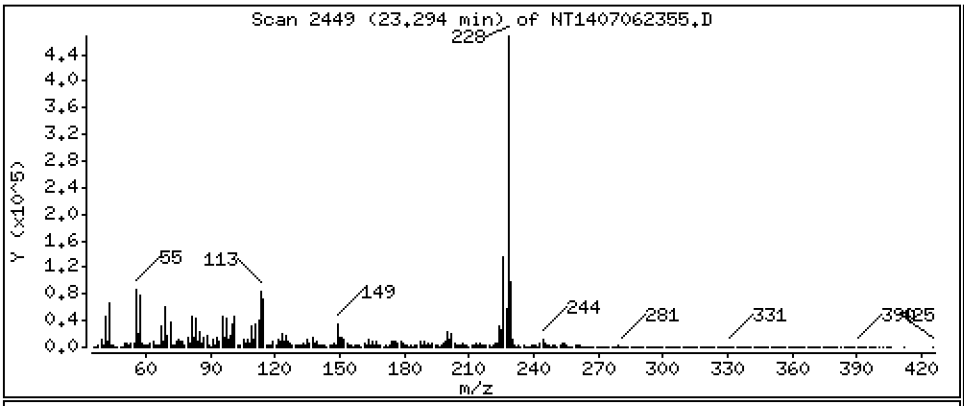
Operator: JGR

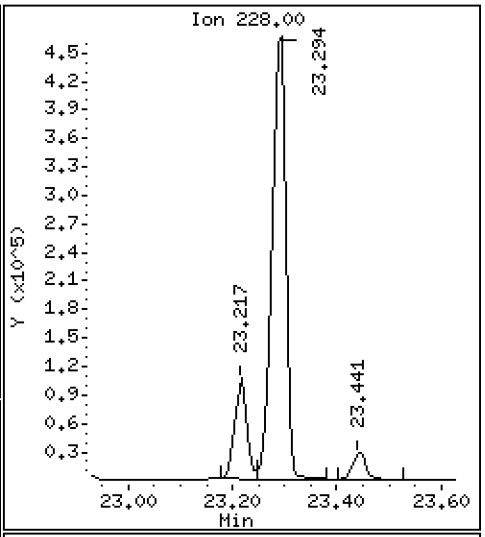
Column phase: ZB-5msi

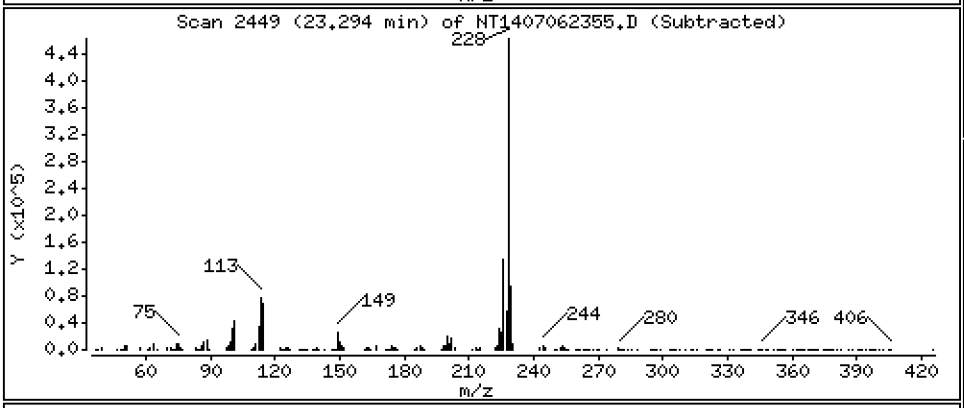
Column diameter: 0.25

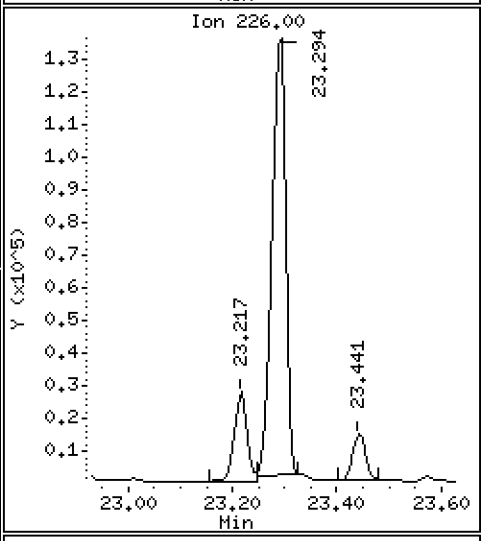
71 Chrysene

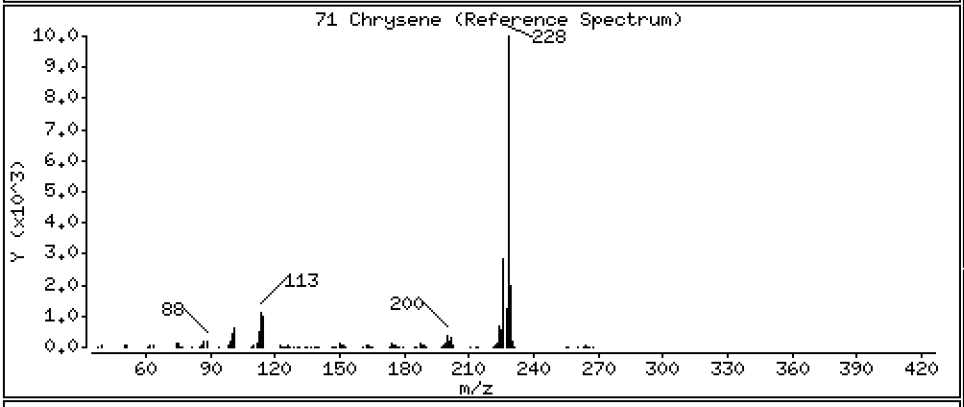
Concentration: 10.02 ug/mL

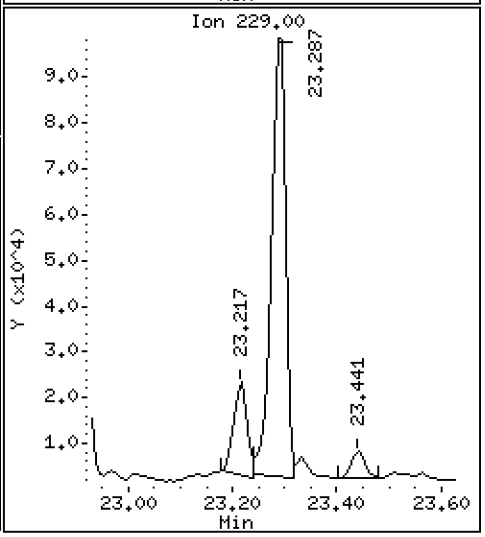


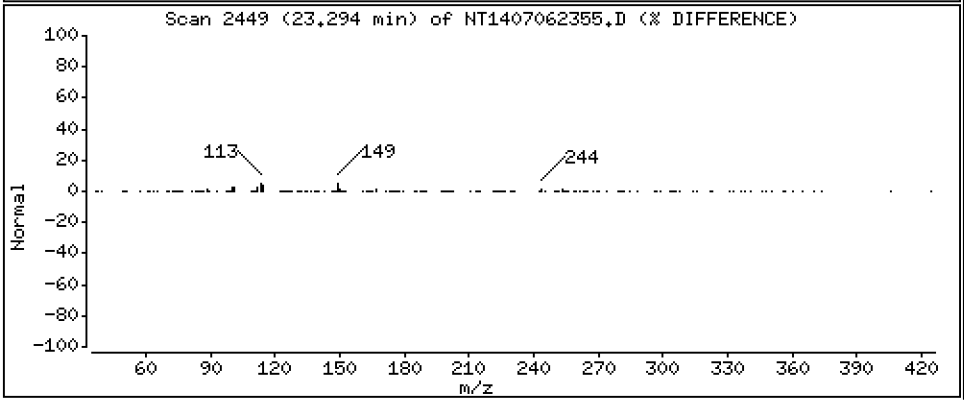












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

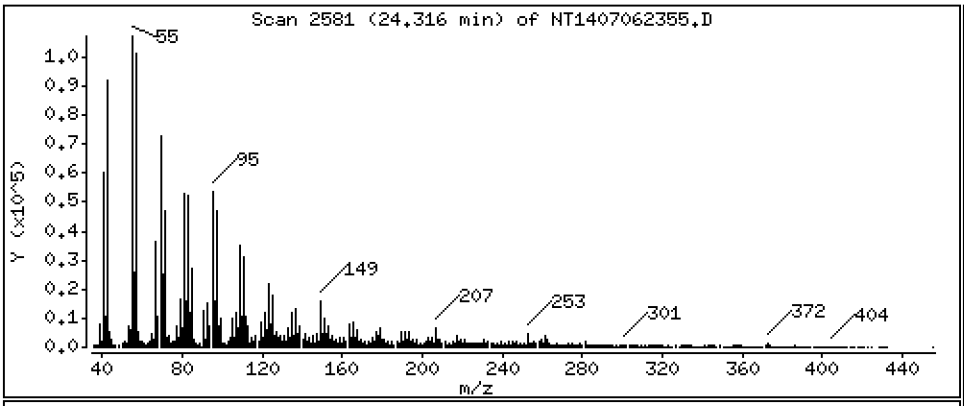
Operator: JGR

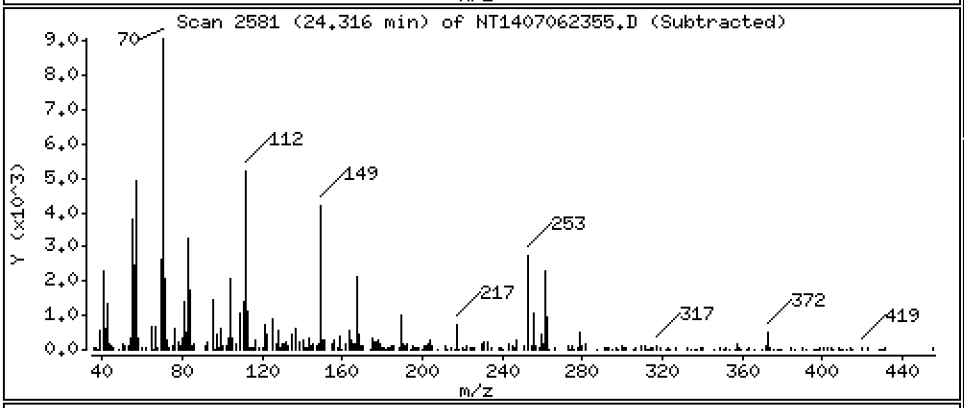
Column phase: ZB-5msi

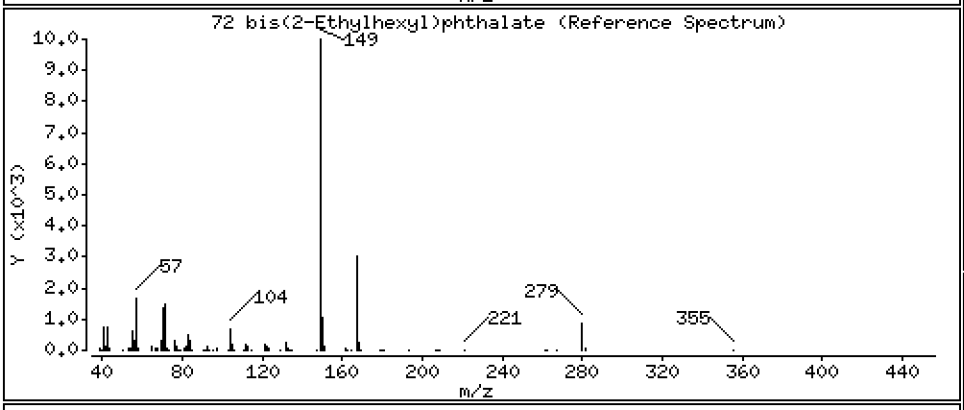
Column diameter: 0.25

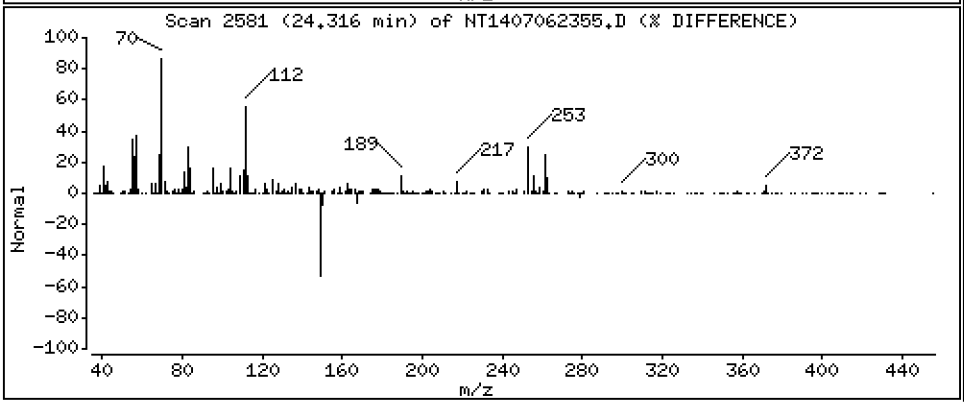
72 bis(2-Ethylhexyl)phthalate

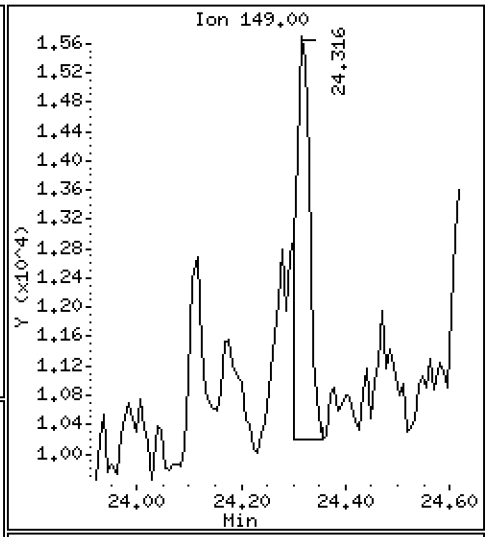
Concentration: 0.06273 ug/mL

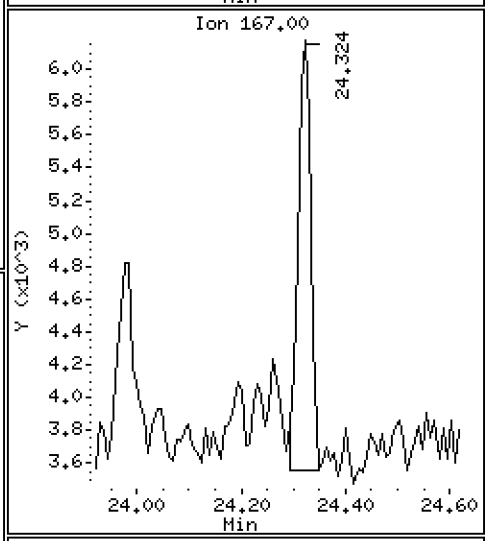


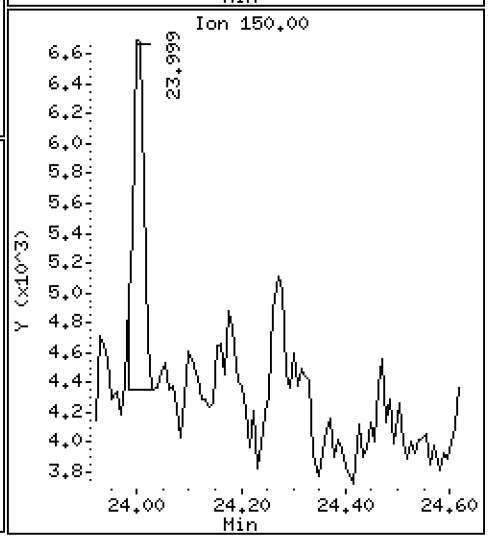












Date : 07-JUL-2023 23:11

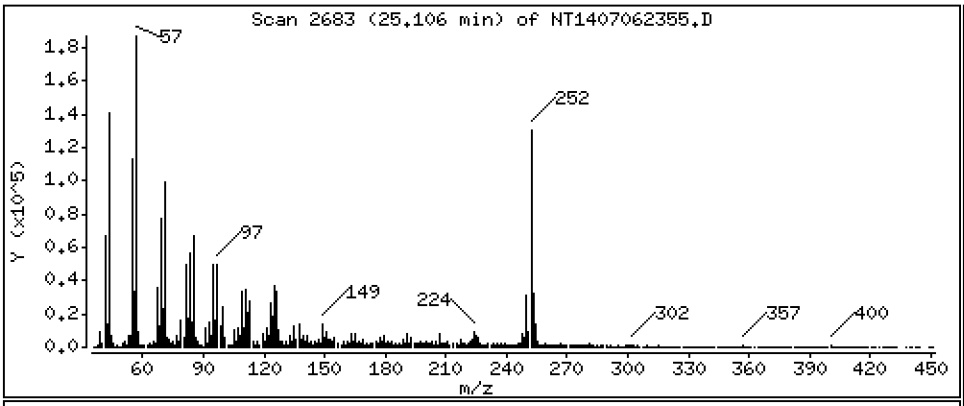
Client ID: Instrument: nt14.i

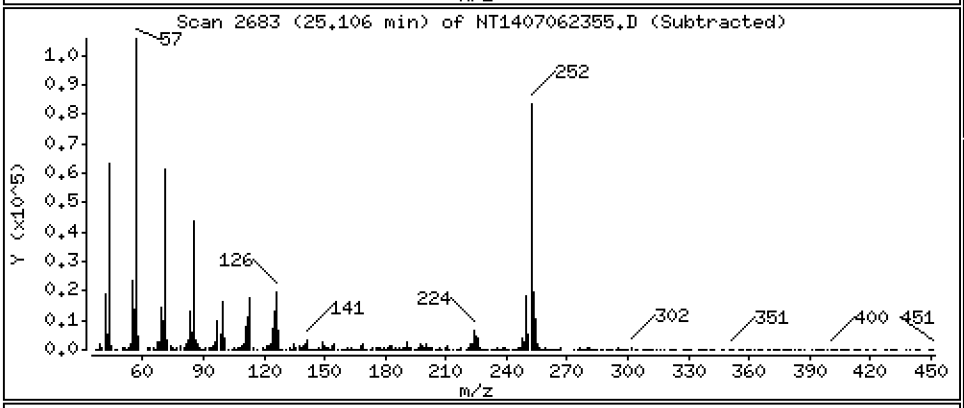
Sample Info: 23F0536-01

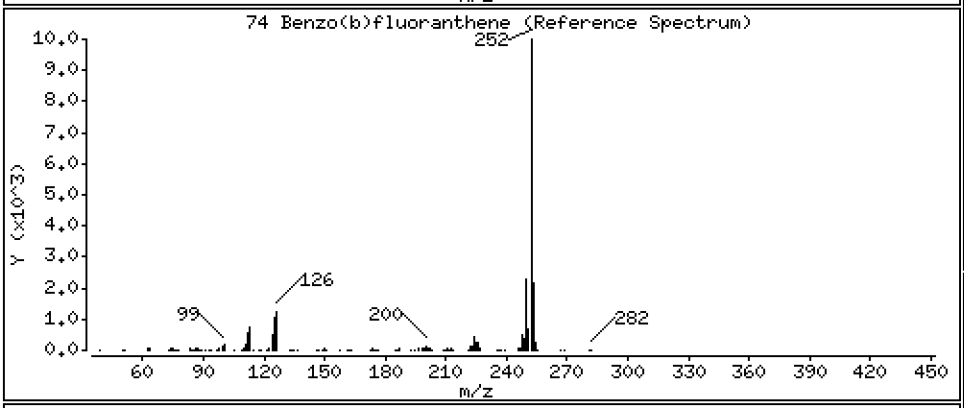
Operator: JGR

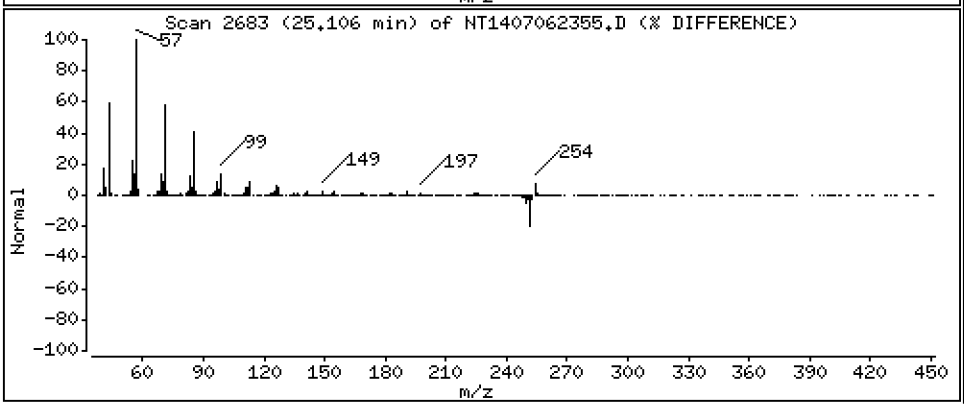
Column phase: ZB-5msi Column diameter: 0.25

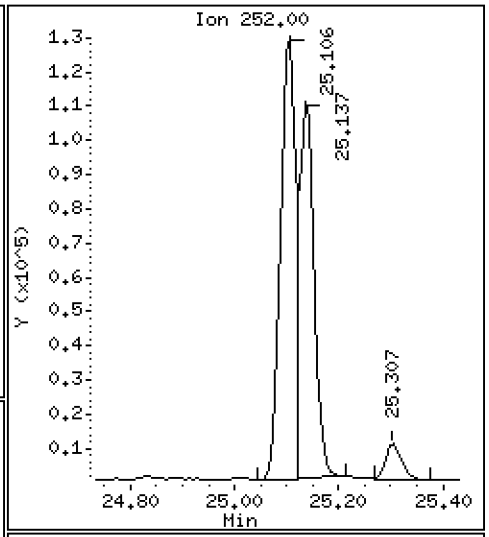
74 Benzo(b)fluoranthene Concentration: 5.897 ug/mL

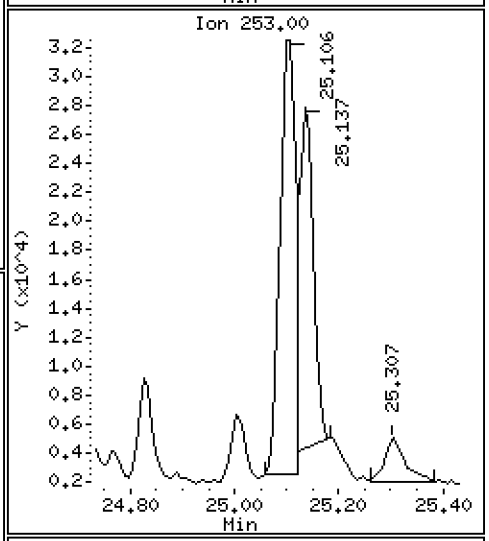


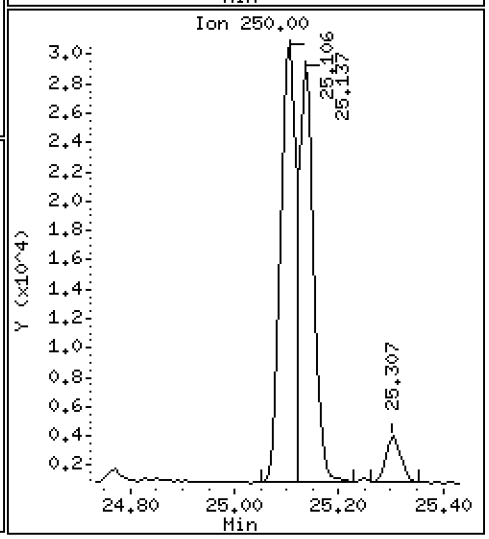












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

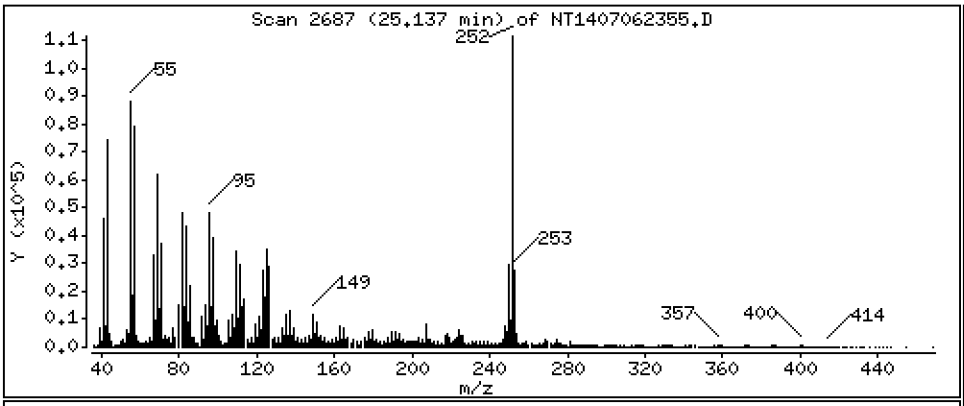
Operator: JGR

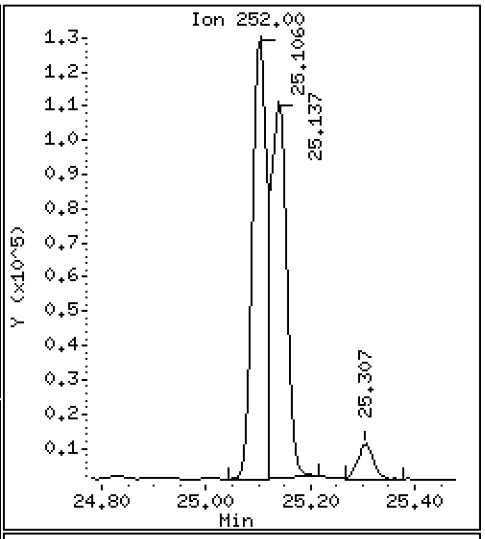
Column phase: ZB-5msi

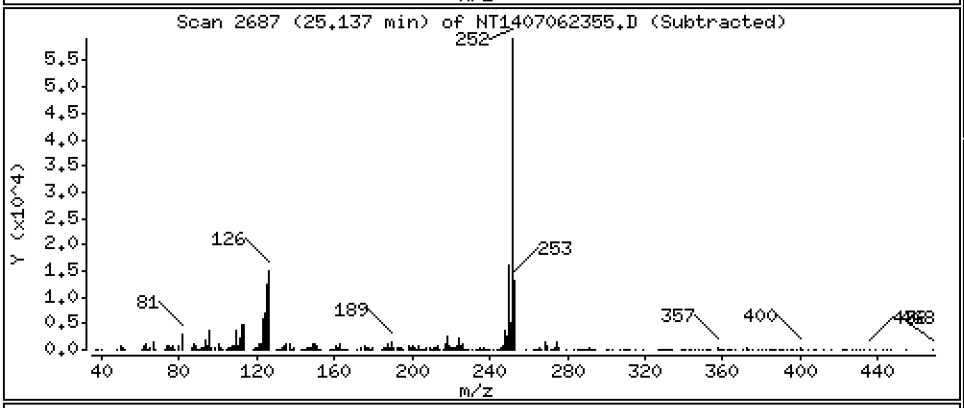
Column diameter: 0.25

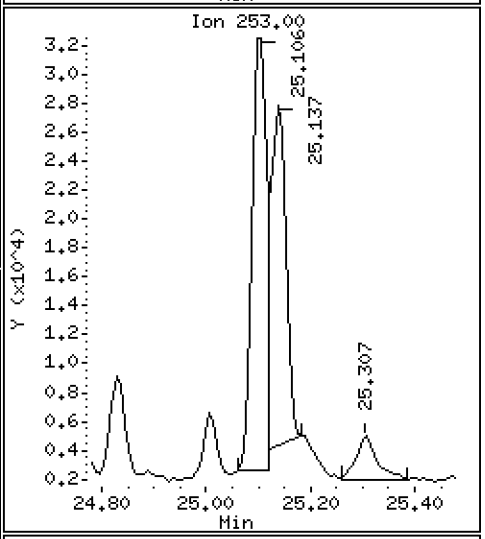
75 Benzo(k)fluoranthene

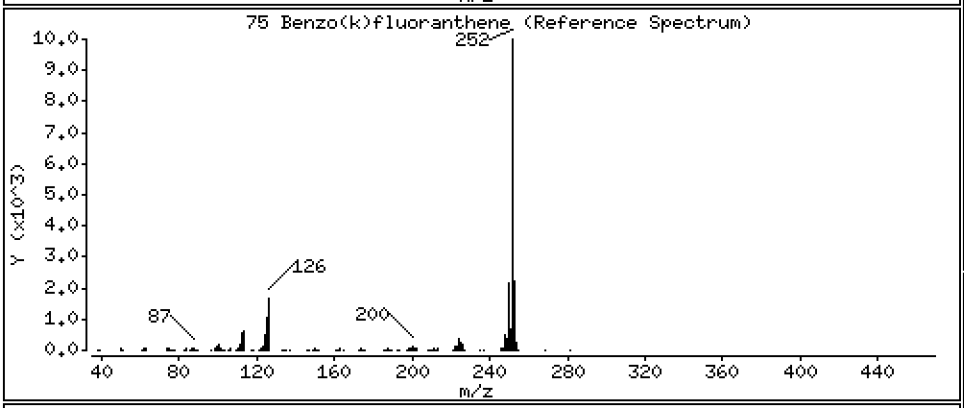
Concentration: 4.623 ug/mL

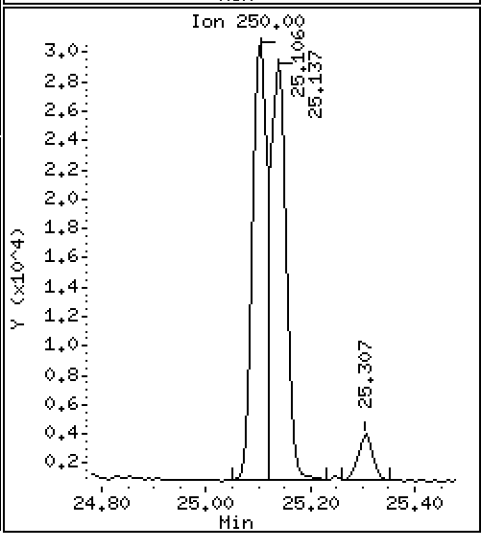


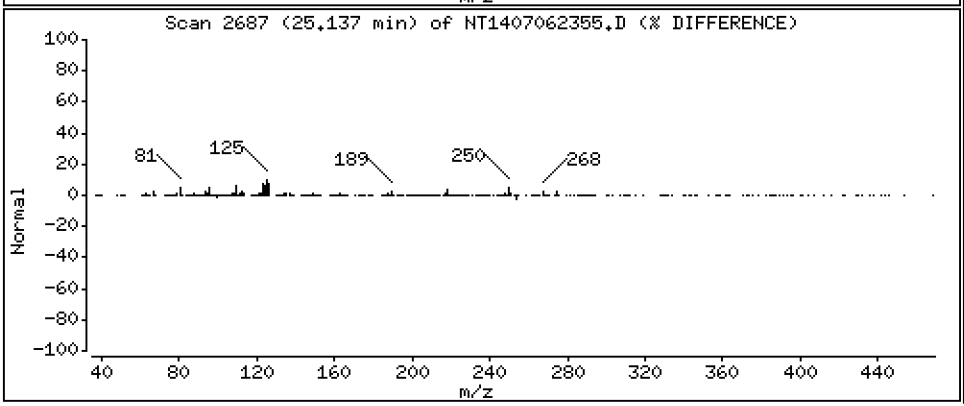












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

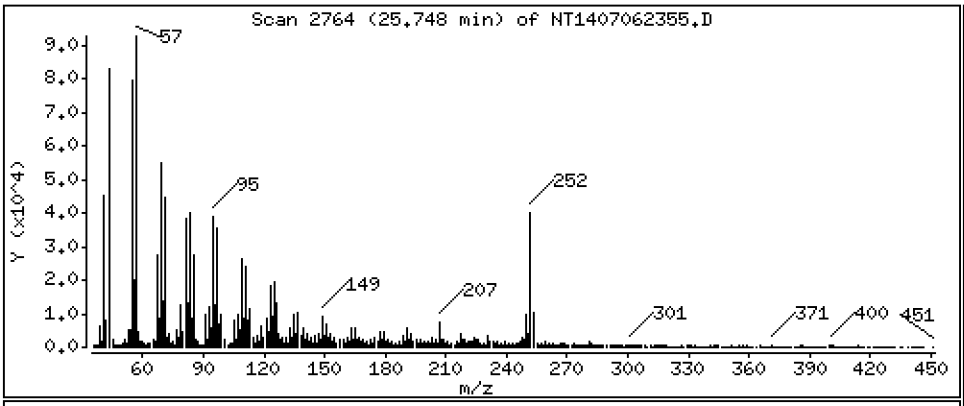
Operator: JGR

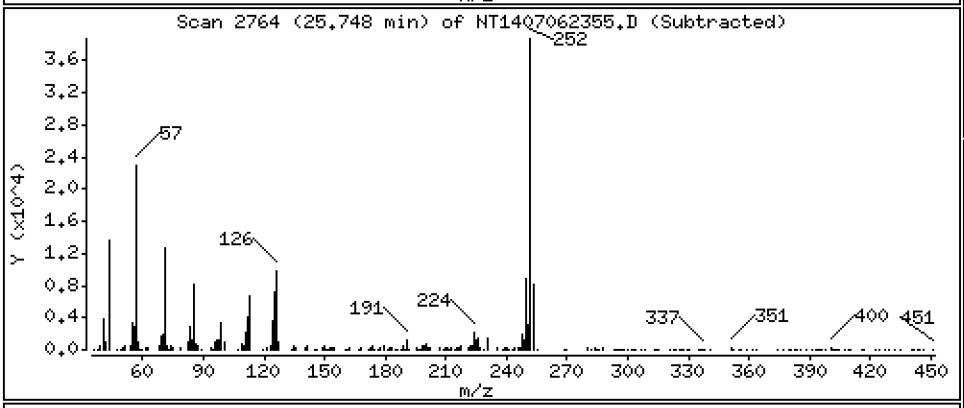
Column phase: ZB-5msi

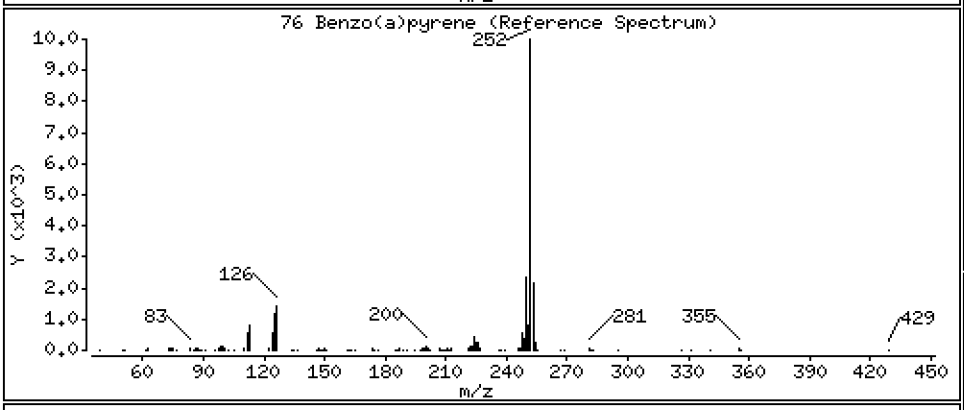
Column diameter: 0.25

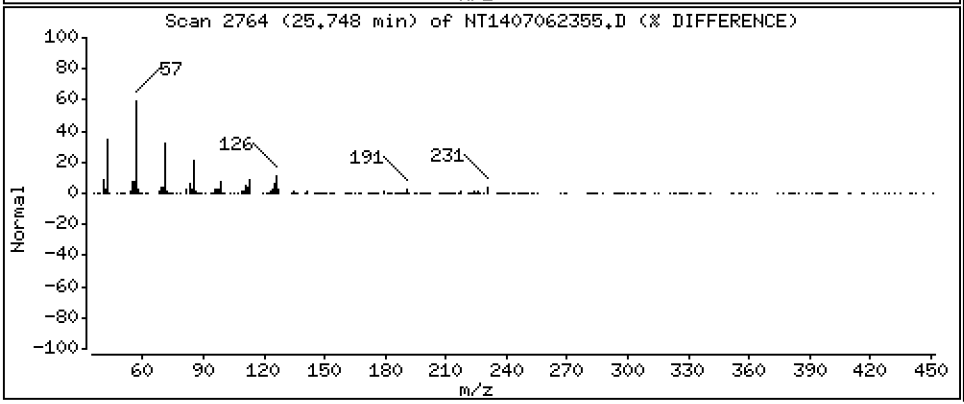
76 Benzo(a)pyrene

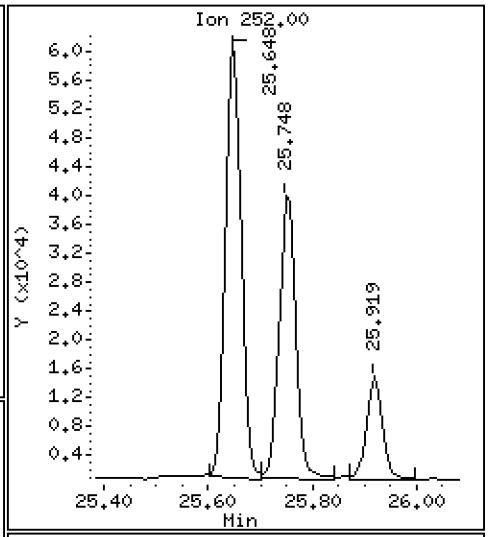
Concentration: 2.406 ug/mL

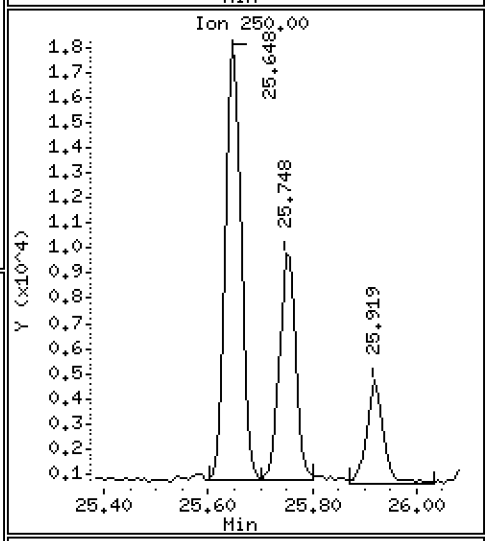


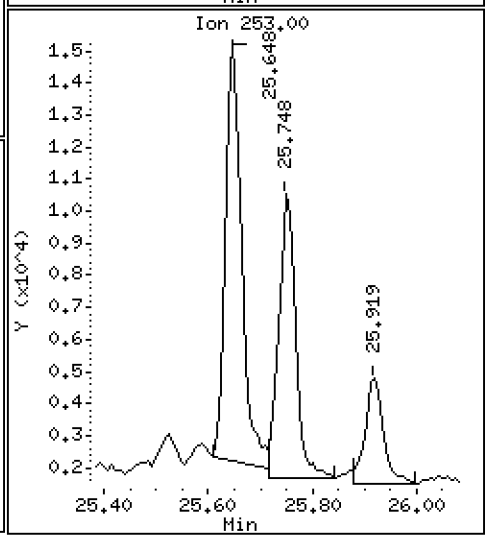












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

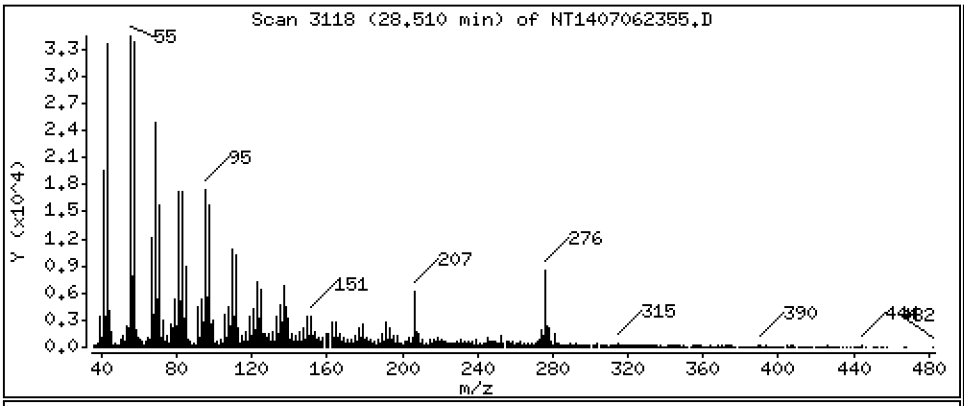
Operator: JGR

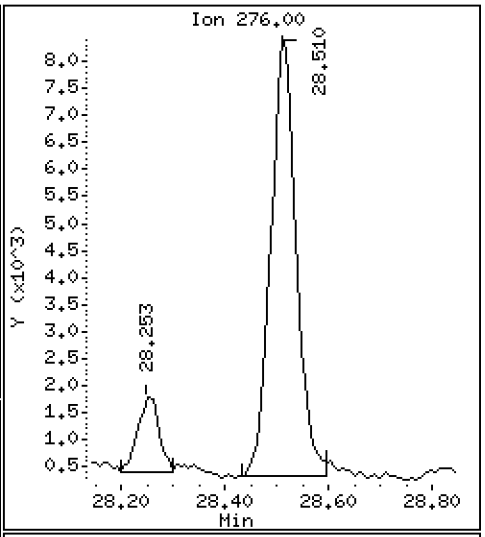
Column phase: ZB-5msi

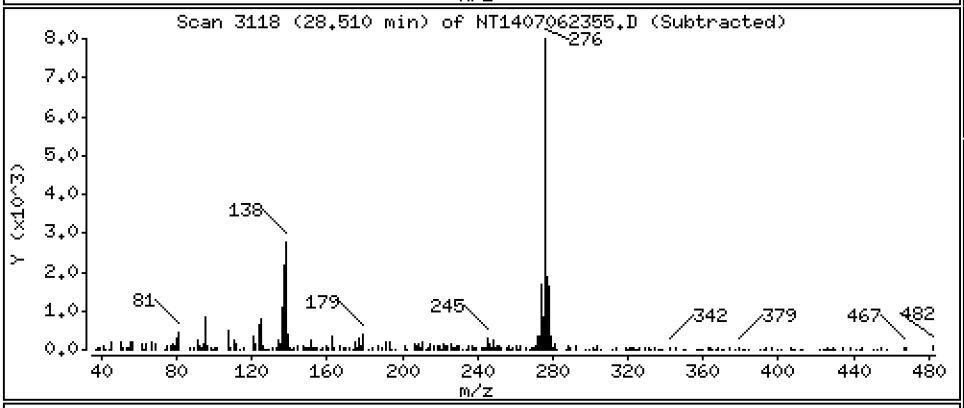
Column diameter: 0.25

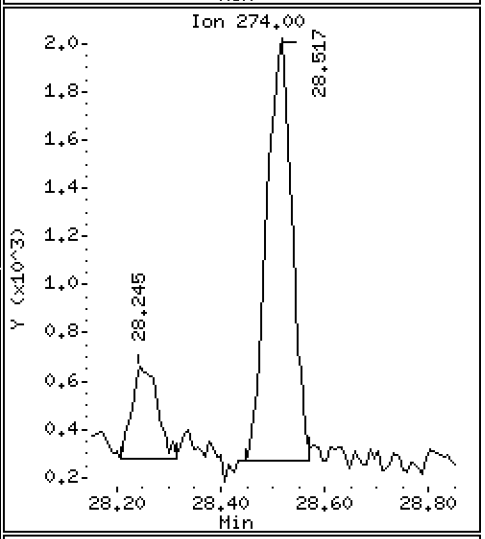
78 Indeno(1,2,3-cd)pyrene

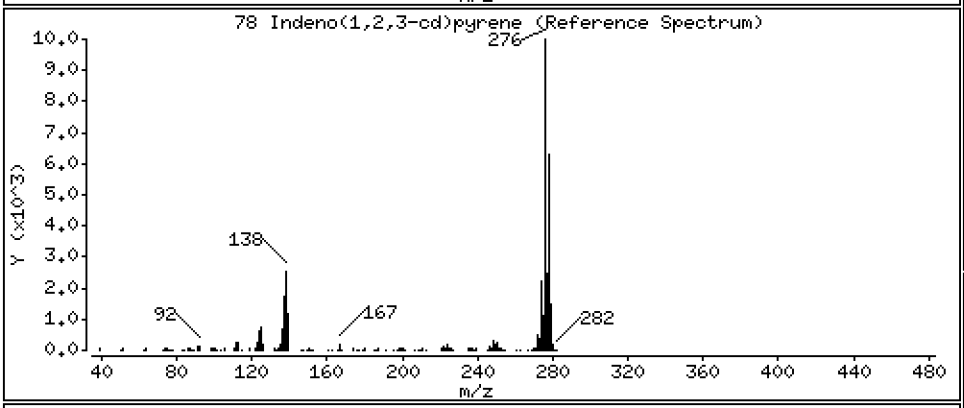
Concentration: 0.8638 ug/mL

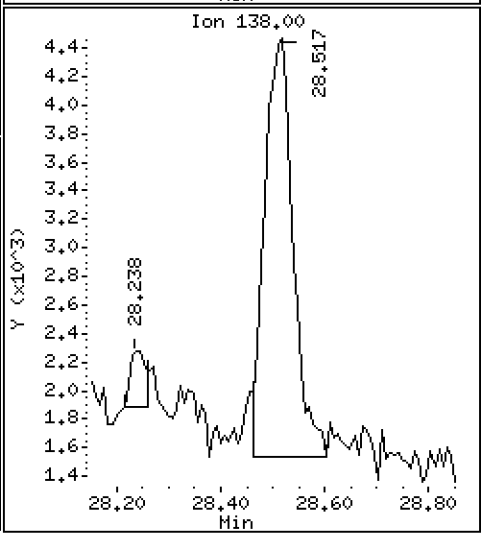


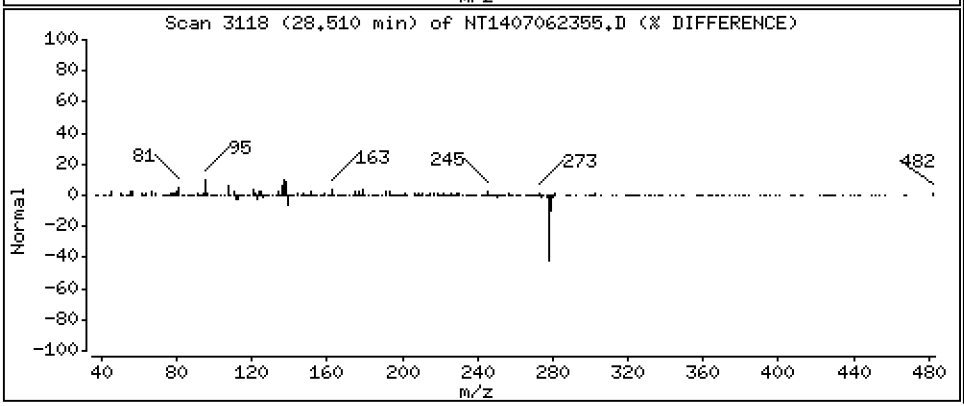












Date : 07-JUL-2023 23:11

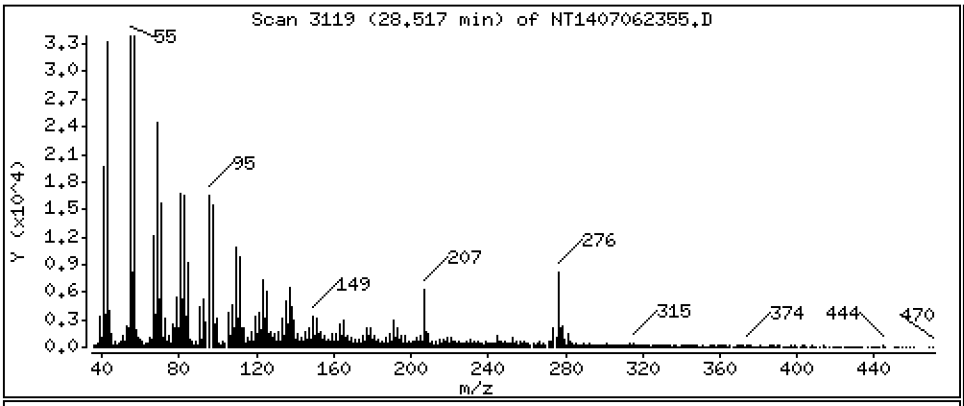
Client ID: Instrument: nt14.i

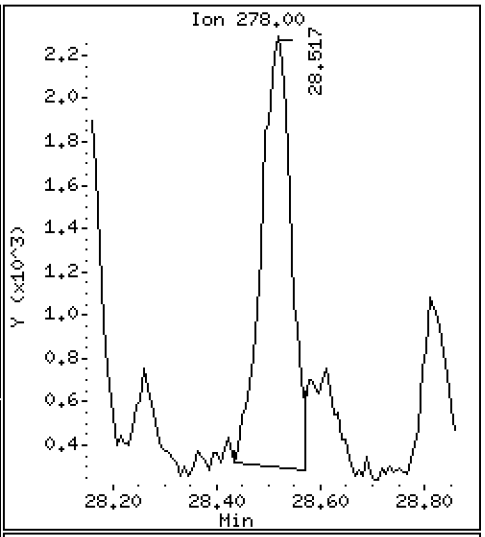
Sample Info: 23F0536-01

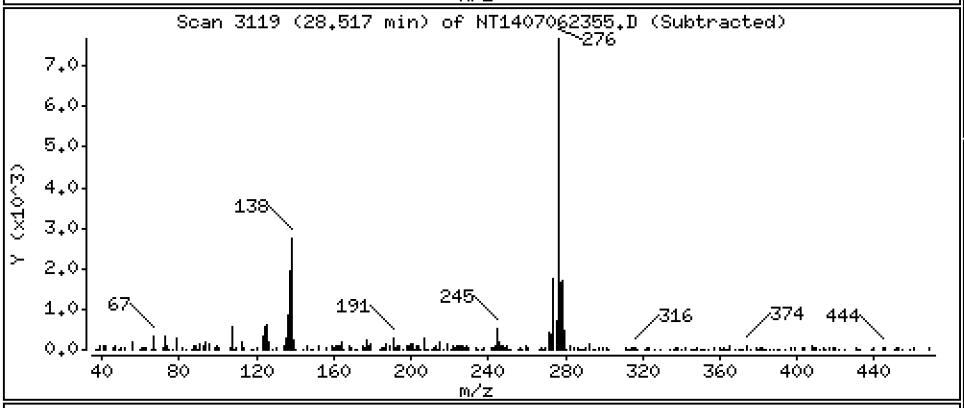
Operator: JGR

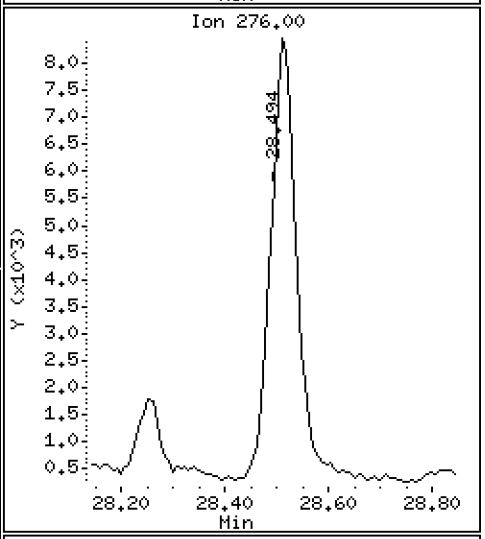
Column phase: ZB-5msi Column diameter: 0.25

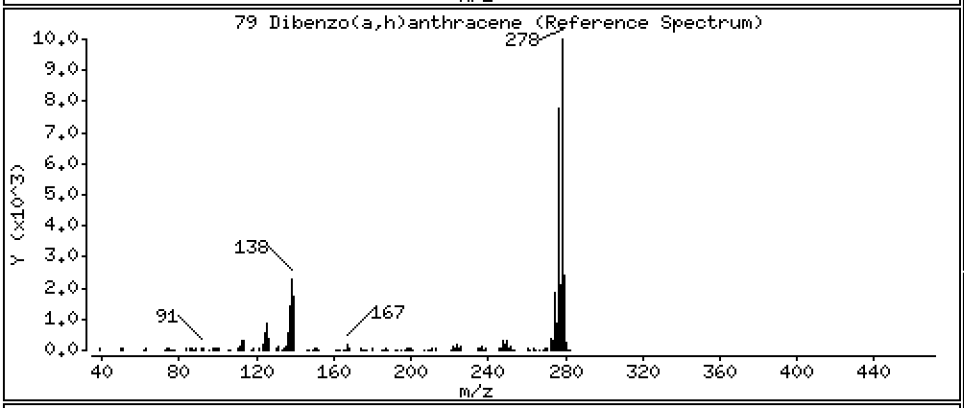
79 Dibenzo(a,h)anthracene Concentration: 0.2901 ug/mL

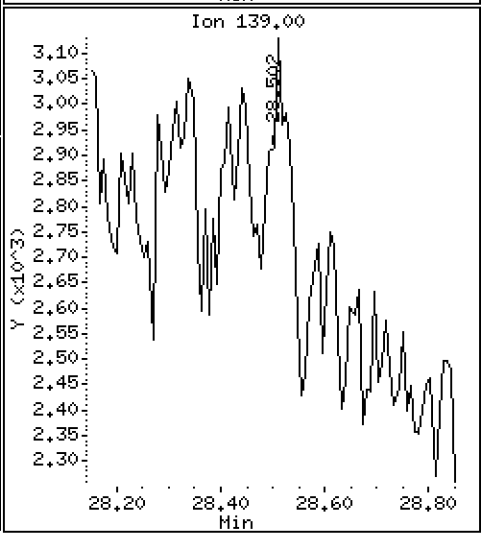


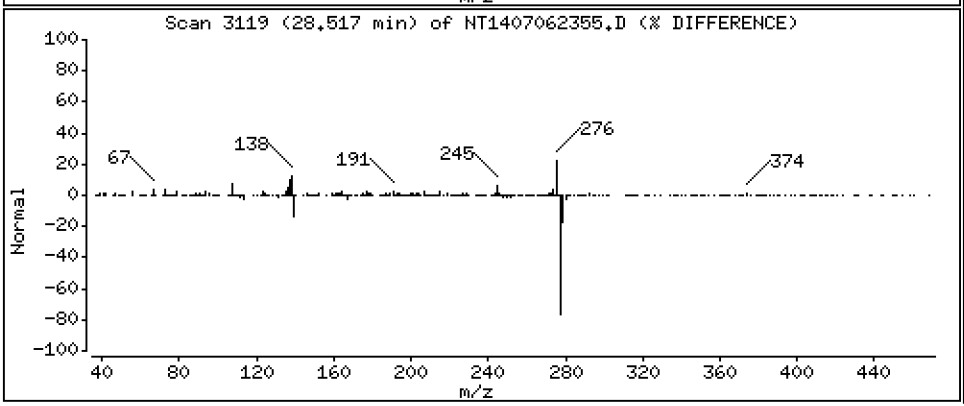












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

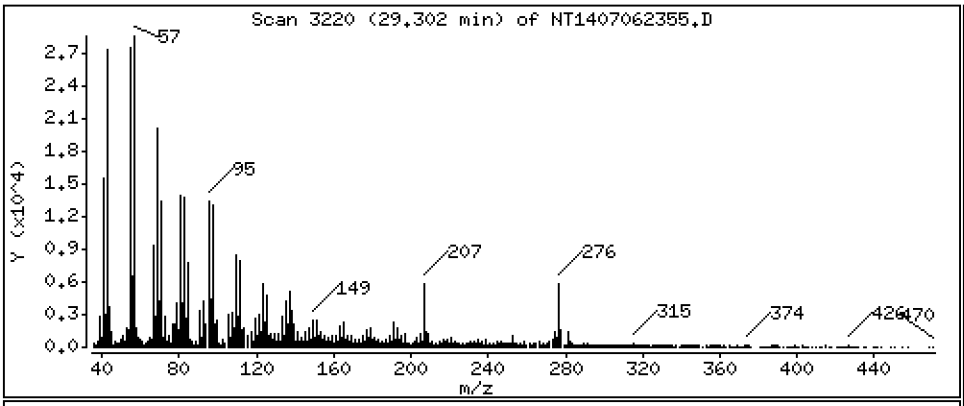
Operator: JGR

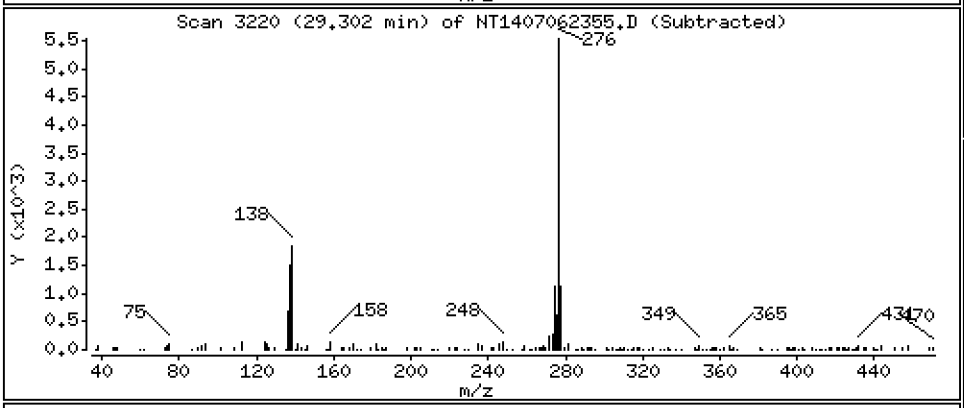
Column phase: ZB-5msi

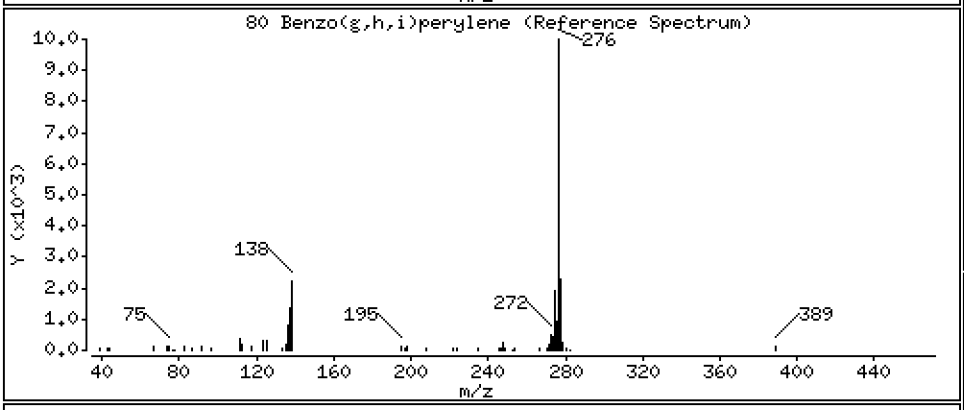
Column diameter: 0.25

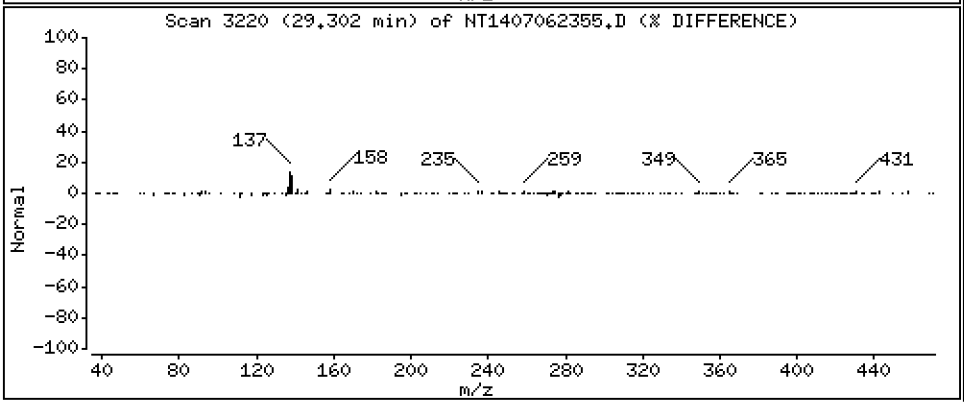
80 Benzo(g,h,i)perylene

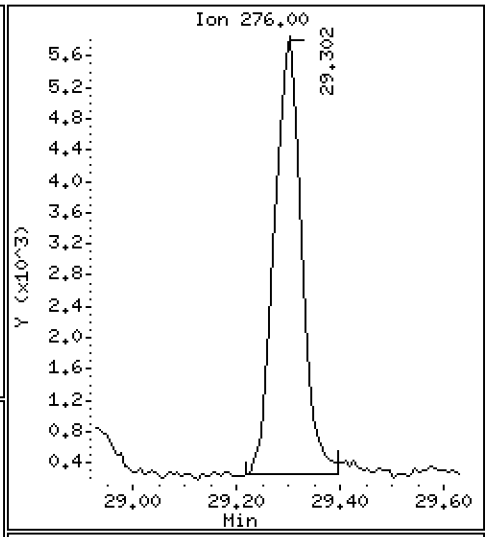
Concentration: 0.7719 ug/mL

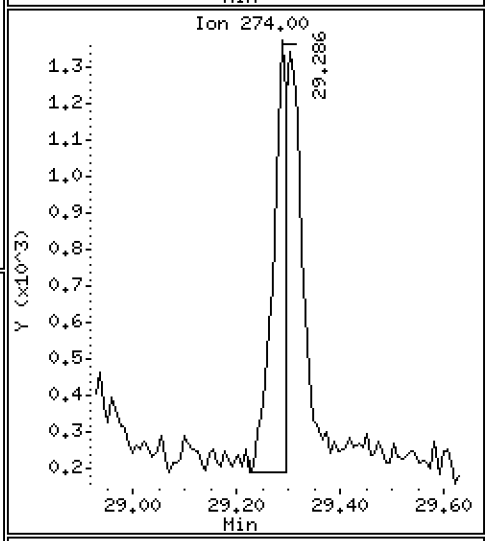


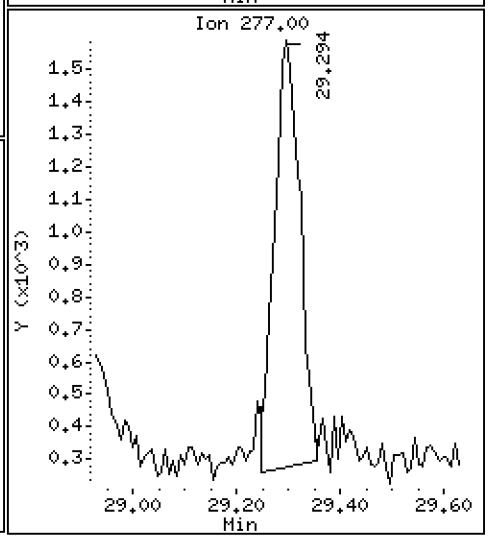












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

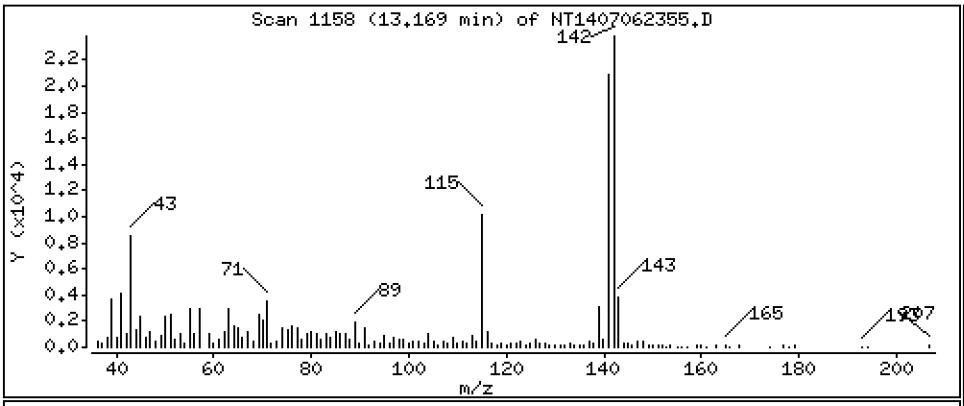
Operator: JGR

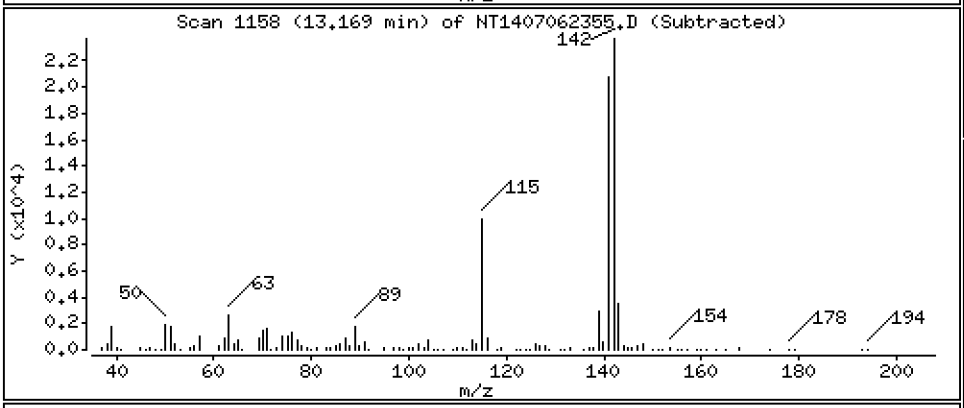
Column phase: ZB-5msi

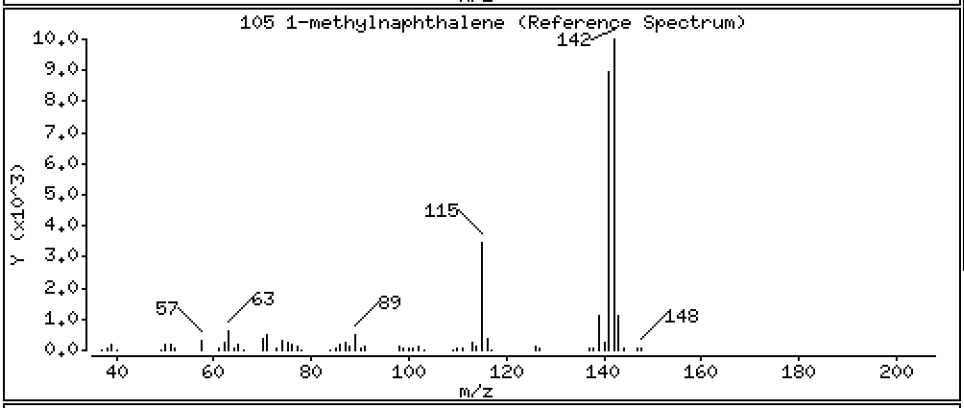
Column diameter: 0.25

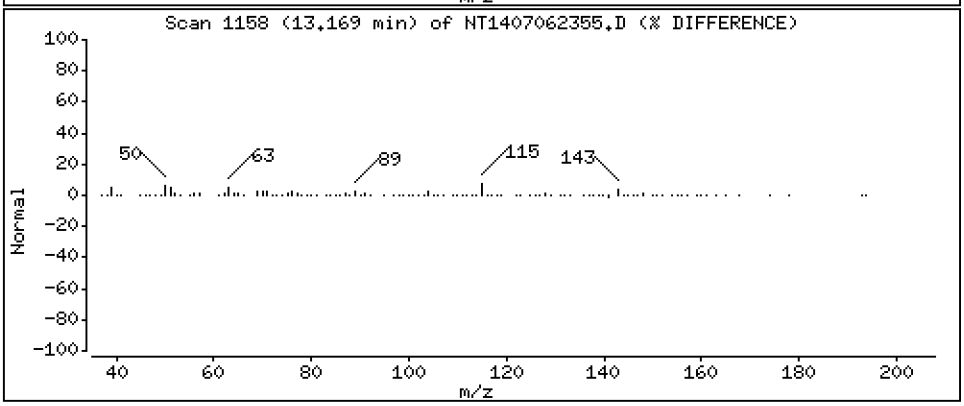
105 1-methylnaphthalene

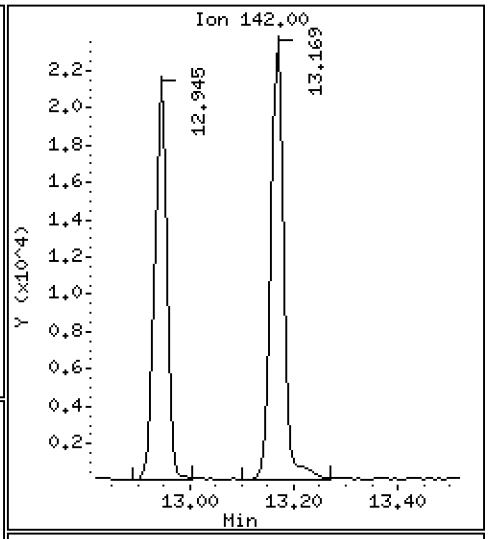
Concentration: 0.4547 ug/mL

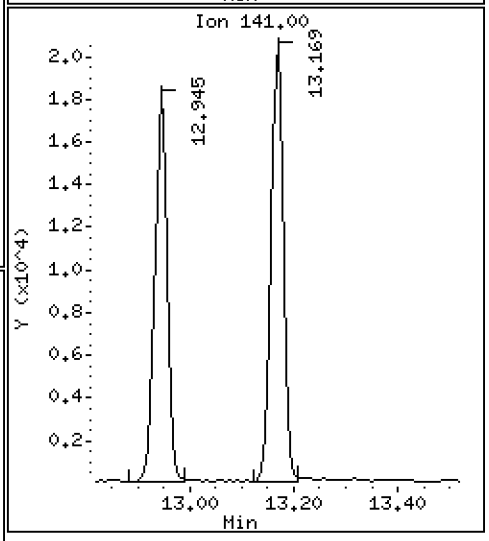












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Date : 07-JUL-2023 23:11

Client ID:

Instrument: nt14.i

Sample Info: 23F0536-01

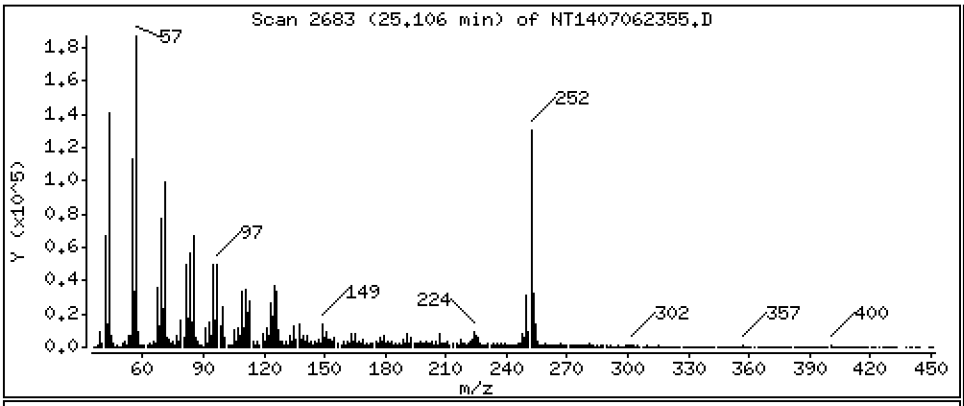
Operator: JGR

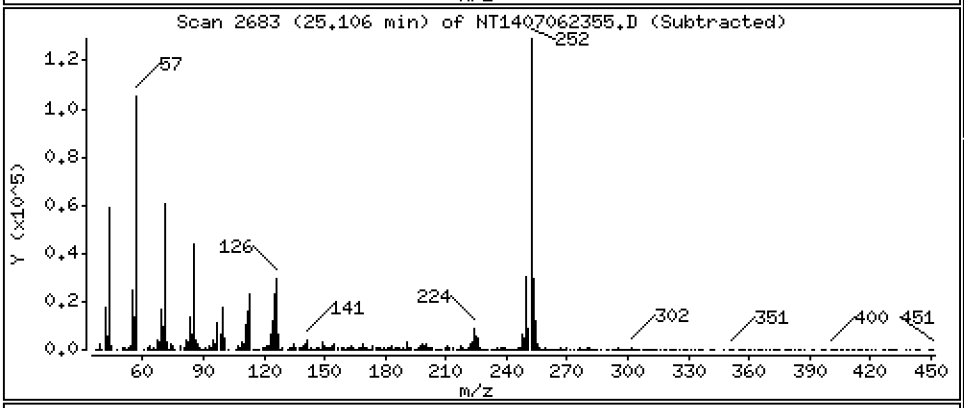
Column phase: ZB-5msi

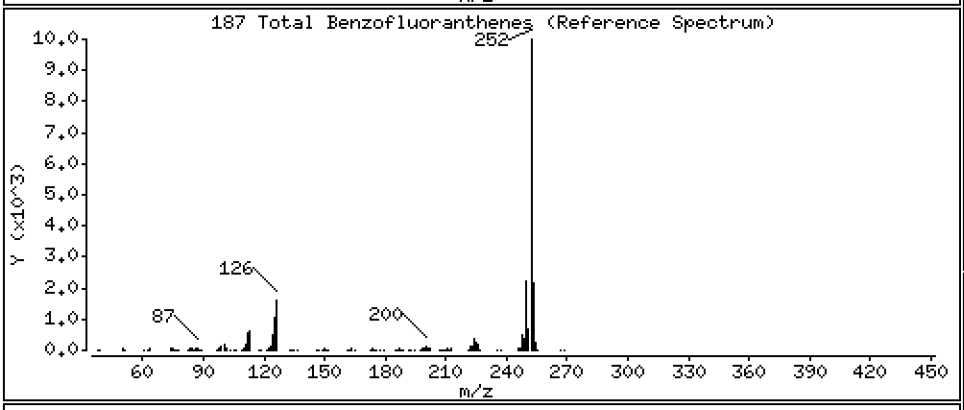
Column diameter: 0.25

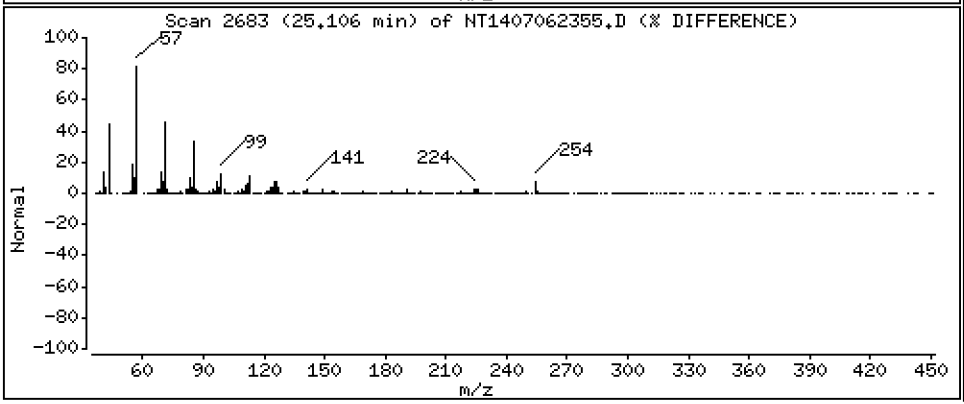
187 Total Benzofluoranthenes

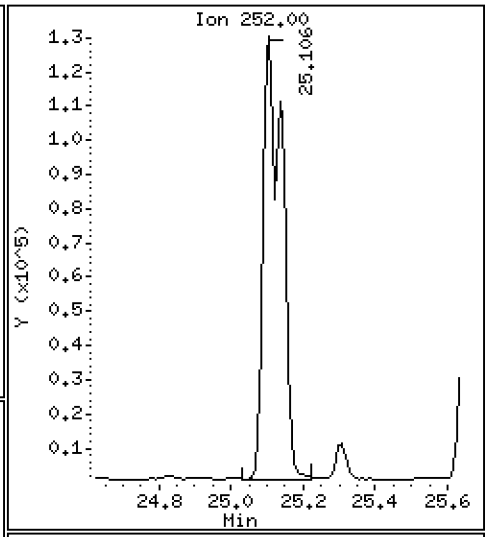
Concentration: 10.19 ug/mL

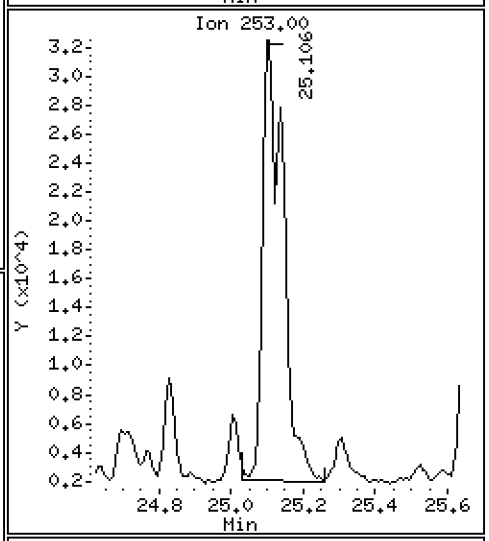


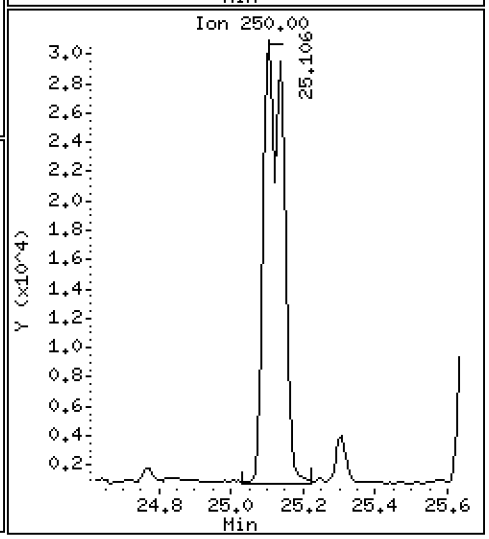












ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230706C.b\NT1407062355.D
Lab Smp Id: 23F0536-01
Inj Date : 07-JUL-2023 23:11 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : 23F0536-01
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Meth Date : 08-Jul-2023 11:17 van Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 38
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: VANS-201906

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/mL)
$	1 2-Fluorophenol	112	6.813	6.798	(0.756)	232337	5.05332	5.053
$	2 Phenol-d5	99	8.389	8.382	(0.931)	330428	5.30165	5.302
	3 Phenol	94	8.420	8.405	(0.935)	26972	0.35740	0.3574
$	5 2-Chlorophenol-d4	132	8.660	8.652	(0.961)	244478	5.30790	5.308
	4 Bis(2-Chloroethyl)ether	93	Compound Not Detected.					
	6 2-Chlorophenol	128	Compound Not Detected.					
	7 1,3-Dichlorobenzene	146	Compound Not Detected.					
*	8 1,4-Dichlorobenzene-d4	152	9.008	9.016	(1.000)	121139	4.00000	
	9 1,4-Dichlorobenzene	146	Compound Not Detected.					
$	10 1,2-Dichlorobenzene-d4	152	9.373	9.373	(1.040)	96888	3.32555	3.326
	12 1,2-Dichlorobenzene	146	Compound Not Detected.					
	11 Benzyl alcohol	108	Compound Not Detected.					
	14 2,2'-oxybis(1-Chloropropane)	121	Compound Not Detected.					
	13 2-Methylphenol	108	9.544	9.520	(1.059)	1546	0.03250	0.03250
	17 Hexachloroethane	117	Compound Not Detected.					
	16 N-Nitroso-di-n-propylamine	70	Compound Not Detected.					
	15 4-Methylphenol	108	9.815	9.792	(1.090)	11598	0.22012	0.2201
$	18 Nitrobenzene-d5	82	10.102	10.110	(0.878)	230078	3.98952	3.990
	19 Nitrobenzene	77	Compound Not Detected.					
	20 Isophorone	82	Compound Not Detected.					
	21 2-Nitrophenol	139	Compound Not Detected.					
	22 2,4-Dimethylphenol	107	10.871	10.840	(0.945)	3539	0.07159	0.07159
	23 Bis(2-Chloroethoxy)methane	93	Compound Not Detected.					
	24 Benzoic acid	105	10.971	11.088	(0.954)	19679	0.65786	0.6579
	25 2,4-Dichlorophenol	162	Compound Not Detected.					
	26 1,2,4-Trichlorobenzene	180	Compound Not Detected.					
*	27 Naphthalene-d8	136	11.505	11.505	(1.000)	488933	4.00000	
	28 Naphthalene	128	11.544	11.544	(1.003)	34225	0.26796	0.2680
	29 4-Chloroaniline	127	Compound Not Detected.					
	30 Hexachlorobutadiene	225	Compound Not Detected.					
	31 4-Chloro-3-methylphenol	107	Compound Not Detected.					
	32 2-Methylnaphthalene	142	12.944	12.952	(1.125)	34114	0.36009	0.3601
	33 Hexachlorocyclopentadiene	237	Compound Not Detected.					

		QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/mL)
	34 2,4,6-Trichlorophenol	196	Compound Not Detected.					
	35 2,4,5-Trichlorophenol	196	Compound Not Detected.					
$	36 2-Fluorobiphenyl	172	13.733	13.733	(0.907)	351139	4.05040	4.050
	37 2-Chloronaphthalene	162	Compound Not Detected.					
	38 2-Nitroaniline	65	Compound Not Detected.					
	39 Dimethylphthalate	163	14.631	14.639	(0.967)	4750	0.05806	0.05806
	40 Acenaphthylene	152	14.817	14.817	(0.979)	172898	1.40495	1.405
	41 2,6-Dinitrotoluene	165	Compound Not Detected.					
*	42 Acenaphthene-d10	164	15.134	15.134	(1.000)	243409	4.00000	
	43 3-Nitroaniline	138	Compound Not Detected.					
	44 Acenaphthene	153	15.196	15.204	(1.004)	109031	1.49708	1.497
	45 2,4-Dinitrophenol	184	Compound Not Detected.					
	46 Dibenzofuran	168	15.521	15.528	(1.026)	291510	2.74667	2.747
	47 4-Nitrophenol	109	Compound Not Detected.					
	48 2,4-Dinitrotoluene	165	Compound Not Detected.					
	50 Diethylphthalate	149	16.093	16.101	(1.063)	32741	0.34608	0.3461
	49 Fluorene	166	16.240	16.240	(1.073)	175697	1.89299	1.893
	51 4-Chlorophenyl-phenylether	204	Compound Not Detected.					
	52 4-Nitroaniline	138	Compound Not Detected.					
	53 4,6-Dinitro-2-methylphenol	198	Compound Not Detected.					
	54 N-Nitrosodiphenylamine	169	Compound Not Detected.					
$	55 2,4,6-Tribromophenol	330	16.779	16.779	(1.109)	51196	6.68715	6.687
	56 4-Bromophenyl-phenylether	248	Compound Not Detected.					
	57 Hexachlorobenzene	284	Compound Not Detected.					
	58 Pentachlorophenol	266	Compound Not Detected.					
*	59 Phenanthrene-d10	188	18.186	18.178	(1.000)	435833	4.00000	
	60 Phenanthrene	178	18.248	18.225	(1.003)	5514809	46.7742	46.77
	61 Anthracene	178	18.325	18.317	(1.008)	147945	1.29857	1.299(M)
	62 Carbazole	167	18.658	18.650	(1.026)	359331	3.13498	3.135
	63 Di-n-butylphthalate	149	19.462	19.447	(1.070)	13206	0.08769	0.08769
	64 Fluoranthene	202	20.685	20.615	(0.890)	5409782	50.3074	50.31
	65 Pyrene	202	21.095	21.041	(0.907)	4294494	39.5327	39.53
$	66 Terphenyl-d14	244	21.343	21.327	(0.918)	342664	4.68683	4.687
	67 Butylbenzylphthalate	149	22.256	22.249	(0.957)	5099	0.09783	0.09783
	68 Benzo(a)anthracene	228	23.216	23.209	(0.999)	164985	1.79115	1.791
*	69 Chrysene-d12	240	23.247	23.232	(1.000)	263067	4.00000	
	70 3,3'-Dichlorobenzidine	252	Compound Not Detected.					
	71 Chrysene	228	23.294	23.278	(1.002)	826226	10.0209	10.02
	72 bis(2-Ethylhexyl)phthalate	149	24.316	24.269	(1.002)	10494	0.06273	0.06273
*	134 Di-n-octylphthalate-d4	153	24.261	24.262	(1.000)	650848	4.00000	
	73 Di-n-octylphthalate	149	Compound Not Detected.					
	74 Benzo(b)fluoranthene	252	25.105	25.082	(0.971)	269273	5.89714	5.897
	75 Benzo(k)fluoranthene	252	25.136	25.129	(0.972)	237002	4.62336	4.623
	76 Benzo(a)pyrene	252	25.748	25.733	(0.996)	86227	2.40613	2.406
*	77 Perylene-d12	264	25.864	25.849	(1.000)	138919	4.00000	
	78 Indeno(1,2,3-cd)pyrene	276	28.509	28.494	(1.102)	27919	0.86384	0.8638
	79 Dibenzo(a,h)anthracene	278	28.517	28.509	(1.103)	7932	0.29005	0.2901(M)
	80 Benzo(g,h,i)perylene	276	29.301	29.278	(1.133)	20597	0.77192	0.7719
	90 N-Nitrosodimethylamine	74	Compound Not Detected.					
	91 Aniline	93	Compound Not Detected.					
	93 Benzidine	184	Compound Not Detected.					
	103 Pyridine	79	Compound Not Detected.					
	105 1-methylnaphthalene	142	13.168	13.169	(1.145)	38429	0.45471	0.4547
	111 Azobenzene (1,2-DP-Hydrazine)	77	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.105	25.129	(0.971)	472368	10.1902	10.19
120 2,3,4,6-Tetrachlorophenol	232	Compound Not Detected.					

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1407062355.D
Lab Smp Id: 23F0536-01
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Misc Info:

Calibration Date: 07-JUL-2023
Calibration Time: 16:23
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	132670	66335	265340	121139	-8.69
27 Naphthalene-d8	538082	269041	1076164	488933	-9.13
42 Acenaphthene-d10	270232	135116	540464	243409	-9.93
59 Phenanthrene-d10	462568	231284	925136	435833	-5.78
69 Chrysene-d12	289075	144538	578150	263067	-9.00
134 Di-n-octylphthala	772331	386166	1544662	650848	-15.73
77 Perylene-d12	173349	86675	346698	138919	-19.86

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.02	8.52	9.52	9.01	-0.09
27 Naphthalene-d8	11.51	11.01	12.01	11.51	-0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	-0.00
59 Phenanthrene-d10	18.18	17.68	18.68	18.19	0.04
69 Chrysene-d12	23.23	22.73	23.73	23.25	0.07
134 Di-n-octylphthala	24.26	23.76	24.76	24.26	-0.00
77 Perylene-d12	25.85	25.35	26.35	25.86	0.06

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

REVIEW SUMMARY FOR FILE - NT1407062355.D

Lab ID: 23F0536-01
nt14.i, ABN.m, 07-JUL-2023 23:11

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.954	0.964	-0.0101	Benzoic acid

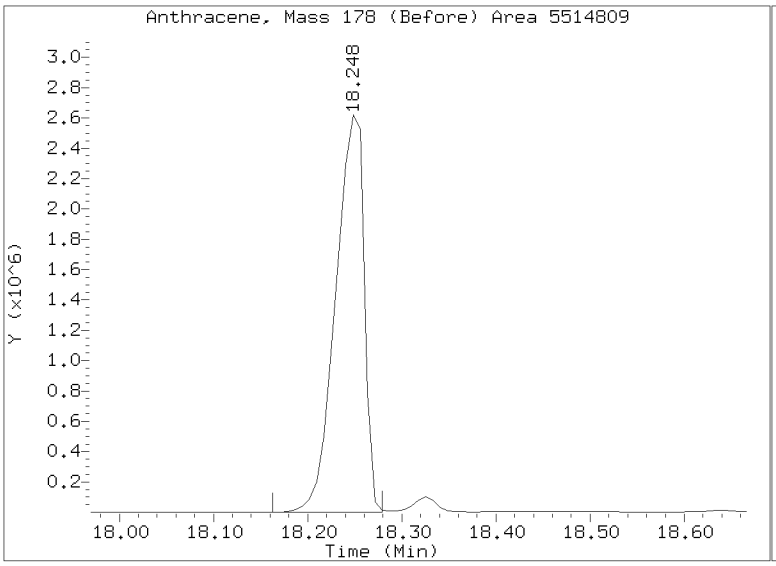
RRT check based on Ccal File: NT1407062344.D

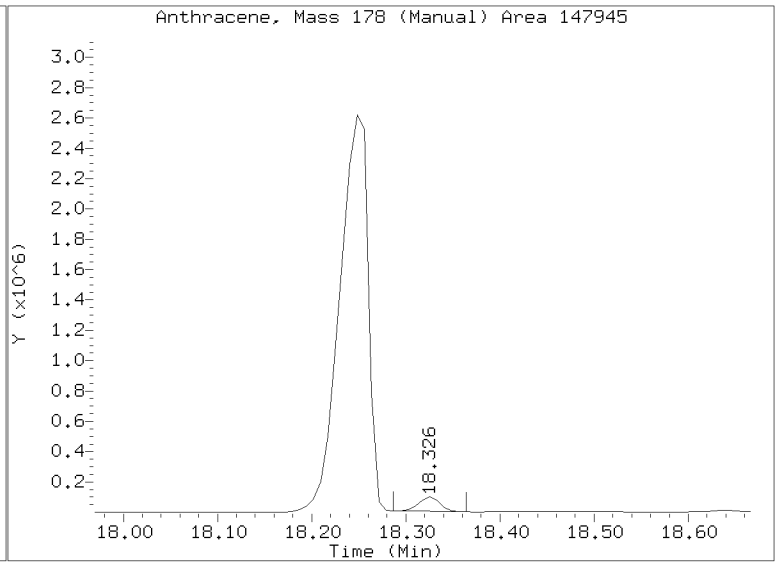
On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

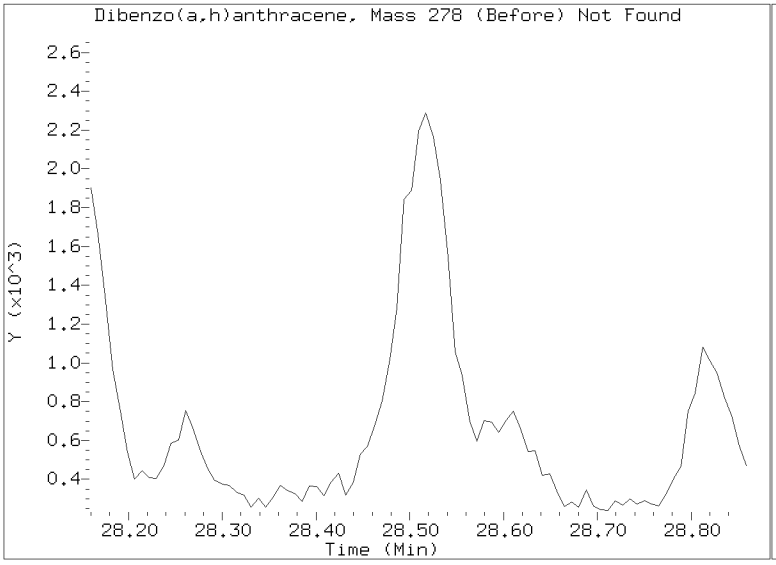
* Only compounds listed in the work order have been verified by the analyst *

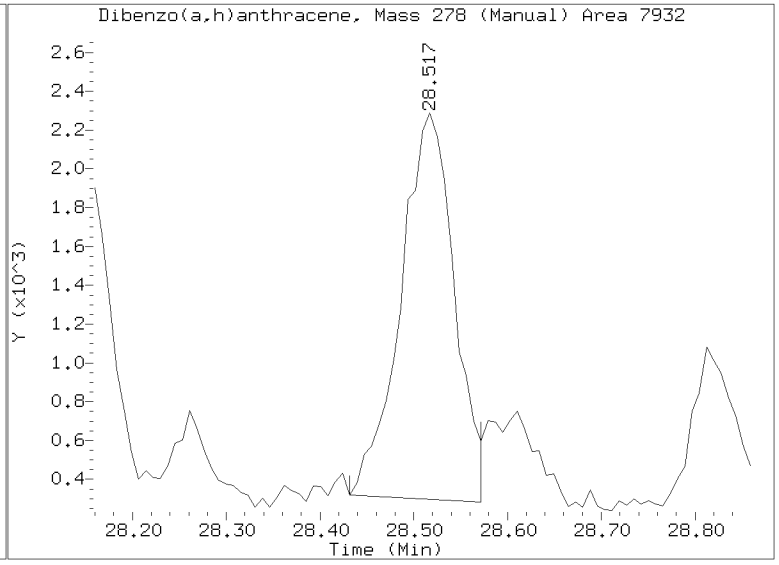
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230706C.b/NT1407062355.D
Injection Date: 07-JUL-2023 23:11
Lab ID:23F0536-01 Client ID:
Report Date: 07/08/2023 11:19









Analytical Resources, LLC
Analytical Chemists and Consultants

LDW20-SC148A

Form I

ORGANIC ANALYSIS DATA SHEET

EPA 8270E

Semivolatiles (20ug/kg - 0.2ug/L SepF)

Laboratory:	Analytical Resources, LLC				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	23F0536-01RE1 A	SDG:	23F0536
Sampled:	06/08/20 08:41	Prepared:	06/28/23 15:16	File ID:	NT1707202306.D
% Solids:	62.38	Preparation:	EPA 3546 (Microwave)	Analyzed:	07/21/23 03:49
Batch:	BLF0718	Sequence:	SLG0263	Initial/Final:	16.08 g Wet / 1 mL
Instrument:	NT17	Column:	ZB-5MS	Calibration:	GG00040
Cleanups:	GPC				

CAS NO.	COMPOUND	DILUTION	CONC: (ug/kg dry)	Q	DL	RL
91-20-3	Naphthalene	10	199	H, U	42.3	199
91-57-6	2-Methylnaphthalene	10	199	H, U	45.0	199
208-96-8	Acenaphthylene	10	103	H, J, D	62.2	199
83-32-9	Acenaphthene	10	170	H, J, D	52.0	199
86-73-7	Fluorene	10	235	H, D	145	199
85-01-8	Phenanthrene	10	5910	H, D	86.9	199
120-12-7	Anthracene	10	85.8	H, J, D	71.7	199
206-44-0	Fluoranthene	10	7100	H, D	60.7	199
129-00-0	Pyrene	10	4550	H, D	56.6	199
56-55-3	Benzo(a)anthracene	10	226	H, D	59.4	199
218-01-9	Chrysene	10	1140	H, D	60.4	199
	Benzofluoranthenes, Total	10	967	H, D	209	399
50-32-8	Benzo(a)pyrene	10	253	H, D	42.2	199
193-39-5	Indeno(1,2,3-cd)pyrene	10	199	H, U	146	199
53-70-3	Dibenzo(a,h)anthracene	10	199	H, U	172	199
191-24-2	Benzo(g,h,i)perylene	10	143	H, J, D	135	199

SURROGATES	ADDED: (ug/kg dry)	FOUND: (ug/kg dry)	% REC	QC LIMITS	Q
1,2-Dichlorobenzene-d4	498.47	323	64.7	32 - 120	
Nitrobenzene-d5	498.47	309	62.1	30 - 120	
2-Fluorobiphenyl	498.47	472	94.6	35 - 120	
p-Terphenyl-d14	498.47	590	118	37 - 120	

Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202306.D

Page 1

Date : 21-JUL-2023 03:49

Client ID:

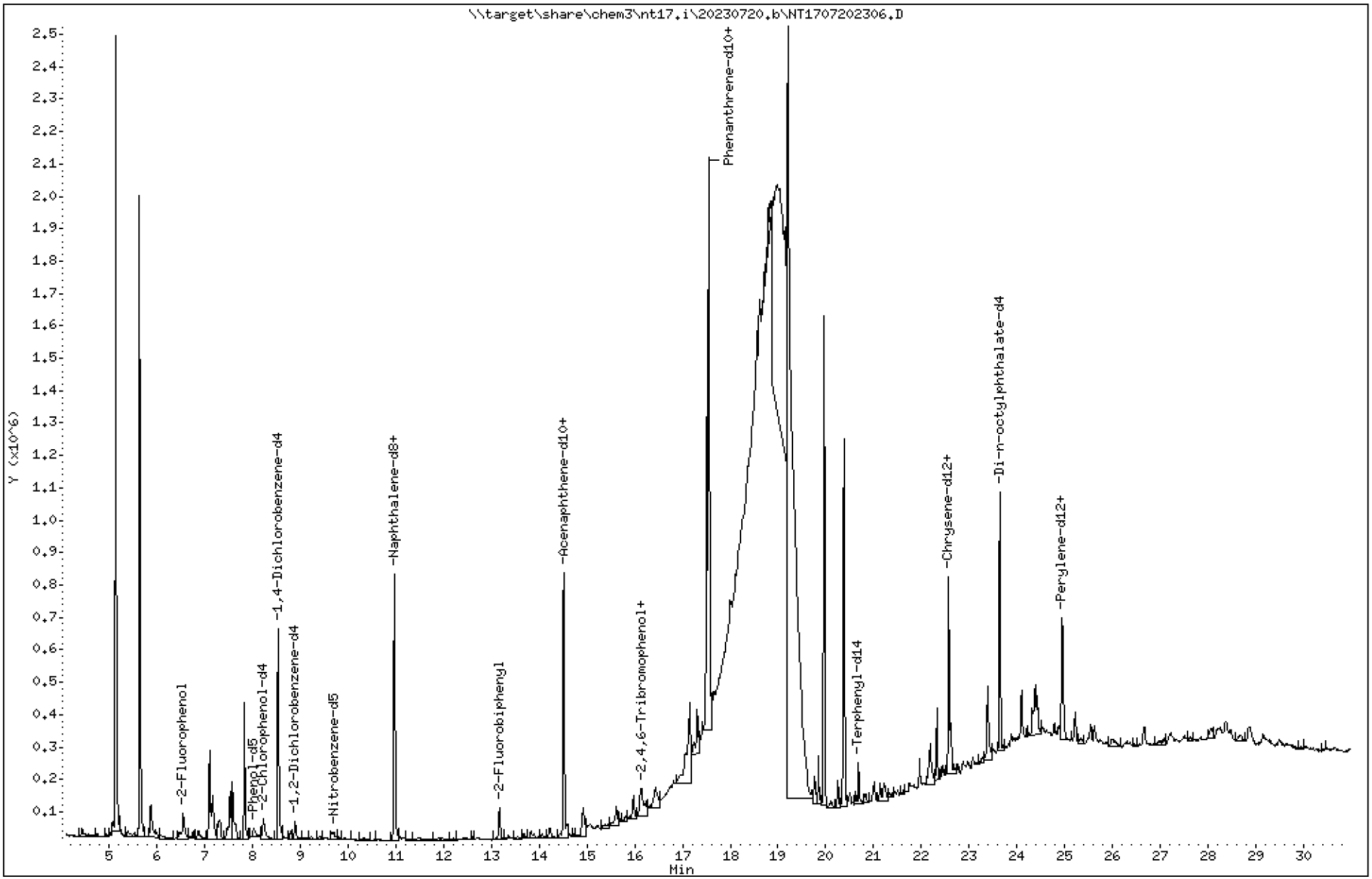
Instrument: nt17.i

Sample Info: 23F0536-01RE1

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202306.D

Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

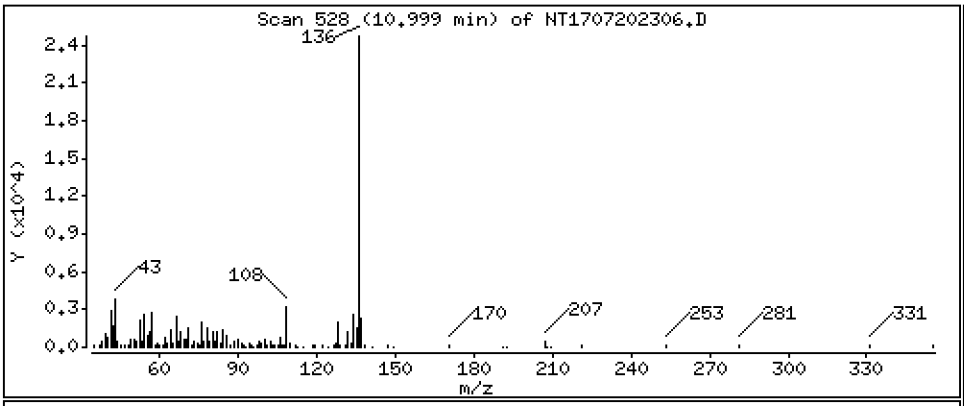
Operator: JGR

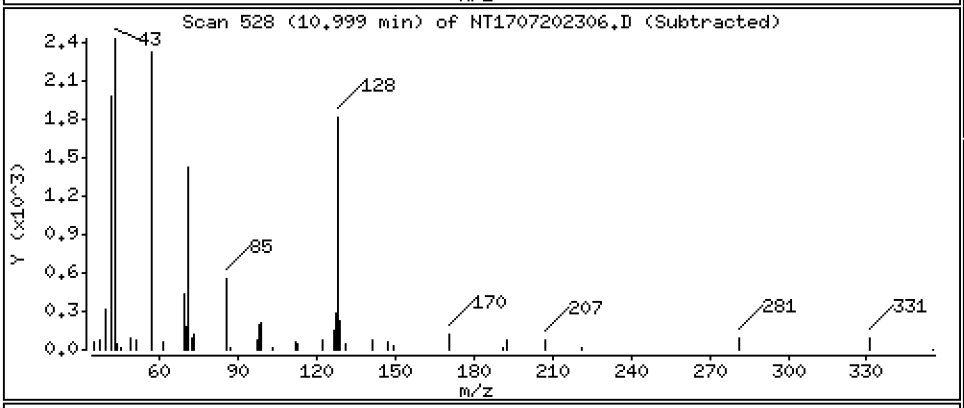
Column phase: ZB-5msi

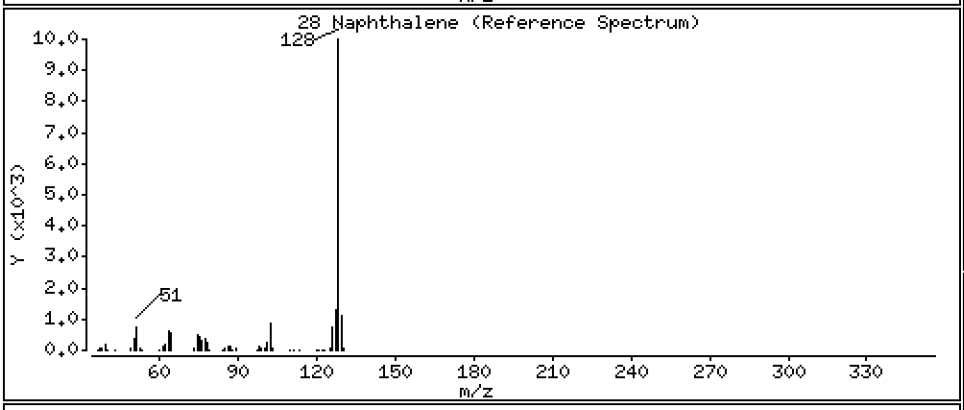
Column diameter: 0.25

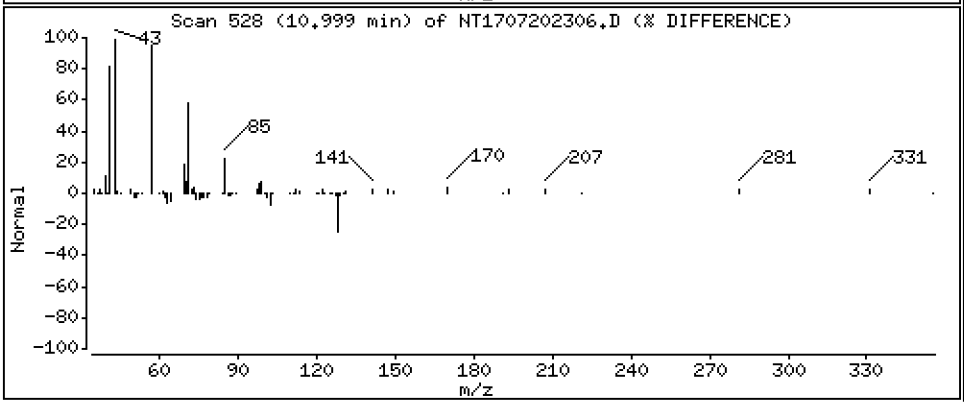
28 Naphthalene

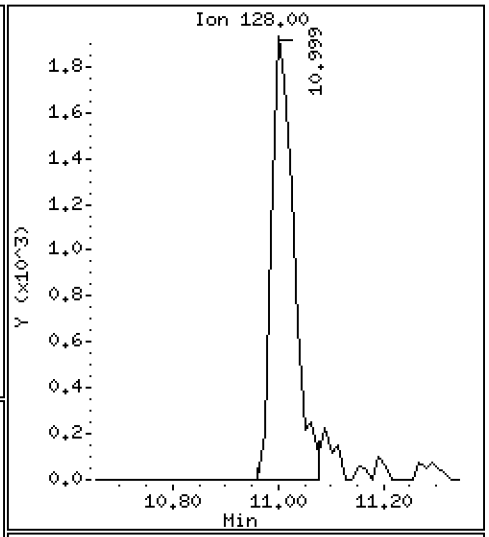
Concentration: 0.3179 ug/mL

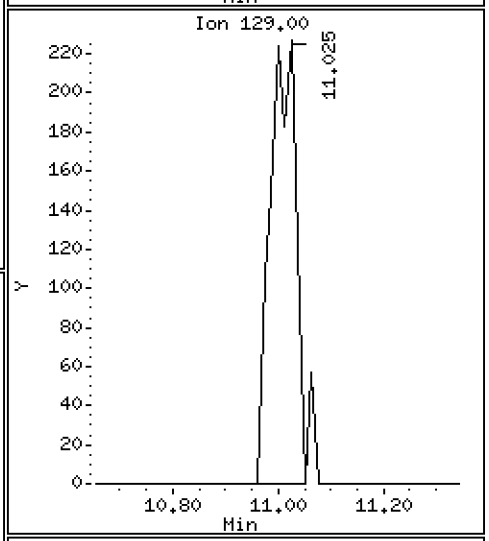


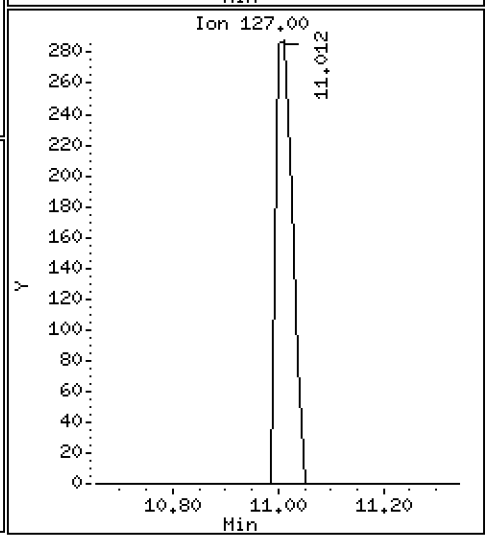












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202306.D

Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

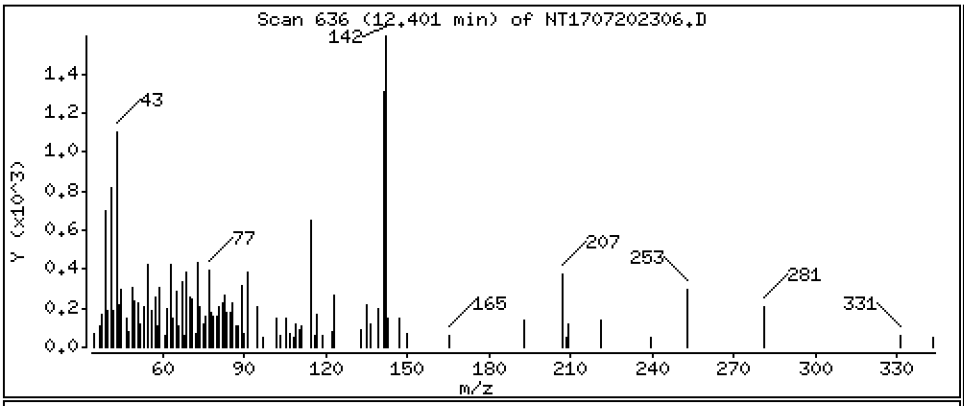
Operator: JGR

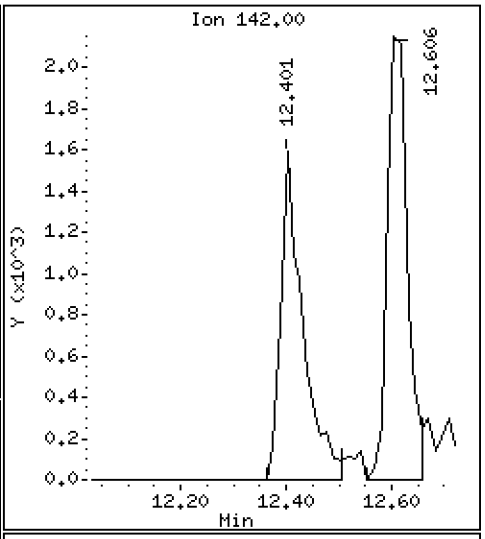
Column phase: ZB-5msi

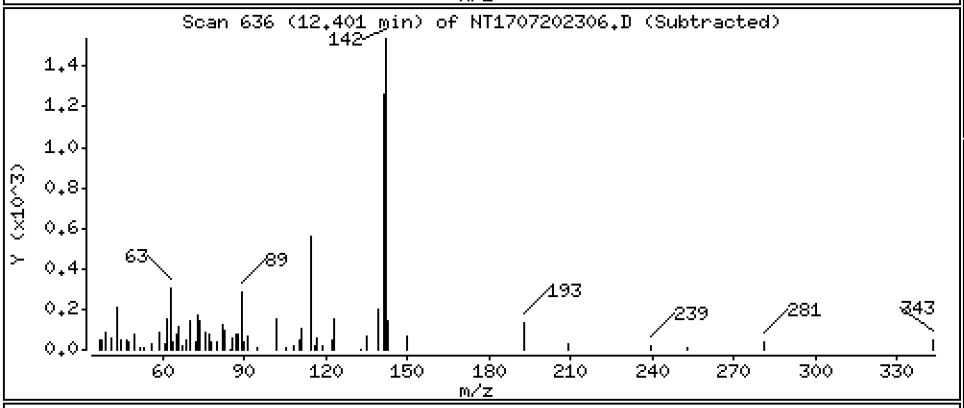
Column diameter: 0.25

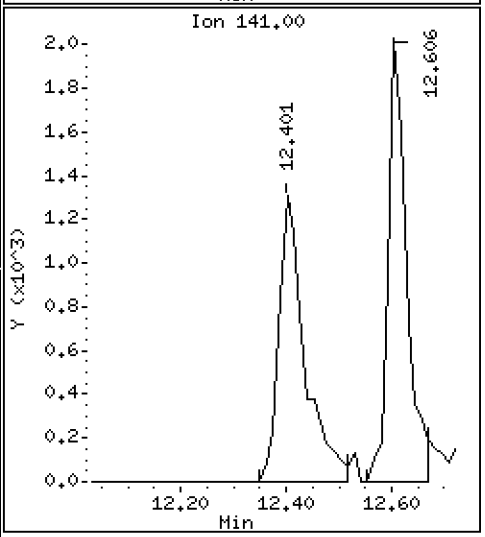
32 2-Methylnaphthalene

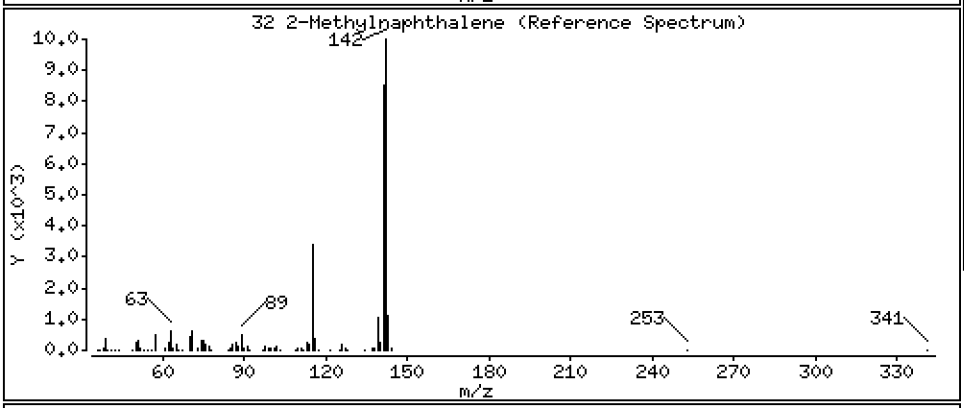
Concentration: 0.3734 ug/mL

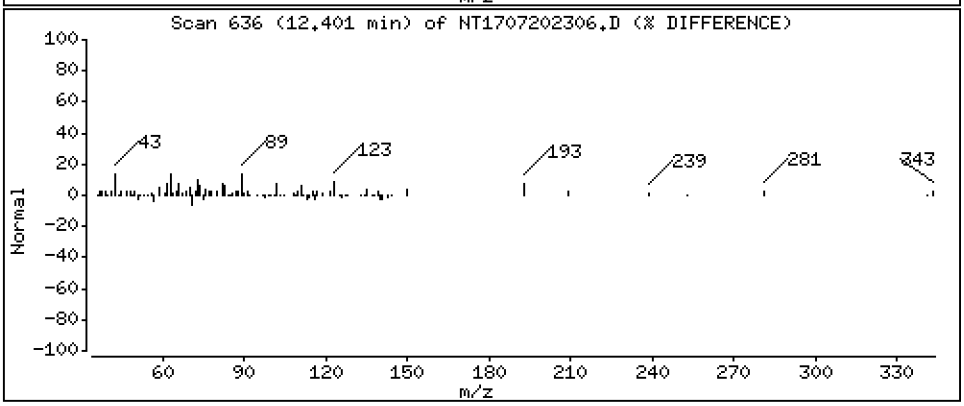












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202306.D

Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

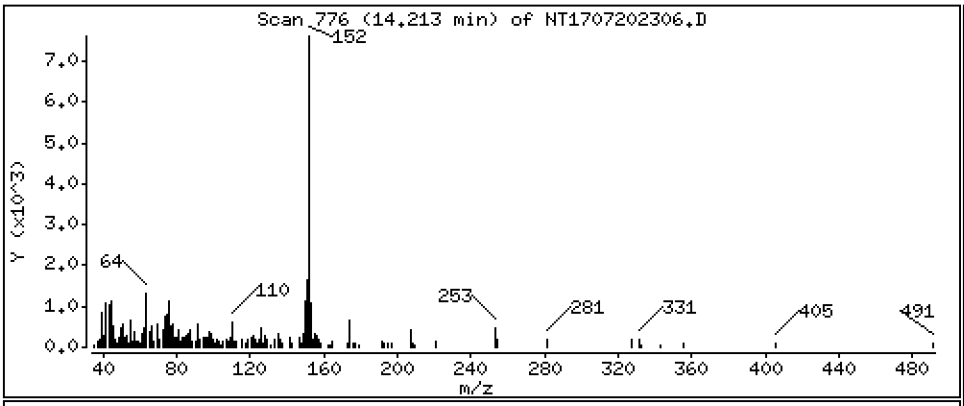
Operator: JGR

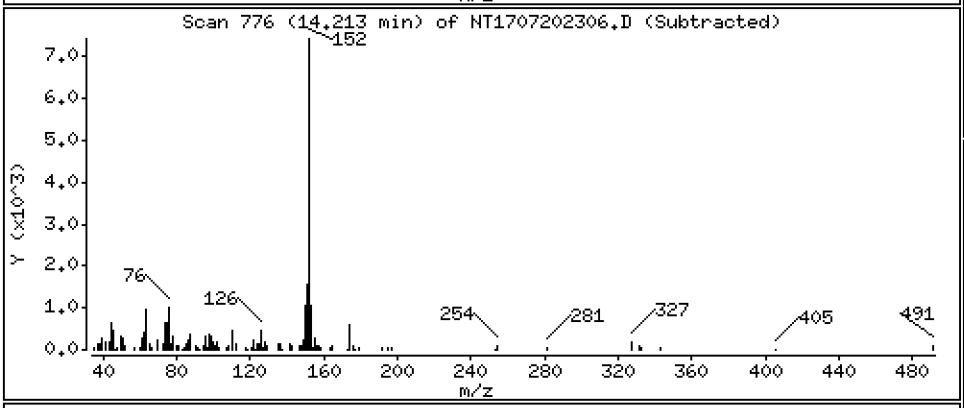
Column phase: ZB-5msi

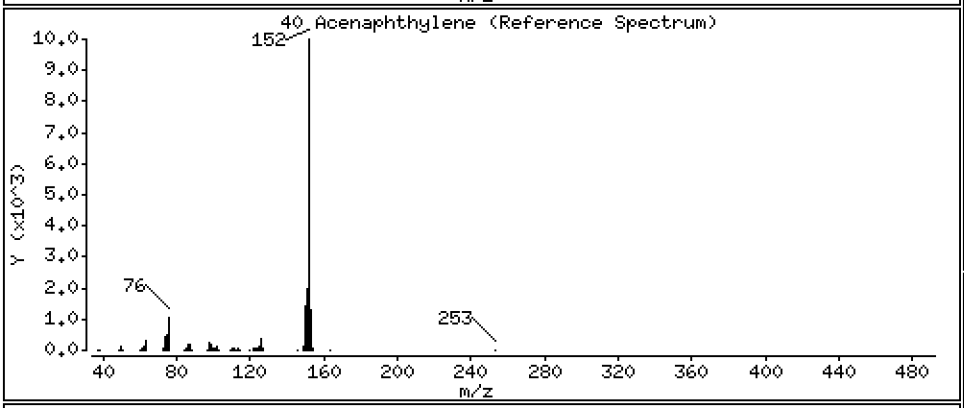
Column diameter: 0.25

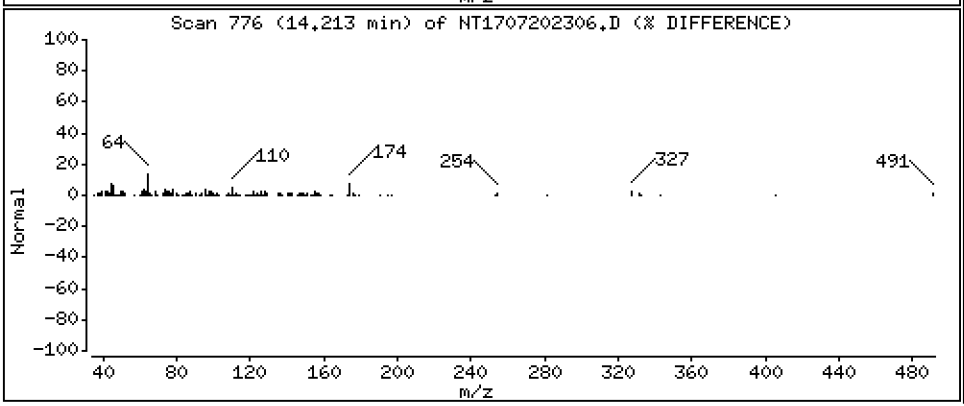
40 Acenaphthylene

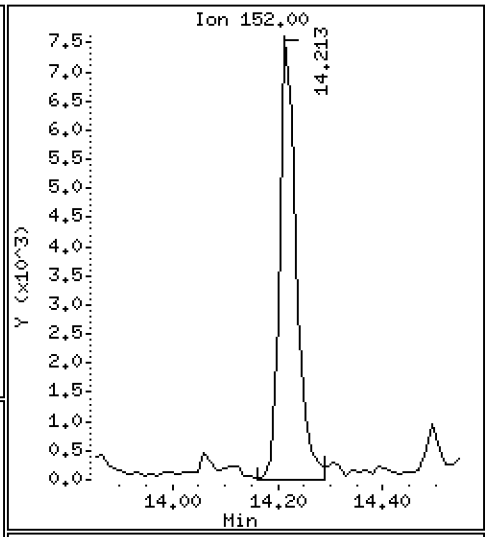
Concentration: 1.030 ug/mL

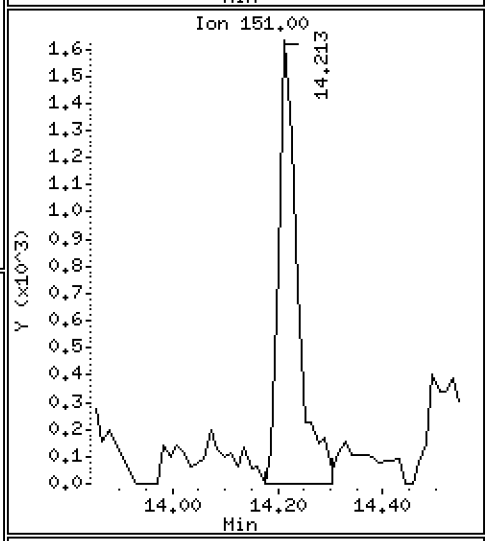


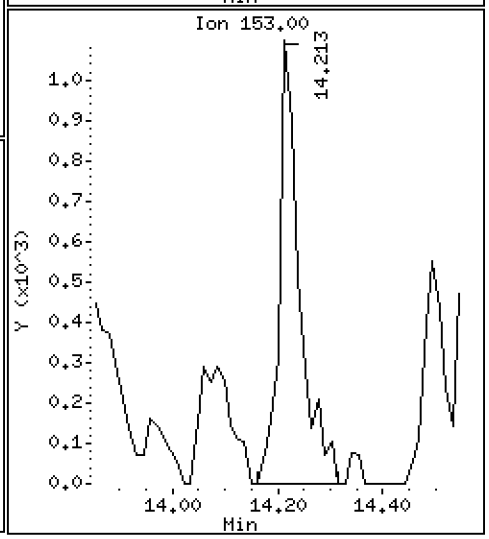












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202306.D

Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

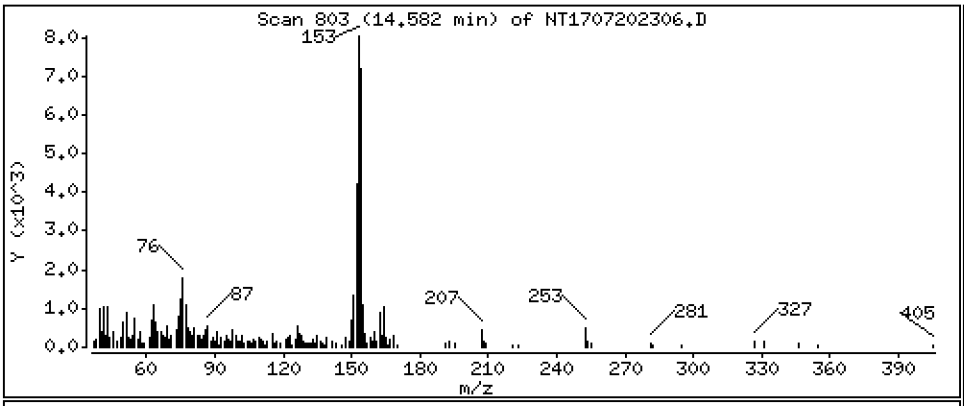
Operator: JGR

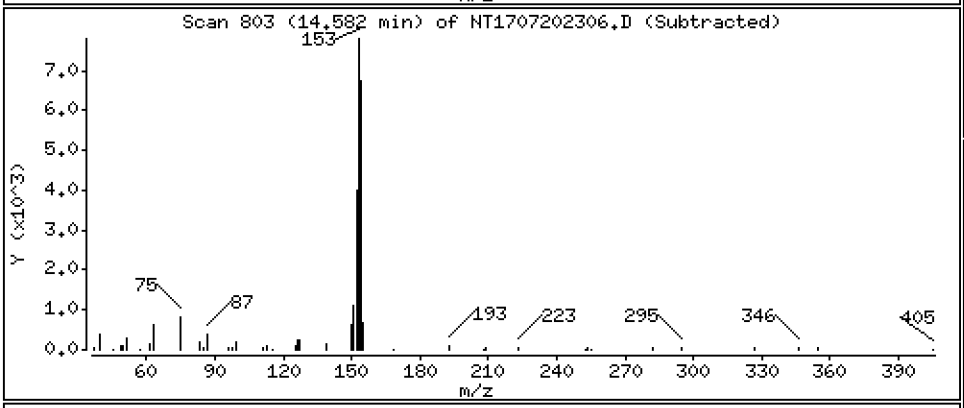
Column phase: ZB-5msi

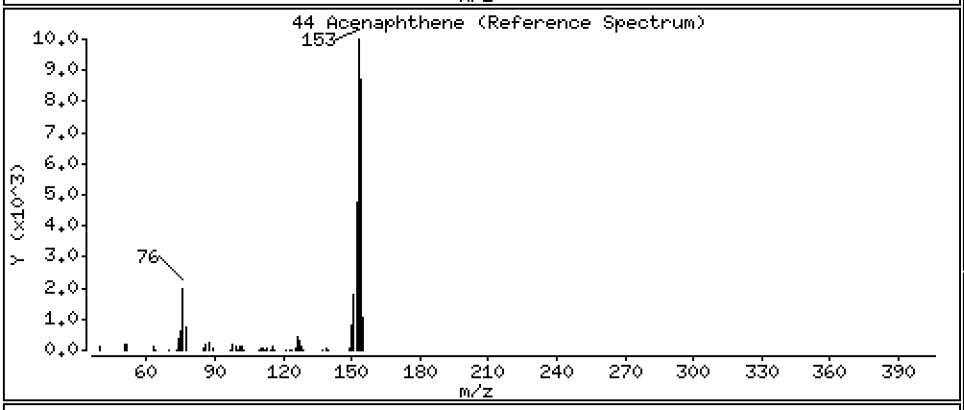
Column diameter: 0.25

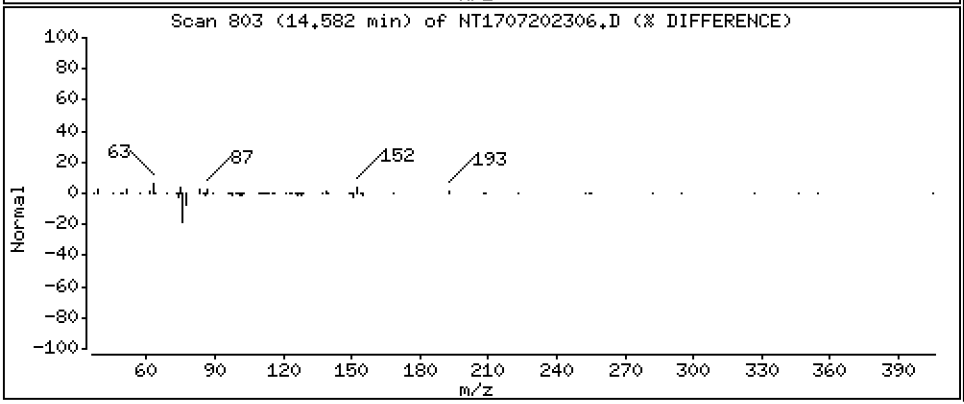
44 Acenaphthene

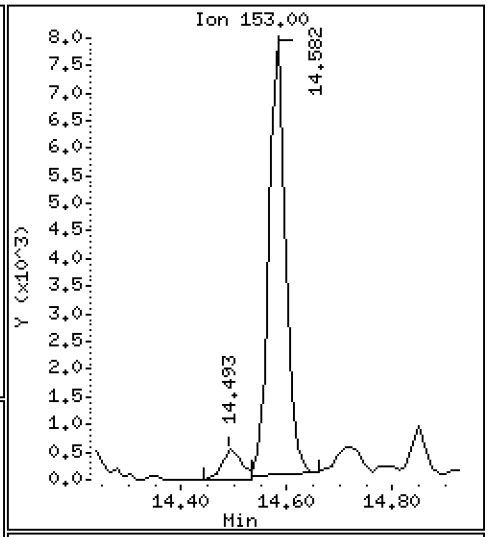
Concentration: 1.705 ug/mL

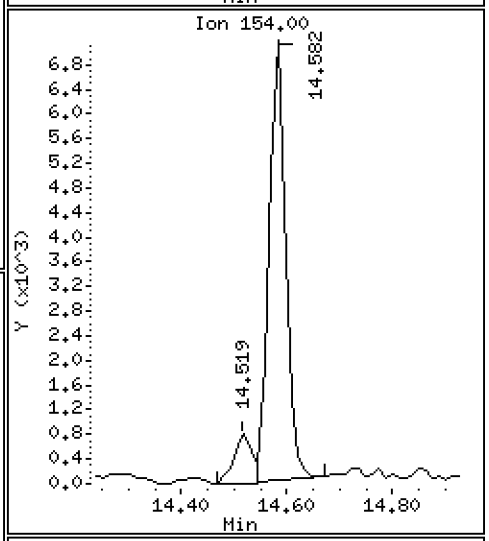


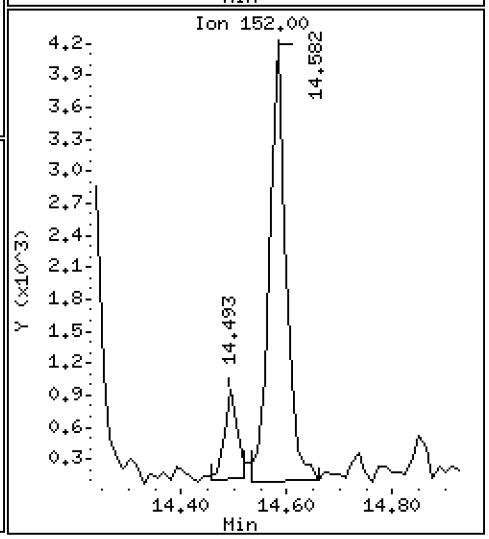












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Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

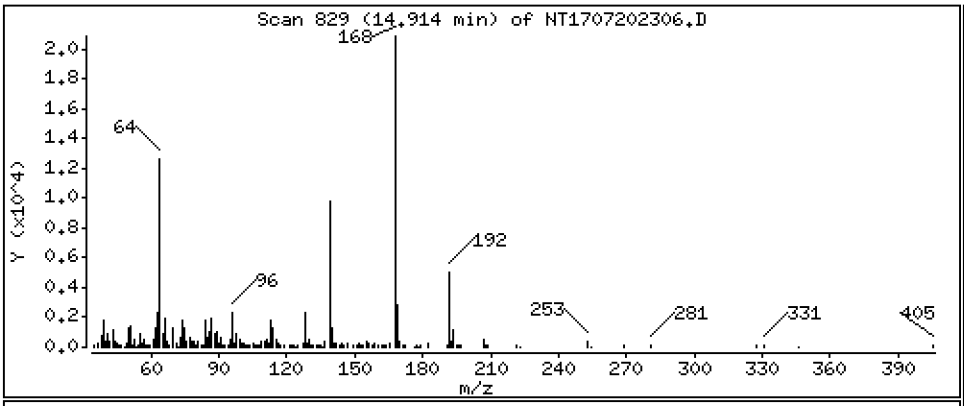
Operator: JGR

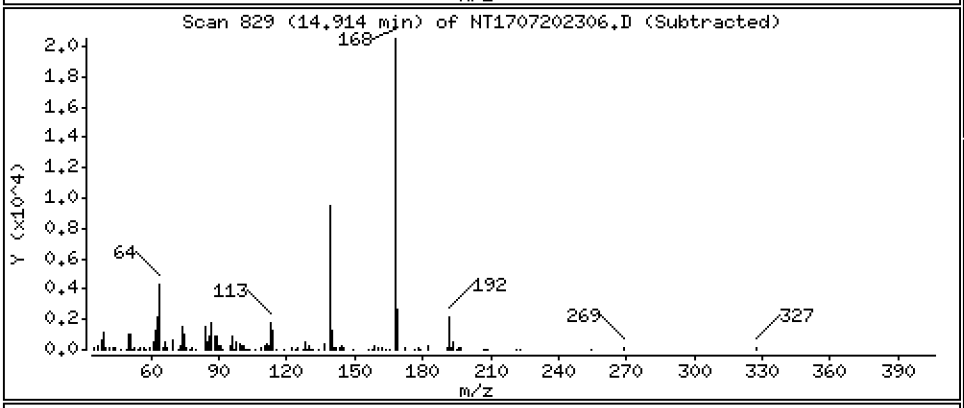
Column phase: ZB-5msi

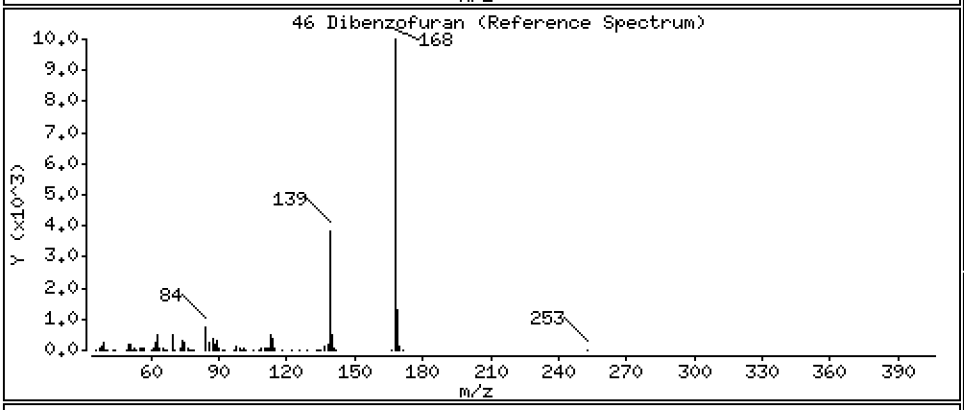
Column diameter: 0.25

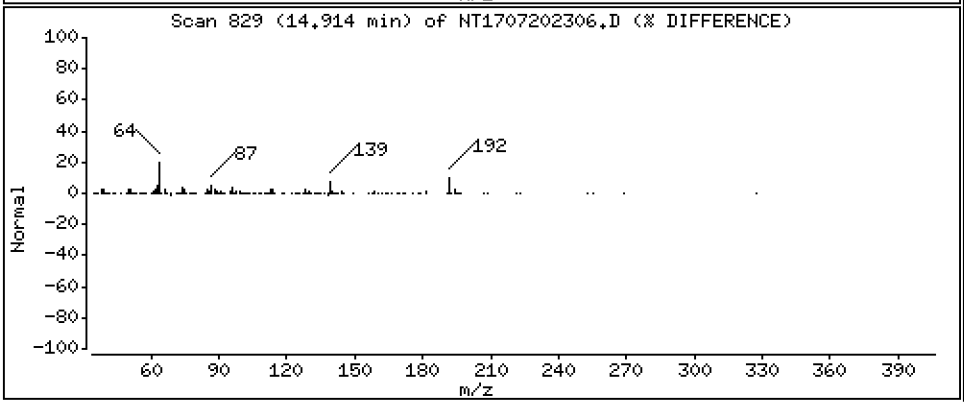
46 Dibenzofuran

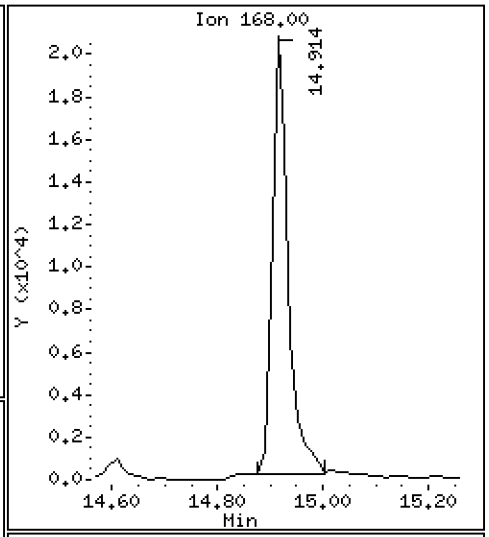
Concentration: 3.066 ug/mL

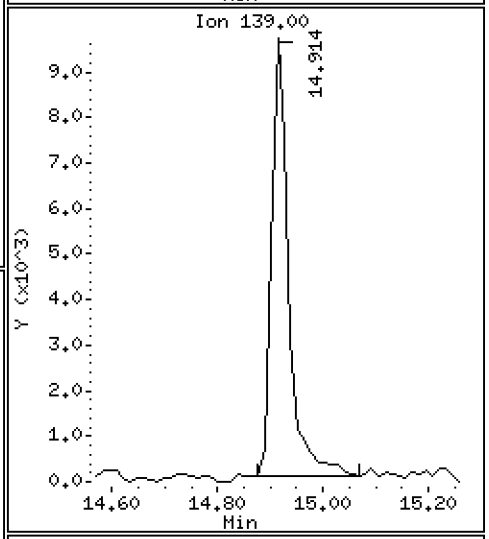


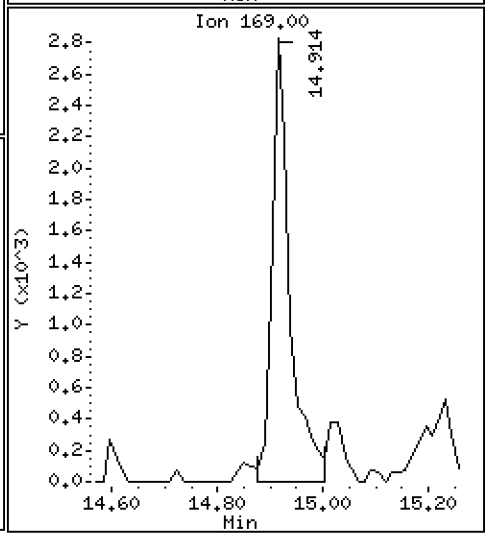












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202306.D

Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

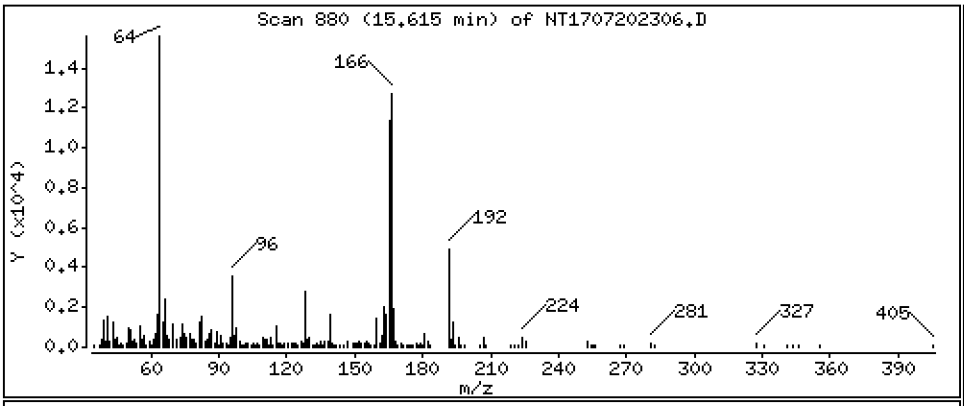
Operator: JGR

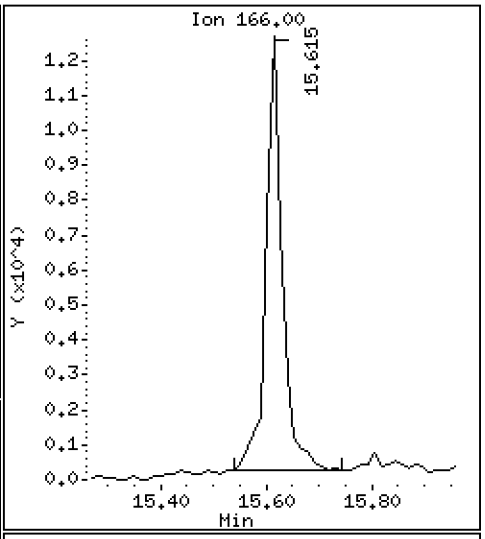
Column phase: ZB-5msi

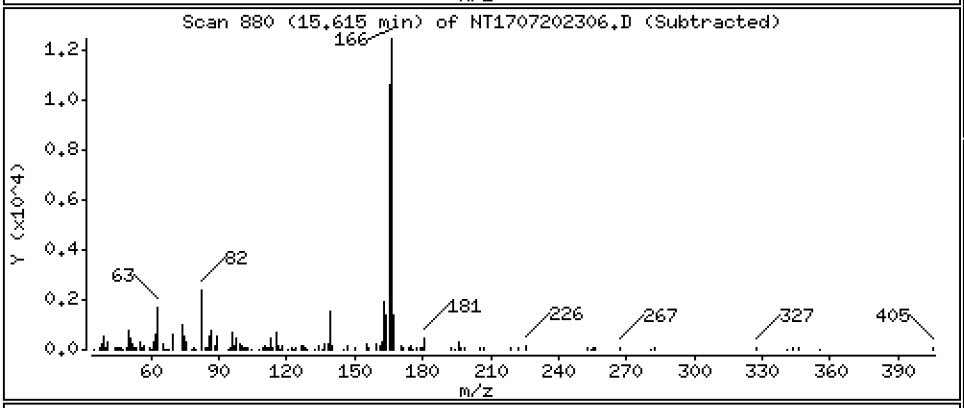
Column diameter: 0.25

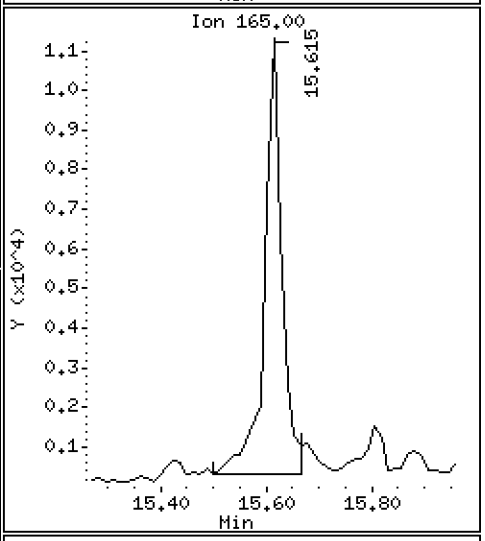
49 Fluorene

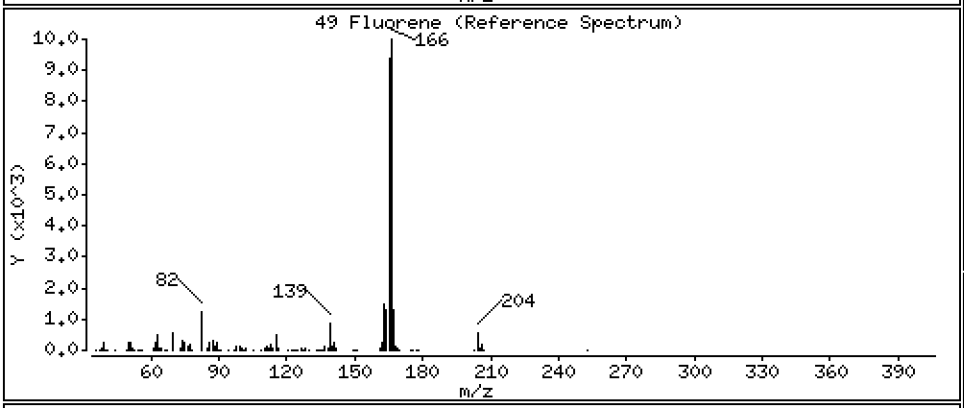
Concentration: 2.356 ug/mL

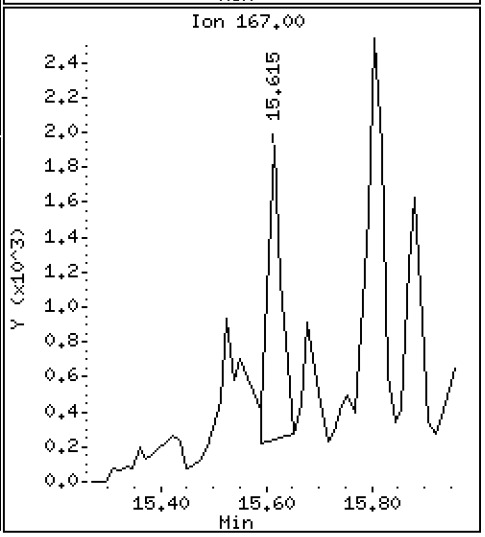


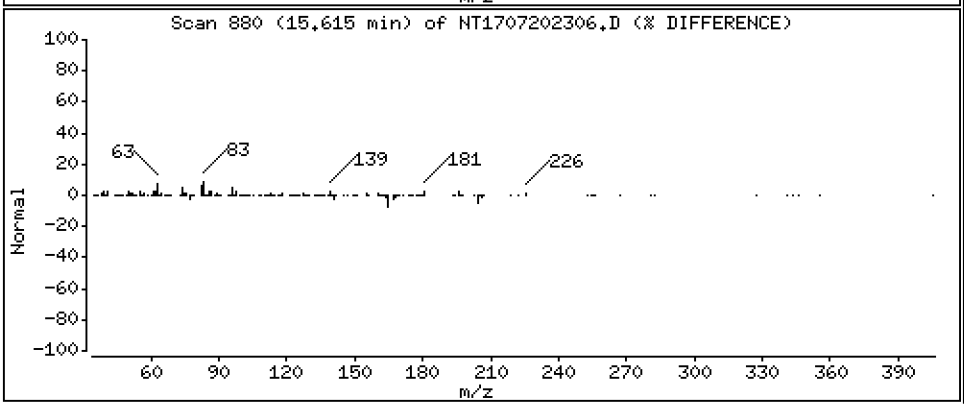












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202306.D

Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

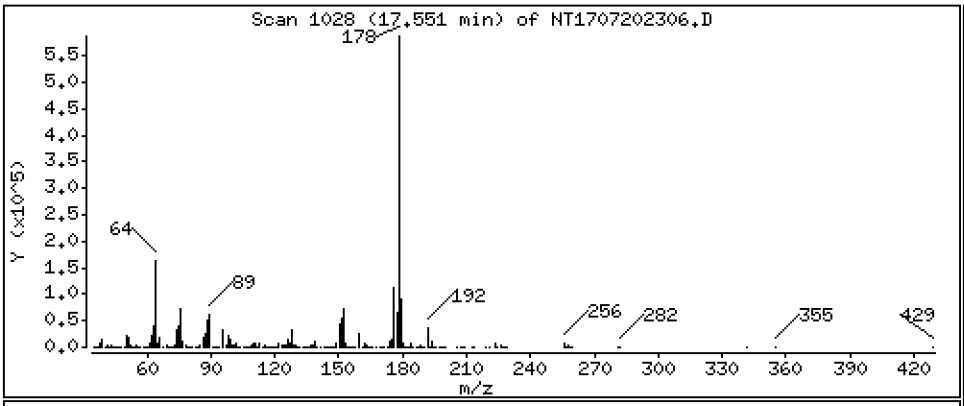
Operator: JGR

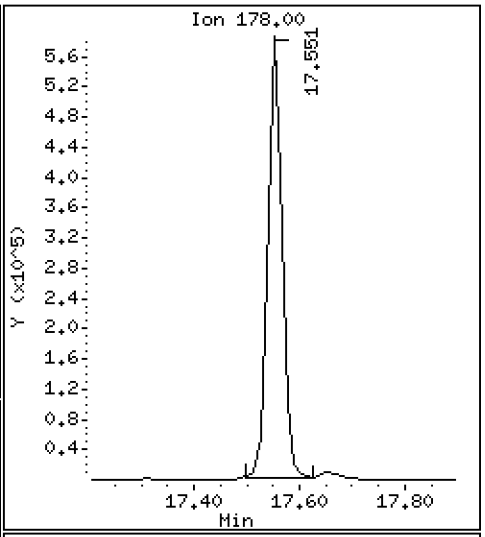
Column phase: ZB-5msi

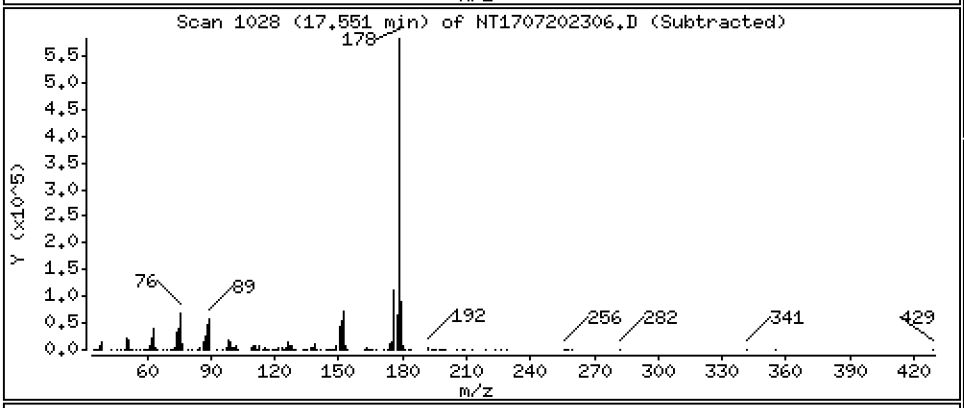
Column diameter: 0.25

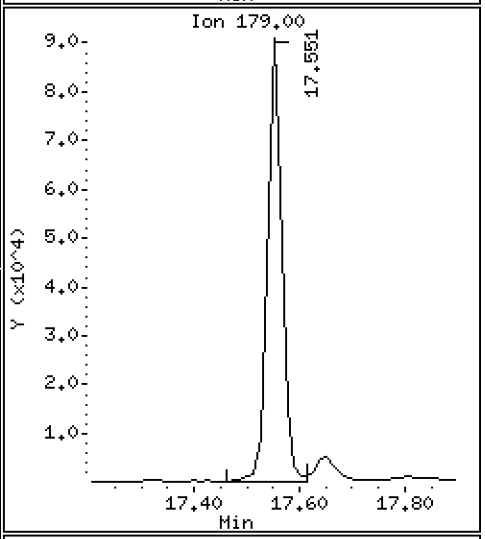
60 Phenanthrene

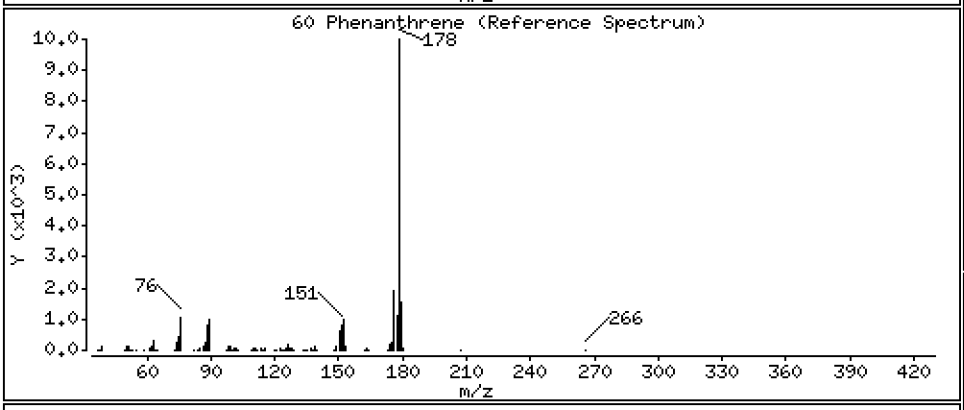
Concentration: 59.24 ug/mL

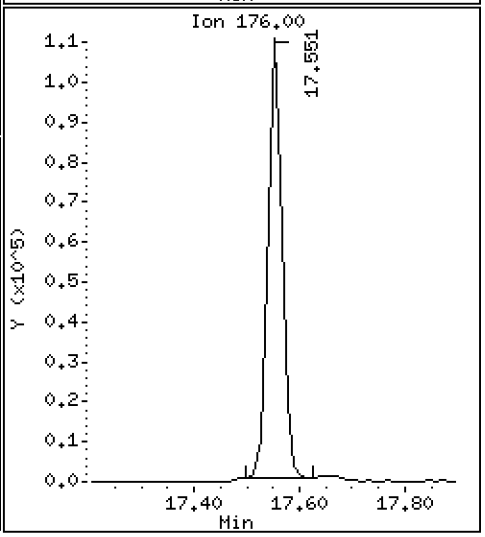


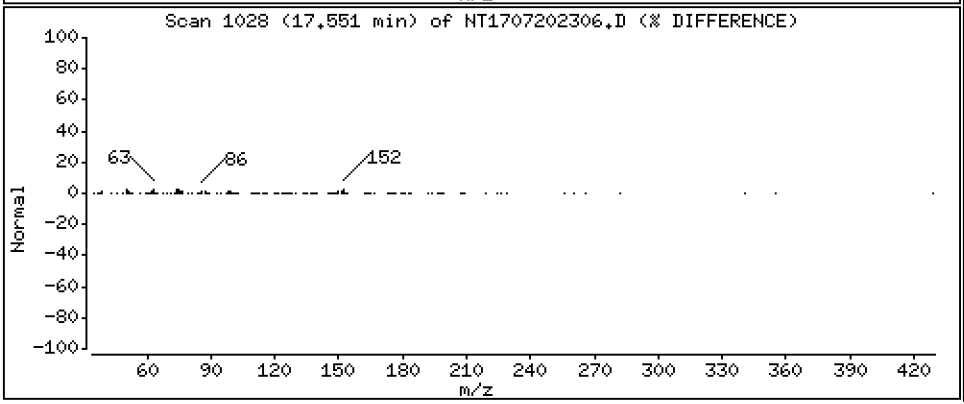












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202306.D

Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

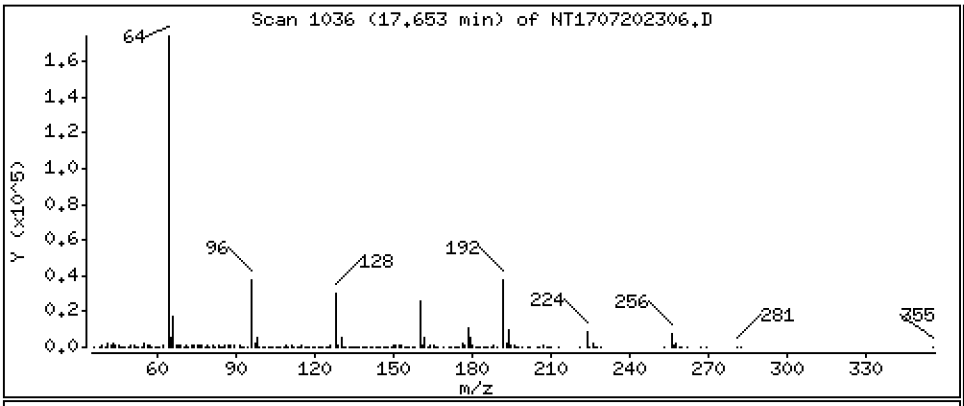
Operator: JGR

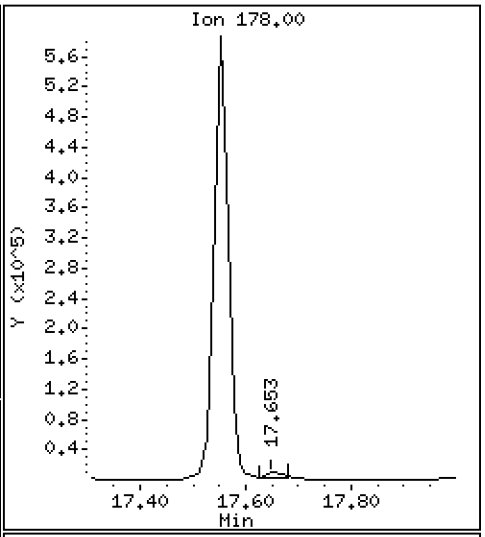
Column phase: ZB-5msi

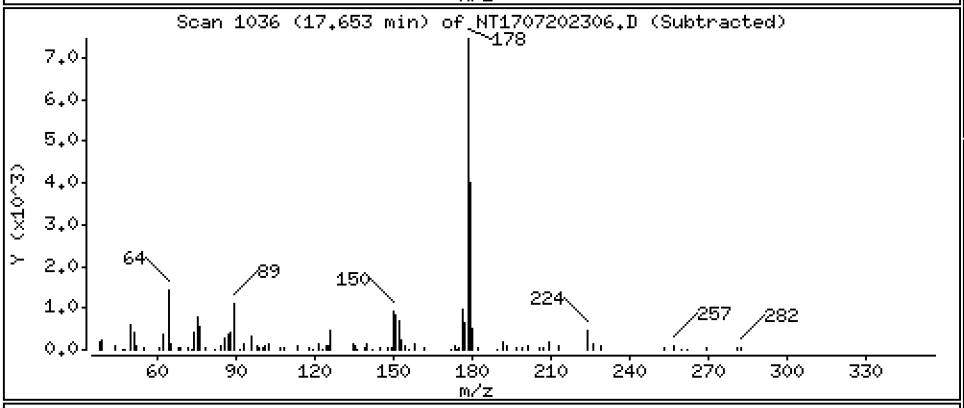
Column diameter: 0.25

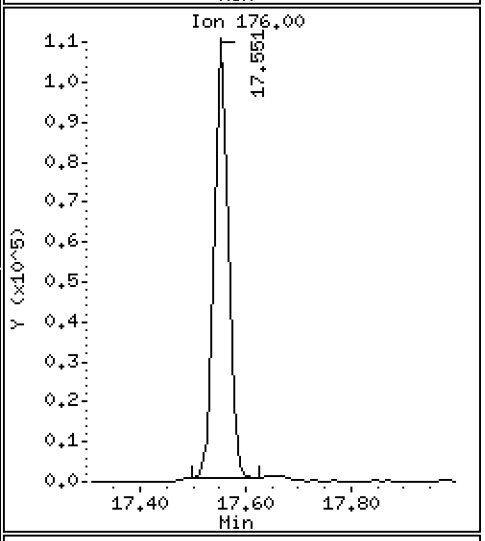
61 Anthracene

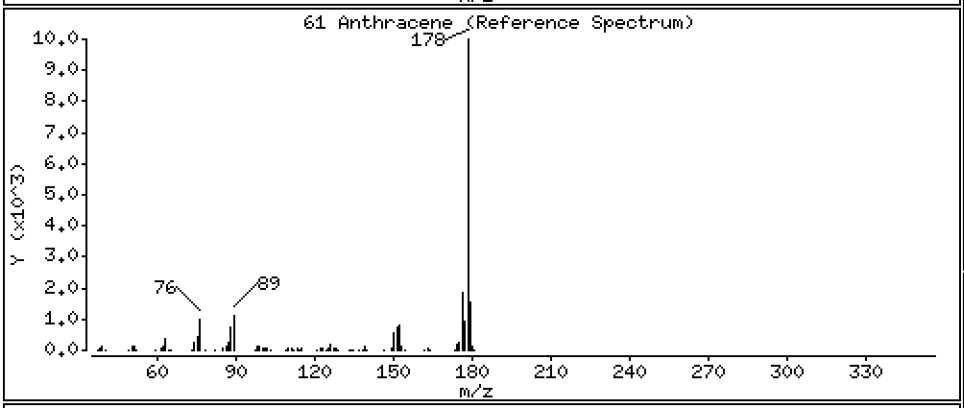
Concentration: 0.8607 ug/mL

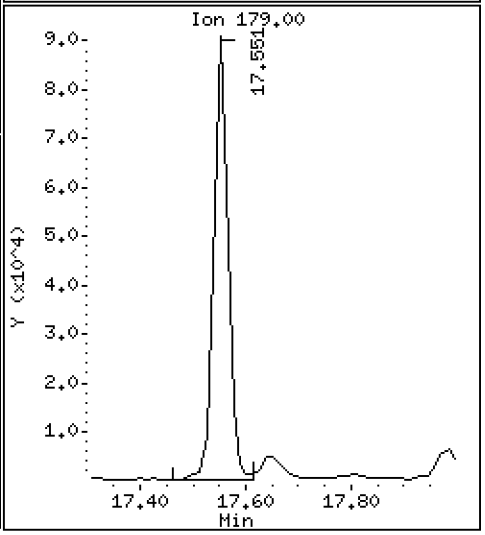


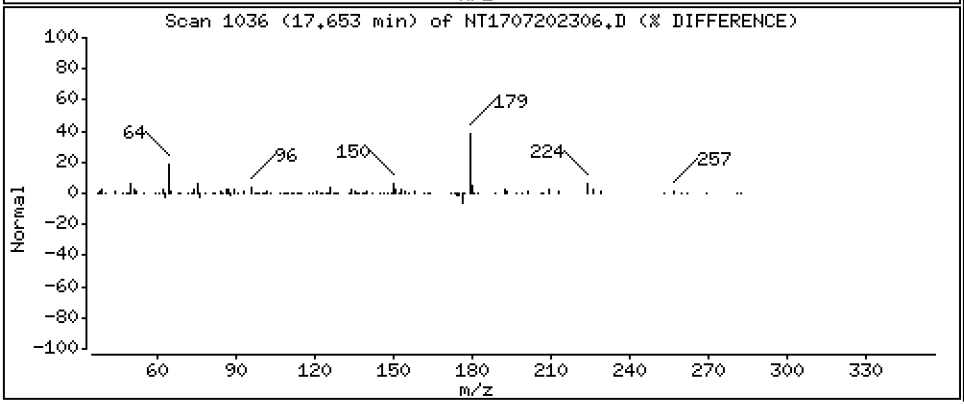












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Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

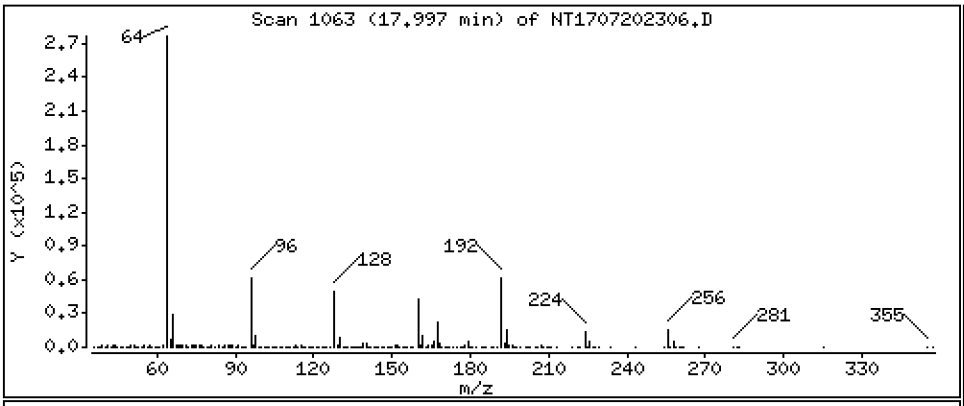
Operator: JGR

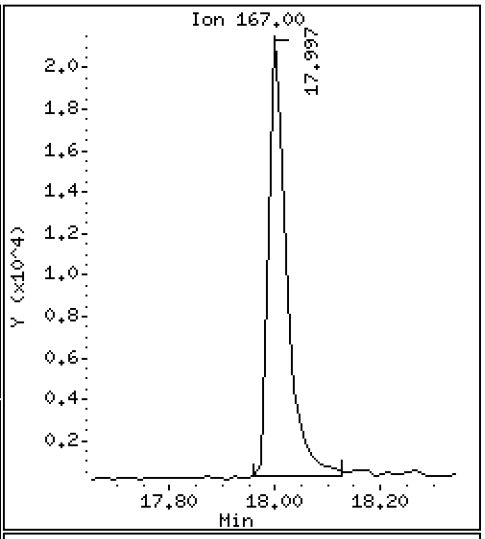
Column phase: ZB-5msi

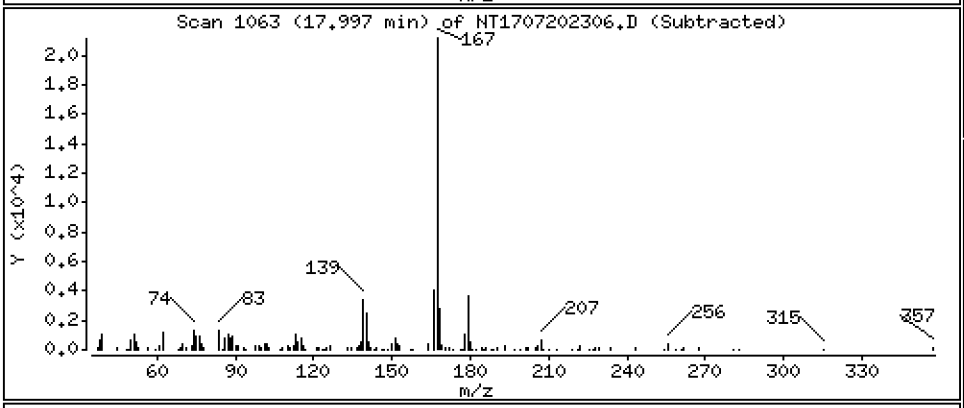
Column diameter: 0.25

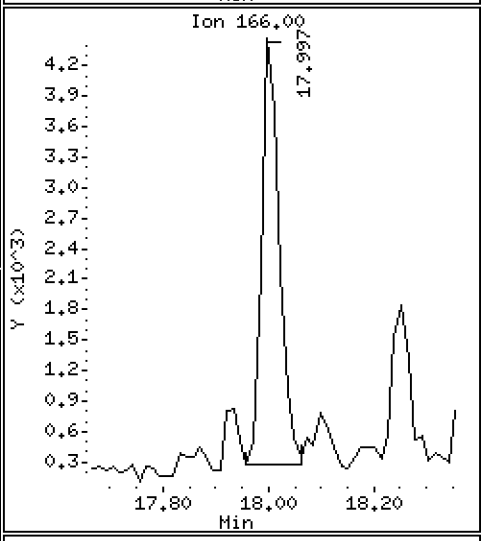
62 Carbazole

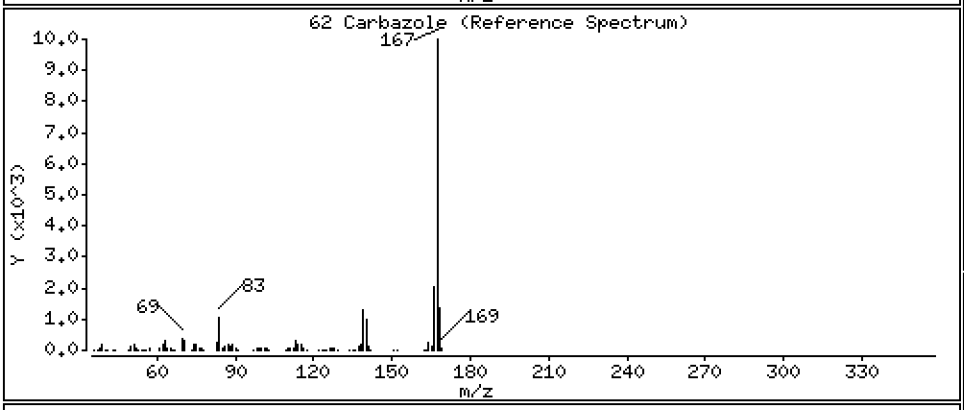
Concentration: 3.594 ug/mL

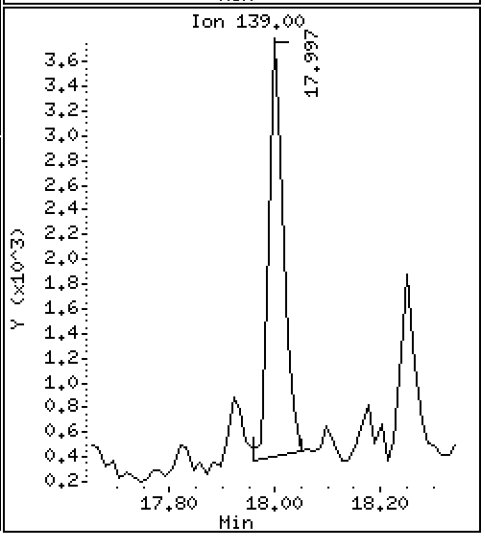


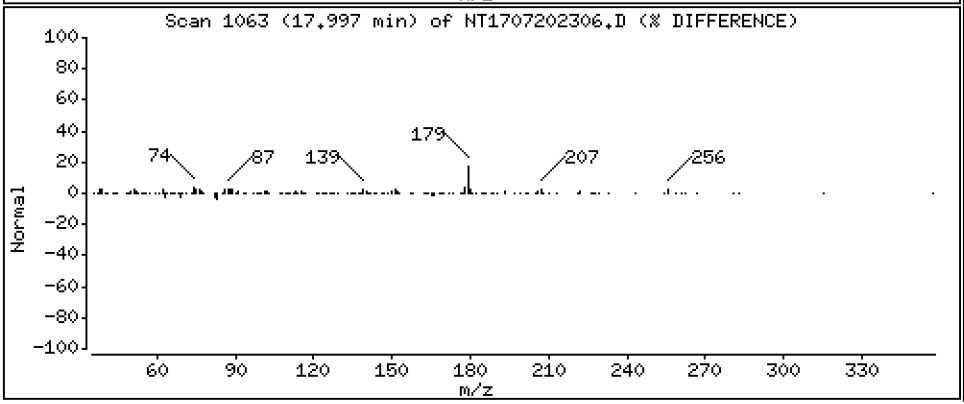












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Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

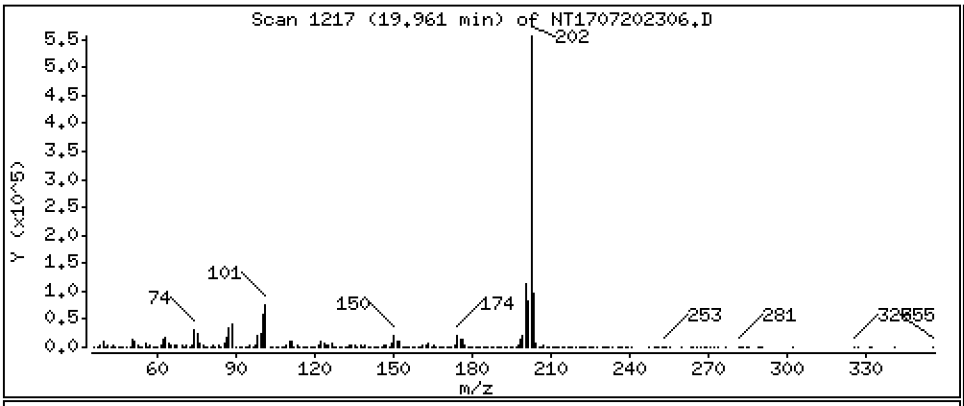
Operator: JGR

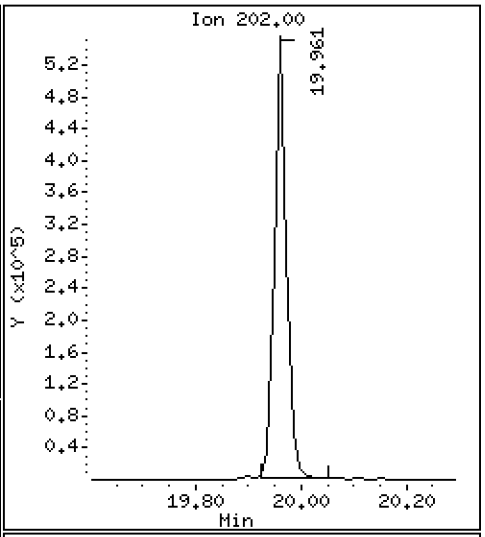
Column phase: ZB-5msi

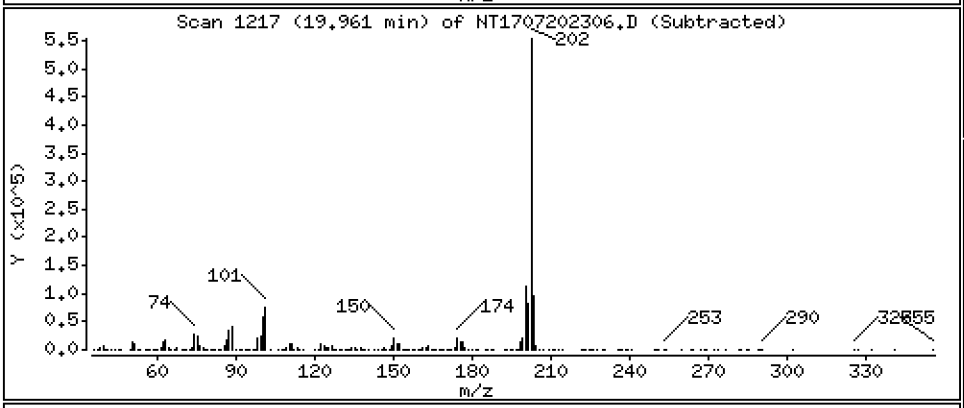
Column diameter: 0.25

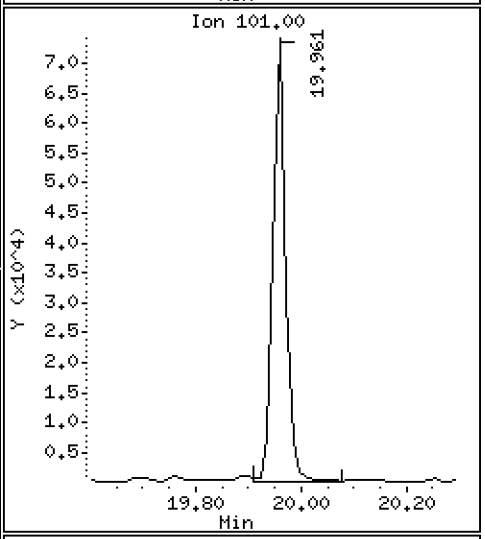
64 Fluoranthene

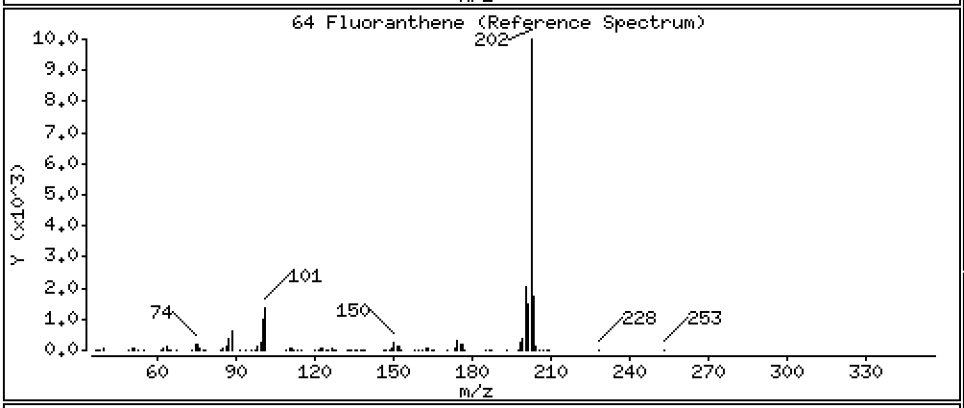
Concentration: 71.25 ug/mL

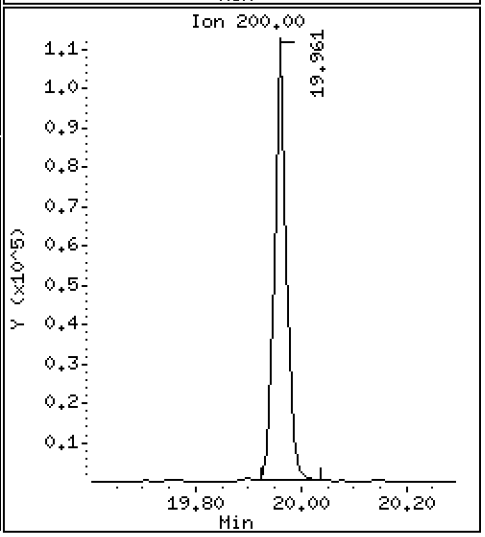


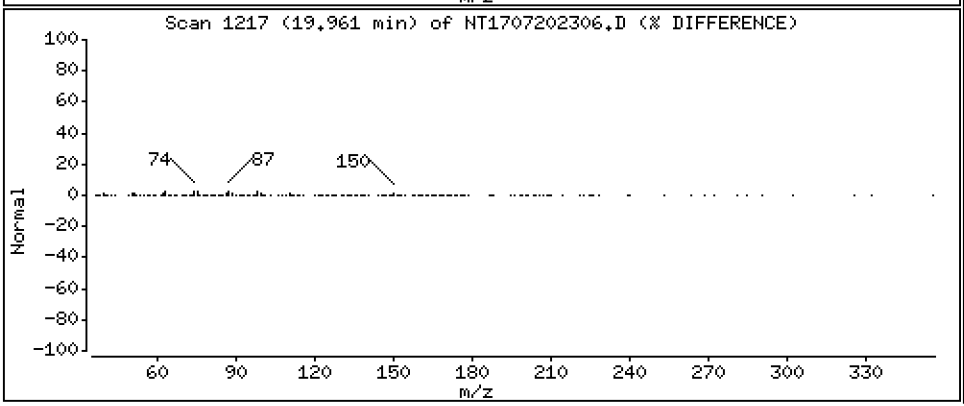












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Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

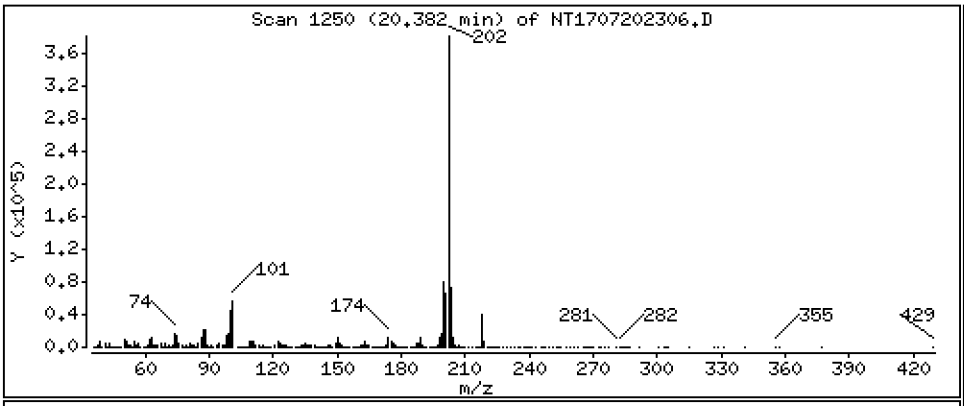
Operator: JGR

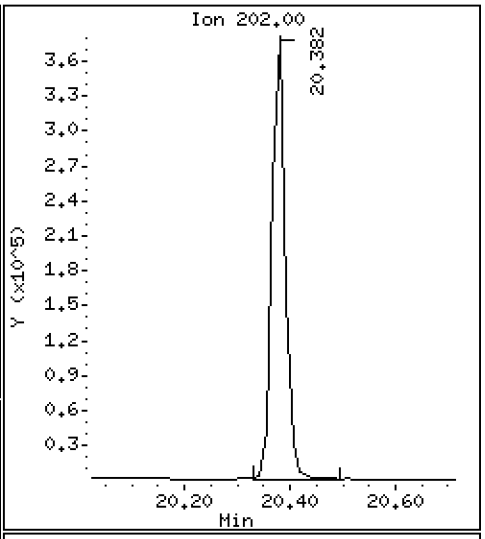
Column phase: ZB-5msi

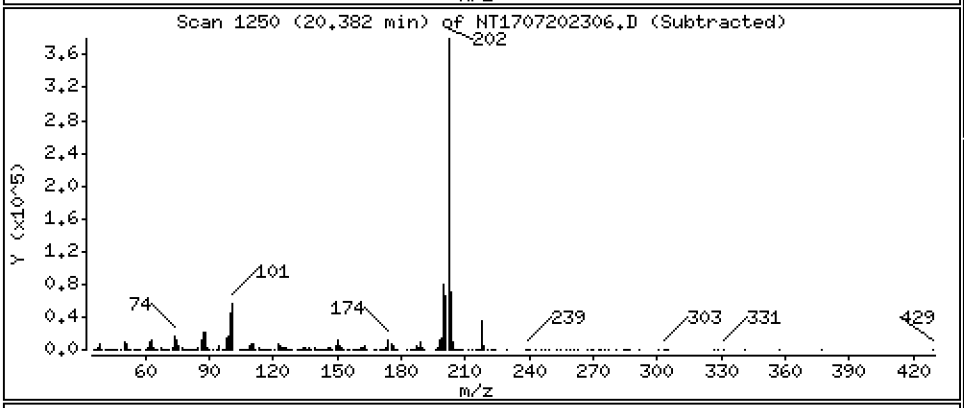
Column diameter: 0.25

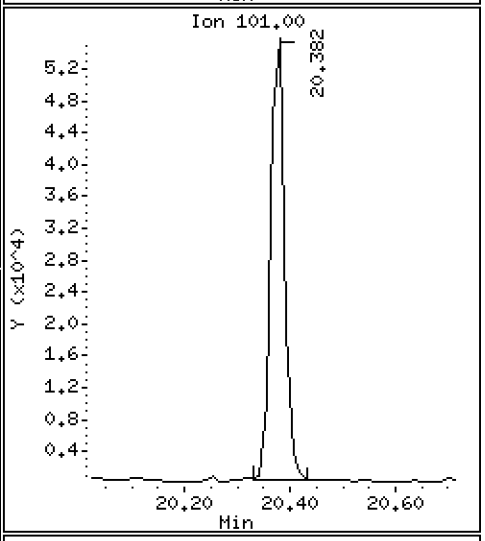
65 Pyrene

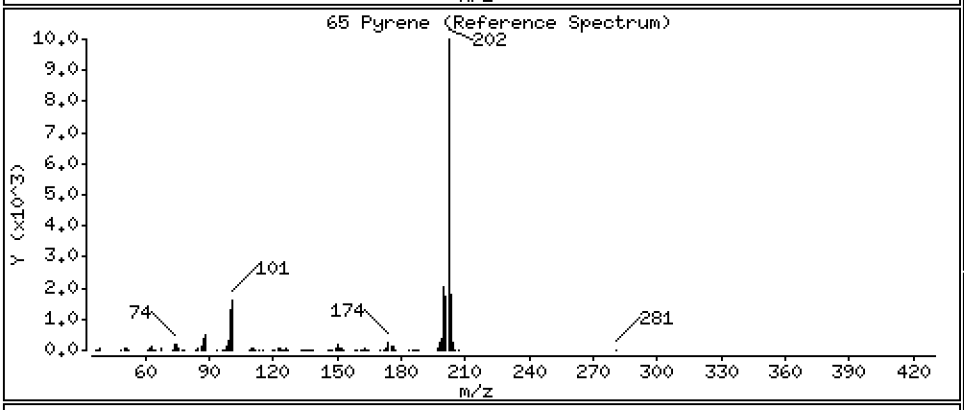
Concentration: 45.63 ug/mL

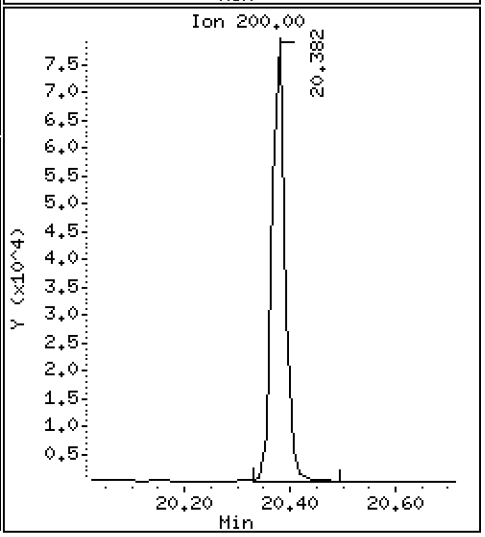


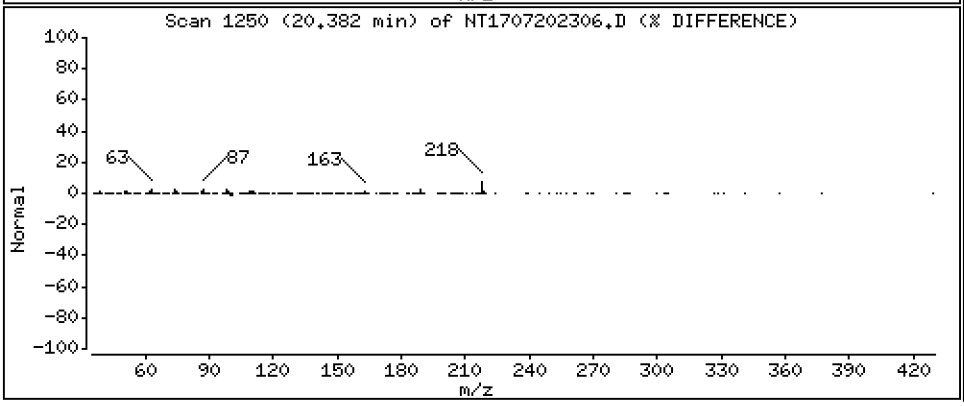












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Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

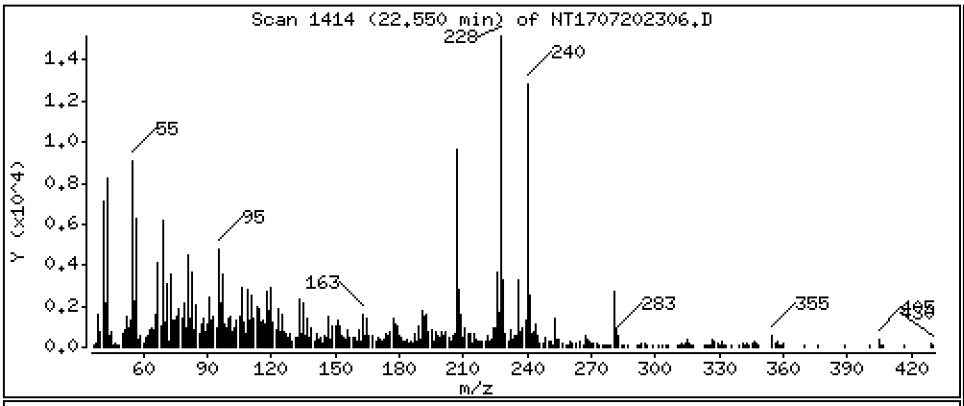
Operator: JGR

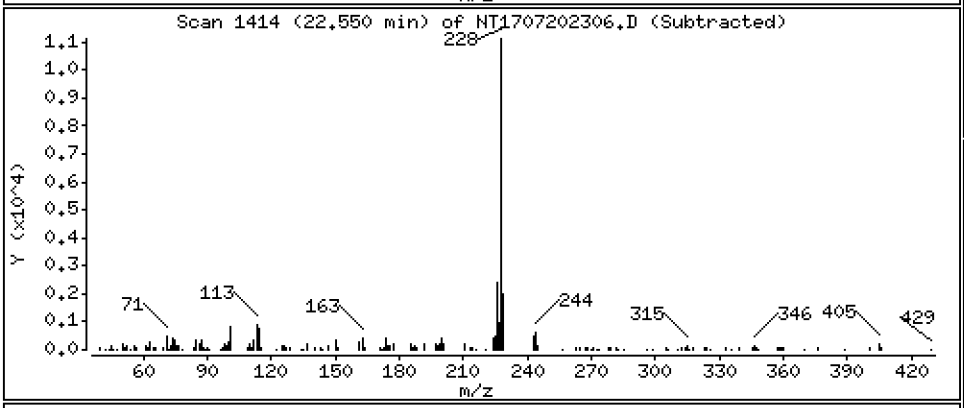
Column phase: ZB-5msi

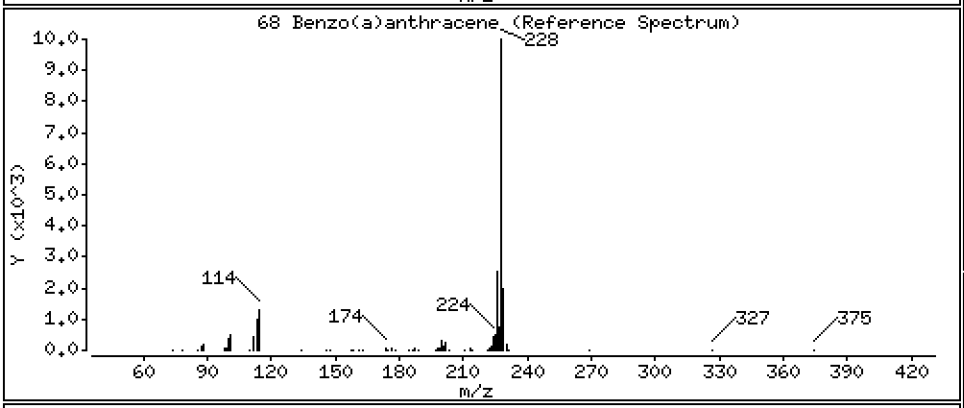
Column diameter: 0.25

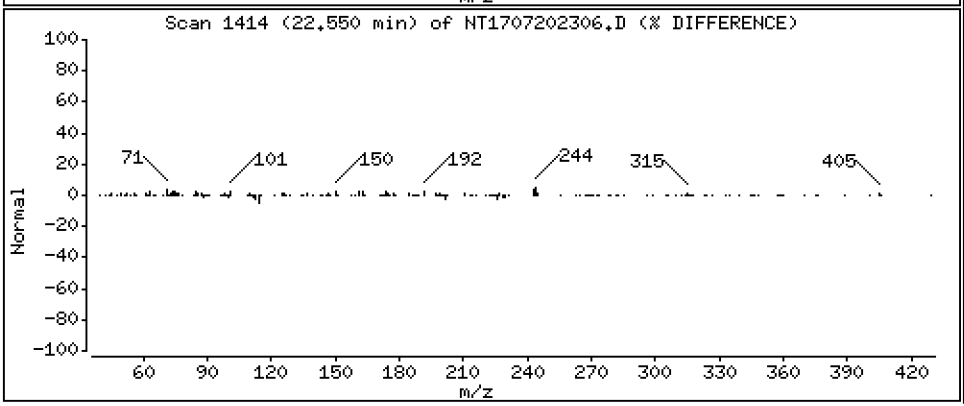
68 Benzo(a)anthracene

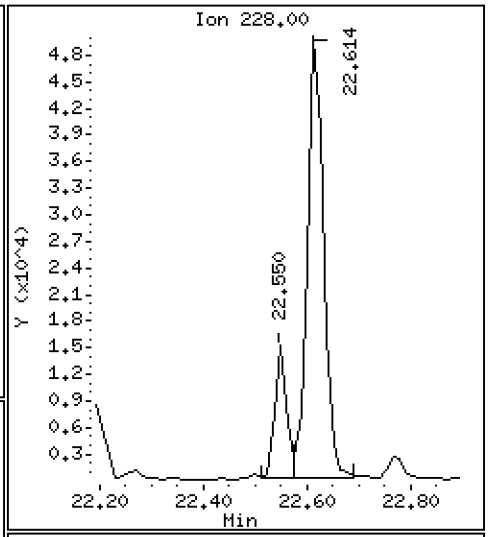
Concentration: 2.269 ug/mL

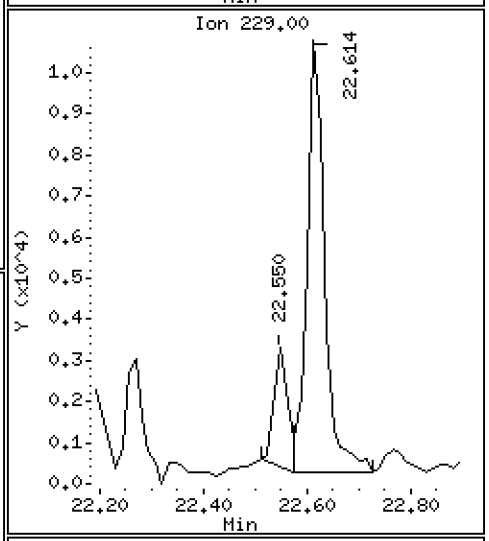


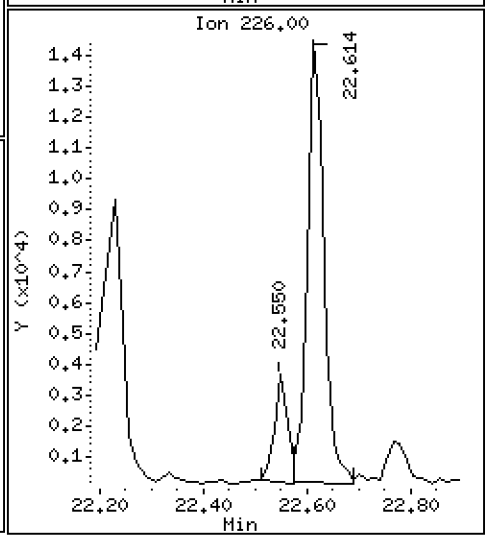












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Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

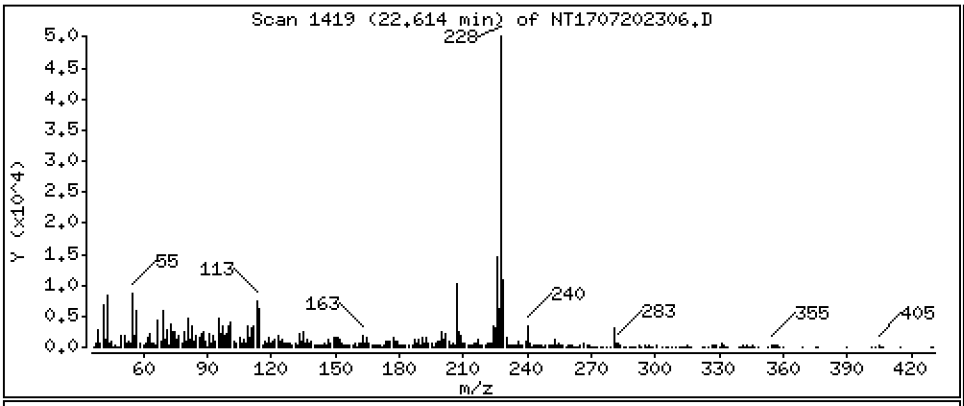
Operator: JGR

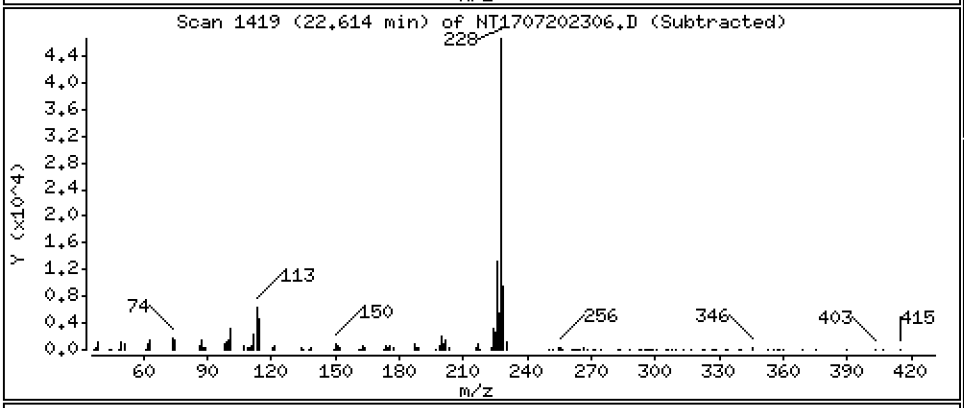
Column phase: ZB-5msi

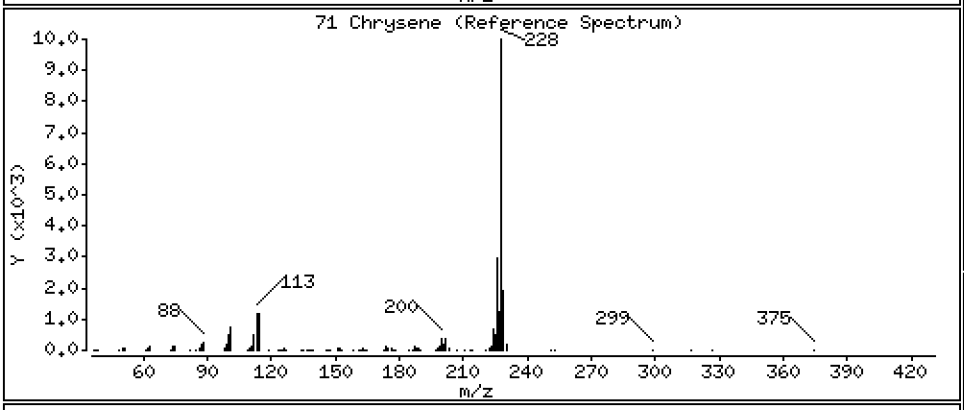
Column diameter: 0.25

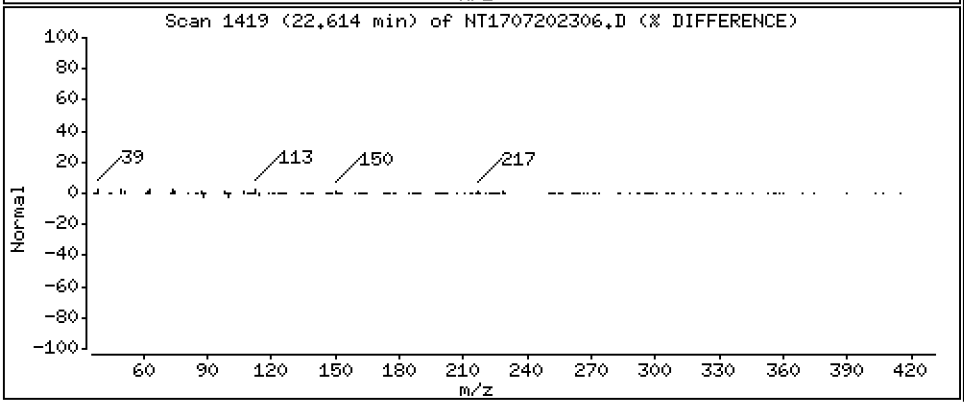
71 Chrysene

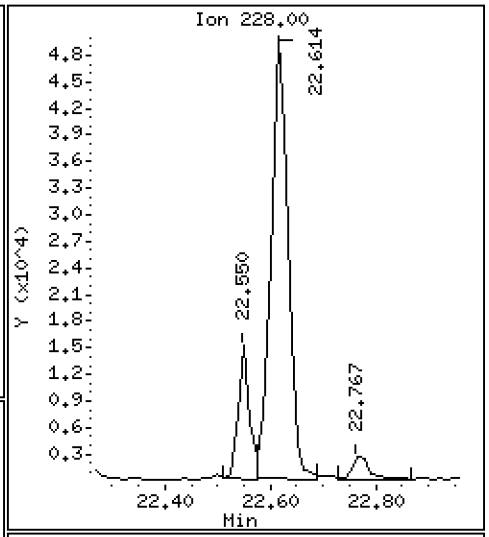
Concentration: 11.39 ug/mL

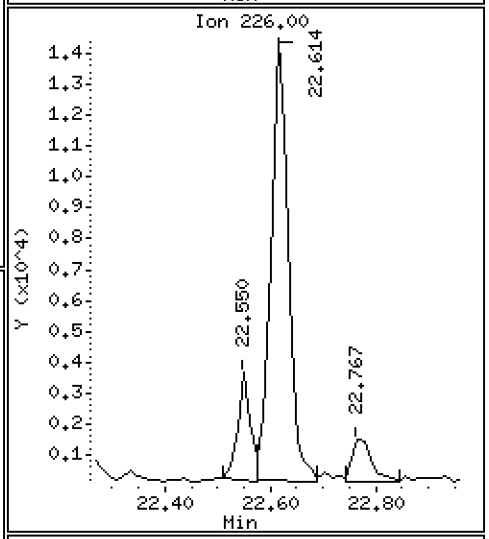


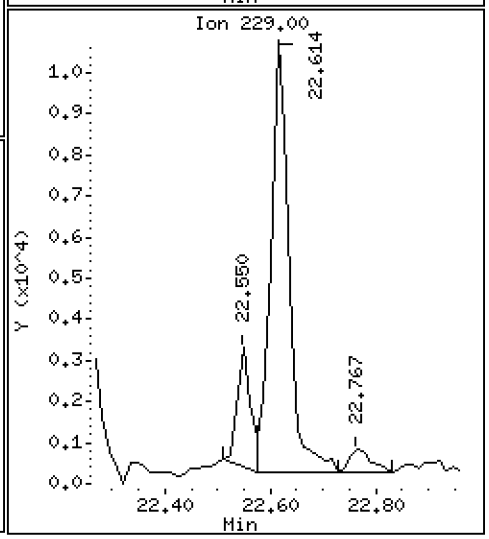












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Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

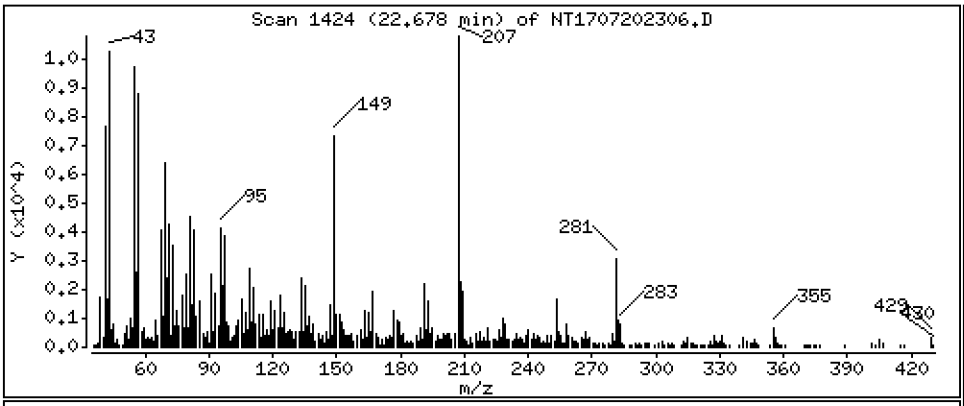
Operator: JGR

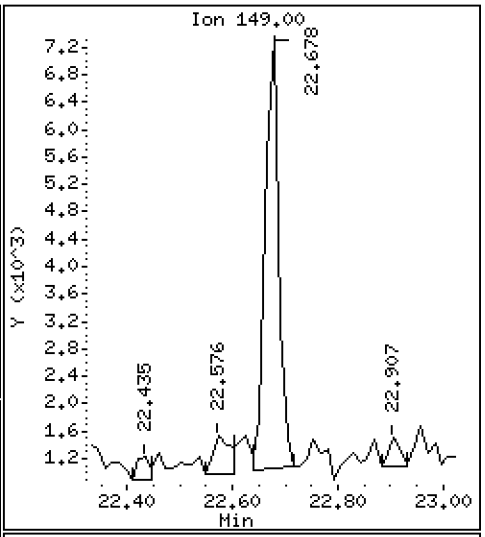
Column phase: ZB-5msi

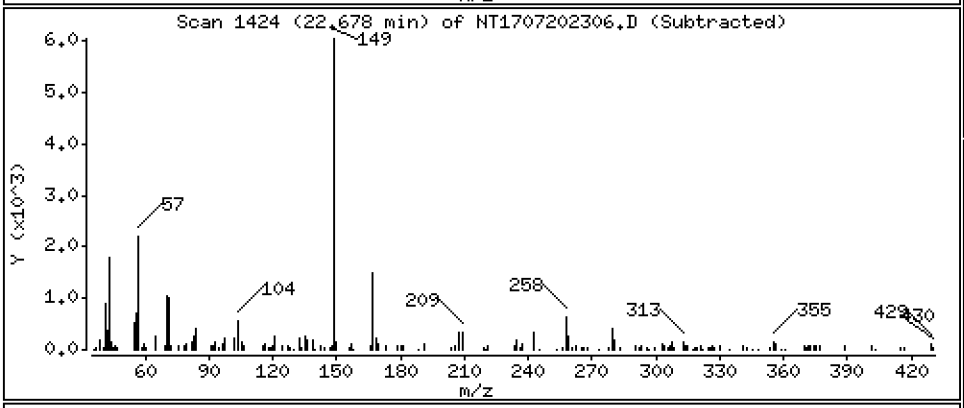
Column diameter: 0.25

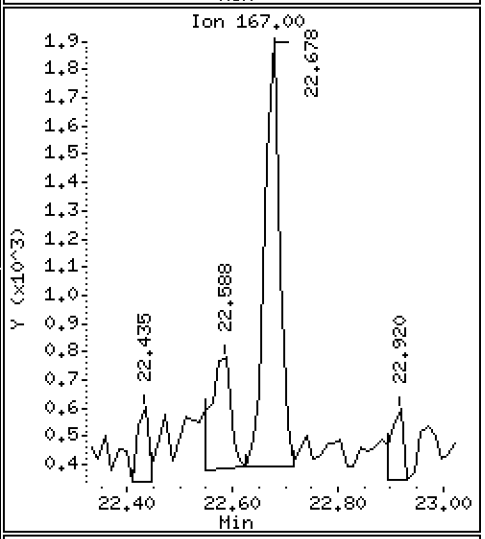
72 bis(2-Ethylhexyl)phthalate

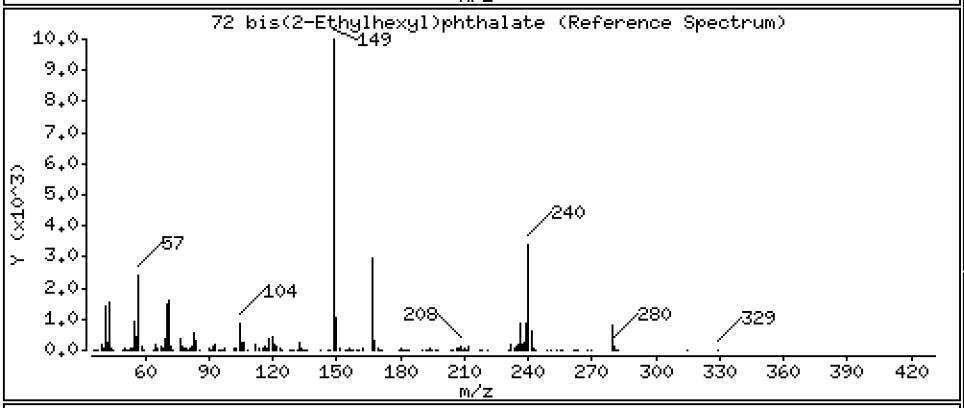
Concentration: 1.520 ug/mL

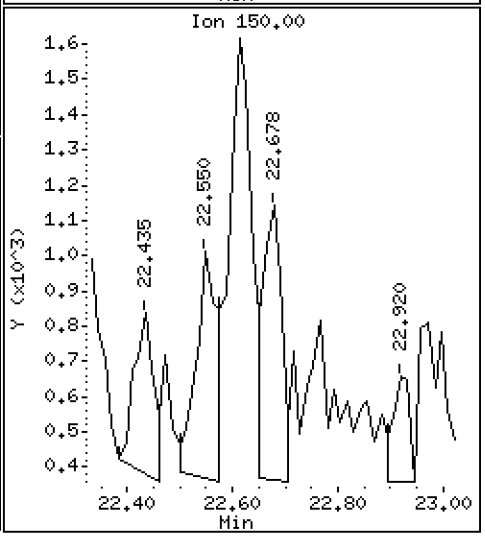


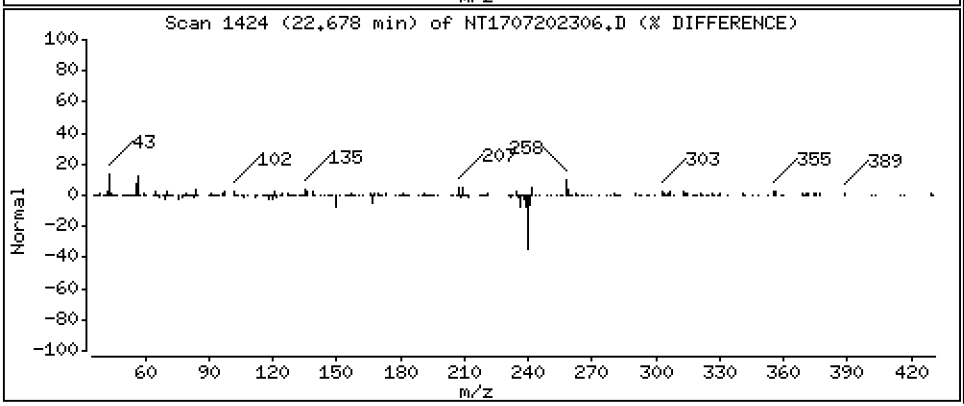












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Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

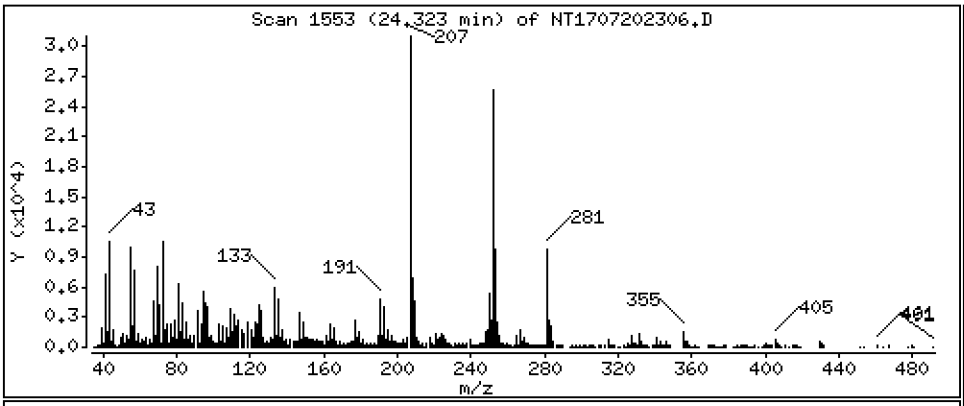
Operator: JGR

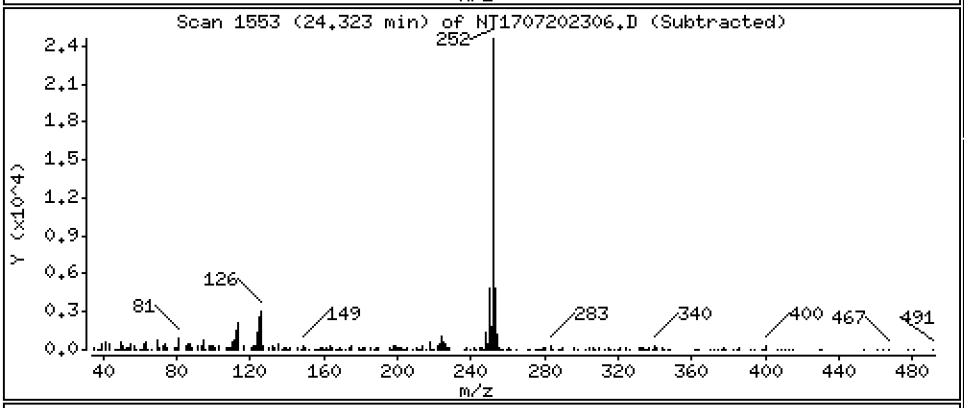
Column phase: ZB-5msi

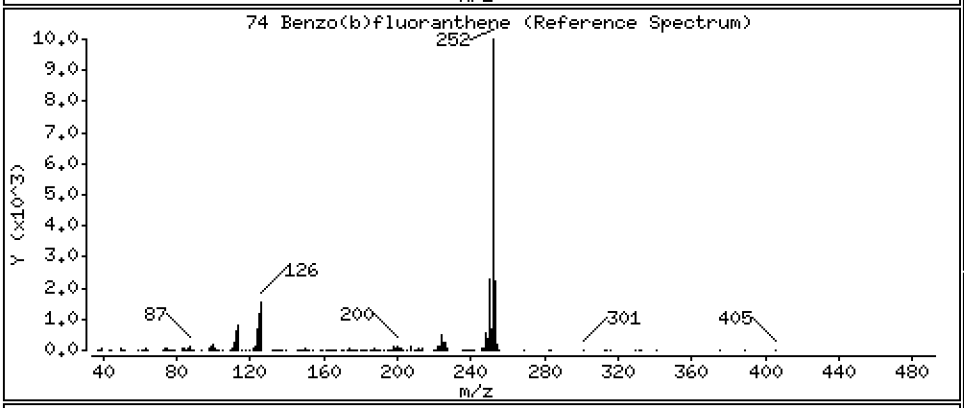
Column diameter: 0.25

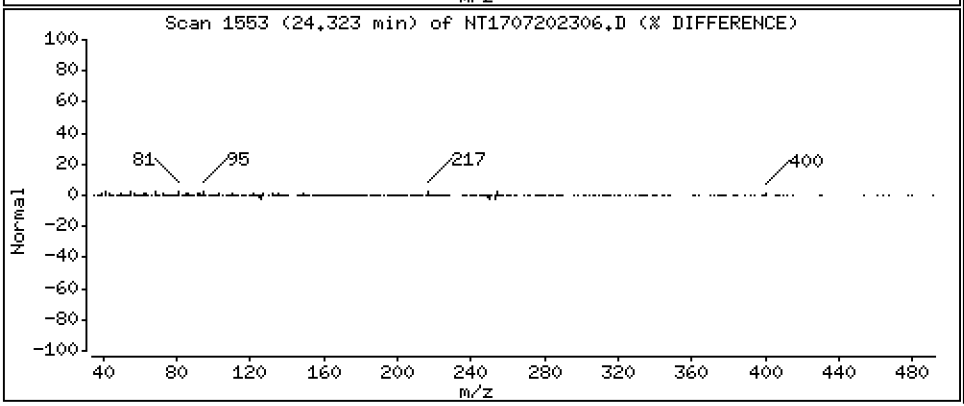
74 Benzo(b)fluoranthene

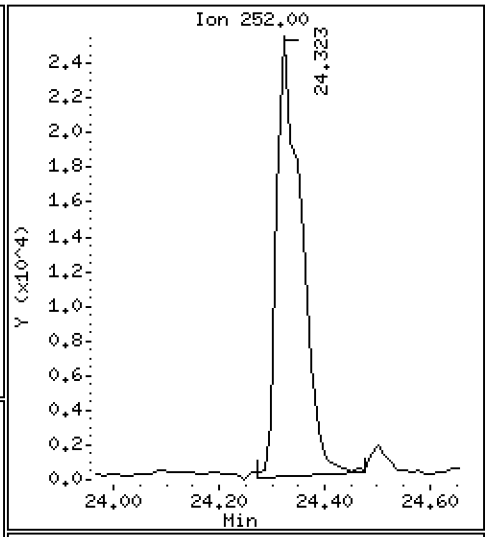
Concentration: 8.931 ug/mL

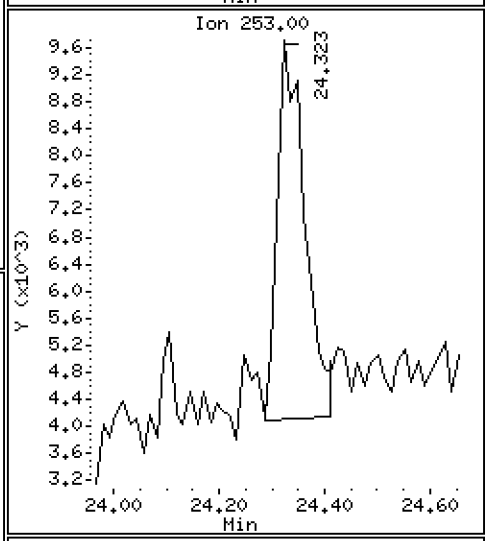


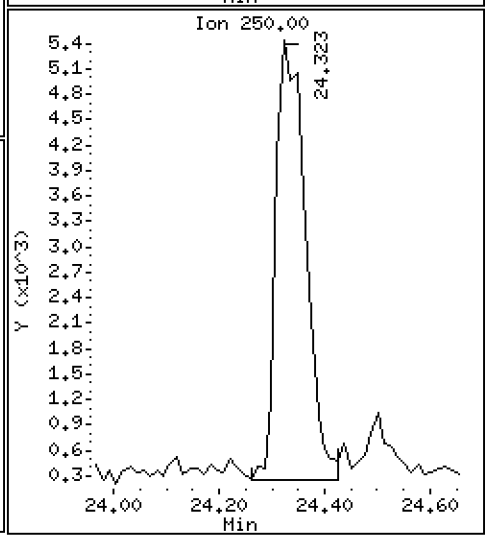












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Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

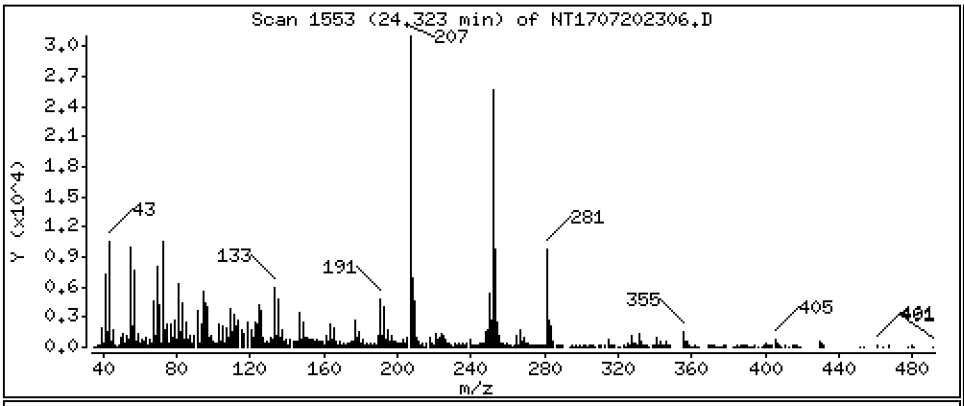
Operator: JGR

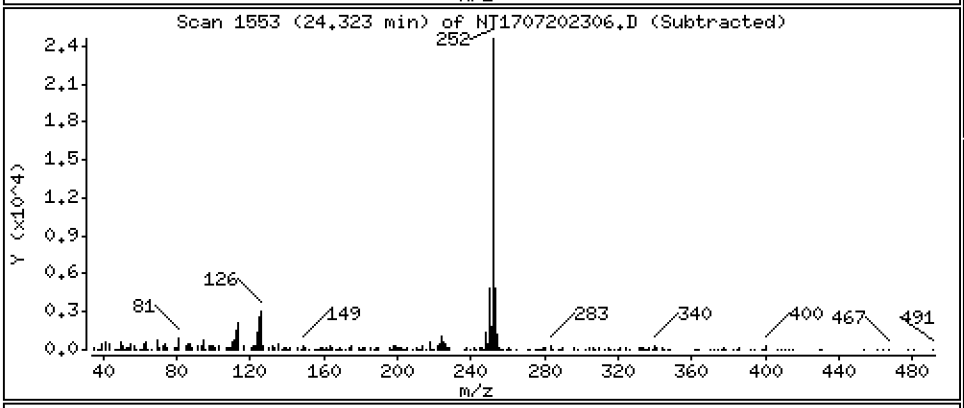
Column phase: ZB-5msi

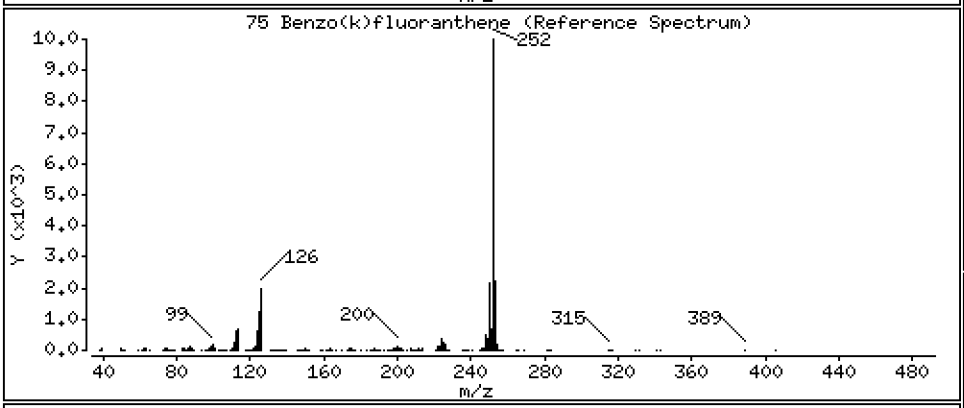
Column diameter: 0.25

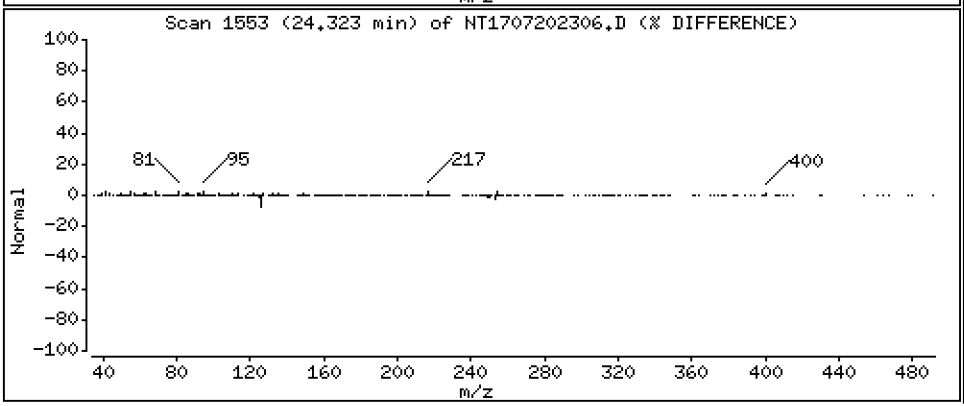
75 Benzo(k)fluoranthene

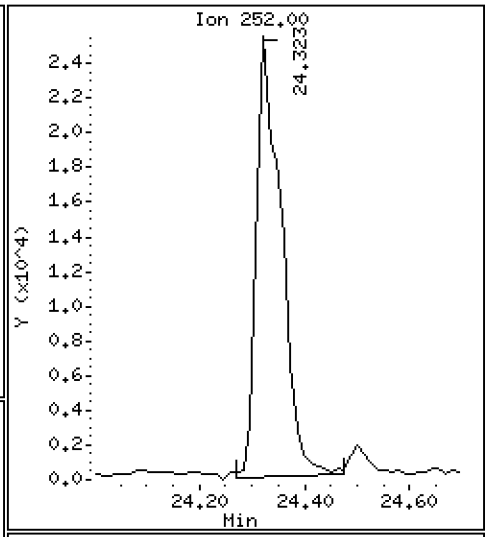
Concentration: 8.870 ug/mL

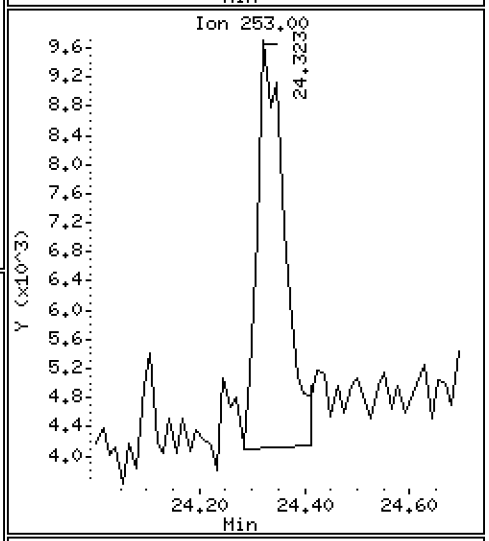


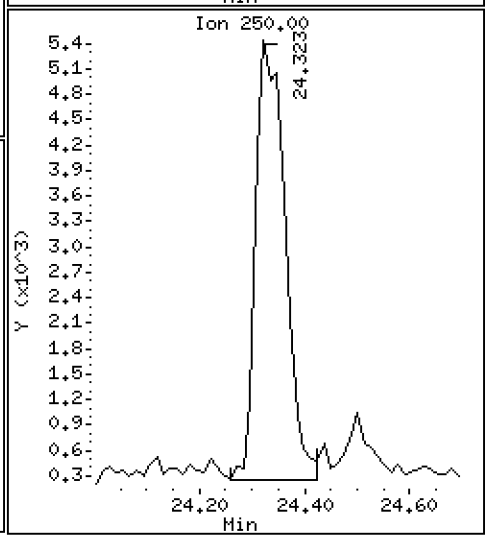












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Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

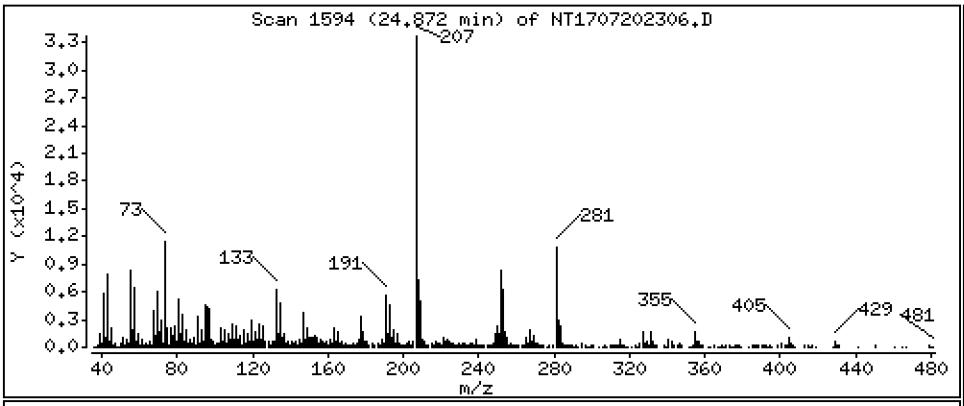
Operator: JGR

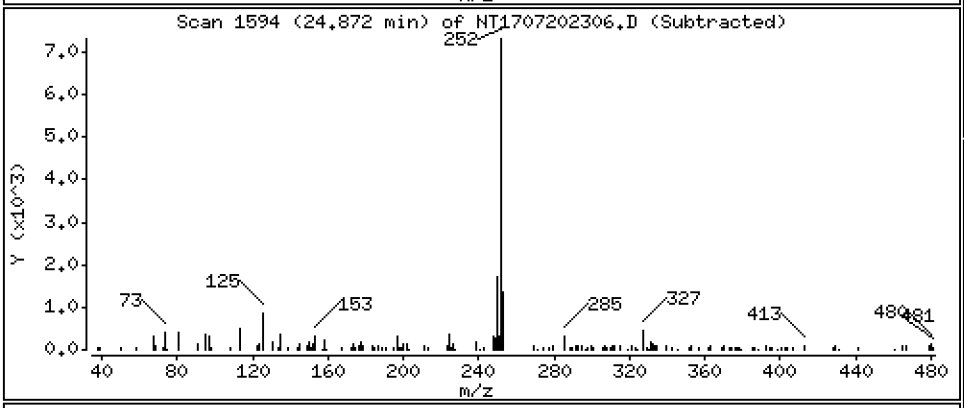
Column phase: ZB-5msi

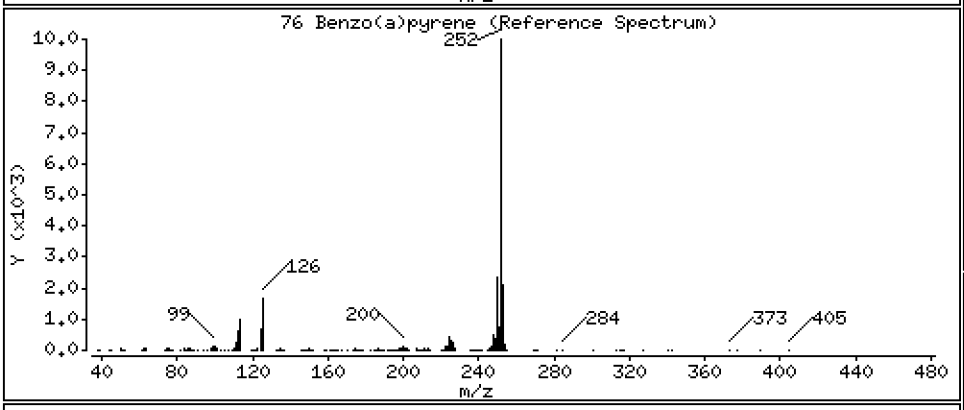
Column diameter: 0.25

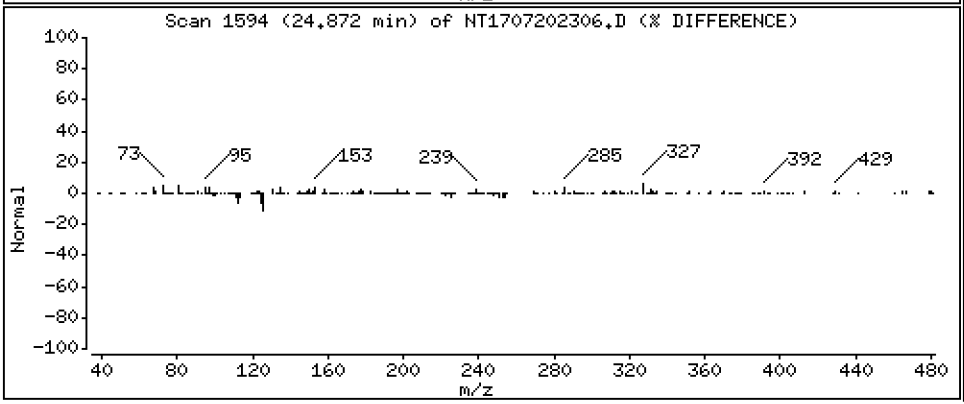
76 Benzo(a)pyrene

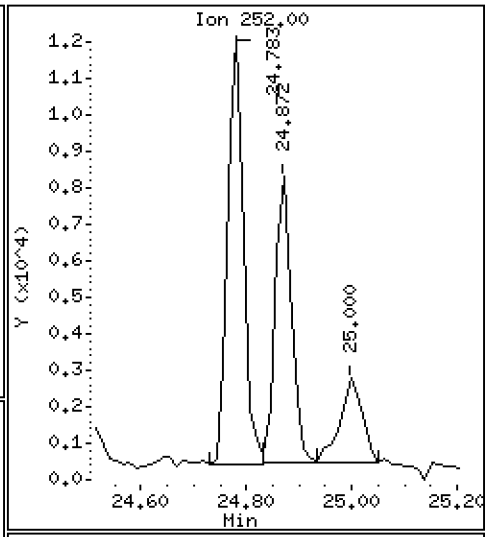
Concentration: 2.536 ug/mL

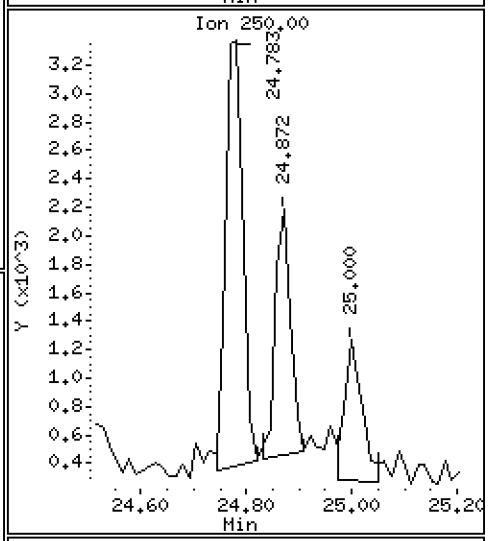


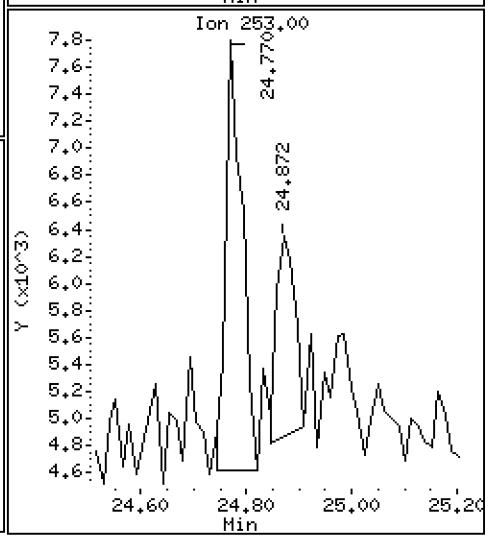












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Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

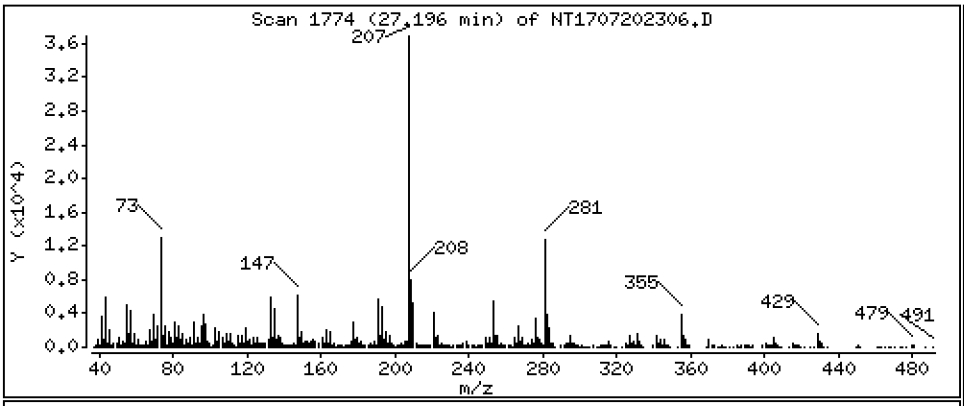
Operator: JGR

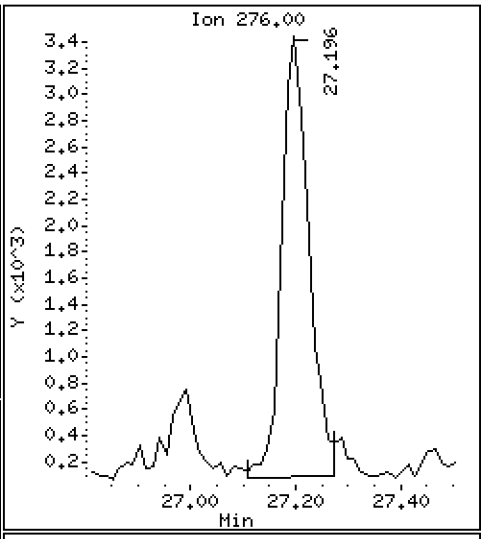
Column phase: ZB-5msi

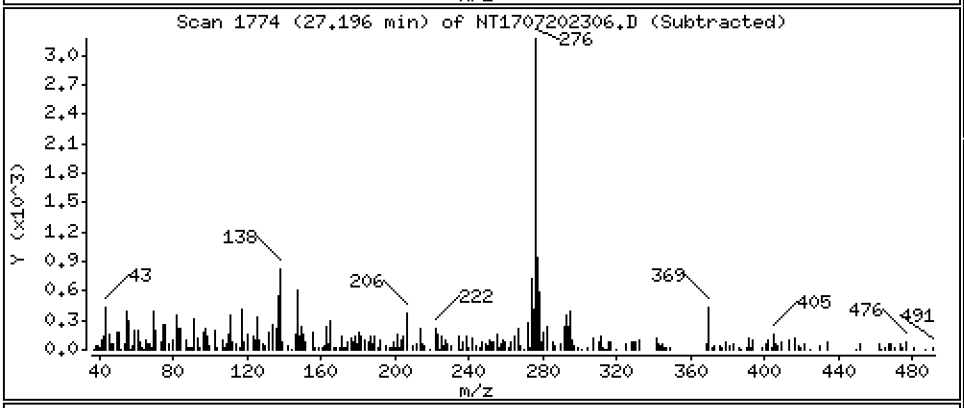
Column diameter: 0.25

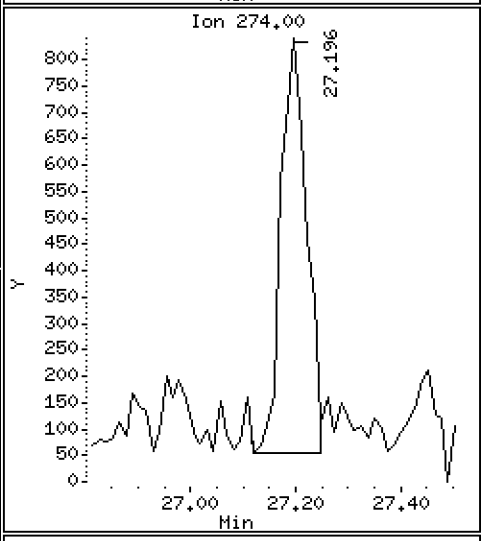
78 Indeno(1,2,3-cd)pyrene

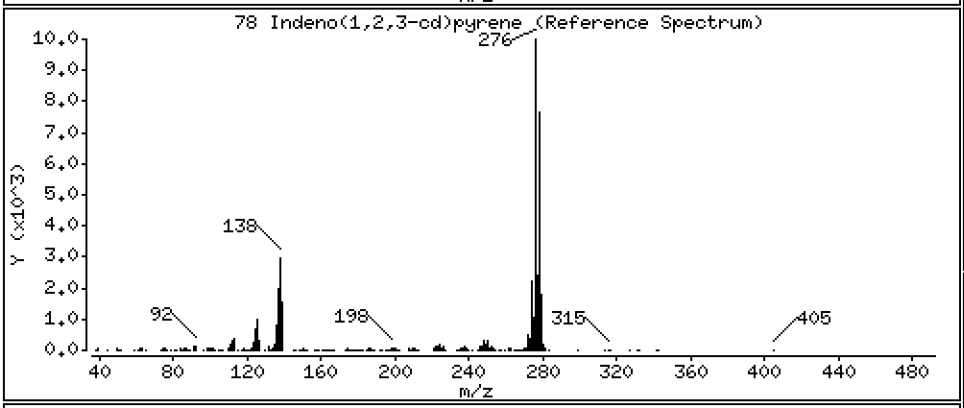
Concentration: 1.343 ug/mL

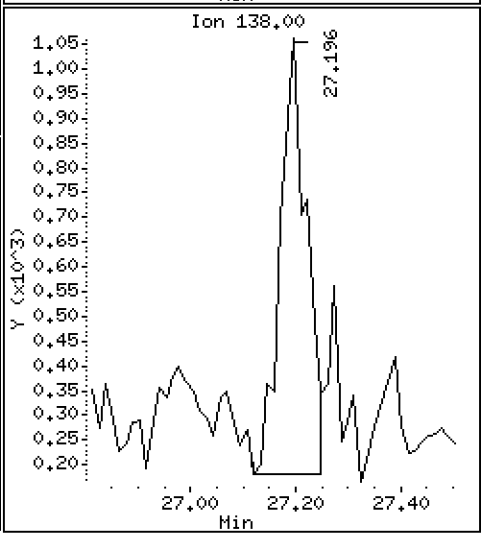


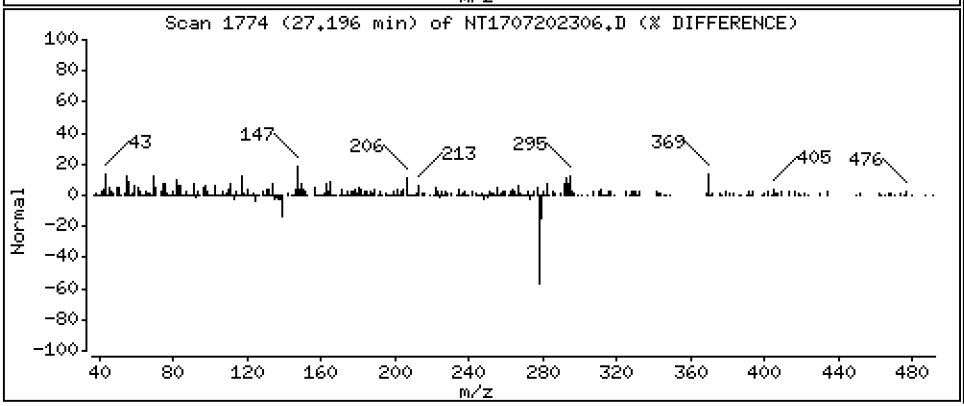












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Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

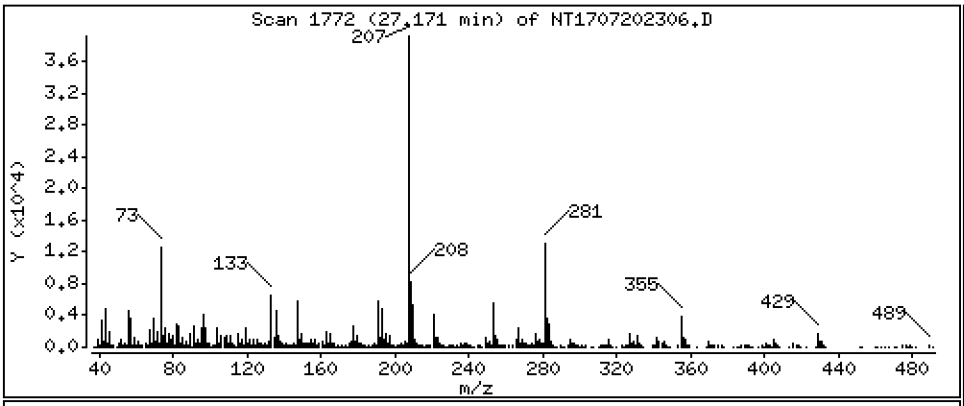
Operator: JGR

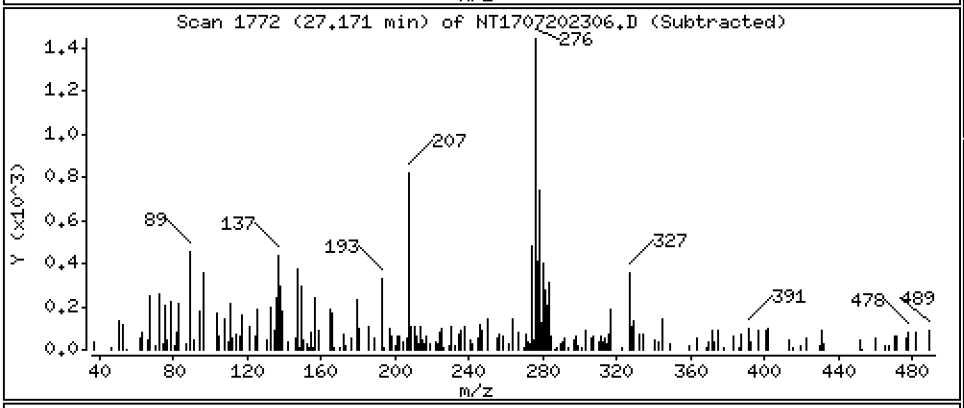
Column phase: ZB-5msi

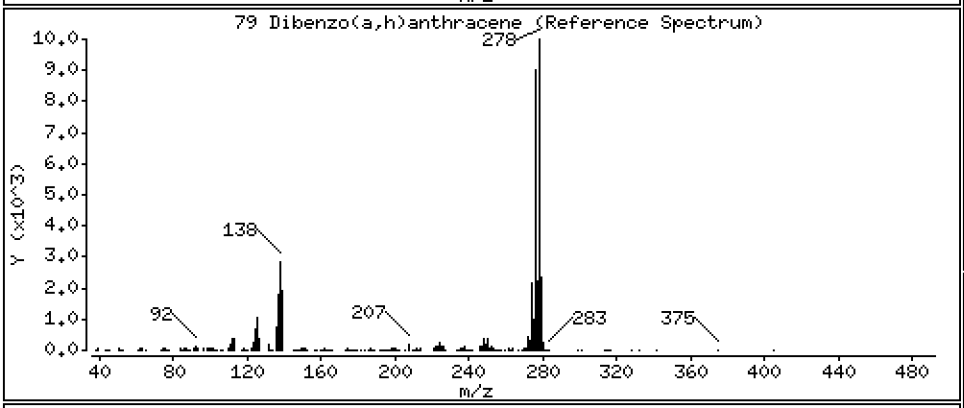
Column diameter: 0.25

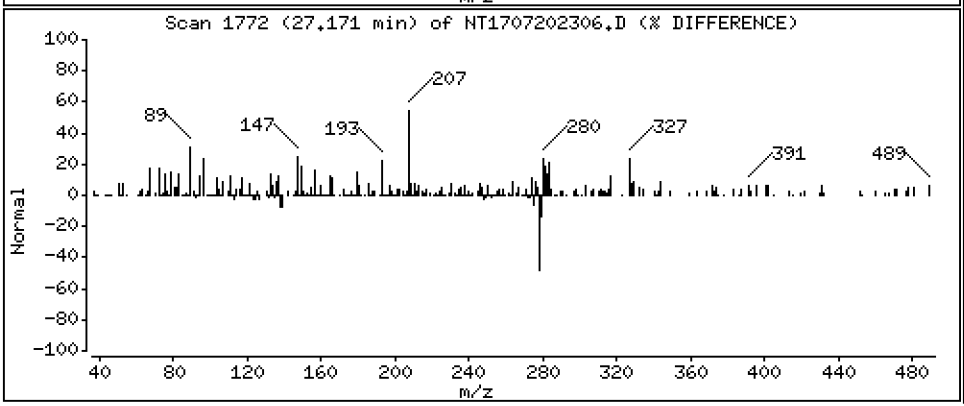
79 Dibenzo(a,h)anthracene

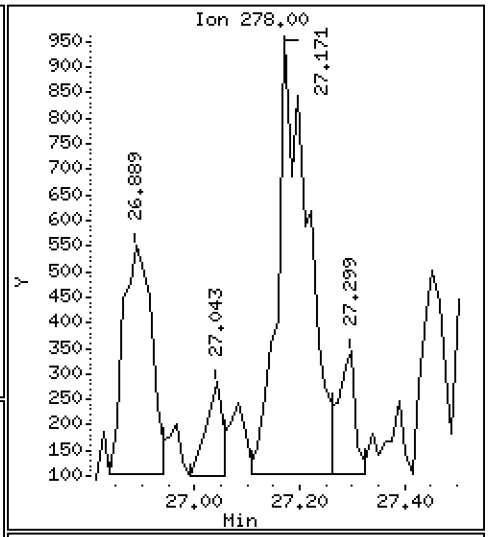
Concentration: 0.4266 ug/mL

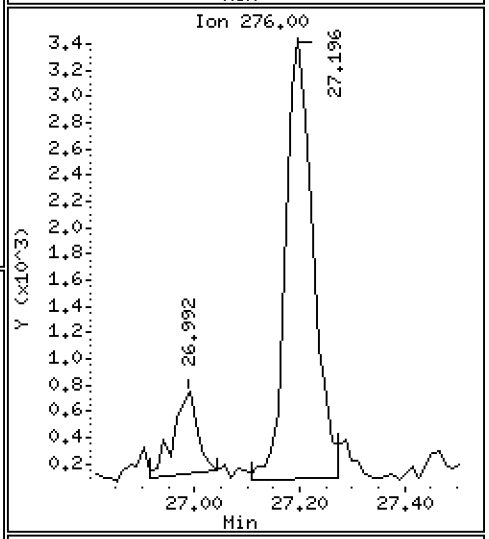


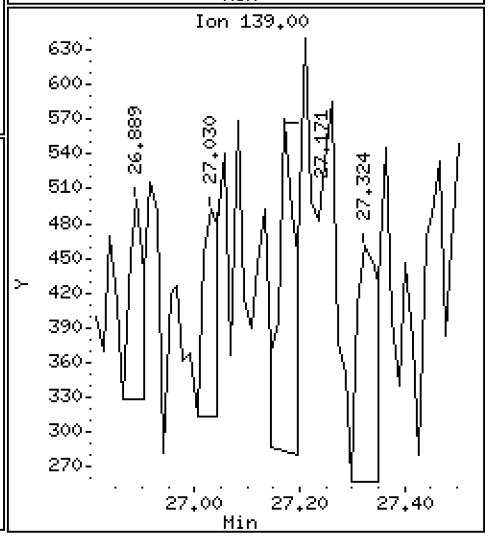












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Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

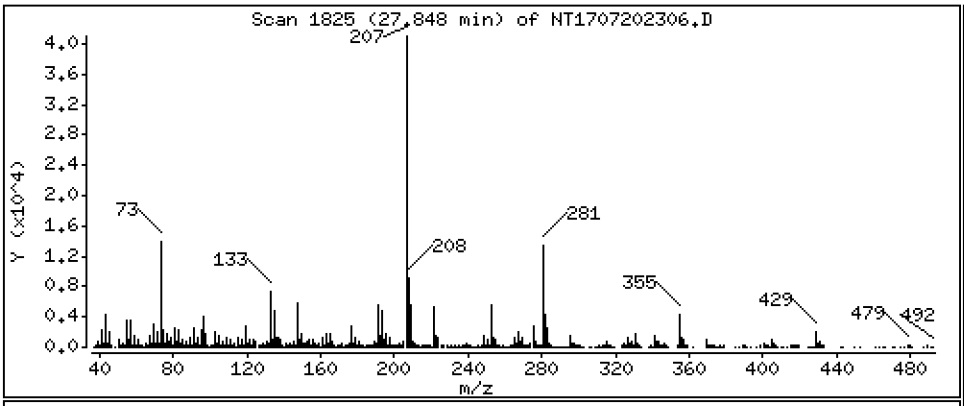
Operator: JGR

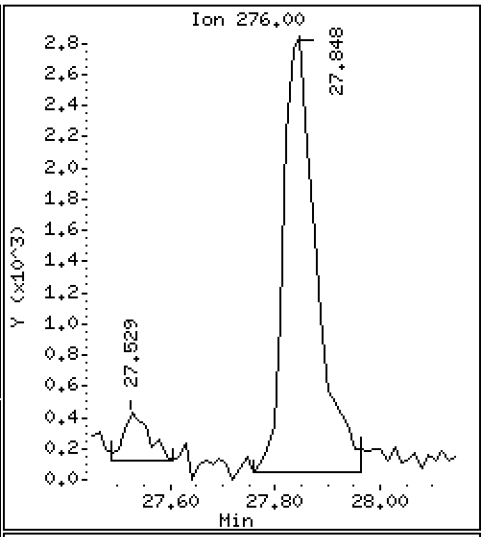
Column phase: ZB-5msi

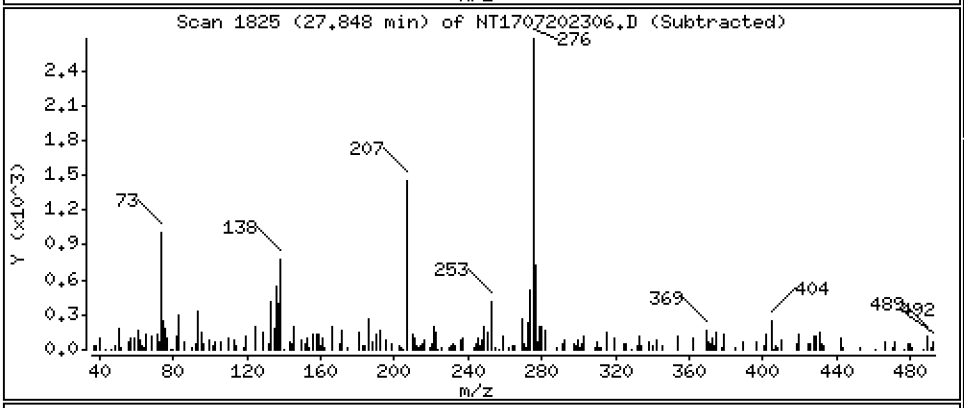
Column diameter: 0.25

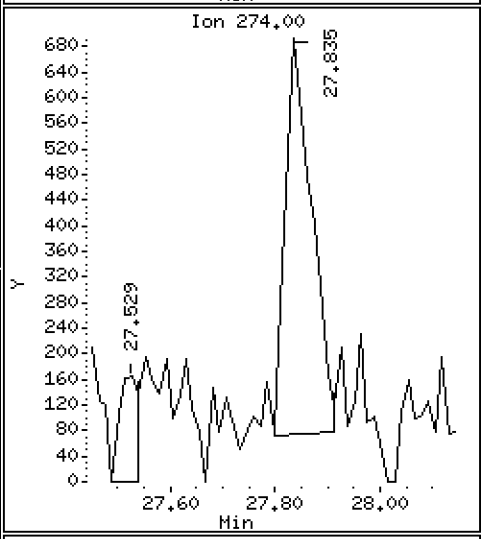
80 Benzo(g,h,i)perylene

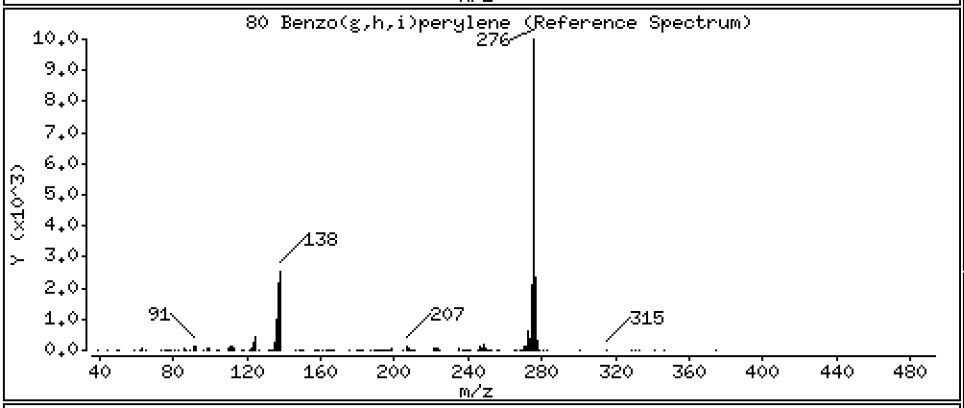
Concentration: 1.438 ug/mL

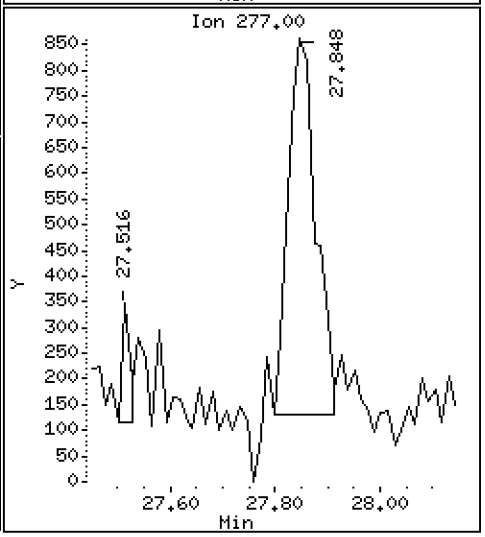


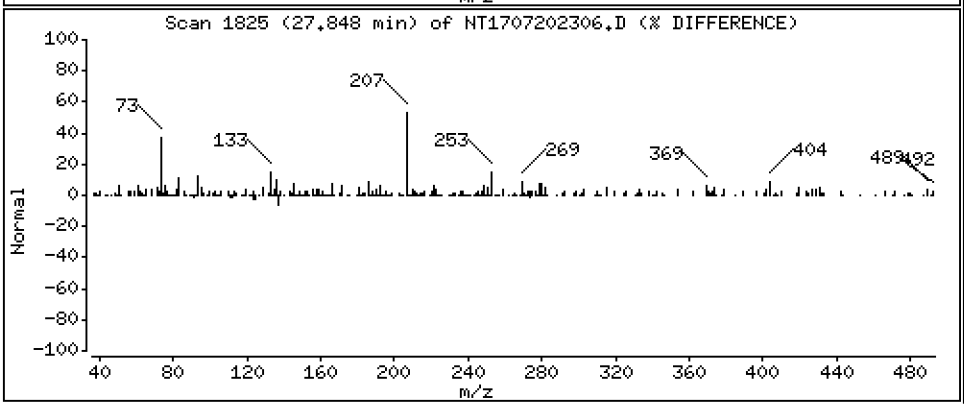












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202306.D

Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

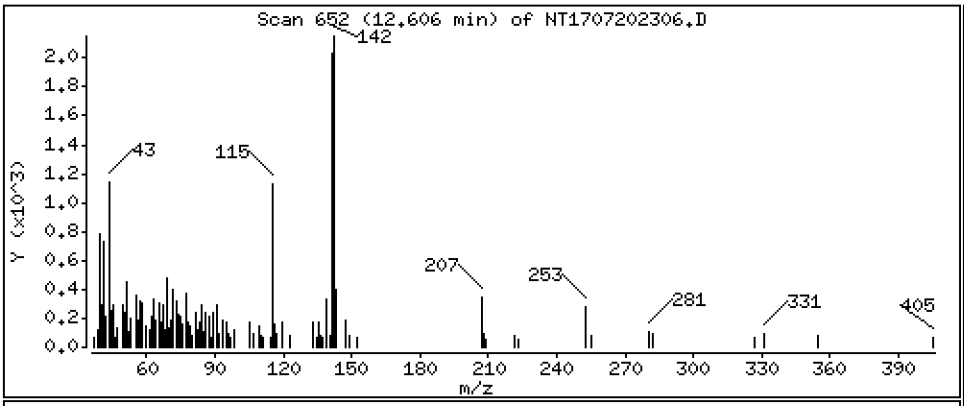
Operator: JGR

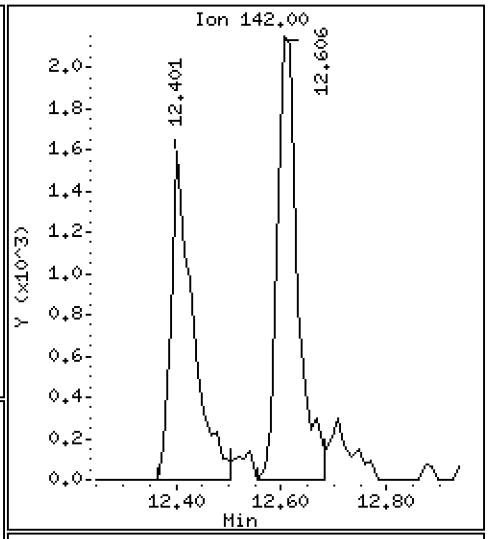
Column phase: ZB-5msi

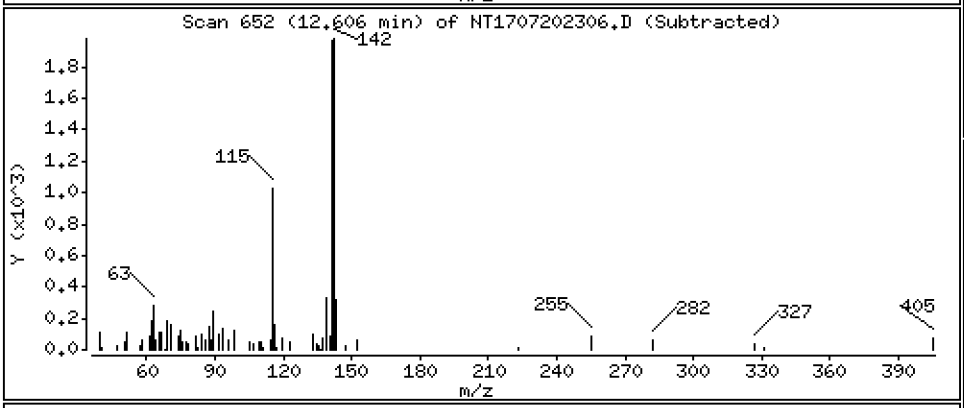
Column diameter: 0.25

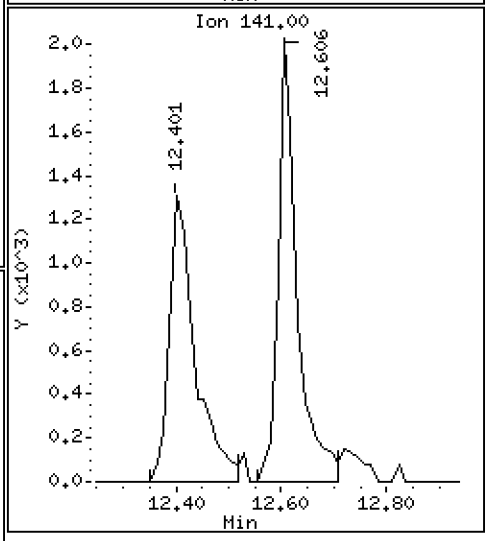
105 1-methylnaphthalene

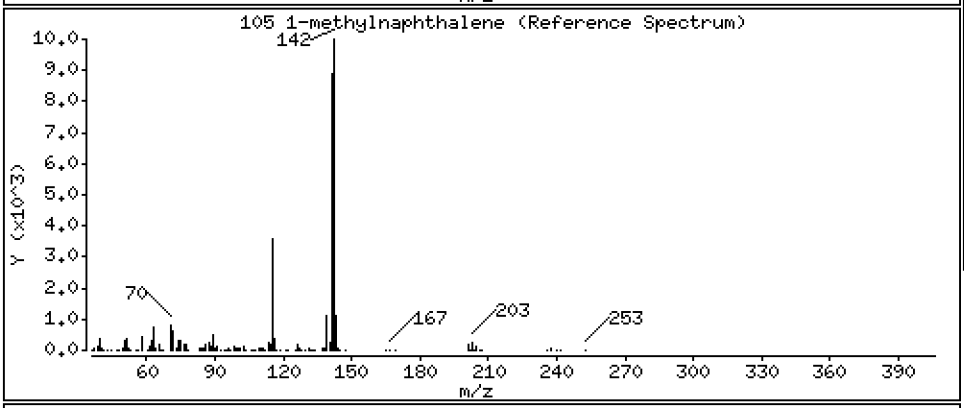
Concentration: 0.5270 ug/mL

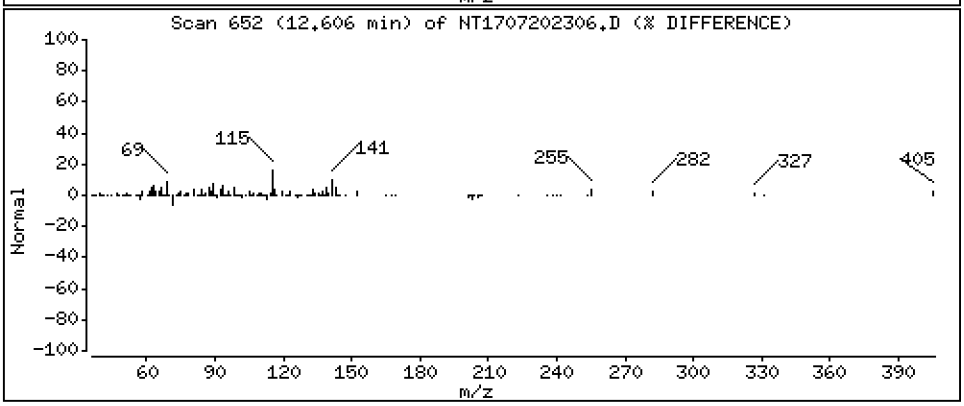












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202306.D

Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

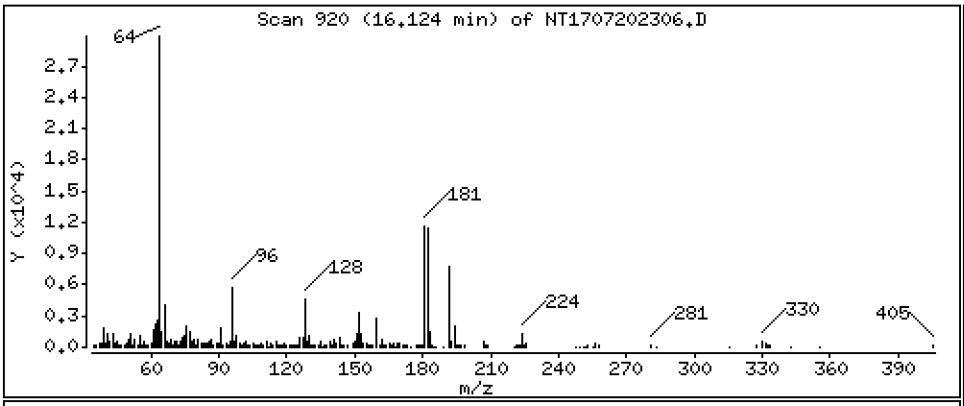
Operator: JGR

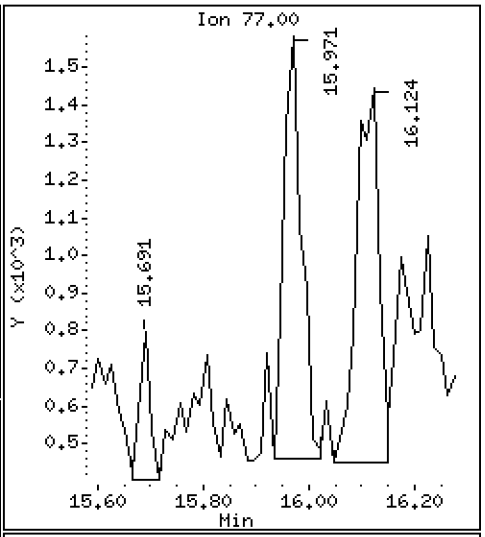
Column phase: ZB-5msi

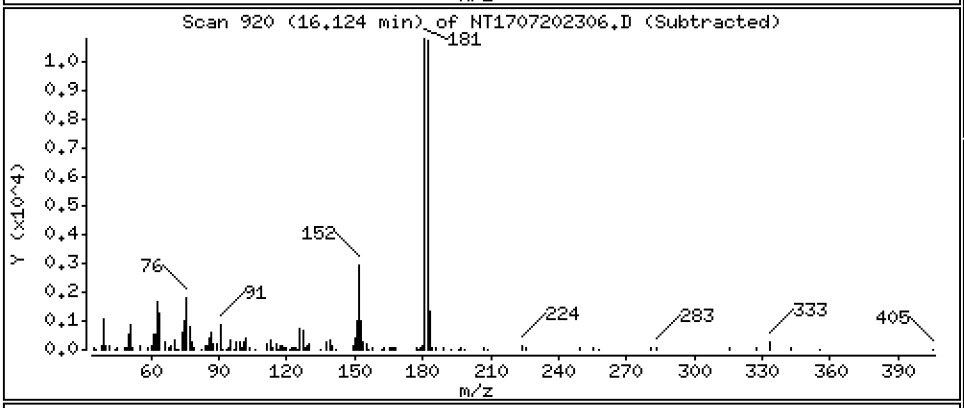
Column diameter: 0.25

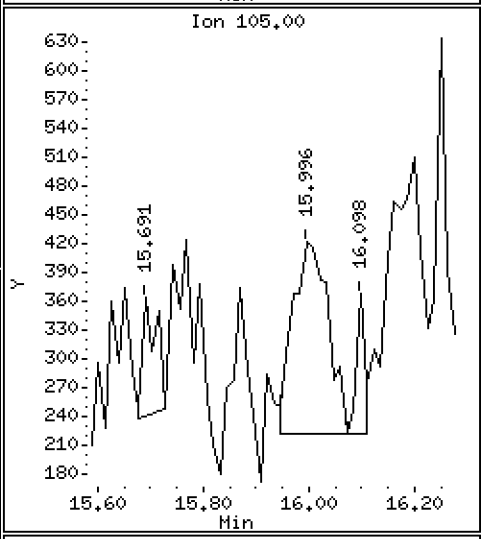
111 Azobenzene (1,2-DP-Hydrazine)

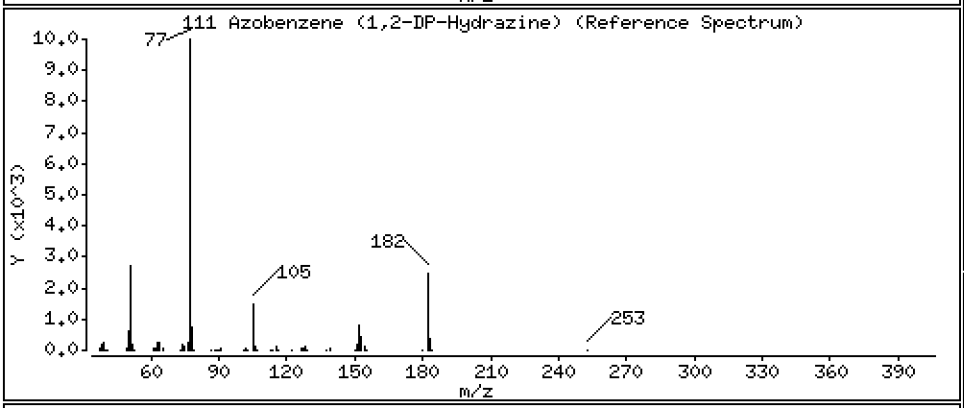
Concentration: 0.1900 ug/mL

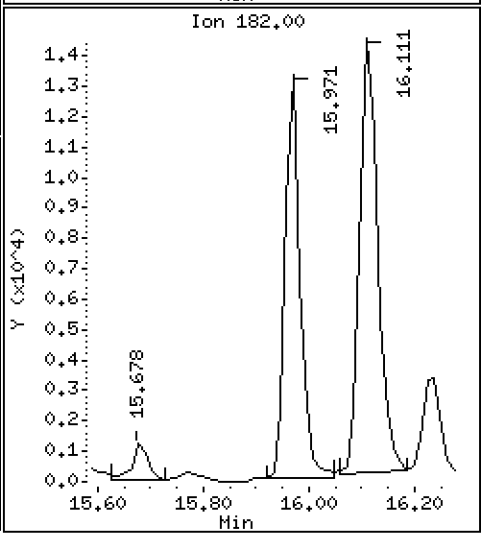


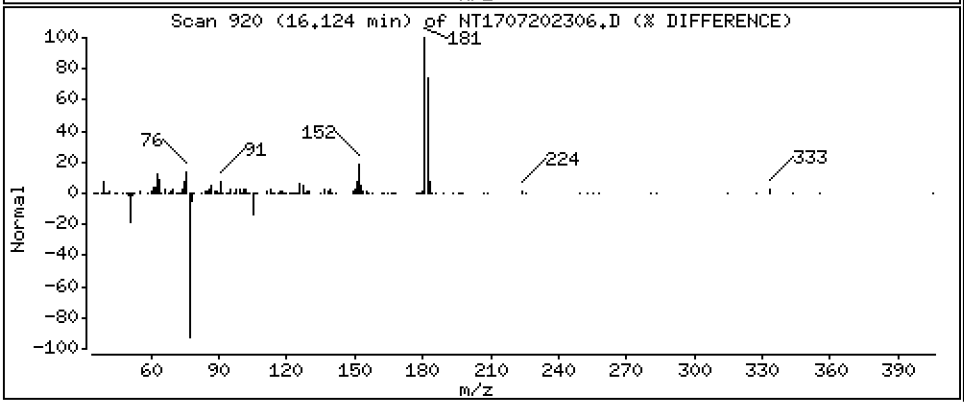












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202306.D

Date : 21-JUL-2023 03:49

Client ID:

Instrument: nt17.i

Sample Info: 23F0536-01RE1

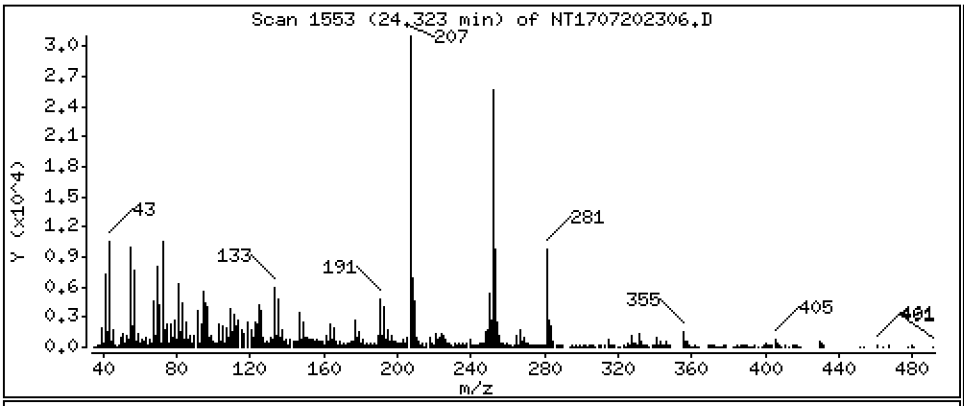
Operator: JGR

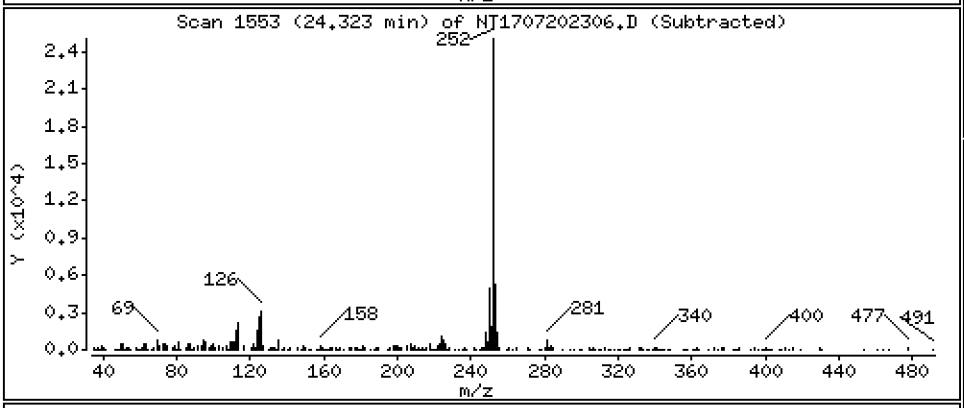
Column phase: ZB-5msi

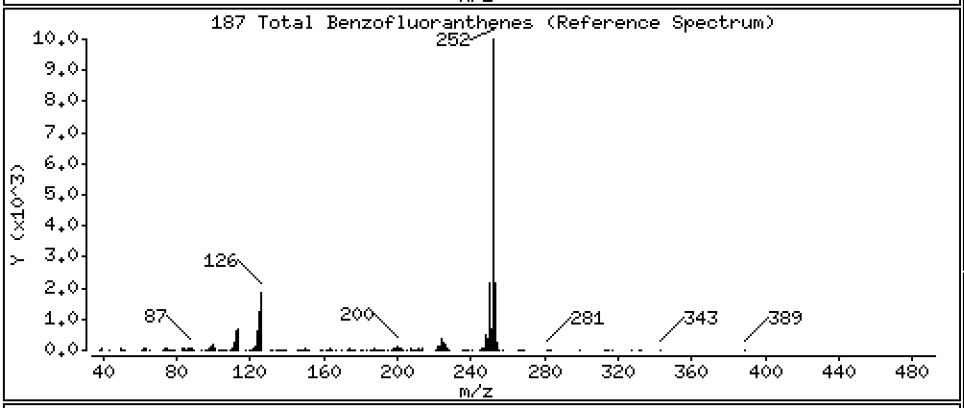
Column diameter: 0.25

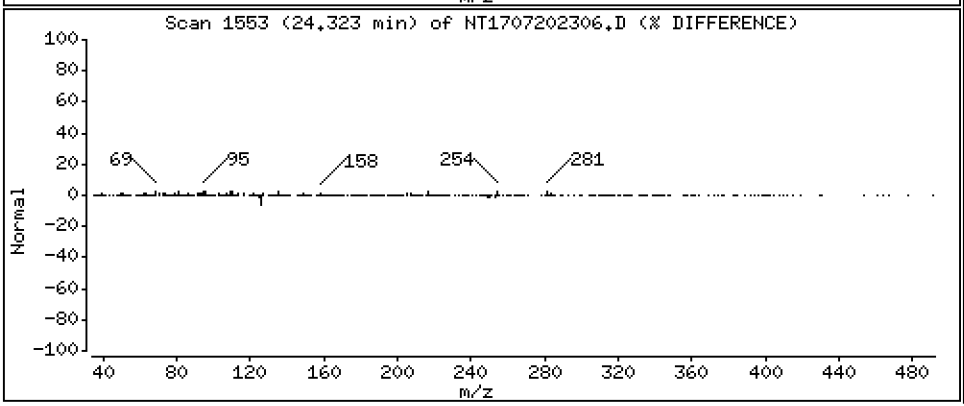
187 Total Benzofluoranthenes

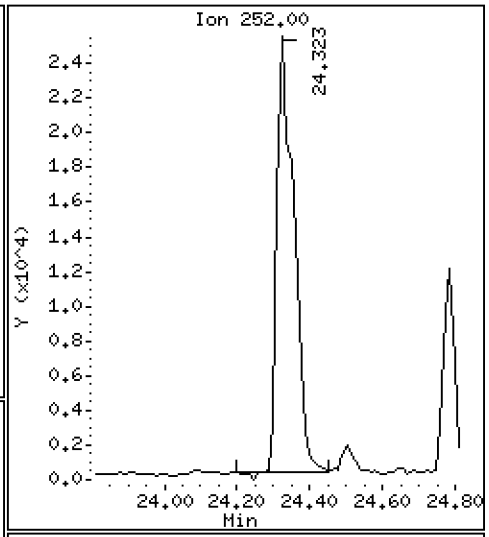
Concentration: 9.695 ug/mL

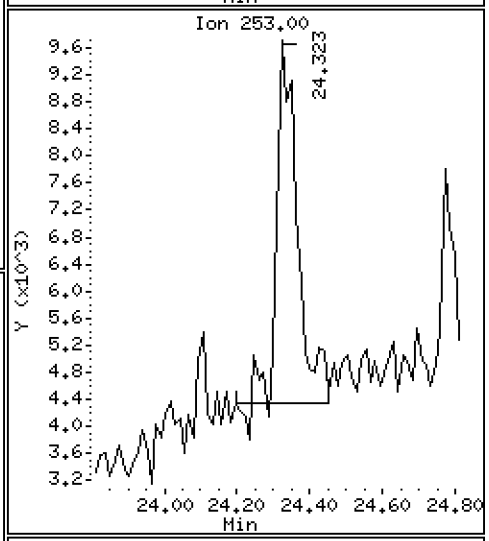


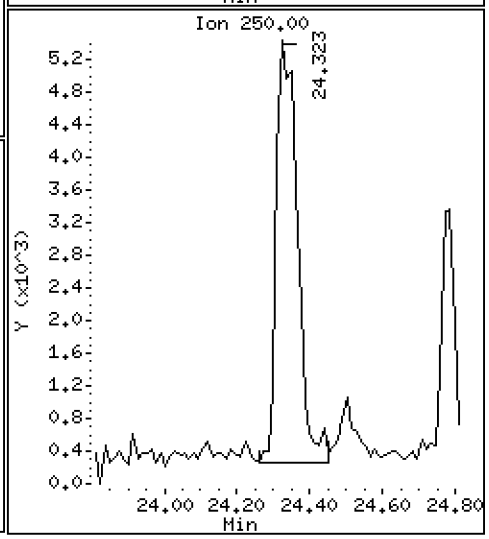












ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt17.i\20230720.b\NT1707202306.D
Lab Smp Id: 23F0536-01RE1
Inj Date : 21-JUL-2023 03:49
Operator : JGR Inst ID: nt17.i
Smp Info : 23F0536-01RE1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt17.i\20230720.b\ABN.m
Meth Date : 21-Jul-2023 14:01 yev Quant Type: ISTD
Cal Date : 10-JUL-2023 16:44 Cal File: NT1707102308.D
Als bottle: 6
Dil Factor: 10.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: ORGDATA102

							CONCENTRATIONS	
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
$	1 2-Fluorophenol	112	6.457	6.406	(0.757)	27082	0.43250	4.325(M)
$	2 Phenol-d5	99	8.024	7.960	(0.940)	40987	0.47208	4.721
	3 Phenol	94	Compound Not Detected.					
$	5 2-Chlorophenol-d4	132	8.228	8.189	(0.964)	37523	0.53125	5.312
	4 Bis(2-Chloroethyl)ether	93	Compound Not Detected.					
	6 2-Chlorophenol	128	Compound Not Detected.					
	7 1,3-Dichlorobenzene	146	Compound Not Detected.					
*	8 1,4-Dichlorobenzene-d4	152	8.534	8.534	(1.000)	177780	4.00000	
	9 1,4-Dichlorobenzene	146	Compound Not Detected.					
$	10 1,2-Dichlorobenzene-d4	152	8.891	8.879	(1.042)	14091	0.32358	3.236
	12 1,2-Dichlorobenzene	146	Compound Not Detected.					
	11 Benzyl alcohol	108	Compound Not Detected.					
	14 2,2'-oxybis(1-Chloropropane)	121	Compound Not Detected.					
	13 2-Methylphenol	108	Compound Not Detected.					
	17 Hexachloroethane	117	Compound Not Detected.					
	16 N-Nitroso-di-n-propylamine	70	Compound Not Detected.					
	15 4-Methylphenol	108	Compound Not Detected.					
$	18 Nitrobenzene-d5	82	9.645	9.607	(0.880)	22851	0.31040	3.104
	19 Nitrobenzene	77	Compound Not Detected.					
	20 Isophorone	82	Compound Not Detected.					
	21 2-Nitrophenol	139	Compound Not Detected.					
	22 2,4-Dimethylphenol	107	Compound Not Detected.					
	23 Bis(2-Chloroethoxy)methane	93	Compound Not Detected.					
	24 Benzoic acid	105	Compound Not Detected.					
	25 2,4-Dichlorophenol	162	Compound Not Detected.					
	26 1,2,4-Trichlorobenzene	180	Compound Not Detected.					
*	27 Naphthalene-d8	136	10.960	10.960	(1.000)	642061	4.00000	
	28 Naphthalene	128	10.999	10.998	(1.003)	5681	0.03179	0.3179
	29 4-Chloroaniline	127	Compound Not Detected.					
	30 Hexachlorobutadiene	225	Compound Not Detected.					
	31 4-Chloro-3-methylphenol	107	Compound Not Detected.					
	32 2-Methylnaphthalene	142	12.401	12.375	(1.131)	4639	0.03734	0.3734(H)
	33 Hexachlorocyclopentadiene	237	Compound Not Detected.					

			QUANT SIG					CONCENTRATIONS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
	34	2,4,6-Trichlorophenol	196	Compound Not Detected.					
	35	2,4,5-Trichlorophenol	196	Compound Not Detected.					
$	36	2-Fluorobiphenyl	172	13.166	13.153	(0.907)	57845	0.47315	4.732
	37	2-Chloronaphthalene	162	Compound Not Detected.					
	38	2-Nitroaniline	65	Compound Not Detected.					
	39	Dimethylphthalate	163	Compound Not Detected.					
	40	Acenaphthylene	152	14.212	14.199	(0.979)	16936	0.10296	1.030
	41	2,6-Dinitrotoluene	165	Compound Not Detected.					
*	42	Acenaphthene-d10	164	14.518	14.518	(1.000)	317525	4.00000	
	43	3-Nitroaniline	138	Compound Not Detected.					
	44	Acenaphthene	153	14.582	14.582	(1.004)	17526	0.17052	1.705
	45	2,4-Dinitrophenol	184	Compound Not Detected.					
	46	Dibenzofuran	168	14.913	14.913	(1.027)	43893	0.30663	3.066
	47	4-Nitrophenol	109	Compound Not Detected.					
	48	2,4-Dinitrotoluene	165	Compound Not Detected.					
	50	Diethylphthalate	149	Compound Not Detected.					
	49	Fluorene	166	15.614	15.614	(1.075)	29370	0.23557	2.356
	51	4-Chlorophenyl-phenylether	204	Compound Not Detected.					
	52	4-Nitroaniline	138	Compound Not Detected.					
	53	4,6-Dinitro-2-methylphenol	198	Compound Not Detected.					
	54	N-Nitrosodiphenylamine	169	Compound Not Detected.					
$	55	2,4,6-Tribromophenol	330	16.149	16.136	(1.112)	12153	0.82727	8.273
	56	4-Bromophenyl-phenylether	248	Compound Not Detected.					
	57	Hexachlorobenzene	284	Compound Not Detected.					
	58	Pentachlorophenol	266	Compound Not Detected.					
*	59	Phenanthrene-d10	188	17.512	17.512	(1.000)	636920	4.00000	
	60	Phenanthrene	178	17.550	17.550	(1.002)	1092293	5.92377	59.24
	61	Anthracene	178	17.652	17.652	(1.008)	14716	0.08607	0.8607(M)
	62	Carbazole	167	17.997	17.996	(1.028)	51414	0.35937	3.594
	63	Di-n-butylphthalate	149	Compound Not Detected.					
	64	Fluoranthene	202	19.960	19.947	(0.884)	927647	7.12457	71.25
	65	Pyrene	202	20.381	20.368	(0.903)	671140	4.56329	45.63
$	66	Terphenyl-d14	244	20.687	20.687	(0.916)	60433	0.59138	5.914
	67	Butylbenzylphthalate	149	Compound Not Detected.					
	68	Benzo(a)anthracene	228	22.550	22.550	(0.999)	23607	0.22687	2.269
*	69	Chrysene-d12	240	22.575	22.575	(1.000)	293987	4.00000	
	70	3,3'-Dichlorobenzidine	252	Compound Not Detected.					
	71	Chrysene	228	22.614	22.613	(1.002)	111036	1.13859	11.39
	72	bis(2-Ethylhexyl)phthalate	149	22.677	22.677	(0.959)	10951	0.15200	1.520
*	134	Di-n-octylphthalate-d4	153	23.647	23.647	(1.000)	508545	4.00000	
	73	Di-n-octylphthalate	149	Compound Not Detected.					
	74	Benzo(b)fluoranthene	252	24.323	24.310	(0.975)	82955	0.89311	8.931
	75	Benzo(k)fluoranthene	252	24.323	24.348	(0.975)	83625	0.88696	8.870
	76	Benzo(a)pyrene	252	24.871	24.859	(0.997)	17135	0.25358	2.536
*	77	Perylene-d12	264	24.948	24.948	(1.000)	250752	4.00000	
	78	Indeno(1,2,3-cd)pyrene	276	27.196	27.157	(1.090)	12227	0.13429	1.343
	79	Dibenzo(a,h)anthracene	278	27.170	27.157	(1.089)	3456	0.04266	0.4266
	80	Benzo(g,h,i)perylene	276	27.848	27.796	(1.116)	12011	0.14377	1.438
	90	N-Nitrosodimethylamine	74	Compound Not Detected.					
	91	Aniline	93	Compound Not Detected.					
	93	Benzidine	184	Compound Not Detected.					
	103	Pyridine	79	Compound Not Detected.					
	105	1-methylnaphthalene	142	12.605	12.592	(1.150)	6059	0.05270	0.5270(H)
	111	Azobenzene (1,2-DP-Hydrazine)	77	16.123	15.932	(1.111)	2969	0.01900	0.1900(H)

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
187 Total Benzofluoranthenes	252	24.323	24.310	(0.975)	80862	0.96950	9.695
120 2,3,4,6-Tetrachlorophenol	232	Compound Not Detected.					

QC Flag Legend

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

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt17.i
Lab File ID: NT1707202306.D
Lab Smp Id: 23F0536-01RE1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt17.i\20230720.b\ABN.m
Misc Info:

Calibration Date: 21-JUL-2023
Calibration Time: 01:21
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	169554	84777	339108	177780	4.85
27 Naphthalene-d8	681387	340694	1362774	642061	-5.77
42 Acenaphthene-d10	390289	195145	780578	317525	-18.64
59 Phenanthrene-d10	698326	349163	1396652	636920	-8.79
69 Chrysene-d12	446763	223382	893526	293987	-34.20
134 Di-n-octylphthala	703373	351687	1406746	508545	-27.70
77 Perylene-d12	323620	161810	647240	250752	-22.52

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	8.53	8.03	9.03	8.53	0.00
27 Naphthalene-d8	10.96	10.46	11.46	10.96	0.00
42 Acenaphthene-d10	14.52	14.02	15.02	14.52	0.00
59 Phenanthrene-d10	17.51	17.01	18.01	17.51	0.00
69 Chrysene-d12	22.58	22.08	23.08	22.58	0.00
134 Di-n-octylphthala	23.65	23.15	24.15	23.65	0.00
77 Perylene-d12	24.95	24.45	25.45	24.95	0.00

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

REVIEW SUMMARY FOR FILE - NT1707202306.D

Lab ID: 23F0536-01RE1
nt17.i, ABN.m, 21-JUL-2023 03:49

RT	CO-ELUTION COMPOUNDS
24.323	Benzo(k)fluoranthene and Benzo(b)fluoranthene

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
1.111	1.097	0.0131	Azobenzene (1,2-DP-Hydrazine)
0.757	0.751	0.0060	2-Fluorophenol
0.940	0.933	0.0075	Phenol-d5

RRT check based on Ccal File: NT1707202302.D

On Column LOD for nt17.i, ABN.m, ICAL.sub = 0.0000

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

Quant Ion Manual Peak Adjustment Report

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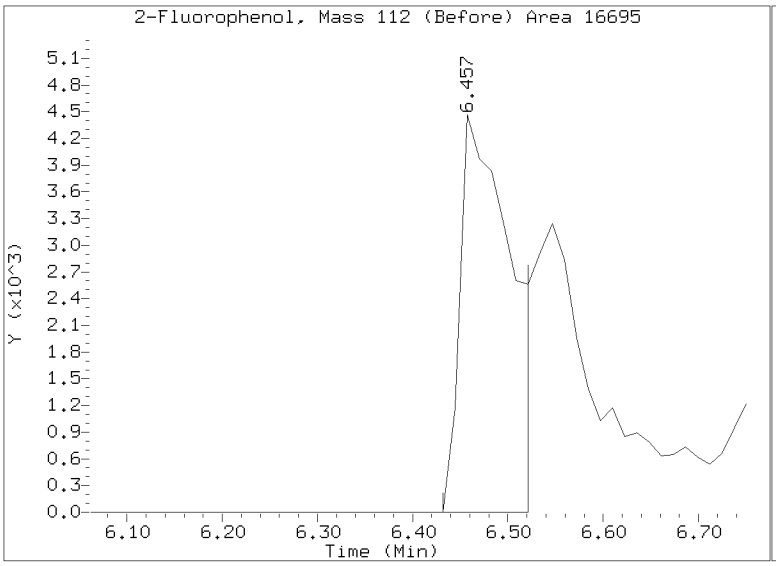
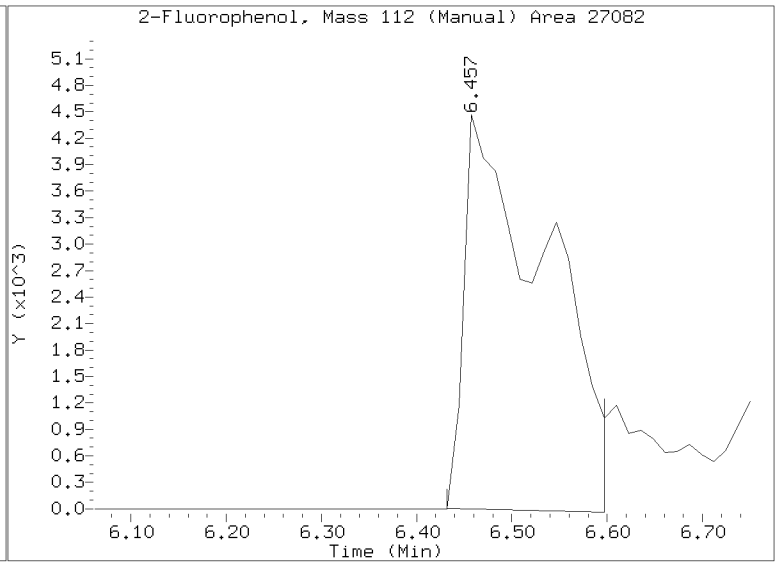
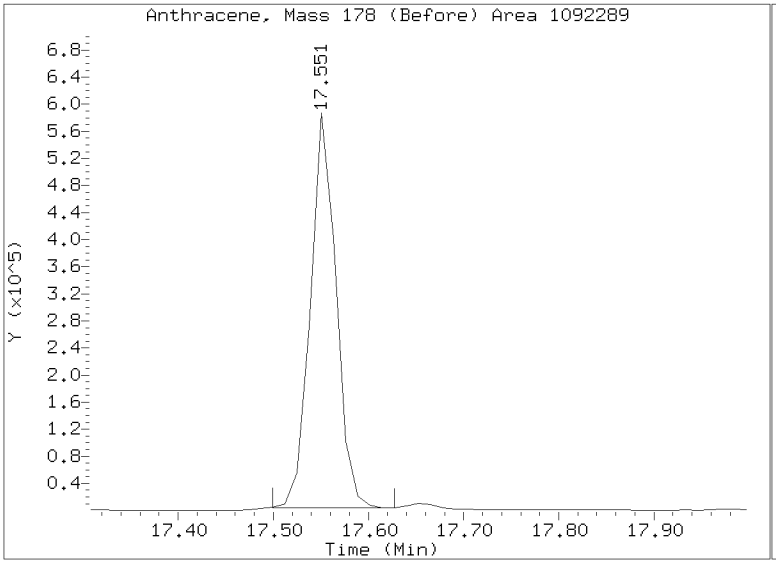
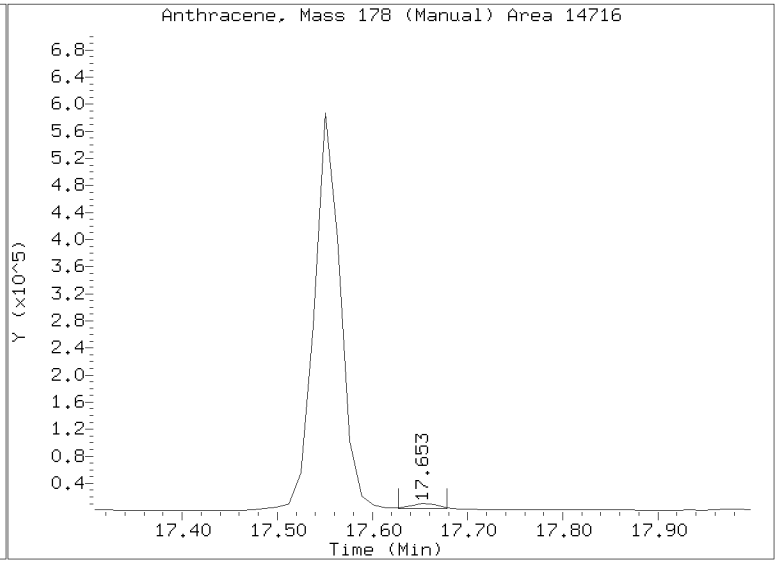
Injection Date: 21-JUL-2023 03:49
Lab ID:23F0536-01RE1 Client ID:
Report Date: 07/21/2023 14:01









PREPARATION BATCH SUMMARY

EPA 8270E

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Batch: BLF0718 Batch Matrix: Solid
Preparation: EPA 3546 (Microwave)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW20-SC148A	23F0536-01	NT1407062355.D	06/28/23 15:16	
LDW20-SC148A	23F0536-01RE1	NT1707202306.D	06/28/23 15:16	Added 7/8/2023 by VTS
Blank	BLF0718-BLK1	NT1407062350.D	06/28/23 15:16	
LCS	BLF0718-BS1	NT1407062349.D	06/28/23 15:16	
LCS Dup	BLF0718-BSD1	NT1407062351.D	06/28/23 15:16	
LDW20-SC148A	BLF0718-MS1	NT1407062353.D	06/28/23 15:16	
LDW20-SC148A	BLF0718-MSD1	NT1407062354.D	06/28/23 15:16	
Reference	BLF0718-SRM1	NT1407062352.D	06/28/23 15:16	

Analytical Resources, LLC
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BLF0718

Prepared using: EPA 3546 (Microwave)

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

Matrix: Solid **Date Prepared:** 06/28/23 **Balance ID:** B14646214 **Set Up By:** CTO 6/26/23

WO Comments

23F0536: <G> Re-logged from frozen archive. Project batch as mcuh as possible </G> <C> SRM, MS, Rep </C> <M> SRM, PS, MS/MSD </M> <E>8270E RM H002055, SIM RM H010158, Pest RM H010158, PCB RM H009325, MS/MSD </E>
<H> RM H009325, Dup </H>
23F0541:

The following standards may be missing from this batch!

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

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

Lab Number & Container	% Solids	Initial (g) Target Dry: 10 (Wet) Actual	(REQ) GPC C/U (1:1) 1 2 3	Water Wash 1mL	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
23F0536-01 A	62.4	(16.03) 16.08 06/28/23	(1:1)	1mL	1 _____	0.5 _____	
23F0541-01 E	68.5	(14.61) 14.67	(1:1)	1mL	1 _____	0.5 _____	
23F0541-02 E	61.6	(16.23) 16.34	(1:1)	1mL	1 _____	0.5 _____	
23F0541-03 E	26.2	(38.20) 38.28	(1:1)	1mL	1 _____	0.5 _____	
23F0541-04 E	35.5	(28.18) 28.23	(1:1)	1mL	1 _____	0.5 _____	
23F0541-05 E	24.5	(40.88) 40.89	(1:1)	1mL	1 _____	0.5 _____	
23F0541-06 E	30.3	(32.99) 32.99	(1:1)	1mL	1 _____	0.5 _____	

Batch QC

Lab Number	% Solids	Initial (g) Target Dry: 10 (Wet) Actual	(REQ) GPC C/U (1:1) 1 2 3	Water Wash 1mL	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
BLF0718-BLK1	100.0	(10.00) 10.00	(1:1)	1mL	1 _____	0.5 _____	Use 5g Neutral Sodium Sulfate for Blanks
BLF0718-BS1	100.0	(10.00) 10.00	(1:1)	1mL	1 _____	0.5 _____	Use 5g Neutral Sodium Sulfate for Blanks
BLF0718-BSD1	100.0	(10.00) 10.00	(1:1)	1mL	1 _____	0.5 _____	Use 5g Neutral Sodium Sulfate for Blanks
BLF0718-MS1	62.4	(16.03) 16.03	(1:1)	1mL	1 _____	0.5 _____	Use 23F0536-01
BLF0718-MSD1	62.4	(16.03) 16.03	(1:1)	1mL	1 _____	0.5 _____	Use 23F0536-01
BLF0718-SRM1	100.0	~~(10.00)~~ (1.00) 1.00	(1:1)	1mL	1 _____	0.5 _____	Use K003477

+1g DI WATER

SH

NG 06/28/23 — Client ID verified By / Date

SH 06/27/23 — Preparation Reviewed By / Date

06/28/23 15:16 — Extraction Date and Time

Printed: 6/26/2023 11:03:33AM

Analytical Resources, LLC
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BLF0718

Prepared using: EPA 3546 (Microwave)

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

WO Comments

23F0536: <G> Re-logged from frozen archive. Project batch as mcuh as possible </G> <C> SRM, MS, Rep </C> <M> SRM, PS, MS/MSD </M> <E>8270E RM H002055, SIM RM H010158, Pest RM H010158, PCB RM H009325, MS/MSD </E>
<H> RM H009325, Dup </H>
23F0541:

Prep Steps

Microwave
1 2 3
CT
Analyst/Date 06/29/23

Pre-GPC KD
100°C
Exchange to Hexane
(add 10 mL to KD)
0 2 4 5 6
Analyst/Date 6/29/23

TurboVap
Pre GPC
1 2 3 4 5
Analyst/Date 6/7/23

Post GPC KD
80-85°C
0 2 4 5 6
Analyst/Date 7/7/23

TurboVap
1 2 3 4 5
Analyst/Date 7/7/23

Water Wash
Analyst/Date 7/7/23

Reagents Used

Station/Reagent	Standard ID
Microwave Analyst: CT Date: 06/29/23	
Anhydrous Sodium Sulfate	L006787
1:1 Methylene Chloride/Acetone	L006534
Methylene Chloride	L006262
Pre-Deactivated Glass Wool	L006744
Pre GPC KD Analyst: CT Date: 6/29/23	
Pre-Deactivated Glass Wool	—
Anhydrous Sodium Sulfate	—
Methylene Chloride	L002621
Hexane	L006866
GPC Filter Prep Analyst: MW Date: 7/5/23	
Methylene Chloride	L002621
GPC Filter	L001749
GPC Analyst: MW Date: 7/6/23	
Methylene Chloride	L005741
GPC Calibration File	CL00132
Post GPC KD Analyst: CR Date: 7/7/23	
Methylene Chloride	L005741
Vialing Analyst: SH Date: 07/07/23	
Methylene Chloride	L006741

Surrogates & Spike Standards Used

Type	Vial ID / Standard ID	Vol uL	Analyst	Witness
Surrogate 100/150µg/mL	A L005074 Exp Date: 5/8/2024	50µL	CT	
Full List Spike (Freezer) 100µg/mL	7 L001812 (V) Exp Date: 8/4/2023 L006178	50µL	CT	
Base Spike 200µg/mL	56 L001812 (V) Exp Date: L006178 8/24/2023	50µL	CT	
Acid Spike 100/200µg/mL	38 L001812 (V) Exp Date: L006177 8/24/2023	50µL	CT	

MANUALLY ENTER EXPIRATION DATES!

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

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

Analytical Resources, LLC
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BLF0718

Prepared using: EPA 3546 (Microwave)

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

WO Comments

23F0536: <G> Re-logged from frozen archive. Project batch as much as possible </G> <C> SRM, MS, Rep </C> <M> SRM, PS, MS/MSD </M> <E>8270E RM H002055, SIM RM H010158, Pest RM H010158, PCB RM H009325, MS/MSD </E>
<H> RM H009325, Dup </H>
23F0541:

Prep Instructions	
SPECIAL INSTRUCTIONS: 1. Weigh into beakers-lightly dry with Sodium Sulfate. 2. Transfer to microwave vessel. 3. Add DCM ONLY to the vessels (until solvent is 3 inches above soil layer after homogenization). 4. Add surr/spike. 5. Microwave on appropriate power setting determined by # of samples. 6. After microwave-re-homogenize while hot then let cool 10-15 min in Refridgerator 05. Re-homogenize while cool. 7. Decant DCM into Erlenmeyer flask with a funnel containing pre-deactivated glasswool. 8. Rinse with DCM 9. Microwave a 2nd time using 1:1 DCM/ACE. 10. Let cool and decant the solvent then empty the soil into the funnel and rinse with DCM. 11. KD: Add 10 mL Hexane directly to extract in the KD. 12. GPC REQUIRED 100°C water bath (CLP) KD to 5mL. 13. Vialers to take 1:5 Split Pre- GPC. 14. (After GPC): KD at 80°C. 15. TurboVap to 1mL in DCM. 16. WATER WASH REQUIRED: 16a. Vial 1mL of all extracts in 2mL amber vials in DCM. 16b. Add ~0.5mL DI water and vortex for ~5 seconds each. 16c. Centrifuge extracts for 5 minutes at 1500-2000rpm. 16d. Transfer and vial 0.5mL to new 2mL amber vials (Avoiding collecting water in syringe and cleaning syringe with Acetone and DCM between each vial). 17. Archive water wahed vials and deliever new vials to GC Department for analysis. A. Need Total Solids Y / N B. Archive/Freeze Y / N	

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Analytical Chemists and
Consultants

Organic Extractions Laboratory
Analyst Notes

Extraction Parameter: SVOA Extraction Batch: BLF0678

Total Solids Batch: BLF0688 Work Order(s): 23F0519, 528, 536

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
[X] No Anomalies (standard soil/wet sediment/sand/gravel)= 23F0519 =Φ.2, 534 =Φ1	MJ 06/24/23
[X] Standing Water Decanted (Not shared)= 536 =Φ1	MJ 06/24/23
[ ] Standing Water Homogenized (Shared samples)=	
[ ] Clay/Clumps (Difficult to homogenize)=	
[ ] Rocks (%+size)?	
[X] Organics (Leaves/sticks/grass)= 20.1 528 =Φ1	MJ 06/24/23
[ ] Oily, obvious fuel/sulfur odors=	
[ ] Received in 32oz jar(s)=Homogenized in Pyrex dish=	
[ ] Previously Frozen =	
[ ] Other (Details)=	
Aqueous:	
[ ] No Anomalies	
[ ] Turbid/Color=	
[ ] Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
[ ] Emulsions (%)=	
[ ] Oily, obvious fuel/sulfur odors=	
[ ] Other (Details)=	
[ ] Received in 1.0L Bottle(s)=No Bottle Rinse=	
[ ] Other Notes/Comments= (Note problems, concerns, corrective actions).	
[X] Share Samples Y / N 23F0524 =Φ1.	MJ 06/24/23
[X] Multiple Jars Y / N	MJ 06/24/23
[ ] Sample Pre-Screens indicate analyte activity=	
[ ] Sample weights/volumes reduced based on Pre-Screen=	

3056F

Incorporated
Analytical Chemists and
Consultants

Organic Extractions Laboratory
Analyst Notes

Extraction Parameter: SVOA Extraction Batch BLF0918

Total Solids Batch: ~~N/A~~ BLF0687 Work Order(s): 23F0541

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☒ No Anomalies (standard soil/wet sediment/sand/gravel)= ϕ1, ϕ3–ϕ6.	AJ ϕ6/24/23
☒ Standing Water Decanted (Not shared)= ϕ1 – ϕ6.	AJ ϕ6/24/23
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%÷size)?	
☒ Organics (Leaves/sticks/grass)= 30.1% ϕ2.	AJ ϕ6/24/23
☐ Oily, obvious fuel/sulfur odors=	
☐ Received in 32oz jar(s)=Homogenized in Pyrex dish=	
☐ Previously Frozen =	
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☐ Received in 1.0L Bottle(s)=No Bottle Rinse=	
☐ Other Notes/Comments= (Note problems, concerns, corrective actions).	
☒ Share Samples Y / N	AJ ϕ6/24/23
☒ Multiple Jars Y / N ϕ1 – ϕ5 X2.	AJ ϕ6/24/23
☐ Sample Pre-Screens indicate analyte activity=	
☐ Sample weights/volumes reduced based on Pre-Screen=	

CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CLG0035	Cleanup Type:	GPC
Cleanup Method:	EPA 3640A GPC Cleanup 1:1	Analysis:	EPA 8270E

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LCS	BLF0718-BS1	NT1407062349.D	07/07/2023	
Reference	BLF0718-SRM1	NT1407062352.D	07/07/2023	
Blank	BLF0718-BLK1	NT1407062350.D	07/07/2023	
LCS Dup	BLF0718-BSD1	NT1407062351.D	07/07/2023	
Matrix Spike	BLF0718-MS1	NT1407062353.D	07/07/2023	
LDW20-SC148A	23F0536-01	NT1407062355.D	07/07/2023	
Matrix Spike Dup	BLF0718-MSD1	NT1407062354.D	07/07/2023	

Analytical Resources, LLC
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CLG0035

Matrix: Solid **Cleanup using: Organics - EPA 3640A GPC Cleanup 1:1** **Check Standard: CLB0132-GPC2** **Printed: 7/7/2023 5:22:47PM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23F0536-01	A	LDW20-SC148A	A 02	1	1	SVOC (20ug/kg solid or 0.2ug/L low H2	7/7/2023	SH	
23F0541-01	E	WEST 1	E 03	1	1	SVOC (20ug/kg solid or 0.2ug/L low H2	7/7/2023	SH	
23F0541-02	E	WEST 2	E 03	1	1	SVOC (20ug/kg solid or 0.2ug/L low H2	7/7/2023	SH	
23F0541-03	E	EAST 1	E 03	1	1	SVOC (20ug/kg solid or 0.2ug/L low H2	7/7/2023	SH	
23F0541-04	E	EAST2	E 03	1	1	SVOC (20ug/kg solid or 0.2ug/L low H2	7/7/2023	SH	
23F0541-05	E	MID 1	E 03	1	1	SVOC (20ug/kg solid or 0.2ug/L low H2	7/7/2023	SH	
23F0541-06	E	MID 2	E 03	1	1	SVOC (20ug/kg solid or 0.2ug/L low H2	7/7/2023	SH	
BLF0718-BLK1	-	Blank	-	1	1	-	7/7/2023	SH	
BLF0718-BS1	-	LCS	-	1	1	-	7/7/2023	SH	
BLF0718-BSD1	-	LCS Dup	-	1	1	-	7/7/2023	SH	
BLF0718-MS1	-	Matrix Spike	-	1	1	-	7/7/2023	SH	
BLF0718-MSD1	-	Matrix Spike Dup	-	1	1	-	7/7/2023	SH	
BLF0718-SRM1	-	Reference	-	1	1	-	7/7/2023	SH	

Analytical Resources, LLC
Analytical Chemists and Consultants

Form I

METHOD BLANK DATA SHEET

EPA 8270E

Blank

Laboratory:	Analytical Resources, LLC			SDG:	23F0536
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Solid	Laboratory ID:	BLF0718-BLK1	File ID:	NT1407062350.D
Sampled:	N/A	Prepared:	06/28/23 15:16	Analyzed:	07/07/23 20:07
Solids:		Preparation:	EPA 3546 (Microwave)	Initial/Final:	10 g / 1 mL
Batch:	BLF0718	Sequence:	SLG0081	Calibration:	GF00097
Instrument:	NT14	Column:	ZB-5MS	Cleanups:	GPC

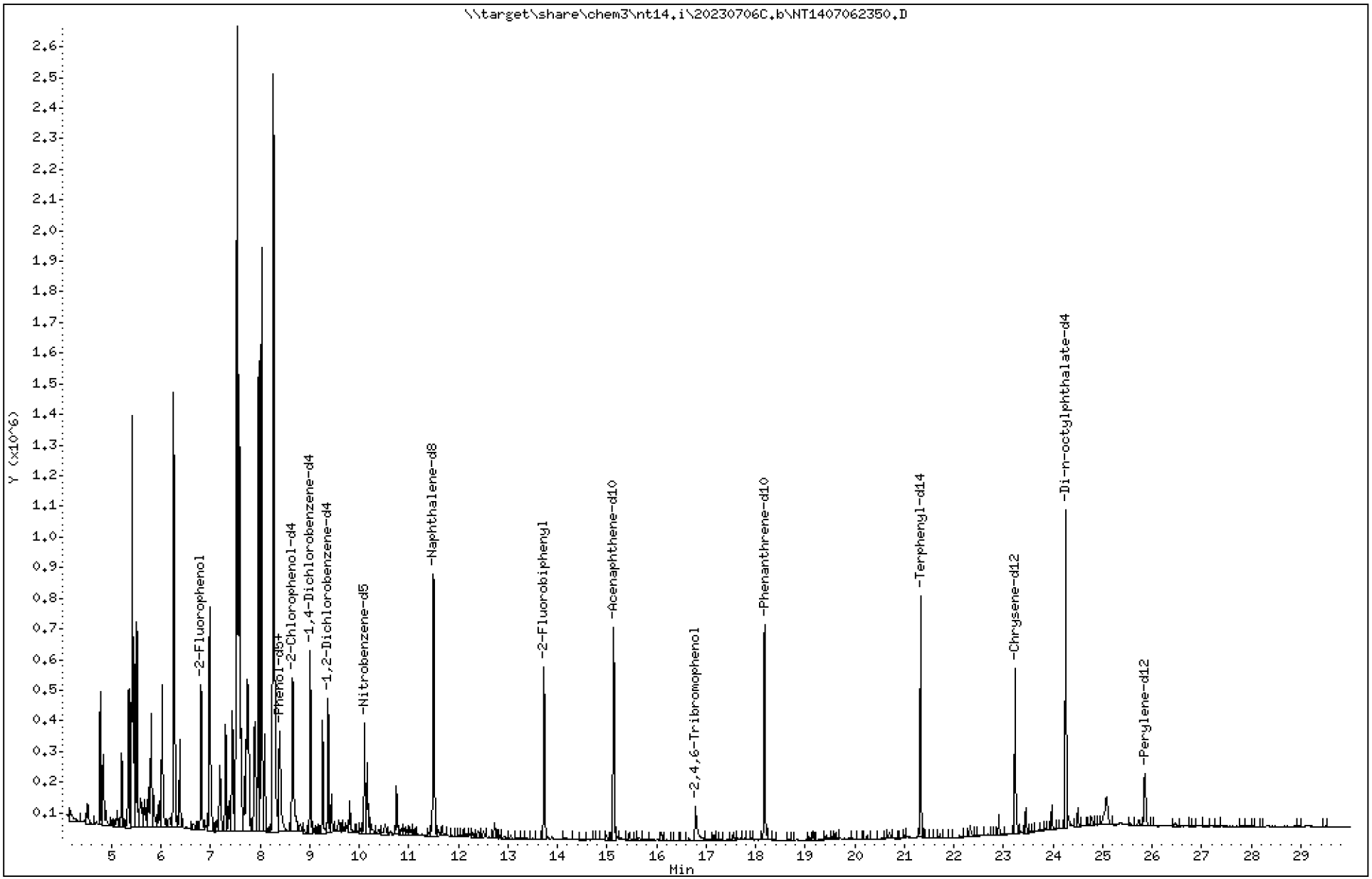
CAS NO.	COMPOUND	DILUTION	CONC: (ug/kg wet)	Q	DL	RL
91-20-3	Naphthalene	1	20.0	U	4.2	20.0
91-57-6	2-Methylnaphthalene	1	20.0	U	4.5	20.0
208-96-8	Acenaphthylene	1	20.0	U	6.2	20.0
83-32-9	Acenaphthene	1	20.0	U	5.2	20.0
86-73-7	Fluorene	1	20.0	U	14.6	20.0
85-01-8	Phenanthrene	1	20.0	U	8.7	20.0
120-12-7	Anthracene	1	20.0	U	7.2	20.0
206-44-0	Fluoranthene	1	20.0	U	6.1	20.0
129-00-0	Pyrene	1	20.0	U	5.7	20.0
56-55-3	Benzo(a)anthracene	1	20.0	U	6.0	20.0
218-01-9	Chrysene	1	20.0	U	6.1	20.0
	Benzofluoranthenes, Total	1	40.0	U	21.0	40.0
50-32-8	Benzo(a)pyrene	1	20.0	U	4.2	20.0
193-39-5	Indeno(1,2,3-cd)pyrene	1	20.0	U	14.7	20.0
53-70-3	Dibenzo(a,h)anthracene	1	20.0	U	17.2	20.0
191-24-2	Benzo(g,h,i)perylene	1	20.0	U	13.6	20.0

SURROGATES	ADDED: (ug/kg wet)	FOUND: (ug/kg wet)	% REC	QC LIMITS	Q
1,2-Dichlorobenzene-d4	500.00	284	56.8	32 - 120	
Nitrobenzene-d5	500.00	300	60.0	30 - 120	
2-Fluorobiphenyl	500.00	306	61.2	35 - 120	
p-Terphenyl-d14	500.00	494	98.9	37 - 120	

Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062350.D
Date : 07-JUL-2023 20:07
Client ID:
Sample Info: BLF0718-BLK1

Instrument: nt14.i
Operator: JGR
Column diameter: 0.25

Column phase: ZB-5msi



Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062350.D

Date : 07-JUL-2023 20:07

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BLK1

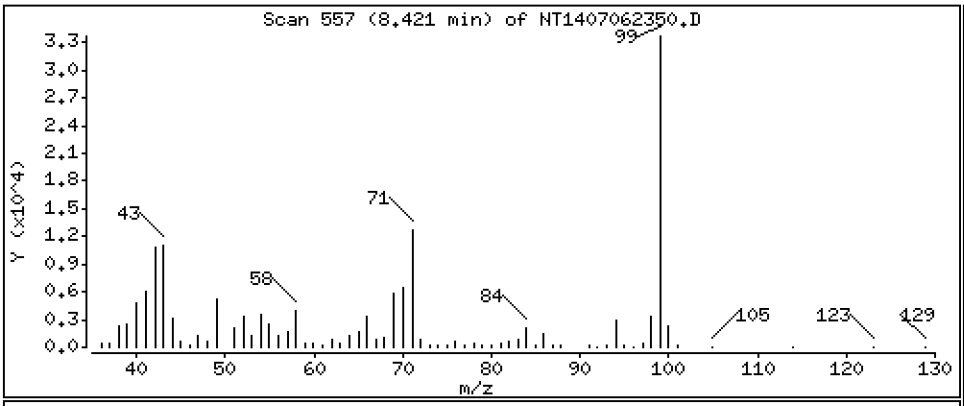
Operator: JGR

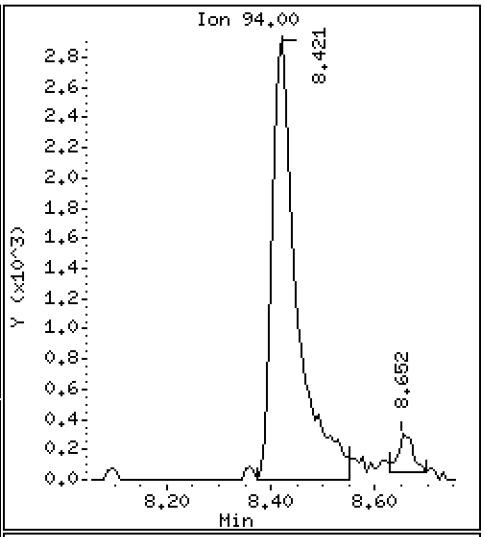
Column phase: ZB-5msi

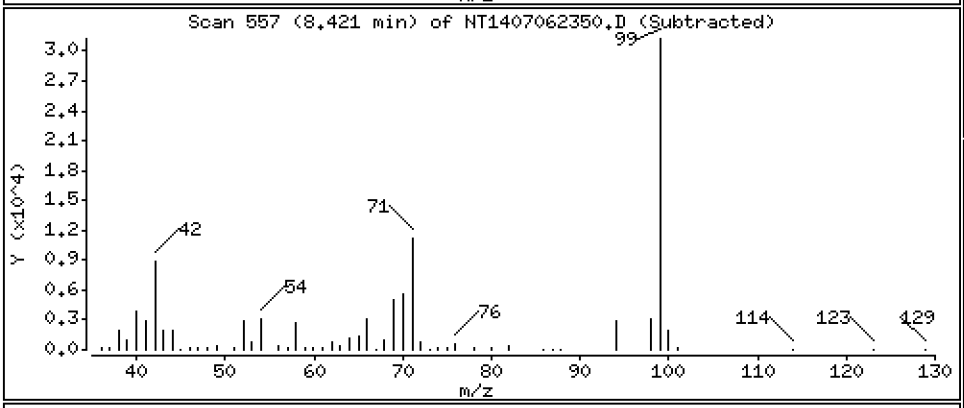
Column diameter: 0.25

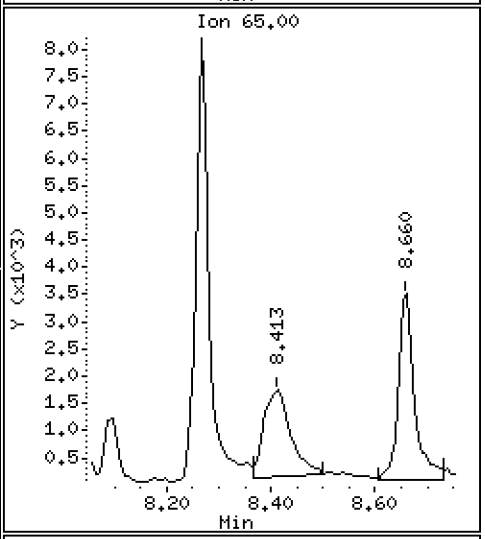
3 Phenol

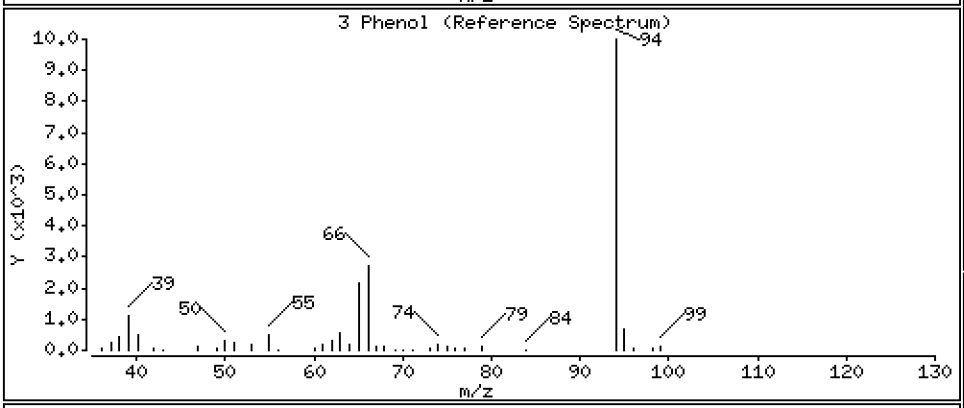
Concentration: 0.1149 ug/mL

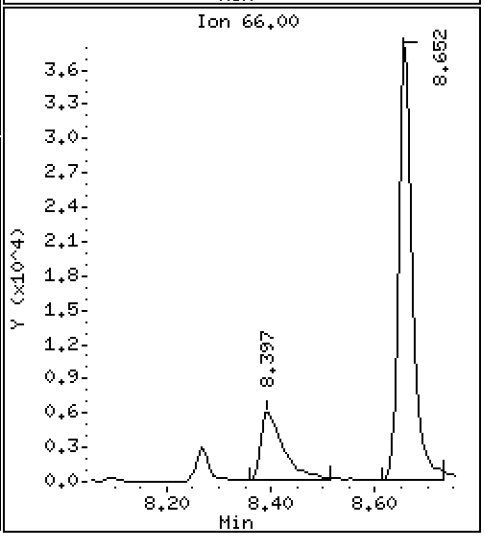


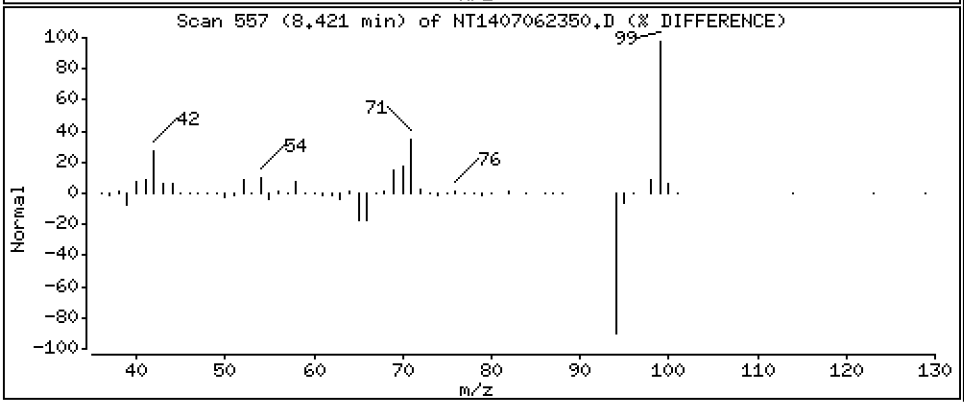












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Date : 07-JUL-2023 20:07

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BLK1

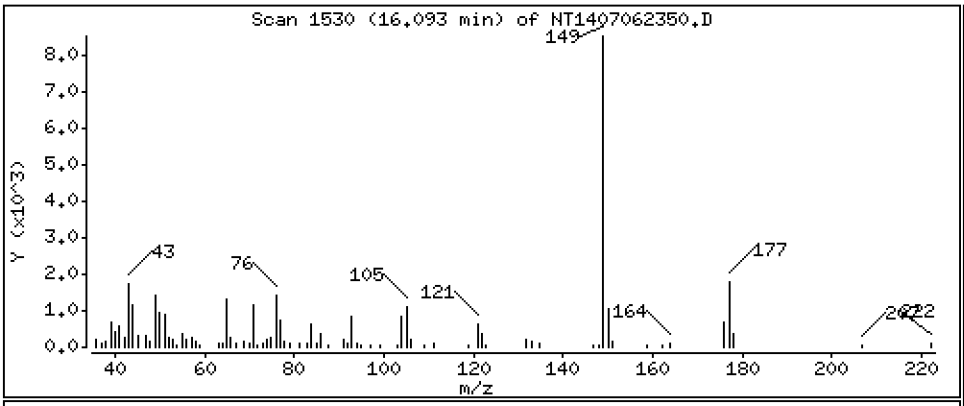
Operator: JGR

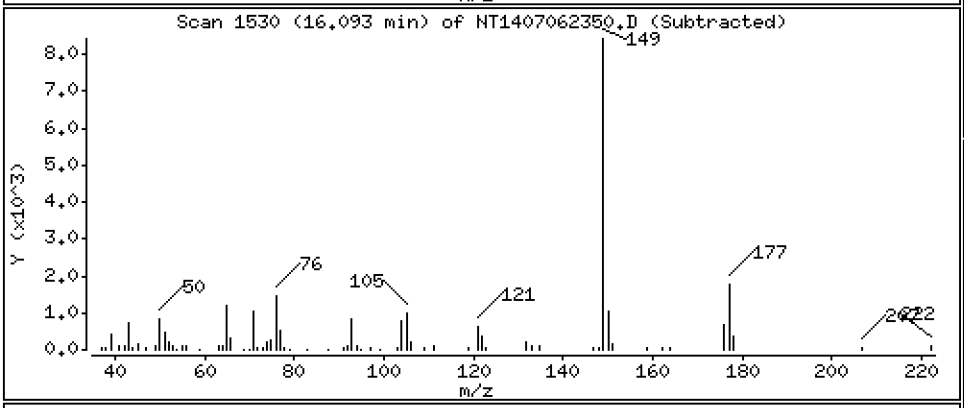
Column phase: ZB-5msi

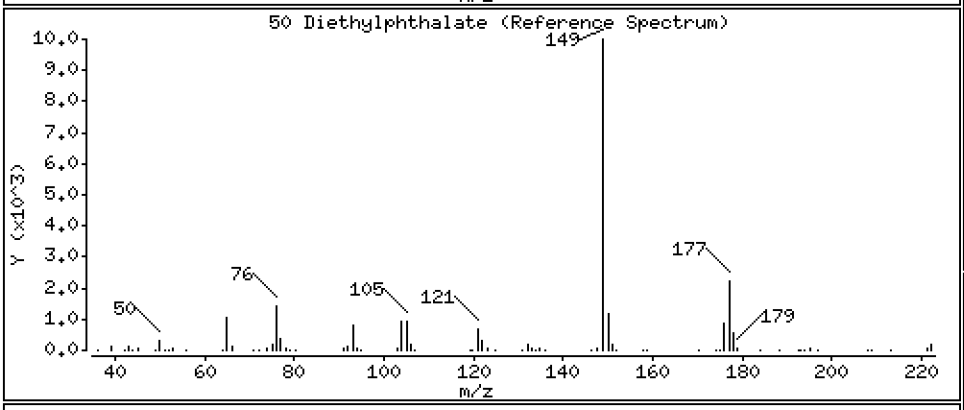
Column diameter: 0.25

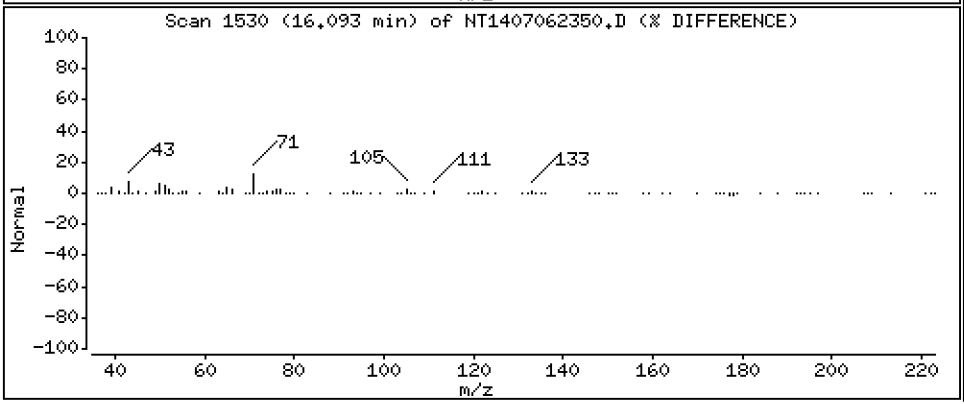
50 Diethylphthalate

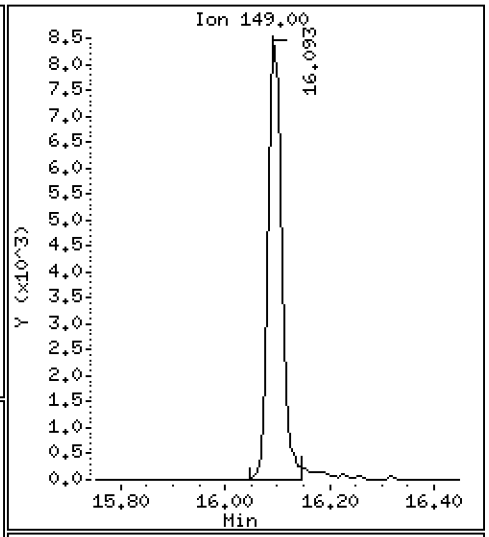
Concentration: 0.1459 ug/mL

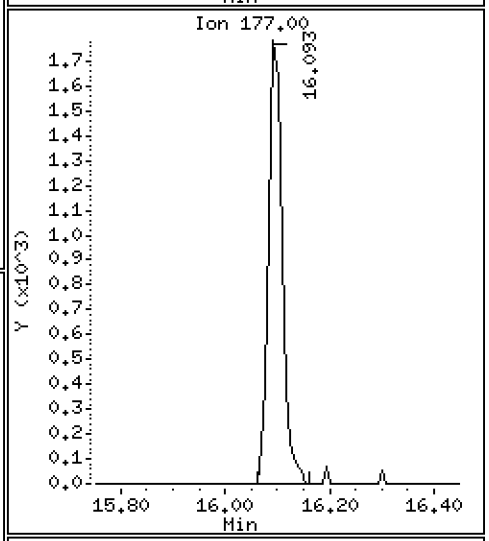


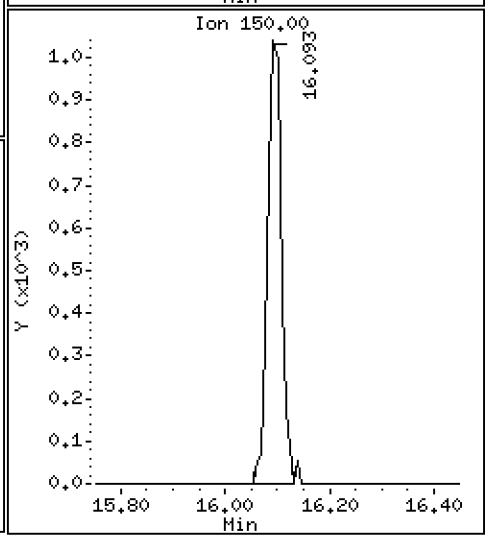












ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230706C.b\NT1407062350.D
Lab Smp Id: BLF0718-BLK1
Inj Date : 07-JUL-2023 20:07 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : BLF0718-BLK1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Meth Date : 08-Jul-2023 11:17 van Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 33
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: VANS-201906

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
$	1 2-Fluorophenol	112	6.805	6.798	(0.755)	188189	3.66880	3.669
$	2 Phenol-d5	99	8.389	8.382	(0.931)	258519	3.71790	3.718
	3 Phenol	94	8.420	8.405	(0.934)	9676	0.11492	0.1149
$	5 2-Chlorophenol-d4	132	8.659	8.652	(0.960)	218972	4.26130	4.261
	4 Bis(2-Chloroethyl)ether	93	Compound Not Detected.					
	6 2-Chlorophenol	128	Compound Not Detected.					
	7 1,3-Dichlorobenzene	146	Compound Not Detected.					
*	8 1,4-Dichlorobenzene-d4	152	9.016	9.016	(1.000)	135149	4.00000	
	9 1,4-Dichlorobenzene	146	Compound Not Detected.					
$	10 1,2-Dichlorobenzene-d4	152	9.373	9.373	(1.040)	92293	2.83945	2.839
	12 1,2-Dichlorobenzene	146	Compound Not Detected.					
	11 Benzyl alcohol	108	Compound Not Detected.					
	14 2,2'-oxybis(1-Chloropropane)	121	Compound Not Detected.					
	13 2-Methylphenol	108	Compound Not Detected.					
	17 Hexachloroethane	117	Compound Not Detected.					
	16 N-Nitroso-di-n-propylamine	70	Compound Not Detected.					
	15 4-Methylphenol	108	Compound Not Detected.					
$	18 Nitrobenzene-d5	82	10.110	10.110	(0.879)	191316	2.99777	2.998
	19 Nitrobenzene	77	Compound Not Detected.					
	20 Isophorone	82	Compound Not Detected.					
	21 2-Nitrophenol	139	Compound Not Detected.					
	22 2,4-Dimethylphenol	107	Compound Not Detected.					
	23 Bis(2-Chloroethoxy)methane	93	Compound Not Detected.					
	24 Benzoic acid	105	Compound Not Detected.					
	25 2,4-Dichlorophenol	162	Compound Not Detected.					
	26 1,2,4-Trichlorobenzene	180	Compound Not Detected.					
*	27 Naphthalene-d8	136	11.505	11.505	(1.000)	541064	4.00000	
	28 Naphthalene	128	Compound Not Detected.					
	29 4-Chloroaniline	127	Compound Not Detected.					
	30 Hexachlorobutadiene	225	Compound Not Detected.					
	31 4-Chloro-3-methylphenol	107	Compound Not Detected.					
	32 2-Methylnaphthalene	142	Compound Not Detected.					
	33 Hexachlorocyclopentadiene	237	Compound Not Detected.					

			QUANT SIG					CONCENTRATIONS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
	34	2,4,6-Trichlorophenol	196	Compound Not Detected.					
	35	2,4,5-Trichlorophenol	196	Compound Not Detected.					
$	36	2-Fluorobiphenyl	172	13.733	13.733	(0.907)	283865	3.06248	3.062
	37	2-Chloronaphthalene	162	Compound Not Detected.					
	38	2-Nitroaniline	65	Compound Not Detected.					
	39	Dimethylphthalate	163	Compound Not Detected.					
	40	Acenaphthylene	152	Compound Not Detected.					
	41	2,6-Dinitrotoluene	165	Compound Not Detected.					
*	42	Acenaphthene-d10	164	15.134	15.134	(1.000)	260252	4.00000	
	43	3-Nitroaniline	138	Compound Not Detected.					
	44	Acenaphthene	153	Compound Not Detected.					
	45	2,4-Dinitrophenol	184	Compound Not Detected.					
	46	Dibenzofuran	168	Compound Not Detected.					
	47	4-Nitrophenol	109	Compound Not Detected.					
	48	2,4-Dinitrotoluene	165	Compound Not Detected.					
	50	Diethylphthalate	149	16.093	16.101	(1.063)	14755	0.14587	0.1459
	49	Fluorene	166	Compound Not Detected.					
	51	4-Chlorophenyl-phenylether	204	Compound Not Detected.					
	52	4-Nitroaniline	138	Compound Not Detected.					
	53	4,6-Dinitro-2-methylphenol	198	Compound Not Detected.					
	54	N-Nitrosodiphenylamine	169	Compound Not Detected.					
$	55	2,4,6-Tribromophenol	330	16.787	16.779	(1.109)	23006	2.84352	2.844
	56	4-Bromophenyl-phenylether	248	Compound Not Detected.					
	57	Hexachlorobenzene	284	Compound Not Detected.					
	58	Pentachlorophenol	266	Compound Not Detected.					
*	59	Phenanthrene-d10	188	18.178	18.178	(1.000)	460382	4.00000	
	60	Phenanthrene	178	Compound Not Detected.					
	61	Anthracene	178	Compound Not Detected.					
	62	Carbazole	167	Compound Not Detected.					
	63	Di-n-butylphthalate	149	Compound Not Detected.					
	64	Fluoranthene	202	Compound Not Detected.					
	65	Pyrene	202	Compound Not Detected.					
$	66	Terphenyl-d14	244	21.327	21.327	(0.918)	358125	4.94321	4.943
	67	Butylbenzylphthalate	149	Compound Not Detected.					
	68	Benzo(a)anthracene	228	Compound Not Detected.					
*	69	Chrysene-d12	240	23.232	23.232	(1.000)	260677	4.00000	
	70	3,3'-Dichlorobenzidine	252	Compound Not Detected.					
	71	Chrysene	228	Compound Not Detected.					
	72	bis(2-Ethylhexyl)phthalate	149	Compound Not Detected.					
*	134	Di-n-octylphthalate-d4	153	24.254	24.262	(1.000)	677882	4.00000	
	73	Di-n-octylphthalate	149	Compound Not Detected.					
	74	Benzo(b)fluoranthene	252	Compound Not Detected.					
	75	Benzo(k)fluoranthene	252	Compound Not Detected.					
	76	Benzo(a)pyrene	252	Compound Not Detected.					
*	77	Perylene-d12	264	25.848	25.849	(1.000)	132744	4.00000	
	78	Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
	79	Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	80	Benzo(g,h,i)perylene	276	Compound Not Detected.					
	90	N-Nitrosodimethylamine	74	Compound Not Detected.					
	91	Aniline	93	Compound Not Detected.					
	93	Benzidine	184	Compound Not Detected.					
	103	Pyridine	79	Compound Not Detected.					
	105	1-methylnaphthalene	142	Compound Not Detected.					
	111	Azobenzene (1,2-DP-Hydrazine)	77	Compound Not Detected.					

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

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1407062350.D
Lab Smp Id: BLF0718-BLK1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Misc Info:

Calibration Date: 07-JUL-2023
Calibration Time: 16:23
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	132670	66335	265340	135149	1.87
27 Naphthalene-d8	538082	269041	1076164	541064	0.55
42 Acenaphthene-d10	270232	135116	540464	260252	-3.69
59 Phenanthrene-d10	462568	231284	925136	460382	-0.47
69 Chrysene-d12	289075	144538	578150	260677	-9.82
134 Di-n-octylphthala	772331	386166	1544662	677882	-12.23
77 Perylene-d12	173349	86675	346698	132744	-23.42

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.02	8.52	9.52	9.02	-0.00
27 Naphthalene-d8	11.51	11.01	12.01	11.51	-0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	-0.00
59 Phenanthrene-d10	18.18	17.68	18.68	18.18	-0.00
69 Chrysene-d12	23.23	22.73	23.73	23.23	-0.00
134 Di-n-octylphthala	24.26	23.76	24.76	24.25	-0.03
77 Perylene-d12	25.85	25.35	26.35	25.85	-0.00

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

REVIEW SUMMARY FOR FILE - NT1407062350.D

Lab ID: BLF0718-BLK1
nt14.i, ABN.m, 07-JUL-2023 20:07

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1407062344.D

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

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

LCS / LCS DUPLICATE RECOVERY

EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	07/07/23 19:29
Batch:	BLF0718	Laboratory ID:	BLF0718-BS1
Preparation:	EPA 3546 (Microwave)	Sequence Name:	LCS
Initial/Final:	10 g / 1 mL		

COMPOUND	SPIKE ADDED (ug/kg wet)	LCS CONCENTRATION (ug/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Naphthalene	500	388		77.7	43 - 120
2-Methylnaphthalene	500	363		72.7	43 - 120
Acenaphthylene	500	373		74.6	42 - 120
Acenaphthene	500	403		80.6	45 - 120
Fluorene	500	375		74.9	45 - 120
Phenanthrene	500	424		84.9	49 - 120
Anthracene	500	374		74.8	45 - 120
Fluoranthene	500	510		102	53 - 145
Pyrene	500	493		98.6	52 - 134
Benzo(a)anthracene	500	444		88.9	49 - 120
Chrysene	500	472		94.4	47 - 120
Benzofluoranthenes, Total	1000	1060		106	30 - 160
Benzo(a)pyrene	500	487		97.3	42 - 120
Indeno(1,2,3-cd)pyrene	500	341	Q	68.2	42 - 163
Dibenzo(a,h)anthracene	500	348		69.7	30 - 133
Benzo(g,h,i)perylene	500	293	Q	58.6	46 - 148

* Indicates values outside of QC limits

COMPOUND	SPIKE ADDED (ug/kg wet)	LCSD CONCENTRATION (ug/kg wet)	Q	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Naphthalene	500	420		84.0	7.81	30	43 - 120
2-Methylnaphthalene	500	390		77.9	6.98	30	43 - 120
Acenaphthylene	500	384		76.8	2.87	30	42 - 120
Acenaphthene	500	427		85.5	5.92	30	45 - 120
Fluorene	500	429		85.9	13.7	30	45 - 120
Phenanthrene	500	453		90.6	6.47	30	49 - 120
Anthracene	500	392		78.5	4.85	30	45 - 120
Fluoranthene	500	534		107	4.65	30	53 - 145
Pyrene	500	522		104	5.78	30	52 - 134
Benzo(a)anthracene	500	466		93.2	4.70	30	49 - 120
Chrysene	500	498		99.6	5.29	30	47 - 120
Benzofluoranthenes, Total	1000	1130		113	6.35	30	30 - 160
Benzo(a)pyrene	500	499		99.9	2.59	30	42 - 120

* Indicates values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

EPA 8270E

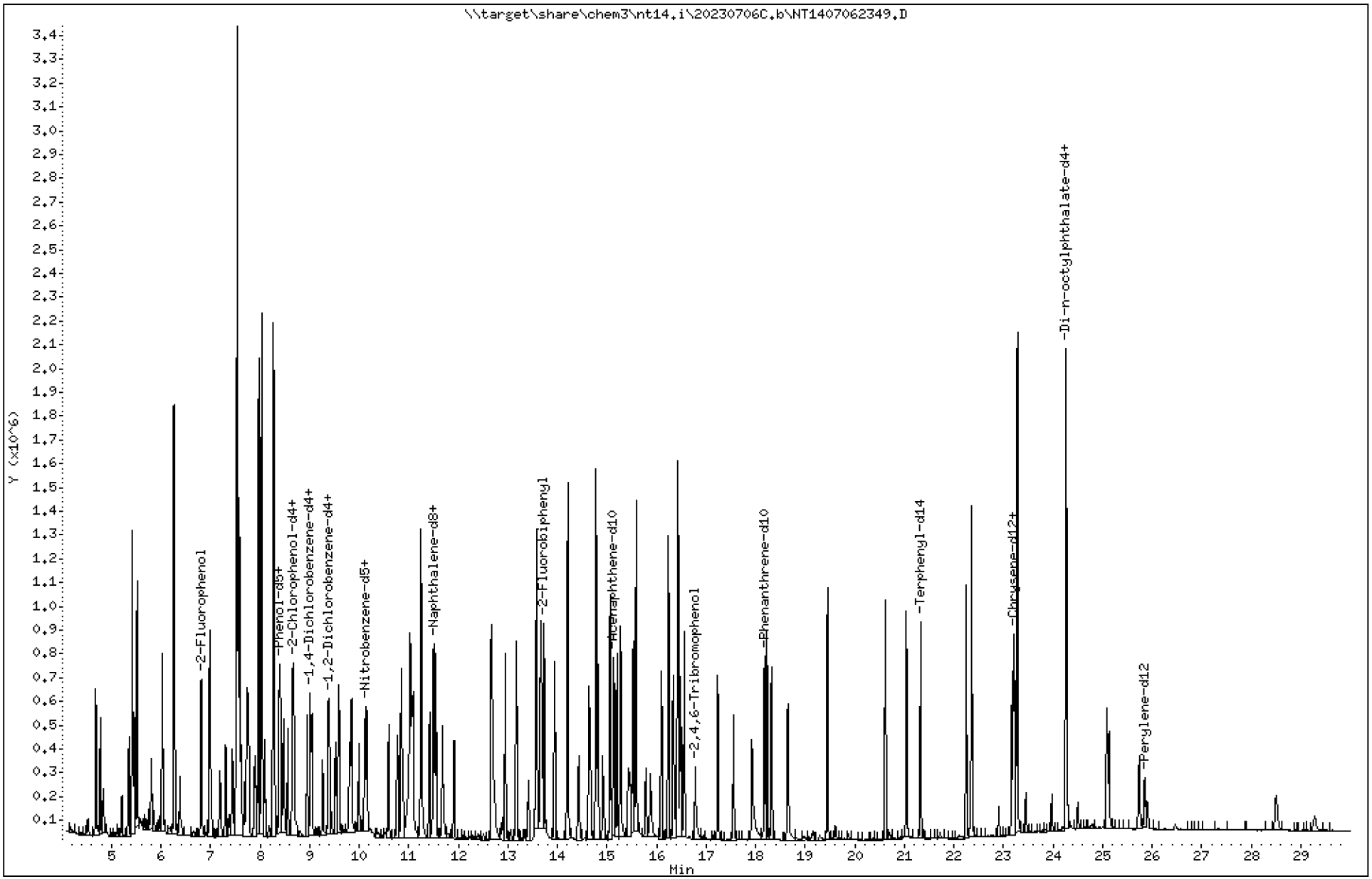
Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	07/07/23 20:44
Batch:	BLF0718	Laboratory ID:	BLF0718-BSD1
Preparation:	EPA 3546 (Microwave)	Sequence Name:	LCS Dup
Initial/Final:	10 g / 1 mL		

COMPOUND	SPIKE ADDED (ug/kg wet)	LCSD CONCENTRATION (ug/kg wet)	Q	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Indeno(1,2,3-cd)pyrene	500	361	Q	72.1	5.53	30	42 - 163
Dibenzo(a,h)anthracene	500	370		74.0	5.98	30	30 - 133
Benzo(g,h,i)perylene	500	313	Q	62.6	6.47	30	46 - 148

* Indicates values outside of QC limits

Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062349.D
Date : 07-JUL-2023 19:29
Client ID:
Sample Info: BLF0718-BS1

Instrument: nt14.i
Operator: JGR
Column phase: ZB-5msi
Column diameter: 0.25



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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

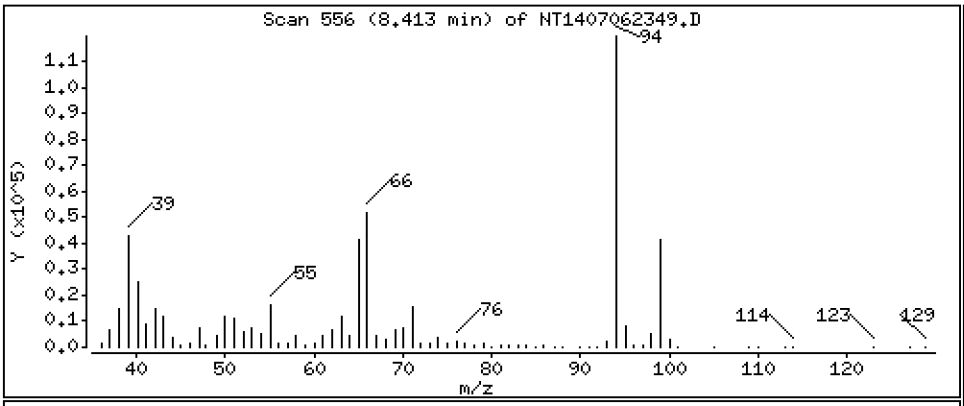
Operator: JGR

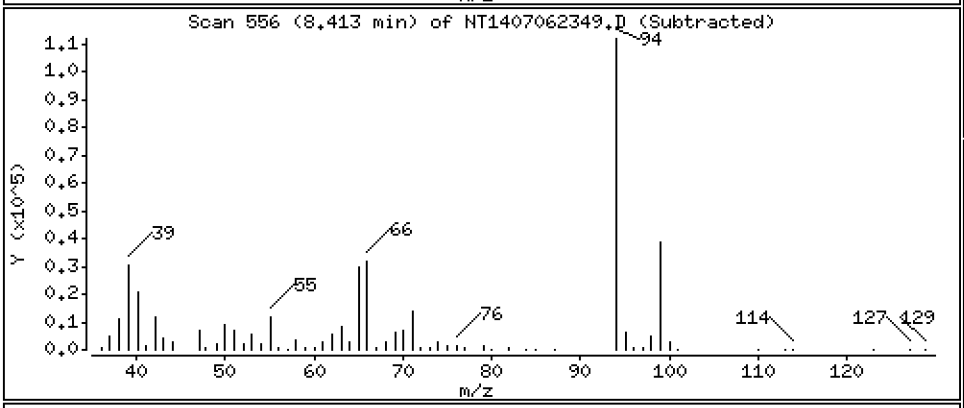
Column phase: ZB-5msi

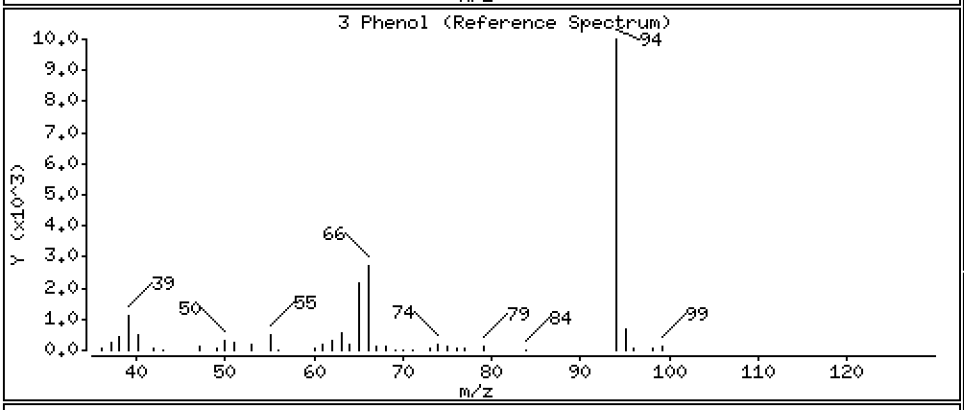
Column diameter: 0.25

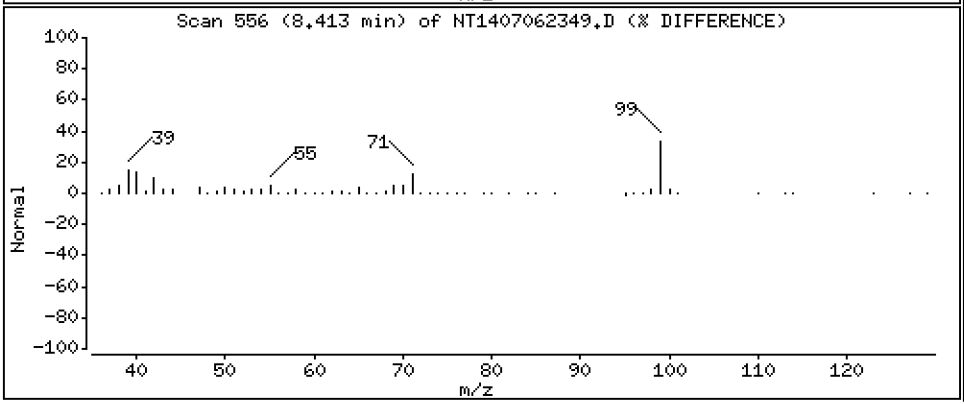
3 Phenol

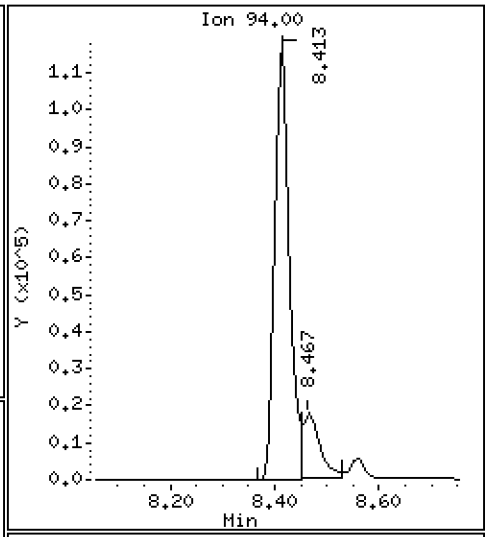
Concentration: 2.897 ug/mL

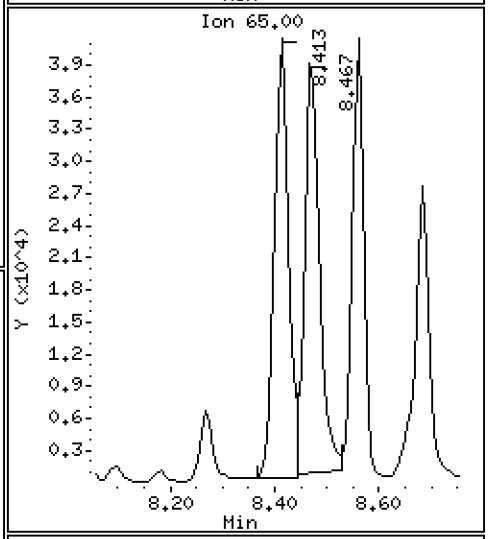


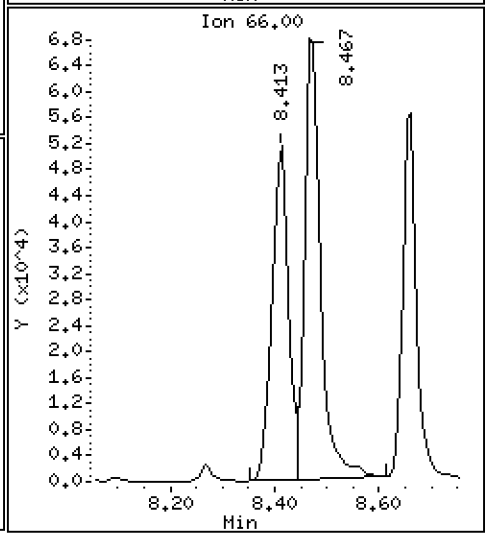












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062349.D

Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

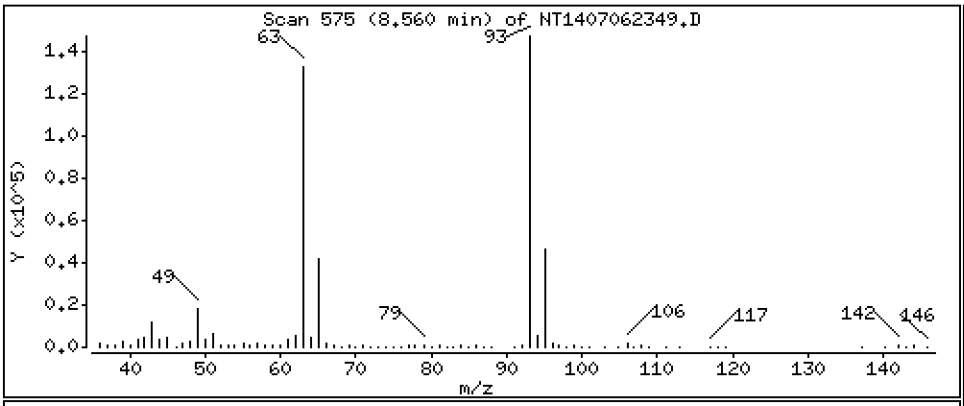
Operator: JGR

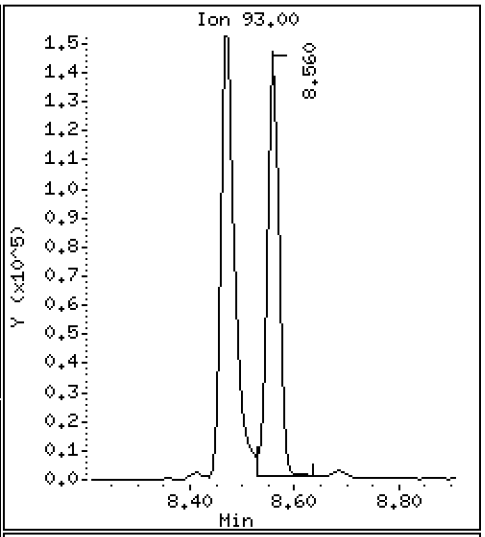
Column phase: ZB-5msi

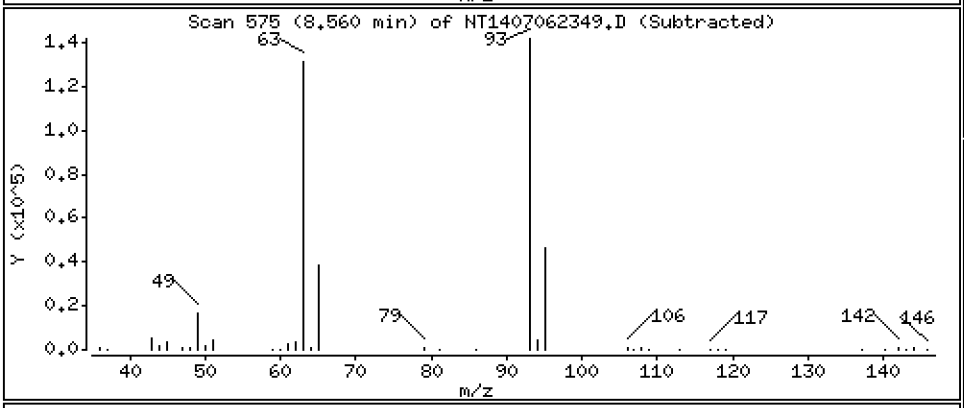
Column diameter: 0.25

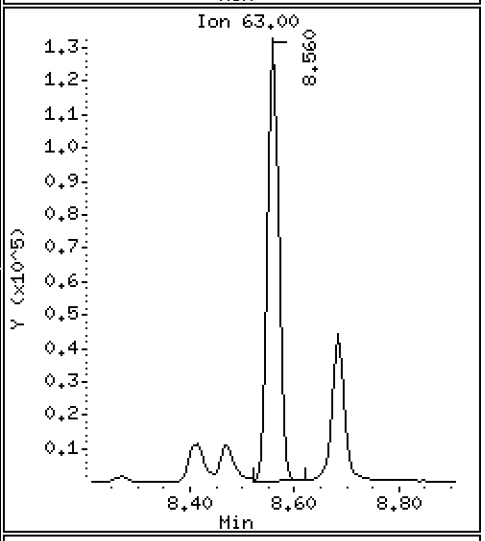
4 Bis(2-Chloroethyl)ether

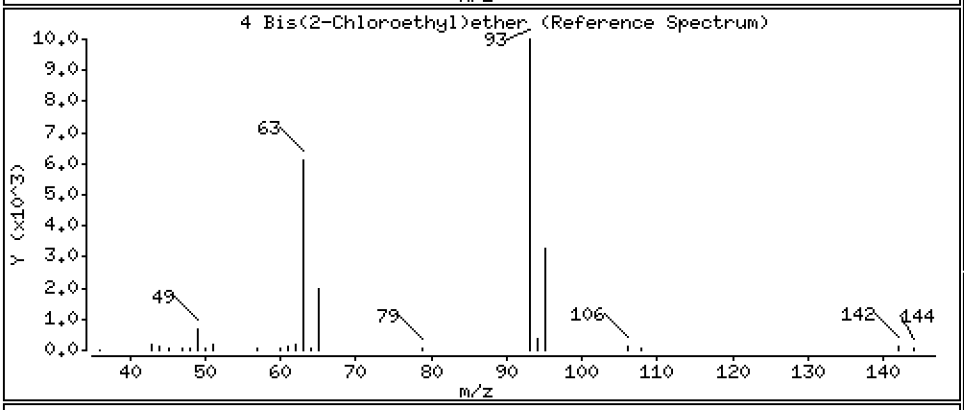
Concentration: 3.863 ug/mL

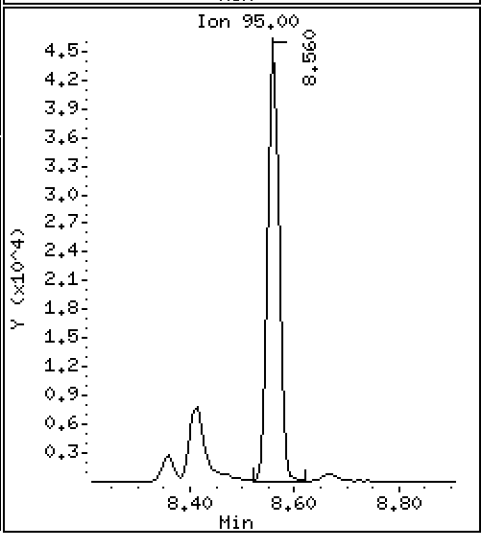


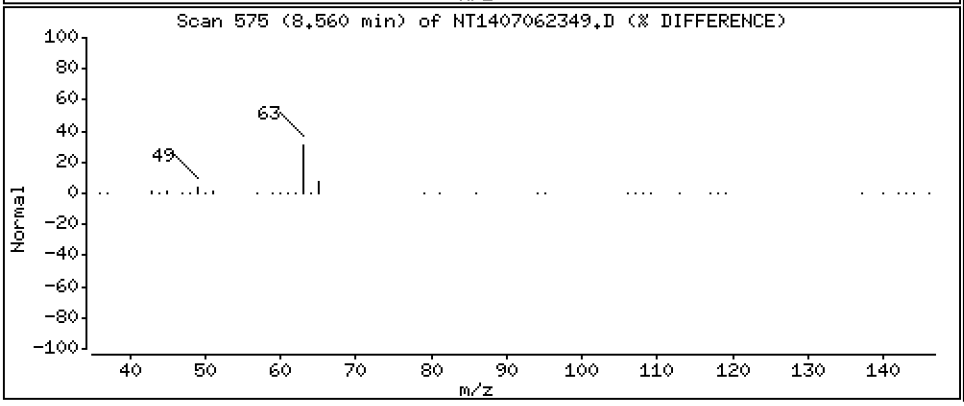












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

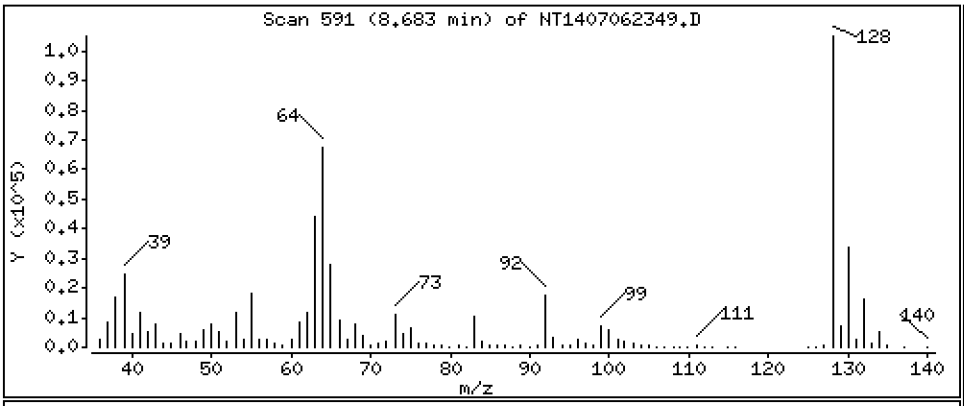
Operator: JGR

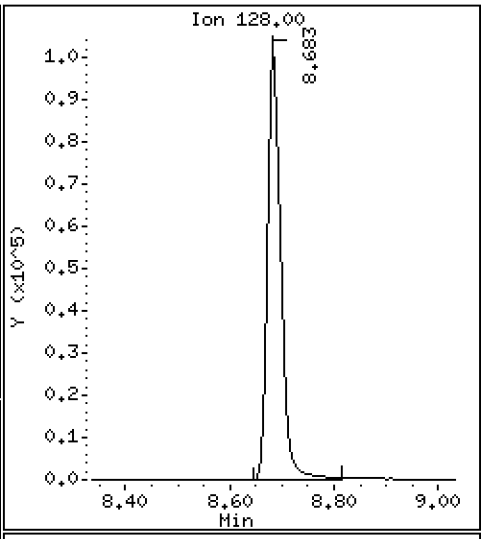
Column phase: ZB-5msi

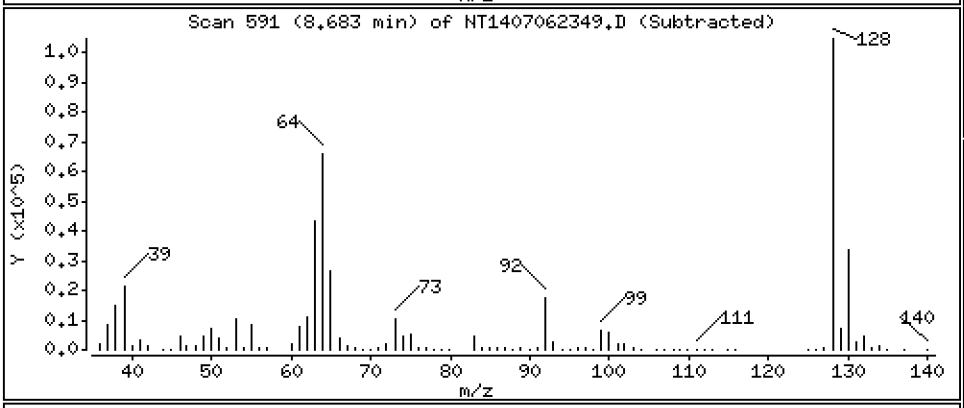
Column diameter: 0.25

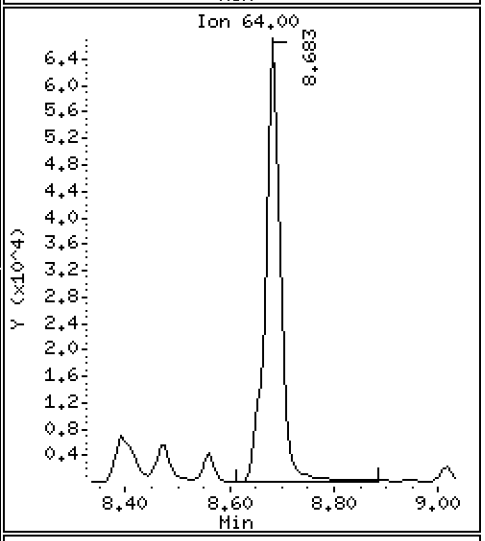
6 2-Chlorophenol

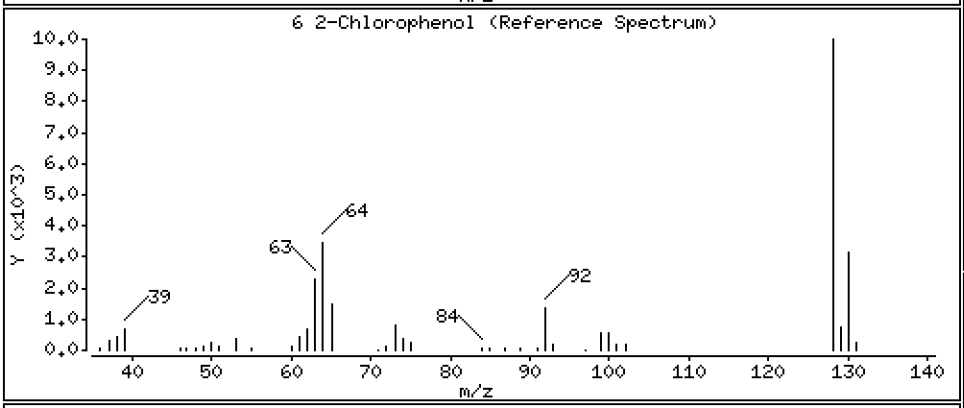
Concentration: 3.399 ug/mL

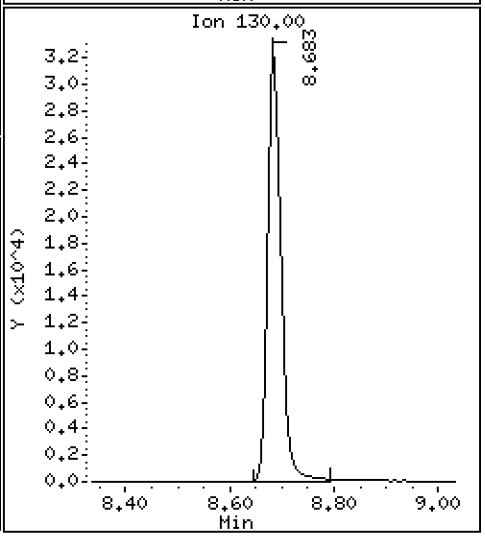


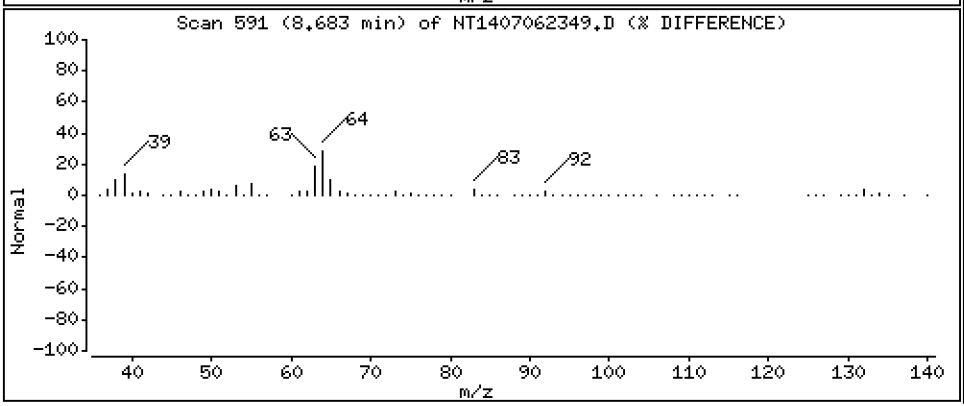












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

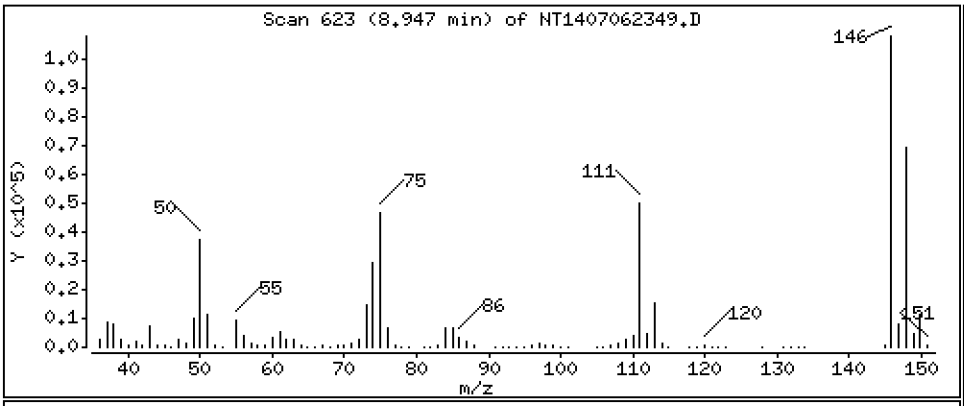
Operator: JGR

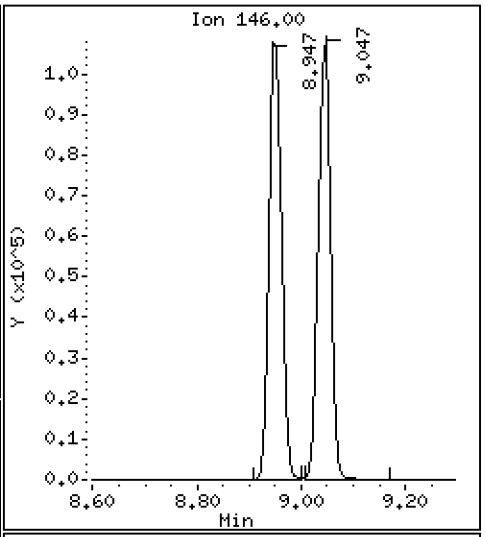
Column phase: ZB-5msi

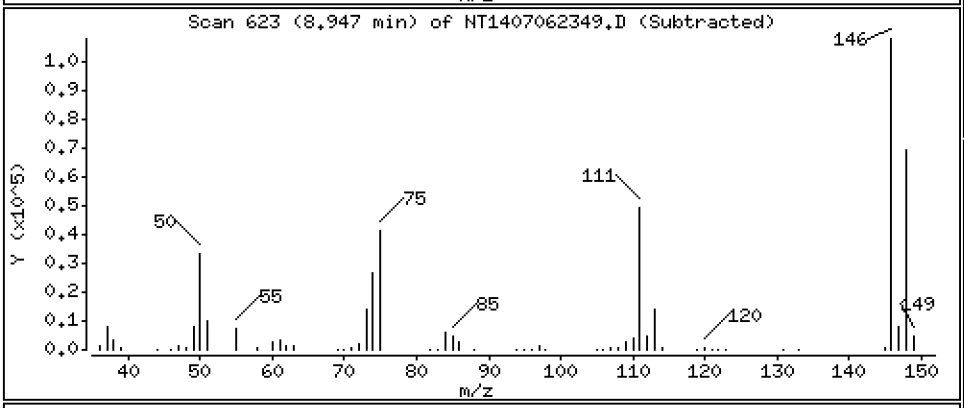
Column diameter: 0.25

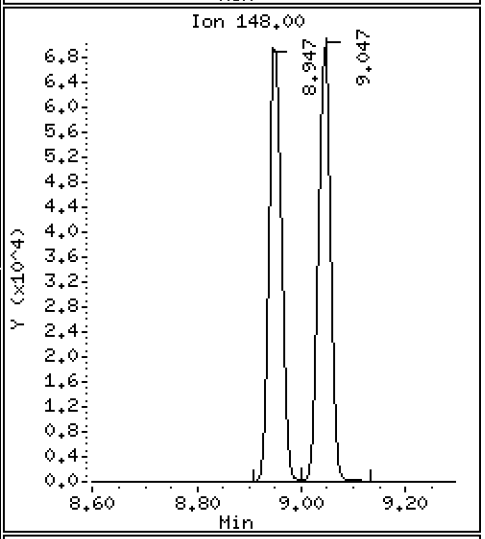
7 1,3-Dichlorobenzene

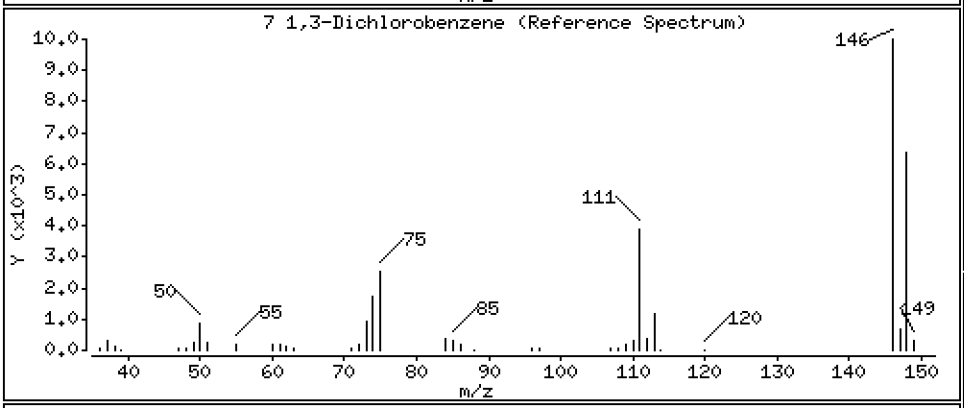
Concentration: 3.428 ug/mL

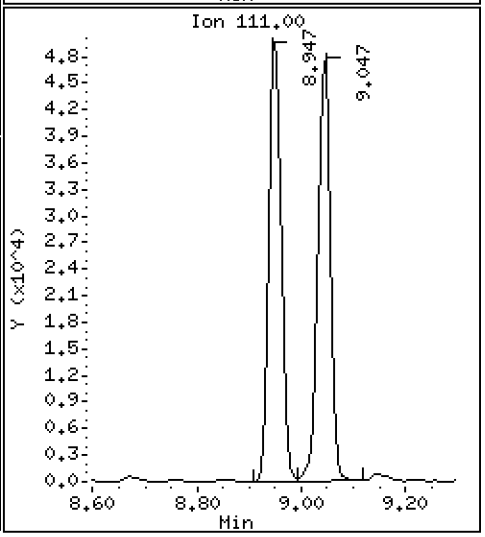


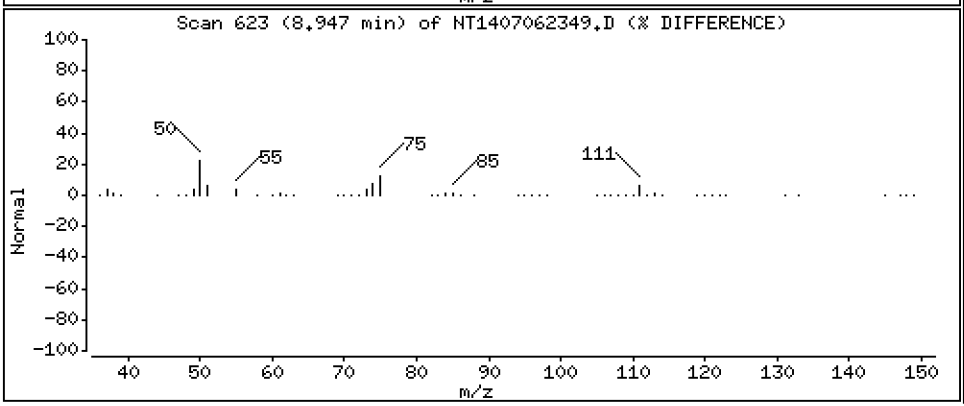












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

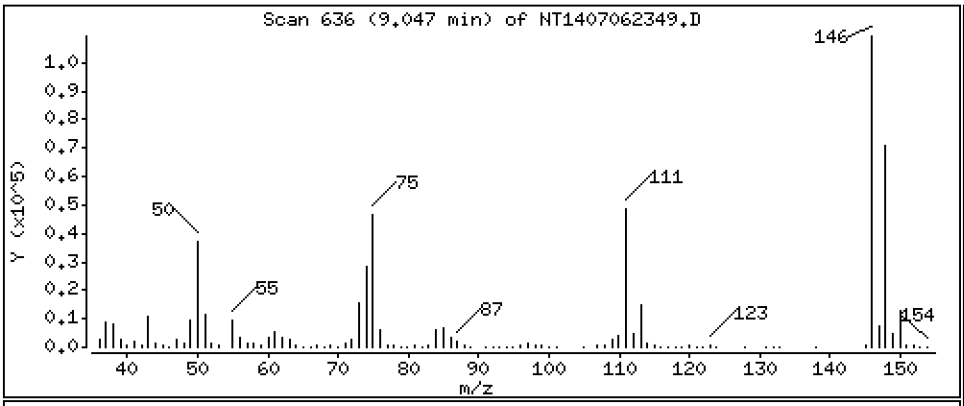
Operator: JGR

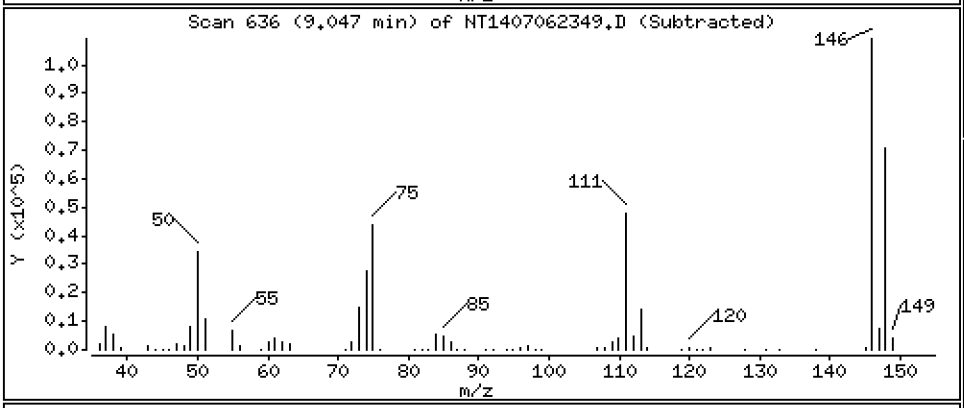
Column phase: ZB-5msi

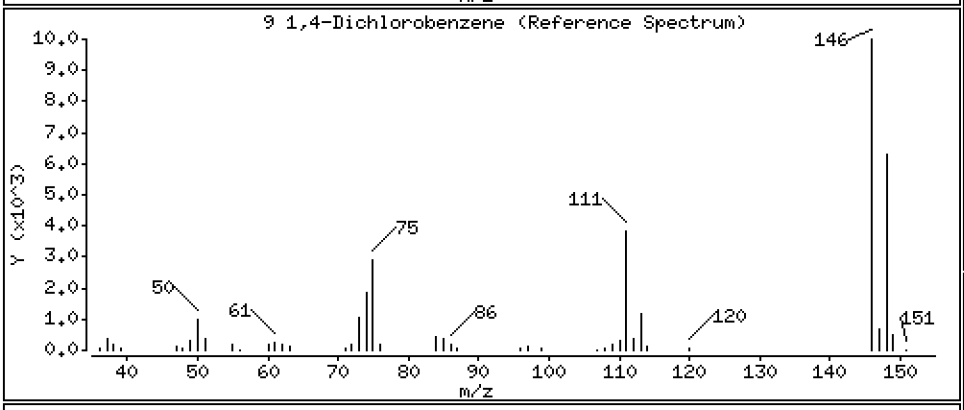
Column diameter: 0.25

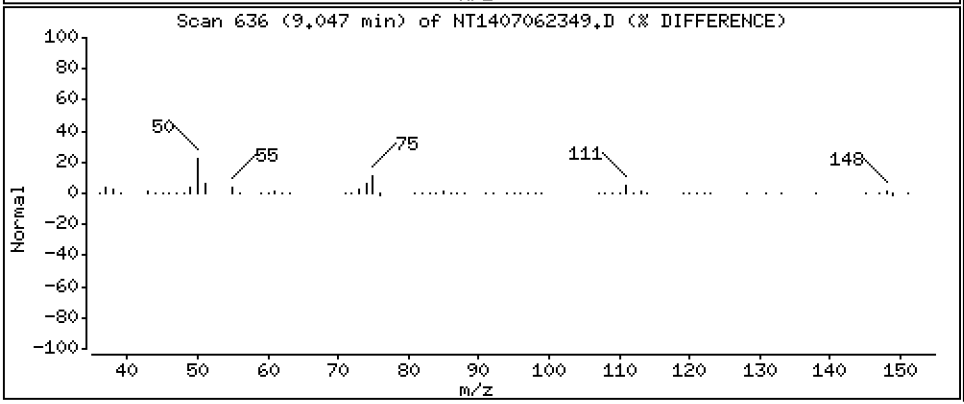
9 1,4-Dichlorobenzene

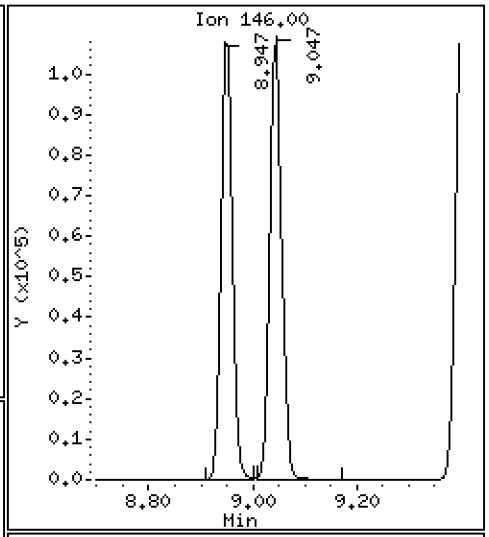
Concentration: 3.813 ug/mL

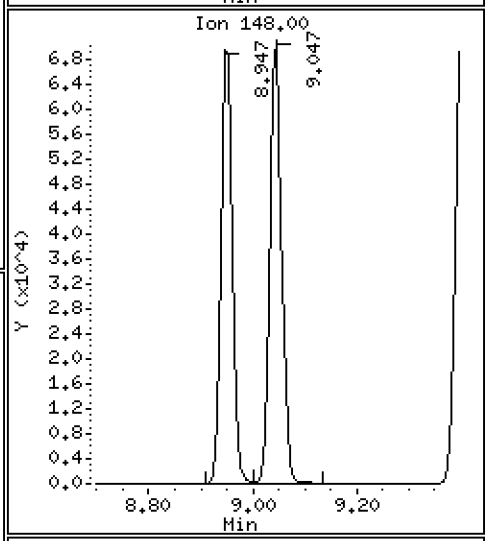


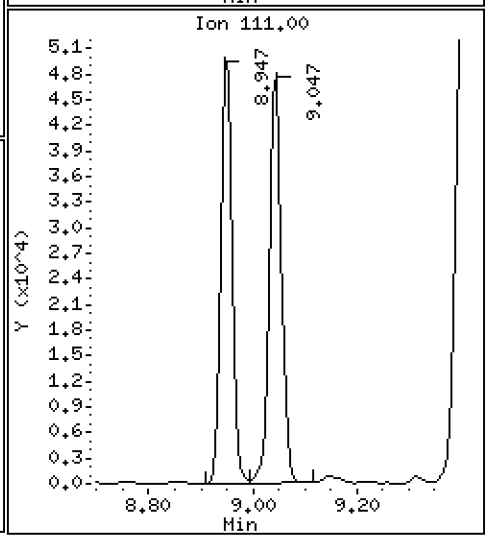












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

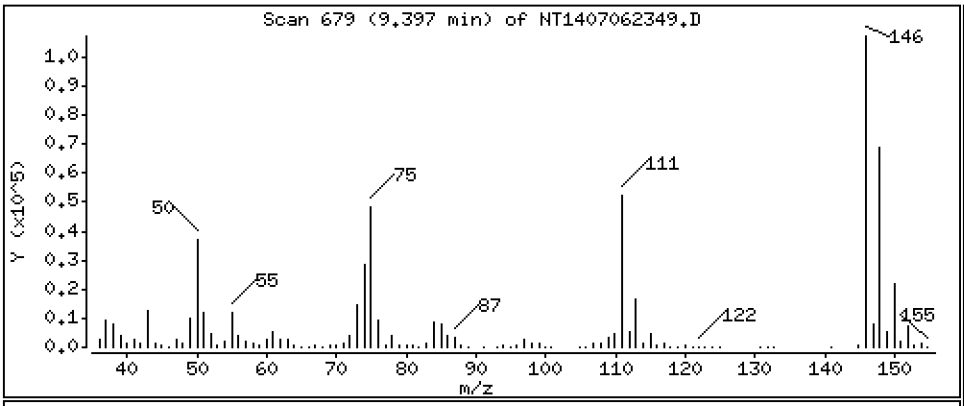
Operator: JGR

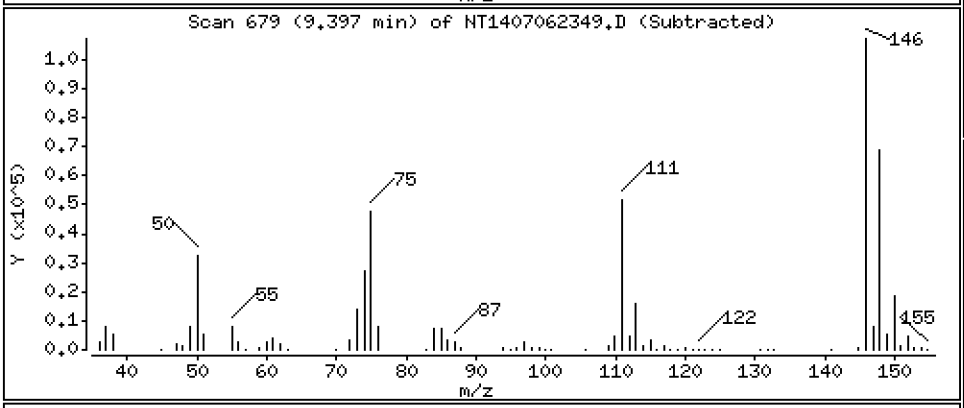
Column phase: ZB-5msi

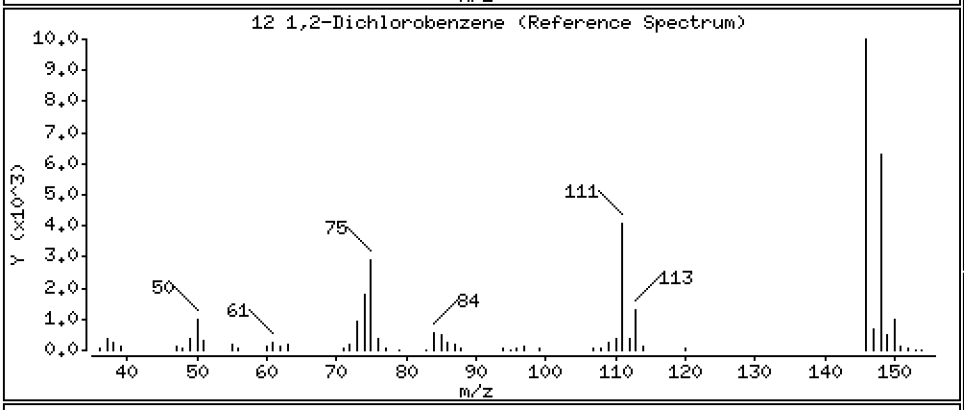
Column diameter: 0.25

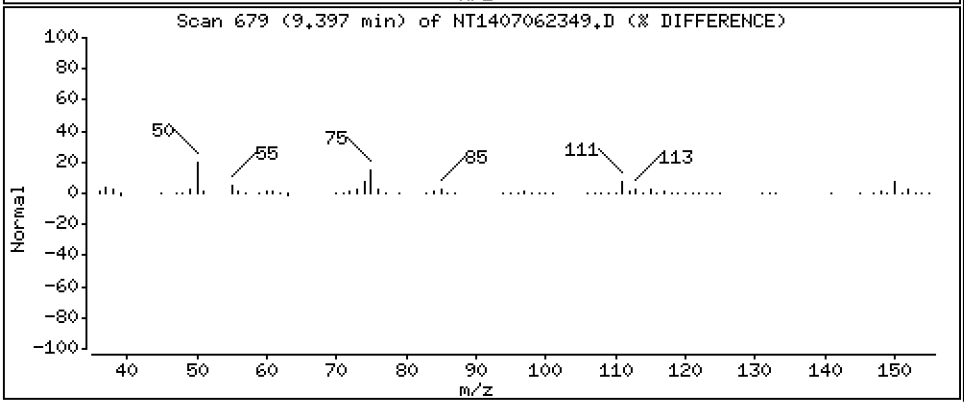
12 1,2-Dichlorobenzene

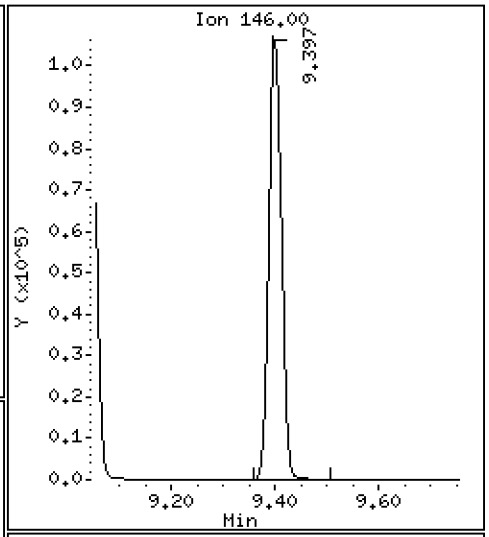
Concentration: 3.561 ug/mL

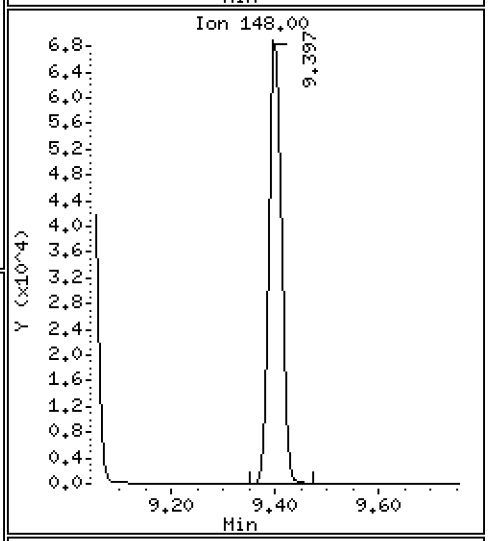


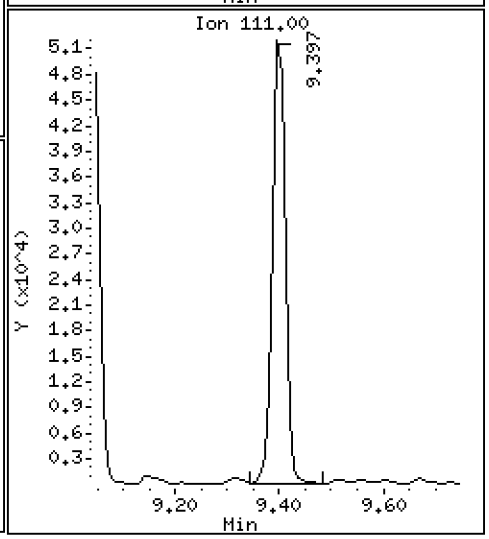












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

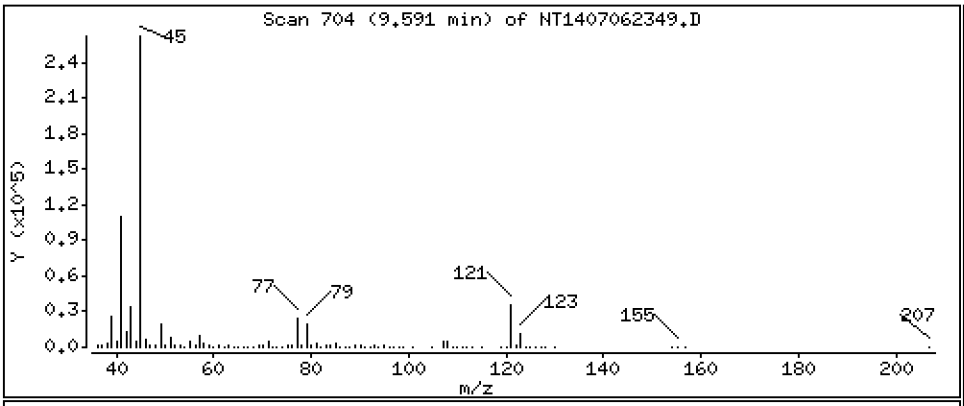
Operator: JGR

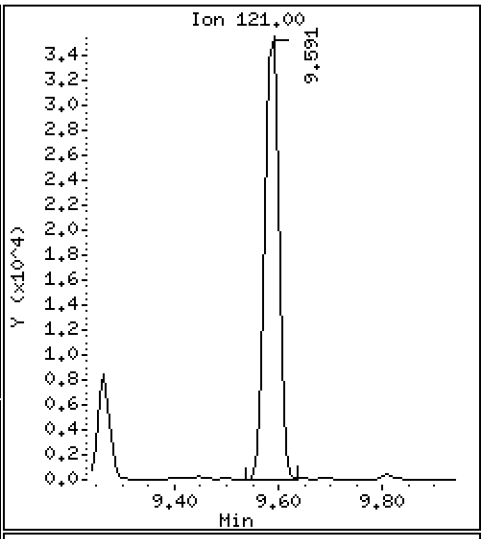
Column phase: ZB-5msi

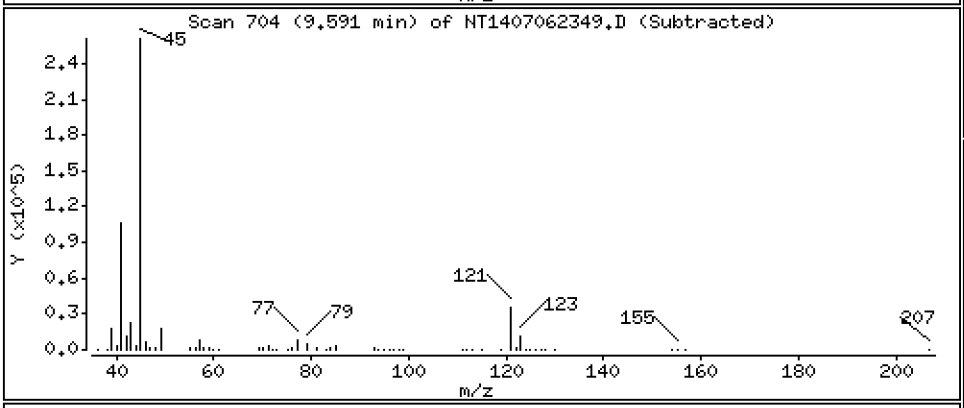
Column diameter: 0.25

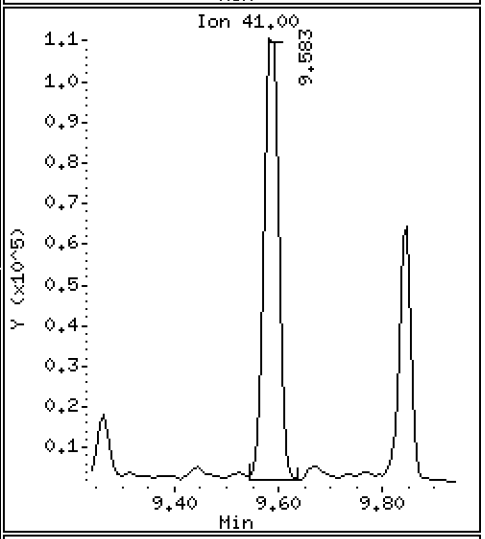
14 2,2'-oxybis(1-Chloropropane)

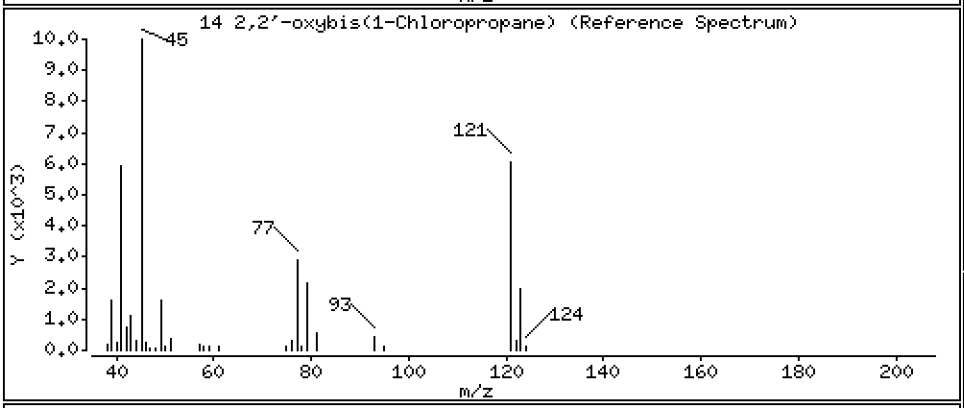
Concentration: 4.136 ug/mL

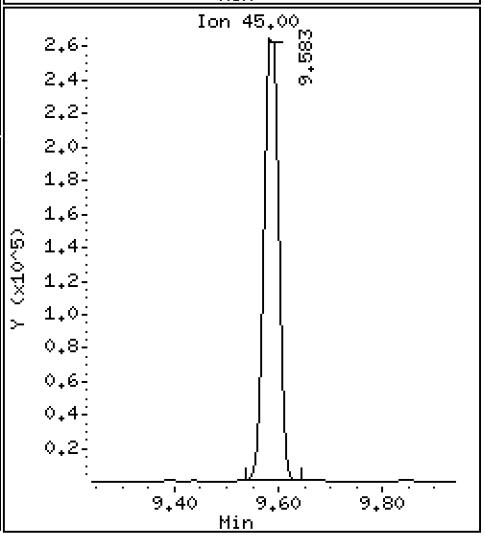


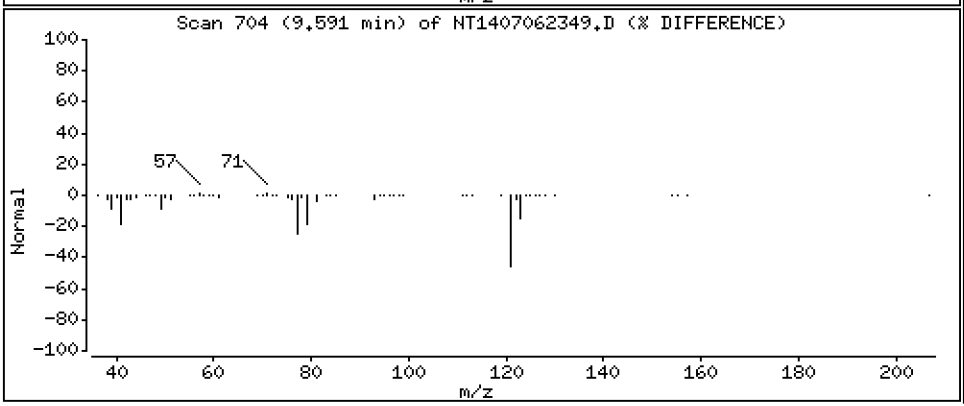












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

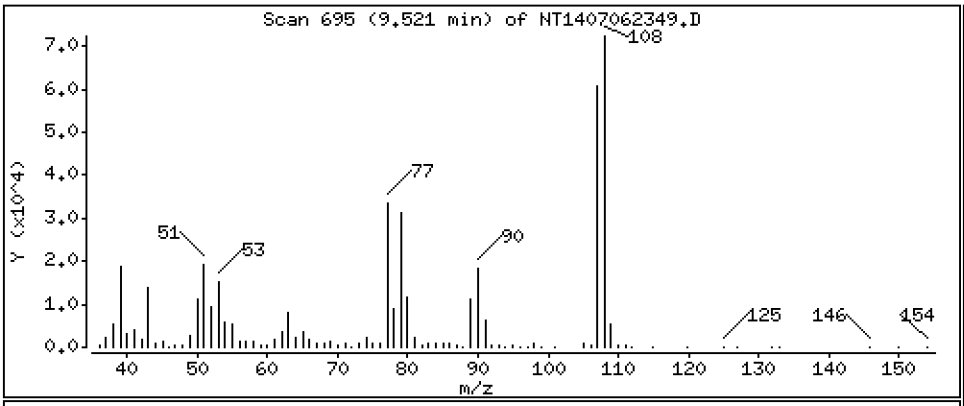
Operator: JGR

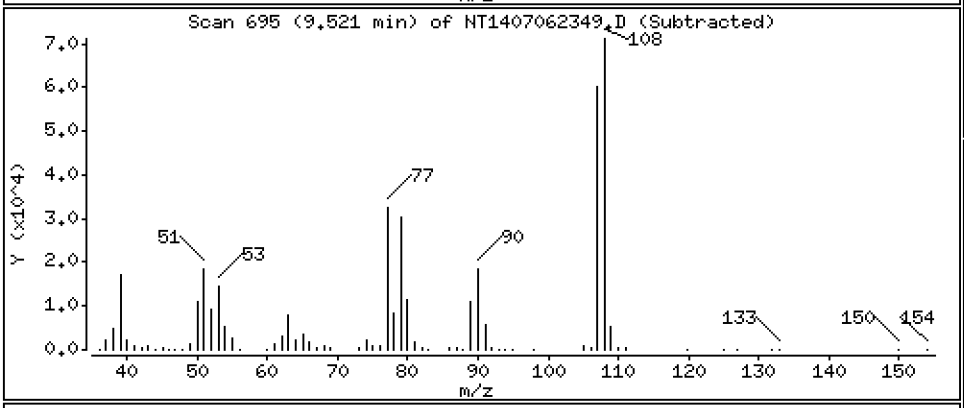
Column phase: ZB-5msi

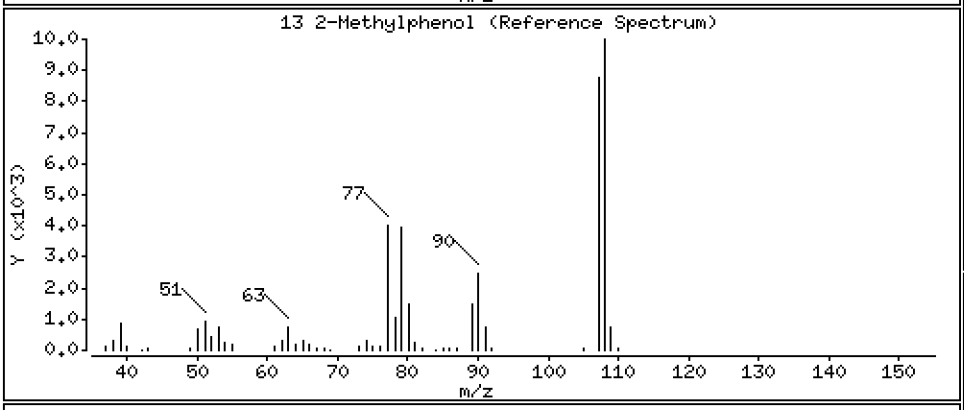
Column diameter: 0.25

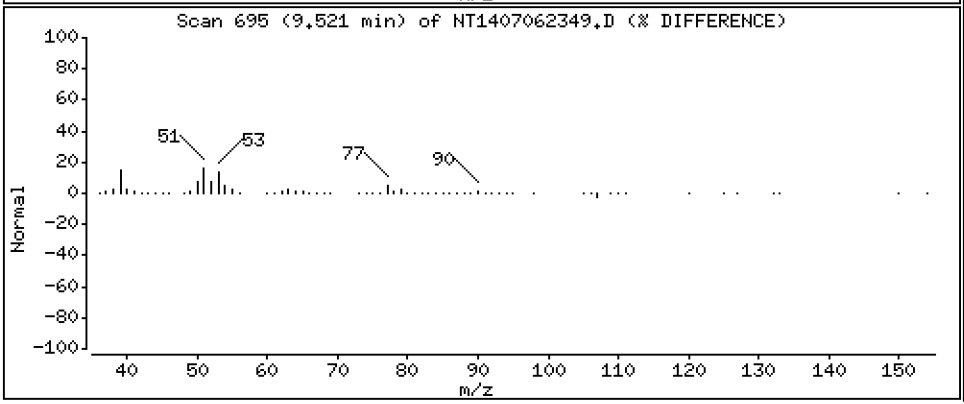
13 2-Methylphenol

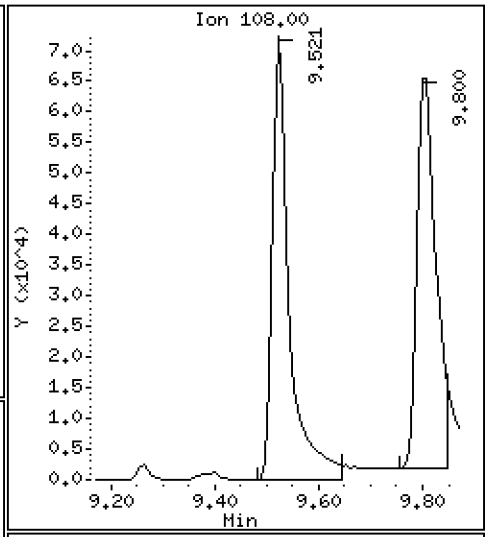
Concentration: 3.190 ug/mL

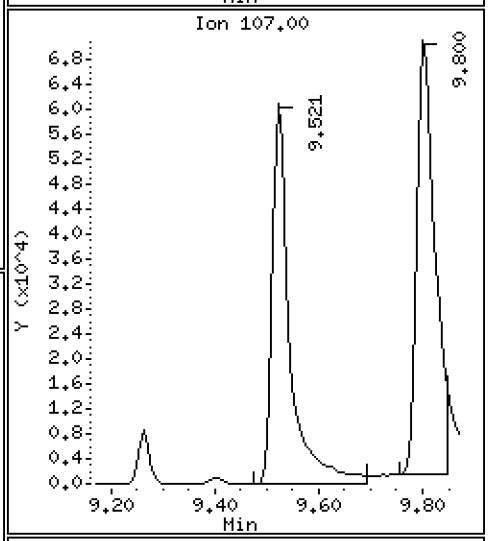


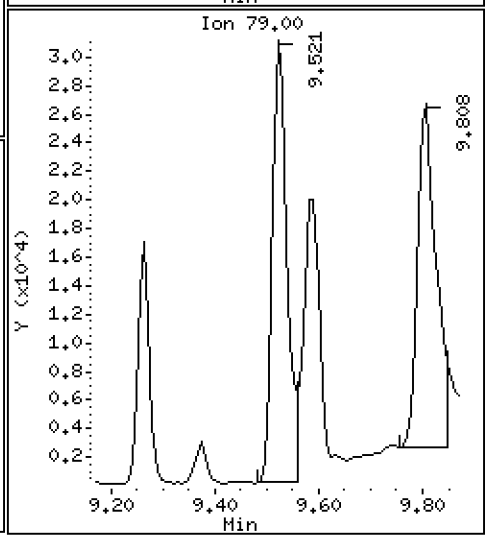












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

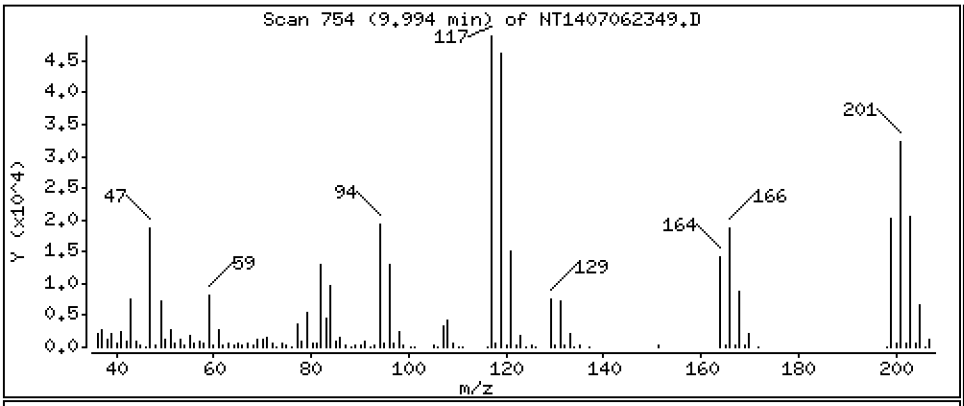
Operator: JGR

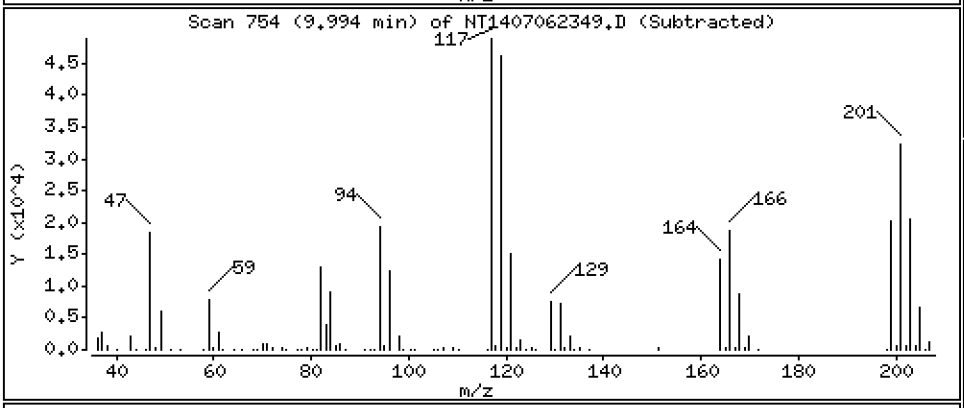
Column phase: ZB-5msi

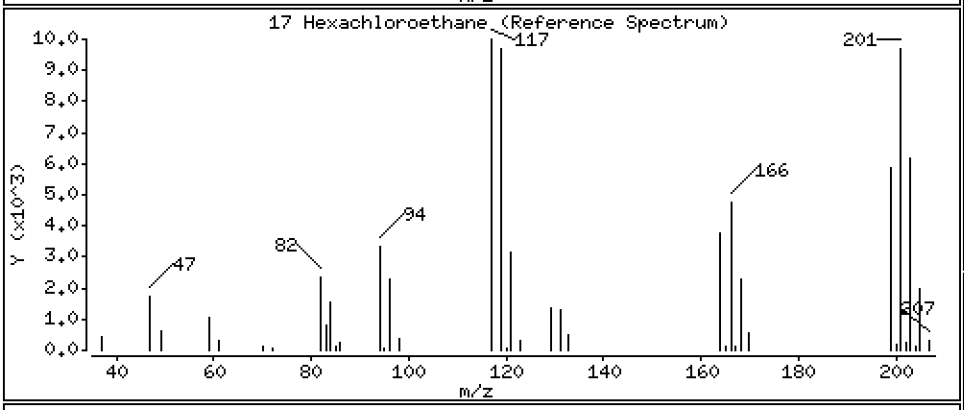
Column diameter: 0.25

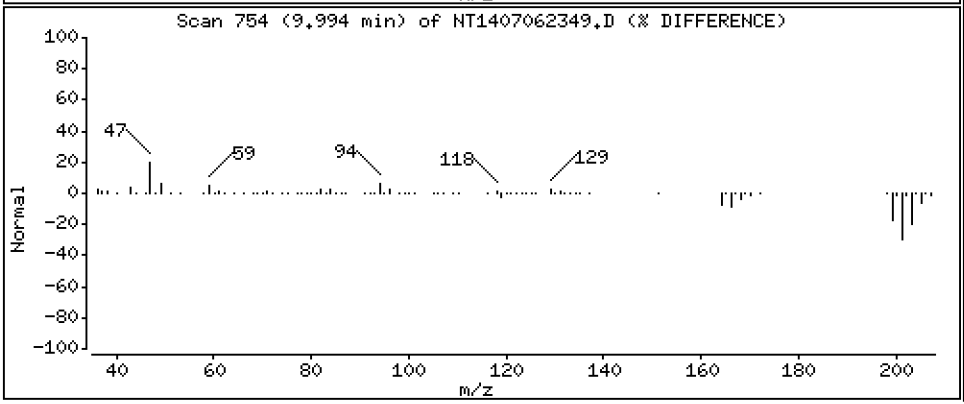
17 Hexachloroethane

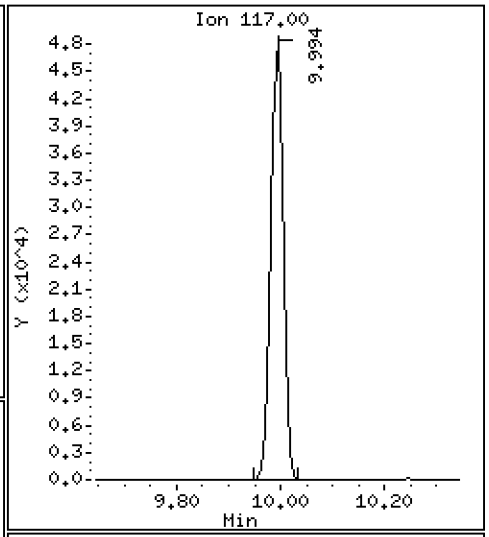
Concentration: 3.312 ug/mL

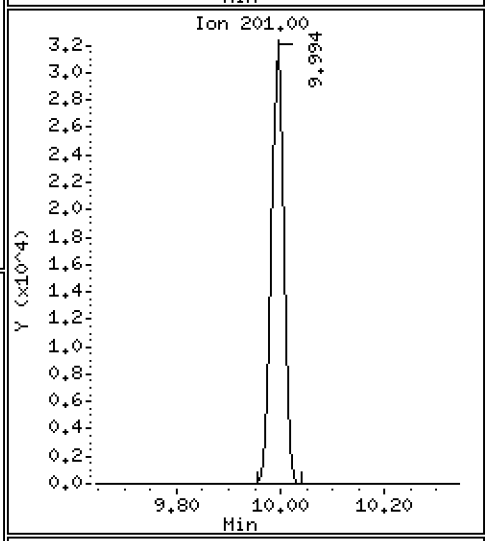


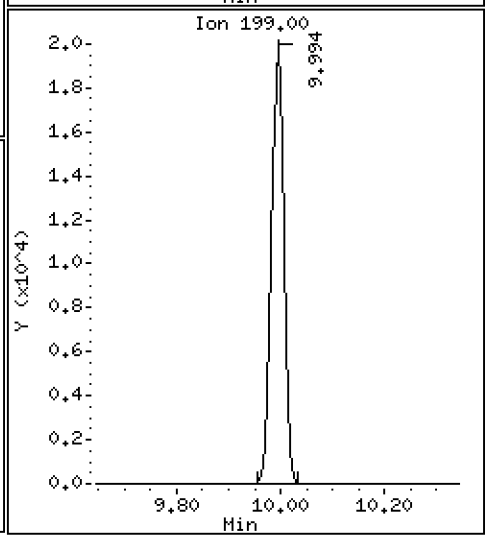












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

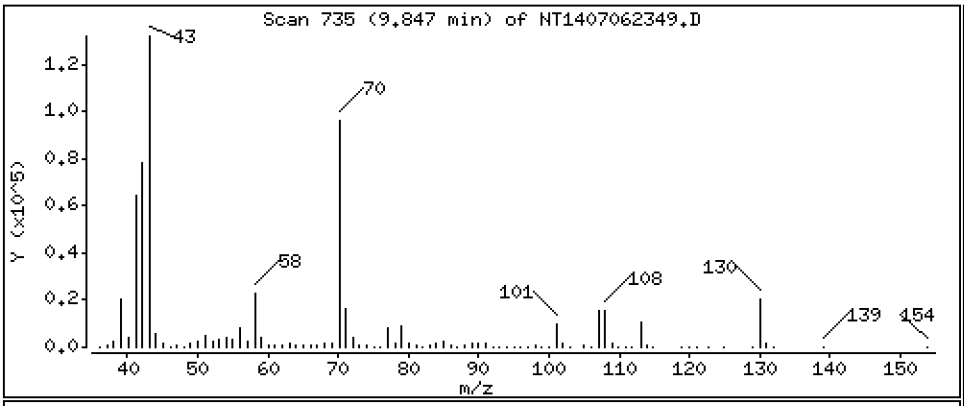
Operator: JGR

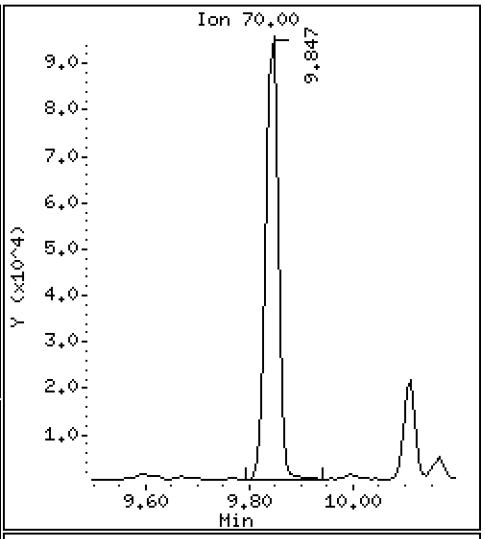
Column phase: ZB-5msi

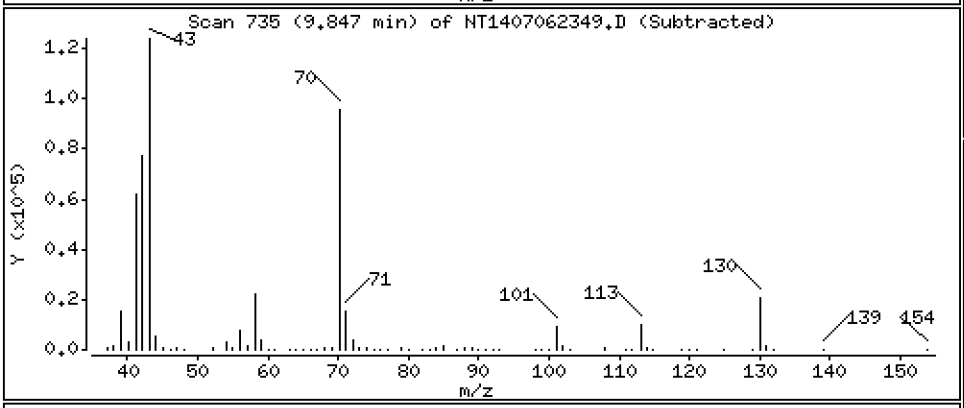
Column diameter: 0.25

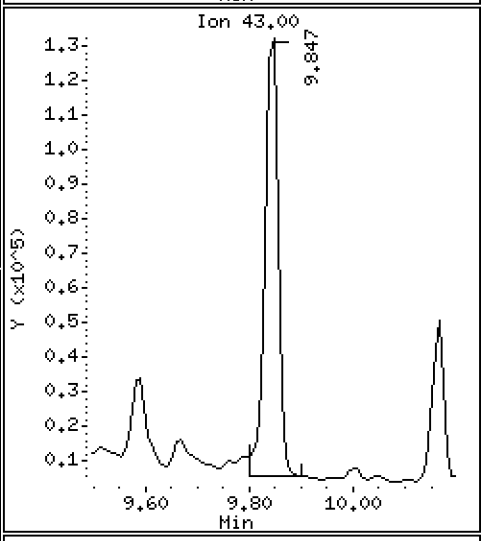
16 N-Nitroso-di-n-propylamine

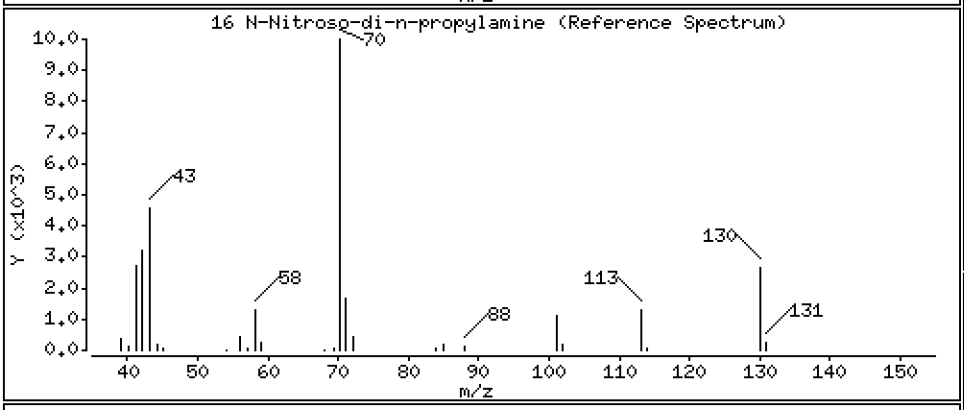
Concentration: 3.430 ug/mL

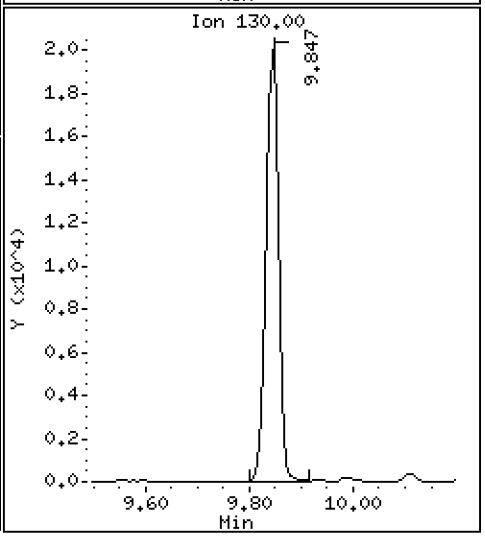


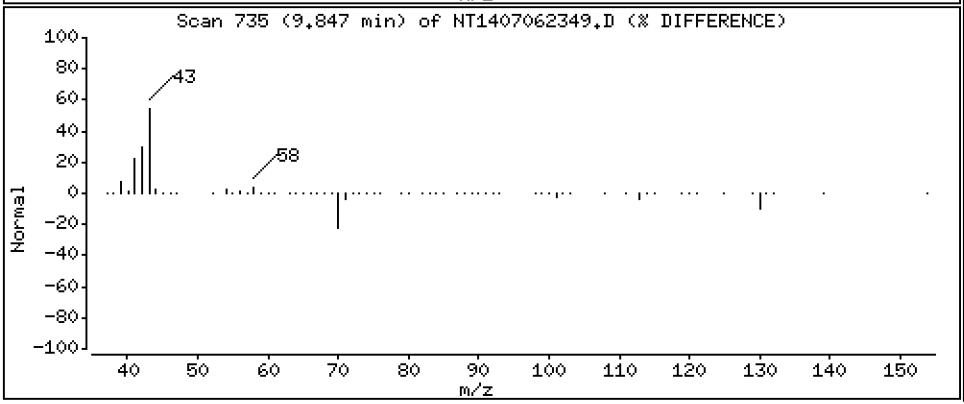












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

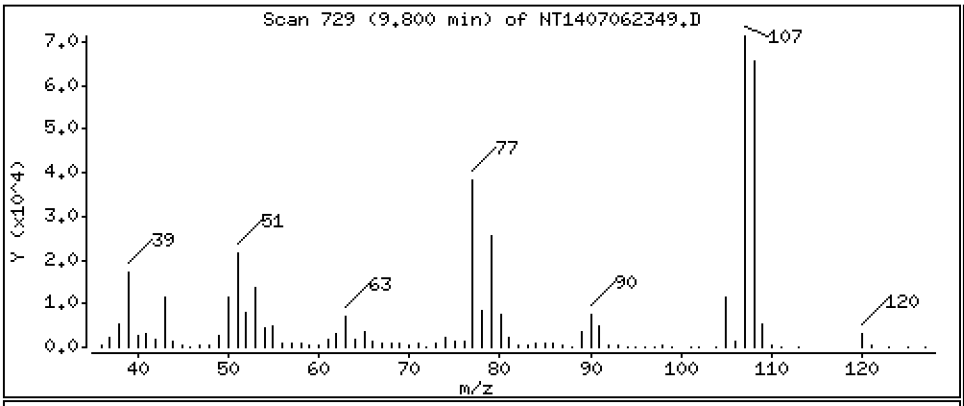
Operator: JGR

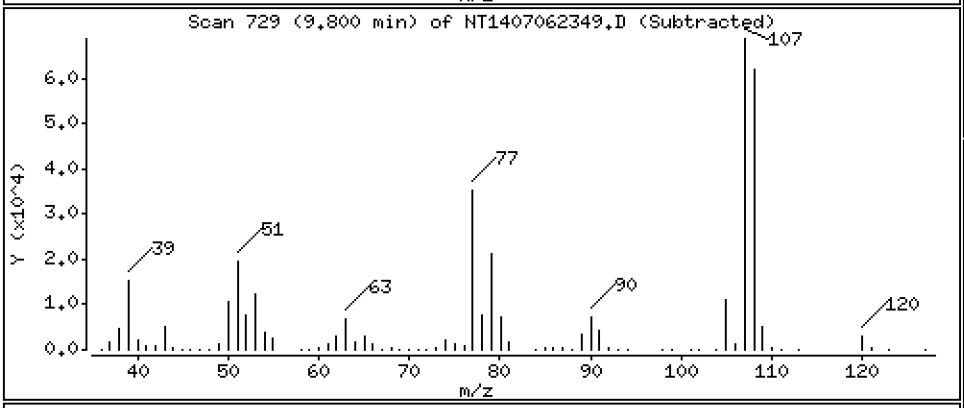
Column phase: ZB-5msi

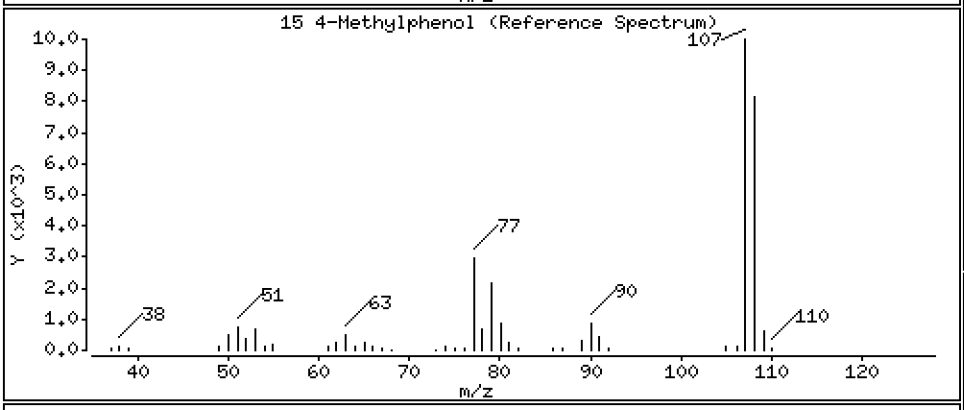
Column diameter: 0.25

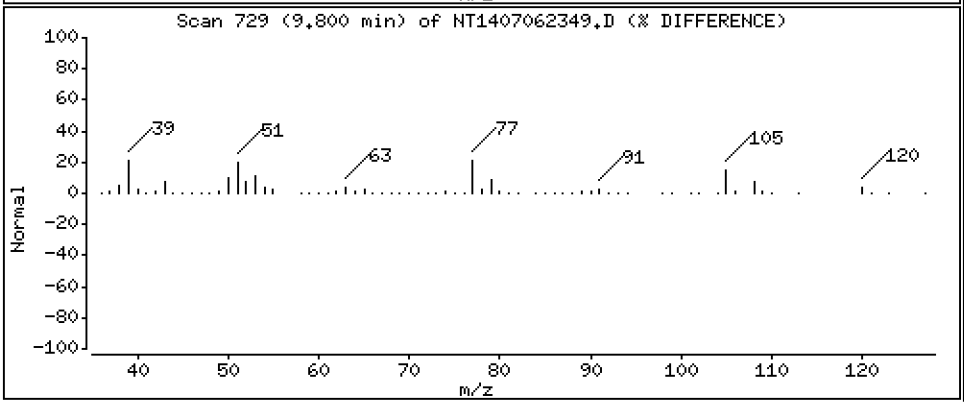
15 4-Methylphenol

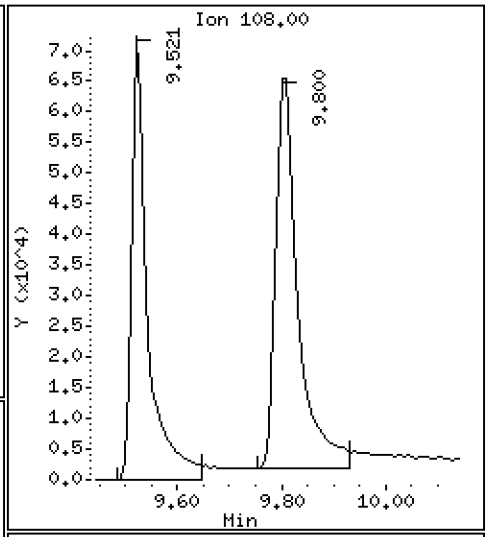
Concentration: 3.471 ug/mL

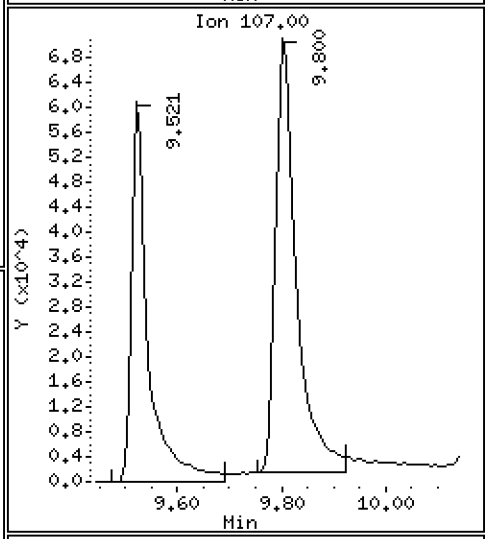


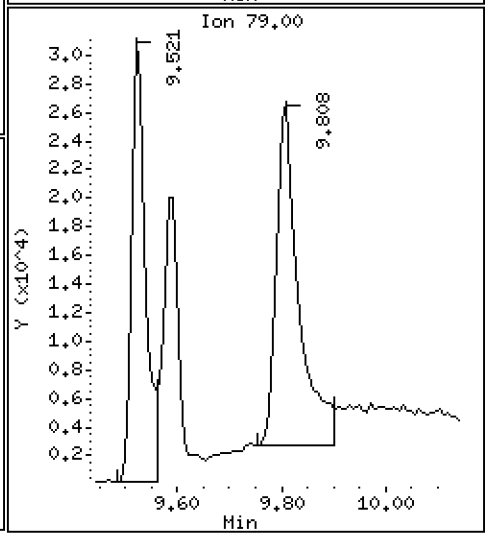












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

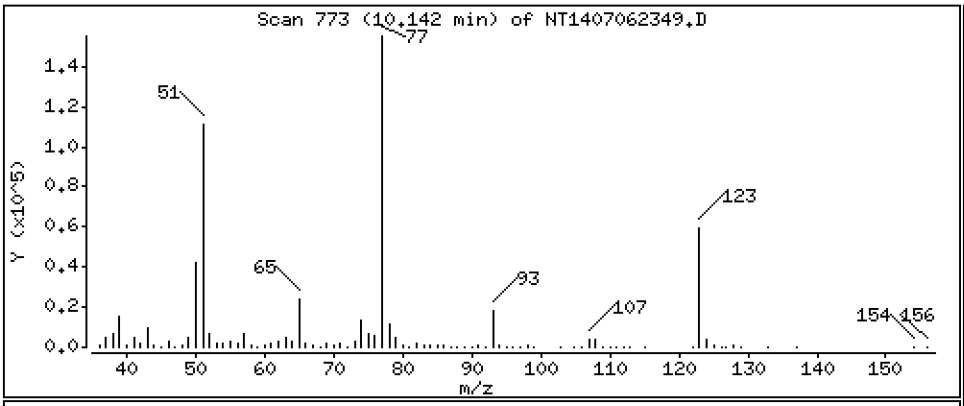
Operator: JGR

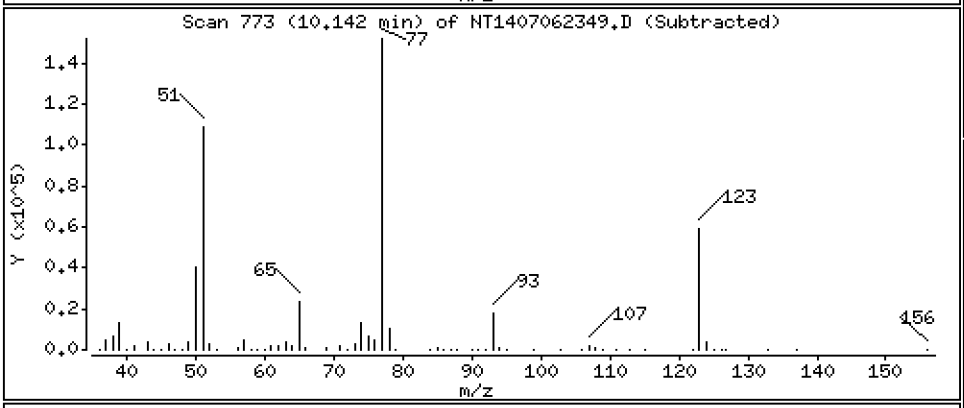
Column phase: ZB-5msi

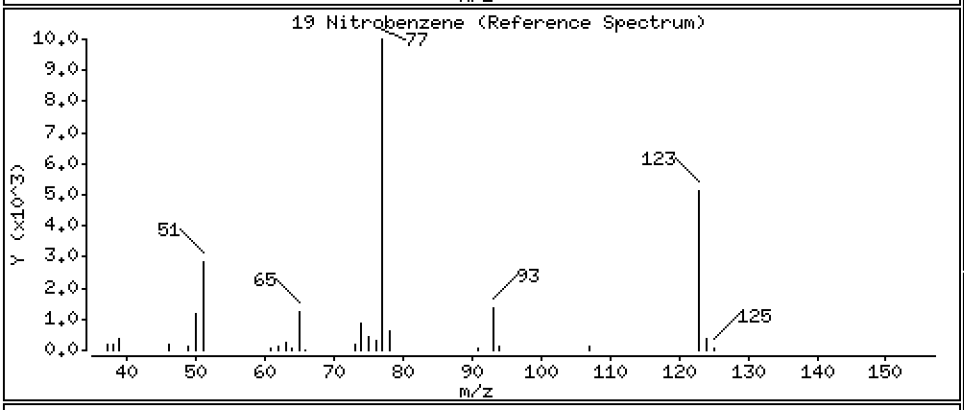
Column diameter: 0.25

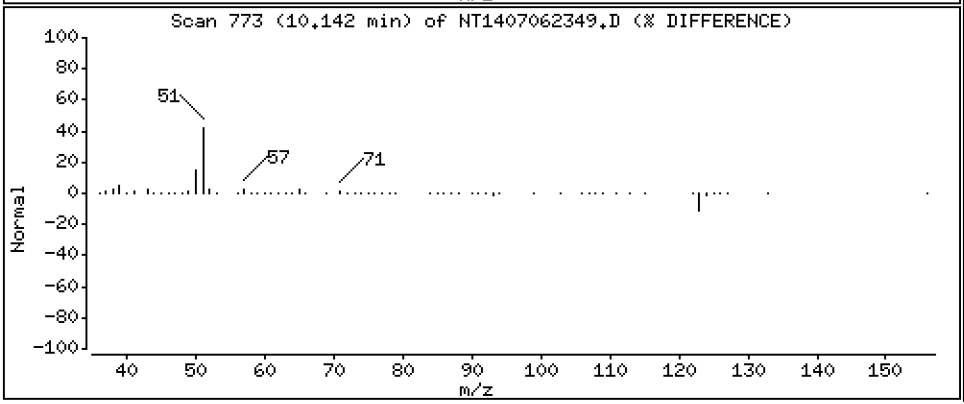
19 Nitrobenzene

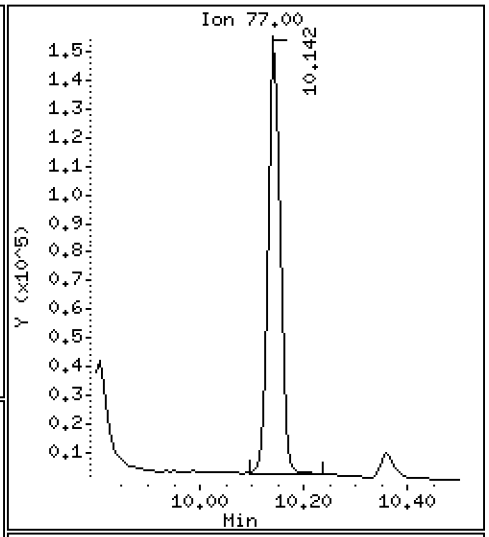
Concentration: 3.693 ug/mL

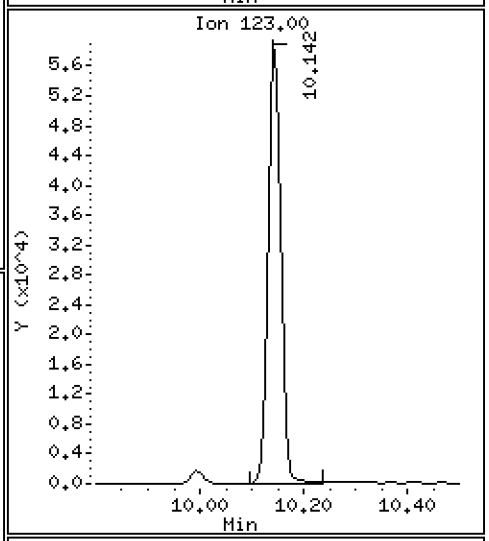


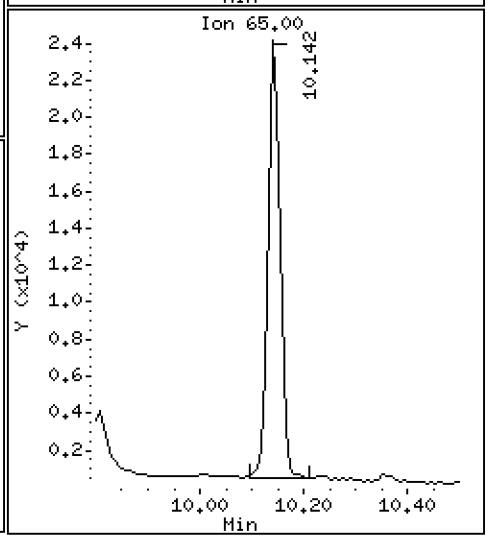












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

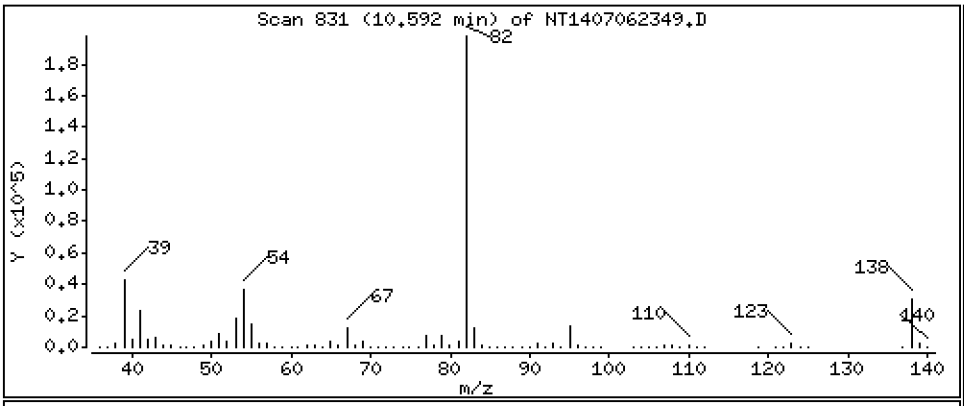
Operator: JGR

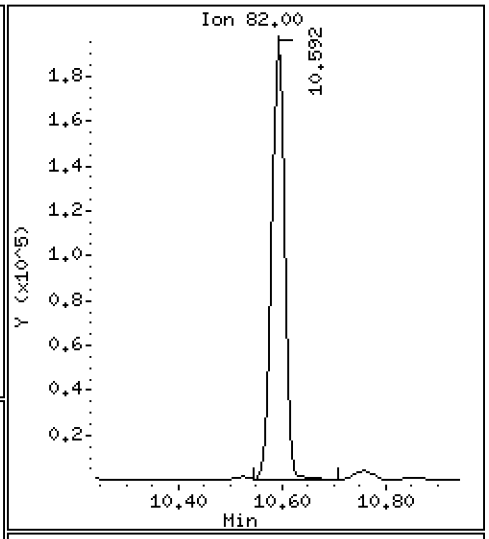
Column phase: ZB-5msi

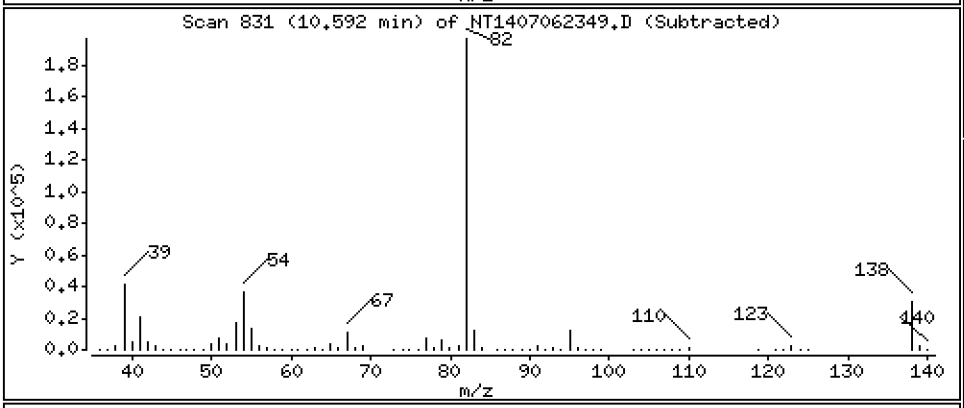
Column diameter: 0.25

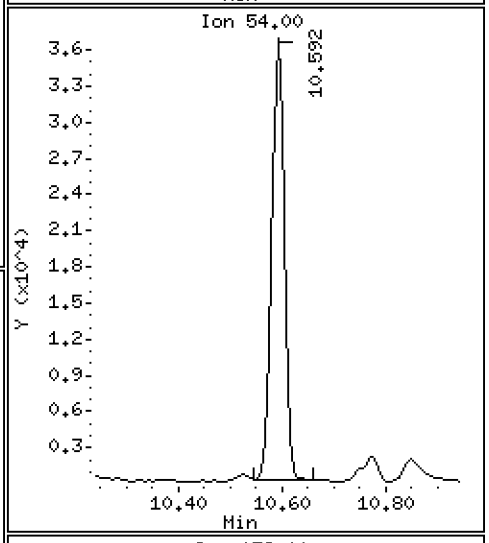
20 Isophorone

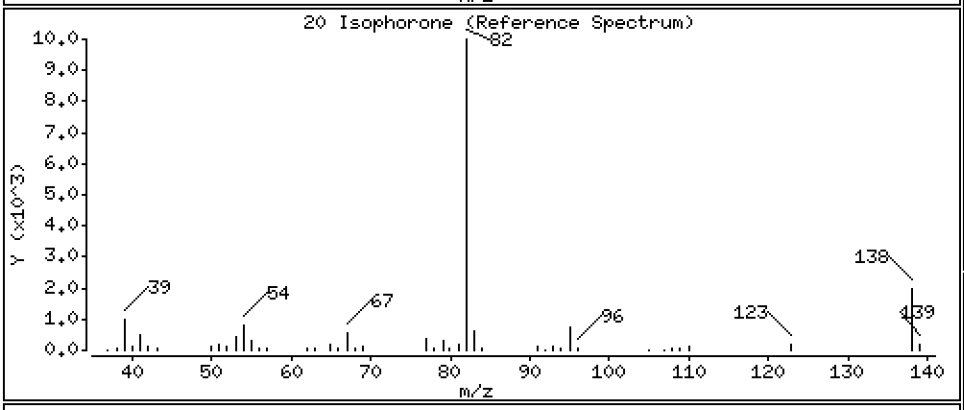
Concentration: 3.896 ug/mL

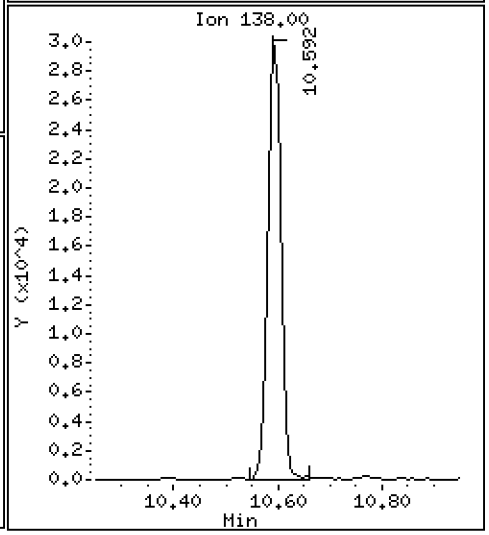


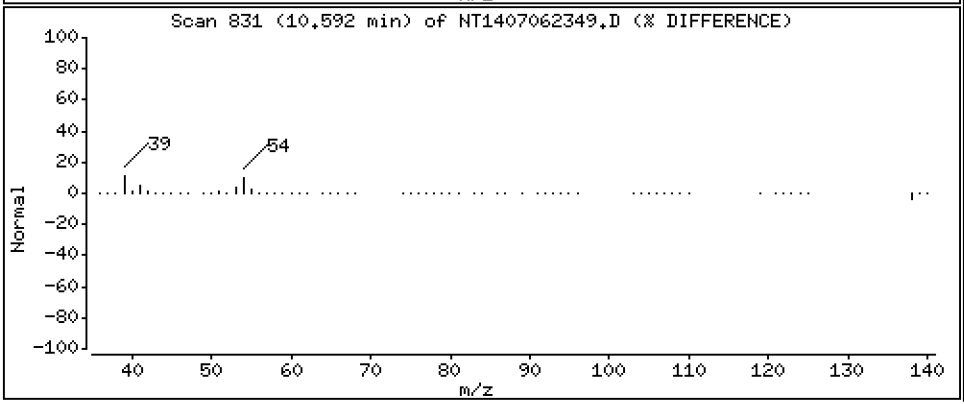












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

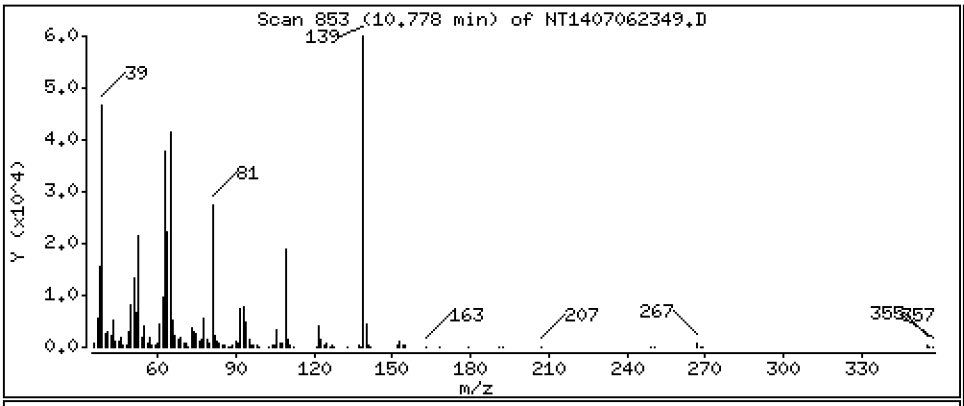
Operator: JGR

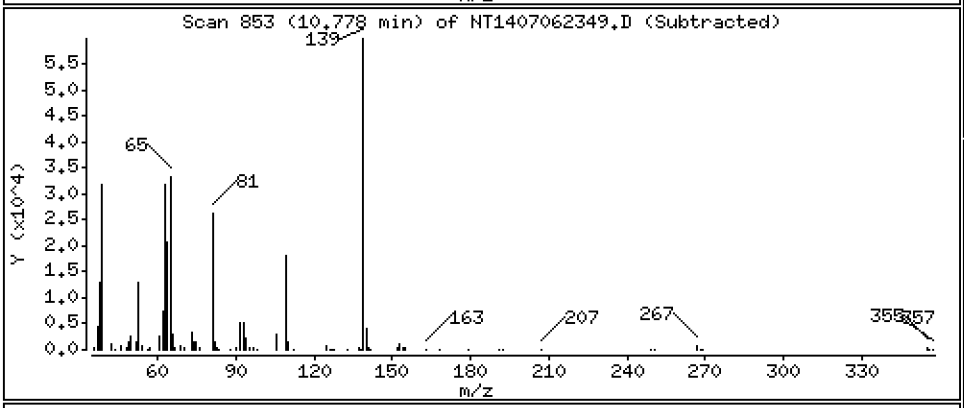
Column phase: ZB-5msi

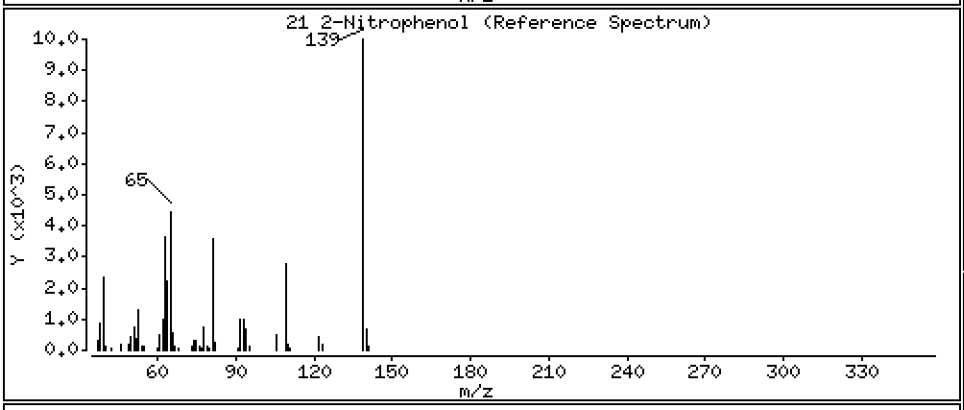
Column diameter: 0.25

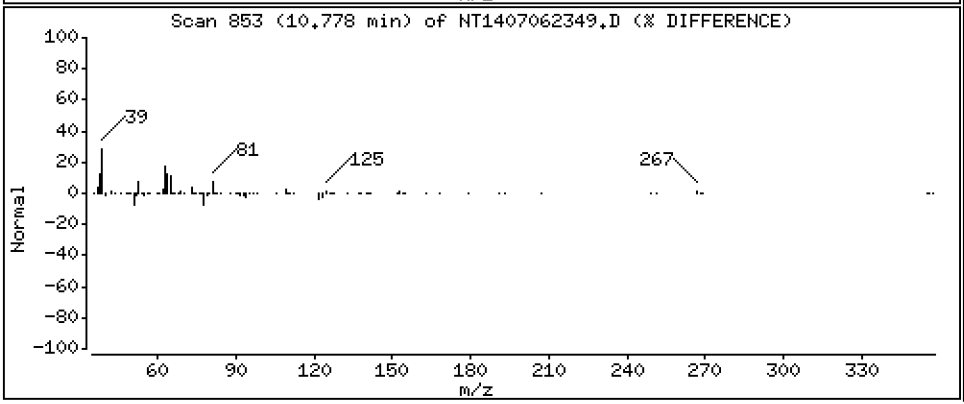
21 2-Nitrophenol

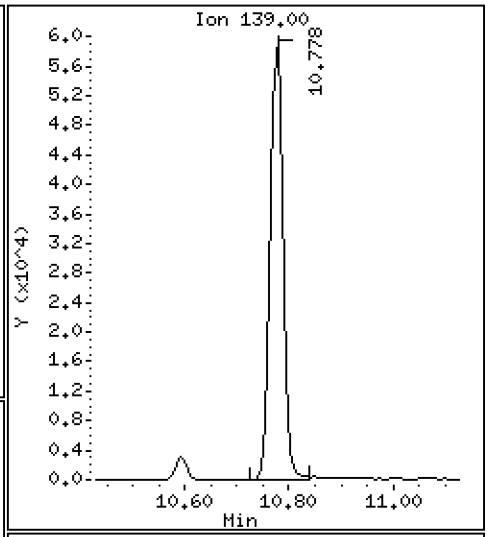
Concentration: 3.121 ug/mL

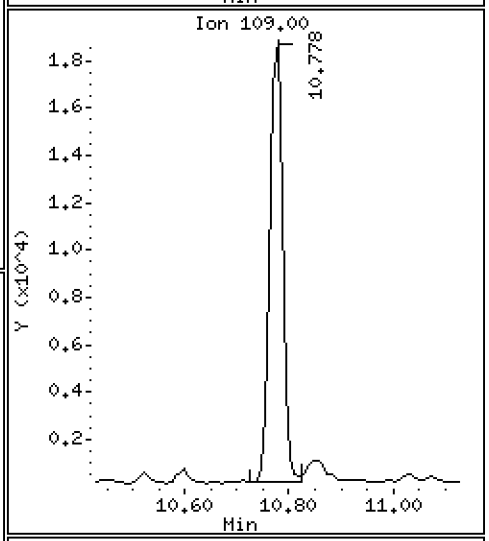


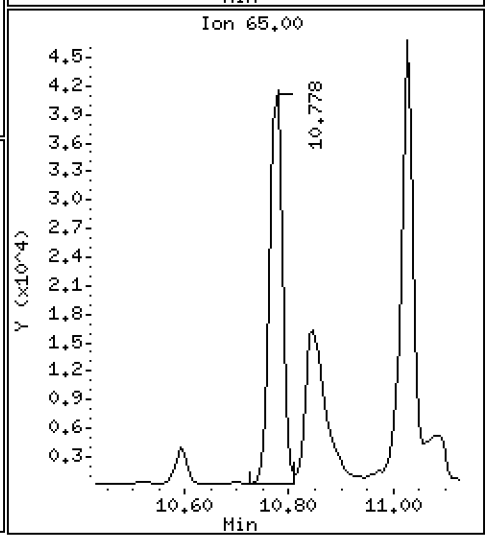












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

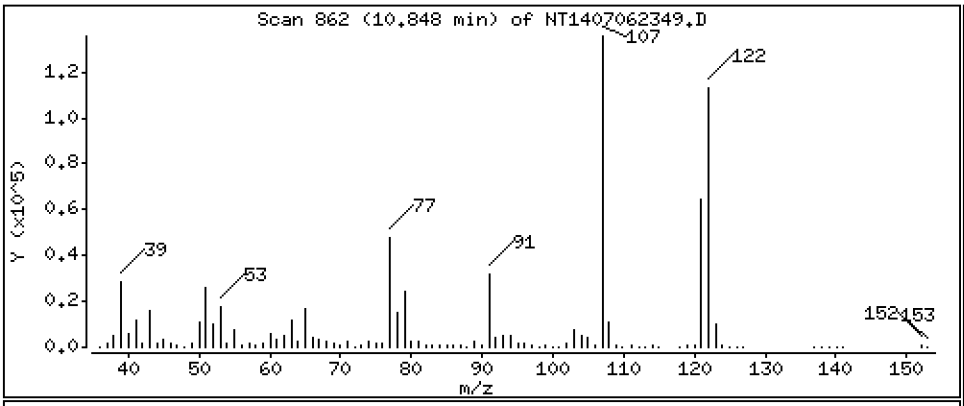
Operator: JGR

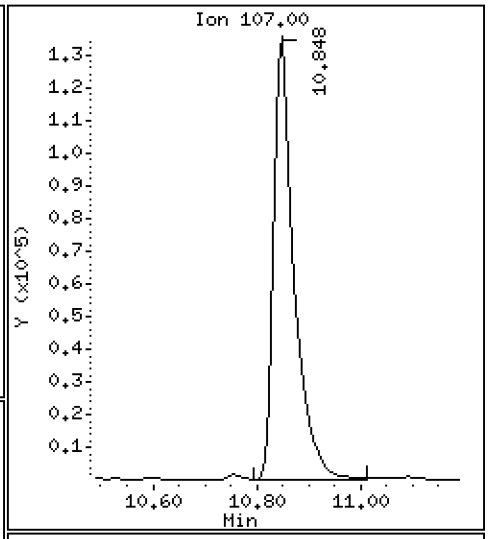
Column phase: ZB-5msi

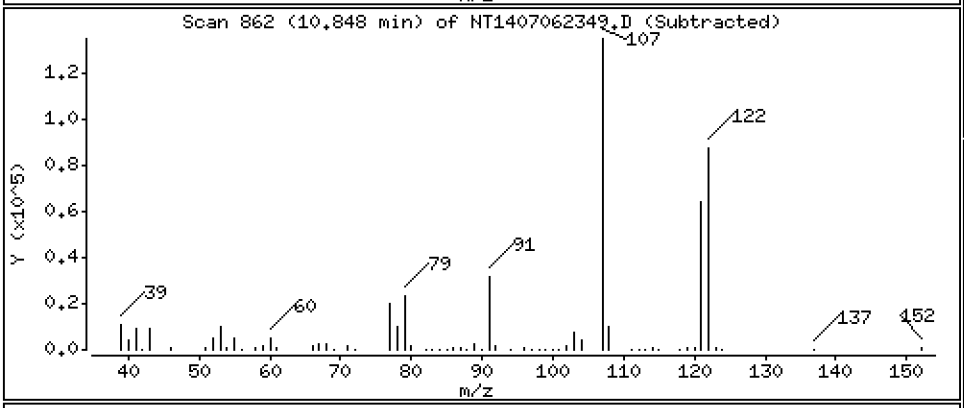
Column diameter: 0.25

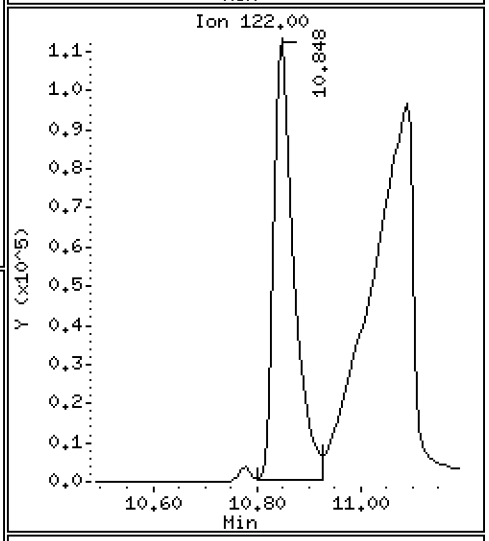
22 2,4-Dimethylphenol

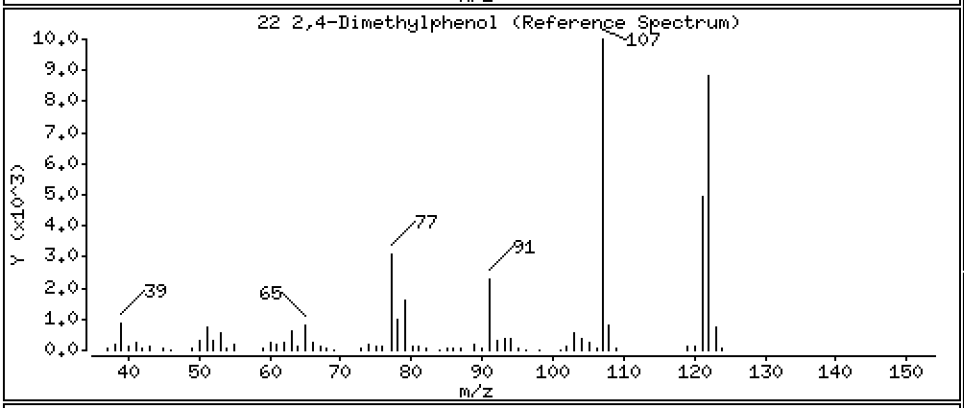
Concentration: 6.897 ug/mL

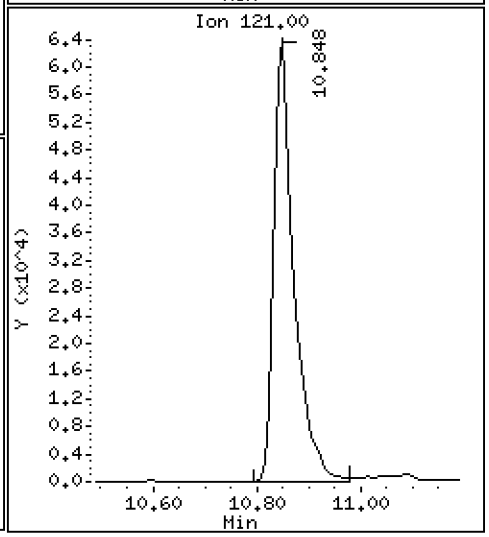


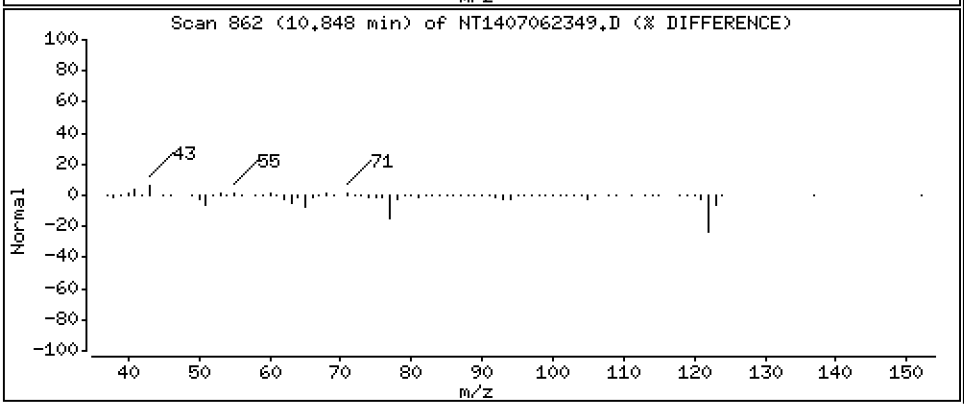












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

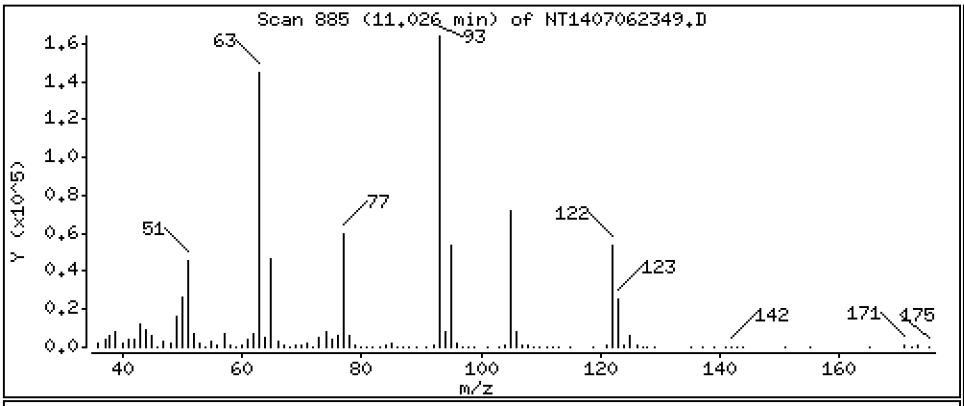
Operator: JGR

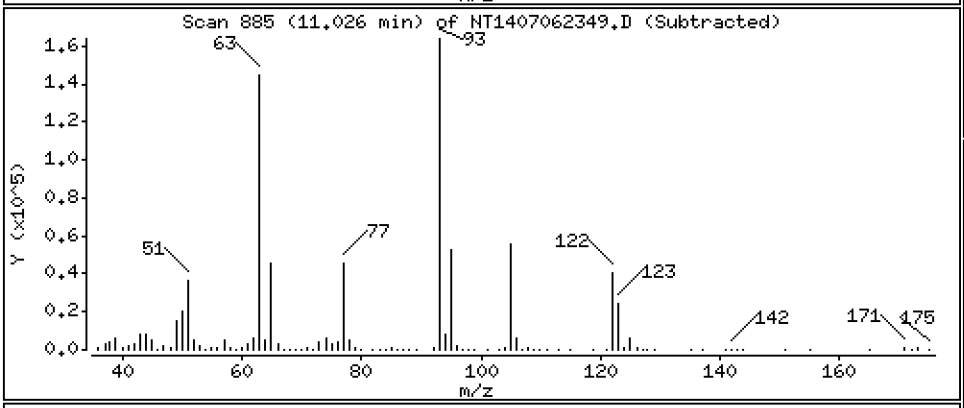
Column phase: ZB-5msi

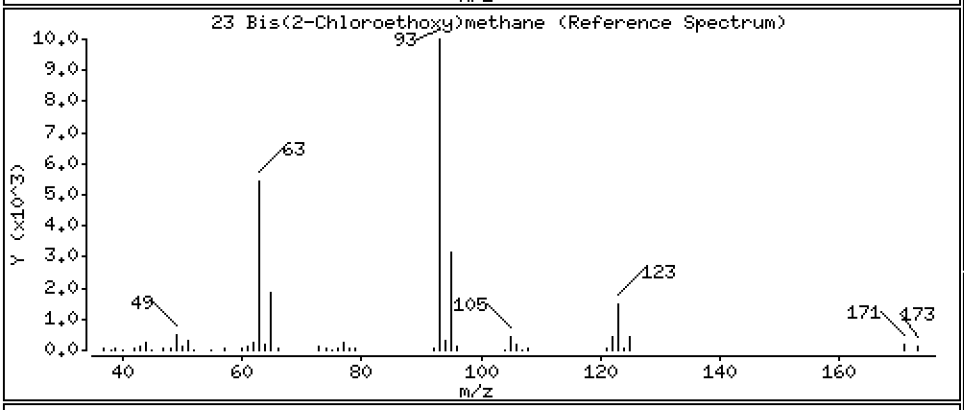
Column diameter: 0.25

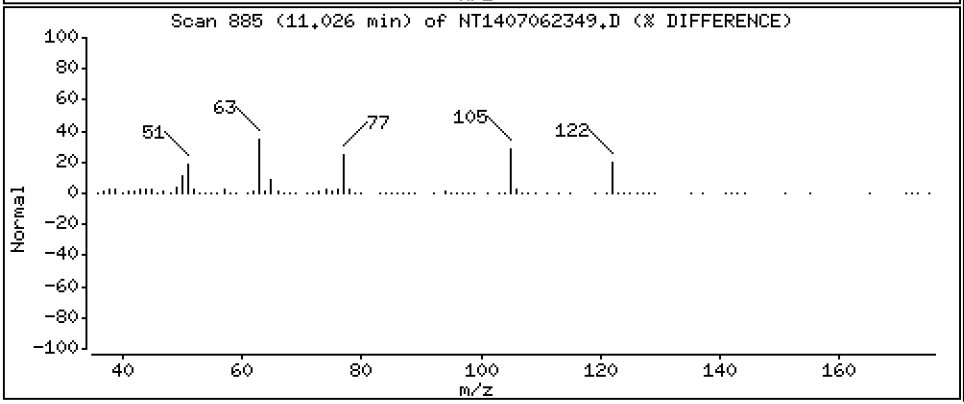
23 Bis(2-Chloroethoxy)methane

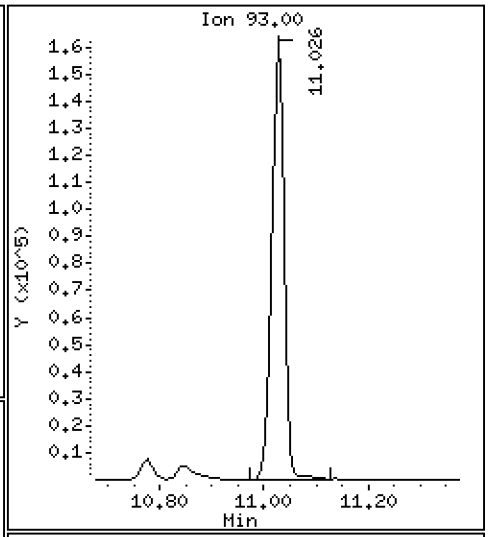
Concentration: 4.334 ug/mL

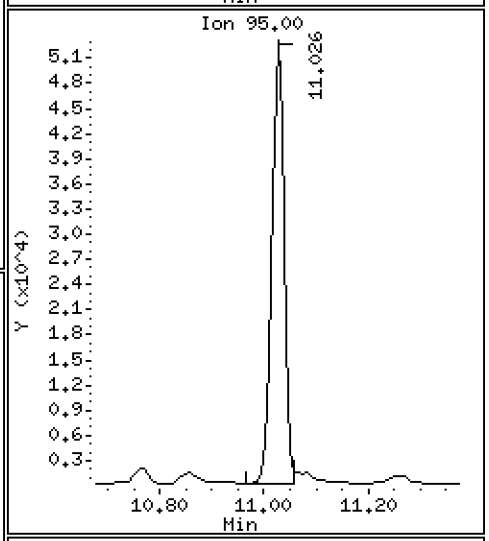


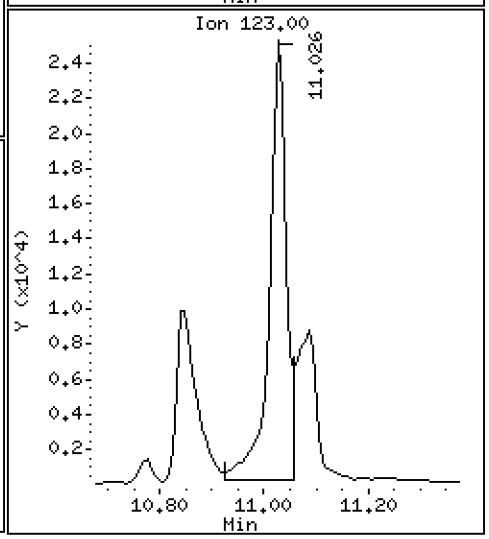












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

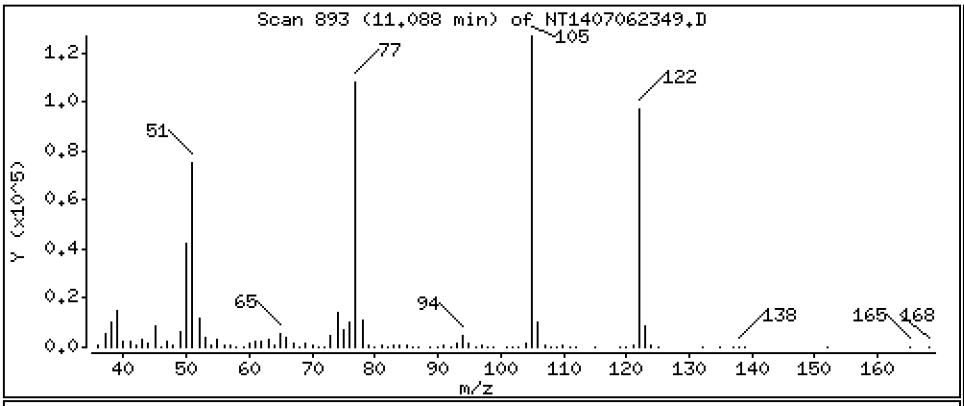
Operator: JGR

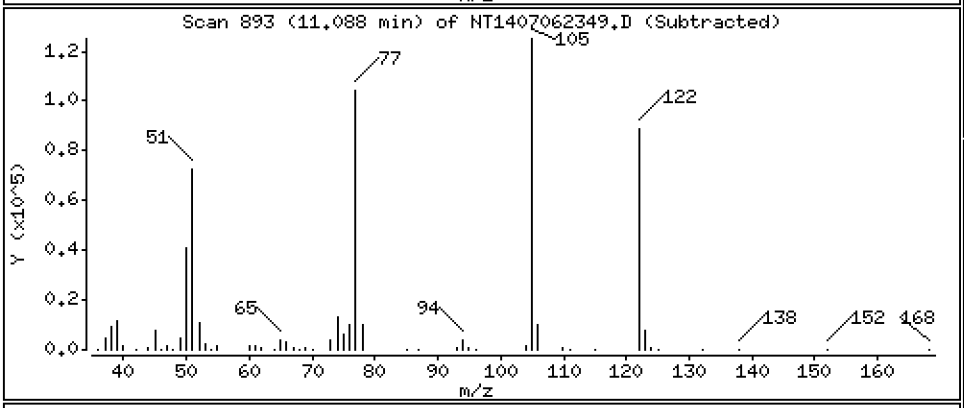
Column phase: ZB-5msi

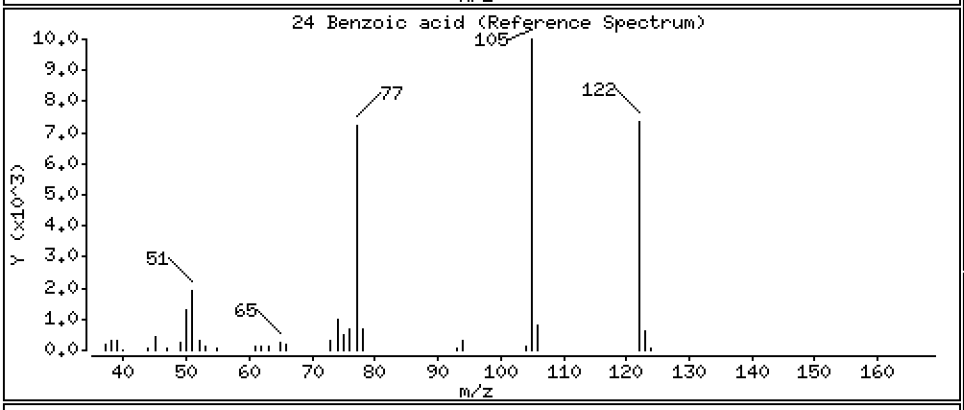
Column diameter: 0.25

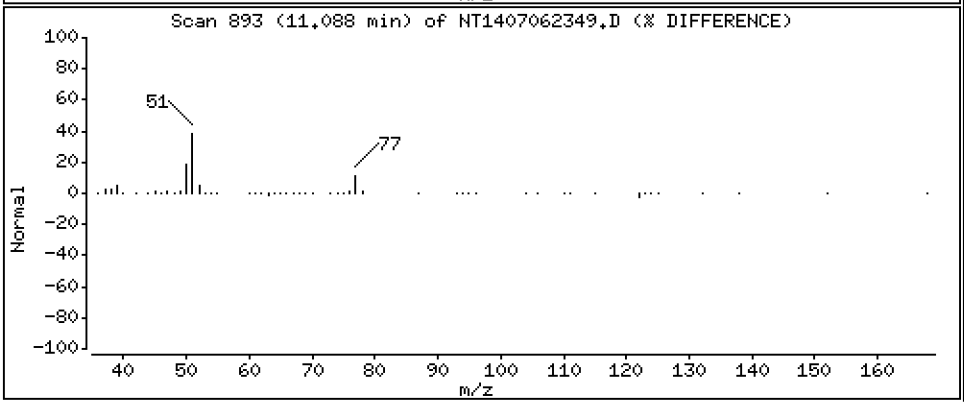
24 Benzoic acid

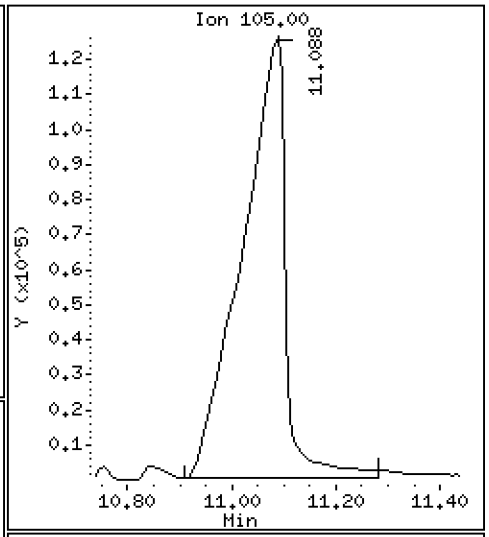
Concentration: 22.20 ug/mL

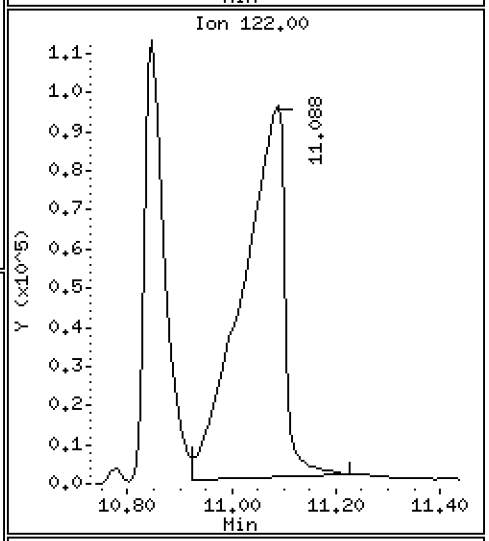


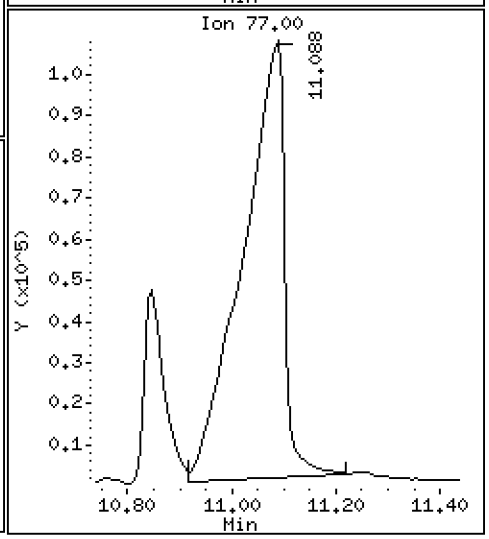












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

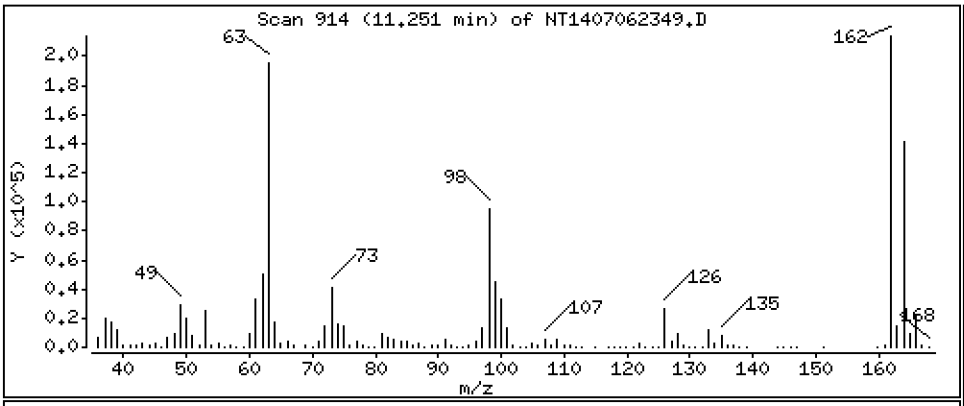
Operator: JGR

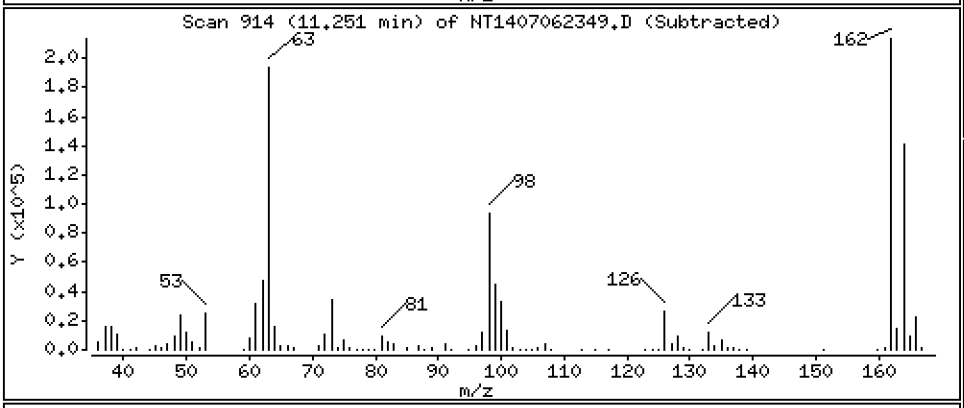
Column phase: ZB-5msi

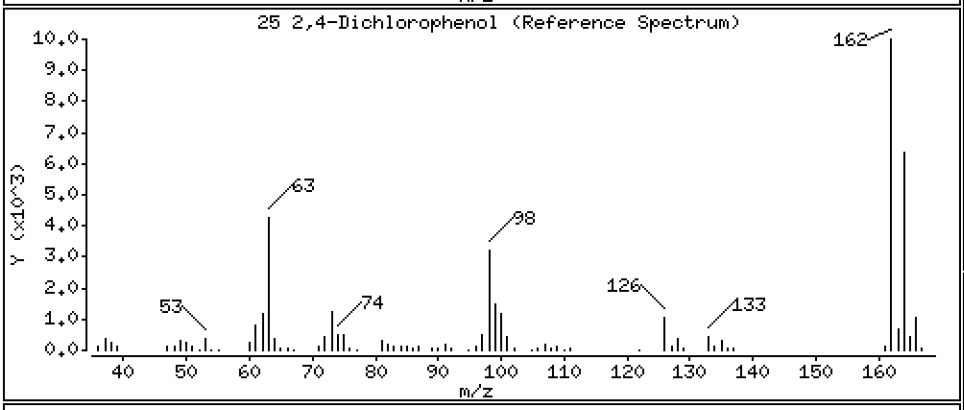
Column diameter: 0.25

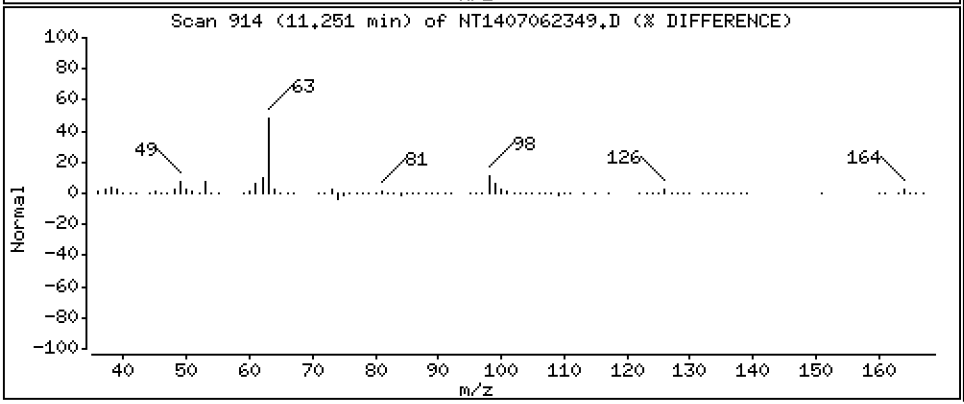
25 2,4-Dichlorophenol

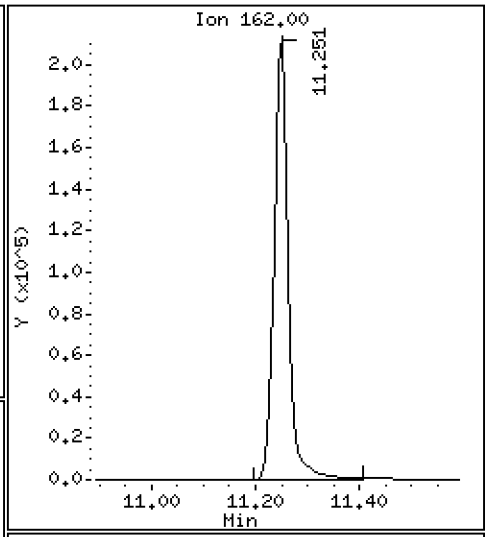
Concentration: 11.06 ug/mL

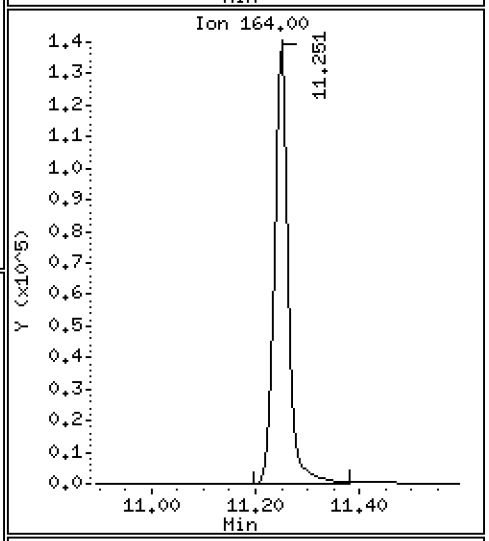


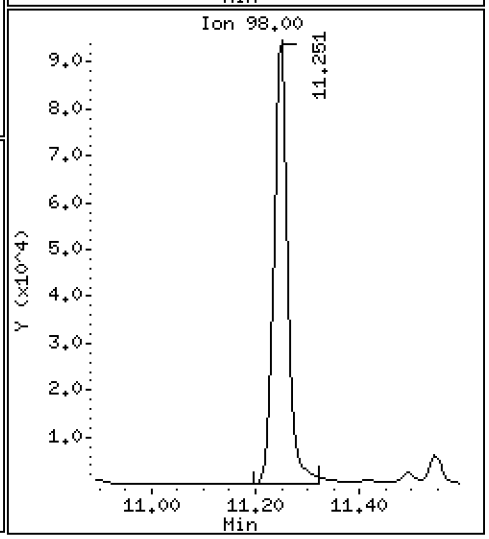












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

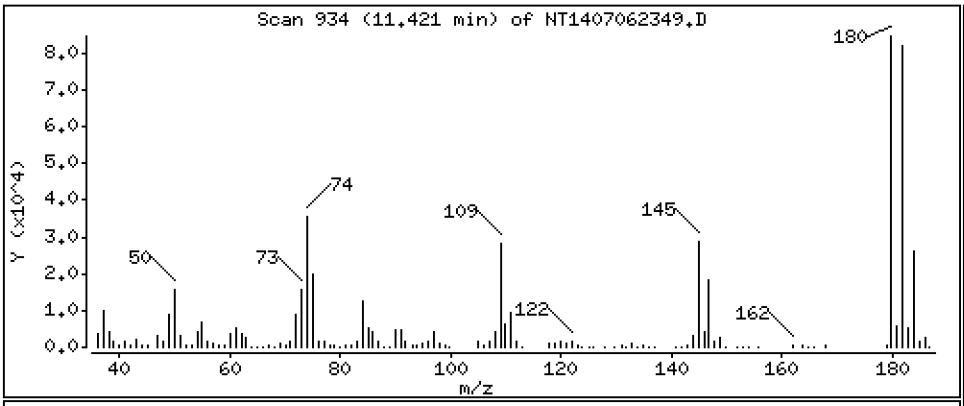
Operator: JGR

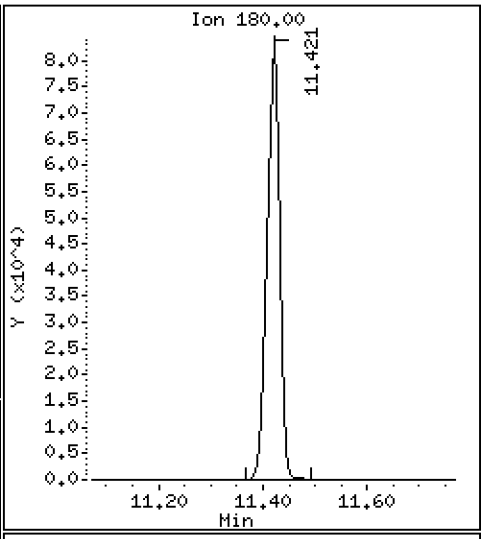
Column phase: ZB-5msi

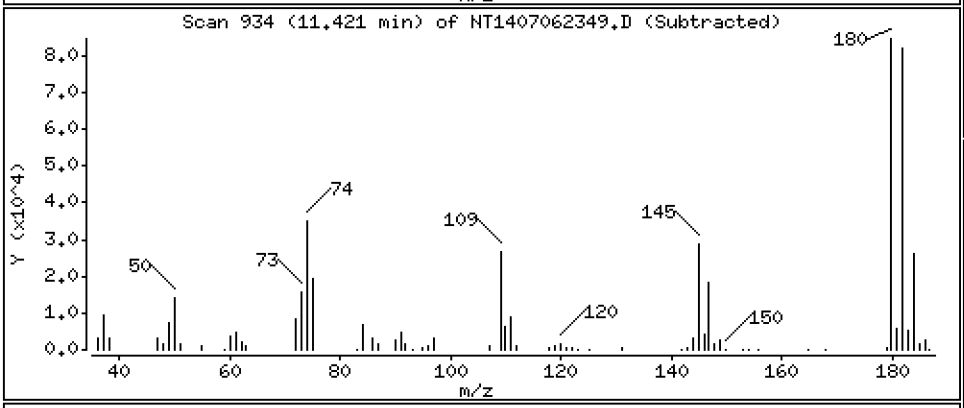
Column diameter: 0.25

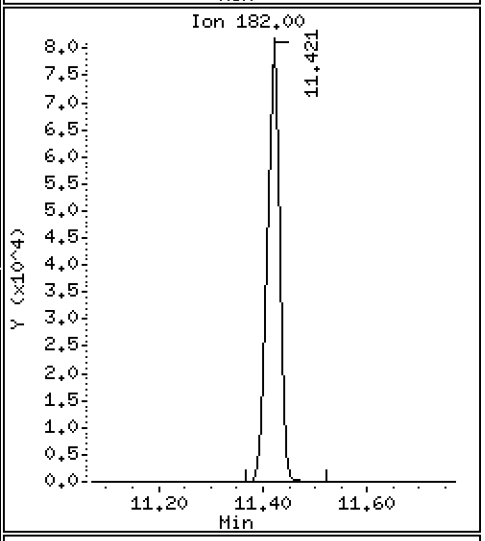
26 1,2,4-Trichlorobenzene

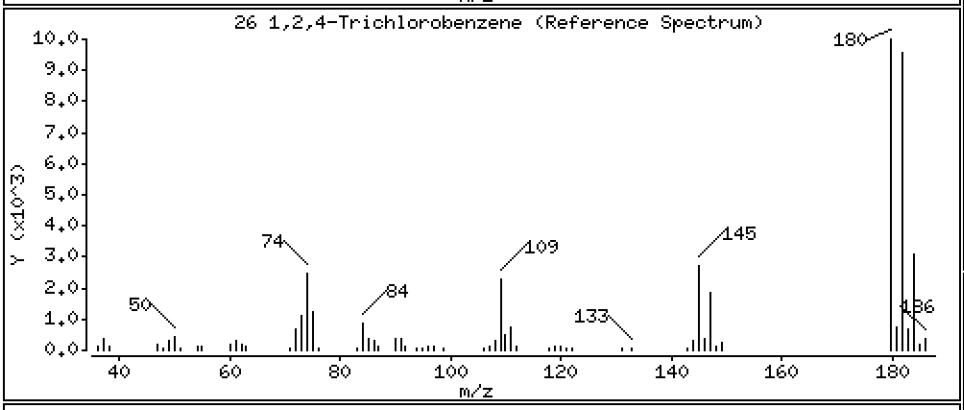
Concentration: 3.540 ug/mL

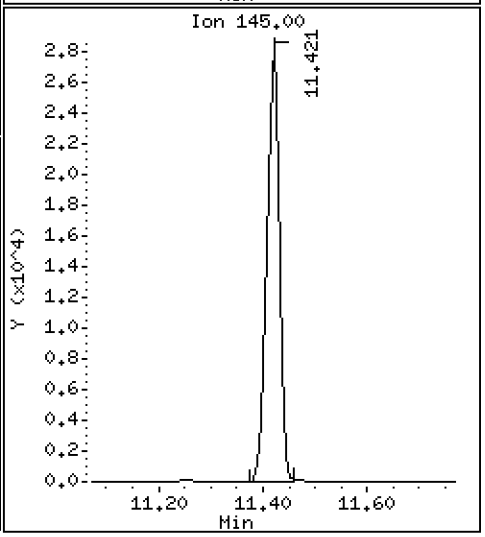


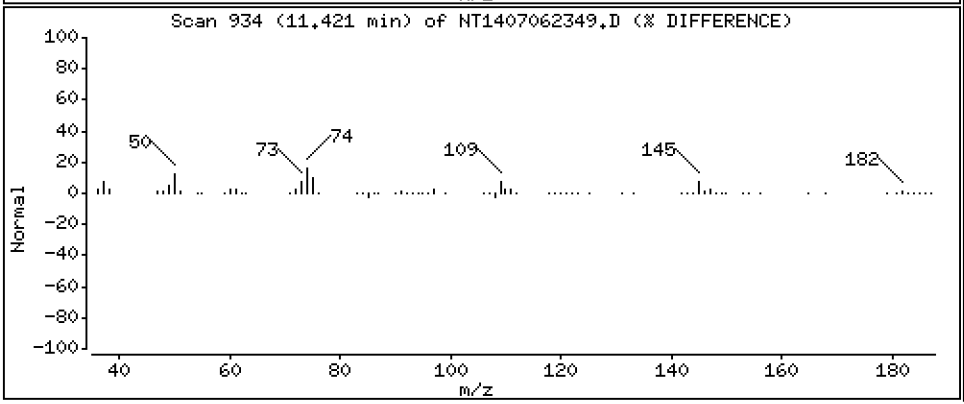












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

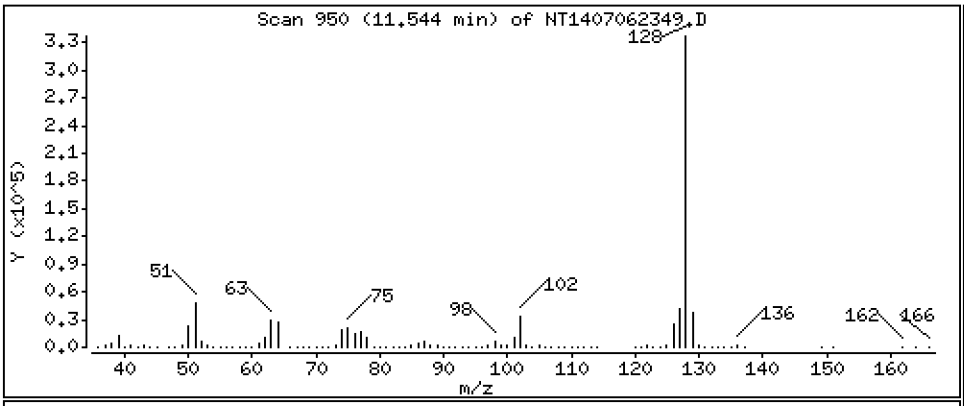
Operator: JGR

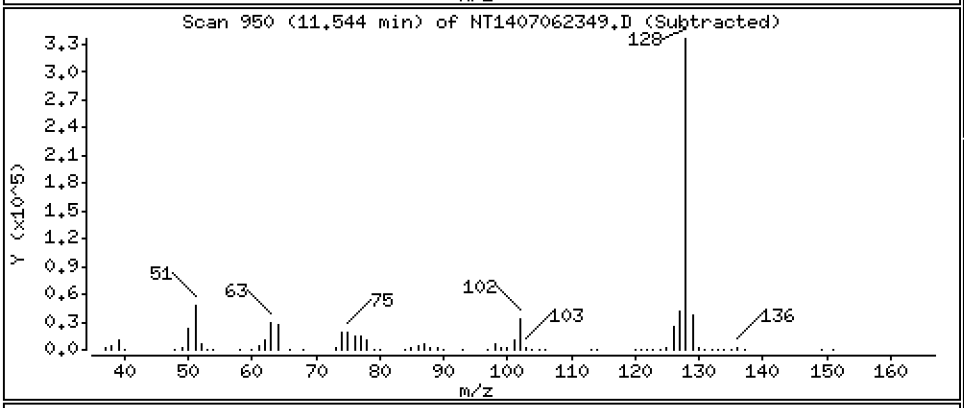
Column phase: ZB-5msi

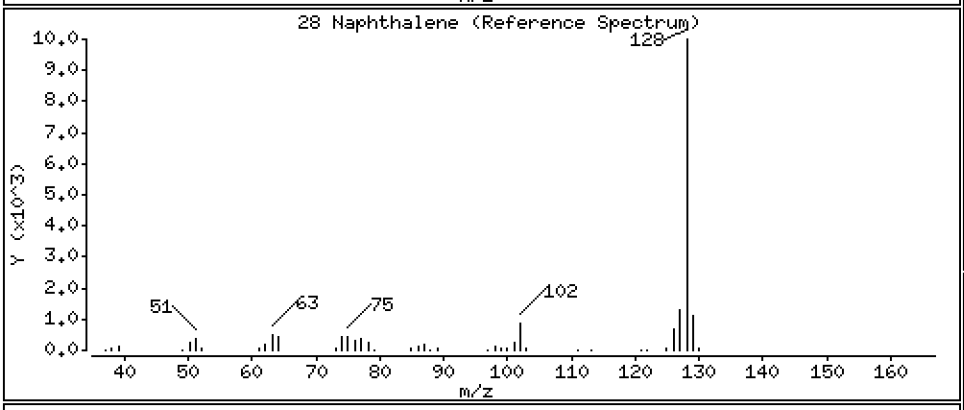
Column diameter: 0.25

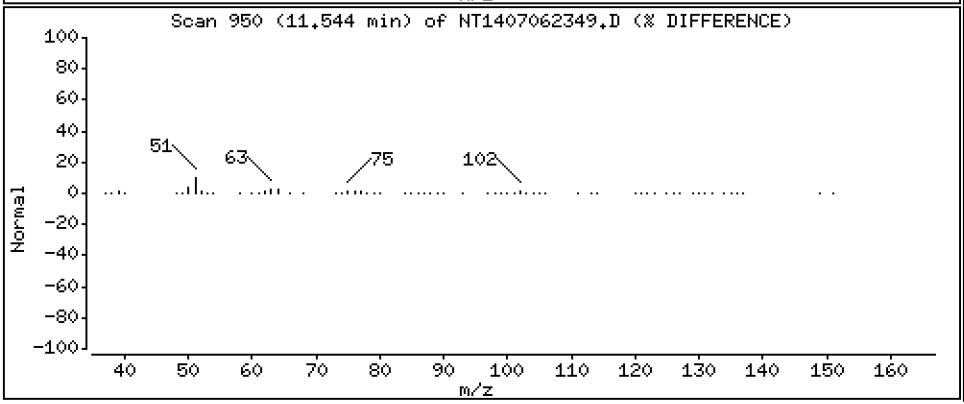
28 Naphthalene

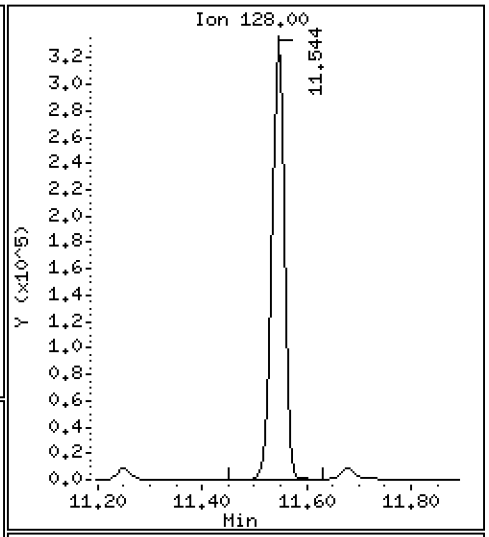
Concentration: 3.884 ug/mL

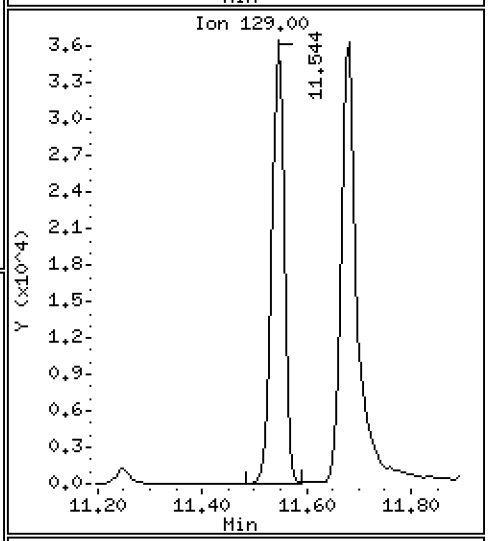


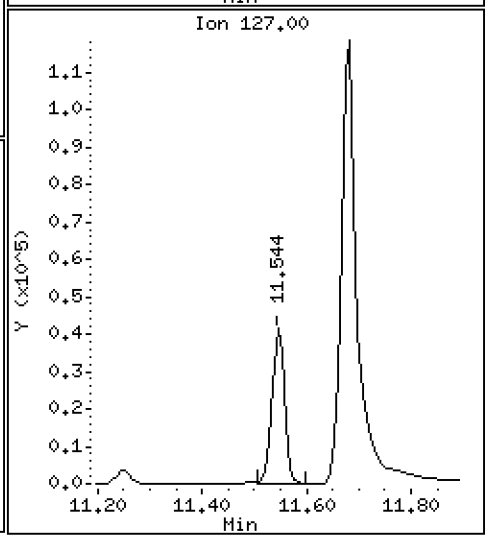












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

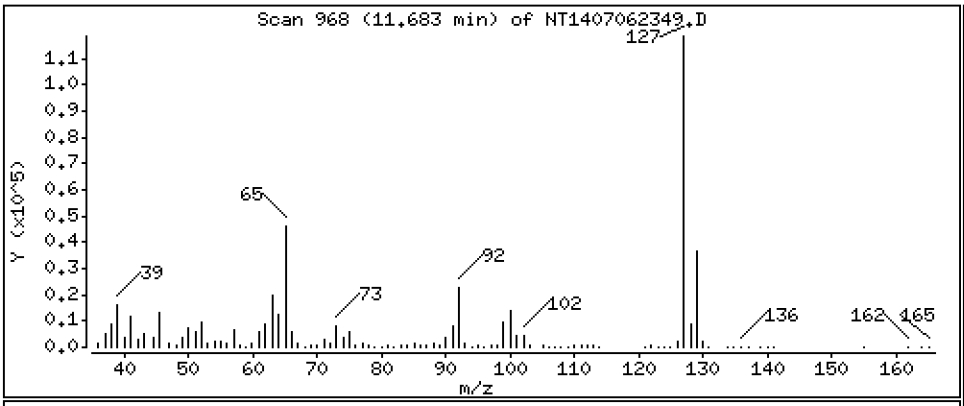
Operator: JGR

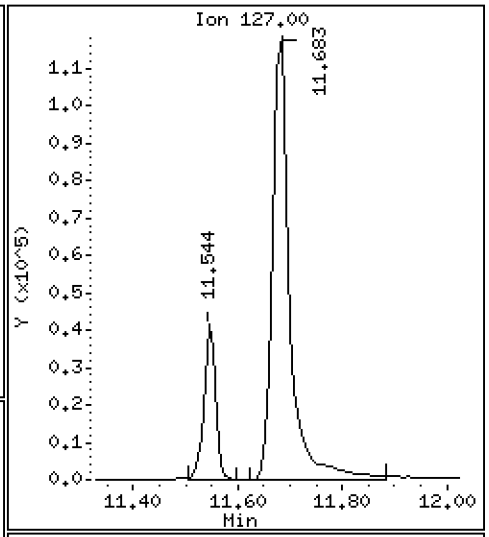
Column phase: ZB-5msi

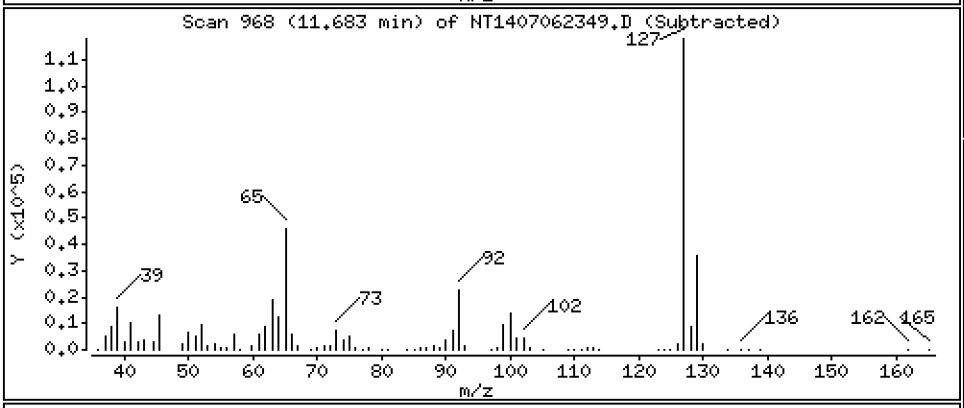
Column diameter: 0.25

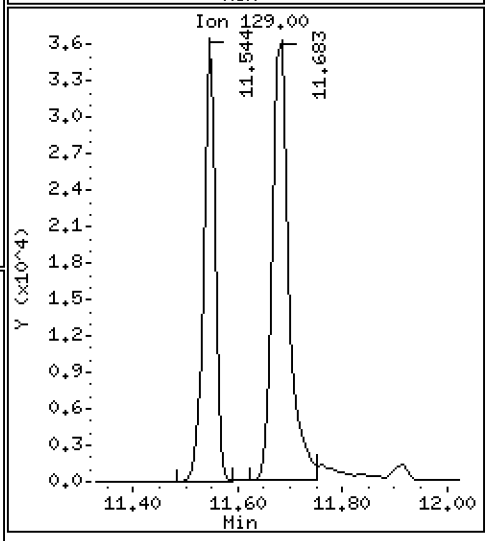
29 4-Chloroaniline

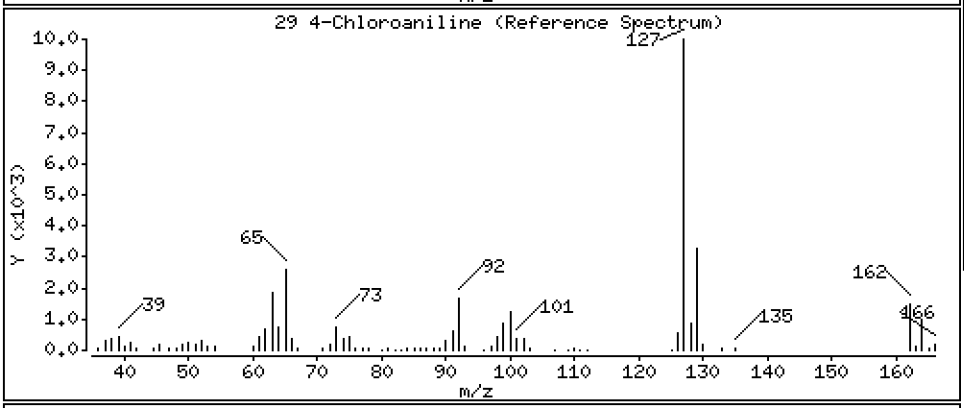
Concentration: 4.353 ug/mL

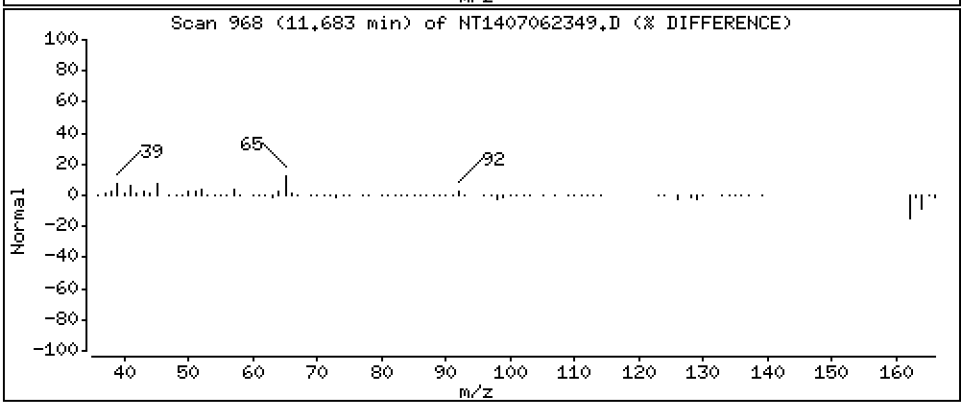












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

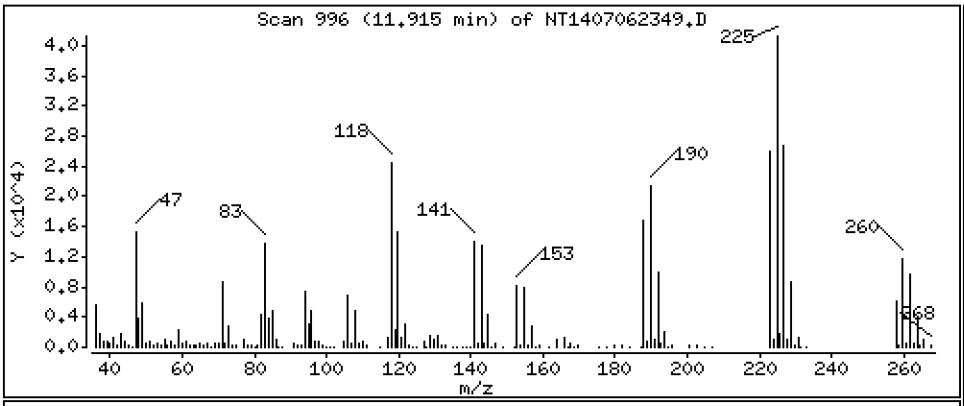
Operator: JGR

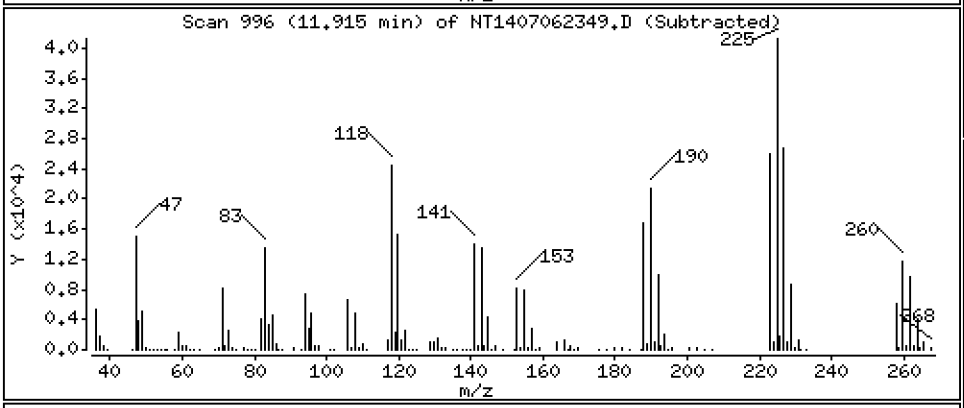
Column phase: ZB-5msi

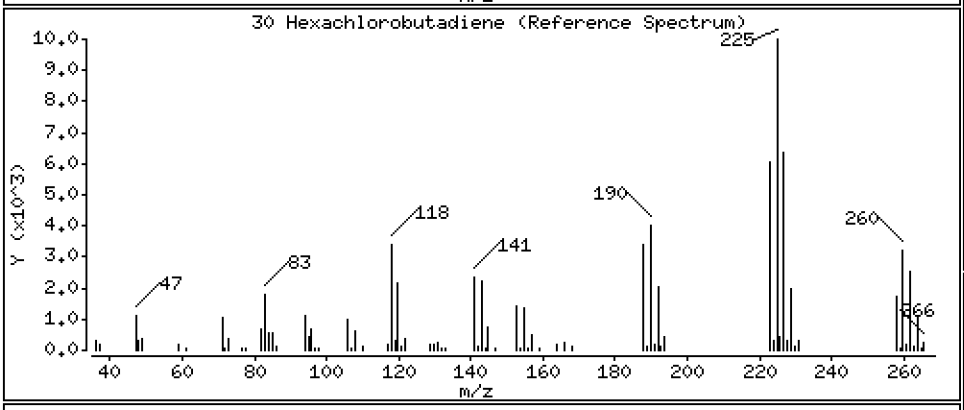
Column diameter: 0.25

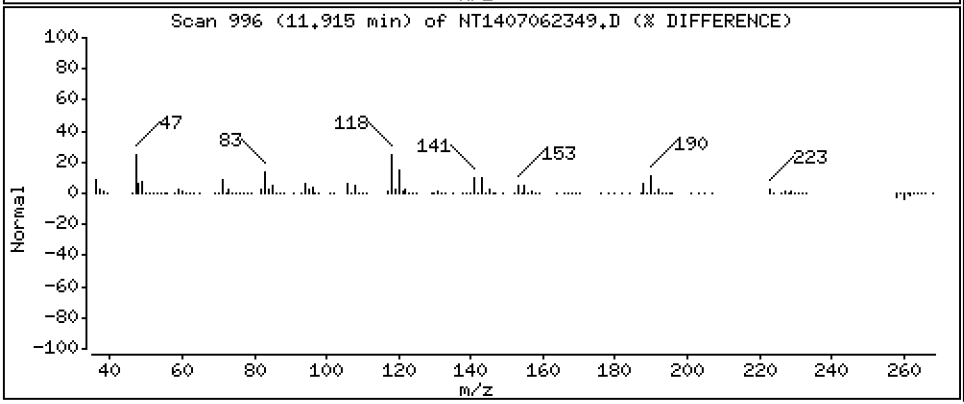
30 Hexachlorobutadiene

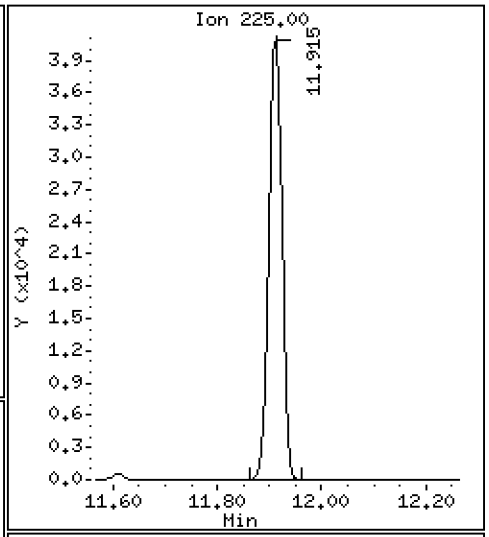
Concentration: 3.845 ug/mL

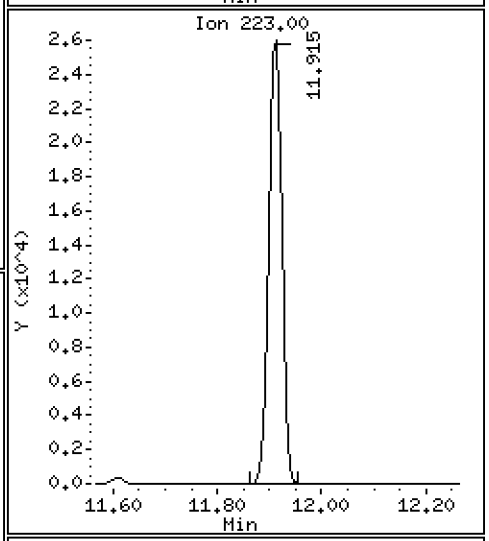


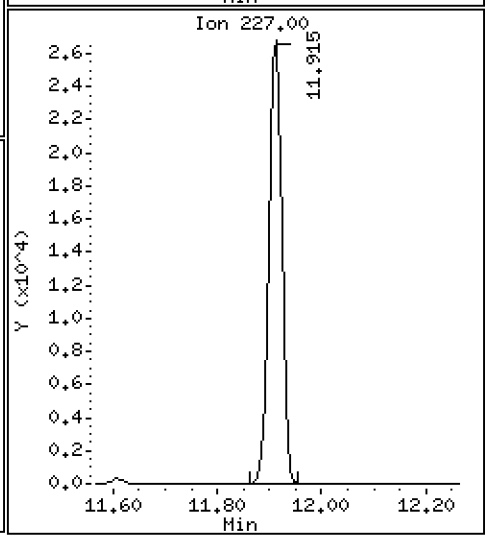












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

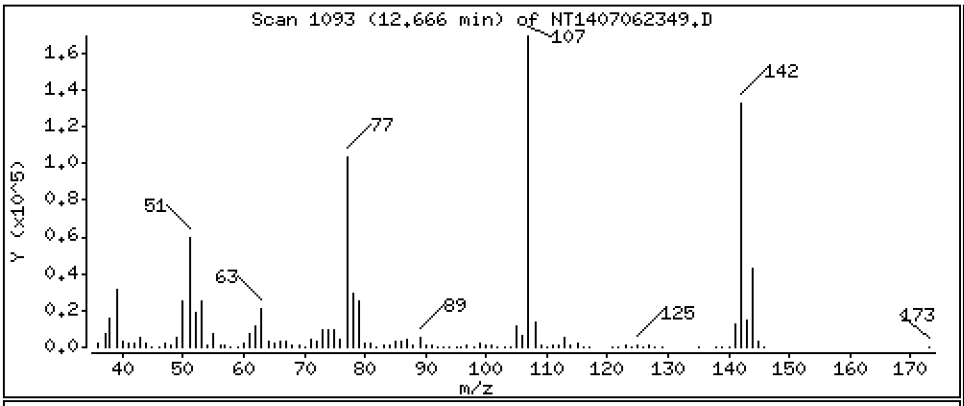
Operator: JGR

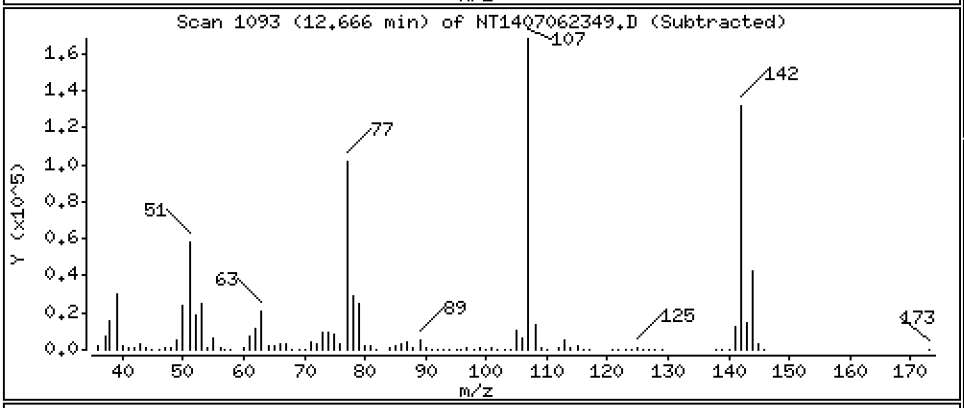
Column phase: ZB-5msi

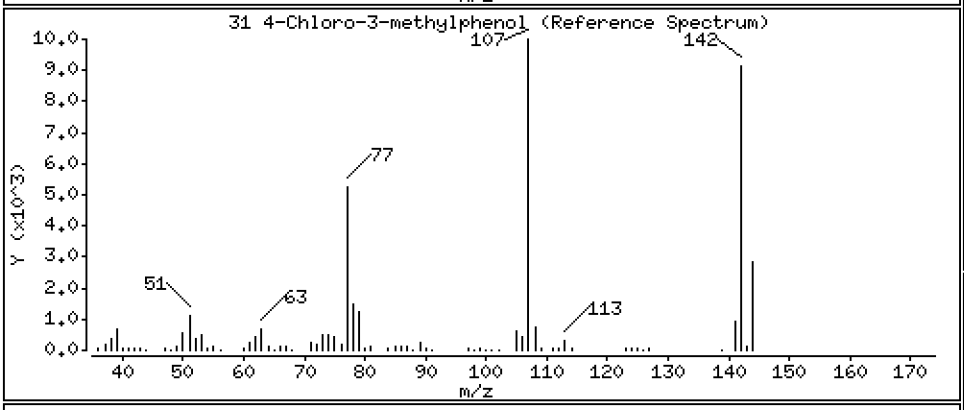
Column diameter: 0.25

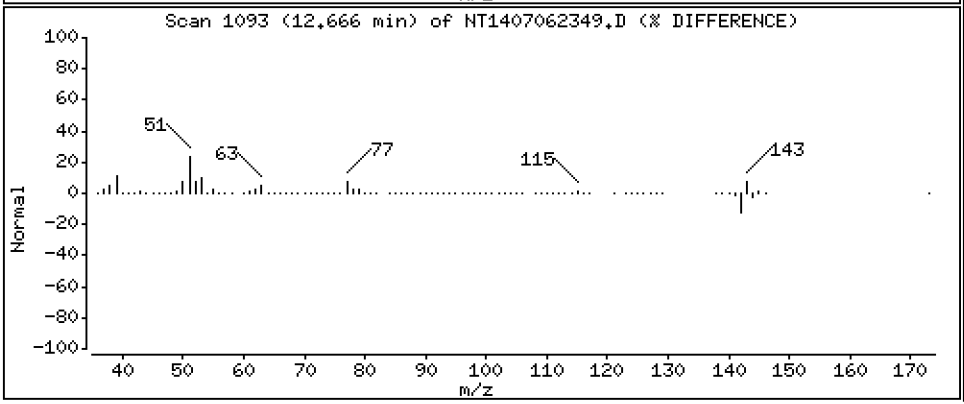
31 4-Chloro-3-methylphenol

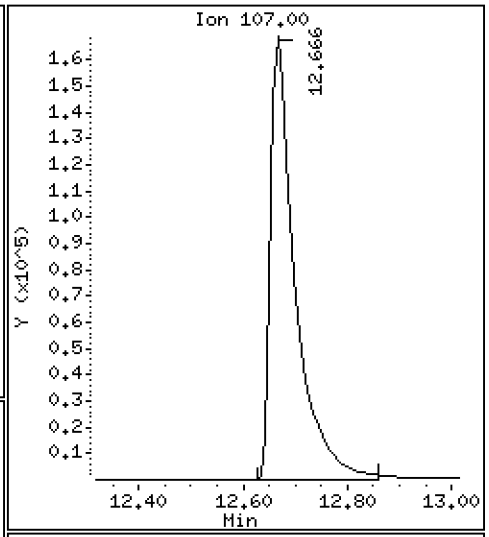
Concentration: 11.20 ug/mL

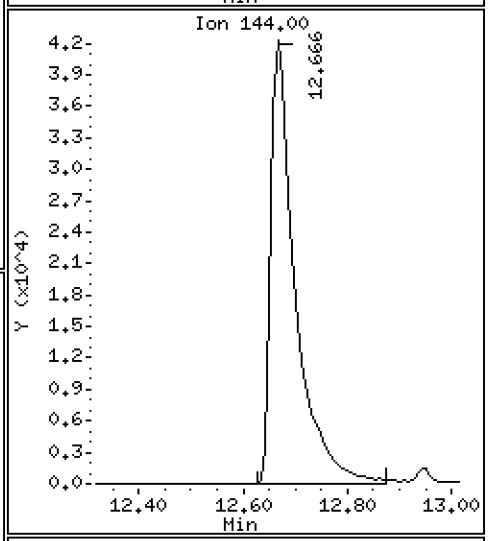


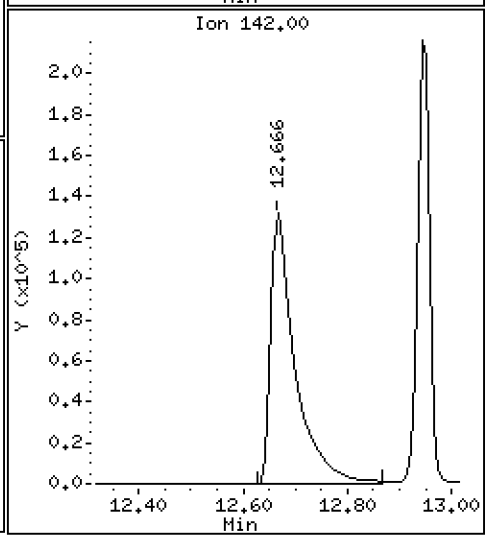












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

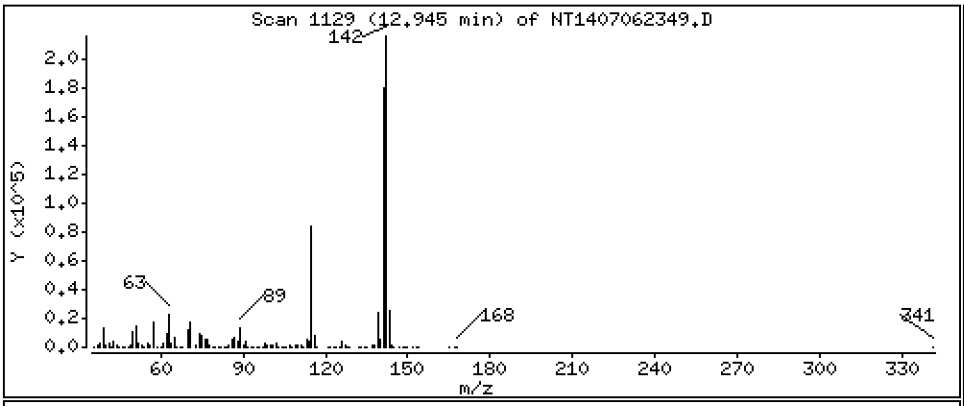
Operator: JGR

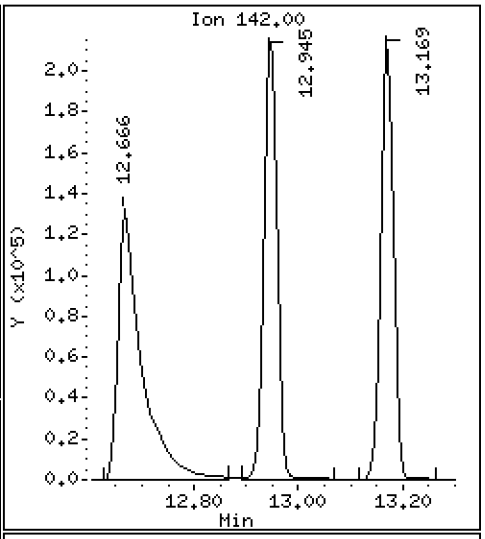
Column phase: ZB-5msi

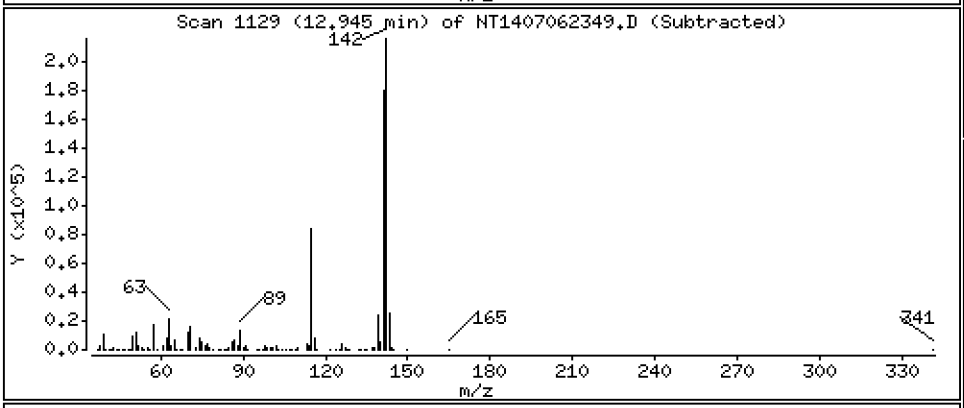
Column diameter: 0.25

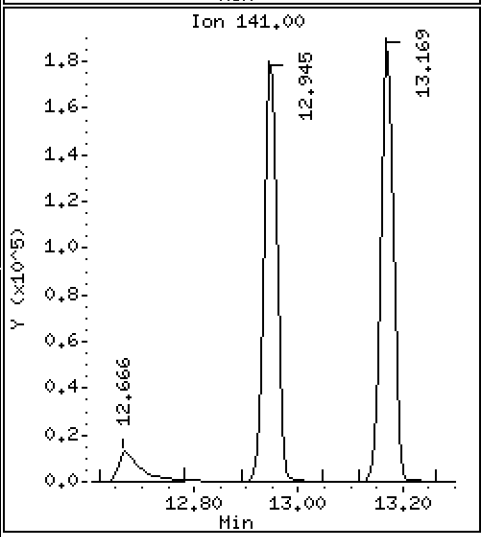
32 2-Methylnaphthalene

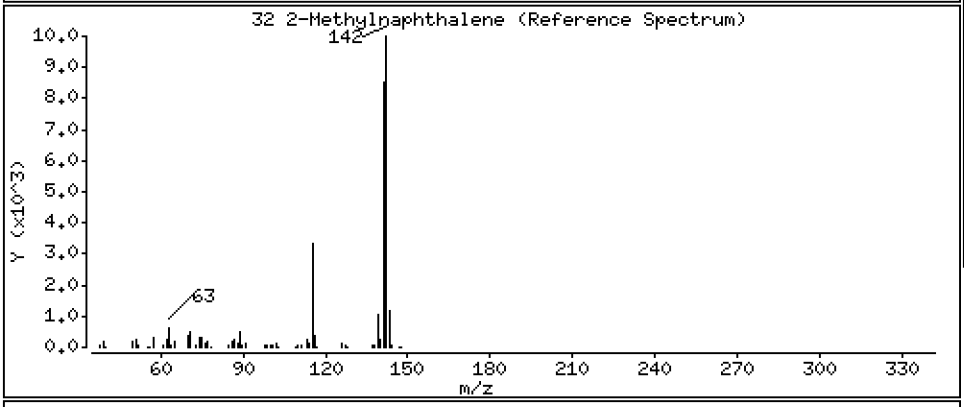
Concentration: 3.634 ug/mL

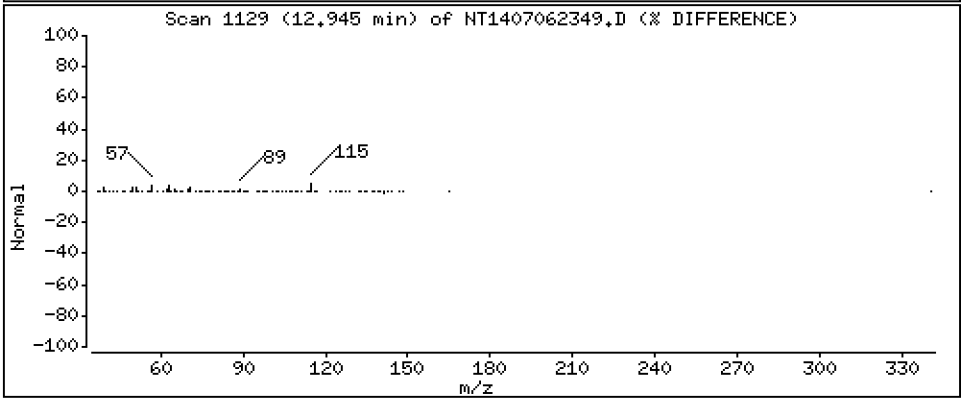












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

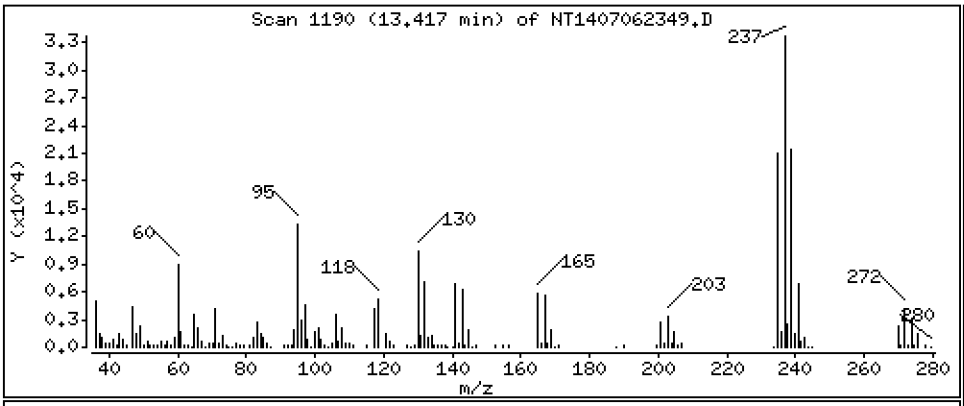
Operator: JGR

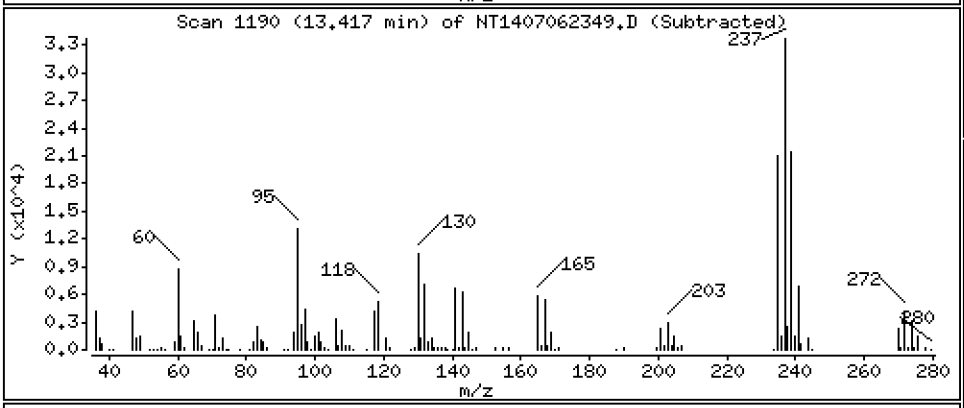
Column phase: ZB-5msi

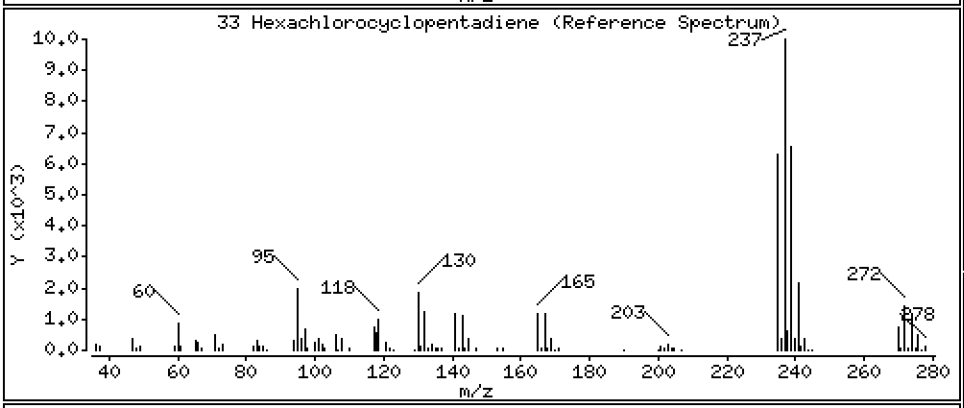
Column diameter: 0.25

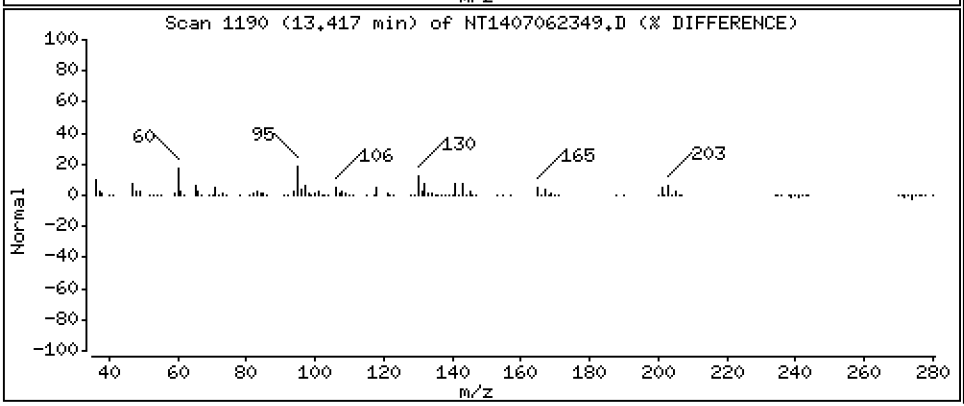
33 Hexachlorocyclopentadiene

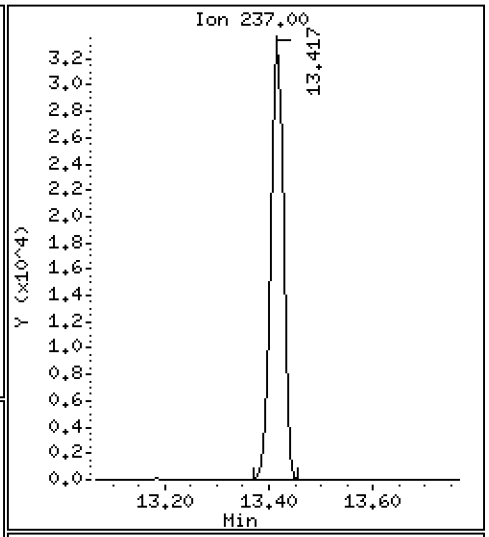
Concentration: 2.745 ug/mL

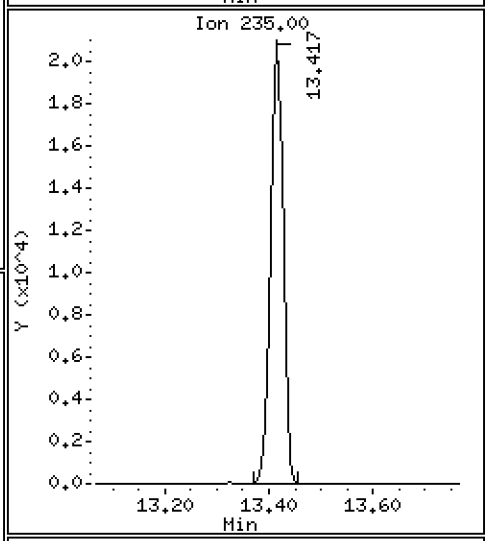


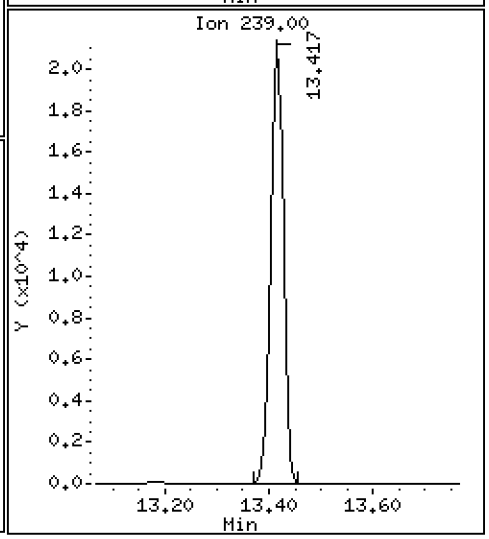












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

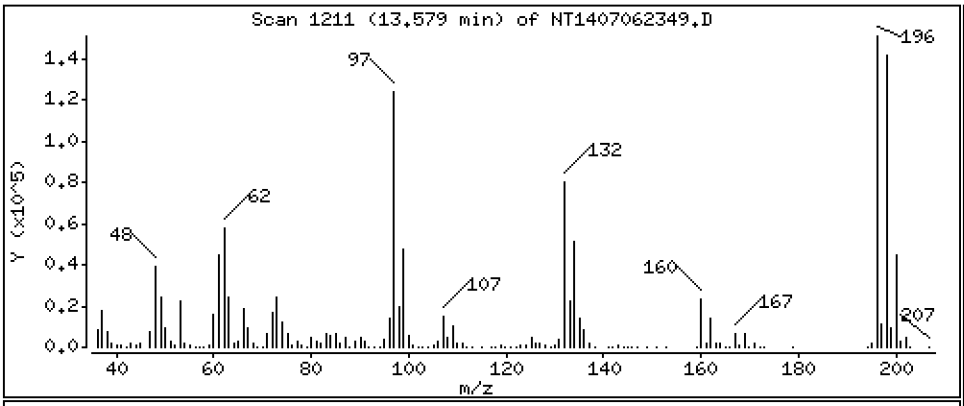
Operator: JGR

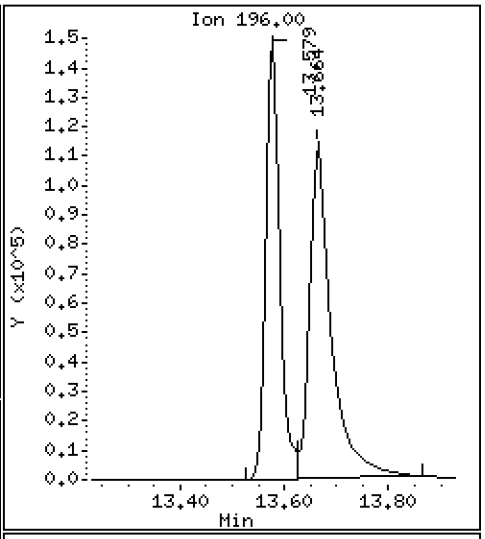
Column phase: ZB-5msi

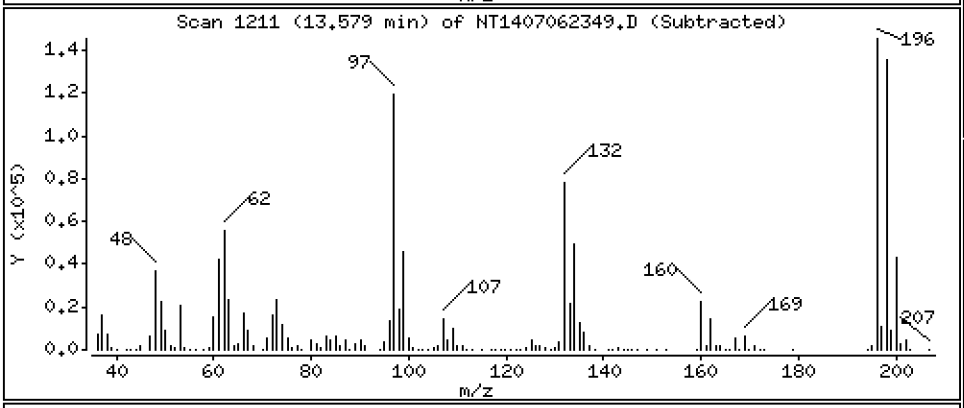
Column diameter: 0.25

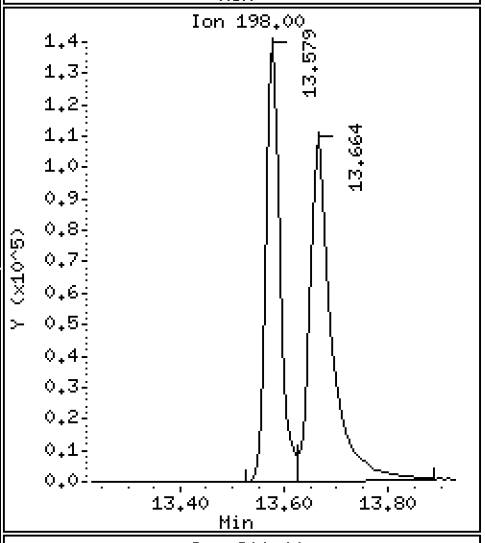
34 2,4,6-Trichlorophenol

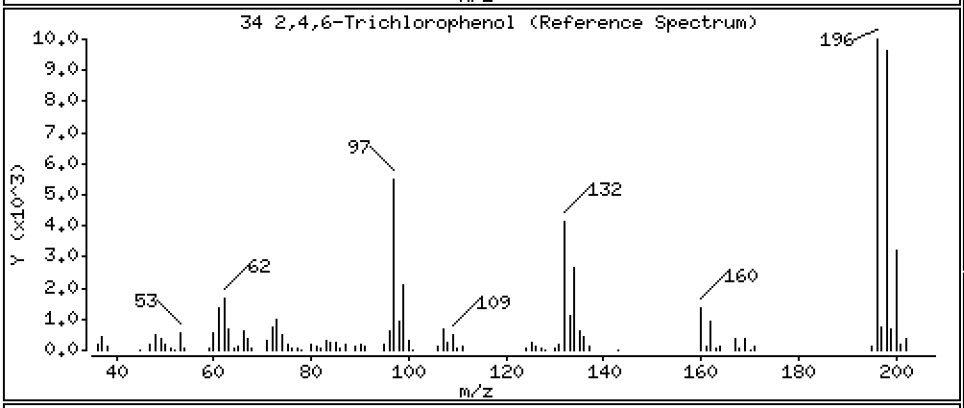
Concentration: 10.84 ug/mL

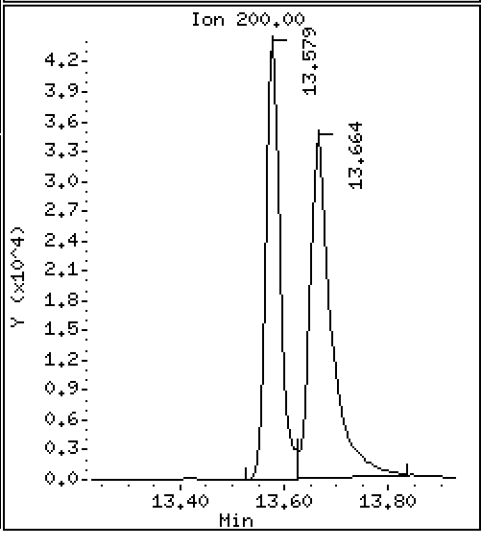


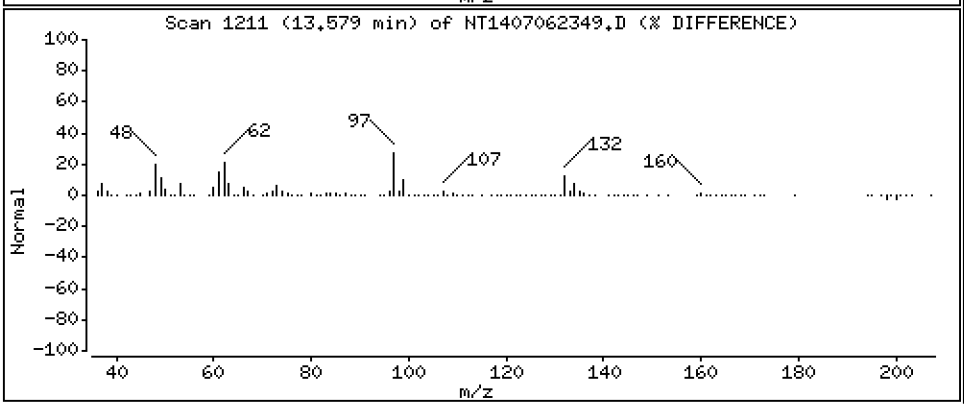












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

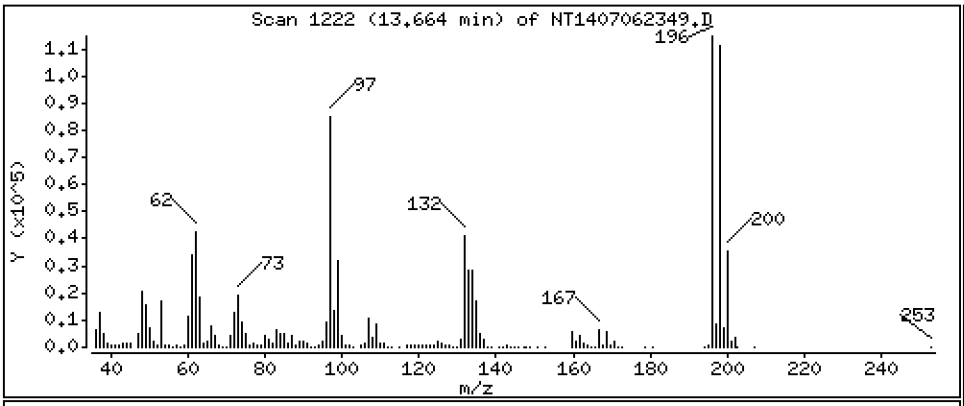
Operator: JGR

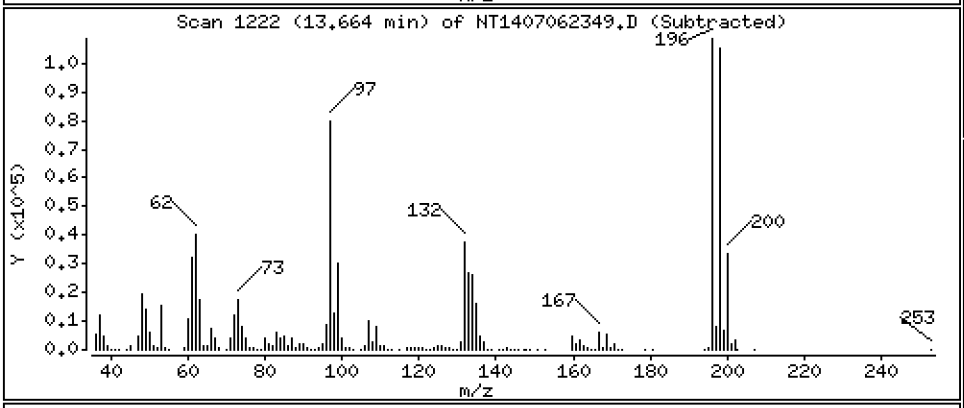
Column phase: ZB-5msi

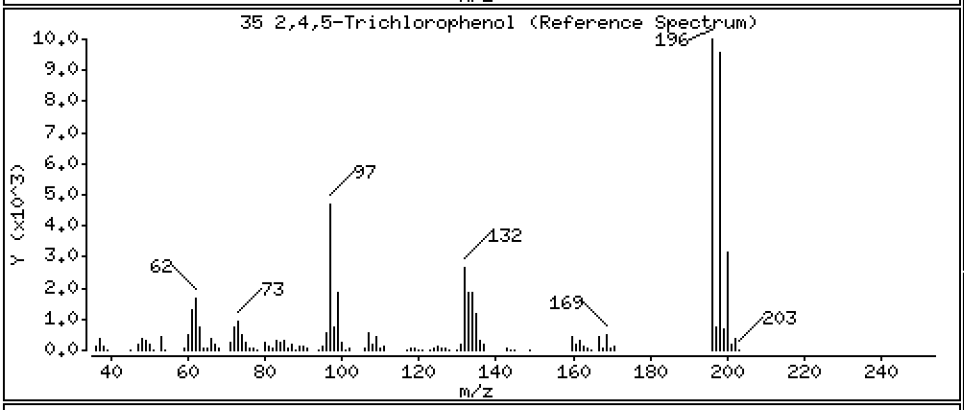
Column diameter: 0.25

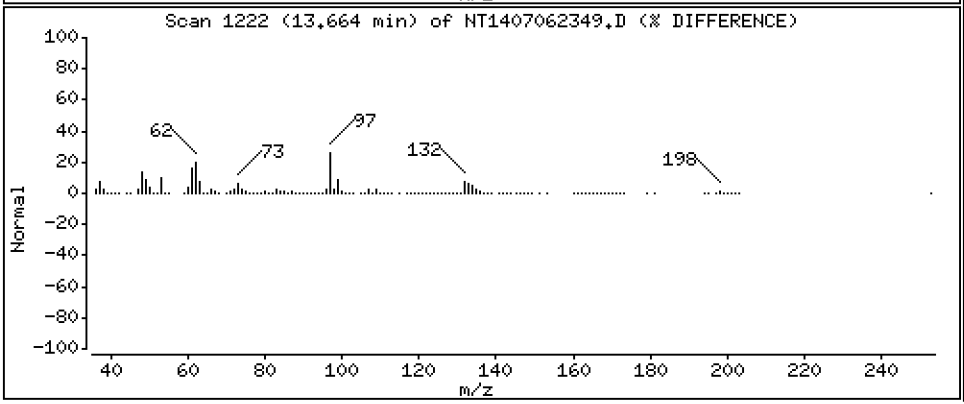
35 2,4,5-Trichlorophenol

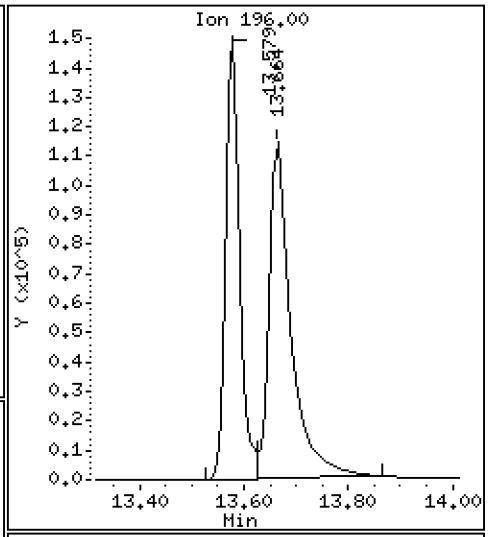
Concentration: 12.72 ug/mL

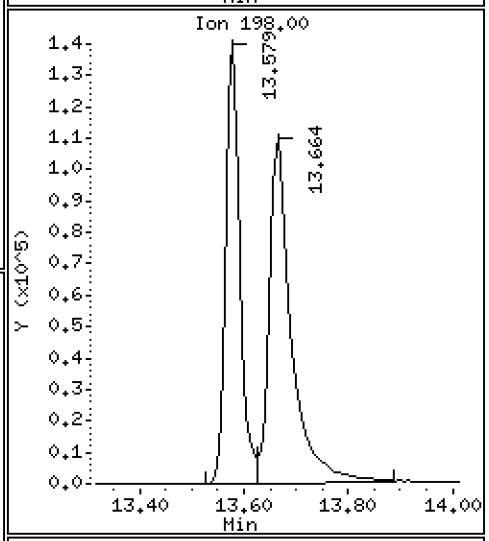


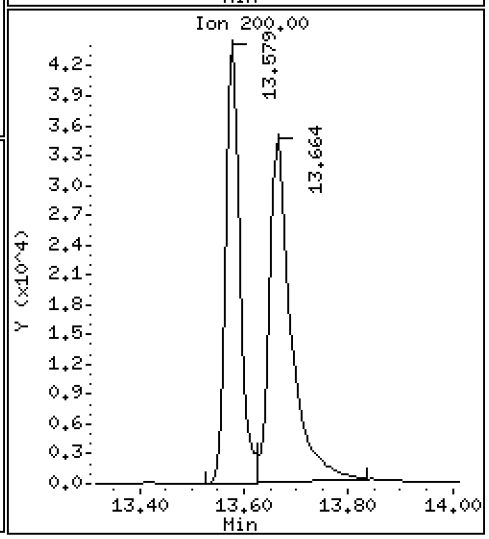












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

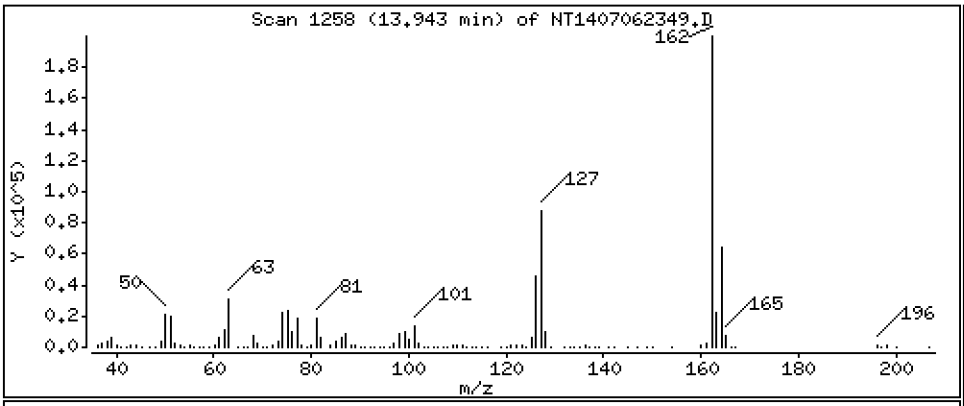
Operator: JGR

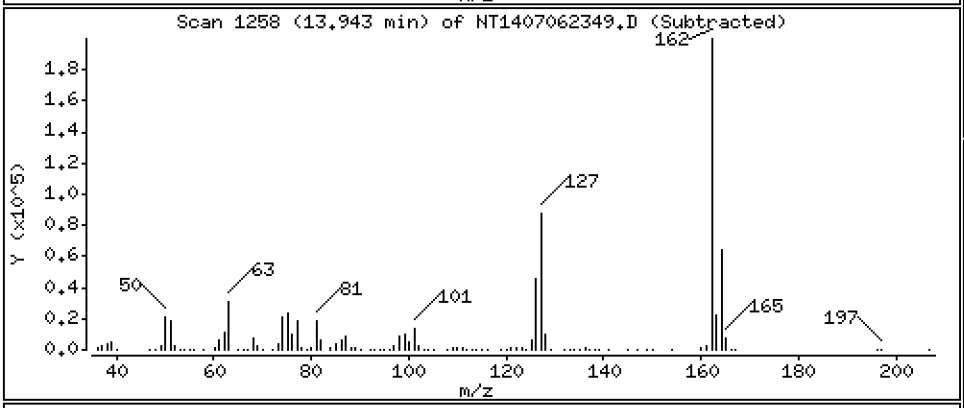
Column phase: ZB-5msi

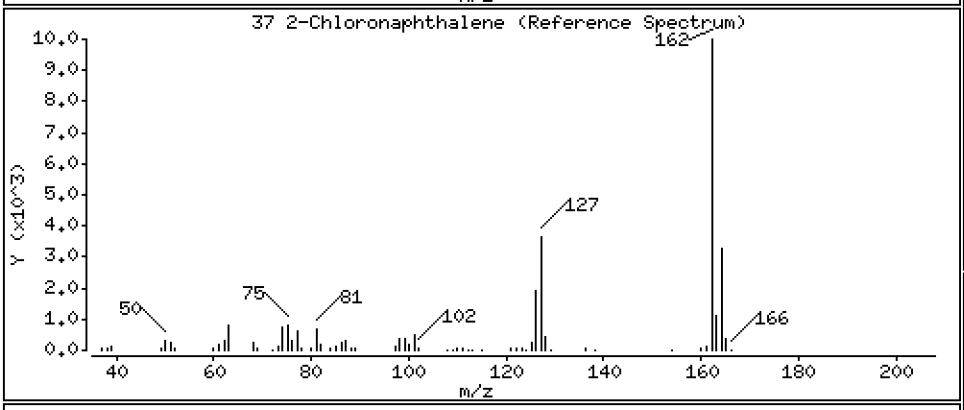
Column diameter: 0.25

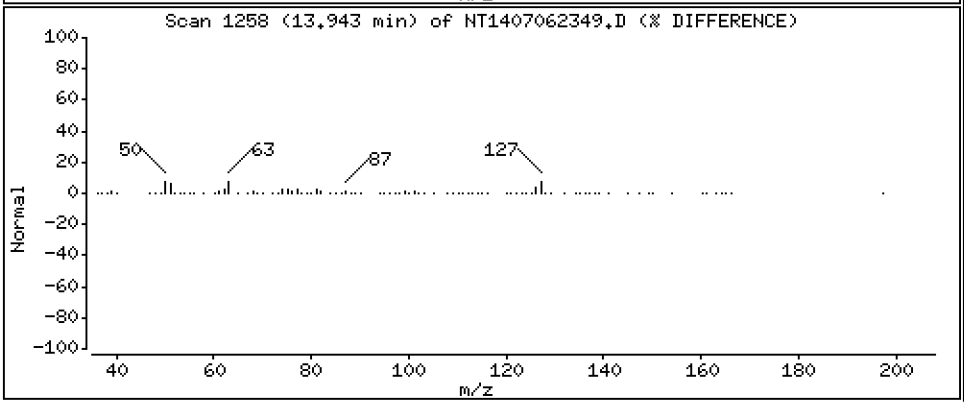
37 2-Chloronaphthalene

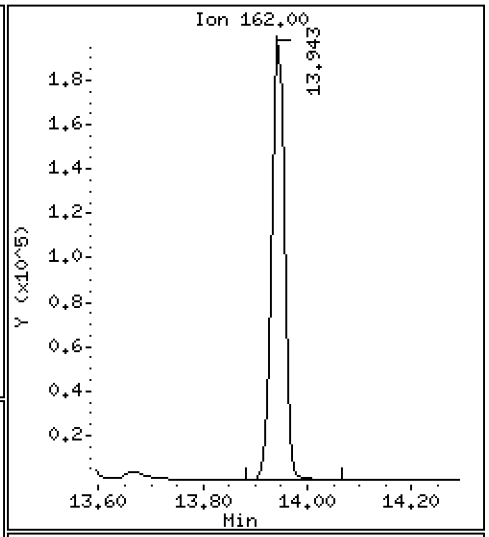
Concentration: 3.804 ug/mL

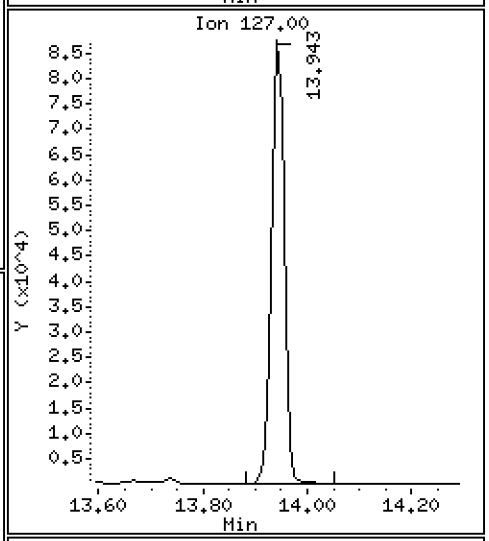


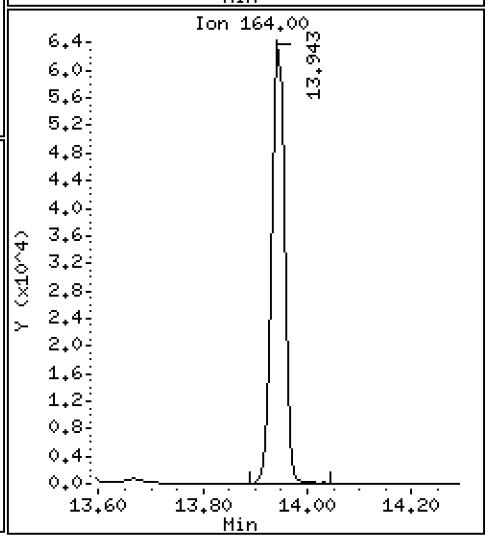












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

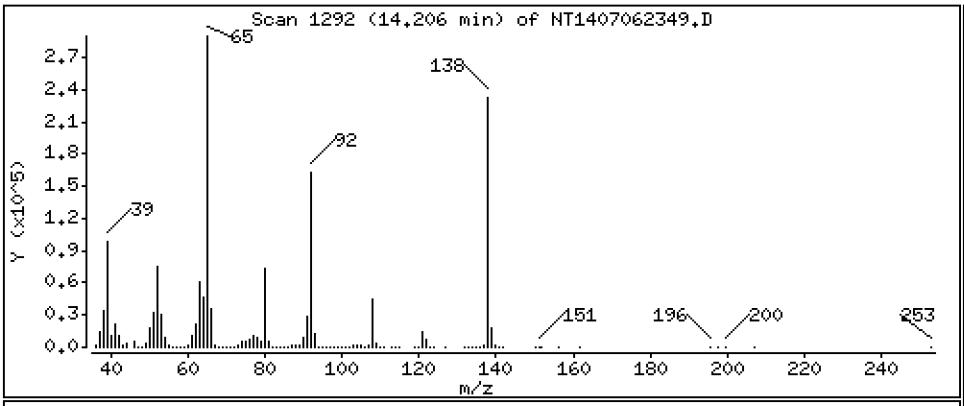
Operator: JGR

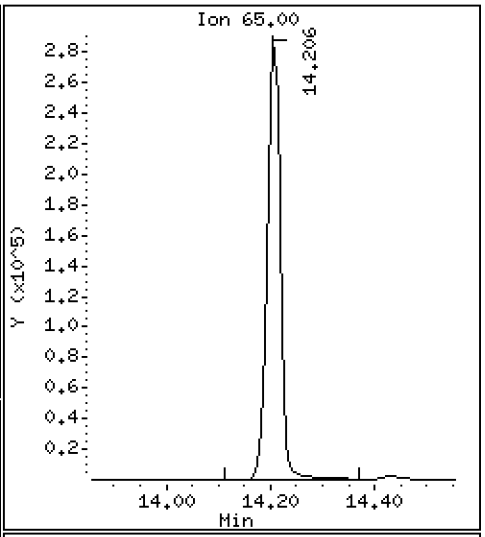
Column phase: ZB-5msi

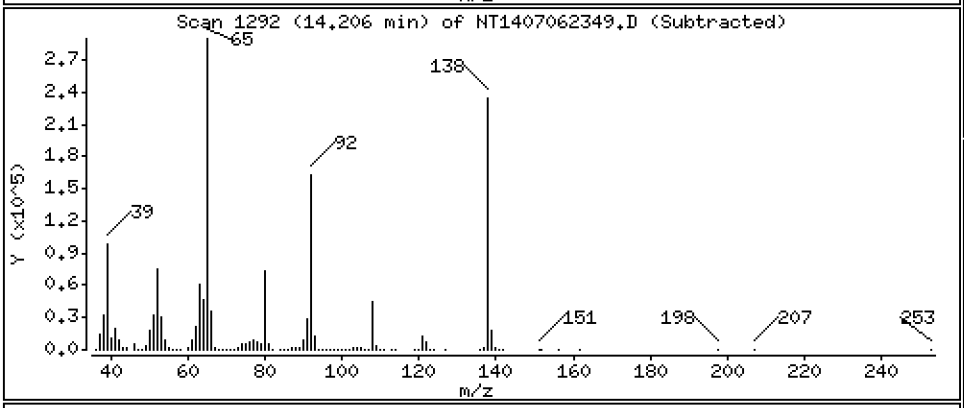
Column diameter: 0.25

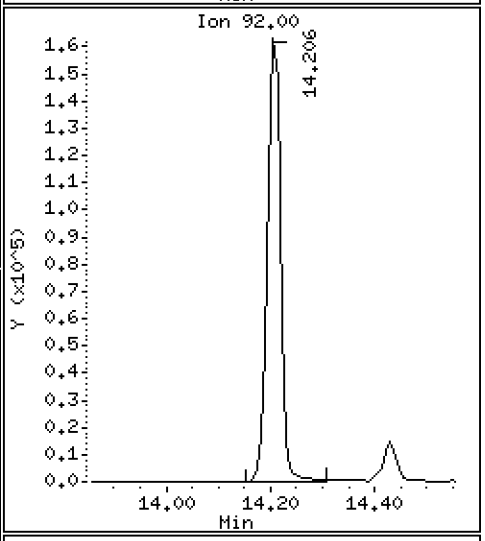
38 2-Nitroaniline

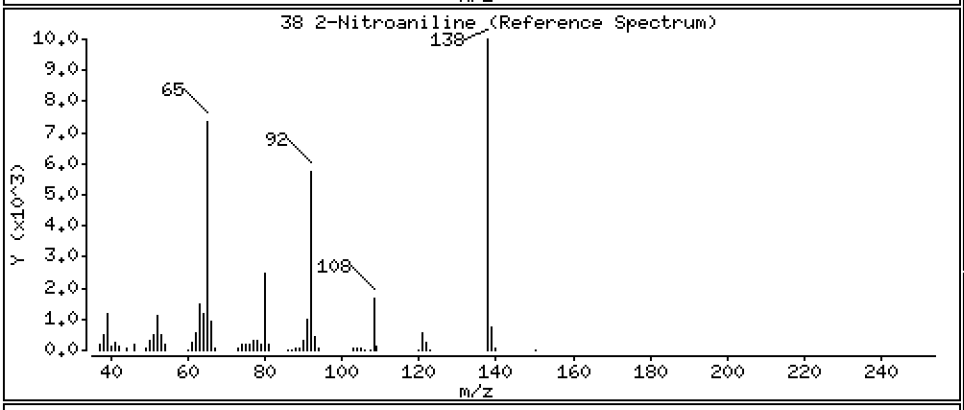
Concentration: 11.67 ug/mL

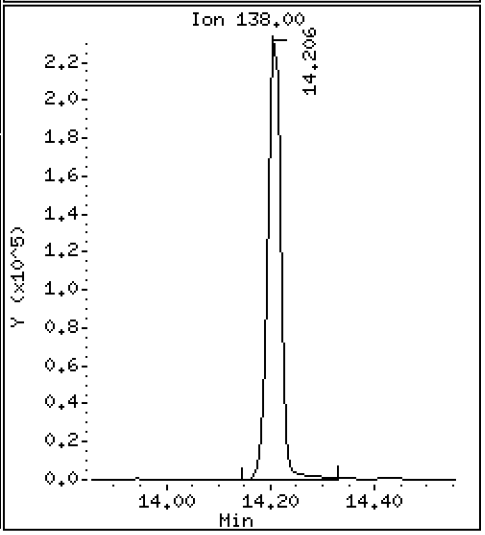


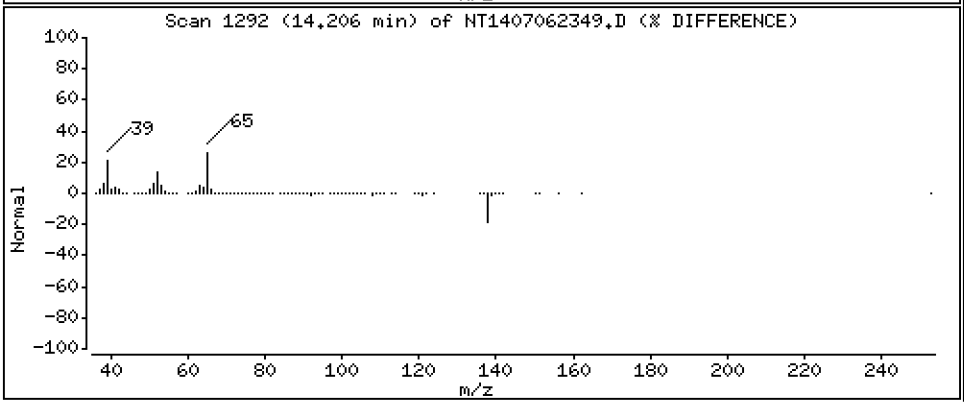












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

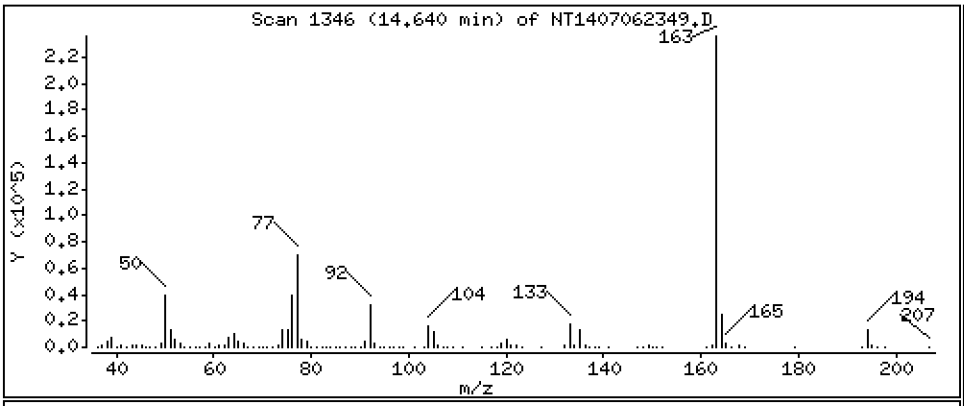
Operator: JGR

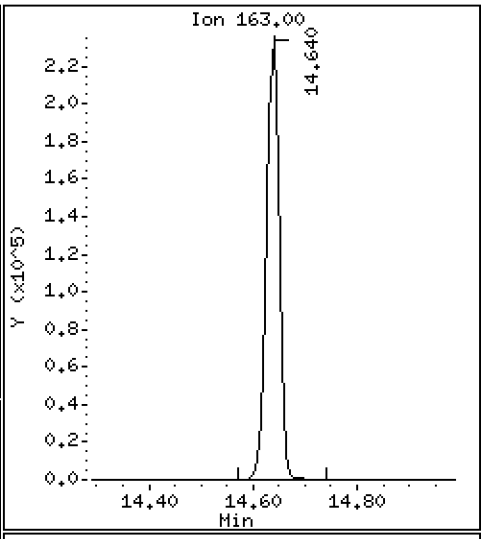
Column phase: ZB-5msi

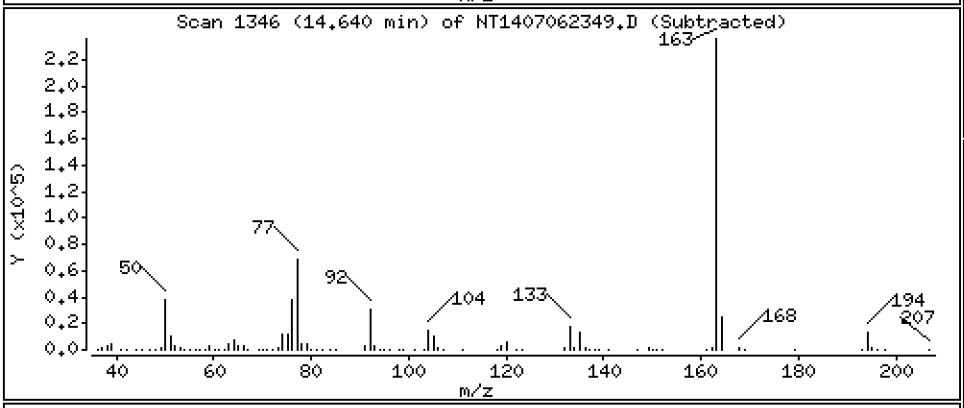
Column diameter: 0.25

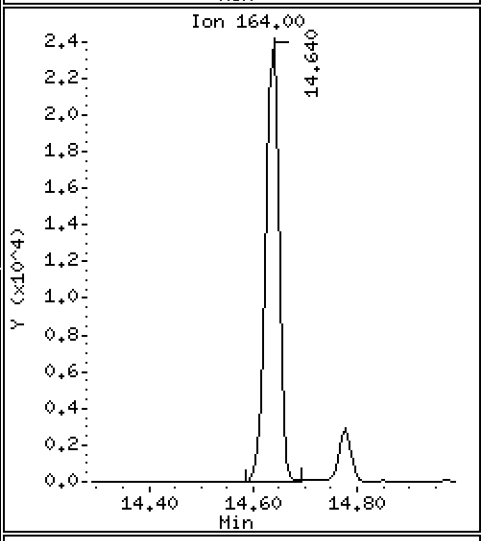
39 Dimethylphthalate

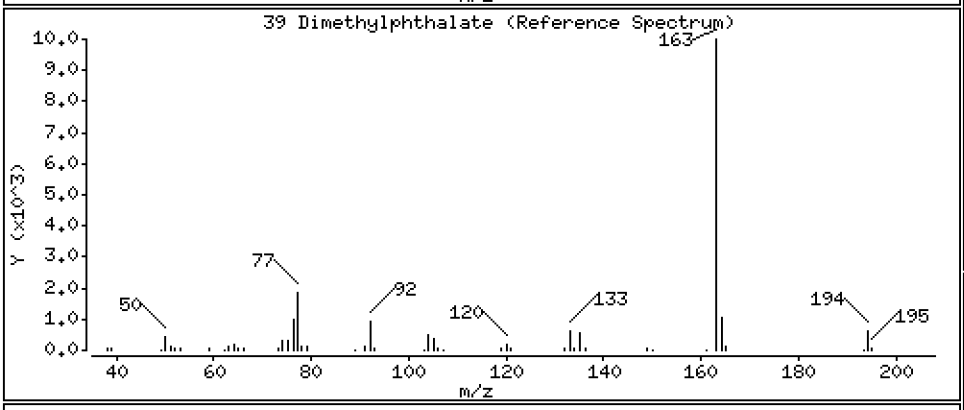
Concentration: 4.392 ug/mL

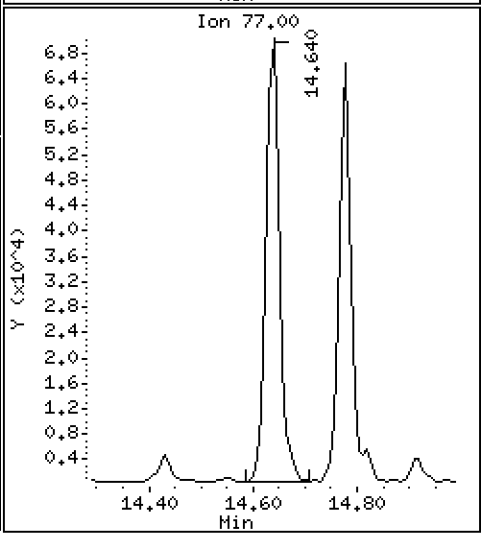


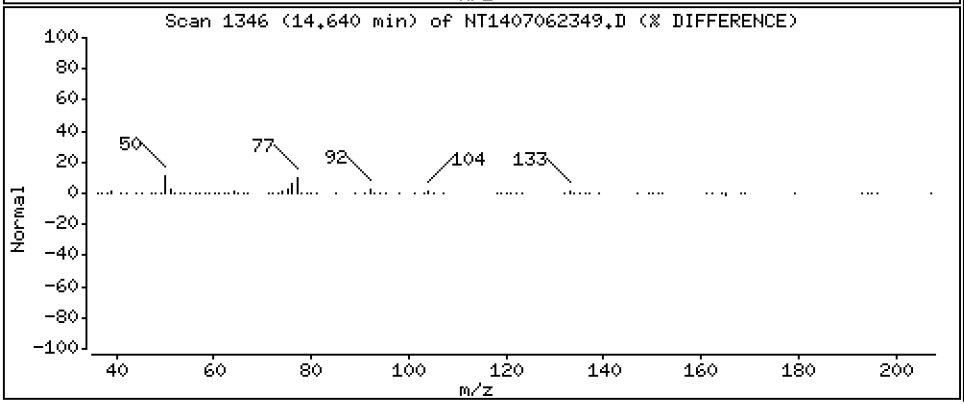












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

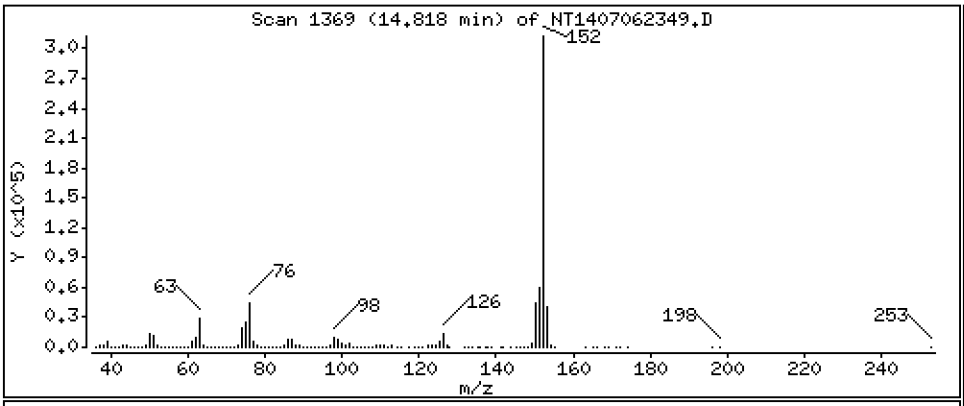
Operator: JGR

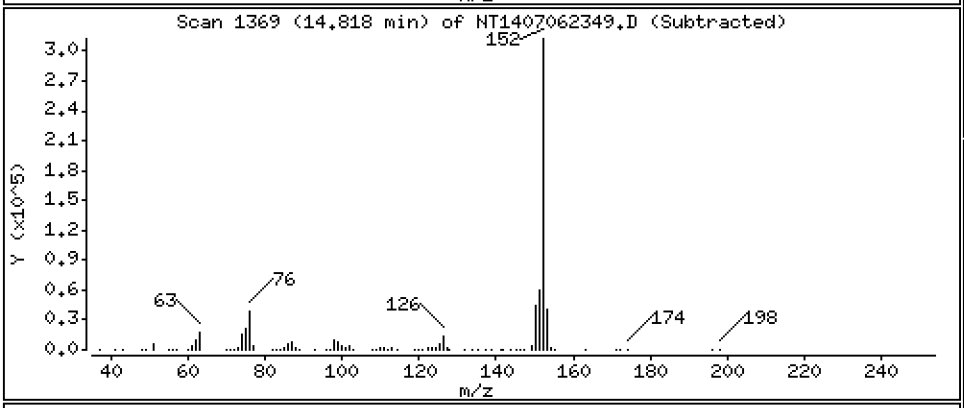
Column phase: ZB-5msi

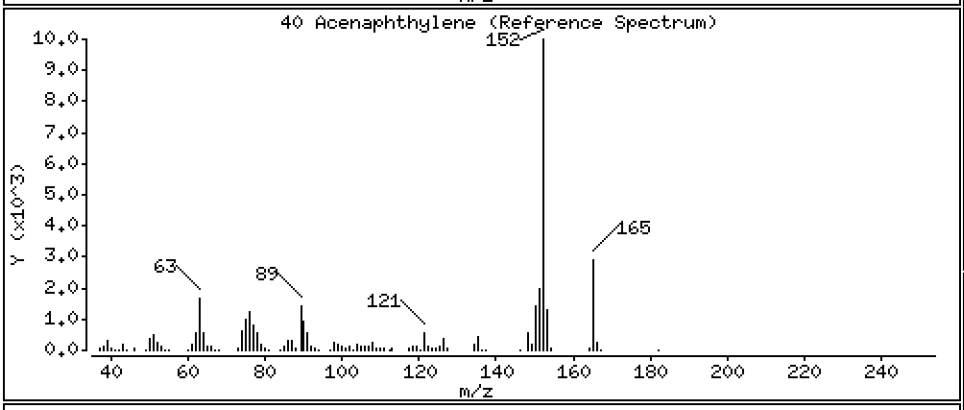
Column diameter: 0.25

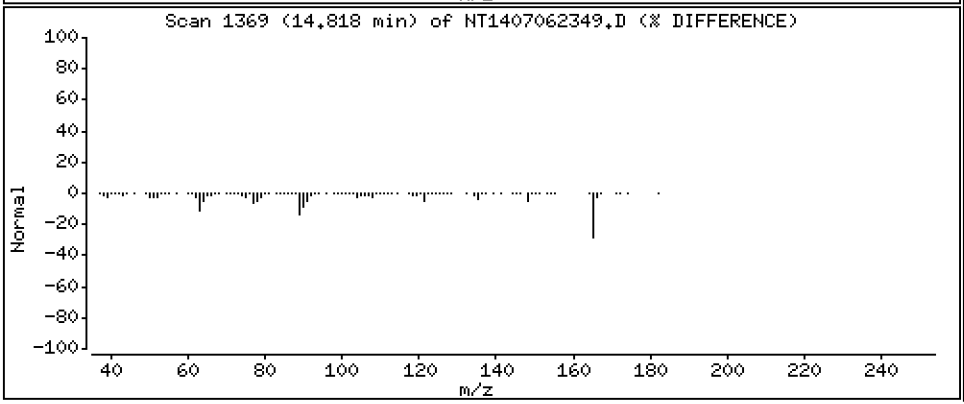
40 Acenaphthylene

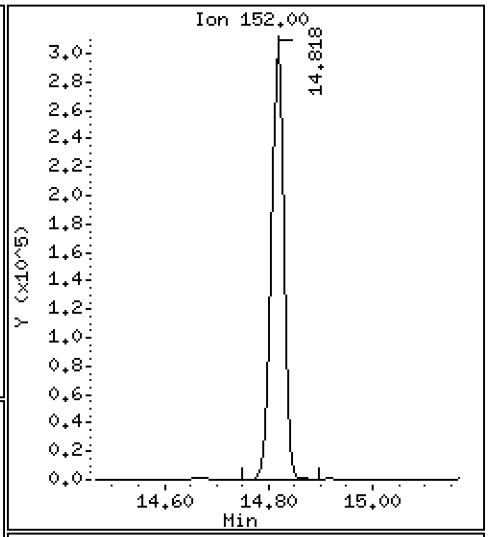
Concentration: 3.732 ug/mL

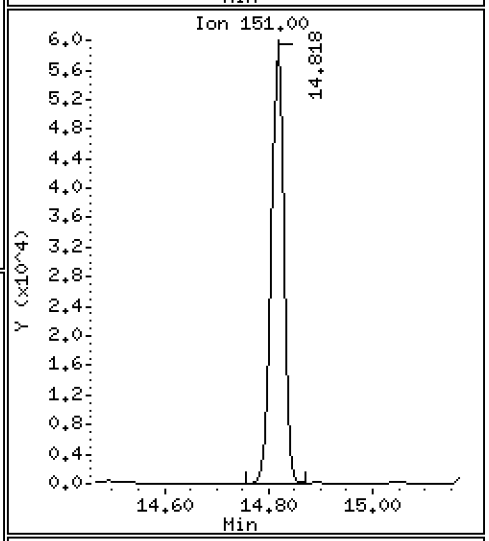


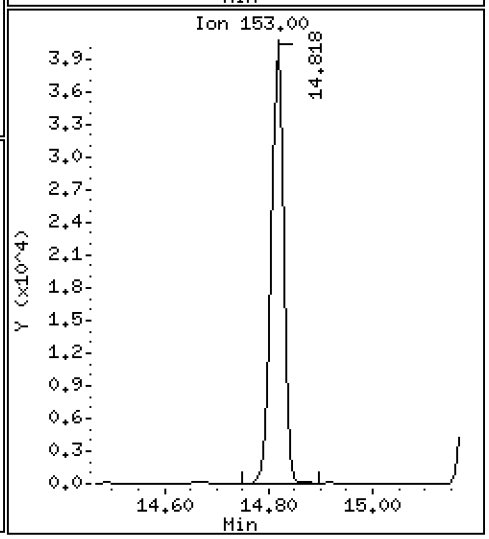












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

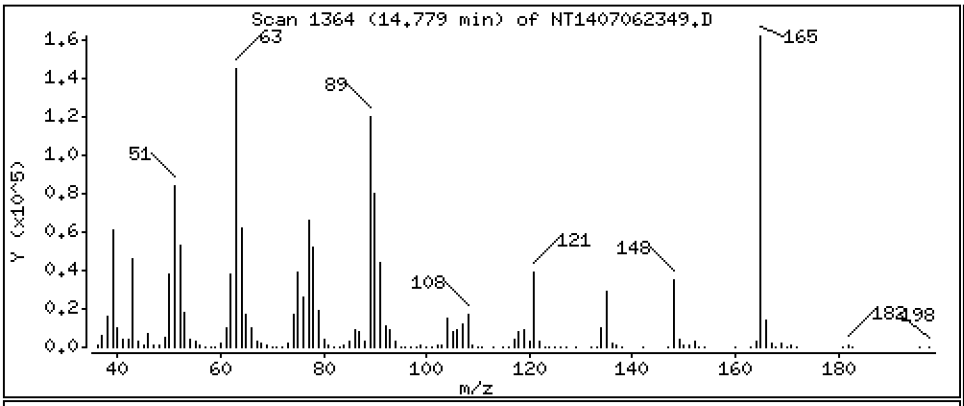
Operator: JGR

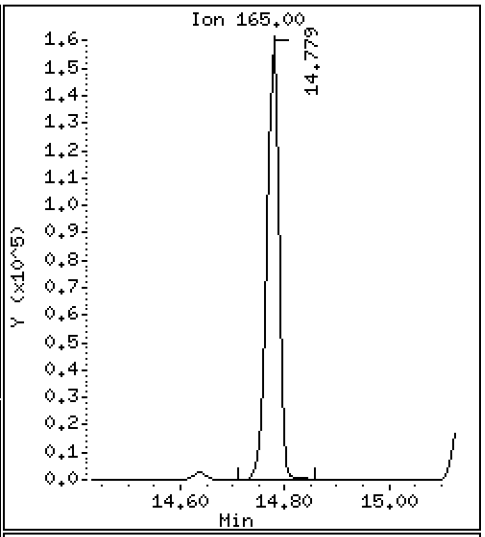
Column phase: ZB-5msi

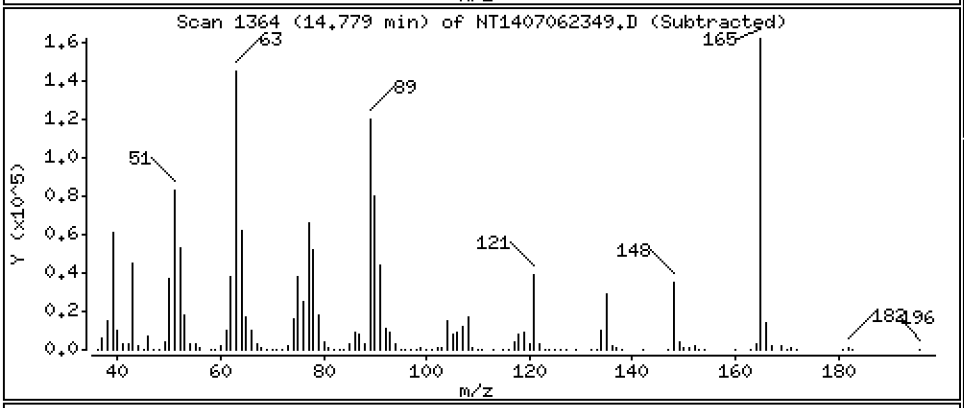
Column diameter: 0.25

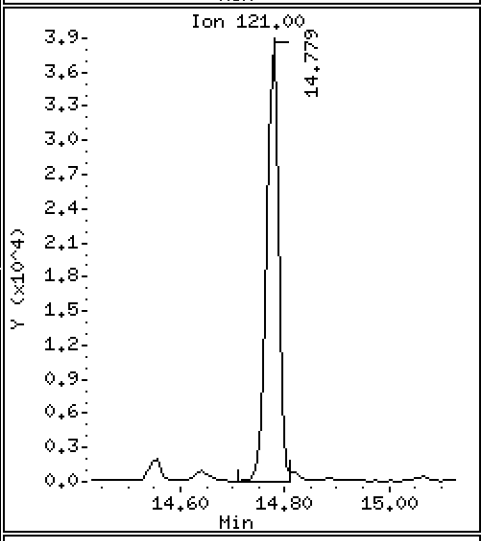
41 2,6-Dinitrotoluene

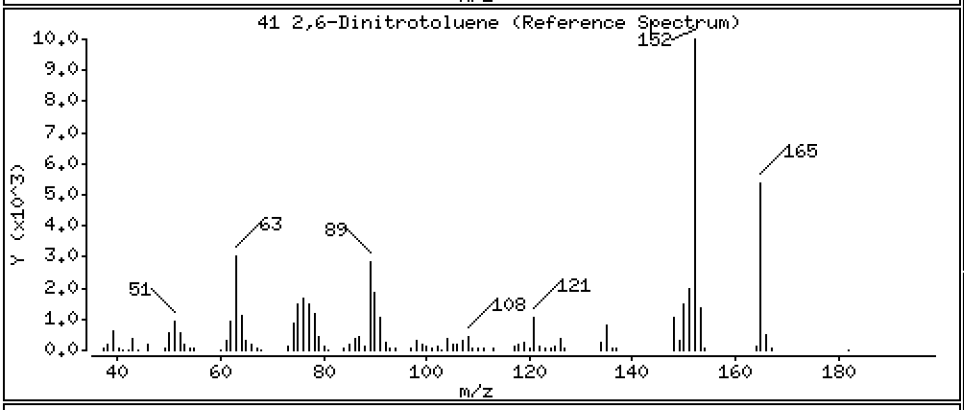
Concentration: 13.30 ug/mL

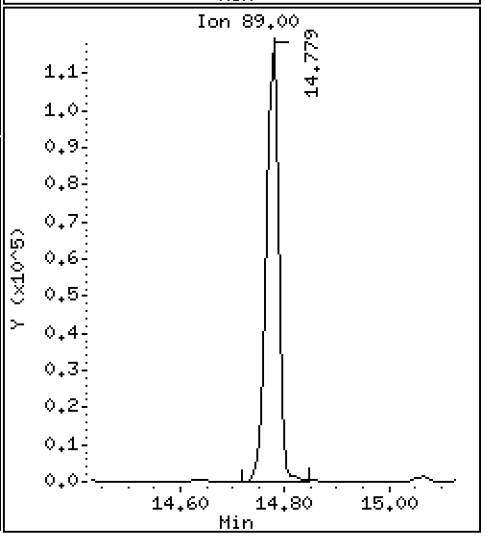


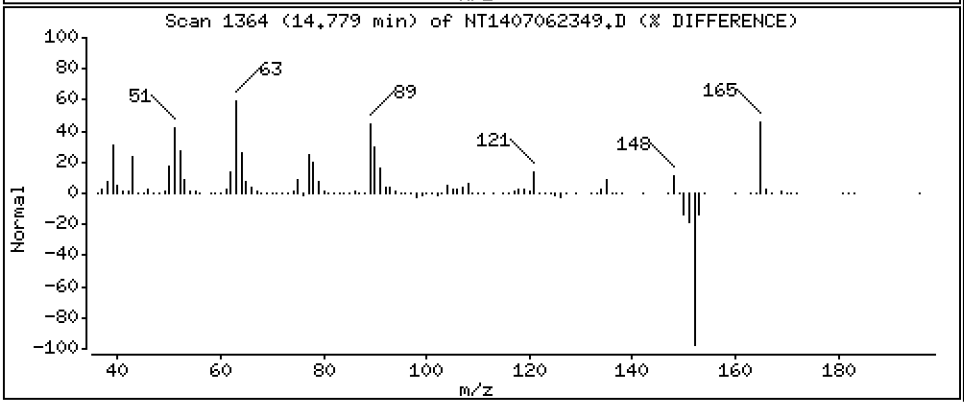












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

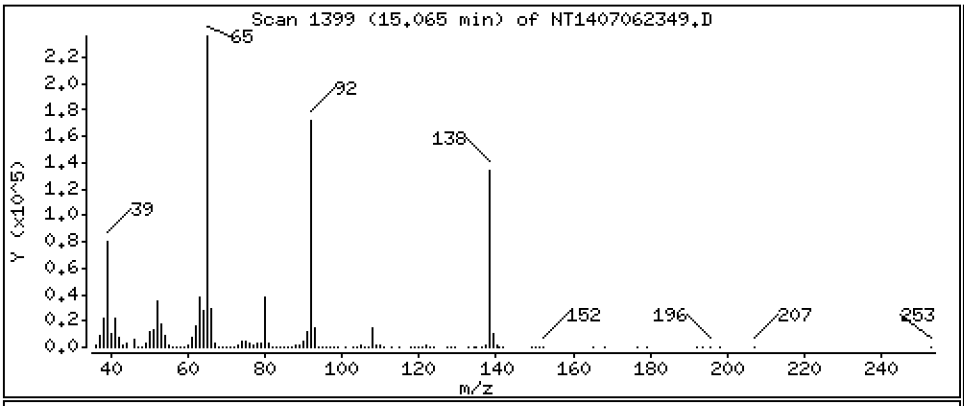
Operator: JGR

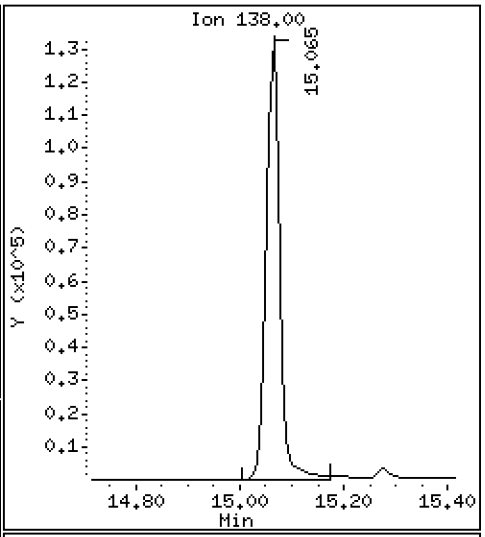
Column phase: ZB-5msi

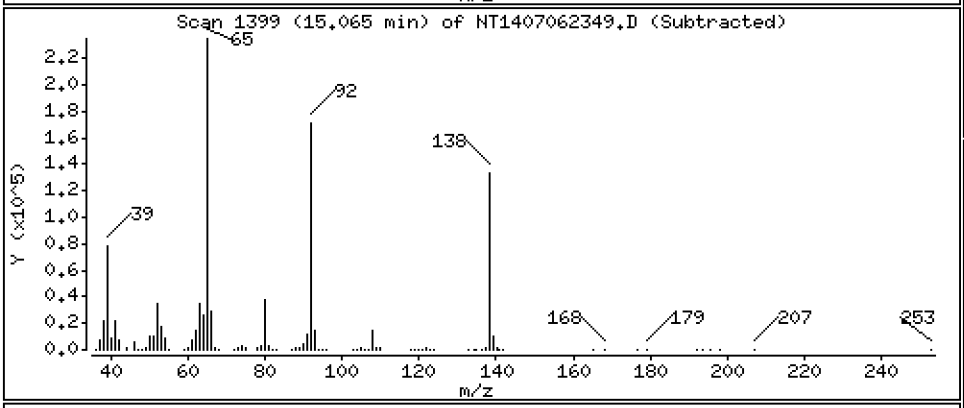
Column diameter: 0.25

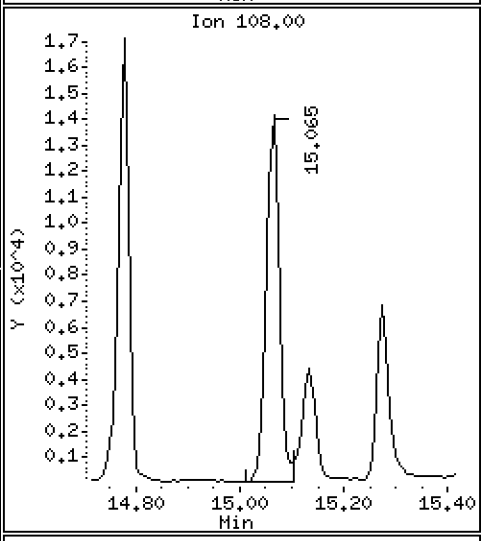
43 3-Nitroaniline

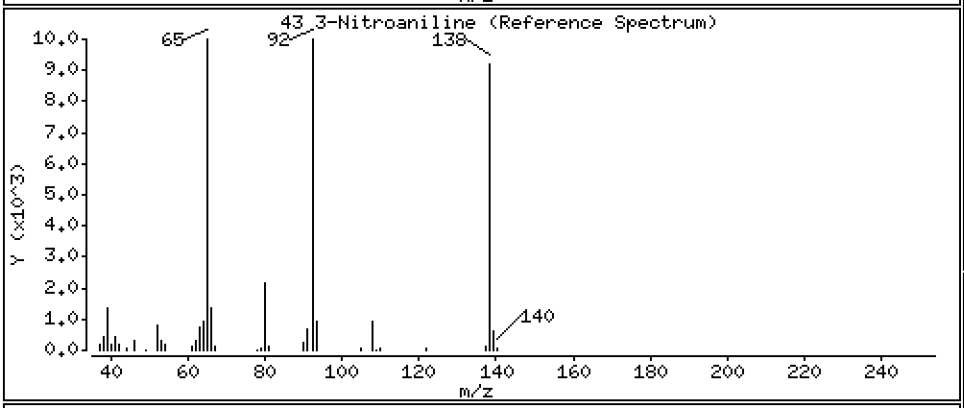
Concentration: 9.283 ug/mL

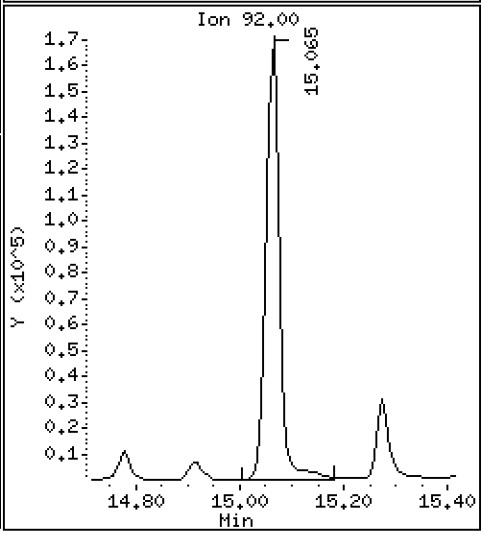


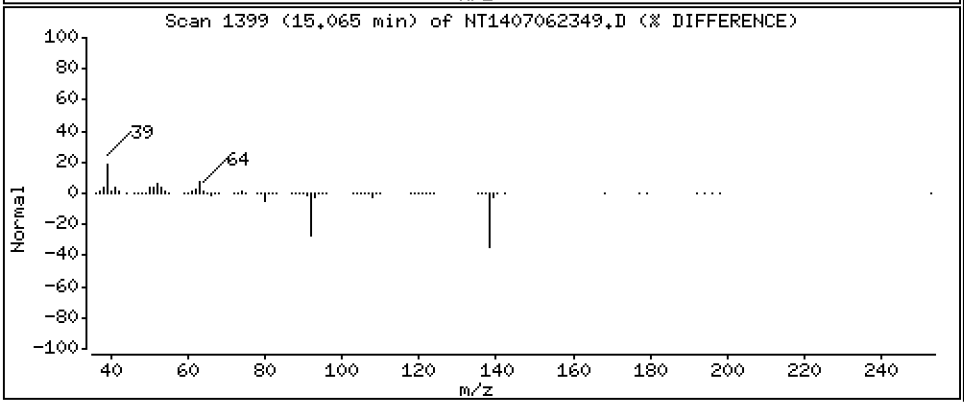












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

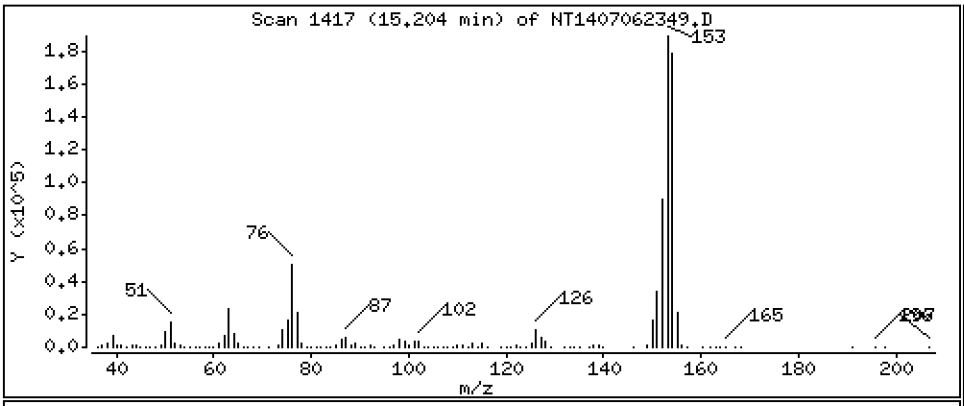
Operator: JGR

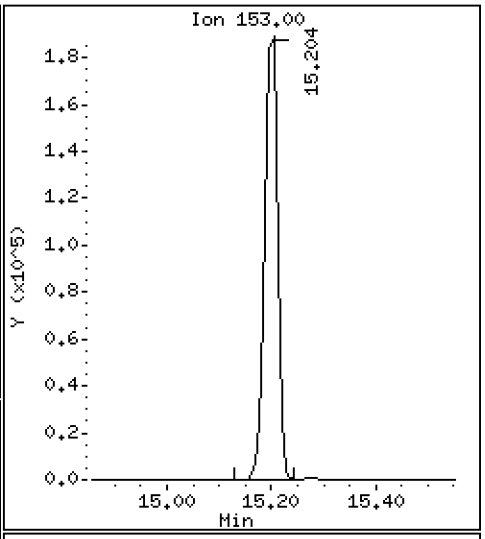
Column phase: ZB-5msi

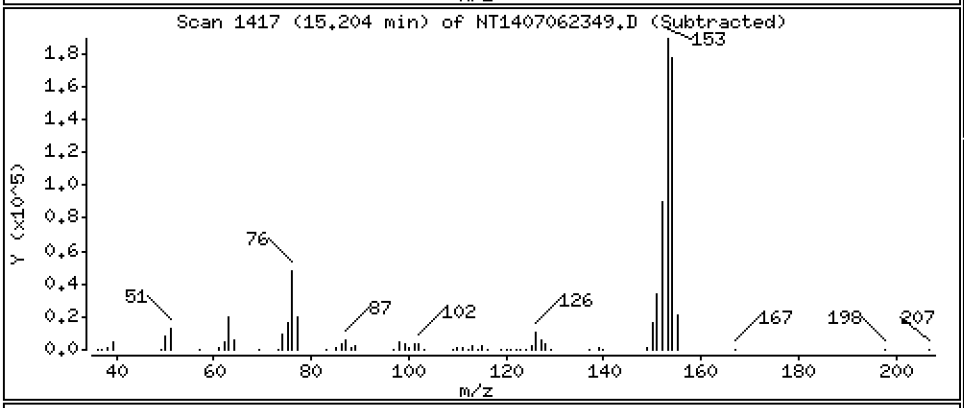
Column diameter: 0.25

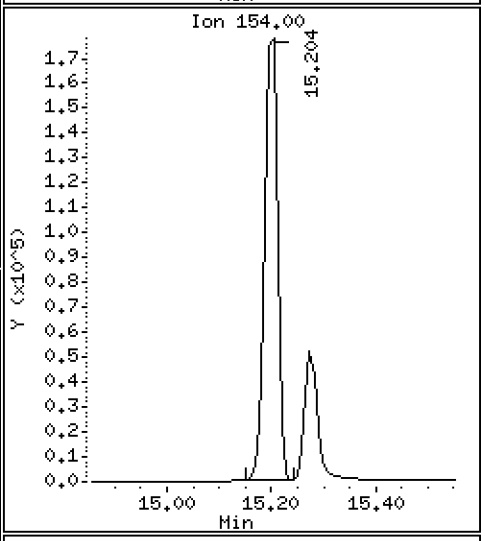
44 Acenaphthene

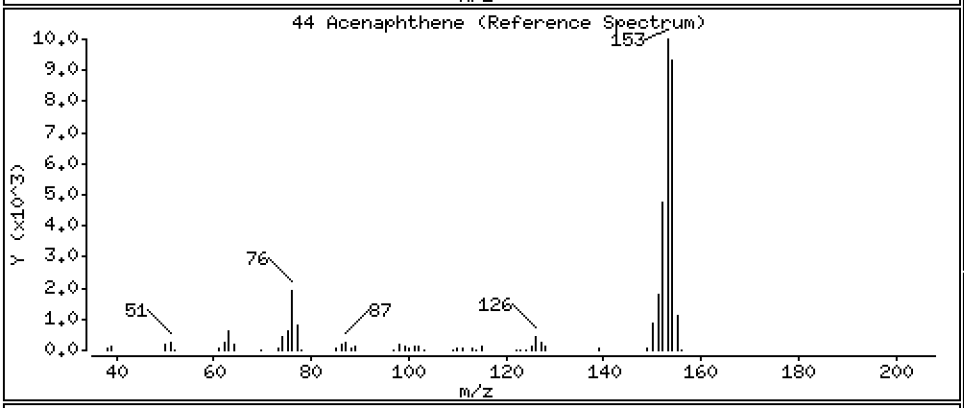
Concentration: 4.029 ug/mL

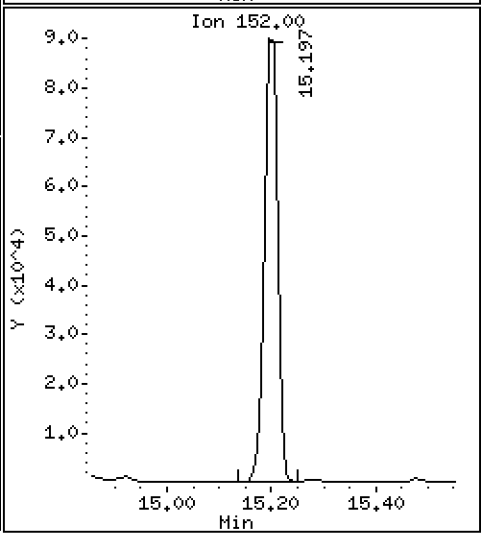


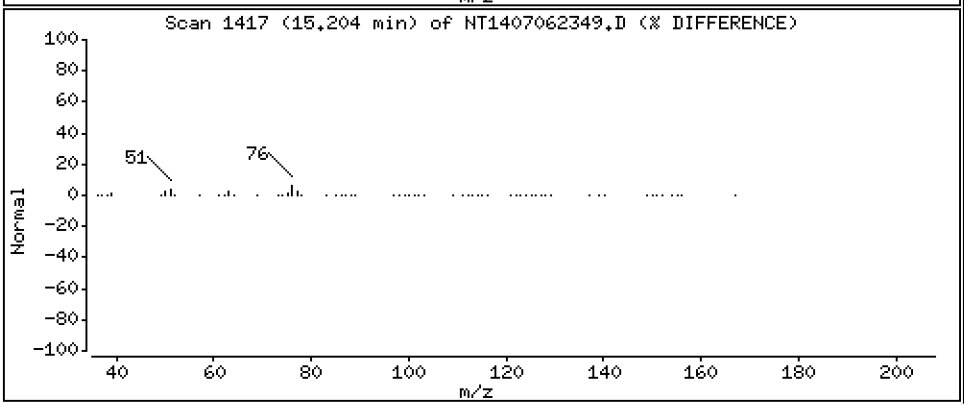












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

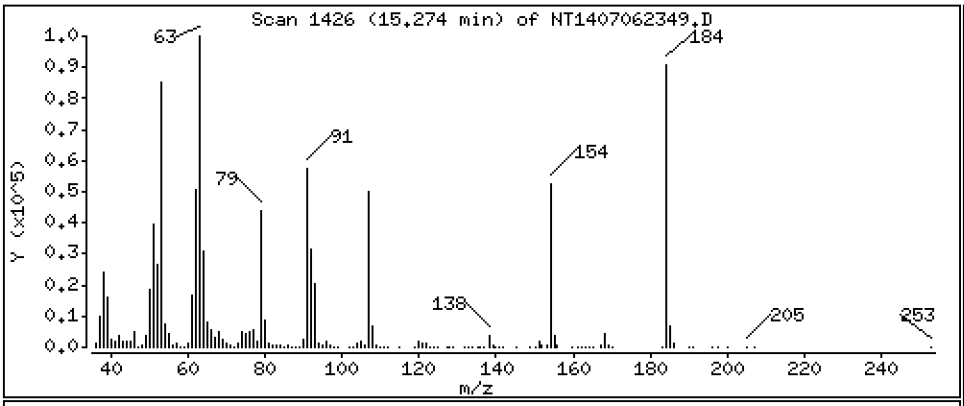
Operator: JGR

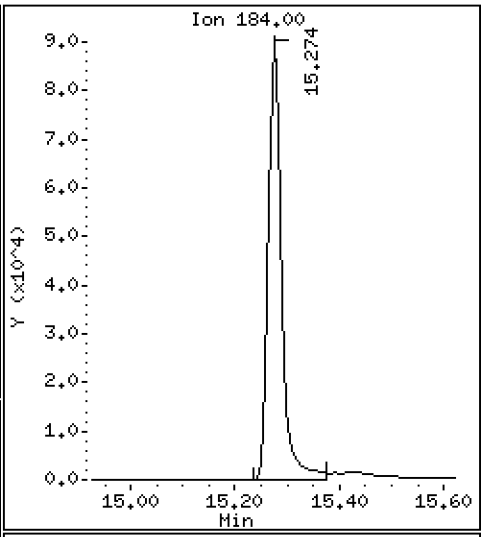
Column phase: ZB-5msi

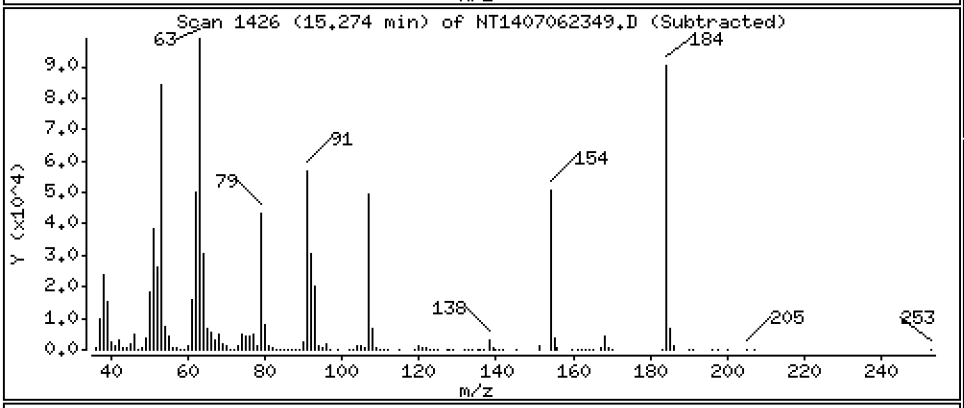
Column diameter: 0.25

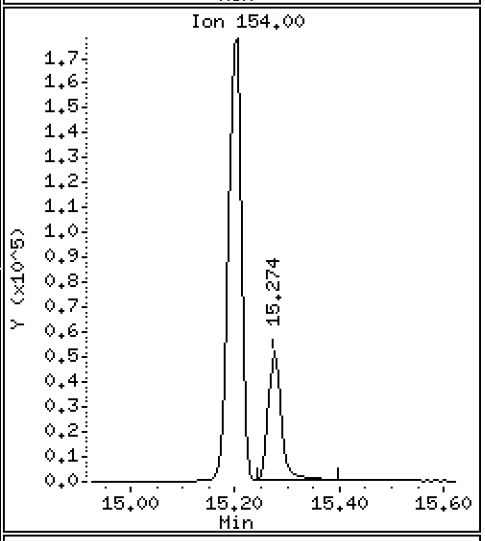
45 2,4-Dinitrophenol

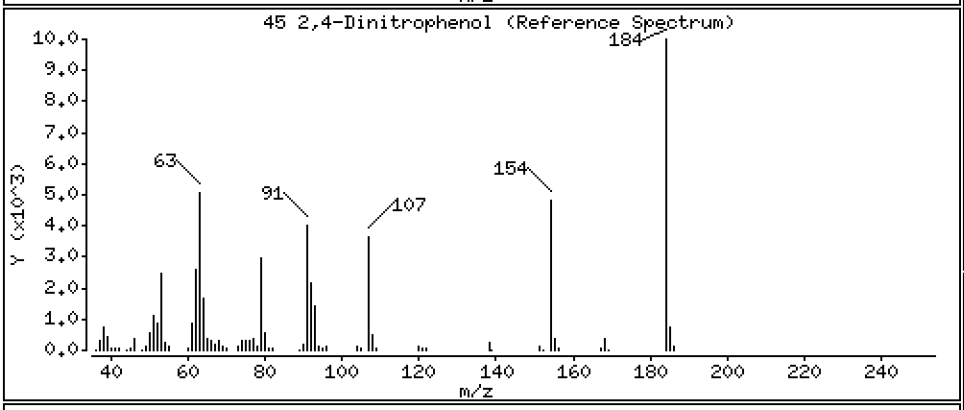
Concentration: 13.26 ug/mL

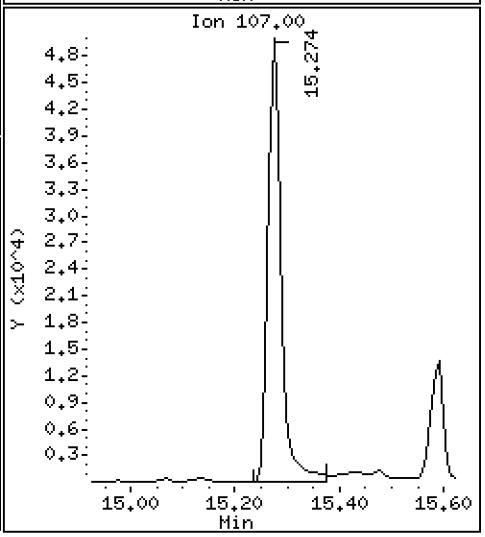


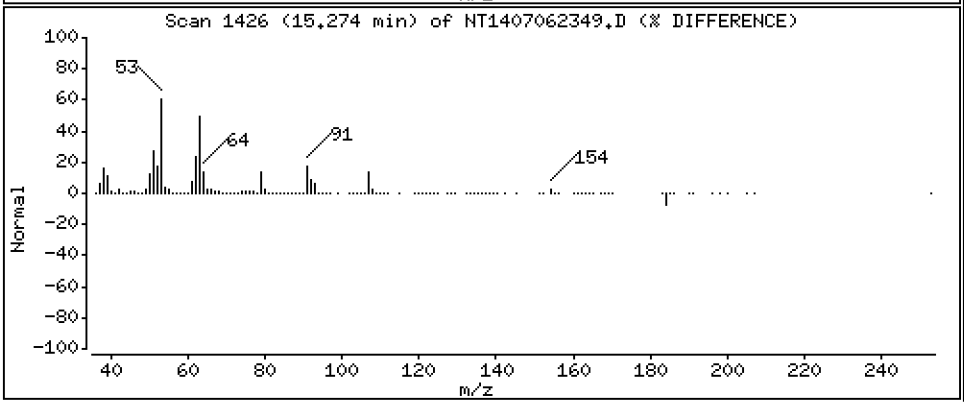












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

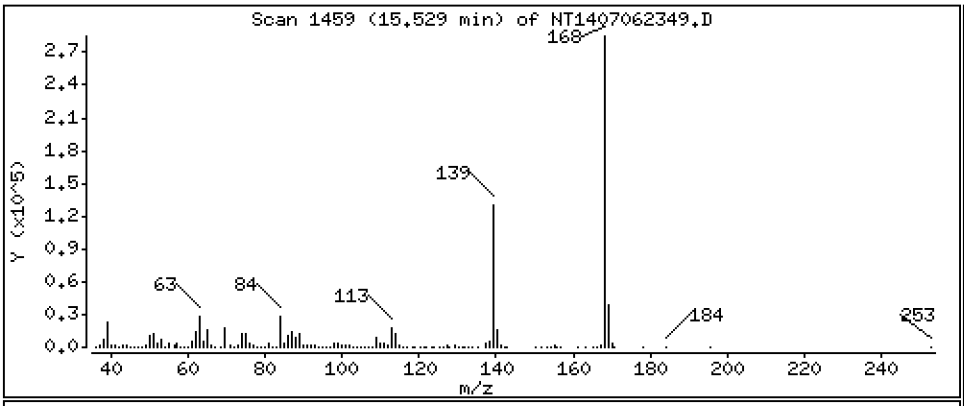
Operator: JGR

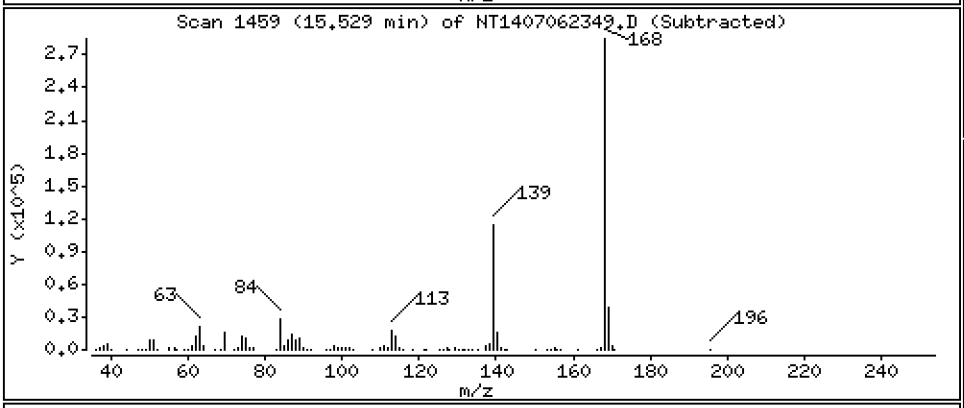
Column phase: ZB-5msi

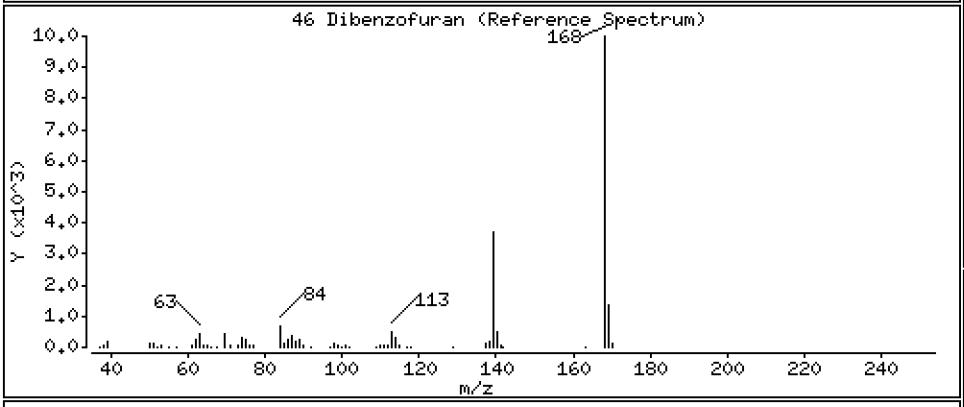
Column diameter: 0.25

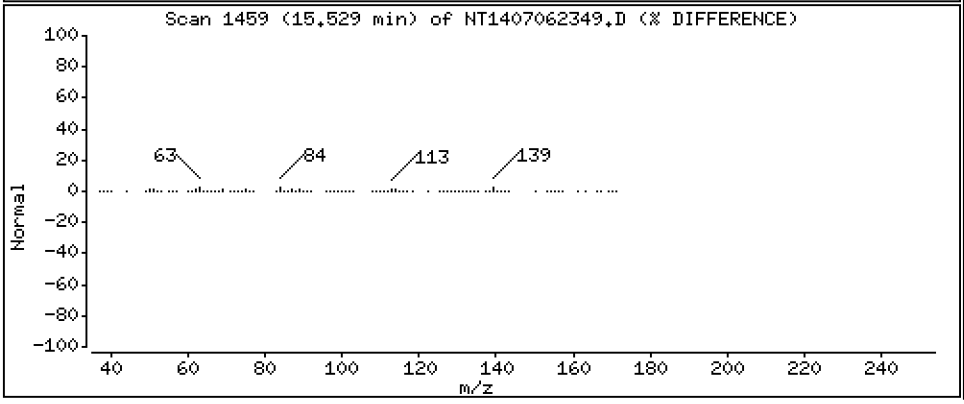
46 Dibenzofuran

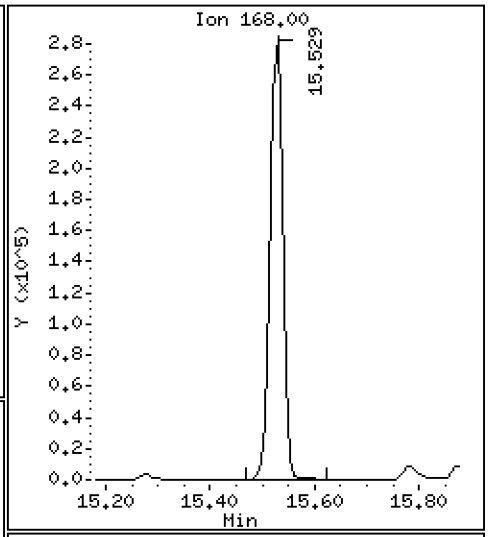
Concentration: 4.057 ug/mL

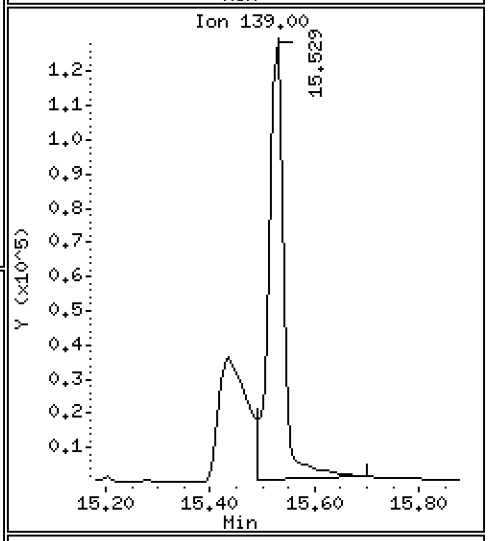


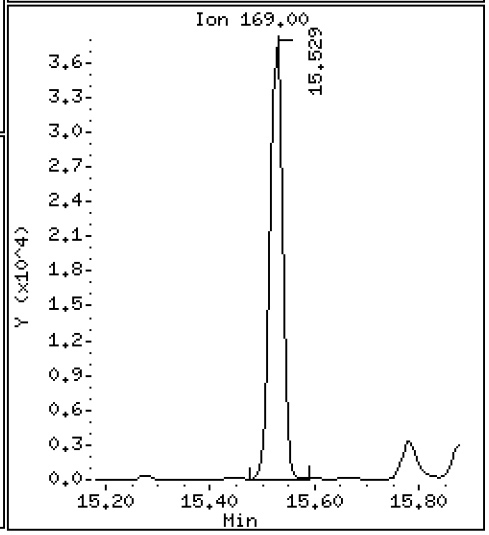












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

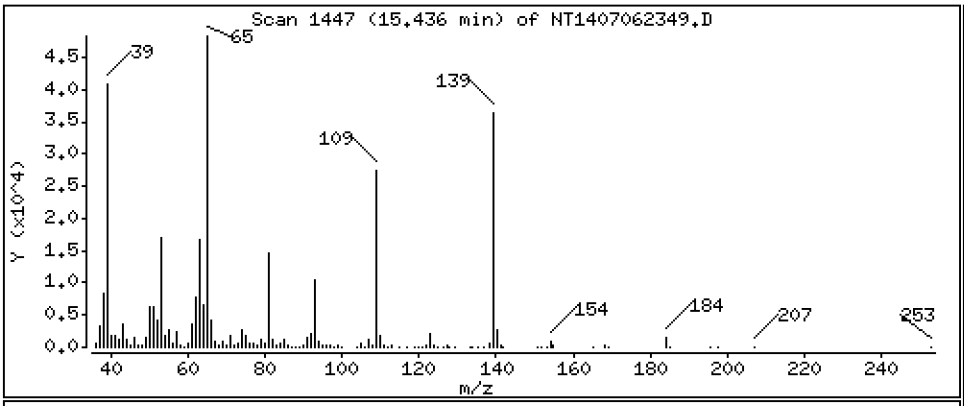
Operator: JGR

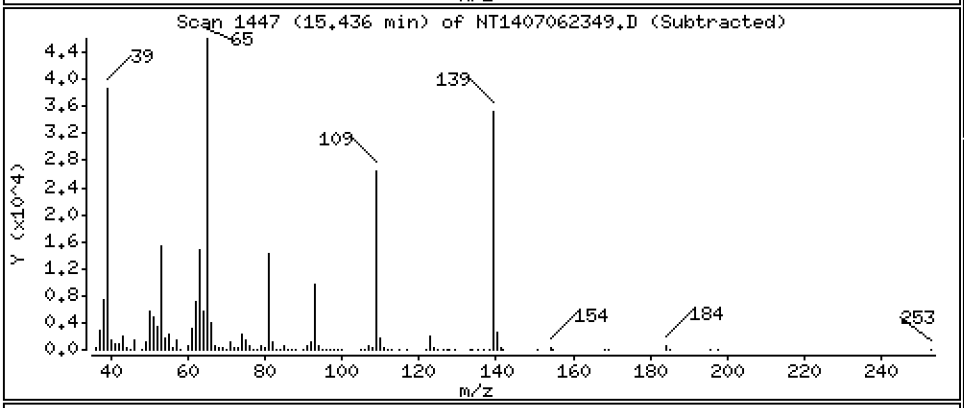
Column phase: ZB-5msi

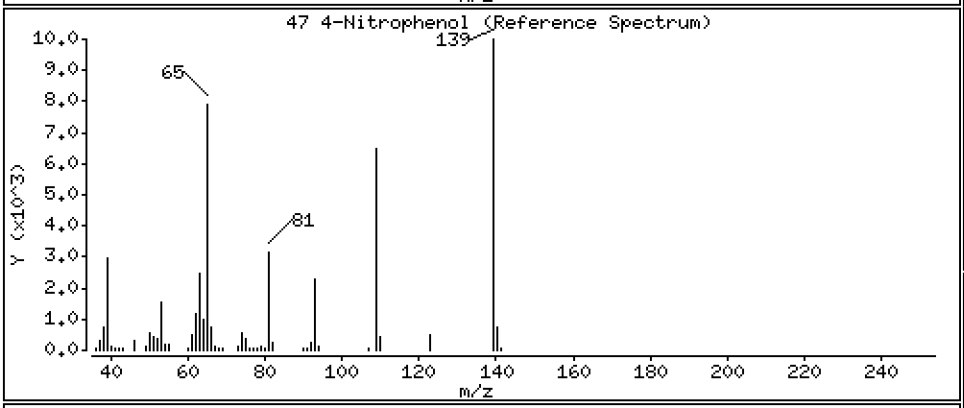
Column diameter: 0.25

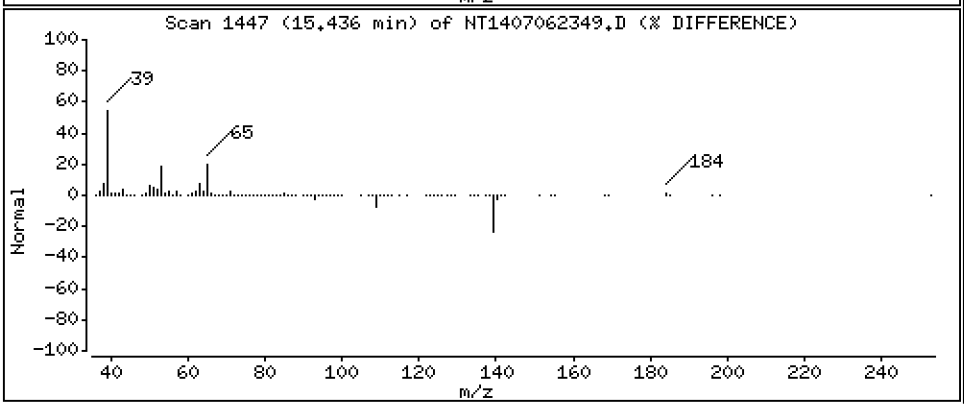
47 4-Nitrophenol

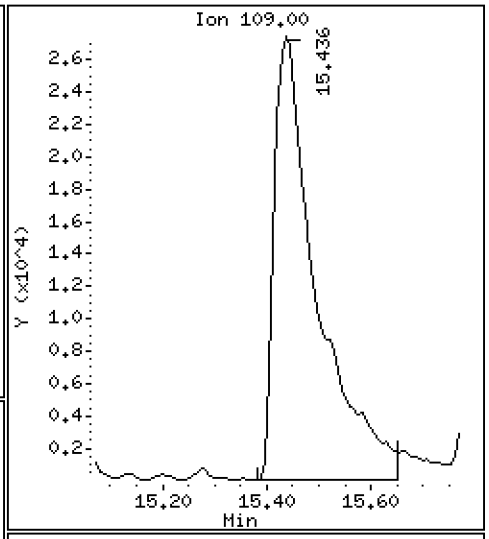
Concentration: 8.659 ug/mL

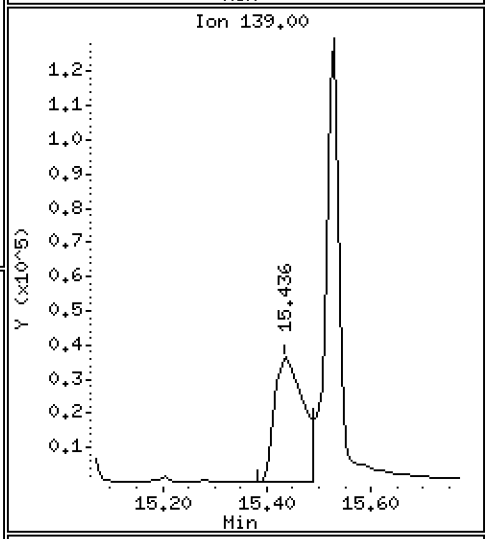


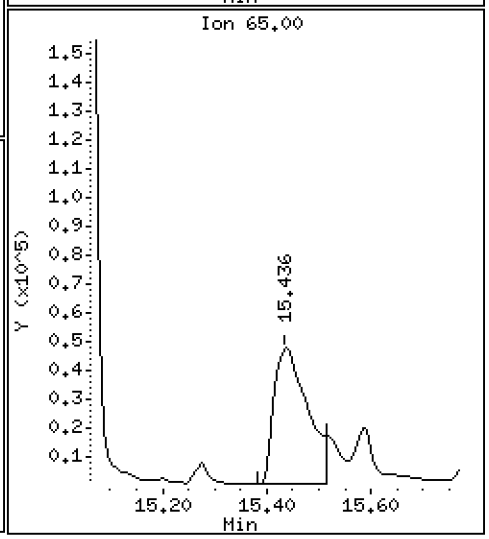












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

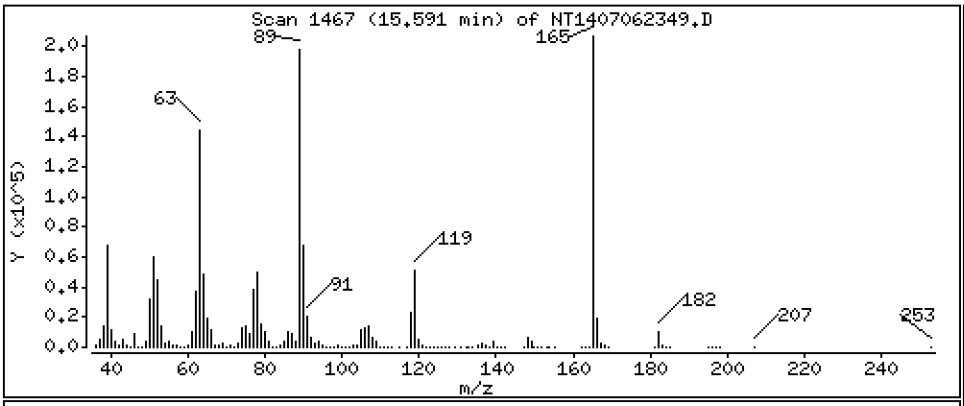
Operator: JGR

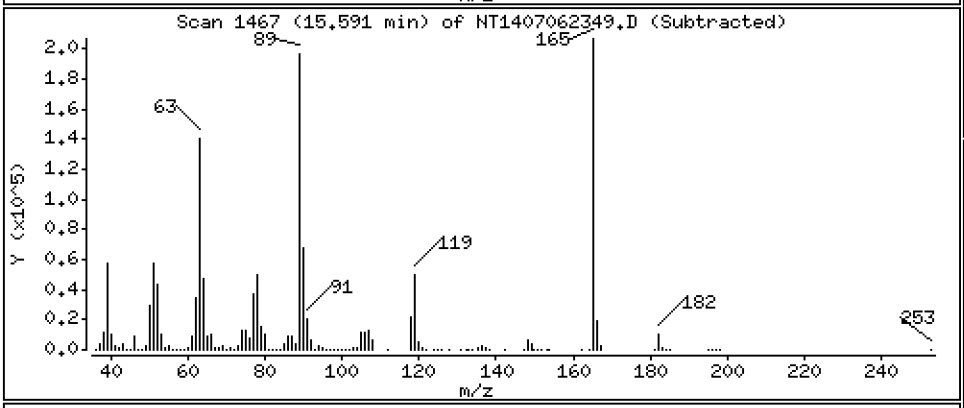
Column phase: ZB-5msi

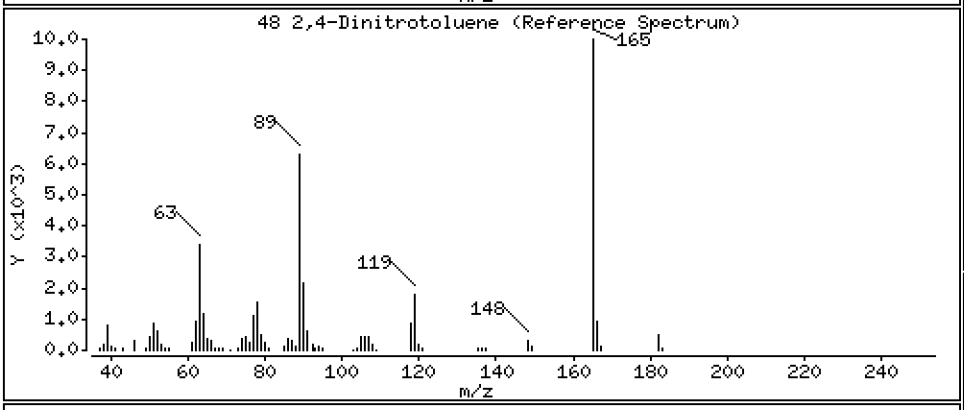
Column diameter: 0.25

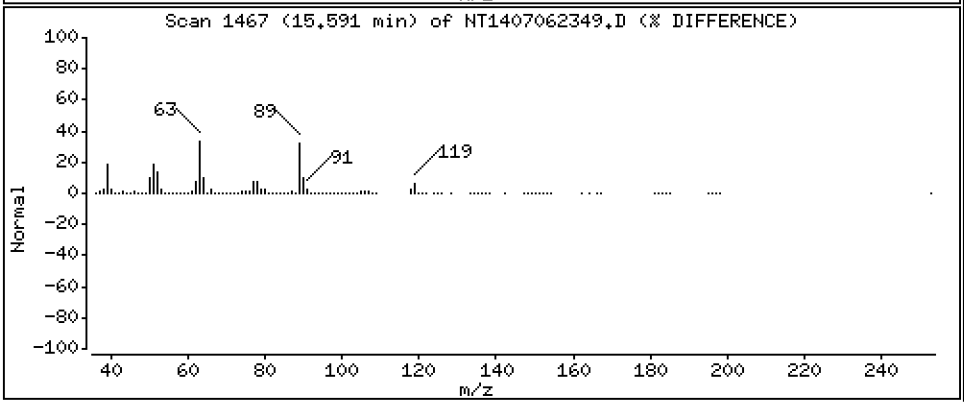
48 2,4-Dinitrotoluene

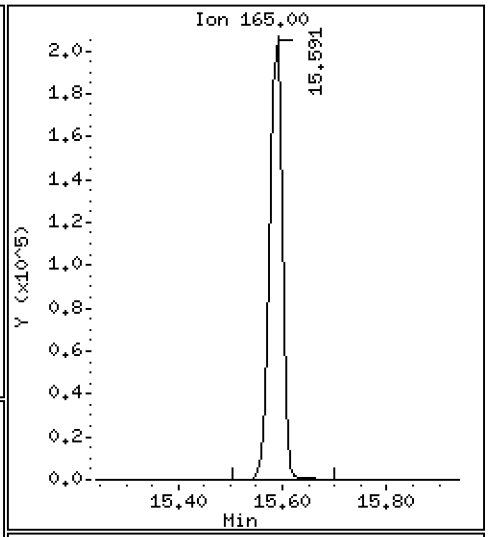
Concentration: 12.98 ug/mL

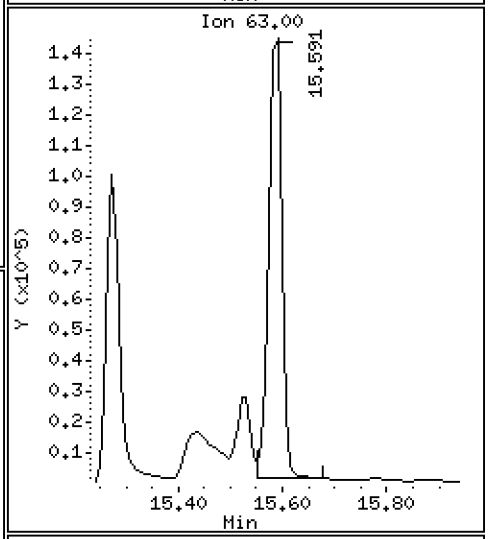


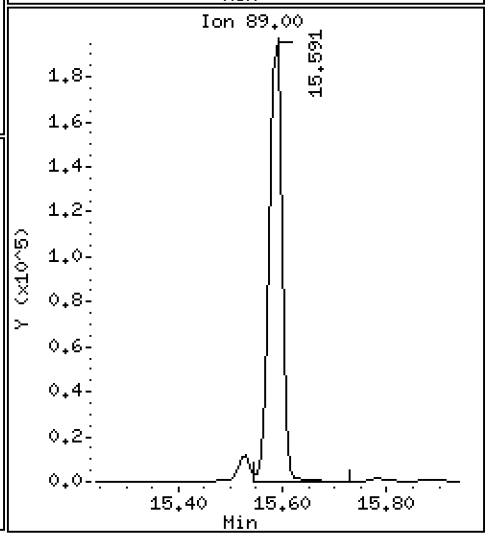












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

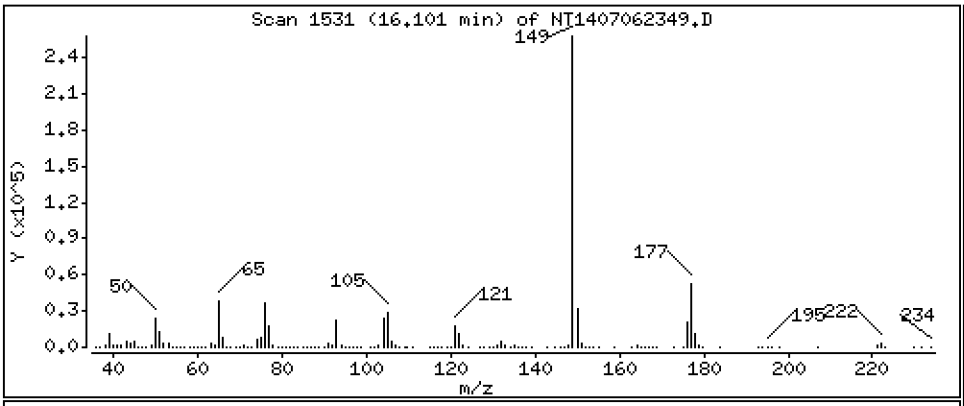
Operator: JGR

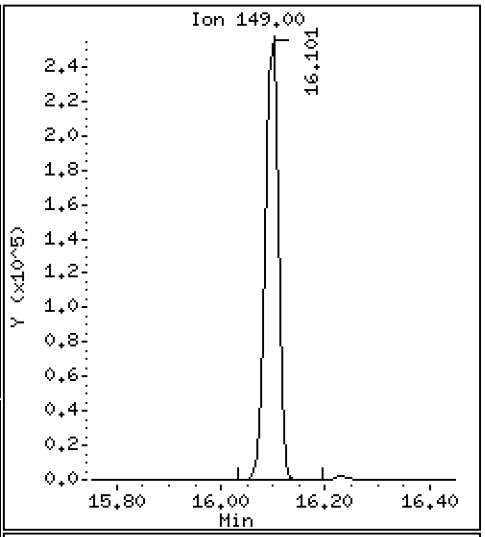
Column phase: ZB-5msi

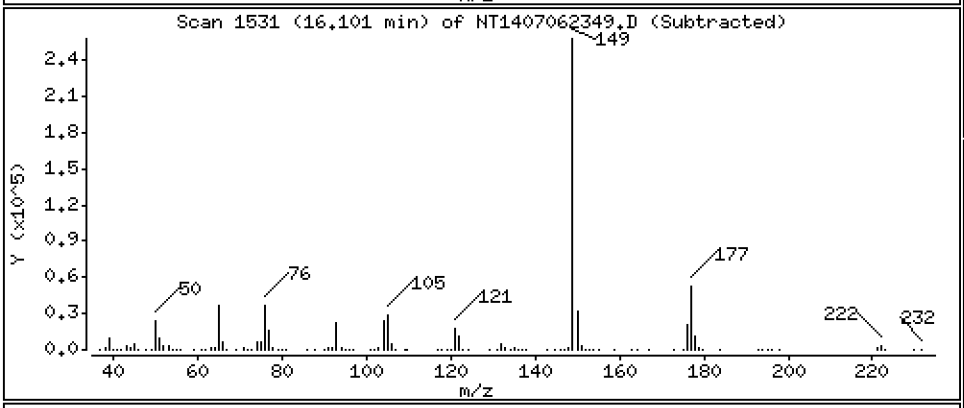
Column diameter: 0.25

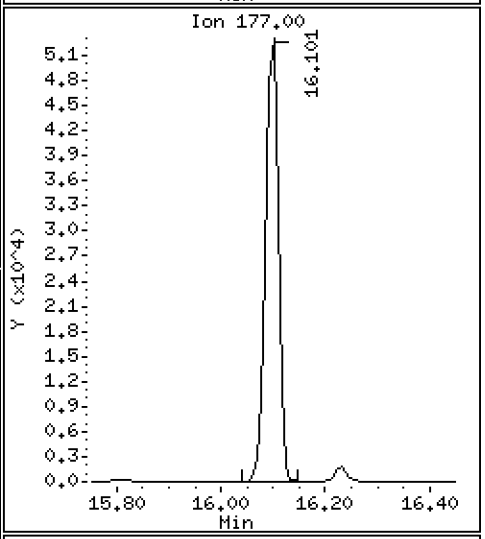
50 Diethylphthalate

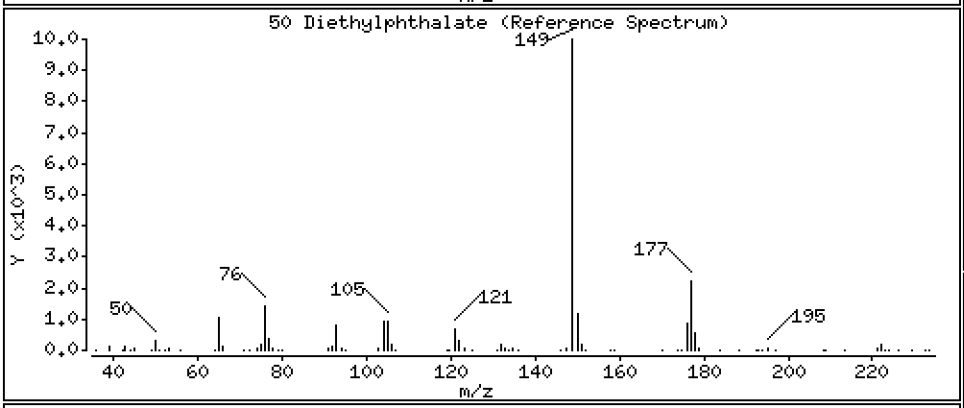
Concentration: 4.700 ug/mL

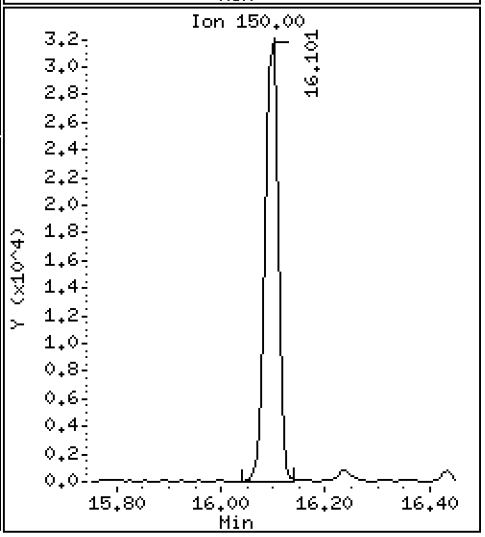


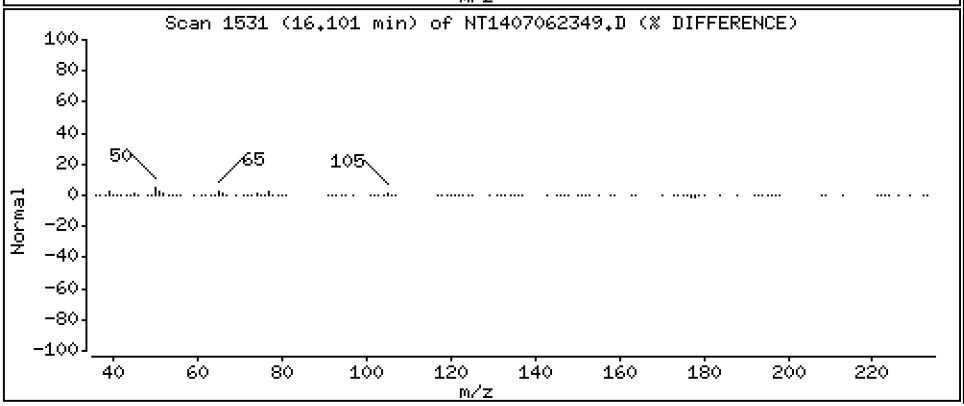












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

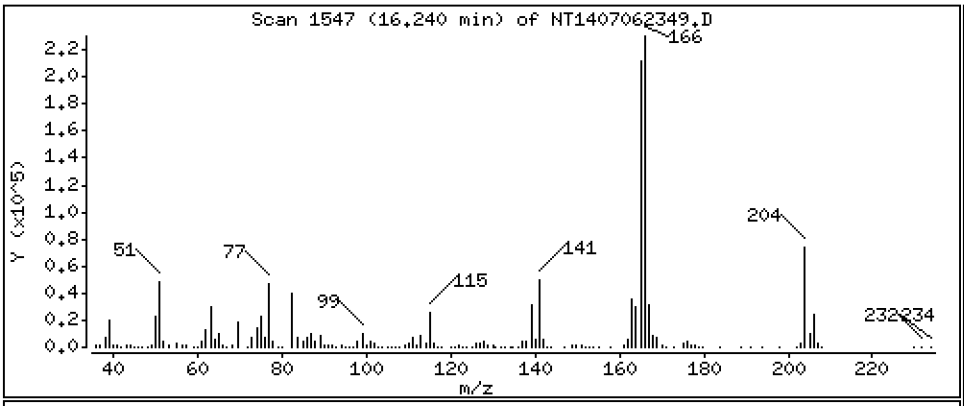
Operator: JGR

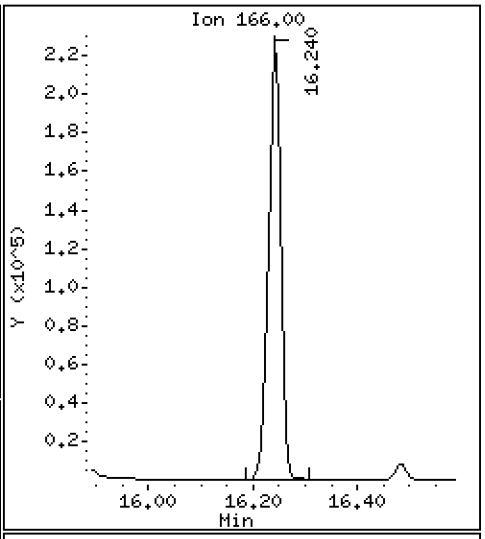
Column phase: ZB-5msi

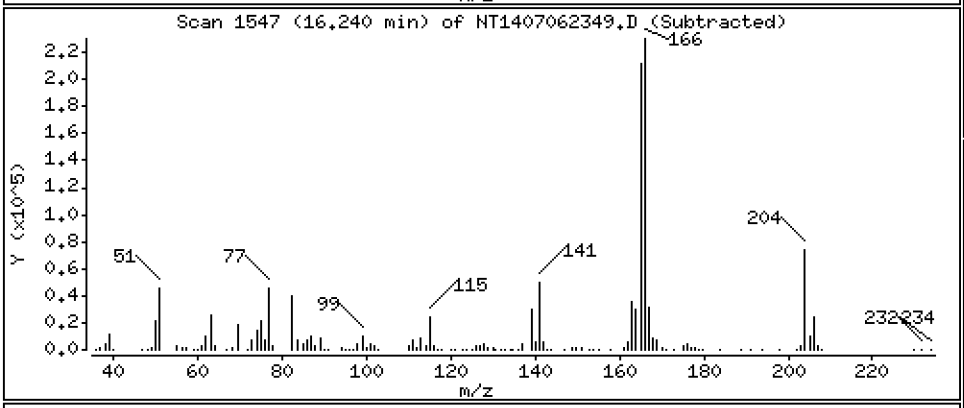
Column diameter: 0.25

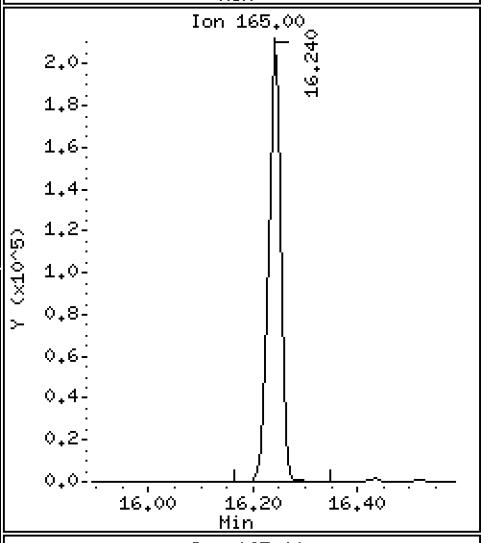
49 Fluorene

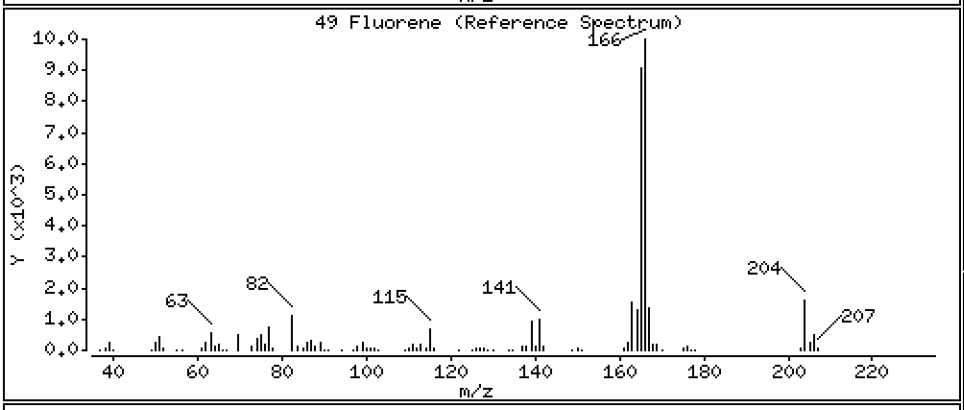
Concentration: 3.745 ug/mL

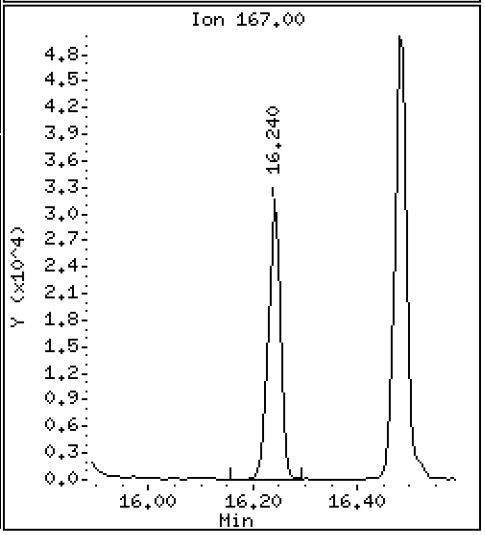


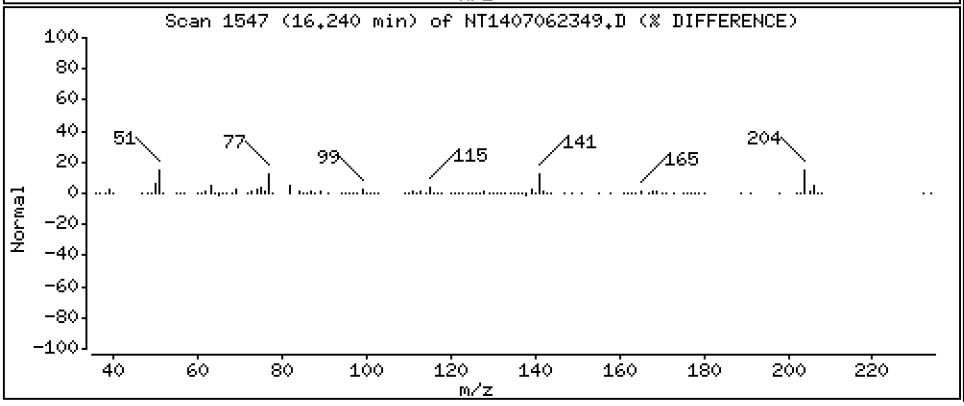












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

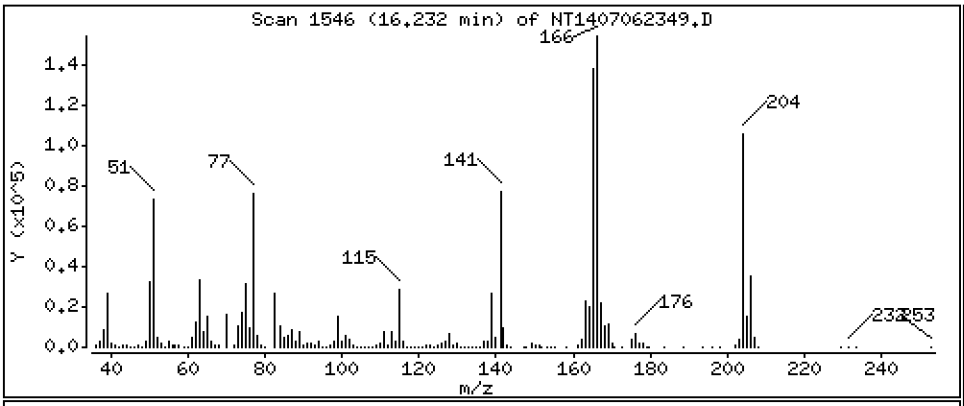
Operator: JGR

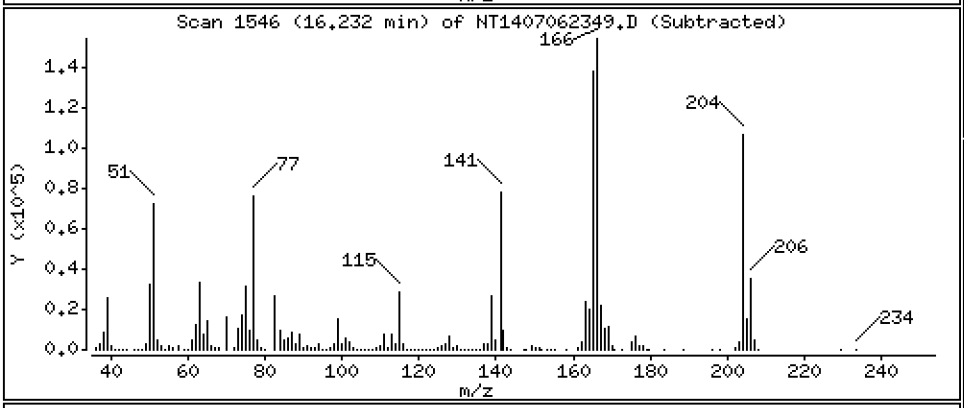
Column phase: ZB-5msi

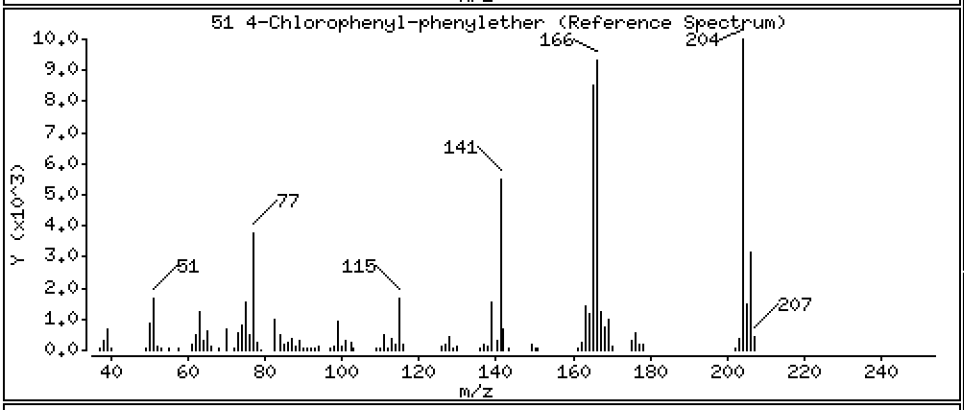
Column diameter: 0.25

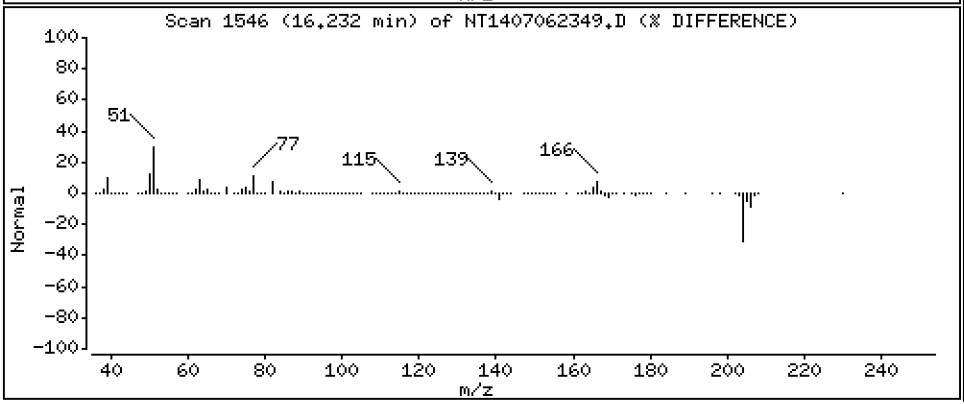
51 4-Chlorophenyl-phenylether

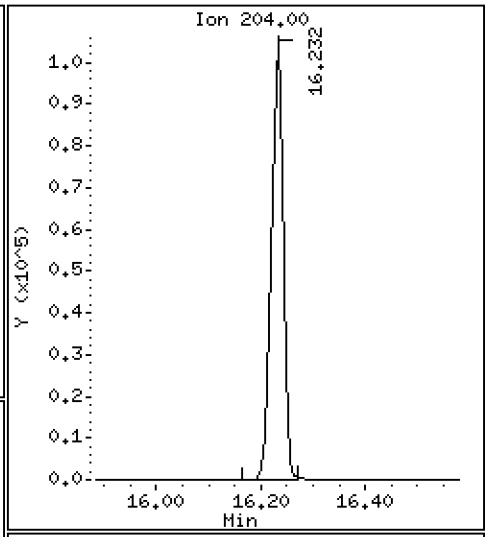
Concentration: 4.419 ug/mL

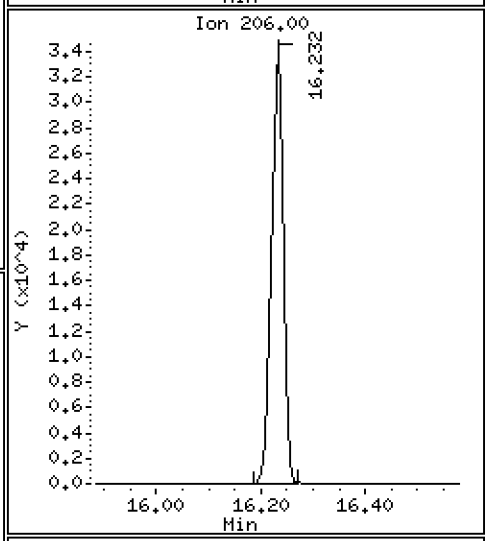


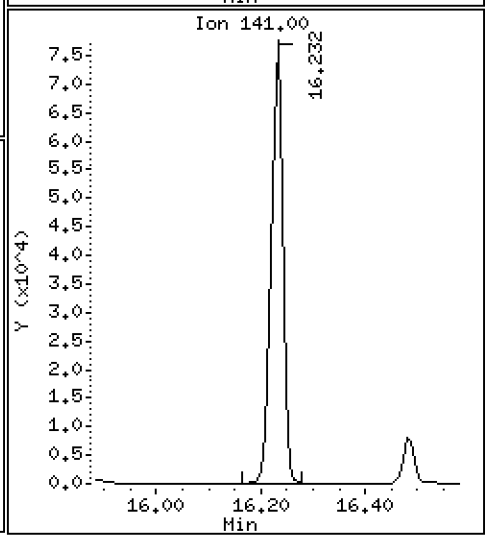












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

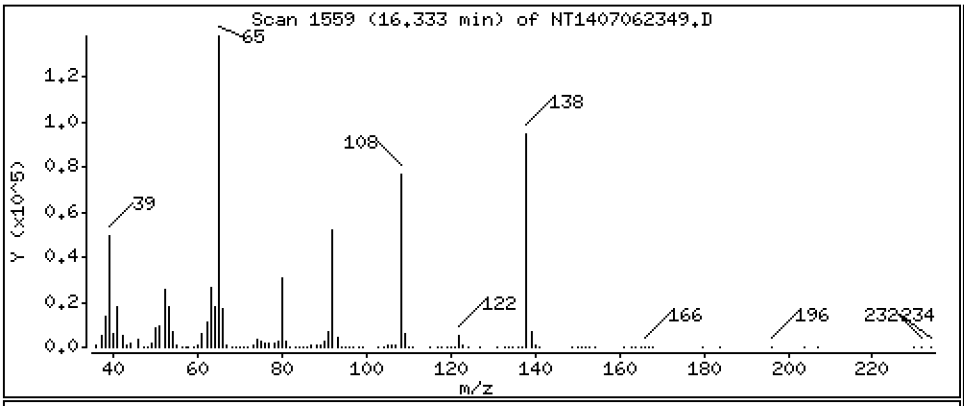
Operator: JGR

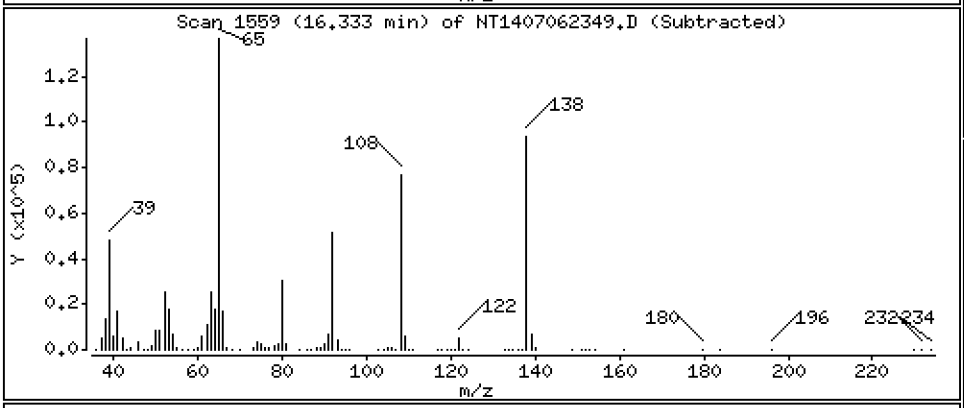
Column phase: ZB-5msi

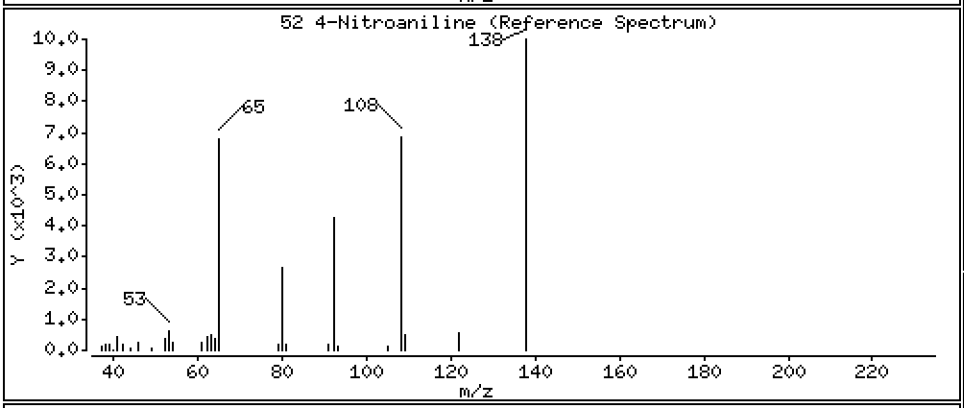
Column diameter: 0.25

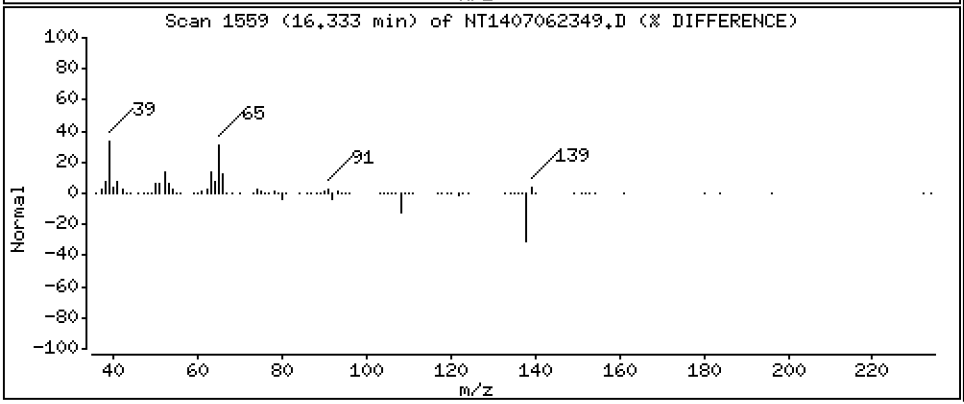
52 4-Nitroaniline

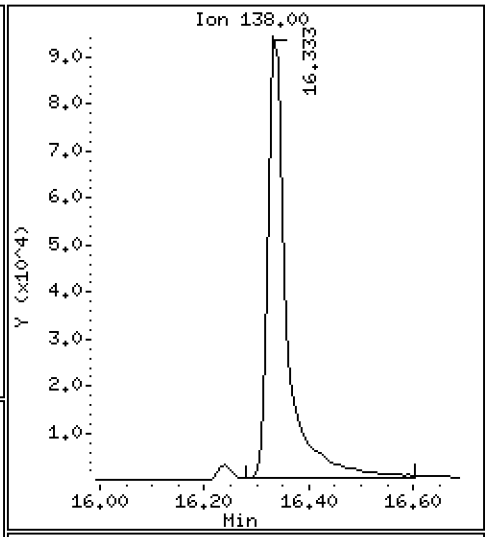
Concentration: 9.387 ug/mL

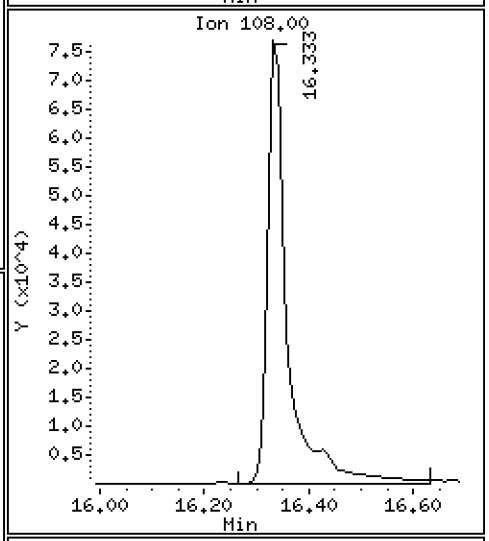


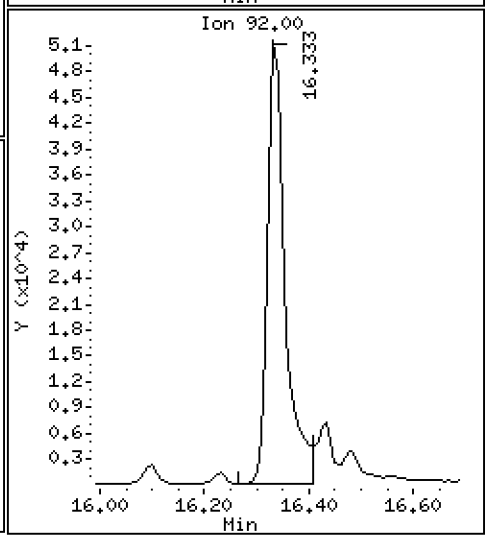












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

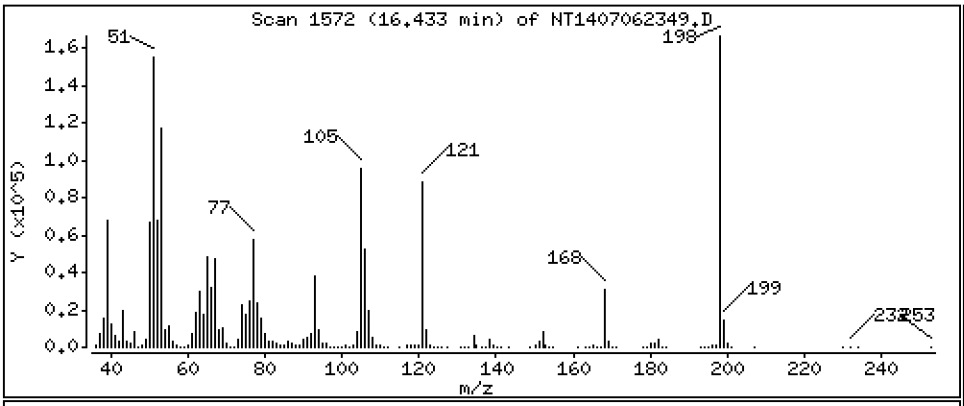
Operator: JGR

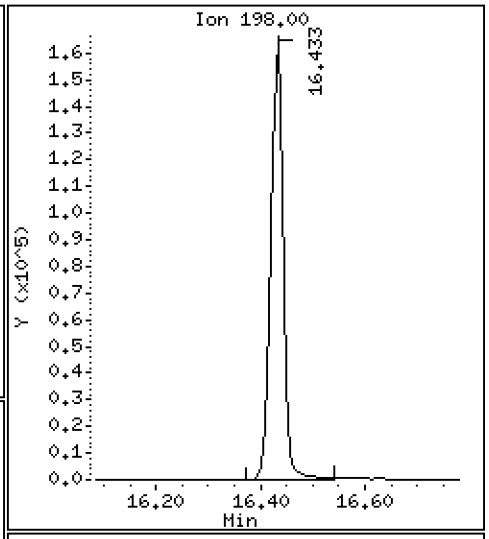
Column phase: ZB-5msi

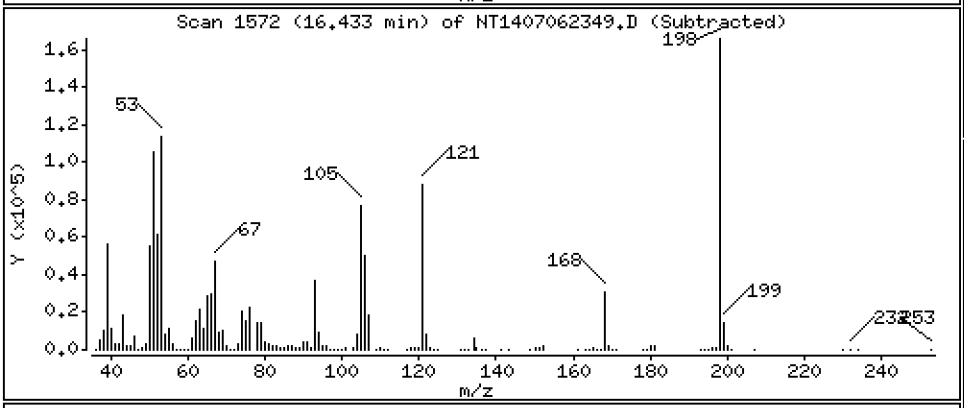
Column diameter: 0.25

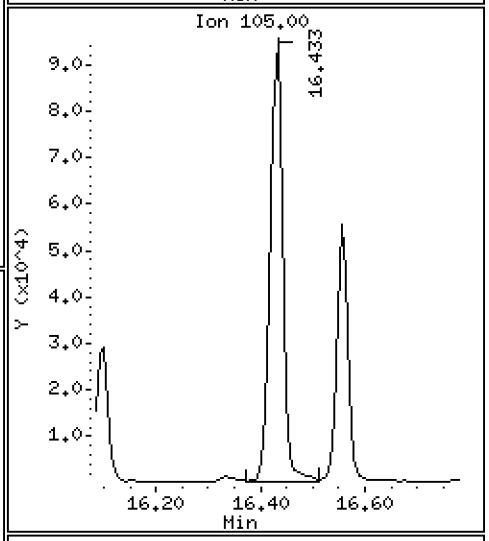
53 4,6-Dinitro-2-methylphenol

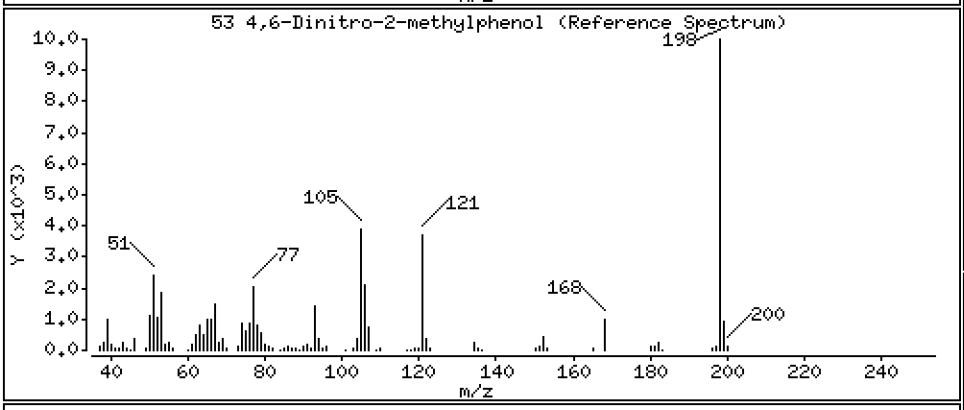
Concentration: 17.77 ug/mL

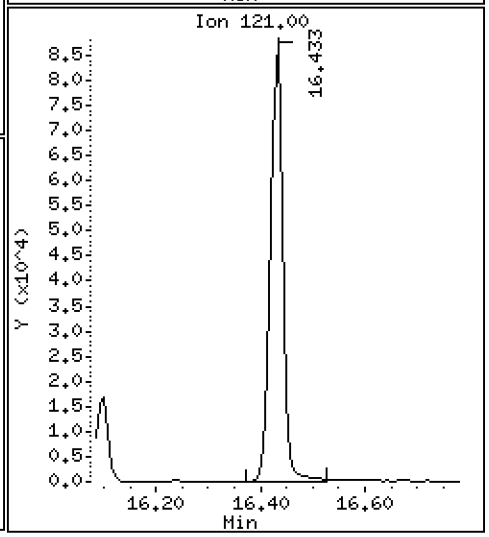


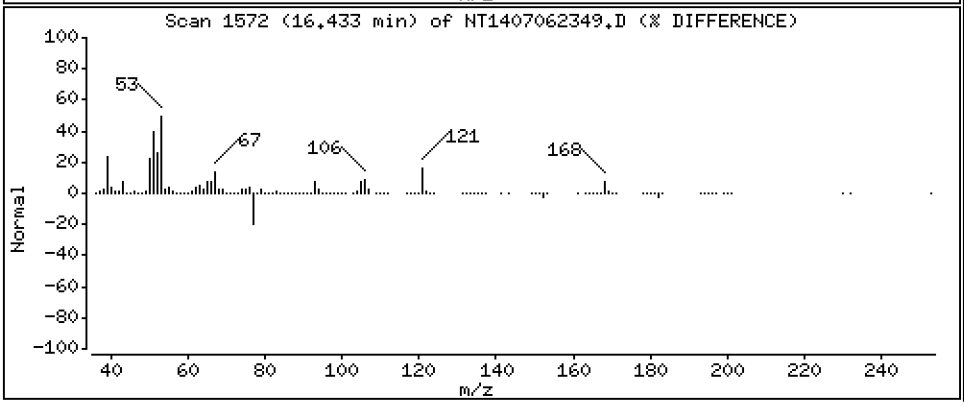












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

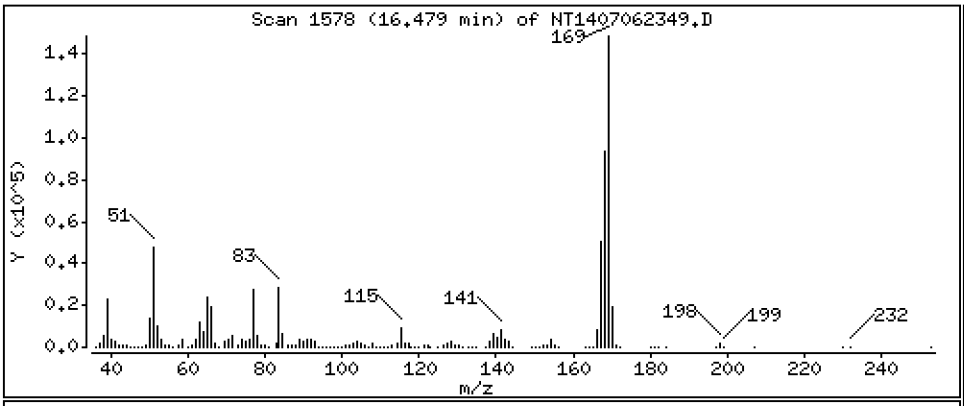
Operator: JGR

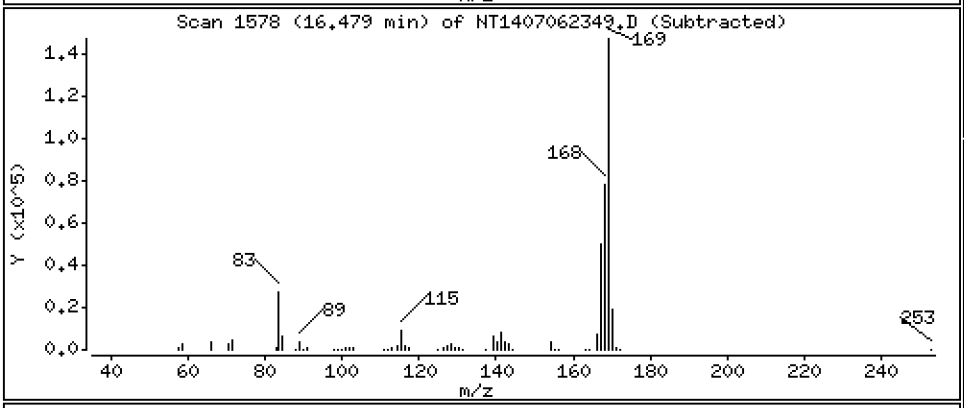
Column phase: ZB-5msi

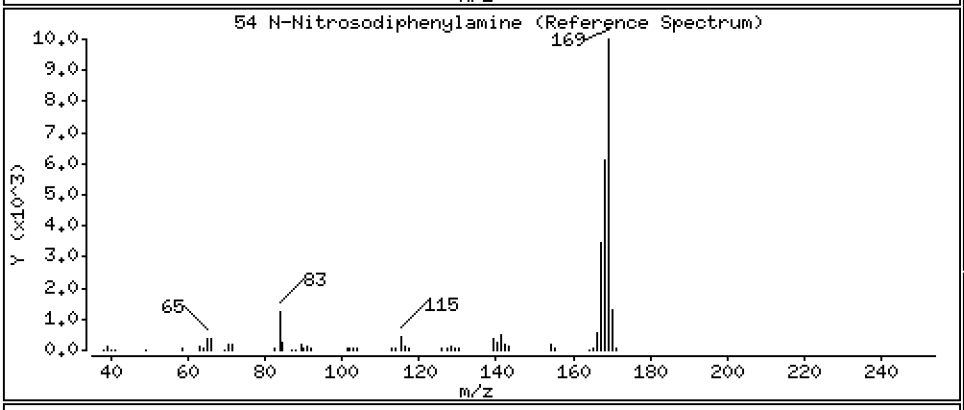
Column diameter: 0.25

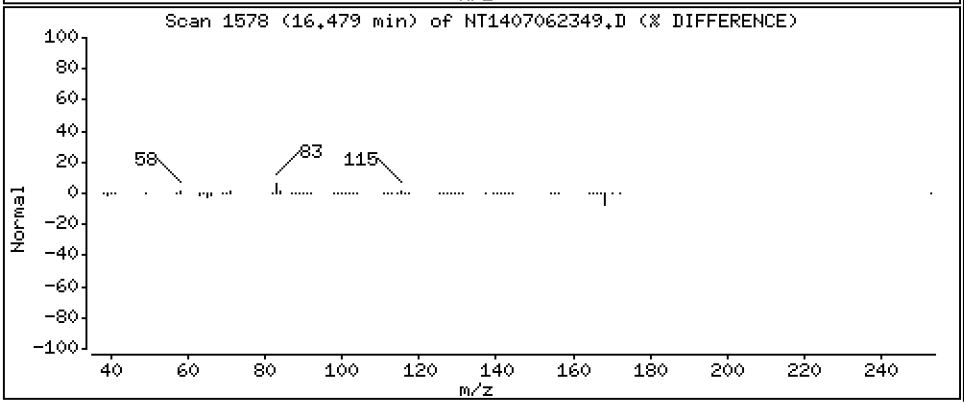
54 N-Nitrosodiphenylamine

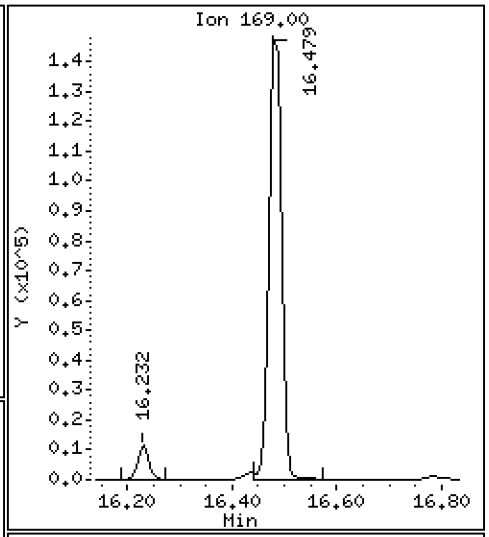
Concentration: 3.700 ug/mL

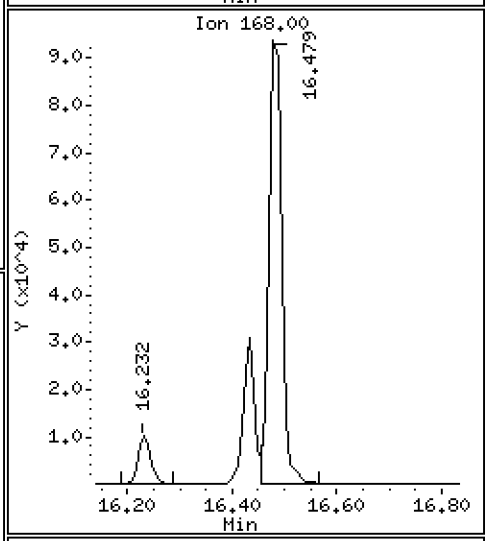


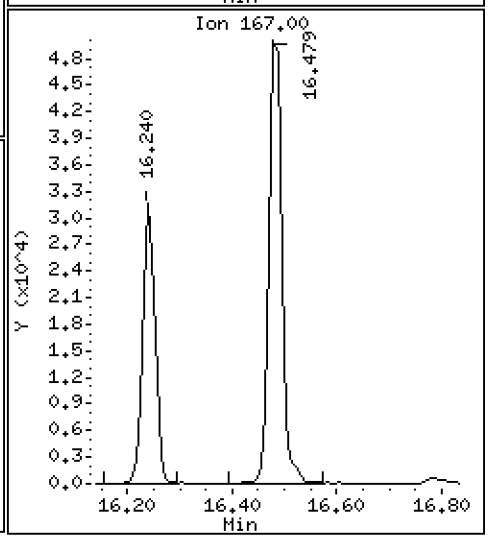












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

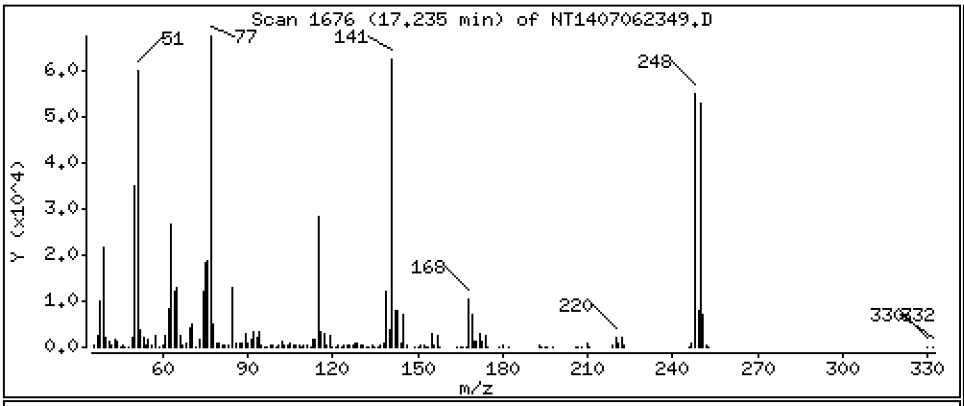
Operator: JGR

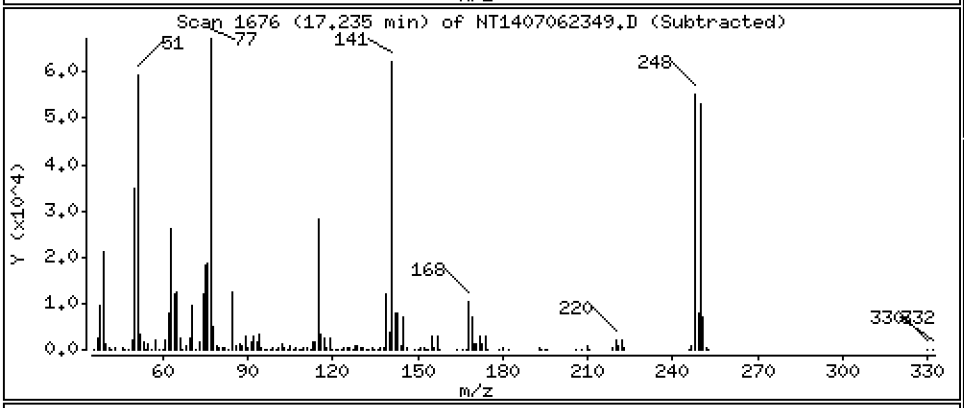
Column phase: ZB-5msi

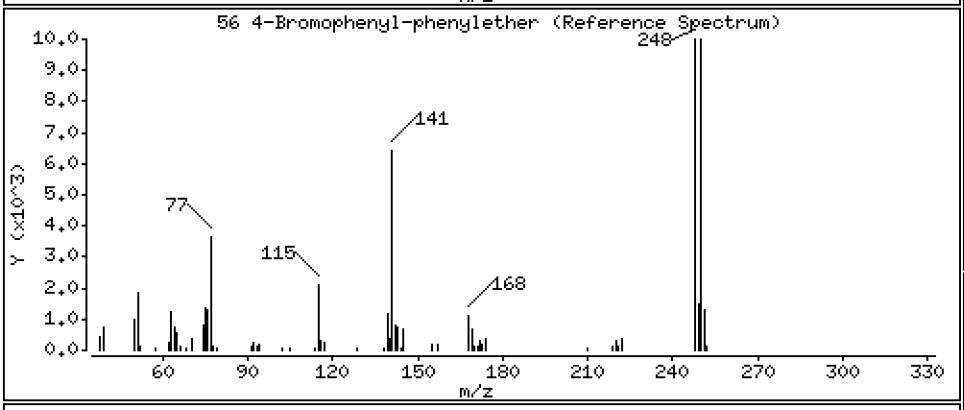
Column diameter: 0.25

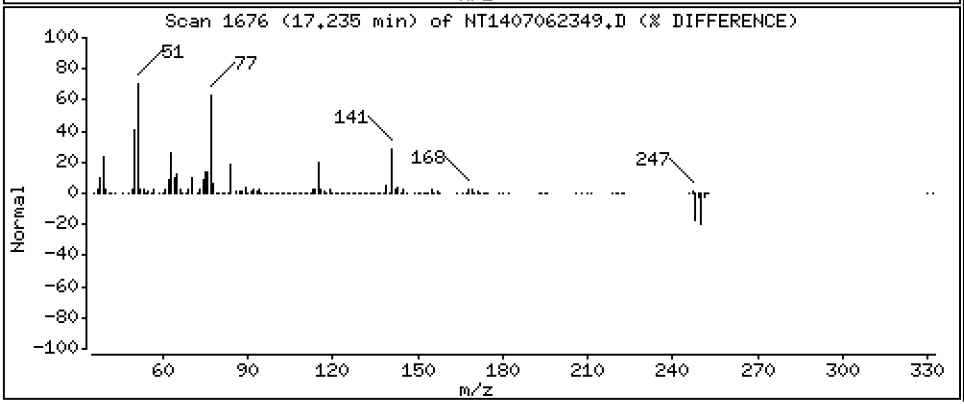
56 4-Bromophenyl-phenylether

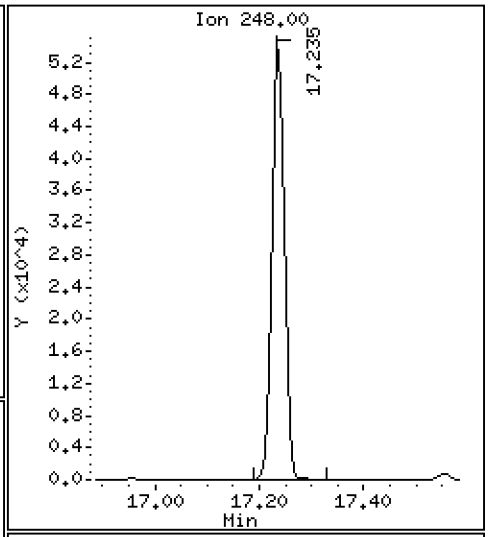
Concentration: 4.537 ug/mL

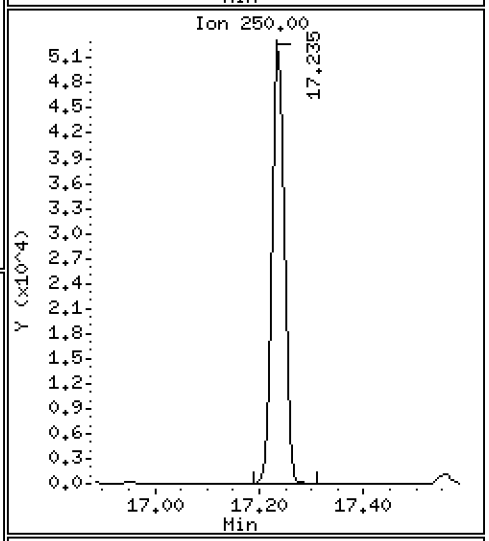


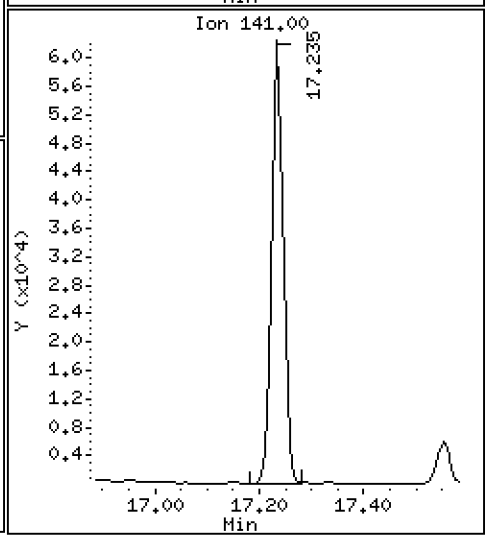












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

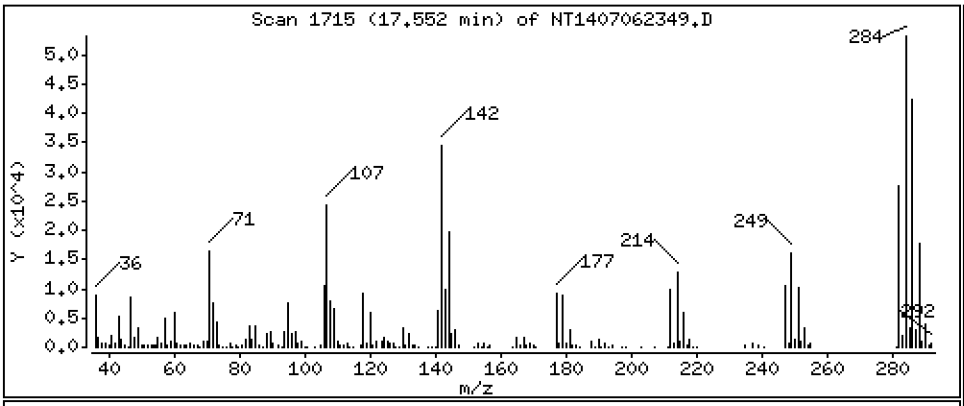
Operator: JGR

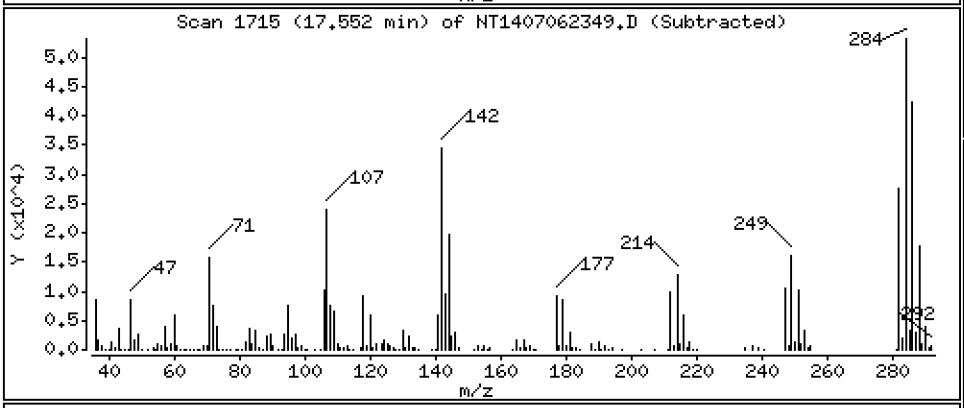
Column phase: ZB-5msi

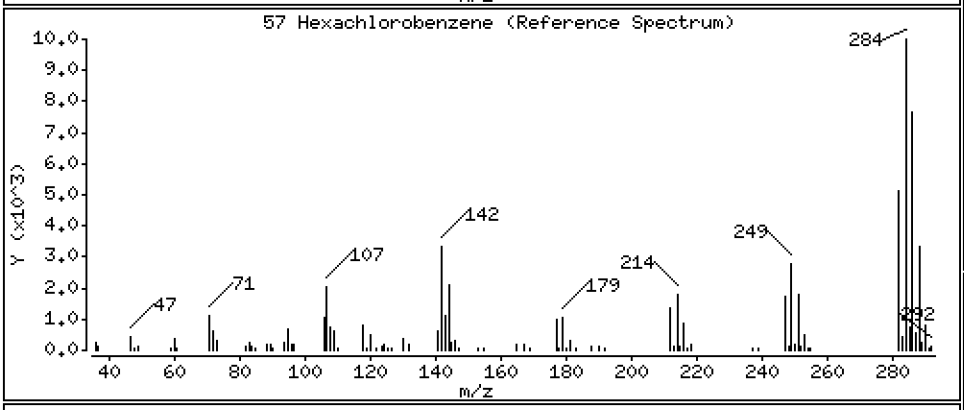
Column diameter: 0.25

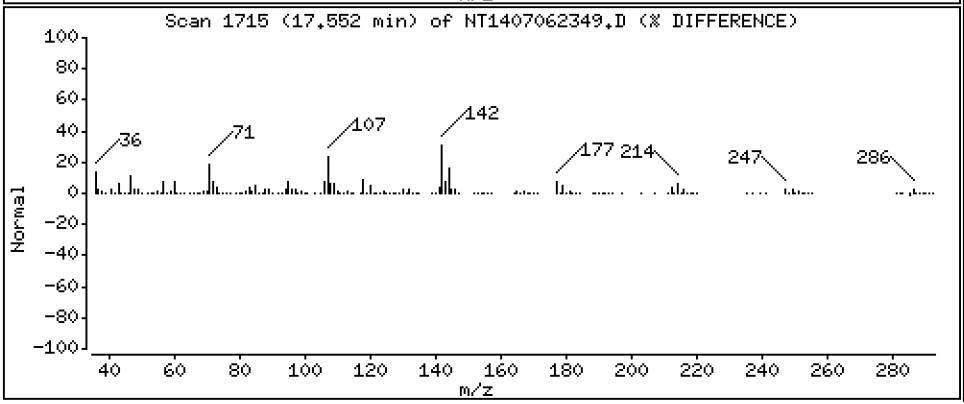
57 Hexachlorobenzene

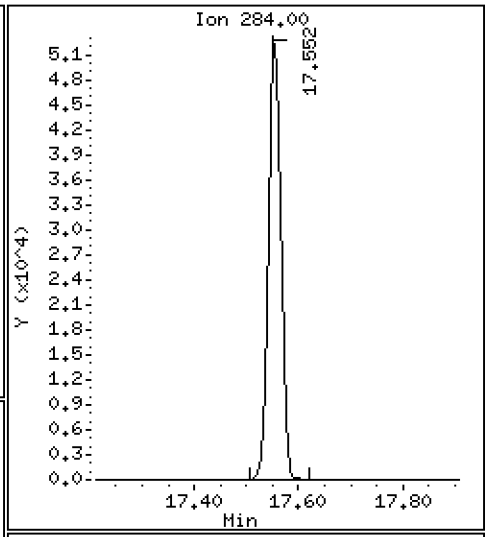
Concentration: 4.182 ug/mL

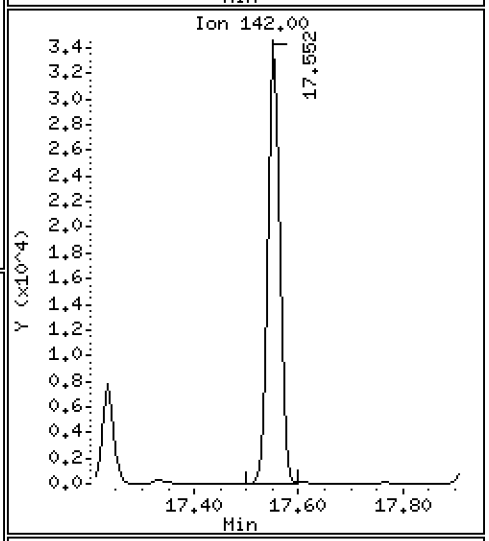


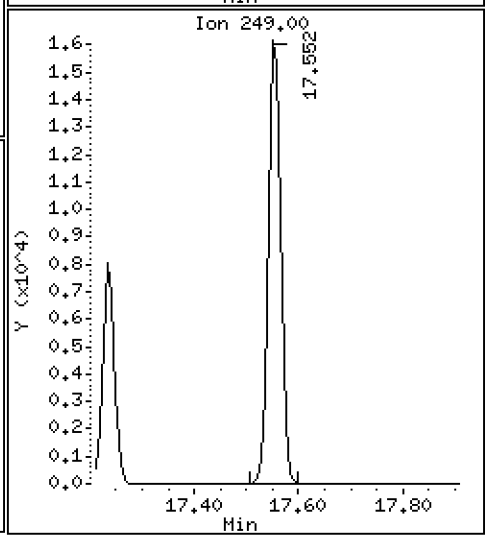












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

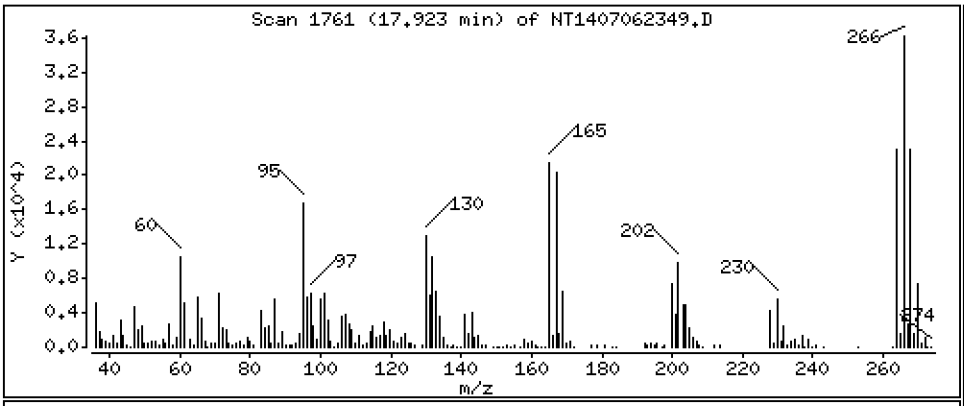
Operator: JGR

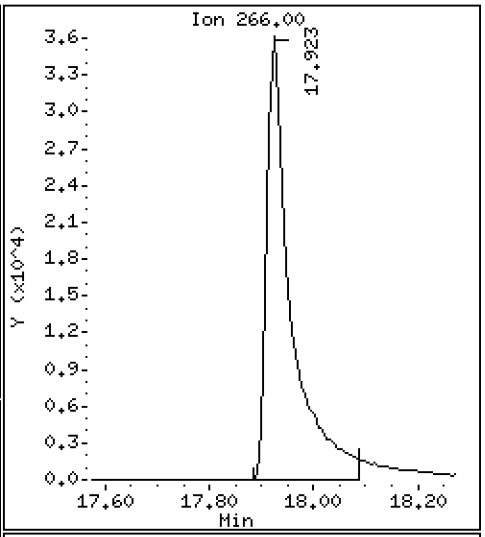
Column phase: ZB-5msi

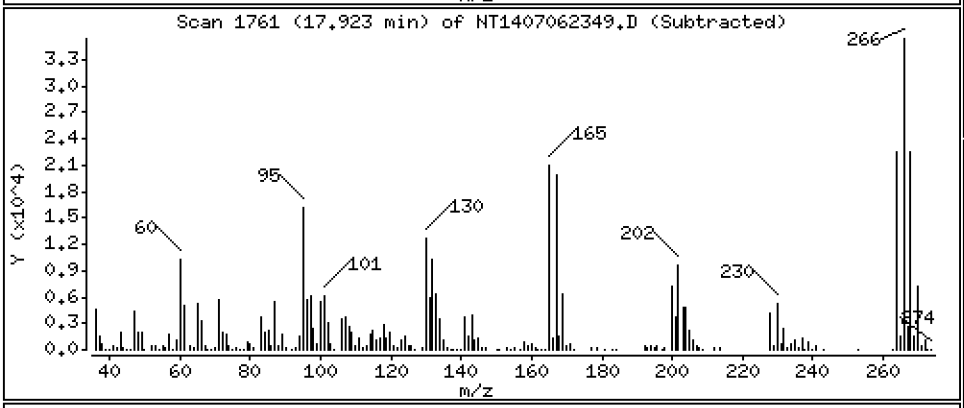
Column diameter: 0.25

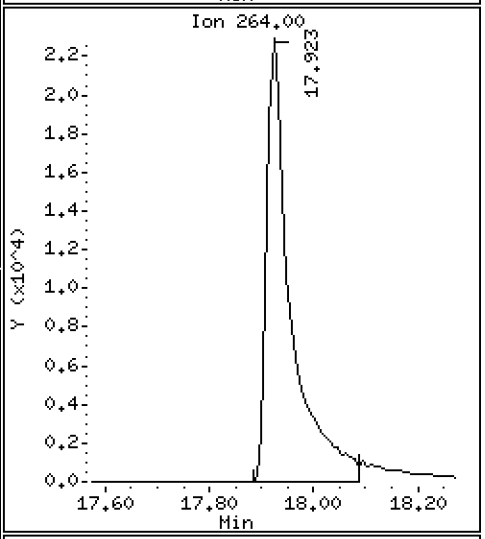
58 Pentachlorophenol

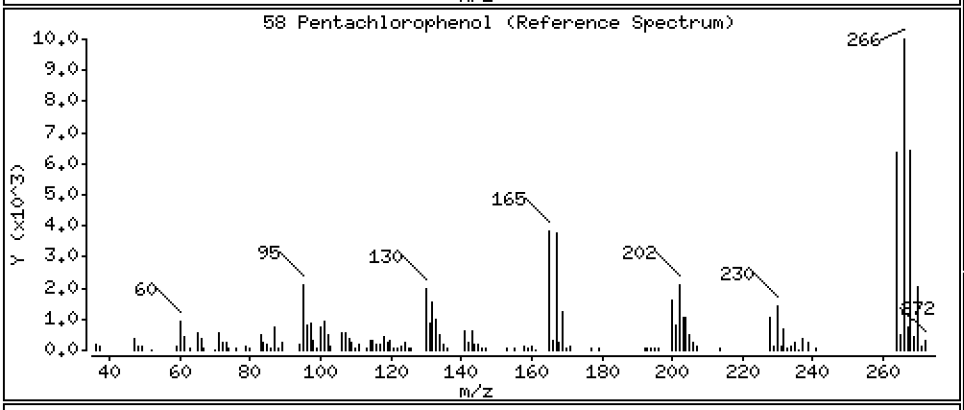
Concentration: 9.258 ug/mL

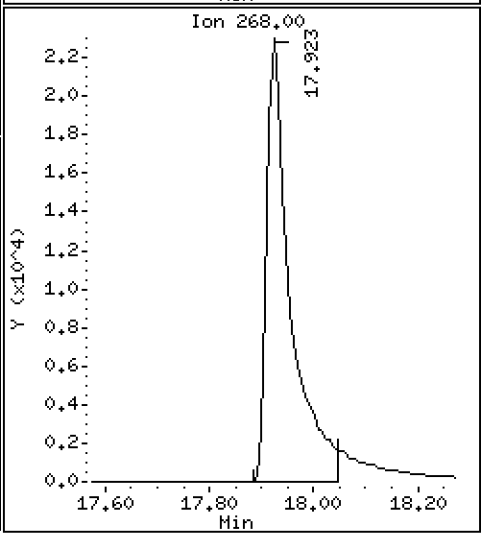


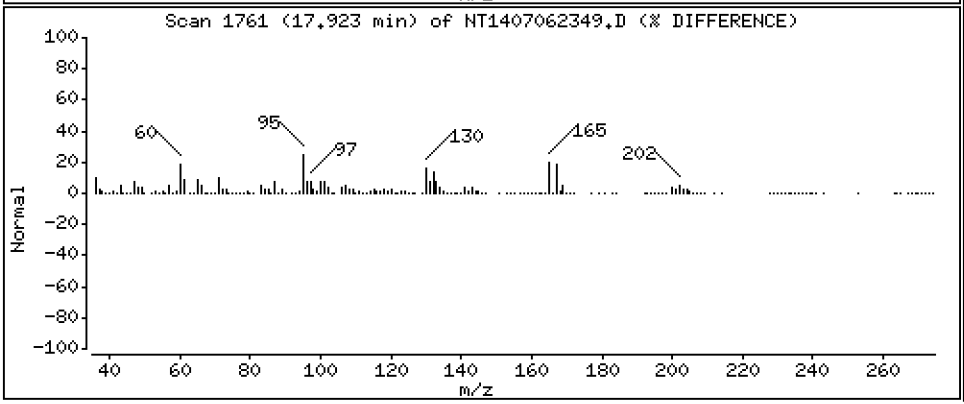












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062349.D

Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

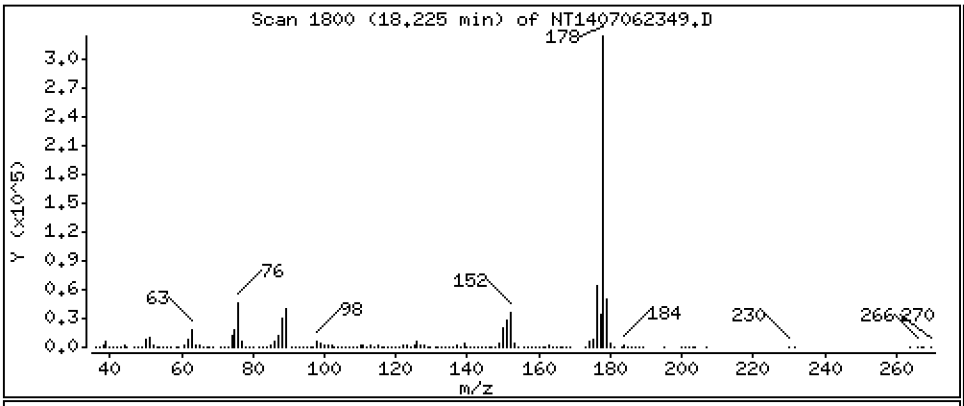
Operator: JGR

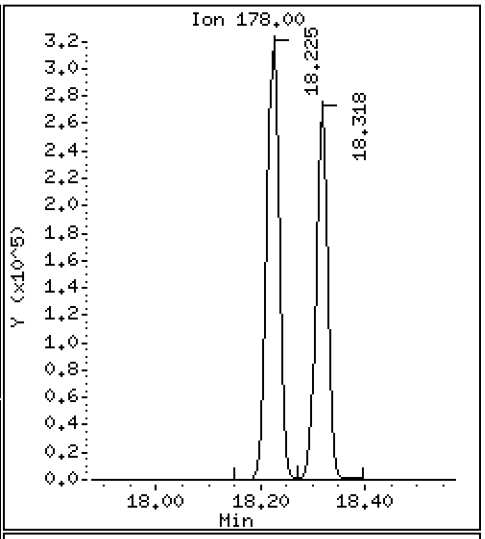
Column phase: ZB-5msi

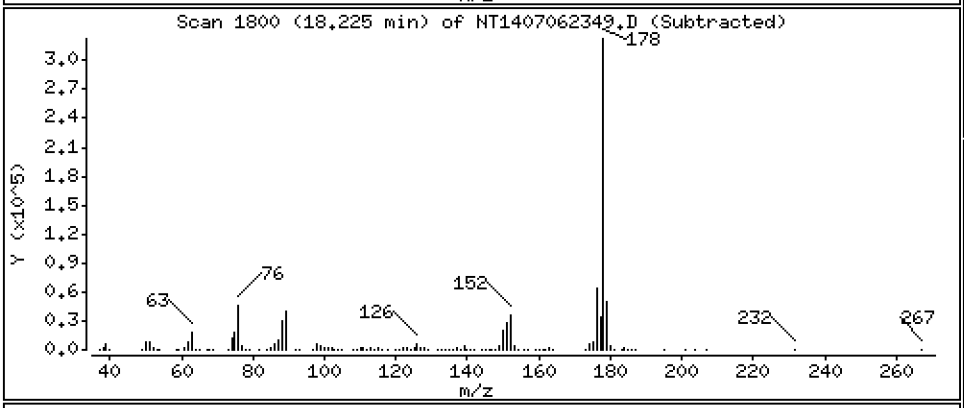
Column diameter: 0.25

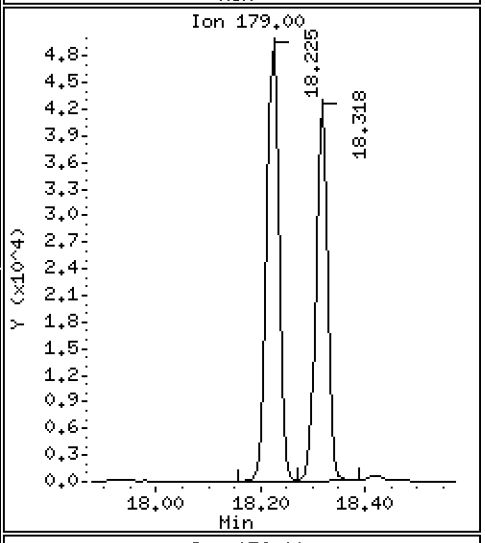
60 Phenanthrene

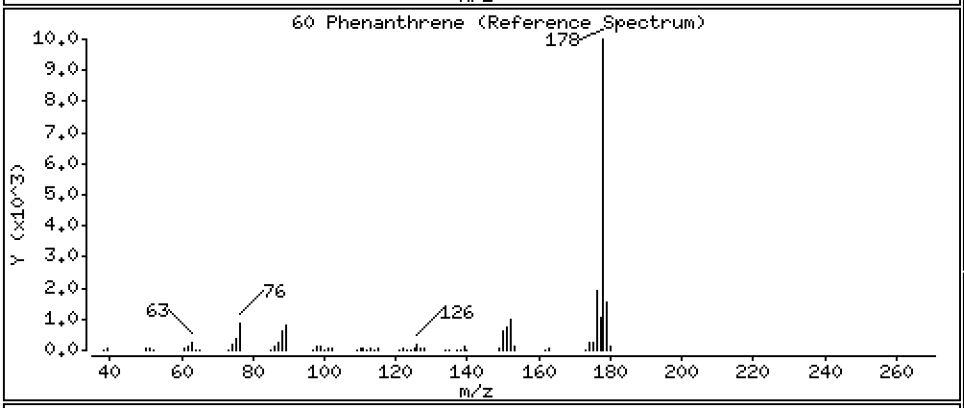
Concentration: 4.244 ug/mL

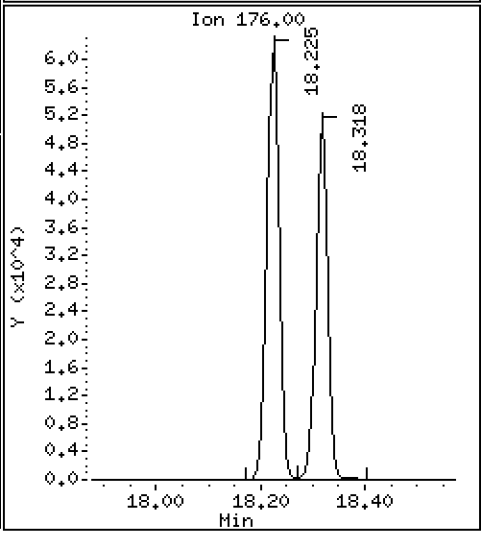


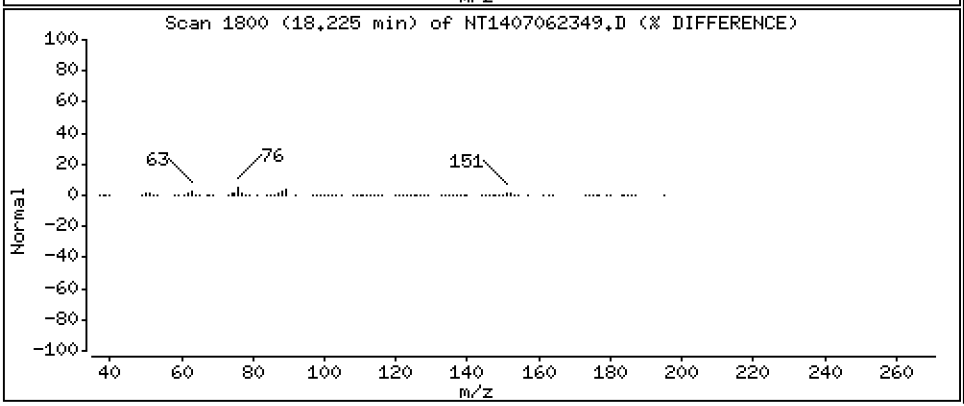












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

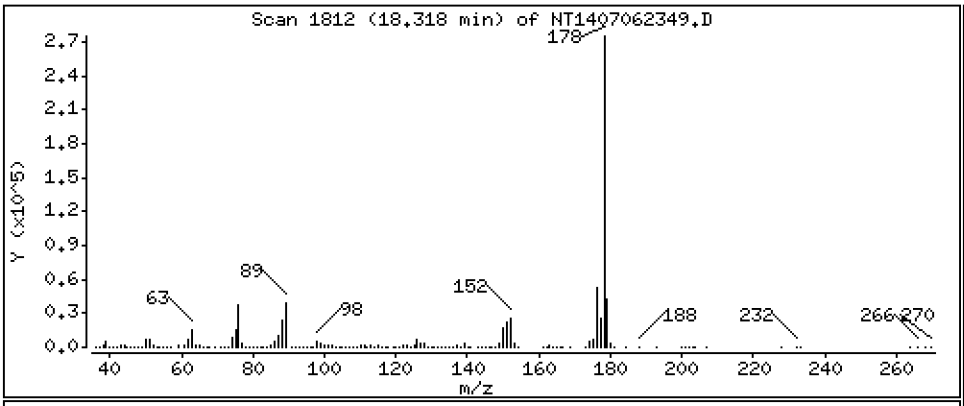
Operator: JGR

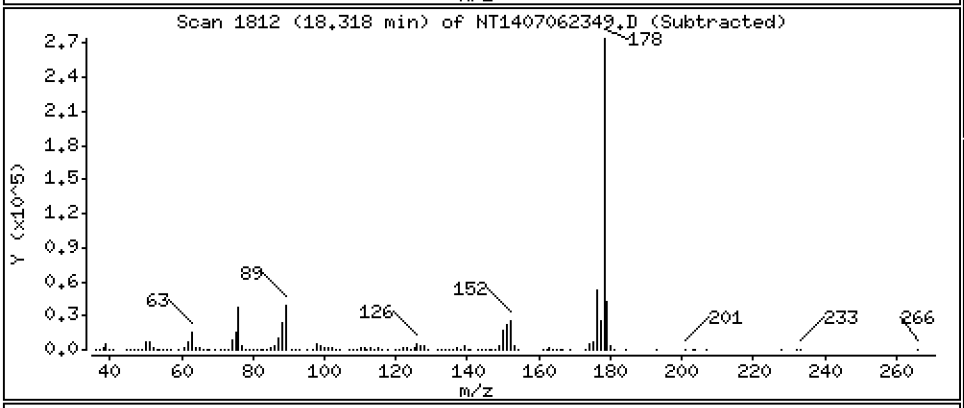
Column phase: ZB-5msi

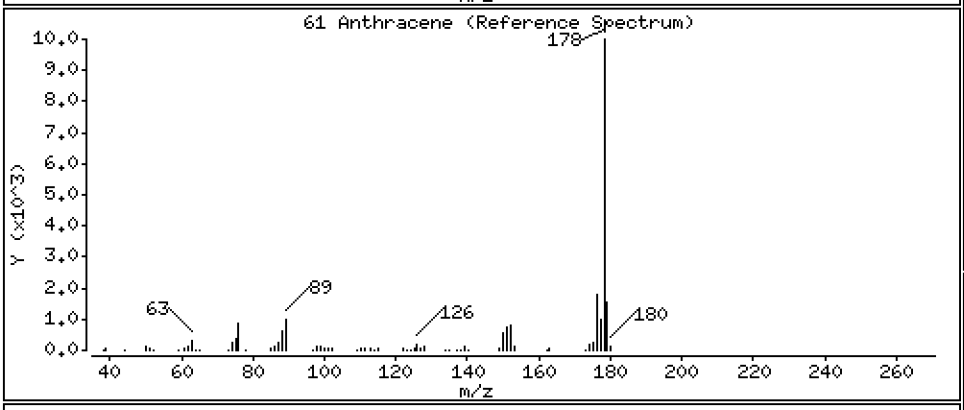
Column diameter: 0.25

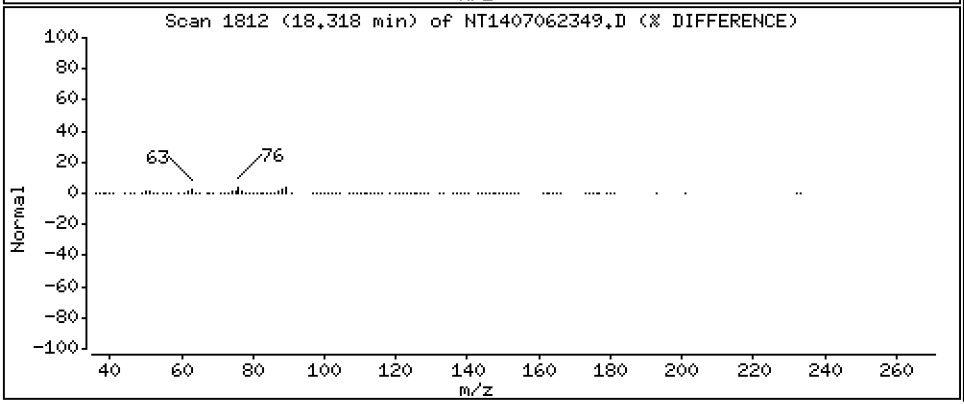
61 Anthracene

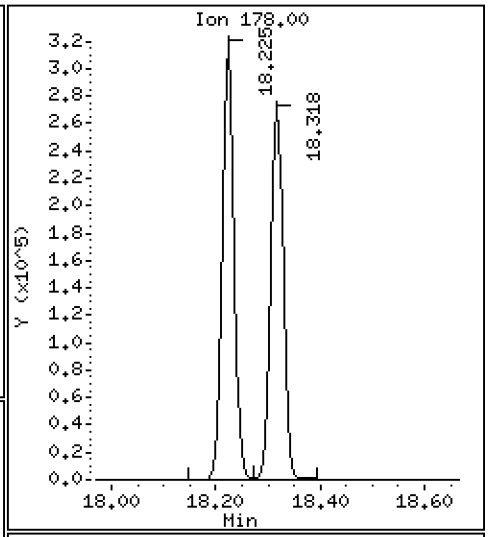
Concentration: 3.739 ug/mL

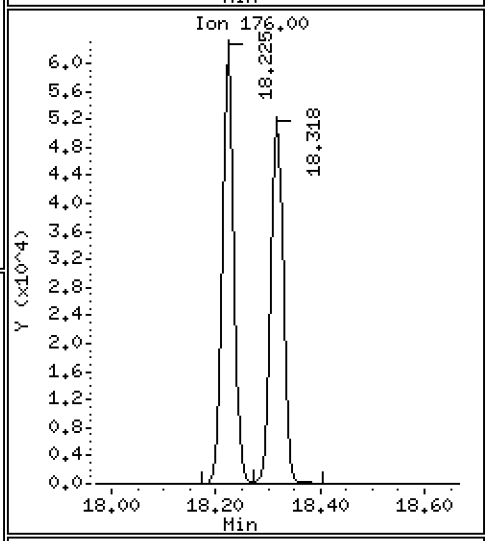


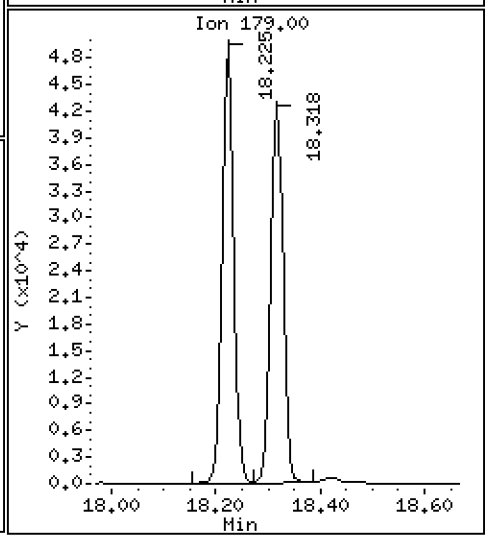












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

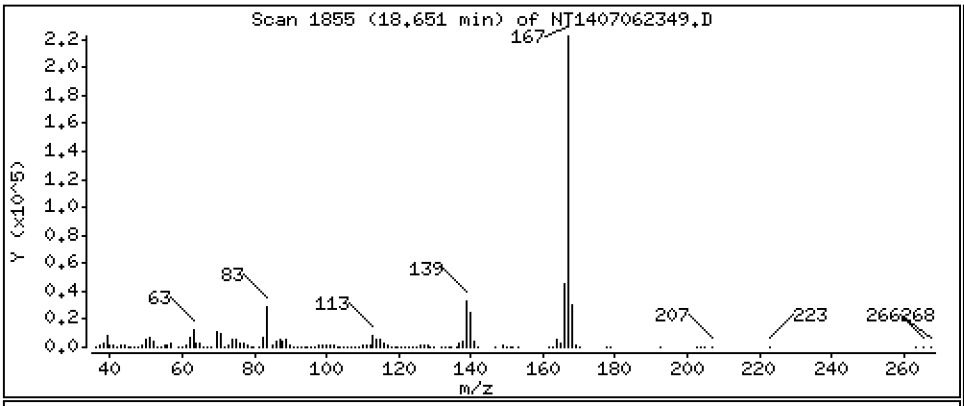
Operator: JGR

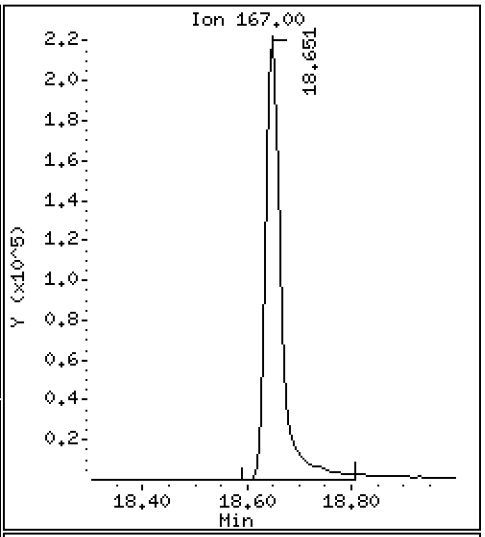
Column phase: ZB-5msi

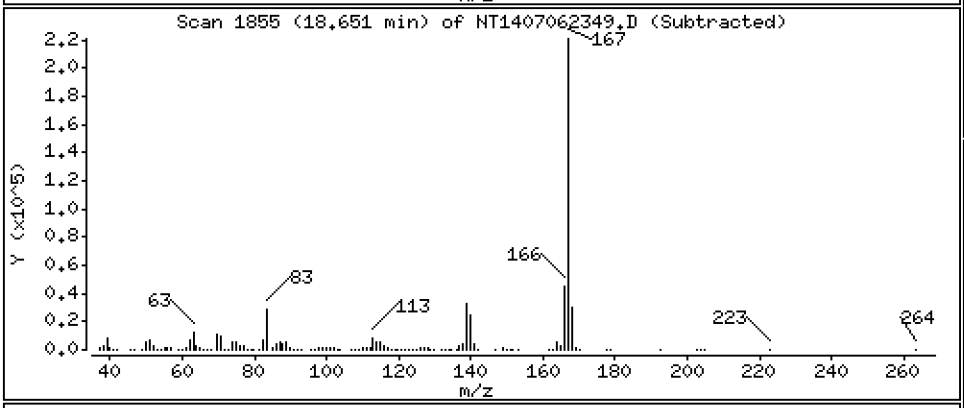
Column diameter: 0.25

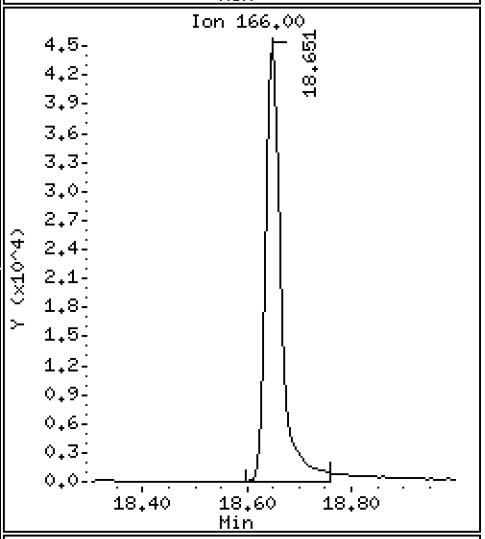
62 Carbazole

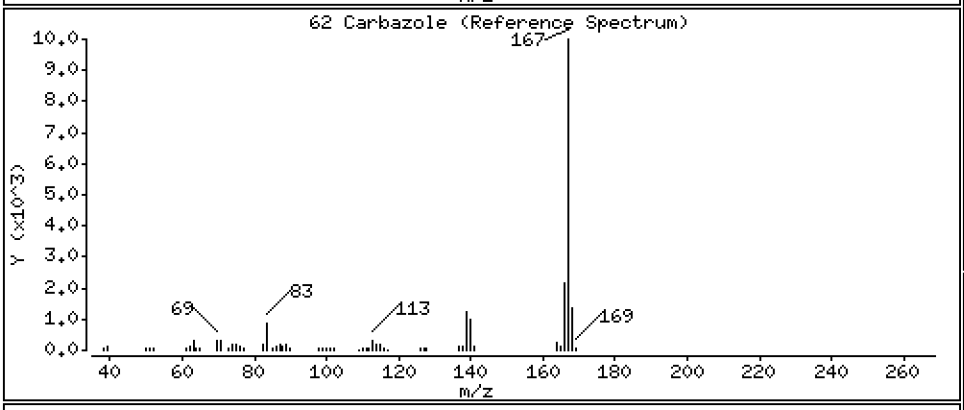
Concentration: 3.884 ug/mL

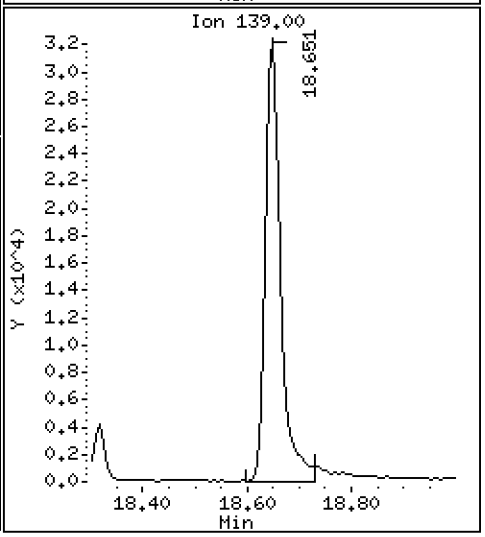


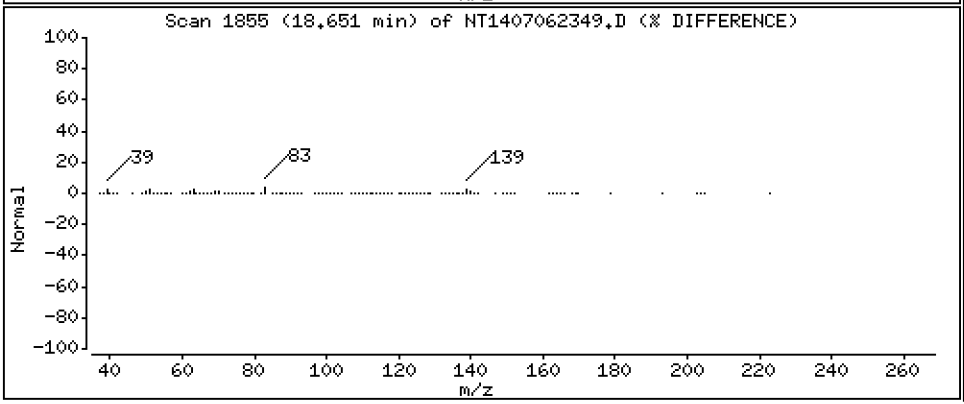












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

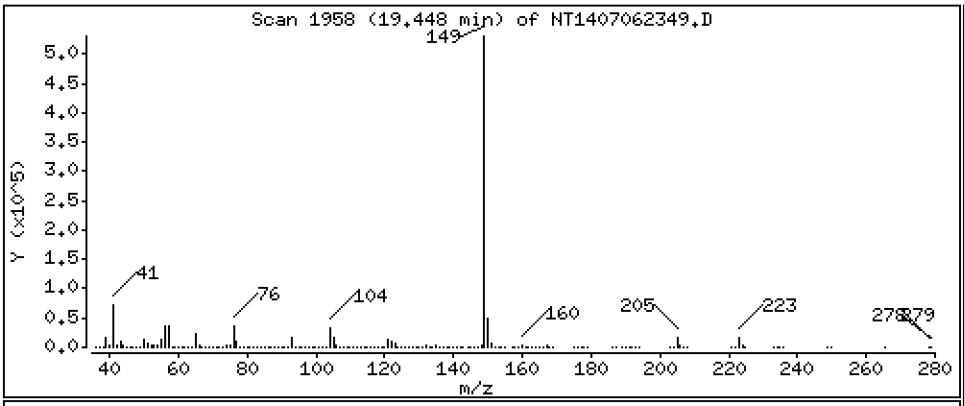
Operator: JGR

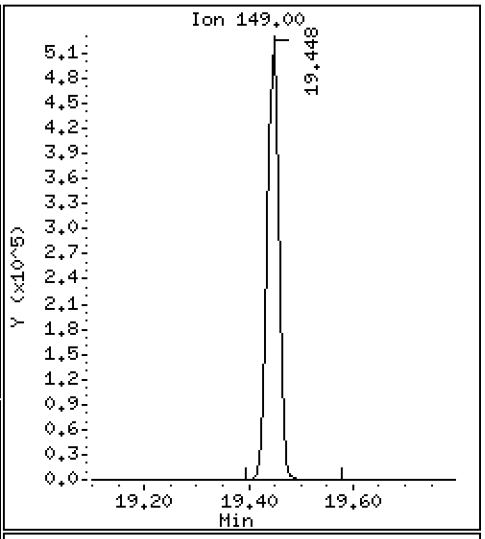
Column phase: ZB-5msi

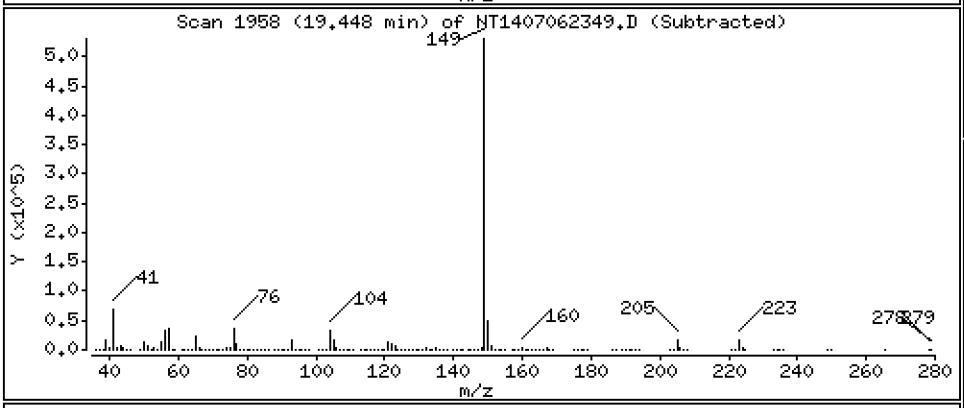
Column diameter: 0.25

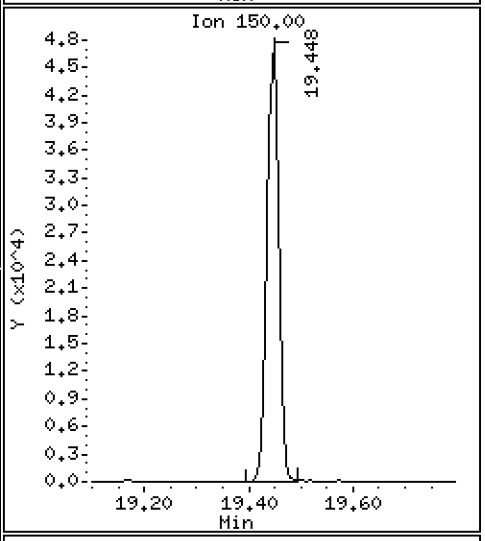
63 Di-n-butylphthalate

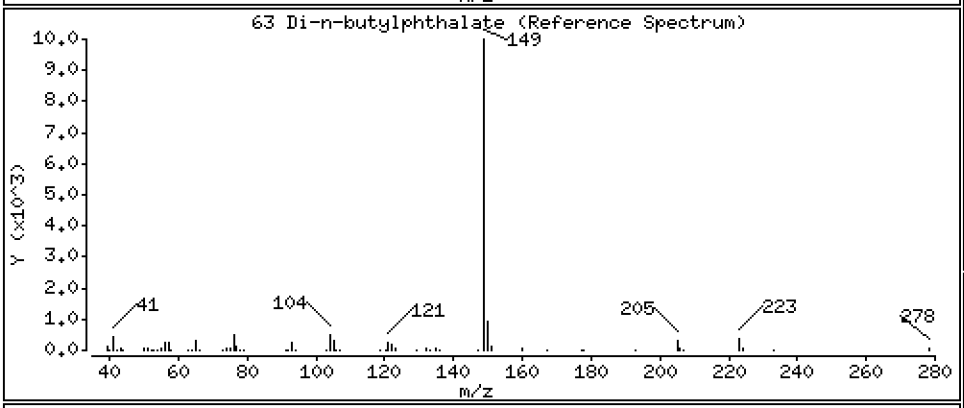
Concentration: 5.026 ug/mL

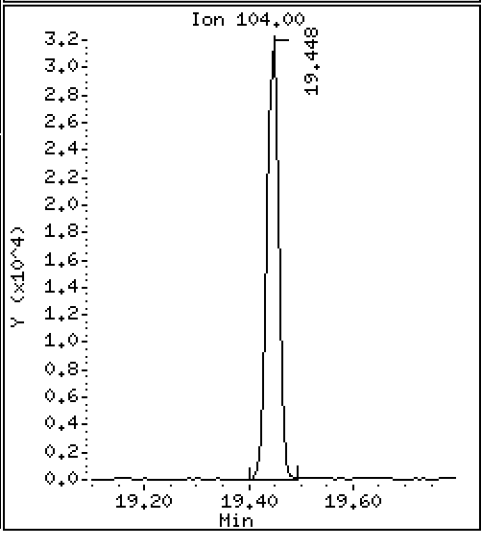


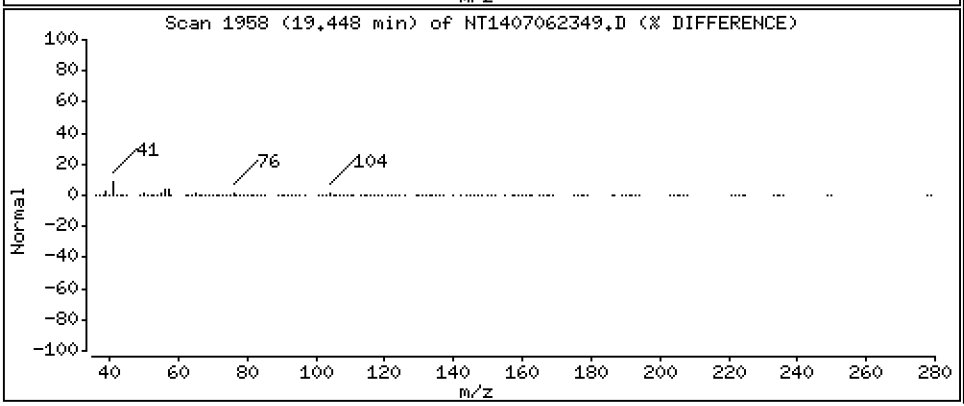












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

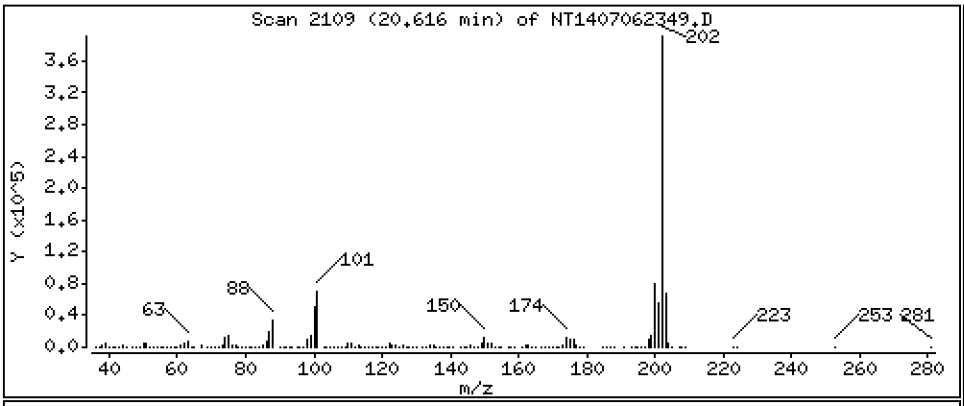
Operator: JGR

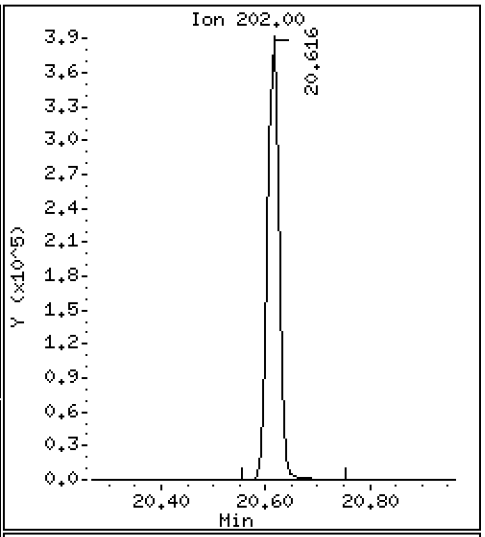
Column phase: ZB-5msi

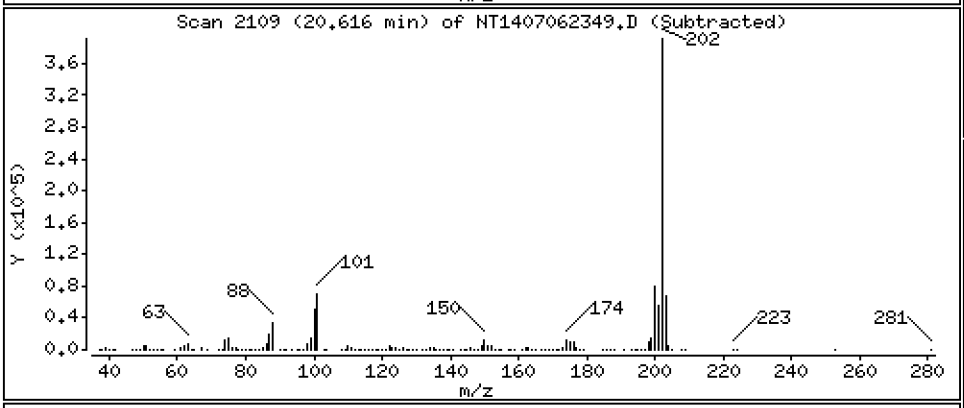
Column diameter: 0.25

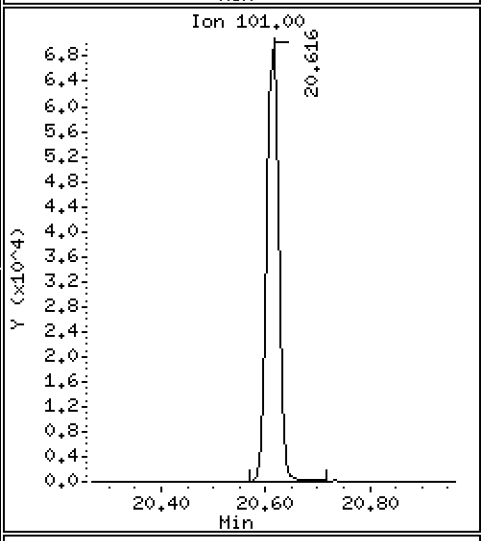
64 Fluoranthene

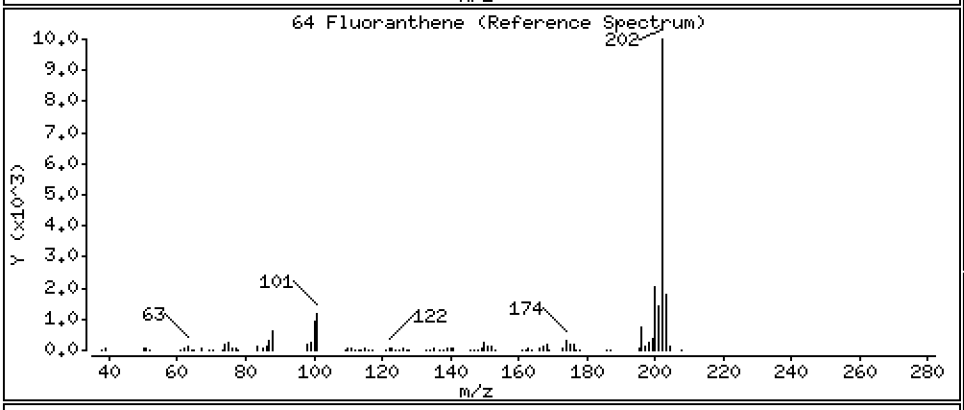
Concentration: 5.096 ug/mL

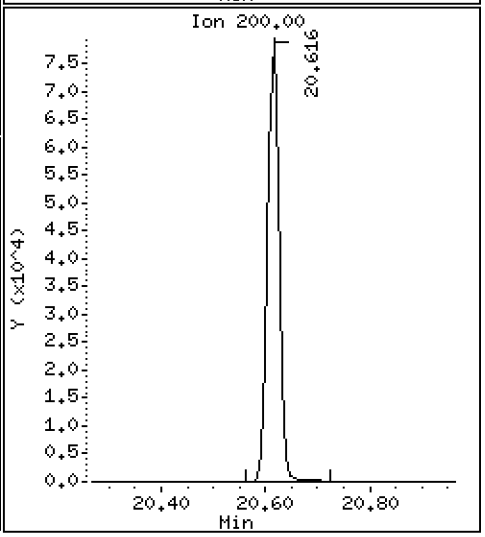


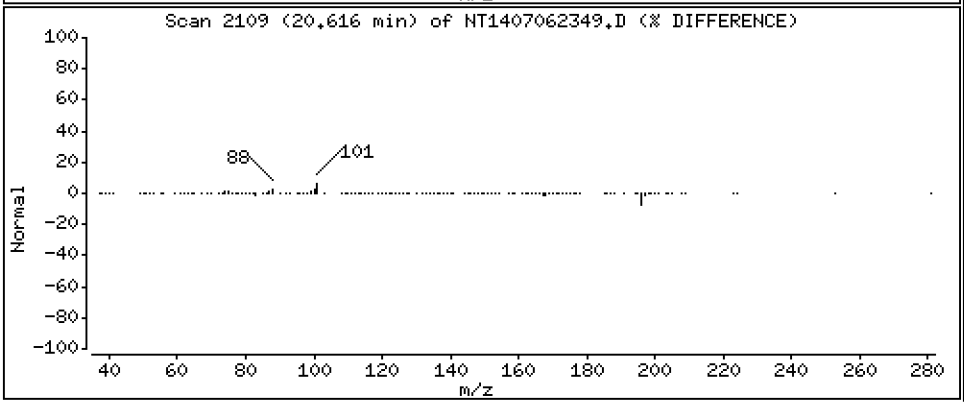












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

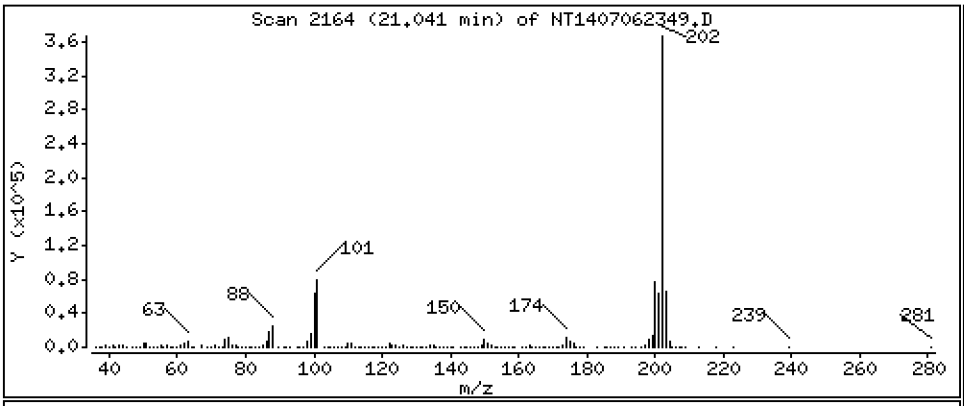
Operator: JGR

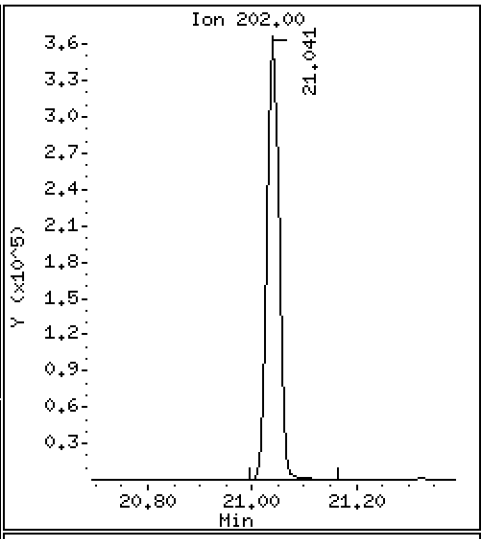
Column phase: ZB-5msi

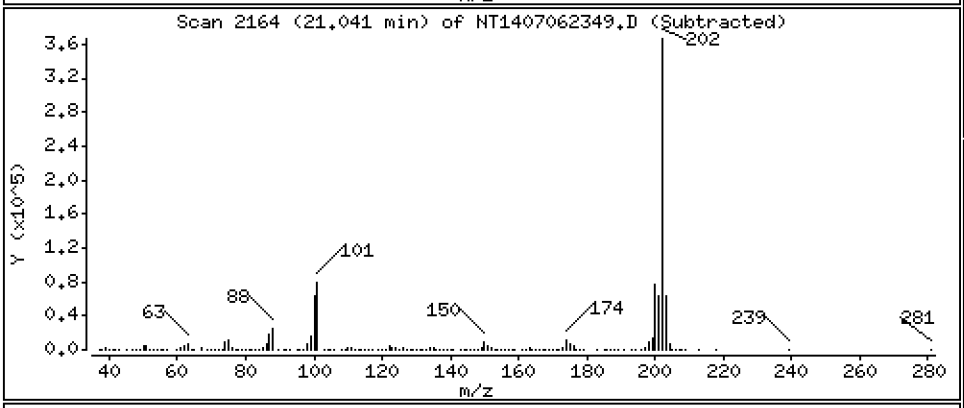
Column diameter: 0.25

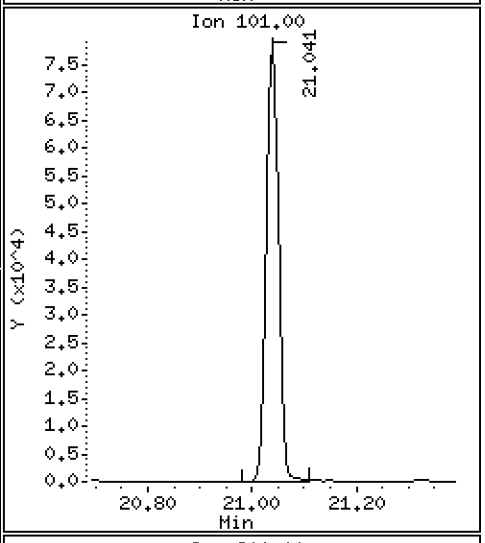
65 Pyrene

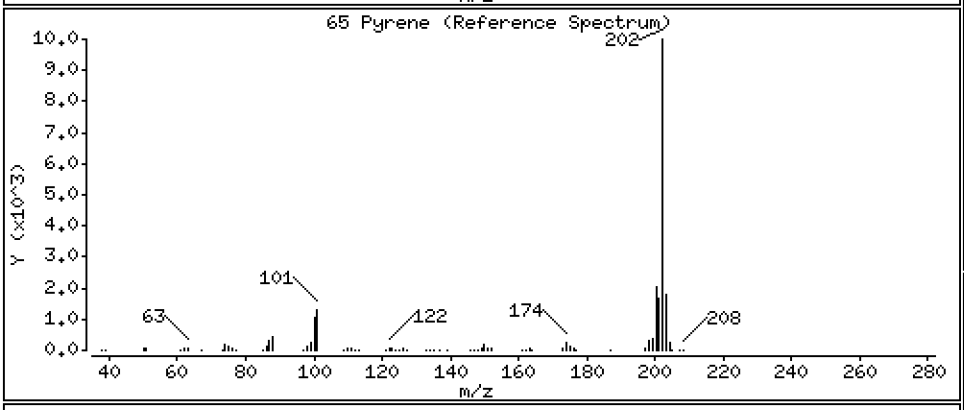
Concentration: 4.928 ug/mL

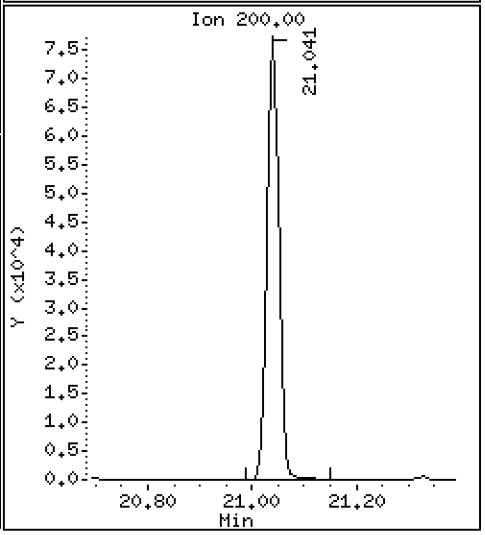


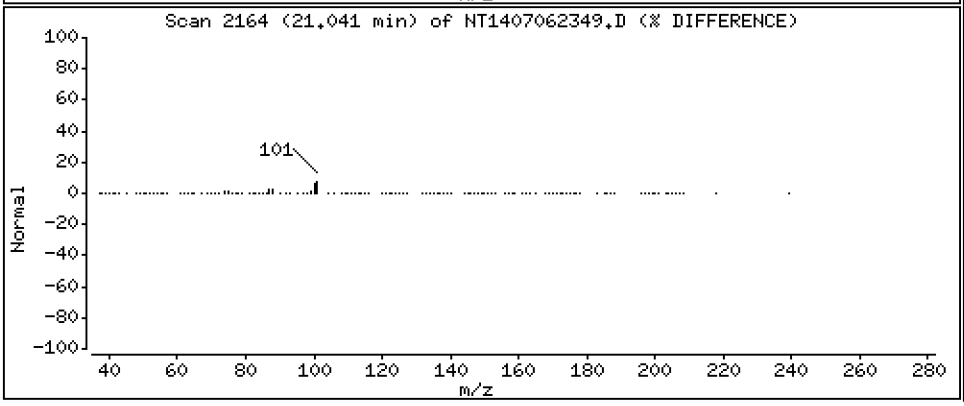












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

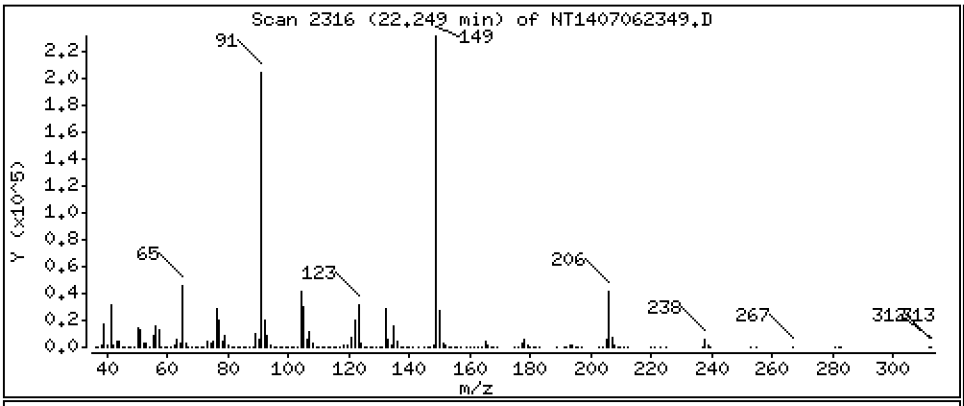
Operator: JGR

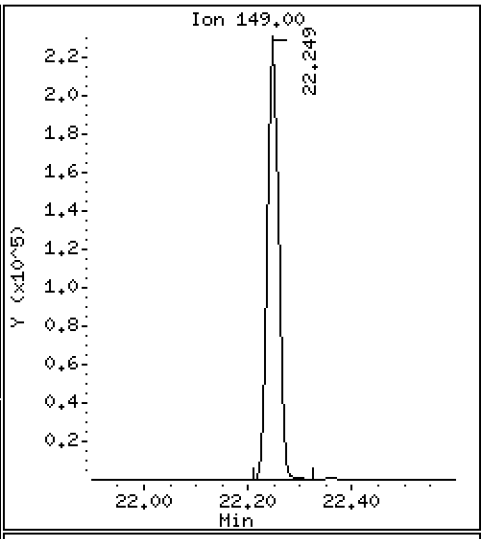
Column phase: ZB-5msi

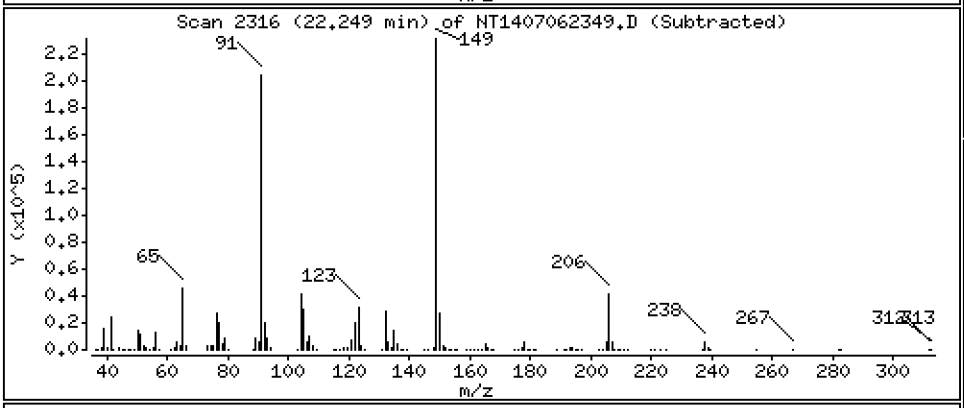
Column diameter: 0.25

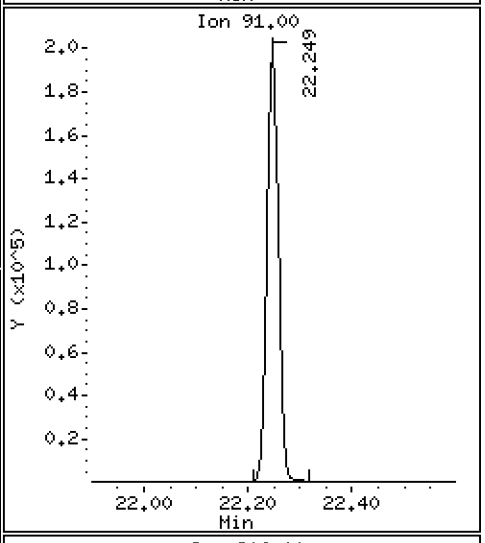
67 Butylbenzylphthalate

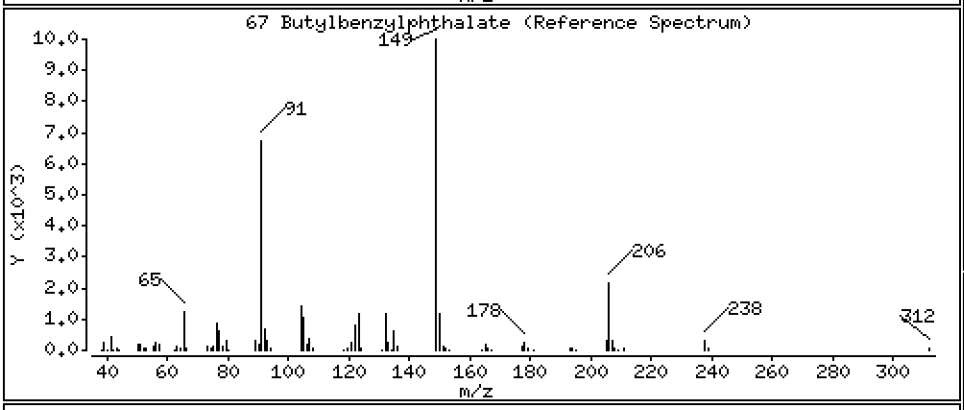
Concentration: 6.021 ug/mL

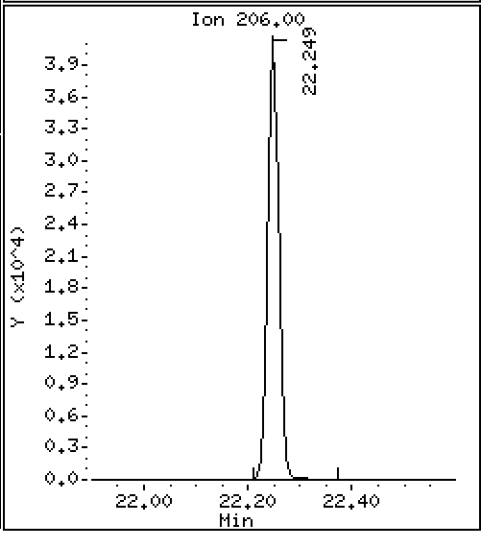


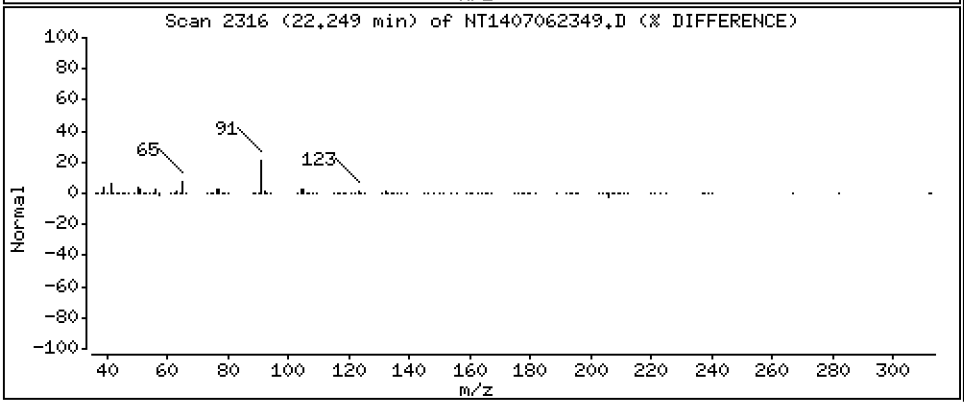












Date : 07-JUL-2023 19:29

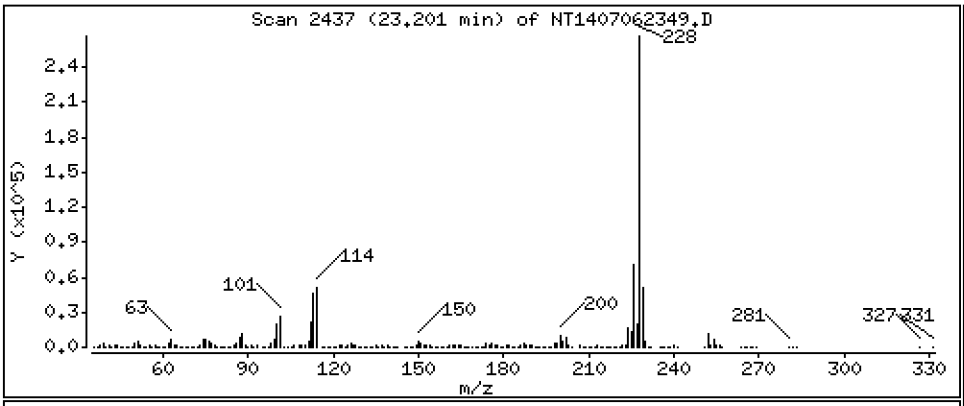
Client ID: Instrument: nt14.i

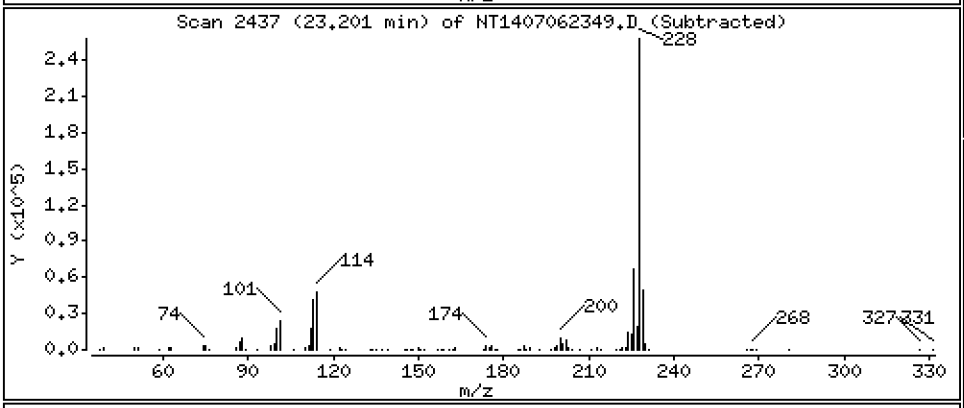
Sample Info: BLF0718-BS1

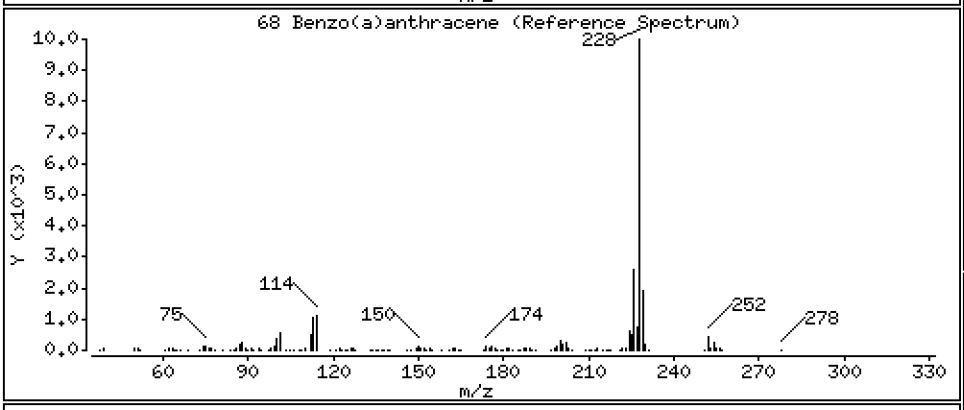
Operator: JGR

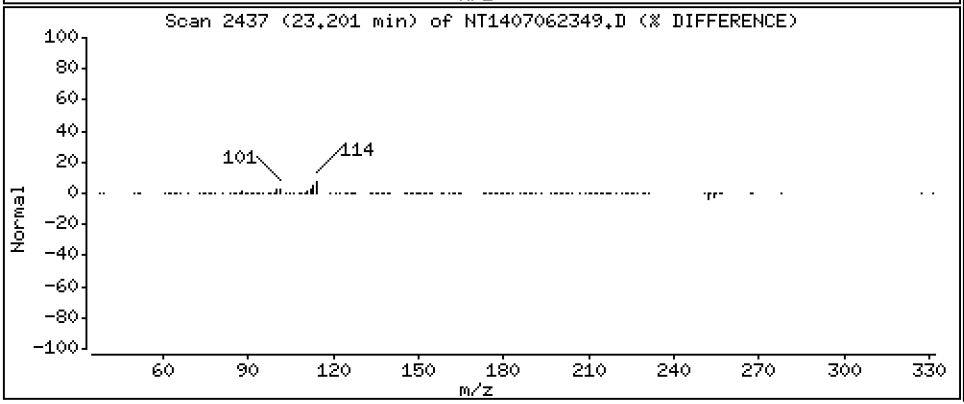
Column phase: ZB-5msi Column diameter: 0.25

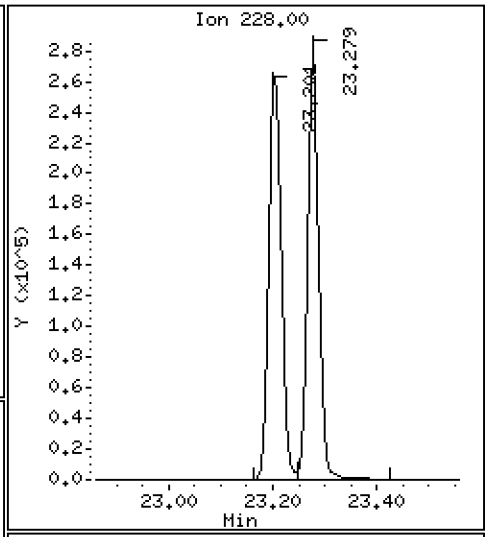
68 Benzo(a)anthracene Concentration: 4.444 ug/mL

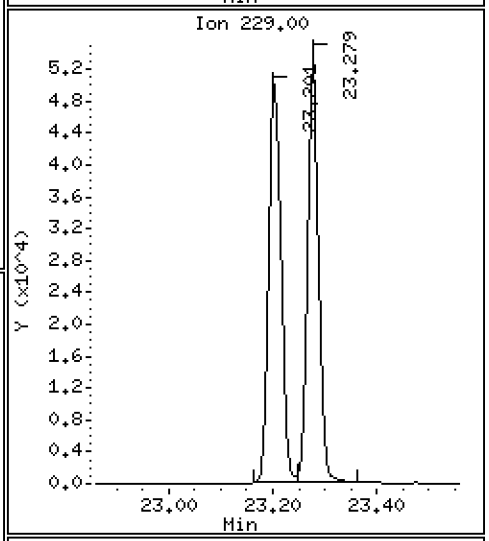


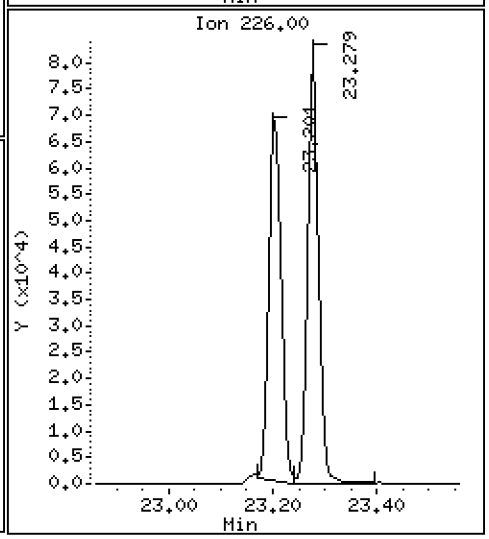












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

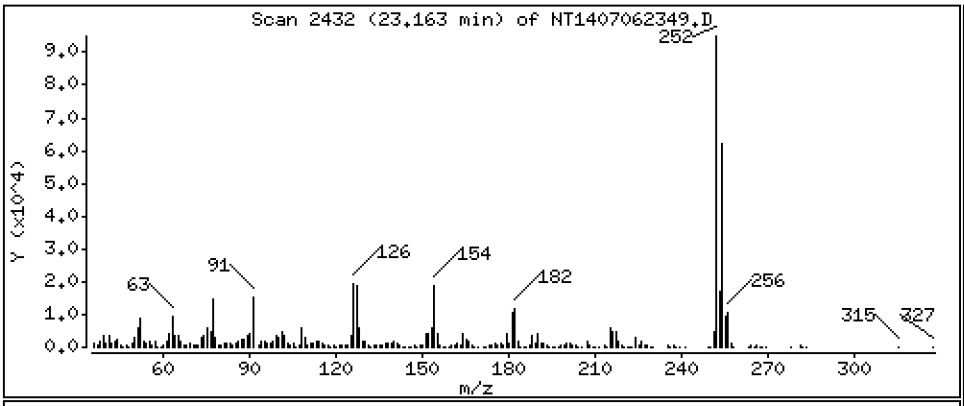
Operator: JGR

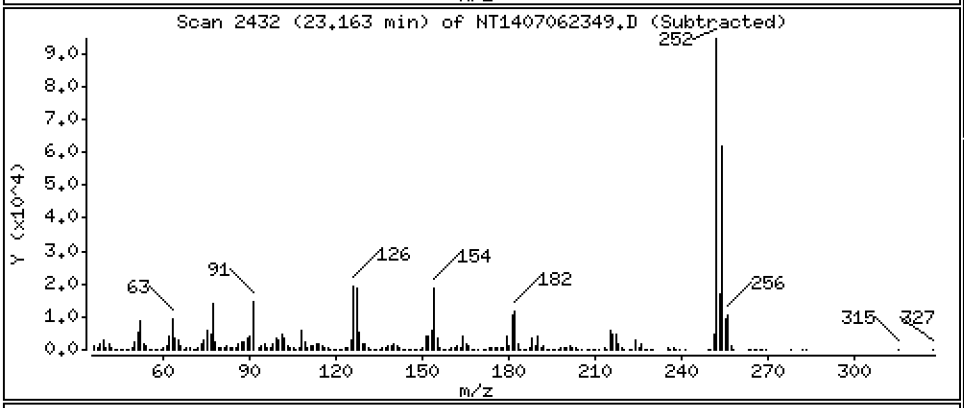
Column phase: ZB-5msi

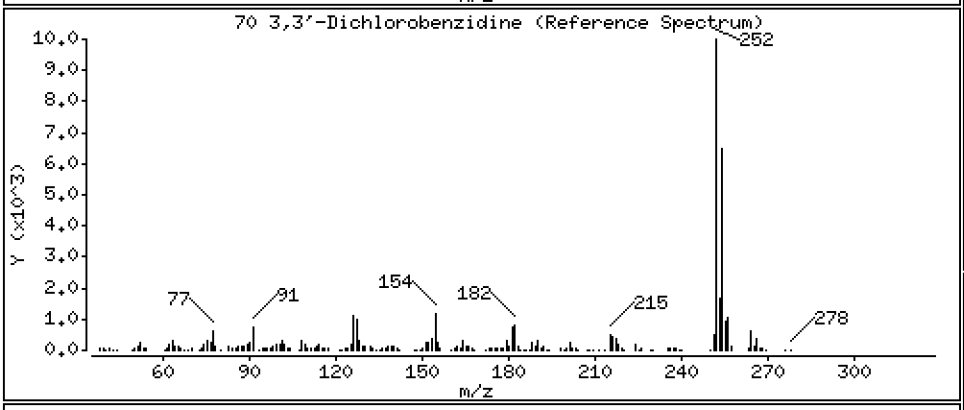
Column diameter: 0.25

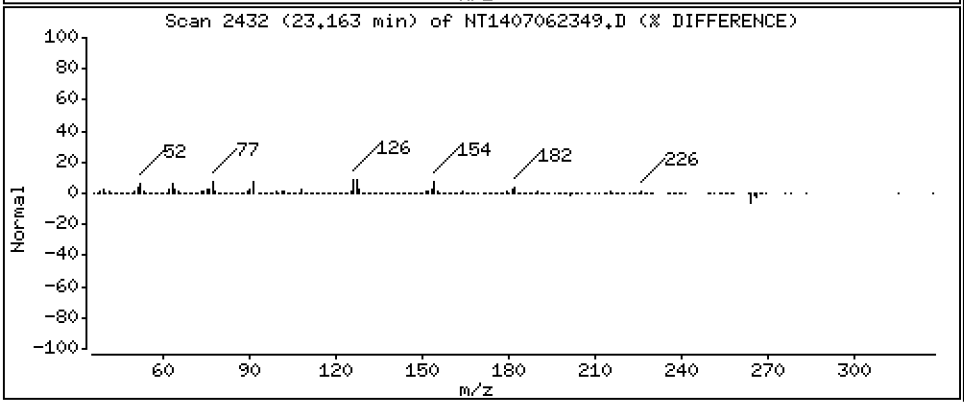
70 3,3'-Dichlorobenzidine

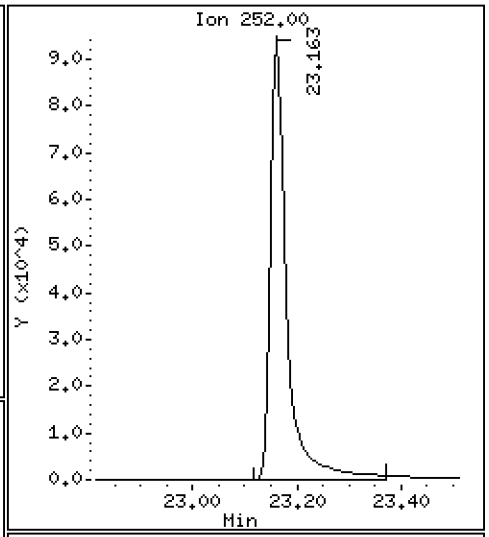
Concentration: 7.319 ug/mL

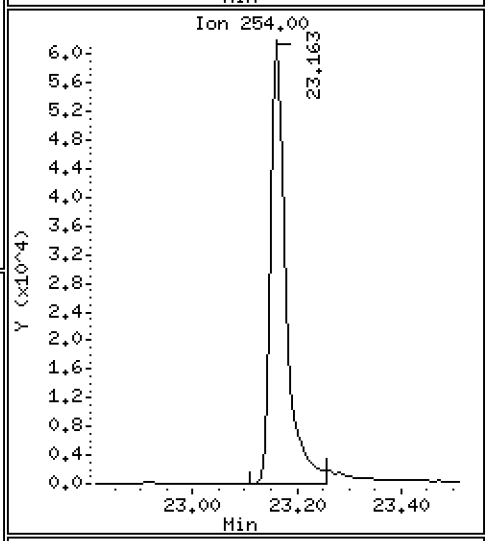


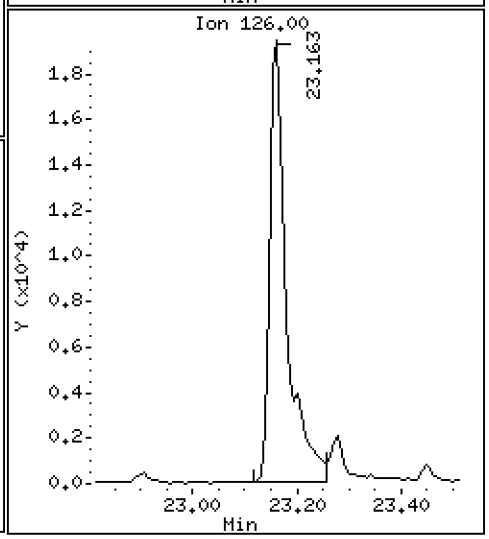












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062349.D

Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

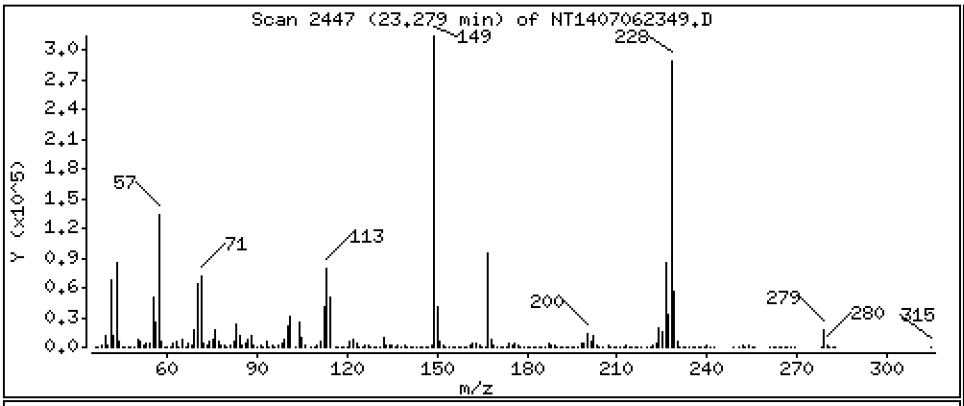
Operator: JGR

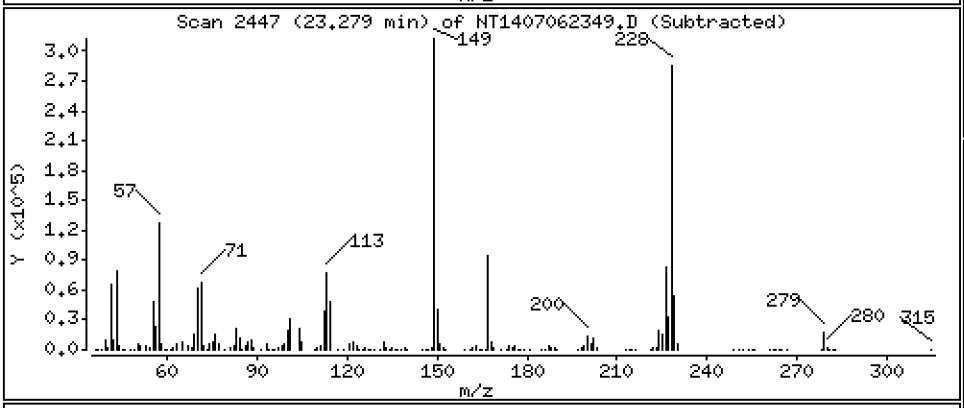
Column phase: ZB-5msi

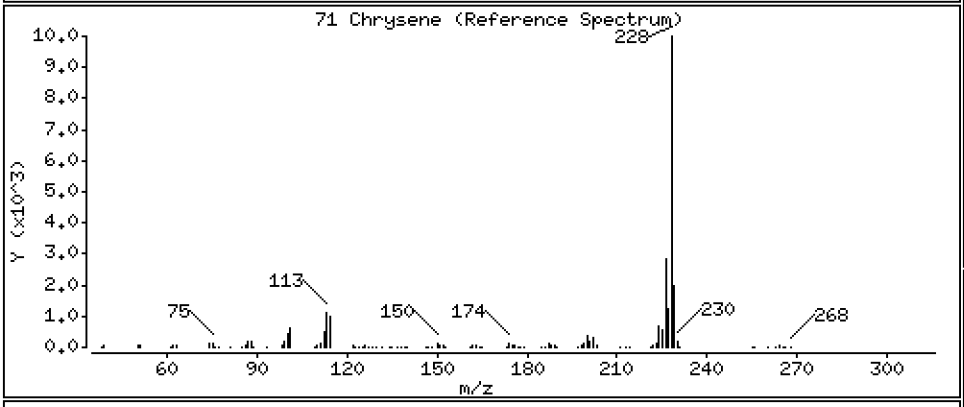
Column diameter: 0.25

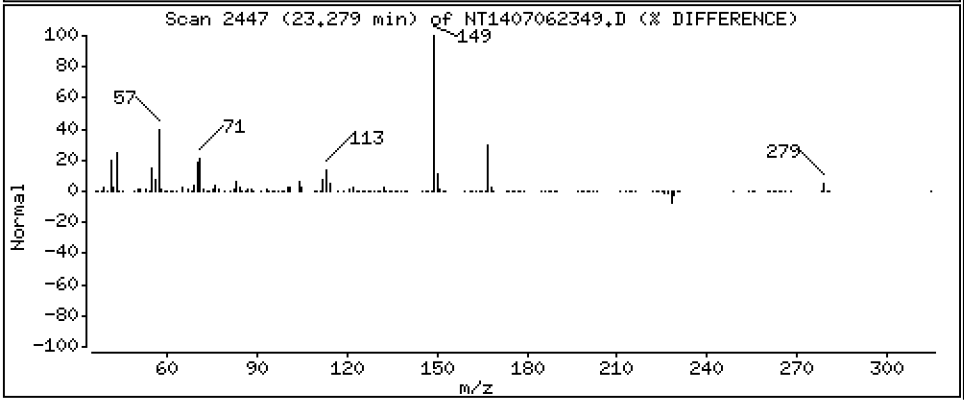
71 Chrysene

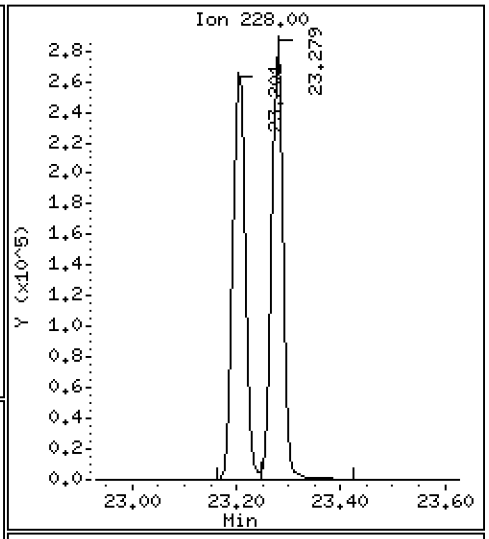
Concentration: 4.722 ug/mL

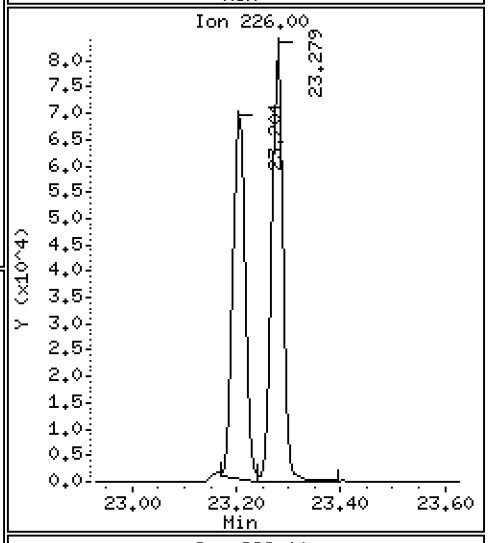


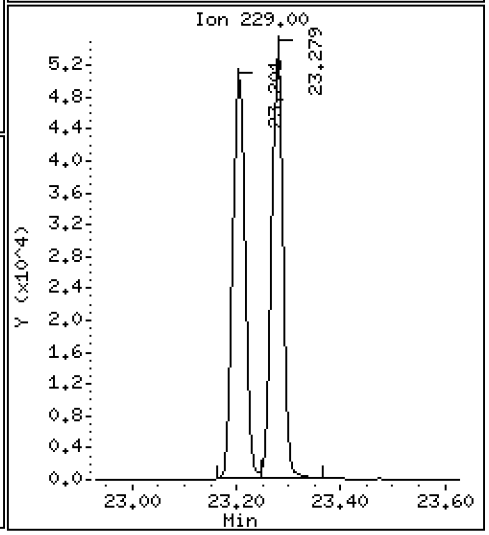












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

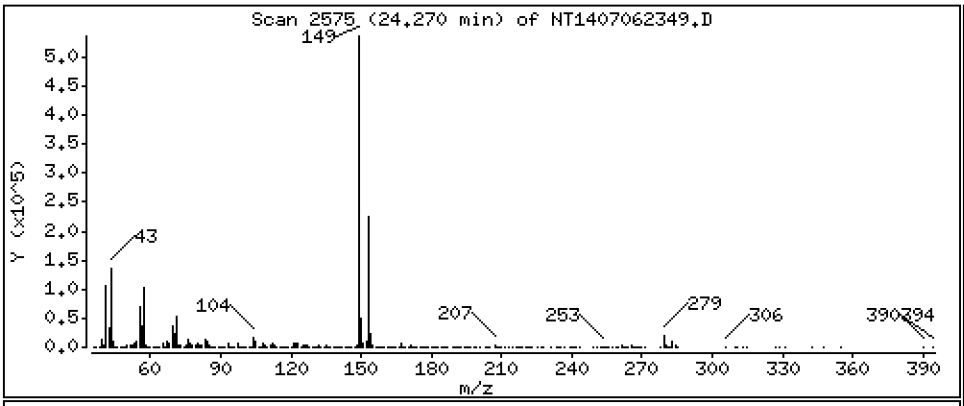
Operator: JGR

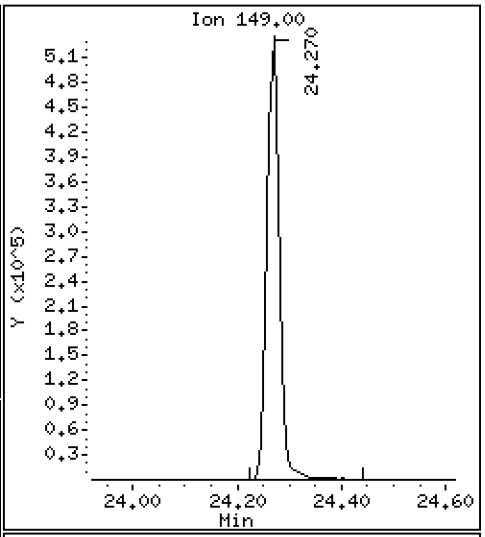
Column phase: ZB-5msi

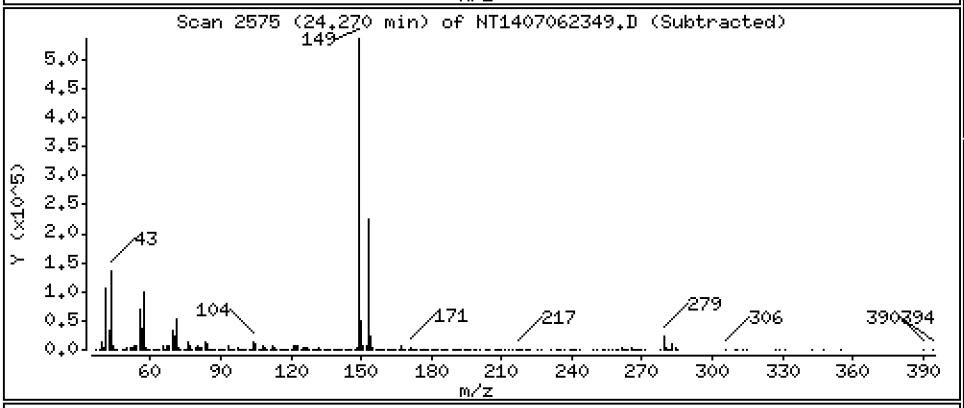
Column diameter: 0.25

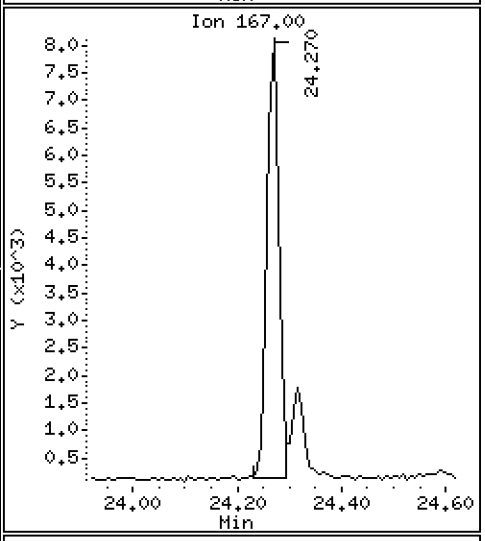
72 bis(2-Ethylhexyl)phthalate

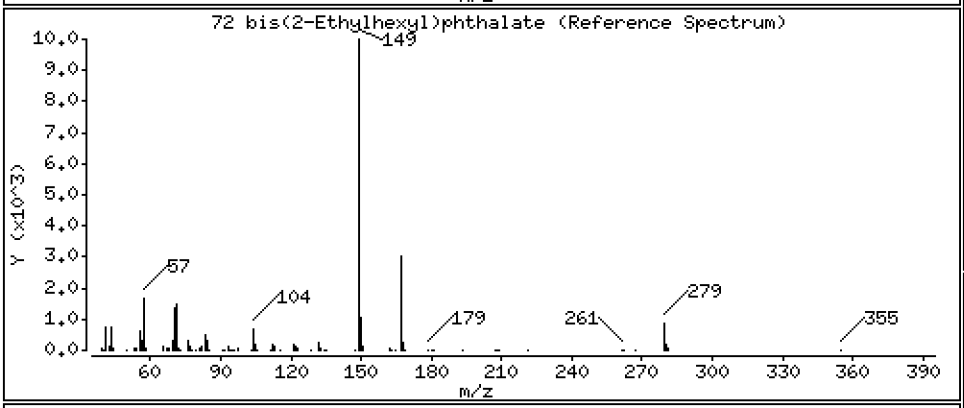
Concentration: 4.644 ug/mL

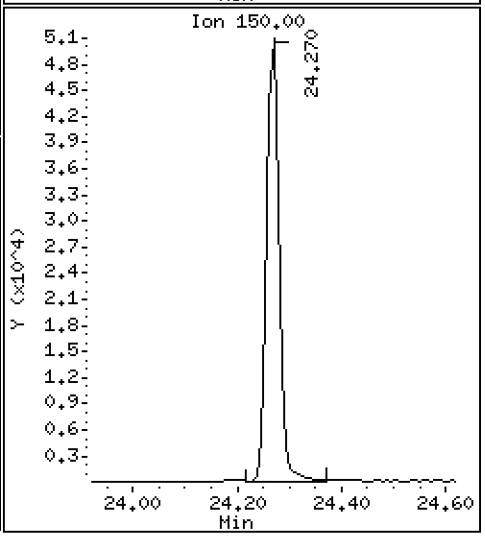


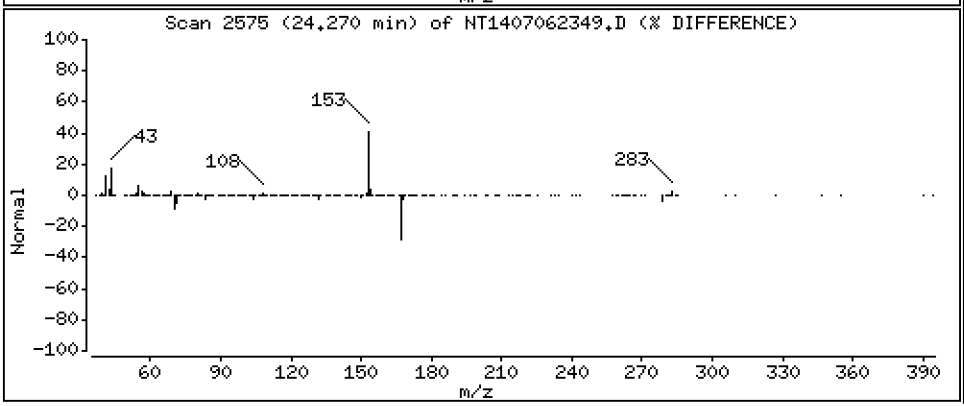












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

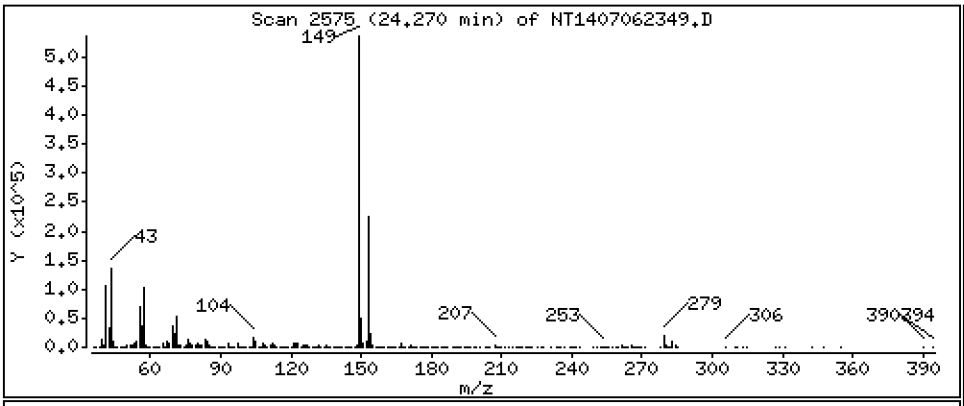
Operator: JGR

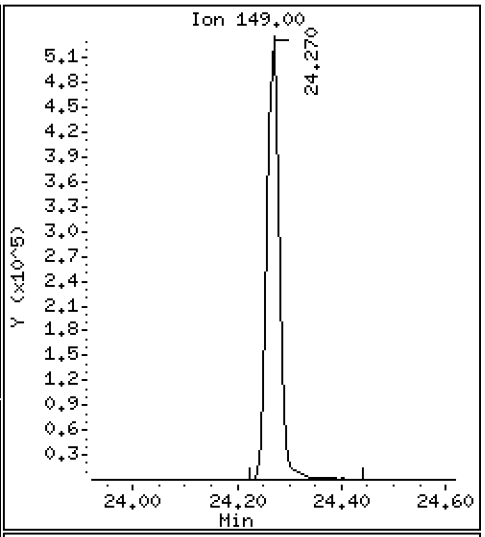
Column phase: ZB-5msi

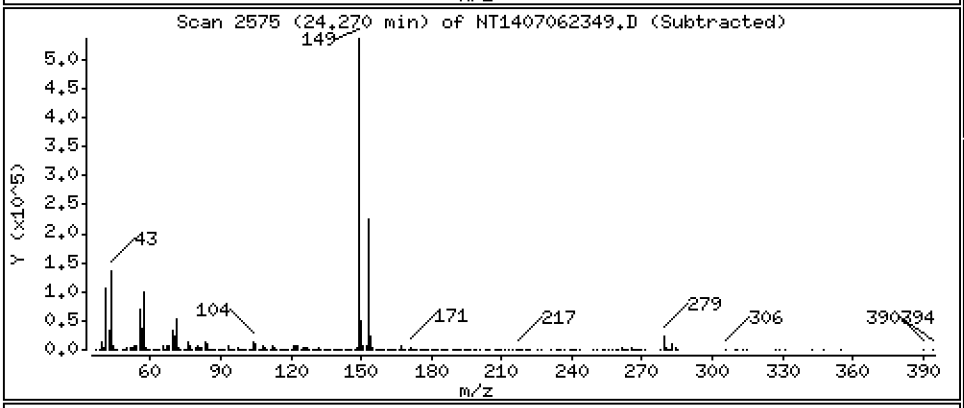
Column diameter: 0.25

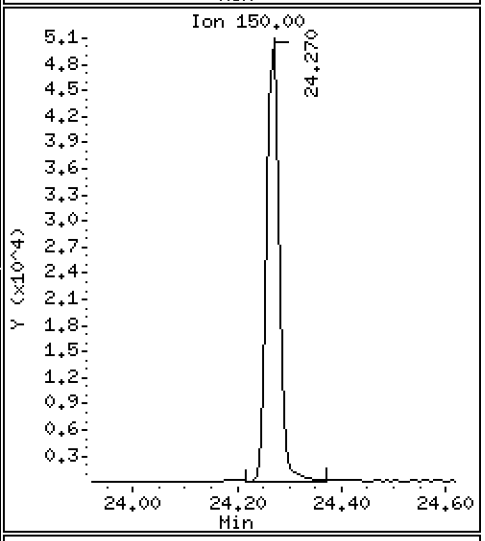
73 Di-n-octylphthalate

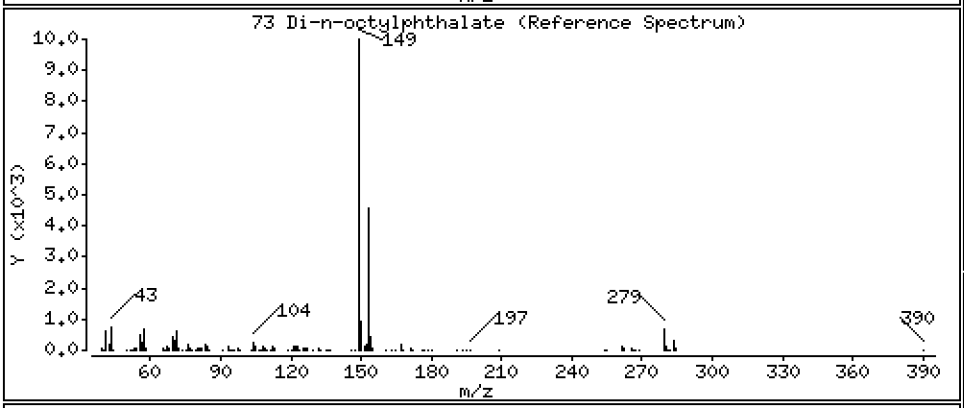
Concentration: 4.644 ug/mL

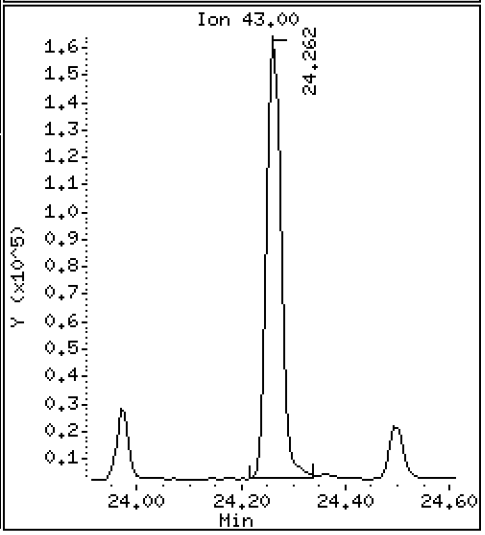


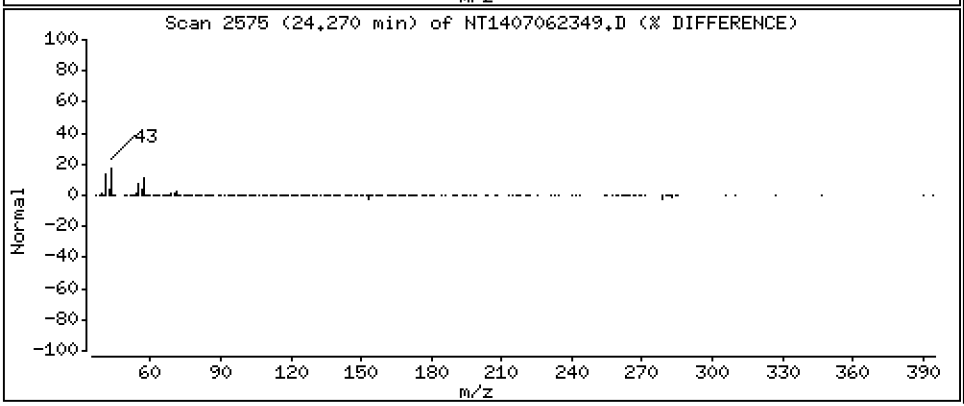












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

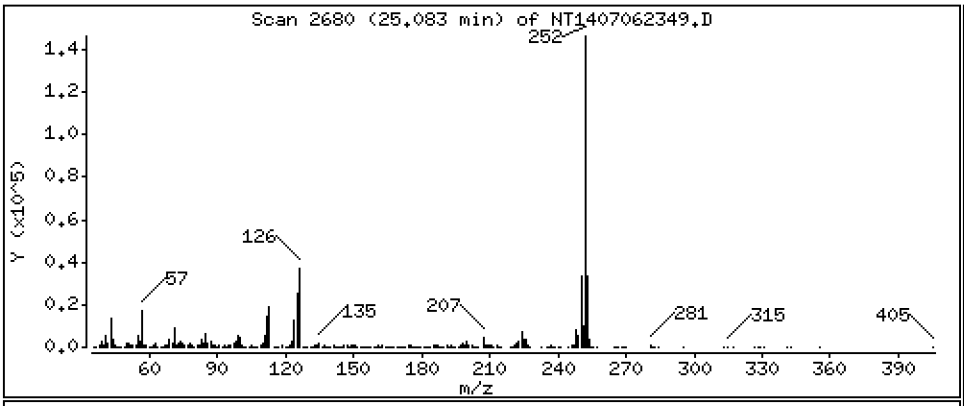
Operator: JGR

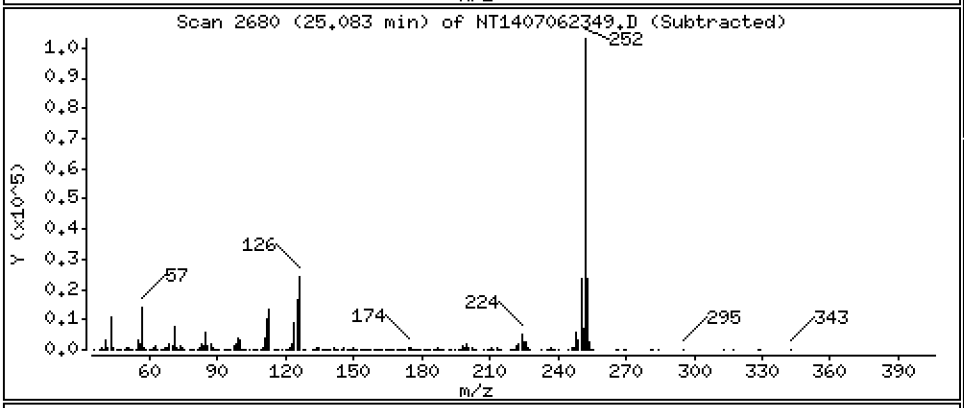
Column phase: ZB-5msi

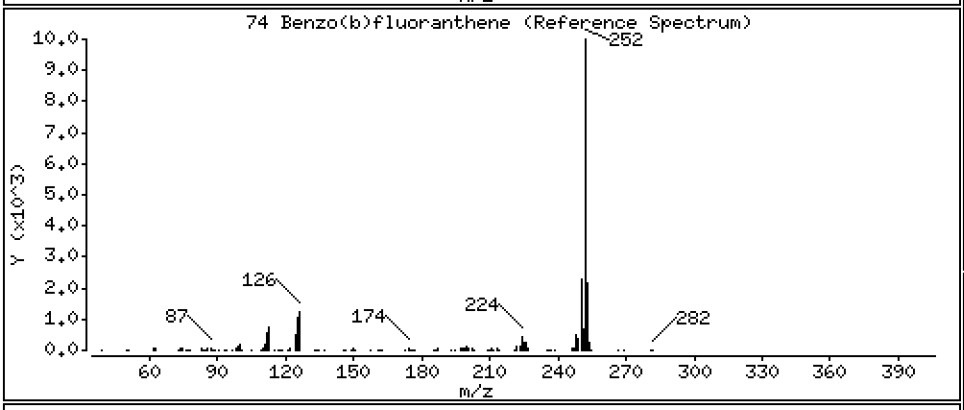
Column diameter: 0.25

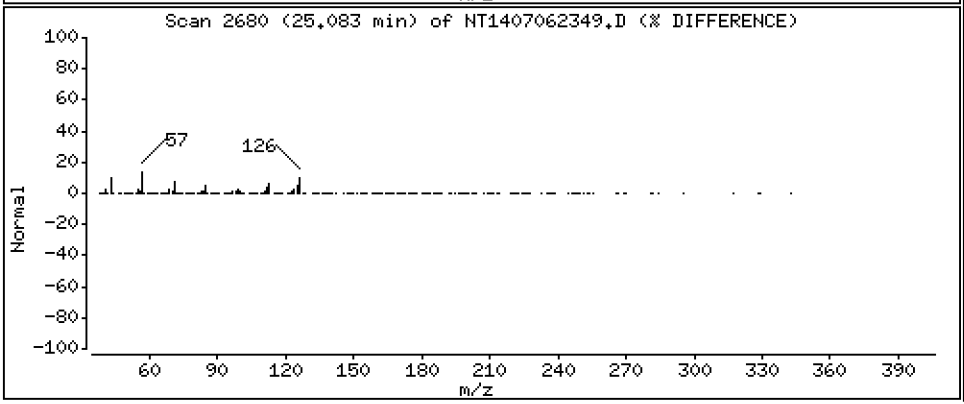
74 Benzo(b)fluoranthene

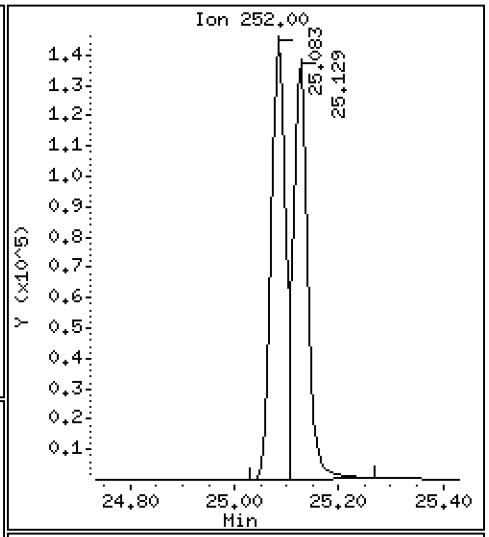
Concentration: 5.598 ug/mL

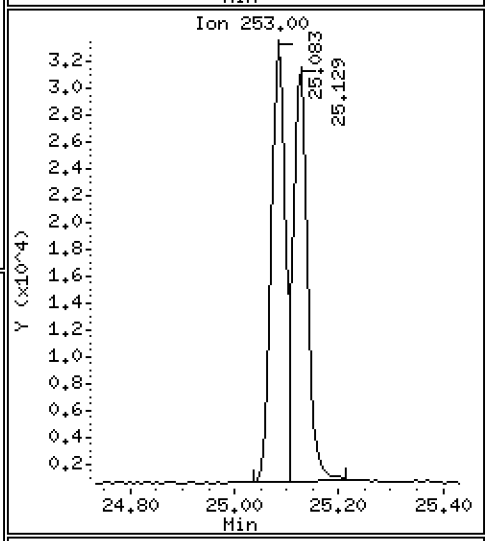


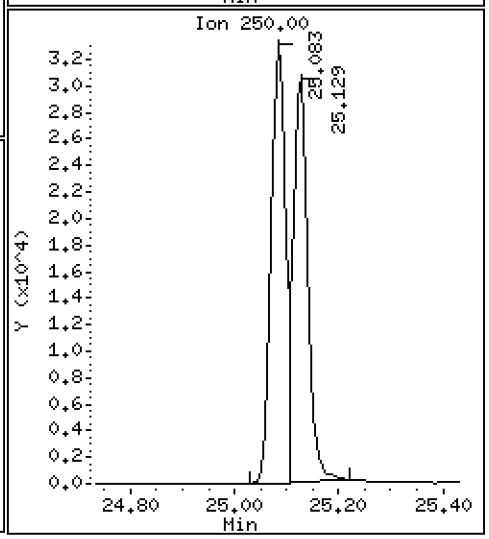












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

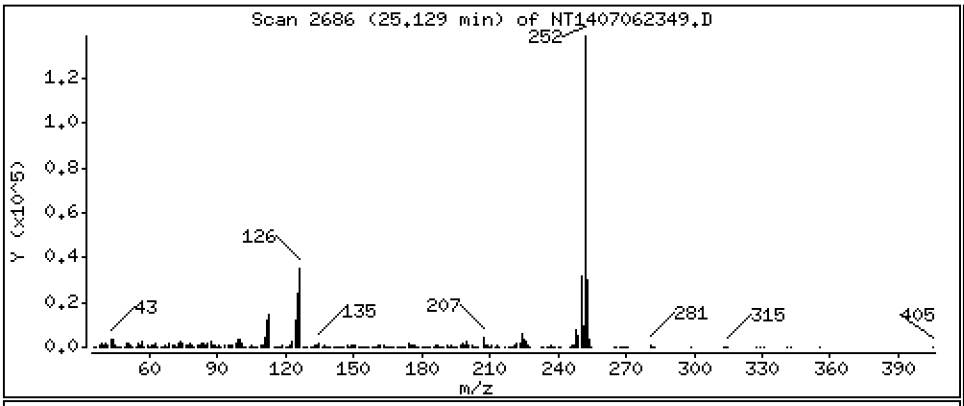
Operator: JGR

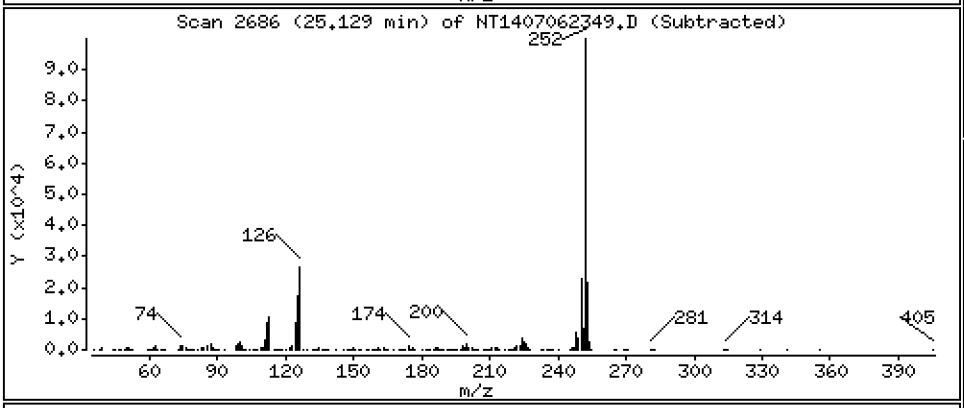
Column phase: ZB-5msi

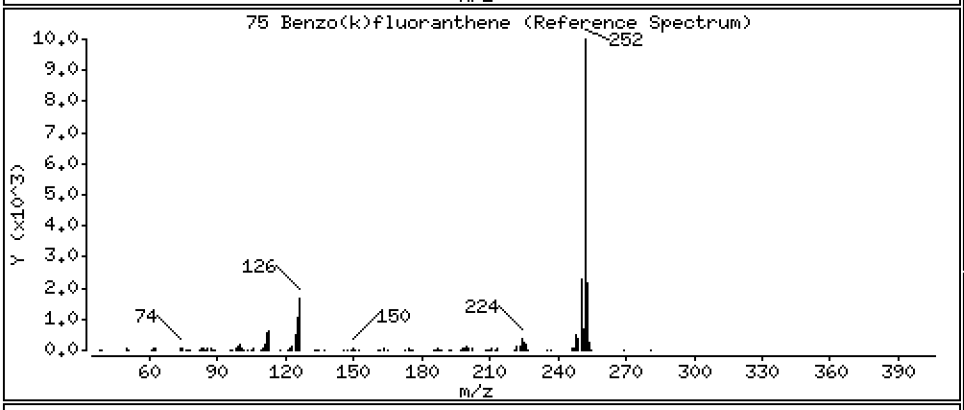
Column diameter: 0.25

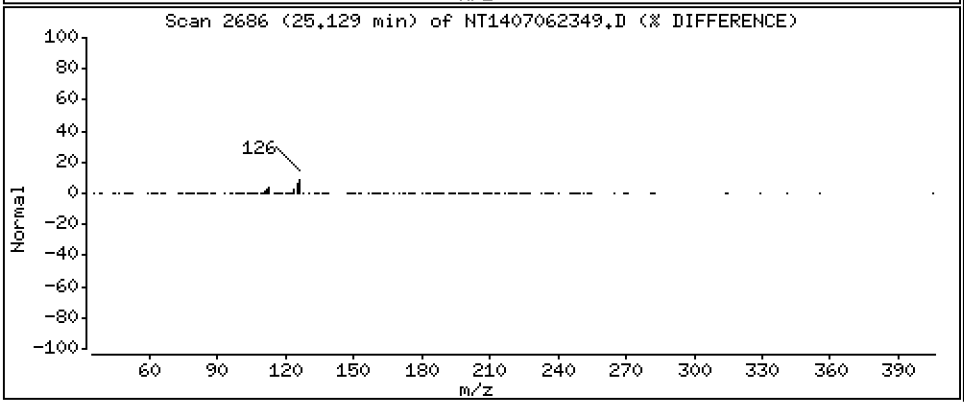
75 Benzo(k)fluoranthene

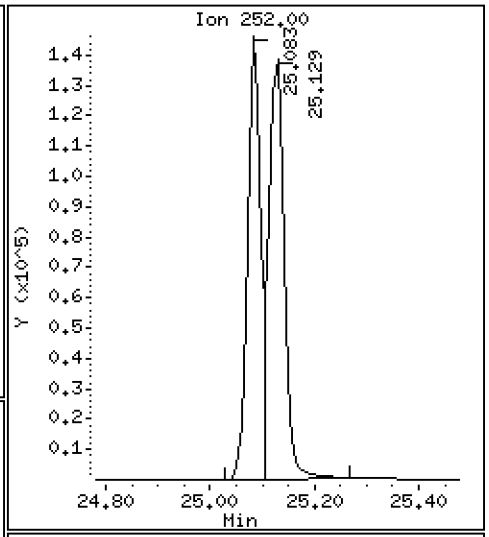
Concentration: 5.126 ug/mL

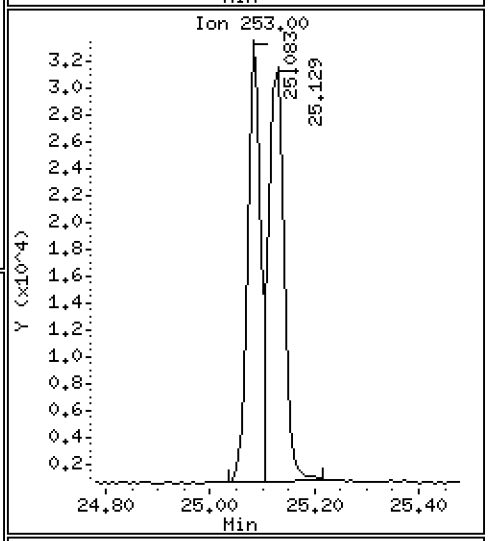


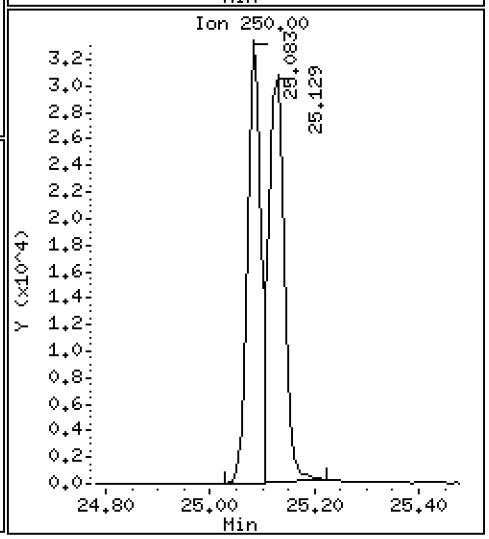












Date : 07-JUL-2023 19:29

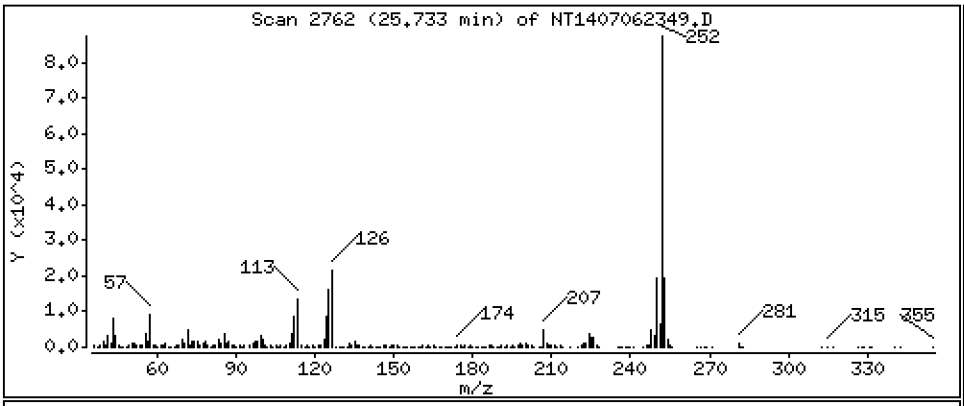
Client ID: Instrument: nt14.i

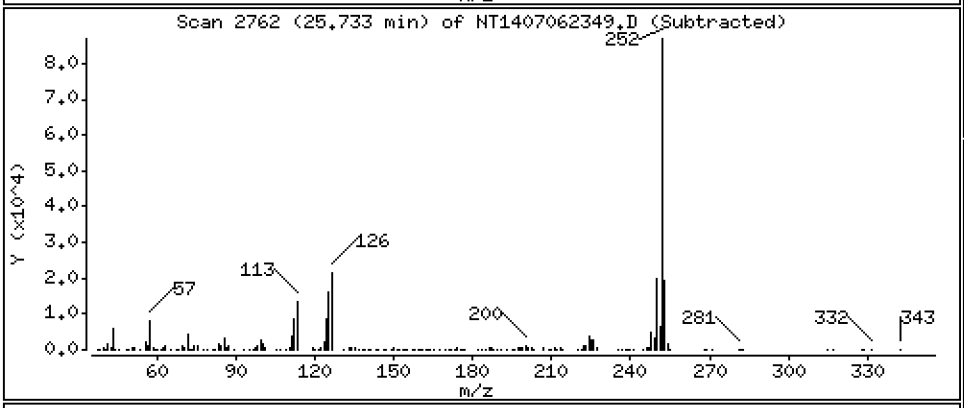
Sample Info: BLF0718-BS1

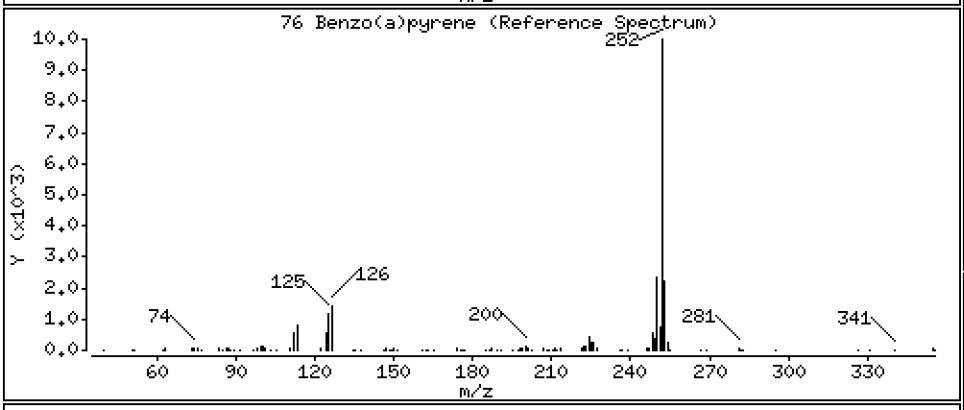
Operator: JGR

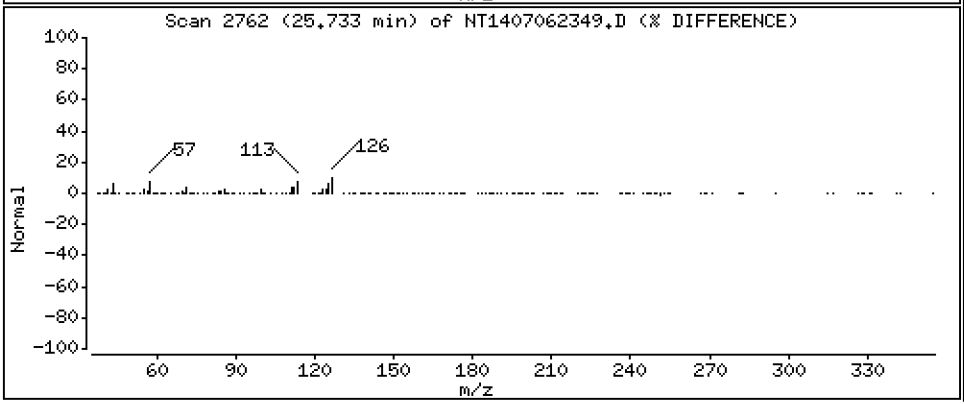
Column phase: ZB-5msi Column diameter: 0.25

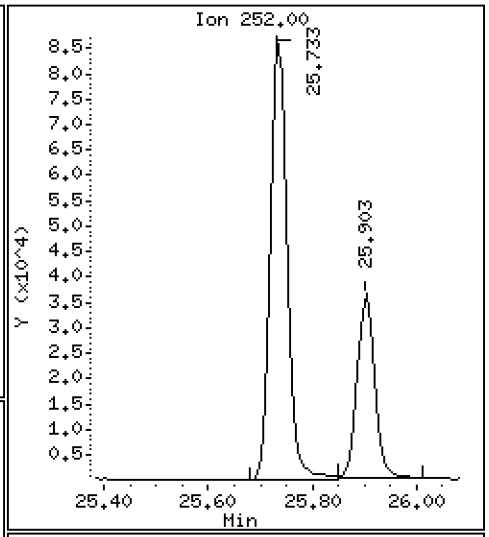
76 Benzo(a)pyrene Concentration: 4.867 ug/mL

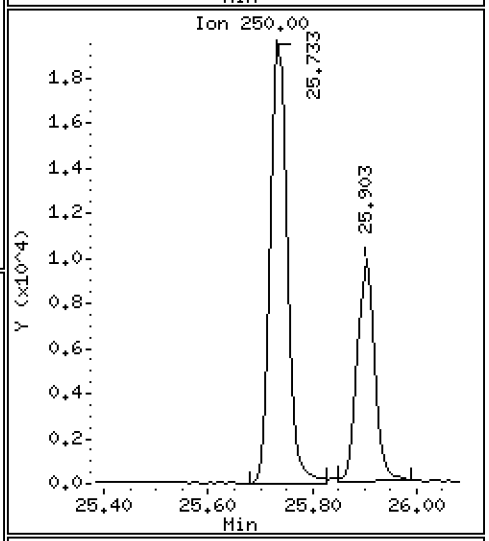


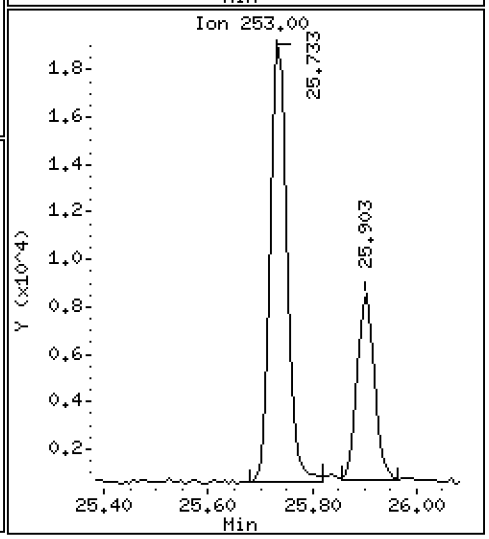












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

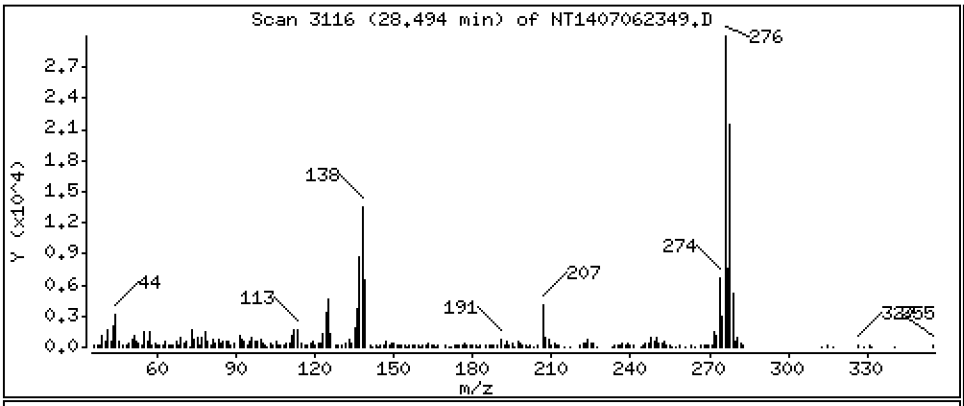
Operator: JGR

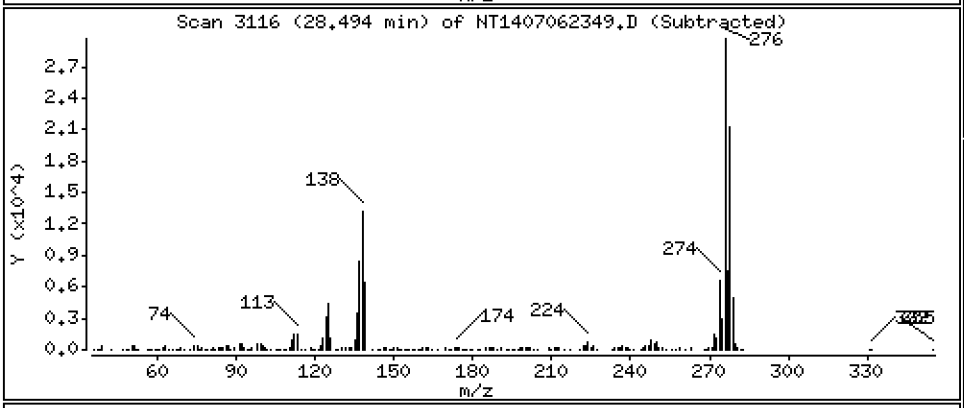
Column phase: ZB-5msi

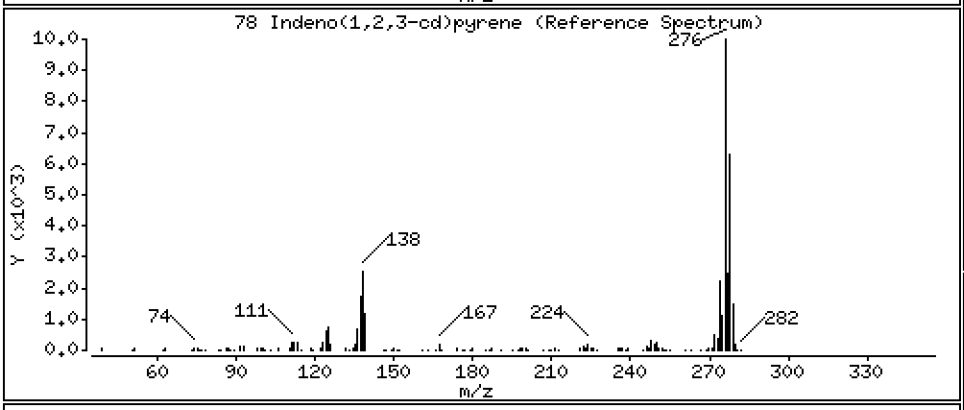
Column diameter: 0.25

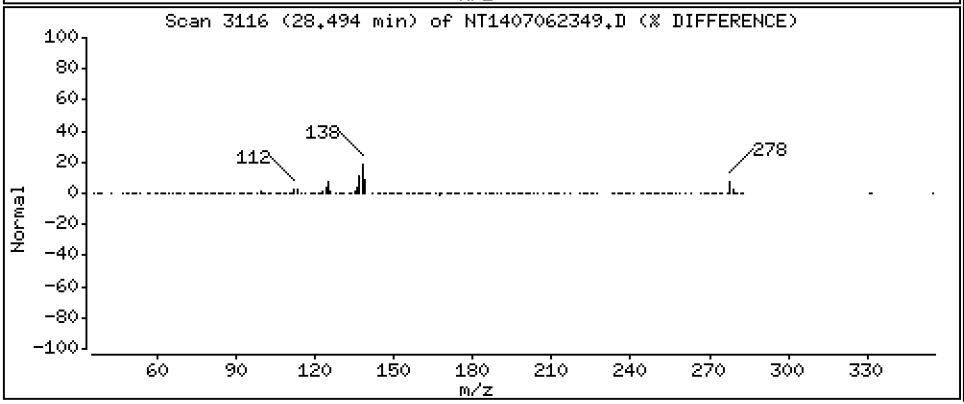
78 Indeno(1,2,3-cd)pyrene

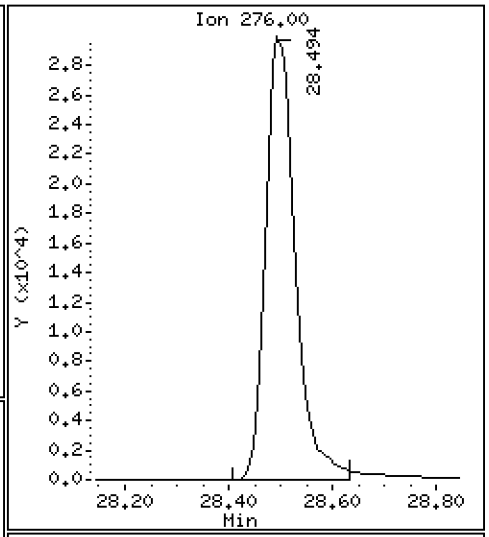
Concentration: 3.412 ug/mL

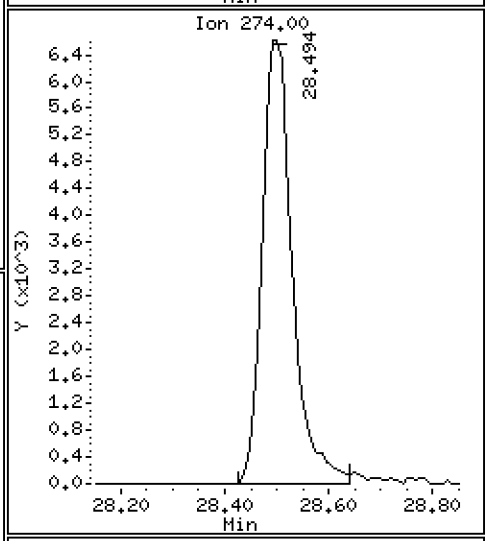


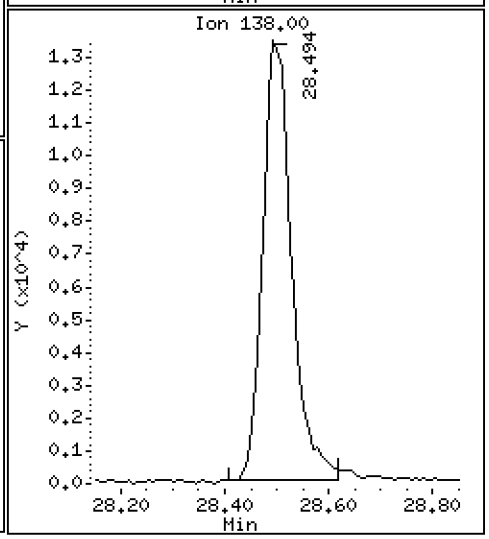












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

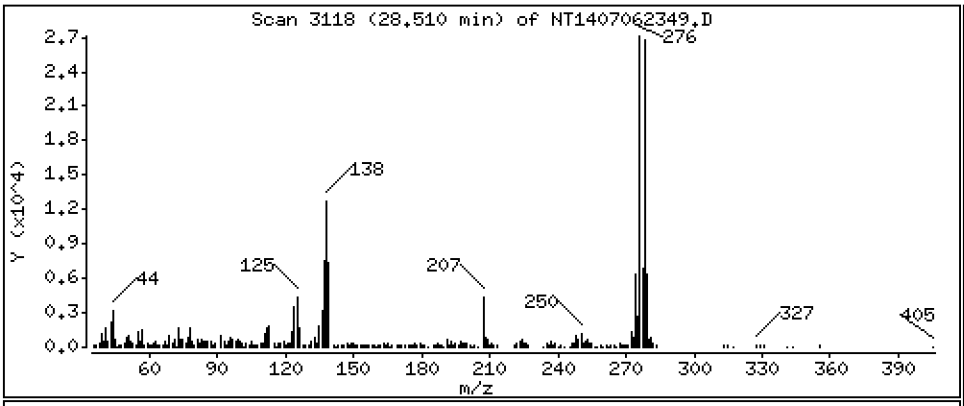
Operator: JGR

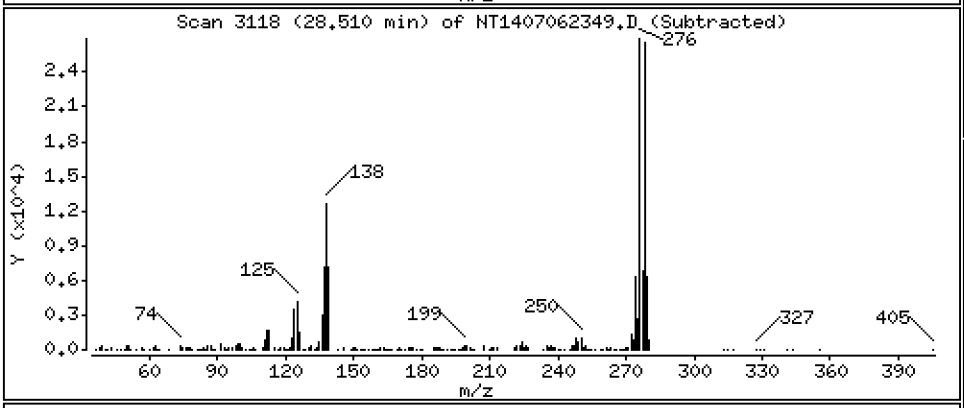
Column phase: ZB-5msi

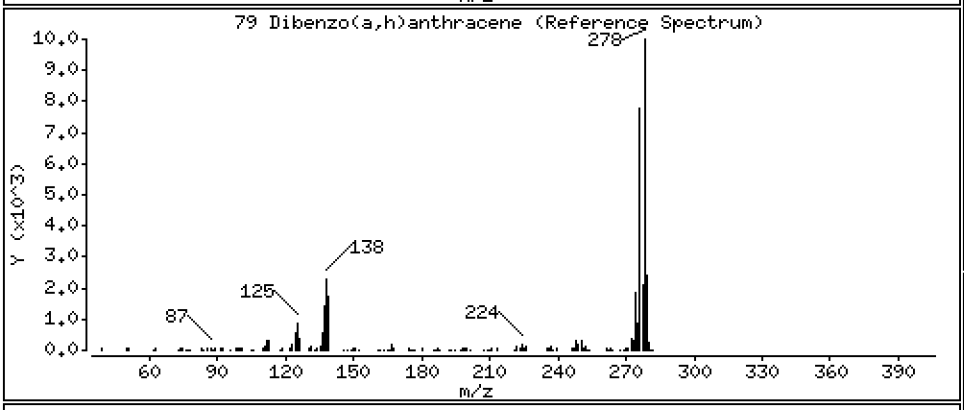
Column diameter: 0.25

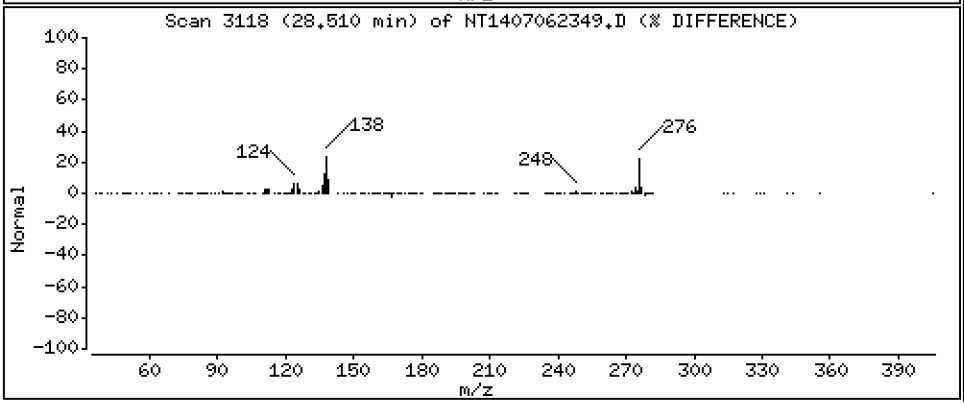
79 Dibenzo(a,h)anthracene

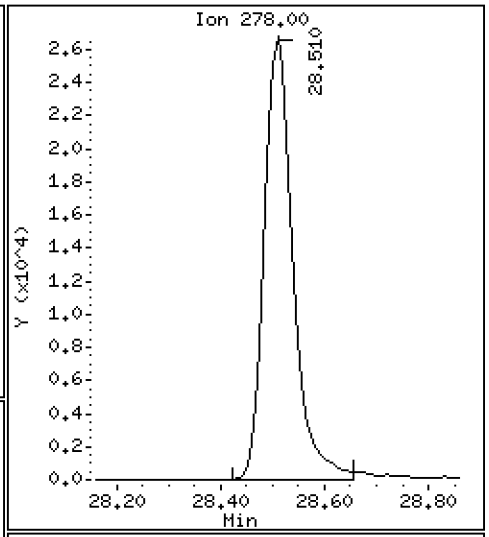
Concentration: 3.484 ug/mL

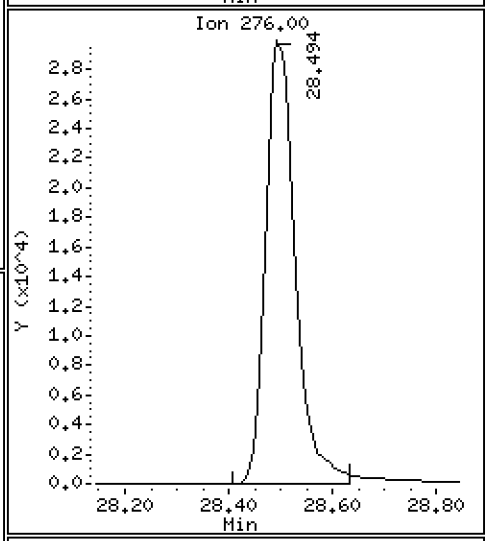


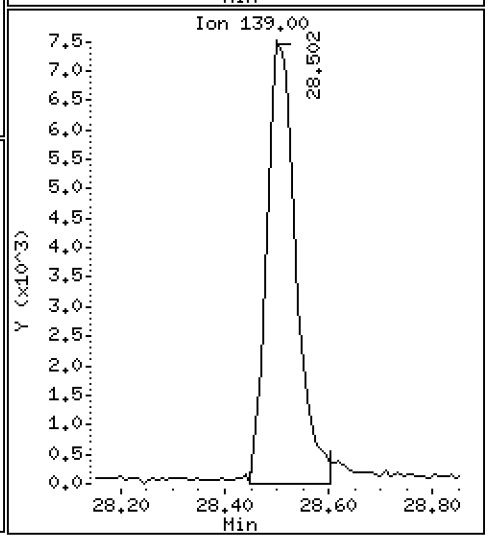












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

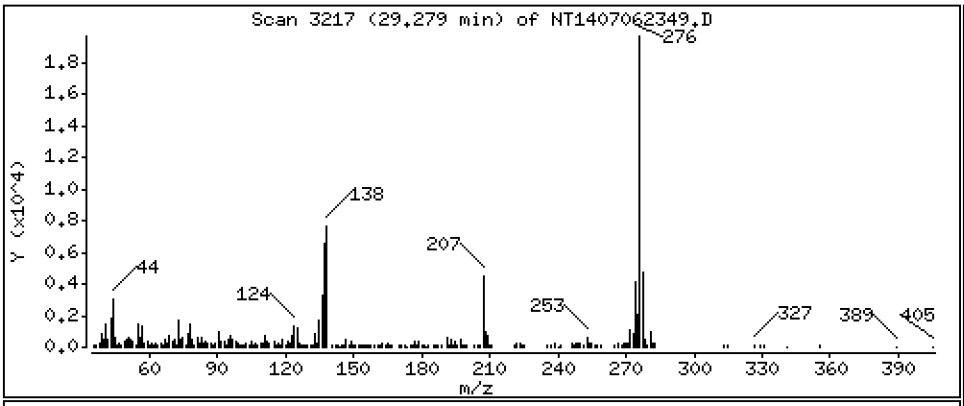
Operator: JGR

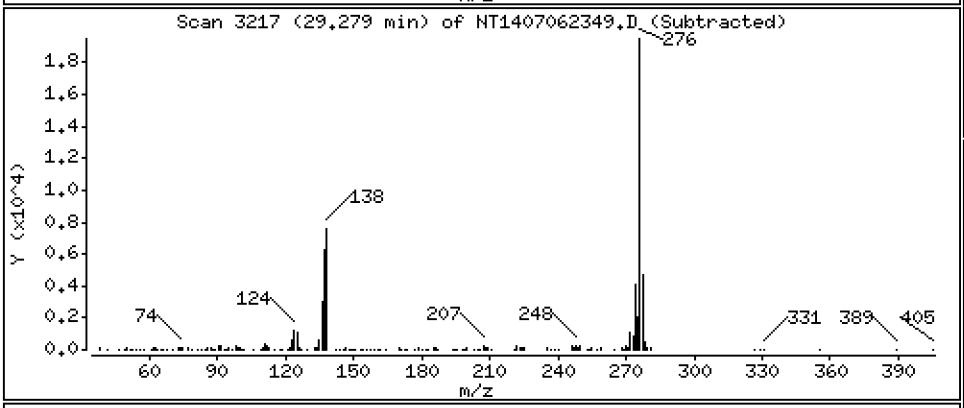
Column phase: ZB-5msi

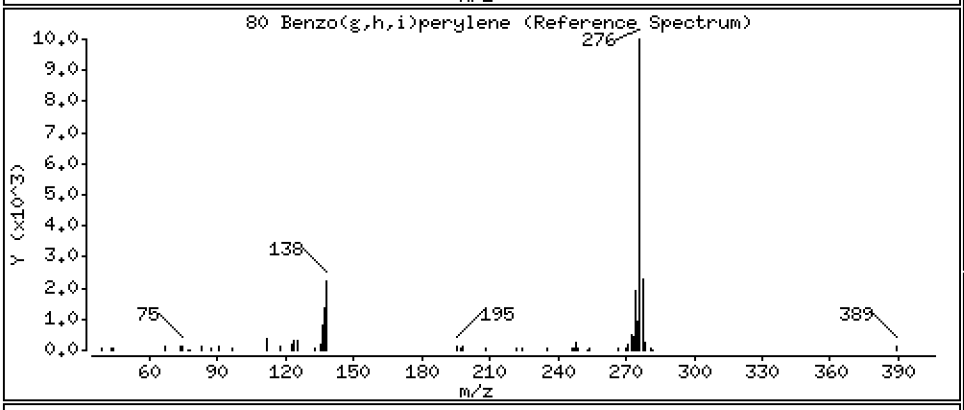
Column diameter: 0.25

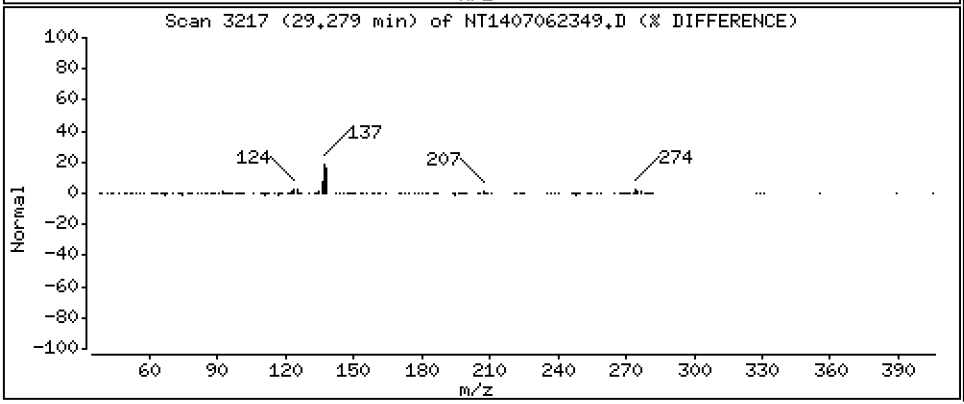
80 Benzo(g,h,i)perylene

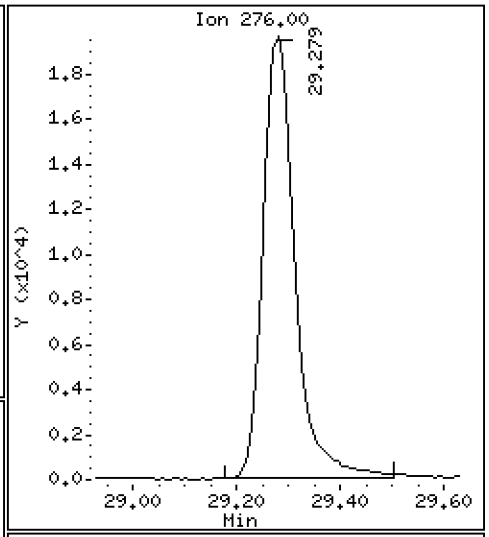
Concentration: 2.932 ug/mL

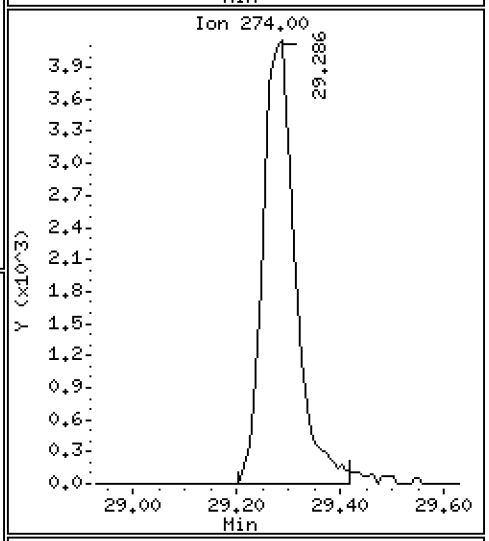


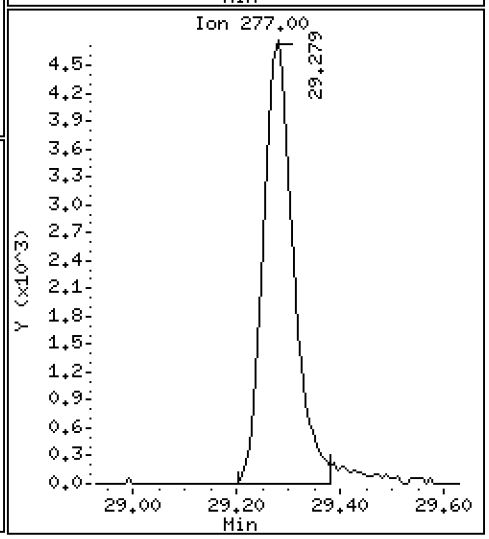












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

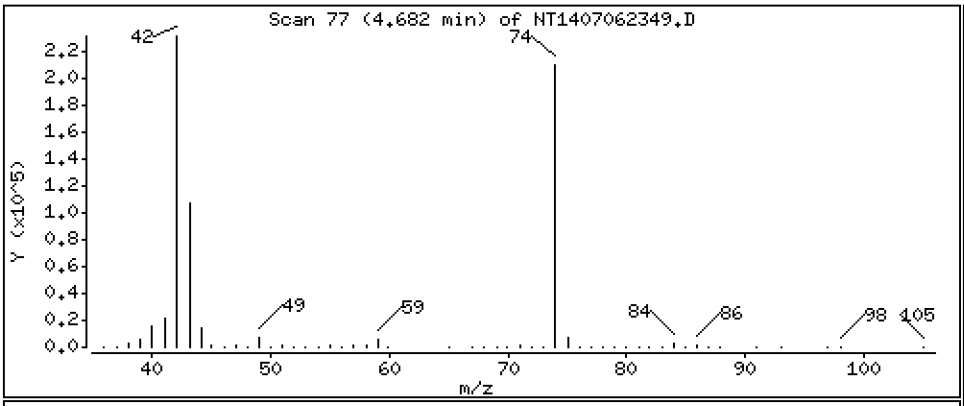
Operator: JGR

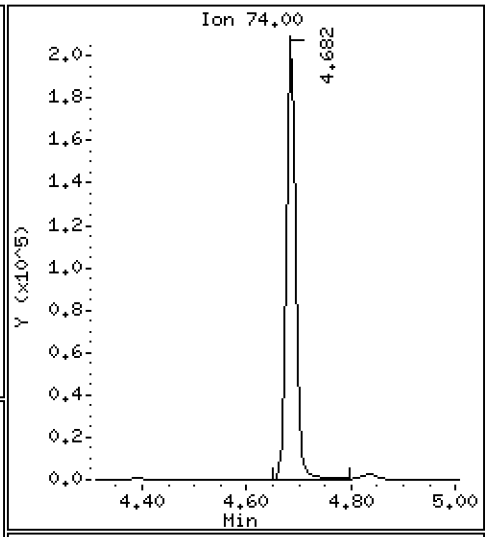
Column phase: ZB-5msi

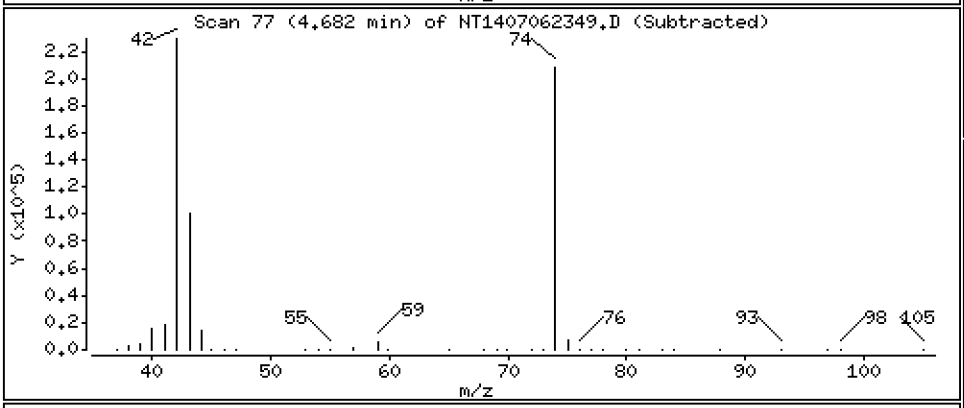
Column diameter: 0.25

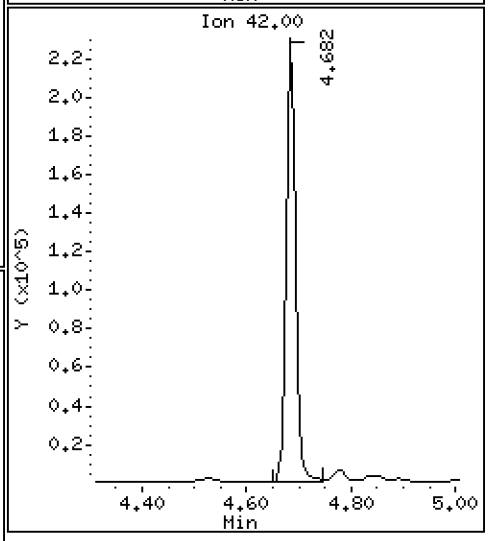
90 N-Nitrosodimethylamine

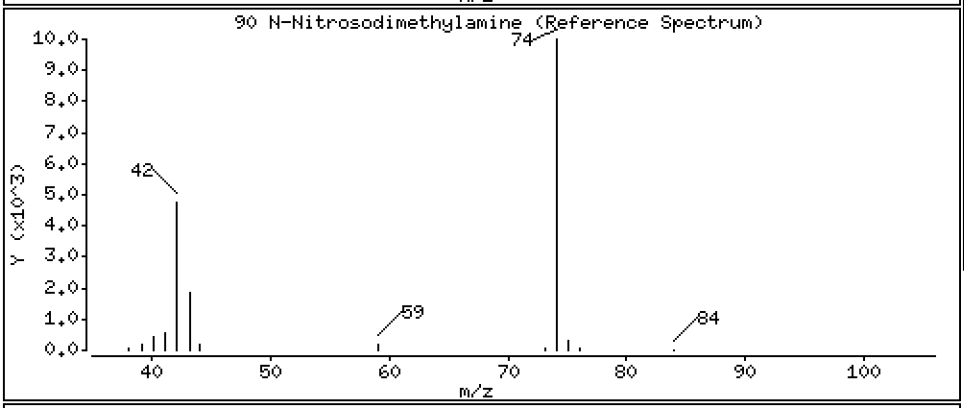
Concentration: 7.498 ug/mL

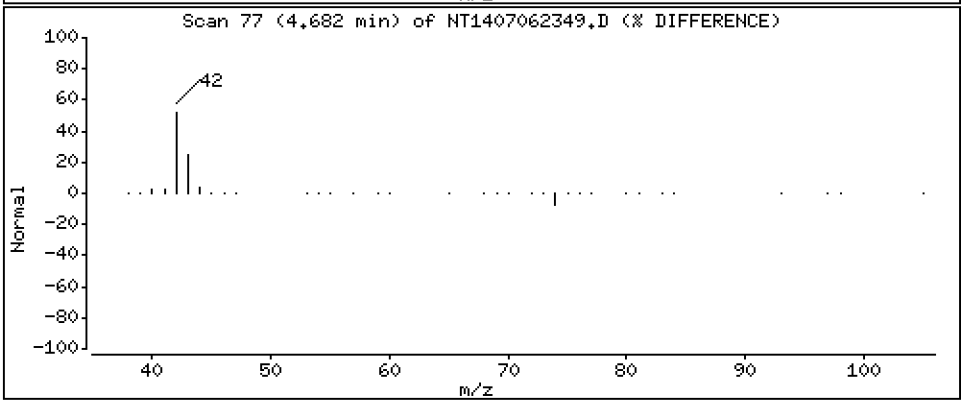












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

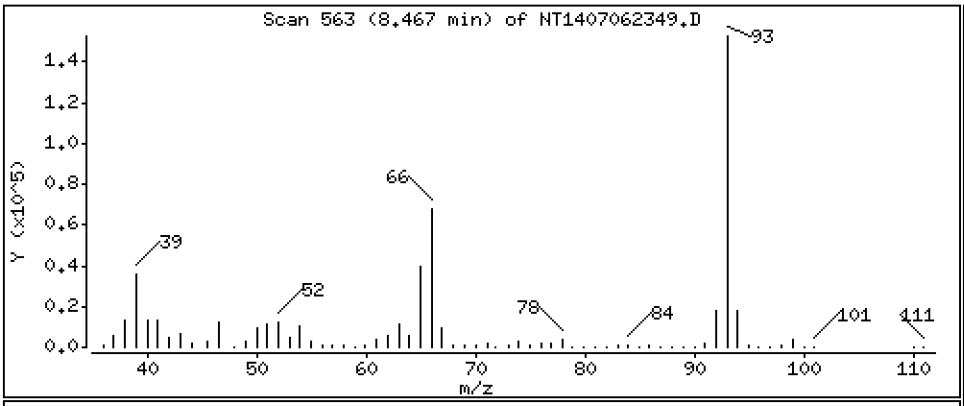
Operator: JGR

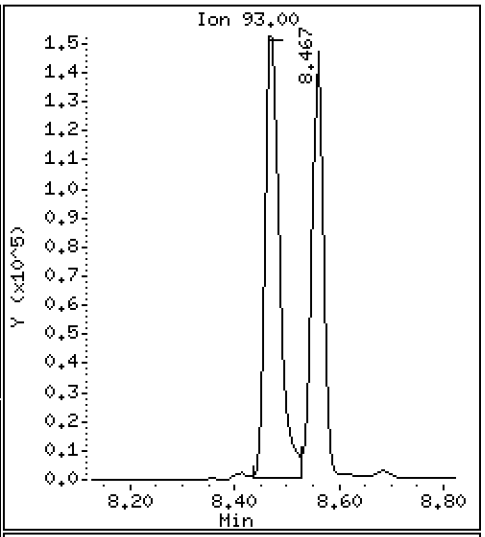
Column phase: ZB-5msi

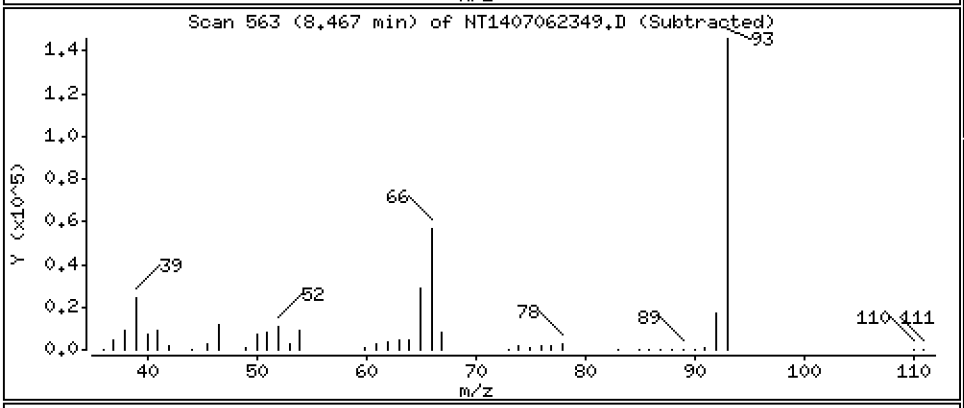
Column diameter: 0.25

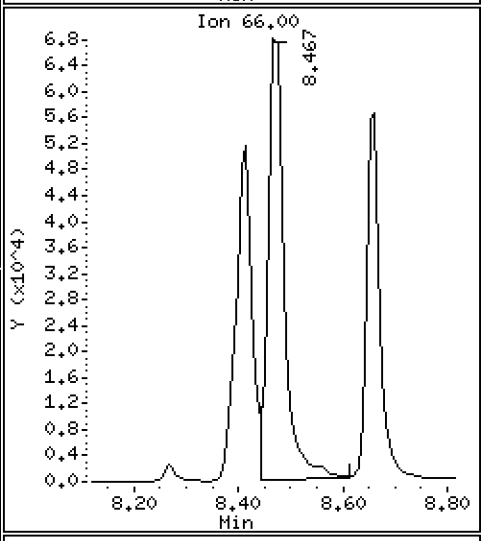
91 Aniline

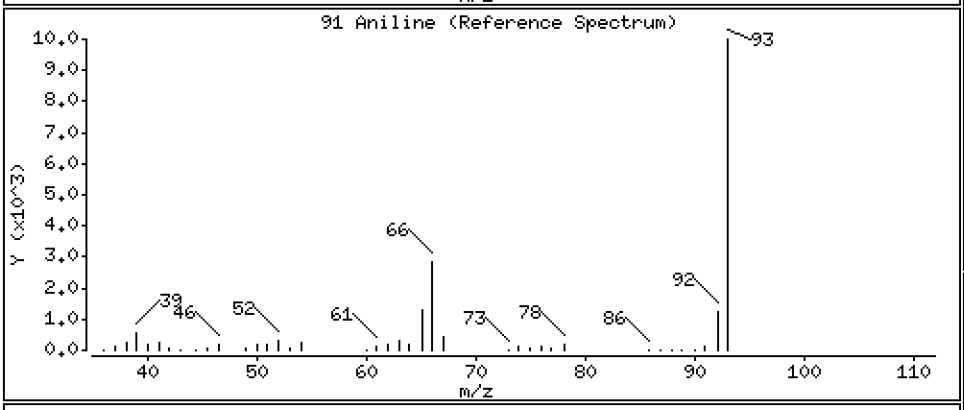
Concentration: 3.730 ug/mL

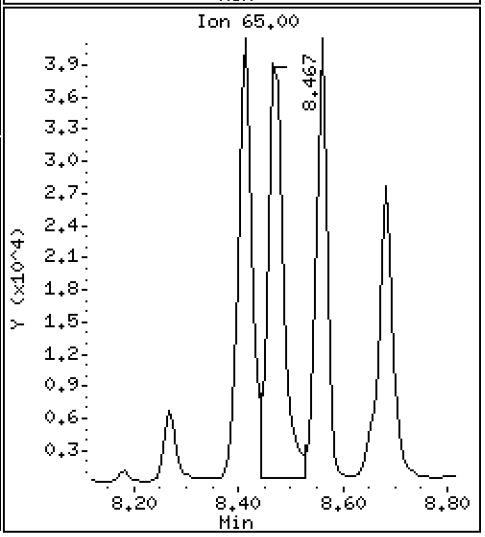


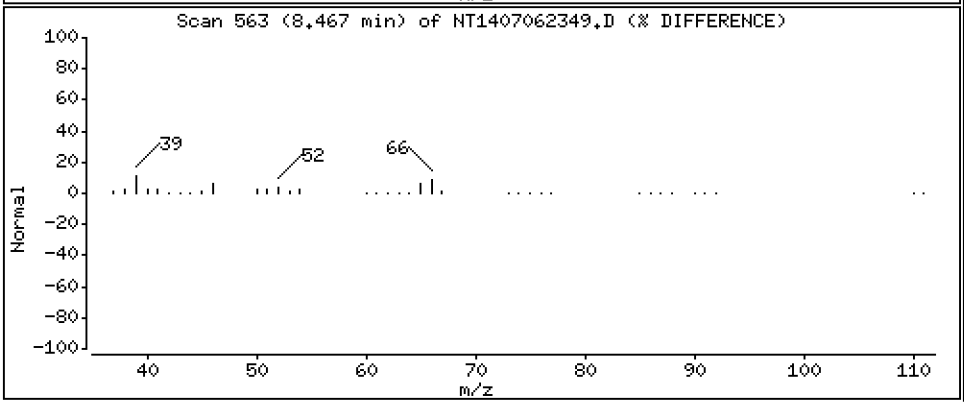












Date : 07-JUL-2023 19:29

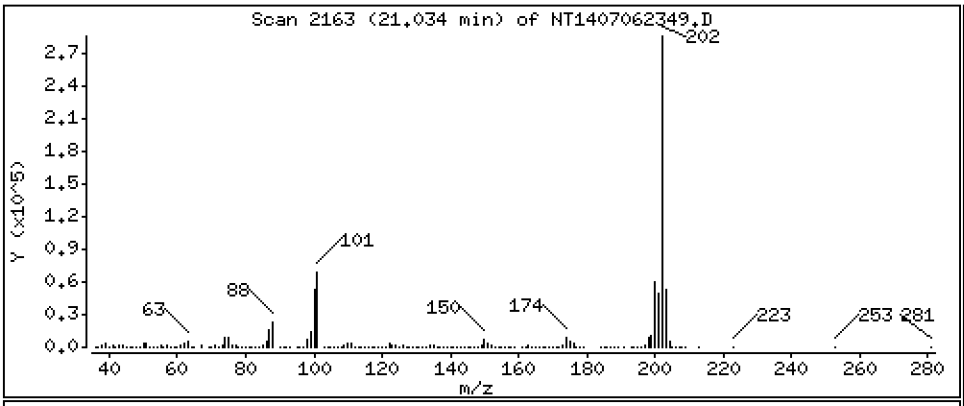
Client ID: Instrument: nt14.i

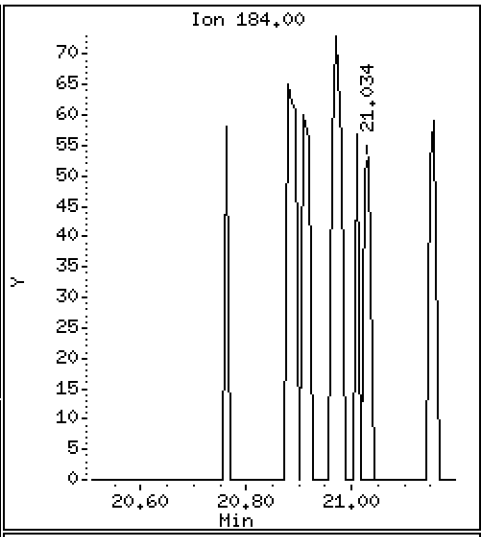
Sample Info: BLF0718-BS1

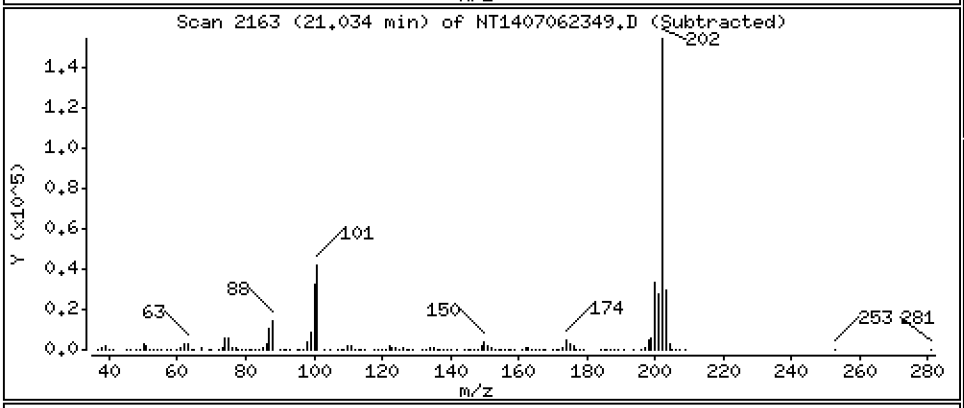
Operator: JGR

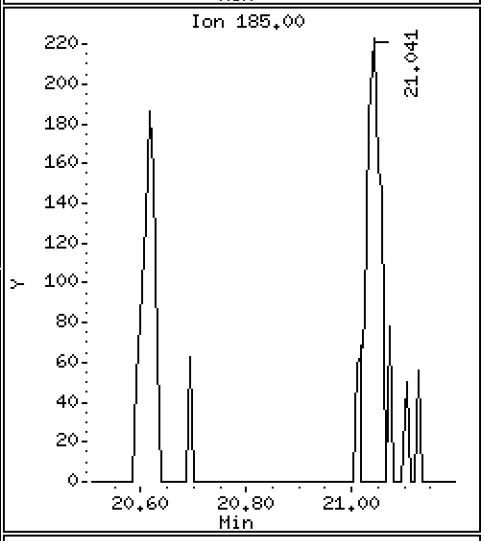
Column phase: ZB-5msi Column diameter: 0.25

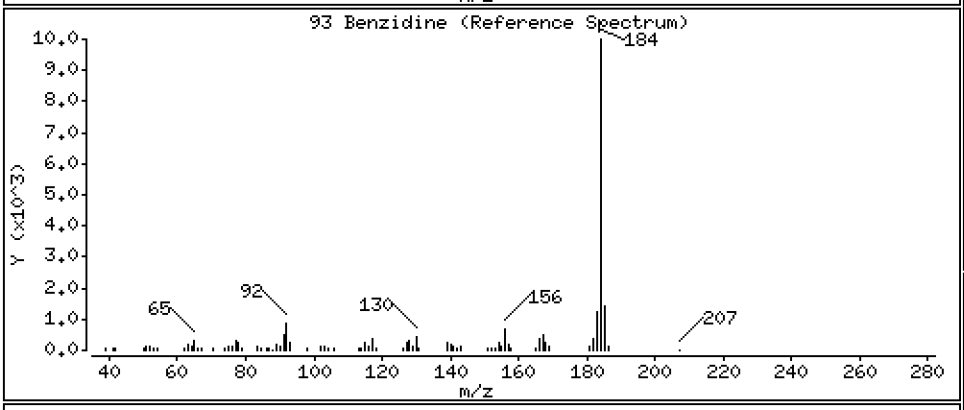
93 Benzidine Concentration: 0.001427 ug/mL

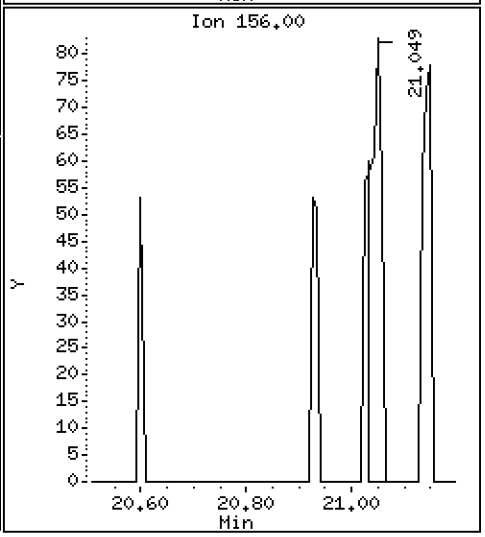


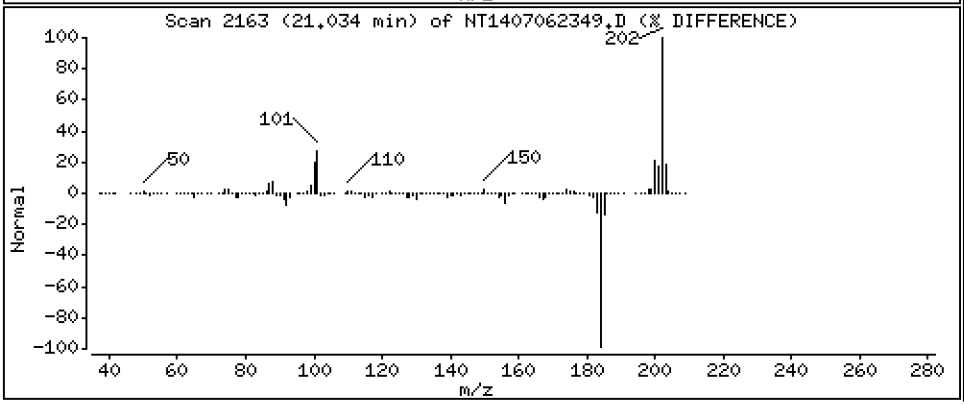












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

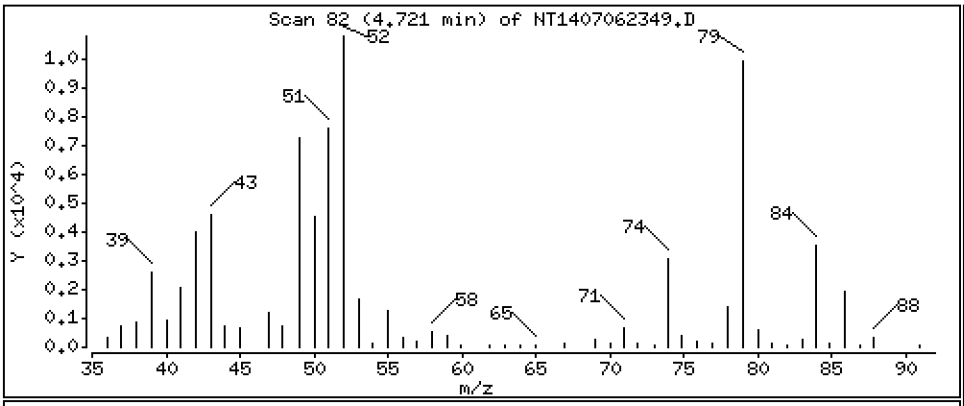
Operator: JGR

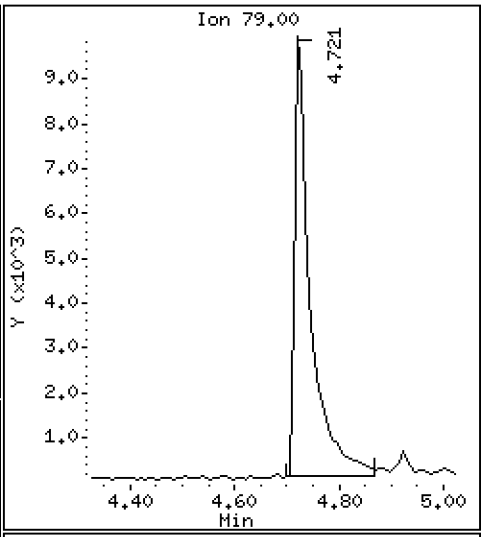
Column phase: ZB-5msi

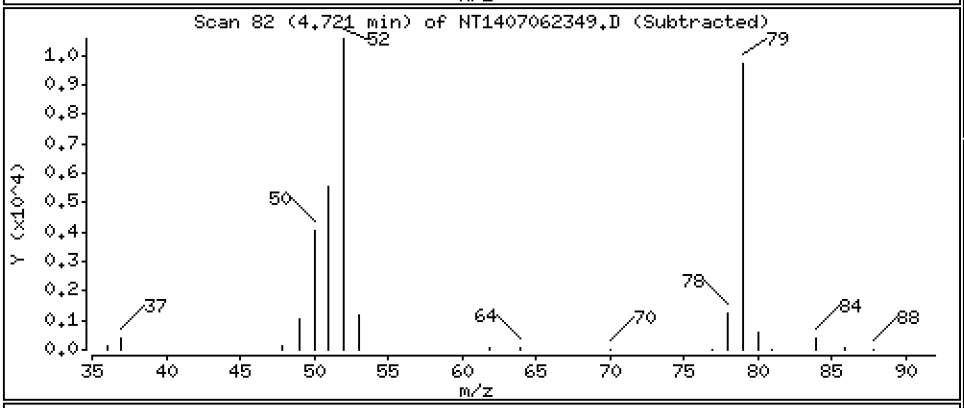
Column diameter: 0.25

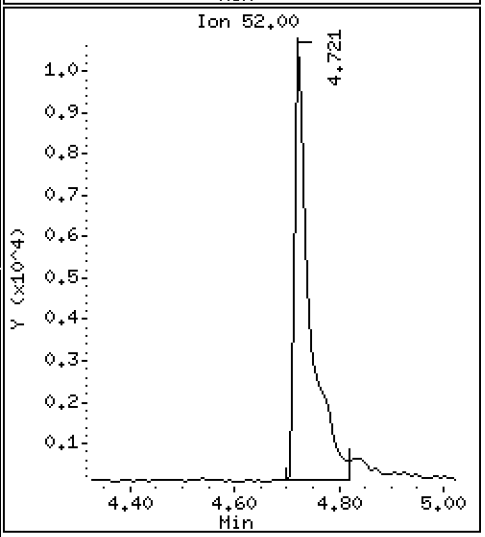
103 Pyridine

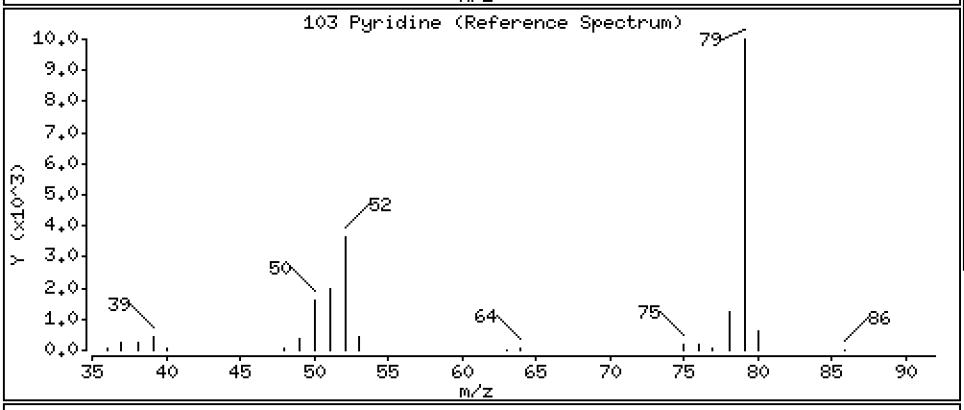
Concentration: 0.3708 ug/mL

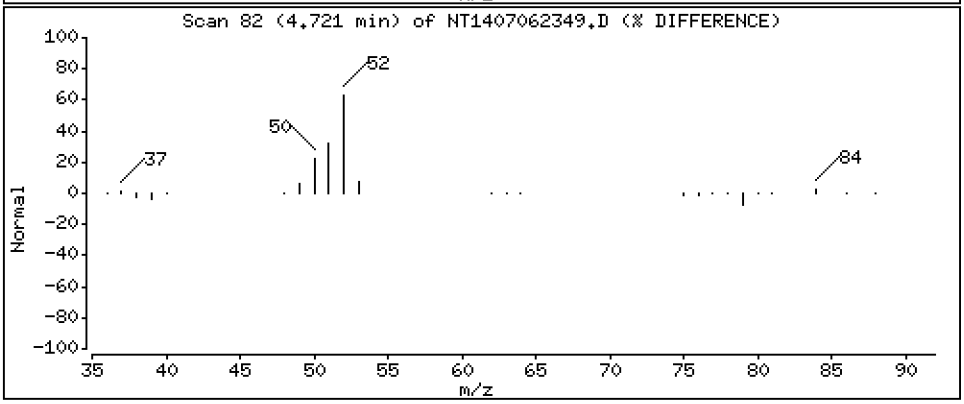












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

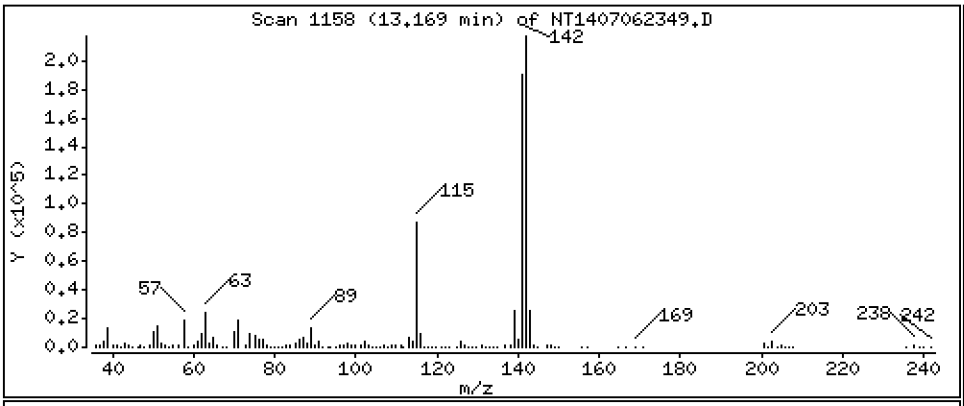
Operator: JGR

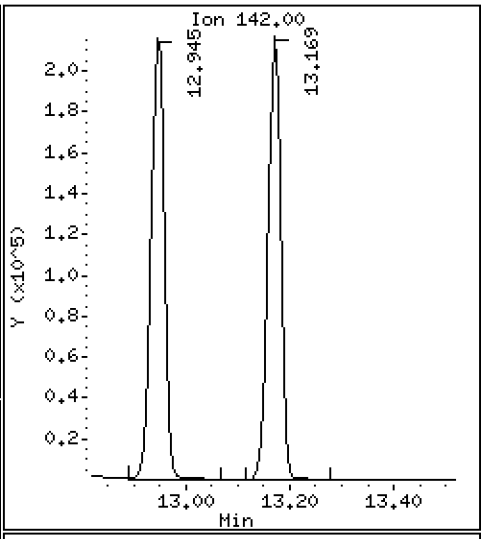
Column phase: ZB-5msi

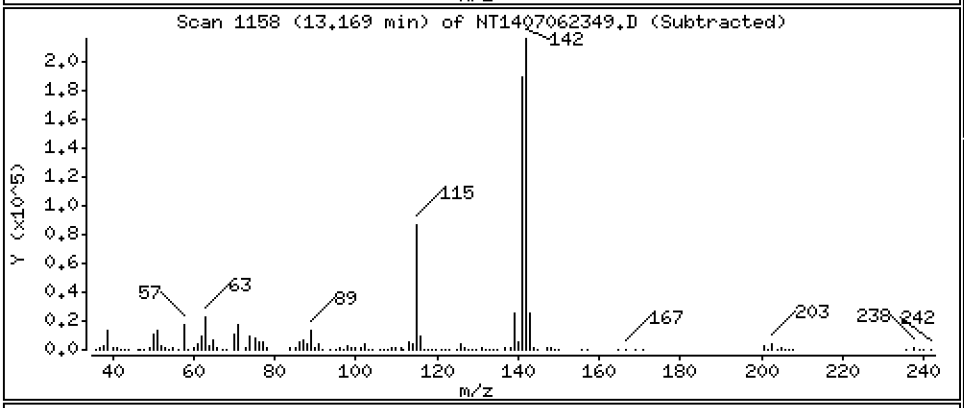
Column diameter: 0.25

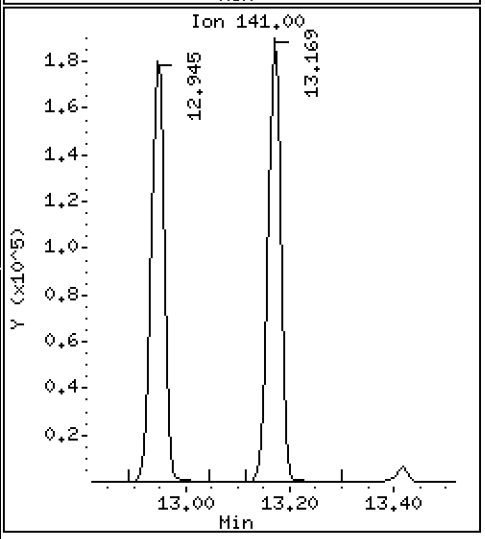
105 1-methylnaphthalene

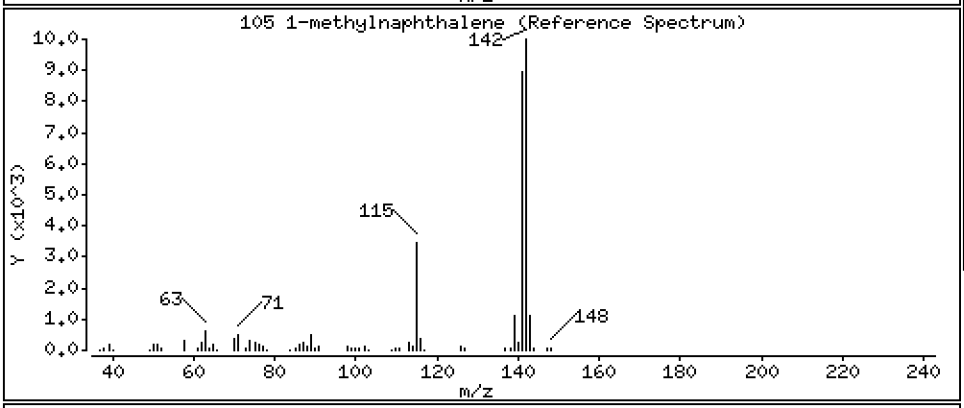
Concentration: 3.912 ug/mL

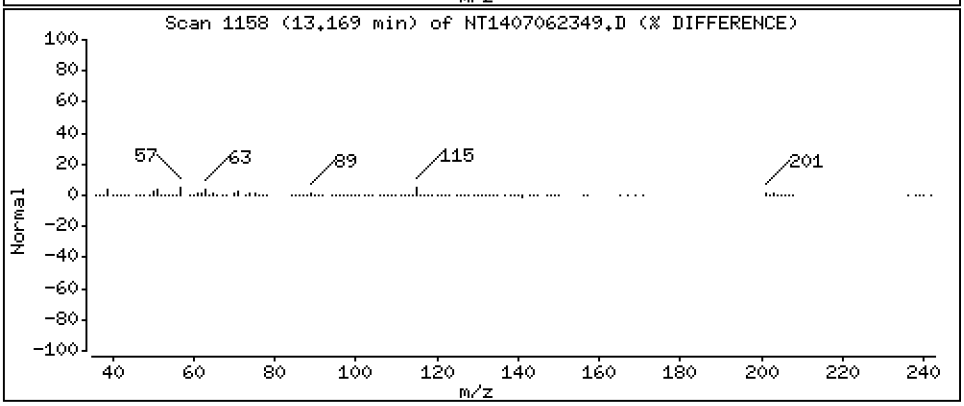












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

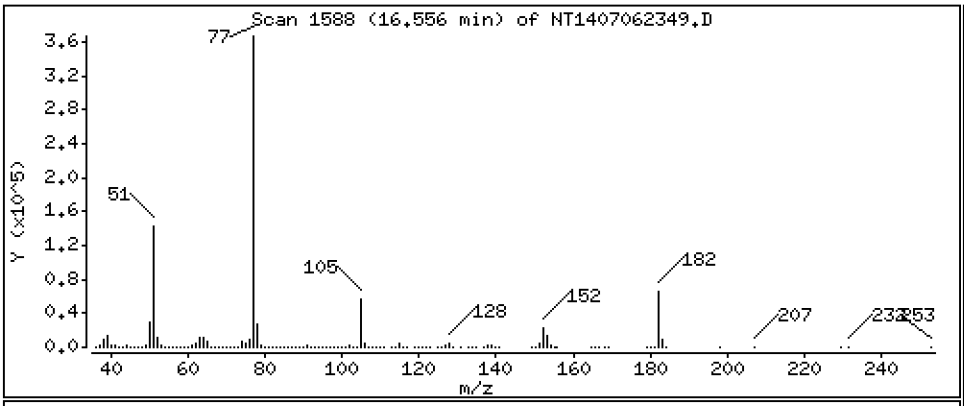
Operator: JGR

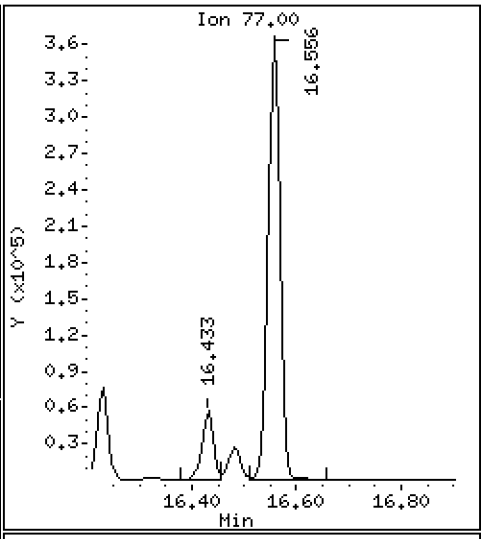
Column phase: ZB-5msi

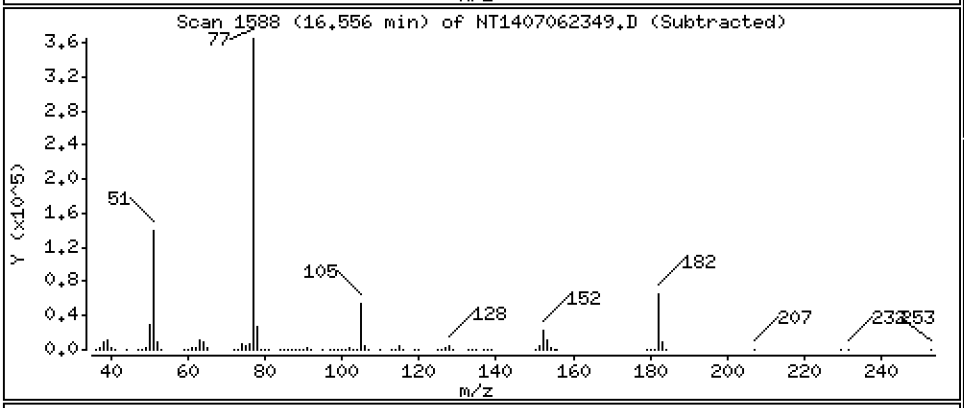
Column diameter: 0.25

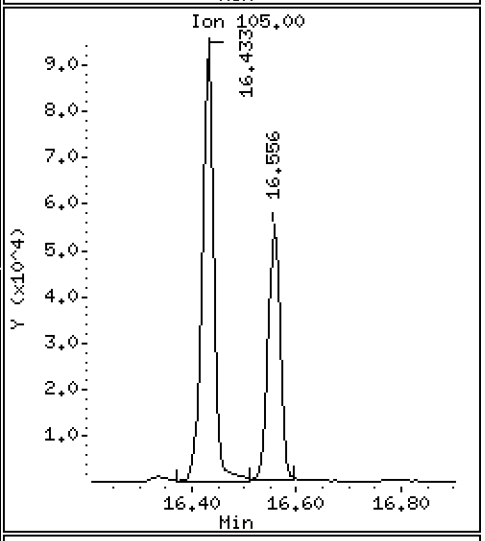
111 Azobenzene (1,2-DP-Hydrazine)

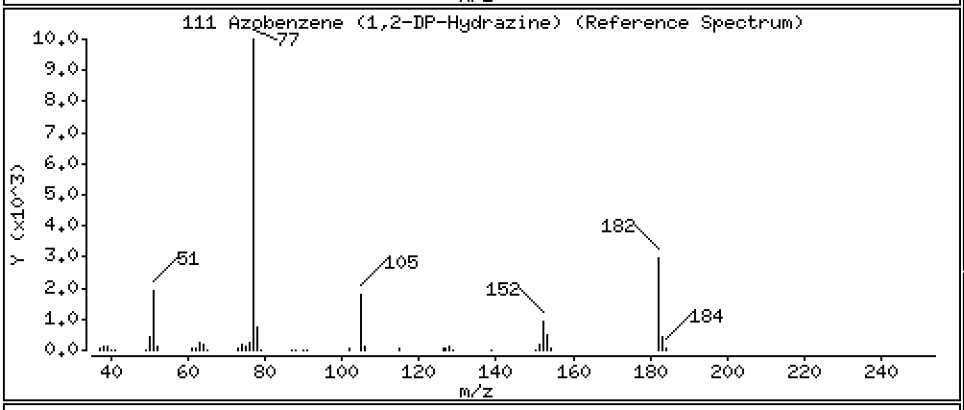
Concentration: 3.824 ug/mL

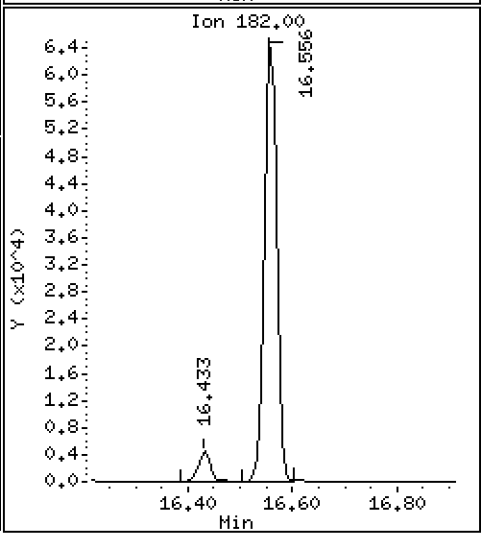


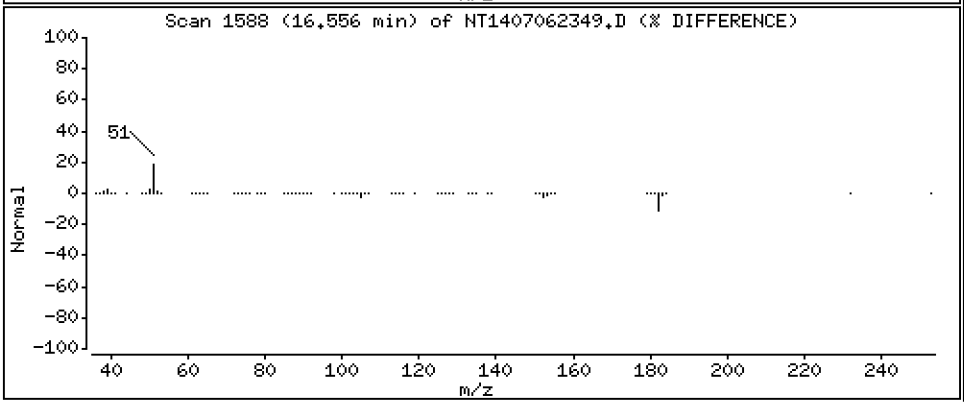












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

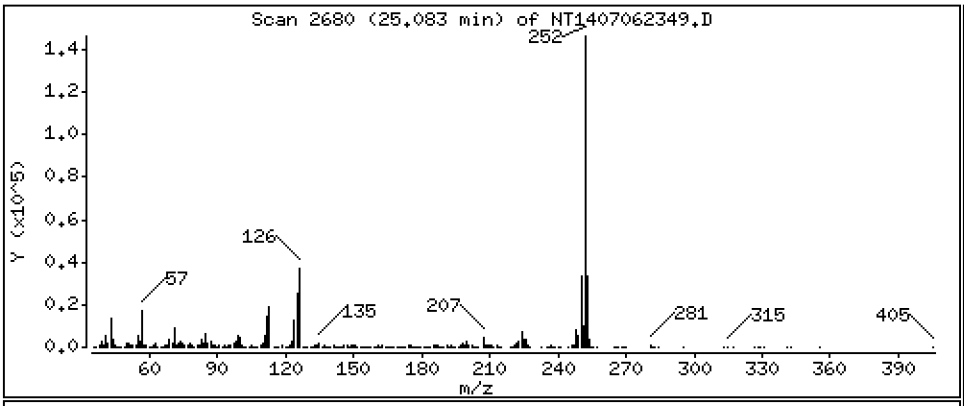
Operator: JGR

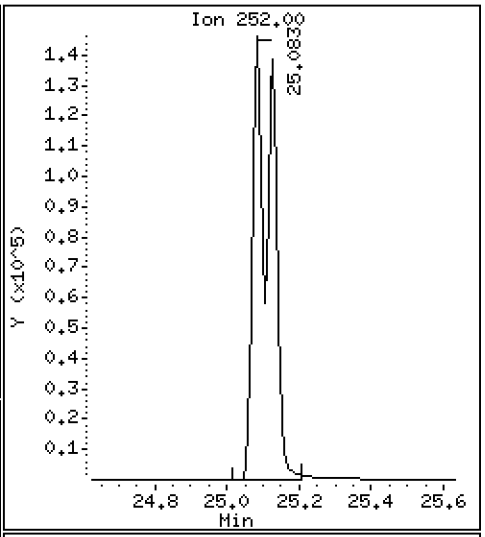
Column phase: ZB-5msi

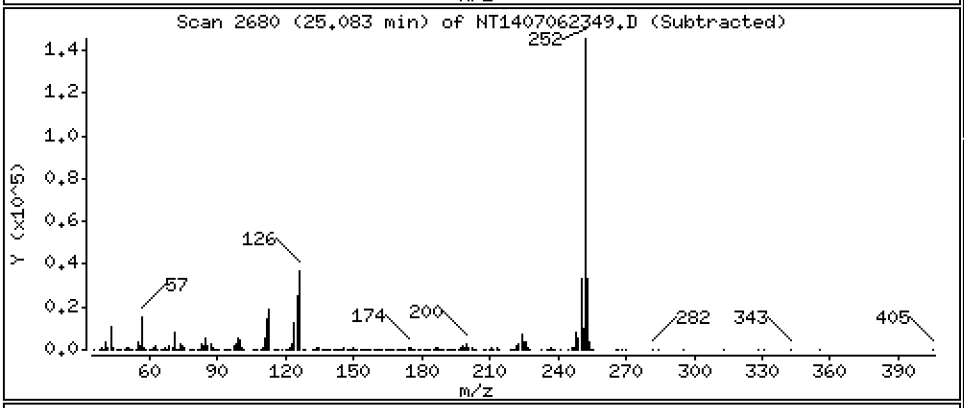
Column diameter: 0.25

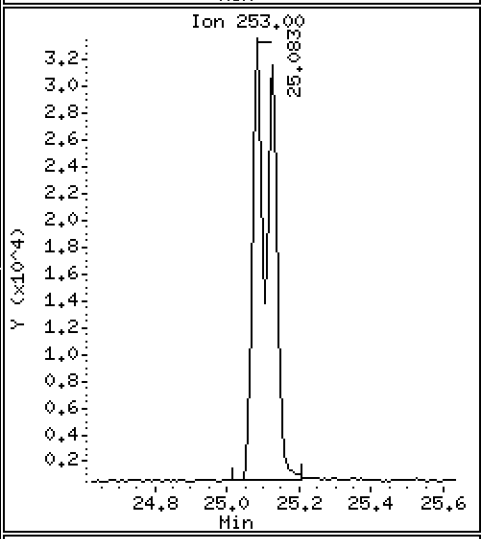
187 Total Benzofluoranthenes

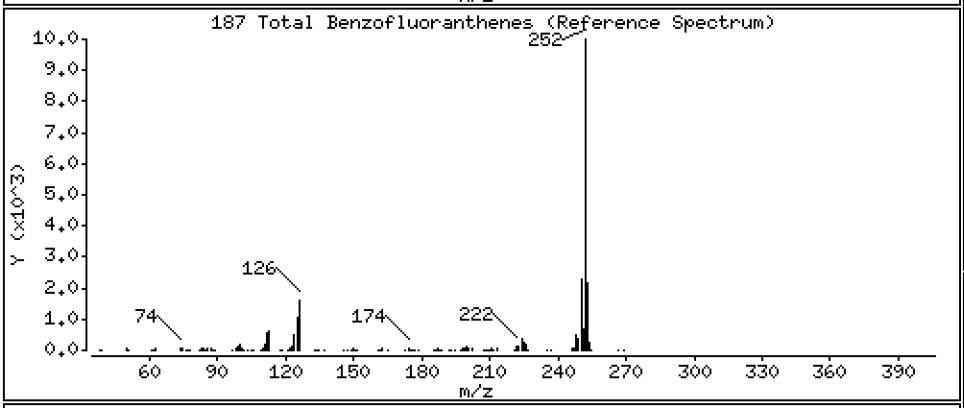
Concentration: 10.64 ug/mL

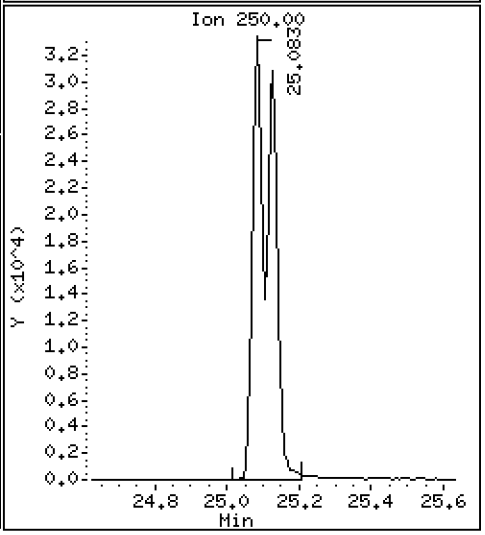


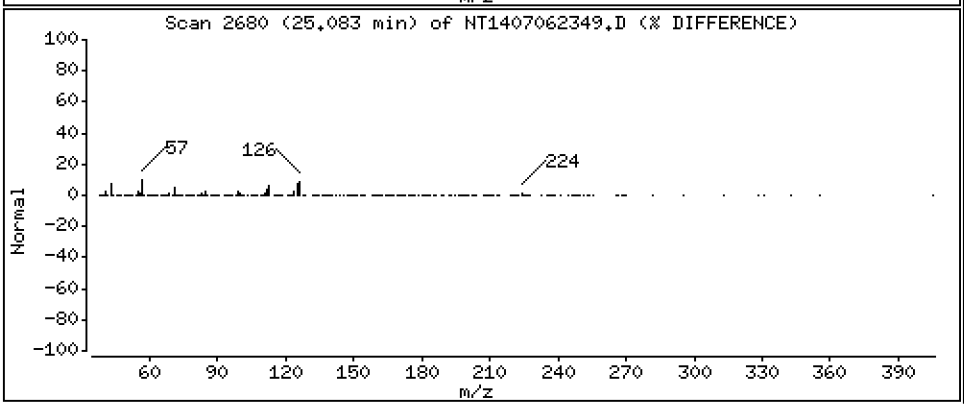












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Date : 07-JUL-2023 19:29

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BS1

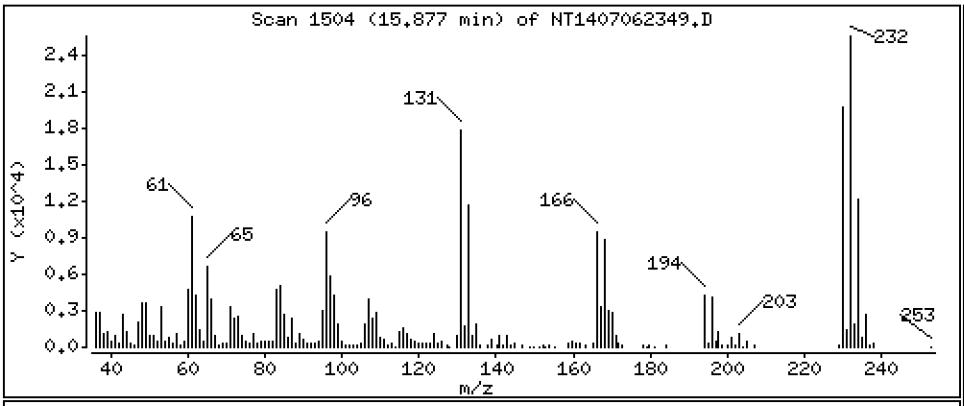
Operator: JGR

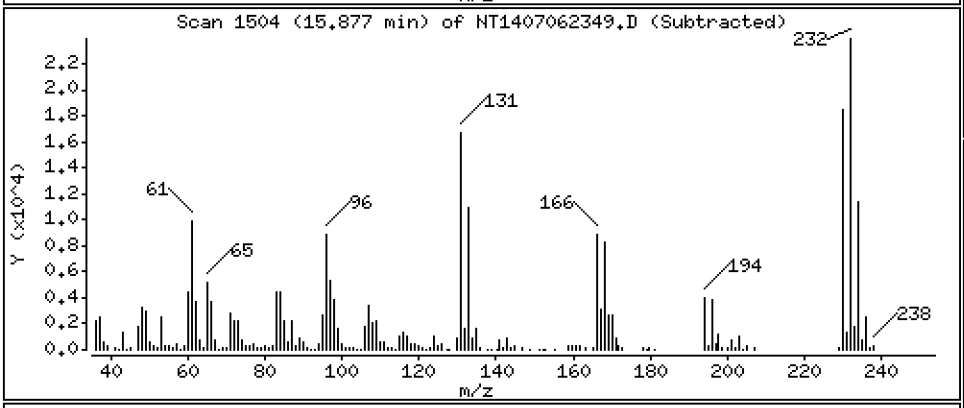
Column phase: ZB-5msi

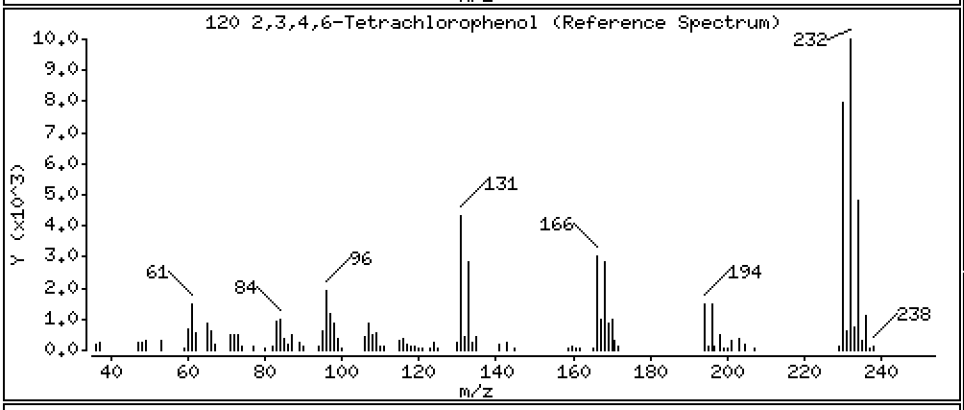
Column diameter: 0.25

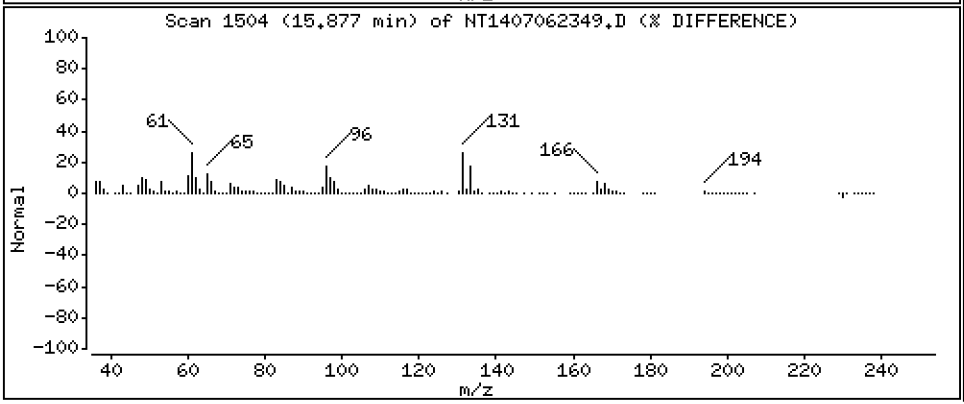
120 2,3,4,6-Tetrachlorophenol

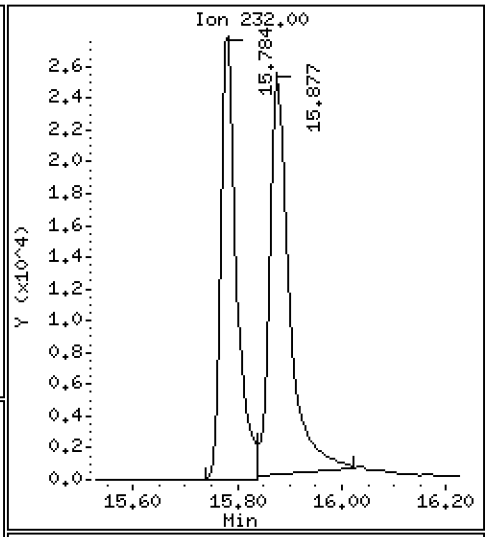
Concentration: 3.491 ug/mL

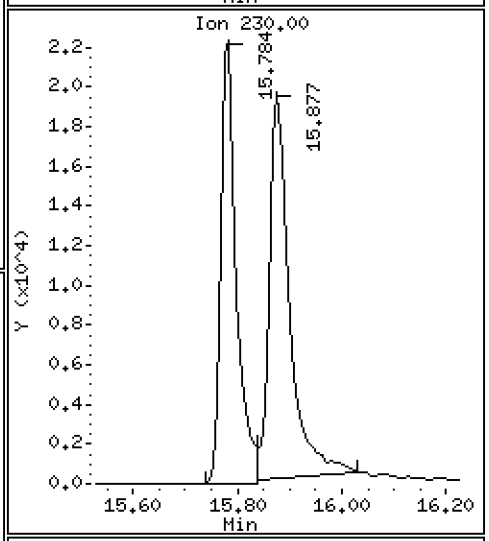


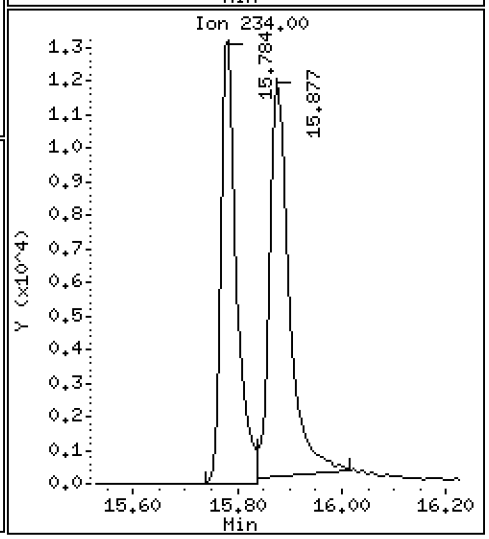












ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230706C.b\NT1407062349.D
Lab Smp Id: BLF0718-BS1
Inj Date : 07-JUL-2023 19:29 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : BLF0718-BS1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Meth Date : 08-Jul-2023 11:17 van Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 32
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: VANS-201906

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/mL)
$ 1	2-Fluorophenol	112	6.813	6.798	(0.756)	264913	5.56252	5.563
$ 2	Phenol-d5	99	8.389	8.382	(0.931)	365595	5.66296	5.663
3	Phenol	94	8.413	8.405	(0.933)	226477	2.89716	2.897
$ 5	2-Chlorophenol-d4	132	8.660	8.652	(0.960)	299511	6.27776	6.278
4	Bis(2-Chloroethyl)ether	93	8.559	8.559	(0.949)	210028	3.86264	3.863
6	2-Chlorophenol	128	8.683	8.683	(0.963)	192781	3.39930	3.399
7	1,3-Dichlorobenzene	146	8.946	8.946	(0.992)	173255	3.42772	3.428
* 8	1,4-Dichlorobenzene-d4	152	9.016	9.016	(1.000)	125480	4.00000	
9	1,4-Dichlorobenzene	146	9.047	9.047	(1.003)	189989	3.81289	3.813
$ 10	1,2-Dichlorobenzene-d4	152	9.373	9.373	(1.040)	111442	3.69277	3.693
12	1,2-Dichlorobenzene	146	9.396	9.404	(1.042)	171909	3.56096	3.561
11	Benzyl alcohol	108	Compound Not Detected.					
14	2,2'-oxybis(1-Chloropropane)	121	9.590	9.590	(1.064)	64589	4.13629	4.136
13	2-Methylphenol	108	9.520	9.520	(1.056)	157166	3.18964	3.190
17	Hexachloroethane	117	9.994	9.994	(1.108)	75806	3.31202	3.312
16	N-Nitroso-di-n-propylamine	70	9.846	9.846	(1.092)	151668	3.43036	3.430
15	4-Methylphenol	108	9.800	9.792	(1.087)	189410	3.47054	3.471
$ 18	Nitrobenzene-d5	82	10.110	10.110	(0.879)	238911	3.91748	3.917
19	Nitrobenzene	77	10.141	10.149	(0.881)	240714	3.69331	3.693
20	Isophorone	82	10.591	10.591	(0.921)	353208	3.89589	3.896
21	2-Nitrophenol	139	10.778	10.778	(0.937)	96392	3.12097	3.121
22	2,4-Dimethylphenol	107	10.847	10.840	(0.943)	360580	6.89733	6.897
23	Bis(2-Chloroethoxy)methane	93	11.026	11.026	(0.958)	251073	4.33414	4.334
24	Benzoic acid	105	11.088	11.088	(0.964)	725579	22.2002	22.20
25	2,4-Dichlorophenol	162	11.250	11.243	(0.978)	427513	11.0600	11.06
26	1,2,4-Trichlorobenzene	180	11.420	11.420	(0.993)	136405	3.54037	3.540
* 27	Naphthalene-d8	136	11.505	11.505	(1.000)	517040	4.00000	
28	Naphthalene	128	11.544	11.544	(1.003)	524593	3.88394	3.884
29	4-Chloroaniline	127	11.683	11.675	(1.015)	274172	4.35312	4.353
30	Hexachlorobutadiene	225	11.915	11.915	(1.036)	69094	3.84455	3.845
31	4-Chloro-3-methylphenol	107	12.665	12.665	(1.101)	542768	11.1956	11.20
32	2-Methylnaphthalene	142	12.944	12.952	(1.125)	364116	3.63448	3.634
33	Hexachlorocyclopentadiene	237	13.416	13.416	(0.886)	53152	2.74500	2.745

			QUANT SIG					CONCENTRATIONS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
	34	2,4,6-Trichlorophenol	196	13.579	13.579	(0.897)	267787	10.8376	10.84
	35	2,4,5-Trichlorophenol	196	13.664	13.664	(0.903)	327047	12.7201	12.72
$	36	2-Fluorobiphenyl	172	13.733	13.733	(0.907)	383400	4.18743	4.187
	37	2-Chloronaphthalene	162	13.942	13.942	(0.921)	320435	3.80429	3.804
	38	2-Nitroaniline	65	14.206	14.206	(0.939)	476464	11.6722	11.67
	39	Dimethylphthalate	163	14.639	14.639	(0.967)	379452	4.39166	4.392
	40	Acenaphthylene	152	14.817	14.817	(0.979)	485052	3.73194	3.732
	41	2,6-Dinitrotoluene	165	14.778	14.778	(0.976)	241764	13.2983	13.30
*	42	Acenaphthene-d10	164	15.134	15.134	(1.000)	257075	4.00000	
	43	3-Nitroaniline	138	15.065	15.065	(0.995)	226098	9.28324	9.283
	44	Acenaphthene	153	15.204	15.204	(1.005)	309880	4.02871	4.029
	45	2,4-Dinitrophenol	184	15.273	15.273	(1.009)	151671	13.2567	13.26
	46	Dibenzofuran	168	15.528	15.528	(1.026)	454715	4.05667	4.057
	47	4-Nitrophenol	109	15.436	15.420	(1.020)	154074	8.65857	8.659
	48	2,4-Dinitrotoluene	165	15.590	15.590	(1.030)	329957	12.9791	12.98
	50	Diethylphthalate	149	16.101	16.101	(1.064)	469585	4.69972	4.700
	49	Fluorene	166	16.240	16.240	(1.073)	367123	3.74518	3.745
	51	4-Chlorophenyl-phenylether	204	16.232	16.232	(1.073)	187025	4.41884	4.419
	52	4-Nitroaniline	138	16.332	16.340	(1.079)	231467	9.38656	9.387
	53	4,6-Dinitro-2-methylphenol	198	16.432	16.432	(0.904)	253708	17.7707	17.77
	54	N-Nitrosodiphenylamine	169	16.479	16.486	(0.907)	231066	3.69988	3.700
$	55	2,4,6-Tribromophenol	330	16.779	16.779	(1.109)	51422	6.36593	6.366
	56	4-Bromophenyl-phenylether	248	17.234	17.234	(0.948)	86404	4.53695	4.537
	57	Hexachlorobenzene	284	17.551	17.559	(0.966)	84255	4.18197	4.182
	58	Pentachlorophenol	266	17.923	17.923	(0.986)	114441	9.25788	9.258
*	59	Phenanthrene-d10	188	18.178	18.178	(1.000)	442300	4.00000	
	60	Phenanthrene	178	18.225	18.225	(1.003)	507810	4.24405	4.244
	61	Anthracene	178	18.317	18.317	(1.008)	432280	3.73882	3.739
	62	Carbazole	167	18.650	18.650	(1.026)	451748	3.88364	3.884
	63	Di-n-butylphthalate	149	19.447	19.447	(1.070)	768156	5.02613	5.026
	64	Fluoranthene	202	20.615	20.615	(0.887)	566404	5.09577	5.096
	65	Pyrene	202	21.041	21.041	(0.906)	553343	4.92799	4.928
$	66	Terphenyl-d14	244	21.327	21.327	(0.918)	408326	5.40318	5.403
	67	Butylbenzylphthalate	149	22.249	22.249	(0.958)	318775	6.02062	6.021
	68	Benzo(a)anthracene	228	23.201	23.209	(0.999)	423066	4.44353	4.444
*	69	Chrysene-d12	240	23.232	23.232	(1.000)	271916	4.00000	
	70	3,3'-Dichlorobenzidine	252	23.162	23.162	(0.997)	197681	7.31905	7.319
	71	Chrysene	228	23.278	23.278	(1.002)	402420	4.72193	4.722
	72	bis(2-Ethylhexyl)phthalate	149	24.269	24.269	(1.001)	833174	4.64444	4.644
*	134	Di-n-octylphthalate-d4	153	24.254	24.262	(1.000)	697972	4.00000	
	73	Di-n-octylphthalate	149	24.269	24.269	(1.001)	833174	4.64444	4.644
	74	Benzo(b)fluoranthene	252	25.082	25.082	(0.970)	273684	5.59799	5.598
	75	Benzo(k)fluoranthene	252	25.129	25.129	(0.972)	281344	5.12598	5.126
	76	Benzo(a)pyrene	252	25.733	25.733	(0.996)	186734	4.86668	4.867
*	77	Perylene-d12	264	25.849	25.849	(1.000)	148740	4.00000	
	78	Indeno(1,2,3-cd)pyrene	276	28.494	28.494	(1.102)	118079	3.41223	3.412
	79	Dibenzo(a,h)anthracene	278	28.509	28.509	(1.103)	102017	3.48417	3.484
	80	Benzo(g,h,i)perylene	276	29.278	29.278	(1.133)	83770	2.93219	2.932
	90	N-Nitrosodimethylamine	74	4.682	4.658	(0.519)	269939	7.49817	7.498
	91	Aniline	93	8.467	8.474	(0.939)	284298	3.73004	3.730
	93	Benzidine	184	21.033	20.855	(0.905)	48	0.00143	0.001427
	103	Pyridine	79	4.720	4.674	(0.524)	21024	0.37084	0.3708
	105	1-methylnaphthalene	142	13.169	13.169	(1.145)	349601	3.91177	3.912
	111	Azobenzene (1,2-DP-Hydrazine)	77	16.556	16.556	(1.094)	544122	3.82364	3.824

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.082	25.129	(0.970)	528042	10.6391	10.64
120 2,3,4,6-Tetrachlorophenol	232	15.876	15.876	(1.049)	69849	3.49139	3.491

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1407062349.D
Lab Smp Id: BLF0718-BS1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Misc Info:

Calibration Date: 07-JUL-2023
Calibration Time: 16:23
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	132670	66335	265340	125480	-5.42
27 Naphthalene-d8	538082	269041	1076164	517040	-3.91
42 Acenaphthene-d10	270232	135116	540464	257075	-4.87
59 Phenanthrene-d10	462568	231284	925136	442300	-4.38
69 Chrysene-d12	289075	144538	578150	271916	-5.94
134 Di-n-octylphthala	772331	386166	1544662	697972	-9.63
77 Perylene-d12	173349	86675	346698	148740	-14.20

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.02	8.52	9.52	9.02	0.00
27 Naphthalene-d8	11.51	11.01	12.01	11.51	0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	0.00
59 Phenanthrene-d10	18.18	17.68	18.68	18.18	0.00
69 Chrysene-d12	23.23	22.73	23.73	23.23	0.00
134 Di-n-octylphthala	24.26	23.76	24.76	24.25	-0.03
77 Perylene-d12	25.85	25.35	26.35	25.85	0.00

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

REVIEW SUMMARY FOR FILE - NT1407062349.D

Lab ID: BLF0718-BS1
nt14.i, ABN.m, 07-JUL-2023 19:29

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.905	0.898	0.0077	Benzidine
0.524	0.518	0.0051	Pyridine

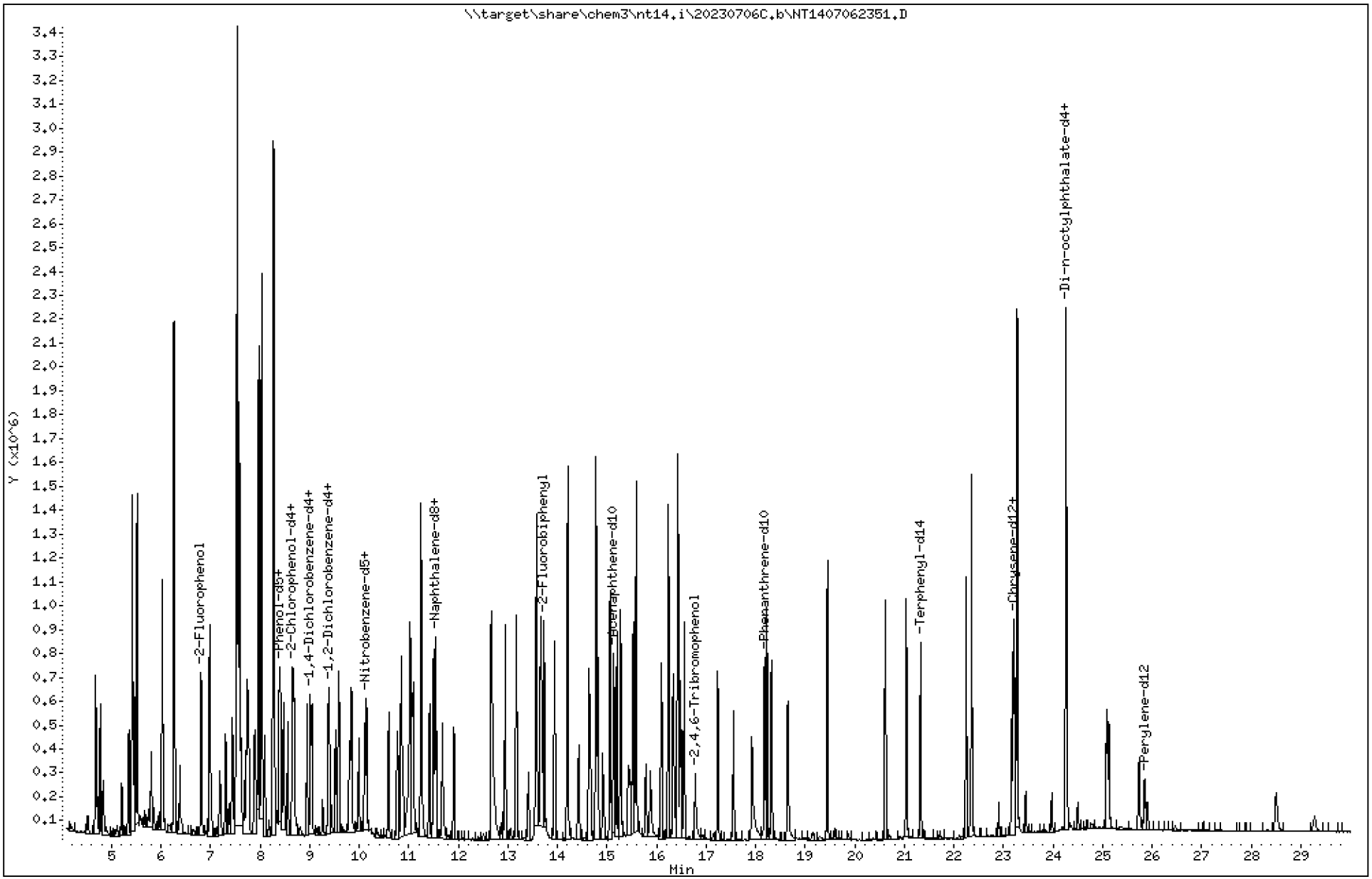
RRT check based on Ccal File: NT1407062344.D

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

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

Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062351.D
Date : 07-JUL-2023 20:44
Client ID:
Sample Info: BLF0718-BSD1

Instrument: nt14.i
Operator: JGR
Column phase: ZB-5msi
Column diameter: 0.25



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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

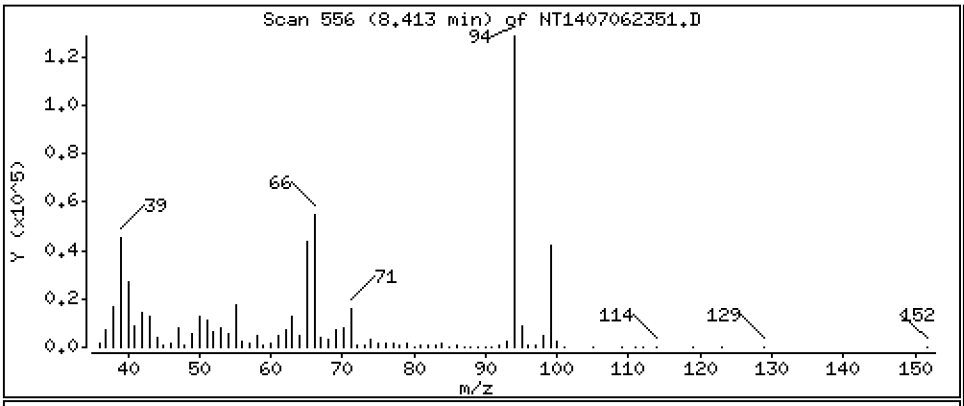
Operator: JGR

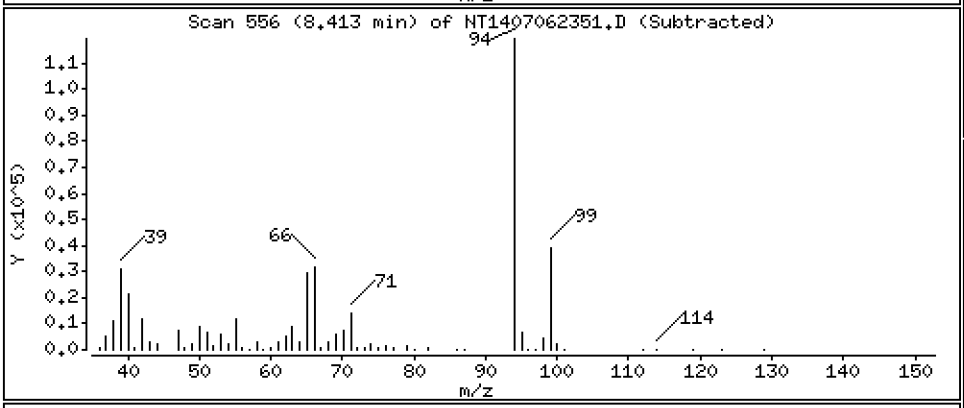
Column phase: ZB-5msi

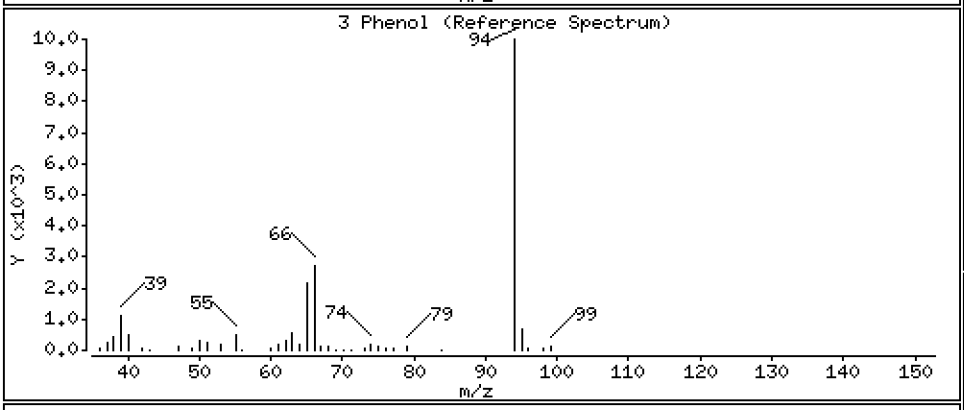
Column diameter: 0.25

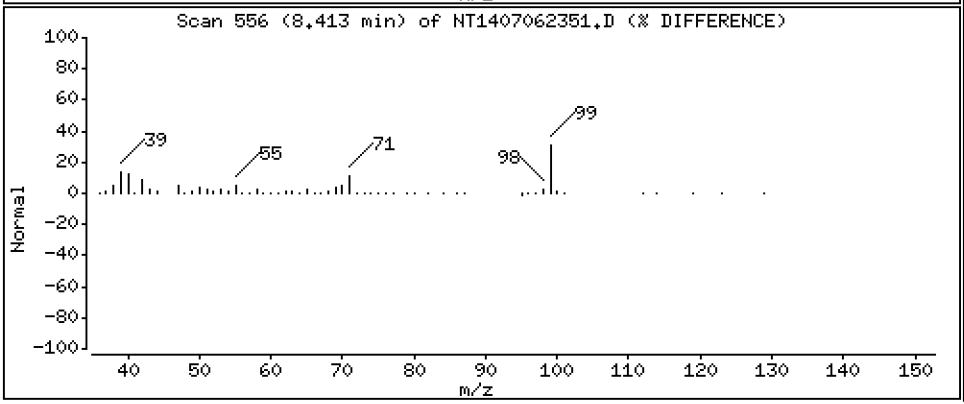
3 Phenol

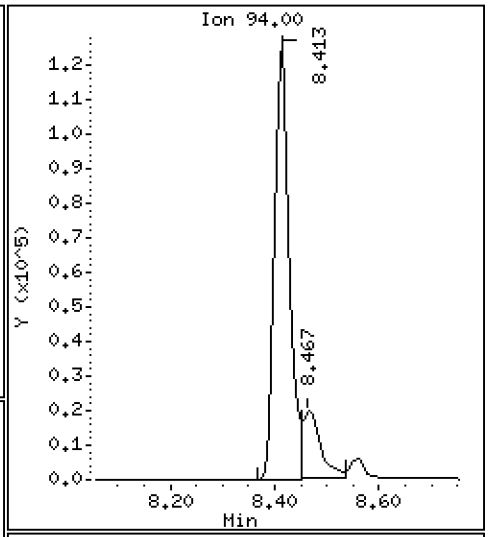
Concentration: 3.025 ug/mL

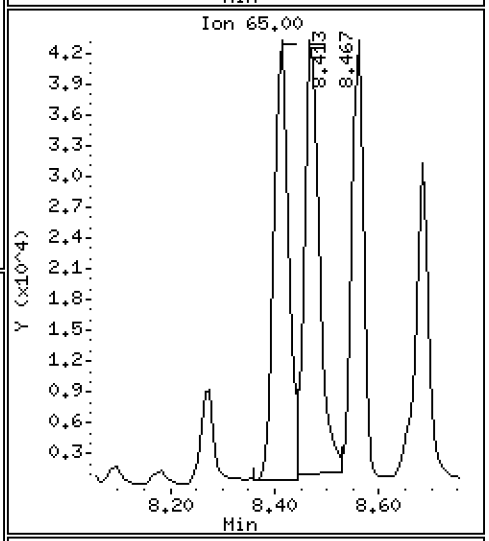


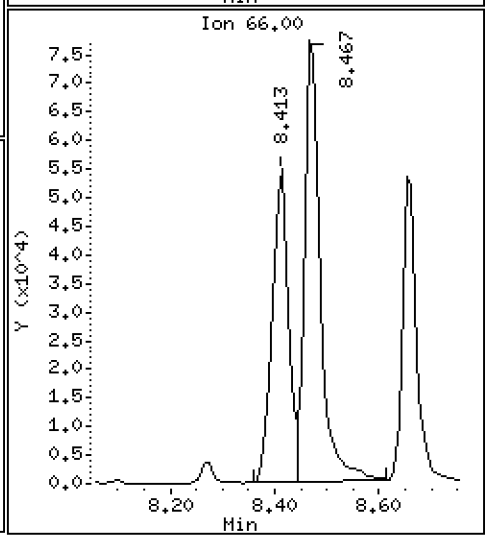












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

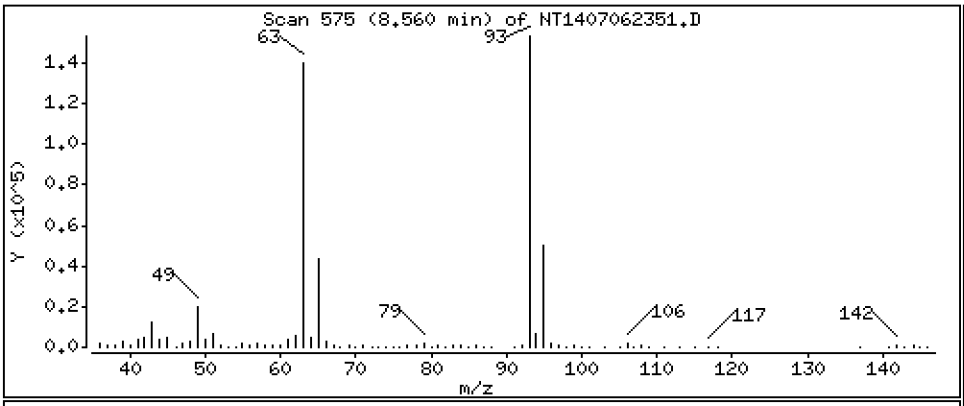
Operator: JGR

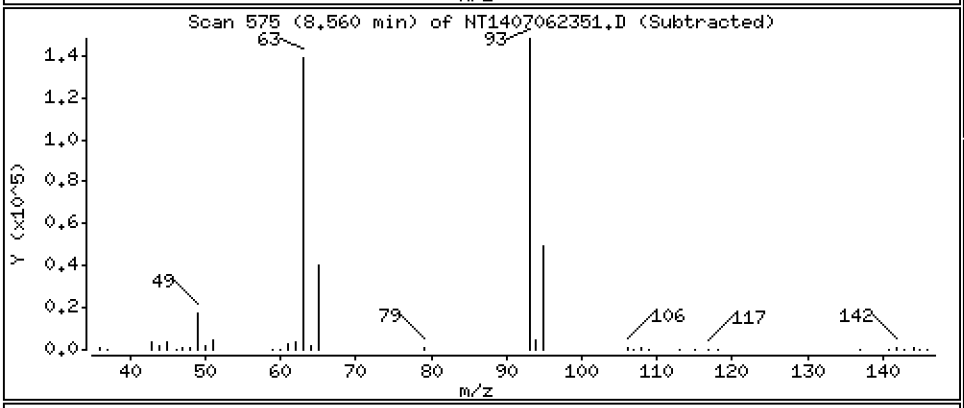
Column phase: ZB-5msi

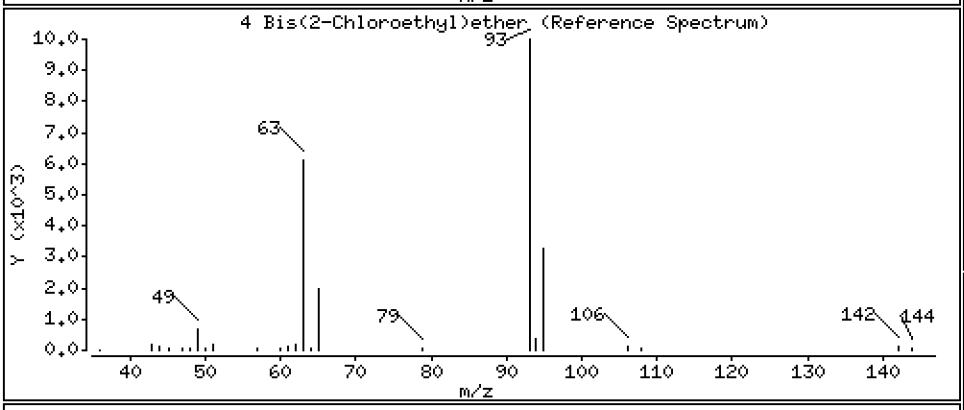
Column diameter: 0.25

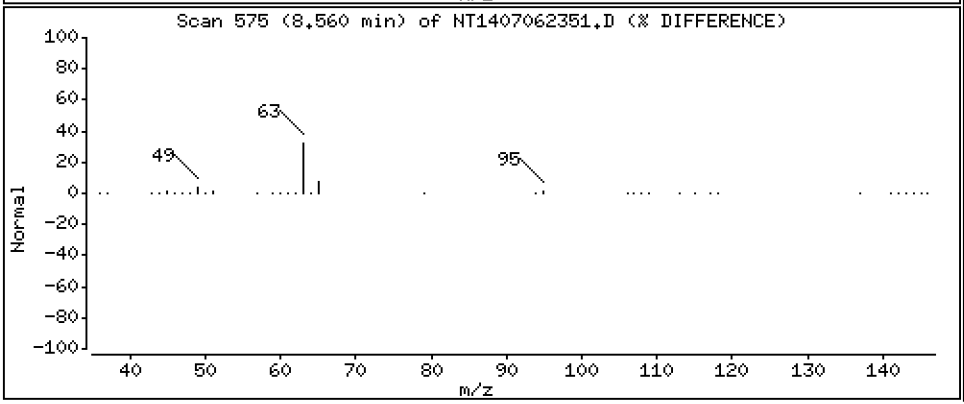
4 Bis(2-Chloroethyl)ether

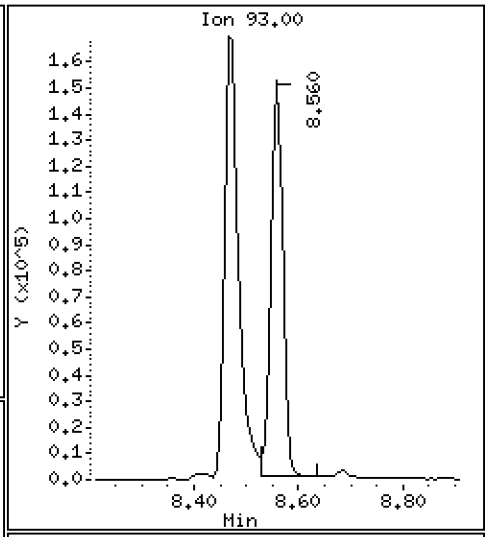
Concentration: 4.039 ug/mL

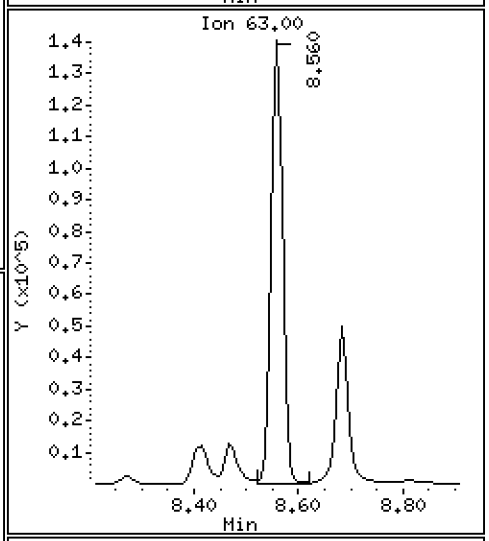


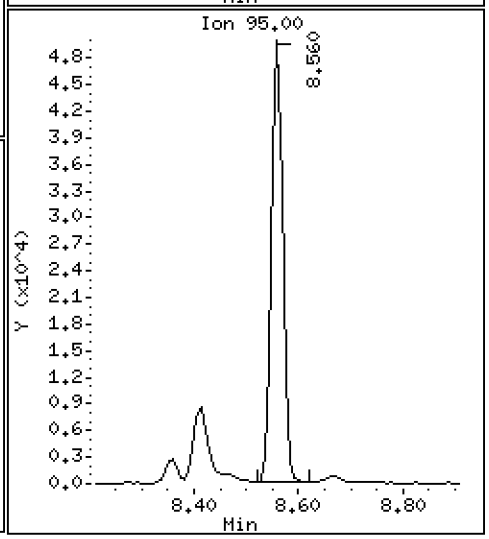












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

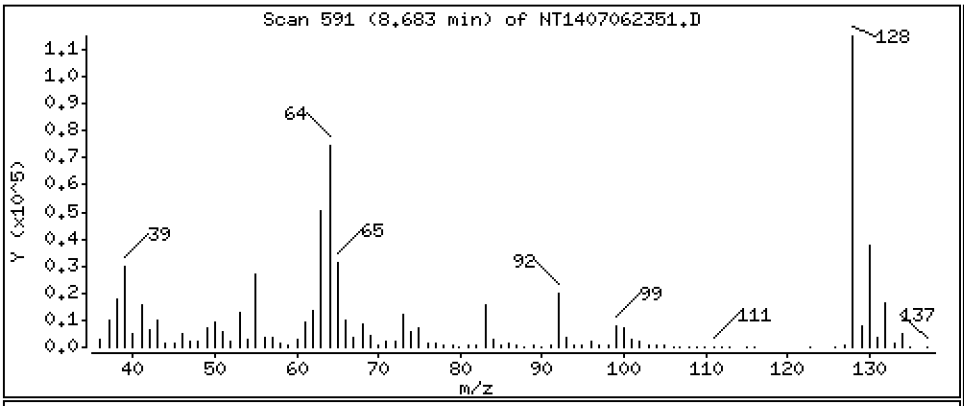
Operator: JGR

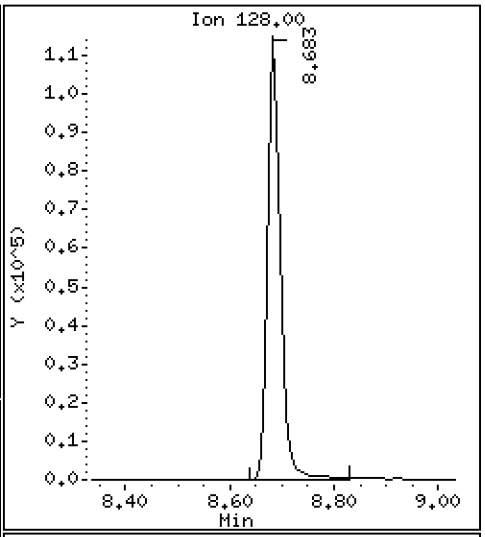
Column phase: ZB-5msi

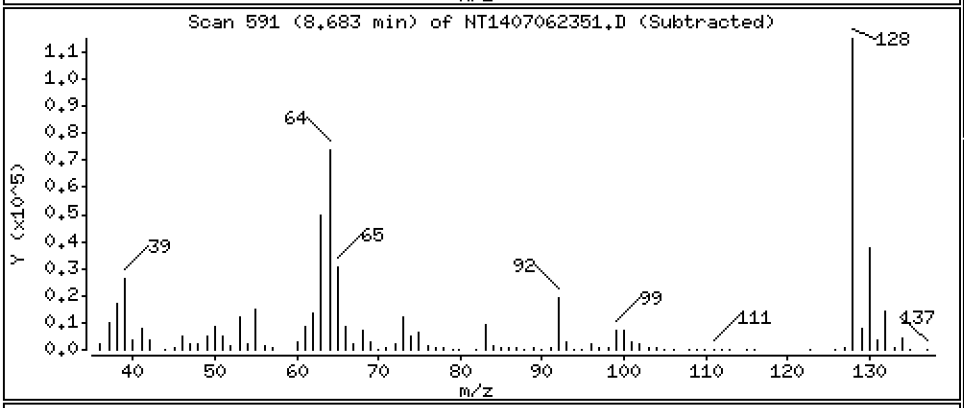
Column diameter: 0.25

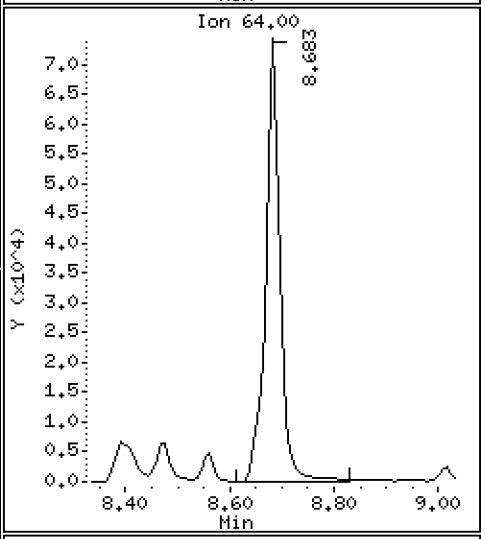
6 2-Chlorophenol

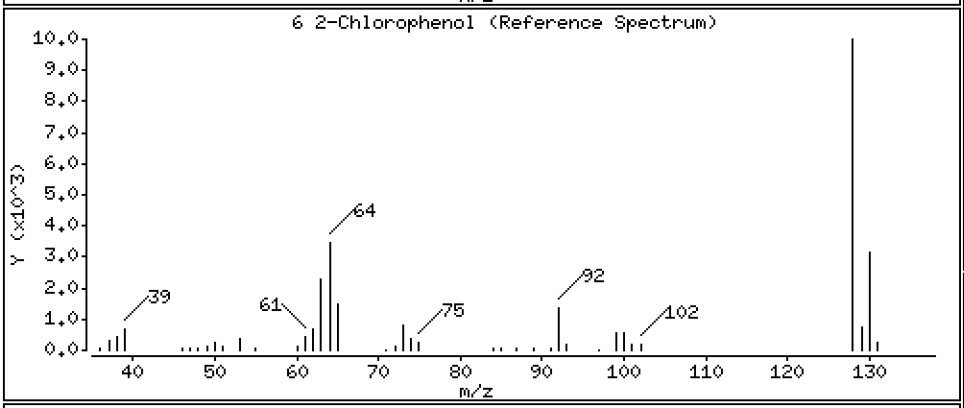
Concentration: 3.536 ug/mL

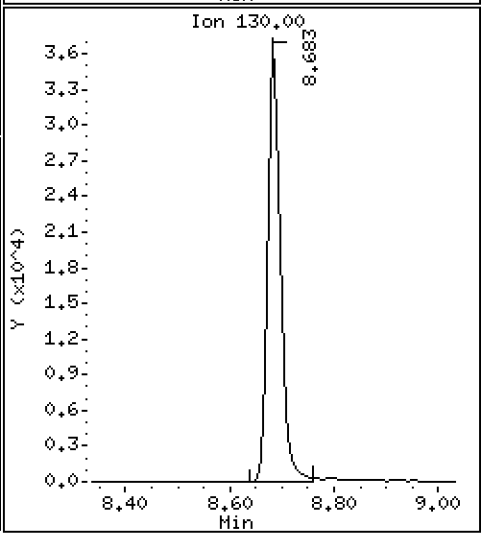


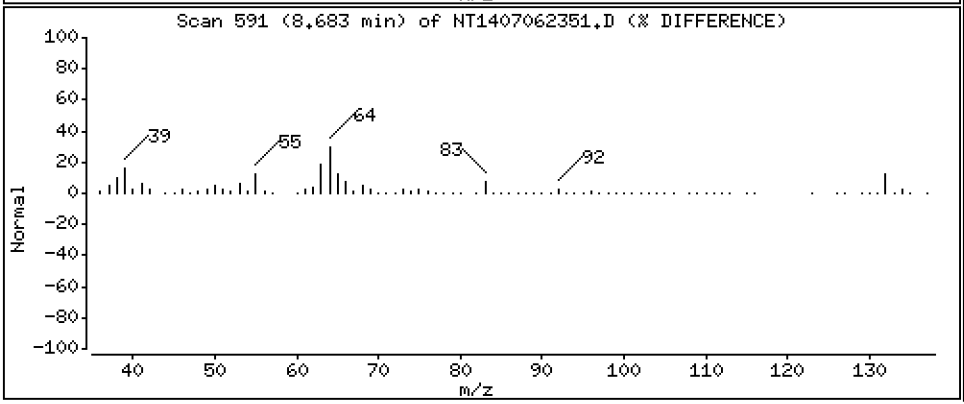












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062351.D

Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

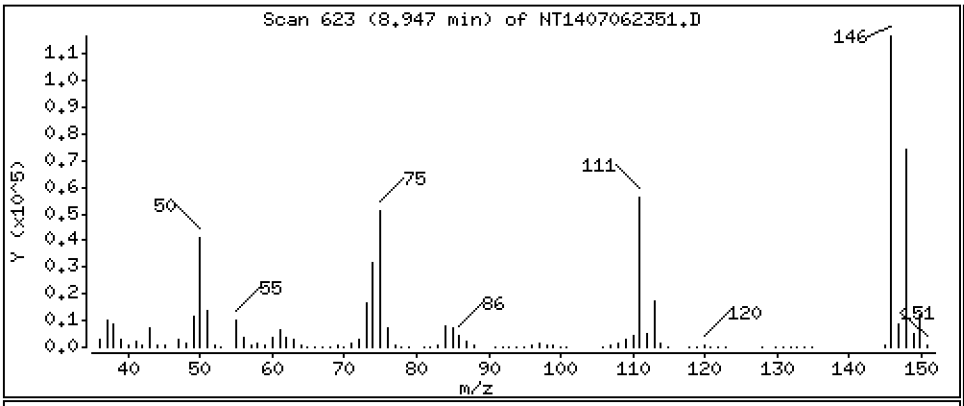
Operator: JGR

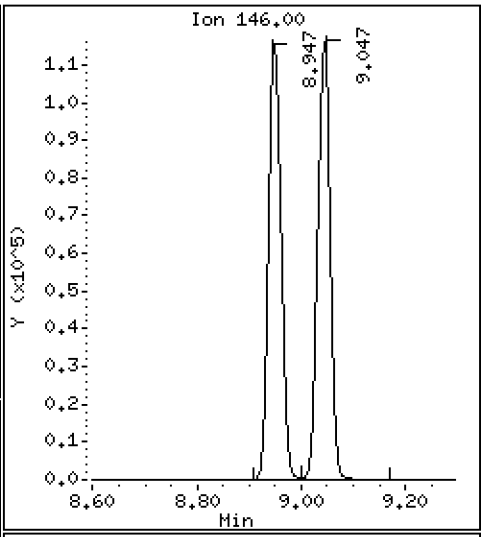
Column phase: ZB-5msi

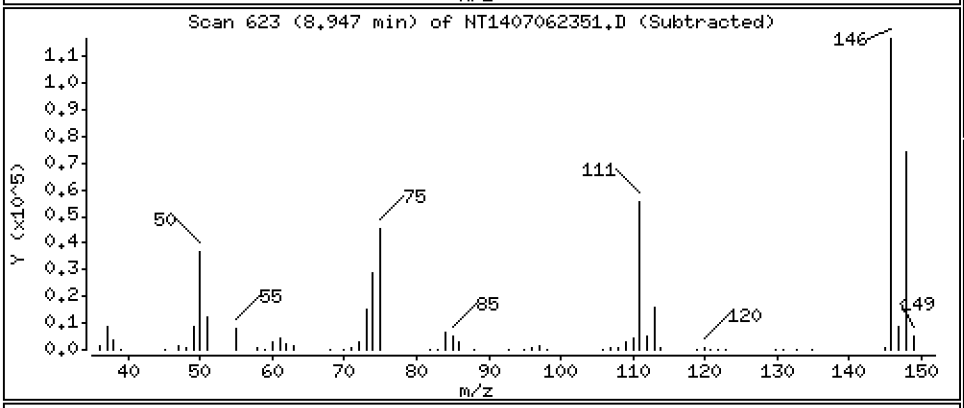
Column diameter: 0.25

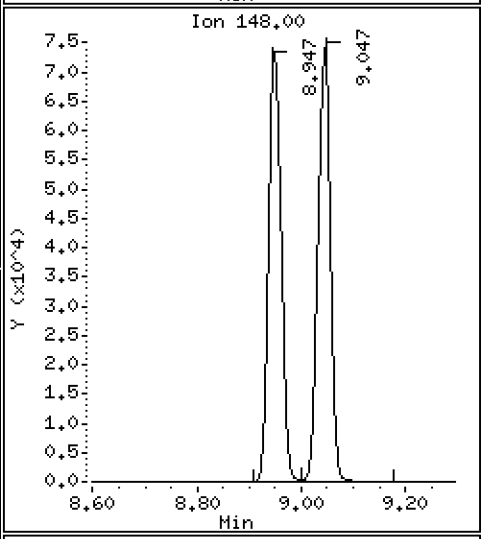
7 1,3-Dichlorobenzene

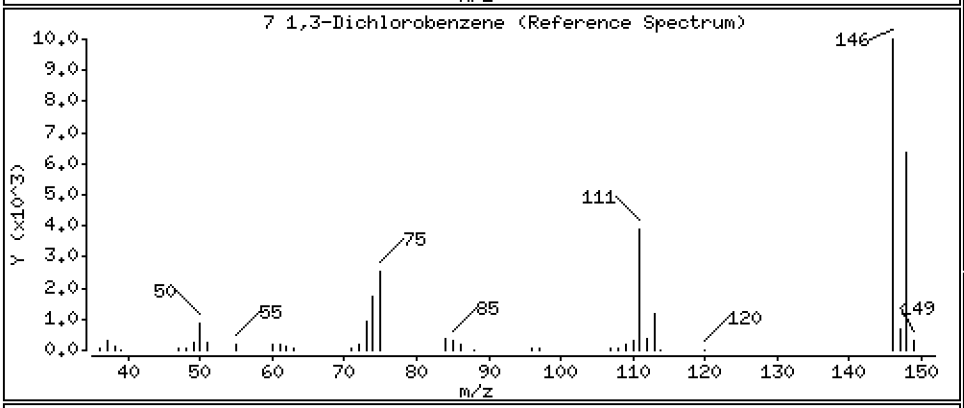
Concentration: 3.580 ug/mL

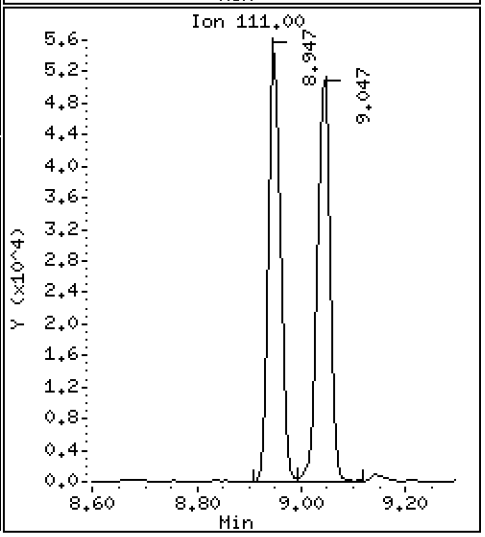


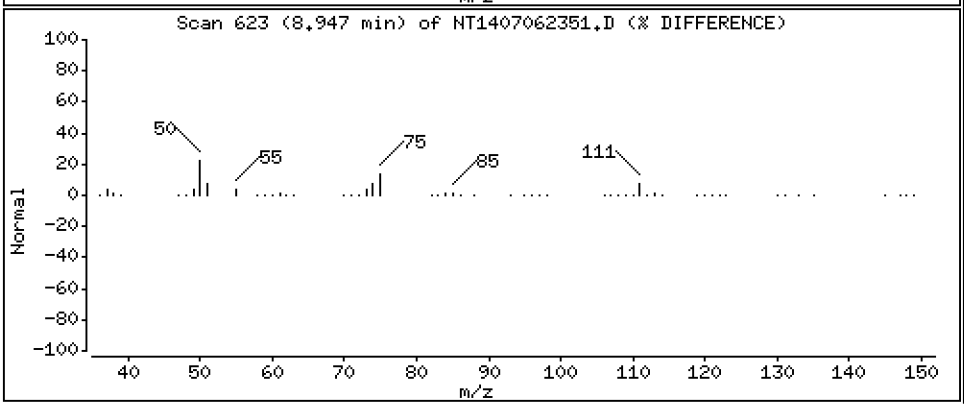












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

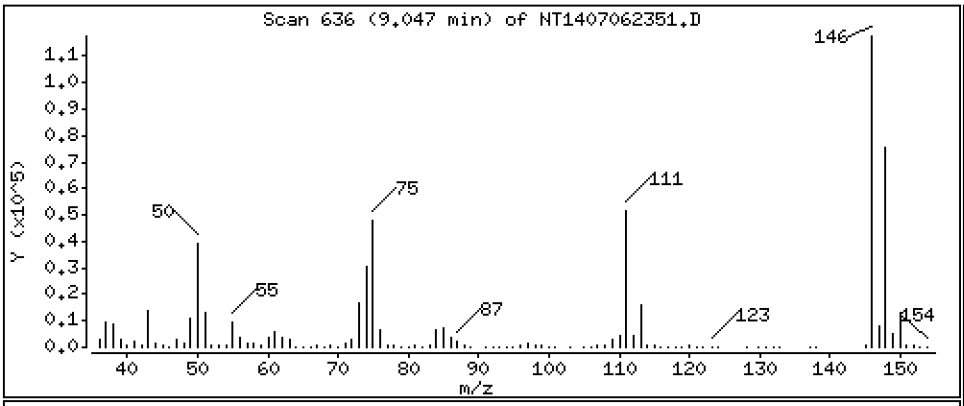
Operator: JGR

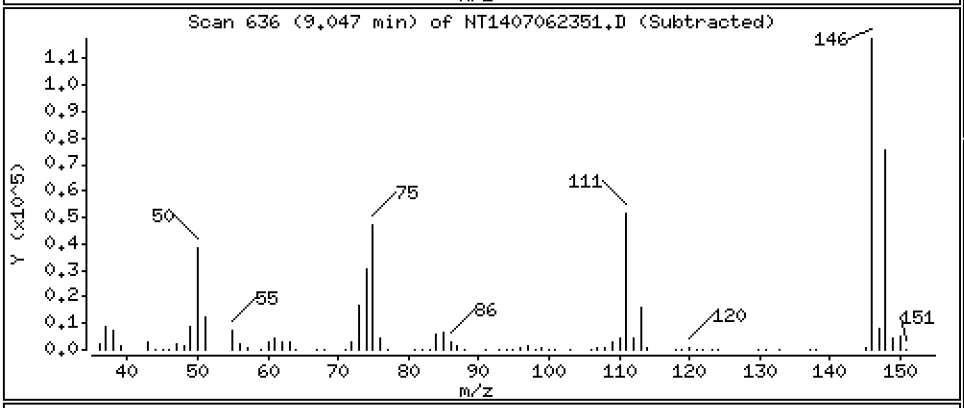
Column phase: ZB-5msi

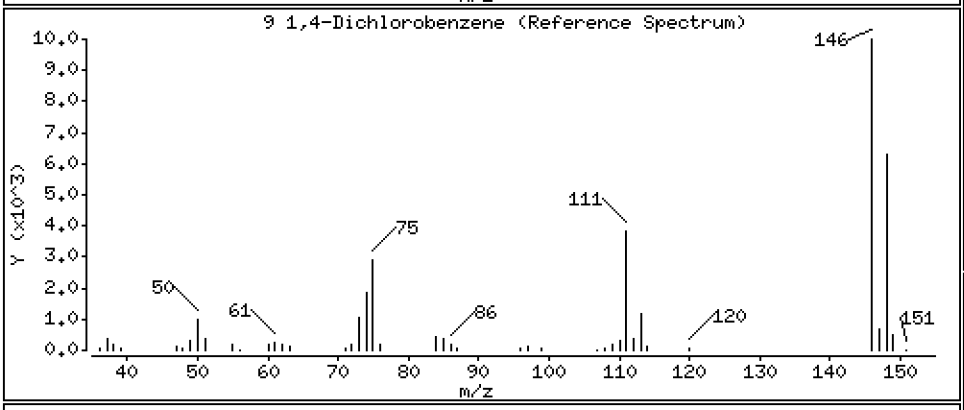
Column diameter: 0.25

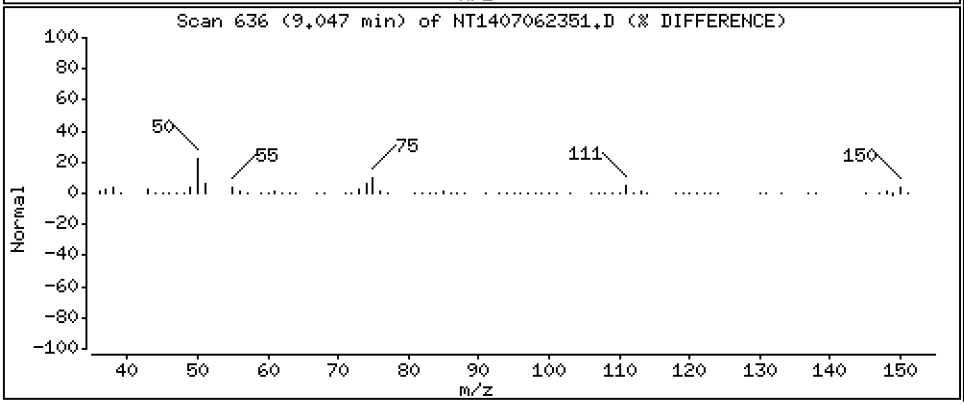
9 1,4-Dichlorobenzene

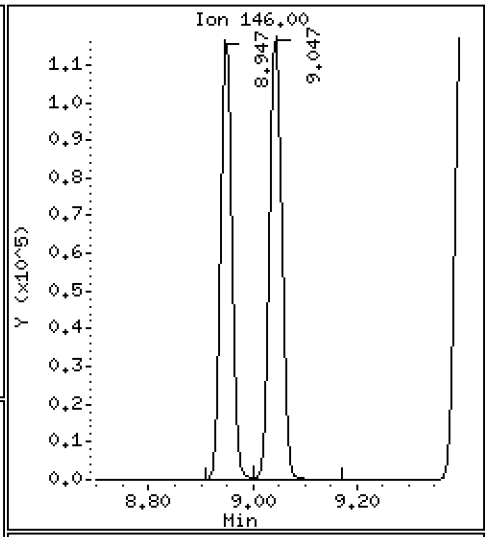
Concentration: 3.969 ug/mL

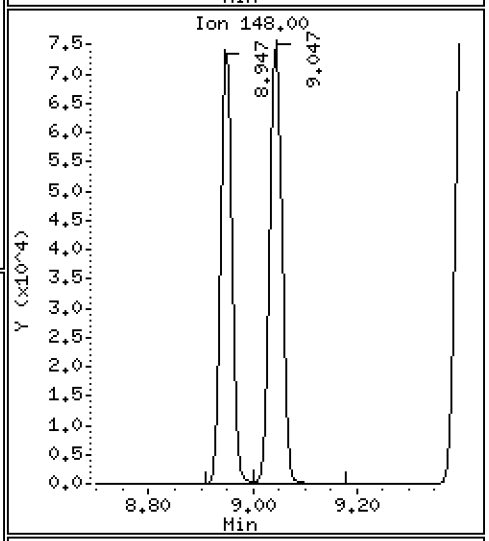


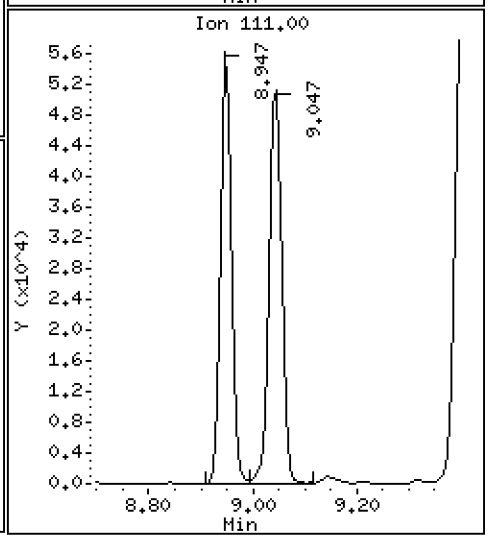












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

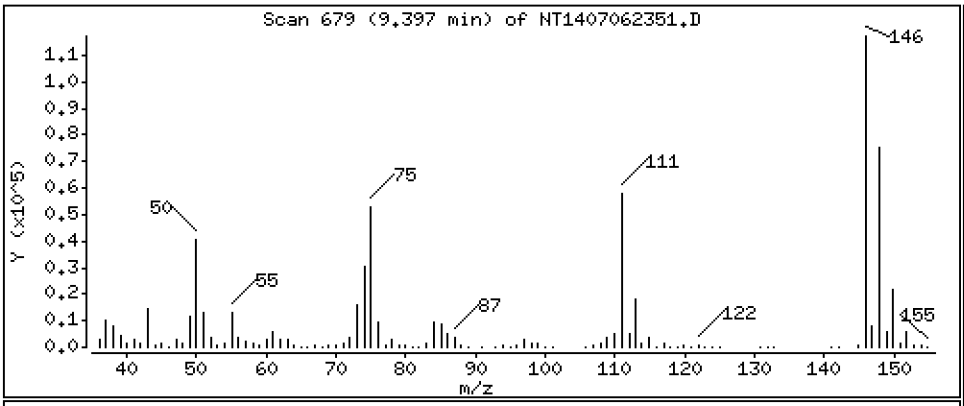
Operator: JGR

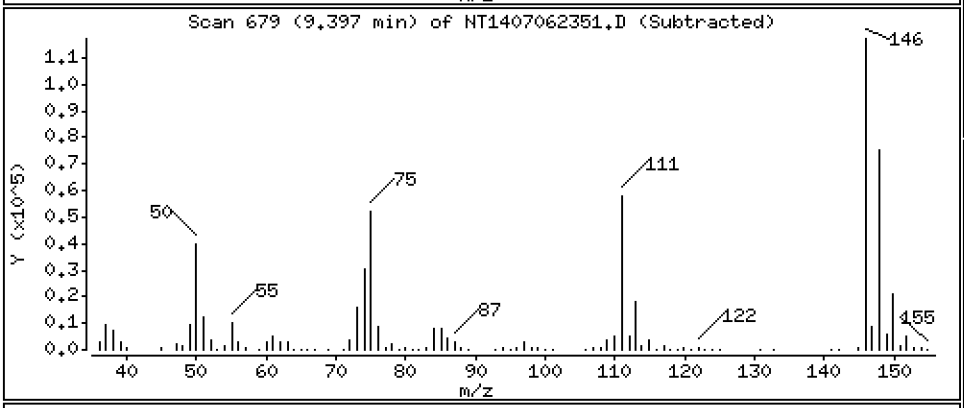
Column phase: ZB-5msi

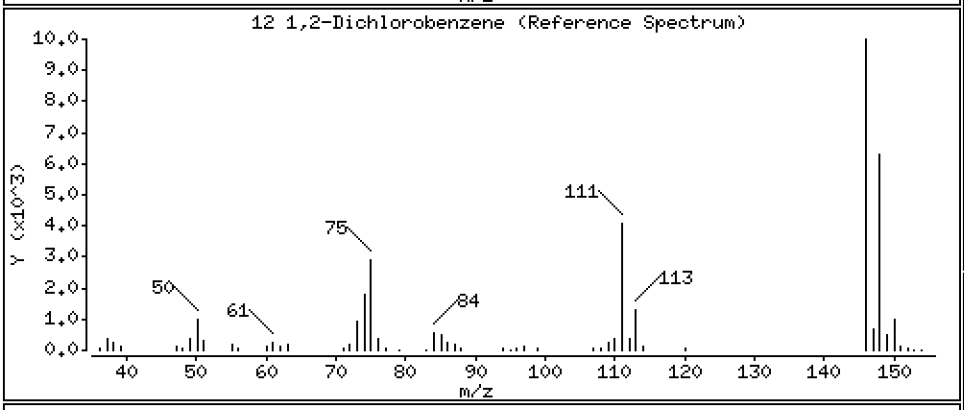
Column diameter: 0.25

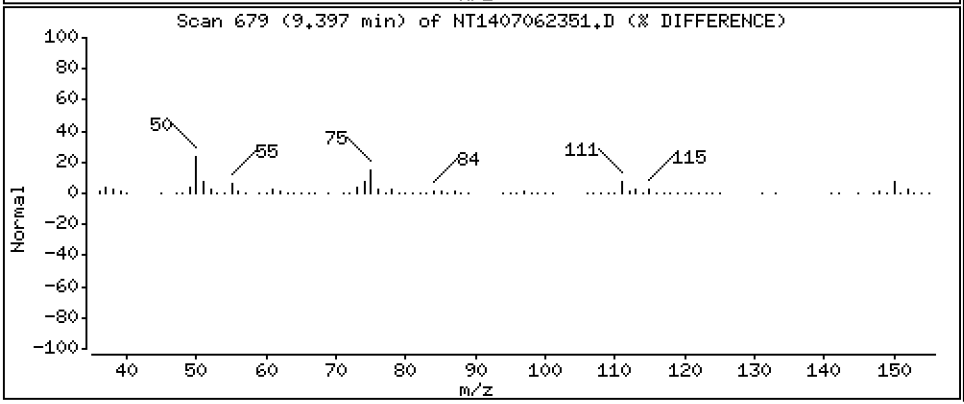
12 1,2-Dichlorobenzene

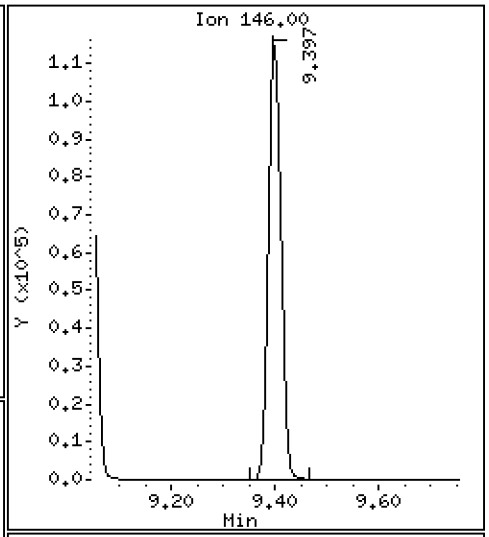
Concentration: 3.765 ug/mL

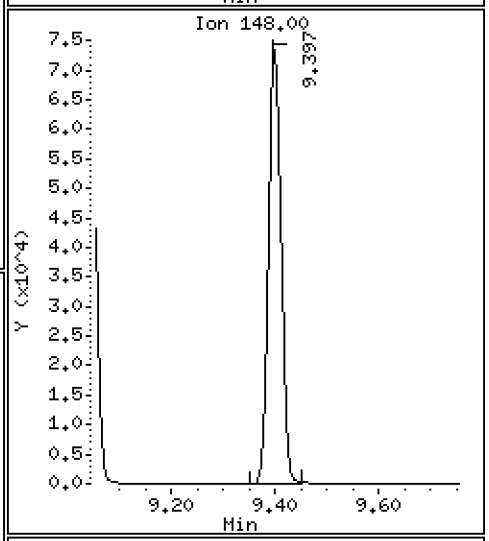


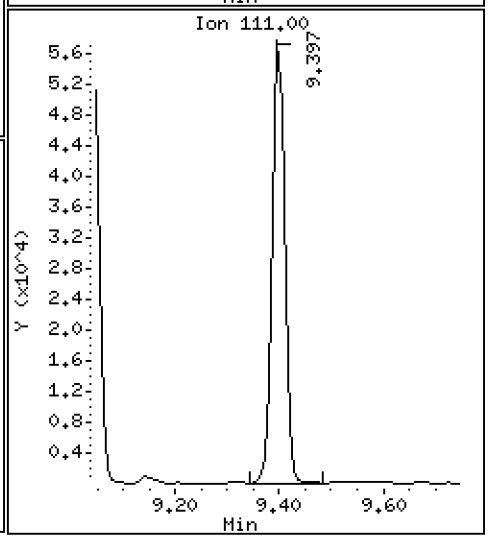












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

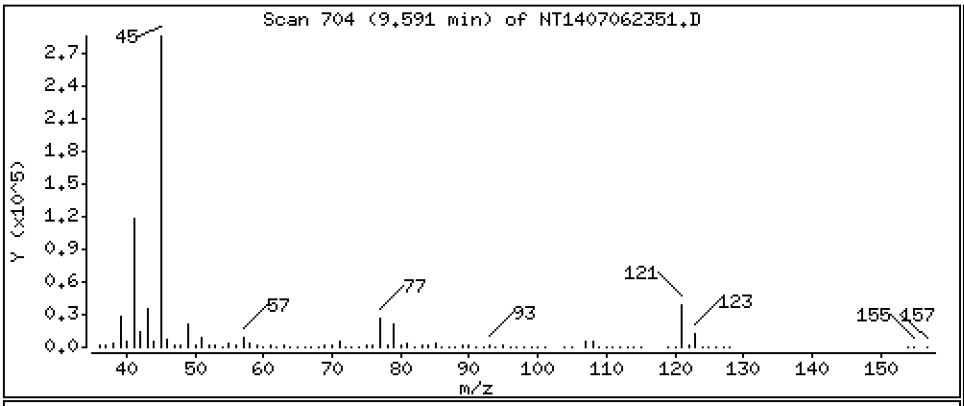
Operator: JGR

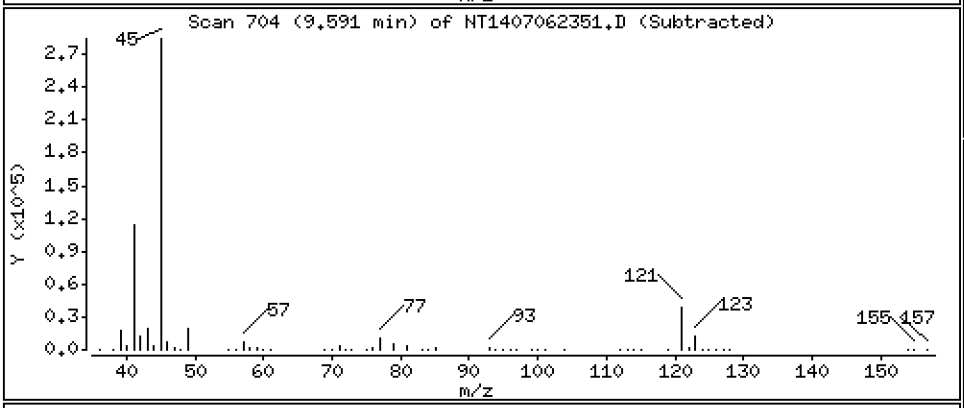
Column phase: ZB-5msi

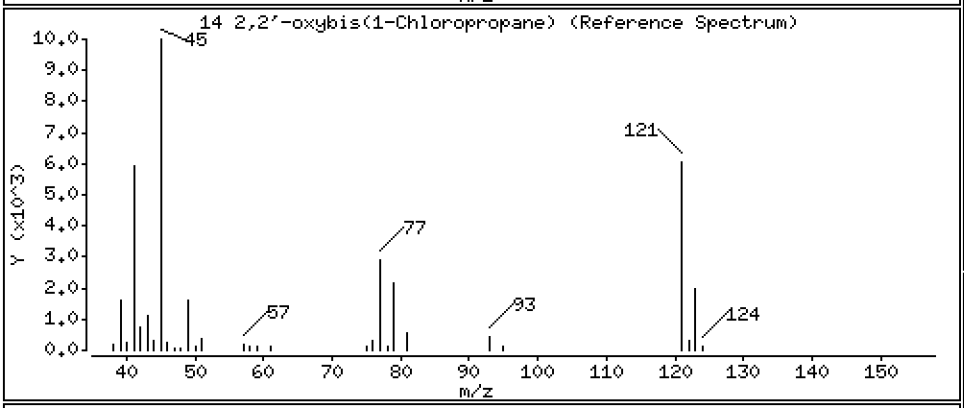
Column diameter: 0.25

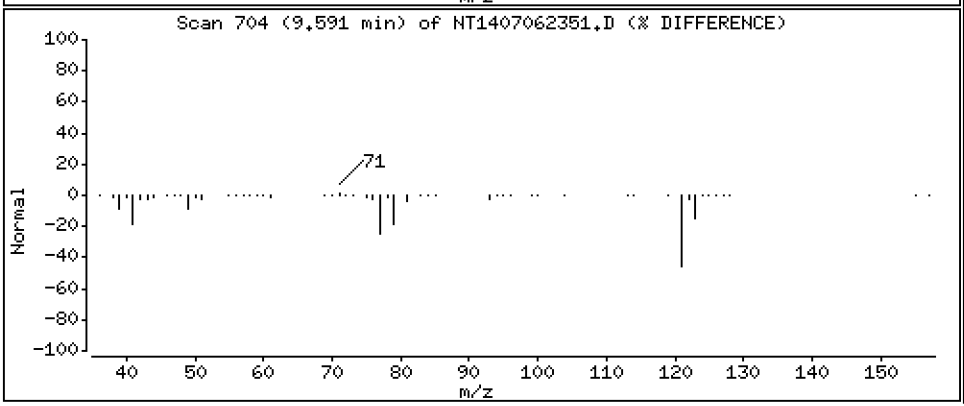
14 2,2'-oxybis(1-Chloropropane)

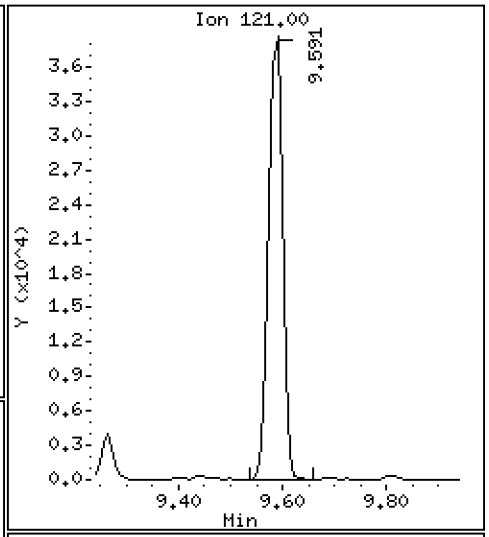
Concentration: 4.358 ug/mL

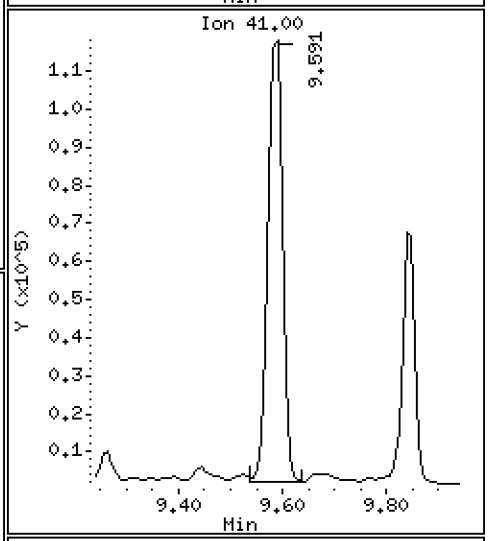


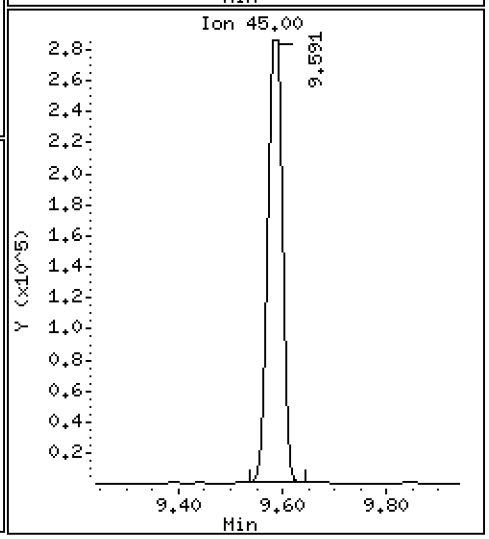












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

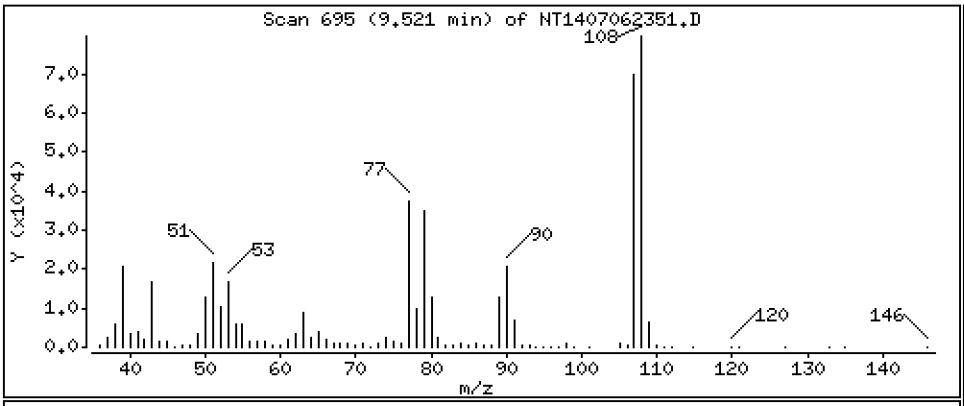
Operator: JGR

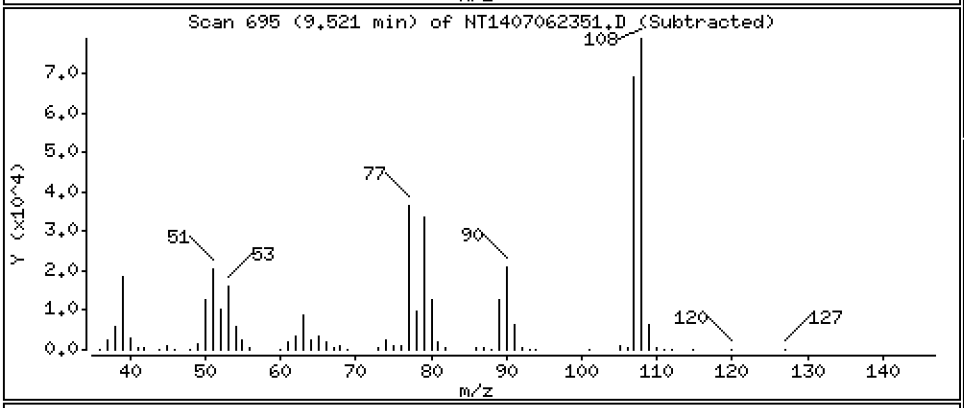
Column phase: ZB-5msi

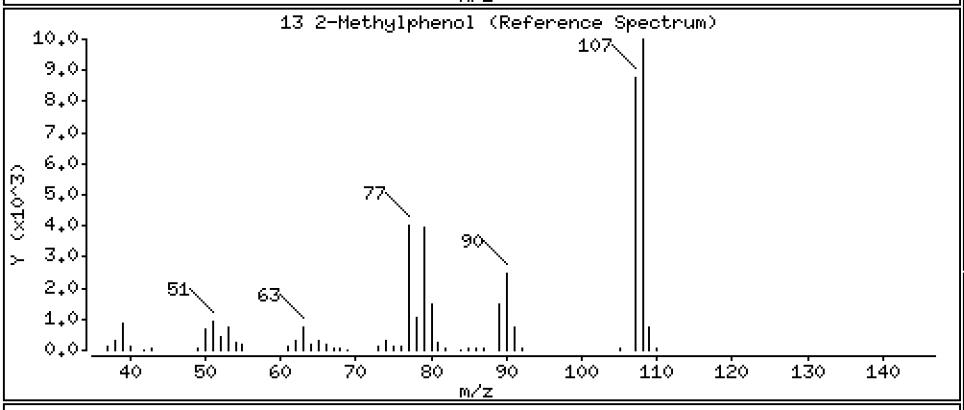
Column diameter: 0.25

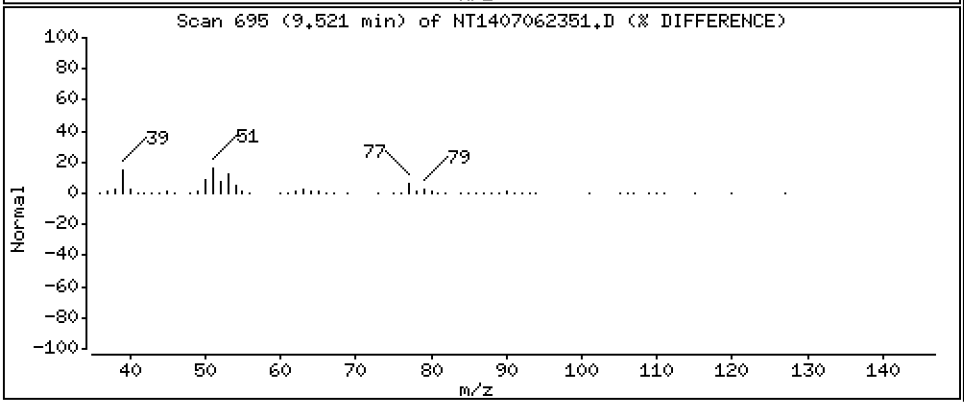
13 2-Methylphenol

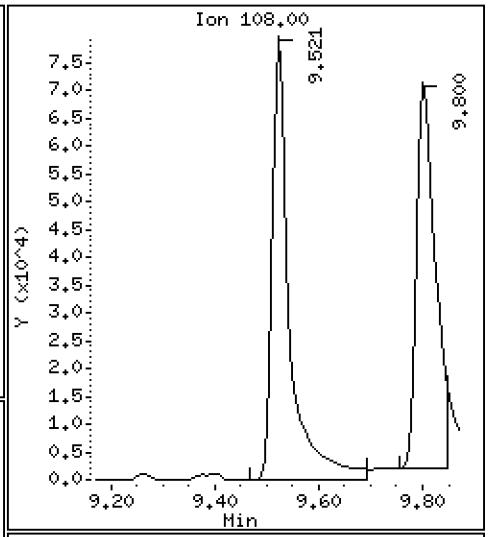
Concentration: 3.512 ug/mL

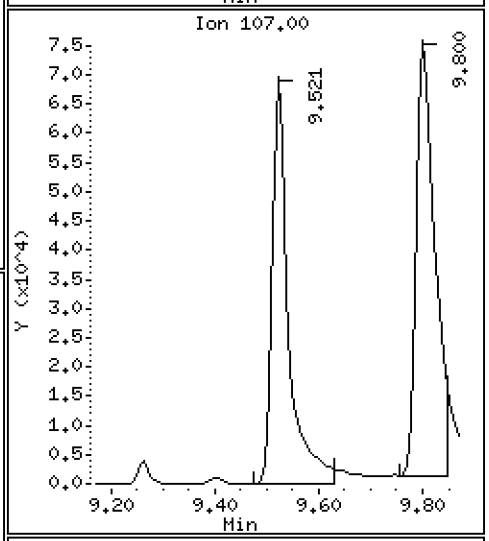


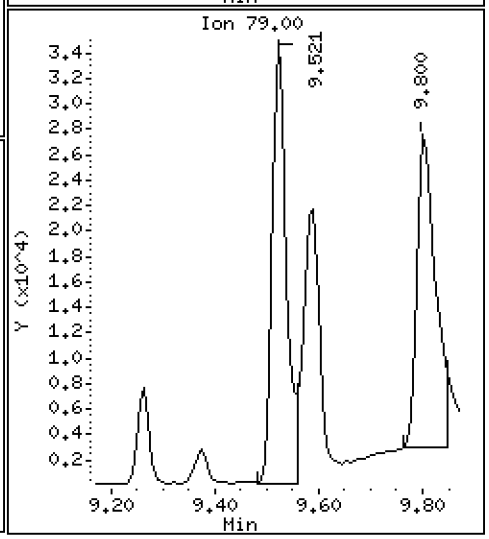












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

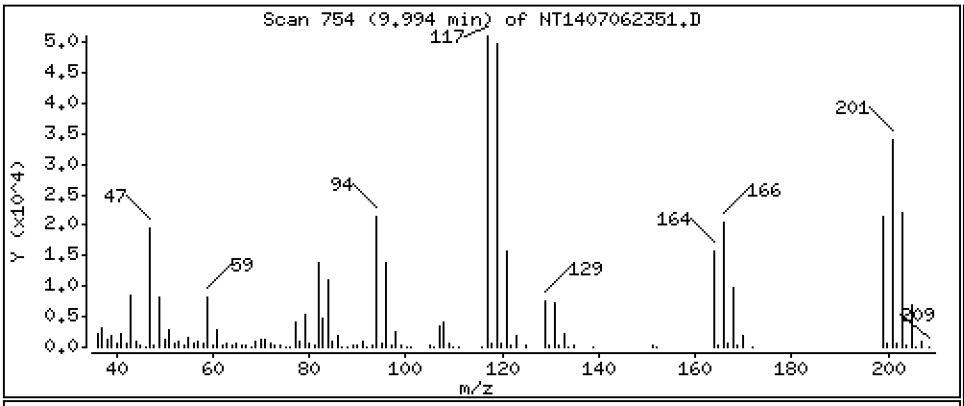
Operator: JGR

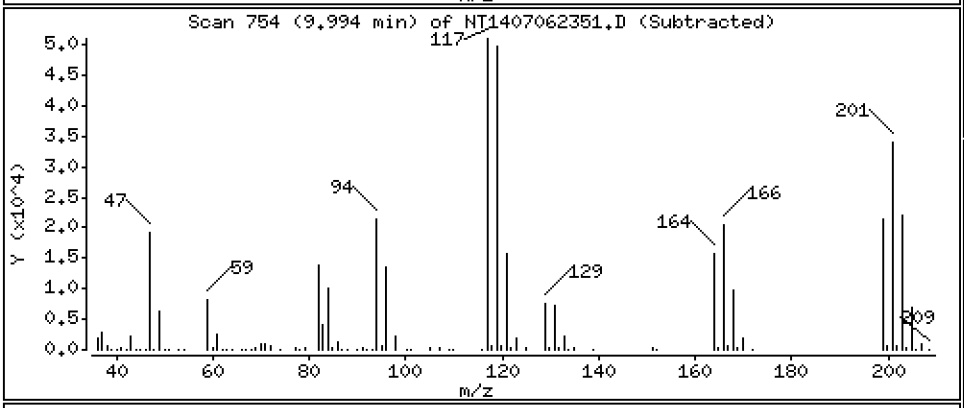
Column phase: ZB-5msi

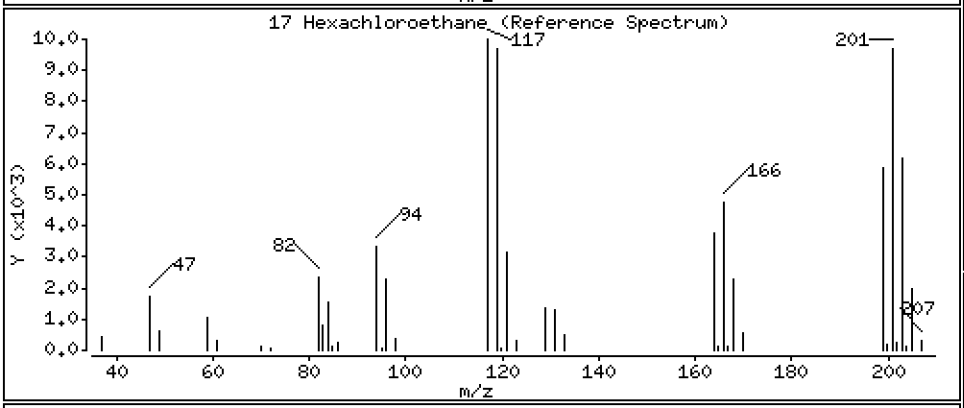
Column diameter: 0.25

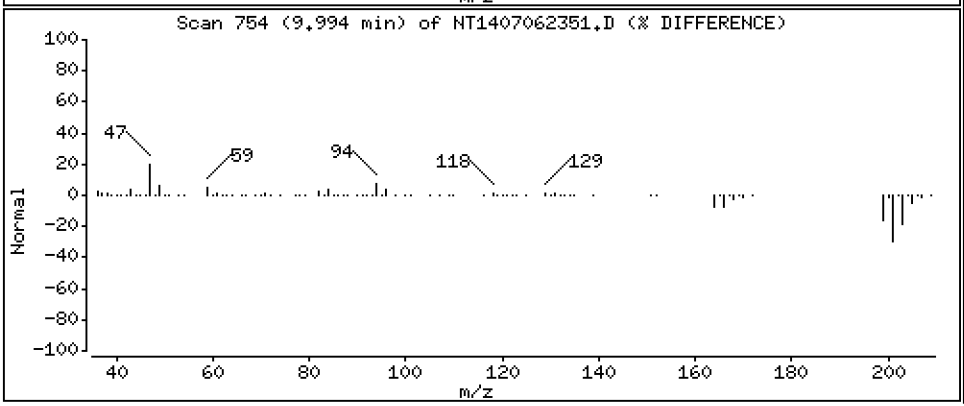
17 Hexachloroethane

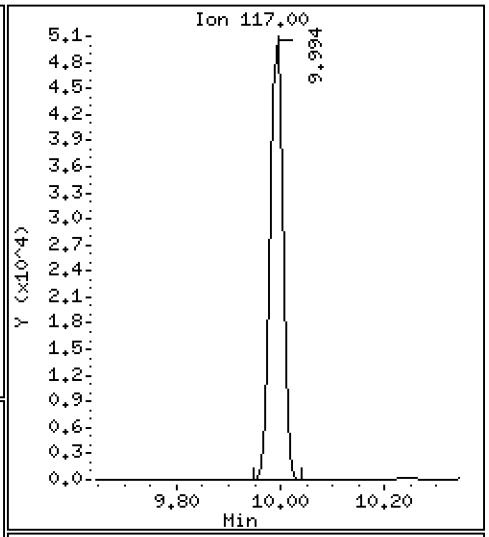
Concentration: 3.492 ug/mL

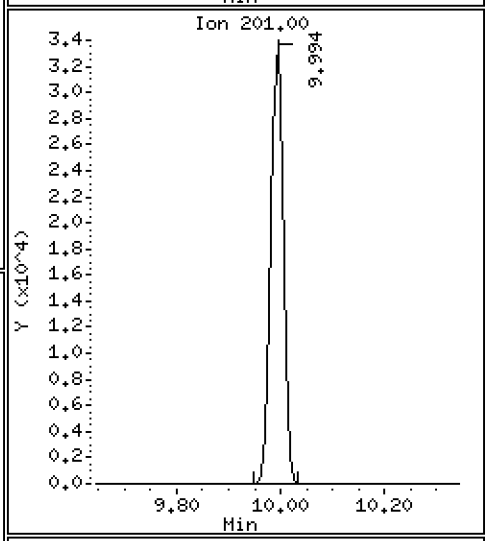


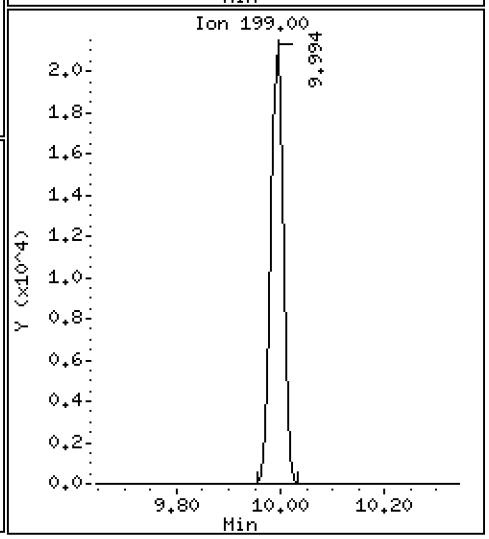












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

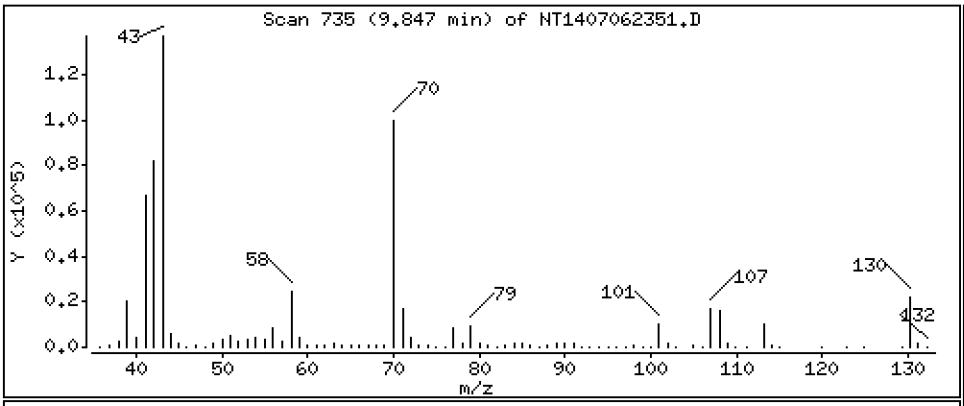
Operator: JGR

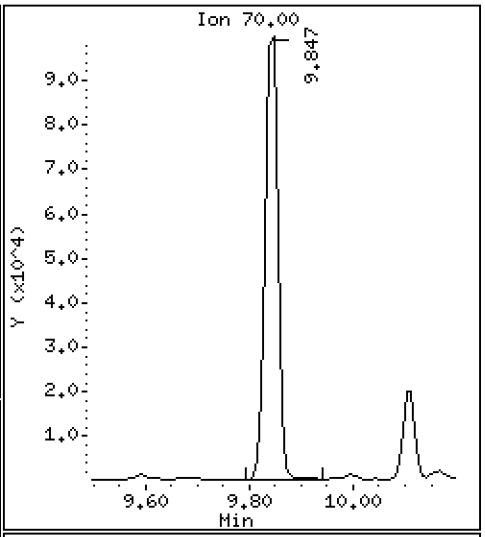
Column phase: ZB-5msi

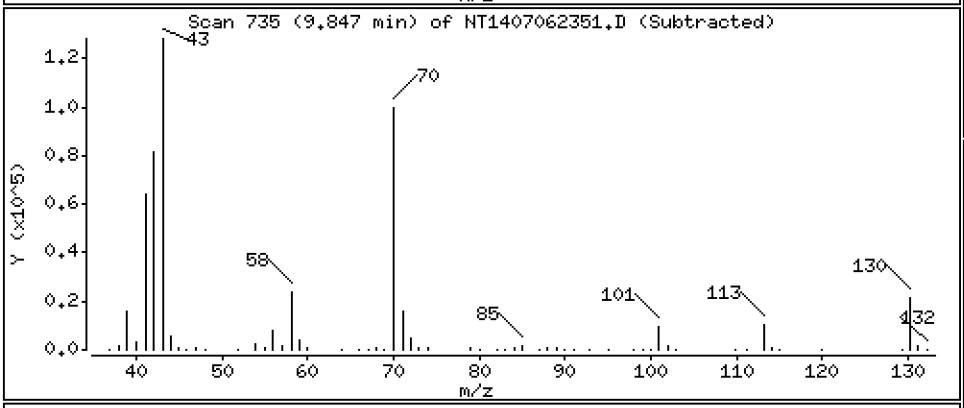
Column diameter: 0.25

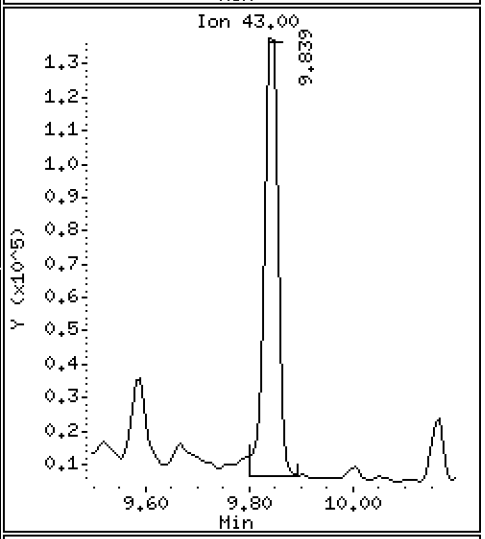
16 N-Nitroso-di-n-propylamine

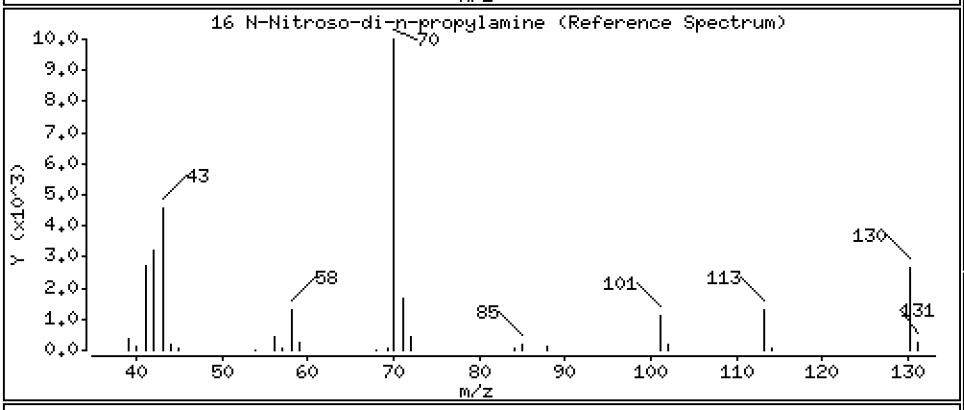
Concentration: 3.551 ug/mL

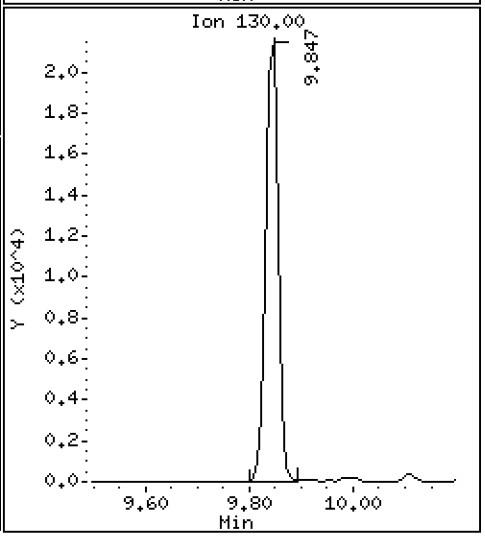


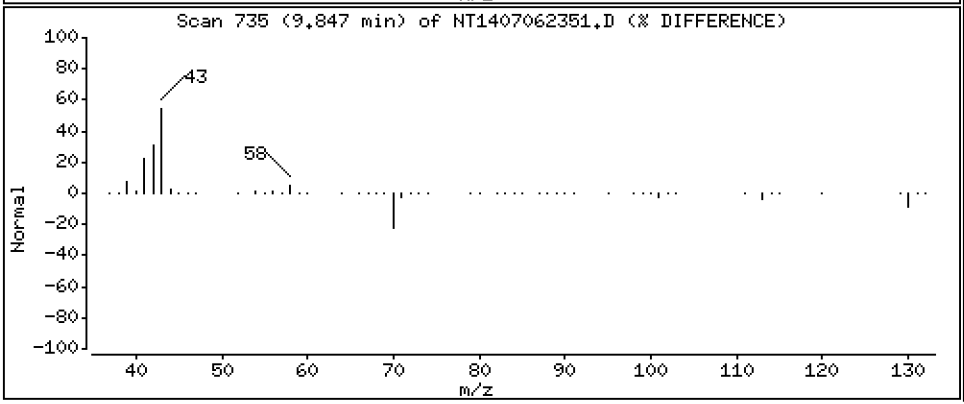












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062351.D

Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

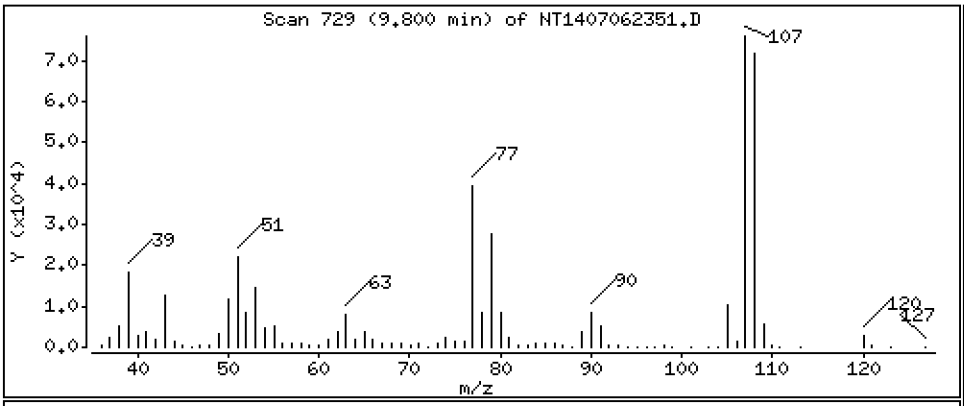
Operator: JGR

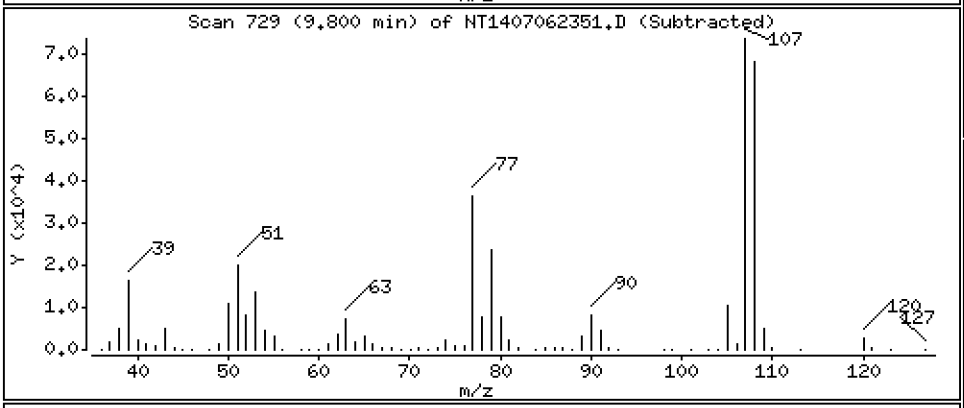
Column phase: ZB-5msi

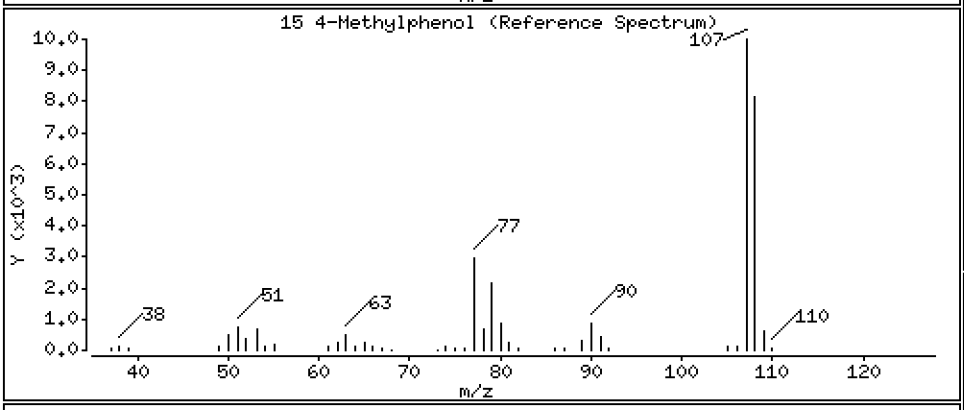
Column diameter: 0.25

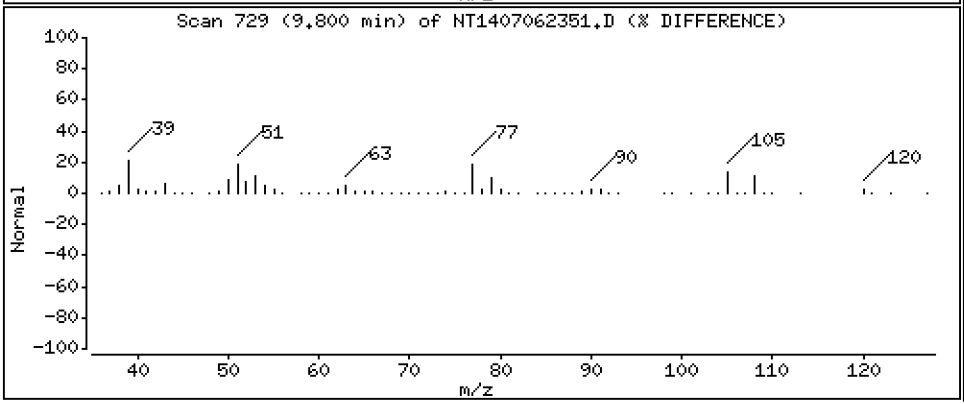
15 4-Methylphenol

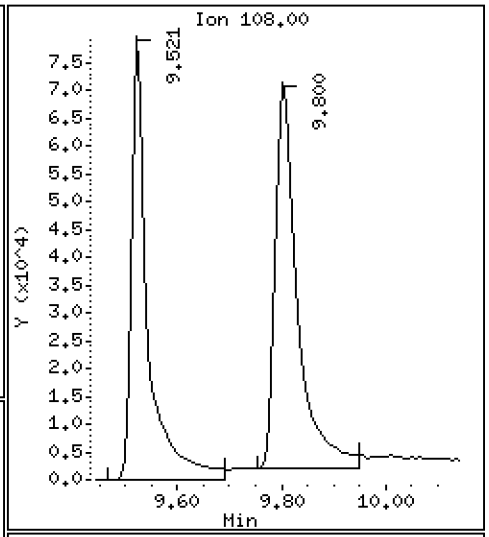
Concentration: 3.667 ug/mL

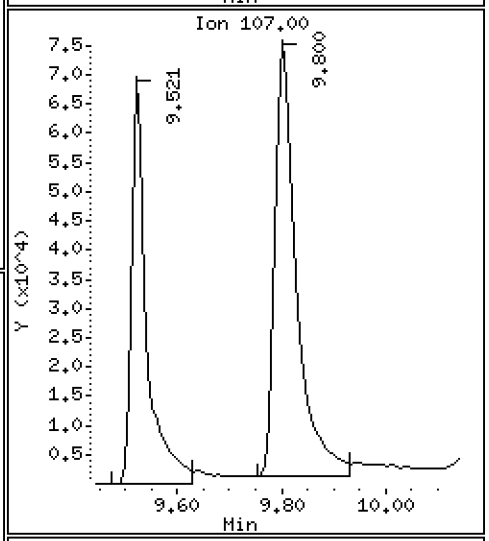


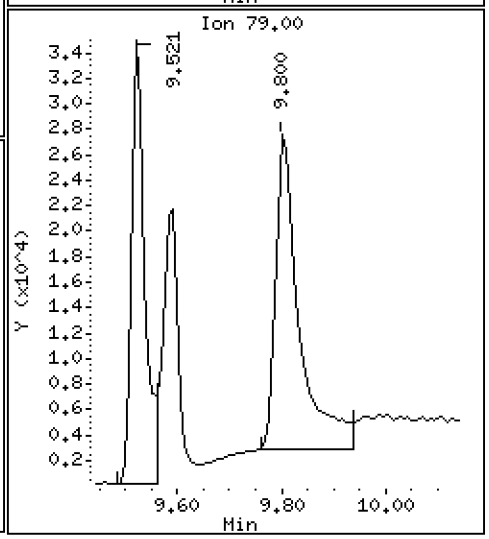












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

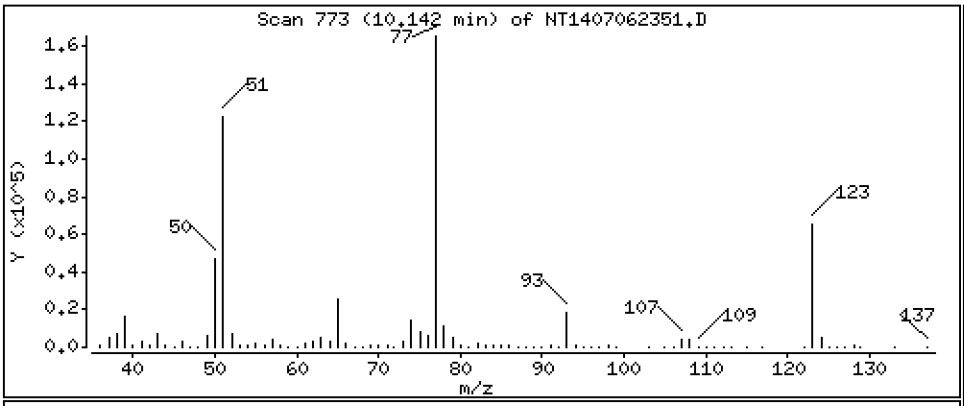
Operator: JGR

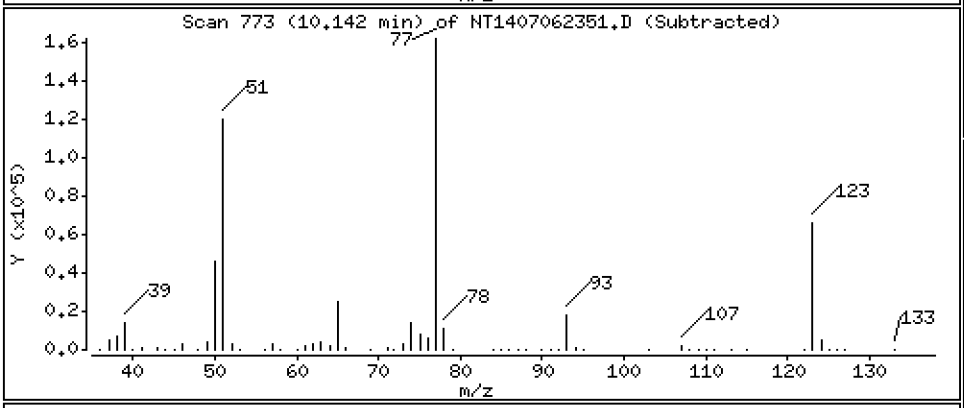
Column phase: ZB-5msi

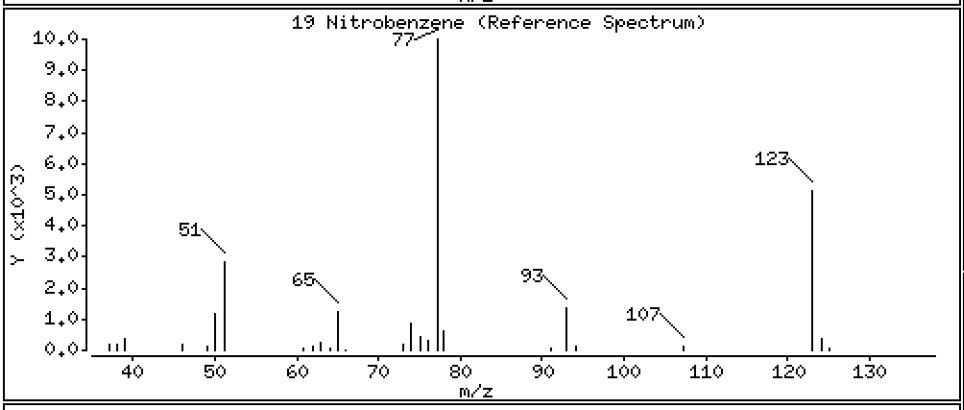
Column diameter: 0.25

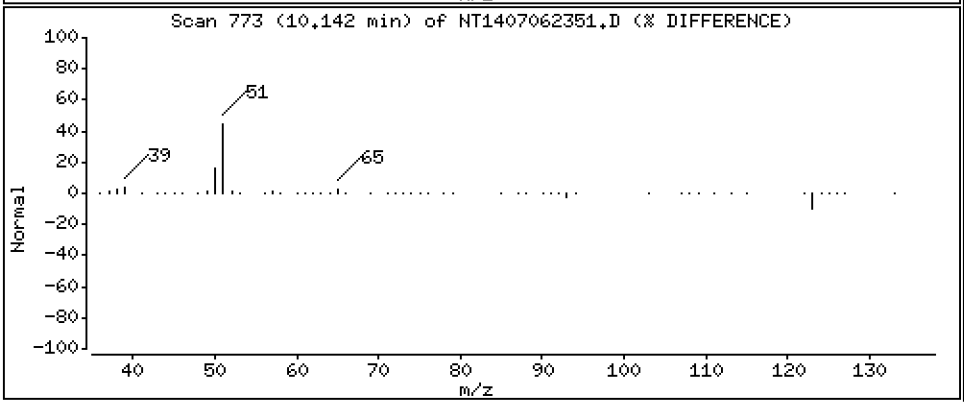
19 Nitrobenzene

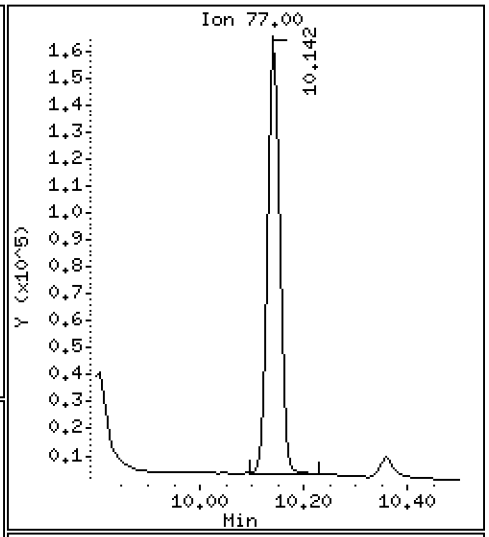
Concentration: 3.929 ug/mL

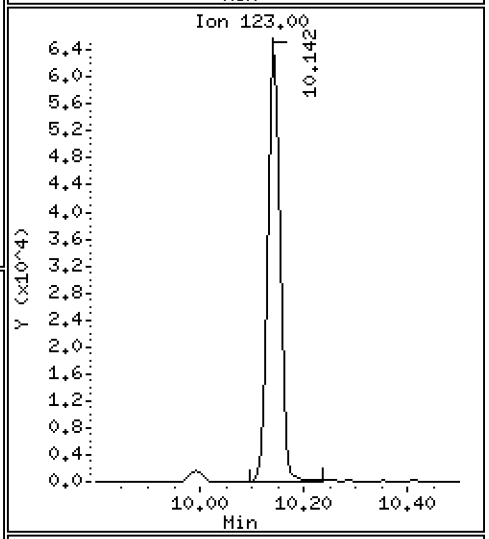


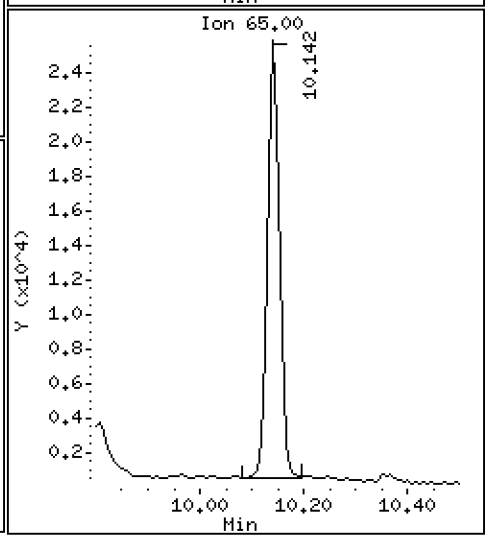












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

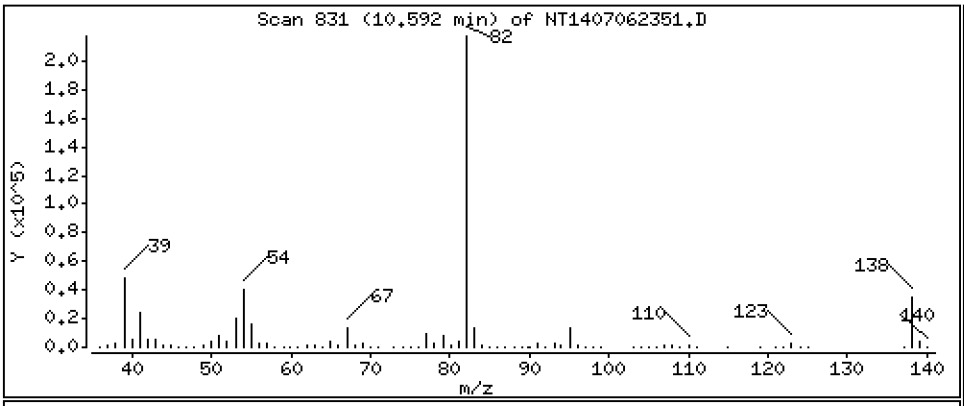
Operator: JGR

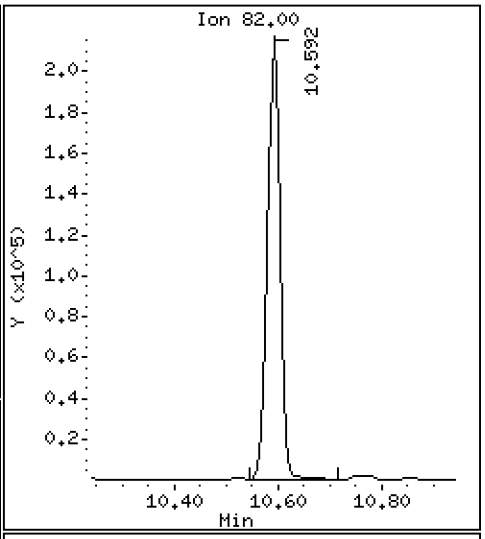
Column phase: ZB-5msi

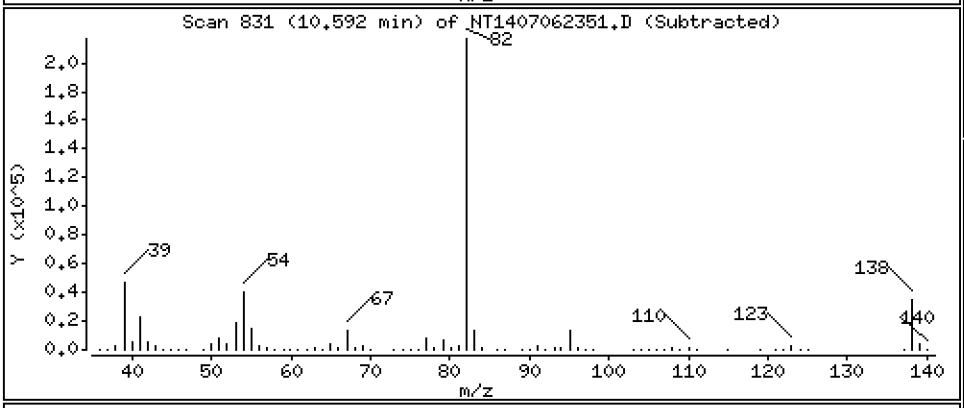
Column diameter: 0.25

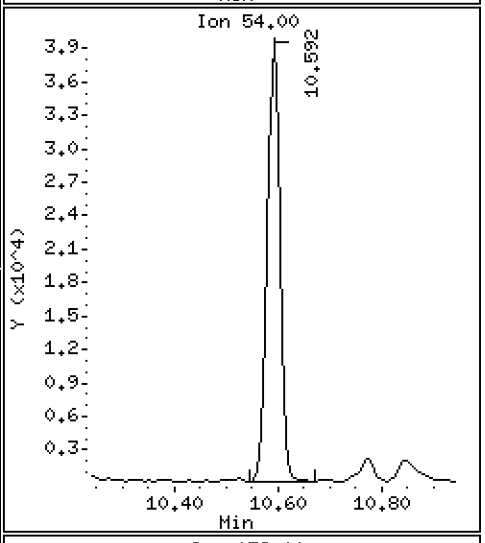
20 Isophorone

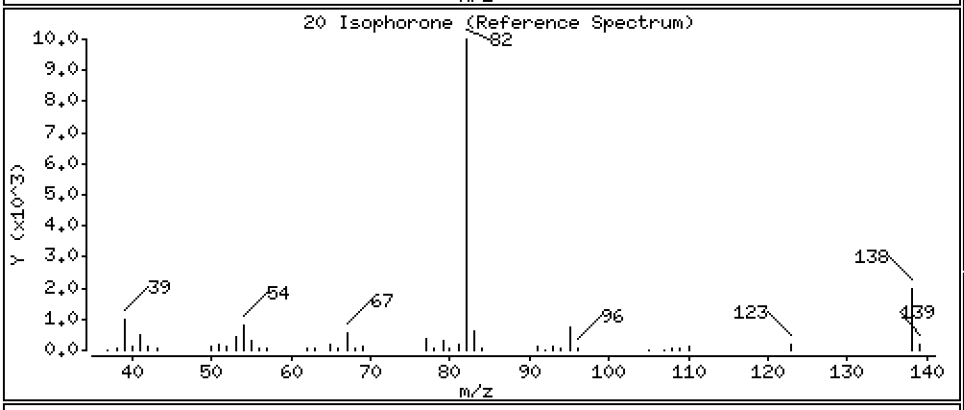
Concentration: 4.171 ug/mL

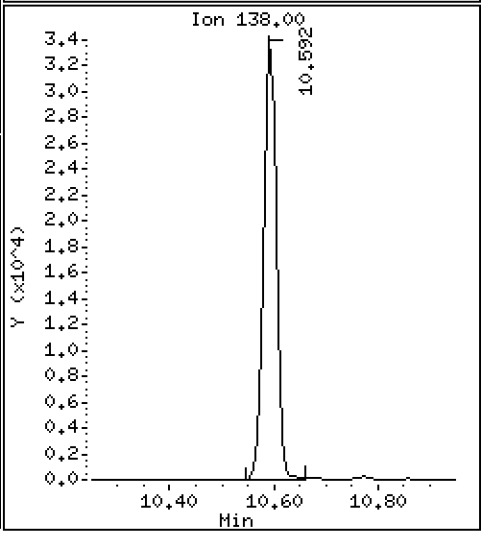


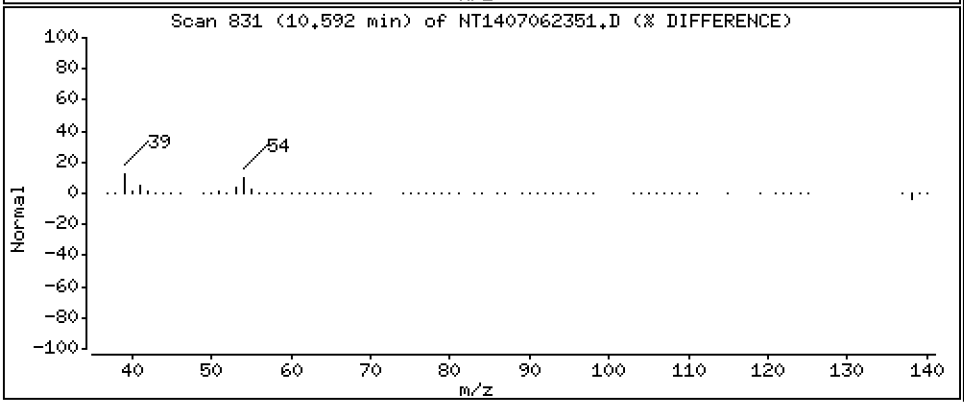












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

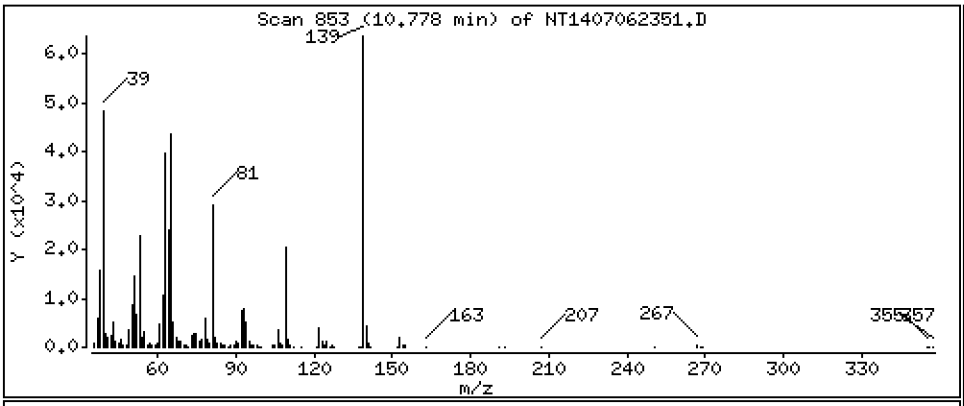
Operator: JGR

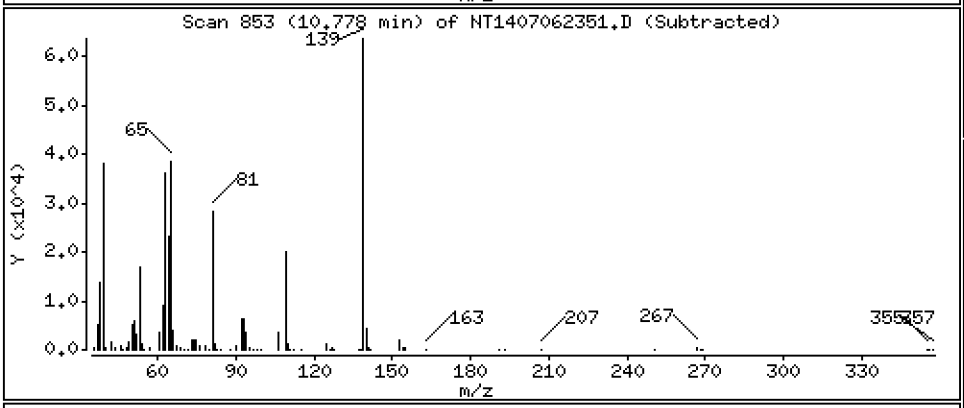
Column phase: ZB-5msi

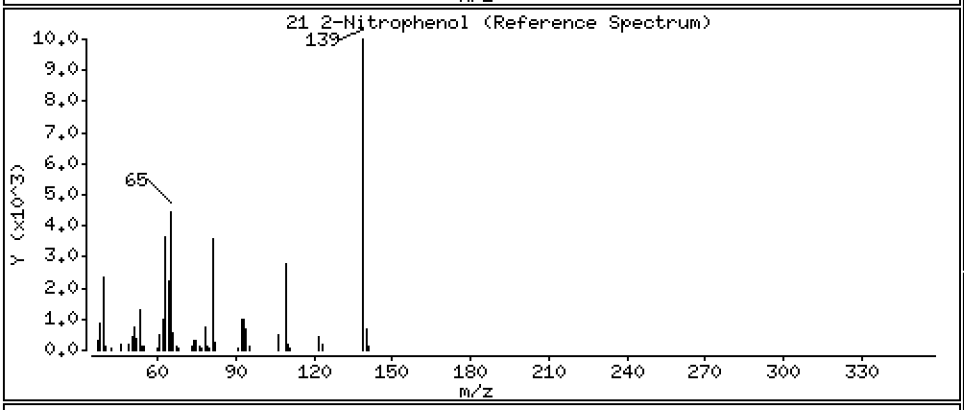
Column diameter: 0.25

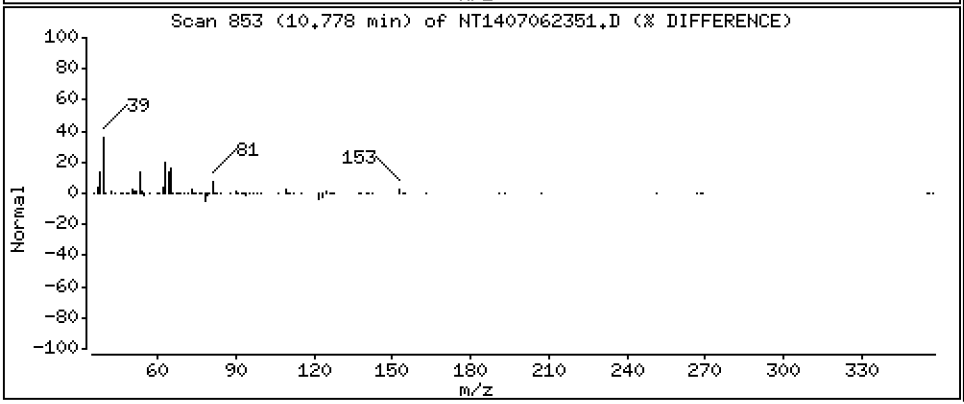
21 2-Nitrophenol

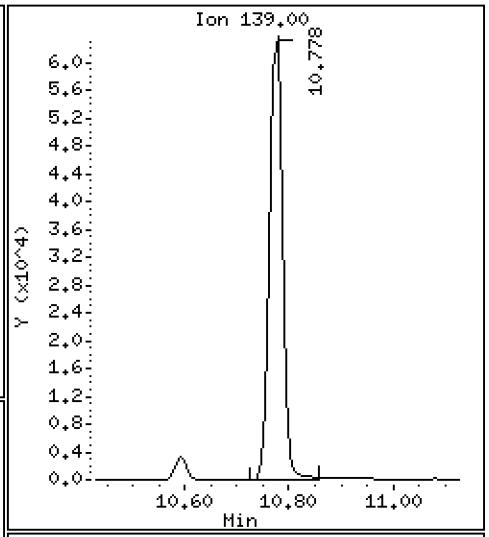
Concentration: 3.403 ug/mL

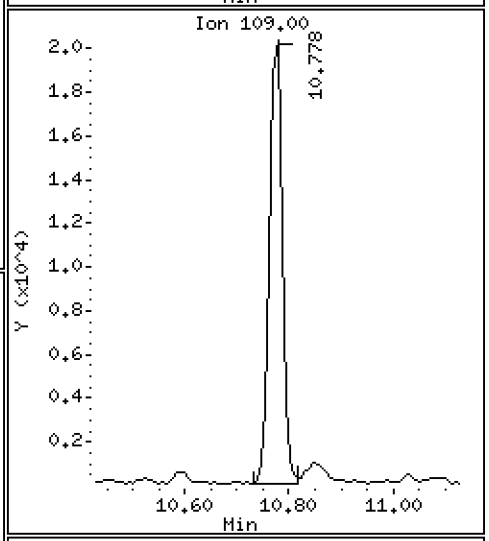


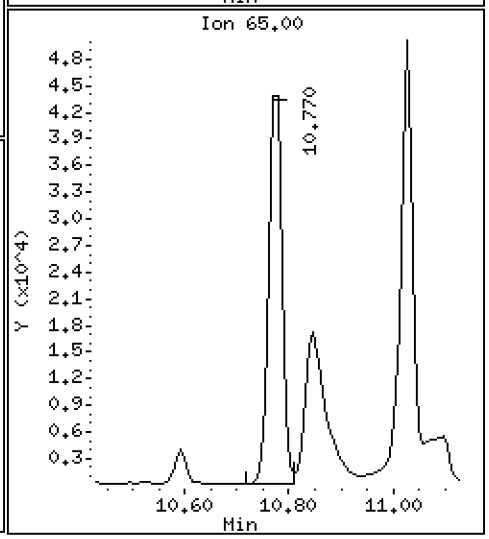












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

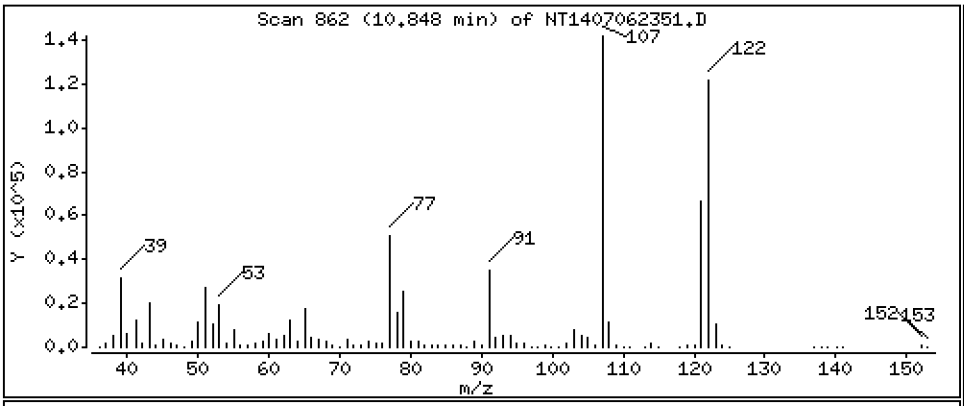
Operator: JGR

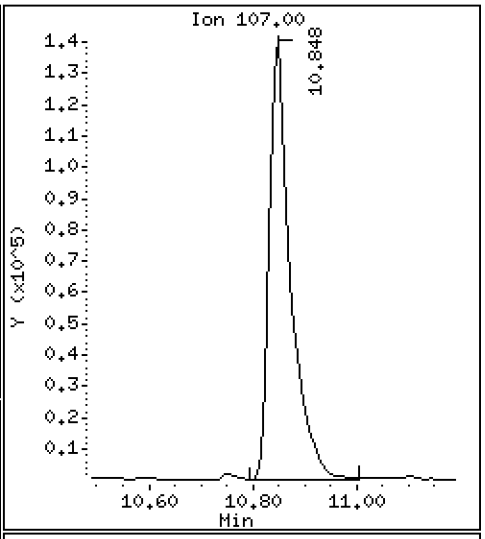
Column phase: ZB-5msi

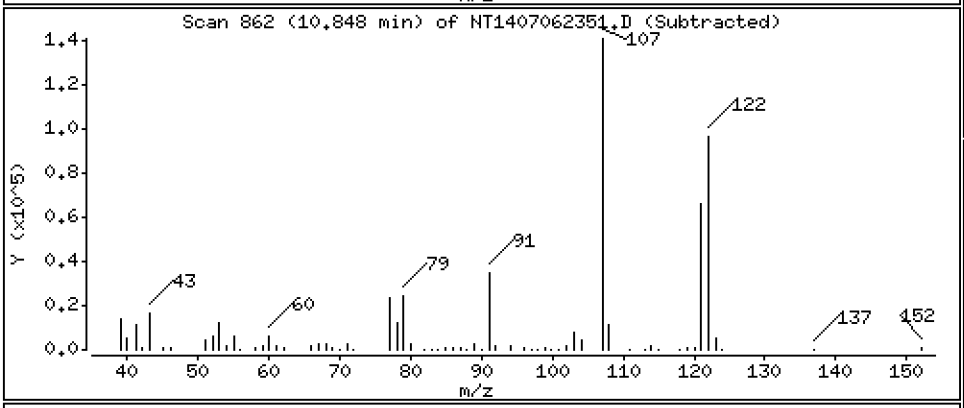
Column diameter: 0.25

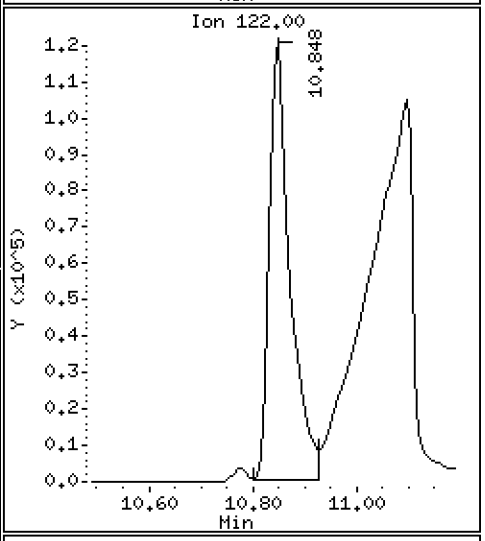
22 2,4-Dimethylphenol

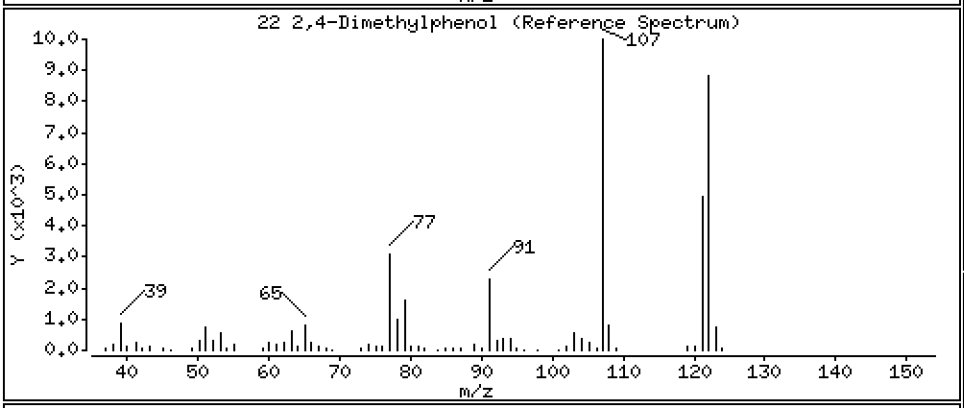
Concentration: 7.454 ug/mL

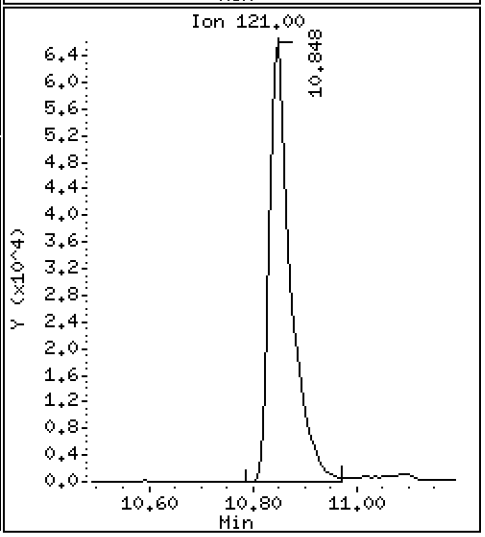


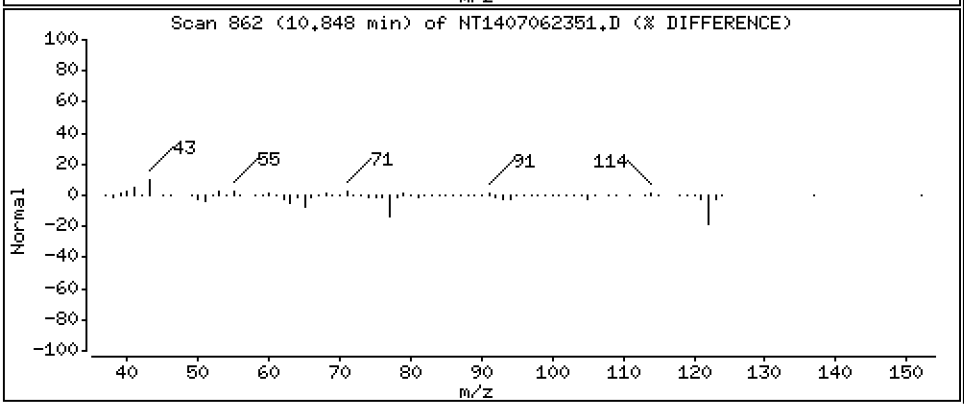












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

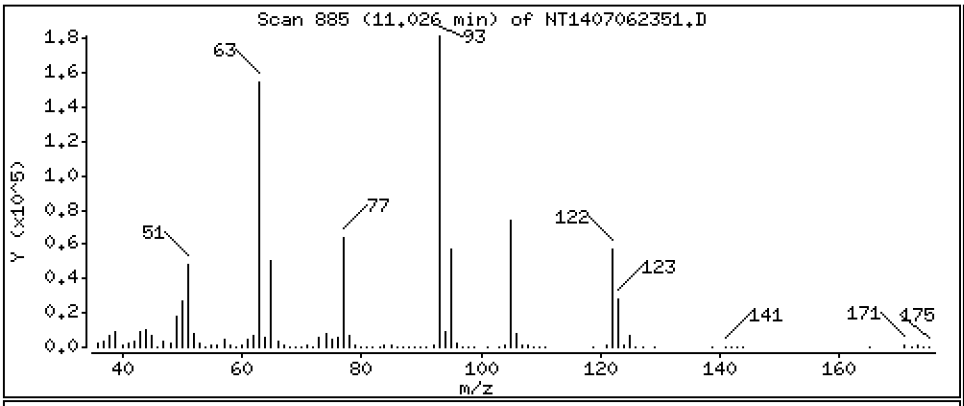
Operator: JGR

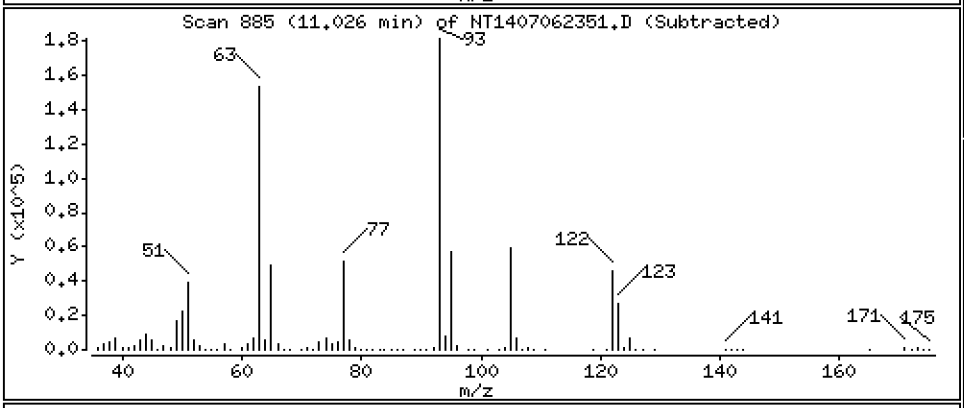
Column phase: ZB-5msi

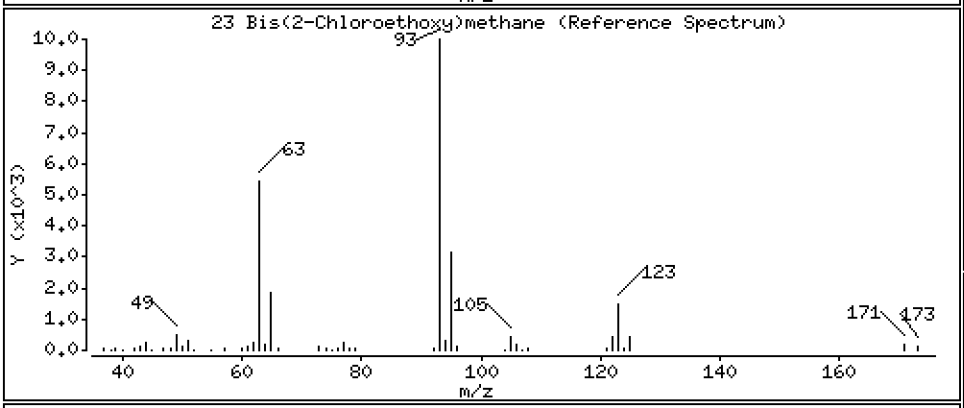
Column diameter: 0.25

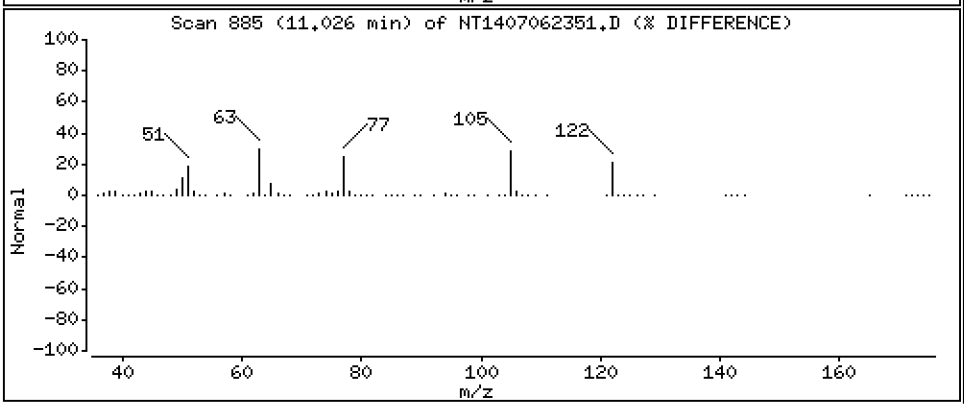
23 Bis(2-Chloroethoxy)methane

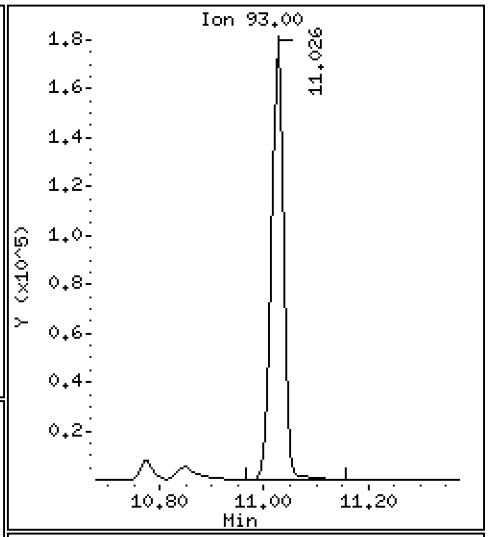
Concentration: 4.706 ug/mL

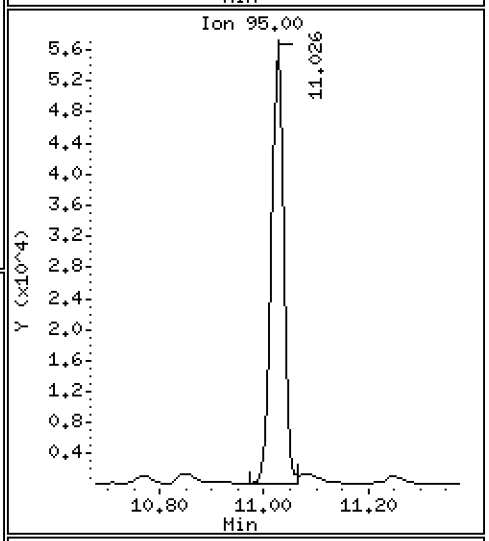


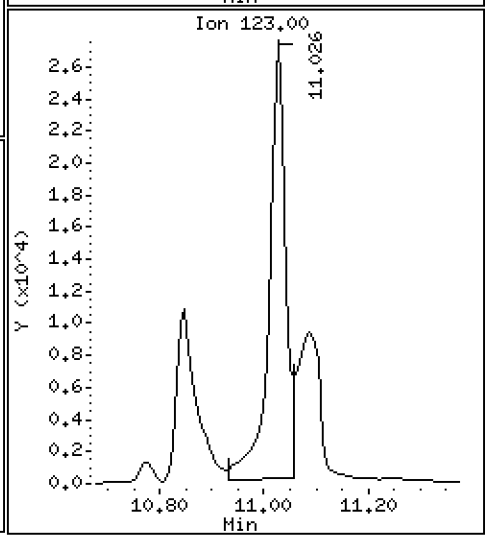












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

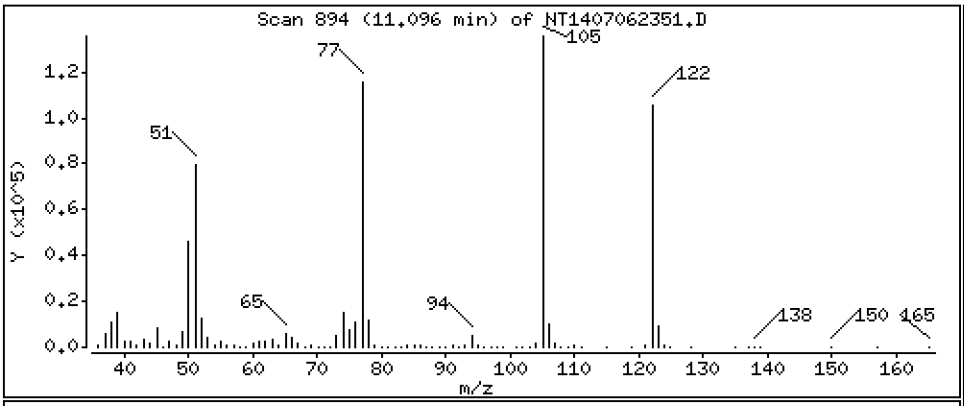
Operator: JGR

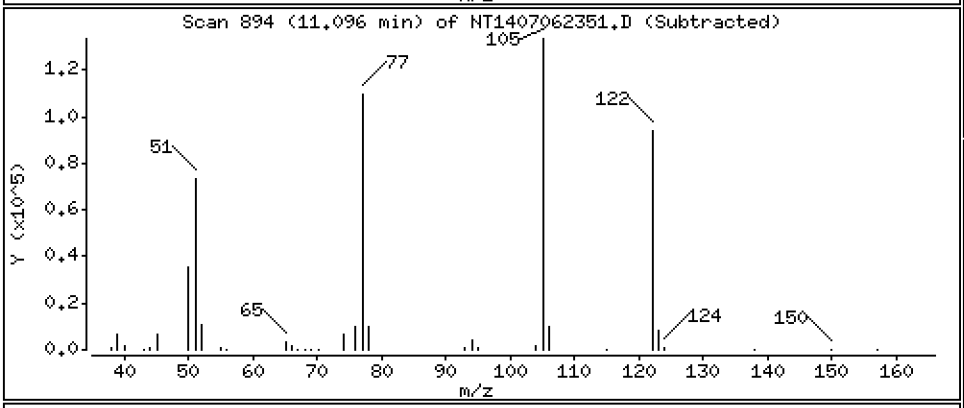
Column phase: ZB-5msi

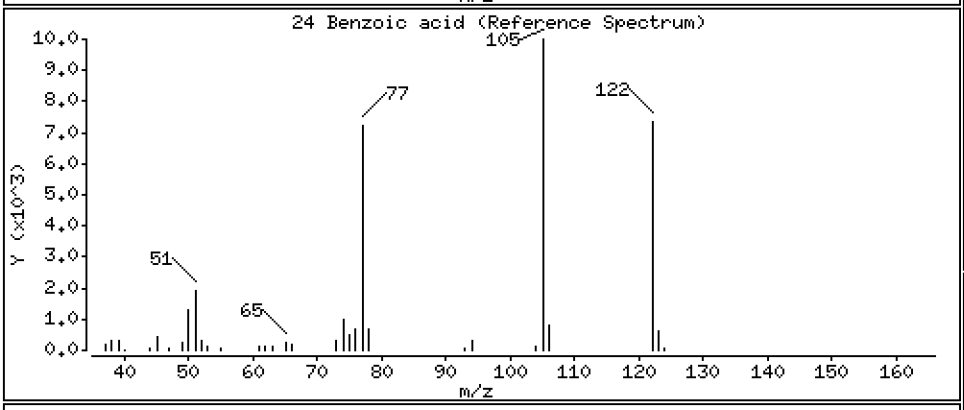
Column diameter: 0.25

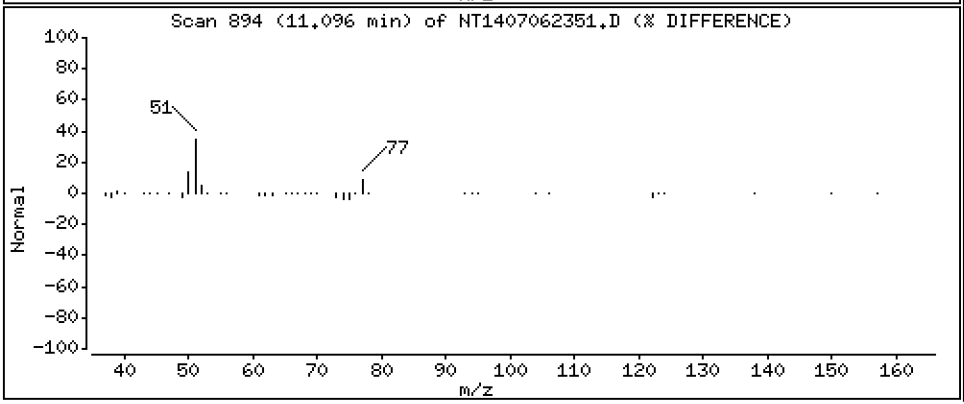
24 Benzoic acid

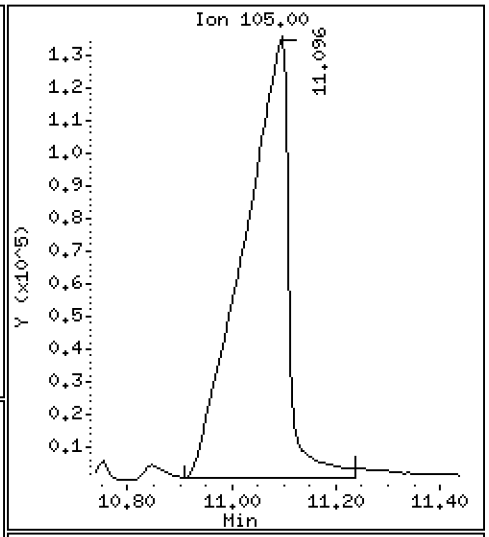
Concentration: 24.56 ug/mL

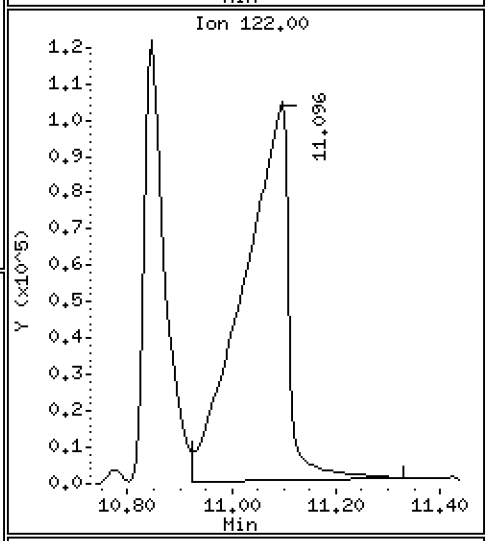


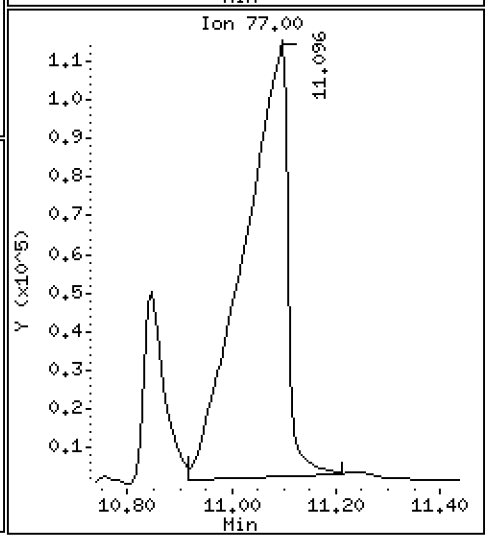












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

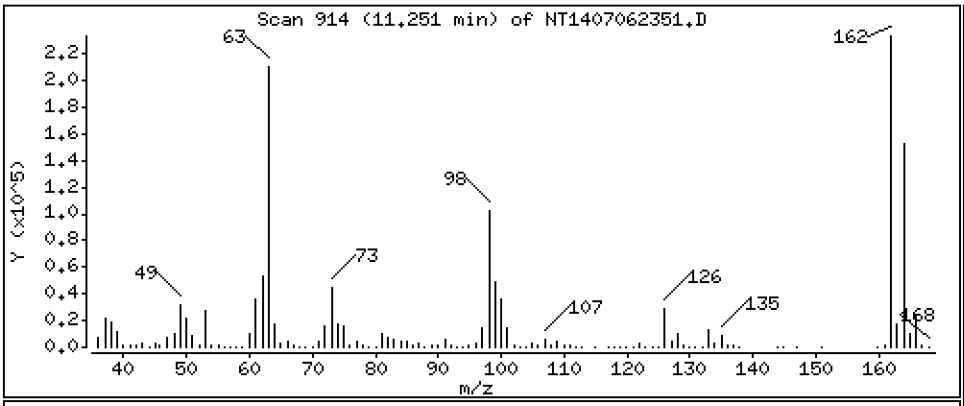
Operator: JGR

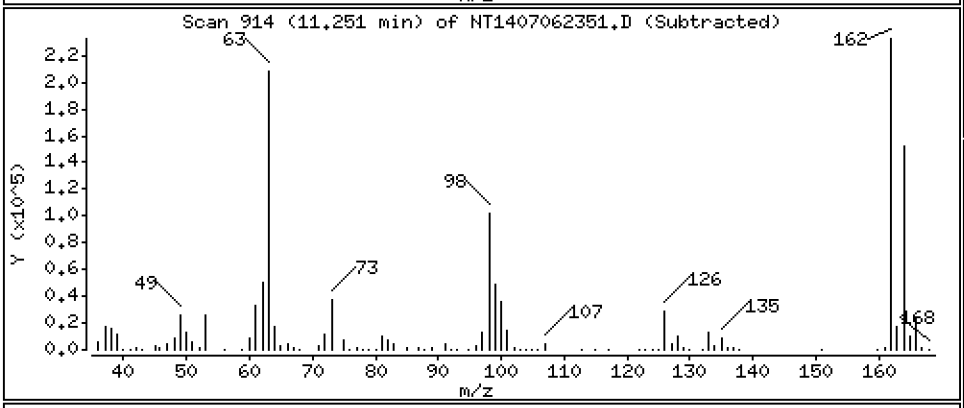
Column phase: ZB-5msi

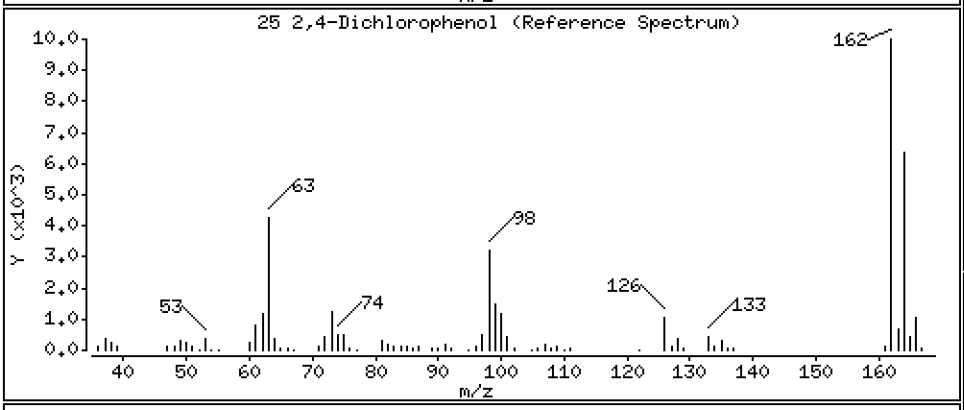
Column diameter: 0.25

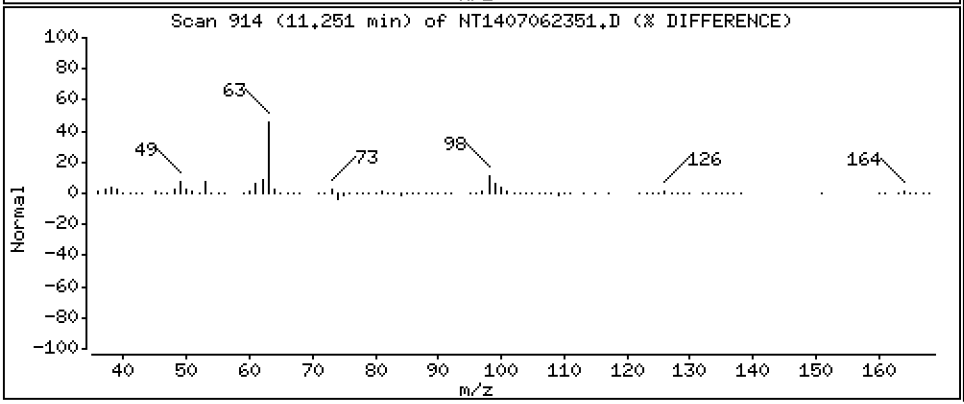
25 2,4-Dichlorophenol

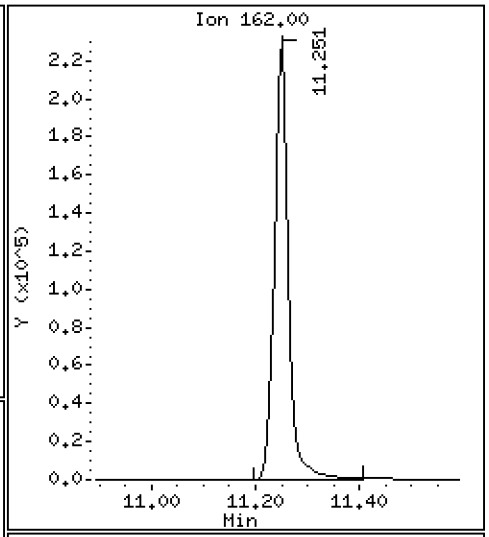
Concentration: 11.79 ug/mL

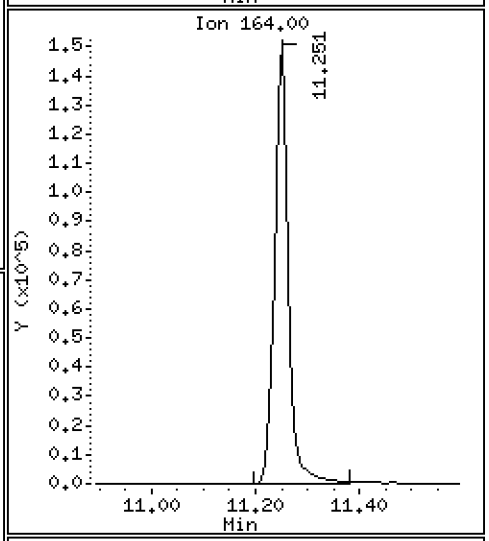


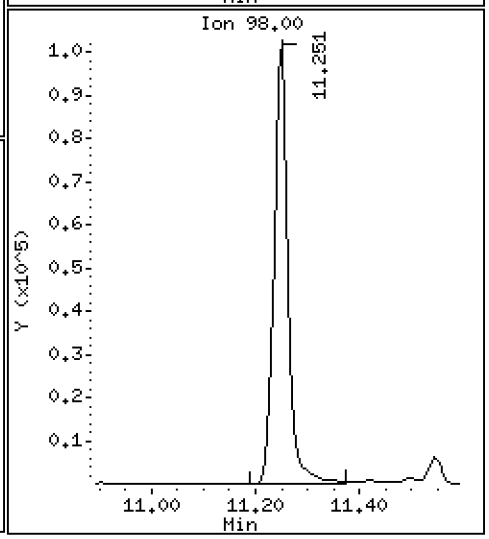












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

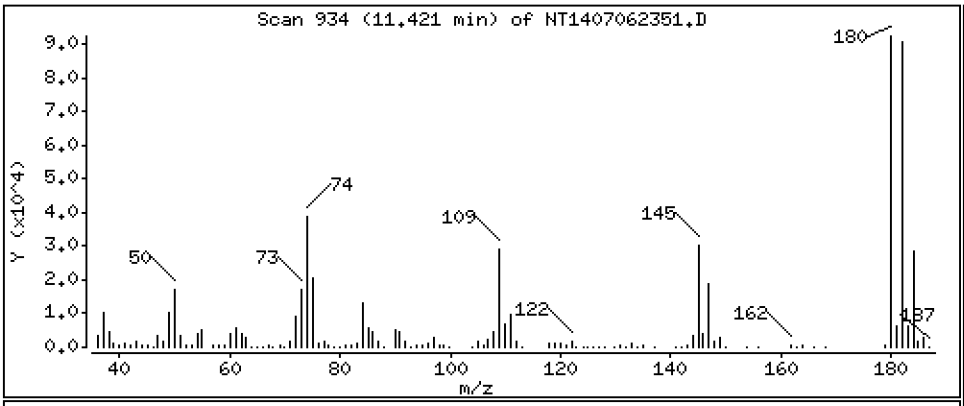
Operator: JGR

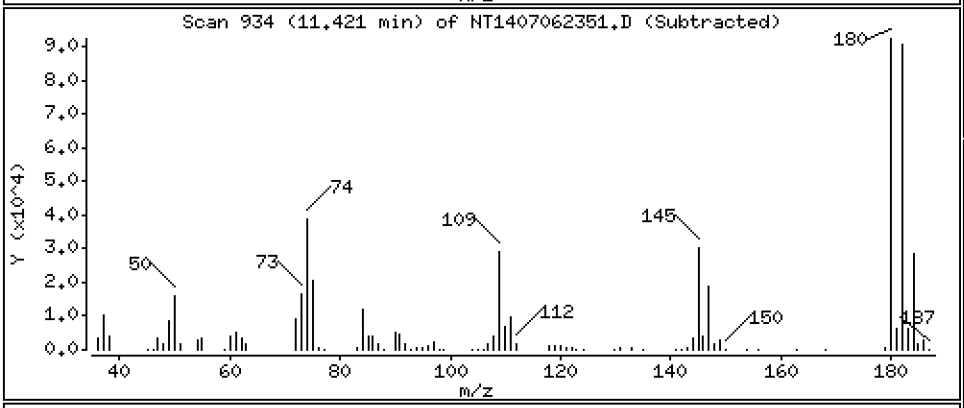
Column phase: ZB-5msi

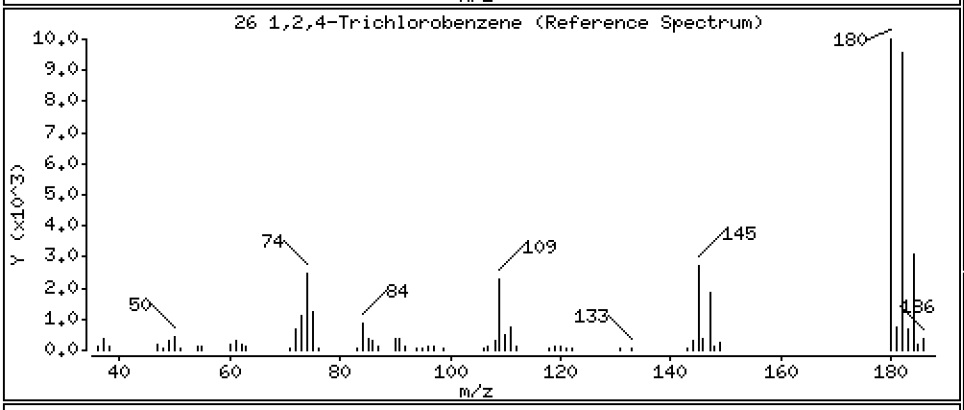
Column diameter: 0.25

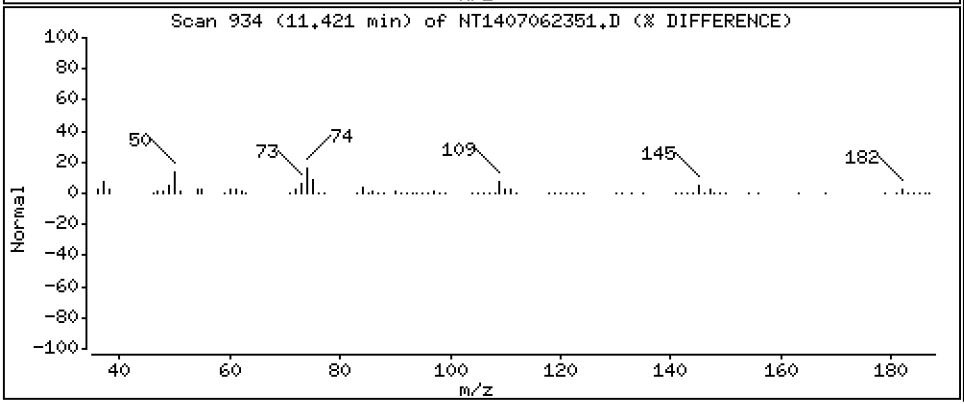
26 1,2,4-Trichlorobenzene

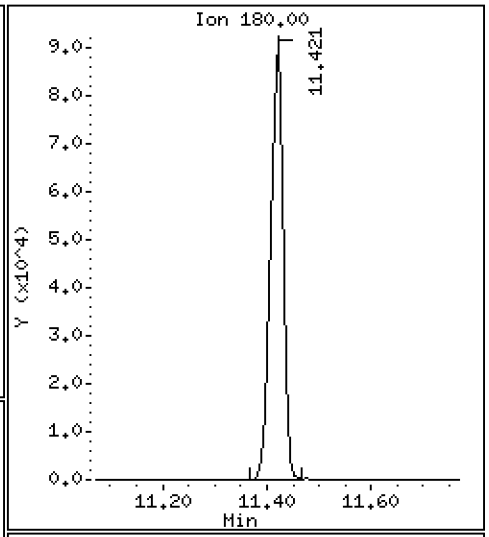
Concentration: 3.811 ug/mL

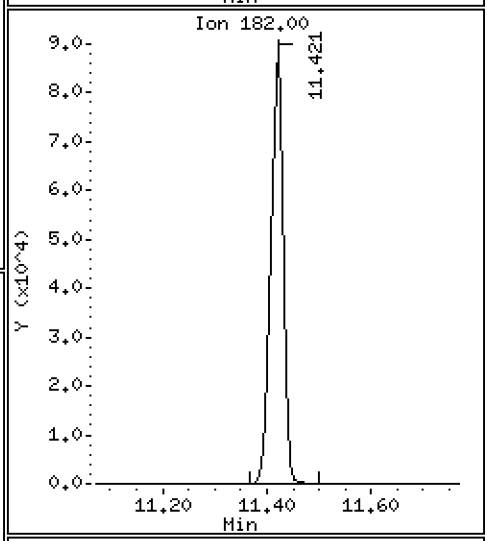


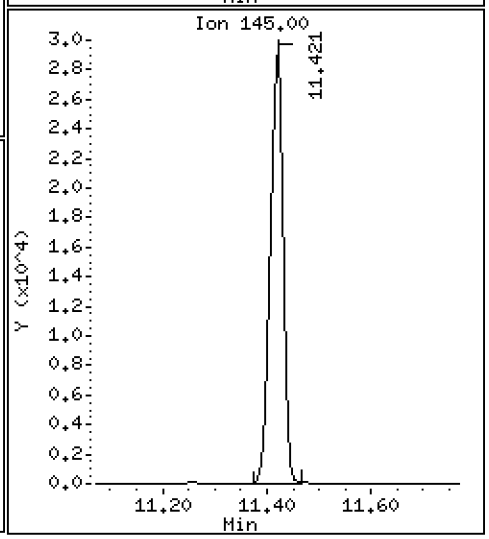












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

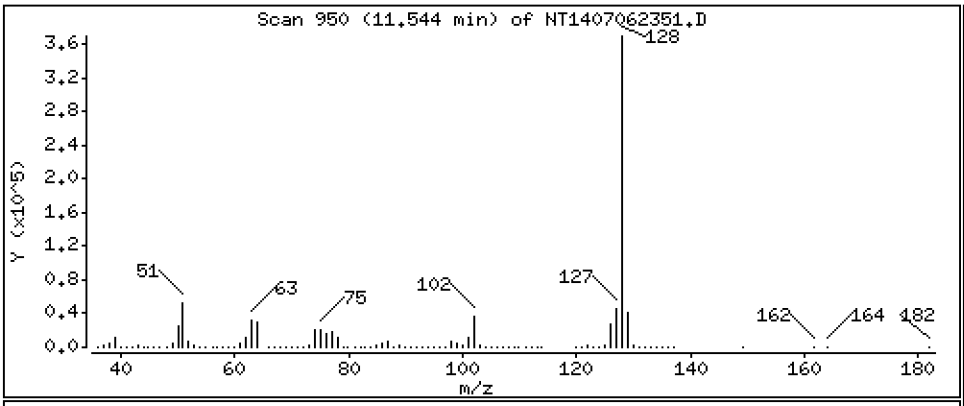
Operator: JGR

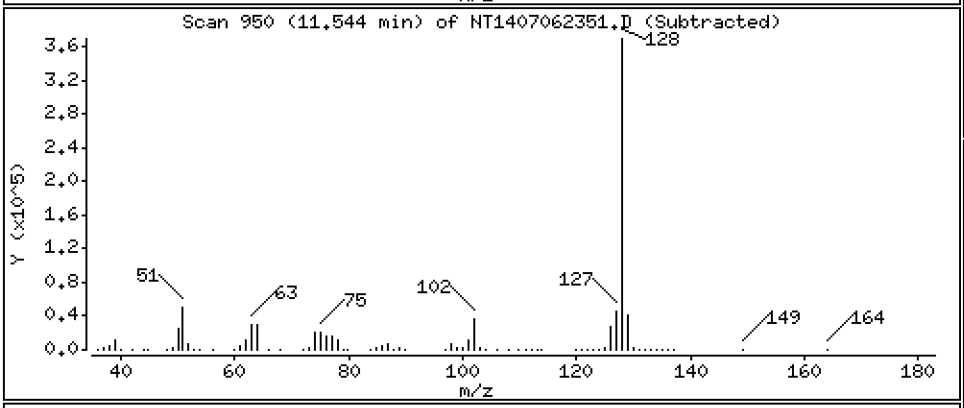
Column phase: ZB-5msi

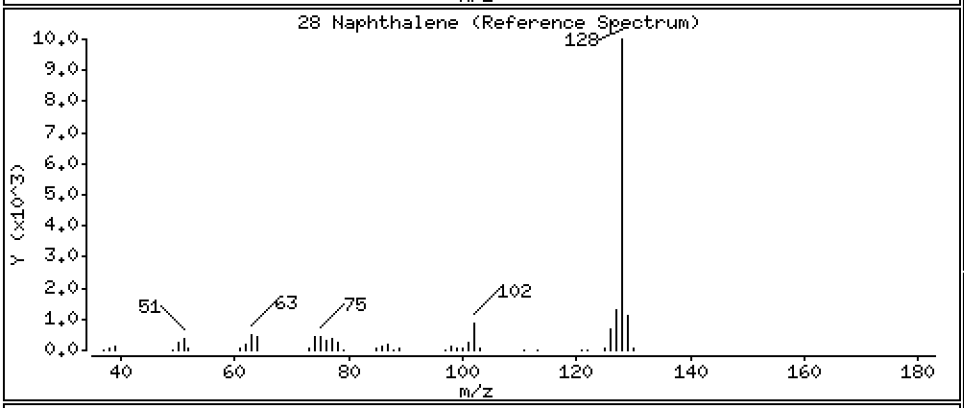
Column diameter: 0.25

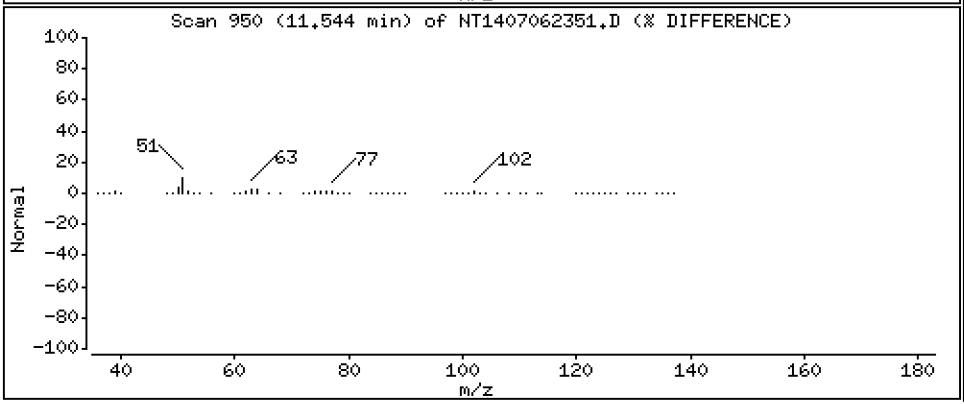
28 Naphthalene

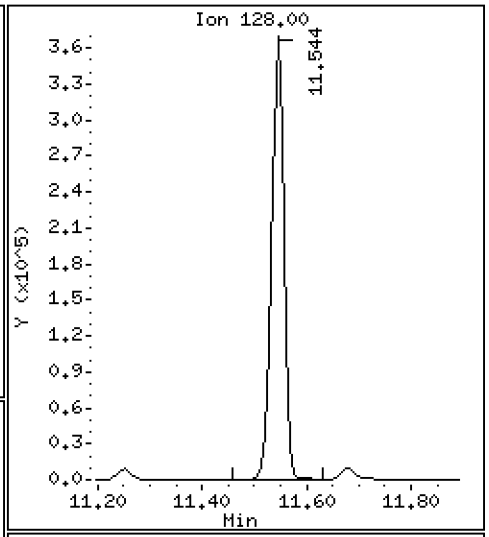
Concentration: 4.199 ug/mL

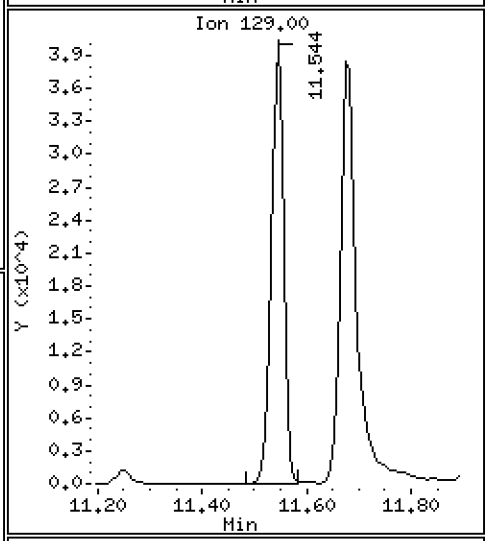


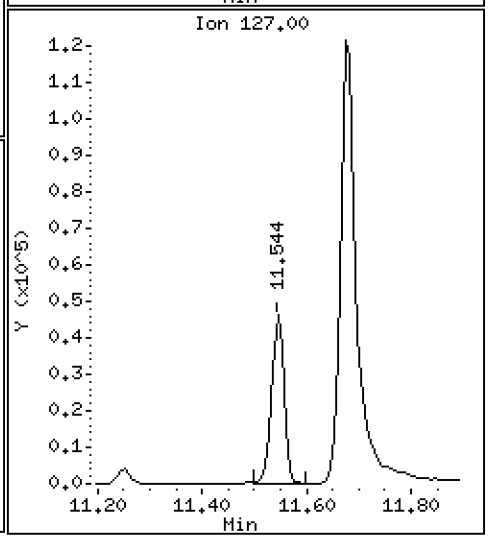












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

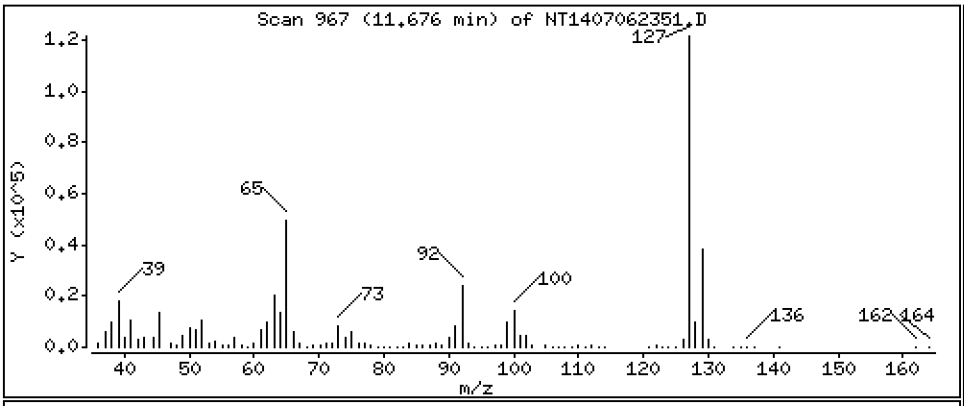
Operator: JGR

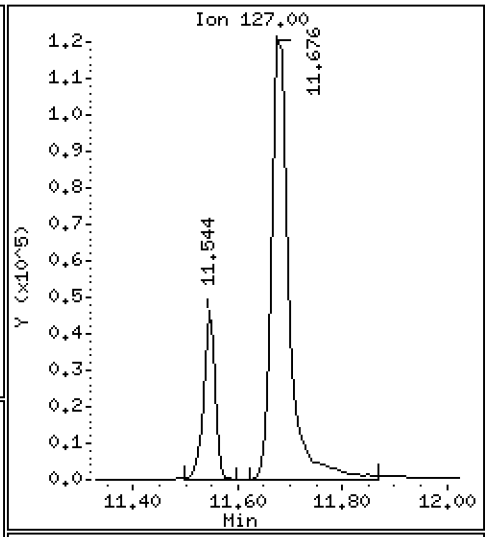
Column phase: ZB-5msi

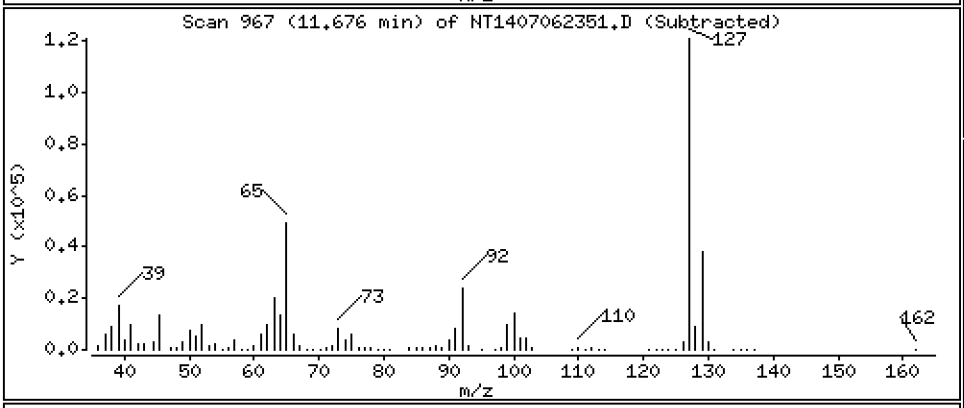
Column diameter: 0.25

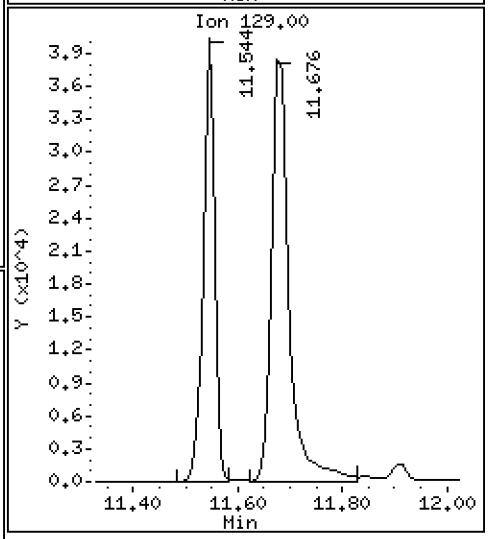
29 4-Chloroaniline

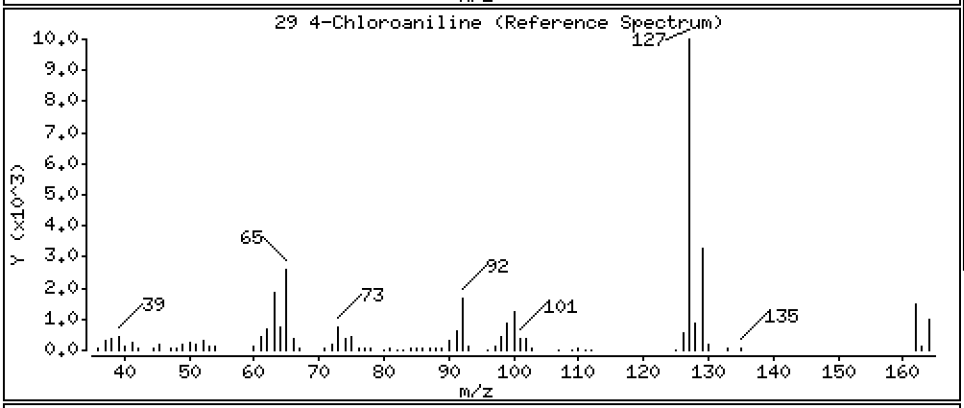
Concentration: 4.562 ug/mL

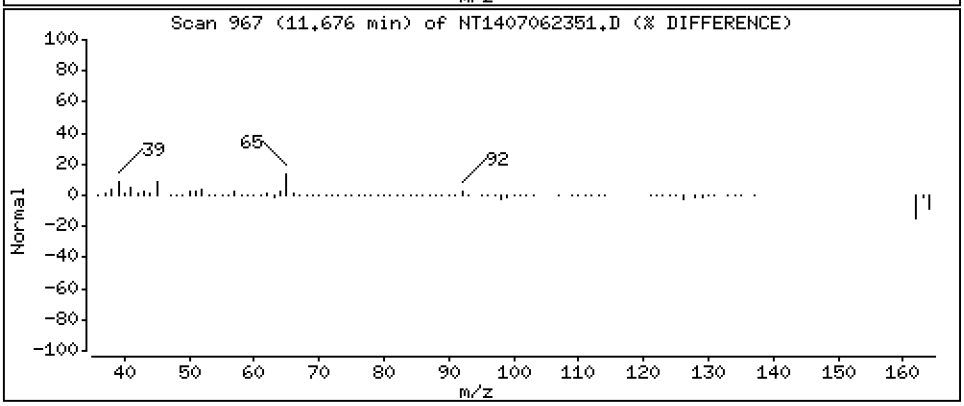












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

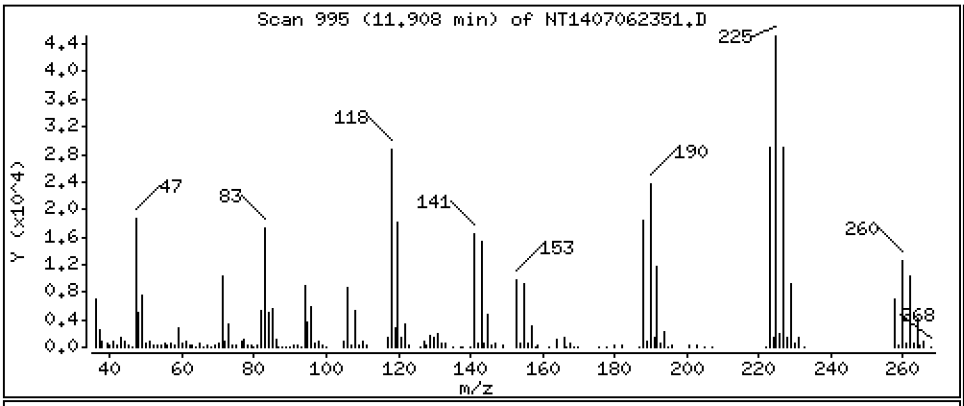
Operator: JGR

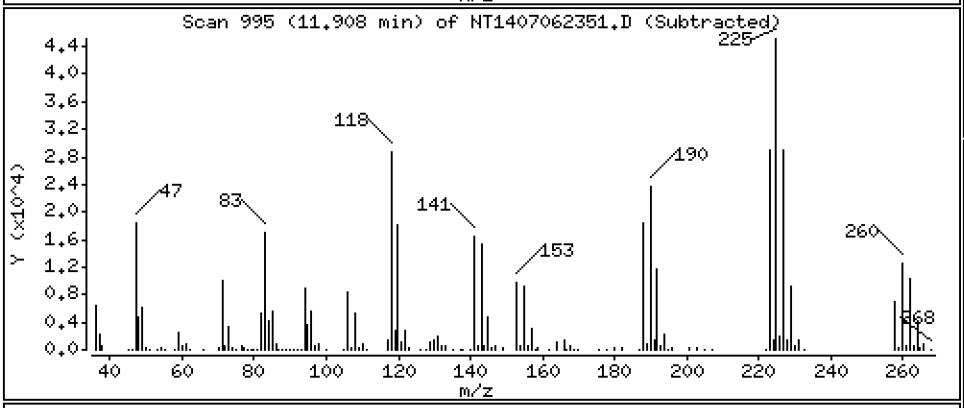
Column phase: ZB-5msi

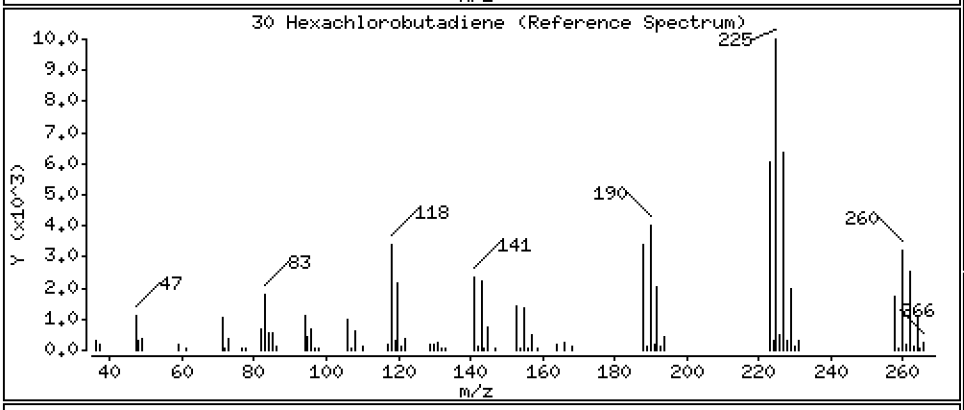
Column diameter: 0.25

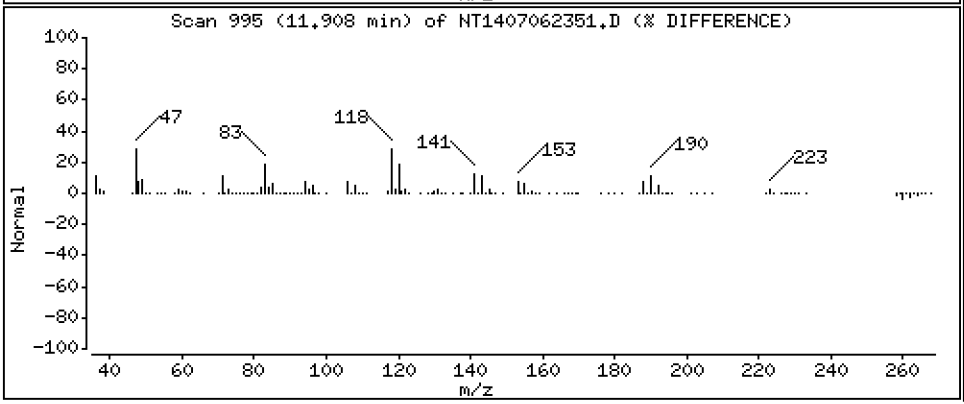
30 Hexachlorobutadiene

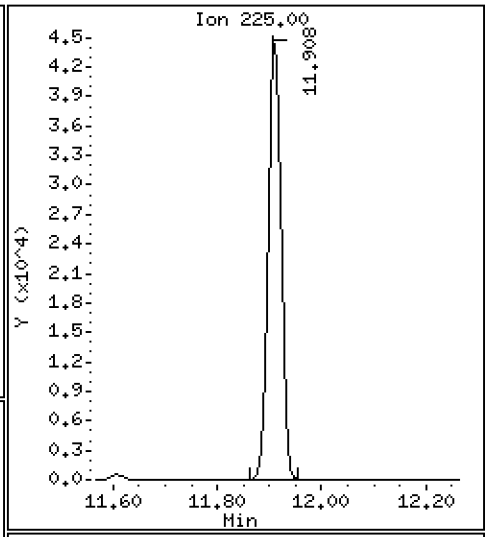
Concentration: 4.105 ug/mL

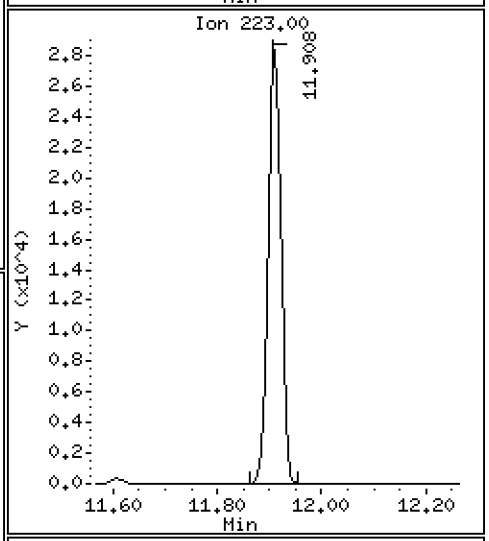


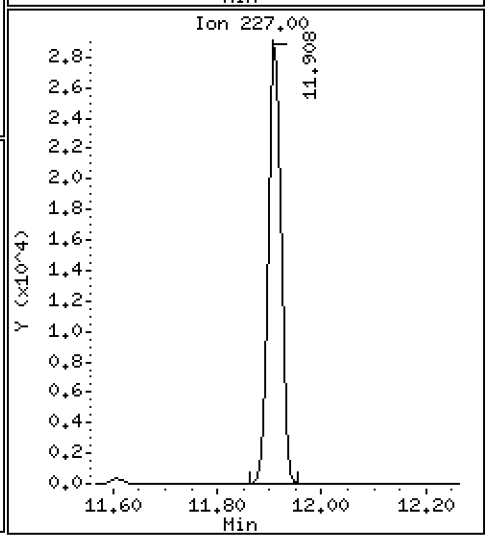












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

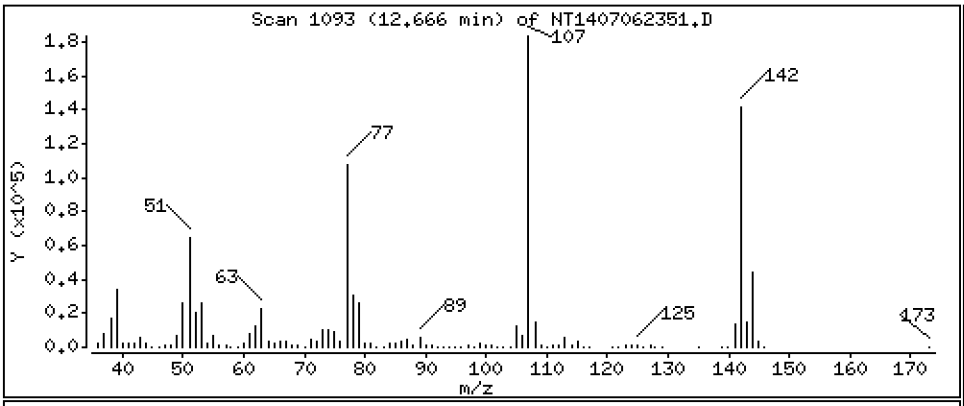
Operator: JGR

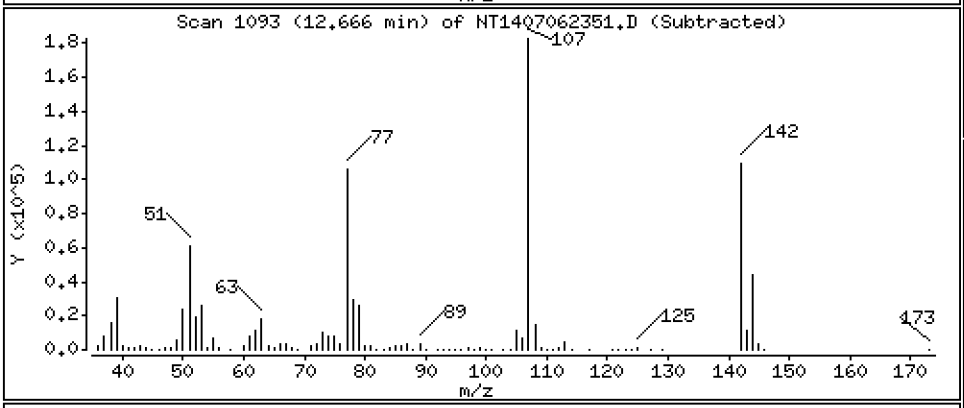
Column phase: ZB-5msi

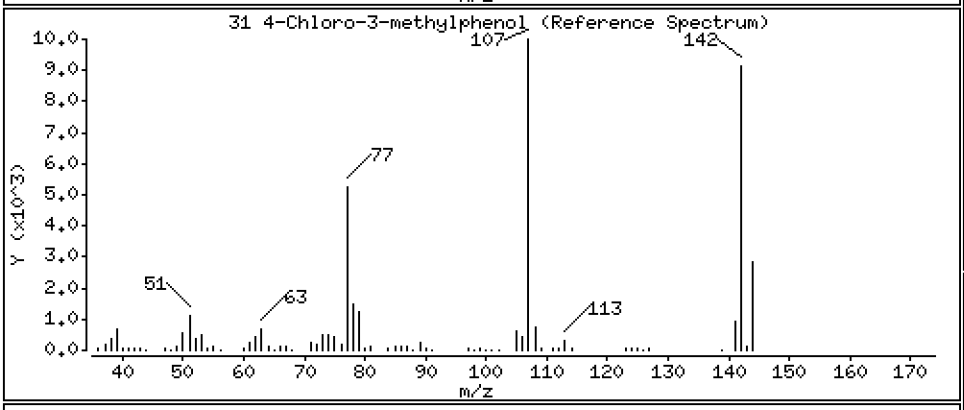
Column diameter: 0.25

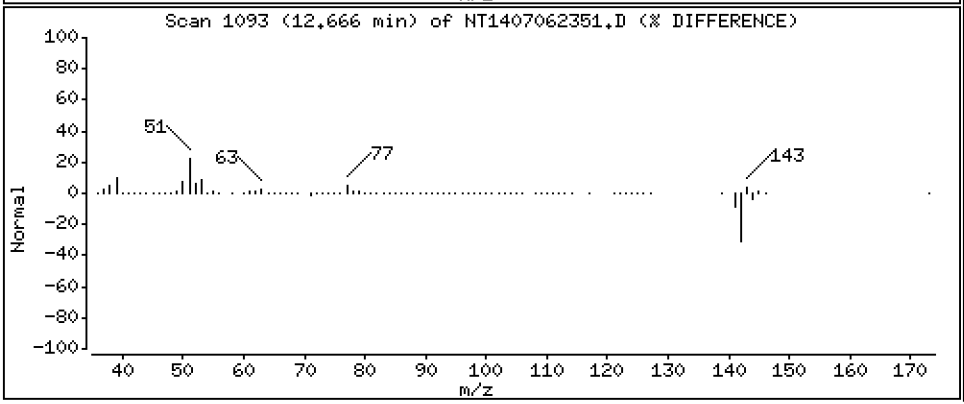
31 4-Chloro-3-methylphenol

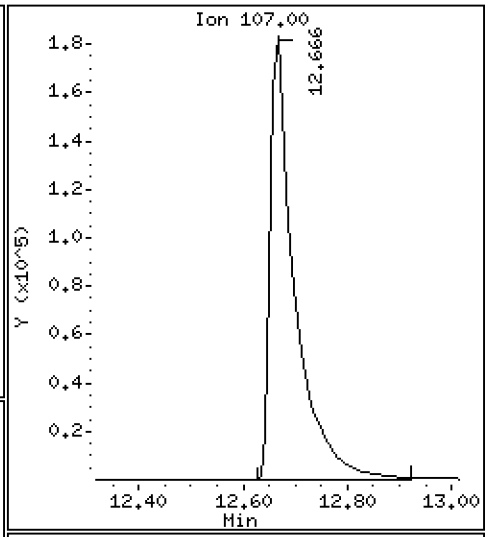
Concentration: 12.03 ug/mL

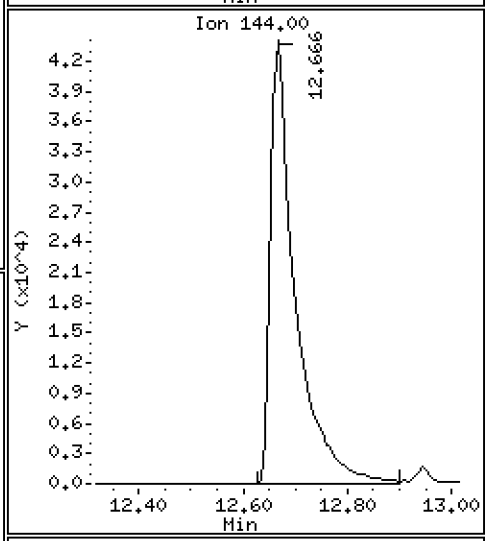


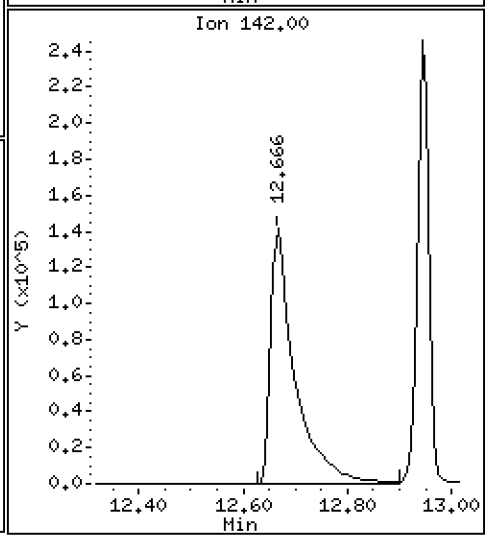












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

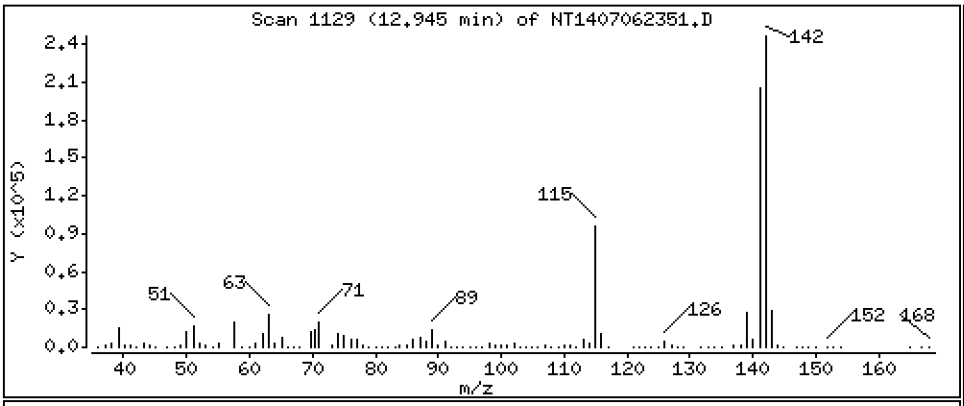
Operator: JGR

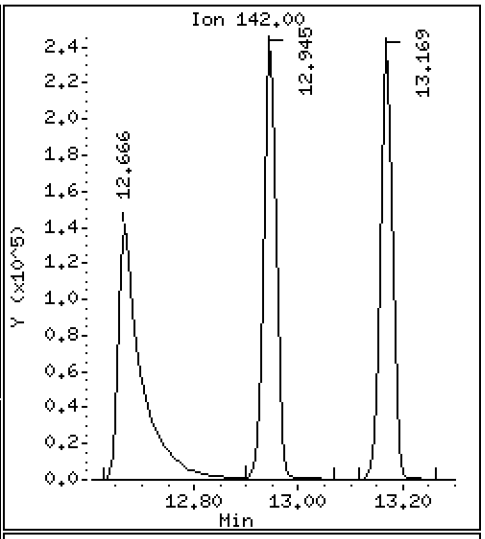
Column phase: ZB-5msi

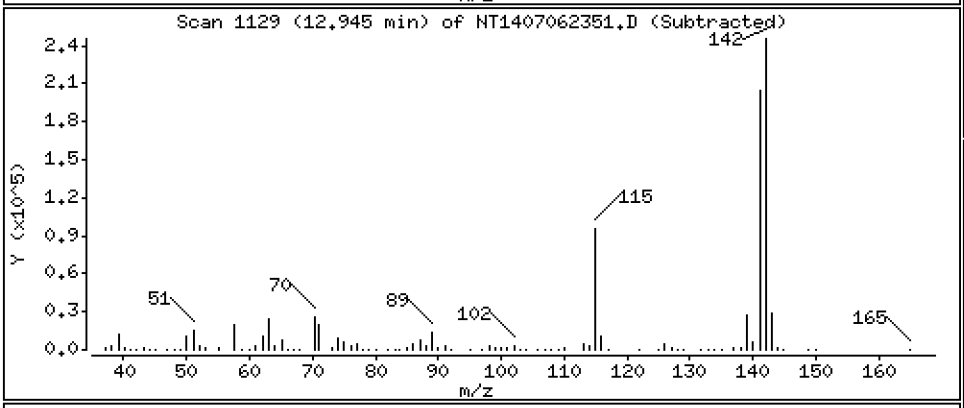
Column diameter: 0.25

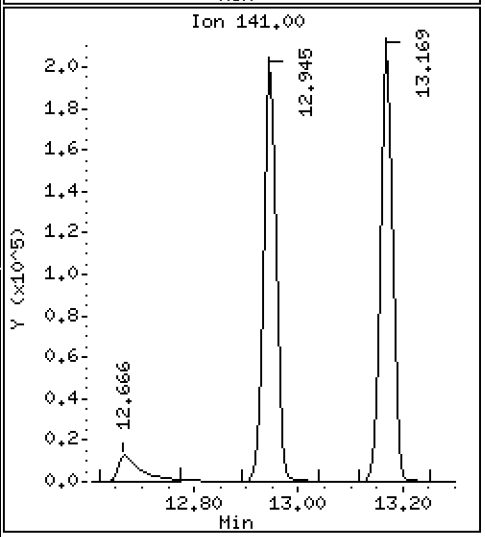
32 2-Methylnaphthalene

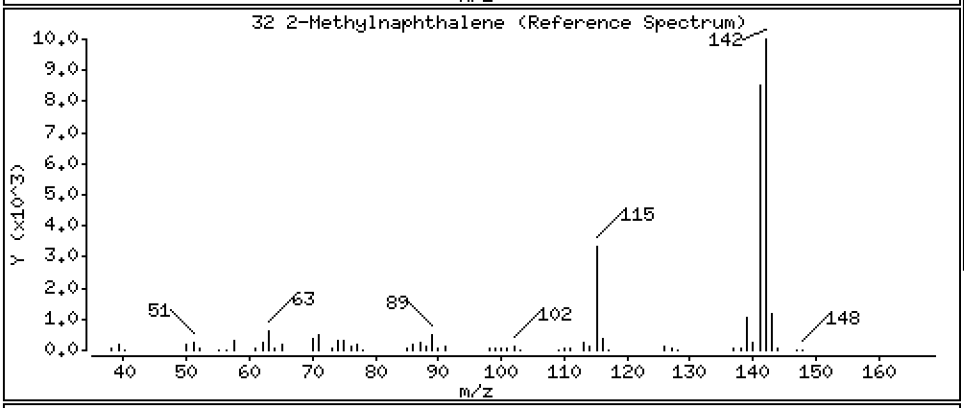
Concentration: 3.897 ug/mL

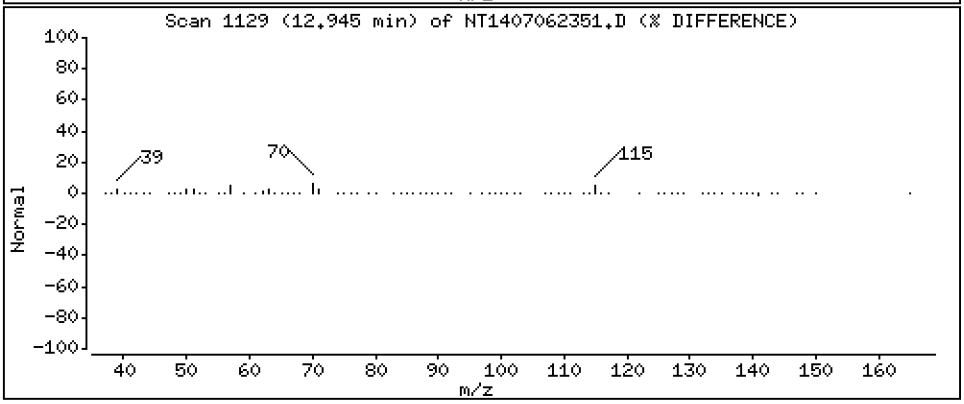












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

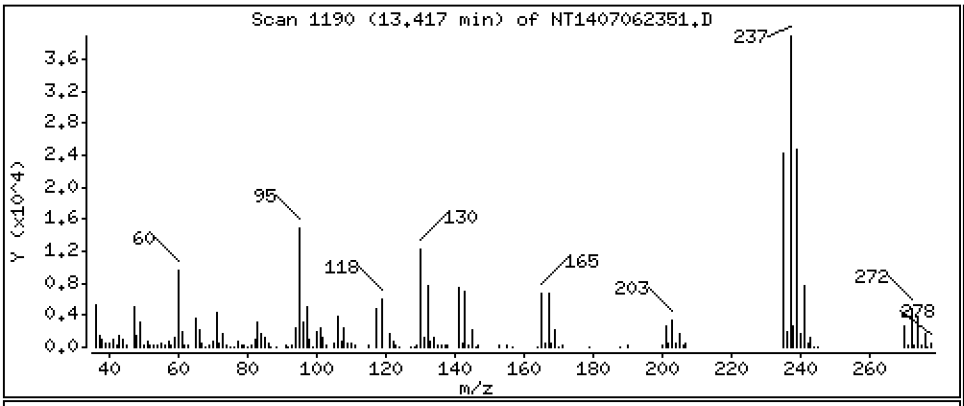
Operator: JGR

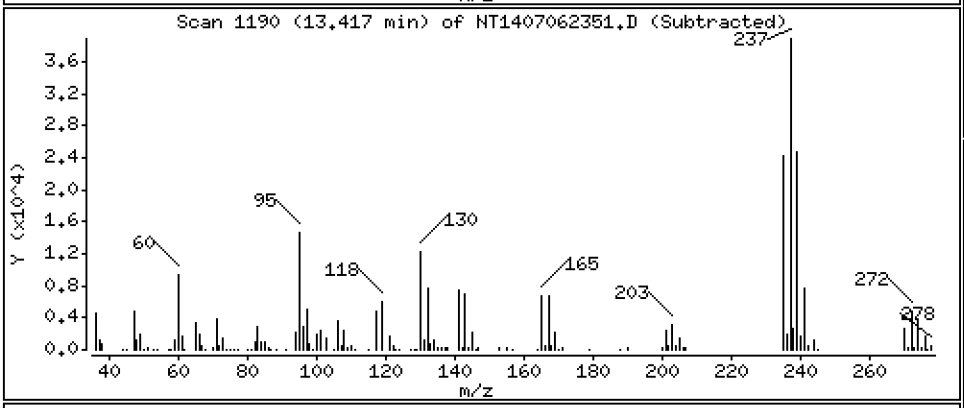
Column phase: ZB-5msi

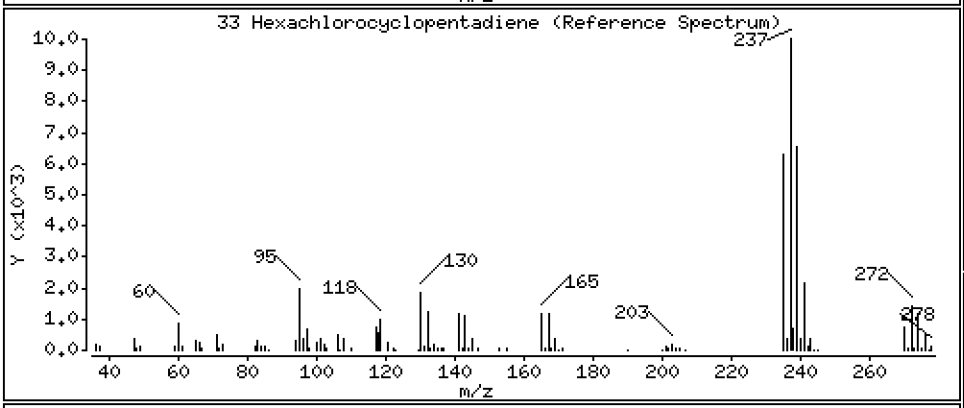
Column diameter: 0.25

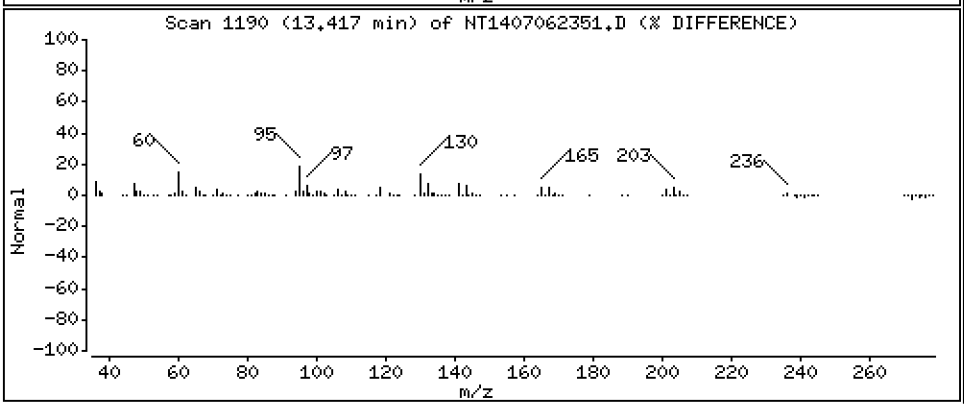
33 Hexachlorocyclopentadiene

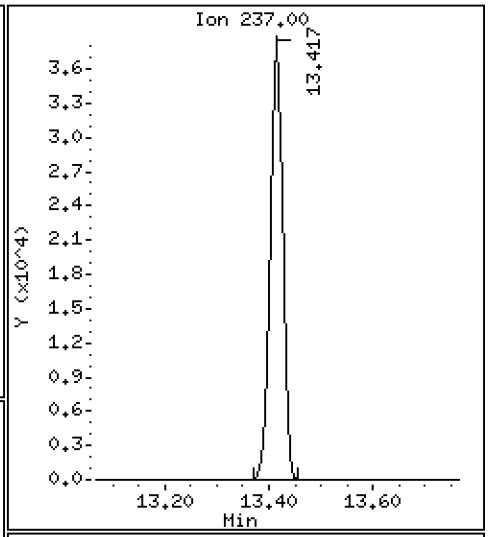
Concentration: 3.034 ug/mL

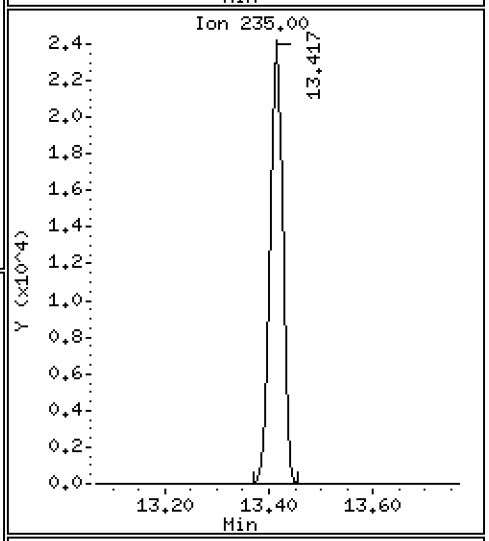


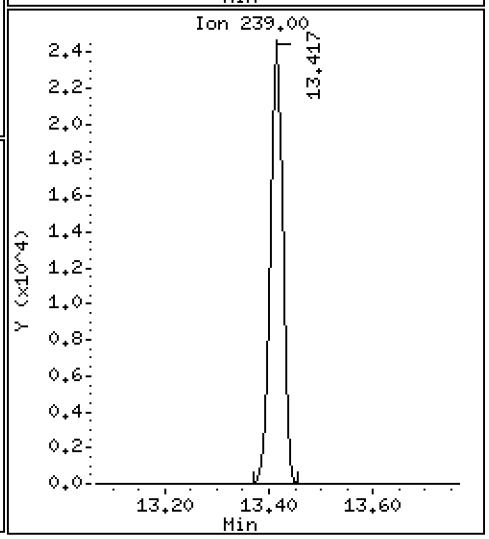












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

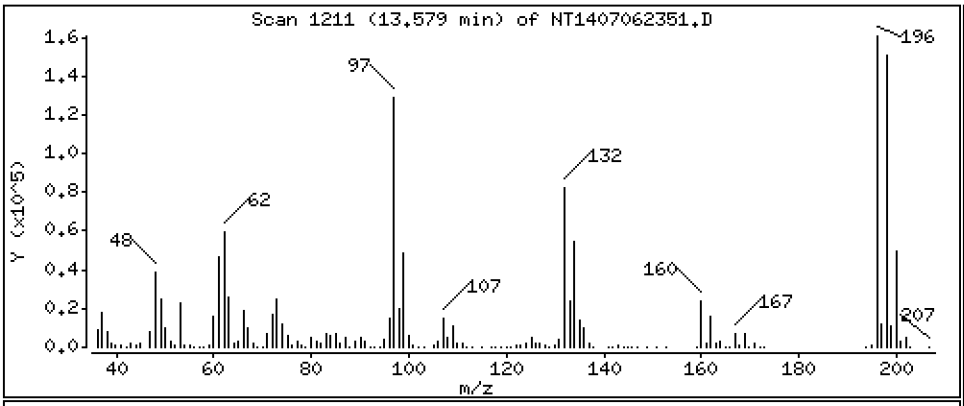
Operator: JGR

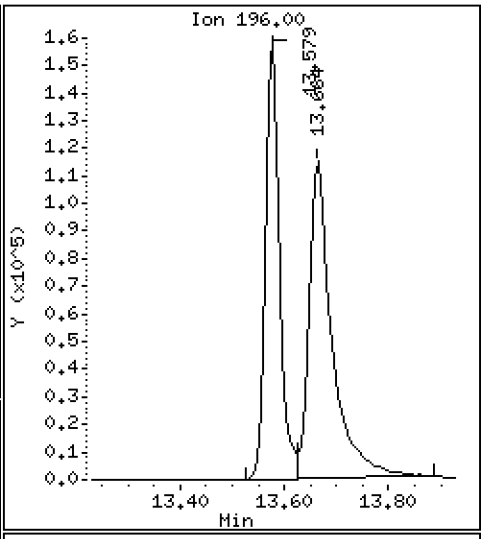
Column phase: ZB-5msi

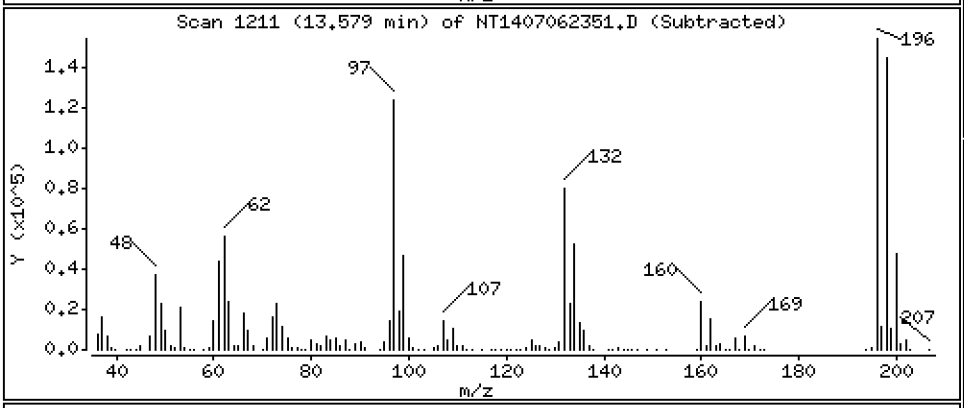
Column diameter: 0.25

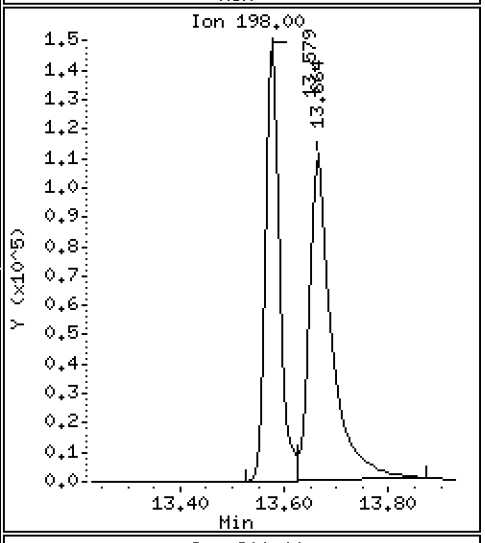
34 2,4,6-Trichlorophenol

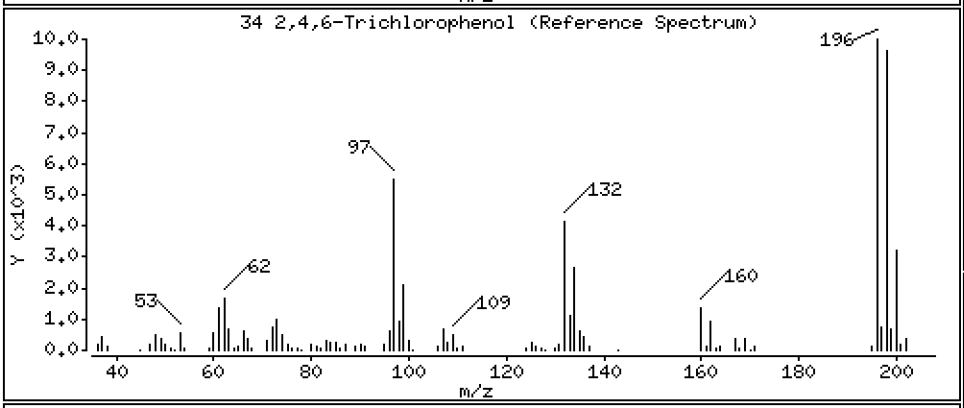
Concentration: 11.20 ug/mL

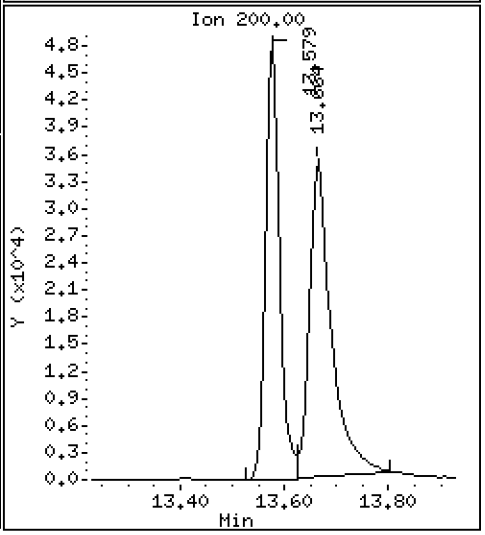


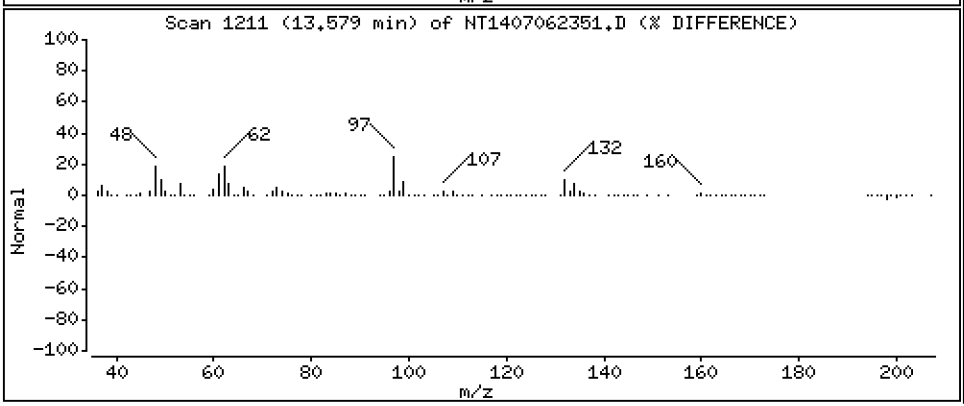












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

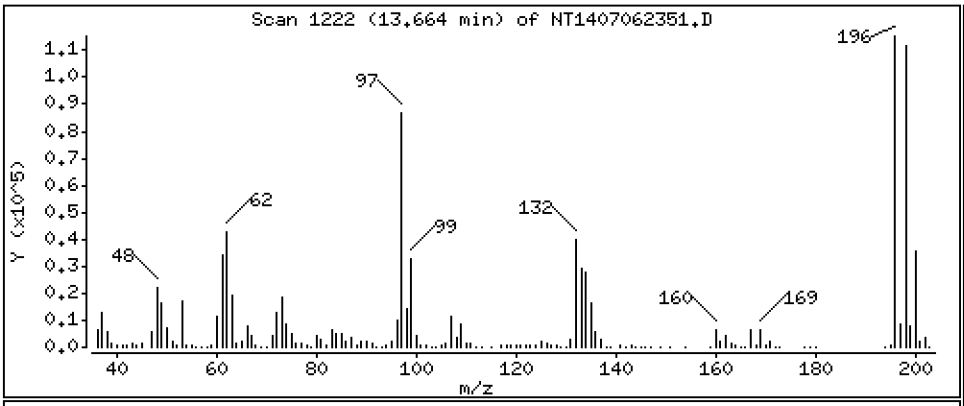
Operator: JGR

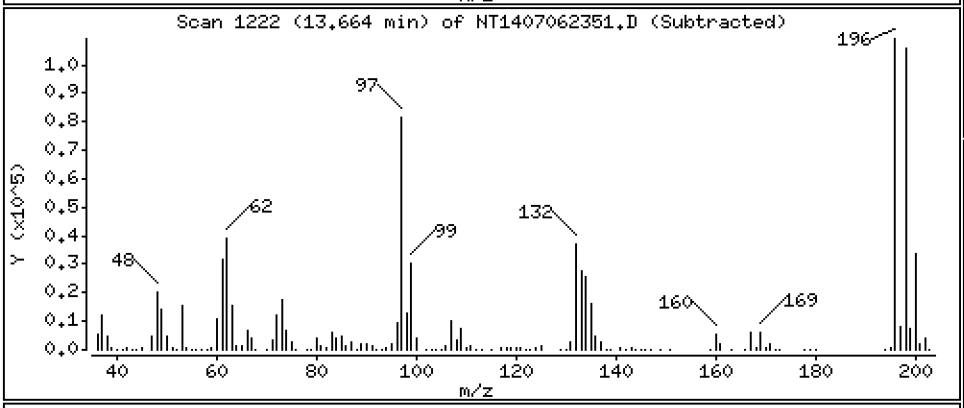
Column phase: ZB-5msi

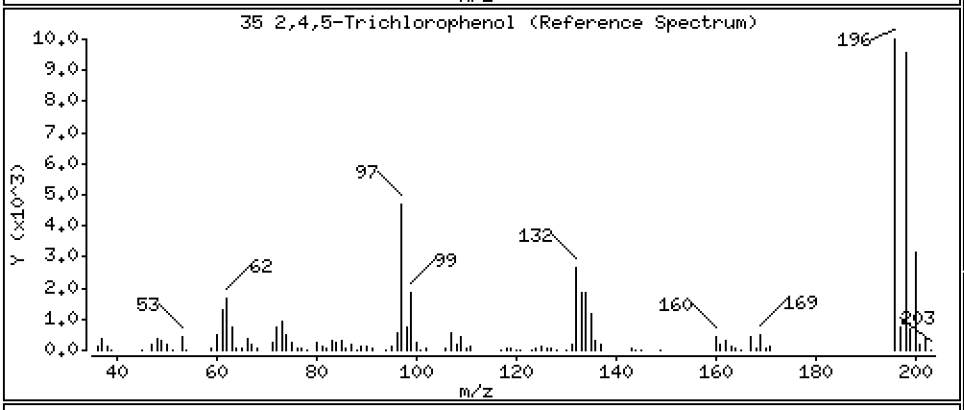
Column diameter: 0.25

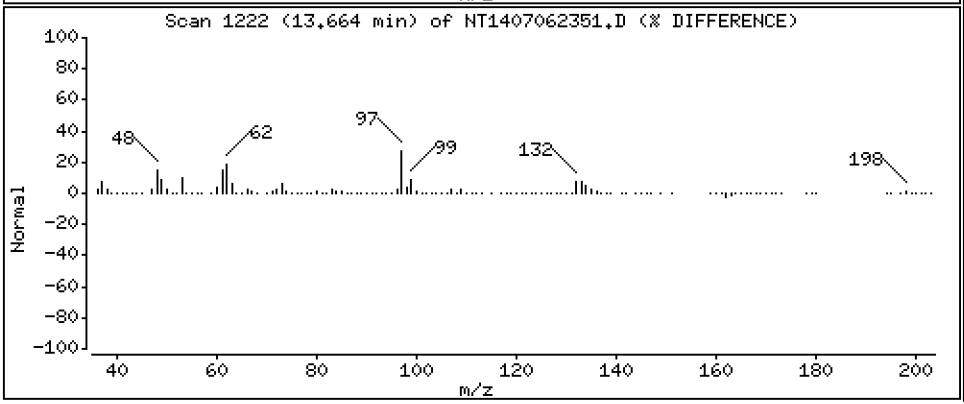
35 2,4,5-Trichlorophenol

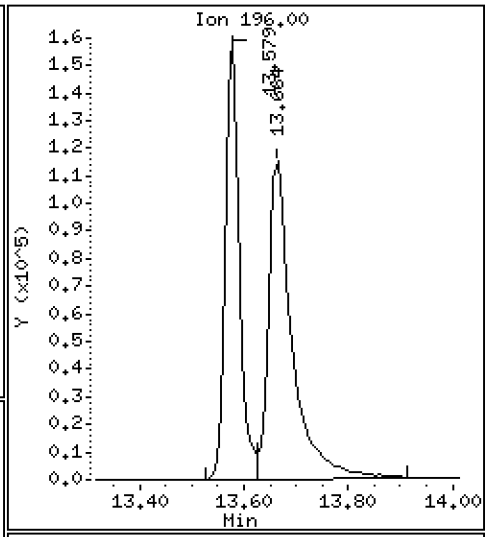
Concentration: 13.38 ug/mL

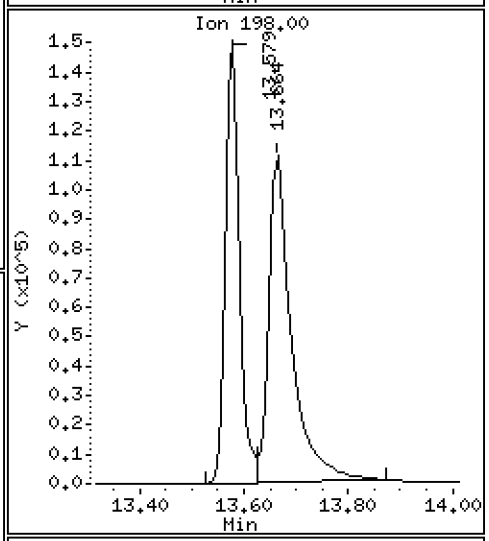


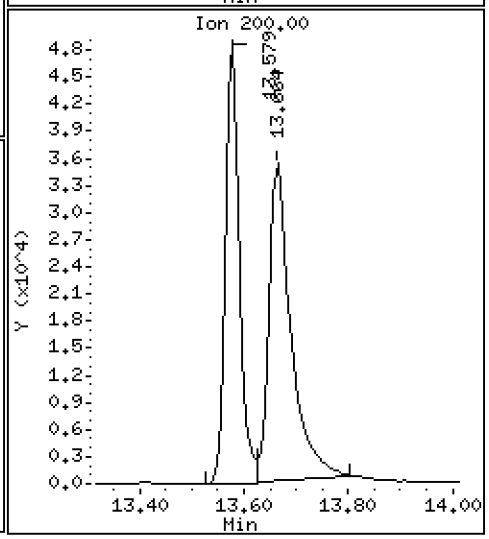












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

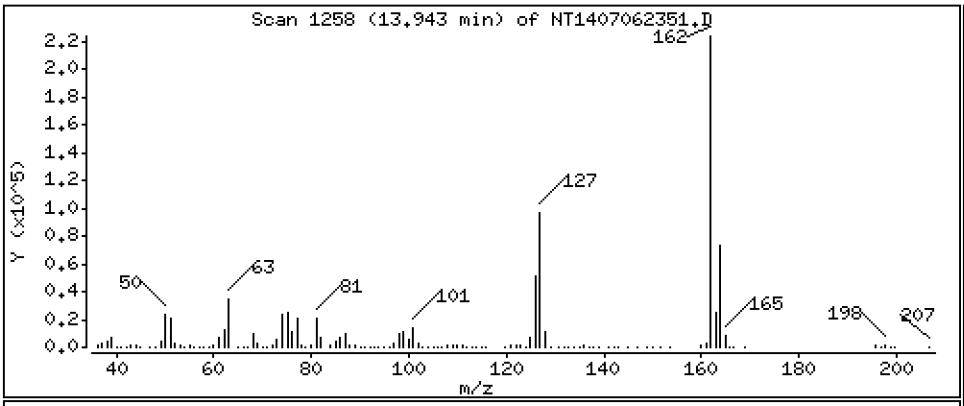
Operator: JGR

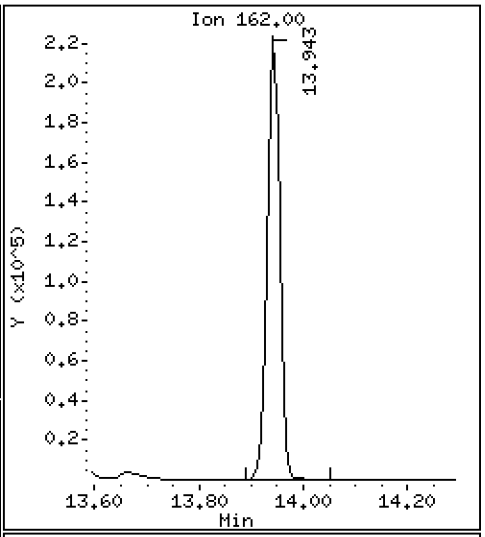
Column phase: ZB-5msi

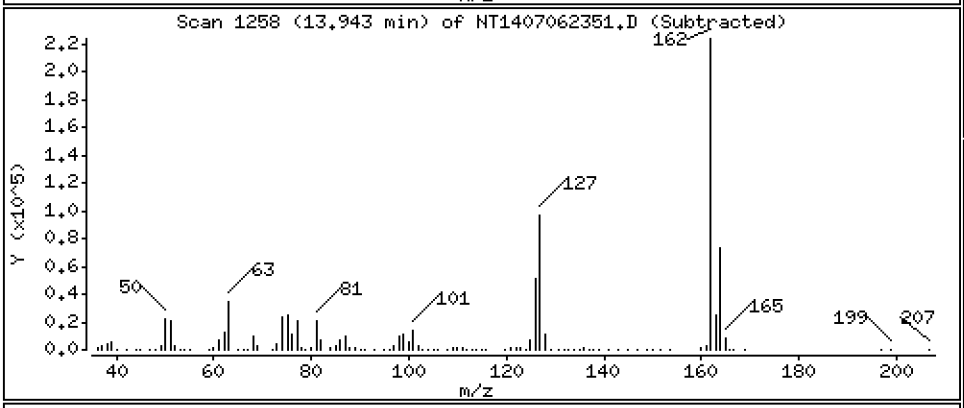
Column diameter: 0.25

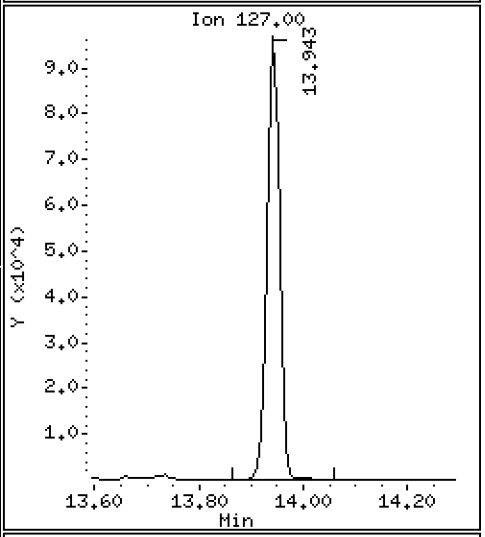
37 2-Chloronaphthalene

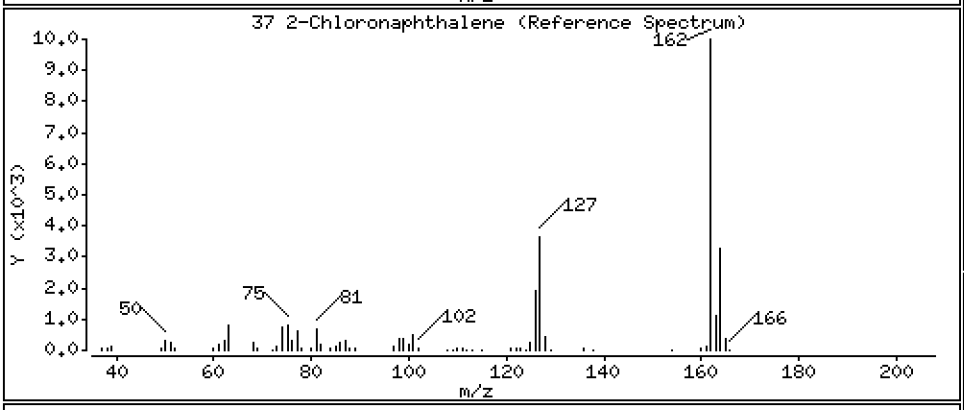
Concentration: 4.025 ug/mL

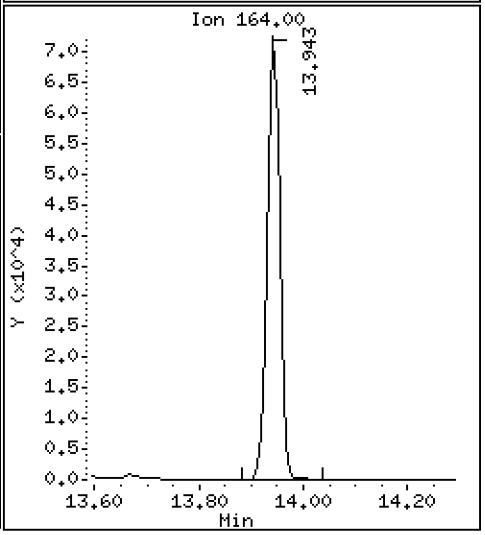


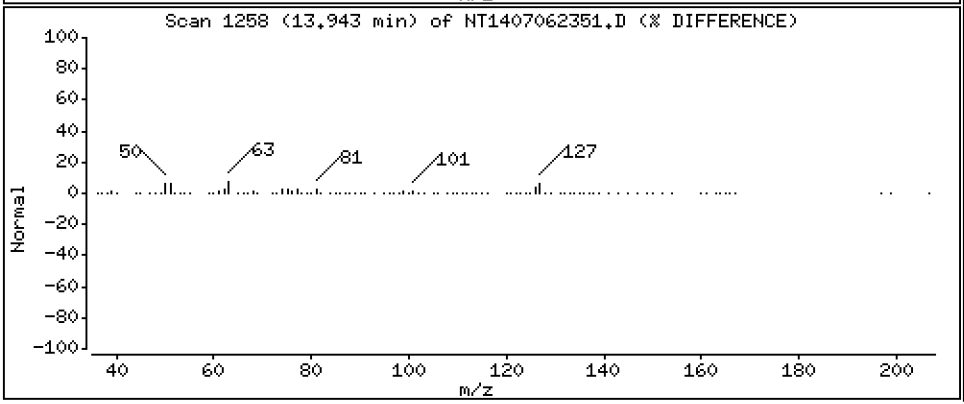












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

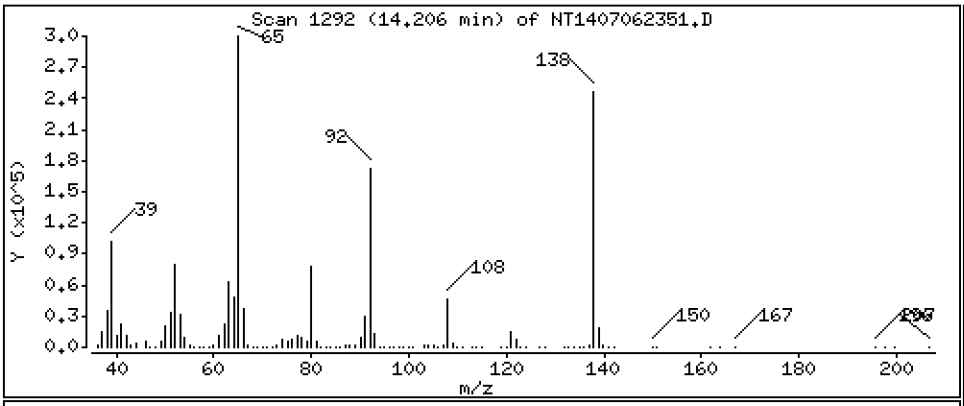
Operator: JGR

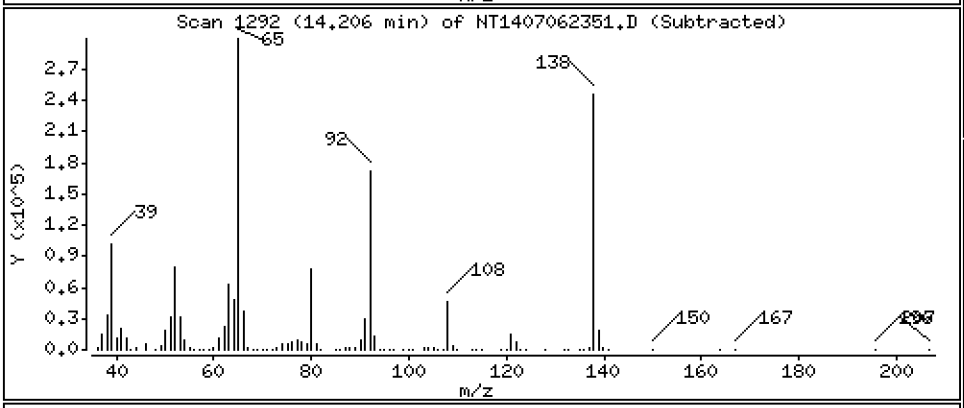
Column phase: ZB-5msi

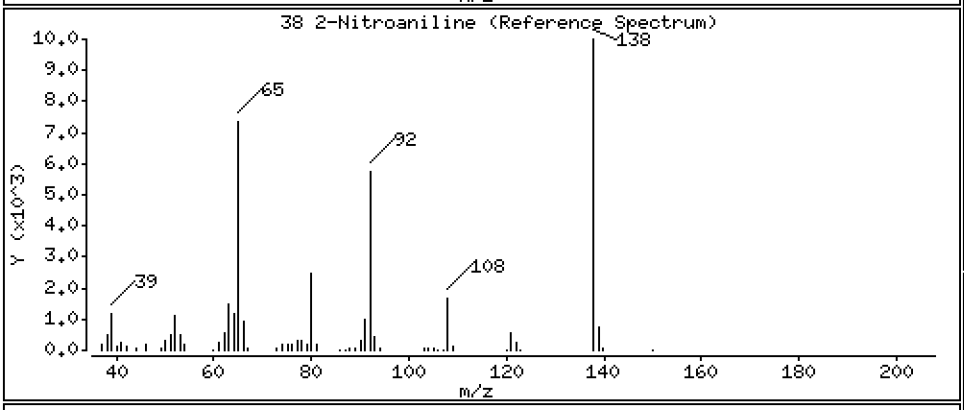
Column diameter: 0.25

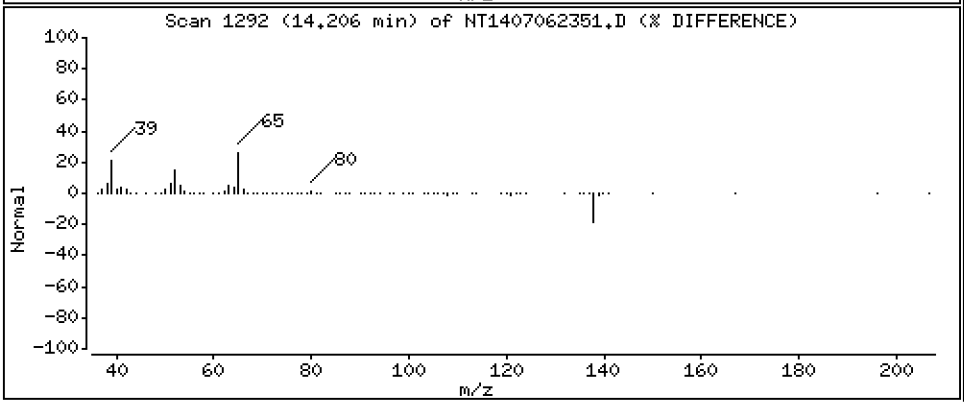
38 2-Nitroaniline

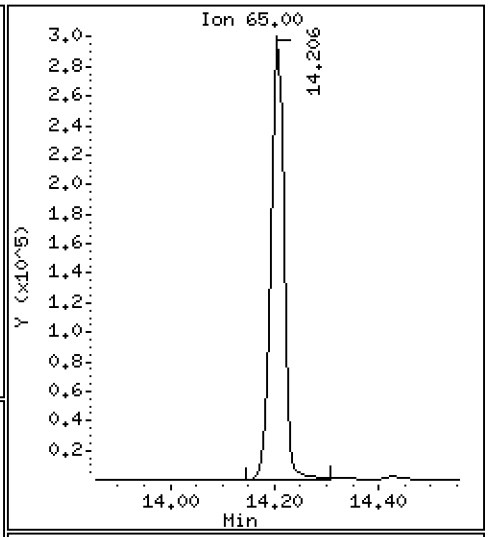
Concentration: 11.74 ug/mL

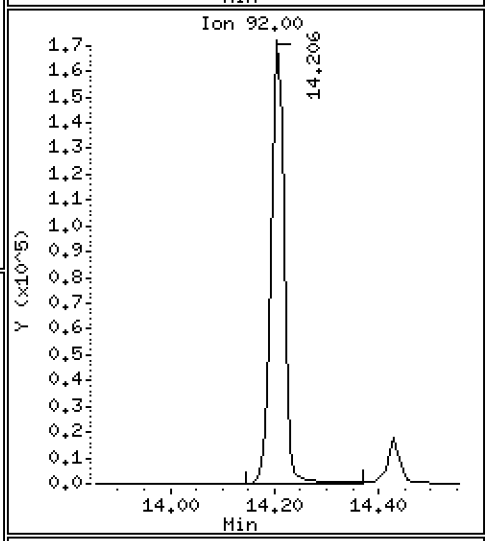


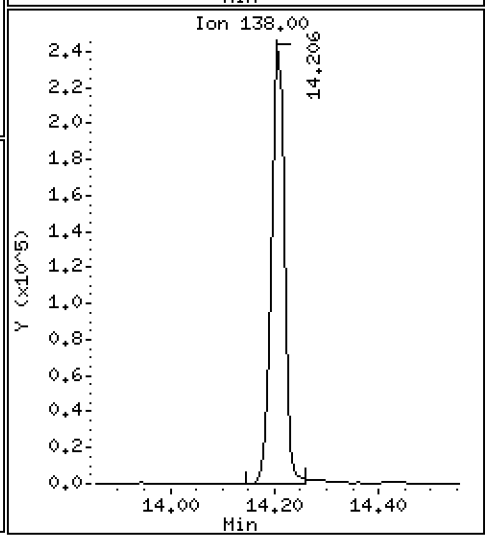












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062351.D

Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

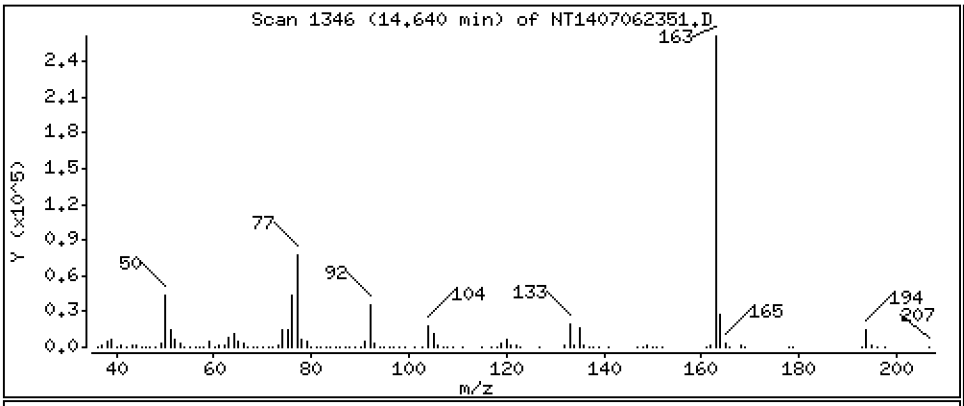
Operator: JGR

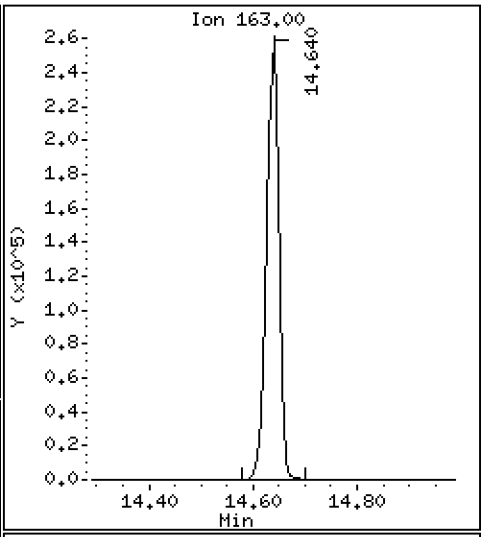
Column phase: ZB-5msi

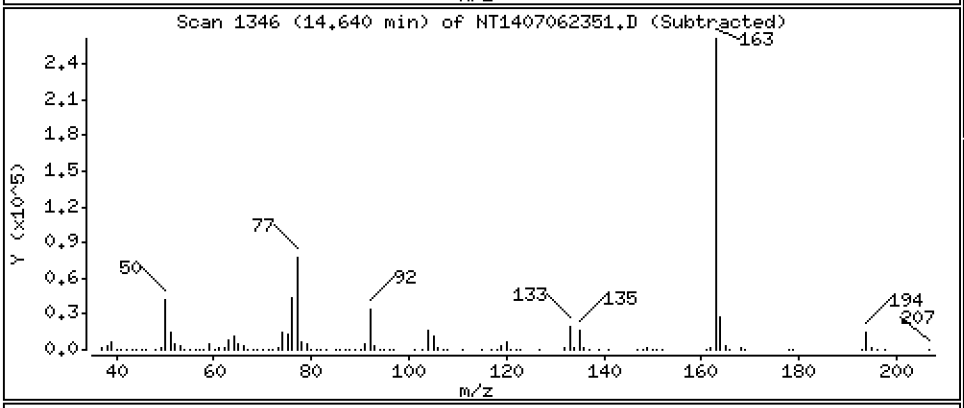
Column diameter: 0.25

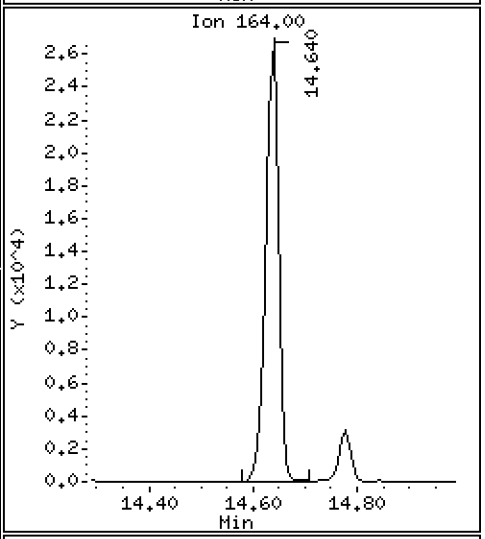
39 Dimethylphthalate

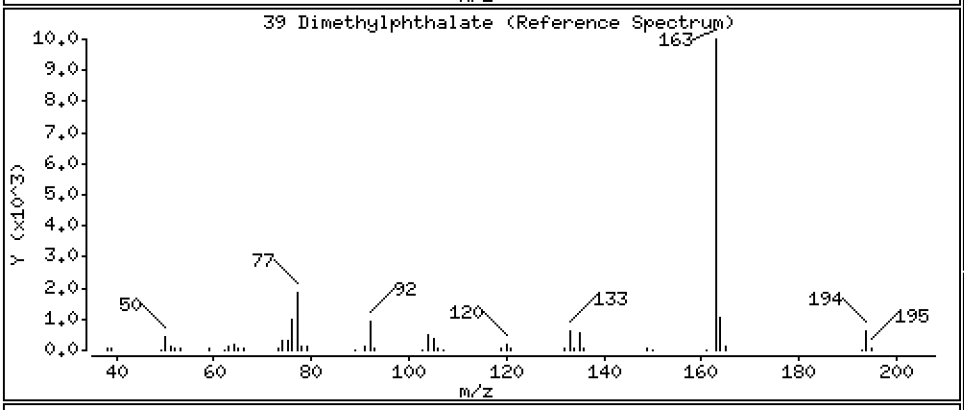
Concentration: 4.533 ug/mL

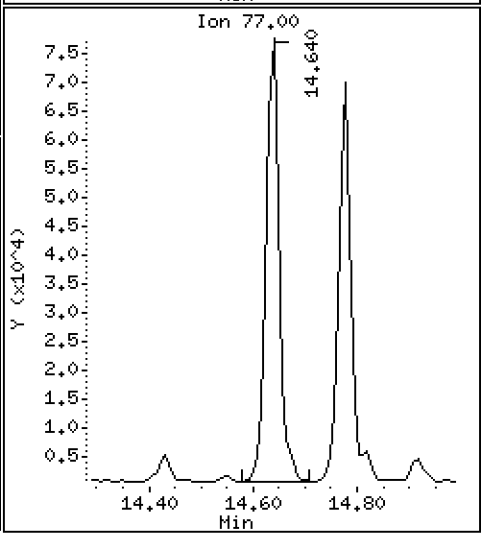


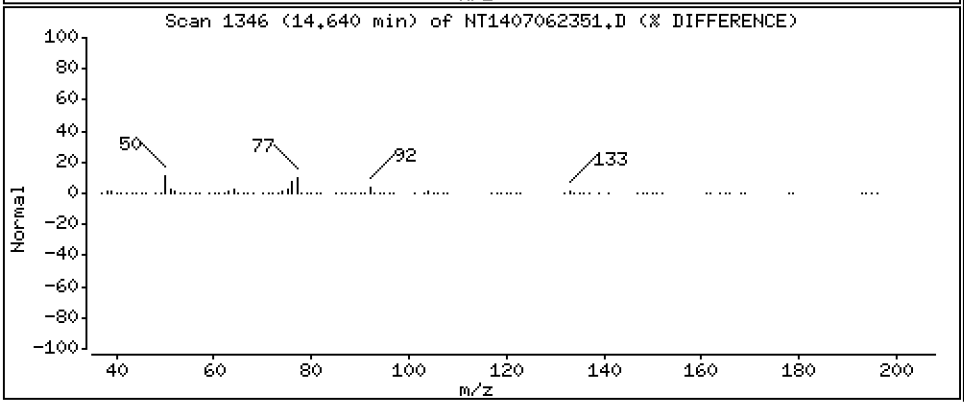












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

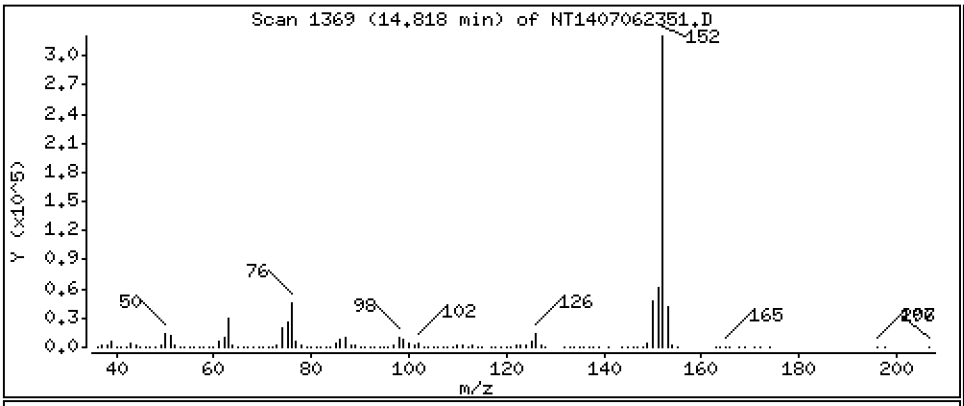
Operator: JGR

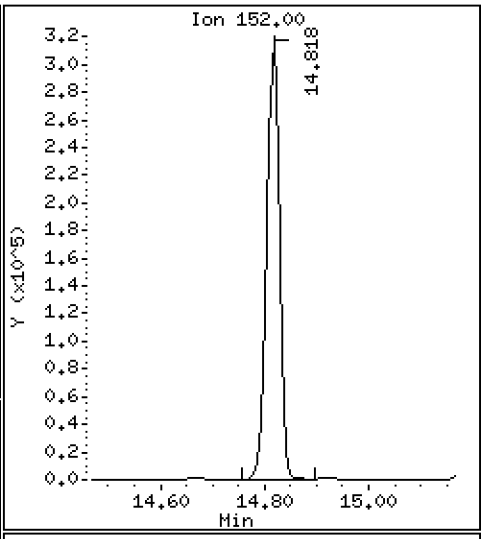
Column phase: ZB-5msi

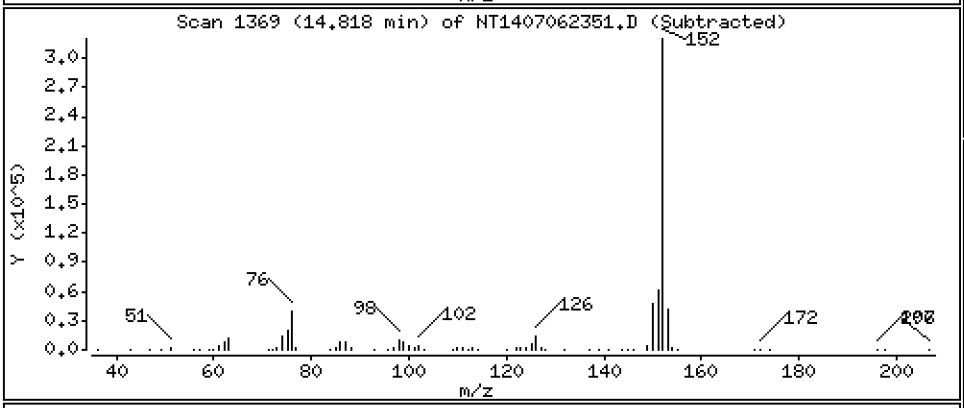
Column diameter: 0.25

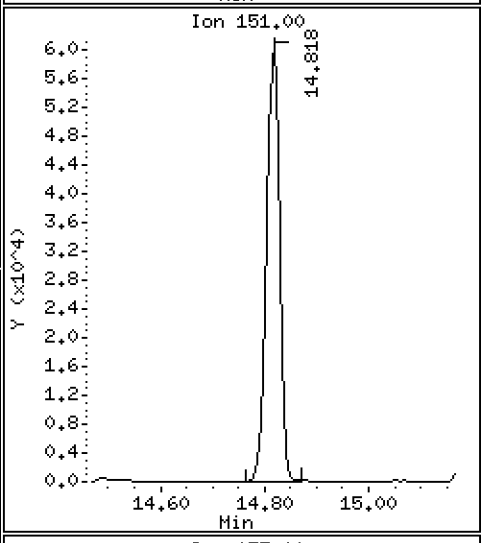
40 Acenaphthylene

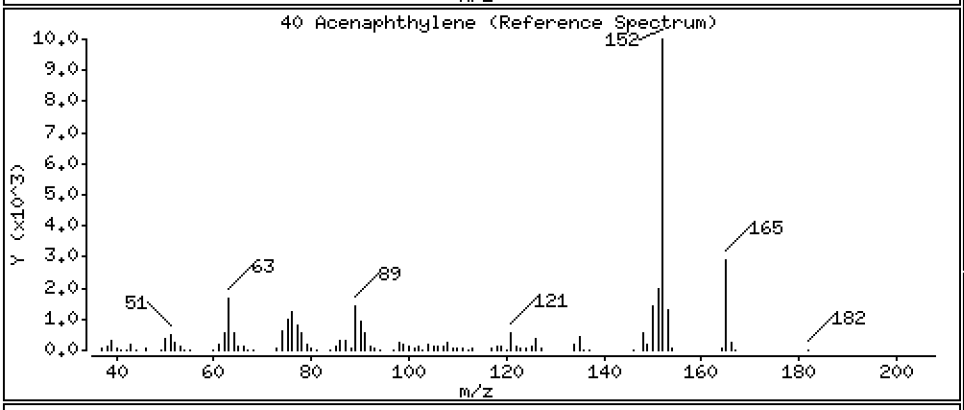
Concentration: 3.841 ug/mL

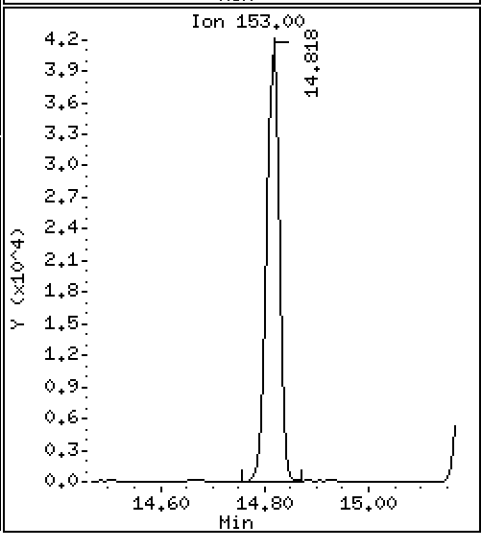


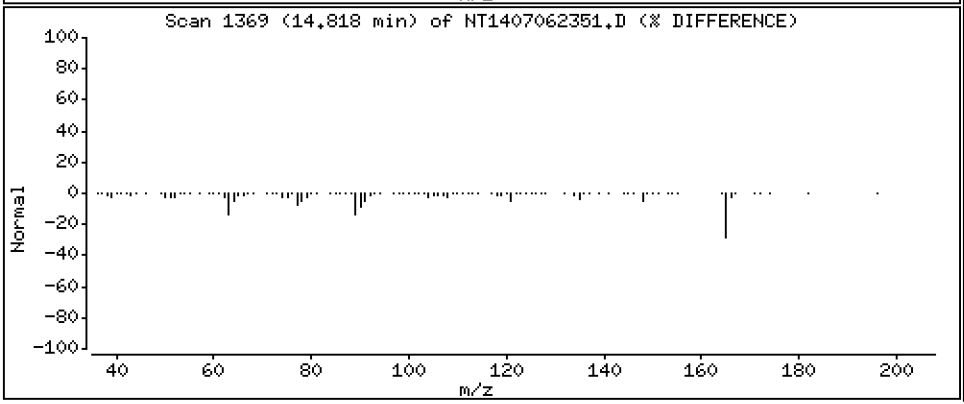












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

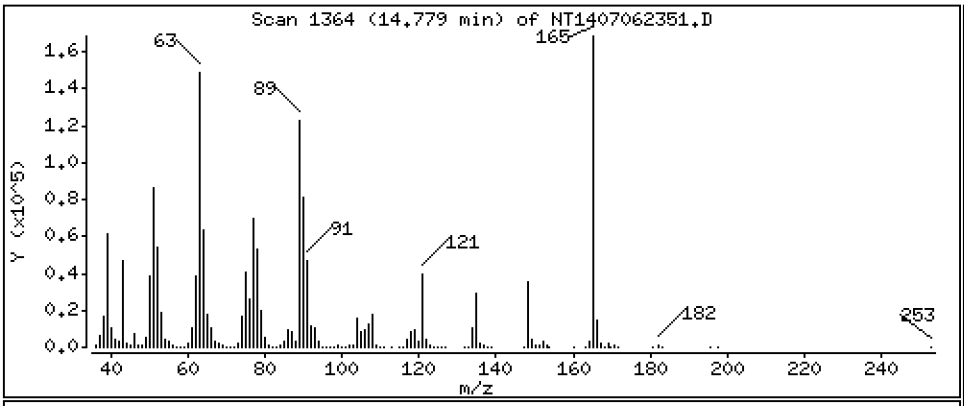
Operator: JGR

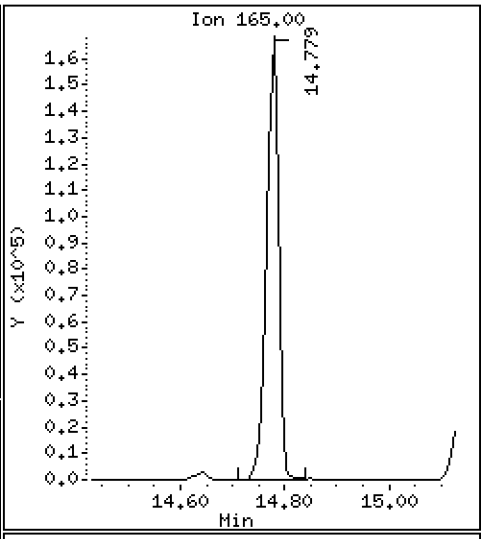
Column phase: ZB-5msi

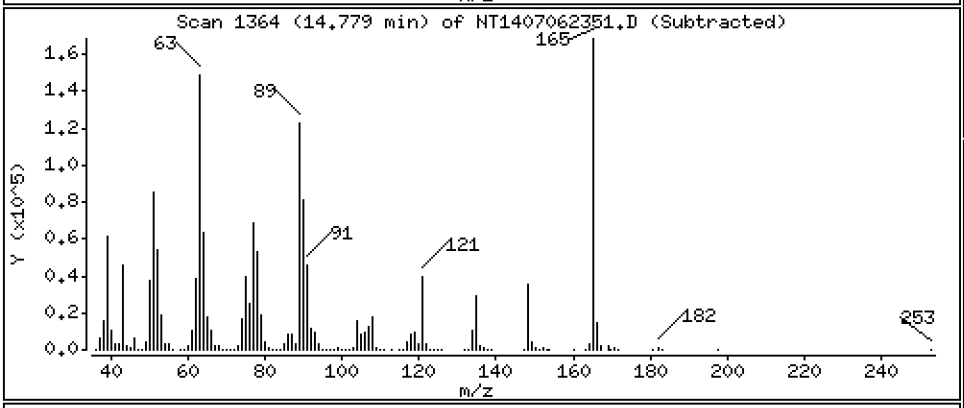
Column diameter: 0.25

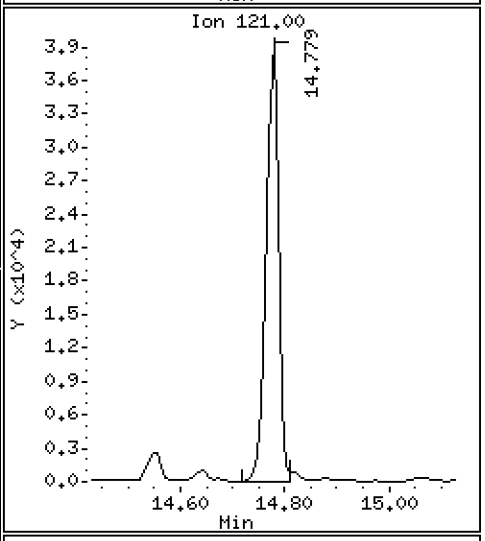
41 2,6-Dinitrotoluene

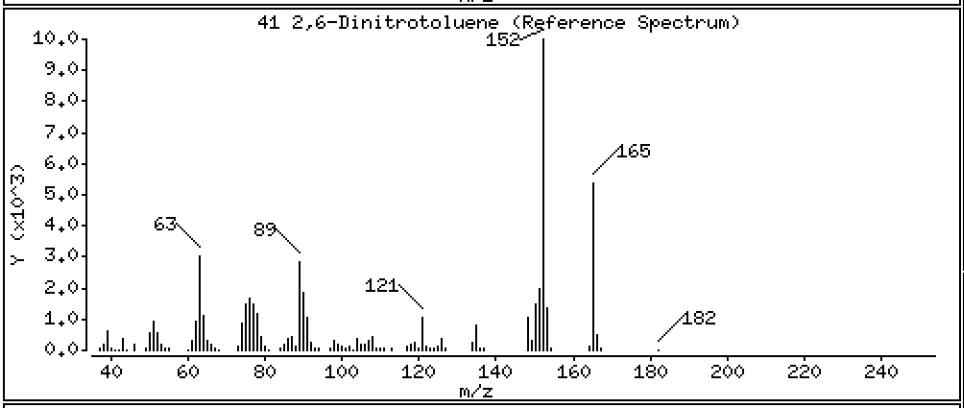
Concentration: 13.54 ug/mL

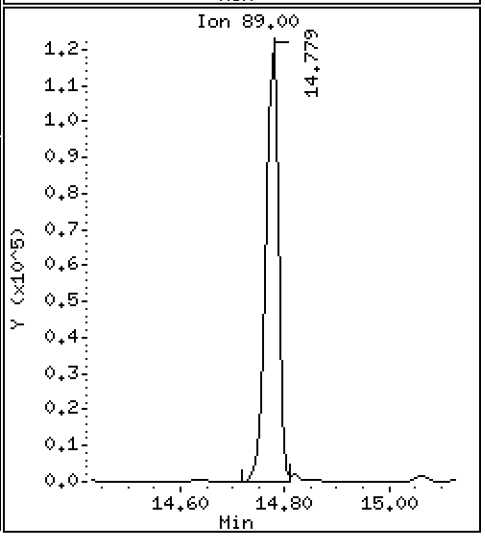


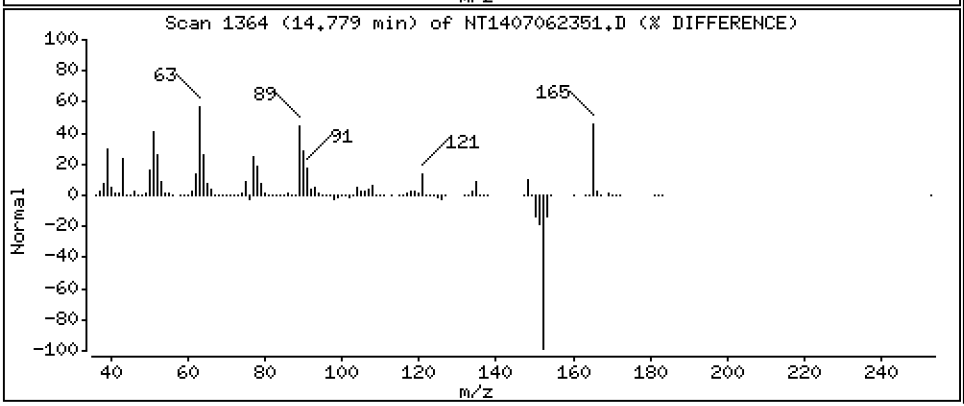












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

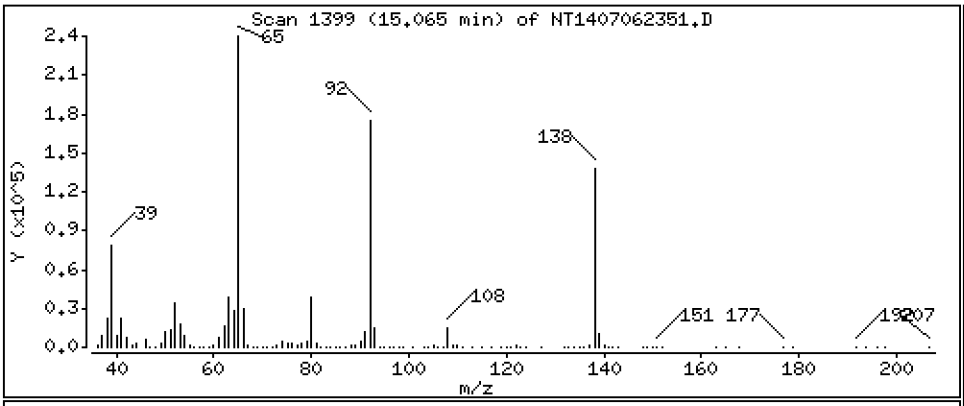
Operator: JGR

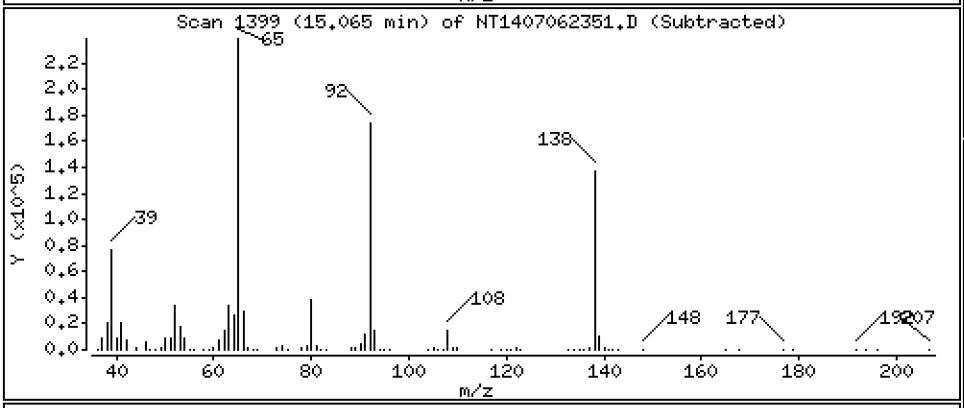
Column phase: ZB-5msi

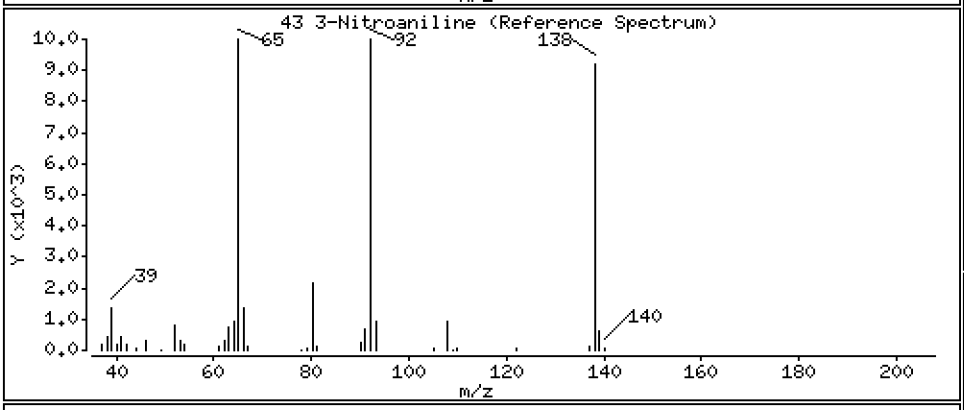
Column diameter: 0.25

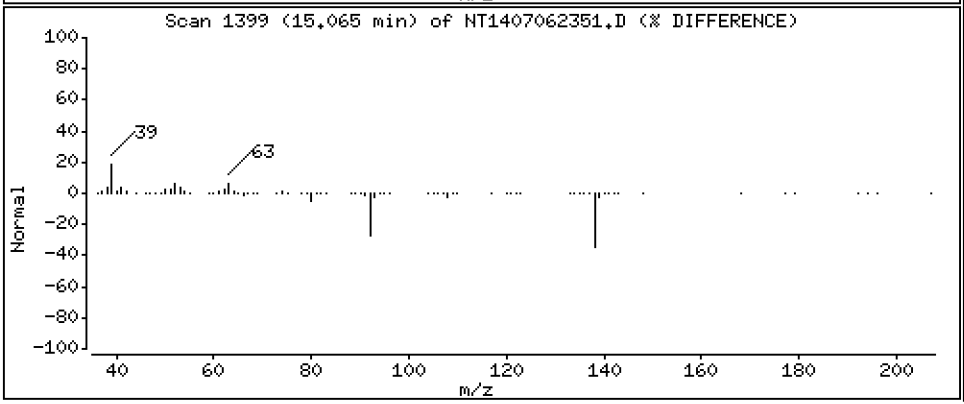
43 3-Nitroaniline

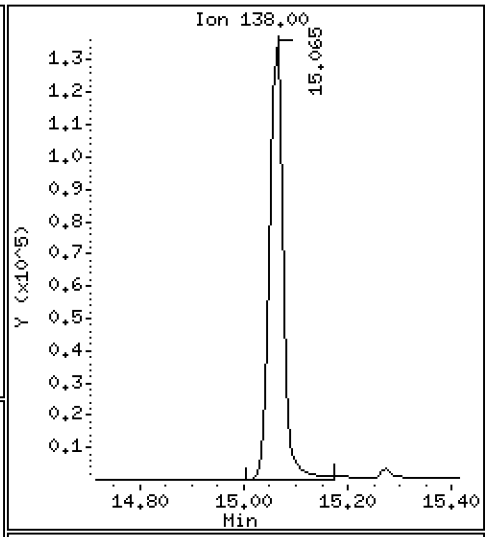
Concentration: 9.469 ug/mL

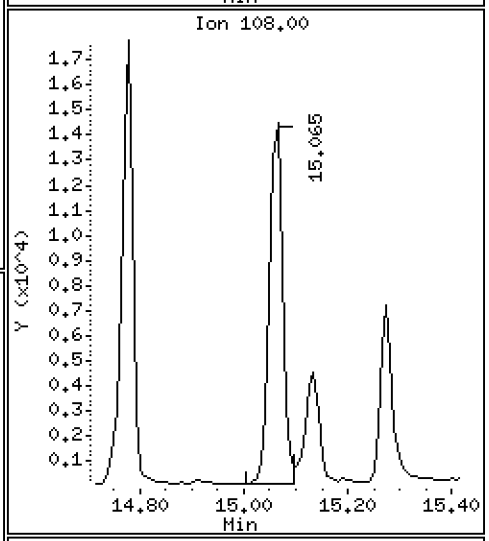


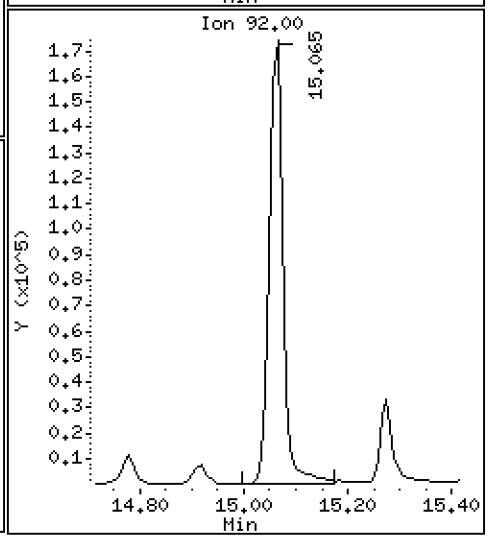












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

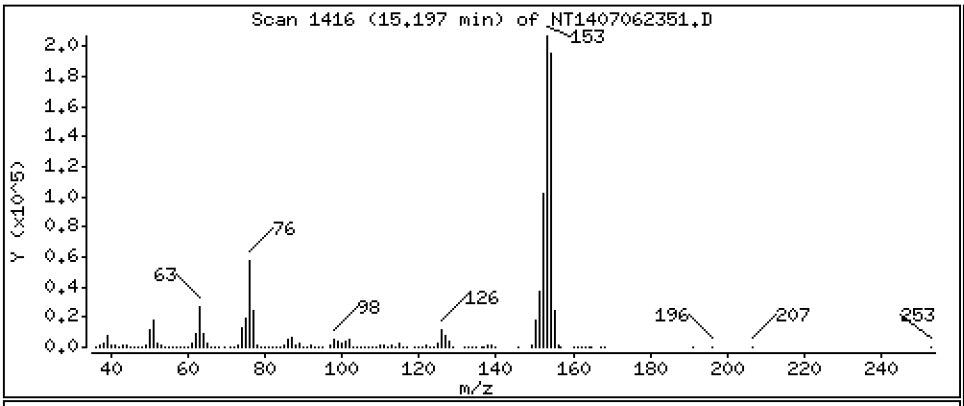
Operator: JGR

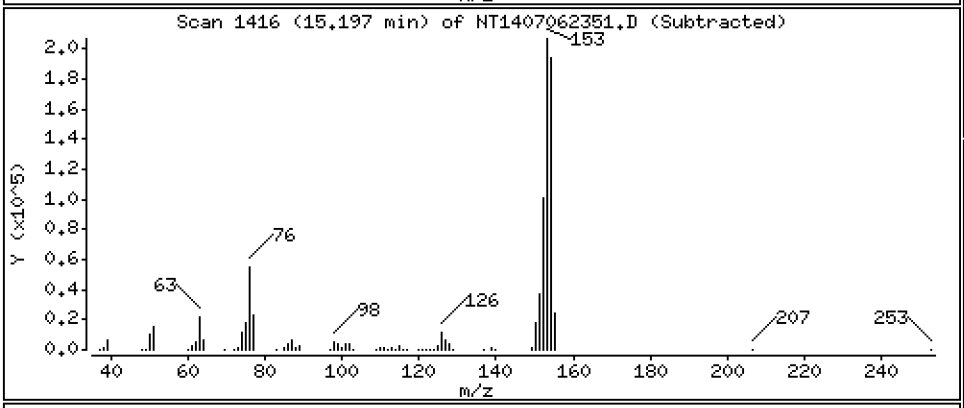
Column phase: ZB-5msi

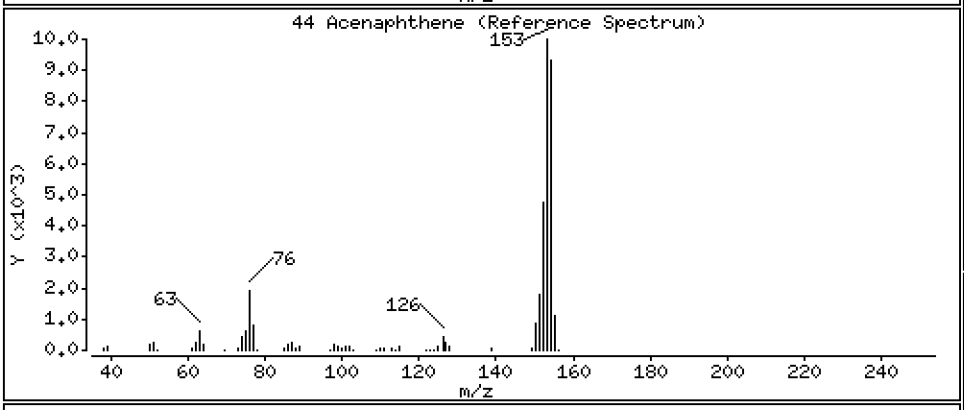
Column diameter: 0.25

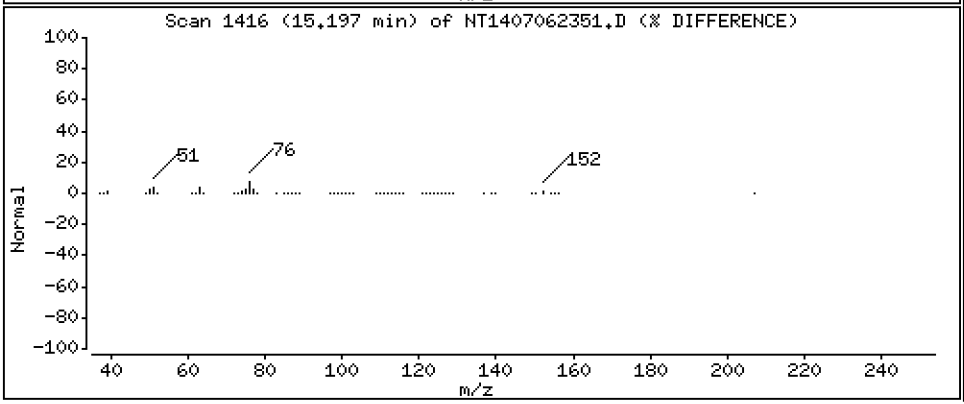
44 Acenaphthene

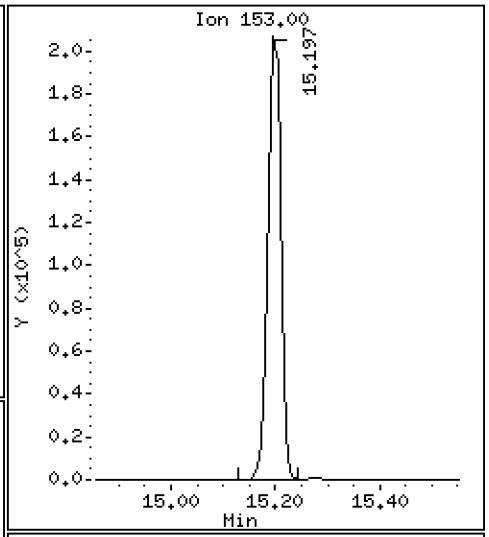
Concentration: 4.275 ug/mL

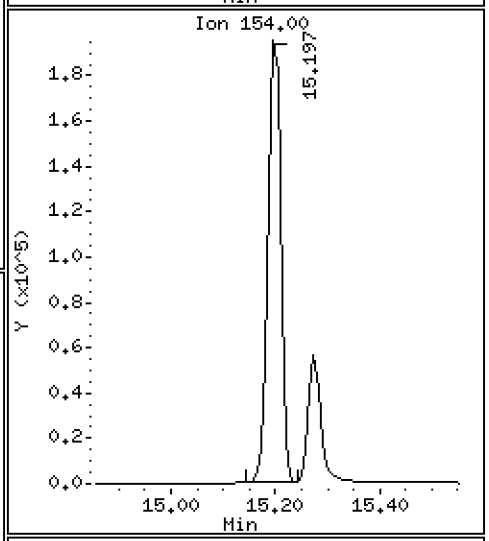


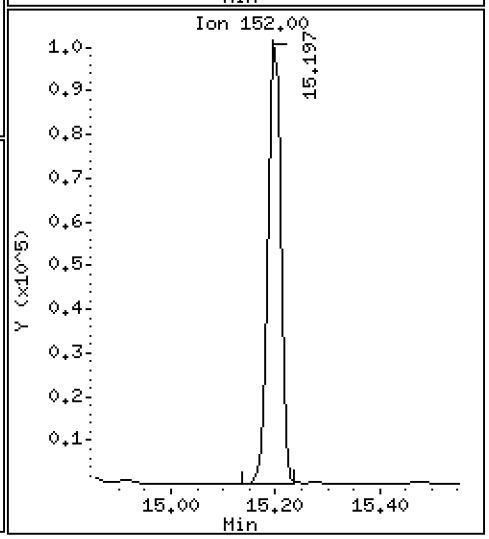












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

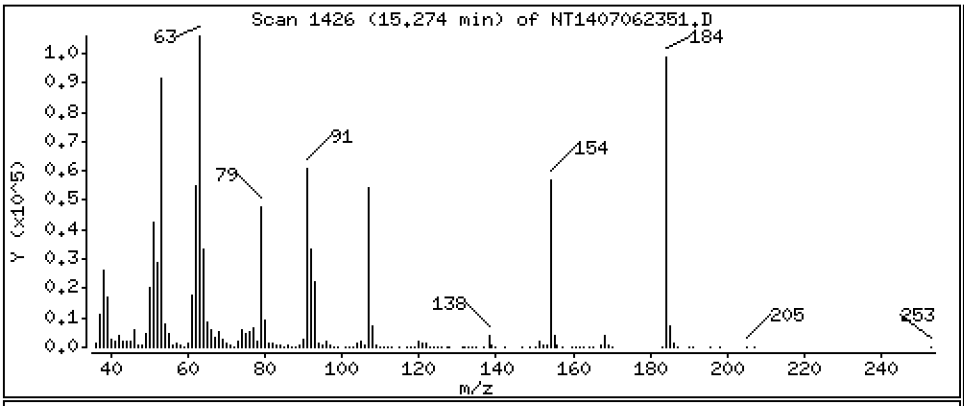
Operator: JGR

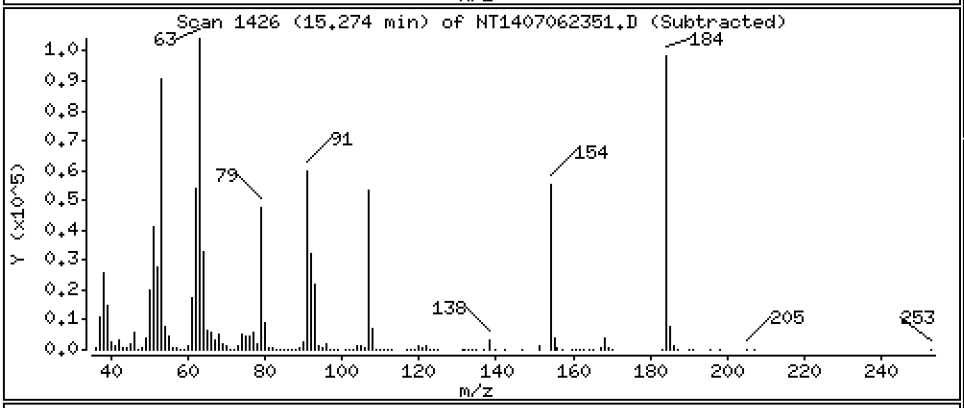
Column phase: ZB-5msi

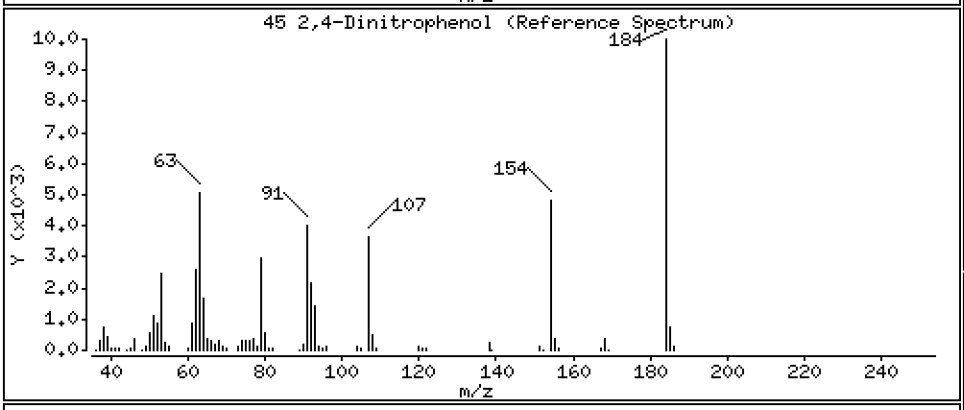
Column diameter: 0.25

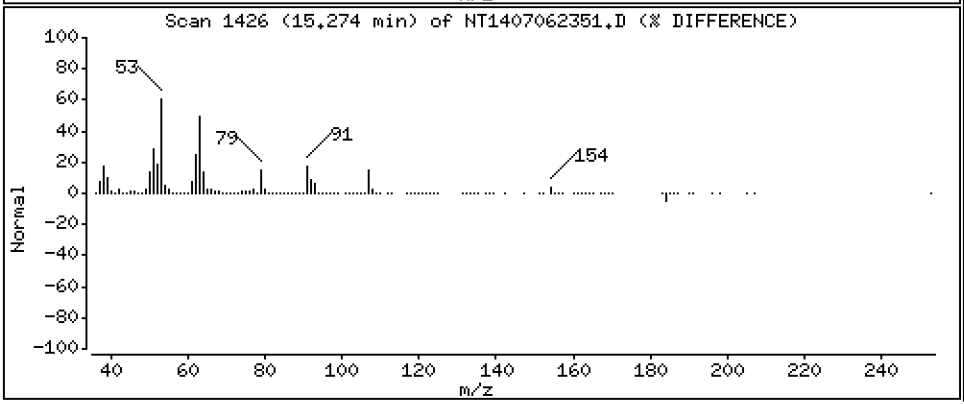
45 2,4-Dinitrophenol

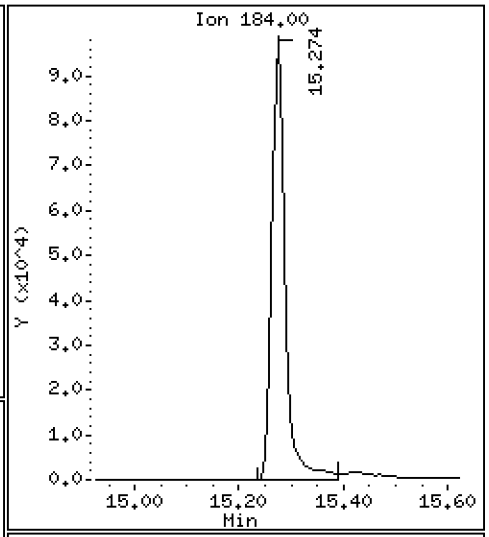
Concentration: 13.97 ug/mL

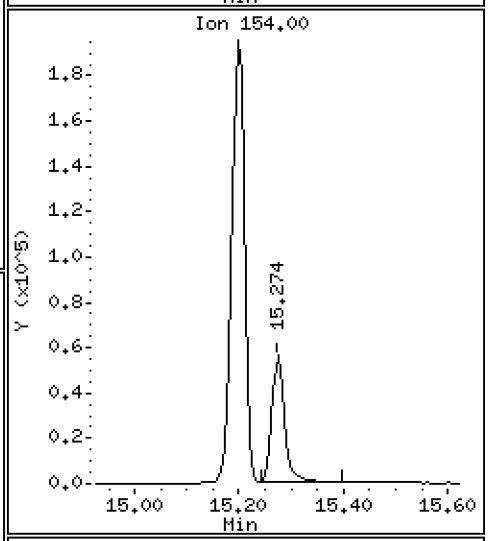


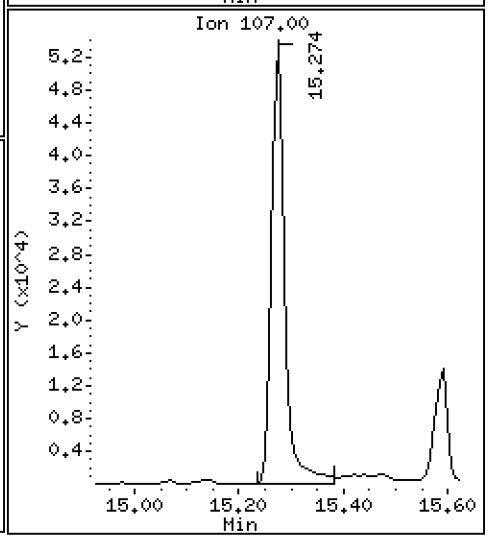












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

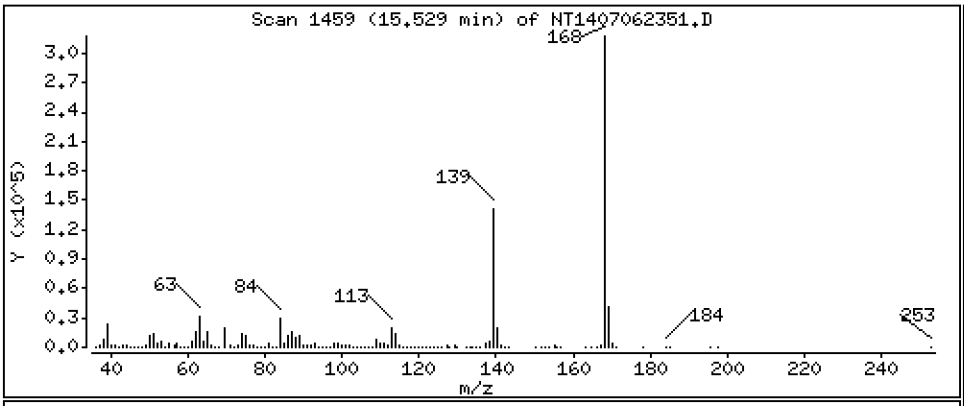
Operator: JGR

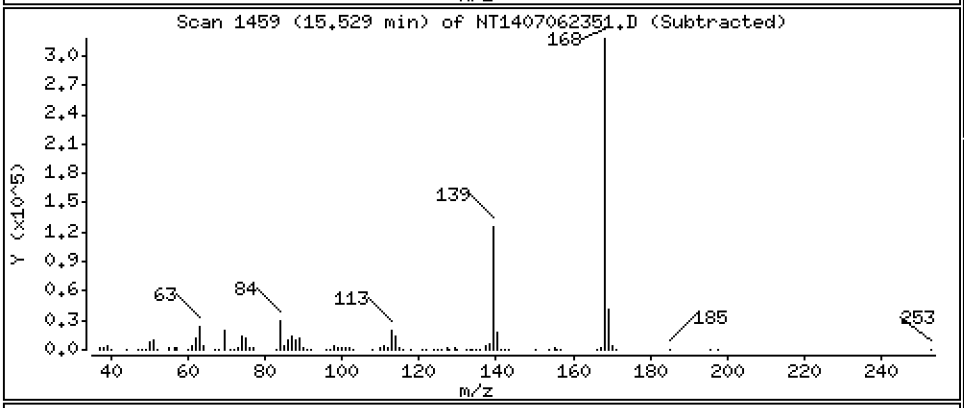
Column phase: ZB-5msi

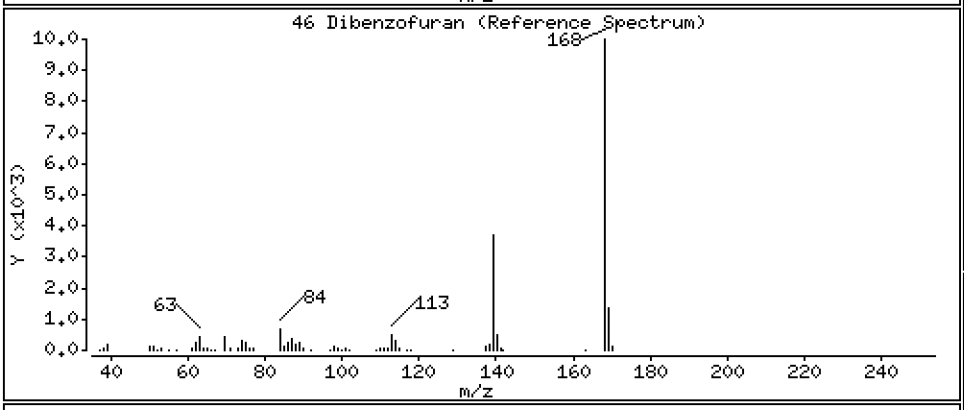
Column diameter: 0.25

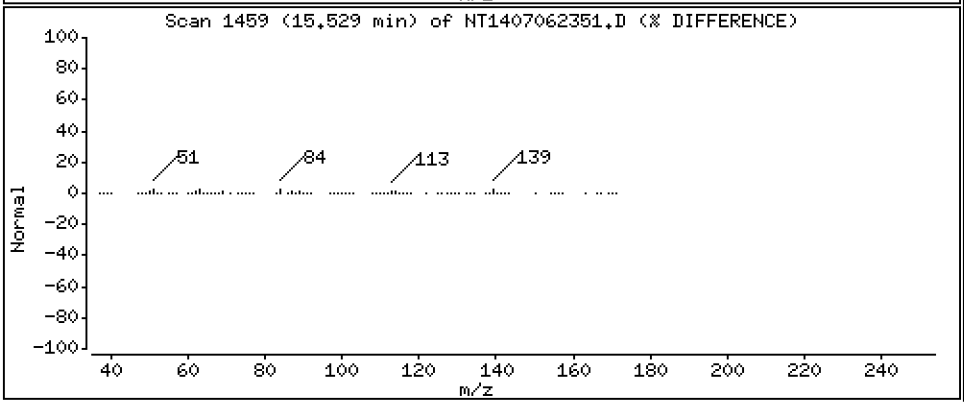
46 Dibenzofuran

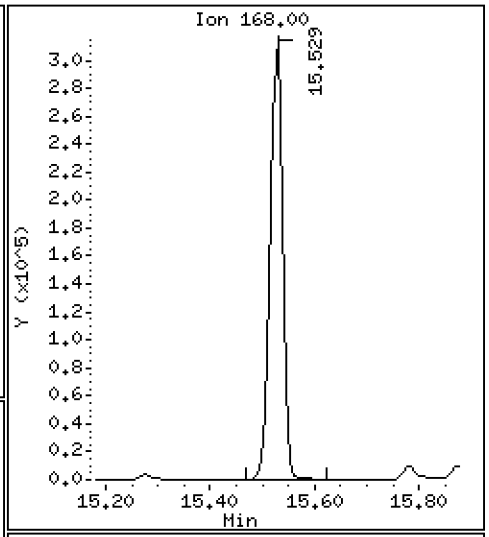
Concentration: 4.274 ug/mL

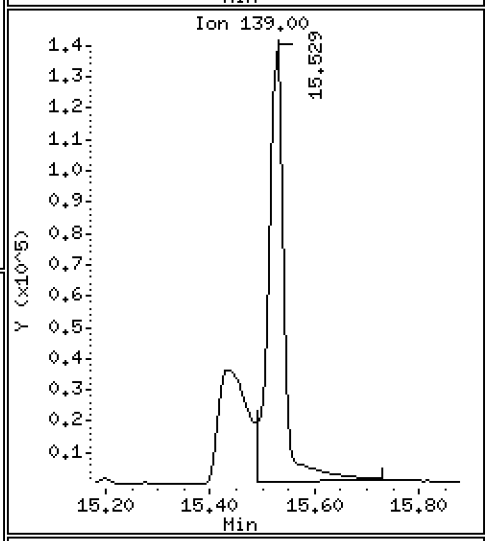


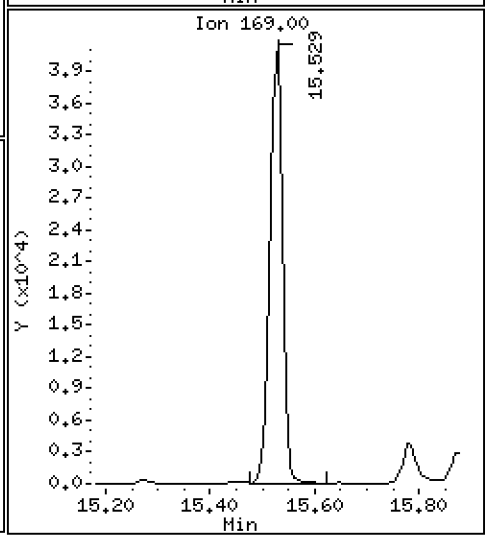












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062351.D

Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

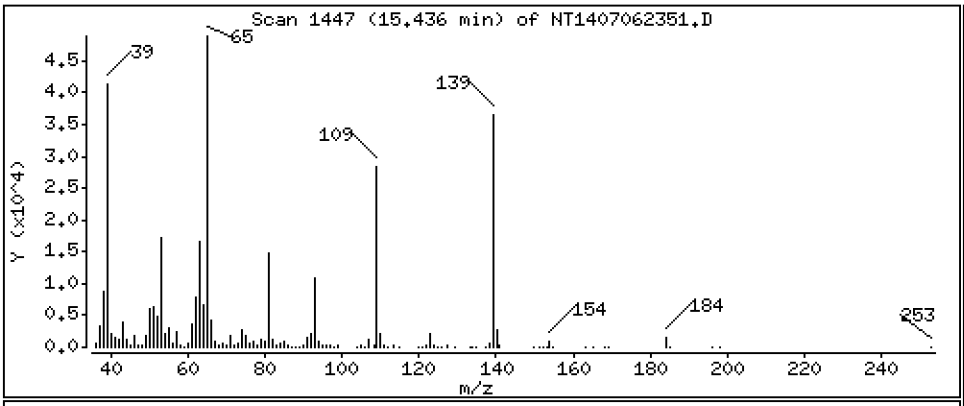
Operator: JGR

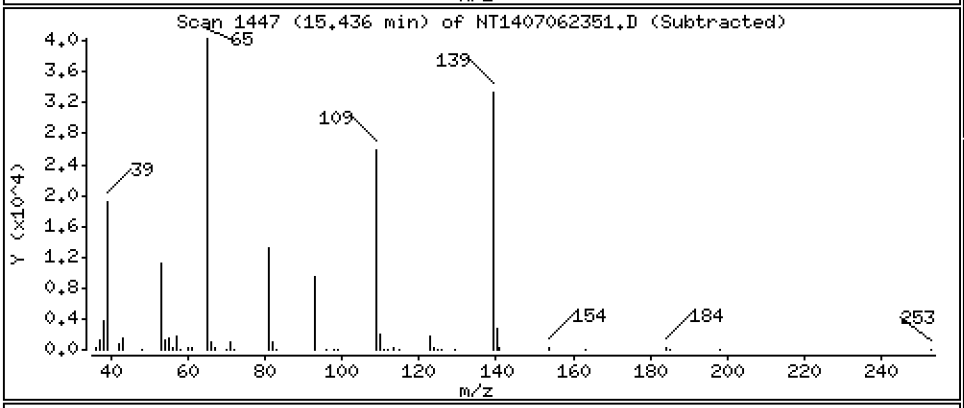
Column phase: ZB-5msi

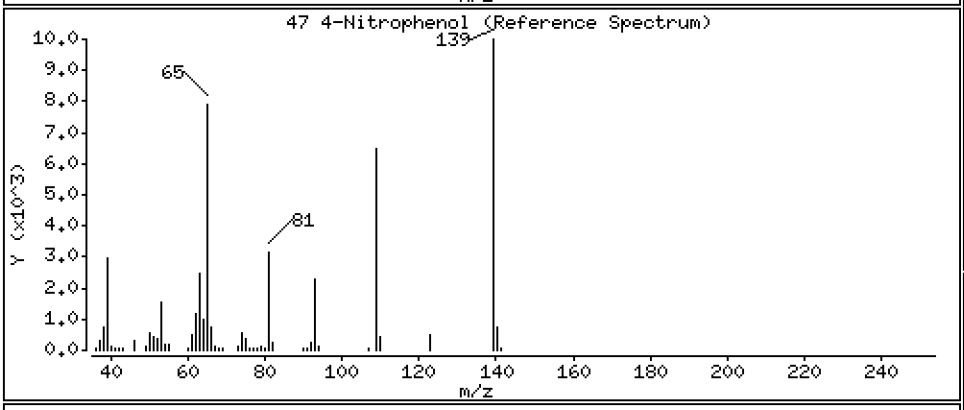
Column diameter: 0.25

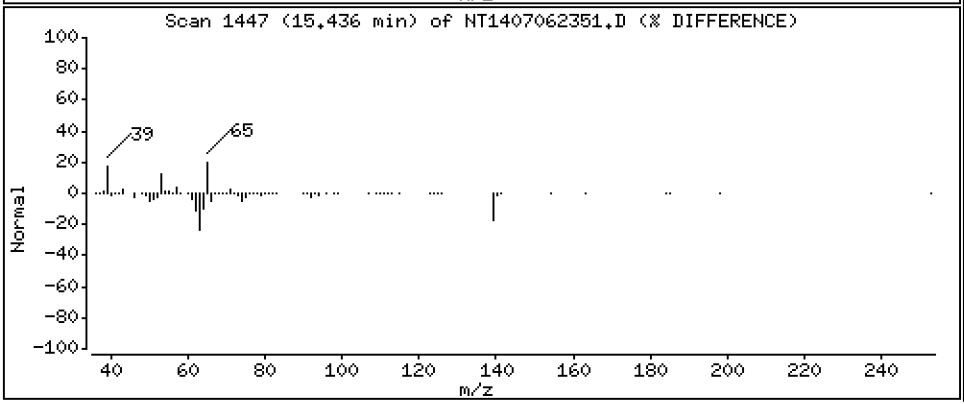
47 4-Nitrophenol

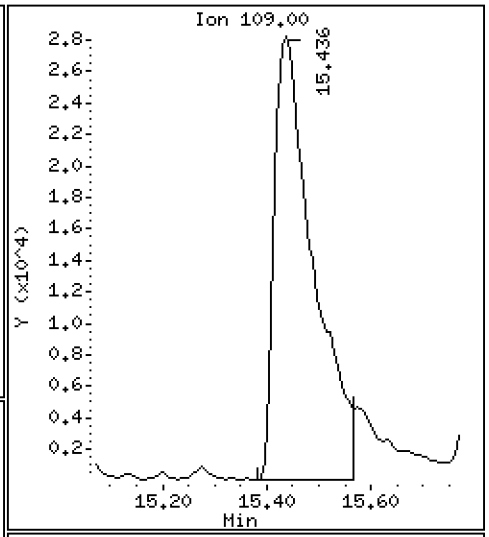
Concentration: 8.036 ug/mL

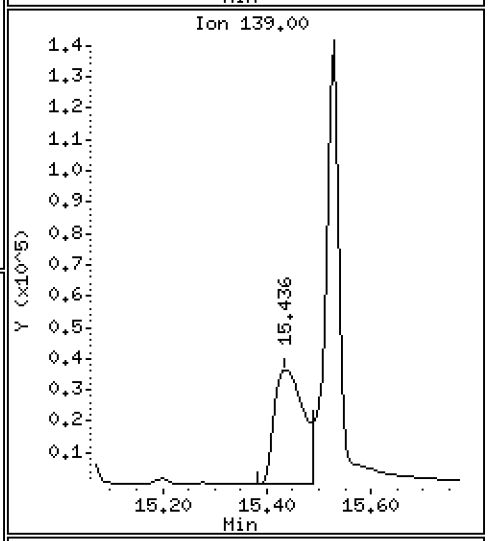


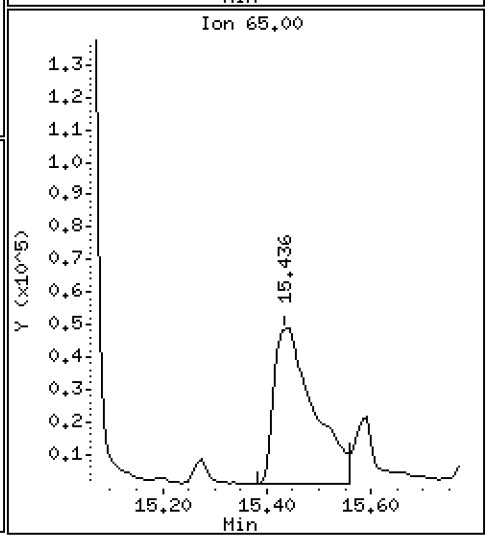












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

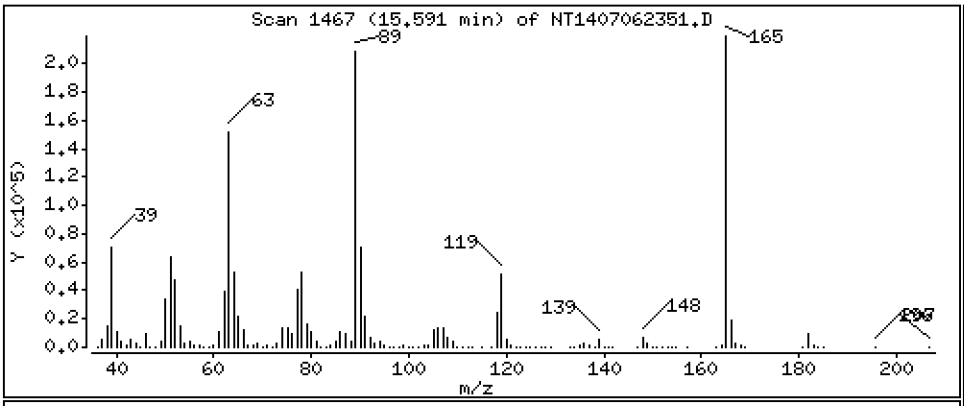
Operator: JGR

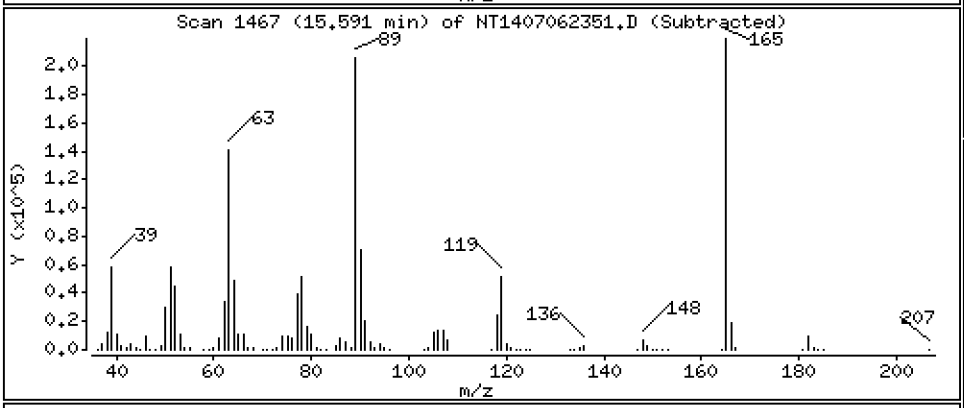
Column phase: ZB-5msi

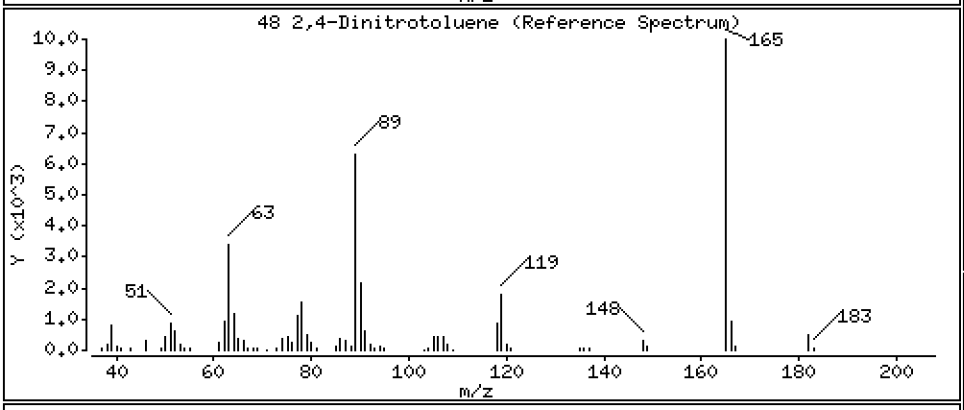
Column diameter: 0.25

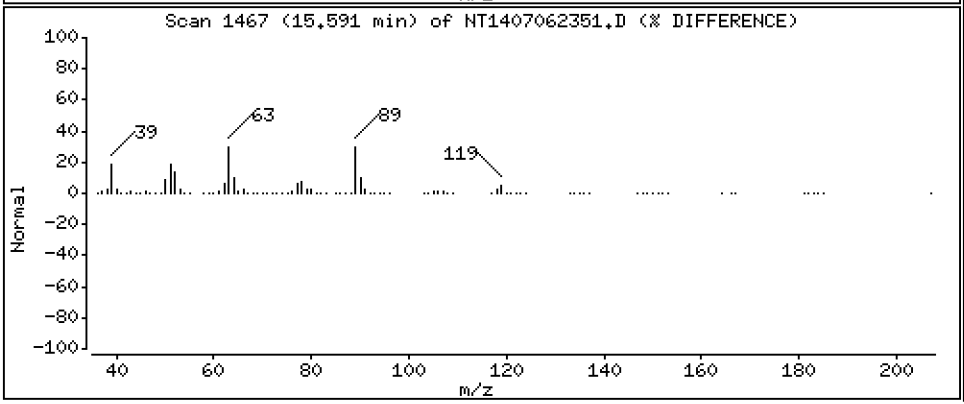
48 2,4-Dinitrotoluene

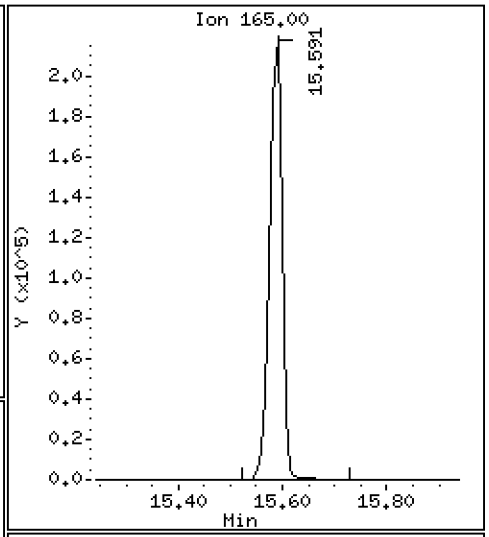
Concentration: 13.24 ug/mL

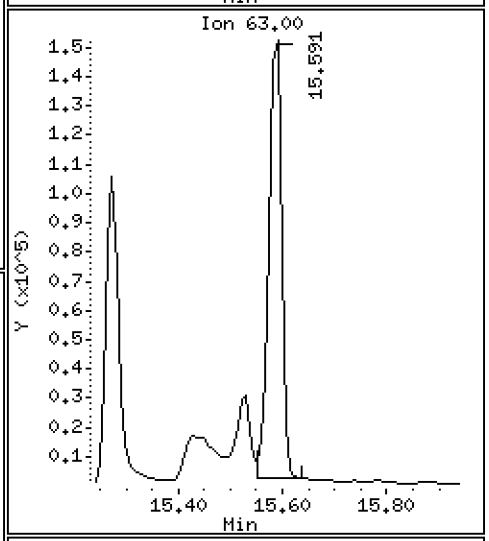


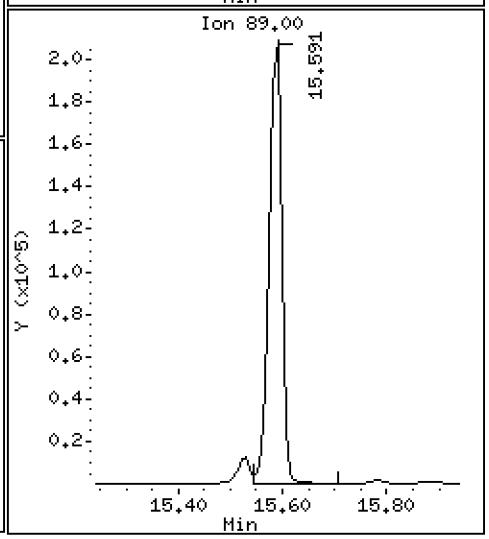












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062351.D

Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

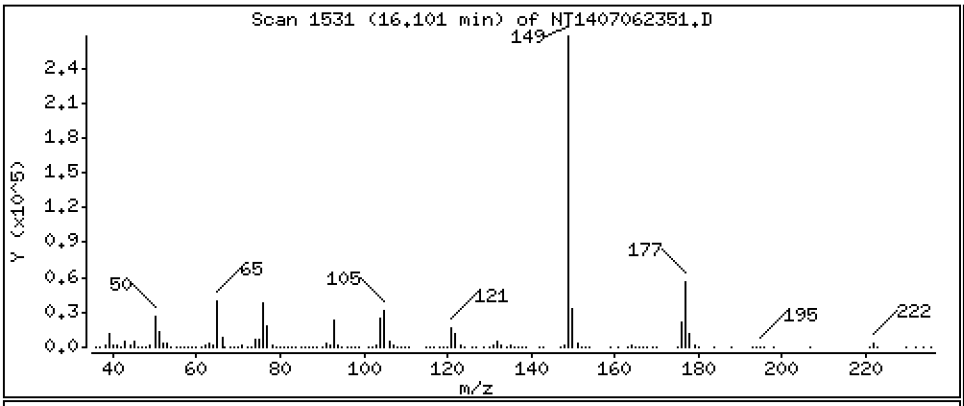
Operator: JGR

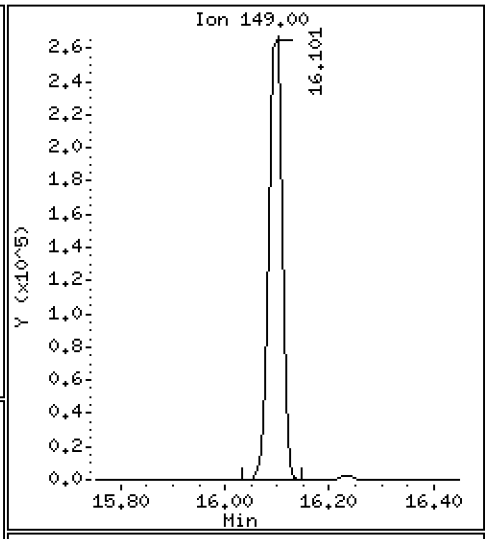
Column phase: ZB-5msi

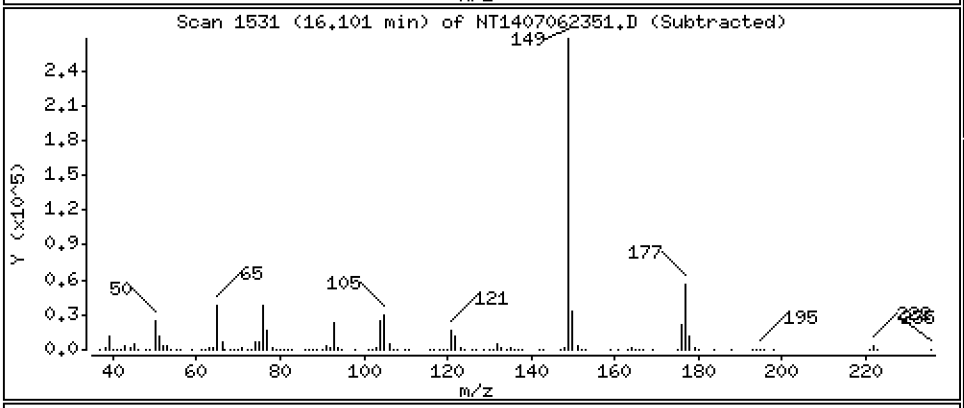
Column diameter: 0.25

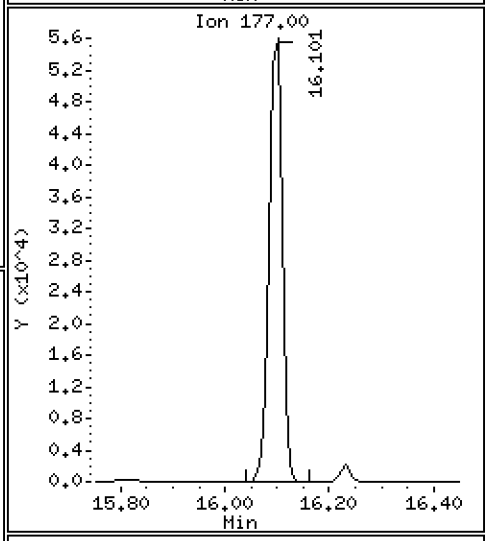
50 Diethylphthalate

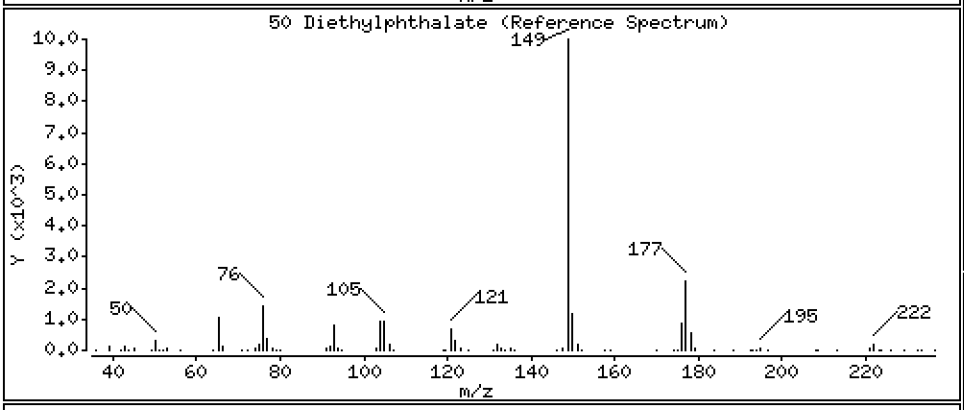
Concentration: 4.403 ug/mL

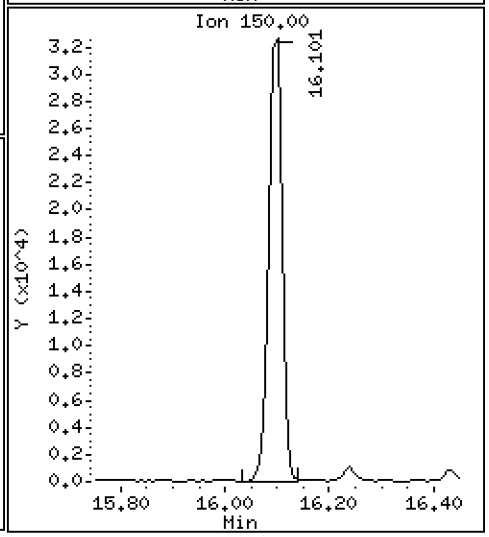


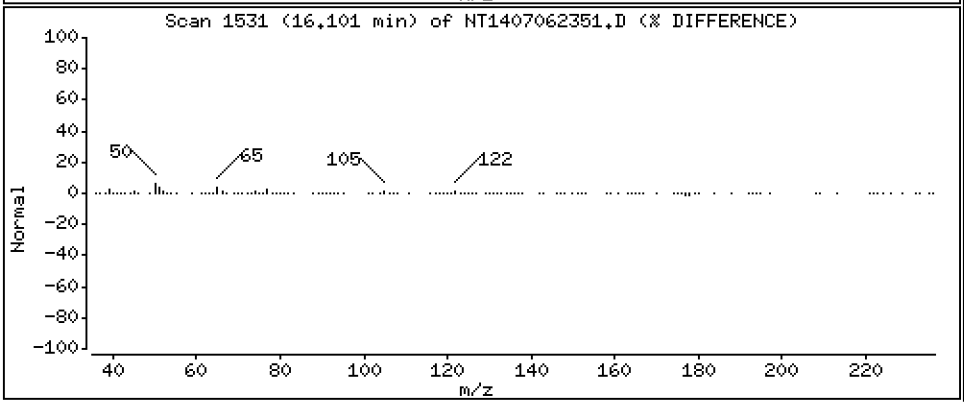












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

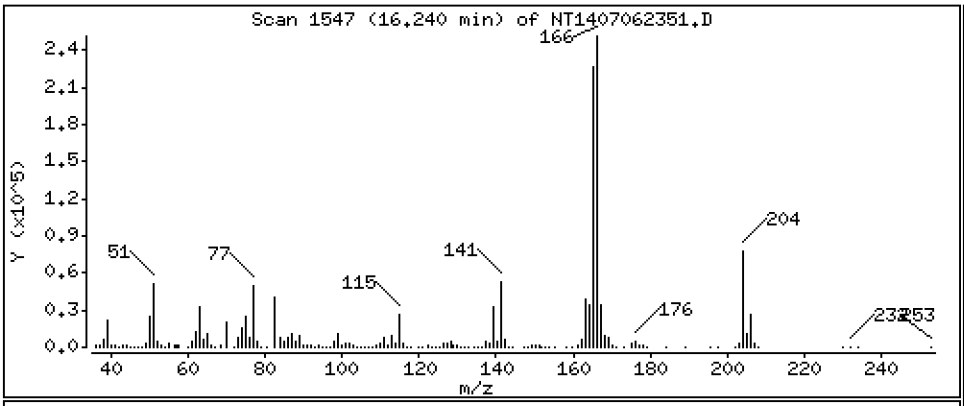
Operator: JGR

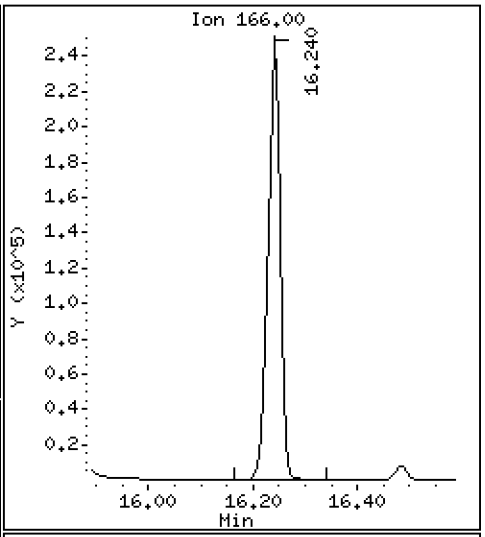
Column phase: ZB-5msi

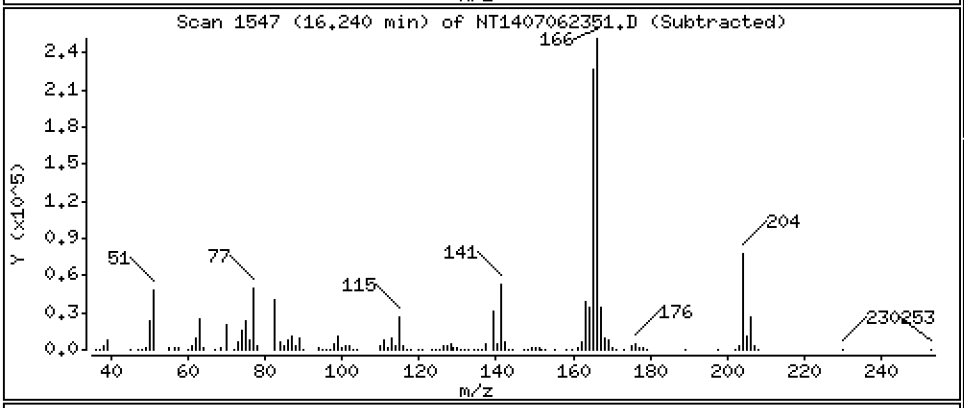
Column diameter: 0.25

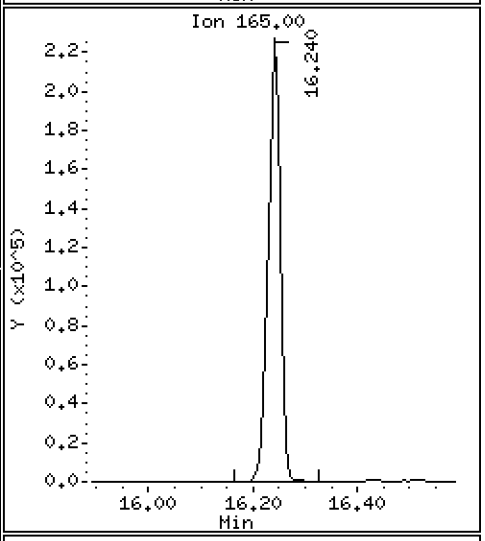
49 Fluorene

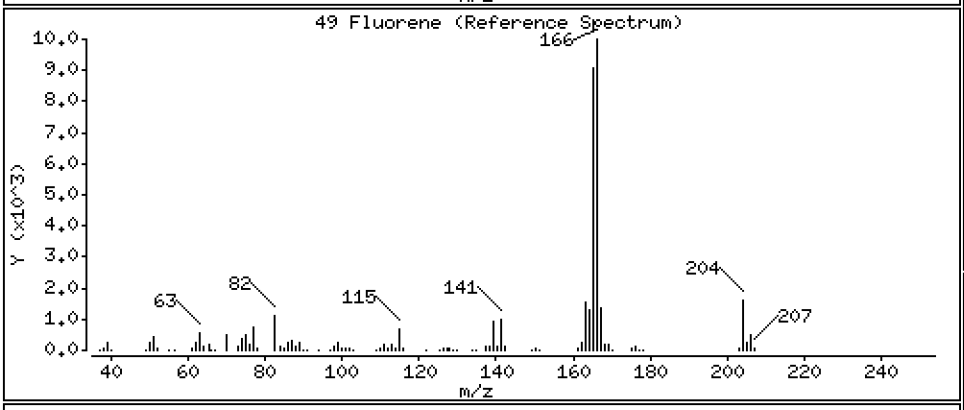
Concentration: 4.294 ug/mL

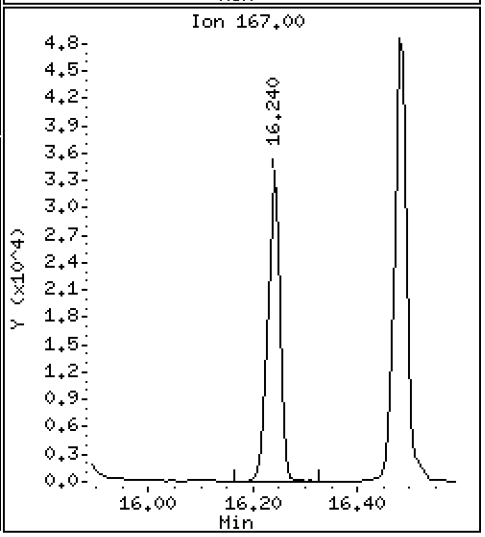


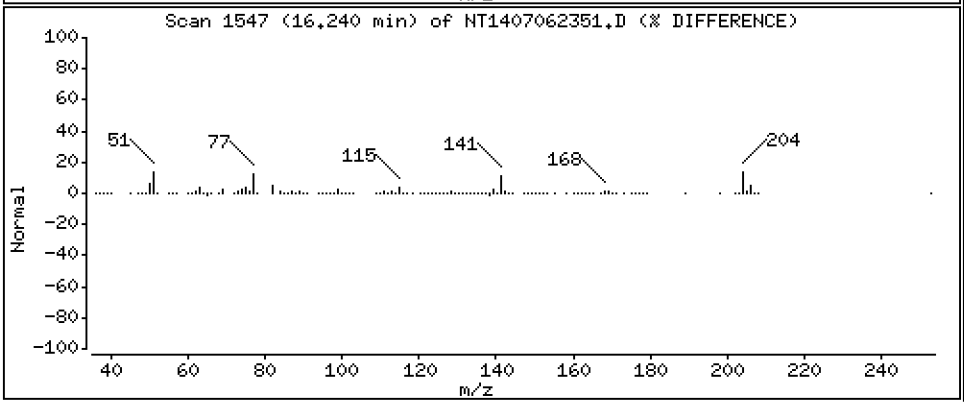












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

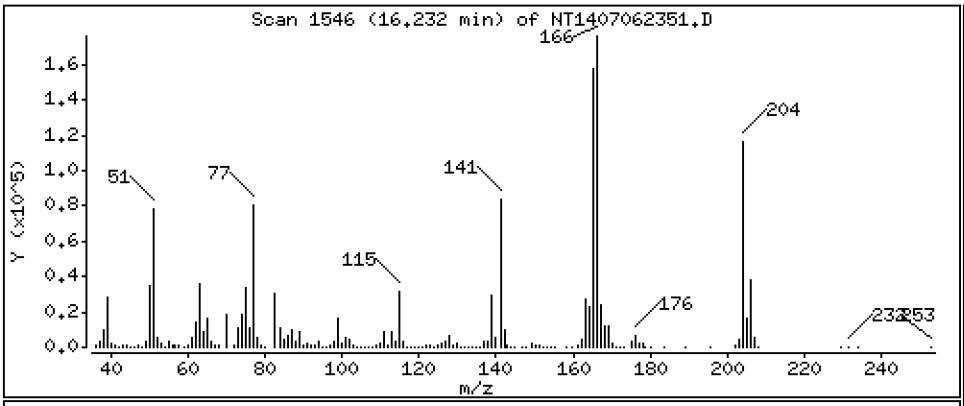
Operator: JGR

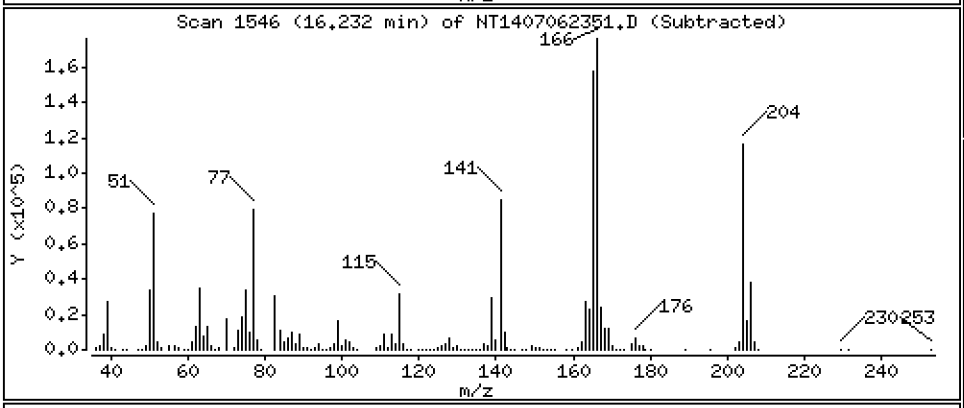
Column phase: ZB-5msi

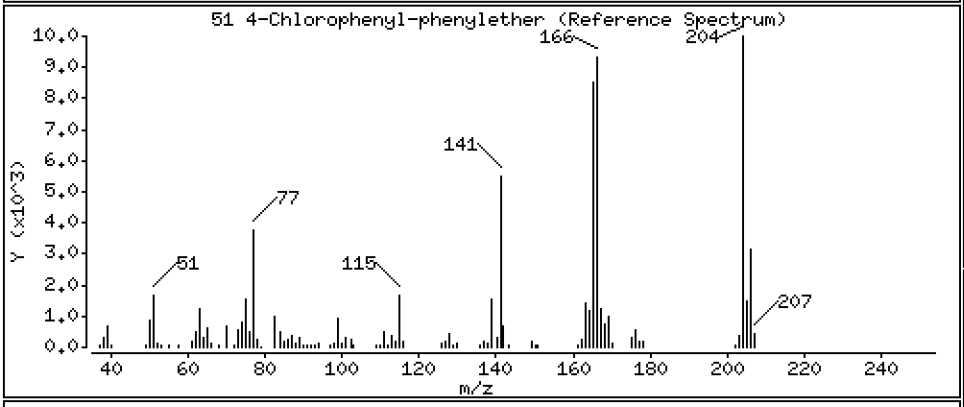
Column diameter: 0.25

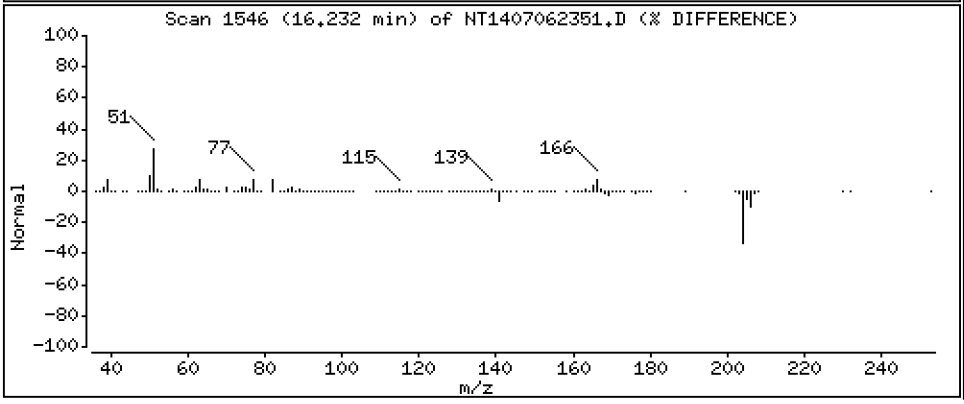
51 4-Chlorophenyl-phenylether

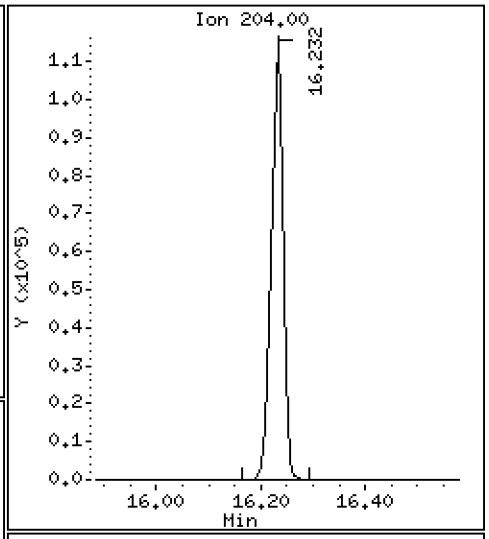
Concentration: 4.562 ug/mL

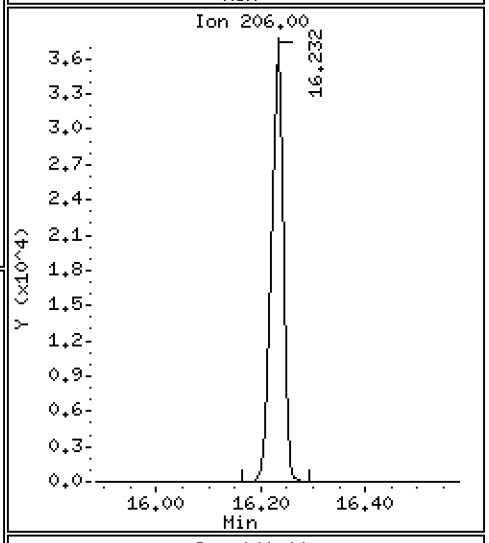


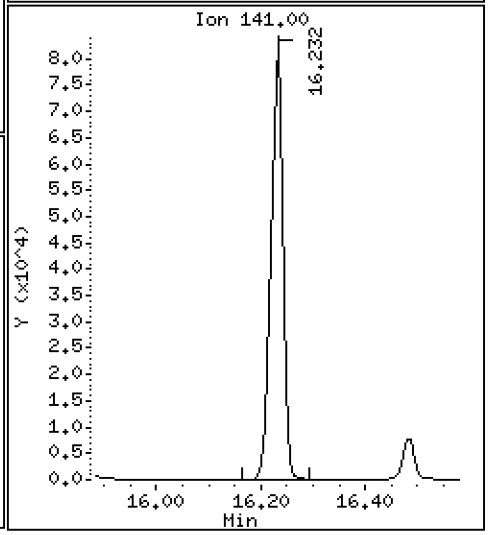












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

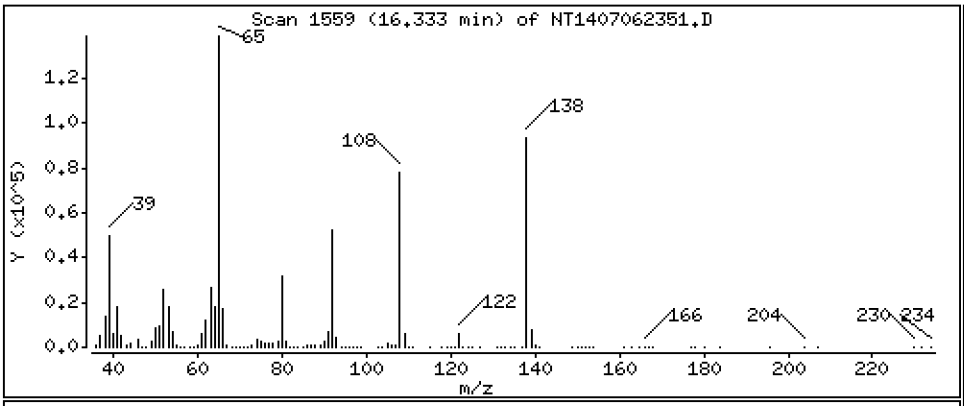
Operator: JGR

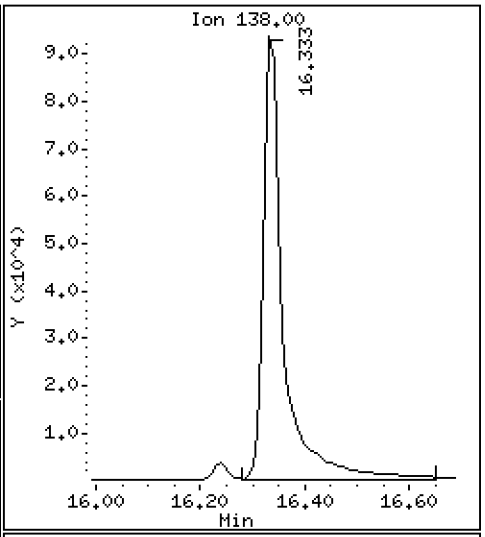
Column phase: ZB-5msi

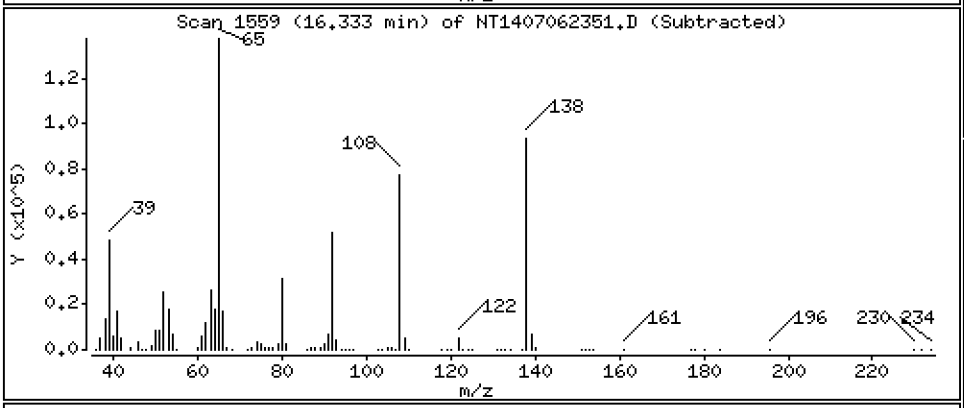
Column diameter: 0.25

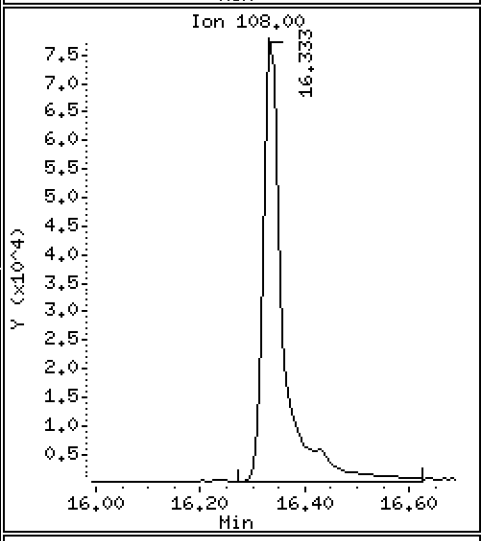
52 4-Nitroaniline

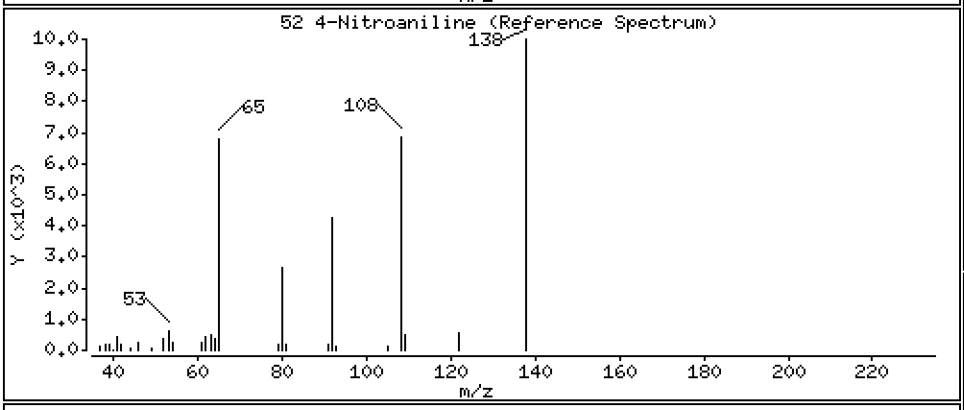
Concentration: 9.333 ug/mL

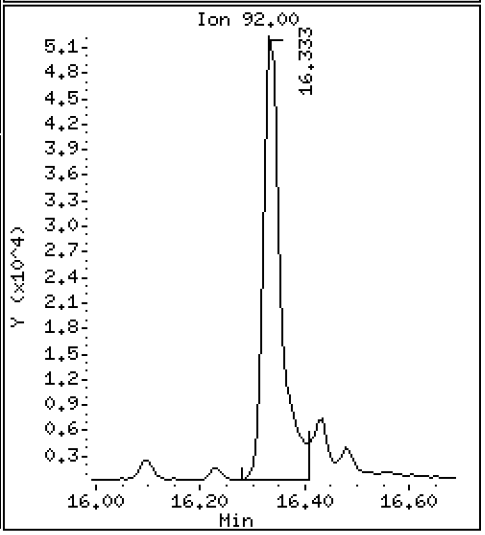


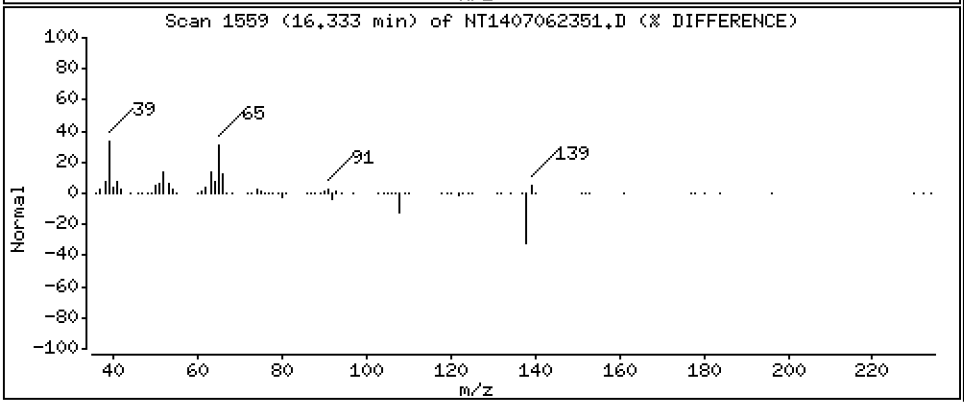












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

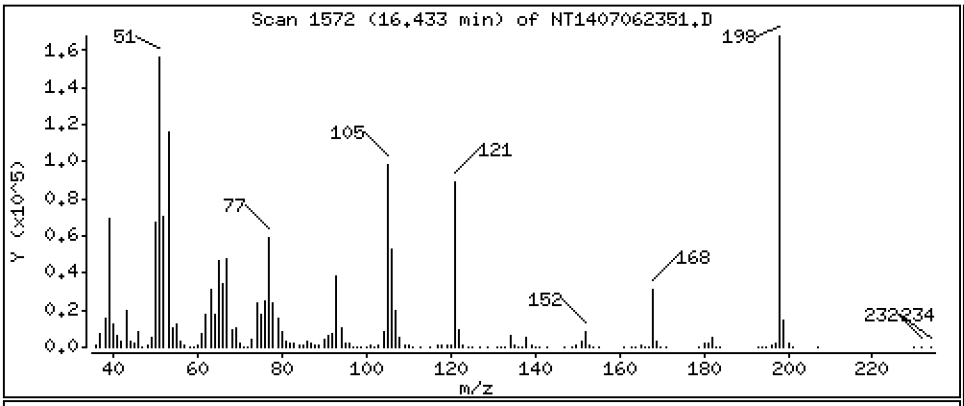
Operator: JGR

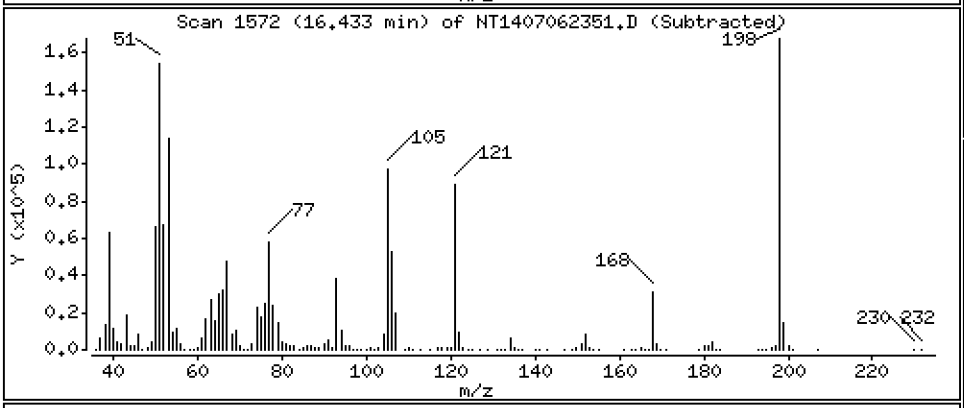
Column phase: ZB-5msi

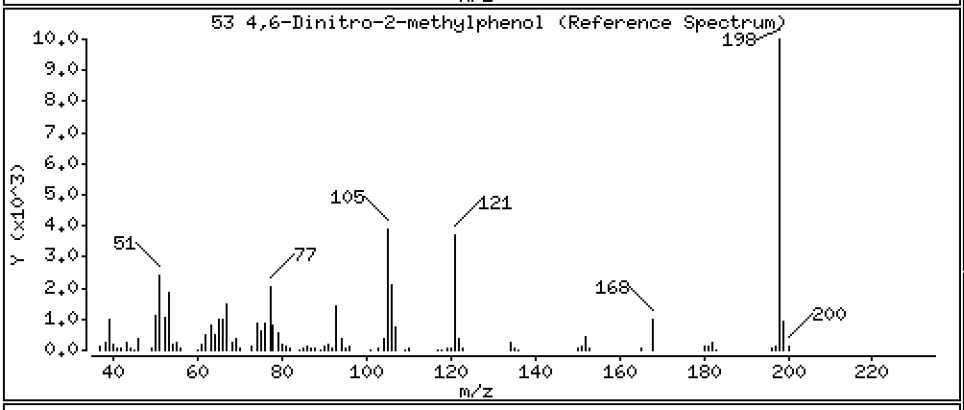
Column diameter: 0.25

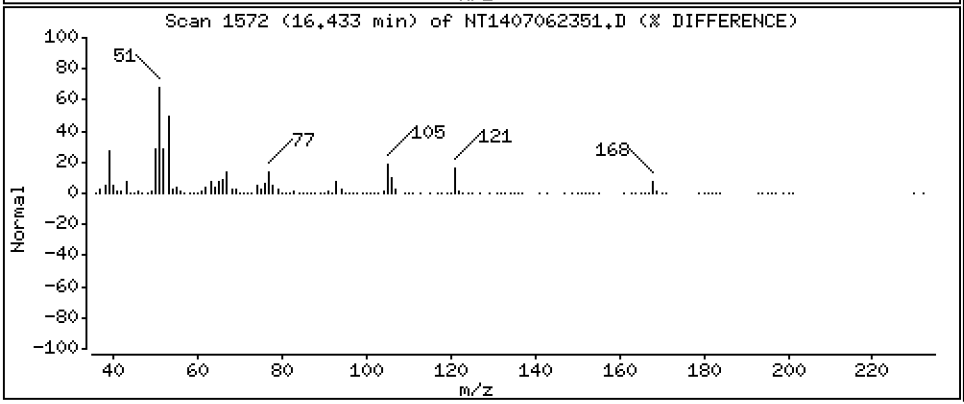
53 4,6-Dinitro-2-methylphenol

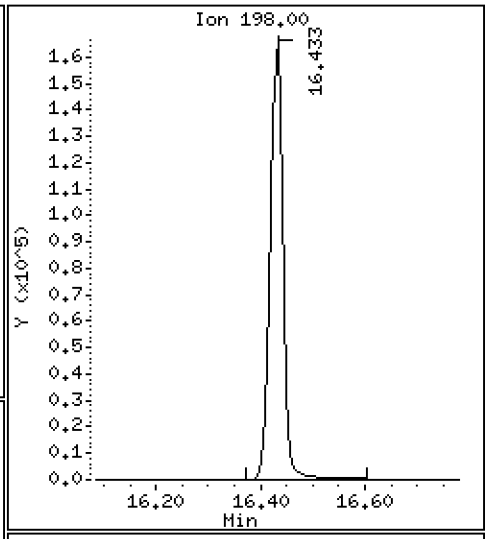
Concentration: 18.58 ug/mL

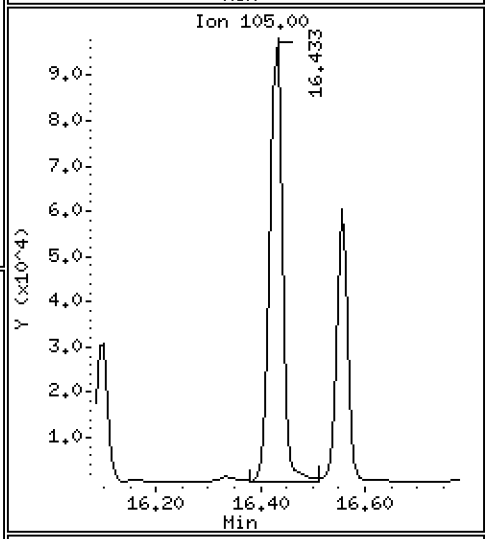


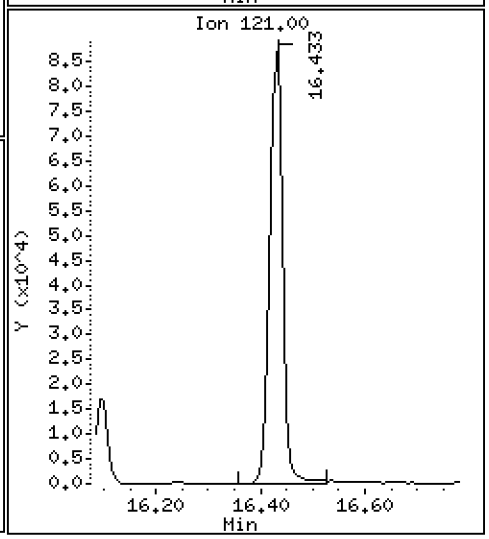












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

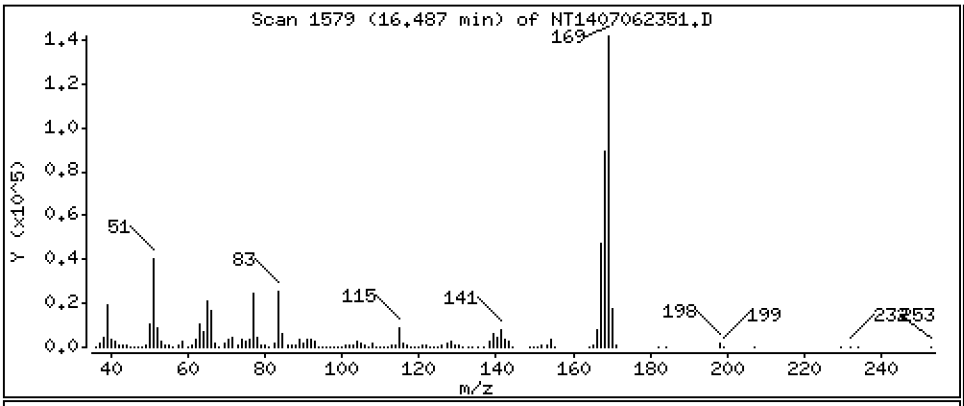
Operator: JGR

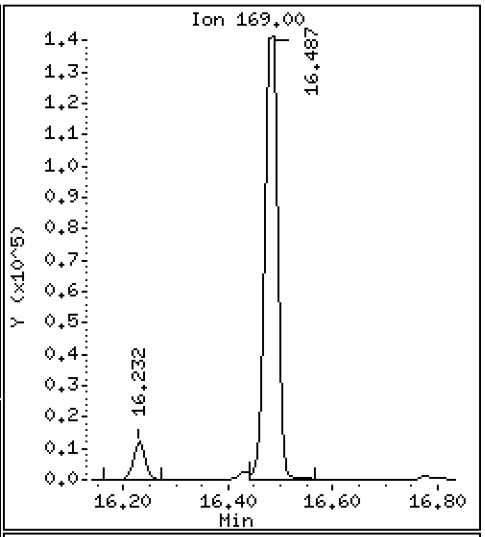
Column phase: ZB-5msi

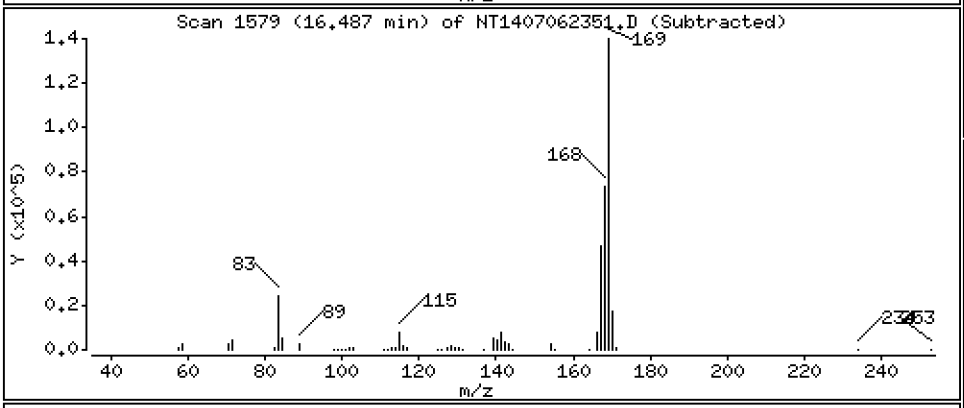
Column diameter: 0.25

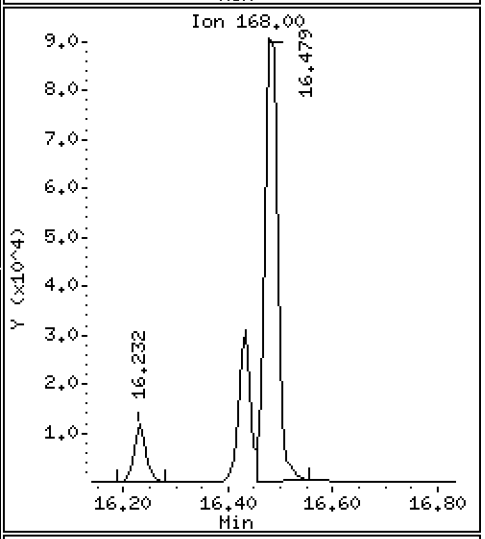
54 N-Nitrosodiphenylamine

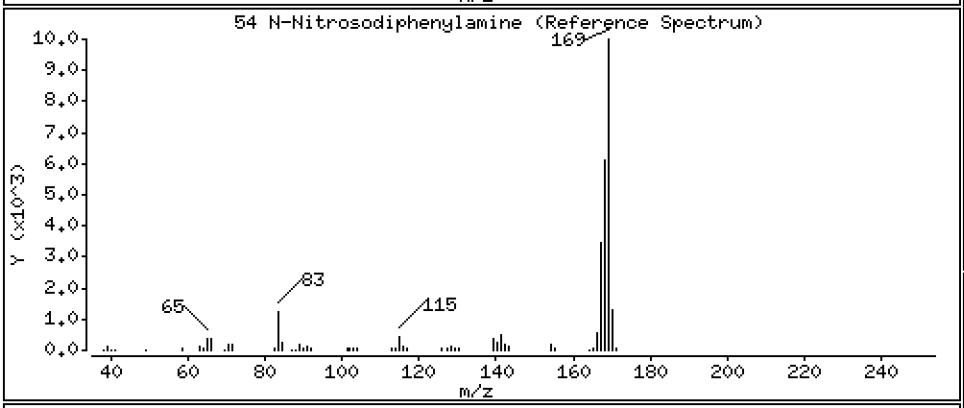
Concentration: 3.590 ug/mL

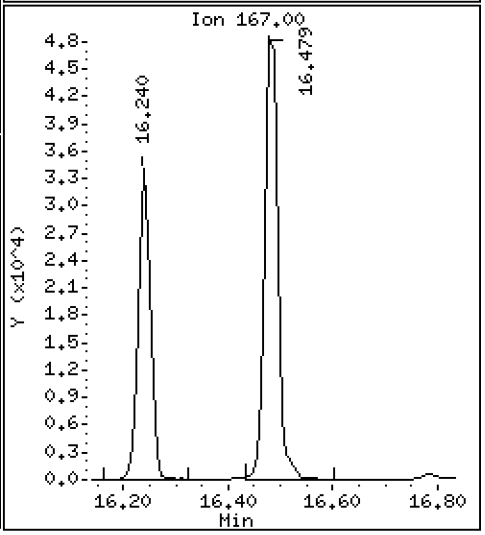


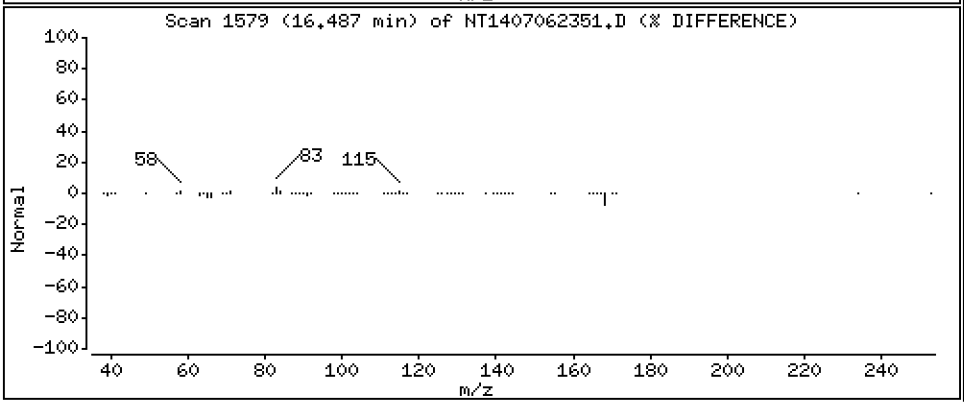












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

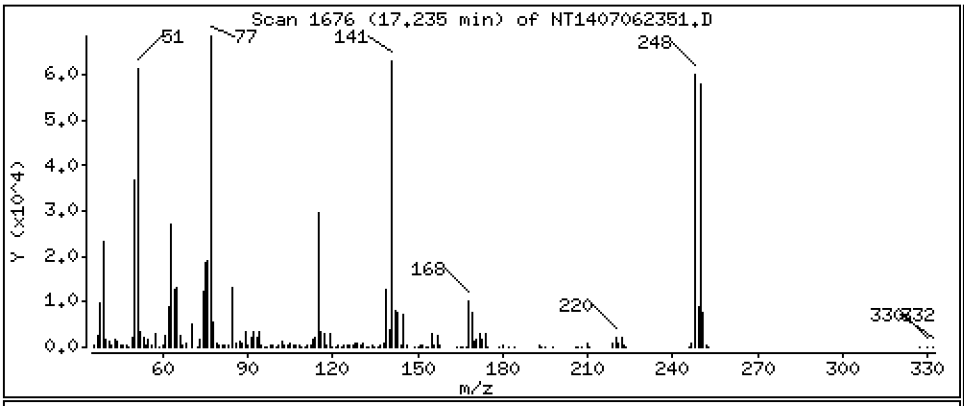
Operator: JGR

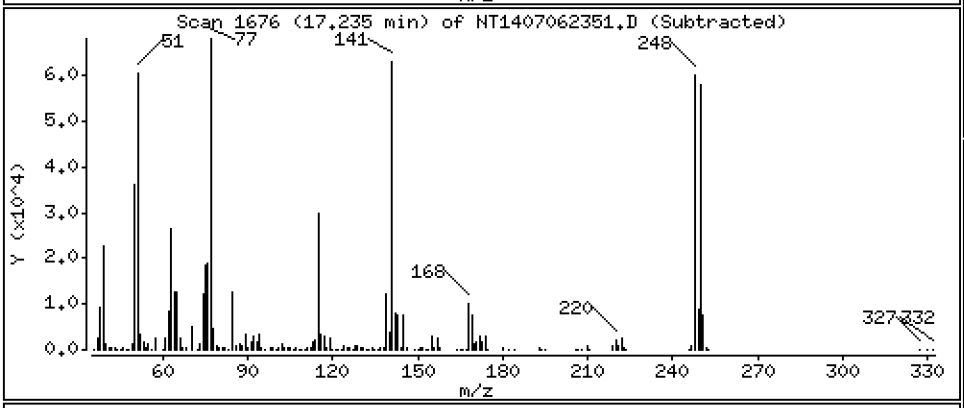
Column phase: ZB-5msi

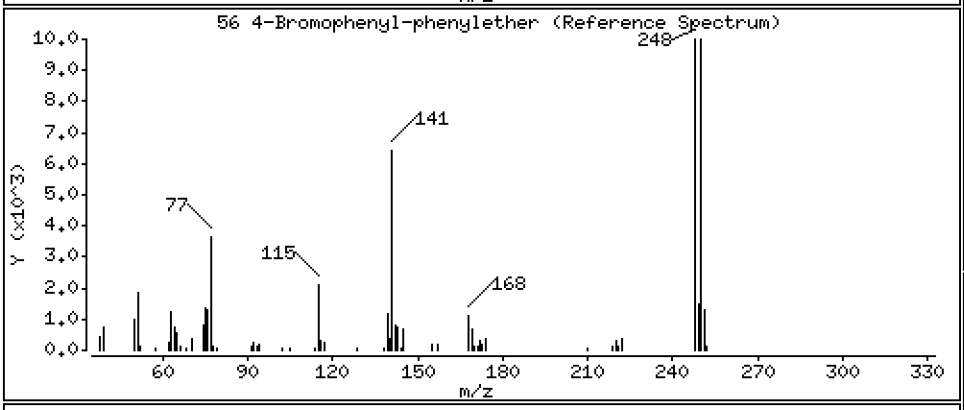
Column diameter: 0.25

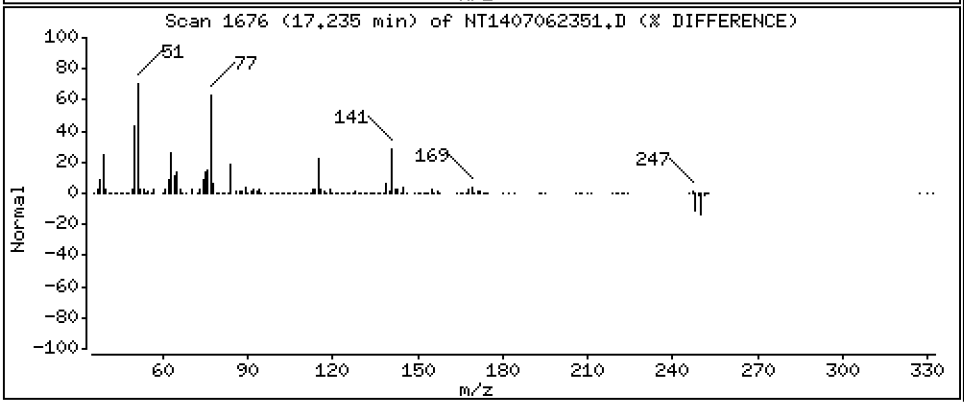
56 4-Bromophenyl-phenylether

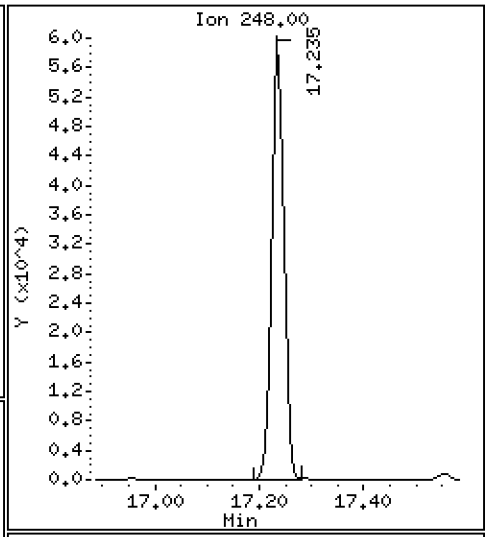
Concentration: 4.836 ug/mL

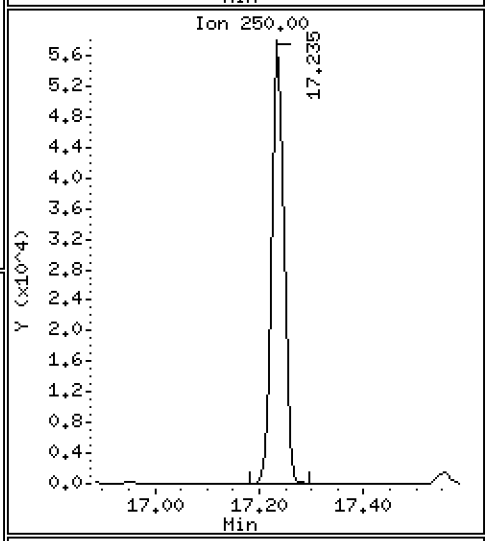


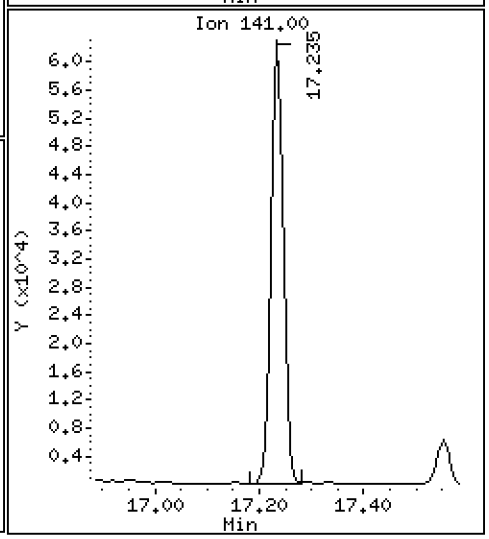












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

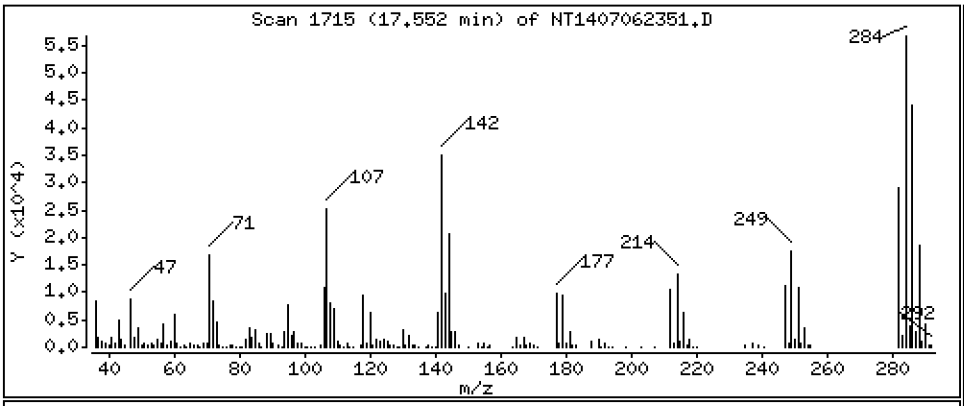
Operator: JGR

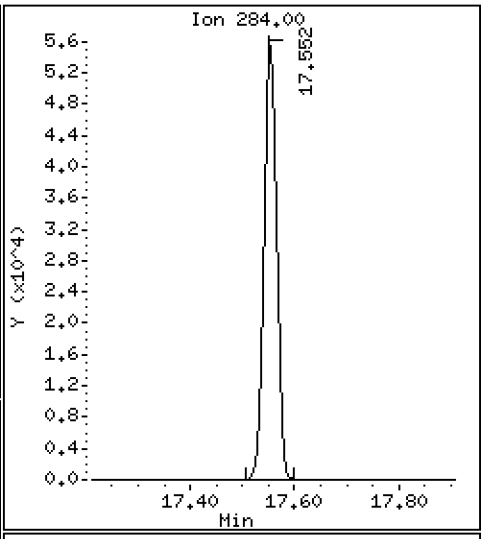
Column phase: ZB-5msi

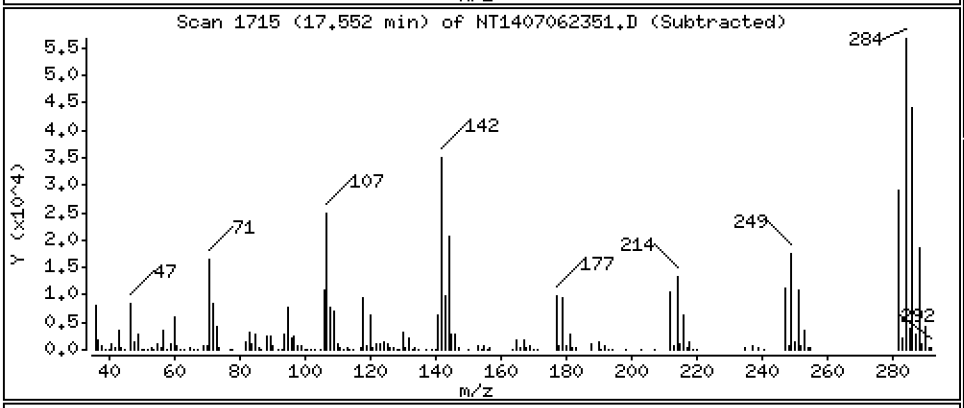
Column diameter: 0.25

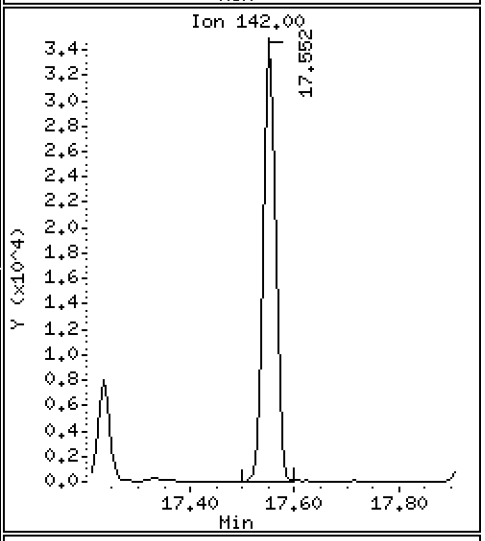
57 Hexachlorobenzene

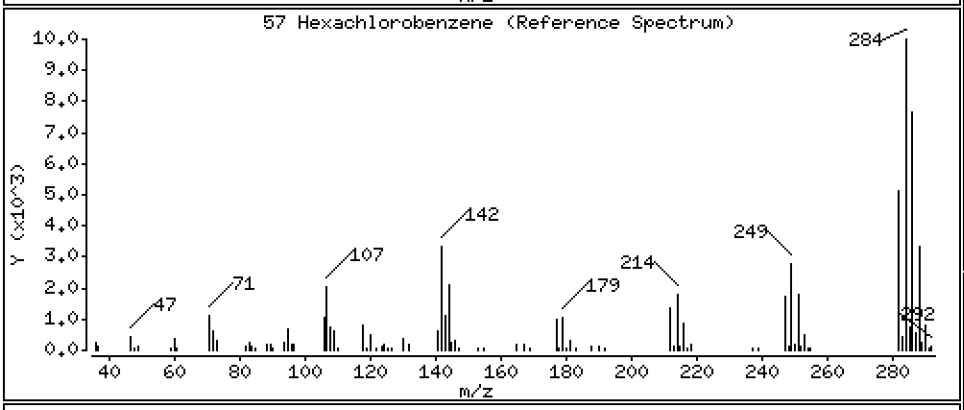
Concentration: 4.455 ug/mL

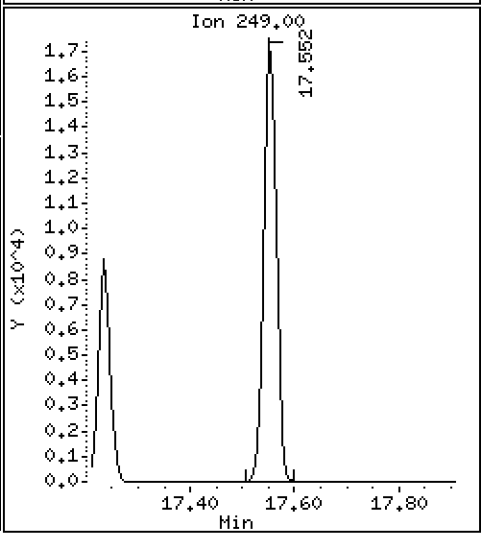


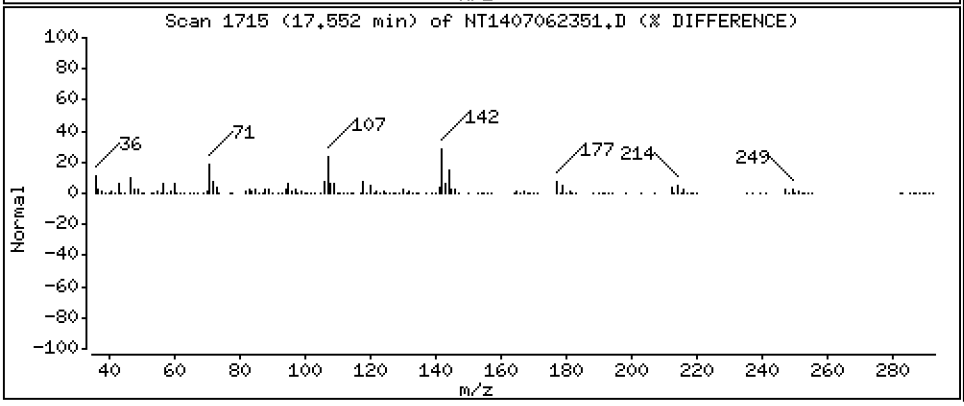












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

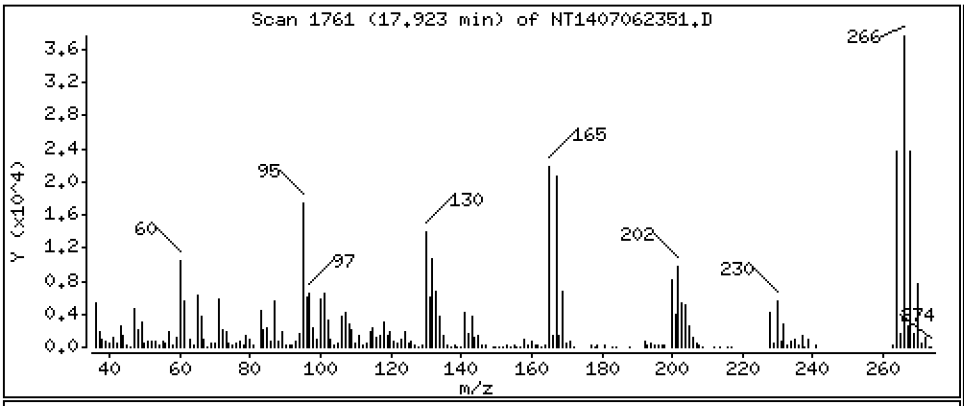
Operator: JGR

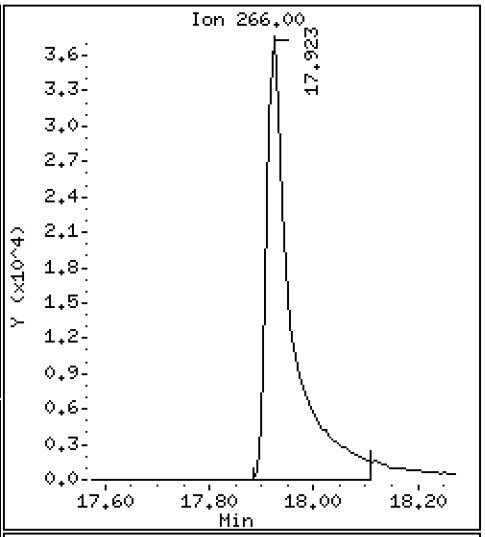
Column phase: ZB-5msi

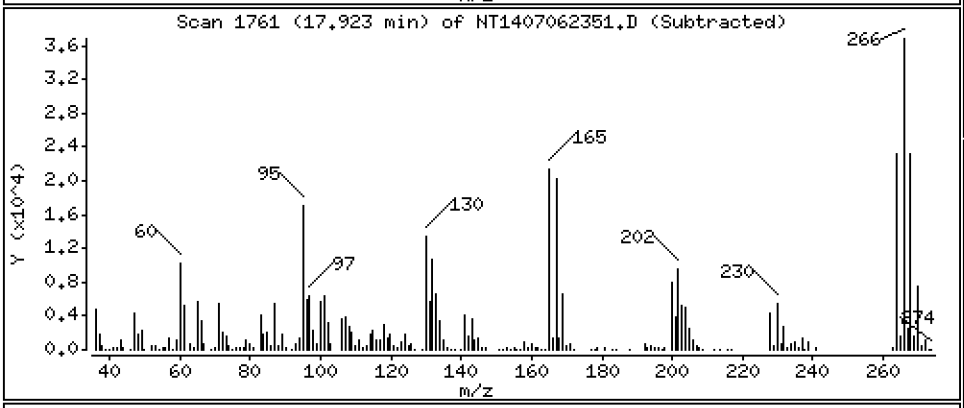
Column diameter: 0.25

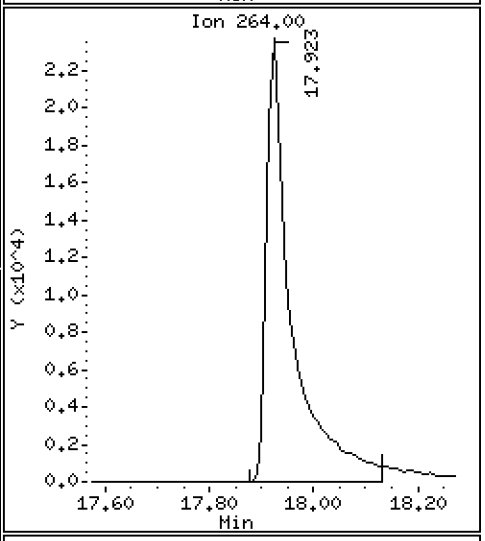
58 Pentachlorophenol

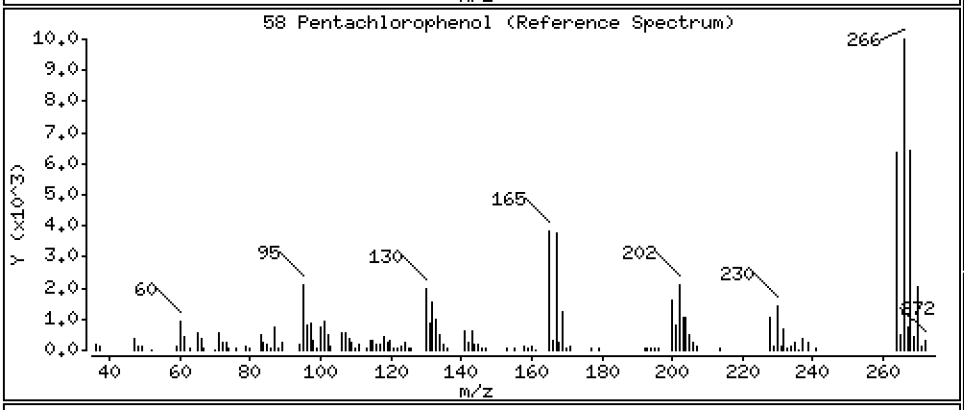
Concentration: 9.799 ug/mL

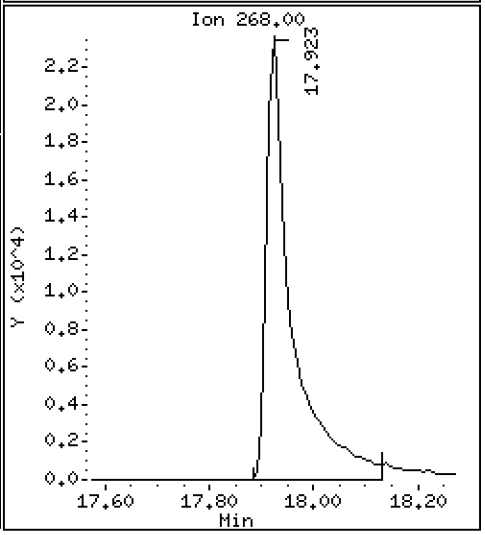


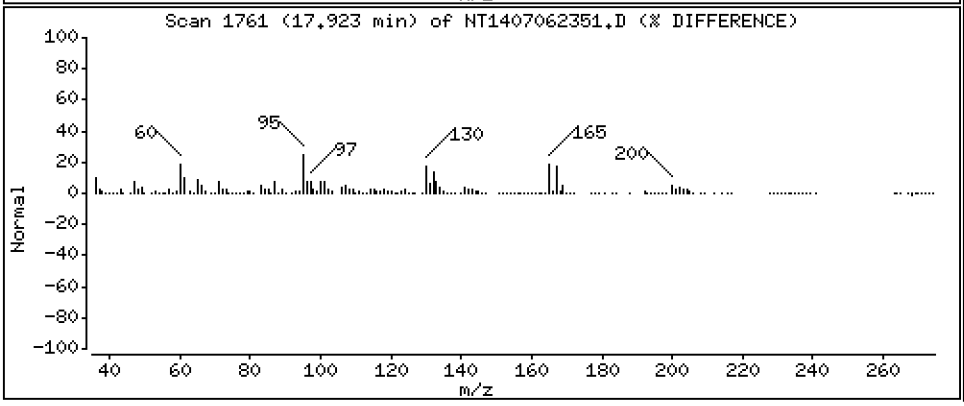












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

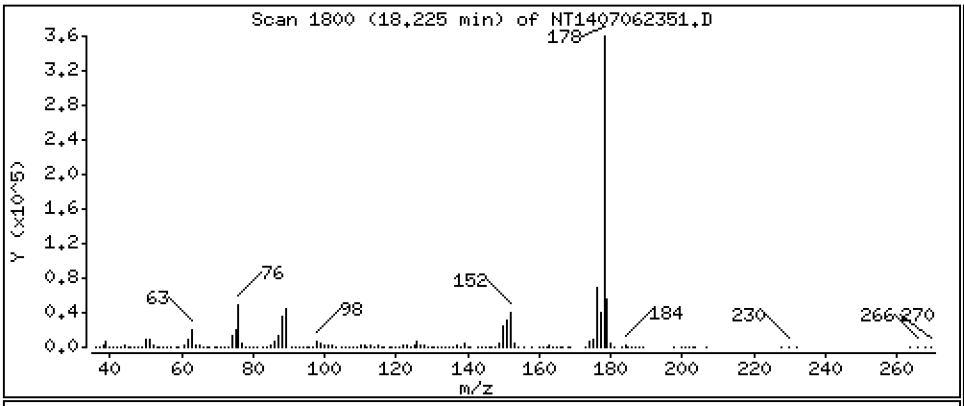
Operator: JGR

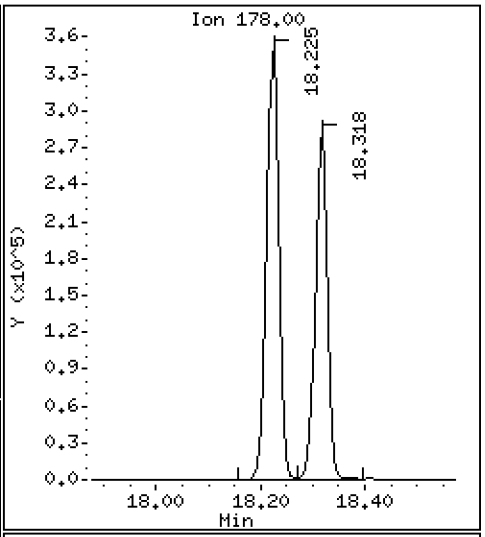
Column phase: ZB-5msi

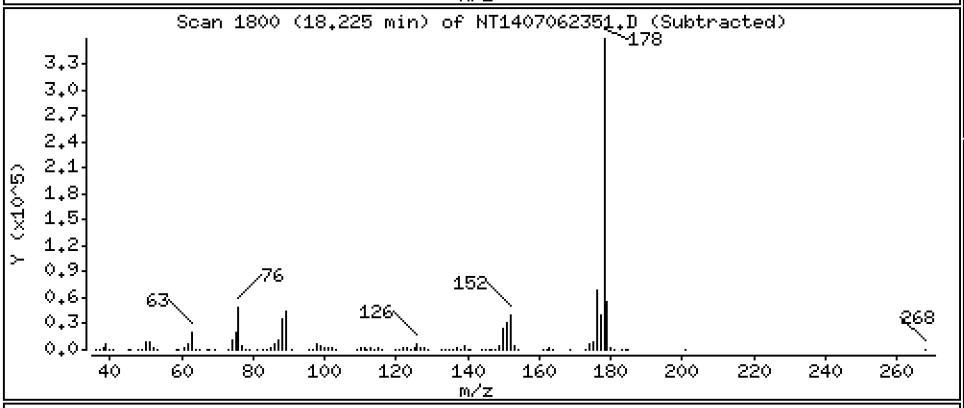
Column diameter: 0.25

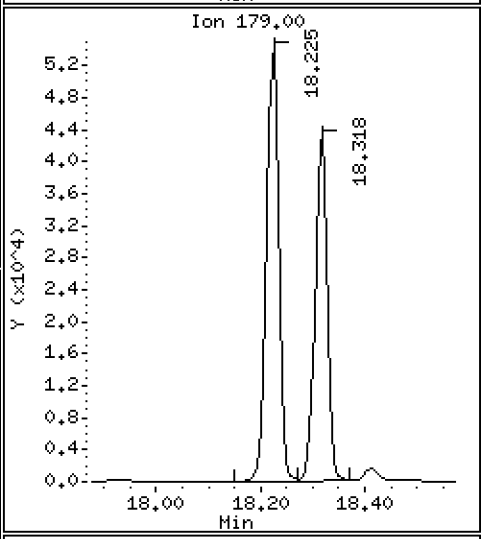
60 Phenanthrene

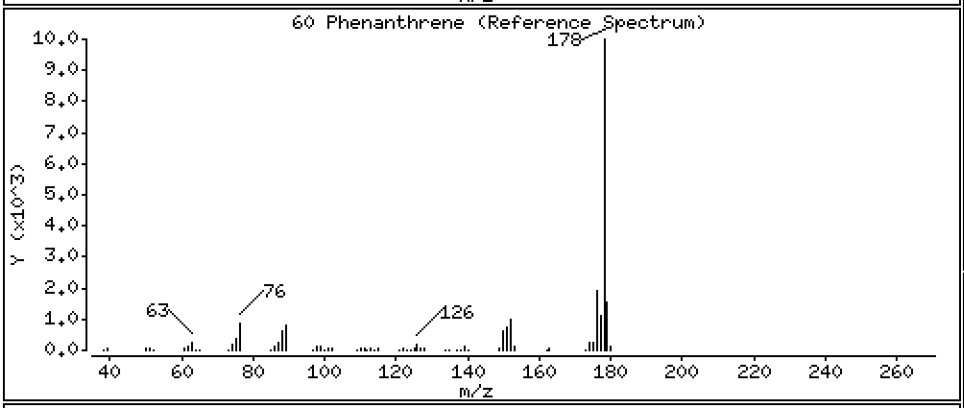
Concentration: 4.528 ug/mL

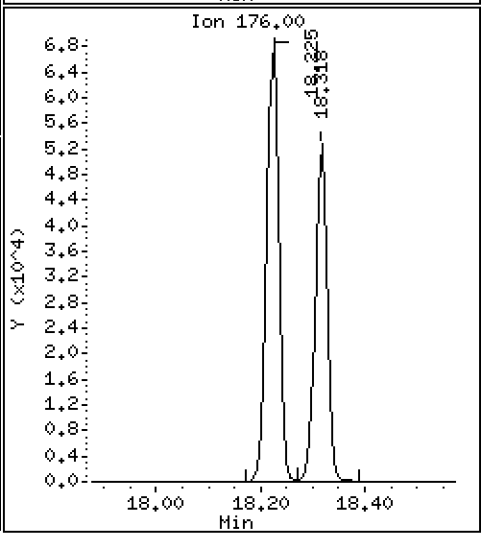


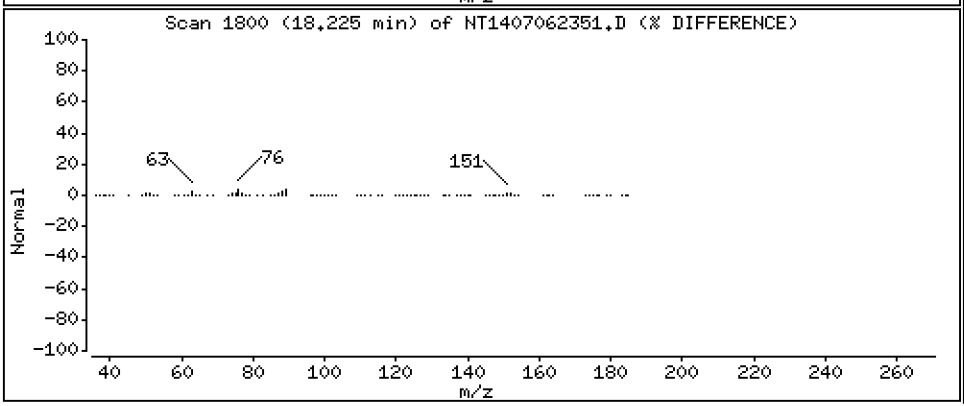












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

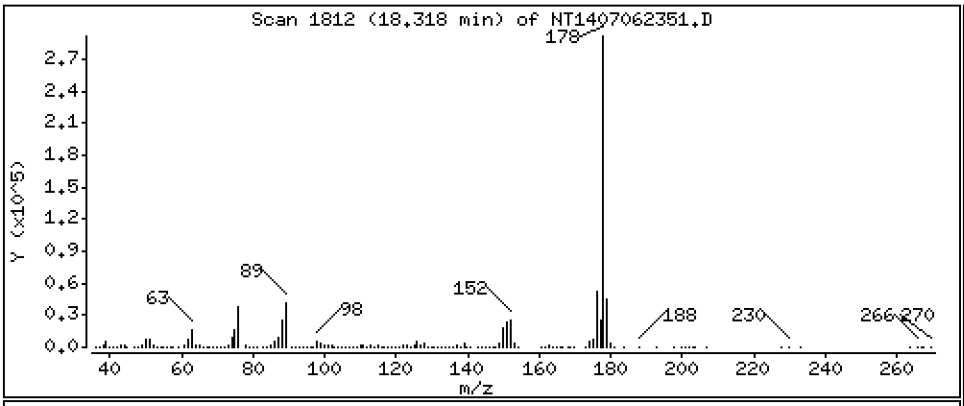
Operator: JGR

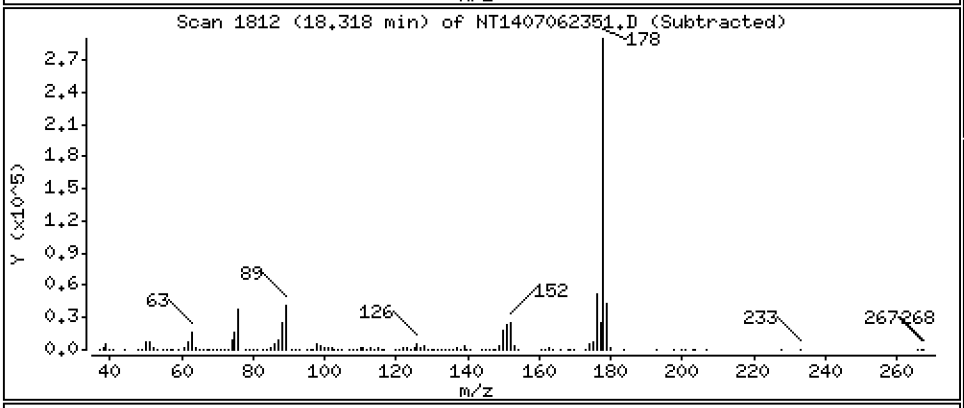
Column phase: ZB-5msi

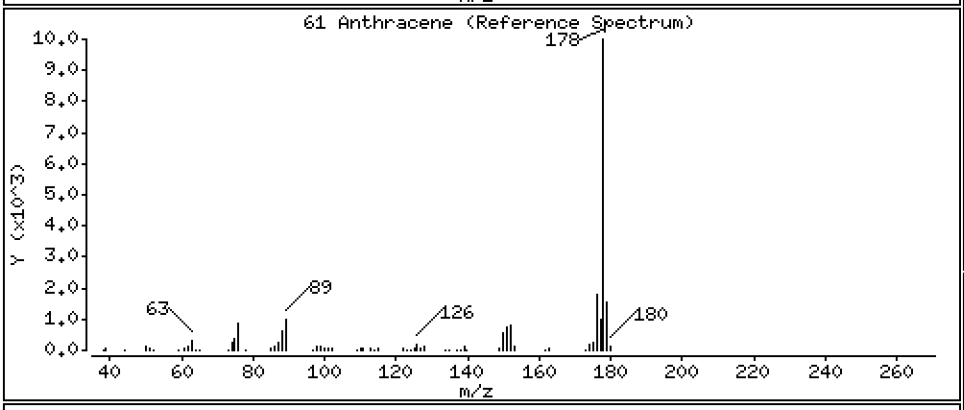
Column diameter: 0.25

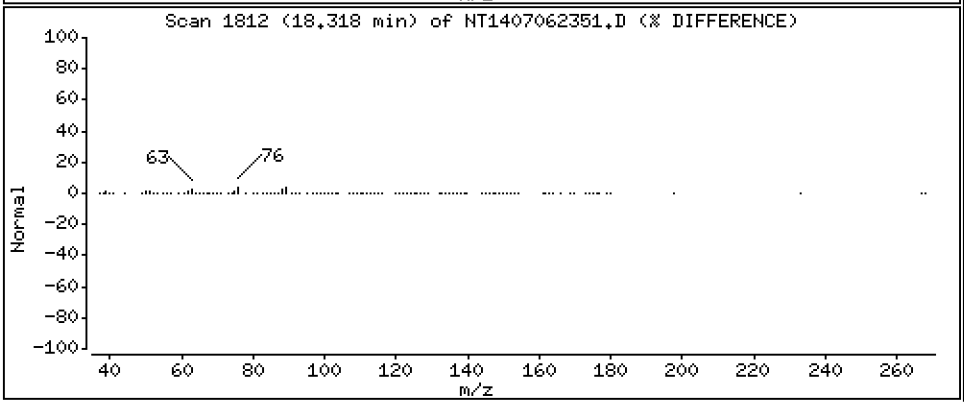
61 Anthracene

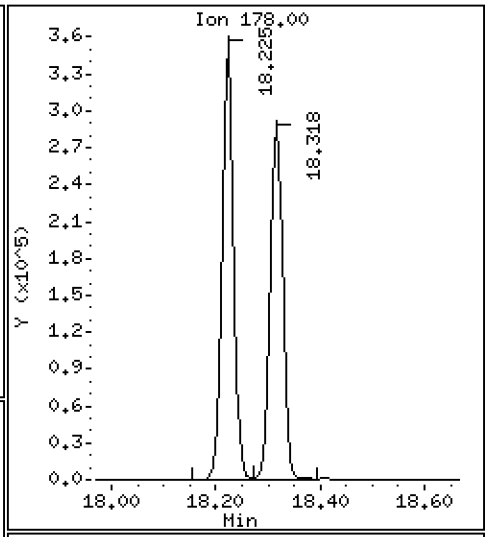
Concentration: 3.925 ug/mL

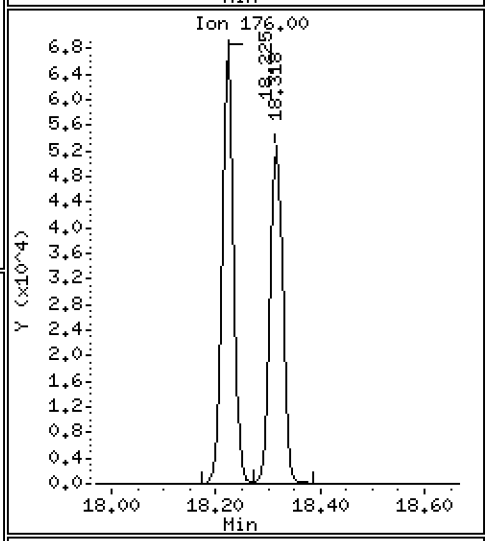


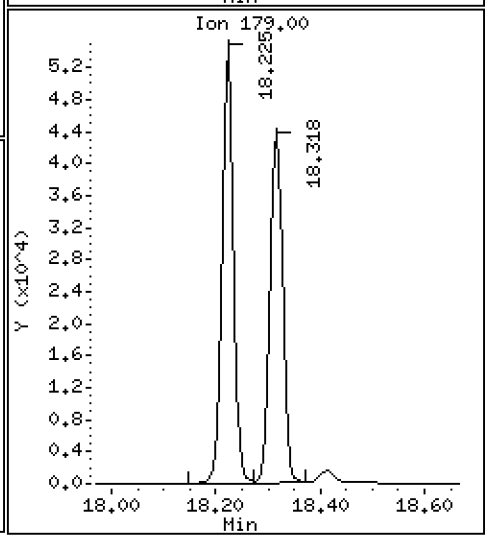












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062351.D

Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

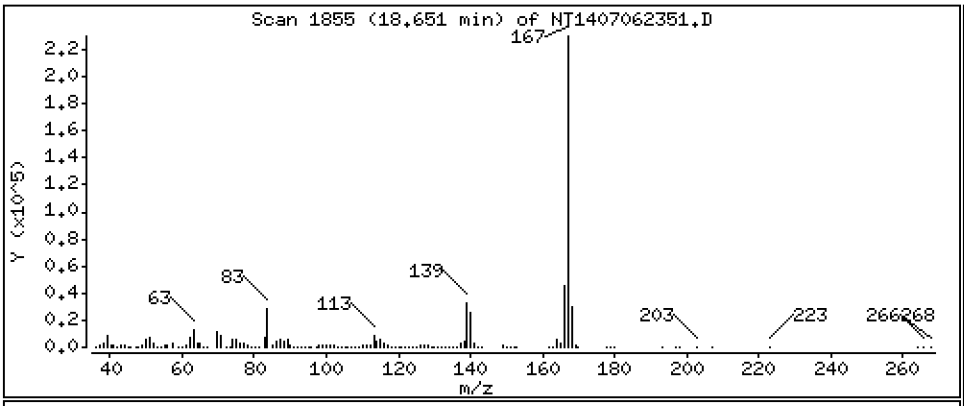
Operator: JGR

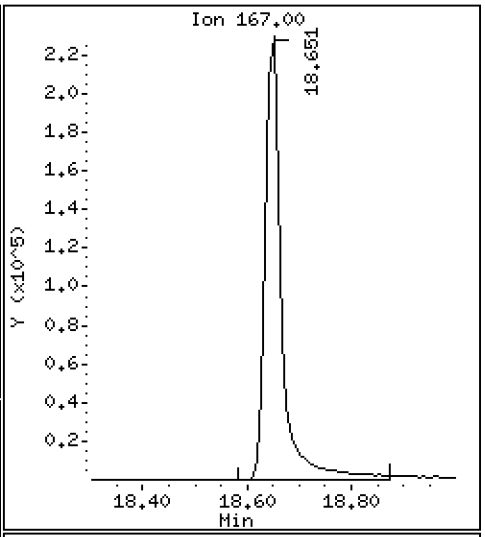
Column phase: ZB-5msi

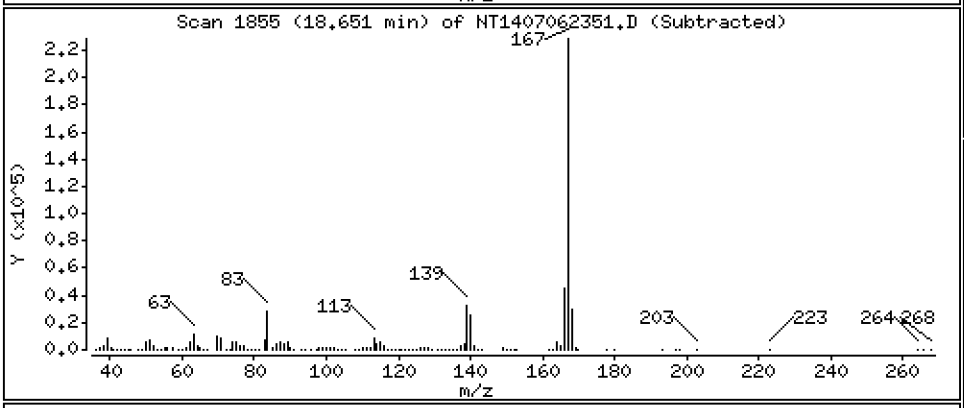
Column diameter: 0.25

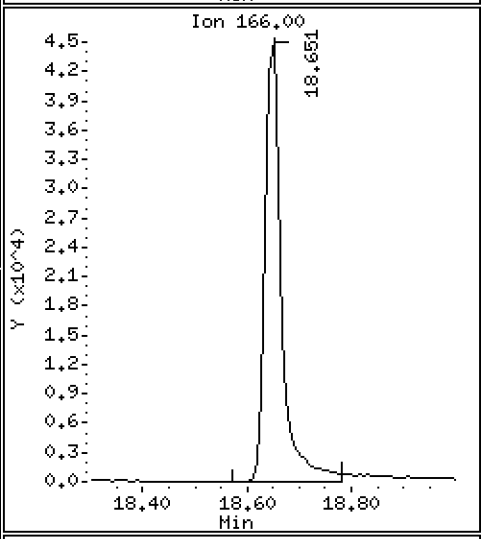
62 Carbazole

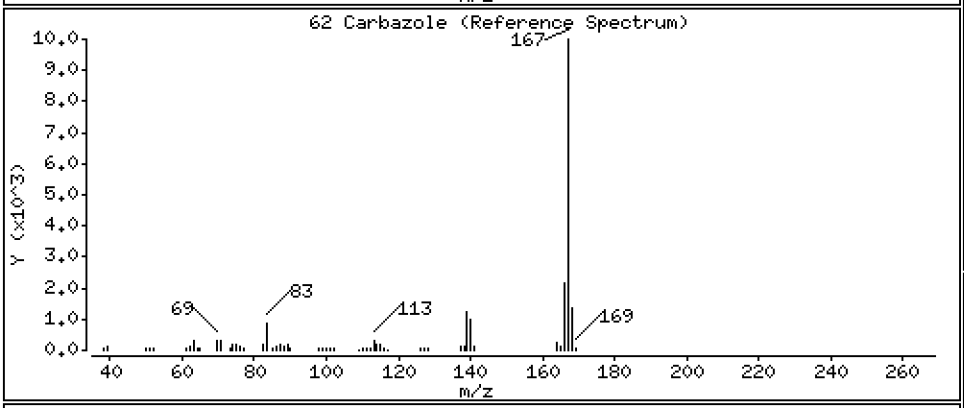
Concentration: 4.147 ug/mL

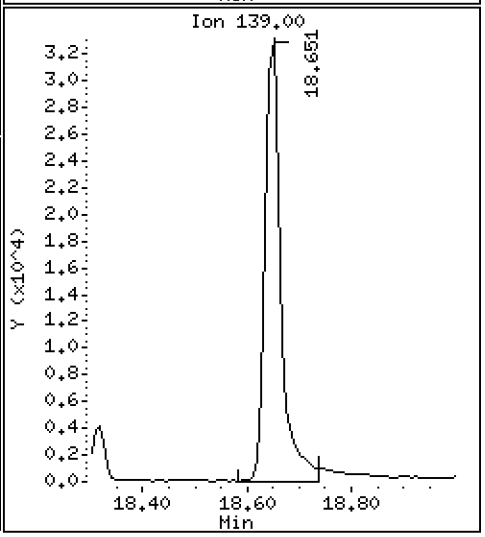


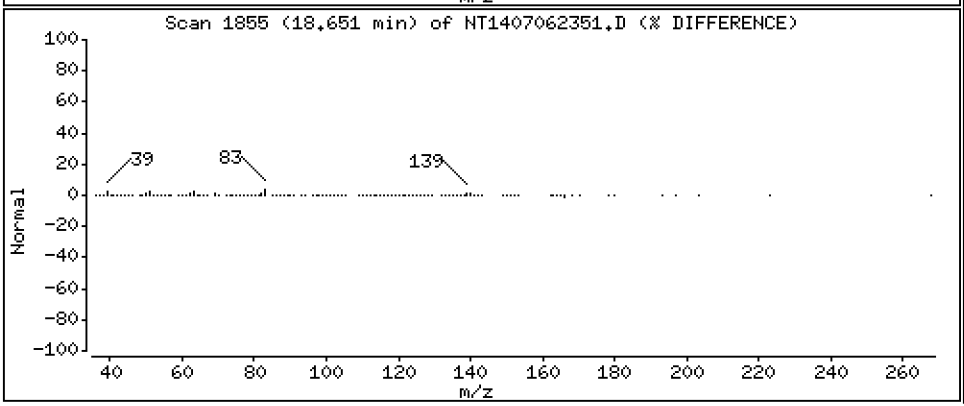












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

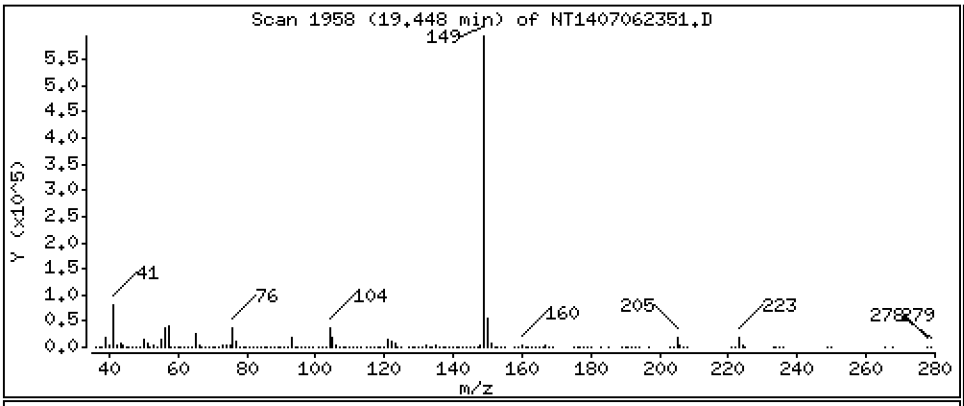
Operator: JGR

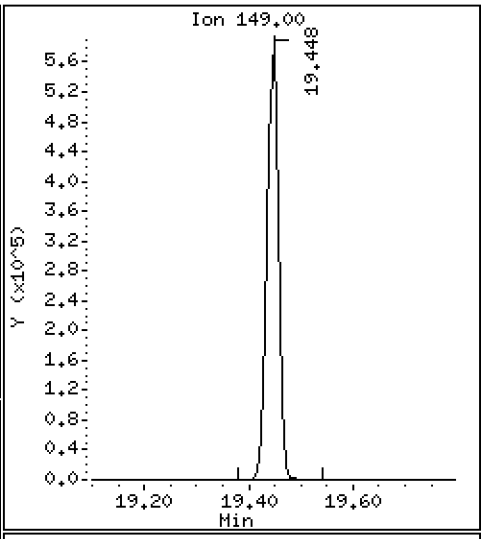
Column phase: ZB-5msi

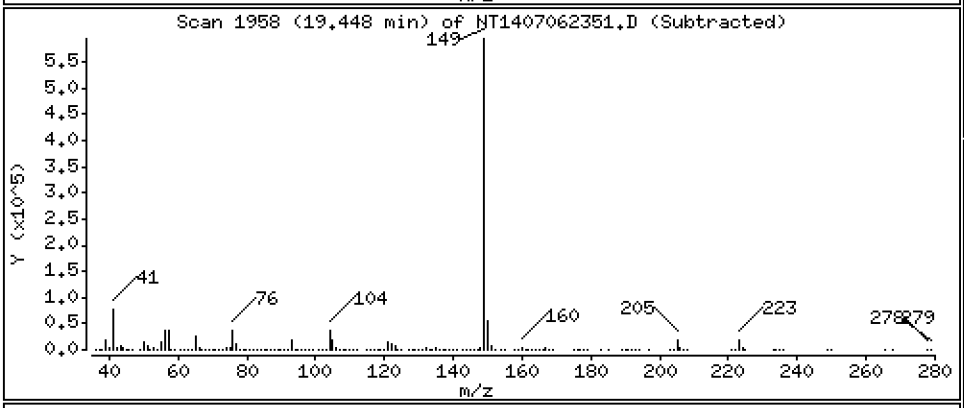
Column diameter: 0.25

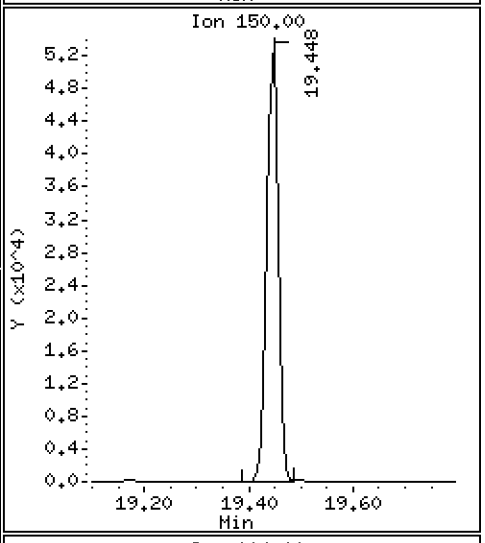
63 Di-n-butylphthalate

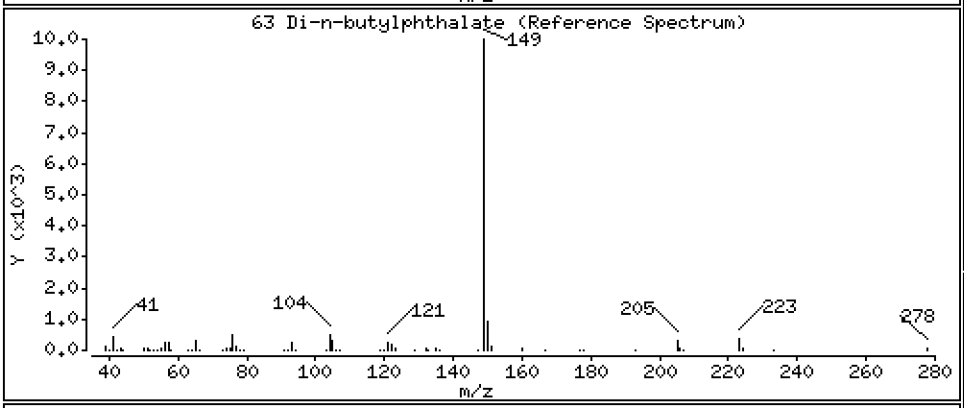
Concentration: 5.430 ug/mL

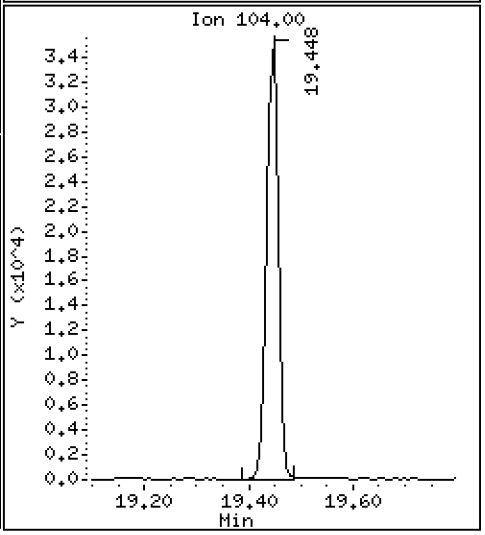


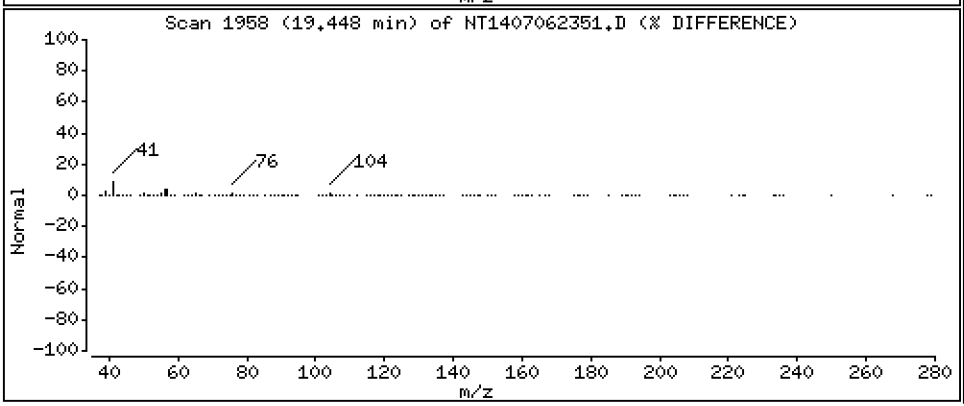












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

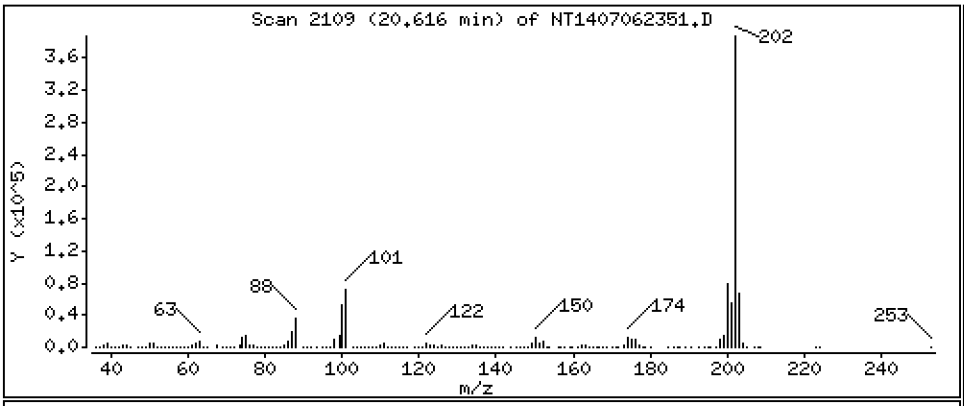
Operator: JGR

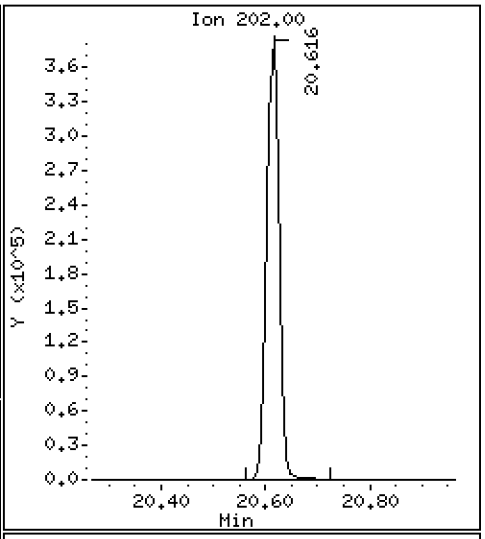
Column phase: ZB-5msi

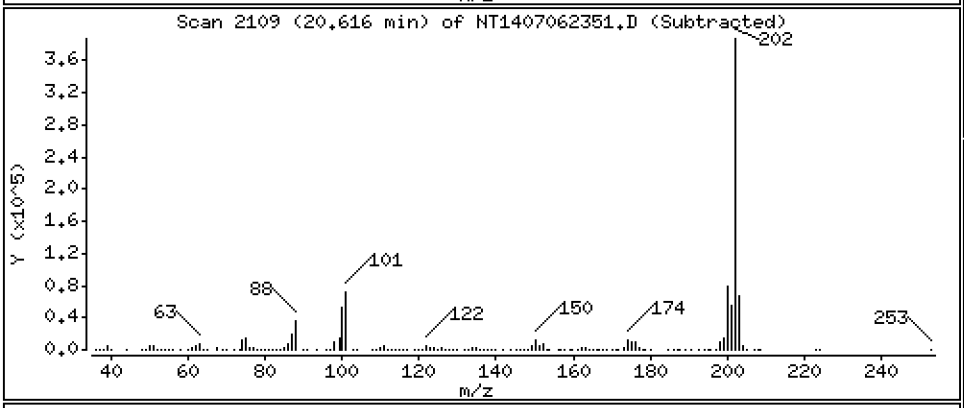
Column diameter: 0.25

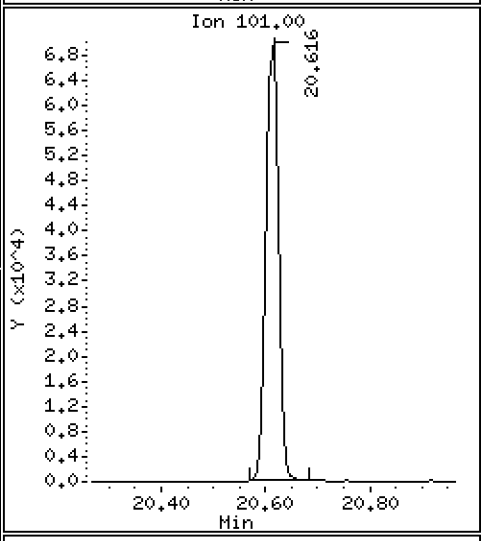
64 Fluoranthene

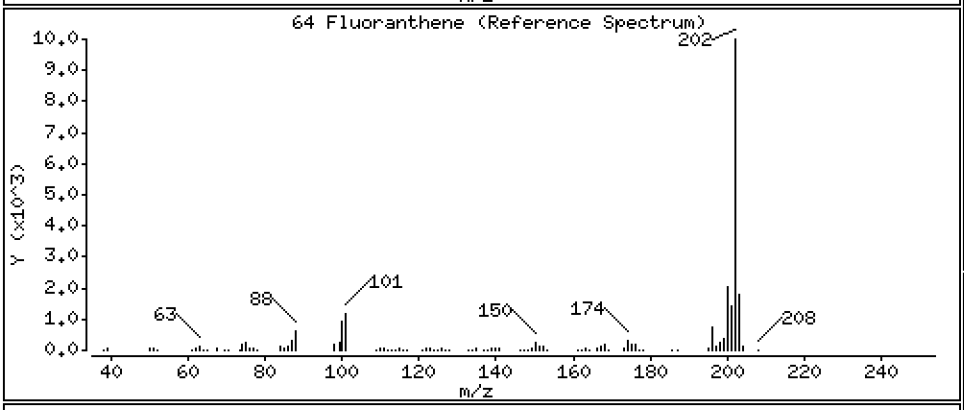
Concentration: 5.338 ug/mL

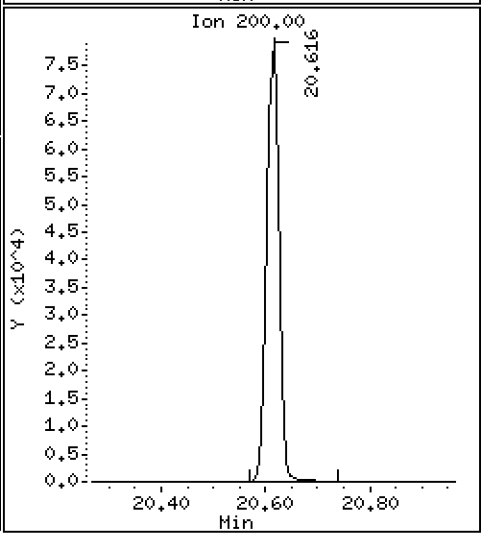


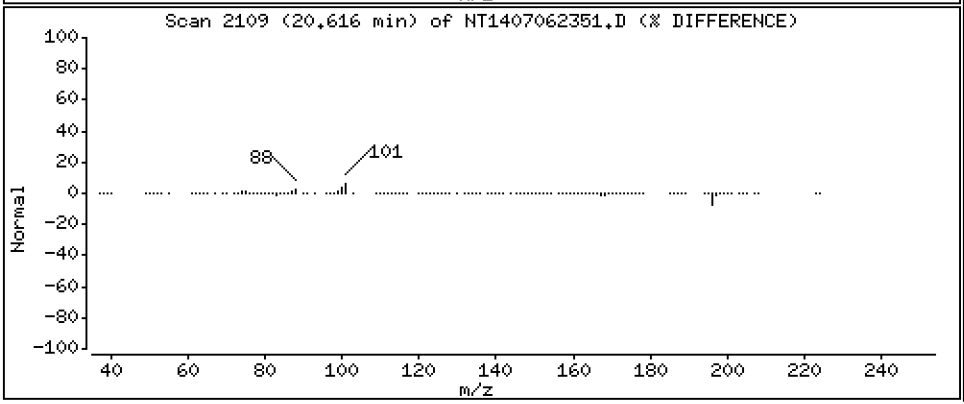












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

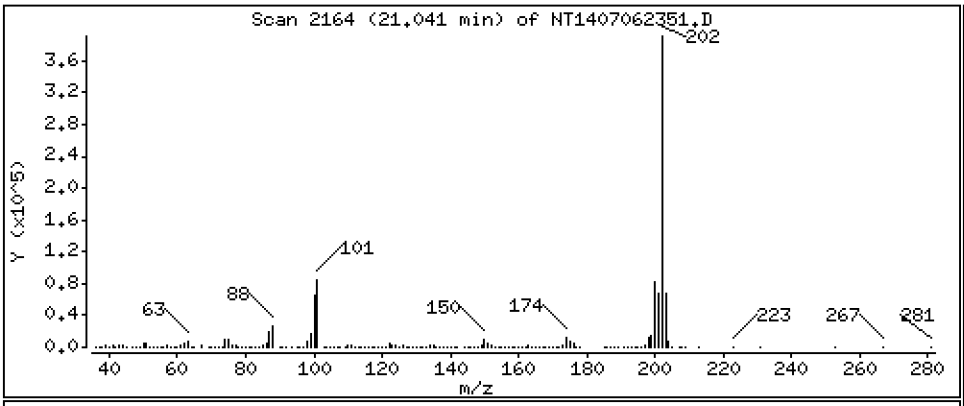
Operator: JGR

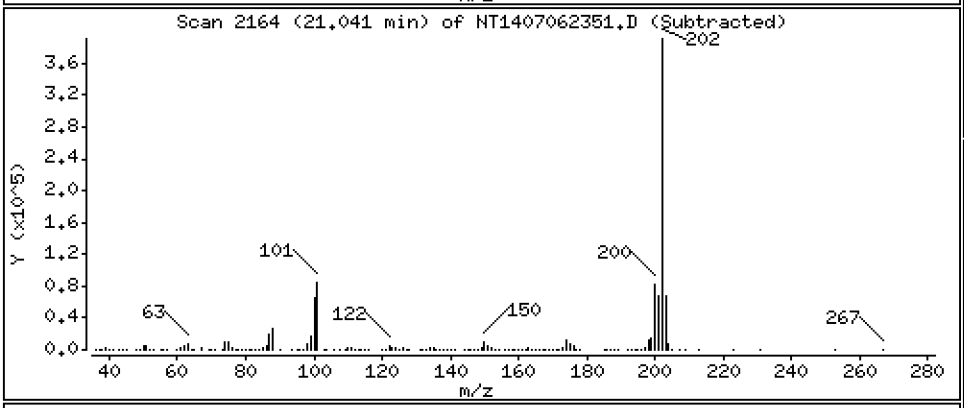
Column phase: ZB-5msi

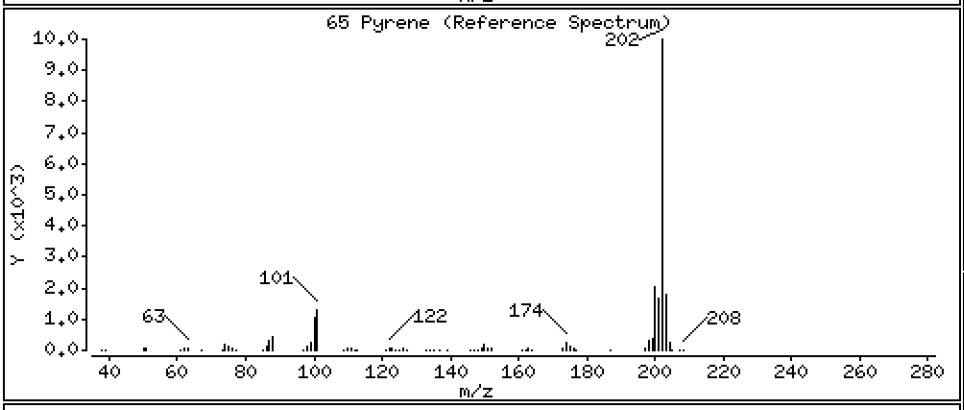
Column diameter: 0.25

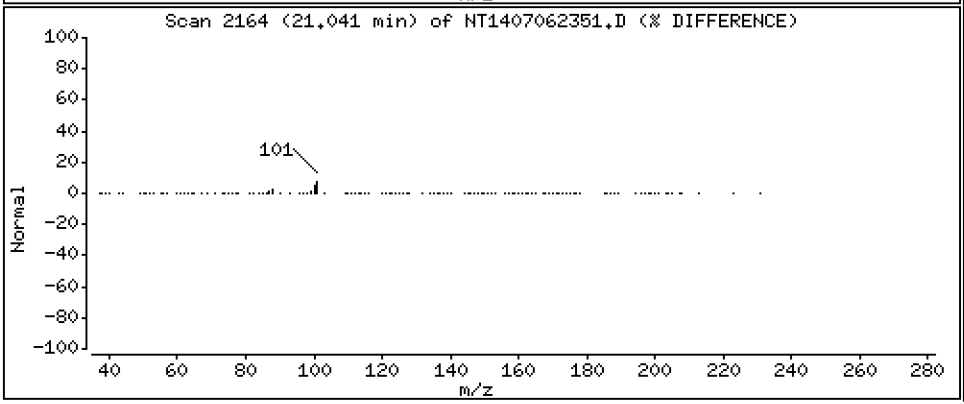
65 Pyrene

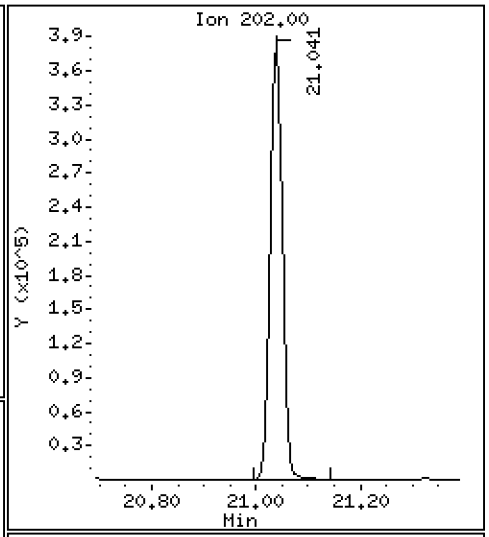
Concentration: 5.221 ug/mL

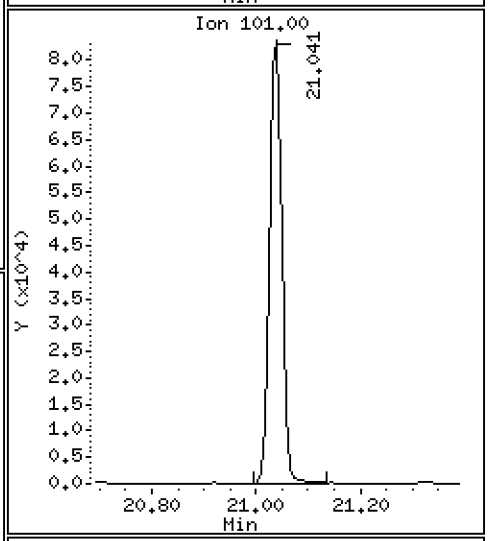


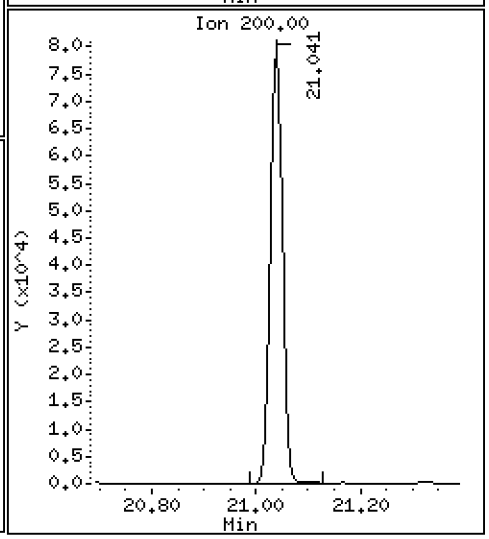












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

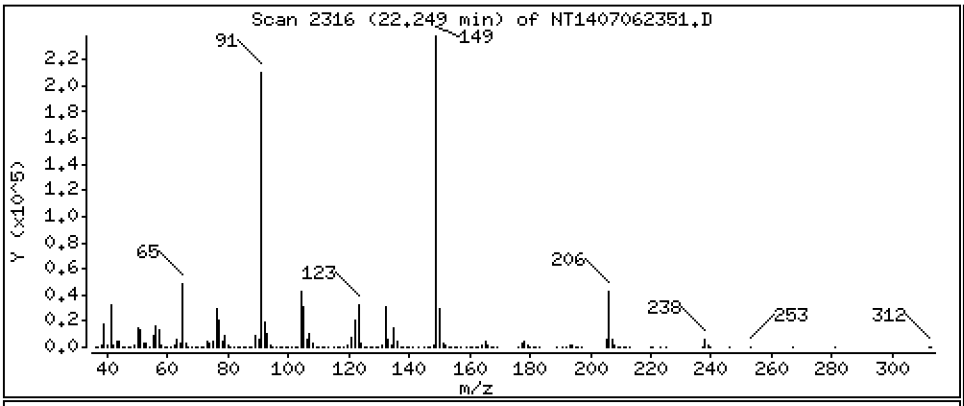
Operator: JGR

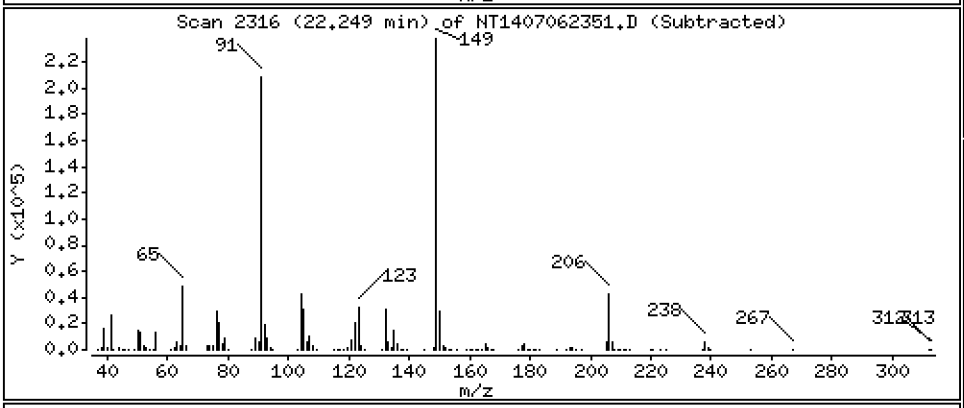
Column phase: ZB-5msi

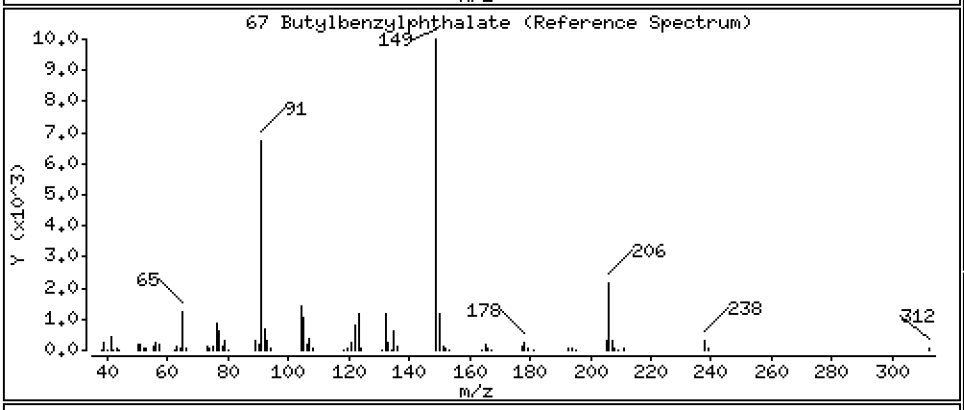
Column diameter: 0.25

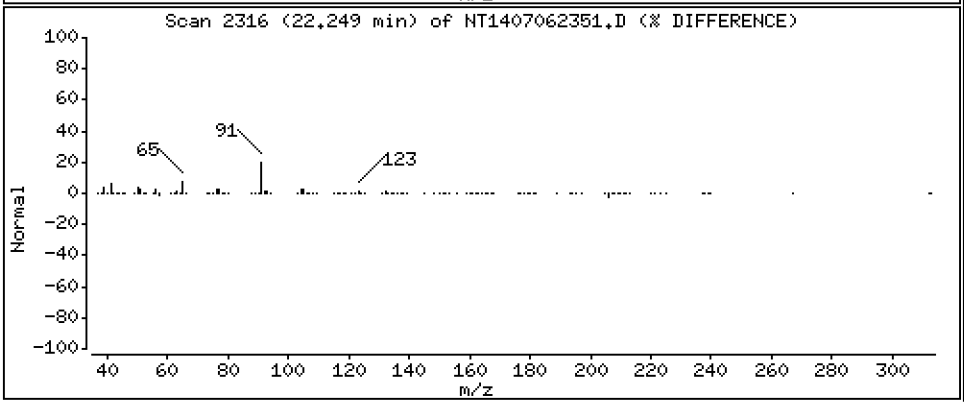
67 Butylbenzylphthalate

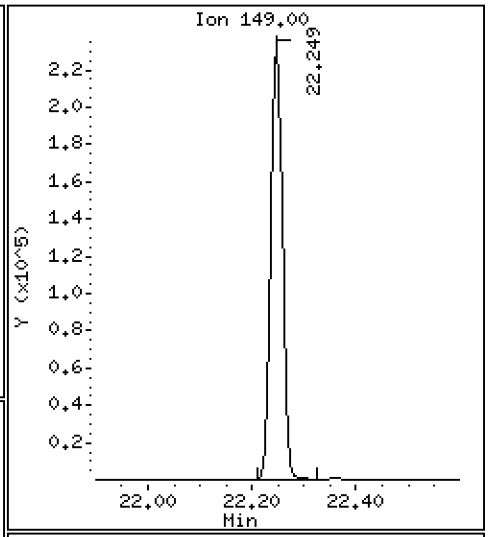
Concentration: 6.372 ug/mL

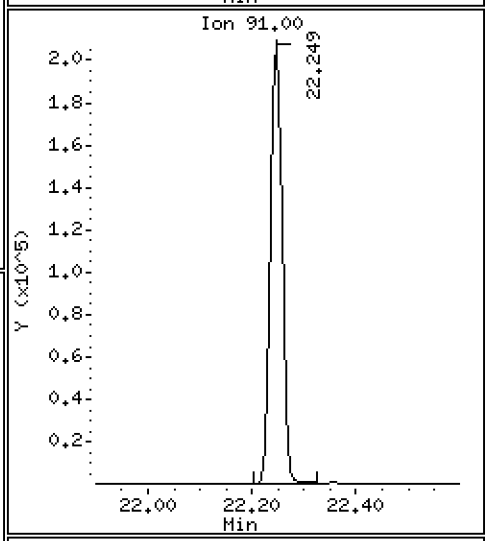


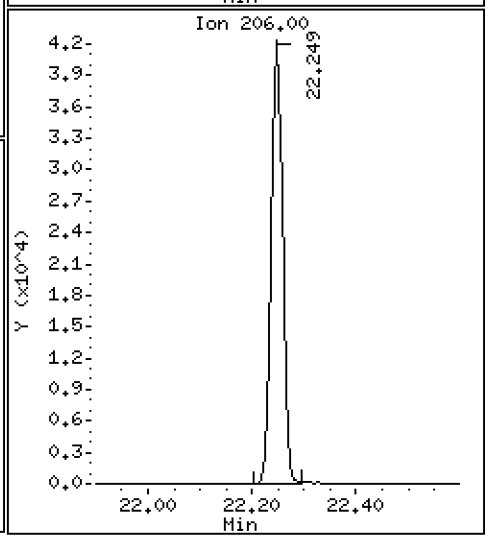












Date : 07-JUL-2023 20:44

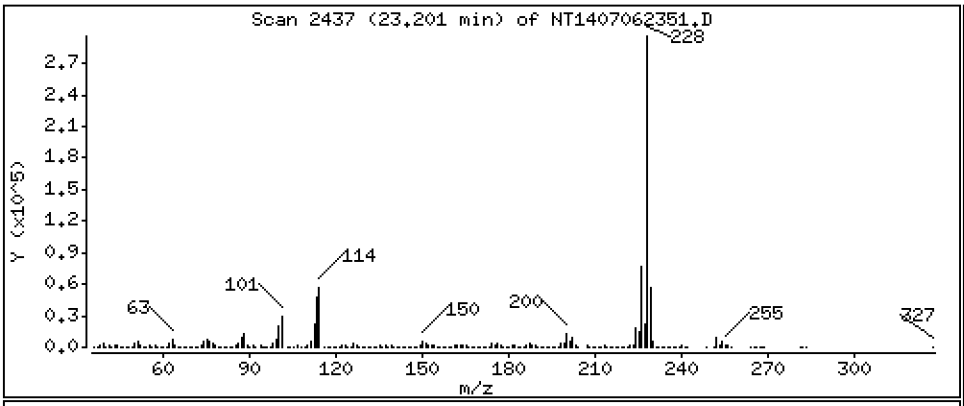
Client ID: Instrument: nt14.i

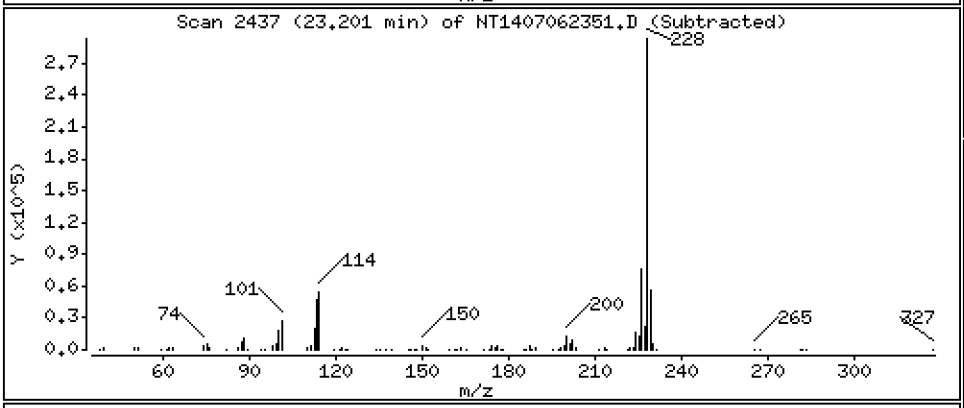
Sample Info: BLF0718-BSD1

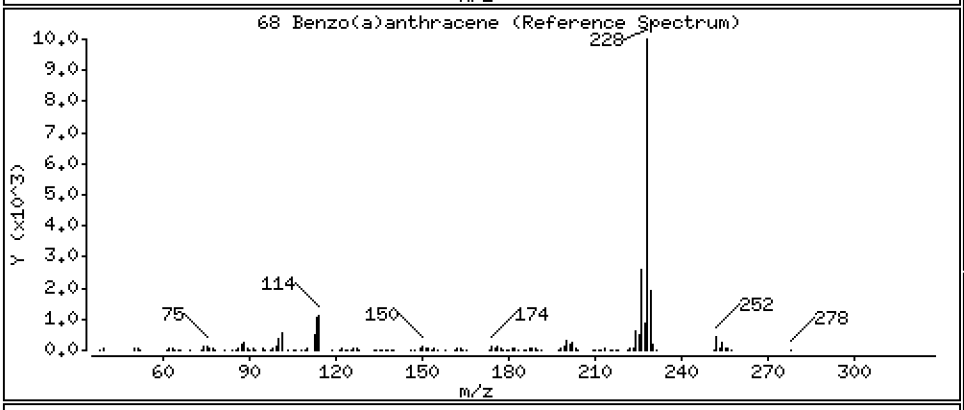
Operator: JGR

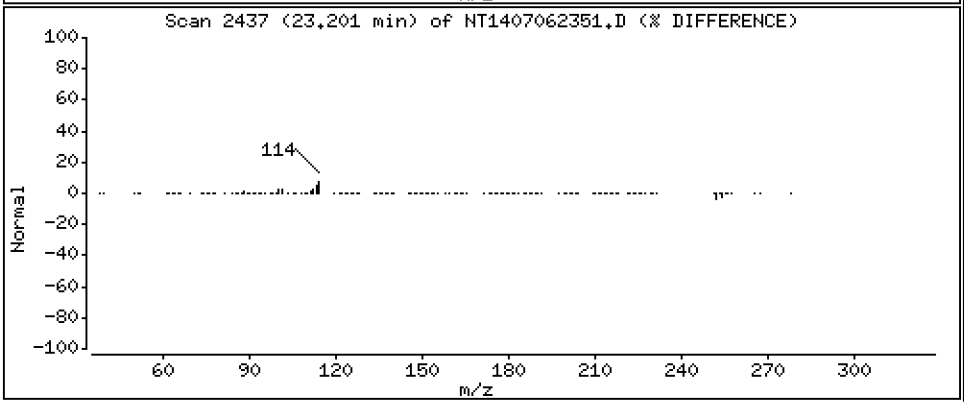
Column phase: ZB-5msi Column diameter: 0.25

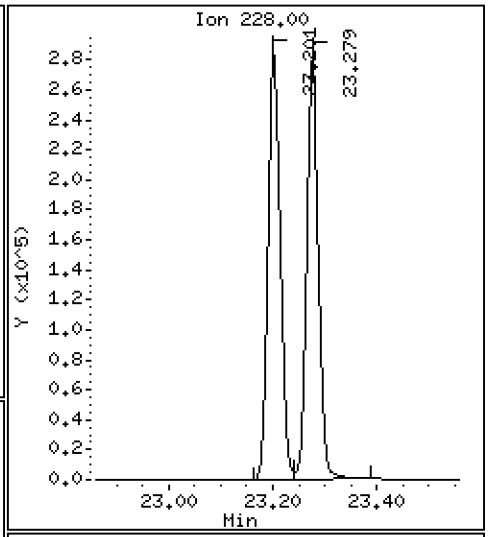
68 Benzo(a)anthracene Concentration: 4.658 ug/mL

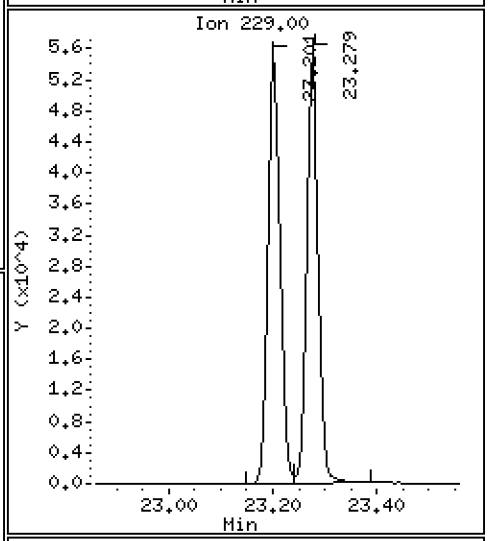


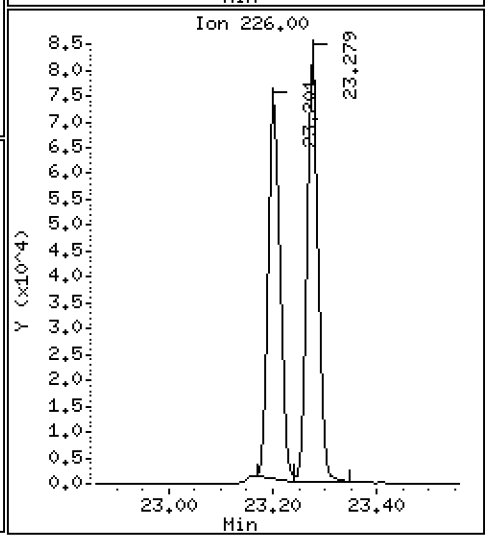












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062351.D

Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

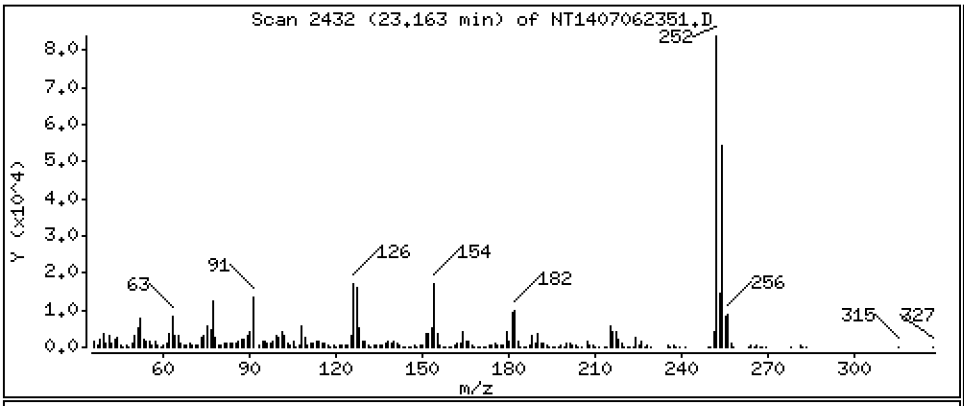
Operator: JGR

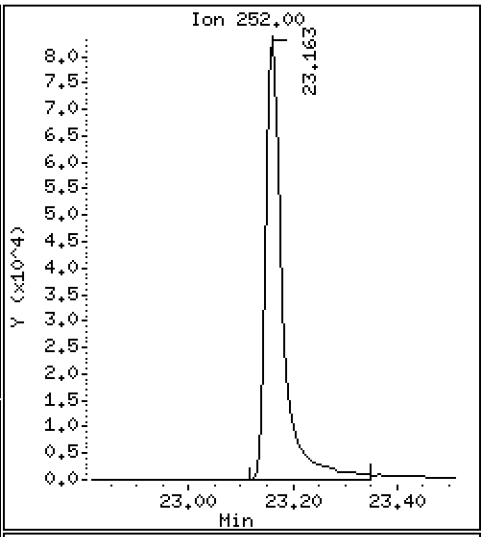
Column phase: ZB-5msi

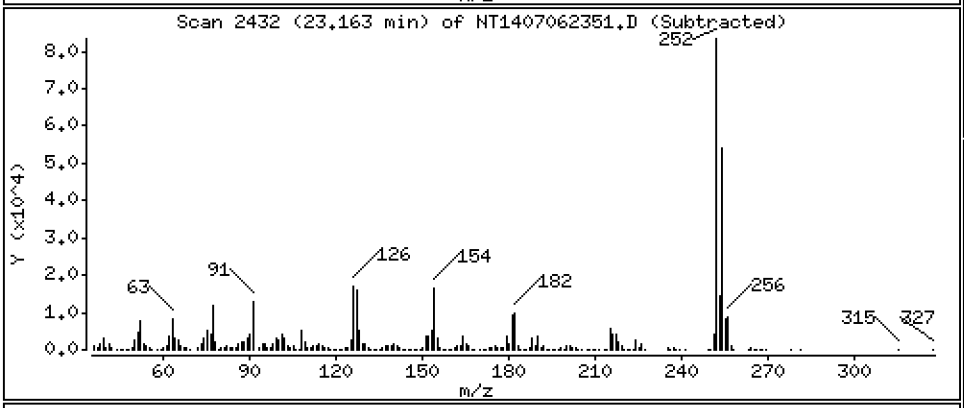
Column diameter: 0.25

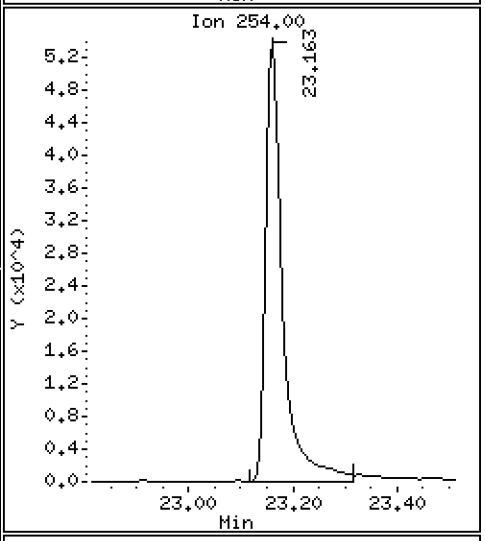
70 3,3'-Dichlorobenzidine

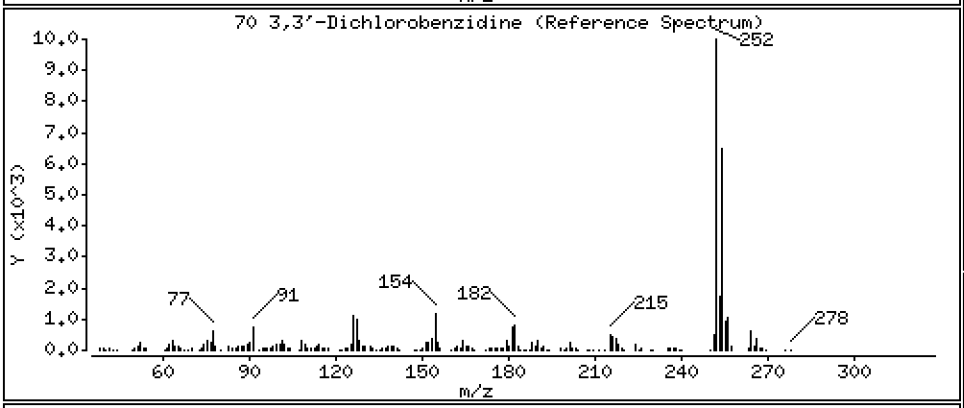
Concentration: 6.751 ug/mL

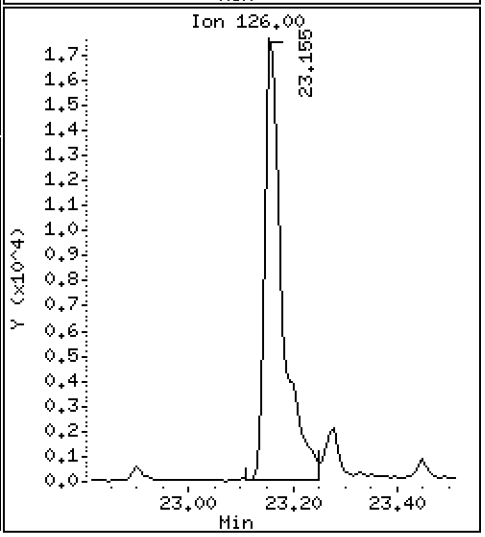


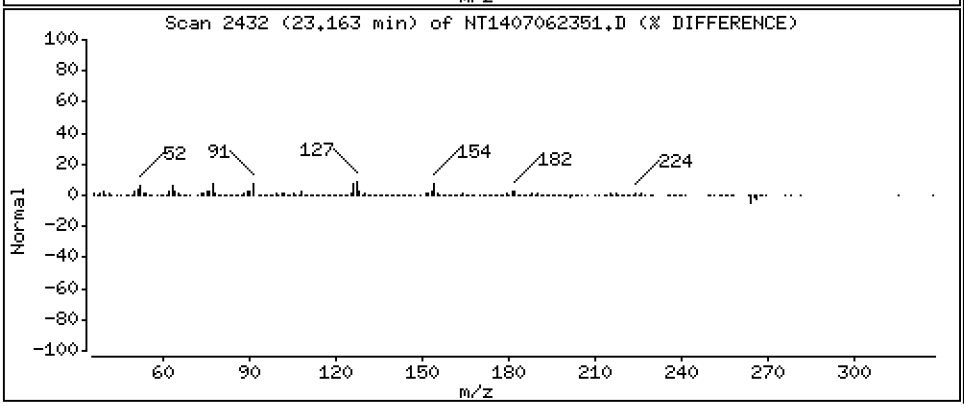












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

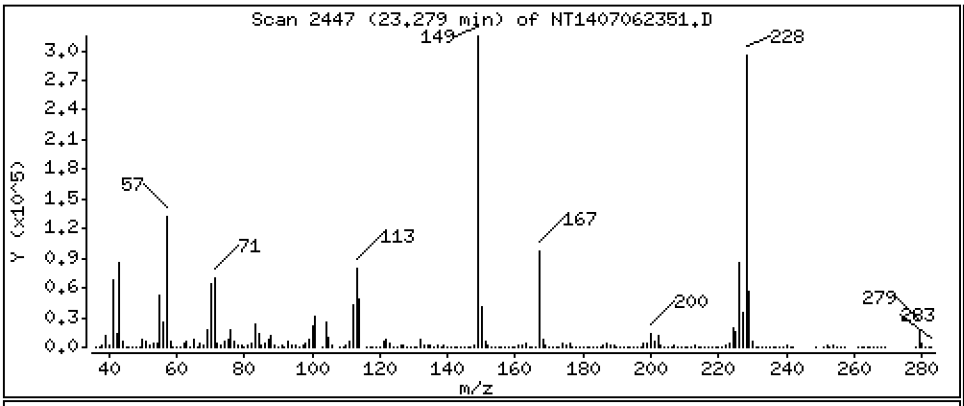
Operator: JGR

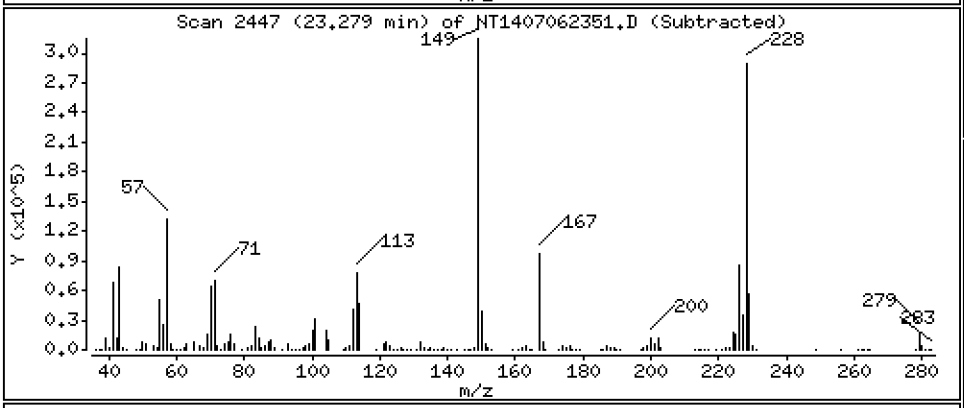
Column phase: ZB-5msi

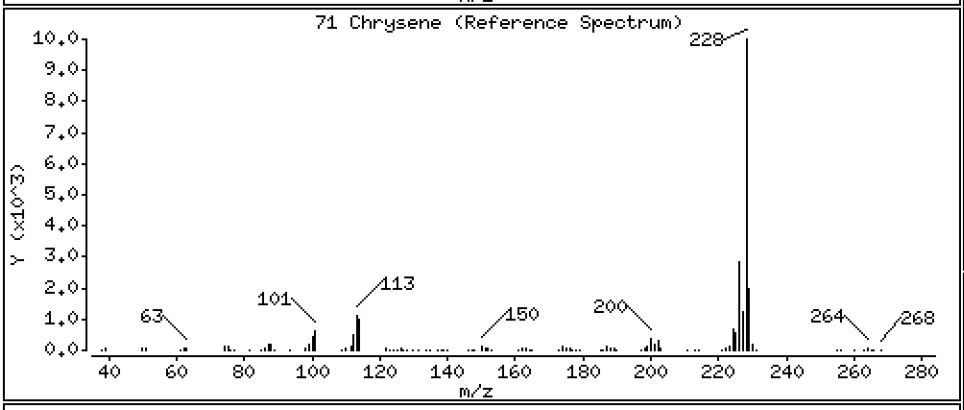
Column diameter: 0.25

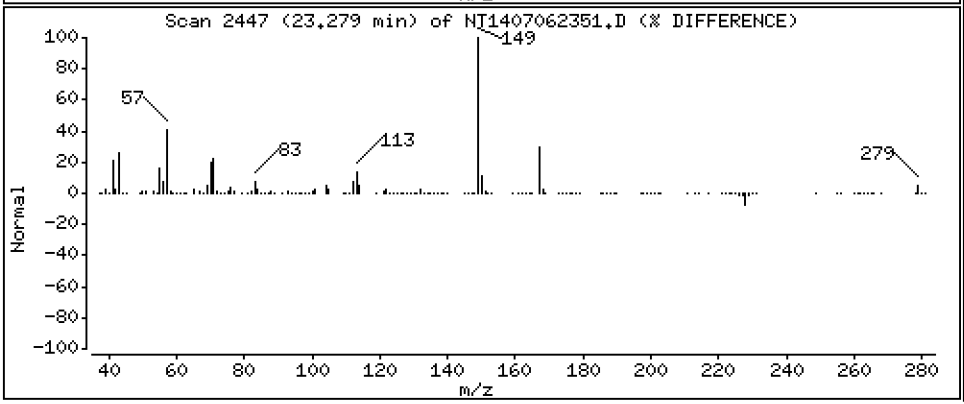
71 Chrysene

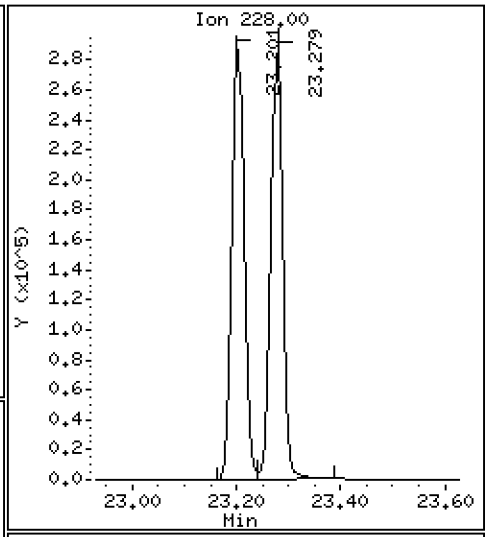
Concentration: 4.978 ug/mL

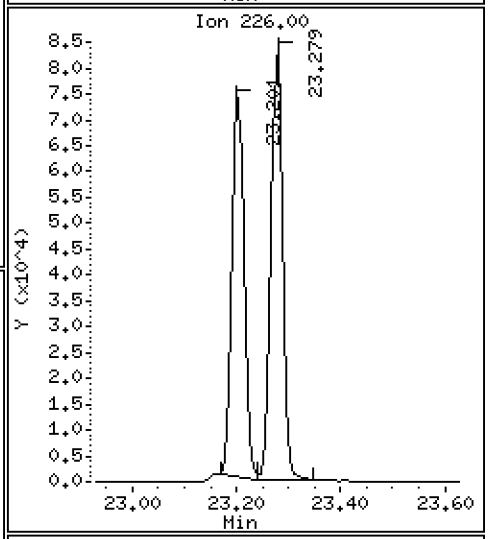


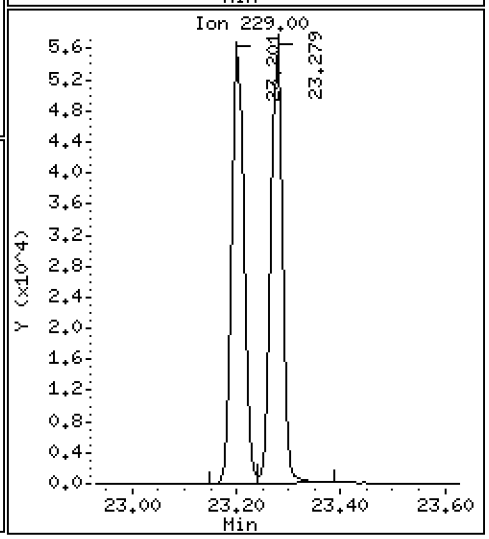












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

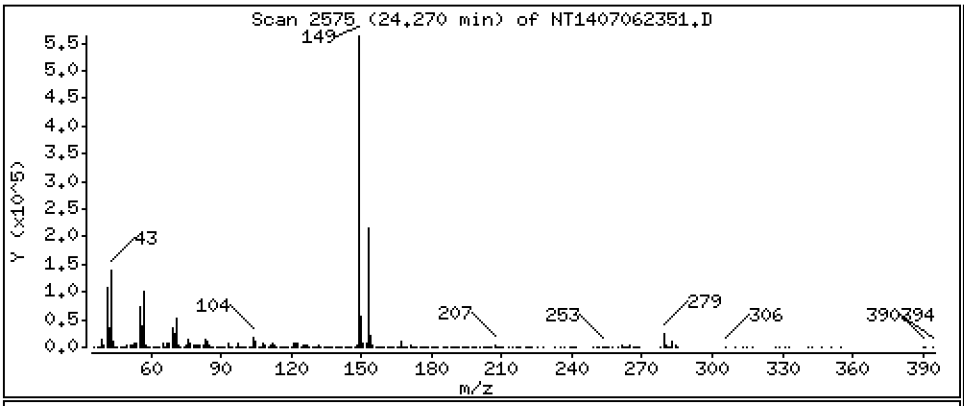
Operator: JGR

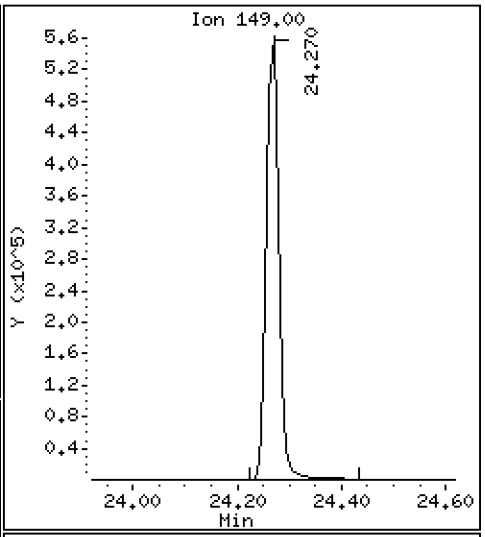
Column phase: ZB-5msi

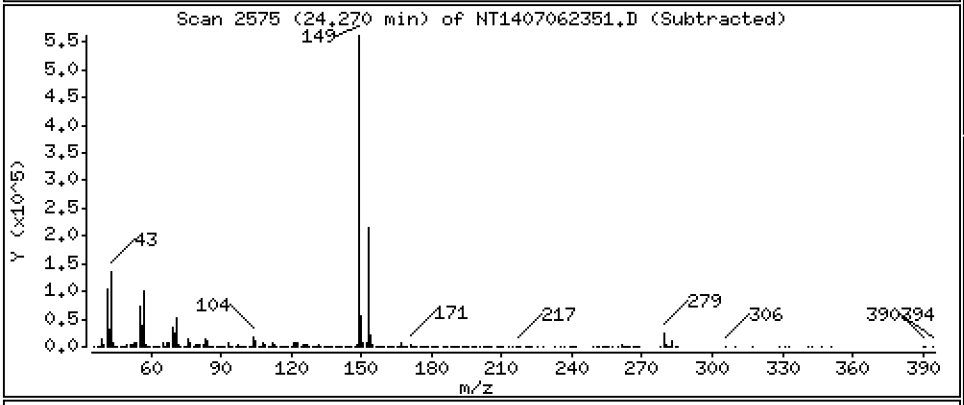
Column diameter: 0.25

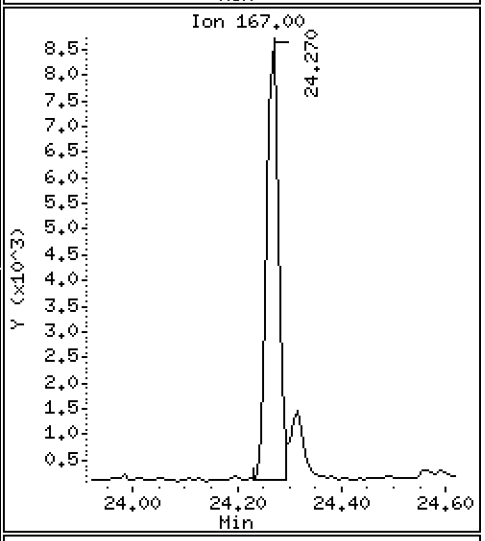
72 bis(2-Ethylhexyl)phthalate

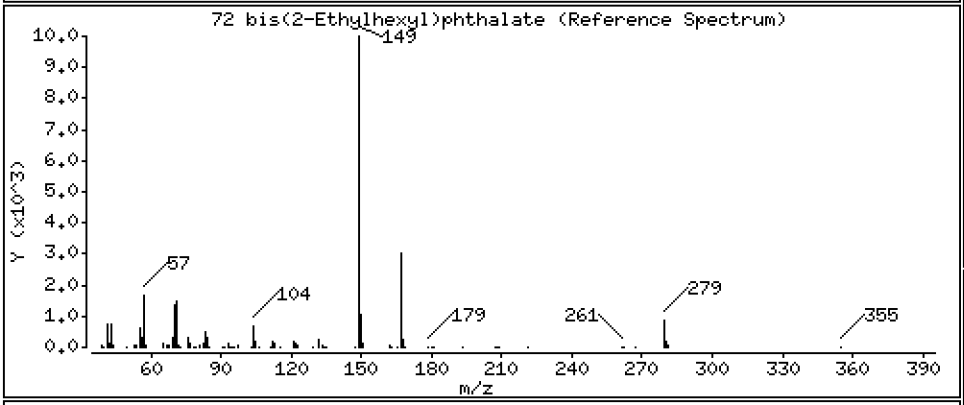
Concentration: 4.803 ug/mL

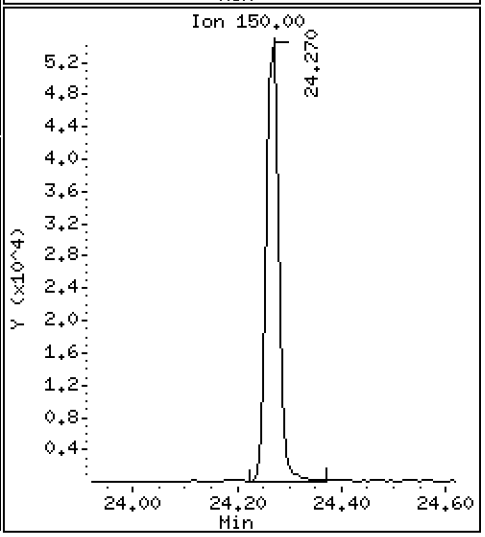


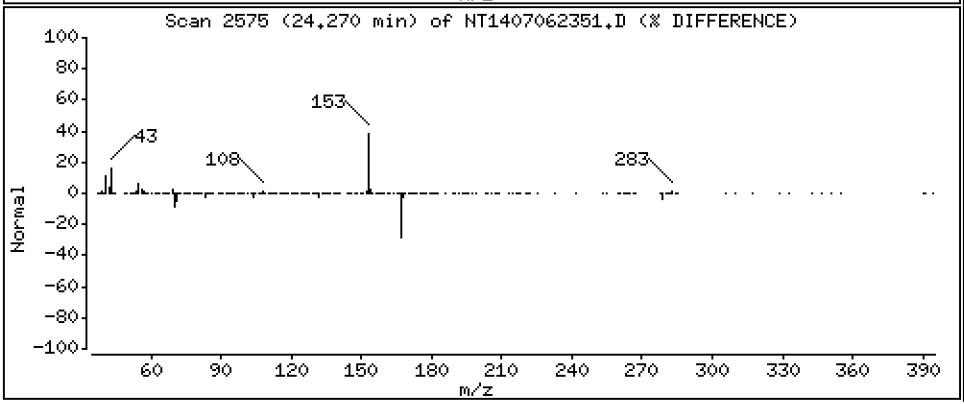












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

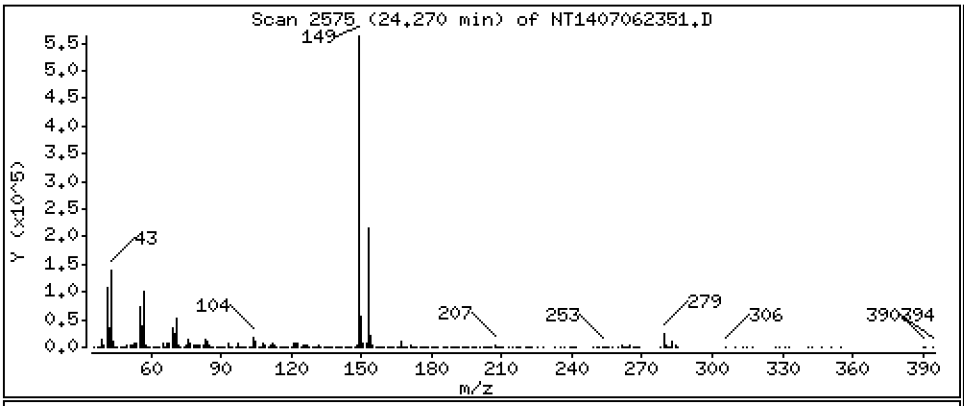
Operator: JGR

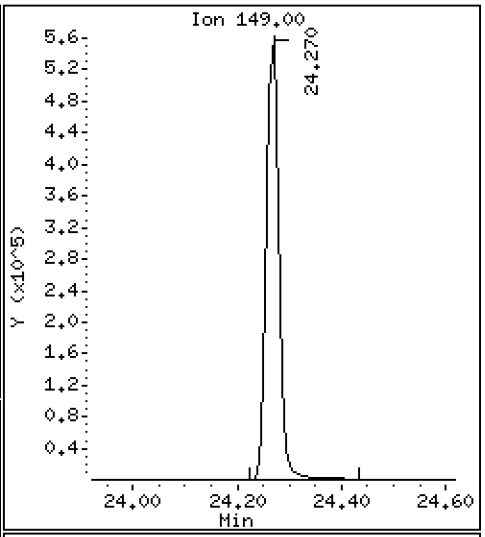
Column phase: ZB-5msi

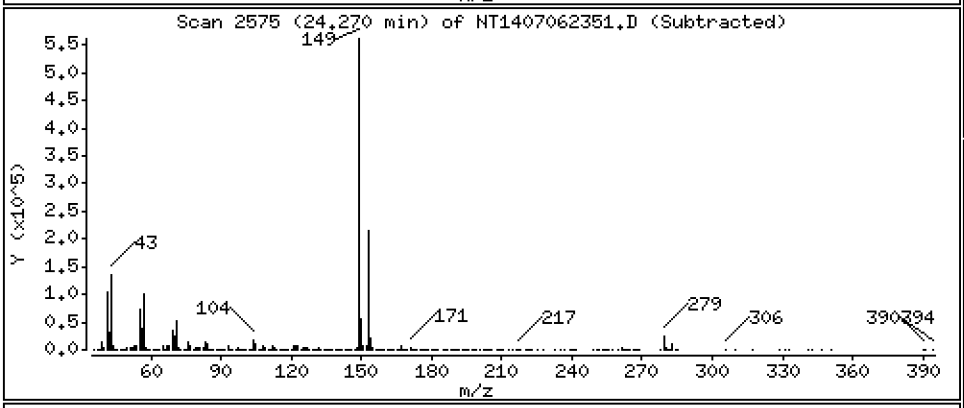
Column diameter: 0.25

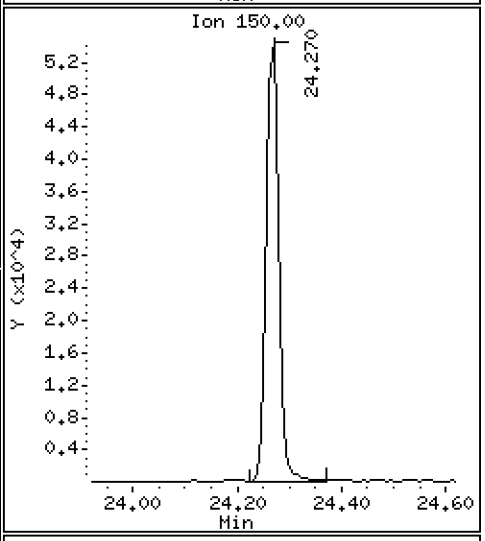
73 Di-n-octylphthalate

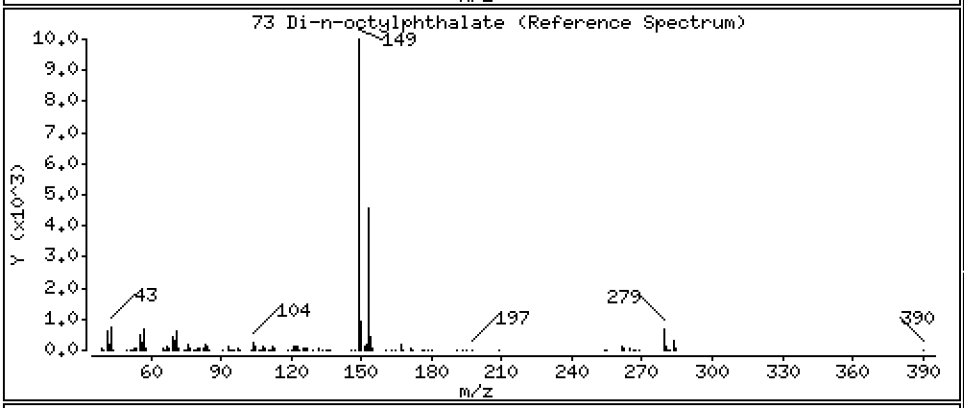
Concentration: 4.803 ug/mL

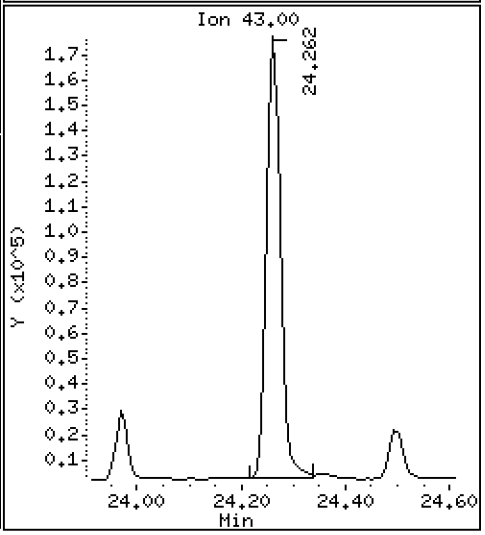


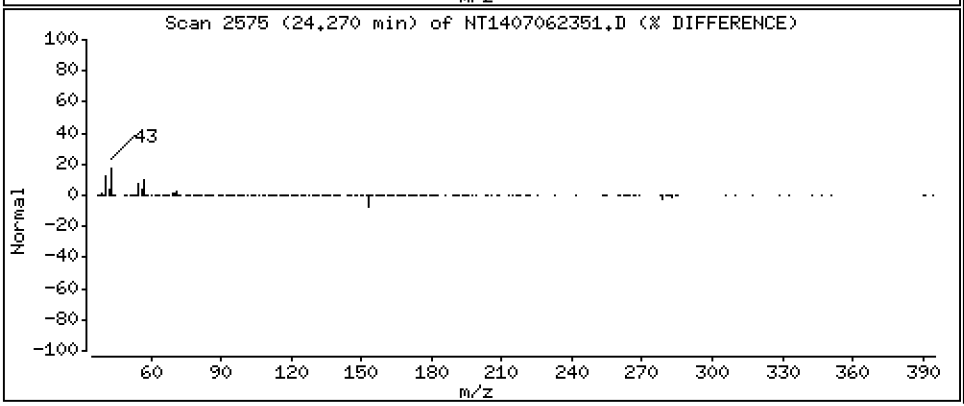












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

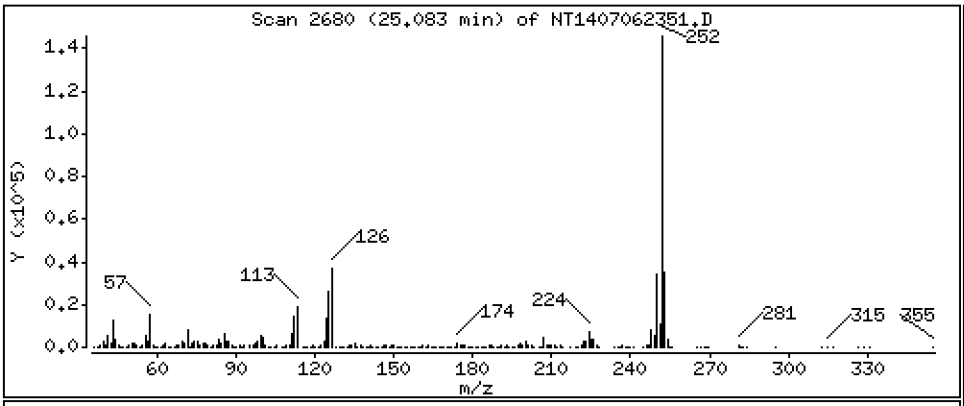
Operator: JGR

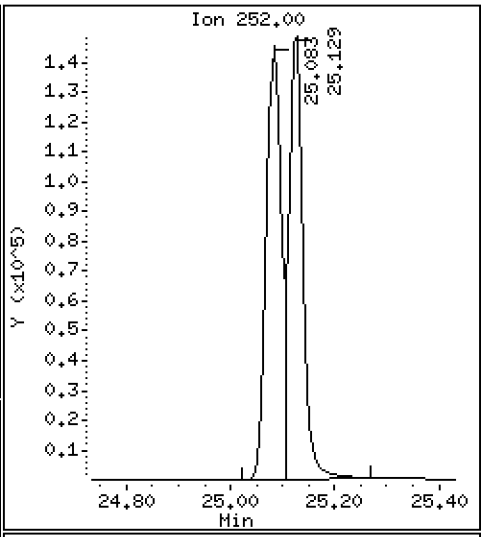
Column phase: ZB-5msi

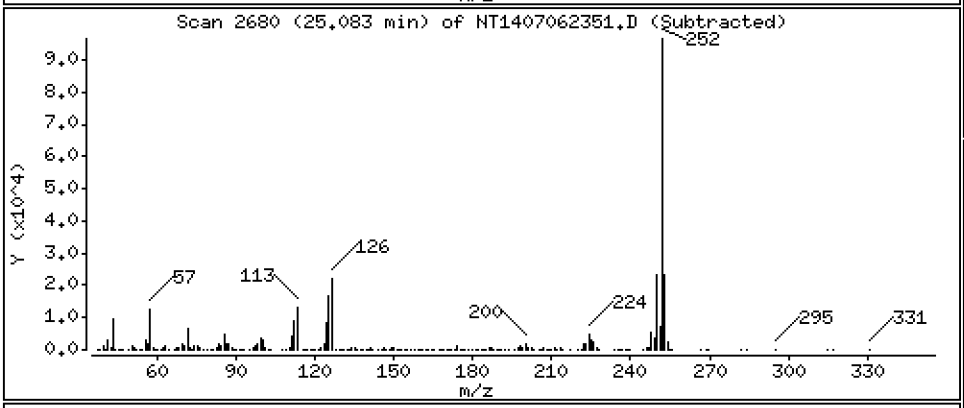
Column diameter: 0.25

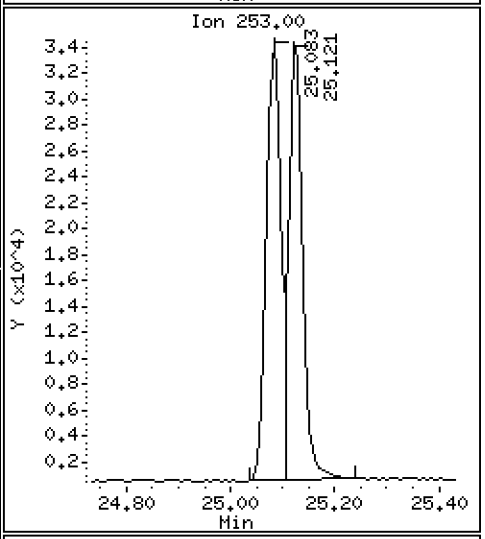
74 Benzo(b)fluoranthene

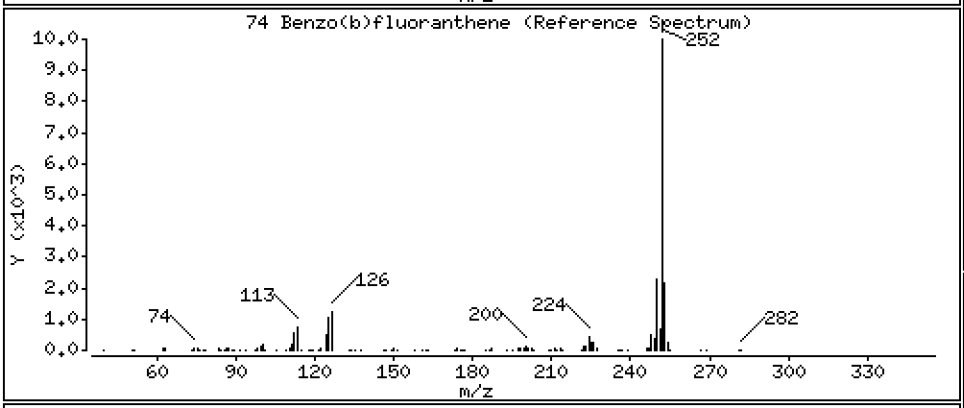
Concentration: 6.004 ug/mL

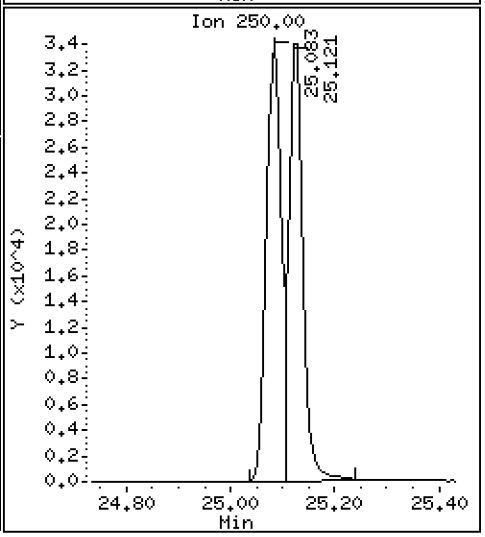


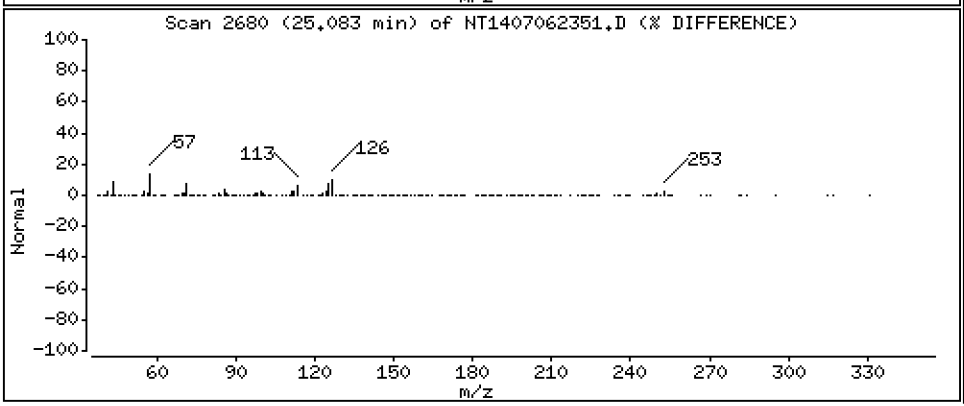












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

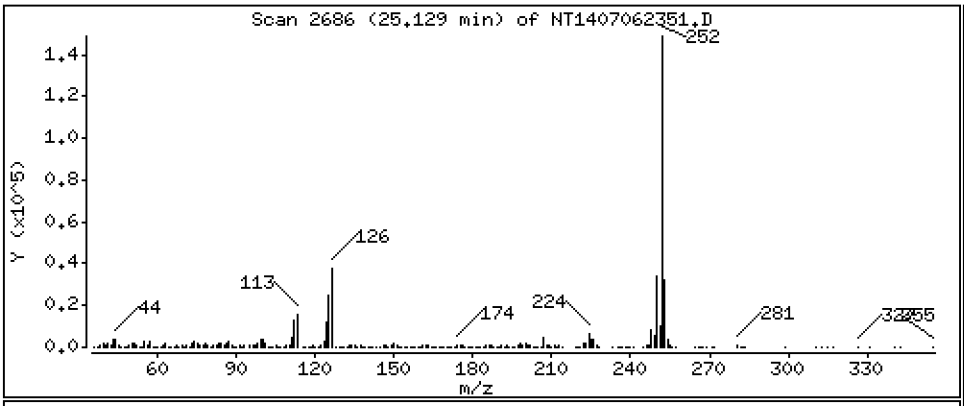
Operator: JGR

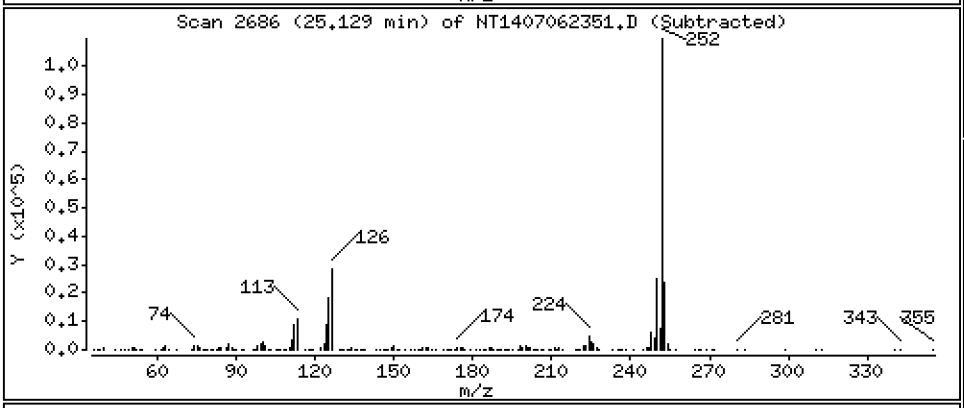
Column phase: ZB-5msi

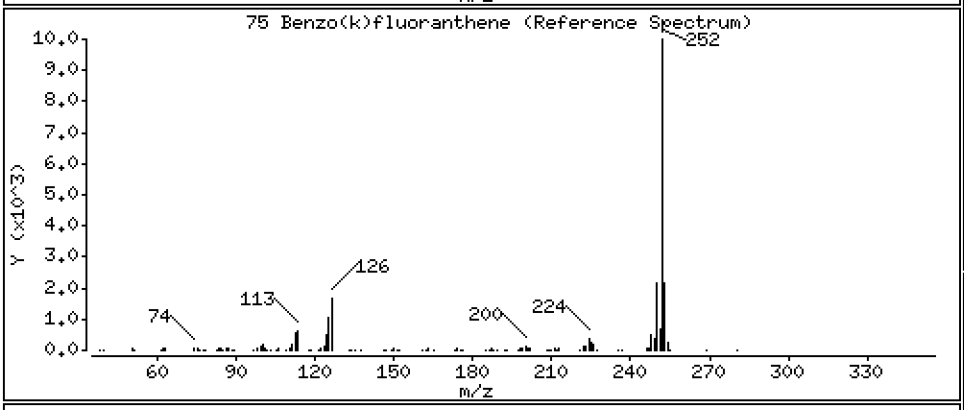
Column diameter: 0.25

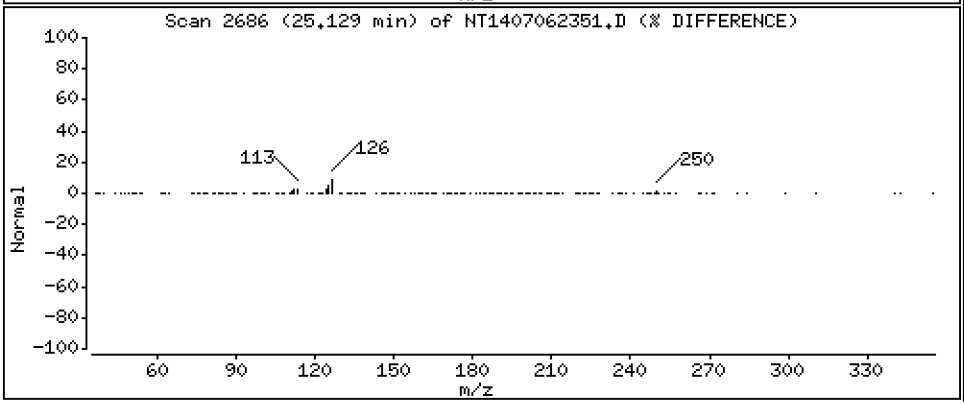
75 Benzo(k)fluoranthene

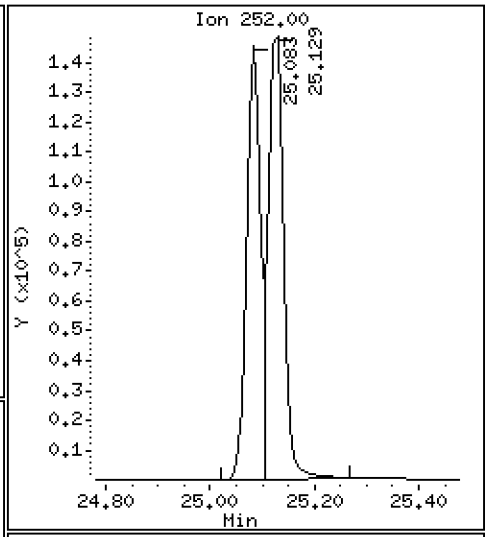
Concentration: 5.436 ug/mL

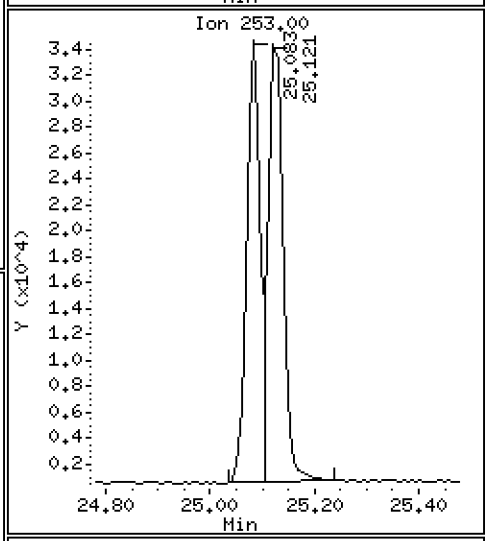


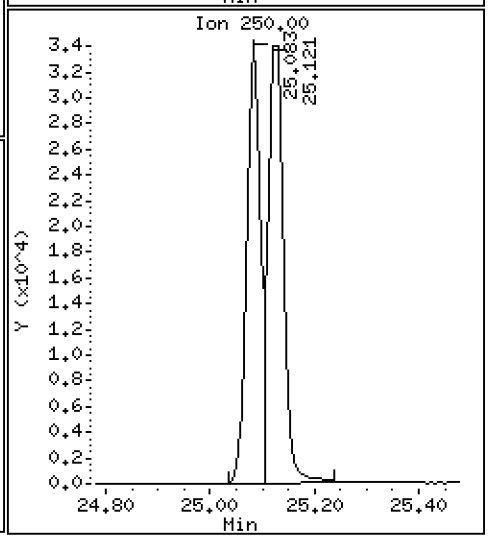












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

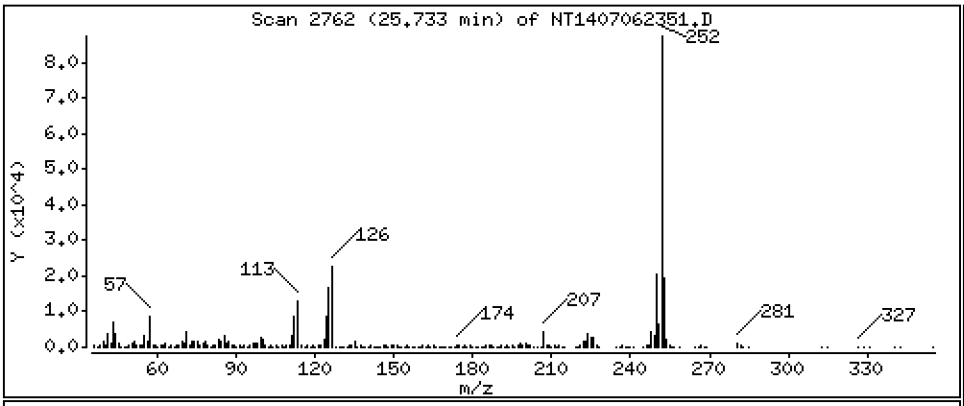
Operator: JGR

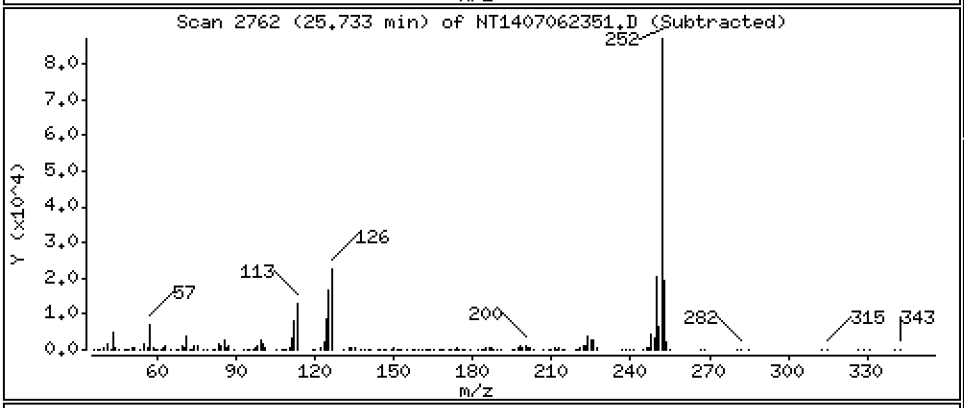
Column phase: ZB-5msi

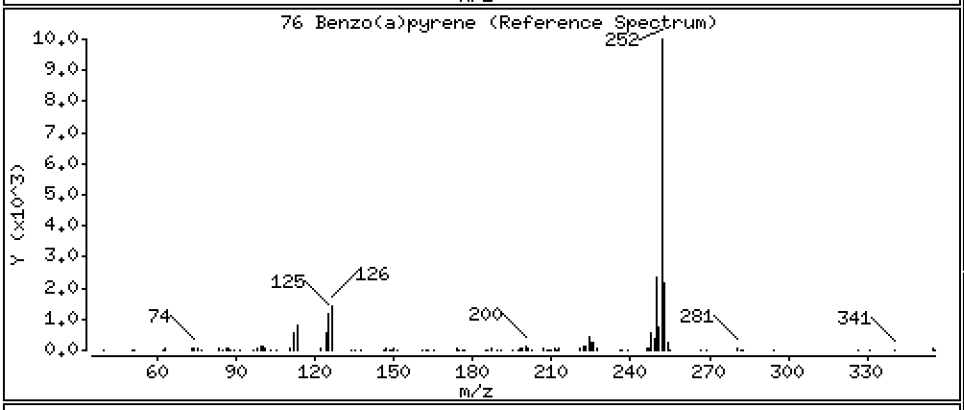
Column diameter: 0.25

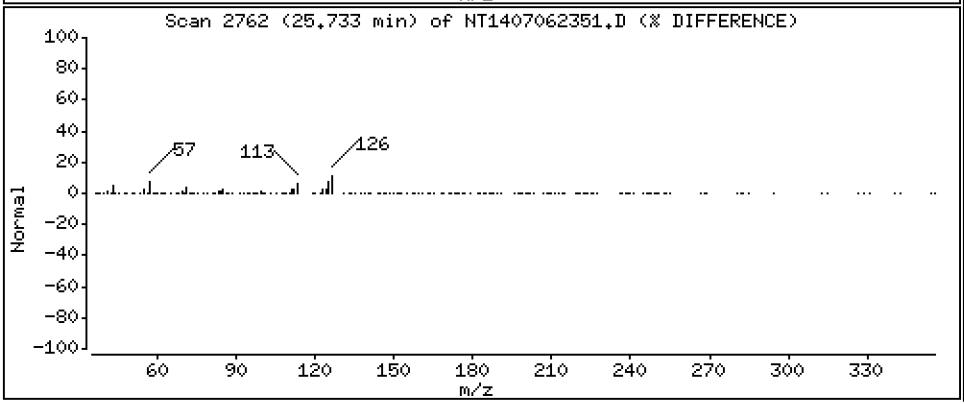
76 Benzo(a)pyrene

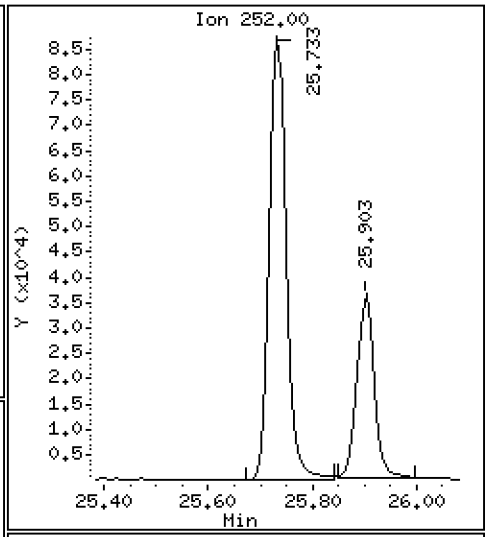
Concentration: 4.994 ug/mL

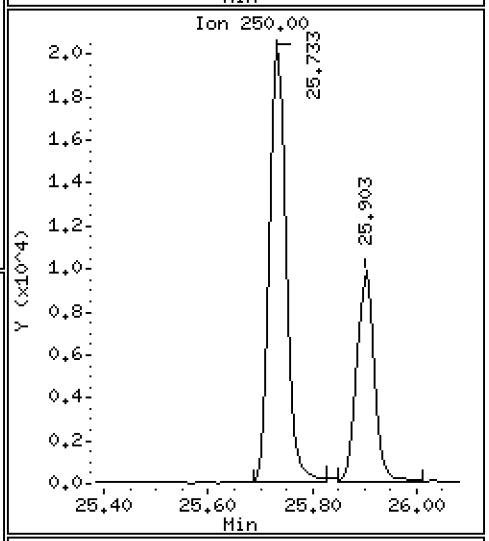


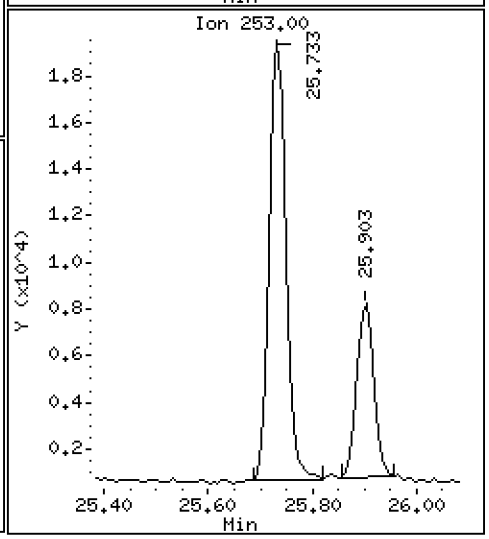












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062351.D

Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

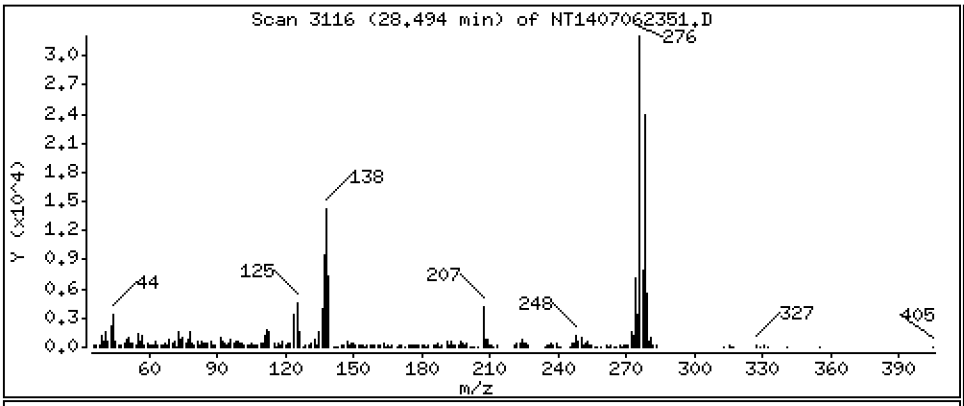
Operator: JGR

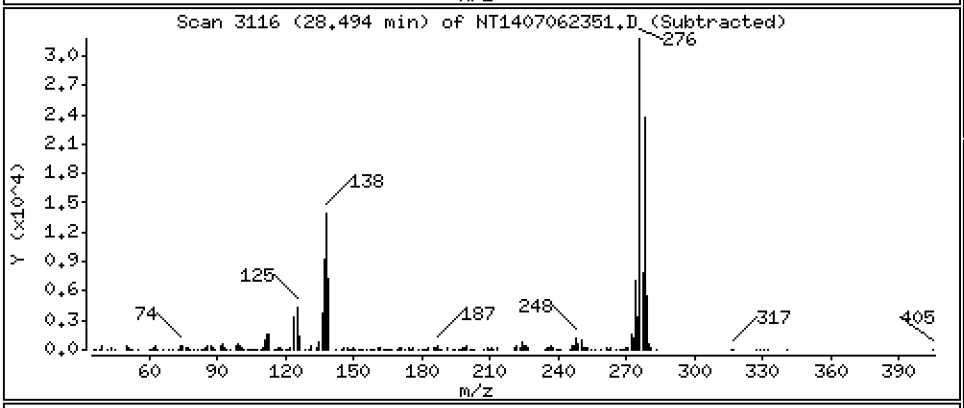
Column phase: ZB-5msi

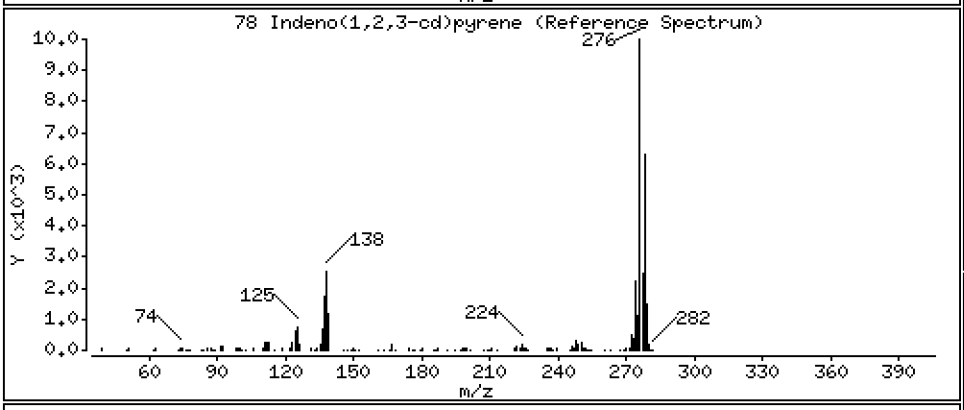
Column diameter: 0.25

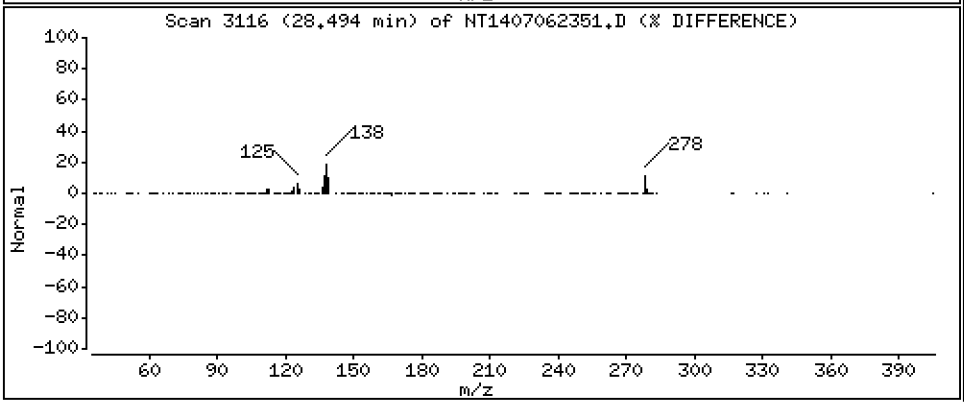
78 Indeno(1,2,3-cd)pyrene

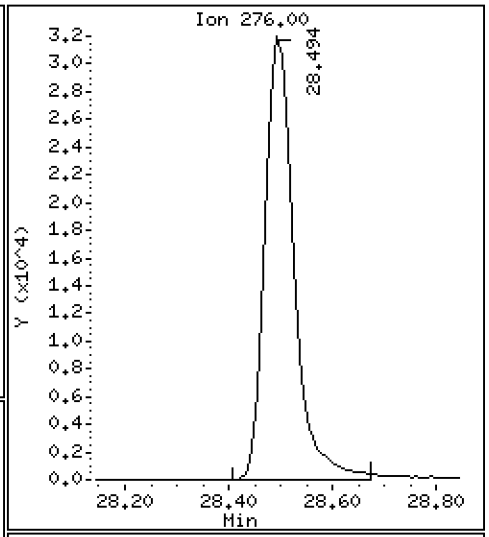
Concentration: 3.606 ug/mL

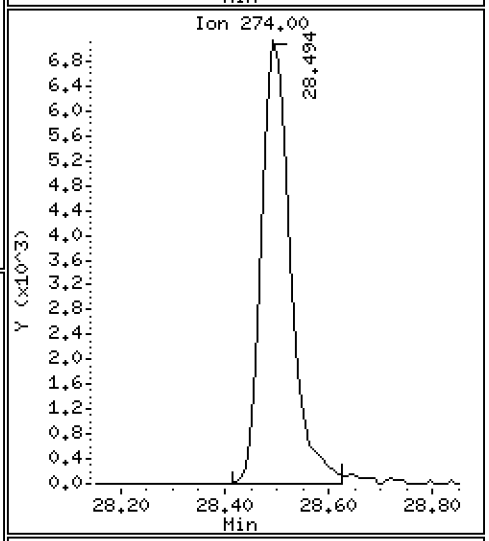


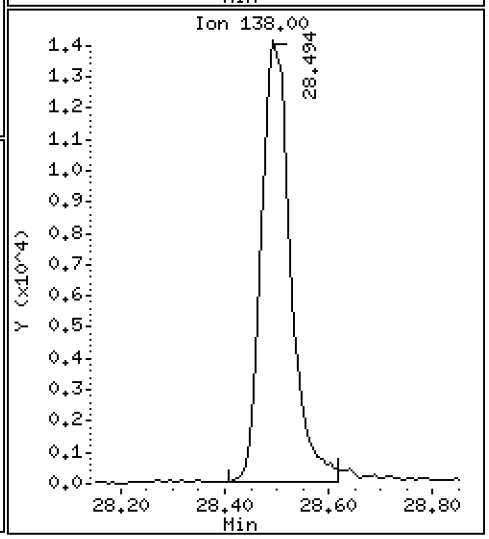












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

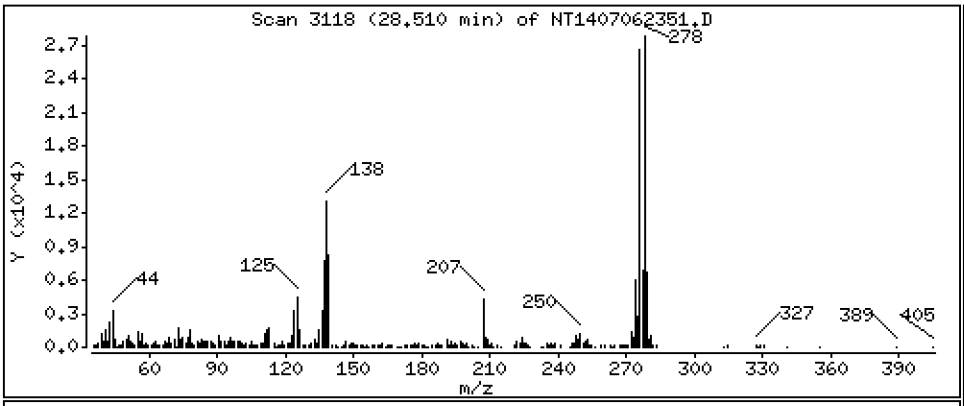
Operator: JGR

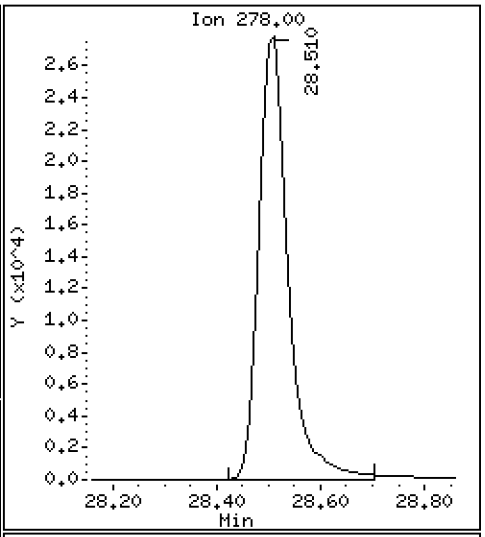
Column phase: ZB-5msi

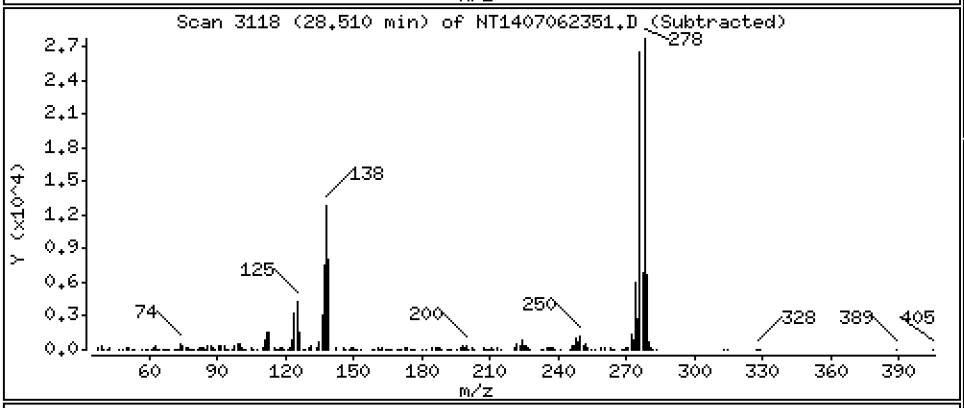
Column diameter: 0.25

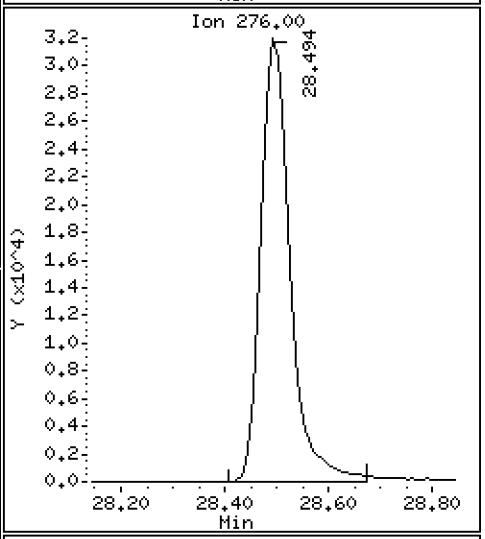
79 Dibenzo(a,h)anthracene

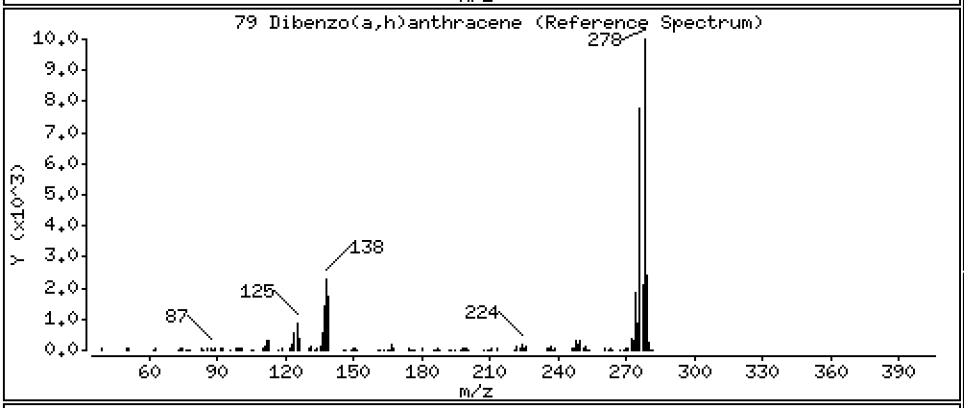
Concentration: 3.699 ug/mL

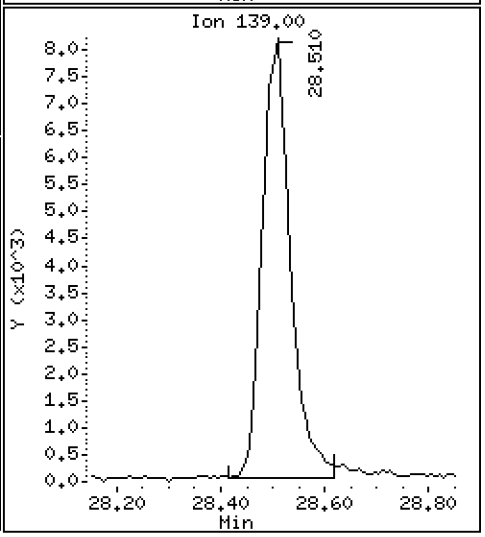


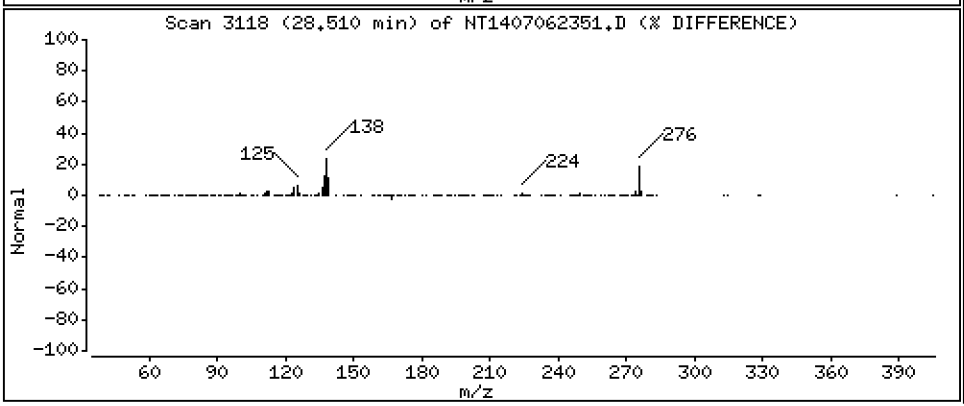












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

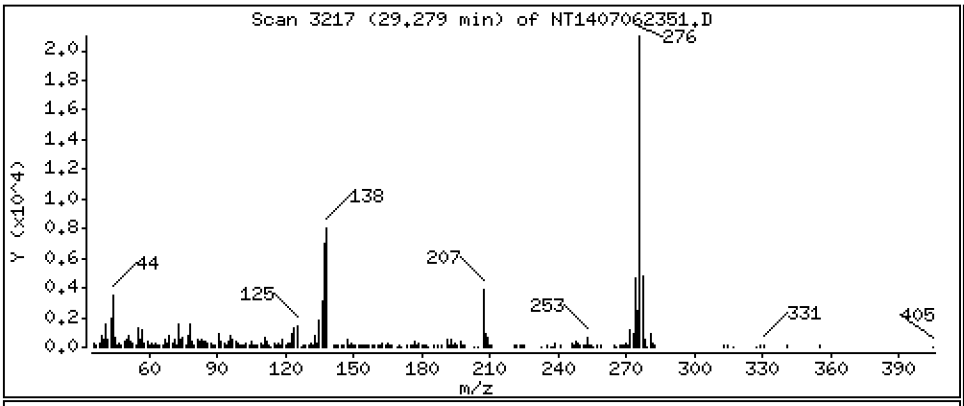
Operator: JGR

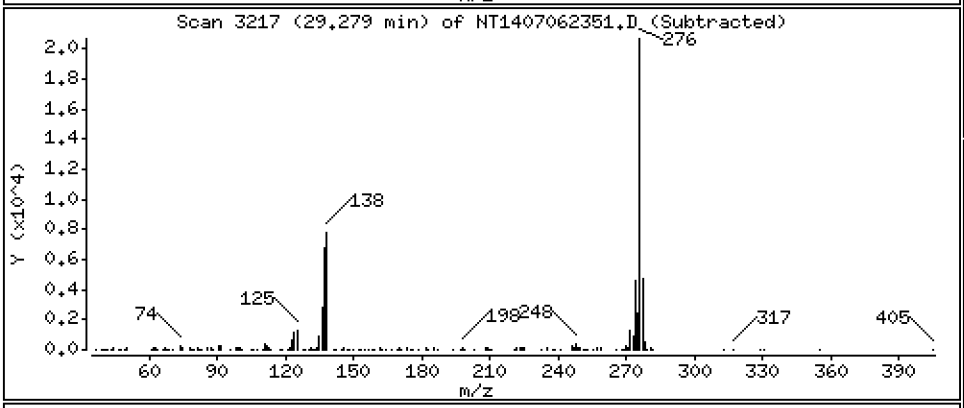
Column phase: ZB-5msi

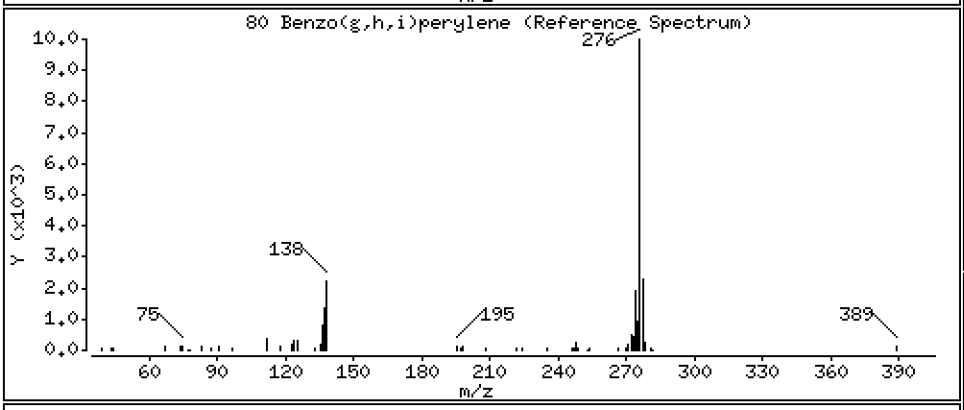
Column diameter: 0.25

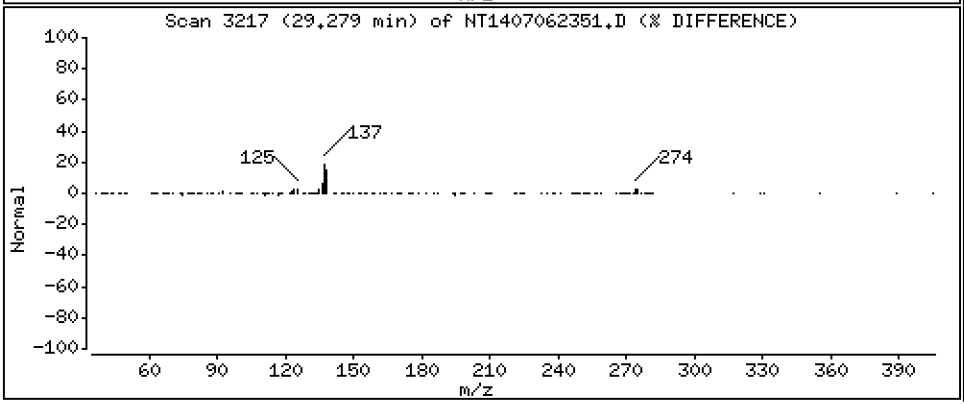
80 Benzo(g,h,i)perylene

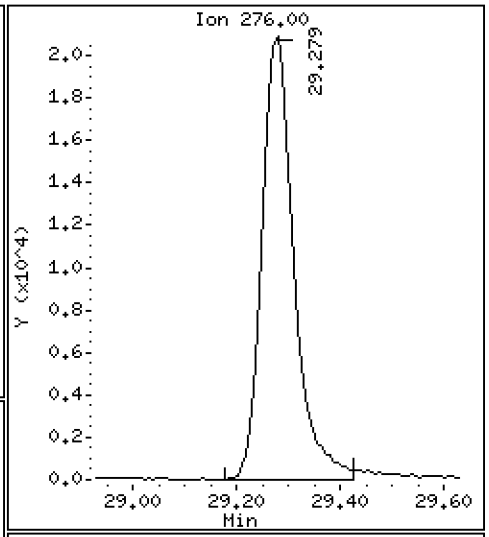
Concentration: 3.128 ug/mL

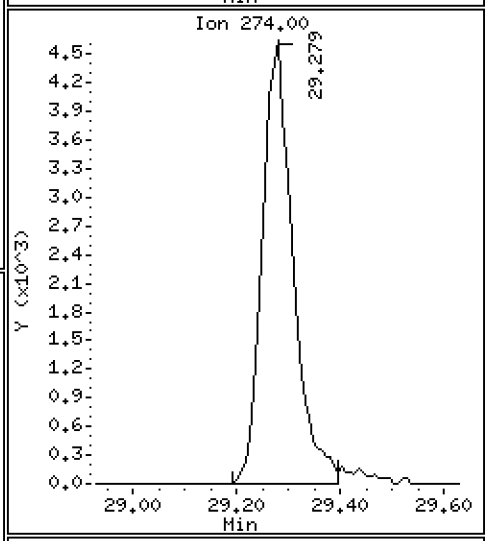


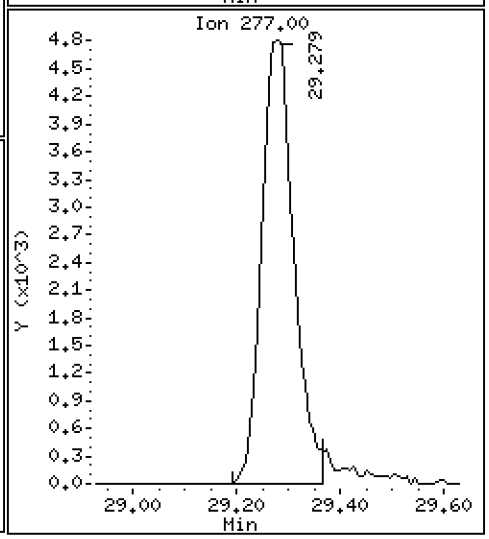












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

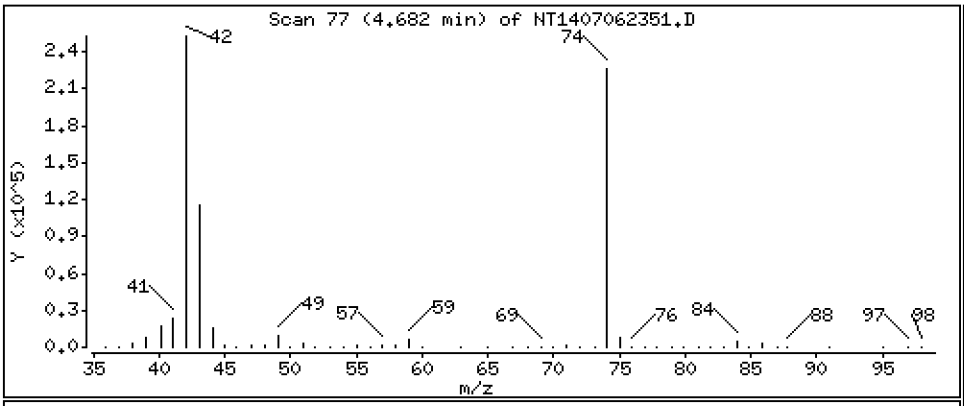
Operator: JGR

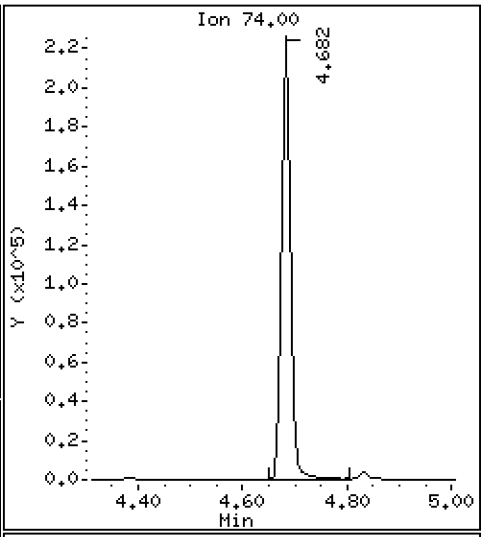
Column phase: ZB-5msi

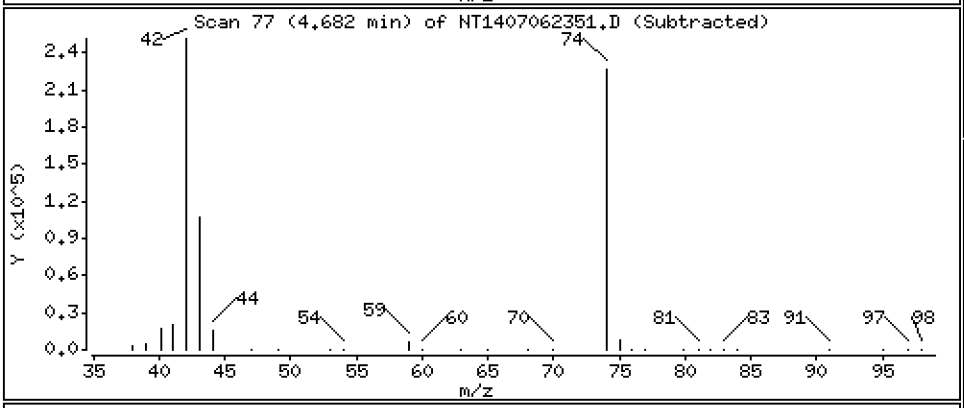
Column diameter: 0.25

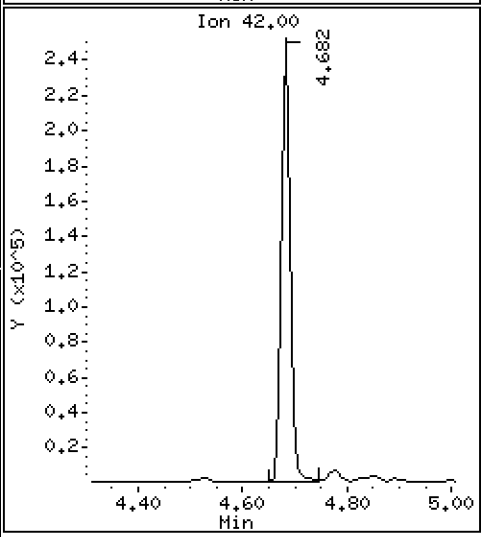
90 N-Nitrosodimethylamine

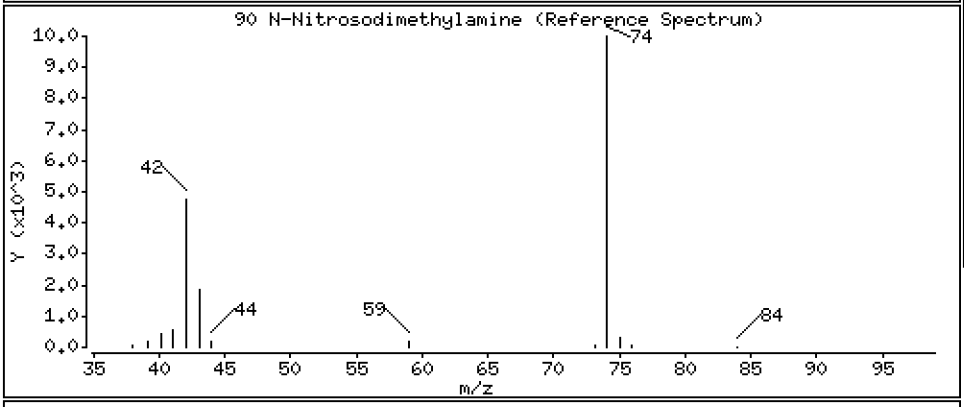
Concentration: 7.638 ug/mL

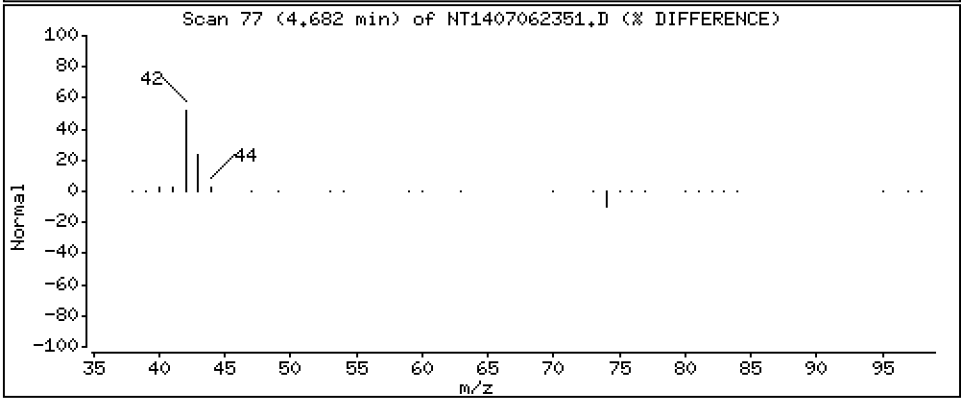












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

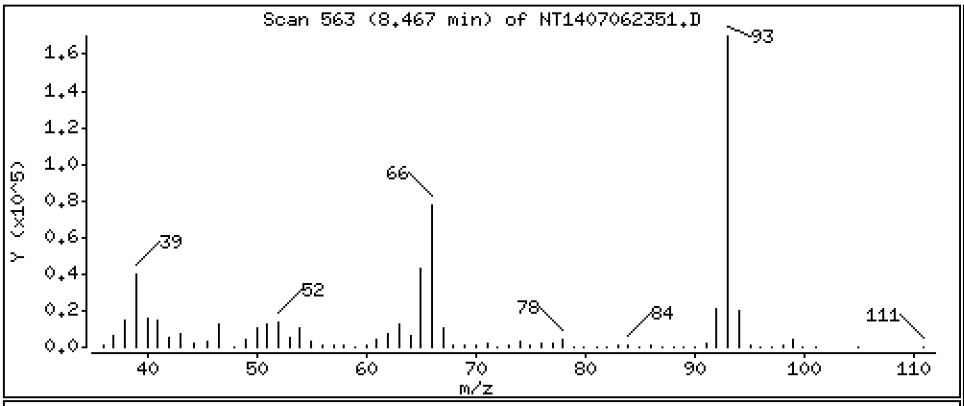
Operator: JGR

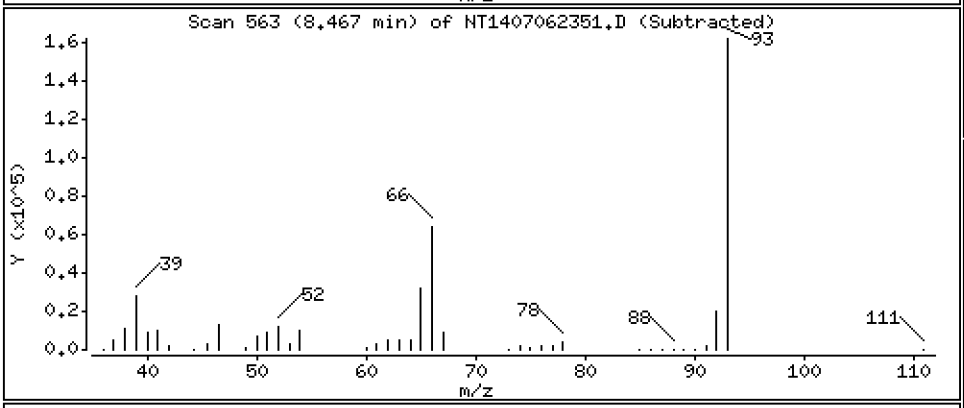
Column phase: ZB-5msi

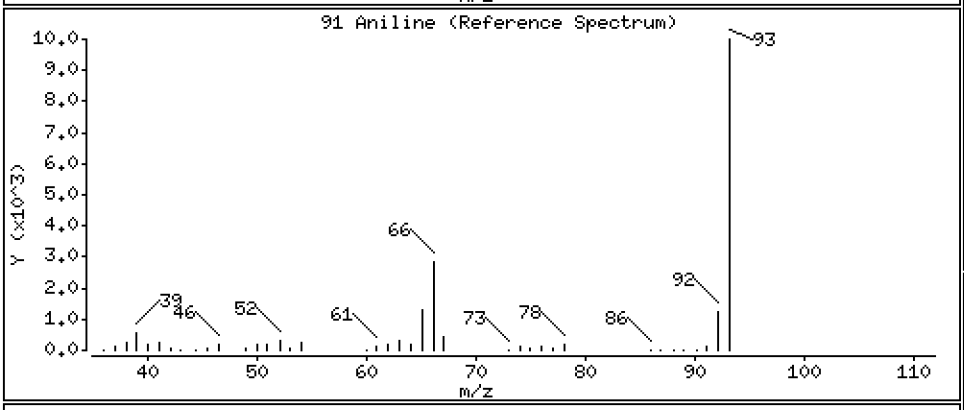
Column diameter: 0.25

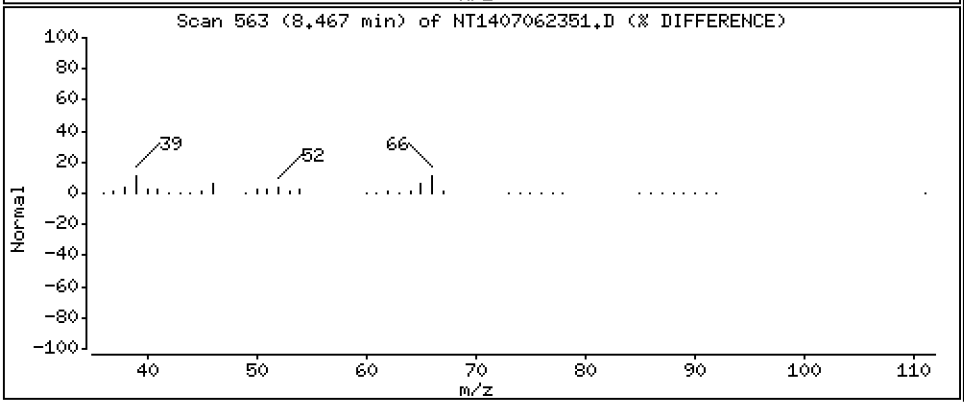
91 Aniline

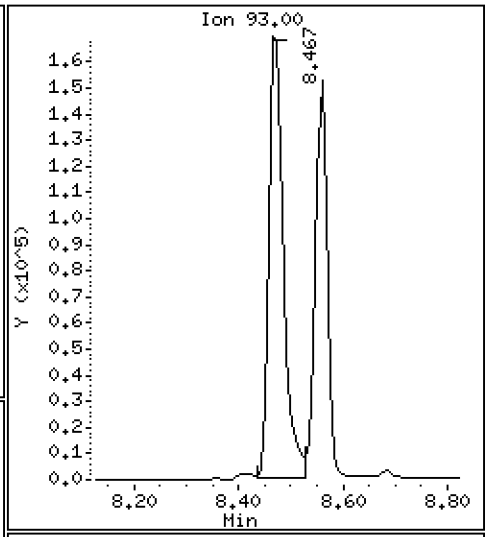
Concentration: 4.013 ug/mL

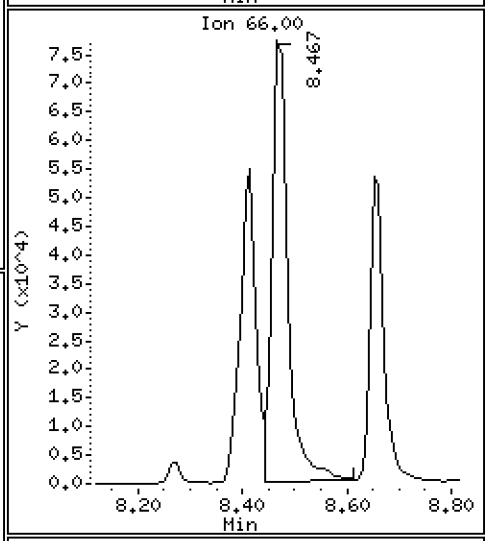


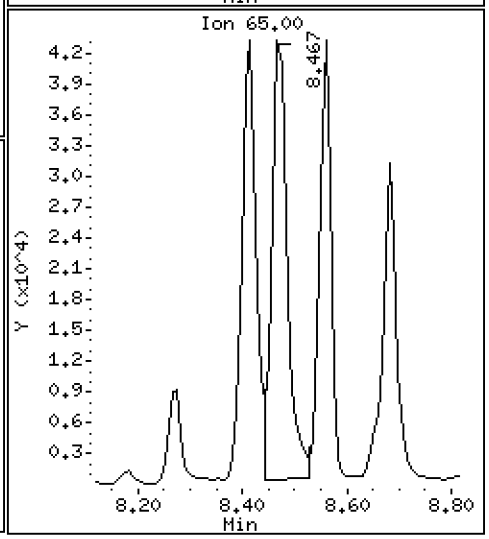












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

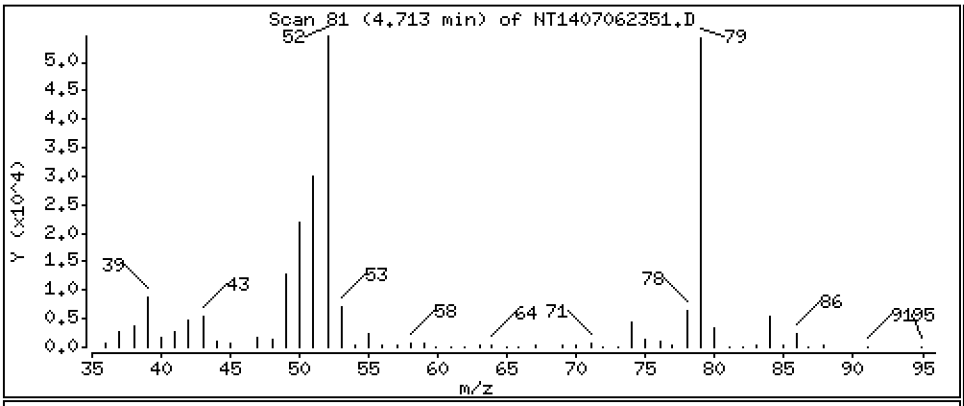
Operator: JGR

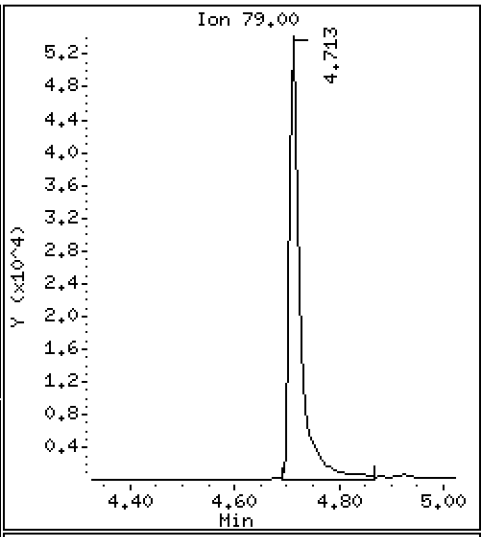
Column phase: ZB-5msi

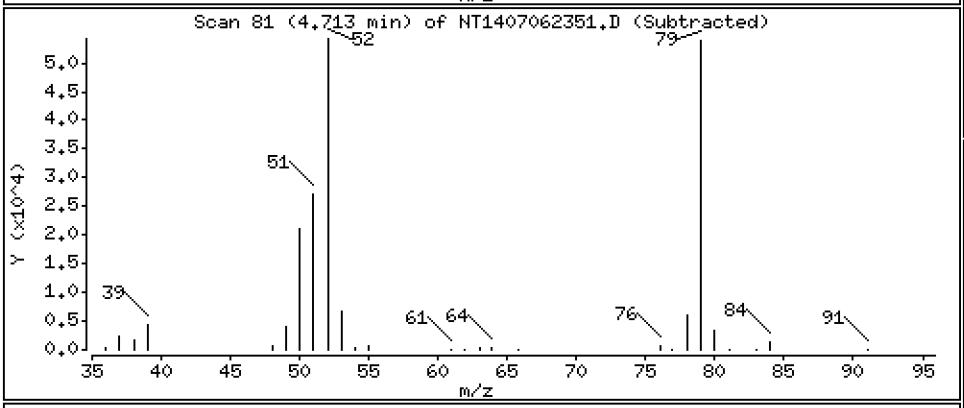
Column diameter: 0.25

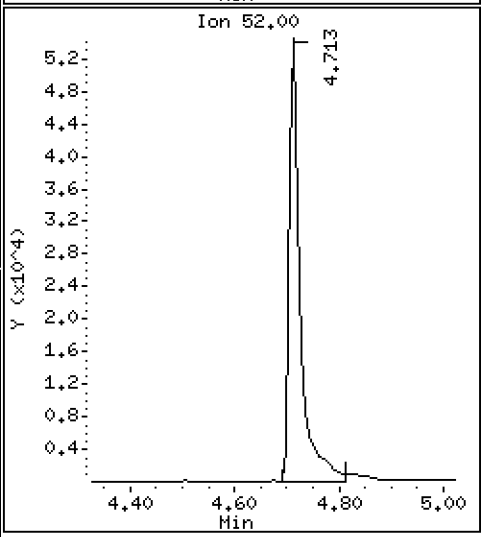
103 Pyridine

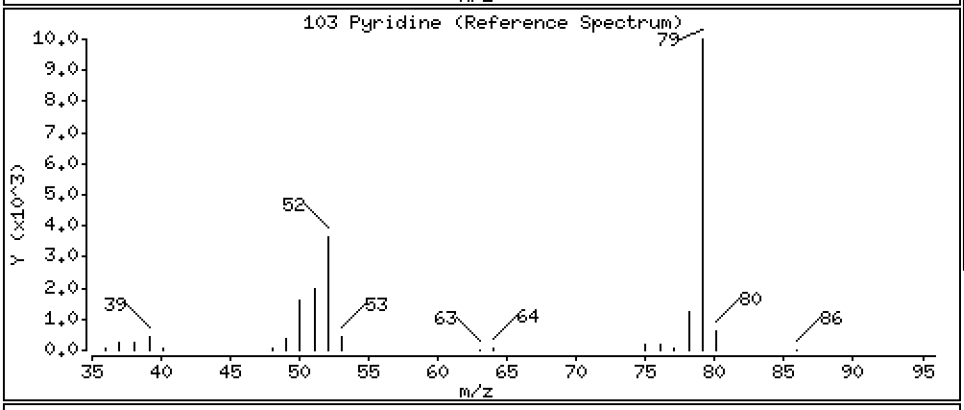
Concentration: 1.400 ug/mL

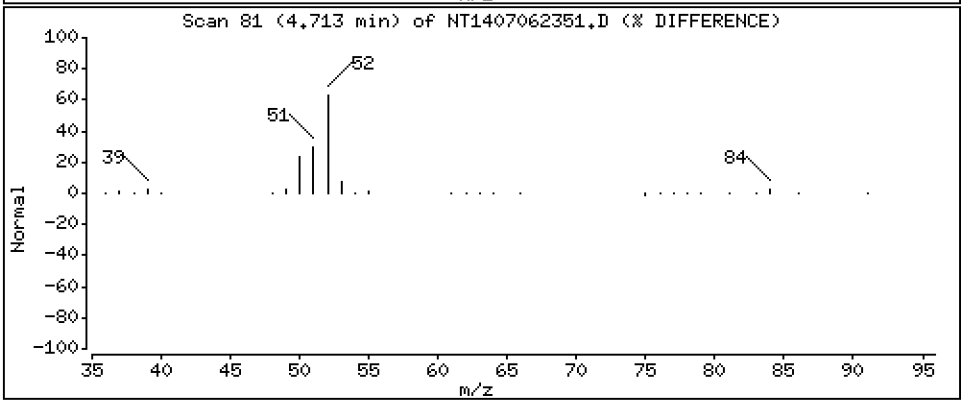












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062351.D

Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

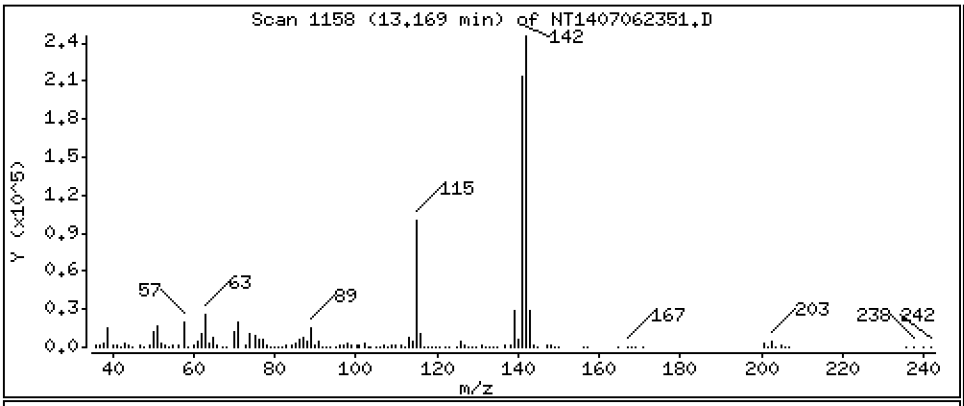
Operator: JGR

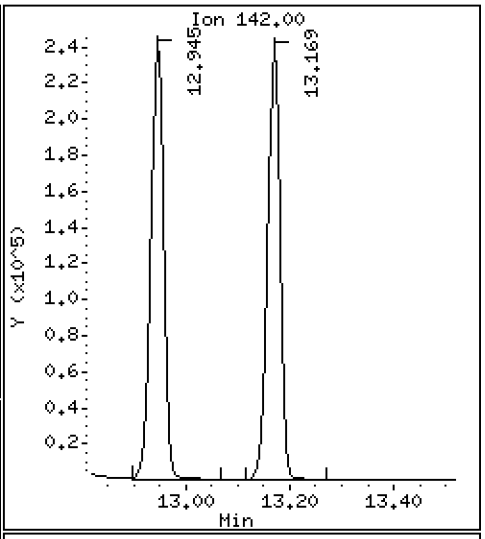
Column phase: ZB-5msi

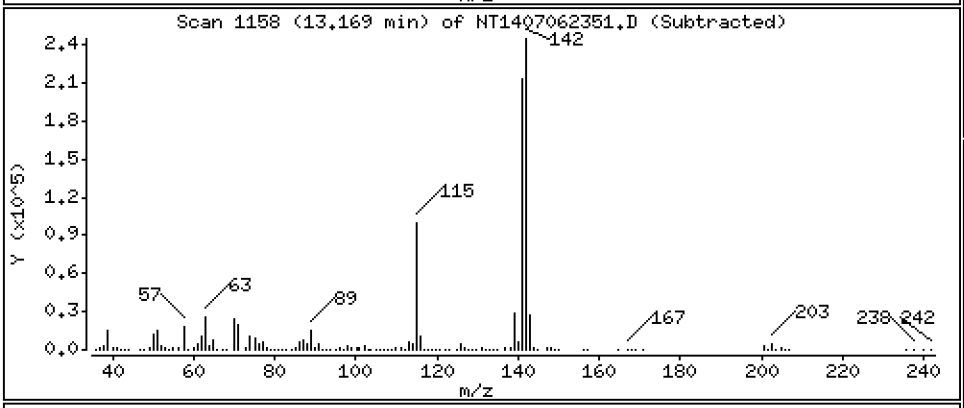
Column diameter: 0.25

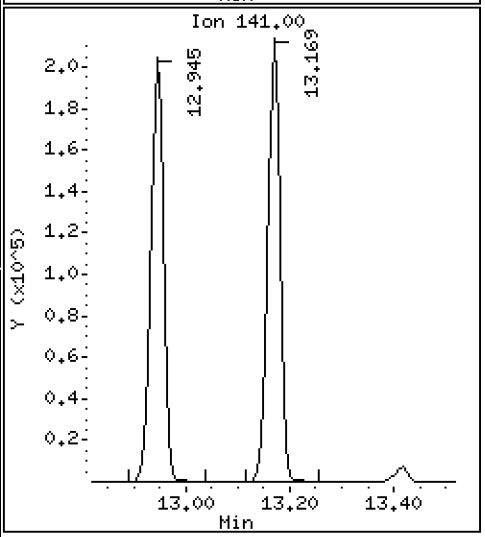
105 1-methylnaphthalene

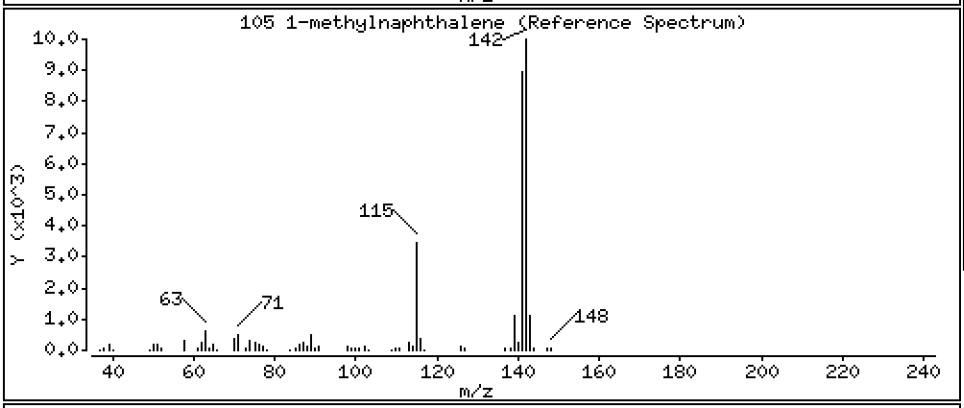
Concentration: 4.208 ug/mL

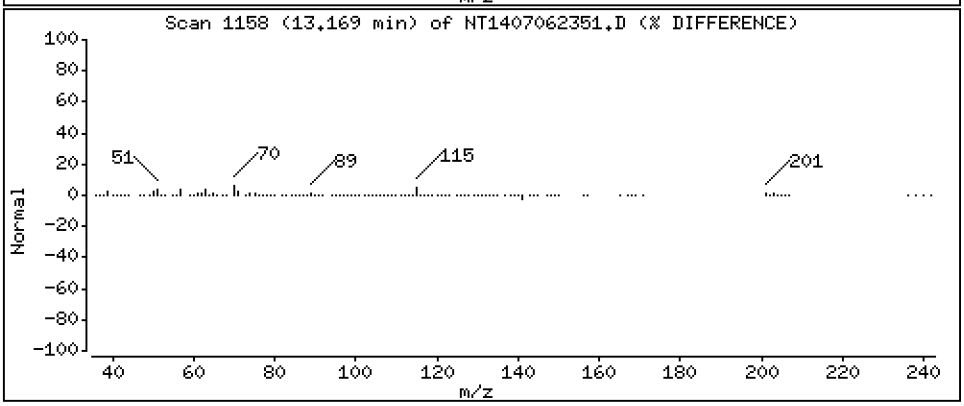












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

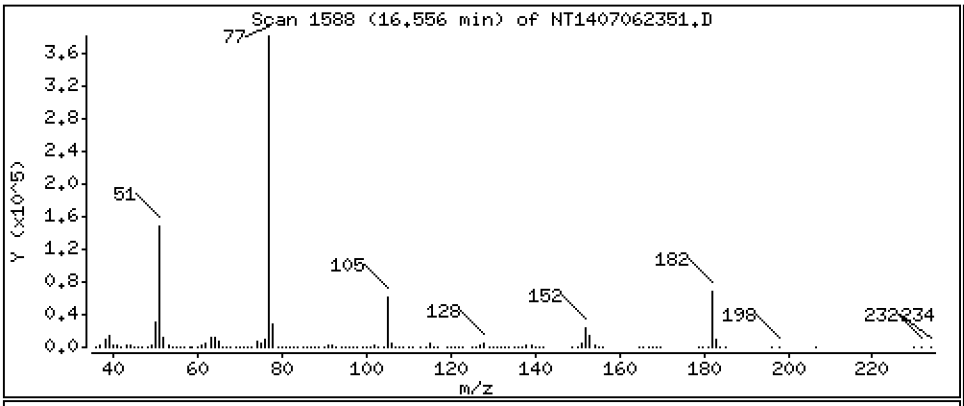
Operator: JGR

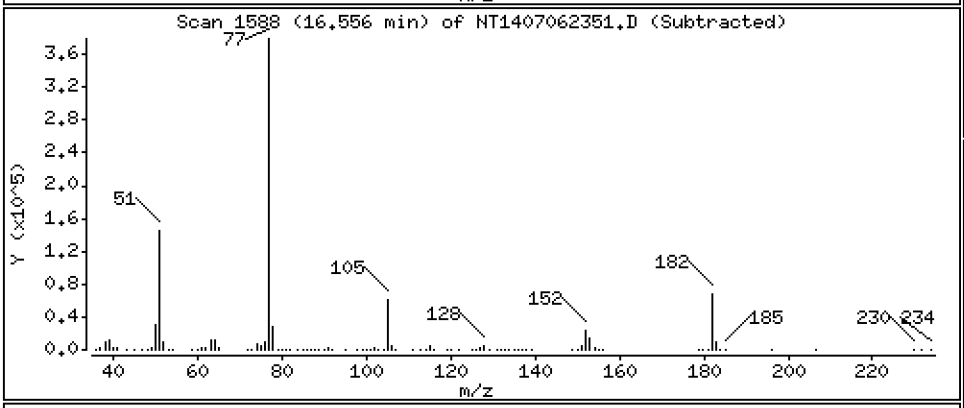
Column phase: ZB-5msi

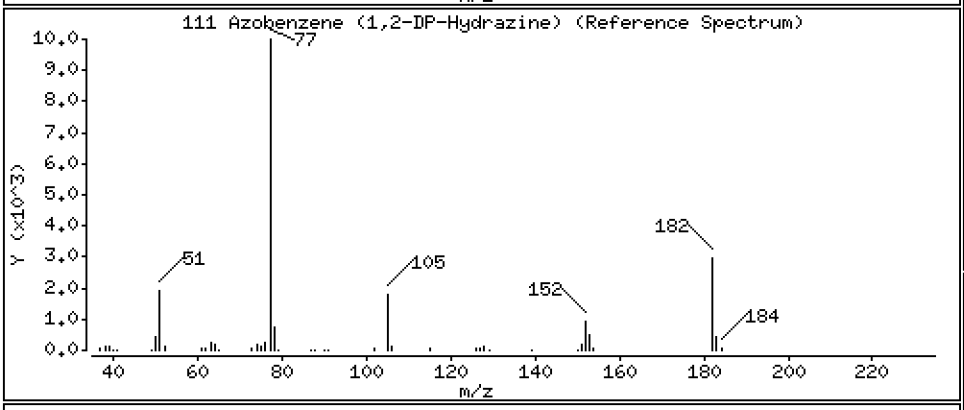
Column diameter: 0.25

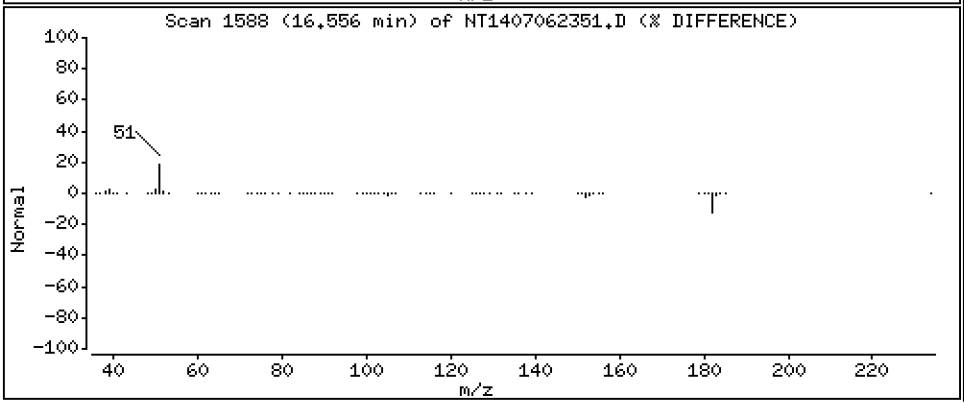
111 Azobenzene (1,2-DP-Hydrazine)

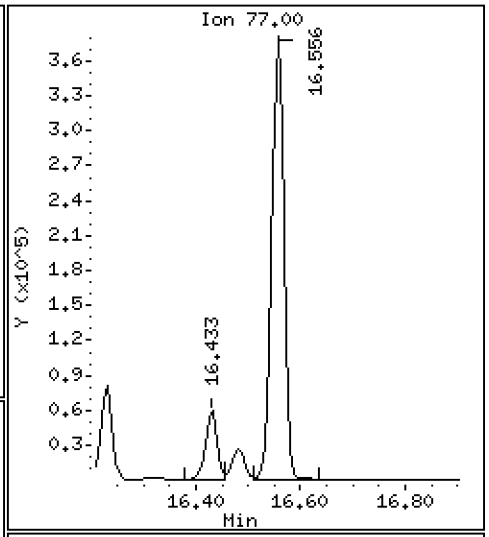
Concentration: 3.961 ug/mL

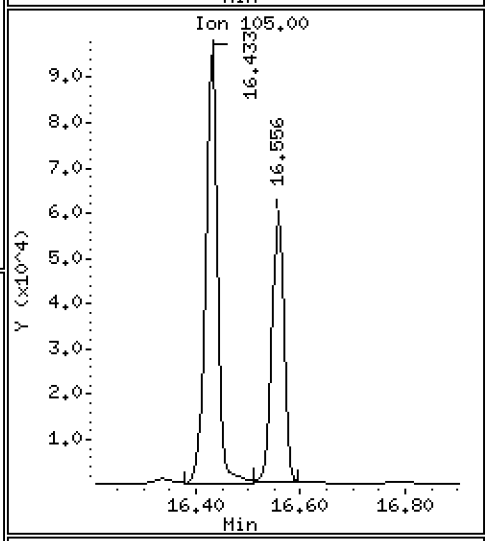


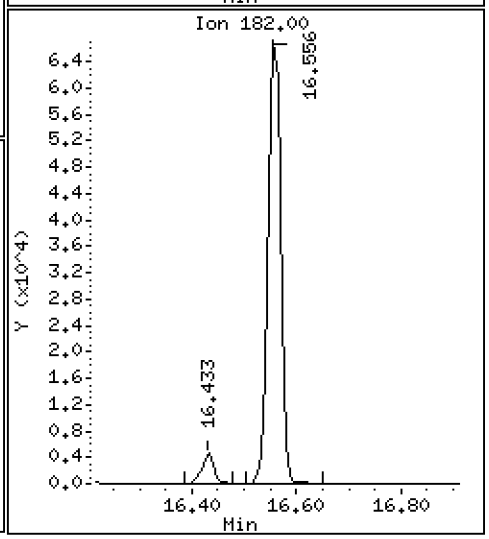












Date : 07-JUL-2023 20:44

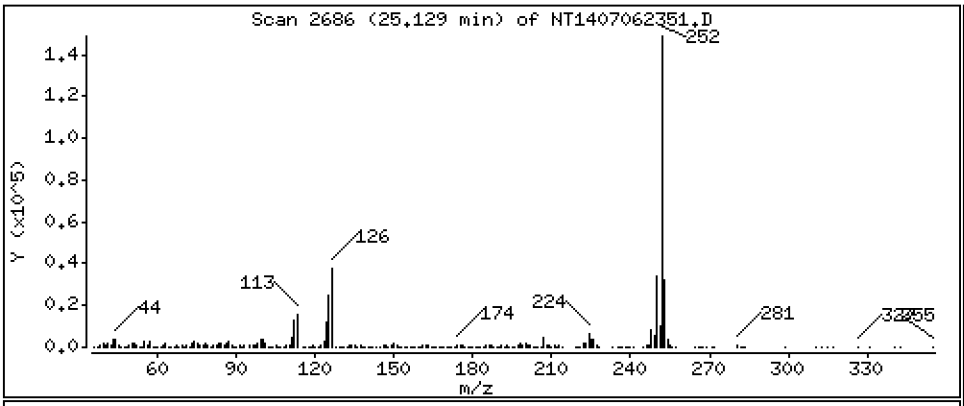
Client ID: Instrument: nt14.i

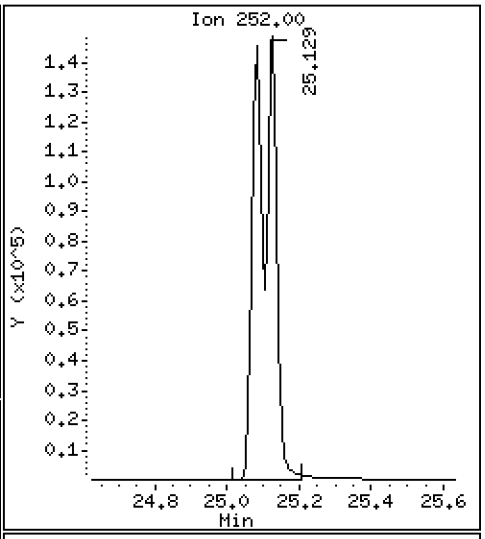
Sample Info: BLF0718-BSD1

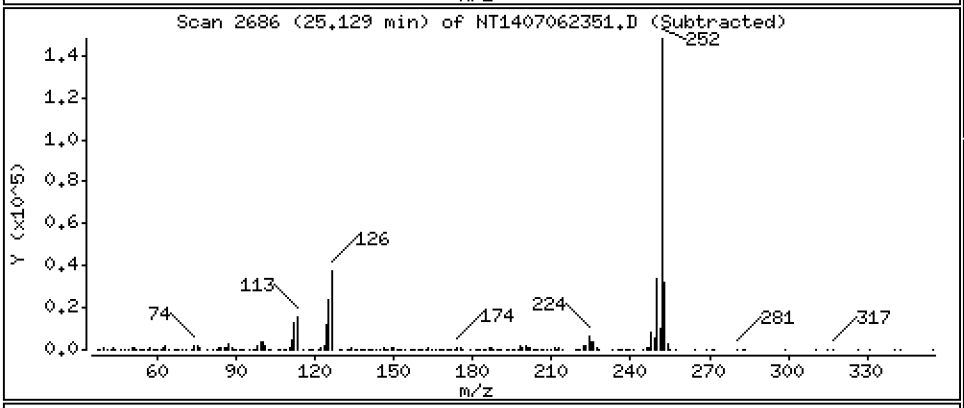
Operator: JGR

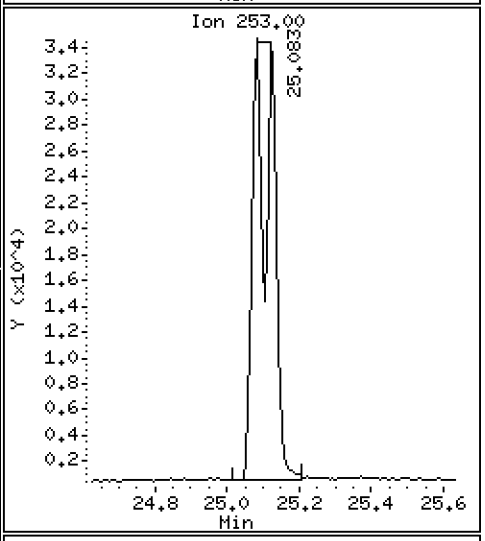
Column phase: ZB-5msi Column diameter: 0.25

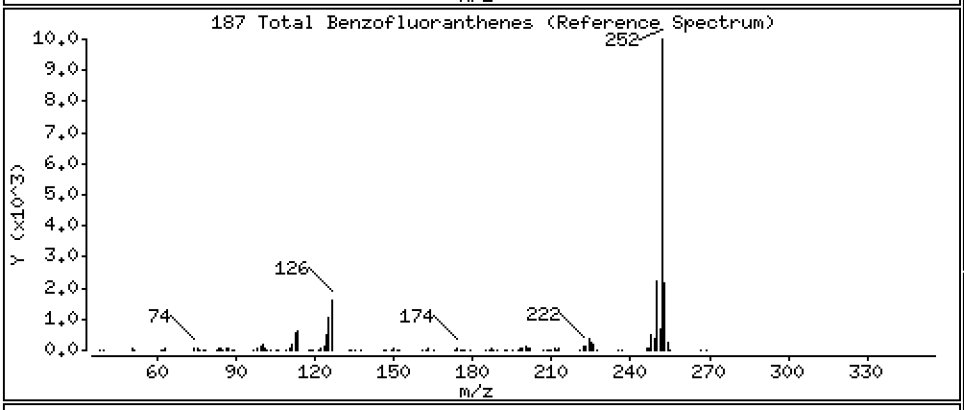
187 Total Benzofluoranthenes Concentration: 11.34 ug/mL

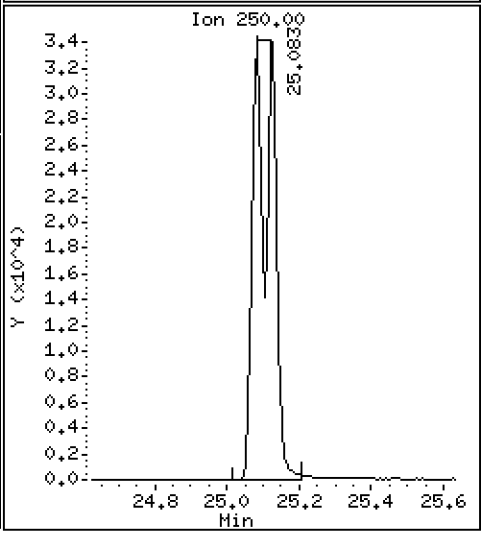


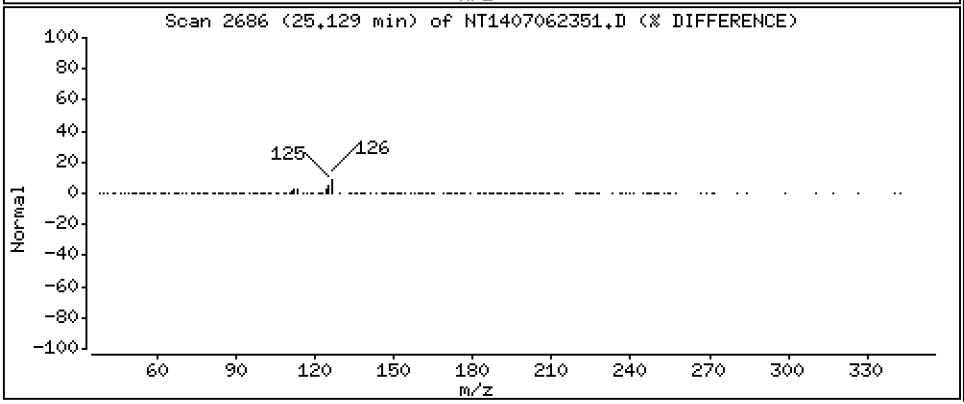












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Date : 07-JUL-2023 20:44

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-BSD1

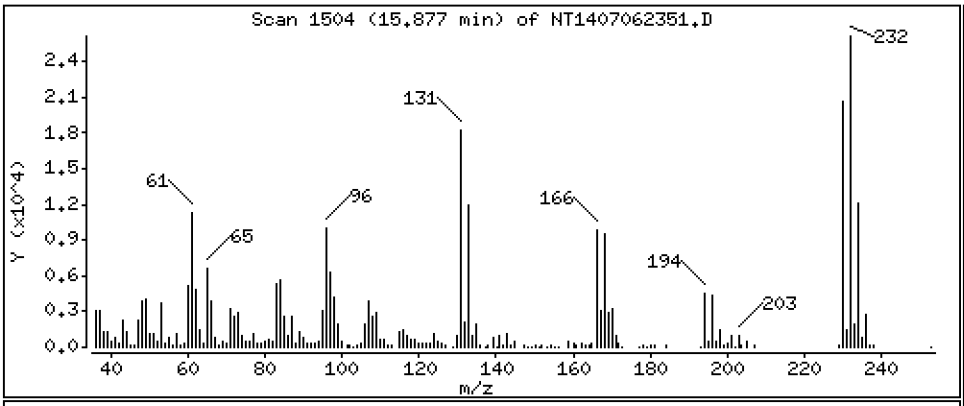
Operator: JGR

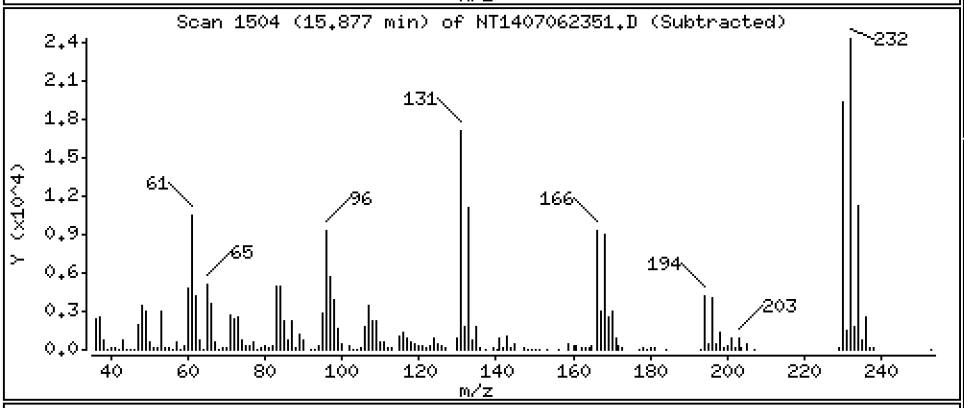
Column phase: ZB-5msi

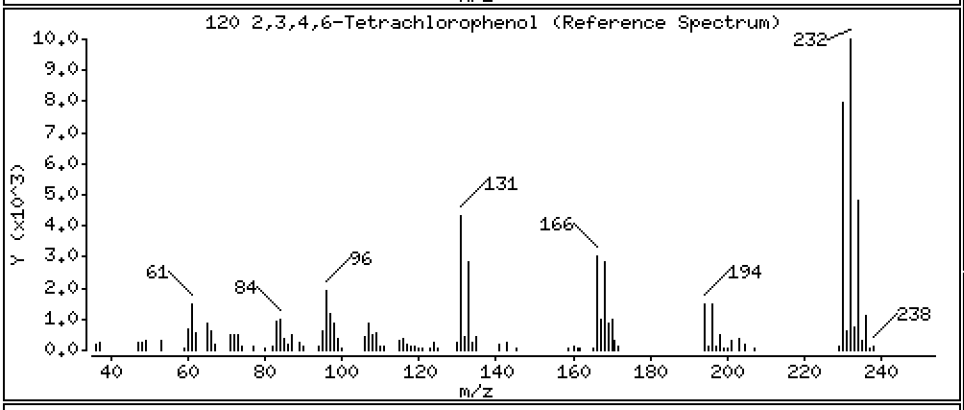
Column diameter: 0.25

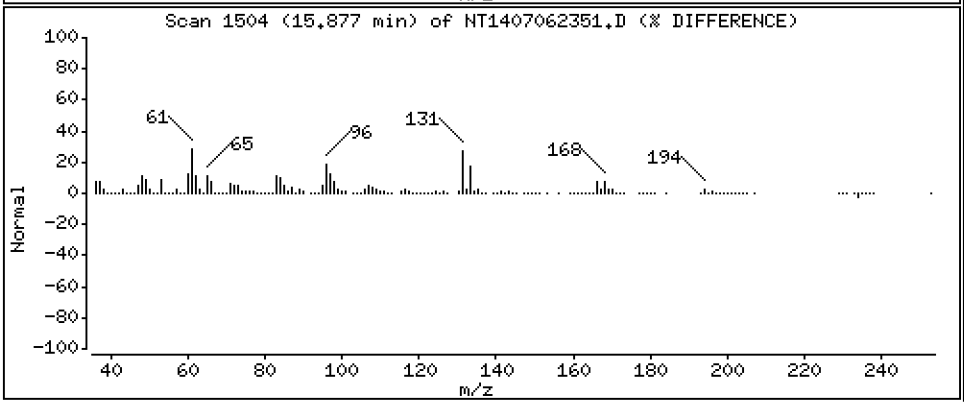
120 2,3,4,6-Tetrachlorophenol

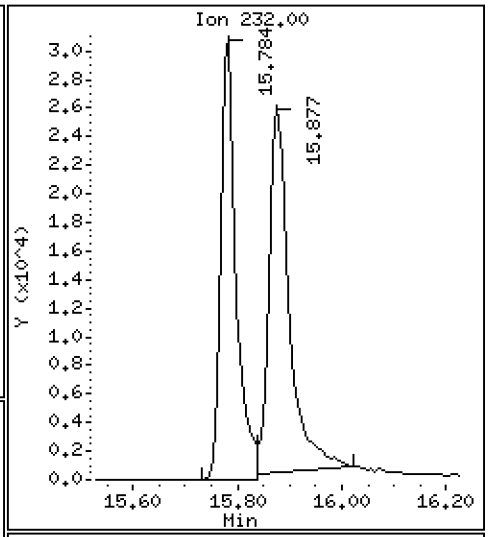
Concentration: 3.573 ug/mL

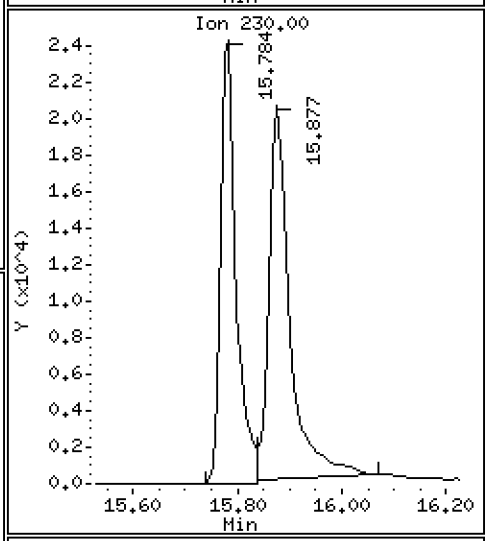


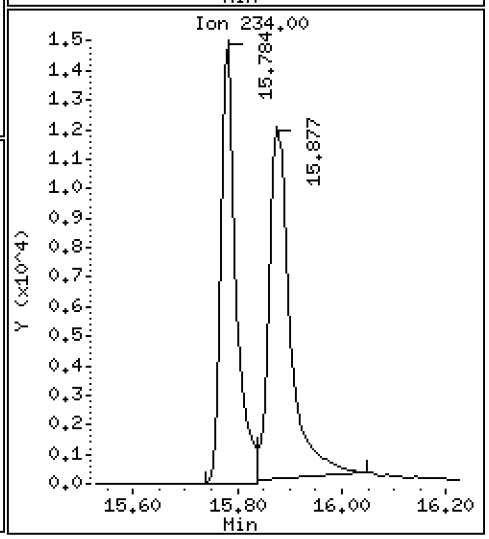












ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230706C.b\NT1407062351.D
Lab Smp Id: BLF0718-BSD1
Inj Date : 07-JUL-2023 20:44 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : BLF0718-BSD1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Meth Date : 08-Jul-2023 11:17 van Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 34
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: VANS-201906

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/mL)
$	1 2-Fluorophenol	112	6.806	6.798	(0.755)	258190	5.25911	5.259
$	2 Phenol-d5	99	8.389	8.382	(0.931)	355903	5.34786	5.348
	3 Phenol	94	8.413	8.405	(0.933)	243729	3.02455	3.025
$	5 2-Chlorophenol-d4	132	8.652	8.652	(0.960)	267097	5.43083	5.431
	4 Bis(2-Chloroethyl)ether	93	8.559	8.559	(0.949)	226416	4.03941	4.039
	6 2-Chlorophenol	128	8.683	8.683	(0.963)	206693	3.53554	3.536
	7 1,3-Dichlorobenzene	146	8.946	8.946	(0.992)	186560	3.58050	3.580
*	8 1,4-Dichlorobenzene-d4	152	9.016	9.016	(1.000)	129351	4.00000	
	9 1,4-Dichlorobenzene	146	9.047	9.047	(1.003)	203848	3.96859	3.969
$	10 1,2-Dichlorobenzene-d4	152	9.373	9.373	(1.040)	108428	3.48538	3.485
	12 1,2-Dichlorobenzene	146	9.396	9.404	(1.042)	187346	3.76459	3.765
	11 Benzyl alcohol	108	Compound Not Detected.					
	14 2,2'-oxybis(1-Chloropropane)	121	9.590	9.590	(1.064)	70152	4.35810	4.358
	13 2-Methylphenol	108	9.520	9.520	(1.056)	178386	3.51195	3.512
	17 Hexachloroethane	117	9.994	9.994	(1.108)	82384	3.49170	3.492
	16 N-Nitroso-di-n-propylamine	70	9.846	9.846	(1.092)	161867	3.55147	3.551
	15 4-Methylphenol	108	9.800	9.792	(1.087)	206328	3.66739	3.667
$	18 Nitrobenzene-d5	82	10.110	10.110	(0.879)	231886	3.79146	3.791
	19 Nitrobenzene	77	10.141	10.149	(0.881)	256838	3.92948	3.929
	20 Isophorone	82	10.591	10.591	(0.921)	379265	4.17139	4.171
	21 2-Nitrophenol	139	10.778	10.778	(0.937)	105279	3.40328	3.403
	22 2,4-Dimethylphenol	107	10.847	10.840	(0.943)	390790	7.45391	7.454
	23 Bis(2-Chloroethoxy)methane	93	11.026	11.026	(0.958)	273406	4.70622	4.706
	24 Benzoic acid	105	11.095	11.088	(0.964)	807977	24.5579	24.56
	25 2,4-Dichlorophenol	162	11.250	11.243	(0.978)	457219	11.7949	11.79
	26 1,2,4-Trichlorobenzene	180	11.420	11.420	(0.993)	147235	3.81058	3.811
*	27 Naphthalene-d8	136	11.505	11.505	(1.000)	518517	4.00000	
	28 Naphthalene	128	11.544	11.544	(1.003)	568823	4.19941	4.199
	29 4-Chloroaniline	127	11.675	11.675	(1.015)	288169	4.56232	4.562
	30 Hexachlorobutadiene	225	11.907	11.915	(1.035)	73987	4.10508	4.105
	31 4-Chloro-3-methylphenol	107	12.665	12.665	(1.101)	585078	12.0340	12.03
	32 2-Methylnaphthalene	142	12.944	12.952	(1.125)	391573	3.89742	3.897
	33 Hexachlorocyclopentadiene	237	13.416	13.416	(0.886)	60378	3.03443	3.034

		QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/mL)	(ug/mL)
34	2,4,6-Trichlorophenol	196	13.579	13.579	(0.897)	284342	11.2047	11.20
35	2,4,5-Trichlorophenol	196	13.664	13.664	(0.903)	353238	13.3772	13.38
$ 36	2-Fluorobiphenyl	172	13.733	13.733	(0.907)	370600	3.94110	3.941
37	2-Chloronaphthalene	162	13.942	13.942	(0.921)	348196	4.02507	4.025
38	2-Nitroaniline	65	14.206	14.206	(0.939)	492303	11.7428	11.74
39	Dimethylphthalate	163	14.639	14.639	(0.967)	402280	4.53332	4.533
40	Acenaphthylene	152	14.817	14.817	(0.979)	512681	3.84070	3.841
41	2,6-Dinitrotoluene	165	14.778	14.778	(0.976)	252730	13.5356	13.54
* 42	Acenaphthene-d10	164	15.134	15.134	(1.000)	264024	4.00000	
43	3-Nitroaniline	138	15.065	15.065	(0.995)	236864	9.46931	9.469
44	Acenaphthene	153	15.196	15.204	(1.004)	337674	4.27451	4.275
45	2,4-Dinitrophenol	184	15.273	15.273	(1.009)	164418	13.9736	13.97
46	Dibenzofuran	168	15.528	15.528	(1.026)	491999	4.27377	4.274
47	4-Nitrophenol	109	15.436	15.420	(1.020)	146789	8.03564	8.036
48	2,4-Dinitrotoluene	165	15.590	15.590	(1.030)	345597	13.2365	13.24
50	Diethylphthalate	149	16.101	16.101	(1.064)	451856	4.40326	4.403
49	Fluorene	166	16.240	16.240	(1.073)	432336	4.29436	4.294
51	4-Chlorophenyl-phenylether	204	16.232	16.232	(1.073)	198285	4.56158	4.562
52	4-Nitroaniline	138	16.332	16.340	(1.079)	236380	9.33317	9.333
53	4,6-Dinitro-2-methylphenol	198	16.432	16.432	(0.904)	268284	18.5803	18.58
54	N-Nitrosodiphenylamine	169	16.486	16.486	(0.907)	226550	3.58986	3.590
$ 55	2,4,6-Tribromophenol	330	16.779	16.779	(1.109)	49776	6.00660	6.007
56	4-Bromophenyl-phenylether	248	17.234	17.234	(0.948)	93076	4.83647	4.836
57	Hexachlorobenzene	284	17.551	17.559	(0.966)	90704	4.45525	4.455
58	Pentachlorophenol	266	17.923	17.923	(0.986)	122646	9.79878	9.799
* 59	Phenanthrene-d10	188	18.178	18.178	(1.000)	446947	4.00000	
60	Phenanthrene	178	18.225	18.225	(1.003)	547443	4.52771	4.528
61	Anthracene	178	18.317	18.317	(1.008)	458518	3.92452	3.925
62	Carbazole	167	18.650	18.650	(1.026)	487429	4.14682	4.147
63	Di-n-butylphthalate	149	19.447	19.447	(1.070)	838583	5.42990	5.430
64	Fluoranthene	202	20.615	20.615	(0.887)	600565	5.33824	5.338
65	Pyrene	202	21.041	21.041	(0.906)	593397	5.22127	5.221
$ 66	Terphenyl-d14	244	21.327	21.327	(0.918)	394033	5.15146	5.151
67	Butylbenzylphthalate	149	22.249	22.249	(0.958)	341120	6.37168	6.372
68	Benzo(a)anthracene	228	23.201	23.209	(0.999)	448831	4.65755	4.658
* 69	Chrysene-d12	240	23.232	23.232	(1.000)	275220	4.00000	
70	3,3'-Dichlorobenzidine	252	23.162	23.162	(0.997)	184242	6.75074	6.751
71	Chrysene	228	23.278	23.278	(1.002)	429428	4.97834	4.978
72	bis(2-Ethylhexyl)phthalate	149	24.269	24.269	(1.001)	886154	4.80301	4.803
* 134	Di-n-octylphthalate-d4	153	24.254	24.262	(1.000)	717845	4.00000	
73	Di-n-octylphthalate	149	24.269	24.269	(1.001)	886154	4.80301	4.803
74	Benzo(b)fluoranthene	252	25.082	25.082	(0.970)	292990	6.00394	6.004
75	Benzo(k)fluoranthene	252	25.129	25.129	(0.972)	297795	5.43573	5.436
76	Benzo(a)pyrene	252	25.733	25.733	(0.996)	191278	4.99431	4.994
* 77	Perylene-d12	264	25.849	25.849	(1.000)	148466	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	28.494	28.494	(1.102)	124568	3.60639	3.606
79	Dibenzo(a,h)anthracene	278	28.509	28.509	(1.103)	108111	3.69912	3.699
80	Benzo(g,h,i)perylene	276	29.278	29.278	(1.133)	89209	3.12833	3.128
90	N-Nitrosodimethylamine	74	4.682	4.658	(0.519)	283439	7.63755	7.638
91	Aniline	93	8.467	8.474	(0.939)	315335	4.01344	4.013
93	Benzidine	184	Compound Not Detected.					
103	Pyridine	79	4.712	4.674	(0.523)	81799	1.39968	1.400
105	1-methylnaphthalene	142	13.169	13.169	(1.145)	377106	4.20751	4.208
111	Azobenzene (1,2-DP-Hydrazine)	77	16.556	16.556	(1.094)	578962	3.96138	3.961

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.129	25.129	(0.972)	561645	11.3371	11.34
120 2,3,4,6-Tetrachlorophenol	232	15.876	15.876	(1.049)	73447	3.57333	3.573

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1407062351.D
Lab Smp Id: BLF0718-BSD1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Misc Info:

Calibration Date: 07-JUL-2023
Calibration Time: 16:23
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	132670	66335	265340	129351	-2.50
27 Naphthalene-d8	538082	269041	1076164	518517	-3.64
42 Acenaphthene-d10	270232	135116	540464	264024	-2.30
59 Phenanthrene-d10	462568	231284	925136	446947	-3.38
69 Chrysene-d12	289075	144538	578150	275220	-4.79
134 Di-n-octylphthala	772331	386166	1544662	717845	-7.05
77 Perylene-d12	173349	86675	346698	148466	-14.35

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.02	8.52	9.52	9.02	0.00
27 Naphthalene-d8	11.51	11.01	12.01	11.51	0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	0.00
59 Phenanthrene-d10	18.18	17.68	18.68	18.18	0.00
69 Chrysene-d12	23.23	22.73	23.73	23.23	0.00
134 Di-n-octylphthala	24.26	23.76	24.76	24.25	-0.03
77 Perylene-d12	25.85	25.35	26.35	25.85	0.00

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

REVIEW SUMMARY FOR FILE - NT1407062351.D

Lab ID: BLF0718-BSD1
nt14.i, ABN.m, 07-JUL-2023 20:44

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1407062344.D

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

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

MS / MS DUPLICATE RECOVERY
EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	07/07/23 21:58
Batch:	BLF0718	Laboratory ID:	BLF0718-MS1
Preparation:	EPA 3546 (Microwave)	Sequence Name:	Matrix Spike
Initial/Final:	16.03 g / 1 mL	Source Sample:	LDW20-SC148A

COMPOUND	SPIKE ADDED (ug/kg dry)	SAMPLE CONCENTRATION (ug/kg dry)	Q	MS CONCENTRATION (ug/kg dry)	Q	MS % REC. #	QC LIMITS REC.
Naphthalene	500	26.7	H	451	H	84.9	43 - 120
2-Methylnaphthalene	500	35.9	H	410	H	74.8	43 - 120
Acenaphthylene	500	140	H	466	H	65.1	42 - 120
Acenaphthene	500	149	H	473	H	64.8	45 - 120
Fluorene	500	189	H	496	H	61.5	45 - 120
Phenanthrene	500	4660	H, E	595	*, H	-814 *	49 - 120
Anthracene	500	129	H	502	H	74.6	45 - 120
Fluoranthene	500	5020	H, E	999	*, H	-803 *	53 - 145
Pyrene	500	3940	H, E	2010	*, H, E	-386 *	52 - 134
Benzo(a)anthracene	500	179	H	682	H	101	49 - 120
Chrysene	500	999	H	1050	*, H	9.61 *	47 - 120
Benzofluoranthenes, Total	1000	1020	H	2090	H	108	30 - 160
Benzo(a)pyrene	500	240	H	777	H	107	42 - 120
Indeno(1,2,3-cd)pyrene	500	86.1	H, Q	438	H, Q	70.4	42 - 163
Dibenzo(a,h)anthracene	500	28.9	H	401	H	74.4	30 - 133
Benzo(g,h,i)perylene	500	77.0	H, Q	367	H, Q	58.1	46 - 148

* Values outside of QC limits

MS / MS DUPLICATE RECOVERY
EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	07/07/23 22:35
Batch:	BLF0718	Laboratory ID:	BLF0718-MSD1
Preparation:	EPA 3546 (Microwave)	Sequence Name:	Matrix Spike Dup
Initial/Final:	16.03 g / 1 mL	Source Sample:	LDW20-SC148A

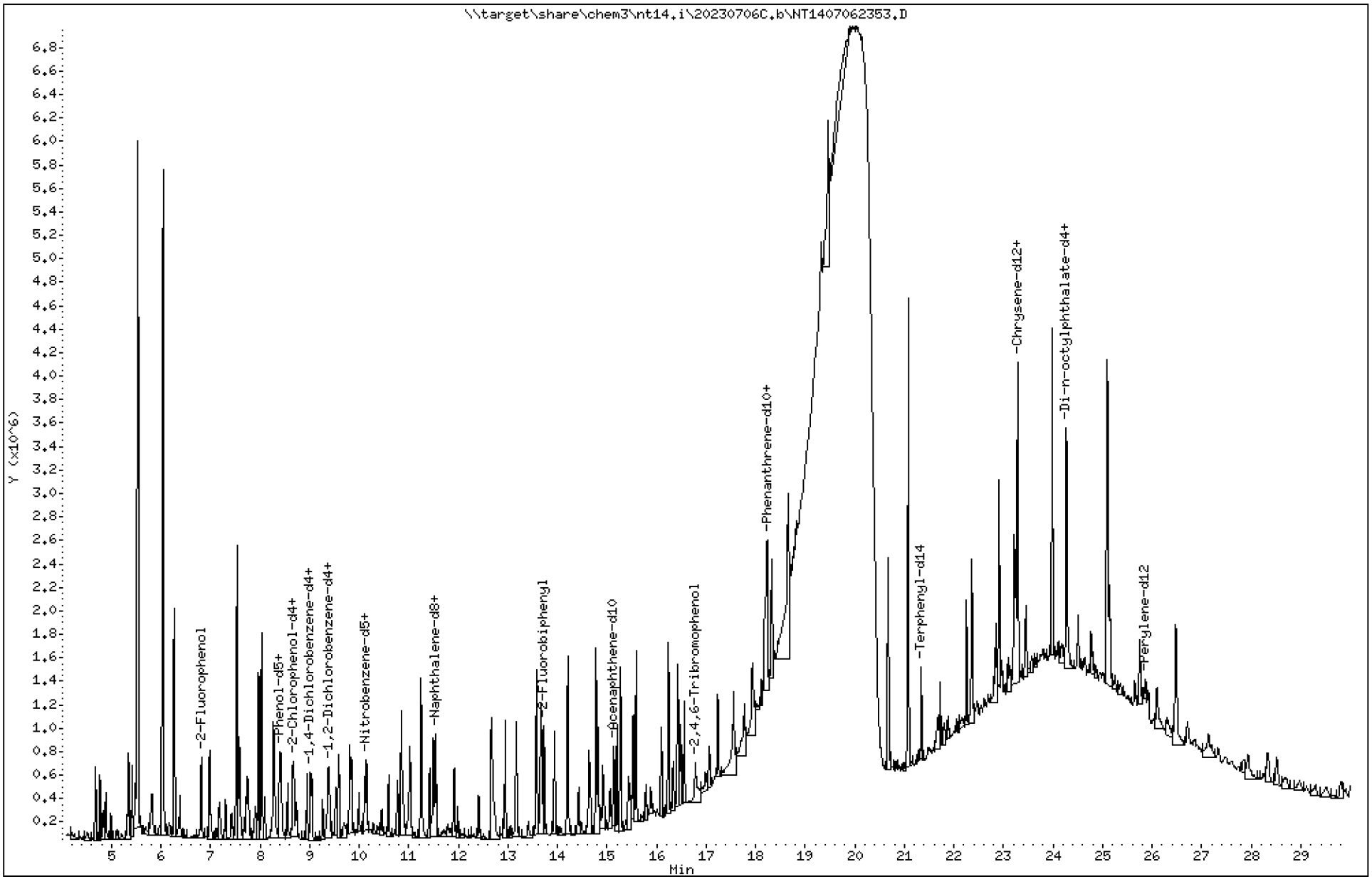
COMPOUND	SPIKE ADDED (ug/kg dry)	MSD CONCENTRATION (ug/kg dry)	Q	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Naphthalene	500	451	H	84.9	0.00133	30	43 - 120
2-Methylnaphthalene	500	414	H	75.7	1.01	30	43 - 120
Acenaphthylene	500	466	H	65.1	0.0513	30	42 - 120
Acenaphthene	500	483	H	66.7	1.98	30	45 - 120
Fluorene	500	504	H	63.0	1.57	30	45 - 120
Phenanthrene	500	618	*, H	-809 *	3.85	30	49 - 120
Anthracene	500	491	H	72.3	2.28	30	45 - 120
Fluoranthene	500	793	*, H	-844 *	23.0	30	53 - 145
Pyrene	500	1740	*, H	-440 *	14.3	30	52 - 134
Benzo(a)anthracene	500	586	H	81.6	15.1	30	49 - 120
Chrysene	500	847	*, H	-30.4 *	21.1	30	47 - 120
Benzofluoranthenes, Total	1000	1890	H	87.2	10.3	30	30 - 160
Benzo(a)pyrene	500	792	H	110	1.85	30	42 - 120
Indeno(1,2,3-cd)pyrene	500	437	H, Q	70.2	0.236	30	42 - 163
Dibenzo(a,h)anthracene	500	405	H	75.3	1.04	30	30 - 133
Benzo(g,h,i)perylene	500	363	H, Q	57.3	1.05	30	46 - 148

* Values outside of QC limits

Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062353.D
Date : 07-JUL-2023 21:58
Client ID:
Sample Info: BLF0718-MS1

Instrument: nt14.i
Operator: JGR
Column diameter: 0.25

Column phase: ZB-5msi



Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062353.D

Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

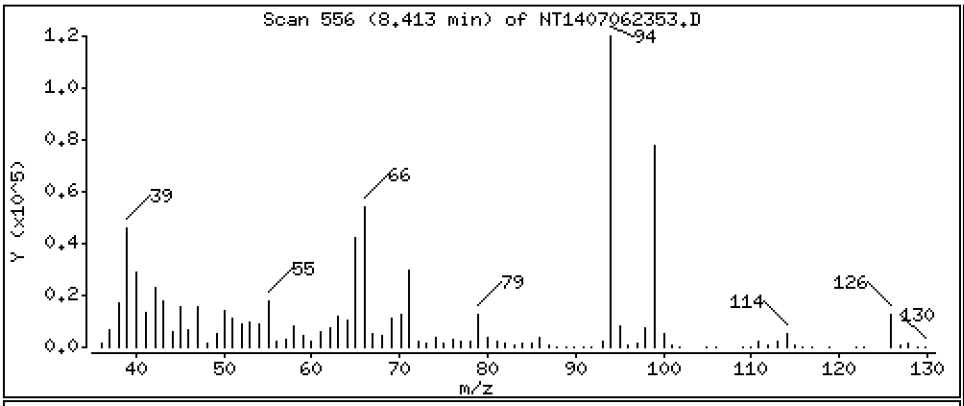
Operator: JGR

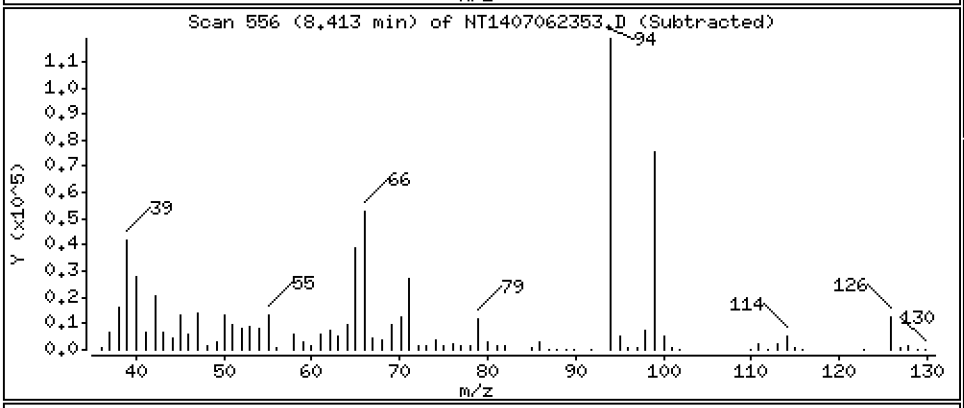
Column phase: ZB-5msi

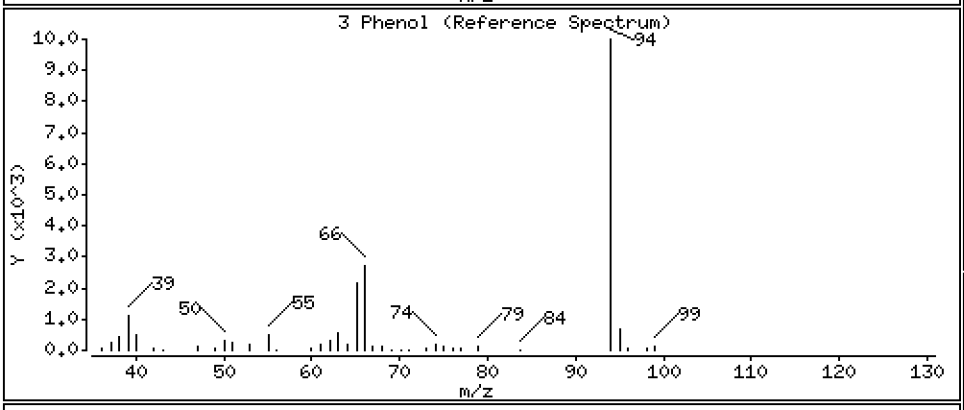
Column diameter: 0.25

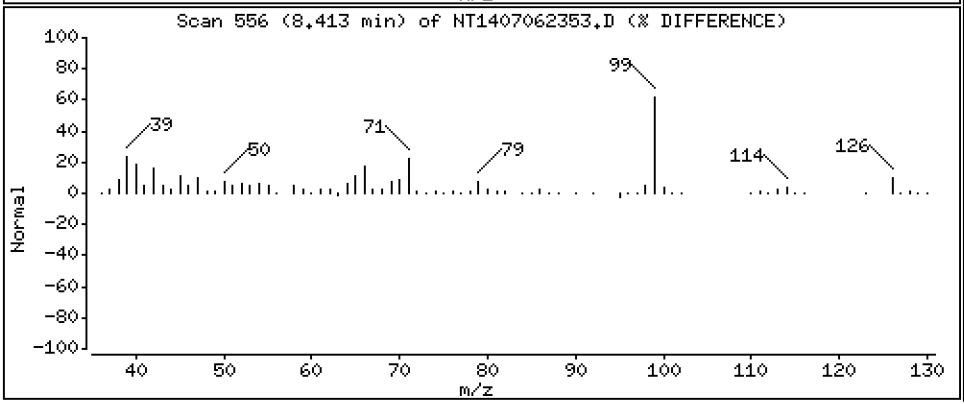
3 Phenol

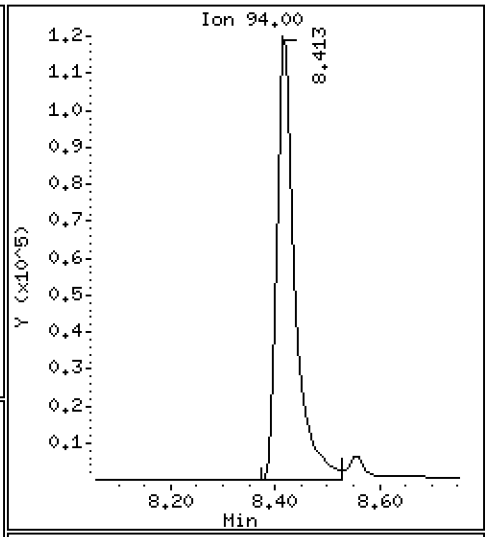
Concentration: 3.663 ug/mL

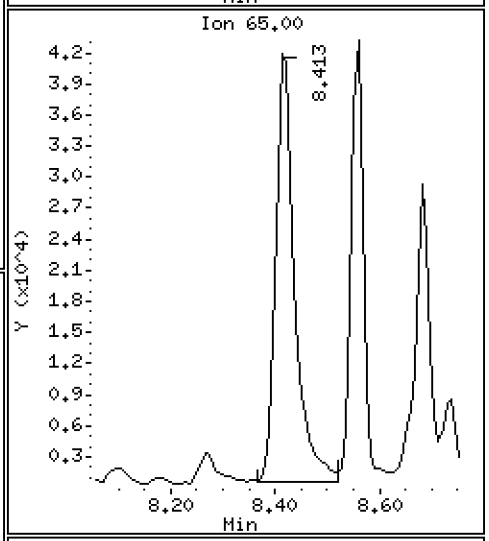


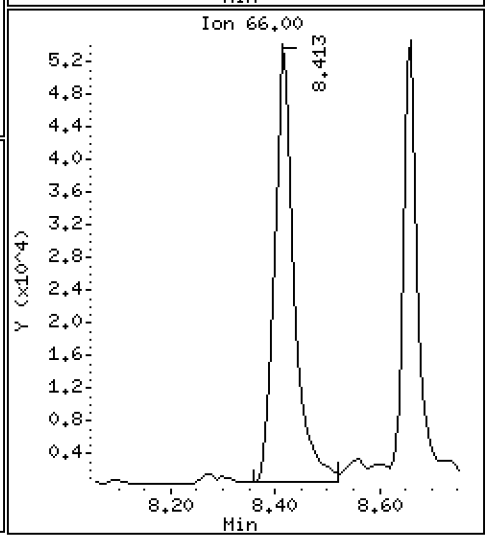












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062353.D

Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

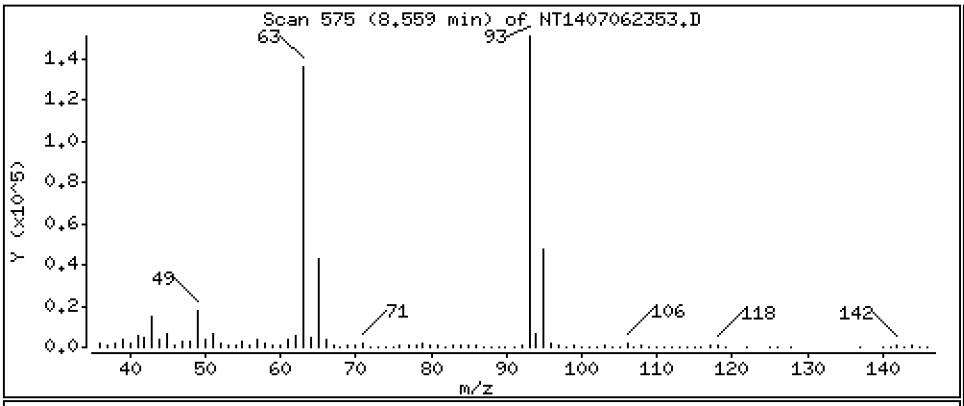
Operator: JGR

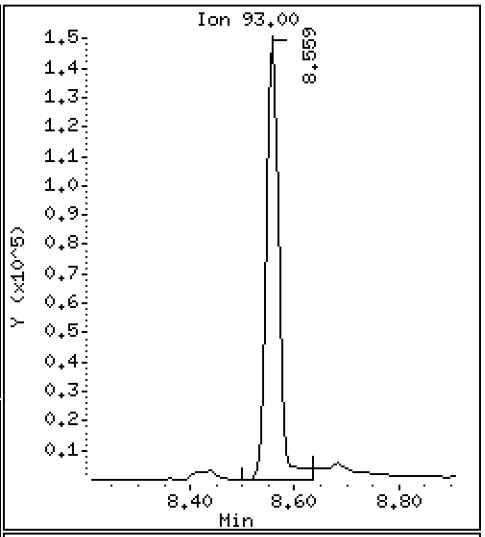
Column phase: ZB-5msi

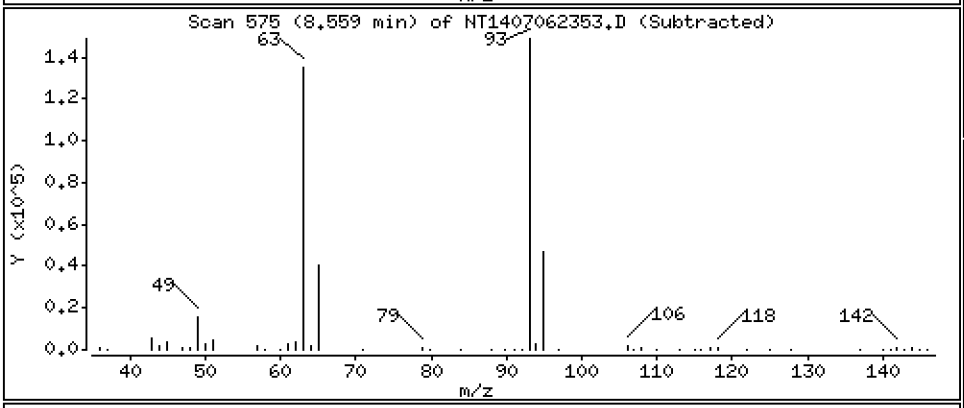
Column diameter: 0.25

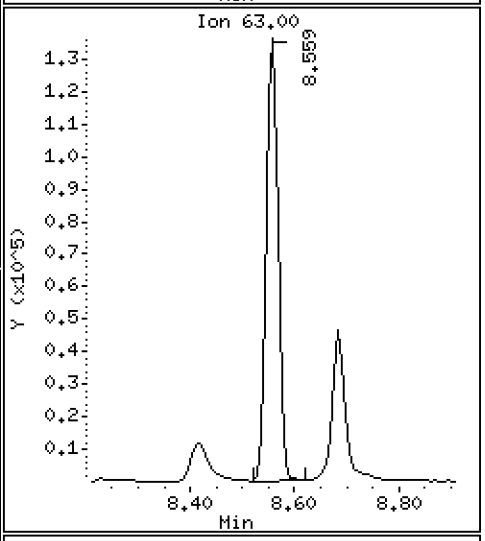
4 Bis(2-Chloroethyl)ether

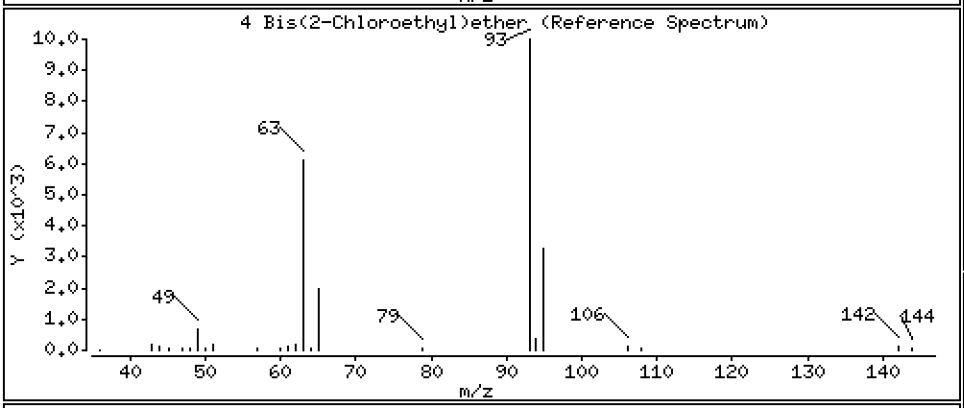
Concentration: 4.349 ug/mL

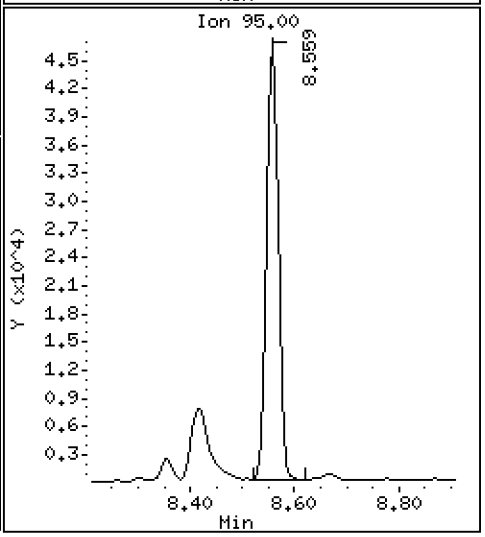


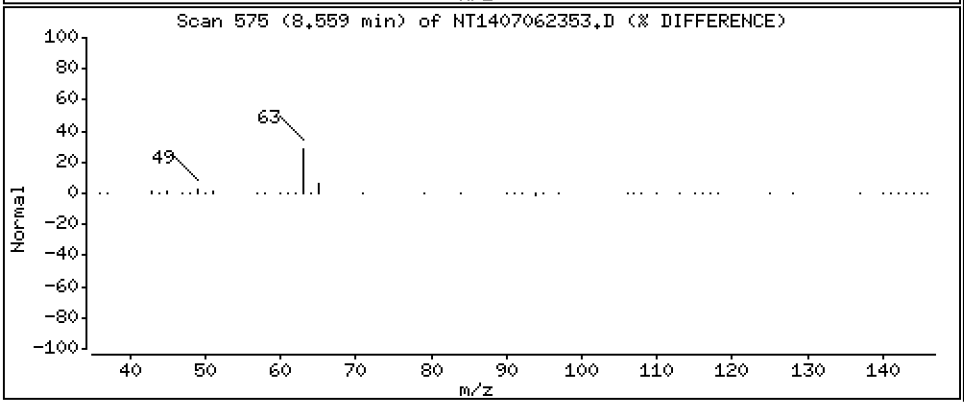












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

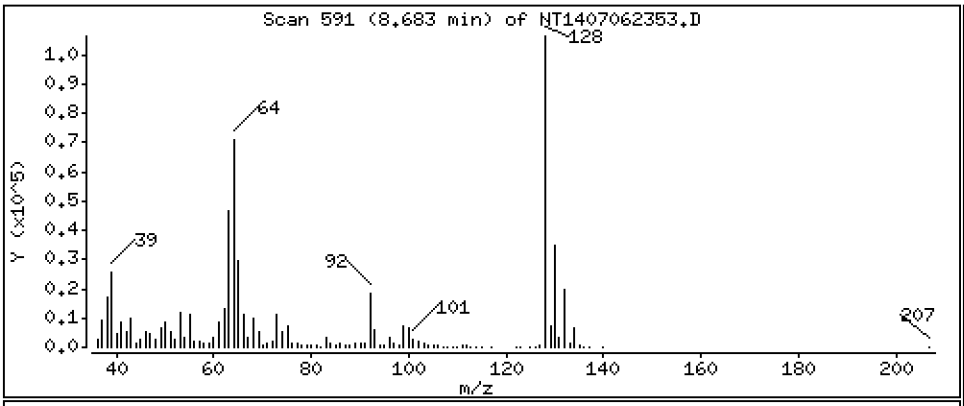
Operator: JGR

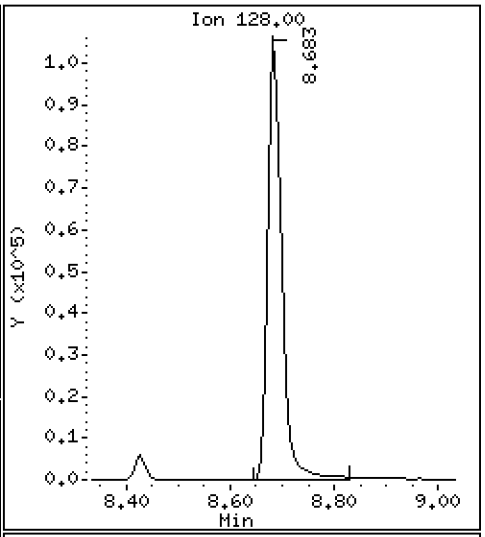
Column phase: ZB-5msi

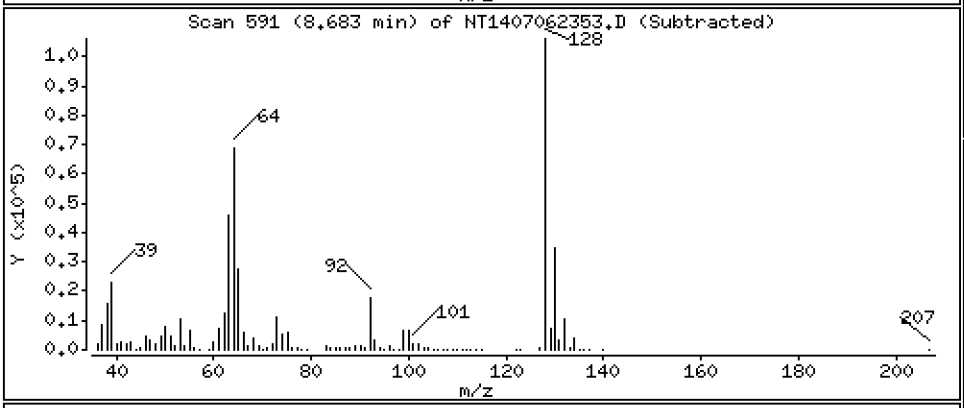
Column diameter: 0.25

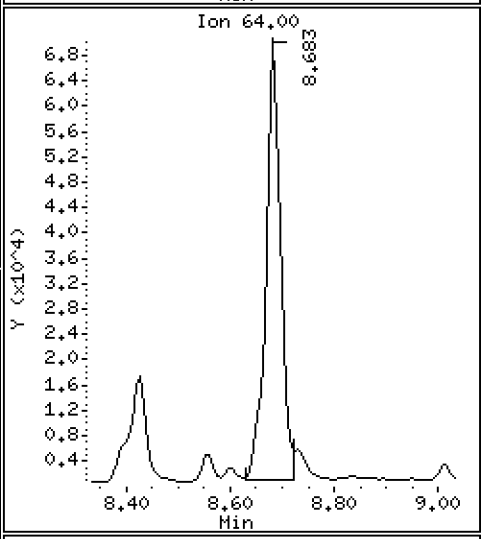
6 2-Chlorophenol

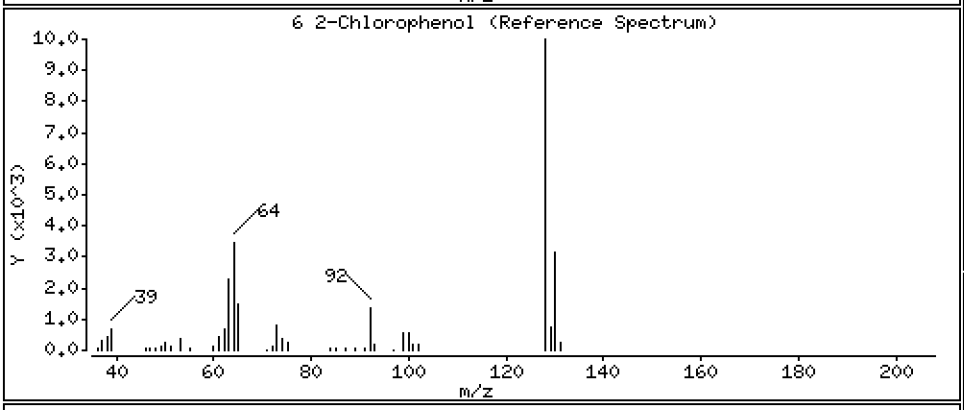
Concentration: 3.619 ug/mL

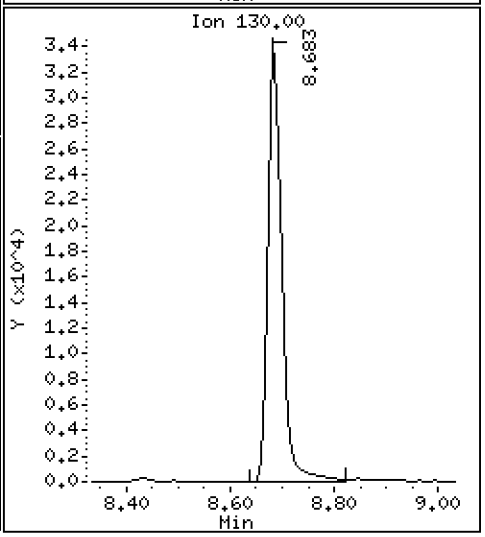


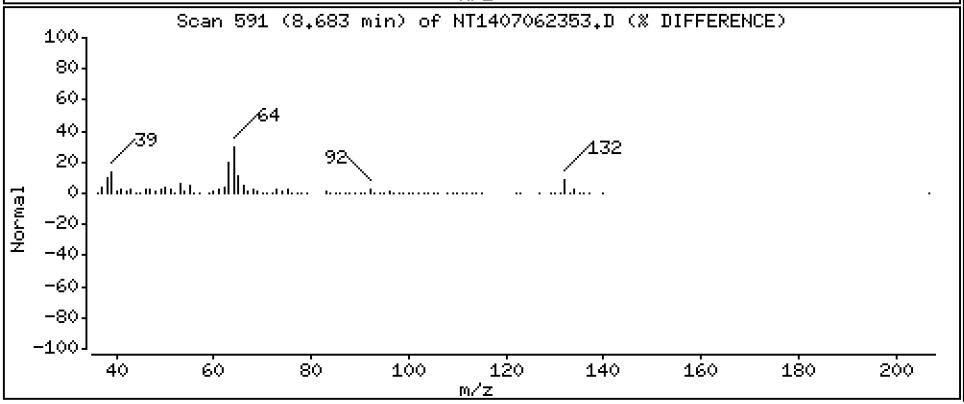












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

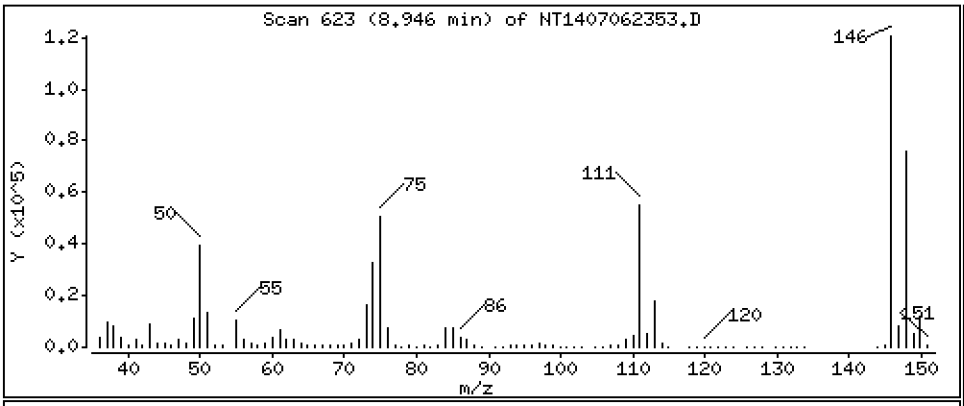
Operator: JGR

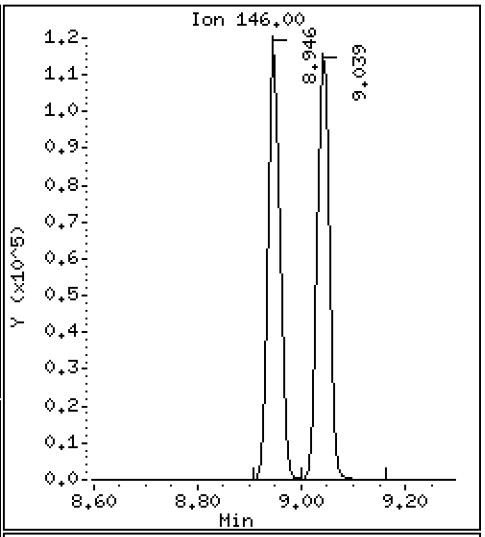
Column phase: ZB-5msi

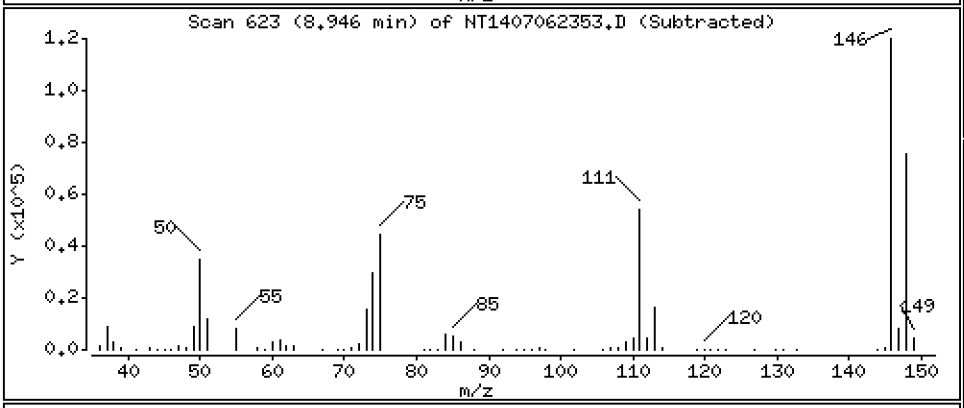
Column diameter: 0.25

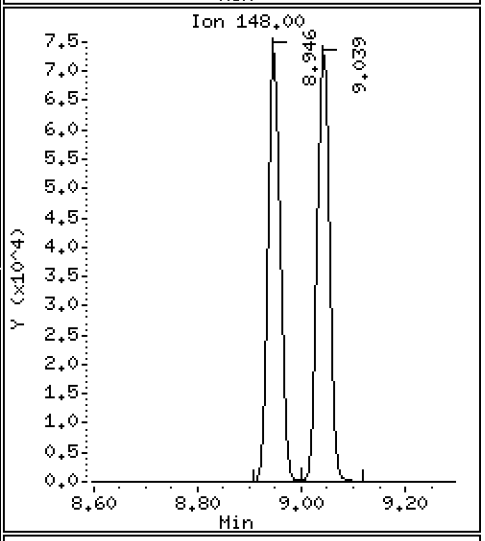
7 1,3-Dichlorobenzene

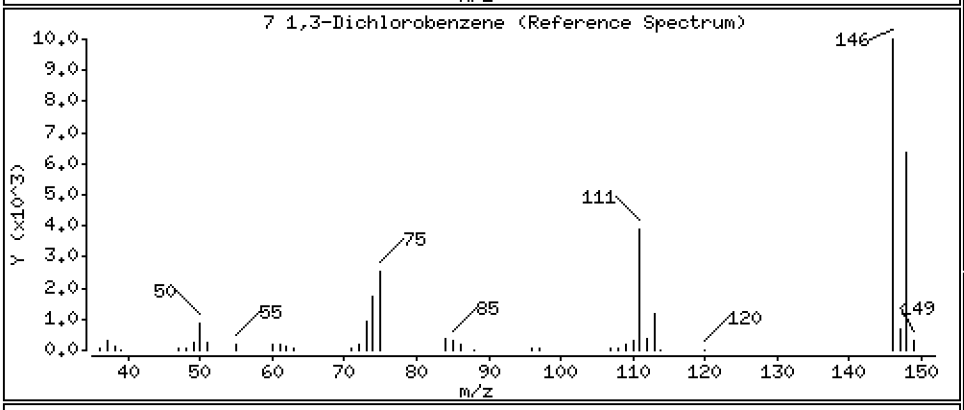
Concentration: 3.571 ug/mL

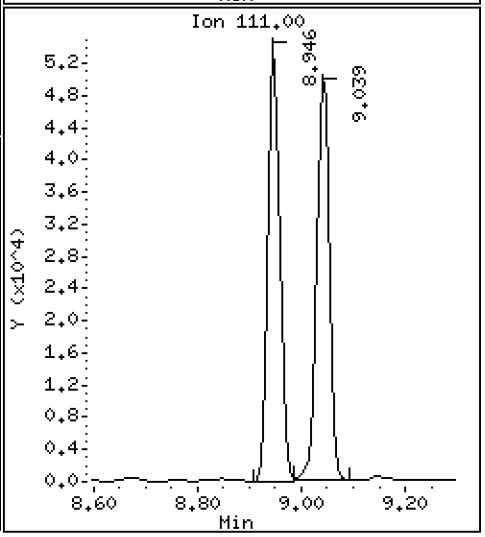


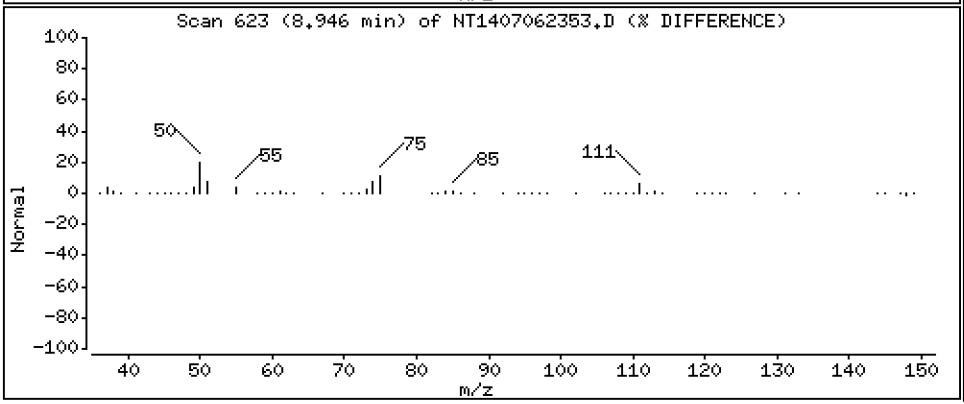












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

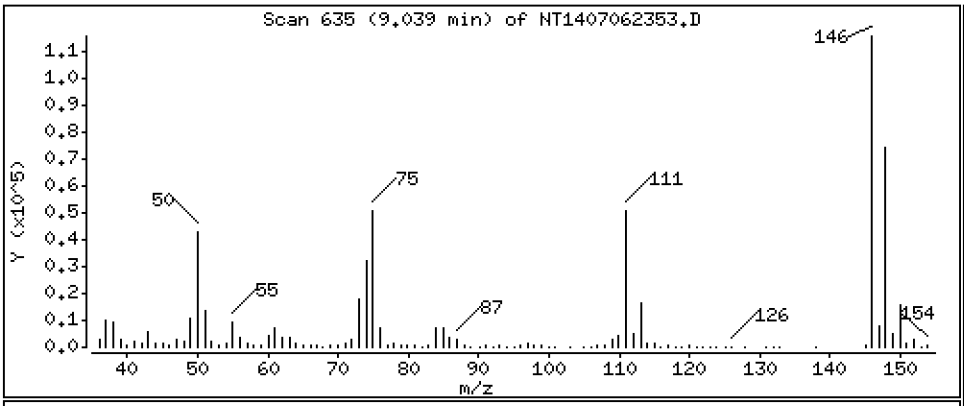
Operator: JGR

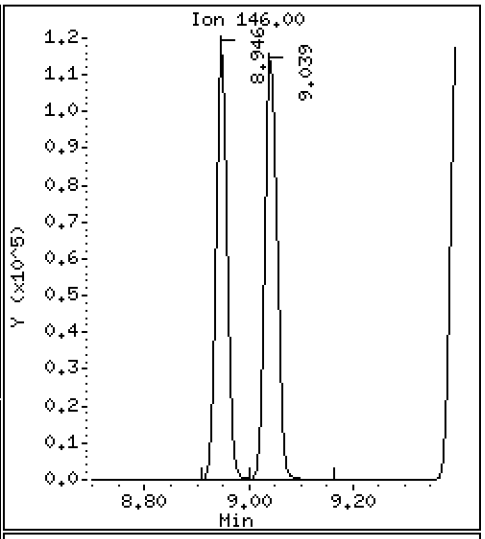
Column phase: ZB-5msi

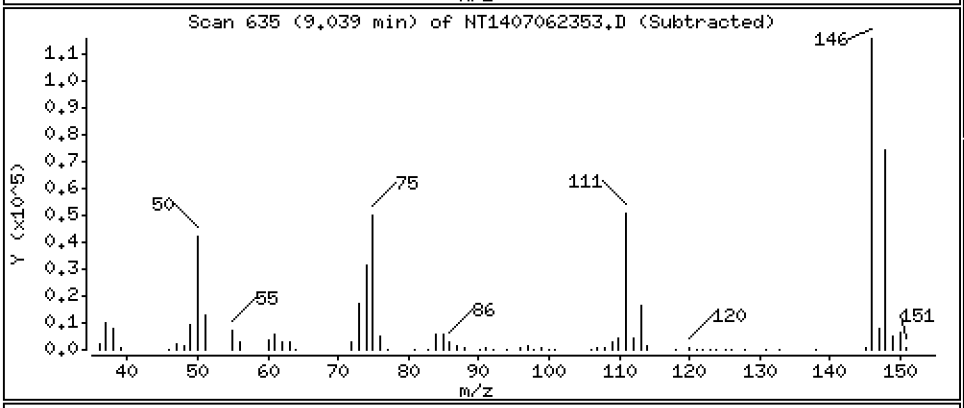
Column diameter: 0.25

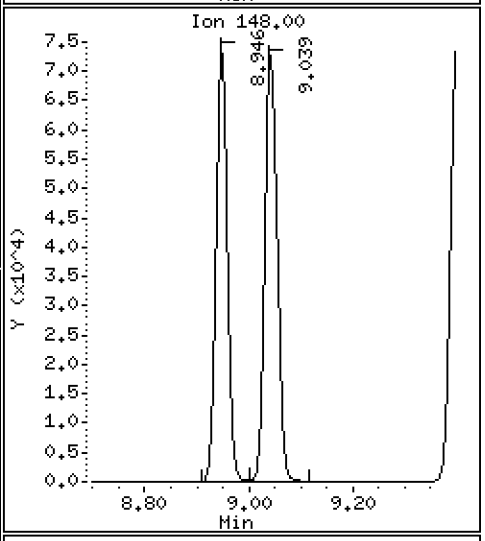
9 1,4-Dichlorobenzene

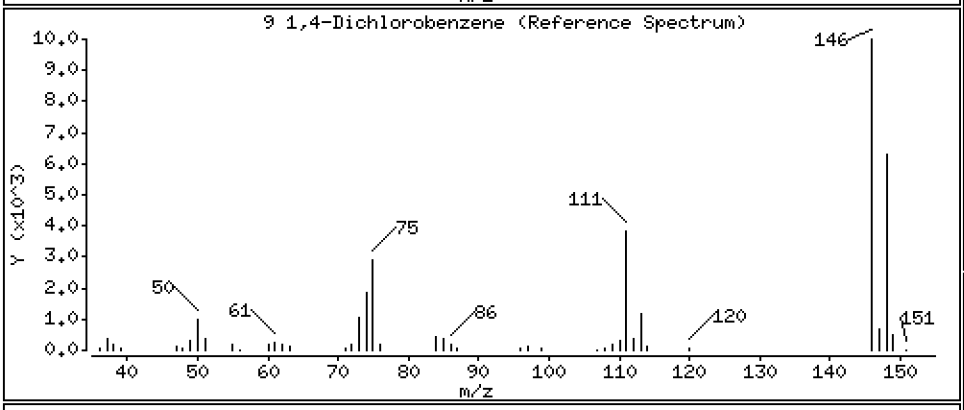
Concentration: 3.972 ug/mL

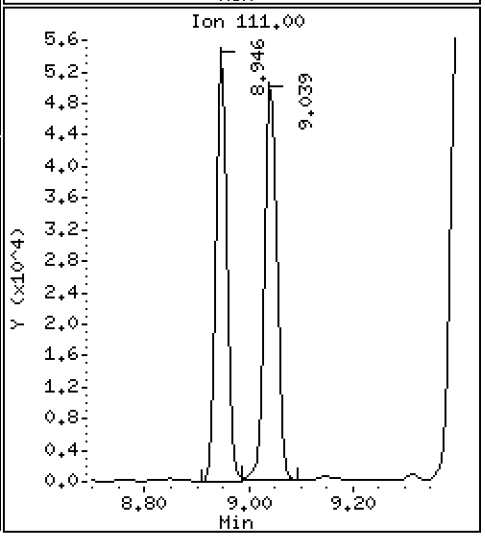


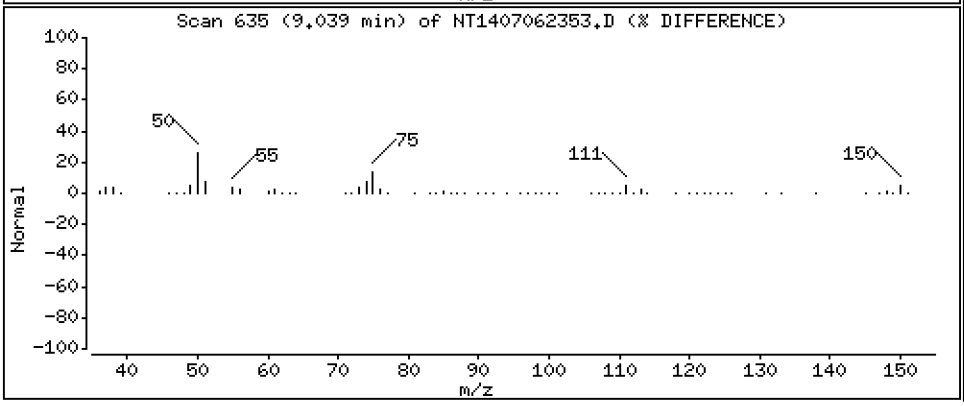












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

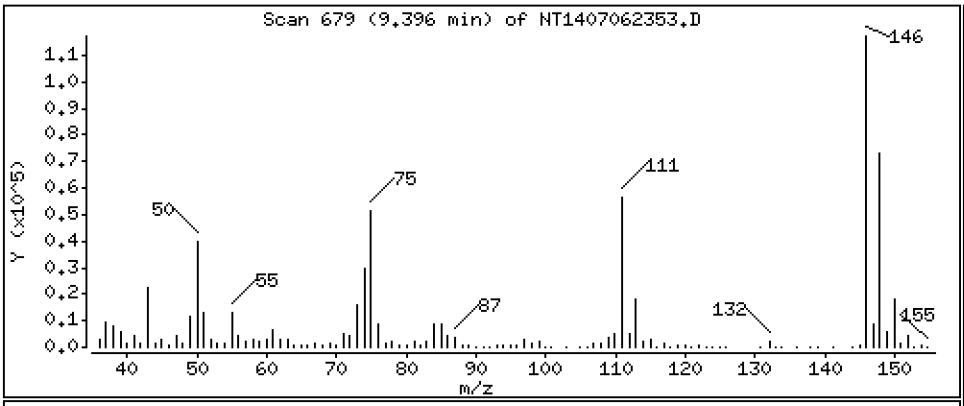
Operator: JGR

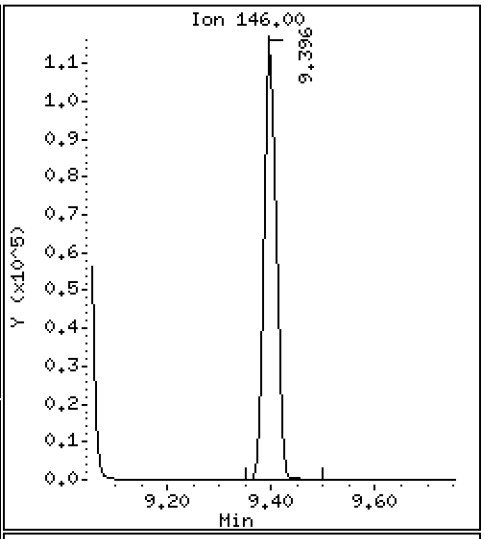
Column phase: ZB-5msi

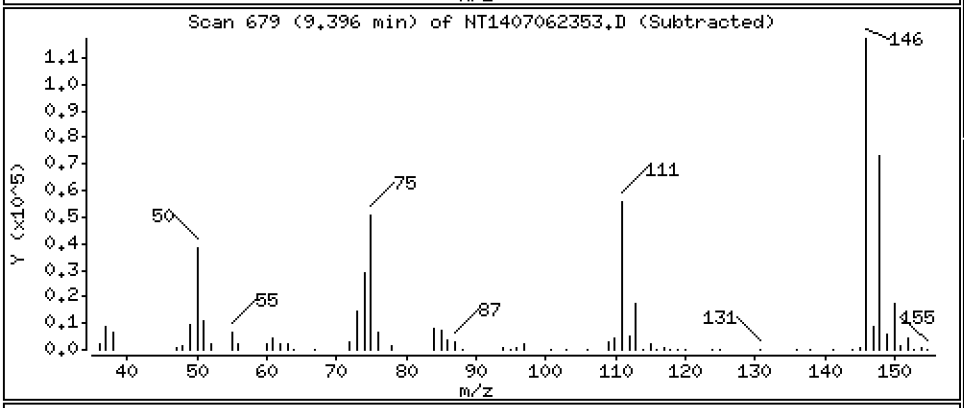
Column diameter: 0.25

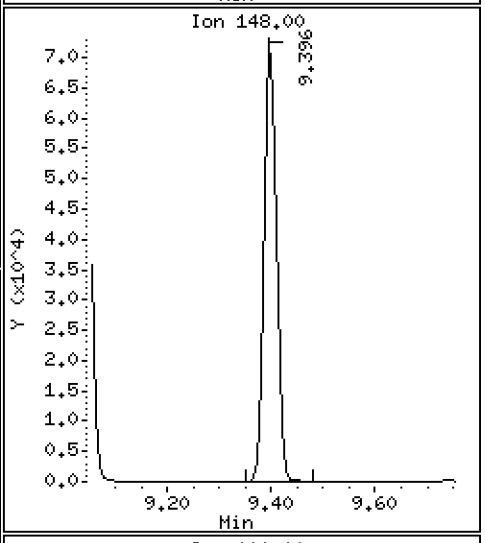
12 1,2-Dichlorobenzene

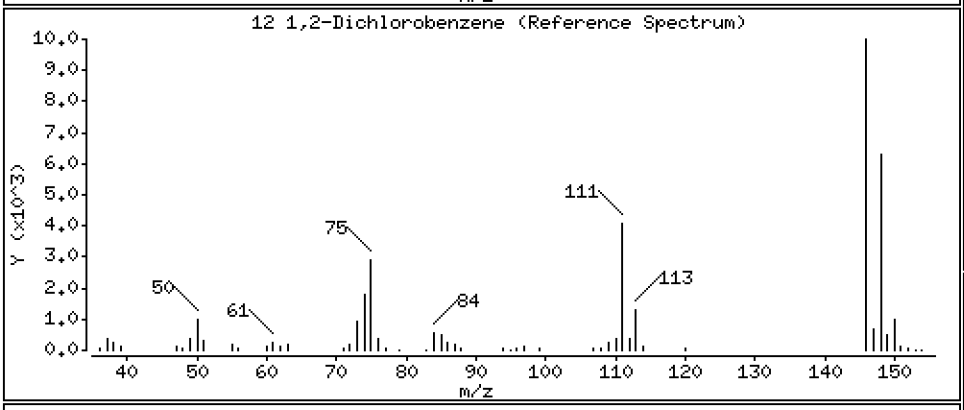
Concentration: 3.747 ug/mL

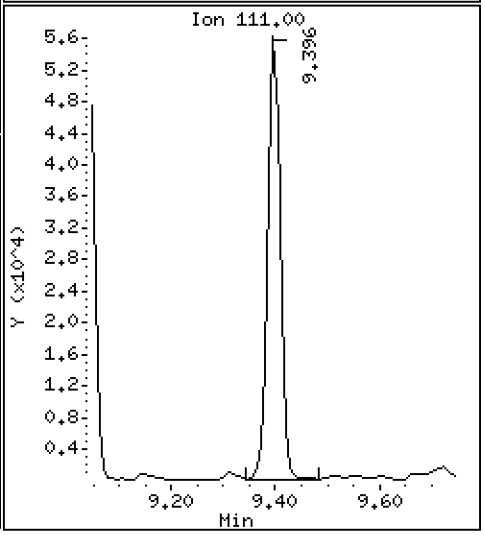


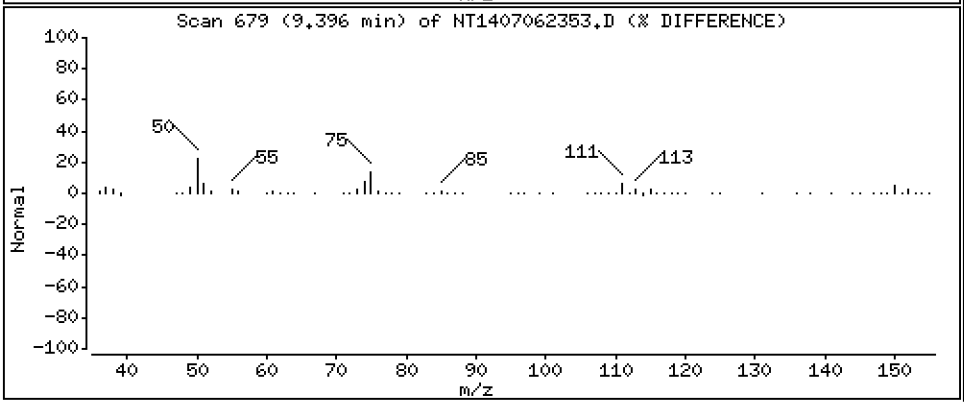












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

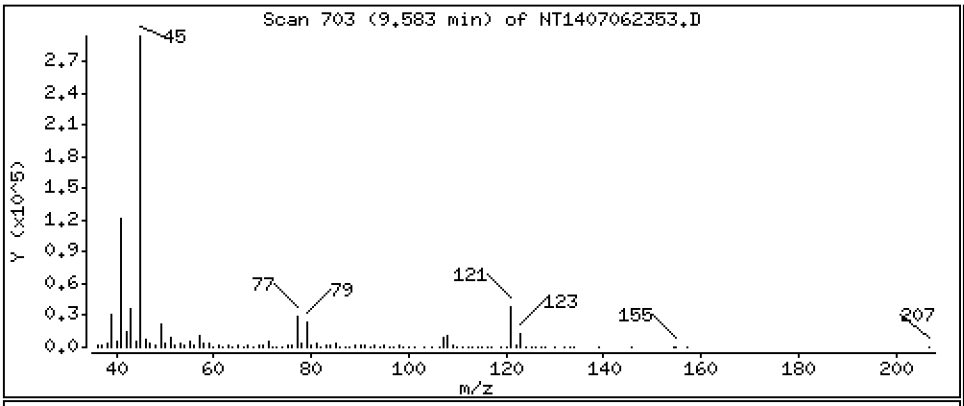
Operator: JGR

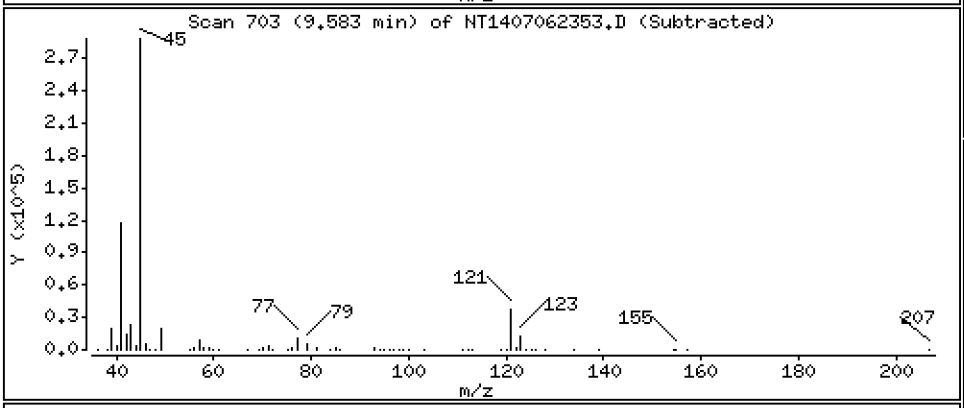
Column phase: ZB-5msi

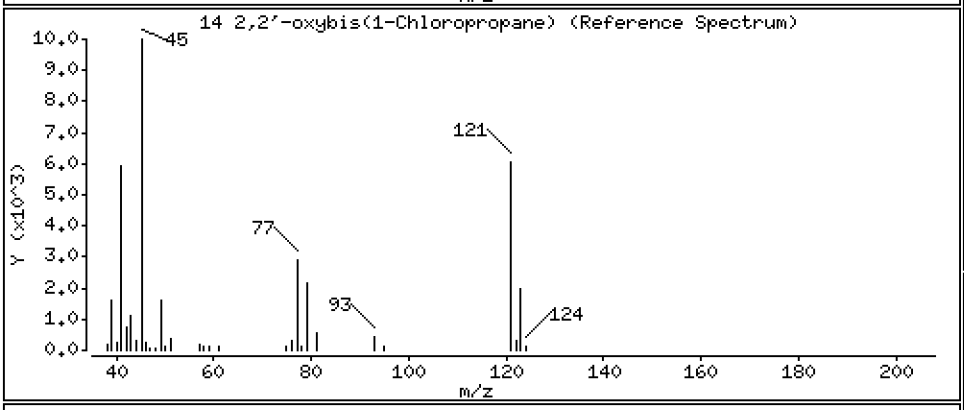
Column diameter: 0.25

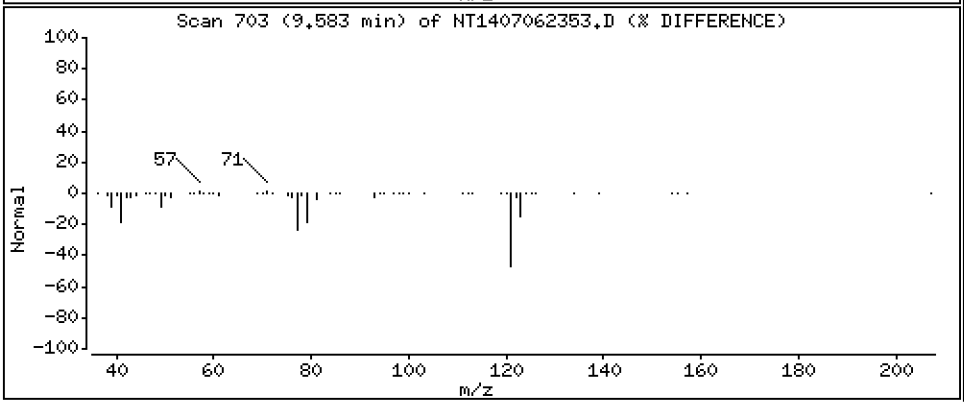
14 2,2'-oxybis(1-Chloropropane)

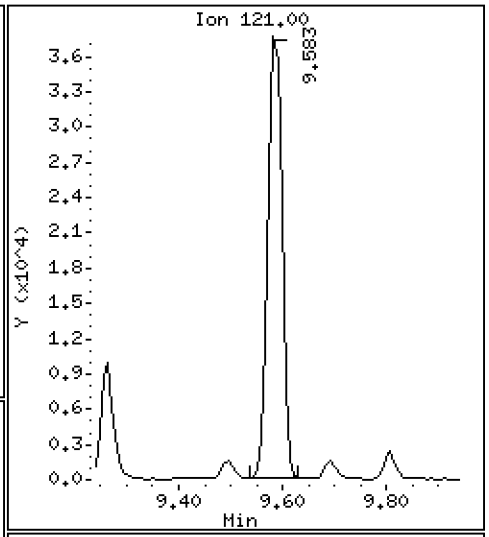
Concentration: 4.351 ug/mL

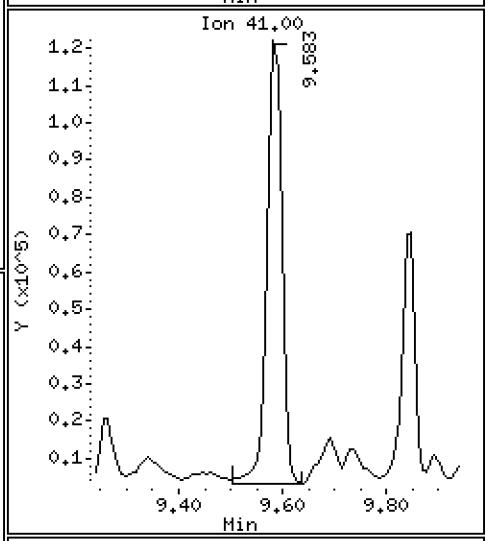


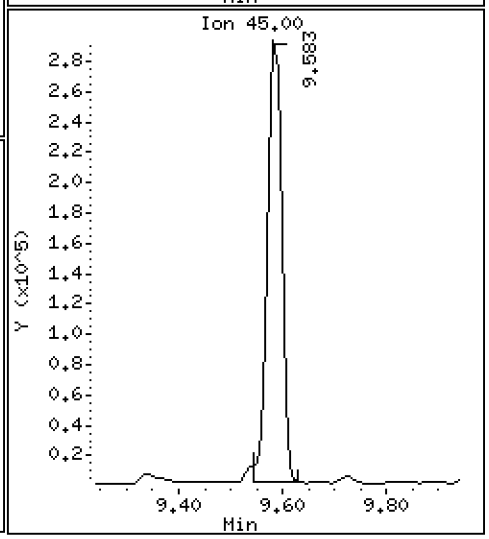












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

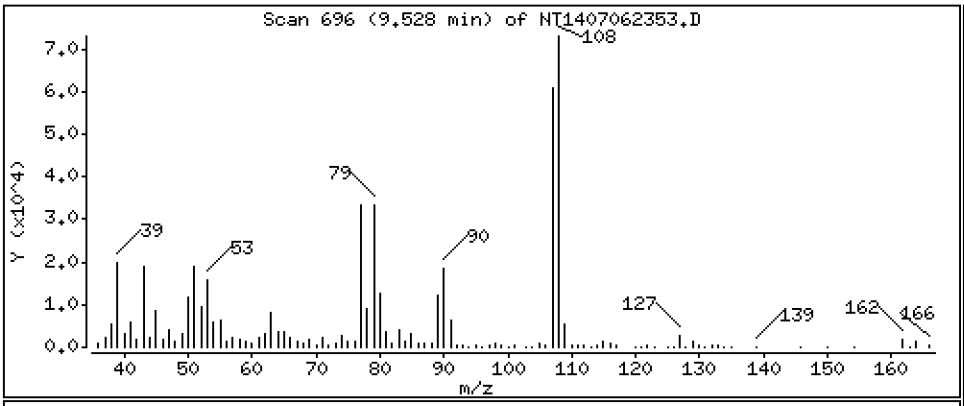
Operator: JGR

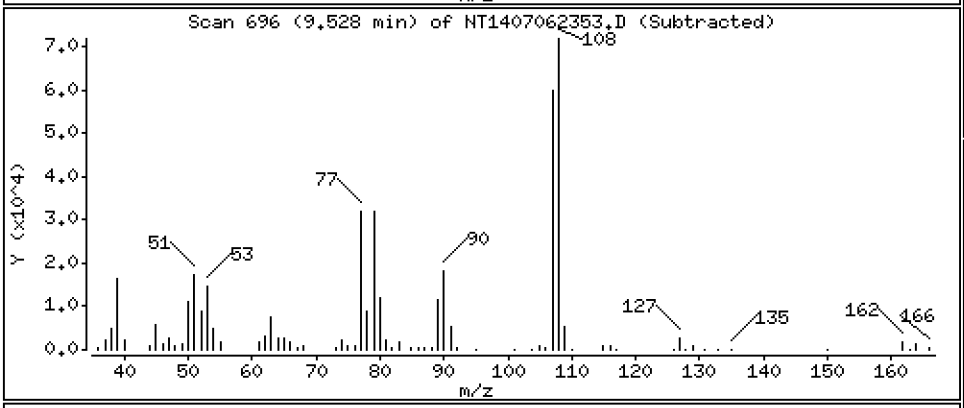
Column phase: ZB-5msi

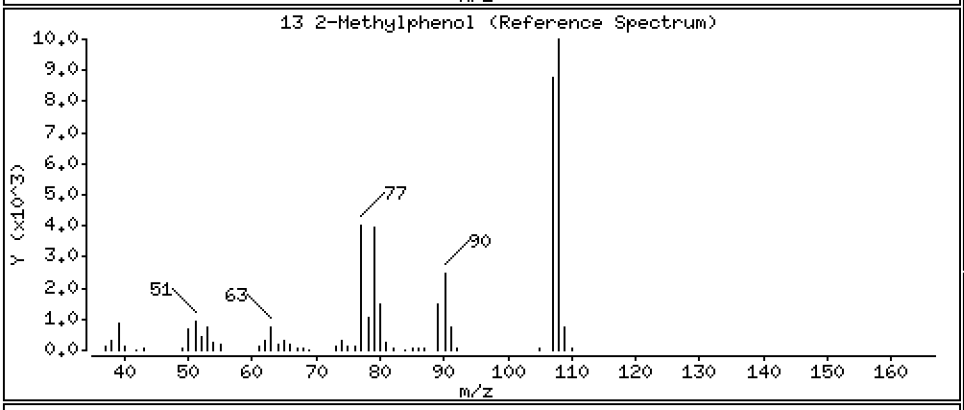
Column diameter: 0.25

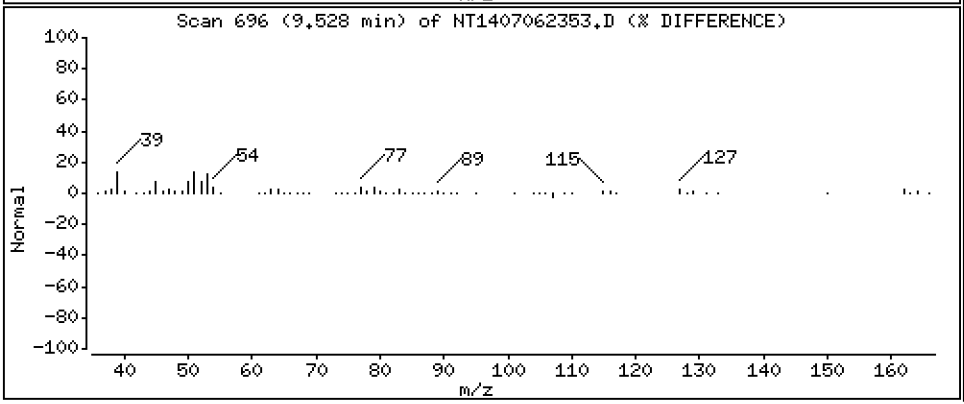
13 2-Methylphenol

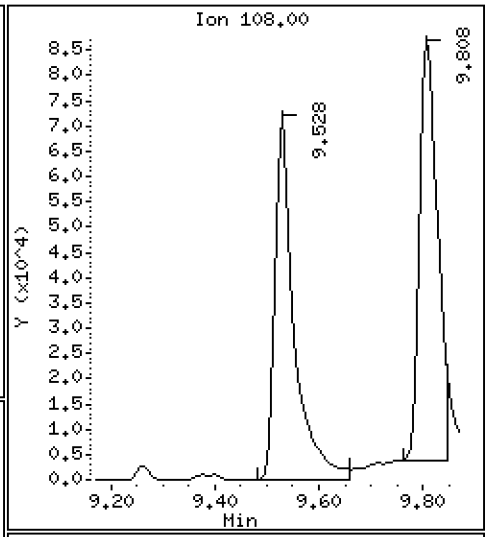
Concentration: 3.653 ug/mL

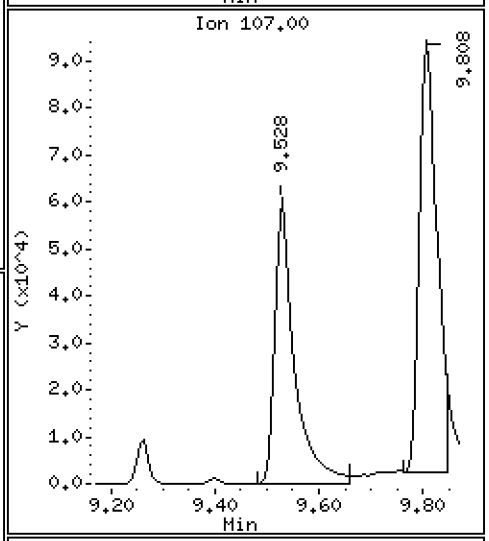


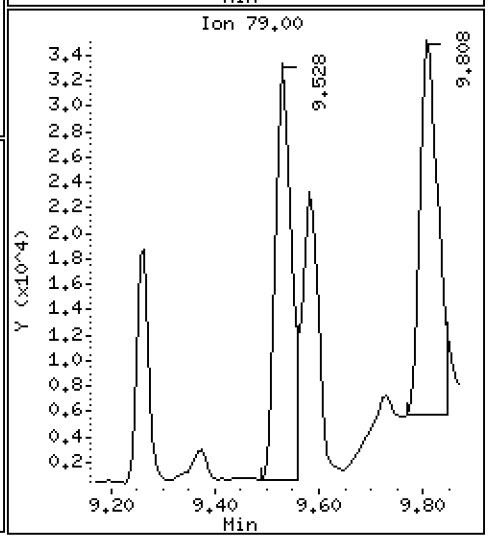












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

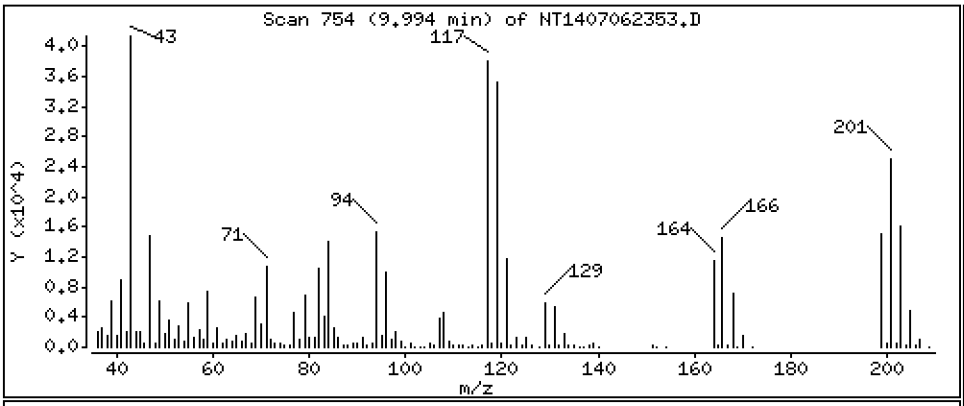
Operator: JGR

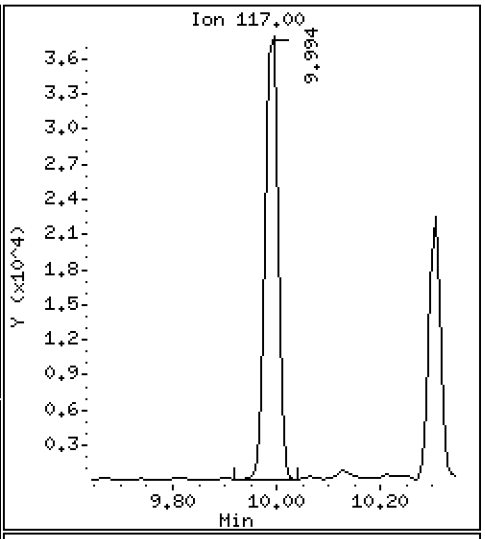
Column phase: ZB-5msi

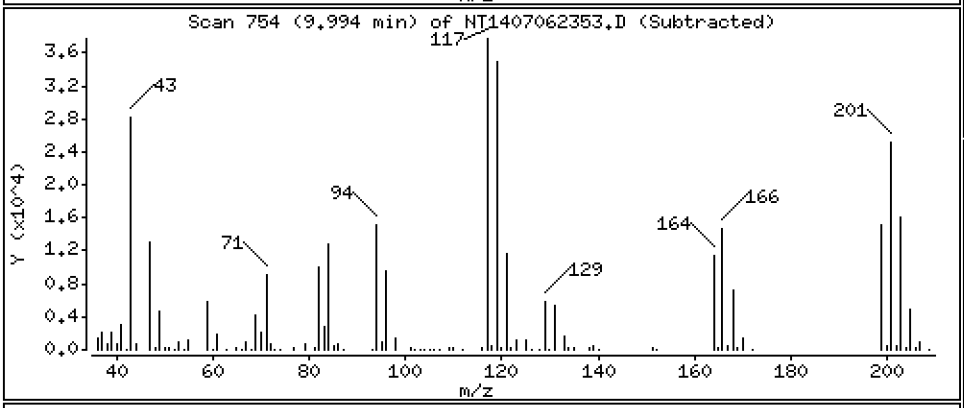
Column diameter: 0.25

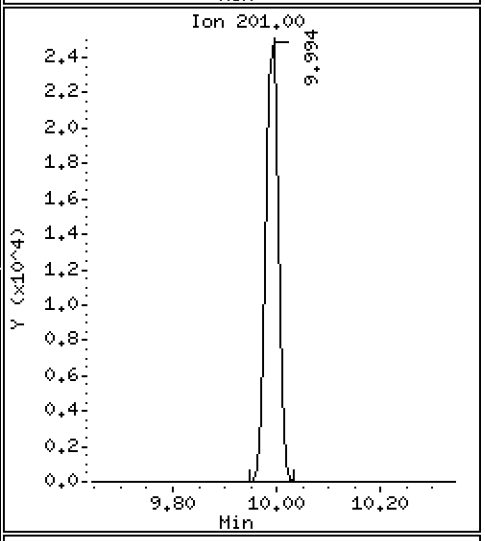
17 Hexachloroethane

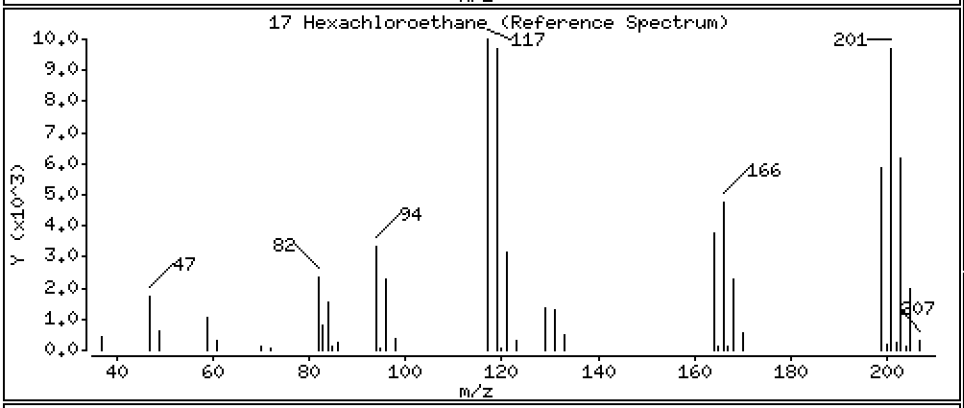
Concentration: 2.686 ug/mL

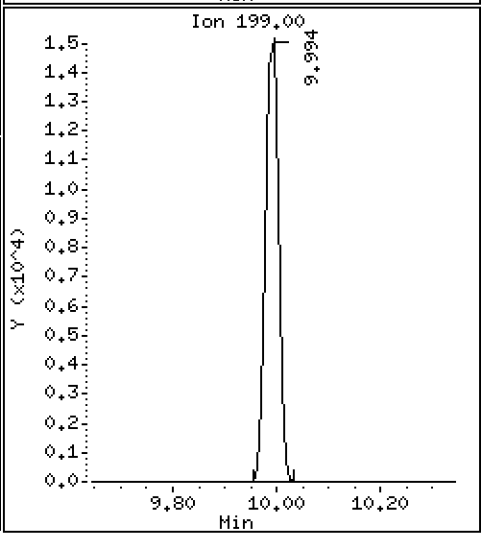


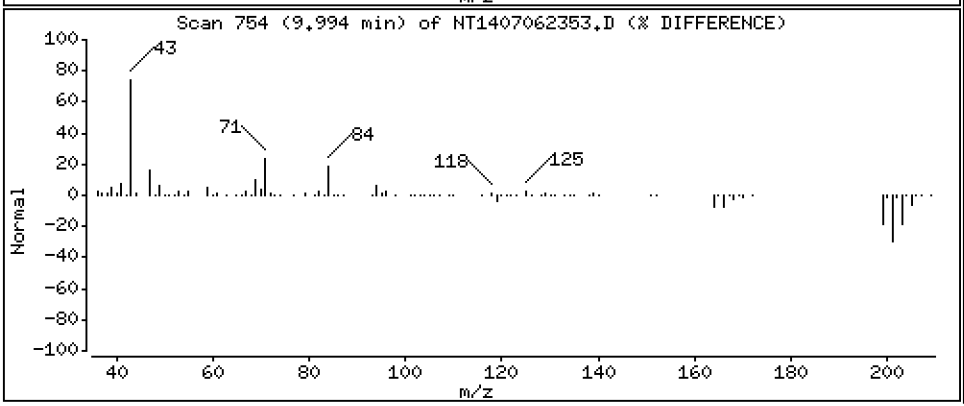












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

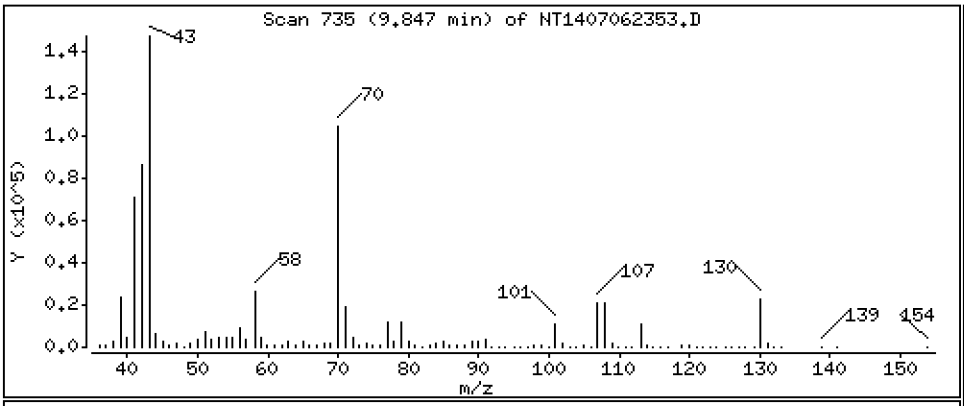
Operator: JGR

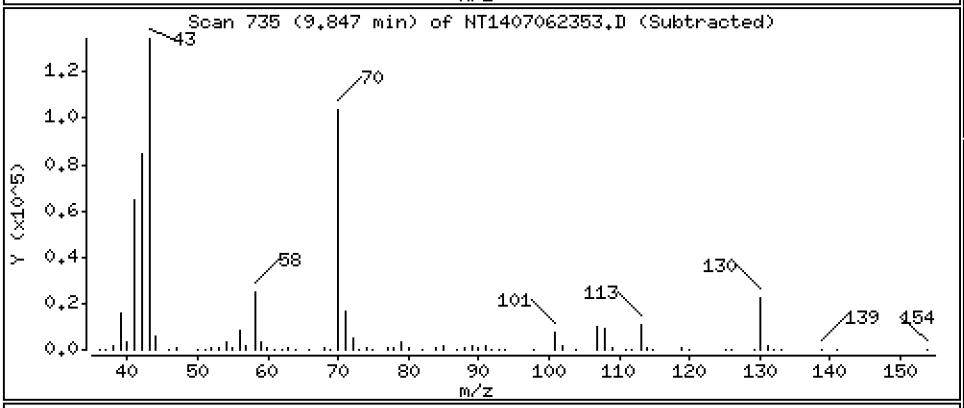
Column phase: ZB-5msi

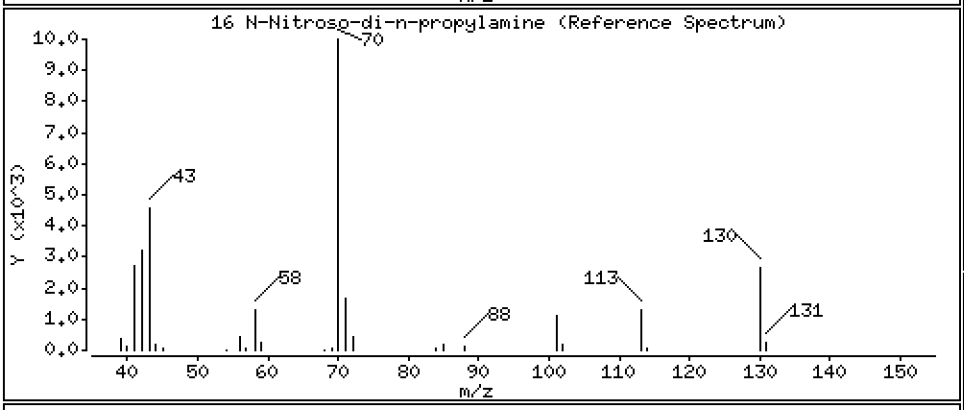
Column diameter: 0.25

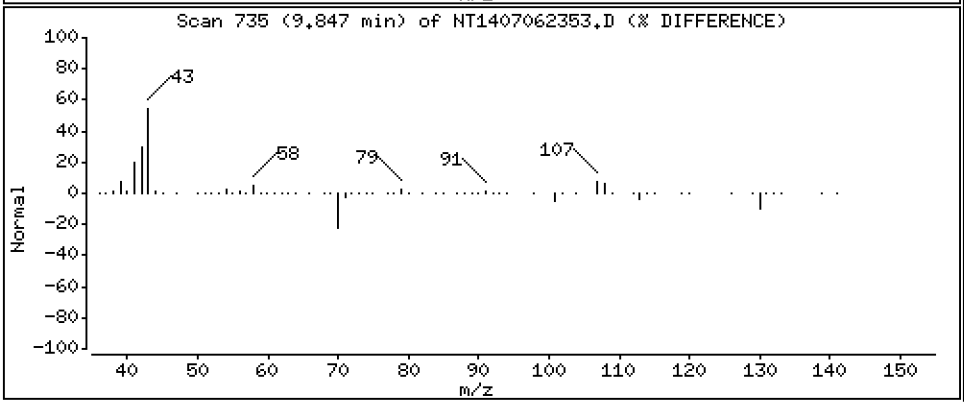
16 N-Nitroso-di-n-propylamine

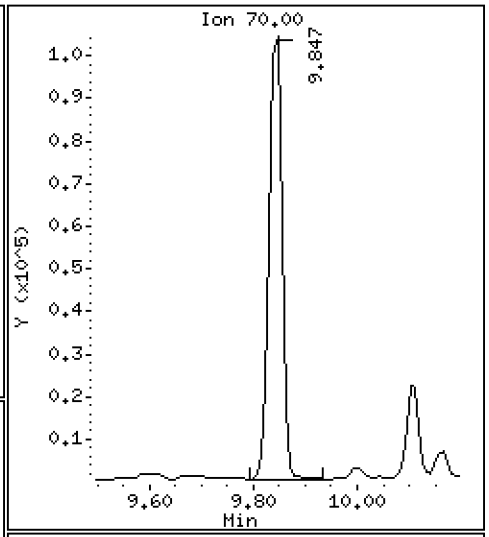
Concentration: 3.849 ug/mL

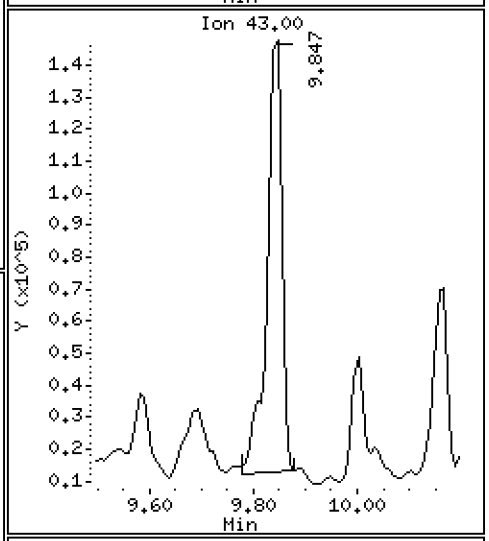


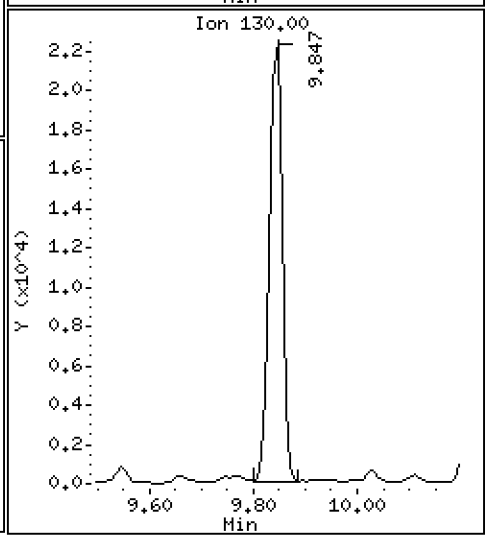












Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

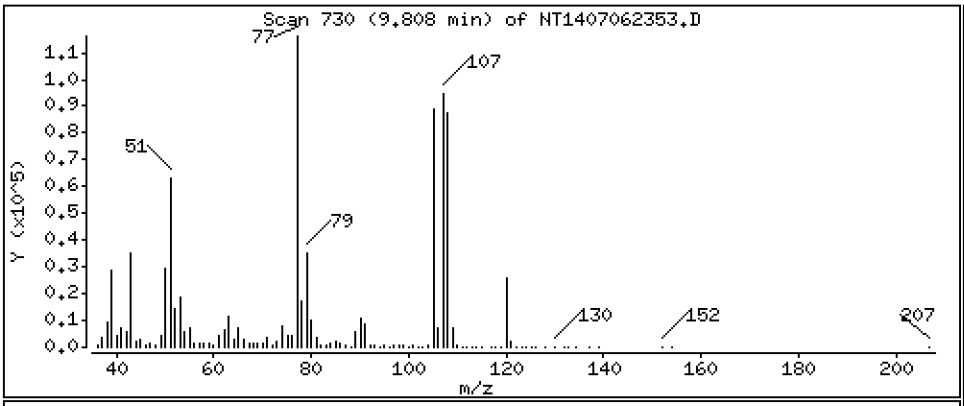
Operator: JGR

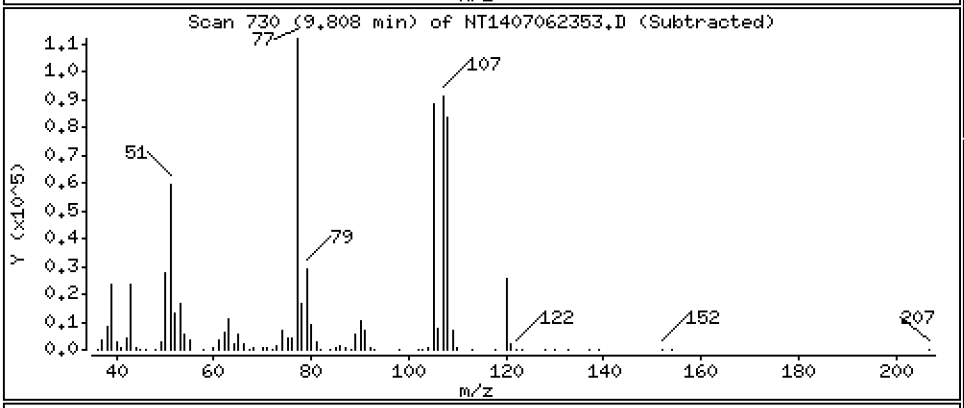
Column phase: ZB-5msi

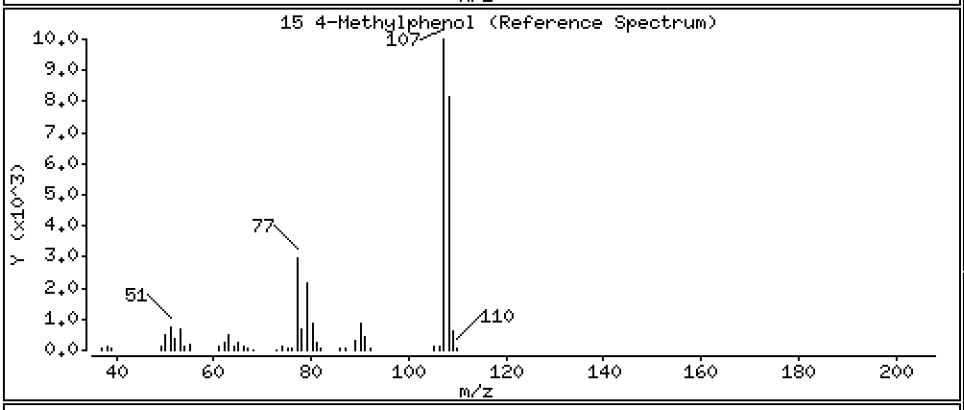
Column diameter: 0.25

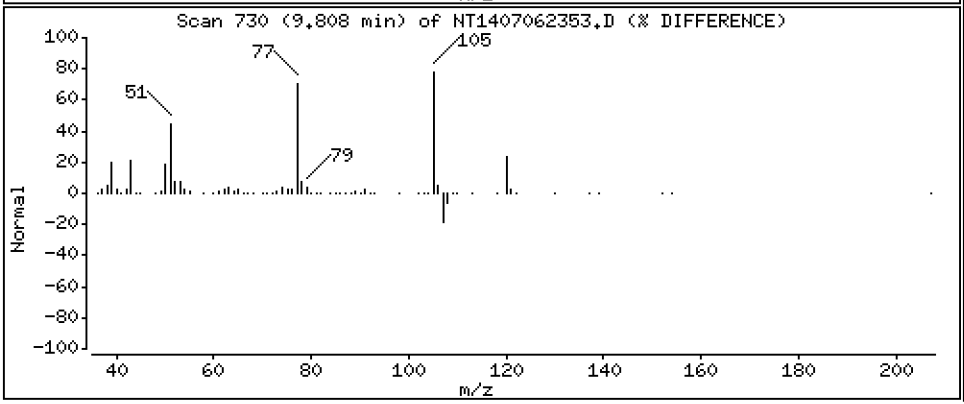
15 4-Methylphenol

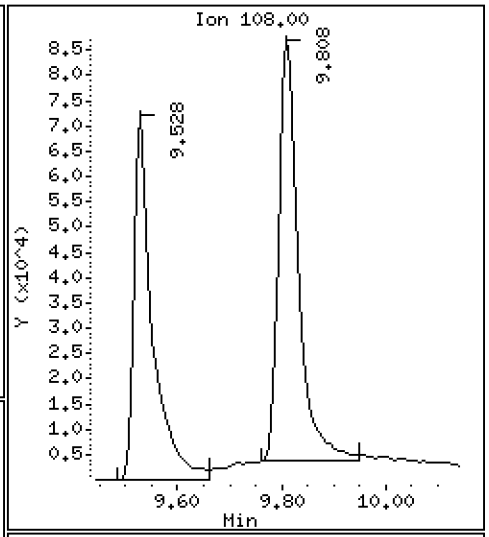
Concentration: 4.078 ug/mL

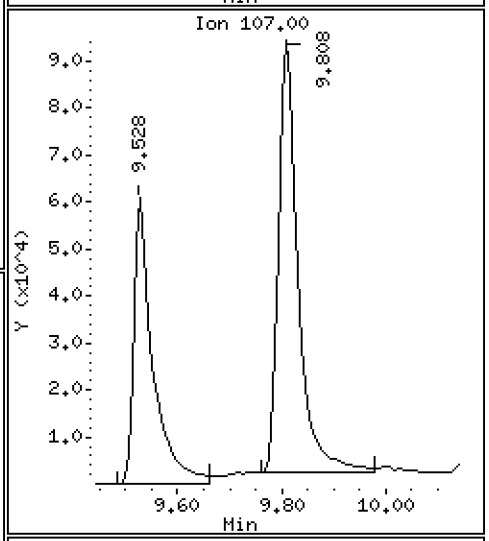


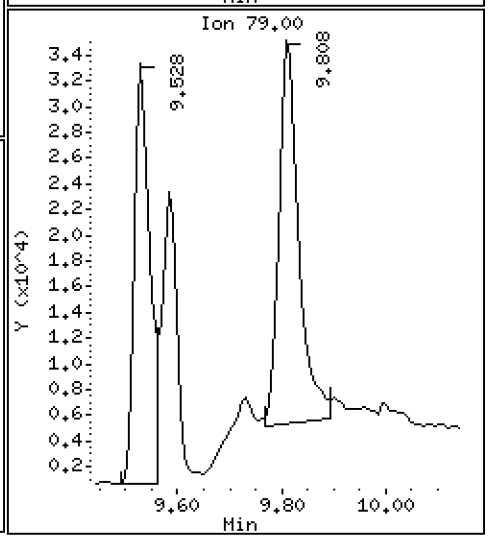












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

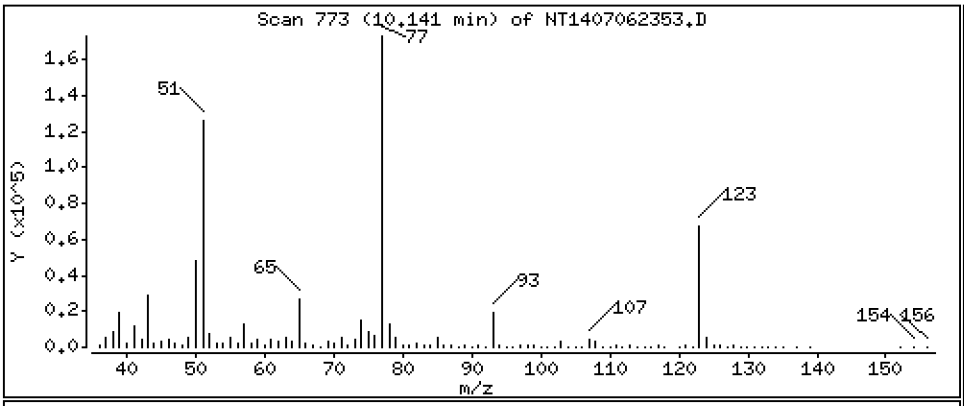
Operator: JGR

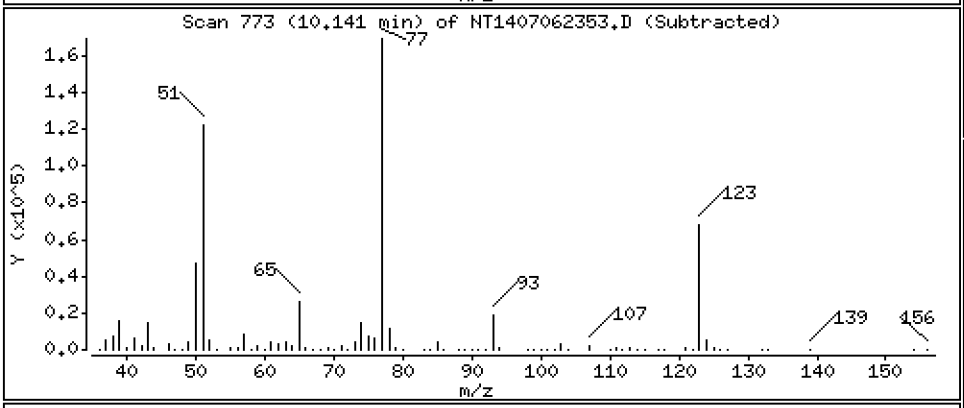
Column phase: ZB-5msi

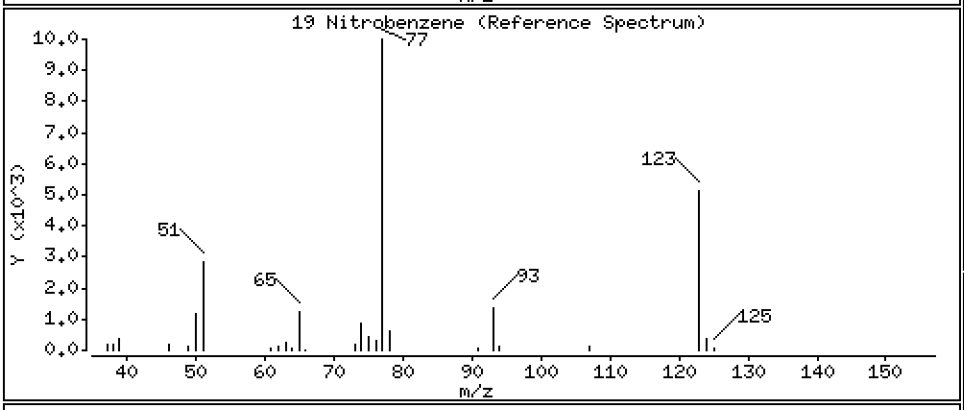
Column diameter: 0.25

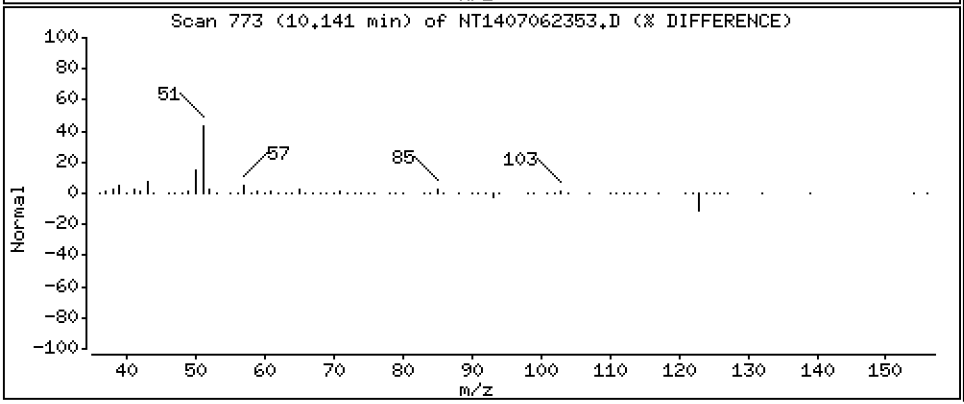
19 Nitrobenzene

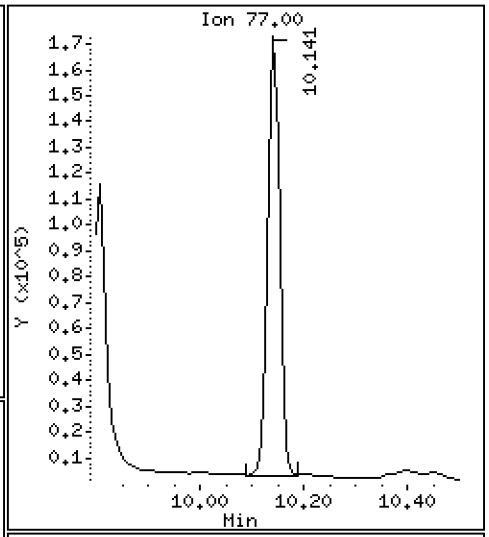
Concentration: 3.948 ug/mL

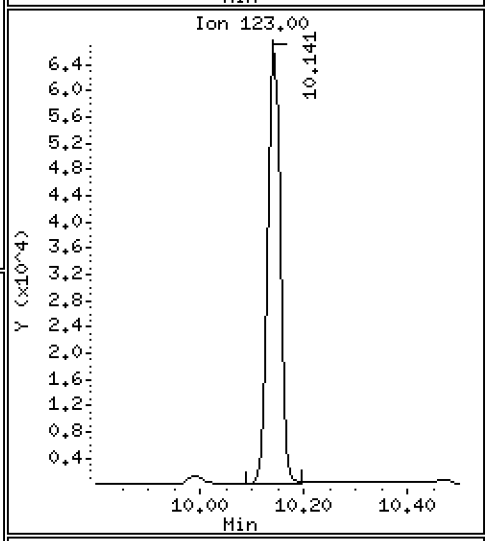


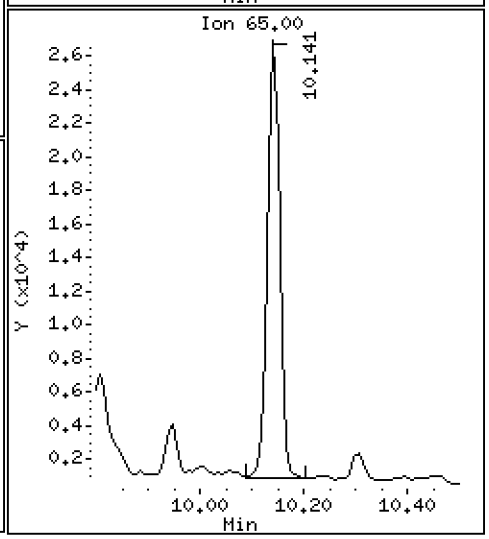












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

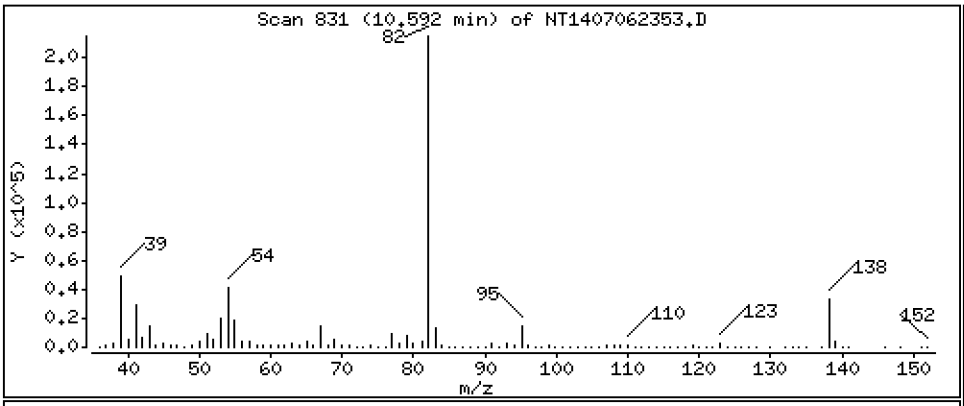
Operator: JGR

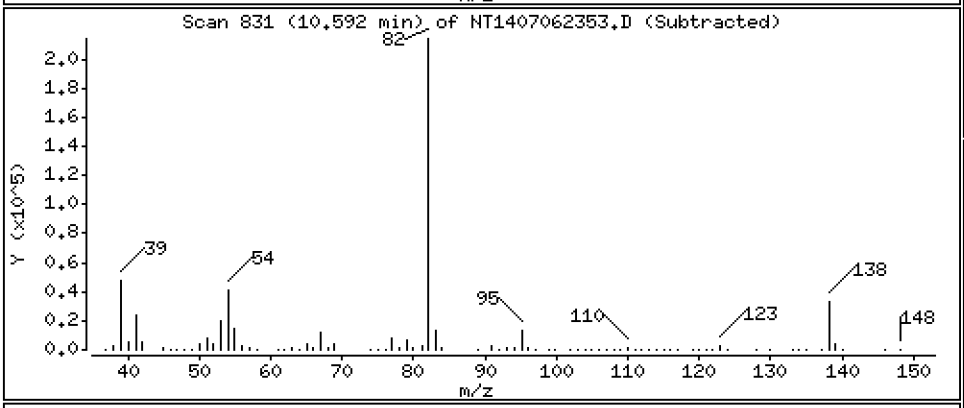
Column phase: ZB-5msi

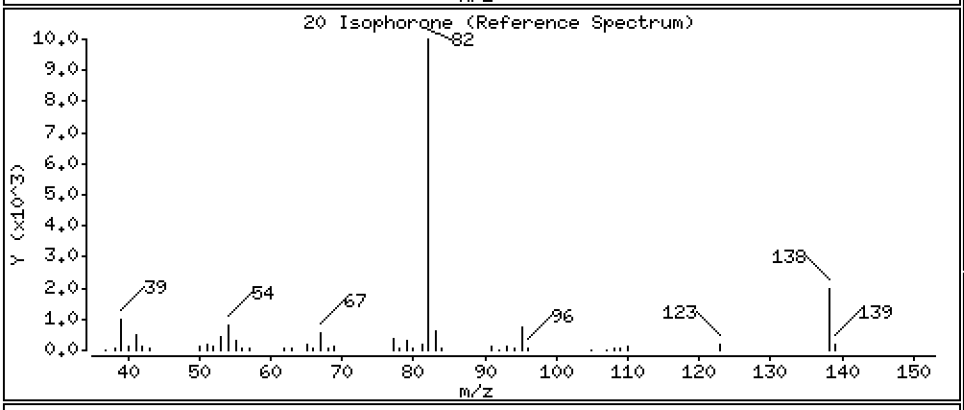
Column diameter: 0.25

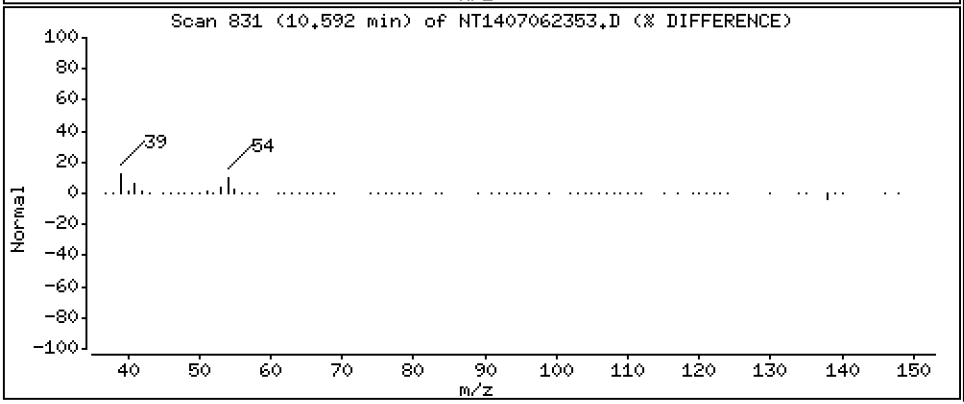
20 Isophorone

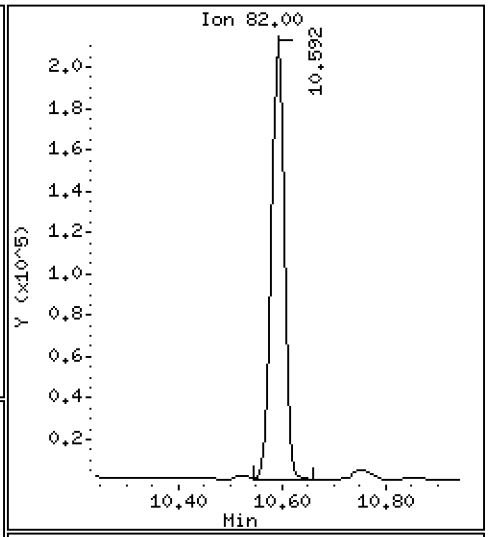
Concentration: 3.858 ug/mL

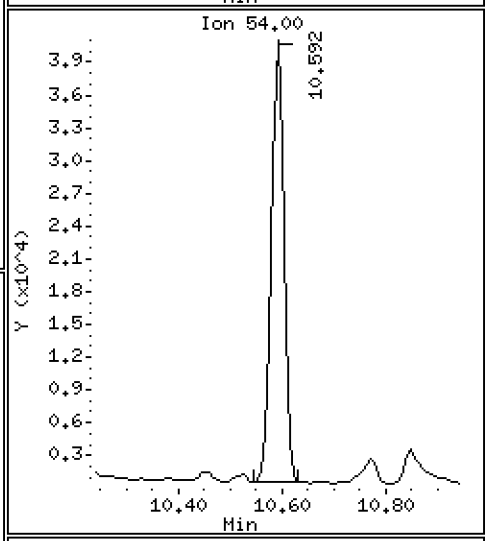


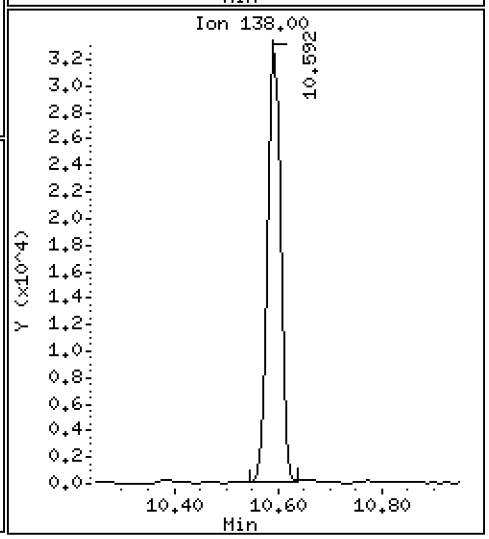












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

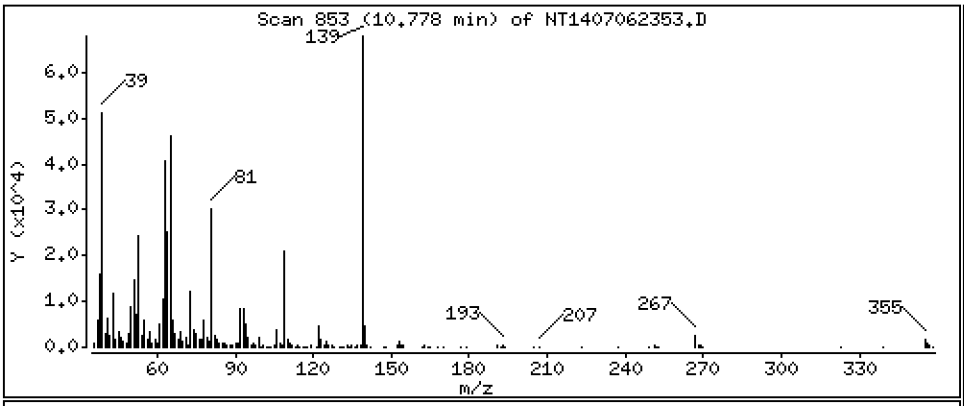
Operator: JGR

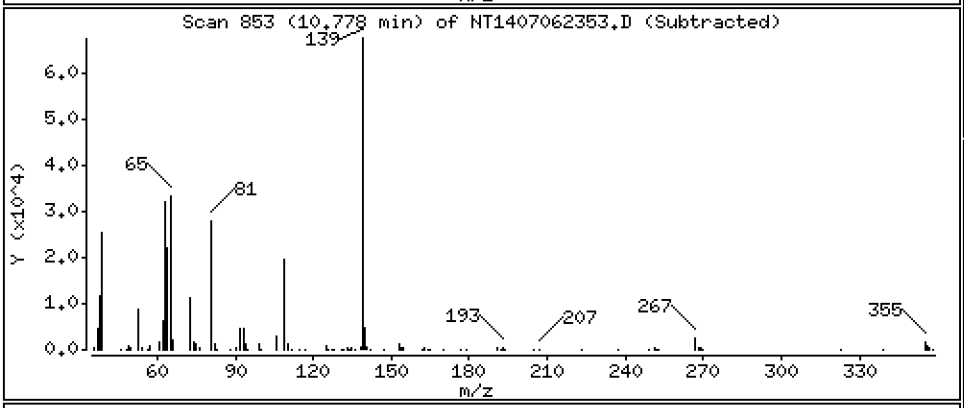
Column phase: ZB-5msi

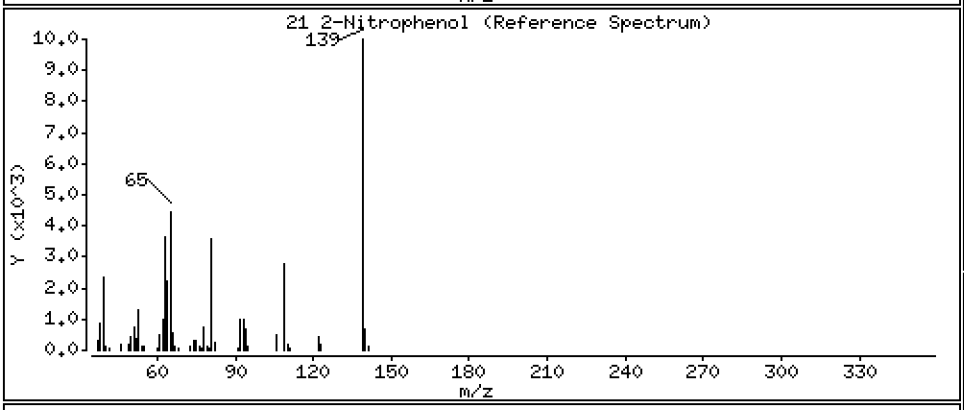
Column diameter: 0.25

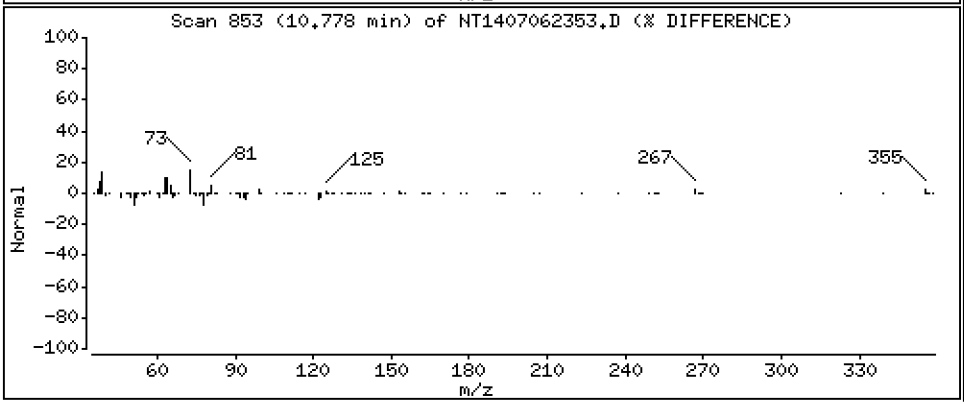
21 2-Nitrophenol

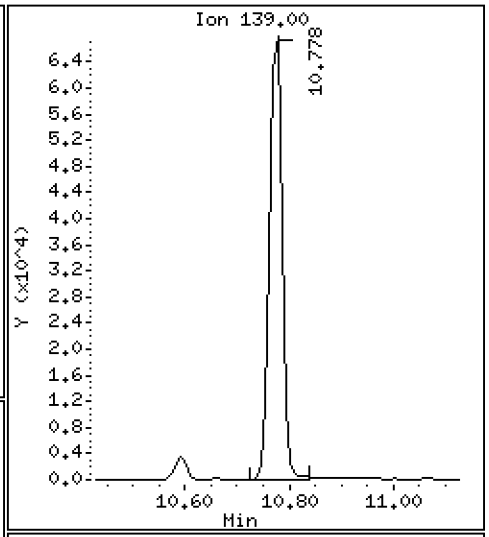
Concentration: 3.555 ug/mL

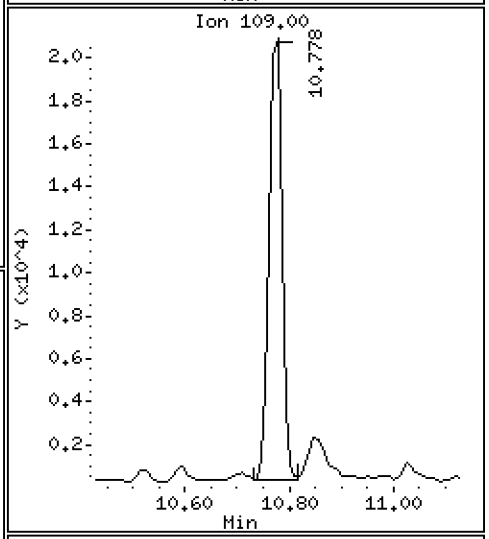


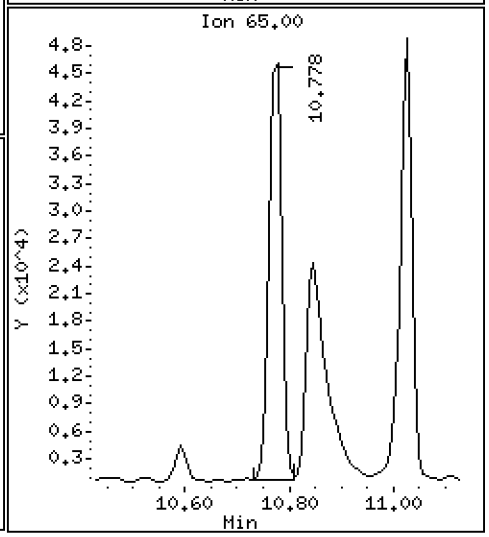












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

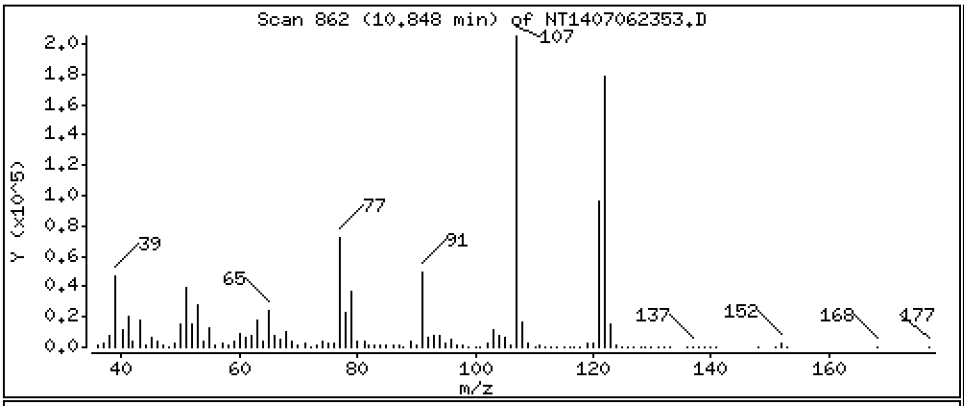
Operator: JGR

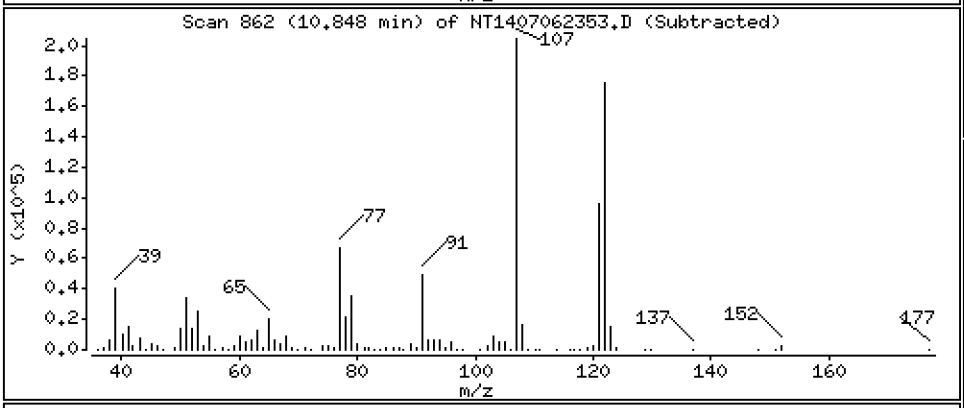
Column phase: ZB-5msi

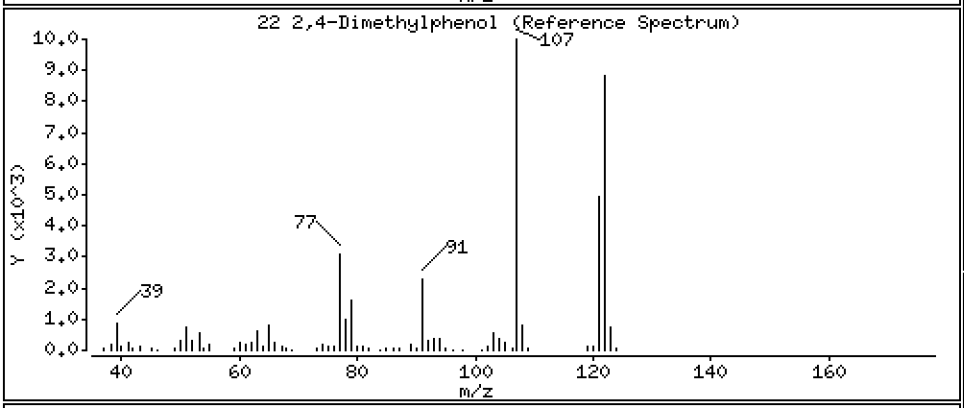
Column diameter: 0.25

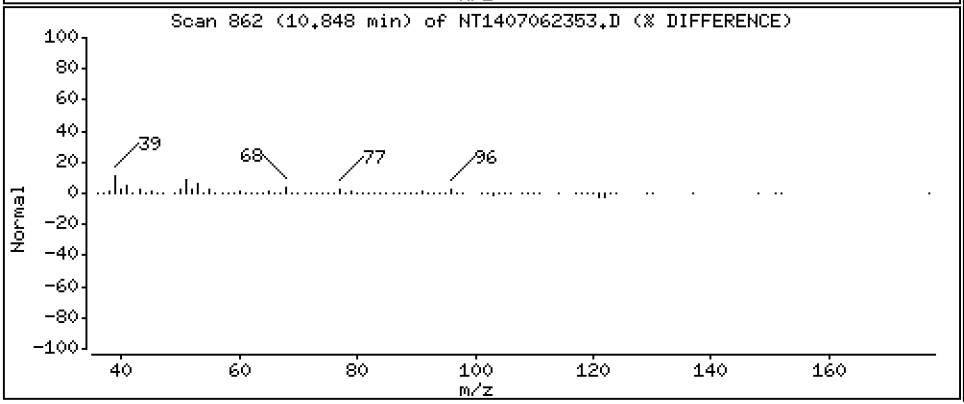
22 2,4-Dimethylphenol

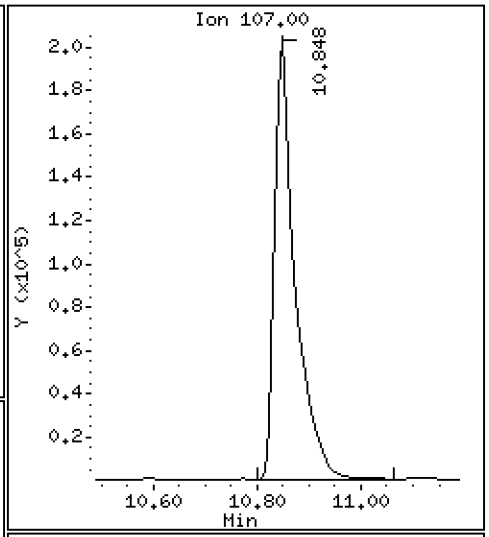
Concentration: 10.72 ug/mL

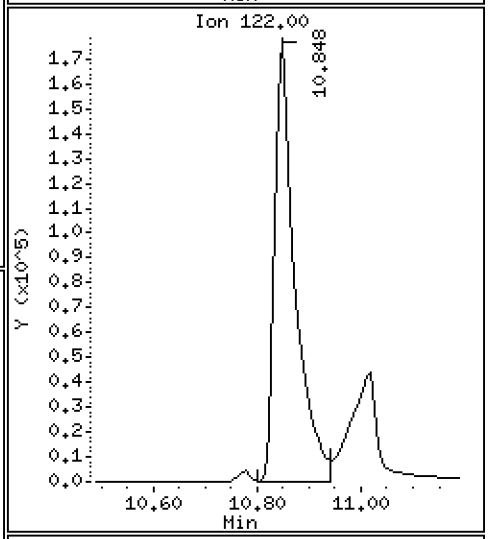


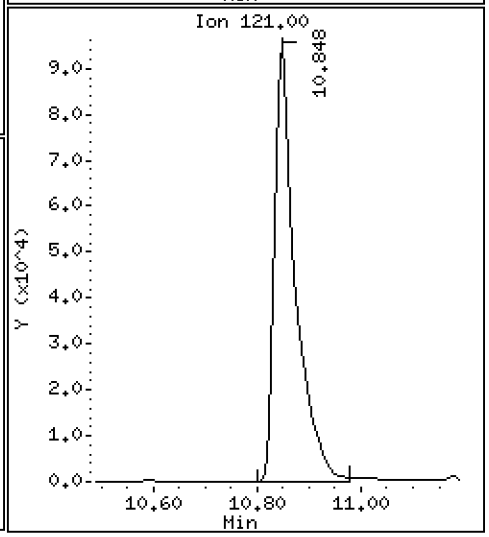












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

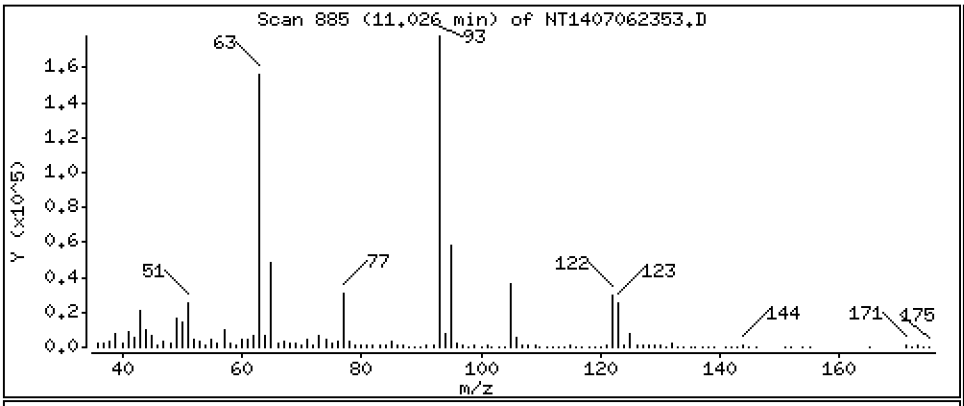
Operator: JGR

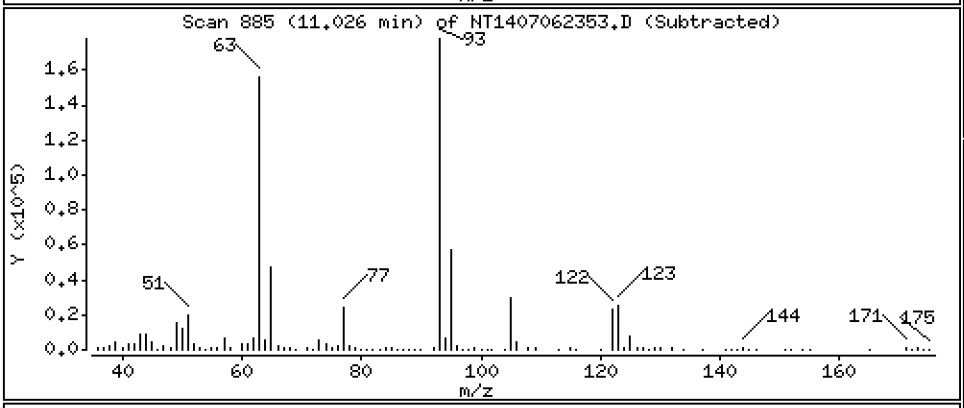
Column phase: ZB-5msi

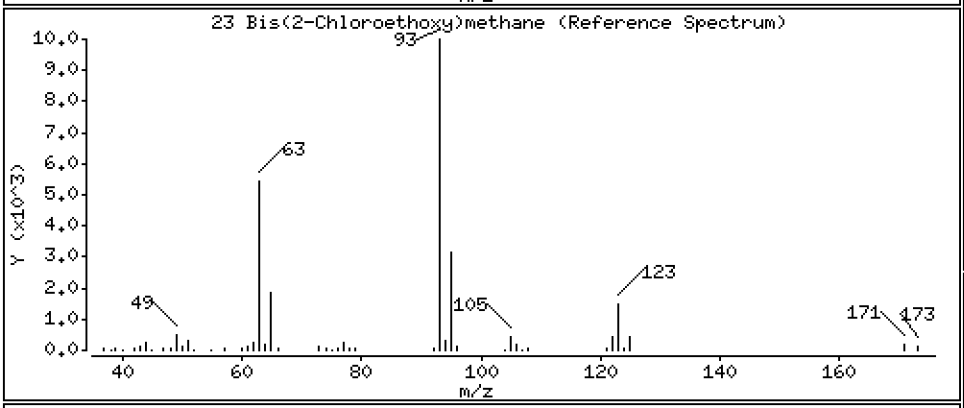
Column diameter: 0.25

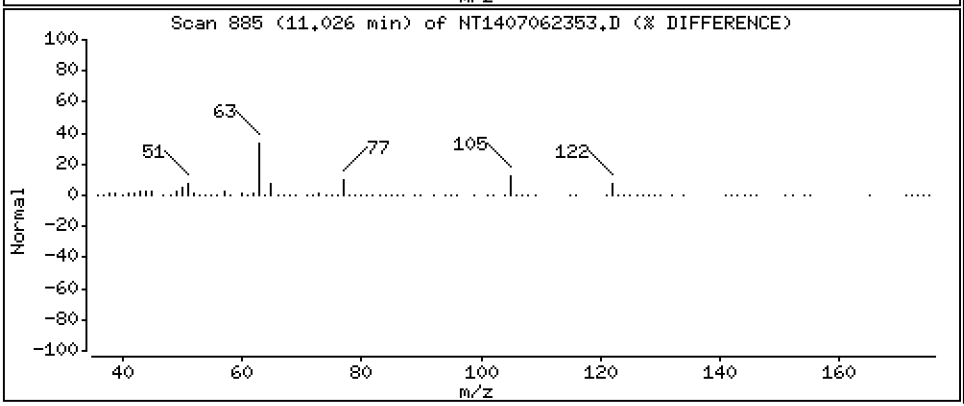
23 Bis(2-Chloroethoxy)methane

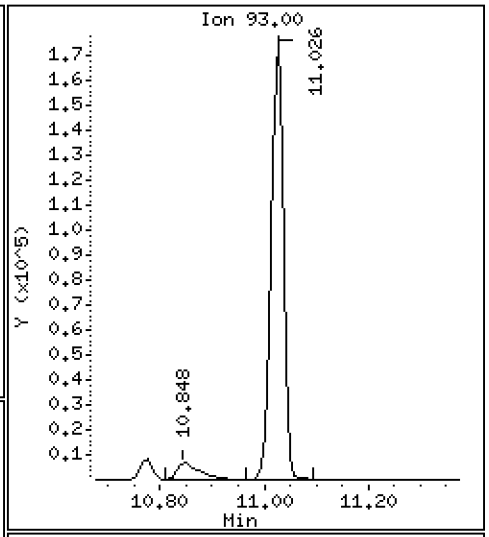
Concentration: 4.704 ug/mL

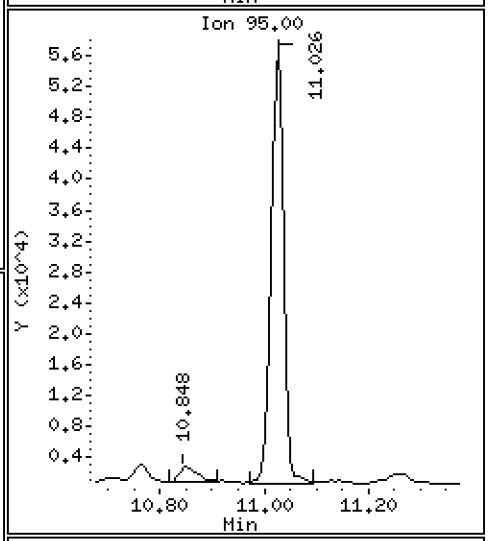


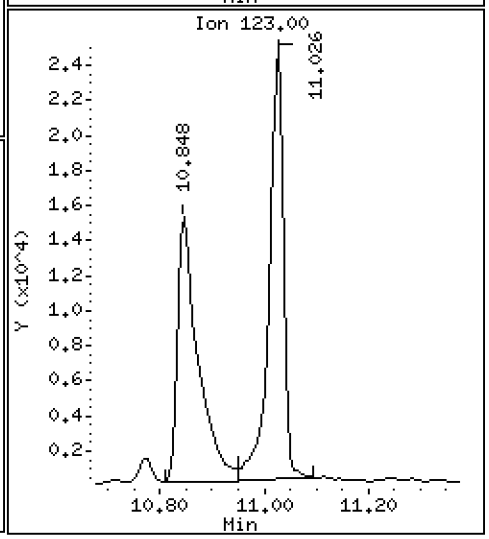












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

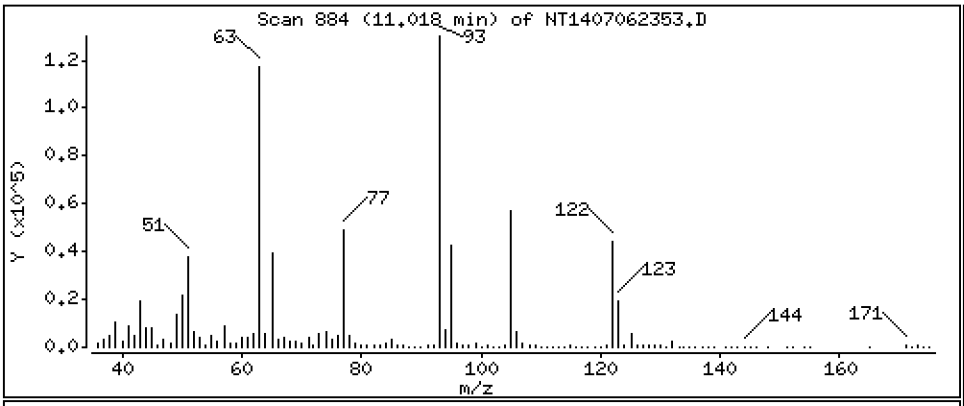
Operator: JGR

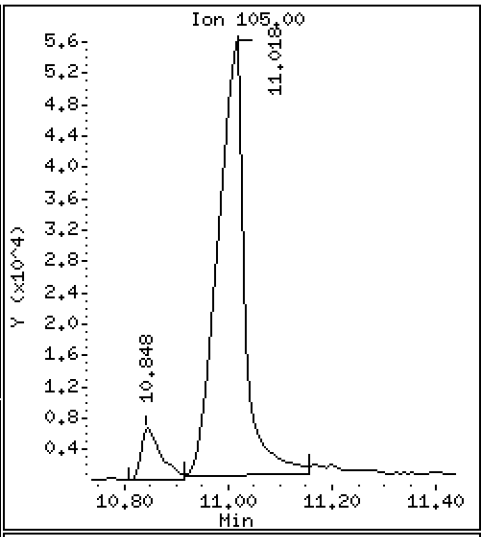
Column phase: ZB-5msi

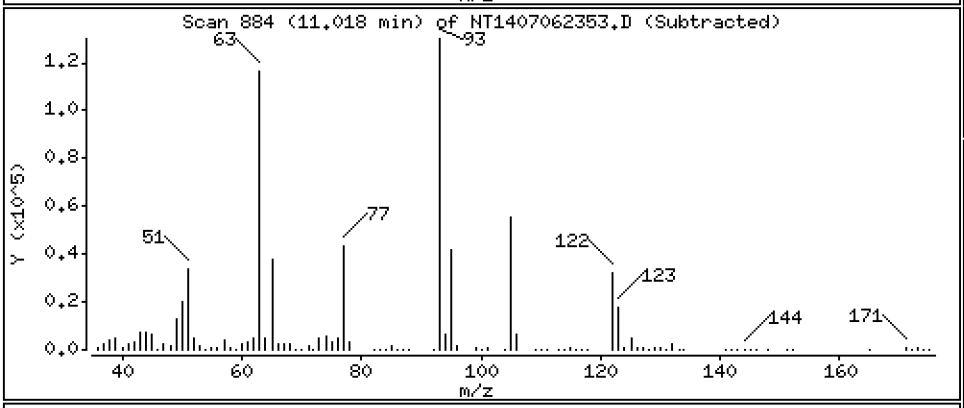
Column diameter: 0.25

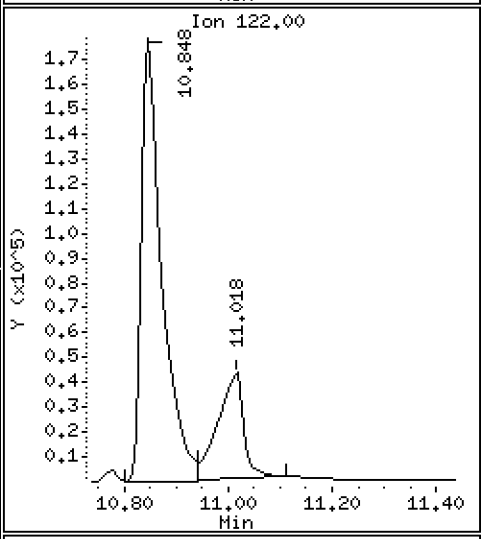
24 Benzoic acid

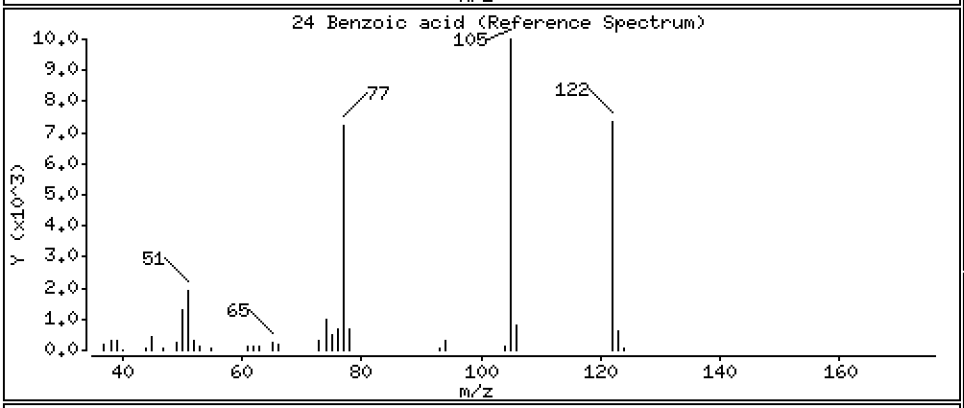
Concentration: 6.230 ug/mL

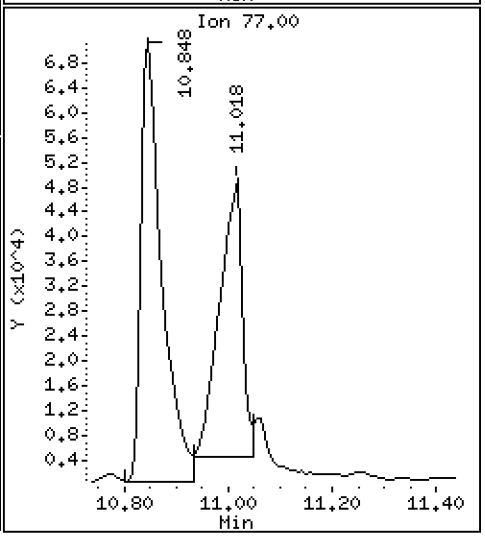


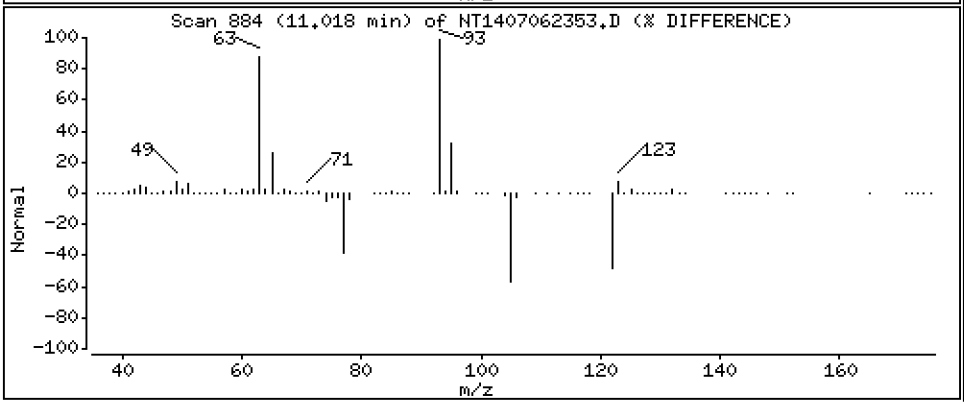












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

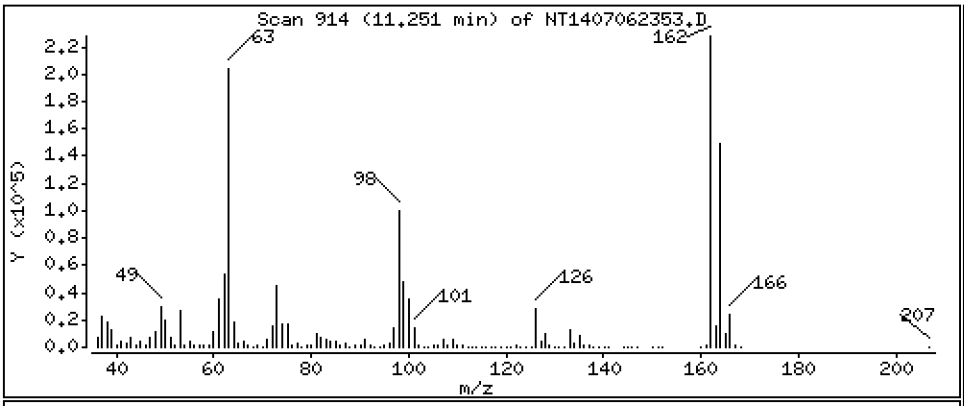
Operator: JGR

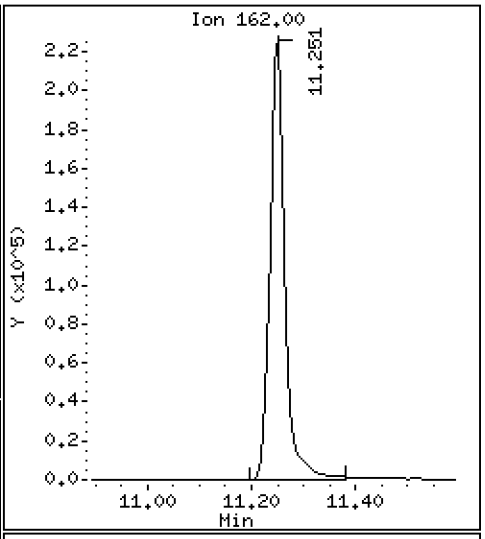
Column phase: ZB-5msi

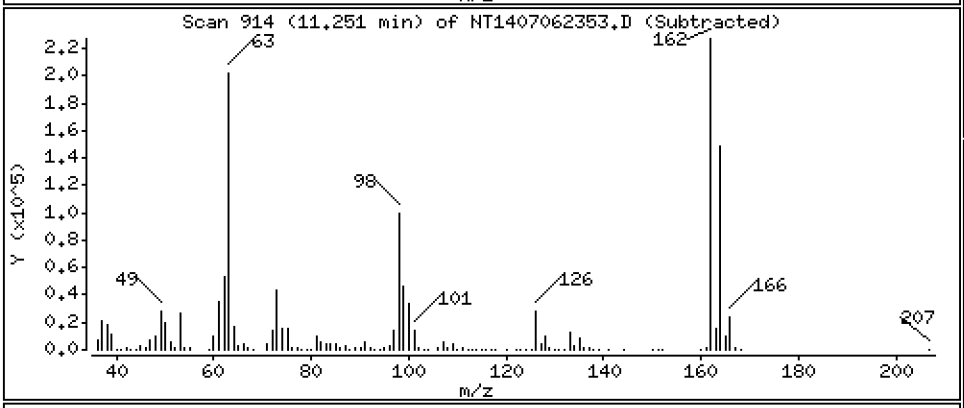
Column diameter: 0.25

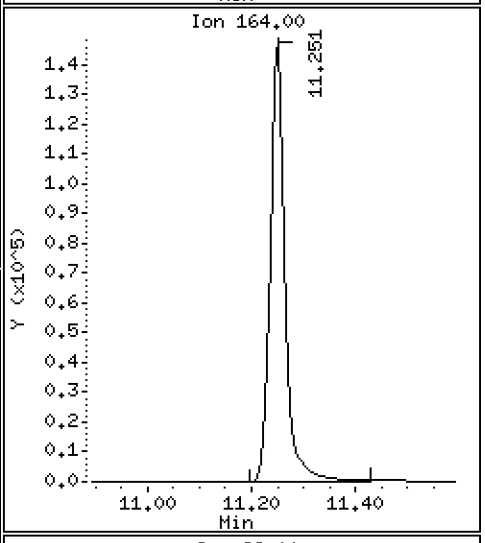
25 2,4-Dichlorophenol

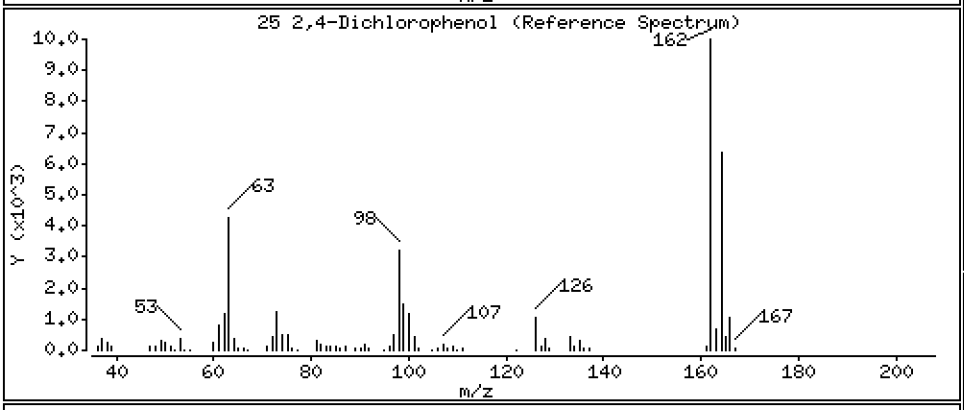
Concentration: 12.54 ug/mL

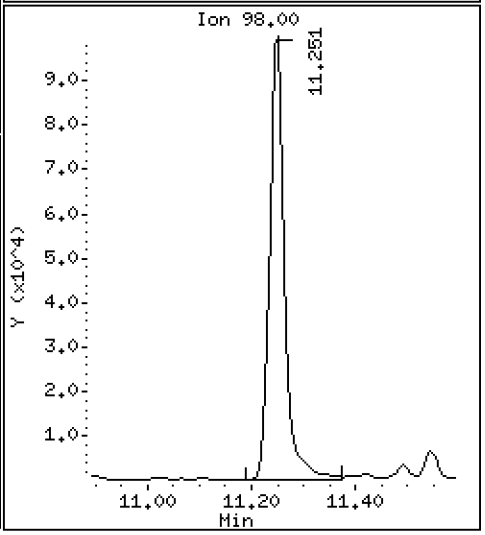


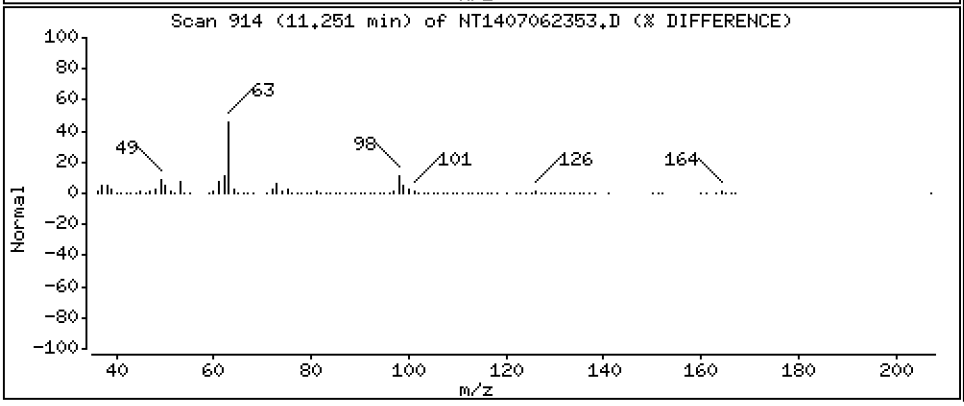












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

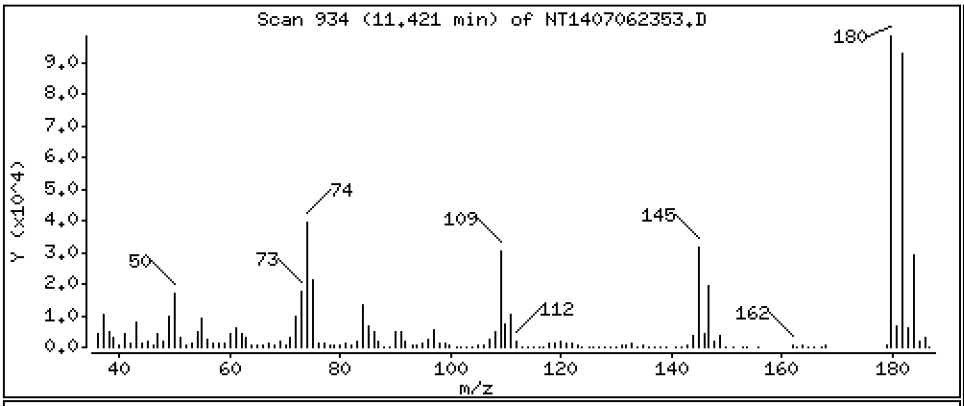
Operator: JGR

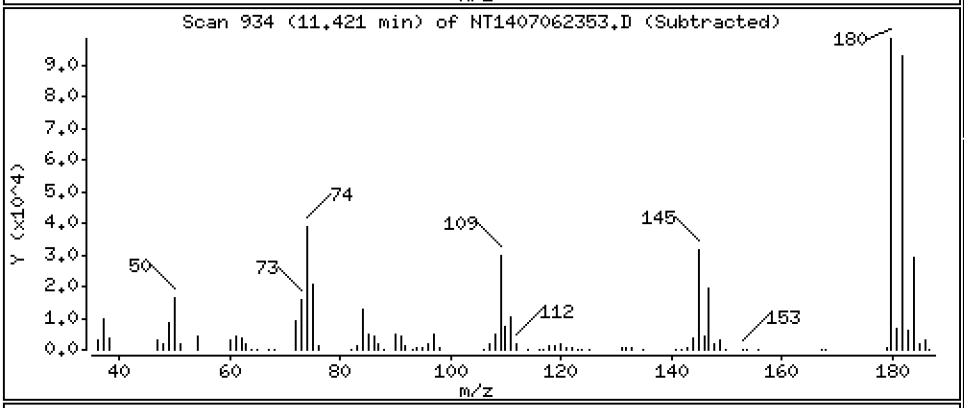
Column phase: ZB-5msi

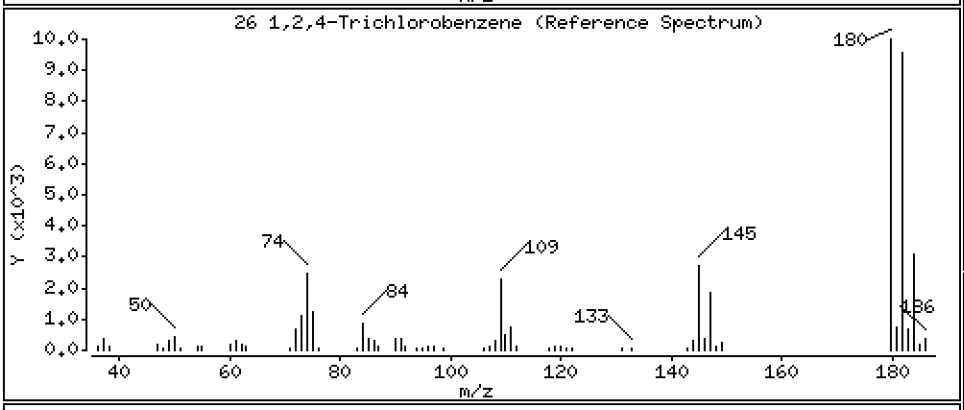
Column diameter: 0.25

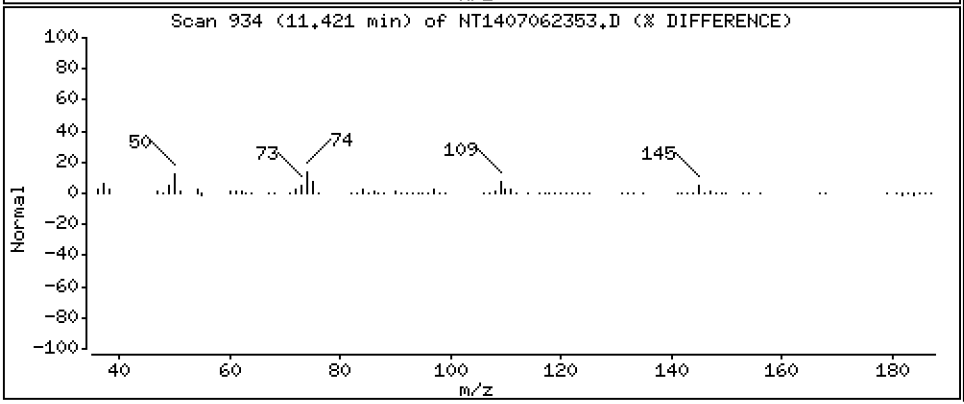
26 1,2,4-Trichlorobenzene

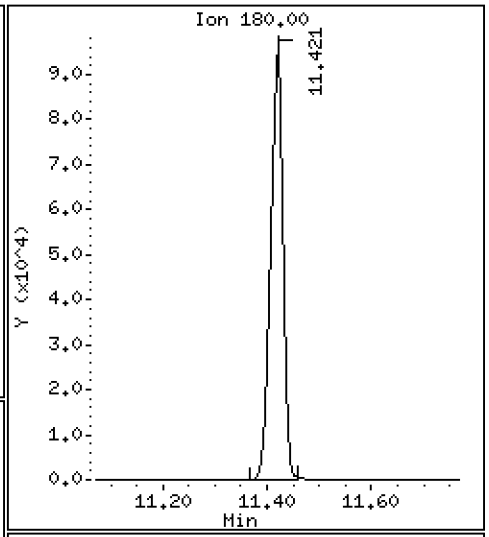
Concentration: 3.961 ug/mL

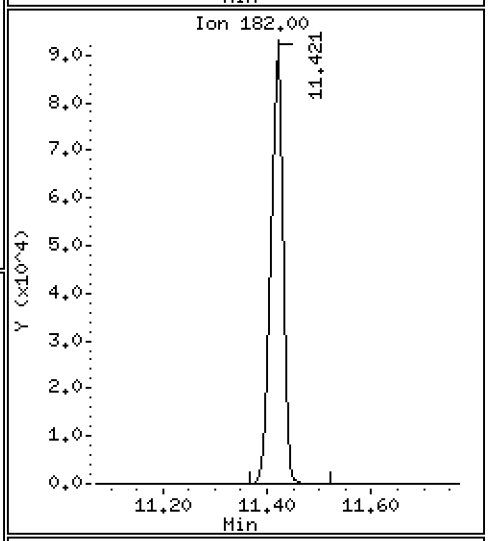


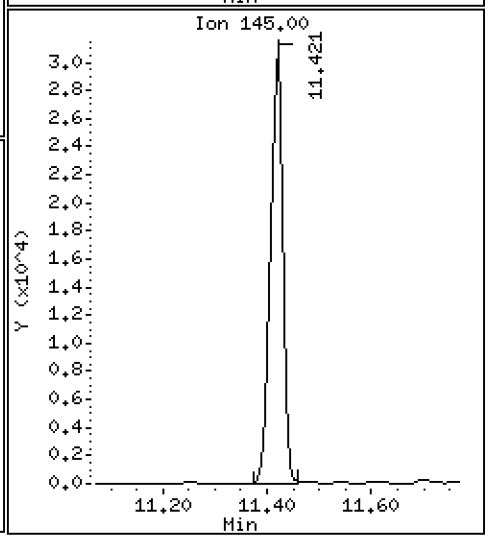












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

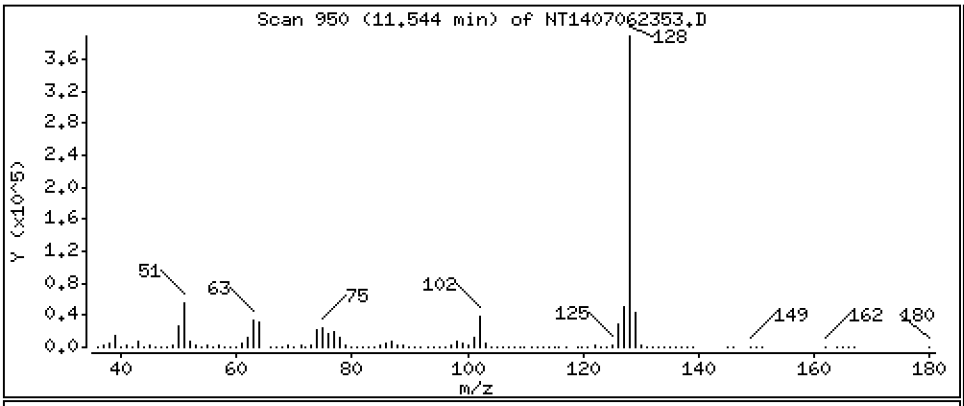
Operator: JGR

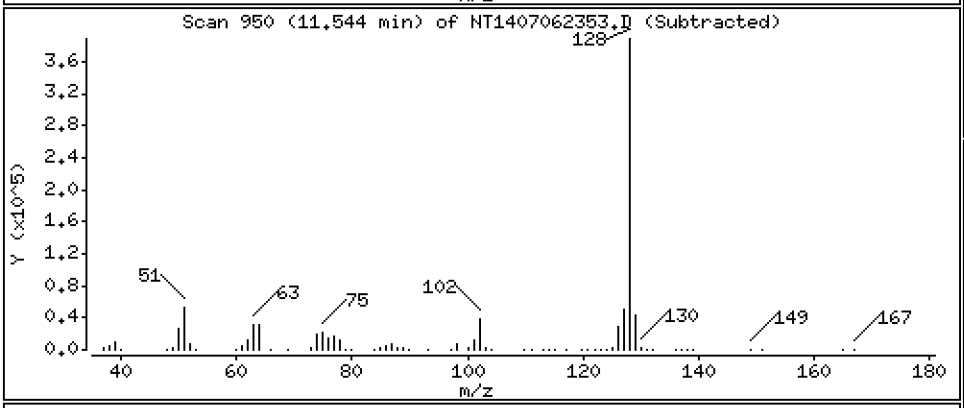
Column phase: ZB-5msi

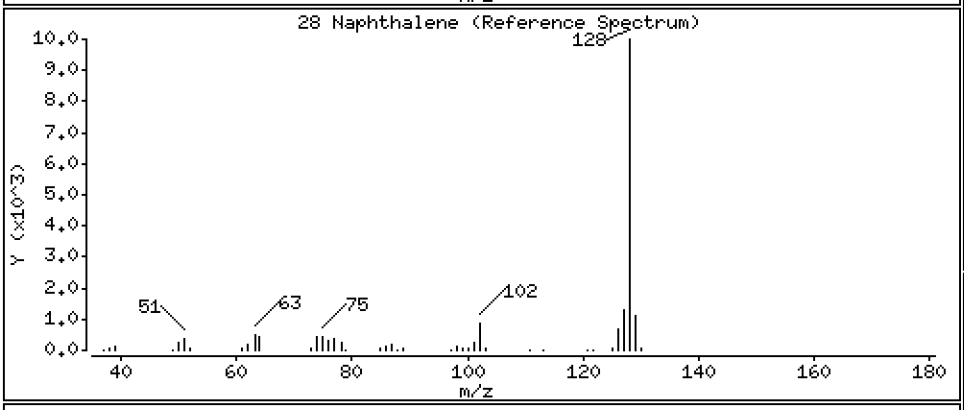
Column diameter: 0.25

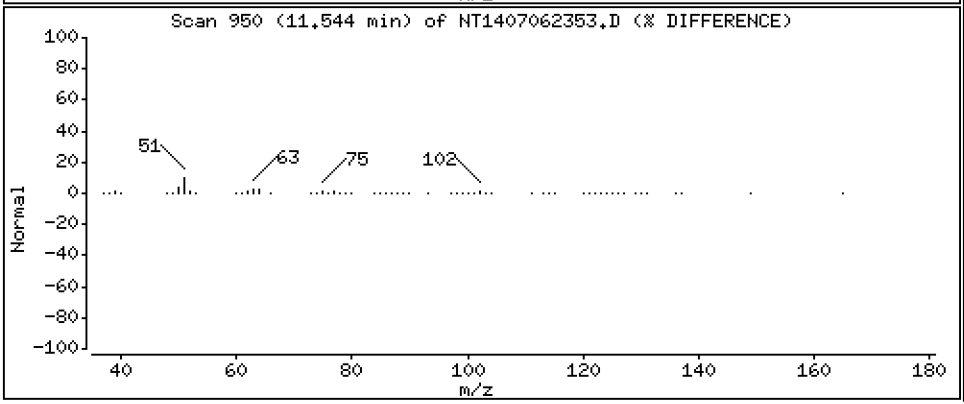
28 Naphthalene

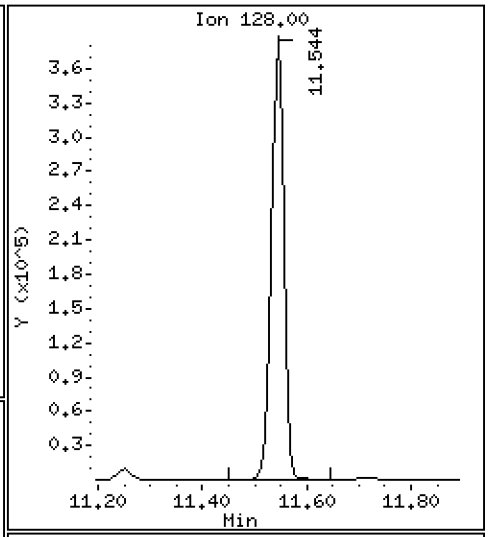
Concentration: 4.512 ug/mL

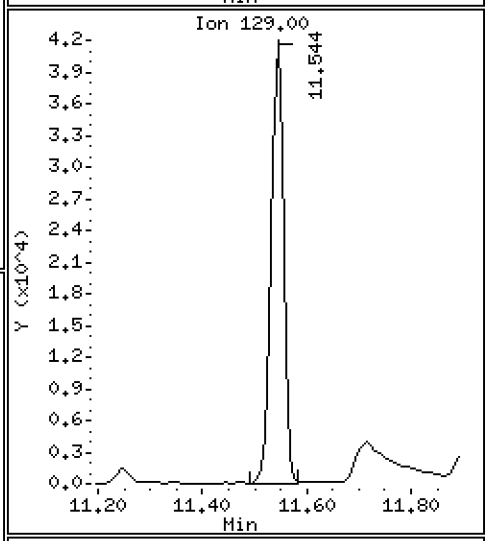


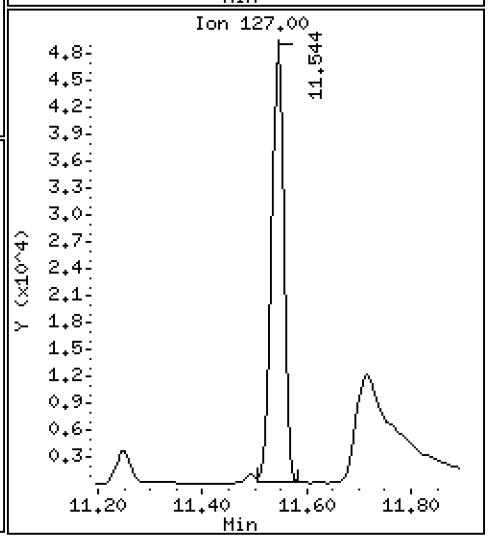












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

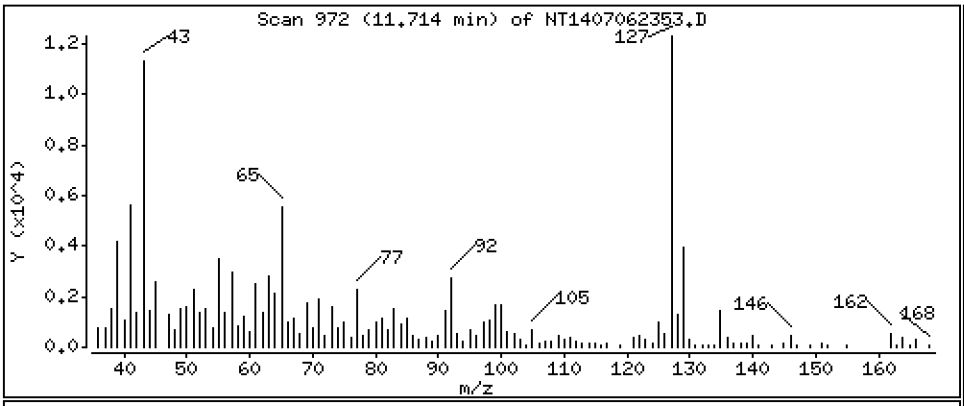
Operator: JGR

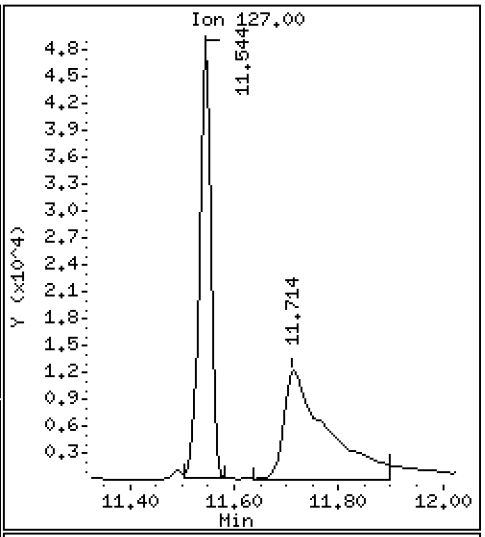
Column phase: ZB-5msi

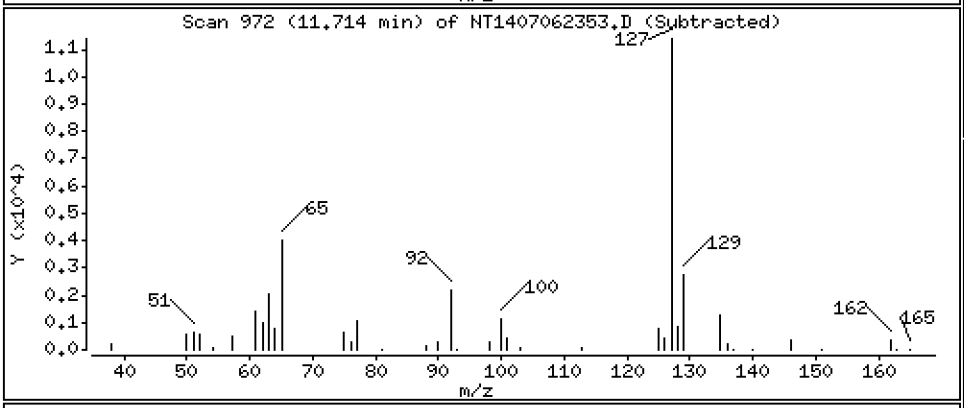
Column diameter: 0.25

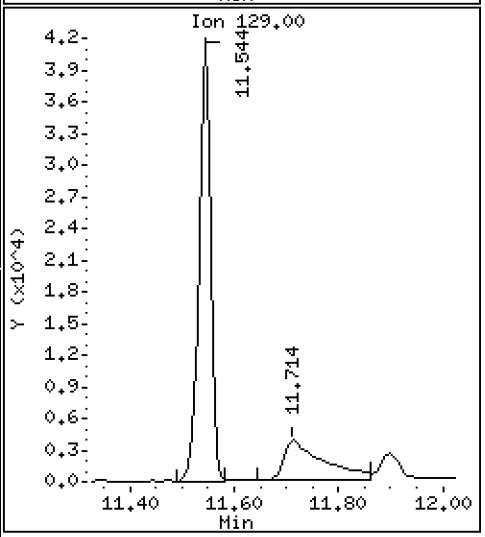
29 4-Chloroaniline

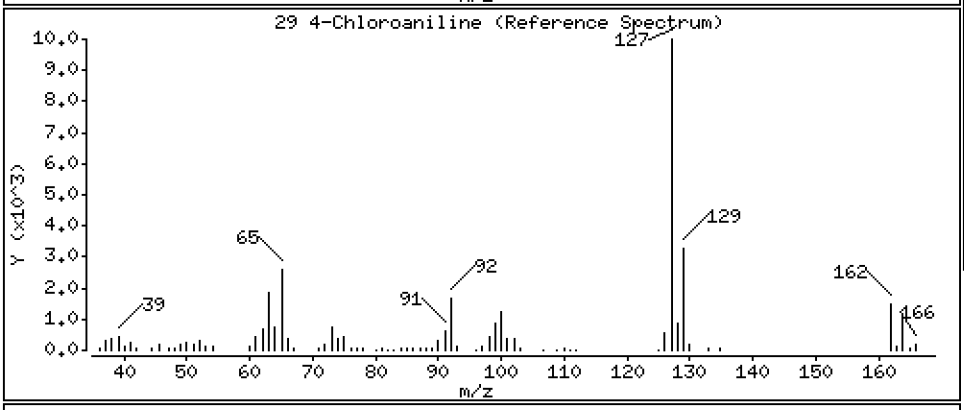
Concentration: 1.127 ug/mL

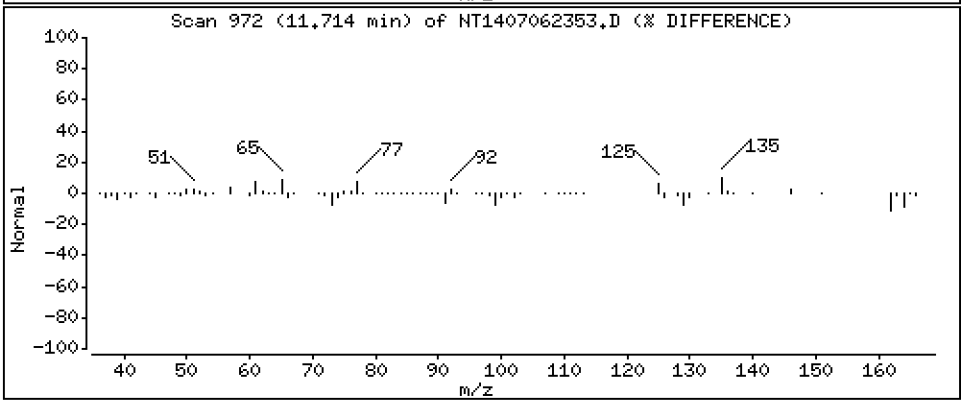












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

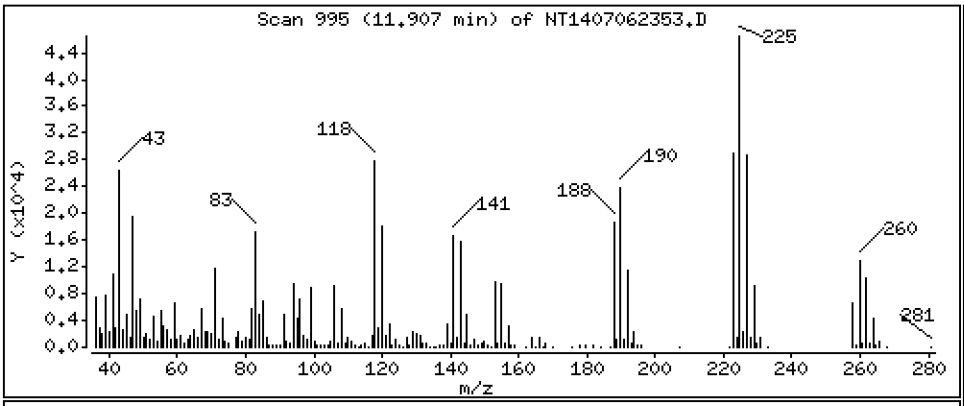
Operator: JGR

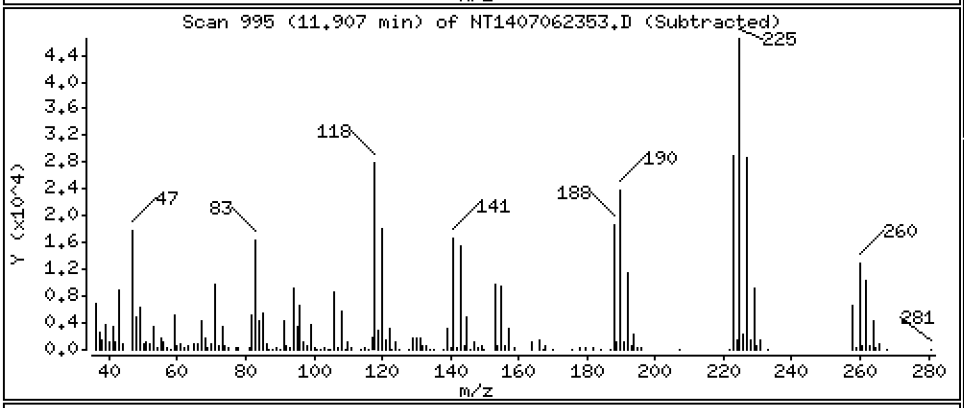
Column phase: ZB-5msi

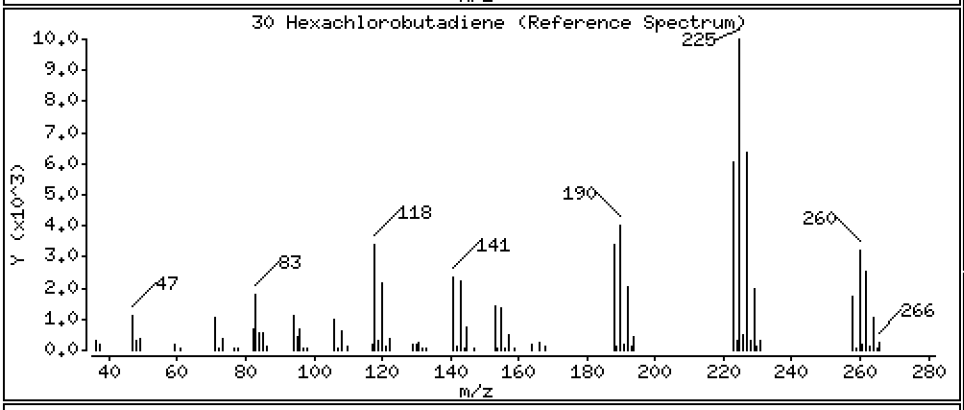
Column diameter: 0.25

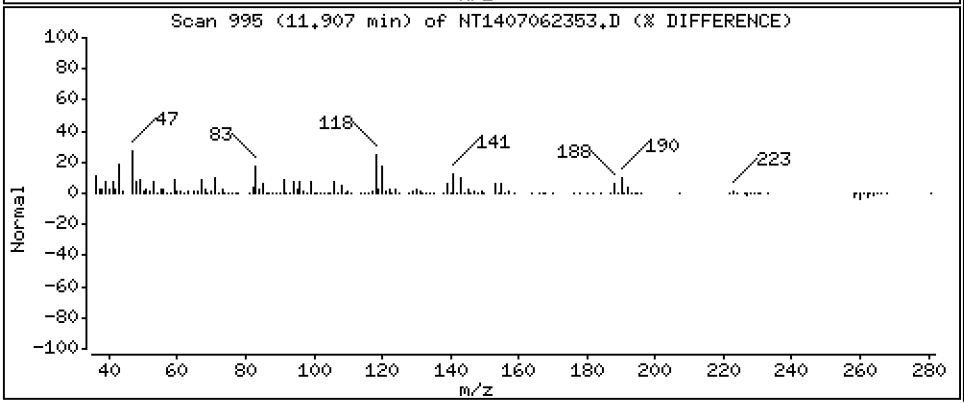
30 Hexachlorobutadiene

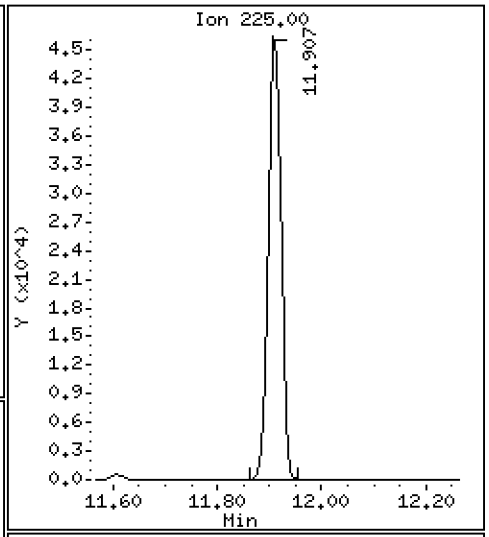
Concentration: 4.267 ug/mL

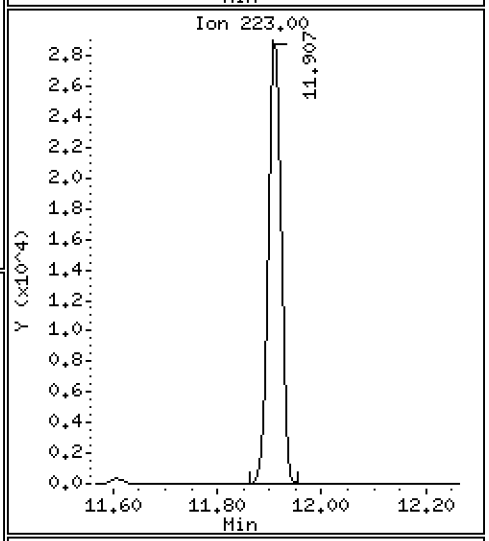


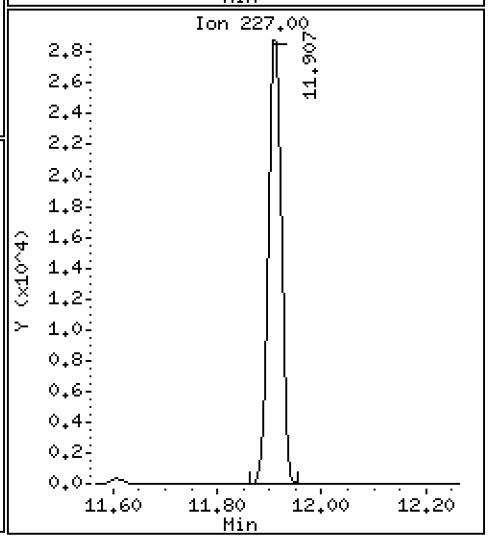












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

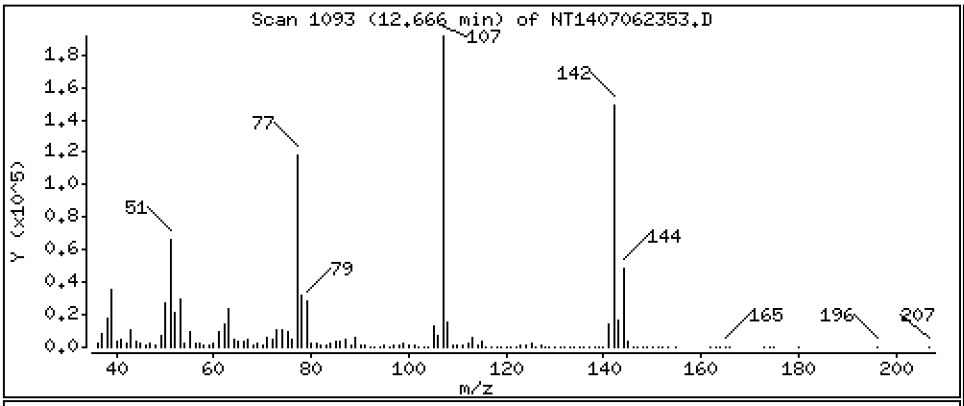
Operator: JGR

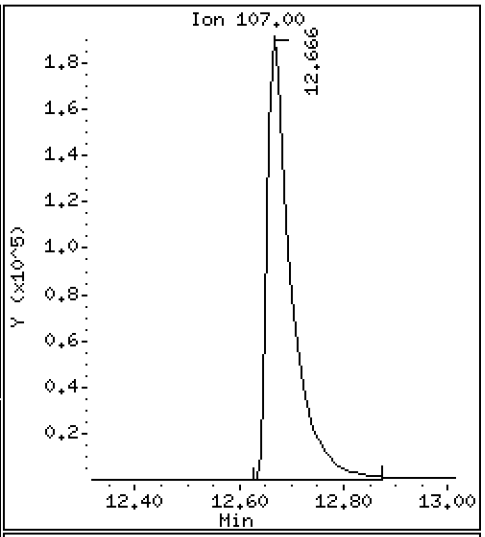
Column phase: ZB-5msi

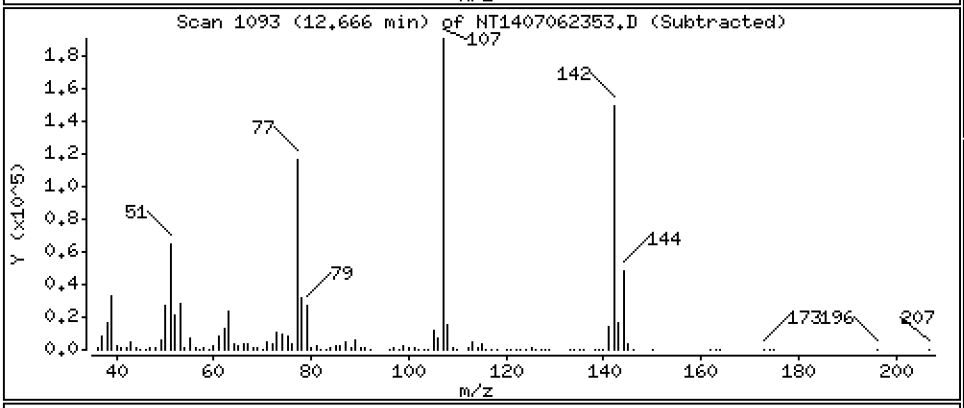
Column diameter: 0.25

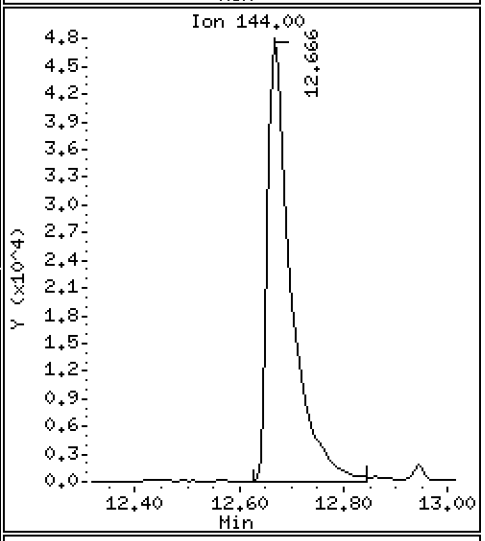
31 4-Chloro-3-methylphenol

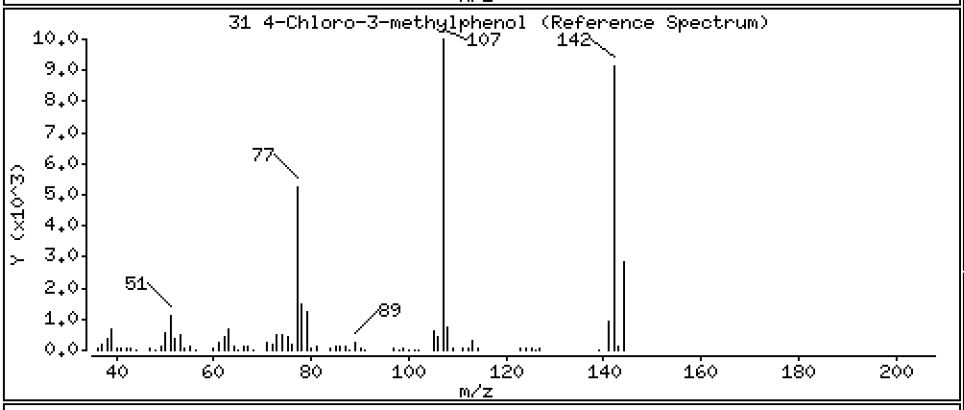
Concentration: 12.48 ug/mL

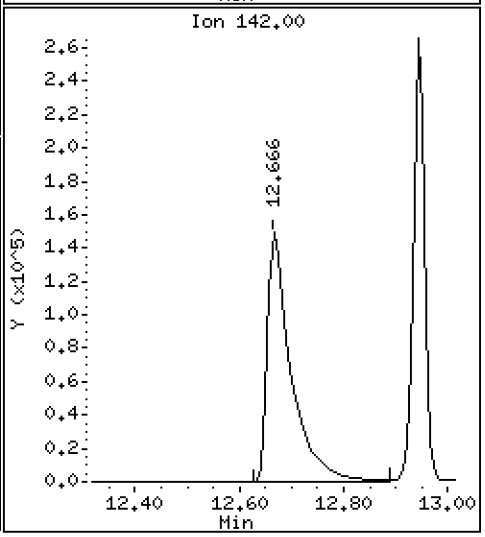


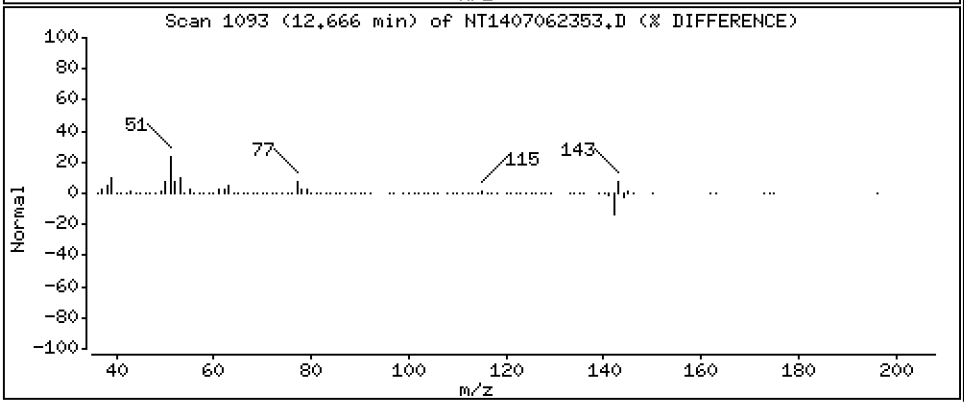












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

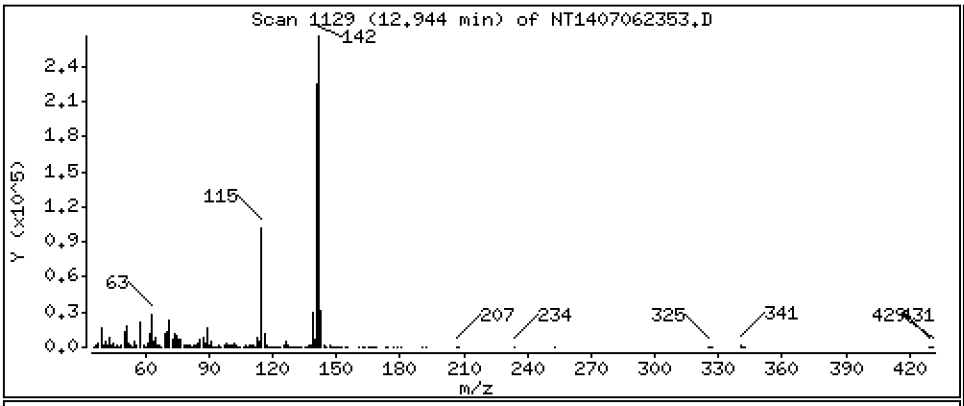
Operator: JGR

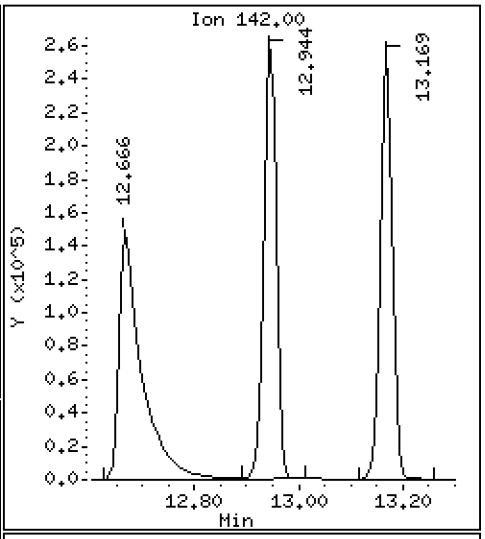
Column phase: ZB-5msi

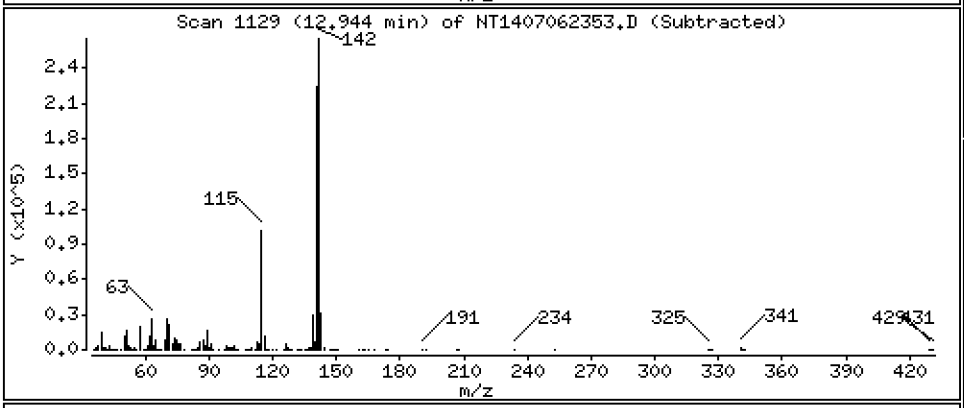
Column diameter: 0.25

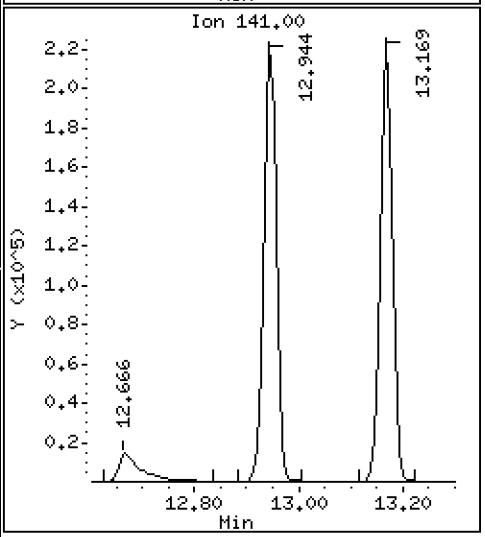
32 2-Methylnaphthalene

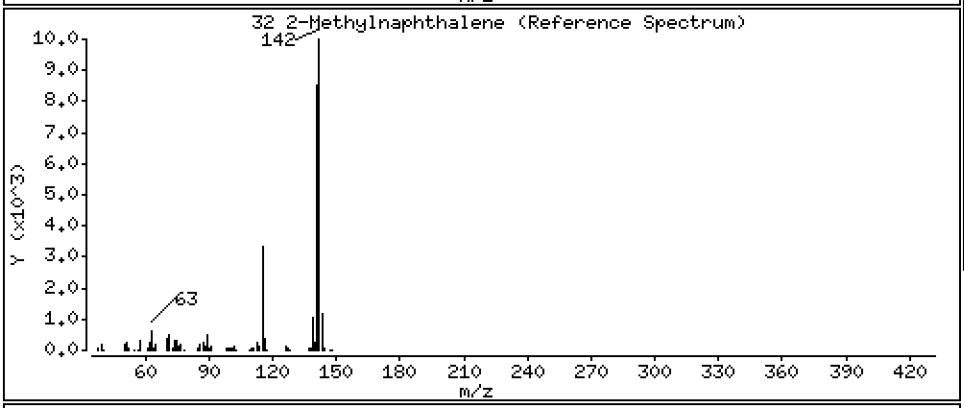
Concentration: 4.101 ug/mL

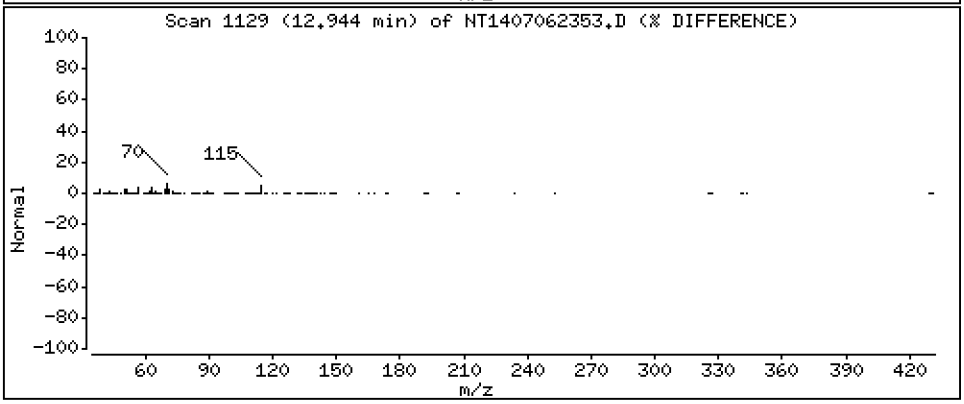












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

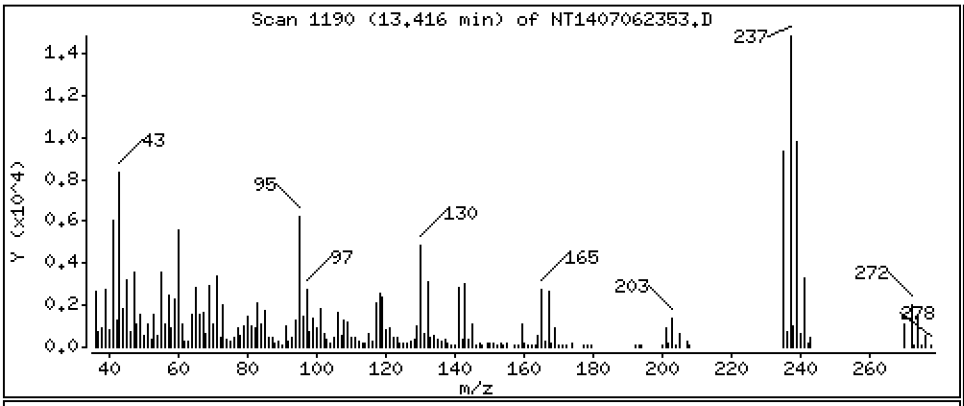
Operator: JGR

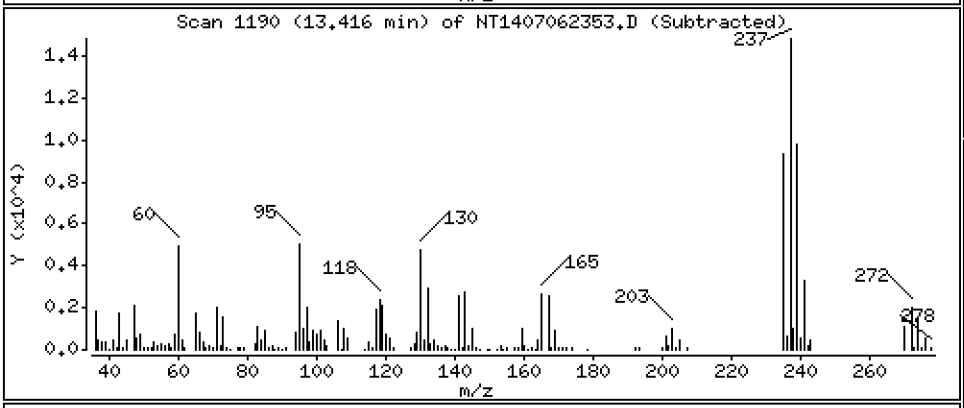
Column phase: ZB-5msi

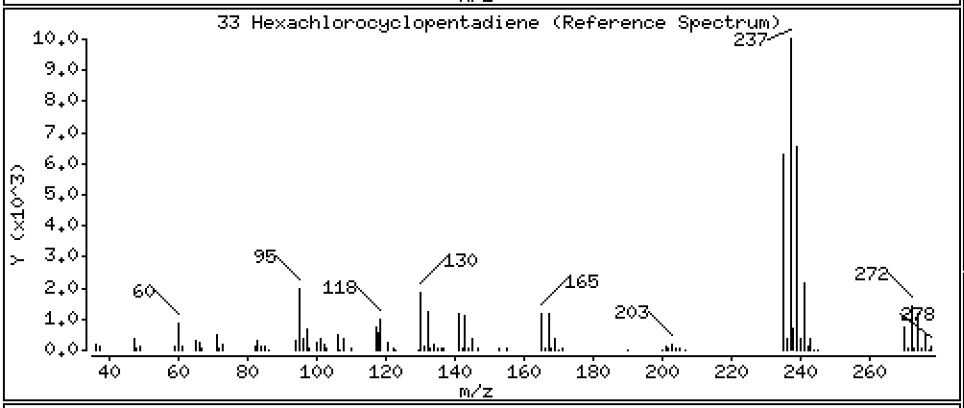
Column diameter: 0.25

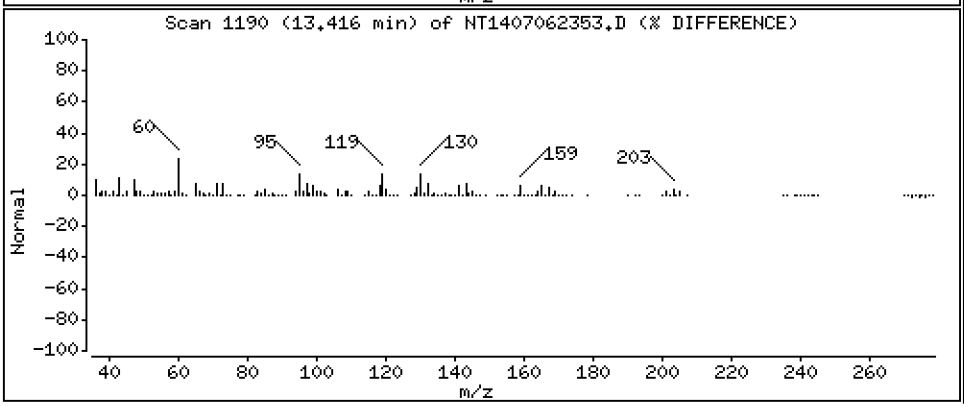
33 Hexachlorocyclopentadiene

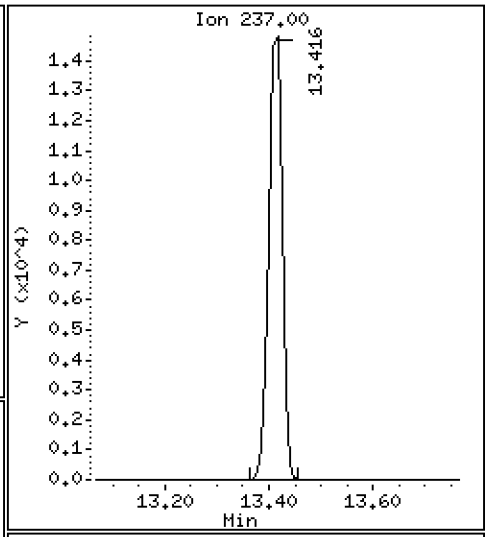
Concentration: 1.321 ug/mL

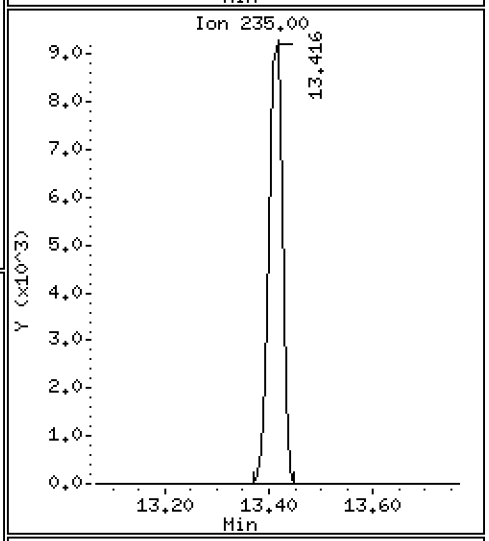


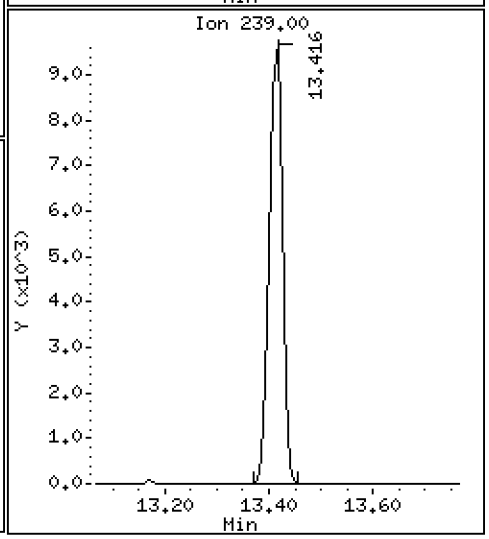












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062353.D

Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

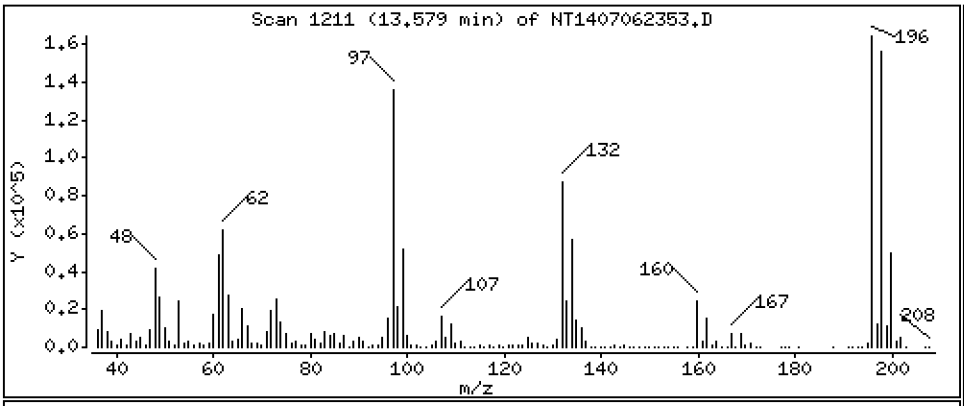
Operator: JGR

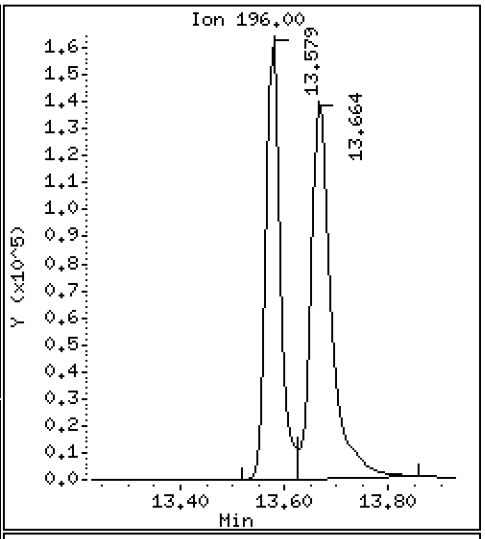
Column phase: ZB-5msi

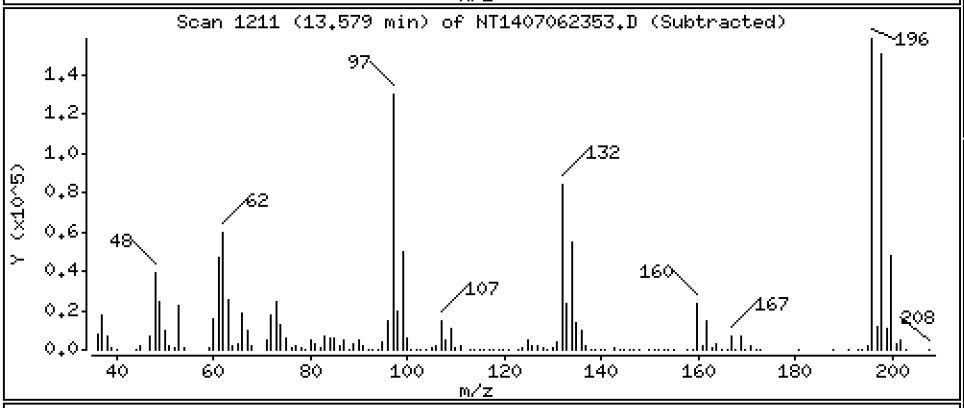
Column diameter: 0.25

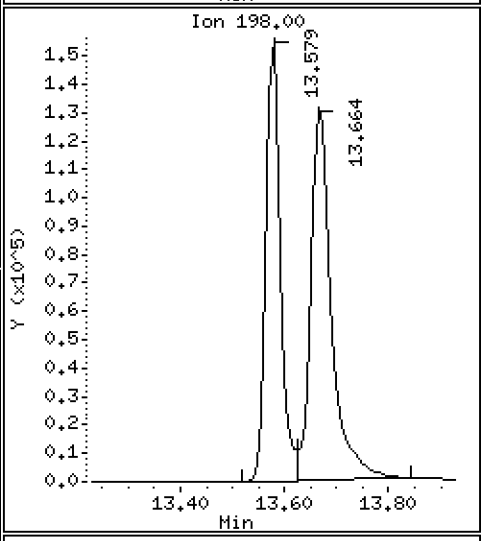
34 2,4,6-Trichlorophenol

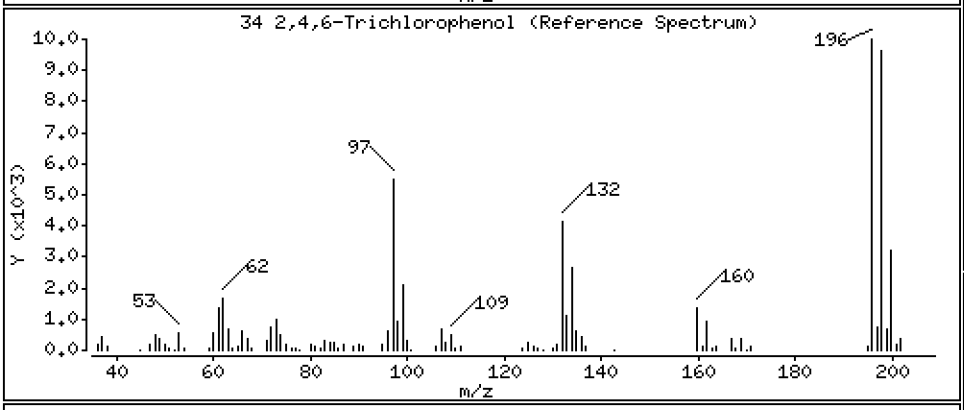
Concentration: 12.13 ug/mL

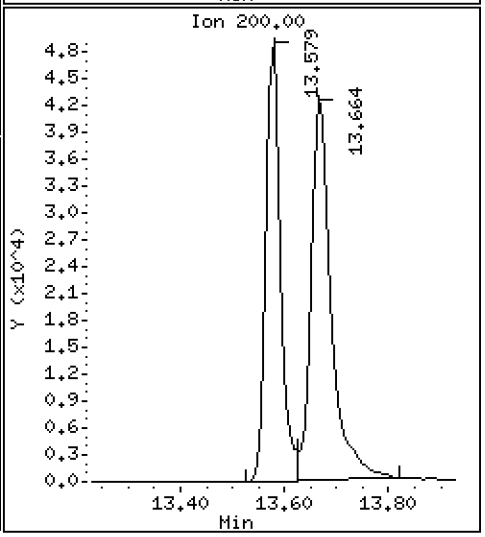


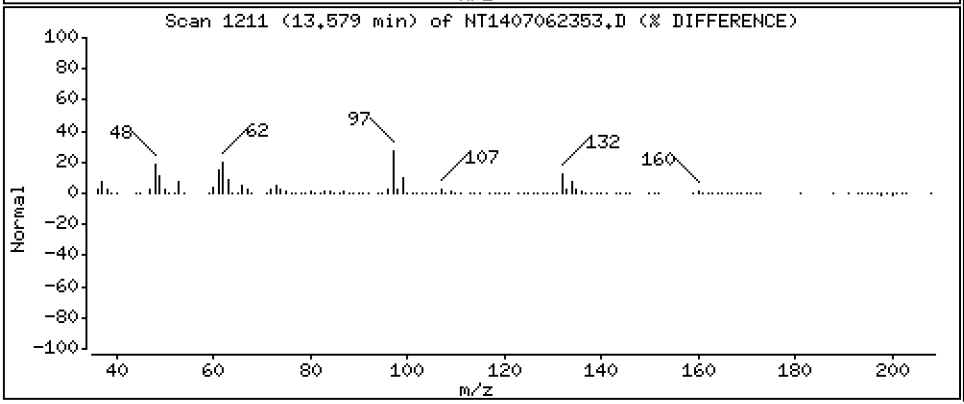












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

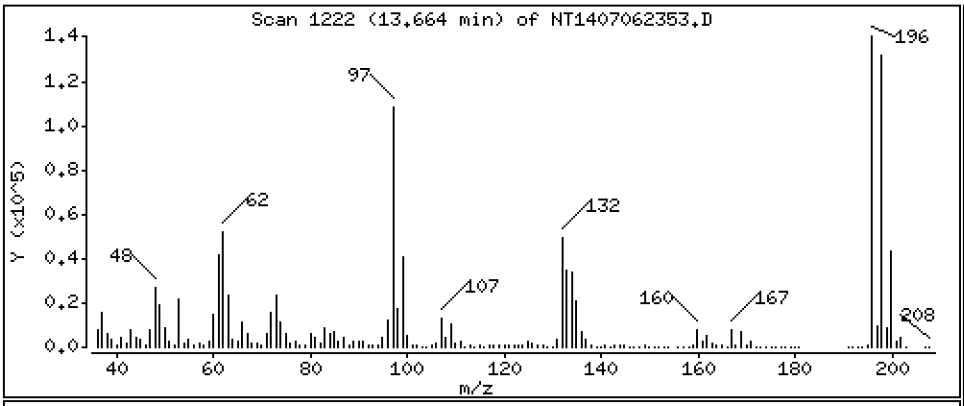
Operator: JGR

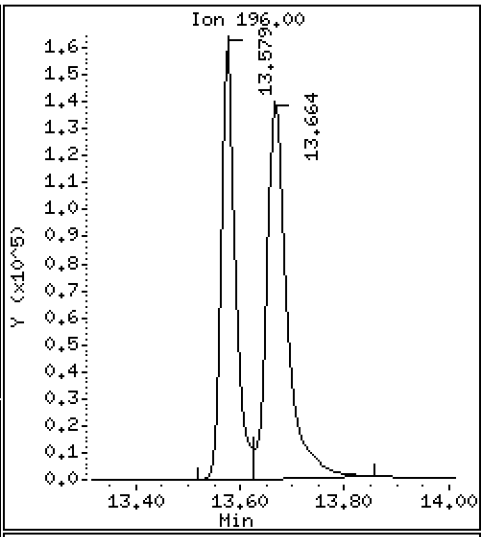
Column phase: ZB-5msi

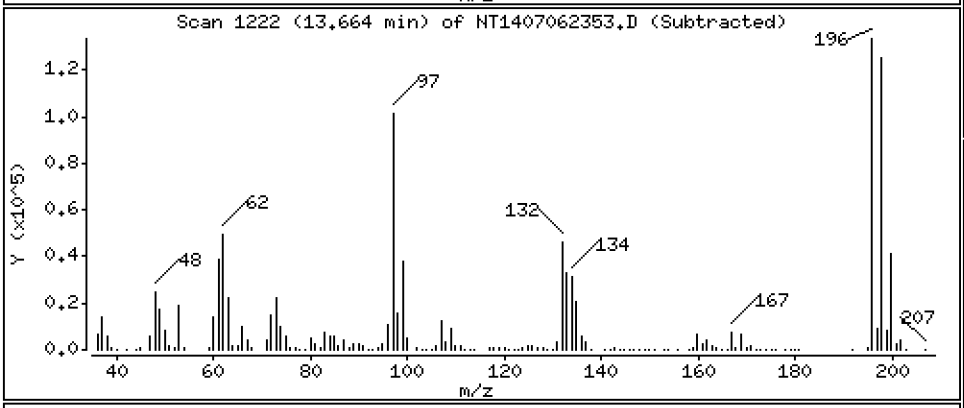
Column diameter: 0.25

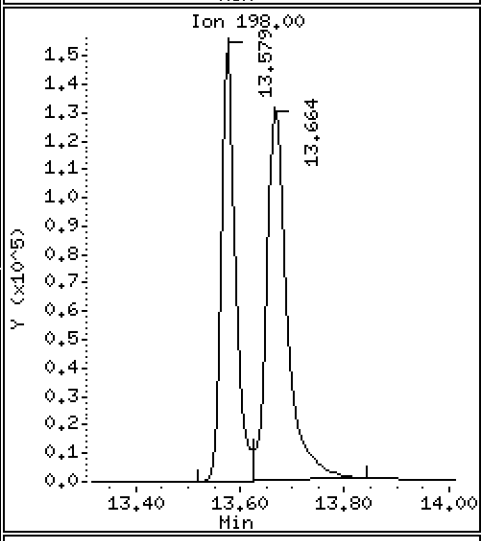
35 2,4,5-Trichlorophenol

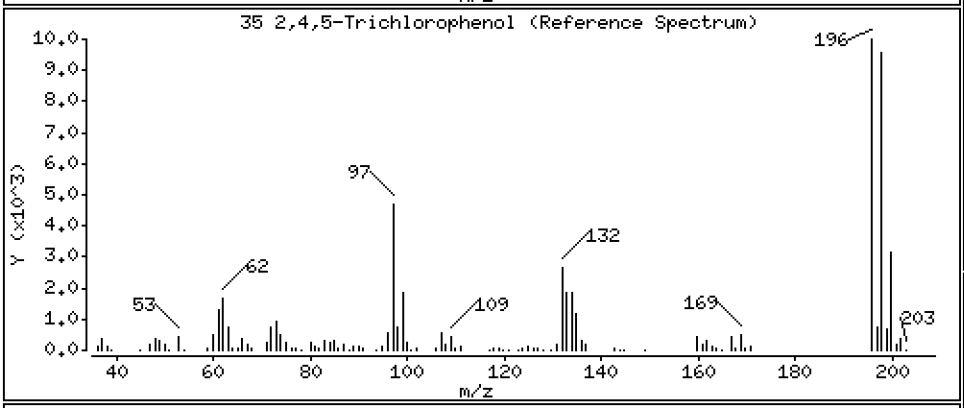
Concentration: 14.44 ug/mL

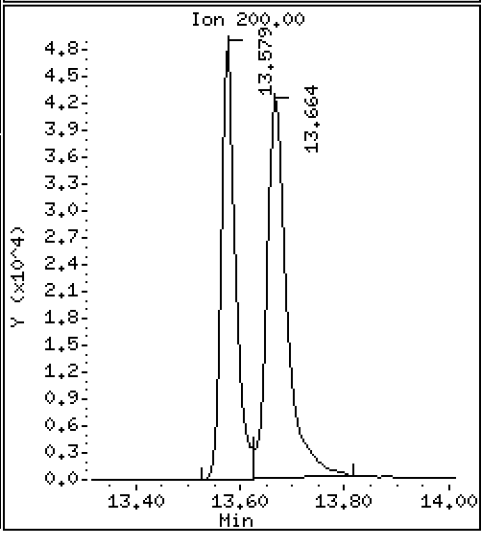


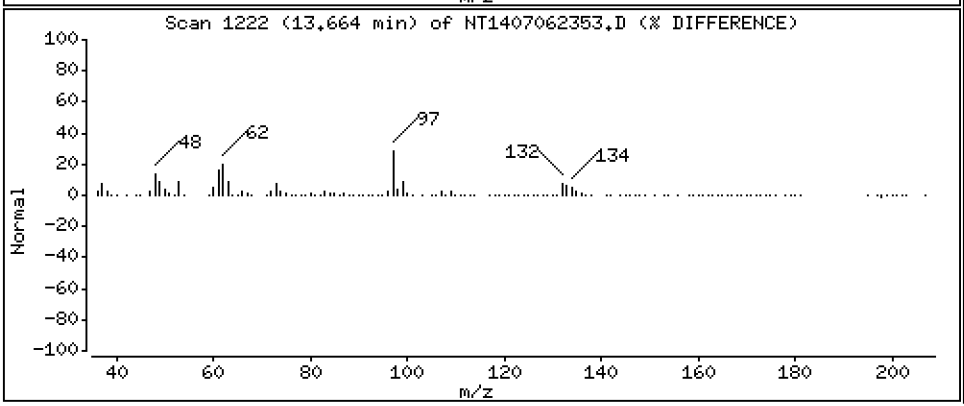












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

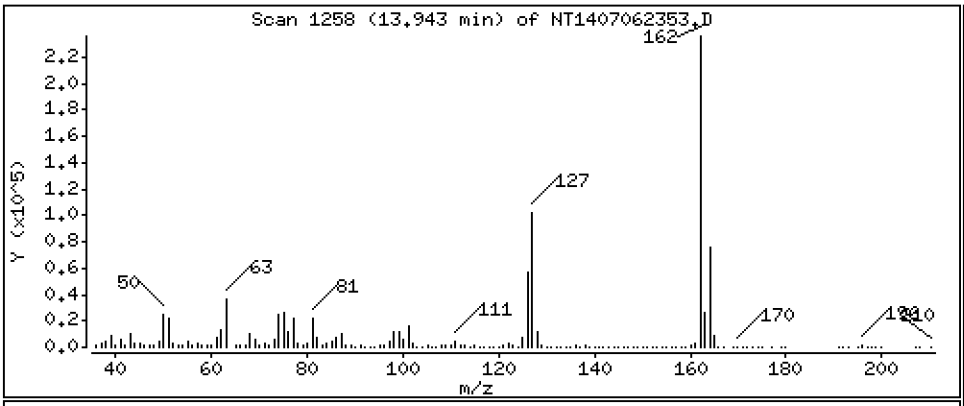
Operator: JGR

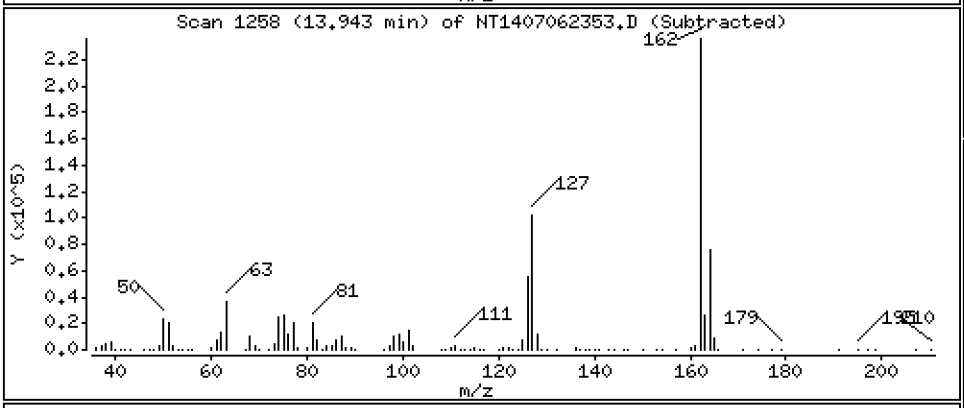
Column phase: ZB-5msi

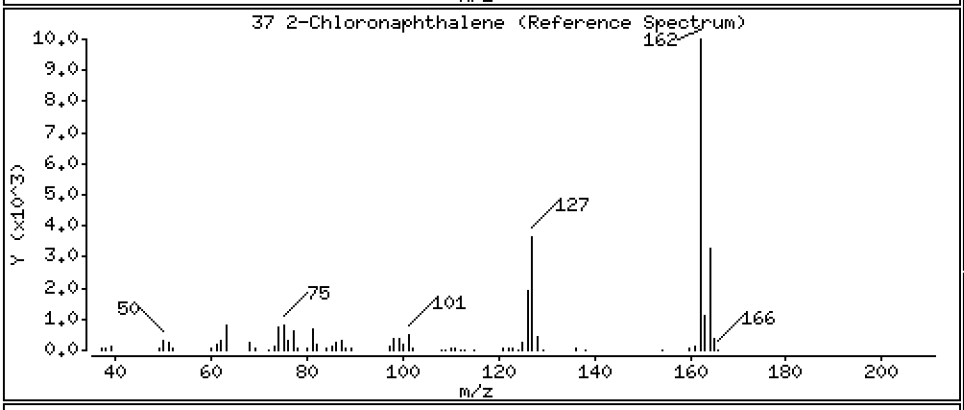
Column diameter: 0.25

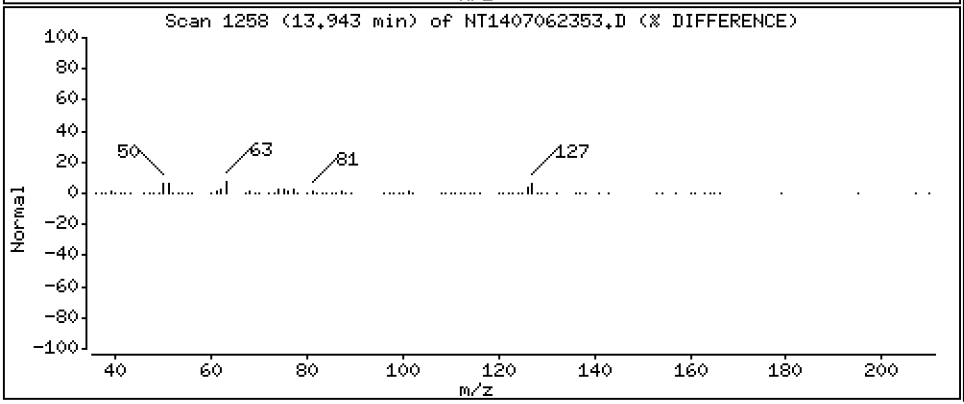
37 2-Chloronaphthalene

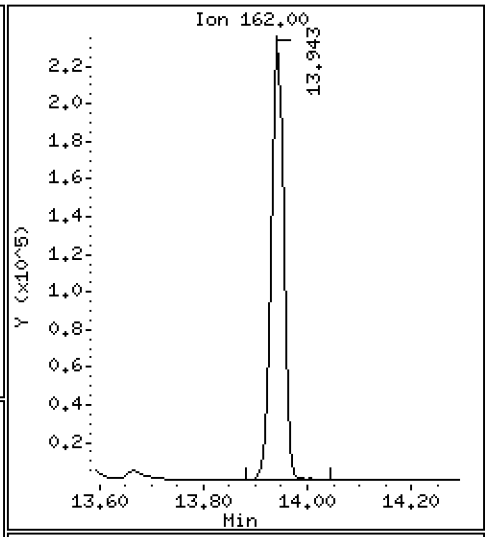
Concentration: 4.298 ug/mL

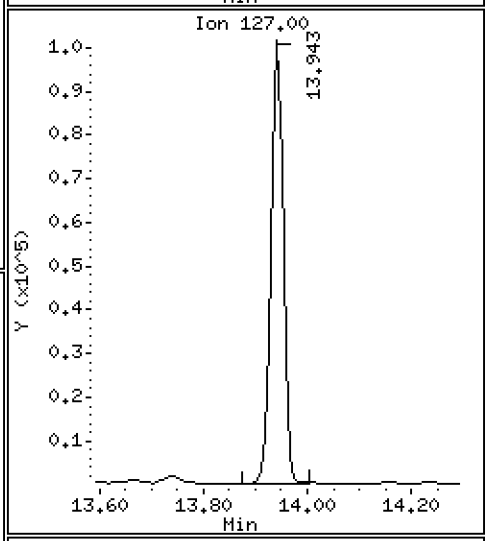


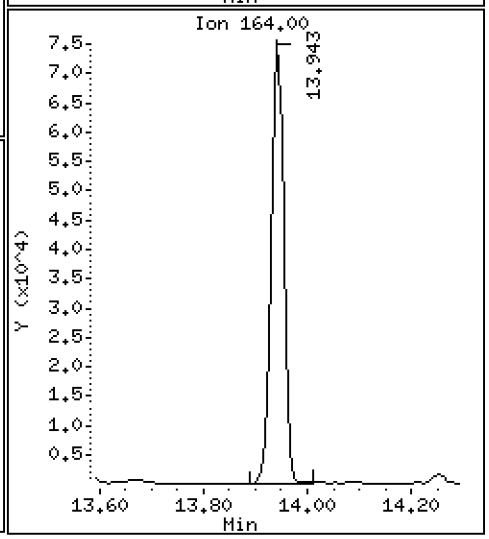












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

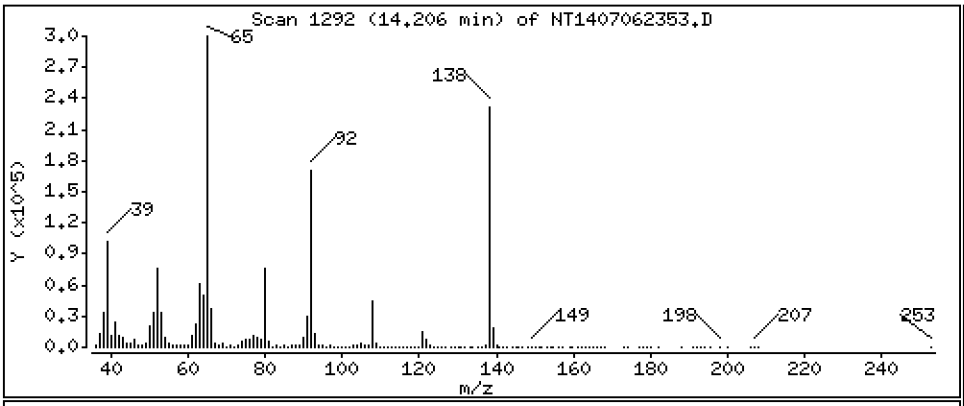
Operator: JGR

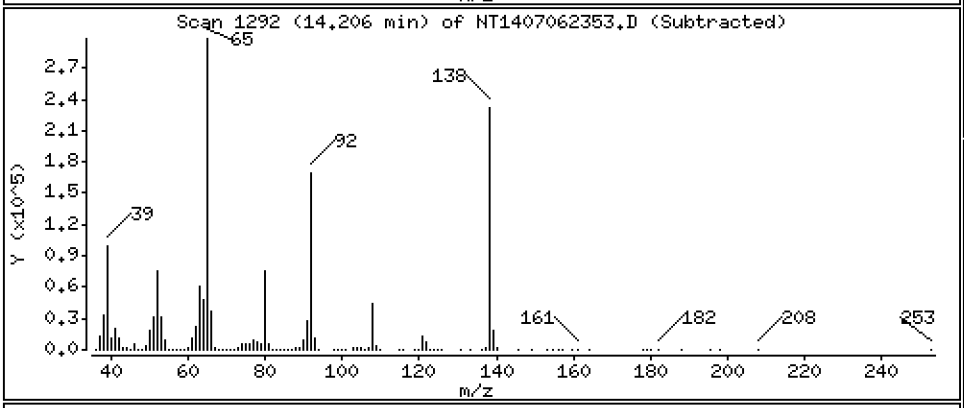
Column phase: ZB-5msi

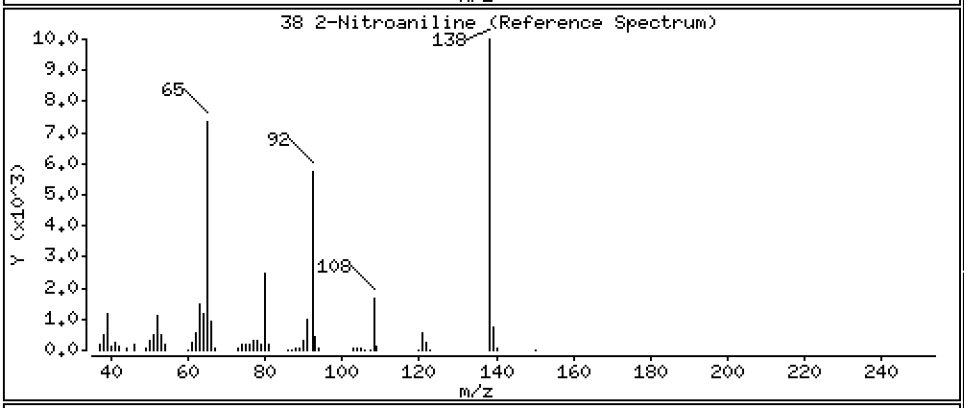
Column diameter: 0.25

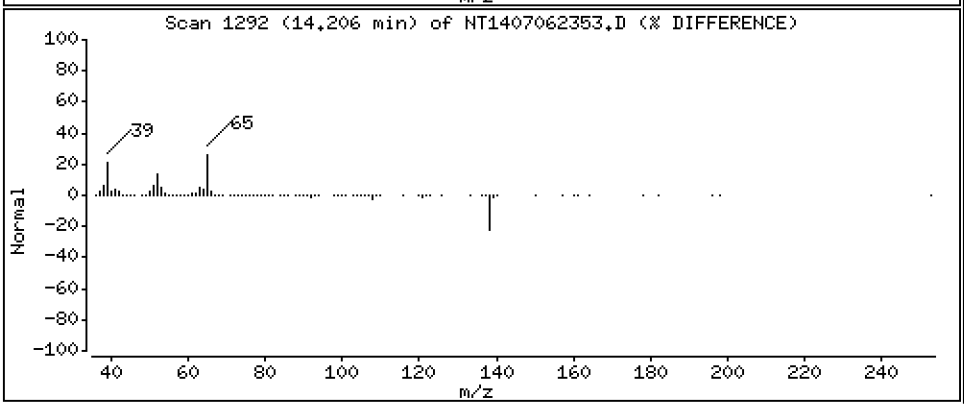
38 2-Nitroaniline

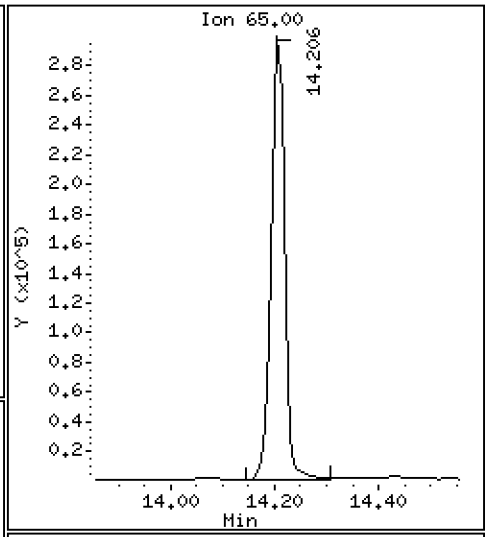
Concentration: 12.25 ug/mL

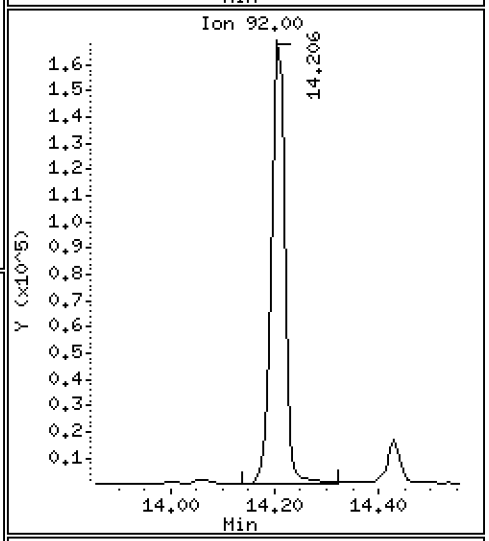


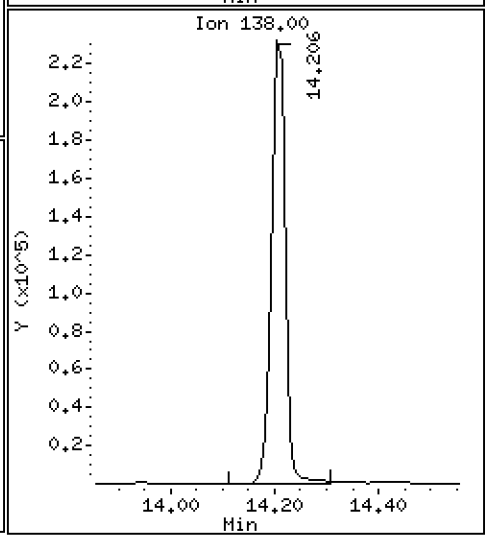












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

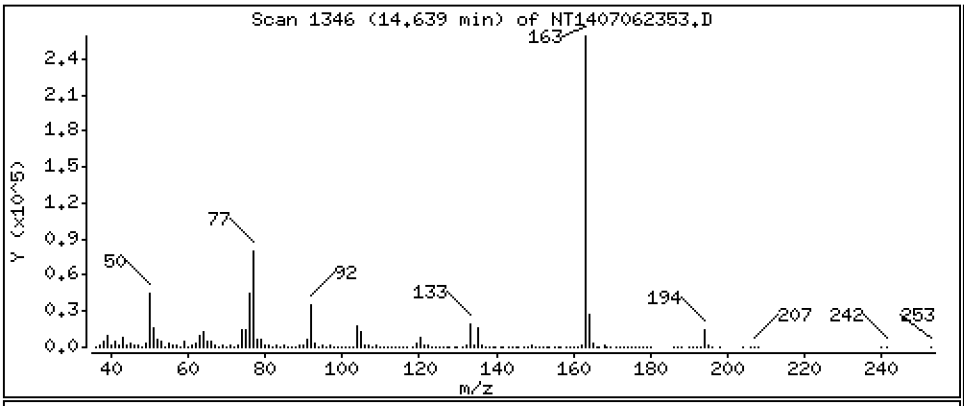
Operator: JGR

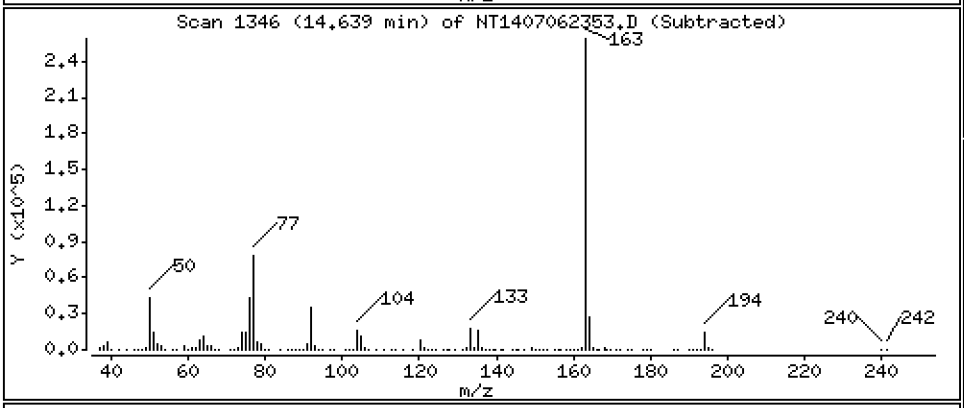
Column phase: ZB-5msi

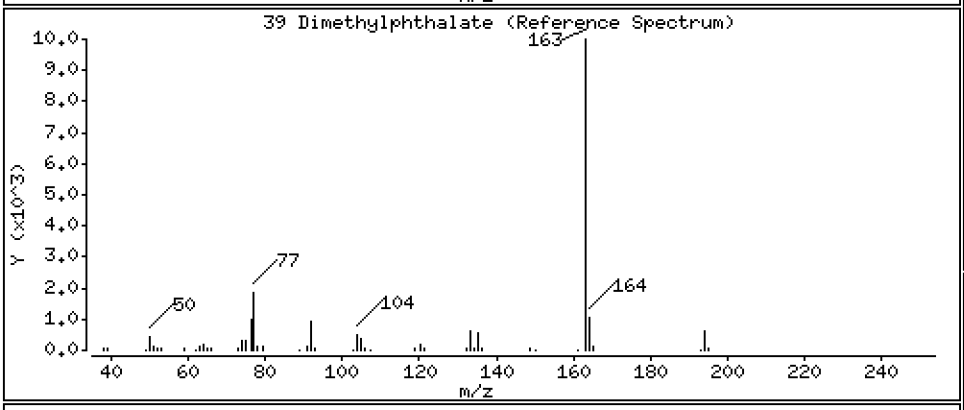
Column diameter: 0.25

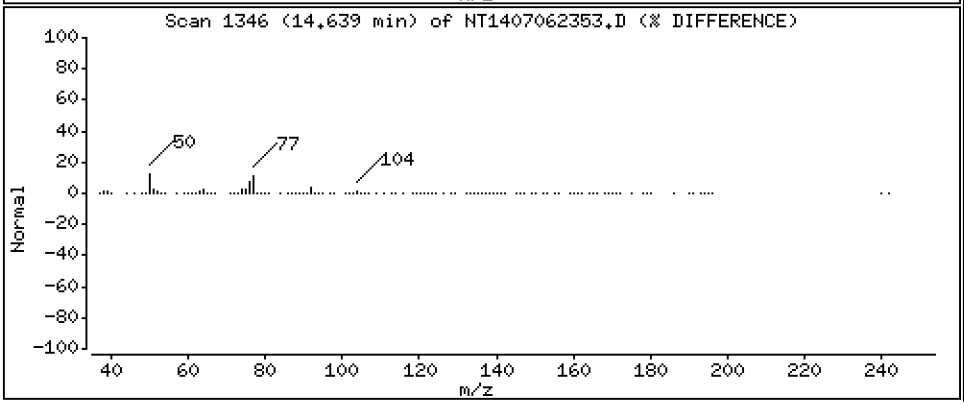
39 Dimethylphthalate

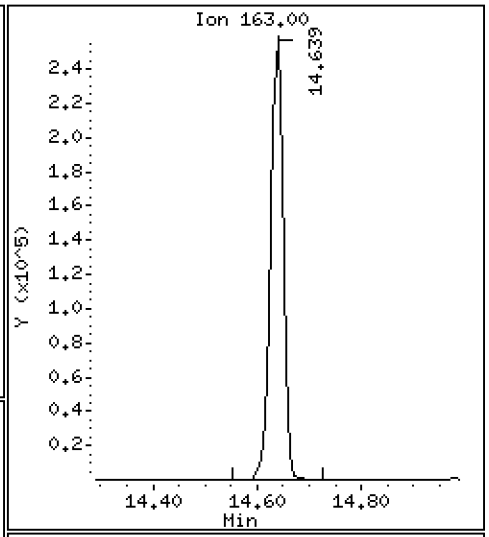
Concentration: 4.733 ug/mL

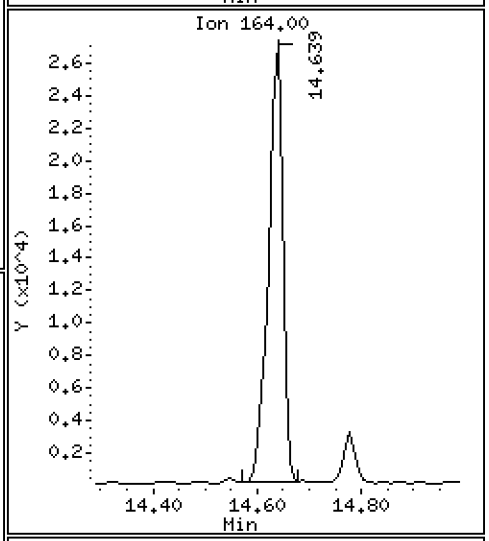


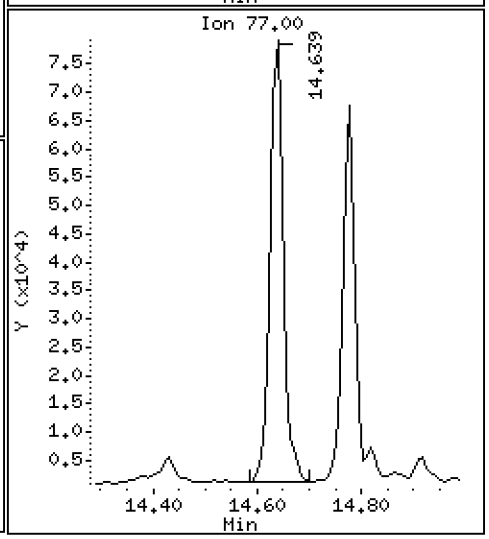












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

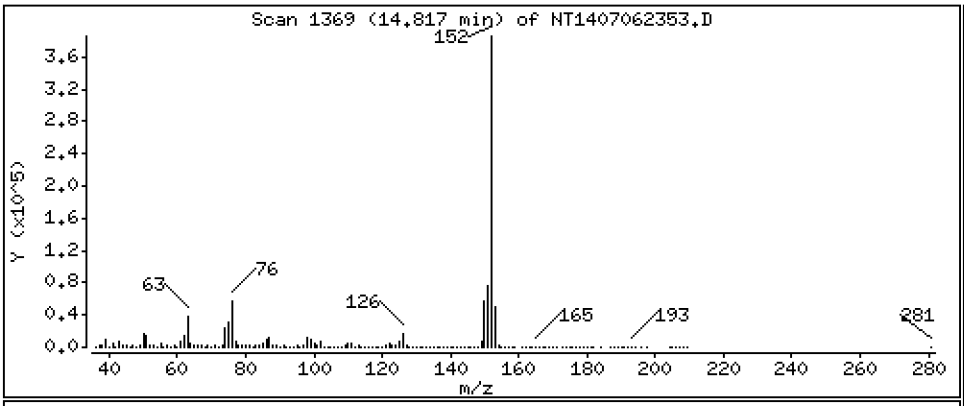
Operator: JGR

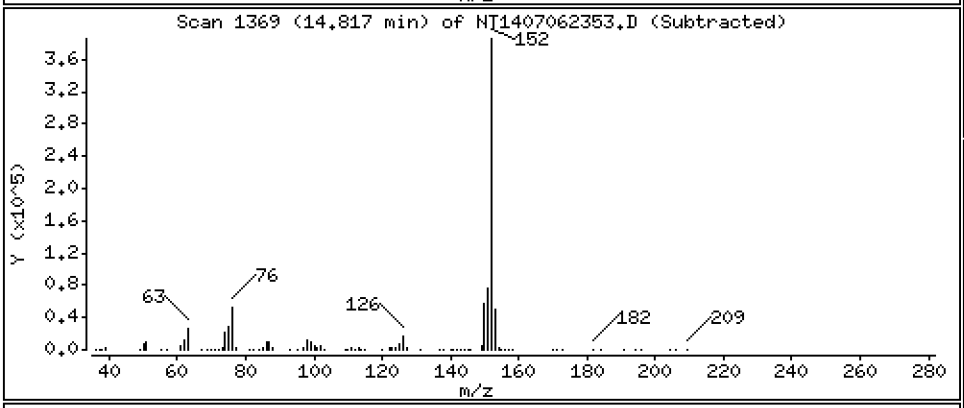
Column phase: ZB-5msi

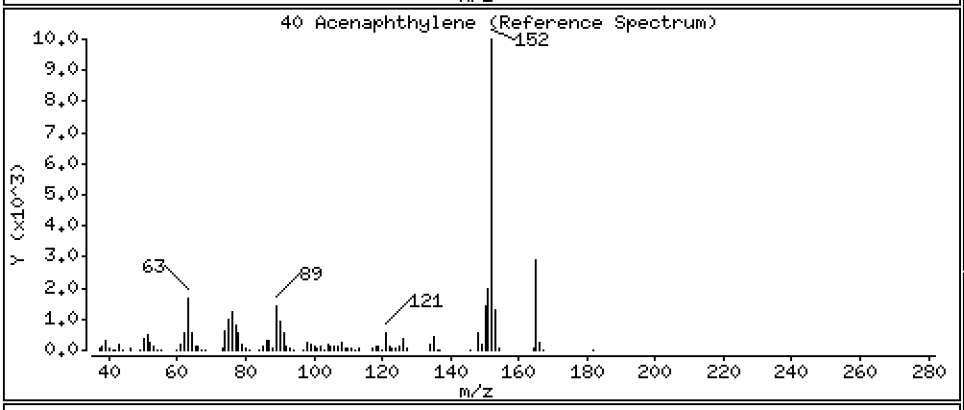
Column diameter: 0.25

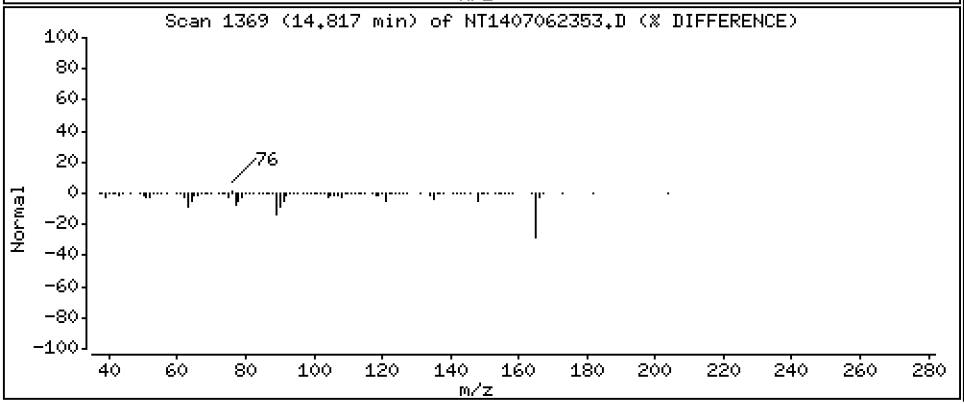
40 Acenaphthylene

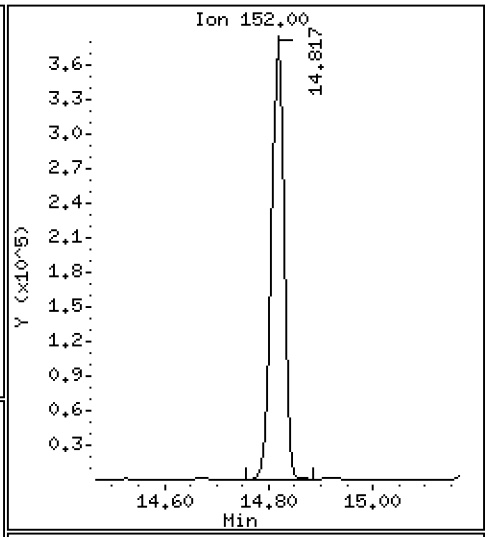
Concentration: 4.657 ug/mL

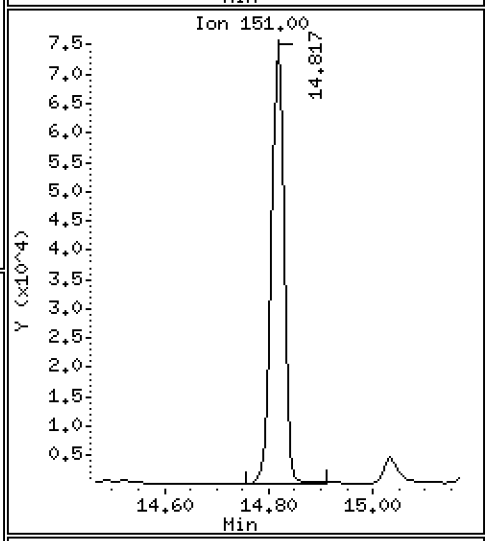


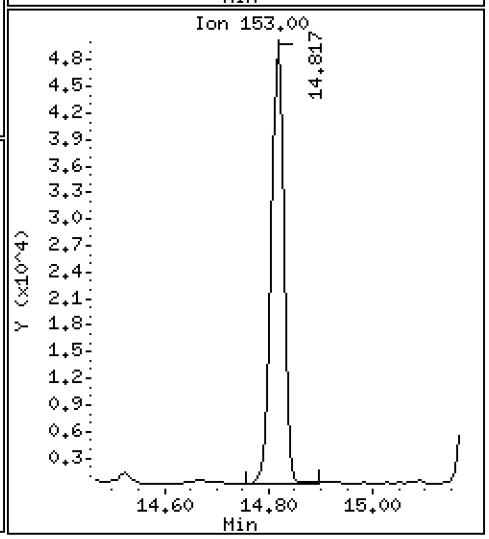












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062353.D

Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

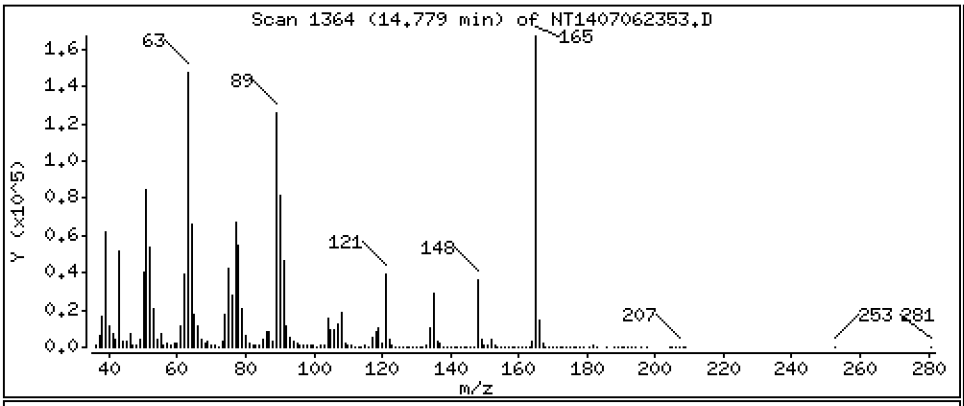
Operator: JGR

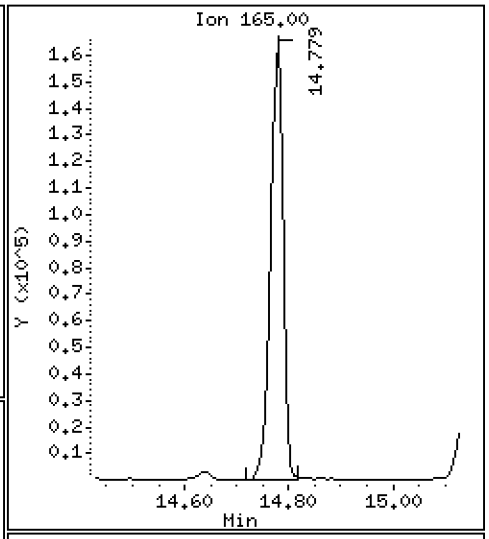
Column phase: ZB-5msi

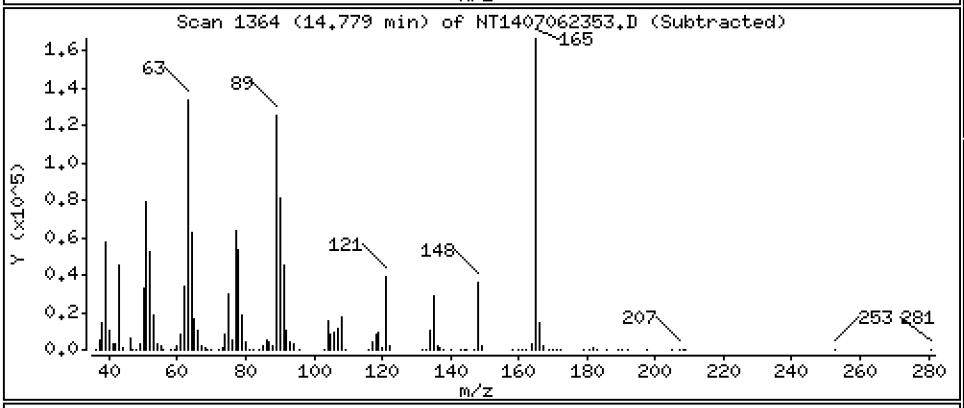
Column diameter: 0.25

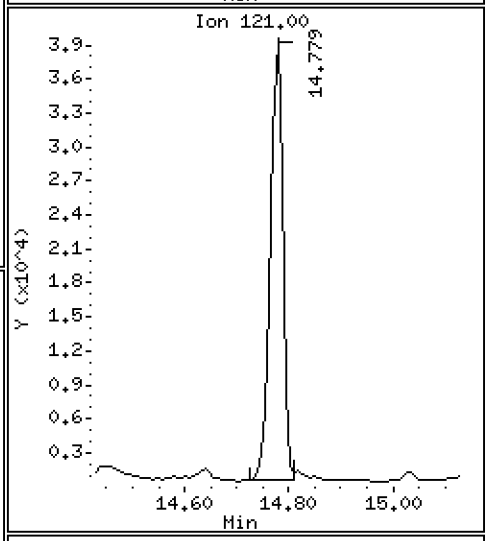
41 2,6-Dinitrotoluene

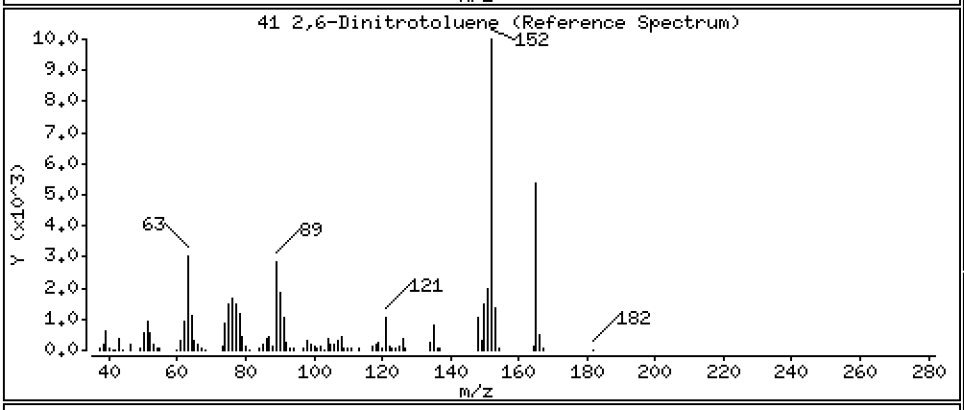
Concentration: 14.10 ug/mL

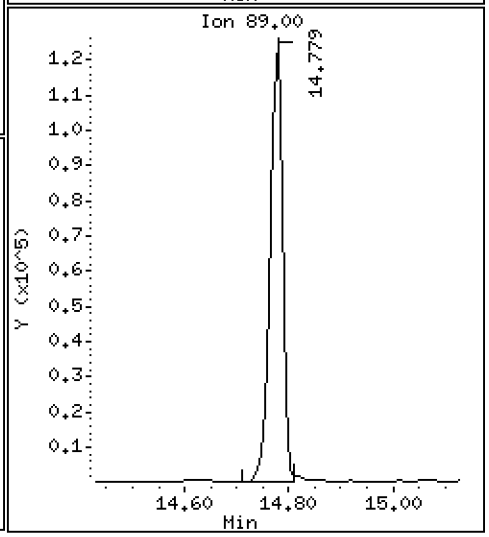


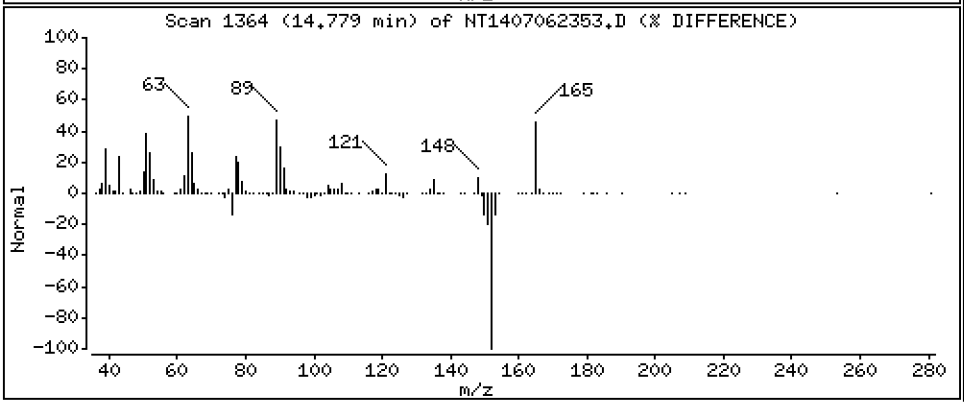












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

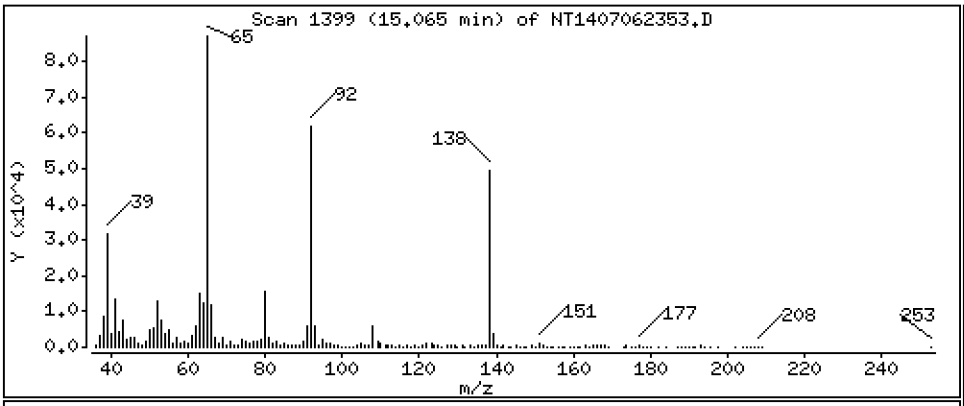
Operator: JGR

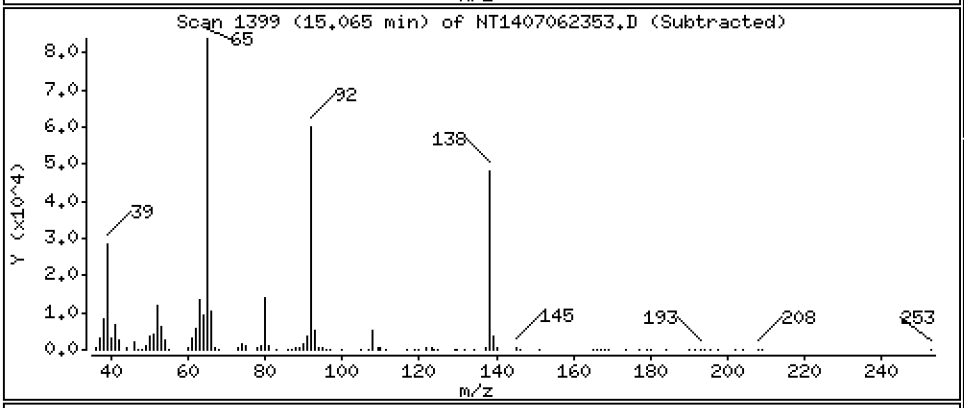
Column phase: ZB-5msi

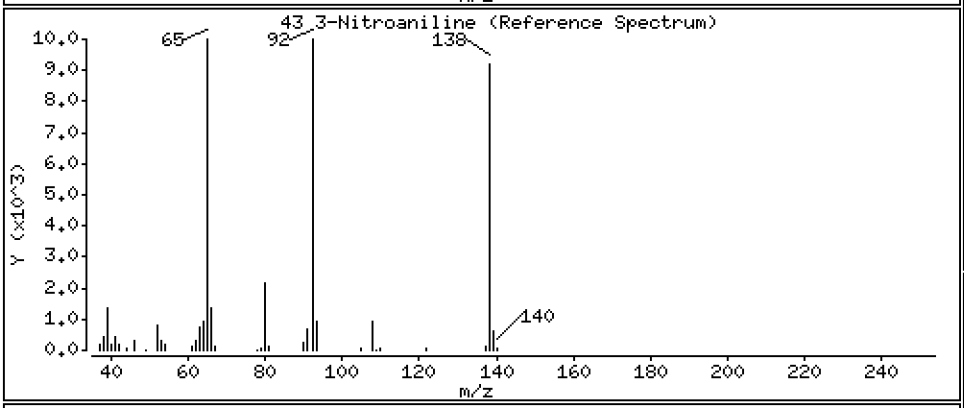
Column diameter: 0.25

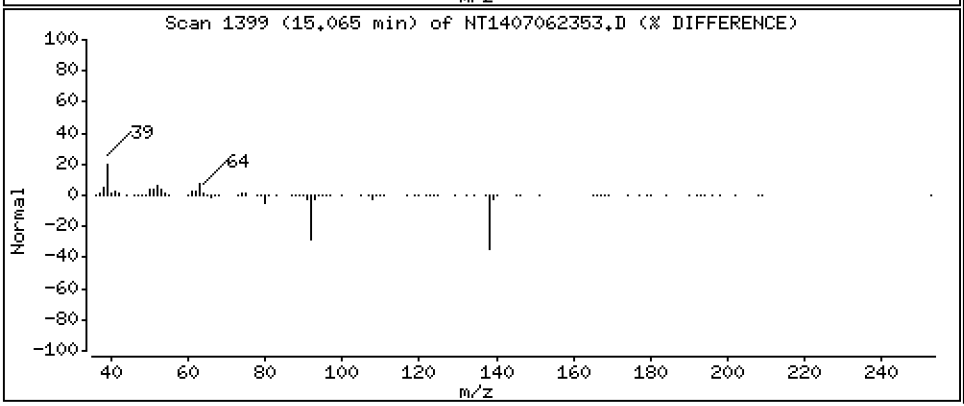
43 3-Nitroaniline

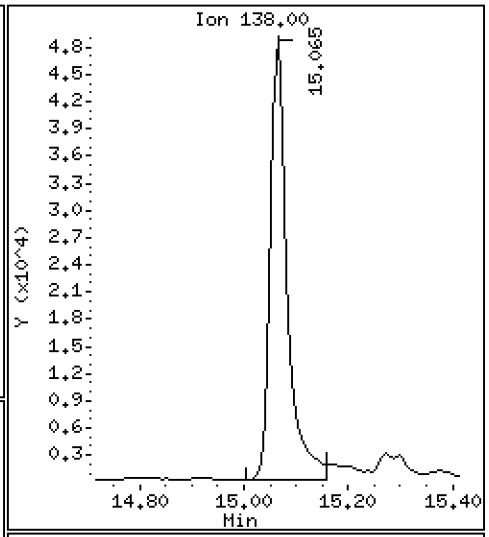
Concentration: 4.321 ug/mL

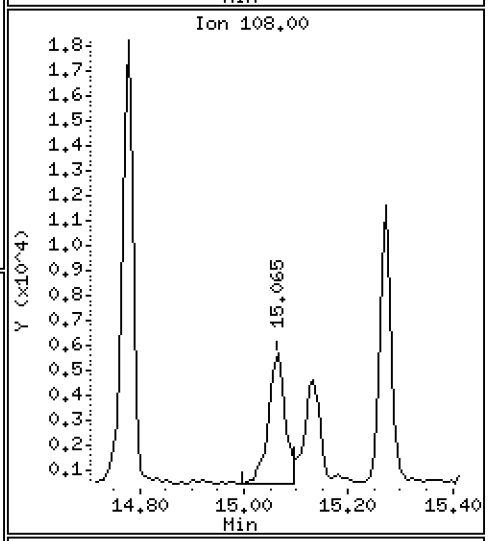


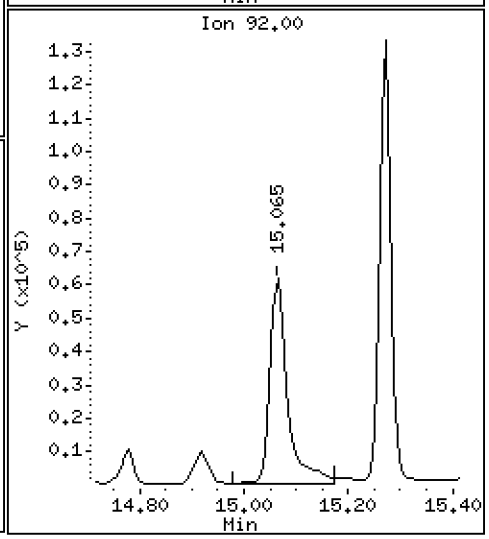












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

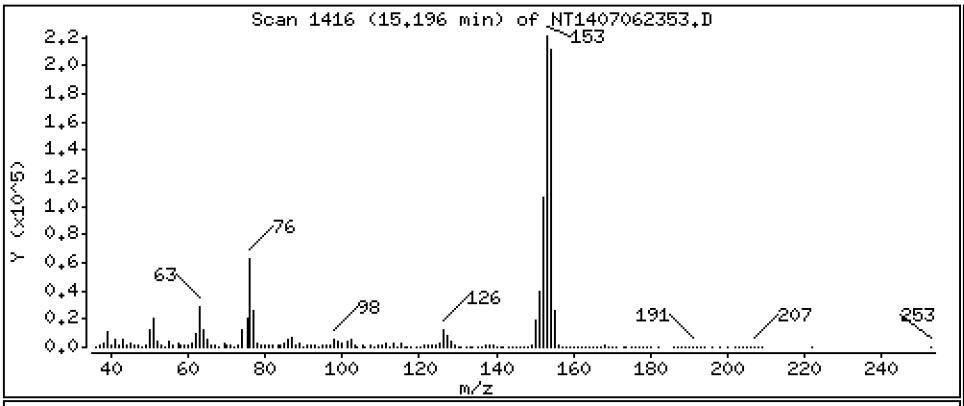
Operator: JGR

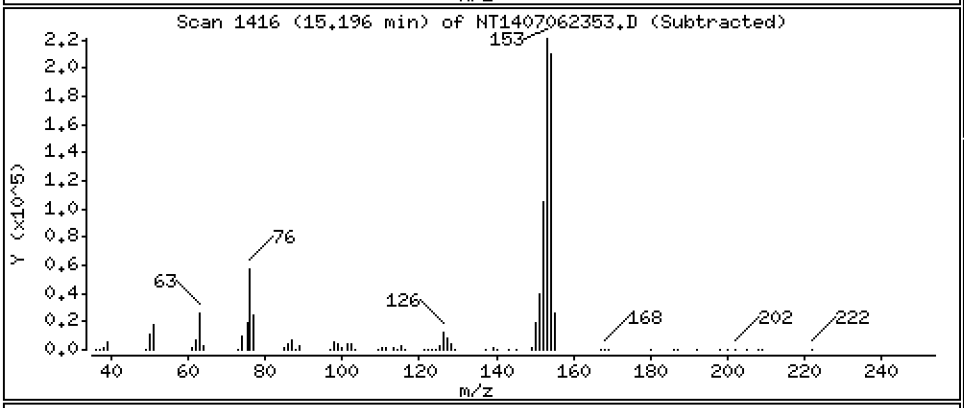
Column phase: ZB-5msi

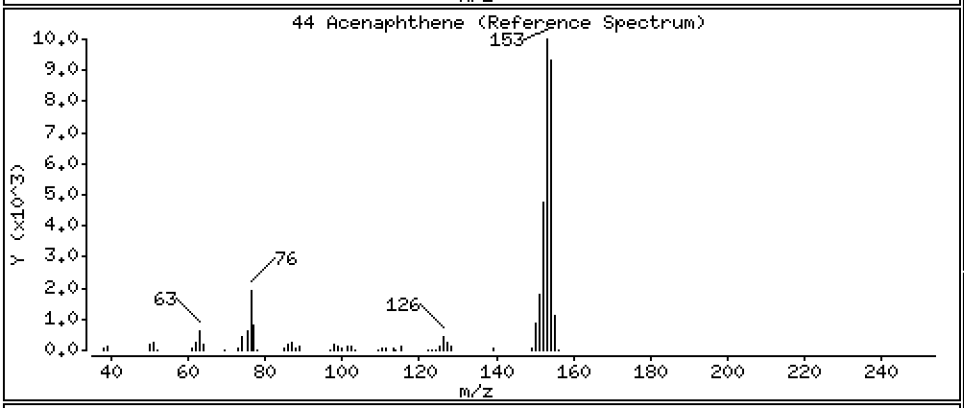
Column diameter: 0.25

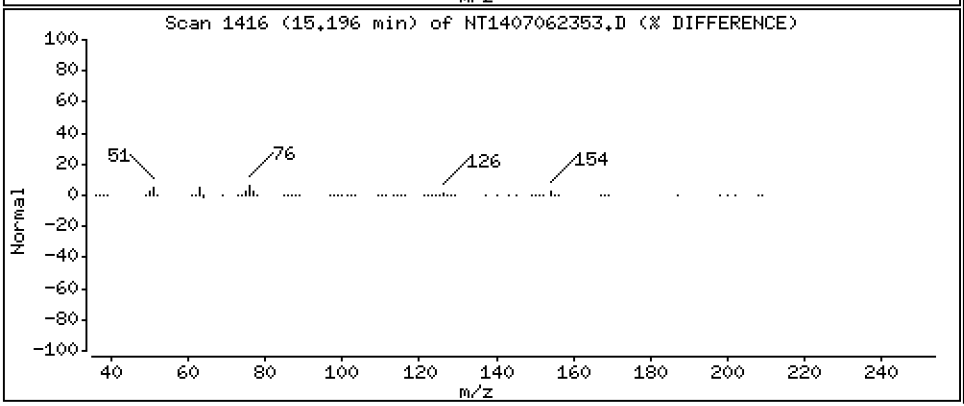
44 Acenaphthene

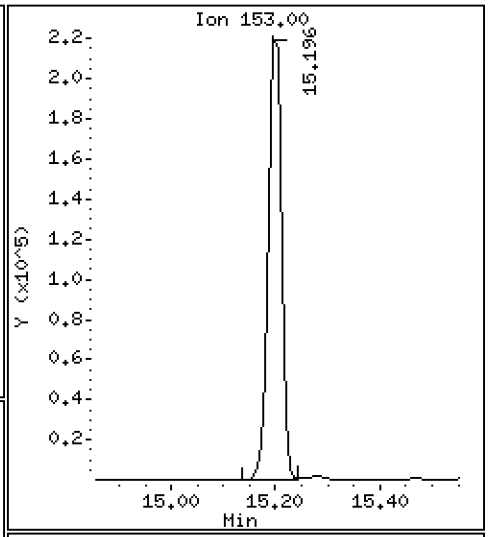
Concentration: 4.733 ug/mL

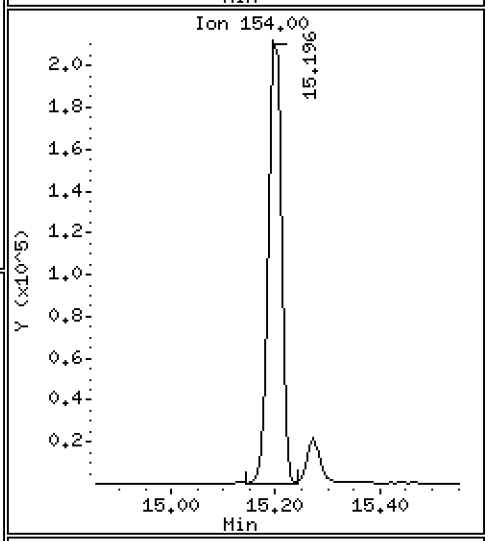


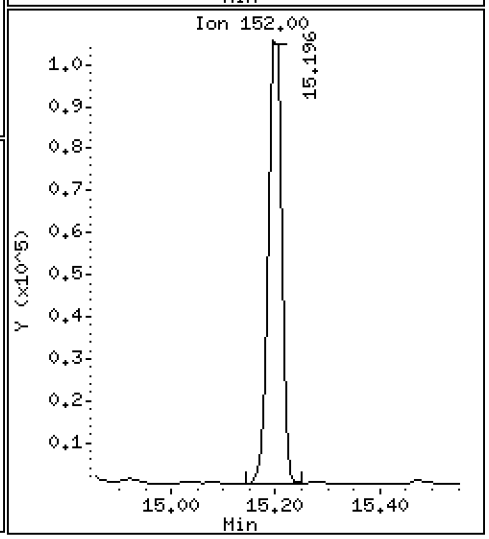












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

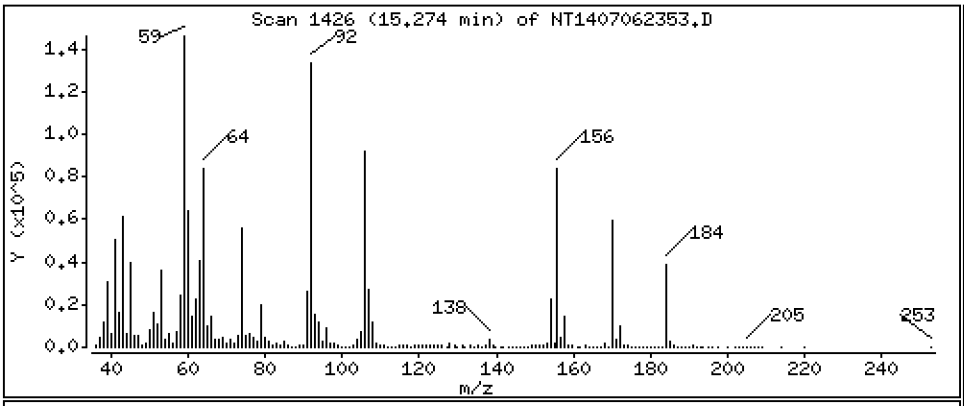
Operator: JGR

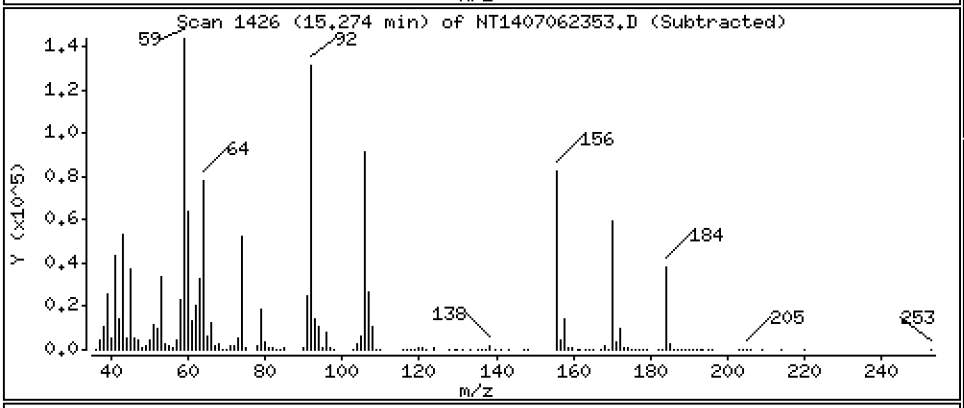
Column phase: ZB-5msi

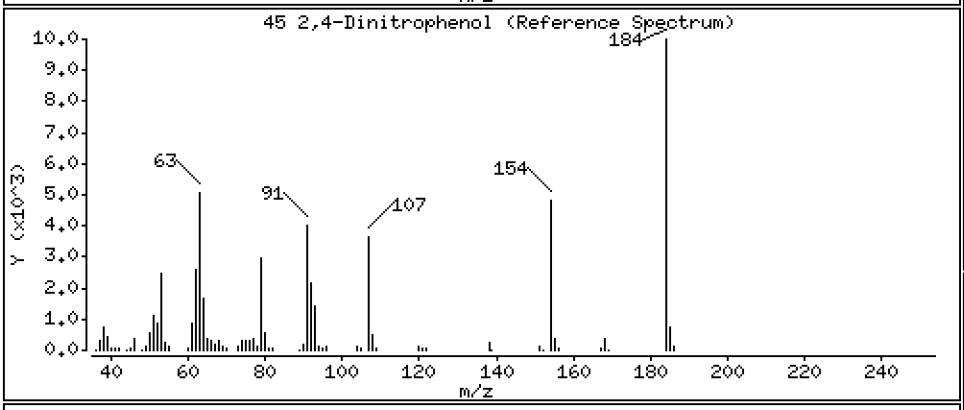
Column diameter: 0.25

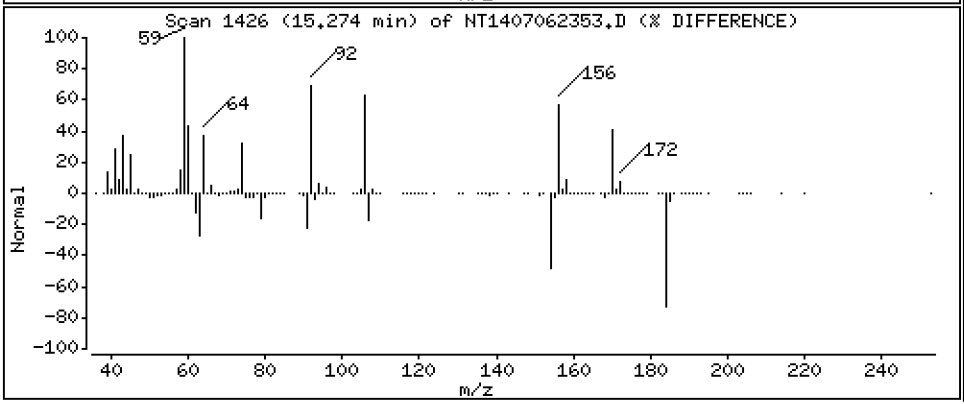
45 2,4-Dinitrophenol

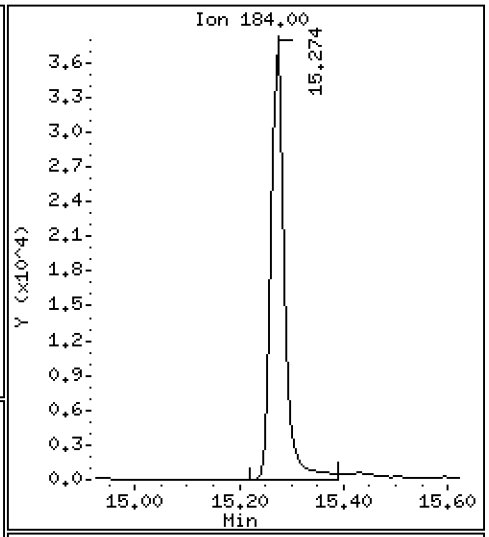
Concentration: 5.694 ug/mL

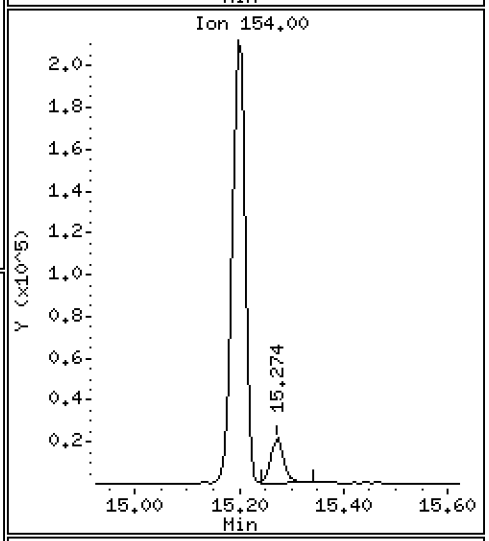


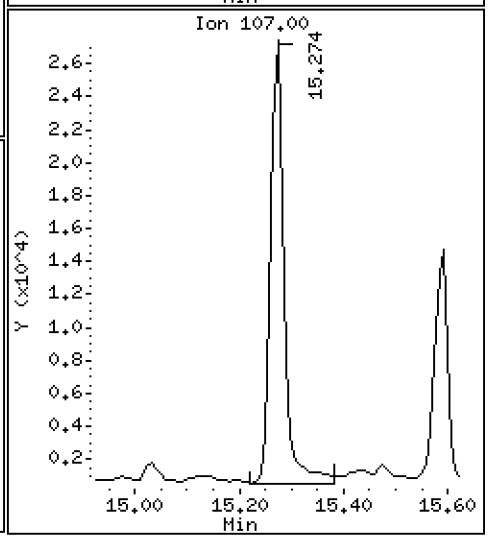












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

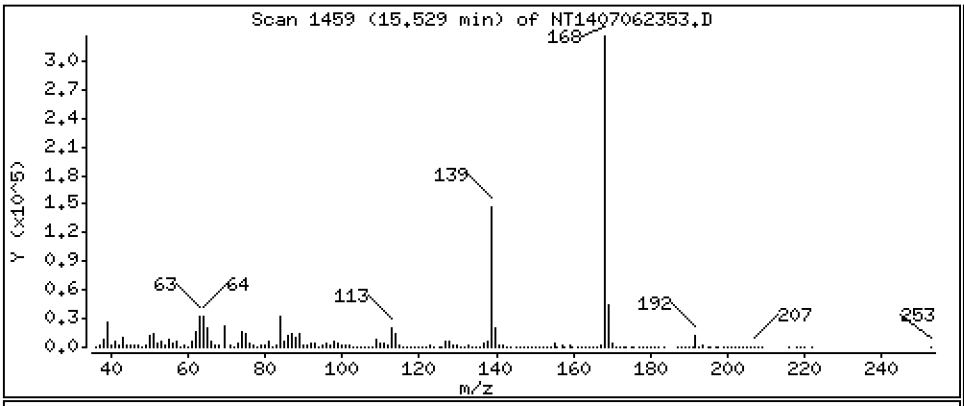
Operator: JGR

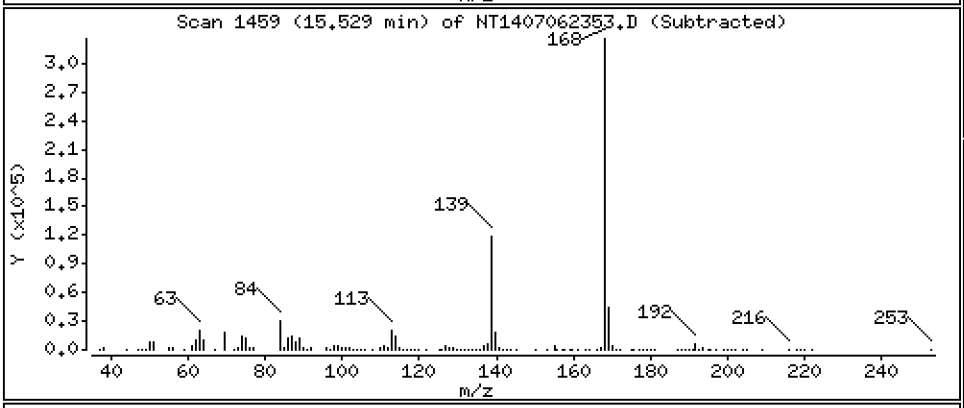
Column phase: ZB-5msi

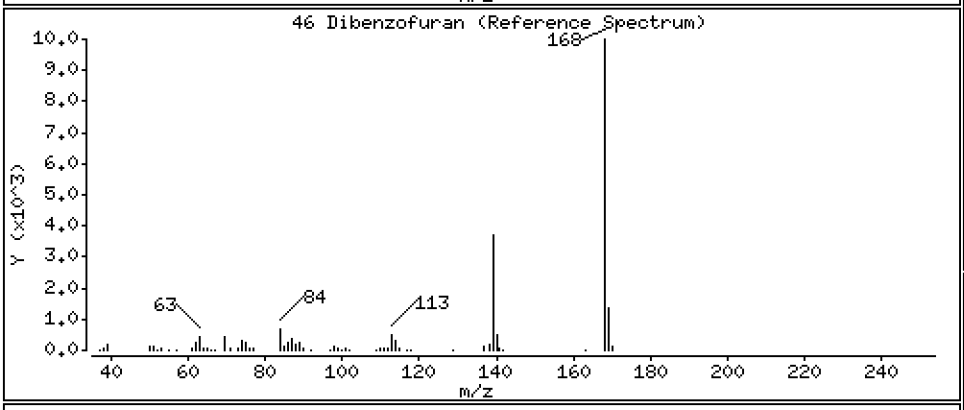
Column diameter: 0.25

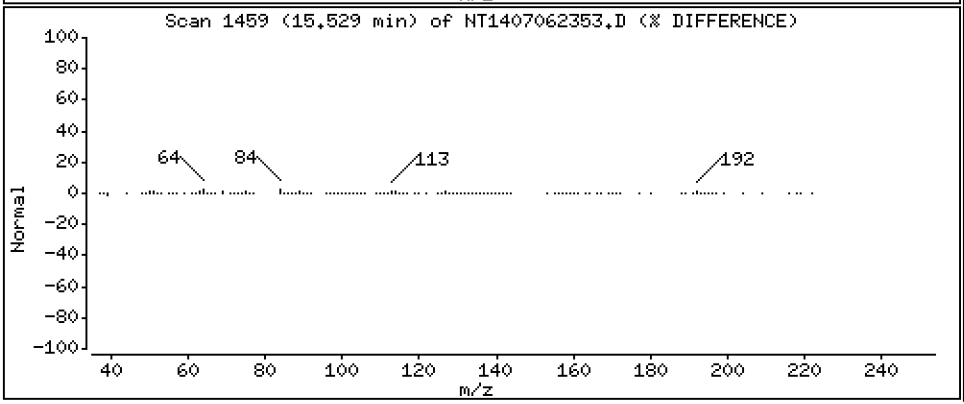
46 Dibenzofuran

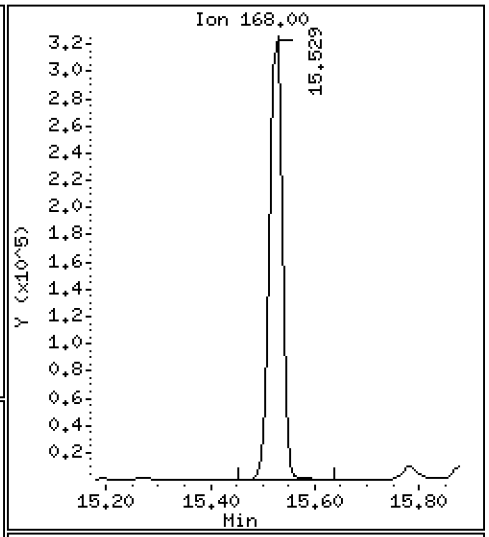
Concentration: 4.665 ug/mL

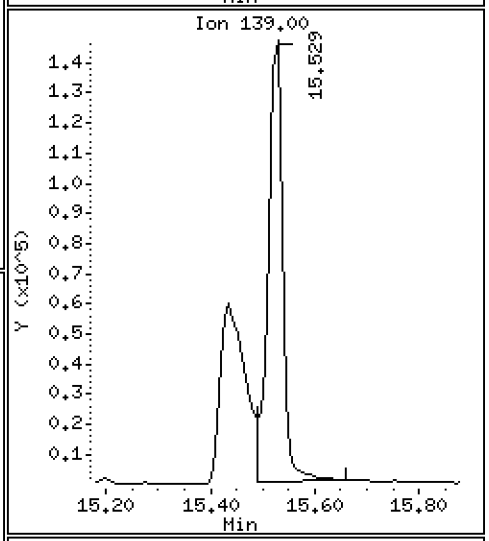


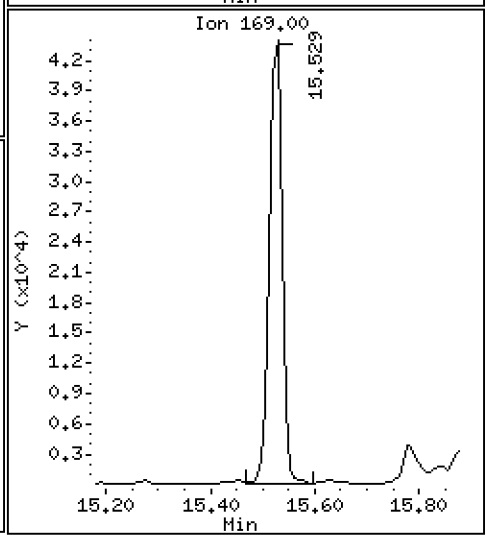












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

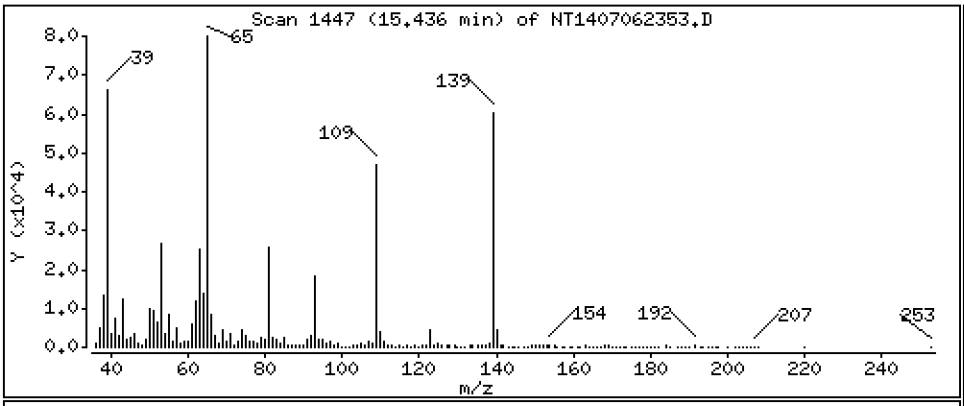
Operator: JGR

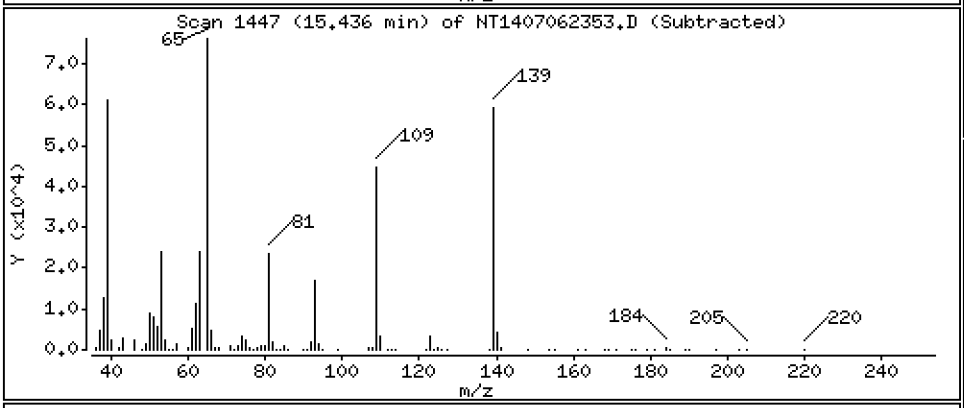
Column phase: ZB-5msi

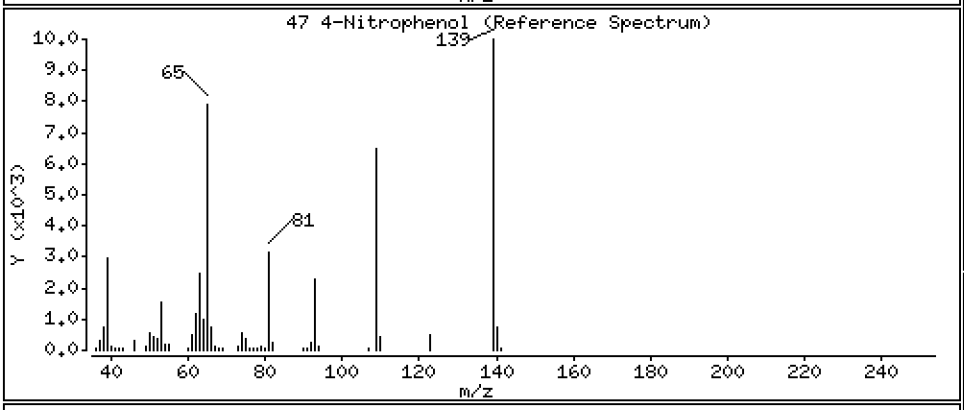
Column diameter: 0.25

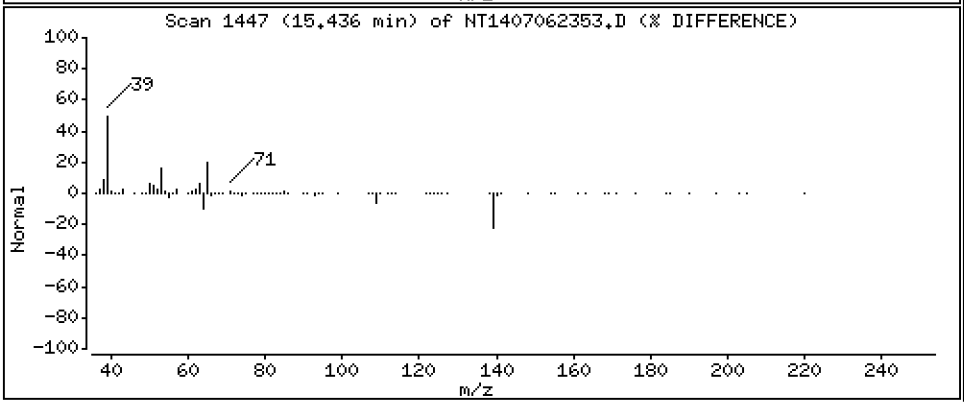
47 4-Nitrophenol

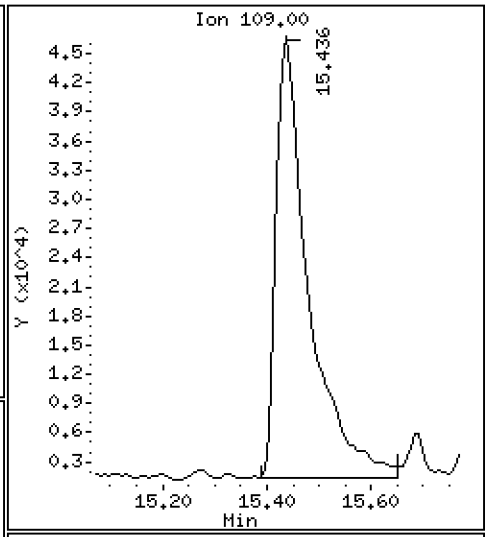
Concentration: 10.88 ug/mL

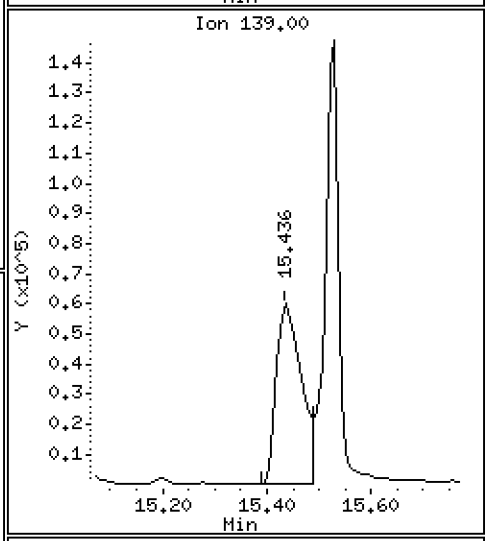


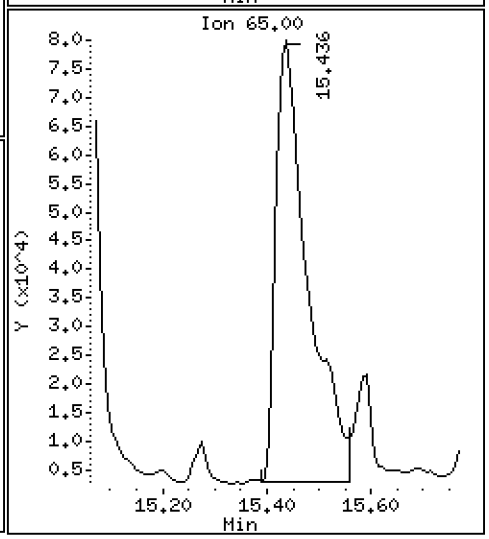












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

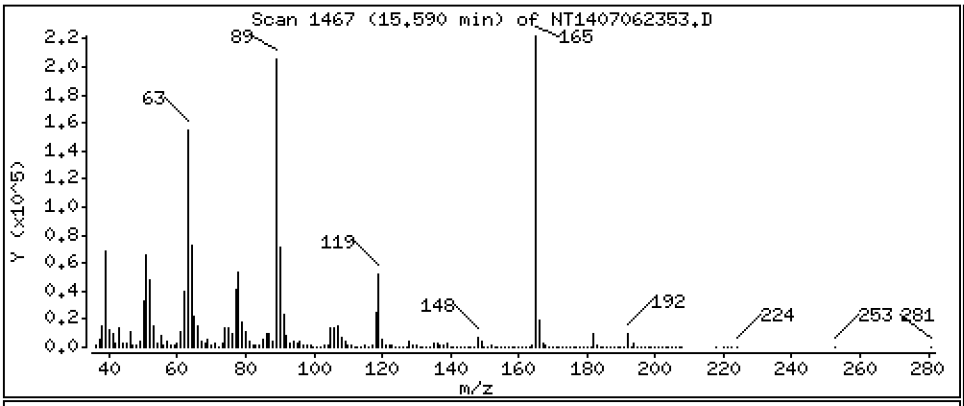
Operator: JGR

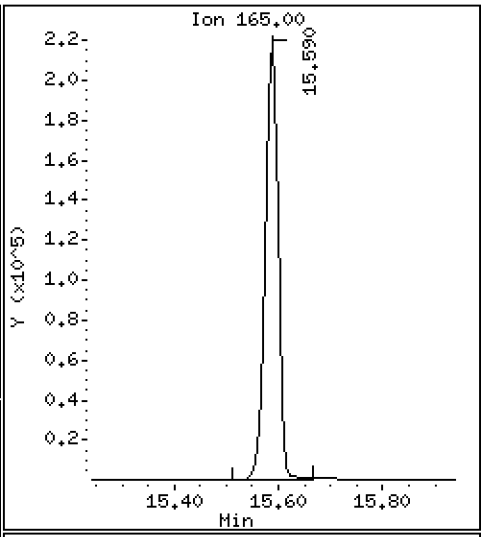
Column phase: ZB-5msi

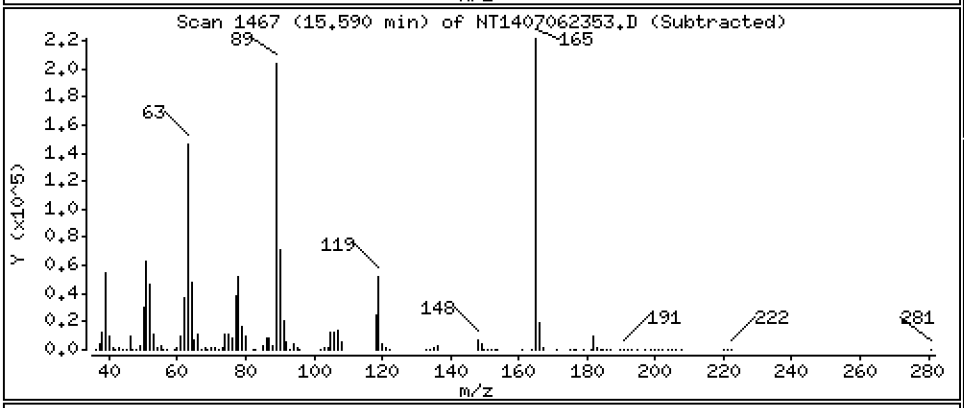
Column diameter: 0.25

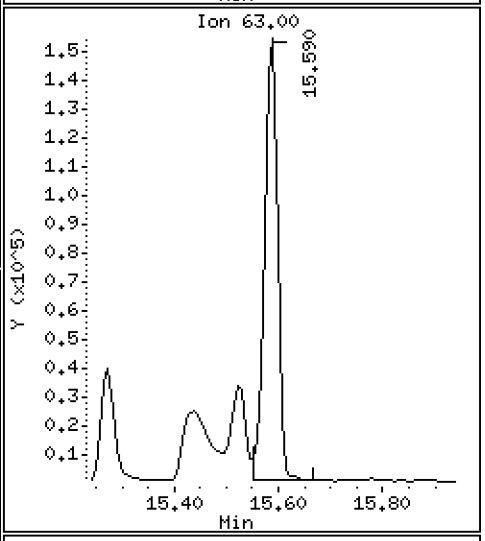
48 2,4-Dinitrotoluene

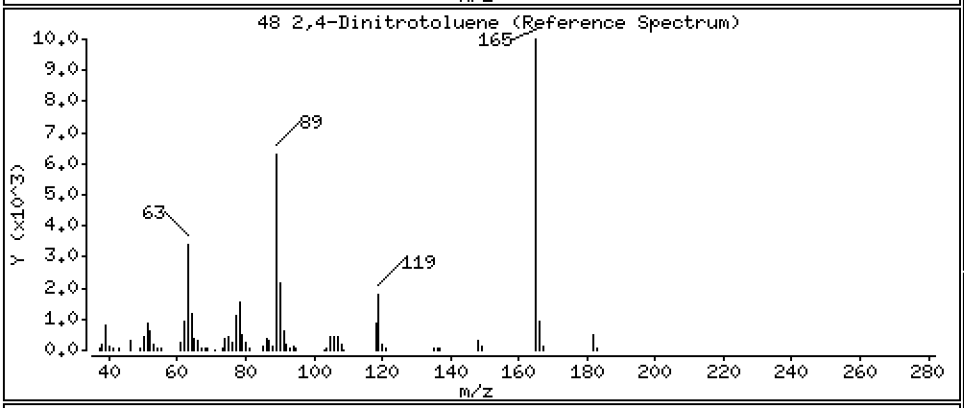
Concentration: 13.97 ug/mL

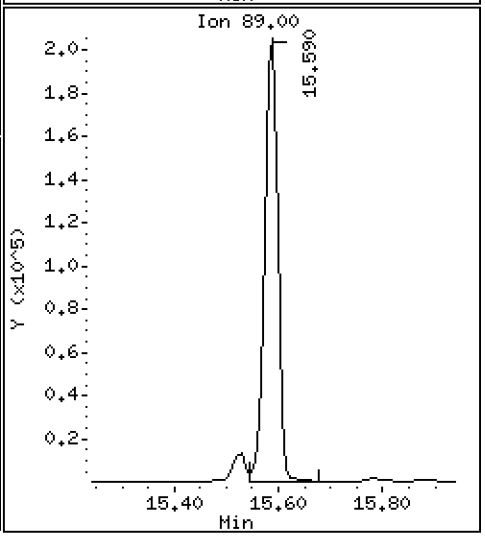


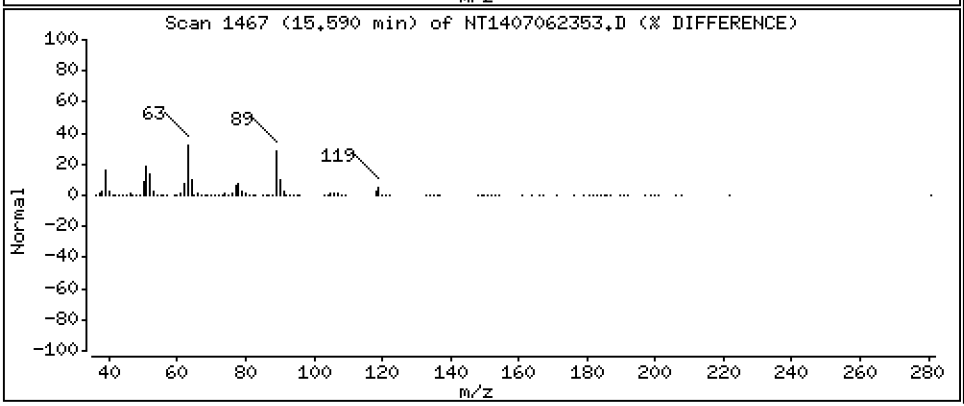












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062353.D

Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

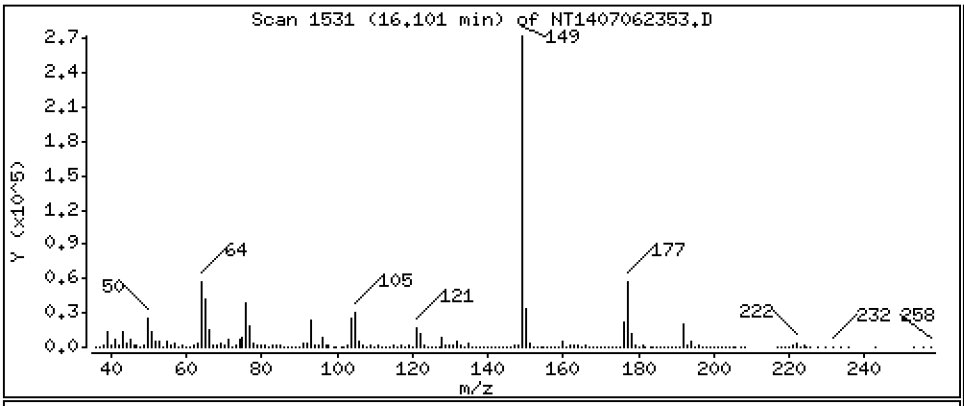
Operator: JGR

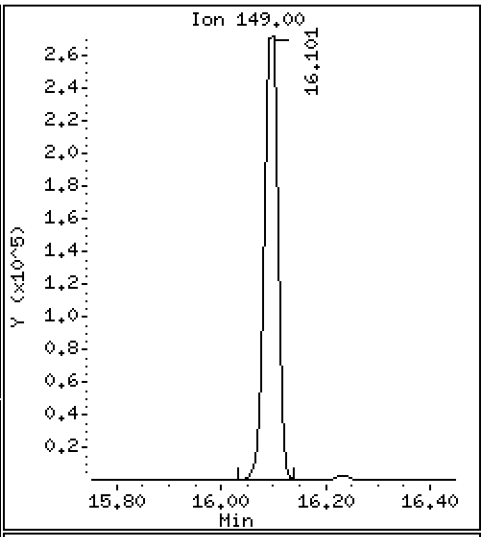
Column phase: ZB-5msi

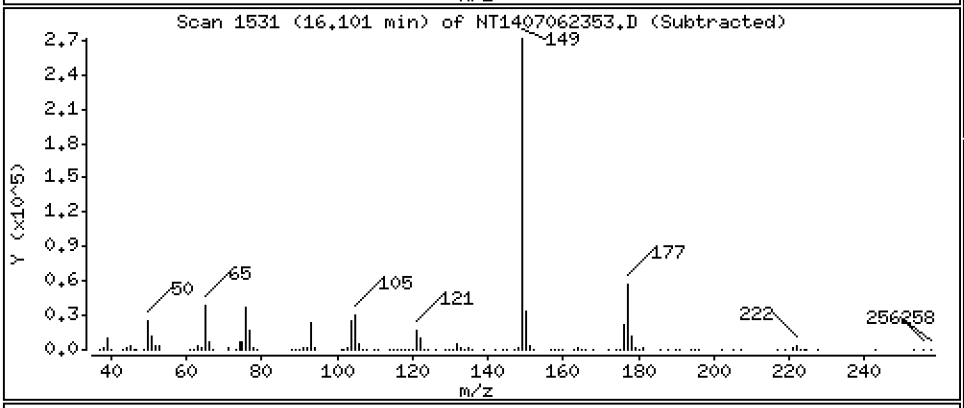
Column diameter: 0.25

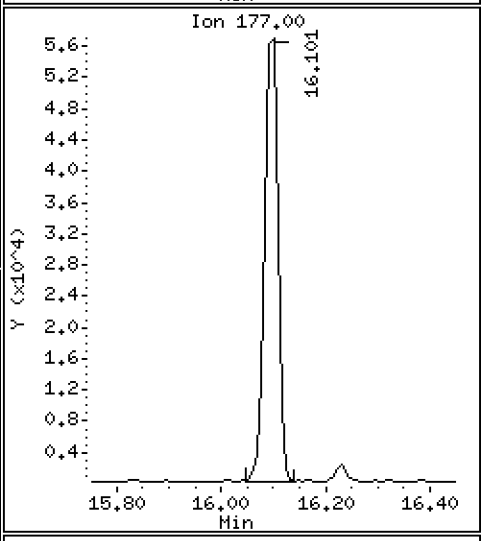
50 Diethylphthalate

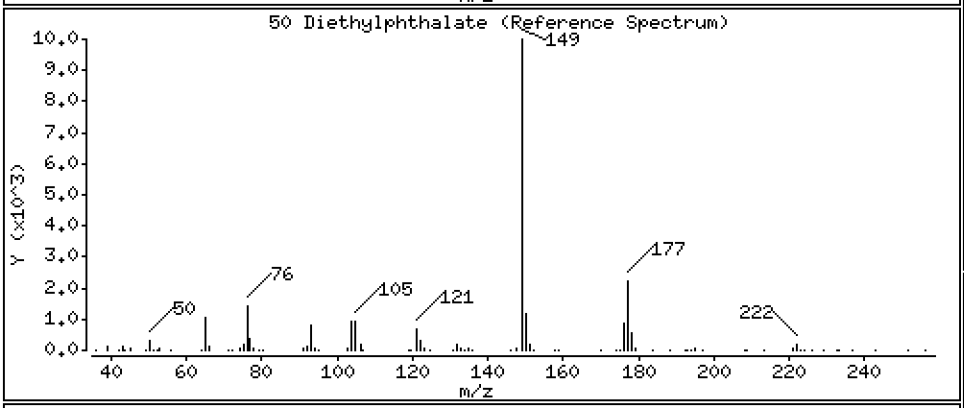
Concentration: 4.643 ug/mL

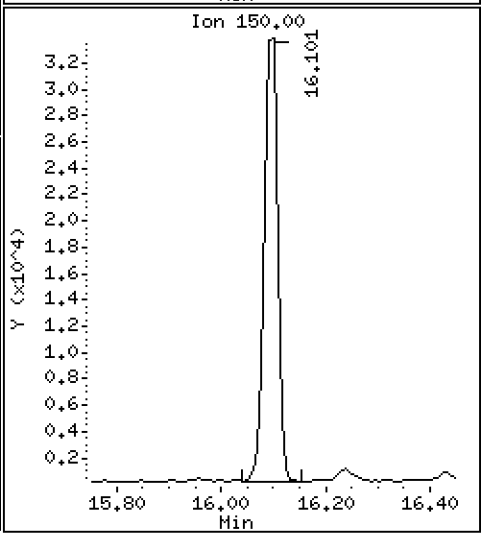


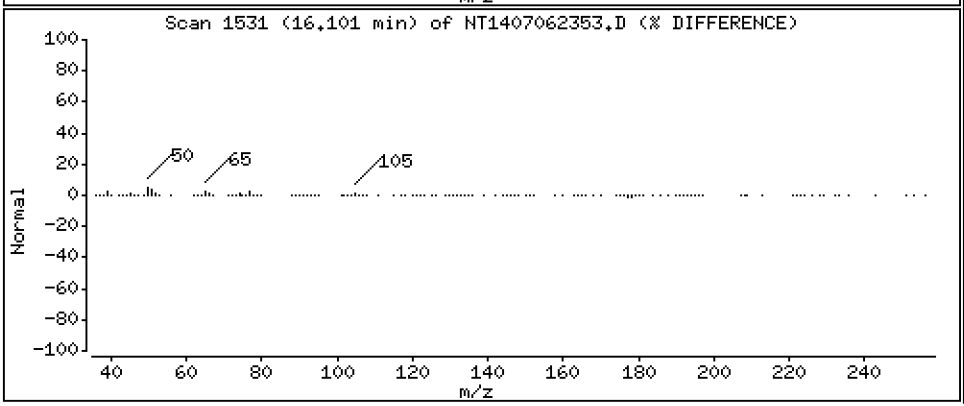












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062353.D

Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

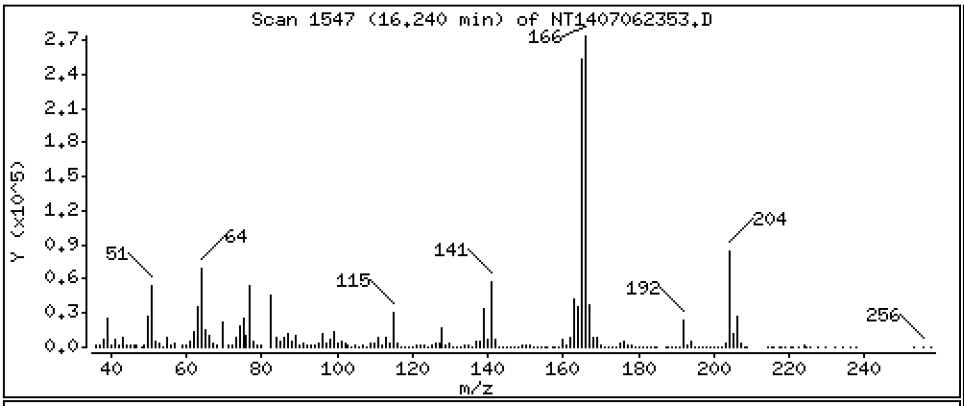
Operator: JGR

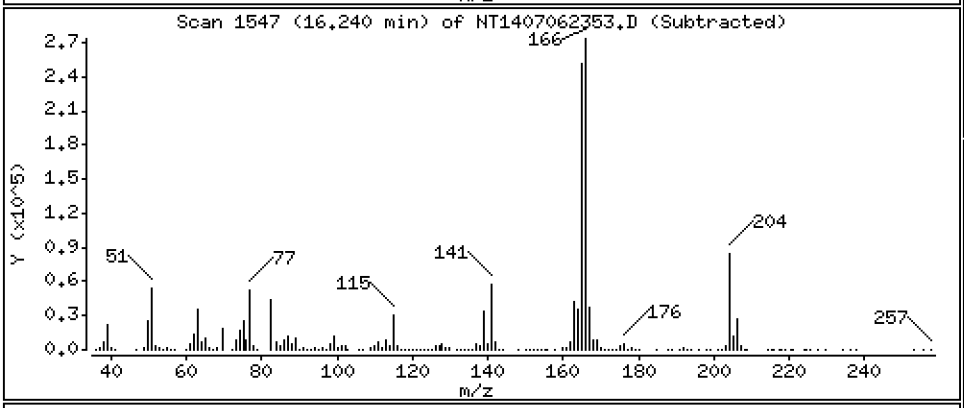
Column phase: ZB-5msi

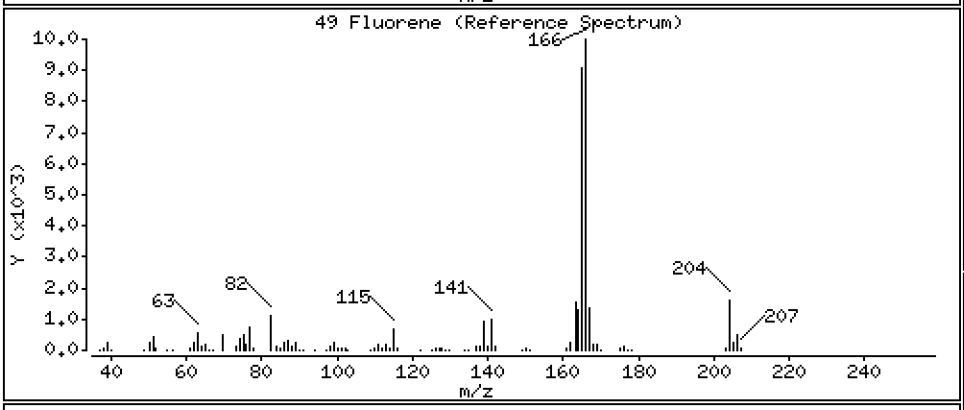
Column diameter: 0.25

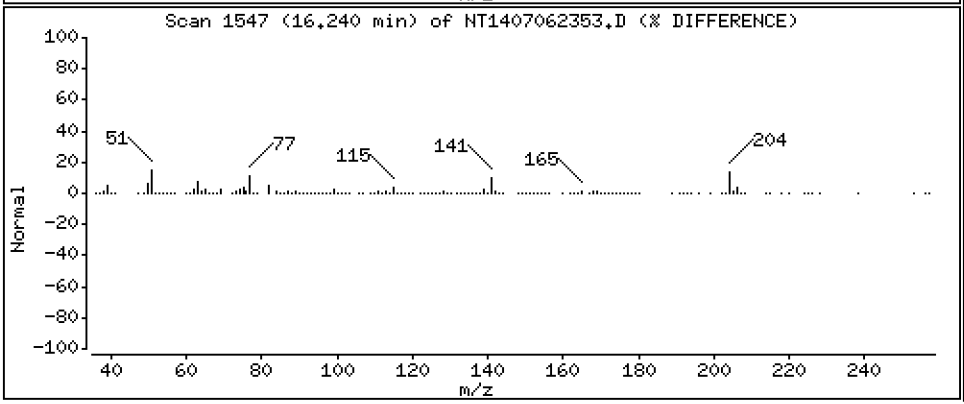
49 Fluorene

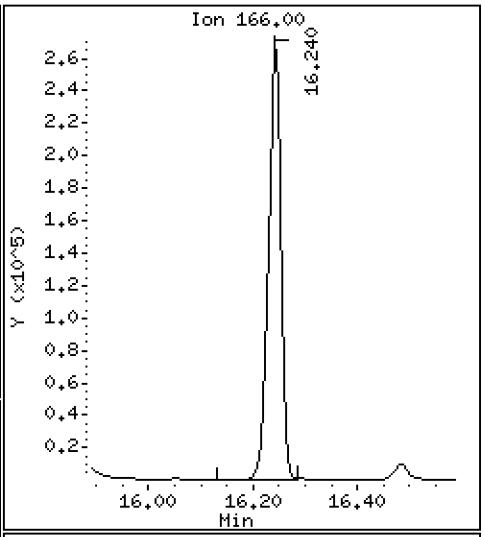
Concentration: 4.960 ug/mL

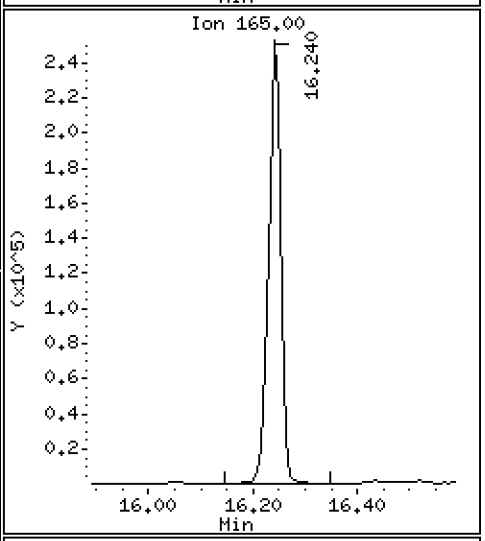


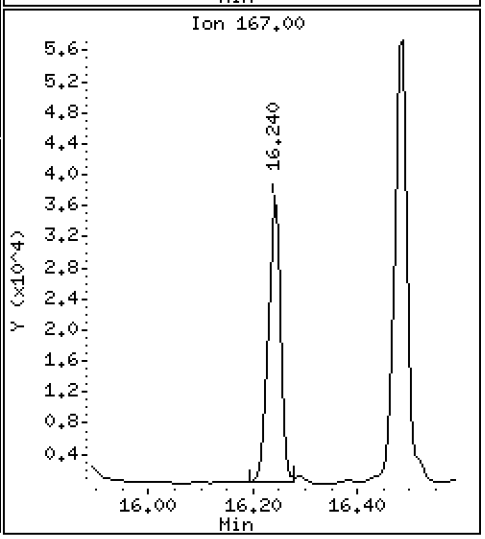












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

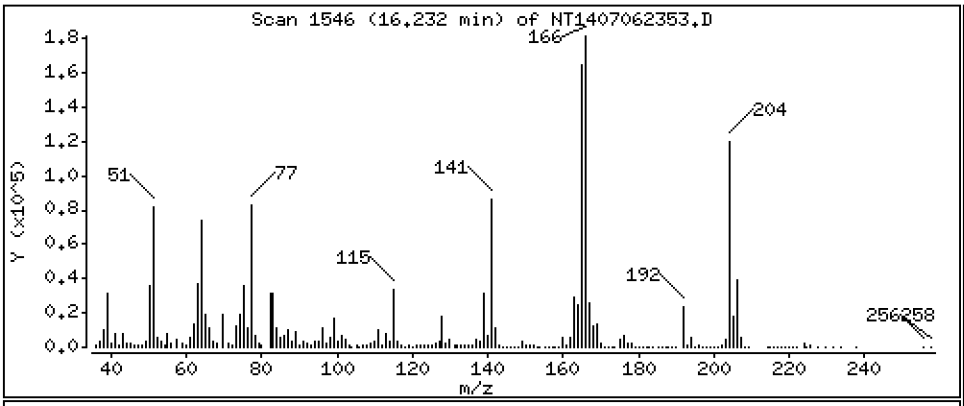
Operator: JGR

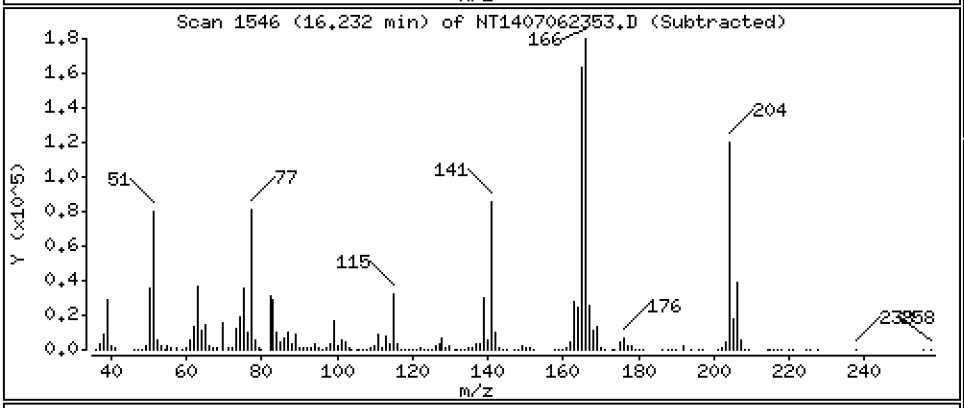
Column phase: ZB-5msi

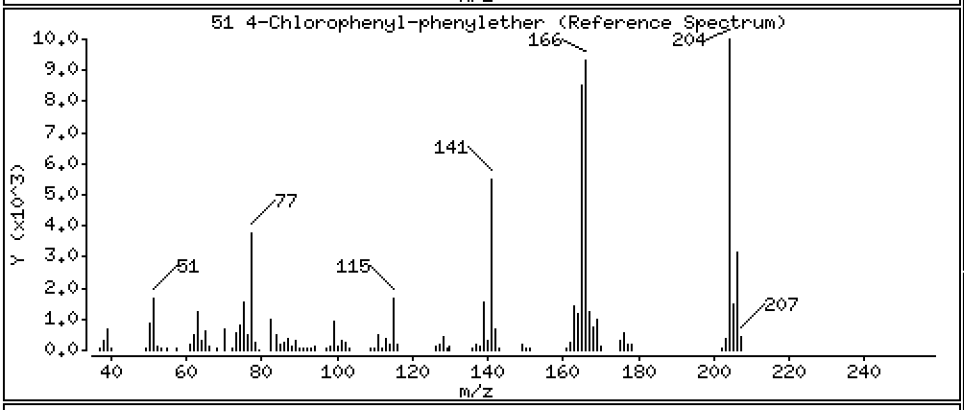
Column diameter: 0.25

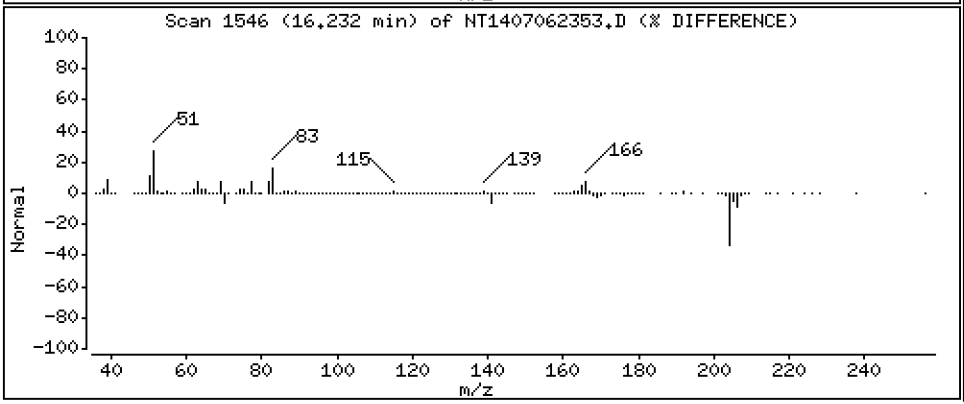
51 4-Chlorophenyl-phenylether

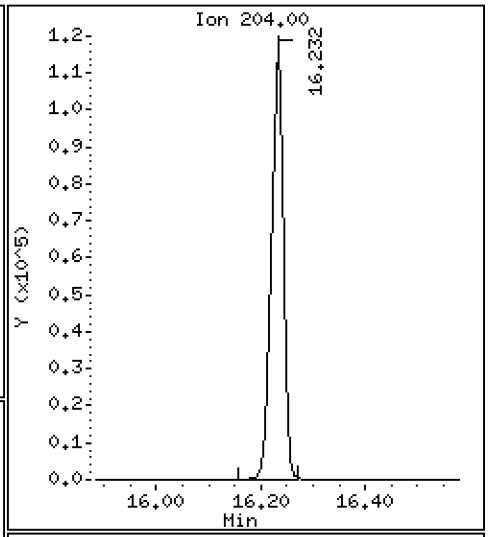
Concentration: 4.911 ug/mL

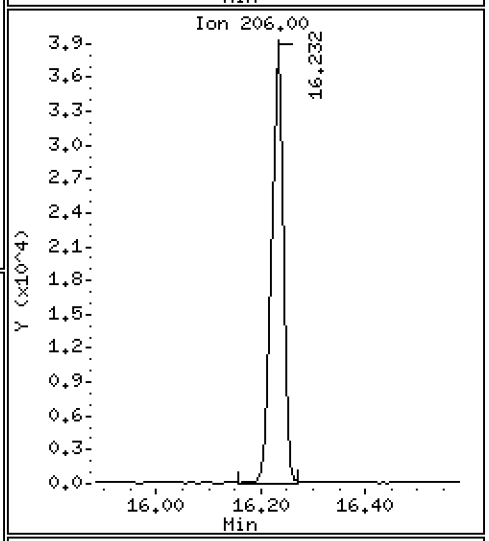


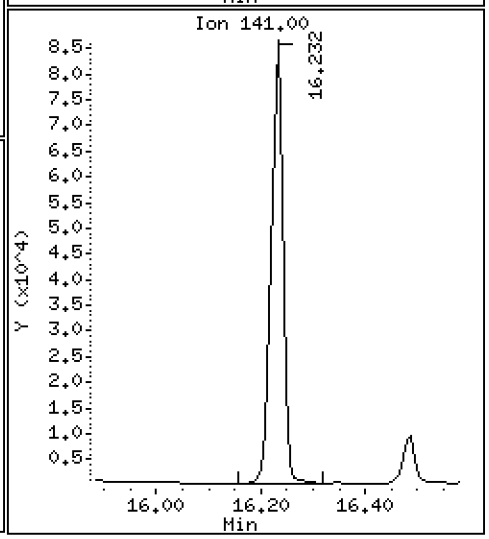












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

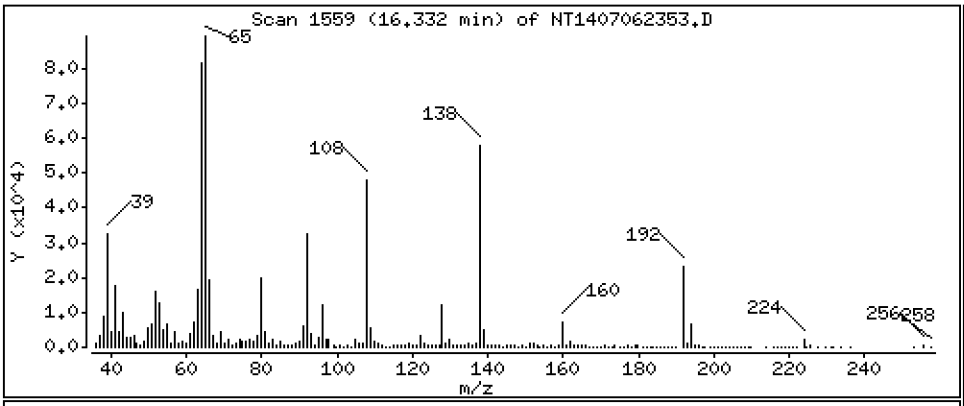
Operator: JGR

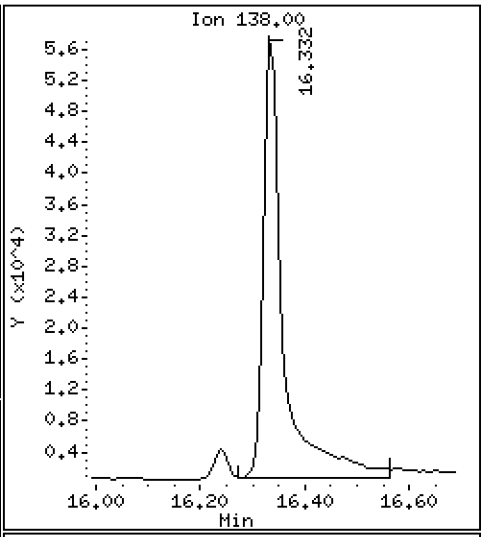
Column phase: ZB-5msi

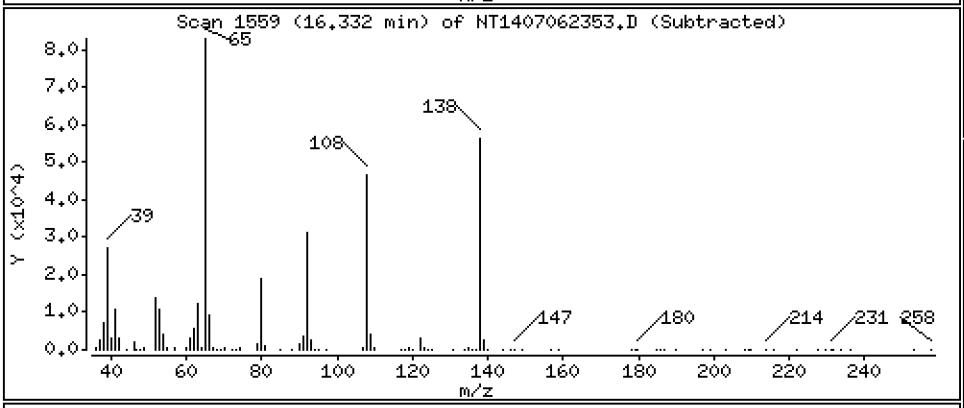
Column diameter: 0.25

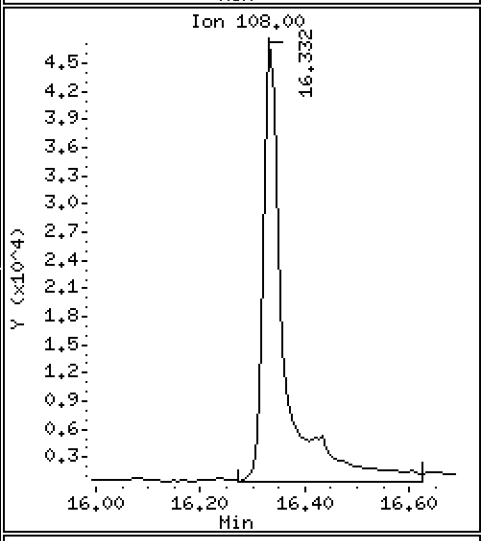
52 4-Nitroaniline

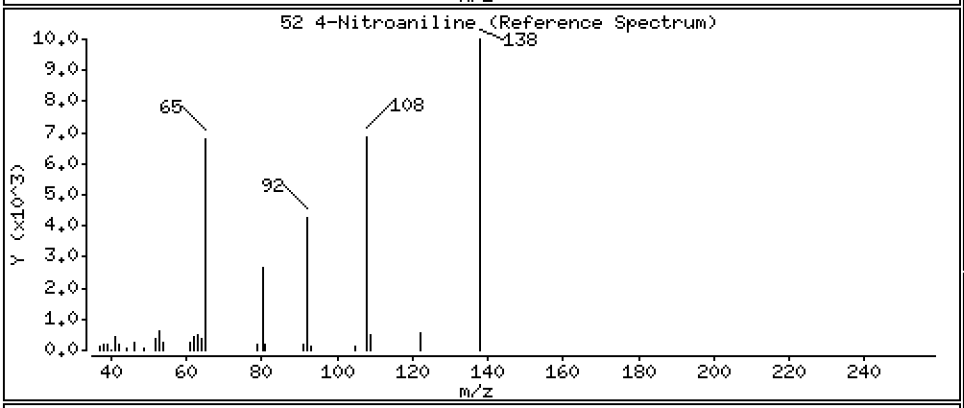
Concentration: 5.881 ug/mL

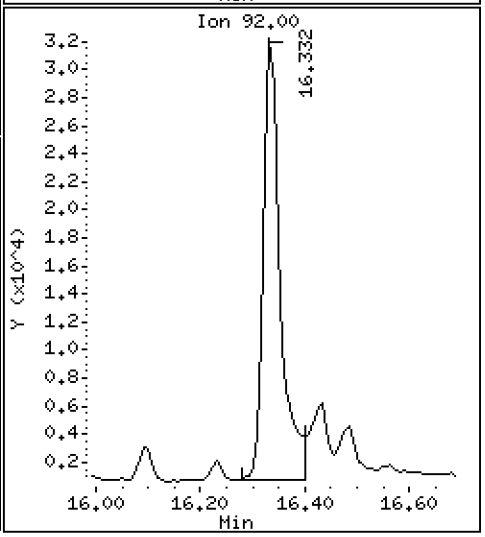


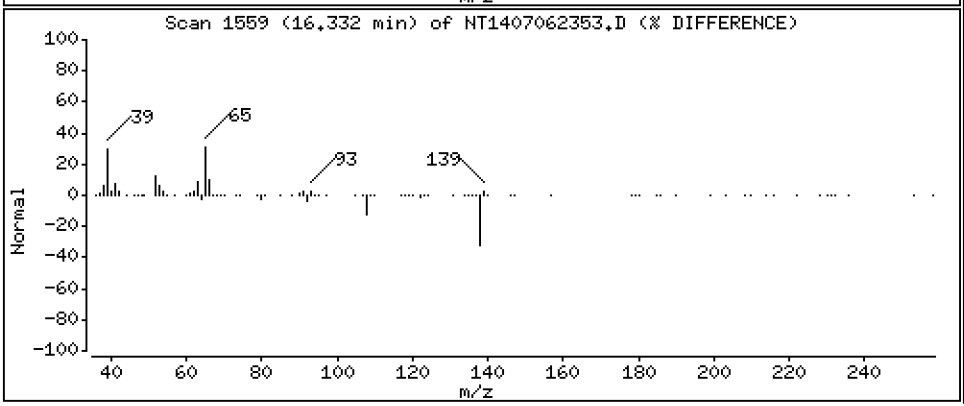












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

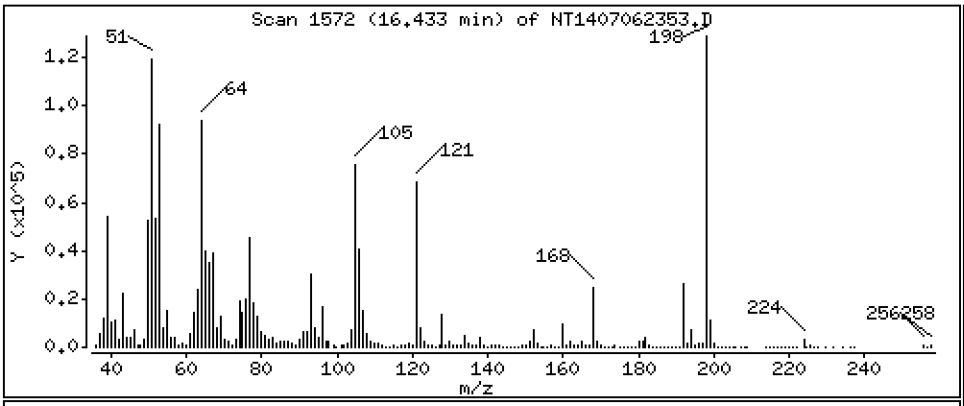
Operator: JGR

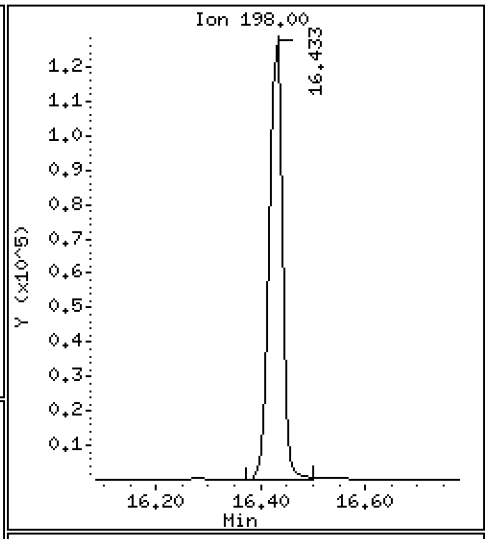
Column phase: ZB-5msi

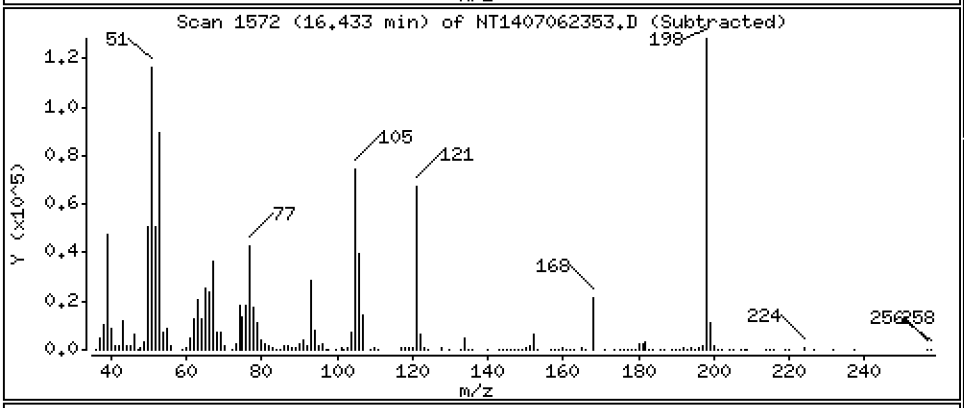
Column diameter: 0.25

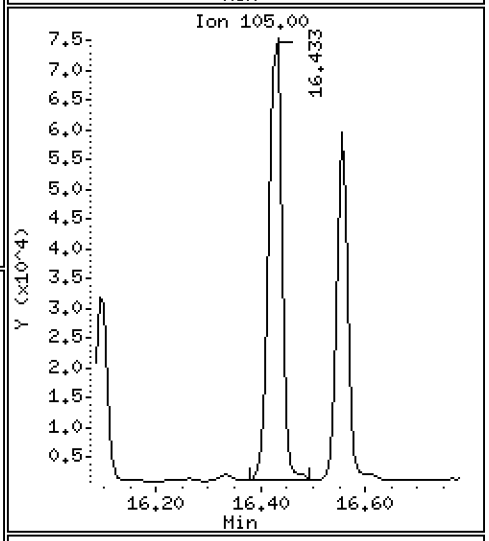
53 4,6-Dinitro-2-methylphenol

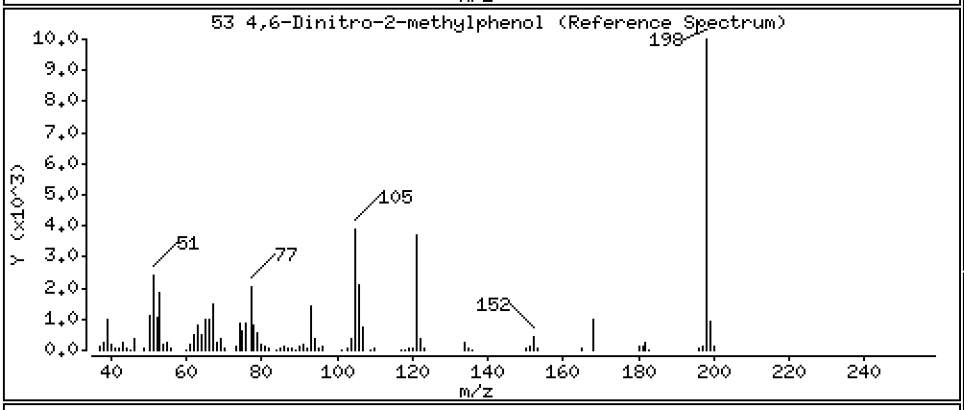
Concentration: 14.22 ug/mL

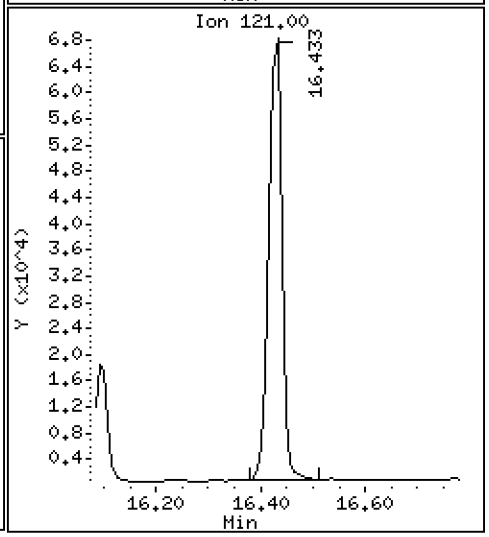


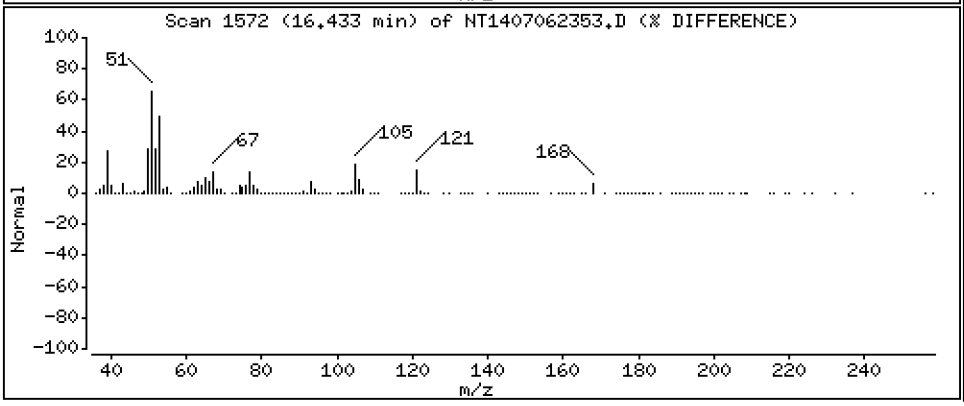












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

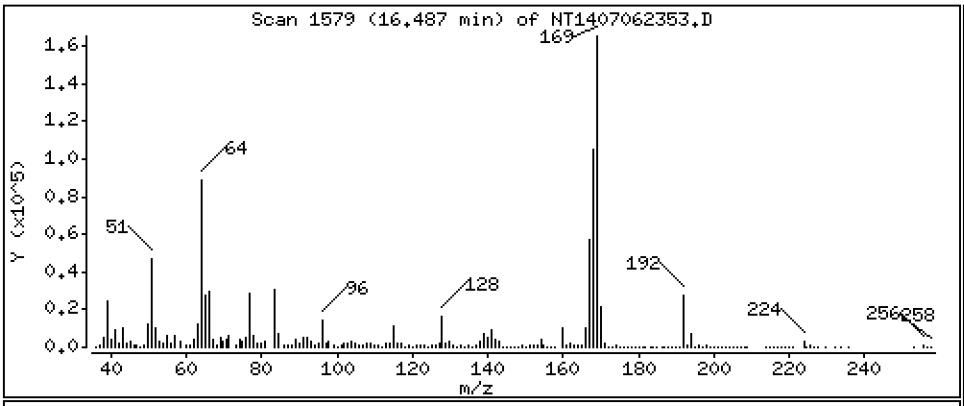
Operator: JGR

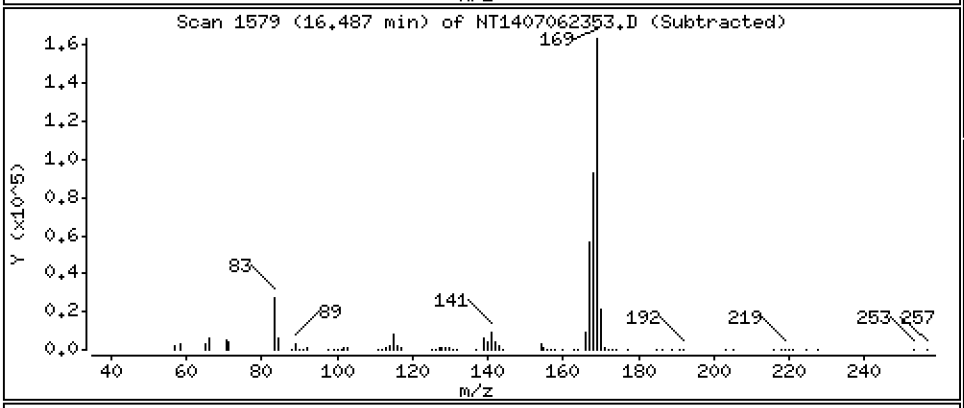
Column phase: ZB-5msi

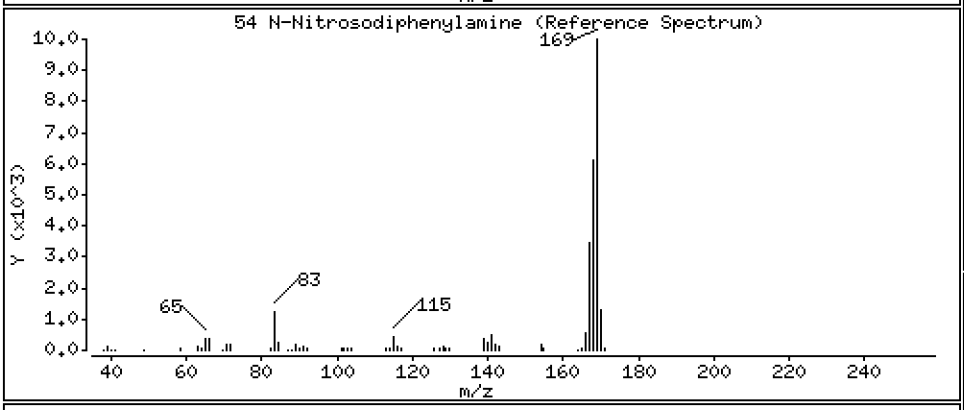
Column diameter: 0.25

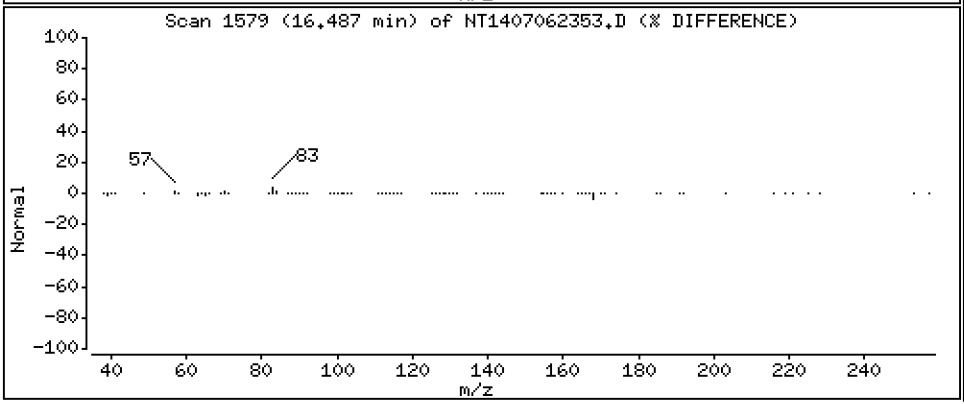
54 N-Nitrosodiphenylamine

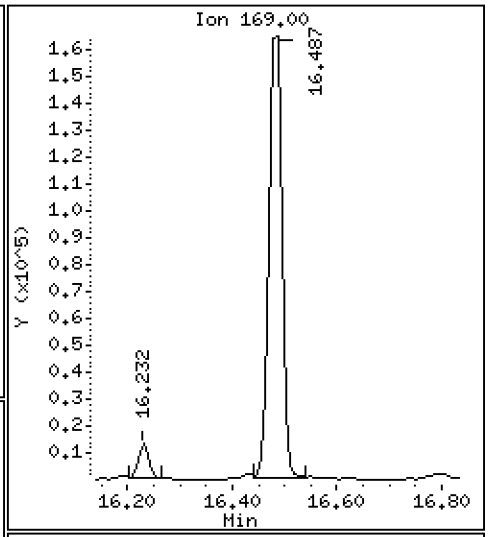
Concentration: 4.080 ug/mL

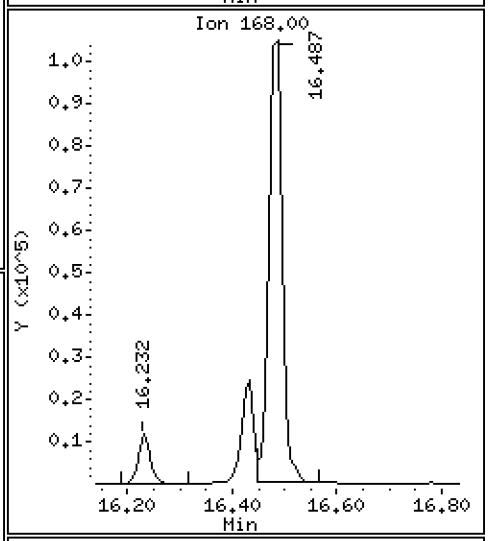


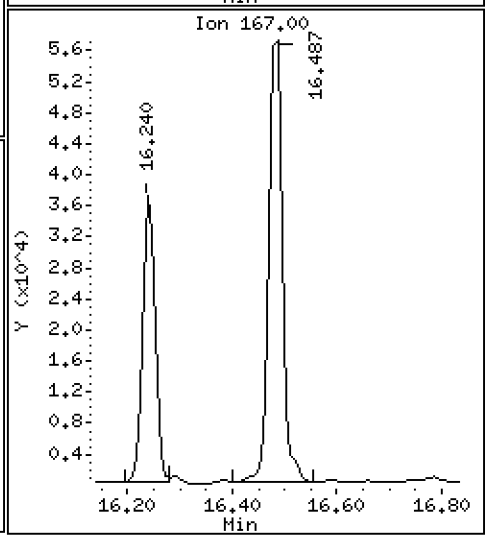












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062353.D

Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

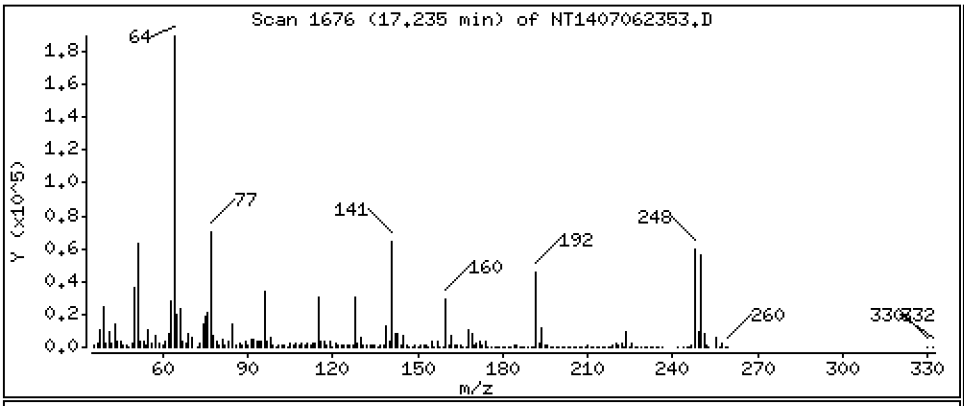
Operator: JGR

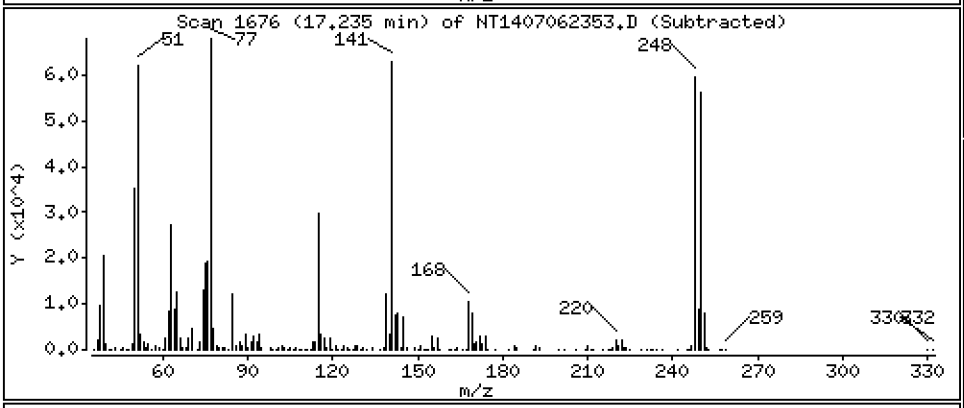
Column phase: ZB-5msi

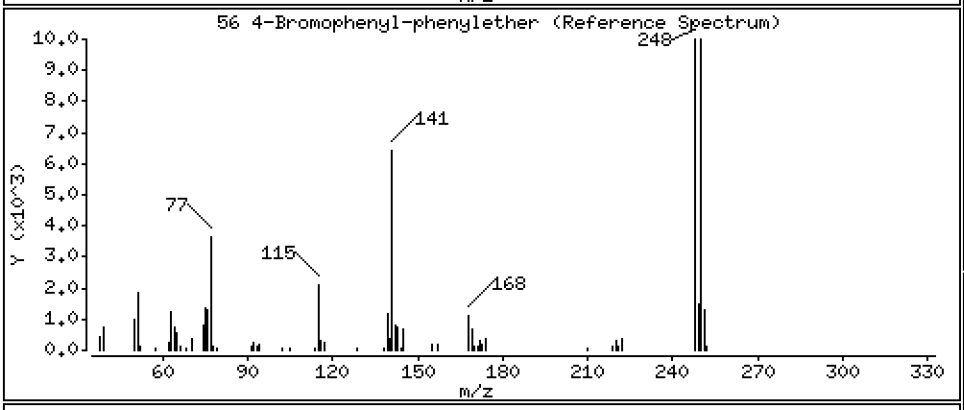
Column diameter: 0.25

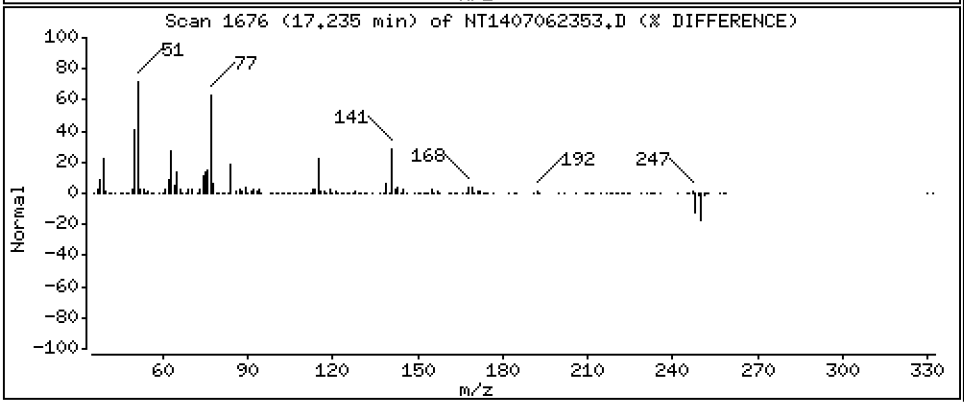
56 4-Bromophenyl-phenylether

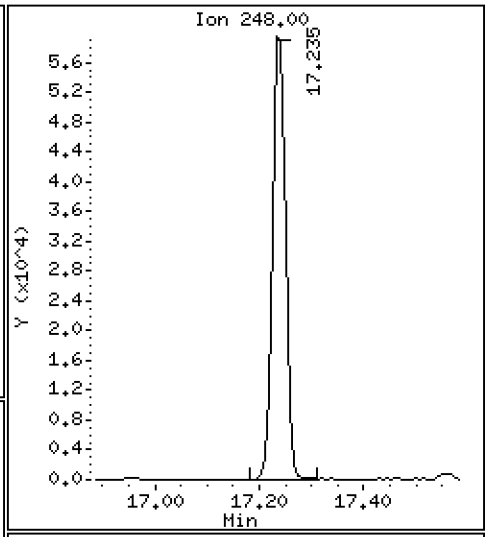
Concentration: 4.922 ug/mL

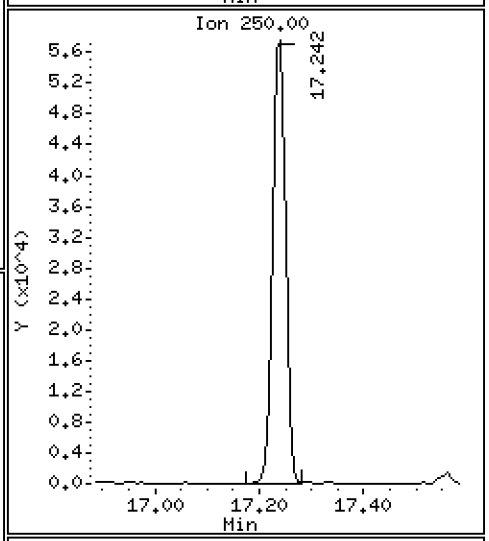


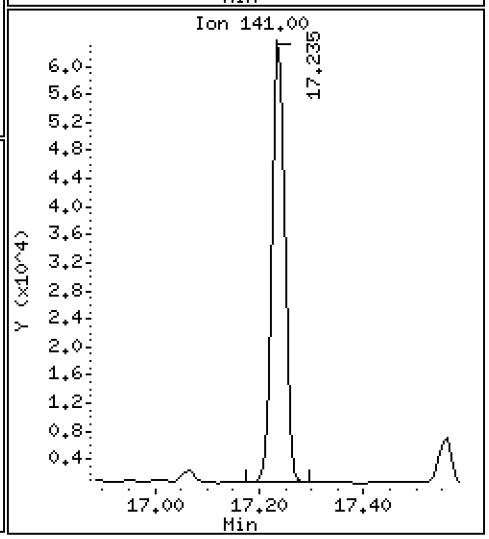












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

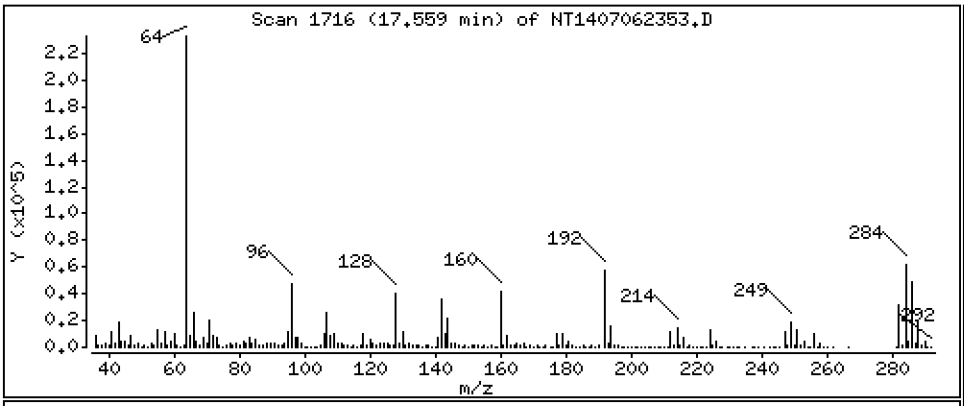
Operator: JGR

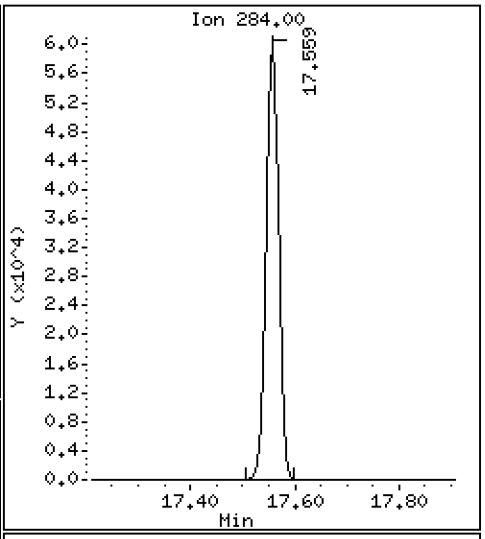
Column phase: ZB-5msi

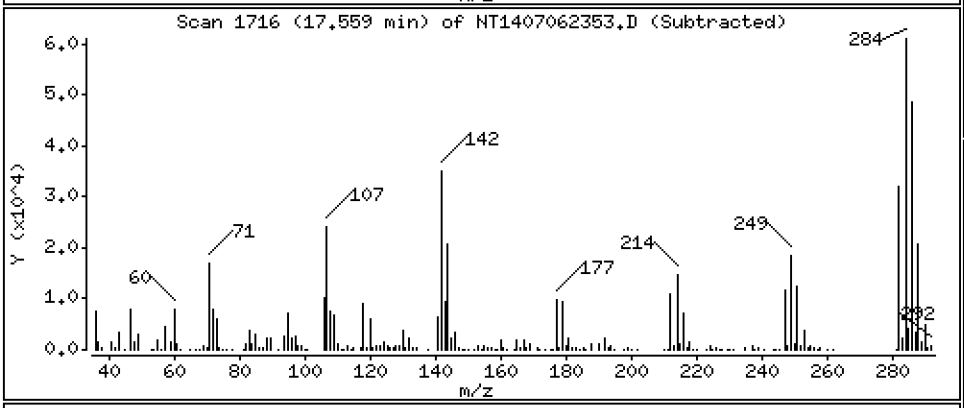
Column diameter: 0.25

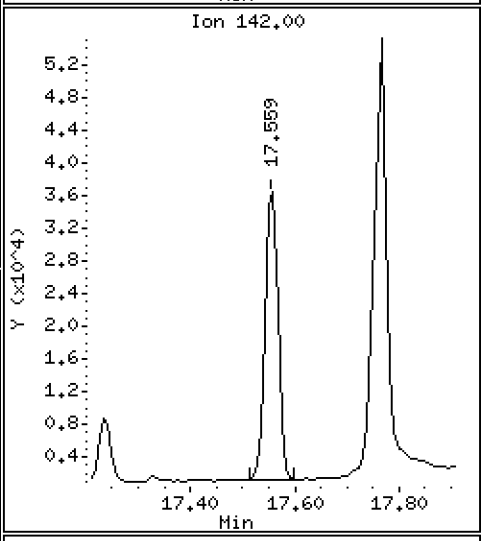
57 Hexachlorobenzene

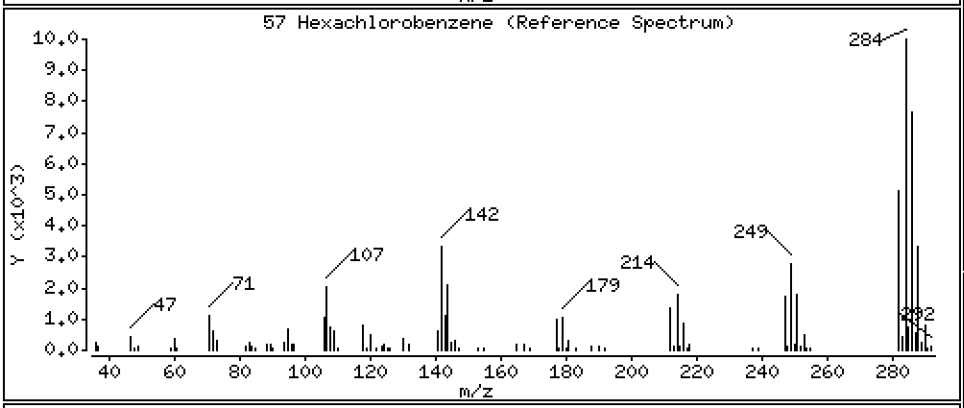
Concentration: 4.530 ug/mL

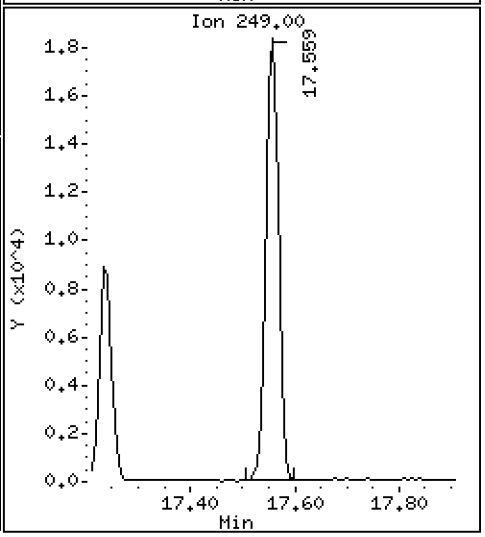


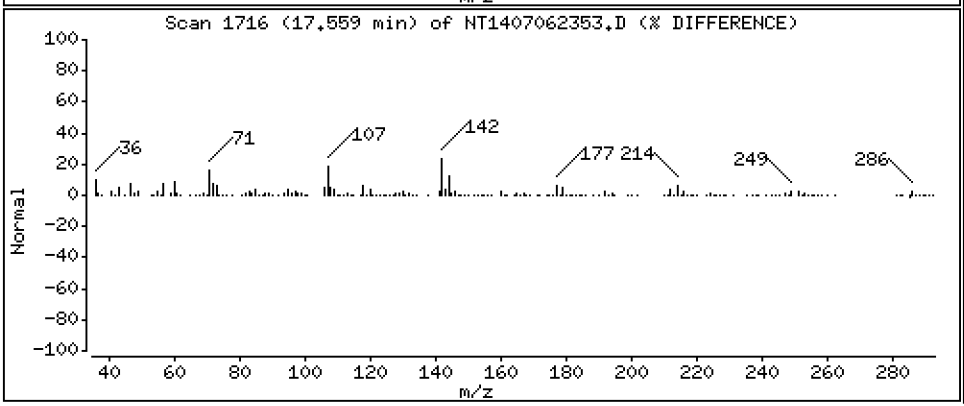












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

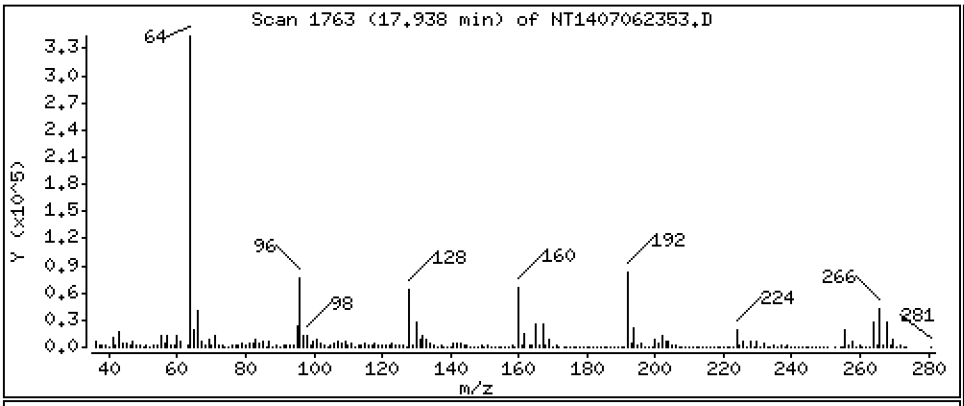
Operator: JGR

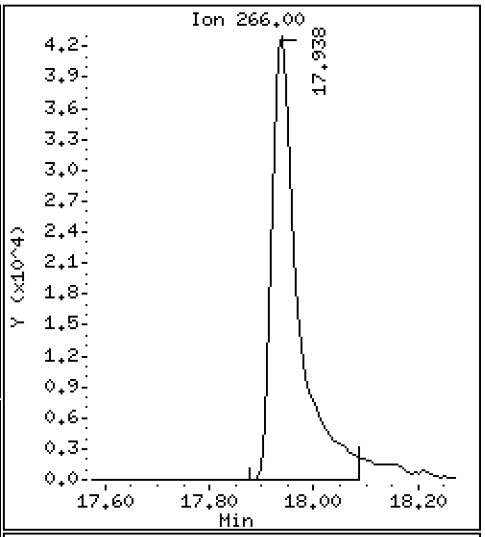
Column phase: ZB-5msi

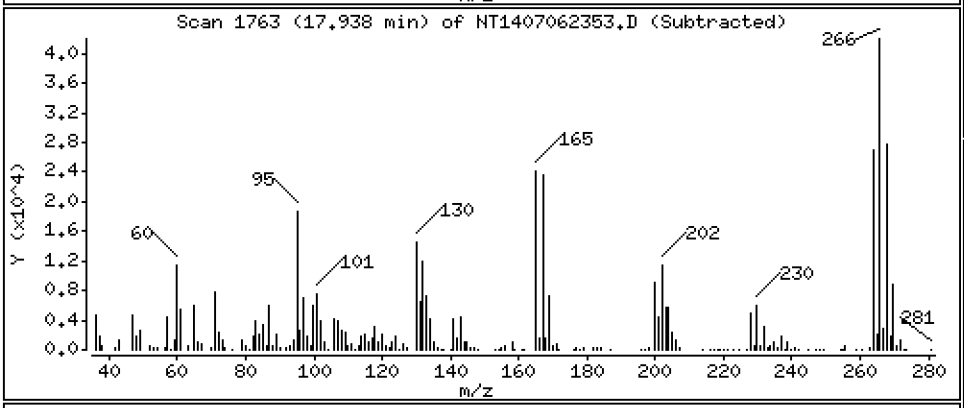
Column diameter: 0.25

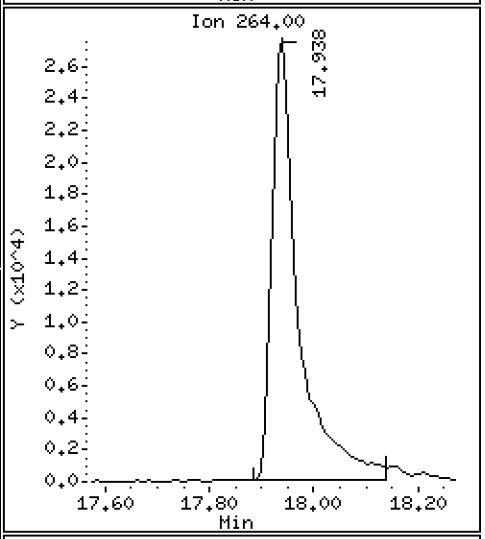
58 Pentachlorophenol

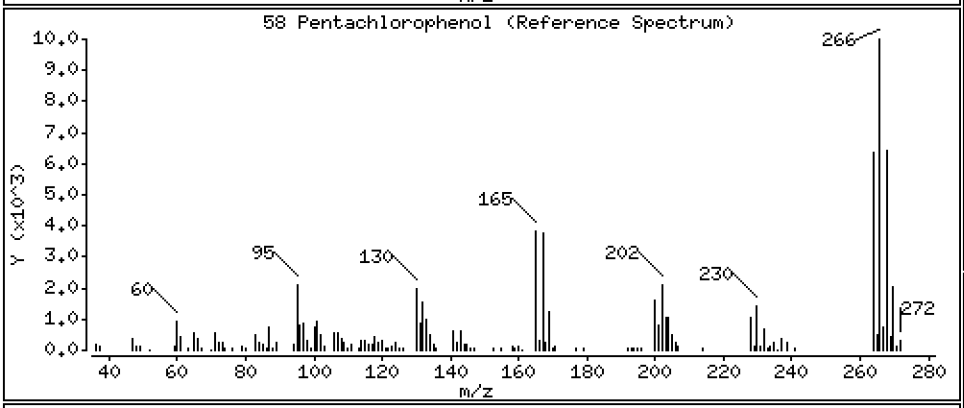
Concentration: 11.63 ug/mL

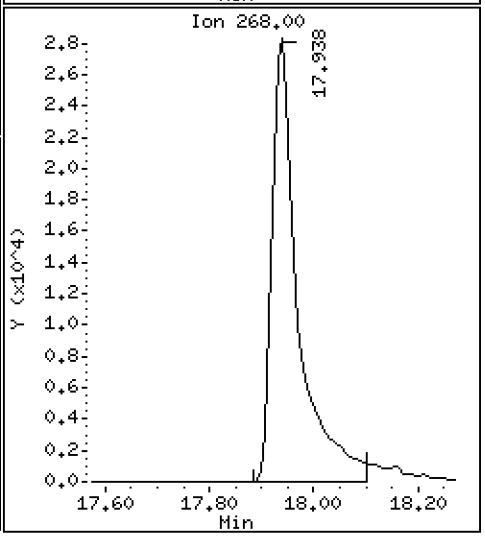


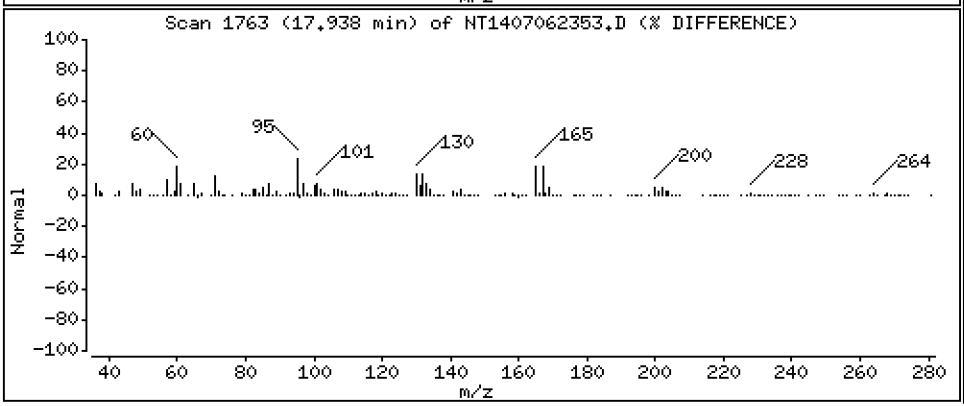












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

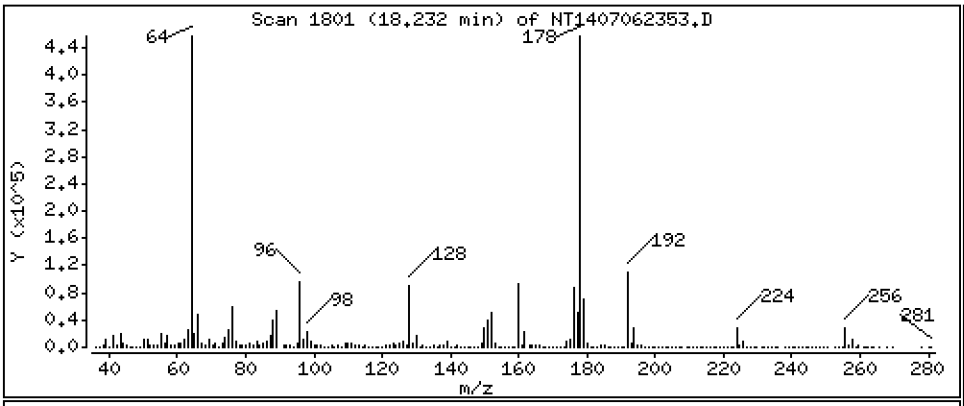
Operator: JGR

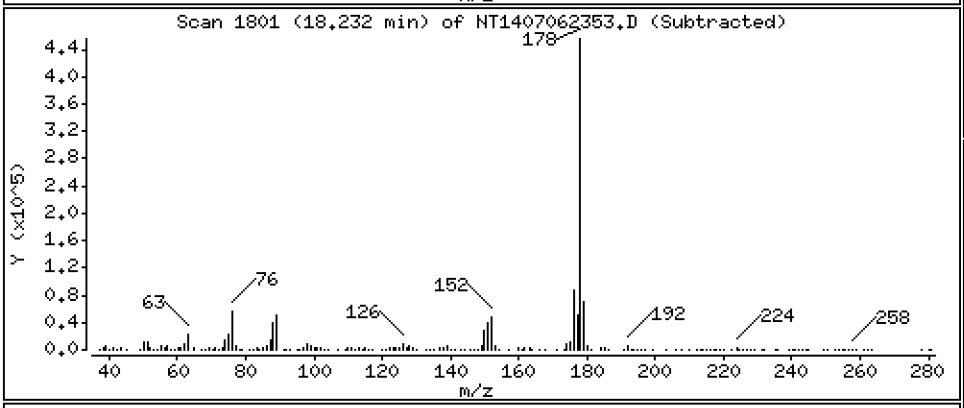
Column phase: ZB-5msi

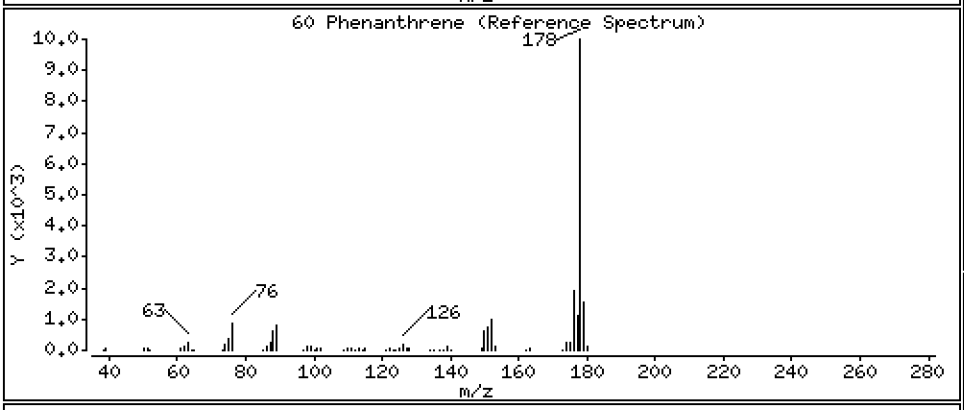
Column diameter: 0.25

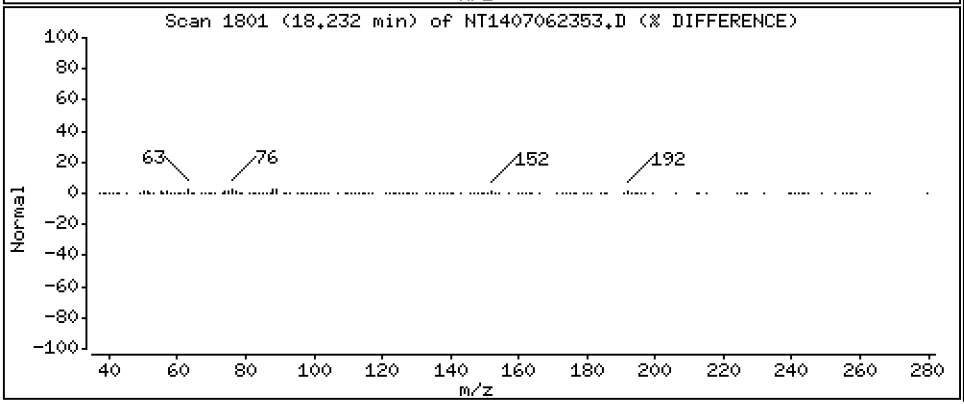
60 Phenanthrene

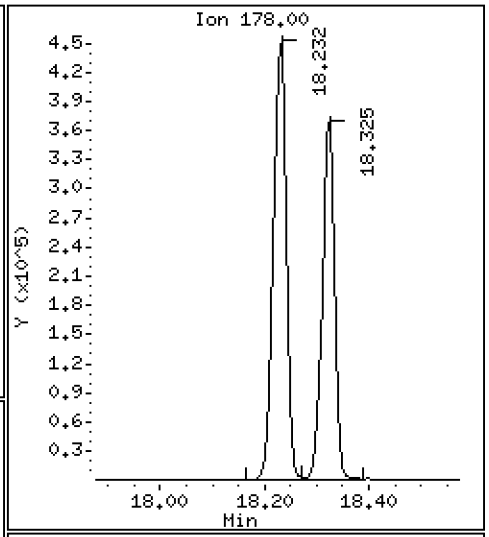
Concentration: 5.951 ug/mL

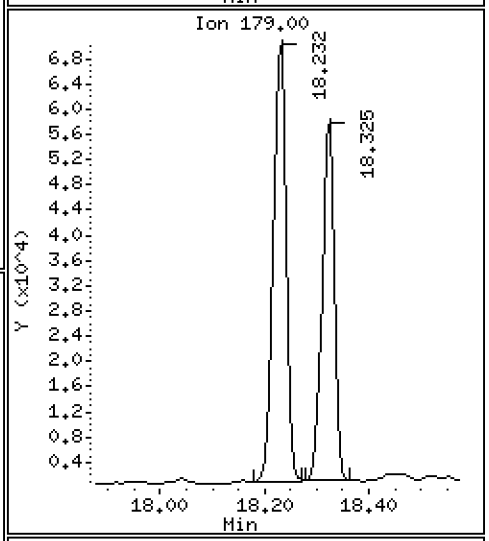


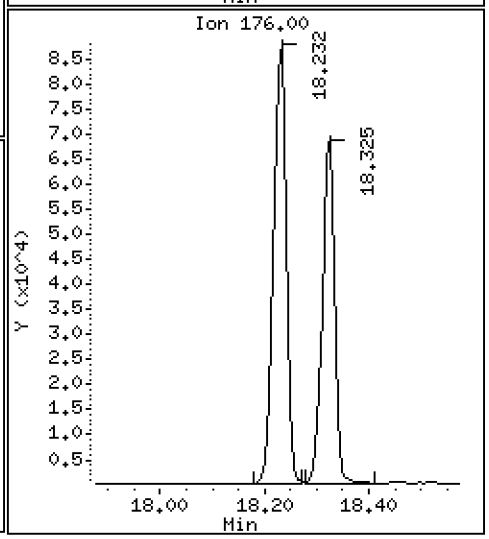












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

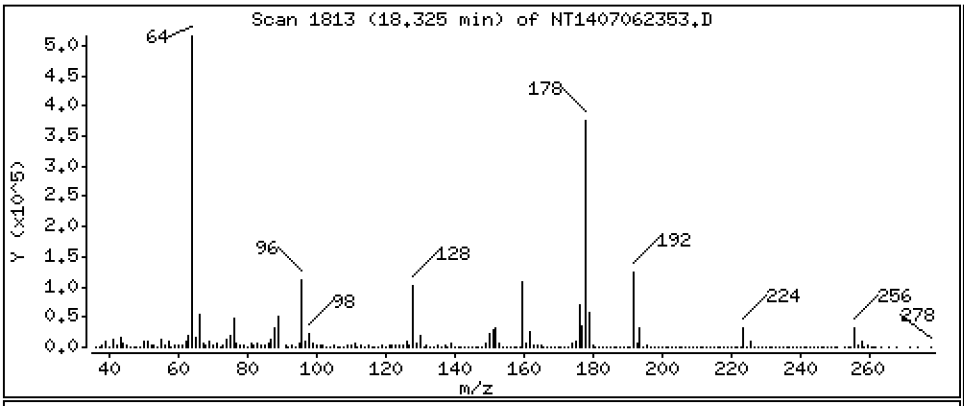
Operator: JGR

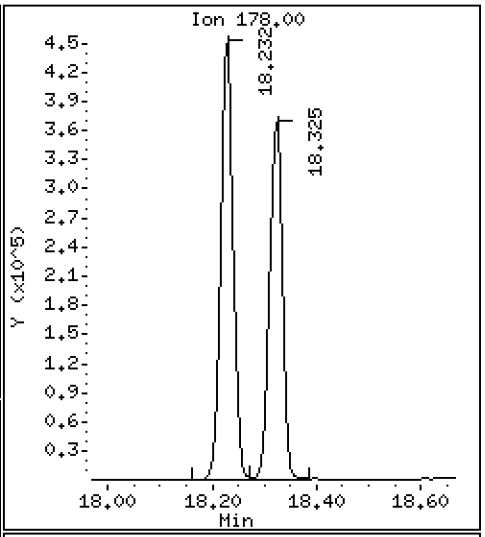
Column phase: ZB-5msi

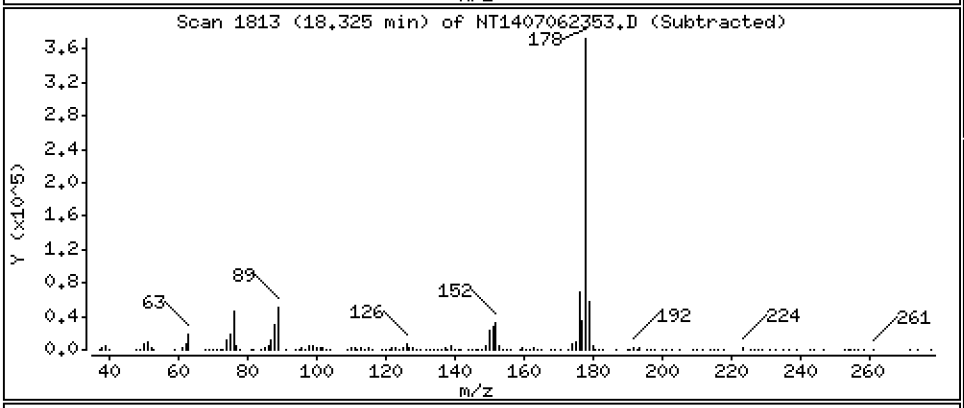
Column diameter: 0.25

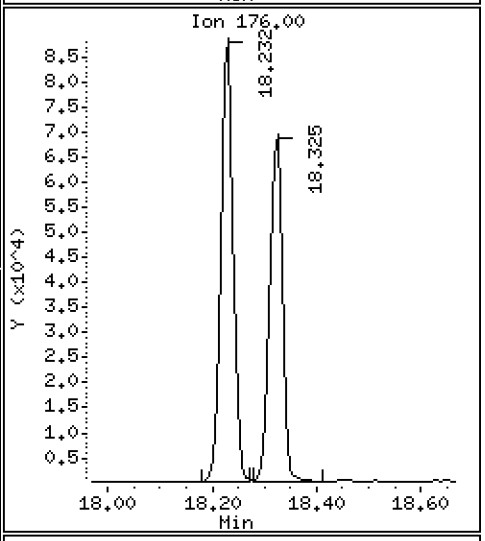
61 Anthracene

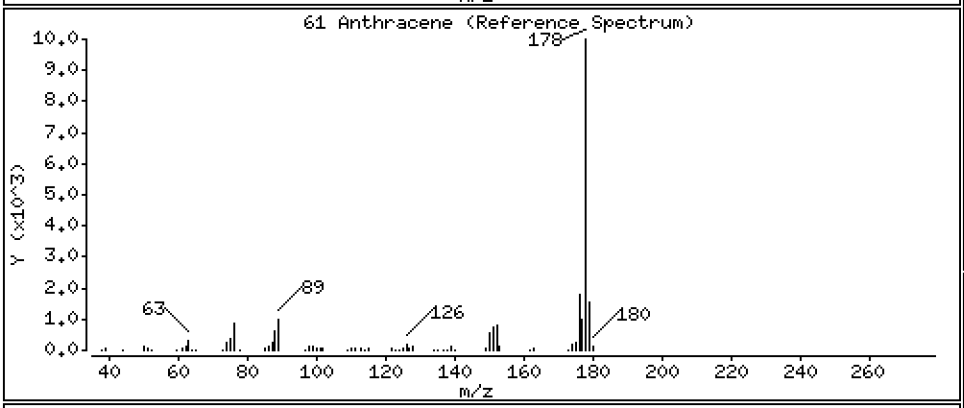
Concentration: 5.022 ug/mL

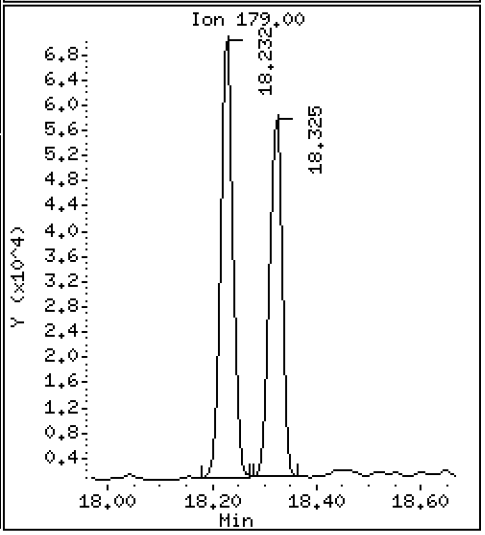


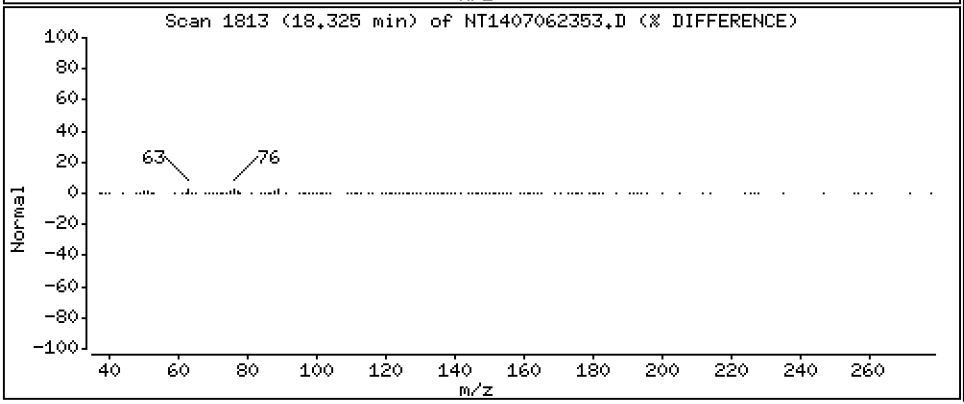












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

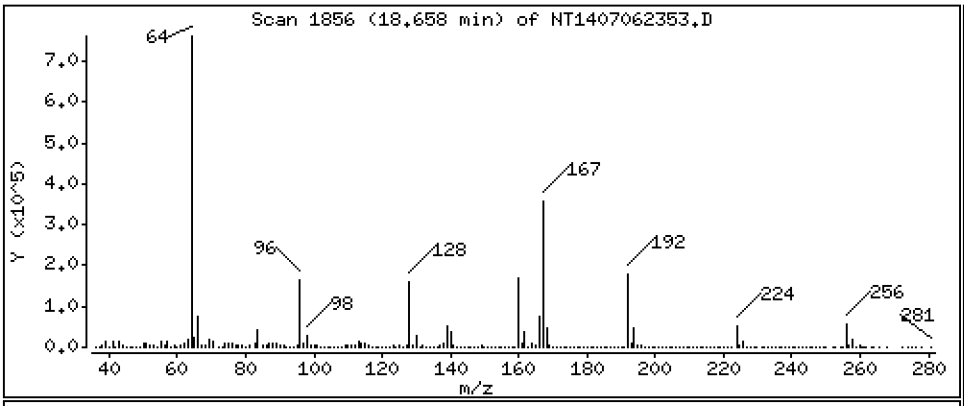
Operator: JGR

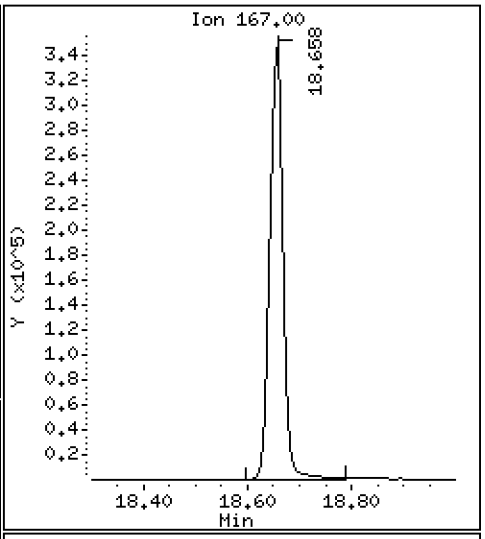
Column phase: ZB-5msi

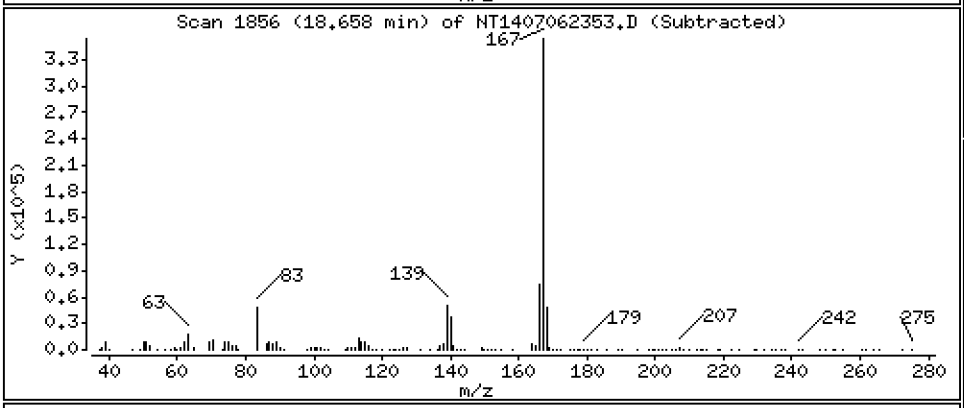
Column diameter: 0.25

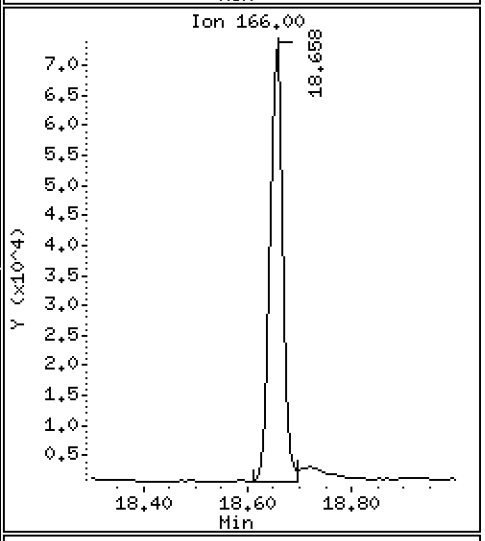
62 Carbazole

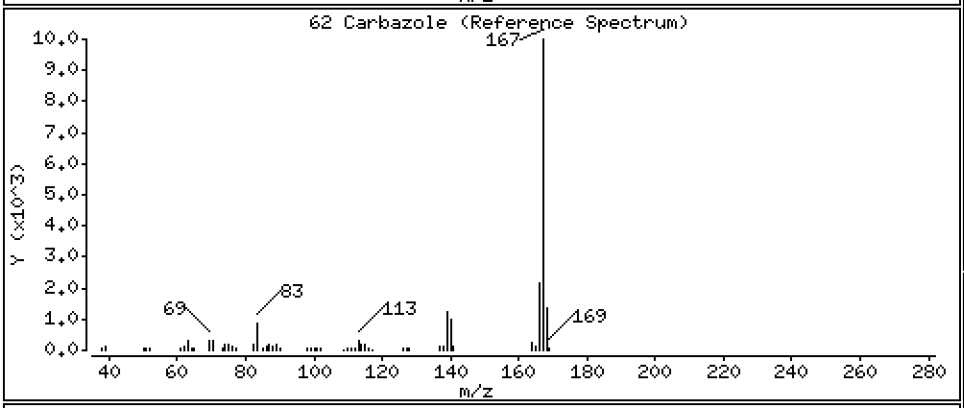
Concentration: 4.894 ug/mL

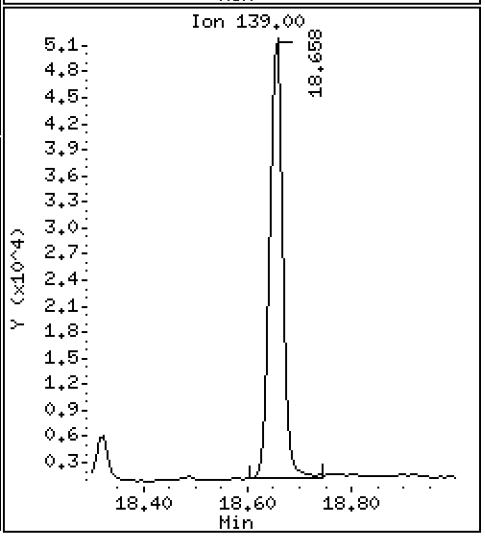


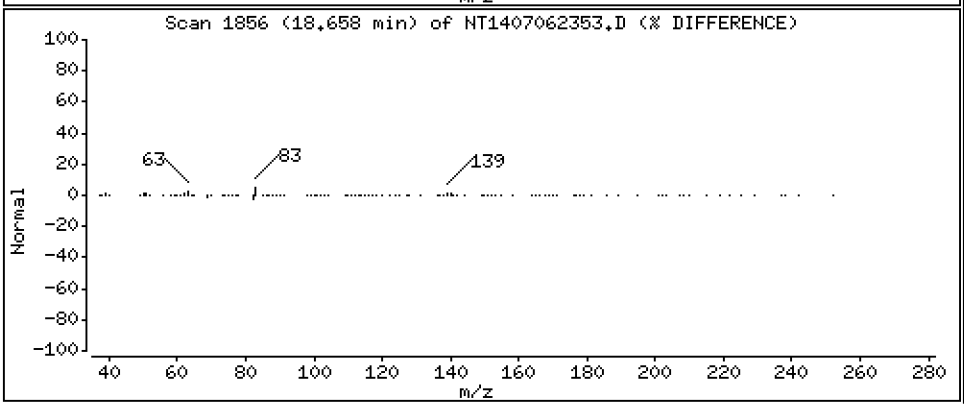












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

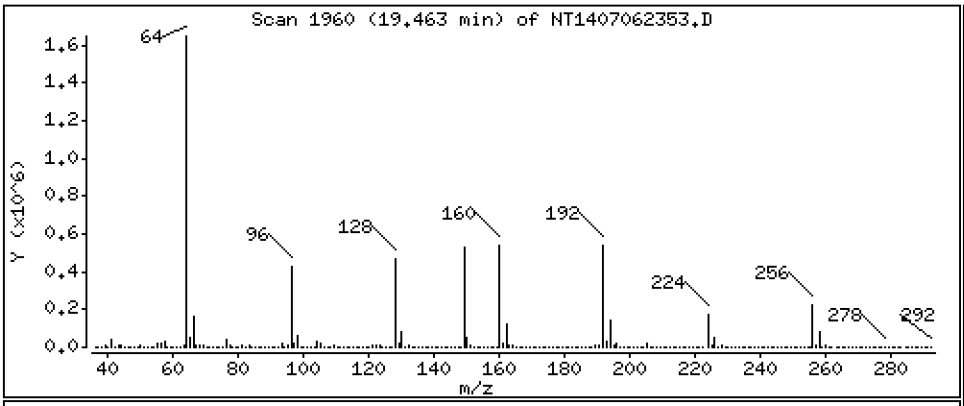
Operator: JGR

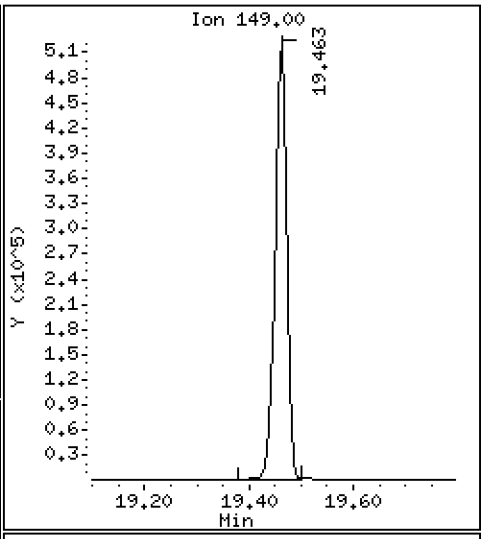
Column phase: ZB-5msi

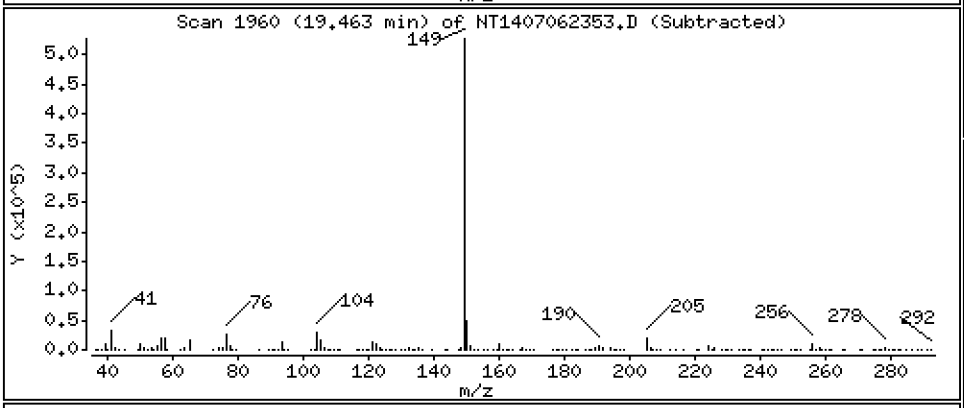
Column diameter: 0.25

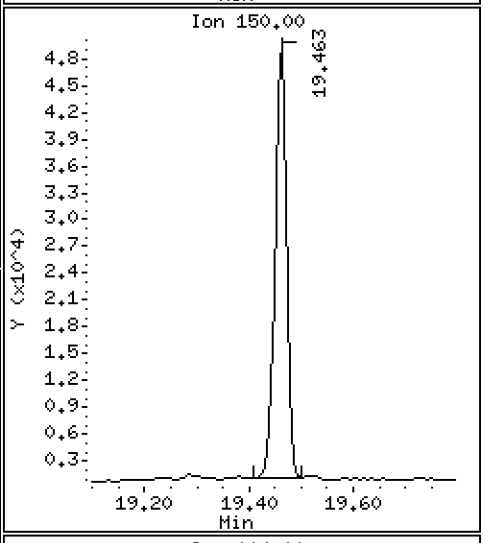
63 Di-n-butylphthalate

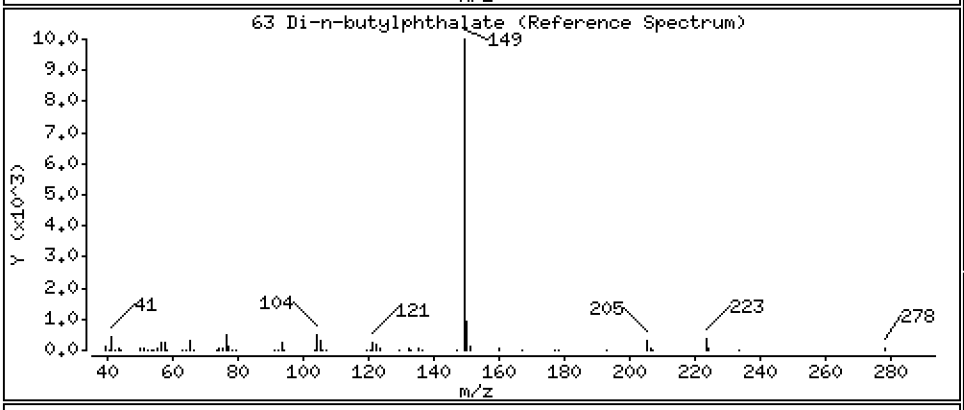
Concentration: 5.124 ug/mL

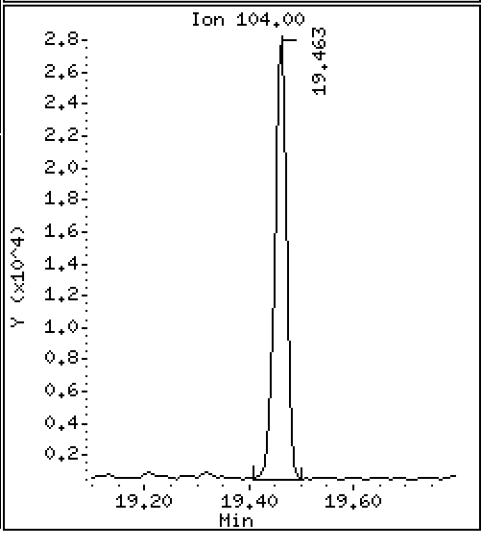


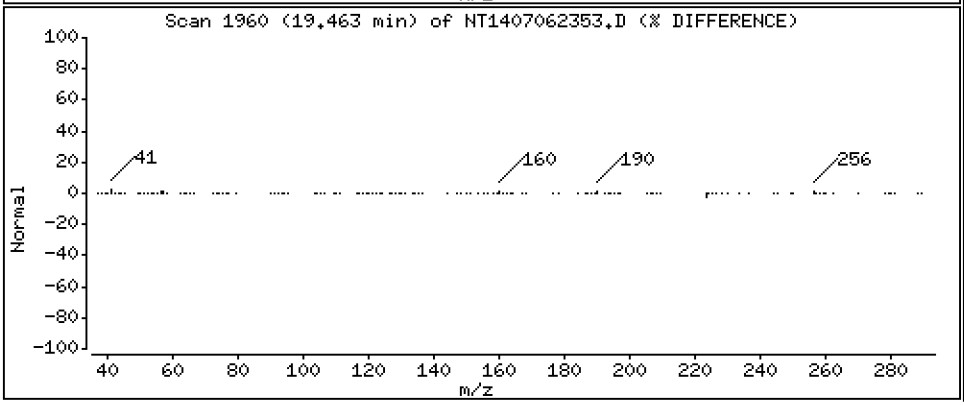












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062353.D

Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

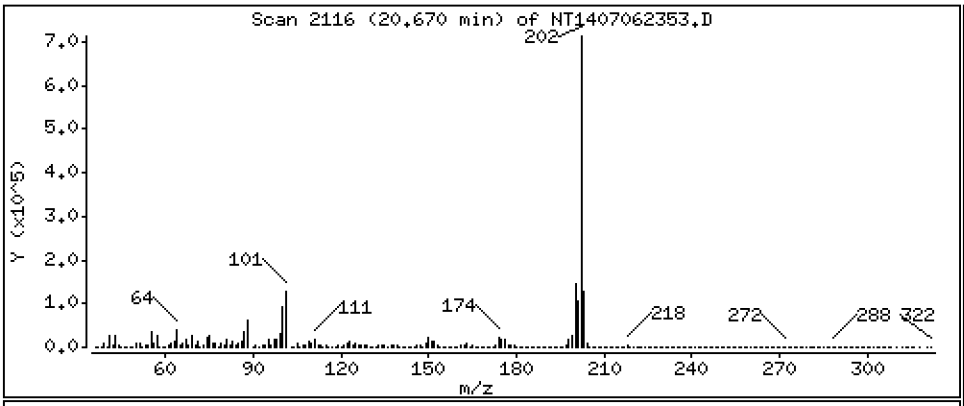
Operator: JGR

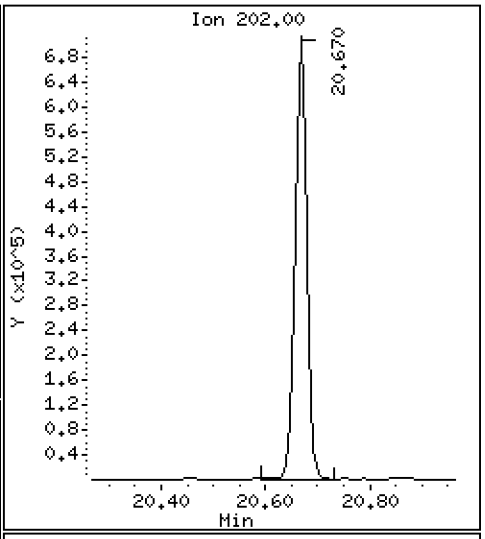
Column phase: ZB-5msi

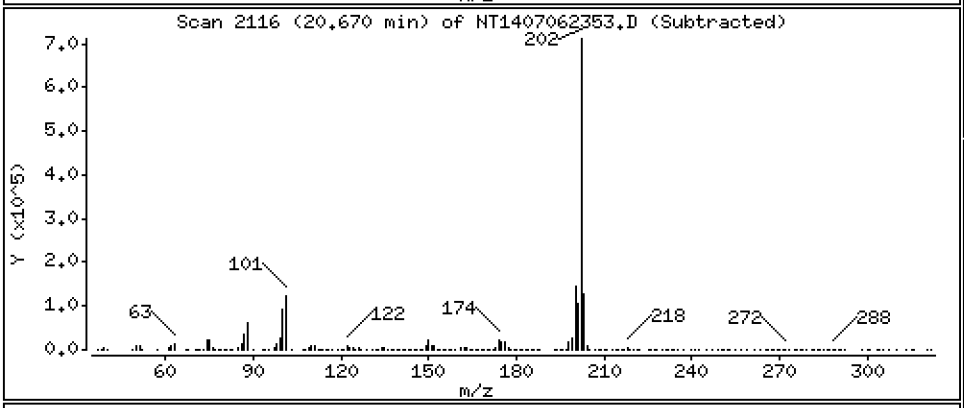
Column diameter: 0.25

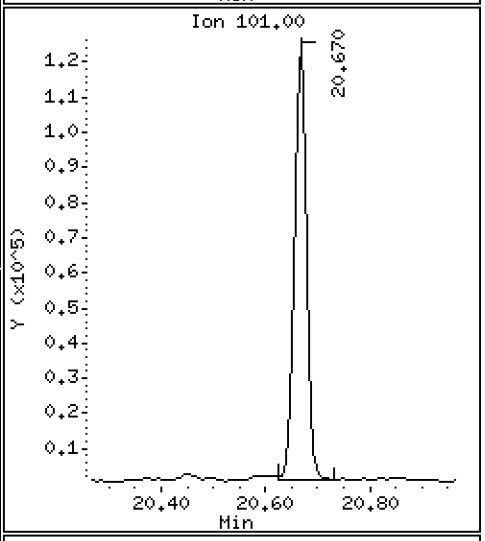
64 Fluoranthene

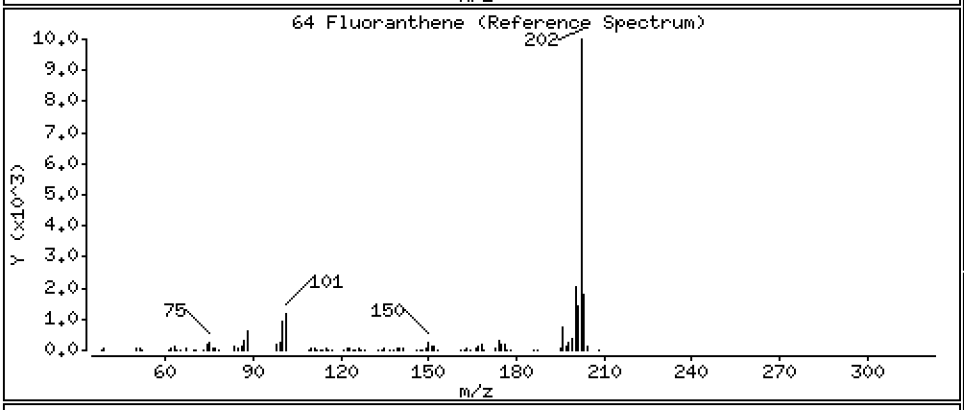
Concentration: 9.991 ug/mL

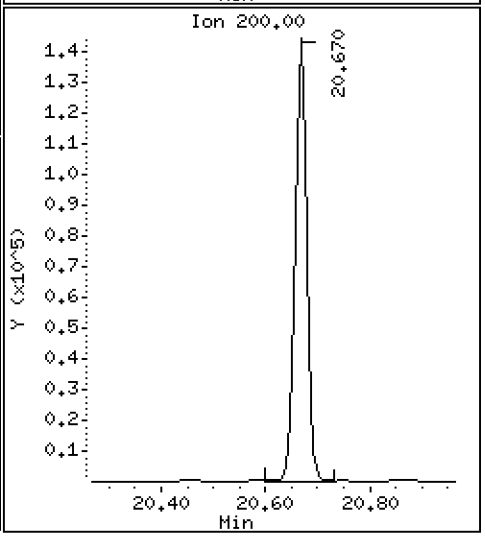


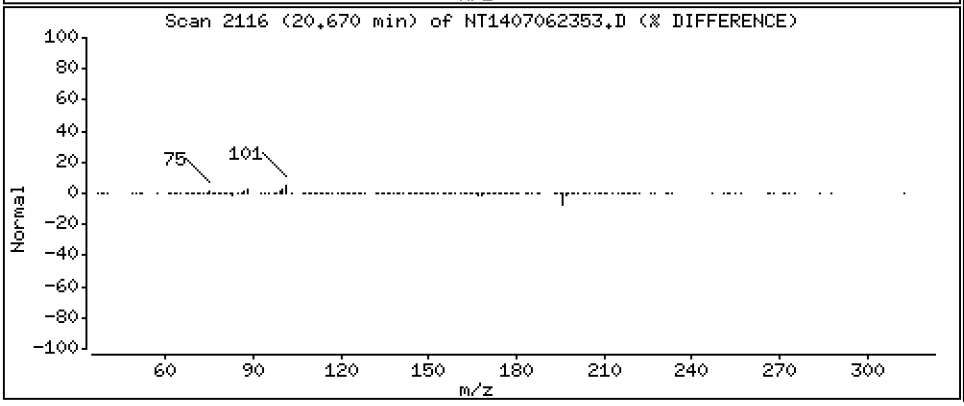












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062353.D

Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

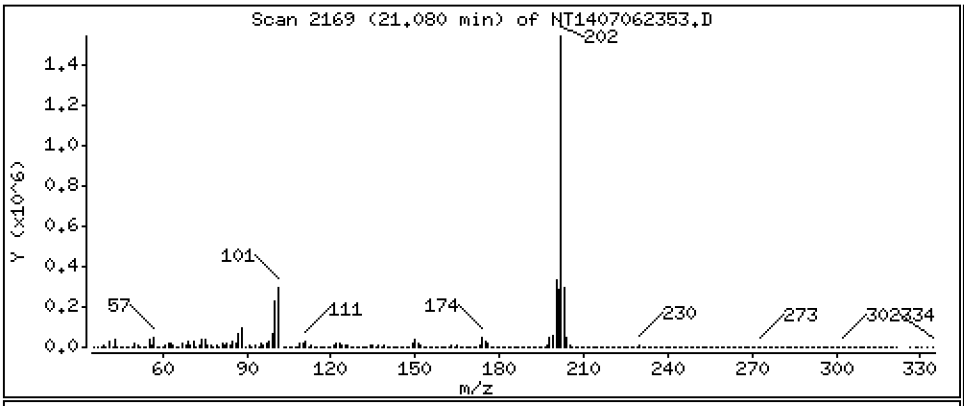
Operator: JGR

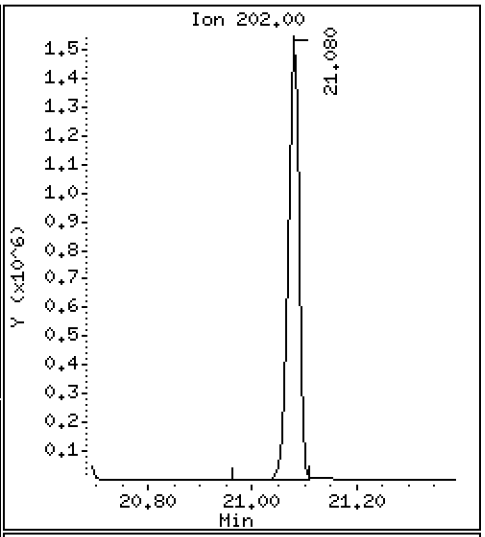
Column phase: ZB-5msi

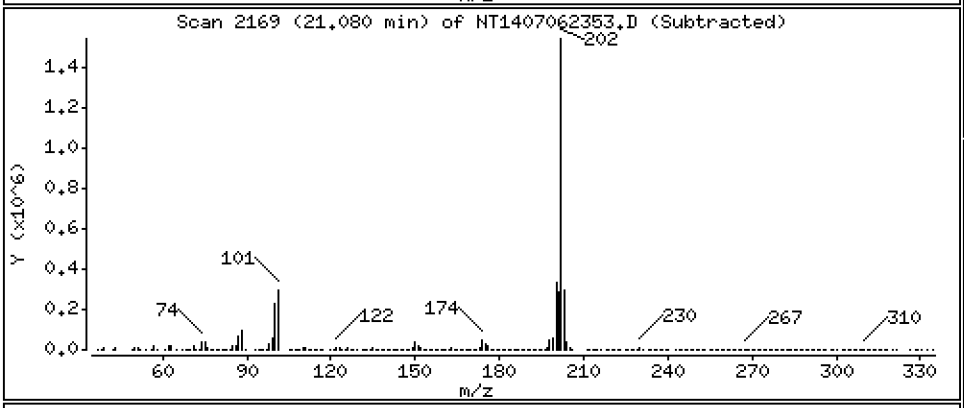
Column diameter: 0.25

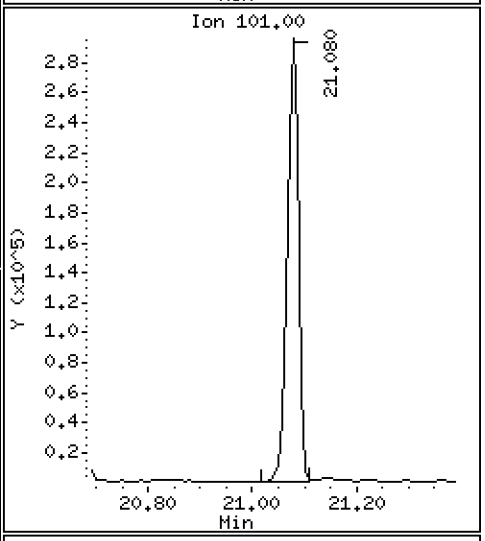
65 Pyrene

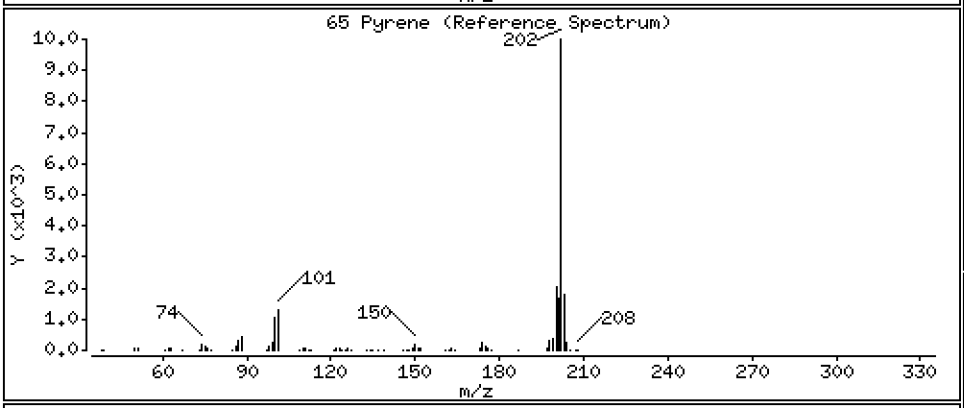
Concentration: 20.12 ug/mL

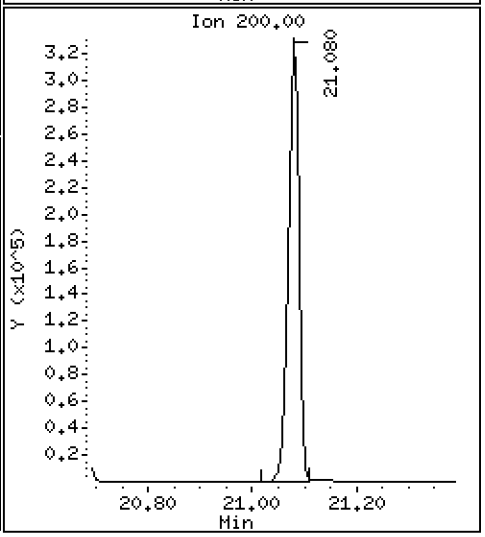


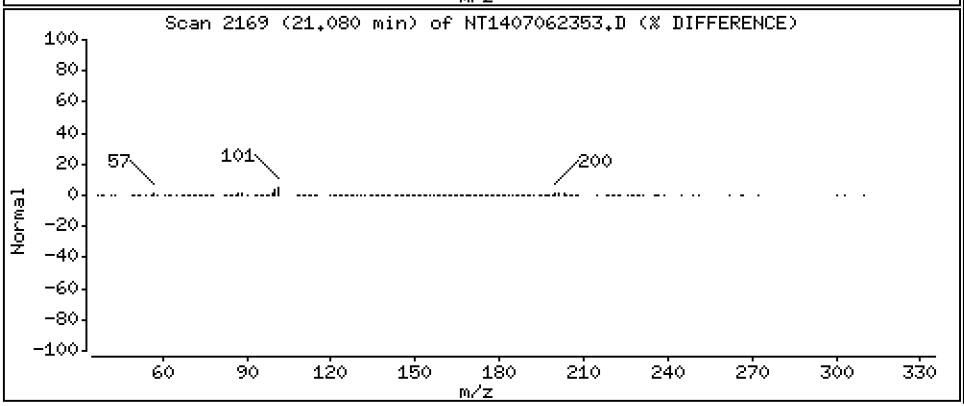












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

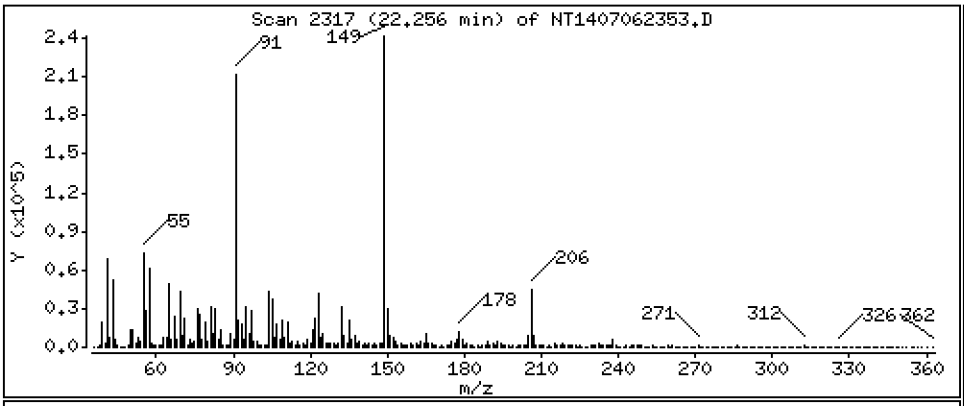
Operator: JGR

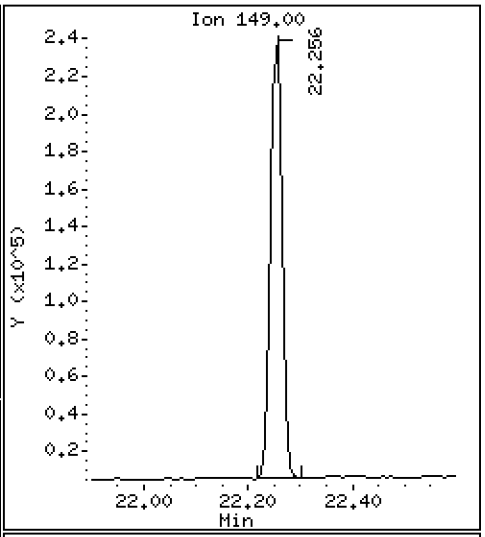
Column phase: ZB-5msi

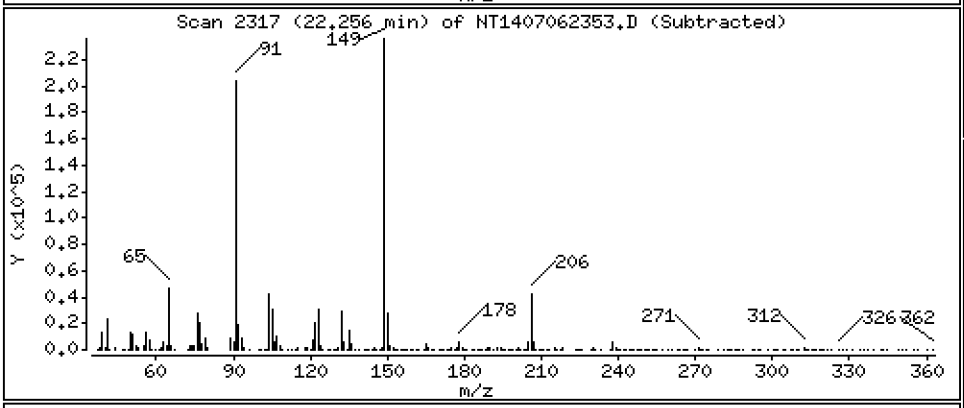
Column diameter: 0.25

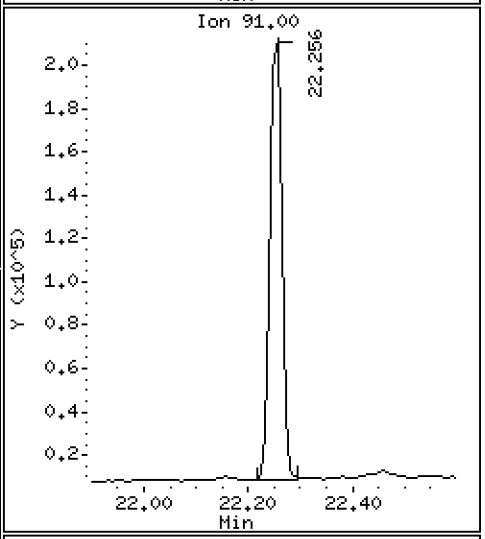
67 Butylbenzylphthalate

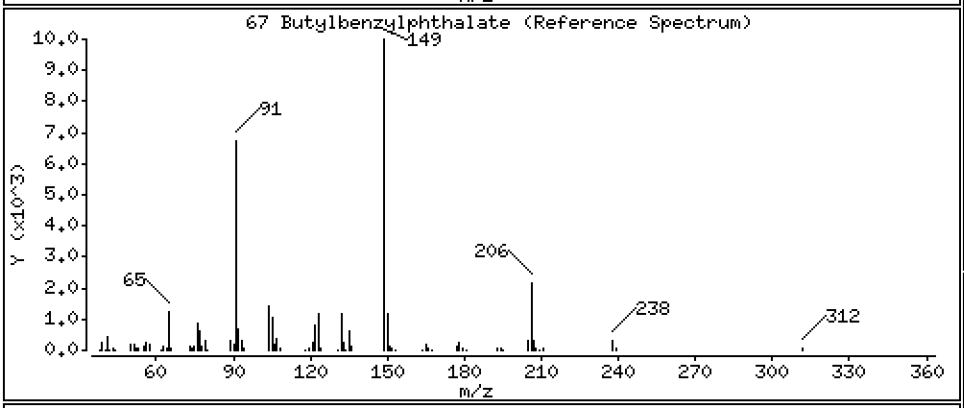
Concentration: 6.200 ug/mL

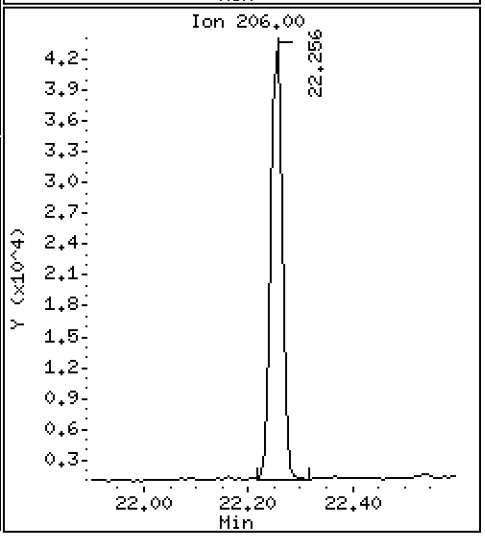


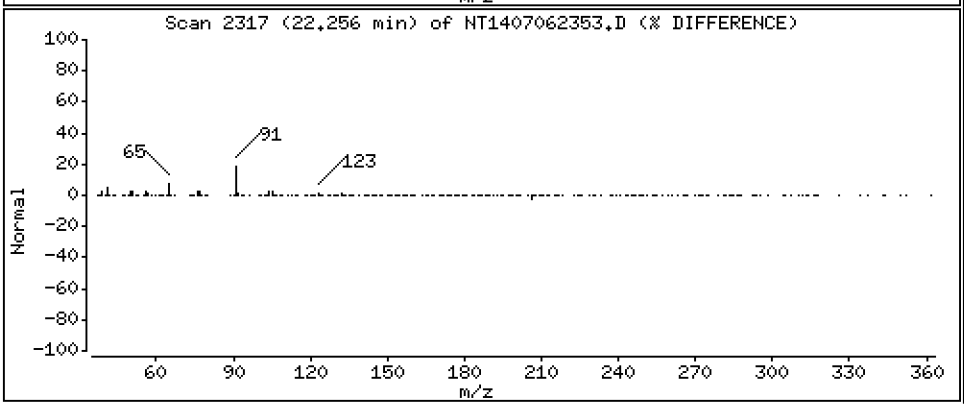












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

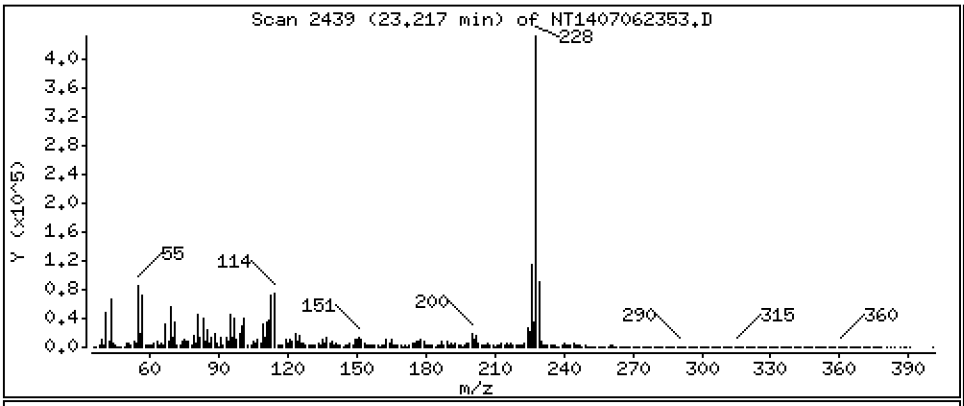
Operator: JGR

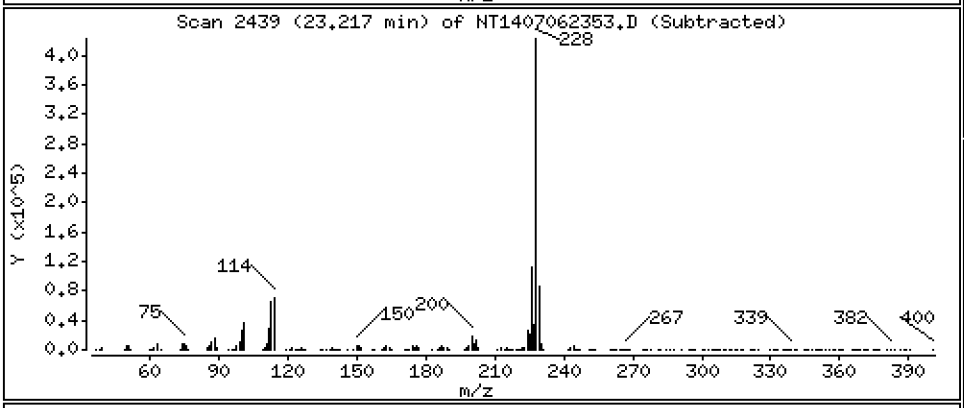
Column phase: ZB-5msi

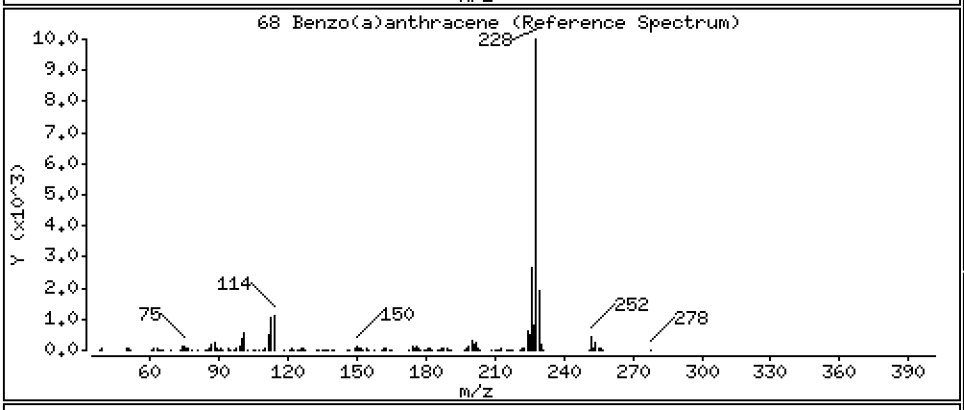
Column diameter: 0.25

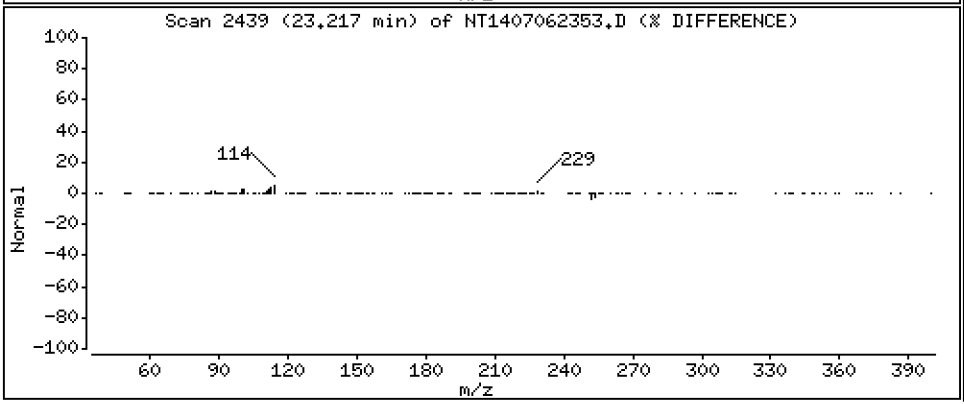
68 Benzo(a)anthracene

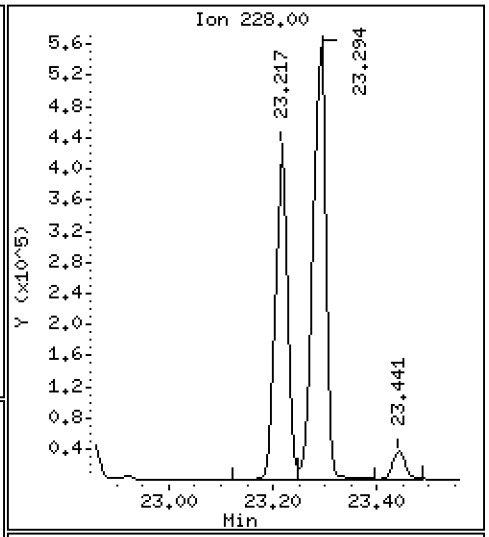
Concentration: 6.822 ug/mL

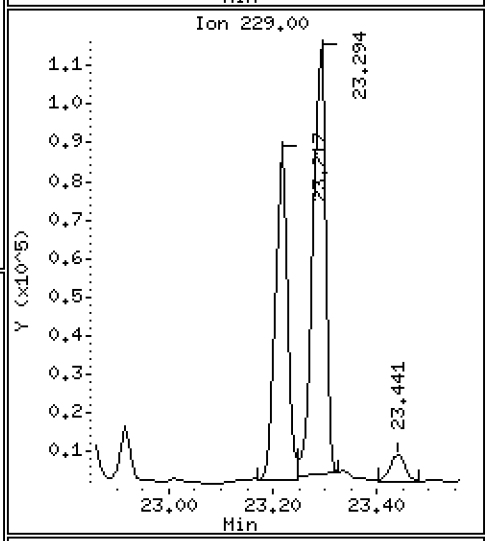


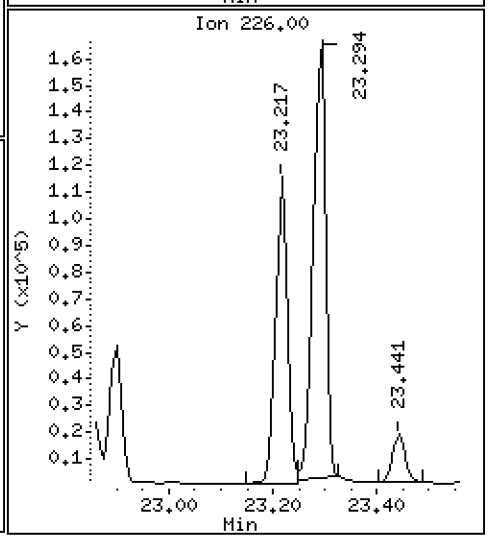












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

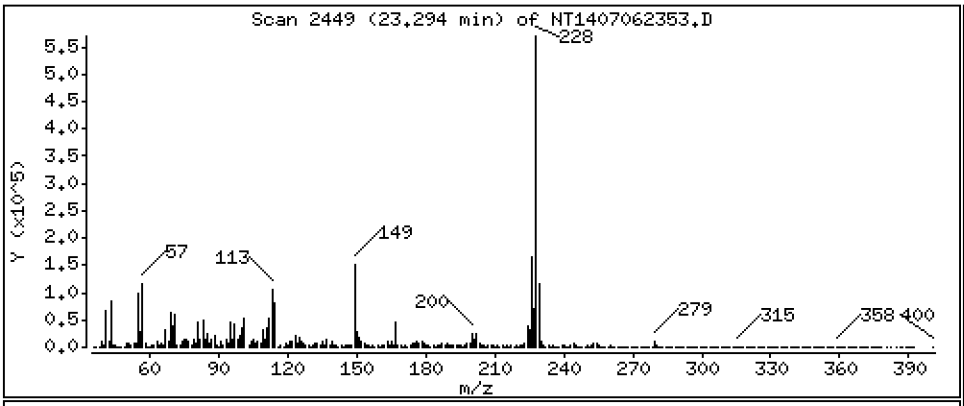
Operator: JGR

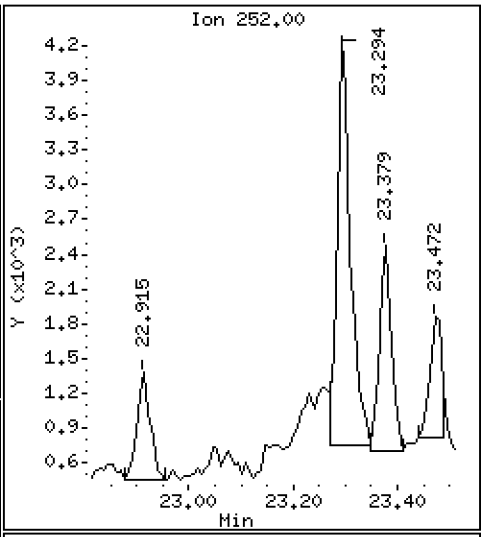
Column phase: ZB-5msi

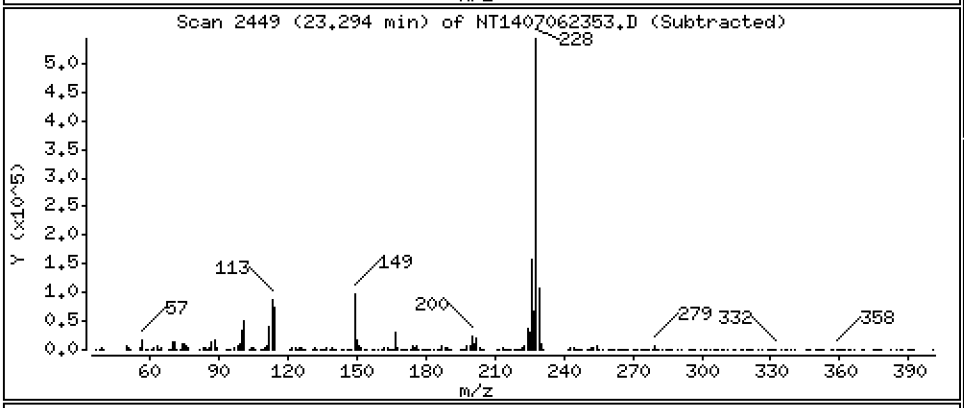
Column diameter: 0.25

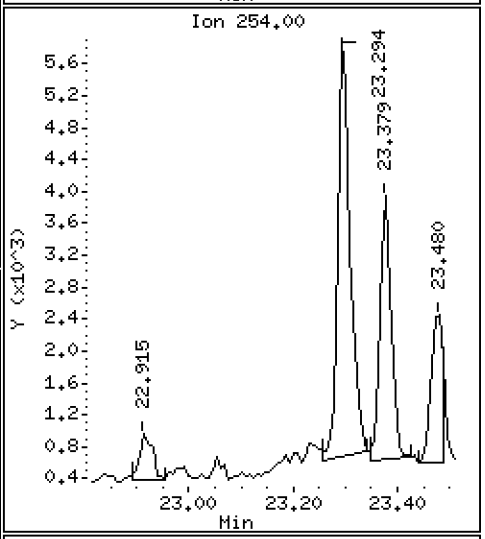
70 3,3'-Dichlorobenzidine

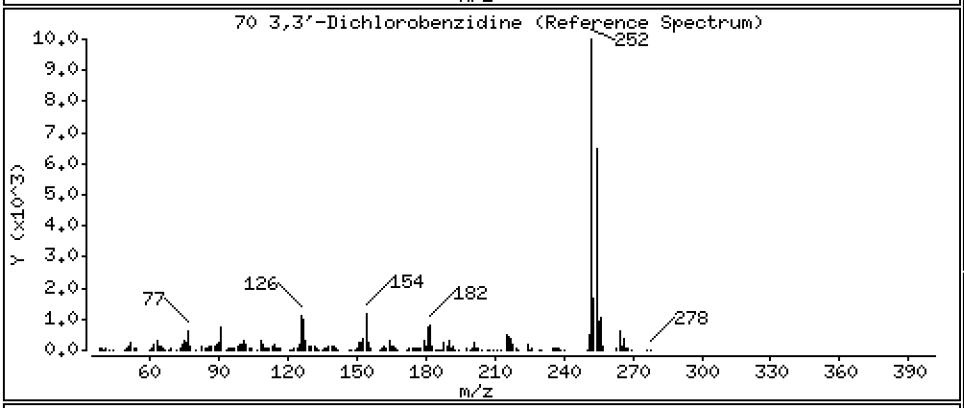
Concentration: 0.2296 ug/mL

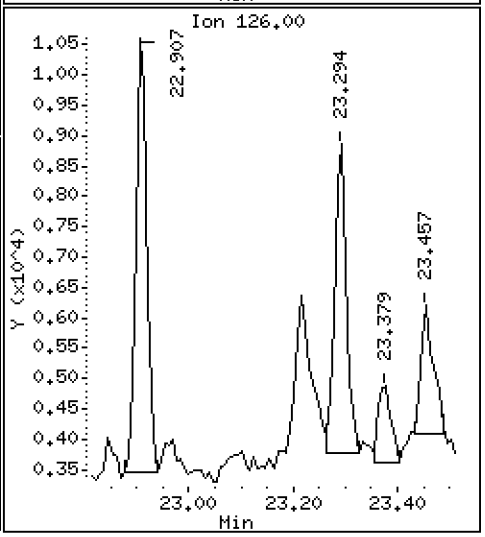


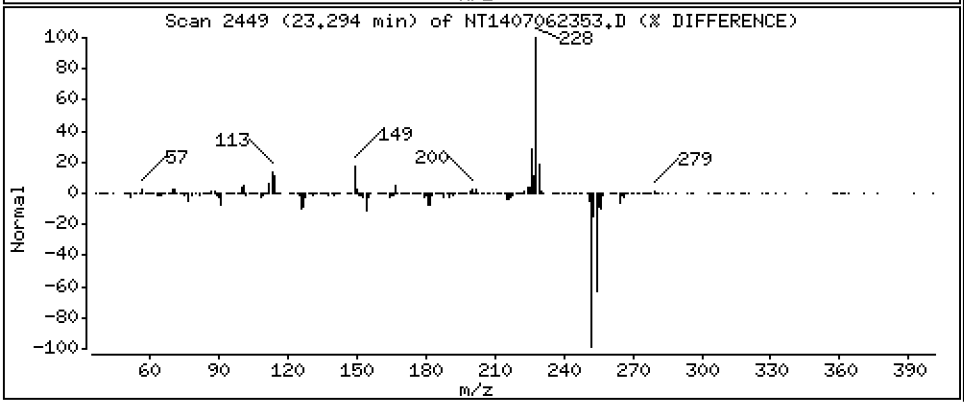












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

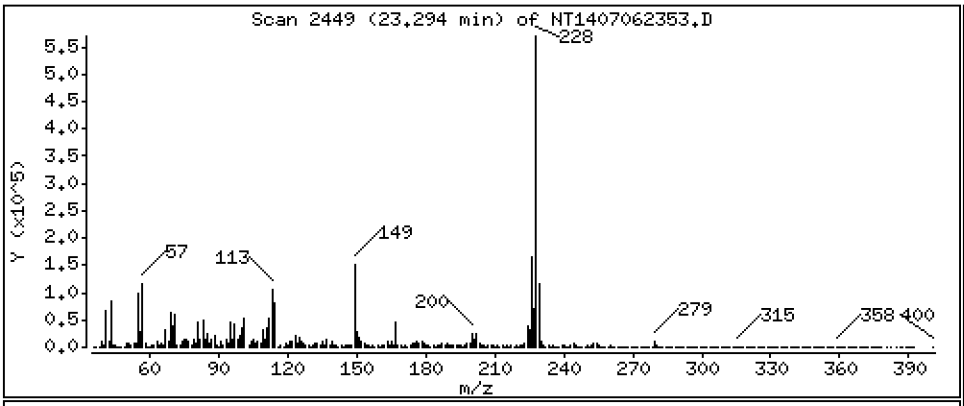
Operator: JGR

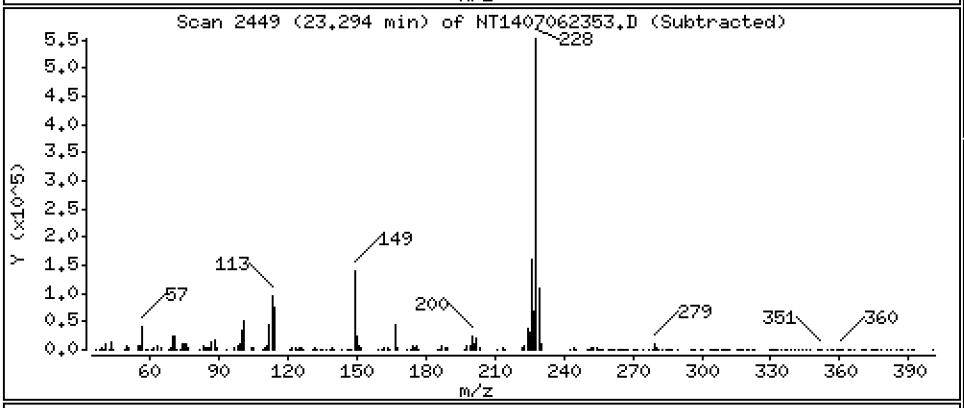
Column phase: ZB-5msi

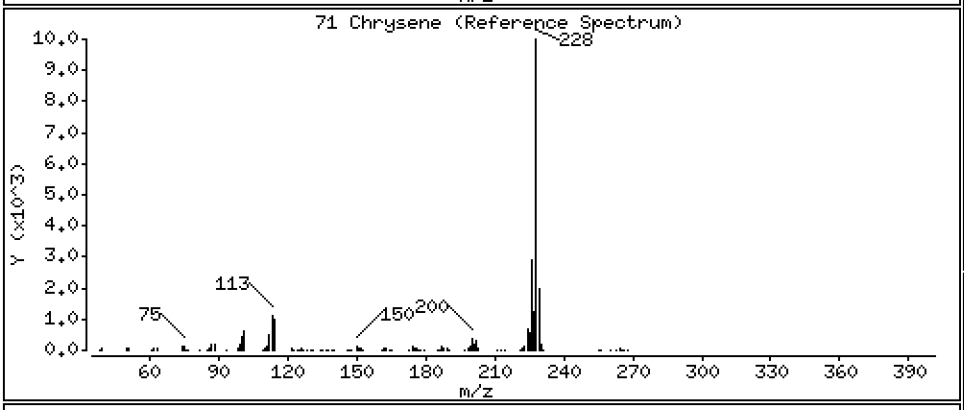
Column diameter: 0.25

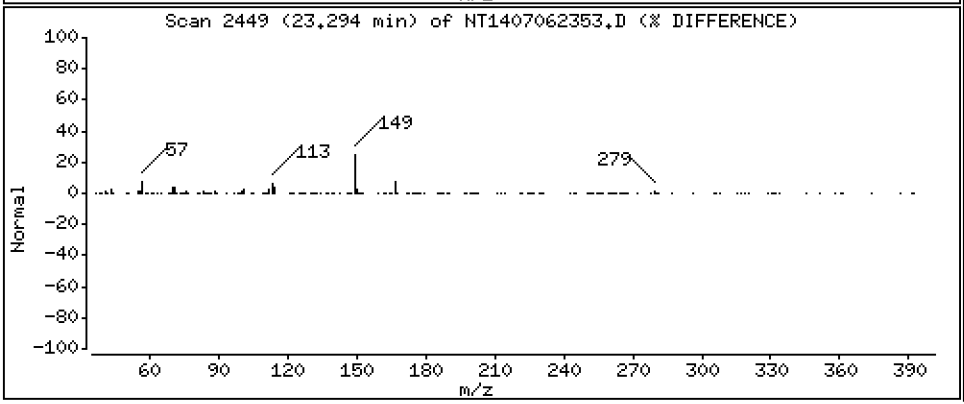
71 Chrysene

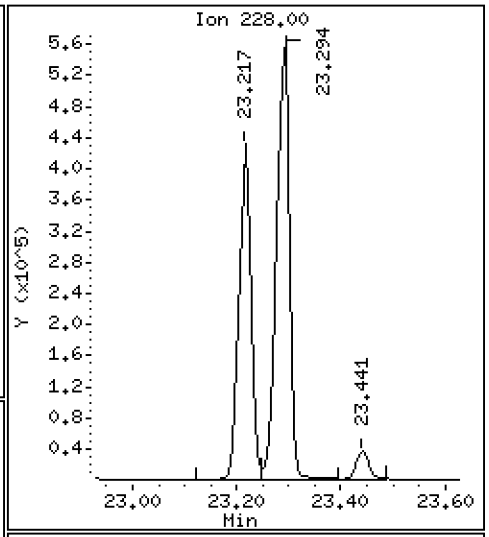
Concentration: 10.47 ug/mL

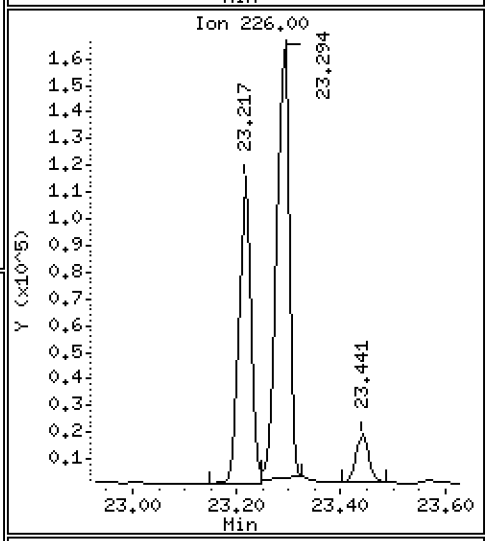


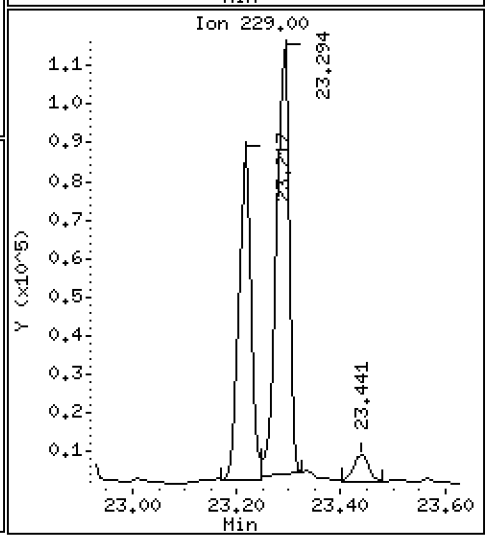












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062353.D

Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

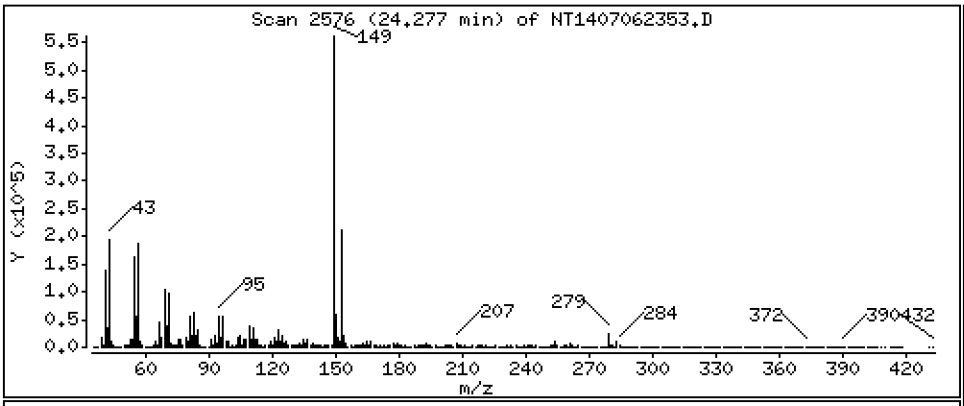
Operator: JGR

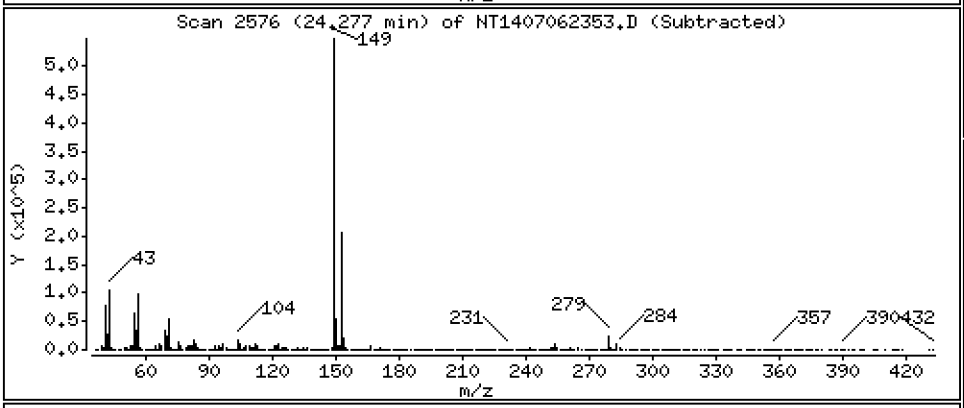
Column phase: ZB-5msi

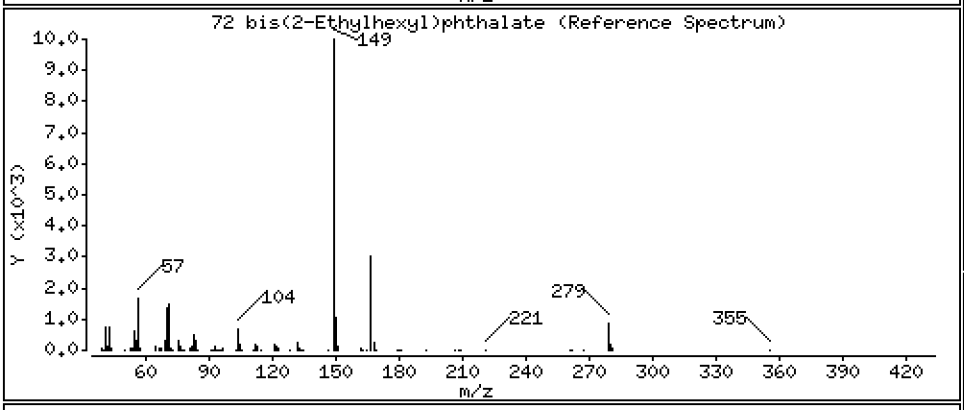
Column diameter: 0.25

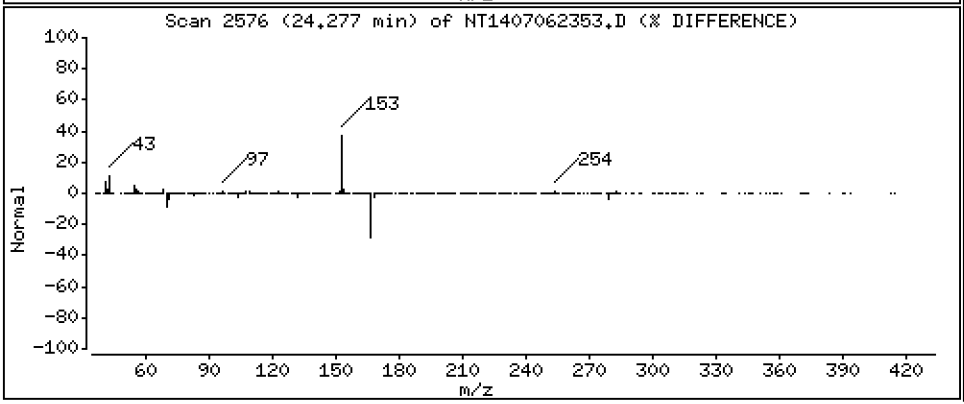
72 bis(2-Ethylhexyl)phthalate

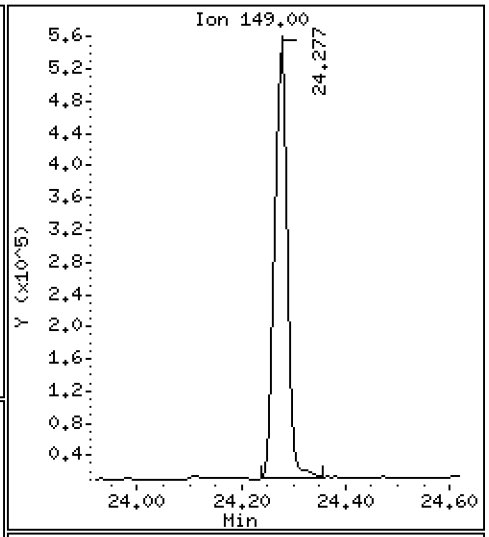
Concentration: 4.935 ug/mL

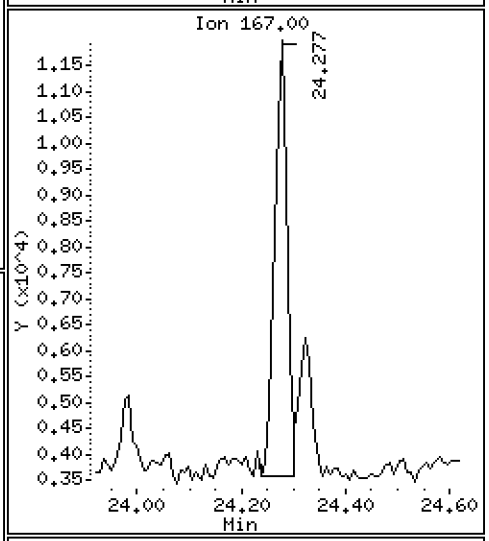


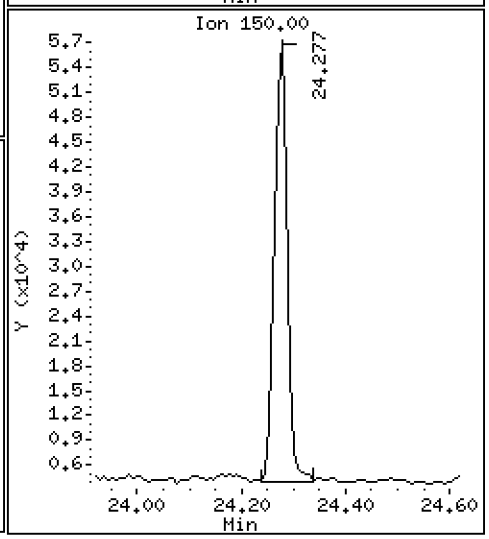












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

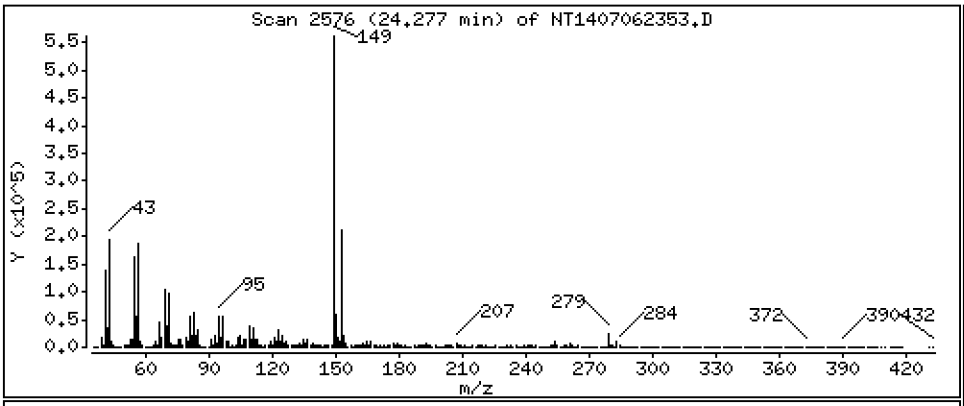
Operator: JGR

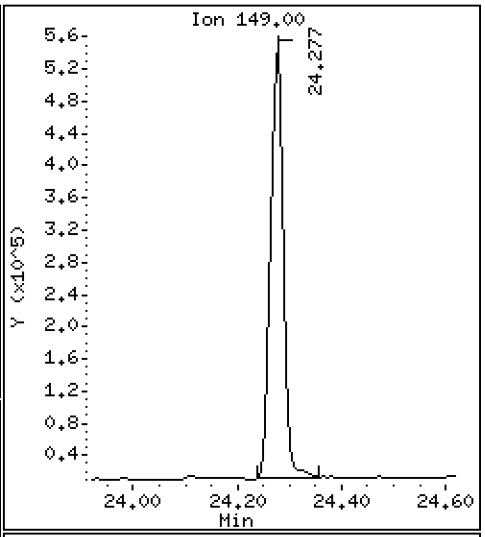
Column phase: ZB-5msi

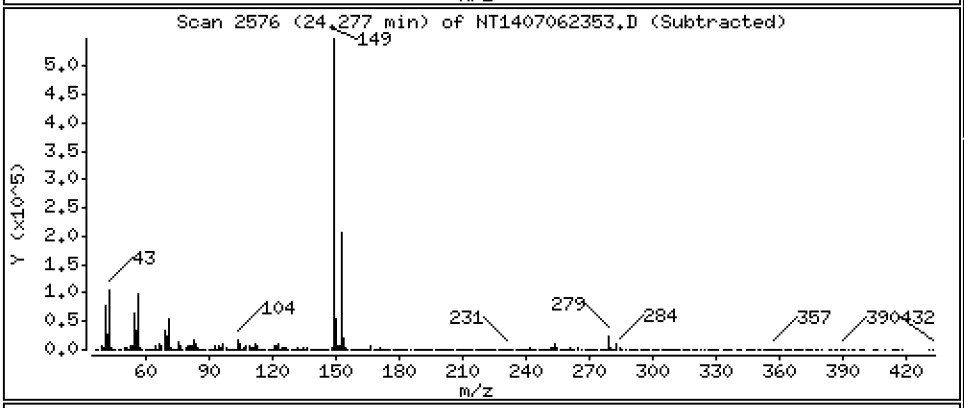
Column diameter: 0.25

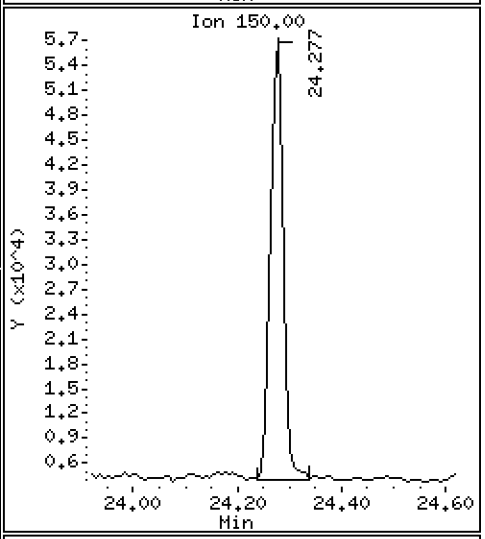
73 Di-n-octylphthalate

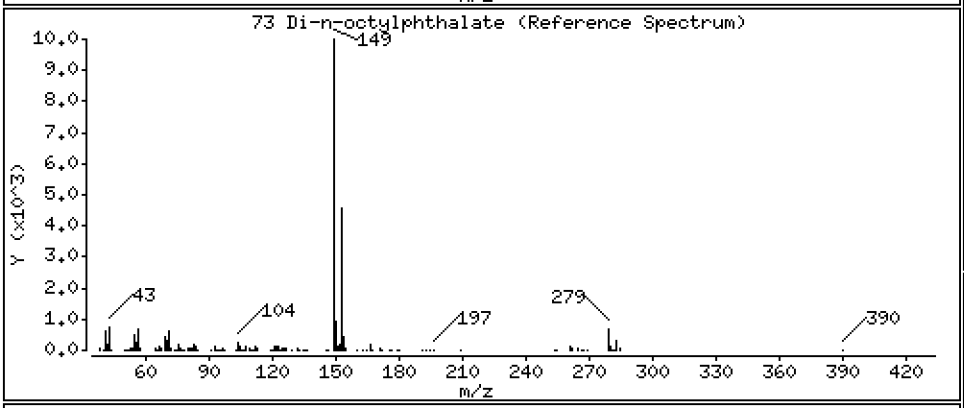
Concentration: 4.935 ug/mL

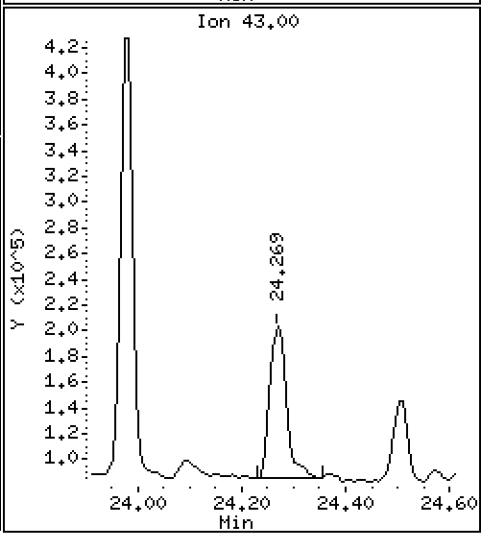


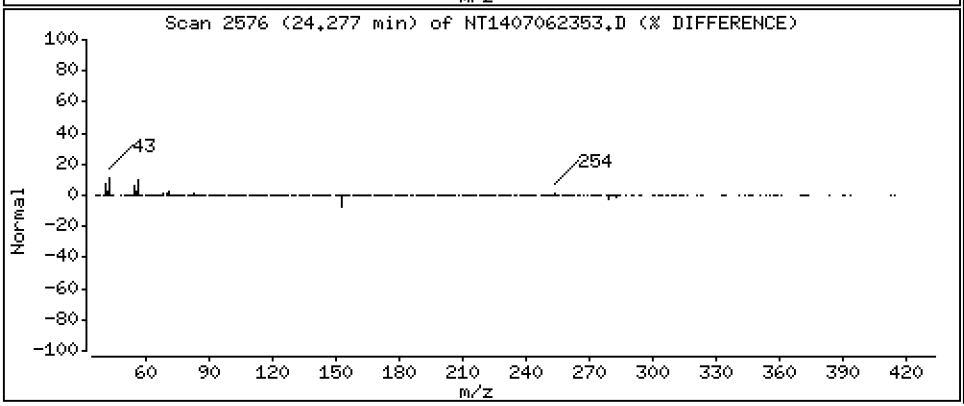












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

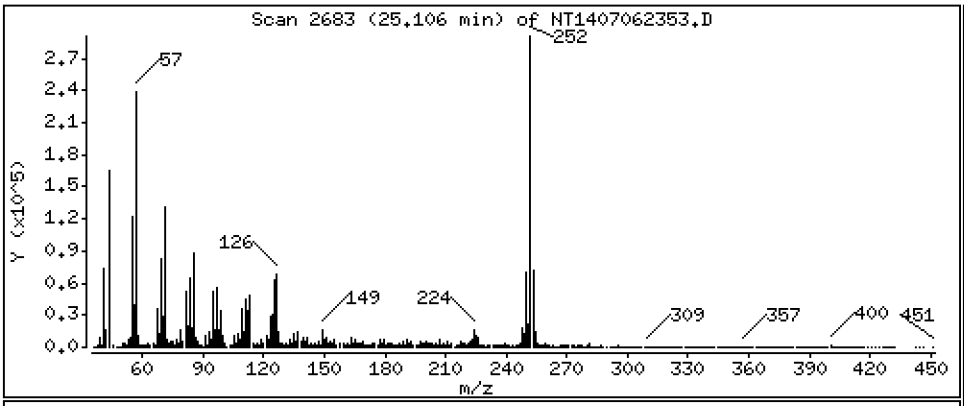
Operator: JGR

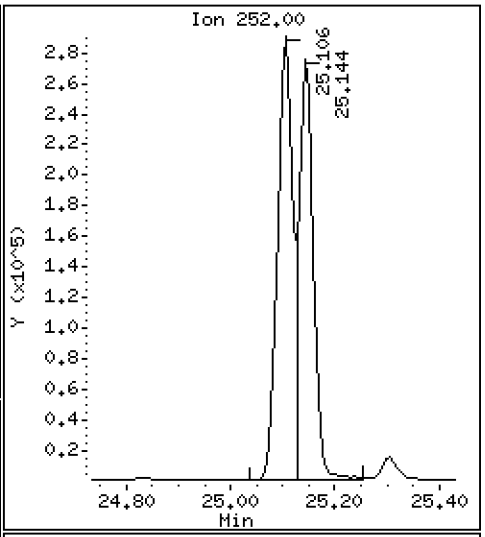
Column phase: ZB-5msi

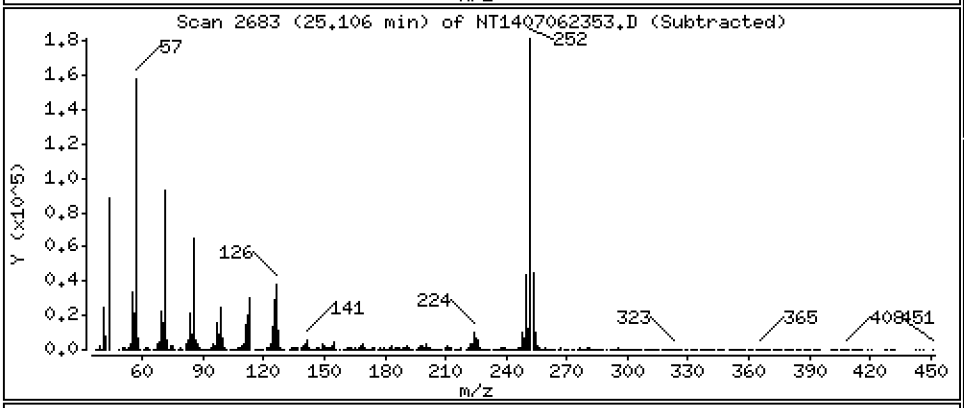
Column diameter: 0.25

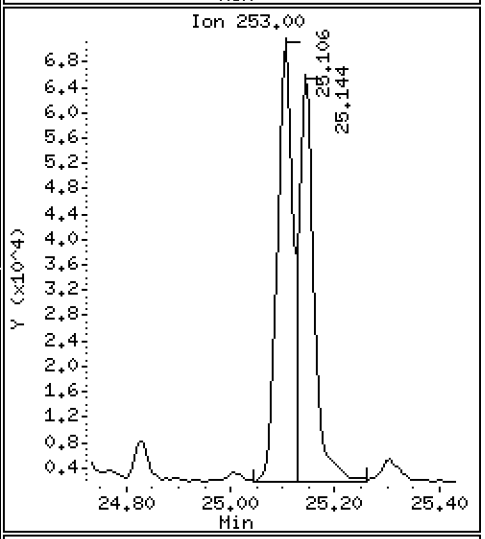
74 Benzo(b)fluoranthene

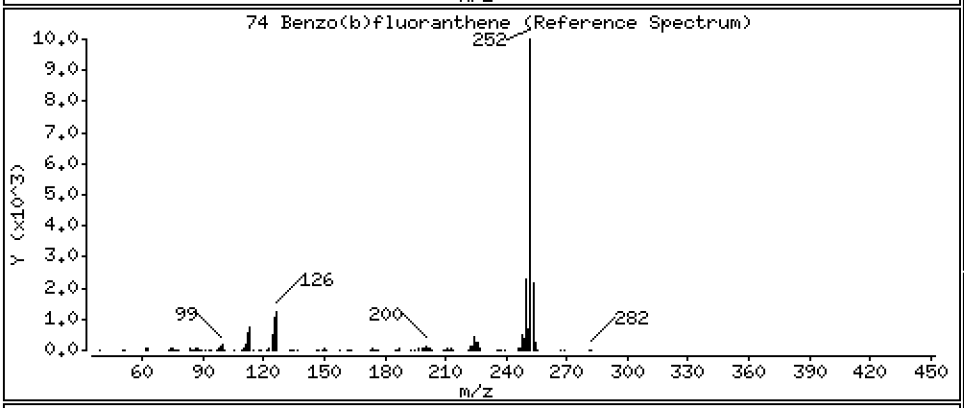
Concentration: 12.35 ug/mL

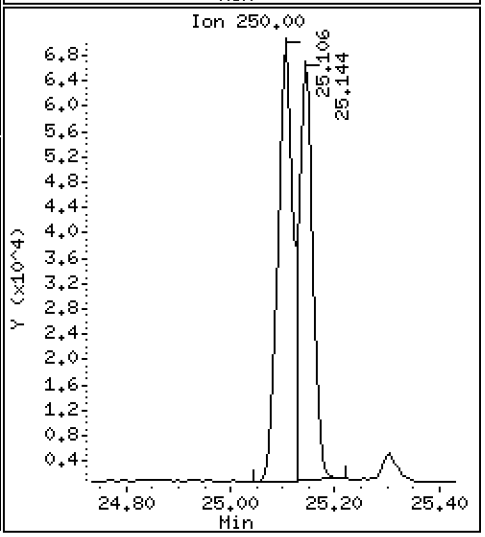


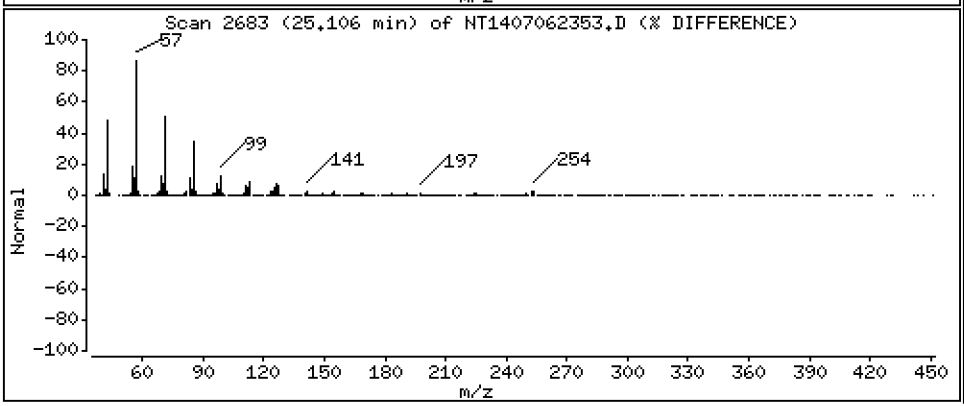












Date : 07-JUL-2023 21:58

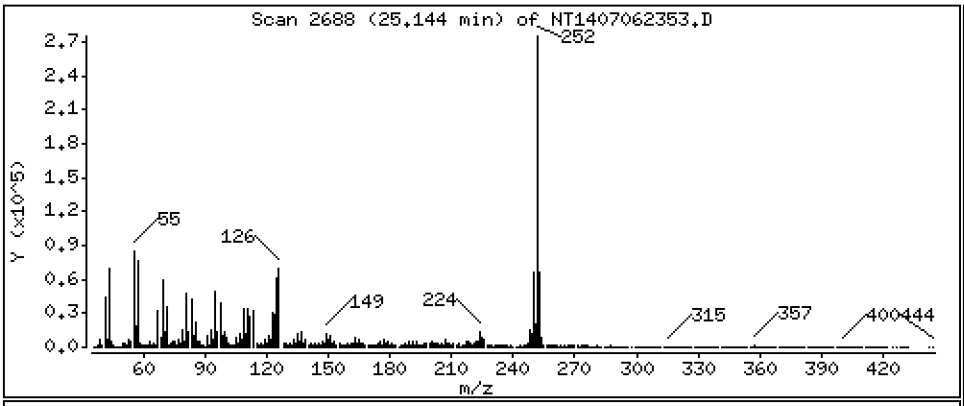
Client ID: Instrument: nt14.i

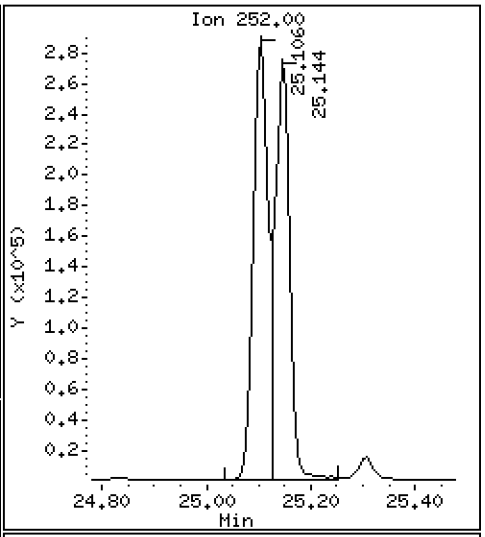
Sample Info: BLF0718-MS1

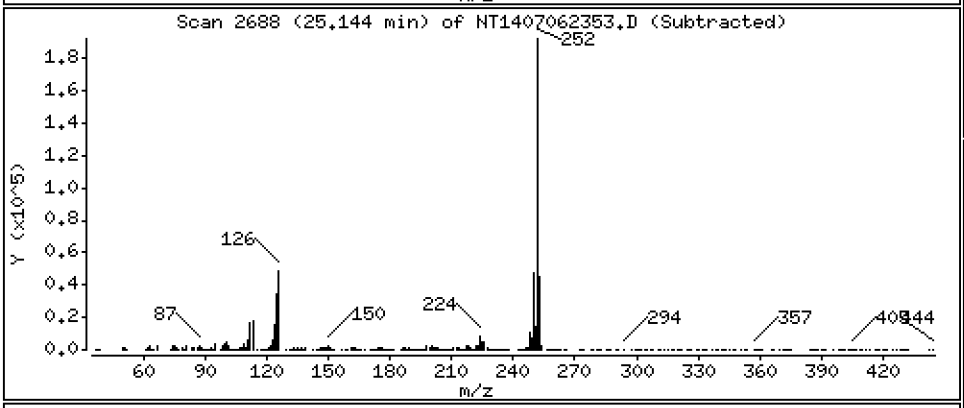
Operator: JGR

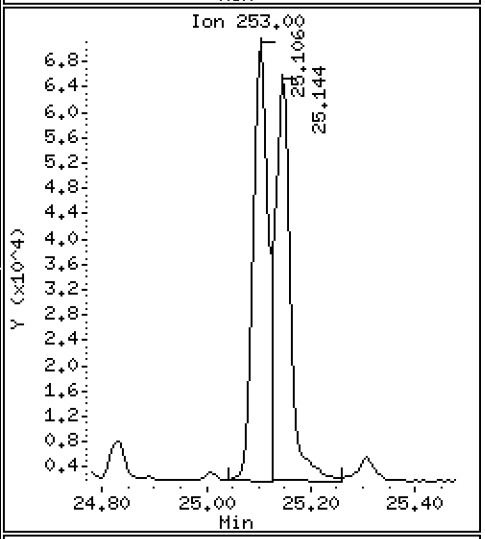
Column phase: ZB-5msi Column diameter: 0.25

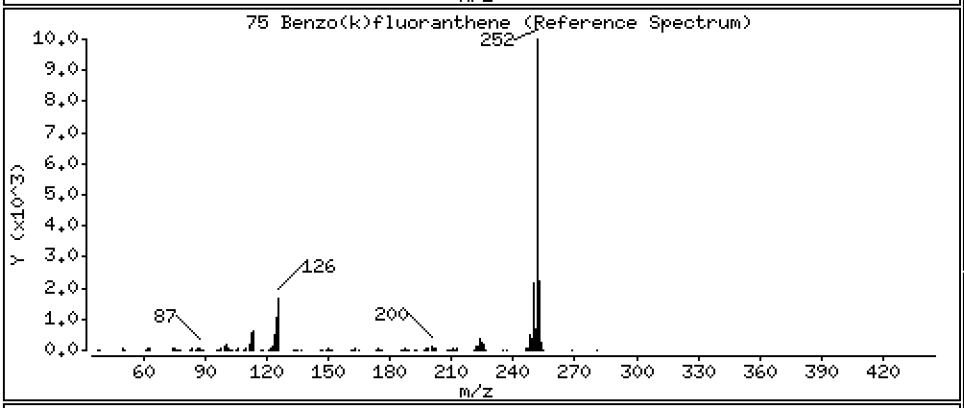
75 Benzo(k)fluoranthene Concentration: 9.174 ug/mL

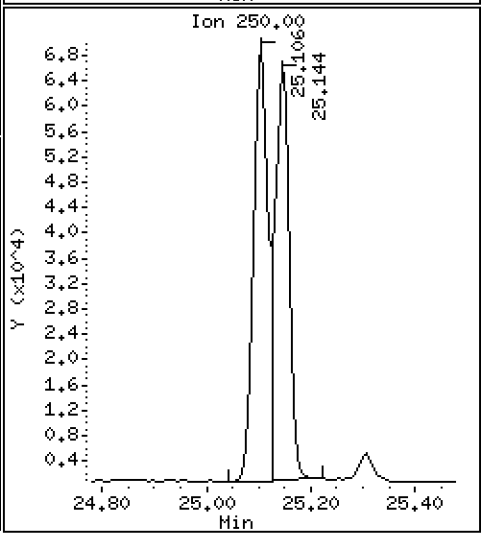


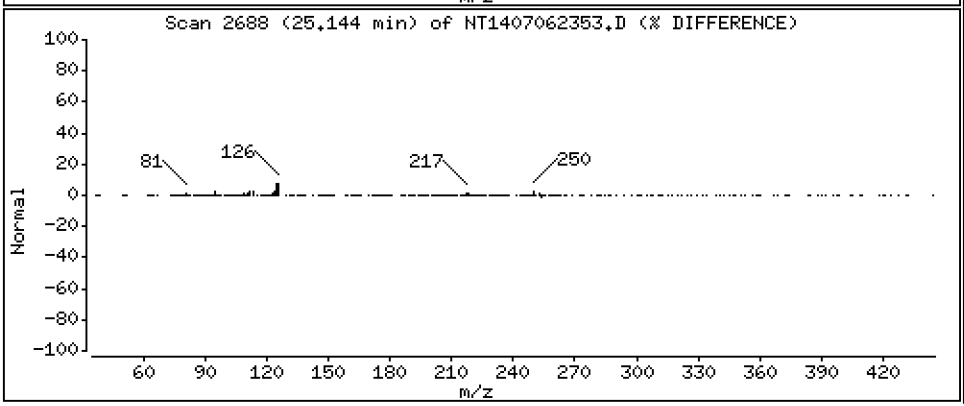












Date : 07-JUL-2023 21:58

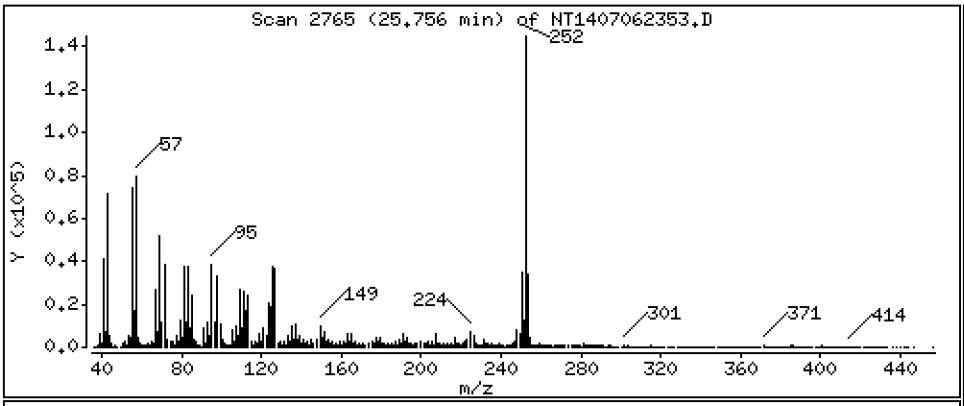
Client ID: Instrument: nt14.i

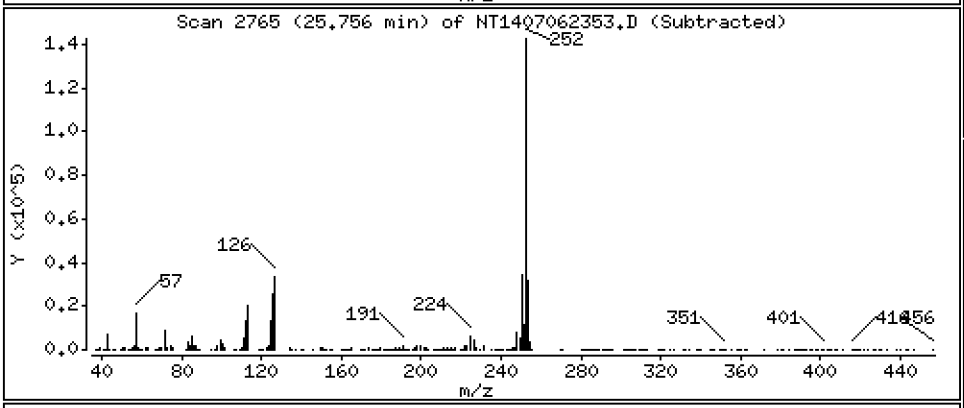
Sample Info: BLF0718-MS1

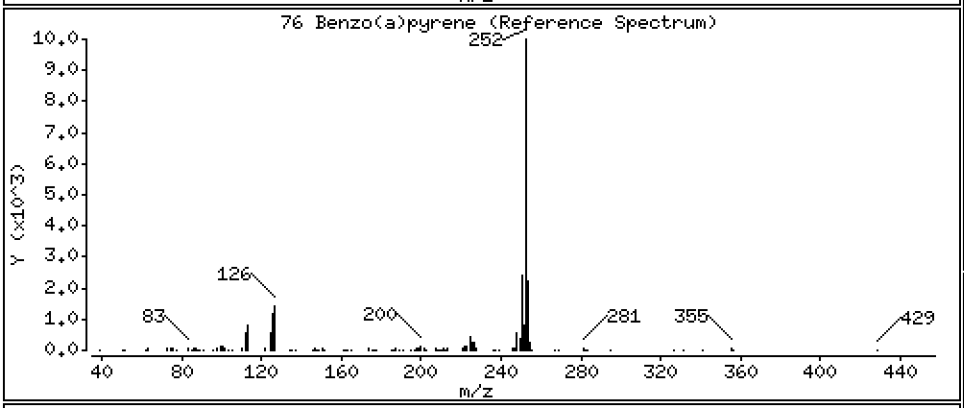
Operator: JGR

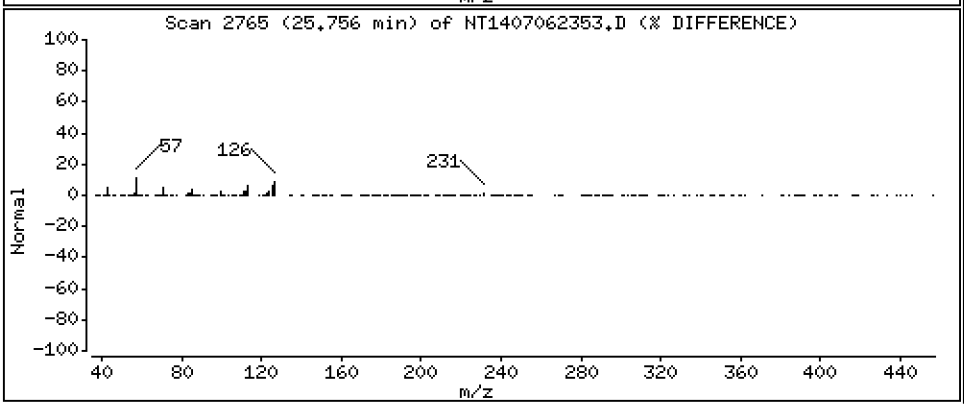
Column phase: ZB-5msi Column diameter: 0.25

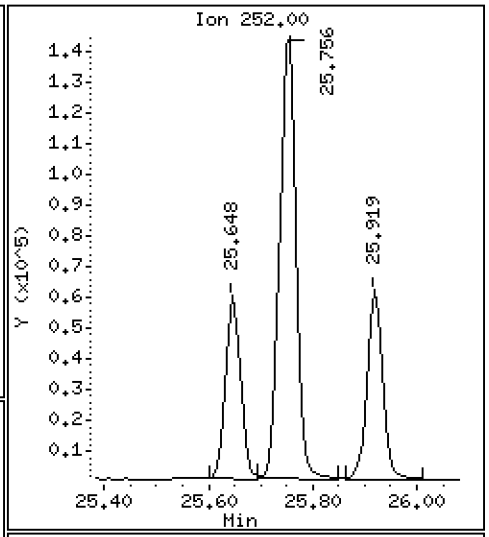
76 Benzo(a)pyrene Concentration: 7.773 ug/mL

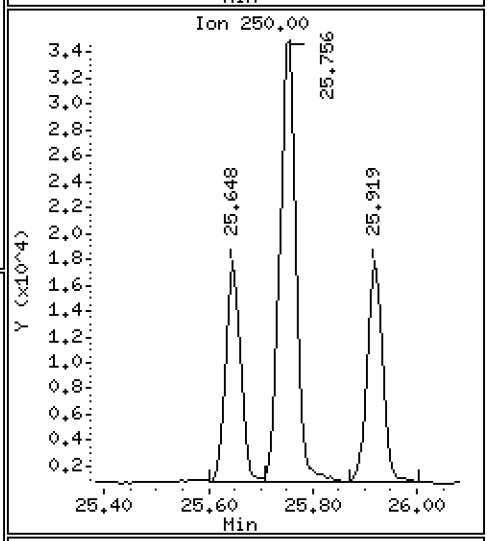


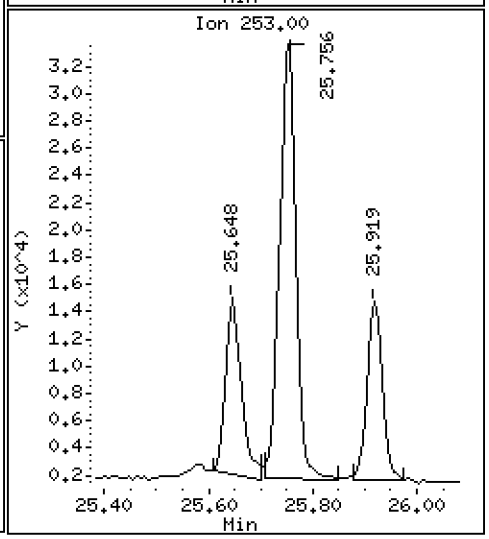












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

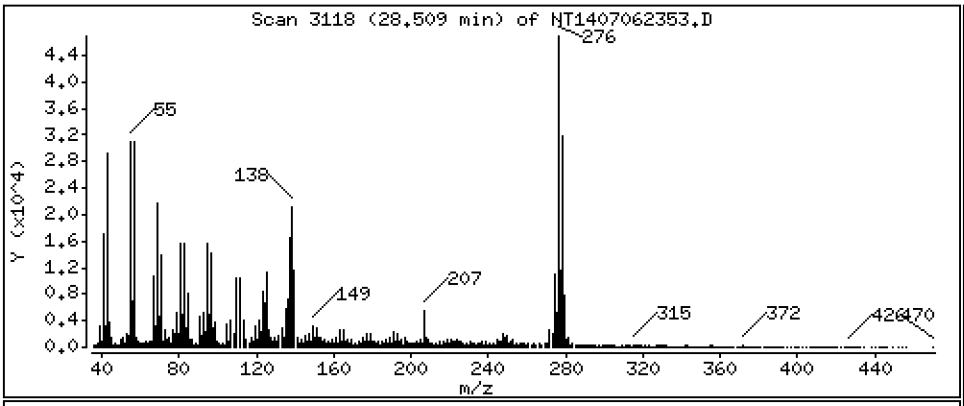
Operator: JGR

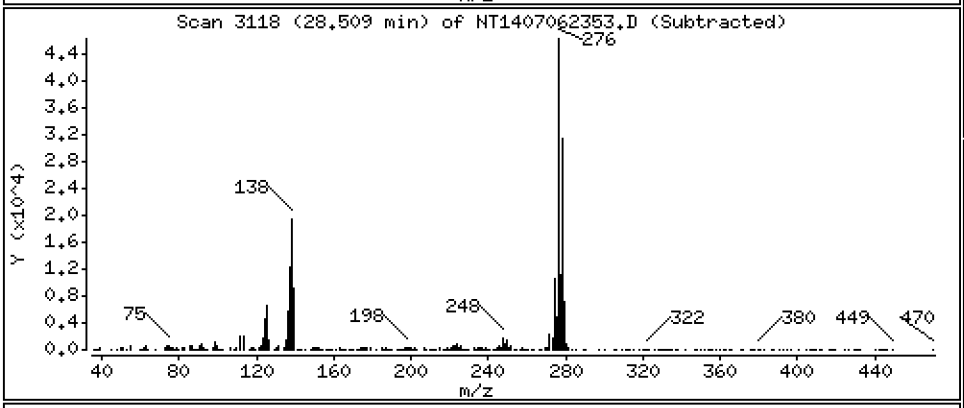
Column phase: ZB-5msi

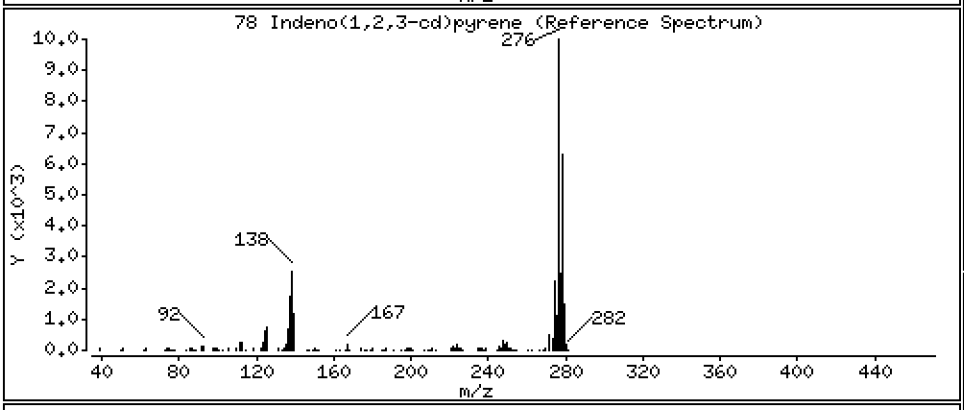
Column diameter: 0.25

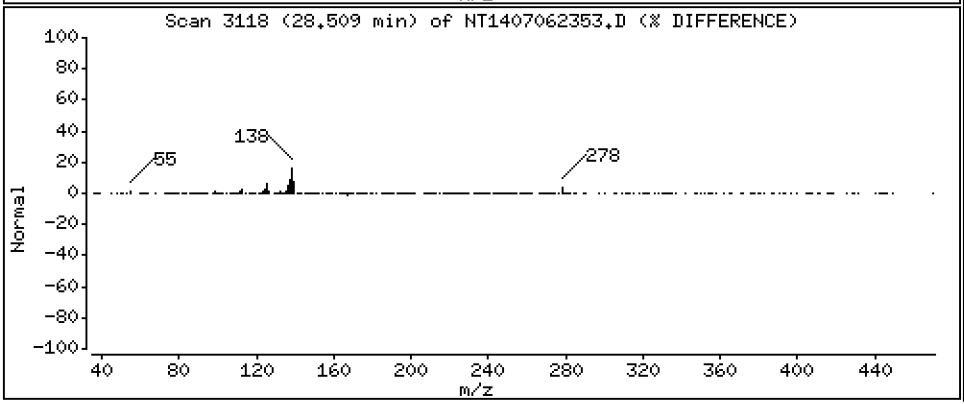
78 Indeno(1,2,3-cd)pyrene

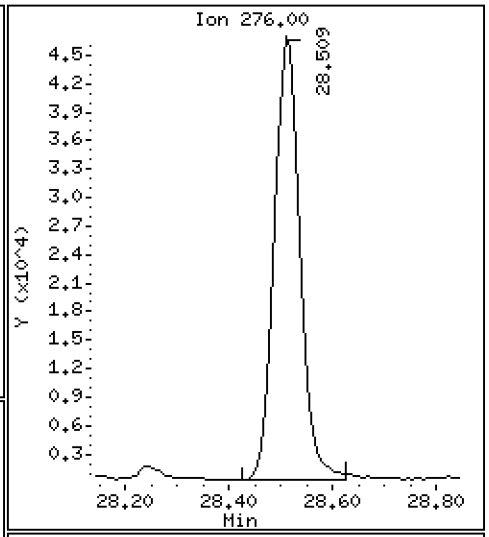
Concentration: 4.382 ug/mL

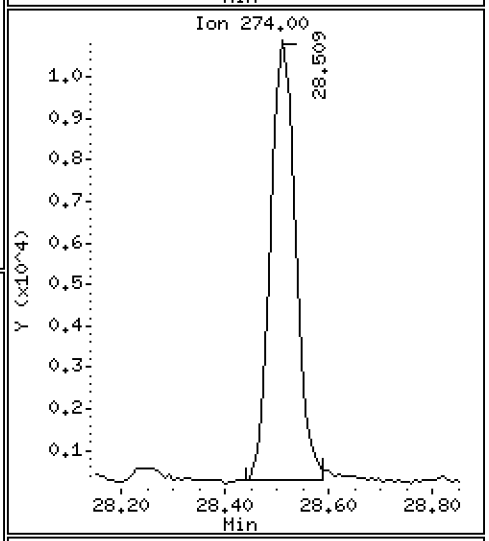


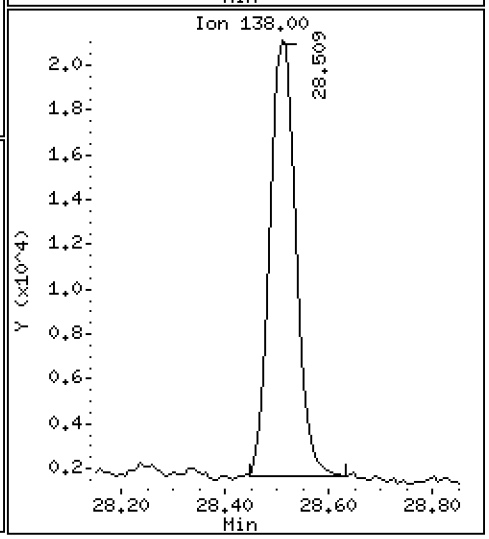












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

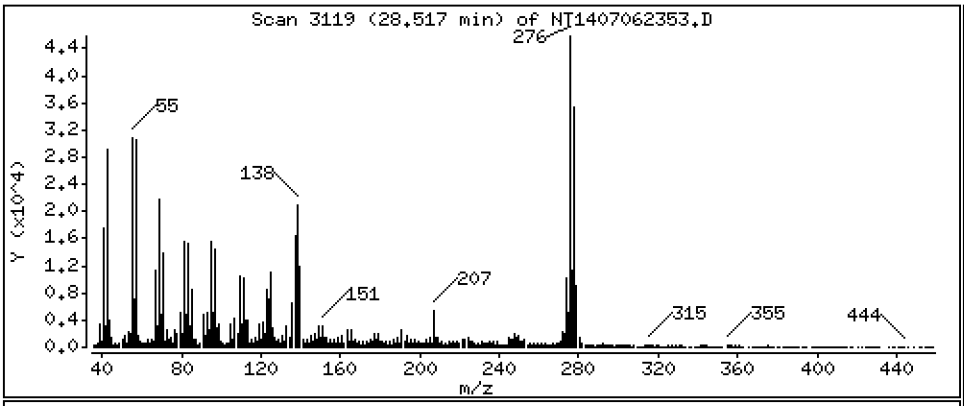
Operator: JGR

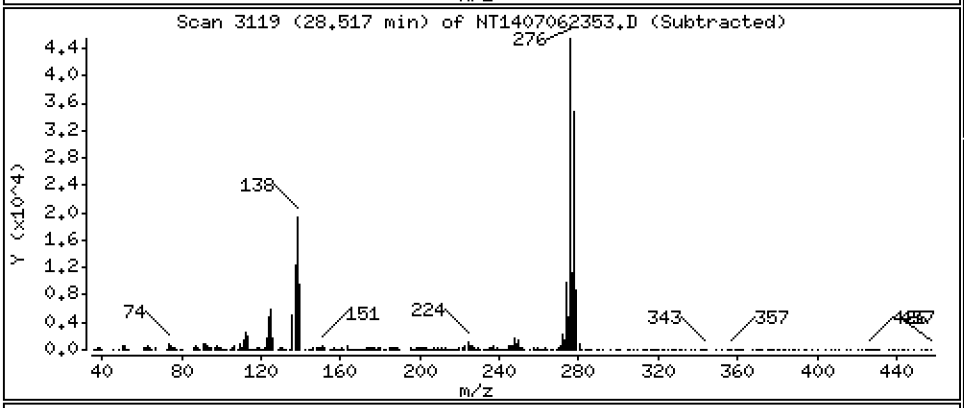
Column phase: ZB-5msi

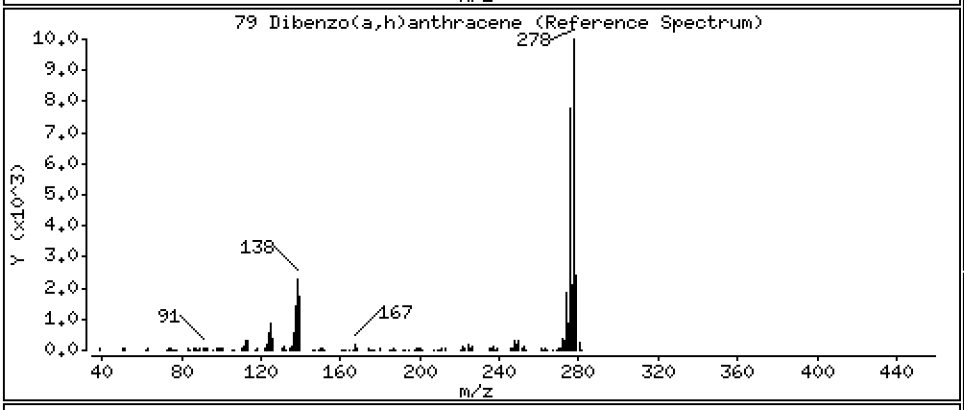
Column diameter: 0.25

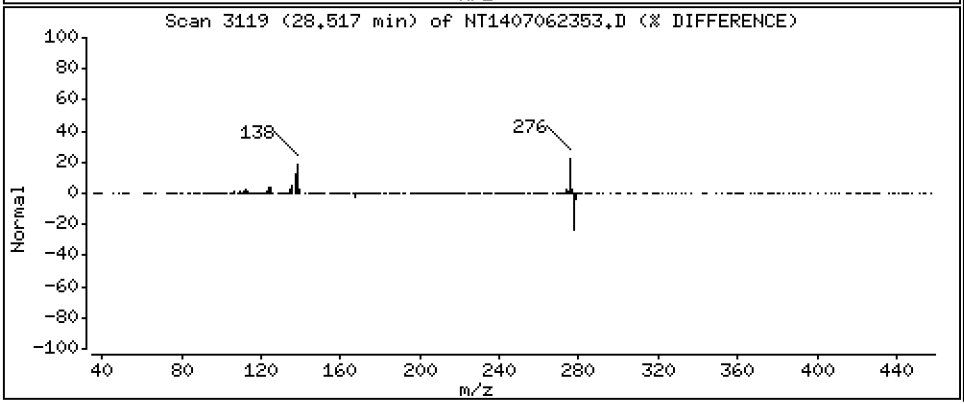
79 Dibenzo(a,h)anthracene

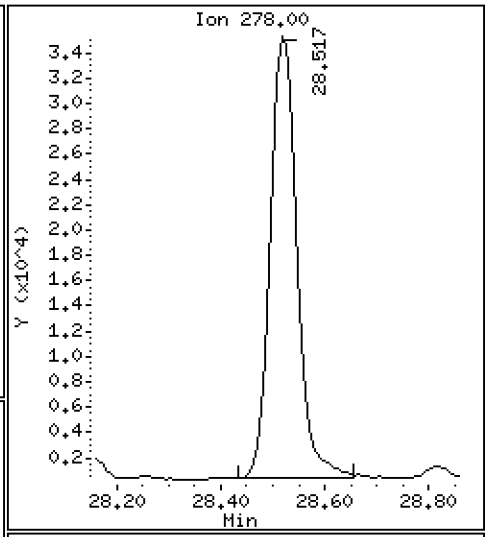
Concentration: 4.011 ug/mL

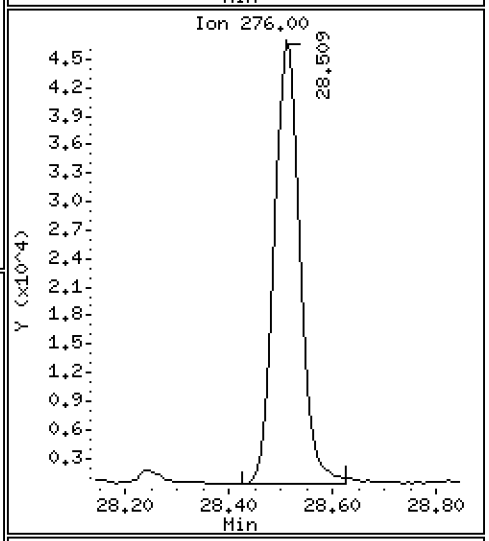


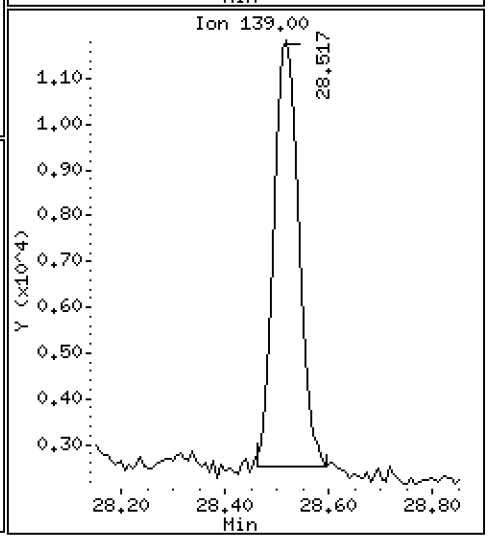












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062353.D

Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

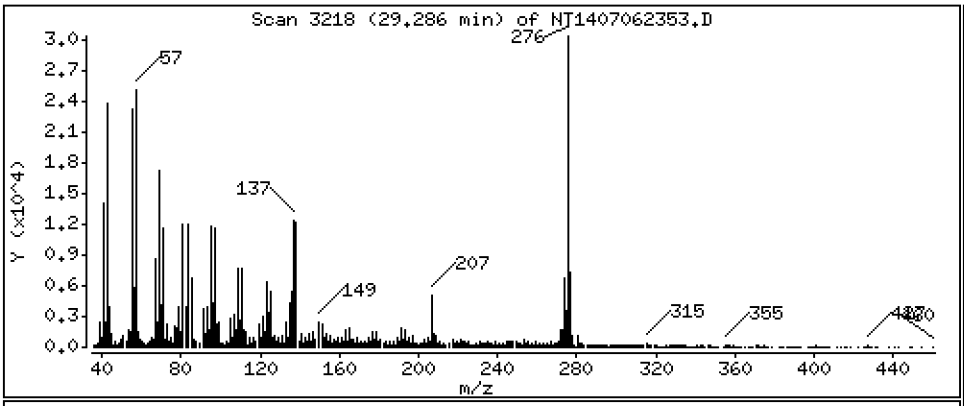
Operator: JGR

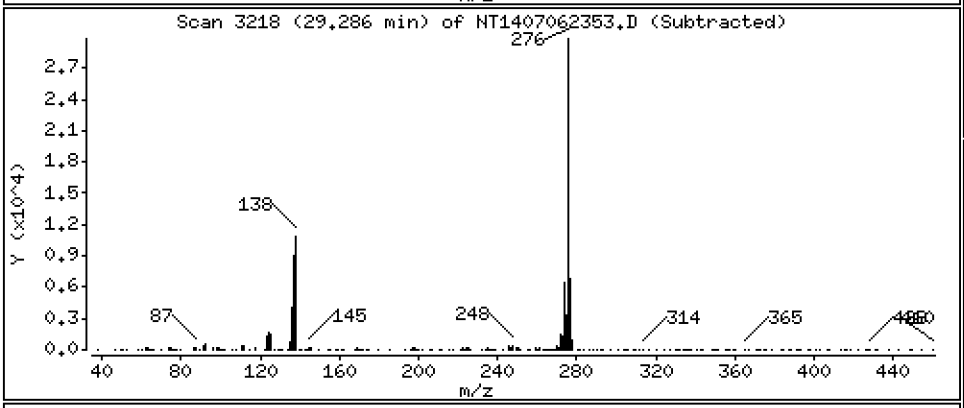
Column phase: ZB-5msi

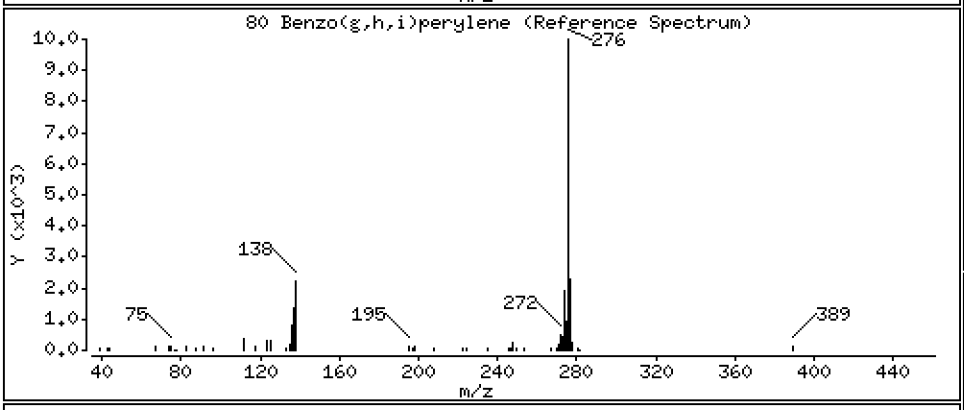
Column diameter: 0.25

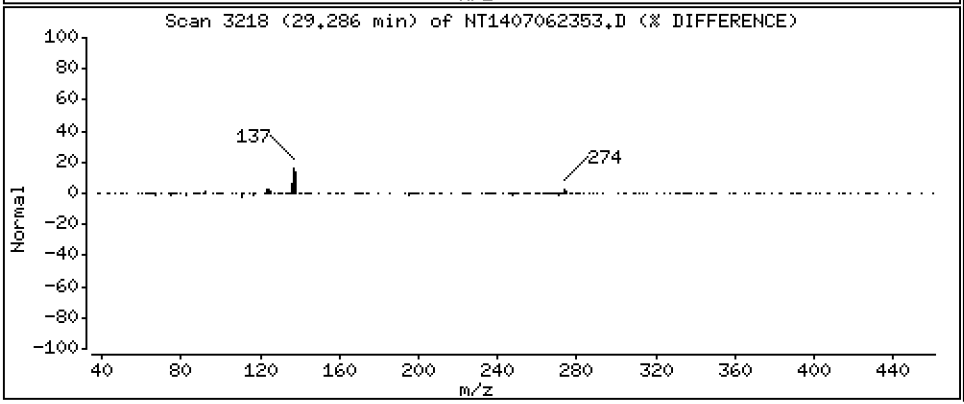
80 Benzo(g,h,i)perylene

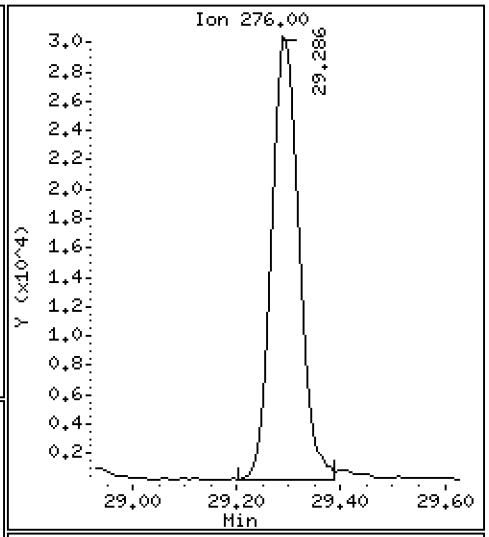
Concentration: 3.672 ug/mL

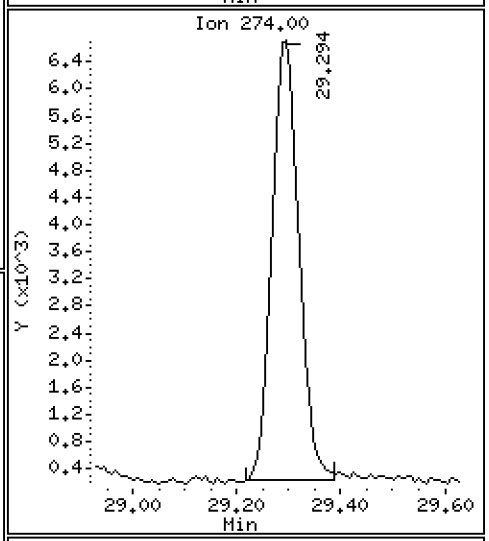


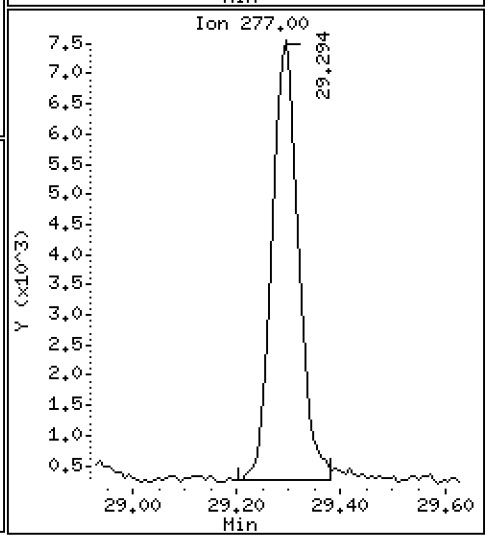












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

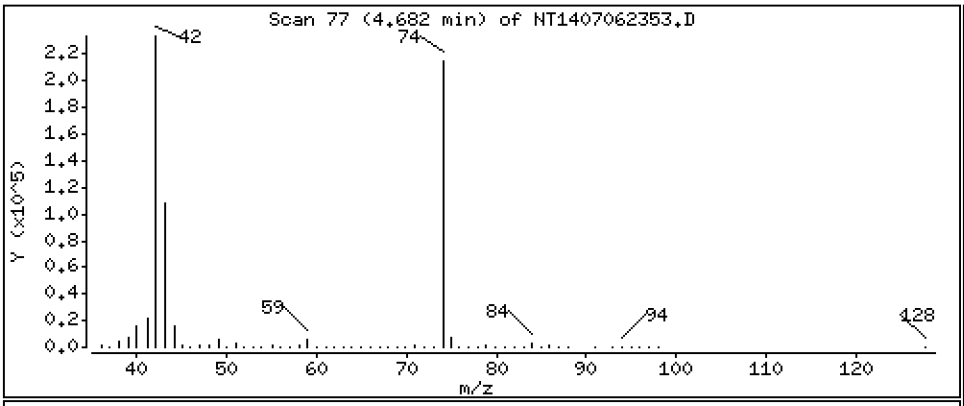
Operator: JGR

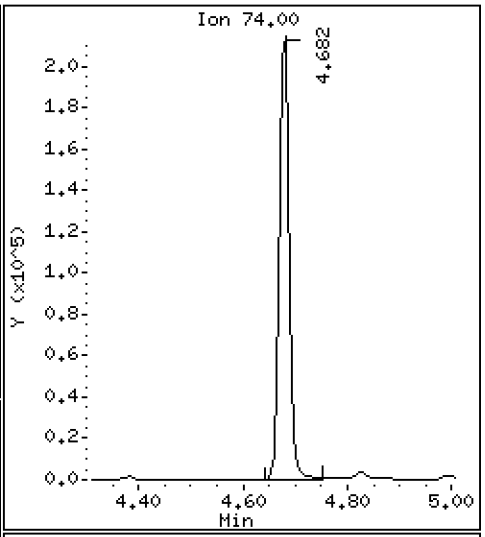
Column phase: ZB-5msi

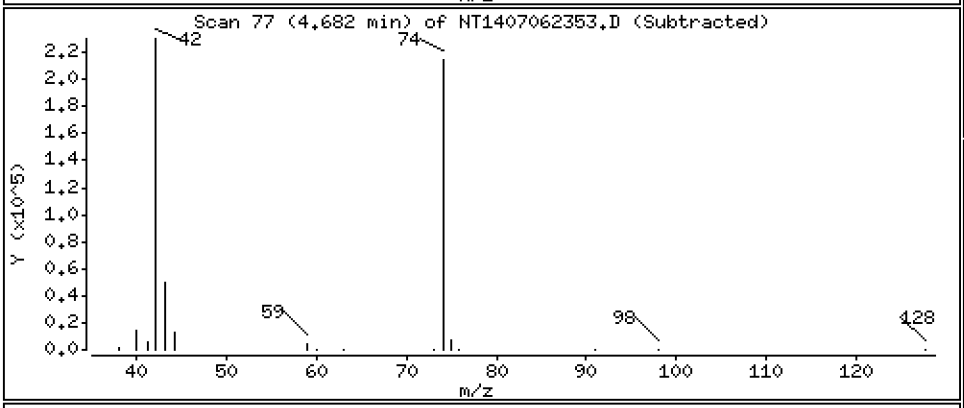
Column diameter: 0.25

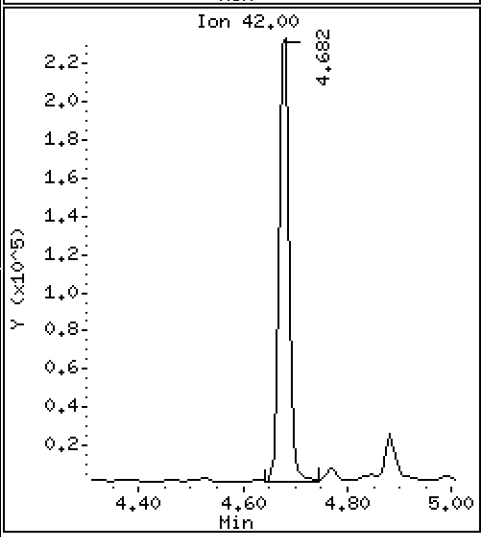
90 N-Nitrosodimethylamine

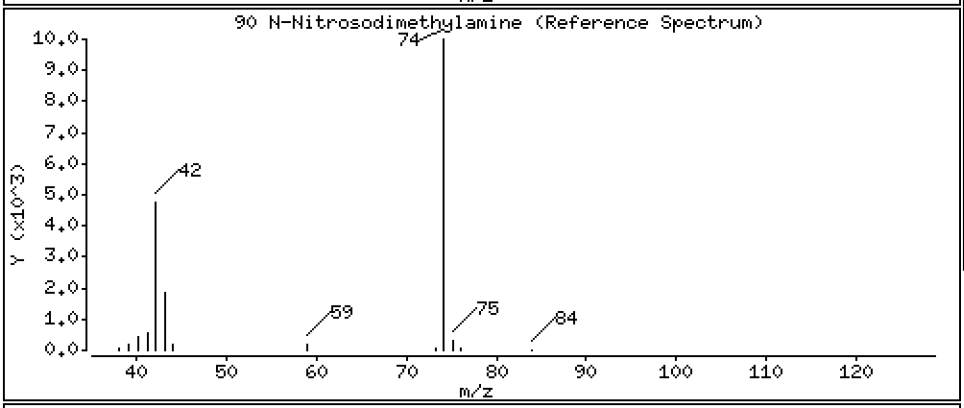
Concentration: 8.173 ug/mL

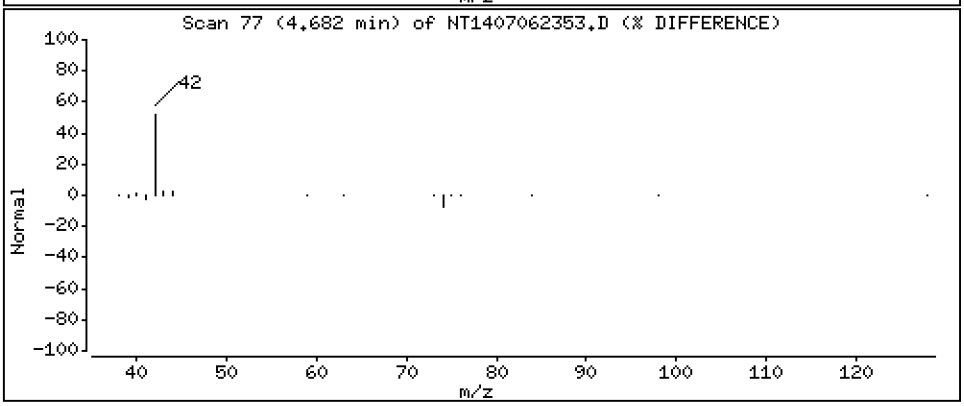












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

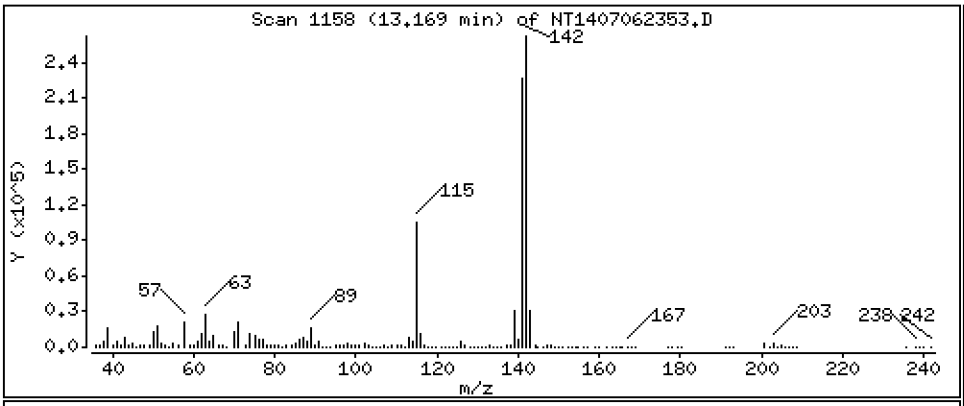
Operator: JGR

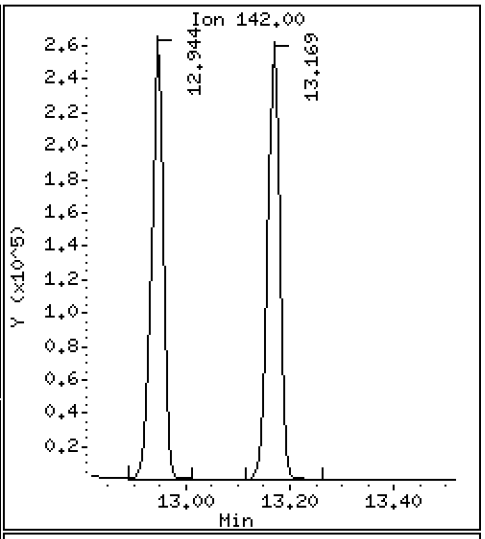
Column phase: ZB-5msi

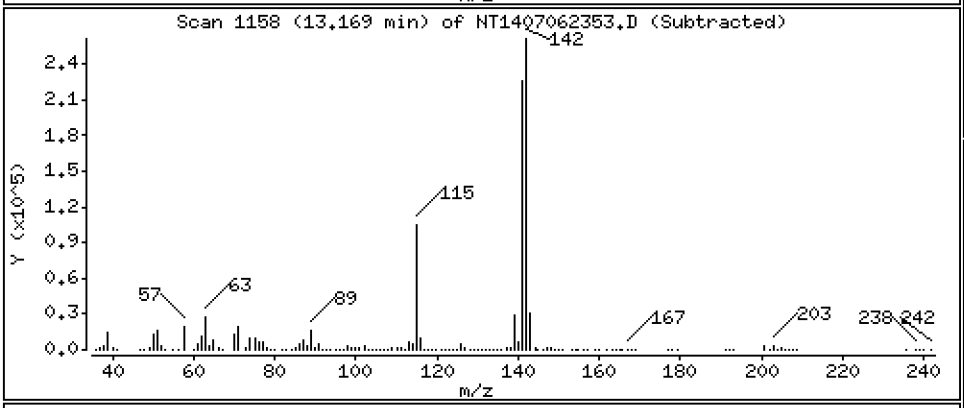
Column diameter: 0.25

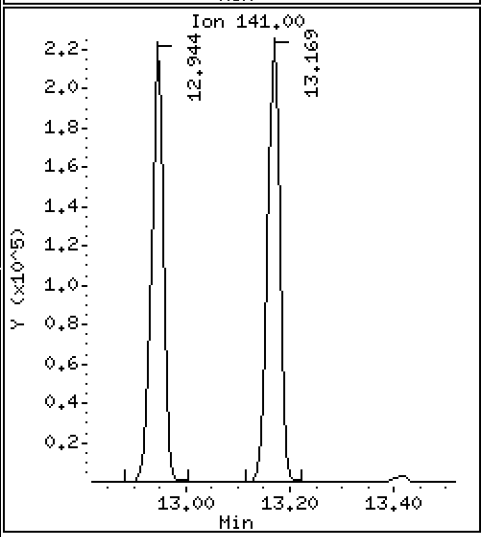
105 1-methylnaphthalene

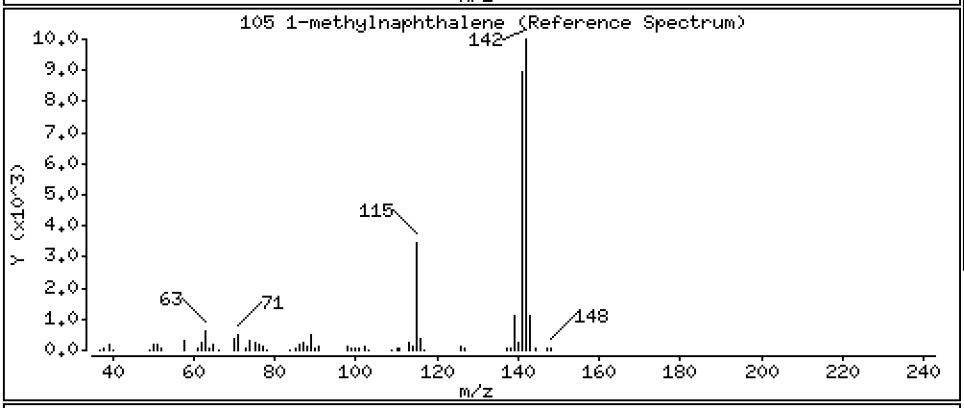
Concentration: 4.491 ug/mL

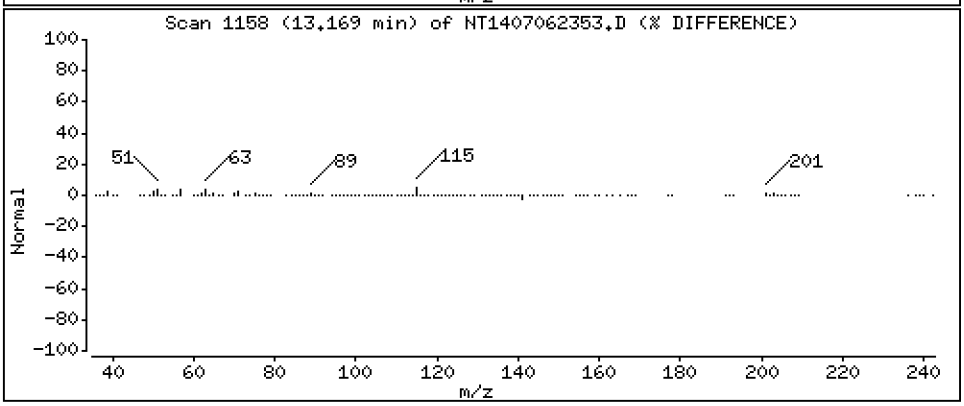












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

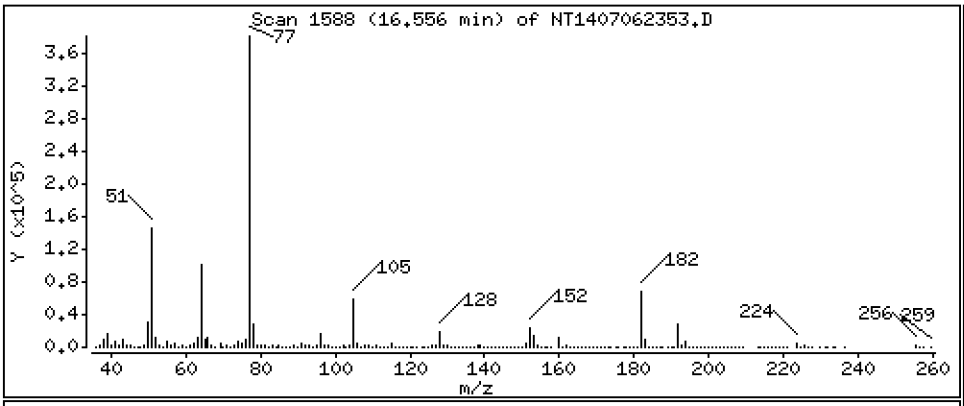
Operator: JGR

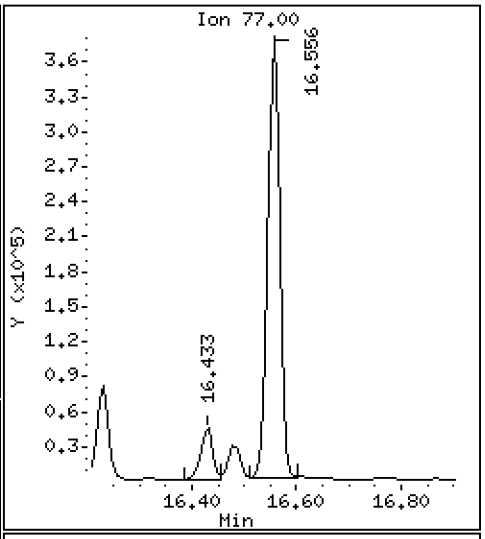
Column phase: ZB-5msi

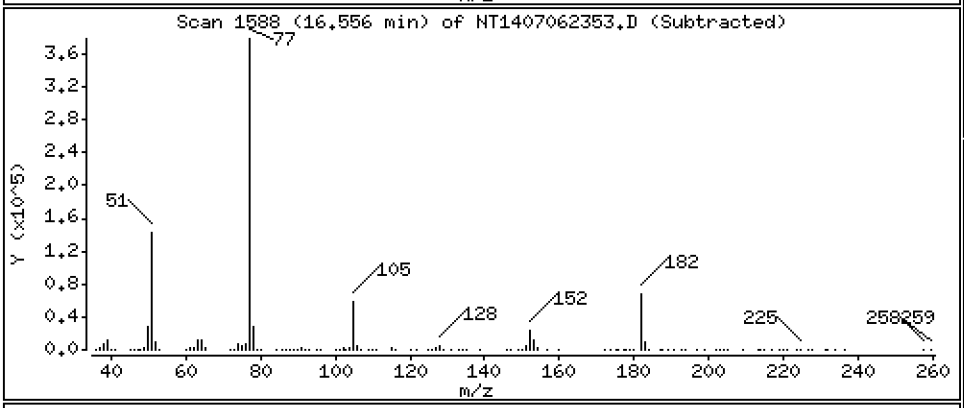
Column diameter: 0.25

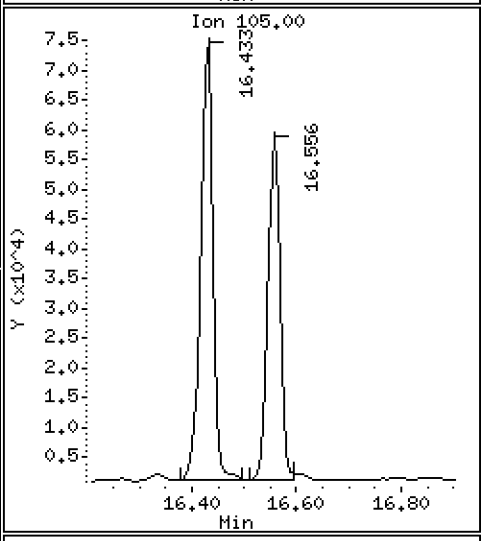
111 Azobenzene (1,2-DP-Hydrazine)

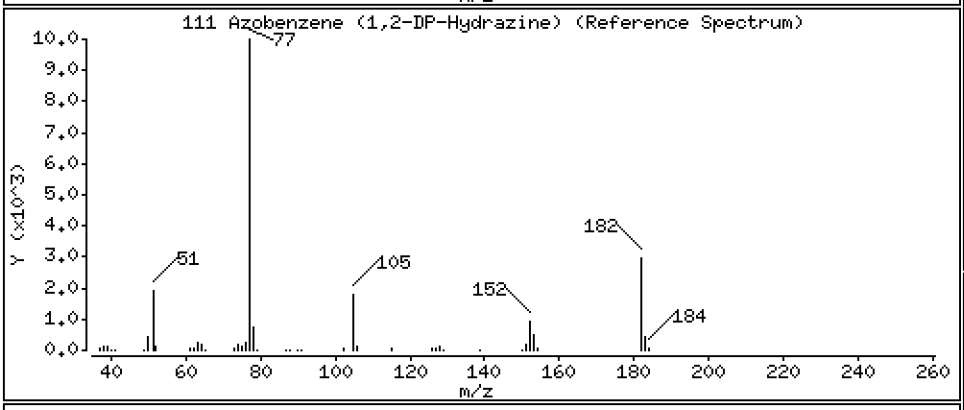
Concentration: 3.986 ug/mL

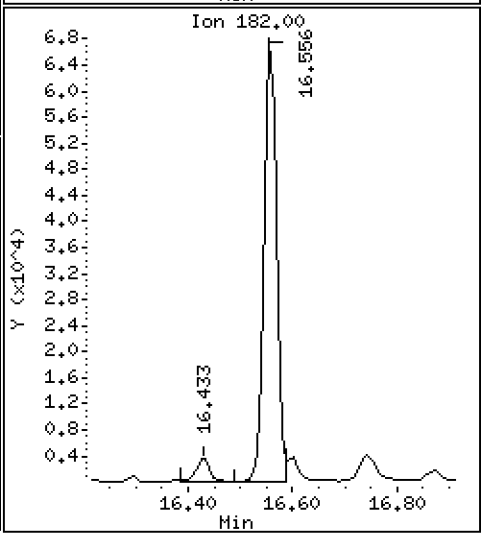


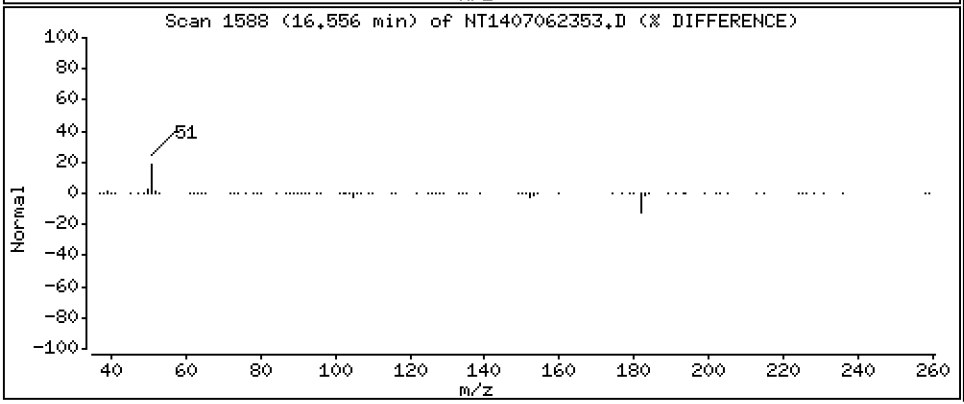












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

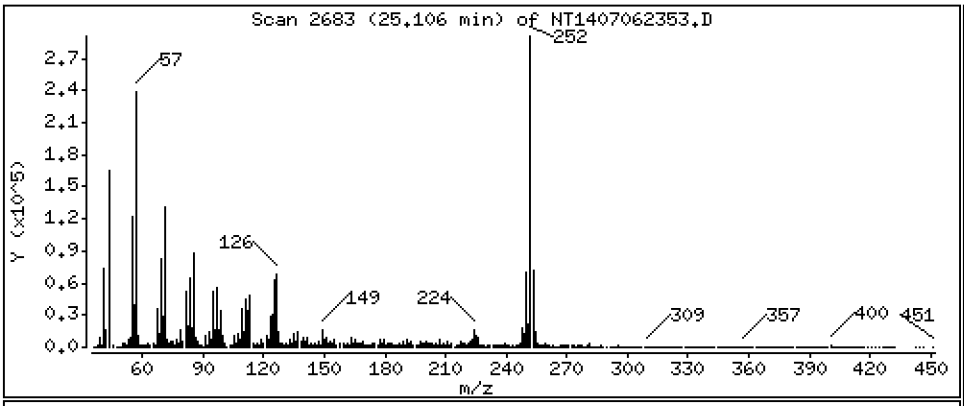
Operator: JGR

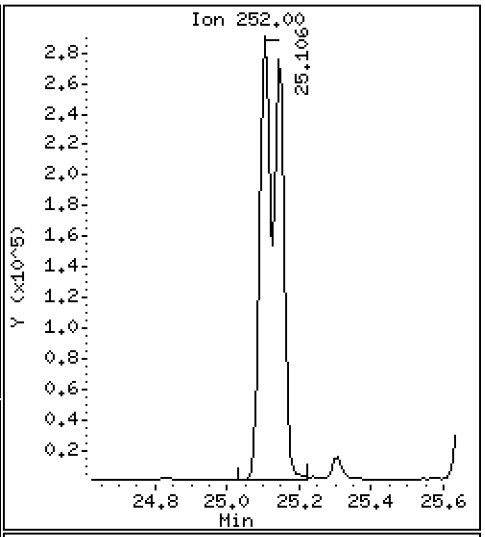
Column phase: ZB-5msi

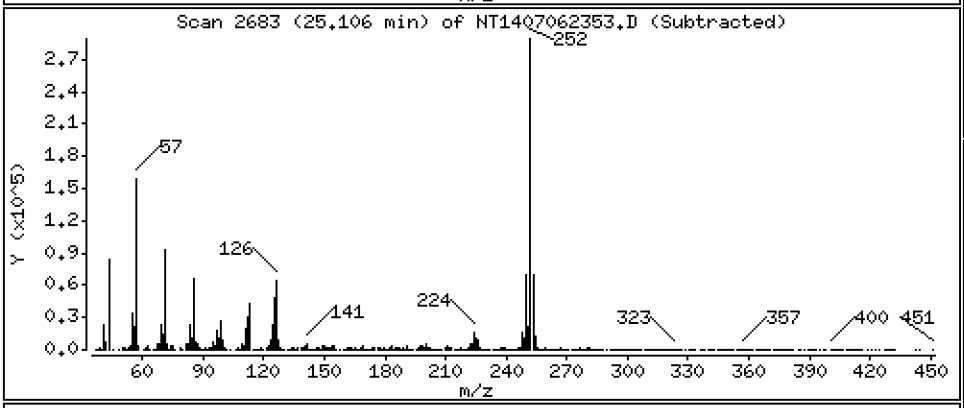
Column diameter: 0.25

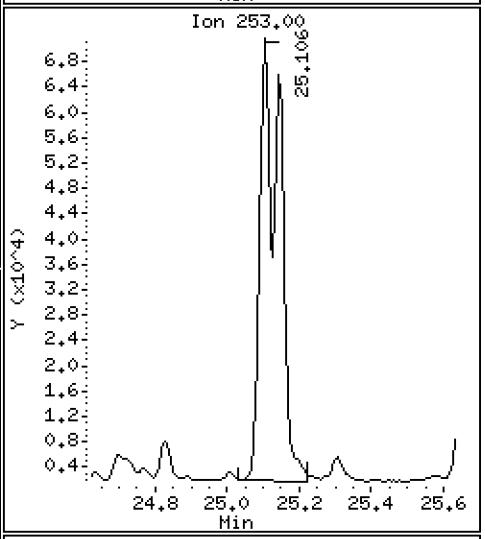
187 Total Benzofluoranthenes

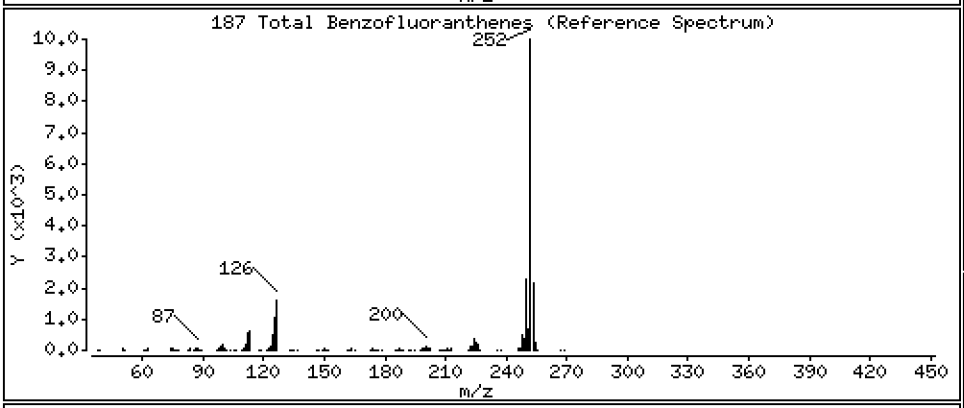
Concentration: 20.94 ug/mL

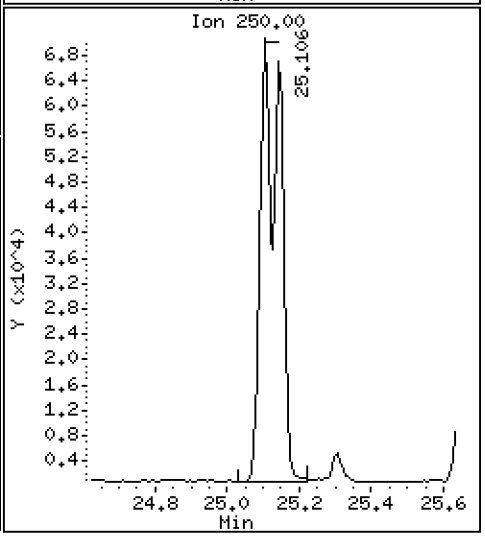


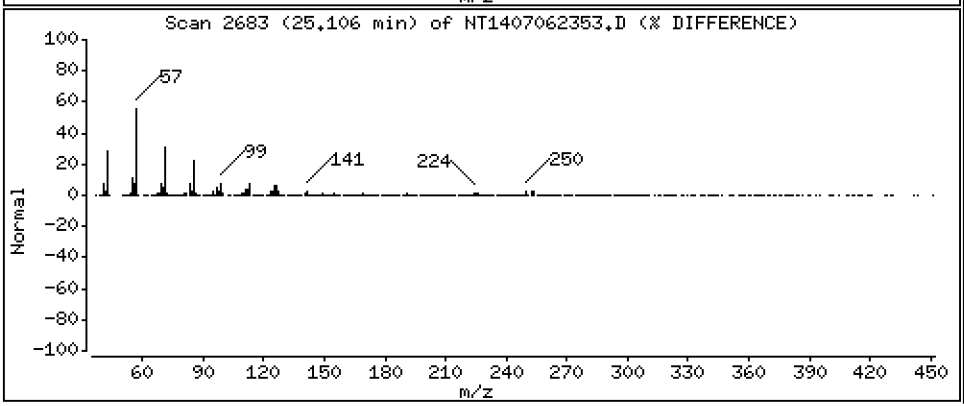












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Date : 07-JUL-2023 21:58

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MS1

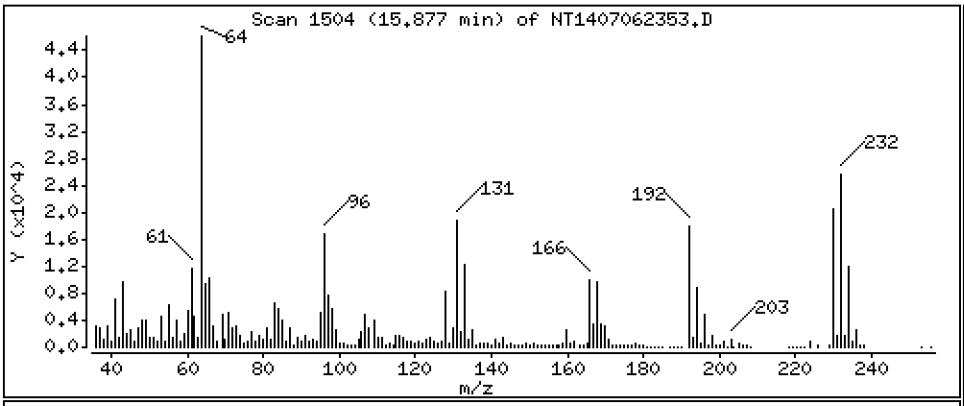
Operator: JGR

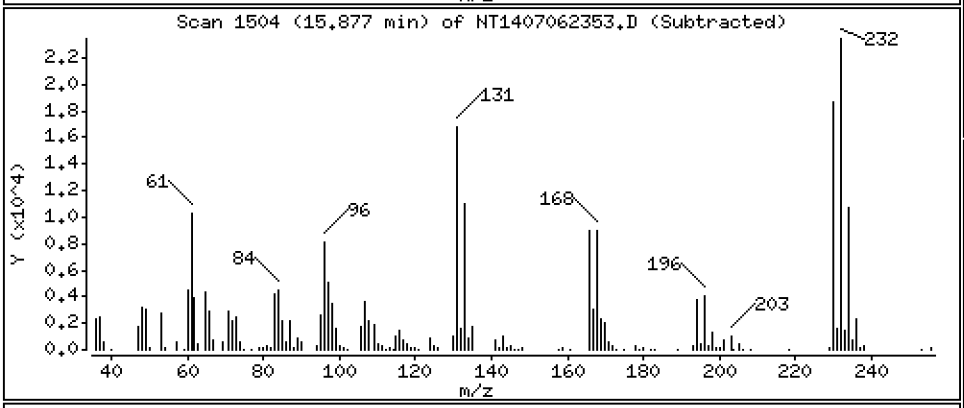
Column phase: ZB-5msi

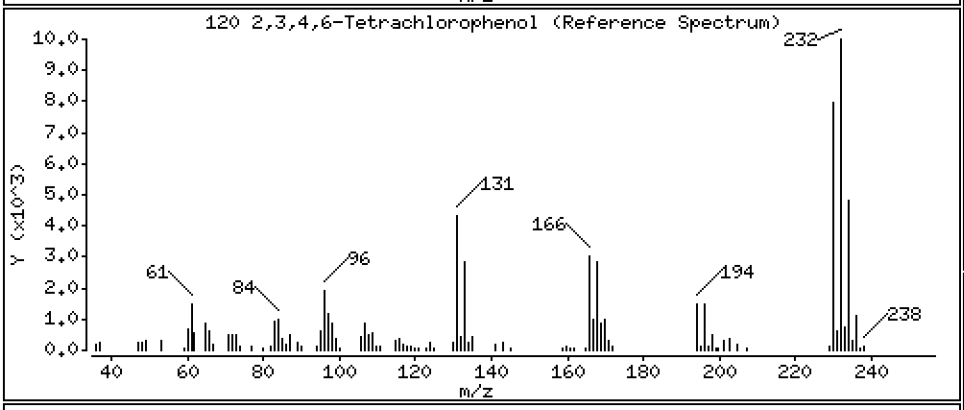
Column diameter: 0.25

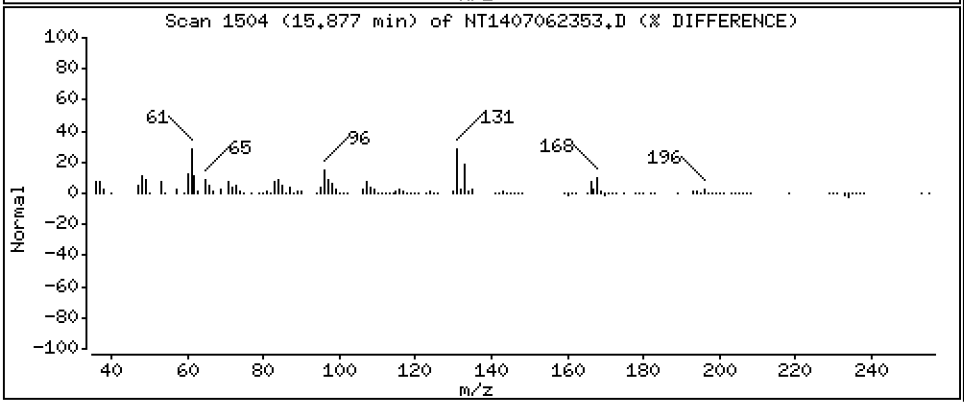
120 2,3,4,6-Tetrachlorophenol

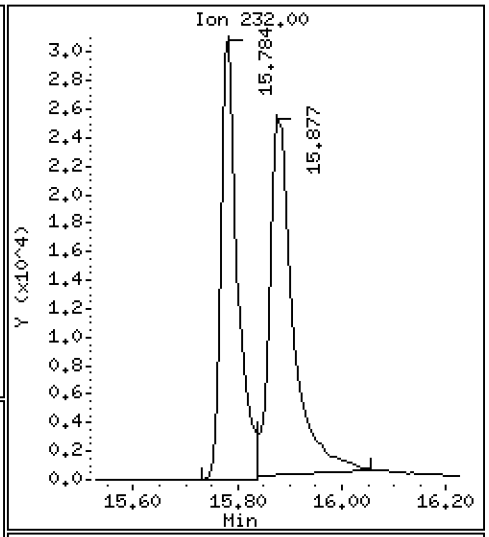
Concentration: 4.082 ug/mL

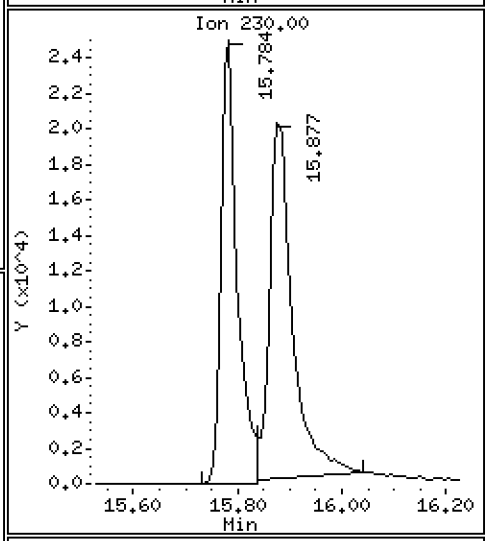


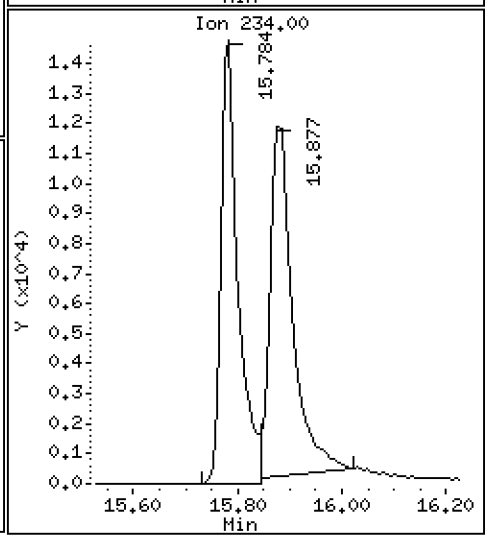












ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

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Inj Date : 07-JUL-2023 21:58 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : BLF0718-MS1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Meth Date : 08-Jul-2023 11:17 van Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 36
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: VANS-201906

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/mL)
$	1 2-Fluorophenol	112	6.813	6.798	(0.756)	259216	5.38526	5.385
$	2 Phenol-d5	99	8.397	8.382	(0.931)	378167	5.79567	5.796
	3 Phenol	94	8.412	8.405	(0.933)	289418	3.66311	3.663
$	5 2-Chlorophenol-d4	132	8.659	8.652	(0.960)	262774	5.44943	5.449
	4 Bis(2-Chloroethyl)ether	93	8.559	8.559	(0.949)	239027	4.34941	4.349
	6 2-Chlorophenol	128	8.683	8.683	(0.963)	207422	3.61873	3.619
	7 1,3-Dichlorobenzene	146	8.946	8.946	(0.992)	182412	3.57067	3.571
*	8 1,4-Dichlorobenzene-d4	152	9.016	9.016	(1.000)	126823	4.00000	
	9 1,4-Dichlorobenzene	146	9.039	9.047	(1.003)	200049	3.97227	3.972
$	10 1,2-Dichlorobenzene-d4	152	9.373	9.373	(1.040)	105298	3.45223	3.452
	12 1,2-Dichlorobenzene	146	9.396	9.404	(1.042)	182843	3.74734	3.747
	11 Benzyl alcohol	108	Compound Not Detected.					
	14 2,2'-oxybis(1-Chloropropane)	121	9.582	9.590	(1.063)	68674	4.35133	4.351
	13 2-Methylphenol	108	9.528	9.520	(1.057)	181935	3.65322	3.653
	17 Hexachloroethane	117	9.994	9.994	(1.108)	62142	2.68628	2.686
	16 N-Nitroso-di-n-propylamine	70	9.846	9.846	(1.092)	172010	3.84925	3.849
	15 4-Methylphenol	108	9.807	9.792	(1.088)	224922	4.07759	4.078
$	18 Nitrobenzene-d5	82	10.110	10.110	(0.879)	233959	3.86587	3.866
	19 Nitrobenzene	77	10.141	10.149	(0.881)	255350	3.94809	3.948
	20 Isophorone	82	10.591	10.591	(0.921)	347129	3.85837	3.858
	21 2-Nitrophenol	139	10.777	10.778	(0.937)	108754	3.55525	3.555
	22 2,4-Dimethylphenol	107	10.847	10.840	(0.943)	556236	10.7220	10.72
	23 Bis(2-Chloroethoxy)methane	93	11.025	11.026	(0.958)	270391	4.70362	4.704
	24 Benzoic acid	105	11.018	11.088	(0.958)	197171	6.23017	6.230
	25 2,4-Dichlorophenol	162	11.250	11.243	(0.978)	480959	12.5387	12.54
	26 1,2,4-Trichlorobenzene	180	11.420	11.420	(0.993)	151441	3.96094	3.961
*	27 Naphthalene-d8	136	11.505	11.505	(1.000)	513083	4.00000	
	28 Naphthalene	128	11.544	11.544	(1.003)	604746	4.51191	4.512
	29 4-Chloroaniline	127	11.714	11.675	(1.018)	70430	1.12687	1.127
	30 Hexachlorobutadiene	225	11.907	11.915	(1.035)	76091	4.26653	4.267
	31 4-Chloro-3-methylphenol	107	12.665	12.665	(1.101)	600188	12.4755	12.48
	32 2-Methylnaphthalene	142	12.944	12.952	(1.125)	407725	4.10116	4.101
	33 Hexachlorocyclopentadiene	237	13.416	13.416	(0.886)	25614	1.32052	1.321

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
34	2,4,6-Trichlorophenol	196	13.578	13.579	(0.897)	300995	12.1275	12.13
35	2,4,5-Trichlorophenol	196	13.664	13.664	(0.903)	372936	14.4405	14.44
$ 36	2-Fluorobiphenyl	172	13.733	13.733	(0.907)	380322	4.13536	4.135
37	2-Chloronaphthalene	162	13.942	13.942	(0.921)	363645	4.29811	4.298
38	2-Nitroaniline	65	14.205	14.206	(0.939)	502100	12.2456	12.25
39	Dimethylphthalate	163	14.639	14.639	(0.967)	410775	4.73307	4.733
40	Acenaphthylene	152	14.817	14.817	(0.979)	608027	4.65732	4.657
41	2,6-Dinitrotoluene	165	14.778	14.778	(0.976)	257543	14.1033	14.10
* 42	Acenaphthene-d10	164	15.134	15.134	(1.000)	258222	4.00000	
43	3-Nitroaniline	138	15.064	15.065	(0.995)	105708	4.32093	4.321
44	Acenaphthene	153	15.196	15.204	(1.004)	365684	4.73309	4.733
45	2,4-Dinitrophenol	184	15.273	15.273	(1.009)	64531	5.69422	5.694
46	Dibenzofuran	168	15.528	15.528	(1.026)	525241	4.66504	4.665
47	4-Nitrophenol	109	15.435	15.420	(1.020)	194751	10.8786	10.88
48	2,4-Dinitrotoluene	165	15.590	15.590	(1.030)	356716	13.9693	13.97
50	Diethylphthalate	149	16.100	16.101	(1.064)	465966	4.64278	4.643
49	Fluorene	166	16.239	16.240	(1.073)	488412	4.96037	4.960
51	4-Chlorophenyl-phenylether	204	16.232	16.232	(1.073)	208780	4.91094	4.911
52	4-Nitroaniline	138	16.332	16.340	(1.079)	146000	5.88060	5.881
53	4,6-Dinitro-2-methylphenol	198	16.432	16.432	(0.904)	211835	14.2226	14.22
54	N-Nitrosodiphenylamine	169	16.486	16.486	(0.907)	266836	4.08016	4.080
$ 55	2,4,6-Tribromophenol	330	16.787	16.779	(1.109)	55080	6.77982	6.780
56	4-Bromophenyl-phenylether	248	17.234	17.234	(0.948)	98169	4.92249	4.922
57	Hexachlorobenzene	284	17.559	17.559	(0.966)	95579	4.53031	4.530
58	Pentachlorophenol	266	17.938	17.923	(0.987)	151913	11.6316	11.63
* 59	Phenanthrene-d10	188	18.178	18.178	(1.000)	463166	4.00000	
60	Phenanthrene	178	18.232	18.225	(1.003)	745650	5.95106	5.951
61	Anthracene	178	18.325	18.317	(1.008)	608048	5.02213	5.022
62	Carbazole	167	18.658	18.650	(1.026)	596116	4.89389	4.894
63	Di-n-butylphthalate	149	19.462	19.447	(1.071)	820109	5.12432	5.124
64	Fluoranthene	202	20.669	20.615	(0.889)	1148072	9.99052	9.991
65	Pyrene	202	21.079	21.041	(0.907)	2335886	20.1216	20.12
$ 66	Terphenyl-d14	244	21.342	21.327	(0.918)	376235	4.81545	4.815
67	Butylbenzylphthalate	149	22.256	22.249	(0.957)	339231	6.20027	6.200
68	Benzo(a)anthracene	228	23.216	23.209	(0.999)	671477	6.82160	6.822
* 69	Chrysene-d12	240	23.247	23.232	(1.000)	281125	4.00000	
70	3,3'-Dichlorobenzidine	252	23.294	23.162	(1.002)	6284	0.22960	0.2296
71	Chrysene	228	23.294	23.278	(1.002)	922546	10.4704	10.47
72	bis(2-Ethylhexyl)phthalate	149	24.277	24.269	(1.001)	887835	4.93549	4.935
* 134	Di-n-octylphthalate-d4	153	24.261	24.262	(1.000)	699902	4.00000	
73	Di-n-octylphthalate	149	24.277	24.269	(1.001)	887835	4.93549	4.935
74	Benzo(b)fluoranthene	252	25.105	25.082	(0.971)	634632	12.3548	12.35
75	Benzo(k)fluoranthene	252	25.144	25.129	(0.972)	529061	9.17435	9.174
76	Benzo(a)pyrene	252	25.755	25.733	(0.996)	313377	7.77332	7.773
* 77	Perylene-d12	264	25.864	25.849	(1.000)	156278	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	28.509	28.494	(1.102)	159329	4.38218	4.382
79	Dibenzo(a,h)anthracene	278	28.516	28.509	(1.103)	123389	4.01082	4.011
80	Benzo(g,h,i)perylene	276	29.285	29.278	(1.132)	110236	3.67246	3.672
90	N-Nitrosodimethylamine	74	4.681	4.658	(0.519)	297385	8.17307	8.173
91	Aniline	93	Compound Not Detected.					
93	Benzidine	184	Compound Not Detected.					
103	Pyridine	79	Compound Not Detected.					
105	1-methylnaphthalene	142	13.168	13.169	(1.145)	398301	4.49106	4.491
111	Azobenzene (1,2-DP-Hydrazine)	77	16.555	16.556	(1.094)	569704	3.98562	3.986

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.105	25.129	(0.971)	1091782	20.9365	20.94
120 2,3,4,6-Tetrachlorophenol	232	15.876	15.876	(1.049)	82240	4.08190	4.082

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1407062353.D
Lab Smp Id: BLF0718-MS1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Misc Info:

Calibration Date: 07-JUL-2023
Calibration Time: 16:23
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	132670	66335	265340	126823	-4.41
27 Naphthalene-d8	538082	269041	1076164	513083	-4.65
42 Acenaphthene-d10	270232	135116	540464	258222	-4.44
59 Phenanthrene-d10	462568	231284	925136	463166	0.13
69 Chrysene-d12	289075	144538	578150	281125	-2.75
134 Di-n-octylphthala	772331	386166	1544662	699902	-9.38
77 Perylene-d12	173349	86675	346698	156278	-9.85

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.02	8.52	9.52	9.02	-0.00
27 Naphthalene-d8	11.51	11.01	12.01	11.51	-0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	-0.00
59 Phenanthrene-d10	18.18	17.68	18.68	18.18	-0.00
69 Chrysene-d12	23.23	22.73	23.73	23.25	0.07
134 Di-n-octylphthala	24.26	23.76	24.76	24.26	-0.00
77 Perylene-d12	25.85	25.35	26.35	25.86	0.06

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

REVIEW SUMMARY FOR FILE - NT1407062353.D

Lab ID: BLF0718-MS1
nt14.i, ABN.m, 07-JUL-2023 21:58

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.958	0.964	-0.0061	Benzoic acid

RRT check based on Ccal File: NT1407062344.D

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

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

Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062354.D

Date : 07-JUL-2023 22:35

Client ID:

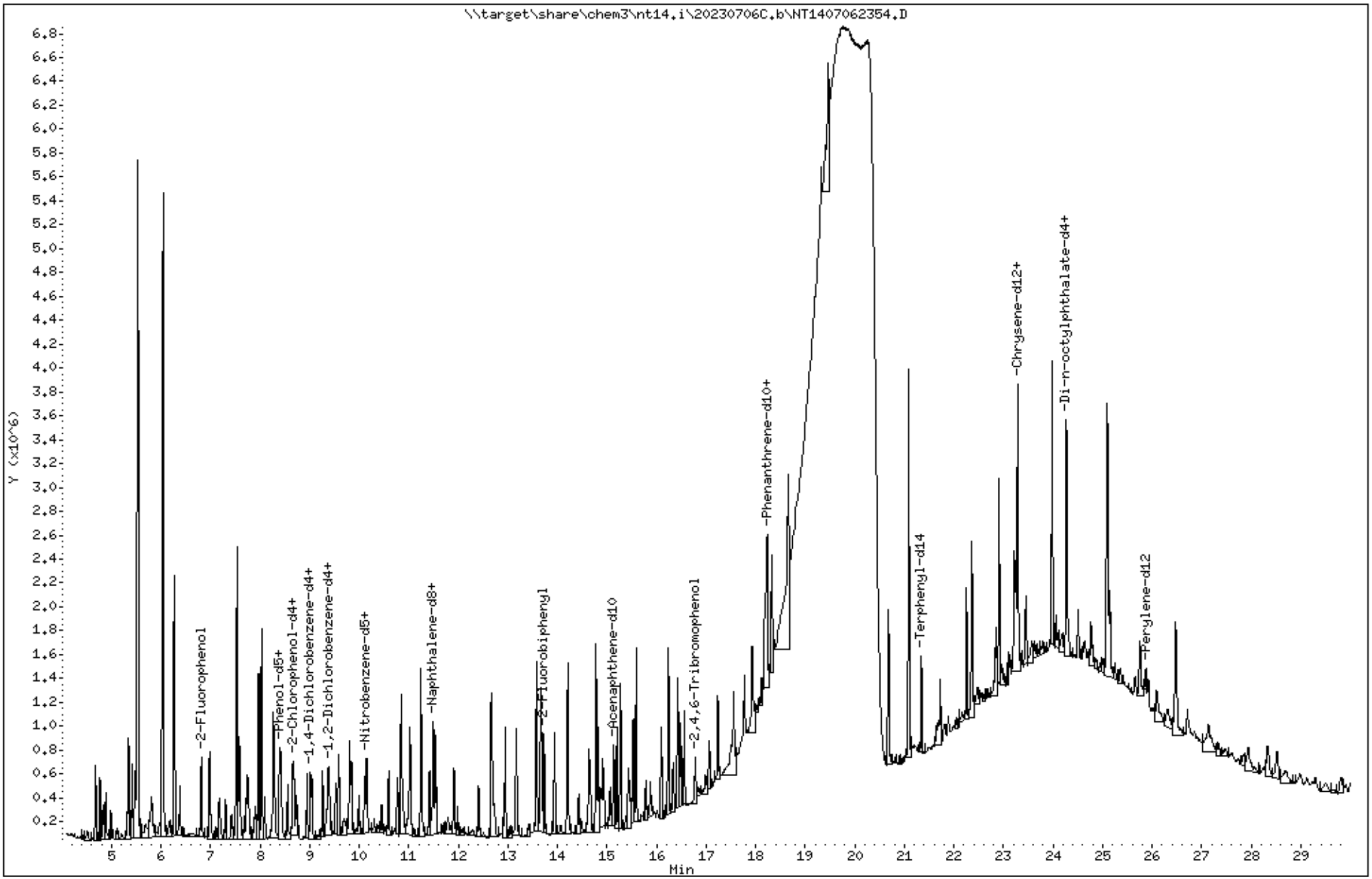
Sample Info: BLF0718-MSD1

Column phase: ZB-5msi

Instrument: nt14.i

Operator: JGR

Column diameter: 0.25



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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

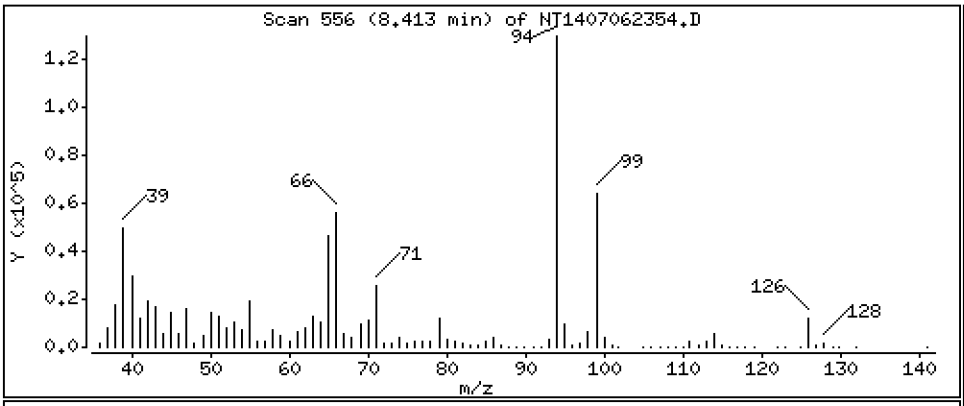
Operator: JGR

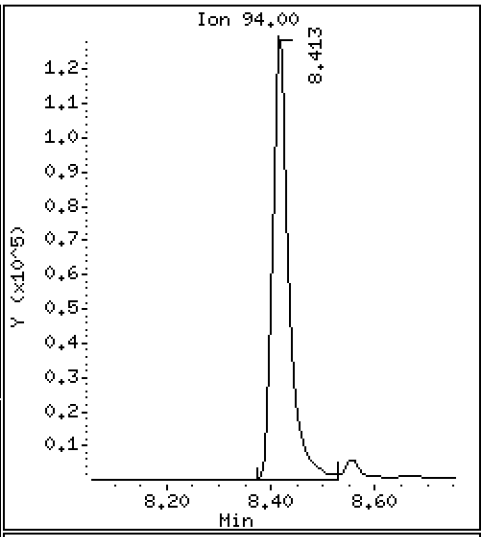
Column phase: ZB-5msi

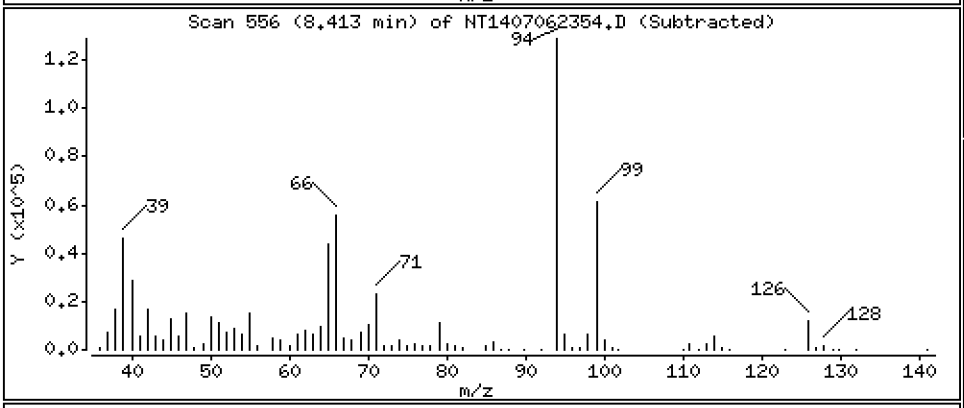
Column diameter: 0.25

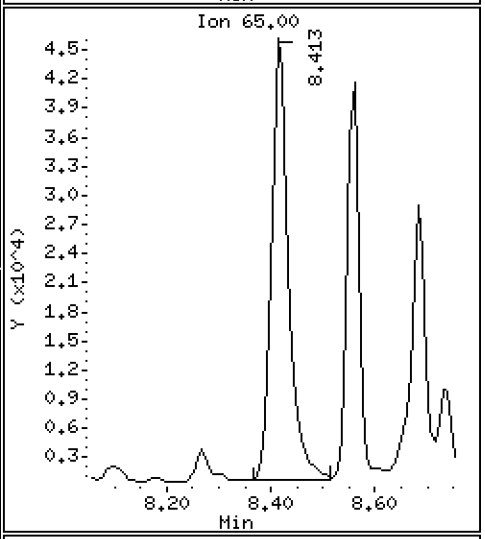
3 Phenol

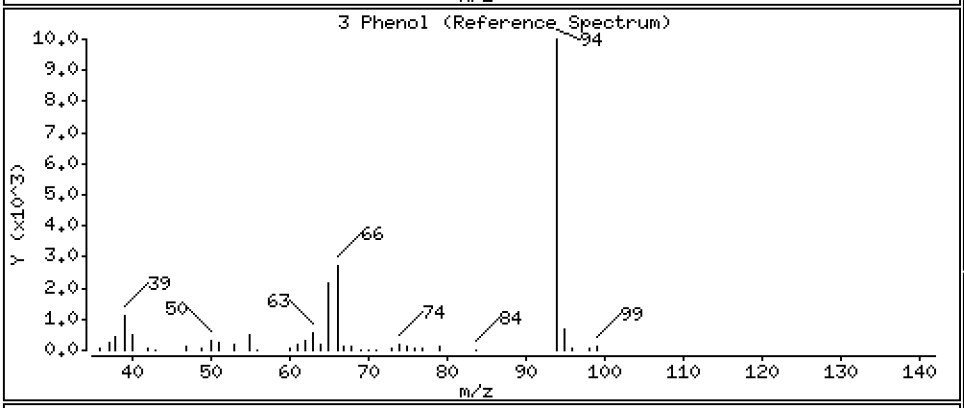
Concentration: 3.766 ug/mL

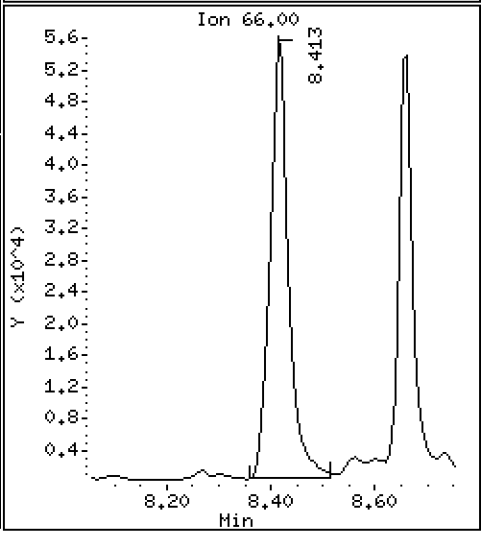


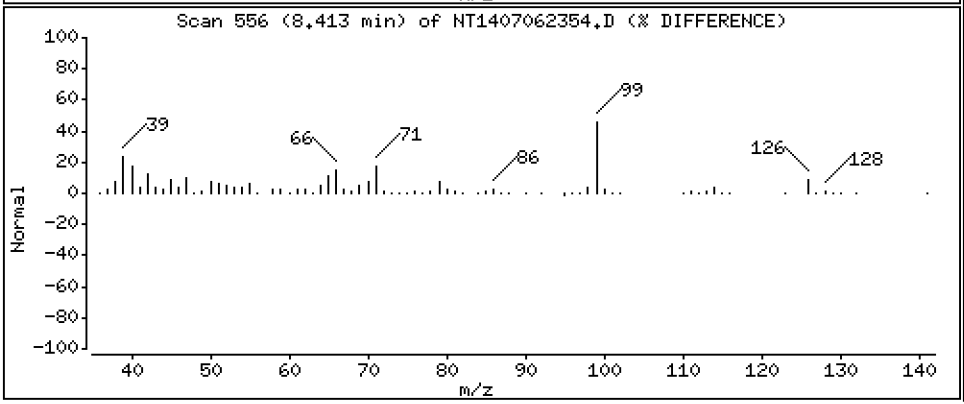












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

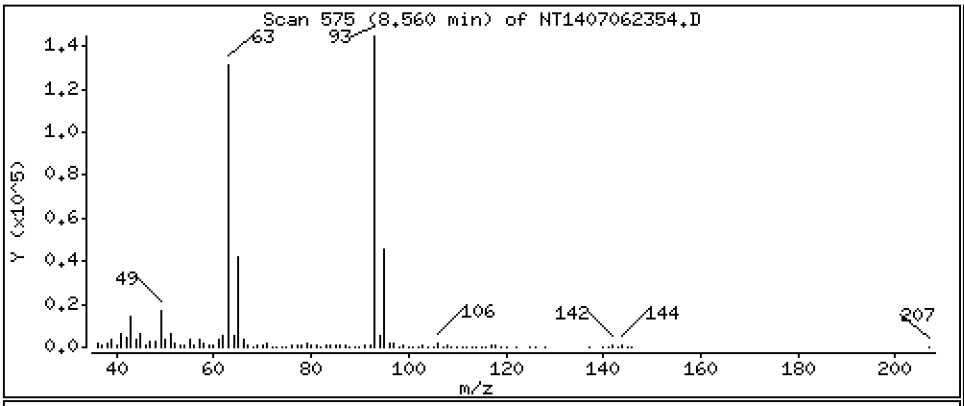
Operator: JGR

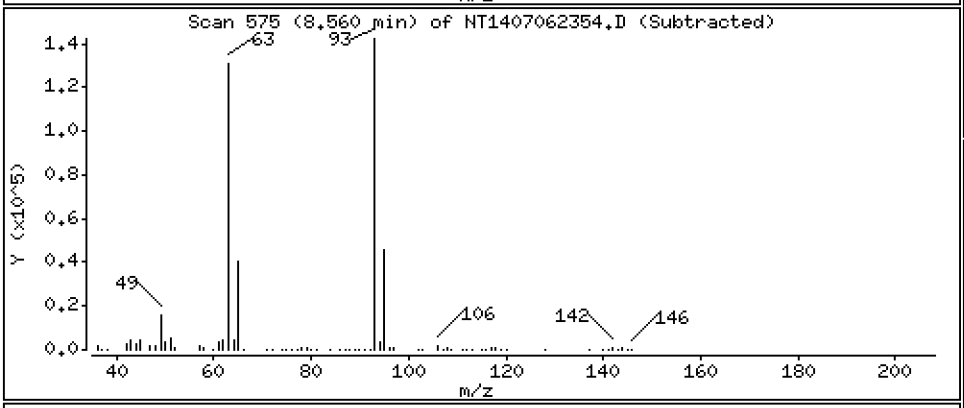
Column phase: ZB-5msi

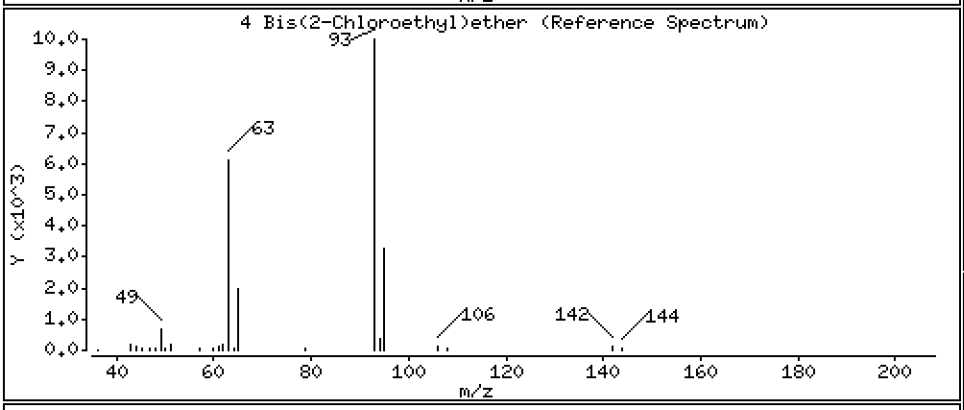
Column diameter: 0.25

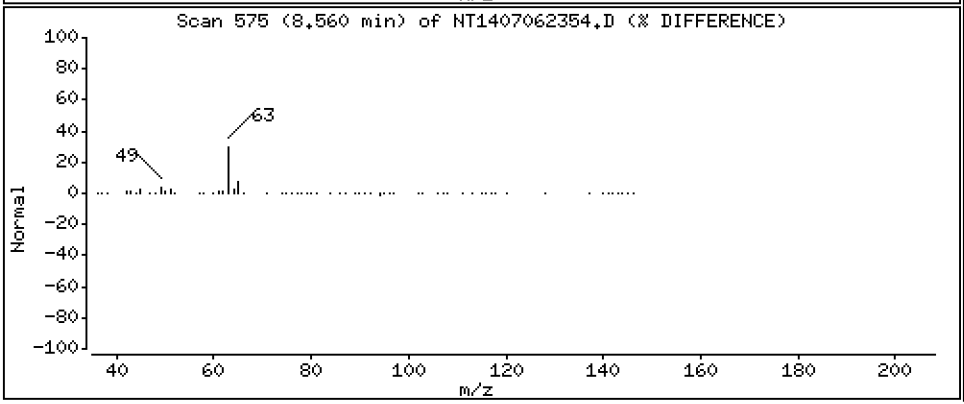
4 Bis(2-Chloroethyl)ether

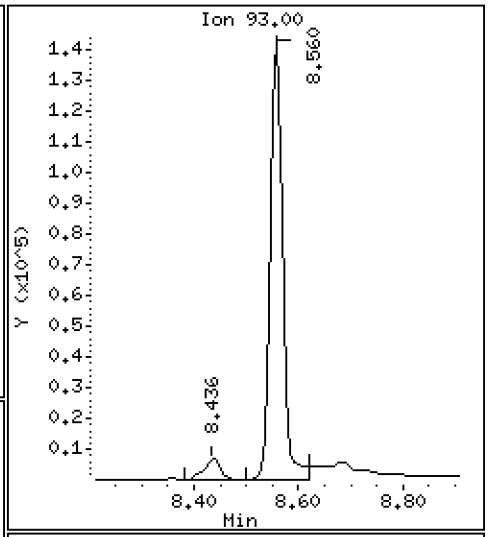
Concentration: 4.349 ug/mL

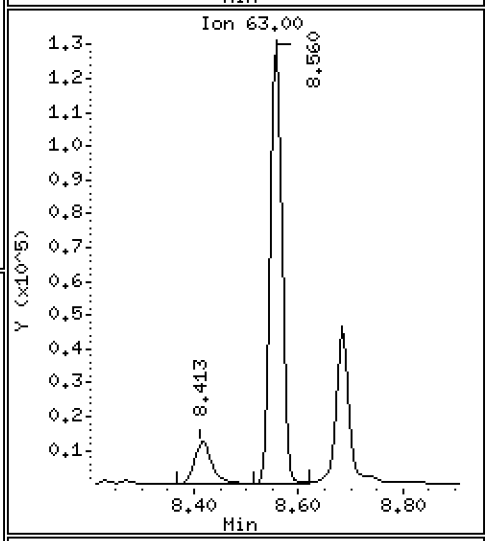


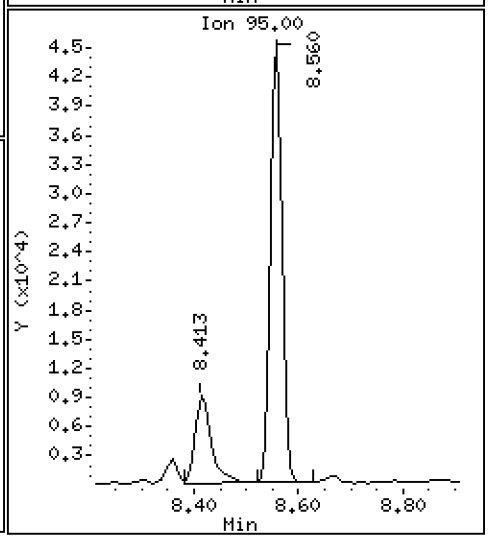












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062354.D

Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

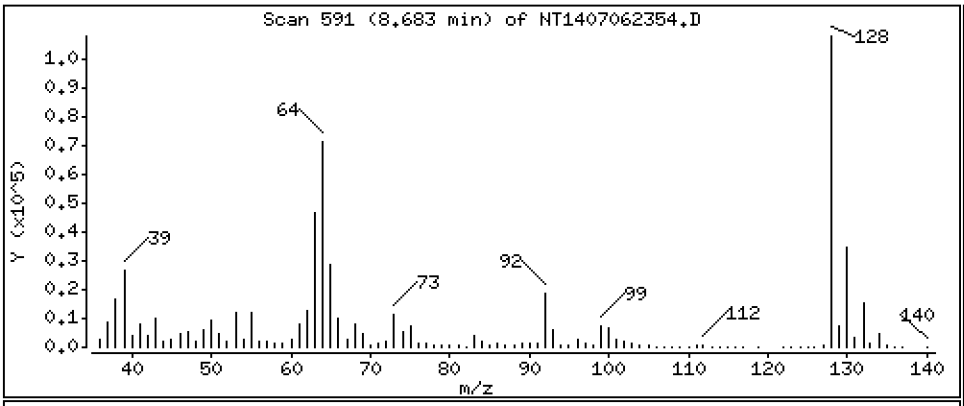
Operator: JGR

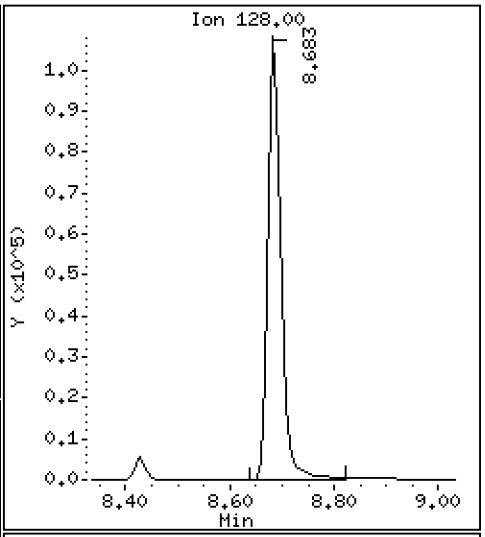
Column phase: ZB-5msi

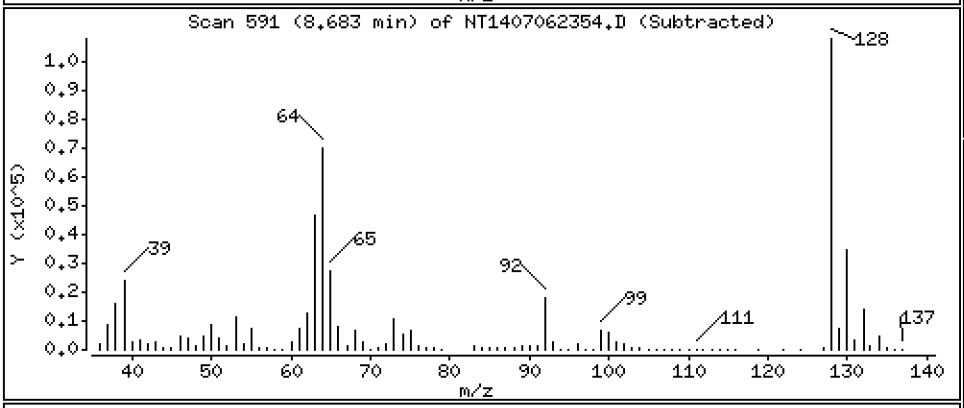
Column diameter: 0.25

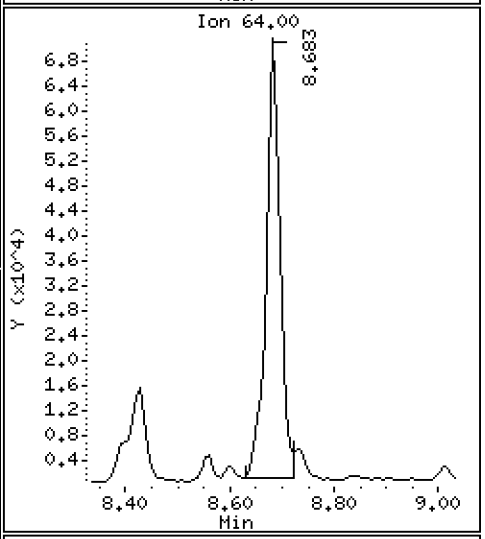
6 2-Chlorophenol

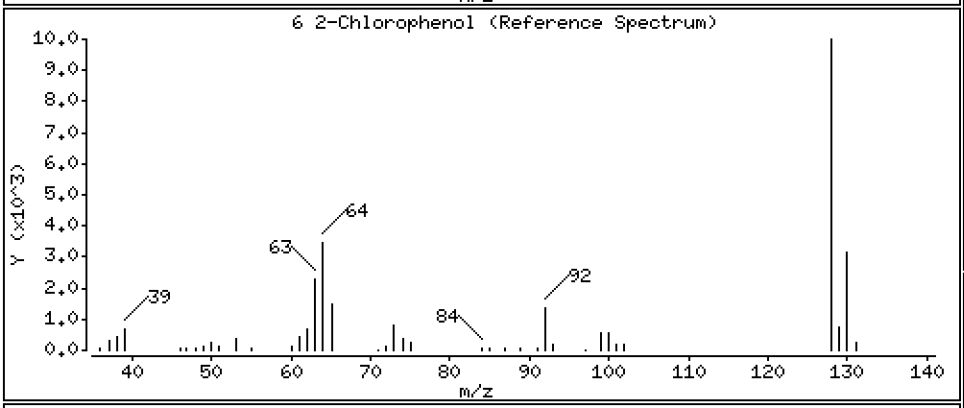
Concentration: 3.680 ug/mL

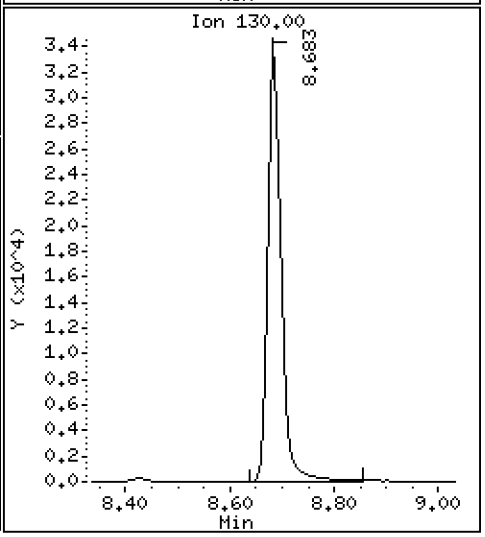


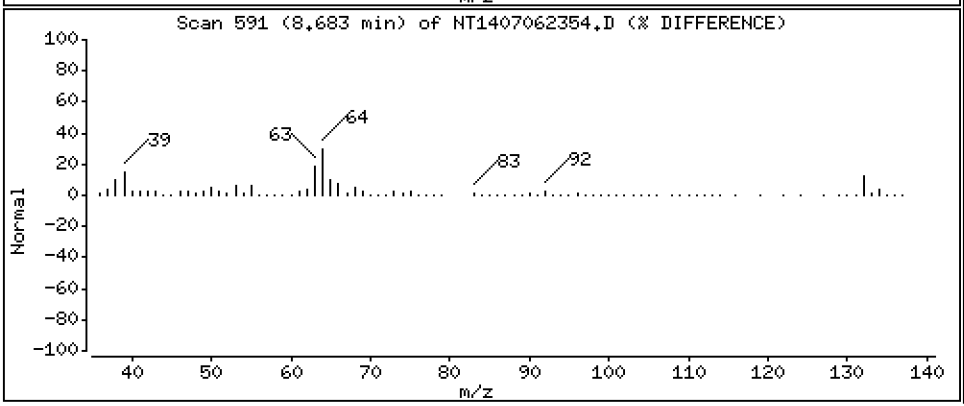












Date : 07-JUL-2023 22:35

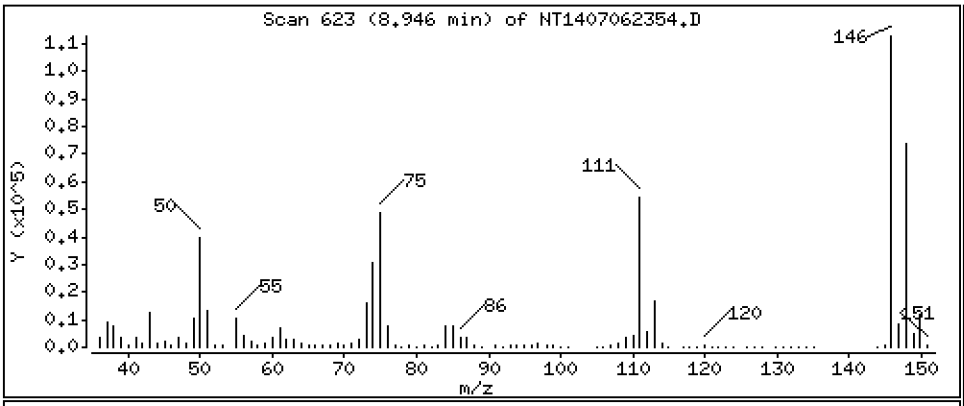
Client ID: Instrument: nt14.i

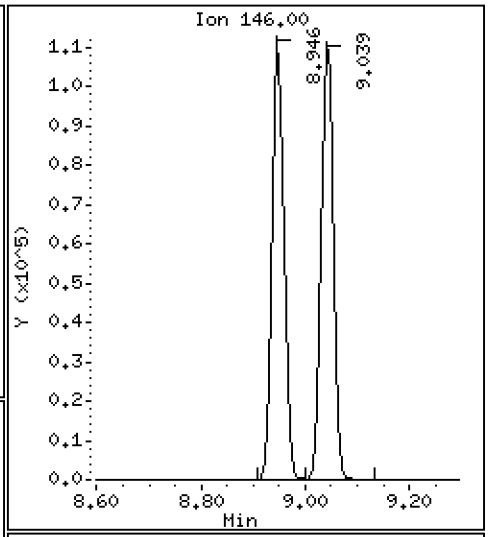
Sample Info: BLF0718-MSD1

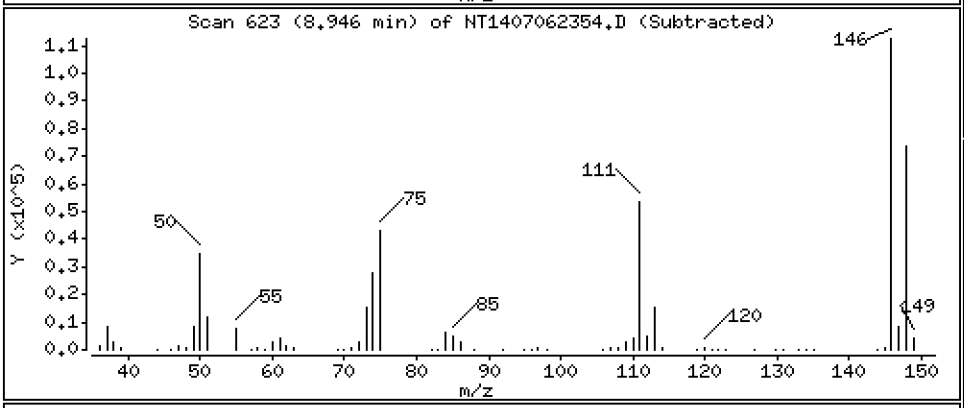
Operator: JGR

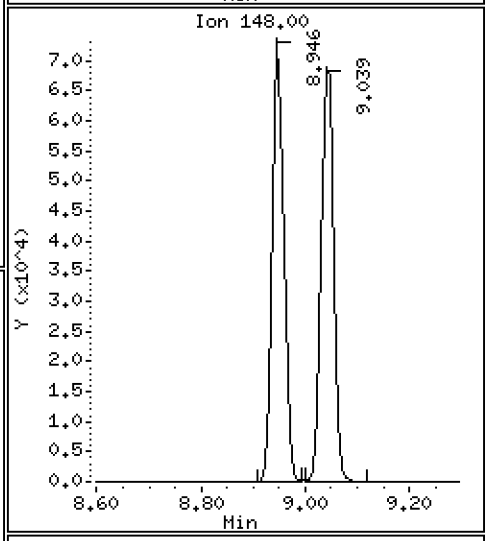
Column phase: ZB-5msi Column diameter: 0.25

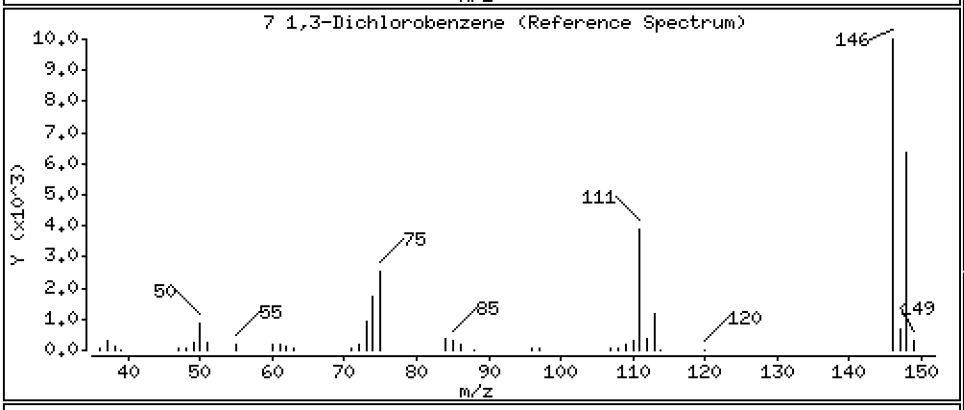
7 1,3-Dichlorobenzene Concentration: 3.557 ug/mL

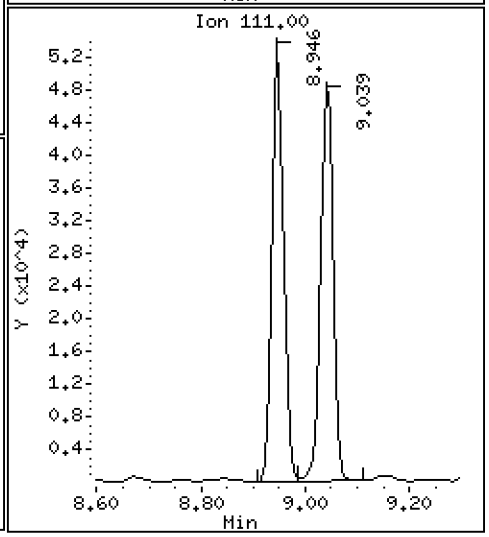


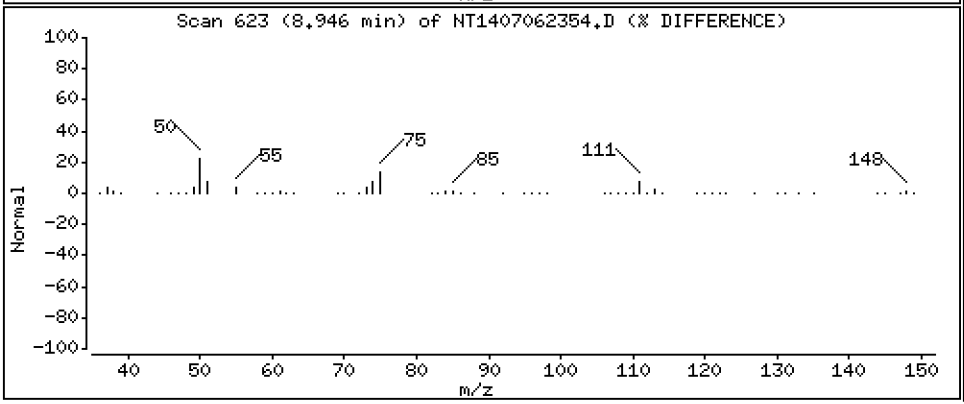












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

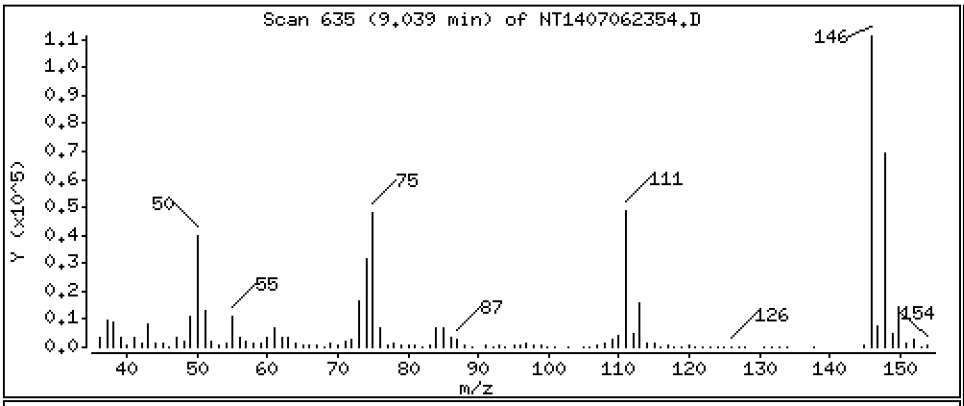
Operator: JGR

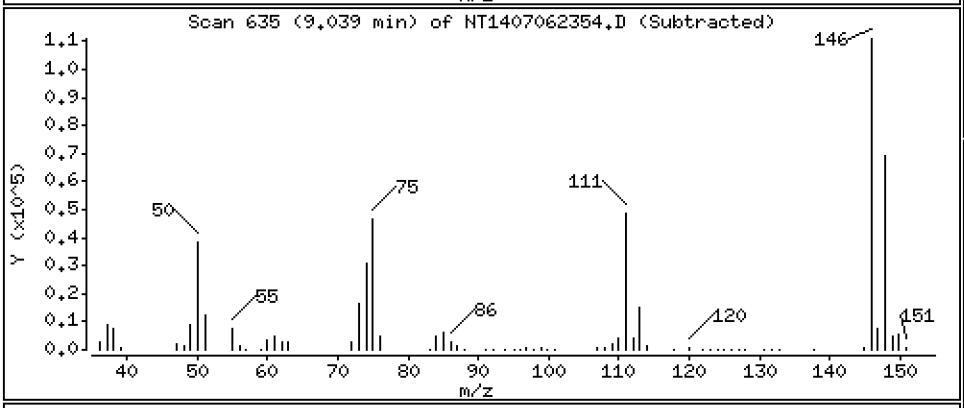
Column phase: ZB-5msi

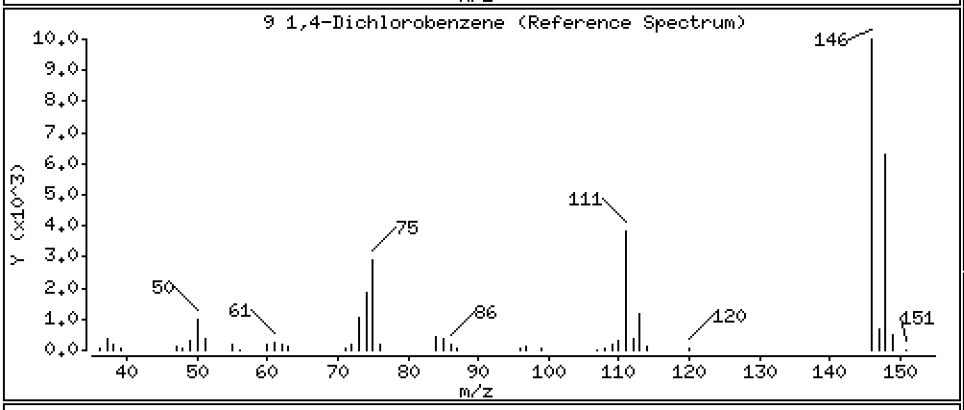
Column diameter: 0.25

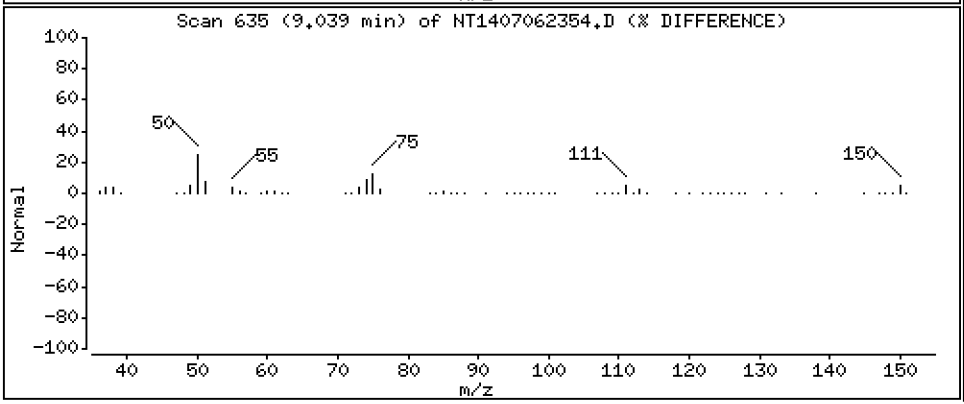
9 1,4-Dichlorobenzene

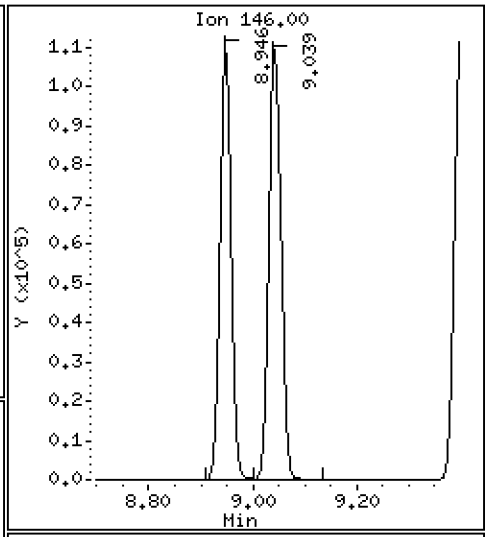
Concentration: 3.614 ug/mL

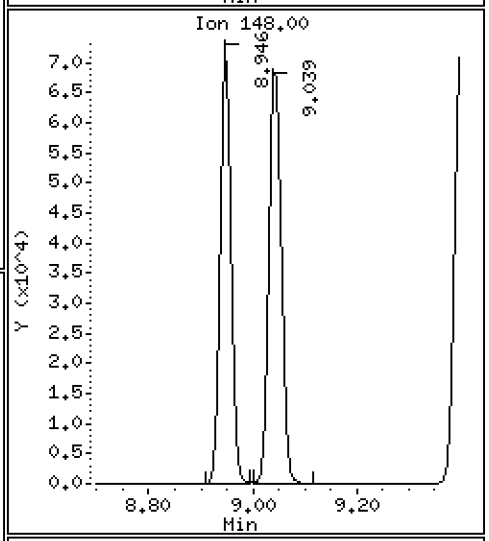


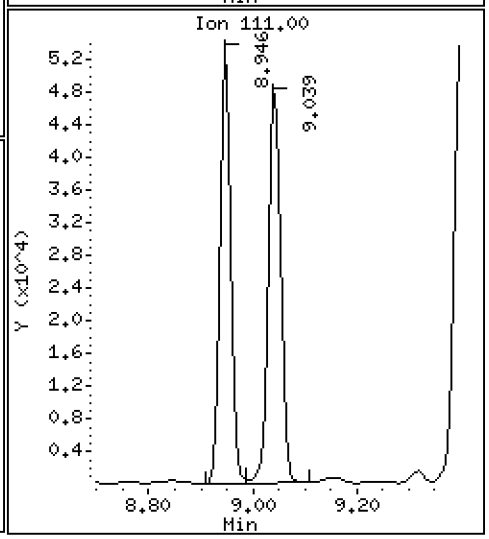












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

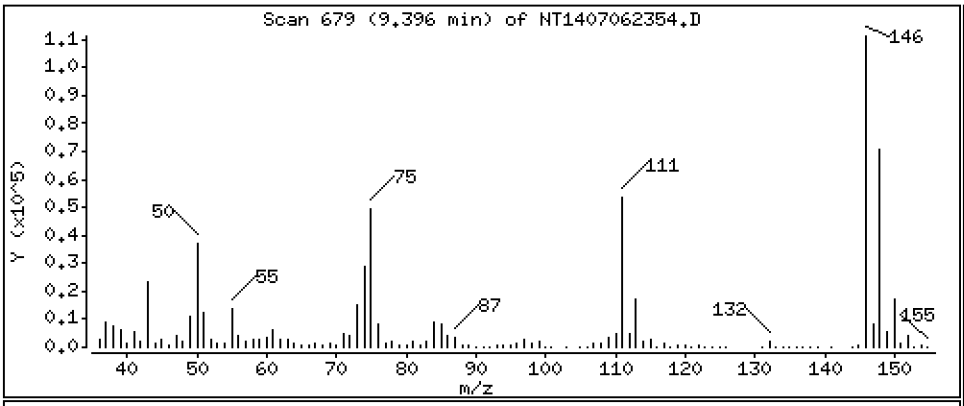
Operator: JGR

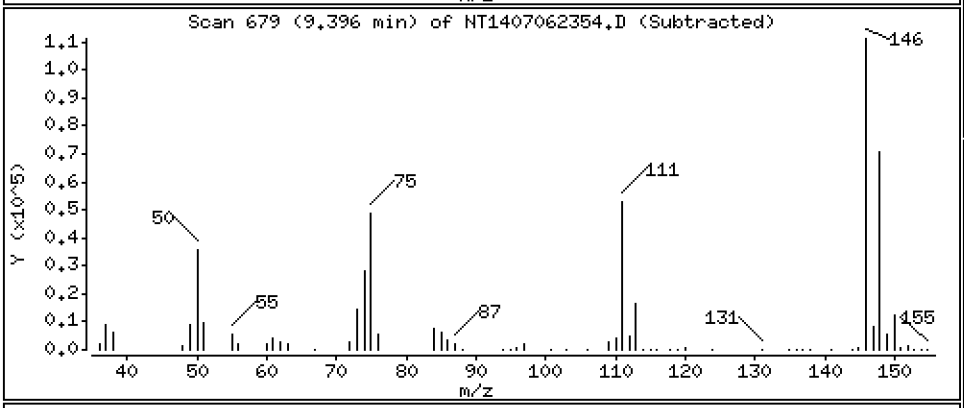
Column phase: ZB-5msi

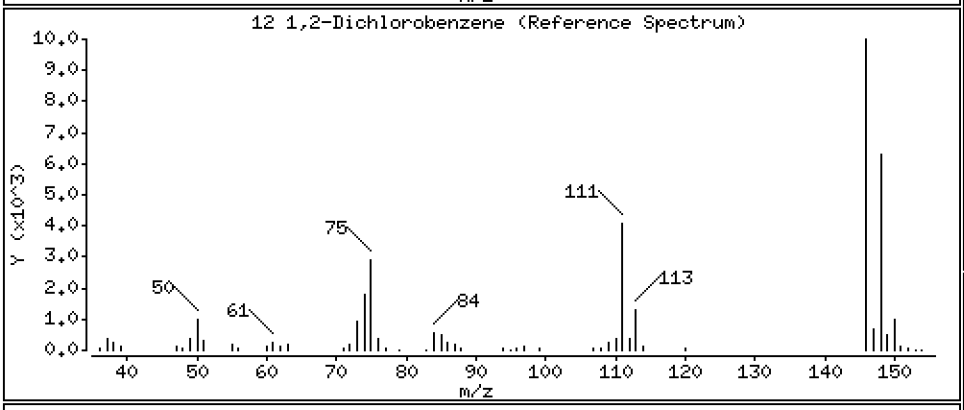
Column diameter: 0.25

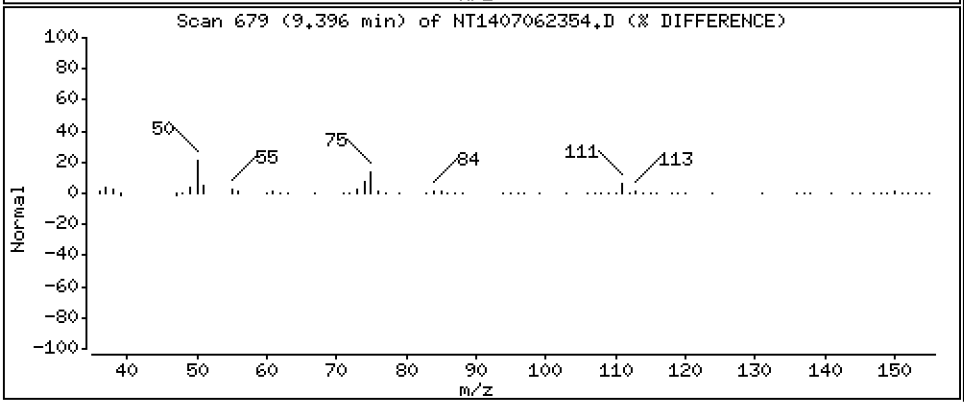
12 1,2-Dichlorobenzene

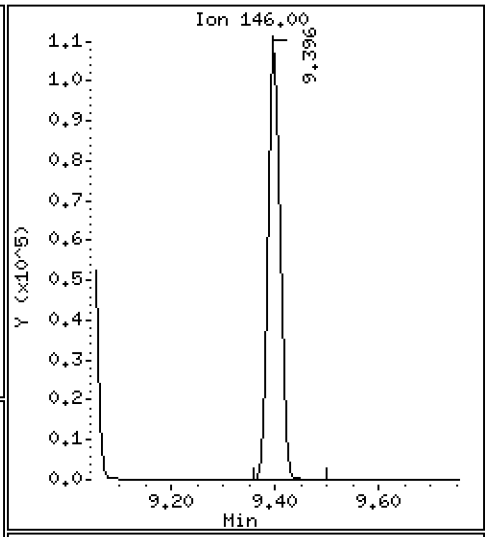
Concentration: 3.743 ug/mL

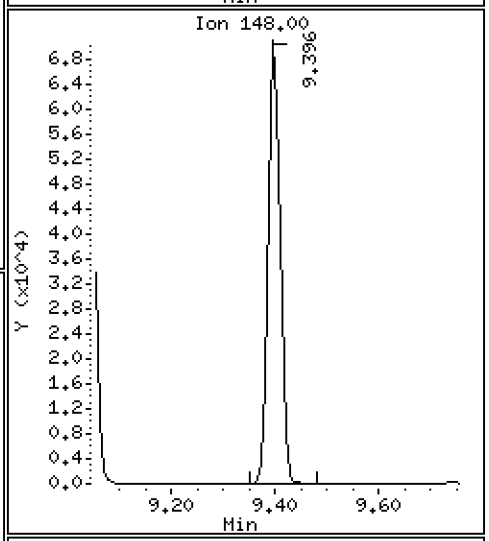


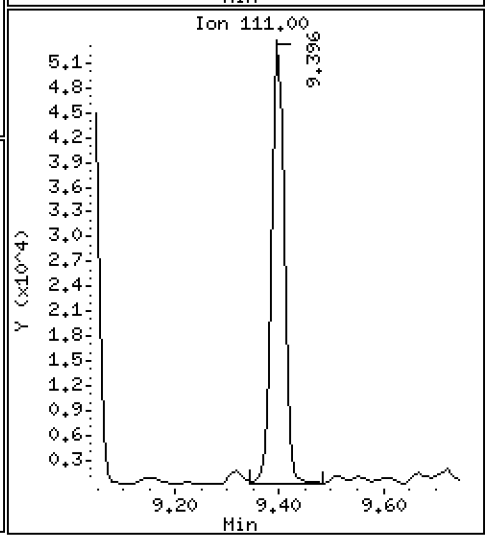












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

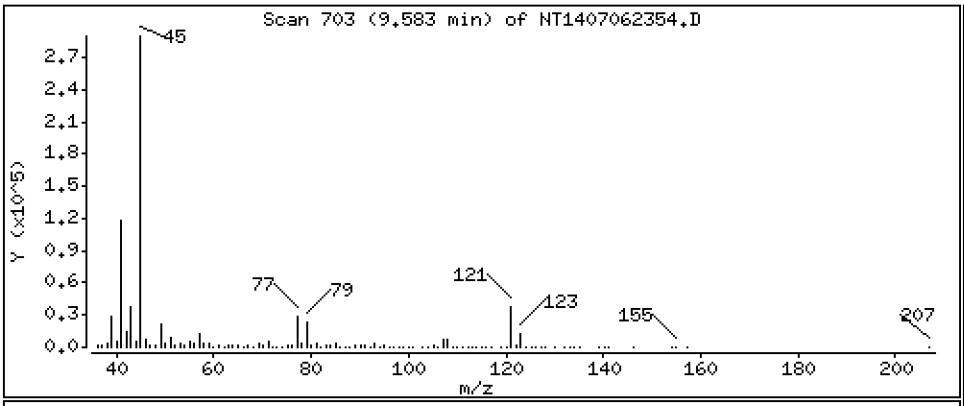
Operator: JGR

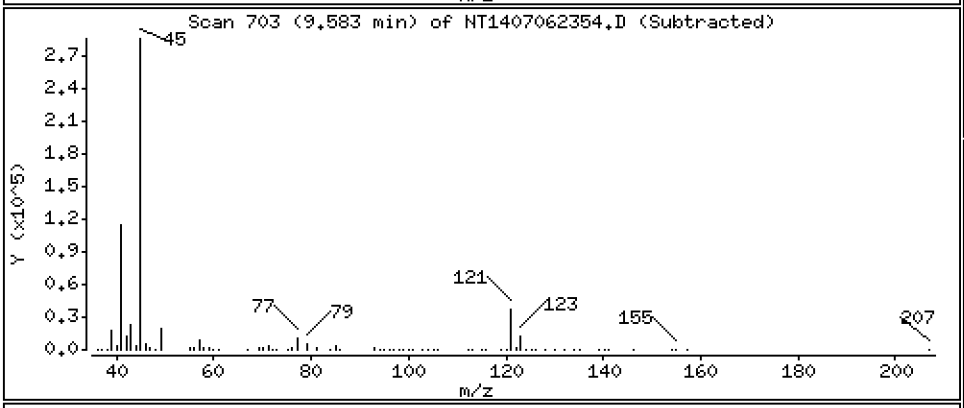
Column phase: ZB-5msi

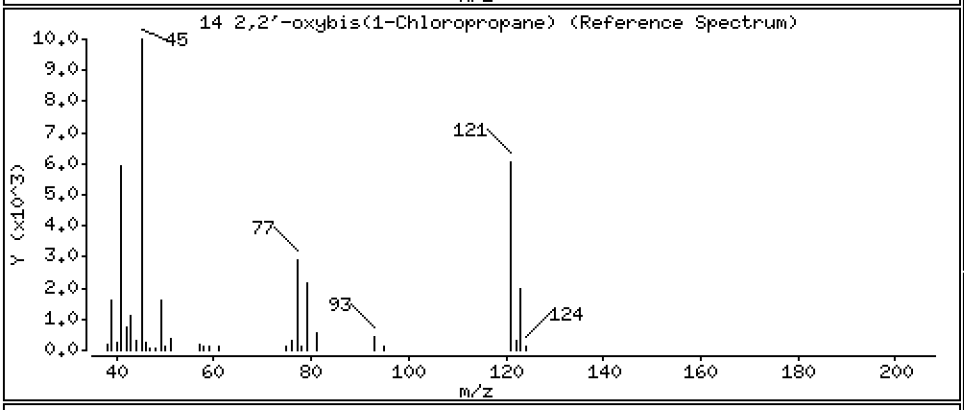
Column diameter: 0.25

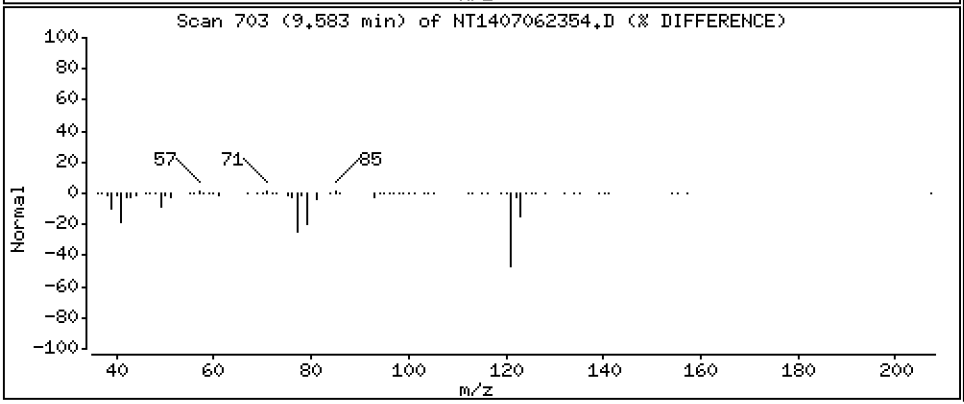
14 2,2'-oxybis(1-Chloropropane)

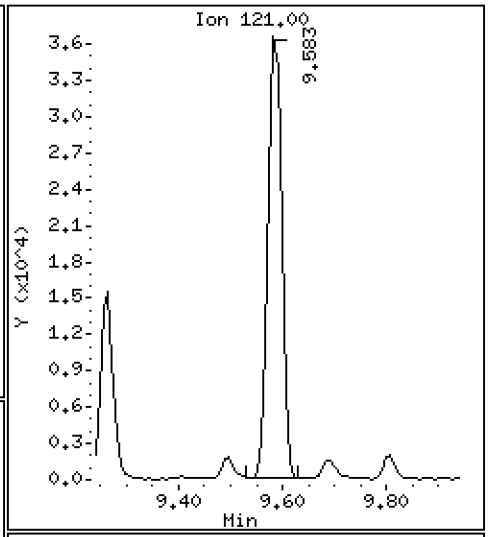
Concentration: 4.349 ug/mL

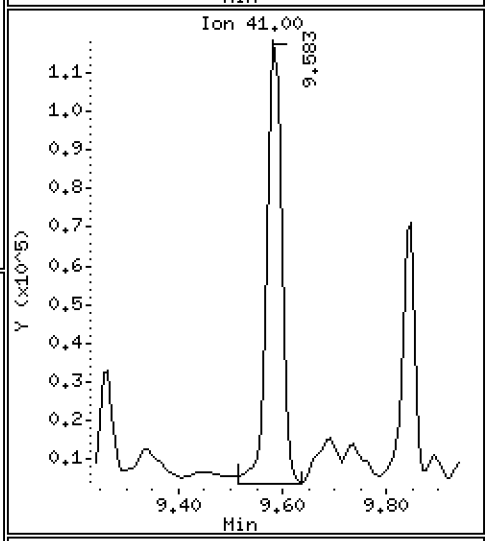


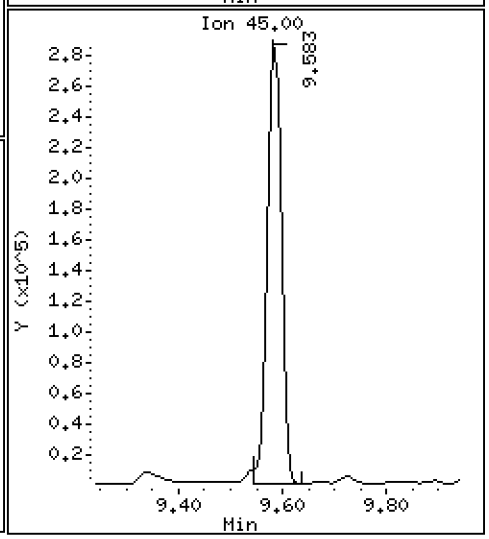












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

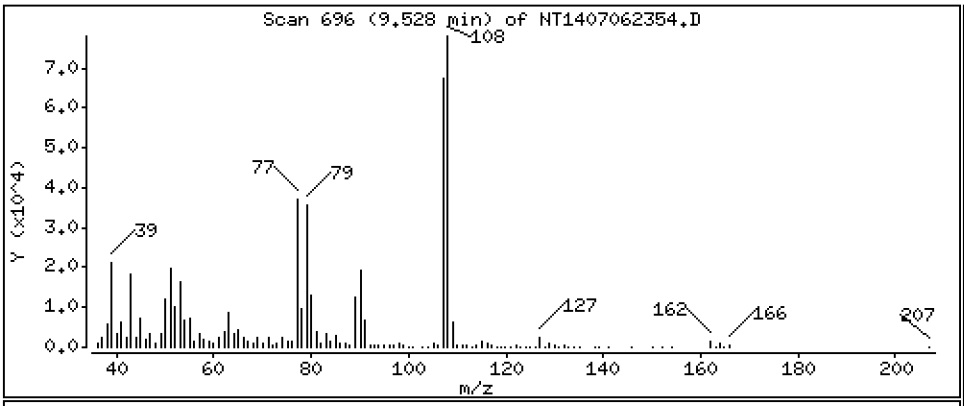
Operator: JGR

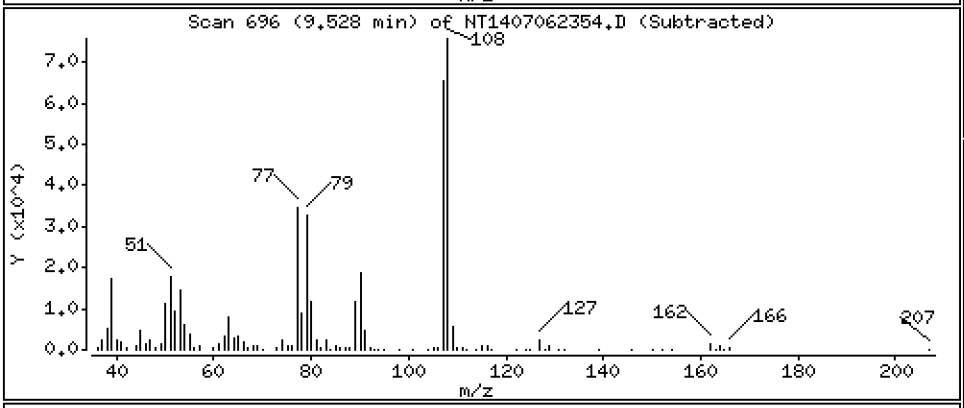
Column phase: ZB-5msi

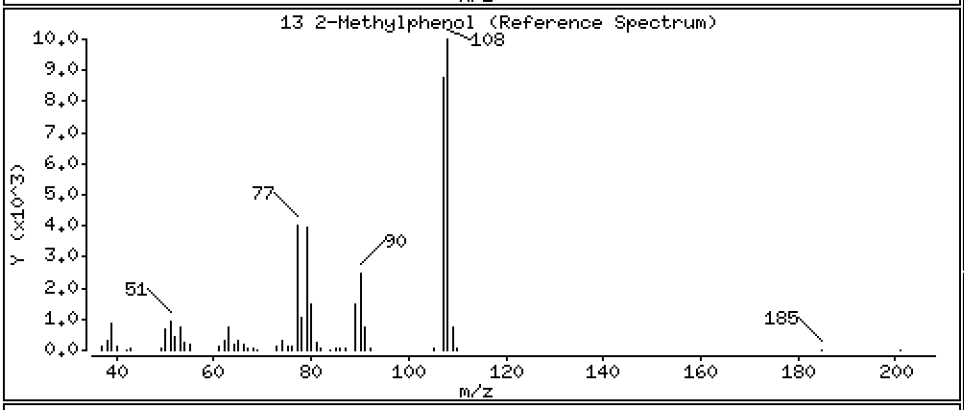
Column diameter: 0.25

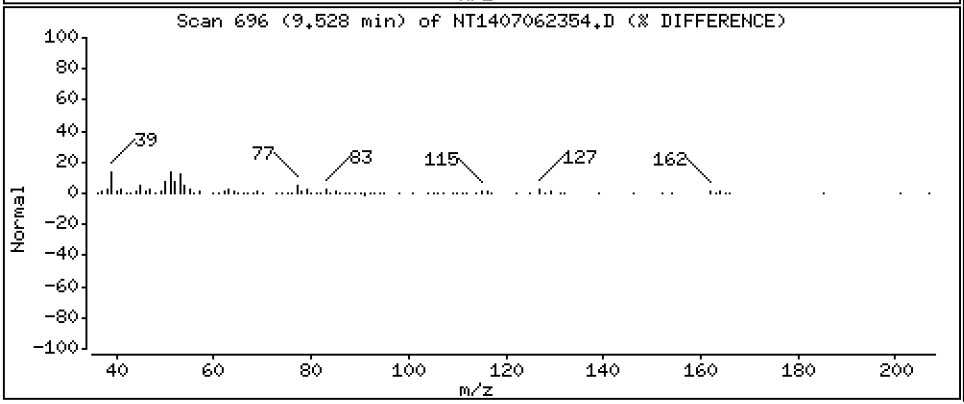
13 2-Methylphenol

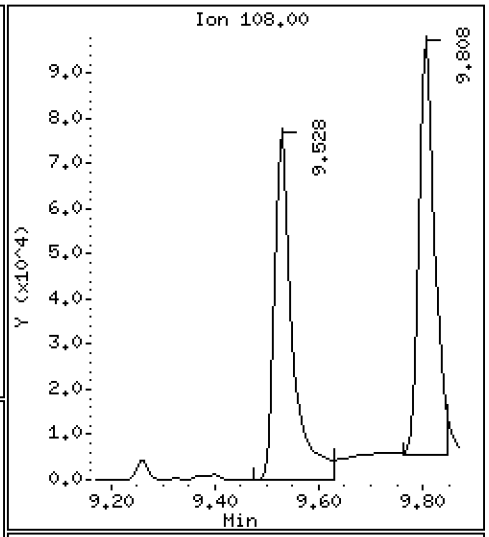
Concentration: 3.862 ug/mL

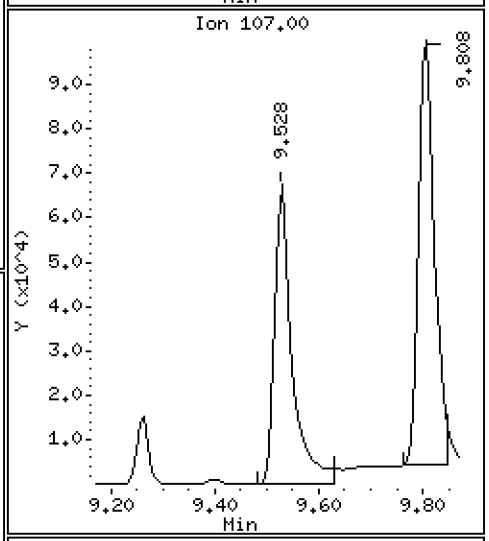


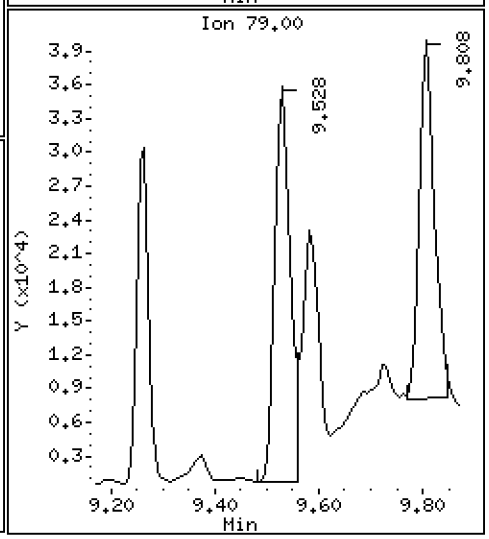












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

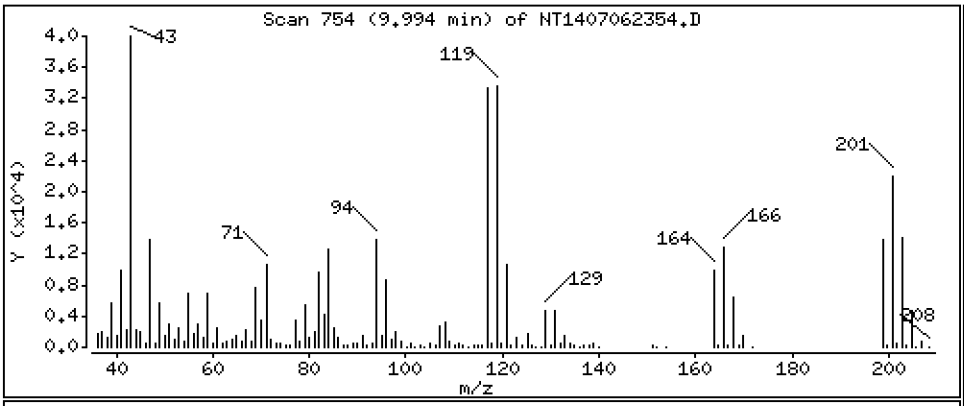
Operator: JGR

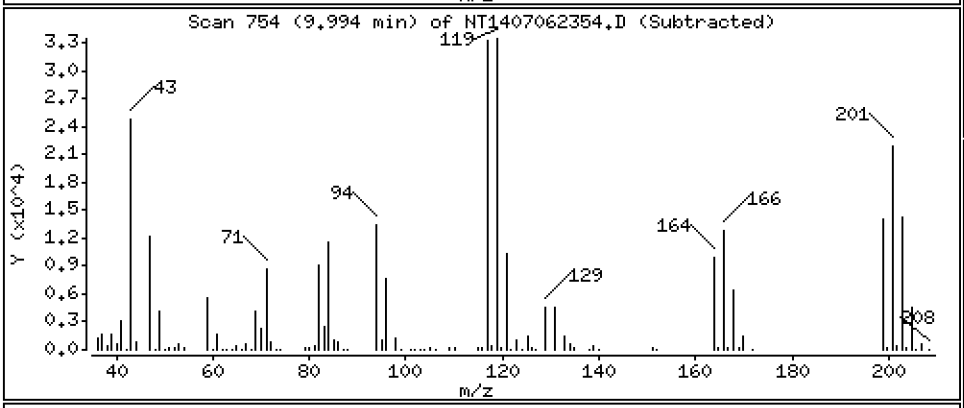
Column phase: ZB-5msi

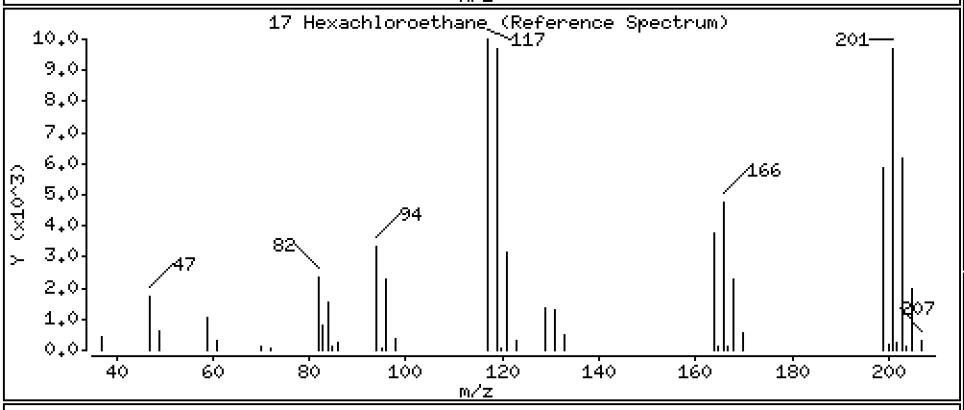
Column diameter: 0.25

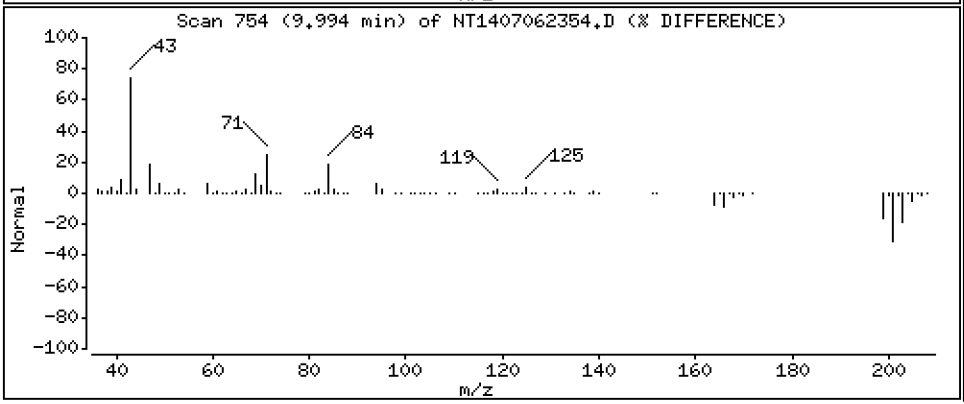
17 Hexachloroethane

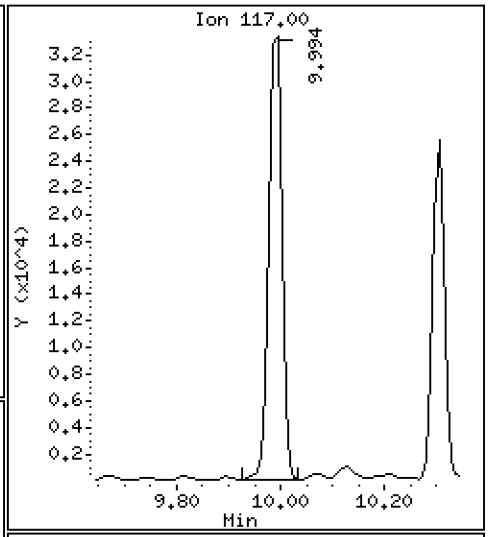
Concentration: 2.563 ug/mL

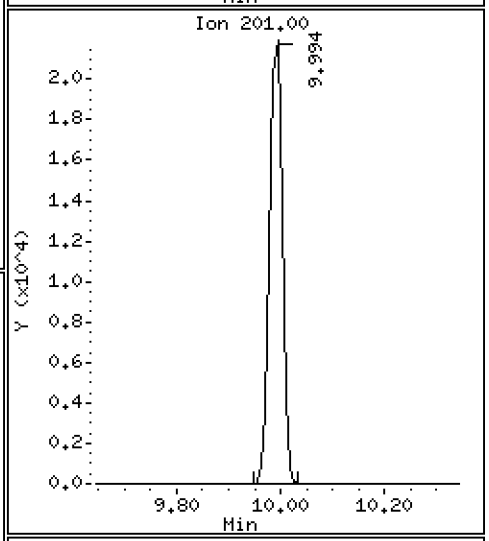


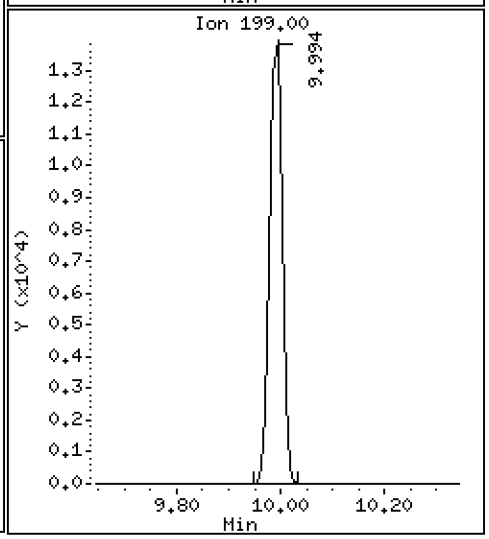












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

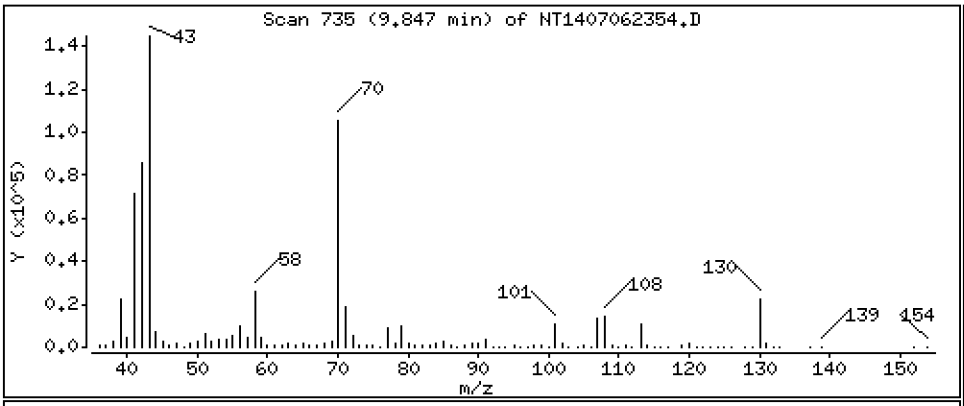
Operator: JGR

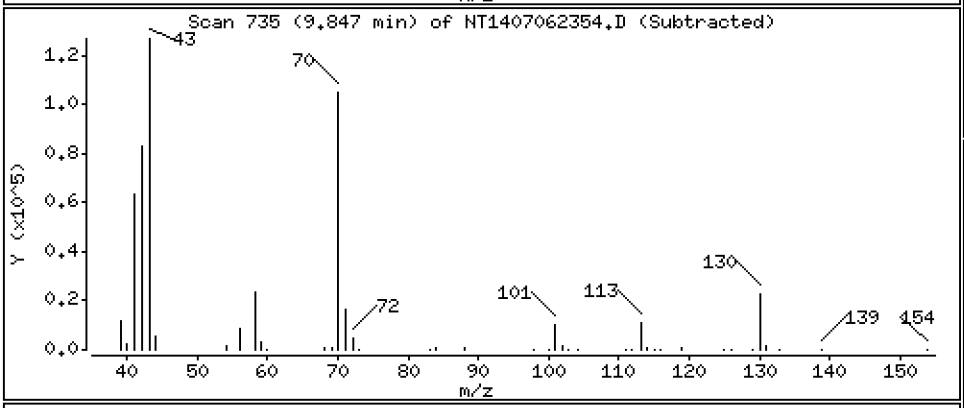
Column phase: ZB-5msi

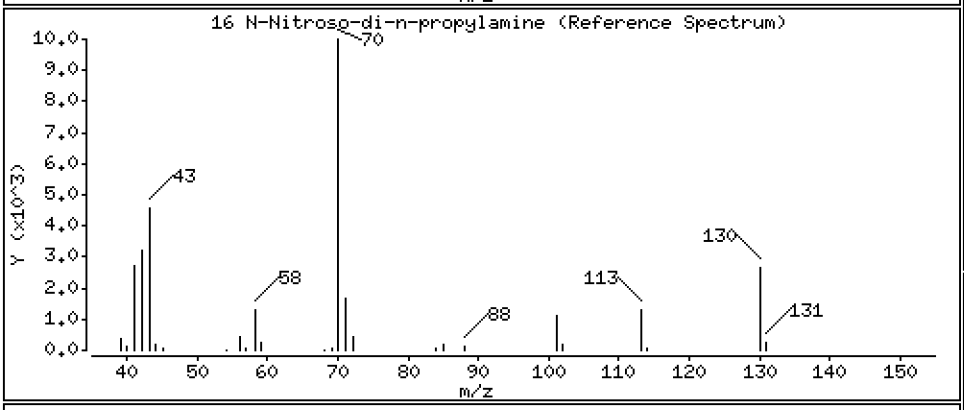
Column diameter: 0.25

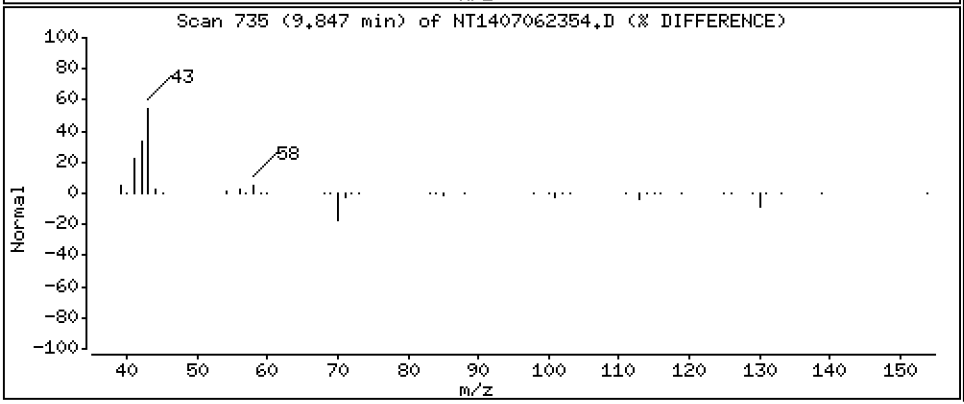
16 N-Nitroso-di-n-propylamine

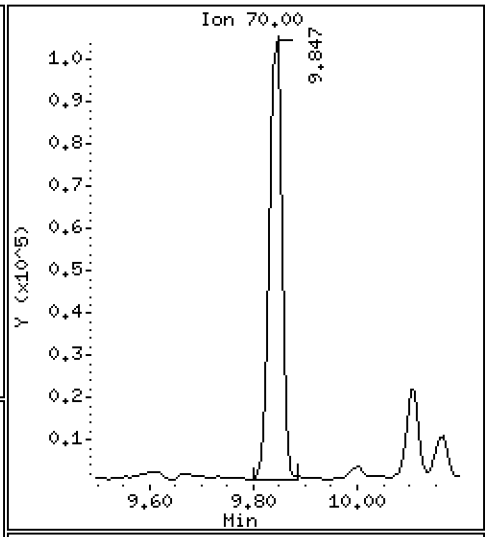
Concentration: 3.925 ug/mL

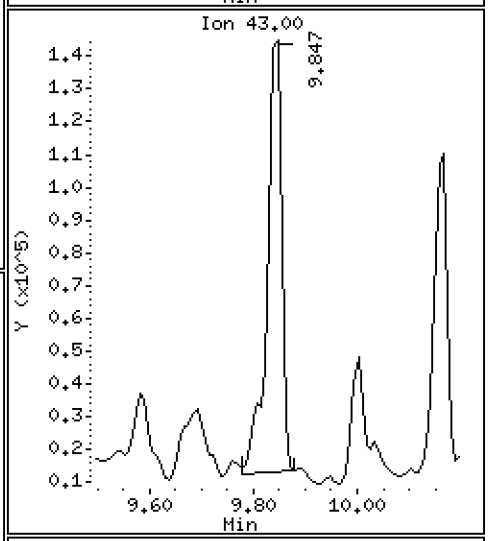


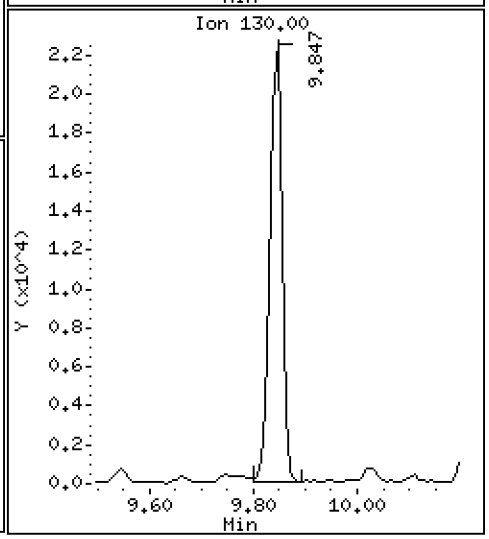












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062354.D

Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

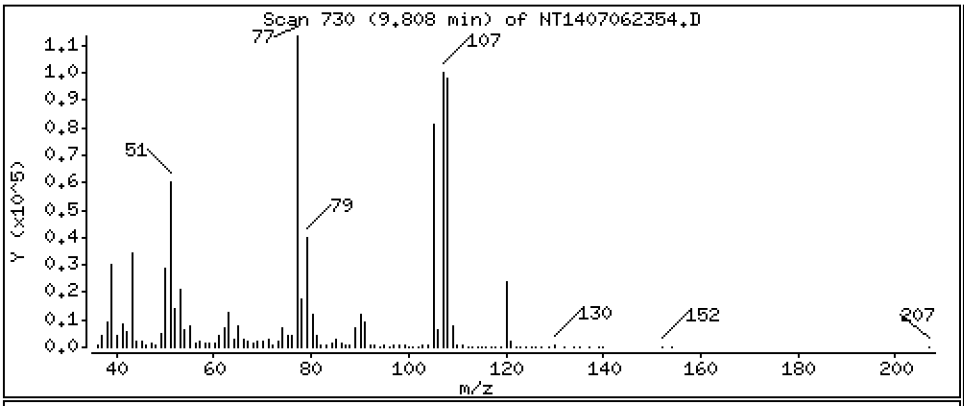
Operator: JGR

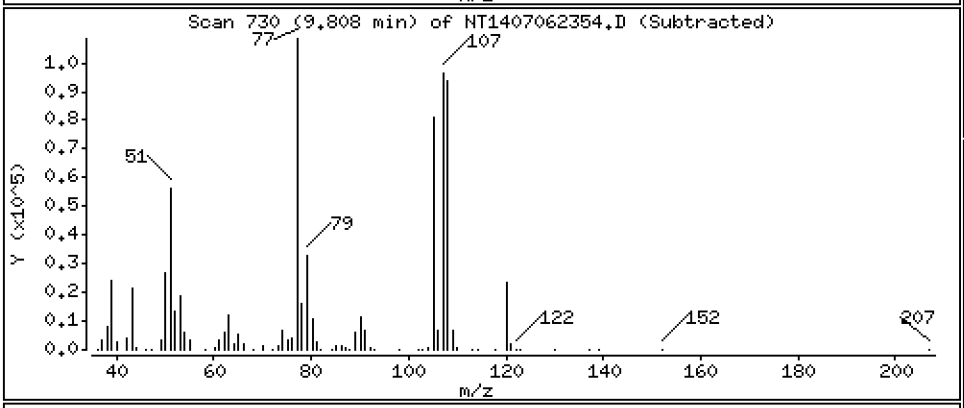
Column phase: ZB-5msi

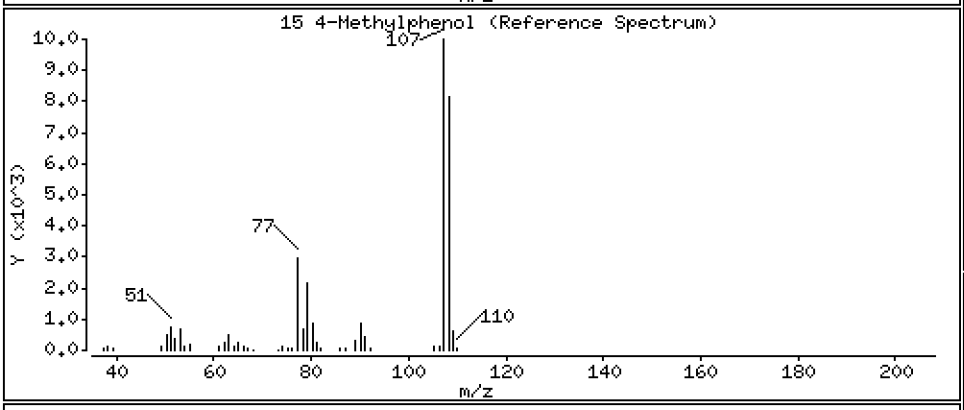
Column diameter: 0.25

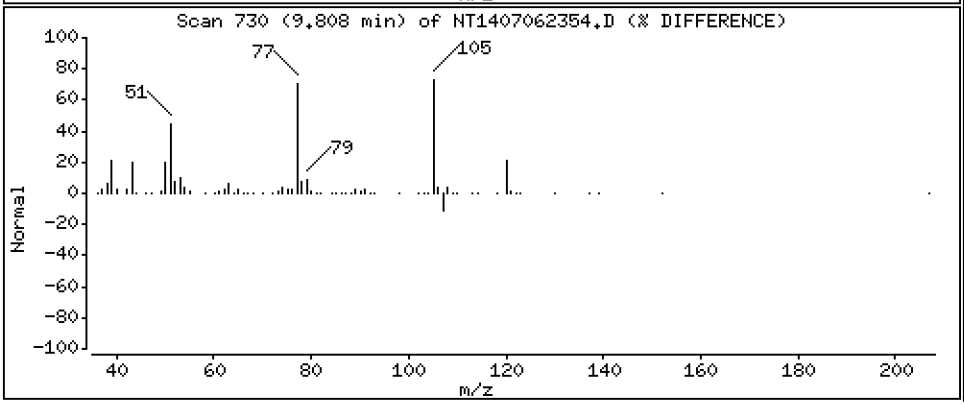
15 4-Methylphenol

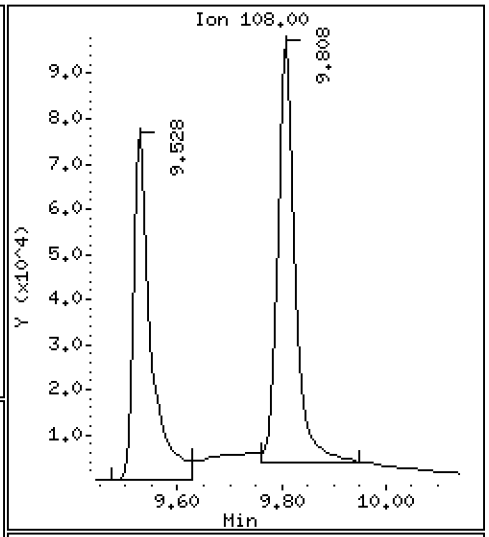
Concentration: 4.211 ug/mL

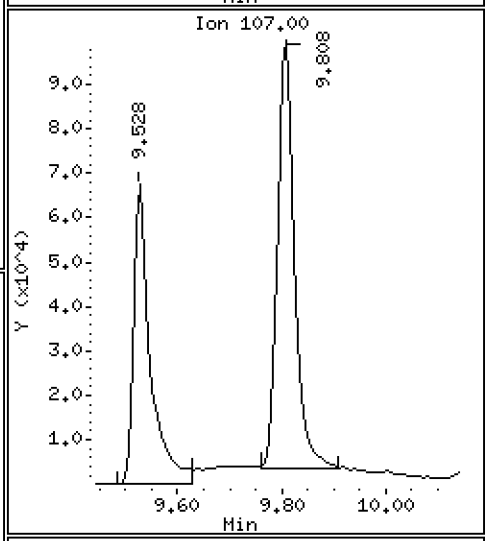


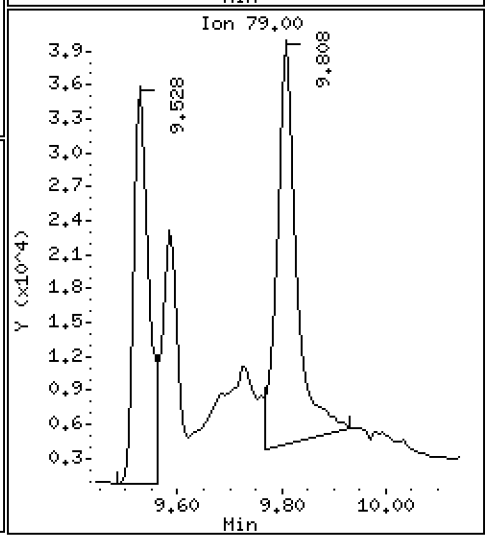












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

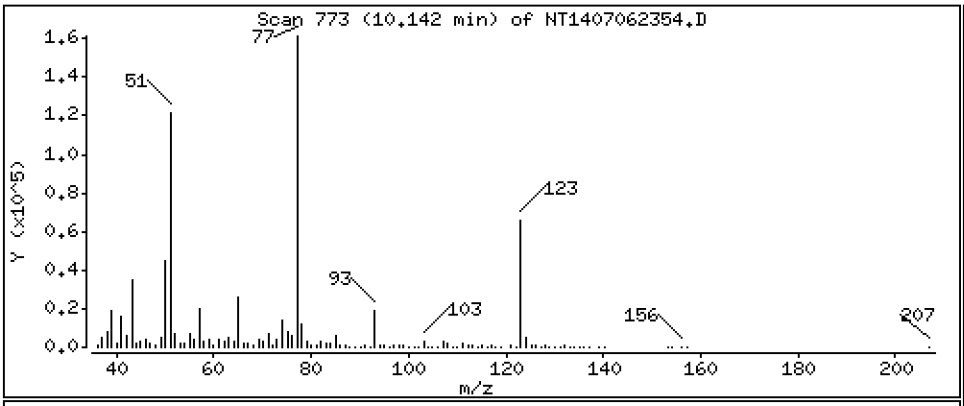
Operator: JGR

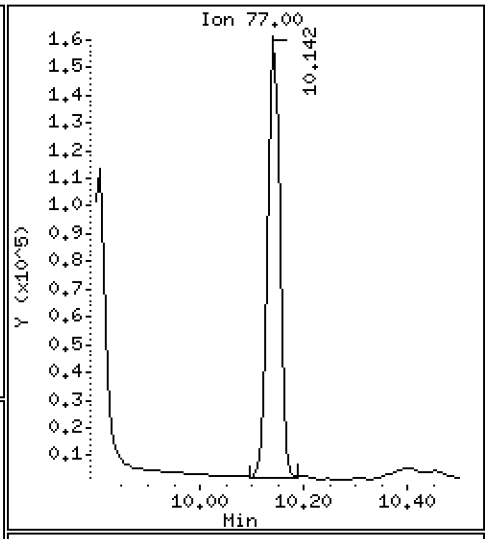
Column phase: ZB-5msi

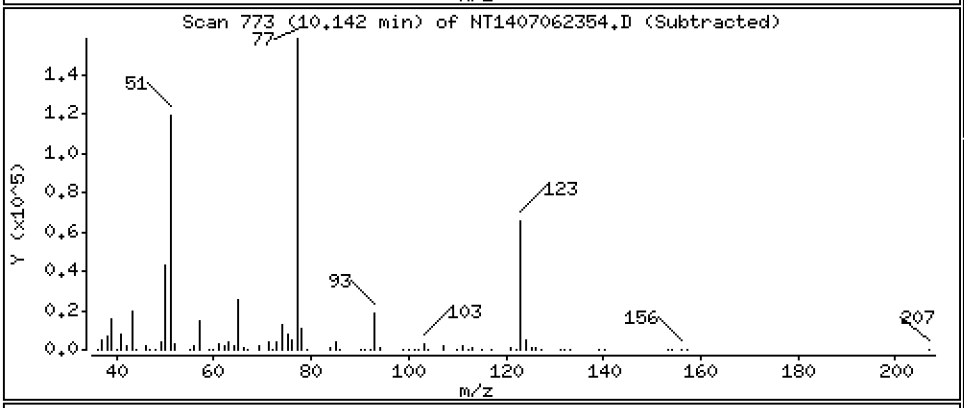
Column diameter: 0.25

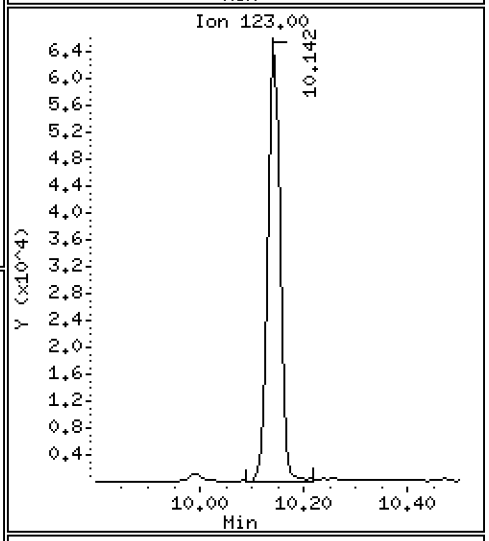
19 Nitrobenzene

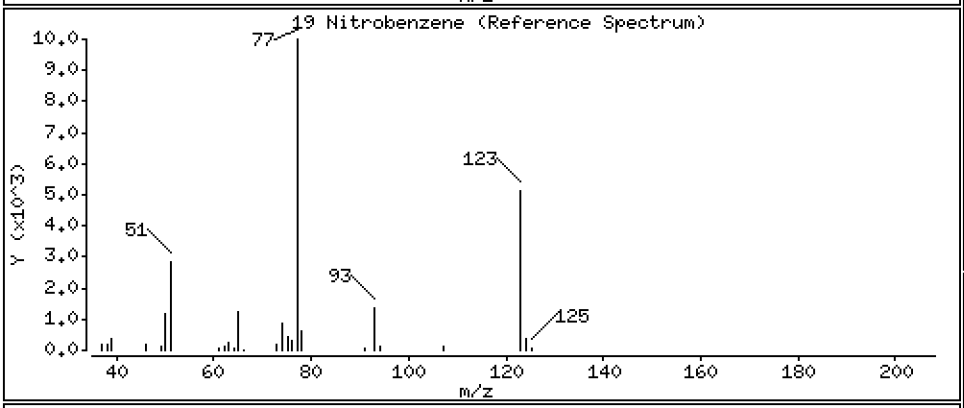
Concentration: 3.957 ug/mL

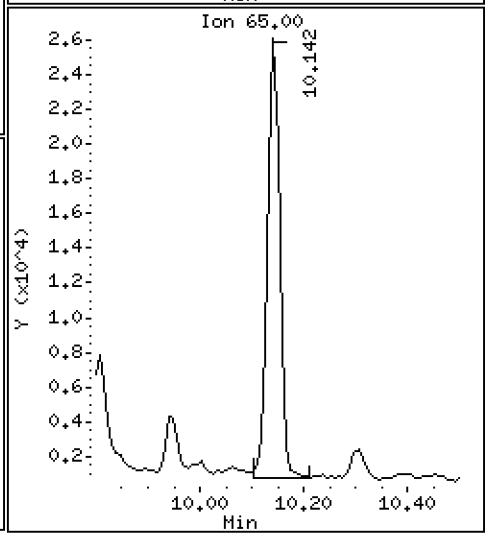


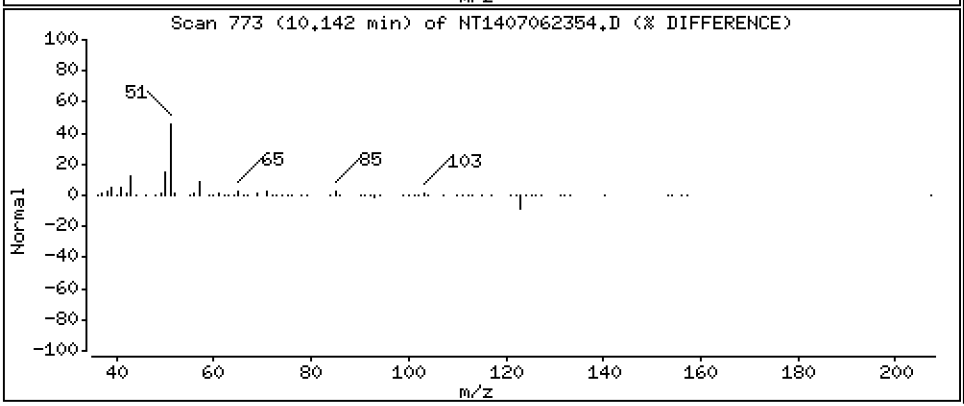












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

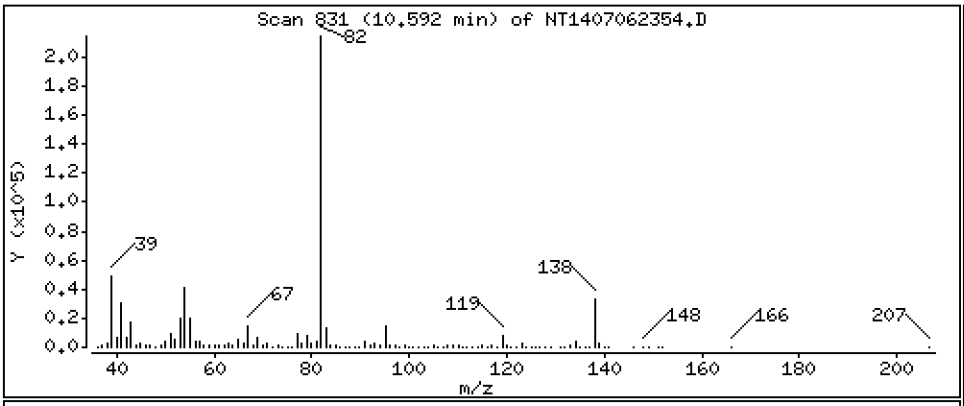
Operator: JGR

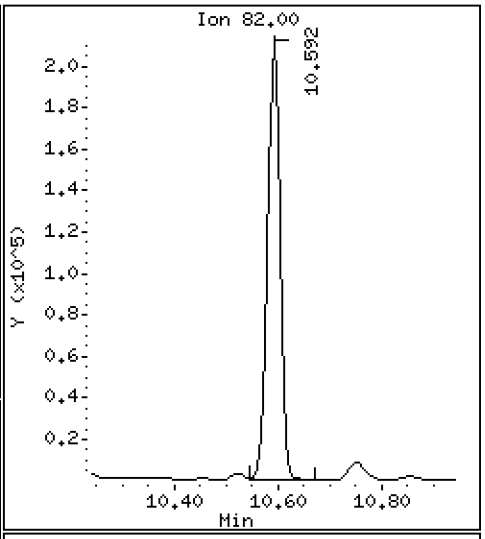
Column phase: ZB-5msi

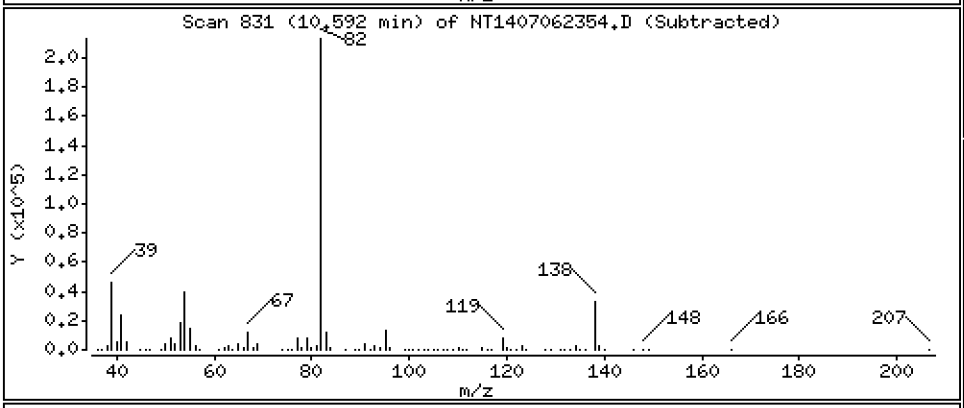
Column diameter: 0.25

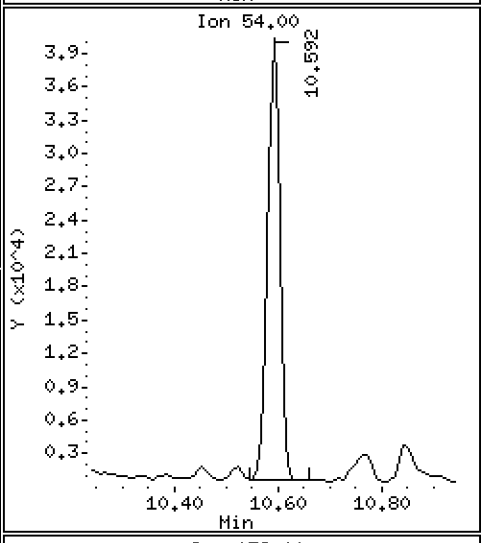
20 Isophorone

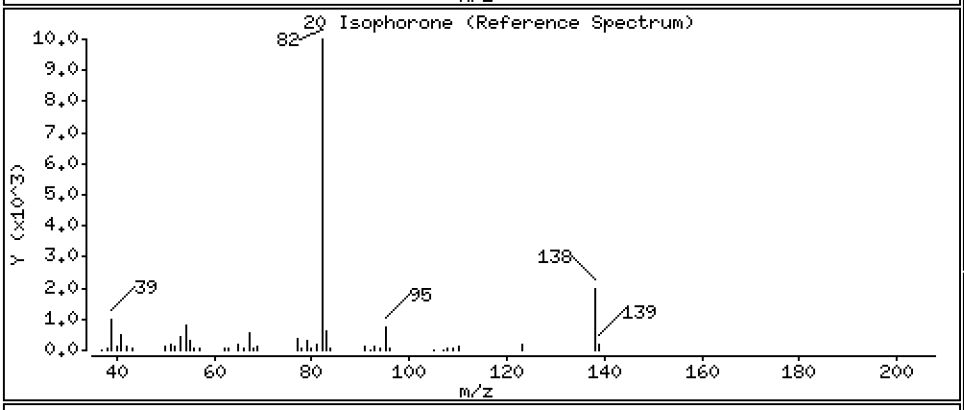
Concentration: 3.943 ug/mL

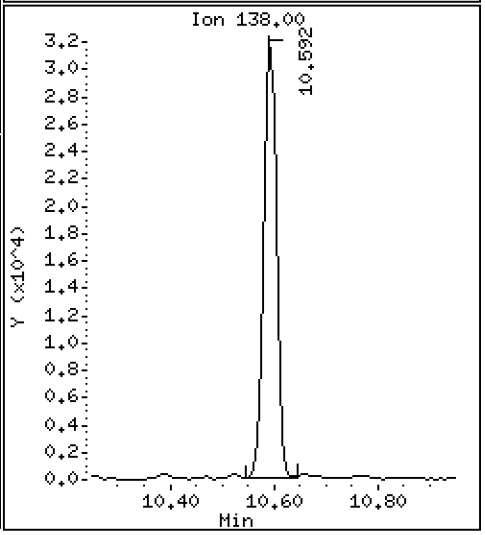


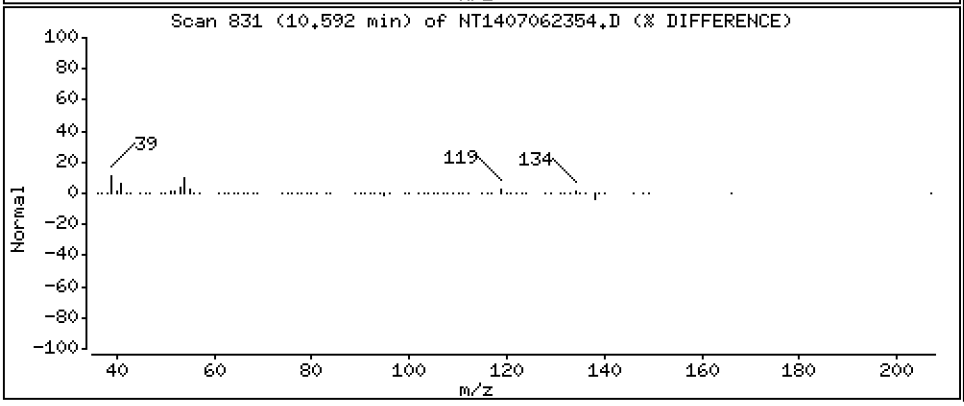












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

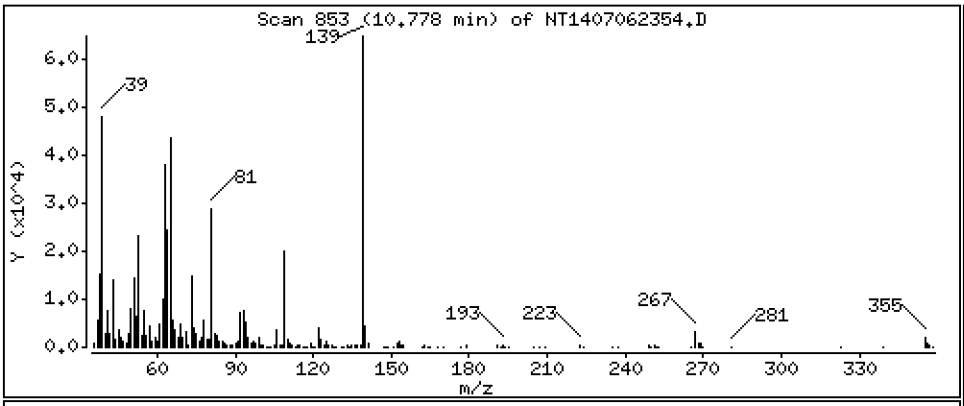
Operator: JGR

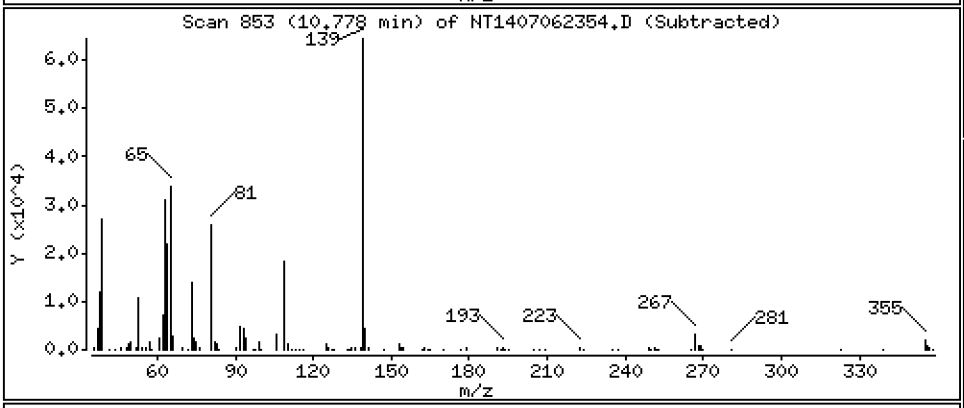
Column phase: ZB-5msi

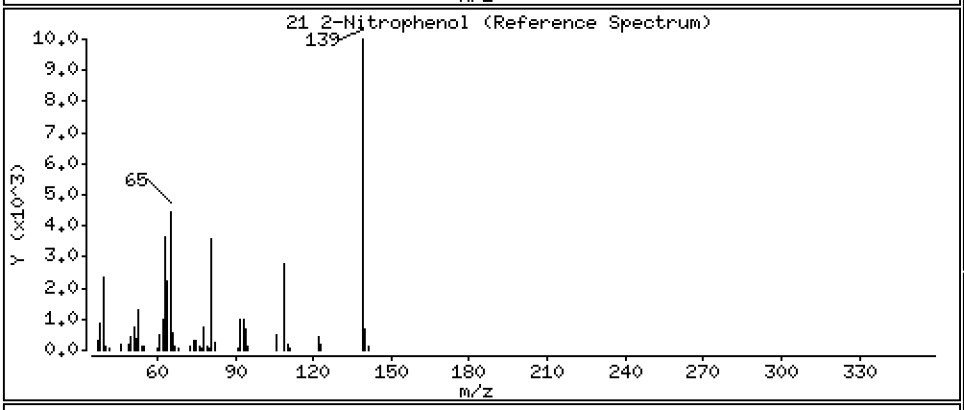
Column diameter: 0.25

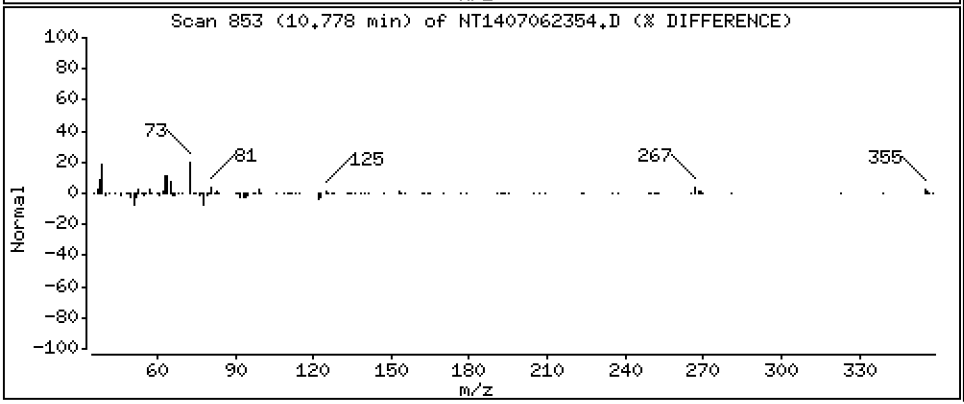
21 2-Nitrophenol

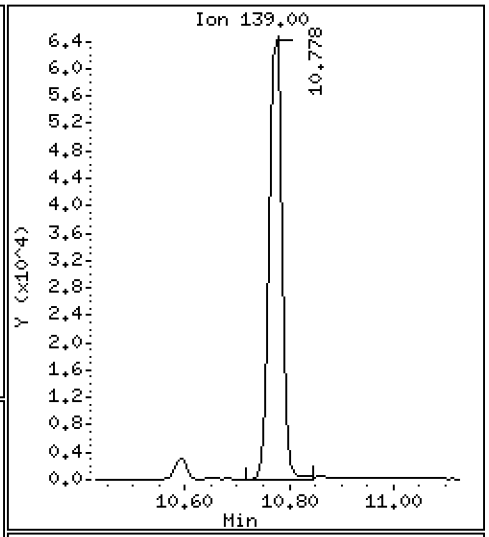
Concentration: 3.583 ug/mL

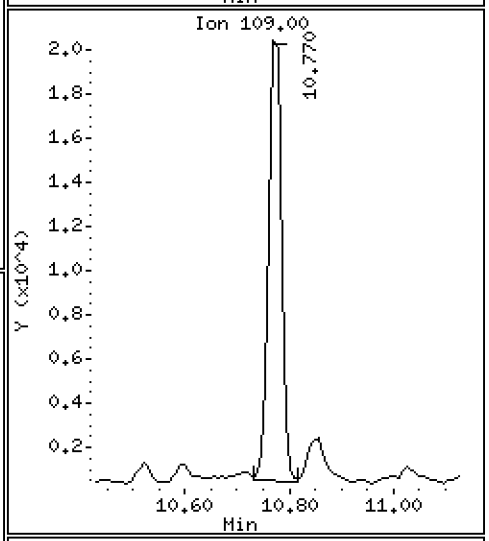


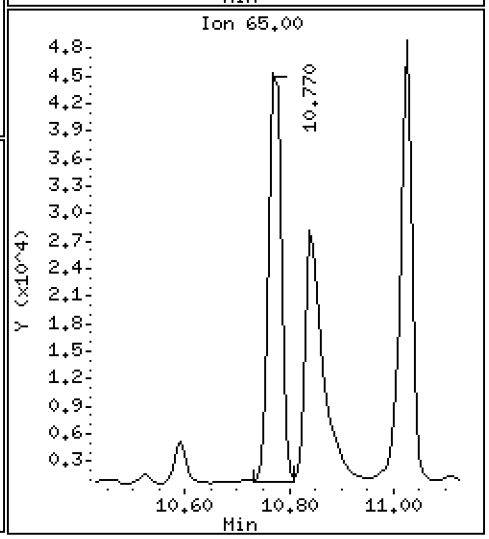












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

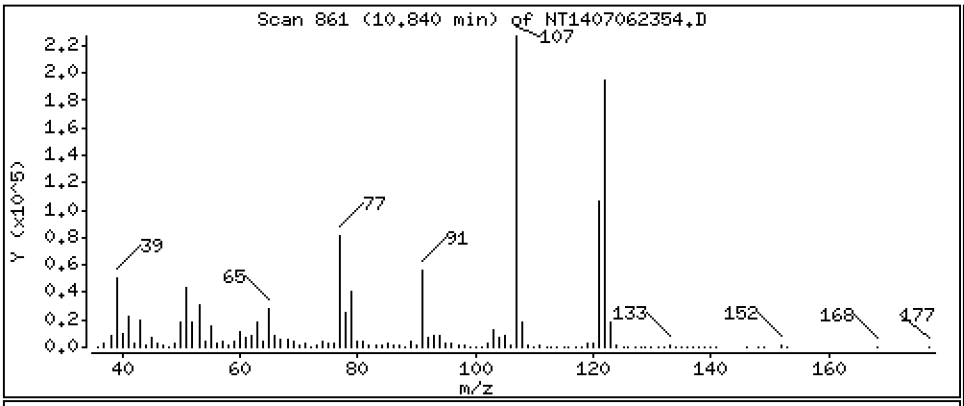
Operator: JGR

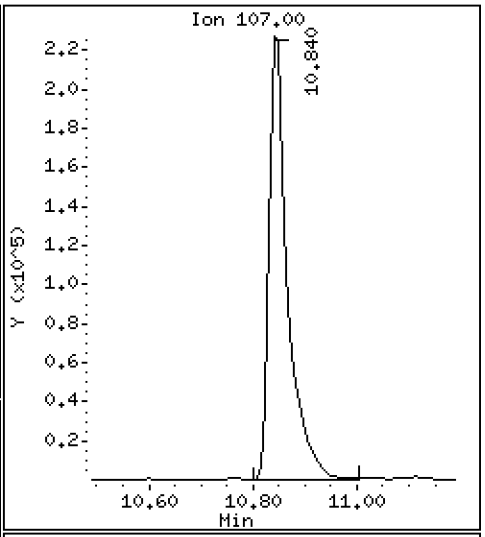
Column phase: ZB-5msi

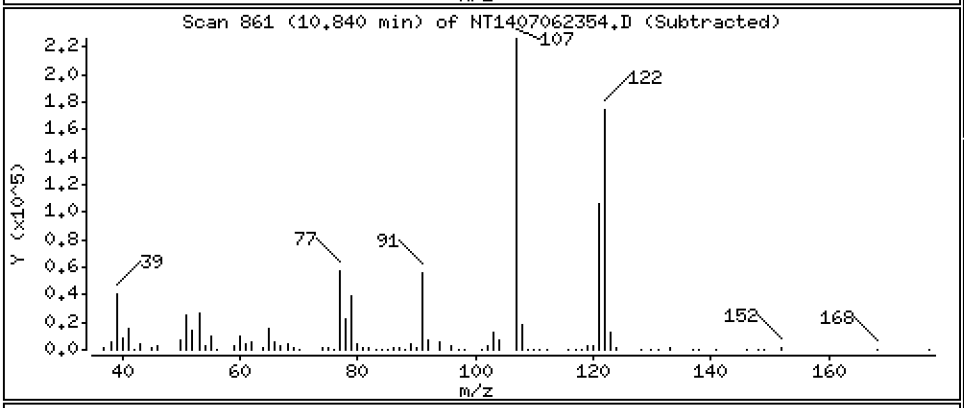
Column diameter: 0.25

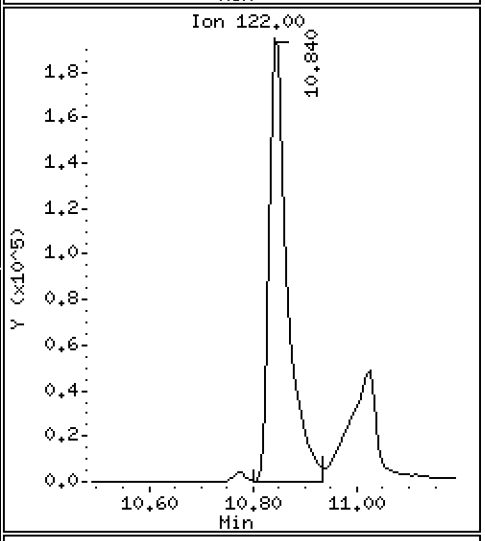
22 2,4-Dimethylphenol

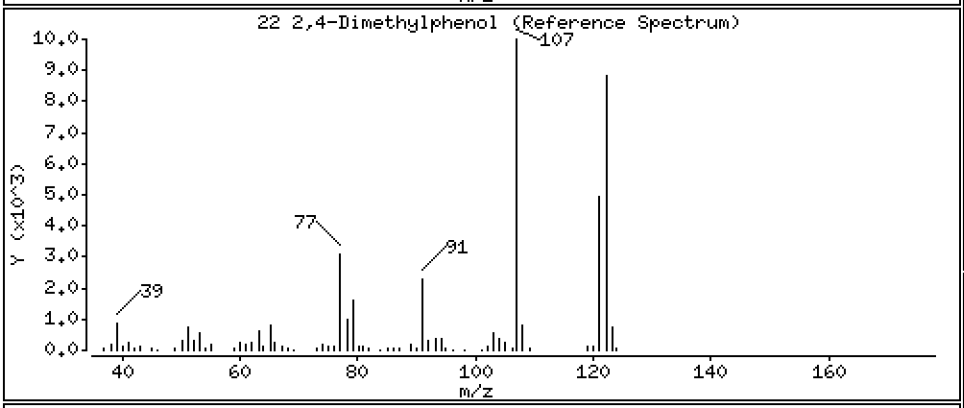
Concentration: 11.15 ug/mL

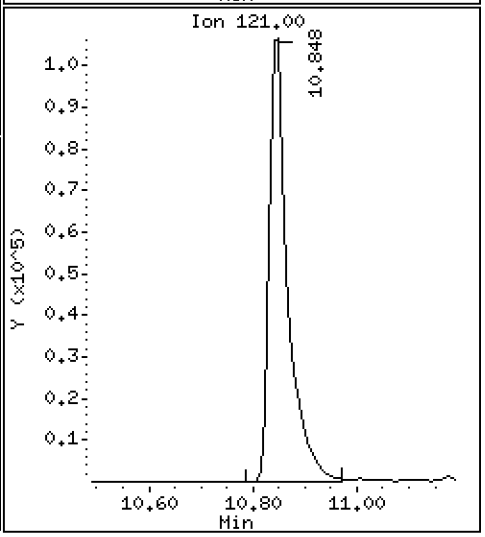


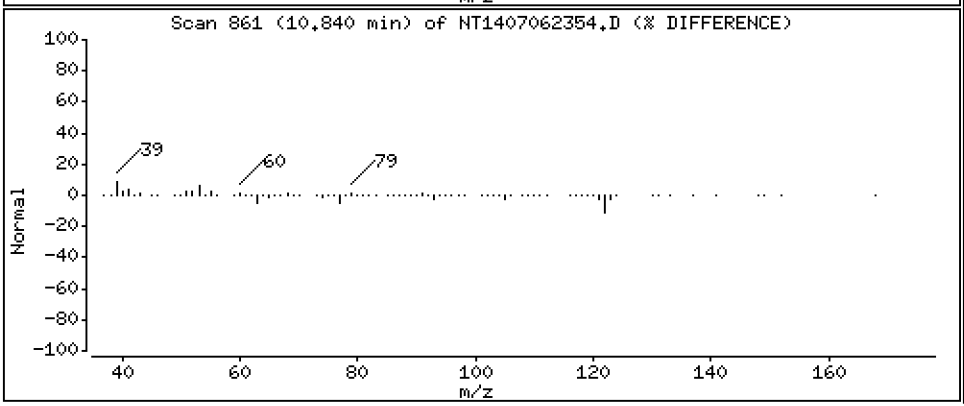












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

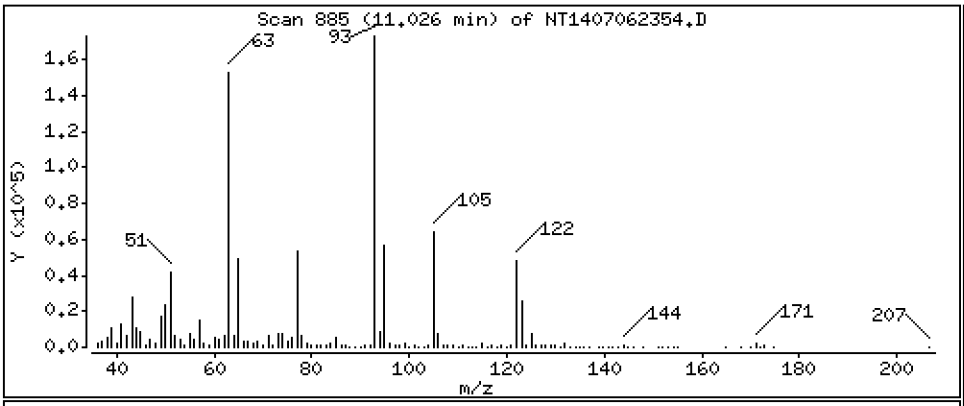
Operator: JGR

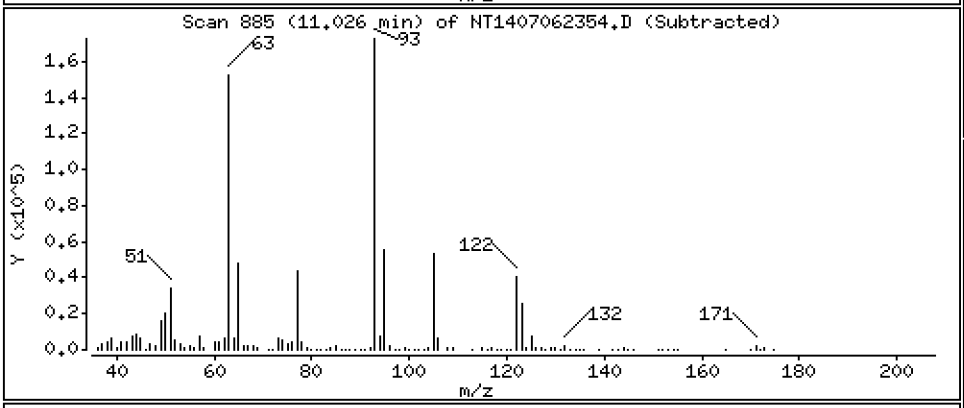
Column phase: ZB-5msi

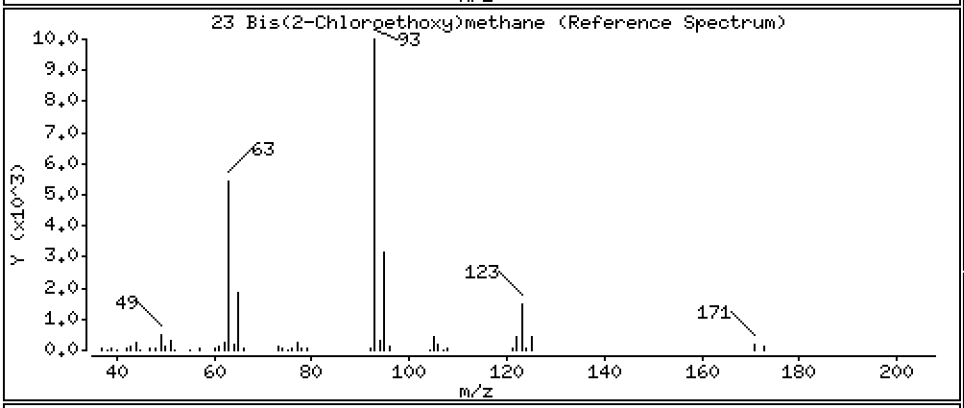
Column diameter: 0.25

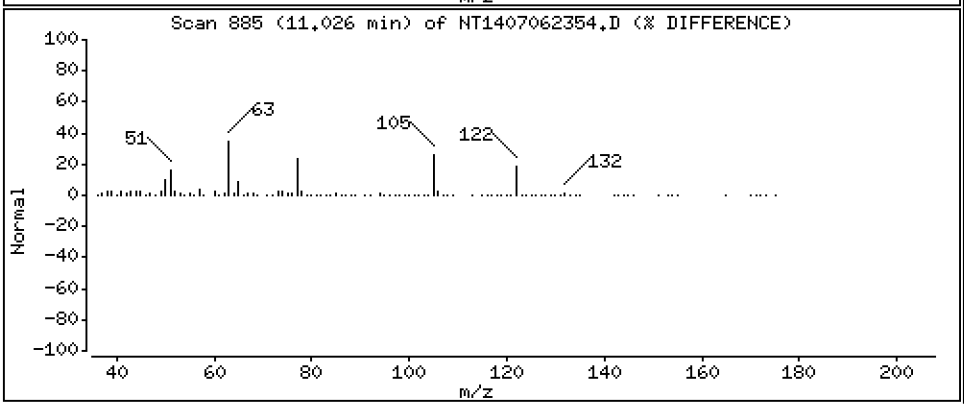
23 Bis(2-Chloroethoxy)methane

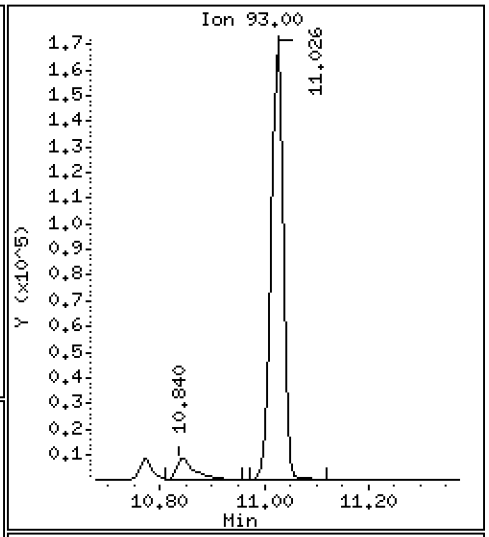
Concentration: 4.731 ug/mL

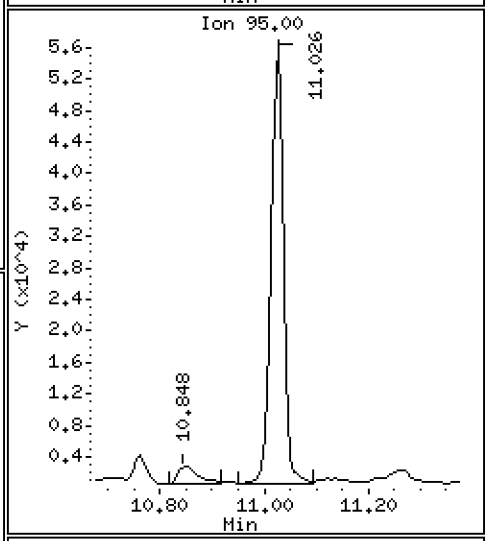


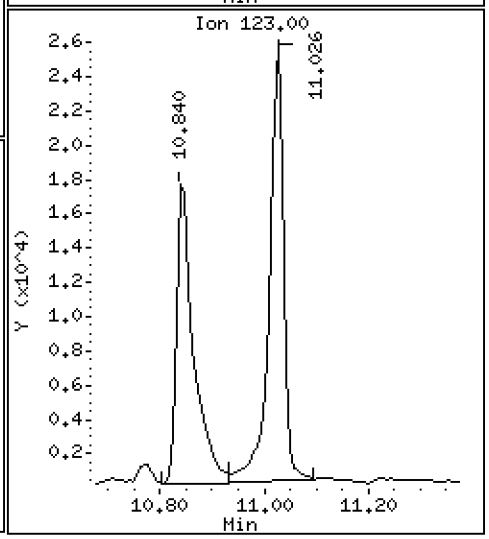












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

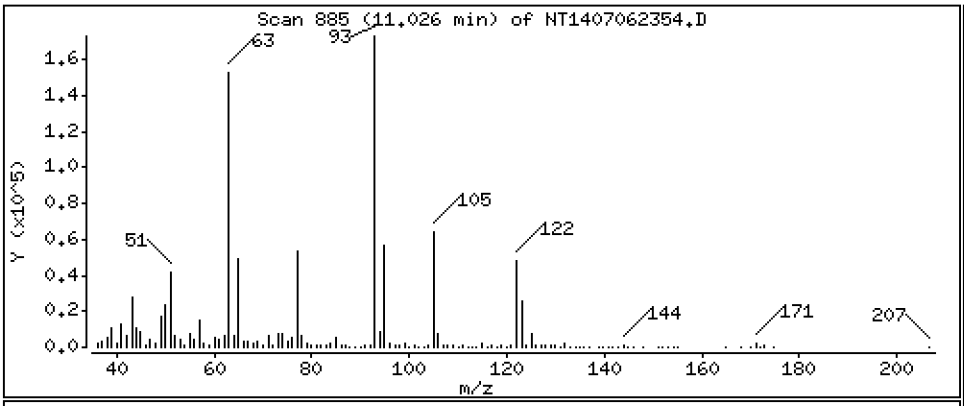
Operator: JGR

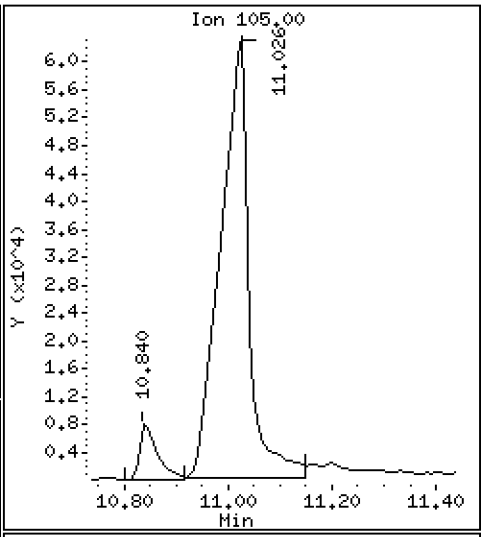
Column phase: ZB-5msi

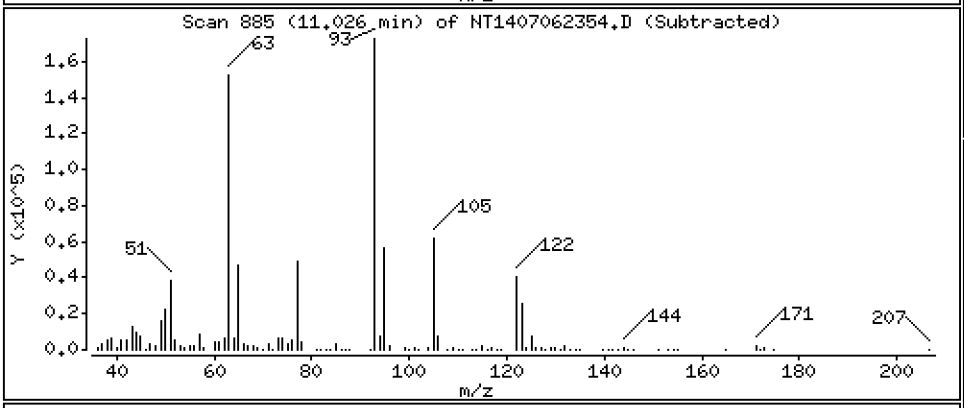
Column diameter: 0.25

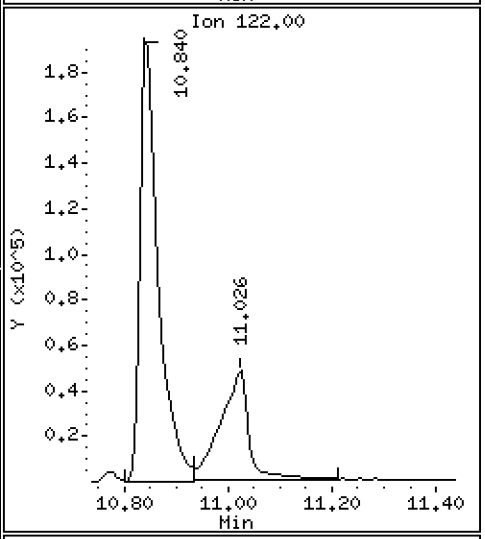
24 Benzoic acid

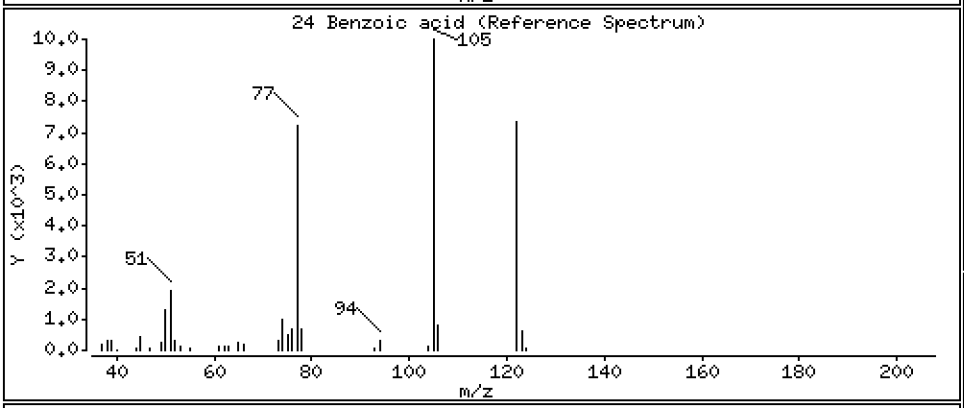
Concentration: 7.901 ug/mL

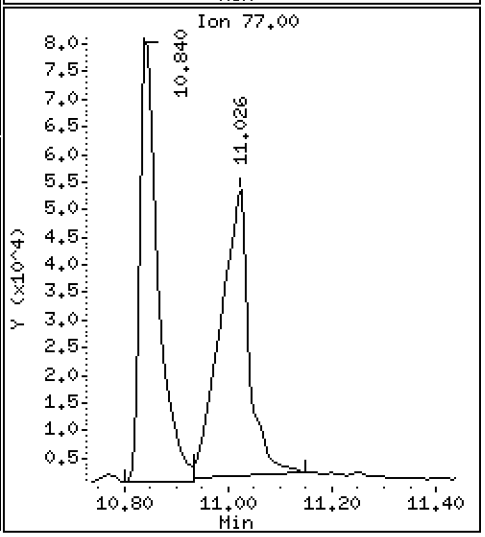


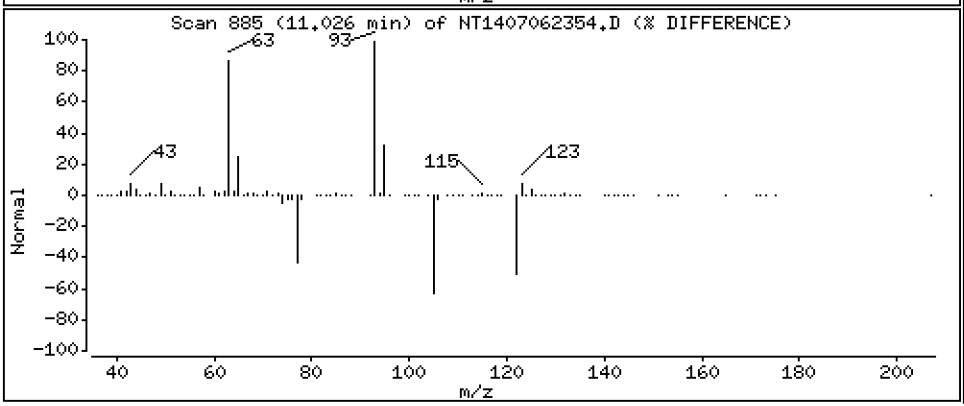












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

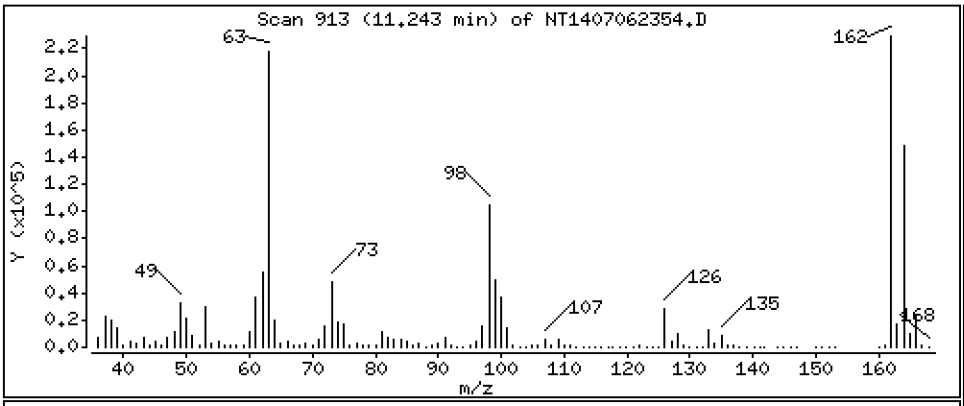
Operator: JGR

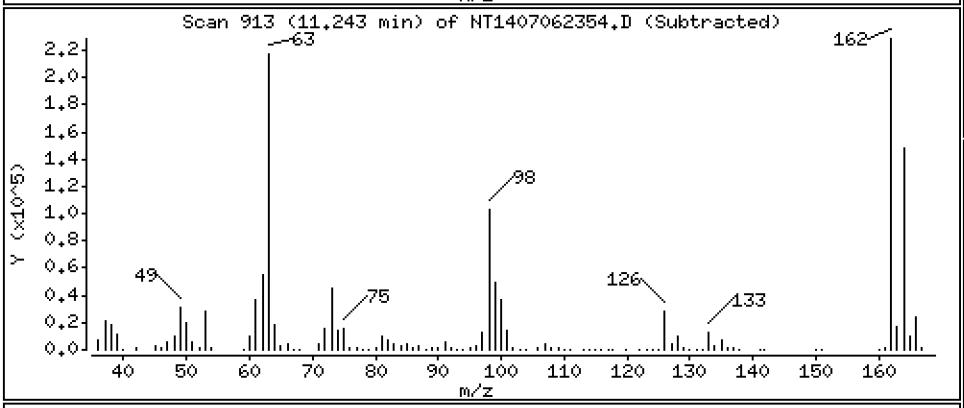
Column phase: ZB-5msi

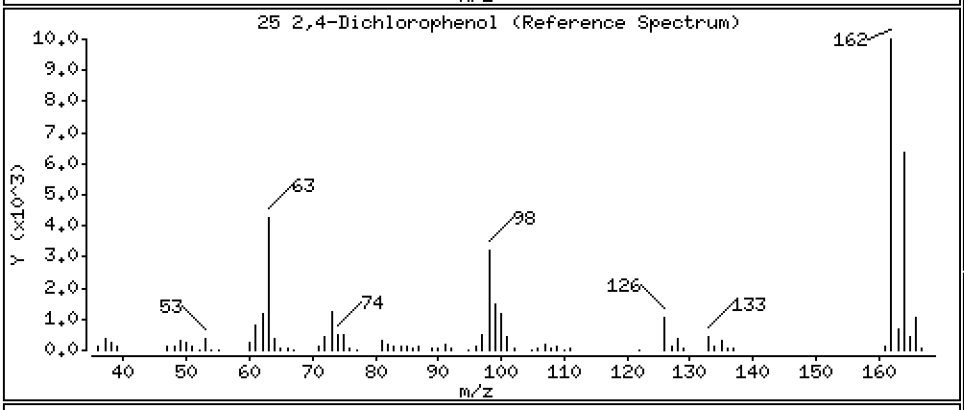
Column diameter: 0.25

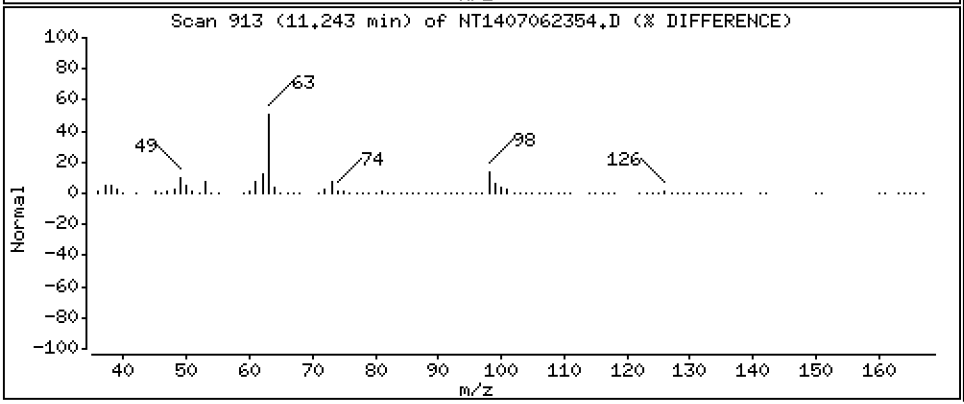
25 2,4-Dichlorophenol

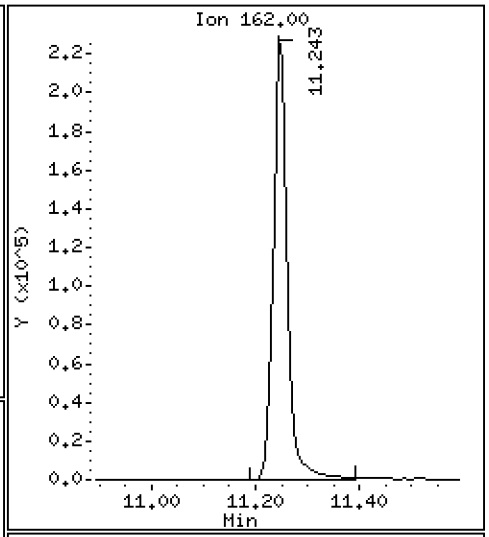
Concentration: 12.50 ug/mL

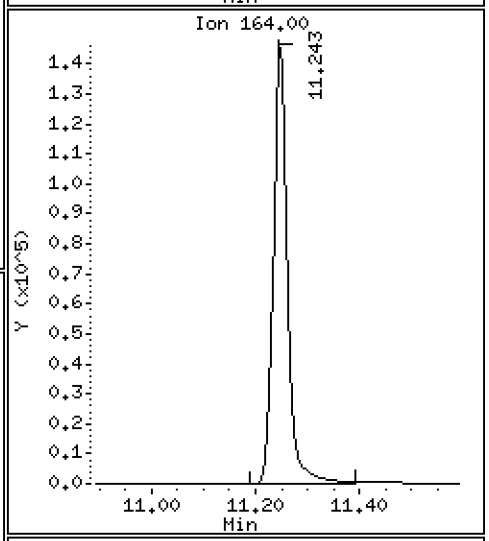


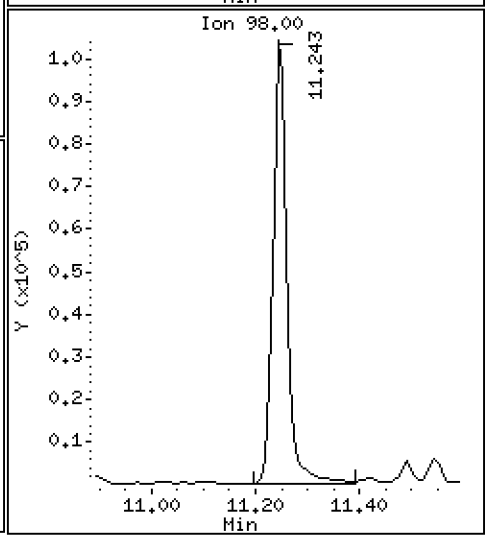












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

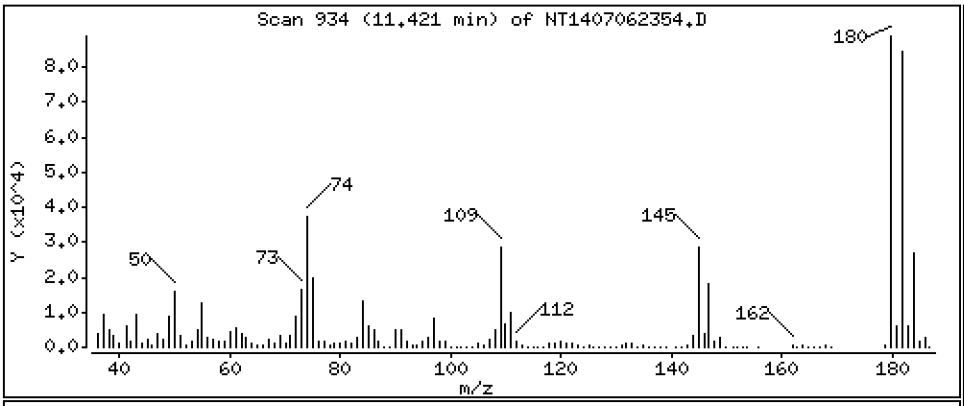
Operator: JGR

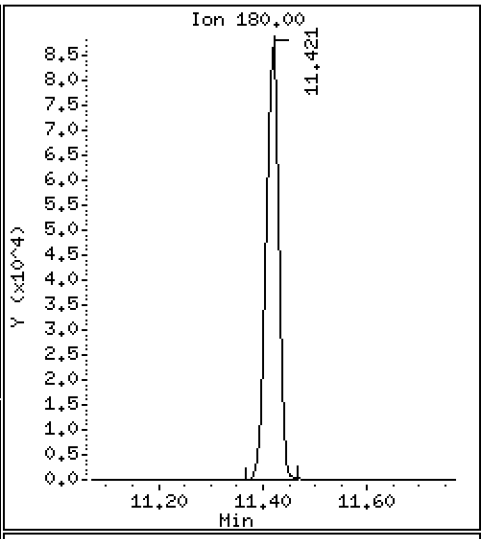
Column phase: ZB-5msi

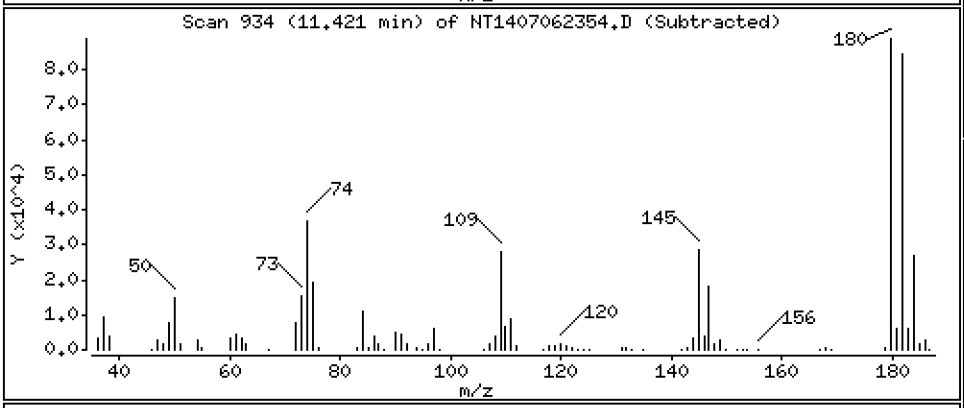
Column diameter: 0.25

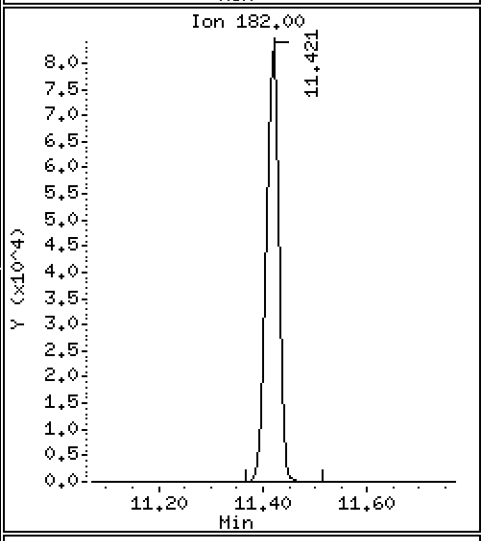
26 1,2,4-Trichlorobenzene

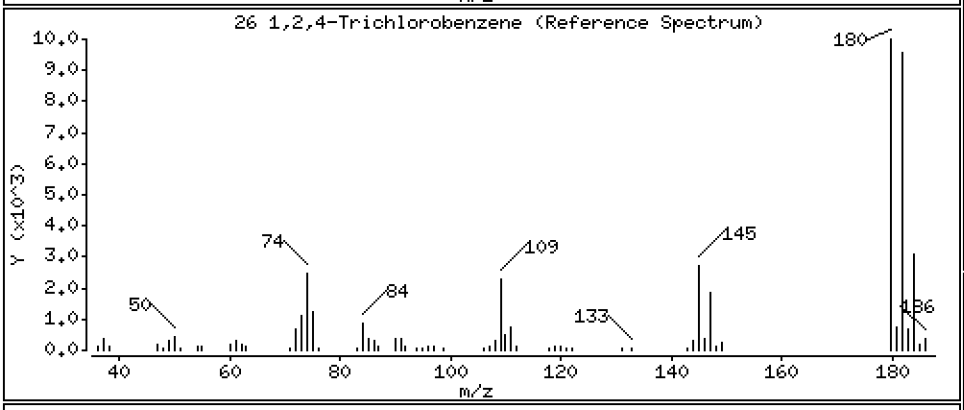
Concentration: 3.933 ug/mL

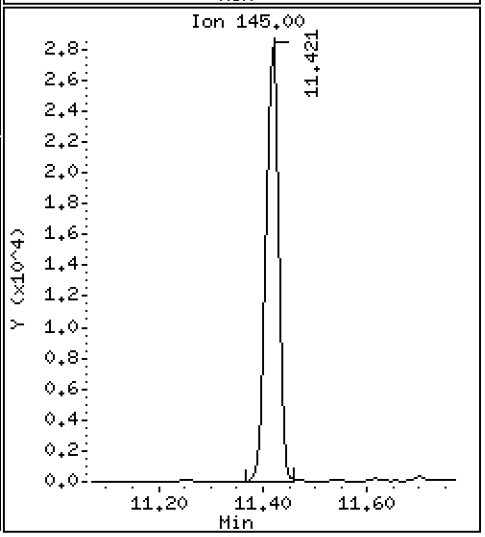


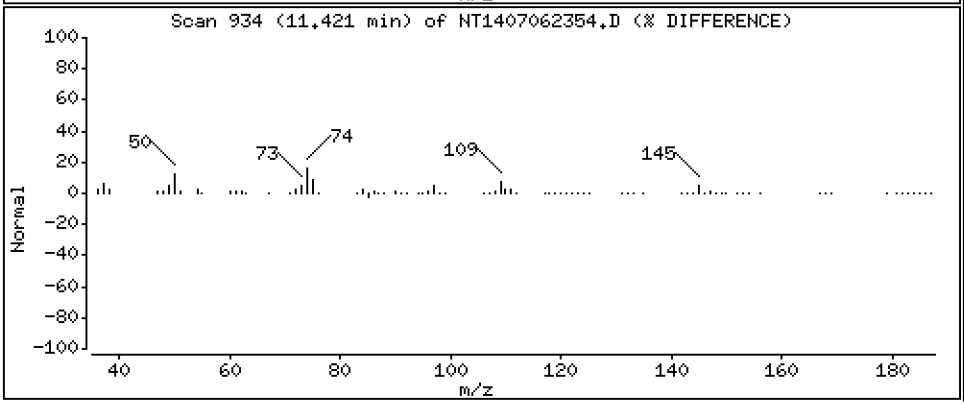












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

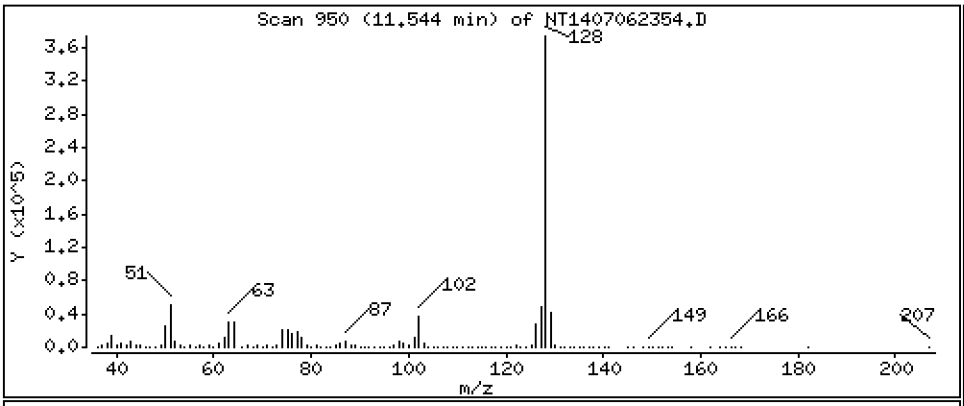
Operator: JGR

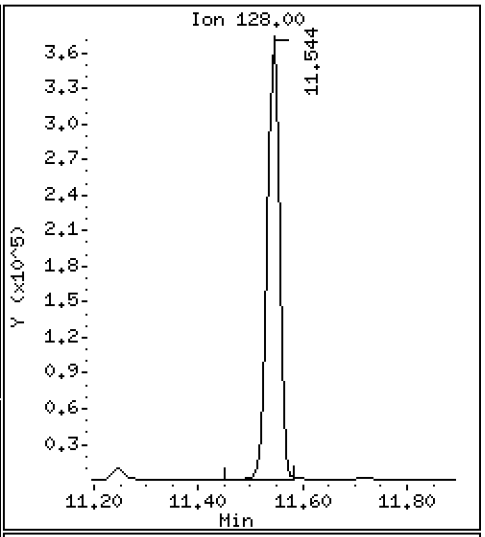
Column phase: ZB-5msi

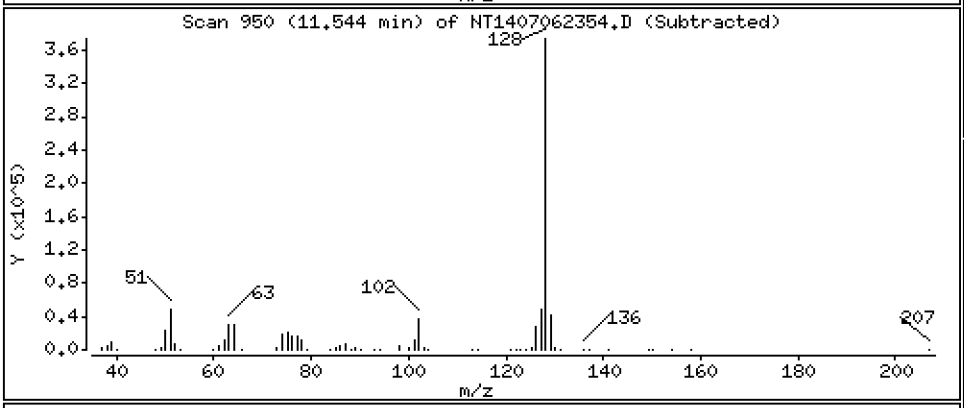
Column diameter: 0.25

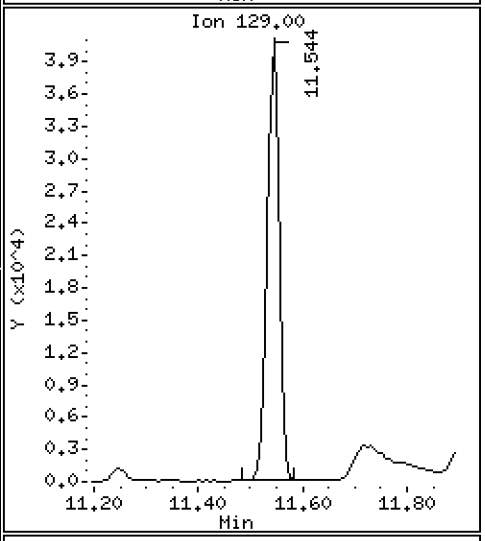
28 Naphthalene

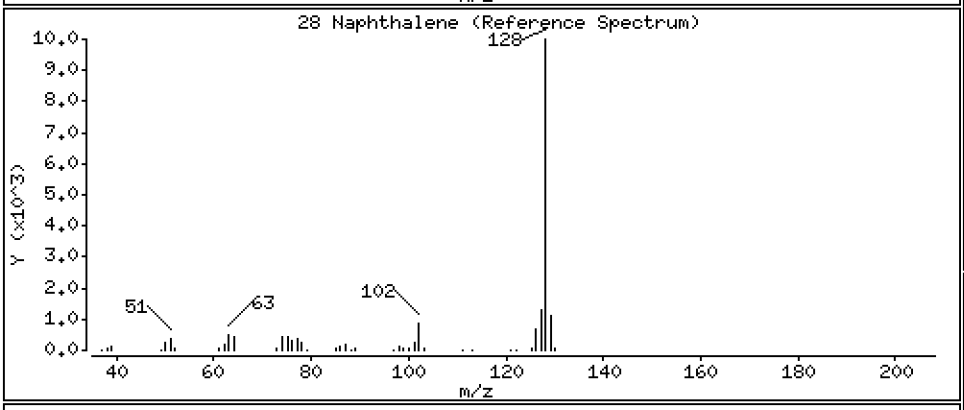
Concentration: 4.512 ug/mL

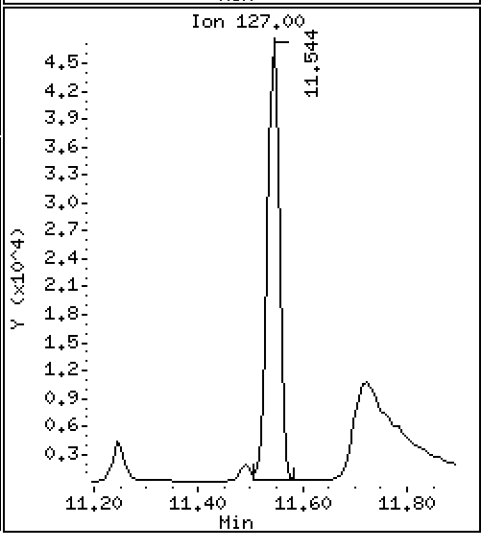


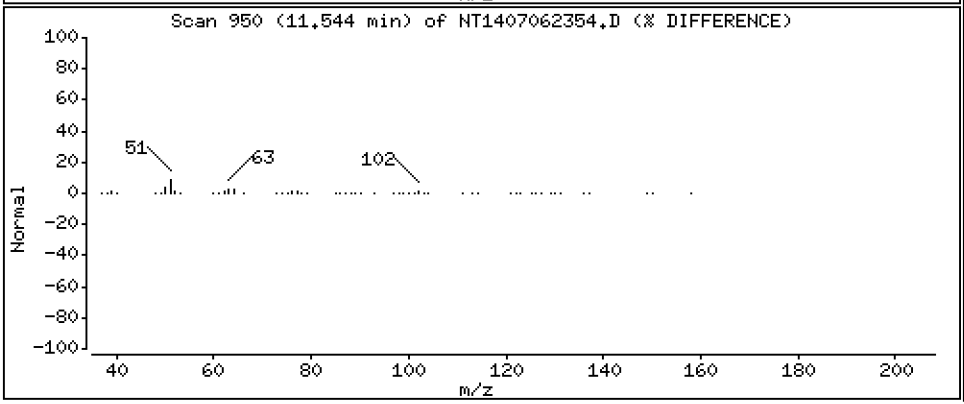












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

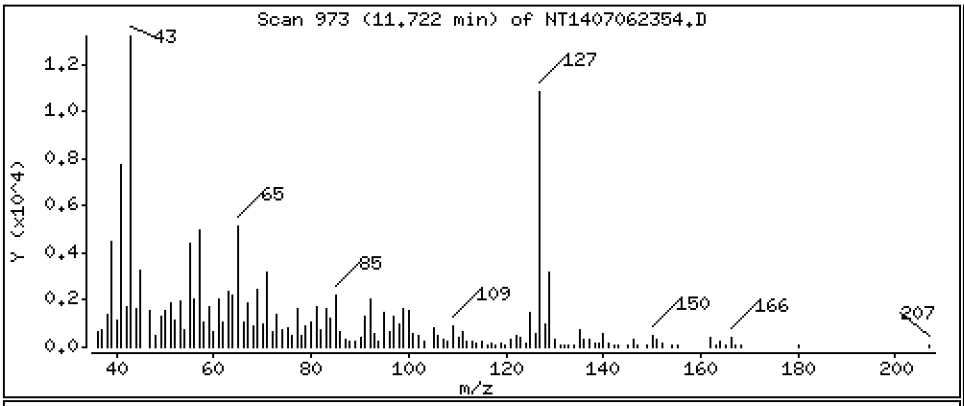
Operator: JGR

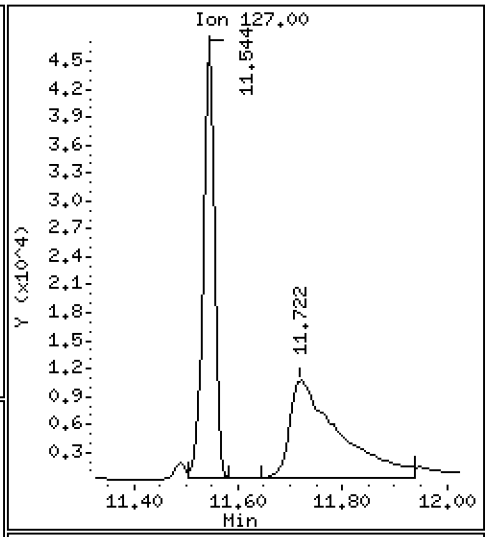
Column phase: ZB-5msi

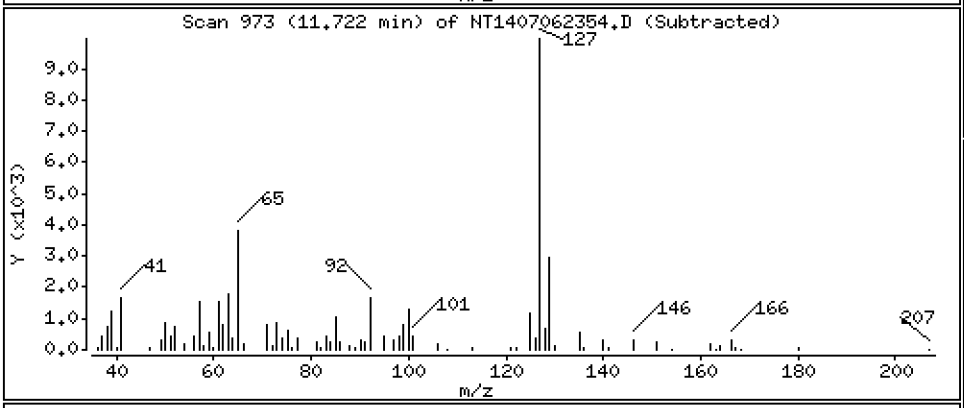
Column diameter: 0.25

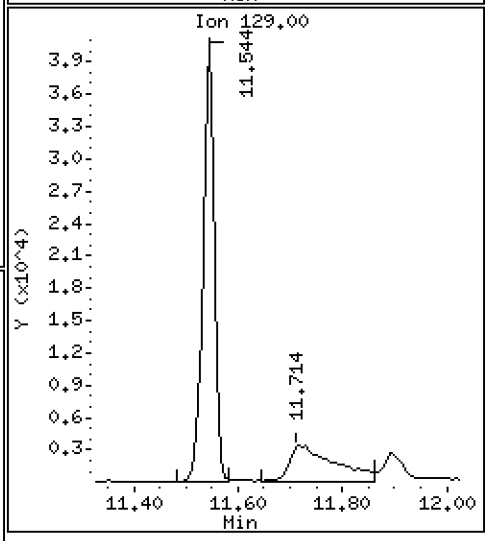
29 4-Chloroaniline

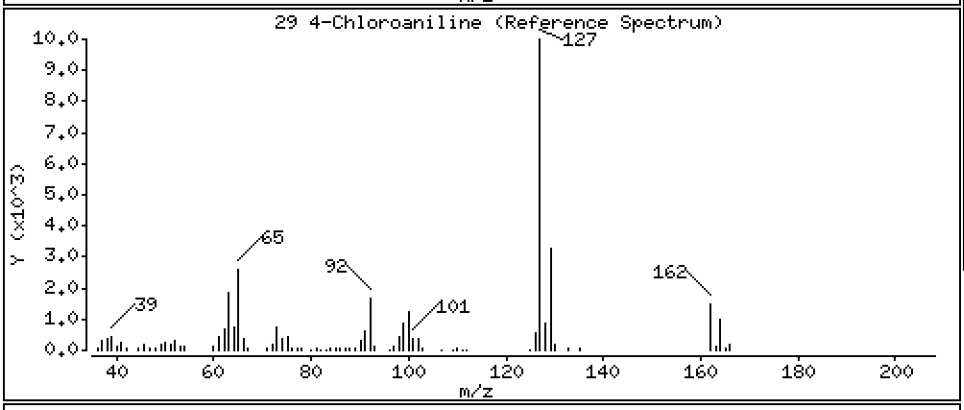
Concentration: 1.198 ug/mL

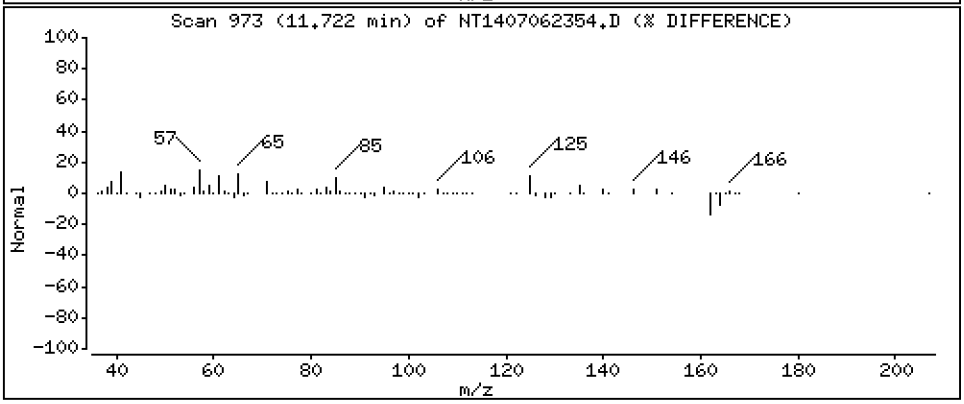












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

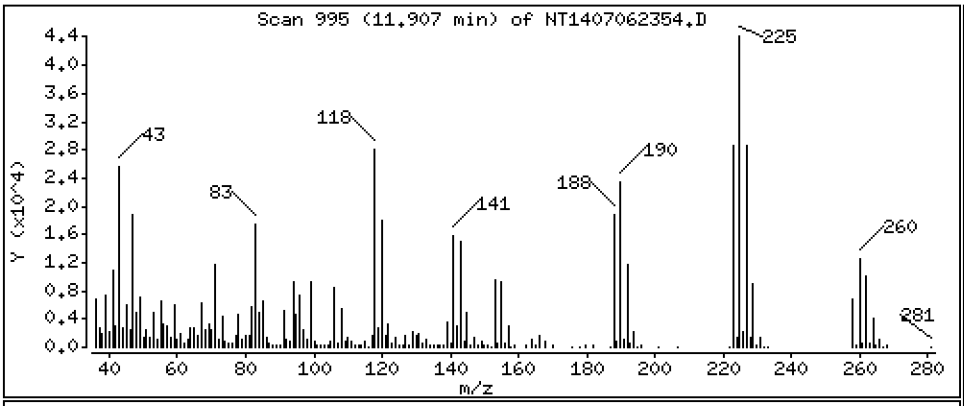
Operator: JGR

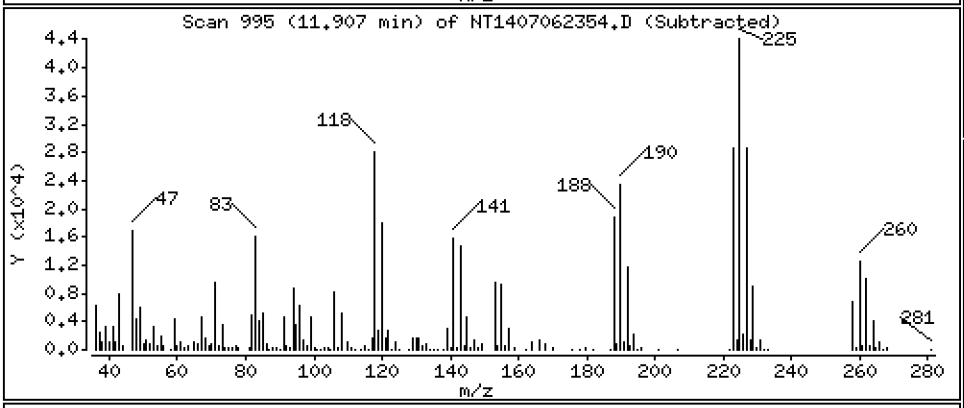
Column phase: ZB-5msi

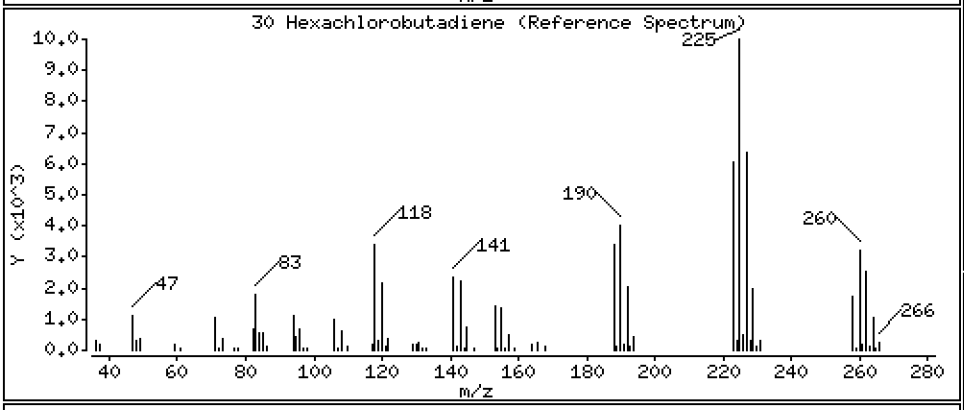
Column diameter: 0.25

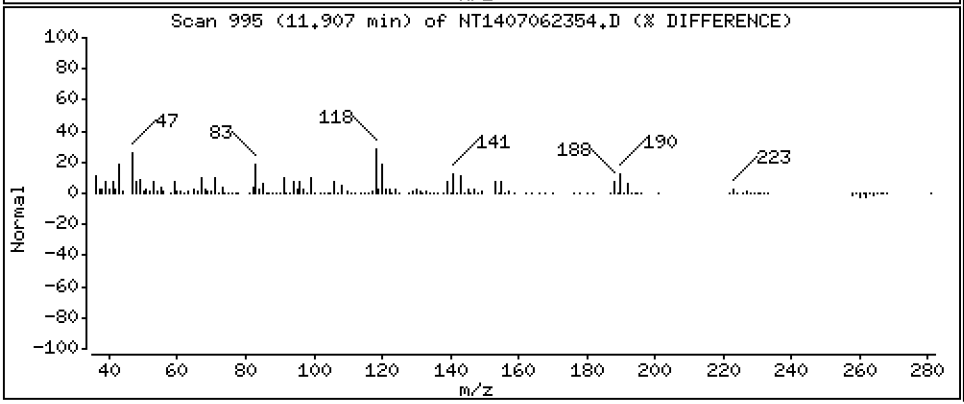
30 Hexachlorobutadiene

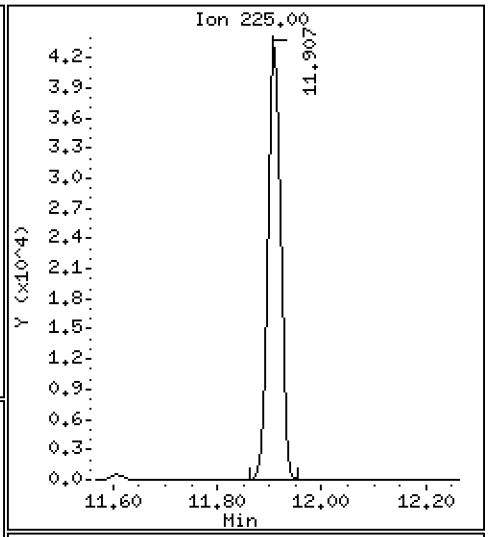
Concentration: 4.209 ug/mL

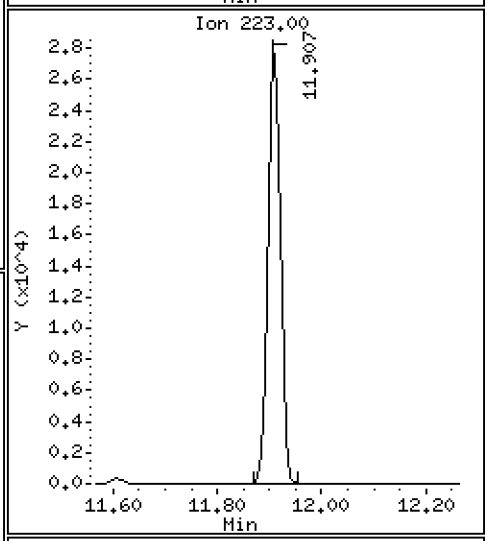


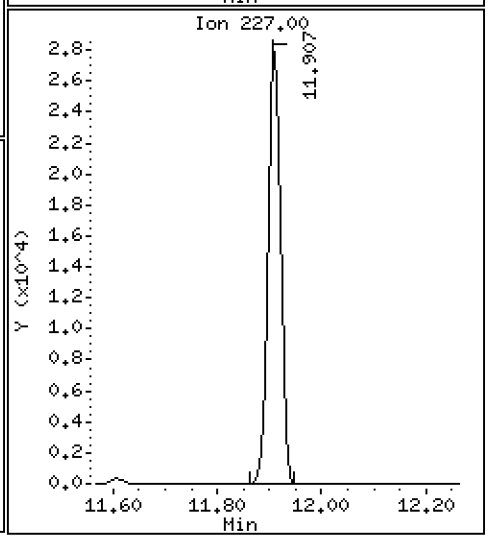












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

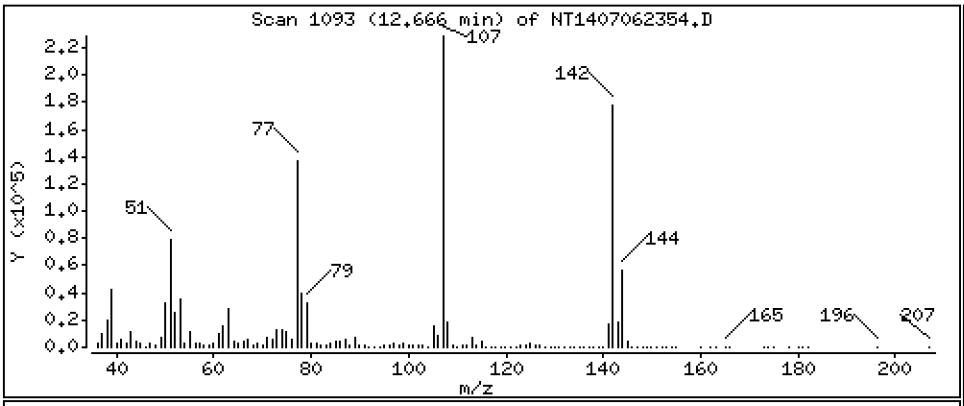
Operator: JGR

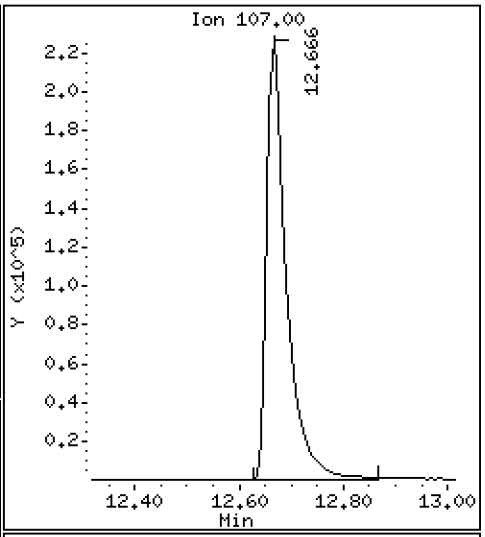
Column phase: ZB-5msi

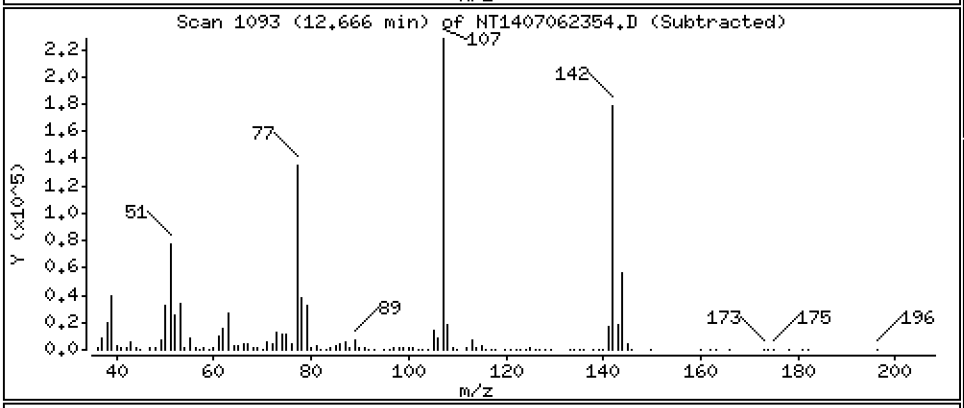
Column diameter: 0.25

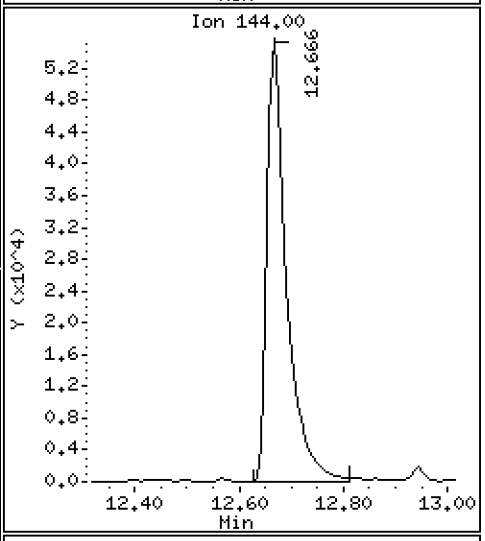
31 4-Chloro-3-methylphenol

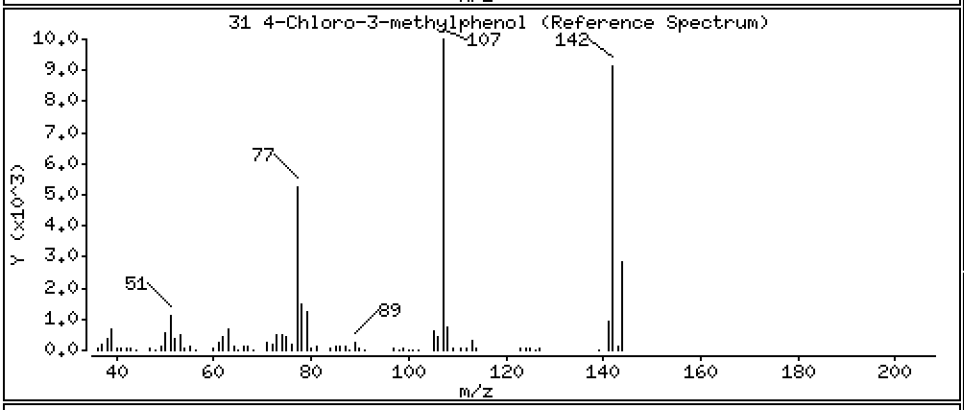
Concentration: 12.72 ug/mL

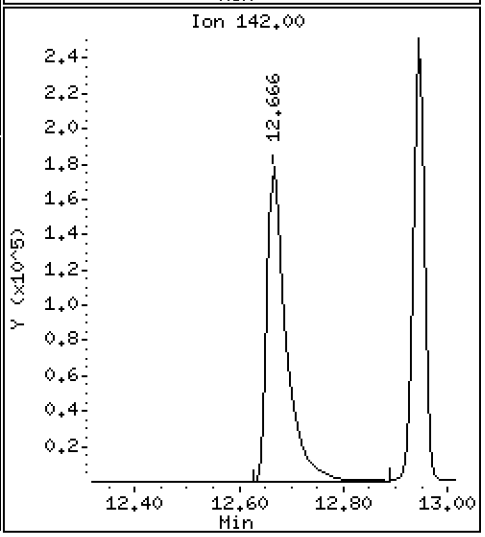


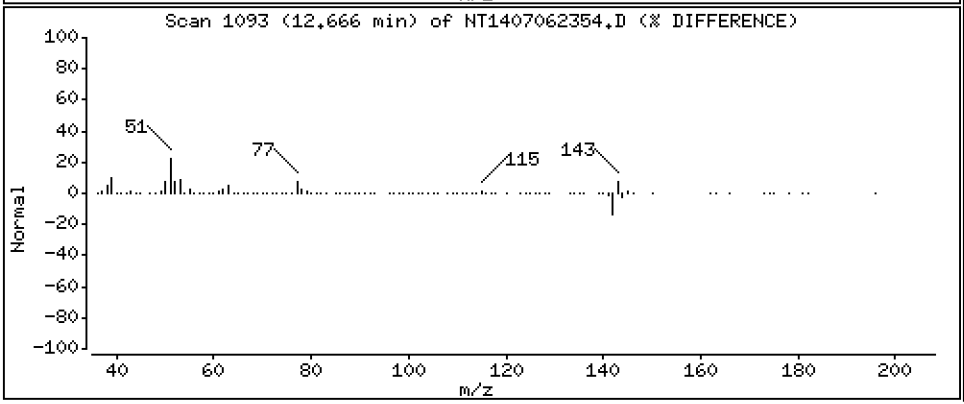












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

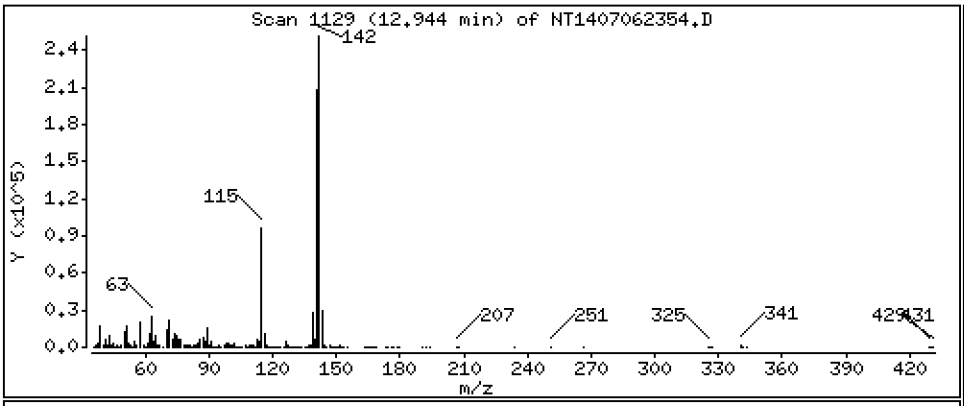
Operator: JGR

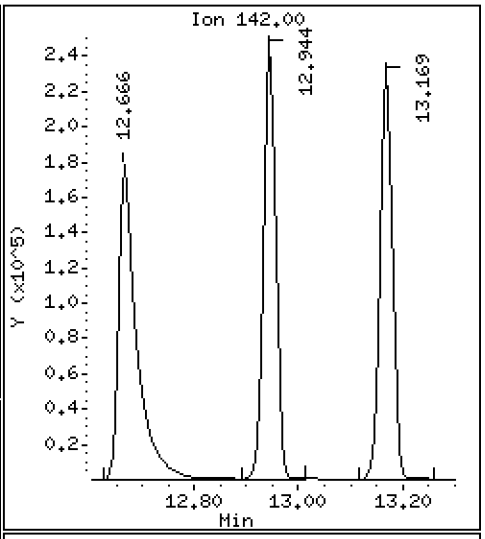
Column phase: ZB-5msi

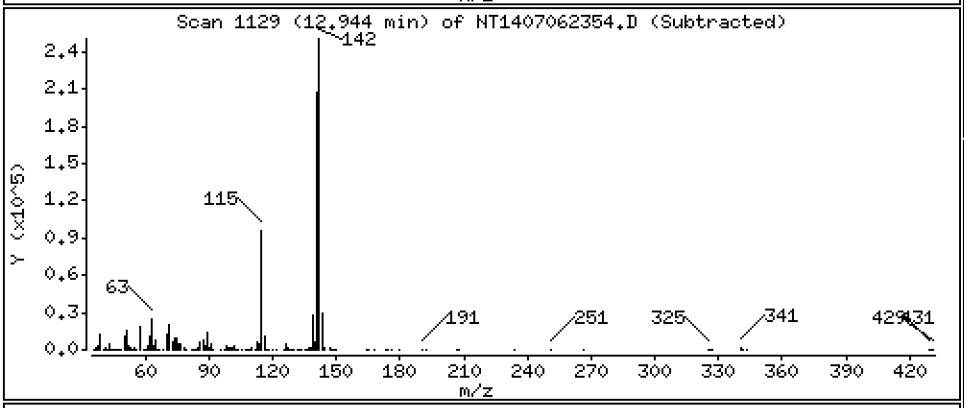
Column diameter: 0.25

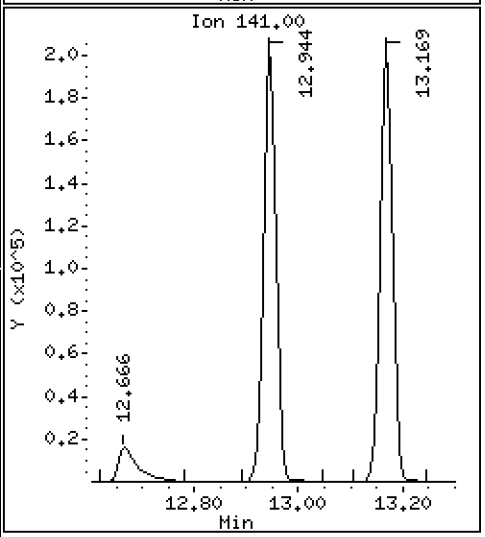
32 2-Methylnaphthalene

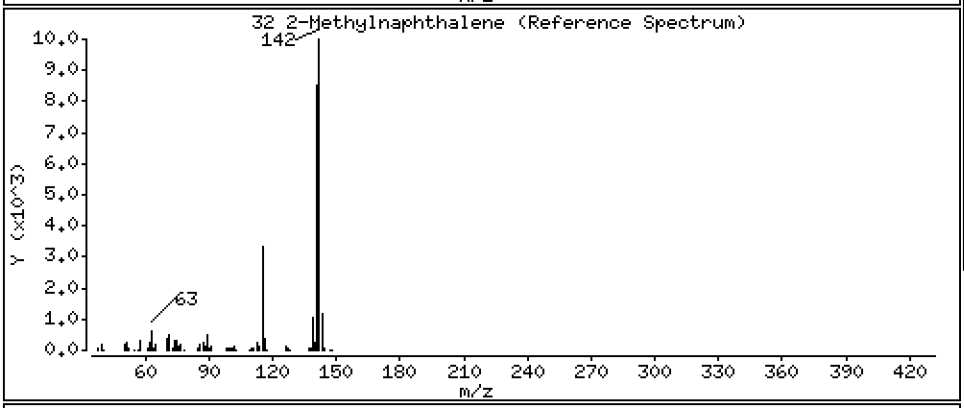
Concentration: 4.143 ug/mL

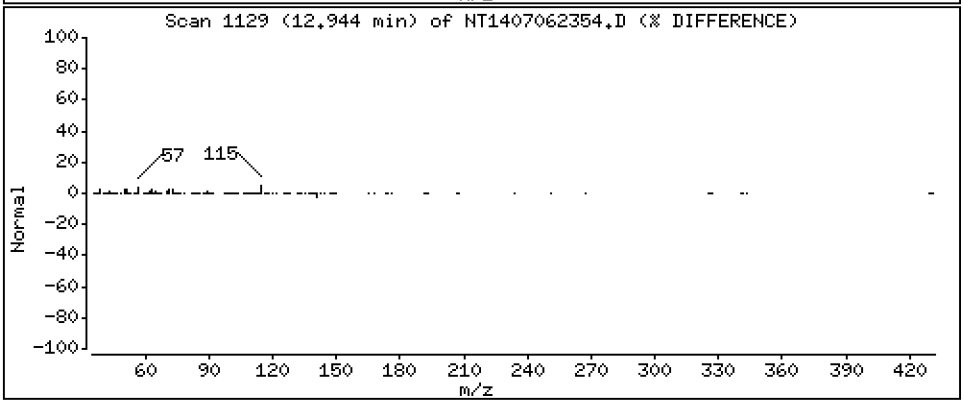












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

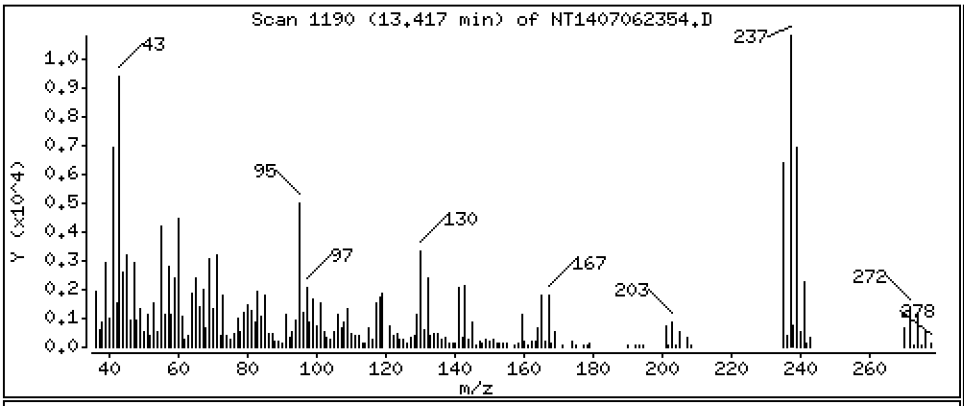
Operator: JGR

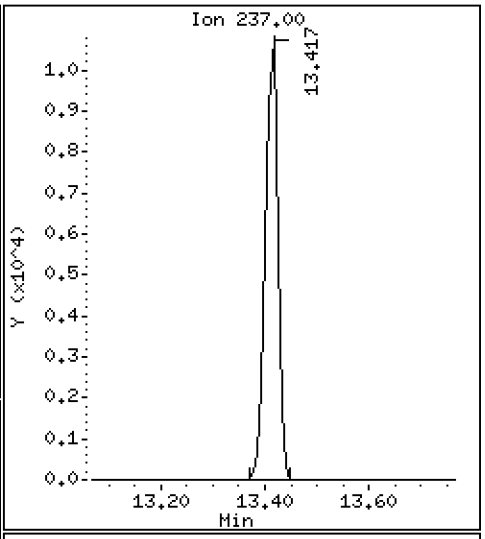
Column phase: ZB-5msi

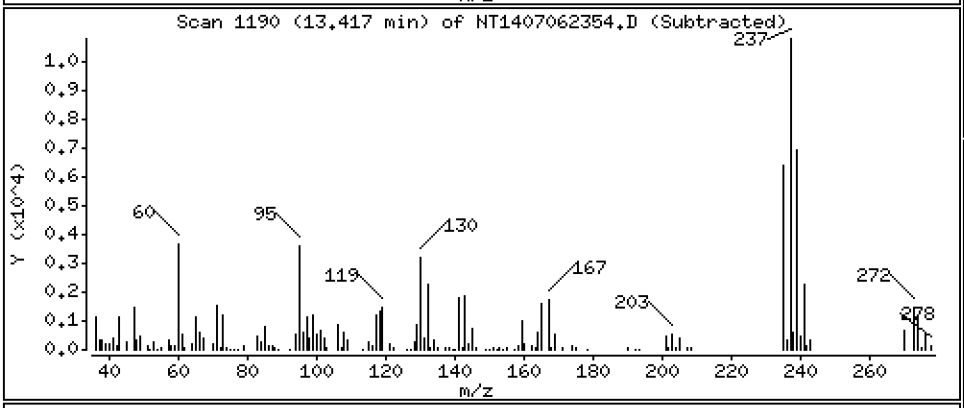
Column diameter: 0.25

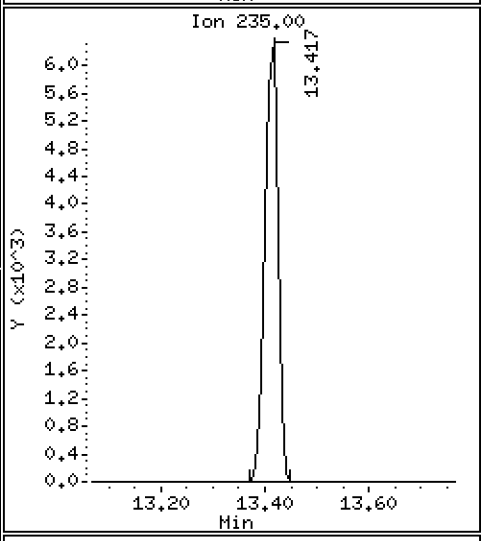
33 Hexachlorocyclopentadiene

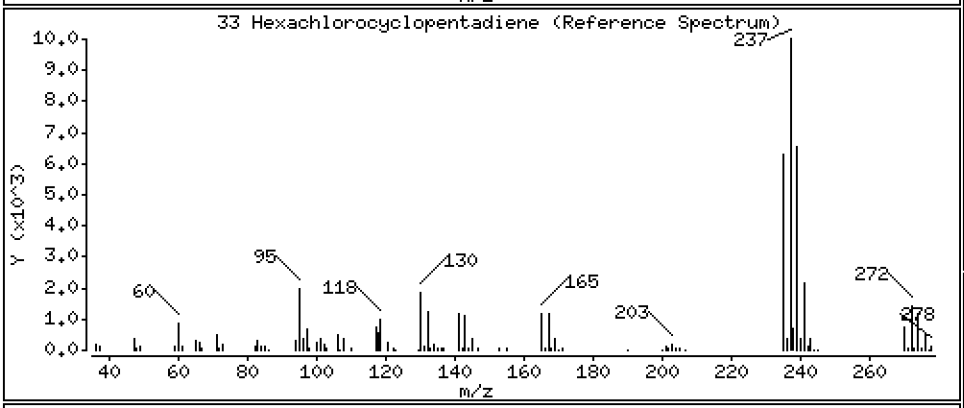
Concentration: 0.9361 ug/mL

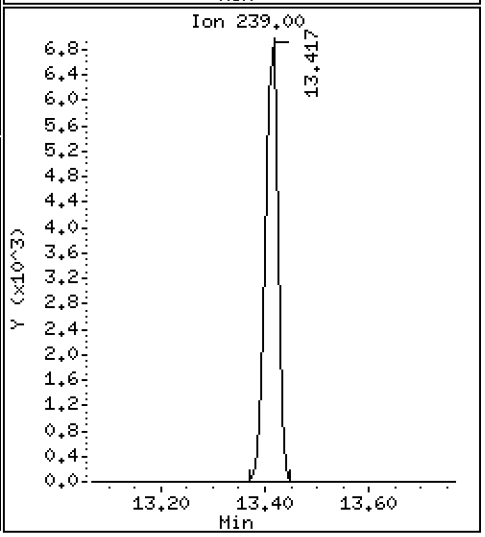


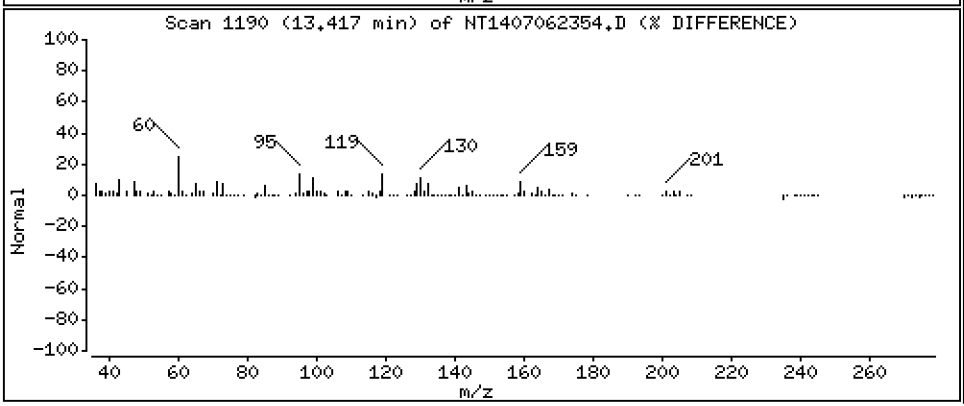












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

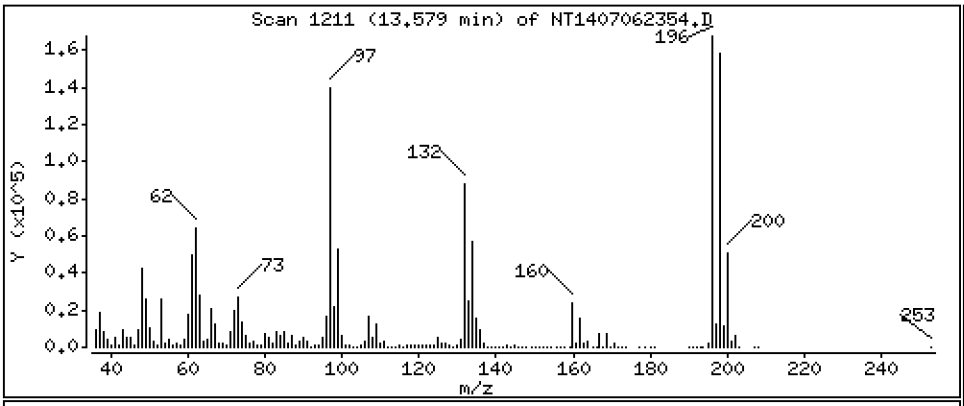
Operator: JGR

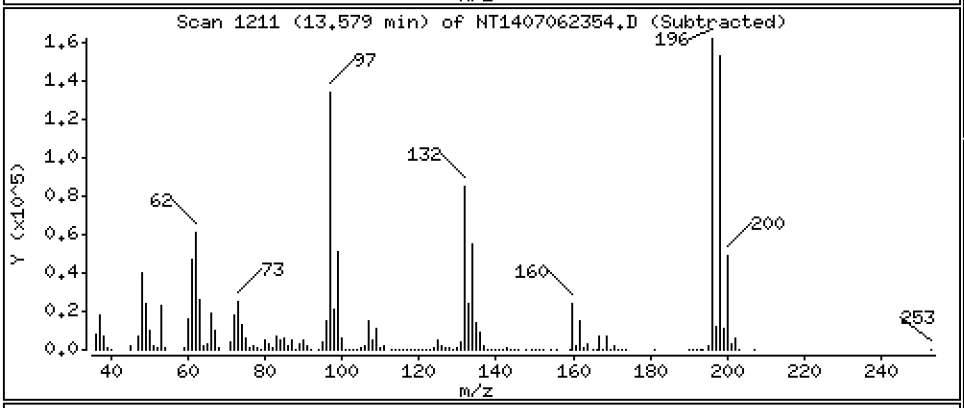
Column phase: ZB-5msi

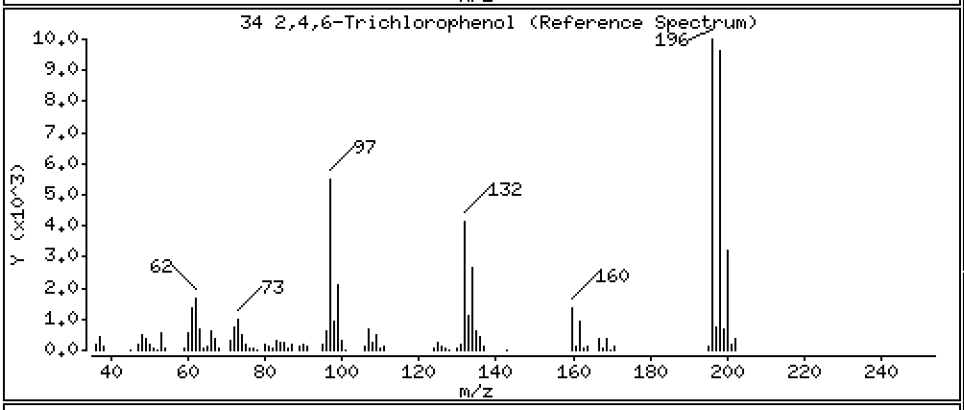
Column diameter: 0.25

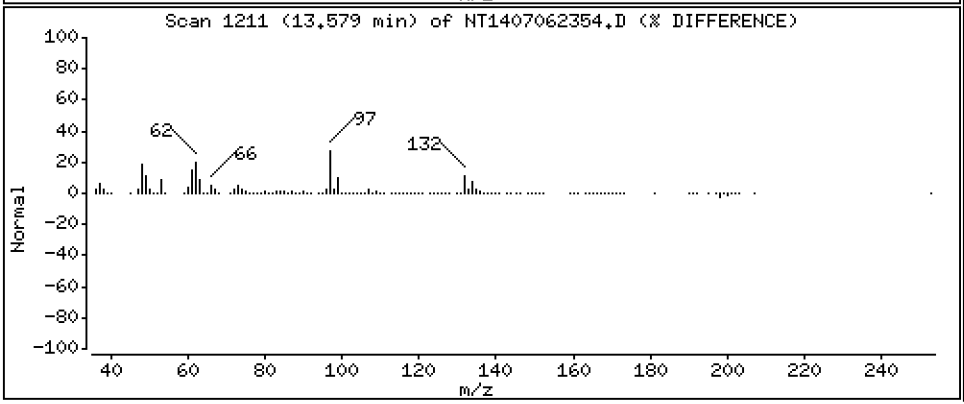
34 2,4,6-Trichlorophenol

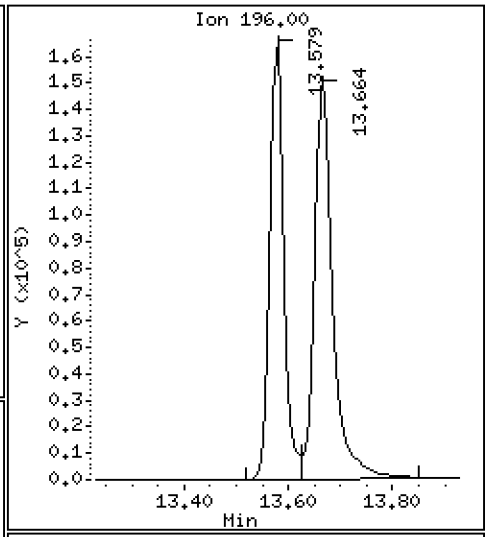
Concentration: 12.74 ug/mL

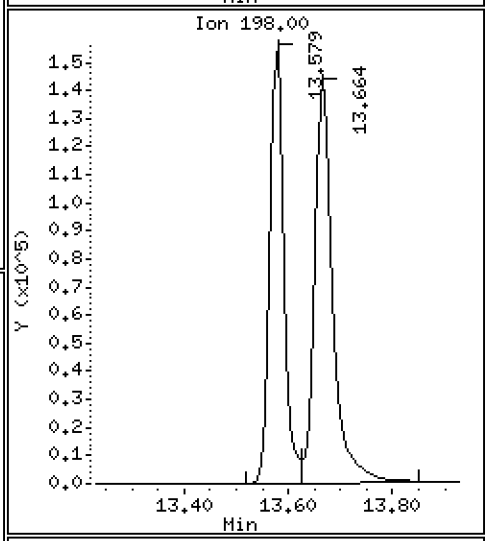


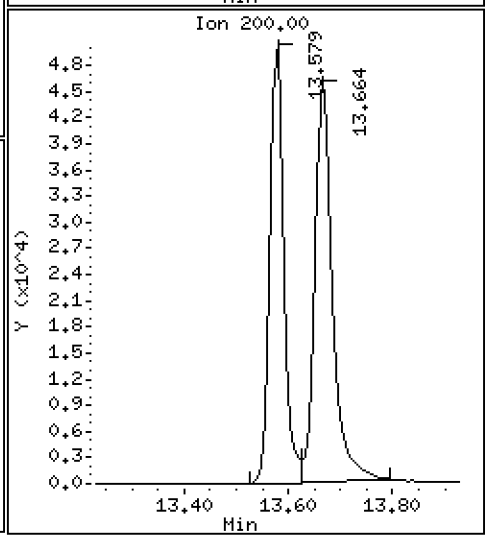












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

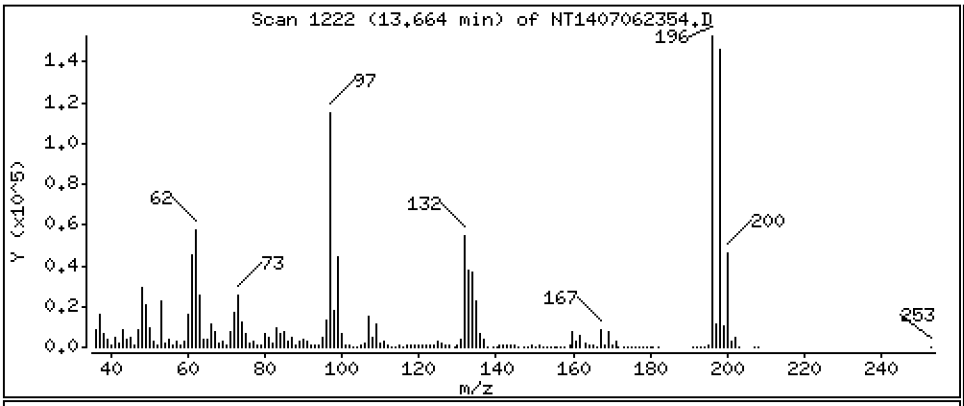
Operator: JGR

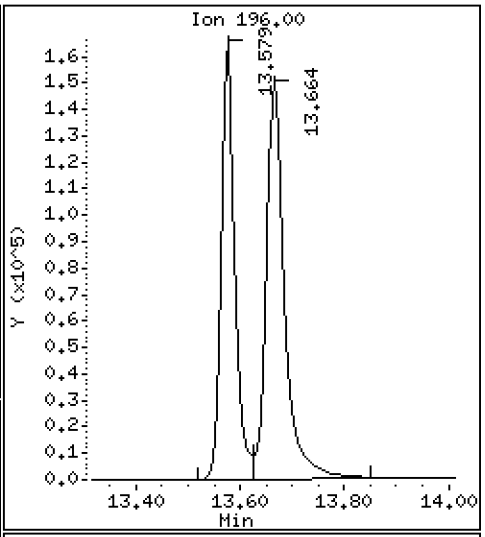
Column phase: ZB-5msi

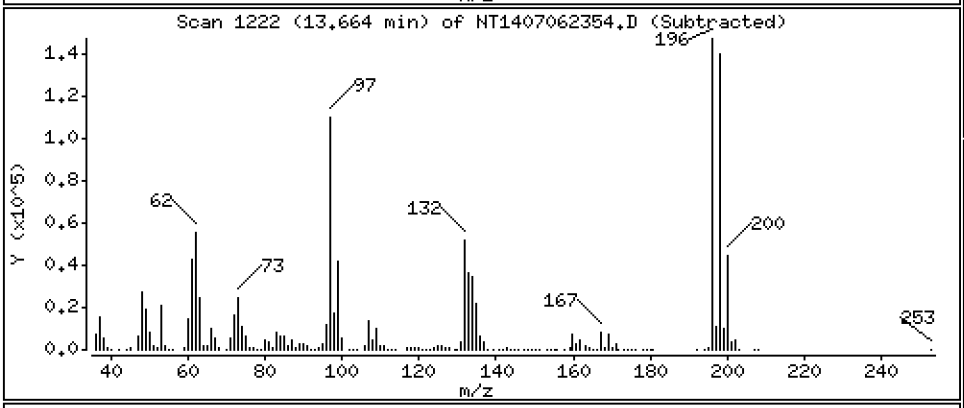
Column diameter: 0.25

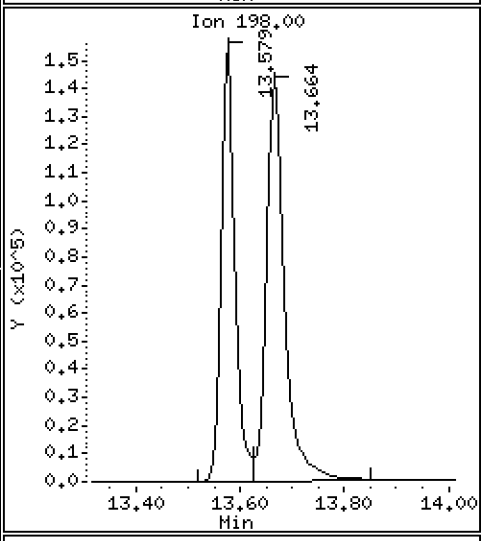
35 2,4,5-Trichlorophenol

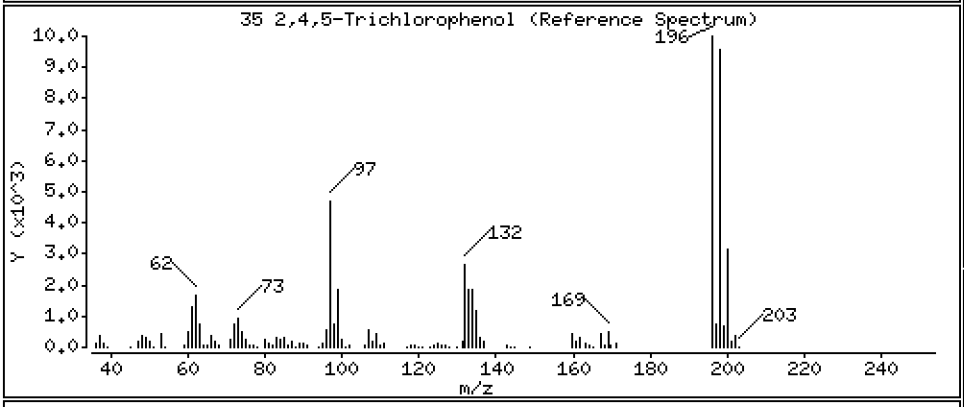
Concentration: 14.66 ug/mL

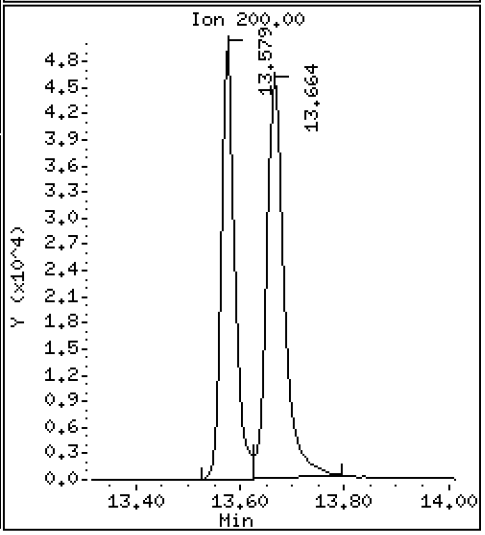


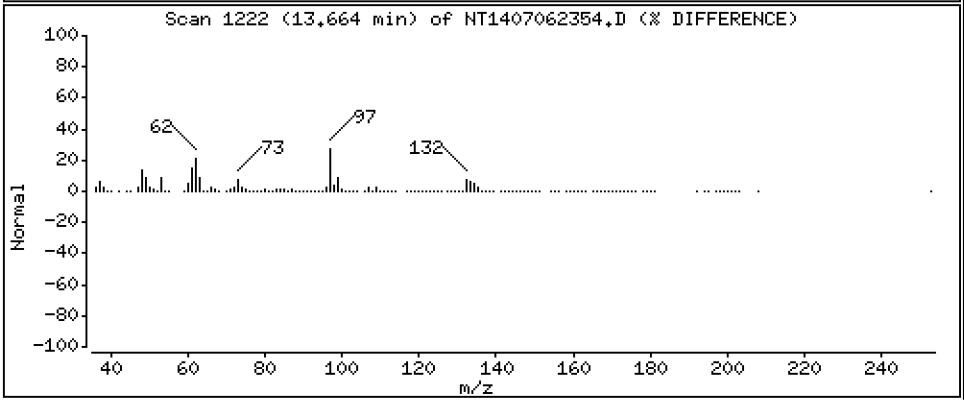












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

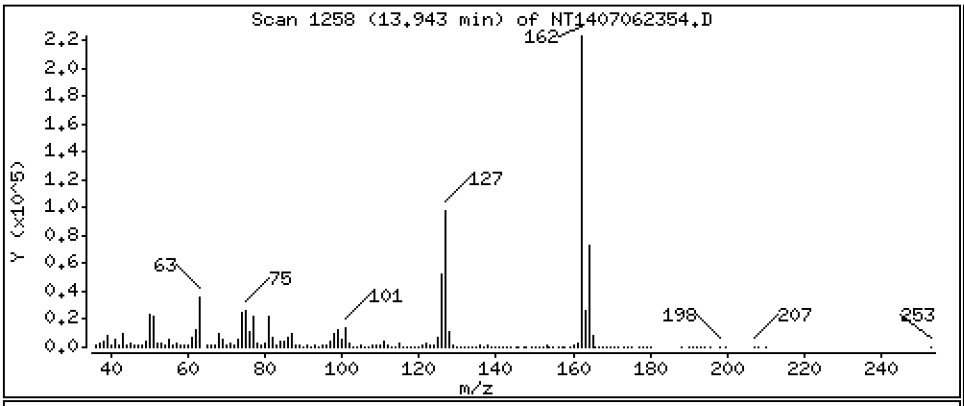
Operator: JGR

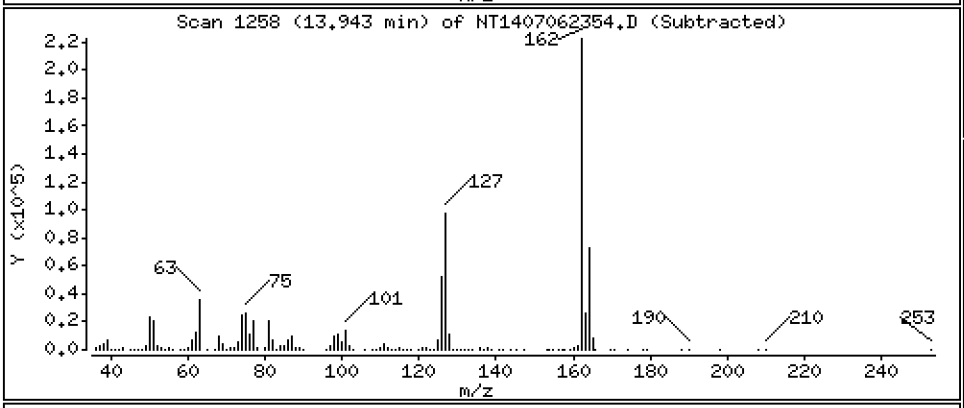
Column phase: ZB-5msi

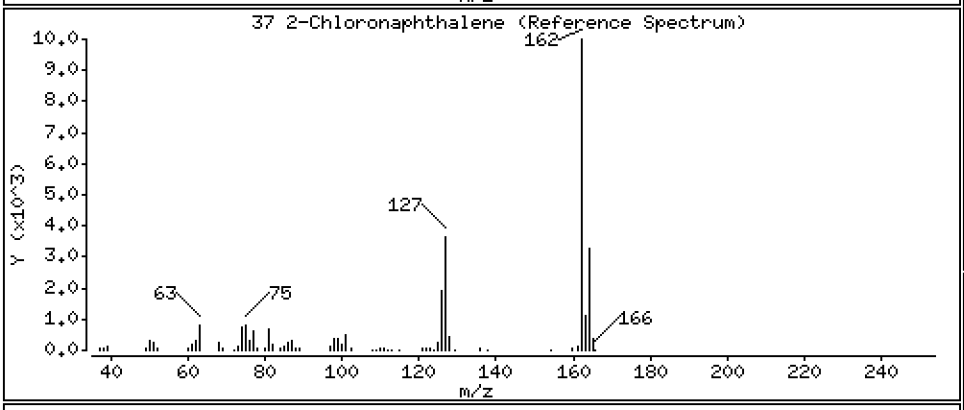
Column diameter: 0.25

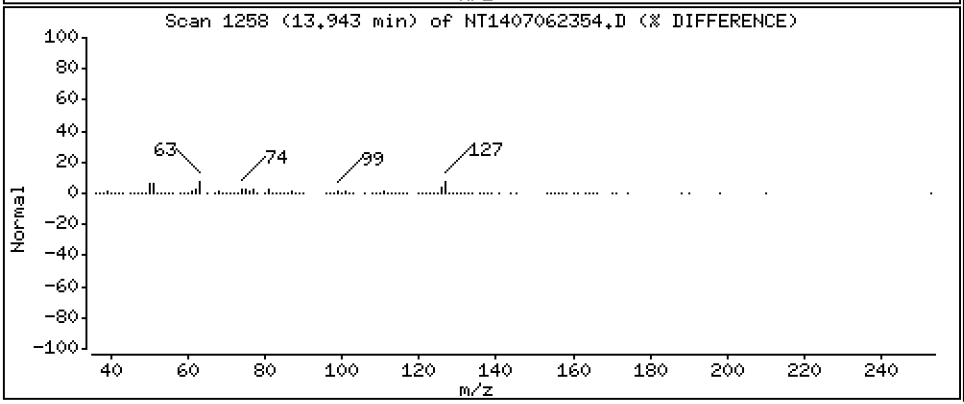
37 2-Chloronaphthalene

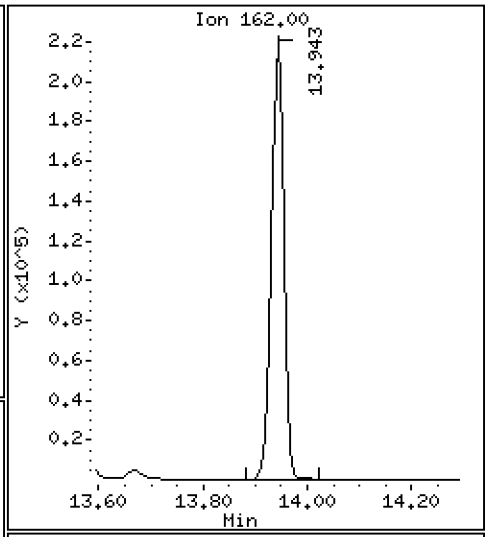
Concentration: 4.348 ug/mL

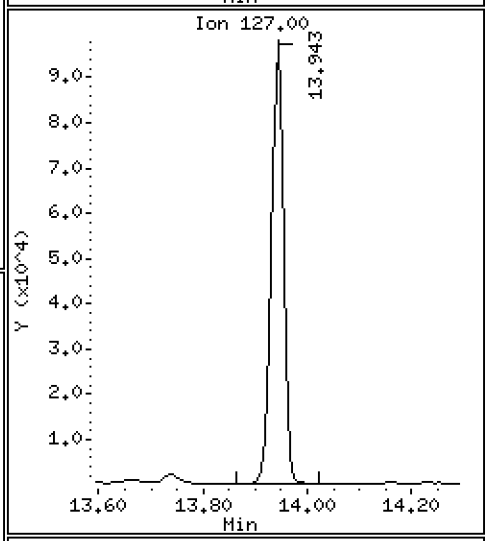


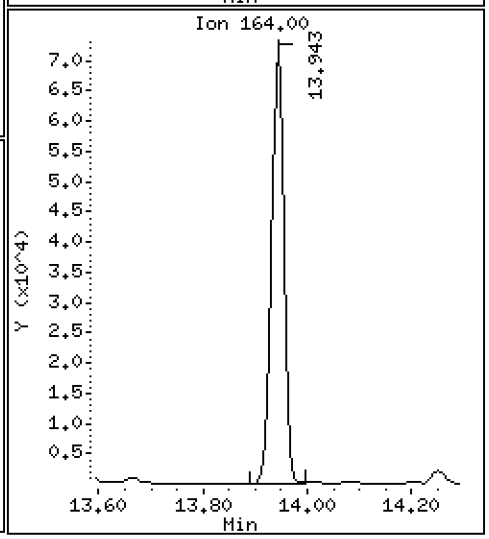












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

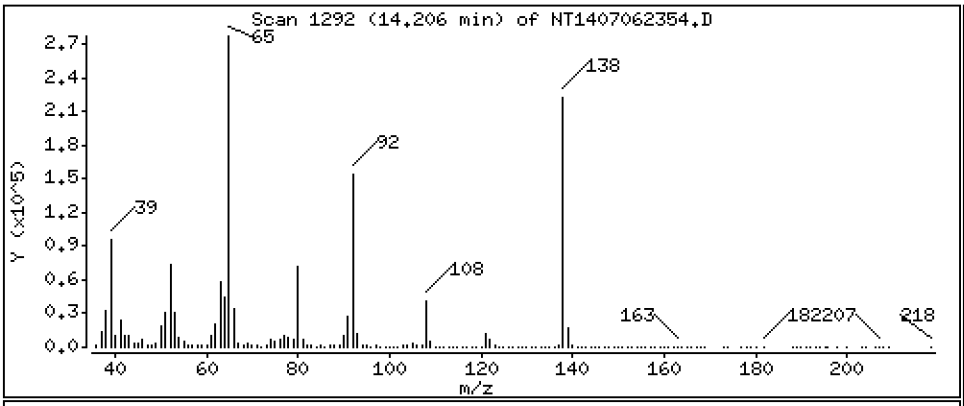
Operator: JGR

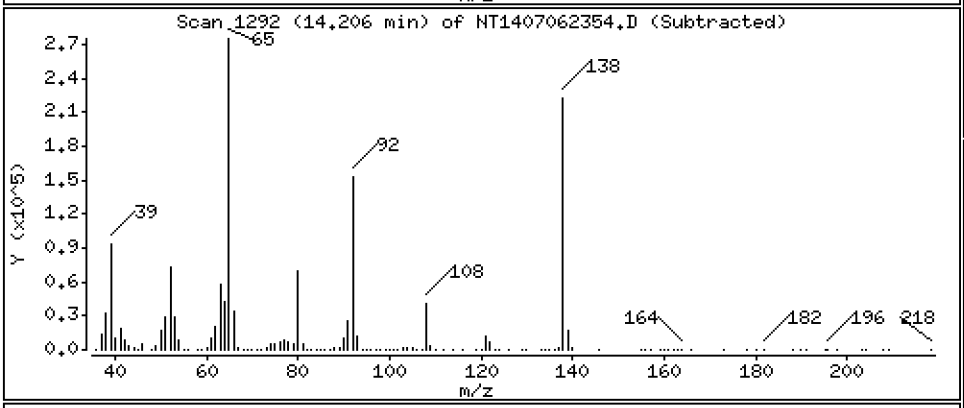
Column phase: ZB-5msi

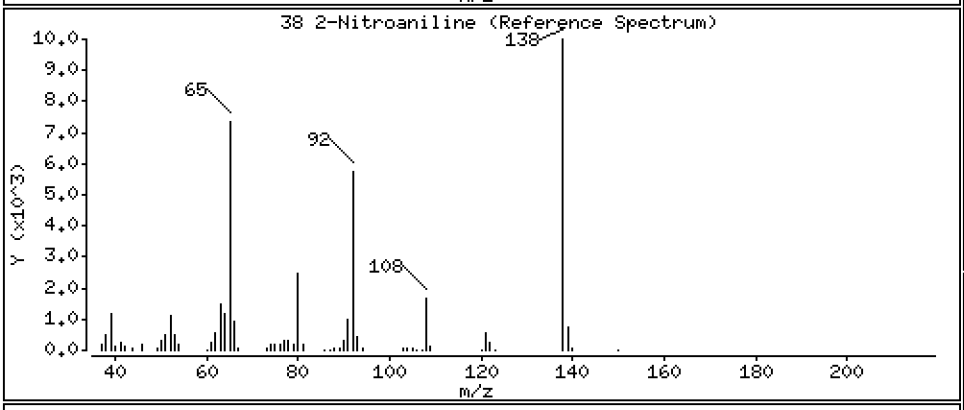
Column diameter: 0.25

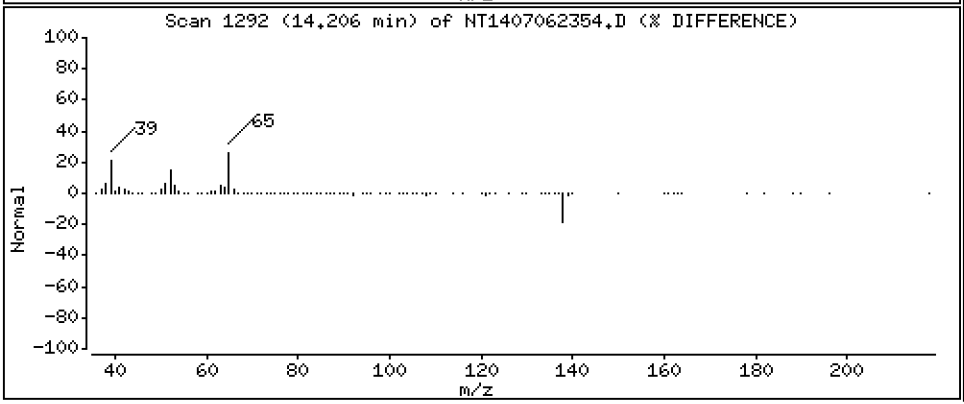
38 2-Nitroaniline

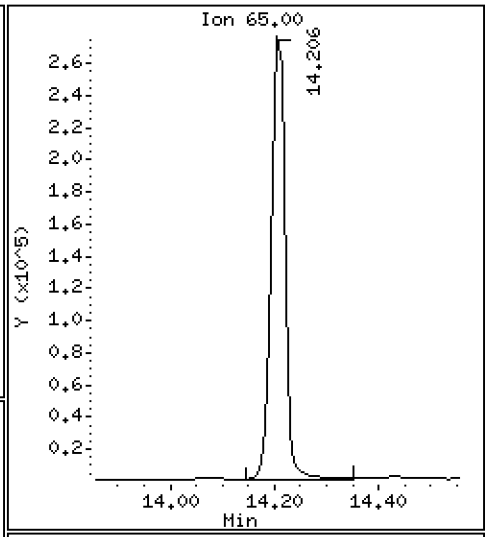
Concentration: 12.62 ug/mL

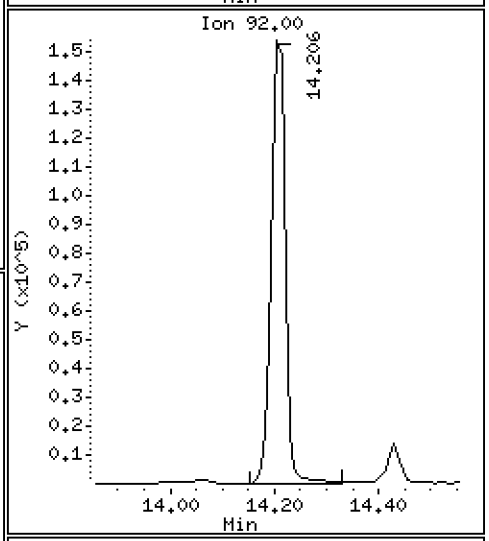


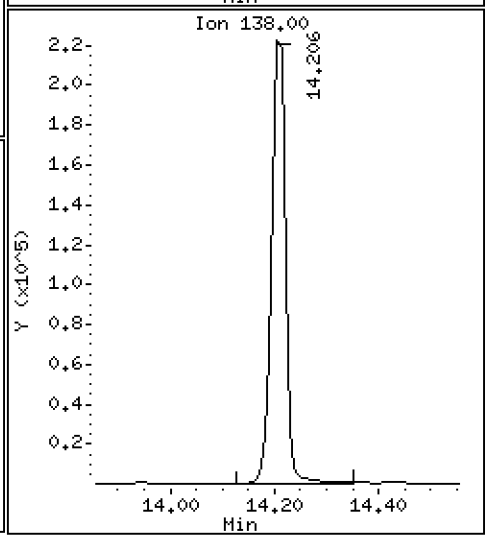












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

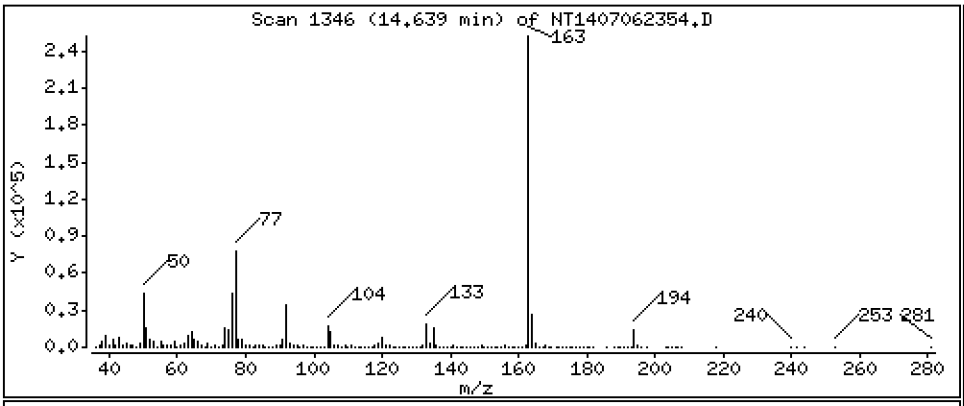
Operator: JGR

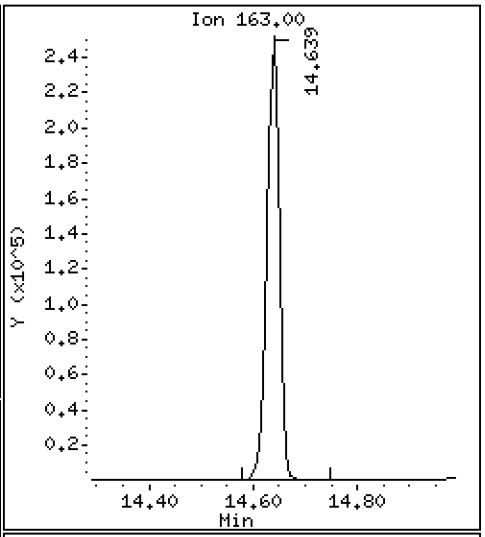
Column phase: ZB-5msi

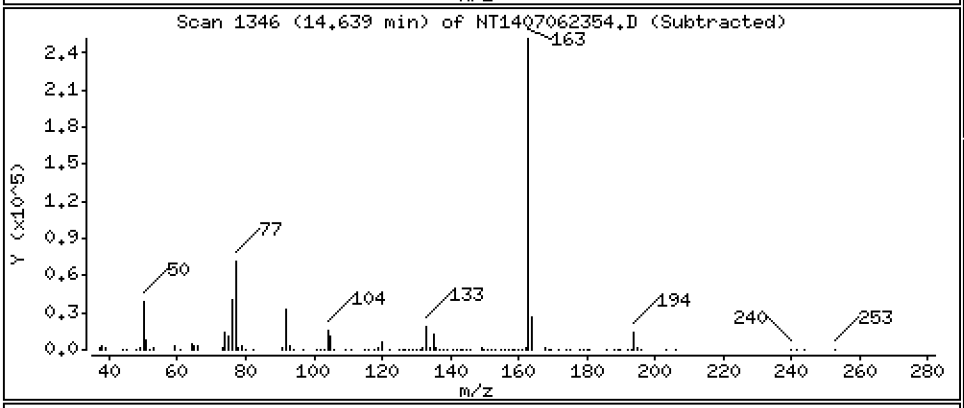
Column diameter: 0.25

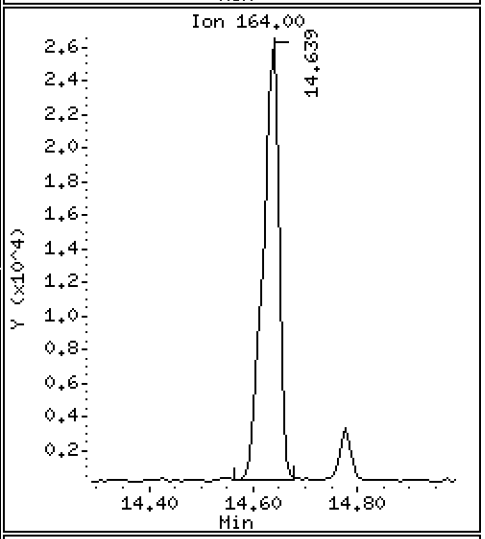
39 Dimethylphthalate

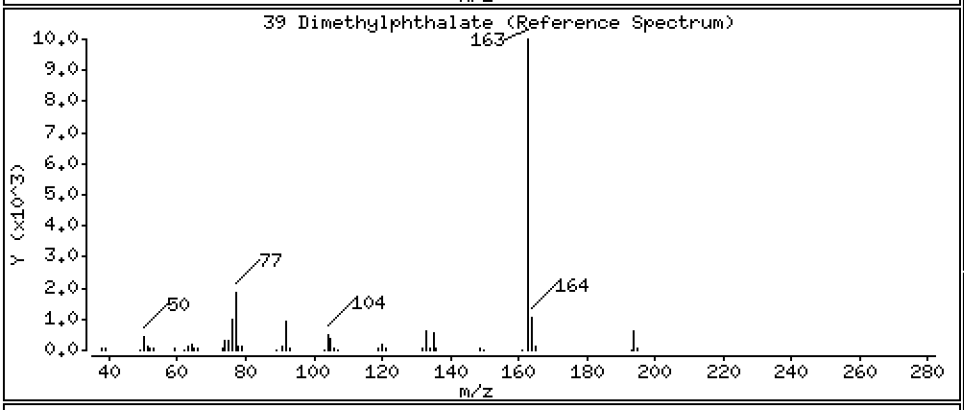
Concentration: 4.861 ug/mL

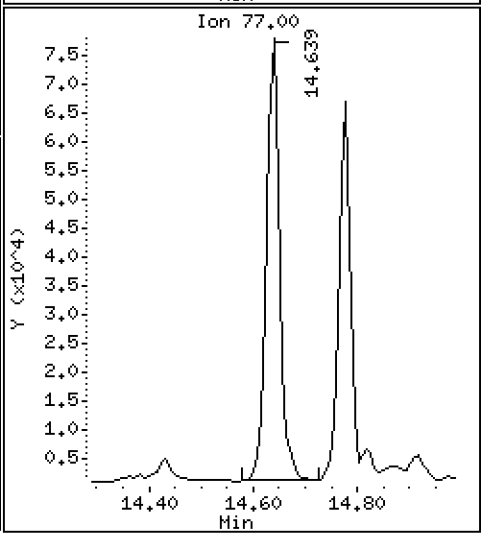


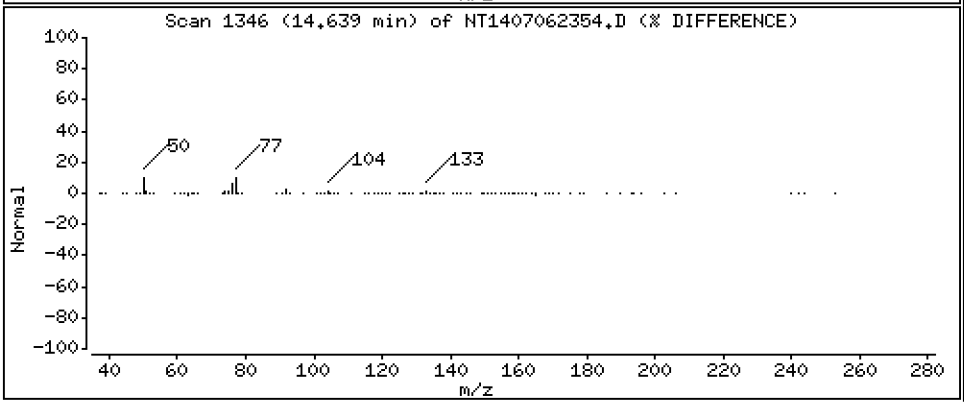












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

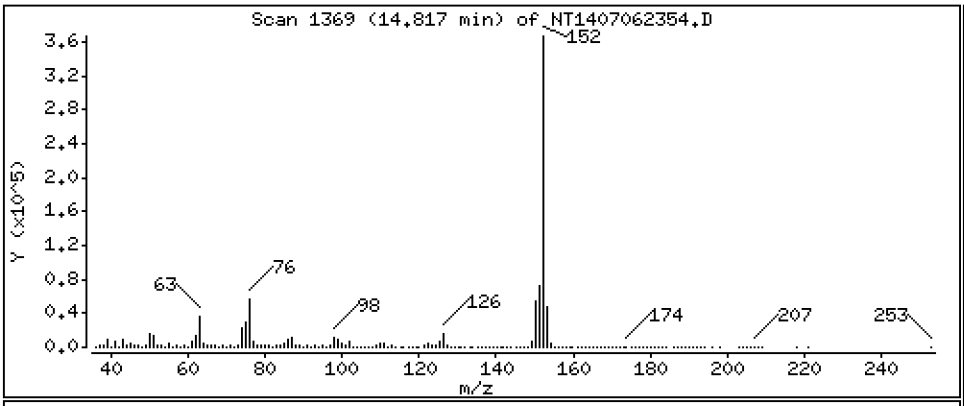
Operator: JGR

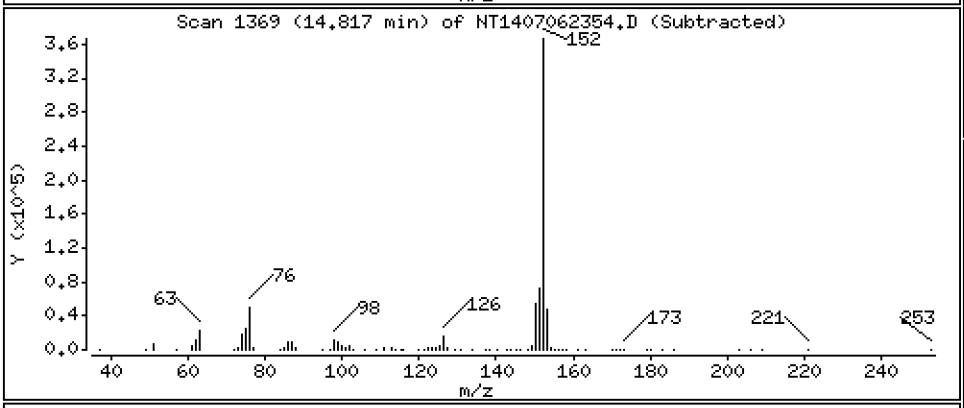
Column phase: ZB-5msi

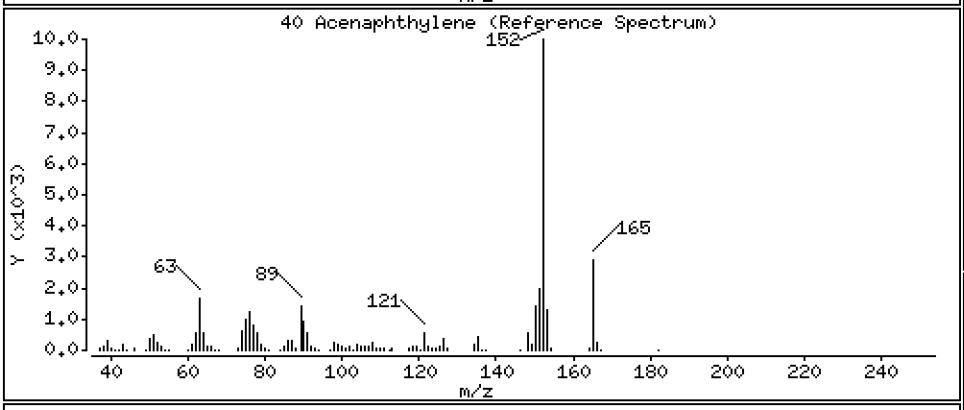
Column diameter: 0.25

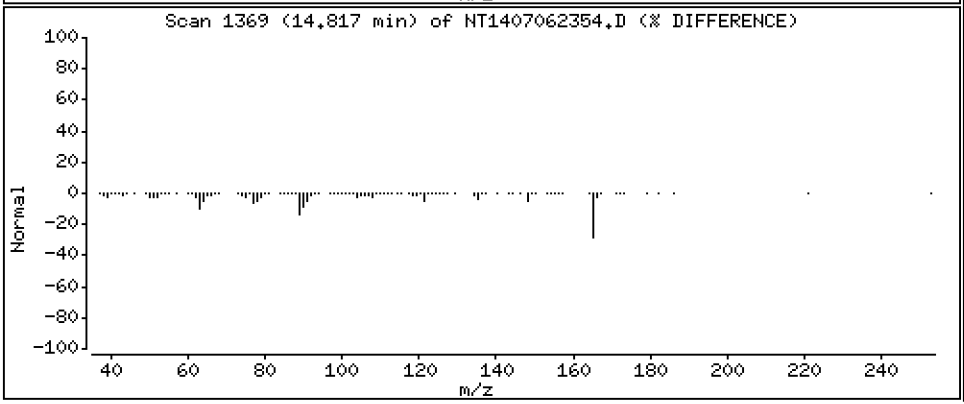
40 Acenaphthylene

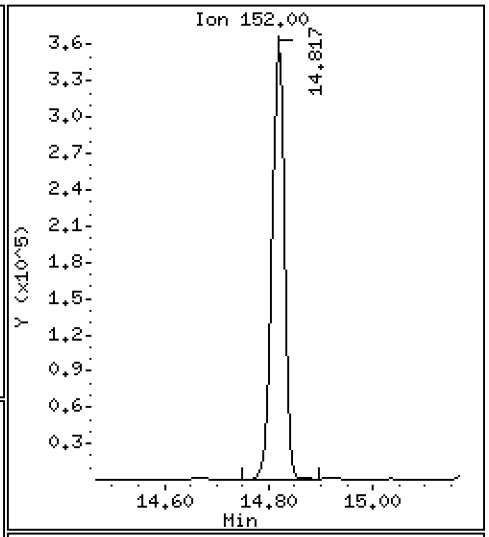
Concentration: 4.655 ug/mL

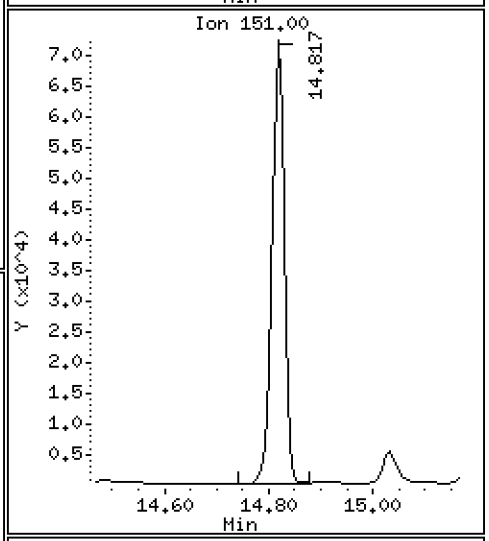


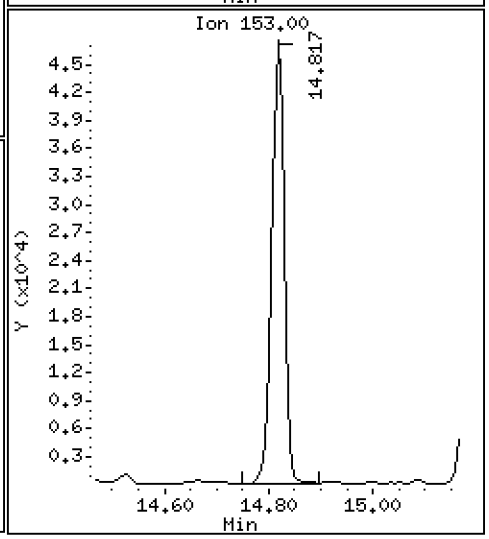












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

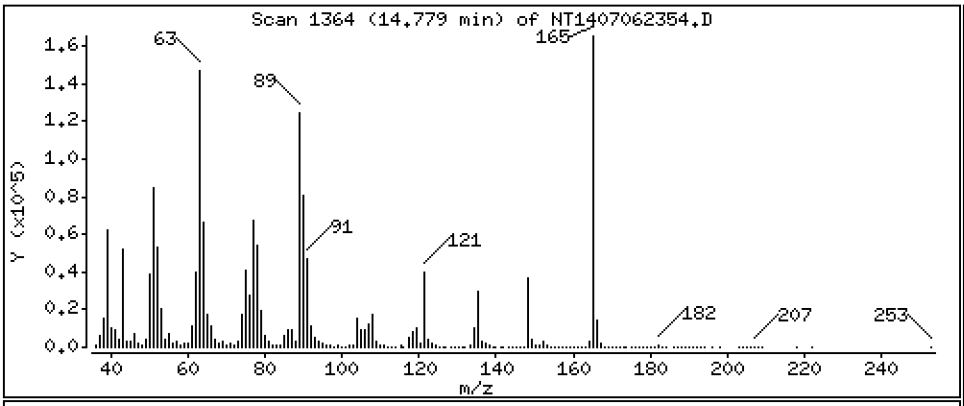
Operator: JGR

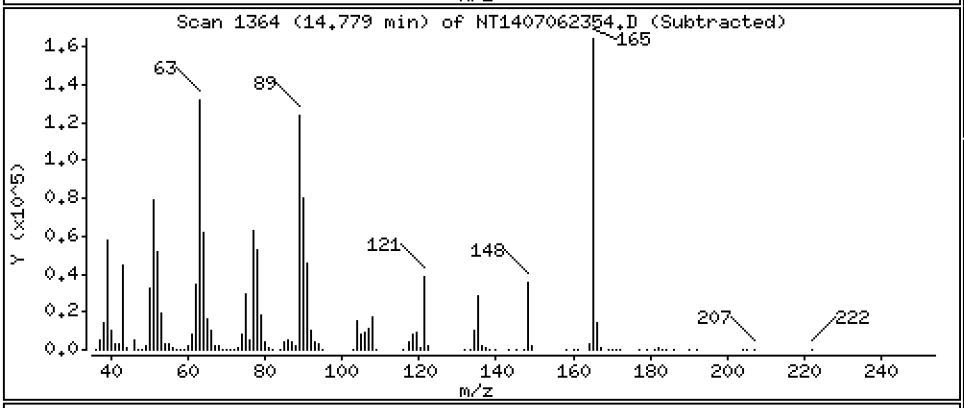
Column phase: ZB-5msi

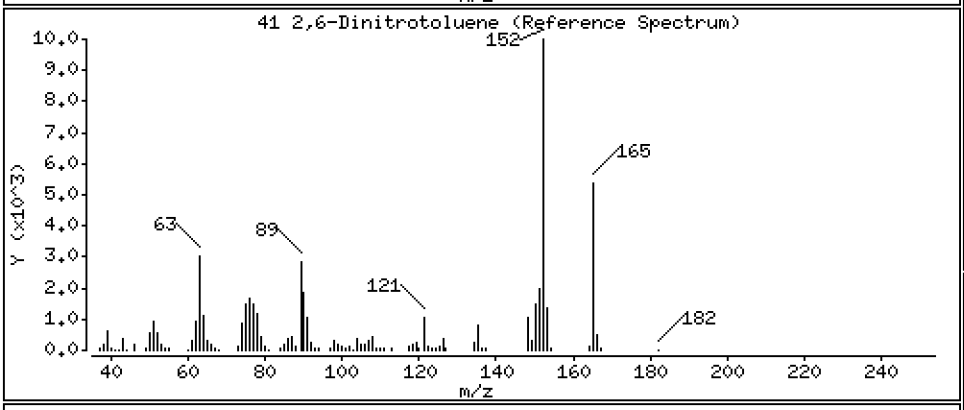
Column diameter: 0.25

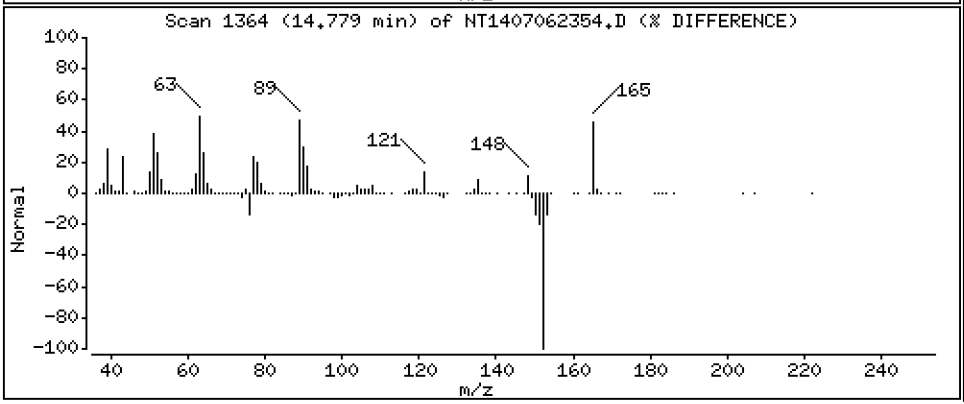
41 2,6-Dinitrotoluene

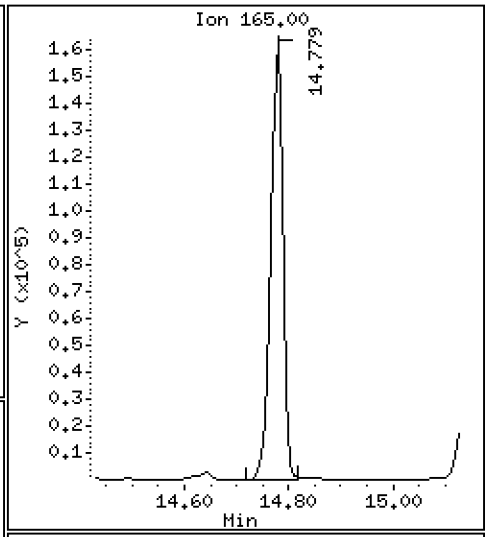
Concentration: 14.41 ug/mL

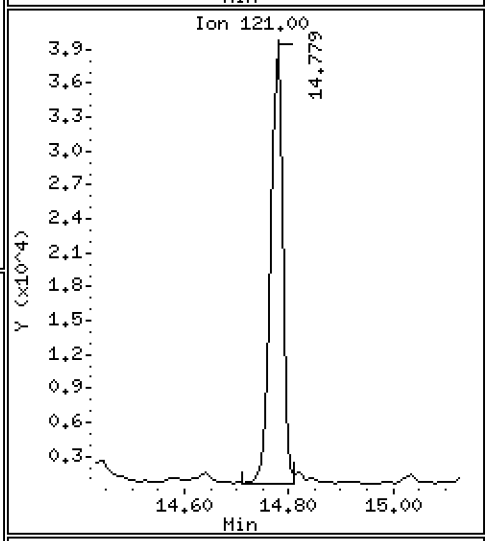


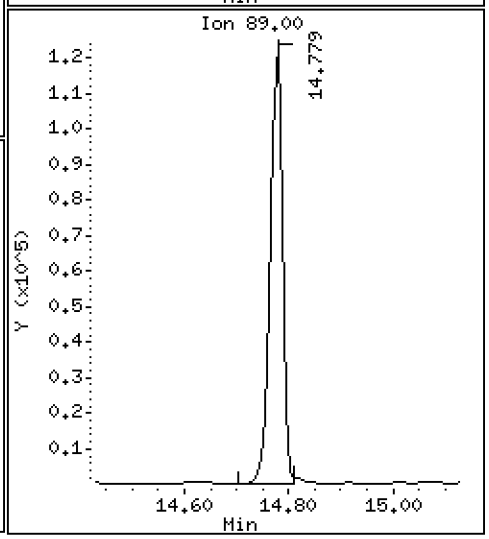












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

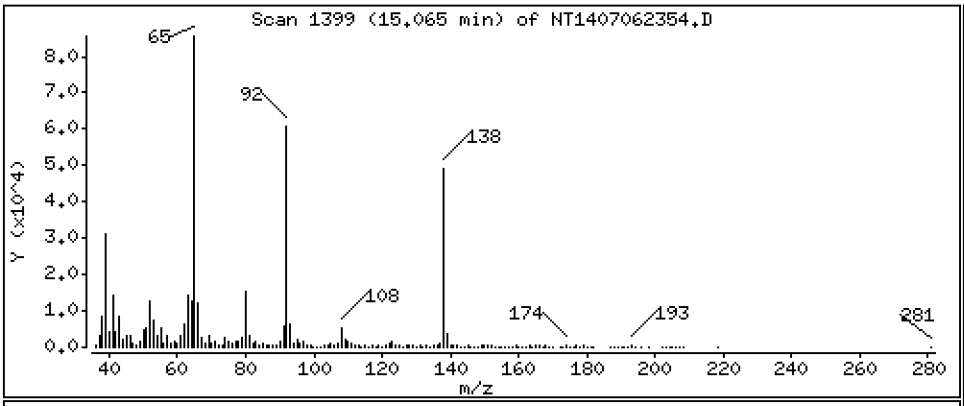
Operator: JGR

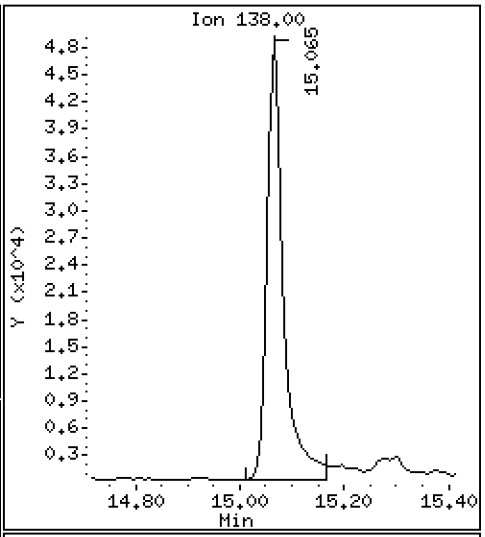
Column phase: ZB-5msi

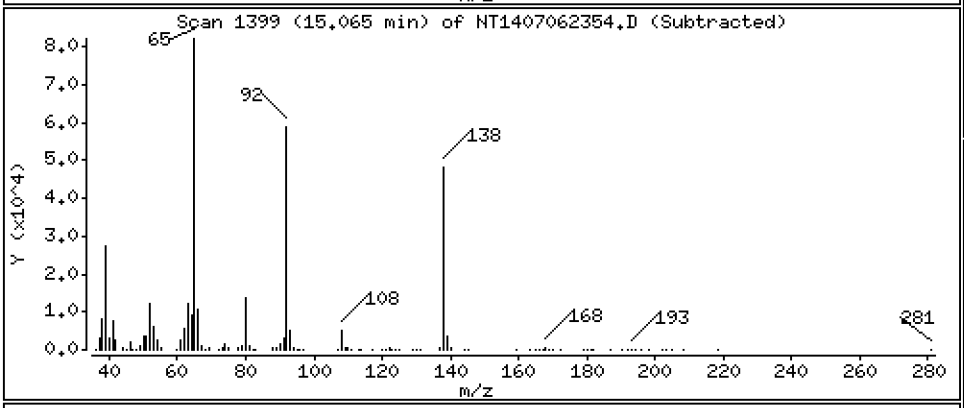
Column diameter: 0.25

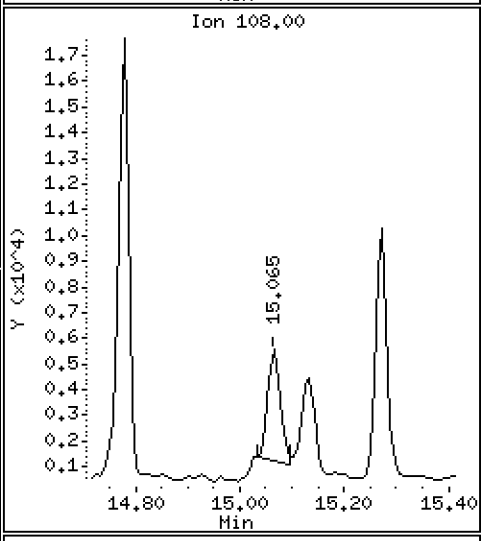
43 3-Nitroaniline

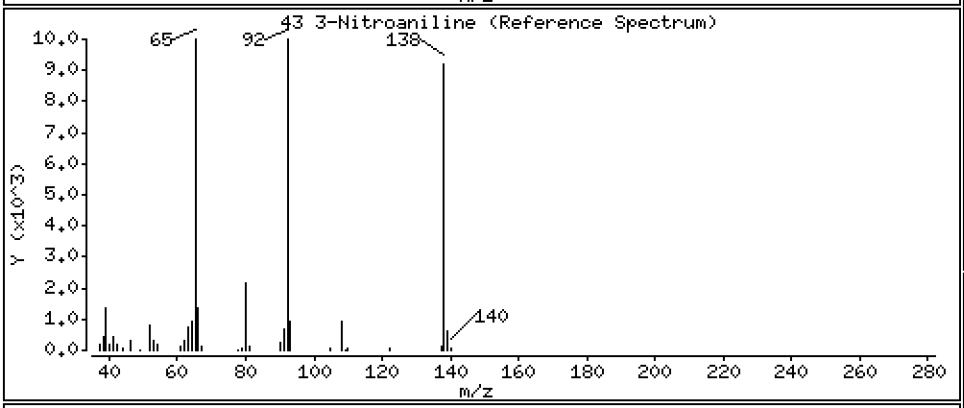
Concentration: 4.441 ug/mL

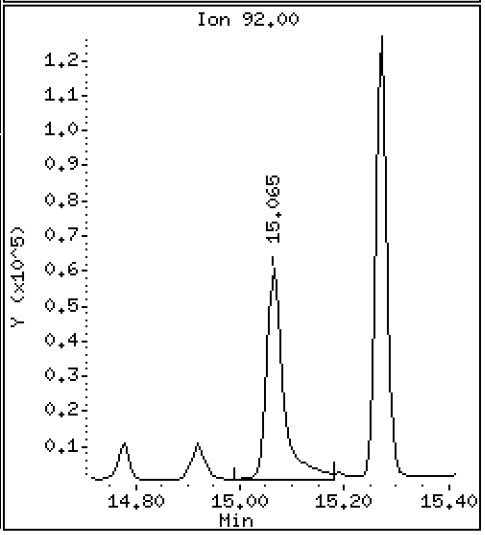


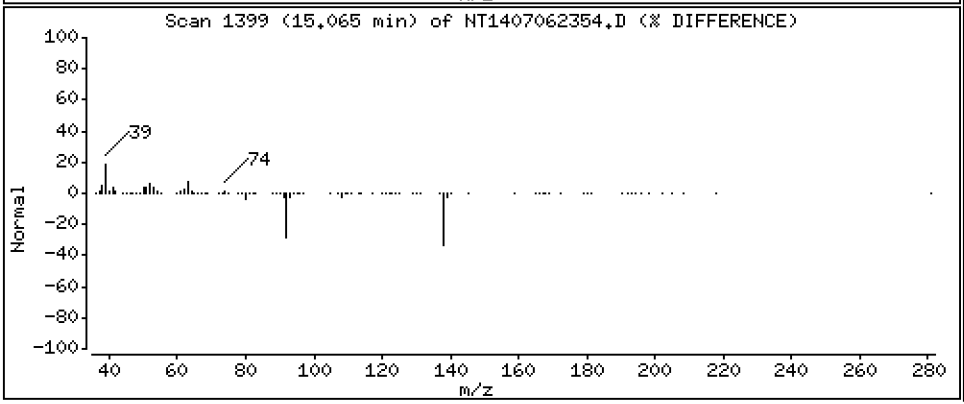












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

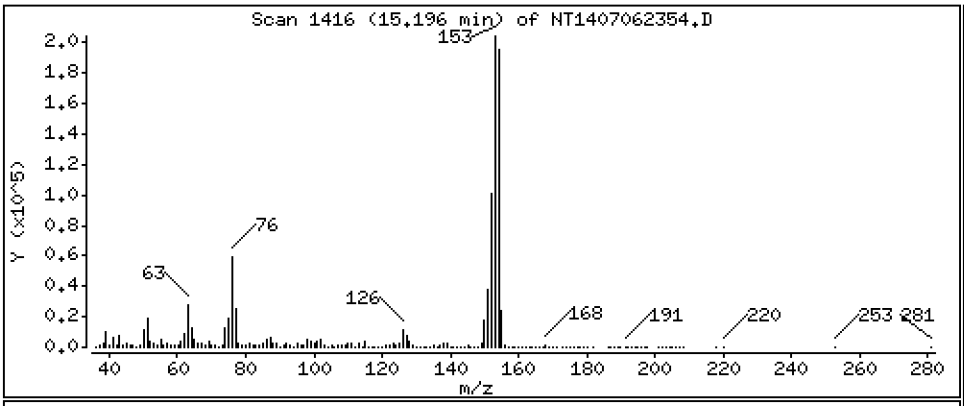
Operator: JGR

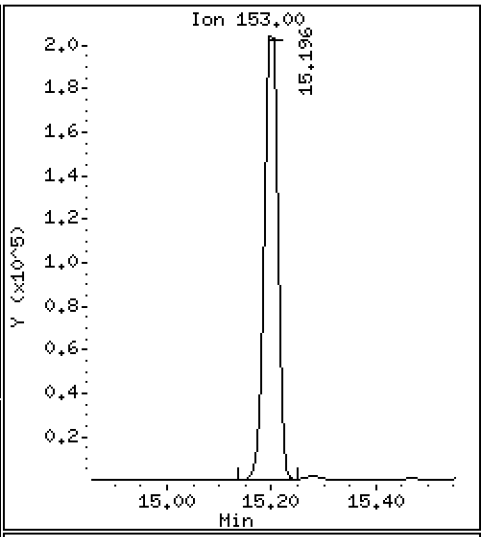
Column phase: ZB-5msi

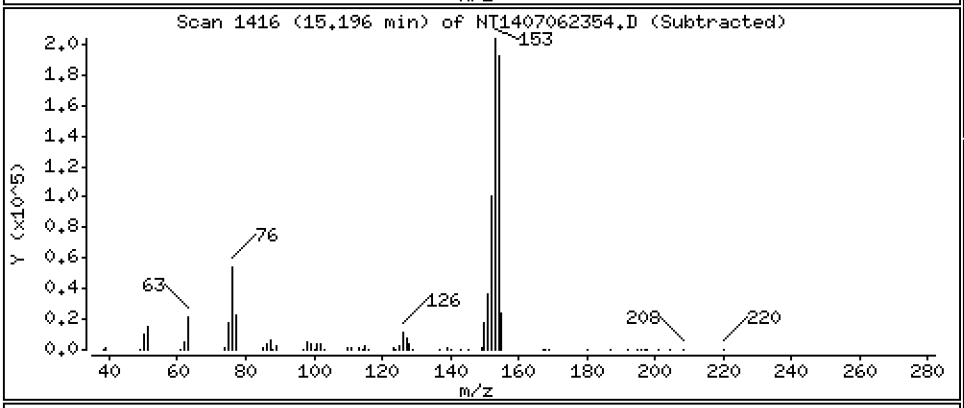
Column diameter: 0.25

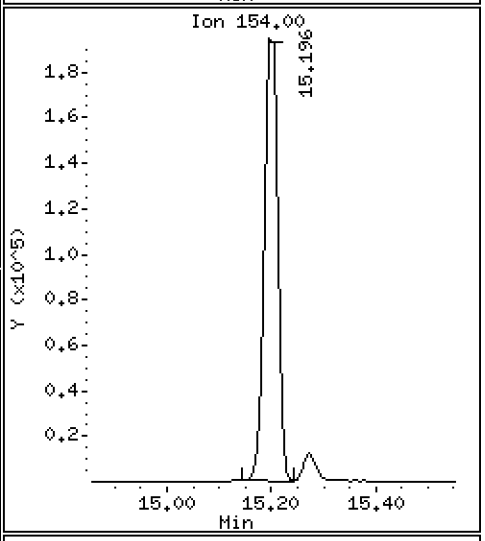
44 Acenaphthene

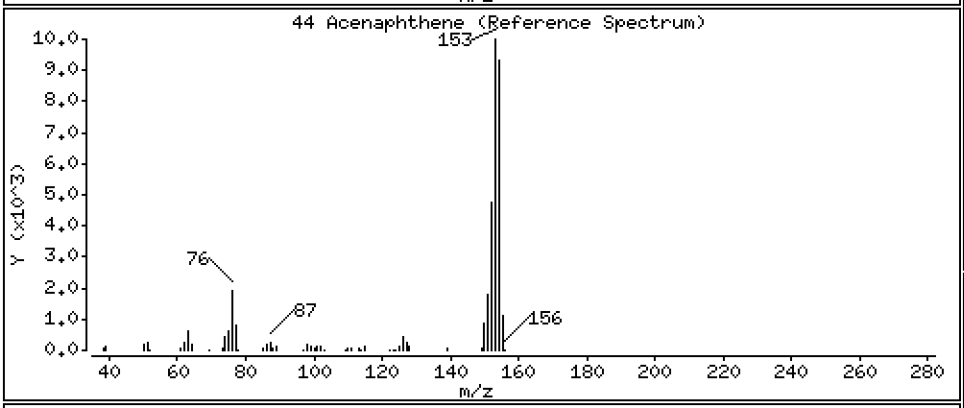
Concentration: 4.828 ug/mL

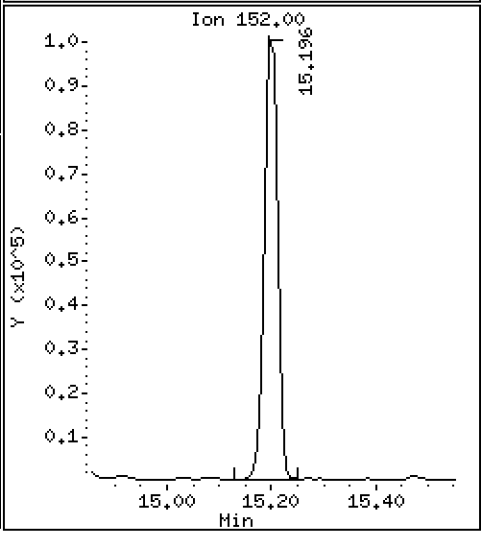


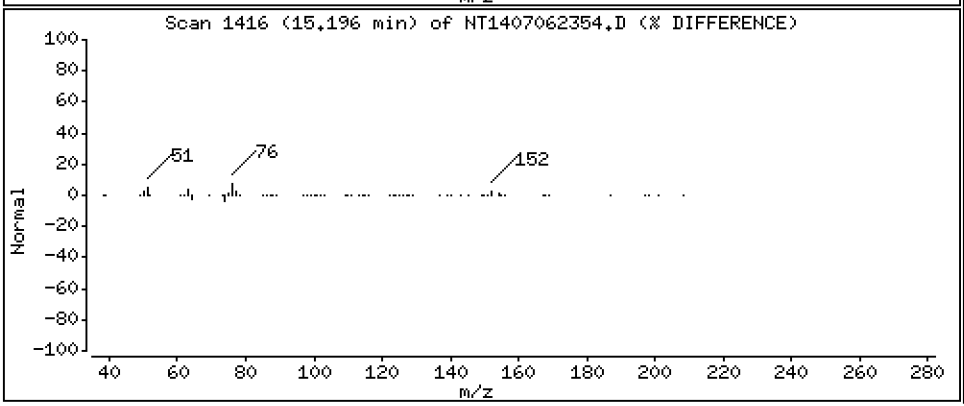












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

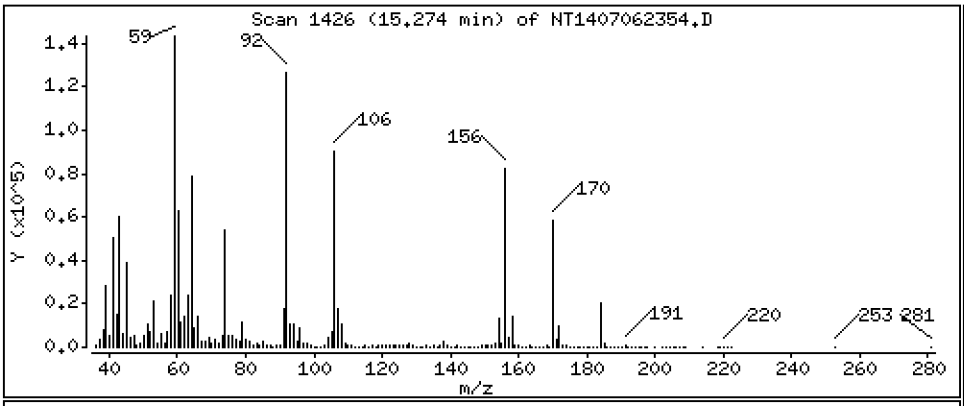
Operator: JGR

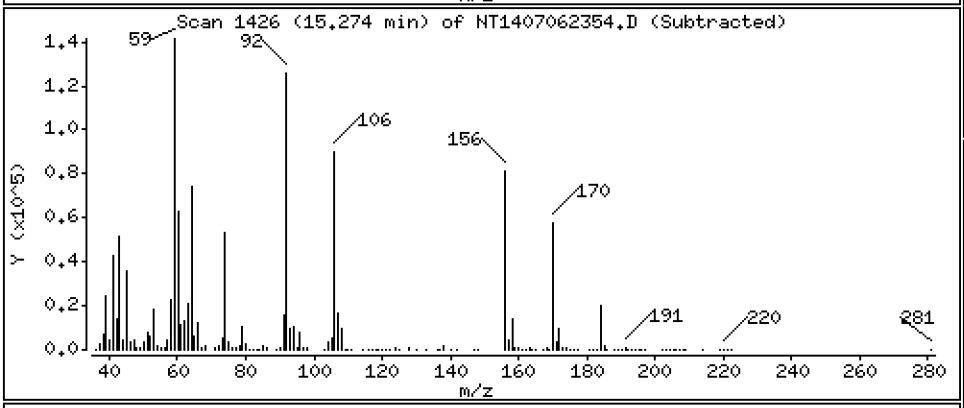
Column phase: ZB-5msi

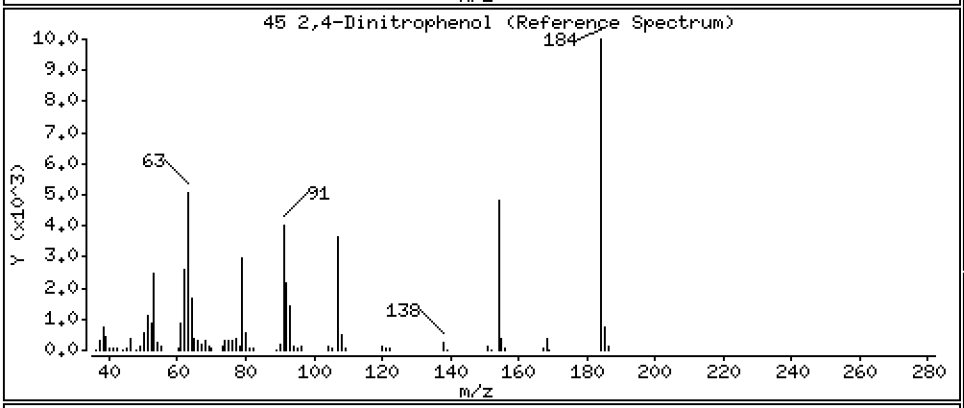
Column diameter: 0.25

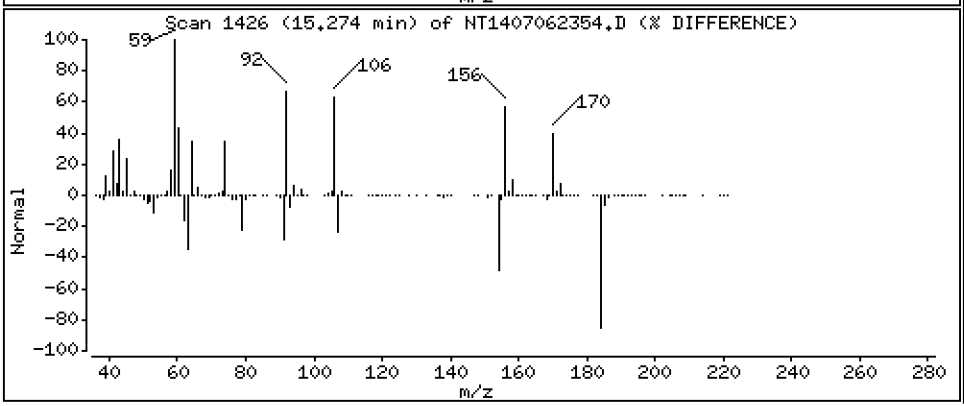
45 2,4-Dinitrophenol

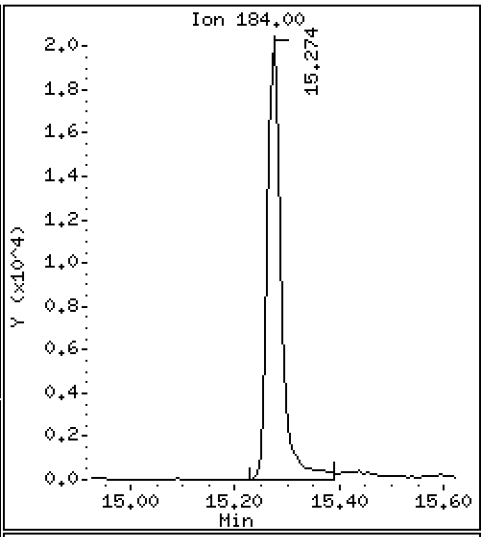
Concentration: 3.413 ug/mL

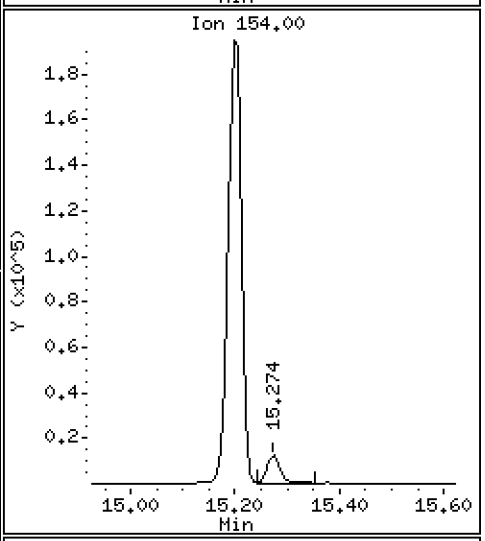


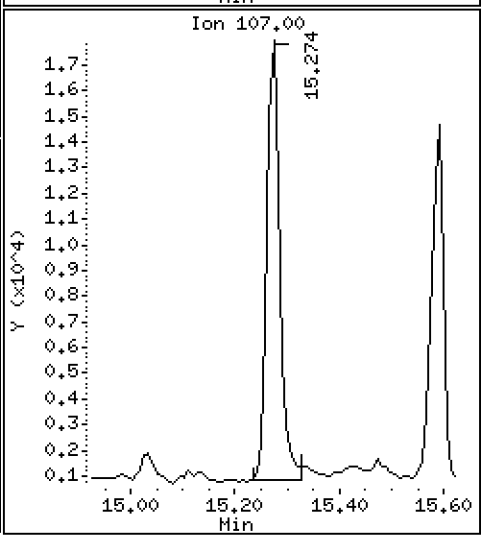












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

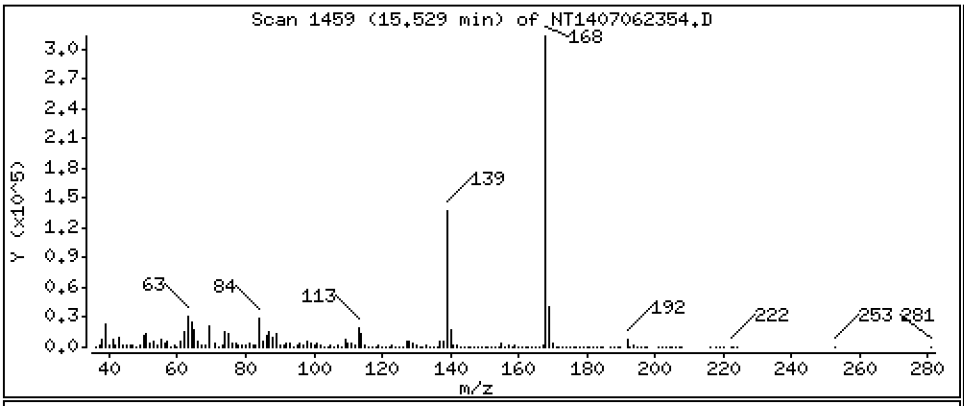
Operator: JGR

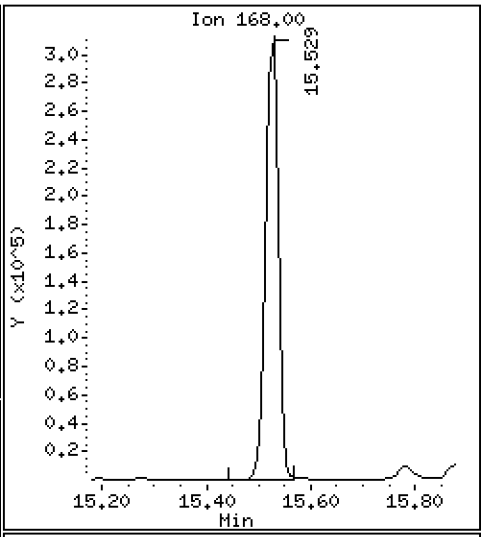
Column phase: ZB-5msi

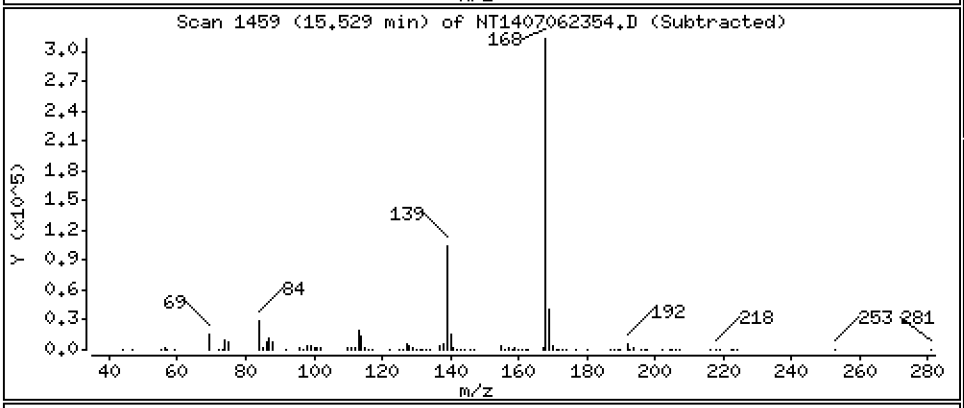
Column diameter: 0.25

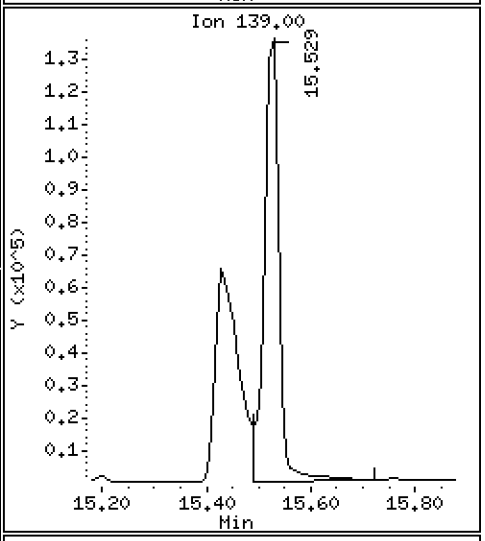
46 Dibenzofuran

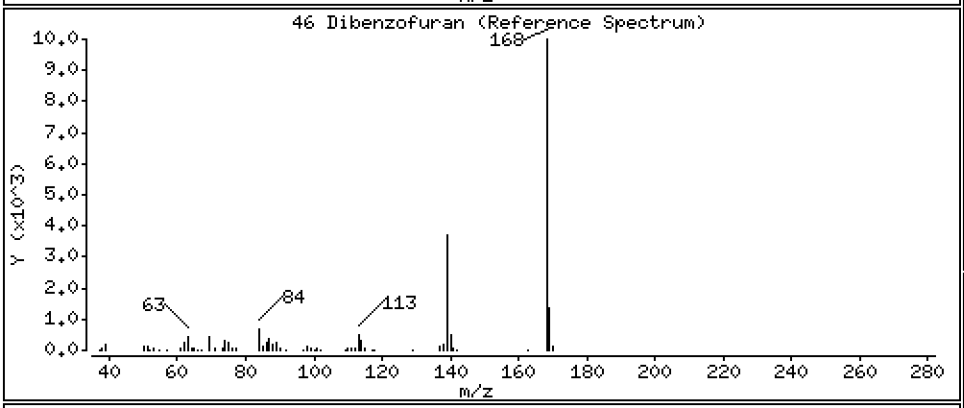
Concentration: 4.754 ug/mL

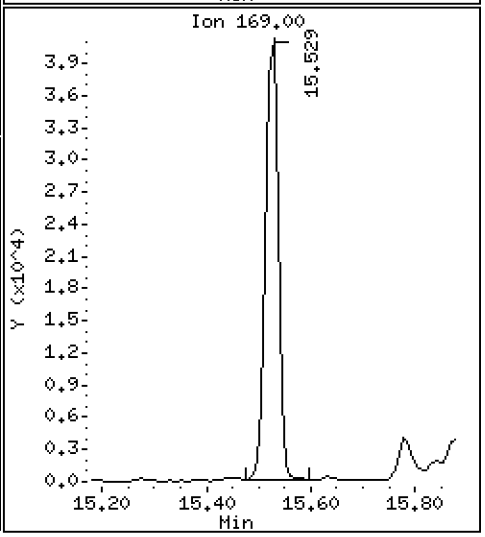


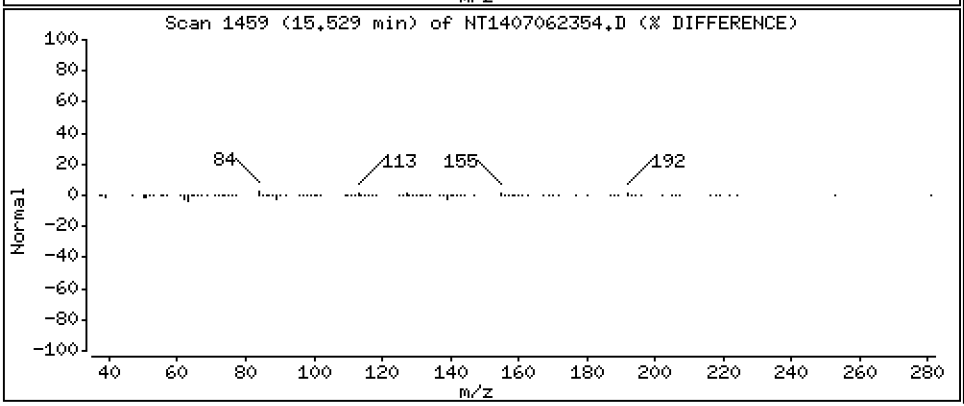












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062354.D

Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

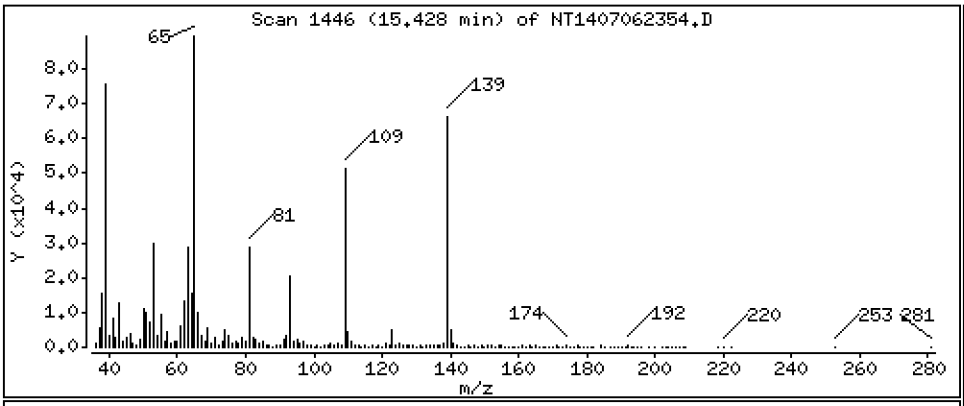
Operator: JGR

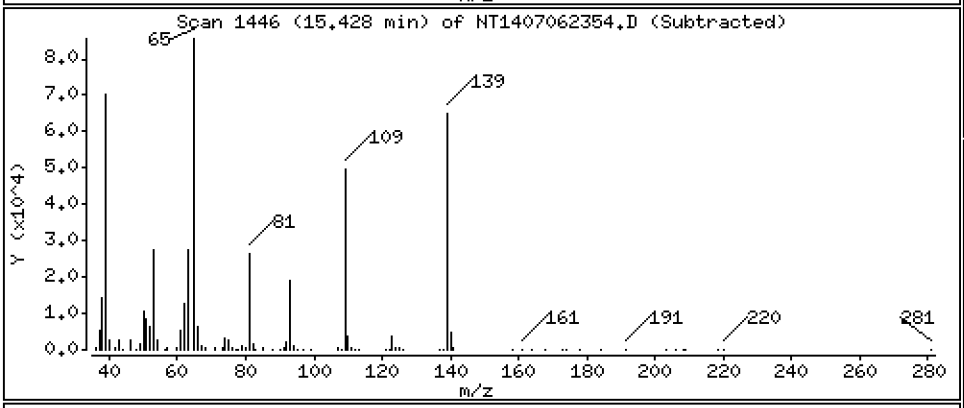
Column phase: ZB-5msi

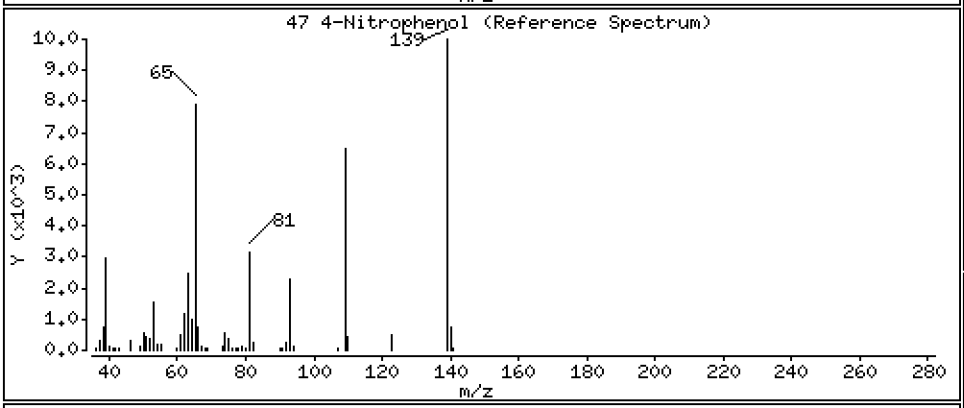
Column diameter: 0.25

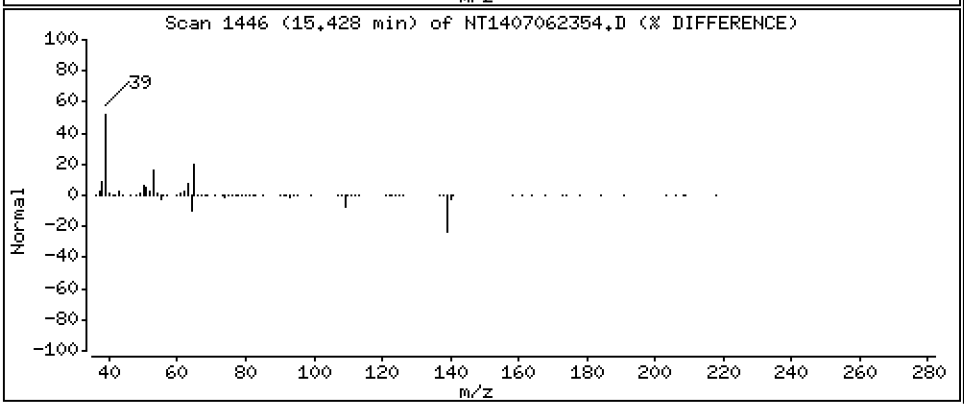
47 4-Nitrophenol

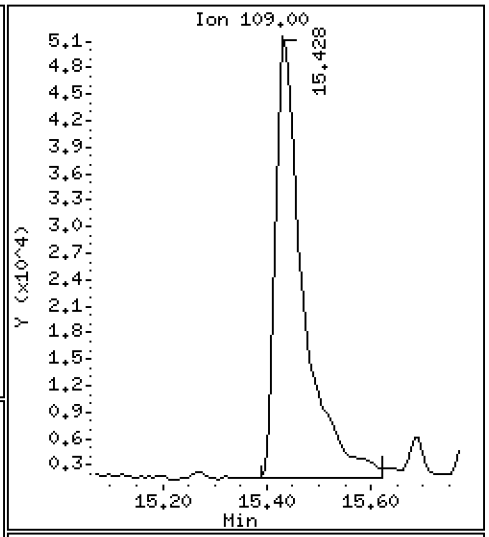
Concentration: 11.10 ug/mL

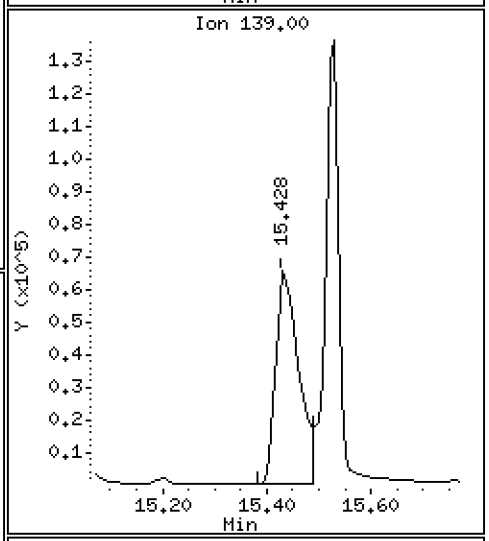


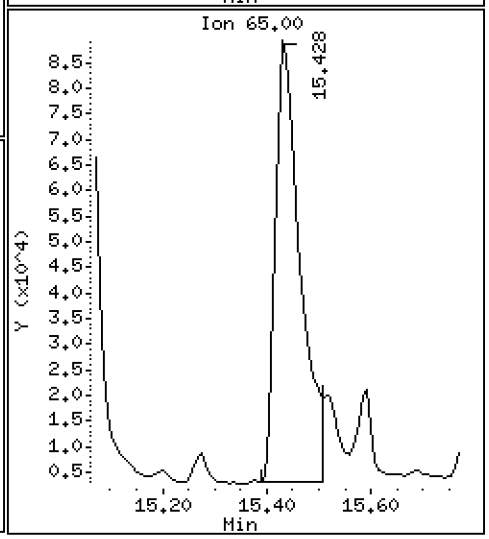












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

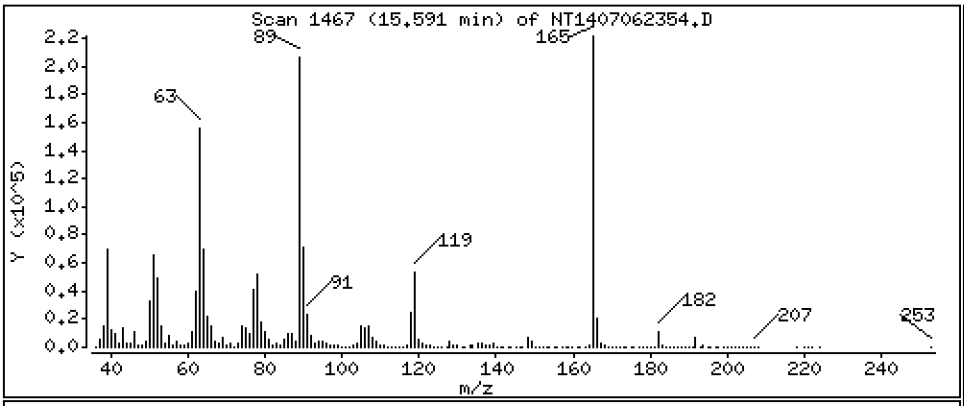
Operator: JGR

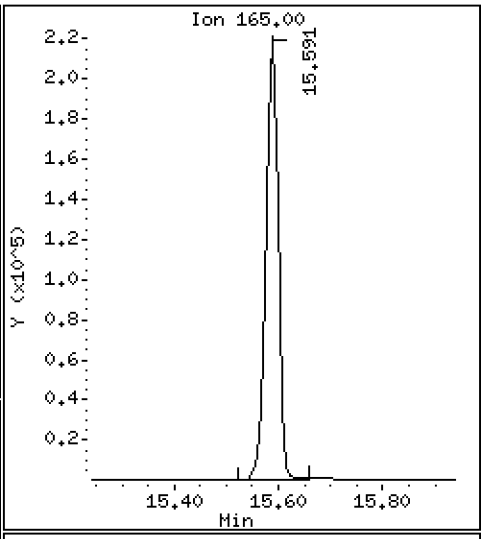
Column phase: ZB-5msi

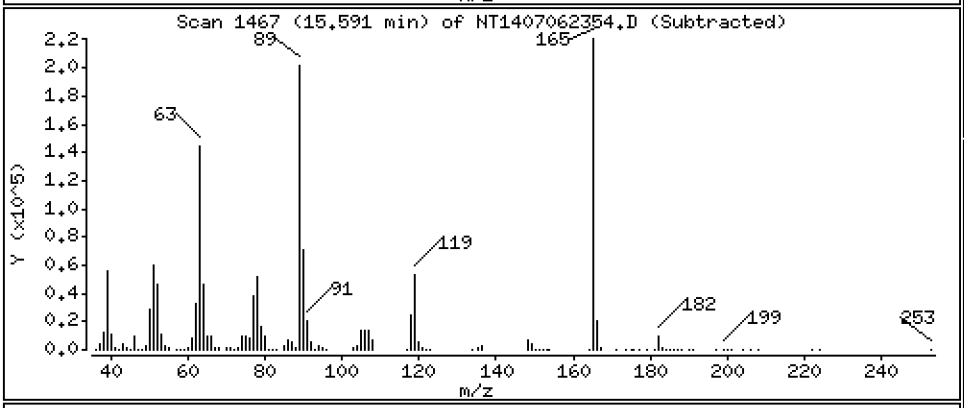
Column diameter: 0.25

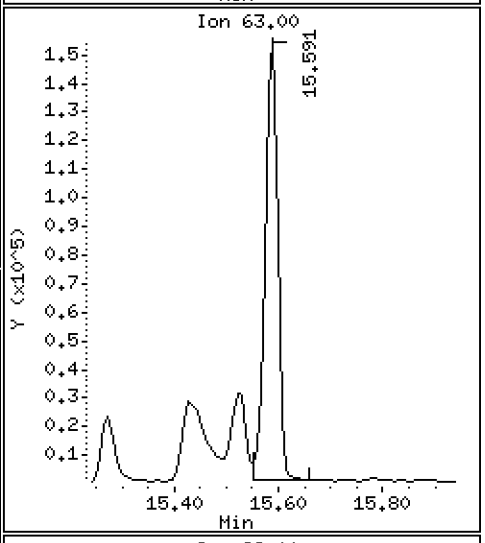
48 2,4-Dinitrotoluene

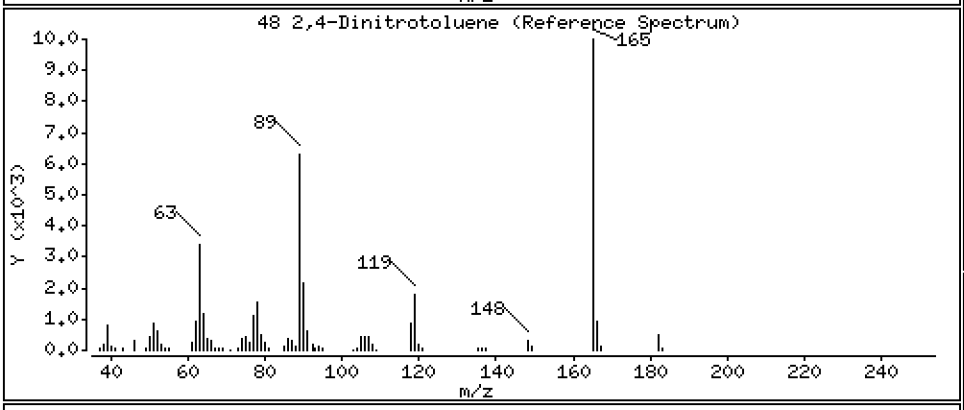
Concentration: 14.19 ug/mL

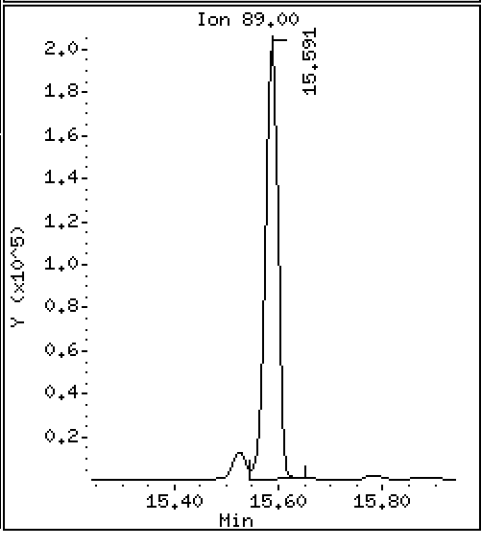


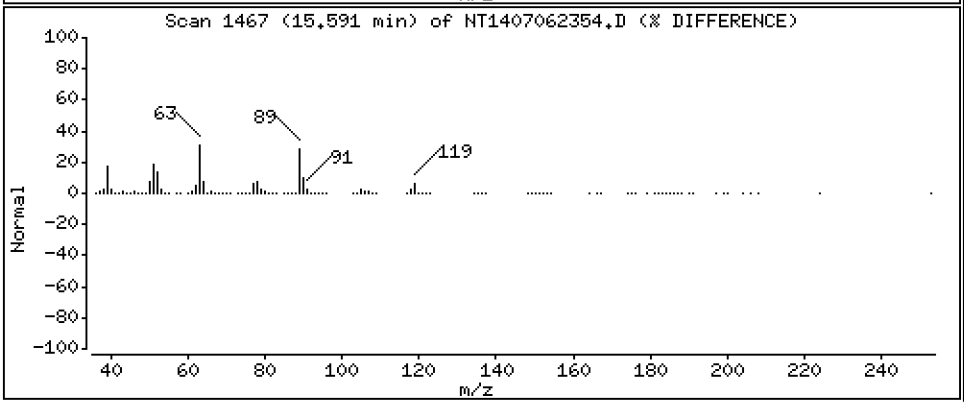












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

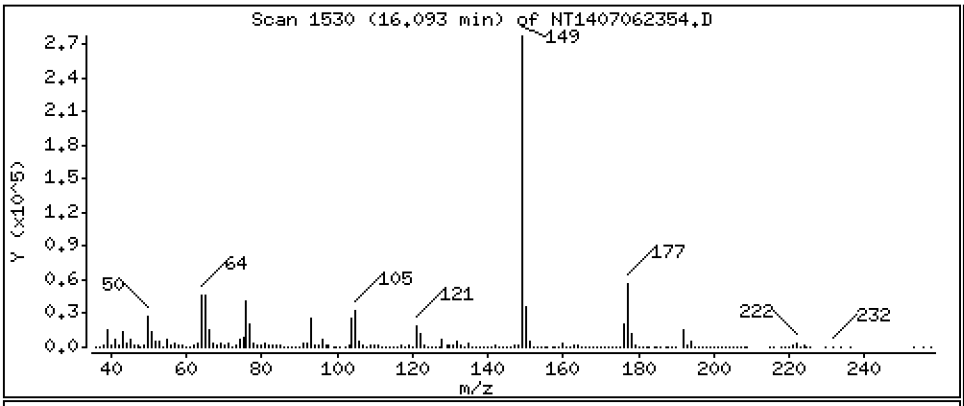
Operator: JGR

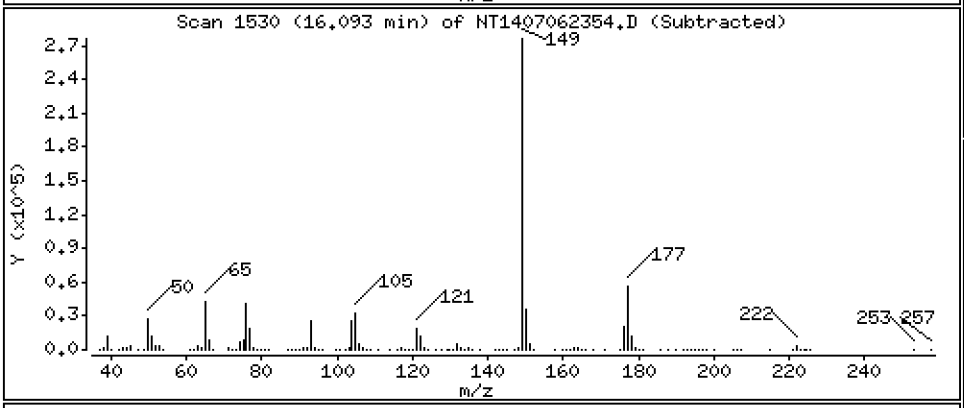
Column phase: ZB-5msi

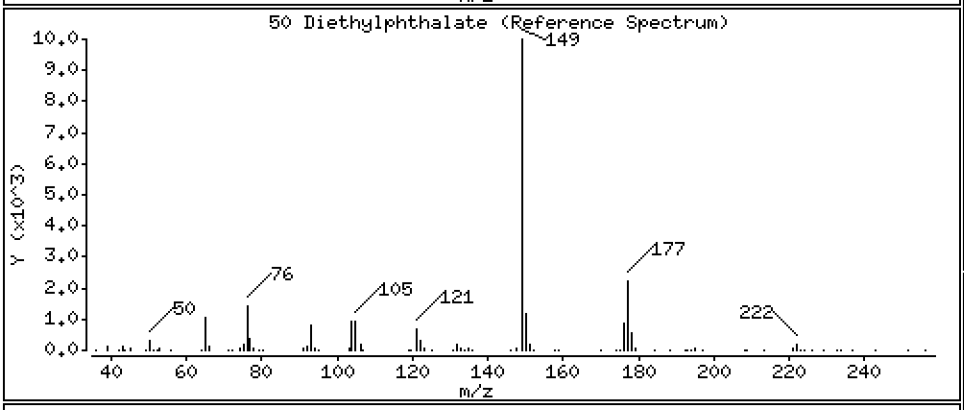
Column diameter: 0.25

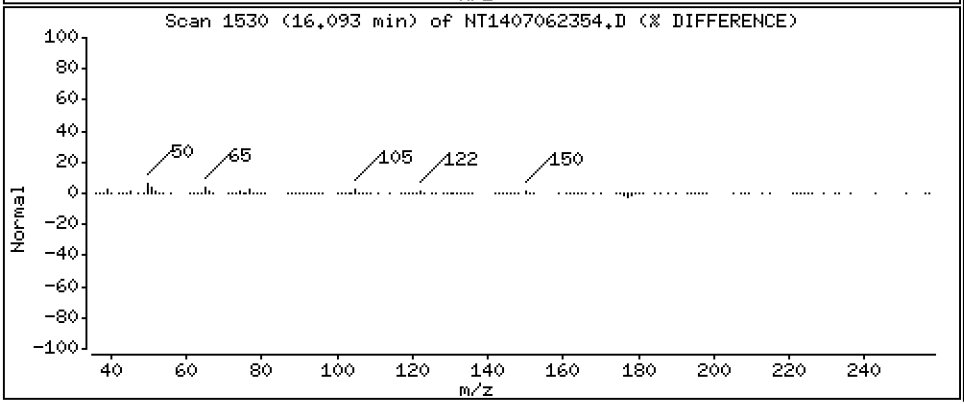
50 Diethylphthalate

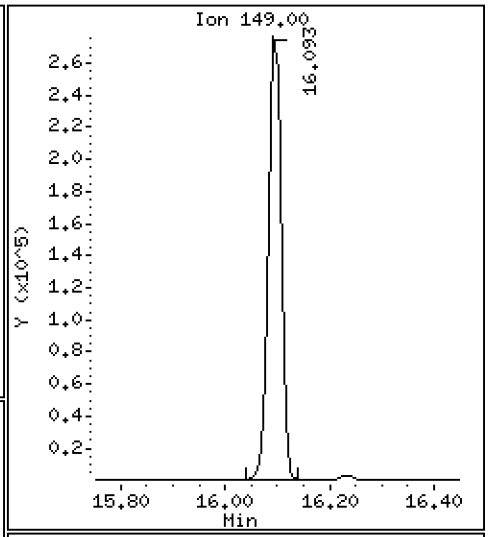
Concentration: 4.757 ug/mL

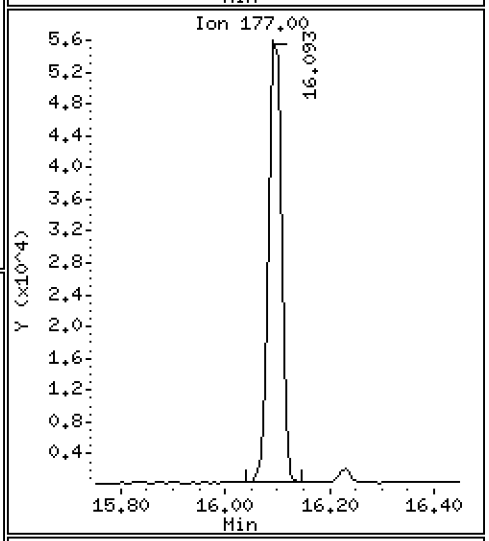


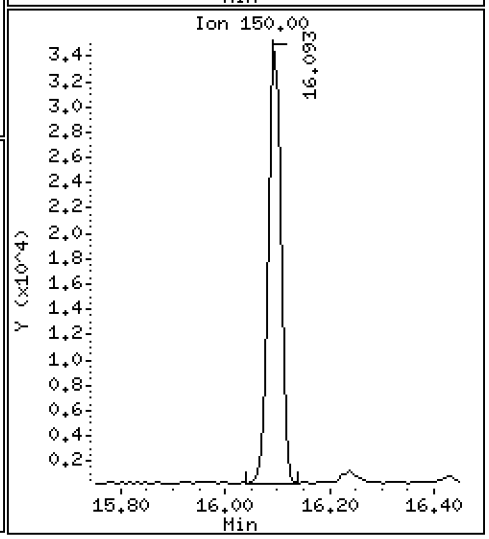












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

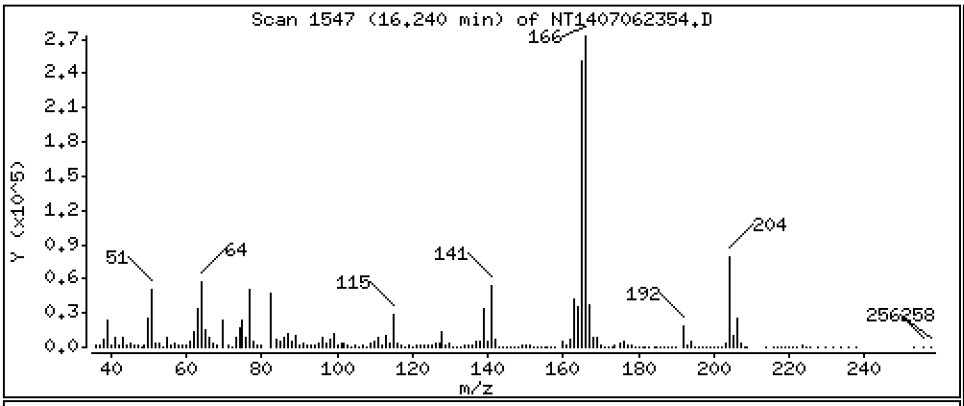
Operator: JGR

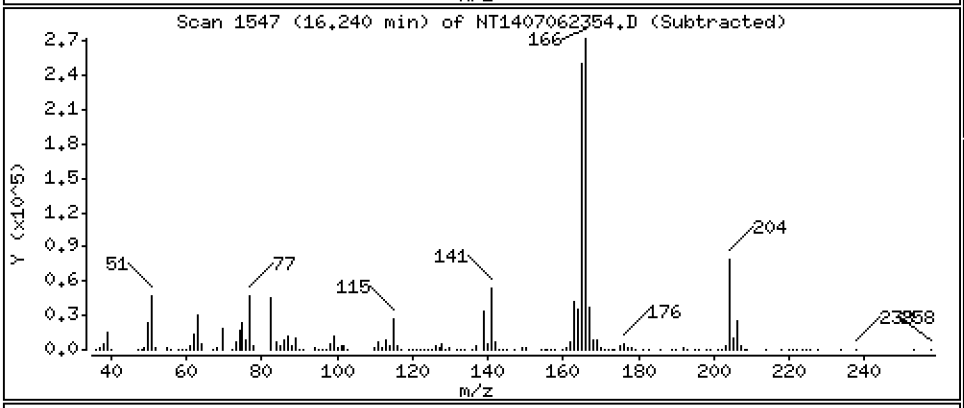
Column phase: ZB-5msi

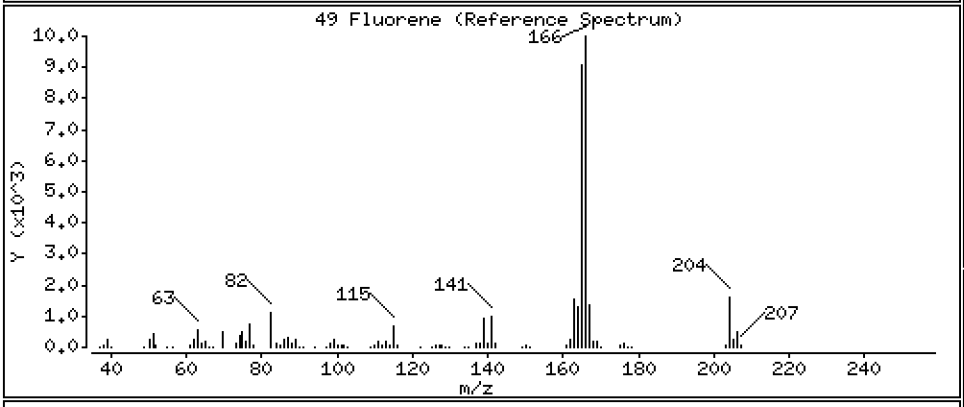
Column diameter: 0.25

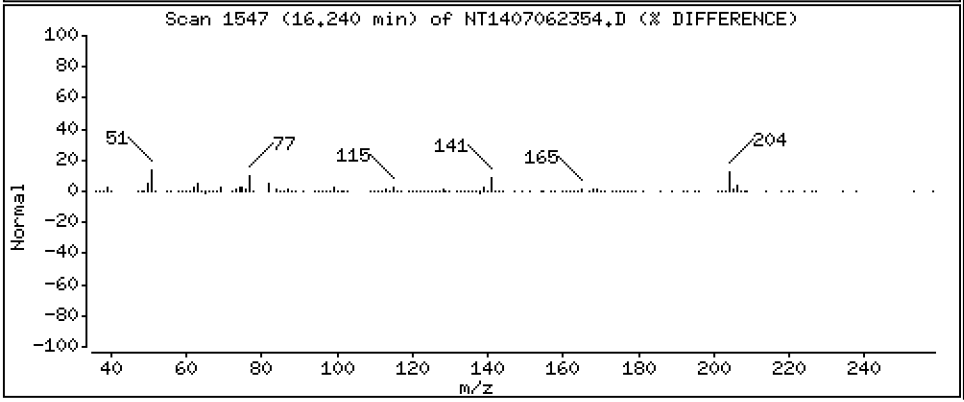
49 Fluorene

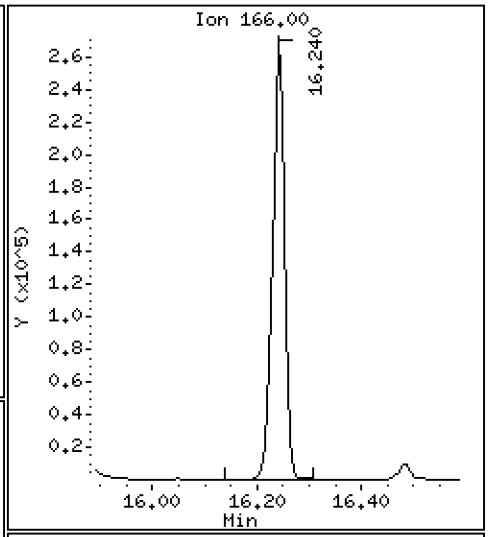
Concentration: 5.039 ug/mL

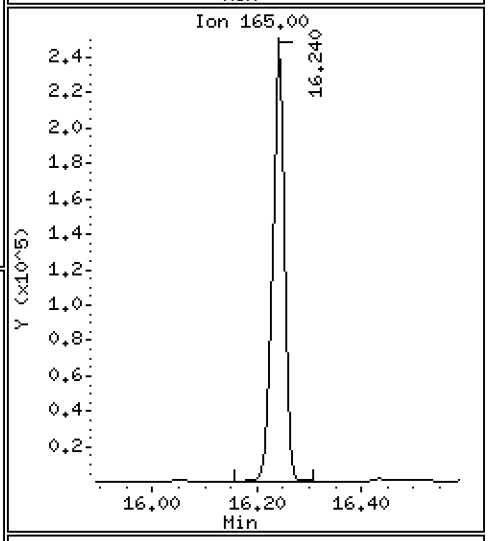


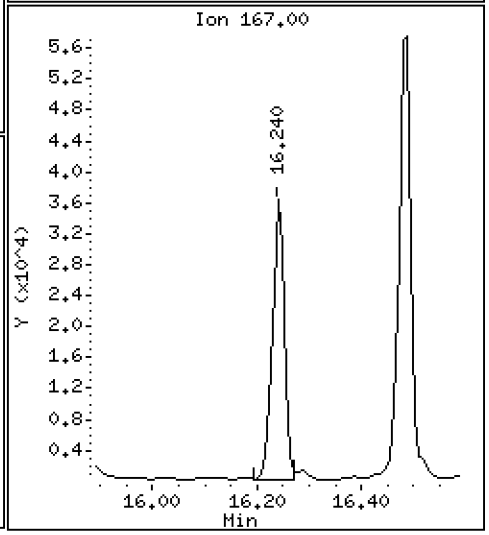












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

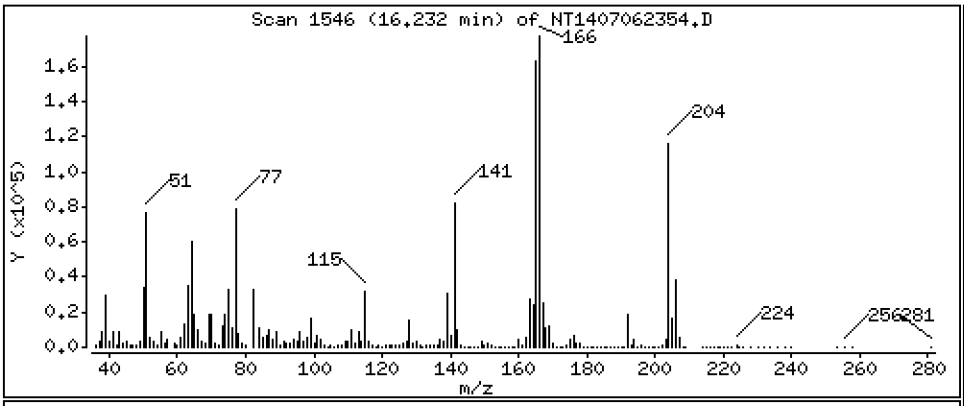
Operator: JGR

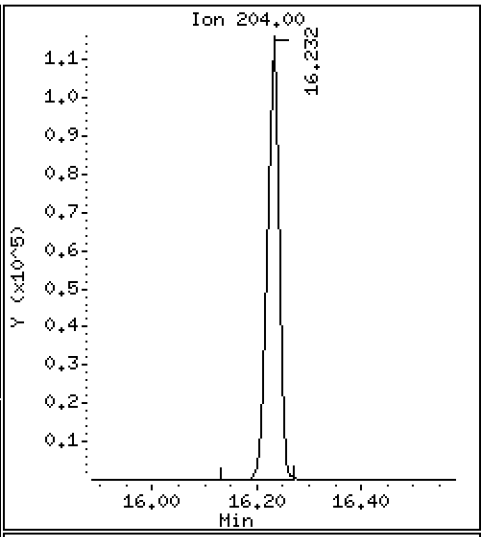
Column phase: ZB-5msi

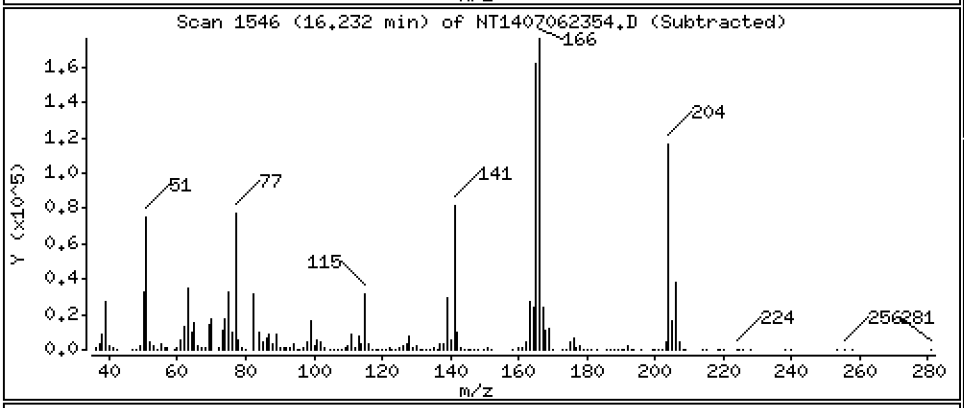
Column diameter: 0.25

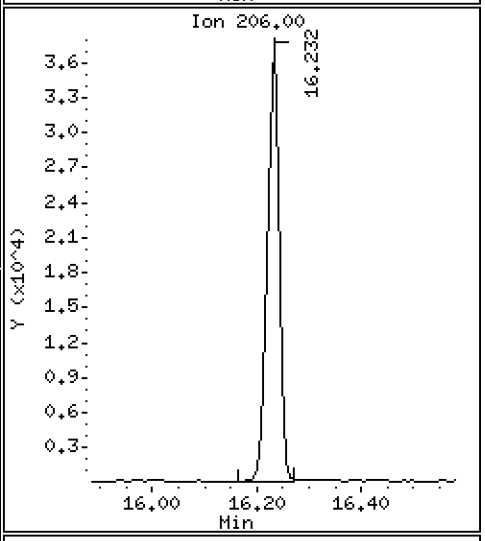
51 4-Chlorophenyl-phenylether

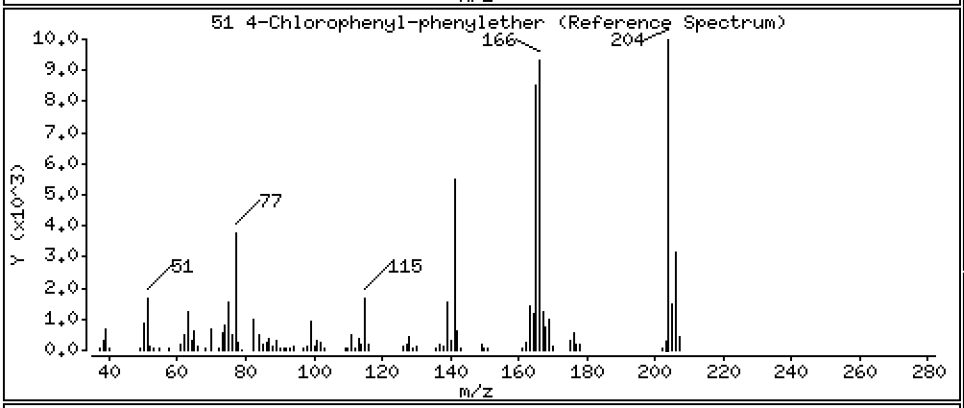
Concentration: 4.934 ug/mL

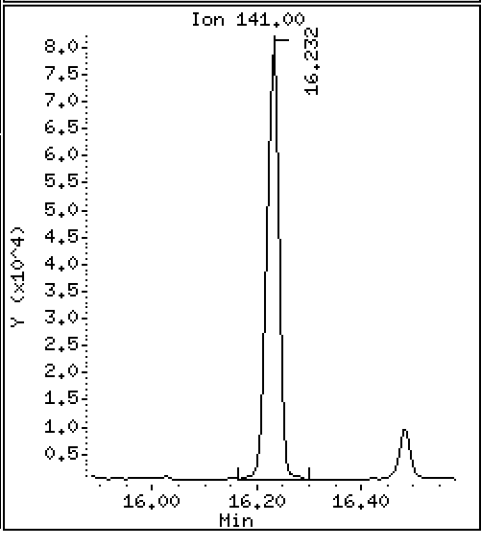


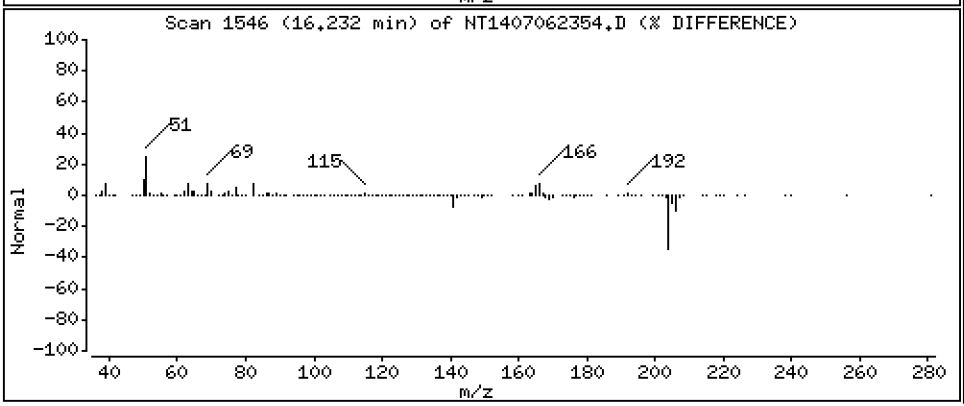












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

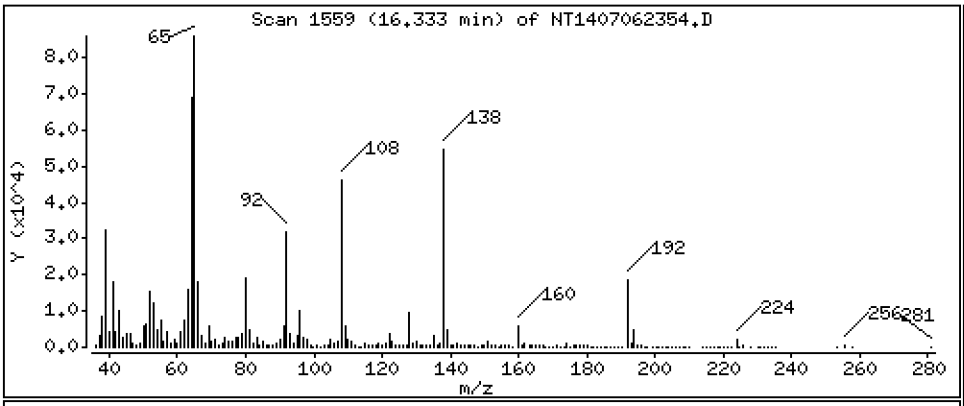
Operator: JGR

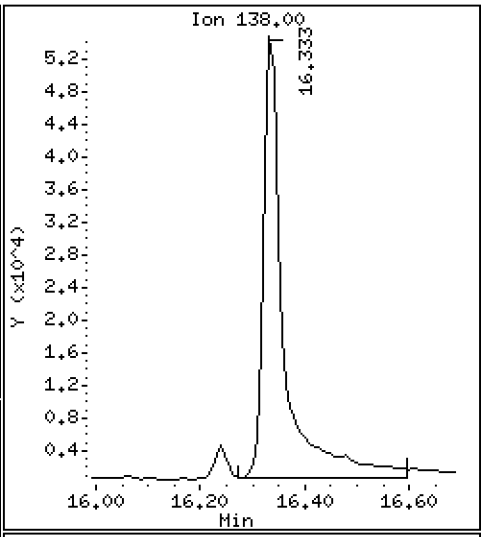
Column phase: ZB-5msi

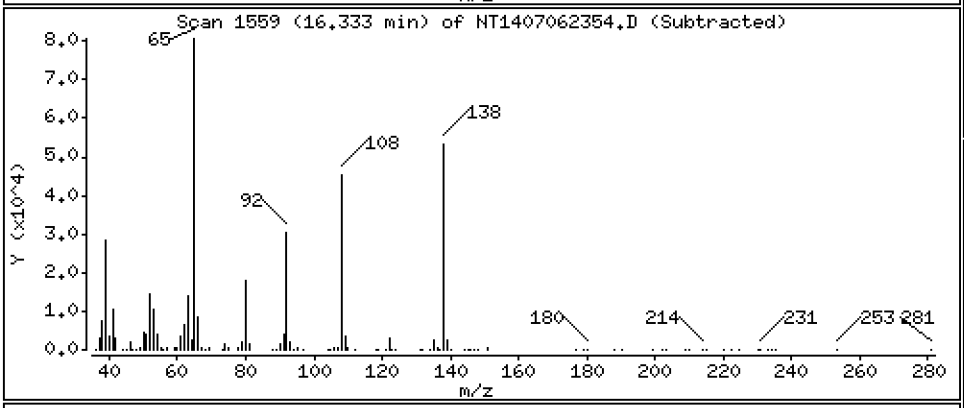
Column diameter: 0.25

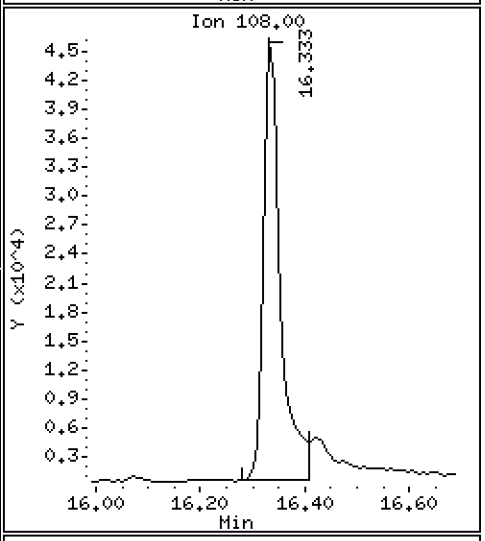
52 4-Nitroaniline

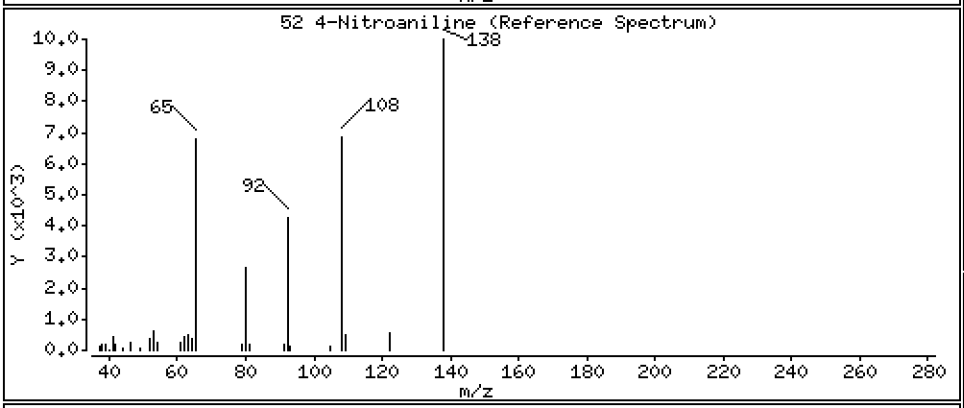
Concentration: 6.169 ug/mL

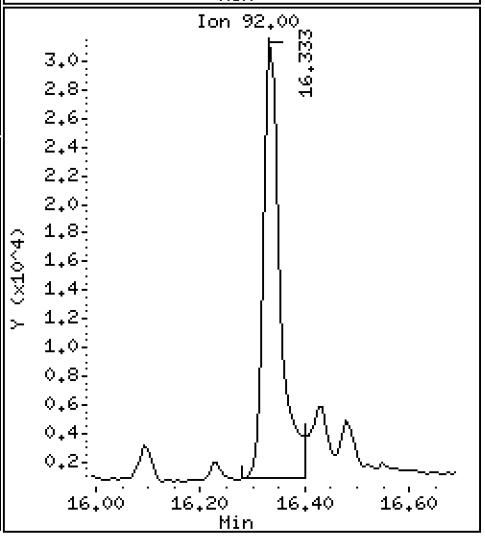


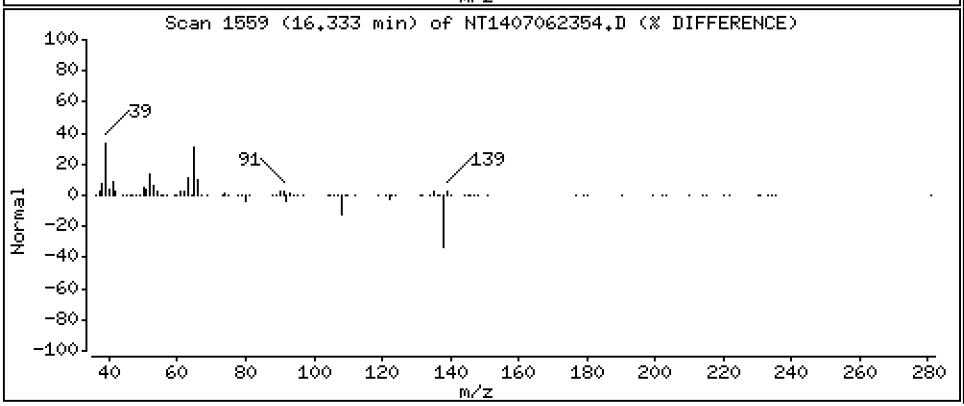












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

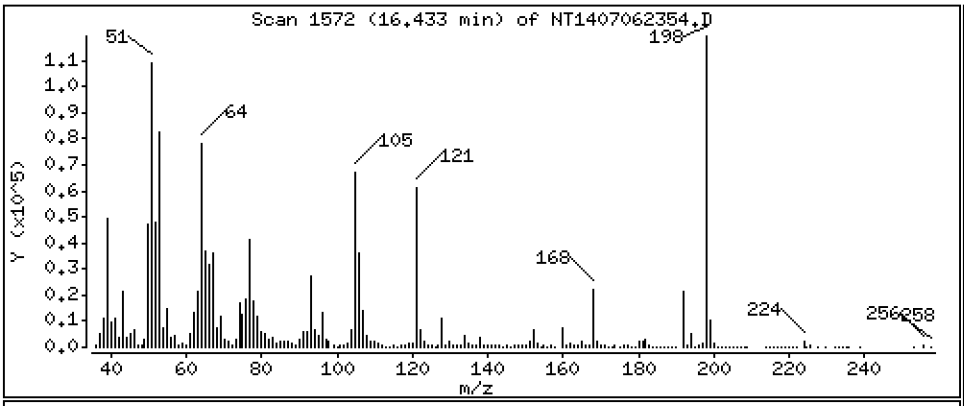
Operator: JGR

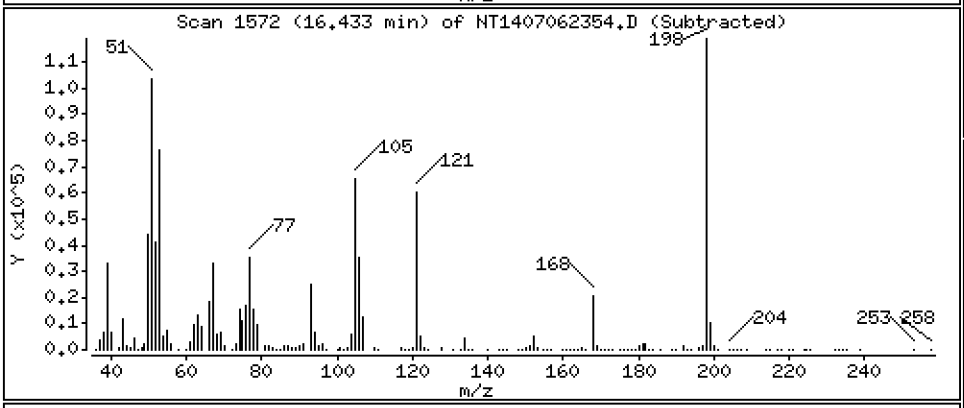
Column phase: ZB-5msi

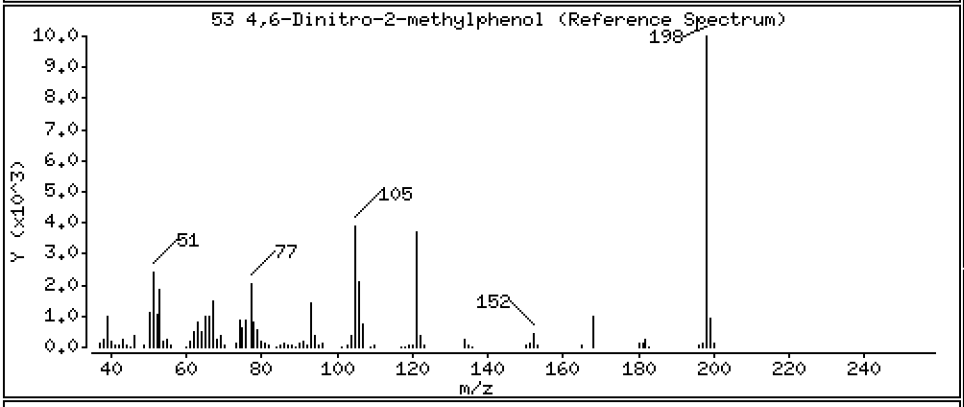
Column diameter: 0.25

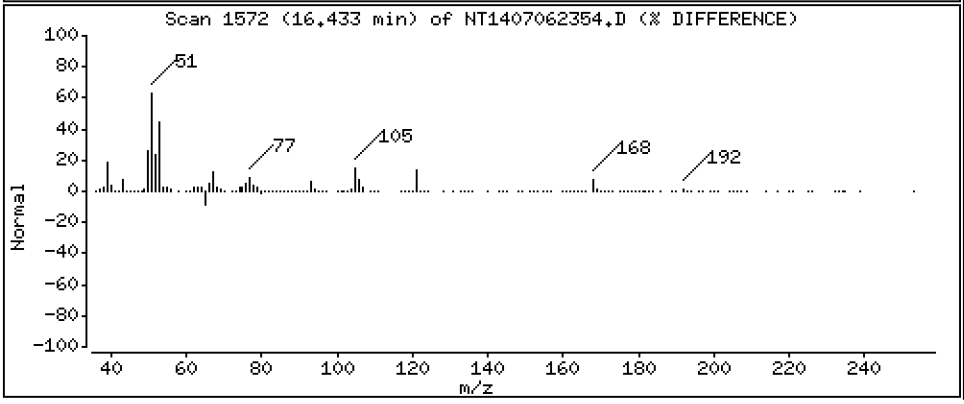
53 4,6-Dinitro-2-methylphenol

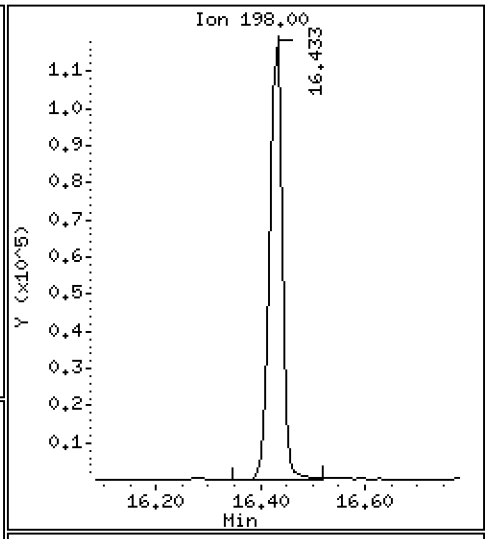
Concentration: 13.42 ug/mL

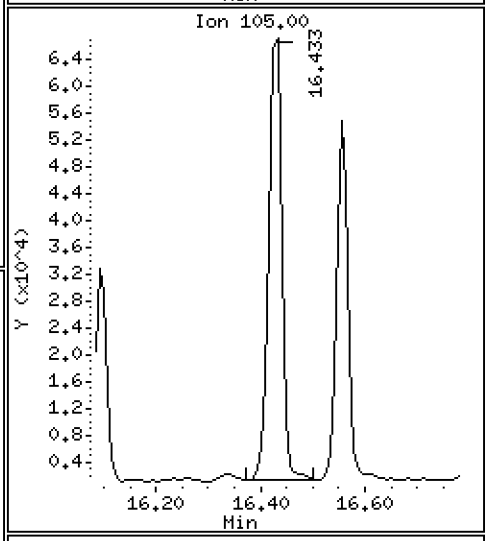


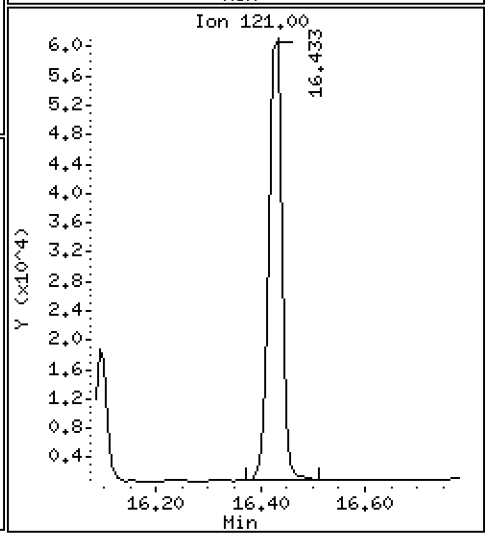












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

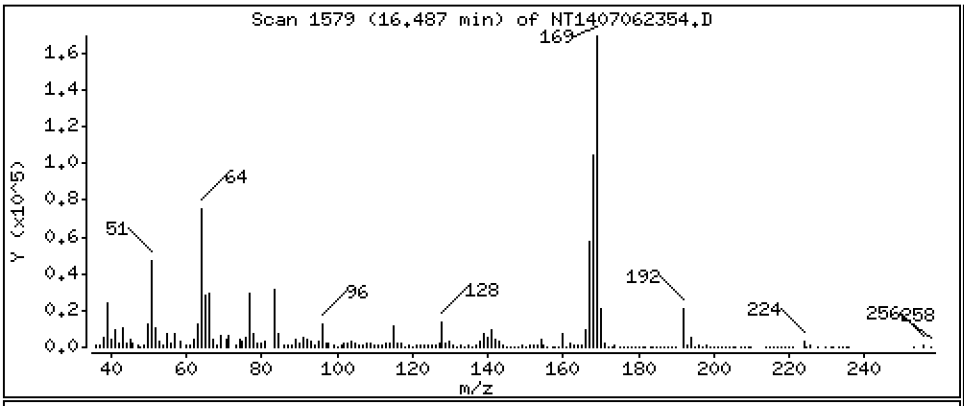
Operator: JGR

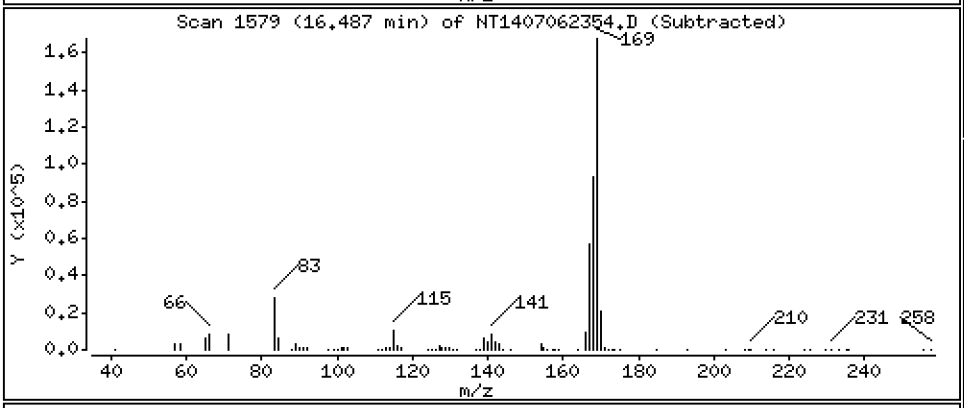
Column phase: ZB-5msi

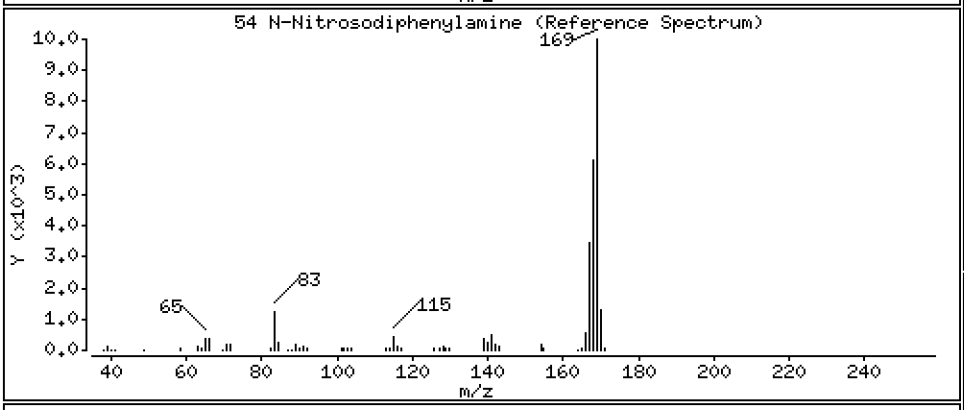
Column diameter: 0.25

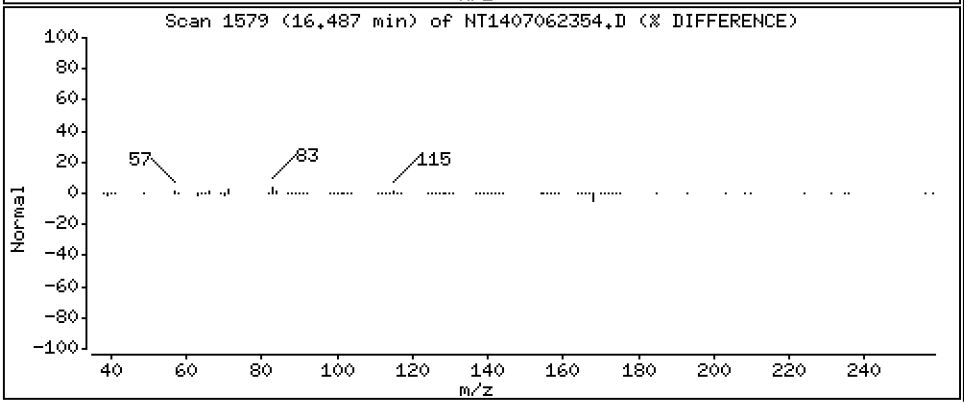
54 N-Nitrosodiphenylamine

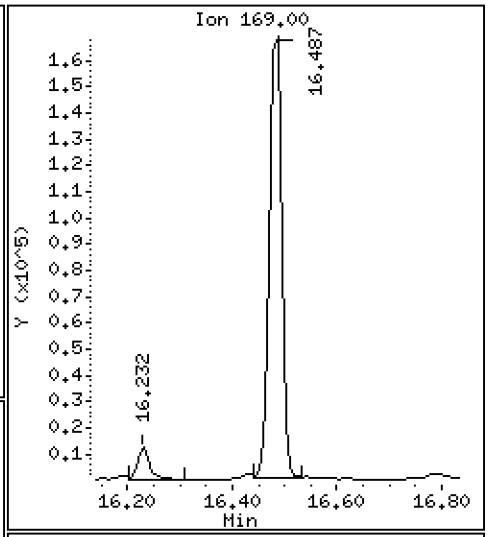
Concentration: 4.171 ug/mL

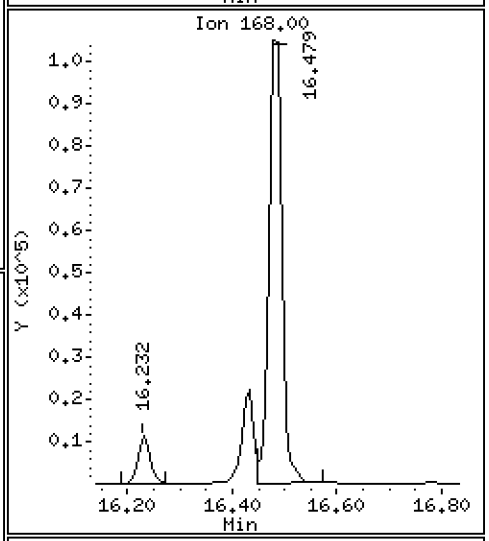


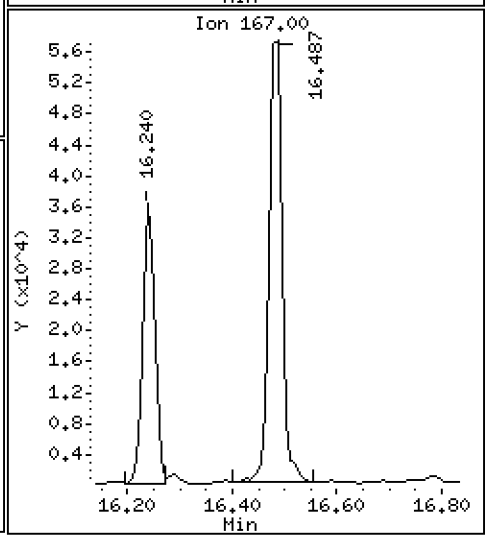












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

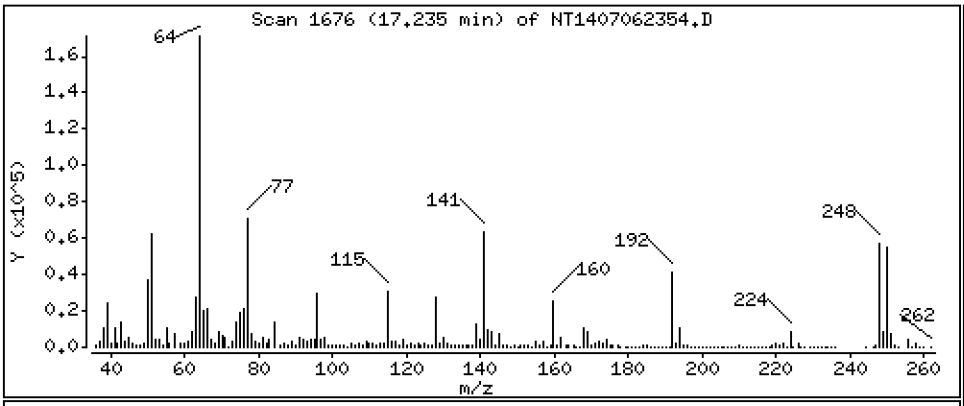
Operator: JGR

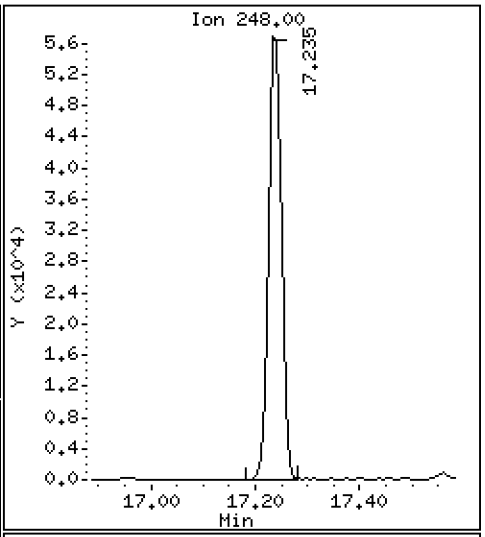
Column phase: ZB-5msi

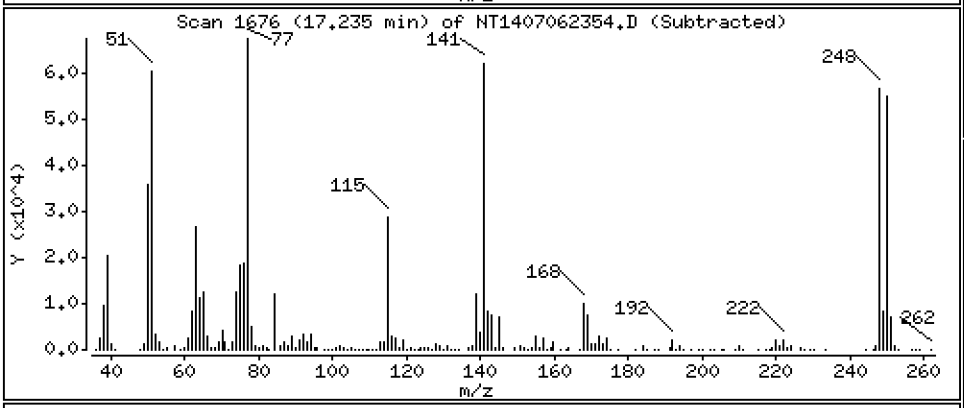
Column diameter: 0.25

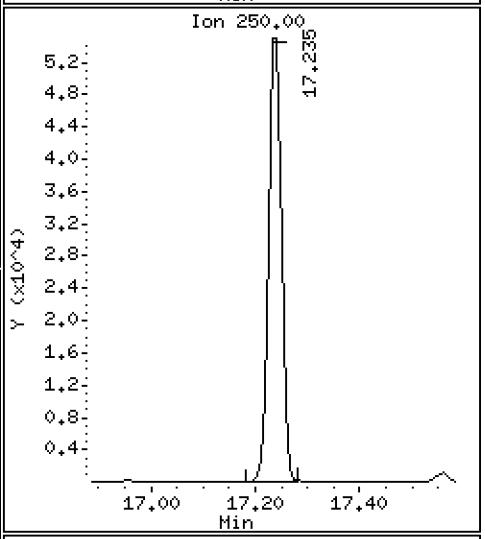
56 4-Bromophenyl-phenylether

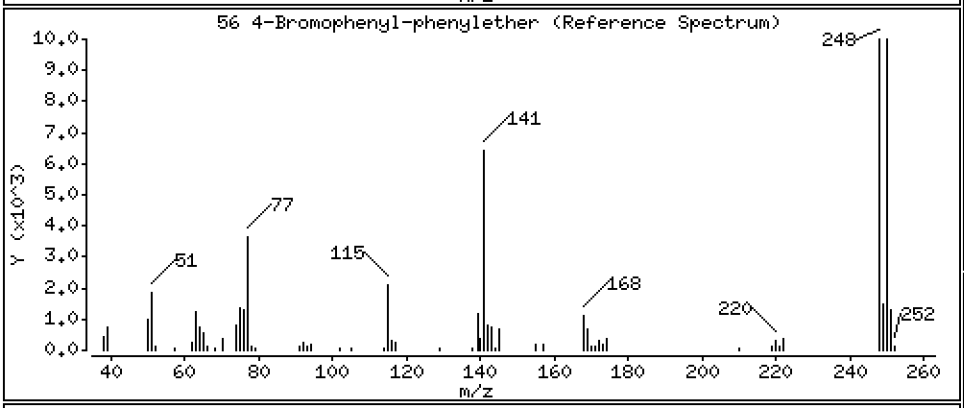
Concentration: 4.961 ug/mL

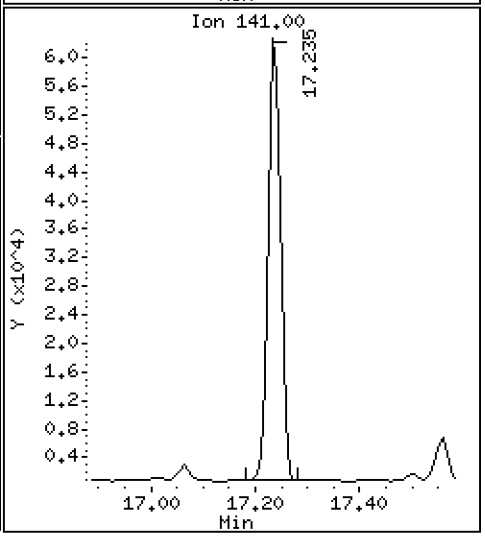


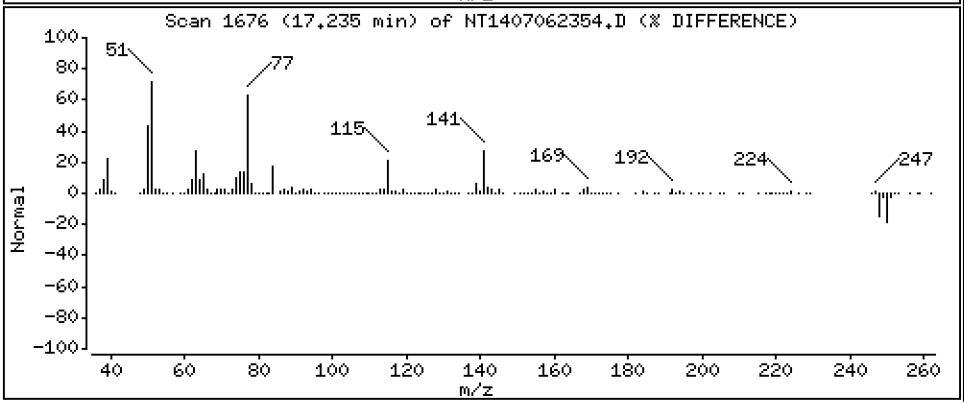












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

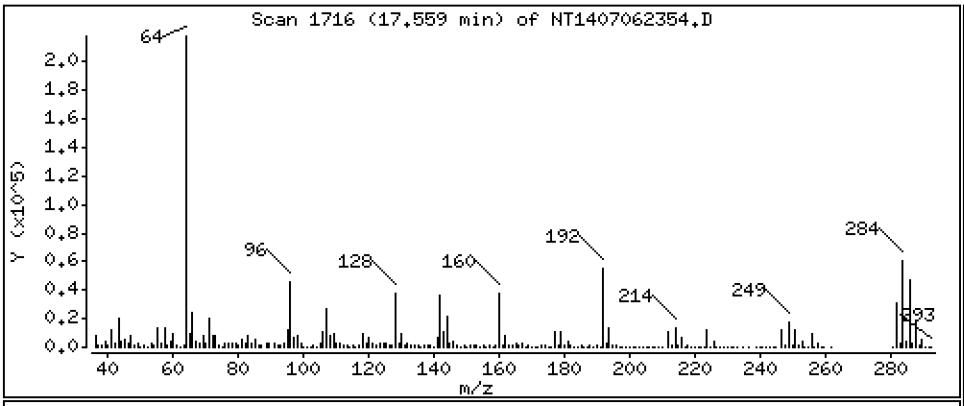
Operator: JGR

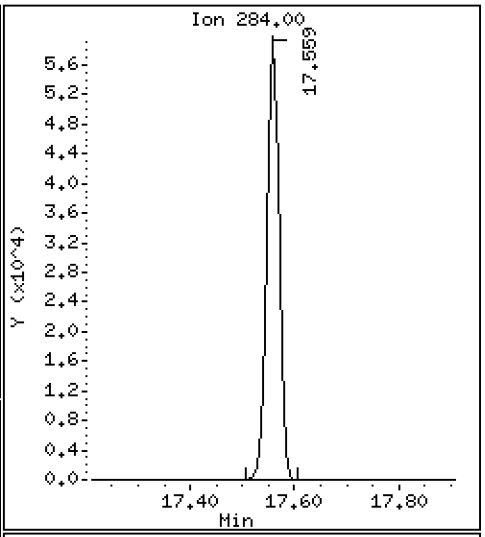
Column phase: ZB-5msi

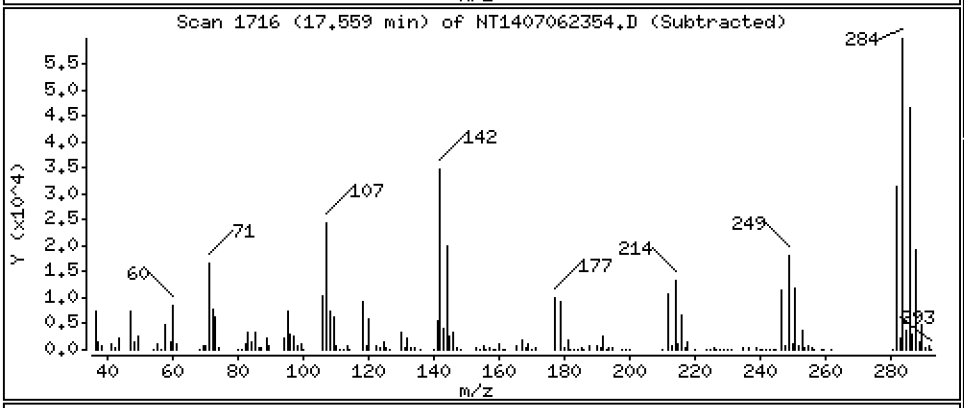
Column diameter: 0.25

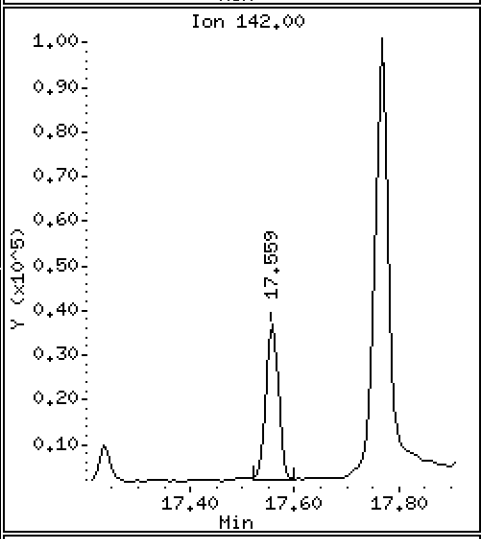
57 Hexachlorobenzene

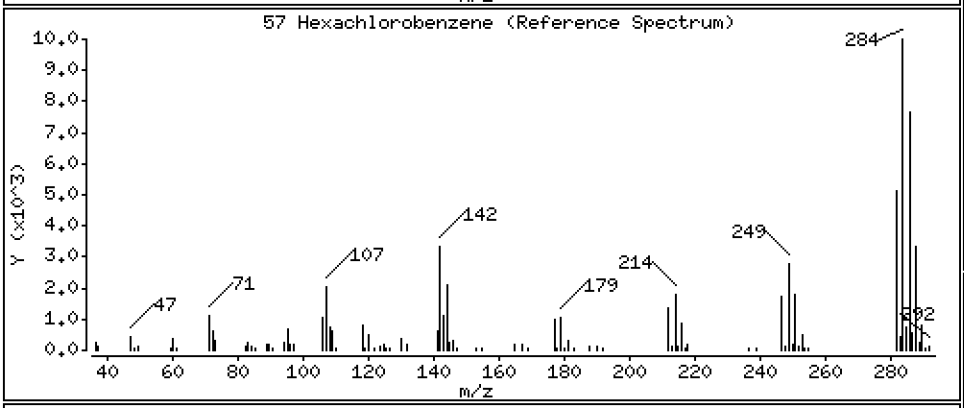
Concentration: 4.636 ug/mL

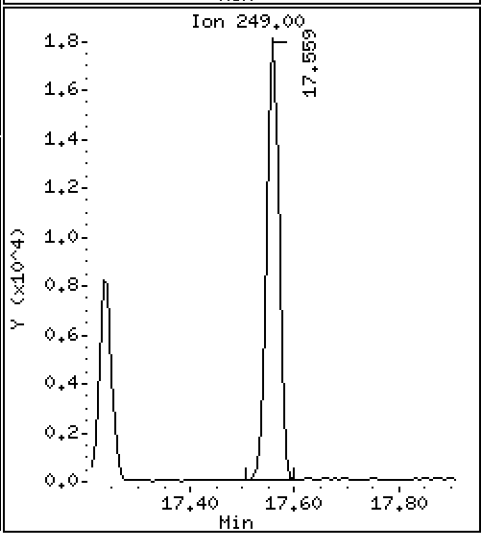


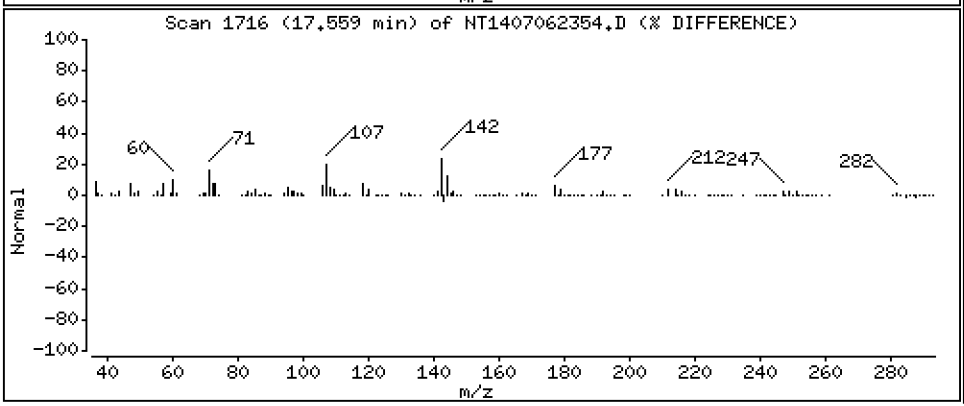












Date : 07-JUL-2023 22:35

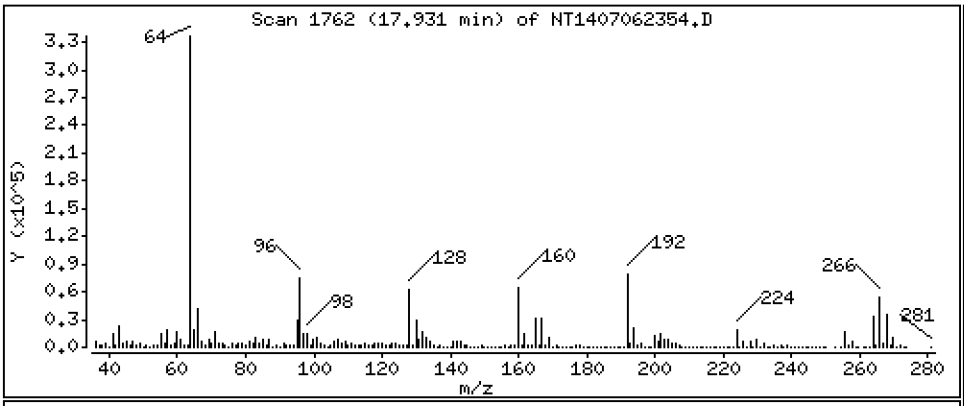
Client ID: Instrument: nt14.i

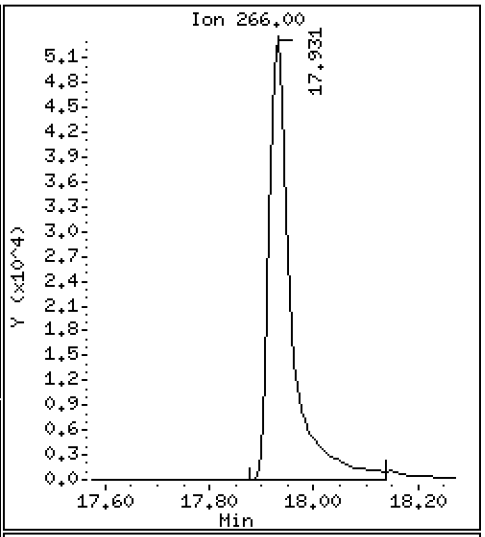
Sample Info: BLF0718-MSD1

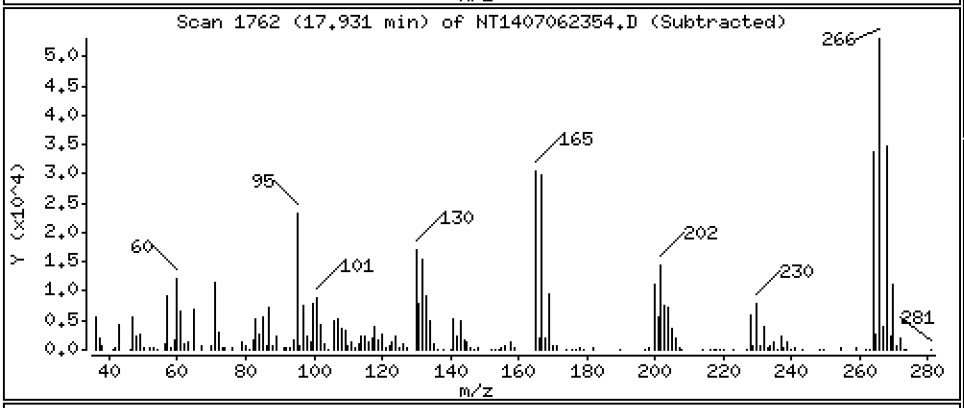
Operator: JGR

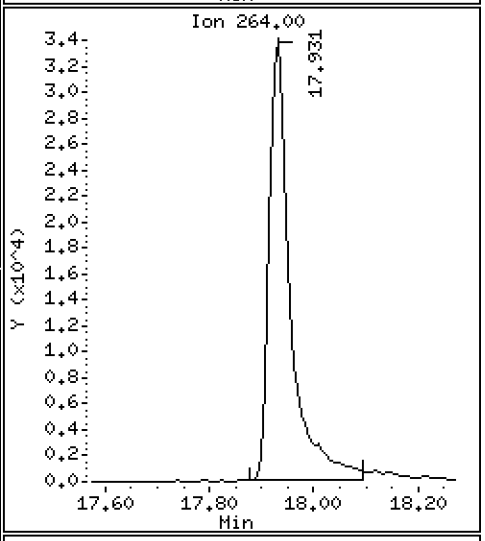
Column phase: ZB-5msi Column diameter: 0.25

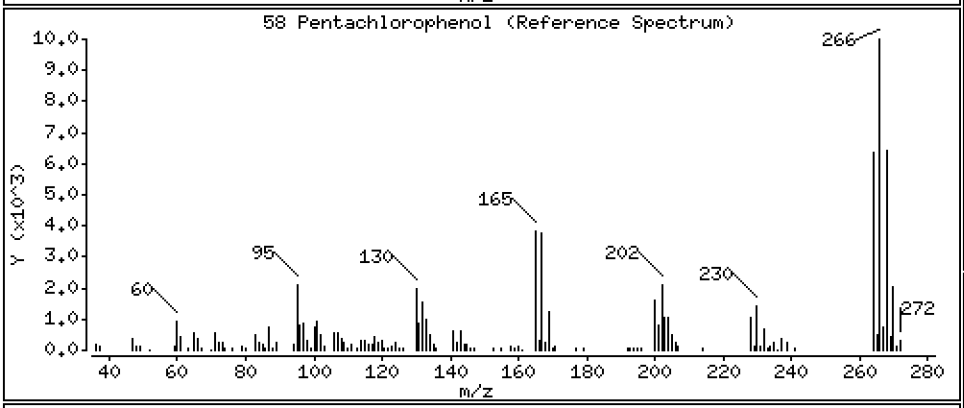
58 Pentachlorophenol Concentration: 12.66 ug/mL

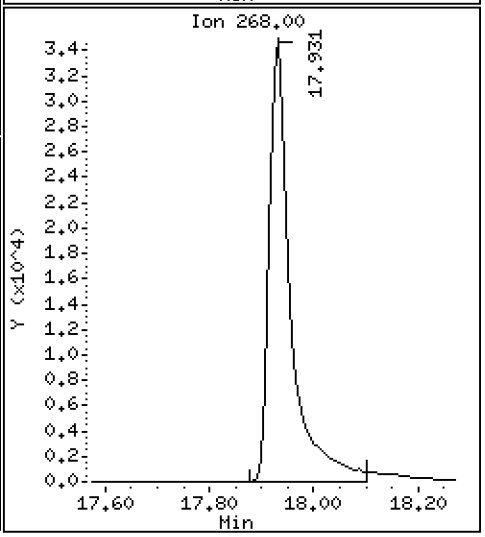


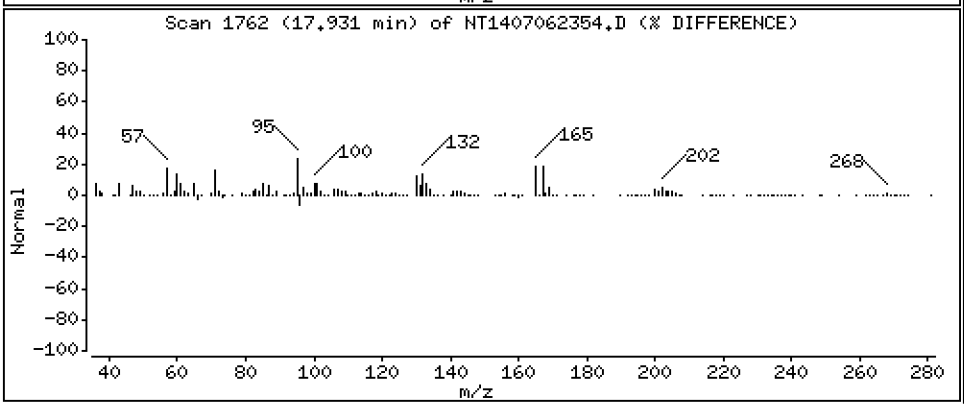












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

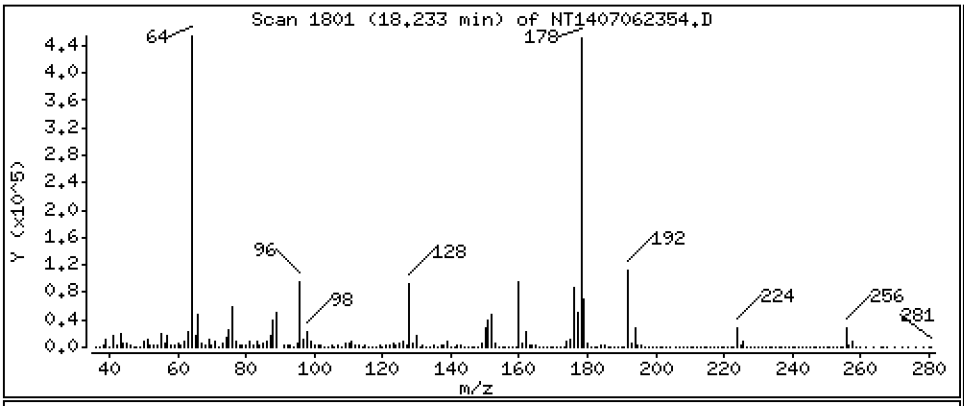
Operator: JGR

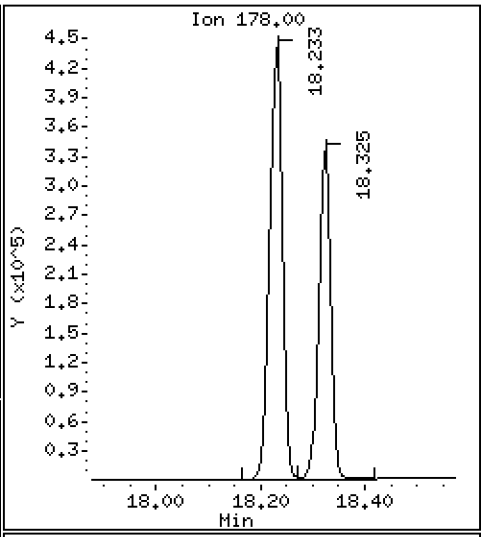
Column phase: ZB-5msi

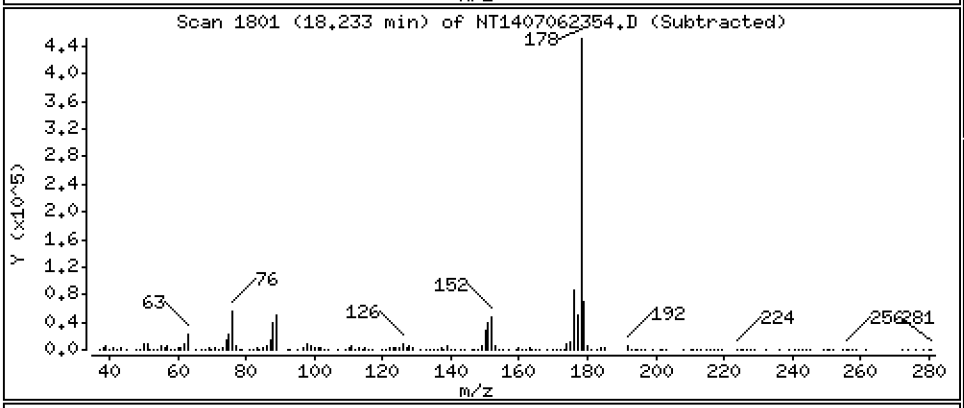
Column diameter: 0.25

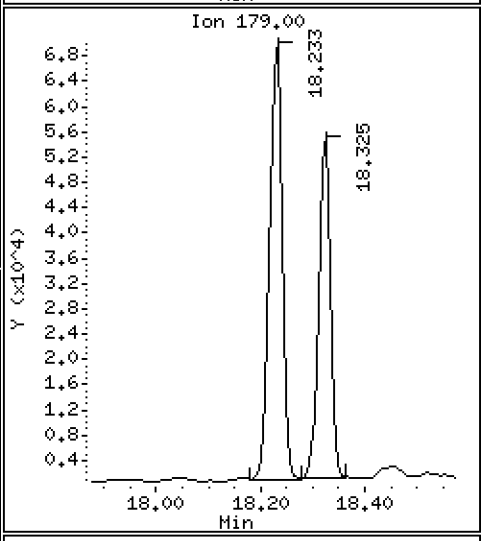
60 Phenanthrene

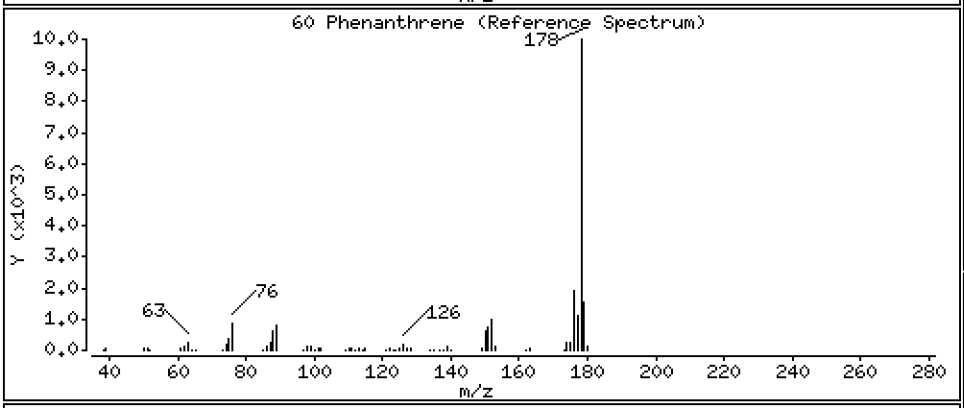
Concentration: 6.184 ug/mL

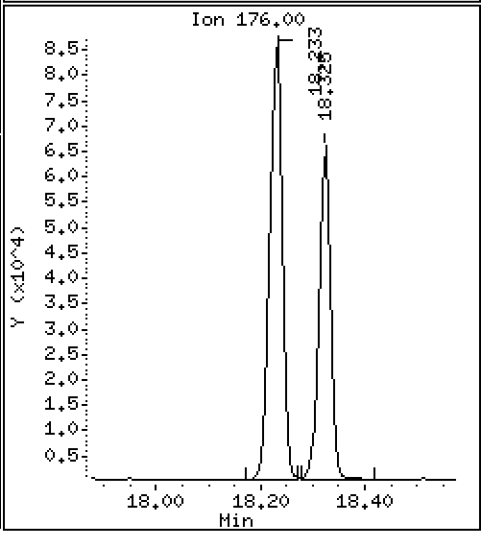


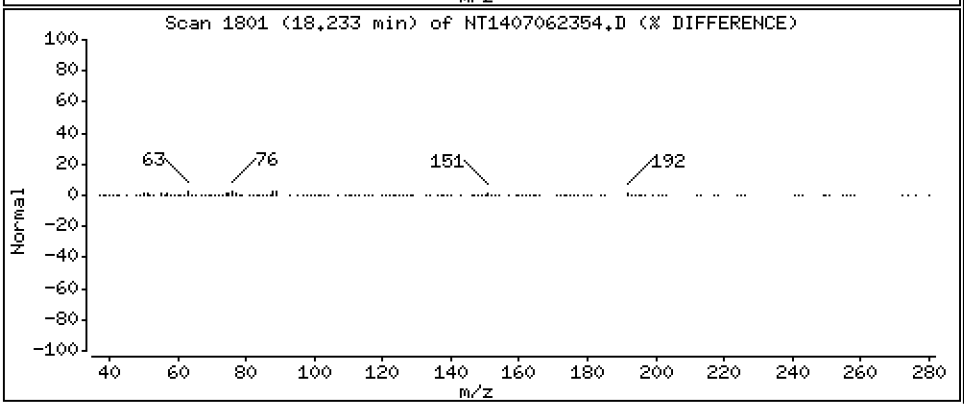












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

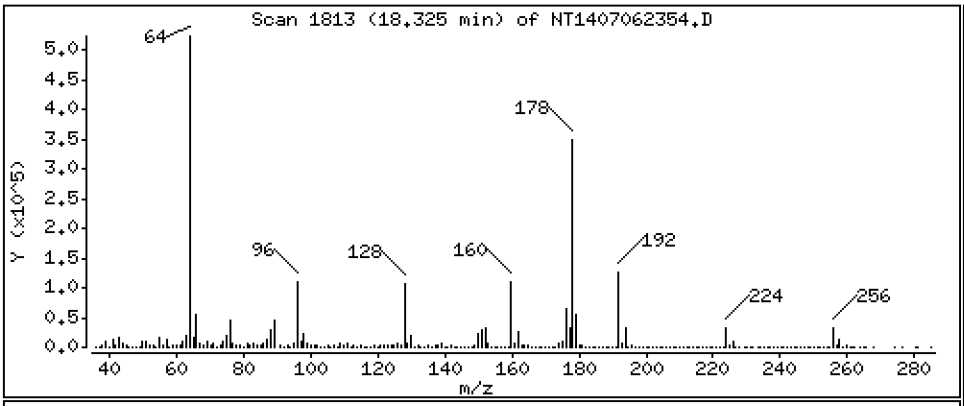
Operator: JGR

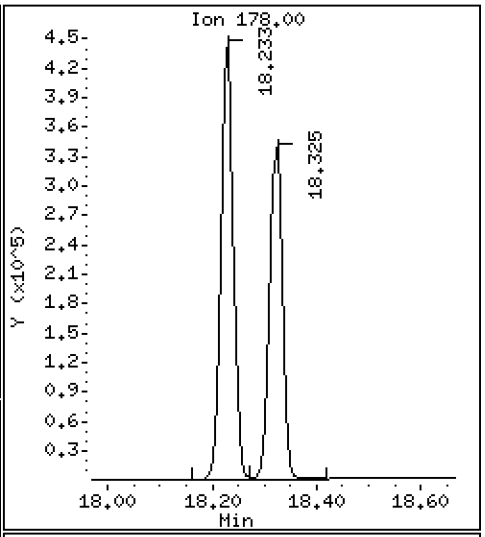
Column phase: ZB-5msi

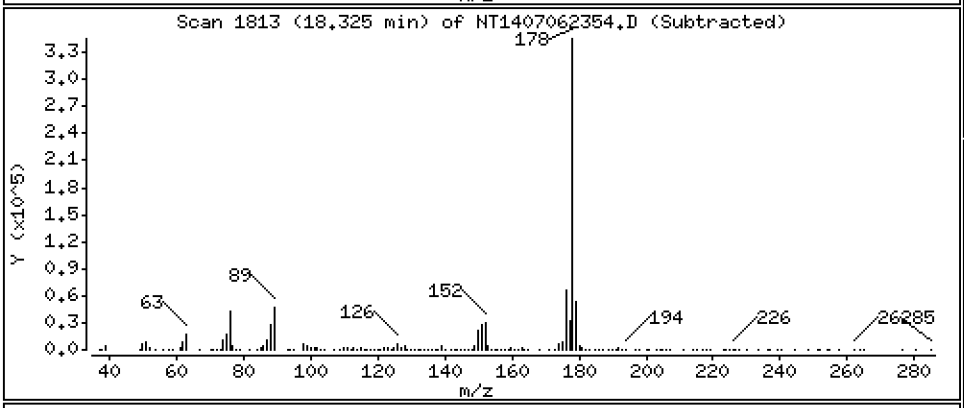
Column diameter: 0.25

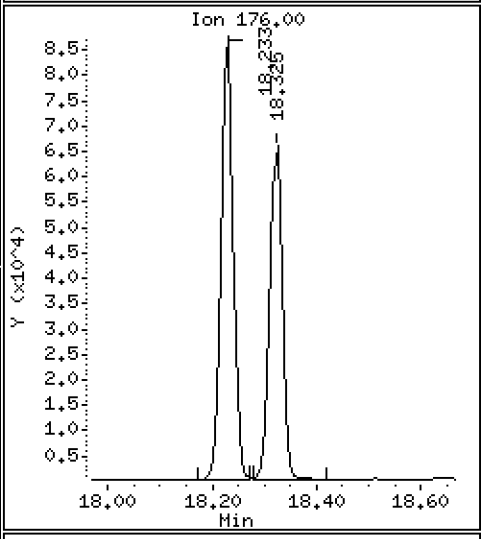
61 Anthracene

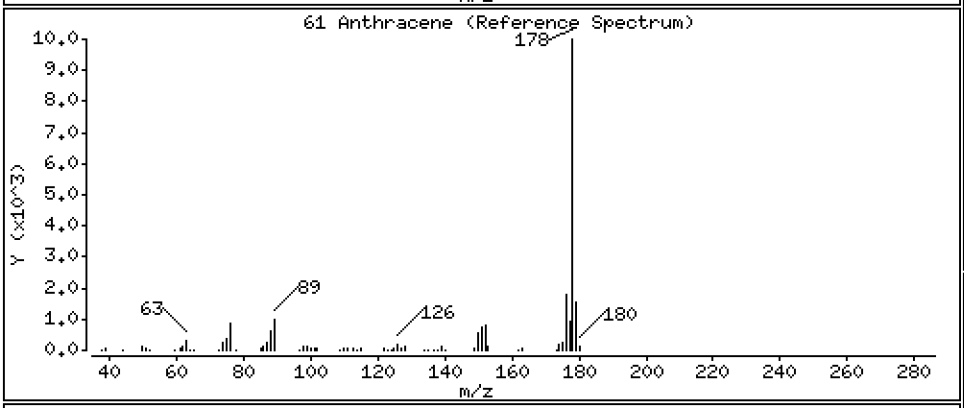
Concentration: 4.909 ug/mL

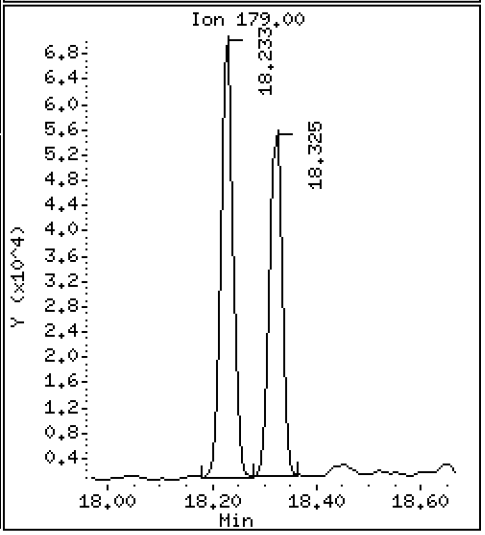


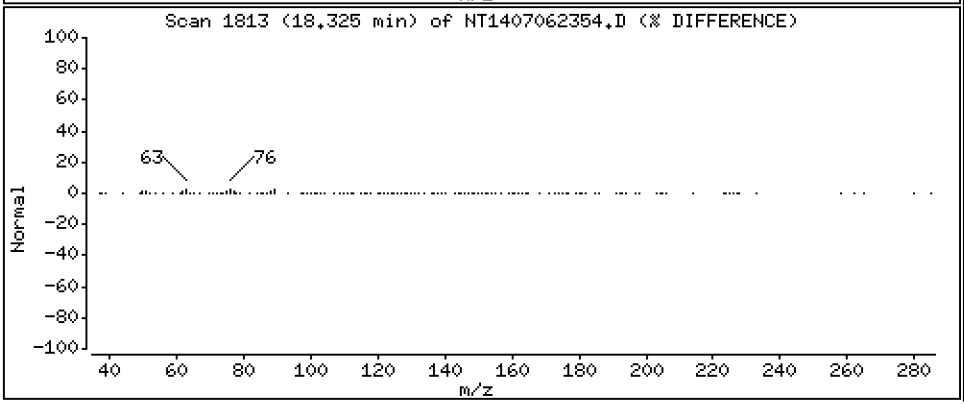












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

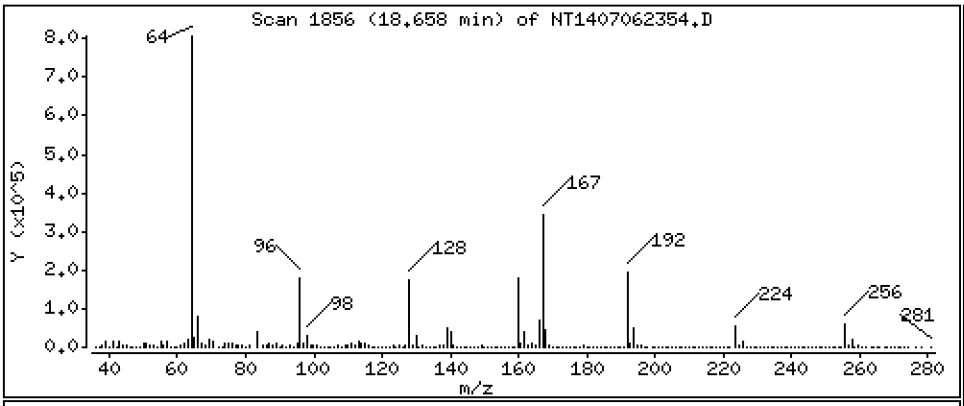
Operator: JGR

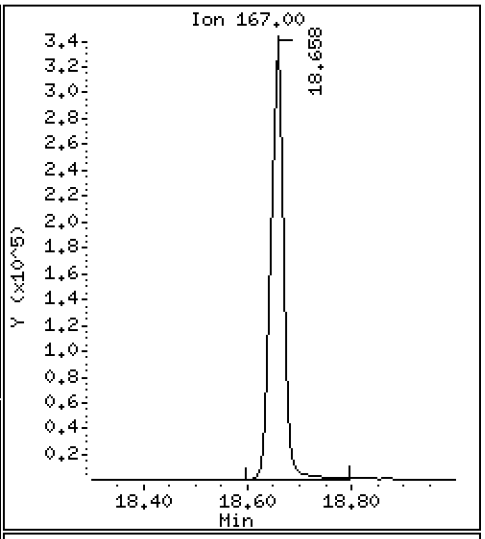
Column phase: ZB-5msi

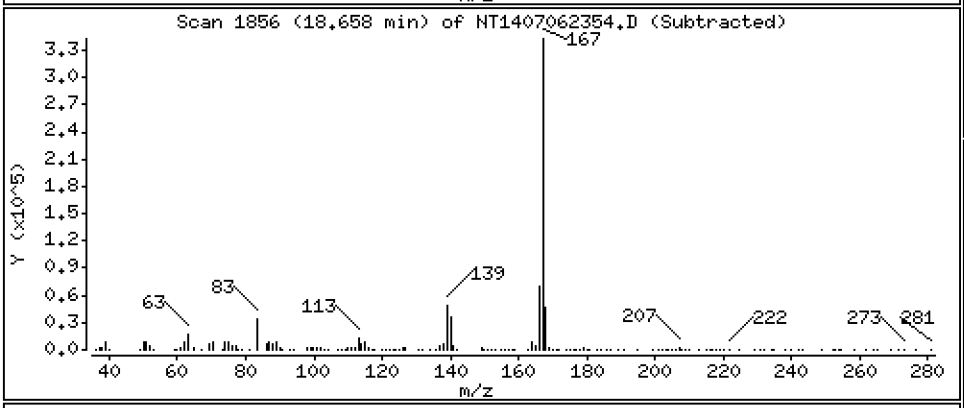
Column diameter: 0.25

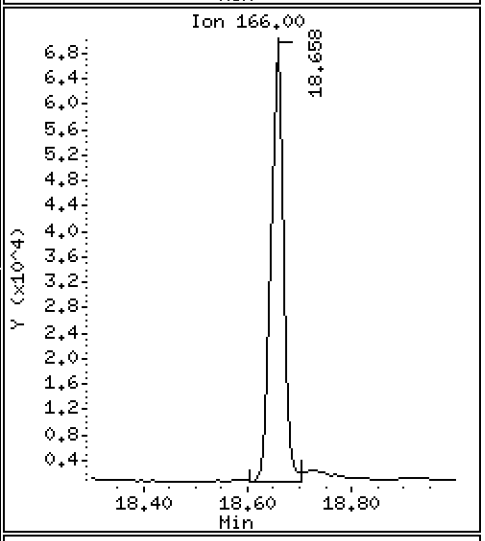
62 Carbazole

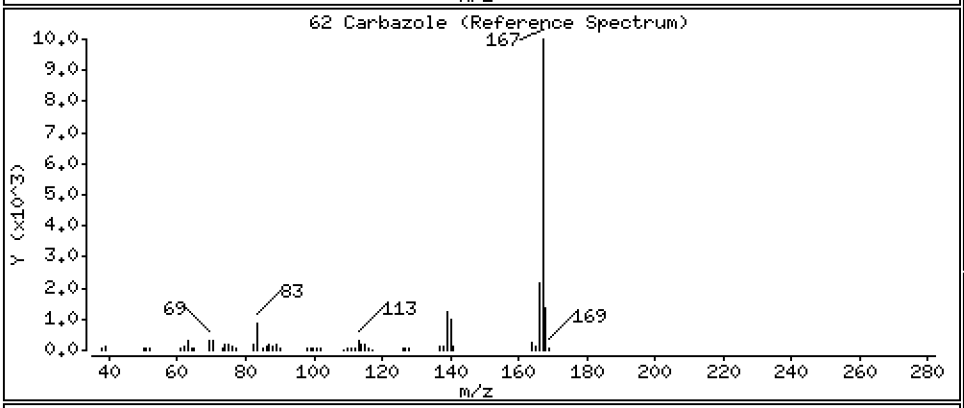
Concentration: 4.927 ug/mL

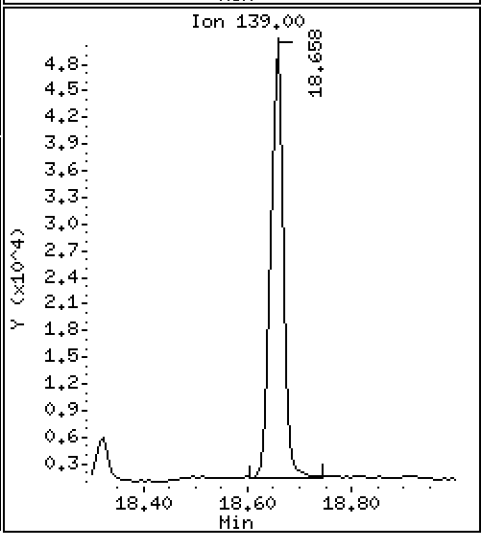


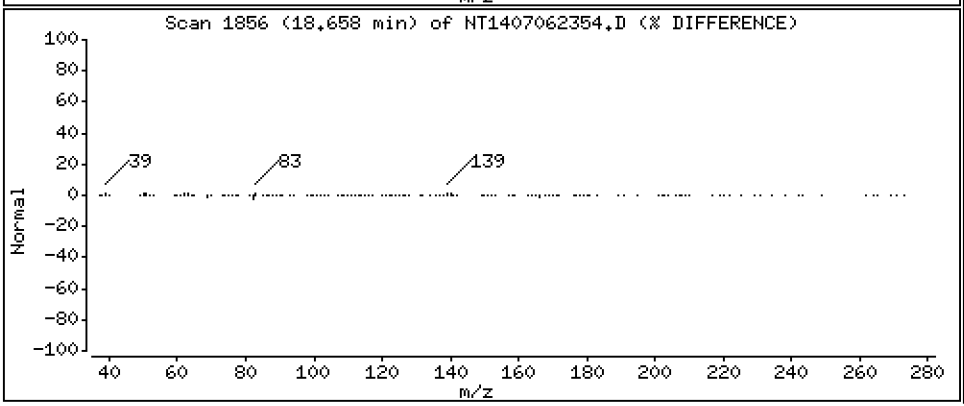












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

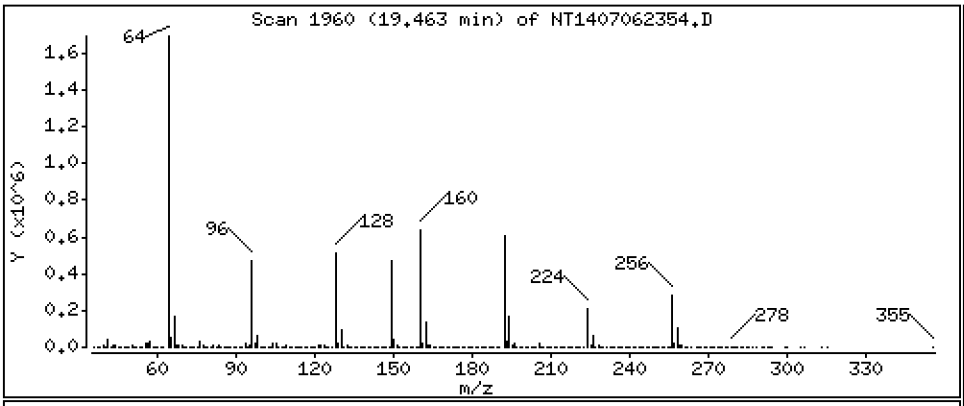
Operator: JGR

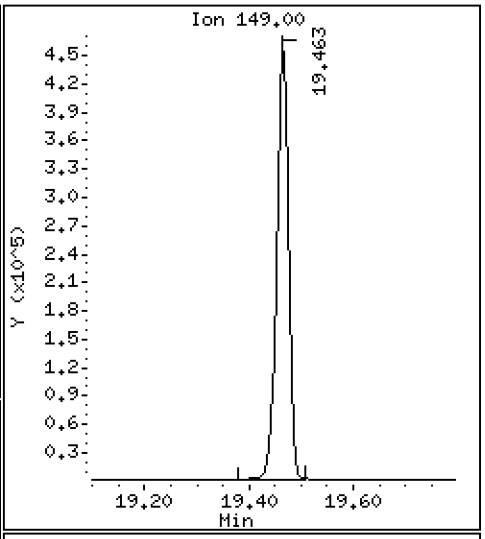
Column phase: ZB-5msi

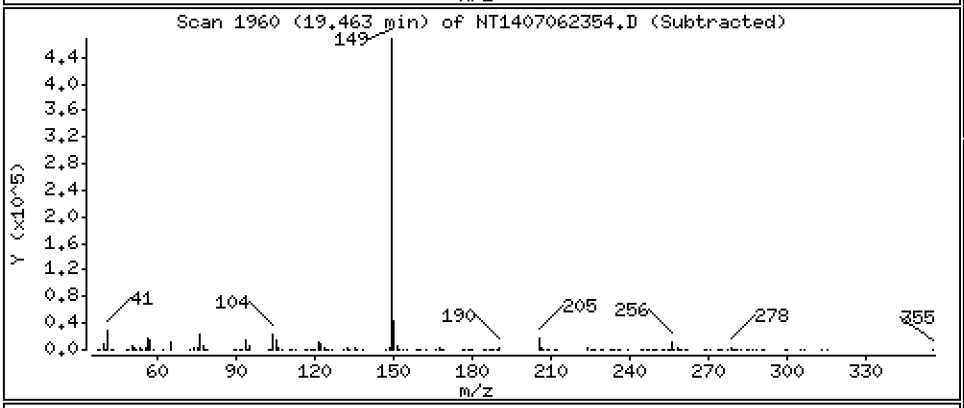
Column diameter: 0.25

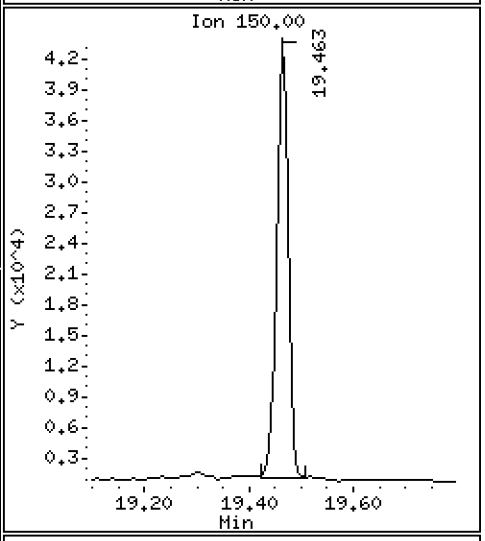
63 Di-n-butylphthalate

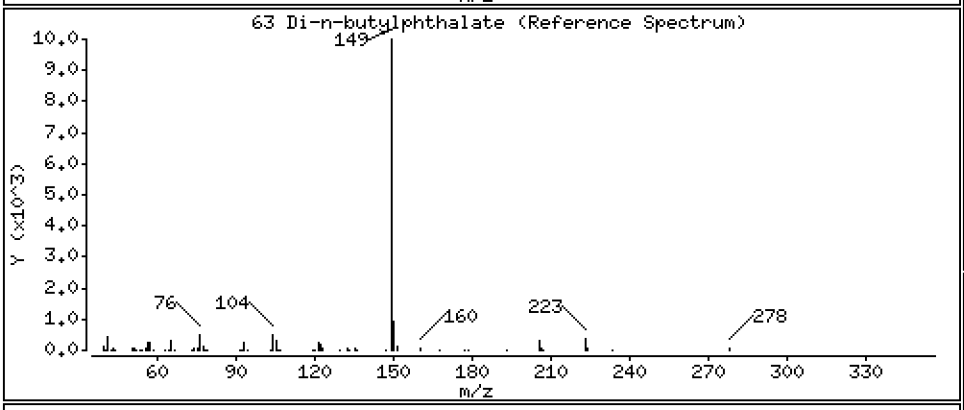
Concentration: 4.941 ug/mL

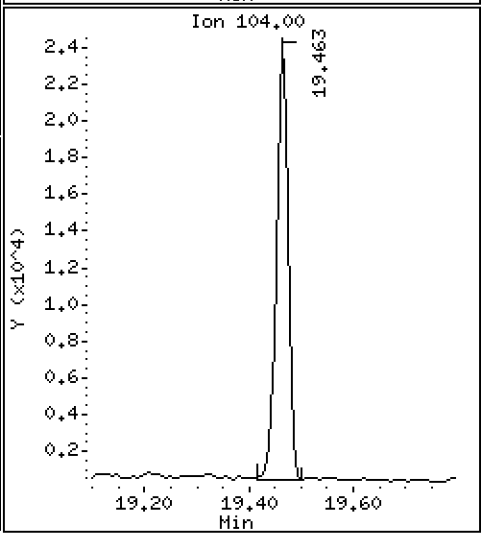


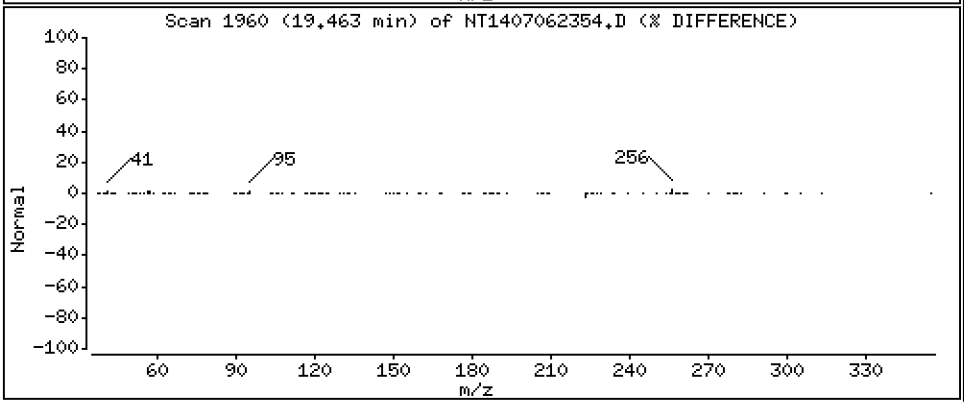












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

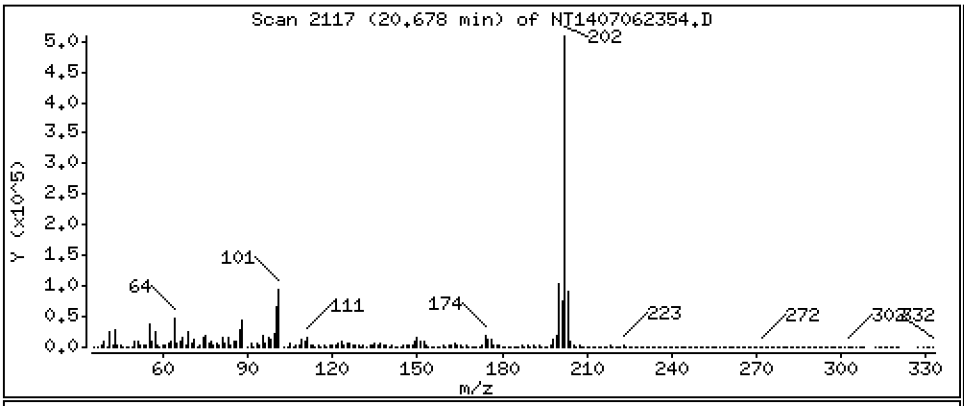
Operator: JGR

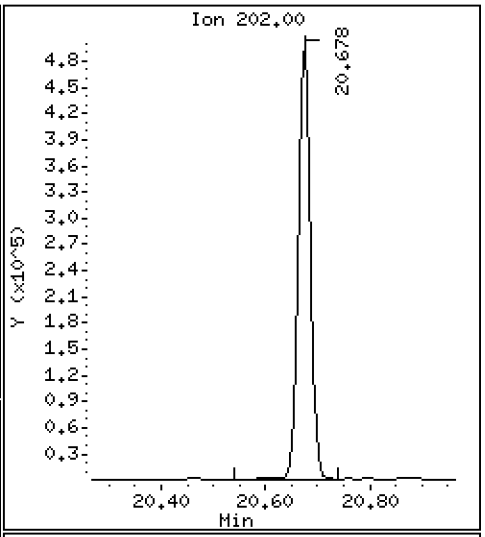
Column phase: ZB-5msi

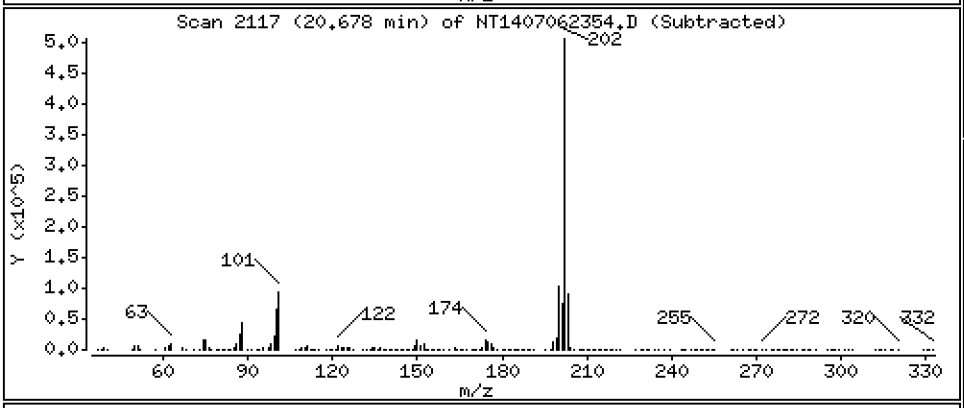
Column diameter: 0.25

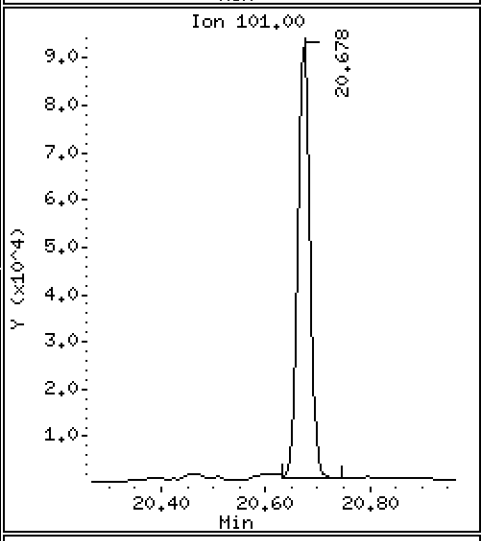
64 Fluoranthene

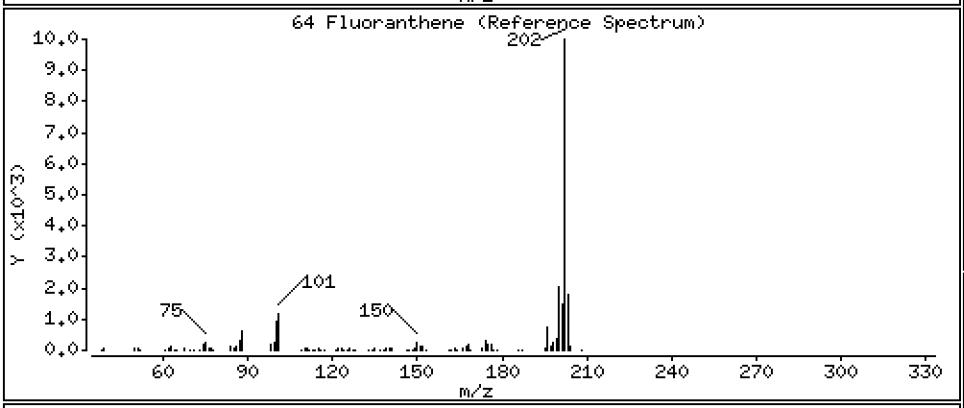
Concentration: 7.928 ug/mL

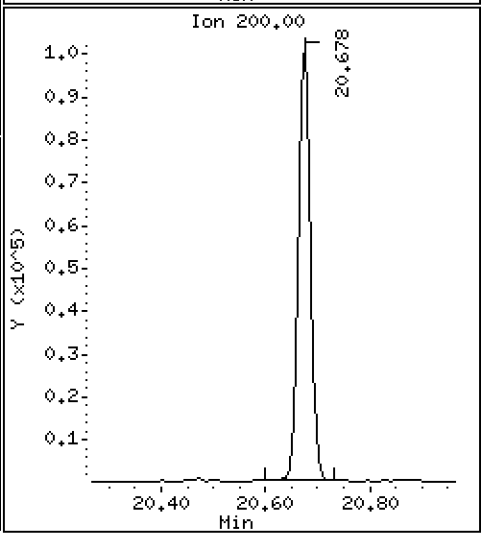


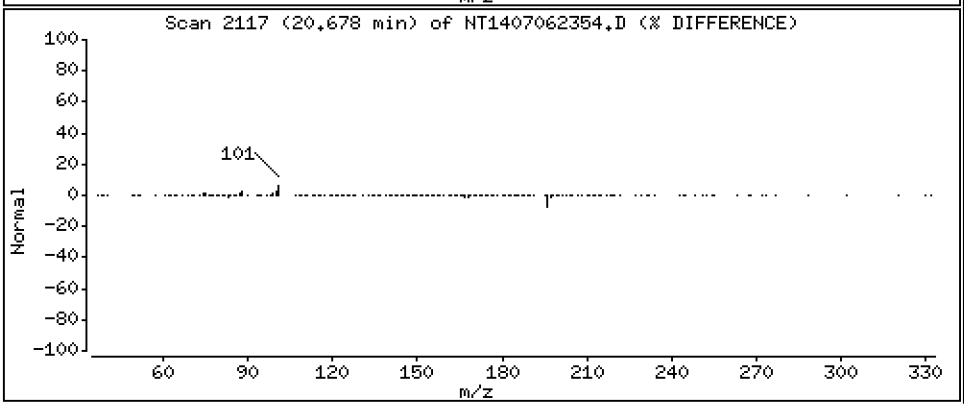












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

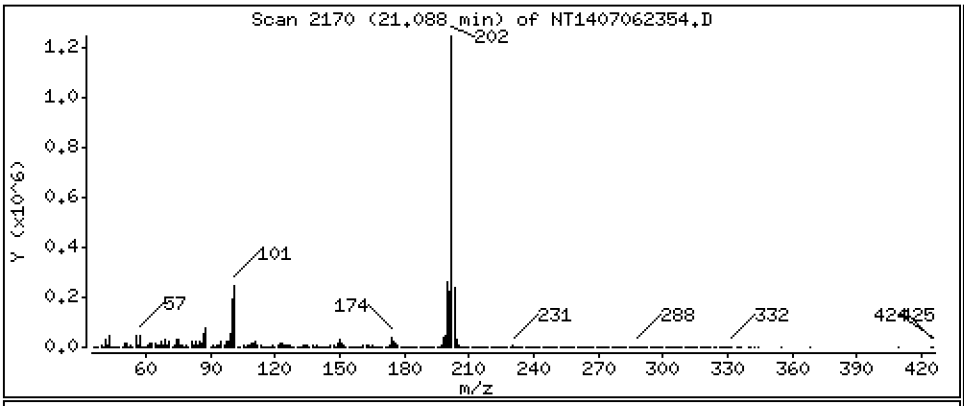
Operator: JGR

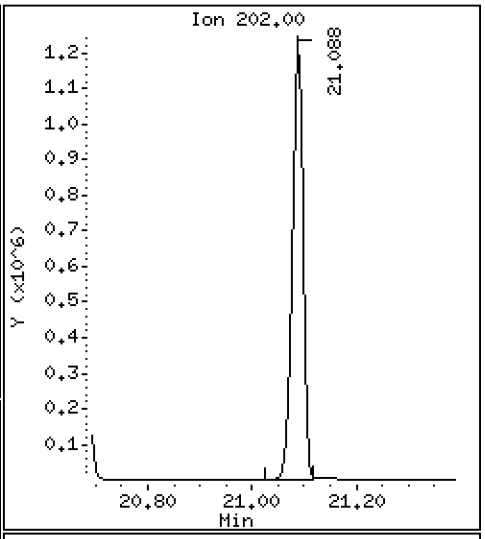
Column phase: ZB-5msi

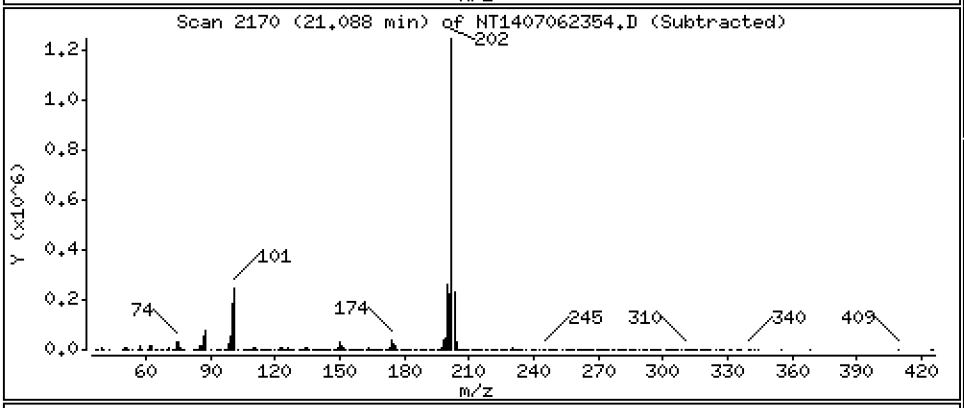
Column diameter: 0.25

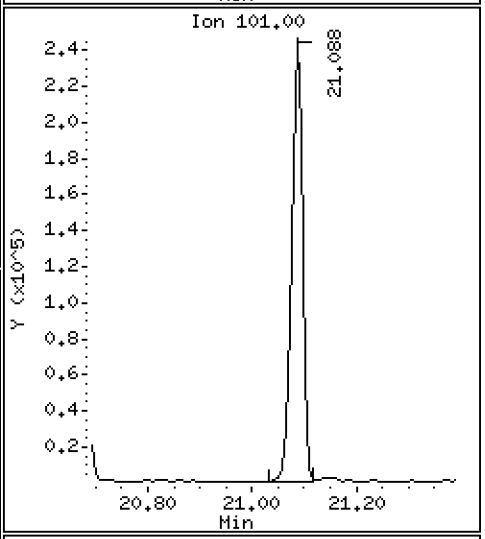
65 Pyrene

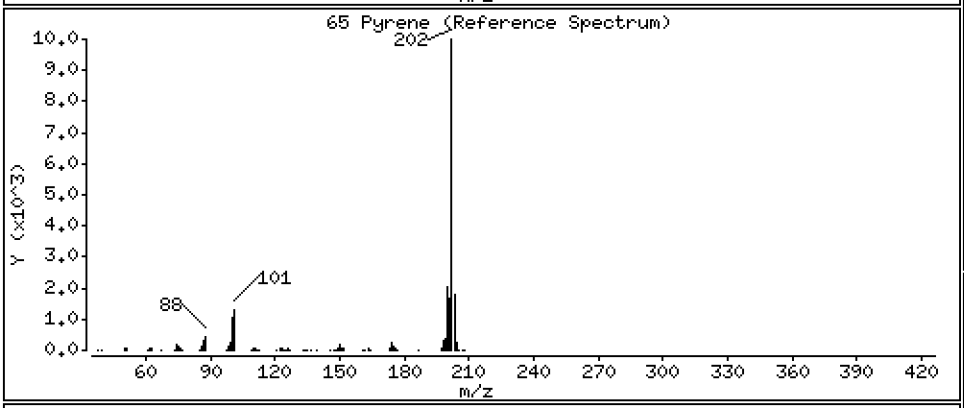
Concentration: 17.43 ug/mL

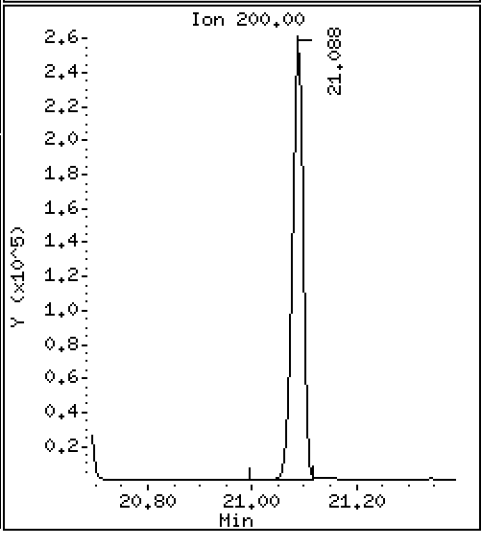


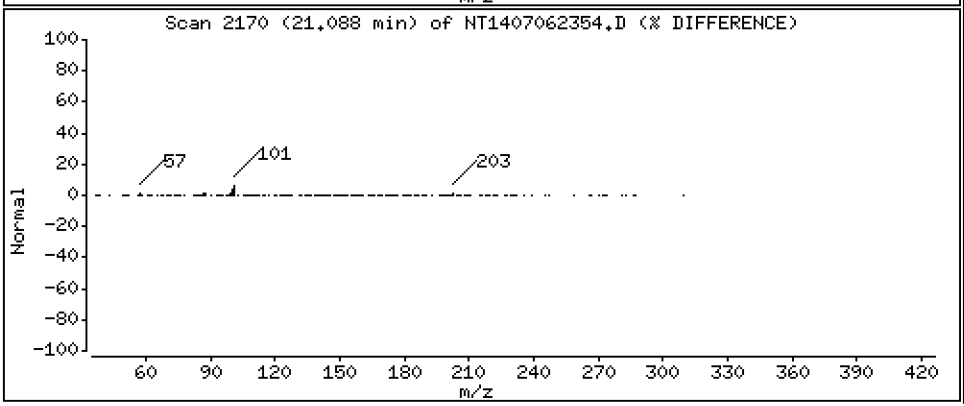












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

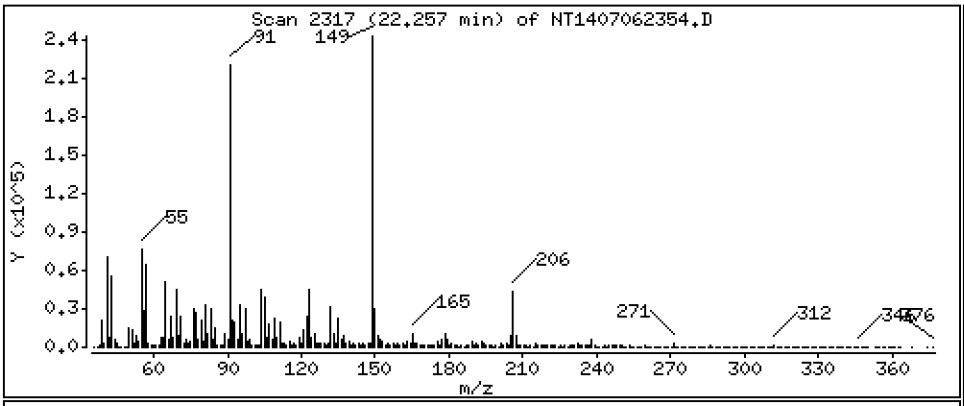
Operator: JGR

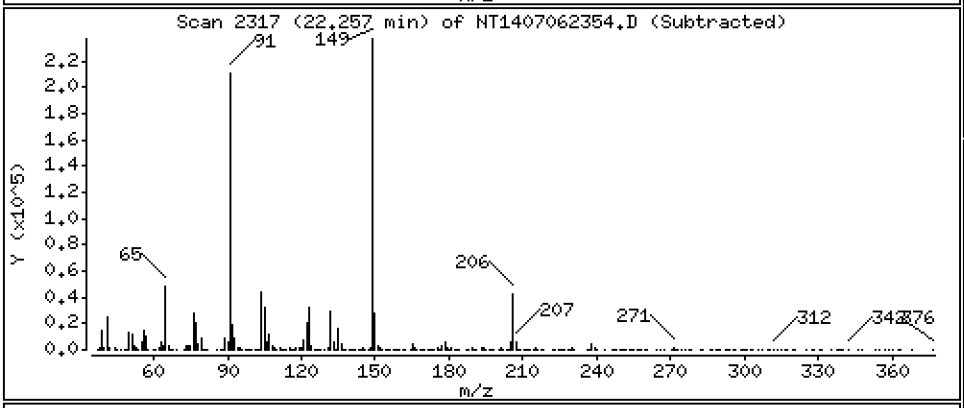
Column phase: ZB-5msi

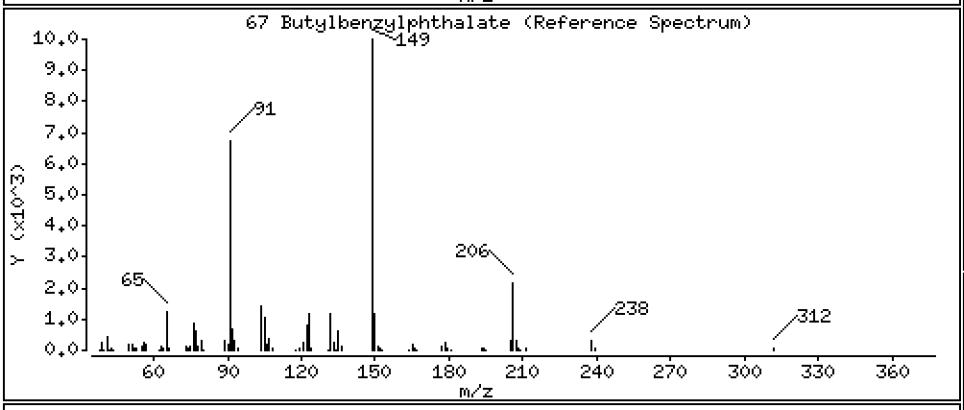
Column diameter: 0.25

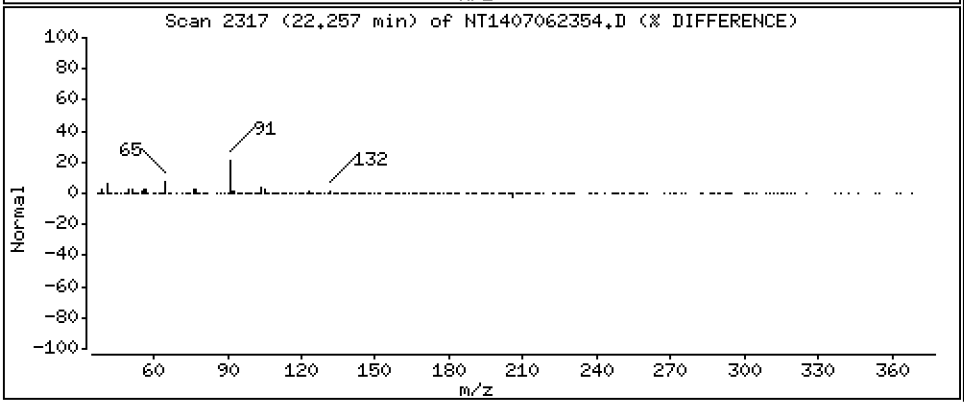
67 Butylbenzylphthalate

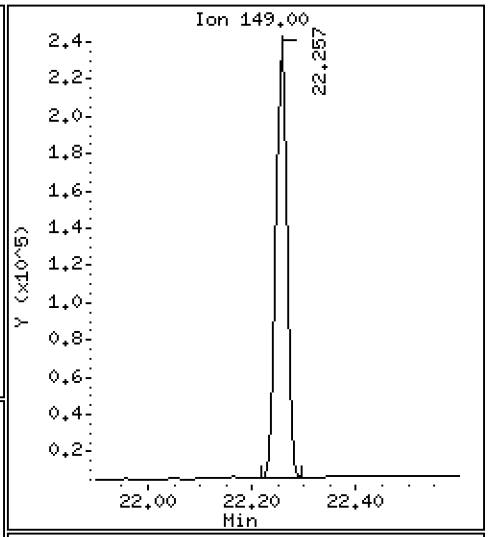
Concentration: 6.432 ug/mL

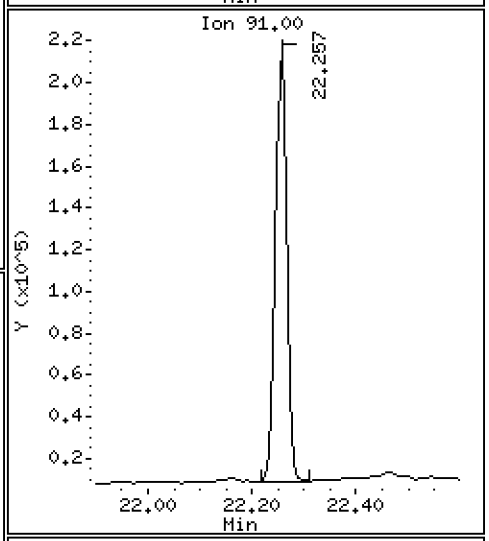


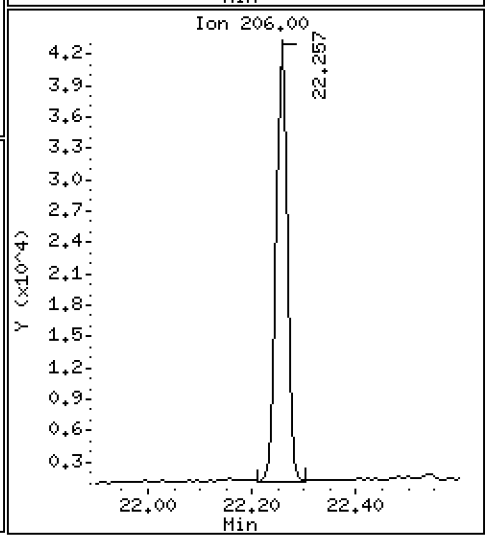












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

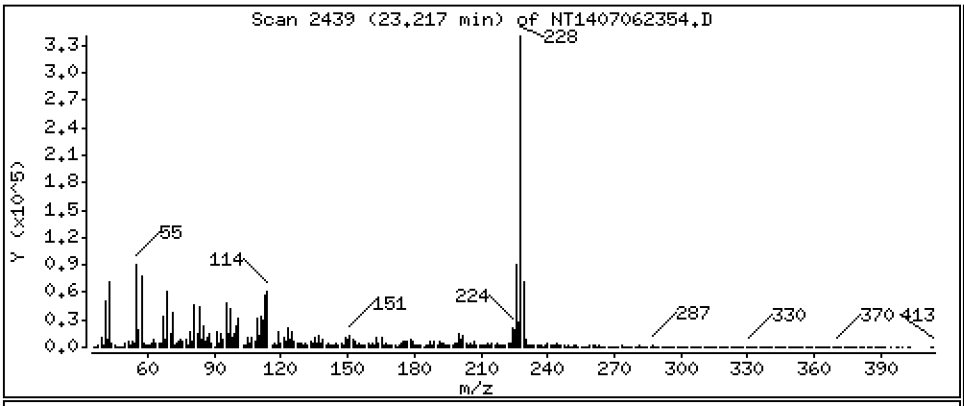
Operator: JGR

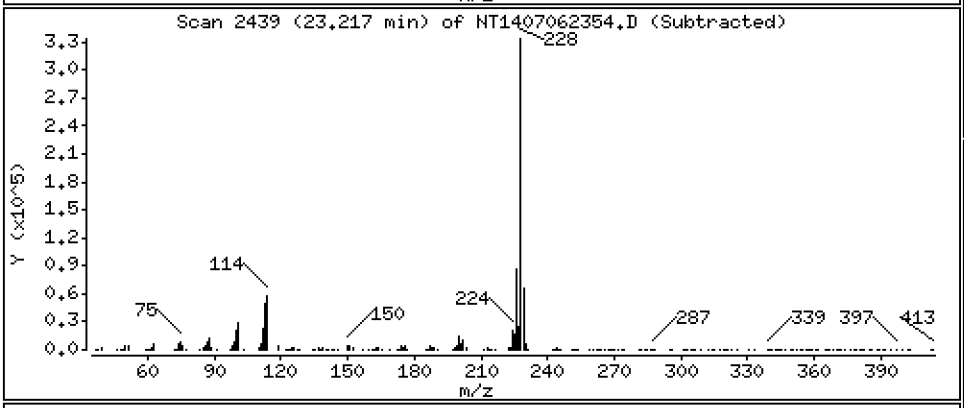
Column phase: ZB-5msi

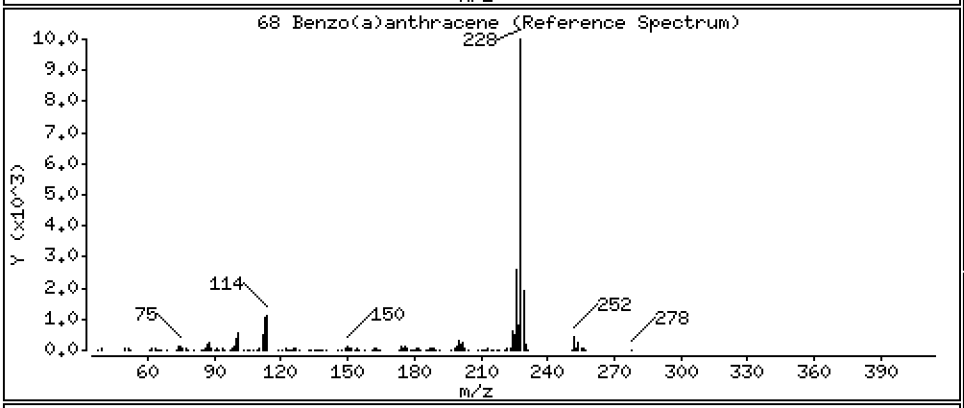
Column diameter: 0.25

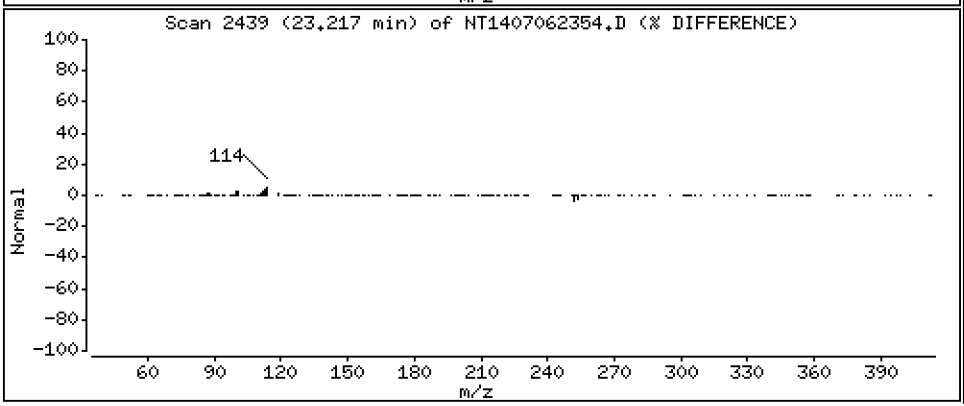
68 Benzo(a)anthracene

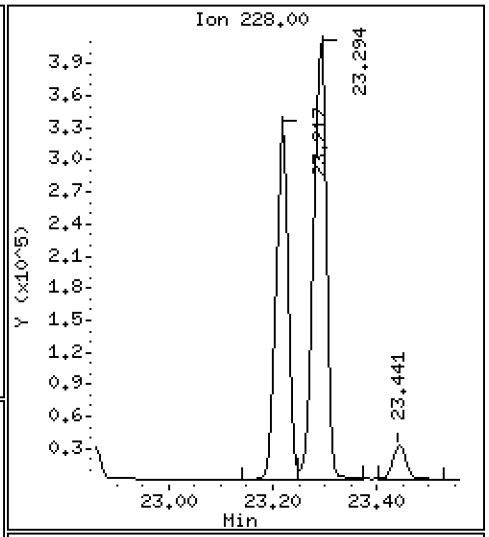
Concentration: 5.864 ug/mL

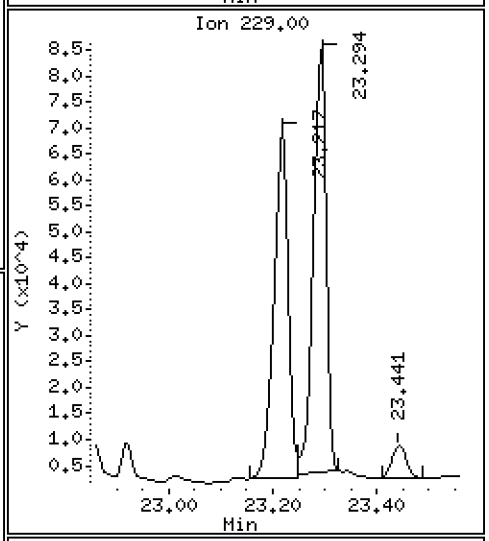


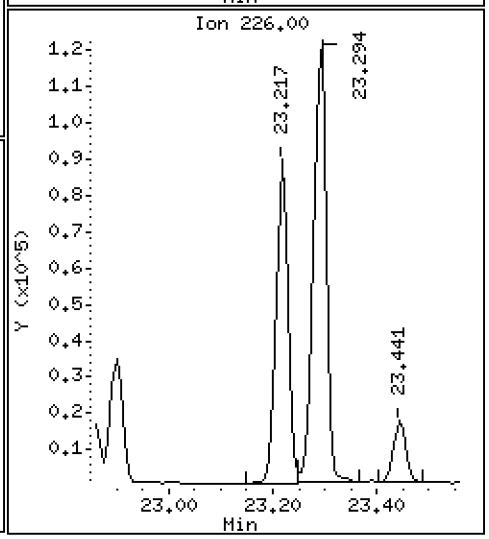












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

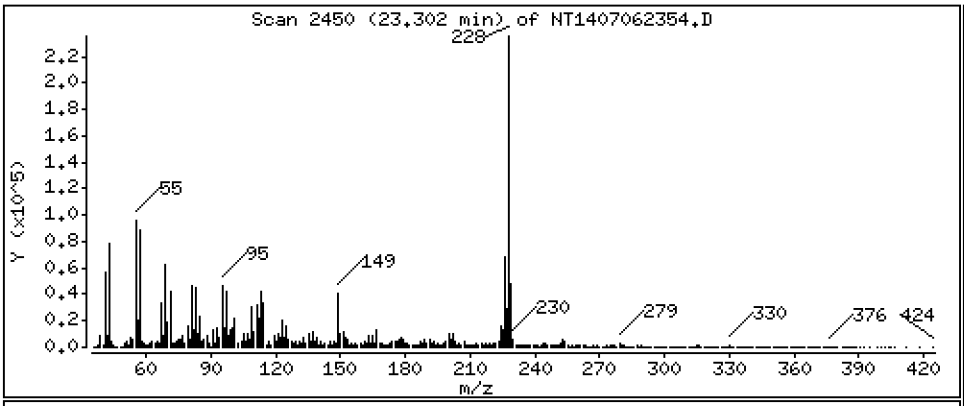
Operator: JGR

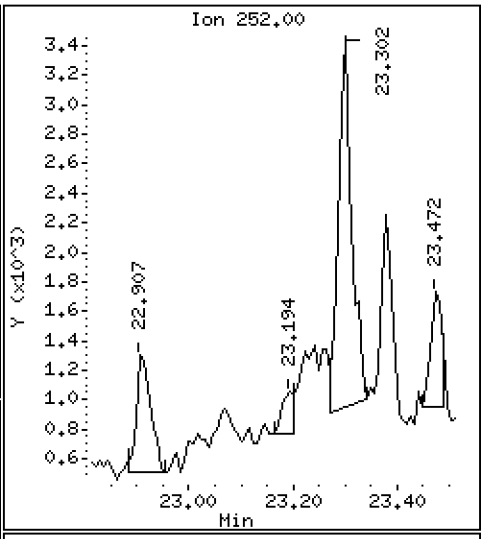
Column phase: ZB-5msi

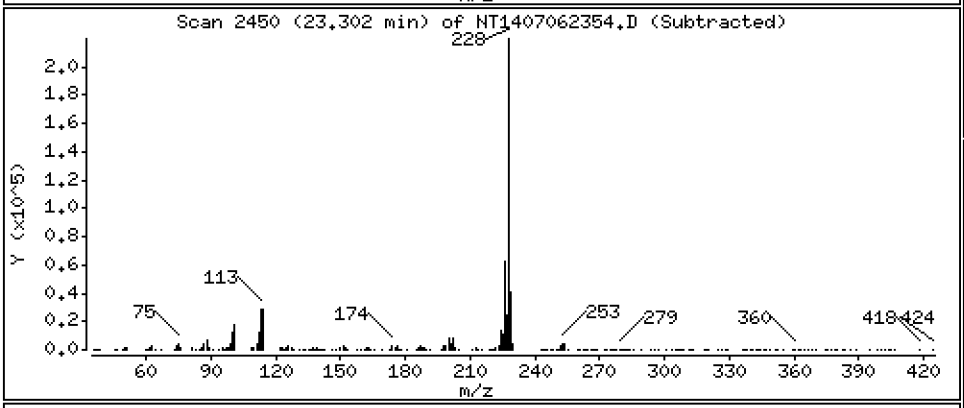
Column diameter: 0.25

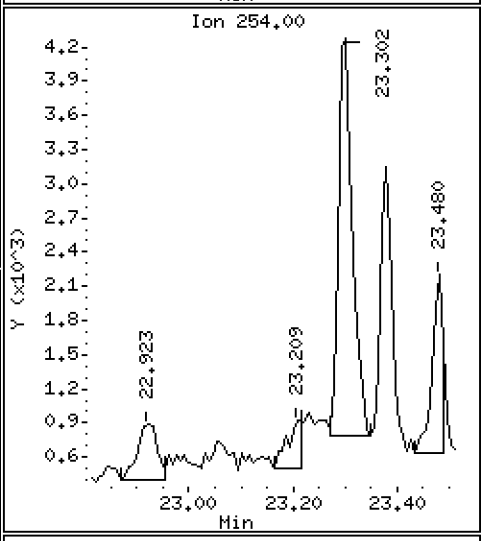
70 3,3'-Dichlorobenzidine

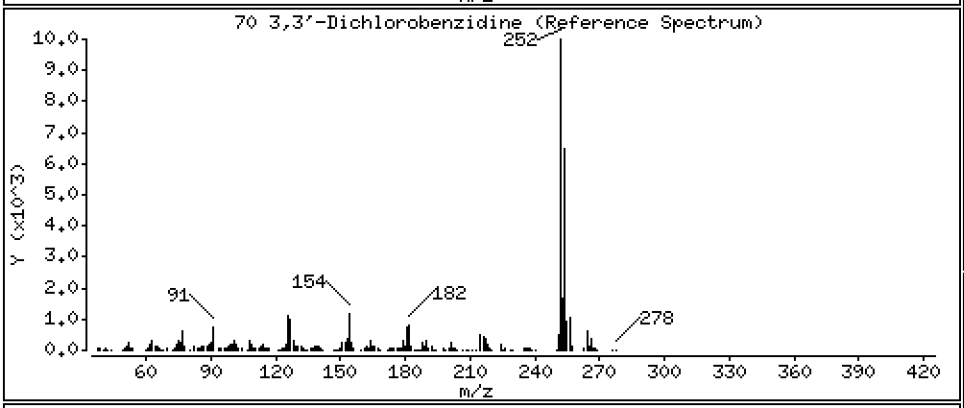
Concentration: 0.1780 ug/mL

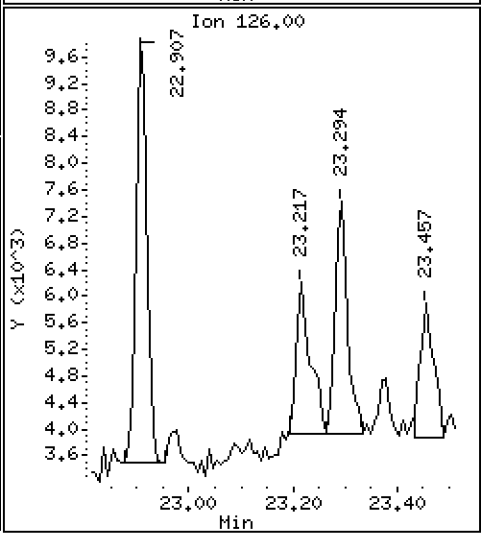


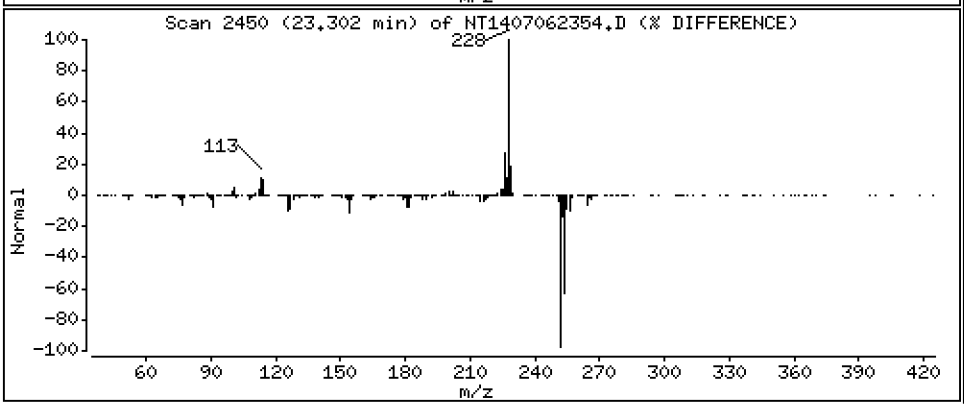












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

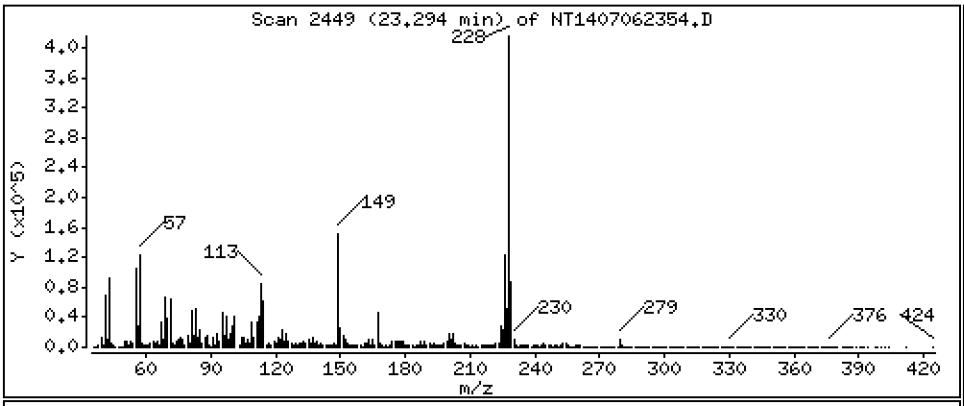
Operator: JGR

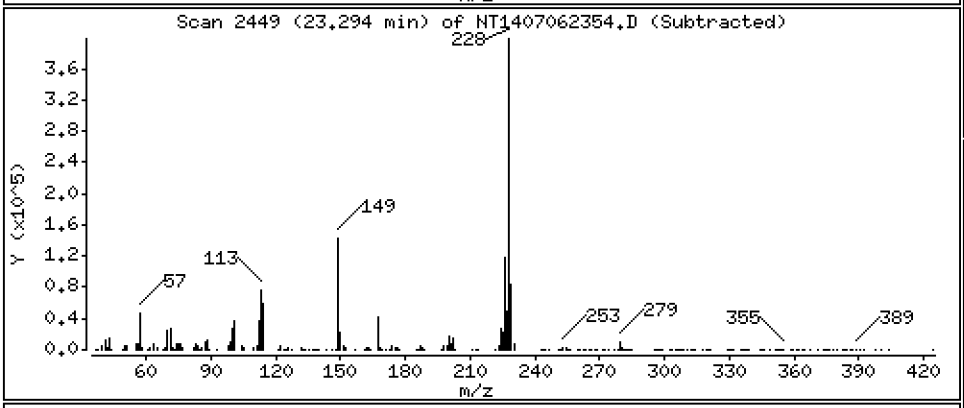
Column phase: ZB-5msi

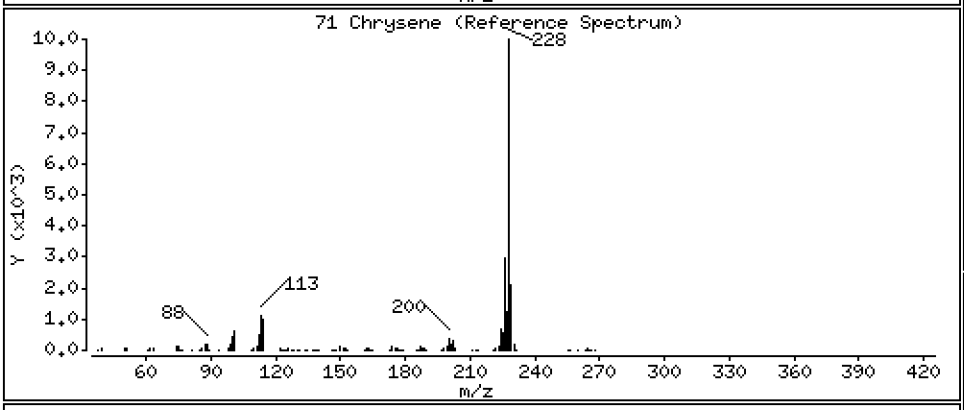
Column diameter: 0.25

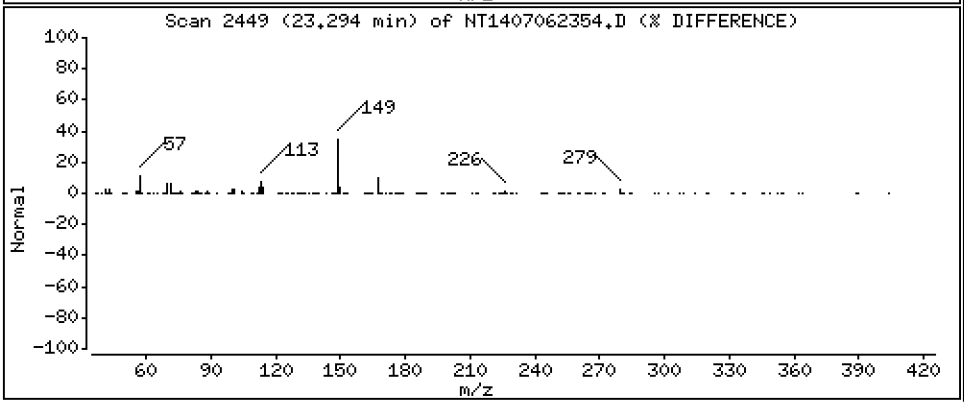
71 Chrysene

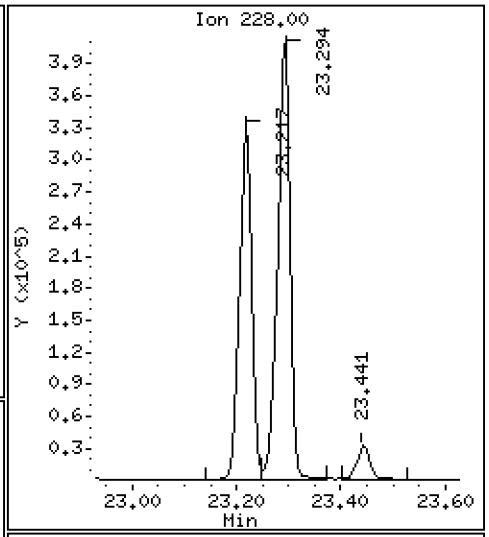
Concentration: 8.472 ug/mL

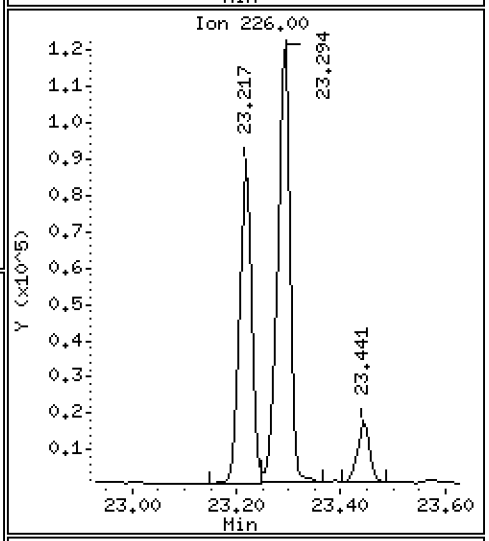


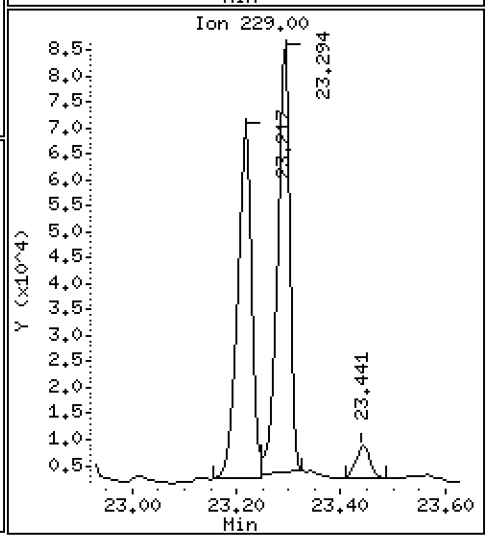












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

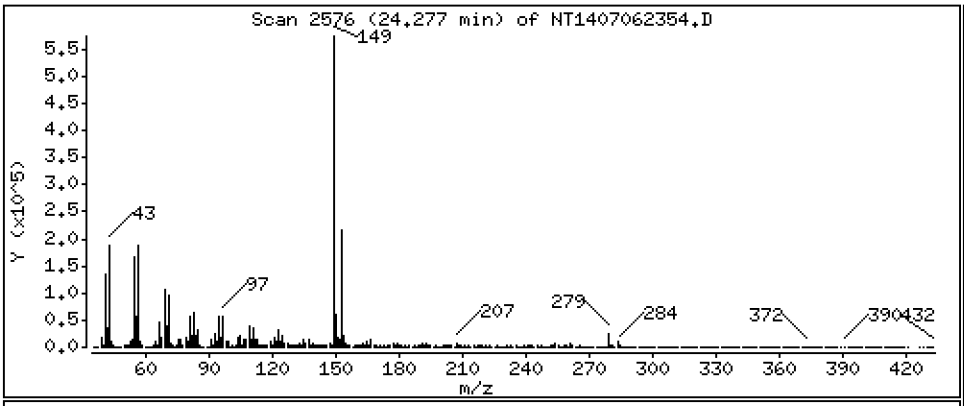
Operator: JGR

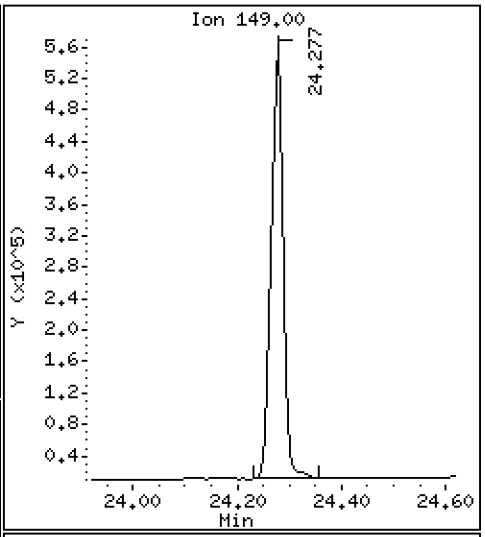
Column phase: ZB-5msi

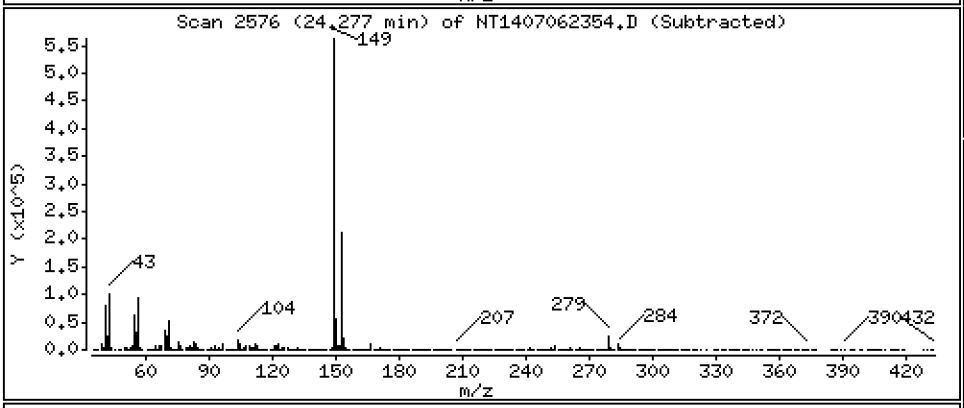
Column diameter: 0.25

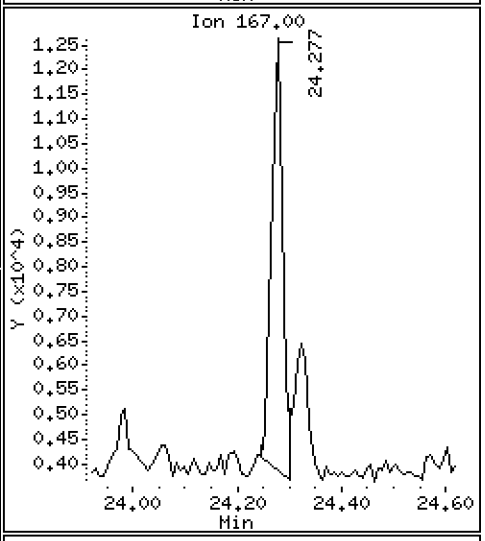
72 bis(2-Ethylhexyl)phthalate

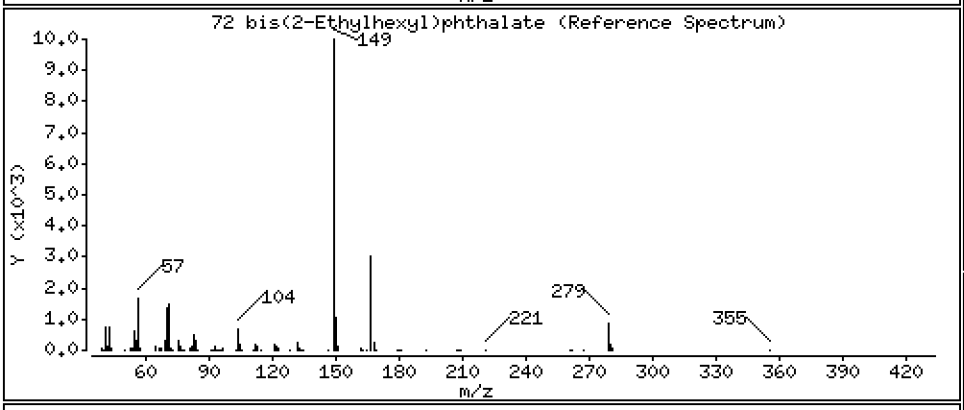
Concentration: 4.969 ug/mL

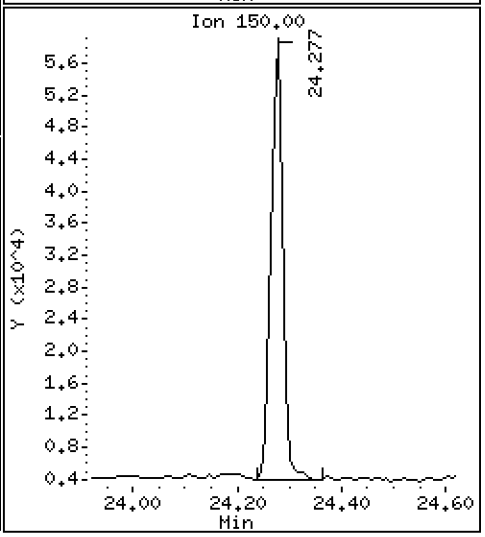


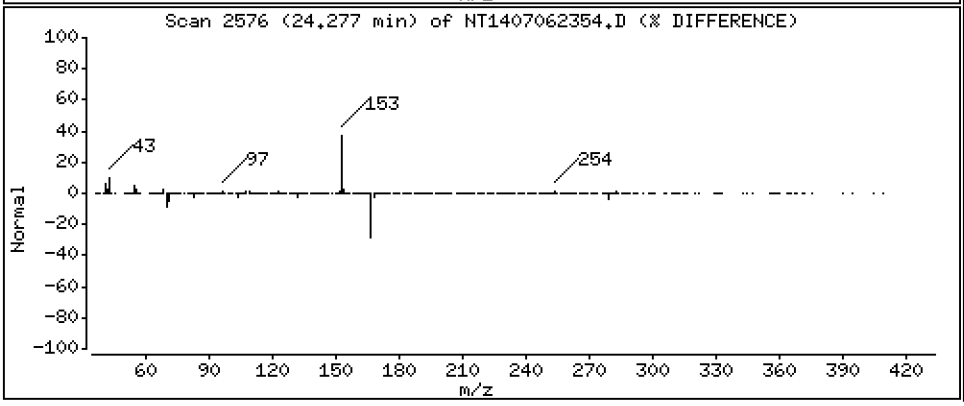












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

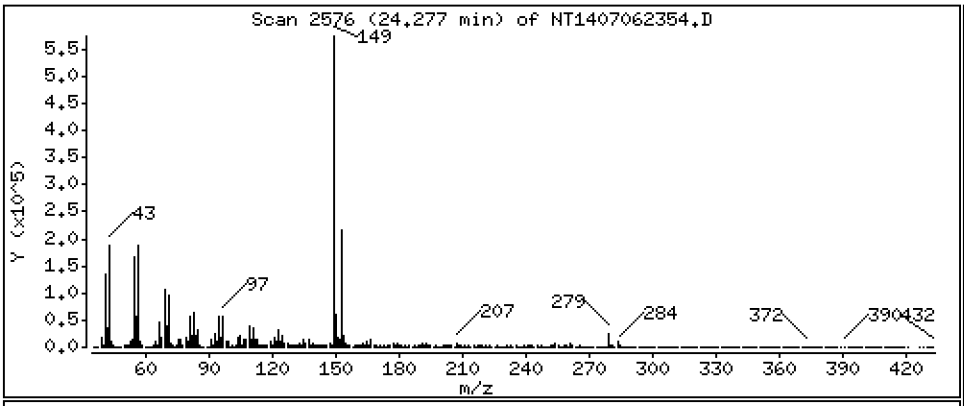
Operator: JGR

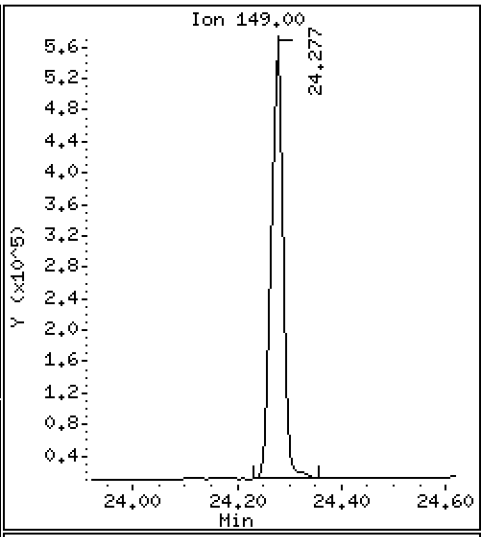
Column phase: ZB-5msi

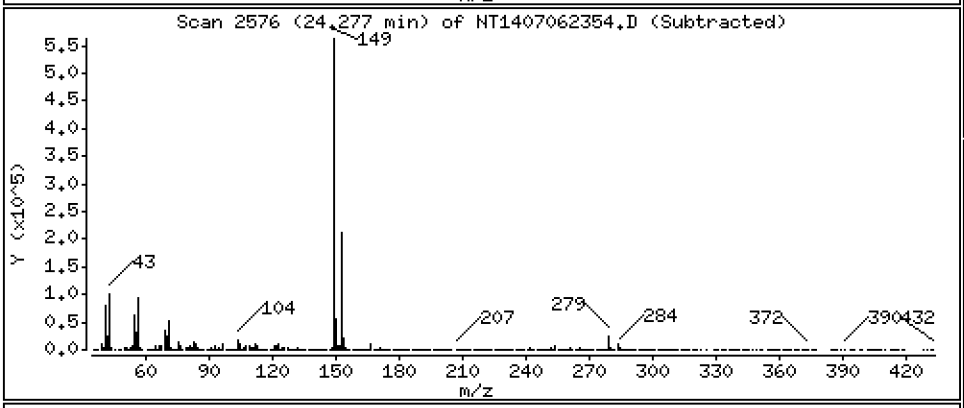
Column diameter: 0.25

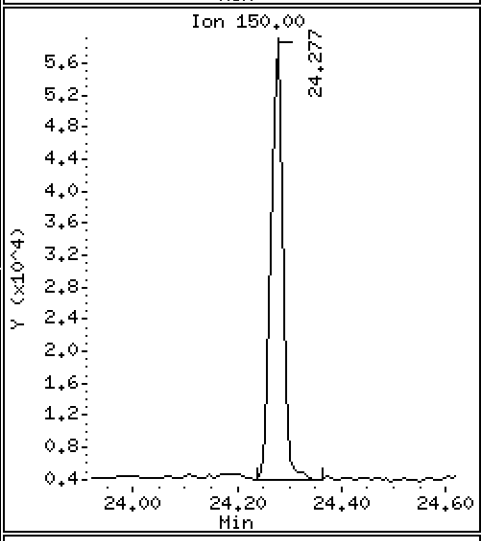
73 Di-n-octylphthalate

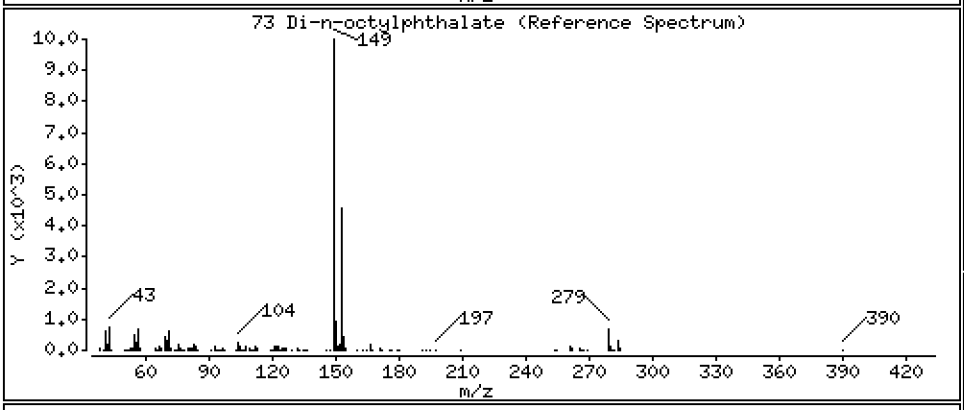
Concentration: 4.969 ug/mL

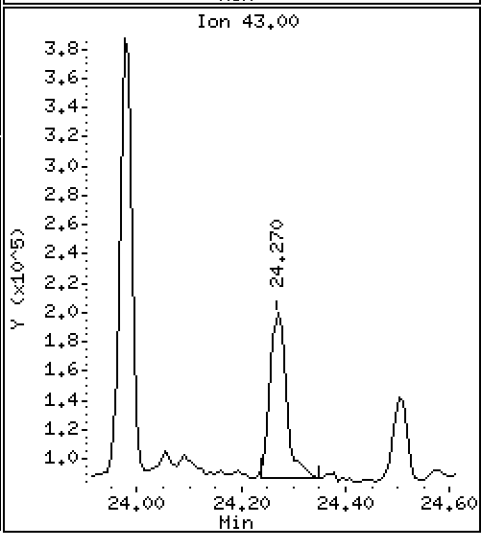


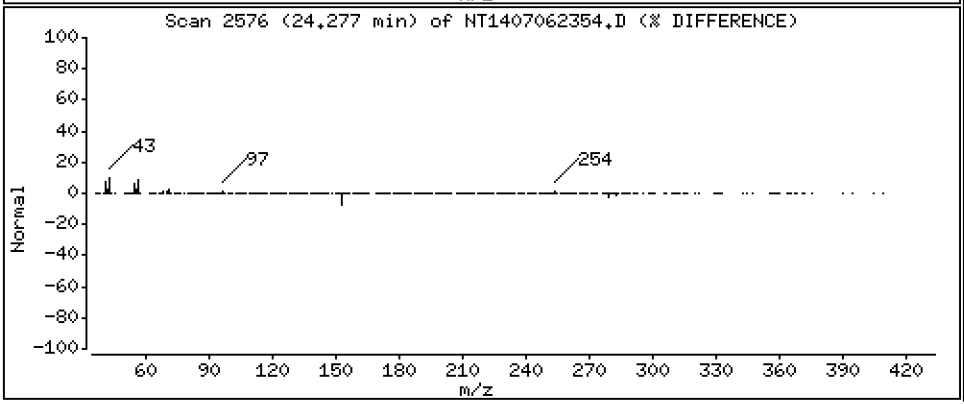












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

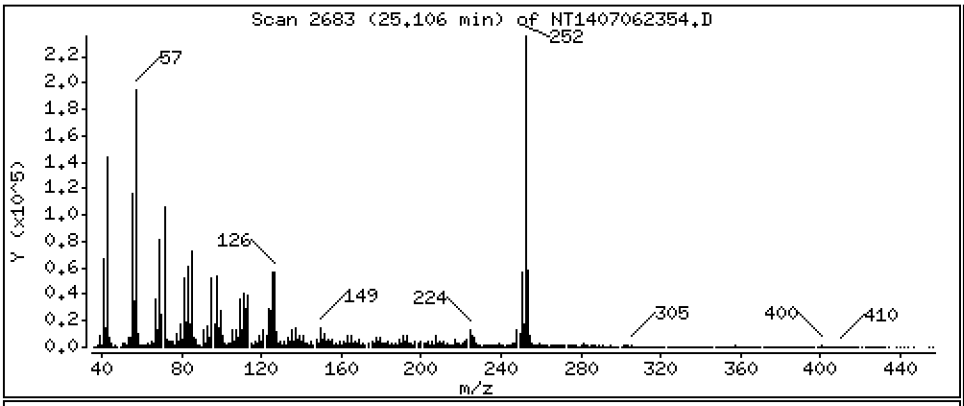
Operator: JGR

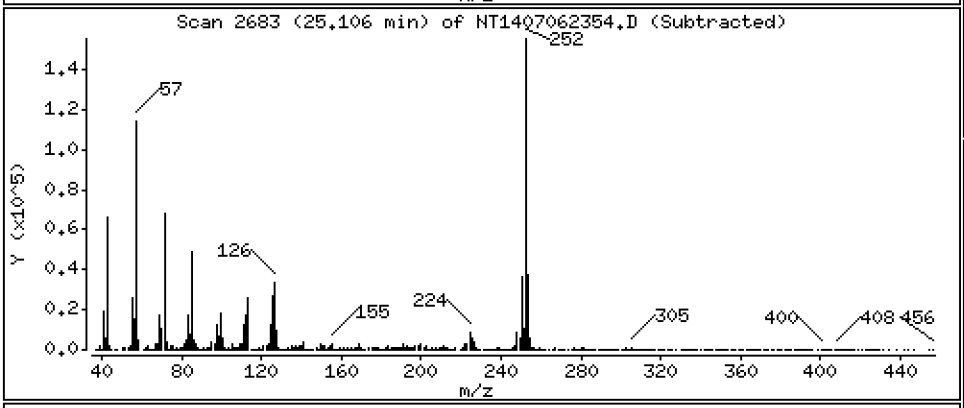
Column phase: ZB-5msi

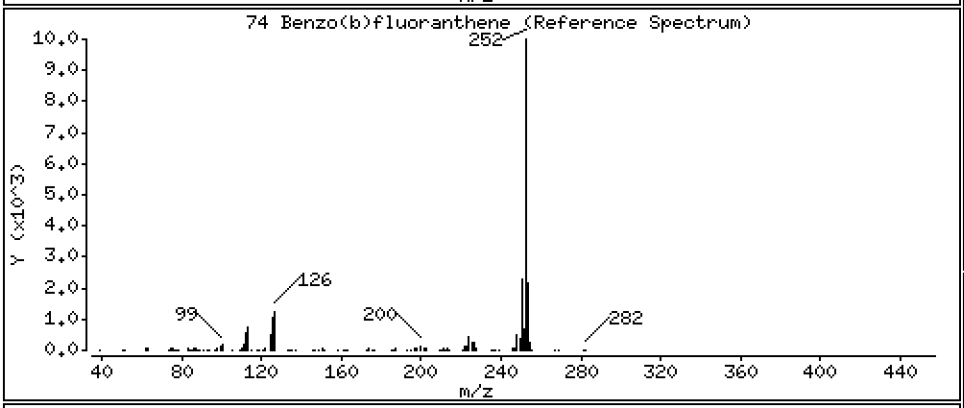
Column diameter: 0.25

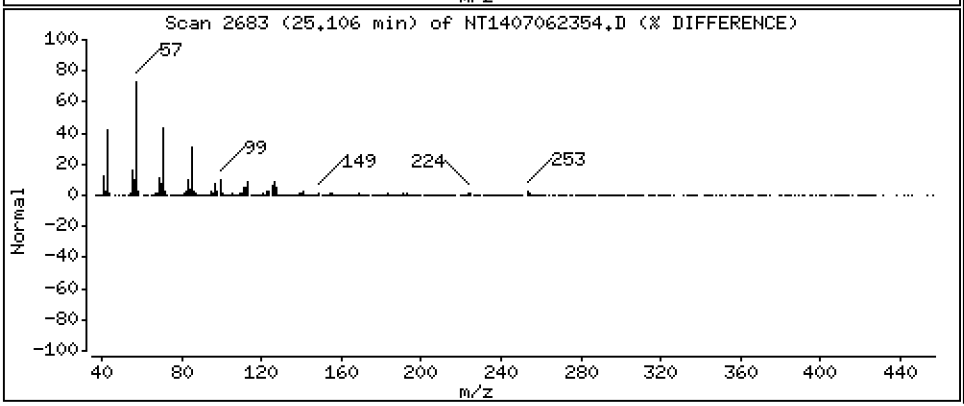
74 Benzo(b)fluoranthene

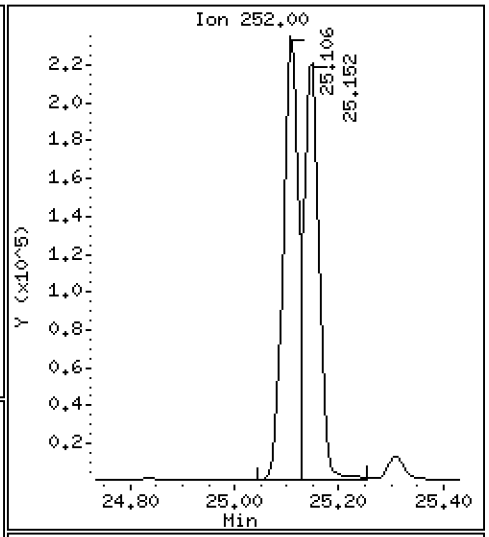
Concentration: 10.61 ug/mL

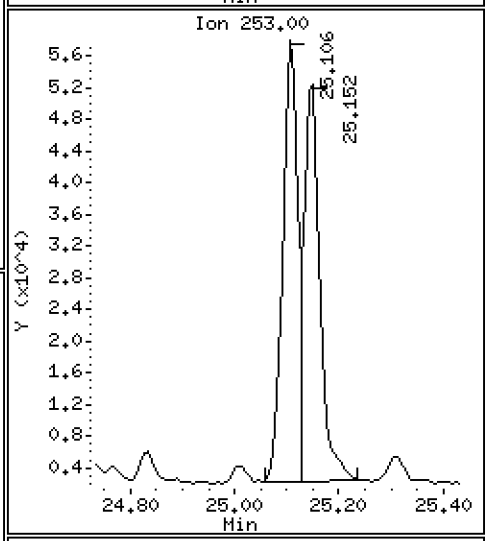


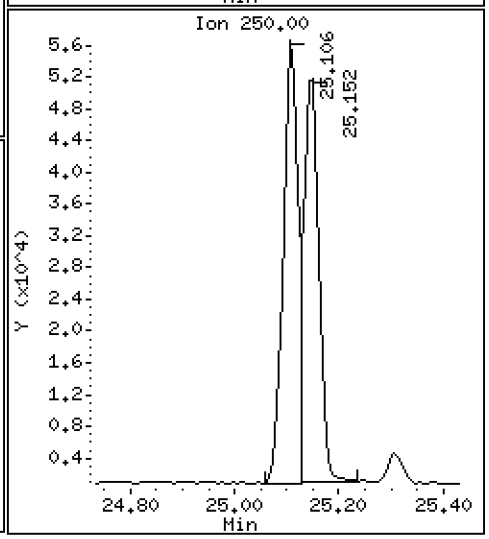












Date : 07-JUL-2023 22:35

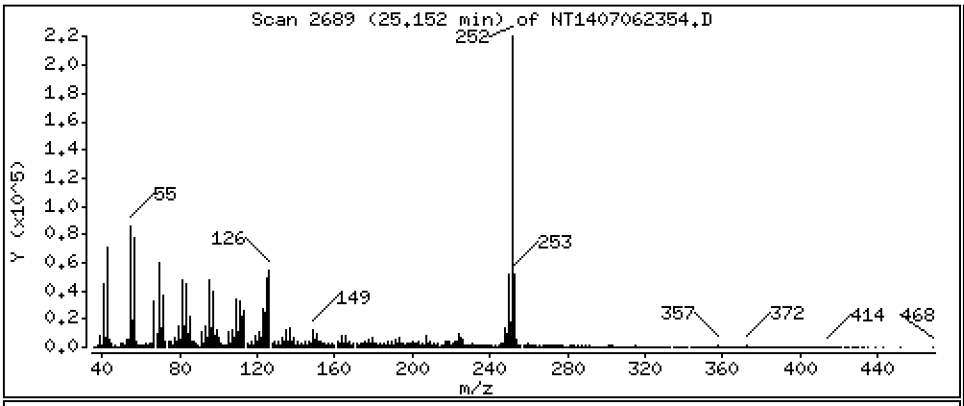
Client ID: Instrument: nt14.i

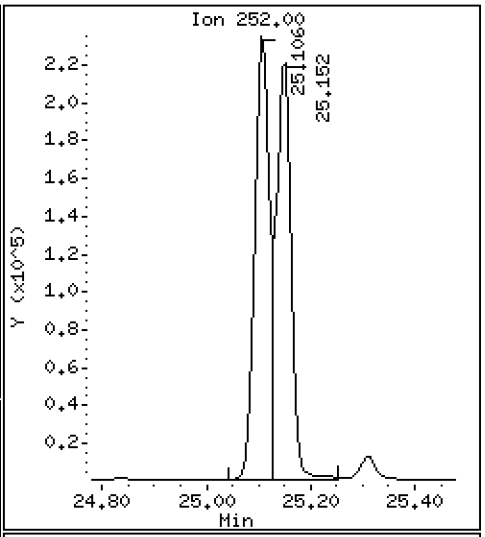
Sample Info: BLF0718-MSD1

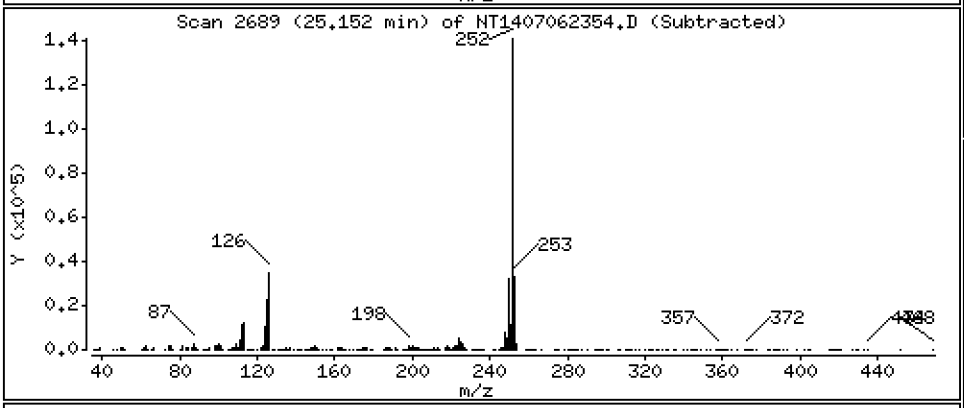
Operator: JGR

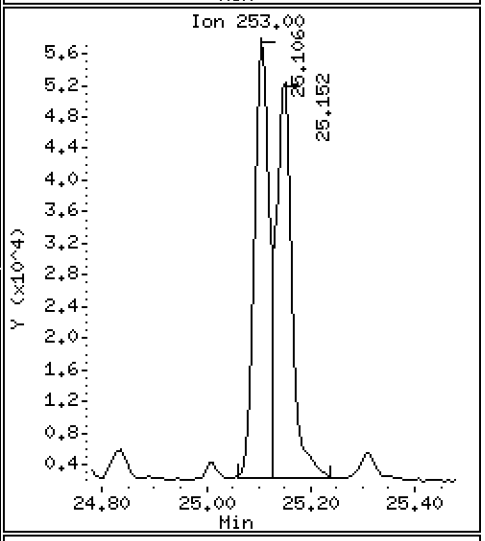
Column phase: ZB-5msi Column diameter: 0.25

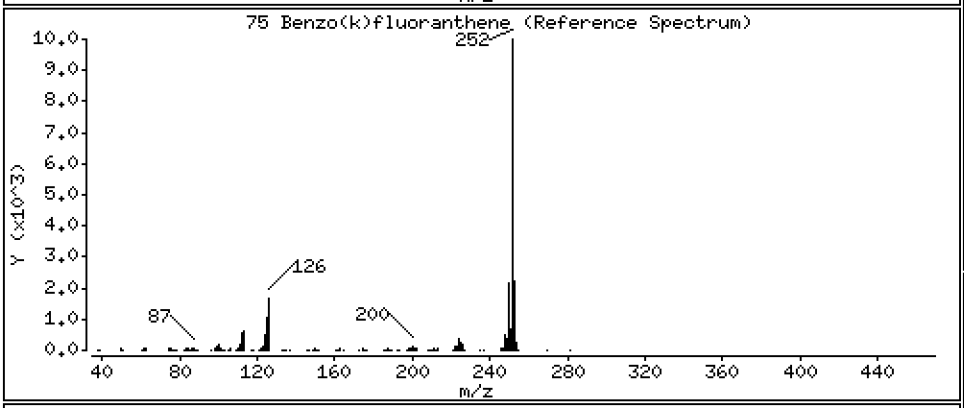
75 Benzo(k)fluoranthene Concentration: 8.666 ug/mL

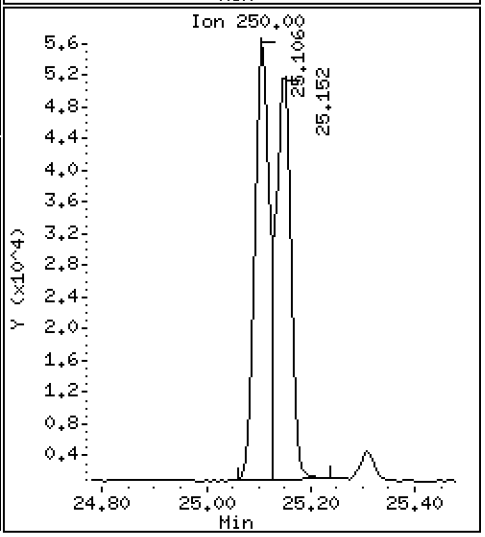


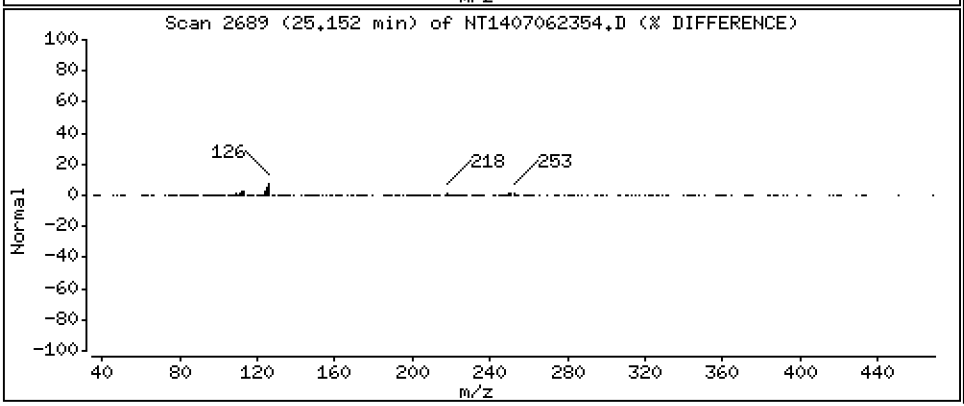












Date : 07-JUL-2023 22:35

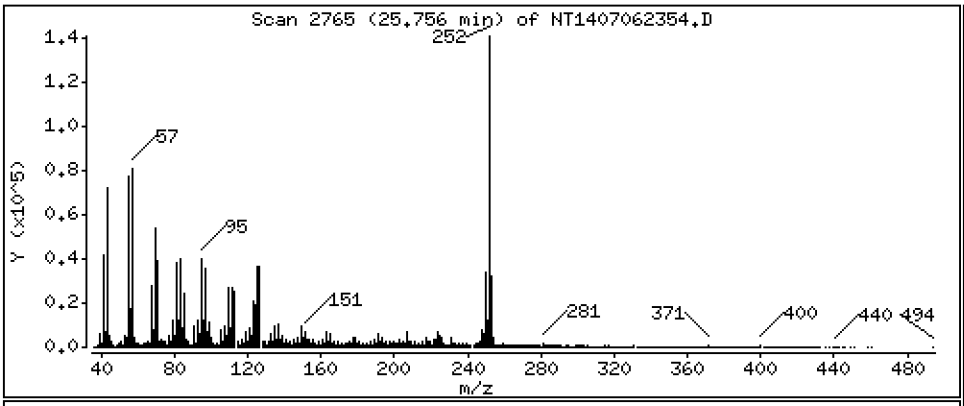
Client ID: Instrument: nt14.i

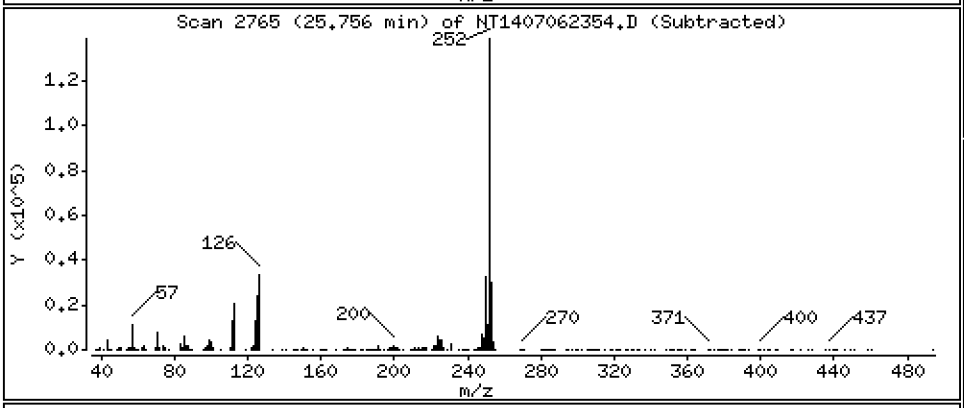
Sample Info: BLF0718-MSD1

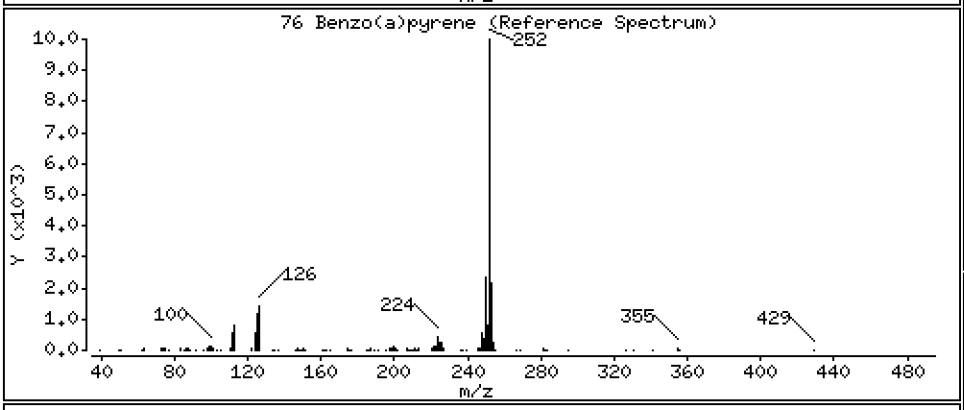
Operator: JGR

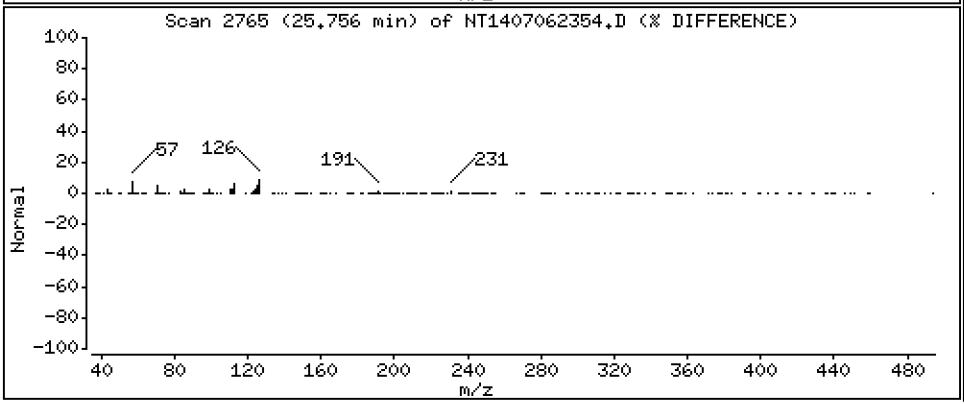
Column phase: ZB-5msi Column diameter: 0.25

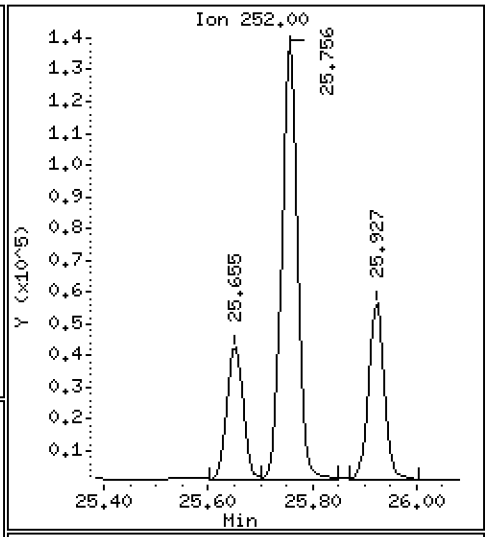
76 Benzo(a)pyrene Concentration: 7.918 ug/mL

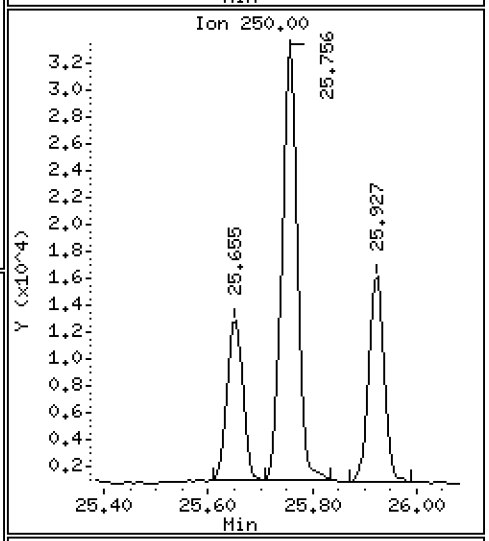


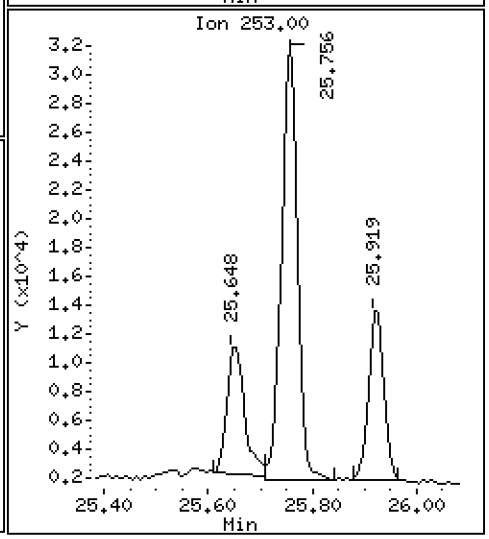












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062354.D

Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

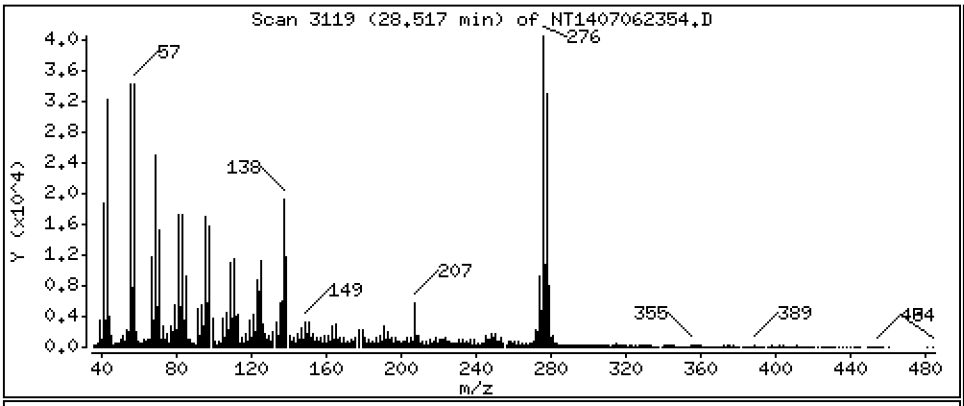
Operator: JGR

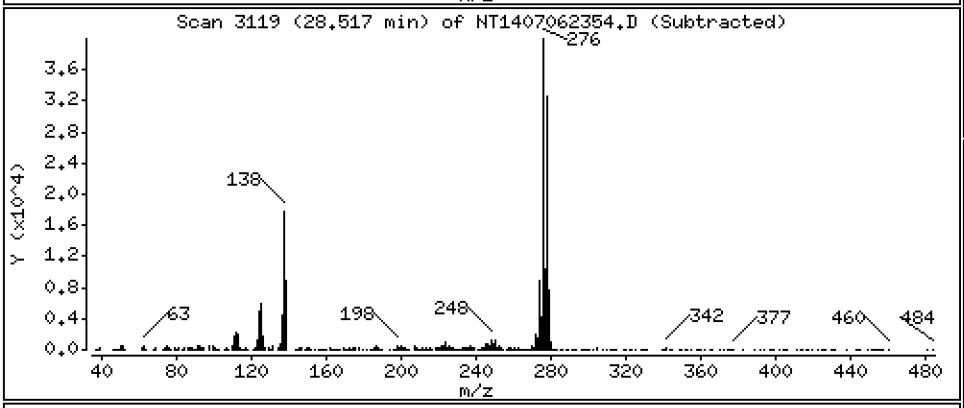
Column phase: ZB-5msi

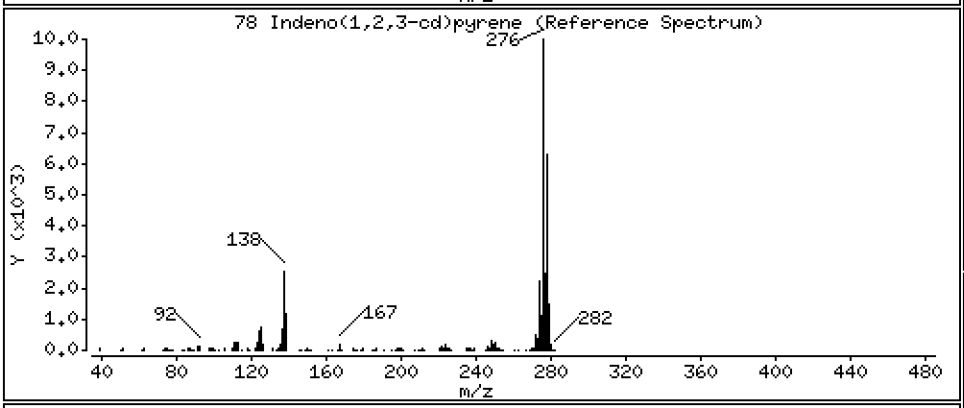
Column diameter: 0.25

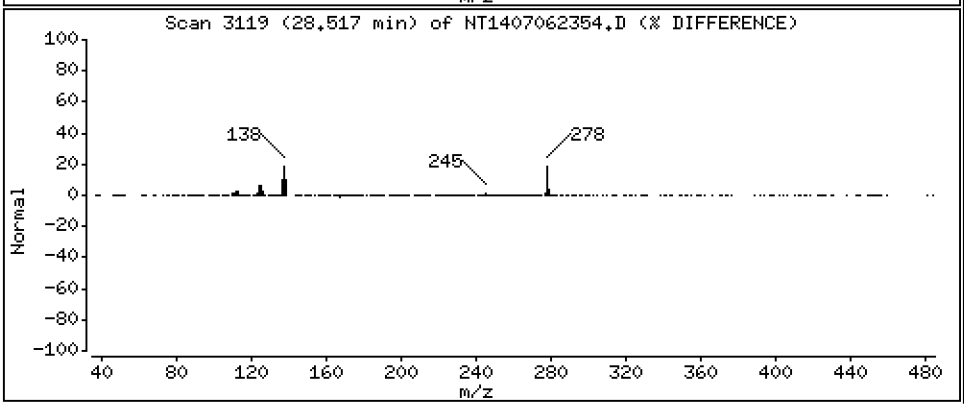
78 Indeno(1,2,3-cd)pyrene

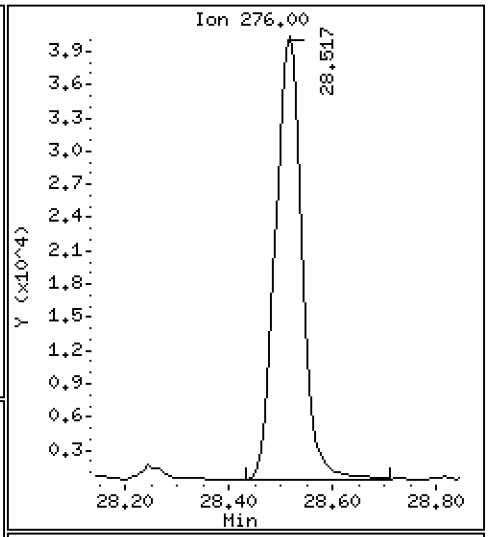
Concentration: 4.372 ug/mL

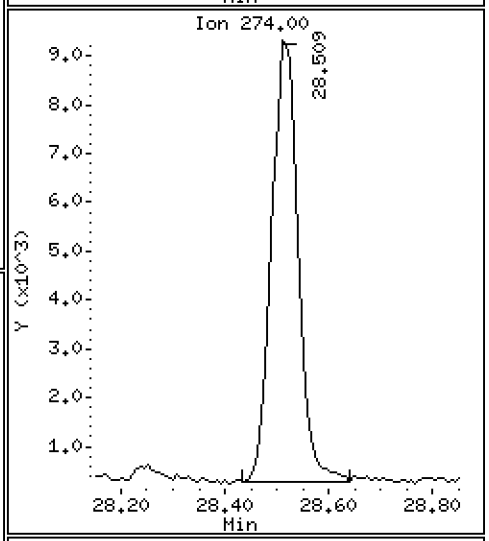


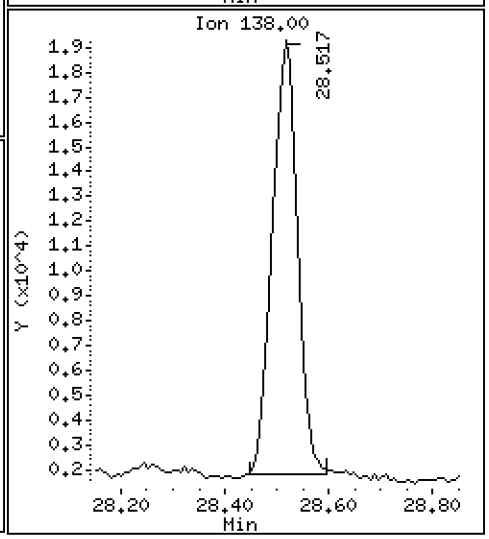












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

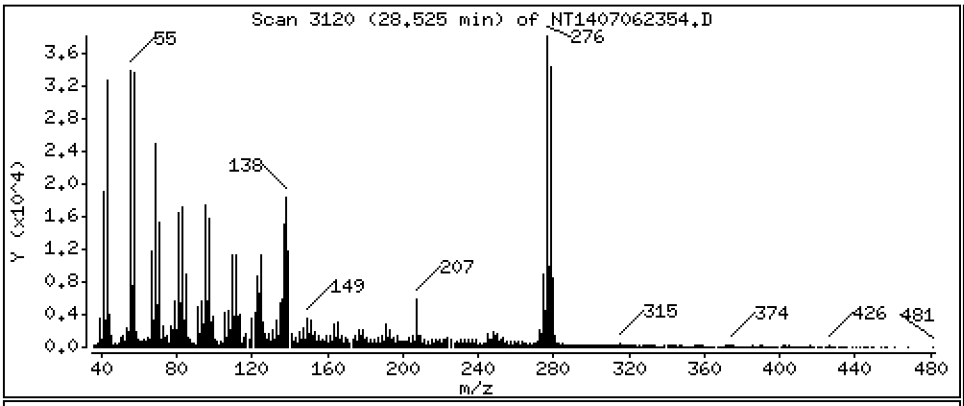
Operator: JGR

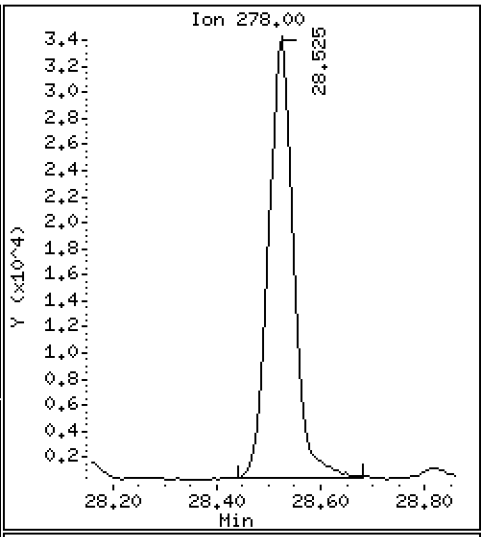
Column phase: ZB-5msi

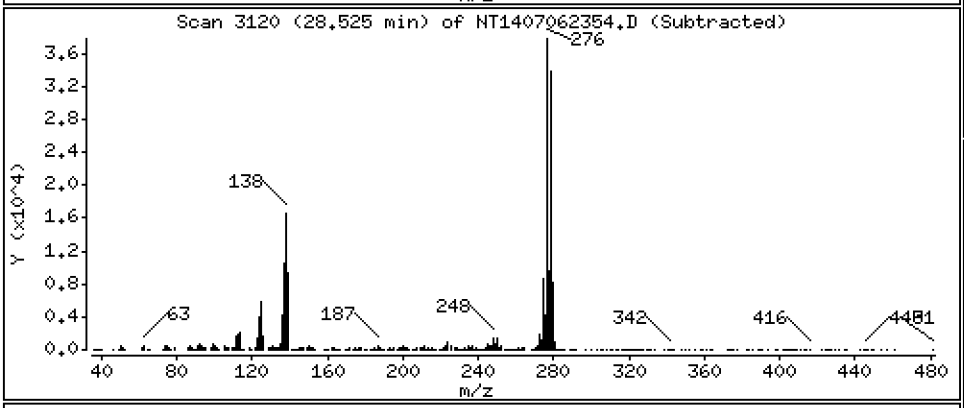
Column diameter: 0.25

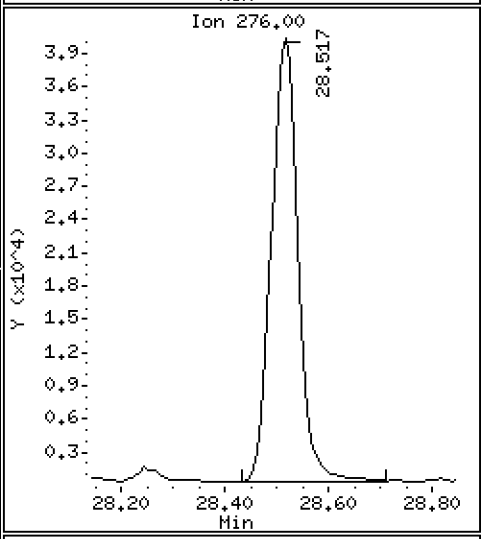
79 Dibenzo(a,h)anthracene

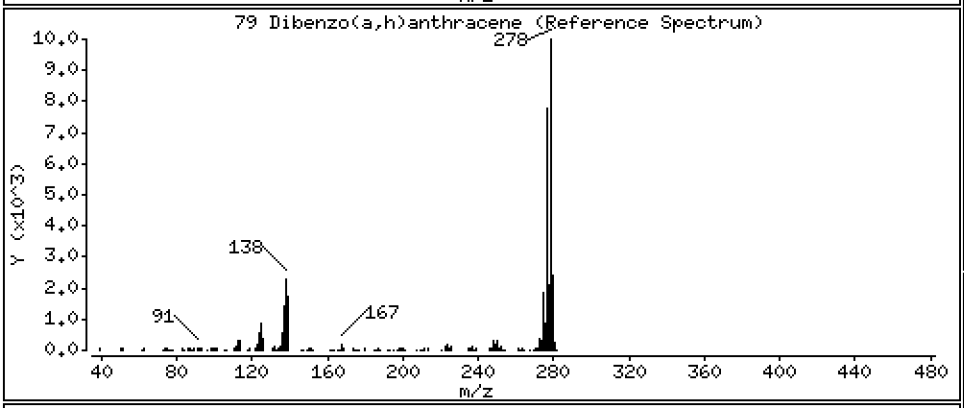
Concentration: 4.053 ug/mL

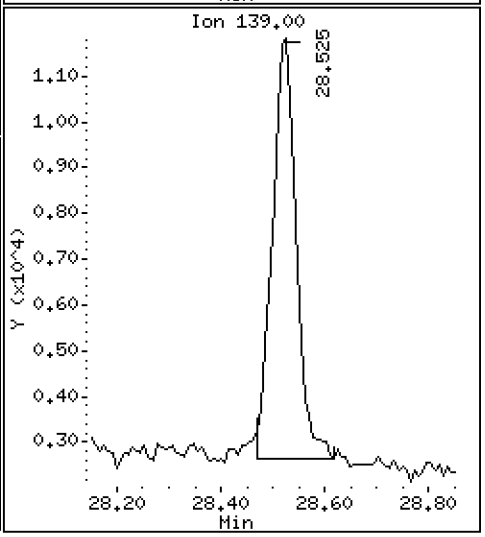


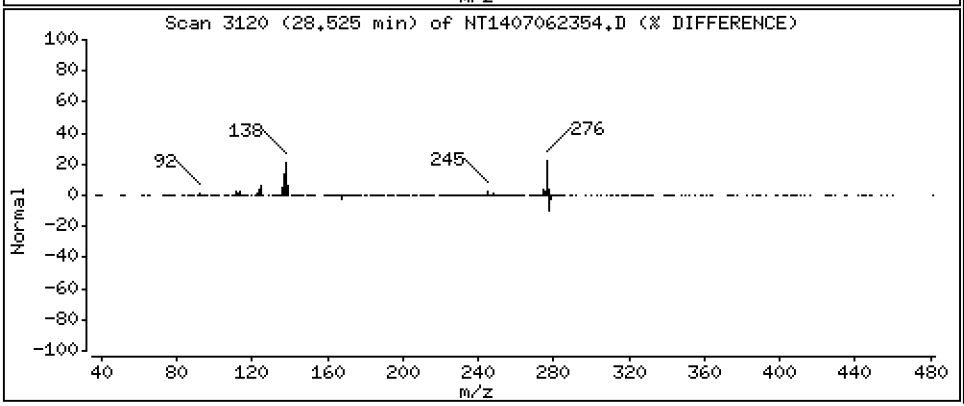












Date : 07-JUL-2023 22:35

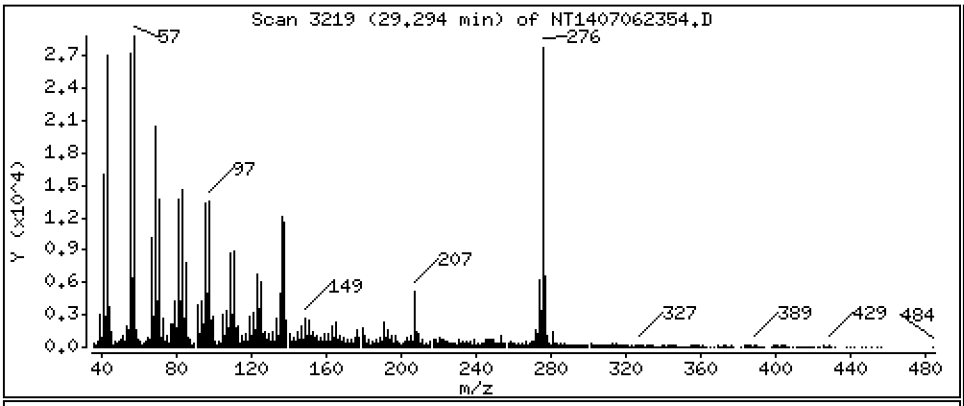
Client ID: Instrument: nt14.i

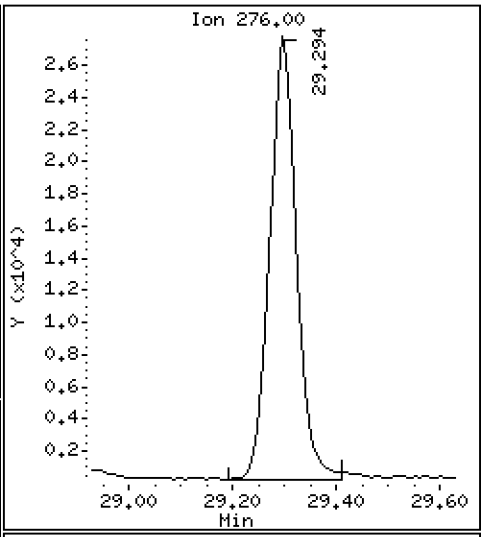
Sample Info: BLF0718-MSD1

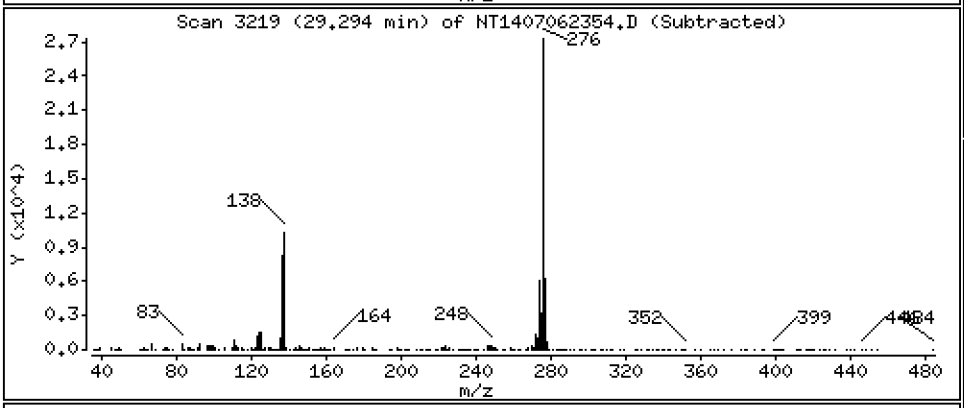
Operator: JGR

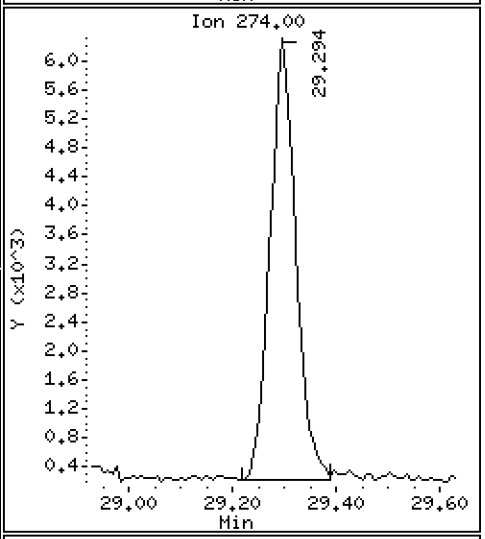
Column phase: ZB-5msi Column diameter: 0.25

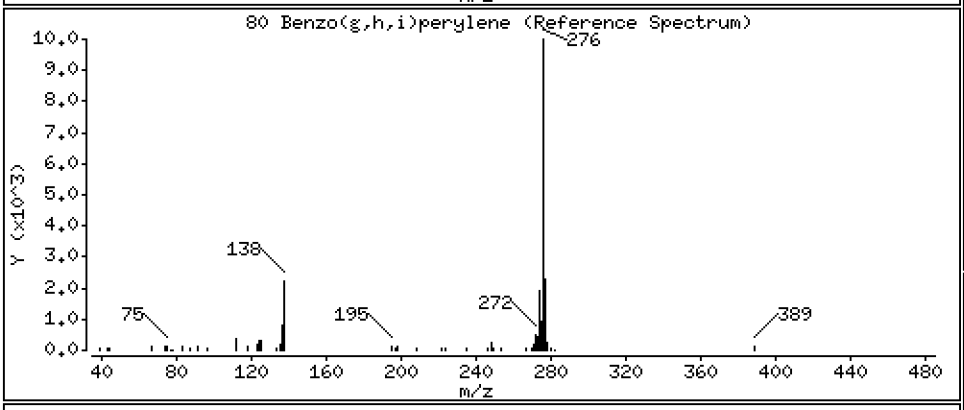
80 Benzo(g,h,i)perylene Concentration: 3.634 ug/mL

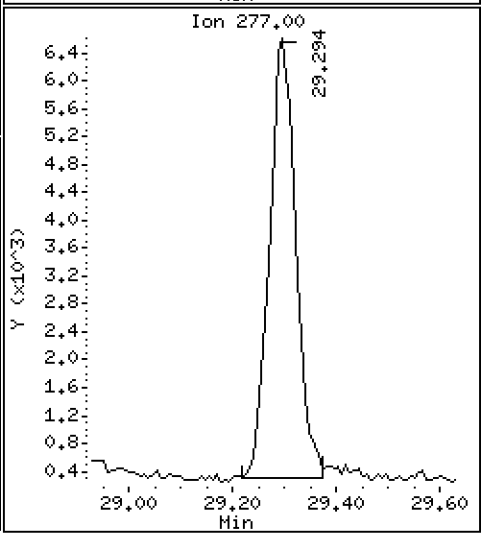


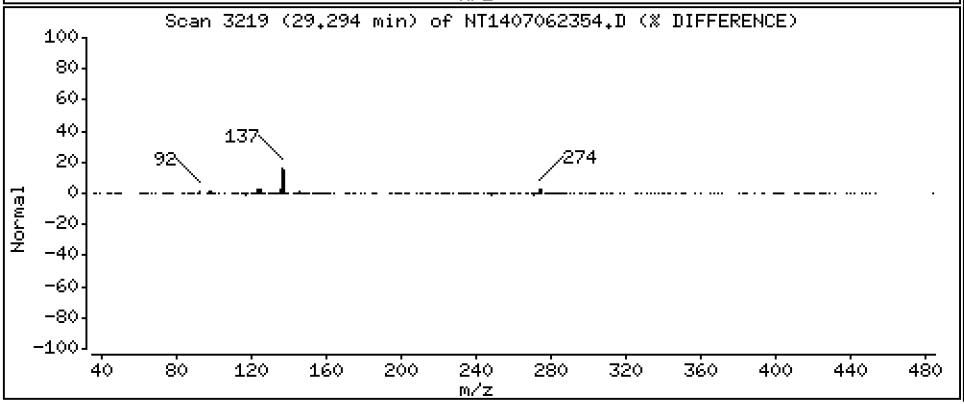












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

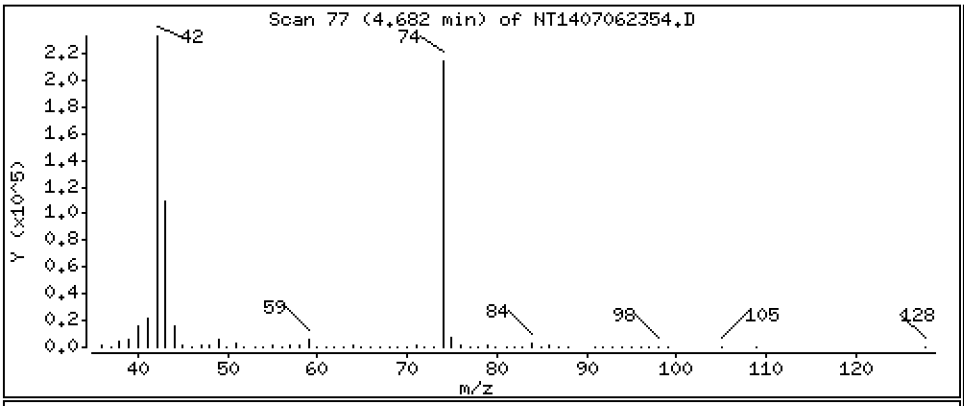
Operator: JGR

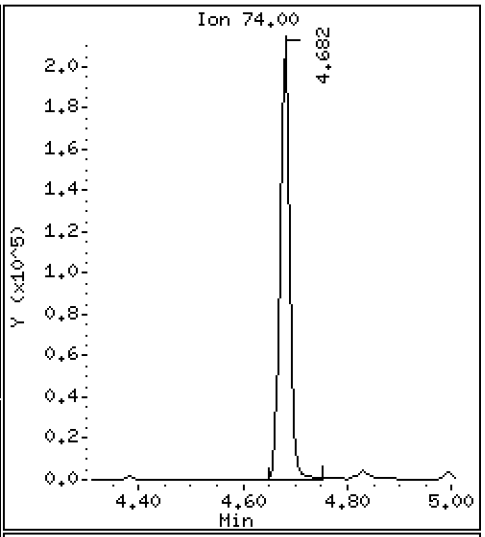
Column phase: ZB-5msi

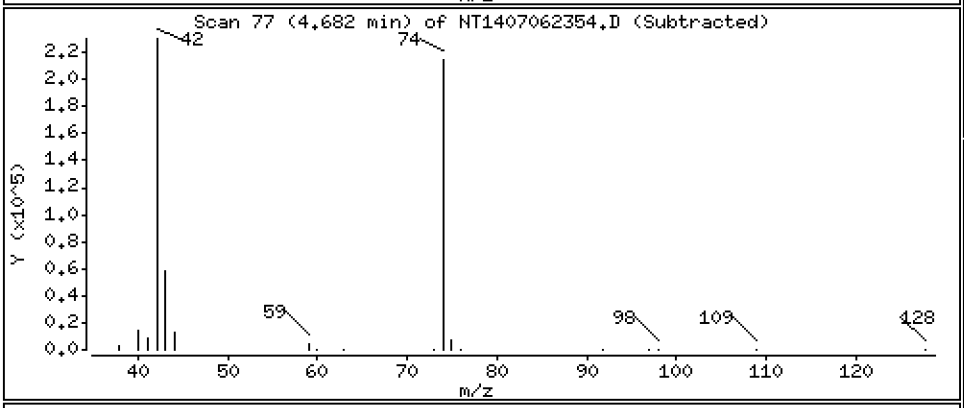
Column diameter: 0.25

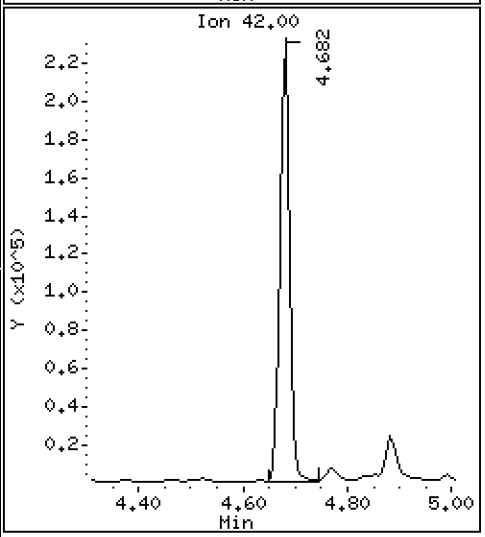
90 N-Nitrosodimethylamine

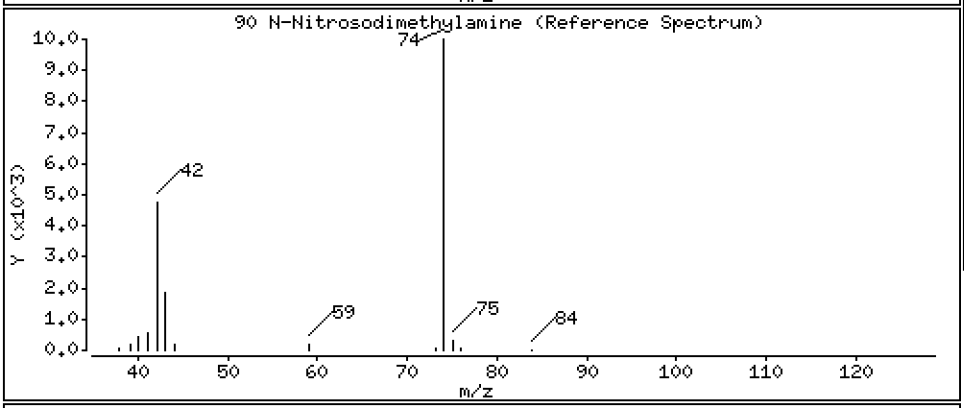
Concentration: 8.081 ug/mL

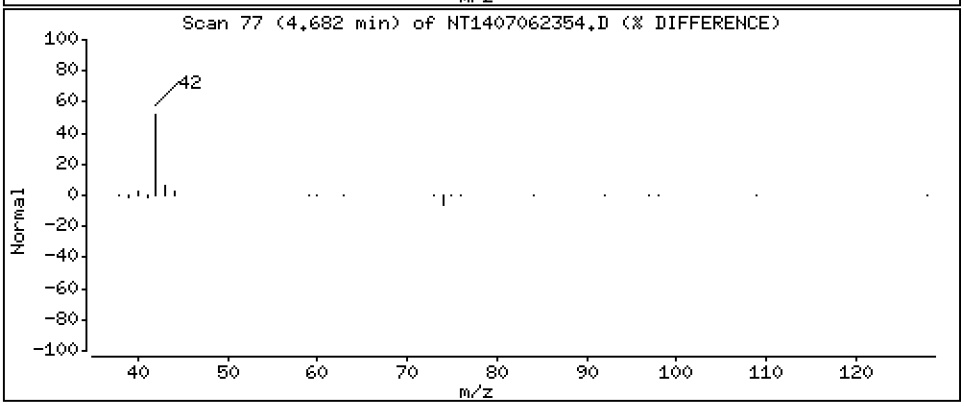












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

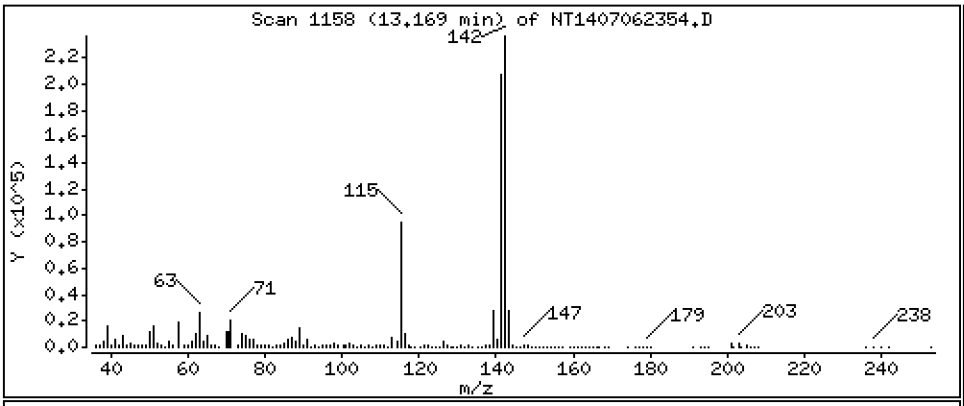
Operator: JGR

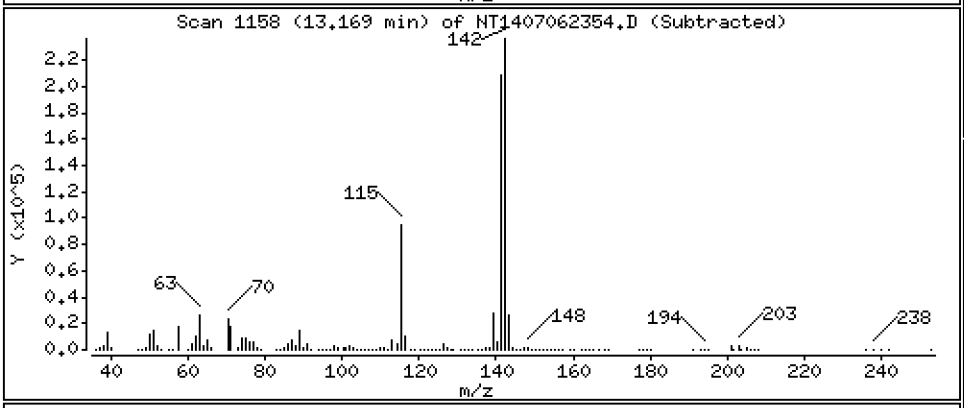
Column phase: ZB-5msi

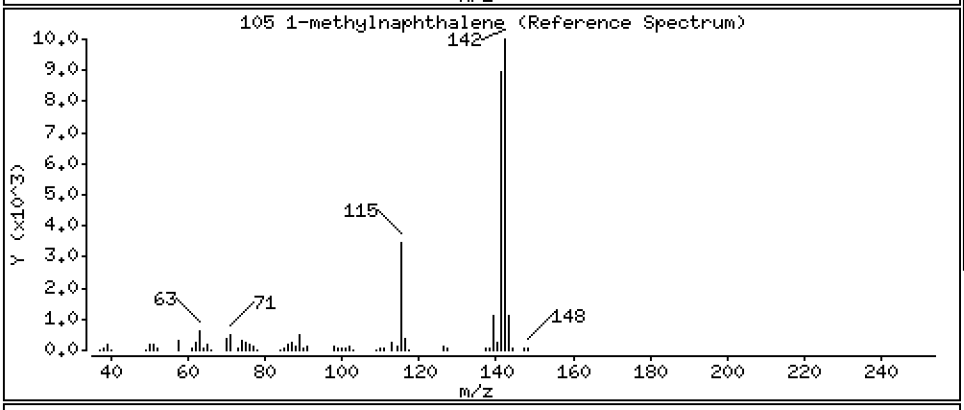
Column diameter: 0.25

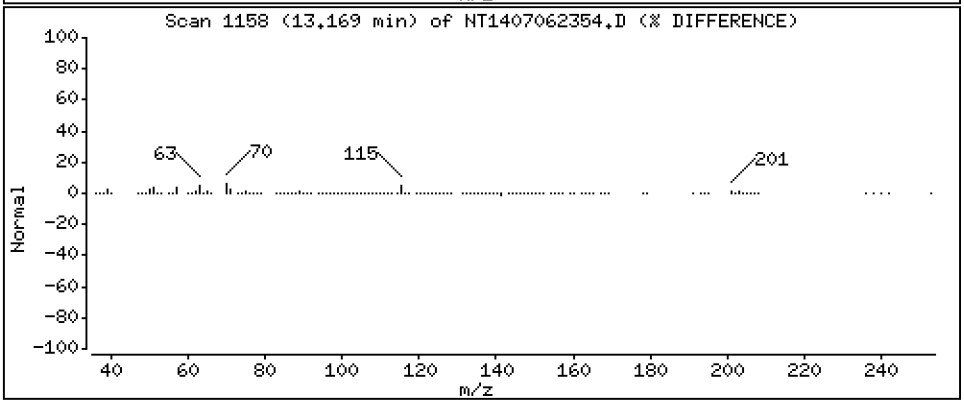
105 1-methylnaphthalene

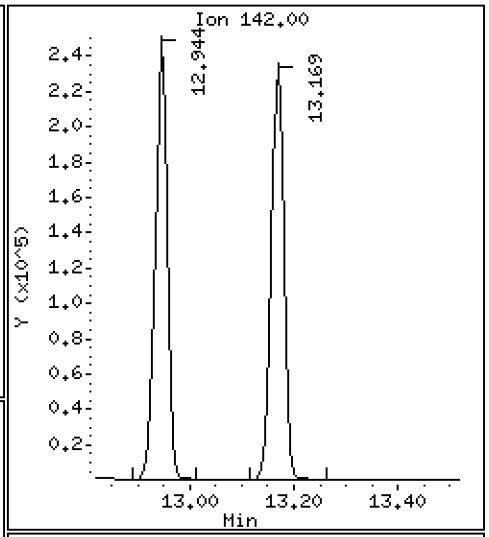
Concentration: 4.471 ug/mL

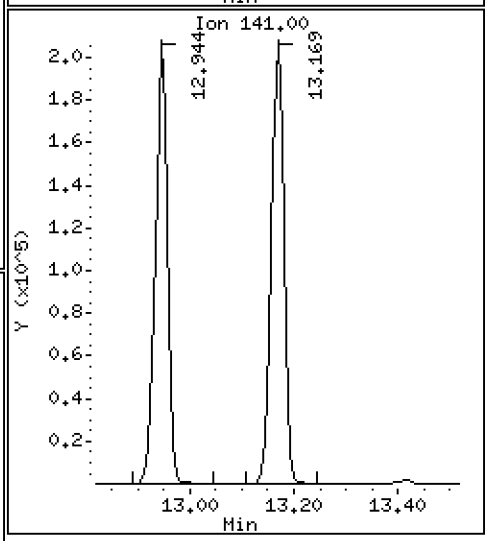












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

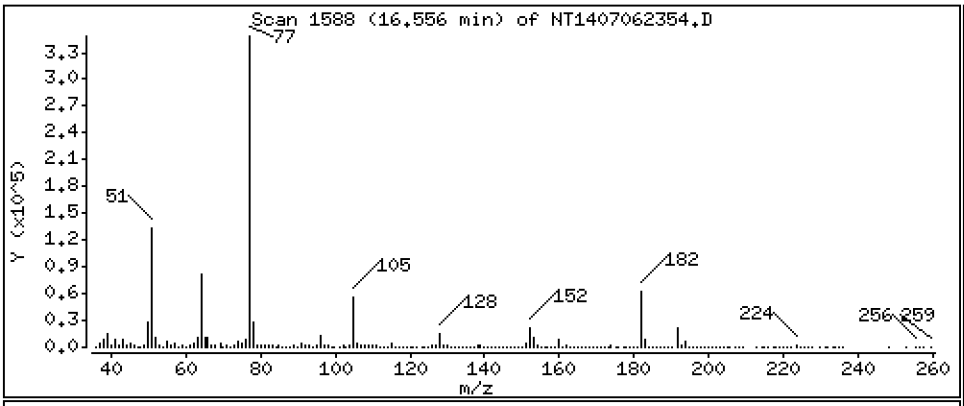
Operator: JGR

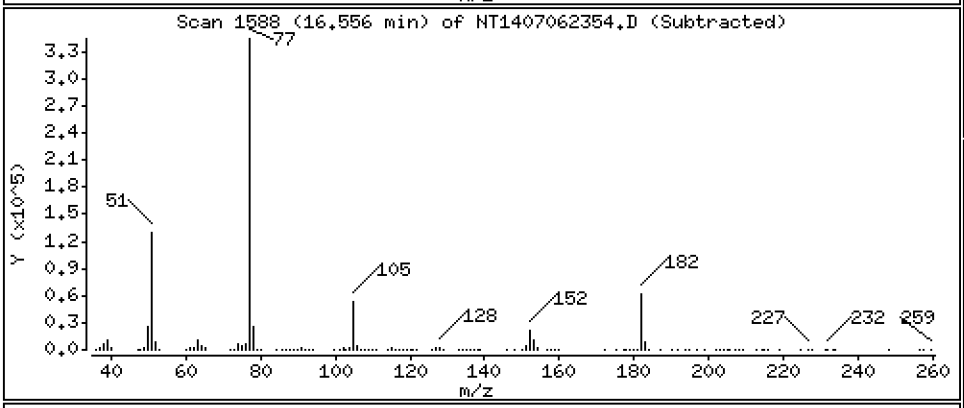
Column phase: ZB-5msi

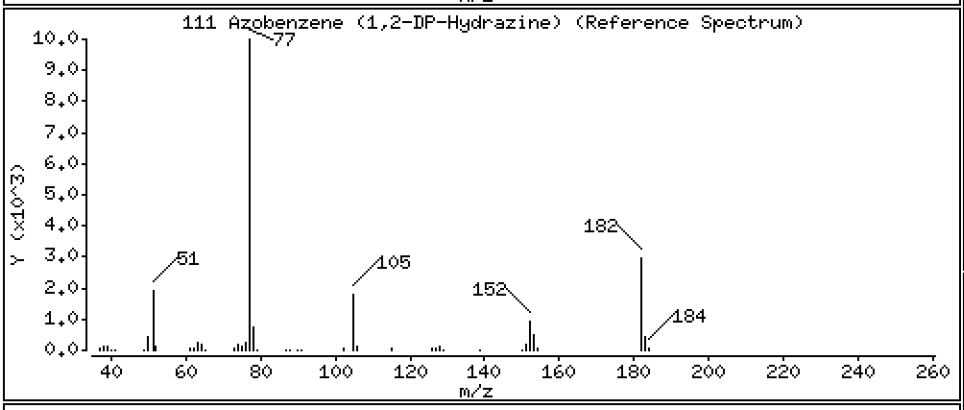
Column diameter: 0.25

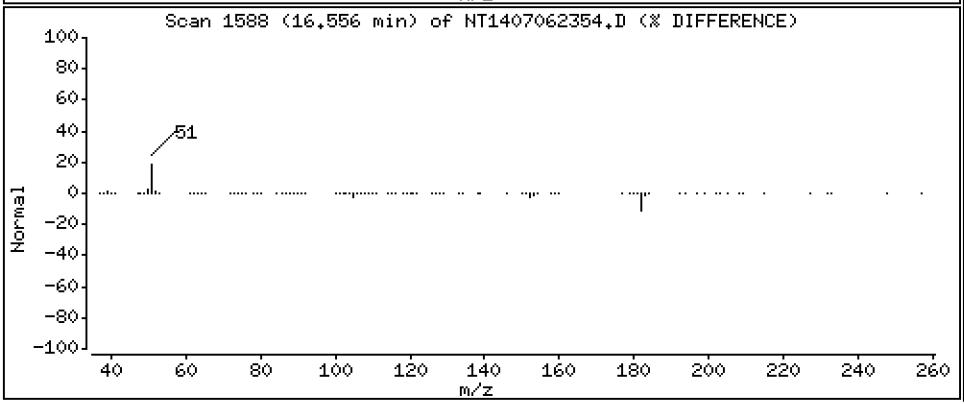
111 Azobenzene (1,2-DP-Hydrazine)

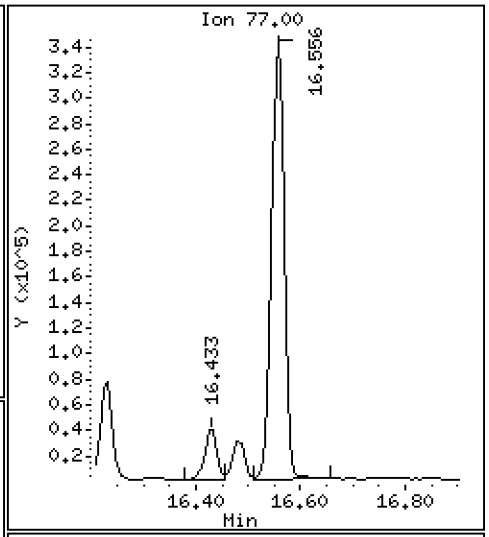
Concentration: 4.087 ug/mL

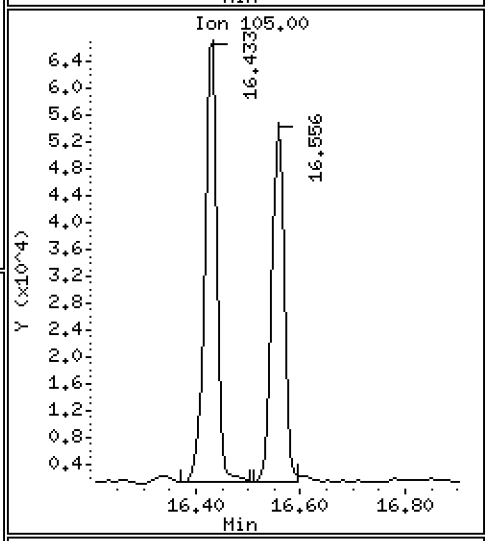


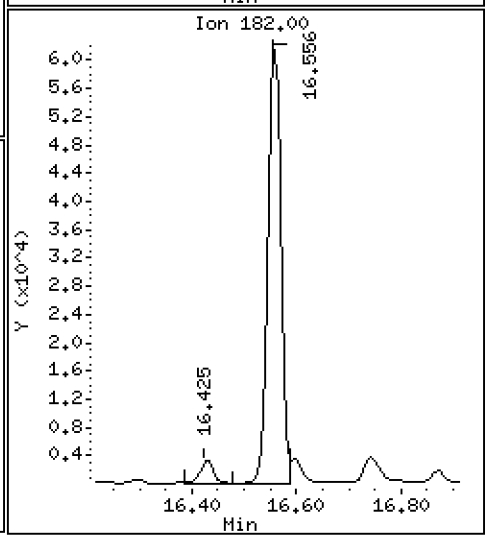












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Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

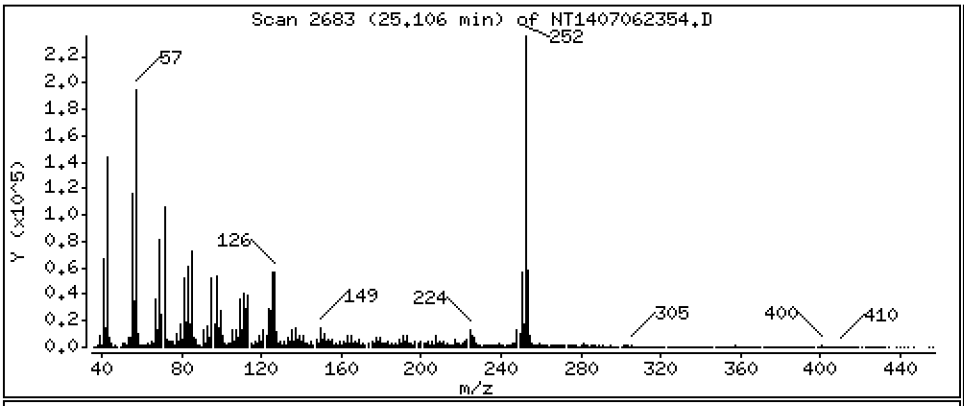
Operator: JGR

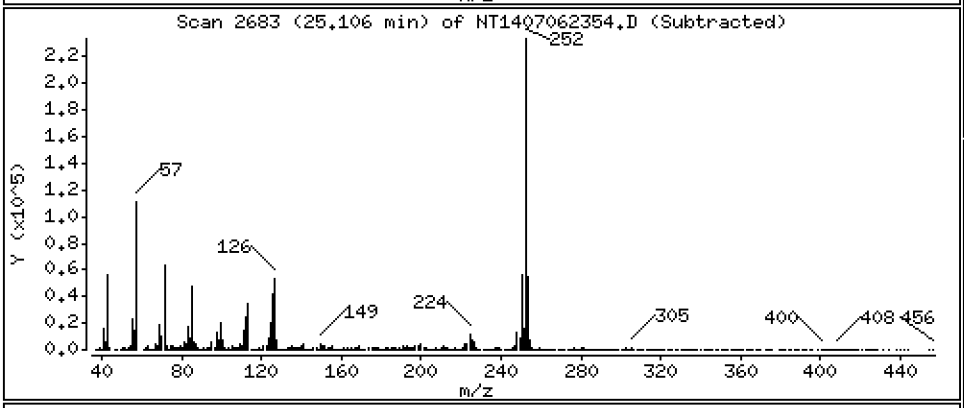
Column phase: ZB-5msi

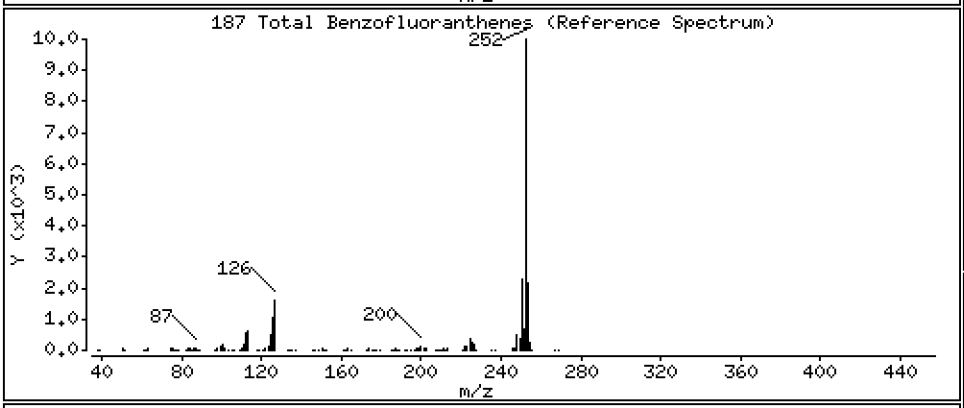
Column diameter: 0.25

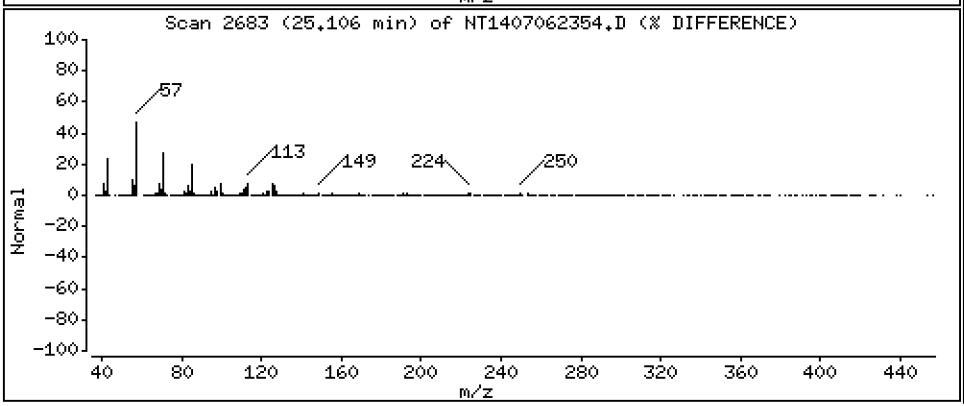
187 Total Benzofluoranthenes

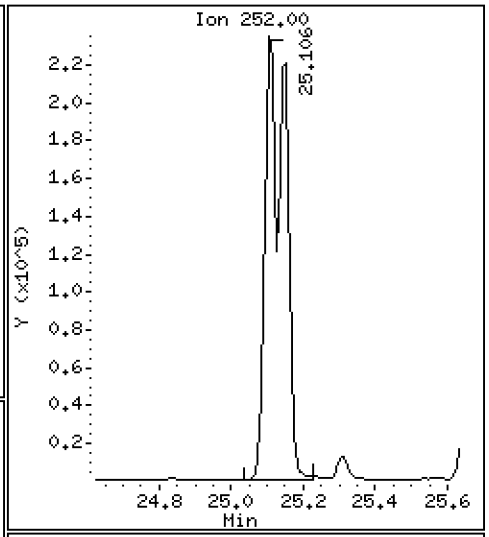
Concentration: 18.88 ug/mL

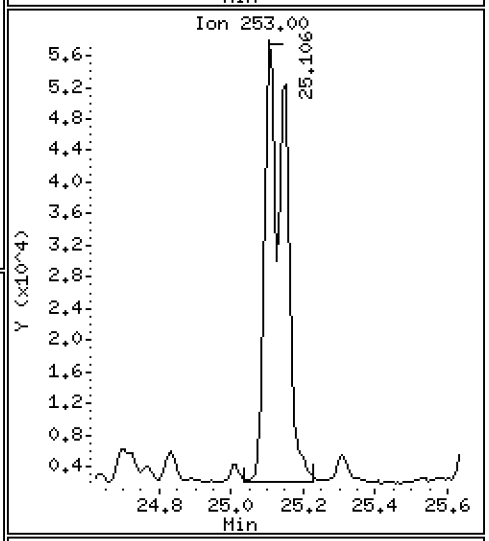


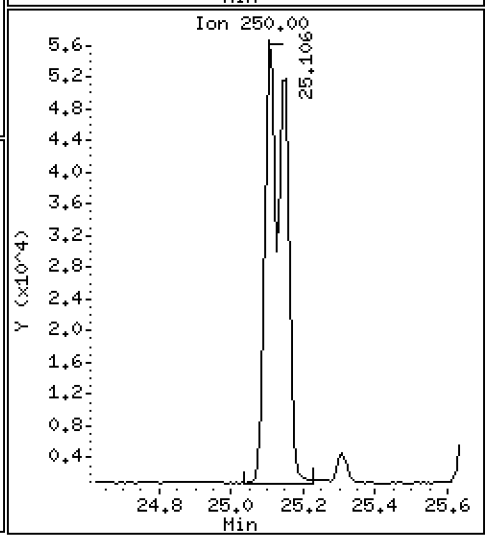












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062354.D

Date : 07-JUL-2023 22:35

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-MSD1

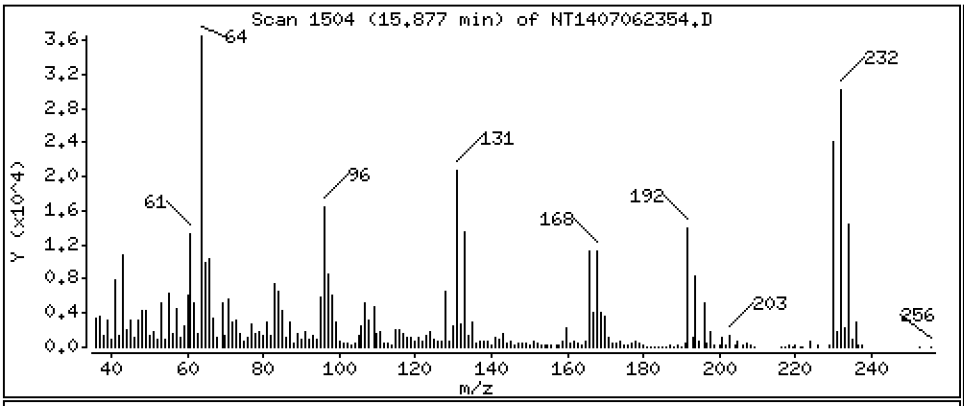
Operator: JGR

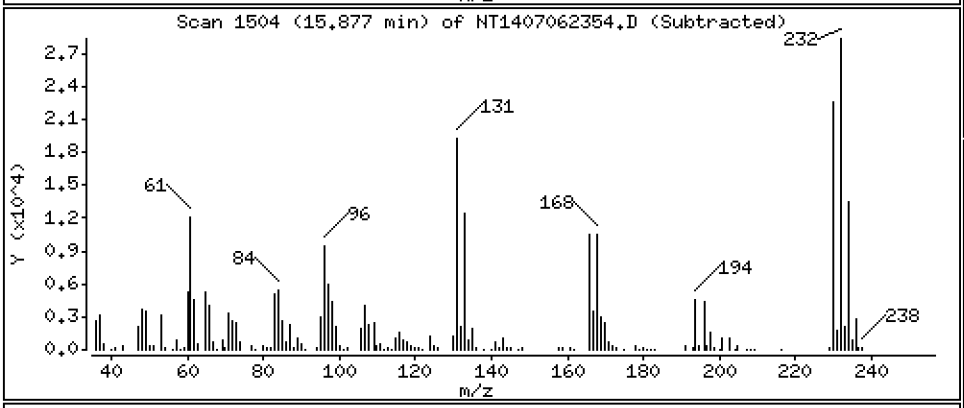
Column phase: ZB-5msi

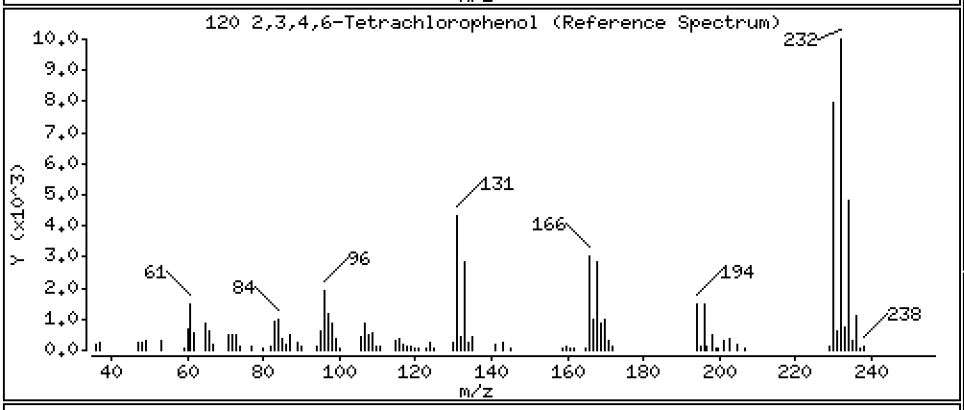
Column diameter: 0.25

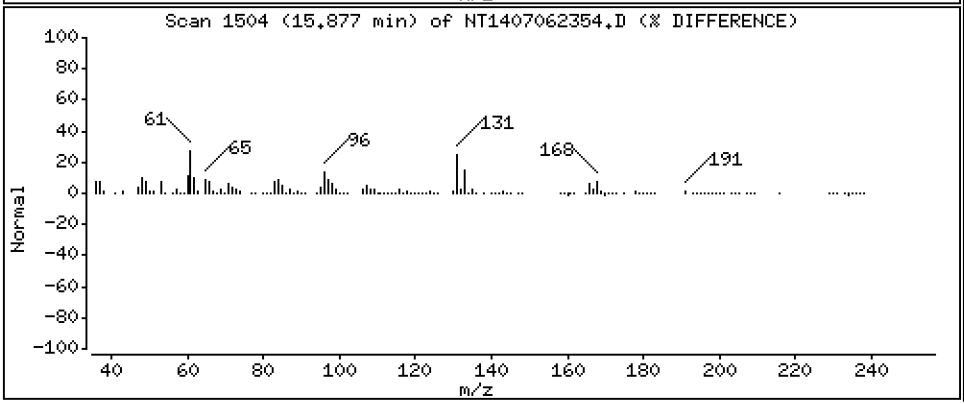
120 2,3,4,6-Tetrachlorophenol

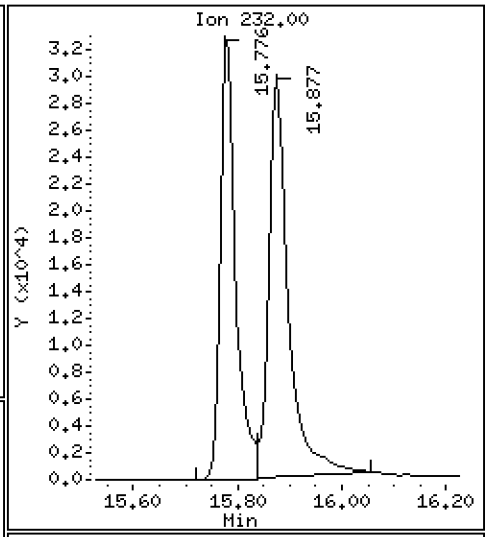
Concentration: 4.267 ug/mL

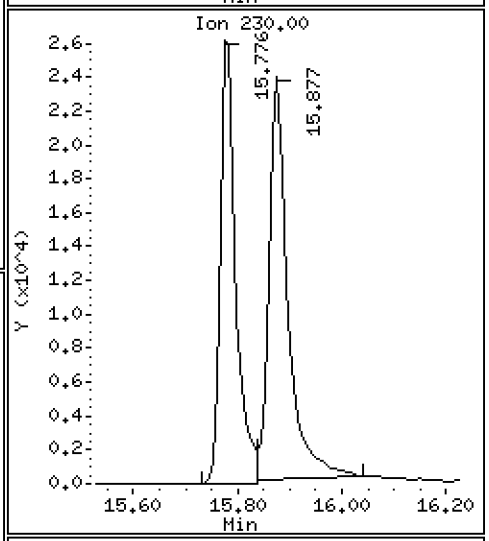


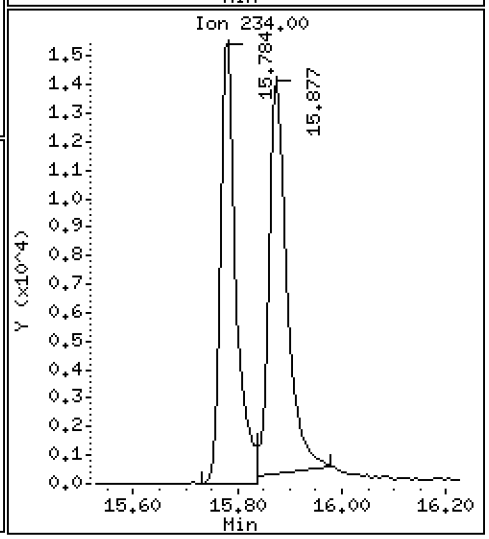












ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

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Inj Date : 07-JUL-2023 22:35 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : BLF0718-MSD1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Meth Date : 08-Jul-2023 11:17 van Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 37
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: VANS-201906

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/mL)
$	1 2-Fluorophenol	112	6.813	6.798	(0.756)	245670	5.42082	5.421
$	2 Phenol-d5	99	8.389	8.382	(0.931)	367492	5.98186	5.982
	3 Phenol	94	8.412	8.405	(0.933)	280151	3.76604	3.766
$	5 2-Chlorophenol-d4	132	8.660	8.652	(0.960)	253907	5.59257	5.593
	4 Bis(2-Chloroethyl)ether	93	8.559	8.559	(0.949)	225028	4.34898	4.349
	6 2-Chlorophenol	128	8.683	8.683	(0.963)	198619	3.68036	3.680
	7 1,3-Dichlorobenzene	146	8.946	8.946	(0.992)	171103	3.55731	3.557
*	8 1,4-Dichlorobenzene-d4	152	9.016	9.016	(1.000)	119407	4.00000	
	9 1,4-Dichlorobenzene	146	9.039	9.047	(1.003)	171387	3.61450	3.614
$	10 1,2-Dichlorobenzene-d4	152	9.373	9.373	(1.040)	97488	3.39468	3.395
	12 1,2-Dichlorobenzene	146	9.396	9.404	(1.042)	171973	3.74346	3.743
	11 Benzyl alcohol	108	Compound Not Detected.					
	14 2,2'-oxybis(1-Chloropropane)	121	9.582	9.590	(1.063)	64617	4.34855	4.349
	13 2-Methylphenol	108	9.528	9.520	(1.057)	181093	3.86215	3.862
	17 Hexachloroethane	117	9.994	9.994	(1.108)	55821	2.56290	2.563
	16 N-Nitroso-di-n-propylamine	70	9.846	9.846	(1.092)	165154	3.92536	3.925
	15 4-Methylphenol	108	9.807	9.792	(1.088)	218708	4.21118	4.211
$	18 Nitrobenzene-d5	82	10.102	10.110	(0.878)	223744	3.90915	3.909
	19 Nitrobenzene	77	10.141	10.149	(0.881)	242015	3.95654	3.957
	20 Isophorone	82	10.591	10.591	(0.921)	335500	3.94302	3.943
	21 2-Nitrophenol	139	10.777	10.778	(0.937)	103635	3.58267	3.583
	22 2,4-Dimethylphenol	107	10.839	10.840	(0.942)	547047	11.1497	11.15
	23 Bis(2-Chloroethoxy)methane	93	11.025	11.026	(0.958)	257208	4.73094	4.731
	24 Benzoic acid	105	11.025	11.088	(0.958)	237063	7.90072	7.901
	25 2,4-Dichlorophenol	162	11.243	11.243	(0.977)	453359	12.4971	12.50
	26 1,2,4-Trichlorobenzene	180	11.420	11.420	(0.993)	142208	3.93280	3.933
*	27 Naphthalene-d8	136	11.505	11.505	(1.000)	485249	4.00000	
	28 Naphthalene	128	11.544	11.544	(1.003)	571933	4.51185	4.512
	29 4-Chloroaniline	127	11.721	11.675	(1.019)	70811	1.19795	1.198
	30 Hexachlorobutadiene	225	11.907	11.915	(1.035)	71000	4.20942	4.209
	31 4-Chloro-3-methylphenol	107	12.665	12.665	(1.101)	578657	12.7179	12.72
	32 2-Methylnaphthalene	142	12.944	12.952	(1.125)	389516	4.14274	4.143
	33 Hexachlorocyclopentadiene	237	13.416	13.416	(0.886)	16948	0.93611	0.9361

		QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/mL)	(ug/mL)
34	2,4,6-Trichlorophenol	196	13.579	13.579	(0.897)	295400	12.7423	12.74
35	2,4,5-Trichlorophenol	196	13.664	13.664	(0.903)	353551	14.6563	14.66
$ 36	2-Fluorobiphenyl	172	13.733	13.733	(0.907)	364056	4.23796	4.238
37	2-Chloronaphthalene	162	13.942	13.942	(0.921)	343595	4.34784	4.348
38	2-Nitroaniline	65	14.205	14.206	(0.939)	483319	12.6197	12.62
39	Dimethylphthalate	163	14.639	14.639	(0.967)	394022	4.86055	4.861
40	Acenaphthylene	152	14.817	14.817	(0.979)	567641	4.65493	4.655
41	2,6-Dinitrotoluene	165	14.778	14.778	(0.976)	245874	14.4148	14.41
* 42	Acenaphthene-d10	164	15.134	15.134	(1.000)	241194	4.00000	
43	3-Nitroaniline	138	15.065	15.065	(0.995)	101489	4.44135	4.441
44	Acenaphthene	153	15.196	15.204	(1.004)	348413	4.82792	4.828
45	2,4-Dinitrophenol	184	15.273	15.273	(1.009)	35984	3.41336	3.413
46	Dibenzofuran	168	15.528	15.528	(1.026)	500003	4.75440	4.754
47	4-Nitrophenol	109	15.428	15.420	(1.019)	185705	11.1038	11.10
48	2,4-Dinitrotoluene	165	15.590	15.590	(1.030)	338383	14.1869	14.19
50	Diethylphthalate	149	16.093	16.101	(1.063)	445984	4.75741	4.757
49	Fluorene	166	16.239	16.240	(1.073)	463420	5.03882	5.039
51	4-Chlorophenyl-phenylether	204	16.232	16.232	(1.073)	195924	4.93390	4.934
52	4-Nitroaniline	138	16.332	16.340	(1.079)	143041	6.16936	6.169
53	4,6-Dinitro-2-methylphenol	198	16.432	16.432	(0.904)	187585	13.4179	13.42
54	N-Nitrosodiphenylamine	169	16.486	16.486	(0.907)	256256	4.17106	4.171
$ 55	2,4,6-Tribromophenol	330	16.787	16.779	(1.109)	55418	7.29143	7.291
56	4-Bromophenyl-phenylether	248	17.234	17.234	(0.948)	92949	4.96129	4.961
57	Hexachlorobenzene	284	17.559	17.559	(0.966)	91893	4.63647	4.636
58	Pentachlorophenol	266	17.930	17.923	(0.986)	155888	12.6559	12.66
* 59	Phenanthrene-d10	188	18.178	18.178	(1.000)	435108	4.00000	
60	Phenanthrene	178	18.232	18.225	(1.003)	727957	6.18450	6.184
61	Anthracene	178	18.325	18.317	(1.008)	558346	4.90900	4.909
62	Carbazole	167	18.658	18.650	(1.026)	563739	4.92653	4.927
63	Di-n-butylphthalate	149	19.462	19.447	(1.071)	742926	4.94140	4.941
64	Fluoranthene	202	20.677	20.615	(0.889)	835675	7.92840	7.928
65	Pyrene	202	21.087	21.041	(0.907)	1855686	17.4279	17.43
$ 66	Terphenyl-d14	244	21.342	21.327	(0.918)	355349	4.95863	4.959
67	Butylbenzylphthalate	149	22.256	22.249	(0.957)	322552	6.43176	6.432
68	Benzo(a)anthracene	228	23.216	23.209	(0.999)	529405	5.86371	5.864
* 69	Chrysene-d12	240	23.247	23.232	(1.000)	257852	4.00000	
70	3,3'-Dichlorobenzidine	252	23.301	23.162	(1.002)	4469	0.17805	0.1780(H)
71	Chrysene	228	23.294	23.278	(1.002)	684668	8.47196	8.472
72	bis(2-Ethylhexyl)phthalate	149	24.277	24.269	(1.001)	853524	4.96894	4.969
* 134	Di-n-octylphthalate-d4	153	24.261	24.262	(1.000)	668324	4.00000	
73	Di-n-octylphthalate	149	24.277	24.269	(1.001)	853524	4.96894	4.969
74	Benzo(b)fluoranthene	252	25.105	25.082	(0.970)	496838	10.6148	10.61
75	Benzo(k)fluoranthene	252	25.152	25.129	(0.972)	455389	8.66636	8.666
76	Benzo(a)pyrene	252	25.756	25.733	(0.996)	290878	7.91836	7.918
* 77	Perylene-d12	264	25.872	25.849	(1.000)	142401	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	28.517	28.494	(1.102)	144839	4.37185	4.372
79	Dibenzo(a,h)anthracene	278	28.524	28.509	(1.103)	113604	4.05262	4.053
80	Benzo(g,h,i)perylene	276	29.293	29.278	(1.132)	99394	3.63394	3.634
90	N-Nitrosodimethylamine	74	4.681	4.658	(0.519)	276850	8.08125	8.081
91	Aniline	93	Compound Not Detected.					
93	Benzidine	184	Compound Not Detected.					
103	Pyridine	79	Compound Not Detected.					
105	1-methylnaphthalene	142	13.168	13.169	(1.145)	375053	4.47149	4.471
111	Azobenzene (1,2-DP-Hydrazine)	77	16.556	16.556	(1.094)	545633	4.08671	4.087

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.105	25.129	(0.970)	897121	18.8801	18.88
120 2,3,4,6-Tetrachlorophenol	232	15.876	15.876	(1.049)	80374	4.26743	4.267

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1407062354.D
Lab Smp Id: BLF0718-MSD1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Misc Info:

Calibration Date: 07-JUL-2023
Calibration Time: 16:23
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	132670	66335	265340	119407	-10.00
27 Naphthalene-d8	538082	269041	1076164	485249	-9.82
42 Acenaphthene-d10	270232	135116	540464	241194	-10.75
59 Phenanthrene-d10	462568	231284	925136	435108	-5.94
69 Chrysene-d12	289075	144538	578150	257852	-10.80
134 Di-n-octylphthala	772331	386166	1544662	668324	-13.47
77 Perylene-d12	173349	86675	346698	142401	-17.85

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.02	8.52	9.52	9.02	-0.00
27 Naphthalene-d8	11.51	11.01	12.01	11.51	-0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	-0.00
59 Phenanthrene-d10	18.18	17.68	18.68	18.18	-0.00
69 Chrysene-d12	23.23	22.73	23.73	23.25	0.07
134 Di-n-octylphthala	24.26	23.76	24.76	24.26	-0.00
77 Perylene-d12	25.85	25.35	26.35	25.87	0.09

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

REVIEW SUMMARY FOR FILE - NT1407062354.D

Lab ID: BLF0718-MSD1
nt14.i, ABN.m, 07-JUL-2023 22:35

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.958	0.964	-0.0054	Benzoic acid
1.002	0.997	0.0053	3,3'-Dichlorobenzidine

RRT check based on Ccal File: NT1407062344.D

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

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

STANDARD REFERENCE MATERIAL RECOVERY

EPA 8270E

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BLF0718-SRM1
Batch: BLF0718
Initial/Final: 1 g / 1 mL
Preparation: EPA 3546 (Microwave)
Analyzed: 07/07/2023 21:21
Standard ID: K003477
Expires: 01/31/2024
Standard Lot#: CRM 143 (LRAC8918)
Description: CRM 143 BNAs - Sandy Loam

ANALYTE	TRUE (ug/kg wet)	FOUND (ug/kg wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
Naphthalene	4458.0	4080	42.4	200		91.6	25 - 175
Acenaphthylene	1948.0	1480	62.4	200		76.1	37 - 167
Acenaphthene	5489.0	4920	52.2	200		89.7	41 - 159
Fluorene	3724.0	3340	146	200		89.8	44 - 156
Phenanthrene	5052.0	4450	87.2	200		88.0	46 - 154
Anthracene	2866.0	2020	71.9	200		70.5	42 - 158
Fluoranthene	2497.0	2460	60.9	200		98.5	39 - 161
Pyrene	2964.0	3120	56.8	200		105	38 - 162
Benzo(a)anthracene	5751.0	5300	59.6	200		92.2	49 - 151
Chrysene	1477.0	1300	60.6	200		87.8	45 - 155
Benzofluoranthenes, Total	6534.0	5560	210	400		85.1	40 - 160
Benzo(a)pyrene	5902.0	4720	42.3	200		79.9	43 - 157
Indeno(1,2,3-cd)pyrene	3914.0	2740	147	200	Q	69.9	22 - 178
Dibenzo(a,h)anthracene	3420.0	2540	172	200		74.3	37 - 163
Benzo(g,h,i)perylene	1380.0	858	136	200	Q	62.2	35 - 165

* Values outside of QC limits

Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062352.D

Date : 07-JUL-2023 21:21

Client ID:

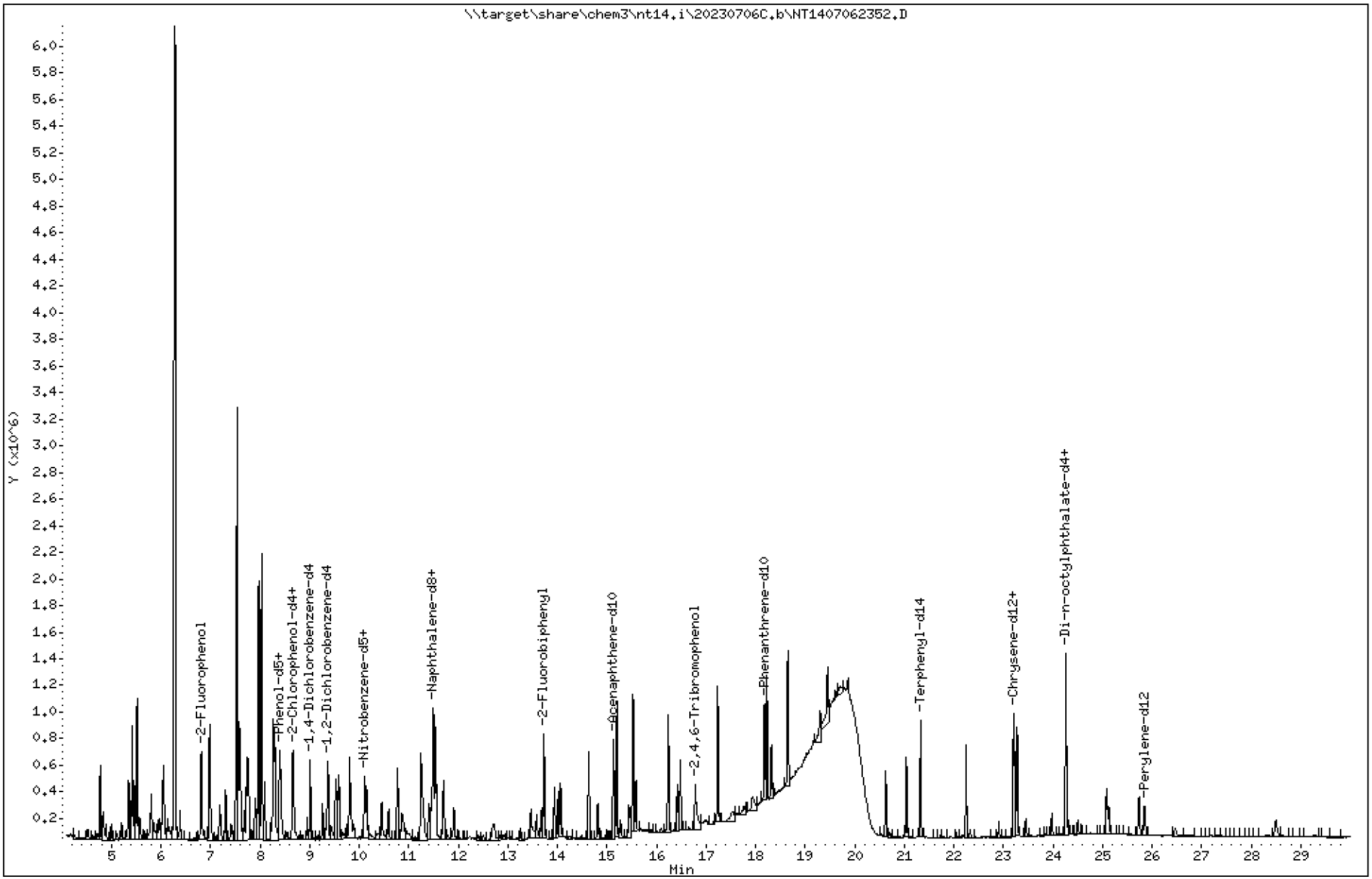
Instrument: nt14.i

Sample Info: BLF0718-SRM1

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

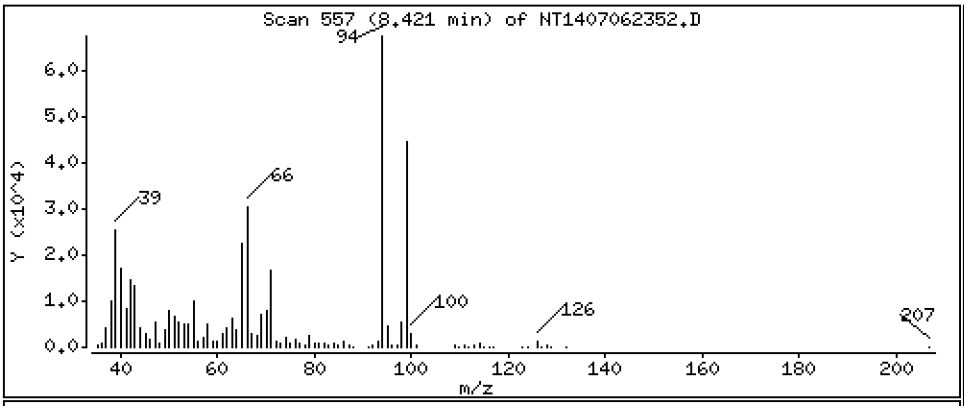
Operator: JGR

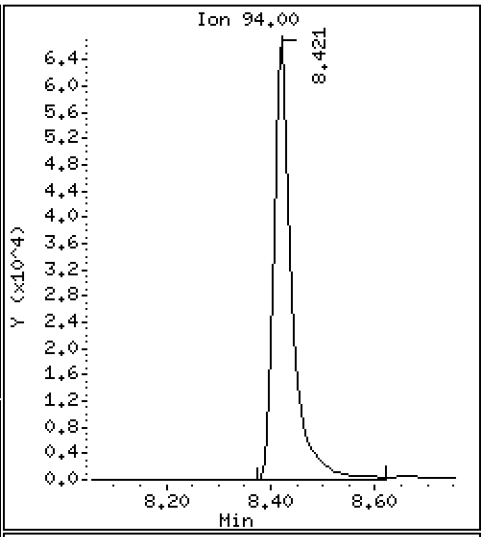
Column phase: ZB-5msi

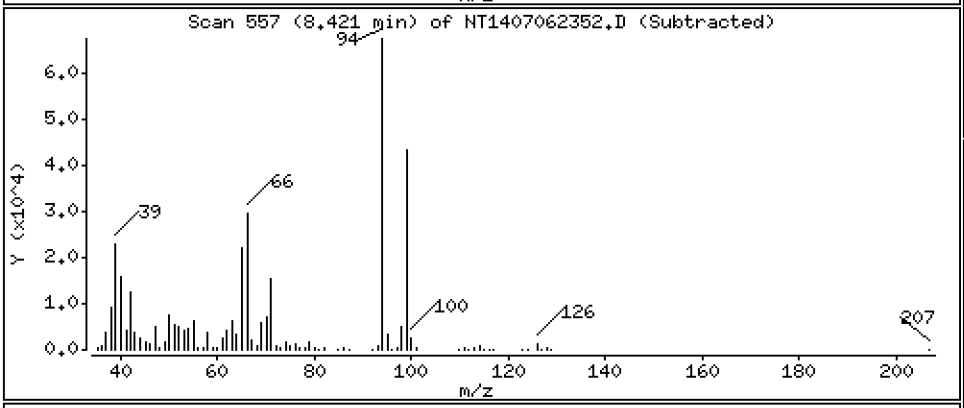
Column diameter: 0.25

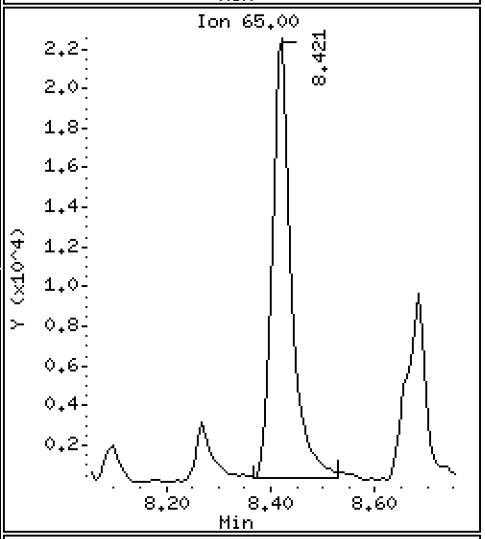
3 Phenol

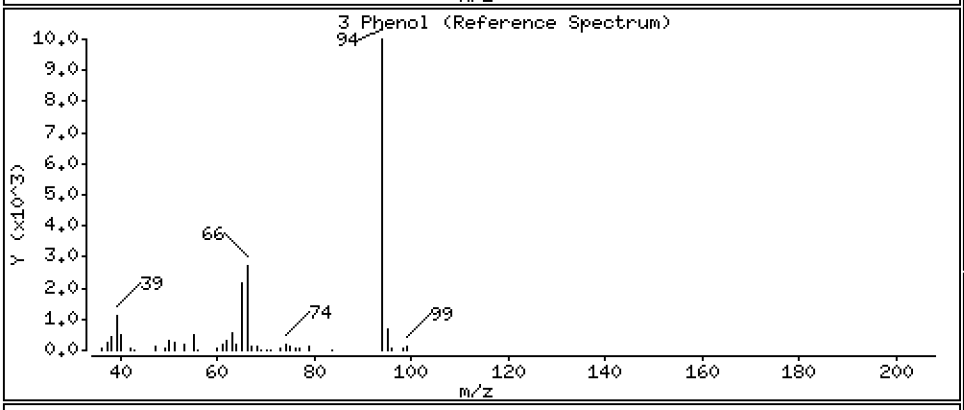
Concentration: 1.964 ug/mL

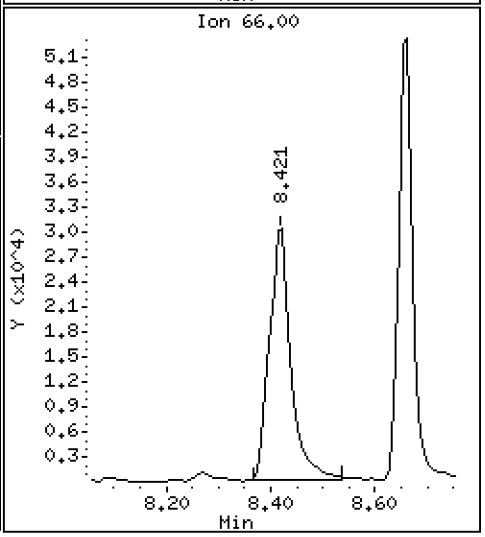


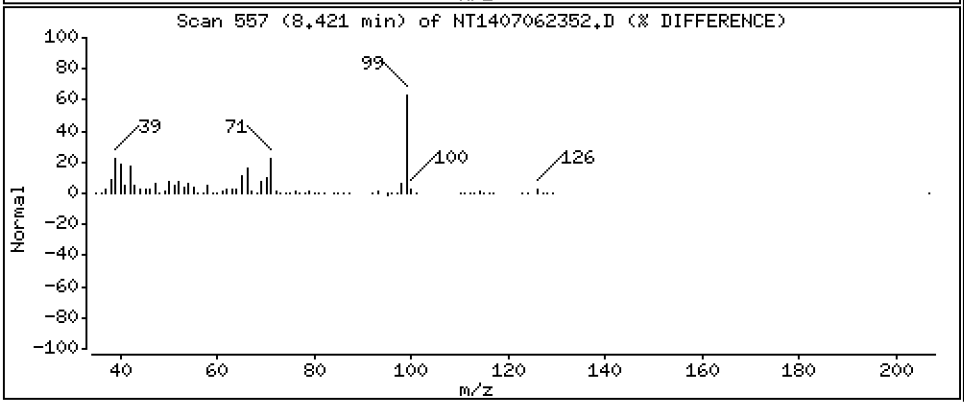












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062352.D

Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

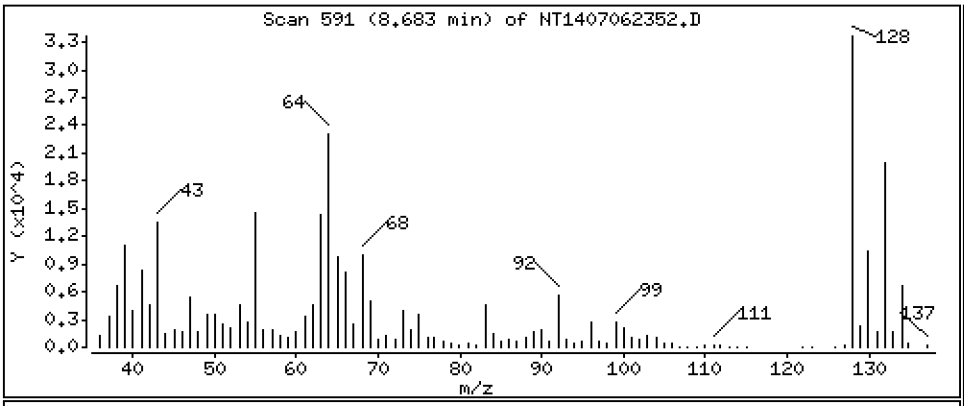
Operator: JGR

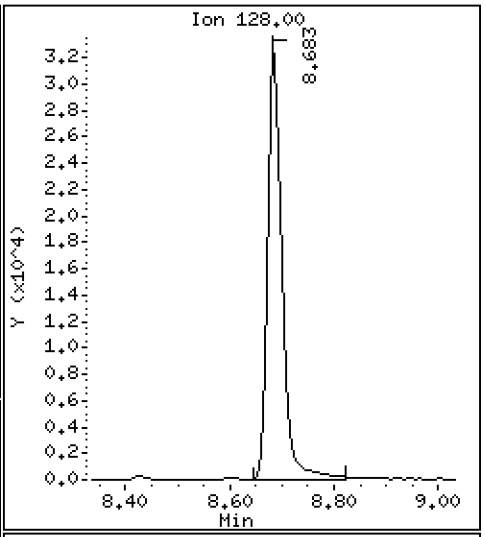
Column phase: ZB-5msi

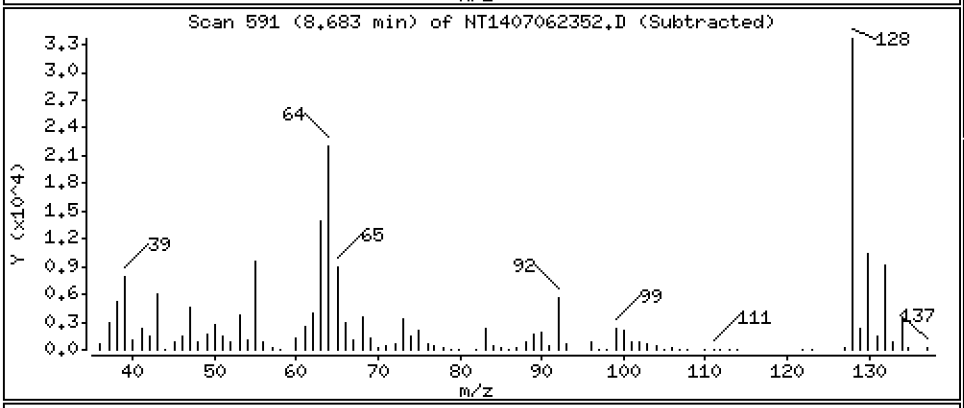
Column diameter: 0.25

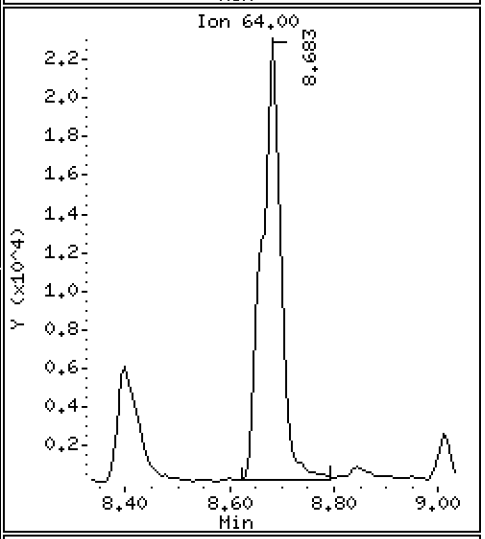
6 2-Chlorophenol

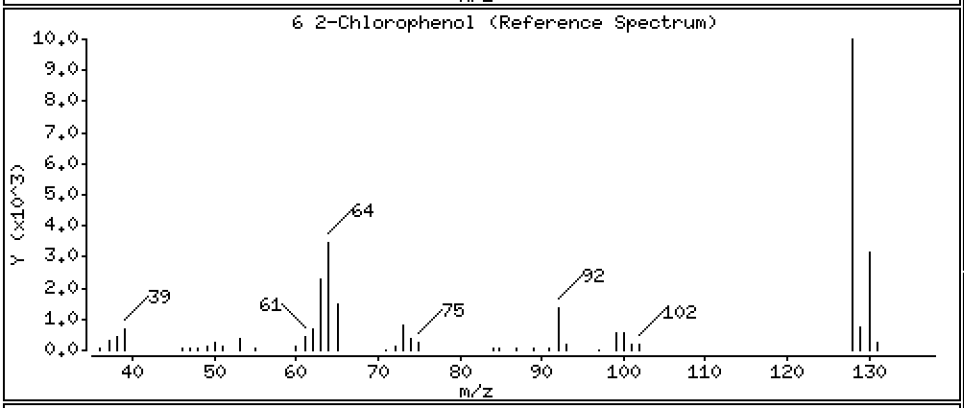
Concentration: 1.119 ug/mL

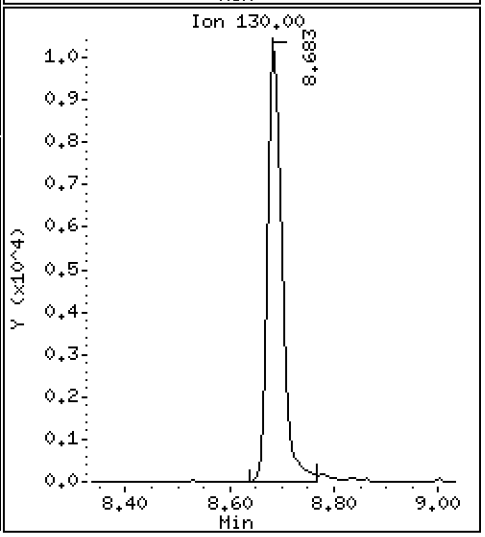


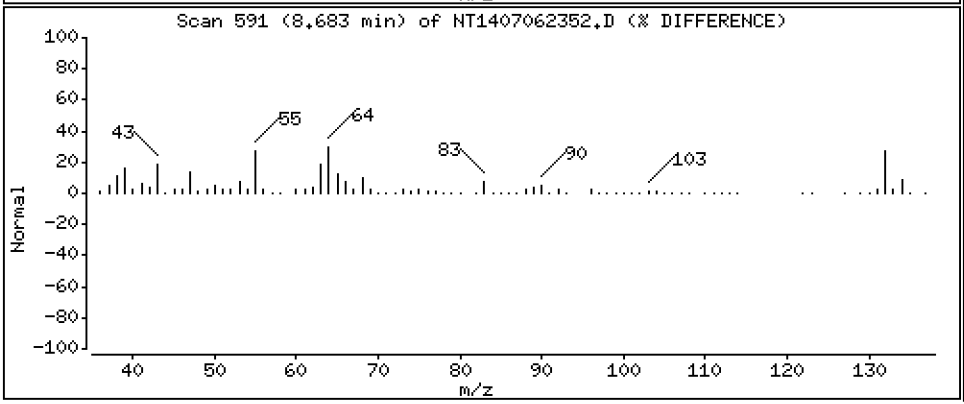












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

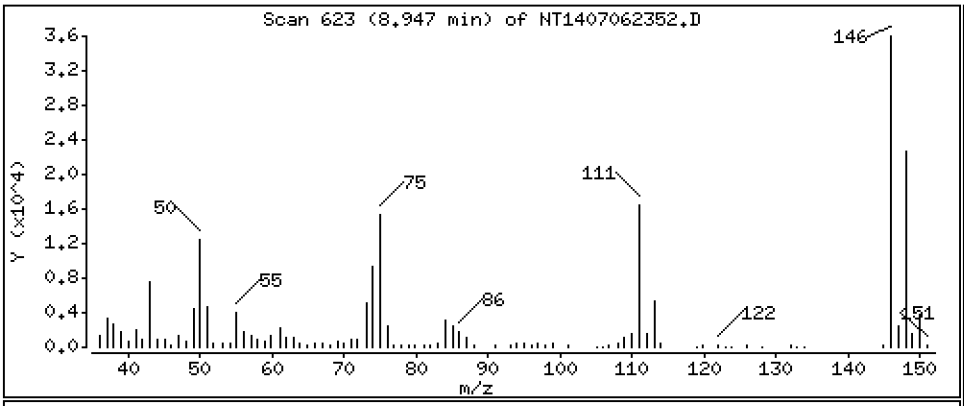
Operator: JGR

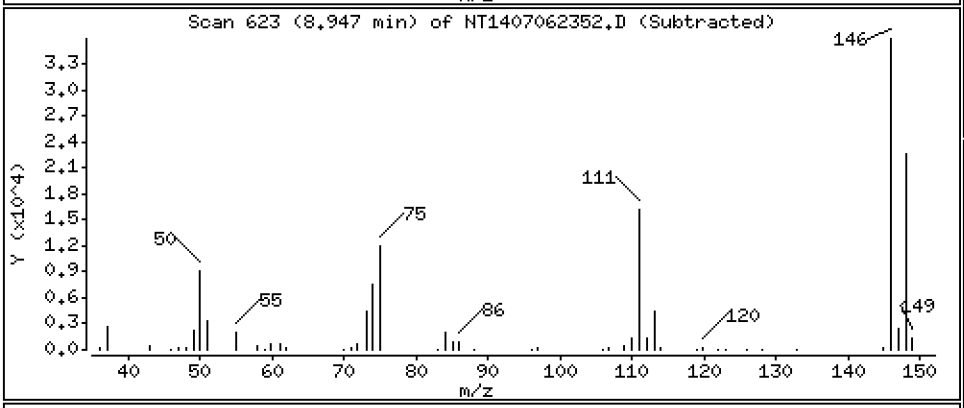
Column phase: ZB-5msi

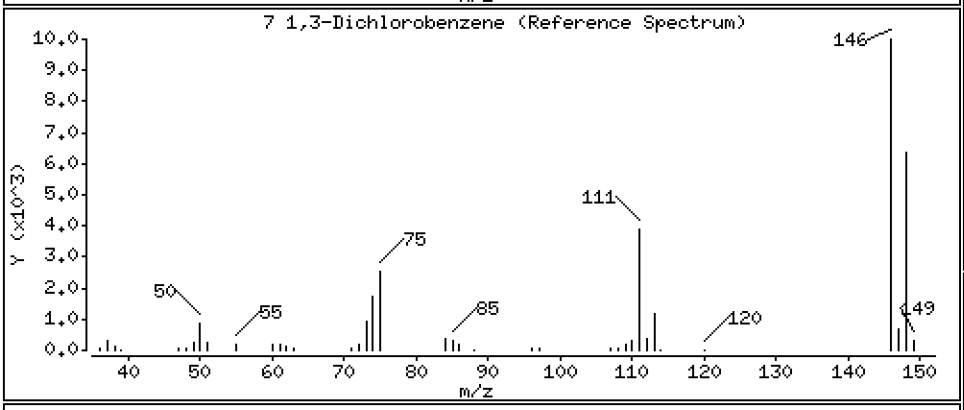
Column diameter: 0.25

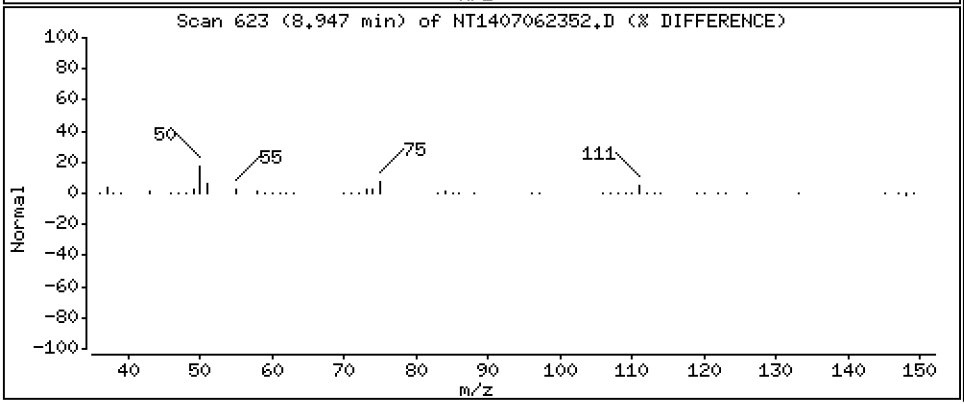
7 1,3-Dichlorobenzene

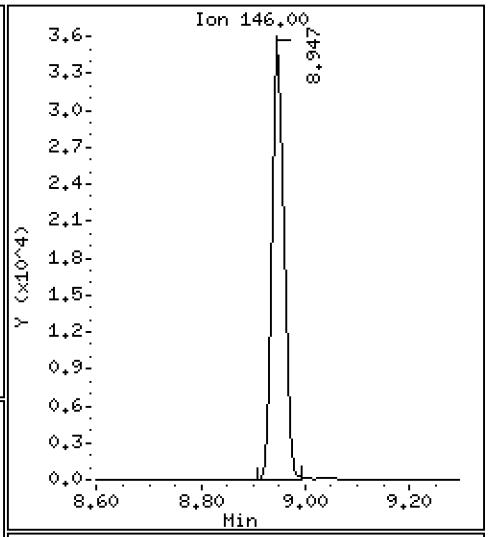
Concentration: 1.040 ug/mL

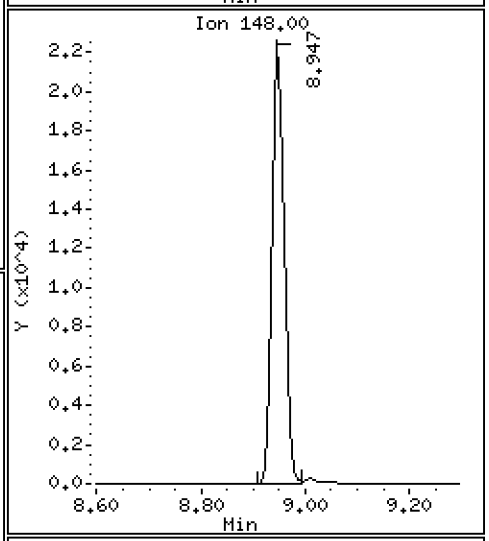


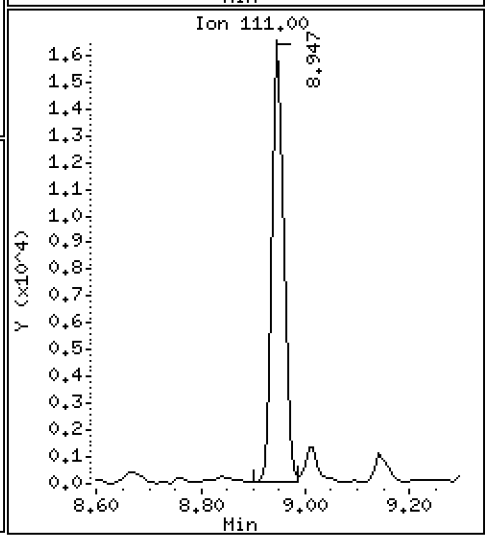












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

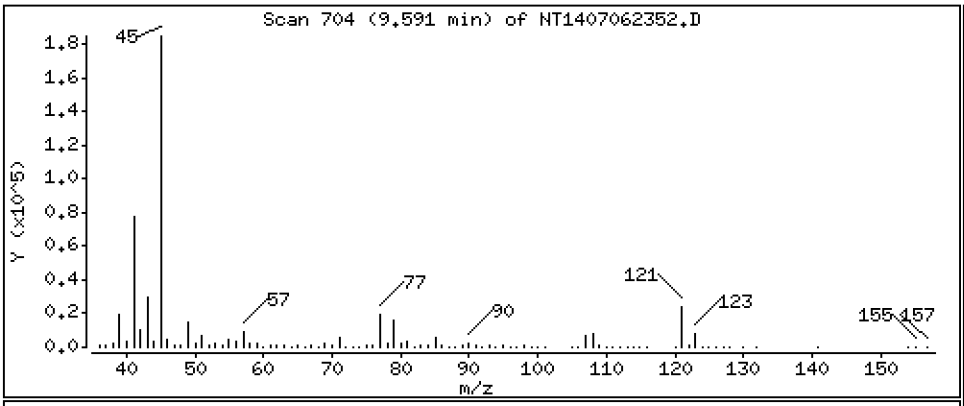
Operator: JGR

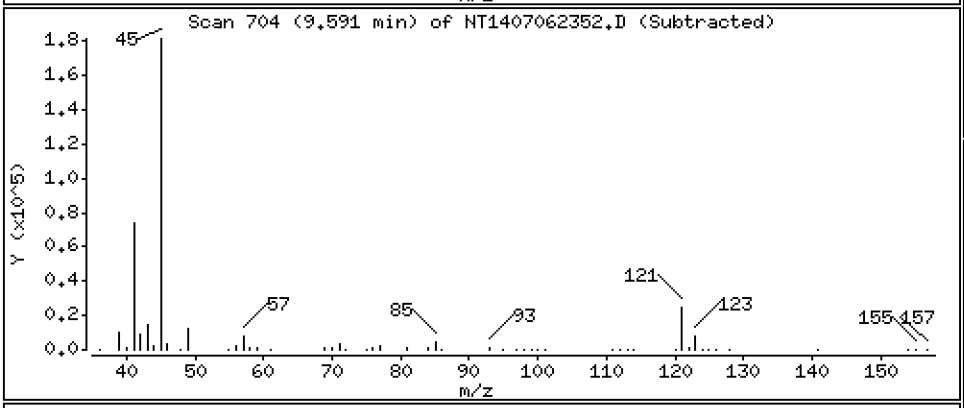
Column phase: ZB-5msi

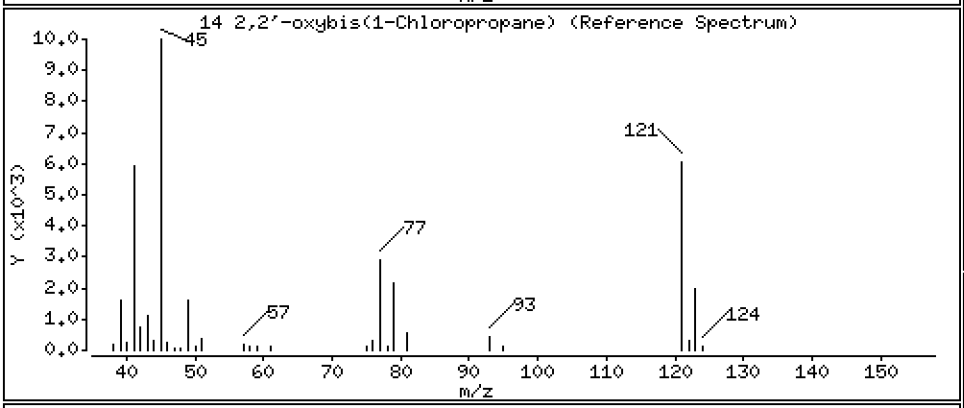
Column diameter: 0.25

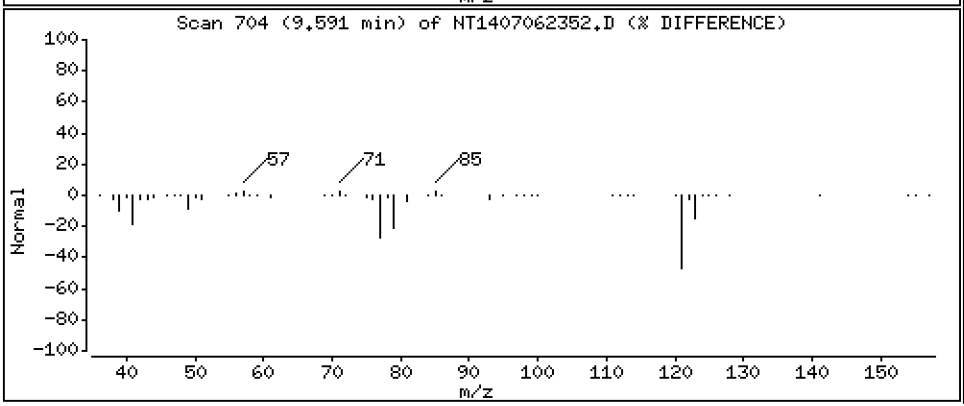
14 2,2'-oxybis(1-Chloropropane)

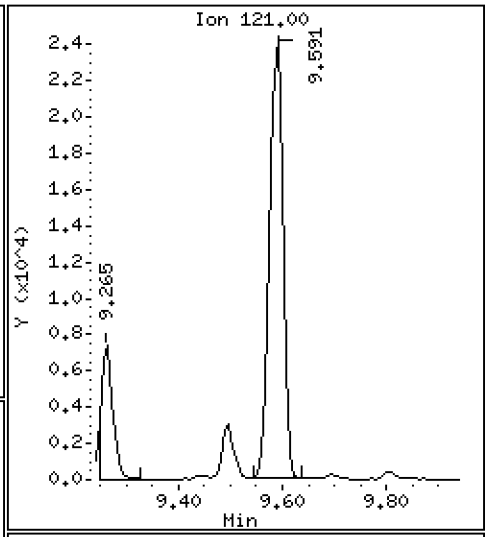
Concentration: 2.537 ug/mL

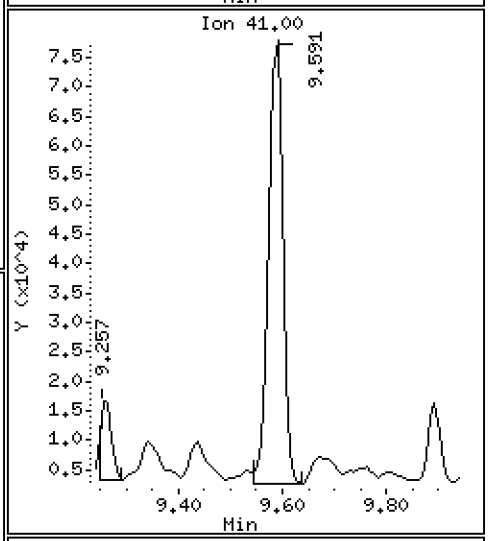


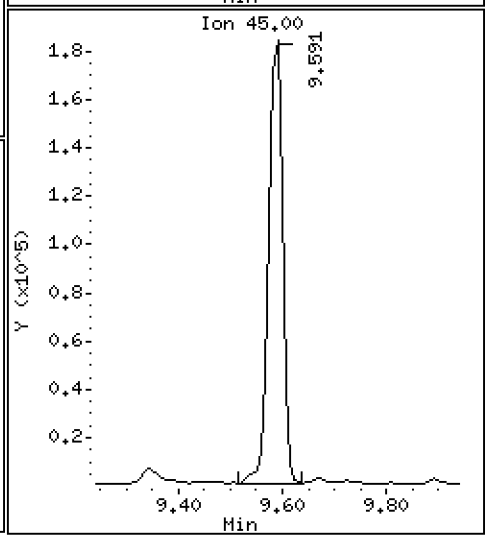












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

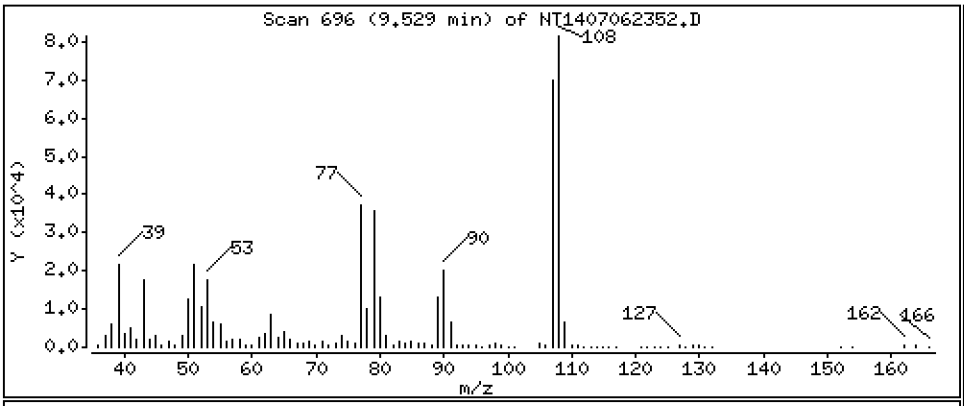
Operator: JGR

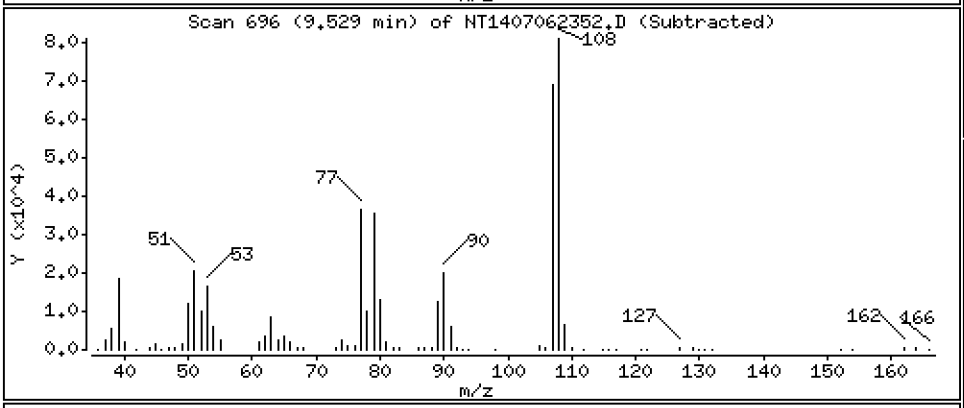
Column phase: ZB-5msi

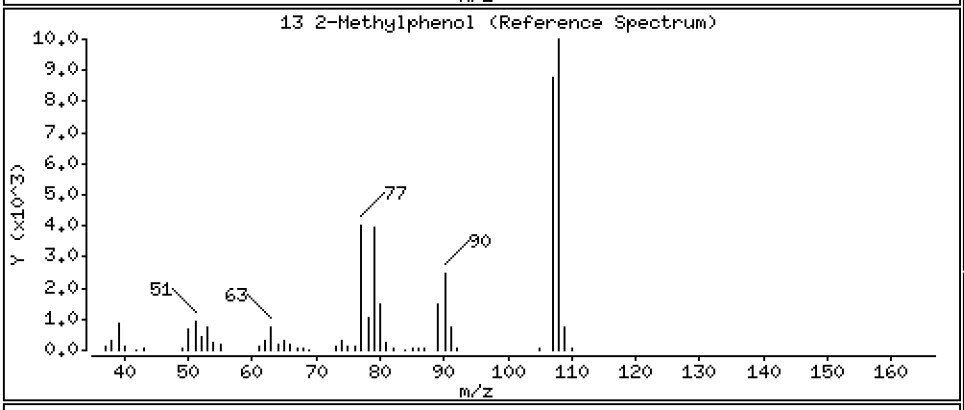
Column diameter: 0.25

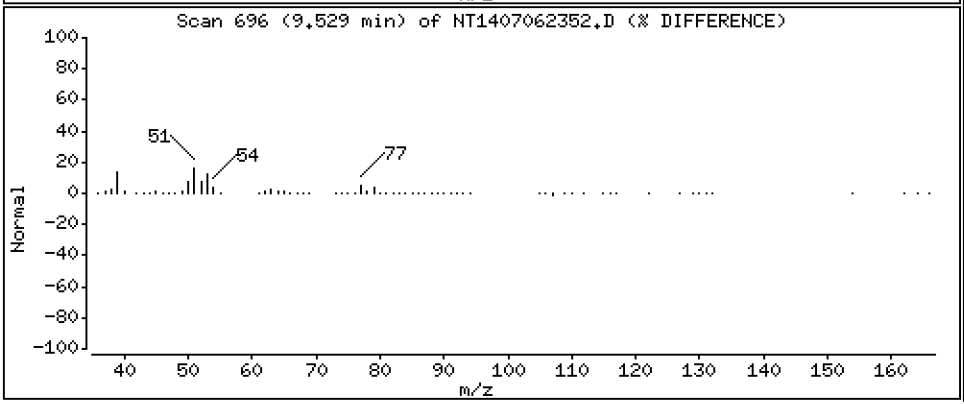
13 2-Methylphenol

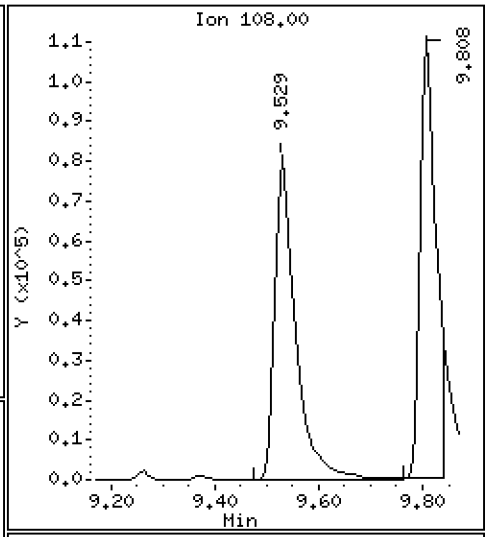
Concentration: 4.598 ug/mL

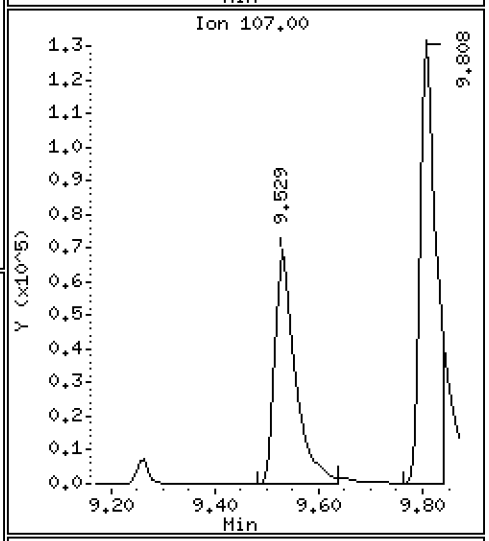


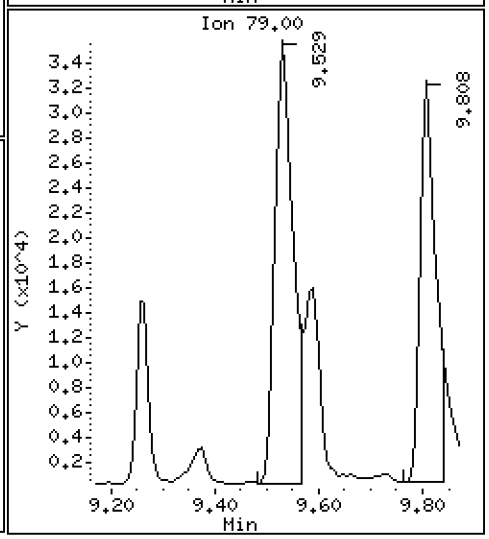












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

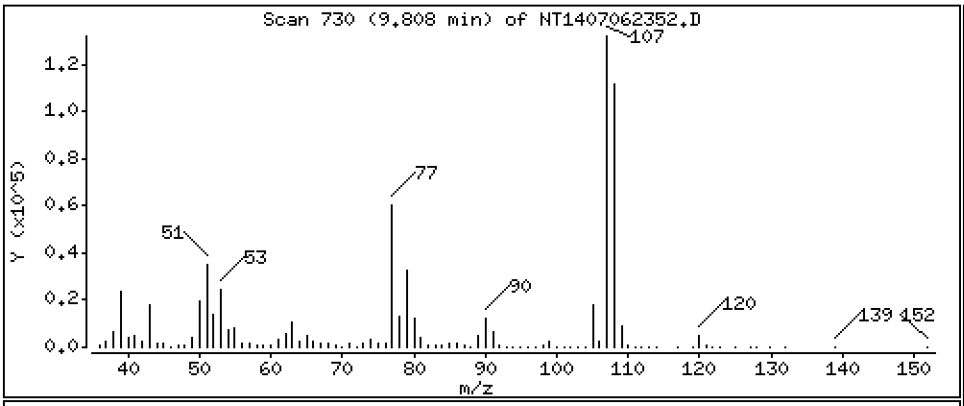
Operator: JGR

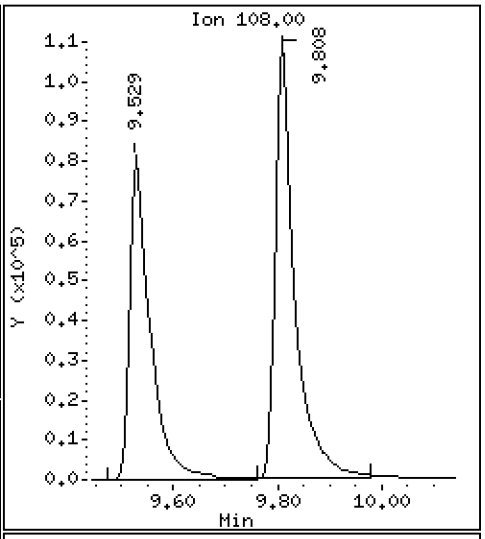
Column phase: ZB-5msi

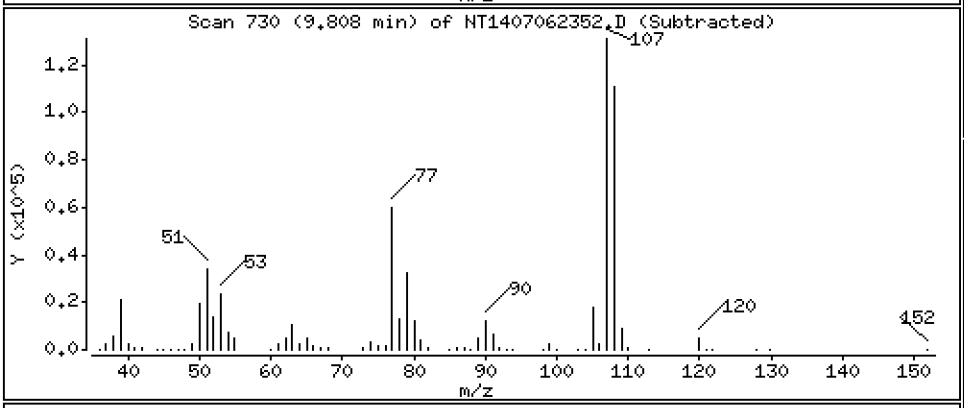
Column diameter: 0.25

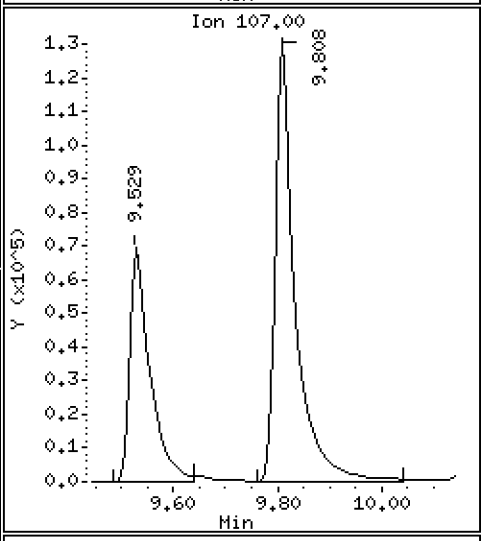
15 4-Methylphenol

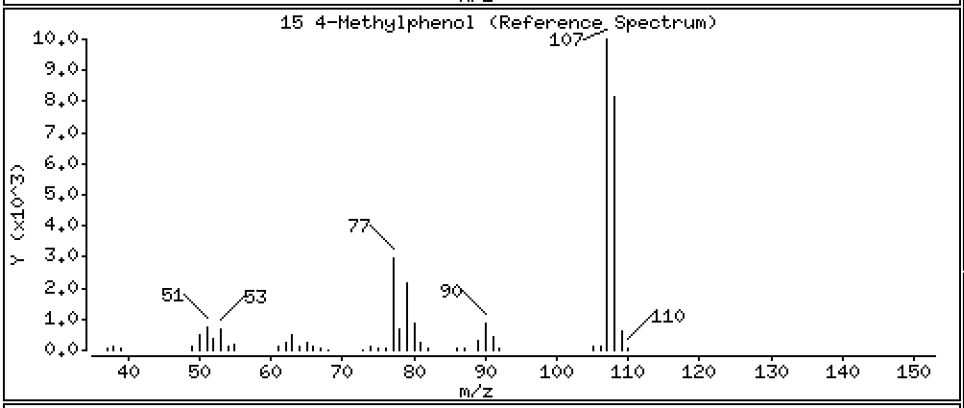
Concentration: 5.061 ug/mL

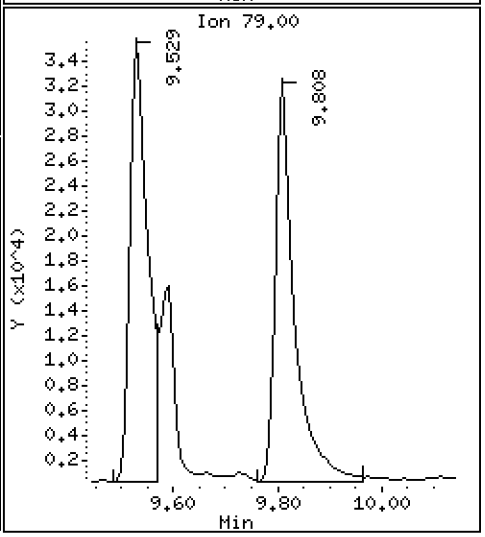


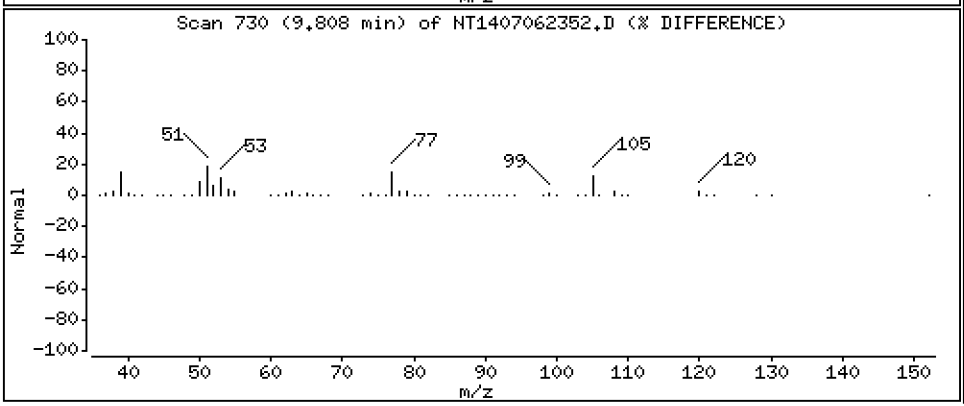












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062352.D

Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

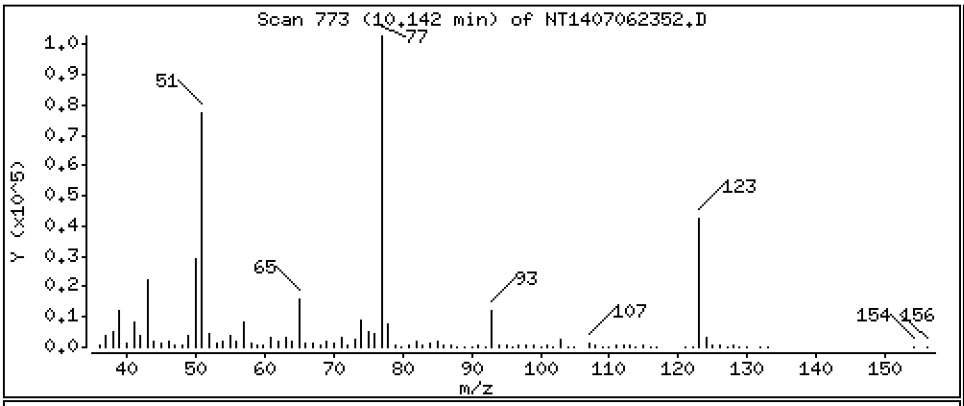
Operator: JGR

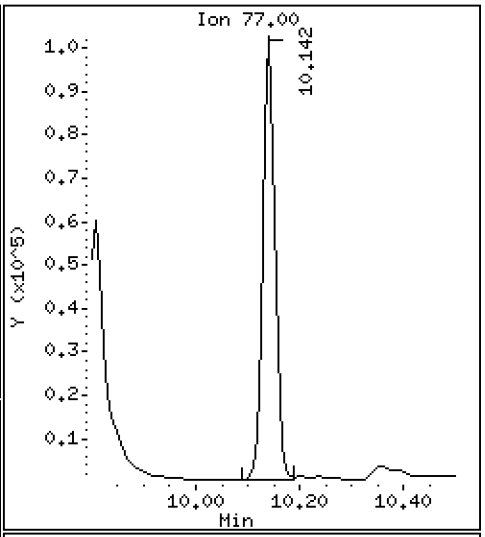
Column phase: ZB-5msi

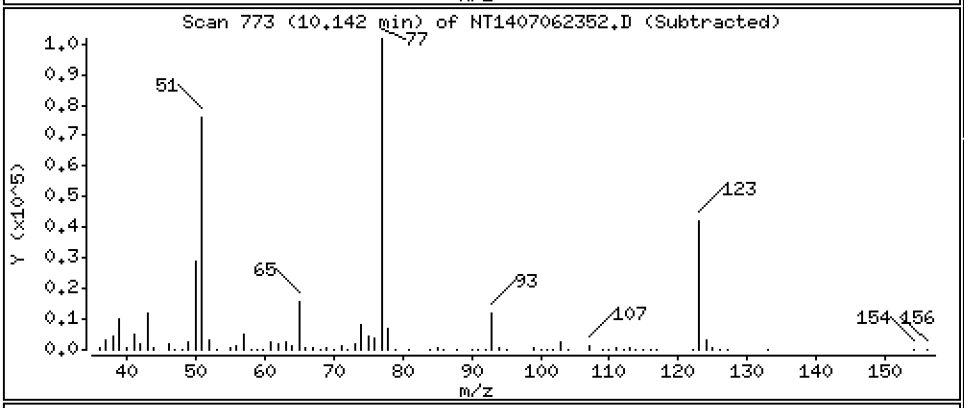
Column diameter: 0.25

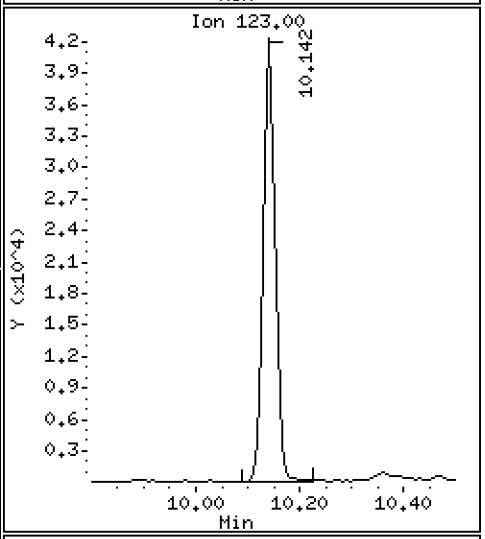
19 Nitrobenzene

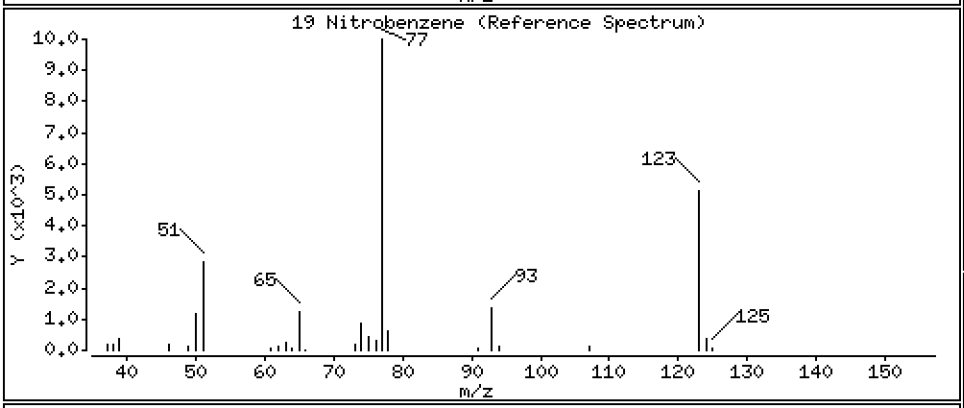
Concentration: 2.448 ug/mL

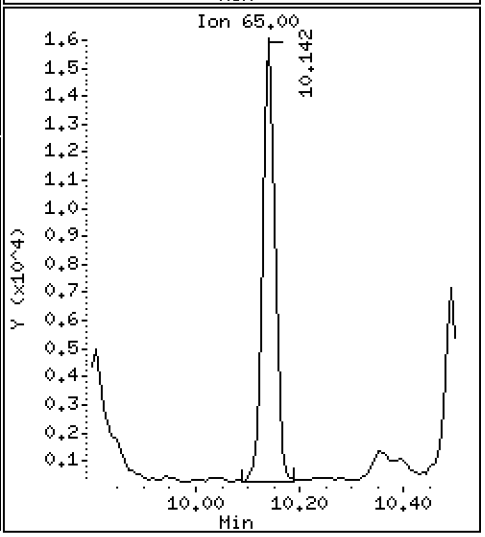


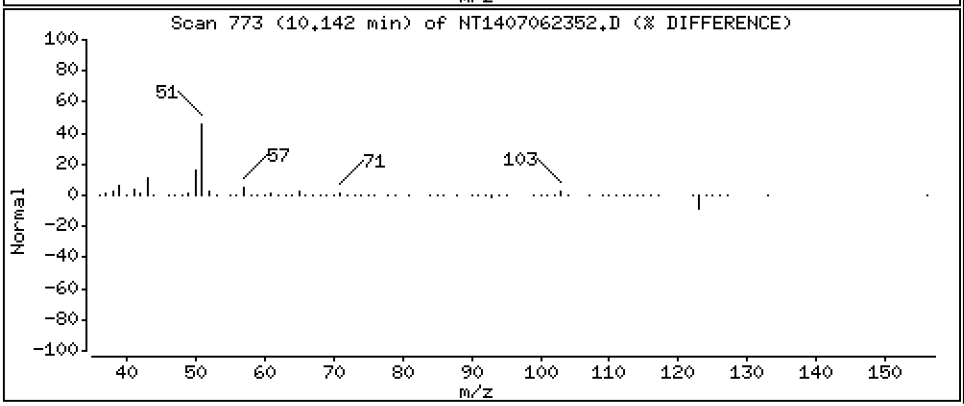












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

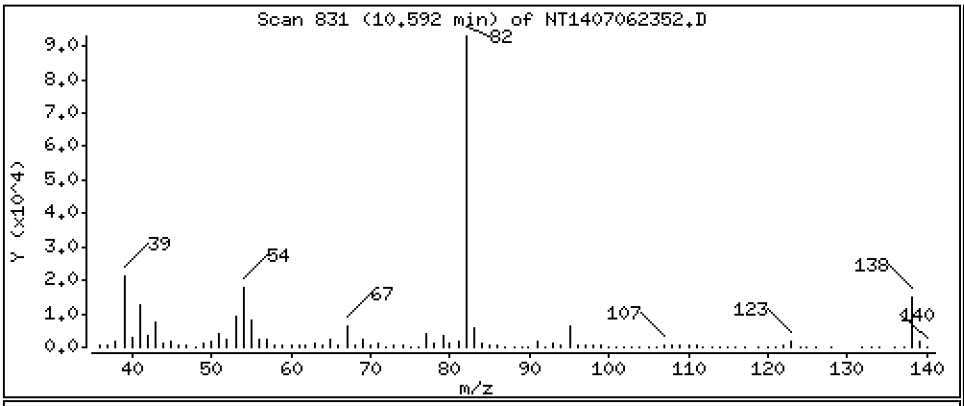
Operator: JGR

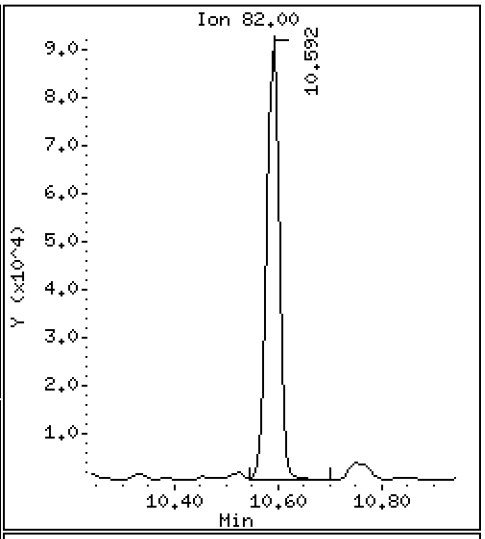
Column phase: ZB-5msi

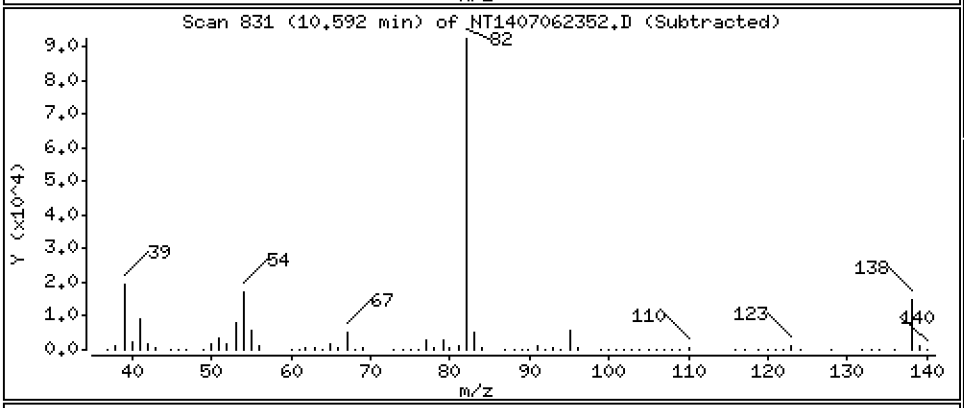
Column diameter: 0.25

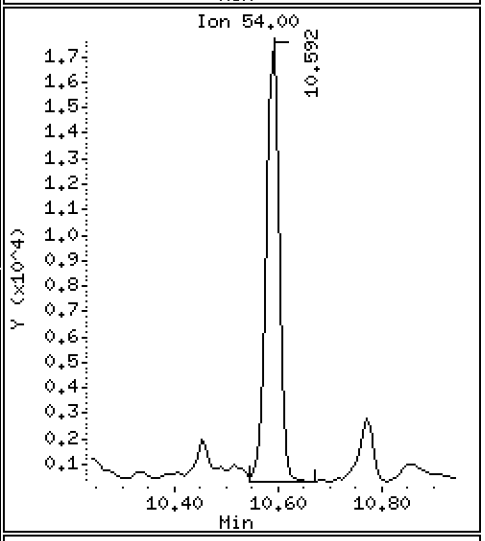
20 Isophorone

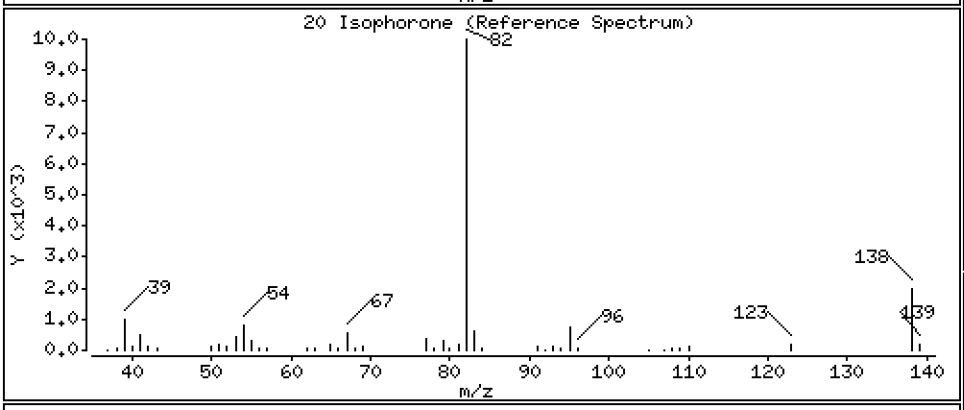
Concentration: 1.778 ug/mL

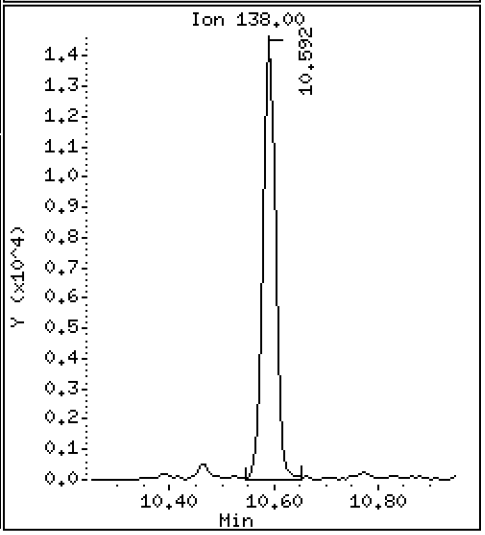


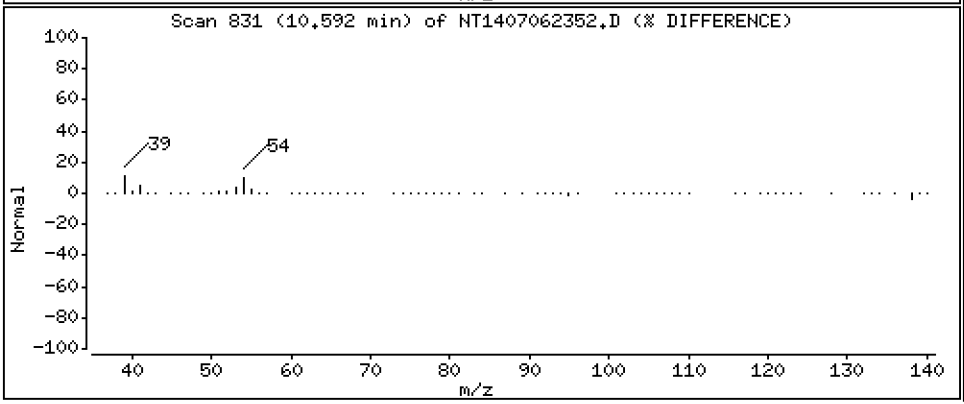












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

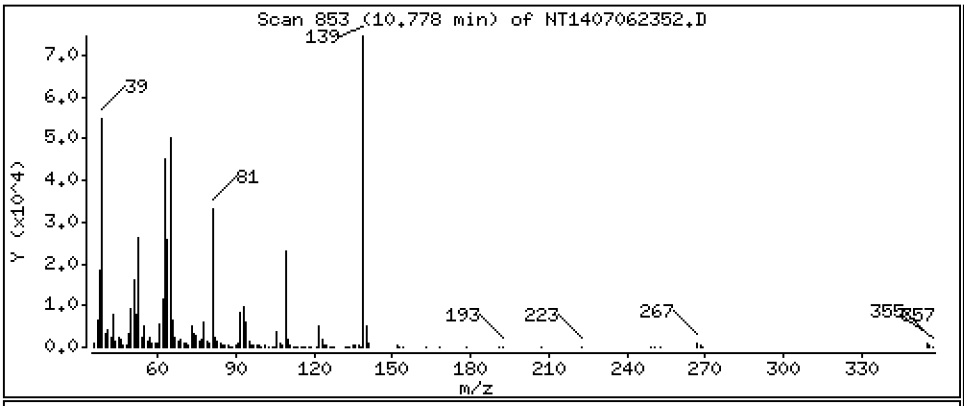
Operator: JGR

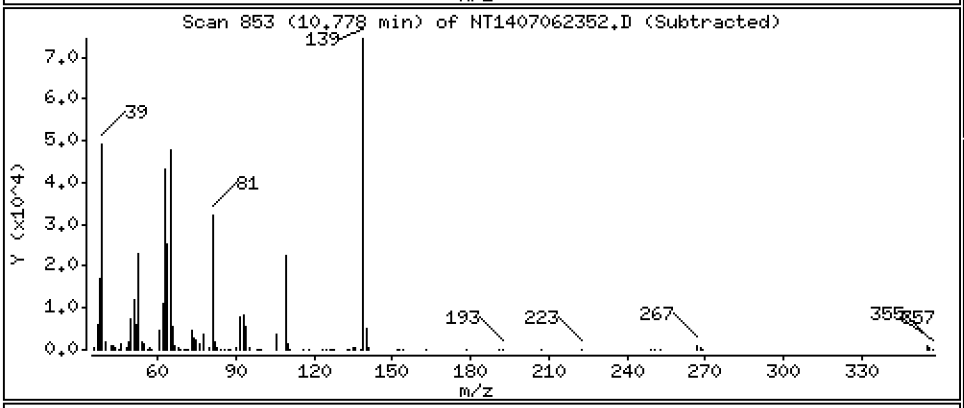
Column phase: ZB-5msi

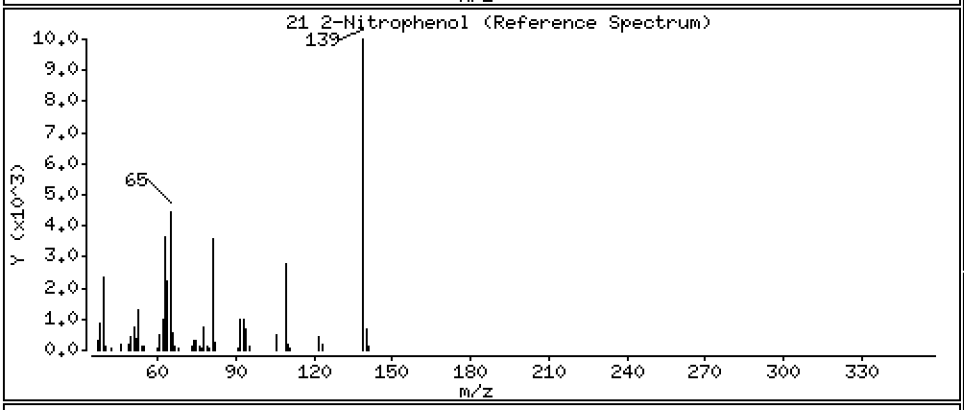
Column diameter: 0.25

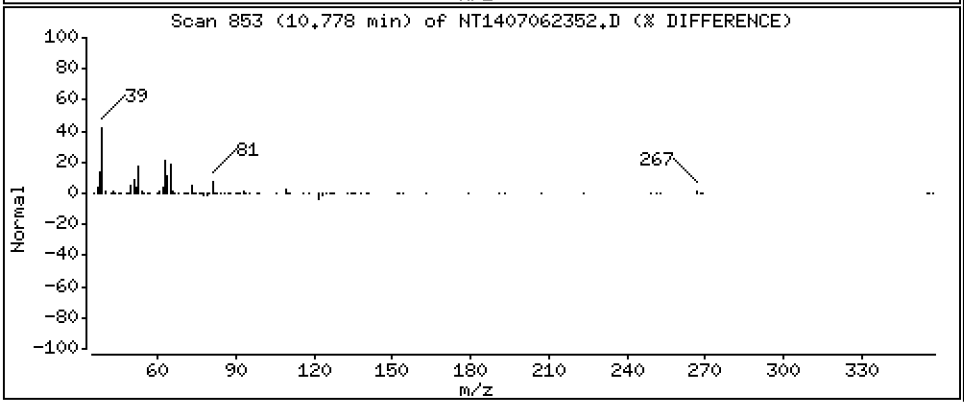
21 2-Nitrophenol

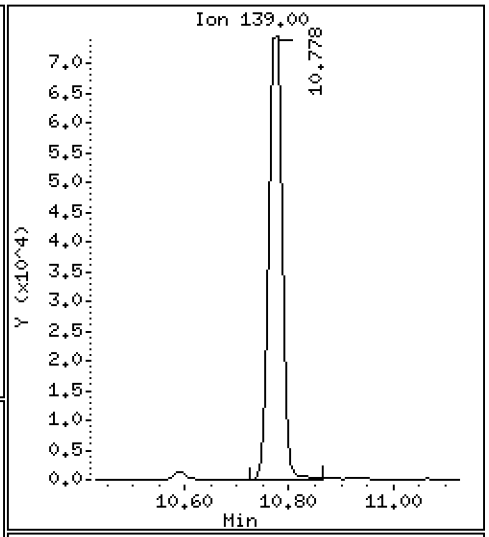
Concentration: 4.087 ug/mL

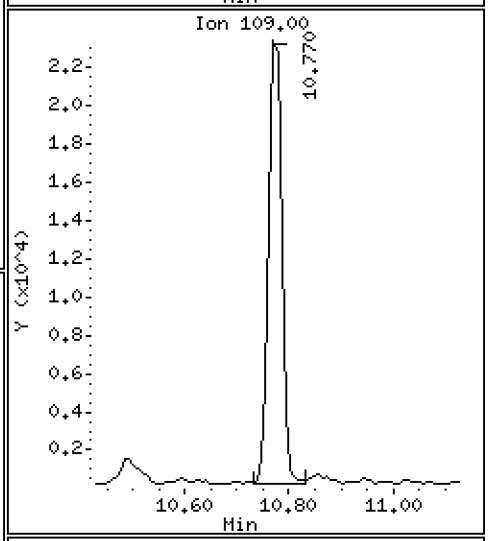


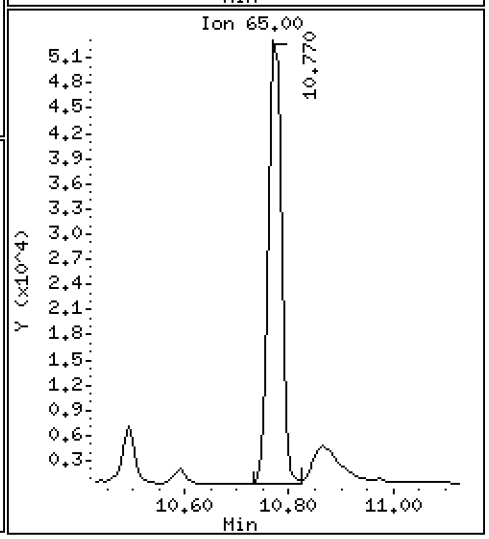












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

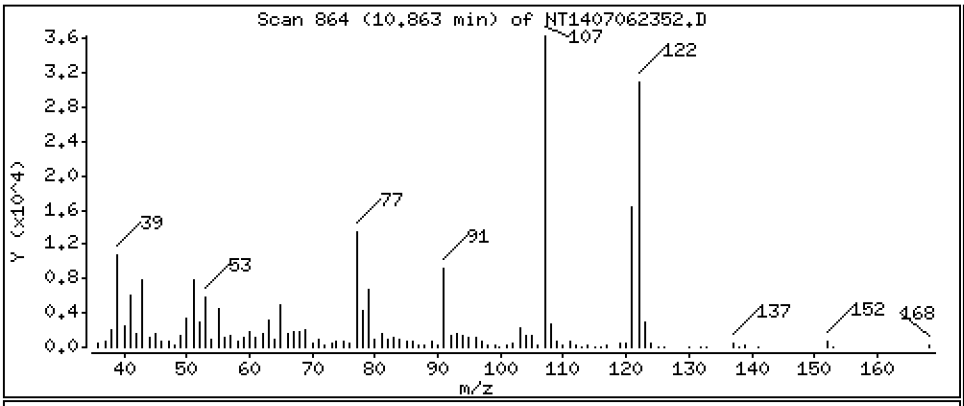
Operator: JGR

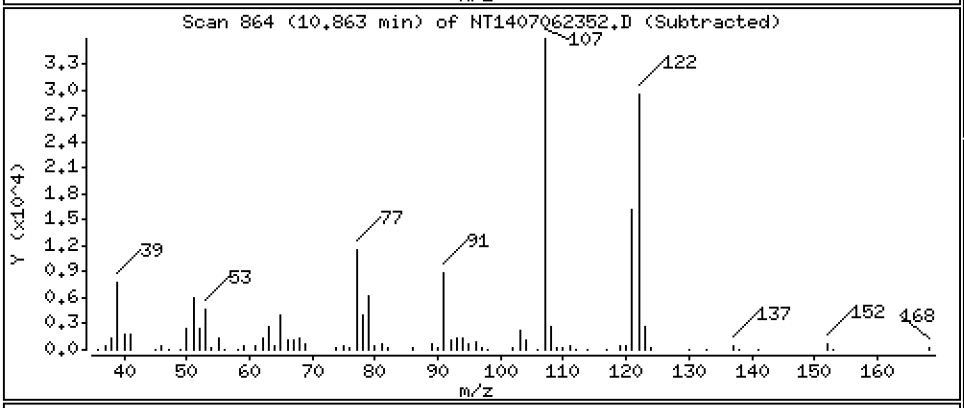
Column phase: ZB-5msi

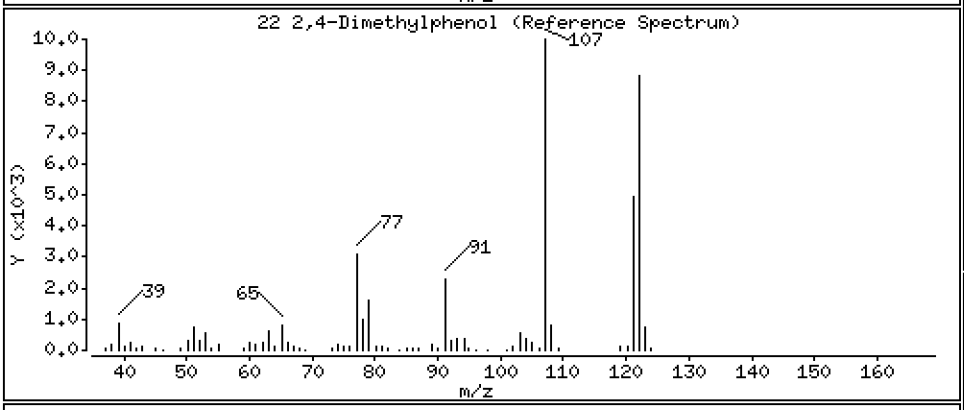
Column diameter: 0.25

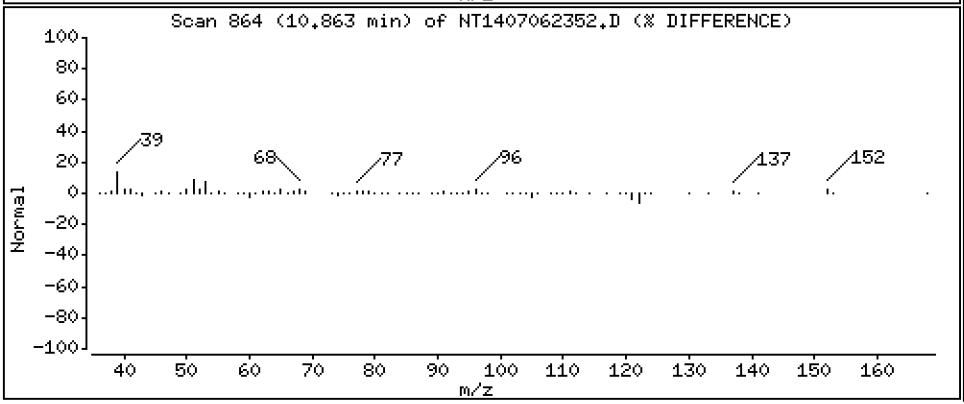
22 2,4-Dimethylphenol

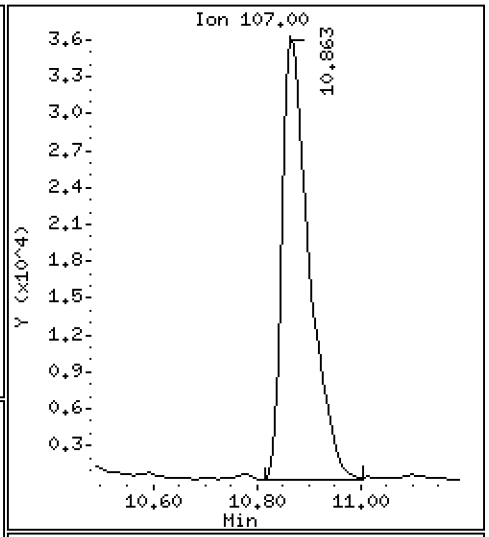
Concentration: 2.544 ug/mL

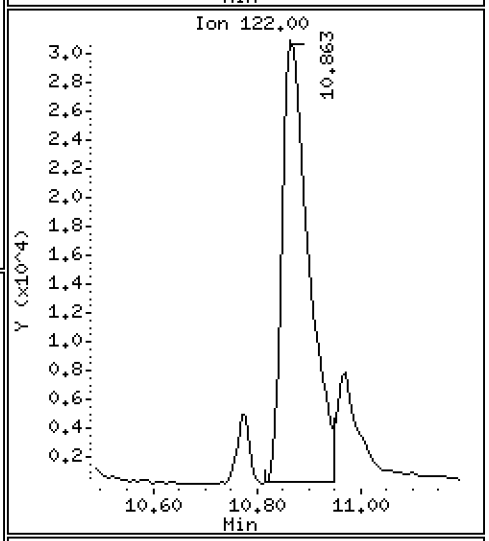


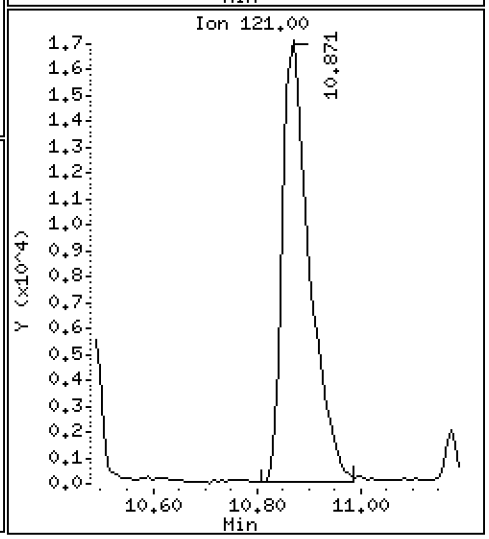












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

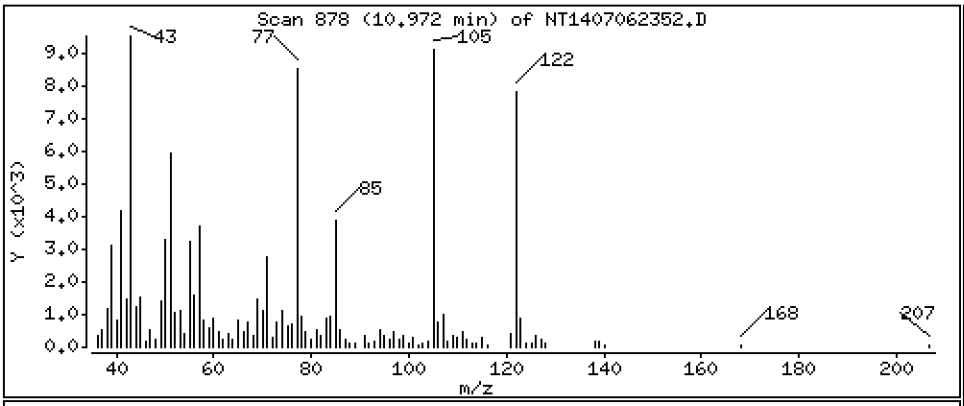
Operator: JGR

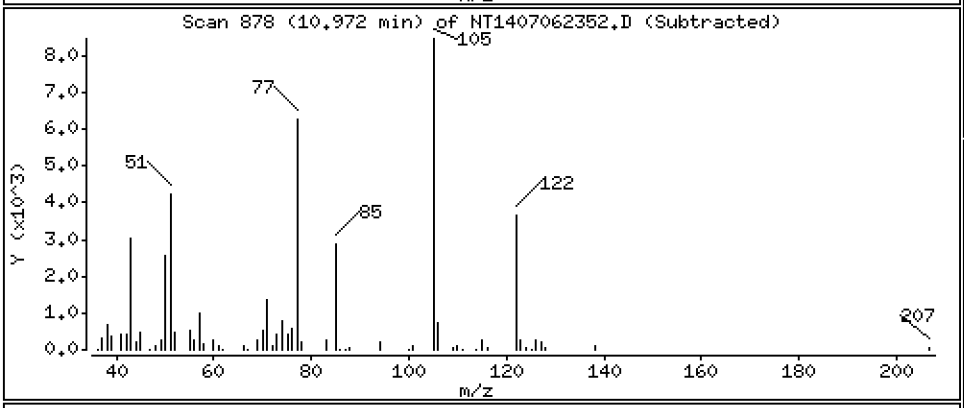
Column phase: ZB-5msi

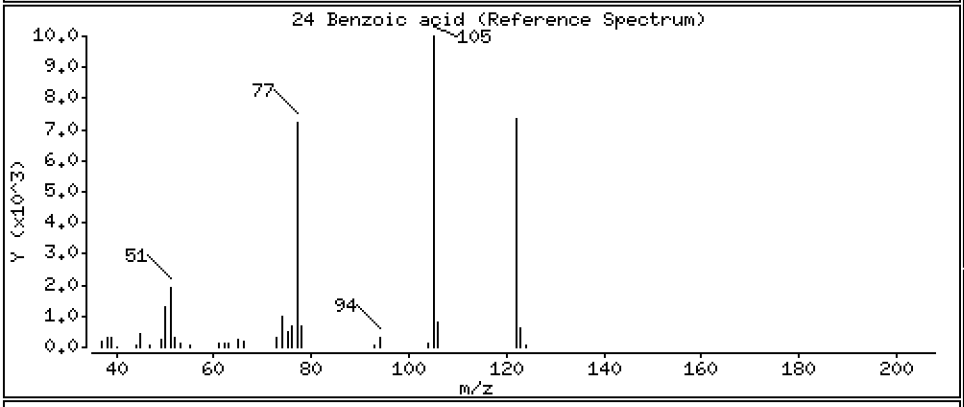
Column diameter: 0.25

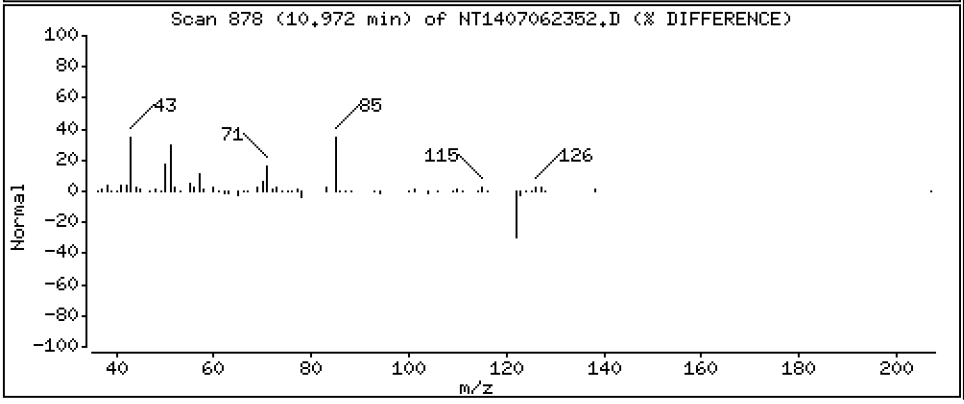
24 Benzoic acid

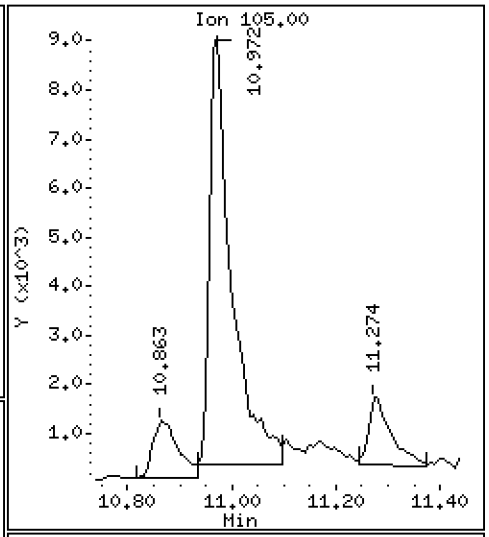
Concentration: 0.8236 ug/mL

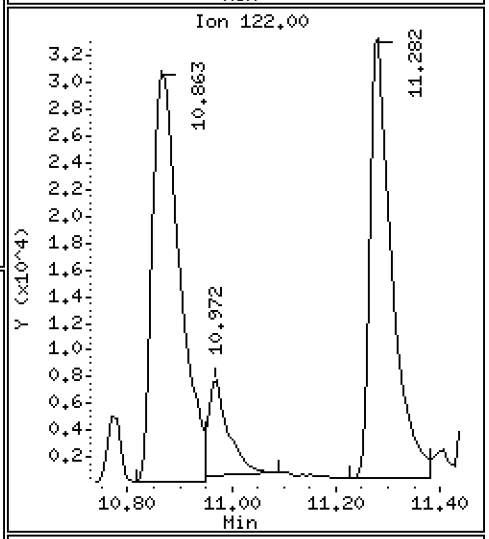


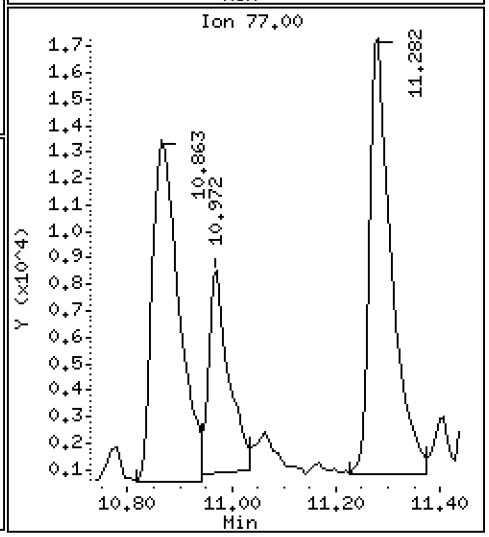












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

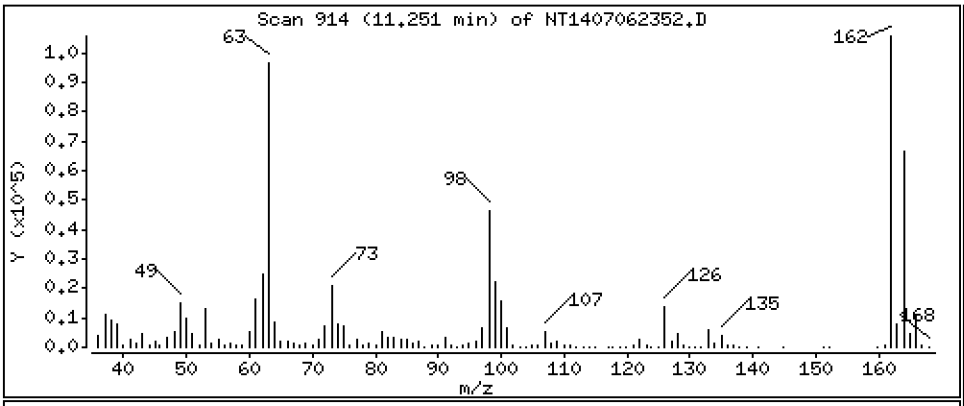
Operator: JGR

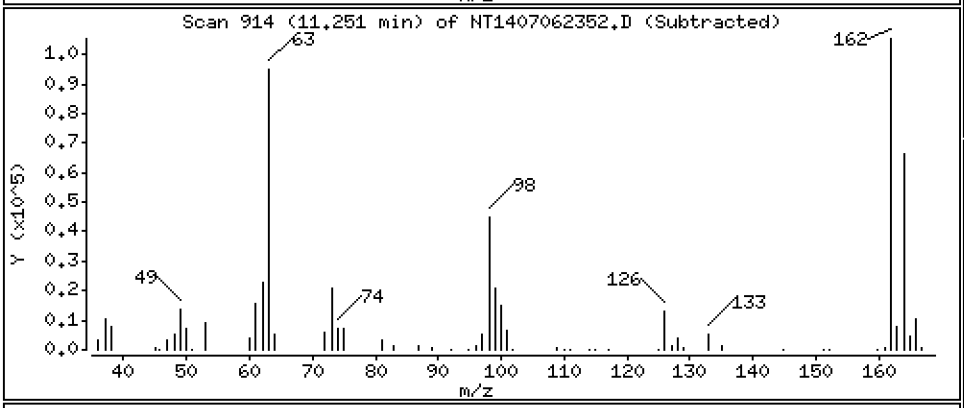
Column phase: ZB-5msi

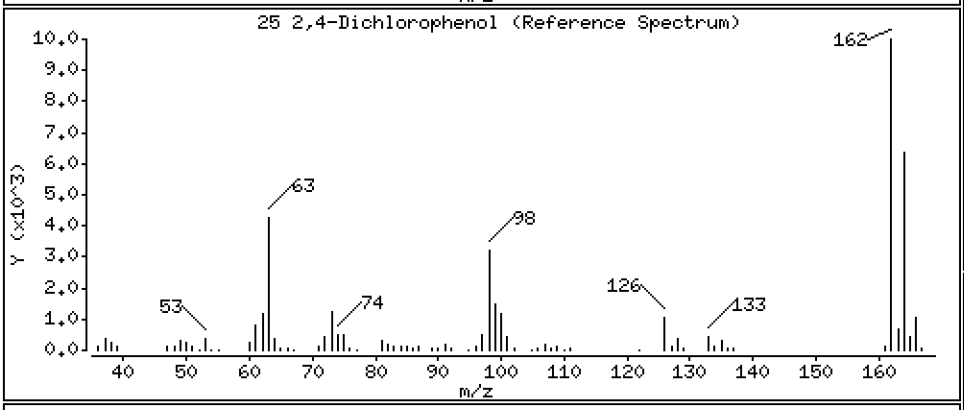
Column diameter: 0.25

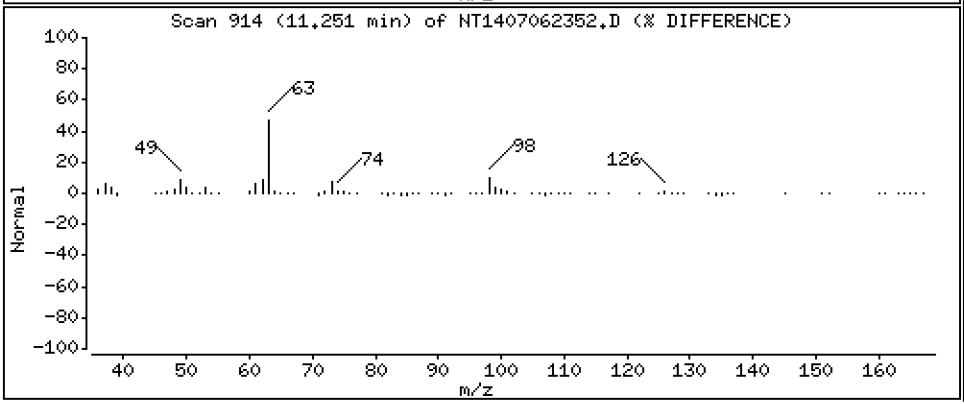
25 2,4-Dichlorophenol

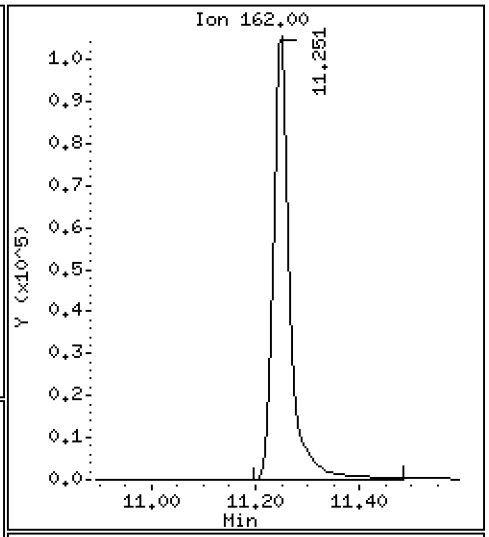
Concentration: 6.192 ug/mL

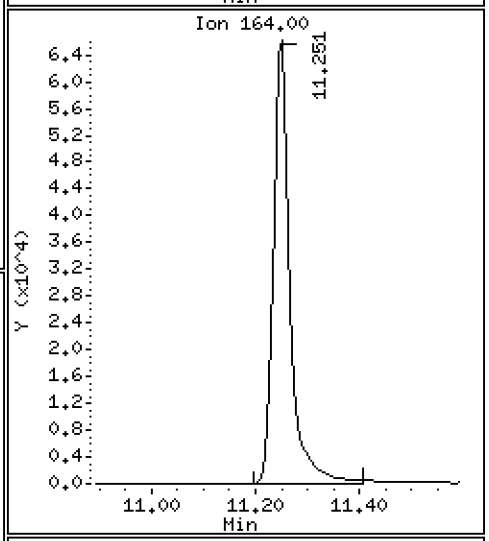


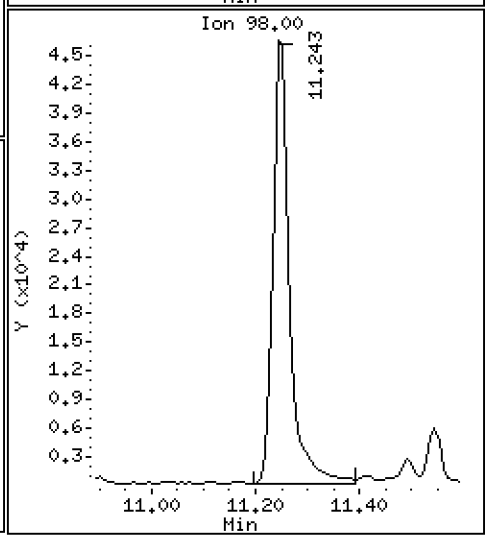












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

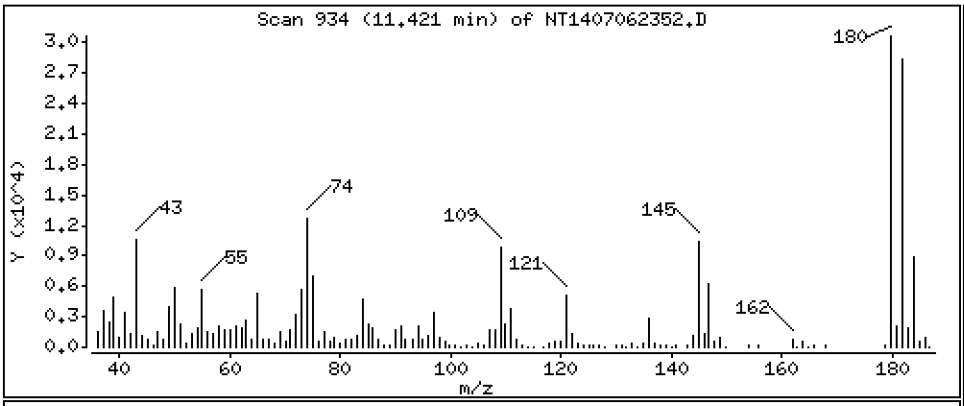
Operator: JGR

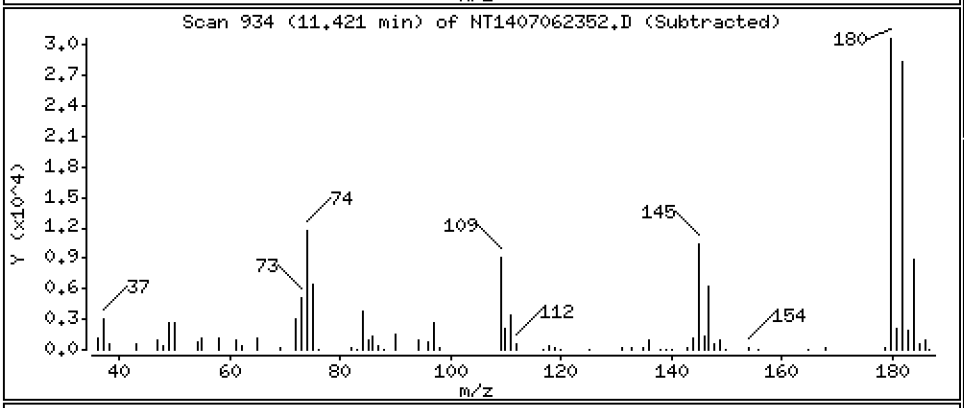
Column phase: ZB-5msi

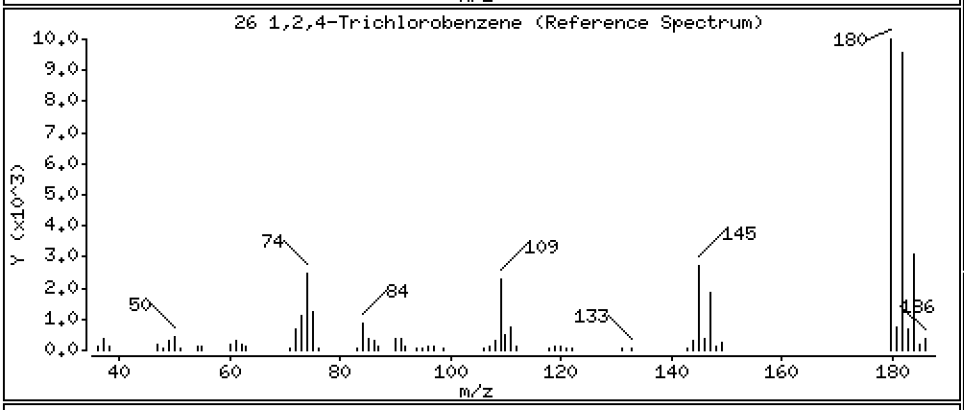
Column diameter: 0.25

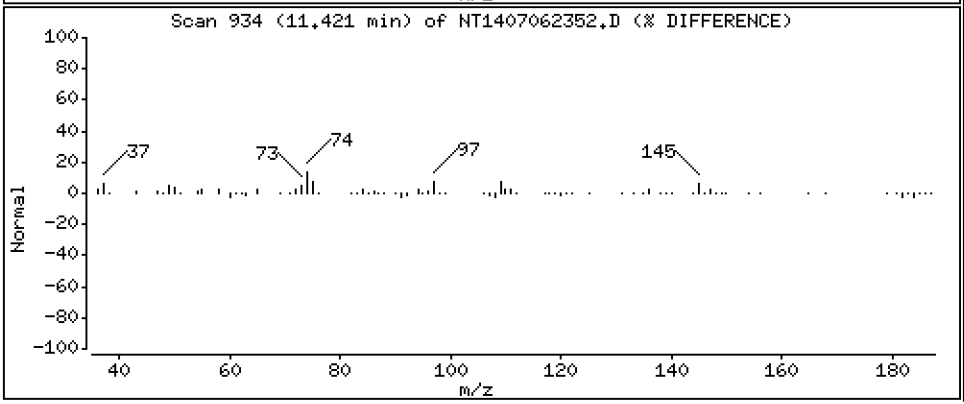
26 1,2,4-Trichlorobenzene

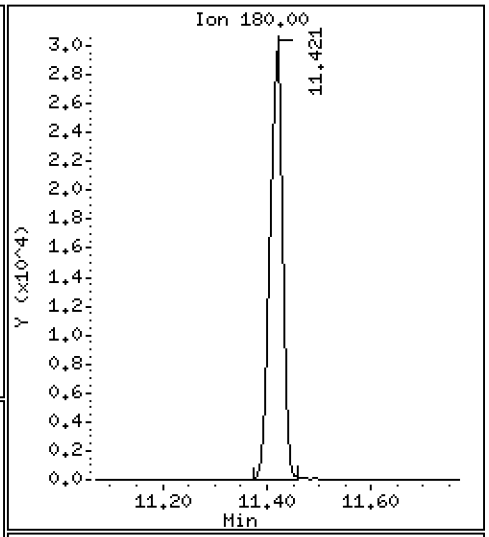
Concentration: 1.251 ug/mL

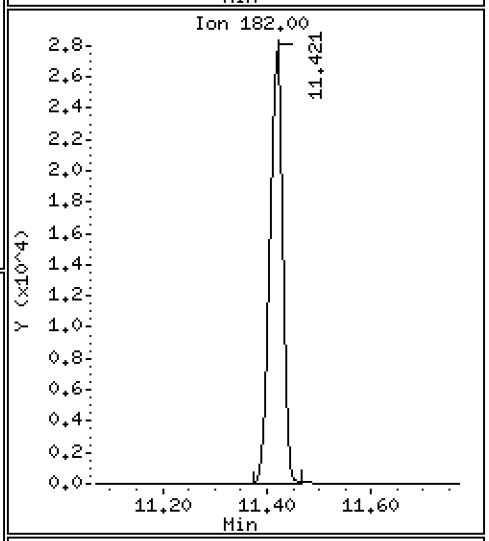


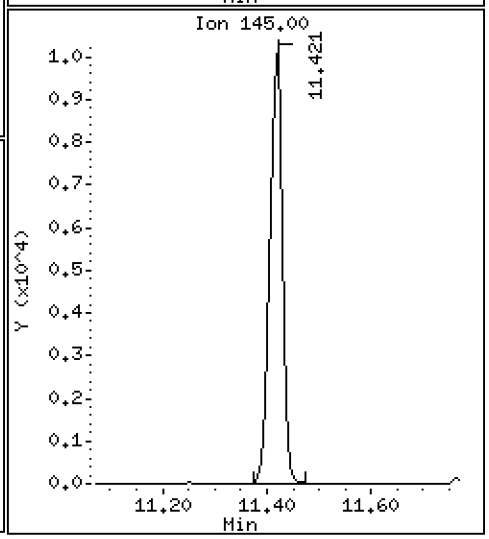












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

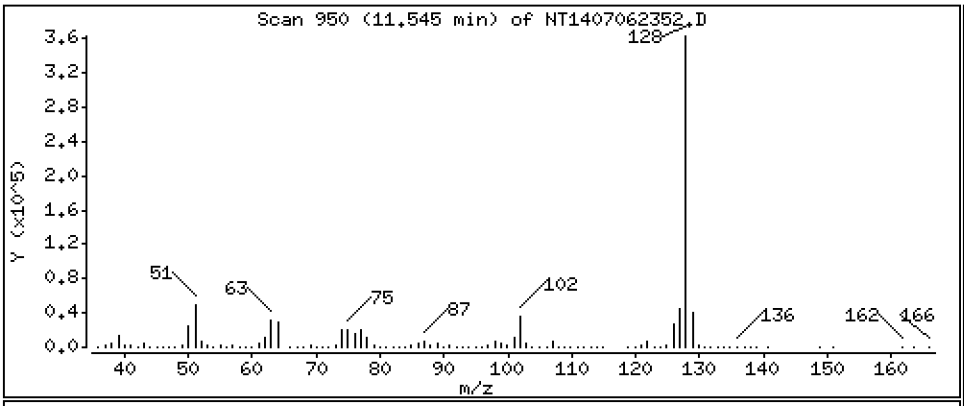
Operator: JGR

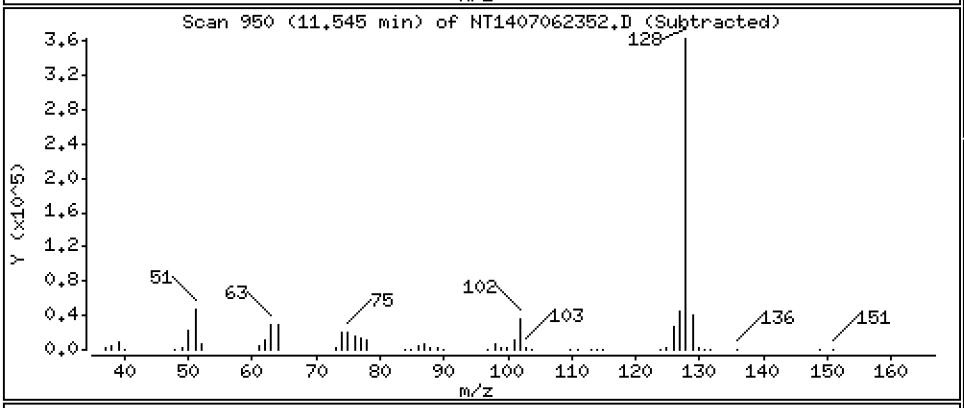
Column phase: ZB-5msi

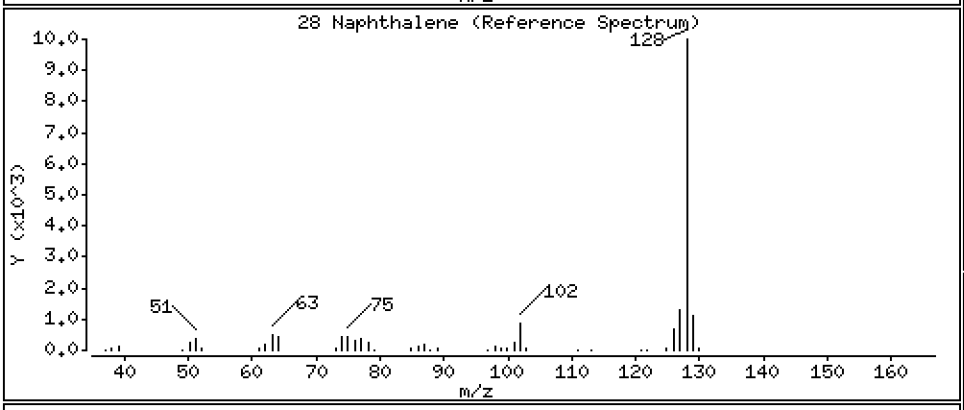
Column diameter: 0.25

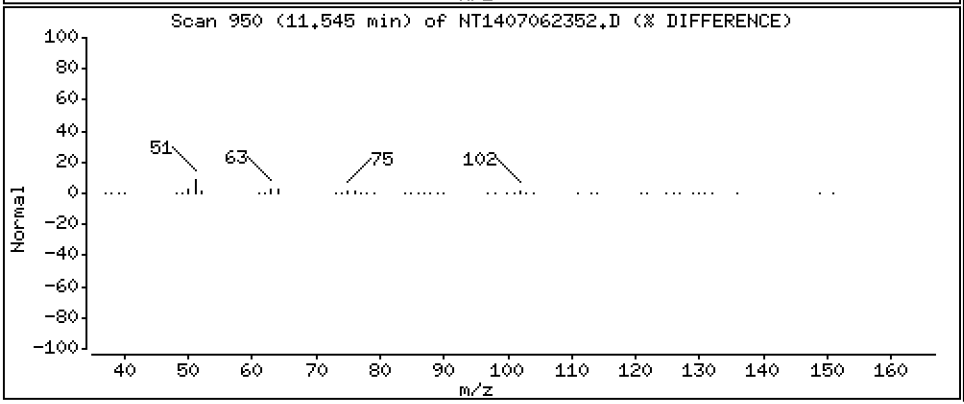
28 Naphthalene

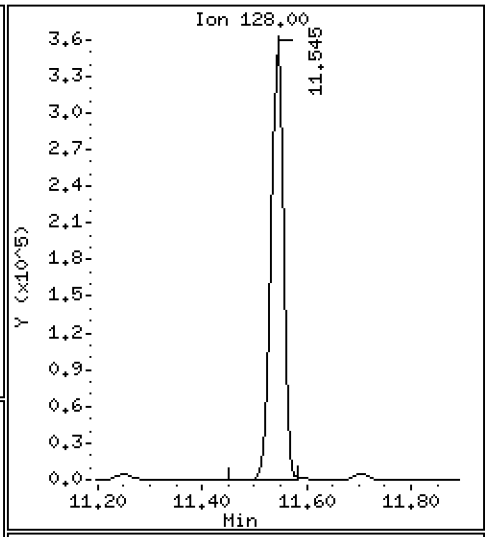
Concentration: 4.081 ug/mL

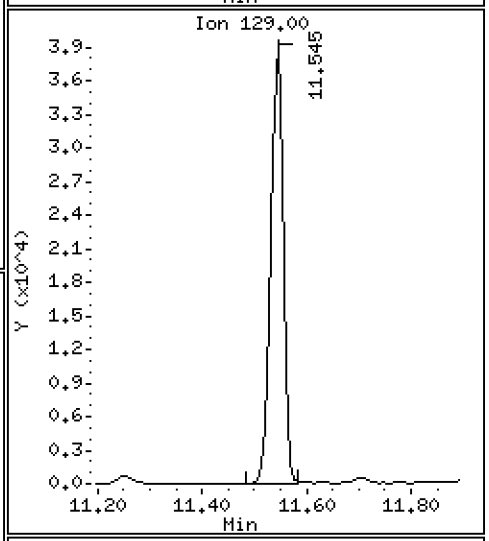


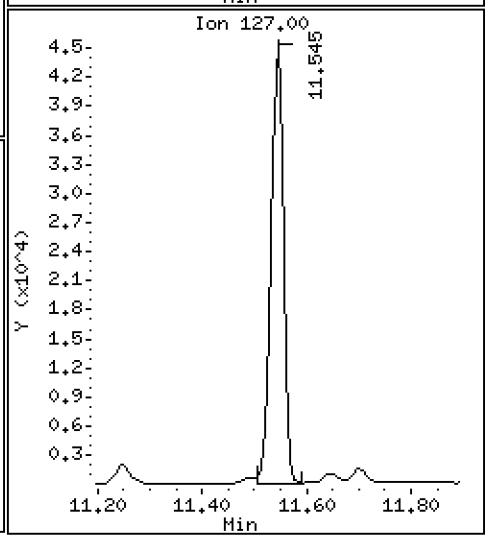












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

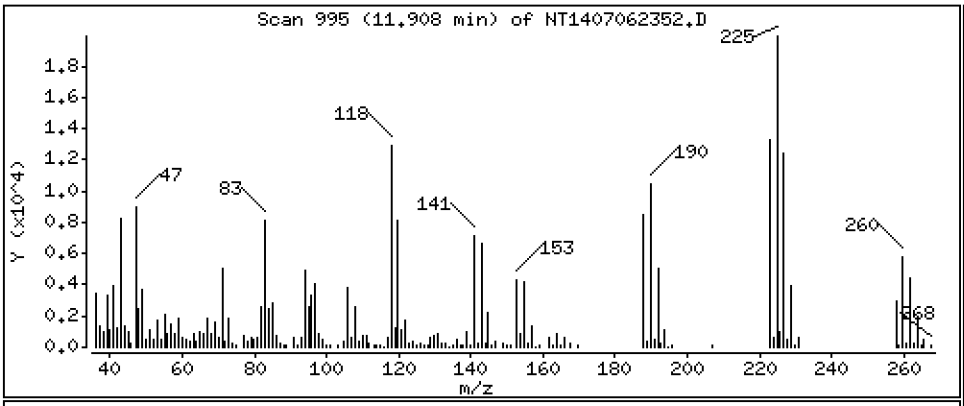
Operator: JGR

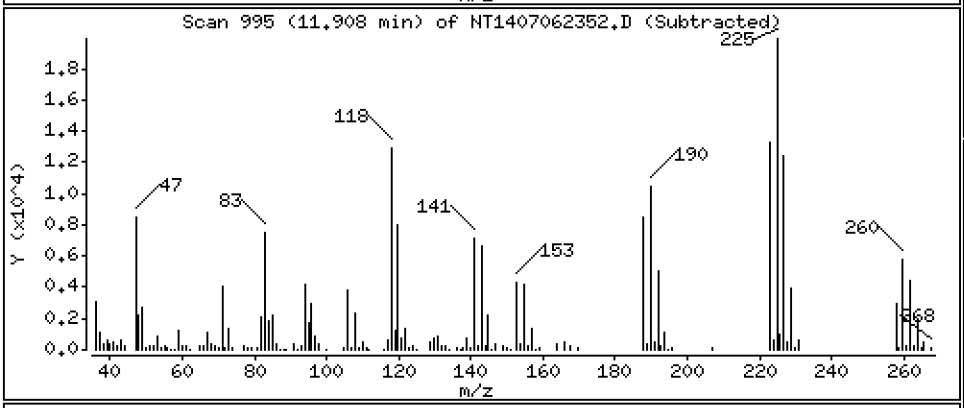
Column phase: ZB-5msi

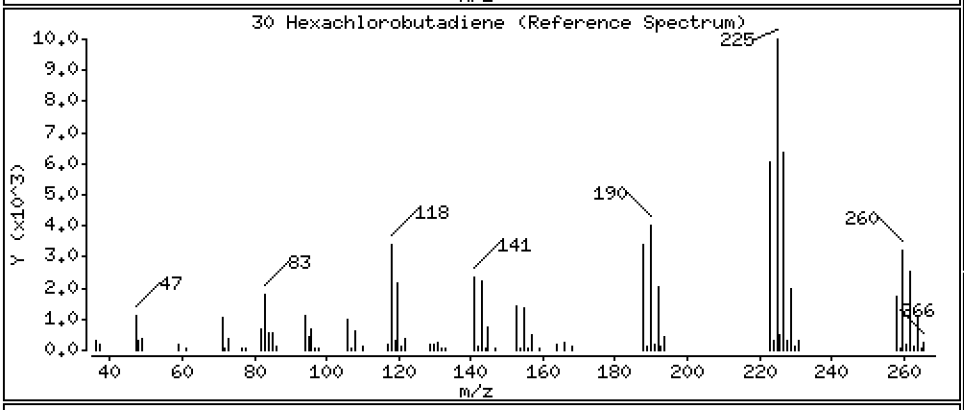
Column diameter: 0.25

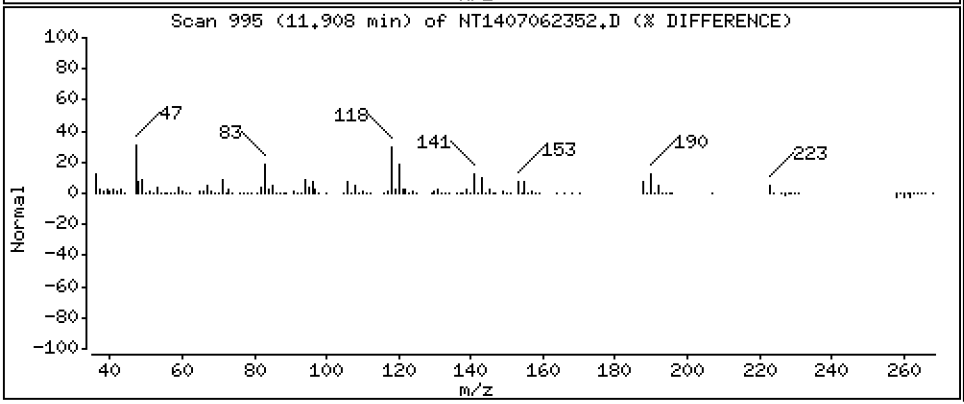
30 Hexachlorobutadiene

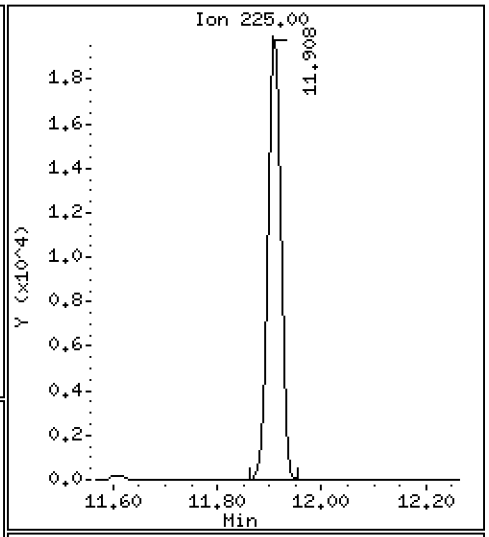
Concentration: 1.830 ug/mL

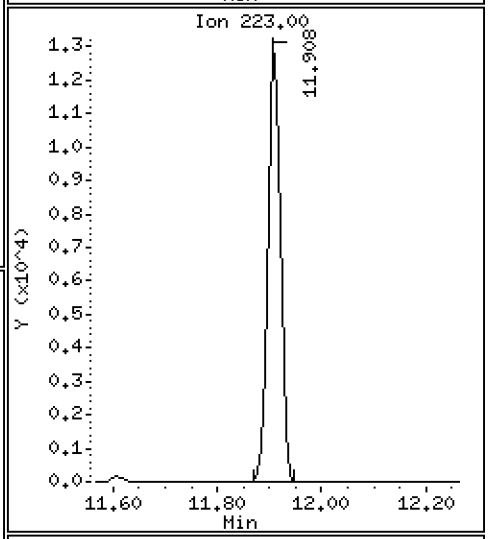


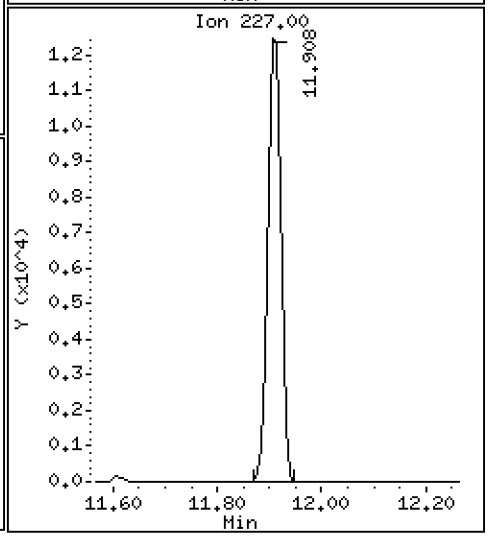












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

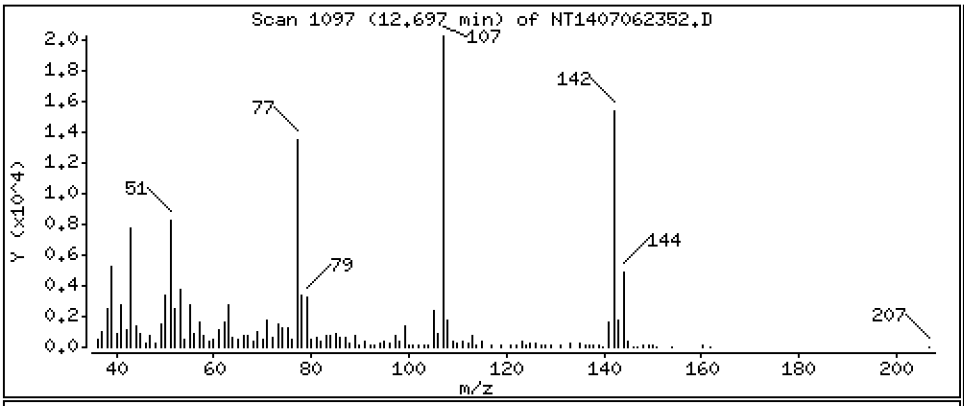
Operator: JGR

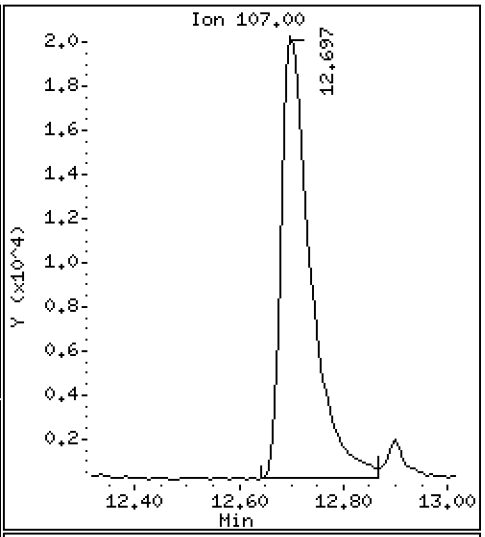
Column phase: ZB-5msi

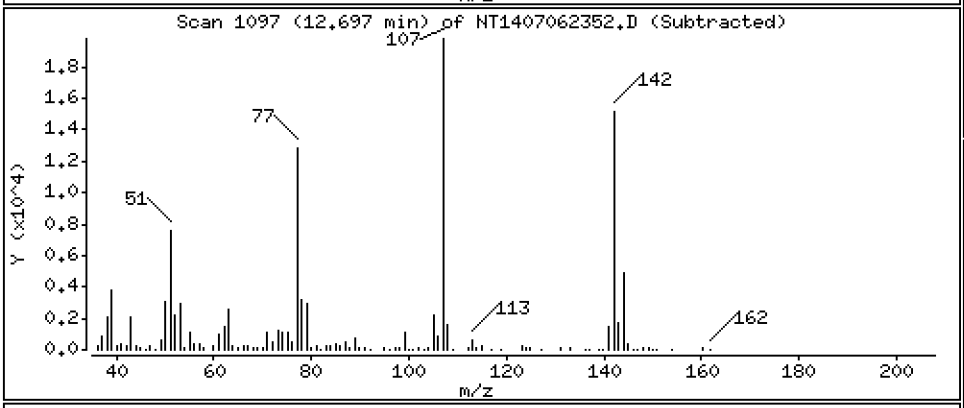
Column diameter: 0.25

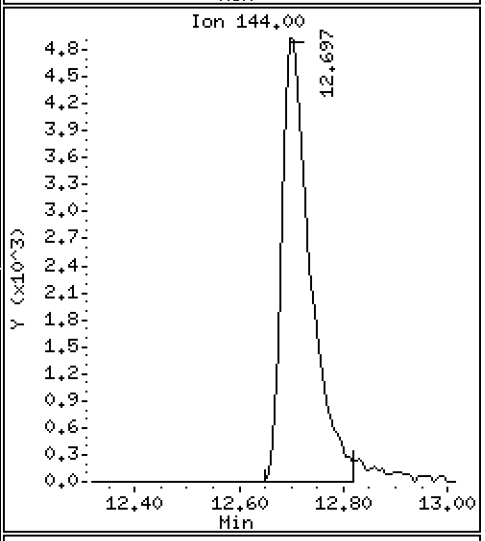
31 4-Chloro-3-methylphenol

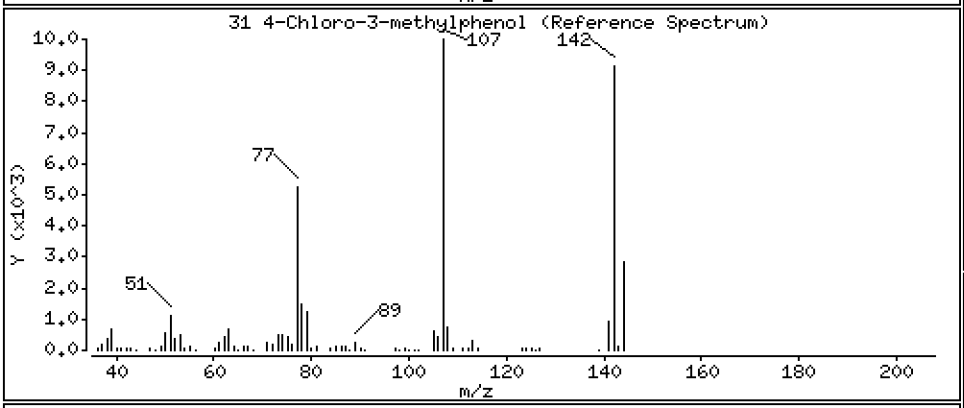
Concentration: 1.647 ug/mL

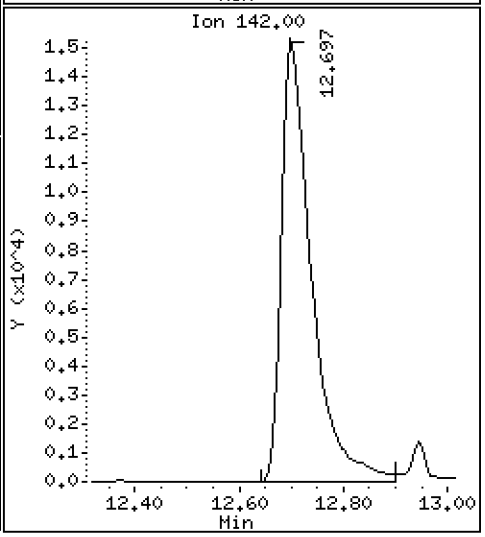


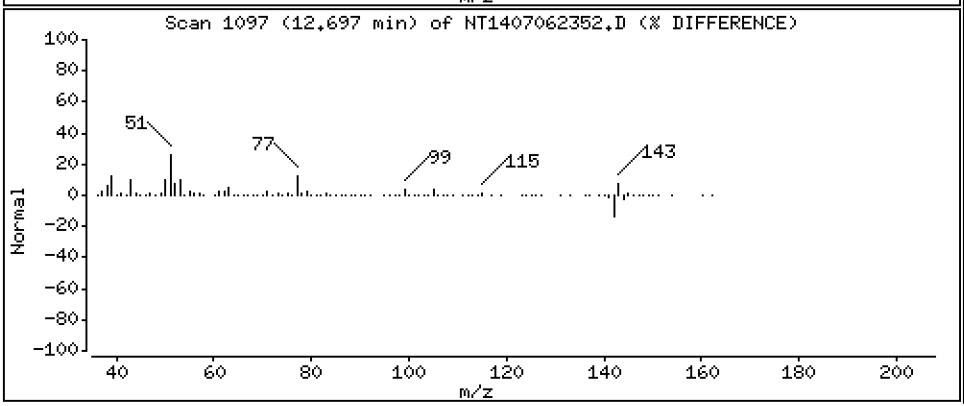












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

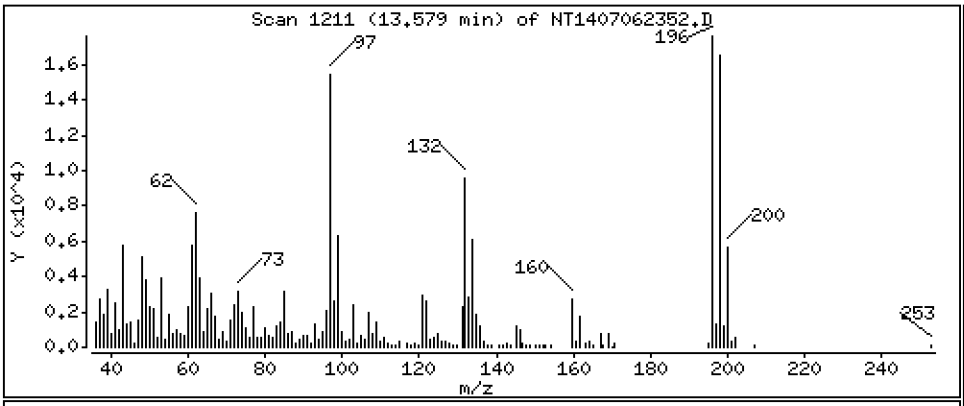
Operator: JGR

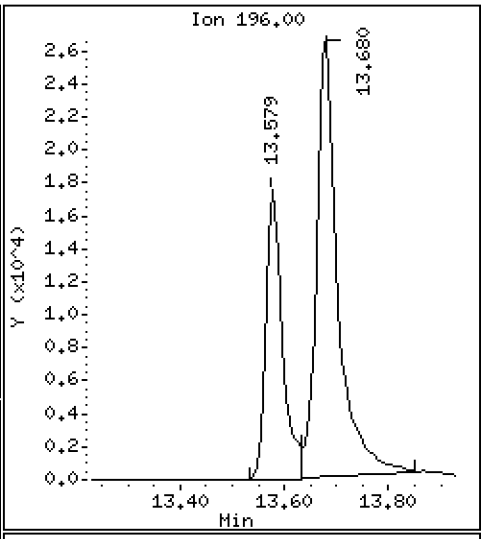
Column phase: ZB-5msi

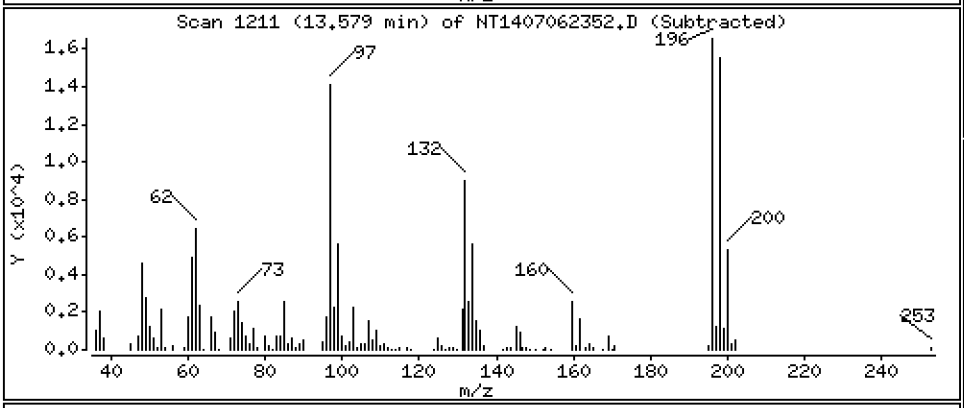
Column diameter: 0.25

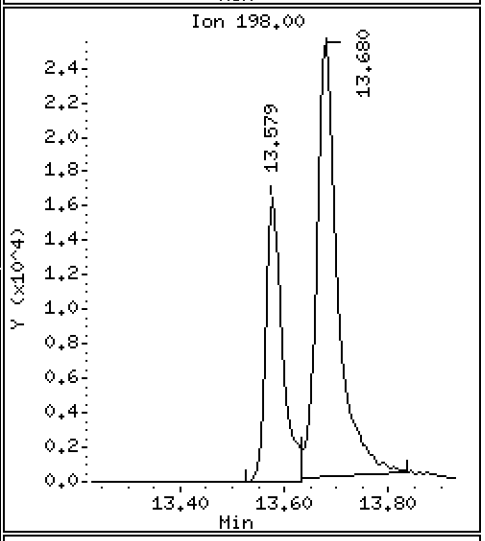
34 2,4,6-Trichlorophenol

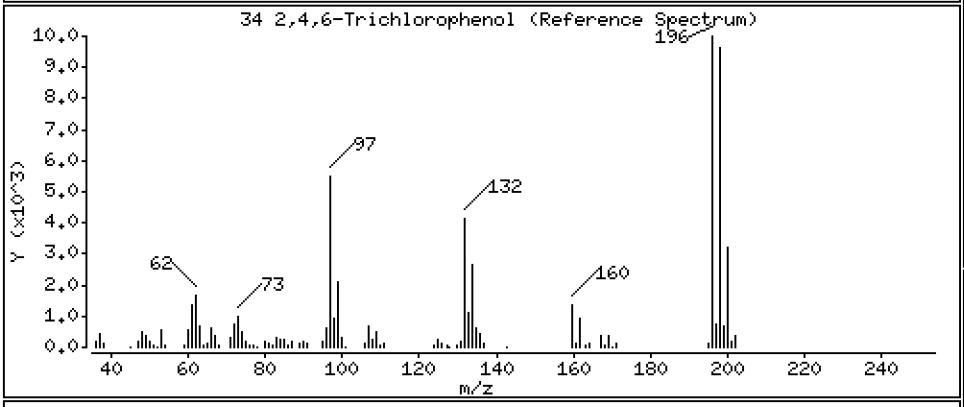
Concentration: 1.503 ug/mL

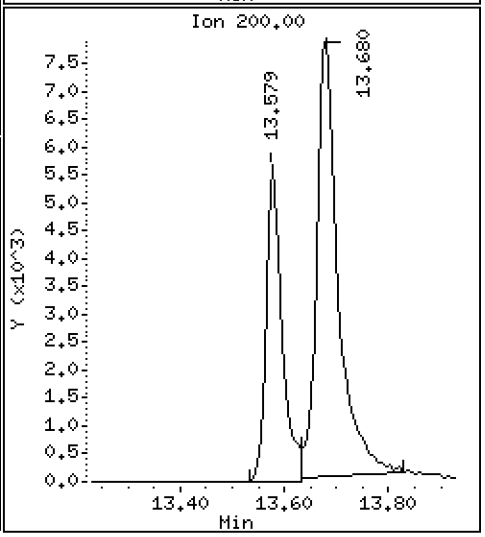


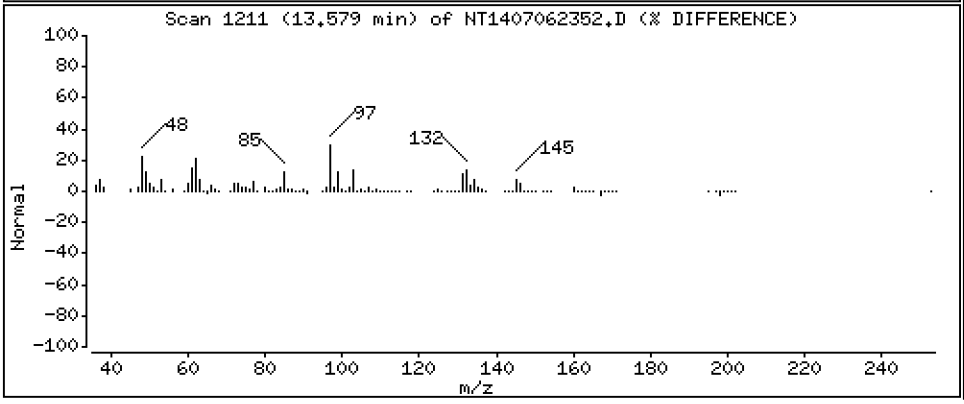












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

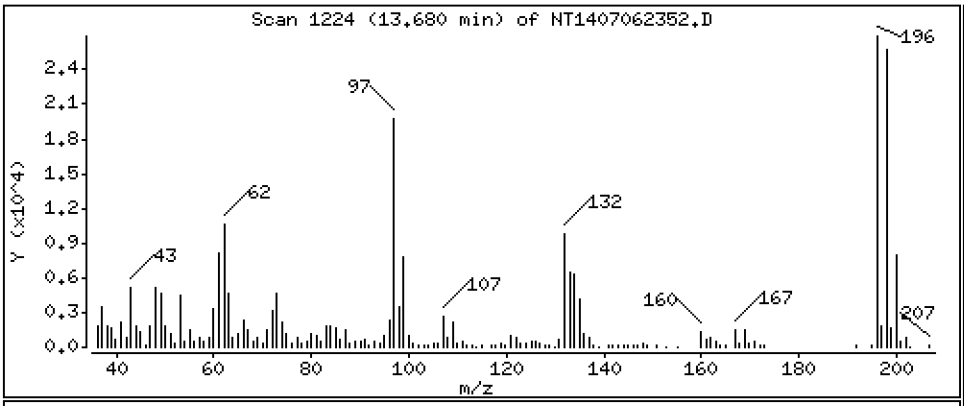
Operator: JGR

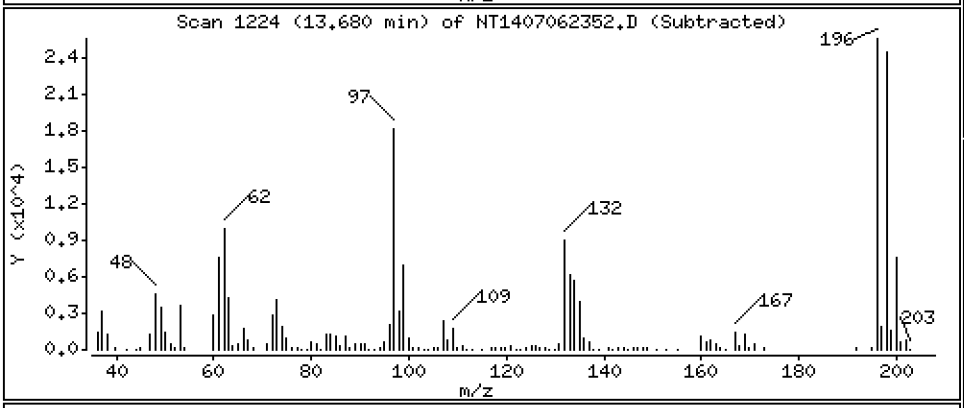
Column phase: ZB-5msi

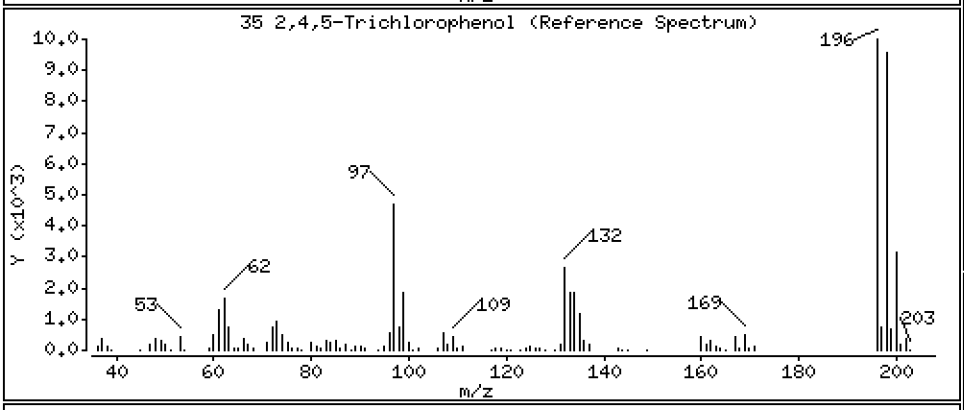
Column diameter: 0.25

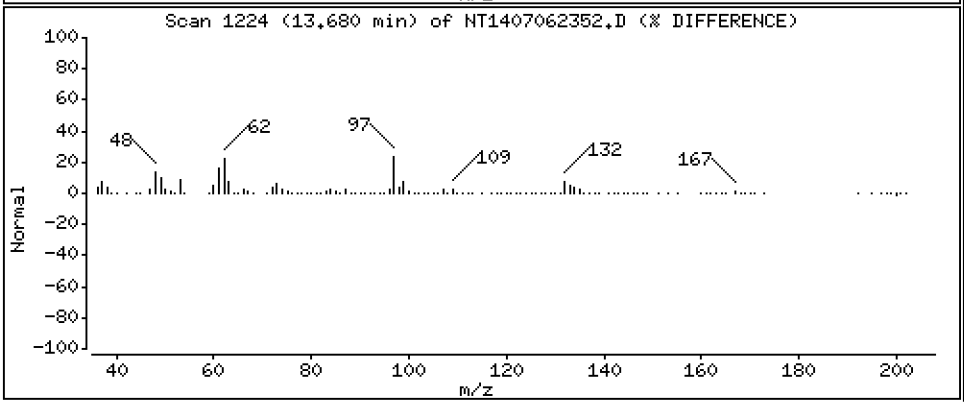
35 2,4,5-Trichlorophenol

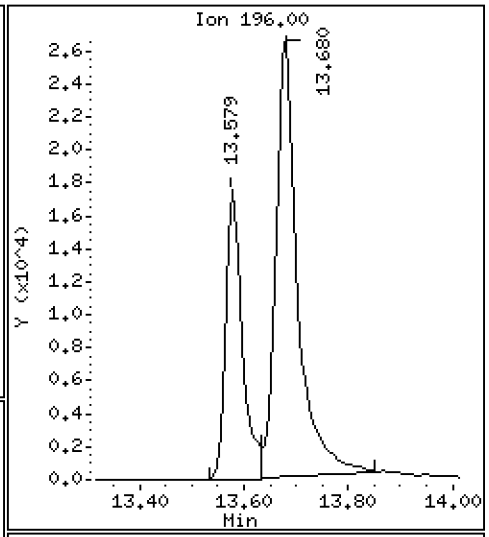
Concentration: 2.965 ug/mL

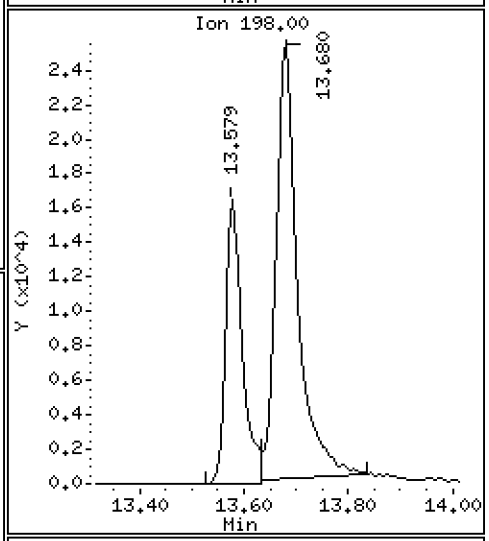


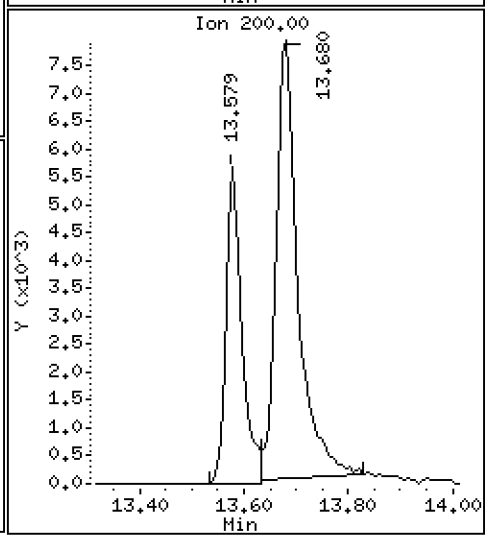












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

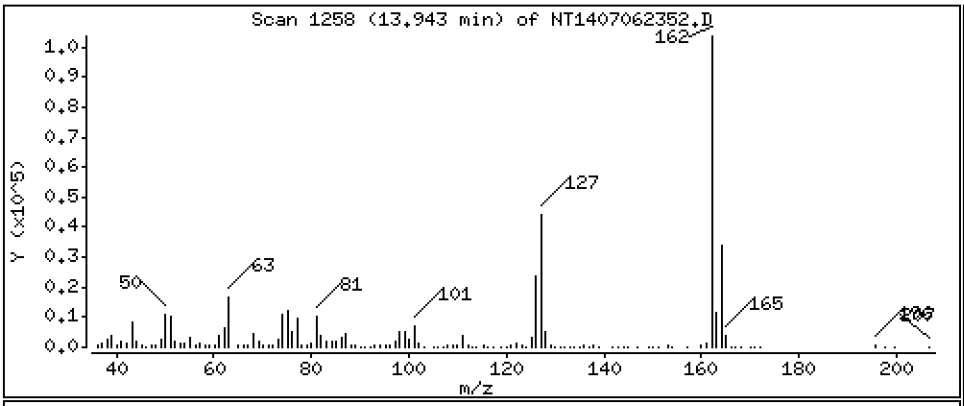
Operator: JGR

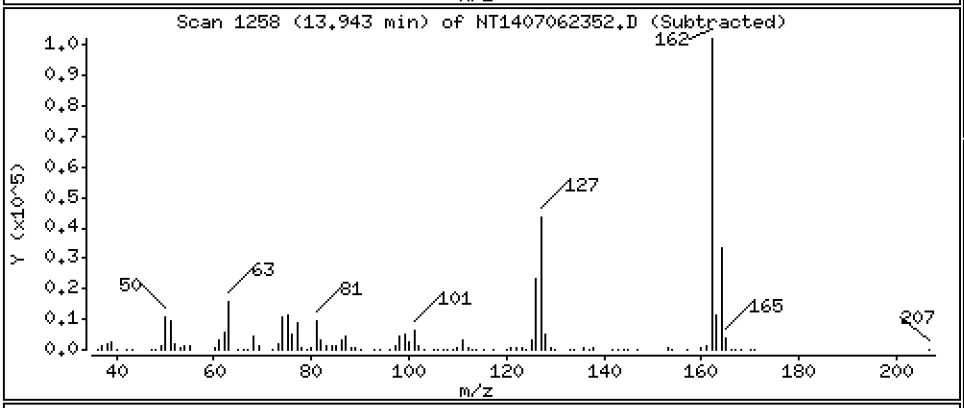
Column phase: ZB-5msi

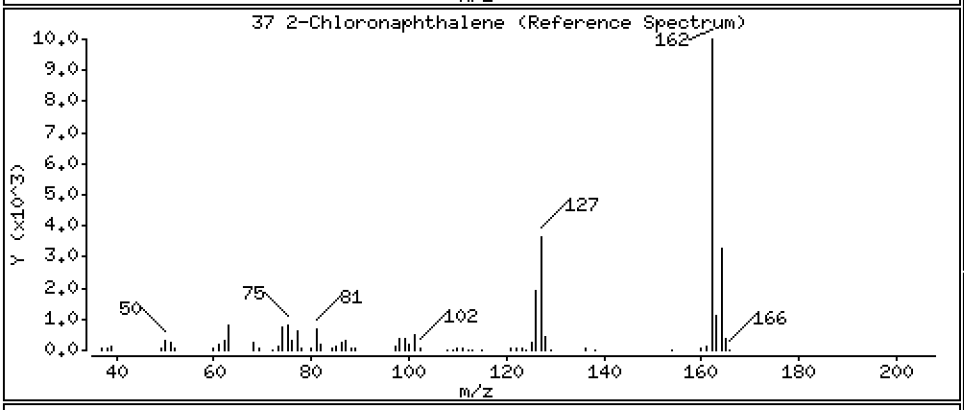
Column diameter: 0.25

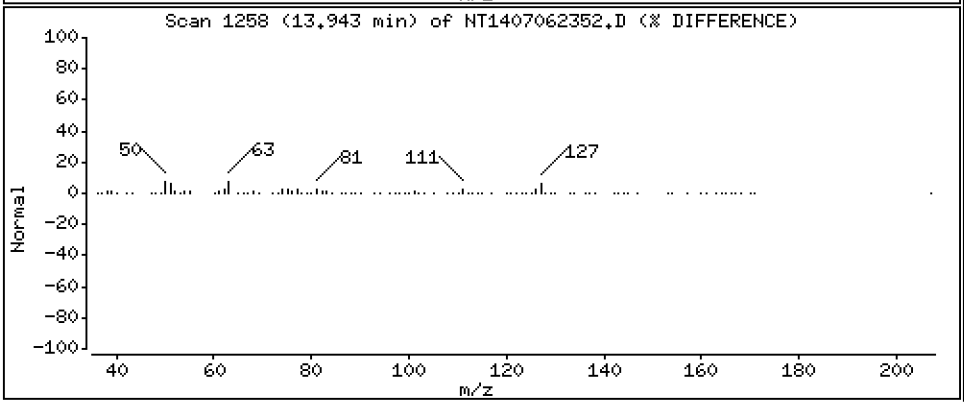
37 2-Chloronaphthalene

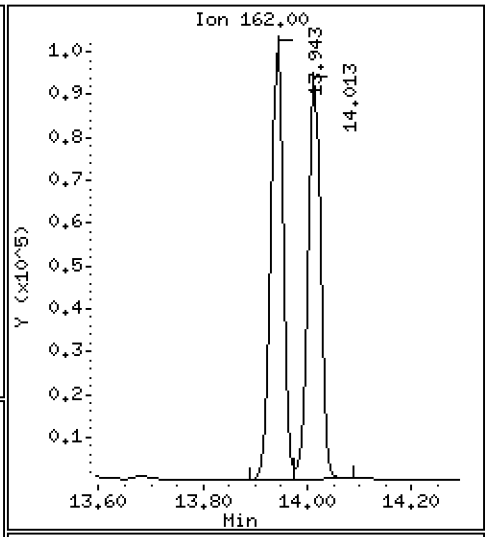
Concentration: 1.869 ug/mL

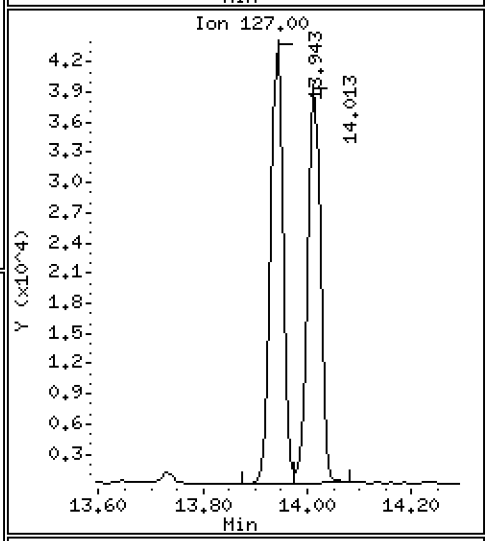


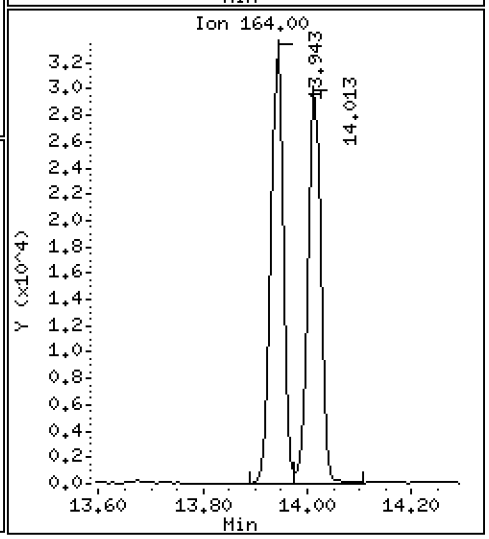












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

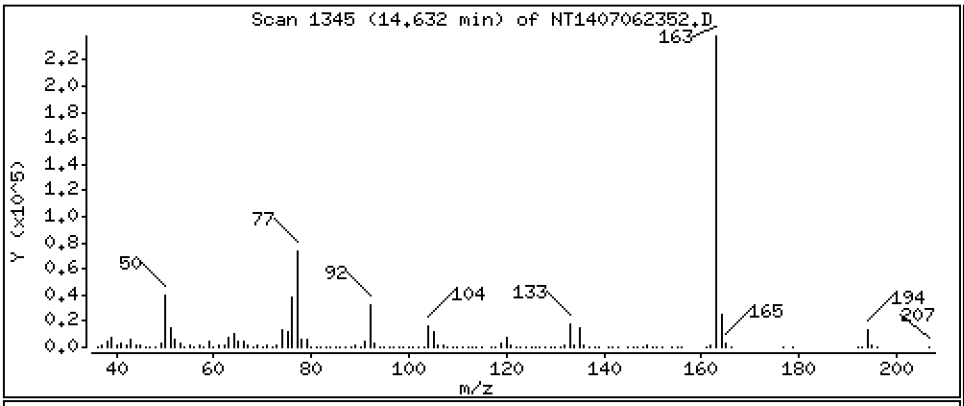
Operator: JGR

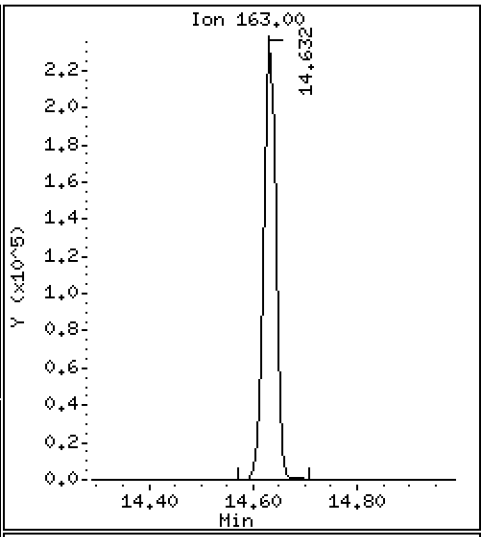
Column phase: ZB-5msi

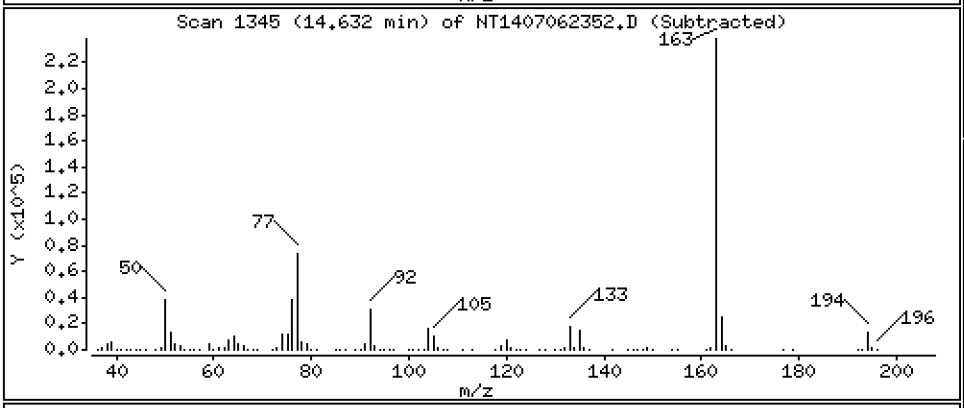
Column diameter: 0.25

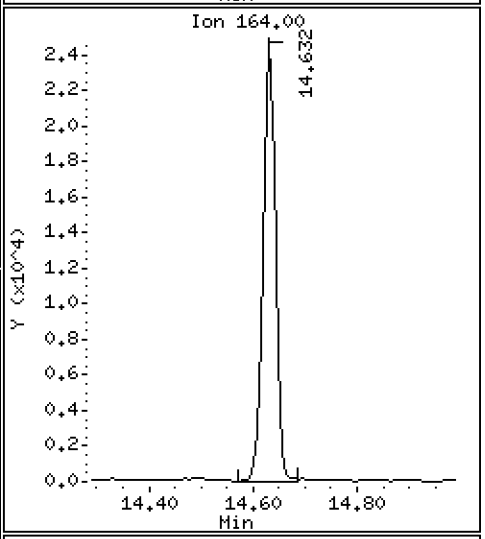
39 Dimethylphthalate

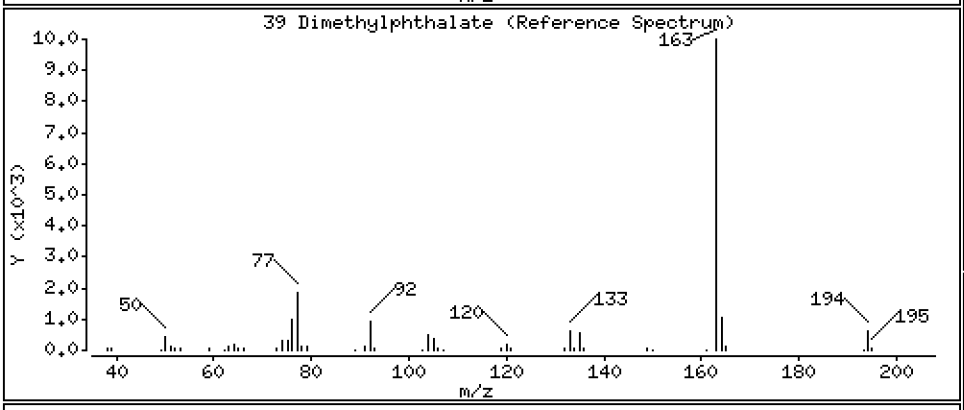
Concentration: 4.114 ug/mL

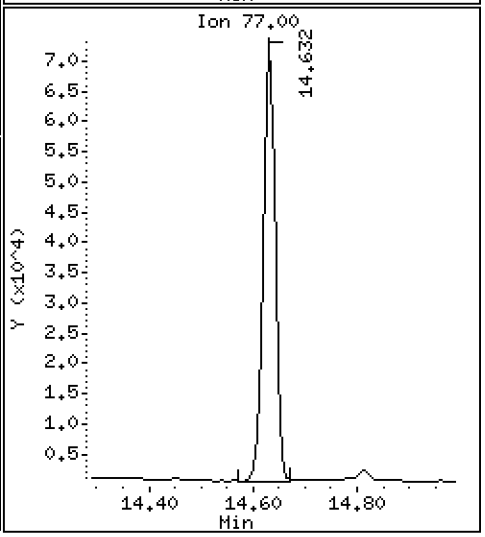


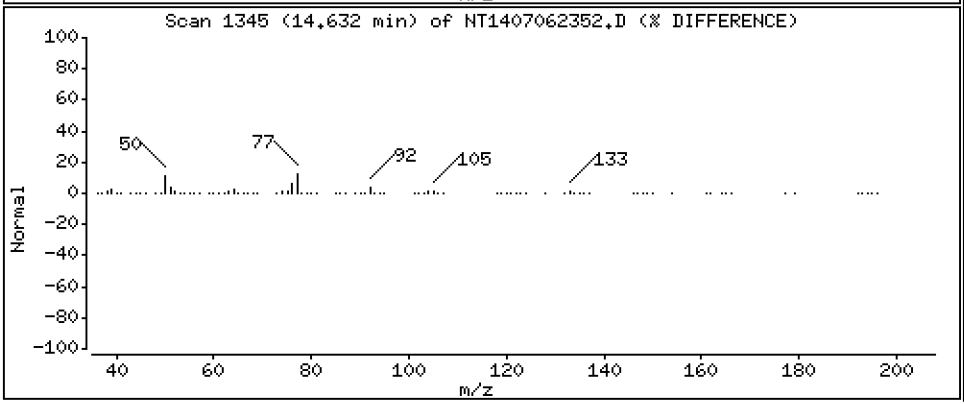












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

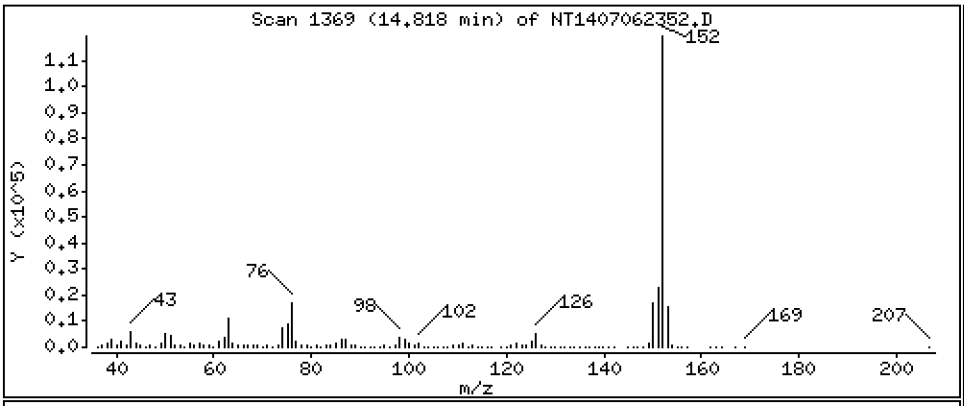
Operator: JGR

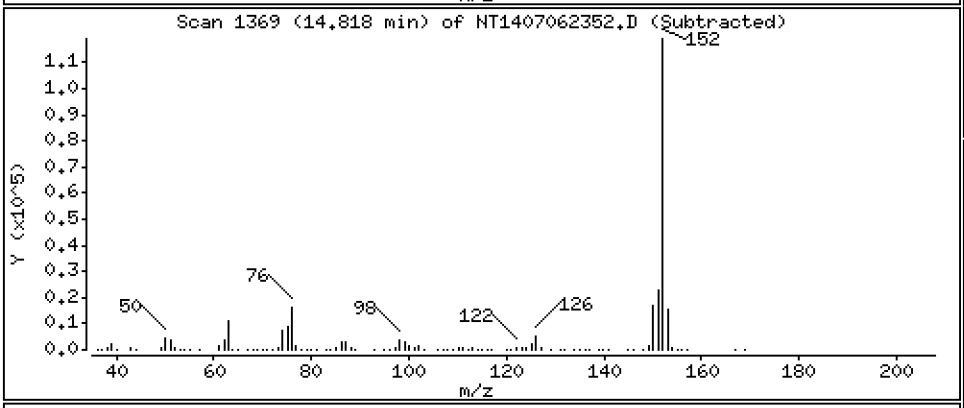
Column phase: ZB-5msi

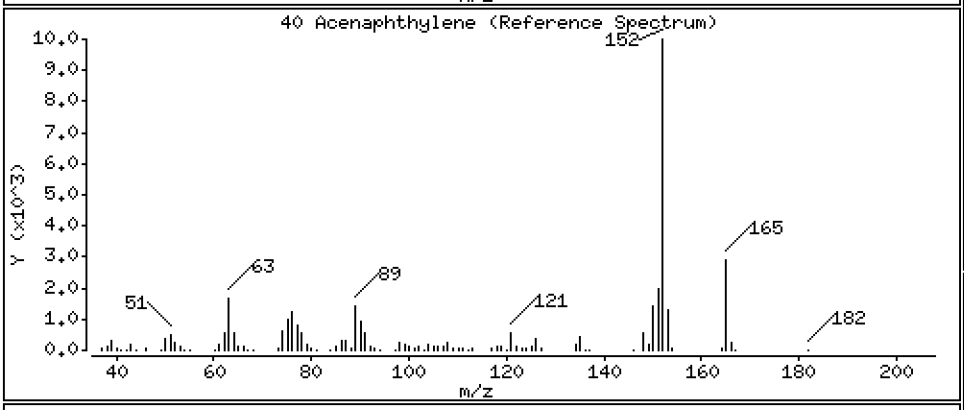
Column diameter: 0.25

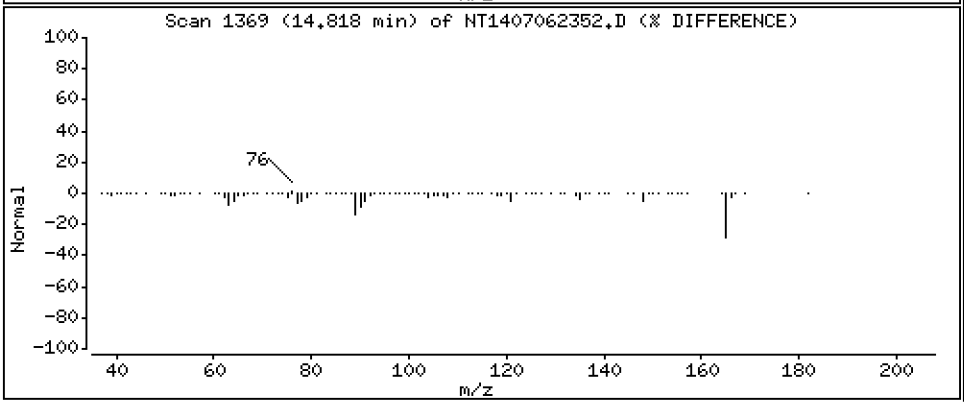
40 Acenaphthylene

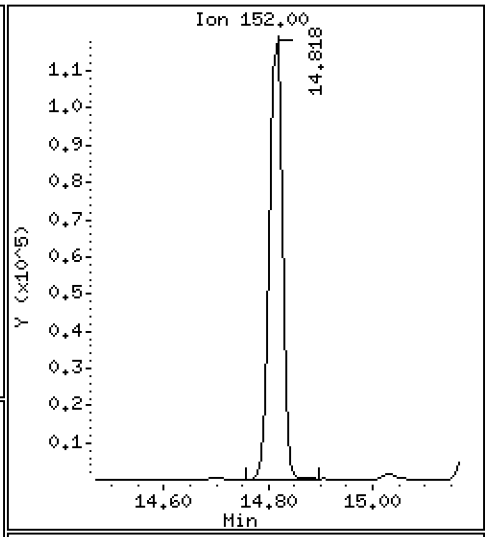
Concentration: 1.483 ug/mL

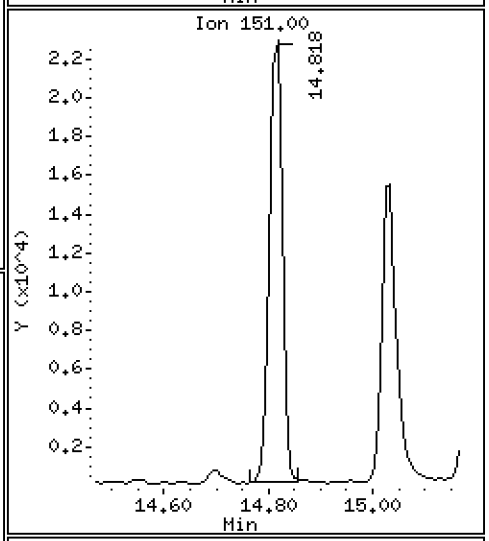


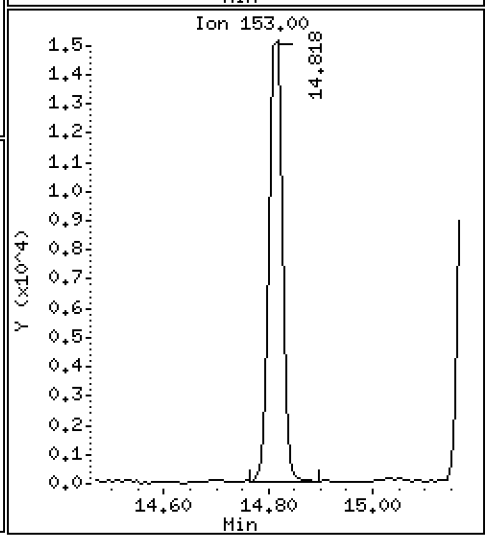












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

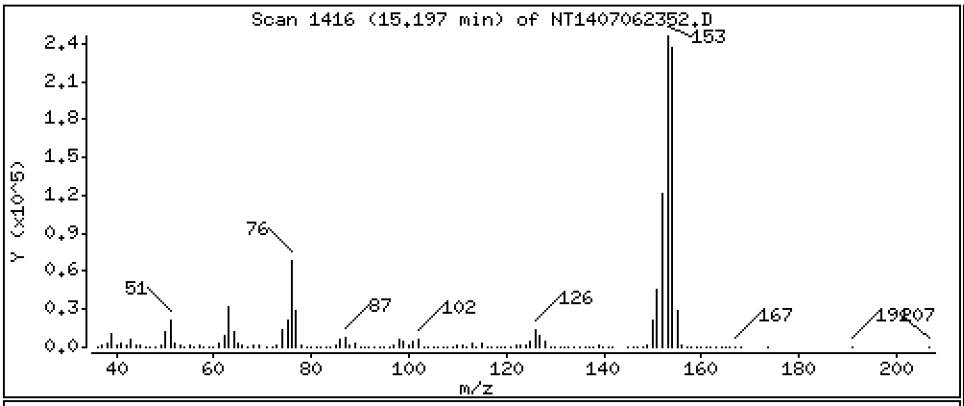
Operator: JGR

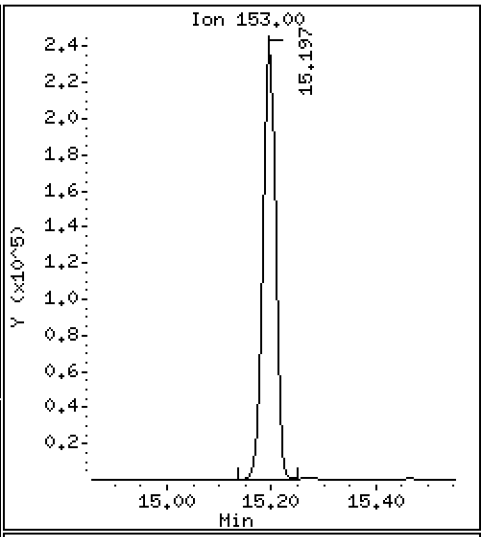
Column phase: ZB-5msi

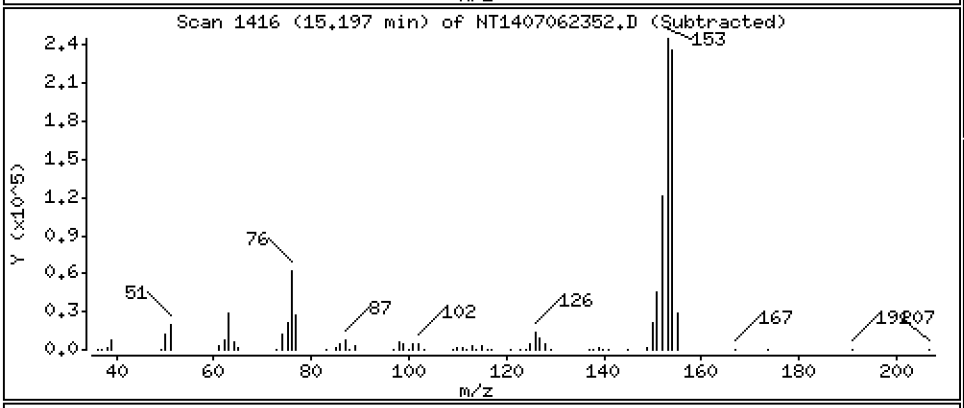
Column diameter: 0.25

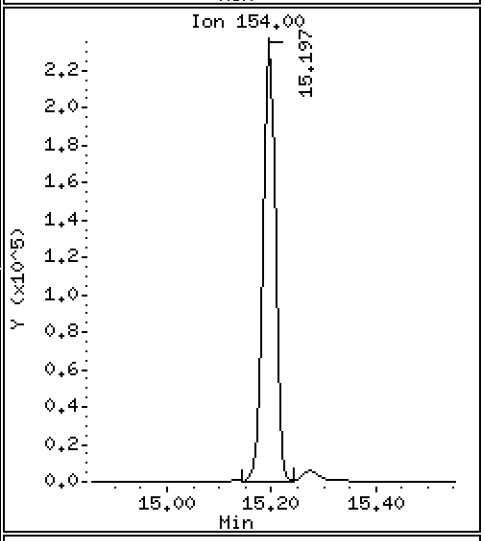
44 Acenaphthene

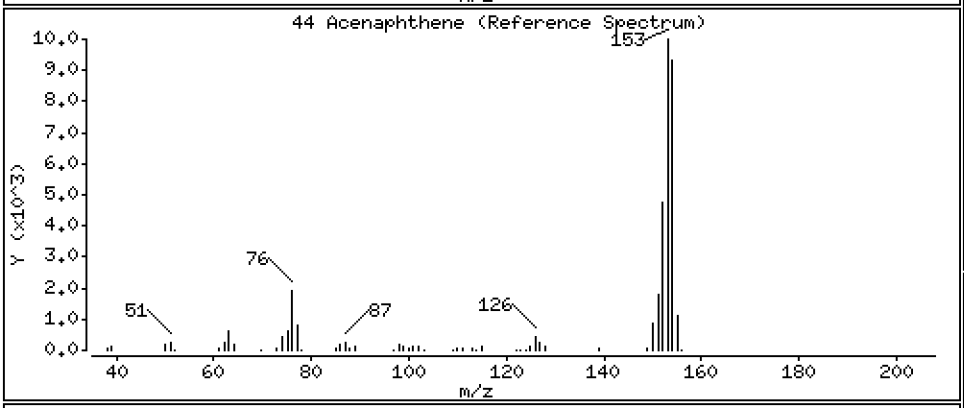
Concentration: 4.924 ug/mL

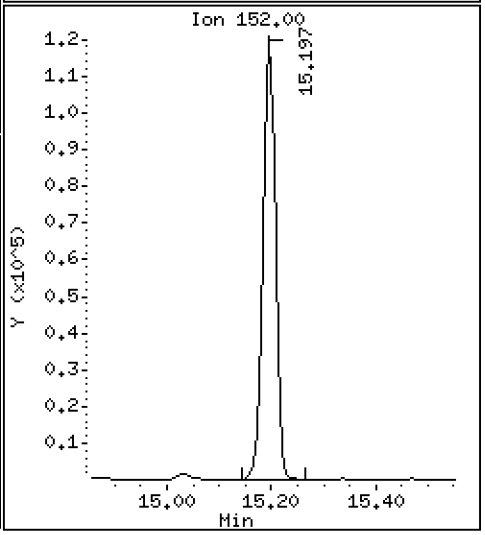


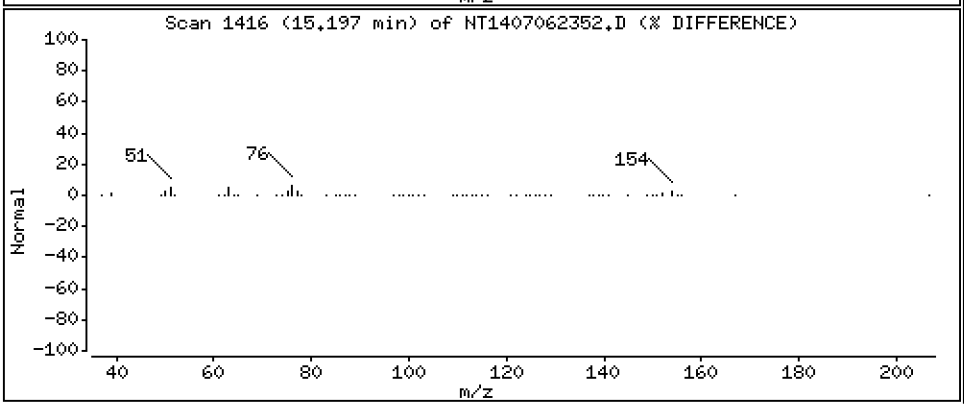












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

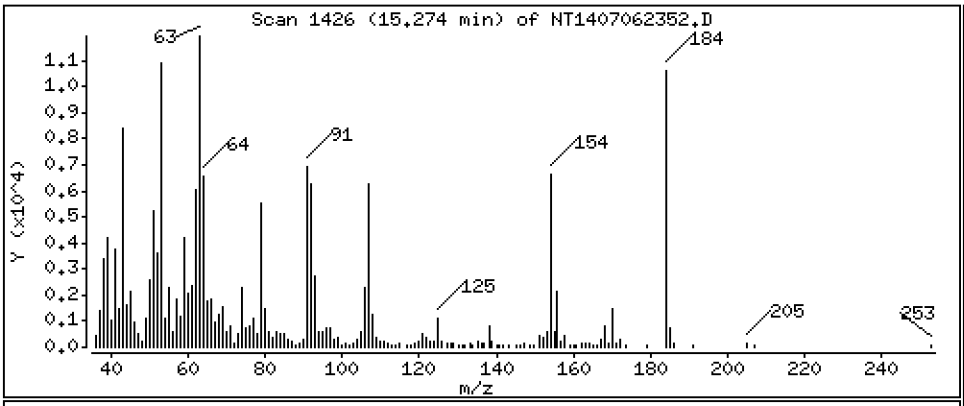
Operator: JGR

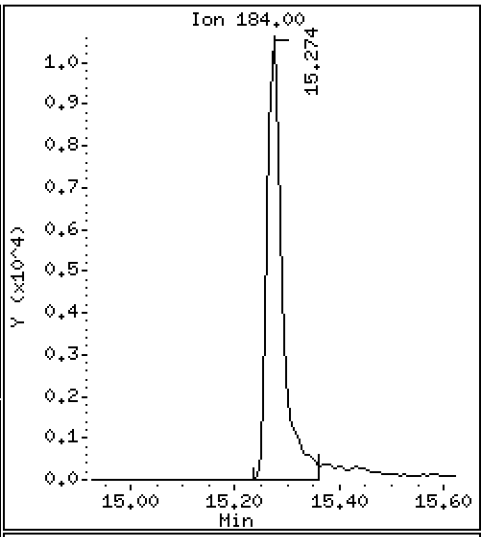
Column phase: ZB-5msi

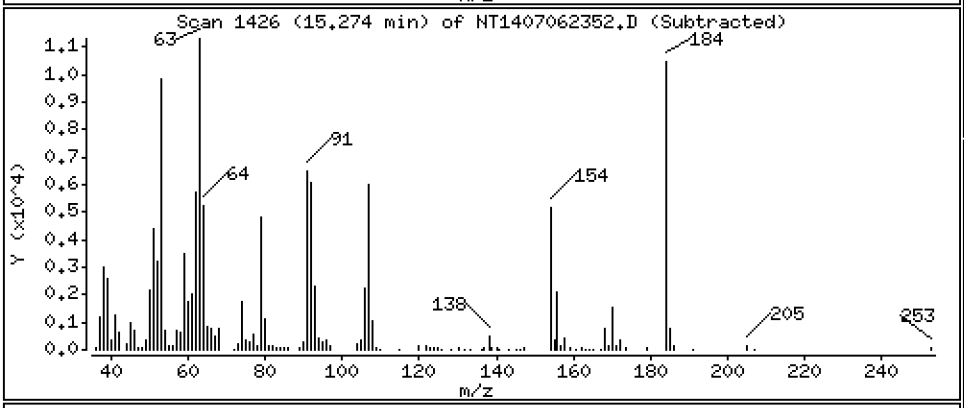
Column diameter: 0.25

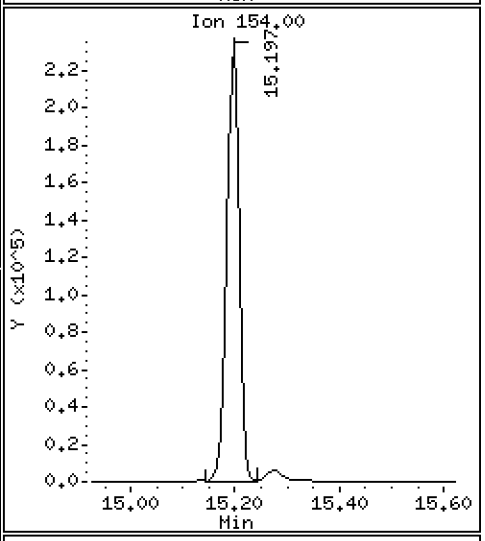
45 2,4-Dinitrophenol

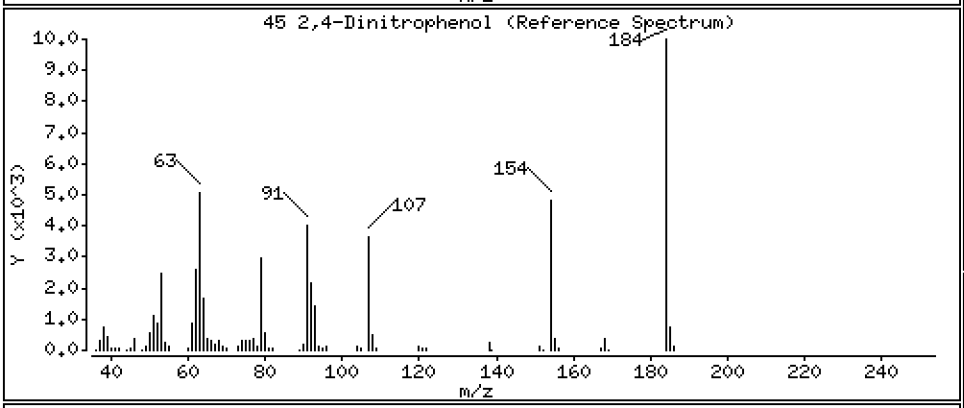
Concentration: 1.827 ug/mL

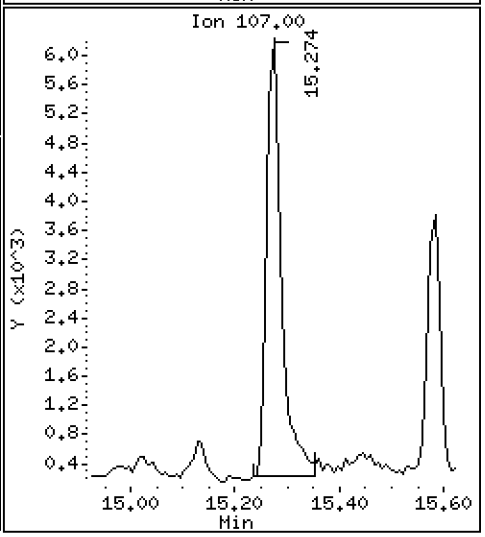


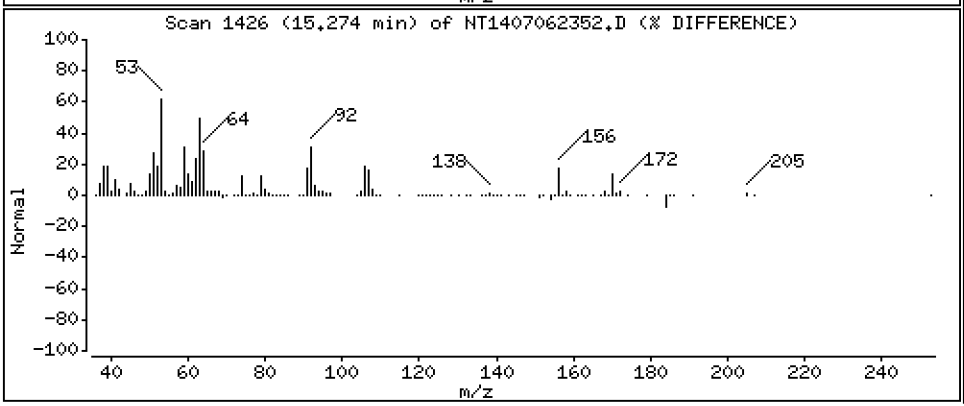












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

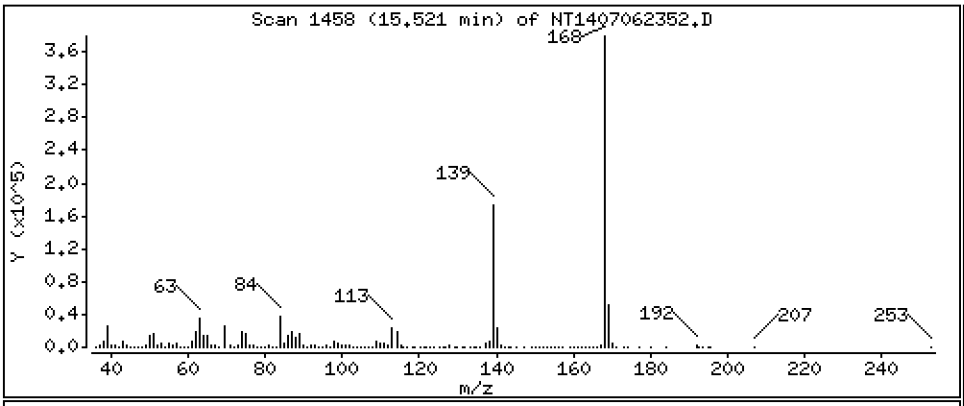
Operator: JGR

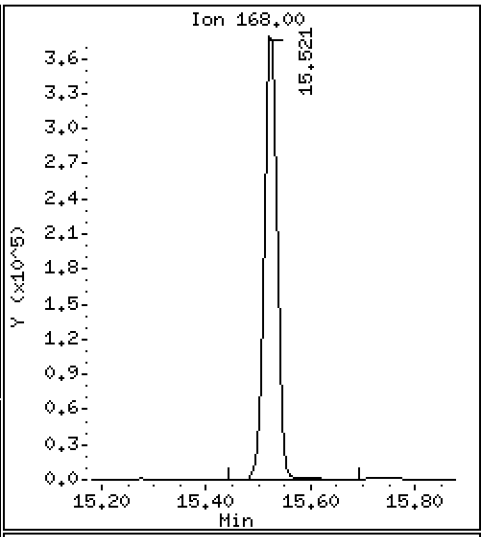
Column phase: ZB-5msi

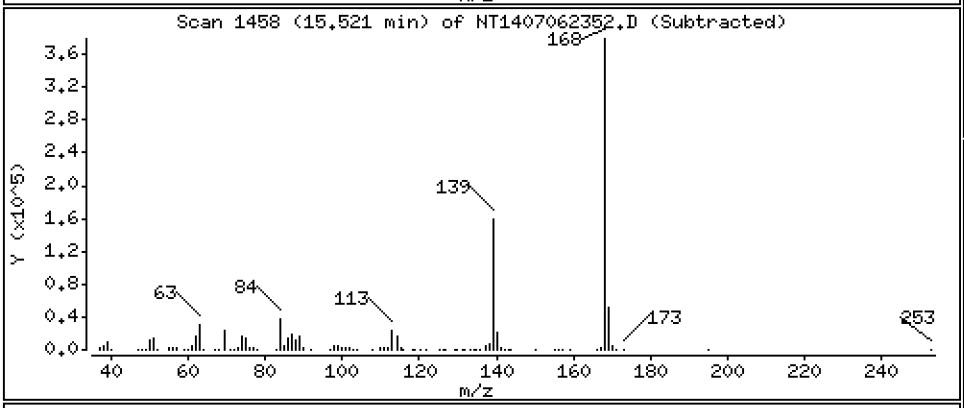
Column diameter: 0.25

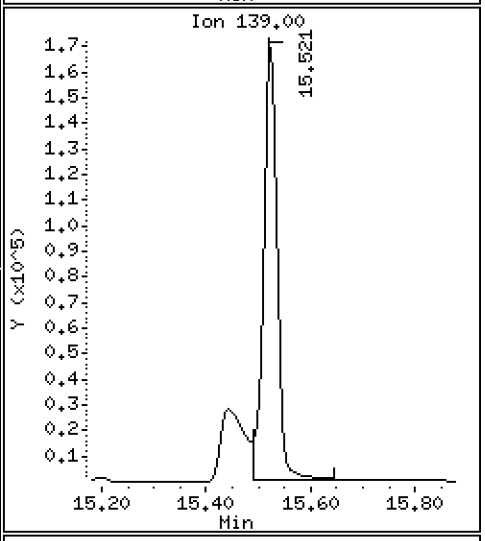
46 Dibenzofuran

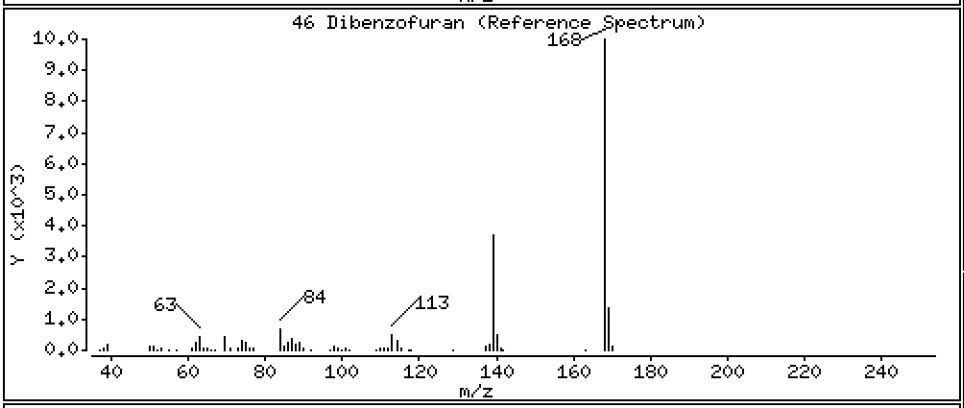
Concentration: 5.513 ug/mL

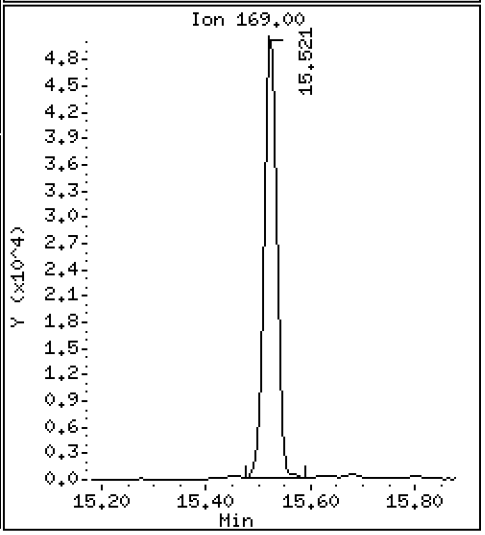


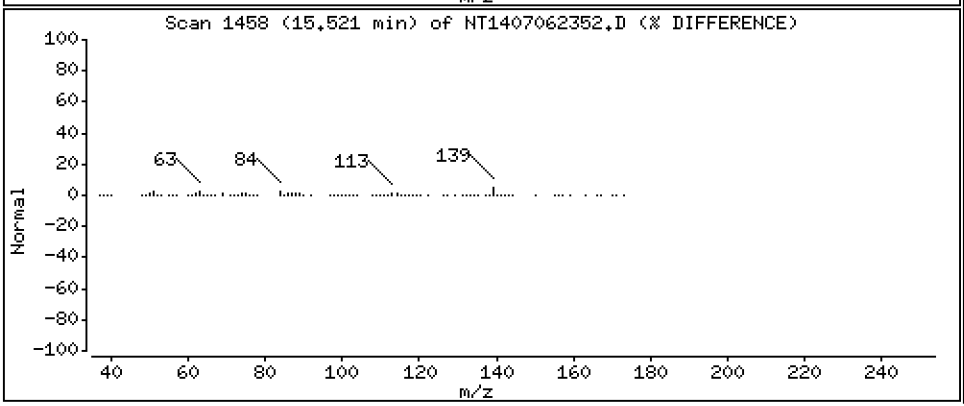












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

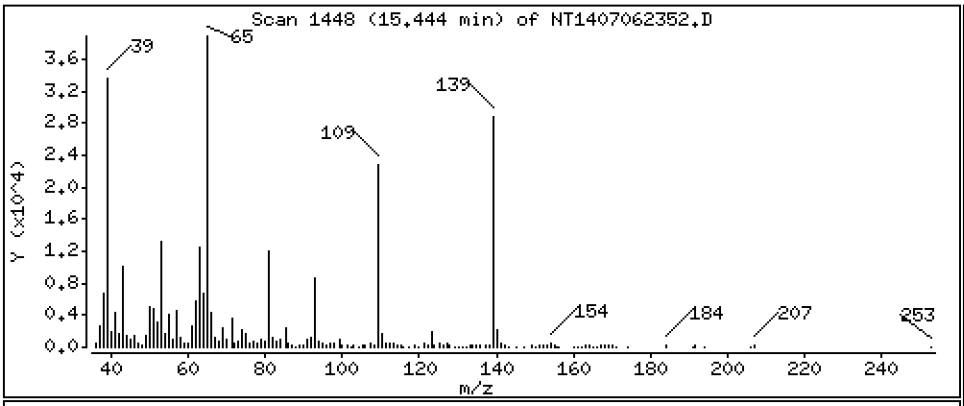
Operator: JGR

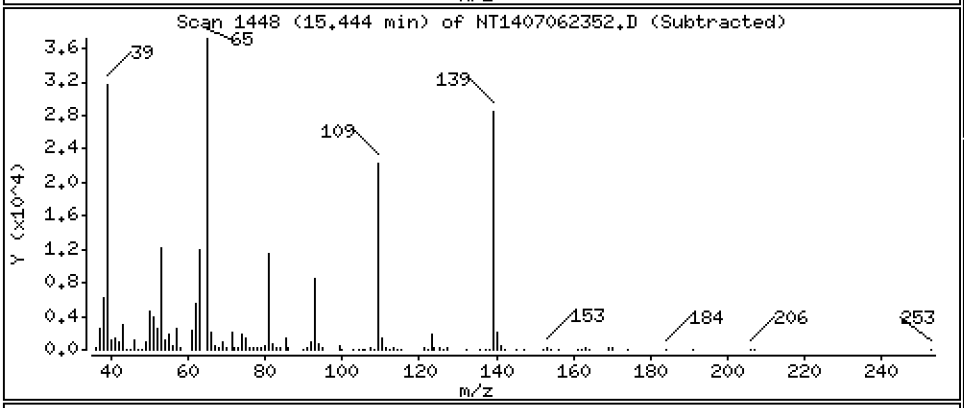
Column phase: ZB-5msi

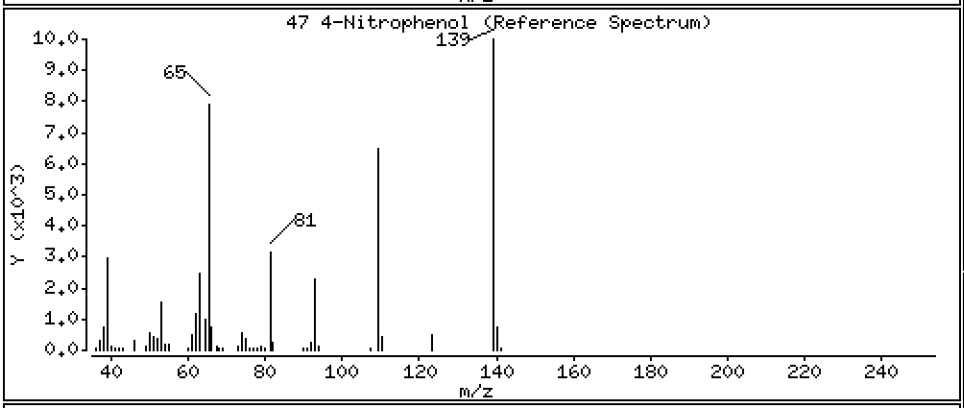
Column diameter: 0.25

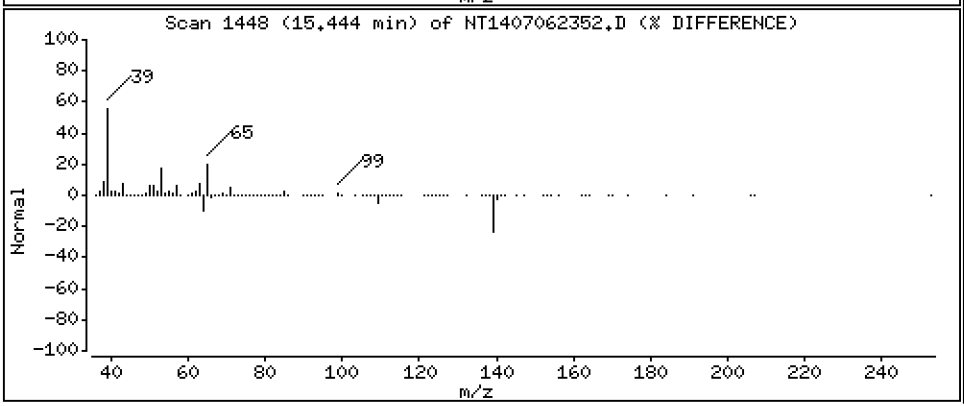
47 4-Nitrophenol

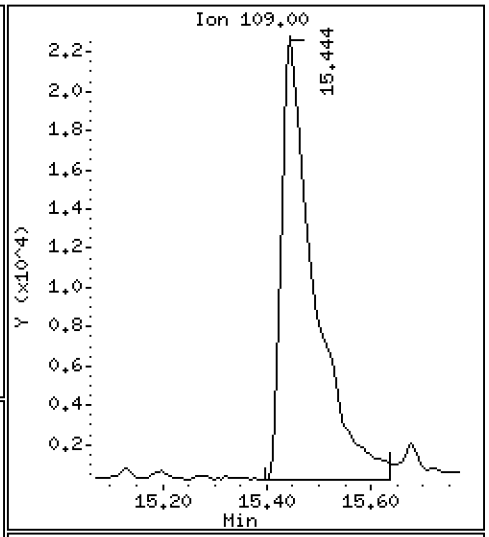
Concentration: 5.480 ug/mL

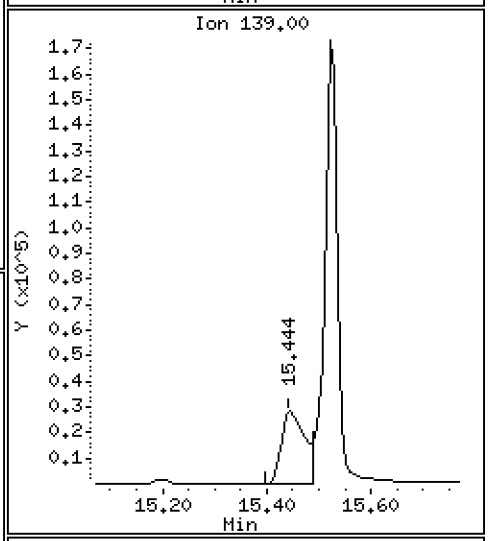


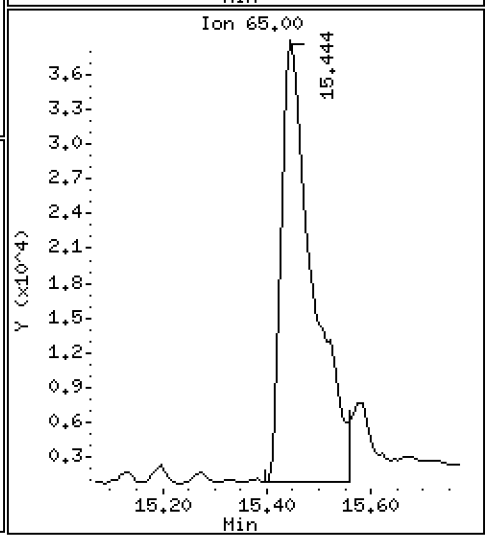












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

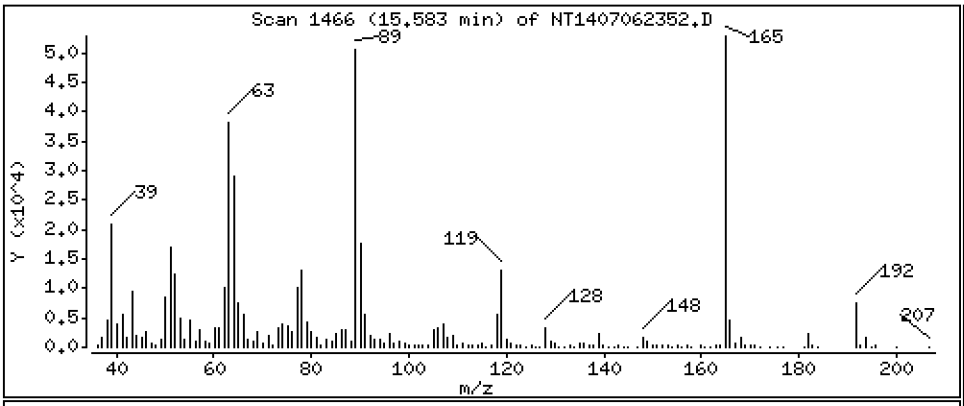
Operator: JGR

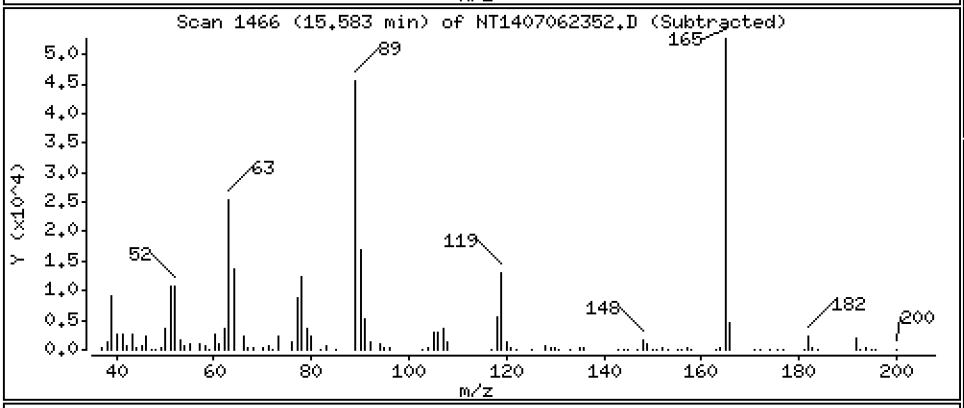
Column phase: ZB-5msi

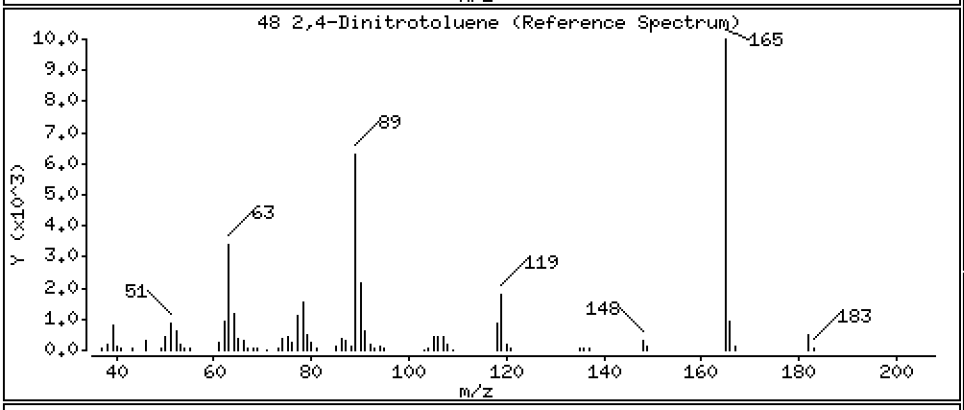
Column diameter: 0.25

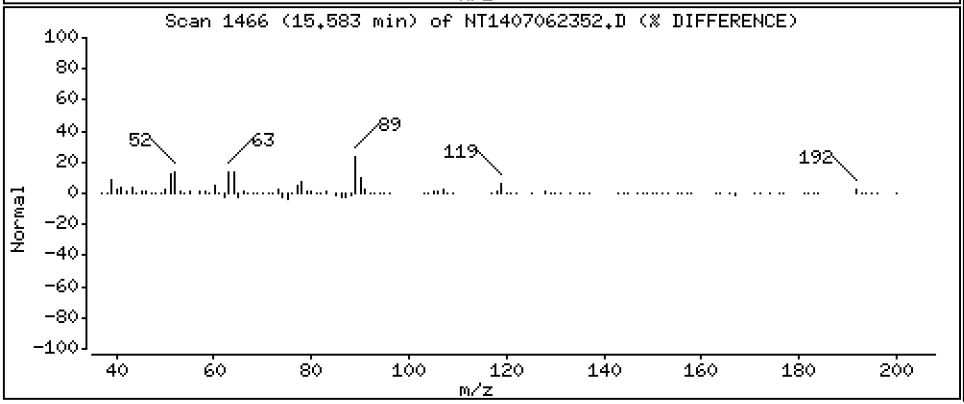
48 2,4-Dinitrotoluene

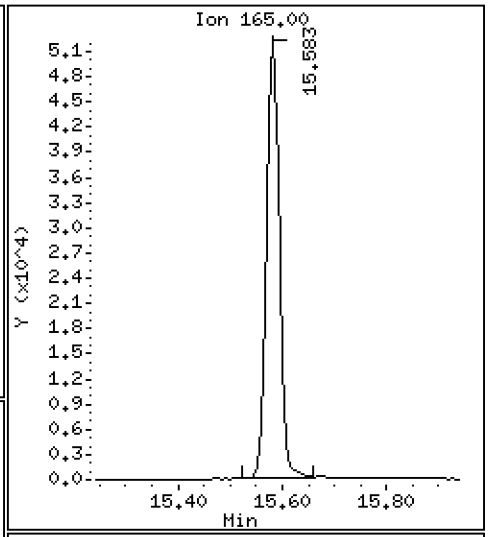
Concentration: 3.295 ug/mL

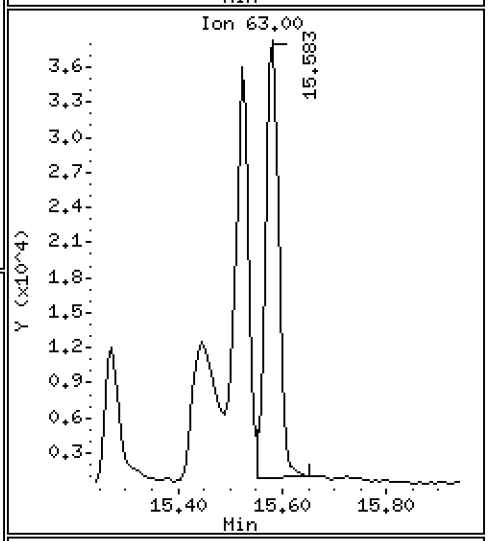


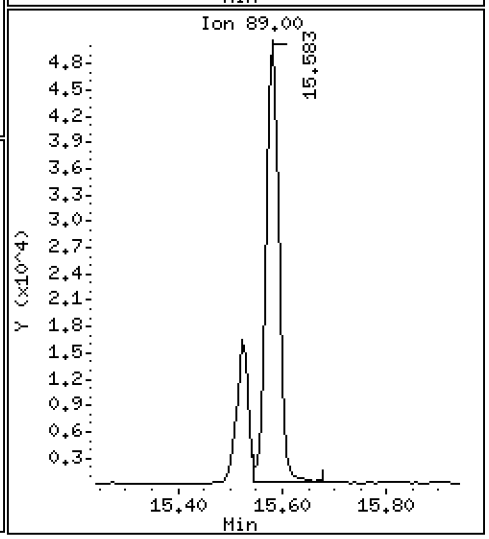












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

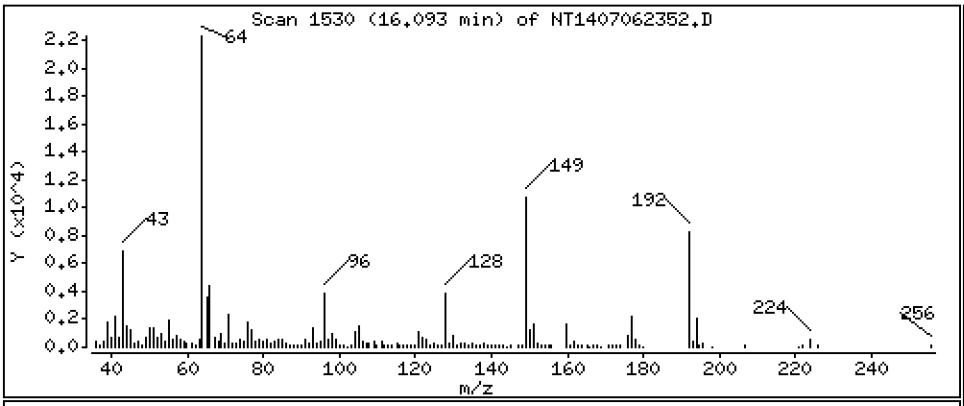
Operator: JGR

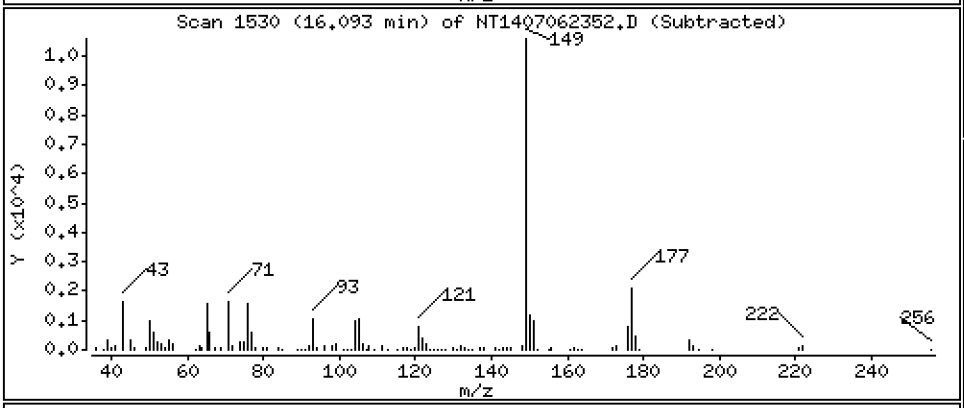
Column phase: ZB-5msi

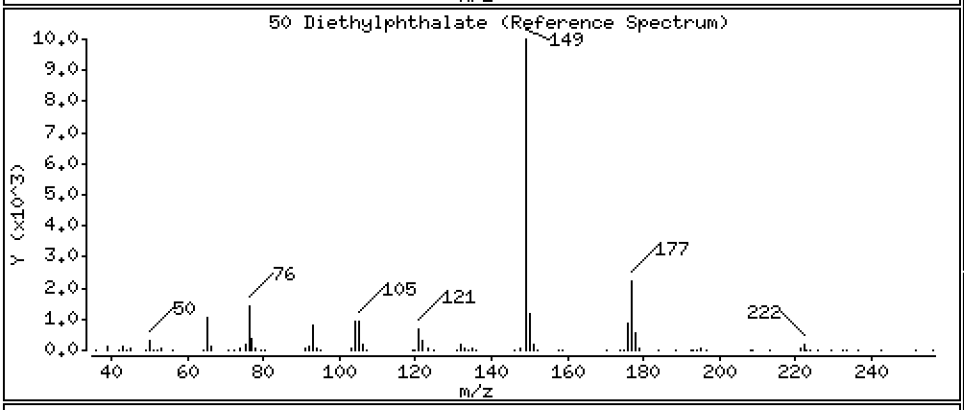
Column diameter: 0.25

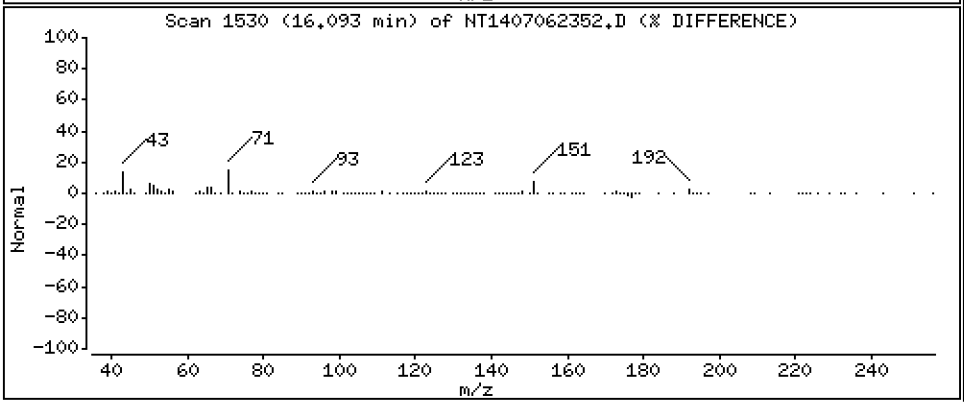
50 Diethylphthalate

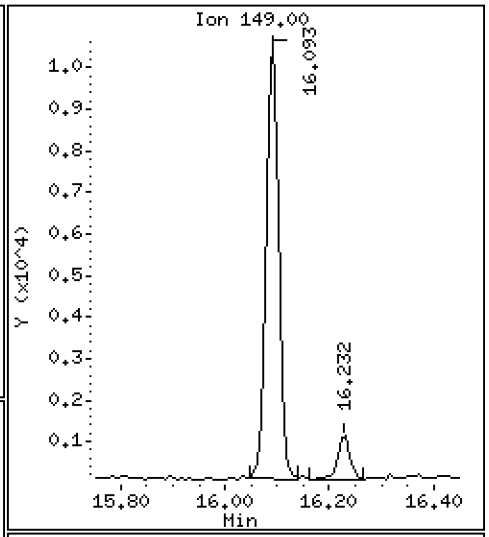
Concentration: 0.1622 ug/mL

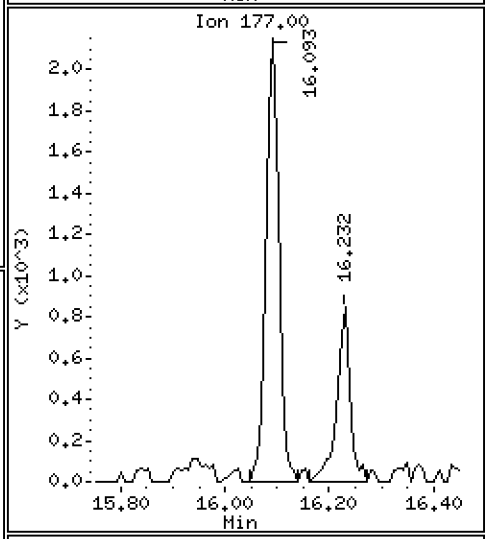


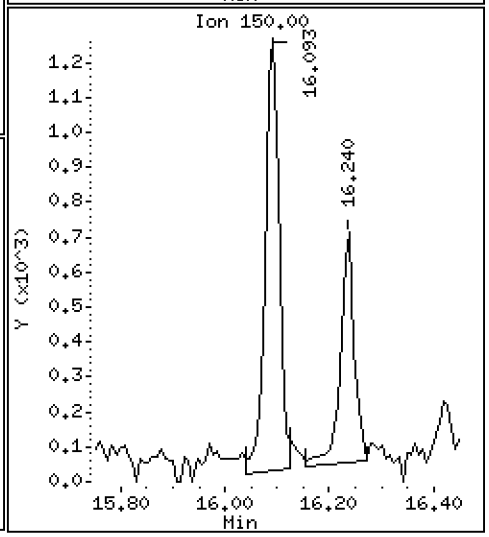












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062352.D

Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

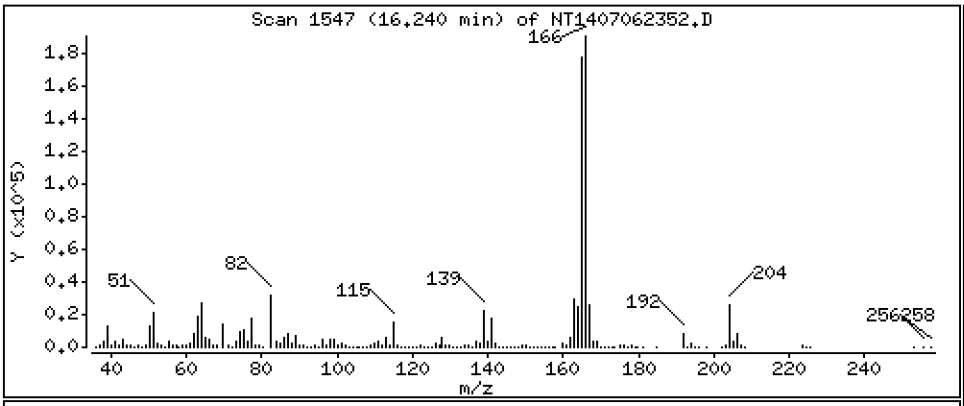
Operator: JGR

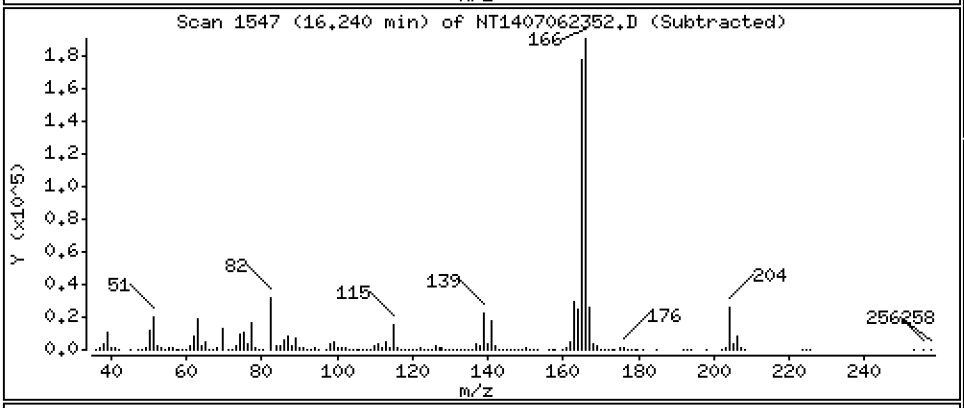
Column phase: ZB-5msi

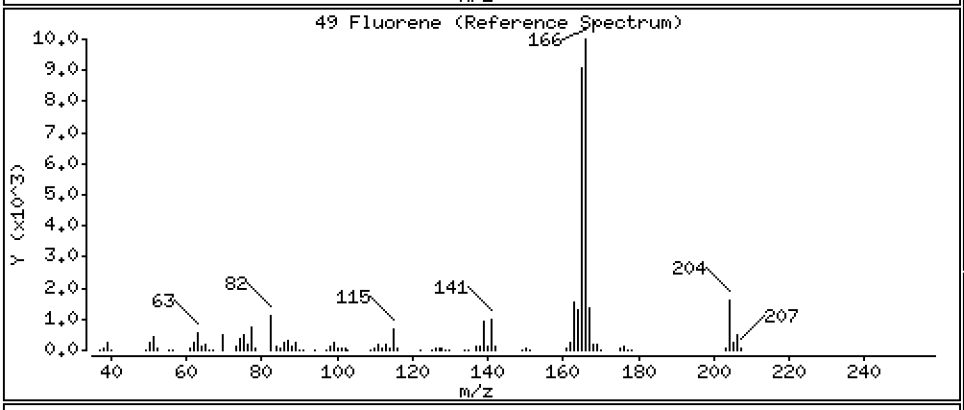
Column diameter: 0.25

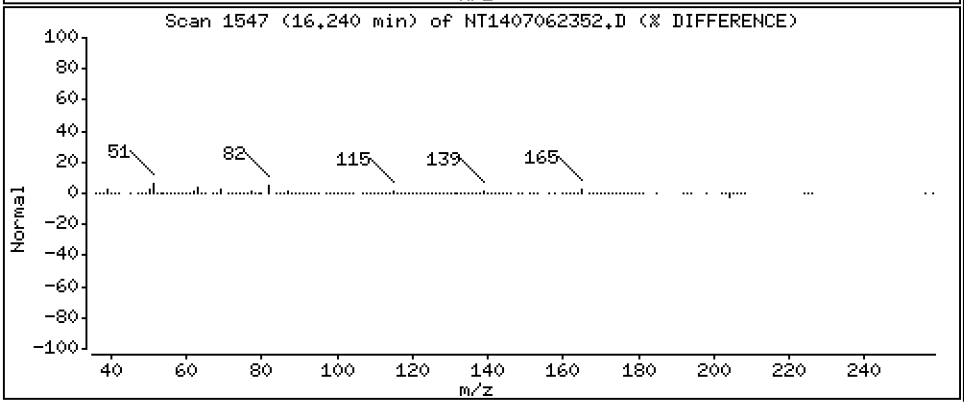
49 Fluorene

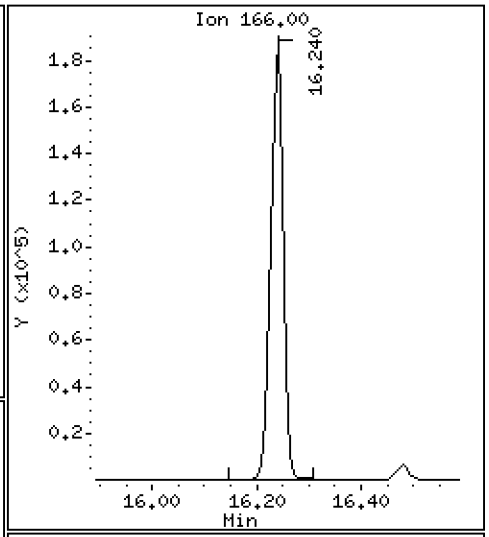
Concentration: 3.344 ug/mL

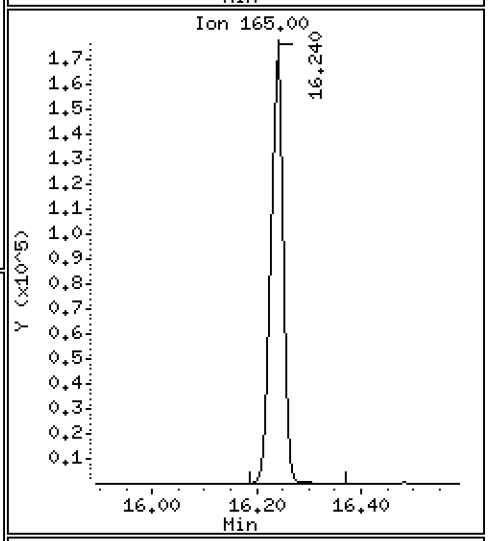


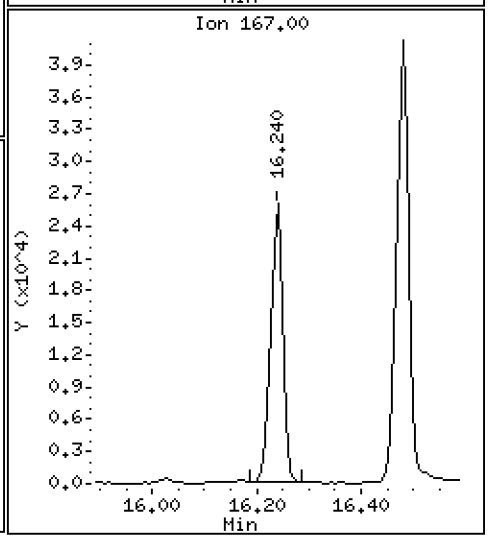












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

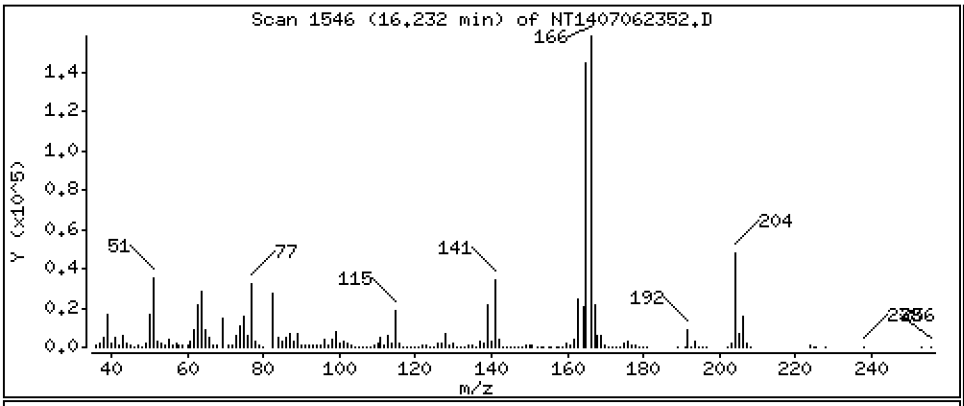
Operator: JGR

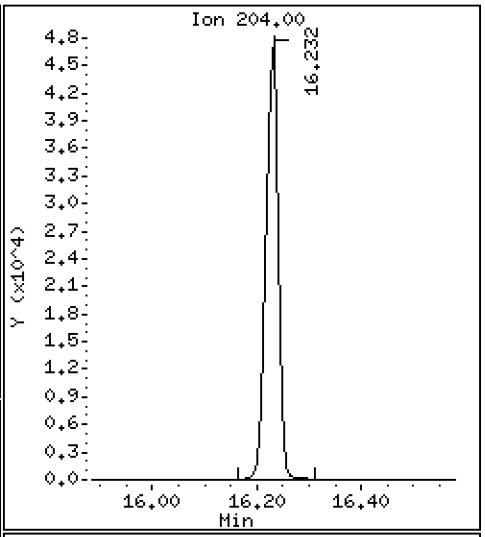
Column phase: ZB-5msi

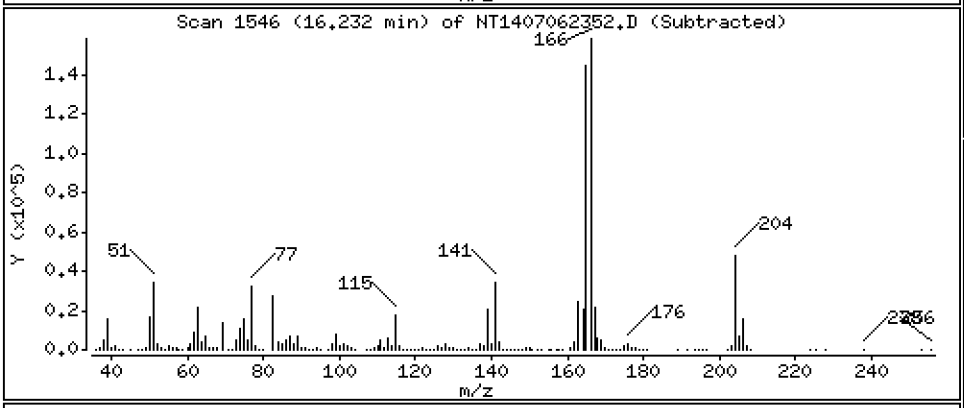
Column diameter: 0.25

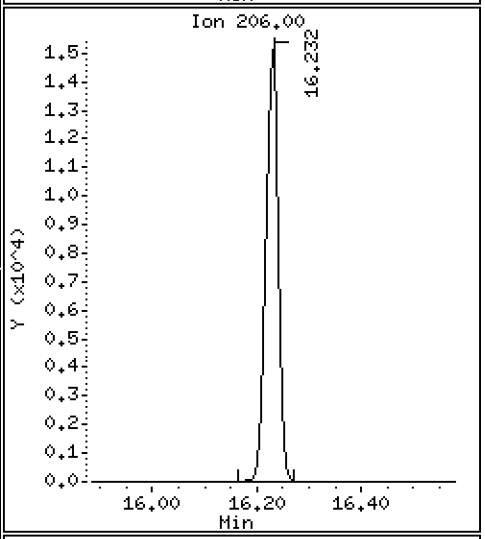
51 4-Chlorophenyl-phenylether

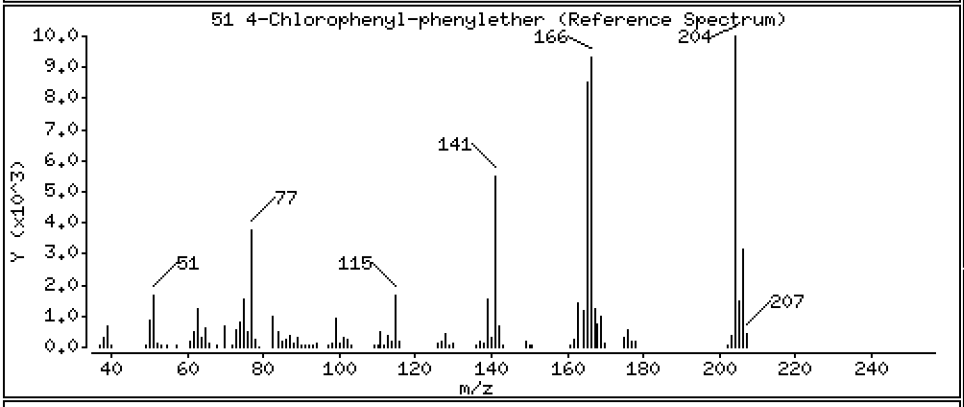
Concentration: 1.938 ug/mL

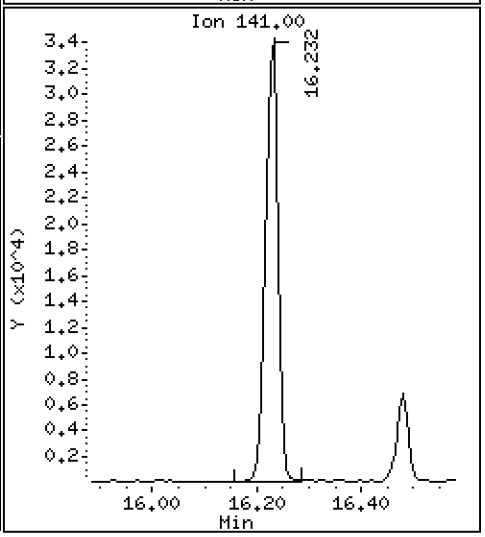


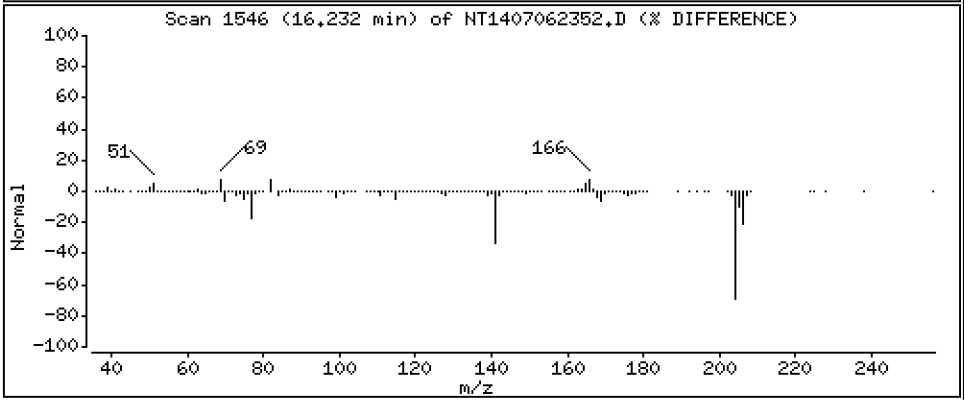












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

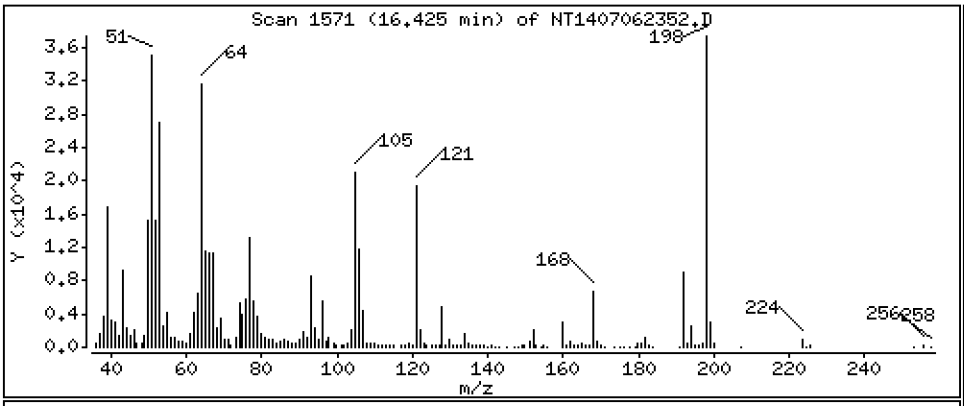
Operator: JGR

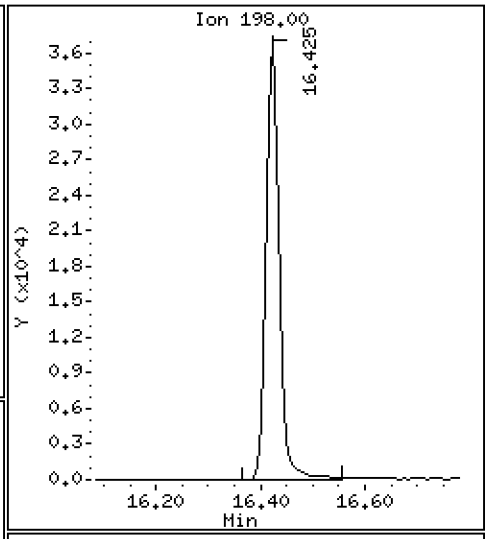
Column phase: ZB-5msi

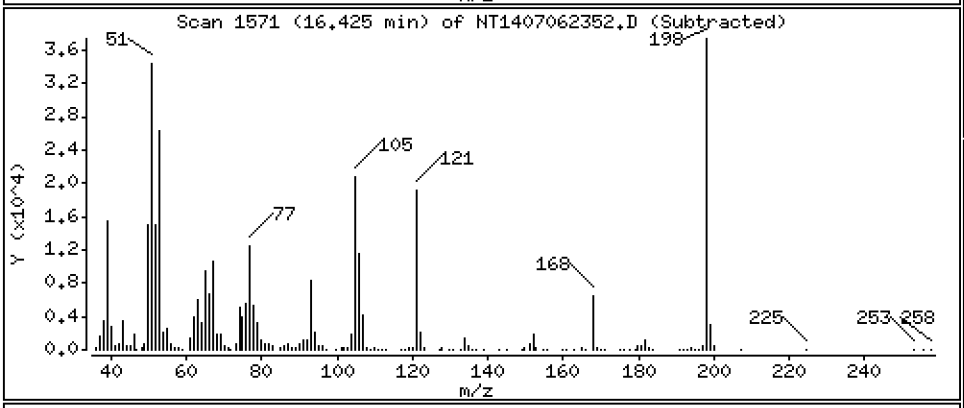
Column diameter: 0.25

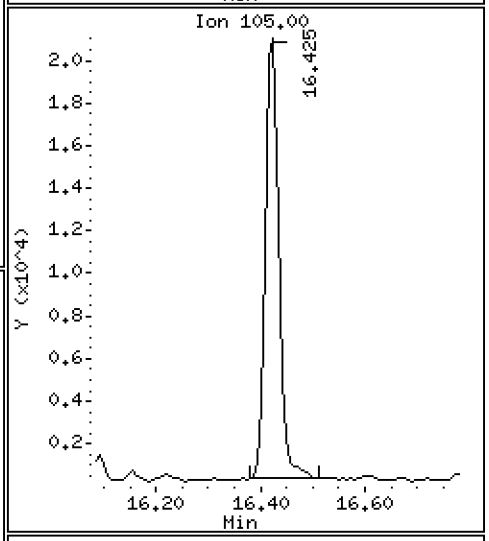
53 4,6-Dinitro-2-methylphenol

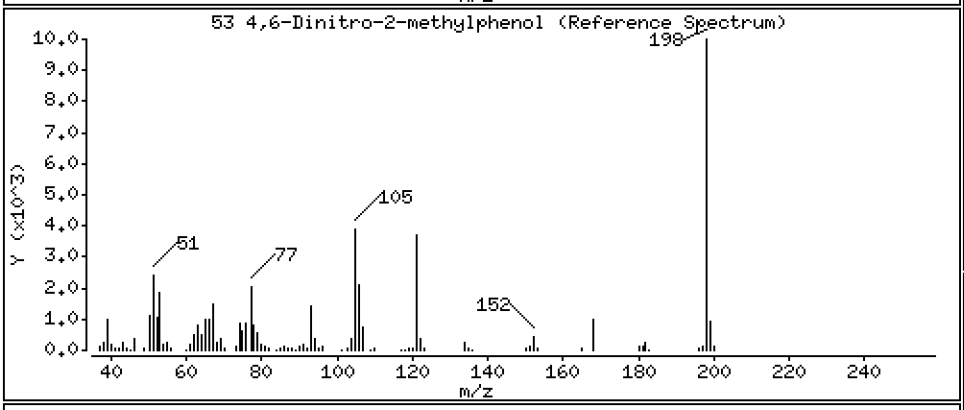
Concentration: 4.187 ug/mL

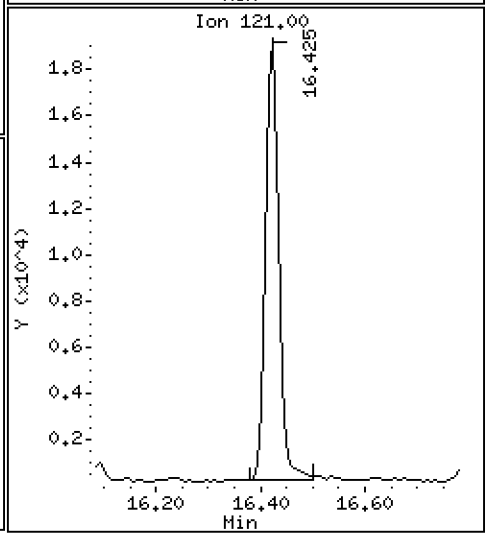


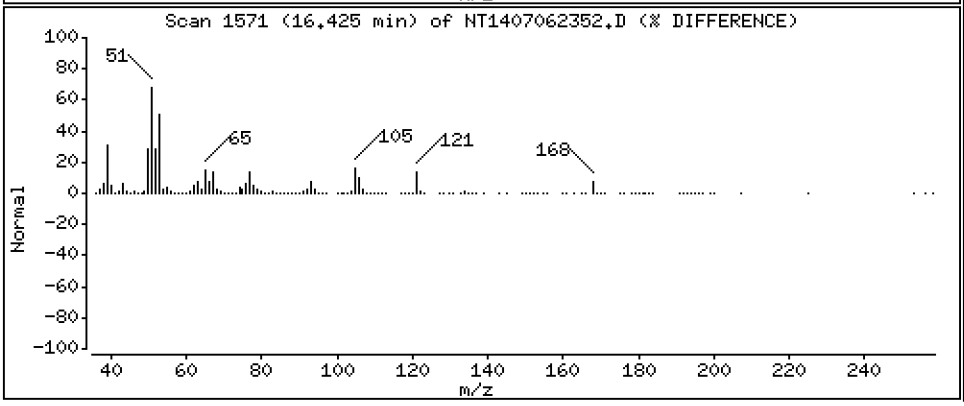












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

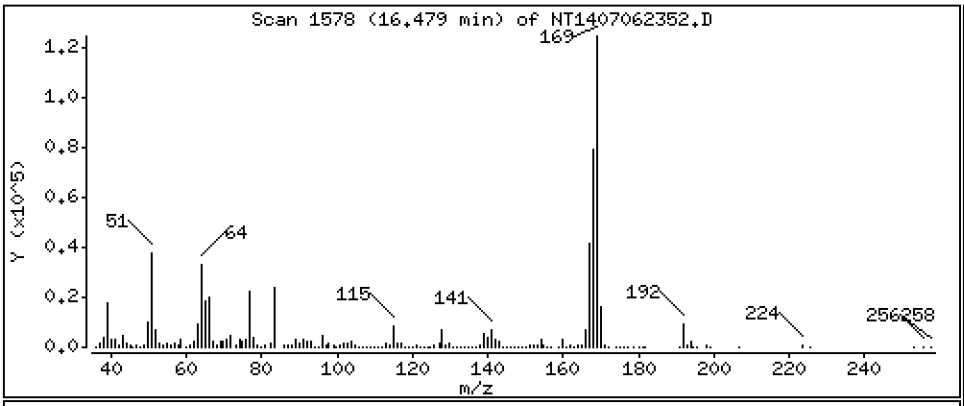
Operator: JGR

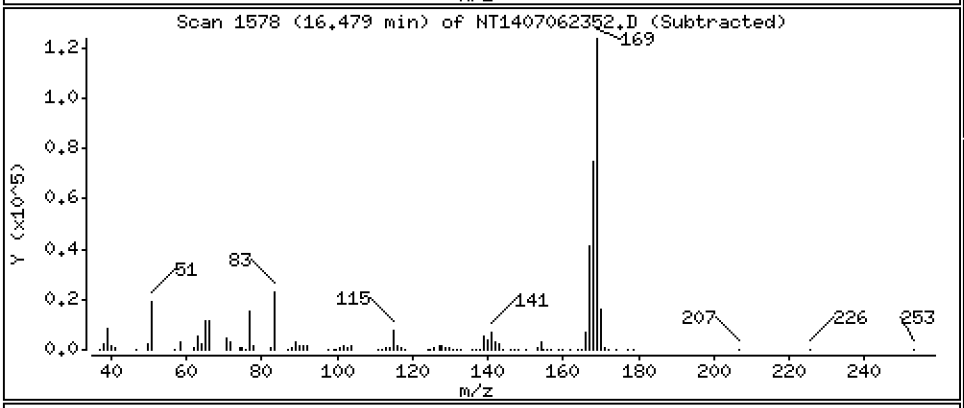
Column phase: ZB-5msi

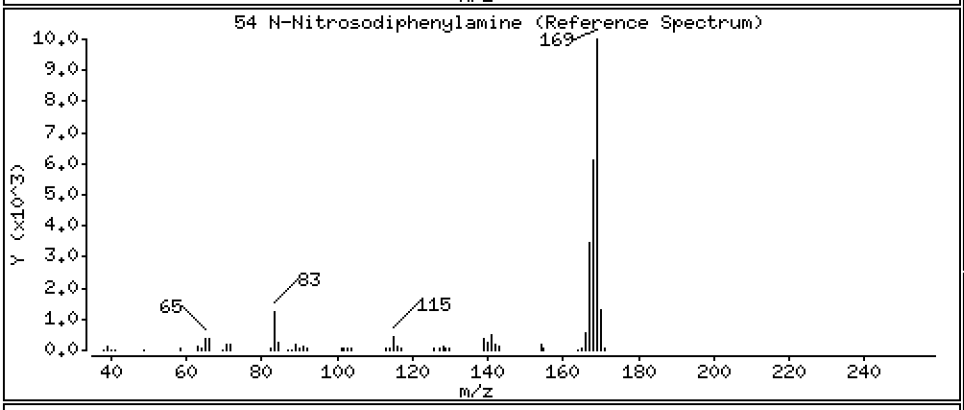
Column diameter: 0.25

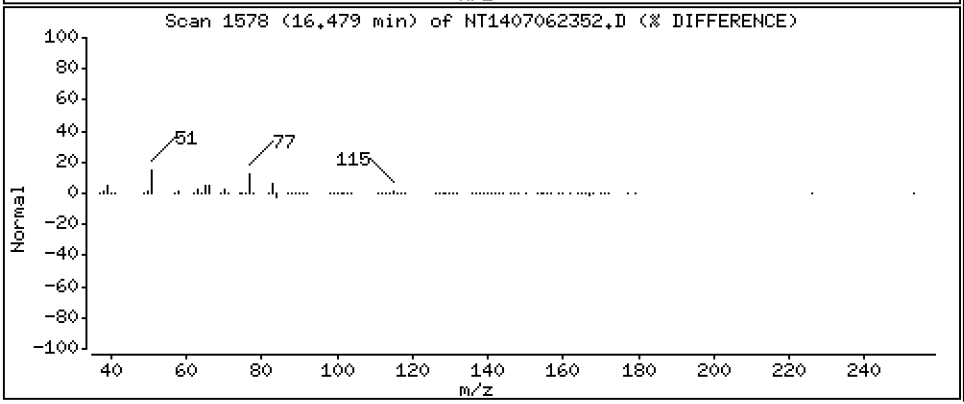
54 N-Nitrosodiphenylamine

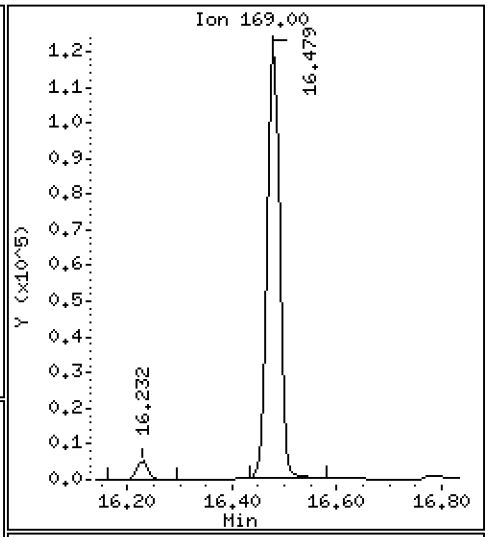
Concentration: 2.929 ug/mL

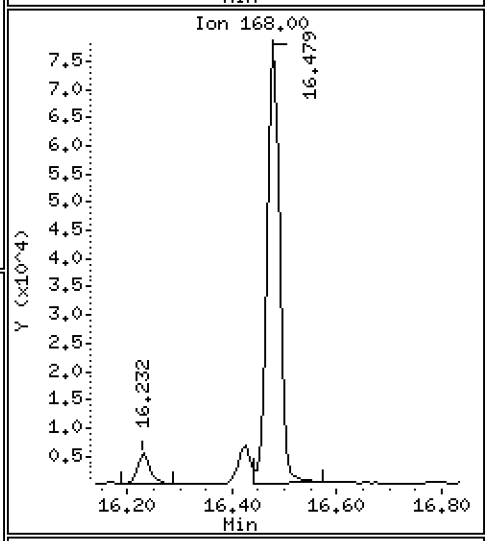


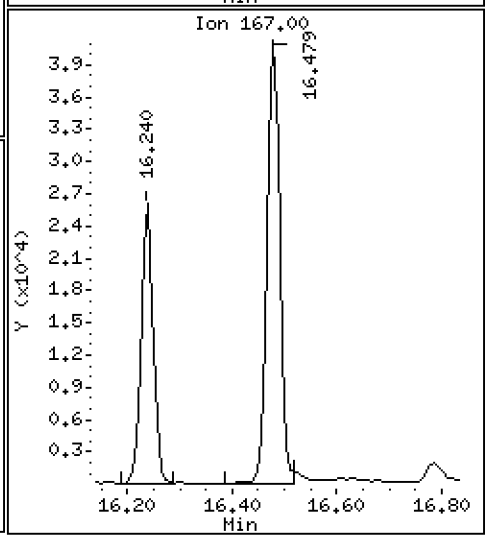












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

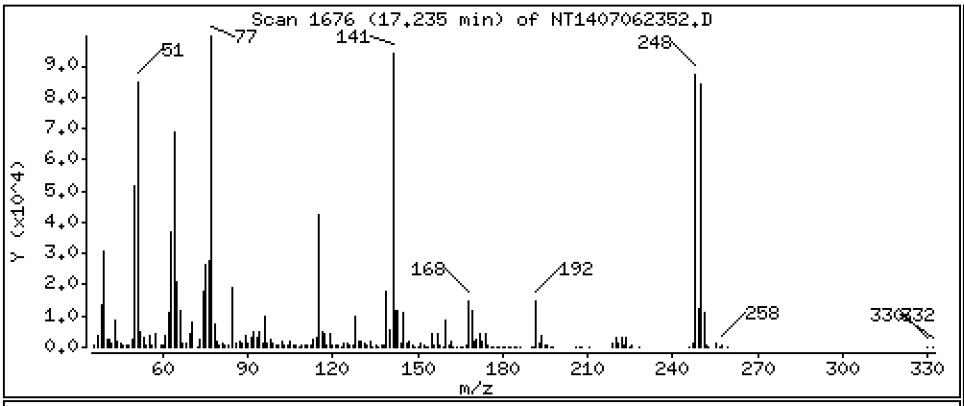
Operator: JGR

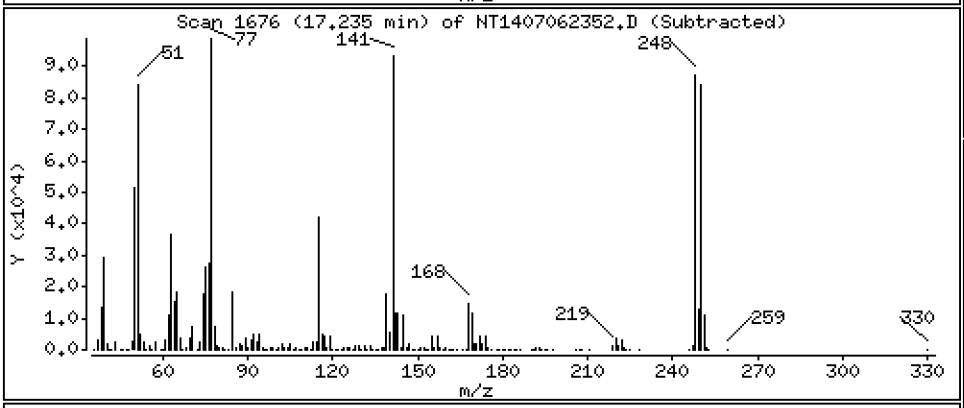
Column phase: ZB-5msi

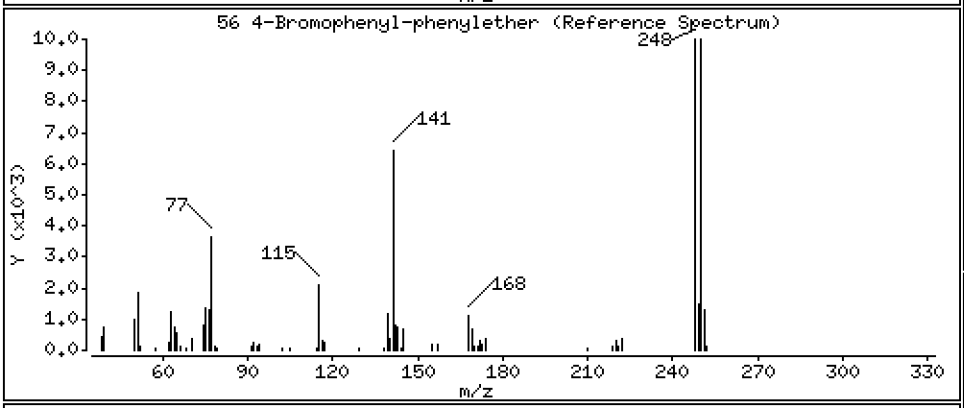
Column diameter: 0.25

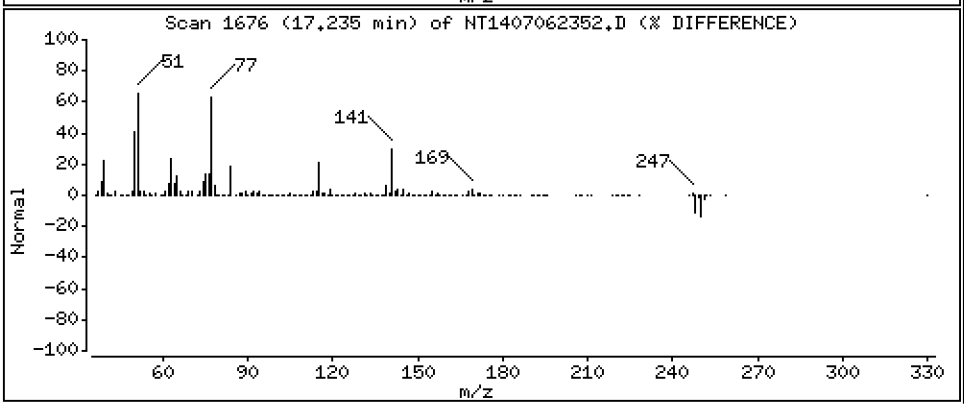
56 4-Bromophenyl-phenylether

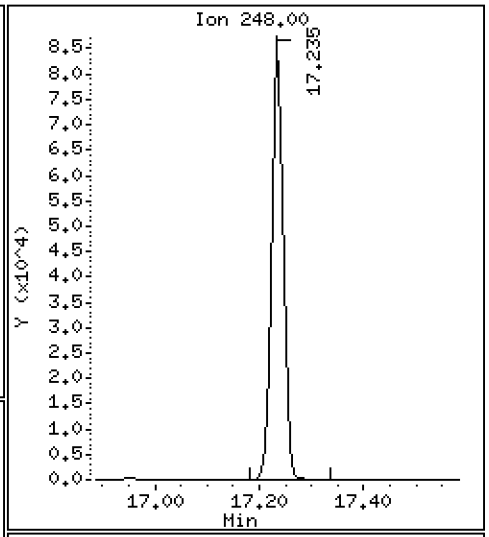
Concentration: 6.493 ug/mL

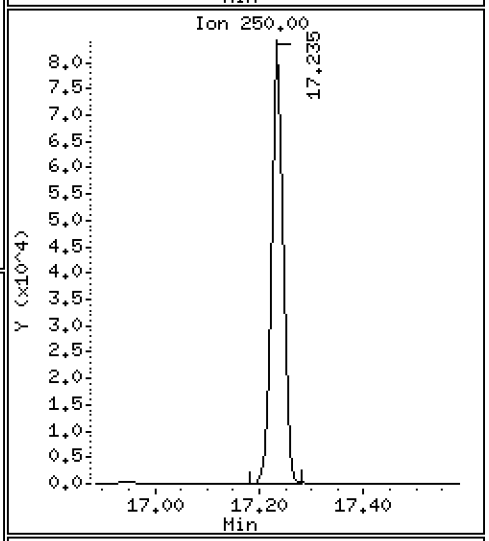


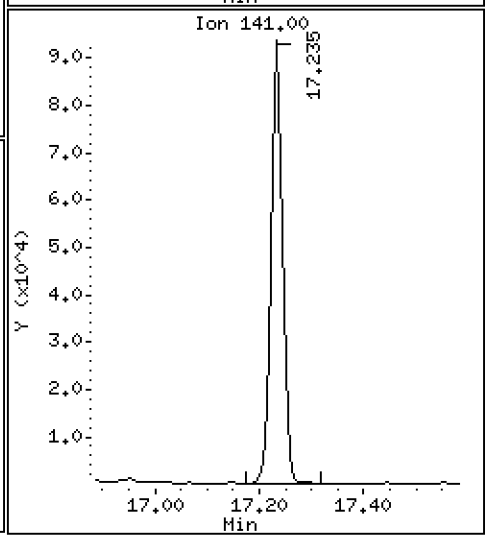












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

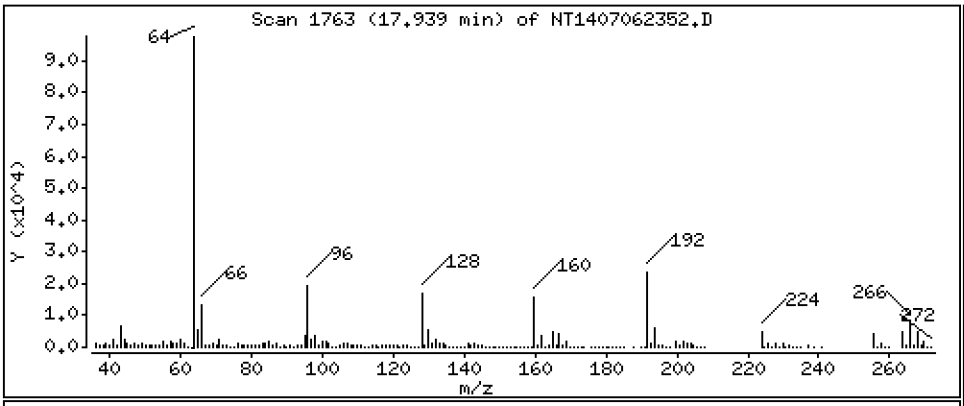
Operator: JGR

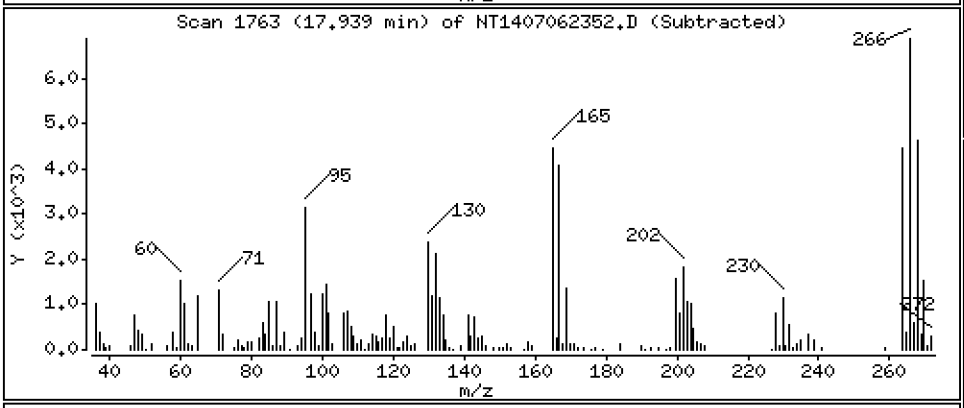
Column phase: ZB-5msi

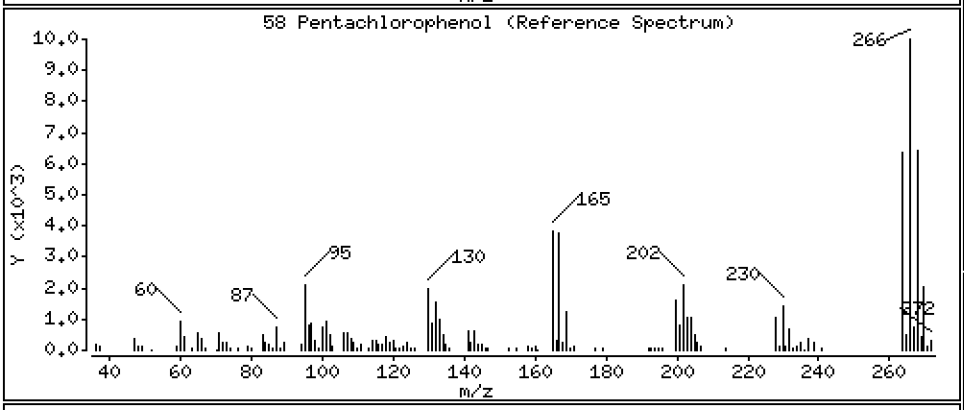
Column diameter: 0.25

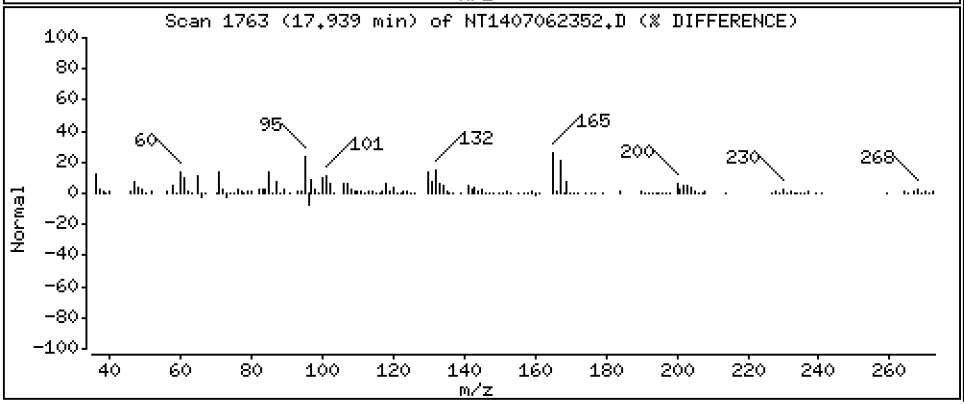
58 Pentachlorophenol

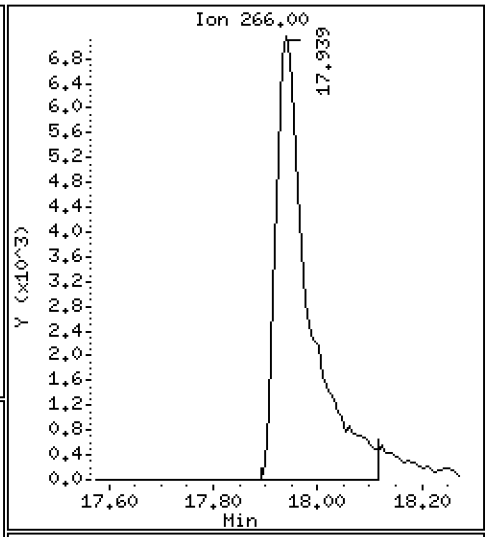
Concentration: 2.530 ug/mL

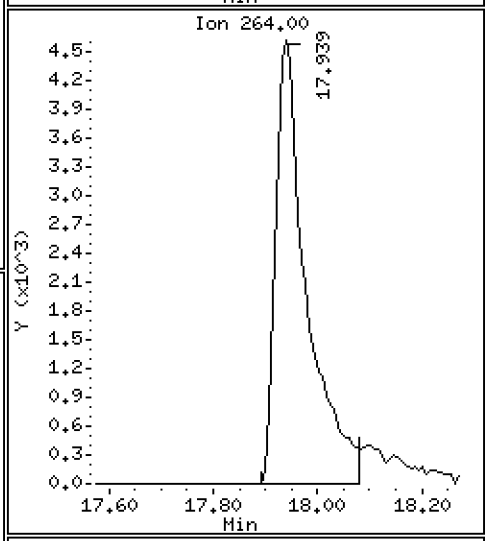


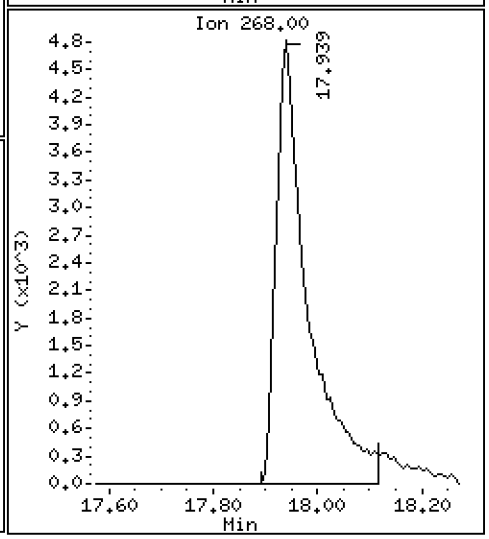












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062352.D

Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

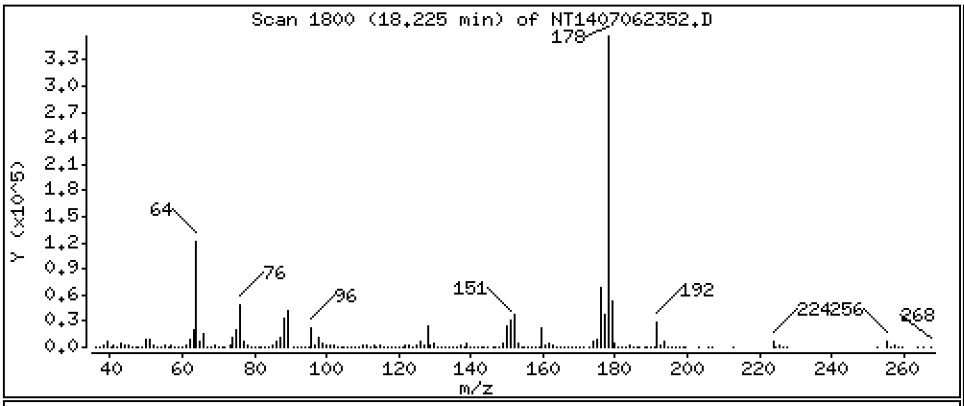
Operator: JGR

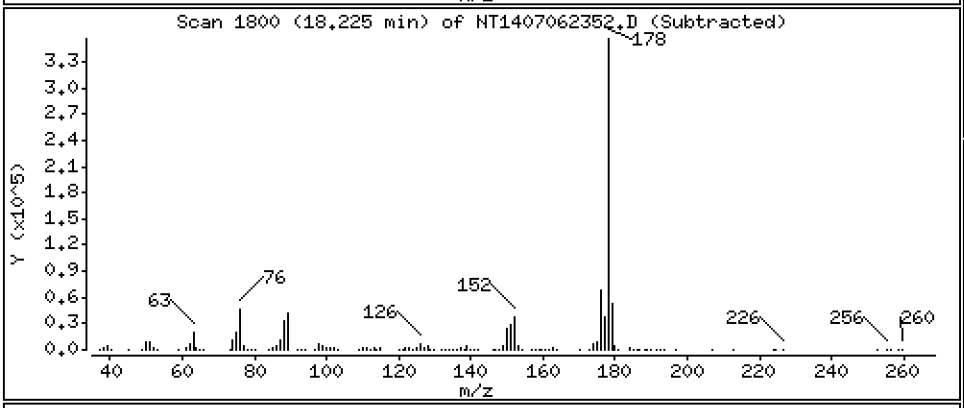
Column phase: ZB-5msi

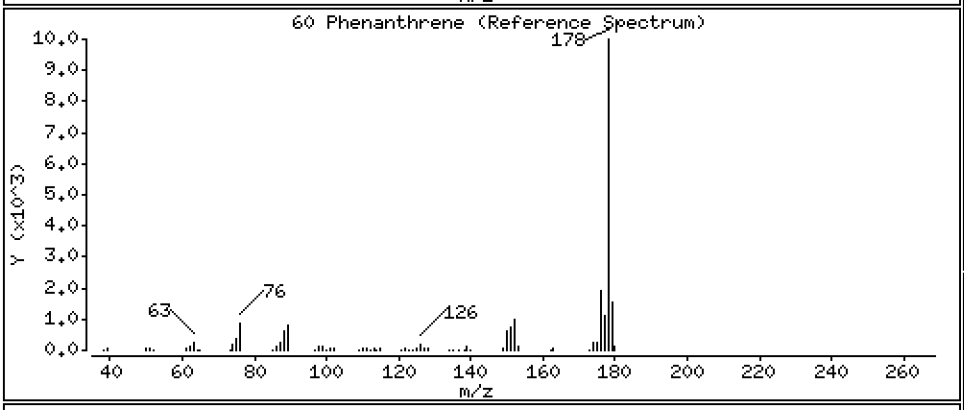
Column diameter: 0.25

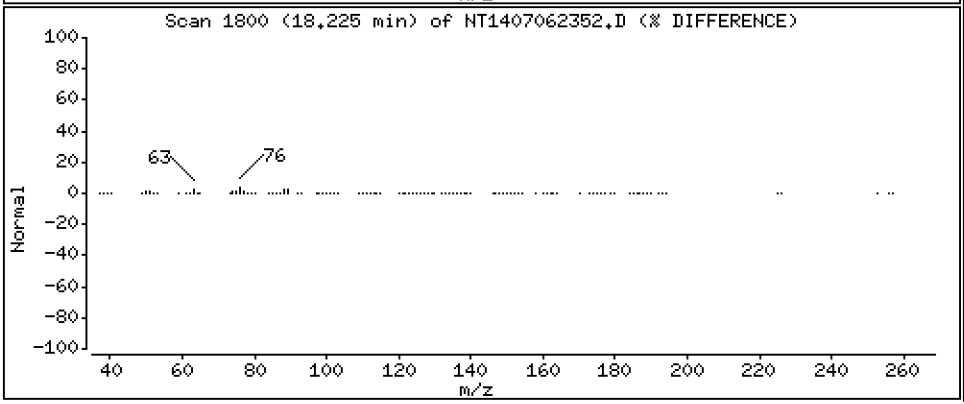
60 Phenanthrene

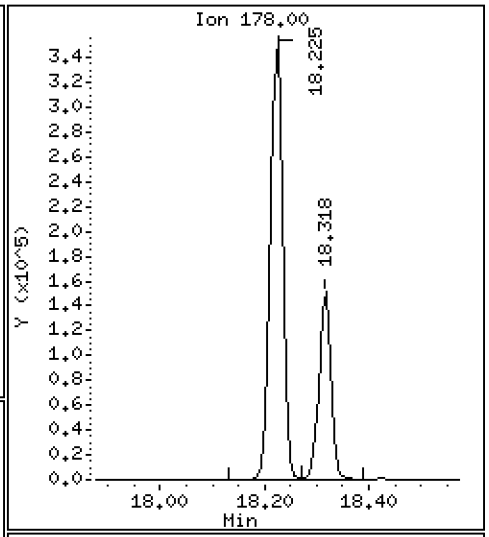
Concentration: 4.445 ug/mL

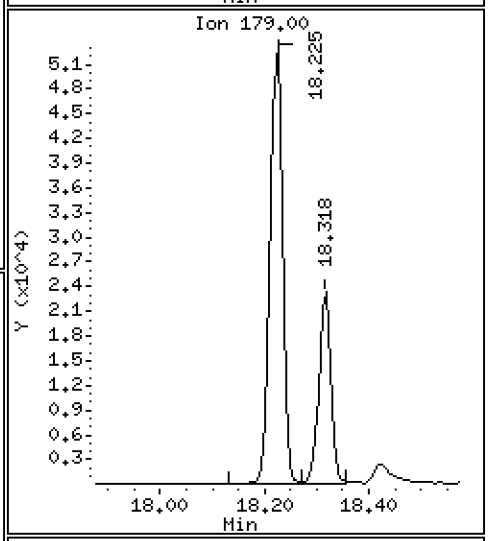


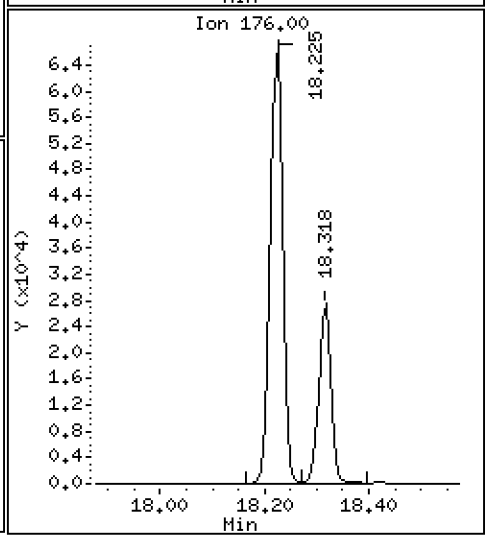












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

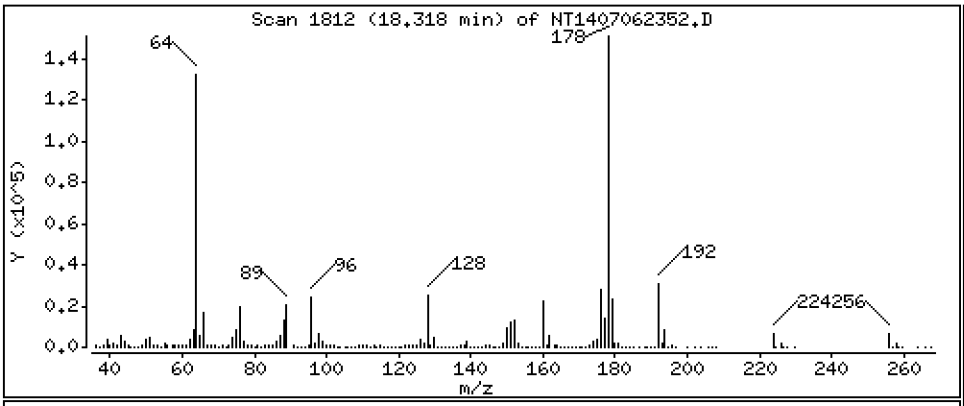
Operator: JGR

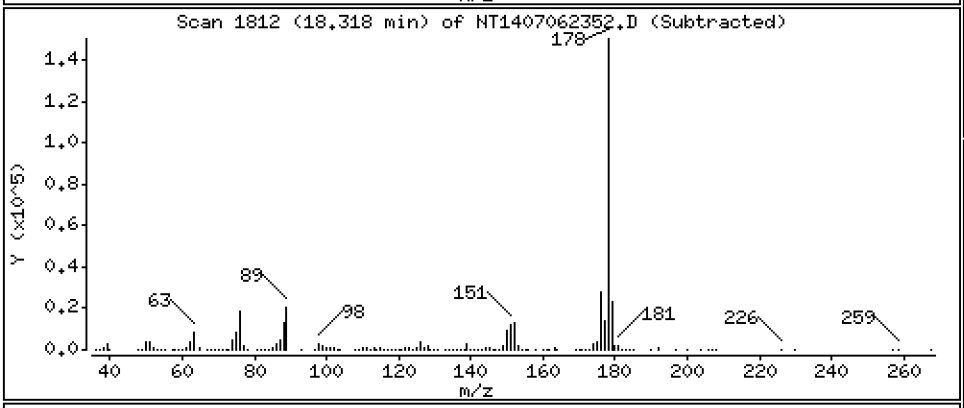
Column phase: ZB-5msi

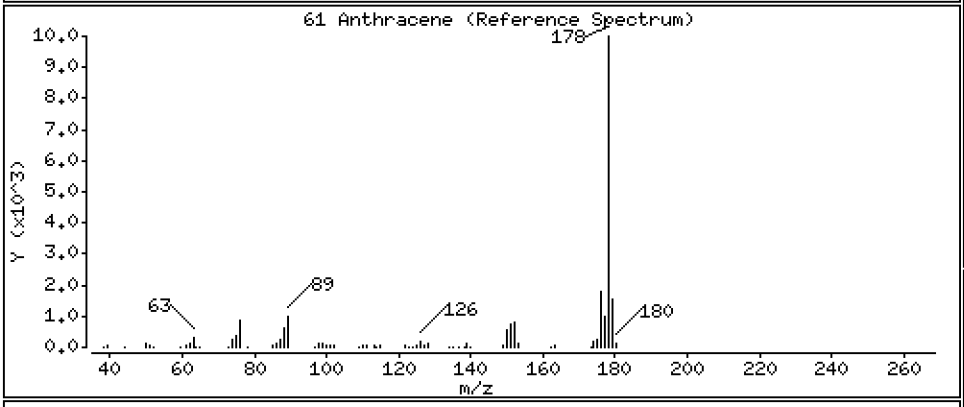
Column diameter: 0.25

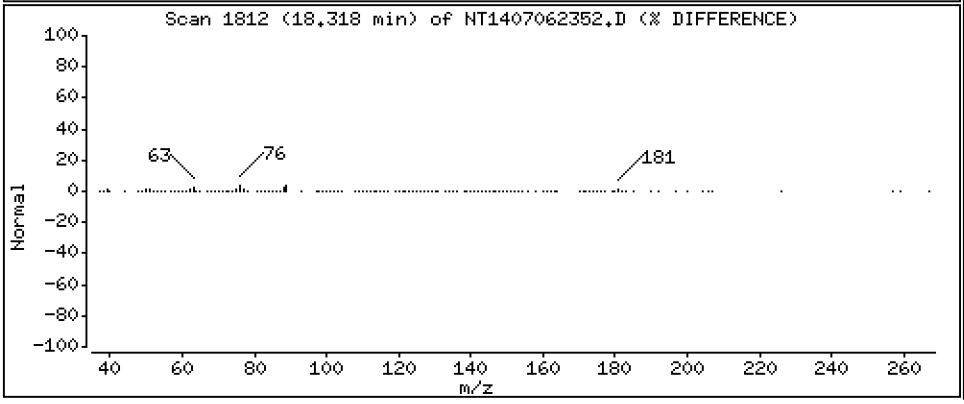
61 Anthracene

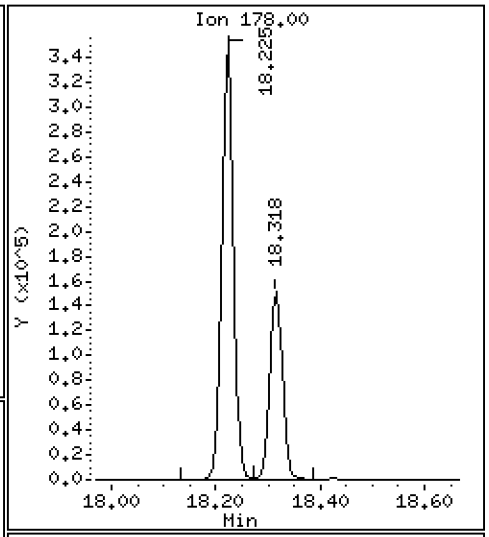
Concentration: 2.020 ug/mL

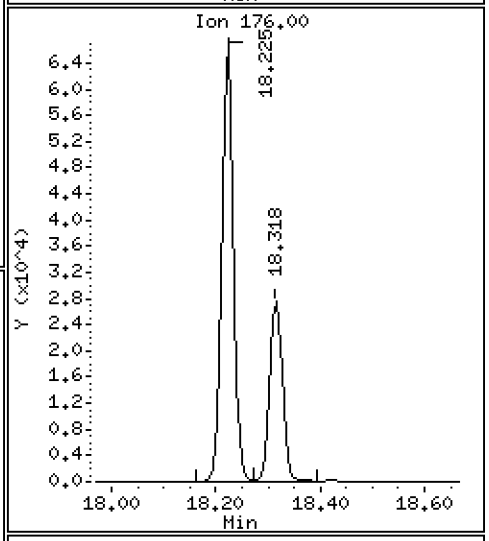


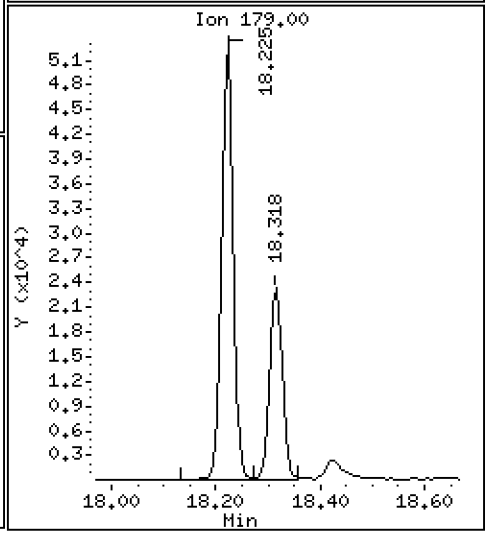












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

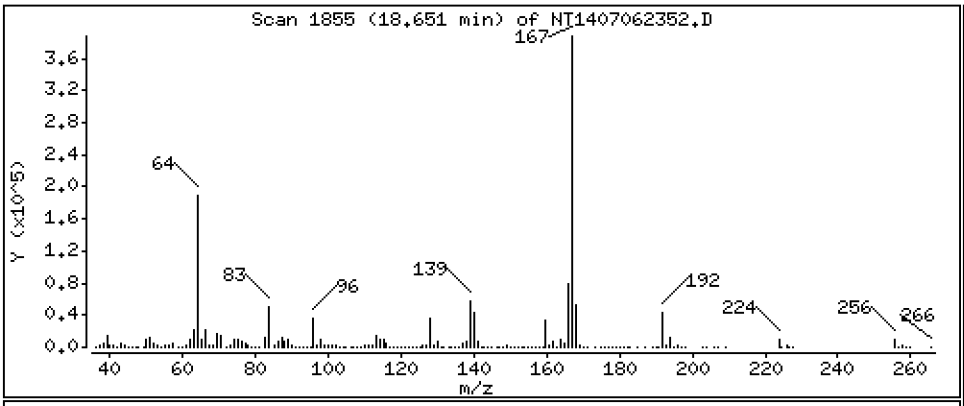
Operator: JGR

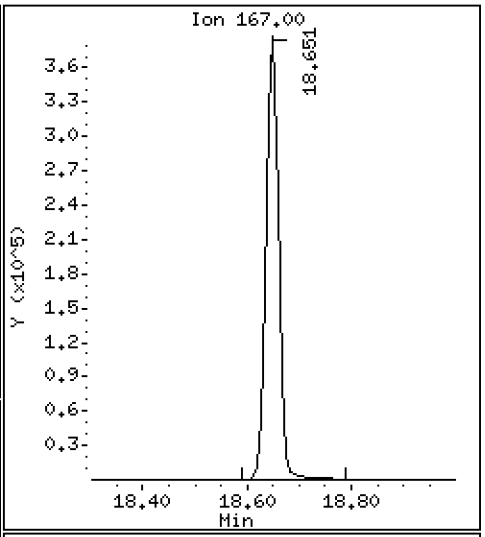
Column phase: ZB-5msi

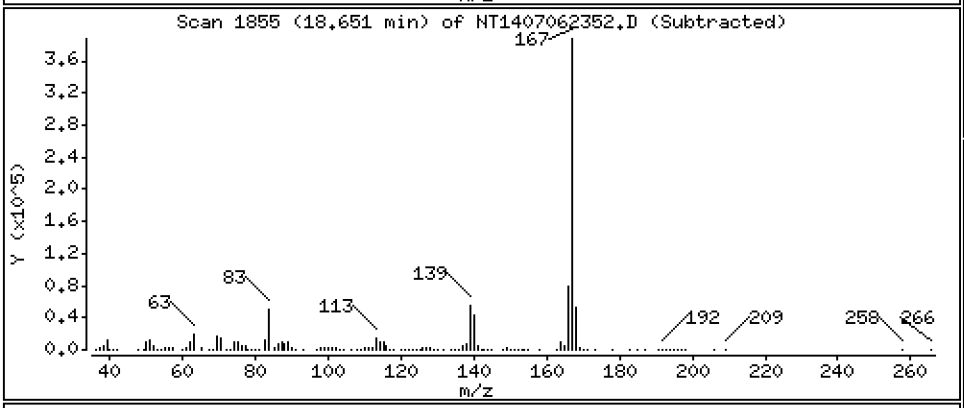
Column diameter: 0.25

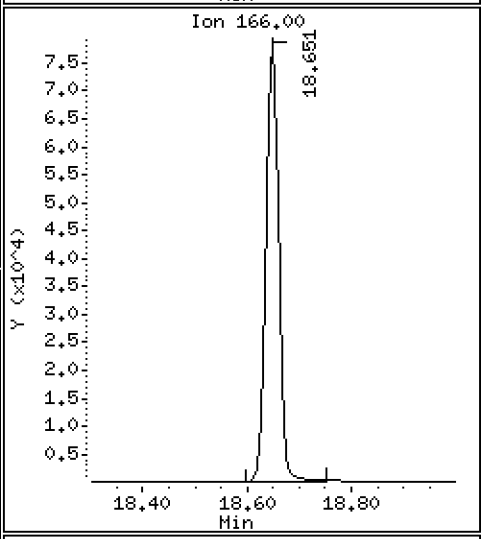
62 Carbazole

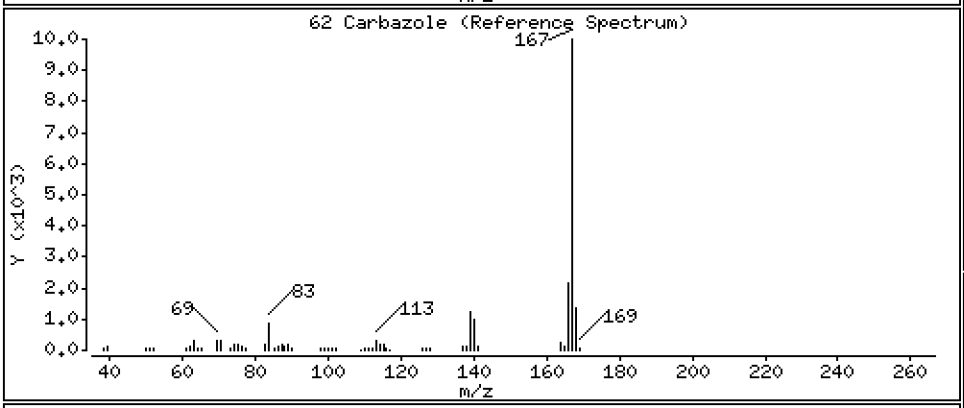
Concentration: 5.089 ug/mL

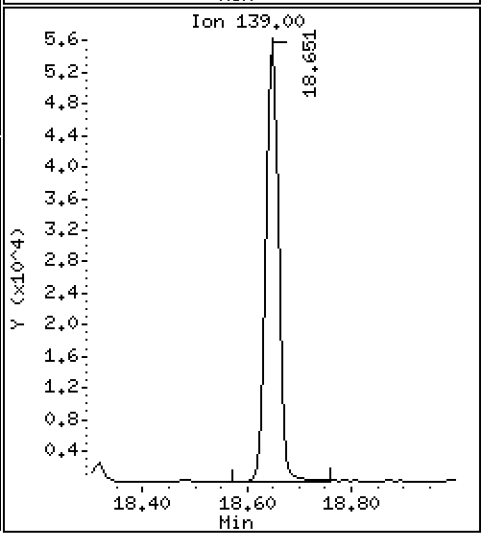


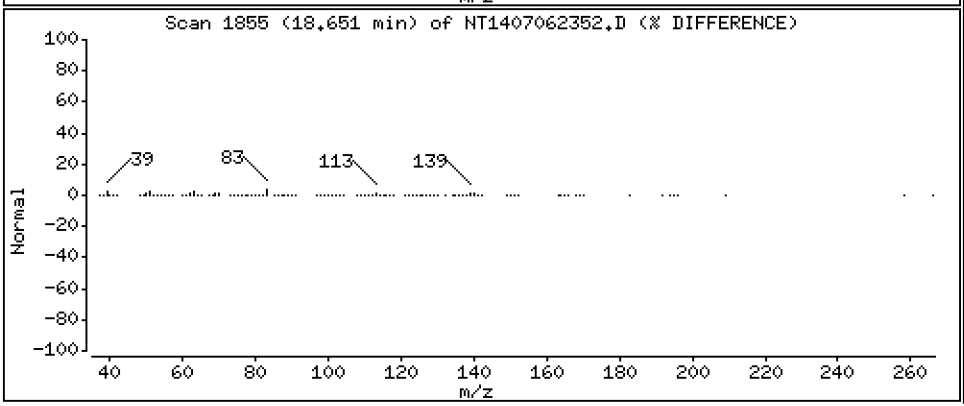












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

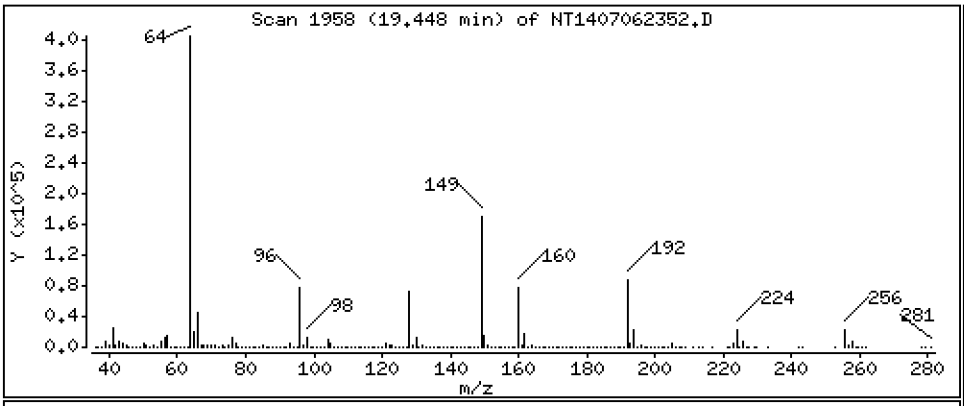
Operator: JGR

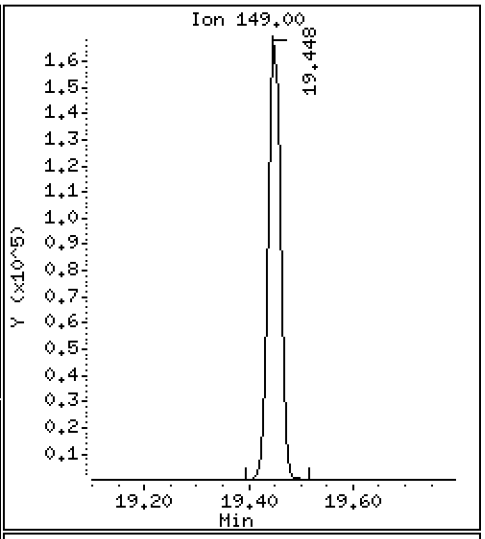
Column phase: ZB-5msi

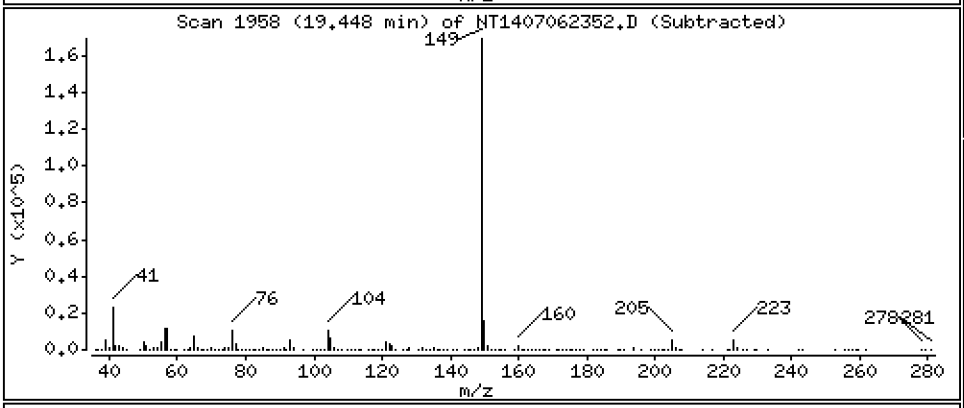
Column diameter: 0.25

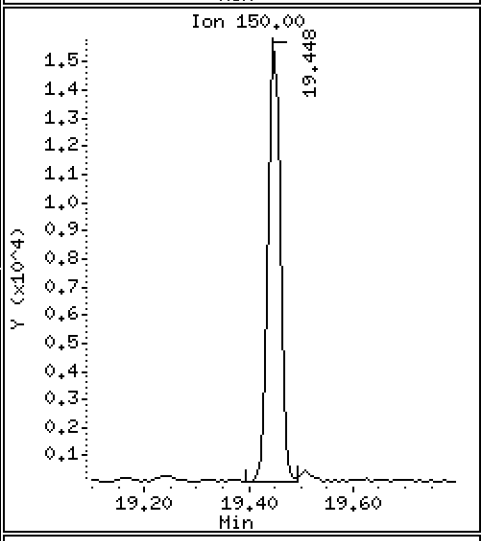
63 Di-n-butylphthalate

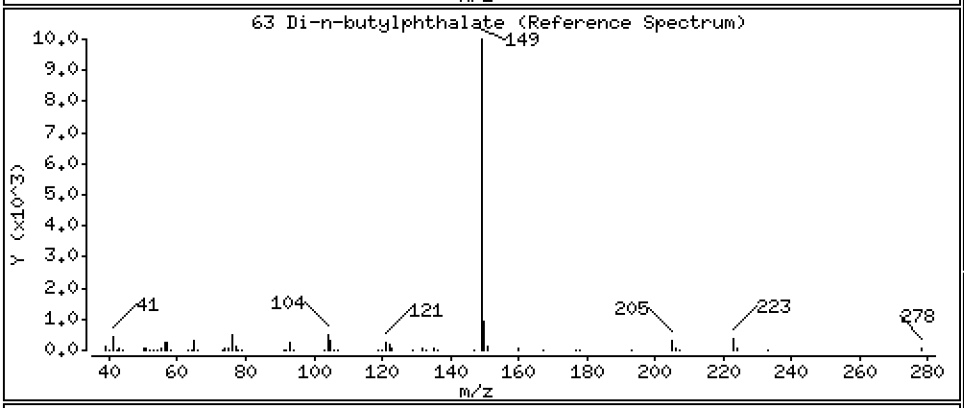
Concentration: 1.636 ug/mL

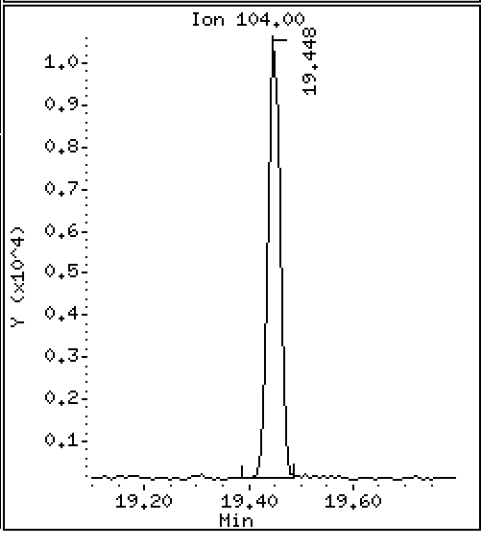


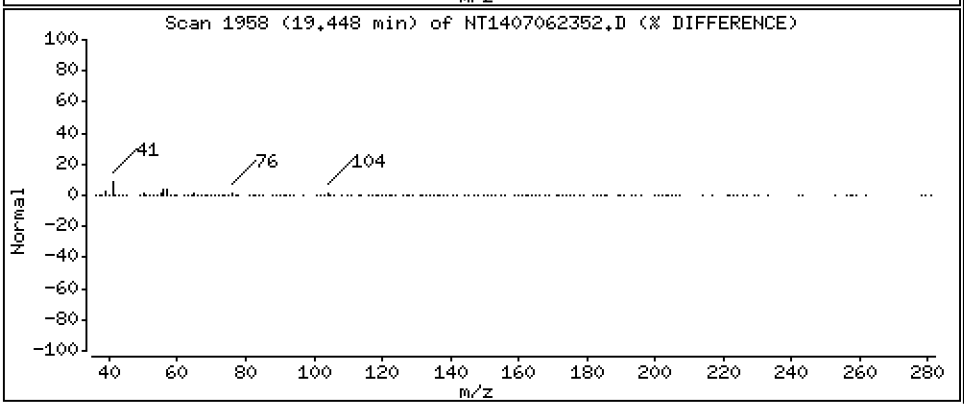












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

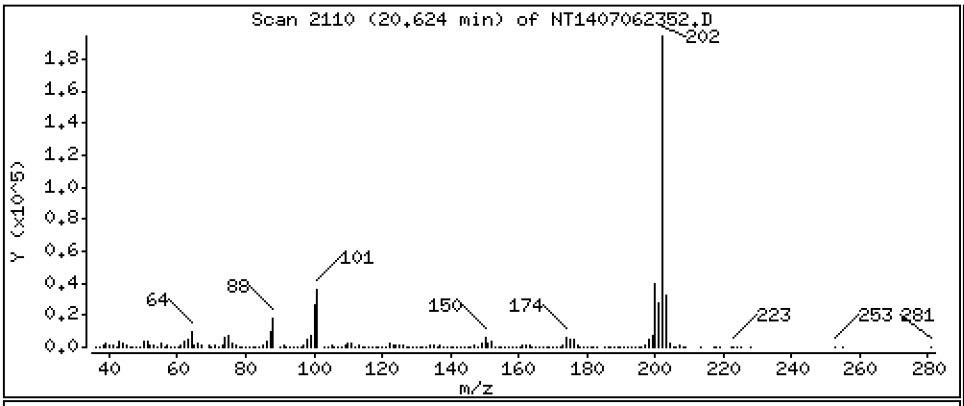
Operator: JGR

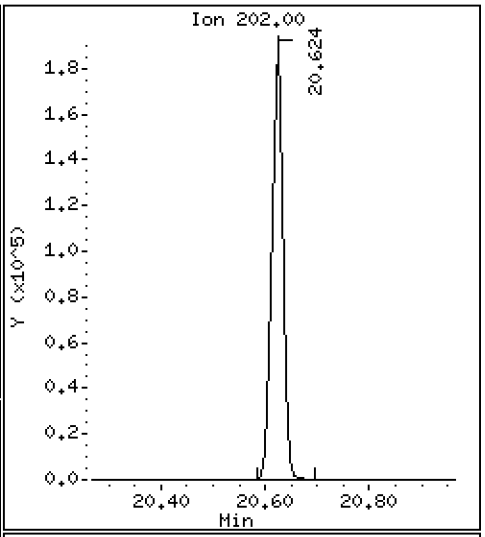
Column phase: ZB-5msi

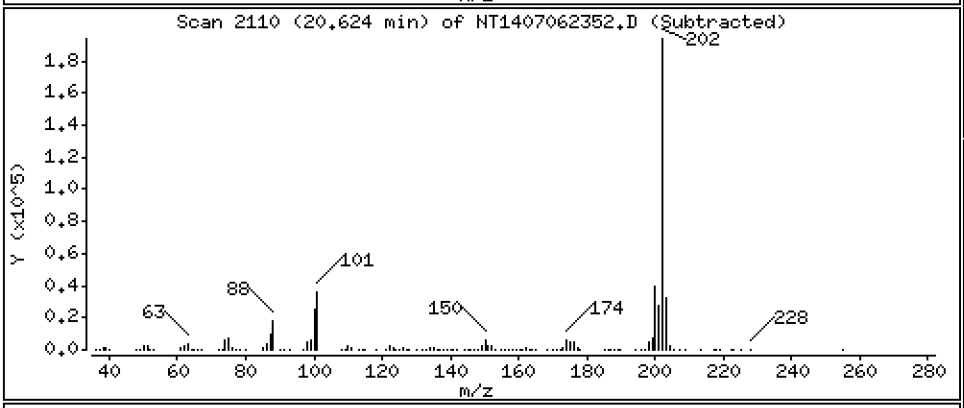
Column diameter: 0.25

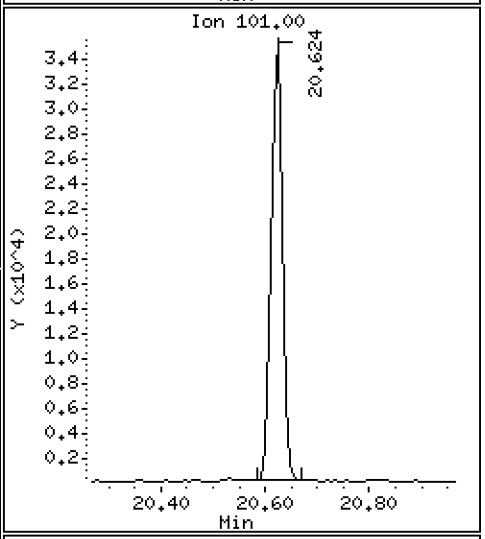
64 Fluoranthene

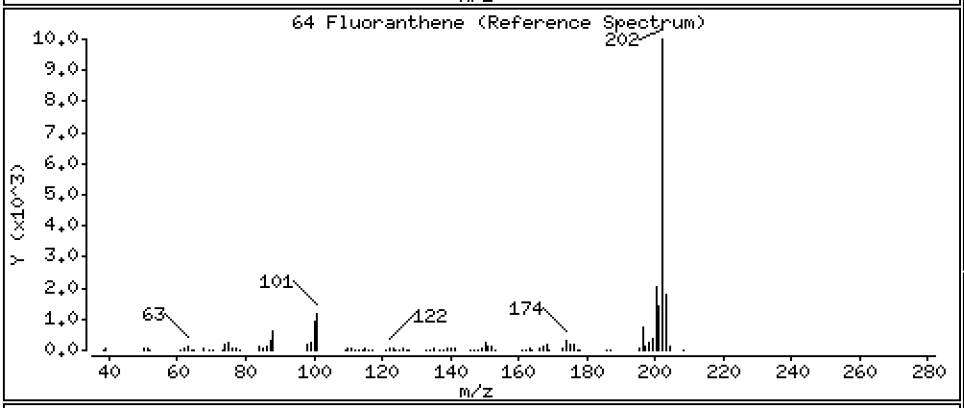
Concentration: 2.459 ug/mL

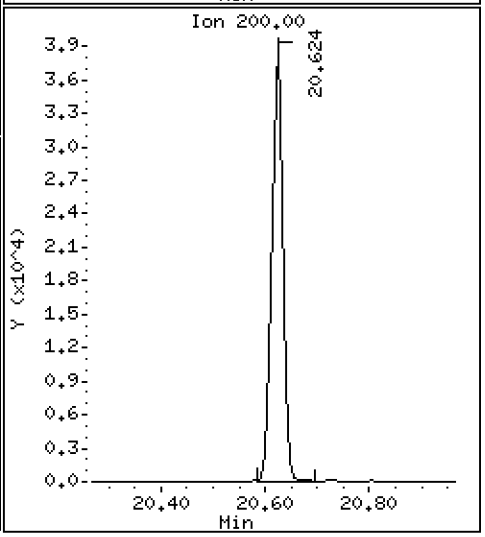


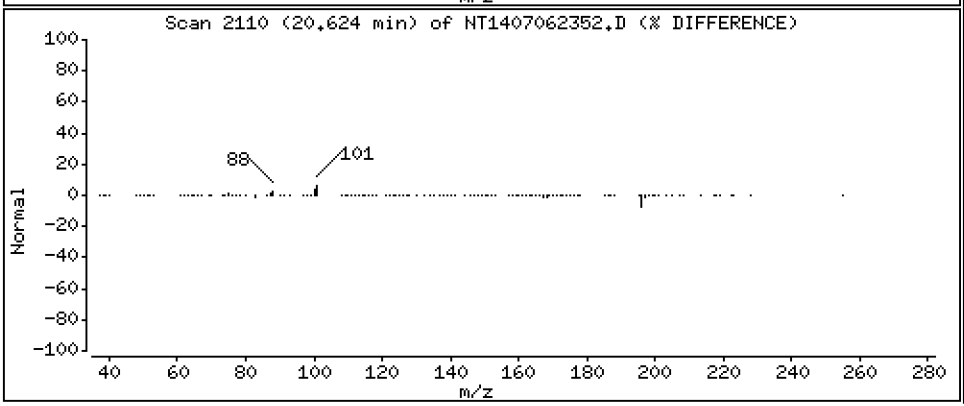












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

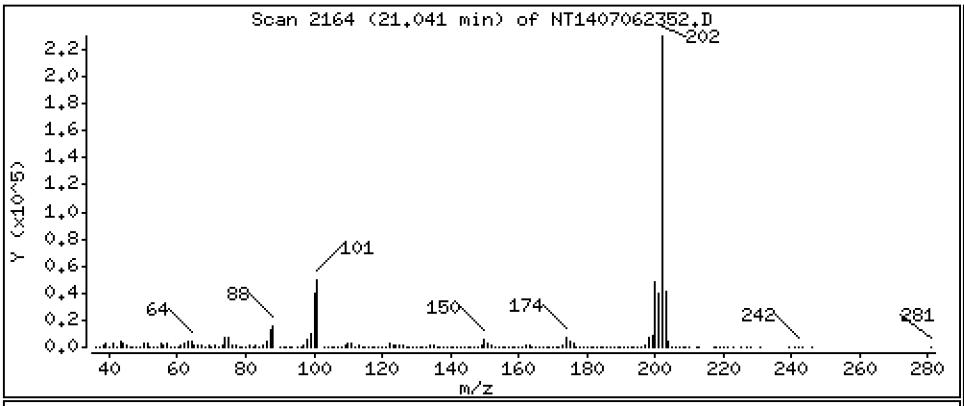
Operator: JGR

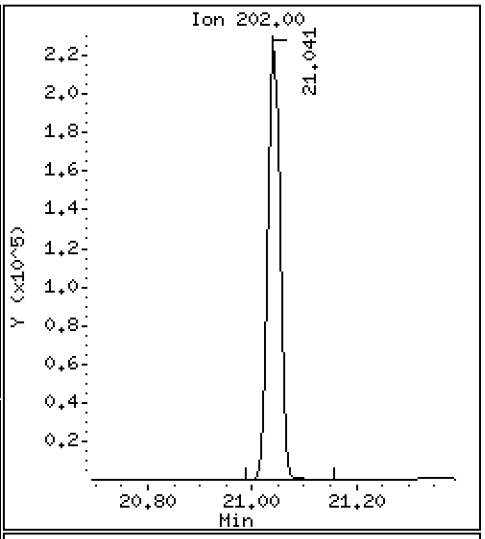
Column phase: ZB-5msi

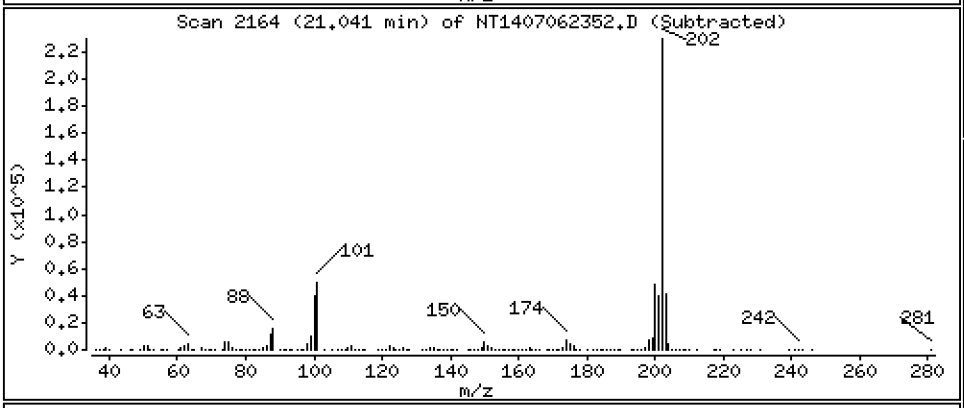
Column diameter: 0.25

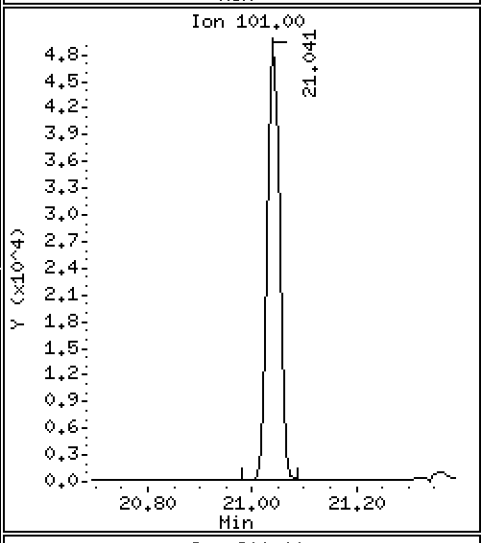
65 Pyrene

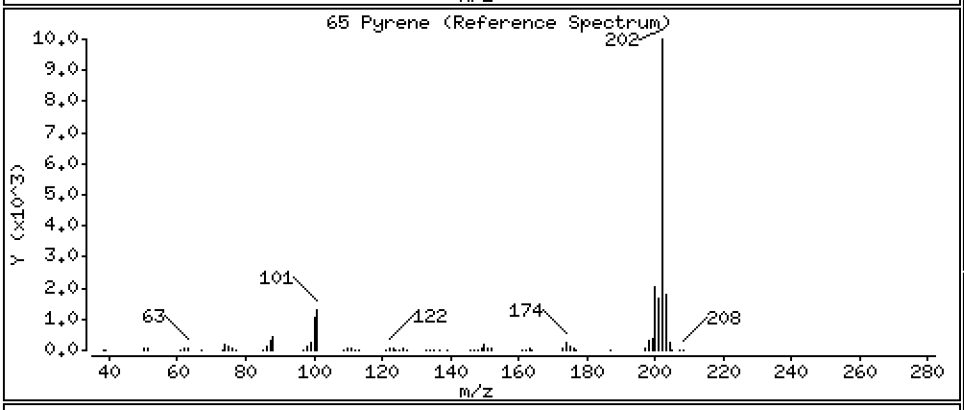
Concentration: 3.119 ug/mL

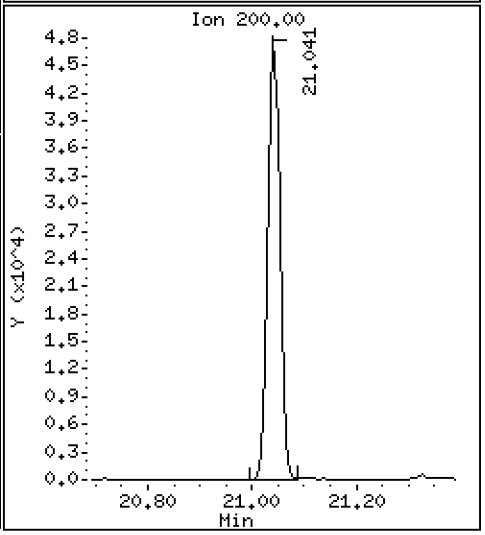


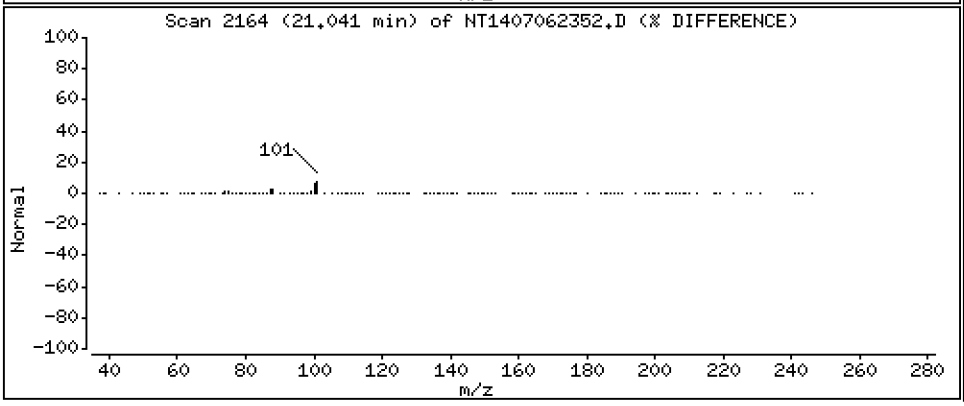












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

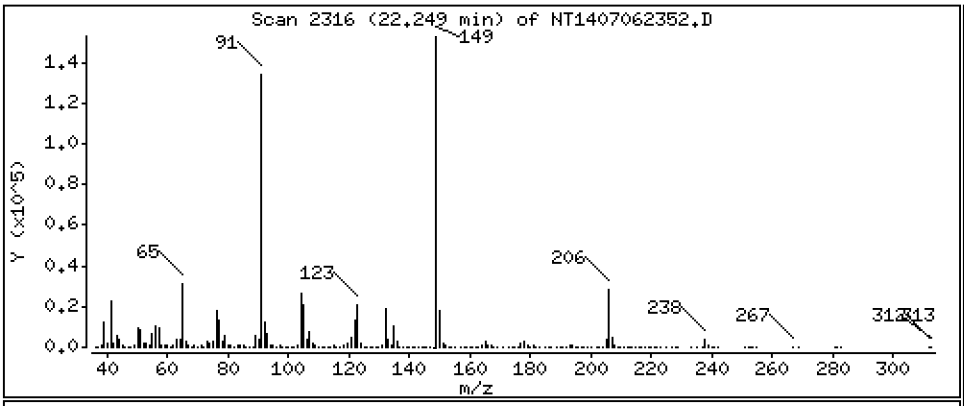
Operator: JGR

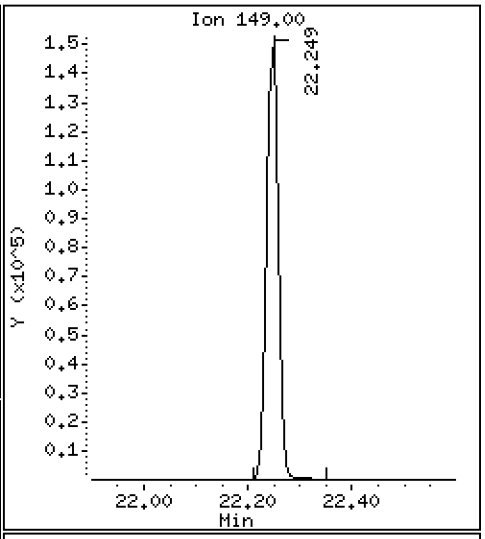
Column phase: ZB-5msi

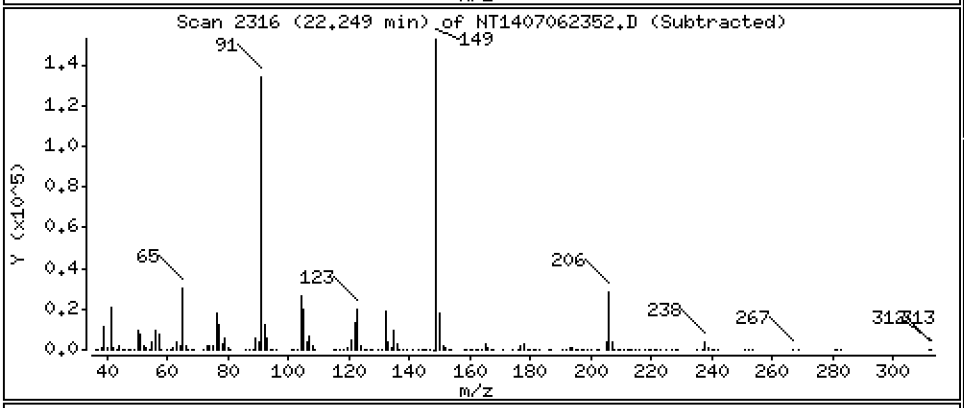
Column diameter: 0.25

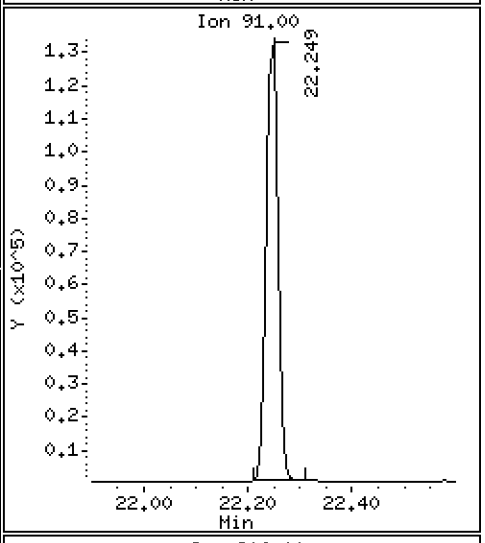
67 Butylbenzylphthalate

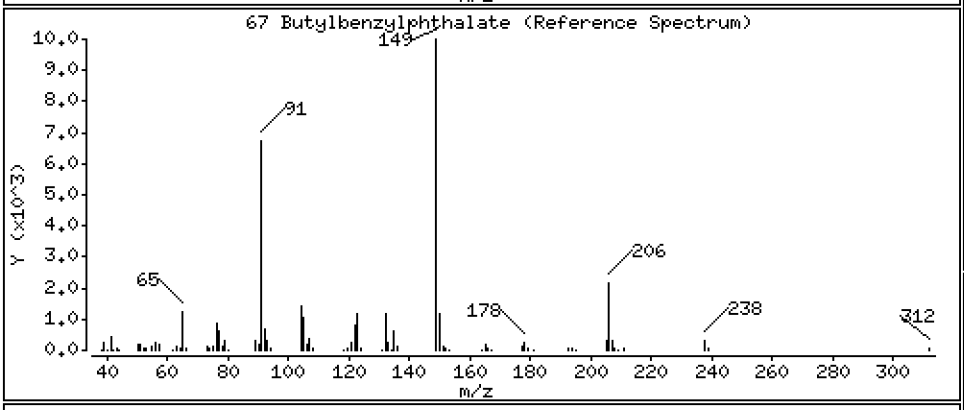
Concentration: 4.133 ug/mL

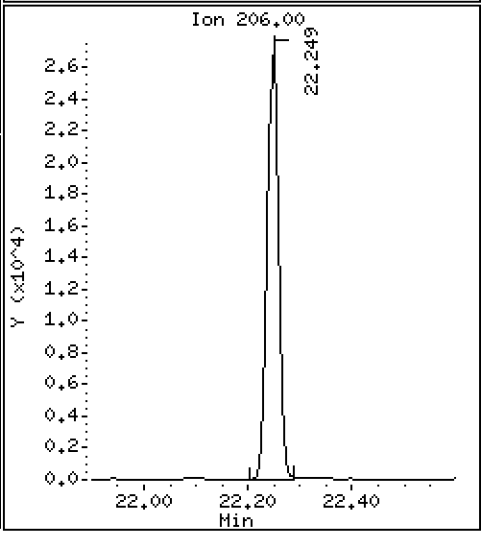


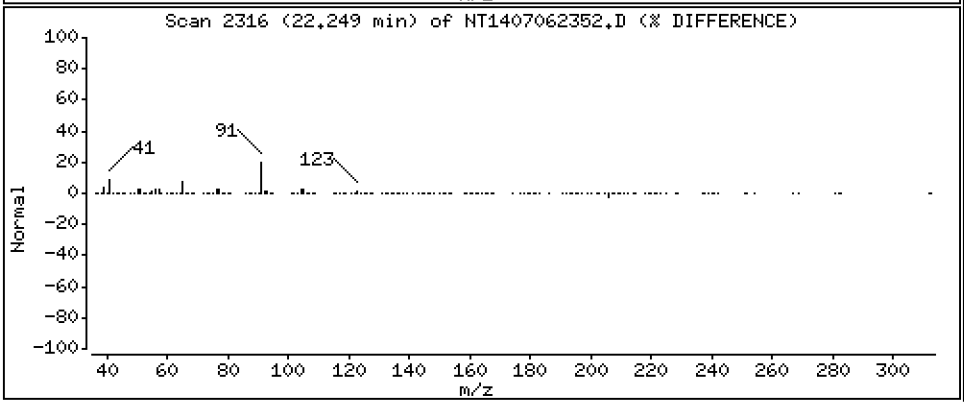












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

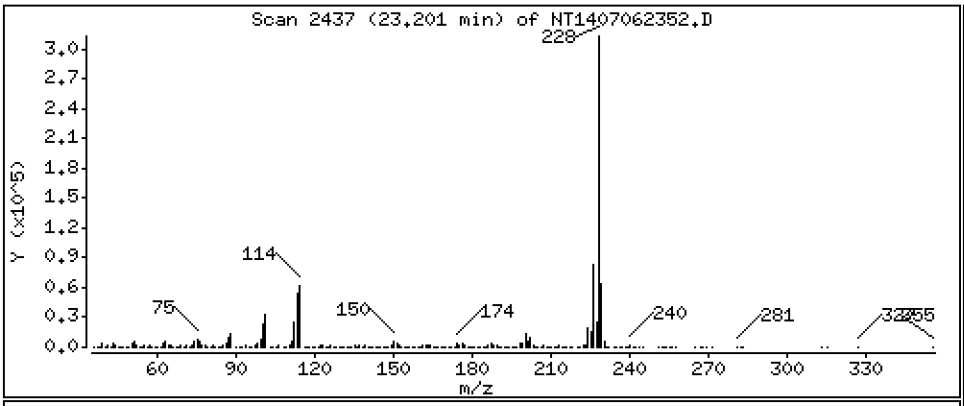
Operator: JGR

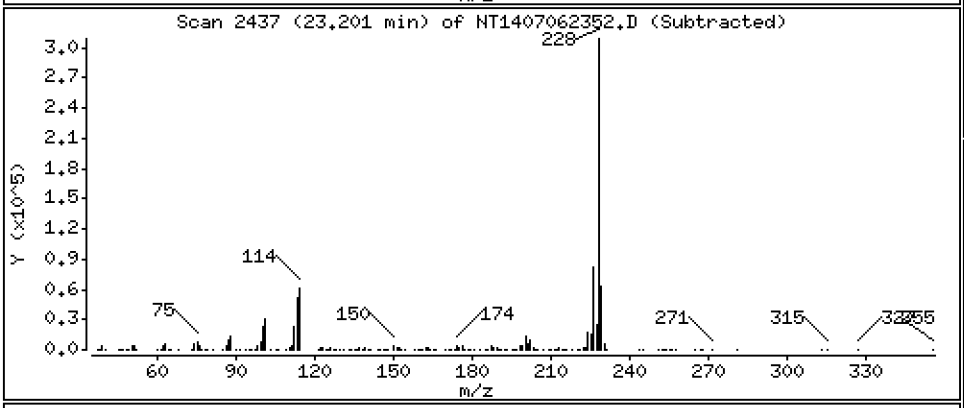
Column phase: ZB-5msi

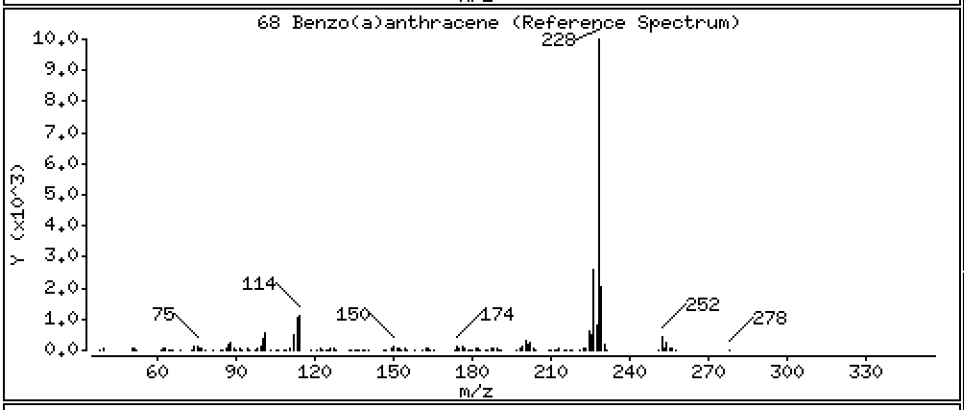
Column diameter: 0.25

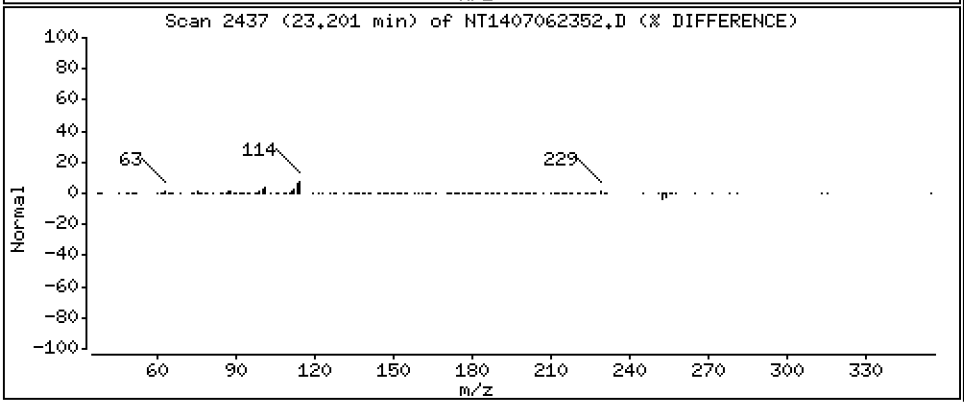
68 Benzo(a)anthracene

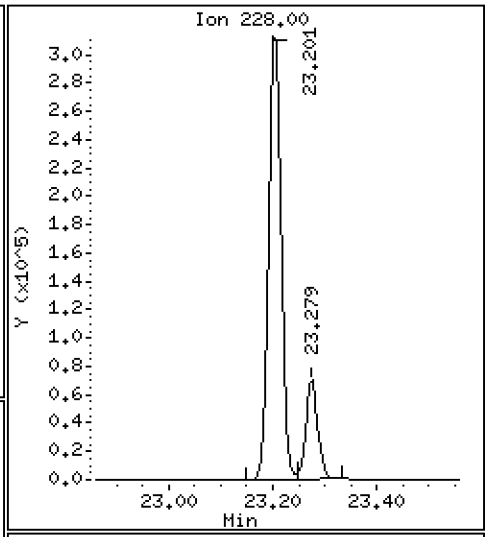
Concentration: 5.303 ug/mL

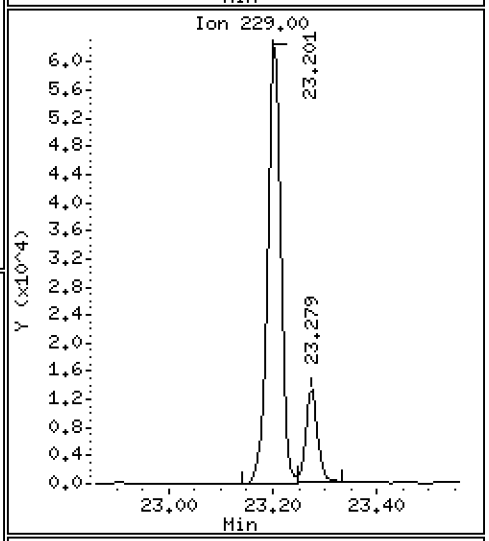


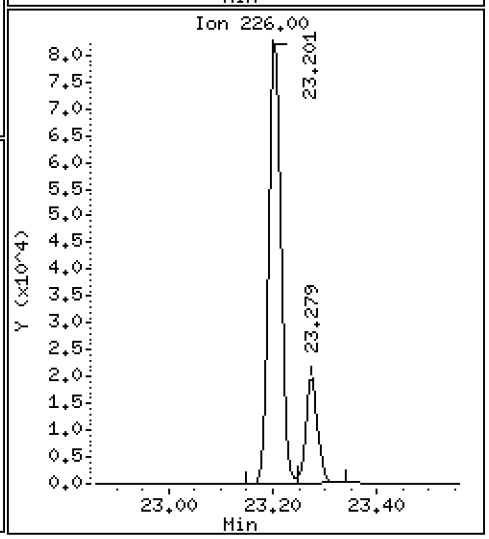












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

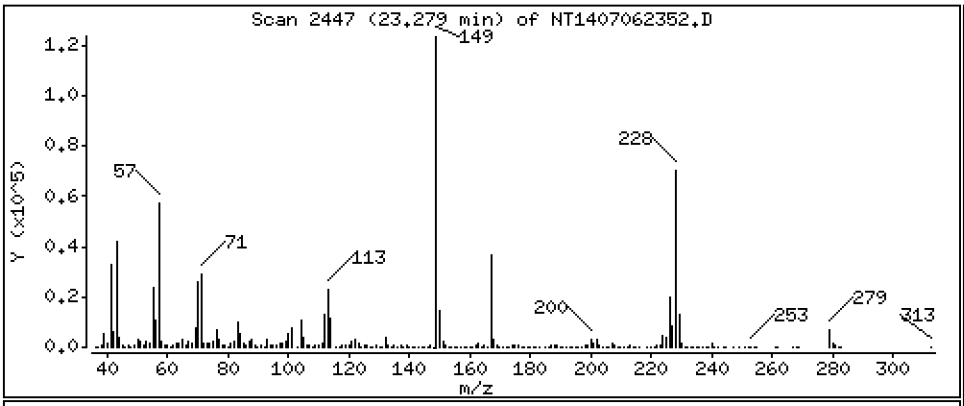
Operator: JGR

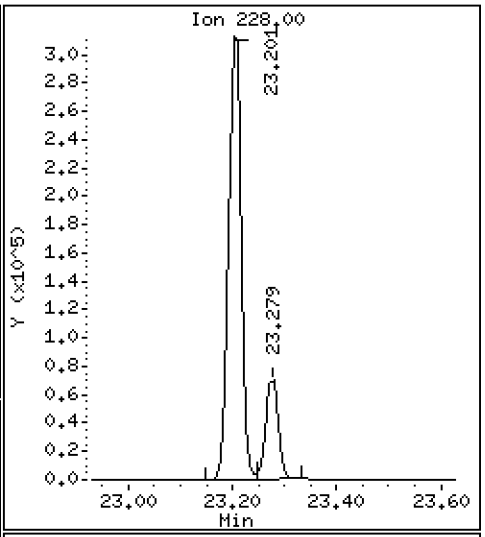
Column phase: ZB-5msi

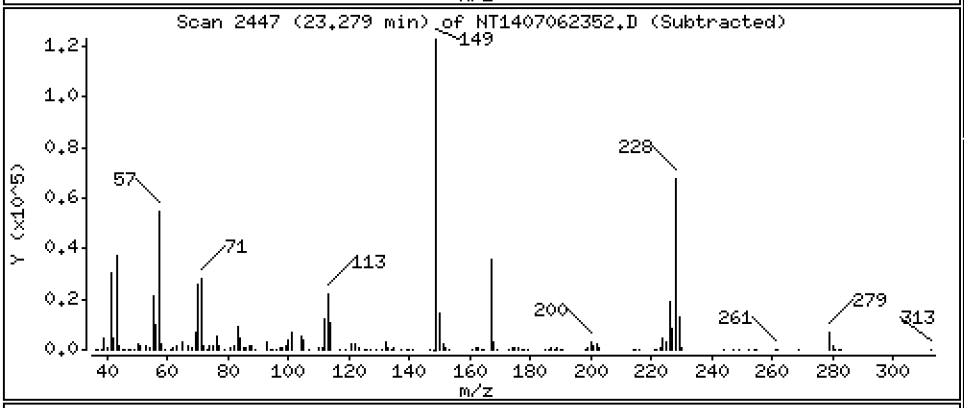
Column diameter: 0.25

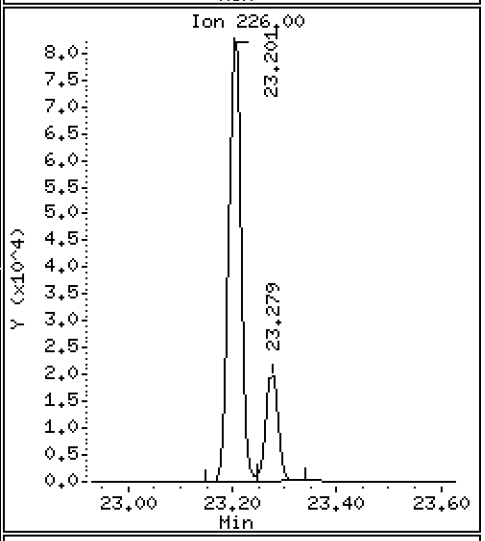
71 Chrysene

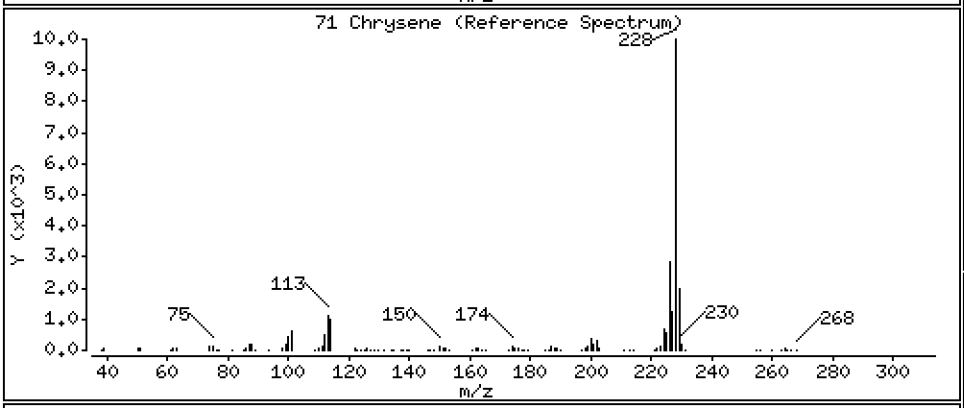
Concentration: 1.297 ug/mL

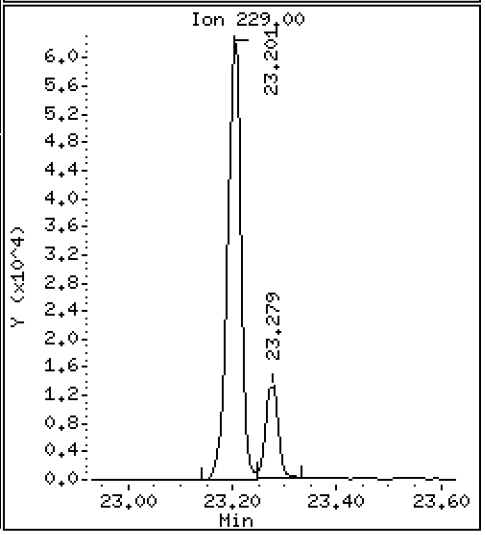


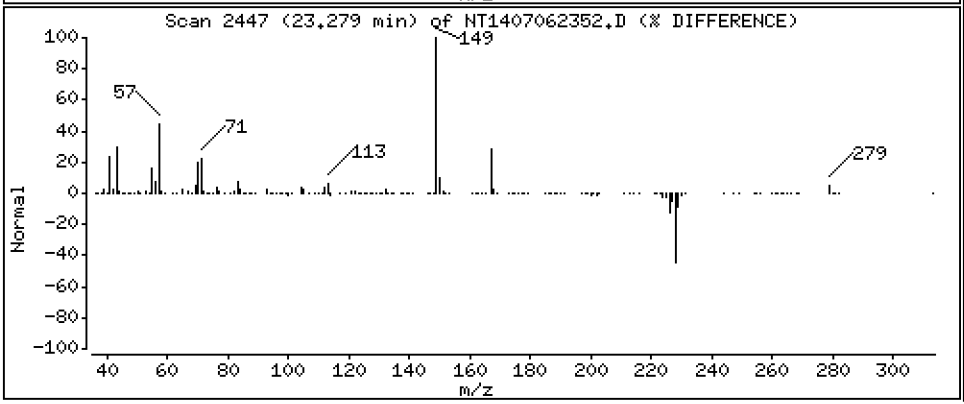












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

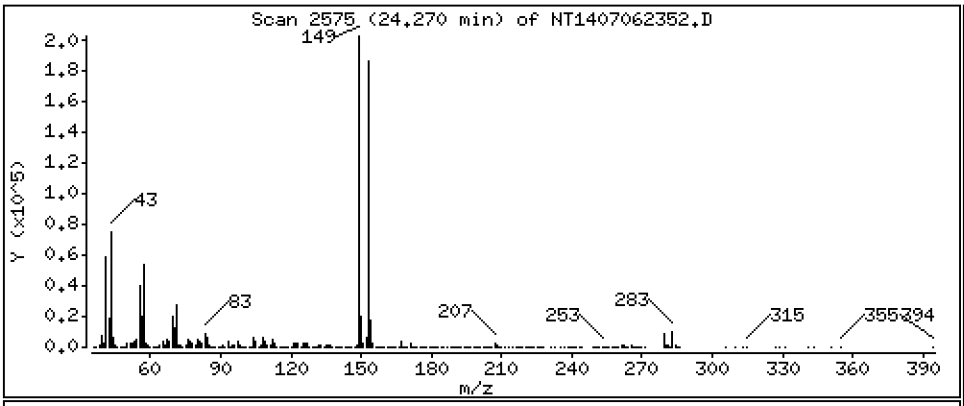
Operator: JGR

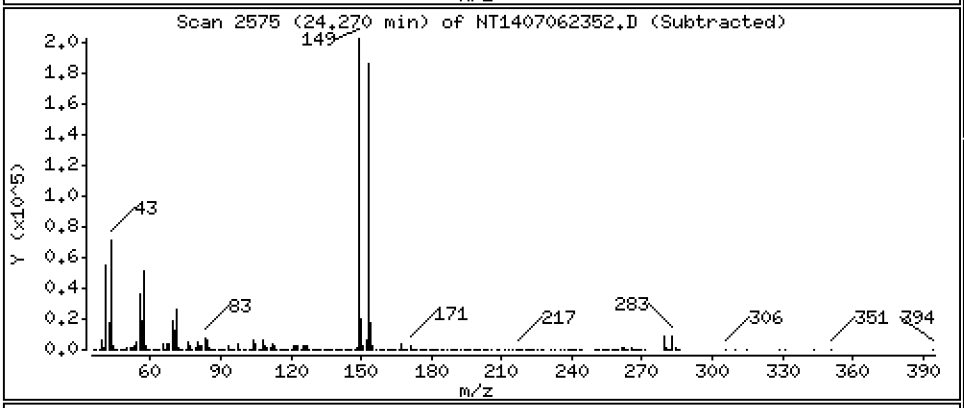
Column phase: ZB-5msi

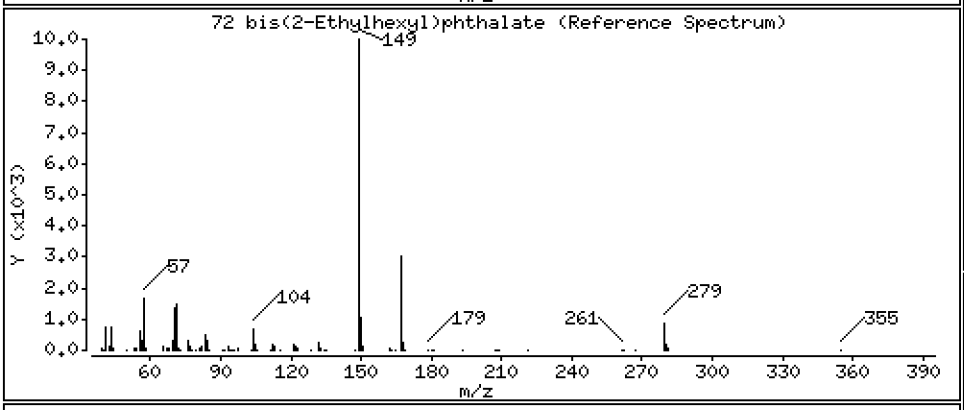
Column diameter: 0.25

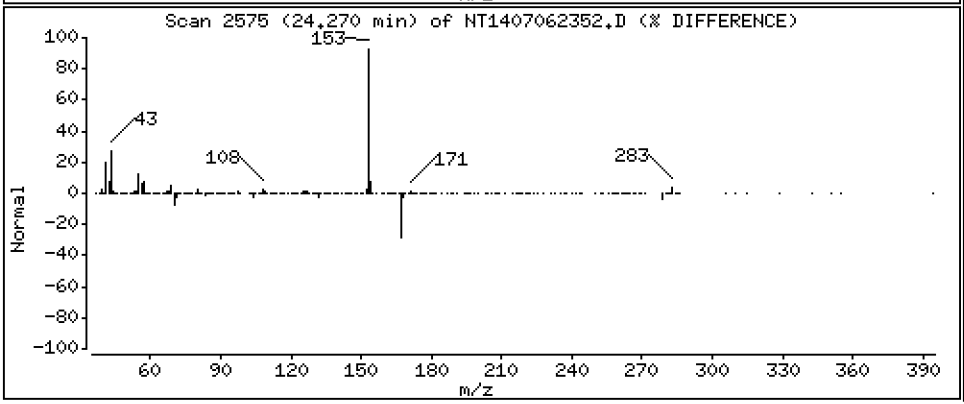
72 bis(2-Ethylhexyl)phthalate

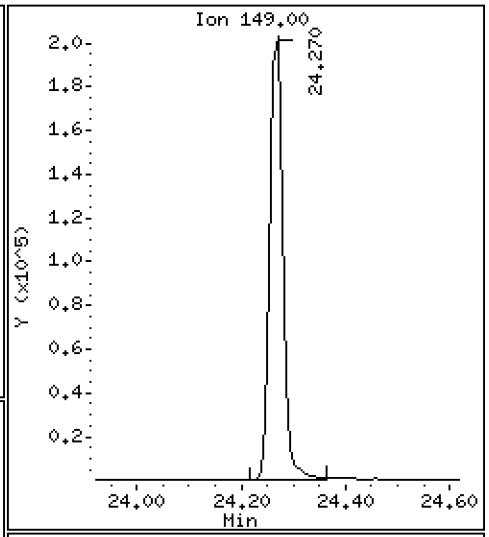
Concentration: 1.886 ug/mL

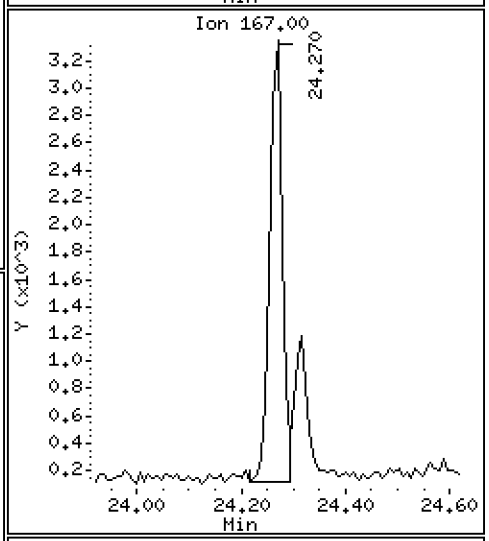


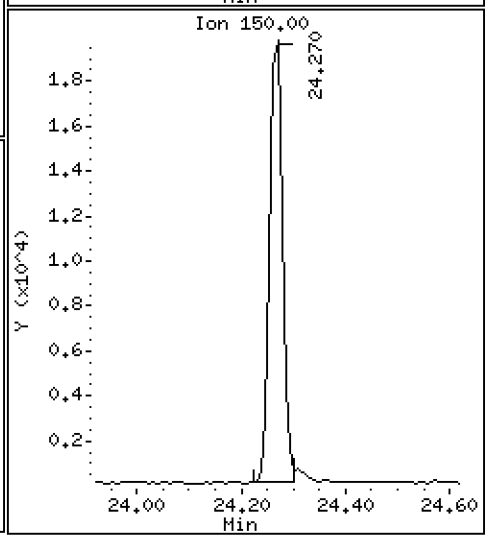












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

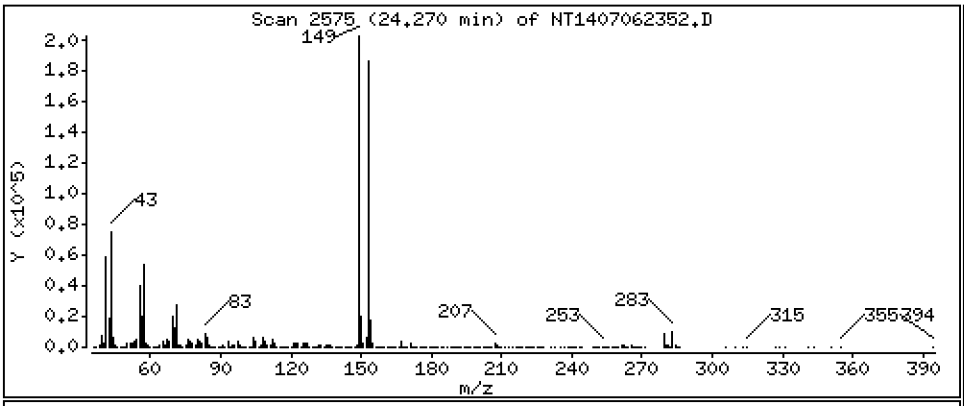
Operator: JGR

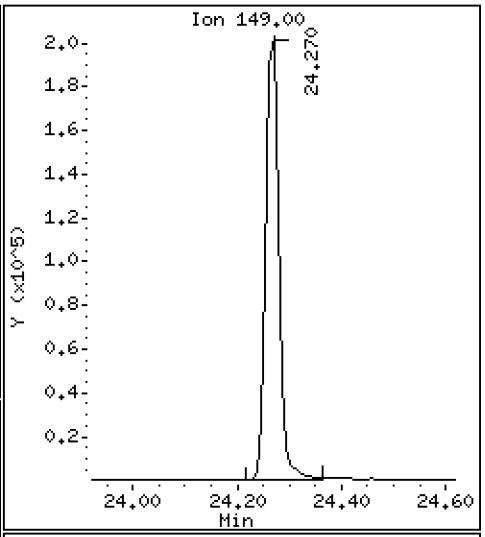
Column phase: ZB-5msi

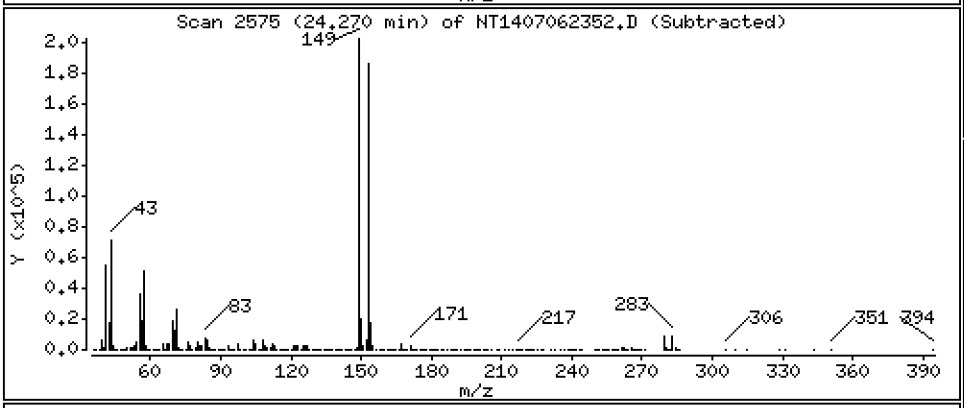
Column diameter: 0.25

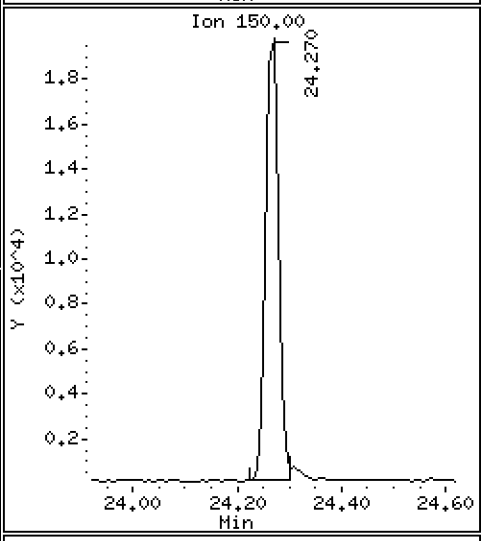
73 Di-n-octylphthalate

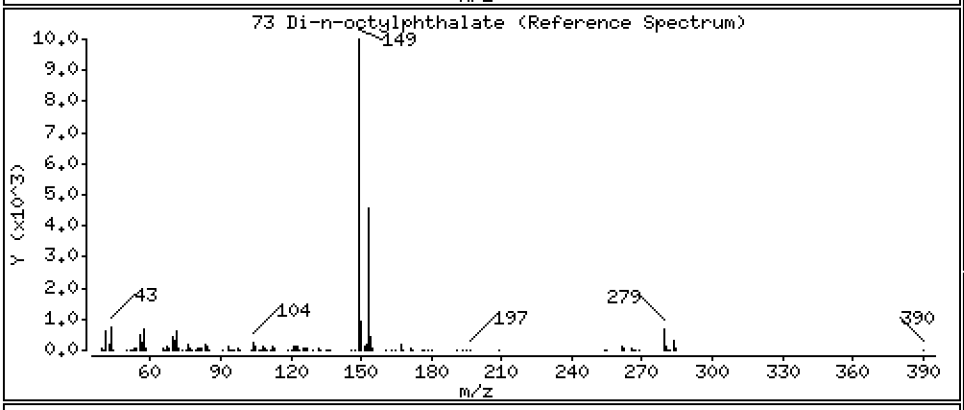
Concentration: 1.886 ug/mL

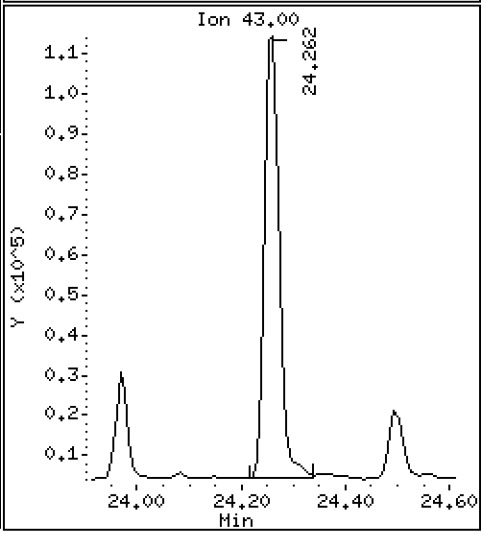


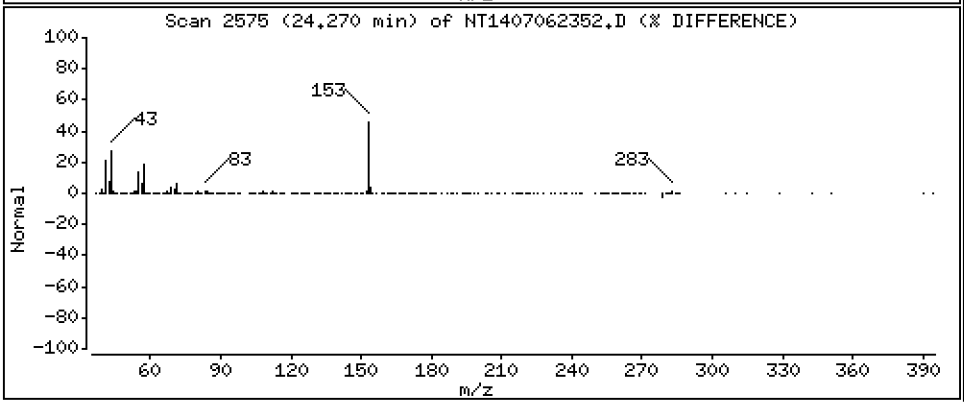












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

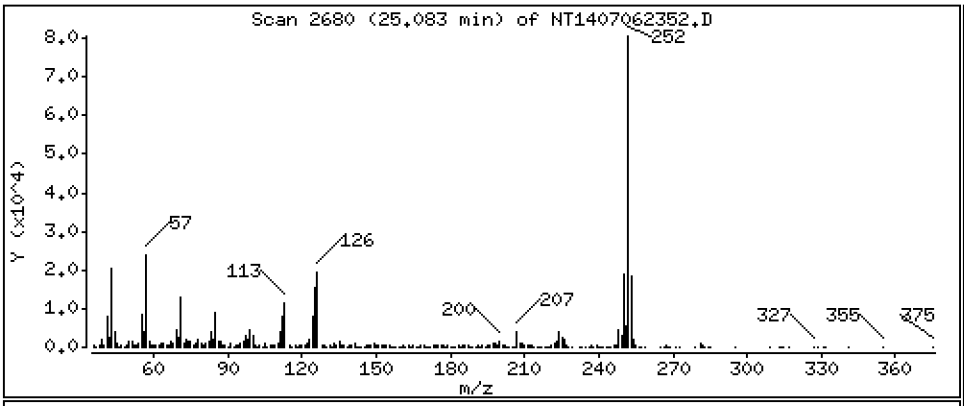
Operator: JGR

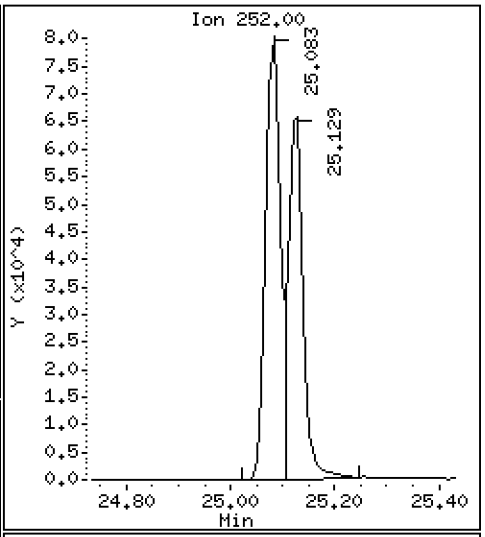
Column phase: ZB-5msi

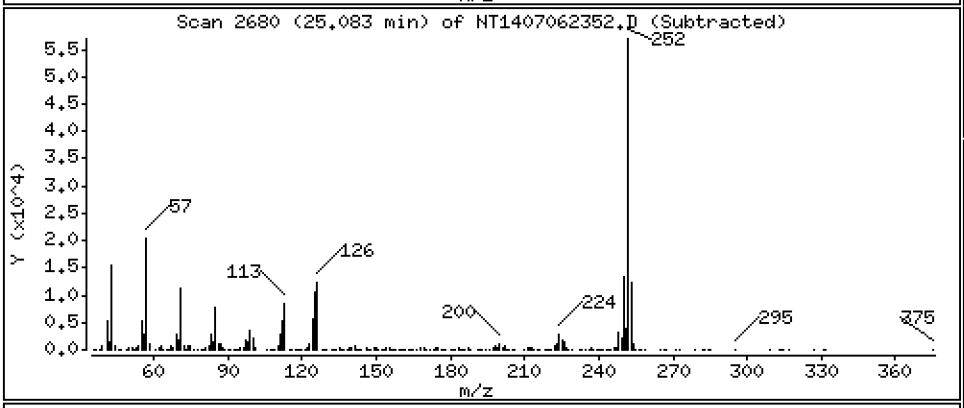
Column diameter: 0.25

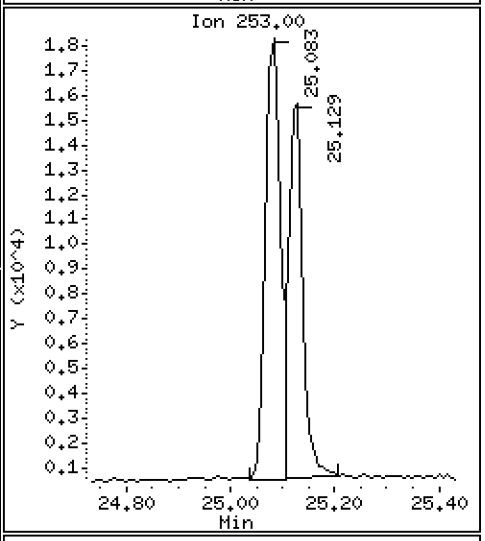
74 Benzo(b)fluoranthene

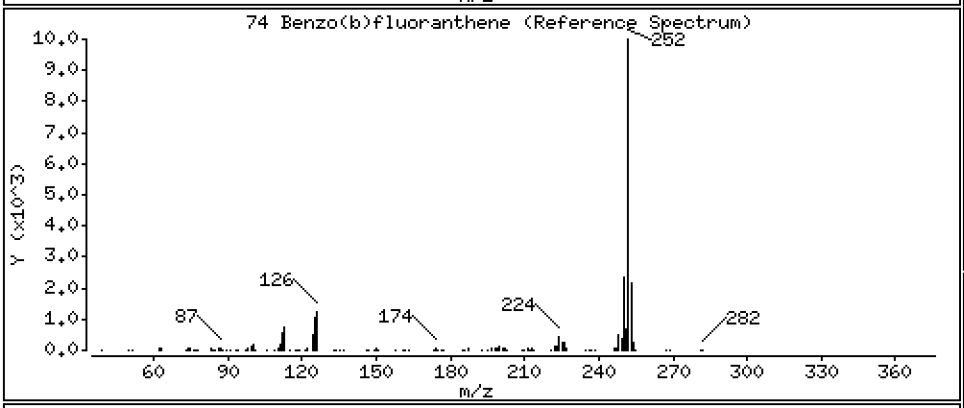
Concentration: 3.199 ug/mL

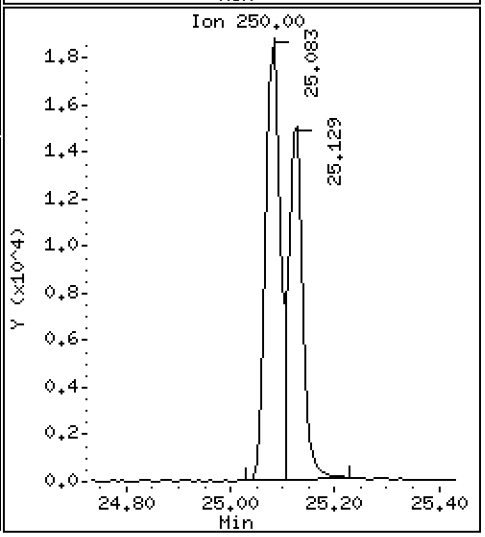


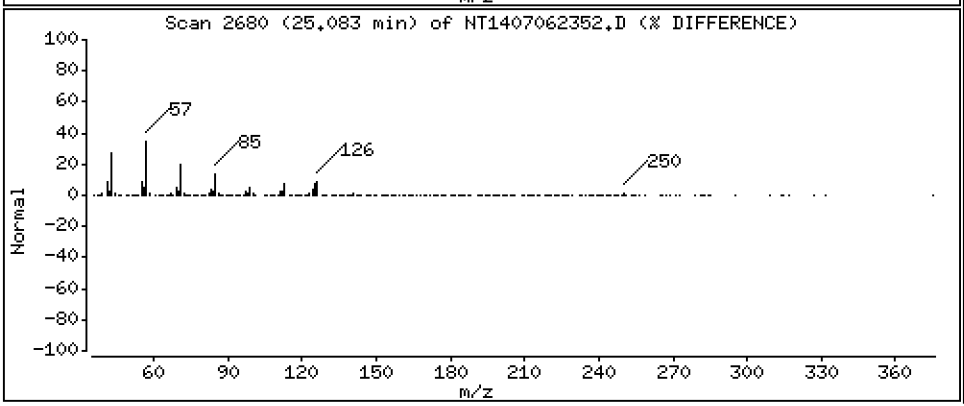












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

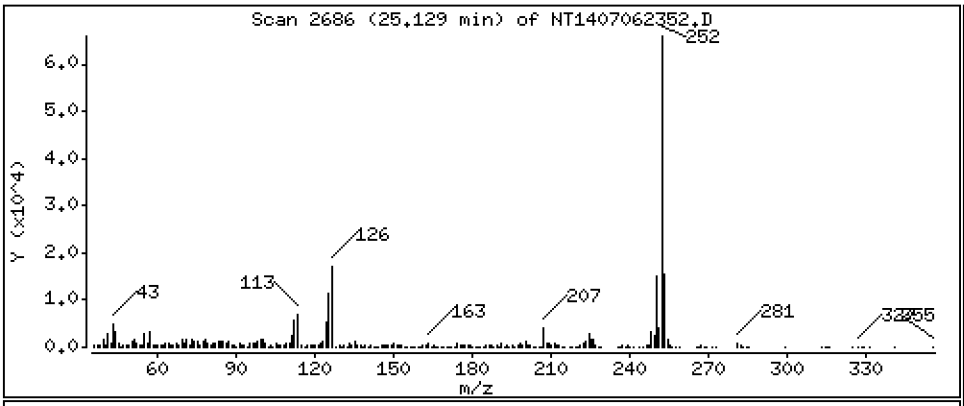
Operator: JGR

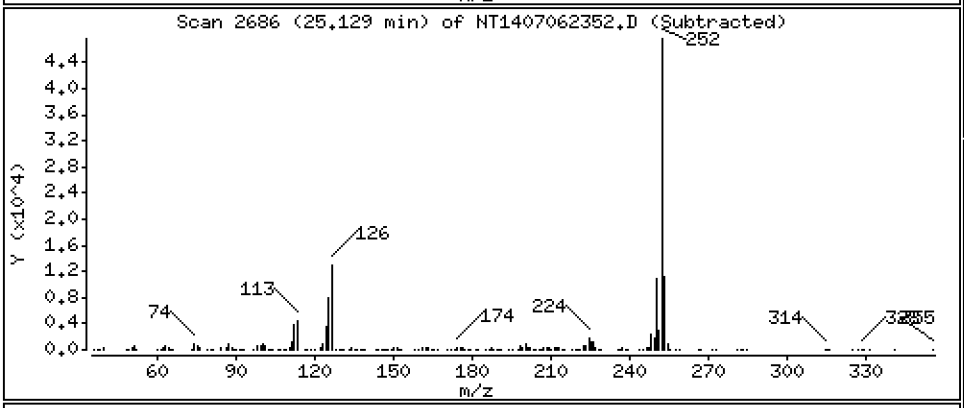
Column phase: ZB-5msi

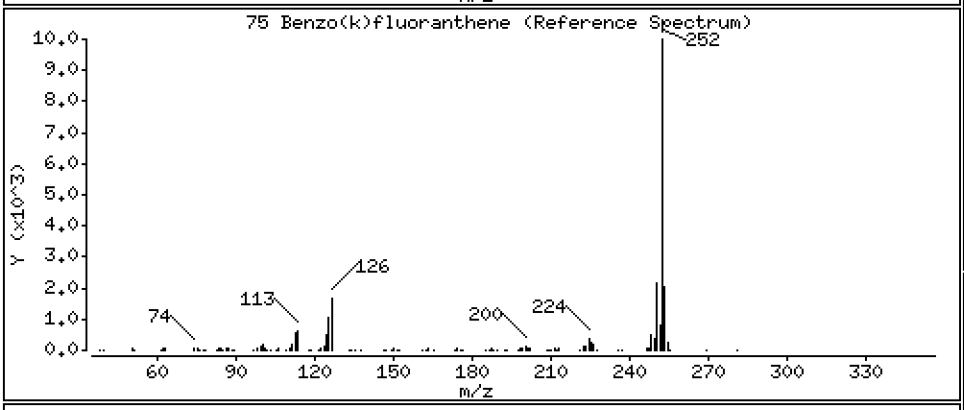
Column diameter: 0.25

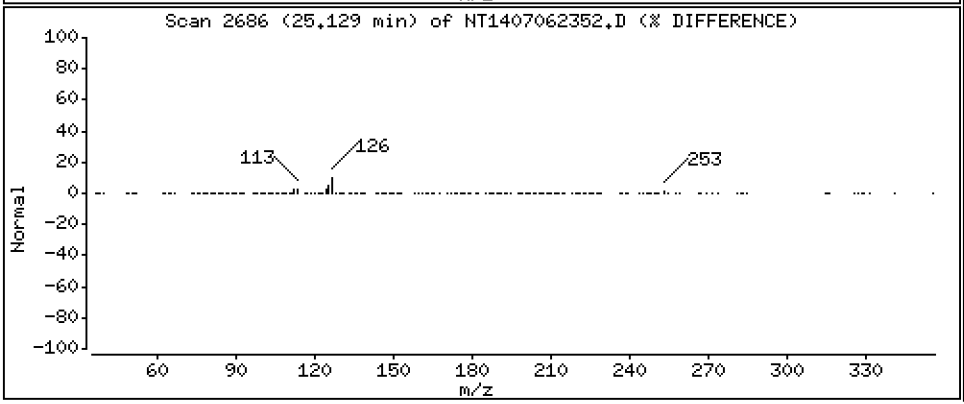
75 Benzo(k)fluoranthene

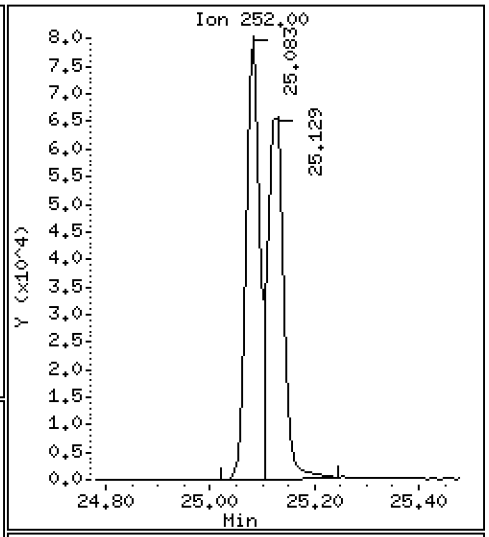
Concentration: 2.424 ug/mL

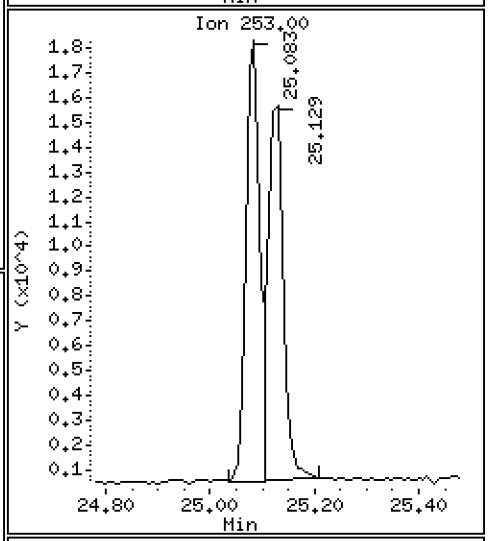


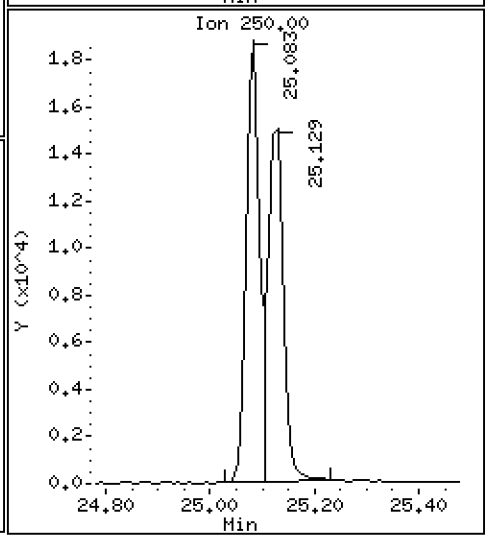












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

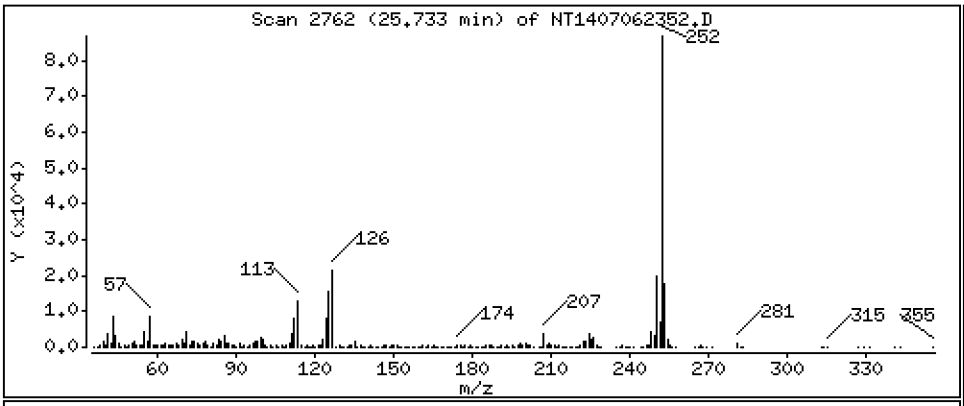
Operator: JGR

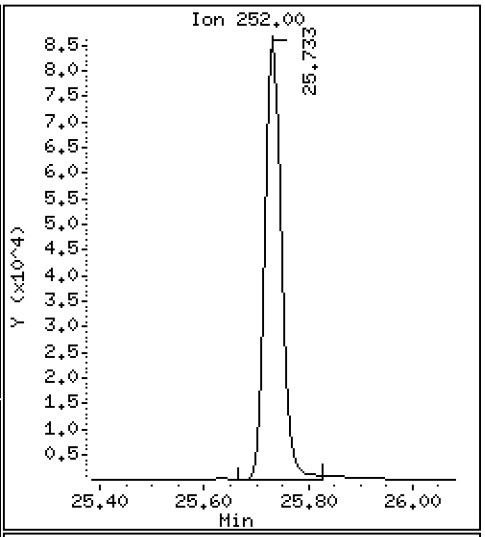
Column phase: ZB-5msi

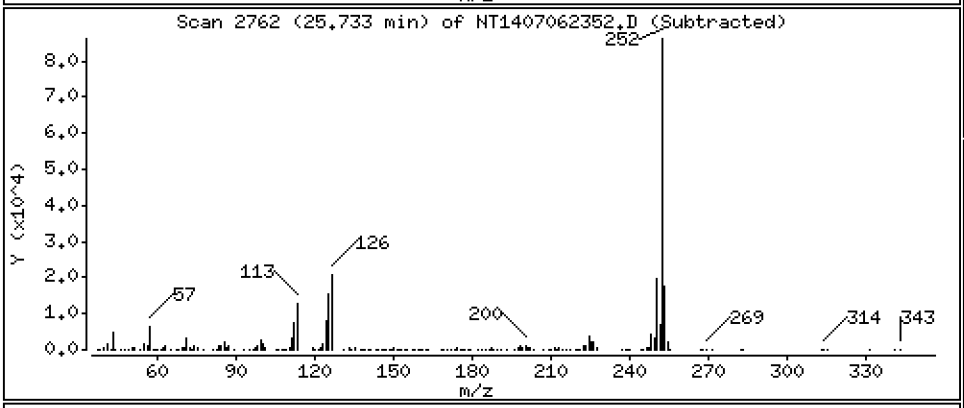
Column diameter: 0.25

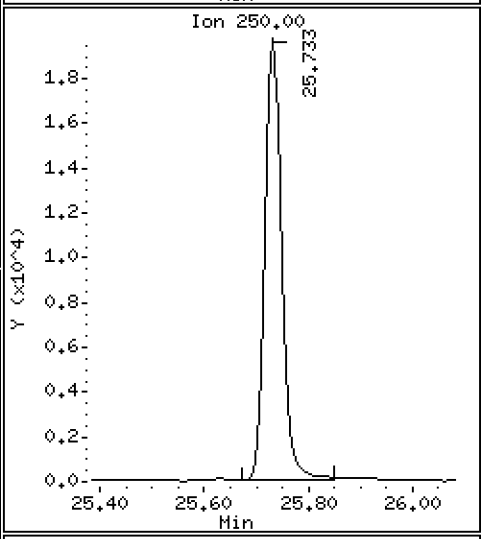
76 Benzo(a)pyrene

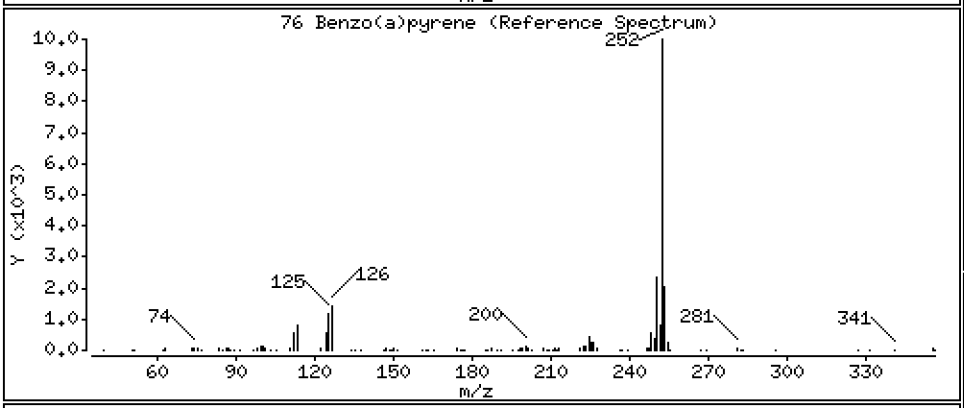
Concentration: 4.717 ug/mL

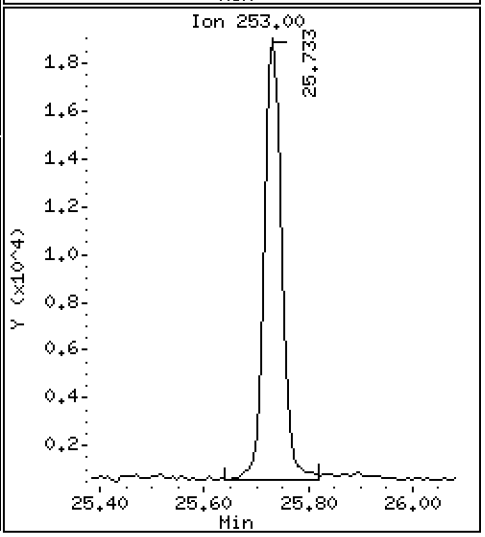


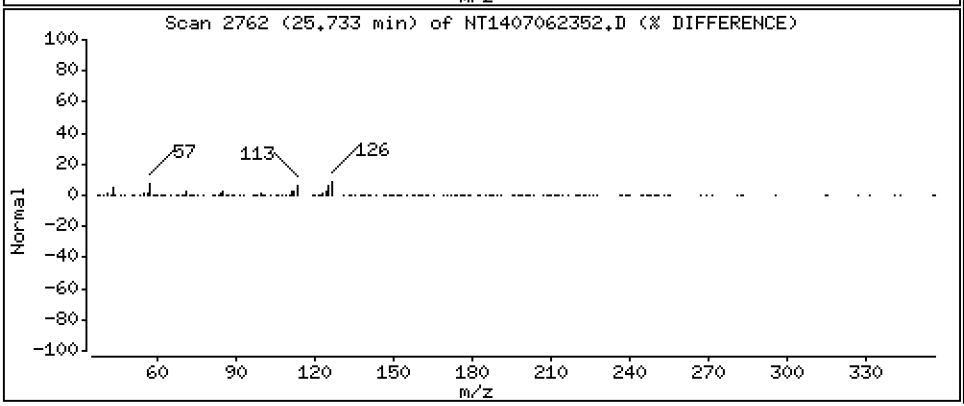












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

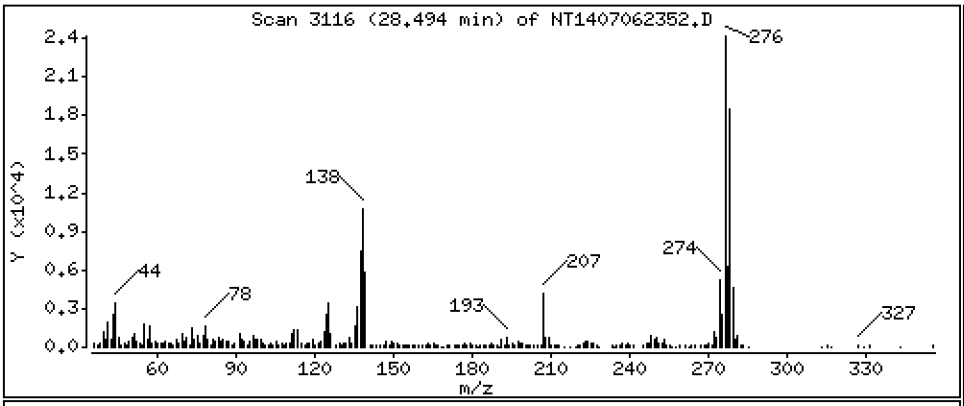
Operator: JGR

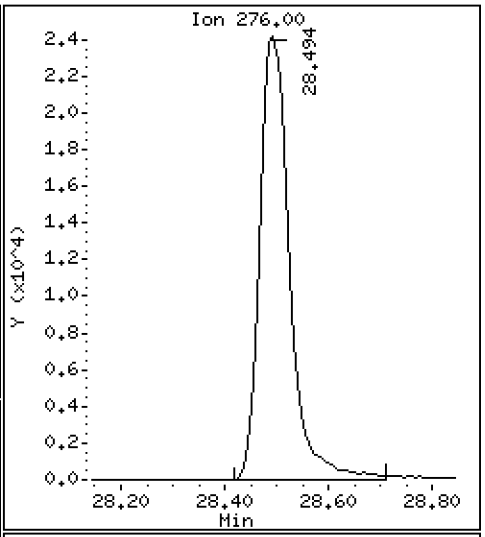
Column phase: ZB-5msi

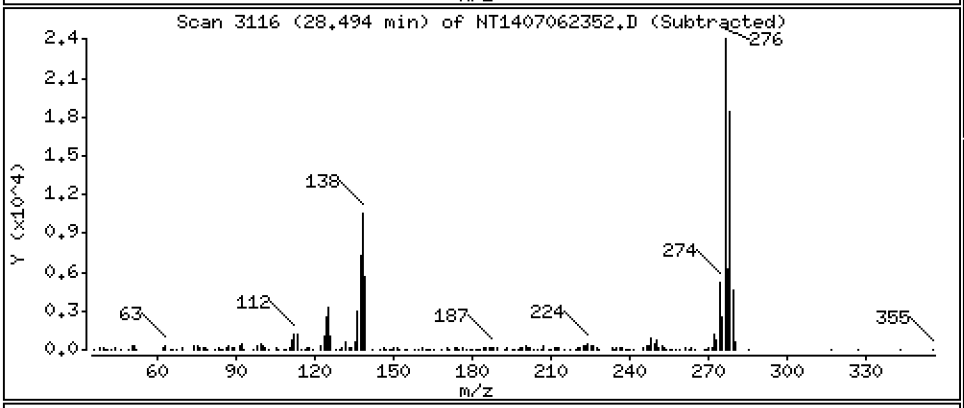
Column diameter: 0.25

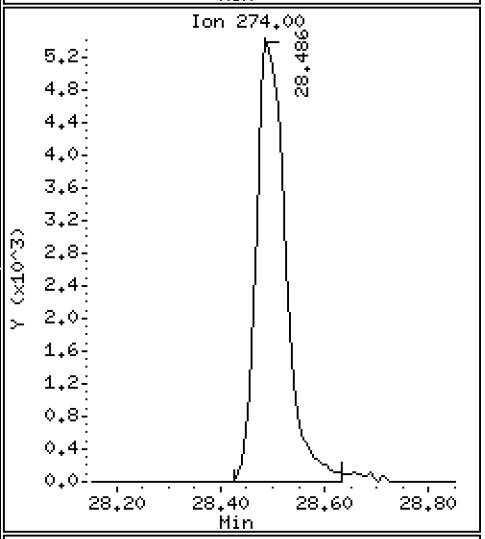
78 Indeno(1,2,3-cd)pyrene

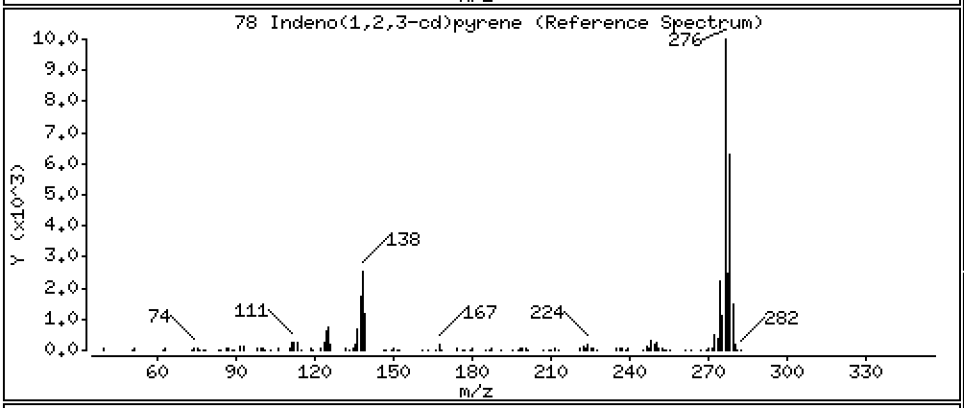
Concentration: 2.735 ug/mL

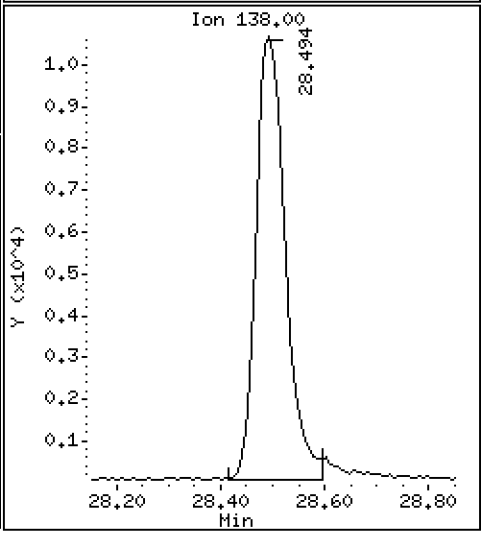


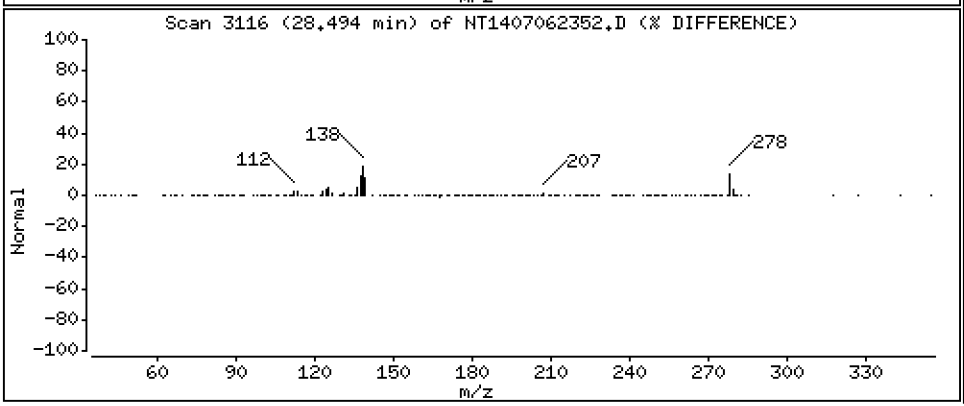












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

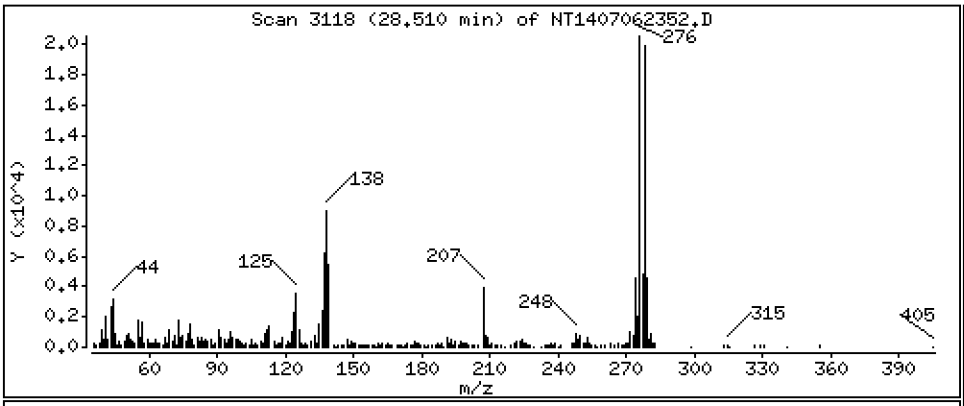
Operator: JGR

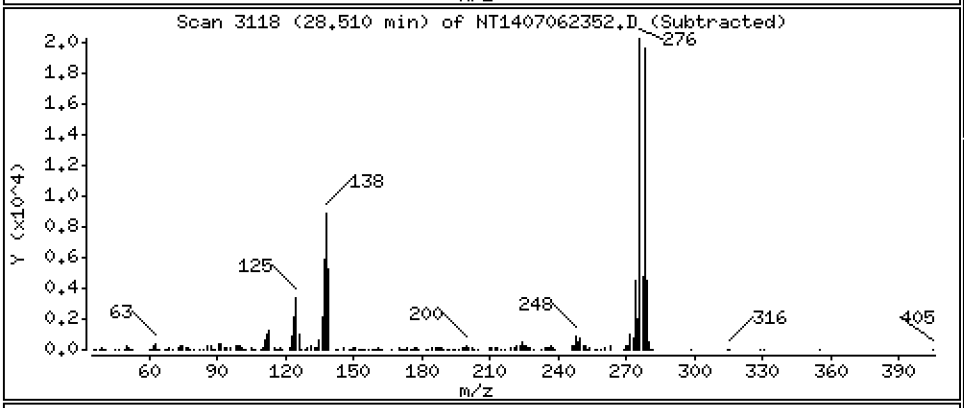
Column phase: ZB-5msi

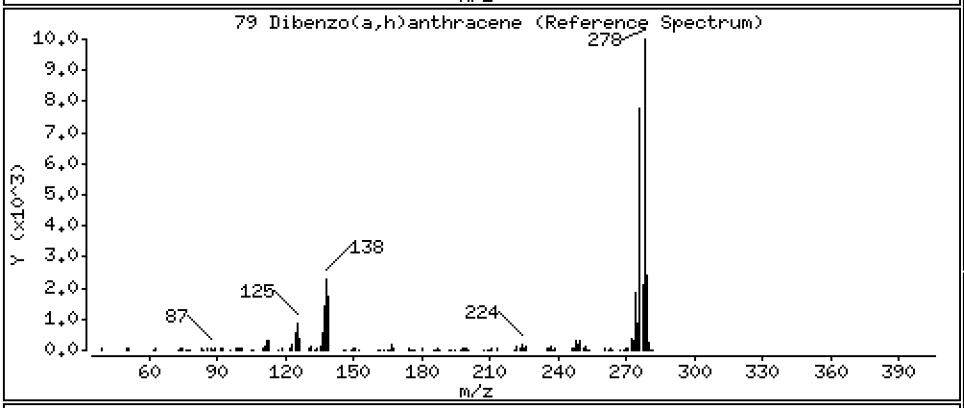
Column diameter: 0.25

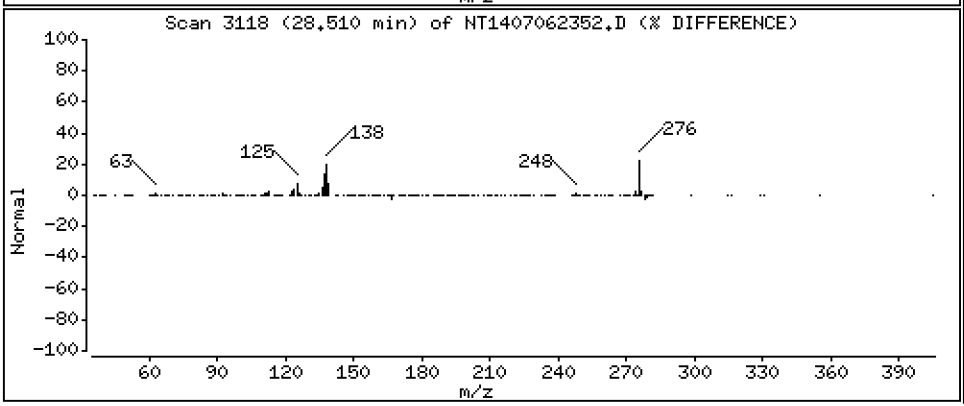
79 Dibenzo(a,h)anthracene

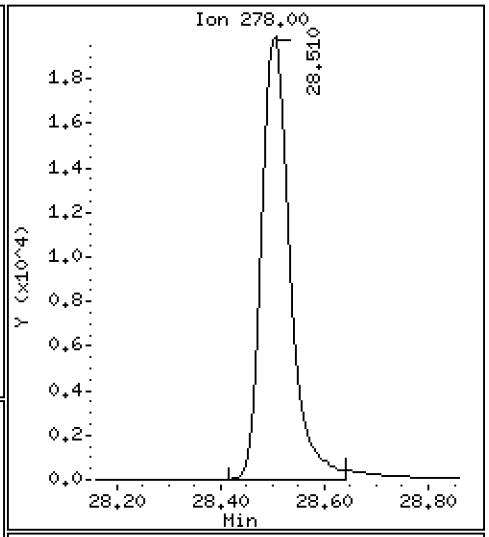
Concentration: 2.539 ug/mL

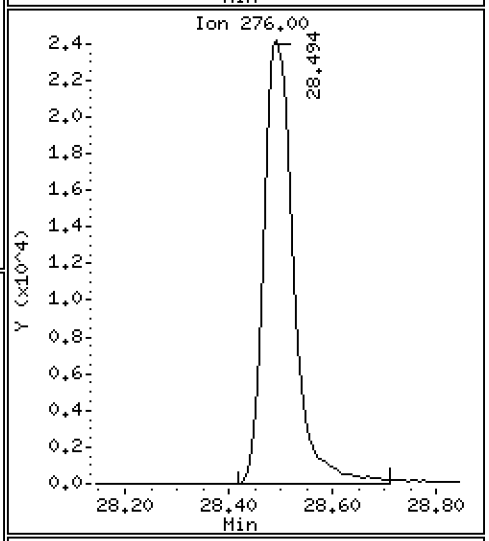


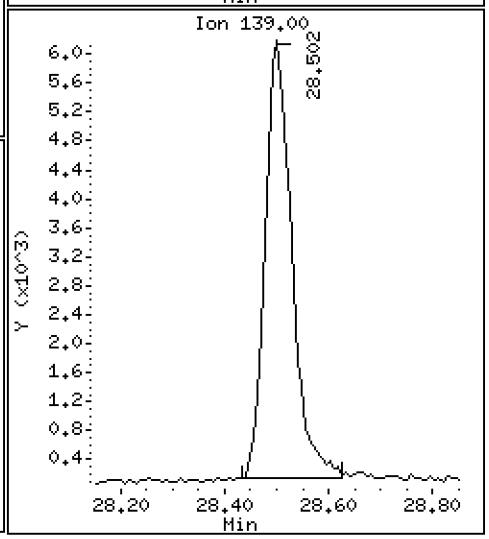












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

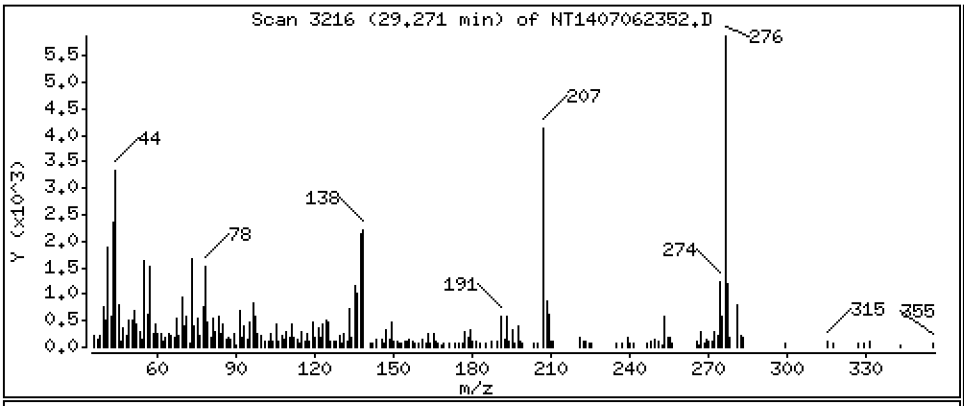
Operator: JGR

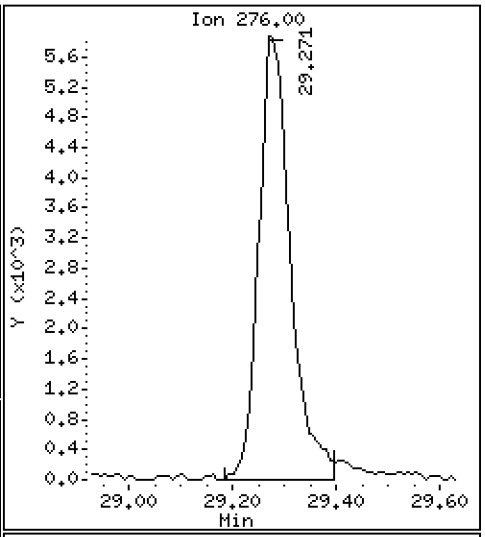
Column phase: ZB-5msi

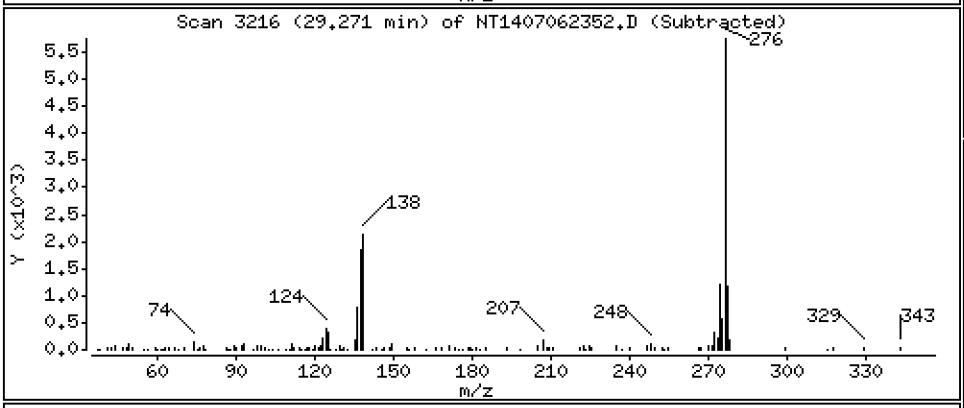
Column diameter: 0.25

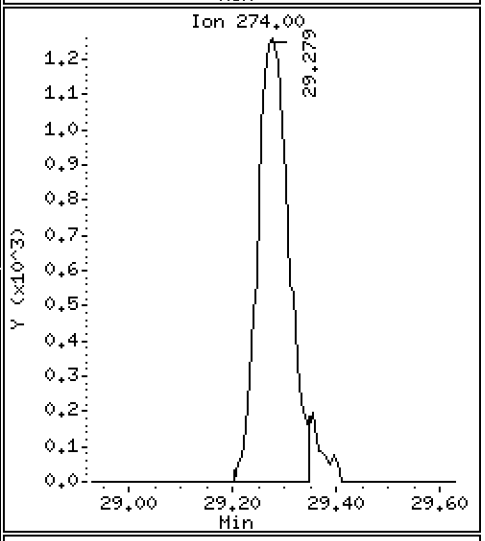
80 Benzo(g,h,i)perylene

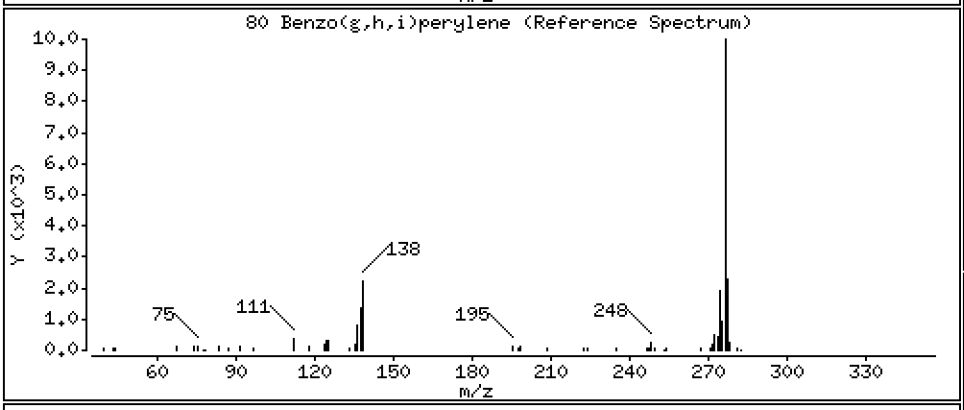
Concentration: 0.8577 ug/mL

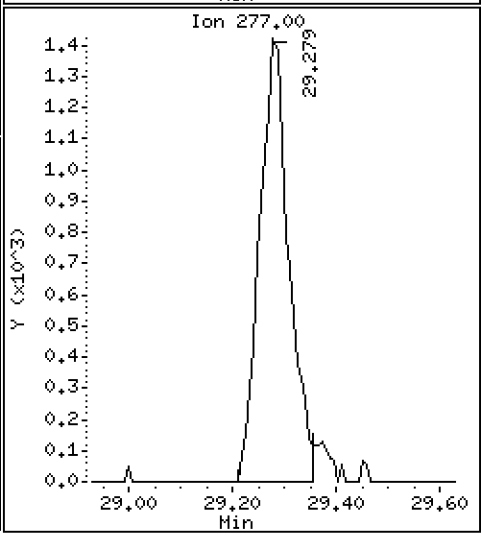


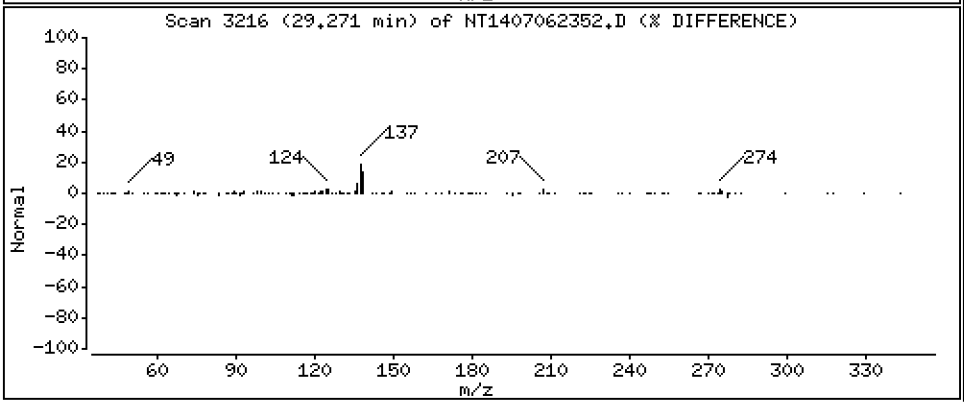












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

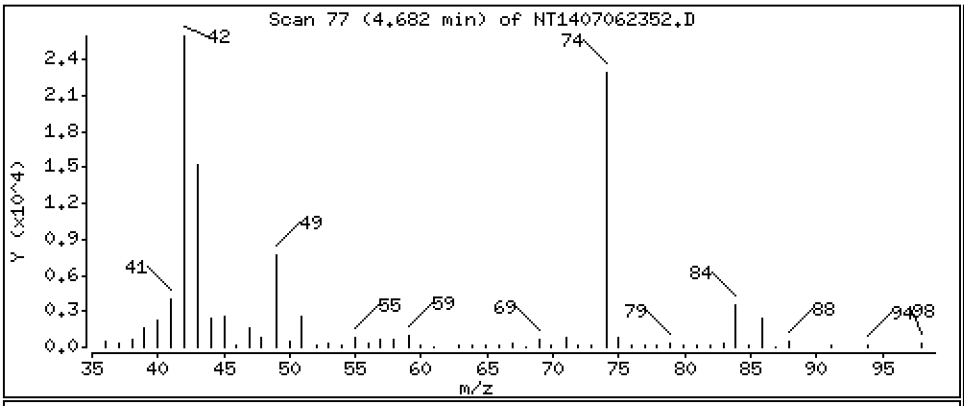
Operator: JGR

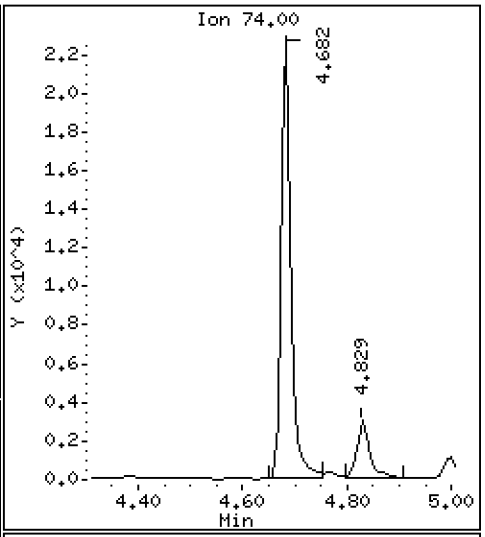
Column phase: ZB-5msi

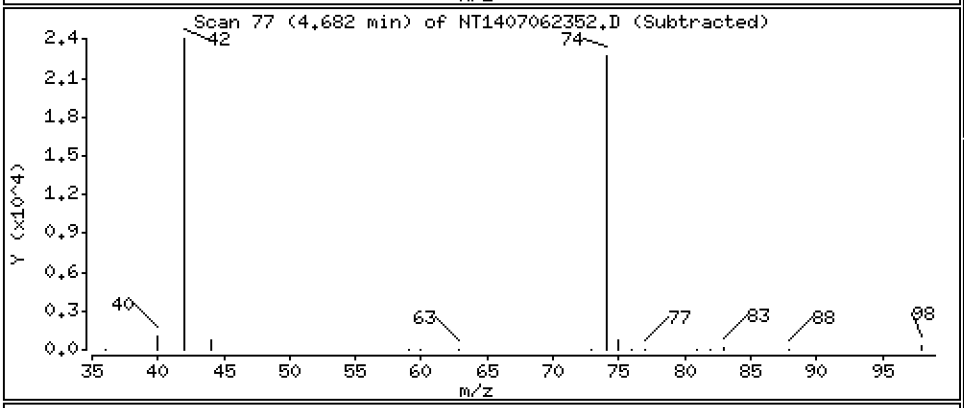
Column diameter: 0.25

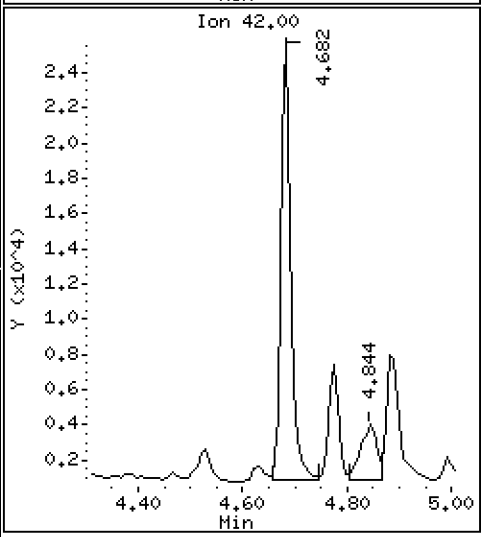
90 N-Nitrosodimethylamine

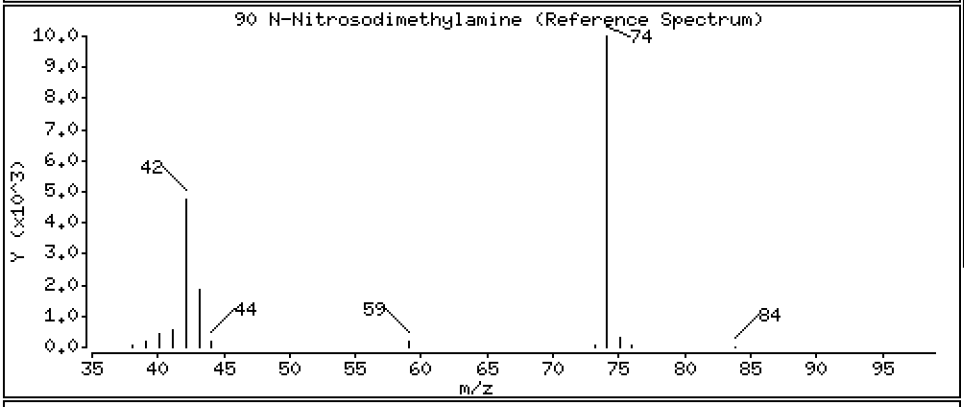
Concentration: 0.8112 ug/mL

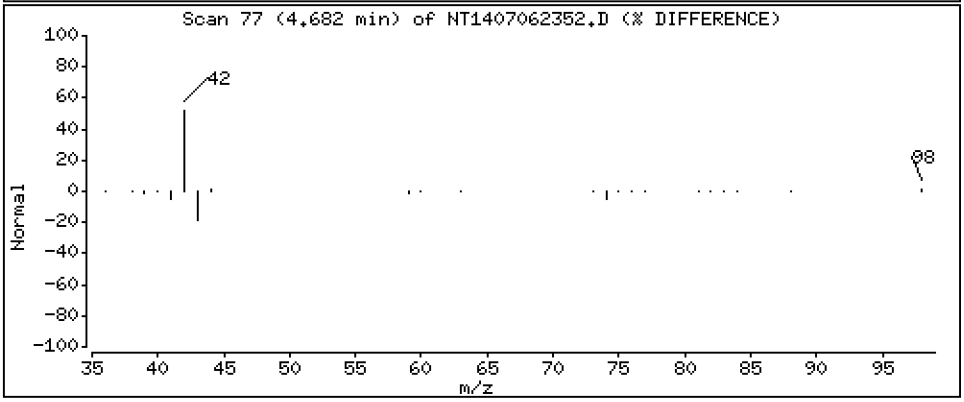












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

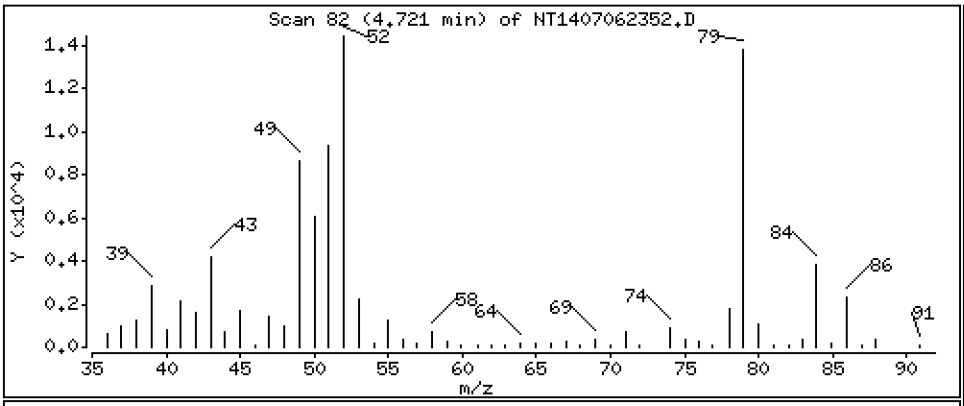
Operator: JGR

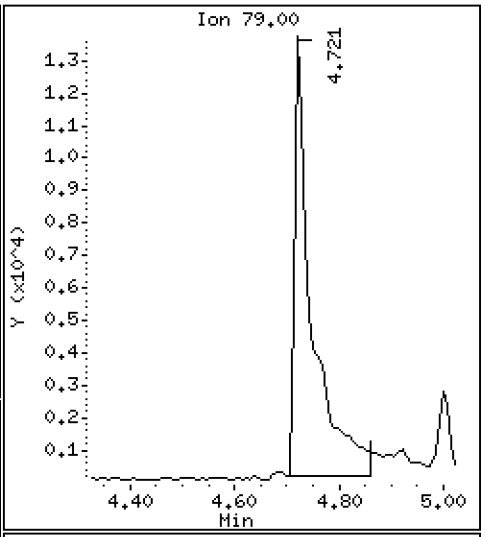
Column phase: ZB-5msi

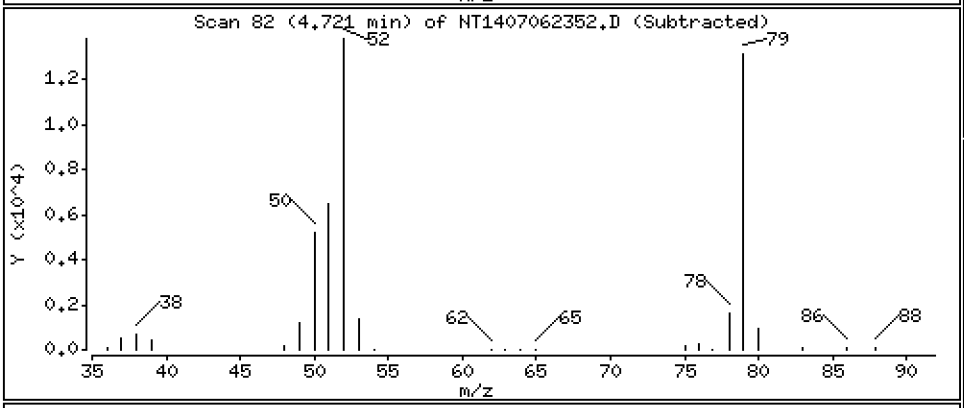
Column diameter: 0.25

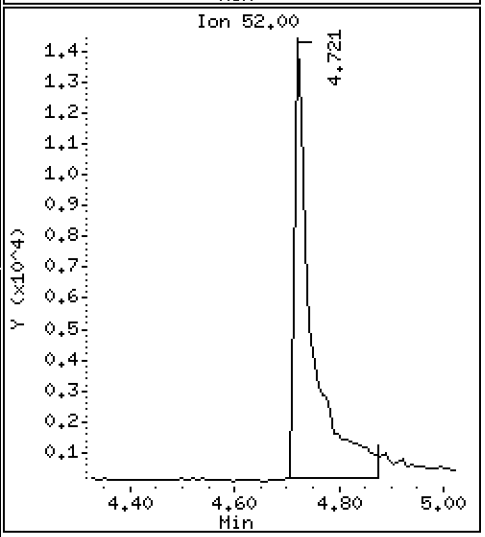
103 Pyridine

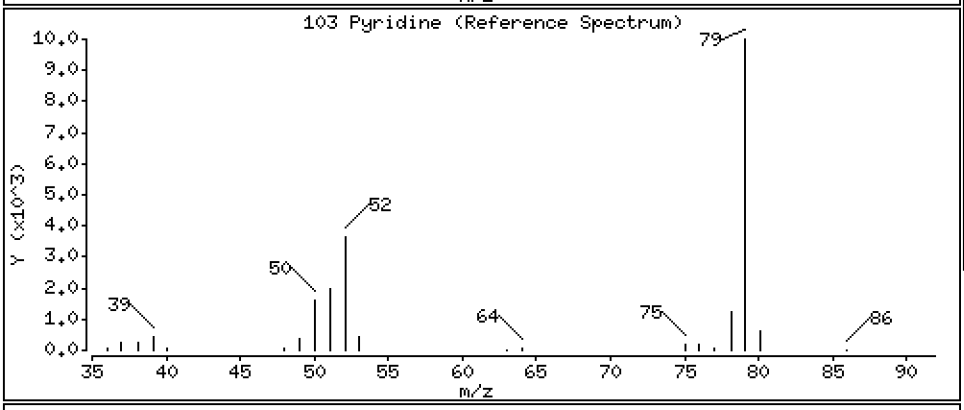
Concentration: 0.5352 ug/mL

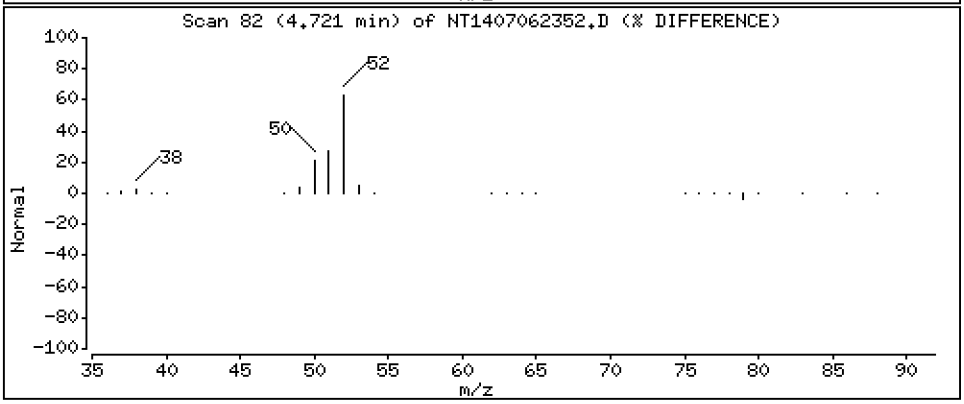












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Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

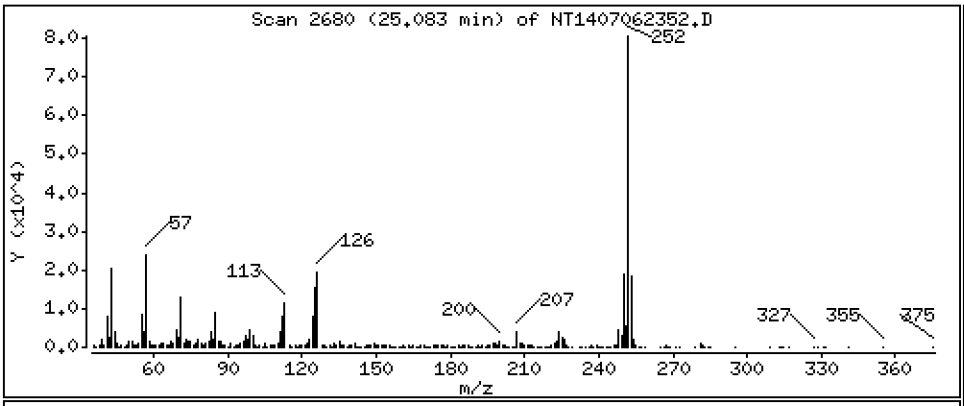
Operator: JGR

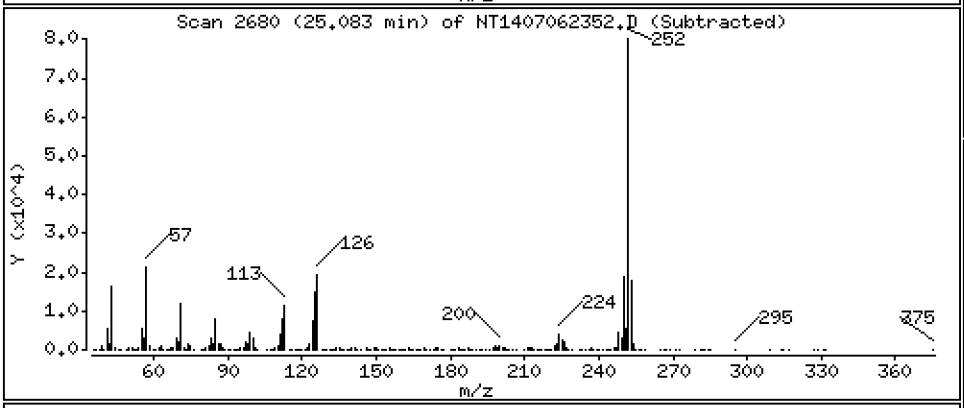
Column phase: ZB-5msi

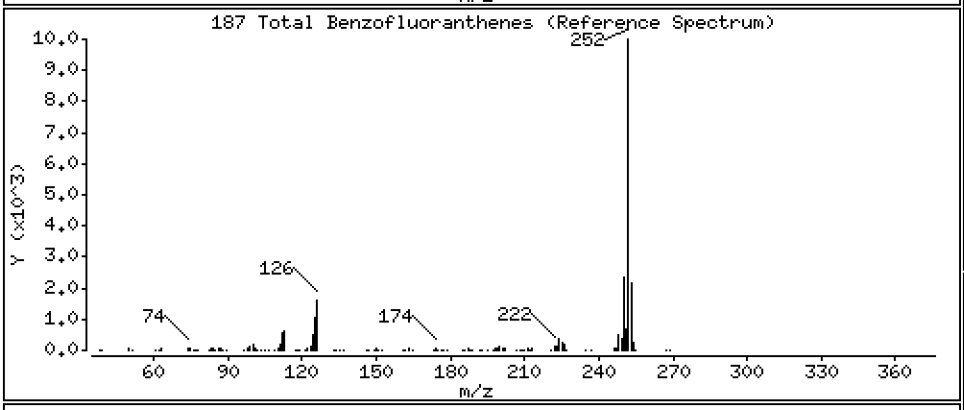
Column diameter: 0.25

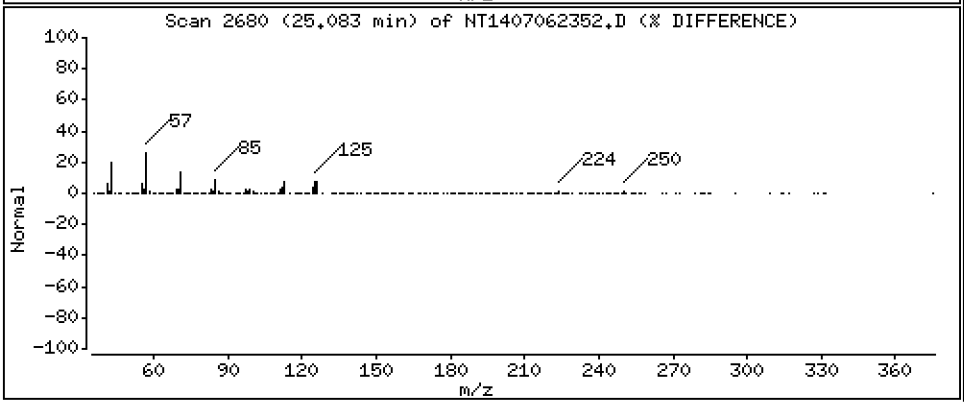
187 Total Benzofluoranthenes

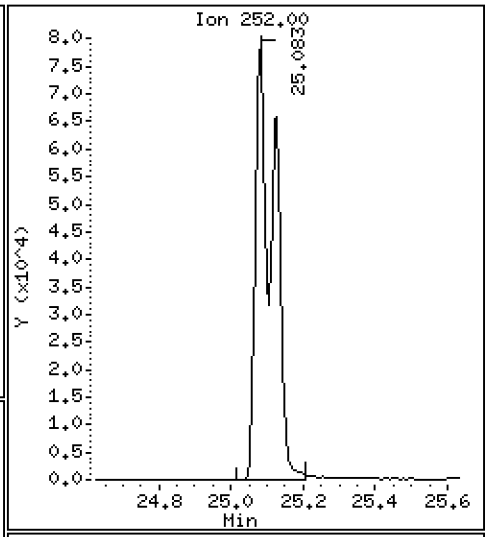
Concentration: 5.557 ug/mL

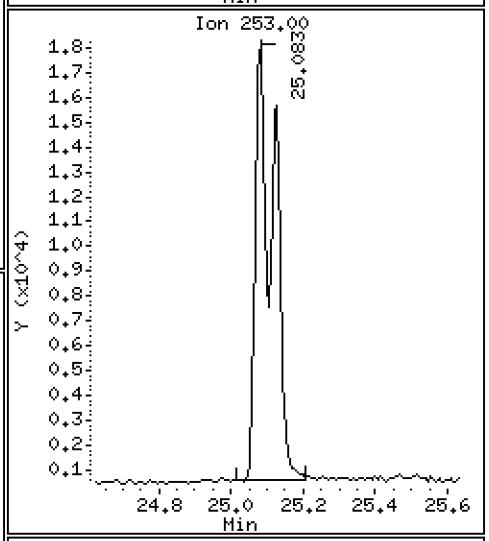


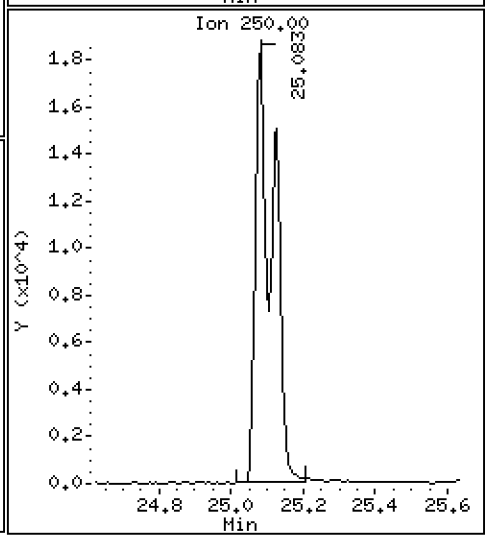












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062352.D

Date : 07-JUL-2023 21:21

Client ID:

Instrument: nt14.i

Sample Info: BLF0718-SRM1

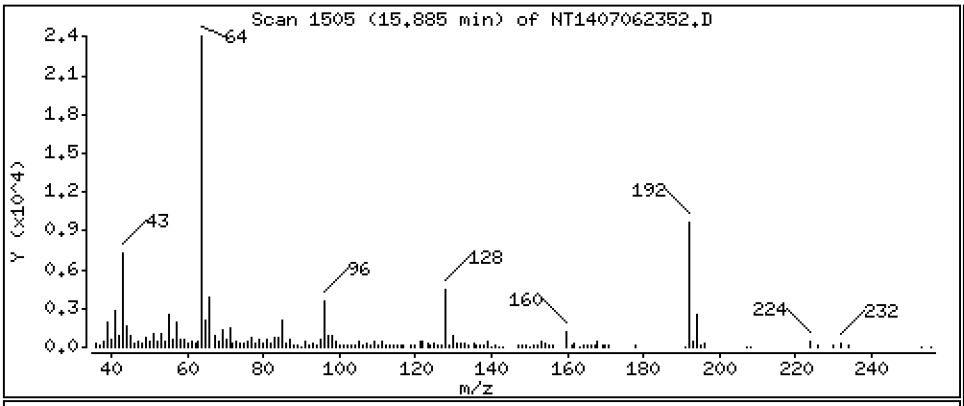
Operator: JGR

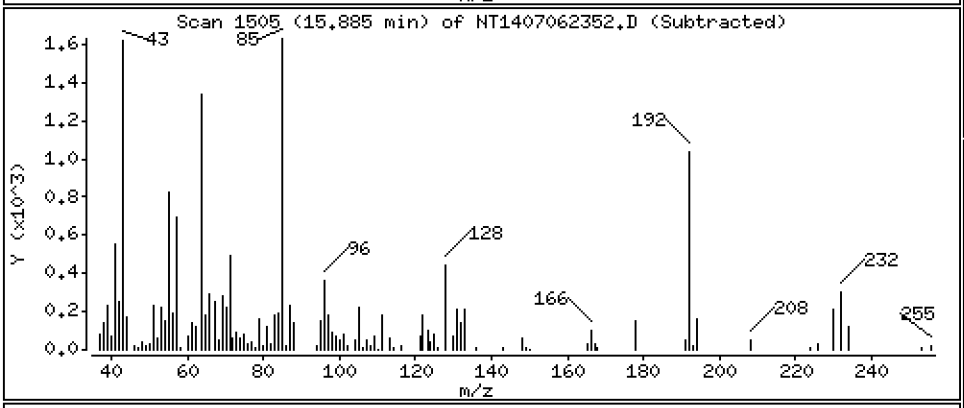
Column phase: ZB-5msi

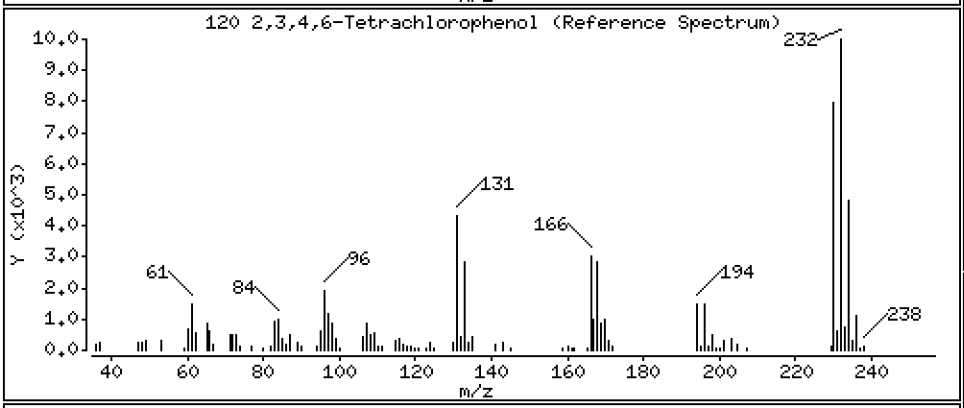
Column diameter: 0.25

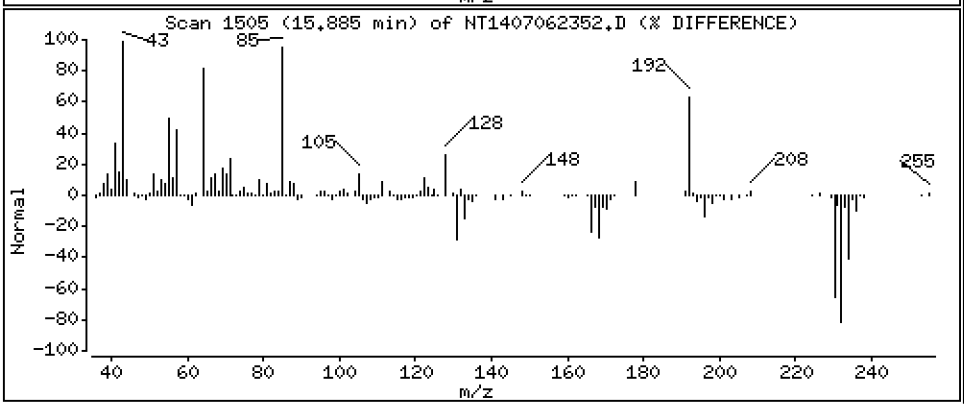
120 2,3,4,6-Tetrachlorophenol

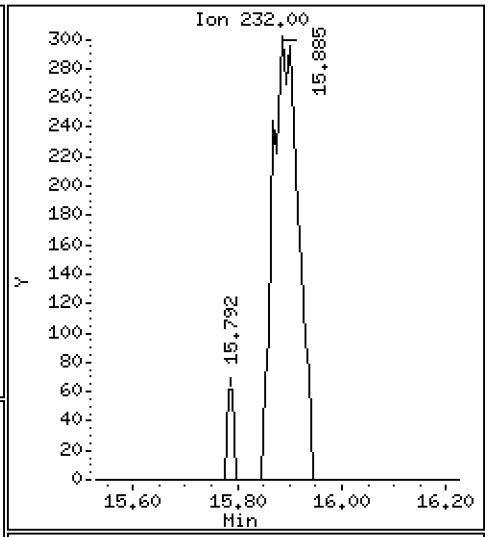
Concentration: 0.05170 ug/mL

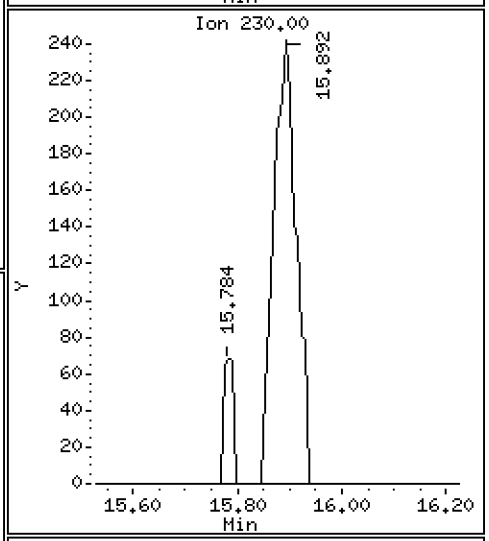


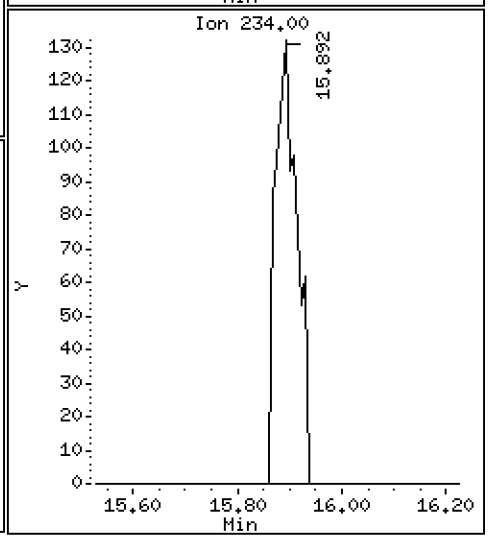












ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230706C.b\NT1407062352.D
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Inj Date : 07-JUL-2023 21:21 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : BLF0718-SRM1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Meth Date : 08-Jul-2023 11:17 van Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 35
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: VANS-201906

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/mL)
$	1 2-Fluorophenol	112	6.813	6.798	(0.756)	268428	5.38489	5.385
$	2 Phenol-d5	99	8.397	8.382	(0.932)	374323	5.53950	5.540
	3 Phenol	94	8.420	8.405	(0.935)	160726	1.96433	1.964
$	5 2-Chlorophenol-d4	132	8.660	8.652	(0.961)	306115	6.12996	6.130
	4 Bis(2-Chloroethyl)ether	93	Compound Not Detected.					
	6 2-Chlorophenol	128	8.683	8.683	(0.964)	66403	1.11865	1.119
	7 1,3-Dichlorobenzene	146	8.946	8.946	(0.993)	55027	1.04010	1.040
*	8 1,4-Dichlorobenzene-d4	152	9.008	9.016	(1.000)	131339	4.00000	
	9 1,4-Dichlorobenzene	146	Compound Not Detected.					
$	10 1,2-Dichlorobenzene-d4	152	9.373	9.373	(1.040)	112075	3.54808	3.548
	12 1,2-Dichlorobenzene	146	Compound Not Detected.					
	11 Benzyl alcohol	108	Compound Not Detected.					
	14 2,2'-oxybis(1-Chloropropane)	121	9.590	9.590	(1.065)	41459	2.53660	2.537
	13 2-Methylphenol	108	9.528	9.520	(1.058)	237153	4.59825	4.598
	17 Hexachloroethane	117	Compound Not Detected.					
	16 N-Nitroso-di-n-propylamine	70	Compound Not Detected.					
	15 4-Methylphenol	108	9.808	9.792	(1.089)	289098	5.06082	5.061
$	18 Nitrobenzene-d5	82	10.103	10.110	(0.878)	239125	3.89264	3.893
	19 Nitrobenzene	77	10.141	10.149	(0.881)	160714	2.44803	2.448
	20 Isophorone	82	10.591	10.591	(0.921)	162410	1.77843	1.778
	21 2-Nitrophenol	139	10.778	10.778	(0.937)	126591	4.08658	4.087
	22 2,4-Dimethylphenol	107	10.863	10.840	(0.944)	133961	2.54394	2.544
	23 Bis(2-Chloroethoxy)methane	93	Compound Not Detected.					
	24 Benzoic acid	105	10.971	11.088	(0.954)	26250	0.82363	0.8236
	25 2,4-Dichlorophenol	162	11.250	11.243	(0.978)	241071	6.19156	6.192
	26 1,2,4-Trichlorobenzene	180	11.421	11.420	(0.993)	48537	1.25066	1.251
*	27 Naphthalene-d8	136	11.505	11.505	(1.000)	520806	4.00000	
	28 Naphthalene	128	11.544	11.544	(1.003)	555279	4.08141	4.081
	29 4-Chloroaniline	127	Compound Not Detected.					
	30 Hexachlorobutadiene	225	11.907	11.915	(1.035)	33131	1.83015	1.830
	31 4-Chloro-3-methylphenol	107	12.696	12.665	(1.104)	80436	1.64715	1.647
	32 2-Methylnaphthalene	142	Compound Not Detected.					
	33 Hexachlorocyclopentadiene	237	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
34	2,4,6-Trichlorophenol	196	13.579	13.579	(0.898)	37717	1.50310	1.503
35	2,4,5-Trichlorophenol	196	13.679	13.664	(0.904)	77414	2.96487	2.965
$ 36	2-Fluorobiphenyl	172	13.734	13.733	(0.908)	376136	4.04526	4.045
37	2-Chloronaphthalene	162	13.942	13.942	(0.922)	159912	1.86948	1.869
38	2-Nitroaniline	65	Compound Not Detected.					
39	Dimethylphthalate	163	14.631	14.639	(0.967)	360980	4.11397	4.114
40	Acenaphthylene	152	14.817	14.817	(0.980)	195763	1.48314	1.483
41	2,6-Dinitrotoluene	165	Compound Not Detected.					
* 42	Acenaphthene-d10	164	15.127	15.134	(1.000)	261068	4.00000	
43	3-Nitroaniline	138	Compound Not Detected.					
44	Acenaphthene	153	15.196	15.204	(1.005)	384618	4.92389	4.924
45	2,4-Dinitrophenol	184	15.273	15.273	(1.010)	20783	1.82650	1.827
46	Dibenzofuran	168	15.521	15.528	(1.026)	627550	5.51296	5.513
47	4-Nitrophenol	109	15.443	15.420	(1.021)	98812	5.48047	5.480
48	2,4-Dinitrotoluene	165	15.583	15.590	(1.030)	85067	3.29498	3.295
50	Diethylphthalate	149	16.093	16.101	(1.064)	16463	0.16225	0.1622
49	Fluorene	166	16.240	16.240	(1.074)	332878	3.34389	3.344
51	4-Chlorophenyl-phenylether	204	16.232	16.232	(1.073)	83319	1.93847	1.938
52	4-Nitroaniline	138	Compound Not Detected.					
53	4,6-Dinitro-2-methylphenol	198	16.425	16.432	(0.904)	61377	4.18685	4.187
54	N-Nitrosodiphenylamine	169	16.479	16.486	(0.907)	190526	2.92938	2.929
$ 55	2,4,6-Tribromophenol	330	16.779	16.779	(1.109)	49729	6.06774	6.068
56	4-Bromophenyl-phenylether	248	17.234	17.234	(0.948)	128776	6.49283	6.493
57	Hexachlorobenzene	284	Compound Not Detected.					
58	Pentachlorophenol	266	17.938	17.923	(0.987)	31795	2.52977	2.530
* 59	Phenanthrene-d10	188	18.178	18.178	(1.000)	460625	4.00000	
60	Phenanthrene	178	18.225	18.225	(1.003)	553947	4.44546	4.445
61	Anthracene	178	18.317	18.317	(1.008)	243244	2.02014	2.020
62	Carbazole	167	18.650	18.650	(1.026)	616426	5.08854	5.089
63	Di-n-butylphthalate	149	19.447	19.447	(1.070)	260413	1.63613	1.636
64	Fluoranthene	202	20.623	20.615	(0.888)	271670	2.45949	2.459
65	Pyrene	202	21.041	21.041	(0.906)	348062	3.11926	3.119
$ 66	Terphenyl-d14	244	21.327	21.327	(0.918)	395682	5.26875	5.269
67	Butylbenzylphthalate	149	22.249	22.249	(0.958)	218630	4.13260	4.133
68	Benzo(a)anthracene	228	23.201	23.209	(0.999)	501778	5.30335	5.303
* 69	Chrysene-d12	240	23.232	23.232	(1.000)	270219	4.00000	
70	3,3'-Dichlorobenzidine	252	Compound Not Detected.					
71	Chrysene	228	23.278	23.278	(1.002)	109851	1.29707	1.297
72	bis(2-Ethylhexyl)phthalate	149	24.269	24.269	(1.001)	335668	1.88622	1.886
* 134	Di-n-octylphthalate-d4	153	24.254	24.262	(1.000)	692394	4.00000	
73	Di-n-octylphthalate	149	24.269	24.269	(1.001)	335668	1.88622	1.886
74	Benzo(b)fluoranthene	252	25.082	25.082	(0.970)	158758	3.19939	3.199
75	Benzo(k)fluoranthene	252	25.129	25.129	(0.972)	135060	2.42446	2.424
76	Benzo(a)pyrene	252	25.733	25.733	(0.996)	183702	4.71707	4.717
* 77	Perylene-d12	264	25.849	25.849	(1.000)	150966	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	28.494	28.494	(1.102)	96072	2.73534	2.735
79	Dibenzo(a,h)anthracene	278	28.509	28.509	(1.103)	75466	2.53938	2.539
80	Benzo(g,h,i)perylene	276	29.270	29.278	(1.132)	24871	0.85772	0.8577
90	N-Nitrosodimethylamine	74	4.682	4.658	(0.520)	30568	0.81122	0.8112
91	Aniline	93	Compound Not Detected.					
93	Benzidine	184	Compound Not Detected.					
103	Pyridine	79	4.720	4.674	(0.524)	31757	0.53518	0.5352
105	1-methylnaphthalene	142	Compound Not Detected.					
111	Azobenzene (1,2-DP-Hydrazine)	77	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.082	25.129	(0.970)	279944	5.55722	5.557
120 2,3,4,6-Tetrachlorophenol	232	15.884	15.876	(1.050)	1035	0.05170	0.05170

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1407062352.D
Lab Smp Id: BLF0718-SRM1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Misc Info:

Calibration Date: 07-JUL-2023
Calibration Time: 16:23
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	132670	66335	265340	131339	-1.00
27 Naphthalene-d8	538082	269041	1076164	520806	-3.21
42 Acenaphthene-d10	270232	135116	540464	261068	-3.39
59 Phenanthrene-d10	462568	231284	925136	460625	-0.42
69 Chrysene-d12	289075	144538	578150	270219	-6.52
134 Di-n-octylphthala	772331	386166	1544662	692394	-10.35
77 Perylene-d12	173349	86675	346698	150966	-12.91

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.02	8.52	9.52	9.01	-0.09
27 Naphthalene-d8	11.51	11.01	12.01	11.51	0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	-0.05
59 Phenanthrene-d10	18.18	17.68	18.68	18.18	0.00
69 Chrysene-d12	23.23	22.73	23.73	23.23	0.00
134 Di-n-octylphthala	24.26	23.76	24.76	24.25	-0.03
77 Perylene-d12	25.85	25.35	26.35	25.85	0.00

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

REVIEW SUMMARY FOR FILE - NT1407062352.D

Lab ID: BLF0718-SRM1
nt14.i, ABN.m, 07-JUL-2023 21:21

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.954	0.964	-0.0101	Benzoic acid
0.524	0.518	0.0056	Pyridine

RRT check based on Ccal File: NT1407062344.D

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

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

Analytical Resources, LLC
Analytical Chemists and Consultants

MASS SPECTROMETER
INSTRUMENT PERFORMANCE CHECK
EPA 8270E

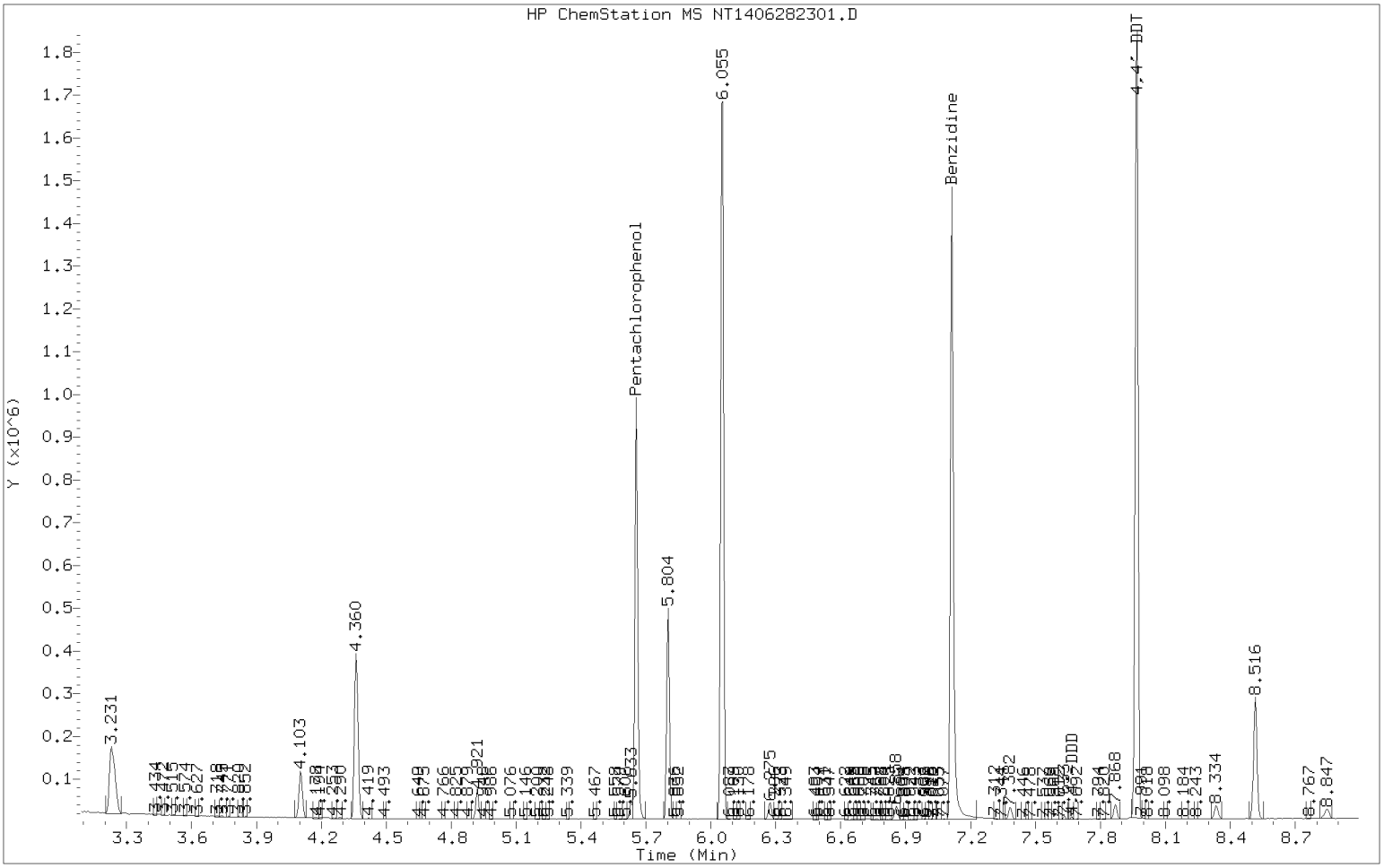
Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Lab File ID:	NT1406282301.D	Injection Date:	06/28/23
Instrument ID:	NT14	Injection Time:	17:48
Sequence:	SLF0467	Lab Sample ID:	SLF0467-TUN1

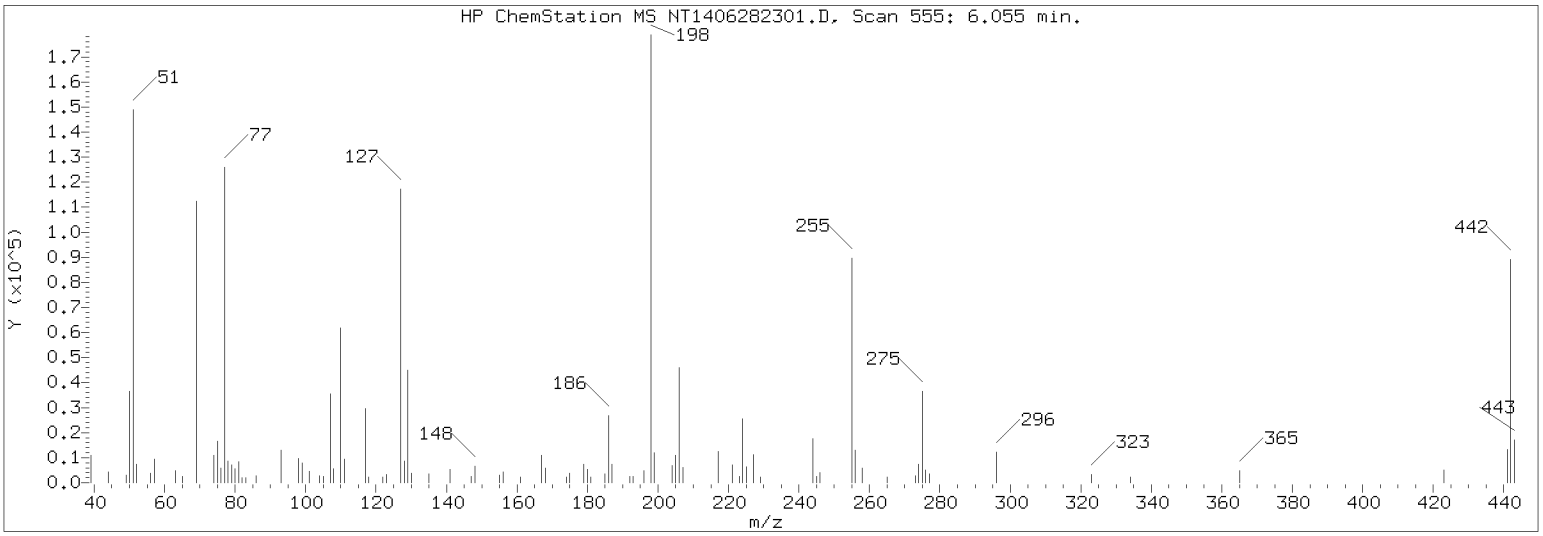
m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
68	Less than 2% of 69	0	PASS
69	Less than 100% of 198	62.8	PASS
70	Less than 2% of 69	0	PASS
197	Less than 2% of 198	0	PASS
198	Base peak, 100% relative abundance	100	PASS
199	5 - 9% of 198	6.69	PASS
365	1 - 100% of 198	2.7	PASS
441	Less than 150% of 443	77.5	PASS
442	1 - 200% of 198	49.9	PASS
443	15 - 24% of 442	19.2	PASS
4,4'-DDD	Less than 20% of 4,4'-DDT		
4,4'-DDE	Less than 20% of		
4,4'-DDT	Base peak, 100% relative abundance		

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
MS Tune	SLF0467-TUN1	NT1406282301.D	06/28/2023	17:48
Cal Standard	SLF0467-CAL7	NT1406282302.D	06/28/2023	18:04
Cal Standard	SLF0467-CAL6	NT1406282303.D	06/28/2023	18:41
Cal Standard	SLF0467-CAL5	NT1406282304.D	06/28/2023	19:18
Cal Standard	SLF0467-CAL4	NT1406282305.D	06/28/2023	19:56
Cal Standard	SLF0467-CAL3	NT1406282306.D	06/28/2023	20:33
Cal Standard	SLF0467-CAL2	NT1406282307.D	06/28/2023	21:10
Cal Standard	SLF0467-CAL1	NT1406282308.D	06/28/2023	21:47
Secondary Cal Check	SLF0467-SCV1	NT1406282311.D	06/28/2023	23:38
Initial Cal Blank	SLF0467-ICB1	NT1406282312.D	06/29/2023	0:15

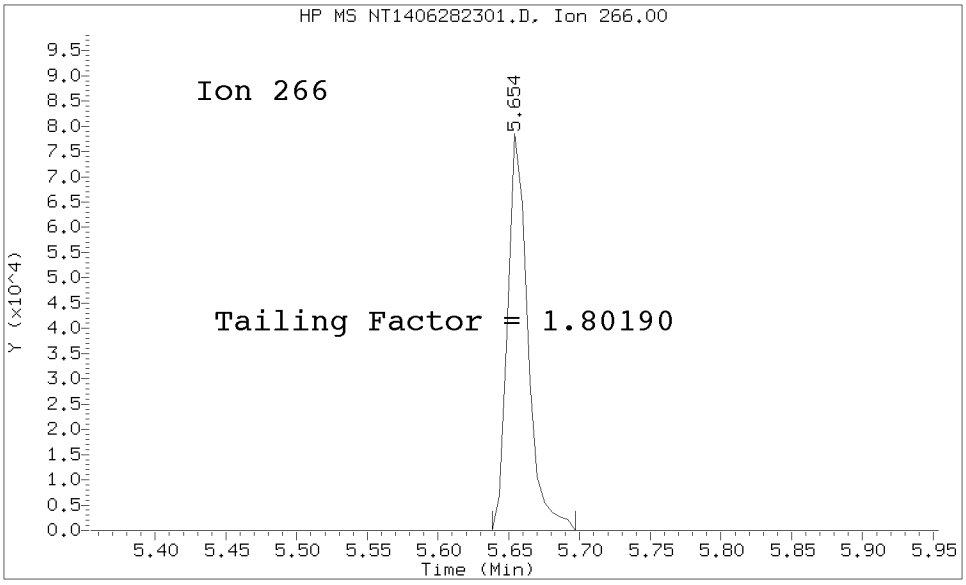
DFTPP TAILING FACTOR AND BREAKDOWN GRAPHIC REPORT

Datafile Analyzed: /20230628.b/NT1406282301.D/NT1406282301.D
Method Used: \20230628.b\DFTPP8270E.m Inst: nt14
Injection Date: 28-JUN-2023 17:48 Operator: JGR
Sample Info: SLF0468-TUN1 SLF0468-TUN1
Report Date: 07/03/2023 14:12



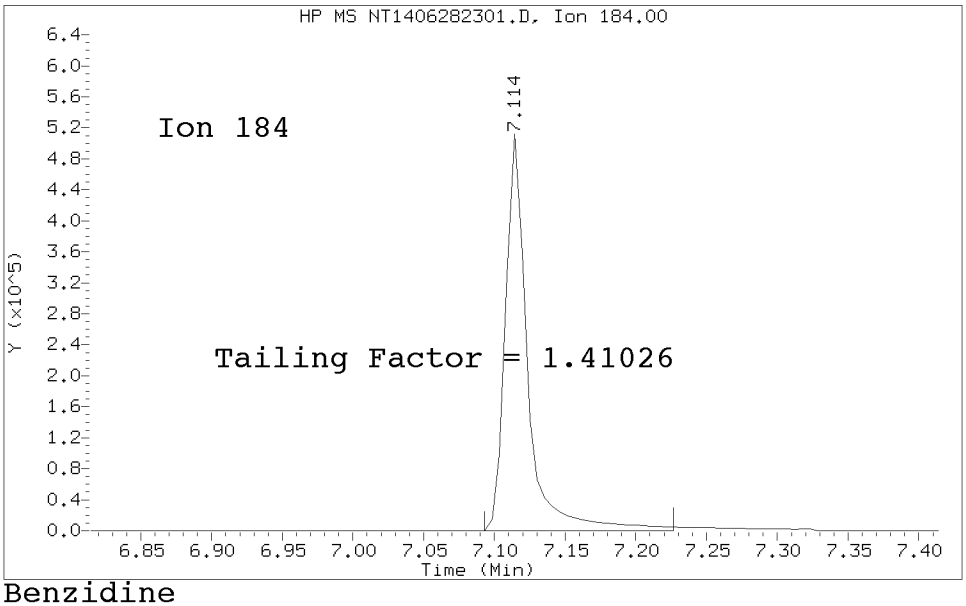


Datafile Analyzed: /20230628.b/NT1406282301.D/NT1406282301.D
Method Used: \20230628.b\DFTPP8270E.m\sw846ddt.m Inst: nt14
Injection Date: 28-JUN-2023 17:48 Operator: JGR
Sample Info: SEQ-TUN1
Report Date: 07/03/2023 14:12



Pentachlorophenol
==========
Exp. RT = 5.681
Found RT = 5.654

Tail Factor = 1.802 Maximum Allowed = 2.0



Benzidine
==========
Exp. RT = 7.146
Found RT = 7.114

Tail Factor = 1.410 Maximum Allowed = 2.0

8270 TAILING FACTOR/BREAKDOWN SUMMARY RESULTS

TAILING ANALYSIS SUMMARY

Compound	Tail Factor	Max Allowed	Test
Pentachlorophenol	1.8019017	2.000	PASS
Benzidine	1.4102564	2.000	PASS

DDT DEGRADATION BREAKDOWN ANALYSIS SUMMARY

Compound	Response	%Breakdown	Max Allowed	Test
4,4-DDT	253440			N/A
4,4-DDE	0	0.0	20.0	PASS
4,4-DDD	1887	0.7	20.0	PASS
4,4-DDD + DDE	1887	0.7	20.0	PASS

Tuning Sample, nt14.i/20230628.b/NT1406282301.D, *** PASSED ***

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	62.85
70	Less than 2.00% of mass 69	0.00 (0.00)
197	Less than 2.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.69
365	1.00 - 100.00% of mass 198	2.70
441	Less than 150.00% of mass 443	7.44 (77.49)
442	Less than 200.00% of mass 198	49.89
443	15.00 - 24.00% of mass 442	9.60 (19.24)

Data File: NT1406282301.D
Spectrum: HP ChemStation MS NT1406282301.D, Scan 555: 6.055 min.
Location of Maximum: 198.00
Number of points: 93

m/z	Y	m/z	Y	m/z	Y	m/z	Y
39.10	10869	99.00	7916	168.00	5826	229.00	2200
44.00	4233	101.00	4684	174.00	2260	244.00	17632
49.00	3042	104.00	2752	175.00	3955	245.00	2575
50.00	36200	105.00	2590	179.00	7496	246.00	4115
51.00	148992	107.00	35504	180.00	5266	255.00	89536
52.00	7402	108.00	5539	181.00	2327	256.00	13078
56.00	3746	110.00	61928	185.00	3625	258.00	5821
57.00	9383	111.00	9489	186.00	26792	265.00	2234
63.00	4859	117.00	29752	187.00	7455	273.00	2842
65.00	2553	118.00	2172	192.00	2448	274.00	7447
69.00	112384	122.00	2190	193.00	2663	275.00	36472
74.00	10908	123.00	3392	196.00	4864	276.00	5069
75.00	16640	127.00	117304	198.00	178816	277.00	3704
76.00	5860	128.00	8599	199.00	11960	296.00	12238
77.00	126056	129.00	45048	204.00	6804	323.00	3321
78.00	8767	130.00	3867	205.00	11051	334.00	2231
79.00	7257	135.00	3672	206.00	45856	365.00	4823
80.00	5686	141.00	5366	207.00	6254	423.00	5010
81.00	8475	147.00	2614	217.00	12484	441.00	13304
82.00	2114	148.00	6668	221.00	7208	442.00	89208
83.00	2048	155.00	3008	223.00	2667	443.00	17168
86.00	2808	156.00	4380	224.00	25600		
93.00	13104	161.00	2354	225.00	6368		
98.00	9679	167.00	10861	227.00	11301		

Analytical Resources, LLC
Analytical Chemists and Consultants

MASS SPECTROMETER
INSTRUMENT PERFORMANCE CHECK
EPA 8270E

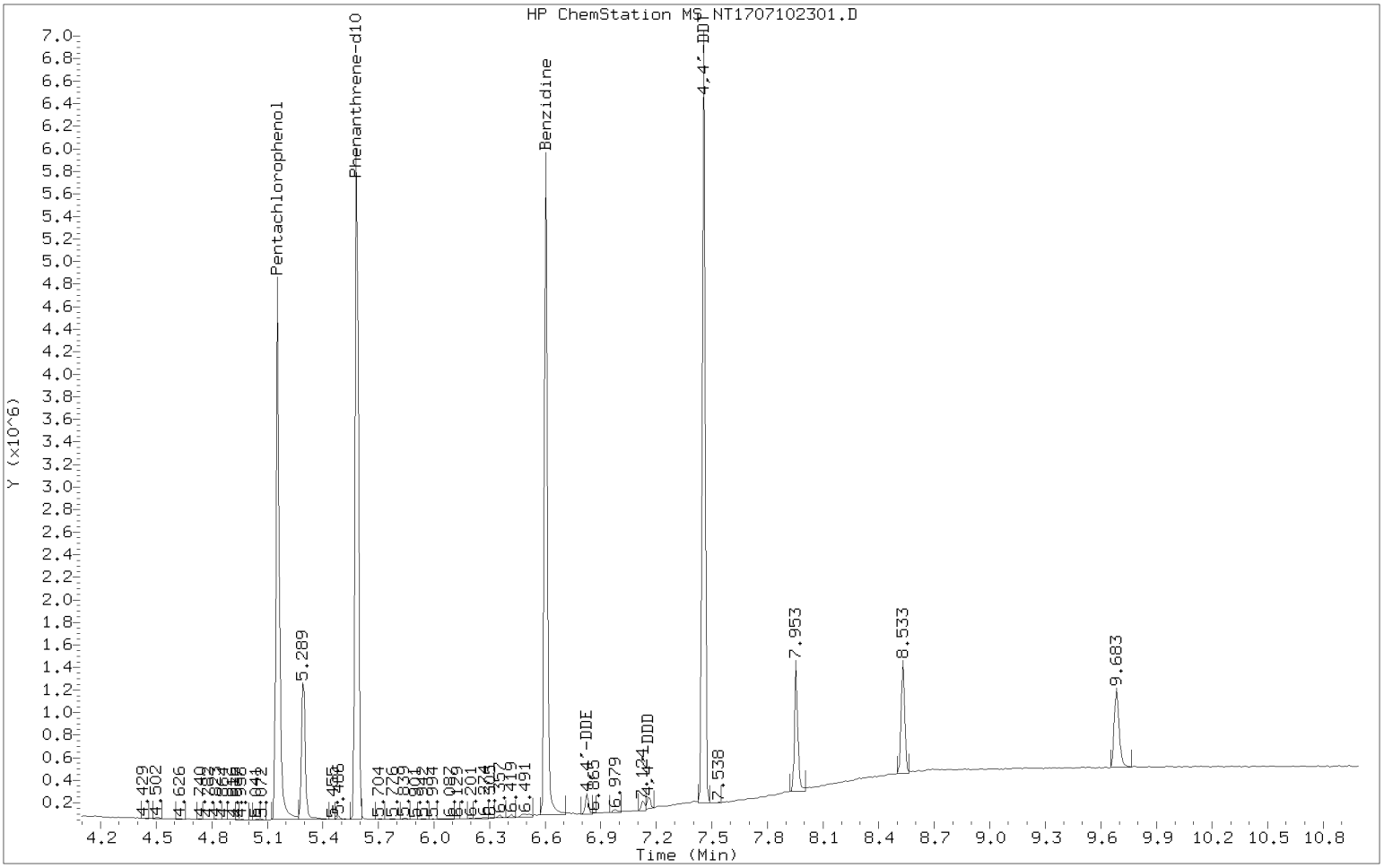
Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Lab File ID:	NT1707102301.D	Injection Date:	07/10/23
Instrument ID:	NT17	Injection Time:	12:42
Sequence:	SLG0194	Lab Sample ID:	SLG0194-TUN1

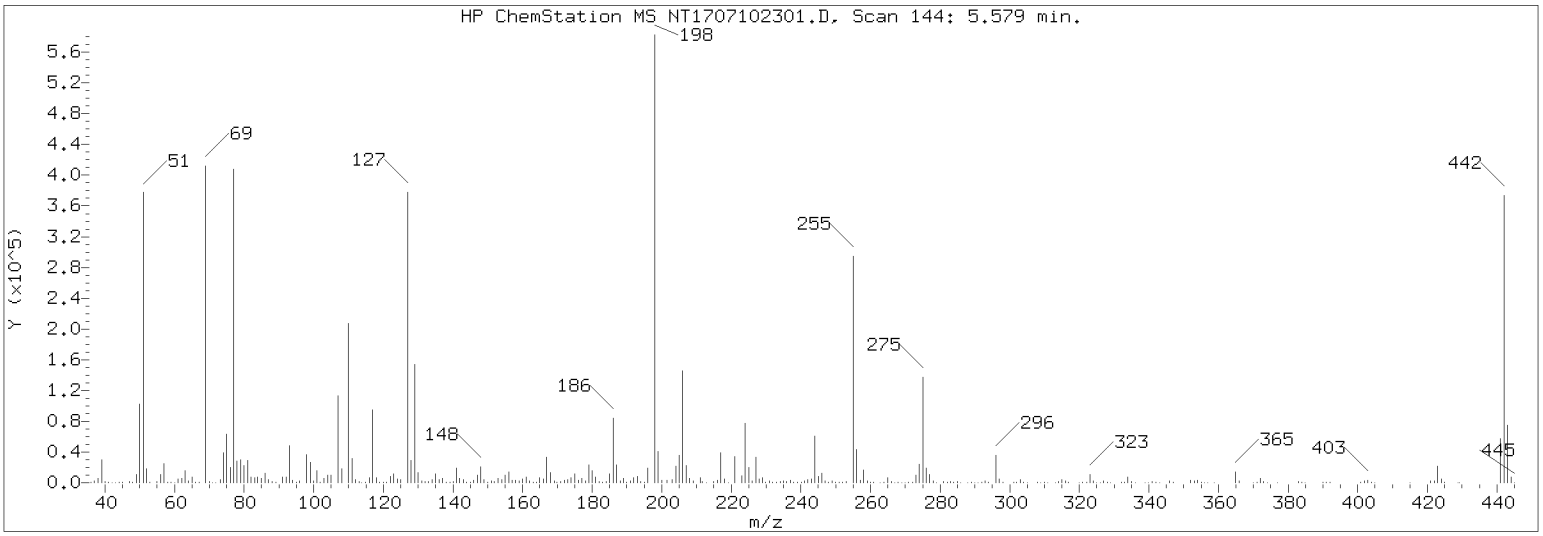
m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
68	Less than 2% of 69	0.372	PASS
69	Less than 100% of 198	65.2	PASS
70	Less than 2% of 69	0.537	PASS
197	Less than 2% of 198	0	PASS
198	Base peak, 100% relative abundance	100	PASS
199	5 - 9% of 198	6.96	PASS
365	1 - 100% of 198	3.41	PASS
441	Less than 150% of 443	78	PASS
442	1 - 200% of 198	111	PASS
443	15 - 24% of 442	19.2	PASS
4,4'-DDD	Less than 20% of 4,4'-DDT		
4,4'-DDE	Less than 20% of		
4,4'-DDT	Base peak, 100% relative abundance		

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
MS Tune	SLG0194-TUN1	NT1707102301.D	07/10/2023	12:42
Cal Standard	SLG0194-CAL7	NT1707102302.D	07/10/2023	12:59
Cal Standard	SLG0194-CAL6	NT1707102303.D	07/10/2023	13:37
Cal Standard	SLG0194-CAL5	NT1707102304.D	07/10/2023	14:14
Cal Standard	SLG0194-CAL4	NT1707102305.D	07/10/2023	14:52
Cal Standard	SLG0194-CAL3	NT1707102306.D	07/10/2023	15:29
Cal Standard	SLG0194-CAL2	NT1707102307.D	07/10/2023	16:07
Cal Standard	SLG0194-CAL1	NT1707102308.D	07/10/2023	16:44
Initial Cal Blank	SLG0194-ICB1	NT1707102311.D	07/10/2023	18:37
Secondary Cal Check	SLG0194-SCV1	NT1707102312.D	07/10/2023	19:15

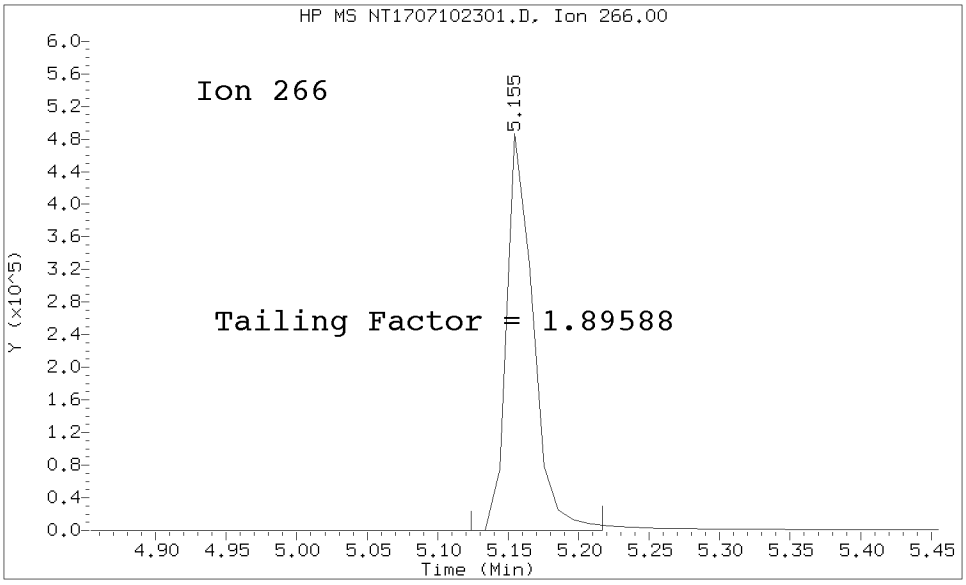
DFTPP TAILING FACTOR AND BREAKDOWN GRAPHIC REPORT

Datafile Analyzed: /20230710.b/NT1707102301.D/NT1707102301.D
Method Used: \20230710.b\DFTPP8270E.m Inst: nt17
Injection Date: 10-JUL-2023 12:42 Operator: JGR
Sample Info: SEQ-TUN1 SEQ-TUN1
Report Date: 07/11/2023 08:25



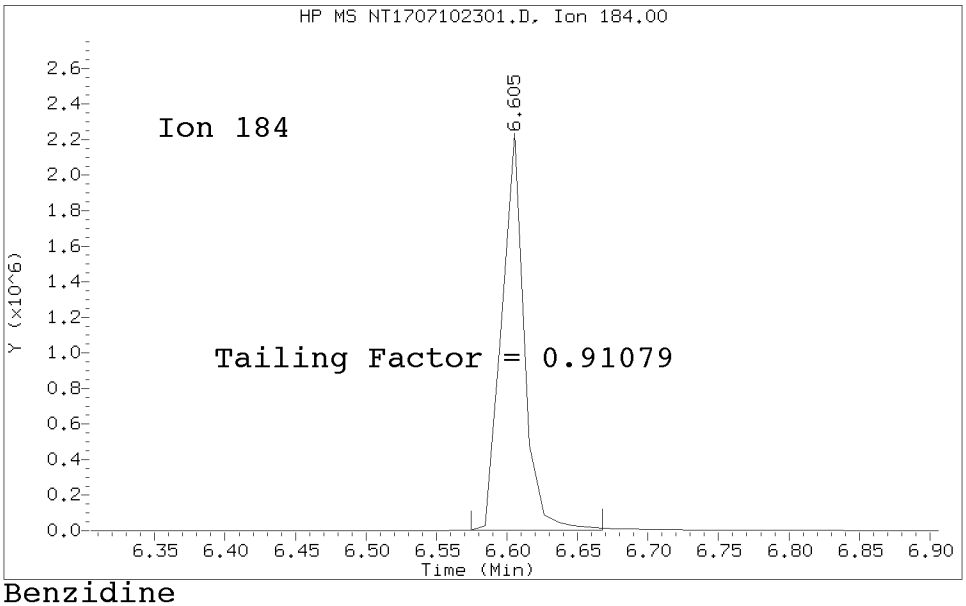


Datafile Analyzed: /20230710.b/NT1707102301.D/NT1707102301.D
Method Used: \20230710.b\DFTPP8270E.m\sw846ddt.m Inst: nt17
Injection Date: 10-JUL-2023 12:42 Operator: JGR
Sample Info: SEQ-TUN1
Report Date: 07/11/2023 08:25



Pentachlorophenol
==========
Exp. RT = 5.155
Found RT = 5.155

Tail Factor = 1.896 Maximum Allowed = 2.0



Benzidine
==========
Exp. RT = 6.605
Found RT = 6.605

Tail Factor = 0.911 Maximum Allowed = 2.0

8270 TAILING FACTOR/BREAKDOWN SUMMARY RESULTS

TAILING ANALYSIS SUMMARY

Compound	Tail Factor	Max Allowed	Test
Pentachlorophenol	1.8958838	2.000	PASS
Benzidine	0.9107939	2.000	PASS

DDT DEGRADATION BREAKDOWN ANALYSIS SUMMARY

Compound	Response	%Breakdown	Max Allowed	Test
4,4-DDT	1258853			N/A
4,4-DDE	20298	1.6	20.0	PASS
4,4-DDD	22884	1.8	20.0	PASS
4,4-DDD + DDE	43182	3.3	20.0	PASS

Tuning Sample, nt17.i/20230710.b/NT1707102301.D, *** PASSED ***

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
68	Less than 2.00% of mass 69	0.24 (0.37)
69	Mass 69 relative abundance	65.20
70	Less than 2.00% of mass 69	0.35 (0.54)
197	Less than 2.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.96
365	1.00 - 100.00% of mass 198	3.41
441	Less than 150.00% of mass 443	16.60 (78.00)
442	Less than 200.00% of mass 198	111.04
443	15.00 - 24.00% of mass 442	21.28 (19.17)

Data File: NT1707102301.D
Spectrum: Avg. Scans 143-145 (5.58), Background Scan 140
Location of Maximum: 442.00
Number of points: 328

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	152	123.00	6648	209.00	934	301.00	317
37.00	885	124.00	3150	210.00	148	302.00	483
38.00	2811	125.00	2709	211.00	3871	303.00	2927
39.00	16440	127.00	215168	212.00	496	304.00	780
40.00	674	128.00	16816	213.00	247	305.00	121
41.00	486	129.00	87672	214.00	52	308.00	394
42.00	114	130.00	7509	215.00	1067	309.00	252
43.00	49	131.00	1541	216.00	2178	310.00	341
44.00	290	132.00	890	217.00	24736	311.00	127
45.00	414	133.00	454	218.00	2965	312.00	80
48.00	45	134.00	2508	219.00	264	313.00	260
49.00	1038	135.00	6462	221.00	20768	314.00	1294
50.00	57152	136.00	2532	223.00	5835	315.00	2639
51.00	210688	137.00	3537	224.00	48512	316.00	1705
52.00	10708	138.00	709	225.00	12453	317.00	284
53.00	579	139.00	398	226.00	1571	320.00	127
55.00	1095	140.00	1147	227.00	21224	321.00	906
56.00	6337	141.00	11090	228.00	3031	322.00	531
57.00	14200	142.00	3464	229.00	4351	323.00	8390
58.00	711	143.00	2342	230.00	684	324.00	1549
59.00	349	144.00	719	231.00	1794	325.00	156
60.00	31	145.00	649	232.00	423	326.00	95
61.00	2705	146.00	2065	233.00	336	327.00	1726
62.00	3240	147.00	5354	234.00	1291	328.00	771
63.00	8633	148.00	12303	235.00	1552	329.00	136
64.00	1300	149.00	2547	236.00	960	332.00	727
65.00	3787	150.00	659	237.00	1899	333.00	875
66.00	435	151.00	1413	238.00	264	334.00	5482
67.00	408	152.00	940	239.00	868	335.00	1361
68.00	854	153.00	3241	240.00	725	336.00	247
69.00	229824	154.00	2429	241.00	1311	339.00	151
70.00	1234	155.00	5825	242.00	2762	340.00	142
71.00	207	156.00	8204	243.00	3165	341.00	995
72.00	138	157.00	1712	244.00	39600	342.00	389
73.00	1783	158.00	1931	245.00	5016	343.00	110
74.00	22080	159.00	1457	246.00	7864	346.00	2121
75.00	35048	160.00	3124	247.00	1547	347.00	323
76.00	11693	161.00	4575	248.00	305	350.00	79
77.00	227584	162.00	1347	249.00	1480	351.00	100
78.00	15447	163.00	496	250.00	278	352.00	3081
79.00	16640	164.00	539	251.00	407	353.00	2058
80.00	12821	165.00	3804	252.00	415	354.00	2881
81.00	17000	166.00	2773	253.00	706	355.00	374
82.00	4176	167.00	19240	255.00	194816	356.00	286
83.00	3764	168.00	8694	256.00	27960	359.00	204
84.00	599	169.00	1459	257.00	2191	365.00	12008
85.00	2874	170.00	655	258.00	11364	366.00	1746
86.00	5061	171.00	896	259.00	1870	367.00	67
87.00	2294	172.00	1877	260.00	358	370.00	282

88.00	749	173.00	2250	261.00	281	371.00	807
89.00	293	174.00	3780	263.00	121	372.00	4925
91.00	3658	175.00	7289	264.00	312	373.00	1227
92.00	4457	176.00	2188	265.00	4610	374.00	140
93.00	27168	177.00	3430	266.00	808	377.00	171
94.00	1823	178.00	1400	267.00	8	383.00	1202
95.00	358	179.00	13906	268.00	30	384.00	367
96.00	983	180.00	9494	269.00	68	385.00	157
97.00	92	181.00	4558	270.00	153	390.00	715
98.00	20976	182.00	887	271.00	372	391.00	439
99.00	15318	183.00	421	272.00	623	392.00	353
100.00	1477	184.00	1174	273.00	6406	401.00	358
101.00	8548	185.00	6958	274.00	16166	402.00	2082
102.00	579	186.00	50152	275.00	93088	403.00	3036
103.00	3039	187.00	14135	276.00	12644	404.00	1170
104.00	5701	188.00	1522	277.00	7496	405.00	293
105.00	5324	189.00	3272	278.00	1480	410.00	91
106.00	296	190.00	731	279.00	260	415.00	171
107.00	64792	191.00	1590	281.00	76	421.00	2703
108.00	10458	192.00	4247	282.00	153	422.00	2621
109.00	389	193.00	4665	283.00	826	423.00	20848
110.00	116904	194.00	964	284.00	714	424.00	4661
111.00	17960	195.00	610	285.00	1436	425.00	434
112.00	2273	196.00	11370	286.00	284	429.00	240
113.00	826	198.00	352512	288.00	109	439.00	98
114.00	152	199.00	24552	289.00	342	441.00	58528
115.00	451	200.00	1965	290.00	258	442.00	391424
116.00	3891	201.00	1764	291.00	174	443.00	75032
117.00	54208	203.00	2777	292.00	404	444.00	6968
118.00	3914	204.00	12950	293.00	1736	445.00	354
119.00	437	205.00	22176	294.00	447		
120.00	715	206.00	89872	296.00	25216		
121.00	443	207.00	12230	297.00	3832		
122.00	4598	208.00	3462	298.00	325		

INITIAL CALIBRATION DATA

EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GF00097	Instrument:	NT14
Calibration Date:	06/30/2023	Column (1):	ZB-5MS

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Naphthalene	0.2	1.05833	0.5	1.042711	1	1.05165	2.5	1.055442	5	1.071257	10	1.021697
2-Methylnaphthalene	0.2	0.7502128	0.5	0.7573941	1	0.7757848	2.5	0.7889727	5	0.8104153	10	0.773809
Acenaphthylene	0.2	1.937442	0.5	2.01397	1	2.105619	2.5	2.087728	5	2.109276	10	1.955297
Acenaphthene	0.2	1.161057	0.5	1.180567	1	1.194832	2.5	1.211463	5	1.247777	10	1.183861
Fluorene	0.2	1.476985	0.5	1.521698	1	1.507706	2.5	1.538984	5	1.611875	10	1.501528
Phenanthrene	0.2	1.058265	0.5	1.06373	1	1.066839	2.5	1.085472	5	1.12978	10	1.065895
Anthracene	0.2	0.8730011	0.5	0.9880556	1	1.033458	2.5	1.101691	5	1.131319	10	1.077719
Fluoranthene	0.2	1.551575	0.5	1.563349	1	1.645078	2.5	1.674136	5	1.736557	10	1.632674
Pyrene	0.2	1.481856	0.5	1.569956	1	1.64586	2.5	1.733696	5	1.78208	10	1.659608
Benzo(a)anthracene	0.2	1.280752	0.5	1.322448	1	1.394013	2.5	1.447618	5	1.484282	10	1.422695
Chrysene	0.2	1.207316	0.5	1.201997	1	1.230115	2.5	1.272891	5	1.303939	10	1.256122
Benzofluoranthenes, Total	0.4	1.139247	1	1.226936	2	1.27328	5	1.379652	10	1.457208	20	1.399484
Benzo(a)pyrene	0.2	0.8170426	0.5	0.9099795	1	0.998956	2.5	1.08139	5	1.148737	10	1.109887
Indeno(1,2,3-cd)pyrene	0.2	0.7147475	0.5	0.8177946	1	0.8653555	2.5	0.9860783	5	1.064979	10	1.007677
Dibenzo(a,h)anthracene	0.2	0.5904615	0.5	0.6769248	1	0.7674199	2.5	0.8424442	5	0.8902869	10	0.853941
Benzo(g,h,i)perylene	0.2	0.6185474	0.5	0.7006314	1	0.7316371	2.5	0.7941419	5	0.8515222	10	0.8187276
1,2-Dichlorobenzene-d4	0.2	0.9702097	0.5	0.9506758	1	0.9662461	2.5	0.9892496	5	0.9975457	10	0.9333263
Nitrobenzene-d5	0.2	0.3851638	0.5	0.422436	1	0.4710584	2.5	0.4968652	5	0.5229896	10	0.5041661
2-Fluorobiphenyl	0.2	1.399897	0.5	1.421781	1	1.431391	2.5	1.43209	5	1.48463	10	1.395173
p-Terphenyl-d14	0.2	1.037802	0.5	1.110983	1	1.13783	2.5	1.17203	5	1.172416	10	1.093588

INITIAL CALIBRATION DATA

EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GF00097	Instrument:	NT14
Calibration Date:	06/30/2023	Column (1):	ZB-5MS

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Naphthalene	20	1.013395										
2-Methylnaphthalene	20	0.7688028										
Acenaphthylene	20	1.947033										
Acenaphthene	20	1.19816										
Fluorene	20	1.517925										
Phenanthrene	20	1.104666										
Anthracene	20	1.11409										
Fluoranthene	20	1.642257										
Pyrene	20	1.689333										
Benzo(a)anthracene	20	1.452194										
Chrysene	20	1.303359										
Benzofluoranthenes, Total	40	1.467323										
Benzo(a)pyrene	20	1.157061										
Indeno(1,2,3-cd)pyrene	20	1.057623										
Dibenzo(a,h)anthracene	20	0.890442										
Benzo(g,h,i)perylene	20	0.8628675										
1,2-Dichlorobenzene-d4	20	0.9268529										
Nitrobenzene-d5	20	0.4999723										
2-Fluorobiphenyl	20	1.40751										
p-Terphenyl-d14	20	1.05716										

INITIAL CALIBRATION DATA

EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GF00097	Instrument:	NT14
Calibration Date:	06/30/2023	Column (1):	ZB-5MS

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Naphthalene	1.044926	2.0			RSD (15)	
2-Methylnaphthalene	0.7750559	2.6			RSD (15)	
Acenaphthylene	2.022338	3.8			RSD (15)	
Acenaphthene	1.196817	2.3			RSD (15)	
Fluorene	1.525243	2.8			RSD (15)	
Phenanthrene	1.082092	2.4			RSD (15)	
Anthracene	1.045619	8.7			RSD (15)	
Fluoranthene	1.635089	3.9			RSD (15)	
Pyrene	1.65177	6.1			RSD (15)	
Benzo(a)anthracene	1.400572	5.3			RSD (15)	
Chrysene	1.253677	3.4			RSD (15)	
Benzofluoranthenes, Total	1.334733	9.3			RSD (15)	
Benzo(a)pyrene	1.031865	12.5			RSD (15)	
Indeno(1,2,3-cd)pyrene	0.9306078	14.3			RSD (15)	
Dibenzo(a,h)anthracene	0.7874172	14.7			RSD (15)	
Benzo(g,h,i)perylene	0.7682964	11.6			RSD (15)	
1,2-Dichlorobenzene-d4	0.9620152	2.8			RSD (15)	
Nitrobenzene-d5	0.4718073	10.6			RSD (15)	
2-Fluorobiphenyl	1.424639	2.1			RSD (15)	
p-Terphenyl-d14	1.111687	4.8			RSD (15)	

ANALYSIS SEQUENCE

SLF0467

Instrument: NT14
Calibration ID: GF00097

Printed: 7/3/2023 2:57:59PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLF0467-TUN1	QC		1		L005516			
SLF0467-CAL1	QC		2		L007253	L006982		
SLF0467-CAL2	QC		3		L007252	L006982		
SLF0467-CAL3	QC		4		L007251	L006982		
SLF0467-CAL4	QC		5		L007250	L006982		
SLF0467-CAL5	QC		6		L007249	L006982		
SLF0467-CAL6	QC		7		L007248	L006982		
SLF0467-CAL7	QC		8		L007247	L006982		
SLF0467-SCV1	QC		9		L006700	L006982		
SLF0467-ICB1	QC		10		L006701	L006982		

Samples Loaded By Date

Data Processed By Date

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230628.b

	Time	Filename	LabID	ClientId	DF																			
1	1748	NT1406282301.D	SLF0468-TUN1		1	|NO ISTDS FOUND||																		
2	1804	NT1406282302.D	SLF0467-CAL7		1	| 9.01	109273||11.51	440116||15.14	216113||18.18	358132||23.24	261975||25.85	215997||24.26	483887|											
3	1841	NT1406282303.D	SLF0467-CAL6		1	| 9.01	114276||11.51	457454||15.13	223861||18.18	373330||23.23	265594||25.84	224460||24.26	473007|											
4	1918	NT1406282304.D	SLF0467-CAL5		1	| 9.01	125577||11.51	506794||15.13	245145||18.17	414056||23.23	285887||25.84	242117||24.25	487823|											
5	1956	NT1406282305.D	SLF0467-CAL4		1	| 9.01	125595||11.50	505003||15.13	244264||18.17	409304||23.22	277608||25.83	233794||24.25	451406|											
6	2033	NT1406282306.D	SLF0467-CAL3		1	| 9.01	131333||11.50	519443||15.13	249595||18.17	422984||23.22	281346||25.83	237544||24.25	423037|											
7	2110	NT1406282307.D	SLF0467-CAL2		1	| 9.01	135836||11.50	538742||15.13	255972||18.17	432170||23.22	286989||25.83	245333||24.25	420698|											
8	2147	NT1406282308.D	SLF0467-CAL1		1	| 9.01	140650||11.50	556802||15.13	261262||18.17	450492||23.22	290595||25.83	242827||24.25	405584|											
9	2224	NT1406282309.D	SEQ-SIM2		1	| 9.01	139285||11.50	548275||15.13	257705||18.17	439798||23.22	281829||25.83	235295||24.25	382555|											
10	2301	NT1406282310.D	SEQ-SIM1		1	| 9.01	139755||11.50	540122||15.13	255588||18.17	436064||23.22	284378||25.83	237577||24.25	373893|											
11	2338	NT1406282311.D	SLF0467-SCV1		1	| 9.00	128354||11.50	519660||15.13	249651||18.17	419362||23.22	287830||25.83	243501||24.25	491823|											
12	0015	NT1406282312.D	SLF0467-ICB1		1	| 9.00	132893||11.50	531076||15.13	248410||18.17	420605||23.22	260535||25.83	224674||24.25	368725|											

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230628.b

ARI Job No.: SLF0 Method: DFTPP8270E.m Instrument: nt14.i Date: 28-JUN-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1748	NT1406282301.D	SLF0468-TUN1		1	NO MANUAL INTEGRATION
1804	NT1406282302.D	SLF0467-CAL7		1	2,2'-oxybis(1-Chloropropane), Isophorone, Benzoic acid,
1841	NT1406282303.D	SLF0467-CAL6		1	2,2'-oxybis(1-Chloropropane),
1918	NT1406282304.D	SLF0467-CAL5		1	2,2'-oxybis(1-Chloropropane),
1956	NT1406282305.D	SLF0467-CAL4		1	2,2'-oxybis(1-Chloropropane),
2033	NT1406282306.D	SLF0467-CAL3		1	2,2'-oxybis(1-Chloropropane),
2110	NT1406282307.D	SLF0467-CAL2		1	2,2'-oxybis(1-Chloropropane),
2147	NT1406282308.D	SLF0467-CAL1		1	2,2'-oxybis(1-Chloropropane),
2224	NT1406282309.D	SEQ-SIM2		1	NO MANUAL INTEGRATION
2301	NT1406282310.D	SEQ-SIM1		1	NO MANUAL INTEGRATION
2338	NT1406282311.D	SLF0467-SCV1		1	NO MANUAL INTEGRATION
0015	NT1406282312.D	SLF0467-ICB1		1	NO MANUAL INTEGRATION

Security Status Report

Date: 03-Jul-2023 14:48

NT1406282301.D	Data Locked	yev, 03-
NT1406282302.D	Data Locked	yev, 03-
NT1406282303.D	Data Locked	yev, 03-
NT1406282304.D	Data Locked	yev, 03-
NT1406282305.D	Data Locked	yev, 03-
NT1406282306.D	Data Locked	yev, 03-
NT1406282307.D	Data Locked	yev, 03-
NT1406282308.D	Data Locked	yev, 03-
NT1406282309.D	Data Locked	yev, 03-
NT1406282310.D	Data Locked	yev, 03-
NT1406282311.D	Data Locked	yev, 03-
NT1406282312.D	Data Locked	yev, 03-

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-APR-2023 15:47
End Cal Date : 28-JUN-2023 21:47
Quant Method : ISTD
Origin : Force
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem3\nt14.i\20230628.b\ABN.m
Last Edit : 30-Jun-2023 13:45 deenayd

Calibration File Names:
Level 1: \\target\share\chem3\nt14.i\20230628.b\NT1406282308.D
Level 2: \\target\share\chem3\nt14.i\20230628.b\NT1406282307.D
Level 3: \\target\share\chem3\nt14.i\20230628.b\NT1406282306.D
Level 4: \\target\share\chem3\nt14.i\20230628.b\NT1406282305.D
Level 5: \\target\share\chem3\nt14.i\20230628.b\NT1406282304.D
Level 6: \\target\share\chem3\nt14.i\20230628.b\NT1406282303.D
Level 7: \\target\share\chem3\nt14.i\20230628.b\NT1406282302.D

Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
186 Carbaryl	+++++ / +++++	+++++	+++++	+++++	+++++	+++++ / +++++	AVRG		0.000e+000		0.000e+000	<-
179 n-Decane	+++++ / +++++	+++++	+++++	+++++	+++++	+++++ / +++++	AVRG		0.000e+000		0.000e+000	<-
180 n-Octadecane	+++++ / +++++	+++++	+++++	+++++	+++++	+++++ / +++++	AVRG		0.000e+000		0.000e+000	<-
169 4-tert-Butylphenol	+++++ / +++++	+++++	+++++	+++++	+++++	+++++ / +++++	AVRG		0.000e+000		0.000e+000	

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

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

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

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

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

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
143 1,4-Dioxane	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-
121 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	
120 2,3,4,6-Tetrachlorophenol	1836	6376	15111	42352	100730	178741						
	364944						QUAD	0.000e+000	3.26077	-0.17778	0.99955	
178 2-Benzyl-4-Chlorophenol	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-
119 7,12-Dimethylbenz(a)anthracen	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	
118 Triphenyl Phosphate	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-
117 Butyl Diphenyl Phosphate	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
116 Dibutyl Phenyl Phosphate	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
115 Tributyl Phosphate	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
114 Beta-Pinene	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	
113 Diphenyl Oxide	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
112 Biphenyl	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
111 Azobenzene (1,2-DP-Hydrazine)	2.09491 / 2.14831	2.20296	2.28710	2.28707	2.33426	2.14491	AVRG		2.21422		4.06200	
110 Tetrachloroguaiacol	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-

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Integrator : HP RTE
Method file : \\target\share\chem3\nt14.i\20230628.b\ABN.m
Last Edit : 30-Jun-2023 13:45 deenayd

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

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
106 Guaiacol	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
105 1-methylnaphthalene	0.66587 / 0.69758	0.67909	0.68208	0.70347	0.71987	0.69190	AVRG		0.69141		2.56316	
151 1,2,4,5-Tetrachlorobenzene	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
152 Benzo(e)pyrene	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	
153 Chlorpyrifos	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	
154 Diazinon	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	
155 Kelthane	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	

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

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Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem3\nt14.i\20230628.b\ABN.m
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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
163 1,2,3,5,8-Pentachloronaphthal	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
164 1,2,3,4,6,7-Hexachloronaphtha	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
165 1,2,3,4,5,6,7-Heptachloronaph	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
166 Octachloronaphthalene	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
167 2,2',4,4',5-Pentabromobipheny	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
3 Phenol	2.35507 / 2.34767	2.47940	2.55357	2.60892	2.65638	2.44255	AVRG		2.49194		4.82307
4 Bis(2-Chloroethyl)ether	1.79211 / 1.61875	1.78774	1.78703	1.75421	1.75670	1.63670	AVRG		1.73332		4.26221

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
6 2-Chlorophenol	1.71148	1.79681	1.81493	1.82866	1.86813	1.76473					
	1.87015						AVRG		1.80784		3.13439
7 1,3-Dichlorobenzene	1.65034	1.64092	1.63877	1.64064	1.65825	1.53655					
	1.51336						AVRG		1.61126		3.70651
9 1,4-Dichlorobenzene	1.61522	1.59563	1.60557	1.58506	1.61408	1.62958					
	1.47367						AVRG		1.58840		3.31095
11 Benzyl alcohol	0.74383	0.85538	0.98866	1.04628	1.10013	1.04644					
	1.03547						AVRG		0.97374		13.08601
12 1,2-Dichlorobenzene	1.55080	1.54881	1.56165	1.56788	1.58504	1.49547					
	1.46281						AVRG		1.53892		2.83261
13 2-Methylphenol	1.41244	1.55853	1.57526	1.63520	1.68374	1.57791					
	1.55207						AVRG		1.57073		5.36137
14 2,2'-oxybis(1-Chloropropane)	0.47451	0.48058	0.52115	0.49531	0.50461	0.50864					
	0.49963						AVRG		0.49777		3.23662

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
15 4-Methylphenol	1.47458	1.73409	1.67885	1.76596	1.94471	1.80915					
	1.77102						AVRG		1.73977		8.21454
16 N-Nitroso-di-n-propylamine	1.22801	1.34598	1.42730	1.48810	1.52464	1.42671					
	1.42519						AVRG		1.40942		6.93168
17 Hexachloroethane	0.66392	0.70114	0.71464	0.75046	0.78054	0.74729					
	0.74934						AVRG		0.72962		5.33205
19 Nitrobenzene	0.43362	0.47396	0.50808	0.52745	0.54647	0.52244					
	0.51754						AVRG		0.50422		7.57299
20 Isophorone	0.63028	0.60232	0.71632	0.68787	0.77687	0.75049					
	0.74558						AVRG		0.70139		9.26497
21 2-Nitrophenol	3839	10688	25888	76087	162591	257404					
	492196						QUAD	0.000e+000	4.12603	0.31721	0.99894
22 2,4-Dimethylphenol	0.38215	0.40608	0.42112	0.42179	0.42135	0.39988					
	0.37873						AVRG		0.40444		4.56668

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
23 Bis(2-Chloroethoxy)methane	0.42141	0.45678	0.46601	0.45596	0.46470	0.43874					
	0.43351						AVRG		0.44816		3.80711
24 Benzoic acid	+++++	11522	58454	244814	646199	1214289					
	2476037						QUAD	0.000e+000	4.09009	-0.09633	0.99897
25 2,4-Dichlorophenol	0.25438	0.29294	0.31167	0.32044	0.32278	0.30804					
	0.28303						AVRG		0.29904		8.13412
26 1,2,4-Trichlorobenzene	0.30237	0.30707	0.30490	0.30050	0.30432	0.28497					
	0.28235						AVRG		0.29807		3.38243
28 Naphthalene	1.05833	1.04271	1.05165	1.05544	1.07126	1.02170					
	1.01339						AVRG		1.04493		1.97967
29 4-Chloroaniline	+++++	0.43445	0.48580	0.50441	0.52883	0.50558					
	0.46447						AVRG		0.48726		6.91008
30 Hexachlorobutadiene	0.13409	0.13908	0.13740	0.14064	0.14520	0.13806					
	0.13880						AVRG		0.13904		2.43353

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	Coefficients m1	Coefficients m2	%RSD or R^2
31 4-Chloro-3-methylphenol	+++++	0.32957	0.36469	0.38368	0.40514	0.38624					
	0.38104						AVRG		0.37506		6.86726
32 2-Methylnaphthalene	0.75021	0.75739	0.77578	0.78897	0.81042	0.77381					
	0.76880						AVRG		0.77506		2.58812
33 Hexachlorocyclopentadiene	+++++	12359	29361	85023	193642	348926					
	705352						QUAD	0.000e+000	3.33644	-0.08377	0.99969
34 2,4,6-Trichlorophenol	+++++	0.32936	0.35532	0.38926	0.42130	0.40153					
	0.41001						AVRG		0.38446		9.16597
35 2,4,5-Trichlorophenol	+++++	0.33782	0.37387	0.40345	0.43857	0.42212					
	0.42450						AVRG		0.40006		9.44512
37 2-Chloronaphthalene	1.27749	1.30136	1.32312	1.34672	1.37701	1.28348					
	1.26495						AVRG		1.31059		3.09500
38 2-Nitroaniline	+++++	0.48462	0.58106	0.66662	0.71988	0.68357					
	0.67517						AVRG		0.63515		13.67149

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
39 Dimethylphthalate	1.27810	1.36052	1.40101	1.40054	1.42002	1.29695						
	1.25365						AVRG		1.34440		5.00968	
40 Acenaphthylene	1.93744	2.01397	2.10562	2.08773	2.10928	1.95530						
	1.94703						AVRG		2.02234		3.84148	
41 2,6-Dinitrotoluene	+++++	0.22695	0.26936	0.29756	0.31581	0.29419						
	0.29340						AVRG		0.28288		11.00974	
43 3-Nitroaniline	+++++	0.31099	0.35338	0.38573	0.42292	0.39925						
	0.40152						AVRG		0.37896		10.66869	
44 Acenaphthene	1.16106	1.18057	1.19483	1.21146	1.24778	1.18386						
	1.19816						AVRG		1.19682		2.29534	
45 2,4-Dinitrophenol	+++++	3794	17476	81411	224083	429269						
	901597						QUAD	0.000e+000	5.75445	-0.23236	0.99878	<-
46 Dibenzofuran	1.71636	1.75644	1.75090	1.76763	1.81769	1.69438						
	1.70527						AVRG		1.74410		2.44569	

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Compound	0.2000000 Level 1	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	20.0000 Level 7										
47 4-Nitrophenol	+++++	9525	26243	76766	176345	312146					
	612213						QUAD	0.000e+000	3.63399	-0.03711	0.99960
48 2,4-Dinitrotoluene	+++++	0.31067	0.36868	0.41254	0.44046	0.41891					
	0.42210						AVRG		0.39556		12.11496
49 Fluorene	1.47698	1.52170	1.50771	1.53898	1.61188	1.50153					
	1.51793						AVRG		1.52524		2.80200
50 Diethylphthalate	1.35289	1.43659	1.53223	1.69153	1.72905	1.58605					
	1.55446						AVRG		1.55469		8.52032
51 4-Chlorophenyl-phenylether	0.66248	0.66582	0.67206	0.66527	0.67443	0.62930					
	0.64052						AVRG		0.65855		2.57777
52 4-Nitroaniline	+++++	15977	25684	108273	246150	424672					
	812879						QUAD	0.000e+000	2.58990	0.01817	0.99923
53 4,6-Dinitro-2-methylphenol	+++++	13036	36447	119807	276089	495104					
	995275						QUAD	0.000e+000	7.88878	-0.25045	0.99959

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
54 N-Nitrosodiphenylamine	0.52028	0.56689	0.58950	0.59041	0.58068	0.54688					
	0.55894						AVRG		0.56480		4.49074
56 4-Bromophenyl-phenylether	0.15468	0.16290	0.17004	0.17698	0.18218	0.17574					
	0.18310						AVRG		0.17223		6.05361
57 Hexachlorobenzene	0.17359	0.17839	0.18192	0.18886	0.19073	0.17987					
	0.18207						AVRG		0.18220		3.25624
58 Pentachlorophenol	+++++	4684	14810	49215	116753	220882					
	460335						QUAD	0.000e+000	9.24145	-1.14522	0.99956
60 Phenanthrene	1.05827	1.06373	1.06684	1.08547	1.12978	1.06589					
	1.10467						AVRG		1.08209		2.44358
61 Anthracene	0.87300	0.98806	1.03346	1.10169	1.13132	1.07772					
	1.11409						AVRG		1.04562		8.68366
62 Carbazole	0.92193	0.98924	1.05075	1.06666	1.10811	1.08164					
	1.14540						AVRG		1.05196		7.13742

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	Coefficients m1	Coefficients m2	%RSD or R^2
63 Di-n-butylphthalate	1.07274	1.16793	1.36595	1.48744	1.54888	1.50082					
	1.53136						AVRG		1.38216		13.76310
64 Fluoranthene	1.55158	1.56335	1.64508	1.67414	1.73656	1.63267					
	1.64226						AVRG		1.63509		3.87596
65 Pyrene	1.48186	1.56996	1.64586	1.73370	1.78208	1.65961					
	1.68933						AVRG		1.65177		6.09255
67 Butylbenzylphthalate	6198	19624	44631	129698	289231	509209					
	982448						QUAD	0.000e+000	1.26143	0.01917	0.99975
68 Benzo(a)anthracene	1.28075	1.32245	1.39401	1.44762	1.48428	1.42269					
	1.45219						AVRG		1.40057		5.28534
70 3,3'-Dichlorobenzidine	+++++	35145	71884	159713	412773	885364					
	1921573						QUAD	0.000e+000	2.56947	-0.07232	0.99871
71 Chrysene	1.20732	1.20200	1.23012	1.27289	1.30394	1.25612					
	1.30336						AVRG		1.25368		3.37553

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72 bis(2-Ethylhexyl)phthalate	1.06671	1.04676	1.04400	1.03198	1.05963	0.98356					
	0.96389						AVRG		1.02807		3.81045
73 Di-n-octylphthalate	1.06671	1.04676	1.04400	1.03198	1.05963	0.98356					
	0.96389						AVRG		1.02807		3.81045
74 Benzo(b)fluoranthene	1.05837	1.16635	1.21160	1.44539	1.44897	1.42962					
	1.44309						AVRG		1.31477		12.54177
75 Benzo(k)fluoranthene	1.29911	1.38483	1.43916	1.45124	1.59500	1.50521					
	1.65760						AVRG		1.47602		8.27744
187 Total Benzofluoranthenes	1.13925	1.22694	1.27328	1.37965	1.45721	1.39948					
	1.46732						AVRG		1.33473		9.29759
76 Benzo(a)pyrene	0.81704	0.90998	0.99896	1.08139	1.14874	1.10989					
	1.15706						AVRG		1.03186		12.50884
78 Indeno(1,2,3-cd)pyrene	0.71475	0.81779	0.86536	0.98608	1.06498	1.00768					
	1.05762						AVRG		0.93061		14.33554

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79 Dibenzo(a,h)anthracene	0.59046	0.67692	0.76742	0.84244	0.89029	0.85394					
	0.89044						AVRG		0.78742		14.66896
80 Benzo(g,h,i)perylene	0.61855	0.70063	0.73164	0.79414	0.85152	0.81873					
	0.86287						AVRG		0.76830		11.57221
90 N-Nitrosodimethylamine	1.08880	1.17783	1.22085	1.25044	1.21838	1.10136					
	0.97564						AVRG		1.14761		8.49533
91 Aniline	2.37597	2.48338	2.49619	2.54031	2.51986	2.34276					
	2.24916						AVRG		2.42966		4.46792
92 1,2-Diphenylhydrazine	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
93 Benzidine	+++++	0.42390	0.45209	0.46039	0.49526	0.56073					
	0.57551						AVRG		0.49465		12.42763
96 p-Cymene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000

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97 Caffeine	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	
98 Retene	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
99 Perylene	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
100 3-beta-Coprostanol	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
101 Cholesterol	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
102 beta-Sitosterol	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	
103 Pyridine	3.73239 / 3.05167	3.74976	3.83160	3.83894	3.70112	3.39545	AVRG		3.61442		8.00243	

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
188 2,6-Dichlorophenol	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
189 N-Nitrosomethylethylamine	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
$ 1 2-Fluorophenol	1.34319 / 1.43272	1.50692	1.57302	1.61750	1.63218	1.52159	AVRG		1.51816		6.79922	
$ 137 d8-1,4-Dioxane	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
$ 2 Phenol-d5	1.81434 / 2.01709	1.98070	2.08021	2.17268	2.23566	2.10522	AVRG		2.05798		6.71124	
$ 5 2-Chlorophenol-d4	1.43098 / 1.49217	1.48933	1.53062	1.57585	1.60929	1.51788	AVRG		1.52087		3.87555	
$ 10 1,2-Dichlorobenzene-d4	0.97021 / 0.92685	0.95068	0.96625	0.98925	0.99755	0.93333	AVRG		0.96202		2.77538	

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-APR-2023 15:47
End Cal Date : 28-JUN-2023 21:47
Quant Method : ISTD
Origin : Force
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem3\nt14.i\20230628.b\ABN.m
Last Edit : 30-Jun-2023 13:45 deenayd

Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
$ 18 Nitrobenzene-d5	0.38516	0.42244	0.47106	0.49687	0.52299	0.50417					
	0.49997						AVRG		0.47181		10.60922
$ 36 2-Fluorobiphenyl	1.39990	1.42178	1.43139	1.43209	1.48463	1.39517					
	1.40751						AVRG		1.42464		2.12172
$ 55 2,4,6-Tribromophenol	1177	4391	9982	27169	59759	108120					
	221247						QUAD	0.000e+000	8.10938	-0.76518	0.99984
$ 66 Terphenyl-d14	1.03780	1.11098	1.13783	1.17203	1.17242	1.09359					
	1.05716						AVRG		1.11169		4.75605
$ 85 p-Cresol-d4	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
$ 86 Anthracene-d10	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
$ 87 Fluoranthene-d10	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-APR-2023 15:47
End Cal Date : 28-JUN-2023 21:47
Quant Method : ISTD
Origin : Force
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem3\nt14.i\20230628.b\ABN.m
Last Edit : 30-Jun-2023 13:45 deenayd

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

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 21-APR-2023 15:47
End Cal Date : 28-JUN-2023 21:47
Quant Method : ISTD
Origin : Force
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem3\nt14.i\20230628.b\ABN.m
Last Edit : 30-Jun-2023 13:45 deenayd

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

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Batch File: \\target\share\chem3\nt14.i\20230628.b
Inst ID: nt14.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07
FILENAME:	NT1406282302	NT1406282303	NT1406282304	NT1406282305	NT1406282306	NT1406282307	NT1406282308
INJ.DATE:	28-JUN-2023	28-JUN-2023	28-JUN-2023	28-JUN-2023	28-JUN-2023	28-JUN-2023	28-JUN-2023
INJ.TIME:	18:04	18:41	19:18	19:56	20:33	21:10	21:47

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
$ 1 2-Fluorophenol	6.783	6.775	6.775	6.775	6.775	6.775	6.783	6.783	3.783-9.783	6.777	0.004
186 Carbaryl	+++++	+++++	+++++	+++++	+++++	+++++	+++++	18.785	15.785-21.785	+++++	+++++
179 n-Decane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.645	5.645-11.645	+++++	+++++
180 n-Octadecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	17.455	14.455-20.455	+++++	+++++
169 4-tert-Butylphenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	20.696	17.696-23.696	+++++	+++++
170 N,N-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	19.219	16.219-22.219	+++++	+++++
171 2,3-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	19.559	16.559-22.559	+++++	+++++
172 2,4-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	19.559	16.559-22.559	+++++	+++++
173 2,5-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	22.949	19.949-25.949	+++++	+++++
174 2,6-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	19.196	16.196-22.196	+++++	+++++
175 3,4-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	19.559	16.559-22.559	+++++	+++++
176 3,5-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	20.503	17.503-23.503	+++++	+++++
177 p-Benzoquinone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.827	4.827-10.827	+++++	+++++
168 Pentachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	15.842	12.842-18.842	+++++	+++++
145 4,4'-DDE	+++++	+++++	+++++	+++++	+++++	+++++	+++++	47.212	44.212-50.212	+++++	+++++
146 4,4'-DDD	+++++	+++++	+++++	+++++	+++++	+++++	+++++	47.746	44.746-50.746	+++++	+++++
147 4,4'-DDT	+++++	+++++	+++++	+++++	+++++	+++++	+++++	48.216	45.216-51.216	+++++	+++++

Reviewer 1 _____ Date:_____
Reviewer 2 _____ Date:_____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Batch File: \\target\share\chem3\nt14.i\20230628.b
Inst ID: nt14.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
148 Dieldrin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	47.281	44.281-50.281	+++++	+++++
149 TCMX	+++++	+++++	+++++	+++++	+++++	+++++	+++++	43.387	40.387-46.387	+++++	+++++
150 DCBP	+++++	+++++	+++++	+++++	+++++	+++++	+++++	50.989	47.989-53.989	+++++	+++++
138 Chlorobenzilate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	67.733	64.733-70.733	+++++	+++++
139 Isodrin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	65.067	62.067-68.067	+++++	+++++
140 Diallate A	+++++	+++++	+++++	+++++	+++++	+++++	+++++	65.487	62.487-68.487	+++++	+++++
141 Diallate B	+++++	+++++	+++++	+++++	+++++	+++++	+++++	65.487	62.487-68.487	+++++	+++++
142 1,2-Dibromo-3-Chloropr	+++++	+++++	+++++	+++++	+++++	+++++	+++++	49.917	46.917-52.917	+++++	+++++
135 2,3,5,6-Tetrachlorophe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.383	13.383-19.383	+++++	+++++
136 2,3,4,5-tetrachlorophe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	39.317	36.317-42.317	+++++	+++++
$ 137 d8-1,4-Dioxane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	2.445	0.000-5.445	+++++	+++++
* 134 Di-n-octylphthalate-d4	24.262	24.262	24.254	24.254	24.254	24.254	24.254	24.254	21.254-27.254	24.256	0.004
133 Butylatedhydroxytoluen	+++++	+++++	+++++	+++++	+++++	+++++	+++++	15.571	12.571-18.571	+++++	+++++
132 3,6-Dimethylphenanthre	+++++	+++++	+++++	+++++	+++++	+++++	+++++	65.450	62.450-68.450	+++++	+++++
131 1-Methylphenanthrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	64.400	61.400-67.400	+++++	+++++
130 Dibenzothiophene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	62.100	59.100-65.100	+++++	+++++
129 1-Methylfluorene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	54.912	51.912-57.912	+++++	+++++
128 N-Hexadecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	54.212	51.212-57.212	+++++	+++++
127 2-Isopropylnaphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	57.650	54.650-60.650	+++++	+++++
126 N-Tetradecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	56.750	53.750-59.750	+++++	+++++
144 alpha-Terpineol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.447	8.447-14.447	+++++	+++++
125 Safrole	+++++	+++++	+++++	+++++	+++++	+++++	+++++	52.166	49.166-55.166	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Batch File: \\target\share\chem3\nt14.i\20230628.b
Inst ID: nt14.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
124 3,4-Dimethylphenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	50.617	47.617-53.617	+++++	+++++
123 Acetophenone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	10.252	7.252-13.252	+++++	+++++
122 Furfuraldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	43.467	40.467-46.467	+++++	+++++
143 1,4-Dioxane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	2.697	0.000-5.697	+++++	+++++
121 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	54.500	51.500-57.500	+++++	+++++
120 2,3,4,6-Tetrachlorophe	15.869	15.861	15.861	15.861	15.861	15.861	15.861	15.861	12.861-18.861	15.862	0.003
178 2-Benzyl-4-Chloropheno	+++++	+++++	+++++	+++++	+++++	+++++	+++++	18.963	15.963-21.963	+++++	+++++
119 7,12-Dimethylbenz(a)an	+++++	+++++	+++++	+++++	+++++	+++++	+++++	47.069	44.069-50.069	+++++	+++++
118 Triphenyl Phosphate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	21.215	18.215-24.215	+++++	+++++
117 Butyl Diphenyl Phospha	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.761	13.761-19.761	+++++	+++++
116 Dibutyl Phenyl Phospha	+++++	+++++	+++++	+++++	+++++	+++++	+++++	18.747	15.747-21.747	+++++	+++++
115 Tributyl Phosphate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.923	13.923-19.923	+++++	+++++
114 Beta-Pinene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	48.950	45.950-51.950	+++++	+++++
113 Diphenyl Oxide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.341	11.341-17.341	+++++	+++++
112 Biphenyl	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.085	11.085-17.085	+++++	+++++
111 Azobenzene (1,2-DP-Hyd	16.572	16.564	16.556	16.556	16.548	16.548	16.549	16.548	13.548-19.548	16.556	0.009
110 Tetrachloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	17.140	14.140-20.140	+++++	+++++
109 3,4,5-Trichloroguaiaco	+++++	+++++	+++++	+++++	+++++	+++++	+++++	15.070	12.070-18.070	+++++	+++++
181 3,4,6-Trichloroguaiaco	+++++	+++++	+++++	+++++	+++++	+++++	+++++	15.232	12.232-18.232	+++++	+++++
108 4,5,6-Trichloroguaiaco	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.374	13.374-19.374	+++++	+++++
184 3,4-Dichloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	13.120	10.120-16.120	+++++	+++++
107 4,5-Dichloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.096	11.096-17.096	+++++	+++++
182 4,6-Dichloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.096	11.096-17.096	+++++	+++++
185 4-Chloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.735	8.735-14.735	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Batch File: \\target\share\chem3\nt14.i\20230628.b
Inst ID: nt14.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
106 Guaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.243	6.243-12.243	+++++	+++++
105 1-methylnaphthalene	13.177	13.169	13.169	13.169	13.169	13.169	13.169	13.169	10.169-16.169	13.170	0.003
151 1,2,4,5-Tetrachloroben	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.499	8.499-14.499	+++++	+++++
152 Benzo(e)pyrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	30.943	27.943-33.943	+++++	+++++
153 Chlorpyrifos	+++++	+++++	+++++	+++++	+++++	+++++	+++++	27.642	24.642-30.642	+++++	+++++
154 Diazinon	+++++	+++++	+++++	+++++	+++++	+++++	+++++	25.953	22.953-28.953	+++++	+++++
155 Kelthane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	27.750	24.750-30.750	+++++	+++++
156 Methyl Parathion	+++++	+++++	+++++	+++++	+++++	+++++	+++++	26.464	23.464-29.464	+++++	+++++
157 Ethyl Parathion	+++++	+++++	+++++	+++++	+++++	+++++	+++++	27.099	24.099-30.099	+++++	+++++
158 Ethion	+++++	+++++	+++++	+++++	+++++	+++++	+++++	24.513	21.513-27.513	+++++	+++++
159 4-Nonylphenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	25.132	22.132-28.132	+++++	+++++
160 Tetraethyl Tin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	19.528	16.528-22.528	+++++	+++++
161 1,2,3-Trichloronaphtha	+++++	+++++	+++++	+++++	+++++	+++++	+++++	36.246	33.246-39.246	+++++	+++++
162 1,2,3,4-Tetrachloronap	+++++	+++++	+++++	+++++	+++++	+++++	+++++	37.506	34.506-40.506	+++++	+++++
163 1,2,3,5,8-Pentachloron	+++++	+++++	+++++	+++++	+++++	+++++	+++++	38.893	35.893-41.893	+++++	+++++
164 1,2,3,4,6,7-Hexachloro	+++++	+++++	+++++	+++++	+++++	+++++	+++++	39.681	36.681-42.681	+++++	+++++
165 1,2,3,4,5,6,7-Heptachl	+++++	+++++	+++++	+++++	+++++	+++++	+++++	41.123	38.123-44.123	+++++	+++++
166 Octachloronaphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	42.253	39.253-45.253	+++++	+++++
167 2,2',4,4',5-Pentabromo	+++++	+++++	+++++	+++++	+++++	+++++	+++++	42.033	39.033-45.033	+++++	+++++
$ 2 Phenol-d5	8.382	8.374	8.367	8.367	8.359	8.359	8.367	8.367	5.367-11.367	8.368	0.008
3 Phenol	8.405	8.397	8.390	8.382	8.382	8.382	8.382	8.382	5.382-11.382	8.389	0.009
4 Bis(2-Chloroethyl)ethe	8.567	8.560	8.552	8.552	8.552	8.552	8.552	8.552	5.552-11.552	8.555	0.006
$ 5 2-Chlorophenol-d4	8.652	8.645	8.645	8.637	8.637	8.637	8.645	8.645	5.645-11.645	8.642	0.006

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Batch File: \\target\share\chem3\nt14.i\20230628.b
Inst ID: nt14.i

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	6 2-Chlorophenol	8.683	8.675	8.668	8.668	8.668	8.668	8.668	8.668	5.668-11.668	8.671	0.006
	7 1,3-Dichlorobenzene	8.946	8.946	8.947	8.939	8.939	8.939	8.939	8.939	5.939-11.939	8.942	0.004
*	8 1,4-Dichlorobenzene-d4	9.008	9.008	9.009	9.009	9.008	9.008	9.009	9.001	6.001-12.001	9.009	0.000
	9 1,4-Dichlorobenzene	9.040	9.039	9.040	9.040	9.039	9.032	9.040	9.040	6.040-12.040	9.038	0.003
$	10 1,2-Dichlorobenzene-d4	9.373	9.373	9.366	9.366	9.365	9.365	9.366	9.366	6.366-12.366	9.368	0.004
	11 Benzyl alcohol	9.296	9.280	9.280	9.280	9.280	9.280	9.288	9.272	6.272-12.272	9.283	0.006
	12 1,2-Dichlorobenzene	9.397	9.396	9.397	9.397	9.389	9.396	9.397	9.389	6.389-12.389	9.395	0.003
	13 2-Methylphenol	9.513	9.505	9.505	9.505	9.505	9.505	9.505	9.505	6.505-12.505	9.506	0.003
	14 2,2'-oxybis(1-Chloropr	9.591	9.583	9.583	9.583	9.583	9.583	9.583	9.583	6.583-12.583	9.584	0.003
	15 4-Methylphenol	9.793	9.785	9.777	9.769	9.777	9.777	9.777	9.777	6.777-12.777	9.779	0.007
	16 N-Nitroso-di-n-propyla	9.870	9.855	9.847	9.839	9.839	9.839	9.839	9.839	6.839-12.839	9.847	0.012
	17 Hexachloroethane	9.994	9.994	9.987	9.987	9.986	9.986	9.987	9.986	6.986-12.986	9.989	0.004
$	18 Nitrobenzene-d5	10.118	10.111	10.103	10.103	10.103	10.103	10.103	10.103	7.103-13.103	10.106	0.006
	19 Nitrobenzene	10.149	10.142	10.142	10.134	10.134	10.134	10.142	10.134	7.134-13.134	10.140	0.006
	20 Isophorone	10.631	10.607	10.592	10.584	10.584	10.584	10.584	10.584	7.584-13.584	10.595	0.018
	21 2-Nitrophenol	10.778	10.778	10.770	10.770	10.770	10.770	10.778	10.770	7.770-13.770	10.774	0.004
	22 2,4-Dimethylphenol	10.840	10.832	10.825	10.825	10.824	10.824	10.825	10.824	7.824-13.824	10.828	0.006
	23 Bis(2-Chloroethoxy)met	11.042	11.034	11.026	11.026	11.026	11.026	11.026	11.026	8.026-14.026	11.029	0.006
	24 Benzoic acid	11.243	11.142	11.080	11.018	10.979	10.964	+++++	11.018	8.018-14.018	11.071	0.107
	25 2,4-Dichlorophenol	11.243	11.235	11.228	11.228	11.228	11.228	11.228	11.228	8.228-14.228	11.231	0.006
	26 1,2,4-Trichlorobenzene	11.429	11.421	11.421	11.413	11.413	11.413	11.413	11.413	8.413-14.413	11.418	0.006
*	27 Naphthalene-d8	11.506	11.506	11.506	11.498	11.498	11.498	11.498	11.498	8.498-14.498	11.501	0.004
	28 Naphthalene	11.552	11.544	11.545	11.545	11.544	11.537	11.537	11.544	8.544-14.544	11.543	0.005
	29 4-Chloroaniline	11.691	11.676	11.676	11.668	11.668	11.668	11.676	11.668	8.668-14.668	11.675	0.008

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Batch File: \\target\share\chem3\nt14.i\20230628.b
Inst ID: nt14.i

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	30 Hexachlorobutadiene	11.915	11.915	11.908	11.908	11.907	11.907	11.908	11.907	8.907-14.907	11.910	0.004
	31 4-Chloro-3-methylpheno	12.650	12.643	12.643	12.635	12.635	12.635	12.643	12.635	9.635-15.635	12.641	0.006
	32 2-Methylnaphthalene	12.952	12.944	12.945	12.945	12.944	12.944	12.945	12.945	9.944-15.945	12.946	0.003
	33 Hexachlorocyclopentadi	13.424	13.417	13.417	13.417	13.417	13.417	13.417	13.417	10.417-16.417	13.418	0.003
	34 2,4,6-Trichlorophenol	13.579	13.571	13.572	13.564	13.564	13.564	13.571	13.564	10.564-16.564	13.569	0.006
	35 2,4,5-Trichlorophenol	13.657	13.649	13.641	13.641	13.641	13.641	13.649	13.641	10.641-16.641	13.645	0.006
$	36 2-Fluorobiphenyl	13.742	13.734	13.734	13.726	13.726	13.726	13.726	13.726	10.726-16.726	13.731	0.006
	37 2-Chloronaphthalene	13.951	13.943	13.943	13.943	13.943	13.935	13.943	13.935	10.935-16.935	13.943	0.004
	38 2-Nitroaniline	14.221	14.206	14.198	14.198	14.198	14.198	14.198	14.198	11.198-17.198	14.203	0.009
	39 Dimethylphthalate	14.655	14.647	14.640	14.632	14.632	14.632	14.632	14.632	11.632-17.632	14.638	0.009
	40 Acenaphthylene	14.825	14.817	14.818	14.810	14.810	14.810	14.810	14.818	11.818-17.818	14.814	0.006
	41 2,6-Dinitrotoluene	14.794	14.779	14.779	14.771	14.771	14.771	14.771	14.771	11.771-17.771	14.777	0.009
*	42 Acenaphthene-d10	15.142	15.135	15.135	15.127	15.127	15.127	15.127	15.127	12.127-18.127	15.131	0.006
	43 3-Nitroaniline	15.088	15.065	15.058	15.050	15.050	15.050	15.050	15.050	12.050-18.050	15.058	0.014
	44 Acenaphthene	15.212	15.204	15.197	15.197	15.196	15.189	15.189	15.196	12.196-18.196	15.198	0.008
	45 2,4-Dinitrophenol	15.305	15.281	15.274	15.266	15.266	15.266	+++++	15.266	12.266-18.266	15.276	0.015
	46 Dibenzofuran	15.544	15.529	15.529	15.521	15.521	15.521	15.521	15.521	12.521-18.521	15.527	0.009
	47 4-Nitrophenol	15.413	15.390	15.382	15.374	15.367	15.374	15.382	15.374	12.374-18.374	15.383	0.015
	48 2,4-Dinitrotoluene	15.614	15.591	15.583	15.583	15.575	15.575	15.583	15.575	12.575-18.575	15.586	0.013
	49 Fluorene	16.255	16.240	16.240	16.240	16.232	16.232	16.232	16.232	13.232-19.232	16.239	0.008
	50 Diethylphthalate	16.124	16.109	16.101	16.093	16.093	16.093	16.093	16.093	13.093-19.093	16.101	0.012
	51 4-Chlorophenyl-phenyle	16.240	16.232	16.233	16.225	16.232	16.225	16.225	16.225	13.225-19.225	16.230	0.006
	52 4-Nitroaniline	16.387	16.348	16.333	16.325	16.317	16.317	16.317	16.317	13.317-19.317	16.335	0.025
	53 4,6-Dinitro-2-methylph	16.471	16.440	16.433	16.425	16.417	16.417	16.418	16.417	13.417-19.417	16.432	0.020

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Batch File: \\target\share\chem3\nt14.i\20230628.b
Inst ID: nt14.i

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	54 N-Nitrosodiphenylamine	16.502	16.487	16.479	16.479	16.479	16.479	16.471	16.479	13.479-19.479	16.482	0.010
$	55 2,4,6-Tribromophenol	16.788	16.780	16.772	16.772	16.772	16.772	16.772	16.772	13.772-19.772	16.775	0.006
	56 4-Bromophenyl-phenylet	17.242	17.235	17.235	17.235	17.235	17.235	17.235	17.235	14.235-20.235	17.236	0.003
	57 Hexachlorobenzene	17.559	17.552	17.552	17.552	17.552	17.552	17.552	17.552	14.552-20.552	17.553	0.003
	58 Pentachlorophenol	17.923	17.915	17.908	17.908	17.908	17.908	17.916	17.908	14.908-20.908	17.912	0.006
*	59 Phenanthrene-d10	18.179	18.179	18.171	18.171	18.171	18.171	18.171	18.171	15.171-21.171	18.173	0.004
	60 Phenanthrene	18.233	18.225	18.225	18.217	18.217	18.217	18.217	18.217	15.217-21.217	18.222	0.006
	61 Anthracene	18.326	18.318	18.318	18.310	18.310	18.310	18.310	18.310	15.310-21.310	18.315	0.006
	62 Carbazole	18.658	18.643	18.643	18.643	18.643	18.643	18.643	18.643	15.643-21.643	18.645	0.006
	63 Di-n-butylphthalate	19.455	19.447	19.448	19.448	19.447	19.447	19.448	19.447	16.447-22.447	19.449	0.003
	64 Fluoranthene	20.623	20.616	20.608	20.608	20.608	20.608	20.608	20.608	17.608-23.608	20.611	0.006
	65 Pyrene	21.049	21.041	21.041	21.034	21.033	21.033	21.034	21.033	18.033-24.033	21.038	0.006
$	66 Terphenyl-d14	21.328	21.328	21.320	21.320	21.320	21.320	21.320	21.320	18.320-24.320	21.322	0.004
	67 Butylbenzylphthalate	22.257	22.249	22.249	22.249	22.249	22.249	22.249	22.249	19.249-25.249	22.250	0.003
	68 Benzo(a)anthracene	23.209	23.209	23.201	23.202	23.194	23.194	23.194	23.201	20.201-26.201	23.200	0.007
*	69 Chrysene-d12	23.240	23.232	23.232	23.225	23.225	23.224	23.225	23.225	20.225-26.225	23.229	0.006
	70 3,3'-Dichlorobenzidine	23.178	23.163	23.155	23.155	23.147	23.155	23.147	23.155	20.155-26.155	23.157	0.011
	71 Chrysene	23.294	23.279	23.271	23.271	23.271	23.271	23.271	23.271	20.271-26.271	23.275	0.009
	72 bis(2-Ethylhexyl)phtha	24.277	24.270	24.270	24.270	24.270	24.262	24.262	24.270	21.270-27.270	24.269	0.005
	73 Di-n-octylphthalate	24.277	24.270	24.270	24.270	24.270	24.262	24.262	24.270	21.270-27.270	24.269	0.005
	74 Benzo(b)fluoranthene	25.098	25.083	25.075	25.075	25.067	25.075	25.075	25.075	22.075-28.075	25.078	0.010
	75 Benzo(k)fluoranthene	25.145	25.129	25.121	25.114	25.114	25.113	25.114	25.121	22.121-28.121	25.121	0.012
	187 Total Benzofluoranthen	25.145	25.129	25.121	25.114	25.114	25.113	25.114	25.121	22.121-28.121	25.121	0.012
	76 Benzo(a)pyrene	25.741	25.733	25.725	25.725	25.717	25.717	25.718	25.725	22.725-28.725	25.725	0.009

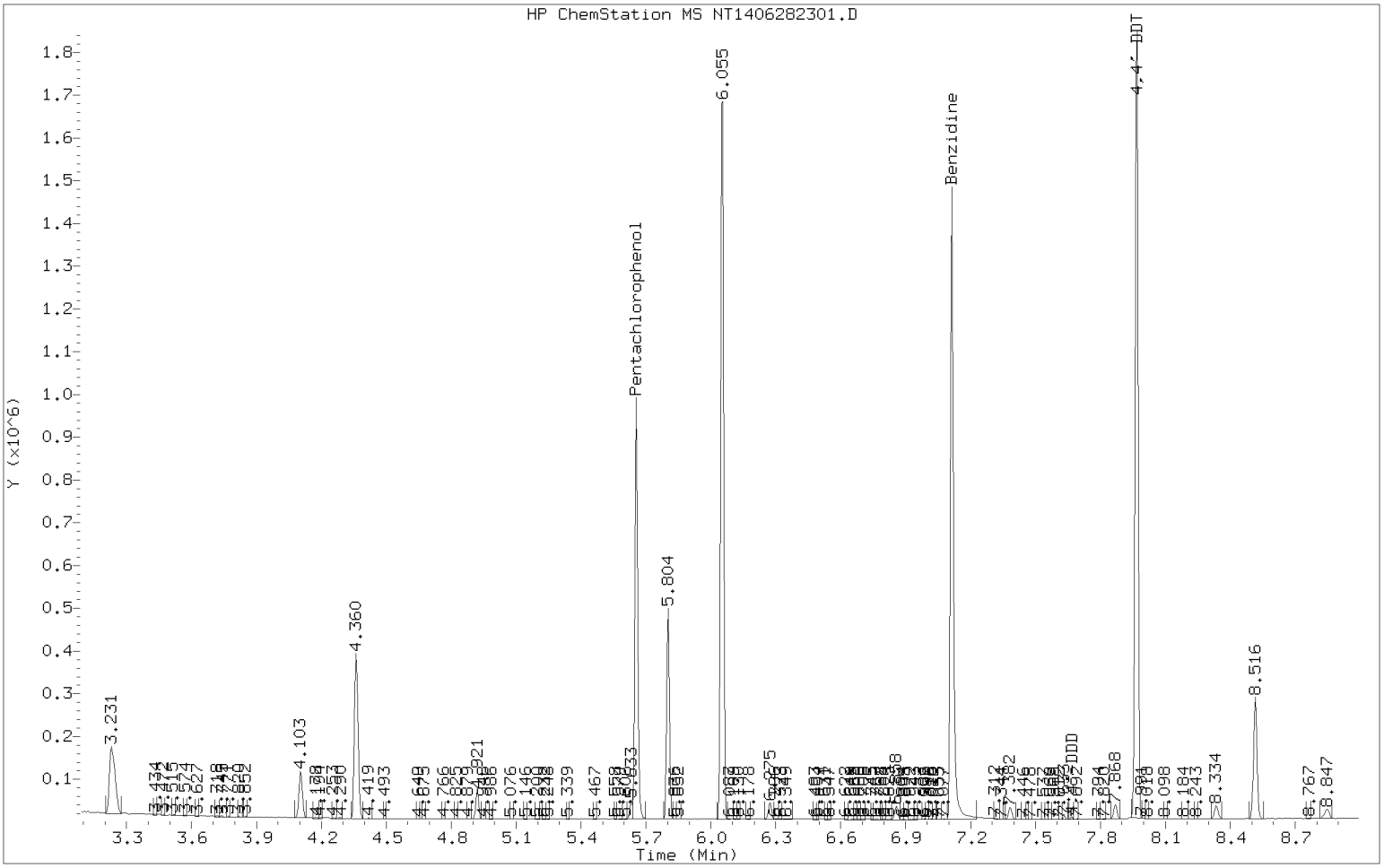
ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

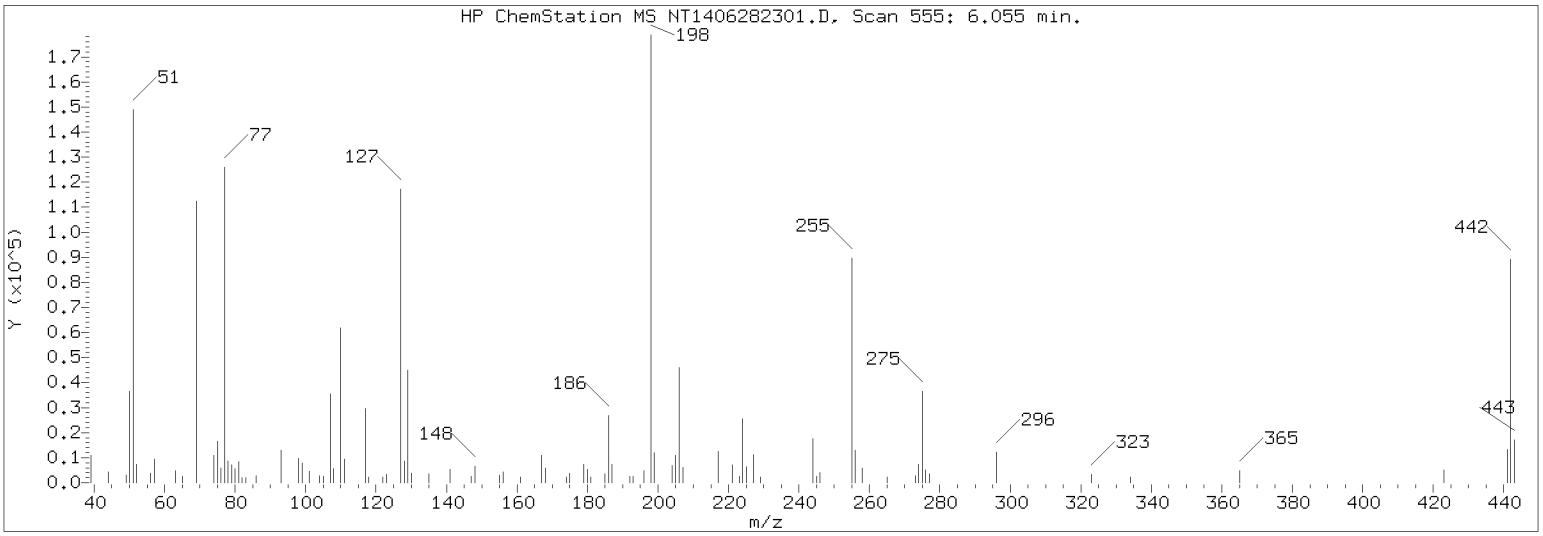
Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Batch File: \\target\share\chem3\nt14.i\20230628.b
Inst ID: nt14.i

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
*	77 Perylene-d12	25.849	25.841	25.842	25.834	25.834	25.834	25.834	25.834	22.834-28.834	25.838	0.006
	78 Indeno(1,2,3-cd)pyrene	28.509	28.486	28.471	28.463	28.463	28.463	28.463	28.471	25.471-31.471	28.474	0.018
	79 Dibenzo(a,h)anthracene	28.517	28.494	28.486	28.479	28.478	28.478	28.486	28.478	25.478-31.478	28.488	0.014
	80 Benzo(g,h,i)perylene	29.286	29.263	29.248	29.240	29.240	29.240	29.240	29.247	26.247-32.247	29.251	0.018
$	85 p-Cresol-d4	+++++	+++++	+++++	+++++	+++++	+++++	+++++	51.633	48.633-54.633	+++++	+++++
$	86 Anthracene-d10	+++++	+++++	+++++	+++++	+++++	+++++	+++++	63.533	60.533-66.533	+++++	+++++
$	87 Fluoranthene-d10	+++++	+++++	+++++	+++++	+++++	+++++	+++++	60.273	57.273-63.273	+++++	+++++
$	88 Dibenz(a,h)anthracene-	+++++	+++++	+++++	+++++	+++++	+++++	+++++	78.600	75.600-81.600	+++++	+++++
$	89 Diphenyl-d10	+++++	+++++	+++++	+++++	+++++	+++++	+++++	50.841	47.841-53.841	+++++	+++++
	90 N-Nitrosodimethylamine	4.697	4.682	4.674	4.667	4.659	4.666	4.667	4.659	1.659-7.659	4.673	0.013
	91 Aniline	8.482	8.467	8.459	8.459	8.459	8.459	8.459	8.459	5.459-11.459	8.464	0.009
	92 1,2-Diphenylhydrazine	+++++	+++++	+++++	+++++	+++++	+++++	+++++	56.160	53.160-59.160	+++++	+++++
	93 Benzidine	20.856	20.848	20.848	20.840	20.840	20.840	20.840	20.840	17.840-23.840	20.845	0.006
$	95 D10-1-methylnaphthalen	+++++	+++++	+++++	+++++	+++++	+++++	+++++	52.075	49.075-55.075	+++++	+++++
	96 p-Cymene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	49.250	46.250-52.250	+++++	+++++
	97 Caffeine	+++++	+++++	+++++	+++++	+++++	+++++	+++++	61.202	58.202-64.202	+++++	+++++
	98 Retene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	18.787	15.787-21.787	+++++	+++++
	99 Perylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	24.361	21.361-27.361	+++++	+++++
	100 3-beta-Coprostanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	25.411	22.411-28.411	+++++	+++++
	101 Cholesterol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	26.023	23.023-29.023	+++++	+++++
	102 beta-Sitosterol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	79.550	76.550-82.550	+++++	+++++
	103 Pyridine	4.690	4.690	4.690	4.690	4.690	4.697	4.705	4.682	1.682-7.682	4.693	0.006
	188 2,6-Dichlorophenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.874	8.874-14.874	+++++	+++++
	189 N-Nitrosomethylethylam	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.818	2.818-8.818	+++++	+++++

DFTPP TAILING FACTOR AND BREAKDOWN GRAPHIC REPORT

Datafile Analyzed: /20230628.b/NT1406282301.D/NT1406282301.D
Method Used: \20230628.b\DFTPP8270E.m Inst: nt14
Injection Date: 28-JUN-2023 17:48 Operator: JGR
Sample Info: SLF0468-TUN1 SLF0468-TUN1
Report Date: 07/03/2023 14:12





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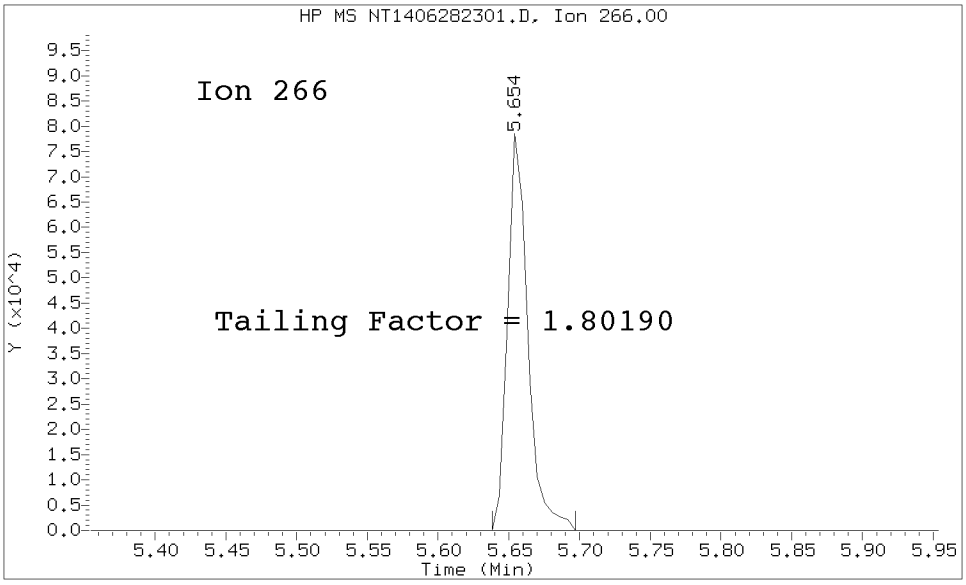
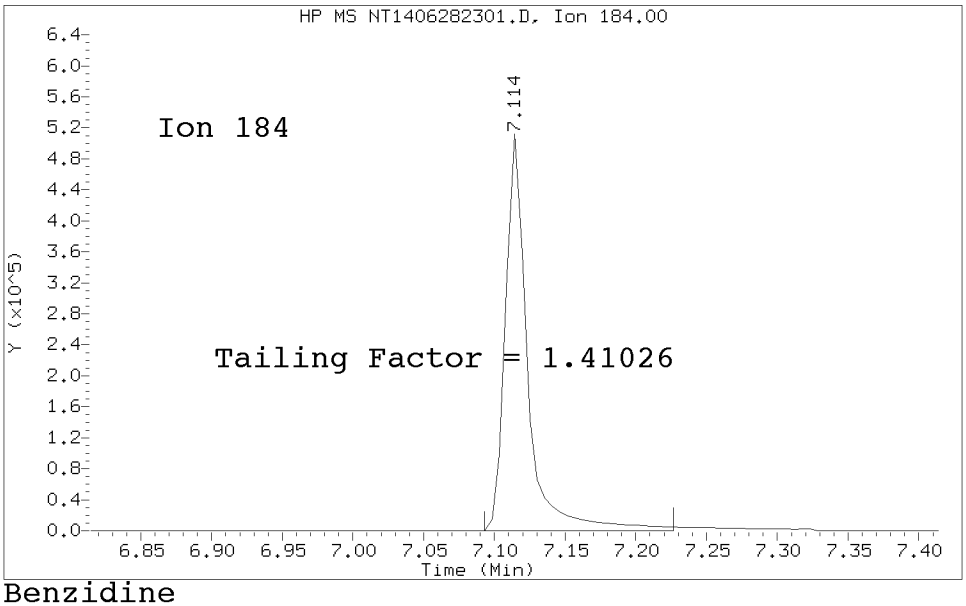
Method Used: \20230628.b\DFTPP8270E.m\sw846ddt.m Inst: nt14
Injection Date: 28-JUN-2023 17:48 Operator: JGR
Sample Info: SEQ-TUN1
Report Date: 07/03/2023 14:12



Pentachlorophenol
==========
Exp. RT = 5.681
Found RT = 5.654

Tail Factor = 1.802 Maximum Allowed = 2.0



Benzidine
==========
Exp. RT = 7.146
Found RT = 7.114

Tail Factor = 1.410 Maximum Allowed = 2.0

8270 TAILING FACTOR/BREAKDOWN SUMMARY RESULTS

TAILING ANALYSIS SUMMARY

Compound	Tail Factor	Max Allowed	Test
Pentachlorophenol	1.8019017	2.000	PASS
Benzidine	1.4102564	2.000	PASS

DDT DEGRADATION BREAKDOWN ANALYSIS SUMMARY

Compound	Response	%Breakdown	Max Allowed	Test
4,4-DDT	253440			N/A
4,4-DDE	0	0.0	20.0	PASS
4,4-DDD	1887	0.7	20.0	PASS
4,4-DDD + DDE	1887	0.7	20.0	PASS

Tuning Sample, nt14.i/20230628.b/NT1406282301.D, *** PASSED ***

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	62.85
70	Less than 2.00% of mass 69	0.00 (0.00)
197	Less than 2.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.69
365	1.00 - 100.00% of mass 198	2.70
441	Less than 150.00% of mass 443	7.44 (77.49)
442	Less than 200.00% of mass 198	49.89
443	15.00 - 24.00% of mass 442	9.60 (19.24)

Data File: NT1406282301.D
Spectrum: HP ChemStation MS NT1406282301.D, Scan 555: 6.055 min.
Location of Maximum: 198.00
Number of points: 93

m/z	Y	m/z	Y	m/z	Y	m/z	Y
39.10	10869	99.00	7916	168.00	5826	229.00	2200
44.00	4233	101.00	4684	174.00	2260	244.00	17632
49.00	3042	104.00	2752	175.00	3955	245.00	2575
50.00	36200	105.00	2590	179.00	7496	246.00	4115
51.00	148992	107.00	35504	180.00	5266	255.00	89536
52.00	7402	108.00	5539	181.00	2327	256.00	13078
56.00	3746	110.00	61928	185.00	3625	258.00	5821
57.00	9383	111.00	9489	186.00	26792	265.00	2234
63.00	4859	117.00	29752	187.00	7455	273.00	2842
65.00	2553	118.00	2172	192.00	2448	274.00	7447
69.00	112384	122.00	2190	193.00	2663	275.00	36472
74.00	10908	123.00	3392	196.00	4864	276.00	5069
75.00	16640	127.00	117304	198.00	178816	277.00	3704
76.00	5860	128.00	8599	199.00	11960	296.00	12238
77.00	126056	129.00	45048	204.00	6804	323.00	3321
78.00	8767	130.00	3867	205.00	11051	334.00	2231
79.00	7257	135.00	3672	206.00	45856	365.00	4823
80.00	5686	141.00	5366	207.00	6254	423.00	5010
81.00	8475	147.00	2614	217.00	12484	441.00	13304
82.00	2114	148.00	6668	221.00	7208	442.00	89208
83.00	2048	155.00	3008	223.00	2667	443.00	17168
86.00	2808	156.00	4380	224.00	25600		
93.00	13104	161.00	2354	225.00	6368		
98.00	9679	167.00	10861	227.00	11301		

Data File: \\target\share\chem3\nt14.i\20230628.b\NT1406282302.D

Date : 28-JUN-2023 18:04

Client ID:

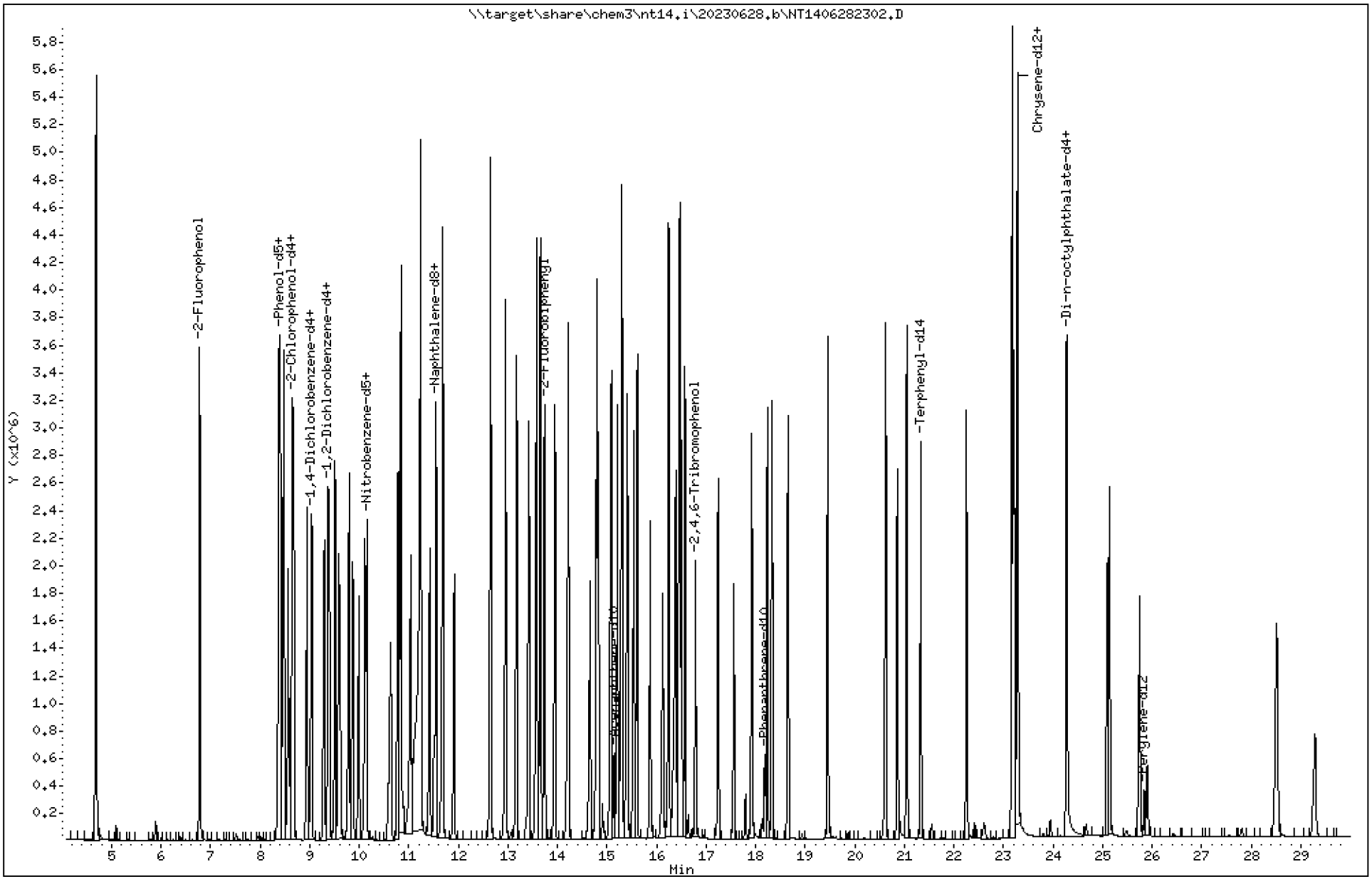
Sample Info: SLF0467-CAL7

Column phase: ZB-5msi

Instrument: nt14.i

Operator: JGR

Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230628.b\NT1406282302.D
Lab Smp Id: SLF0467-CAL7
Inj Date : 28-JUN-2023 18:04 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : SLF0467-CAL7
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230628.b\ABN.m
Meth Date : 30-Jun-2023 13:53 deenayd Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 2 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: DEENAY-201905

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
$	1 2-Fluorophenol	112	6.782	6.782	(0.753)	1174184	30.0000	28.31
$	2 Phenol-d5	99	8.382	8.366	(0.930)	1653097	30.0000	29.40
	3 Phenol	94	8.405	8.382	(0.933)	1282682	20.0000	18.84
$	5 2-Chlorophenol-d4	132	8.652	8.644	(0.960)	1222906	30.0000	29.43
	4 Bis(2-Chloroethyl)ether	93	8.567	8.551	(0.951)	884430	20.0000	18.68
	6 2-Chlorophenol	128	8.683	8.667	(0.964)	1021785	20.0000	20.69
	7 1,3-Dichlorobenzene	146	8.946	8.938	(0.993)	826849	20.0000	18.78
*	8 1,4-Dichlorobenzene-d4	152	9.008	9.000	(1.000)	109273	4.00000	
	9 1,4-Dichlorobenzene	146	9.039	9.039	(1.003)	805163	20.0000	18.56
$	10 1,2-Dichlorobenzene-d4	152	9.373	9.365	(1.040)	506400	20.0000	19.27
	12 1,2-Dichlorobenzene	146	9.396	9.388	(1.043)	799228	20.0000	19.01
	11 Benzyl alcohol	108	9.295	9.272	(1.032)	565743	20.0000	21.27
	14 2,2'-oxybis(1-Chloropropane)	121	9.590	9.582	(1.065)	272982	20.0000	20.07(M)
	13 2-Methylphenol	108	9.513	9.505	(1.056)	847994	20.0000	19.76
	17 Hexachloroethane	117	9.994	9.986	(1.109)	409413	20.0000	20.54
	16 N-Nitroso-di-n-propylamine	70	9.870	9.839	(1.096)	778673	20.0000	20.22
	15 4-Methylphenol	108	9.792	9.776	(1.087)	967623	20.0000	20.36
$	18 Nitrobenzene-d5	82	10.118	10.103	(0.879)	1100229	20.0000	21.19
	19 Nitrobenzene	77	10.149	10.133	(0.882)	1138878	20.0000	20.53
	20 Isophorone	82	10.630	10.584	(0.924)	1640699	20.0000	21.26(M)
	21 2-Nitrophenol	139	10.777	10.770	(0.937)	492196	20.0000	20.04
	22 2,4-Dimethylphenol	107	10.839	10.824	(0.942)	1666836	40.0000	37.46
	23 Bis(2-Chloroethoxy)methane	93	11.041	11.026	(0.960)	953981	20.0000	19.35
	24 Benzoic acid	105	11.243	11.018	(0.977)	2476037	80.0000	79.85(M)
	25 2,4-Dichlorophenol	162	11.243	11.227	(0.977)	1245651	40.0000	37.86
	26 1,2,4-Trichlorobenzene	180	11.428	11.413	(0.993)	621337	20.0000	18.95
*	27 Naphthalene-d8	136	11.505	11.498	(1.000)	440116	4.00000	
	28 Naphthalene	128	11.552	11.544	(1.004)	2230056	20.0000	19.40
	29 4-Chloroaniline	127	11.691	11.667	(1.016)	2044218	40.0000	38.13
	30 Hexachlorobutadiene	225	11.915	11.907	(1.036)	305430	20.0000	19.97
	31 4-Chloro-3-methylphenol	107	12.650	12.634	(1.099)	1677039	40.0000	40.64
	32 2-Methylnaphthalene	142	12.952	12.944	(1.126)	1691812	20.0000	19.84
	33 Hexachlorocyclopentadiene	237	13.424	13.416	(0.887)	705352	40.0000	39.99

			QUANT SIG					AMOUNTS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
	34	2,4,6-Trichlorophenol	196	13.579	13.563	(0.897)	886090	40.0000	42.66
	35	2,4,5-Trichlorophenol	196	13.656	13.641	(0.902)	917410	40.0000	42.44
$	36	2-Fluorobiphenyl	172	13.741	13.726	(0.907)	1520906	20.0000	19.76
	37	2-Chloronaphthalene	162	13.950	13.935	(0.921)	1366864	20.0000	19.30
	38	2-Nitroaniline	65	14.221	14.198	(0.939)	1459125	40.0000	42.52
	39	Dimethylphthalate	163	14.654	14.631	(0.968)	1354647	20.0000	18.65
	40	Acenaphthylene	152	14.825	14.817	(0.979)	2103896	20.0000	19.26
	41	2,6-Dinitrotoluene	165	14.794	14.771	(0.977)	634071	40.0000	41.49
*	42	Acenaphthene-d10	164	15.142	15.126	(1.000)	216113	4.00000	
	43	3-Nitroaniline	138	15.088	15.049	(0.996)	867740	40.0000	42.38
	44	Acenaphthene	153	15.211	15.196	(1.005)	1294690	20.0000	20.02
	45	2,4-Dinitrophenol	184	15.304	15.266	(1.011)	901597	80.0000	79.85
	46	Dibenzofuran	168	15.544	15.521	(1.027)	1842655	20.0000	19.55
	47	4-Nitrophenol	109	15.412	15.374	(1.018)	612213	40.0000	39.99
	48	2,4-Dinitrotoluene	165	15.613	15.575	(1.031)	912216	40.0000	42.68
	50	Diethylphthalate	149	16.124	16.093	(1.065)	1679696	20.0000	20.00
	49	Fluorene	166	16.255	16.232	(1.074)	1640217	20.0000	19.90
	51	4-Chlorophenyl-phenylether	204	16.240	16.224	(1.072)	692120	20.0000	19.45
	52	4-Nitroaniline	138	16.386	16.317	(1.082)	812879	40.0000	39.99
	53	4,6-Dinitro-2-methylphenol	198	16.471	16.417	(0.906)	995275	80.0000	79.96
	54	N-Nitrosodiphenylamine	169	16.502	16.479	(0.908)	1000870	20.0000	19.79
$	55	2,4,6-Tribromophenol	330	16.787	16.771	(1.109)	221247	30.0000	30.00
	56	4-Bromophenyl-phenylether	248	17.242	17.234	(0.949)	327878	20.0000	21.26
	57	Hexachlorobenzene	284	17.559	17.551	(0.966)	326028	20.0000	19.99
	58	Pentachlorophenol	266	17.923	17.907	(0.986)	460335	40.0000	39.95
*	59	Phenanthrene-d10	188	18.178	18.170	(1.000)	358132	4.00000	
	60	Phenanthrene	178	18.232	18.217	(1.003)	1978081	20.0000	20.42
	61	Anthracene	178	18.325	18.310	(1.008)	1994957	20.0000	21.31
	62	Carbazole	167	18.658	18.642	(1.026)	2051014	20.0000	21.78
	63	Di-n-butylphthalate	149	19.455	19.447	(1.070)	2742149	20.0000	22.16
	64	Fluoranthene	202	20.623	20.607	(0.887)	2151151	20.0000	20.09
	65	Pyrene	202	21.048	21.033	(0.906)	2212815	20.0000	20.45
$	66	Terphenyl-d14	244	21.327	21.319	(0.918)	1384748	20.0000	19.02
	67	Butylbenzylphthalate	149	22.256	22.248	(0.958)	982448	20.0000	20.00
	68	Benzo(a)anthracene	228	23.209	23.201	(0.999)	1902192	20.0000	20.74
*	69	Chrysene-d12	240	23.240	23.224	(1.000)	261975	4.00000	
	70	3,3'-Dichlorobenzidine	252	23.178	23.154	(0.997)	1921573	60.0000	59.82
	71	Chrysene	228	23.294	23.271	(1.002)	1707237	20.0000	20.79
	72	bis(2-Ethylhexyl)phthalate	149	24.277	24.269	(1.001)	2332068	20.0000	18.75
*	134	Di-n-octylphthalate-d4	153	24.261	24.254	(1.000)	483887	4.00000	
	73	Di-n-octylphthalate	149	24.277	24.269	(1.001)	2332068	20.0000	18.75
	74	Benzo(b)fluoranthene	252	25.098	25.074	(0.971)	1558516	20.0000	21.95
	75	Benzo(k)fluoranthene	252	25.144	25.121	(0.973)	1790178	20.0000	22.46(H)
	76	Benzo(a)pyrene	252	25.740	25.725	(0.996)	1249609	20.0000	22.43
*	77	Perylene-d12	264	25.849	25.833	(1.000)	215997	4.00000	
	78	Indeno(1,2,3-cd)pyrene	276	28.509	28.470	(1.103)	1142217	20.0000	22.73
	79	Dibenzo(a,h)anthracene	278	28.517	28.478	(1.103)	961664	20.0000	22.62
	80	Benzo(g,h,i)perylene	276	29.286	29.247	(1.133)	931884	20.0000	22.46
	90	N-Nitrosodimethylamine	74	4.697	4.658	(0.521)	1066111	40.0000	34.01
	91	Aniline	93	8.482	8.459	(0.942)	2457725	40.0000	37.03
	93	Benzidine	184	20.855	20.840	(0.897)	1507690	40.0000	46.54
	103	Pyridine	79	4.689	4.681	(0.521)	1667327	20.0000	16.89
	105	1-methylnaphthalene	142	13.176	13.168	(1.145)	1535086	20.0000	20.18
	111	Azobenzene (1,2-DP-Hydrazine)	77	16.571	16.548	(1.094)	2321390	20.0000	19.40

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
187 Total Benzofluoranthenes	252	25.144	25.121	(0.973)	3169374	40.0000	43.97
120 2,3,4,6-Tetrachlorophenol	232	15.868	15.861	(1.048)	364944	20.0000	20.00

QC Flag Legend

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

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1406282302.D
Lab Smp Id: SLF0467-CAL7
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Misc Info:

Calibration Date: 28-JUN-2023
Calibration Time: 23:38
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	128354	64177	256708	109273	-14.87
27 Naphthalene-d8	519660	259830	1039320	440116	-15.31
42 Acenaphthene-d10	249651	124826	499302	216113	-13.43
59 Phenanthrene-d10	419362	209681	838724	358132	-14.60
69 Chrysene-d12	287830	143915	575660	261975	-8.98
134 Di-n-octylphthala	491823	245912	983646	483887	-1.61
77 Perylene-d12	243501	121751	487002	215997	-11.30

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.00	8.50	9.50	9.01	0.09
27 Naphthalene-d8	11.50	11.00	12.00	11.51	0.07
42 Acenaphthene-d10	15.13	14.63	15.63	15.14	0.10
59 Phenanthrene-d10	18.17	17.67	18.67	18.18	0.04
69 Chrysene-d12	23.22	22.72	23.72	23.24	0.07
134 Di-n-octylphthala	24.25	23.75	24.75	24.26	0.03
77 Perylene-d12	25.83	25.33	26.33	25.85	0.06

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

REVIEW SUMMARY FOR FILE - NT1406282302.D

Lab ID: SLF0467-CAL7
nt14.i, ABN.m, 28-JUN-2023 18:04

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.977	0.958	0.0189	Benzoic acid
0.942	0.000	0.9416	Aniline
0.753	0.000	0.7529	2-Fluorophenol
0.960	0.000	0.9605	2-Chlorophenol-d4
1.040	0.000	1.0405	1,2-Dichlorobenzene-d4
0.879	0.000	0.8794	Nitrobenzene-d5
0.907	0.000	0.9075	2-Fluorobiphenyl
1.109	0.000	1.1086	2,4,6-Tribromophenol

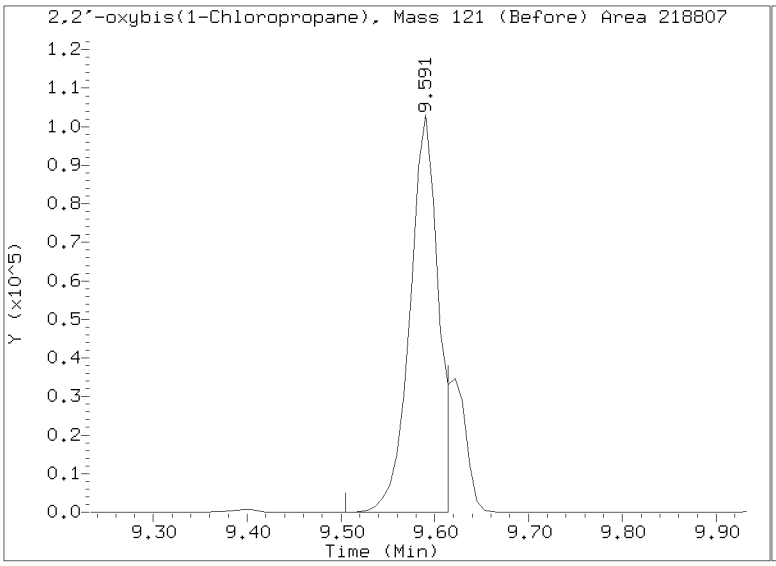
RRT check based on Ccal File: NT1406282311.D

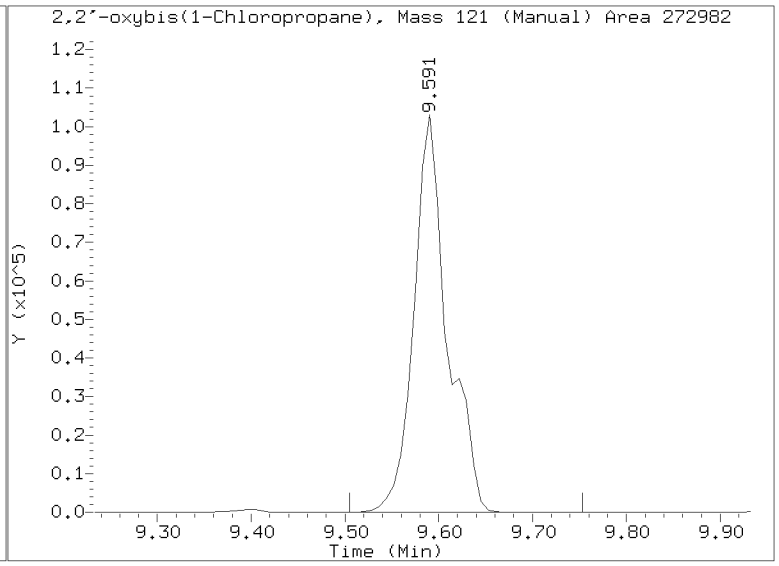
On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

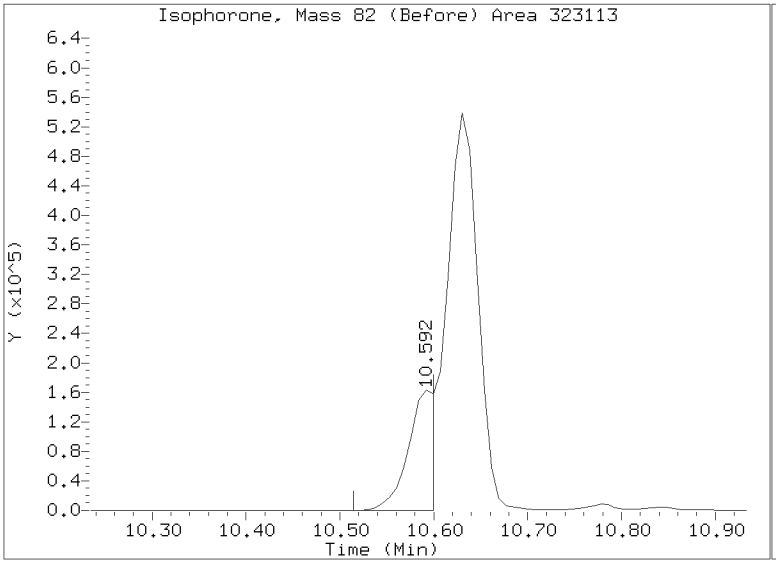
* Only compounds listed in the work order have been verified by the analyst *

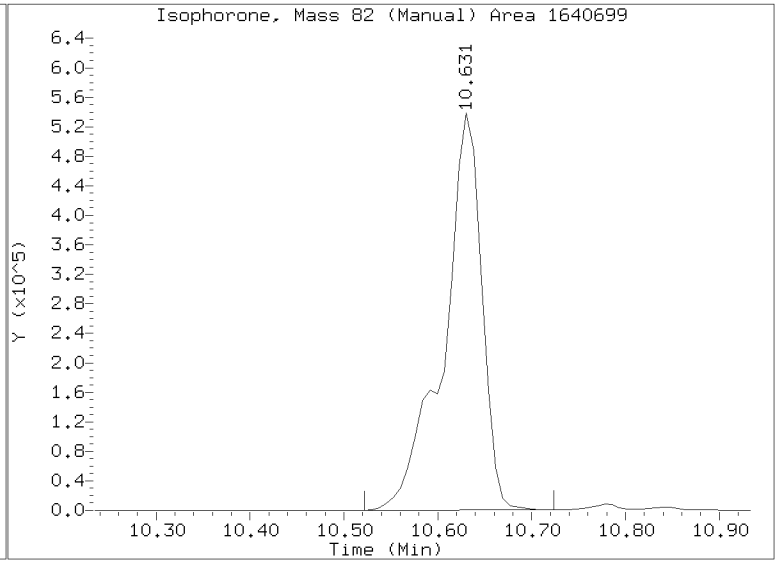
Quant Ion Manual Peak Adjustment Report

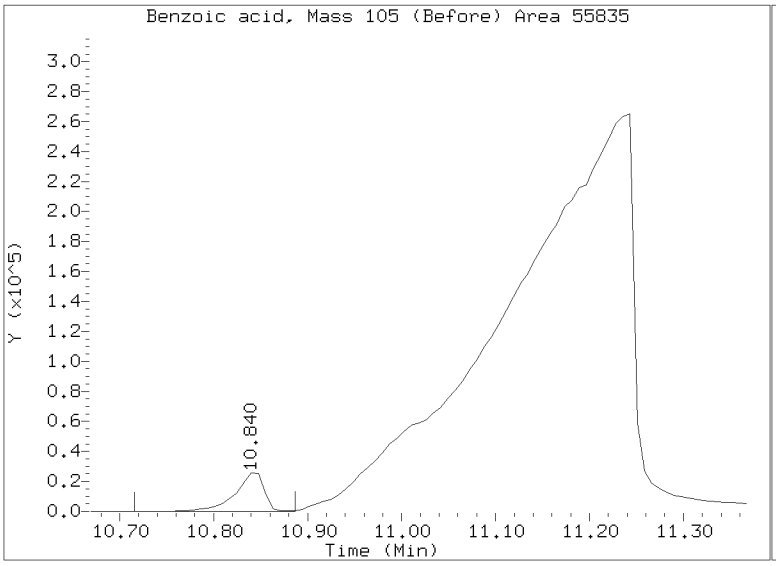
Datafile: //target/share/chem3/nt14.i/20230628.b/NT1406282302.D
Injection Date: 28-JUN-2023 18:04
Lab ID:SLF0467-CAL7 Client ID:
Report Date: 07/03/2023 13:50

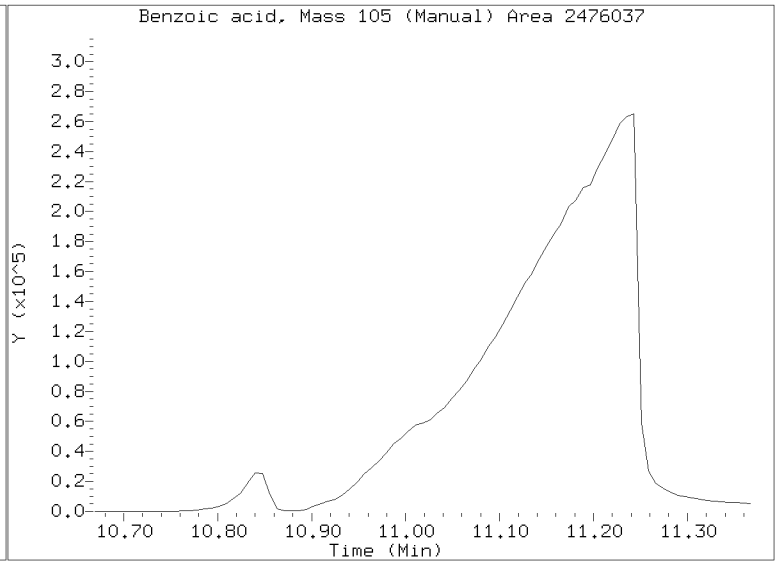












Data File: \\target\share\chem3\nt14.i\20230628.b\NT1406282303.D

Date : 28-JUN-2023 18:41

Client ID:

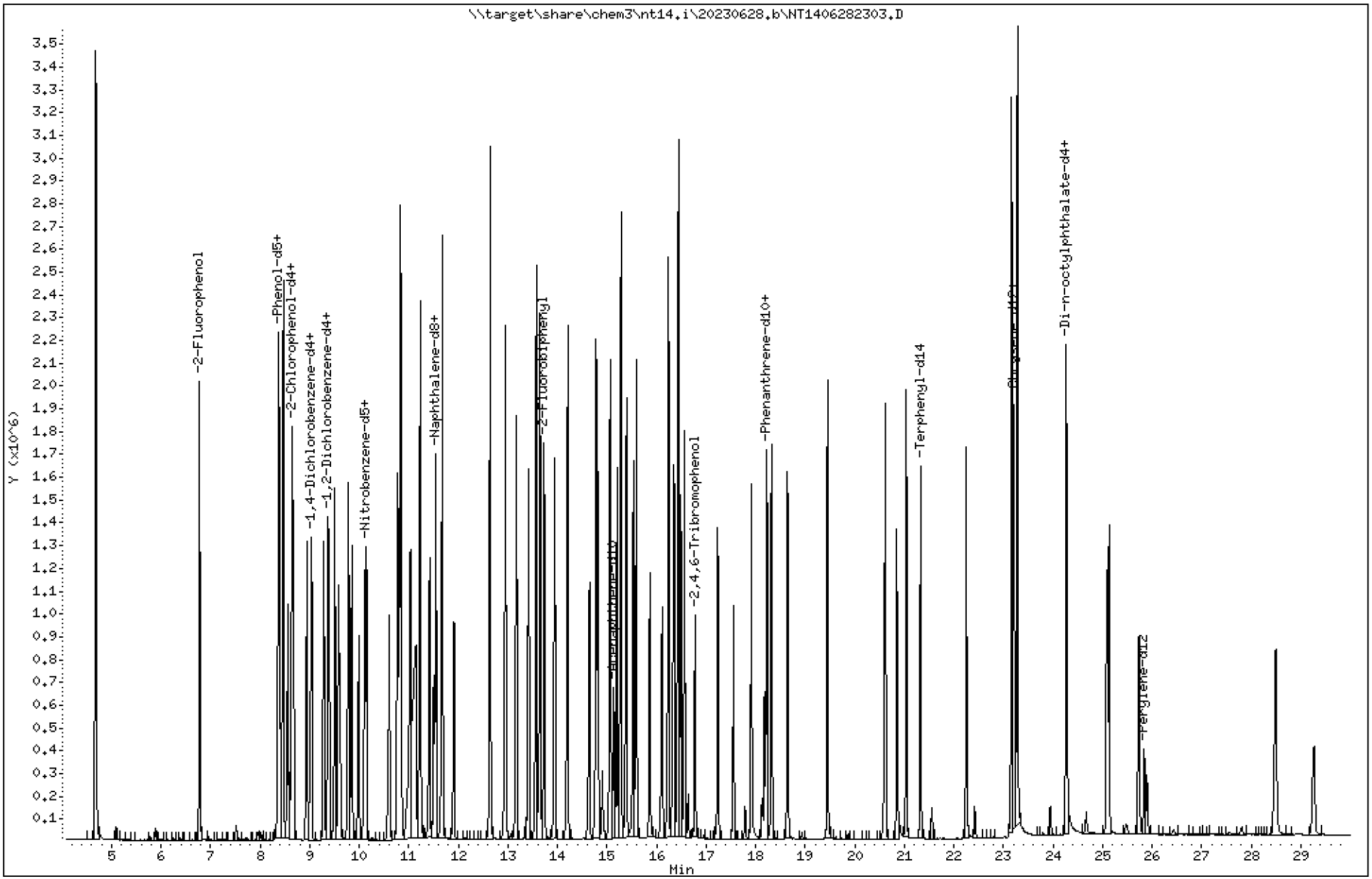
Instrument: nt14.i

Sample Info: SLF0467-CAL6

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230628.b\NT1406282303.D
Lab Smp Id: SLF0467-CAL6
Inj Date : 28-JUN-2023 18:41 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : SLF0467-CAL6
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230628.b\ABN.m
Meth Date : 30-Jun-2023 13:53 deenayd Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 3 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: DEENAY-201905

			QUANT SIG					AMOUNTS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
$	1	2-Fluorophenol	112	6.775	6.782	(0.752)	652053	15.0000	15.03
$	2	Phenol-d5	99	8.374	8.366	(0.930)	902159	15.0000	15.34
	3	Phenol	94	8.397	8.382	(0.932)	697812	10.0000	9.802
$	5	2-Chlorophenol-d4	132	8.644	8.644	(0.960)	650465	15.0000	14.97
	4	Bis(2-Chloroethyl)ether	93	8.559	8.551	(0.950)	467588	10.0000	9.443
	6	2-Chlorophenol	128	8.675	8.667	(0.963)	504166	10.0000	9.762
	7	1,3-Dichlorobenzene	146	8.946	8.938	(0.993)	438976	10.0000	9.536
*	8	1,4-Dichlorobenzene-d4	152	9.008	9.000	(1.000)	114276	4.00000	
	9	1,4-Dichlorobenzene	146	9.039	9.039	(1.003)	465555	10.0000	10.26
$	10	1,2-Dichlorobenzene-d4	152	9.373	9.365	(1.040)	266642	10.0000	9.702
	12	1,2-Dichlorobenzene	146	9.396	9.388	(1.043)	427242	10.0000	9.718
	11	Benzyl alcohol	108	9.280	9.272	(1.030)	298958	10.0000	10.75
	14	2,2'-oxybis(1-Chloropropane)	121	9.582	9.582	(1.064)	145312	10.0000	10.22(M)
	13	2-Methylphenol	108	9.505	9.505	(1.055)	450792	10.0000	10.05
	17	Hexachloroethane	117	9.994	9.986	(1.109)	213492	10.0000	10.24
	16	N-Nitroso-di-n-propylamine	70	9.854	9.839	(1.094)	407597	10.0000	10.12
	15	4-Methylphenol	108	9.784	9.776	(1.086)	516857	10.0000	10.40
$	18	Nitrobenzene-d5	82	10.110	10.103	(0.879)	576582	10.0000	10.69
	19	Nitrobenzene	77	10.141	10.133	(0.881)	597477	10.0000	10.36
	20	Isophorone	82	10.607	10.584	(0.922)	858283	10.0000	10.70
	21	2-Nitrophenol	139	10.777	10.770	(0.937)	257404	10.0000	9.688
	22	2,4-Dimethylphenol	107	10.832	10.824	(0.941)	914642	20.0000	19.77
	23	Bis(2-Chloroethoxy)methane	93	11.033	11.026	(0.959)	501758	10.0000	9.790
	24	Benzoic acid	105	11.142	11.018	(0.968)	1214289	40.0000	40.71
	25	2,4-Dichlorophenol	162	11.235	11.227	(0.976)	704564	20.0000	20.60
	26	1,2,4-Trichlorobenzene	180	11.420	11.413	(0.993)	325901	10.0000	9.561
*	27	Naphthalene-d8	136	11.505	11.498	(1.000)	457454	4.00000	
	28	Naphthalene	128	11.544	11.544	(1.003)	1168448	10.0000	9.778
	29	4-Chloroaniline	127	11.675	11.667	(1.015)	1156405	20.0000	20.75
	30	Hexachlorobutadiene	225	11.915	11.907	(1.036)	157894	10.0000	9.930
	31	4-Chloro-3-methylphenol	107	12.642	12.634	(1.099)	883429	20.0000	20.60
	32	2-Methylnaphthalene	142	12.944	12.944	(1.125)	884955	10.0000	9.984
	33	Hexachlorocyclopentadiene	237	13.416	13.416	(0.886)	348926	20.0000	19.99

		QUANT SIG					AMOUNTS CAL-AMT	AMOUNTS ON-COL
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/mL)	(ug/mL)
34	2,4,6-Trichlorophenol	196	13.571	13.563	(0.897)	449439	20.0000	20.89
35	2,4,5-Trichlorophenol	196	13.648	13.641	(0.902)	472485	20.0000	21.10
$ 36	2-Fluorobiphenyl	172	13.733	13.726	(0.907)	780812	10.0000	9.793
37	2-Chloronaphthalene	162	13.942	13.935	(0.921)	718302	10.0000	9.793
38	2-Nitroaniline	65	14.205	14.198	(0.939)	765123	20.0000	21.52
39	Dimethylphthalate	163	14.647	14.631	(0.968)	725844	10.0000	9.647
40	Acenaphthylene	152	14.817	14.817	(0.979)	1094287	10.0000	9.668
41	2,6-Dinitrotoluene	165	14.778	14.771	(0.976)	329287	20.0000	20.80
* 42	Acenaphthene-d10	164	15.134	15.126	(1.000)	223861	4.00000	
43	3-Nitroaniline	138	15.065	15.049	(0.995)	446879	20.0000	21.07
44	Acenaphthene	153	15.204	15.196	(1.005)	662551	10.0000	9.892
45	2,4-Dinitrophenol	184	15.281	15.266	(1.010)	429269	40.0000	40.72
46	Dibenzofuran	168	15.528	15.521	(1.026)	948262	10.0000	9.715
47	4-Nitrophenol	109	15.389	15.374	(1.017)	312146	20.0000	19.98
48	2,4-Dinitrotoluene	165	15.590	15.575	(1.030)	468893	20.0000	21.18
50	Diethylphthalate	149	16.108	16.093	(1.064)	887635	10.0000	10.20
49	Fluorene	166	16.240	16.232	(1.073)	840334	10.0000	9.845
51	4-Chlorophenyl-phenylether	204	16.232	16.224	(1.073)	352188	10.0000	9.556
52	4-Nitroaniline	138	16.347	16.317	(1.080)	424672	20.0000	19.91
53	4,6-Dinitro-2-methylphenol	198	16.440	16.417	(0.904)	495104	40.0000	40.09
54	N-Nitrosodiphenylamine	169	16.486	16.479	(0.907)	510420	10.0000	9.683
$ 55	2,4,6-Tribromophenol	330	16.779	16.771	(1.109)	108120	15.0000	14.95
56	4-Bromophenyl-phenylether	248	17.234	17.234	(0.948)	164021	10.0000	10.20
57	Hexachlorobenzene	284	17.551	17.551	(0.966)	167881	10.0000	9.872
58	Pentachlorophenol	266	17.915	17.907	(0.986)	220882	20.0000	20.27
* 59	Phenanthrene-d10	188	18.178	18.170	(1.000)	373330	4.00000	
60	Phenanthrene	178	18.224	18.217	(1.003)	994826	10.0000	9.850
61	Anthracene	178	18.317	18.310	(1.008)	1005862	10.0000	10.31
62	Carbazole	167	18.642	18.642	(1.026)	1009523	10.0000	10.28
63	Di-n-butylphthalate	149	19.447	19.447	(1.070)	1400757	10.0000	10.86
64	Fluoranthene	202	20.615	20.607	(0.887)	1084071	10.0000	9.985
65	Pyrene	202	21.041	21.033	(0.906)	1101955	10.0000	10.05
$ 66	Terphenyl-d14	244	21.327	21.319	(0.918)	726126	10.0000	9.837
67	Butylbenzylphthalate	149	22.248	22.248	(0.958)	509209	10.0000	9.956
68	Benzo(a)anthracene	228	23.209	23.201	(0.999)	944648	10.0000	10.16
* 69	Chrysene-d12	240	23.232	23.224	(1.000)	265594	4.00000	
70	3,3'-Dichlorobenzidine	252	23.162	23.154	(0.997)	885364	30.0000	31.05
71	Chrysene	228	23.278	23.271	(1.002)	834046	10.0000	10.02
72	bis(2-Ethylhexyl)phthalate	149	24.269	24.269	(1.000)	1163075	10.0000	9.567
* 134	Di-n-octylphthalate-d4	153	24.261	24.254	(1.000)	473007	4.00000	
73	Di-n-octylphthalate	149	24.269	24.269	(1.000)	1163075	10.0000	9.567
74	Benzo(b)fluoranthene	252	25.082	25.074	(0.971)	802229	10.0000	10.87
75	Benzo(k)fluoranthene	252	25.128	25.121	(0.972)	844646	10.0000	10.20(H)
76	Benzo(a)pyrene	252	25.732	25.725	(0.996)	622813	10.0000	10.76
* 77	Perylene-d12	264	25.841	25.833	(1.000)	224460	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	28.486	28.470	(1.102)	565458	10.0000	10.83
79	Dibenzo(a,h)anthracene	278	28.493	28.478	(1.103)	479189	10.0000	10.84
80	Benzo(g,h,i)perylene	276	29.262	29.247	(1.132)	459429	10.0000	10.66
90	N-Nitrosodimethylamine	74	4.681	4.658	(0.520)	629296	20.0000	19.19
91	Aniline	93	8.466	8.459	(0.940)	1338609	20.0000	19.28
93	Benzidine	184	20.847	20.840	(0.897)	744631	20.0000	22.67
103	Pyridine	79	4.689	4.681	(0.521)	970045	10.0000	9.394
105	1-methylnaphthalene	142	13.168	13.168	(1.145)	791277	10.0000	10.01
111	Azobenzene (1,2-DP-Hydrazine)	77	16.563	16.548	(1.094)	1200402	10.0000	9.687

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
187 Total Benzofluoranthenes	252	25.128	25.121	(0.972)	1570641	20.0000	20.97
120 2,3,4,6-Tetrachlorophenol	232	15.861	15.861	(1.048)	178741	10.0000	9.961

QC Flag Legend

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

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1406282303.D
Lab Smp Id: SLF0467-CAL6
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Misc Info:

Calibration Date: 28-JUN-2023
Calibration Time: 23:38
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	128354	64177	256708	114276	-10.97
27 Naphthalene-d8	519660	259830	1039320	457454	-11.97
42 Acenaphthene-d10	249651	124826	499302	223861	-10.33
59 Phenanthrene-d10	419362	209681	838724	373330	-10.98
69 Chrysene-d12	287830	143915	575660	265594	-7.73
134 Di-n-octylphthala	491823	245912	983646	473007	-3.83
77 Perylene-d12	243501	121751	487002	224460	-7.82

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.00	8.50	9.50	9.01	0.09
27 Naphthalene-d8	11.50	11.00	12.00	11.51	0.07
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	0.05
59 Phenanthrene-d10	18.17	17.67	18.67	18.18	0.04
69 Chrysene-d12	23.22	22.72	23.72	23.23	0.03
134 Di-n-octylphthala	24.25	23.75	24.75	24.26	0.03
77 Perylene-d12	25.83	25.33	26.33	25.84	0.03

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

REVIEW SUMMARY FOR FILE - NT1406282303.D

Lab ID: SLF0467-CAL6
nt14.i, ABN.m, 28-JUN-2023 18:41

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.968	0.958	0.0101	Benzoic acid
0.940	0.000	0.9399	Aniline
0.752	0.000	0.7521	2-Fluorophenol
0.960	0.000	0.9596	2-Chlorophenol-d4
1.040	0.000	1.0405	1,2-Dichlorobenzene-d4
0.879	0.000	0.8787	Nitrobenzene-d5
0.907	0.000	0.9074	2-Fluorobiphenyl
1.109	0.000	1.1087	2,4,6-Tribromophenol

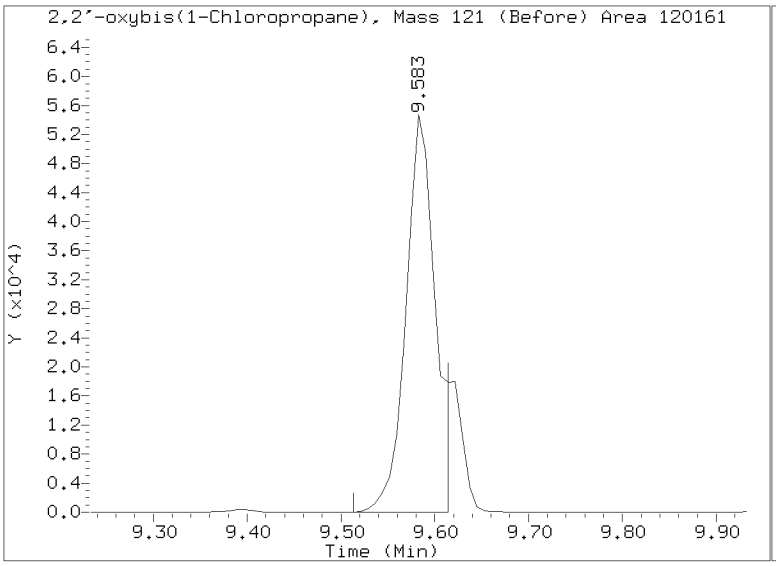
RRT check based on Ccal File: NT1406282311.D

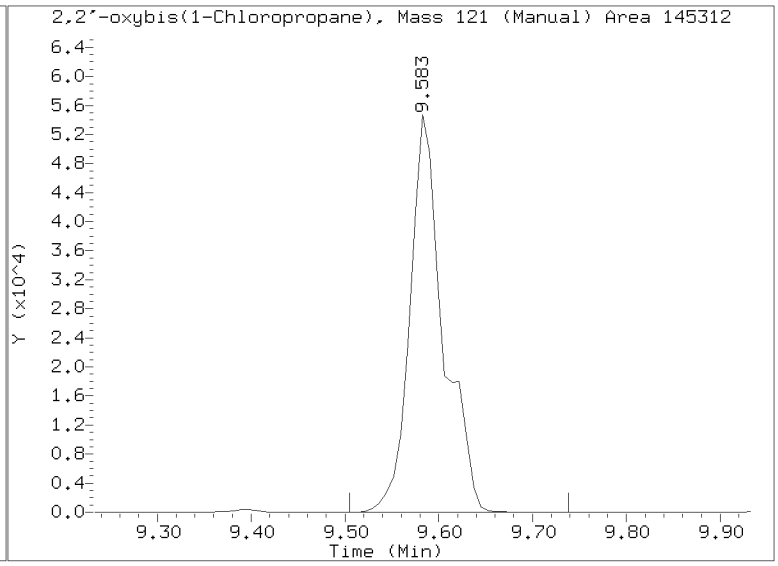
On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

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

Quant Ion Manual Peak Adjustment Report

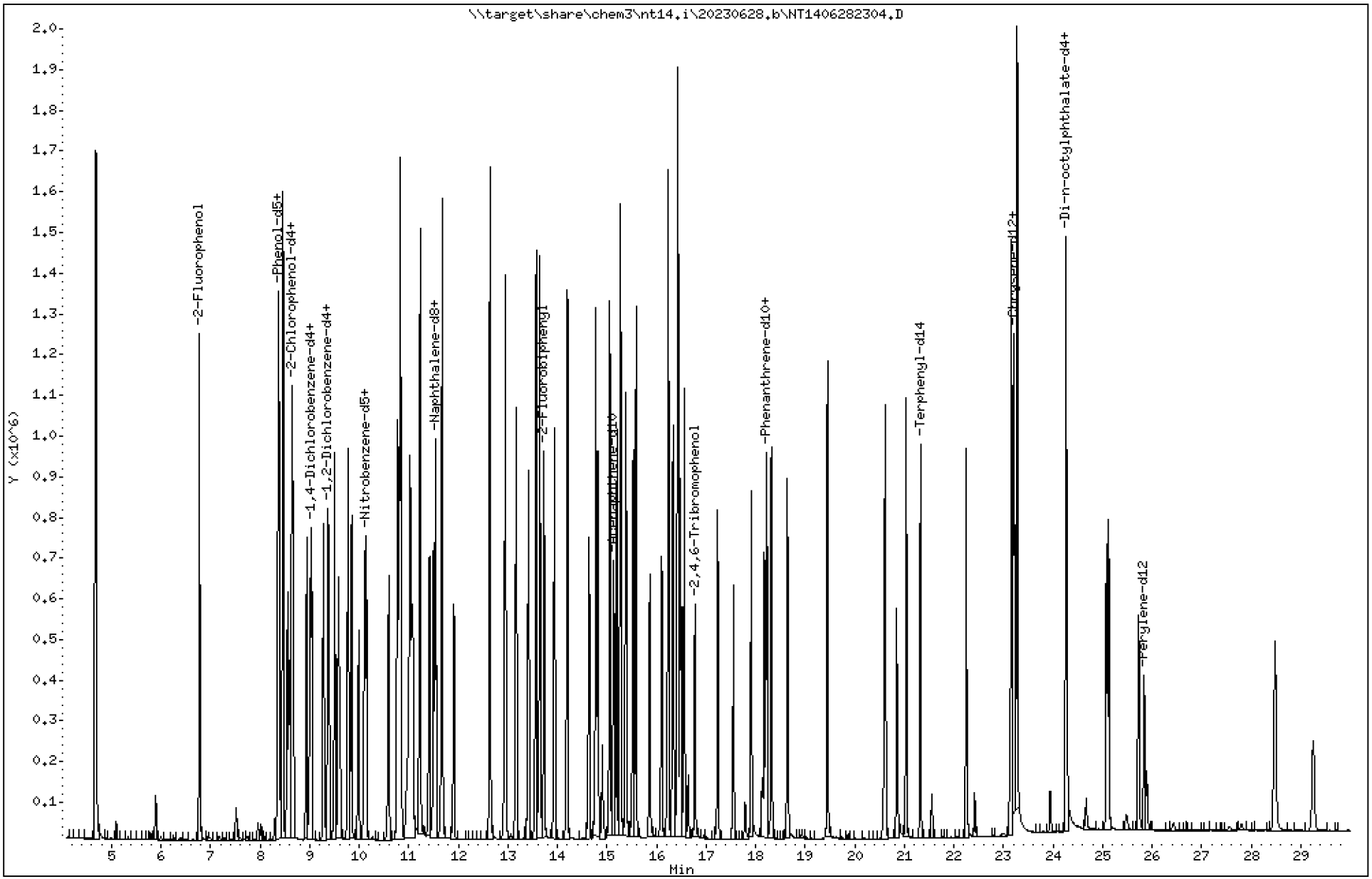
Datafile: //target/share/chem3/nt14.i/20230628.b/NT1406282303.D
Injection Date: 28-JUN-2023 18:41
Lab ID:SLF0467-CAL6 Client ID:
Report Date: 07/03/2023 13:50





Data File: \\target\share\chem3\nt14.i\20230628.b\NT1406282304.D
Date : 28-JUN-2023 19:18
Client ID:
Sample Info: SLF0467-CAL5

Instrument: nt14.i
Operator: JGR
Column phase: ZB-5msi
Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230628.b\NT1406282304.D
Lab Smp Id: SLF0467-CAL5
Inj Date : 28-JUN-2023 19:18 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : SLF0467-CAL5
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230628.b\ABN.m
Meth Date : 30-Jun-2023 13:53 deenayd Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 4 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: DEENAY-201905

							AMOUNTS	
		QUANT SIG					CAL-AMT	ON-COL
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/mL)	(ug/mL)
$	1 2-Fluorophenol	112	6.775	6.782	(0.752)	384308	7.50000	8.063
$	2 Phenol-d5	99	8.366	8.366	(0.929)	526401	7.50000	8.148
	3 Phenol	94	8.389	8.382	(0.931)	416976	5.00000	5.330
$	5 2-Chlorophenol-d4	132	8.644	8.644	(0.960)	378919	7.50000	7.936
	4 Bis(2-Chloroethyl)ether	93	8.552	8.551	(0.949)	275752	5.00000	5.067
	6 2-Chlorophenol	128	8.667	8.667	(0.962)	293242	5.00000	5.167
	7 1,3-Dichlorobenzene	146	8.946	8.938	(0.993)	260297	5.00000	5.146
*	8 1,4-Dichlorobenzene-d4	152	9.008	9.000	(1.000)	125577	4.00000	
	9 1,4-Dichlorobenzene	146	9.039	9.039	(1.003)	253364	5.00000	5.081
$	10 1,2-Dichlorobenzene-d4	152	9.365	9.365	(1.040)	156586	5.00000	5.185
	12 1,2-Dichlorobenzene	146	9.396	9.388	(1.043)	248805	5.00000	5.150
	11 Benzyl alcohol	108	9.280	9.272	(1.030)	172689	5.00000	5.649
	14 2,2'-oxybis(1-Chloropropane)	121	9.583	9.582	(1.064)	79209	5.00000	5.069(M)
	13 2-Methylphenol	108	9.505	9.505	(1.055)	264298	5.00000	5.360
	17 Hexachloroethane	117	9.986	9.986	(1.109)	122523	5.00000	5.349
	16 N-Nitroso-di-n-propylamine	70	9.846	9.839	(1.093)	239325	5.00000	5.409
	15 4-Methylphenol	108	9.777	9.776	(1.085)	305264	5.00000	5.589
$	18 Nitrobenzene-d5	82	10.103	10.103	(0.878)	331310	5.00000	5.542
	19 Nitrobenzene	77	10.141	10.133	(0.881)	346184	5.00000	5.419
	20 Isophorone	82	10.591	10.584	(0.921)	492141	5.00000	5.538
	21 2-Nitrophenol	139	10.770	10.770	(0.936)	162591	5.00000	5.425
	22 2,4-Dimethylphenol	107	10.824	10.824	(0.941)	533841	10.0000	10.42
	23 Bis(2-Chloroethoxy)methane	93	11.026	11.026	(0.958)	294387	5.00000	5.185
	24 Benzoic acid	105	11.080	11.018	(0.963)	646199	20.0000	20.23
	25 2,4-Dichlorophenol	162	11.227	11.227	(0.976)	408959	10.0000	10.79
	26 1,2,4-Trichlorobenzene	180	11.421	11.413	(0.993)	192785	5.00000	5.105
*	27 Naphthalene-d8	136	11.505	11.498	(1.000)	506794	4.00000	
	28 Naphthalene	128	11.544	11.544	(1.003)	678633	5.00000	5.126
	29 4-Chloroaniline	127	11.675	11.667	(1.015)	670019	10.0000	10.85
	30 Hexachlorobutadiene	225	11.907	11.907	(1.035)	91981	5.00000	5.222
	31 4-Chloro-3-methylphenol	107	12.642	12.634	(1.099)	513308	10.0000	10.80
	32 2-Methylnaphthalene	142	12.944	12.944	(1.125)	513392	5.00000	5.228
	33 Hexachlorocyclopentadiene	237	13.416	13.416	(0.886)	193642	10.0000	10.33

		QUANT SIG					AMOUNTS	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
	34 2,4,6-Trichlorophenol	196	13.571	13.563	(0.897)	258198	10.0000	10.96
	35 2,4,5-Trichlorophenol	196	13.641	13.641	(0.901)	268783	10.0000	10.96
$	36 2-Fluorobiphenyl	172	13.734	13.726	(0.907)	454937	5.00000	5.211
	37 2-Chloronaphthalene	162	13.943	13.935	(0.921)	421958	5.00000	5.253
	38 2-Nitroaniline	65	14.198	14.198	(0.938)	441186	10.0000	11.33
	39 Dimethylphthalate	163	14.639	14.631	(0.967)	435137	5.00000	5.281
	40 Acenaphthylene	152	14.817	14.817	(0.979)	646348	5.00000	5.215
	41 2,6-Dinitrotoluene	165	14.778	14.771	(0.976)	193548	10.0000	11.16
*	42 Acenaphthene-d10	164	15.134	15.126	(1.000)	245145	4.00000	
	43 3-Nitroaniline	138	15.057	15.049	(0.995)	259189	10.0000	11.16
	44 Acenaphthene	153	15.196	15.196	(1.004)	382358	5.00000	5.213
	45 2,4-Dinitrophenol	184	15.273	15.266	(1.009)	224083	20.0000	20.26
	46 Dibenzofuran	168	15.529	15.521	(1.026)	556996	5.00000	5.211
	47 4-Nitrophenol	109	15.382	15.374	(1.016)	176345	10.0000	10.38
	48 2,4-Dinitrotoluene	165	15.583	15.575	(1.030)	269943	10.0000	11.14
	50 Diethylphthalate	149	16.101	16.093	(1.064)	529834	5.00000	5.561
	49 Fluorene	166	16.240	16.232	(1.073)	493929	5.00000	5.284
	51 4-Chlorophenyl-phenylether	204	16.232	16.224	(1.073)	206666	5.00000	5.121
	52 4-Nitroaniline	138	16.332	16.317	(1.079)	246150	10.0000	10.48
	53 4,6-Dinitro-2-methylphenol	198	16.432	16.417	(0.904)	276089	20.0000	20.60
	54 N-Nitrosodiphenylamine	169	16.479	16.479	(0.907)	300540	5.00000	5.141
$	55 2,4,6-Tribromophenol	330	16.772	16.771	(1.108)	59759	7.50000	7.725
	56 4-Bromophenyl-phenylether	248	17.234	17.234	(0.948)	94292	5.00000	5.289
	57 Hexachlorobenzene	284	17.551	17.551	(0.966)	98714	5.00000	5.234
	58 Pentachlorophenol	266	17.907	17.907	(0.986)	116753	10.0000	10.06
*	59 Phenanthrene-d10	188	18.171	18.170	(1.000)	414056	4.00000	
	60 Phenanthrene	178	18.225	18.217	(1.003)	584740	5.00000	5.220
	61 Anthracene	178	18.318	18.310	(1.008)	585537	5.00000	5.410
	62 Carbazole	167	18.642	18.642	(1.026)	573526	5.00000	5.267
	63 Di-n-butylphthalate	149	19.447	19.447	(1.070)	801652	5.00000	5.603
	64 Fluoranthene	202	20.608	20.607	(0.887)	620574	5.00000	5.310
	65 Pyrene	202	21.041	21.033	(0.906)	636842	5.00000	5.394
$	66 Terphenyl-d14	244	21.319	21.319	(0.918)	418973	5.00000	5.273
	67 Butylbenzylphthalate	149	22.249	22.248	(0.958)	289231	5.00000	5.183
	68 Benzo(a)anthracene	228	23.201	23.201	(0.999)	530421	5.00000	5.299
*	69 Chrysene-d12	240	23.232	23.224	(1.000)	285887	4.00000	
	70 3,3'-Dichlorobenzidine	252	23.155	23.154	(0.997)	412773	15.0000	14.24
	71 Chrysene	228	23.271	23.271	(1.002)	465974	5.00000	5.200
	72 bis(2-Ethylhexyl)phthalate	149	24.269	24.269	(1.001)	646140	5.00000	5.153
*	134 Di-n-octylphthalate-d4	153	24.254	24.254	(1.000)	487823	4.00000	
	73 Di-n-octylphthalate	149	24.269	24.269	(1.001)	646140	5.00000	5.153
	74 Benzo(b)fluoranthene	252	25.074	25.074	(0.970)	438526	5.00000	5.510
	75 Benzo(k)fluoranthene	252	25.121	25.121	(0.972)	482722	5.00000	5.403(H)
	76 Benzo(a)pyrene	252	25.725	25.725	(0.996)	347661	5.00000	5.566
*	77 Perylene-d12	264	25.841	25.833	(1.000)	242117	4.00000	
	78 Indeno(1,2,3-cd)pyrene	276	28.470	28.470	(1.102)	322312	5.00000	5.722
	79 Dibenzo(a,h)anthracene	278	28.486	28.478	(1.102)	269442	5.00000	5.653
	80 Benzo(g,h,i)perylene	276	29.247	29.247	(1.132)	257710	5.00000	5.542
	90 N-Nitrosodimethylamine	74	4.674	4.658	(0.519)	382500	10.0000	10.62
	91 Aniline	93	8.459	8.459	(0.939)	791092	10.0000	10.37
	93 Benzidine	184	20.847	20.840	(0.897)	353973	10.0000	10.01
	103 Pyridine	79	4.689	4.681	(0.521)	580970	5.00000	5.120
	105 1-methylnaphthalene	142	13.169	13.168	(1.145)	456032	5.00000	5.206
	111 Azobenzene (1,2-DP-Hydrazine)	77	16.556	16.548	(1.094)	715289	5.00000	5.271

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
187 Total Benzofluoranthenes	252	25.121	25.121	(0.972)	882037	10.0000	10.92
120 2,3,4,6-Tetrachlorophenol	232	15.861	15.861	(1.048)	100730	5.00000	5.239

QC Flag Legend

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

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1406282304.D
Lab Smp Id: SLF0467-CAL5
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Misc Info:

Calibration Date: 28-JUN-2023
Calibration Time: 23:38
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	128354	64177	256708	125577	-2.16
27 Naphthalene-d8	519660	259830	1039320	506794	-2.48
42 Acenaphthene-d10	249651	124826	499302	245145	-1.80
59 Phenanthrene-d10	419362	209681	838724	414056	-1.27
69 Chrysene-d12	287830	143915	575660	285887	-0.68
134 Di-n-octylphthala	491823	245912	983646	487823	-0.81
77 Perylene-d12	243501	121751	487002	242117	-0.57

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.00	8.50	9.50	9.01	0.09
27 Naphthalene-d8	11.50	11.00	12.00	11.51	0.07
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	0.05
59 Phenanthrene-d10	18.17	17.67	18.67	18.17	0.00
69 Chrysene-d12	23.22	22.72	23.72	23.23	0.03
134 Di-n-octylphthala	24.25	23.75	24.75	24.25	0.00
77 Perylene-d12	25.83	25.33	26.33	25.84	0.03

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

REVIEW SUMMARY FOR FILE - NT1406282304.D

Lab ID: SLF0467-CAL5
nt14.i, ABN.m, 28-JUN-2023 19:18

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.939	0.000	0.9390	Aniline
0.752	0.000	0.7521	2-Fluorophenol
0.960	0.000	0.9596	2-Chlorophenol-d4
1.040	0.000	1.0396	1,2-Dichlorobenzene-d4
0.878	0.000	0.8781	Nitrobenzene-d5
0.907	0.000	0.9074	2-Fluorobiphenyl
1.108	0.000	1.1082	2,4,6-Tribromophenol

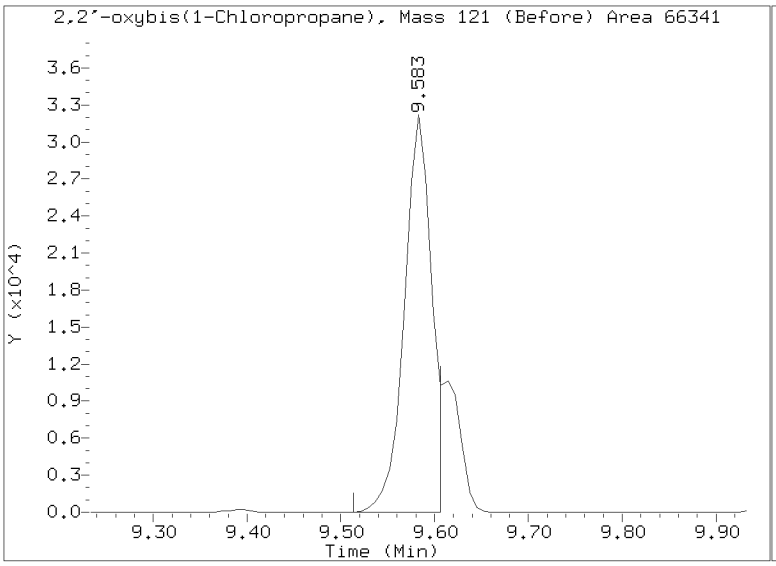
RRT check based on Ccal File: NT1406282311.D

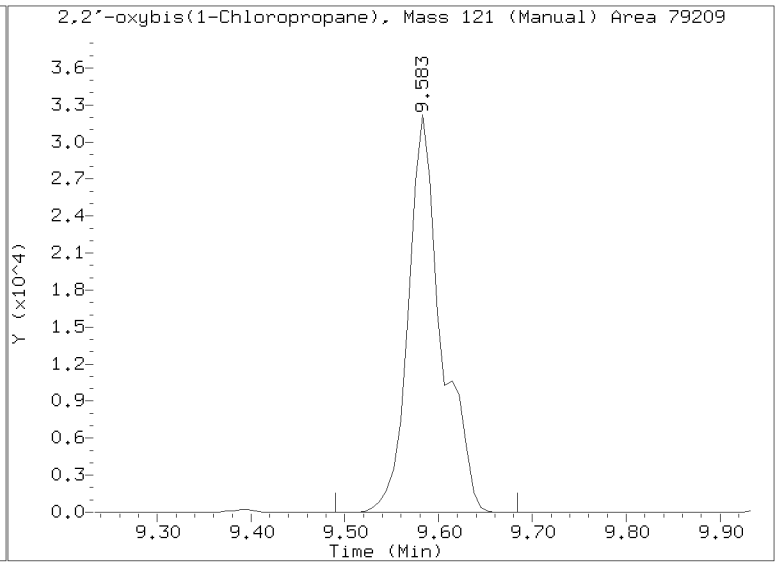
On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

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

Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230628.b/NT1406282304.D
Injection Date: 28-JUN-2023 19:18
Lab ID:SLF0467-CAL5 Client ID:
Report Date: 07/03/2023 13:50





Q-FLAG SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230628.b

Instrument: nt14.i Date: 28-JUN-2023 Method: ABN.m

INITIAL CAL: 21-APR-2023

Compound	%RSD or R^2
NO Q-FLAGS	

ICV CAL: NT1406282304.D 28-JUN-2023 19:18

Compound	%D
Benzoic acid	-22.3
4-Nitrophenol	26.5
Butylbenzylphthalate	-29.1
Benzo(k)fluoranthene	21.88
Indeno(1,2,3-cd)pyrene	-31.7
Dibenzo(a,h)anthracene	-30.2
Benzo(g,h,i)perylene	-35.5
Aniline	22.05
Benzidine	-32.0

Data File: \\target\share\chem3\nt14.i\20230628.b\NT1406282305.D

Date : 28-JUN-2023 19:56

Client ID:

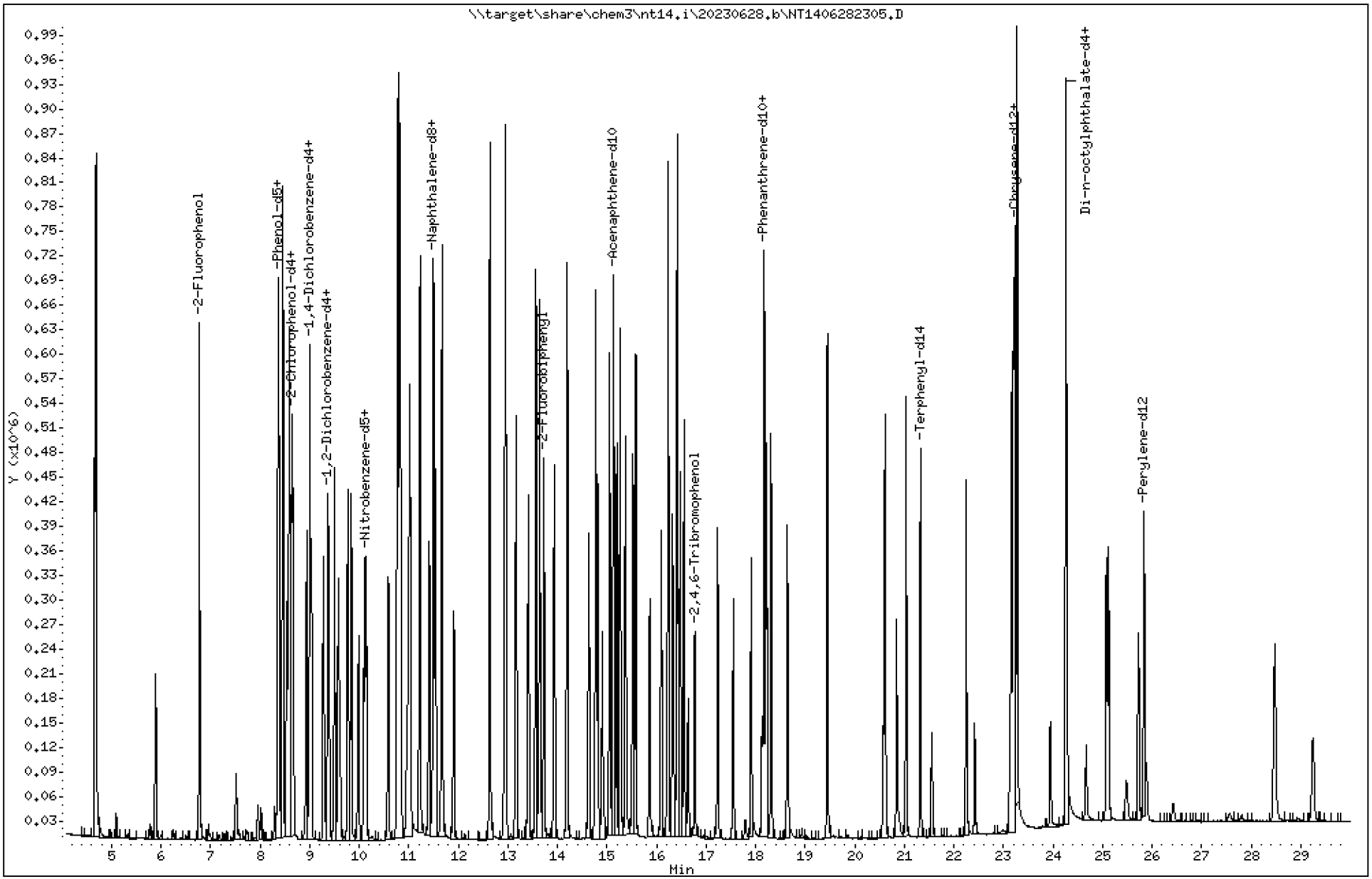
Instrument: nt14.i

Sample Info: SLF0467-CAL4

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230628.b\NT1406282305.D
Lab Smp Id: SLF0467-CAL4
Inj Date : 28-JUN-2023 19:56 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : SLF0467-CAL4
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230628.b\ABN.m
Meth Date : 30-Jun-2023 13:53 deenayd Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 5 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: DEENAY-201905

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
$	1 2-Fluorophenol	112	6.775	6.782	(0.752)	190453	3.75000	3.995
$	2 Phenol-d5	99	8.366	8.366	(0.929)	255823	3.75000	3.959
	3 Phenol	94	8.382	8.382	(0.930)	204792	2.50000	2.617
$	5 2-Chlorophenol-d4	132	8.637	8.644	(0.959)	185549	3.75000	3.886
	4 Bis(2-Chloroethyl)ether	93	8.552	8.551	(0.949)	137700	2.50000	2.530
	6 2-Chlorophenol	128	8.667	8.667	(0.962)	143544	2.50000	2.529
	7 1,3-Dichlorobenzene	146	8.938	8.938	(0.992)	128785	2.50000	2.546
*	8 1,4-Dichlorobenzene-d4	152	9.008	9.000	(1.000)	125595	4.00000	
	9 1,4-Dichlorobenzene	146	9.039	9.039	(1.003)	124422	2.50000	2.495
$	10 1,2-Dichlorobenzene-d4	152	9.365	9.365	(1.040)	77653	2.50000	2.571
	12 1,2-Dichlorobenzene	146	9.396	9.388	(1.043)	123074	2.50000	2.547
	11 Benzyl alcohol	108	9.280	9.272	(1.030)	82130	2.50000	2.686
	14 2,2'-oxybis(1-Chloropropane)	121	9.583	9.582	(1.064)	38880	2.50000	2.488(M)
	13 2-Methylphenol	108	9.505	9.505	(1.055)	128358	2.50000	2.603
	17 Hexachloroethane	117	9.986	9.986	(1.109)	58909	2.50000	2.571
	16 N-Nitroso-di-n-propylamine	70	9.839	9.839	(1.092)	116811	2.50000	2.640
	15 4-Methylphenol	108	9.769	9.776	(1.084)	138622	2.50000	2.538
$	18 Nitrobenzene-d5	82	10.103	10.103	(0.879)	156824	2.50000	2.633
	19 Nitrobenzene	77	10.134	10.133	(0.881)	166476	2.50000	2.615
	20 Isophorone	82	10.584	10.584	(0.921)	217111	2.50000	2.452
	21 2-Nitrophenol	139	10.770	10.770	(0.937)	76087	2.50000	2.515
	22 2,4-Dimethylphenol	107	10.824	10.824	(0.941)	266259	5.00000	5.215
	23 Bis(2-Chloroethoxy)methane	93	11.026	11.026	(0.959)	143912	2.50000	2.543
	24 Benzoic acid	105	11.018	11.018	(0.958)	244814	10.0000	7.841
	25 2,4-Dichlorophenol	162	11.227	11.227	(0.976)	202279	5.00000	5.358
	26 1,2,4-Trichlorobenzene	180	11.413	11.413	(0.993)	94846	2.50000	2.520
*	27 Naphthalene-d8	136	11.498	11.498	(1.000)	505003	4.00000	
	28 Naphthalene	128	11.544	11.544	(1.004)	333126	2.50000	2.525
	29 4-Chloroaniline	127	11.668	11.667	(1.015)	318411	5.00000	5.176
	30 Hexachlorobutadiene	225	11.907	11.907	(1.036)	44389	2.50000	2.529
	31 4-Chloro-3-methylphenol	107	12.635	12.634	(1.099)	242201	5.00000	5.115
	32 2-Methylnaphthalene	142	12.944	12.944	(1.126)	249021	2.50000	2.545
	33 Hexachlorocyclopentadiene	237	13.416	13.416	(0.887)	85023	5.00000	4.605

		QUANT SIG					AMOUNTS	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
	34 2,4,6-Trichlorophenol	196	13.563	13.563	(0.897)	118852	5.00000	5.062
	35 2,4,5-Trichlorophenol	196	13.641	13.641	(0.902)	123184	5.00000	5.042
$	36 2-Fluorobiphenyl	172	13.726	13.726	(0.907)	218630	2.50000	2.513
	37 2-Chloronaphthalene	162	13.943	13.935	(0.922)	205597	2.50000	2.569
	38 2-Nitroaniline	65	14.198	14.198	(0.939)	203540	5.00000	5.248
	39 Dimethylphthalate	163	14.631	14.631	(0.967)	213814	2.50000	2.604
	40 Acenaphthylene	152	14.809	14.817	(0.979)	318723	2.50000	2.581
	41 2,6-Dinitrotoluene	165	14.771	14.771	(0.976)	90853	5.00000	5.259
*	42 Acenaphthene-d10	164	15.127	15.126	(1.000)	244264	4.00000	
	43 3-Nitroaniline	138	15.049	15.049	(0.995)	117775	5.00000	5.089
	44 Acenaphthene	153	15.196	15.196	(1.005)	184948	2.50000	2.531
	45 2,4-Dinitrophenol	184	15.266	15.266	(1.009)	81411	10.0000	7.568
	46 Dibenzofuran	168	15.521	15.521	(1.026)	269855	2.50000	2.534
	47 4-Nitrophenol	109	15.374	15.374	(1.016)	76766	5.00000	4.554
	48 2,4-Dinitrotoluene	165	15.583	15.575	(1.030)	125961	5.00000	5.215
	50 Diethylphthalate	149	16.093	16.093	(1.064)	258237	2.50000	2.720
	49 Fluorene	166	16.240	16.232	(1.074)	234949	2.50000	2.523
	51 4-Chlorophenyl-phenylether	204	16.224	16.224	(1.073)	101563	2.50000	2.525
	52 4-Nitroaniline	138	16.325	16.317	(1.079)	108273	5.00000	4.606
	53 4,6-Dinitro-2-methylphenol	198	16.425	16.417	(0.904)	119807	10.0000	9.151
	54 N-Nitrosodiphenylamine	169	16.479	16.479	(0.907)	151035	2.50000	2.613
$	55 2,4,6-Tribromophenol	330	16.772	16.771	(1.109)	27169	3.75000	3.570
	56 4-Bromophenyl-phenylether	248	17.234	17.234	(0.948)	45275	2.50000	2.569
	57 Hexachlorobenzene	284	17.551	17.551	(0.966)	48313	2.50000	2.591
	58 Pentachlorophenol	266	17.907	17.907	(0.986)	49215	5.00000	4.379
*	59 Phenanthrene-d10	188	18.171	18.170	(1.000)	409304	4.00000	
	60 Phenanthrene	178	18.217	18.217	(1.003)	277680	2.50000	2.508
	61 Anthracene	178	18.310	18.310	(1.008)	281829	2.50000	2.634
	62 Carbazole	167	18.642	18.642	(1.026)	272868	2.50000	2.535
	63 Di-n-butylphthalate	149	19.447	19.447	(1.070)	380510	2.50000	2.690
	64 Fluoranthene	202	20.608	20.607	(0.887)	290471	2.50000	2.560
	65 Pyrene	202	21.033	21.033	(0.906)	300805	2.50000	2.624
$	66 Terphenyl-d14	244	21.319	21.319	(0.918)	203353	2.50000	2.636
	67 Butylbenzylphthalate	149	22.249	22.248	(0.958)	129698	2.50000	2.374
	68 Benzo(a)anthracene	228	23.201	23.201	(0.999)	251169	2.50000	2.584
*	69 Chrysene-d12	240	23.224	23.224	(1.000)	277608	4.00000	
	70 3,3'-Dichlorobenzidine	252	23.155	23.154	(0.997)	159713	7.50000	5.817
	71 Chrysene	228	23.271	23.271	(1.002)	220853	2.50000	2.538
	72 bis(2-Ethylhexyl)phthalate	149	24.269	24.269	(1.001)	291151	2.50000	2.509
*	134 Di-n-octylphthalate-d4	153	24.254	24.254	(1.000)	451406	4.00000	
	73 Di-n-octylphthalate	149	24.269	24.269	(1.001)	291151	2.50000	2.509
	74 Benzo(b)fluoranthene	252	25.074	25.074	(0.971)	211202	2.50000	2.748
	75 Benzo(k)fluoranthene	252	25.113	25.121	(0.972)	212057	2.50000	2.458(H)
	76 Benzo(a)pyrene	252	25.725	25.725	(0.996)	158014	2.50000	2.620
*	77 Perylene-d12	264	25.833	25.833	(1.000)	233794	4.00000	
	78 Indeno(1,2,3-cd)pyrene	276	28.463	28.470	(1.102)	144087	2.50000	2.649
	79 Dibenzo(a,h)anthracene	278	28.478	28.478	(1.102)	123099	2.50000	2.675
	80 Benzo(g,h,i)perylene	276	29.239	29.247	(1.132)	116041	2.50000	2.584
	90 N-Nitrosodimethylamine	74	4.666	4.658	(0.518)	196311	5.00000	5.448
	91 Aniline	93	8.459	8.459	(0.939)	398813	5.00000	5.228
	93 Benzidine	184	20.840	20.840	(0.897)	159761	5.00000	4.654
	103 Pyridine	79	4.689	4.681	(0.521)	301345	2.50000	2.655
	105 1-methylnaphthalene	142	13.169	13.168	(1.145)	222033	2.50000	2.544
	111 Azobenzene (1,2-DP-Hydrazine)	77	16.556	16.548	(1.094)	349155	2.50000	2.582

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
187 Total Benzofluoranthenes	252	25.113	25.121	(0.972)	403193	5.00000	5.168
120 2,3,4,6-Tetrachlorophenol	232	15.861	15.861	(1.049)	42352	2.50000	2.240

QC Flag Legend

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

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1406282305.D
Lab Smp Id: SLF0467-CAL4
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Misc Info:

Calibration Date: 28-JUN-2023
Calibration Time: 23:38
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	128354	64177	256708	125595	-2.15
27 Naphthalene-d8	519660	259830	1039320	505003	-2.82
42 Acenaphthene-d10	249651	124826	499302	244264	-2.16
59 Phenanthrene-d10	419362	209681	838724	409304	-2.40
69 Chrysene-d12	287830	143915	575660	277608	-3.55
134 Di-n-octylphthala	491823	245912	983646	451406	-8.22
77 Perylene-d12	243501	121751	487002	233794	-3.99

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.00	8.50	9.50	9.01	0.09
27 Naphthalene-d8	11.50	11.00	12.00	11.50	0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	0.00
59 Phenanthrene-d10	18.17	17.67	18.67	18.17	0.00
69 Chrysene-d12	23.22	22.72	23.72	23.22	0.00
134 Di-n-octylphthala	24.25	23.75	24.75	24.25	0.00
77 Perylene-d12	25.83	25.33	26.33	25.83	0.00

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

REVIEW SUMMARY FOR FILE - NT1406282305.D

Lab ID: SLF0467-CAL4
nt14.i, ABN.m, 28-JUN-2023 19:56

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.939	0.000	0.9390	Aniline
0.752	0.000	0.7521	2-Fluorophenol
0.959	0.000	0.9587	2-Chlorophenol-d4
1.040	0.000	1.0396	1,2-Dichlorobenzene-d4
0.879	0.000	0.8787	Nitrobenzene-d5
0.907	0.000	0.9074	2-Fluorobiphenyl
1.109	0.000	1.1087	2,4,6-Tribromophenol

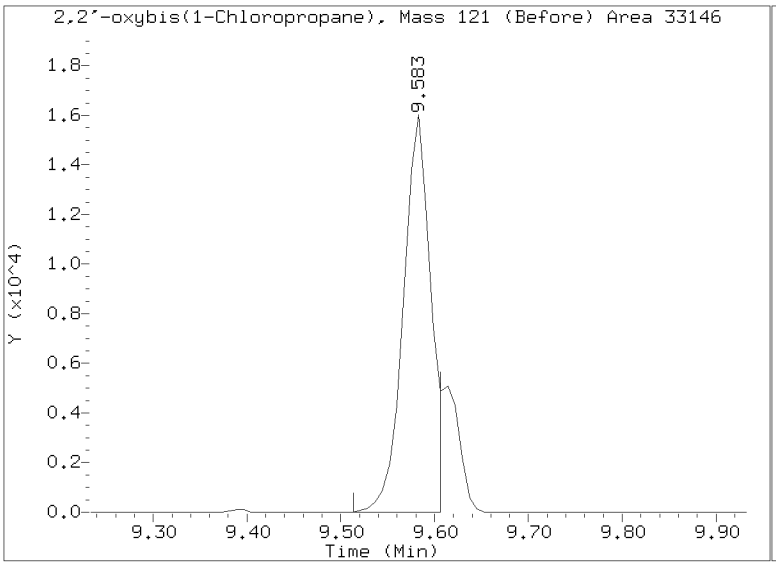
RRT check based on Ccal File: NT1406282311.D

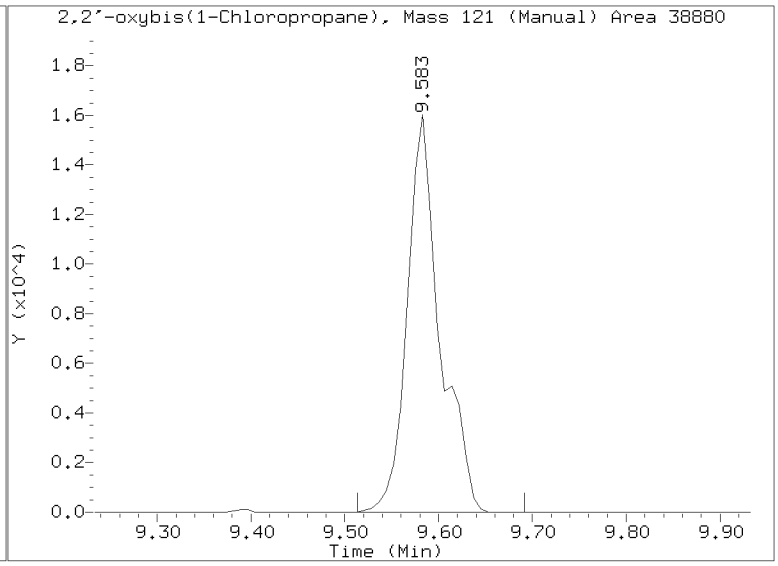
On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

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

Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230628.b/NT1406282305.D
Injection Date: 28-JUN-2023 19:56
Lab ID:SLF0467-CAL4 Client ID:
Report Date: 07/03/2023 13:50

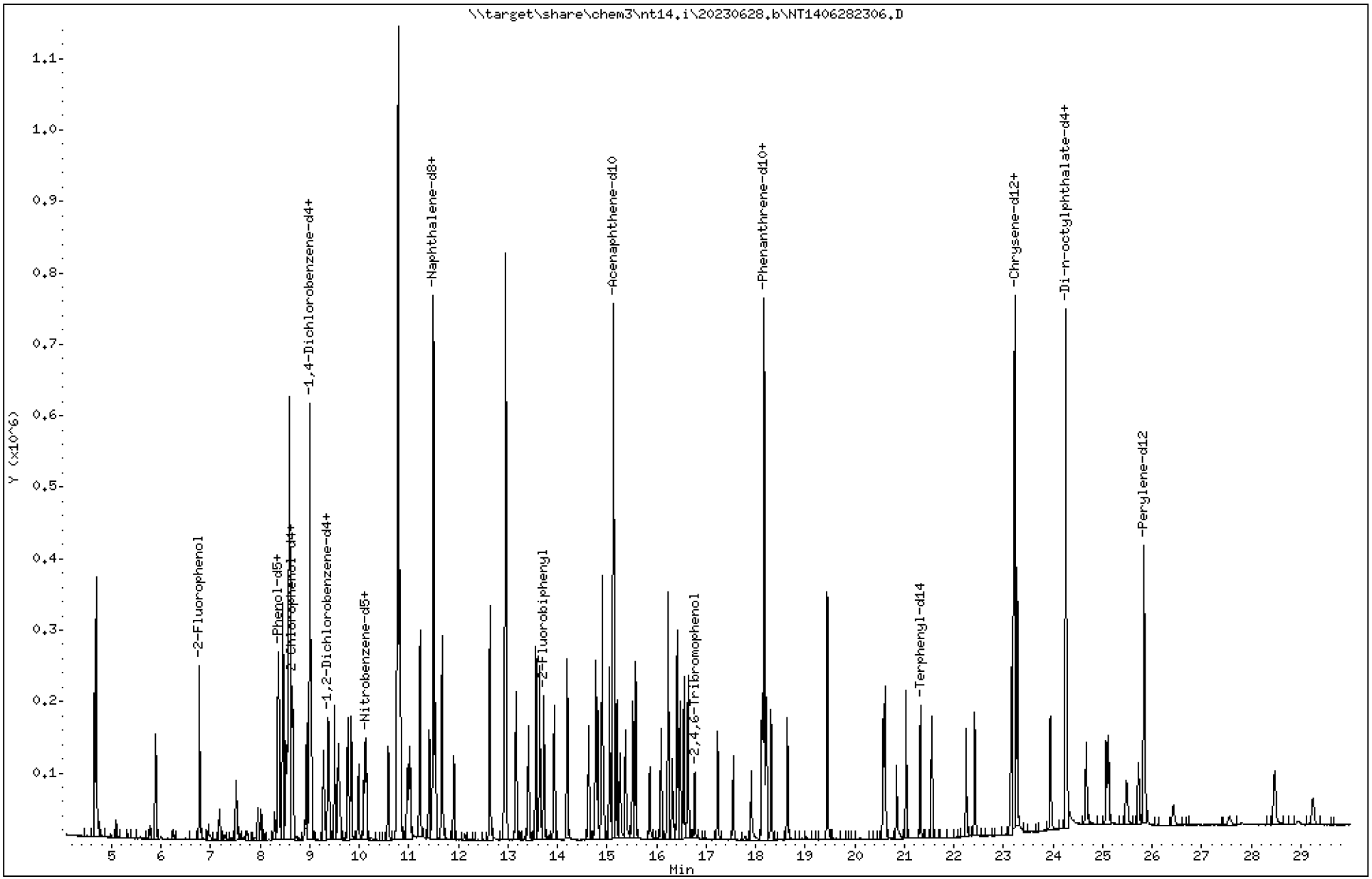




Data File: \\target\share\chem3\nt14.i\20230628.b\NT1406282306.D
Date : 28-JUN-2023 20:33
Client ID:
Sample Info: SLF0467-CAL3

Instrument: nt14.i
Operator: JGR
Column diameter: 0.25

Column phase: ZB-5msi



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230628.b\NT1406282306.D
Lab Smp Id: SLF0467-CAL3
Inj Date : 28-JUN-2023 20:33 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : SLF0467-CAL3
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230628.b\ABN.m
Meth Date : 30-Jun-2023 13:53 deenayd Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 6 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: DEENAY-201905

			QUANT SIG					AMOUNTS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
$	1	2-Fluorophenol	112	6.775	6.782	(0.752)	77471	1.50000	1.554
$	2	Phenol-d5	99	8.358	8.366	(0.928)	102450	1.50000	1.516
	3	Phenol	94	8.382	8.382	(0.930)	83842	1.00000	1.025
$	5	2-Chlorophenol-d4	132	8.636	8.644	(0.959)	75383	1.50000	1.510
	4	Bis(2-Chloroethyl)ether	93	8.551	8.551	(0.949)	58674	1.00000	1.031
	6	2-Chlorophenol	128	8.667	8.667	(0.962)	59590	1.00000	1.004
	7	1,3-Dichlorobenzene	146	8.938	8.938	(0.992)	53806	1.00000	1.017
*	8	1,4-Dichlorobenzene-d4	152	9.008	9.000	(1.000)	131333	4.00000	
	9	1,4-Dichlorobenzene	146	9.039	9.039	(1.003)	52716	1.00000	1.011
$	10	1,2-Dichlorobenzene-d4	152	9.365	9.365	(1.040)	31725	1.00000	1.004
	12	1,2-Dichlorobenzene	146	9.388	9.388	(1.042)	51274	1.00000	1.015
	11	Benzyl alcohol	108	9.280	9.272	(1.030)	32461	1.00000	1.015
	14	2,2'-oxybis(1-Chloropropane)	121	9.582	9.582	(1.064)	17111	1.00000	1.047(M)
	13	2-Methylphenol	108	9.505	9.505	(1.055)	51721	1.00000	1.003
	17	Hexachloroethane	117	9.986	9.986	(1.109)	23464	1.00000	0.9795
	16	N-Nitroso-di-n-propylamine	70	9.839	9.839	(1.092)	46863	1.00000	1.013
	15	4-Methylphenol	108	9.776	9.776	(1.085)	55122	1.00000	0.9650
$	18	Nitrobenzene-d5	82	10.102	10.103	(0.879)	61172	1.00000	0.9984
	19	Nitrobenzene	77	10.133	10.133	(0.881)	65980	1.00000	1.008
	20	Isophorone	82	10.584	10.584	(0.921)	93022	1.00000	1.021
	21	2-Nitrophenol	139	10.770	10.770	(0.937)	25888	1.00000	0.8257
	22	2,4-Dimethylphenol	107	10.824	10.824	(0.941)	109373	2.00000	2.082
	23	Bis(2-Chloroethoxy)methane	93	11.026	11.026	(0.959)	60517	1.00000	1.040
	24	Benzoic acid	105	10.979	11.018	(0.955)	58454	4.00000	1.836
	25	2,4-Dichlorophenol	162	11.227	11.227	(0.976)	80947	2.00000	2.084
	26	1,2,4-Trichlorobenzene	180	11.413	11.413	(0.993)	39595	1.00000	1.023
*	27	Naphthalene-d8	136	11.498	11.498	(1.000)	519443	4.00000	
	28	Naphthalene	128	11.544	11.544	(1.004)	136568	1.00000	1.006
	29	4-Chloroaniline	127	11.667	11.667	(1.015)	126172	2.00000	1.994
	30	Hexachlorobutadiene	225	11.907	11.907	(1.036)	17843	1.00000	0.9882
	31	4-Chloro-3-methylphenol	107	12.634	12.634	(1.099)	94719	2.00000	1.945
	32	2-Methylnaphthalene	142	12.944	12.944	(1.126)	100744	1.00000	1.001
	33	Hexachlorocyclopentadiene	237	13.416	13.416	(0.887)	29361	2.00000	1.565

		QUANT SIG					AMOUNTS	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
	34 2,4,6-Trichlorophenol	196	13.563	13.563	(0.897)	44343	2.00000	1.848
	35 2,4,5-Trichlorophenol	196	13.641	13.641	(0.902)	46658	2.00000	1.869
$	36 2-Fluorobiphenyl	172	13.726	13.726	(0.907)	89317	1.00000	1.005
	37 2-Chloronaphthalene	162	13.942	13.935	(0.922)	82561	1.00000	1.010
	38 2-Nitroaniline	65	14.198	14.198	(0.939)	72515	2.00000	1.830
	39 Dimethylphthalate	163	14.631	14.631	(0.967)	87421	1.00000	1.042
	40 Acenaphthylene	152	14.809	14.817	(0.979)	131388	1.00000	1.041
	41 2,6-Dinitrotoluene	165	14.771	14.771	(0.976)	33615	2.00000	1.904
*	42 Acenaphthene-d10	164	15.126	15.126	(1.000)	249595	4.00000	
	43 3-Nitroaniline	138	15.049	15.049	(0.995)	44101	2.00000	1.865
	44 Acenaphthene	153	15.196	15.196	(1.005)	74556	1.00000	0.9983
	45 2,4-Dinitrophenol	184	15.266	15.266	(1.009)	17476	4.00000	1.607
	46 Dibenzofuran	168	15.521	15.521	(1.026)	109254	1.00000	1.004
	47 4-Nitrophenol	109	15.366	15.374	(1.016)	26243	2.00000	1.527
	48 2,4-Dinitrotoluene	165	15.575	15.575	(1.030)	46010	2.00000	1.864
	50 Diethylphthalate	149	16.093	16.093	(1.064)	95609	1.00000	0.9856
	49 Fluorene	166	16.232	16.232	(1.073)	94079	1.00000	0.9885
	51 4-Chlorophenyl-phenylether	204	16.232	16.224	(1.073)	41936	1.00000	1.021
	52 4-Nitroaniline	138	16.317	16.317	(1.079)	25684	2.00000	1.067
	53 4,6-Dinitro-2-methylphenol	198	16.417	16.417	(0.904)	36447	4.00000	2.712
	54 N-Nitrosodiphenylamine	169	16.479	16.479	(0.907)	62337	1.00000	1.044
$	55 2,4,6-Tribromophenol	330	16.772	16.771	(1.109)	9982	1.50000	1.292
	56 4-Bromophenyl-phenylether	248	17.234	17.234	(0.948)	17981	1.00000	0.9873
	57 Hexachlorobenzene	284	17.551	17.551	(0.966)	19237	1.00000	0.9984
	58 Pentachlorophenol	266	17.907	17.907	(0.986)	14810	2.00000	1.289
*	59 Phenanthrene-d10	188	18.170	18.170	(1.000)	422984	4.00000	
	60 Phenanthrene	178	18.217	18.217	(1.003)	112814	1.00000	0.9859
	61 Anthracene	178	18.310	18.310	(1.008)	109284	1.00000	0.9884
	62 Carbazole	167	18.642	18.642	(1.026)	111113	1.00000	0.9989
	63 Di-n-butylphthalate	149	19.447	19.447	(1.070)	144444	1.00000	0.9883
	64 Fluoranthene	202	20.607	20.607	(0.887)	115709	1.00000	1.006
	65 Pyrene	202	21.033	21.033	(0.906)	115764	1.00000	0.9964
$	66 Terphenyl-d14	244	21.319	21.319	(0.918)	80031	1.00000	1.024
	67 Butylbenzylphthalate	149	22.248	22.248	(0.958)	44631	1.00000	0.8024
	68 Benzo(a)anthracene	228	23.193	23.201	(0.999)	98050	1.00000	0.9953
*	69 Chrysene-d12	240	23.224	23.224	(1.000)	281346	4.00000	
	70 3,3'-Dichlorobenzidine	252	23.147	23.154	(0.997)	71884	3.00000	2.607
	71 Chrysene	228	23.271	23.271	(1.002)	86522	1.00000	0.9812
	72 bis(2-Ethylhexyl)phthalate	149	24.269	24.269	(1.001)	110413	1.00000	1.015
*	134 Di-n-octylphthalate-d4	153	24.254	24.254	(1.000)	423037	4.00000	
	73 Di-n-octylphthalate	149	24.269	24.269	(1.001)	110413	1.00000	1.015
	74 Benzo(b)fluoranthene	252	25.067	25.074	(0.970)	71952	1.00000	0.9215
	75 Benzo(k)fluoranthene	252	25.113	25.121	(0.972)	85466	1.00000	0.9750(H)
	76 Benzo(a)pyrene	252	25.717	25.725	(0.996)	59324	1.00000	0.9681
*	77 Perylene-d12	264	25.833	25.833	(1.000)	237544	4.00000	
	78 Indeno(1,2,3-cd)pyrene	276	28.462	28.470	(1.102)	51390	1.00000	0.9299
	79 Dibenzo(a,h)anthracene	278	28.478	28.478	(1.102)	45574	1.00000	0.9746
	80 Benzo(g,h,i)perylene	276	29.239	29.247	(1.132)	43449	1.00000	0.9523
	90 N-Nitrosodimethylamine	74	4.658	4.658	(0.517)	80169	2.00000	2.128
	91 Aniline	93	8.459	8.459	(0.939)	163916	2.00000	2.055
	93 Benzidine	184	20.840	20.840	(0.897)	63597	2.00000	1.828
	103 Pyridine	79	4.689	4.681	(0.521)	125804	1.00000	1.060
	105 1-methylnaphthalene	142	13.168	13.168	(1.145)	88576	1.00000	0.9865
	111 Azobenzene (1,2-DP-Hydrazine)	77	16.548	16.548	(1.094)	142712	1.00000	1.033

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
187 Total Benzofluoranthenes	252	25.113	25.121	(0.972)	151230	2.00000	1.908
120 2,3,4,6-Tetrachlorophenol	232	15.861	15.861	(1.049)	15111	1.00000	0.7870

QC Flag Legend

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

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1406282306.D
Lab Smp Id: SLF0467-CAL3
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Misc Info:

Calibration Date: 28-JUN-2023
Calibration Time: 23:38
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	128354	64177	256708	131333	2.32
27 Naphthalene-d8	519660	259830	1039320	519443	-0.04
42 Acenaphthene-d10	249651	124826	499302	249595	-0.02
59 Phenanthrene-d10	419362	209681	838724	422984	0.86
69 Chrysene-d12	287830	143915	575660	281346	-2.25
134 Di-n-octylphthala	491823	245912	983646	423037	-13.99
77 Perylene-d12	243501	121751	487002	237544	-2.45

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.00	8.50	9.50	9.01	0.09
27 Naphthalene-d8	11.50	11.00	12.00	11.50	-0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	-0.00
59 Phenanthrene-d10	18.17	17.67	18.67	18.17	-0.00
69 Chrysene-d12	23.22	22.72	23.72	23.22	-0.00
134 Di-n-octylphthala	24.25	23.75	24.75	24.25	-0.00
77 Perylene-d12	25.83	25.33	26.33	25.83	-0.00

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

REVIEW SUMMARY FOR FILE - NT1406282306.D

Lab ID: SLF0467-CAL3
nt14.i, ABN.m, 28-JUN-2023 20:33

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.939	0.000	0.9390	Aniline
0.752	0.000	0.7521	2-Fluorophenol
0.959	0.000	0.9587	2-Chlorophenol-d4
1.040	0.000	1.0396	1,2-Dichlorobenzene-d4
0.879	0.000	0.8787	Nitrobenzene-d5
0.907	0.000	0.9074	2-Fluorobiphenyl
1.109	0.000	1.1087	2,4,6-Tribromophenol

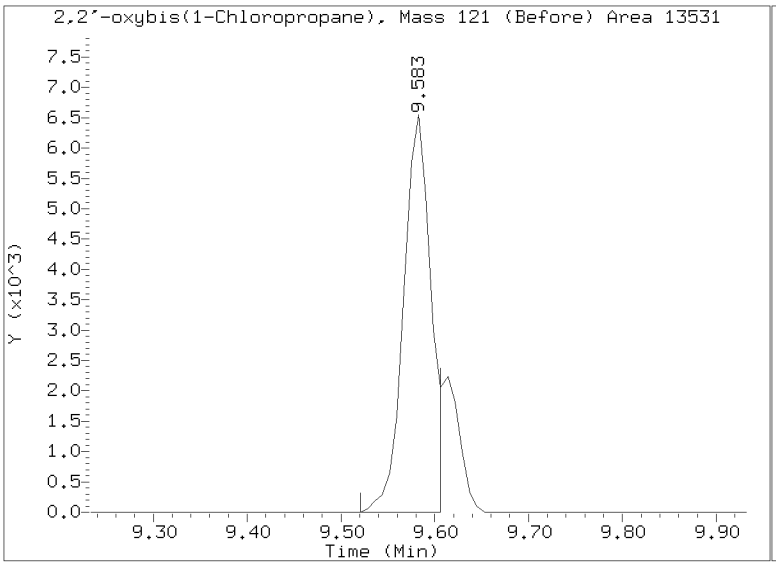
RRT check based on Ccal File: NT1406282311.D

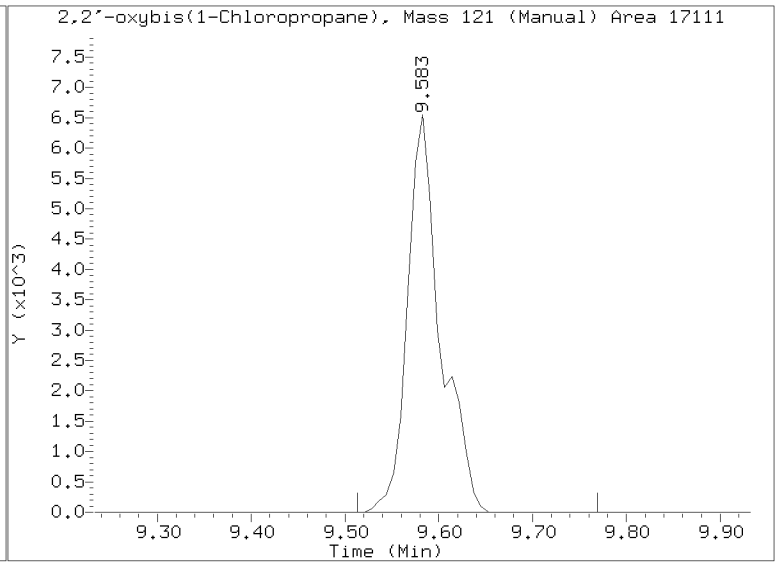
On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

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

Quant Ion Manual Peak Adjustment Report

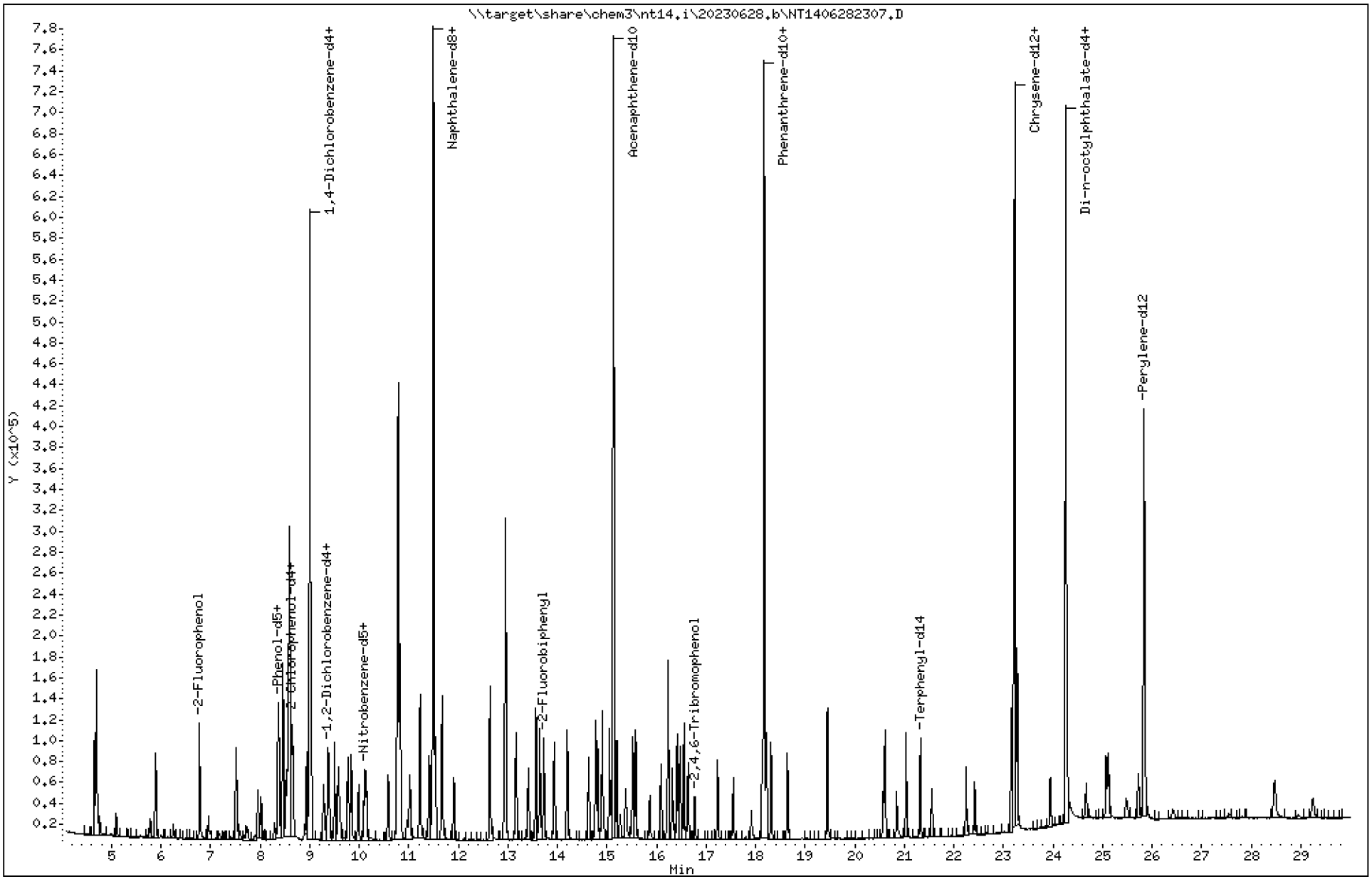
Datafile: //target/share/chem3/nt14.i/20230628.b/NT1406282306.D
Injection Date: 28-JUN-2023 20:33
Lab ID:SLF0467-CAL3 Client ID:
Report Date: 07/03/2023 13:50





Data File: \\target\share\chem3\nt14.i\20230628.b\NT1406282307.D
Date : 28-JUN-2023 21:10
Client ID:
Sample Info: SLF0467-CAL2

Instrument: nt14.i
Operator: JGR
Column phase: ZB-5msi
Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230628.b\NT1406282307.D
Lab Smp Id: SLF0467-CAL2
Inj Date : 28-JUN-2023 21:10 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : SLF0467-CAL2
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230628.b\ABN.m
Meth Date : 30-Jun-2023 13:53 deenayd Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 7 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: DEENAY-201905

							AMOUNTS	
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
$	1 2-Fluorophenol	112	6.775	6.782	(0.752)	38380	0.75000	0.7444
$	2 Phenol-d5	99	8.358	8.366	(0.928)	50447	0.75000	0.7218
	3 Phenol	94	8.381	8.382	(0.930)	42099	0.50000	0.4975
$	5 2-Chlorophenol-d4	132	8.636	8.644	(0.959)	37932	0.75000	0.7344
	4 Bis(2-Chloroethyl)ether	93	8.551	8.551	(0.949)	30355	0.50000	0.5157
	6 2-Chlorophenol	128	8.667	8.667	(0.962)	30509	0.50000	0.4970
	7 1,3-Dichlorobenzene	146	8.938	8.938	(0.992)	27862	0.50000	0.5092
*	8 1,4-Dichlorobenzene-d4	152	9.008	9.000	(1.000)	135836	4.00000	
	9 1,4-Dichlorobenzene	146	9.031	9.039	(1.003)	27093	0.50000	0.5023
$	10 1,2-Dichlorobenzene-d4	152	9.365	9.365	(1.040)	16142	0.50000	0.4941
	12 1,2-Dichlorobenzene	146	9.396	9.388	(1.043)	26298	0.50000	0.5032
	11 Benzyl alcohol	108	9.280	9.272	(1.030)	14524	0.50000	0.4392
	14 2,2'-oxybis(1-Chloropropane)	121	9.582	9.582	(1.064)	8160	0.50000	0.4827(M)
	13 2-Methylphenol	108	9.505	9.505	(1.055)	26463	0.50000	0.4961
	17 Hexachloroethane	117	9.986	9.986	(1.109)	11905	0.50000	0.4805
	16 N-Nitroso-di-n-propylamine	70	9.839	9.839	(1.092)	22854	0.50000	0.4775
	15 4-Methylphenol	108	9.776	9.776	(1.085)	29444	0.50000	0.4984
$	18 Nitrobenzene-d5	82	10.102	10.103	(0.879)	28448	0.50000	0.4477
	19 Nitrobenzene	77	10.133	10.133	(0.881)	31918	0.50000	0.4700
	20 Isophorone	82	10.583	10.584	(0.921)	40562	0.50000	0.4294
	21 2-Nitrophenol	139	10.770	10.770	(0.937)	10688	0.50000	0.3279
	22 2,4-Dimethylphenol	107	10.824	10.824	(0.941)	54693	1.00000	1.004
	23 Bis(2-Chloroethoxy)methane	93	11.025	11.026	(0.959)	30761	0.50000	0.5096
	24 Benzoic acid	105	10.963	11.018	(0.954)	11522	2.00000	0.3497
	25 2,4-Dichlorophenol	162	11.227	11.227	(0.976)	39455	1.00000	0.9796
	26 1,2,4-Trichlorobenzene	180	11.413	11.413	(0.993)	20679	0.50000	0.5151
*	27 Naphthalene-d8	136	11.498	11.498	(1.000)	538742	4.00000	
	28 Naphthalene	128	11.536	11.544	(1.003)	70219	0.50000	0.4989
	29 4-Chloroaniline	127	11.667	11.667	(1.015)	58514	1.00000	0.8916
	30 Hexachlorobutadiene	225	11.907	11.907	(1.036)	9366	0.50000	0.5002
	31 4-Chloro-3-methylphenol	107	12.634	12.634	(1.099)	44388	1.00000	0.8787
	32 2-Methylnaphthalene	142	12.944	12.944	(1.126)	51005	0.50000	0.4886
	33 Hexachlorocyclopentadiene	237	13.416	13.416	(0.887)	12359	1.00000	0.6436

		QUANT SIG					AMOUNTS	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
	34 2,4,6-Trichlorophenol	196	13.563	13.563	(0.897)	21077	1.00000	0.8567
	35 2,4,5-Trichlorophenol	196	13.640	13.641	(0.902)	21618	1.00000	0.8444
$	36 2-Fluorobiphenyl	172	13.726	13.726	(0.907)	45492	0.50000	0.4990
	37 2-Chloronaphthalene	162	13.935	13.935	(0.921)	41639	0.50000	0.4965
	38 2-Nitroaniline	65	14.198	14.198	(0.939)	31012	1.00000	0.7630
	39 Dimethylphthalate	163	14.631	14.631	(0.967)	43532	0.50000	0.5060
	40 Acenaphthylene	152	14.809	14.817	(0.979)	64440	0.50000	0.4979
	41 2,6-Dinitrotoluene	165	14.771	14.771	(0.976)	14523	1.00000	0.8023
*	42 Acenaphthene-d10	164	15.126	15.126	(1.000)	255972	4.00000	
	43 3-Nitroaniline	138	15.049	15.049	(0.995)	19901	1.00000	0.8206
	44 Acenaphthene	153	15.188	15.196	(1.004)	37774	0.50000	0.4932
	45 2,4-Dinitrophenol	184	15.265	15.266	(1.009)	3794	2.00000	0.3410
	46 Dibenzofuran	168	15.521	15.521	(1.026)	56200	0.50000	0.5035
	47 4-Nitrophenol	109	15.374	15.374	(1.016)	9525	1.00000	0.5407
	48 2,4-Dinitrotoluene	165	15.575	15.575	(1.030)	19881	1.00000	0.7854
	50 Diethylphthalate	149	16.093	16.093	(1.064)	45966	0.50000	0.4620
	49 Fluorene	166	16.232	16.232	(1.073)	48689	0.50000	0.4988
	51 4-Chlorophenyl-phenylether	204	16.224	16.224	(1.073)	21304	0.50000	0.5055
	52 4-Nitroaniline	138	16.317	16.317	(1.079)	15977	1.00000	0.6469
	53 4,6-Dinitro-2-methylphenol	198	16.417	16.417	(0.904)	13036	2.00000	0.9509
	54 N-Nitrosodiphenylamine	169	16.479	16.479	(0.907)	30624	0.50000	0.5019
$	55 2,4,6-Tribromophenol	330	16.772	16.771	(1.109)	4391	0.75000	0.5555
	56 4-Bromophenyl-phenylether	248	17.234	17.234	(0.948)	8800	0.50000	0.4729
	57 Hexachlorobenzene	284	17.551	17.551	(0.966)	9637	0.50000	0.4895
	58 Pentachlorophenol	266	17.907	17.907	(0.986)	4684	1.00000	0.4001
*	59 Phenanthrene-d10	188	18.170	18.170	(1.000)	432170	4.00000	
	60 Phenanthrene	178	18.217	18.217	(1.003)	57464	0.50000	0.4915
	61 Anthracene	178	18.310	18.310	(1.008)	53376	0.50000	0.4725
	62 Carbazole	167	18.642	18.642	(1.026)	53440	0.50000	0.4702
	63 Di-n-butylphthalate	149	19.447	19.447	(1.070)	63093	0.50000	0.4225
	64 Fluoranthene	202	20.607	20.607	(0.887)	56083	0.50000	0.4781
	65 Pyrene	202	21.033	21.033	(0.906)	56320	0.50000	0.4752
$	66 Terphenyl-d14	244	21.319	21.319	(0.918)	39855	0.50000	0.4997
	67 Butylbenzylphthalate	149	22.248	22.248	(0.958)	19624	0.50000	0.3454
	68 Benzo(a)anthracene	228	23.193	23.201	(0.999)	47441	0.50000	0.4721
*	69 Chrysene-d12	240	23.224	23.224	(1.000)	286989	4.00000	
	70 3,3'-Dichlorobenzidine	252	23.154	23.154	(0.997)	35145	1.50000	1.254
	71 Chrysene	228	23.270	23.271	(1.002)	43120	0.50000	0.4794
	72 bis(2-Ethylhexyl)phthalate	149	24.261	24.269	(1.000)	55046	0.50000	0.5091
*	134 Di-n-octylphthalate-d4	153	24.254	24.254	(1.000)	420698	4.00000	
	73 Di-n-octylphthalate	149	24.261	24.269	(1.000)	55046	0.50000	0.5091
	74 Benzo(b)fluoranthene	252	25.074	25.074	(0.971)	35768	0.50000	0.4436
	75 Benzo(k)fluoranthene	252	25.113	25.121	(0.972)	42468	0.50000	0.4691(H)
	76 Benzo(a)pyrene	252	25.717	25.725	(0.996)	27906	0.50000	0.4409
*	77 Perylene-d12	264	25.833	25.833	(1.000)	245333	4.00000	
	78 Indeno(1,2,3-cd)pyrene	276	28.462	28.470	(1.102)	25079	0.50000	0.4394
	79 Dibenzo(a,h)anthracene	278	28.478	28.478	(1.102)	20759	0.50000	0.4298
	80 Benzo(g,h,i)perylene	276	29.239	29.247	(1.132)	21486	0.50000	0.4560
	90 N-Nitrosodimethylamine	74	4.666	4.658	(0.518)	39998	1.00000	1.026
	91 Aniline	93	8.459	8.459	(0.939)	84333	1.00000	1.022
	93 Benzidine	184	20.839	20.840	(0.897)	30414	1.00000	0.8570
	103 Pyridine	79	4.697	4.681	(0.521)	63669	0.50000	0.5187
	105 1-methylnaphthalene	142	13.168	13.168	(1.145)	45732	0.50000	0.4911
	111 Azobenzene (1,2-DP-Hydrazine)	77	16.548	16.548	(1.094)	70487	0.50000	0.4975

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
187 Total Benzofluoranthenes	252	25.113	25.121	(0.972)	75252	1.00000	0.9192
120 2,3,4,6-Tetrachlorophenol	232	15.861	15.861	(1.049)	6376	0.50000	0.3244

QC Flag Legend

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

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1406282307.D
Lab Smp Id: SLF0467-CAL2
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Misc Info:

Calibration Date: 28-JUN-2023
Calibration Time: 23:38
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	128354	64177	256708	135836	5.83
27 Naphthalene-d8	519660	259830	1039320	538742	3.67
42 Acenaphthene-d10	249651	124826	499302	255972	2.53
59 Phenanthrene-d10	419362	209681	838724	432170	3.05
69 Chrysene-d12	287830	143915	575660	286989	-0.29
134 Di-n-octylphthala	491823	245912	983646	420698	-14.46
77 Perylene-d12	243501	121751	487002	245333	0.75

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.00	8.50	9.50	9.01	0.09
27 Naphthalene-d8	11.50	11.00	12.00	11.50	-0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	-0.00
59 Phenanthrene-d10	18.17	17.67	18.67	18.17	-0.00
69 Chrysene-d12	23.22	22.72	23.72	23.22	-0.00
134 Di-n-octylphthala	24.25	23.75	24.75	24.25	-0.00
77 Perylene-d12	25.83	25.33	26.33	25.83	-0.00

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

REVIEW SUMMARY FOR FILE - NT1406282307.D

Lab ID: SLF0467-CAL2
nt14.i, ABN.m, 28-JUN-2023 21:10

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.939	0.000	0.9390	Aniline
0.752	0.000	0.7521	2-Fluorophenol
0.959	0.000	0.9587	2-Chlorophenol-d4
1.040	0.000	1.0396	1,2-Dichlorobenzene-d4
0.879	0.000	0.8787	Nitrobenzene-d5
0.907	0.000	0.9074	2-Fluorobiphenyl
1.109	0.000	1.1087	2,4,6-Tribromophenol

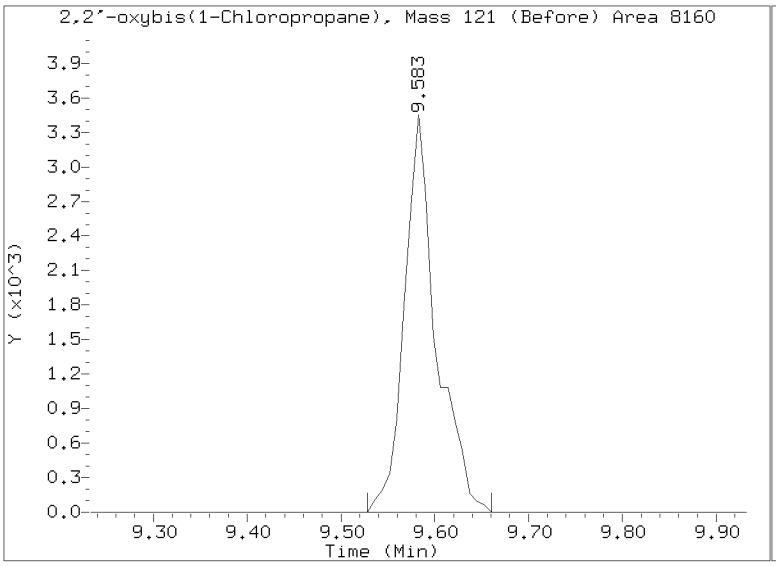
RRT check based on Ccal File: NT1406282311.D

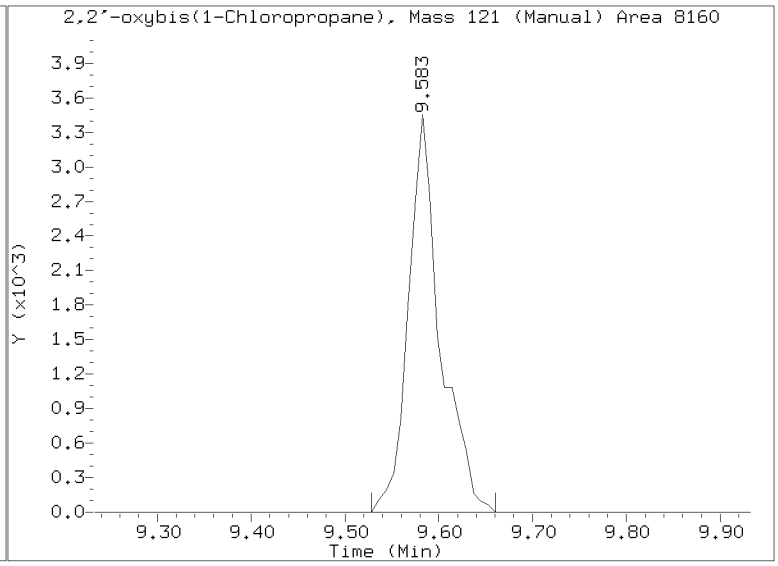
On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

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

Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230628.b/NT1406282307.D
Injection Date: 28-JUN-2023 21:10
Lab ID:SLF0467-CAL2 Client ID:
Report Date: 07/03/2023 13:50





Data File: \\target\share\chem3\nt14.i\20230628.b\NT1406282308.D

Date : 28-JUN-2023 21:47

Client ID:

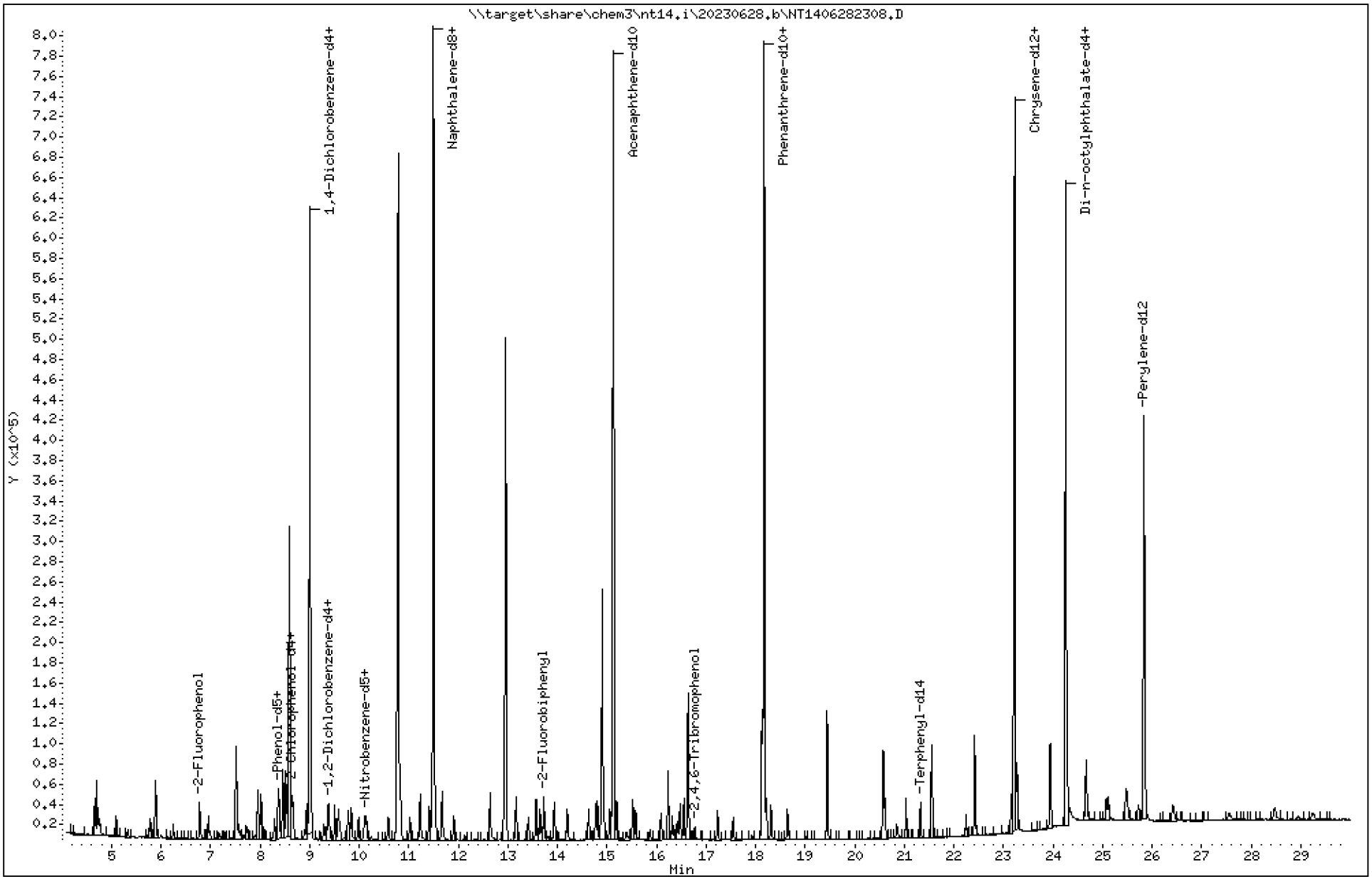
Instrument: nt14.i

Sample Info: SLF0467-CAL1

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230628.b\NT1406282308.D
Lab Smp Id: SLF0467-CAL1
Inj Date : 28-JUN-2023 21:47 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : SLF0467-CAL1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230628.b\ABN.m
Meth Date : 30-Jun-2023 13:53 deenayd Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 8 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: DEENAY-201905

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
$	1 2-Fluorophenol	112	6.782	6.782	(0.753)	14169	0.30000	0.2654
$	2 Phenol-d5	99	8.366	8.366	(0.929)	19139	0.30000	0.2645
	3 Phenol	94	8.382	8.382	(0.930)	16562	0.20000	0.1890
$	5 2-Chlorophenol-d4	132	8.644	8.644	(0.960)	15095	0.30000	0.2823
	4 Bis(2-Chloroethyl)ether	93	8.552	8.551	(0.949)	12603	0.20000	0.2068
	6 2-Chlorophenol	128	8.667	8.667	(0.962)	12036	0.20000	0.1893
	7 1,3-Dichlorobenzene	146	8.938	8.938	(0.992)	11606	0.20000	0.2049
*	8 1,4-Dichlorobenzene-d4	152	9.008	9.000	(1.000)	140650	4.00000	
	9 1,4-Dichlorobenzene	146	9.039	9.039	(1.003)	11359	0.20000	0.2034
$	10 1,2-Dichlorobenzene-d4	152	9.365	9.365	(1.040)	6823	0.20000	0.2017
	12 1,2-Dichlorobenzene	146	9.396	9.388	(1.043)	10906	0.20000	0.2015
	11 Benzyl alcohol	108	9.287	9.272	(1.031)	5231	0.20000	0.1528
	14 2,2'-oxybis(1-Chloropropane)	121	9.583	9.582	(1.064)	3337	0.20000	0.1907(M)
	13 2-Methylphenol	108	9.505	9.505	(1.055)	9933	0.20000	0.1798
	17 Hexachloroethane	117	9.986	9.986	(1.109)	4669	0.20000	0.1820
	16 N-Nitroso-di-n-propylamine	70	9.839	9.839	(1.092)	8636	0.20000	0.1743
	15 4-Methylphenol	108	9.777	9.776	(1.085)	10370	0.20000	0.1695
$	18 Nitrobenzene-d5	82	10.103	10.103	(0.879)	10723	0.20000	0.1633
	19 Nitrobenzene	77	10.141	10.133	(0.882)	12072	0.20000	0.1720
	20 Isophorone	82	10.584	10.584	(0.921)	17547	0.20000	0.1797
	21 2-Nitrophenol	139	10.778	10.770	(0.937)	3839	0.20000	0.1139
	22 2,4-Dimethylphenol	107	10.824	10.824	(0.941)	21278	0.40000	0.3779
	23 Bis(2-Chloroethoxy)methane	93	11.026	11.026	(0.959)	11732	0.20000	0.1881
	24 Benzoic acid	105	Compound Not Detected.					
	25 2,4-Dichlorophenol	162	11.227	11.227	(0.976)	14164	0.40000	0.3403
	26 1,2,4-Trichlorobenzene	180	11.413	11.413	(0.993)	8418	0.20000	0.2029
*	27 Naphthalene-d8	136	11.498	11.498	(1.000)	556802	4.00000	
	28 Naphthalene	128	11.536	11.544	(1.003)	29464	0.20000	0.2026
	29 4-Chloroaniline	127	11.675	11.667	(1.015)	22535	0.40000	0.3322
	30 Hexachlorobutadiene	225	11.907	11.907	(1.036)	3733	0.20000	0.1929
	31 4-Chloro-3-methylphenol	107	12.642	12.634	(1.100)	16393	0.40000	0.3140
	32 2-Methylnaphthalene	142	12.944	12.944	(1.126)	20886	0.20000	0.1936
	33 Hexachlorocyclopentadiene	237	13.416	13.416	(0.887)	4033	0.40000	0.2059

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
34	2,4,6-Trichlorophenol	196	13.571	13.563	(0.897)	7186	0.40000	0.2862
35	2,4,5-Trichlorophenol	196	13.648	13.641	(0.902)	6155	0.40000	0.2356
$ 36	2-Fluorobiphenyl	172	13.726	13.726	(0.907)	18287	0.20000	0.1965
37	2-Chloronaphthalene	162	13.942	13.935	(0.922)	16688	0.20000	0.1949
38	2-Nitroaniline	65	14.198	14.198	(0.939)	9645	0.40000	0.2325
39	Dimethylphthalate	163	14.631	14.631	(0.967)	16696	0.20000	0.1901
40	Acenaphthylene	152	14.809	14.817	(0.979)	25309	0.20000	0.1916
41	2,6-Dinitrotoluene	165	14.771	14.771	(0.976)	4401	0.40000	0.2382
* 42	Acenaphthene-d10	164	15.127	15.126	(1.000)	261262	4.00000	
43	3-Nitroaniline	138	15.049	15.049	(0.995)	6074	0.40000	0.2454
44	Acenaphthene	153	15.188	15.196	(1.004)	15167	0.20000	0.1940
45	2,4-Dinitrophenol	184	Compound Not Detected.					
46	Dibenzofuran	168	15.521	15.521	(1.026)	22421	0.20000	0.1968
47	4-Nitrophenol	109	15.382	15.374	(1.017)	1733	0.40000	0.09641
48	2,4-Dinitrotoluene	165	15.583	15.575	(1.030)	5503	0.40000	0.2130
50	Diethylphthalate	149	16.093	16.093	(1.064)	17673	0.20000	0.1740
49	Fluorene	166	16.232	16.232	(1.073)	19294	0.20000	0.1937
51	4-Chlorophenyl-phenylether	204	16.224	16.224	(1.073)	8654	0.20000	0.2012
52	4-Nitroaniline	138	16.317	16.317	(1.079)	5456	0.40000	0.2164
53	4,6-Dinitro-2-methylphenol	198	16.417	16.417	(0.904)	2631	0.80000	0.1843
54	N-Nitrosodiphenylamine	169	16.471	16.479	(0.906)	11719	0.20000	0.1842
$ 55	2,4,6-Tribromophenol	330	16.772	16.771	(1.109)	1177	0.30000	0.1461
56	4-Bromophenyl-phenylether	248	17.234	17.234	(0.948)	3484	0.20000	0.1796
57	Hexachlorobenzene	284	17.551	17.551	(0.966)	3910	0.20000	0.1905
58	Pentachlorophenol	266	17.915	17.907	(0.986)	770	0.40000	0.06317
* 59	Phenanthrene-d10	188	18.170	18.170	(1.000)	450492	4.00000	
60	Phenanthrene	178	18.217	18.217	(1.003)	23837	0.20000	0.1956
61	Anthracene	178	18.310	18.310	(1.008)	19664	0.20000	0.1670
62	Carbazole	167	18.642	18.642	(1.026)	20766	0.20000	0.1753
63	Di-n-butylphthalate	149	19.447	19.447	(1.070)	24163	0.20000	0.1552
64	Fluoranthene	202	20.608	20.607	(0.887)	22544	0.20000	0.1898
65	Pyrene	202	21.033	21.033	(0.906)	21531	0.20000	0.1794
$ 66	Terphenyl-d14	244	21.319	21.319	(0.918)	15079	0.20000	0.1867
67	Butylbenzylphthalate	149	22.249	22.248	(0.958)	6198	0.20000	0.1077
68	Benzo(a)anthracene	228	23.193	23.201	(0.999)	18609	0.20000	0.1829
* 69	Chrysene-d12	240	23.224	23.224	(1.000)	290595	4.00000	
70	3,3'-Dichlorobenzidine	252	23.147	23.154	(0.997)	10949	0.60000	0.3868
71	Chrysene	228	23.271	23.271	(1.002)	17542	0.20000	0.1926
72	bis(2-Ethylhexyl)phthalate	149	24.262	24.269	(1.000)	21632	0.20000	0.2075
* 134	Di-n-octylphthalate-d4	153	24.254	24.254	(1.000)	405584	4.00000	
73	Di-n-octylphthalate	149	24.262	24.269	(1.000)	21632	0.20000	0.2075
74	Benzo(b)fluoranthene	252	25.074	25.074	(0.971)	12850	0.20000	0.1610
75	Benzo(k)fluoranthene	252	25.113	25.121	(0.972)	15773	0.20000	0.1760(H)
76	Benzo(a)pyrene	252	25.717	25.725	(0.996)	9920	0.20000	0.1584
* 77	Perylene-d12	264	25.833	25.833	(1.000)	242827	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	28.462	28.470	(1.102)	8678	0.20000	0.1536
79	Dibenzo(a,h)anthracene	278	28.486	28.478	(1.103)	7169	0.20000	0.1500
80	Benzo(g,h,i)perylene	276	29.239	29.247	(1.132)	7510	0.20000	0.1610
90	N-Nitrosodimethylamine	74	4.666	4.658	(0.518)	15314	0.40000	0.3795
91	Aniline	93	8.459	8.459	(0.939)	33418	0.40000	0.3912
93	Benzidine	184	20.840	20.840	(0.897)	11770	0.40000	0.3275
103	Pyridine	79	4.705	4.681	(0.522)	26248	0.20000	0.2065
105	1-methylnaphthalene	142	13.169	13.168	(1.145)	18538	0.20000	0.1926
111	Azobenzene (1,2-DP-Hydrazine)	77	16.548	16.548	(1.094)	27366	0.20000	0.1892

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
187 Total Benzofluoranthenes	252	25.113	25.121	(0.972)	27664	0.40000	0.3414
120 2,3,4,6-Tetrachlorophenol	232	15.861	15.861	(1.049)	1836	0.20000	0.09162

QC Flag Legend

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

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1406282308.D
Lab Smp Id: SLF0467-CAL1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Misc Info:

Calibration Date: 28-JUN-2023
Calibration Time: 23:38
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	128354	64177	256708	140650	9.58
27 Naphthalene-d8	519660	259830	1039320	556802	7.15
42 Acenaphthene-d10	249651	124826	499302	261262	4.65
59 Phenanthrene-d10	419362	209681	838724	450492	7.42
69 Chrysene-d12	287830	143915	575660	290595	0.96
134 Di-n-octylphthala	491823	245912	983646	405584	-17.53
77 Perylene-d12	243501	121751	487002	242827	-0.28

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.00	8.50	9.50	9.01	0.09
27 Naphthalene-d8	11.50	11.00	12.00	11.50	0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	0.00
59 Phenanthrene-d10	18.17	17.67	18.67	18.17	0.00
69 Chrysene-d12	23.22	22.72	23.72	23.22	0.00
134 Di-n-octylphthala	24.25	23.75	24.75	24.25	0.00
77 Perylene-d12	25.83	25.33	26.33	25.83	0.00

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

REVIEW SUMMARY FOR FILE - NT1406282308.D

Lab ID: SLF0467-CAL1
nt14.i, ABN.m, 28-JUN-2023 21:47

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.939	0.000	0.9390	Aniline
0.753	0.000	0.7529	2-Fluorophenol
0.960	0.000	0.9596	2-Chlorophenol-d4
1.040	0.000	1.0396	1,2-Dichlorobenzene-d4
0.879	0.000	0.8787	Nitrobenzene-d5
0.907	0.000	0.9074	2-Fluorobiphenyl
1.109	0.000	1.1087	2,4,6-Tribromophenol

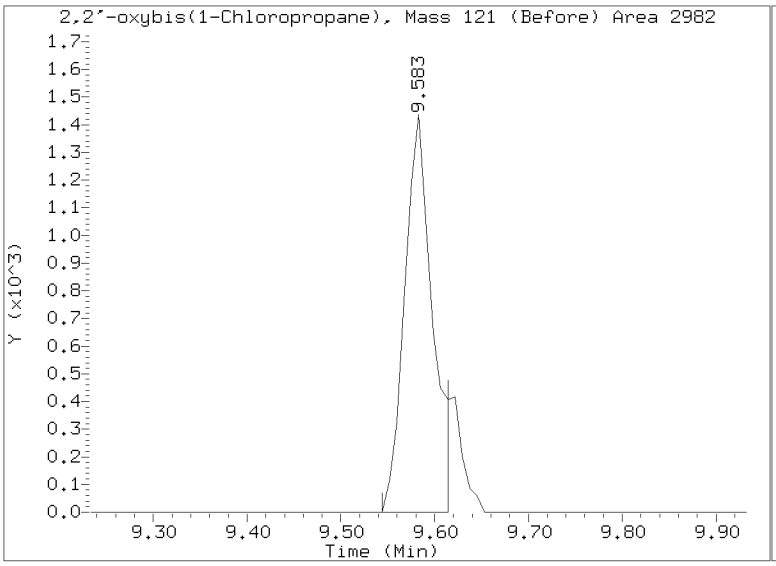
RRT check based on Ccal File: NT1406282311.D

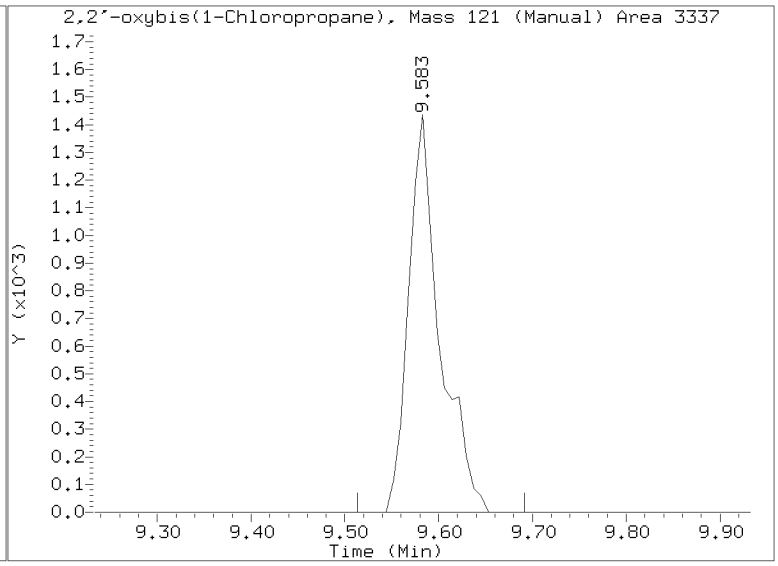
On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

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

Quant Ion Manual Peak Adjustment Report

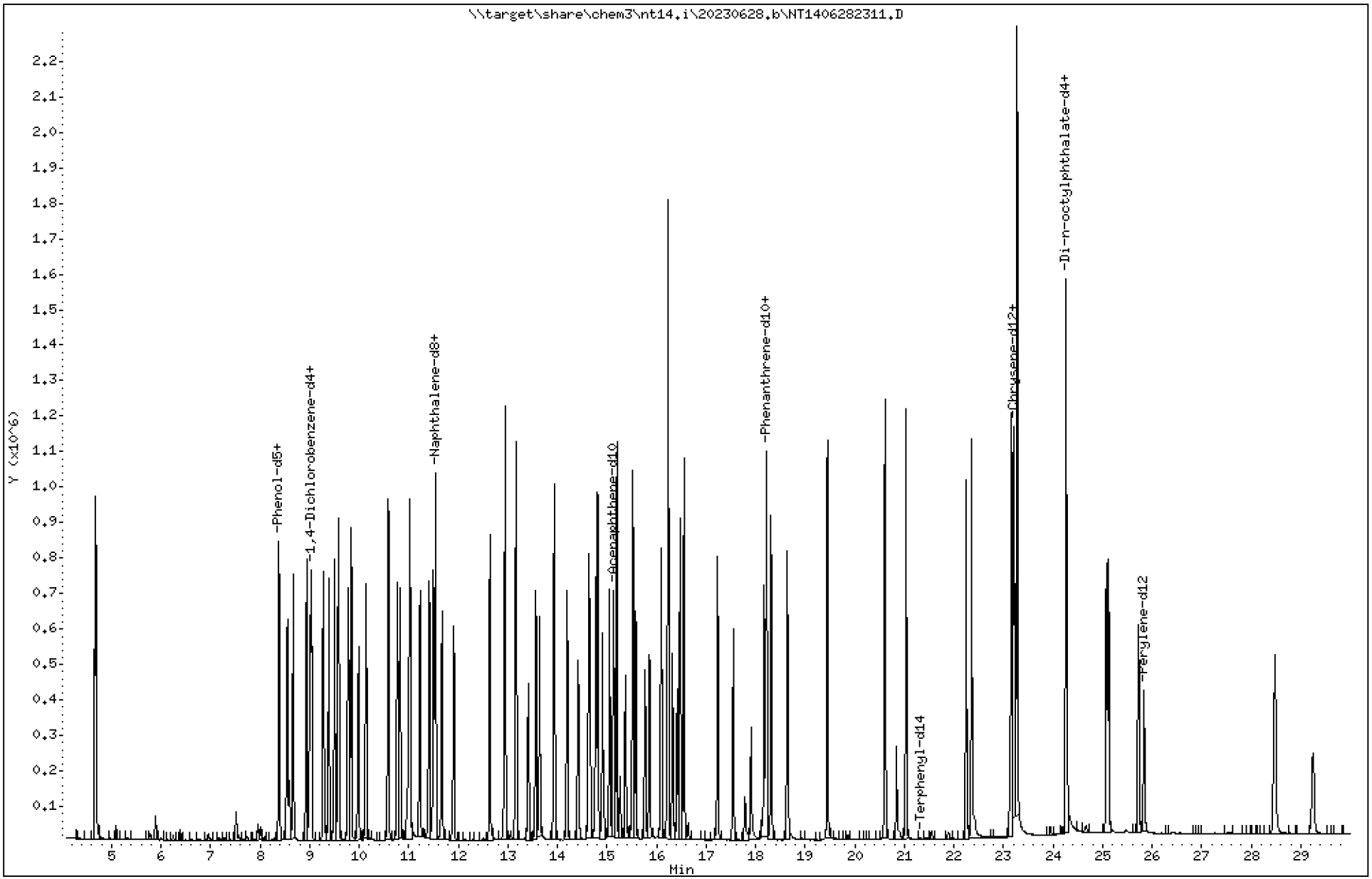
Datafile: //target/share/chem3/nt14.i/20230628.b/NT1406282308.D
Injection Date: 28-JUN-2023 21:47
Lab ID:SLF0467-CAL1 Client ID:
Report Date: 07/03/2023 13:50





Data File: \\target\share\chem3\nt14.i\20230628.b\NT1406282311.D
Date : 28-JUN-2023 23:38
Client ID:
Sample Info: SLF0467-SCV1

Instrument: nt14.i
Operator: JGR
Column phase: ZB-5msi
Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230628.b\NT1406282311.D
Lab Smp Id: SLF0467-SCV1
Inj Date : 28-JUN-2023 23:38 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : SLF0467-SCV1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230628.b\ABN.m
Meth Date : 03-Jul-2023 15:05 yev Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 11 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: ORGDATA102

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
$ 1	2-Fluorophenol	112	Compound Not Detected.					
$ 2	Phenol-d5	99	8.366	8.366	(0.930)	1531	7.50000	0.02318
3	Phenol	94	8.382	8.382	(0.931)	358734	5.00000	4.486
$ 5	2-Chlorophenol-d4	132	Compound Not Detected.					
4	Bis(2-Chloroethyl)ether	93	8.551	8.551	(0.950)	311433	5.00000	5.599
6	2-Chlorophenol	128	8.667	8.667	(0.963)	279261	5.00000	4.814
7	1,3-Dichlorobenzene	146	8.938	8.938	(0.993)	267188	5.00000	5.168
* 8	1,4-Dichlorobenzene-d4	152	9.000	9.000	(1.000)	128354	4.00000	
9	1,4-Dichlorobenzene	146	9.039	9.039	(1.004)	260977	5.00000	5.120
$ 10	1,2-Dichlorobenzene-d4	152	Compound Not Detected.					
12	1,2-Dichlorobenzene	146	9.388	9.388	(1.043)	254243	5.00000	5.149
11	Benzyl alcohol	108	9.272	9.272	(1.030)	178390	5.00000	5.709
14	2,2'-oxybis(1-Chloropropane)	121	9.582	9.582	(1.065)	93021	5.00000	5.824
13	2-Methylphenol	108	9.505	9.505	(1.056)	230056	5.00000	4.564
17	Hexachloroethane	117	9.986	9.986	(1.110)	125989	5.00000	5.381
16	N-Nitroso-di-n-propylamine	70	9.839	9.839	(1.093)	246429	5.00000	5.449
15	4-Methylphenol	108	9.776	9.776	(1.086)	275884	5.00000	4.942
$ 18	Nitrobenzene-d5	82	Compound Not Detected.					
19	Nitrobenzene	77	10.133	10.133	(0.881)	342851	5.00000	5.234
20	Isophorone	82	10.584	10.584	(0.921)	688938	5.00000	7.561
21	2-Nitrophenol	139	10.770	10.770	(0.937)	127147	5.00000	4.114
22	2,4-Dimethylphenol	107	10.824	10.824	(0.941)	210514	10.0000	4.007
23	Bis(2-Chloroethoxy)methane	93	11.026	11.026	(0.959)	367536	5.00000	6.313
24	Benzoic acid	105	11.018	11.018	(0.958)	224723	20.0000	7.003
25	2,4-Dichlorophenol	162	11.227	11.227	(0.976)	194589	10.0000	5.009
26	1,2,4-Trichlorobenzene	180	11.413	11.413	(0.993)	194178	5.00000	5.014
* 27	Naphthalene-d8	136	11.498	11.498	(1.000)	519660	4.00000	
28	Naphthalene	128	11.544	11.544	(1.004)	749328	5.00000	5.520
29	4-Chloroaniline	127	11.667	11.667	(1.015)	252592	10.0000	3.990
30	Hexachlorobutadiene	225	11.907	11.907	(1.036)	93169	5.00000	5.158
31	4-Chloro-3-methylphenol	107	12.634	12.634	(1.099)	240444	10.0000	4.935
32	2-Methylnaphthalene	142	12.944	12.944	(1.126)	509818	5.00000	5.063
33	Hexachlorocyclopentadiene	237	13.416	13.416	(0.887)	93021	10.0000	4.926

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
34	2,4,6-Trichlorophenol	196	13.563	13.563	(0.897)	117483	10.0000	4.896
35	2,4,5-Trichlorophenol	196	13.641	13.641	(0.902)	123559	10.0000	4.949
$ 36	2-Fluorobiphenyl	172	Compound Not Detected.					
37	2-Chloronaphthalene	162	13.935	13.935	(0.921)	435248	5.00000	5.321
38	2-Nitroaniline	65	14.198	14.198	(0.939)	212525	10.0000	5.361
39	Dimethylphthalate	163	14.631	14.631	(0.967)	457780	5.00000	5.456
40	Acenaphthylene	152	14.817	14.817	(0.980)	709296	5.00000	5.620
41	2,6-Dinitrotoluene	165	14.771	14.771	(0.976)	102094	10.0000	5.783
* 42	Acenaphthene-d10	164	15.126	15.126	(1.000)	249651	4.00000	
43	3-Nitroaniline	138	15.049	15.049	(0.995)	134057	10.0000	5.668
44	Acenaphthene	153	15.196	15.196	(1.005)	421843	5.00000	5.647
45	2,4-Dinitrophenol	184	15.266	15.266	(1.009)	25611	20.0000	2.352
46	Dibenzofuran	168	15.521	15.521	(1.026)	581754	5.00000	5.344
47	4-Nitrophenol	109	15.374	15.374	(1.016)	73738	10.0000	4.280
48	2,4-Dinitrotoluene	165	15.575	15.575	(1.030)	138404	10.0000	5.606
50	Diethylphthalate	149	16.093	16.093	(1.064)	572899	5.00000	5.904
49	Fluorene	166	16.232	16.232	(1.073)	520914	5.00000	5.472
51	4-Chlorophenyl-phenylether	204	16.224	16.224	(1.073)	220136	5.00000	5.356
52	4-Nitroaniline	138	16.317	16.317	(1.079)	118618	10.0000	4.939
53	4,6-Dinitro-2-methylphenol	198	16.417	16.417	(0.904)	54175	20.0000	4.060
54	N-Nitrosodiphenylamine	169	16.479	16.479	(0.907)	318426	5.00000	5.378
$ 55	2,4,6-Tribromophenol	330	Compound Not Detected.					
56	4-Bromophenyl-phenylether	248	17.234	17.234	(0.948)	102449	5.00000	5.674
57	Hexachlorobenzene	284	17.551	17.551	(0.966)	99464	5.00000	5.207
58	Pentachlorophenol	266	17.907	17.907	(0.986)	45853	10.0000	3.987
* 59	Phenanthrene-d10	188	18.170	18.170	(1.000)	419362	4.00000	
60	Phenanthrene	178	18.217	18.217	(1.003)	637811	5.00000	5.622
61	Anthracene	178	18.310	18.310	(1.008)	546172	5.00000	4.982
62	Carbazole	167	18.642	18.642	(1.026)	585034	5.00000	5.305
63	Di-n-butylphthalate	149	19.447	19.447	(1.070)	838559	5.00000	5.787
64	Fluoranthene	202	20.607	20.607	(0.887)	676844	5.00000	5.753
65	Pyrene	202	21.033	21.033	(0.906)	694120	5.00000	5.840
$ 66	Terphenyl-d14	244	21.319	21.319	(0.918)	1130	5.00000	0.01413
67	Butylbenzylphthalate	149	22.248	22.248	(0.958)	308364	5.00000	5.494
68	Benzo(a)anthracene	228	23.201	23.201	(0.999)	558885	5.00000	5.546
* 69	Chrysene-d12	240	23.224	23.224	(1.000)	287830	4.00000	
70	3,3'-Dichlorobenzidine	252	23.154	23.154	(0.997)	330788	15.0000	11.43
71	Chrysene	228	23.271	23.271	(1.002)	504838	5.00000	5.596
72	bis(2-Ethylhexyl)phthalate	149	24.269	24.269	(1.001)	718841	5.00000	5.687
* 134	Di-n-octylphthalate-d4	153	24.254	24.254	(1.000)	491823	4.00000	
73	Di-n-octylphthalate	149	24.269	24.269	(1.001)	718841	5.00000	5.687
74	Benzo(b)fluoranthene	252	25.074	25.074	(0.971)	490492	5.00000	6.128
75	Benzo(k)fluoranthene	252	25.121	25.121	(0.972)	497504	5.00000	5.537(H)
76	Benzo(a)pyrene	252	25.725	25.725	(0.996)	401522	5.00000	6.392
* 77	Perylene-d12	264	25.833	25.833	(1.000)	243501	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	28.470	28.470	(1.102)	345159	5.00000	6.093
79	Dibenzo(a,h)anthracene	278	28.478	28.478	(1.102)	284447	5.00000	5.934
80	Benzo(g,h,i)perylene	276	29.247	29.247	(1.132)	260483	5.00000	5.569
90	N-Nitrosodimethylamine	74	4.658	4.658	(0.518)	209812	10.0000	5.698
91	Aniline	93	Compound Not Detected.					
93	Benzidine	184	20.840	20.840	(0.897)	158741	10.0000	4.460
103	Pyridine	79	4.681	4.681	(0.520)	318653	5.00000	2.747
105	1-methylnaphthalene	142	13.168	13.168	(1.145)	491308	5.00000	5.470
111	Azobenzene (1,2-DP-Hydrazine)	77	16.548	16.548	(1.094)	718859	5.00000	5.202

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
187 Total Benzofluoranthenes	252	25.121	25.121	(0.972)	940527	10.0000	11.58
120 2,3,4,6-Tetrachlorophenol	232	15.861	15.861	(1.049)	87501	5.00000	4.484

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1406282311.D
Lab Smp Id: SLF0467-SCV1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Misc Info:

Calibration Date: 28-JUN-2023
Calibration Time: 19:18
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	128354	64177	256708	128354	0.00
27 Naphthalene-d8	519660	259830	1039320	519660	0.00
42 Acenaphthene-d10	249651	124826	499302	249651	0.00
59 Phenanthrene-d10	419362	209681	838724	419362	0.00
69 Chrysene-d12	287830	143915	575660	287830	0.00
134 Di-n-octylphthala	491823	245912	983646	491823	0.00
77 Perylene-d12	243501	121751	487002	243501	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.00	8.50	9.50	9.00	0.00
27 Naphthalene-d8	11.50	11.00	12.00	11.50	0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	0.00
59 Phenanthrene-d10	18.17	17.67	18.67	18.17	0.00
69 Chrysene-d12	23.22	22.72	23.72	23.22	0.00
134 Di-n-octylphthala	24.25	23.75	24.75	24.25	0.00
77 Perylene-d12	25.83	25.33	26.33	25.83	0.00

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

REVIEW SUMMARY FOR FILE - NT1406282311.D

Lab ID: SLF0467-SCV1
nt14.i, ABN.m, 28-JUN-2023 23:38

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

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

No RRT check. Ccal file.

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

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

Q-FLAG SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230628.b

Instrument: nt14.i Date: 28-JUN-2023 Method: ABN.m

INITIAL CAL: 21-APR-2023

Compound	%RSD or R^2
NO Q-FLAGS	

ICV CAL: NT1406282311.D 28-JUN-2023 23:38

Compound	%D
Isophorone	51.21
2,4-Dimethylphenol	-59.93
Bis(2-Chloroethoxy)methane	26.25
2,4-Dichlorophenol	-49.91
Benzoic acid	-65.0
4-Chloroaniline	-60.10
4-Chloro-3-methylphenol	-50.65
Hexachlorocyclopentadiene	-50.7
2,4,6-Trichlorophenol	-51.04
2,4,5-Trichlorophenol	-50.51
2-Nitroaniline	-46.39
2,6-Dinitrotoluene	-42.17
3-Nitroaniline	-43.32
2,4-Dinitrophenol	-88.2
4-Nitrophenol	-57.2
2,4-Dinitrotoluene	-43.94
4-Nitroaniline	-50.6
4,6-Dinitro-2-methylphenol	-79.7
Pentachlorophenol	-60.1
3,3'-Dichlorobenzidine	-23.8
Benzo(b)fluoranthene	22.57
Benzo(a)pyrene	27.84
Indeno(1,2,3-cd)pyrene	21.85
N-Nitrosodimethylamine	-43.02
Aniline	ND
Benzidine	-55.40
Pyridine	-45.05
2-Fluorophenol	ND
Phenol-d5	-99.69
2-Chlorophenol-d4	ND
1,2-Dichlorobenzene-d4	ND
Nitrobenzene-d5	ND
2-Fluorobiphenyl	ND
2,4,6-Tribromophenol	ND
Terphenyl-d14	-99.72

Data File: \\target\share\chem3\nt14.i\20230628.b\NT1406282312.D

Date : 29-JUN-2023 00:15

Client ID:

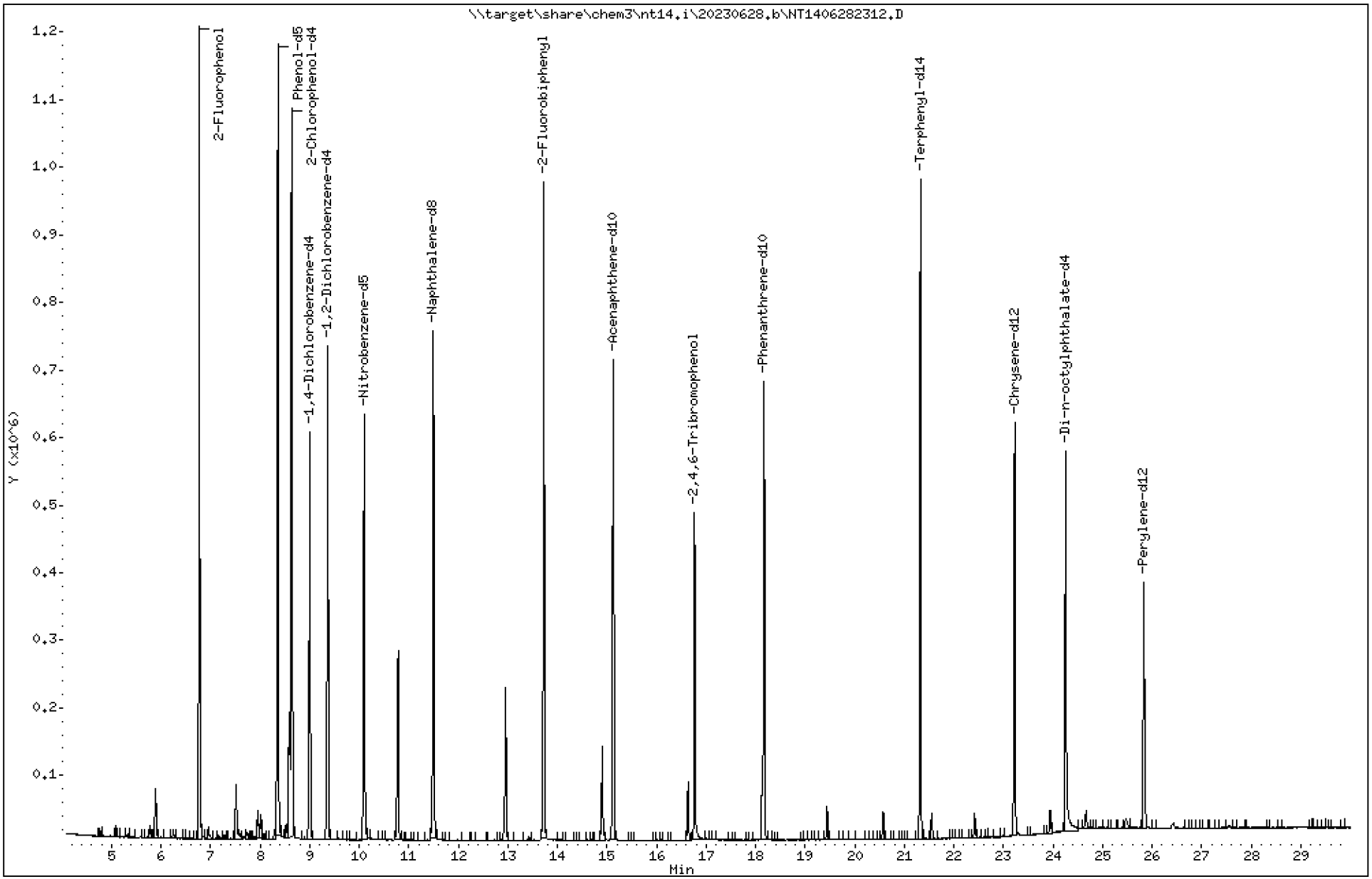
Instrument: nt14.i

Sample Info: SLF0467-ICB1

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230628.b\NT1406282312.D
Lab Smp Id: SLF0467-ICB1
Inj Date : 29-JUN-2023 00:15 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : SLF0467-ICB1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230628.b\ABN.m
Meth Date : 03-Jul-2023 15:05 yev Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: ORGDATA102

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/mL)
$ 1	2-Fluorophenol	112	6.775	6.782	(0.753)	382124	7.57609	7.576
$ 2	Phenol-d5	99	8.358	8.366	(0.929)	519177	7.59331	7.593
3	Phenol	94	Compound Not Detected.					
$ 5	2-Chlorophenol-d4	132	8.636	8.644	(0.960)	390056	7.71954	7.720
4	Bis(2-Chloroethyl)ether	93	Compound Not Detected.					
6	2-Chlorophenol	128	Compound Not Detected.					
7	1,3-Dichlorobenzene	146	Compound Not Detected.					
* 8	1,4-Dichlorobenzene-d4	152	9.000	9.000	(1.000)	132893	4.00000	
9	1,4-Dichlorobenzene	146	Compound Not Detected.					
$ 10	1,2-Dichlorobenzene-d4	152	9.365	9.365	(1.041)	162690	5.09022	5.090
12	1,2-Dichlorobenzene	146	Compound Not Detected.					
11	Benzyl alcohol	108	Compound Not Detected.					
14	2,2'-oxybis(1-Chloropropane)	121	Compound Not Detected.					
13	2-Methylphenol	108	Compound Not Detected.					
17	Hexachloroethane	117	Compound Not Detected.					
16	N-Nitroso-di-n-propylamine	70	Compound Not Detected.					
15	4-Methylphenol	108	Compound Not Detected.					
$ 18	Nitrobenzene-d5	82	10.102	10.103	(0.879)	327814	5.23319	5.233
19	Nitrobenzene	77	Compound Not Detected.					
20	Isophorone	82	Compound Not Detected.					
21	2-Nitrophenol	139	Compound Not Detected.					
22	2,4-Dimethylphenol	107	Compound Not Detected.					
23	Bis(2-Chloroethoxy)methane	93	Compound Not Detected.					
24	Benzoic acid	105	Compound Not Detected.					
25	2,4-Dichlorophenol	162	Compound Not Detected.					
26	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
* 27	Naphthalene-d8	136	11.498	11.498	(1.000)	531076	4.00000	
28	Naphthalene	128	Compound Not Detected.					
29	4-Chloroaniline	127	Compound Not Detected.					
30	Hexachlorobutadiene	225	Compound Not Detected.					
31	4-Chloro-3-methylphenol	107	Compound Not Detected.					
32	2-Methylnaphthalene	142	Compound Not Detected.					
33	Hexachlorocyclopentadiene	237	Compound Not Detected.					

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
	34	2,4,6-Trichlorophenol	196	Compound Not Detected.					
	35	2,4,5-Trichlorophenol	196	Compound Not Detected.					
$	36	2-Fluorobiphenyl	172	13.726	13.726	(0.907)	451623	5.10461	5.105
	37	2-Chloronaphthalene	162	Compound Not Detected.					
	38	2-Nitroaniline	65	Compound Not Detected.					
	39	Dimethylphthalate	163	Compound Not Detected.					
	40	Acenaphthylene	152	Compound Not Detected.					
	41	2,6-Dinitrotoluene	165	Compound Not Detected.					
*	42	Acenaphthene-d10	164	15.126	15.126	(1.000)	248410	4.00000	
	43	3-Nitroaniline	138	Compound Not Detected.					
	44	Acenaphthene	153	Compound Not Detected.					
	45	2,4-Dinitrophenol	184	Compound Not Detected.					
	46	Dibenzofuran	168	Compound Not Detected.					
	47	4-Nitrophenol	109	Compound Not Detected.					
	48	2,4-Dinitrotoluene	165	Compound Not Detected.					
	50	Diethylphthalate	149	Compound Not Detected.					
	49	Fluorene	166	Compound Not Detected.					
	51	4-Chlorophenyl-phenylether	204	Compound Not Detected.					
	52	4-Nitroaniline	138	Compound Not Detected.					
	53	4,6-Dinitro-2-methylphenol	198	Compound Not Detected.					
	54	N-Nitrosodiphenylamine	169	Compound Not Detected.					
$	55	2,4,6-Tribromophenol	330	16.764	16.771	(1.108)	48755	6.24855	6.249
	56	4-Bromophenyl-phenylether	248	Compound Not Detected.					
	57	Hexachlorobenzene	284	Compound Not Detected.					
	58	Pentachlorophenol	266	Compound Not Detected.					
*	59	Phenanthrene-d10	188	18.170	18.170	(1.000)	420605	4.00000	
	60	Phenanthrene	178	Compound Not Detected.					
	61	Anthracene	178	Compound Not Detected.					
	62	Carbazole	167	Compound Not Detected.					
	63	Di-n-butylphthalate	149	Compound Not Detected.					
	64	Fluoranthene	202	Compound Not Detected.					
	65	Pyrene	202	Compound Not Detected.					
$	66	Terphenyl-d14	244	21.319	21.319	(0.918)	405780	5.60405	5.604
	67	Butylbenzylphthalate	149	Compound Not Detected.					
	68	Benzo(a)anthracene	228	Compound Not Detected.					
*	69	Chrysene-d12	240	23.224	23.224	(1.000)	260535	4.00000	
	70	3,3'-Dichlorobenzidine	252	Compound Not Detected.					
	71	Chrysene	228	Compound Not Detected.					
	72	bis(2-Ethylhexyl)phthalate	149	Compound Not Detected.					
*	134	Di-n-octylphthalate-d4	153	24.254	24.254	(1.000)	368725	4.00000	
	73	Di-n-octylphthalate	149	Compound Not Detected.					
	74	Benzo(b)fluoranthene	252	Compound Not Detected.					
	75	Benzo(k)fluoranthene	252	Compound Not Detected.					
	76	Benzo(a)pyrene	252	Compound Not Detected.					
*	77	Perylene-d12	264	25.833	25.833	(1.000)	224674	4.00000	
	78	Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
	79	Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	80	Benzo(g,h,i)perylene	276	Compound Not Detected.					
	90	N-Nitrosodimethylamine	74	Compound Not Detected.					
	91	Aniline	93	Compound Not Detected.					
	93	Benzidine	184	Compound Not Detected.					
	103	Pyridine	79	Compound Not Detected.					
	105	1-methylnaphthalene	142	Compound Not Detected.					
	111	Azobenzene (1,2-DP-Hydrazine)	77	Compound Not Detected.					

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

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1406282312.D
Lab Smp Id: SLF0467-ICB1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Misc Info:

Calibration Date: 28-JUN-2023
Calibration Time: 23:38
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	128354	64177	256708	132893	3.54
27 Naphthalene-d8	519660	259830	1039320	531076	2.20
42 Acenaphthene-d10	249651	124826	499302	248410	-0.50
59 Phenanthrene-d10	419362	209681	838724	420605	0.30
69 Chrysene-d12	287830	143915	575660	260535	-9.48
134 Di-n-octylphthala	491823	245912	983646	368725	-25.03
77 Perylene-d12	243501	121751	487002	224674	-7.73

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.00	8.50	9.50	9.00	0.00
27 Naphthalene-d8	11.50	11.00	12.00	11.50	0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	0.00
59 Phenanthrene-d10	18.17	17.67	18.67	18.17	0.00
69 Chrysene-d12	23.22	22.72	23.72	23.22	0.00
134 Di-n-octylphthala	24.25	23.75	24.75	24.25	0.00
77 Perylene-d12	25.83	25.33	26.33	25.83	0.00

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

REVIEW SUMMARY FOR FILE - NT1406282312.D

Lab ID: SLF0467-ICB1
nt14.i, ABN.m, 29-JUN-2023 00:15

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.753	0.000	0.7527	2-Fluorophenol
0.960	0.000	0.9596	2-Chlorophenol-d4
1.041	0.000	1.0405	1,2-Dichlorobenzene-d4
0.879	0.000	0.8787	Nitrobenzene-d5
0.907	0.000	0.9074	2-Fluorobiphenyl
1.108	0.000	1.1082	2,4,6-Tribromophenol

RRT check based on Ccal File: NT1406282311.D

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

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

INITIAL CALIBRATION DATA

EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GG00040	Instrument:	NT17
Calibration Date:	07/10/2023	Column (1):	ZB-5MS

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Naphthalene	0.2	1.222157	0.5	1.057034	1	1.123359	2.5	1.203976	5	1.052373	10	1.072576
2-Methylnaphthalene	0.2	0.7759957	0.5	0.6904357	1	0.7739524	2.5	0.8635115	5	0.7605605	10	0.7697962
Acenaphthylene	0.2	2.061512	0.5	2.10085	1	2.297245	2.5	2.227712	5	1.931757	10	1.916007
Acenaphthene	0.2	1.39373	0.5	1.225452	1	1.31444	2.5	1.395462	5	1.235386	10	1.234216
Fluorene	0.2	1.54007	0.5	1.320725	1	1.616669	2.5	1.73575	5	1.538223	10	1.495137
Phenanthrene	0.2	1.26461	0.5	1.096903	1	1.123632	2.5	1.26853	5	1.088957	10	1.131446
Anthracene	0.2	0.9780816	0.5	0.9337863	1	1.062141	2.5	1.222606	5	1.080913	10	1.116061
Fluoranthene	0.2	1.662947	0.5	1.507091	1	1.766759	2.5	1.979566	5	1.737191	10	1.880306
Pyrene	0.2	1.951368	0.5	1.823774	1	2.05774	2.5	2.24493	5	1.945092	10	2.10016
Benzo(a)anthracene	0.2	1.377707	0.5	1.276275	1	1.467414	2.5	1.586064	5	1.366256	10	1.42793
Chrysene	0.2	1.459573	0.5	1.25738	1	1.333634	2.5	1.455728	5	1.240225	10	1.2629
Benzofluoranthenes, Total	0.4	1.344008	1	1.282123	2	1.327546	5	1.443055	10	1.286029	20	1.319312
Benzo(a)pyrene	0.2	1.084213	0.5	0.9786896	1	1.072541	2.5	1.162769	5	1.062509	10	1.086679
Indeno(1,2,3-cd)pyrene	0.2	1.428357	0.5	1.28519	1	1.426191	2.5	1.605222	5	1.405149	10	1.500008
Dibenzo(a,h)anthracene	0.2	1.283845	0.5	1.194145	1	1.267943	2.5	1.42577	5	1.239974	10	1.314729
Benzo(g,h,i)perylene	0.2	1.330892	0.5	1.199067	1	1.291944	2.5	1.443542	5	1.260946	10	1.378697
1,2-Dichlorobenzene-d4	0.2	1.064276	0.5	0.8783026	1	0.9800296	2.5	1.069473	5	0.9572159	10	0.9580427
Nitrobenzene-d5	0.2	0.3901824	0.5	0.3944684	1	0.4654044	2.5	0.520921	5	0.4773303	10	0.4789521
2-Fluorobiphenyl	0.2	1.66937	0.5	1.453467	1	1.543272	2.5	1.679353	5	1.477286	10	1.46311
p-Terphenyl-d14	0.2	1.475258	0.5	1.27512	1	1.393742	2.5	1.52915	5	1.350028	10	1.37085

INITIAL CALIBRATION DATA

EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GG00040	Instrument:	NT17
Calibration Date:	07/10/2023	Column (1):	ZB-5MS

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Naphthalene	20	1.06283										
2-Methylnaphthalene	20	0.7838225										
Acenaphthylene	20	1.970312										
Acenaphthene	20	1.264854										
Fluorene	20	1.747802										
Phenanthrene	20	1.132057										
Anthracene	20	1.122643										
Fluoranthene	20	1.867065										
Pyrene	20	1.88457										
Benzo(a)anthracene	20	1.408694										
Chrysene	20	1.278645										
Benzofluoranthenes, Total	40	1.311402										
Benzo(a)pyrene	20	1.098126										
Indeno(1,2,3-cd)pyrene	20	1.516503										
Dibenzo(a,h)anthracene	20	1.319419										
Benzo(g,h,i)perylene	20	1.423492										
1,2-Dichlorobenzene-d4	20	0.9512787										
Nitrobenzene-d5	20	0.483174										
2-Fluorobiphenyl	20	1.494748										
p-Terphenyl-d14	20	1.3387										

INITIAL CALIBRATION DATA

EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GG00040	Instrument:	NT17
Calibration Date:	07/10/2023	Column (1):	ZB-5MS

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Naphthalene	1.113472	6.5			RSD (15)	
2-Methylnaphthalene	0.7740106	6.5			RSD (15)	
Acenaphthylene	2.072199	7.1			RSD (15)	
Acenaphthene	1.294791	5.7			RSD (15)	
Fluorene	1.570625	9.4			RSD (15)	
Phenanthrene	1.158019	6.6			RSD (15)	
Anthracene	1.073747	8.9			RSD (15)	
Fluoranthene	1.771561	8.8			RSD (15)	
Pyrene	2.001091	7.2			RSD (15)	
Benzo(a)anthracene	1.415763	6.8			RSD (15)	
Chrysene	1.326869	7.1			RSD (15)	
Benzofluoranthenes, Total	1.330496	4.1			RSD (15)	
Benzo(a)pyrene	1.077932	5.1			RSD (15)	
Indeno(1,2,3-cd)pyrene	1.452374	7.0			RSD (15)	
Dibenzo(a,h)anthracene	1.292261	5.7			RSD (15)	
Benzo(g,h,i)perylene	1.332654	6.7			RSD (15)	
1,2-Dichlorobenzene-d4	0.9798026	6.9			RSD (15)	
Nitrobenzene-d5	0.4586332	10.6			RSD (15)	
2-Fluorobiphenyl	1.540087	6.2			RSD (15)	
p-Terphenyl-d14	1.390407	6.2			RSD (15)	

Printed: 7/20/2023 8:01:08AM

ANALYSIS SEQUENCE

SLG0194

Instrument ID: NT17
Calibration ID: GG00040
MS EM Level: EV

GCMS Description: Agilent 7890B/5977B
GCMS Column ID: ZB-5MS

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Analyzed	File ID	Analyst	Comments
SLG0194-TUN1	MS Tune	QC		1	L005045	L006982	07/10/2023 12:42	NT1707102301.D	JGR	
SLG0194-CAL7	ABN 20	QC		2	L007247	L006982	07/10/2023 12:59	NT1707102302.D	JGR	
SLG0194-CAL6	ABN 10	QC		3	L007248	L006982	07/10/2023 13:37	NT1707102303.D	JGR	
SLG0194-CAL5	ABN 5	QC		4	L007249	L006982	07/10/2023 14:14	NT1707102304.D	JGR	
SLG0194-CAL4	ABN 2.5	QC		5	L007250	L006982	07/10/2023 14:52	NT1707102305.D	JGR	
SLG0194-CAL3	ABN 1.0	QC		6	L007251	L006982	07/10/2023 15:29	NT1707102306.D	JGR	
SLG0194-CAL2	ABN 0.5	QC		7	L007252	L006982	07/10/2023 16:07	NT1707102307.D	JGR	
SLG0194-CAL1	ABN 0.2	QC		8	L007253	L006982	07/10/2023 16:44	NT1707102308.D	JGR	
SLG0194-ICB1	Initial Cal Blank	QC		9	L006701	L006982	07/10/2023 18:37	NT1707102311.D	JGR	
SLG0194-SCV1	SCV 5.0	QC		10	L006700	L006982	07/10/2023 19:15	NT1707102312.D	JGR	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem3\nt17.i\20230710.b

	Time	Filename	LabID	ClientId	DF													
1	1242	NT1707102301.D	SEQ-TUN1		1	|NO ISTDS FOUND||												
2	1259	NT1707102302.D	SEQ-CAL7		1	| 8.61	280842||	11.05	1044672||	14.61	516529||	17.60	808054||	22.65	498295||	25.04	493387||	23.71	1020642|
3	1337	NT1707102303.D	SEQ-CAL6		1	| 8.61	291539||	11.05	1108429||	14.59	562528||	17.59	863738||	22.65	536389||	25.04	510402||	23.71	1052606|
4	1414	NT1707102304.D	SEQ-CAL5		1	| 8.61	288953||	11.04	1098716||	14.60	552014||	17.59	884794||	22.64	564549||	25.04	526075||	23.71	1047332|
5	1452	NT1707102305.D	SEQ-CAL4		1	| 8.61	311675||	11.04	1177840||	14.59	587752||	17.59	925305||	22.64	592213||	25.04	555496||	23.71	1044124|
6	1529	NT1707102306.D	SEQ-CAL3		1	| 8.61	318121||	11.04	1202782||	14.59	591035||	17.59	969314||	22.64	602183||	25.04	565972||	23.71	974988|
7	1607	NT1707102307.D	SEQ-CAL2		1	| 8.61	354338||	11.04	1188942||	14.60	595679||	17.59	962353||	22.64	623665||	25.04	567281||	23.71	929701|
8	1644	NT1707102308.D	SEQ-CAL1		1	| 8.61	326889||	11.04	1222249||	14.60	584532||	17.59	957323||	22.64	628595||	25.04	587080||	23.71	903250|
9	1722	NT1707102309.D	SEQ-SIM2		1	| 8.61	346758||	11.04	1159049||	14.59	545614||	17.59	873619||	22.64	552057||	25.04	541713||	23.71	756270|
10	1800	NT1707102310.D	SEQ-SIM1		1	| 8.61	337642||	11.04	1221231||	14.60	521748||	17.59	822486||	22.64	529772||	25.04	521005||	23.71	724790|
11	1837	NT1707102311.D	SEQ-ICB1		1	| 8.61	357755||	11.04	1320796||	14.60	564896||	17.59	906550||	22.64	593878||	25.04	596393||	23.71	850240|
12	1915	NT1707102312.D	SEQ-SCV1		1	| 8.61	273909||	11.04	1035709||	14.59	521998||	17.59	856143||	22.64	580475||	25.04	571758||	23.71	1040512|

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt17.i\20230710.b

ARI Job No.: SEQ- Method: DFTPP8270E.m Instrument: nt17.i Date: 10-JUL-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1242	NT1707102301.D	SEQ-TUN1		1	NO MANUAL INTEGRATION
1259	NT1707102302.D	SEQ-CAL7		1	Benzoic acid, Benzo(g,h,i)perylene,
1337	NT1707102303.D	SEQ-CAL6		1	NO MANUAL INTEGRATION
1414	NT1707102304.D	SEQ-CAL5		1	Benzoic acid,
1452	NT1707102305.D	SEQ-CAL4		1	Benzoic acid,
1529	NT1707102306.D	SEQ-CAL3		1	Bis(2-Chloroethyl)ether, Benzoic acid, 3-Nitroaniline, 4-Nitrophenol, Benzo(k)fluoranthene, Benzidine, 2-Fluorophenol,
1607	NT1707102307.D	SEQ-CAL2		1	Phenol, Benzyl alcohol, Benzoic acid, 2,4-Dinitrophenol, 4-Nitrophenol, Benzidine, 2-Fluorophenol,
1644	NT1707102308.D	SEQ-CAL1		1	Phenol, Bis(2-Chloroethyl)ether, 2-Nitrophenol, 2,4-Dichlorophenol, 2,4,5-Trichlorophenol, 2,4-Dinitrophenol, 4-Nitroaniline, Benzo(k)fluoranthene, N-Nitrosodimethylamine, Benzidine, Pyridine, Total Benzofluoranthenes, 2-Fluorophenol, Phenol-d5,
1722	NT1707102309.D	SEQ-SIM2		1	NO MANUAL INTEGRATION
1800	NT1707102310.D	SEQ-SIM1		1	NO MANUAL INTEGRATION
1837	NT1707102311.D	SEQ-ICB1		1	NO MANUAL INTEGRATION
1915	NT1707102312.D	SEQ-SCV1		1	NO MANUAL INTEGRATION

Security Status Report

Date: 21-Jul-2023 07:03

NT1707102301.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102302.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102303.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102304.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102305.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102306.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102307.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102308.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102309.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102310.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102311.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102312.D	Data Locked	jrains, 21-Jul-2023 06:58

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-JUL-2023 12:59
End Cal Date : 10-JUL-2023 16:44
Quant Method : ISTD
Origin : Force
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Last Edit : 18-Jul-2023 07:51 jrains

Calibration File Names:
Level 1: \\target\share\chem3\nt17.i\20230710.b\NT1707102308.D
Level 2: \\target\share\chem3\nt17.i\20230710.b\NT1707102307.D
Level 3: \\target\share\chem3\nt17.i\20230710.b\NT1707102306.D
Level 4: \\target\share\chem3\nt17.i\20230710.b\NT1707102305.D
Level 5: \\target\share\chem3\nt17.i\20230710.b\NT1707102304.D
Level 6: \\target\share\chem3\nt17.i\20230710.b\NT1707102303.D
Level 7: \\target\share\chem3\nt17.i\20230710.b\NT1707102302.D

Compound	0.2000000 Level 1	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	20.0000 Level 7	Curve	Coefficients b	m1	m2	%RSD or R^2	
186 Carbaryl	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
179 n-Decane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
180 n-Octadecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
169 4-tert-Butylphenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-JUL-2023 12:59
End Cal Date : 10-JUL-2023 16:44
Quant Method : ISTD
Origin : Force
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Last Edit : 18-Jul-2023 07:51 jrains

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

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-JUL-2023 12:59
End Cal Date : 10-JUL-2023 16:44
Quant Method : ISTD
Origin : Force
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Last Edit : 18-Jul-2023 07:51 jrains

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

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-JUL-2023 12:59
End Cal Date : 10-JUL-2023 16:44
Quant Method : ISTD
Origin : Force
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Last Edit : 18-Jul-2023 07:51 jrains

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

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-JUL-2023 12:59
End Cal Date : 10-JUL-2023 16:44
Quant Method : ISTD
Origin : Force
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Last Edit : 18-Jul-2023 07:51 jrains

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

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

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
143 1,4-Dioxane	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
121 Quinoline	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
120 2,3,4,6-Tetrachlorophenol	0.29966 / 0.39879	0.27867	0.34059	0.39590	0.37124	0.36149	AVRG		0.34948		13.20542	
178 2-Benzyl-4-Chlorophenol	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
119 7,12-Dimethylbenz(a)anthracen	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
118 Triphenyl Phosphate	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
117 Butyl Diphenyl Phosphate	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
116 Dibutyl Phenyl Phosphate	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
115 Tributyl Phosphate	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
114 Beta-Pinene	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
113 Diphenyl Oxide	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
112 Biphenyl	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
111 Azobenzene (1,2-DP-Hydrazine)	1.96503 / 1.84729	1.85547	2.08134	2.23312	1.92623	1.87209	AVRG		1.96865		7.22300	
110 Tetrachloroguaiacol	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-

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

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
106 Guaiacol	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-
105 1-methylnaphthalene	0.72440	0.67680	0.70793	0.78961	0.70902	0.70322						
	0.70312						AVRG		0.71630		4.92532	
151 1,2,4,5-Tetrachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-
152 Benzo(e)pyrene	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-
153 Chlorpyrifos	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-
154 Diazinon	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-
155 Kelthane	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-

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

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
163 1,2,3,5,8-Pentachloronaphthal	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
164 1,2,3,4,6,7-Hexachloronaphtha	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
165 1,2,3,4,5,6,7-Heptachloronaph	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
166 Octachloronaphthalene	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
167 2,2',4,4',5-Pentabromobipheny	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
3 Phenol	3.04183 / 2.52769	2.22188	2.50386	2.83778	2.53303	2.56729	AVRG		2.60477		10.09178	
4 Bis(2-Chloroethyl)ether	37527 / 2100995	78686	161467	355938	547231	1116233	LINR	0.000e+000	1.51013		0.99851	

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	Coefficients m1	Coefficients m2	%RSD or R^2
6 2-Chlorophenol	1.90927	1.55695	1.91559	2.06014	1.81617	1.90842					
	1.82531						AVRG		1.85598		8.31119
7 1,3-Dichlorobenzene	1.89936	1.48502	1.69134	1.85570	1.61272	1.63392					
	1.63672						AVRG		1.68783		8.55944
9 1,4-Dichlorobenzene	1.89563	1.43221	1.96965	2.04849	1.80918	1.78651					
	1.79914						AVRG		1.82012		10.81232
11 Benzyl alcohol	11571	29273	69509	203773	347427	717953					
	1376338						LINR	0.000e+000	0.98077		0.99974
12 1,2-Dichlorobenzene	1.75791	1.39453	1.62479	1.77275	1.54577	1.54305					
	1.53461						AVRG		1.59620		8.40394
13 2-Methylphenol	1.59112	1.30955	1.38520	1.85314	1.65431	1.47888					
	1.63916						AVRG		1.55877		11.76856
14 2,2'-oxybis(1-Chloropropane)	0.62082	0.47462	0.53841	0.57351	0.51650	0.49685					
	0.43511						AVRG		0.52226		11.89245

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	Coefficients m1	Coefficients m2	%RSD or R^2
15 4-Methylphenol	17339	43619	110861	328638	547880	1138668					
	2119995						LINR	0.000e+000	1.52213		0.99932
16 N-Nitroso-di-n-propylamine	1.09927	1.00227	1.23782	1.39358	1.25319	1.23284					
	1.18787						AVRG		1.20098		10.32139
17 Hexachloroethane	0.78767	0.63316	0.72701	0.77860	0.70670	0.69944					
	0.70224						AVRG		0.71926		7.29400
19 Nitrobenzene	0.39889	0.40195	0.47165	0.53831	0.48653	0.49389					
	0.50126						AVRG		0.47036		11.03960
20 Isophorone	0.64406	0.60428	0.68786	0.80527	0.73023	0.74764					
	0.73788						AVRG		0.70817		9.58960
21 2-Nitrophenol	0.18047	0.15897	0.19876	0.20425	0.19551	0.21237					
	0.22124						AVRG		0.19594		10.61048
22 2,4-Dimethylphenol	+++++	0.40918	0.43774	0.48883	0.42996	0.42555					
	0.42712						AVRG		0.43640		6.26386

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
23 Bis(2-Chloroethoxy)methane	0.38015	0.37452	0.40913	0.45355	0.40698	0.39620					
	0.39970						AVRG		0.40289		6.40776
24 Benzoic acid	+++++	64823	230416	856449	1587491	3374536					
	6939911						LINR	0.000e+000	0.32483		0.99552
25 2,4-Dichlorophenol	+++++	0.28454	0.33360	0.37802	0.31992	0.32067					
	0.32452						AVRG		0.32688		9.22495
26 1,2,4-Trichlorobenzene	0.38329	0.33026	0.33428	0.35760	0.31239	0.36246					
	0.38711						AVRG		0.35248		7.94598
28 Naphthalene	1.22216	1.05703	1.12336	1.20398	1.05237	1.07258					
	1.06283						AVRG		1.11347		6.48209
29 4-Chloroaniline	+++++	100986	230192	714897	1284200	2713680					
	5301847						LINR	0.000e+000	0.50201		0.99887
30 Hexachlorobutadiene	0.19651	0.16701	0.17394	0.18793	0.16671	0.16935					
	0.17119						AVRG		0.17609		6.56412

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Compound	0.2000000 Level 1	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	20.0000 Level 7										
31 4-Chloro-3-methylphenol	+++++	0.30697	0.35125	0.40890	0.36738	0.38314					
	0.38689						AVRG		0.36742		9.63250
32 2-Methylnaphthalene	0.77600	0.69044	0.77395	0.86351	0.76056	0.76980					
	0.78382						AVRG		0.77401		6.52287
33 Hexachlorocyclopentadiene	+++++	3417	17793	101434	223132	608194					
	1423813						QUAD	0.000e+000	5.67337	-0.74630	0.99770
34 2,4,6-Trichlorophenol	+++++	0.32624	0.37601	0.44714	0.39736	0.41189					
	0.43572						AVRG		0.39906		11.01338
35 2,4,5-Trichlorophenol	+++++	0.31874	0.40050	0.45654	0.41666	0.43201					
	0.46158						AVRG		0.41434		12.61520
37 2-Chloronaphthalene	1.41450	1.27199	1.34998	1.47778	1.28587	1.29897					
	1.33936						AVRG		1.34835		5.53212
38 2-Nitroaniline	+++++	58266	156563	475026	815204	1513430					
	2787770						LINR	0.000e+000	0.54344		0.99834

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Compound	0.2000000 Level 1	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	20.0000 Level 7										
39 Dimethylphthalate	1.47438	1.30388	1.40698	1.57971	1.35609	1.33458					
	1.31609						AVRG		1.39596		7.17846
40 Acenaphthylene	2.06151	2.10085	2.29724	2.22771	1.93176	1.91601					
	1.97031						AVRG		2.07220		7.11063
41 2,6-Dinitrotoluene	+++++	31786	82297	246384	419749	956805					
	1664089						LINR	0.000e+000	0.32498		0.99854
43 3-Nitroaniline	+++++	28018	59284	177734	379199	950026					
	1881616						LINR	0.000e+000	0.35505		0.99045
44 Acenaphthene	1.39373	1.22545	1.31444	1.39546	1.23539	1.23422					
	1.26485						AVRG		1.29479		5.74609
45 2,4-Dinitrophenol	+++++	17236	41901	196403	402271	982518					
	2097659						QUAD	0.000e+000	6.69531	-0.43911	0.99896
46 Dibenzofuran	1.96485	1.67739	1.83590	1.95072	1.72409	1.70965					
	1.76030						AVRG		1.80327		6.46879

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	20.0000 Level 7										
47 4-Nitrophenol	+++++	19393	48876	151420	266512	523365					
	1108509						LINR	0.000e+000	0.20868		0.99386
48 2,4-Dinitrotoluene	+++++	40258	105275	331198	564407	1160717					
	2184501						LINR	0.000e+000	0.42059		0.99945
49 Fluorene	1.54007	1.32072	1.61667	1.73575	1.53822	1.49514					
	1.74780						AVRG		1.57063		9.40456
50 Diethylphthalate	1.64066	1.49603	1.58680	1.80046	1.56961	1.54682					
	1.44388						AVRG		1.58347		7.24803
51 4-Chlorophenyl-phenylether	0.75079	0.70850	0.73207	0.76747	0.71100	0.76097					
	0.78799						AVRG		0.74554		3.98467
52 4-Nitroaniline	+++++	25263	62356	202186	382218	866561					
	1641380						LINR	0.000e+000	0.31368		0.99750
53 4,6-Dinitro-2-methylphenol	+++++	28865	85450	308110	561119	1226799					
	2415718						LINR	0.000e+000	0.14694		0.99641

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Last Edit : 18-Jul-2023 07:51 jrains

Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	Coefficients m1	Coefficients m2	%RSD or R^2
54 N-Nitrosodiphenylamine	0.65372	0.58852	0.61921	0.64755	0.55288	0.56882					
	0.56337						AVRG		0.59915		6.87347
56 4-Bromophenyl-phenylether	0.22423	0.19844	0.24995	0.27866	0.21201	0.22789					
	0.23007						AVRG		0.23161		11.29387
57 Hexachlorobenzene	0.28488	0.25387	0.26687	0.28929	0.25180	0.28485					
	0.26048						AVRG		0.27029		5.85962
58 Pentachlorophenol	+++++	17038	46990	156389	277844	631190					
	1261418						LINR	0.000e+000	0.15283		0.99478
60 Phenanthrene	1.26461	1.09690	1.12363	1.26853	1.08896	1.13145					
	1.13206						AVRG		1.15802		6.56158
61 Anthracene	0.97808	0.93379	1.06214	1.22261	1.08091	1.11606					
	1.12264						AVRG		1.07375		8.93832
62 Carbazole	0.98982	0.88597	0.95774	0.90796	0.69394	0.88517					
	0.96885						AVRG		0.89849		11.04294

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-JUL-2023 12:59
End Cal Date : 10-JUL-2023 16:44
Quant Method : ISTD
Origin : Force
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Last Edit : 18-Jul-2023 07:51 jrains

Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
63 Di-n-butylphthalate	49396	121029	293633	888469	1497861	3140752					
	5883051						LINR	0.000e+000	1.45179		0.99939
64 Fluoranthene	1.66295	1.50709	1.76676	1.97957	1.73719	1.88031					
	1.86707						AVRG		1.77156		8.84018
65 Pyrene	1.95137	1.82377	2.05774	2.24493	1.94509	2.10016					
	1.88457						AVRG		2.00109		7.15815
67 Butylbenzylphthalate	15247	42926	108701	336950	574608	1166526					
	2133649						LINR	0.000e+000	0.85743		0.99945
68 Benzo(a)anthracene	1.37771	1.27627	1.46741	1.58606	1.36626	1.42793					
	1.40869						AVRG		1.41576		6.77642
70 3,3'-Dichlorobenzidine	38668	88515	176211	406151	663547	1767955					
	3921010						QUAD	0.000e+000	2.73597	-0.10622	0.99674
71 Chrysene	1.45957	1.25738	1.33363	1.45573	1.24023	1.26290					
	1.27865						AVRG		1.32687		7.08421

ARI Labs, Inc.

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Method file : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Last Edit : 18-Jul-2023 07:51 jrains

Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	Coefficients m1	Coefficients m2	%RSD or R^2
72 bis(2-Ethylhexyl)phthalate	0.45164	0.45583	0.56740	0.67864	0.60864	0.61758					
	0.58696						AVRG		0.56667		14.90797
73 Di-n-octylphthalate	1.31496	1.09522	1.12581	1.19244	1.01784	1.03357					
	1.00248						AVRG		1.11176		10.06645
74 Benzo(b)fluoranthene	1.23540	1.27784	1.47605	1.75647	1.59036	1.57479					
	1.46078						AVRG		1.48167		12.28089
75 Benzo(k)fluoranthene	1.75639	1.55259	1.46406	1.52783	1.33065	1.41058					
	1.48592						AVRG		1.50400		8.89266
187 Total Benzofluoranthenes	1.34401	1.28212	1.32755	1.44305	1.28603	1.31931					
	1.31140						AVRG		1.33050		4.07850
76 Benzo(a)pyrene	1.08421	0.97869	1.07254	1.16277	1.06251	1.08668					
	1.09813						AVRG		1.07793		5.05819
78 Indeno(1,2,3-cd)pyrene	1.42836	1.28519	1.42619	1.60522	1.40515	1.50001					
	1.51650						AVRG		1.45237		6.95305

ARI Labs, Inc.

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Last Edit : 18-Jul-2023 07:51 jrains

Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
79 Dibenzo(a,h)anthracene	1.28385	1.19415	1.26794	1.42577	1.23997	1.31473						
	1.31942						AVRG		1.29226		5.65924	
80 Benzo(g,h,i)perylene	1.33089	1.19907	1.29194	1.44354	1.26095	1.37870						
	1.42349						AVRG		1.33265		6.66360	
90 N-Nitrosodimethylamine	0.97703	0.74823	1.04931	1.23987	1.12919	1.13802						
	1.10266						AVRG		1.05490		14.94153	
91 Aniline	+++++	1.52833	1.97335	2.31305	2.08523	2.16164						
	2.09168						AVRG		2.02555		13.23000	
92 1,2-Diphenylhydrazine	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-
93 Benzidine	+++++	0.18059	0.13131	0.11134	0.11619	0.31038						
	0.46137						AVRG		0.21853		64.20059	<-
96 p-Cymene	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-

ARI Labs, Inc.

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Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
97 Caffeine	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
98 Retene	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
99 Perylene	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
100 3-beta-Coprostanol	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
101 Cholesterol	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
102 beta-Sitosterol	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	<-
103 Pyridine	53096 / 4614338	102745	283159	782101	1218414	2458088	LINR	0.000e+000	1.65868		0.99880	

ARI Labs, Inc.

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Method file : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Last Edit : 18-Jul-2023 07:51 jrains

Compound	0.2000000 Level 1	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
	20.0000 Level 7											
188 2,6-Dichlorophenol	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-
189 N-Nitrosomethylethylamine	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-
$ 1 2-Fluorophenol	1.45476	1.13844	1.34568	1.57326	1.44313	1.45381						
	1.45293						AVRG		1.40886		9.67120	
$ 137 d8-1,4-Dioxane	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-
$ 2 Phenol-d5	2.17354	1.51577	1.95827	2.16885	1.93053	1.95529						
	1.97202						AVRG		1.95347		11.20182	
$ 5 2-Chlorophenol-d4	1.59455	1.36891	1.67631	1.82629	1.59544	1.45119						
	1.61172						AVRG		1.58920		9.33147	
$ 10 1,2-Dichlorobenzene-d4	1.06428	0.87830	0.98003	1.06947	0.95722	0.95804						
	0.95128						AVRG		0.97980		6.88139	

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-JUL-2023 12:59
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Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Last Edit : 18-Jul-2023 07:51 jrains

Compound	0.2000000 Level 1 / 20.0000 Level 7	0.5000000 Level 2	1.0000 Level 3	2.5000 Level 4	5.0000 Level 5	10.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
$ 18 Nitrobenzene-d5	0.39018	0.39447	0.46540	0.52092	0.47733	0.47895						
	0.48317						AVRG		0.45863		10.56720	
$ 36 2-Fluorobiphenyl	1.66937	1.45347	1.54327	1.67935	1.47729	1.46311						
	1.49475						AVRG		1.54009		6.24756	
$ 55 2,4,6-Tribromophenol	0.16567	0.15300	0.17943	0.21031	0.18915	0.19408						
	0.20378						AVRG		0.18506		11.07746	
$ 66 Terphenyl-d14	1.47526	1.27512	1.39374	1.52915	1.35003	1.37085						
	1.33870						AVRG		1.39041		6.18956	
$ 85 p-Cresol-d4	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-
$ 86 Anthracene-d10	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-
$ 87 Fluoranthene-d10	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	<-

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 10-JUL-2023 12:59
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Method file : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Last Edit : 18-Jul-2023 07:51 jrains

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

ARI Labs, Inc.

INITIAL CALIBRATION DATA

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Quant Method : ISTD
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Method file : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Last Edit : 18-Jul-2023 07:51 jrains

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

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Batch File: \\target\share\chem3\nt17.i\20230710.b
Inst ID: nt17.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07
FILENAME:	NT1707102302	NT1707102303	NT1707102304	NT1707102305	NT1707102306	NT1707102307	NT1707102308
INJ.DATE:	10-JUL-2023	10-JUL-2023	10-JUL-2023	10-JUL-2023	10-JUL-2023	10-JUL-2023	10-JUL-2023
INJ.TIME:	12:59	13:37	14:14	14:52	15:29	16:07	16:44

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
$ 1 2-Fluorophenol	6.470	6.470	6.470	6.470	6.495	6.521	6.572	6.470	3.470-9.470	6.495	0.039
186 Carbaryl	+++++	+++++	+++++	+++++	+++++	+++++	+++++	19.211	16.211-22.211	+++++	+++++
179 n-Decane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.060	6.060-12.060	+++++	+++++
180 n-Octadecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	18.076	15.076-21.076	+++++	+++++
169 4-tert-Butylphenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	21.289	18.289-24.289	+++++	+++++
170 N,N-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	21.289	18.289-24.289	+++++	+++++
171 2,3-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	20.052	17.052-23.052	+++++	+++++
172 2,4-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	20.052	17.052-23.052	+++++	+++++
173 2,5-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	25.066	22.066-28.066	+++++	+++++
174 2,6-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	19.542	16.542-22.542	+++++	+++++
175 3,4-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	20.052	17.052-23.052	+++++	+++++
176 3,5-Dimethylaniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	21.572	18.572-24.572	+++++	+++++
177 p-Benzoquinone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.779	5.779-11.779	+++++	+++++
168 Pentachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.560	13.560-19.560	+++++	+++++
145 4,4'-DDE	+++++	+++++	+++++	+++++	+++++	+++++	+++++	47.212	44.212-50.212	+++++	+++++
146 4,4'-DDD	+++++	+++++	+++++	+++++	+++++	+++++	+++++	47.746	44.746-50.746	+++++	+++++
147 4,4'-DDT	+++++	+++++	+++++	+++++	+++++	+++++	+++++	48.216	45.216-51.216	+++++	+++++

Reviewer 1 _____ Date:_____
Reviewer 2 _____ Date:_____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Batch File: \\target\share\chem3\nt17.i\20230710.b
Inst ID: nt17.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
148 Dieldrin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	47.281	44.281-50.281	+++++	+++++
149 TCMX	+++++	+++++	+++++	+++++	+++++	+++++	+++++	43.387	40.387-46.387	+++++	+++++
150 DCBP	+++++	+++++	+++++	+++++	+++++	+++++	+++++	50.989	47.989-53.989	+++++	+++++
138 Chlorobenzilate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	67.733	64.733-70.733	+++++	+++++
139 Isodrin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	65.067	62.067-68.067	+++++	+++++
140 Diallate A	+++++	+++++	+++++	+++++	+++++	+++++	+++++	65.487	62.487-68.487	+++++	+++++
141 Diallate B	+++++	+++++	+++++	+++++	+++++	+++++	+++++	65.487	62.487-68.487	+++++	+++++
142 1,2-Dibromo-3-Chloropr	+++++	+++++	+++++	+++++	+++++	+++++	+++++	49.917	46.917-52.917	+++++	+++++
135 2,3,5,6-Tetrachlorophe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.840	13.840-19.840	+++++	+++++
136 2,3,4,5-tetrachlorophe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	39.317	36.317-42.317	+++++	+++++
$ 137 d8-1,4-Dioxane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	2.445	0.000-5.445	+++++	+++++
* 134 Di-n-octylphthalate-d4	23.711	23.711	23.711	23.711	23.711	23.711	23.711	23.711	20.711-26.711	23.711	0.000
133 Butylatedhydroxytoluen	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.687	13.687-19.687	+++++	+++++
132 3,6-Dimethylphenanthre	+++++	+++++	+++++	+++++	+++++	+++++	+++++	65.450	62.450-68.450	+++++	+++++
131 1-Methylphenanthrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	64.400	61.400-67.400	+++++	+++++
130 Dibenzothiophene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	62.100	59.100-65.100	+++++	+++++
129 1-Methylfluorene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	54.912	51.912-57.912	+++++	+++++
128 N-Hexadecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	54.212	51.212-57.212	+++++	+++++
127 2-Isopropylnaphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	57.650	54.650-60.650	+++++	+++++
126 N-Tetradecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	56.750	53.750-59.750	+++++	+++++
144 alpha-Terpineol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	12.493	9.493-15.493	+++++	+++++
125 Safrole	+++++	+++++	+++++	+++++	+++++	+++++	+++++	52.166	49.166-55.166	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Batch File: \\target\share\chem3\nt17.i\20230710.b
Inst ID: nt17.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
124 3,4-Dimethylphenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	50.617	47.617-53.617	+++++	+++++
123 Acetophenone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.537	8.537-14.537	+++++	+++++
122 Furfuraldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	43.467	40.467-46.467	+++++	+++++
143 1,4-Dioxane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	2.697	0.000-5.697	+++++	+++++
121 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	54.500	51.500-57.500	+++++	+++++
120 2,3,4,6-Tetrachlorophe	15.334	15.334	15.334	15.334	15.347	15.347	15.360	15.334	12.334-18.334	15.341	0.010
178 2-Benzyl-4-Chloropheno	+++++	+++++	+++++	+++++	+++++	+++++	+++++	18.963	15.963-21.963	+++++	+++++
119 7,12-Dimethylbenz(a)an	+++++	+++++	+++++	+++++	+++++	+++++	+++++	47.069	44.069-50.069	+++++	+++++
118 Triphenyl Phosphate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	21.315	18.315-24.315	+++++	+++++
117 Butyl Diphenyl Phospha	+++++	+++++	+++++	+++++	+++++	+++++	+++++	17.681	14.681-20.681	+++++	+++++
116 Dibutyl Phenyl Phospha	+++++	+++++	+++++	+++++	+++++	+++++	+++++	18.747	15.747-21.747	+++++	+++++
115 Tributyl Phosphate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	17.049	14.049-20.049	+++++	+++++
114 Beta-Pinene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	48.950	45.950-51.950	+++++	+++++
113 Diphenyl Oxide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.341	11.341-17.341	+++++	+++++
112 Biphenyl	+++++	+++++	+++++	+++++	+++++	+++++	+++++	15.526	12.526-18.526	+++++	+++++
111 Azobenzene (1,2-DP-Hyd	16.022	16.009	16.009	16.009	16.009	16.009	16.009	16.022	13.022-19.022	16.011	0.005
110 Tetrachloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	17.874	14.874-20.874	+++++	+++++
109 3,4,5-Trichloroguaiaco	+++++	+++++	+++++	+++++	+++++	+++++	+++++	15.070	12.070-18.070	+++++	+++++
181 3,4,6-Trichloroguaiaco	+++++	+++++	+++++	+++++	+++++	+++++	+++++	15.232	12.232-18.232	+++++	+++++
108 4,5,6-Trichloroguaiaco	+++++	+++++	+++++	+++++	+++++	+++++	+++++	16.547	13.547-19.547	+++++	+++++
184 3,4-Dichloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.330	11.330-17.330	+++++	+++++
107 4,5-Dichloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.330	11.330-17.330	+++++	+++++
182 4,6-Dichloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	14.330	11.330-17.330	+++++	+++++
185 4-Chloroguaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.737	8.737-14.737	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Batch File: \\target\share\chem3\nt17.i\20230710.b
Inst ID: nt17.i

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	106 Guaiacol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	10.031	7.031-13.031	+++++	+++++
	105 1-methylnaphthalene	12.682	12.682	12.682	12.682	12.682	12.682	12.682	12.682	9.682-15.682	12.682	0.000
	151 1,2,4,5-Tetrachloroben	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.499	8.499-14.499	+++++	+++++
	152 Benzo(e)pyrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	30.943	27.943-33.943	+++++	+++++
	153 Chlorpyrifos	+++++	+++++	+++++	+++++	+++++	+++++	+++++	28.884	25.884-31.884	+++++	+++++
	154 Diazinon	+++++	+++++	+++++	+++++	+++++	+++++	+++++	27.197	24.197-30.197	+++++	+++++
	155 Kelthane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	29.408	26.408-32.408	+++++	+++++
	156 Methyl Parathion	+++++	+++++	+++++	+++++	+++++	+++++	+++++	26.903	23.903-29.903	+++++	+++++
	157 Ethyl Parathion	+++++	+++++	+++++	+++++	+++++	+++++	+++++	27.619	24.619-30.619	+++++	+++++
	158 Ethion	+++++	+++++	+++++	+++++	+++++	+++++	+++++	24.900	21.900-27.900	+++++	+++++
	159 4-Nonylphenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	26.405	23.405-29.405	+++++	+++++
	160 Tetraethyl Tin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	21.710	18.710-24.710	+++++	+++++
	161 1,2,3-Trichloronaphtha	+++++	+++++	+++++	+++++	+++++	+++++	+++++	36.246	33.246-39.246	+++++	+++++
	162 1,2,3,4-Tetrachloronap	+++++	+++++	+++++	+++++	+++++	+++++	+++++	37.506	34.506-40.506	+++++	+++++
	163 1,2,3,5,8-Pentachloron	+++++	+++++	+++++	+++++	+++++	+++++	+++++	38.893	35.893-41.893	+++++	+++++
	164 1,2,3,4,6,7-Hexachloro	+++++	+++++	+++++	+++++	+++++	+++++	+++++	39.681	36.681-42.681	+++++	+++++
	165 1,2,3,4,5,6,7-Heptachl	+++++	+++++	+++++	+++++	+++++	+++++	+++++	41.123	38.123-44.123	+++++	+++++
	166 Octachloronaphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	42.253	39.253-45.253	+++++	+++++
	167 2,2',4,4',5-Pentabromo	+++++	+++++	+++++	+++++	+++++	+++++	+++++	42.033	39.033-45.033	+++++	+++++
$	2 Phenol-d5	8.037	8.024	8.024	8.024	8.037	8.050	8.063	8.037	5.037-11.037	8.037	0.015
	3 Phenol	8.063	8.050	8.050	8.050	8.062	8.075	8.088	8.063	5.063-11.063	8.062	0.015
	4 Bis(2-Chloroethyl)ethe	8.190	8.177	8.177	8.177	8.177	8.190	8.203	8.190	5.190-11.190	8.184	0.010
$	5 2-Chlorophenol-d4	8.266	8.266	8.266	8.266	8.266	8.279	8.292	8.266	5.266-11.266	8.272	0.010

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Batch File: \\target\share\chem3\nt17.i\20230710.b
Inst ID: nt17.i

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	6 2-Chlorophenol	8.292	8.292	8.292	8.292	8.304	8.305	8.317	8.292	5.292-11.292	8.299	0.010
	7 1,3-Dichlorobenzene	8.547	8.547	8.547	8.547	8.560	8.560	8.560	8.547	5.547-11.547	8.552	0.007
*	8 1,4-Dichlorobenzene-d4	8.611	8.611	8.611	8.611	8.611	8.611	8.611	8.611	5.611-11.611	8.611	0.000
	9 1,4-Dichlorobenzene	8.636	8.636	8.636	8.636	8.649	8.649	8.649	8.636	5.636-11.636	8.642	0.007
$	10 1,2-Dichlorobenzene-d4	8.968	8.955	8.956	8.956	8.968	8.968	8.981	8.968	5.968-11.968	8.965	0.010
	11 Benzyl alcohol	8.905	8.892	8.892	8.904	8.917	8.956	9.020	8.905	5.905-11.905	8.926	0.047
	12 1,2-Dichlorobenzene	8.981	8.981	8.981	8.981	8.994	8.994	9.007	8.981	5.981-11.981	8.988	0.010
	13 2-Methylphenol	9.135	9.134	9.135	9.134	9.147	9.147	9.173	9.135	6.135-12.135	9.144	0.014
	14 2,2'-oxybis(1-Chloropr	9.186	9.185	9.186	9.186	9.186	9.186	9.198	9.186	6.186-12.186	9.187	0.005
	15 4-Methylphenol	9.403	9.403	9.403	9.403	9.416	9.428	9.467	9.403	6.403-12.403	9.417	0.024
	16 N-Nitroso-di-n-propyla	9.454	9.441	9.441	9.441	9.441	9.441	9.454	9.454	6.454-12.454	9.445	0.006
	17 Hexachloroethane	9.569	9.569	9.569	9.569	9.569	9.569	9.569	9.569	6.569-12.569	9.569	0.000
$	18 Nitrobenzene-d5	9.684	9.684	9.684	9.684	9.697	9.697	9.722	9.684	6.684-12.684	9.693	0.014
	19 Nitrobenzene	9.722	9.709	9.710	9.709	9.722	9.735	9.761	9.722	6.722-12.722	9.724	0.019
	20 Isophorone	10.195	10.182	10.169	10.169	10.169	10.169	10.182	10.195	7.195-13.195	10.177	0.010
	21 2-Nitrophenol	10.335	10.335	10.335	10.335	10.348	10.361	10.386	10.335	7.335-13.335	10.348	0.020
	22 2,4-Dimethylphenol	10.425	10.412	10.412	10.412	10.425	10.425	10.438	10.425	7.425-13.425	10.421	0.010
	23 Bis(2-Chloroethoxy)met	10.604	10.591	10.591	10.591	10.603	10.603	10.616	10.604	7.604-13.604	10.600	0.010
	24 Benzoic acid	10.859	10.769	10.693	10.667	10.616	10.629	+++++	10.859	7.859-13.859	10.706	0.093
	25 2,4-Dichlorophenol	10.808	10.795	10.795	10.795	10.808	10.821	10.859	10.808	7.808-13.808	10.811	0.023
	26 1,2,4-Trichlorobenzene	10.974	10.961	10.961	10.961	10.961	10.974	10.974	10.974	7.974-13.974	10.966	0.007
*	27 Naphthalene-d8	11.050	11.050	11.037	11.037	11.037	11.037	11.037	11.050	8.050-14.050	11.041	0.006
	28 Naphthalene	11.088	11.088	11.075	11.075	11.088	11.088	11.088	11.088	8.088-14.088	11.085	0.006
	29 4-Chloroaniline	11.228	11.228	11.228	11.228	11.241	11.241	11.266	11.228	8.228-14.228	11.237	0.014

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Batch File: \\target\share\chem3\nt17.i\20230710.b
Inst ID: nt17.i

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	30 Hexachlorobutadiene	11.458	11.457	11.458	11.458	11.458	11.458	11.458	11.458	8.458-14.458	11.458	0.000
	31 4-Chloro-3-methylpheno	12.210	12.197	12.197	12.197	12.210	12.223	12.236	12.210	9.210-15.210	12.210	0.015
	32 2-Methylnaphthalene	12.465	12.465	12.465	12.465	12.465	12.465	12.478	12.465	9.465-15.465	12.467	0.005
	33 Hexachlorocyclopentadi	12.937	12.924	12.924	12.924	12.924	12.937	12.924	12.937	9.937-15.937	12.928	0.006
	34 2,4,6-Trichlorophenol	13.090	13.090	13.090	13.090	13.090	13.103	13.103	13.090	10.090-16.090	13.094	0.006
	35 2,4,5-Trichlorophenol	13.167	13.166	13.167	13.167	13.179	13.192	13.205	13.167	10.167-16.167	13.177	0.016
$	36 2-Fluorobiphenyl	13.243	13.243	13.243	13.243	13.243	13.243	13.243	13.243	10.243-16.243	13.243	0.000
	37 2-Chloronaphthalene	13.447	13.434	13.434	13.434	13.434	13.447	13.447	13.447	10.447-16.447	13.440	0.007
	38 2-Nitroaniline	13.715	13.702	13.702	13.702	13.702	13.715	13.728	13.715	10.715-16.715	13.709	0.010
	39 Dimethylphthalate	14.161	14.149	14.136	14.136	14.136	14.136	14.136	14.161	11.161-17.161	14.141	0.010
	40 Acenaphthylene	14.289	14.289	14.289	14.289	14.289	14.289	14.289	14.289	11.289-17.289	14.289	0.000
	41 2,6-Dinitrotoluene	14.276	14.263	14.264	14.263	14.263	14.263	14.264	14.276	11.276-17.276	14.265	0.005
*	42 Acenaphthene-d10	14.608	14.595	14.595	14.595	14.595	14.595	14.595	14.608	11.608-17.608	14.597	0.005
	43 3-Nitroaniline	14.557	14.544	14.544	14.557	14.557	14.570	+++++	14.557	11.557-17.557	14.555	0.010
	44 Acenaphthene	14.672	14.671	14.659	14.659	14.659	14.659	14.659	14.672	11.672-17.672	14.662	0.006
	45 2,4-Dinitrophenol	14.786	14.761	14.761	14.761	14.773	14.812	14.939	14.786	11.786-17.786	14.799	0.065
	46 Dibenzofuran	15.003	14.990	14.990	14.990	14.990	14.990	15.003	15.003	12.003-18.003	14.994	0.006
	47 4-Nitrophenol	14.926	14.913	14.914	14.914	14.952	14.990	+++++	14.926	11.926-17.926	14.935	0.031
	48 2,4-Dinitrotoluene	15.079	15.066	15.067	15.067	15.066	15.079	15.092	15.079	12.079-18.079	15.074	0.010
	49 Fluorene	15.704	15.691	15.691	15.691	15.691	15.691	15.691	15.704	12.704-18.704	15.693	0.005
	50 Diethylphthalate	15.602	15.589	15.576	15.576	15.576	15.576	15.576	15.602	12.602-18.602	15.582	0.010
	51 4-Chlorophenyl-phenyle	15.704	15.691	15.691	15.691	15.691	15.691	15.691	15.704	12.704-18.704	15.693	0.005
	52 4-Nitroaniline	15.831	15.805	15.806	15.806	15.831	15.844	15.857	15.831	12.831-18.831	15.826	0.021
	53 4,6-Dinitro-2-methylph	15.920	15.907	15.895	15.895	15.895	15.907	15.933	15.920	12.920-18.920	15.907	0.015

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Batch File: \\target\share\chem3\nt17.i\20230710.b
Inst ID: nt17.i

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	54 N-Nitrosodiphenylamine	15.958	15.945	15.946	15.946	15.946	15.946	15.946	15.958	12.958-18.958	15.947	0.005
$	55 2,4,6-Tribromophenol	16.226	16.225	16.213	16.226	16.225	16.226	16.226	16.226	13.226-19.226	16.224	0.005
	56 4-Bromophenyl-phenylet	16.684	16.684	16.684	16.684	16.684	16.684	16.684	16.684	13.684-19.684	16.684	0.000
	57 Hexachlorobenzene	16.990	16.989	16.990	16.989	16.989	16.989	16.989	16.990	13.990-19.990	16.989	0.000
	58 Pentachlorophenol	17.347	17.346	17.347	17.347	17.359	17.359	17.372	17.347	14.347-20.347	17.354	0.010
*	59 Phenanthrene-d10	17.602	17.589	17.589	17.589	17.589	17.589	17.589	17.602	14.602-20.602	17.591	0.005
	60 Phenanthrene	17.640	17.640	17.640	17.640	17.640	17.640	17.640	17.640	14.640-20.640	17.640	0.000
	61 Anthracene	17.742	17.729	17.729	17.729	17.729	17.742	17.742	17.742	14.742-20.742	17.735	0.007
	62 Carbazole	18.061	18.061	18.074	18.073	18.073	18.073	18.086	18.061	15.061-21.061	18.072	0.009
	63 Di-n-butylphthalate	18.902	18.902	18.902	18.890	18.889	18.902	18.902	18.902	15.902-21.902	18.899	0.006
	64 Fluoranthene	20.037	20.037	20.025	20.037	20.037	20.037	20.037	20.037	17.037-23.037	20.035	0.005
	65 Pyrene	20.458	20.458	20.445	20.458	20.458	20.458	20.458	20.458	17.458-23.458	20.456	0.005
$	66 Terphenyl-d14	20.764	20.764	20.764	20.764	20.764	20.764	20.764	20.764	17.764-23.764	20.764	0.000
	67 Butylbenzylphthalate	21.695	21.695	21.695	21.695	21.695	21.695	21.695	21.695	18.695-24.695	21.695	0.000
	68 Benzo(a)anthracene	22.627	22.614	22.614	22.614	22.614	22.614	22.614	22.627	19.627-25.627	22.616	0.005
*	69 Chrysene-d12	22.652	22.652	22.640	22.639	22.639	22.639	22.640	22.652	19.652-25.652	22.643	0.006
	70 3,3'-Dichlorobenzidine	22.589	22.588	22.588	22.588	22.576	22.588	22.588	22.589	19.589-25.589	22.587	0.005
	71 Chrysene	22.691	22.690	22.691	22.690	22.690	22.690	22.691	22.691	19.691-25.691	22.690	0.000
	72 bis(2-Ethylhexyl)phtha	22.742	22.741	22.742	22.741	22.741	22.741	22.742	22.742	19.742-25.742	22.741	0.000
	73 Di-n-octylphthalate	23.724	23.724	23.724	23.724	23.724	23.724	23.724	23.724	20.724-26.724	23.724	0.000
	74 Benzo(b)fluoranthene	24.400	24.387	24.387	24.387	24.387	24.400	24.400	24.400	21.400-27.400	24.393	0.007
	75 Benzo(k)fluoranthene	24.438	24.425	24.425	24.425	24.425	24.425	24.438	24.438	21.438-27.438	24.429	0.006
	187 Total Benzofluoranthen	24.400	24.425	24.387	24.387	24.387	24.400	24.400	24.400	21.400-27.400	24.398	0.014
	76 Benzo(a)pyrene	24.948	24.948	24.948	24.948	24.948	24.948	24.961	24.948	21.948-27.948	24.950	0.005

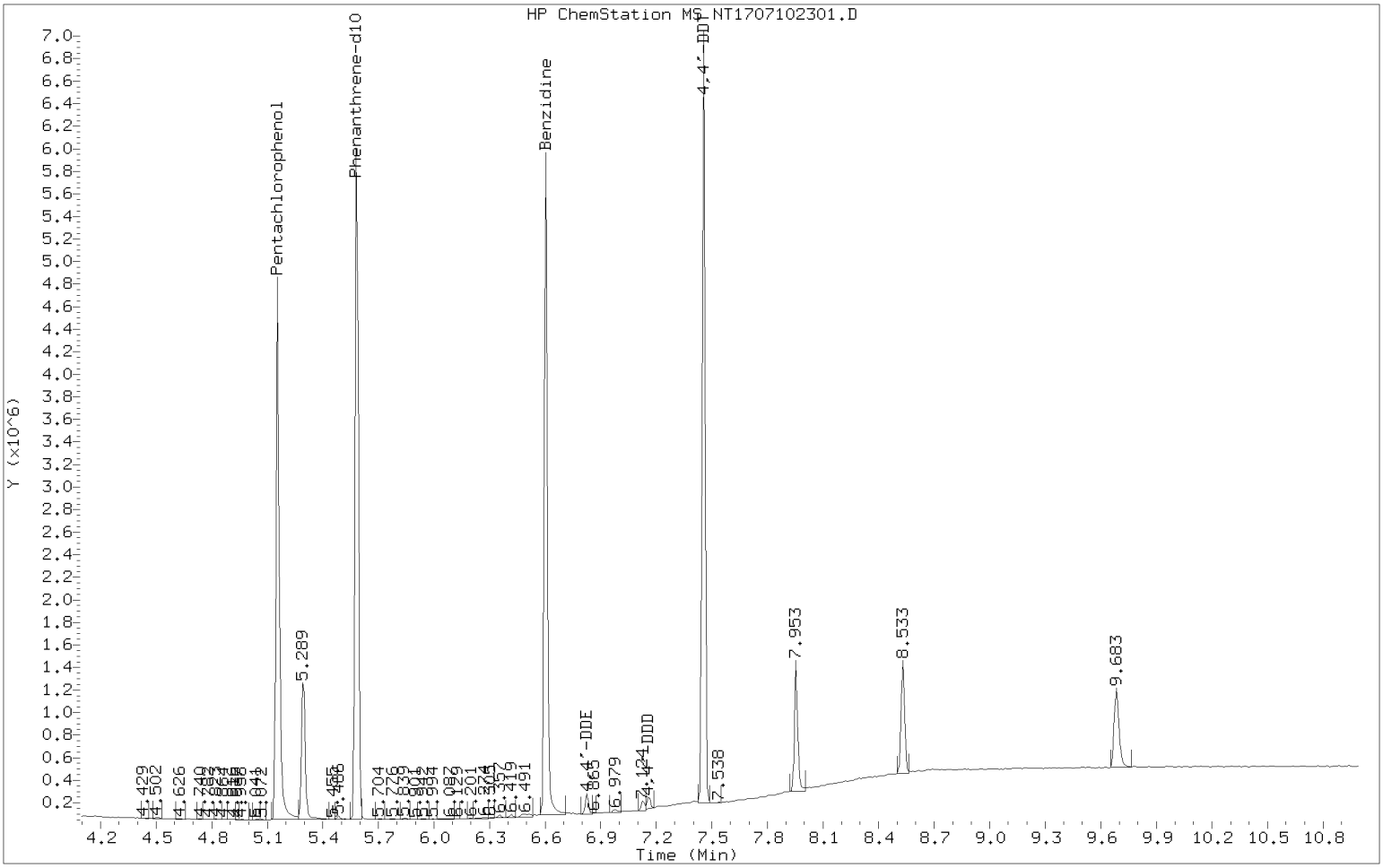
ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

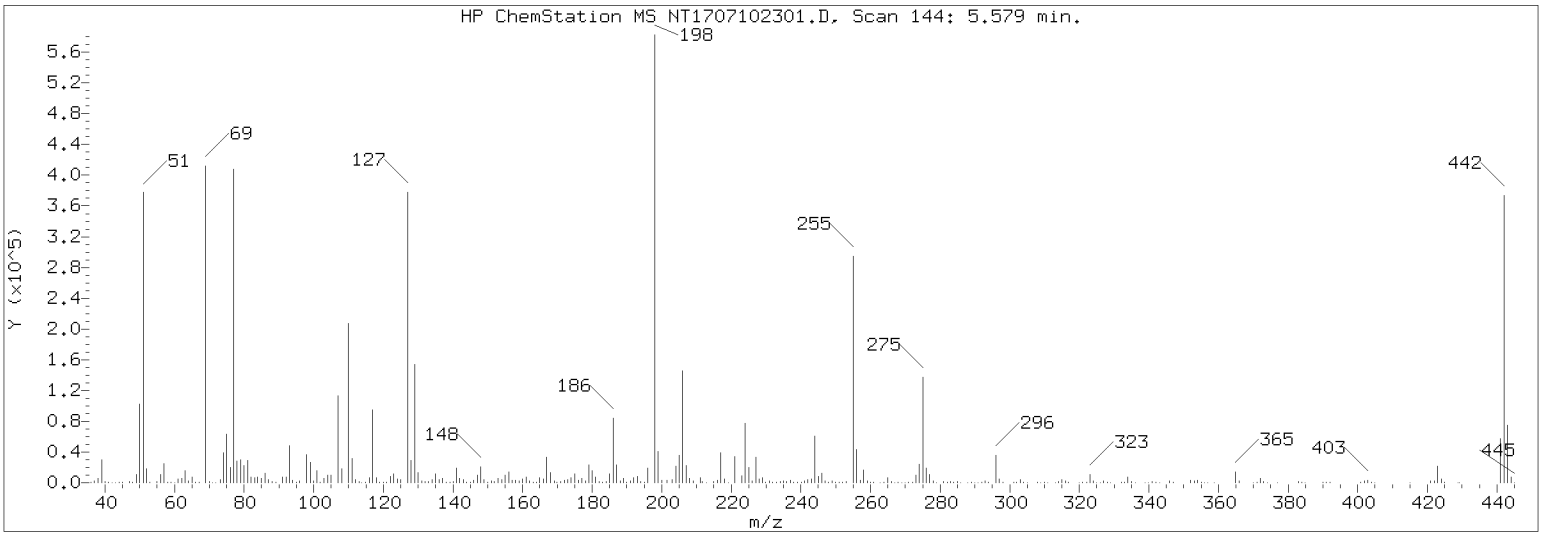
Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Batch File: \\target\share\chem3\nt17.i\20230710.b
Inst ID: nt17.i

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
*	77 Perylene-d12	25.038	25.038	25.038	25.038	25.038	25.038	25.038	25.038	22.038-28.038	25.038	0.000
	78 Indeno(1,2,3-cd)pyrene	27.299	27.285	27.286	27.286	27.286	27.298	27.311	27.299	24.299-30.299	27.293	0.010
	79 Dibenzo(a,h)anthracene	27.311	27.298	27.286	27.286	27.298	27.298	27.311	27.311	24.311-30.311	27.298	0.010
	80 Benzo(g,h,i)perylene	27.963	27.950	27.938	27.937	27.950	27.963	27.976	27.963	24.963-30.963	27.954	0.014
$	85 p-Cresol-d4	+++++	+++++	+++++	+++++	+++++	+++++	+++++	51.633	48.633-54.633	+++++	+++++
$	86 Anthracene-d10	+++++	+++++	+++++	+++++	+++++	+++++	+++++	63.533	60.533-66.533	+++++	+++++
$	87 Fluoranthene-d10	+++++	+++++	+++++	+++++	+++++	+++++	+++++	60.273	57.273-63.273	+++++	+++++
$	88 Dibenz(a,h)anthracene-	+++++	+++++	+++++	+++++	+++++	+++++	+++++	78.600	75.600-81.600	+++++	+++++
$	89 Diphenyl-d10	+++++	+++++	+++++	+++++	+++++	+++++	+++++	50.841	47.841-53.841	+++++	+++++
	90 N-Nitrosodimethylamine	4.406	4.381	4.381	4.381	4.393	4.419	4.457	4.406	1.406-7.406	4.403	0.028
	91 Aniline	8.088	8.088	8.088	8.088	8.088	8.101	8.139	8.088	5.088-11.088	8.097	0.019
	92 1,2-Diphenylhydrazine	+++++	+++++	+++++	+++++	+++++	+++++	+++++	56.160	53.160-59.160	+++++	+++++
	93 Benzidine	20.280	20.279	20.292	20.292	20.292	20.305	20.318	20.280	17.280-23.280	20.294	0.014
$	95 D10-1-methylnaphthalen	+++++	+++++	+++++	+++++	+++++	+++++	+++++	52.075	49.075-55.075	+++++	+++++
	96 p-Cymene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	49.250	46.250-52.250	+++++	+++++
	97 Caffeine	+++++	+++++	+++++	+++++	+++++	+++++	+++++	61.202	58.202-64.202	+++++	+++++
	98 Retene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	18.248	15.248-21.248	+++++	+++++
	99 Perylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	26.341	23.341-29.341	+++++	+++++
	100 3-beta-Coprostanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	25.614	22.614-28.614	+++++	+++++
	101 Cholesterol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	26.405	23.405-29.405	+++++	+++++
	102 beta-Sitosterol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	79.550	76.550-82.550	+++++	+++++
	103 Pyridine	4.406	4.406	4.406	4.406	4.432	4.457	4.495	4.406	1.406-7.406	4.430	0.035
	188 2,6-Dichlorophenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.996	8.996-14.996	+++++	+++++
	189 N-Nitrosomethylethylam	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.823	2.823-8.823	+++++	+++++

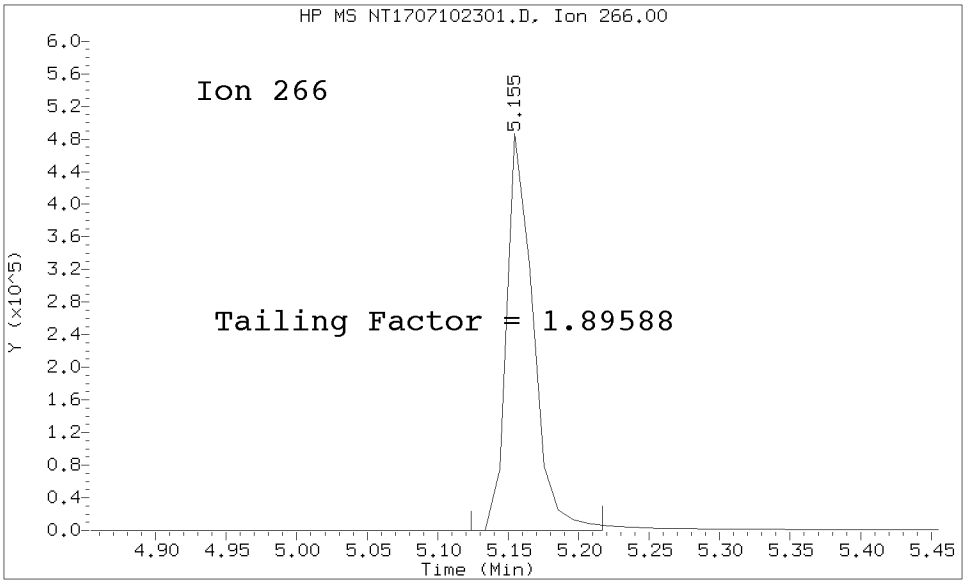
DFTPP TAILING FACTOR AND BREAKDOWN GRAPHIC REPORT

Datafile Analyzed: /20230710.b/NT1707102301.D/NT1707102301.D
Method Used: \20230710.b\DFTPP8270E.m Inst: nt17
Injection Date: 10-JUL-2023 12:42 Operator: JGR
Sample Info: SEQ-TUN1 SEQ-TUN1
Report Date: 07/11/2023 08:25



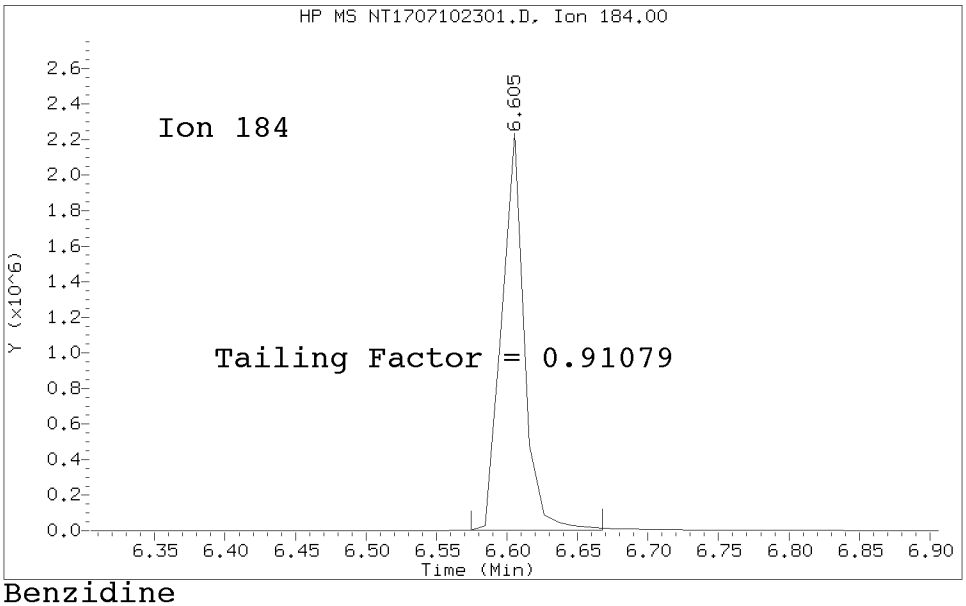


Datafile Analyzed: /20230710.b/NT1707102301.D/NT1707102301.D
Method Used: \20230710.b\DFTPP8270E.m\sw846ddt.m Inst: nt17
Injection Date: 10-JUL-2023 12:42 Operator: JGR
Sample Info: SEQ-TUN1
Report Date: 07/11/2023 08:25



Pentachlorophenol
==========
Exp. RT = 5.155
Found RT = 5.155

Tail Factor = 1.896 Maximum Allowed = 2.0



Benzidine
==========
Exp. RT = 6.605
Found RT = 6.605

Tail Factor = 0.911 Maximum Allowed = 2.0

8270 TAILING FACTOR/BREAKDOWN SUMMARY RESULTS

TAILING ANALYSIS SUMMARY

Compound	Tail Factor	Max Allowed	Test
Pentachlorophenol	1.8958838	2.000	PASS
Benzidine	0.9107939	2.000	PASS

DDT DEGRADATION BREAKDOWN ANALYSIS SUMMARY

Compound	Response	%Breakdown	Max Allowed	Test
4,4-DDT	1258853			N/A
4,4-DDE	20298	1.6	20.0	PASS
4,4-DDD	22884	1.8	20.0	PASS
4,4-DDD + DDE	43182	3.3	20.0	PASS

Tuning Sample, nt17.i/20230710.b/NT1707102301.D, *** PASSED ***

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
68	Less than 2.00% of mass 69	0.24 (0.37)
69	Mass 69 relative abundance	65.20
70	Less than 2.00% of mass 69	0.35 (0.54)
197	Less than 2.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.96
365	1.00 - 100.00% of mass 198	3.41
441	Less than 150.00% of mass 443	16.60 (78.00)
442	Less than 200.00% of mass 198	111.04
443	15.00 - 24.00% of mass 442	21.28 (19.17)

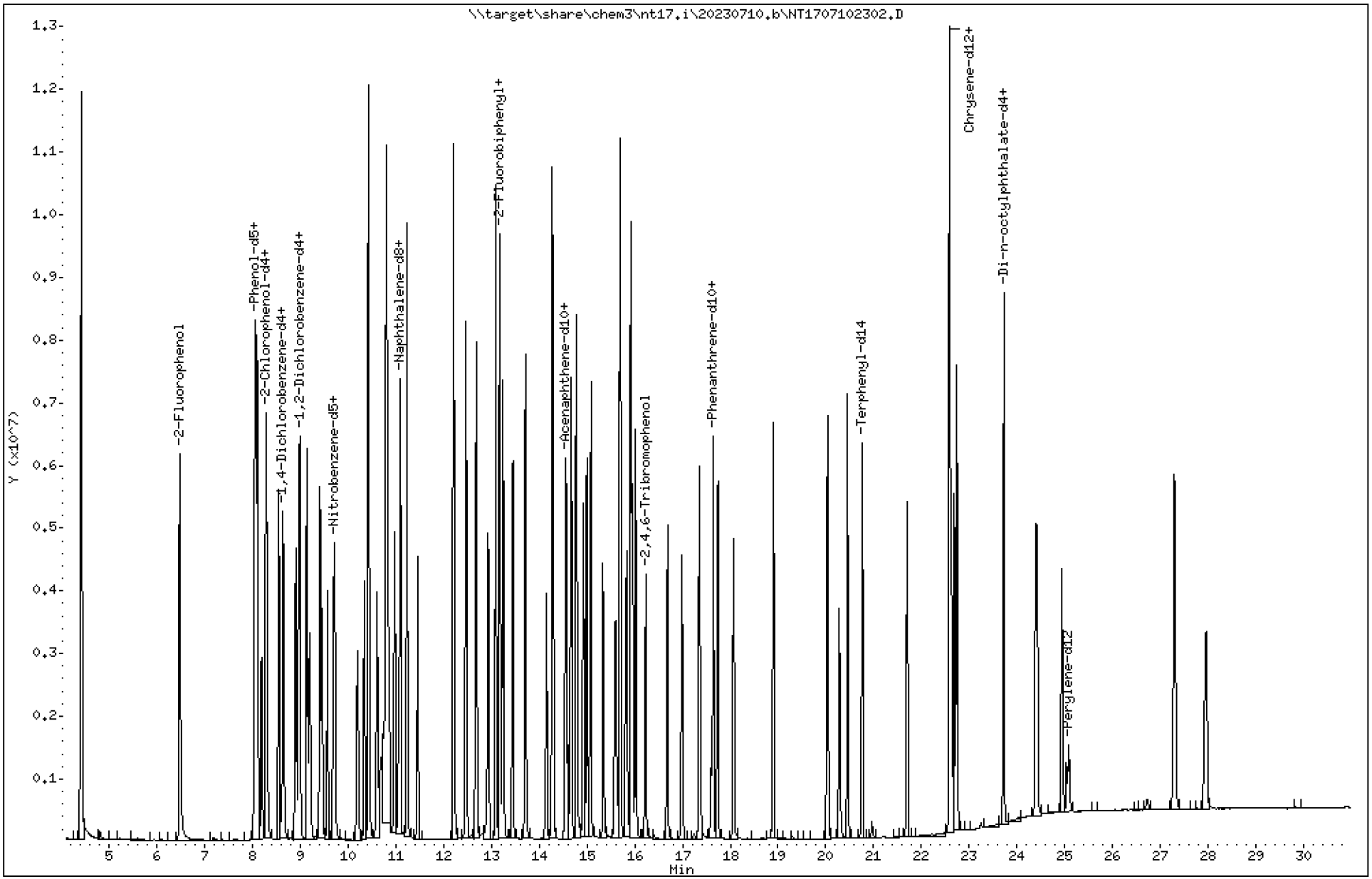
Data File: NT1707102301.D
Spectrum: Avg. Scans 143-145 (5.58), Background Scan 140
Location of Maximum: 442.00
Number of points: 328

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	152	123.00	6648	209.00	934	301.00	317
37.00	885	124.00	3150	210.00	148	302.00	483
38.00	2811	125.00	2709	211.00	3871	303.00	2927
39.00	16440	127.00	215168	212.00	496	304.00	780
40.00	674	128.00	16816	213.00	247	305.00	121
41.00	486	129.00	87672	214.00	52	308.00	394
42.00	114	130.00	7509	215.00	1067	309.00	252
43.00	49	131.00	1541	216.00	2178	310.00	341
44.00	290	132.00	890	217.00	24736	311.00	127
45.00	414	133.00	454	218.00	2965	312.00	80
48.00	45	134.00	2508	219.00	264	313.00	260
49.00	1038	135.00	6462	221.00	20768	314.00	1294
50.00	57152	136.00	2532	223.00	5835	315.00	2639
51.00	210688	137.00	3537	224.00	48512	316.00	1705
52.00	10708	138.00	709	225.00	12453	317.00	284
53.00	579	139.00	398	226.00	1571	320.00	127
55.00	1095	140.00	1147	227.00	21224	321.00	906
56.00	6337	141.00	11090	228.00	3031	322.00	531
57.00	14200	142.00	3464	229.00	4351	323.00	8390
58.00	711	143.00	2342	230.00	684	324.00	1549
59.00	349	144.00	719	231.00	1794	325.00	156
60.00	31	145.00	649	232.00	423	326.00	95
61.00	2705	146.00	2065	233.00	336	327.00	1726
62.00	3240	147.00	5354	234.00	1291	328.00	771
63.00	8633	148.00	12303	235.00	1552	329.00	136
64.00	1300	149.00	2547	236.00	960	332.00	727
65.00	3787	150.00	659	237.00	1899	333.00	875
66.00	435	151.00	1413	238.00	264	334.00	5482
67.00	408	152.00	940	239.00	868	335.00	1361
68.00	854	153.00	3241	240.00	725	336.00	247
69.00	229824	154.00	2429	241.00	1311	339.00	151
70.00	1234	155.00	5825	242.00	2762	340.00	142
71.00	207	156.00	8204	243.00	3165	341.00	995
72.00	138	157.00	1712	244.00	39600	342.00	389
73.00	1783	158.00	1931	245.00	5016	343.00	110
74.00	22080	159.00	1457	246.00	7864	346.00	2121
75.00	35048	160.00	3124	247.00	1547	347.00	323
76.00	11693	161.00	4575	248.00	305	350.00	79
77.00	227584	162.00	1347	249.00	1480	351.00	100
78.00	15447	163.00	496	250.00	278	352.00	3081
79.00	16640	164.00	539	251.00	407	353.00	2058
80.00	12821	165.00	3804	252.00	415	354.00	2881
81.00	17000	166.00	2773	253.00	706	355.00	374
82.00	4176	167.00	19240	255.00	194816	356.00	286
83.00	3764	168.00	8694	256.00	27960	359.00	204
84.00	599	169.00	1459	257.00	2191	365.00	12008
85.00	2874	170.00	655	258.00	11364	366.00	1746
86.00	5061	171.00	896	259.00	1870	367.00	67
87.00	2294	172.00	1877	260.00	358	370.00	282

88.00	749	173.00	2250	261.00	281	371.00	807
89.00	293	174.00	3780	263.00	121	372.00	4925
91.00	3658	175.00	7289	264.00	312	373.00	1227
92.00	4457	176.00	2188	265.00	4610	374.00	140
93.00	27168	177.00	3430	266.00	808	377.00	171
94.00	1823	178.00	1400	267.00	8	383.00	1202
95.00	358	179.00	13906	268.00	30	384.00	367
96.00	983	180.00	9494	269.00	68	385.00	157
97.00	92	181.00	4558	270.00	153	390.00	715
98.00	20976	182.00	887	271.00	372	391.00	439
99.00	15318	183.00	421	272.00	623	392.00	353
100.00	1477	184.00	1174	273.00	6406	401.00	358
101.00	8548	185.00	6958	274.00	16166	402.00	2082
102.00	579	186.00	50152	275.00	93088	403.00	3036
103.00	3039	187.00	14135	276.00	12644	404.00	1170
104.00	5701	188.00	1522	277.00	7496	405.00	293
105.00	5324	189.00	3272	278.00	1480	410.00	91
106.00	296	190.00	731	279.00	260	415.00	171
107.00	64792	191.00	1590	281.00	76	421.00	2703
108.00	10458	192.00	4247	282.00	153	422.00	2621
109.00	389	193.00	4665	283.00	826	423.00	20848
110.00	116904	194.00	964	284.00	714	424.00	4661
111.00	17960	195.00	610	285.00	1436	425.00	434
112.00	2273	196.00	11370	286.00	284	429.00	240
113.00	826	198.00	352512	288.00	109	439.00	98
114.00	152	199.00	24552	289.00	342	441.00	58528
115.00	451	200.00	1965	290.00	258	442.00	391424
116.00	3891	201.00	1764	291.00	174	443.00	75032
117.00	54208	203.00	2777	292.00	404	444.00	6968
118.00	3914	204.00	12950	293.00	1736	445.00	354
119.00	437	205.00	22176	294.00	447		
120.00	715	206.00	89872	296.00	25216		
121.00	443	207.00	12230	297.00	3832		
122.00	4598	208.00	3462	298.00	325		

Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102302.D
Date : 10-JUL-2023 12:59
Client ID:
Sample Info: SEQ-CAL7
Volume Injected (uL): 1.0
Column phase: ZB-5msi

Instrument: nt17.i
Operator: JGR
Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt17.i\20230710.b\NT1707102302.D
Lab Smp Id: SEQ-CAL7
Inj Date : 10-JUL-2023 12:59
Operator : JGR Inst ID: nt17.i
Smp Info : SEQ-CAL7
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Meth Date : 18-Jul-2023 10:00 jrains Quant Type: ISTD
Cal Date : 10-JUL-2023 12:59 Cal File: NT1707102302.D
Als bottle: 2 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: JOSHR-201909

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	500.000	Volume of final extract (uL)
Vo	500.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
$ 1	2-Fluorophenol	112	6.469	6.469	(0.751)	3060319	30.0000	30.94
$ 2	Phenol-d5	99	8.037	8.037	(0.933)	4153693	30.0000	30.28
3	Phenol	94	8.062	8.062	(0.936)	3549404	20.0000	19.41
$ 5	2-Chlorophenol-d4	132	8.266	8.266	(0.960)	3394795	30.0000	30.43
4	Bis(2-Chloroethyl)ether	93	8.189	8.189	(0.951)	2100995	20.0000	19.82
6	2-Chlorophenol	128	8.291	8.291	(0.963)	2563124	20.0000	19.67
7	1,3-Dichlorobenzene	146	8.546	8.546	(0.993)	2298300	20.0000	19.39
* 8	1,4-Dichlorobenzene-d4	152	8.610	8.610	(1.000)	280842	4.00000	
9	1,4-Dichlorobenzene	146	8.636	8.636	(1.003)	2526370	20.0000	19.77
$ 10	1,2-Dichlorobenzene-d4	152	8.968	8.968	(1.042)	1335795	20.0000	19.42
12	1,2-Dichlorobenzene	146	8.981	8.981	(1.043)	2154915	20.0000	19.23
11	Benzyl alcohol	108	8.904	8.904	(1.034)	1376338	20.0000	19.99
14	2,2'-oxybis(1-Chloropropane)	121	9.185	9.185	(1.067)	610987	20.0000	16.66
13	2-Methylphenol	108	9.134	9.134	(1.061)	2301720	20.0000	21.03
17	Hexachloroethane	117	9.569	9.569	(1.111)	986093	20.0000	19.53
16	N-Nitroso-di-n-propylamine	70	9.454	9.454	(1.098)	1668012	20.0000	19.78
15	4-Methylphenol	108	9.402	9.402	(1.092)	2119995	20.0000	19.84
$ 18	Nitrobenzene-d5	82	9.683	9.683	(0.876)	2523792	20.0000	21.07
19	Nitrobenzene	77	9.722	9.722	(0.880)	2618287	20.0000	21.31
20	Isophorone	82	10.194	10.194	(0.923)	3854225	20.0000	20.84
21	2-Nitrophenol	139	10.335	10.335	(0.935)	1155626	20.0000	22.58
22	2,4-Dimethylphenol	107	10.424	10.424	(0.943)	4462039	40.0000	39.15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
	23 Bis(2-Chloroethoxy)methane	93	10.603	10.603	(0.960)	2087765	20.0000	19.84
	24 Benzoic acid	105	10.858	10.858	(0.983)	6939911	80.0000	81.80(M)
	25 2,4-Dichlorophenol	162	10.807	10.807	(0.978)	3390200	40.0000	39.71
	26 1,2,4-Trichlorobenzene	180	10.973	10.973	(0.993)	2022023	20.0000	21.96
*	27 Naphthalene-d8	136	11.050	11.050	(1.000)	1044672	4.00000	
	28 Naphthalene	128	11.088	11.088	(1.003)	5551546	20.0000	19.09
	29 4-Chloroaniline	127	11.228	11.228	(1.016)	5301847	40.0000	40.44
	30 Hexachlorobutadiene	225	11.457	11.457	(1.037)	894182	20.0000	19.44
	31 4-Chloro-3-methylphenol	107	12.210	12.210	(1.105)	4041759	40.0000	42.12
	32 2-Methylnaphthalene	142	12.465	12.465	(1.128)	4094187	20.0000	20.25
	33 Hexachlorocyclopentadiene	237	12.937	12.937	(0.886)	1423813	40.0000	39.87
	34 2,4,6-Trichlorophenol	196	13.090	13.090	(0.896)	2250608	40.0000	43.67
	35 2,4,5-Trichlorophenol	196	13.166	13.166	(0.901)	2384215	40.0000	44.56
$	36 2-Fluorobiphenyl	172	13.243	13.243	(0.907)	3860403	20.0000	19.41
	37 2-Chloronaphthalene	162	13.447	13.447	(0.921)	3459098	20.0000	19.87
	38 2-Nitroaniline	65	13.715	13.715	(0.939)	2787770	40.0000	39.73
	39 Dimethylphthalate	163	14.161	14.161	(0.969)	3399003	20.0000	18.86
	40 Acenaphthylene	152	14.289	14.289	(0.978)	5088617	20.0000	19.02
	41 2,6-Dinitrotoluene	165	14.276	14.276	(0.977)	1664089	40.0000	39.65
*	42 Acenaphthene-d10	164	14.607	14.607	(1.000)	516529	4.00000	
	43 3-Nitroaniline	138	14.556	14.556	(0.997)	1881616	40.0000	41.04
	44 Acenaphthene	153	14.671	14.671	(1.004)	3266670	20.0000	19.54
	45 2,4-Dinitrophenol	184	14.786	14.786	(1.012)	2097659	80.0000	79.79
	46 Dibenzofuran	168	15.002	15.002	(1.027)	4546230	20.0000	19.52
	47 4-Nitrophenol	109	14.926	14.926	(1.022)	1108509	40.0000	41.14
	48 2,4-Dinitrotoluene	165	15.079	15.079	(1.032)	2184501	40.0000	40.22
	50 Diethylphthalate	149	15.602	15.602	(1.068)	3729035	20.0000	18.24
	49 Fluorene	166	15.703	15.703	(1.075)	4513953	20.0000	22.26
	51 4-Chlorophenyl-phenylether	204	15.703	15.703	(1.075)	2035105	20.0000	21.14
	52 4-Nitroaniline	138	15.831	15.831	(1.084)	1641380	40.0000	40.52
	53 4,6-Dinitro-2-methylphenol	198	15.920	15.920	(0.904)	2415718	80.0000	81.38
	54 N-Nitrosodiphenylamine	169	15.958	15.958	(0.907)	2276183	20.0000	18.81
$	55 2,4,6-Tribromophenol	330	16.225	16.225	(1.111)	789438	30.0000	33.03
	56 4-Bromophenyl-phenylether	248	16.683	16.683	(0.948)	929551	20.0000	19.87
	57 Hexachlorobenzene	284	16.989	16.989	(0.965)	1052424	20.0000	19.27
	58 Pentachlorophenol	266	17.346	17.346	(0.986)	1261418	40.0000	40.86
*	59 Phenanthrene-d10	188	17.601	17.601	(1.000)	808054	4.00000	
	60 Phenanthrene	178	17.640	17.640	(1.002)	4573816	20.0000	19.55
	61 Anthracene	178	17.742	17.742	(1.008)	4535780	20.0000	20.91
	62 Carbazole	167	18.060	18.060	(1.026)	3914432	20.0000	21.57
	63 Di-n-butylphthalate	149	18.902	18.902	(1.074)	5883051	20.0000	20.06
	64 Fluoranthene	202	20.037	20.037	(0.885)	4651747	20.0000	21.08
	65 Pyrene	202	20.458	20.458	(0.903)	4695359	20.0000	18.84
$	66 Terphenyl-d14	244	20.764	20.764	(0.917)	3335338	20.0000	19.26
	67 Butylbenzylphthalate	149	21.695	21.695	(0.958)	2133649	20.0000	19.98
	68 Benzo(a)anthracene	228	22.626	22.626	(0.999)	3509725	20.0000	19.90
*	69 Chrysene-d12	240	22.652	22.652	(1.000)	498295	4.00000	
	70 3,3'-Dichlorobenzidine	252	22.588	22.588	(0.997)	3921010	60.0000	59.81
	71 Chrysene	228	22.690	22.690	(1.002)	3185713	20.0000	19.27
	72 bis(2-Ethylhexyl)phthalate	149	22.741	22.741	(0.959)	2995369	20.0000	20.72
*	134 Di-n-octylphthalate-d4	153	23.711	23.711	(1.000)	1020642	4.00000	
	73 Di-n-octylphthalate	149	23.723	23.723	(1.001)	5115861	20.0000	18.03
	74 Benzo(b)fluoranthene	252	24.399	24.399	(0.975)	3603656	20.0000	19.72
	75 Benzo(k)fluoranthene	252	24.438	24.438	(0.976)	3665659	20.0000	19.76

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
76	Benzo(a)pyrene	252	24.948	24.948	(0.996)	2709006	20.0000	20.37
* 77	Perylene-d12	264	25.037	25.037	(1.000)	493387	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	27.298	27.298	(1.090)	3741114	20.0000	20.88
79	Dibenzo(a,h)anthracene	278	27.311	27.311	(1.091)	3254920	20.0000	20.42
80	Benzo(g,h,i)perylene	276	27.963	27.963	(1.117)	3511662	20.0000	21.36(M)
90	N-Nitrosodimethylamine	74	4.406	4.406	(0.512)	3096738	40.0000	41.81
91	Aniline	93	8.088	8.088	(0.939)	5874319	40.0000	41.31
93	Benzidine	184	20.279	20.279	(0.895)	2298991	40.0000	84.45
103	Pyridine	79	4.406	4.406	(0.512)	4614338	40.0000	39.62
105	1-methylnaphthalene	142	12.682	12.682	(1.148)	3672642	20.0000	19.63
111	Azobenzene (1,2-DP-Hydrazine)	77	16.022	16.022	(1.097)	4770900	20.0000	18.77
187	Total Benzofluoranthenes	252	24.399	24.399	(0.975)	6470288	40.0000	39.43
120	2,3,4,6-Tetrachlorophenol	232	15.334	15.334	(1.050)	1029934	20.0000	22.82

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt17.i
Lab File ID: NT1707102302.D
Lab Smp Id: SEQ-CAL7
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Misc Info:

Calibration Date: 10-JUL-2023
Calibration Time: 14:14
Level: LOW
Sample Type: WATER

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	288953	144477	577906	280842	-2.81
27 Naphthalene-d8	1098716	549358	2197432	1044672	-4.92
42 Acenaphthene-d10	552014	276007	1104028	516529	-6.43
59 Phenanthrene-d10	884794	442397	1769588	808054	-8.67
69 Chrysene-d12	564549	282275	1129098	498295	-11.74
134 Di-n-octylphthala	1047332	523666	2094664	1020642	-2.55
77 Perylene-d12	526075	263038	1052150	493387	-6.21

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	8.61	8.11	9.11	8.61	0.00
27 Naphthalene-d8	11.04	10.54	11.54	11.05	0.12
42 Acenaphthene-d10	14.60	14.10	15.10	14.61	0.09
59 Phenanthrene-d10	17.59	17.09	18.09	17.60	0.07
69 Chrysene-d12	22.64	22.14	23.14	22.65	0.06
134 Di-n-octylphthala	23.71	23.21	24.21	23.71	0.00
77 Perylene-d12	25.04	24.54	25.54	25.04	0.00

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

REVIEW SUMMARY FOR FILE - NT1707102302.D

Lab ID: SEQ-CAL7
nt17.i, ABN.m, 10-JUL-2023 12:59

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

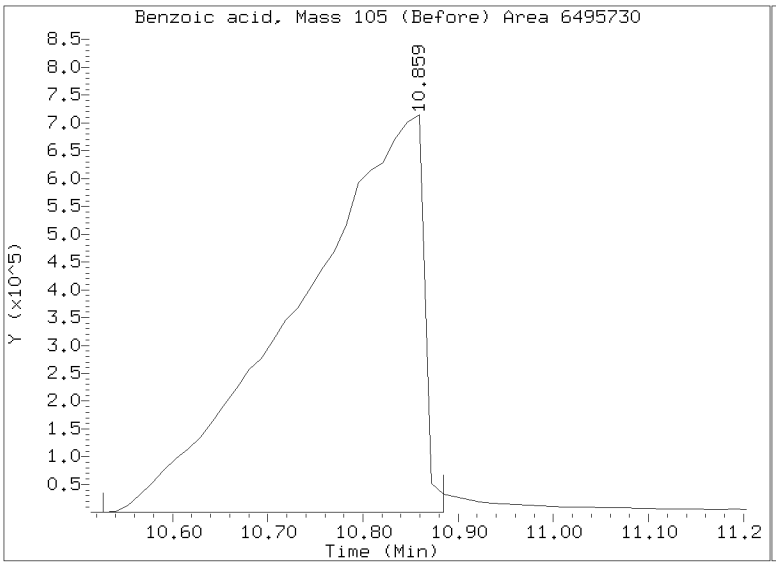
RRT check based on Ccal File: NT1707102302.D

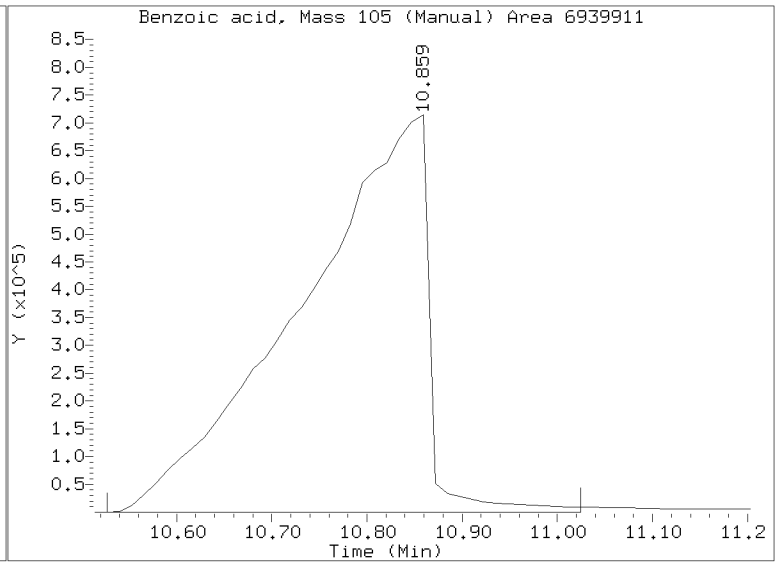
On Column LOD for nt17.i, ABN.m, ICAL.sub = 0.0000

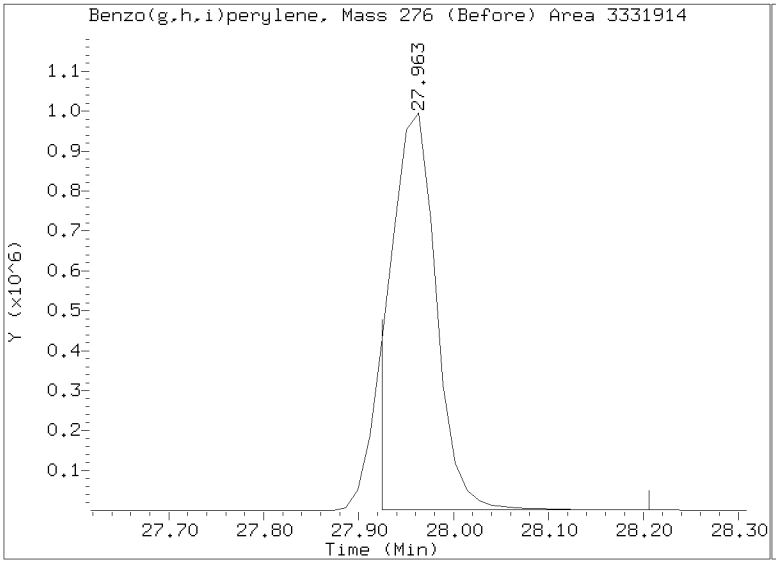
* Only compounds listed in the work order have been verified by the analyst *

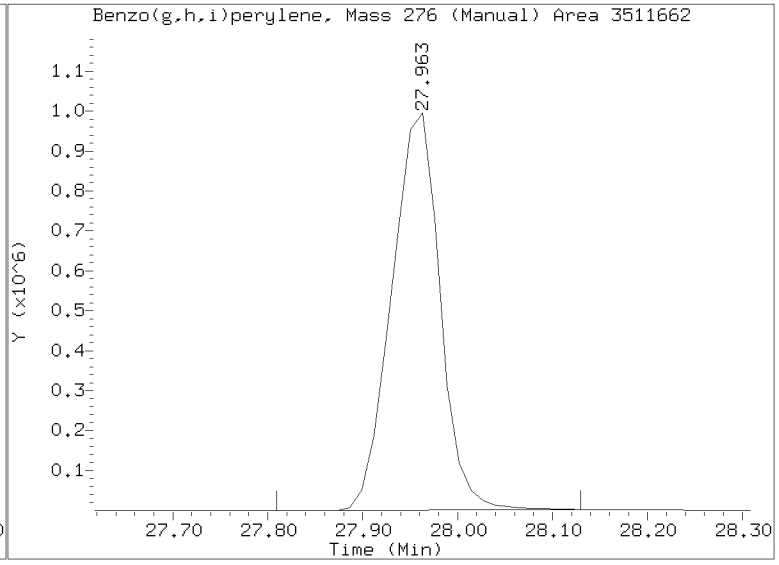
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt17.i/20230710.b/NT1707102302.D
Injection Date: 10-JUL-2023 12:59
Lab ID:SEQ-CAL7 Client ID:
Report Date: 07/18/2023 10:00



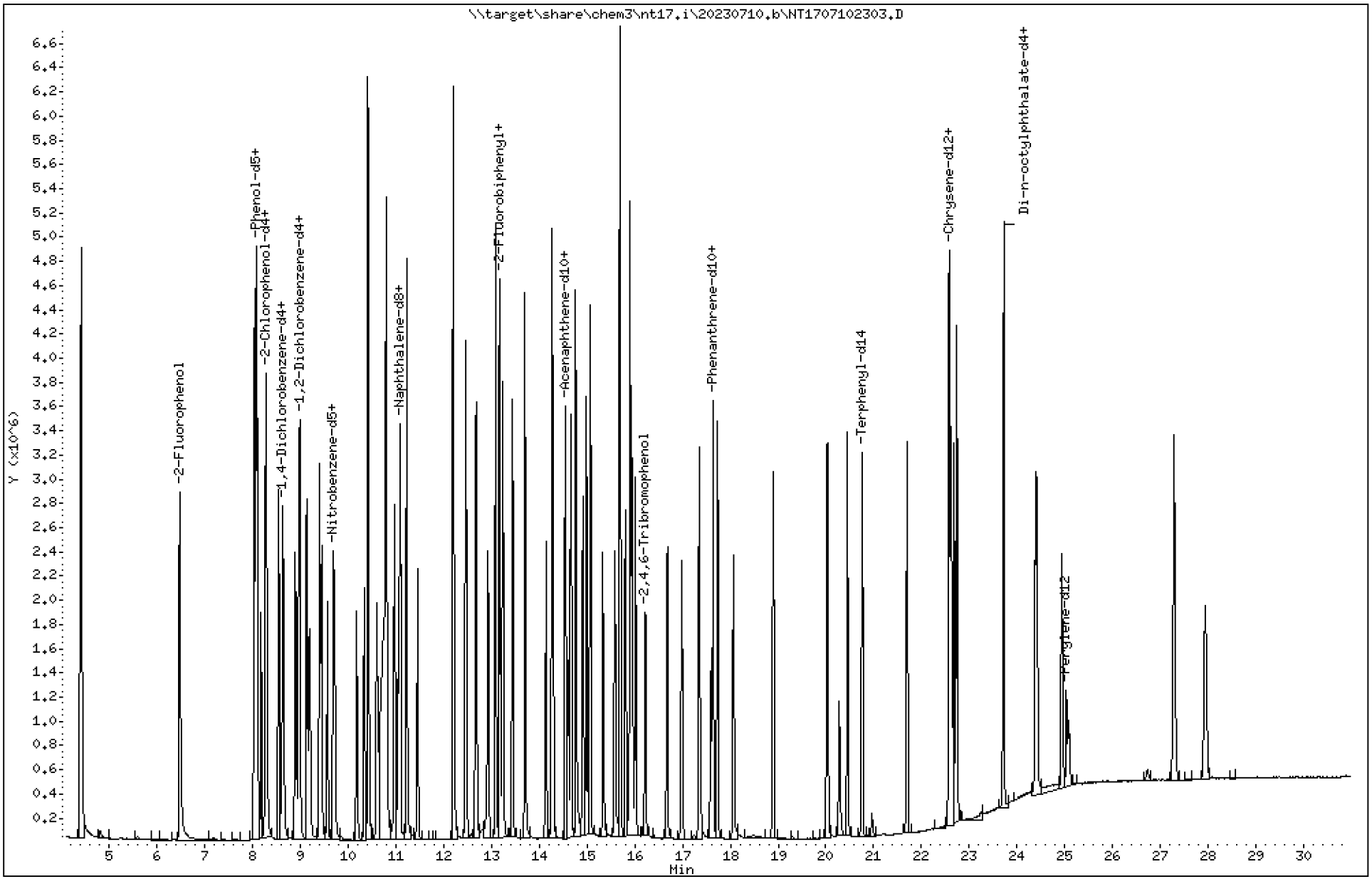






Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102303.D
Date : 10-JUL-2023 13:37
Client ID:
Sample Info: SEQ-CAL6
Volume Injected (uL): 1.0
Column phase: ZB-5msi

Instrument: nt17.i
Operator: JGR
Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt17.i\20230710.b\NT1707102303.D
Lab Smp Id: SEQ-CAL6
Inj Date : 10-JUL-2023 13:37
Operator : JGR Inst ID: nt17.i
Smp Info : SEQ-CAL6
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Meth Date : 18-Jul-2023 10:00 jrains Quant Type: ISTD
Cal Date : 10-JUL-2023 13:37 Cal File: NT1707102303.D
Als bottle: 3 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: JOSHR-201909

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	500.000	Volume of final extract (uL)
Vo	500.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
$ 1	2-Fluorophenol	112	6.469	6.469	(0.751)	1589412	15.0000	15.48
$ 2	Phenol-d5	99	8.024	8.024	(0.932)	2137661	15.0000	15.01
3	Phenol	94	8.049	8.049	(0.935)	1871160	10.0000	9.856
$ 5	2-Chlorophenol-d4	132	8.266	8.266	(0.960)	1586549	15.0000	13.70
4	Bis(2-Chloroethyl)ether	93	8.176	8.176	(0.950)	1116233	10.0000	10.14
6	2-Chlorophenol	128	8.291	8.291	(0.963)	1390947	10.0000	10.28
7	1,3-Dichlorobenzene	146	8.546	8.546	(0.993)	1190880	10.0000	9.681
* 8	1,4-Dichlorobenzene-d4	152	8.610	8.610	(1.000)	291539	4.00000	
9	1,4-Dichlorobenzene	146	8.636	8.636	(1.003)	1302090	10.0000	9.815
$ 10	1,2-Dichlorobenzene-d4	152	8.955	8.955	(1.040)	698267	10.0000	9.778
12	1,2-Dichlorobenzene	146	8.981	8.981	(1.043)	1124646	10.0000	9.667
11	Benzyl alcohol	108	8.891	8.891	(1.033)	717953	10.0000	10.04
14	2,2'-oxybis(1-Chloropropane)	121	9.185	9.185	(1.067)	362126	10.0000	9.513
13	2-Methylphenol	108	9.134	9.134	(1.061)	1077878	10.0000	9.488
17	Hexachloroethane	117	9.568	9.568	(1.111)	509786	10.0000	9.724
16	N-Nitroso-di-n-propylamine	70	9.441	9.441	(1.096)	898554	10.0000	10.27
15	4-Methylphenol	108	9.402	9.402	(1.092)	1138668	10.0000	10.26
$ 18	Nitrobenzene-d5	82	9.683	9.683	(0.876)	1327211	10.0000	10.44
19	Nitrobenzene	77	9.709	9.709	(0.879)	1368616	10.0000	10.50
20	Isophorone	82	10.181	10.181	(0.921)	2071755	10.0000	10.56
21	2-Nitrophenol	139	10.335	10.335	(0.935)	588505	10.0000	10.84
22	2,4-Dimethylphenol	107	10.411	10.411	(0.942)	2358471	20.0000	19.50

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
	23 Bis(2-Chloroethoxy)methane	93	10.590	10.590	(0.958)	1097897	10.0000	9.834
	24 Benzoic acid	105	10.769	10.769	(0.975)	3374536	40.0000	37.49
	25 2,4-Dichlorophenol	162	10.794	10.794	(0.977)	1777179	20.0000	19.62
	26 1,2,4-Trichlorobenzene	180	10.960	10.960	(0.992)	1004390	10.0000	10.28
*	27 Naphthalene-d8	136	11.049	11.049	(1.000)	1108429	4.00000	
	28 Naphthalene	128	11.088	11.088	(1.003)	2972186	10.0000	9.633
	29 4-Chloroaniline	127	11.228	11.228	(1.016)	2713680	20.0000	19.51
	30 Hexachlorobutadiene	225	11.457	11.457	(1.037)	469279	10.0000	9.617
	31 4-Chloro-3-methylphenol	107	12.197	12.197	(1.104)	2123410	20.0000	20.86
	32 2-Methylnaphthalene	142	12.464	12.464	(1.128)	2133161	10.0000	9.946
	33 Hexachlorocyclopentadiene	237	12.924	12.924	(0.886)	608194	20.0000	21.05
	34 2,4,6-Trichlorophenol	196	13.089	13.089	(0.897)	1158508	20.0000	20.64
	35 2,4,5-Trichlorophenol	196	13.166	13.166	(0.902)	1215084	20.0000	20.85
$	36 2-Fluorobiphenyl	172	13.242	13.242	(0.907)	2057601	10.0000	9.500
	37 2-Chloronaphthalene	162	13.434	13.434	(0.920)	1826772	10.0000	9.634
	38 2-Nitroaniline	65	13.702	13.702	(0.939)	1513430	20.0000	19.80
	39 Dimethylphthalate	163	14.148	14.148	(0.969)	1876843	10.0000	9.560
	40 Acenaphthylene	152	14.288	14.288	(0.979)	2694519	10.0000	9.246
	41 2,6-Dinitrotoluene	165	14.263	14.263	(0.977)	956805	20.0000	20.94
*	42 Acenaphthene-d10	164	14.594	14.594	(1.000)	562528	4.00000	
	43 3-Nitroaniline	138	14.543	14.543	(0.997)	950026	20.0000	19.03
	44 Acenaphthene	153	14.671	14.671	(1.005)	1735703	10.0000	9.532
	45 2,4-Dinitrophenol	184	14.760	14.760	(1.011)	982518	40.0000	41.42
	46 Dibenzofuran	168	14.989	14.989	(1.027)	2404313	10.0000	9.481
	47 4-Nitrophenol	109	14.913	14.913	(1.022)	523365	20.0000	17.83
	48 2,4-Dinitrotoluene	165	15.066	15.066	(1.032)	1160717	20.0000	19.62
	50 Diethylphthalate	149	15.589	15.589	(1.068)	2175329	10.0000	9.769
	49 Fluorene	166	15.690	15.690	(1.075)	2102641	10.0000	9.519
	51 4-Chlorophenyl-phenylether	204	15.690	15.690	(1.075)	1070166	10.0000	10.21
	52 4-Nitroaniline	138	15.805	15.805	(1.083)	866561	20.0000	19.64
	53 4,6-Dinitro-2-methylphenol	198	15.907	15.907	(0.904)	1226799	40.0000	38.66
	54 N-Nitrosodiphenylamine	169	15.945	15.945	(0.907)	1228288	10.0000	9.494
$	55 2,4,6-Tribromophenol	330	16.225	16.225	(1.112)	409409	15.0000	15.73
	56 4-Bromophenyl-phenylether	248	16.683	16.683	(0.949)	492101	10.0000	9.840
	57 Hexachlorobenzene	284	16.989	16.989	(0.966)	615089	10.0000	10.54
	58 Pentachlorophenol	266	17.346	17.346	(0.986)	631190	20.0000	19.13
*	59 Phenanthrene-d10	188	17.588	17.588	(1.000)	863738	4.00000	
	60 Phenanthrene	178	17.639	17.639	(1.003)	2443183	10.0000	9.771
	61 Anthracene	178	17.729	17.729	(1.008)	2409961	10.0000	10.39
	62 Carbazole	167	18.060	18.060	(1.027)	1911386	10.0000	9.852
	63 Di-n-butylphthalate	149	18.902	18.902	(1.075)	3140752	10.0000	10.02
	64 Fluoranthene	202	20.037	20.037	(0.885)	2521439	10.0000	10.61
	65 Pyrene	202	20.457	20.457	(0.903)	2816257	10.0000	10.50
$	66 Terphenyl-d14	244	20.763	20.763	(0.917)	1838272	10.0000	9.859
	67 Butylbenzylphthalate	149	21.695	21.695	(0.958)	1166526	10.0000	10.15
	68 Benzo(a)anthracene	228	22.613	22.613	(0.998)	1914815	10.0000	10.09
*	69 Chrysene-d12	240	22.652	22.652	(1.000)	536389	4.00000	
	70 3,3'-Dichlorobenzidine	252	22.588	22.588	(0.997)	1767955	30.0000	31.46
	71 Chrysene	228	22.690	22.690	(1.002)	1693514	10.0000	9.518
	72 bis(2-Ethylhexyl)phthalate	149	22.741	22.741	(0.959)	1625161	10.0000	10.90
*	134 Di-n-octylphthalate-d4	153	23.710	23.710	(1.000)	1052606	4.00000	
	73 Di-n-octylphthalate	149	23.723	23.723	(1.001)	2719846	10.0000	9.297
	74 Benzo(b)fluoranthene	252	24.386	24.386	(0.974)	2009445	10.0000	10.63
	75 Benzo(k)fluoranthene	252	24.425	24.425	(0.976)	1799909	10.0000	9.379

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
76	Benzo(a)pyrene	252	24.948	24.948	(0.996)	1386608	10.0000	10.08
* 77	Perylene-d12	264	25.037	25.037	(1.000)	510402	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	27.285	27.285	(1.090)	1914018	10.0000	10.33
79	Dibenzo(a,h)anthracene	278	27.298	27.298	(1.090)	1677601	10.0000	10.17
80	Benzo(g,h,i)perylene	276	27.950	27.950	(1.116)	1759224	10.0000	10.35
90	N-Nitrosodimethylamine	74	4.380	4.380	(0.509)	1658882	20.0000	21.58
91	Aniline	93	8.087	8.087	(0.939)	3151008	20.0000	21.34
93	Benzidine	184	20.279	20.279	(0.895)	832429	20.0000	28.41
103	Pyridine	79	4.406	4.406	(0.512)	2458088	20.0000	20.33
105	1-methylnaphthalene	142	12.681	12.681	(1.148)	1948681	10.0000	9.817
111	Azobenzene (1,2-DP-Hydrazine)	77	16.009	16.009	(1.097)	2632752	10.0000	9.509
187	Total Benzofluoranthenes	252	24.425	24.425	(0.976)	3366897	20.0000	19.83
120	2,3,4,6-Tetrachlorophenol	232	15.334	15.334	(1.051)	508369	10.0000	10.34

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt17.i
Lab File ID: NT1707102303.D
Lab Smp Id: SEQ-CAL6
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Misc Info:

Calibration Date: 10-JUL-2023
Calibration Time: 14:14
Level: LOW
Sample Type: WATER

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	288953	144477	577906	291539	0.89
27 Naphthalene-d8	1098716	549358	2197432	1108429	0.88
42 Acenaphthene-d10	552014	276007	1104028	562528	1.90
59 Phenanthrene-d10	884794	442397	1769588	863738	-2.38
69 Chrysene-d12	564549	282275	1129098	536389	-4.99
134 Di-n-octylphthala	1047332	523666	2094664	1052606	0.50
77 Perylene-d12	526075	263038	1052150	510402	-2.98

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	8.61	8.11	9.11	8.61	-0.00
27 Naphthalene-d8	11.04	10.54	11.54	11.05	0.11
42 Acenaphthene-d10	14.60	14.10	15.10	14.59	-0.00
59 Phenanthrene-d10	17.59	17.09	18.09	17.59	-0.00
69 Chrysene-d12	22.64	22.14	23.14	22.65	0.06
134 Di-n-octylphthala	23.71	23.21	24.21	23.71	-0.00
77 Perylene-d12	25.04	24.54	25.54	25.04	-0.00

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

REVIEW SUMMARY FOR FILE - NT1707102303.D

Lab ID: SEQ-CAL6
nt17.i, ABN.m, 10-JUL-2023 13:37

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

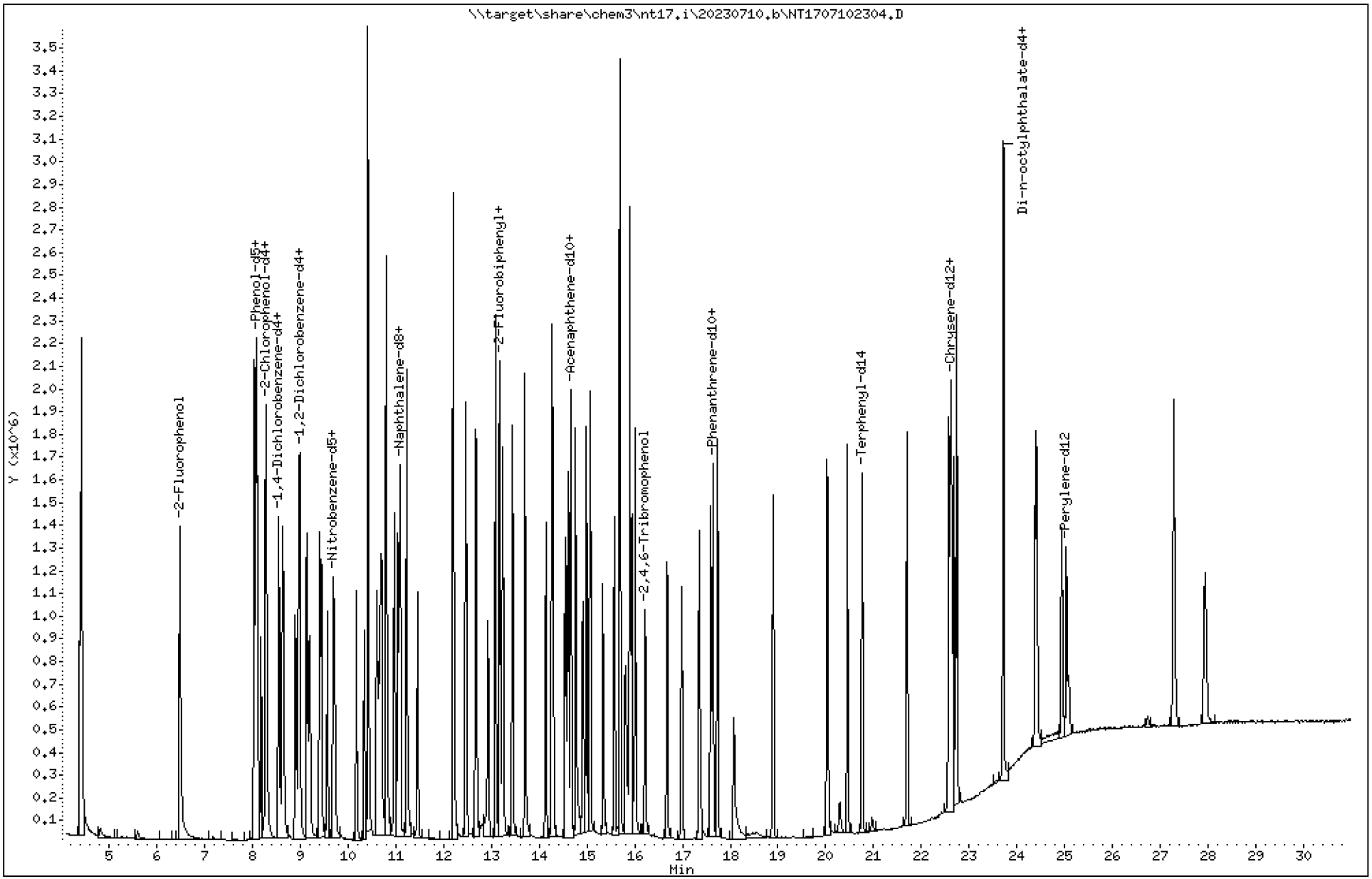
RRT check based on Ccal File: NT1707102303.D

On Column LOD for nt17.i, ABN.m, ICAL.sub = 0.0000

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

Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102304.D
Date : 10-JUL-2023 14:14
Client ID:
Sample Info: SEQ-CAL5
Volume Injected (uL): 1.0
Column phase: ZB-5msi

Instrument: nt17.i
Operator: JGR
Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt17.i\20230710.b\NT1707102304.D
Lab Smp Id: SEQ-CAL5
Inj Date : 10-JUL-2023 14:14
Operator : JGR Inst ID: nt17.i
Smp Info : SEQ-CAL5
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Meth Date : 18-Jul-2023 10:00 jrains Quant Type: ISTD
Cal Date : 10-JUL-2023 14:14 Cal File: NT1707102304.D
Als bottle: 4 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: JOSHR-201909

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	500.000	Volume of final extract (uL)
Vo	500.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
$ 1	2-Fluorophenol	112	6.469	6.469	(0.751)	781867	7.50000	7.682
$ 2	Phenol-d5	99	8.024	8.024	(0.932)	1045935	7.50000	7.412
3	Phenol	94	8.049	8.049	(0.935)	914908	5.00000	4.862
$ 5	2-Chlorophenol-d4	132	8.266	8.266	(0.960)	864386	7.50000	7.529
4	Bis(2-Chloroethyl)ether	93	8.177	8.177	(0.950)	547231	5.00000	5.016
6	2-Chlorophenol	128	8.291	8.291	(0.963)	655986	5.00000	4.893
7	1,3-Dichlorobenzene	146	8.546	8.546	(0.993)	582501	5.00000	4.778
* 8	1,4-Dichlorobenzene-d4	152	8.610	8.610	(1.000)	288953	4.00000	
9	1,4-Dichlorobenzene	146	8.636	8.636	(1.003)	653461	5.00000	4.970
$ 10	1,2-Dichlorobenzene-d4	152	8.955	8.955	(1.040)	345738	5.00000	4.885
12	1,2-Dichlorobenzene	146	8.981	8.981	(1.043)	558318	5.00000	4.842
11	Benzyl alcohol	108	8.891	8.891	(1.033)	347427	5.00000	4.904
14	2,2'-oxybis(1-Chloropropane)	121	9.185	9.185	(1.067)	186554	5.00000	4.945
13	2-Methylphenol	108	9.134	9.134	(1.061)	597523	5.00000	5.306
17	Hexachloroethane	117	9.568	9.568	(1.111)	255255	5.00000	4.913
16	N-Nitroso-di-n-propylamine	70	9.441	9.441	(1.096)	452640	5.00000	5.217
15	4-Methylphenol	108	9.402	9.402	(1.092)	547880	5.00000	4.983
$ 18	Nitrobenzene-d5	82	9.683	9.683	(0.877)	655563	5.00000	5.204
19	Nitrobenzene	77	9.709	9.709	(0.880)	668198	5.00000	5.172
20	Isophorone	82	10.169	10.169	(0.921)	1002893	5.00000	5.156
21	2-Nitrophenol	139	10.335	10.335	(0.936)	268514	5.00000	4.989
22	2,4-Dimethylphenol	107	10.412	10.412	(0.943)	1181021	10.0000	9.853

		QUANT SIG					AMOUNTS CAL-AMT	AMOUNTS ON-COL
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/mL)	(ug/mL)
	23 Bis(2-Chloroethoxy)methane	93	10.590	10.590	(0.960)	558949	5.00000	5.051
	24 Benzoic acid	105	10.692	10.692	(0.969)	1587491	20.0000	17.79(M)
	25 2,4-Dichlorophenol	162	10.795	10.795	(0.978)	878747	10.0000	9.787
	26 1,2,4-Trichlorobenzene	180	10.960	10.960	(0.993)	429037	5.00000	4.431
*	27 Naphthalene-d8	136	11.037	11.037	(1.000)	1098716	4.00000	
	28 Naphthalene	128	11.075	11.075	(1.003)	1445324	5.00000	4.726
	29 4-Chloroaniline	127	11.228	11.228	(1.017)	1284200	10.0000	9.313
	30 Hexachlorobutadiene	225	11.457	11.457	(1.038)	228959	5.00000	4.734
	31 4-Chloro-3-methylphenol	107	12.197	12.197	(1.105)	1009124	10.0000	9.999
	32 2-Methylnaphthalene	142	12.465	12.465	(1.129)	1044550	5.00000	4.913
	33 Hexachlorocyclopentadiene	237	12.924	12.924	(0.886)	223132	10.0000	8.685
	34 2,4,6-Trichlorophenol	196	13.090	13.090	(0.897)	548371	10.0000	9.957
	35 2,4,5-Trichlorophenol	196	13.166	13.166	(0.902)	575012	10.0000	10.06
$	36 2-Fluorobiphenyl	172	13.243	13.243	(0.907)	1019353	5.00000	4.796
	37 2-Chloronaphthalene	162	13.434	13.434	(0.920)	887270	5.00000	4.768
	38 2-Nitroaniline	65	13.702	13.702	(0.939)	815204	10.0000	10.87
	39 Dimethylphthalate	163	14.135	14.135	(0.969)	935724	5.00000	4.857
	40 Acenaphthylene	152	14.289	14.289	(0.979)	1332946	5.00000	4.661
	41 2,6-Dinitrotoluene	165	14.263	14.263	(0.977)	419749	10.0000	9.359
*	42 Acenaphthene-d10	164	14.595	14.595	(1.000)	552014	4.00000	
	43 3-Nitroaniline	138	14.544	14.544	(0.997)	379199	10.0000	7.739
	44 Acenaphthene	153	14.658	14.658	(1.004)	852438	5.00000	4.771
	45 2,4-Dinitrophenol	184	14.760	14.760	(1.011)	402271	20.0000	18.58
	46 Dibenzofuran	168	14.990	14.990	(1.027)	1189655	5.00000	4.780
	47 4-Nitrophenol	109	14.913	14.913	(1.022)	266512	10.0000	9.254
	48 2,4-Dinitrotoluene	165	15.066	15.066	(1.032)	564407	10.0000	9.724
	50 Diethylphthalate	149	15.576	15.576	(1.067)	1083055	5.00000	4.956
	49 Fluorene	166	15.691	15.691	(1.075)	1061401	5.00000	4.897
	51 4-Chlorophenyl-phenylether	204	15.691	15.691	(1.075)	490602	5.00000	4.768
	52 4-Nitroaniline	138	15.805	15.805	(1.083)	382218	10.0000	8.830
	53 4,6-Dinitro-2-methylphenol	198	15.894	15.894	(0.904)	561119	20.0000	17.26
	54 N-Nitrosodiphenylamine	169	15.945	15.945	(0.907)	611481	5.00000	4.614
$	55 2,4,6-Tribromophenol	330	16.212	16.212	(1.111)	195778	7.50000	7.666
	56 4-Bromophenyl-phenylether	248	16.683	16.683	(0.949)	234482	5.00000	4.577
	57 Hexachlorobenzene	284	16.989	16.989	(0.966)	278494	5.00000	4.658
	58 Pentachlorophenol	266	17.346	17.346	(0.986)	277844	10.0000	8.219
*	59 Phenanthrene-d10	188	17.588	17.588	(1.000)	884794	4.00000	
	60 Phenanthrene	178	17.639	17.639	(1.003)	1204378	5.00000	4.702
	61 Anthracene	178	17.729	17.729	(1.008)	1195482	5.00000	5.033
	62 Carbazole	167	18.073	18.073	(1.028)	767493	5.00000	3.862
	63 Di-n-butylphthalate	149	18.902	18.902	(1.075)	1497861	5.00000	4.664
	64 Fluoranthene	202	20.024	20.024	(0.884)	1225912	5.00000	4.903
	65 Pyrene	202	20.445	20.445	(0.903)	1372625	5.00000	4.860
$	66 Terphenyl-d14	244	20.764	20.764	(0.917)	952696	5.00000	4.855
	67 Butylbenzylphthalate	149	21.695	21.695	(0.958)	574608	5.00000	4.748
	68 Benzo(a)anthracene	228	22.614	22.614	(0.999)	964148	5.00000	4.825
*	69 Chrysene-d12	240	22.639	22.639	(1.000)	564549	4.00000	
	70 3,3'-Dichlorobenzidine	252	22.588	22.588	(0.998)	663547	15.0000	12.28
	71 Chrysene	228	22.690	22.690	(1.002)	875210	5.00000	4.674
	72 bis(2-Ethylhexyl)phthalate	149	22.741	22.741	(0.959)	796807	5.00000	5.370
*	134 Di-n-octylphthalate-d4	153	23.711	23.711	(1.000)	1047332	4.00000	
	73 Di-n-octylphthalate	149	23.723	23.723	(1.001)	1332521	5.00000	4.578
	74 Benzo(b)fluoranthene	252	24.387	24.387	(0.974)	1045813	5.00000	5.367
	75 Benzo(k)fluoranthene	252	24.425	24.425	(0.976)	875027	5.00000	4.424

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
76	Benzo(a)pyrene	252	24.948	24.948	(0.996)	698699	5.00000	4.928
* 77	Perylene-d12	264	25.037	25.037	(1.000)	526075	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	27.285	27.285	(1.090)	924017	5.00000	4.837
79	Dibenzo(a,h)anthracene	278	27.285	27.285	(1.090)	815399	5.00000	4.798
80	Benzo(g,h,i)perylene	276	27.937	27.937	(1.116)	829190	5.00000	4.731
90	N-Nitrosodimethylamine	74	4.380	4.380	(0.509)	815706	10.0000	10.70
91	Aniline	93	8.088	8.088	(0.939)	1506336	10.0000	10.29
93	Benzidine	184	20.292	20.292	(0.896)	163992	10.0000	5.317
103	Pyridine	79	4.406	4.406	(0.512)	1218414	10.0000	10.17
105	1-methylnaphthalene	142	12.682	12.682	(1.149)	973761	5.00000	4.949
111	Azobenzene (1,2-DP-Hydrazine)	77	16.009	16.009	(1.097)	1329130	5.00000	4.892
187	Total Benzofluoranthenes	252	24.387	24.387	(0.974)	1691369	10.0000	9.666
120	2,3,4,6-Tetrachlorophenol	232	15.334	15.334	(1.051)	256163	5.00000	5.311

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt17.i
Lab File ID: NT1707102304.D
Lab Smp Id: SEQ-CAL5
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Misc Info:

Calibration Date: 10-JUL-2023
Calibration Time: 14:14
Level: LOW
Sample Type: WATER

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	288953	144477	577906	288953	0.00
27 Naphthalene-d8	1098716	549358	2197432	1098716	0.00
42 Acenaphthene-d10	552014	276007	1104028	552014	0.00
59 Phenanthrene-d10	884794	442397	1769588	884794	0.00
69 Chrysene-d12	564549	282275	1129098	564549	0.00
134 Di-n-octylphthala	1047332	523666	2094664	1047332	0.00
77 Perylene-d12	526075	263038	1052150	526075	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	8.61	8.11	9.11	8.61	0.00
27 Naphthalene-d8	11.04	10.54	11.54	11.04	0.00
42 Acenaphthene-d10	14.60	14.10	15.10	14.60	0.00
59 Phenanthrene-d10	17.59	17.09	18.09	17.59	0.00
69 Chrysene-d12	22.64	22.14	23.14	22.64	0.00
134 Di-n-octylphthala	23.71	23.21	24.21	23.71	0.00
77 Perylene-d12	25.04	24.54	25.54	25.04	0.00

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

REVIEW SUMMARY FOR FILE - NT1707102304.D

Lab ID: SEQ-CAL5
nt17.i, ABN.m, 10-JUL-2023 14:14

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

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
NONE			

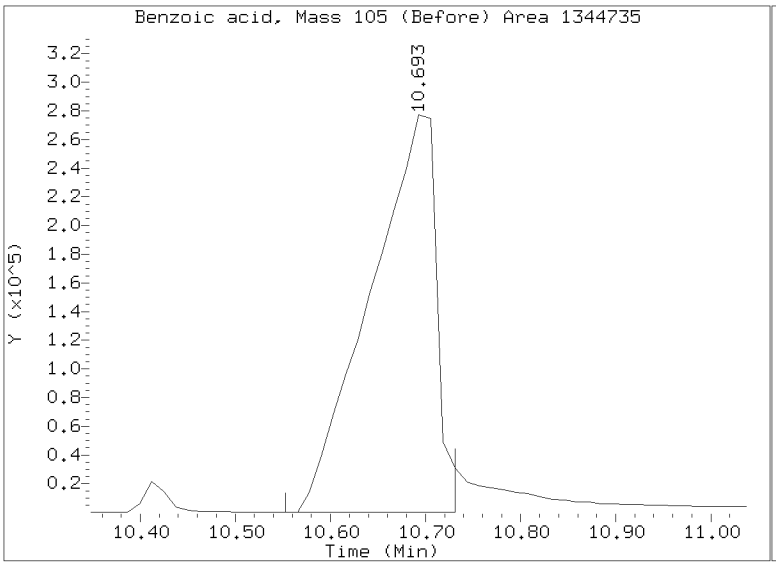
RRT check based on Ccal File: NT1707102304.D

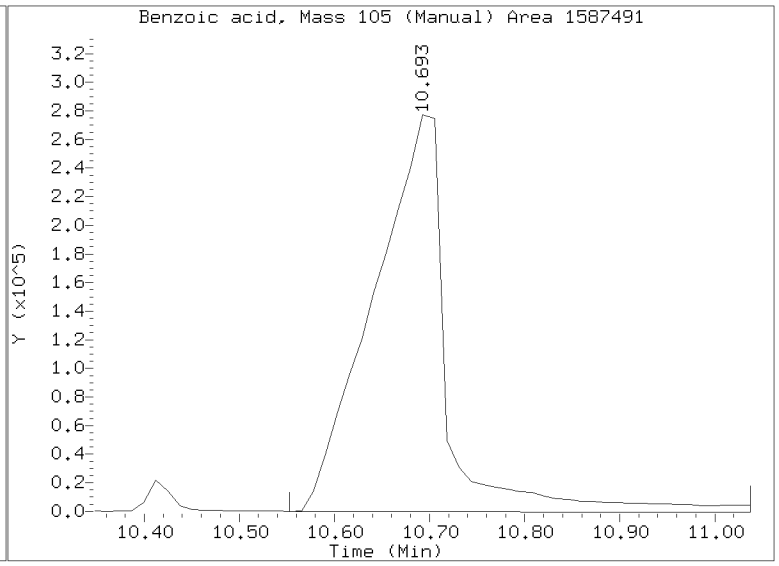
On Column LOD for nt17.i, ABN.m, ICAL.sub = 0.0000

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

Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt17.i/20230710.b/NT1707102304.D
Injection Date: 10-JUL-2023 14:14
Lab ID:SEQ-CAL5 Client ID:
Report Date: 07/18/2023 10:00





Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102305.D

Date : 10-JUL-2023 14:52

Client ID:

Instrument: nt17.i

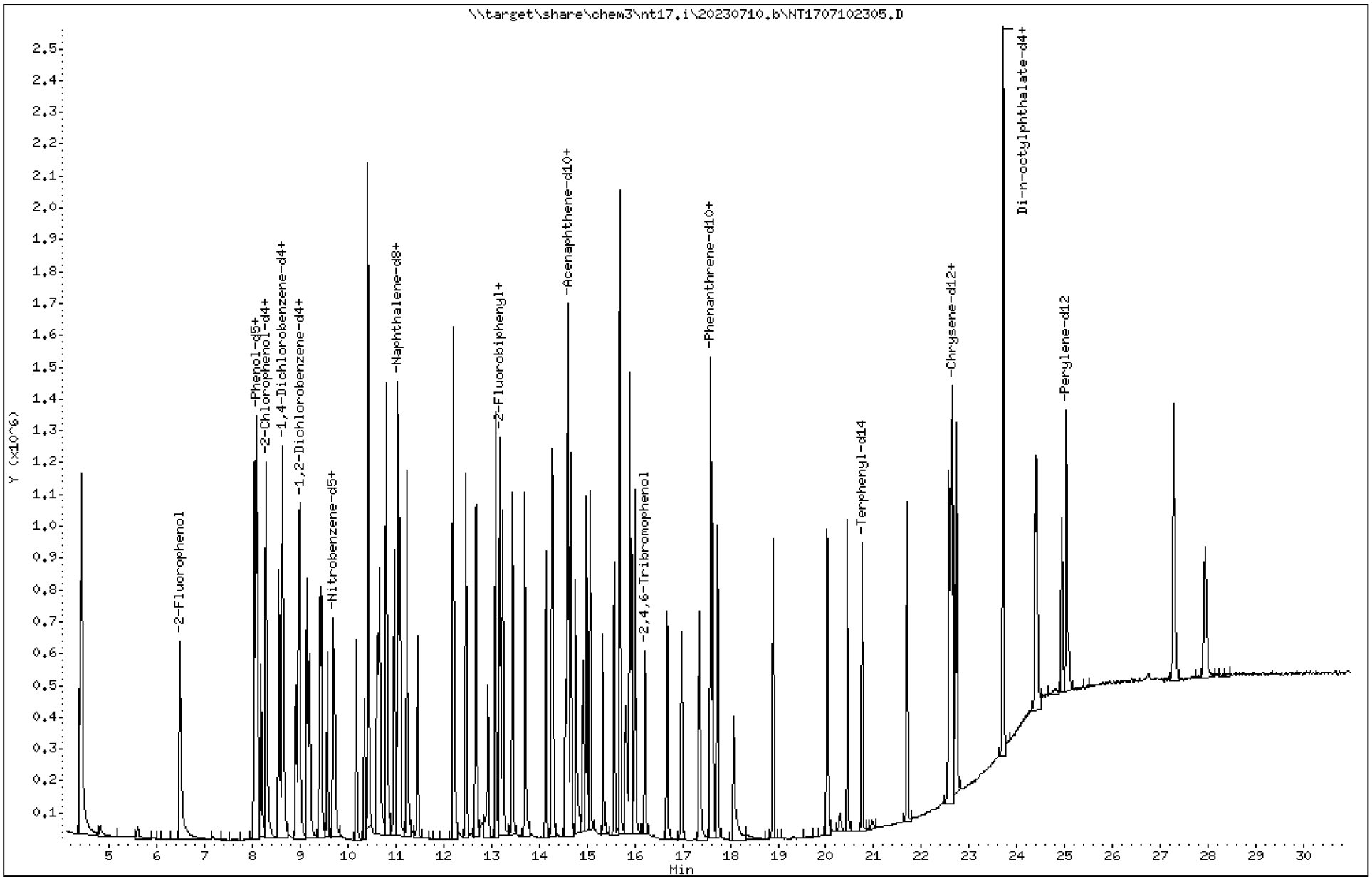
Sample Info: SEQ-CAL4

Volume Injected (uL): 1.0

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt17.i\20230710.b\NT1707102305.D
Lab Smp Id: SEQ-CAL4
Inj Date : 10-JUL-2023 14:52
Operator : JGR Inst ID: nt17.i
Smp Info : SEQ-CAL4
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Meth Date : 18-Jul-2023 10:00 jrains Quant Type: ISTD
Cal Date : 10-JUL-2023 14:52 Cal File: NT1707102305.D
Als bottle: 5 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: JOSHR-201909

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	500.000	Volume of final extract (uL)
Vo	500.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
$ 1	2-Fluorophenol	112	6.469	6.469	(0.751)	459698	3.75000	4.188
$ 2	Phenol-d5	99	8.024	8.024	(0.932)	633729	3.75000	4.163
3	Phenol	94	8.049	8.049	(0.935)	552791	2.50000	2.724
$ 5	2-Chlorophenol-d4	132	8.266	8.266	(0.960)	533634	3.75000	4.309
4	Bis(2-Chloroethyl)ether	93	8.177	8.177	(0.950)	355938	2.50000	3.025
6	2-Chlorophenol	128	8.291	8.291	(0.963)	401309	2.50000	2.775
7	1,3-Dichlorobenzene	146	8.546	8.546	(0.993)	361484	2.50000	2.749
* 8	1,4-Dichlorobenzene-d4	152	8.610	8.610	(1.000)	311675	4.00000	
9	1,4-Dichlorobenzene	146	8.636	8.636	(1.003)	399039	2.50000	2.814
$ 10	1,2-Dichlorobenzene-d4	152	8.955	8.955	(1.040)	208330	2.50000	2.729
12	1,2-Dichlorobenzene	146	8.981	8.981	(1.043)	345326	2.50000	2.777
11	Benzyl alcohol	108	8.904	8.904	(1.034)	203773	2.50000	2.666
14	2,2'-oxybis(1-Chloropropane)	121	9.185	9.185	(1.067)	111718	2.50000	2.745
13	2-Methylphenol	108	9.134	9.134	(1.061)	360986	2.50000	2.972
17	Hexachloroethane	117	9.568	9.568	(1.111)	151668	2.50000	2.706
16	N-Nitroso-di-n-propylamine	70	9.441	9.441	(1.096)	271465	2.50000	2.901
15	4-Methylphenol	108	9.402	9.402	(1.092)	328638	2.50000	2.771
$ 18	Nitrobenzene-d5	82	9.683	9.683	(0.877)	383476	2.50000	2.840
19	Nitrobenzene	77	9.709	9.709	(0.880)	396277	2.50000	2.861
20	Isophorone	82	10.169	10.169	(0.921)	592802	2.50000	2.843
21	2-Nitrophenol	139	10.335	10.335	(0.936)	150356	2.50000	2.606
22	2,4-Dimethylphenol	107	10.411	10.411	(0.943)	719698	5.00000	5.601

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
	23 Bis(2-Chloroethoxy)methane	93	10.590	10.590	(0.960)	333882	2.50000	2.814
	24 Benzoic acid	105	10.667	10.667	(0.966)	856449	10.0000	8.954(M)
	25 2,4-Dichlorophenol	162	10.794	10.794	(0.978)	556562	5.00000	5.782
	26 1,2,4-Trichlorobenzene	180	10.960	10.960	(0.993)	263246	2.50000	2.536
*	27 Naphthalene-d8	136	11.037	11.037	(1.000)	1177840	4.00000	
	28 Naphthalene	128	11.075	11.075	(1.003)	886307	2.50000	2.703
	29 4-Chloroaniline	127	11.228	11.228	(1.017)	714897	5.00000	4.836
	30 Hexachlorobutadiene	225	11.457	11.457	(1.038)	138346	2.50000	2.668
	31 4-Chloro-3-methylphenol	107	12.197	12.197	(1.105)	602021	5.00000	5.564
	32 2-Methylnaphthalene	142	12.465	12.465	(1.129)	635674	2.50000	2.789
	33 Hexachlorocyclopentadiene	237	12.924	12.924	(0.886)	101434	5.00000	3.828
	34 2,4,6-Trichlorophenol	196	13.090	13.090	(0.897)	328511	5.00000	5.602
	35 2,4,5-Trichlorophenol	196	13.166	13.166	(0.902)	335412	5.00000	5.509
$	36 2-Fluorobiphenyl	172	13.243	13.243	(0.907)	616902	2.50000	2.726
	37 2-Chloronaphthalene	162	13.434	13.434	(0.920)	542854	2.50000	2.740
	38 2-Nitroaniline	65	13.702	13.702	(0.939)	475026	5.00000	5.949
	39 Dimethylphthalate	163	14.135	14.135	(0.969)	580300	2.50000	2.829
	40 Acenaphthylene	152	14.288	14.288	(0.979)	818339	2.50000	2.688
	41 2,6-Dinitrotoluene	165	14.263	14.263	(0.977)	246384	5.00000	5.160
*	42 Acenaphthene-d10	164	14.594	14.594	(1.000)	587752	4.00000	
	43 3-Nitroaniline	138	14.556	14.556	(0.997)	177734	5.00000	3.407
	44 Acenaphthene	153	14.658	14.658	(1.004)	512616	2.50000	2.694
	45 2,4-Dinitrophenol	184	14.760	14.760	(1.011)	196403	10.0000	8.753
	46 Dibenzofuran	168	14.990	14.990	(1.027)	716588	2.50000	2.704
	47 4-Nitrophenol	109	14.913	14.913	(1.022)	151420	5.00000	4.938
	48 2,4-Dinitrotoluene	165	15.066	15.066	(1.032)	331198	5.00000	5.359
	50 Diethylphthalate	149	15.576	15.576	(1.067)	661390	2.50000	2.843
	49 Fluorene	166	15.691	15.691	(1.075)	637619	2.50000	2.763
	51 4-Chlorophenyl-phenylether	204	15.691	15.691	(1.075)	281928	2.50000	2.574
	52 4-Nitroaniline	138	15.805	15.805	(1.083)	202186	5.00000	4.387
	53 4,6-Dinitro-2-methylphenol	198	15.894	15.894	(0.904)	308110	10.0000	9.064
	54 N-Nitrosodiphenylamine	169	15.945	15.945	(0.907)	374486	2.50000	2.702
$	55 2,4,6-Tribromophenol	330	16.225	16.225	(1.112)	115887	3.75000	4.262
	56 4-Bromophenyl-phenylether	248	16.683	16.683	(0.949)	161154	2.50000	3.008
	57 Hexachlorobenzene	284	16.989	16.989	(0.966)	167302	2.50000	2.676
	58 Pentachlorophenol	266	17.346	17.346	(0.986)	156389	5.00000	4.424
*	59 Phenanthrene-d10	188	17.588	17.588	(1.000)	925305	4.00000	
	60 Phenanthrene	178	17.639	17.639	(1.003)	733611	2.50000	2.739
	61 Anthracene	178	17.729	17.729	(1.008)	707052	2.50000	2.847
	62 Carbazole	167	18.073	18.073	(1.028)	525090	2.50000	2.526
	63 Di-n-butylphthalate	149	18.889	18.889	(1.074)	888469	2.50000	2.646
	64 Fluoranthene	202	20.037	20.037	(0.885)	732703	2.50000	2.794
	65 Pyrene	202	20.457	20.457	(0.904)	830923	2.50000	2.805
$	66 Terphenyl-d14	244	20.764	20.764	(0.917)	565989	2.50000	2.749
	67 Butylbenzylphthalate	149	21.695	21.695	(0.958)	336950	2.50000	2.654
	68 Benzo(a)anthracene	228	22.613	22.613	(0.999)	587055	2.50000	2.801
*	69 Chrysene-d12	240	22.639	22.639	(1.000)	592213	4.00000	
	70 3,3'-Dichlorobenzidine	252	22.588	22.588	(0.998)	406151	7.50000	7.306
	71 Chrysene	228	22.690	22.690	(1.002)	538813	2.50000	2.743
	72 bis(2-Ethylhexyl)phthalate	149	22.741	22.741	(0.959)	442862	2.50000	2.994
*	134 Di-n-octylphthalate-d4	153	23.710	23.710	(1.000)	1044124	4.00000	
	73 Di-n-octylphthalate	149	23.723	23.723	(1.001)	778161	2.50000	2.681
	74 Benzo(b)fluoranthene	252	24.387	24.387	(0.974)	609820	2.50000	2.964
	75 Benzo(k)fluoranthene	252	24.425	24.425	(0.976)	530438	2.50000	2.540

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
76	Benzo(a)pyrene	252	24.948	24.948	(0.996)	403696	2.50000	2.697
* 77	Perylene-d12	264	25.037	25.037	(1.000)	555496	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	27.285	27.285	(1.090)	557309	2.50000	2.763
79	Dibenzo(a,h)anthracene	278	27.285	27.285	(1.090)	495006	2.50000	2.758
80	Benzo(g,h,i)perylene	276	27.937	27.937	(1.116)	501176	2.50000	2.708
90	N-Nitrosodimethylamine	74	4.380	4.380	(0.509)	483046	5.00000	5.877
91	Aniline	93	8.087	8.087	(0.939)	901148	5.00000	5.710
93	Benzidine	184	20.292	20.292	(0.896)	82424	5.00000	2.548
103	Pyridine	79	4.406	4.406	(0.512)	782101	5.00000	6.051
105	1-methylnaphthalene	142	12.681	12.681	(1.149)	581273	2.50000	2.756
111	Azobenzene (1,2-DP-Hydrazine)	77	16.009	16.009	(1.097)	820325	2.50000	2.836
187	Total Benzofluoranthenes	252	24.387	24.387	(0.974)	1002014	5.00000	5.423
120	2,3,4,6-Tetrachlorophenol	232	15.334	15.334	(1.051)	145432	2.50000	2.832

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt17.i
Lab File ID: NT1707102305.D
Lab Smp Id: SEQ-CAL4
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Misc Info:

Calibration Date: 10-JUL-2023
Calibration Time: 14:14
Level: LOW
Sample Type: WATER

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	288953	144477	577906	311675	7.86
27 Naphthalene-d8	1098716	549358	2197432	1177840	7.20
42 Acenaphthene-d10	552014	276007	1104028	587752	6.47
59 Phenanthrene-d10	884794	442397	1769588	925305	4.58
69 Chrysene-d12	564549	282275	1129098	592213	4.90
134 Di-n-octylphthala	1047332	523666	2094664	1044124	-0.31
77 Perylene-d12	526075	263038	1052150	555496	5.59

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	8.61	8.11	9.11	8.61	-0.00
27 Naphthalene-d8	11.04	10.54	11.54	11.04	-0.00
42 Acenaphthene-d10	14.60	14.10	15.10	14.59	-0.00
59 Phenanthrene-d10	17.59	17.09	18.09	17.59	-0.00
69 Chrysene-d12	22.64	22.14	23.14	22.64	-0.00
134 Di-n-octylphthala	23.71	23.21	24.21	23.71	-0.00
77 Perylene-d12	25.04	24.54	25.54	25.04	-0.00

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

REVIEW SUMMARY FOR FILE - NT1707102305.D

Lab ID: SEQ-CAL4
nt17.i, ABN.m, 10-JUL-2023 14:52

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

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
NONE			

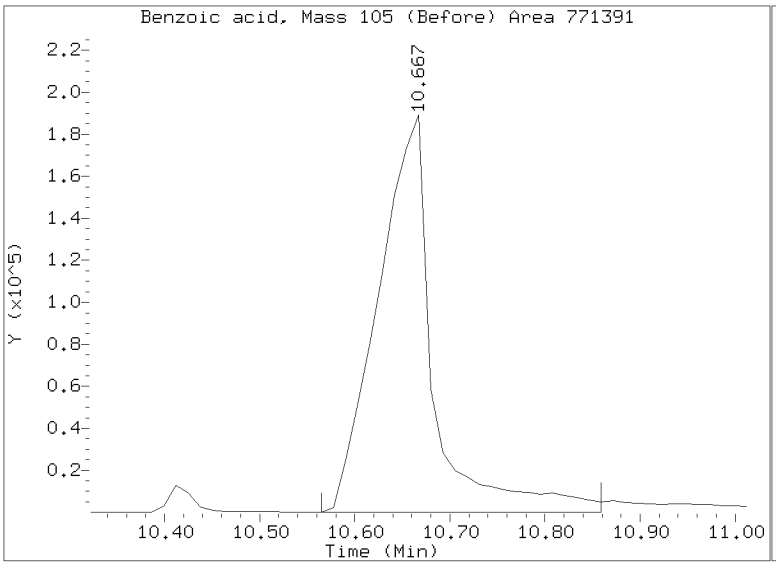
RRT check based on Ccal File: NT1707102305.D

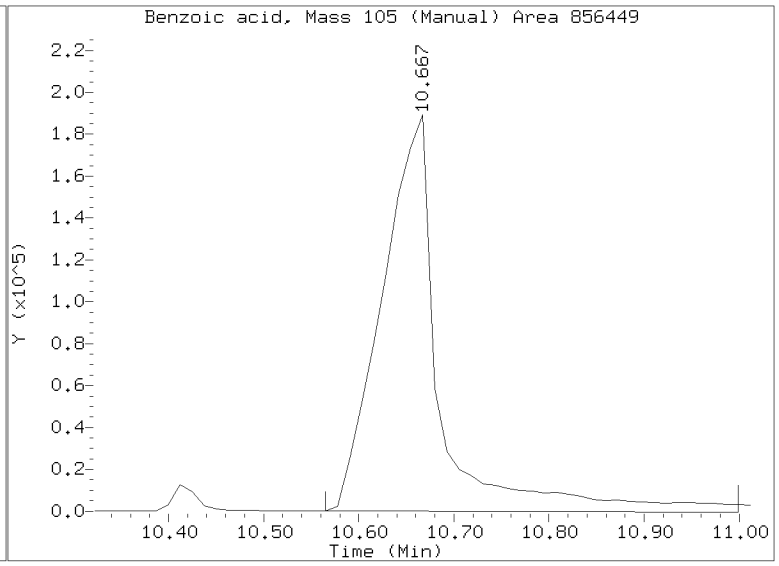
On Column LOD for nt17.i, ABN.m, ICAL.sub = 0.0000

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

Quant Ion Manual Peak Adjustment Report

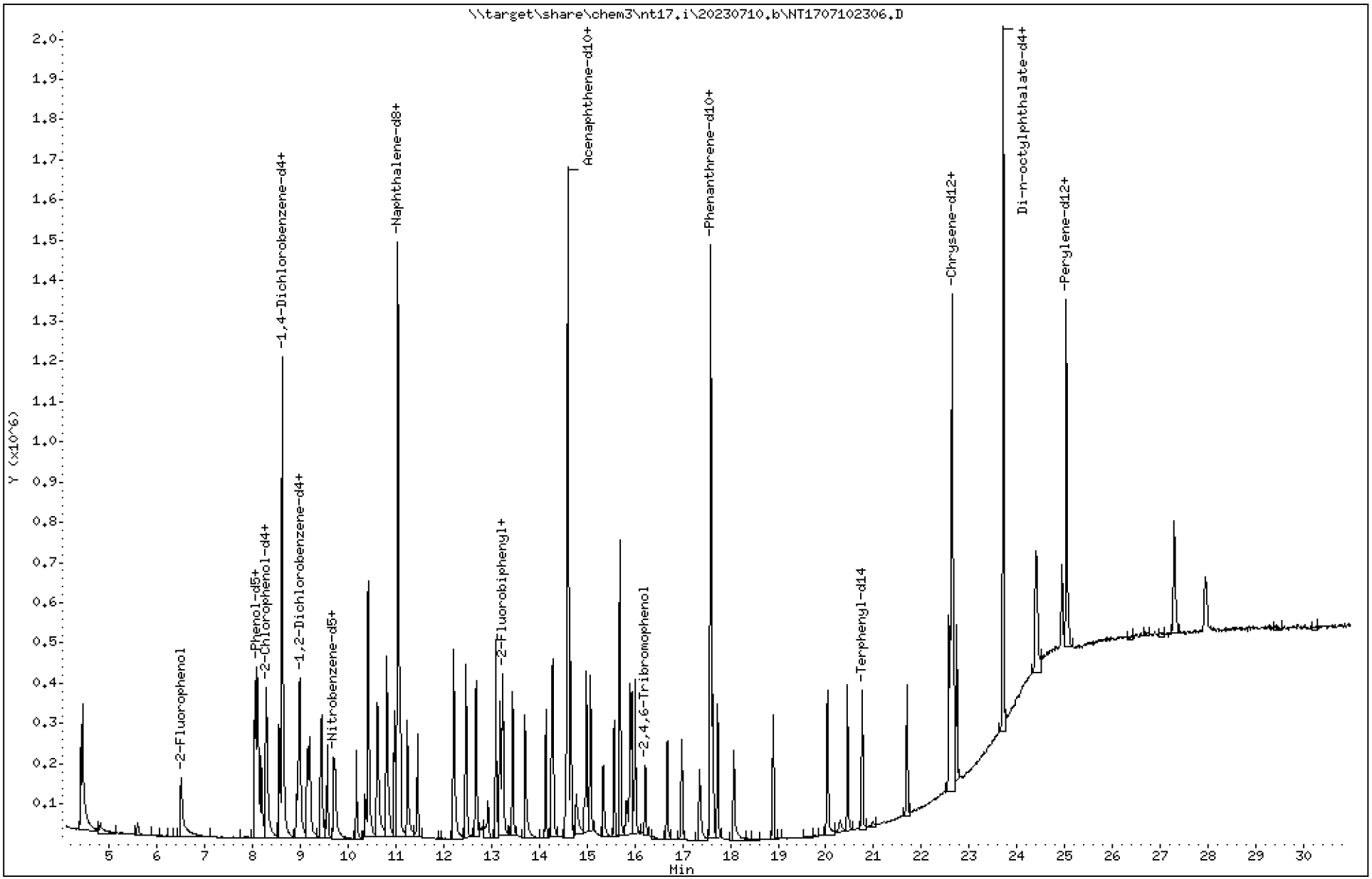
Datafile: //target/share/chem3/nt17.i/20230710.b/NT1707102305.D
Injection Date: 10-JUL-2023 14:52
Lab ID:SEQ-CAL4 Client ID:
Report Date: 07/18/2023 10:00





Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102306.D
Date : 10-JUL-2023 15:29
Client ID:
Sample Info: SEQ-CAL3
Volume Injected (uL): 1.0
Column phase: ZB-5msi

Instrument: nt17.i
Operator: JGR
Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt17.i\20230710.b\NT1707102306.D
Lab Smp Id: SEQ-CAL3
Inj Date : 10-JUL-2023 15:29
Operator : JGR Inst ID: nt17.i
Smp Info : SEQ-CAL3
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Meth Date : 18-Jul-2023 10:00 jrains Quant Type: ISTD
Cal Date : 10-JUL-2023 15:29 Cal File: NT1707102306.D
Als bottle: 6 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: JOSHR-201909

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	500.000	Volume of final extract (uL)
Vo	500.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
$ 1	2-Fluorophenol	112	6.495	6.495	(0.754)	160533	1.50000	1.433(M)
$ 2	Phenol-d5	99	8.036	8.036	(0.933)	233613	1.50000	1.504
3	Phenol	94	8.062	8.062	(0.936)	199133	1.00000	0.9613
$ 5	2-Chlorophenol-d4	132	8.266	8.266	(0.960)	199976	1.50000	1.582
4	Bis(2-Chloroethyl)ether	93	8.177	8.177	(0.950)	161467	1.00000	1.344(M)
6	2-Chlorophenol	128	8.304	8.304	(0.964)	152347	1.00000	1.032
7	1,3-Dichlorobenzene	146	8.559	8.559	(0.994)	134513	1.00000	1.002
* 8	1,4-Dichlorobenzene-d4	152	8.610	8.610	(1.000)	318121	4.00000	
9	1,4-Dichlorobenzene	146	8.648	8.648	(1.004)	156647	1.00000	1.082
$ 10	1,2-Dichlorobenzene-d4	152	8.968	8.968	(1.042)	77942	1.00000	1.000
12	1,2-Dichlorobenzene	146	8.993	8.993	(1.045)	129220	1.00000	1.018
11	Benzyl alcohol	108	8.917	8.917	(1.036)	69509	1.00000	0.8911
14	2,2'-oxybis(1-Chloropropane)	121	9.185	9.185	(1.067)	42820	1.00000	1.031
13	2-Methylphenol	108	9.147	9.147	(1.062)	110165	1.00000	0.8886
17	Hexachloroethane	117	9.568	9.568	(1.111)	57819	1.00000	1.011
16	N-Nitroso-di-n-propylamine	70	9.441	9.441	(1.096)	98444	1.00000	1.031
15	4-Methylphenol	108	9.415	9.415	(1.093)	110861	1.00000	0.9158
$ 18	Nitrobenzene-d5	82	9.696	9.696	(0.879)	139945	1.00000	1.015
19	Nitrobenzene	77	9.722	9.722	(0.881)	141823	1.00000	1.003
20	Isophorone	82	10.169	10.169	(0.921)	206837	1.00000	0.9713
21	2-Nitrophenol	139	10.348	10.348	(0.938)	59766	1.00000	1.014
22	2,4-Dimethylphenol	107	10.424	10.424	(0.945)	263254	2.00000	2.006

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
	23 Bis(2-Chloroethoxy)methane	93	10.603	10.603	(0.961)	123024	1.00000	1.015
	24 Benzoic acid	105	10.616	10.616	(0.962)	230416	4.00000	2.359(M)
	25 2,4-Dichlorophenol	162	10.807	10.807	(0.979)	200625	2.00000	2.041
	26 1,2,4-Trichlorobenzene	180	10.960	10.960	(0.993)	100516	1.00000	0.9484
*	27 Naphthalene-d8	136	11.037	11.037	(1.000)	1202782	4.00000	
	28 Naphthalene	128	11.088	11.088	(1.005)	337789	1.00000	1.009
	29 4-Chloroaniline	127	11.240	11.240	(1.018)	230192	2.00000	1.525
	30 Hexachlorobutadiene	225	11.457	11.457	(1.038)	52304	1.00000	0.9878
	31 4-Chloro-3-methylphenol	107	12.209	12.209	(1.106)	211239	2.00000	1.912
	32 2-Methylnaphthalene	142	12.465	12.465	(1.129)	232724	1.00000	0.9999
	33 Hexachlorocyclopentadiene	237	12.924	12.924	(0.886)	17793	2.00000	0.6805
	34 2,4,6-Trichlorophenol	196	13.089	13.089	(0.897)	111117	2.00000	1.884
	35 2,4,5-Trichlorophenol	196	13.179	13.179	(0.903)	118354	2.00000	1.933
$	36 2-Fluorobiphenyl	172	13.243	13.243	(0.907)	228032	1.00000	1.002
	37 2-Chloronaphthalene	162	13.434	13.434	(0.920)	199472	1.00000	1.001
	38 2-Nitroaniline	65	13.702	13.702	(0.939)	156563	2.00000	1.950
	39 Dimethylphthalate	163	14.135	14.135	(0.969)	207893	1.00000	1.008
	40 Acenaphthylene	152	14.288	14.288	(0.979)	339438	1.00000	1.109
	41 2,6-Dinitrotoluene	165	14.263	14.263	(0.977)	82297	2.00000	1.714
*	42 Acenaphthene-d10	164	14.594	14.594	(1.000)	591035	4.00000	
	43 3-Nitroaniline	138	14.556	14.556	(0.997)	59284	2.00000	1.130(M)
	44 Acenaphthene	153	14.658	14.658	(1.004)	194220	1.00000	1.015
	45 2,4-Dinitrophenol	184	14.773	14.773	(1.012)	41901	4.00000	1.890
	46 Dibenzofuran	168	14.990	14.990	(1.027)	271271	1.00000	1.018
	47 4-Nitrophenol	109	14.951	14.951	(1.024)	48876	2.00000	1.585(M)
	48 2,4-Dinitrotoluene	165	15.066	15.066	(1.032)	105275	2.00000	1.694
	50 Diethylphthalate	149	15.576	15.576	(1.067)	234464	1.00000	1.002
	49 Fluorene	166	15.691	15.691	(1.075)	238877	1.00000	1.029
	51 4-Chlorophenyl-phenylether	204	15.691	15.691	(1.075)	108170	1.00000	0.9819
	52 4-Nitroaniline	138	15.830	15.830	(1.085)	62356	2.00000	1.345
	53 4,6-Dinitro-2-methylphenol	198	15.894	15.894	(0.904)	85450	4.00000	2.400
	54 N-Nitrosodiphenylamine	169	15.945	15.945	(0.907)	150053	1.00000	1.033
$	55 2,4,6-Tribromophenol	330	16.225	16.225	(1.112)	39769	1.50000	1.454
	56 4-Bromophenyl-phenylether	248	16.683	16.683	(0.949)	60570	1.00000	1.079
	57 Hexachlorobenzene	284	16.989	16.989	(0.966)	64670	1.00000	0.9873
	58 Pentachlorophenol	266	17.359	17.359	(0.987)	46990	2.00000	1.269
*	59 Phenanthrene-d10	188	17.588	17.588	(1.000)	969314	4.00000	
	60 Phenanthrene	178	17.639	17.639	(1.003)	272288	1.00000	0.9703
	61 Anthracene	178	17.729	17.729	(1.008)	257387	1.00000	0.9892
	62 Carbazole	167	18.073	18.073	(1.028)	232088	1.00000	1.066
	63 Di-n-butylphthalate	149	18.889	18.889	(1.074)	293633	1.00000	0.8346
	64 Fluoranthene	202	20.037	20.037	(0.885)	265978	1.00000	0.9973
	65 Pyrene	202	20.457	20.457	(0.904)	309784	1.00000	1.028
$	66 Terphenyl-d14	244	20.764	20.764	(0.917)	209822	1.00000	1.002
	67 Butylbenzylphthalate	149	21.695	21.695	(0.958)	108701	1.00000	0.8421
	68 Benzo(a)anthracene	228	22.613	22.613	(0.999)	220913	1.00000	1.036
*	69 Chrysene-d12	240	22.639	22.639	(1.000)	602183	4.00000	
	70 3,3'-Dichlorobenzidine	252	22.575	22.575	(0.997)	176211	3.00000	3.166
	71 Chrysene	228	22.690	22.690	(1.002)	200773	1.00000	1.005
	72 bis(2-Ethylhexyl)phthalate	149	22.741	22.741	(0.959)	138302	1.00000	1.001
*	134 Di-n-octylphthalate-d4	153	23.710	23.710	(1.000)	974988	4.00000	
	73 Di-n-octylphthalate	149	23.723	23.723	(1.001)	274413	1.00000	1.013
	74 Benzo(b)fluoranthene	252	24.386	24.386	(0.974)	208851	1.00000	0.9962
	75 Benzo(k)fluoranthene	252	24.425	24.425	(0.976)	207154	1.00000	0.9734(M)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
76	Benzo(a)pyrene	252	24.948	24.948	(0.996)	151757	1.00000	0.9950
* 77	Perylene-d12	264	25.037	25.037	(1.000)	565972	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	27.285	27.285	(1.090)	201796	1.00000	0.9820
79	Dibenzo(a,h)anthracene	278	27.298	27.298	(1.090)	179405	1.00000	0.9812
80	Benzo(g,h,i)perylene	276	27.950	27.950	(1.116)	182801	1.00000	0.9695
90	N-Nitrosodimethylamine	74	4.393	4.393	(0.510)	166904	2.00000	1.989
91	Aniline	93	8.087	8.087	(0.939)	313882	2.00000	1.948
93	Benzidine	184	20.292	20.292	(0.896)	39535	2.00000	1.202(M)
103	Pyridine	79	4.431	4.431	(0.515)	283159	2.00000	2.147
105	1-methylnaphthalene	142	12.681	12.681	(1.149)	212872	1.00000	0.9883
111	Azobenzene (1,2-DP-Hydrazine)	77	16.009	16.009	(1.097)	307536	1.00000	1.057
187	Total Benzofluoranthenes	252	24.386	24.386	(0.974)	375677	2.00000	1.996
120	2,3,4,6-Tetrachlorophenol	232	15.346	15.346	(1.052)	50325	1.00000	0.9746(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt17.i
Lab File ID: NT1707102306.D
Lab Smp Id: SEQ-CAL3
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Misc Info:

Calibration Date: 10-JUL-2023
Calibration Time: 14:14
Level: LOW
Sample Type: WATER

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	288953	144477	577906	318121	10.09
27 Naphthalene-d8	1098716	549358	2197432	1202782	9.47
42 Acenaphthene-d10	552014	276007	1104028	591035	7.07
59 Phenanthrene-d10	884794	442397	1769588	969314	9.55
69 Chrysene-d12	564549	282275	1129098	602183	6.67
134 Di-n-octylphthala	1047332	523666	2094664	974988	-6.91
77 Perylene-d12	526075	263038	1052150	565972	7.58

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	8.61	8.11	9.11	8.61	-0.00
27 Naphthalene-d8	11.04	10.54	11.54	11.04	-0.00
42 Acenaphthene-d10	14.60	14.10	15.10	14.59	-0.00
59 Phenanthrene-d10	17.59	17.09	18.09	17.59	-0.00
69 Chrysene-d12	22.64	22.14	23.14	22.64	-0.00
134 Di-n-octylphthala	23.71	23.21	24.21	23.71	-0.00
77 Perylene-d12	25.04	24.54	25.54	25.04	-0.00

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

REVIEW SUMMARY FOR FILE - NT1707102306.D

Lab ID: SEQ-CAL3
nt17.i, ABN.m, 10-JUL-2023 15:29

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

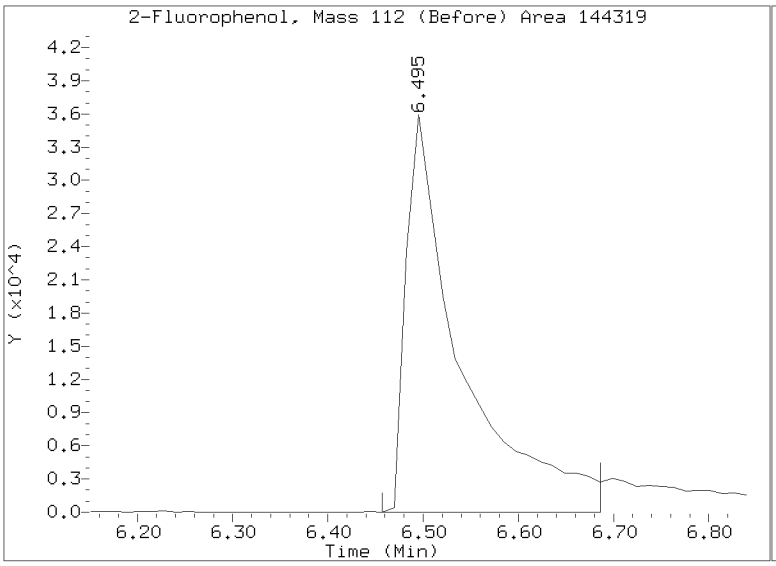
RRT check based on Ccal File: NT1707102306.D

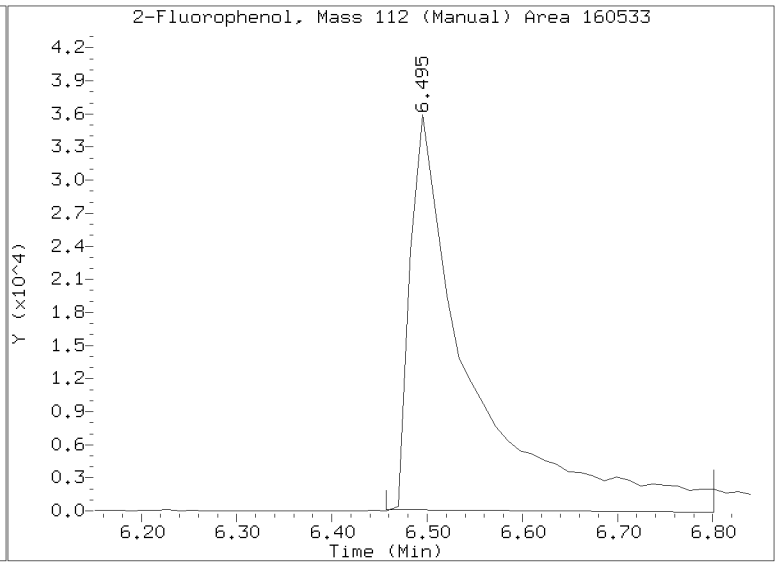
On Column LOD for nt17.i, ABN.m, ICAL.sub = 0.0000

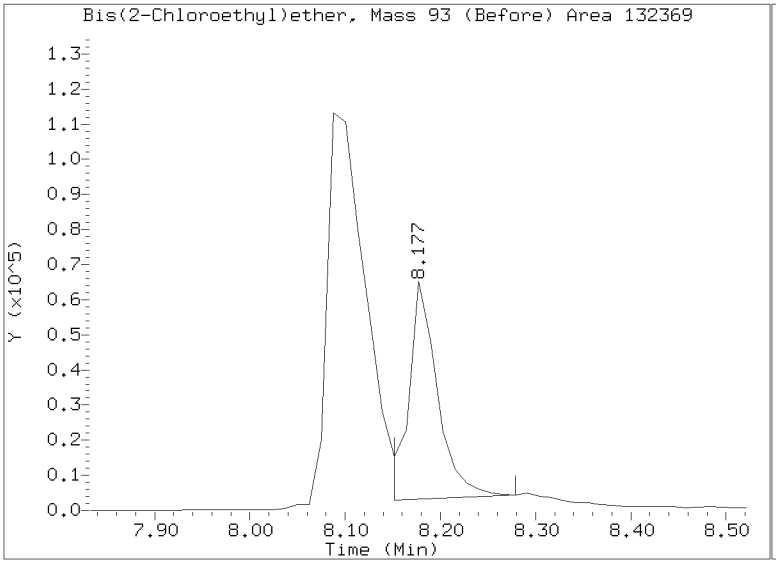
* Only compounds listed in the work order have been verified by the analyst *

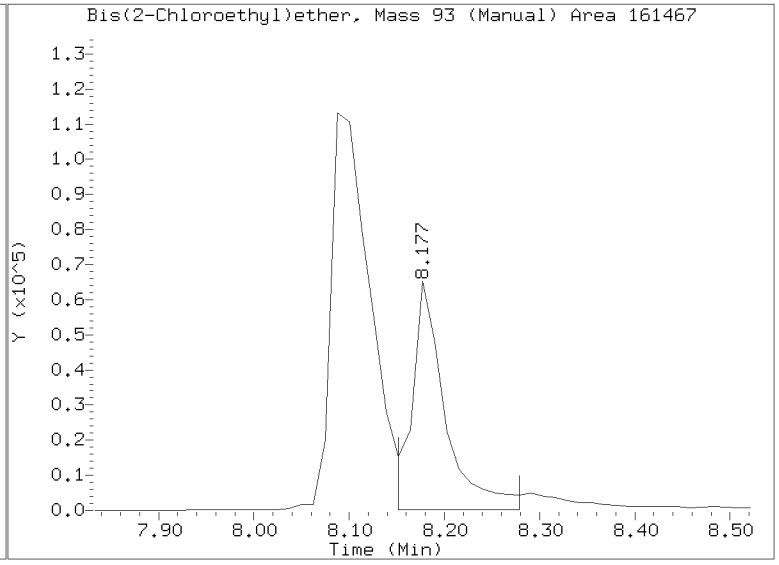
Quant Ion Manual Peak Adjustment Report

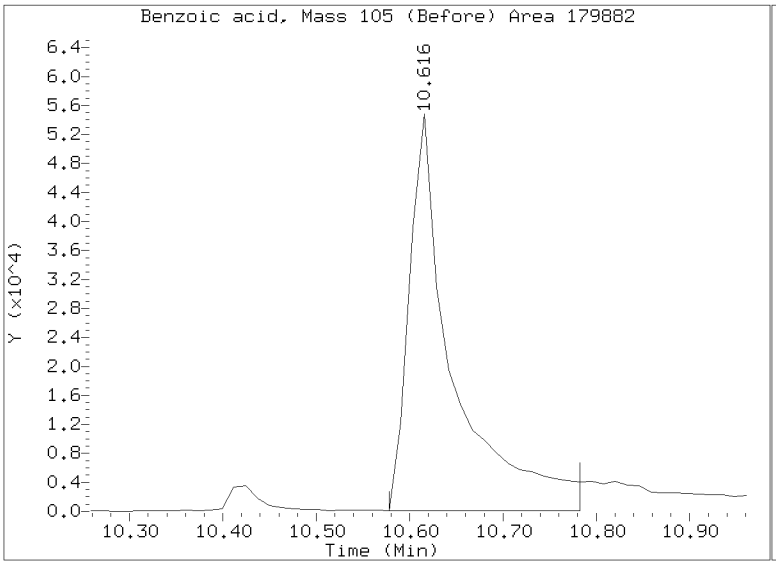
Datafile: //target/share/chem3/nt17.i/20230710.b/NT1707102306.D
Injection Date: 10-JUL-2023 15:29
Lab ID:SEQ-CAL3 Client ID:
Report Date: 07/18/2023 10:00

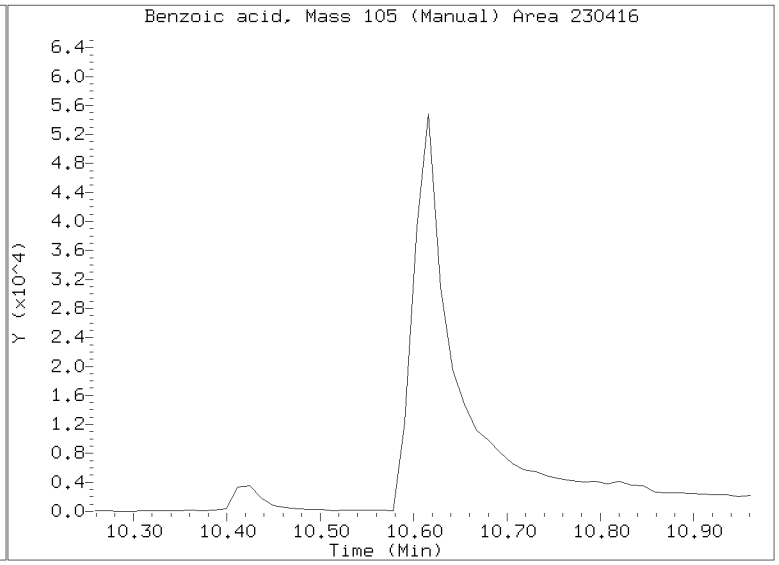






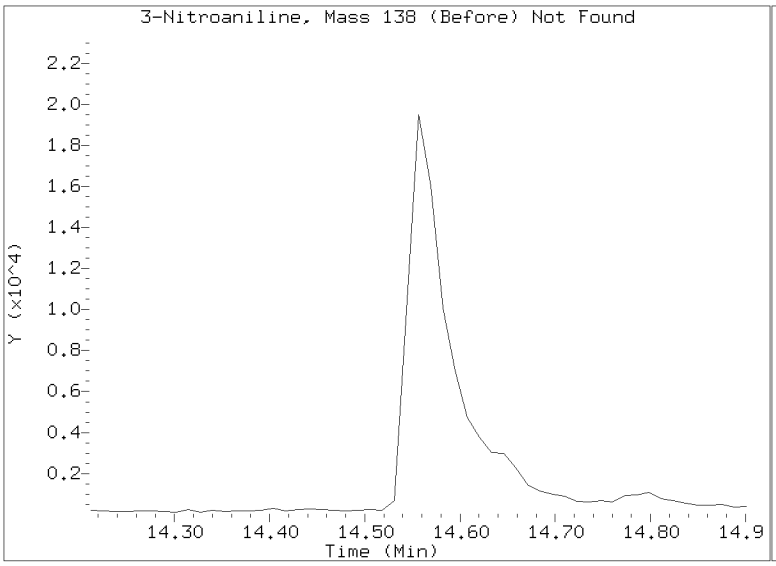


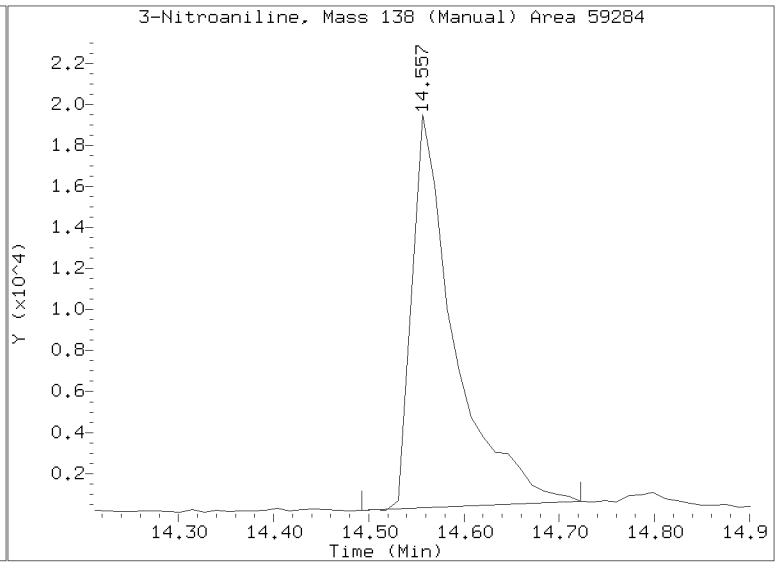


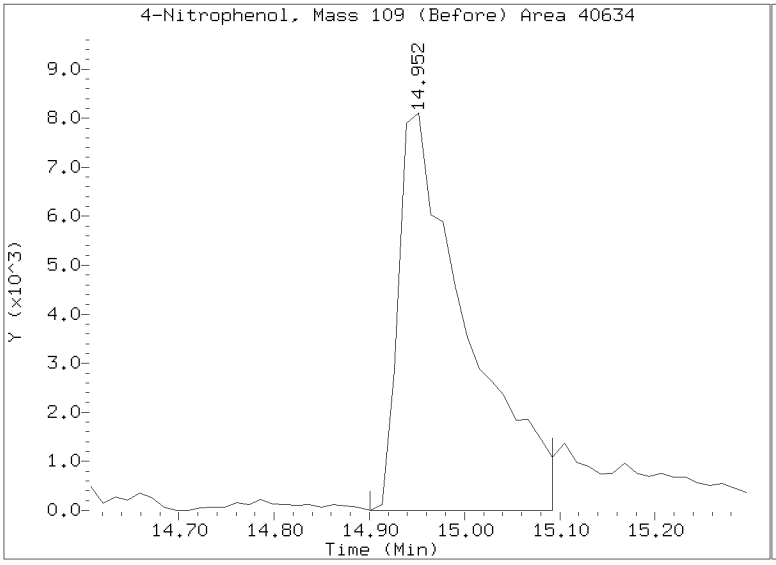


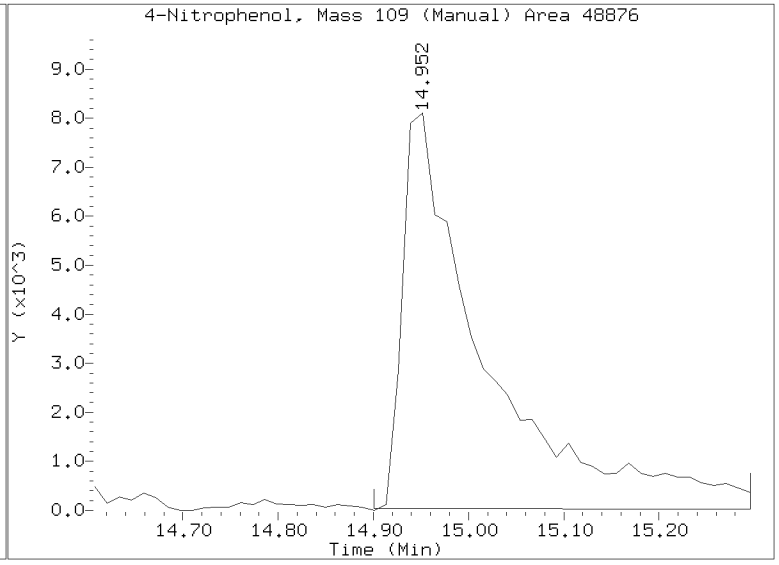
Quant Ion Manual Peak Adjustment Report

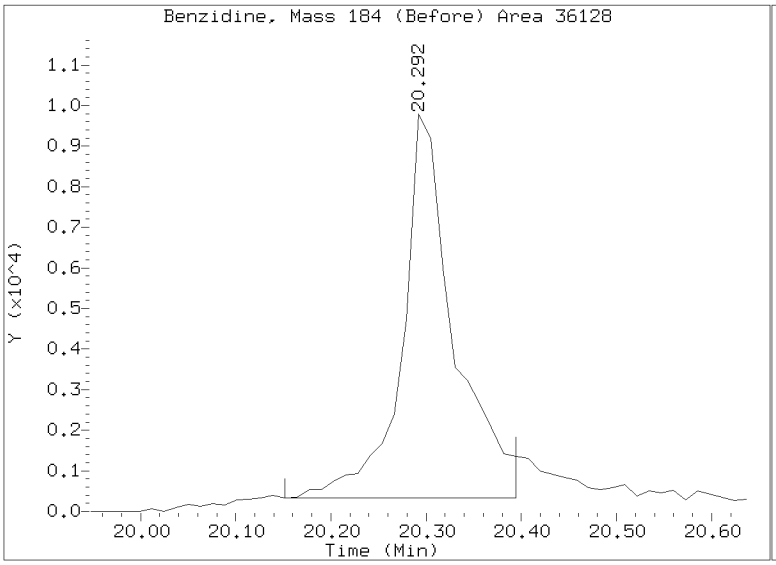
Datafile: //target/share/chem3/nt17.i/20230710.b/NT1707102306.D
Injection Date: 10-JUL-2023 15:29
Lab ID:SEQ-CAL3 Client ID:
Report Date: 07/18/2023 10:00

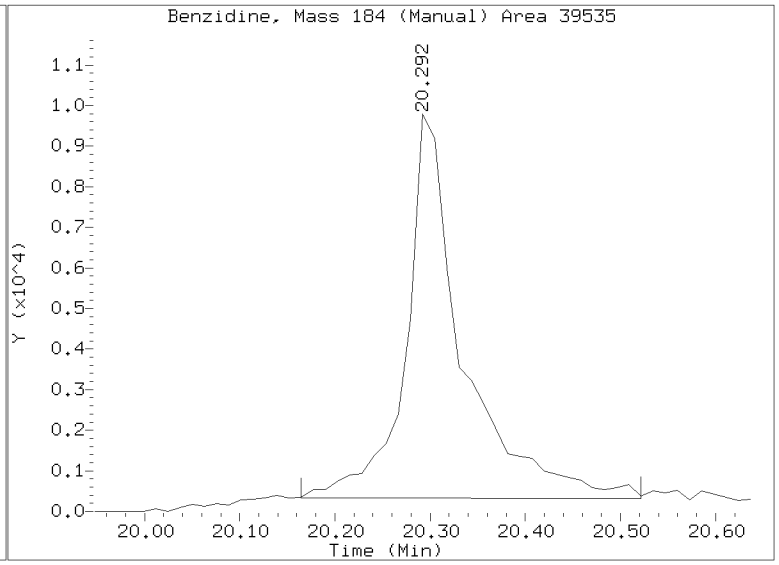












Quant Ion Manual Peak Adjustment Report

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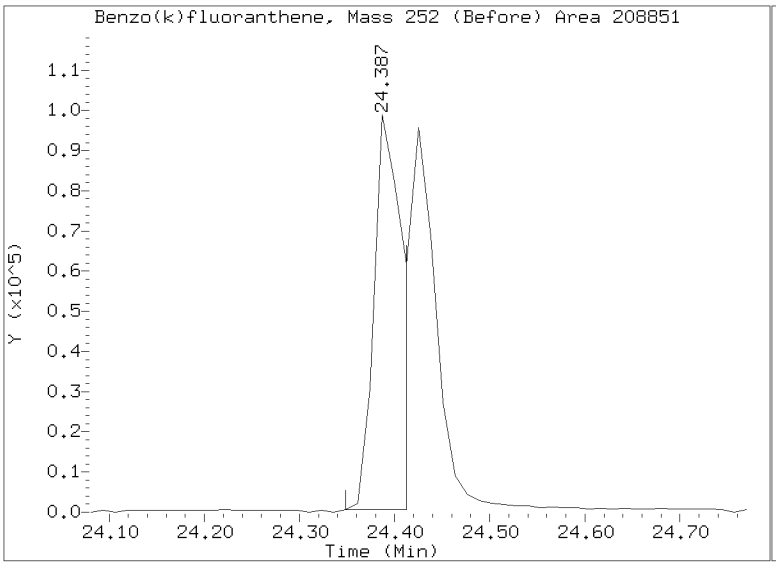
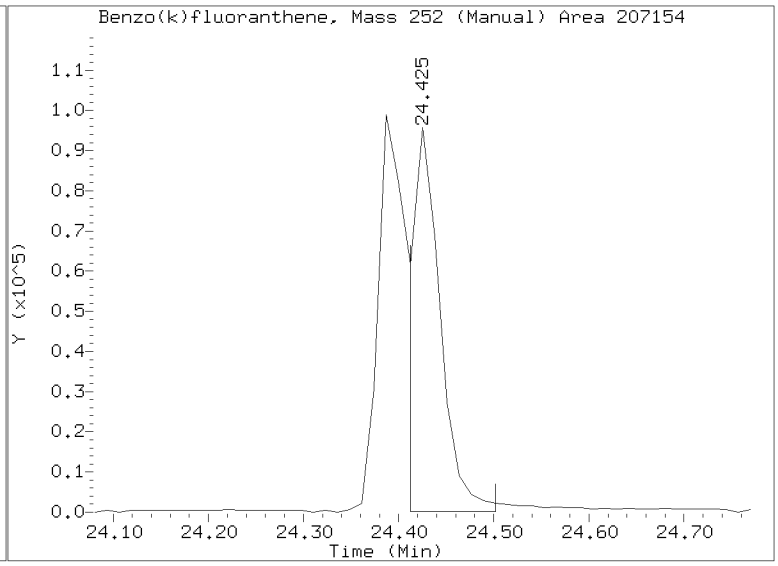
Injection Date: 10-JUL-2023 15:29
Lab ID:SEQ-CAL3 Client ID:
Report Date: 07/18/2023 10:00





Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102307.D

Date : 10-JUL-2023 16:07

Client ID:

Instrument: nt17.i

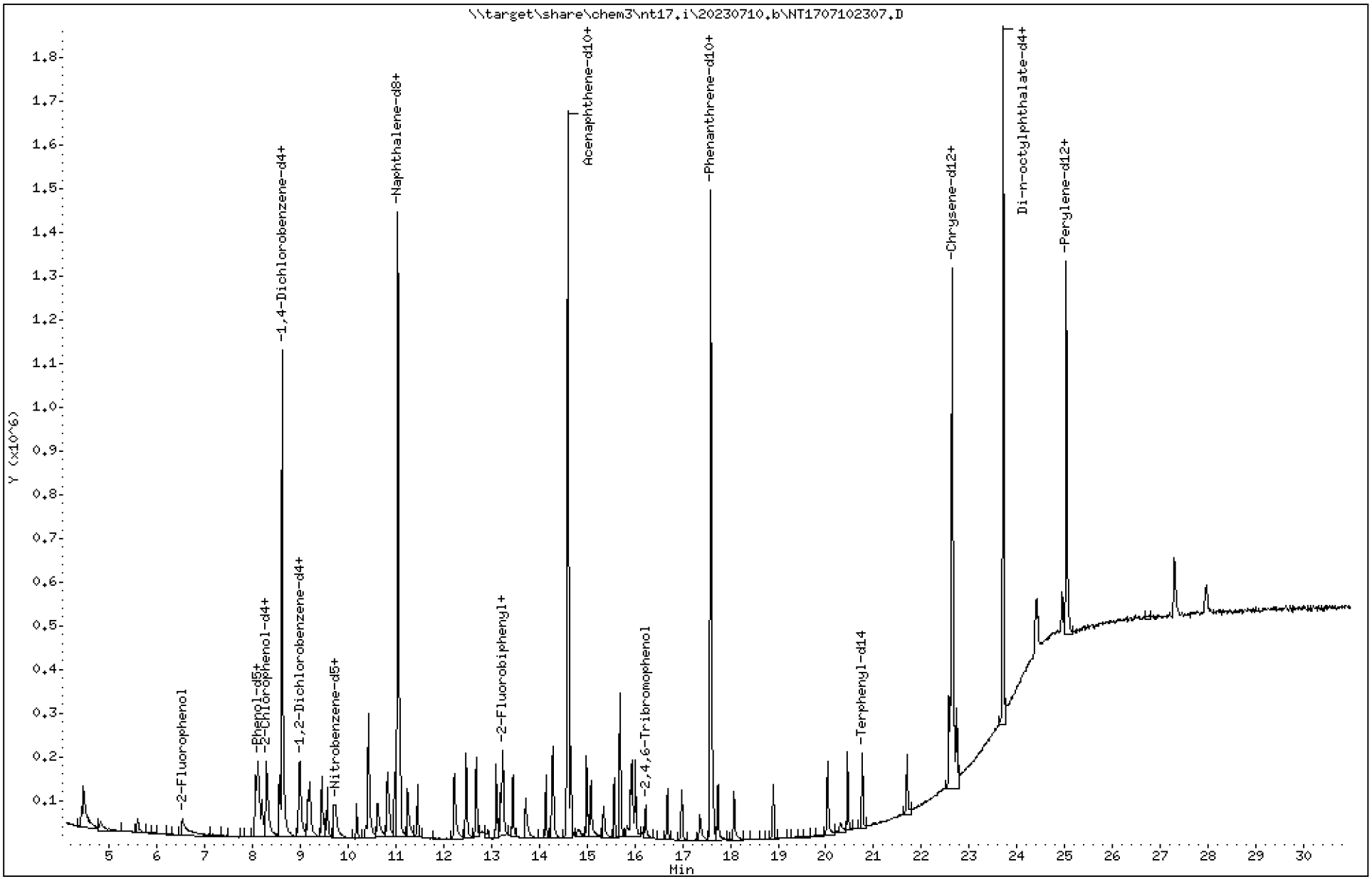
Sample Info: SEQ-CAL2

Volume Injected (uL): 1.0

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt17.i\20230710.b\NT1707102307.D
Lab Smp Id: SEQ-CAL2
Inj Date : 10-JUL-2023 16:07
Operator : JGR Inst ID: nt17.i
Smp Info : SEQ-CAL2
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Meth Date : 18-Jul-2023 10:01 jrains Quant Type: ISTD
Cal Date : 10-JUL-2023 16:07 Cal File: NT1707102307.D
Als bottle: 7 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: JOSHR-201909

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	500.000	Volume of final extract (uL)
Vo	500.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
$ 1	2-Fluorophenol	112	6.520	6.520	(0.757)	75636	0.75000	0.6060(M)
$ 2	Phenol-d5	99	8.049	8.049	(0.935)	100705	0.75000	0.5820
3	Phenol	94	8.075	8.075	(0.938)	98412	0.50000	0.4265(M)
$ 5	2-Chlorophenol-d4	132	8.279	8.279	(0.961)	90948	0.75000	0.6460
4	Bis(2-Chloroethyl)ether	93	8.189	8.189	(0.951)	78686	0.50000	0.5882
6	2-Chlorophenol	128	8.304	8.304	(0.964)	68961	0.50000	0.4194
7	1,3-Dichlorobenzene	146	8.559	8.559	(0.994)	65775	0.50000	0.4399
* 8	1,4-Dichlorobenzene-d4	152	8.610	8.610	(1.000)	354338	4.00000	
9	1,4-Dichlorobenzene	146	8.649	8.649	(1.004)	63436	0.50000	0.3934
$ 10	1,2-Dichlorobenzene-d4	152	8.968	8.968	(1.042)	38902	0.50000	0.4482
12	1,2-Dichlorobenzene	146	8.993	8.993	(1.045)	61767	0.50000	0.4368
11	Benzyl alcohol	108	8.955	8.955	(1.040)	29273	0.50000	0.3369(M)
14	2,2'-oxybis(1-Chloropropane)	121	9.185	9.185	(1.067)	21022	0.50000	0.4544
13	2-Methylphenol	108	9.147	9.147	(1.062)	58003	0.50000	0.4201
17	Hexachloroethane	117	9.568	9.568	(1.111)	28044	0.50000	0.4401
16	N-Nitroso-di-n-propylamine	70	9.441	9.441	(1.096)	44393	0.50000	0.4173
15	4-Methylphenol	108	9.428	9.428	(1.095)	43619	0.50000	0.3235
$ 18	Nitrobenzene-d5	82	9.696	9.696	(0.879)	58625	0.50000	0.4300
19	Nitrobenzene	77	9.734	9.734	(0.882)	59737	0.50000	0.4273
20	Isophorone	82	10.169	10.169	(0.921)	89807	0.50000	0.4266
21	2-Nitrophenol	139	10.360	10.360	(0.939)	23626	0.50000	0.4057
22	2,4-Dimethylphenol	107	10.424	10.424	(0.945)	121624	1.00000	0.9376

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
	23 Bis(2-Chloroethoxy)methane	93	10.603	10.603	(0.961)	55661	0.50000	0.4648
	24 Benzoic acid	105	10.629	10.629	(0.963)	64823	2.00000	0.6714(M)
	25 2,4-Dichlorophenol	162	10.820	10.820	(0.980)	84574	1.00000	0.8705
	26 1,2,4-Trichlorobenzene	180	10.973	10.973	(0.994)	49082	0.50000	0.4685
*	27 Naphthalene-d8	136	11.037	11.037	(1.000)	1188942	4.00000	
	28 Naphthalene	128	11.088	11.088	(1.005)	157094	0.50000	0.4747
	29 4-Chloroaniline	127	11.240	11.240	(1.018)	100986	1.00000	0.6768
	30 Hexachlorobutadiene	225	11.457	11.457	(1.038)	24820	0.50000	0.4742
	31 4-Chloro-3-methylphenol	107	12.222	12.222	(1.107)	91241	1.00000	0.8355
	32 2-Methylnaphthalene	142	12.465	12.465	(1.129)	102611	0.50000	0.4460
	33 Hexachlorocyclopentadiene	237	12.937	12.937	(0.886)	3417	1.00000	0.1301
	34 2,4,6-Trichlorophenol	196	13.102	13.102	(0.898)	48583	1.00000	0.8175
	35 2,4,5-Trichlorophenol	196	13.192	13.192	(0.904)	47467	1.00000	0.7693
$	36 2-Fluorobiphenyl	172	13.243	13.243	(0.907)	108225	0.50000	0.4719
	37 2-Chloronaphthalene	162	13.447	13.447	(0.921)	94712	0.50000	0.4717
	38 2-Nitroaniline	65	13.714	13.714	(0.940)	58266	1.00000	0.7200
	39 Dimethylphthalate	163	14.135	14.135	(0.969)	97087	0.50000	0.4670
	40 Acenaphthylene	152	14.288	14.288	(0.979)	156429	0.50000	0.5069
	41 2,6-Dinitrotoluene	165	14.263	14.263	(0.977)	31786	1.00000	0.6568
*	42 Acenaphthene-d10	164	14.595	14.595	(1.000)	595679	4.00000	
	43 3-Nitroaniline	138	14.569	14.569	(0.998)	28018	1.00000	0.5299
	44 Acenaphthene	153	14.658	14.658	(1.004)	91247	0.50000	0.4732
	45 2,4-Dinitrophenol	184	14.811	14.811	(1.015)	17236	2.00000	0.7734(M)
	46 Dibenzofuran	168	14.990	14.990	(1.027)	124898	0.50000	0.4651
	47 4-Nitrophenol	109	14.990	14.990	(1.027)	19393	1.00000	0.6240(M)
	48 2,4-Dinitrotoluene	165	15.079	15.079	(1.033)	40258	1.00000	0.6427
	50 Diethylphthalate	149	15.576	15.576	(1.067)	111394	0.50000	0.4724
	49 Fluorene	166	15.691	15.691	(1.075)	98341	0.50000	0.4204
	51 4-Chlorophenyl-phenylether	204	15.691	15.691	(1.075)	52755	0.50000	0.4752
	52 4-Nitroaniline	138	15.843	15.843	(1.086)	25263	1.00000	0.5408
	53 4,6-Dinitro-2-methylphenol	198	15.907	15.907	(0.904)	28865	2.00000	0.8165
	54 N-Nitrosodiphenylamine	169	15.945	15.945	(0.907)	70795	0.50000	0.4911
$	55 2,4,6-Tribromophenol	330	16.225	16.225	(1.112)	17089	0.75000	0.6201
	56 4-Bromophenyl-phenylether	248	16.683	16.683	(0.949)	23871	0.50000	0.4284
	57 Hexachlorobenzene	284	16.989	16.989	(0.966)	30539	0.50000	0.4696
	58 Pentachlorophenol	266	17.359	17.359	(0.987)	17038	1.00000	0.4634
*	59 Phenanthrene-d10	188	17.588	17.588	(1.000)	962353	4.00000	
	60 Phenanthrene	178	17.639	17.639	(1.003)	131951	0.50000	0.4736
	61 Anthracene	178	17.741	17.741	(1.009)	112329	0.50000	0.4348
	62 Carbazole	167	18.073	18.073	(1.028)	106577	0.50000	0.4930
	63 Di-n-butylphthalate	149	18.902	18.902	(1.075)	121029	0.50000	0.3465
	64 Fluoranthene	202	20.037	20.037	(0.885)	117490	0.50000	0.4254
	65 Pyrene	202	20.457	20.457	(0.904)	142178	0.50000	0.4557
$	66 Terphenyl-d14	244	20.764	20.764	(0.917)	99406	0.50000	0.4585
	67 Butylbenzylphthalate	149	21.695	21.695	(0.958)	42926	0.50000	0.3211
	68 Benzo(a)anthracene	228	22.613	22.613	(0.999)	99496	0.50000	0.4507
*	69 Chrysene-d12	240	22.639	22.639	(1.000)	623665	4.00000	
	70 3,3'-Dichlorobenzidine	252	22.588	22.588	(0.998)	88515	1.50000	1.545
	71 Chrysene	228	22.690	22.690	(1.002)	98023	0.50000	0.4738
	72 bis(2-Ethylhexyl)phthalate	149	22.741	22.741	(0.959)	52973	0.50000	0.4022
*	134 Di-n-octylphthalate-d4	153	23.710	23.710	(1.000)	929701	4.00000	
	73 Di-n-octylphthalate	149	23.723	23.723	(1.001)	127278	0.50000	0.4926
	74 Benzo(b)fluoranthene	252	24.399	24.399	(0.975)	90612	0.50000	0.4312
	75 Benzo(k)fluoranthene	252	24.425	24.425	(0.976)	110094	0.50000	0.5162(H)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
76	Benzo(a)pyrene	252	24.948	24.948	(0.996)	69399	0.50000	0.4540
* 77	Perylene-d12	264	25.037	25.037	(1.000)	567281	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	27.298	27.298	(1.090)	91133	0.50000	0.4424
79	Dibenzo(a,h)anthracene	278	27.298	27.298	(1.090)	84677	0.50000	0.4620
80	Benzo(g,h,i)perylene	276	27.963	27.963	(1.117)	85026	0.50000	0.4499
90	N-Nitrosodimethylamine	74	4.418	4.418	(0.513)	66282	1.00000	0.7093
91	Aniline	93	8.100	8.100	(0.941)	135386	1.00000	0.7545
93	Benzidine	184	20.304	20.304	(0.897)	28157	1.00000	0.8264(M)
103	Pyridine	79	4.457	4.457	(0.518)	102745	1.00000	0.6993
105	1-methylnaphthalene	142	12.681	12.681	(1.149)	100585	0.50000	0.4724
111	Azobenzene (1,2-DP-Hydrazine)	77	16.009	16.009	(1.097)	138158	0.50000	0.4713
187	Total Benzofluoranthenes	252	24.399	24.399	(0.975)	181831	1.00000	0.9636
120	2,3,4,6-Tetrachlorophenol	232	15.346	15.346	(1.052)	20750	0.50000	0.3987(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt17.i
Lab File ID: NT1707102307.D
Lab Smp Id: SEQ-CAL2
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Misc Info:

Calibration Date: 10-JUL-2023
Calibration Time: 14:14
Level: LOW
Sample Type: WATER

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	288953	144477	577906	354338	22.63
27 Naphthalene-d8	1098716	549358	2197432	1188942	8.21
42 Acenaphthene-d10	552014	276007	1104028	595679	7.91
59 Phenanthrene-d10	884794	442397	1769588	962353	8.77
69 Chrysene-d12	564549	282275	1129098	623665	10.47
134 Di-n-octylphthala	1047332	523666	2094664	929701	-11.23
77 Perylene-d12	526075	263038	1052150	567281	7.83

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	8.61	8.11	9.11	8.61	-0.00
27 Naphthalene-d8	11.04	10.54	11.54	11.04	-0.00
42 Acenaphthene-d10	14.60	14.10	15.10	14.60	-0.00
59 Phenanthrene-d10	17.59	17.09	18.09	17.59	-0.00
69 Chrysene-d12	22.64	22.14	23.14	22.64	-0.00
134 Di-n-octylphthala	23.71	23.21	24.21	23.71	-0.00
77 Perylene-d12	25.04	24.54	25.54	25.04	-0.00

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

REVIEW SUMMARY FOR FILE - NT1707102307.D

Lab ID: SEQ-CAL2
nt17.i, ABN.m, 10-JUL-2023 16:07

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

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
NONE			

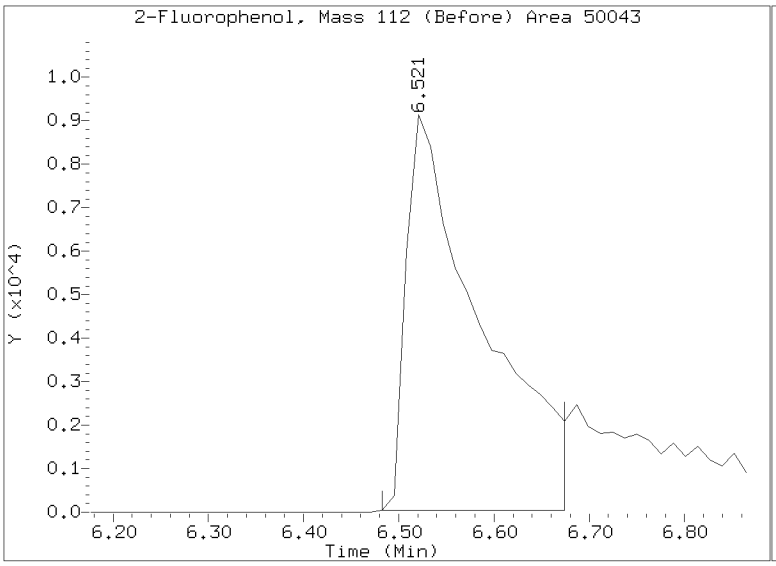
RRT check based on Ccal File: NT1707102307.D

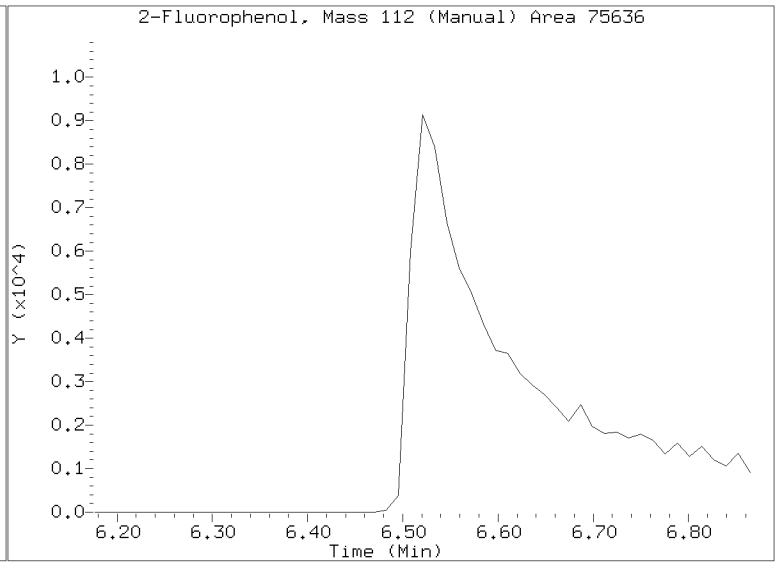
On Column LOD for nt17.i, ABN.m, ICAL.sub = 0.0000

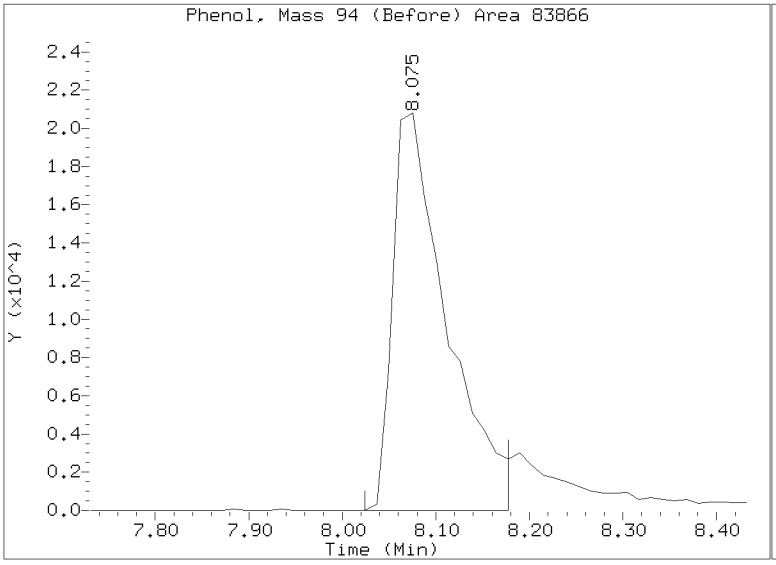
* Only compounds listed in the work order have been verified by the analyst *

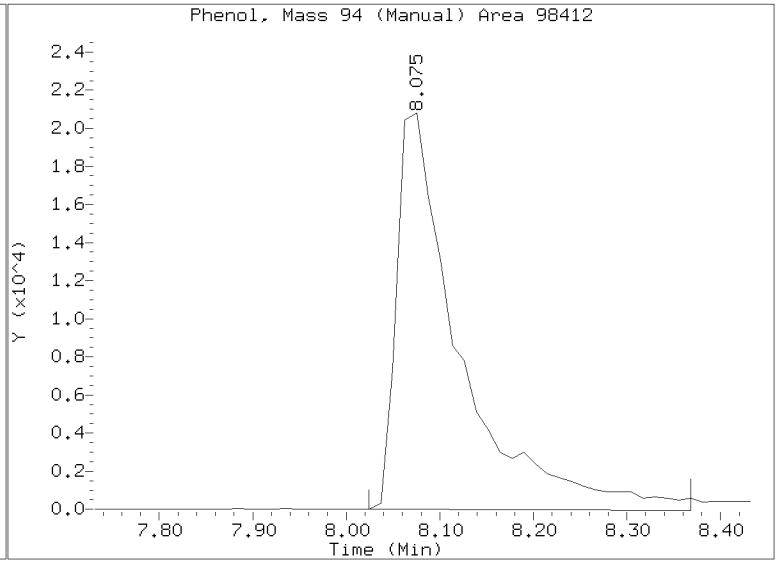
Quant Ion Manual Peak Adjustment Report

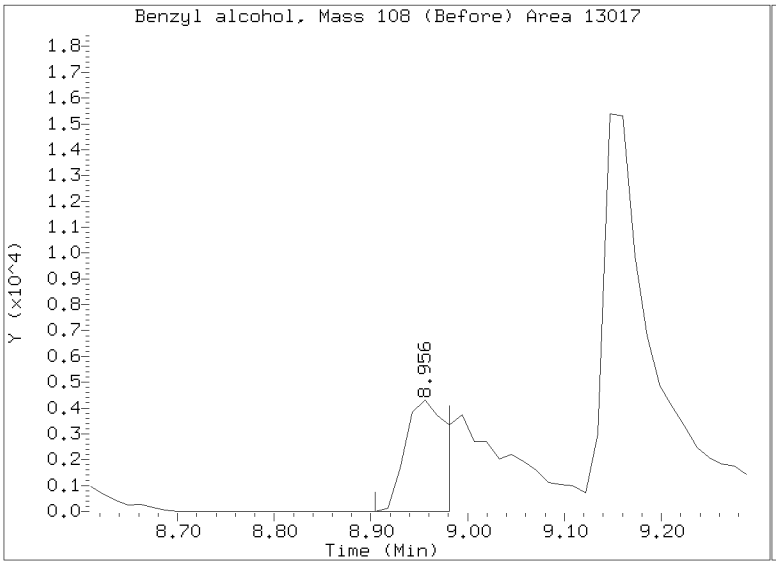
Datafile: //target/share/chem3/nt17.i/20230710.b/NT1707102307.D
Injection Date: 10-JUL-2023 16:07
Lab ID:SEQ-CAL2 Client ID:
Report Date: 07/18/2023 10:01

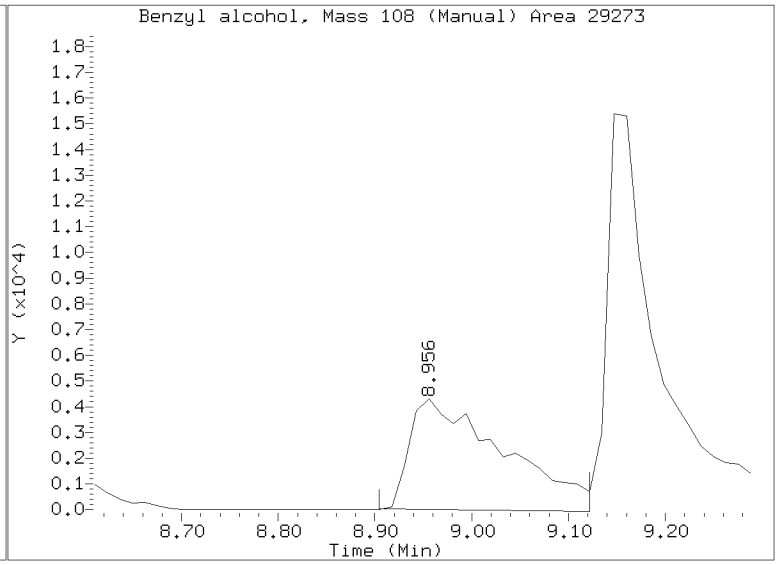






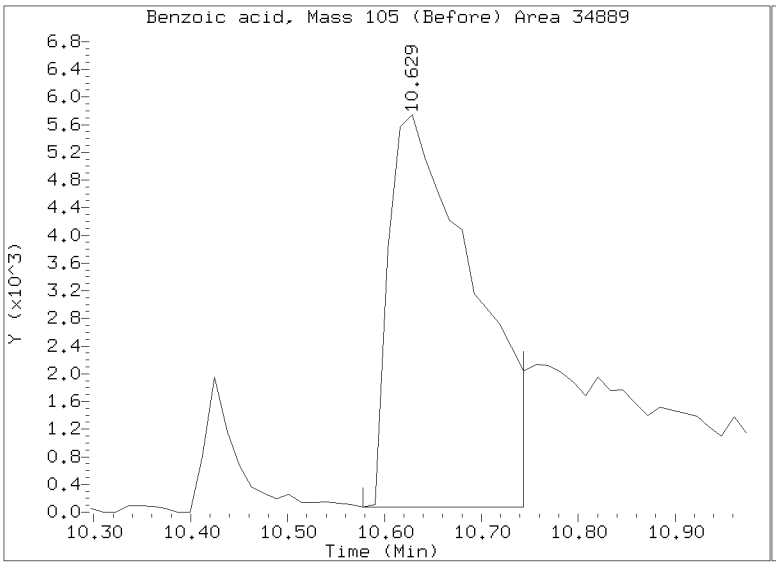


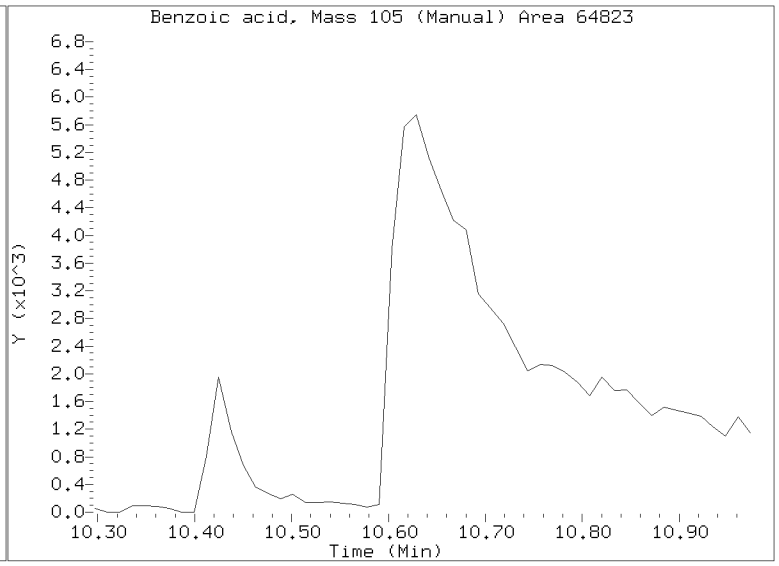


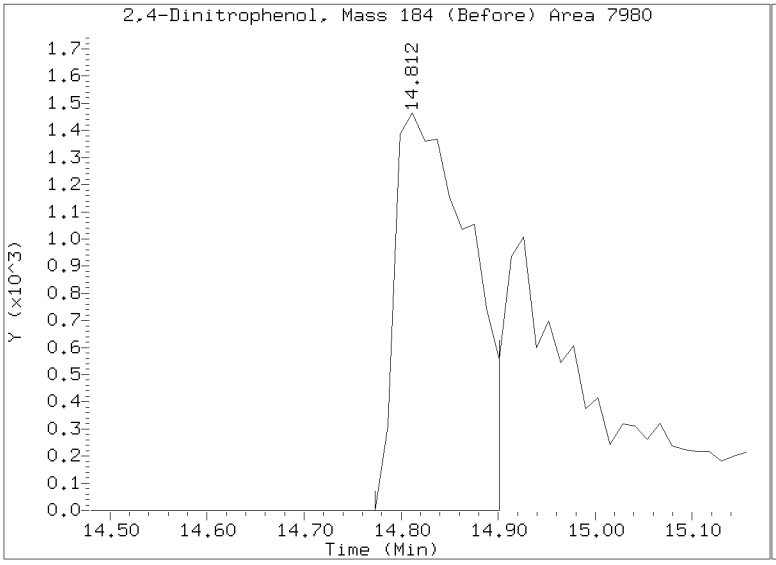


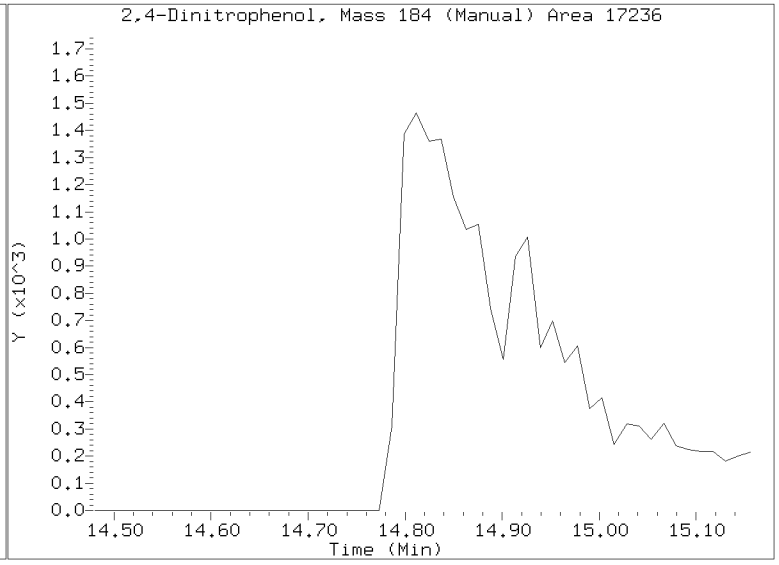
Quant Ion Manual Peak Adjustment Report

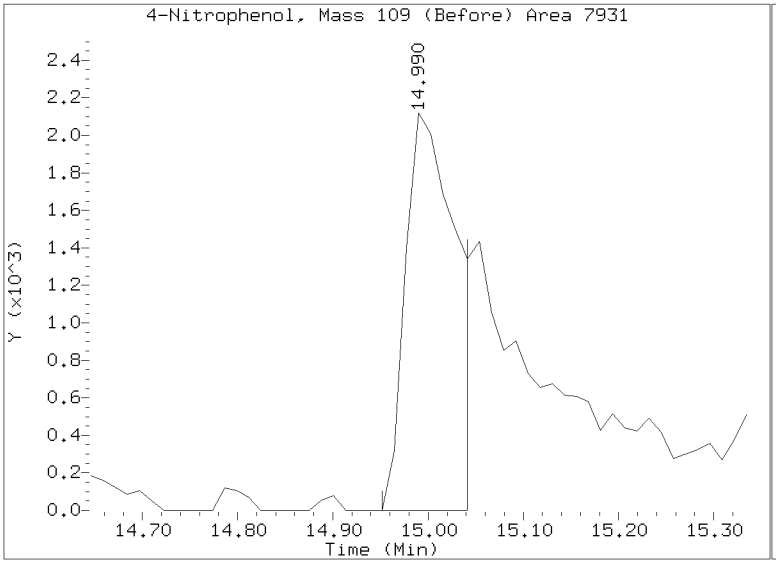
Datafile: //target/share/chem3/nt17.i/20230710.b/NT1707102307.D
Injection Date: 10-JUL-2023 16:07
Lab ID:SEQ-CAL2 Client ID:
Report Date: 07/18/2023 10:01

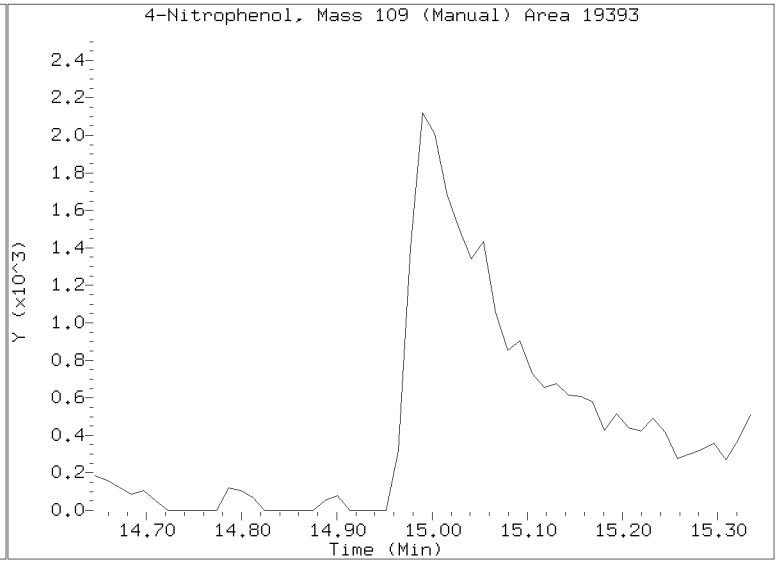












Quant Ion Manual Peak Adjustment Report

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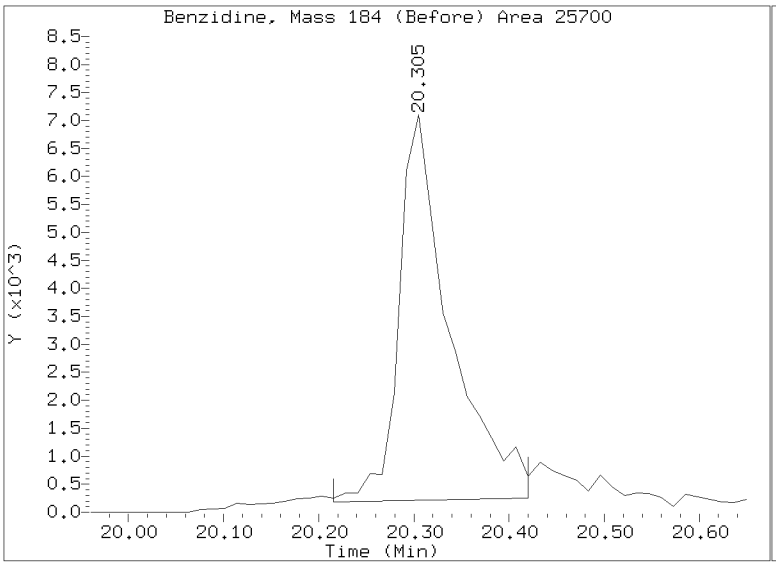
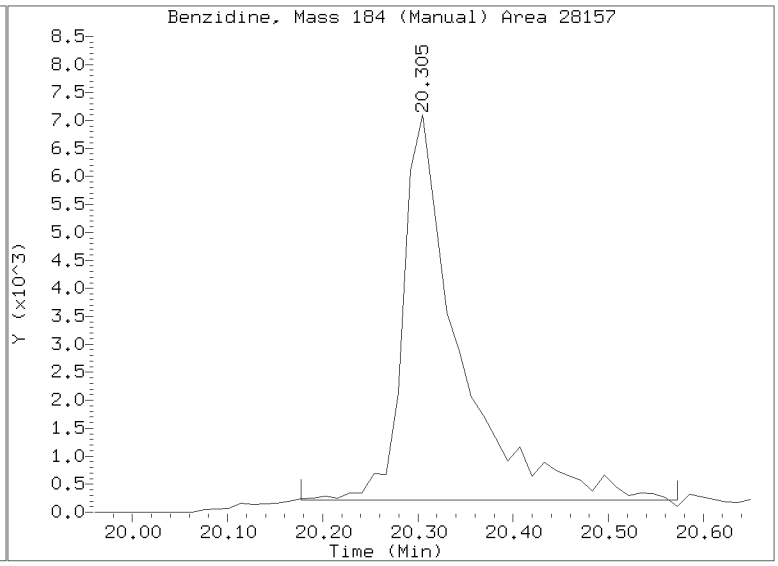
Injection Date: 10-JUL-2023 16:07
Lab ID:SEQ-CAL2 Client ID:
Report Date: 07/18/2023 10:01





Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102308.D

Page 1

Date : 10-JUL-2023 16:44

Client ID:

Instrument: nt17.i

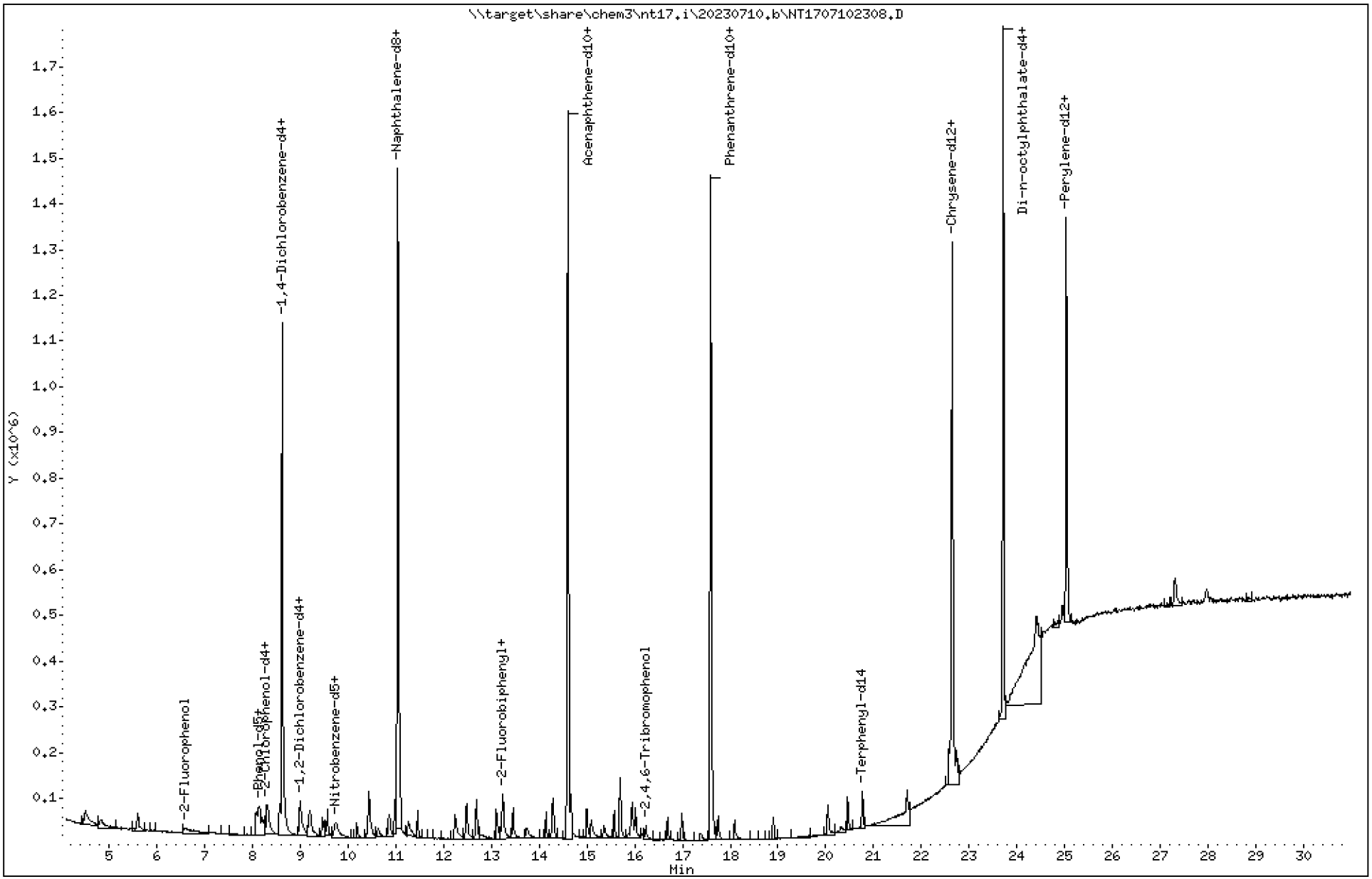
Sample Info: SEQ-CAL1

Volume Injected (uL): 1.0

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt17.i\20230710.b\NT1707102308.D
Lab Smp Id: SEQ-CAL1
Inj Date : 10-JUL-2023 16:44
Operator : JGR Inst ID: nt17.i
Smp Info : SEQ-CAL1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Meth Date : 18-Jul-2023 10:03 jrains Quant Type: ISTD
Cal Date : 10-JUL-2023 16:44 Cal File: NT1707102308.D
Als bottle: 8 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: JOSHR-201909

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	500.000	Volume of final extract (uL)
Vo	500.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
$ 1	2-Fluorophenol	112	6.571	6.571	(0.763)	35666	0.30000	0.3098(M)
$ 2	Phenol-d5	99	8.062	8.062	(0.936)	53288	0.30000	0.3338(M)
3	Phenol	94	8.088	8.088	(0.939)	49717	0.20000	0.2336(M)
$ 5	2-Chlorophenol-d4	132	8.291	8.291	(0.963)	39093	0.30000	0.3010
4	Bis(2-Chloroethyl)ether	93	8.202	8.202	(0.953)	37527	0.20000	0.3041(M)
6	2-Chlorophenol	128	8.317	8.317	(0.966)	31206	0.20000	0.2057
7	1,3-Dichlorobenzene	146	8.559	8.559	(0.994)	31044	0.20000	0.2251
* 8	1,4-Dichlorobenzene-d4	152	8.610	8.610	(1.000)	326889	4.00000	
9	1,4-Dichlorobenzene	146	8.649	8.649	(1.004)	30983	0.20000	0.2083
$ 10	1,2-Dichlorobenzene-d4	152	8.981	8.981	(1.043)	17395	0.20000	0.2172
12	1,2-Dichlorobenzene	146	9.006	9.006	(1.046)	28732	0.20000	0.2203
11	Benzyl alcohol	108	9.019	9.019	(1.047)	11571	0.20000	0.1444
14	2,2'-oxybis(1-Chloropropane)	121	9.198	9.198	(1.068)	10147	0.20000	0.2377
13	2-Methylphenol	108	9.172	9.172	(1.065)	26006	0.20000	0.2042
17	Hexachloroethane	117	9.568	9.568	(1.111)	12874	0.20000	0.2190
16	N-Nitroso-di-n-propylamine	70	9.454	9.454	(1.098)	17967	0.20000	0.1831
15	4-Methylphenol	108	9.466	9.466	(1.099)	17339	0.20000	0.1394
$ 18	Nitrobenzene-d5	82	9.722	9.722	(0.881)	23845	0.20000	0.1702
19	Nitrobenzene	77	9.760	9.760	(0.884)	24377	0.20000	0.1696
20	Isophorone	82	10.182	10.182	(0.923)	39360	0.20000	0.1819
21	2-Nitrophenol	139	10.386	10.386	(0.941)	11029	0.20000	0.1842(M)
22	2,4-Dimethylphenol	107	10.437	10.437	(0.946)	53269	0.40000	0.3995

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
23	Bis(2-Chloroethoxy)methane	93	10.616	10.616	(0.962)	23232	0.20000	0.1887
24	Benzoic acid	105	Compound Not Detected.					
25	2,4-Dichlorophenol	162	10.858	10.858	(0.984)	35923	0.40000	0.3597(M)
26	1,2,4-Trichlorobenzene	180	10.973	10.973	(0.994)	23424	0.20000	0.2175
* 27	Naphthalene-d8	136	11.037	11.037	(1.000)	1222249	4.00000	
28	Naphthalene	128	11.088	11.088	(1.005)	74689	0.20000	0.2195
29	4-Chloroaniline	127	11.266	11.266	(1.021)	42643	0.40000	0.2780
30	Hexachlorobutadiene	225	11.457	11.457	(1.038)	12009	0.20000	0.2232
31	4-Chloro-3-methylphenol	107	12.235	12.235	(1.109)	38505	0.40000	0.3430
32	2-Methylnaphthalene	142	12.477	12.477	(1.131)	47423	0.20000	0.2005
33	Hexachlorocyclopentadiene	237	12.924	12.924	(0.886)	312	0.40000	0.01211
34	2,4,6-Trichlorophenol	196	13.102	13.102	(0.898)	19612	0.40000	0.3363
35	2,4,5-Trichlorophenol	196	13.204	13.204	(0.905)	21497	0.40000	0.3550(M)
$ 36	2-Fluorobiphenyl	172	13.243	13.243	(0.907)	48790	0.20000	0.2168
37	2-Chloronaphthalene	162	13.447	13.447	(0.921)	41341	0.20000	0.2098
38	2-Nitroaniline	65	13.727	13.727	(0.941)	17268	0.40000	0.2174
39	Dimethylphthalate	163	14.135	14.135	(0.969)	43091	0.20000	0.2112
40	Acenaphthylene	152	14.289	14.289	(0.979)	60251	0.20000	0.1990
41	2,6-Dinitrotoluene	165	14.263	14.263	(0.977)	11699	0.40000	0.2463
* 42	Acenaphthene-d10	164	14.595	14.595	(1.000)	584532	4.00000	
43	3-Nitroaniline	138	Compound Not Detected.					
44	Acenaphthene	153	14.658	14.658	(1.004)	40734	0.20000	0.2153
45	2,4-Dinitrophenol	184	14.939	14.939	(1.024)	4864	0.80000	0.2227(M)
46	Dibenzofuran	168	15.002	15.002	(1.028)	57426	0.20000	0.2179
47	4-Nitrophenol	109	Compound Not Detected.					
48	2,4-Dinitrotoluene	165	15.092	15.092	(1.034)	14456	0.40000	0.2352
50	Diethylphthalate	149	15.576	15.576	(1.067)	47951	0.20000	0.2072
49	Fluorene	166	15.691	15.691	(1.075)	45011	0.20000	0.1961
51	4-Chlorophenyl-phenylether	204	15.691	15.691	(1.075)	21943	0.20000	0.2014
52	4-Nitroaniline	138	15.856	15.856	(1.086)	11604	0.40000	0.2531(M)
53	4,6-Dinitro-2-methylphenol	198	15.932	15.932	(0.906)	8540	0.80000	0.2428
54	N-Nitrosodiphenylamine	169	15.945	15.945	(0.907)	31291	0.20000	0.2182
$ 55	2,4,6-Tribromophenol	330	16.225	16.225	(1.112)	7263	0.30000	0.2686
56	4-Bromophenyl-phenylether	248	16.683	16.683	(0.949)	10733	0.20000	0.1936
57	Hexachlorobenzene	284	16.989	16.989	(0.966)	13636	0.20000	0.2108
58	Pentachlorophenol	266	17.372	17.372	(0.988)	5783	0.40000	0.1581
* 59	Phenanthrene-d10	188	17.588	17.588	(1.000)	957323	4.00000	
60	Phenanthrene	178	17.639	17.639	(1.003)	60532	0.20000	0.2184
61	Anthracene	178	17.741	17.741	(1.009)	46817	0.20000	0.1822
62	Carbazole	167	18.086	18.086	(1.028)	47379	0.20000	0.2203
63	Di-n-butylphthalate	149	18.902	18.902	(1.075)	49396	0.20000	0.1422
64	Fluoranthene	202	20.037	20.037	(0.885)	52266	0.20000	0.1877
65	Pyrene	202	20.458	20.458	(0.904)	61331	0.20000	0.1950
$ 66	Terphenyl-d14	244	20.764	20.764	(0.917)	46367	0.20000	0.2122
67	Butylbenzylphthalate	149	21.695	21.695	(0.958)	15247	0.20000	0.1132
68	Benzo(a)anthracene	228	22.613	22.613	(0.999)	43301	0.20000	0.1946
* 69	Chrysene-d12	240	22.639	22.639	(1.000)	628595	4.00000	
70	3,3'-Dichlorobenzidine	252	22.588	22.588	(0.998)	38668	0.60000	0.6716
71	Chrysene	228	22.690	22.690	(1.002)	45874	0.20000	0.2200
72	bis(2-Ethylhexyl)phthalate	149	22.741	22.741	(0.959)	20397	0.20000	0.1594
* 134	Di-n-octylphthalate-d4	153	23.711	23.711	(1.000)	903250	4.00000	
73	Di-n-octylphthalate	149	23.723	23.723	(1.001)	59387	0.20000	0.2366
74	Benzo(b)fluoranthene	252	24.399	24.399	(0.975)	36264	0.20000	0.1668
75	Benzo(k)fluoranthene	252	24.438	24.438	(0.976)	51557	0.20000	0.2336(M)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
76	Benzo(a)pyrene	252	24.961	24.961	(0.997)	31826	0.20000	0.2012
* 77	Perylene-d12	264	25.037	25.037	(1.000)	587080	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	27.311	27.311	(1.091)	41928	0.20000	0.1967
79	Dibenzo(a,h)anthracene	278	27.311	27.311	(1.091)	37686	0.20000	0.1987
80	Benzo(g,h,i)perylene	276	27.975	27.975	(1.117)	39067	0.20000	0.1997
90	N-Nitrosodimethylamine	74	4.457	4.457	(0.518)	31938	0.40000	0.3705(M)
91	Aniline	93	8.138	8.138	(0.945)	54852	0.40000	0.3314
93	Benzidine	184	20.317	20.317	(0.897)	18114	0.40000	0.5275(M)
103	Pyridine	79	4.495	4.495	(0.522)	53096	0.40000	0.3917(M)
105	1-methylnaphthalene	142	12.681	12.681	(1.149)	44270	0.20000	0.2023
111	Azobenzene (1,2-DP-Hydrazine)	77	16.009	16.009	(1.097)	57431	0.20000	0.1996
187	Total Benzofluoranthenes	252	24.399	24.399	(0.975)	78904	0.40000	0.4041(M)
120	2,3,4,6-Tetrachlorophenol	232	15.359	15.359	(1.052)	8758	0.20000	0.1715(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt17.i
Lab File ID: NT1707102308.D
Lab Smp Id: SEQ-CAL1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Misc Info:

Calibration Date: 10-JUL-2023
Calibration Time: 14:14
Level: LOW
Sample Type: WATER

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	288953	144477	577906	326889	13.13
27 Naphthalene-d8	1098716	549358	2197432	1222249	11.24
42 Acenaphthene-d10	552014	276007	1104028	584532	5.89
59 Phenanthrene-d10	884794	442397	1769588	957323	8.20
69 Chrysene-d12	564549	282275	1129098	628595	11.34
134 Di-n-octylphthala	1047332	523666	2094664	903250	-13.76
77 Perylene-d12	526075	263038	1052150	587080	11.60

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	8.61	8.11	9.11	8.61	-0.00
27 Naphthalene-d8	11.04	10.54	11.54	11.04	-0.00
42 Acenaphthene-d10	14.60	14.10	15.10	14.60	-0.00
59 Phenanthrene-d10	17.59	17.09	18.09	17.59	0.00
69 Chrysene-d12	22.64	22.14	23.14	22.64	-0.00
134 Di-n-octylphthala	23.71	23.21	24.21	23.71	-0.00
77 Perylene-d12	25.04	24.54	25.54	25.04	-0.00

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

REVIEW SUMMARY FOR FILE - NT1707102308.D

Lab ID: SEQ-CAL1
nt17.i, ABN.m, 10-JUL-2023 16:44

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

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
NONE			

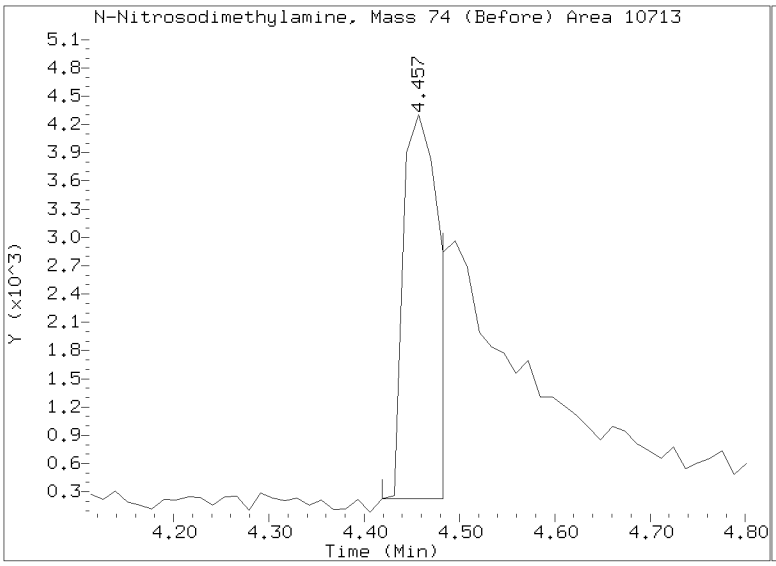
RRT check based on Ccal File: NT1707102308.D

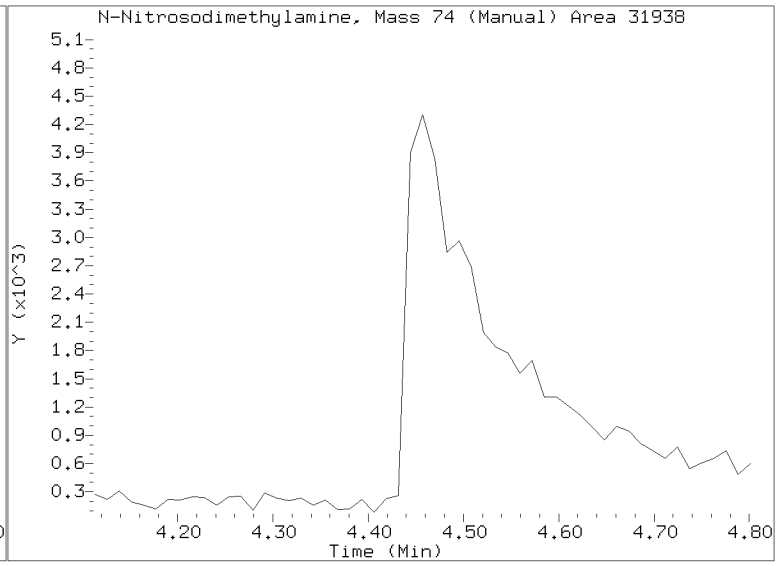
On Column LOD for nt17.i, ABN.m, ICAL.sub = 0.0000

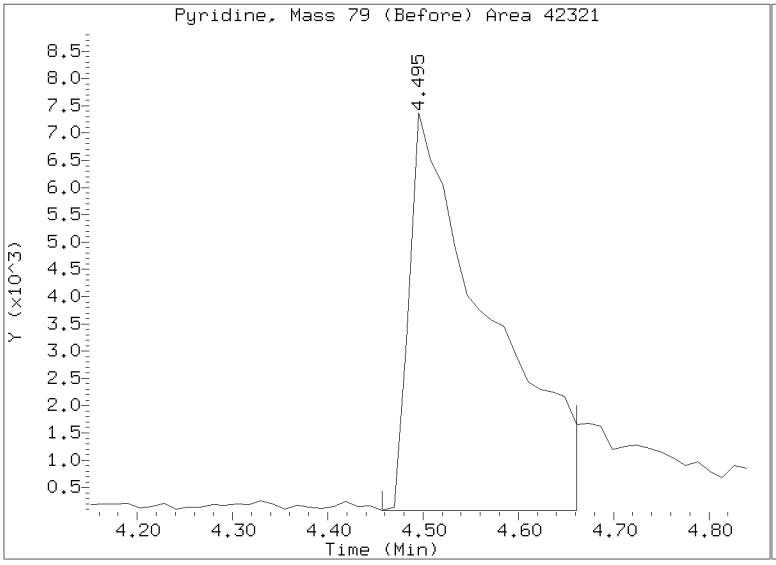
* Only compounds listed in the work order have been verified by the analyst *

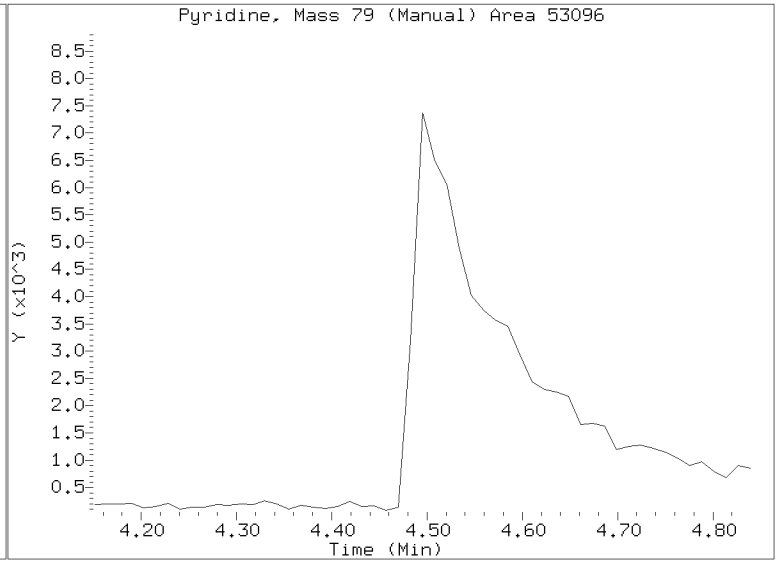
Quant Ion Manual Peak Adjustment Report

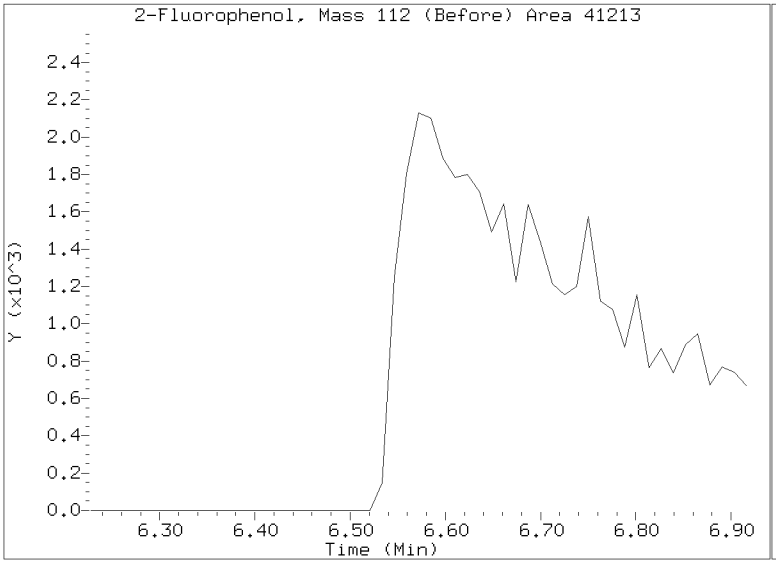
Datafile: //target/share/chem3/nt17.i/20230710.b/NT1707102308.D
Injection Date: 10-JUL-2023 16:44
Lab ID:SEQ-CAL1 Client ID:
Report Date: 07/19/2023 08:14

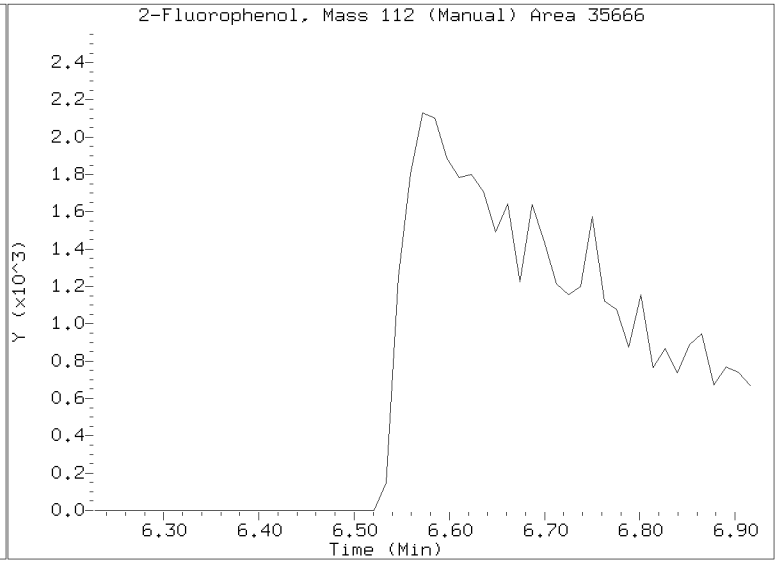






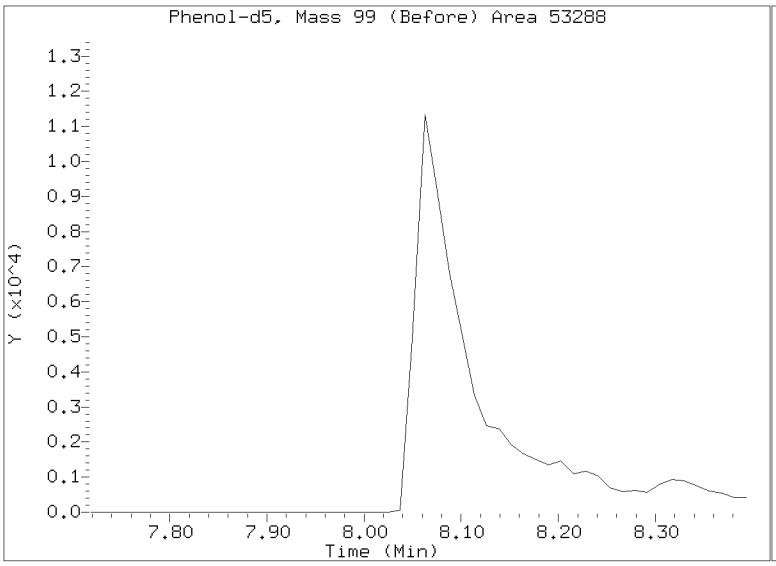


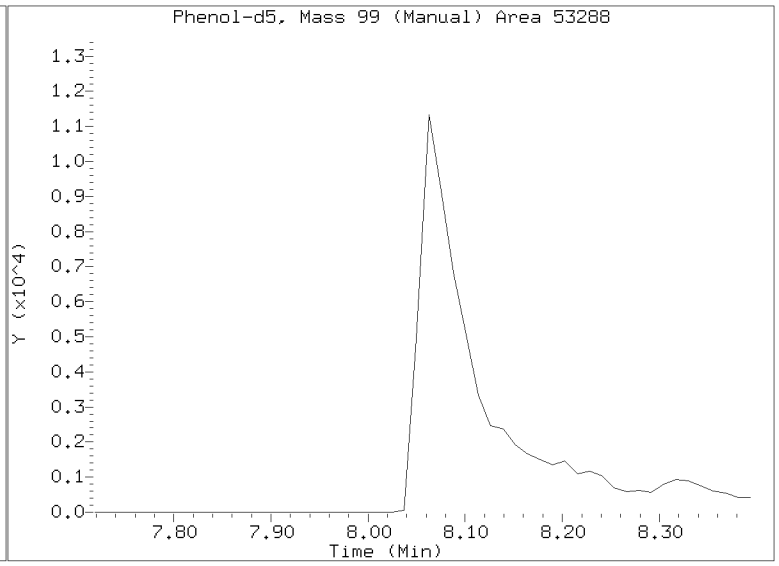


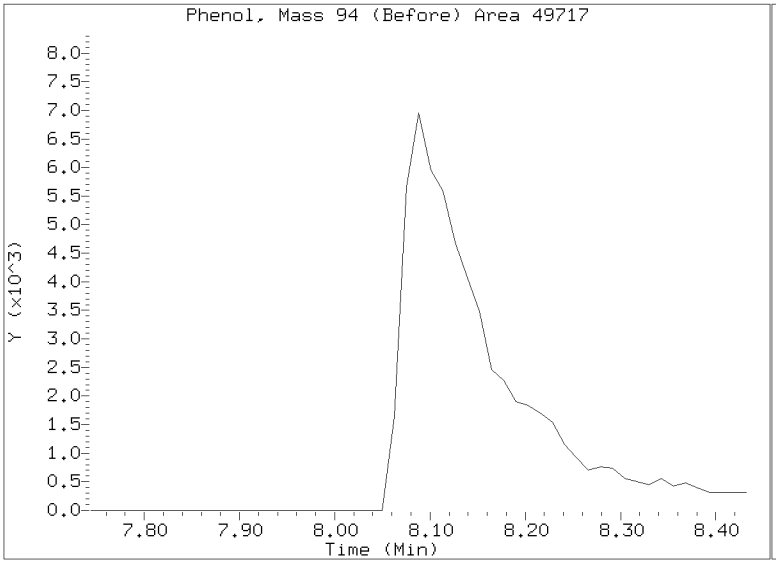


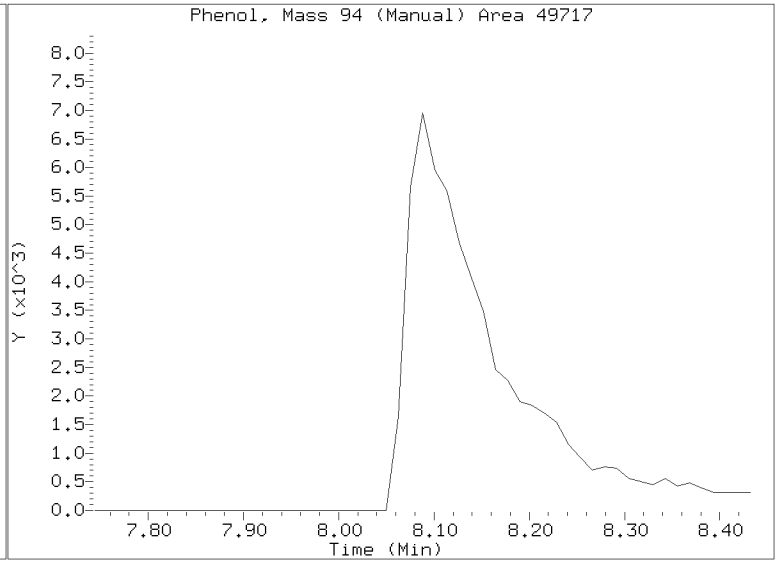
Quant Ion Manual Peak Adjustment Report

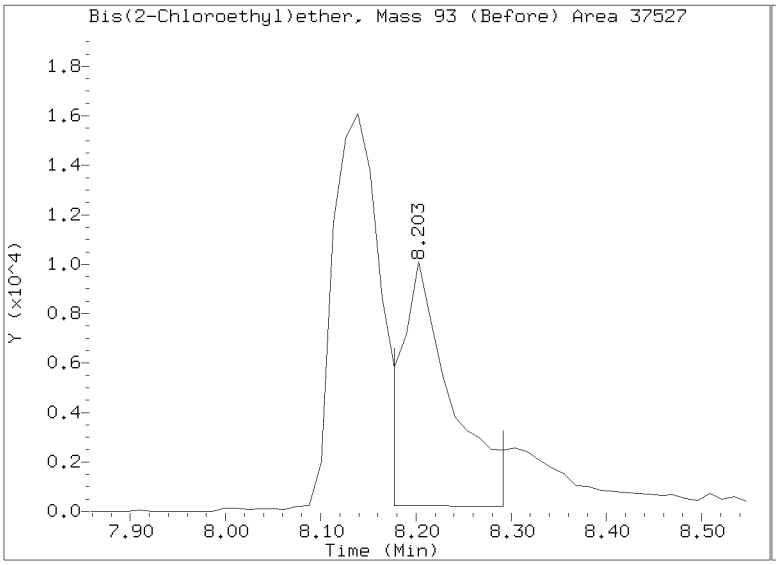
Datafile: //target/share/chem3/nt17.i/20230710.b/NT1707102308.D
Injection Date: 10-JUL-2023 16:44
Lab ID:SEQ-CAL1 Client ID:
Report Date: 07/19/2023 08:14

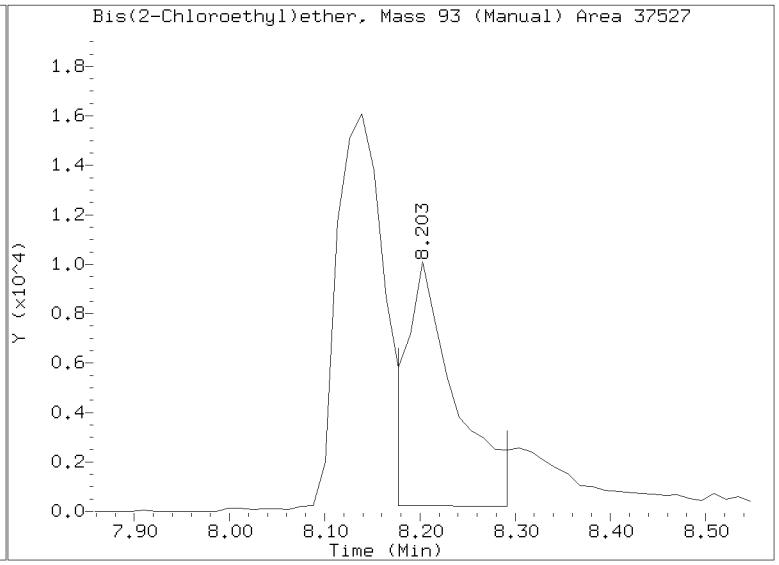






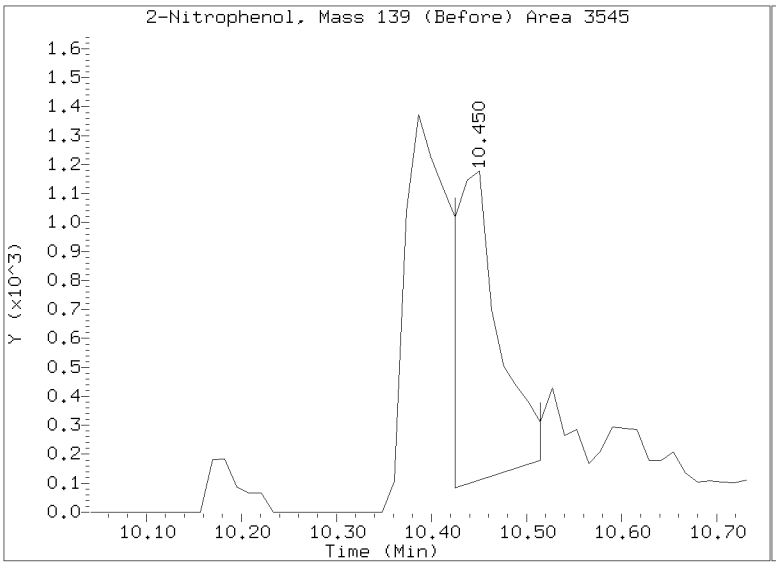


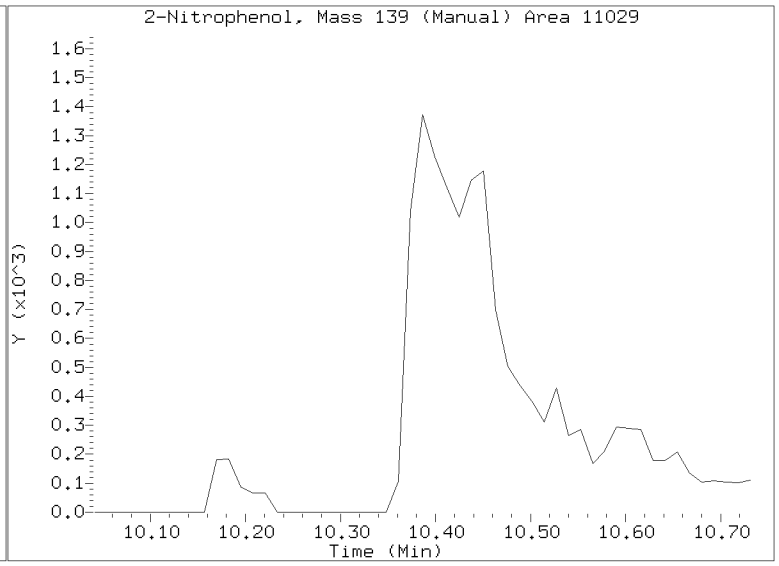


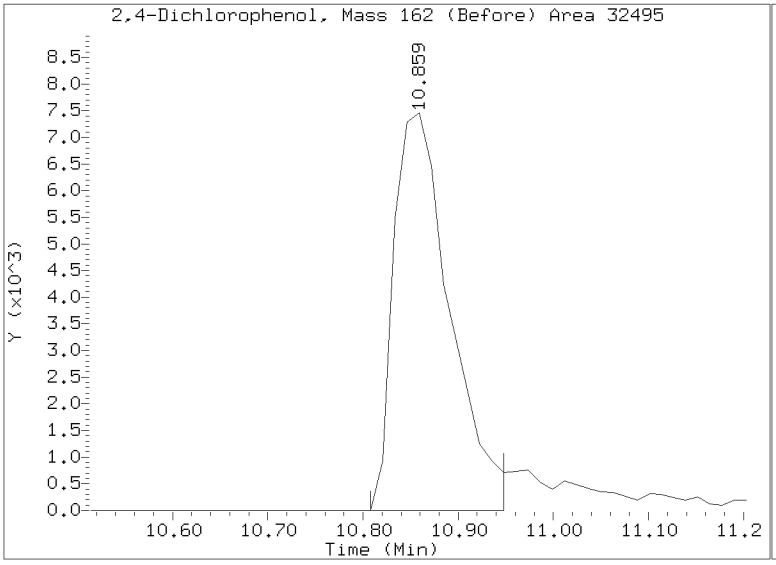


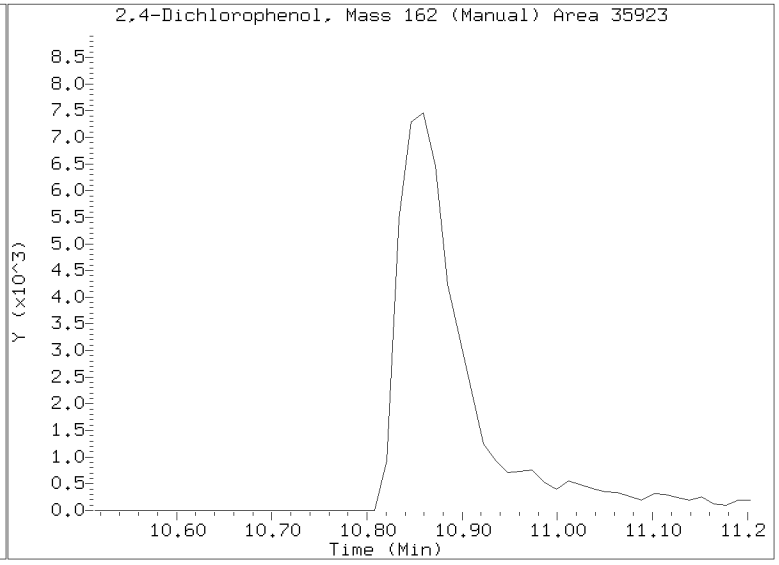
Quant Ion Manual Peak Adjustment Report

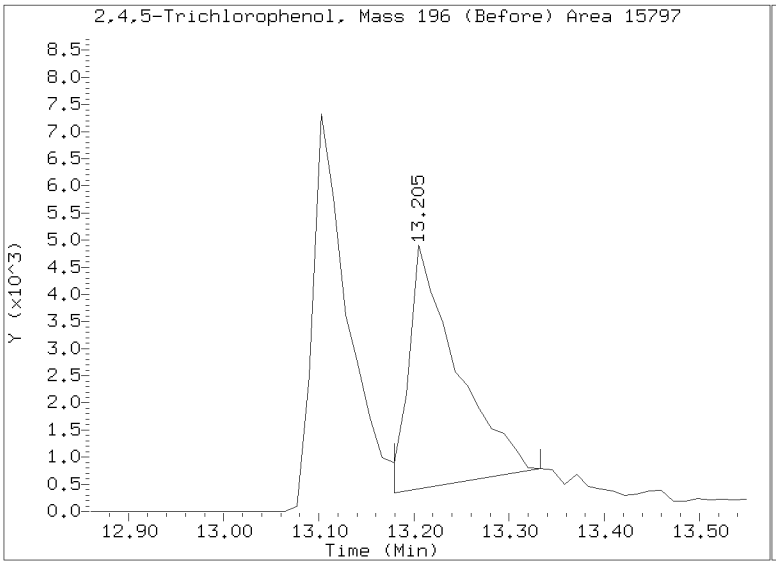
Datafile: //target/share/chem3/nt17.i/20230710.b/NT1707102308.D
Injection Date: 10-JUL-2023 16:44
Lab ID:SEQ-CAL1 Client ID:
Report Date: 07/19/2023 08:14

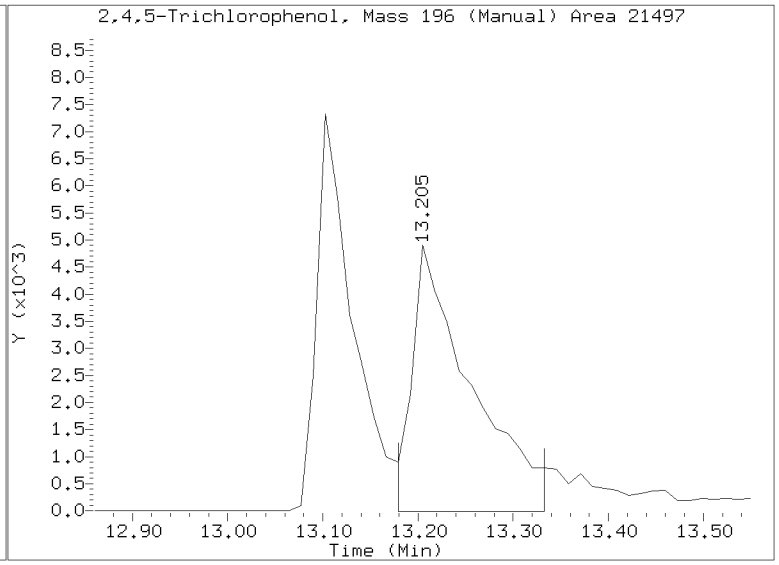






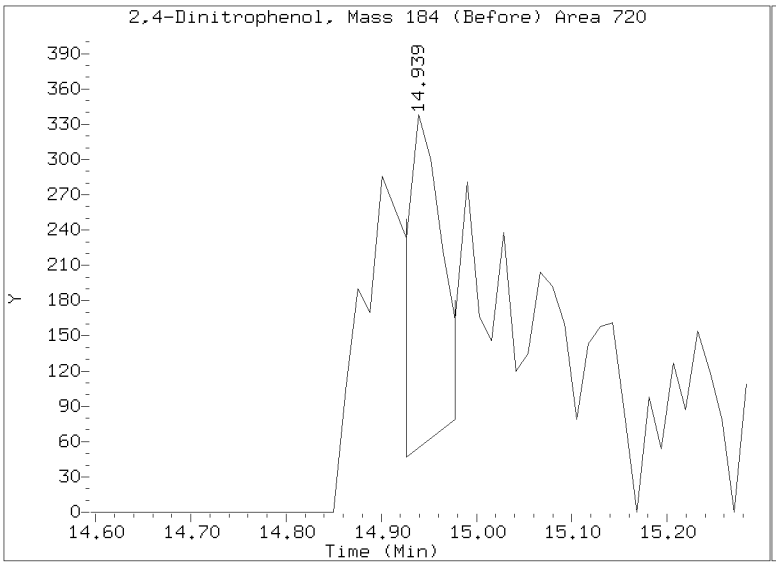


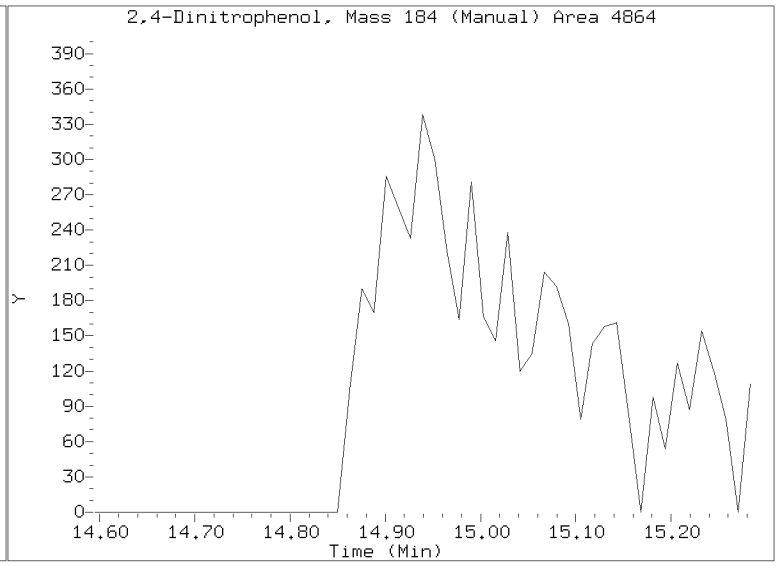


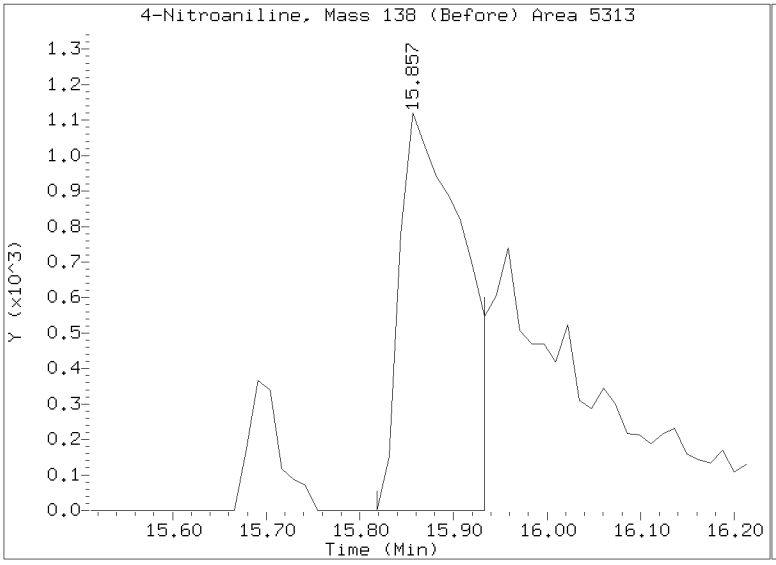


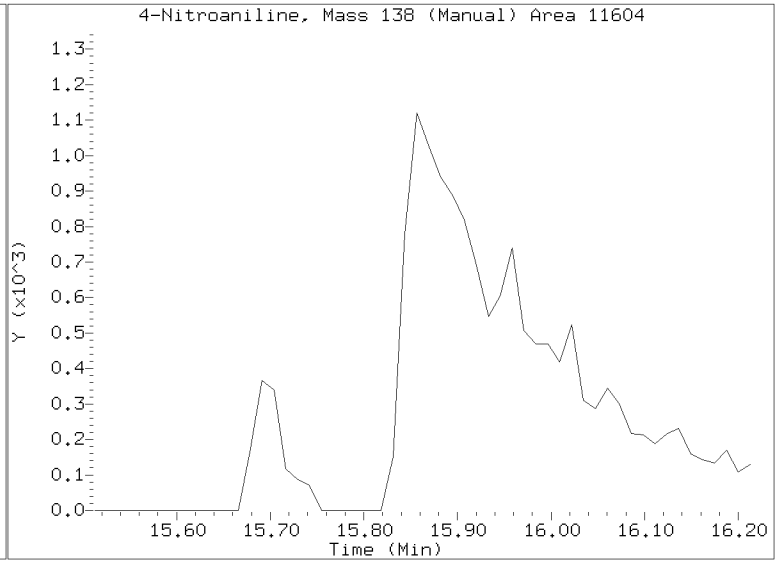
Quant Ion Manual Peak Adjustment Report

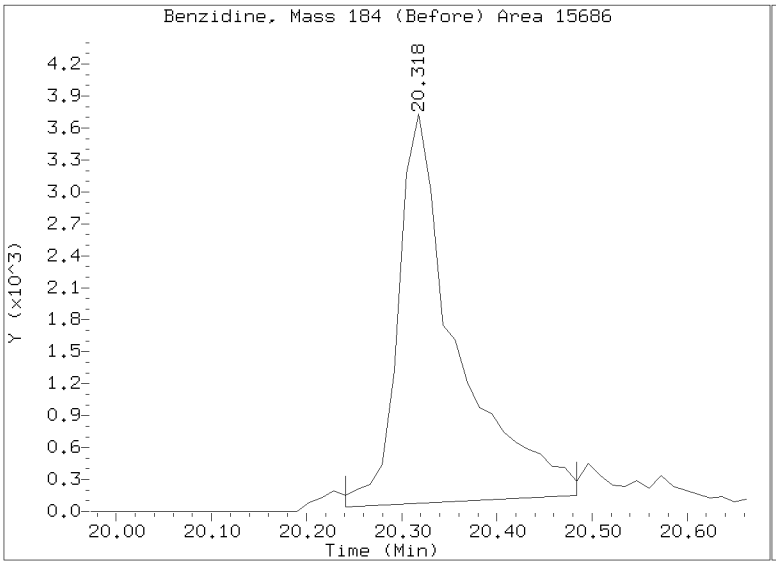
Datafile: //target/share/chem3/nt17.i/20230710.b/NT1707102308.D
Injection Date: 10-JUL-2023 16:44
Lab ID:SEQ-CAL1 Client ID:
Report Date: 07/19/2023 08:14

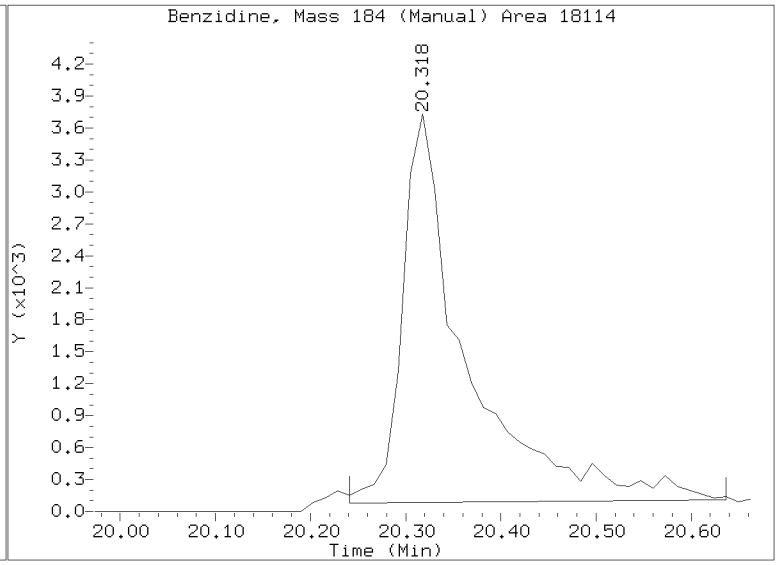






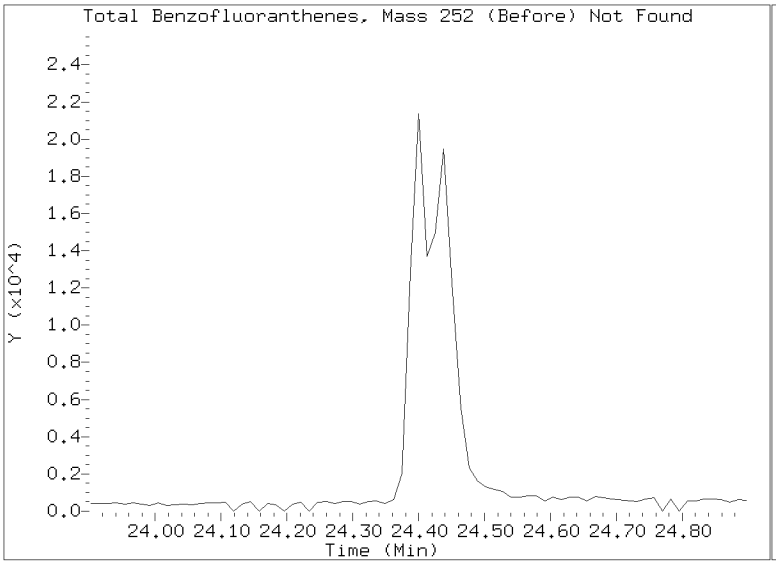


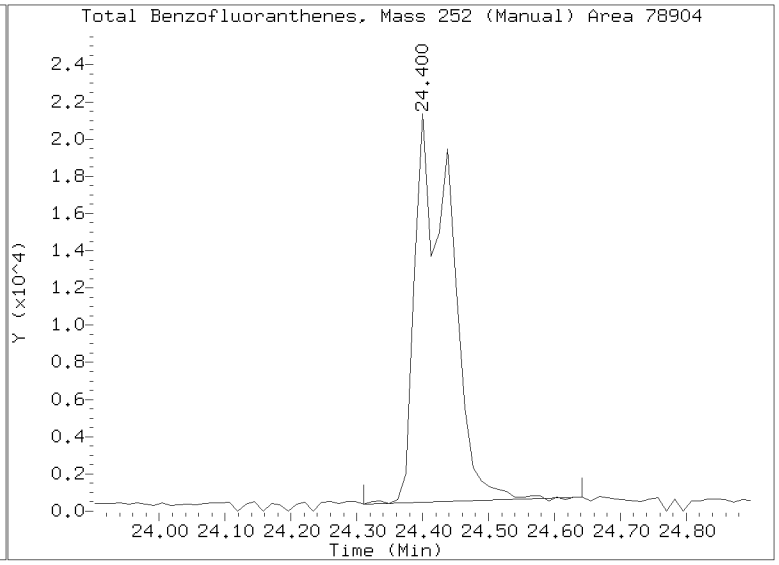


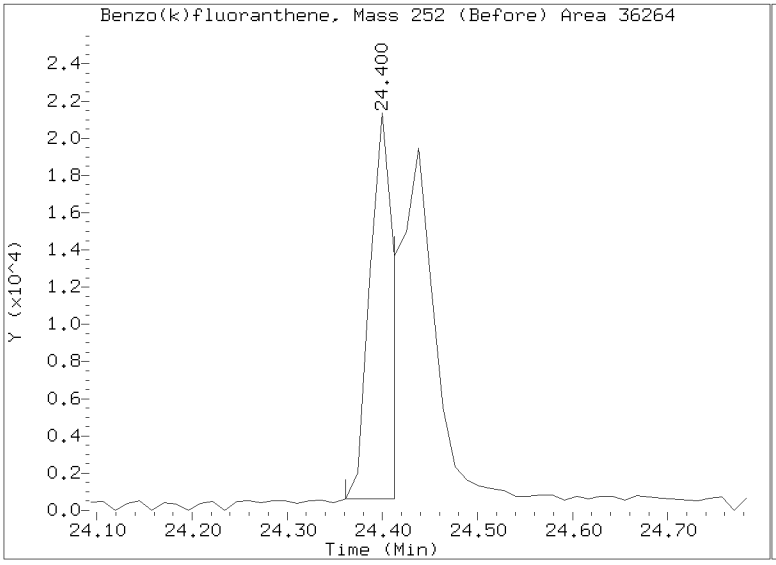


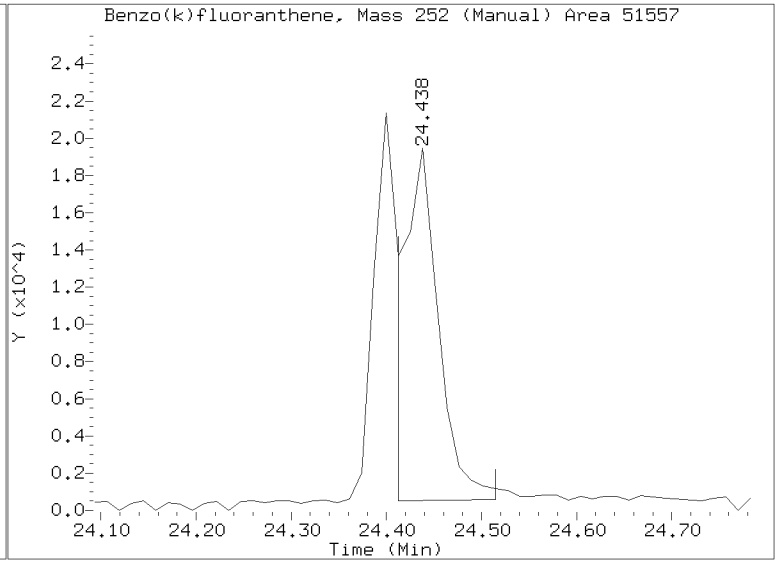
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt17.i/20230710.b/NT1707102308.D
Injection Date: 10-JUL-2023 16:44
Lab ID:SEQ-CAL1 Client ID:
Report Date: 07/19/2023 08:14



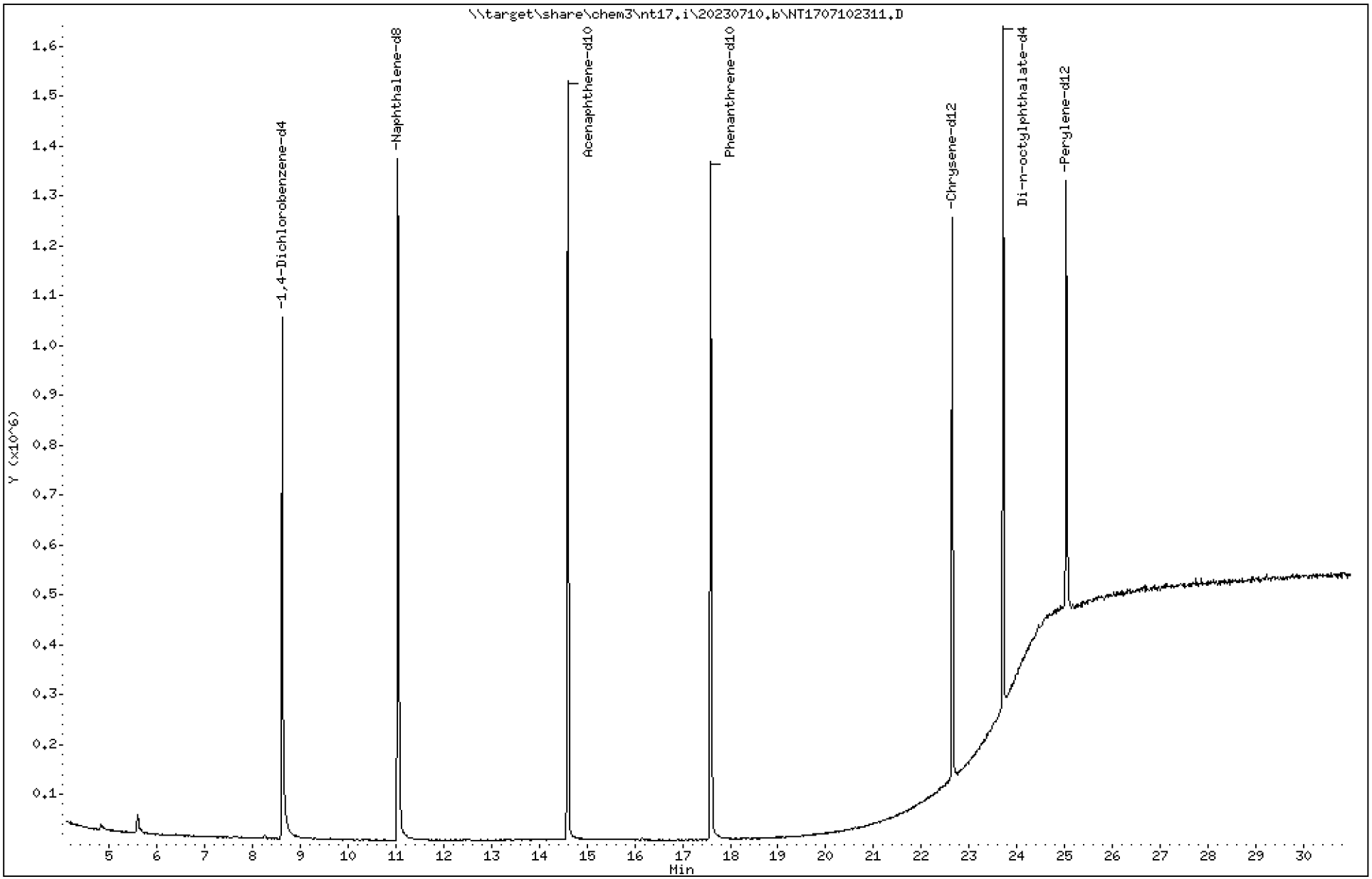






Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102311.D
Date : 10-JUL-2023 18:37
Client ID:
Sample Info: SEQ-ICB1
Volume Injected (uL): 1.0
Column phase: ZB-5msi

Instrument: nt17.i
Operator: JGR
Column diameter: 0.25



Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102311.D

Date : 10-JUL-2023 18:37

Client ID:

Instrument: nt17.i

Sample Info: SEQ-ICB1

Volume Injected (uL): 1.0

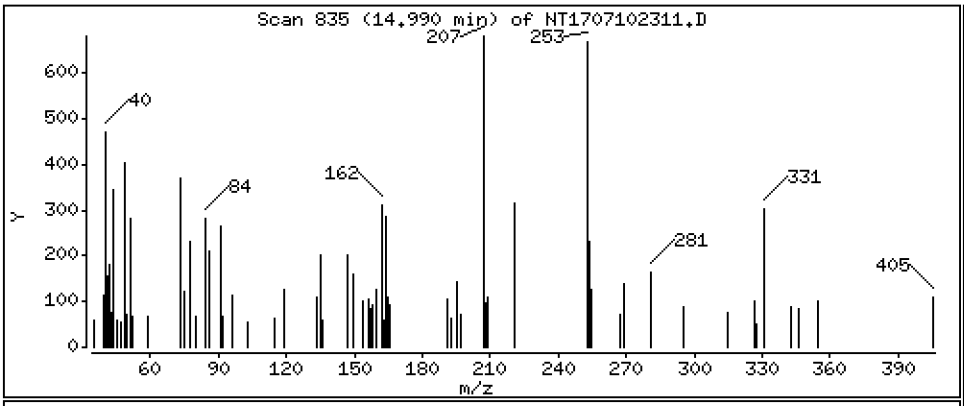
Operator: JGR

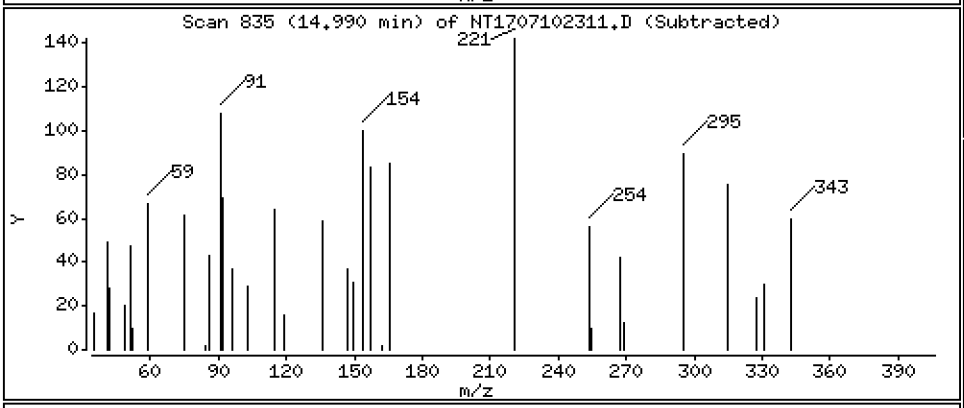
Column phase: ZB-5msi

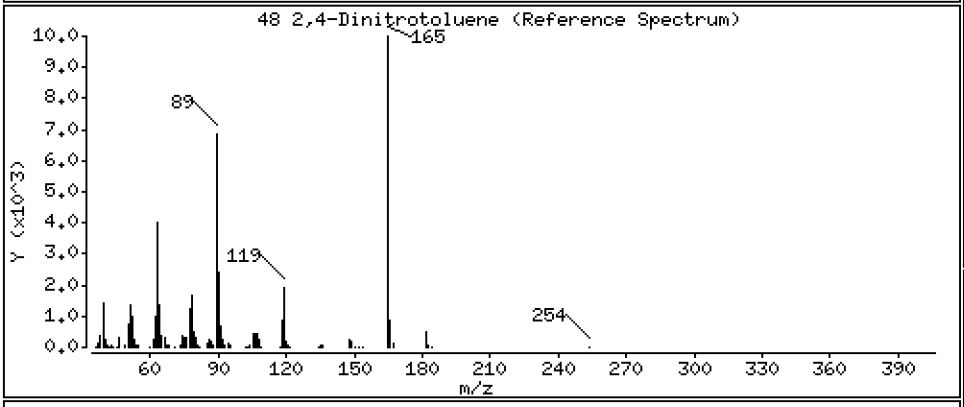
Column diameter: 0.25

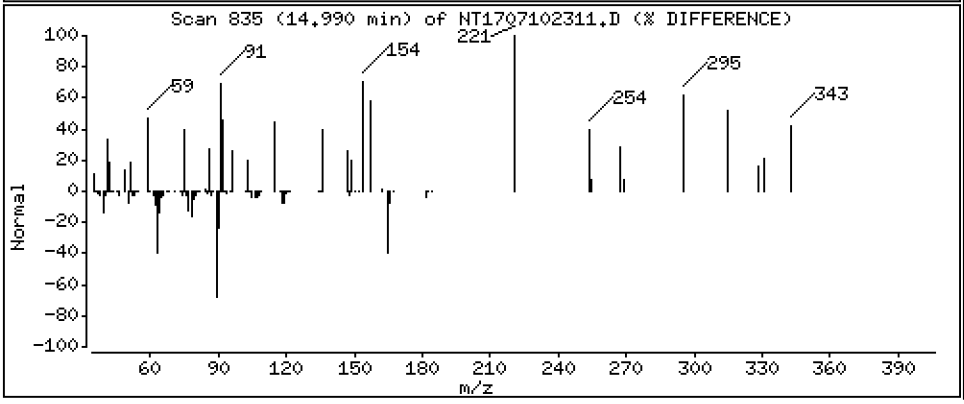
48 2,4-Dinitrotoluene

Concentration: 0.008418 ug/ml









ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt17.i\20230710.b\NT1707102311.D
Lab Smp Id: SEQ-ICB1
Inj Date : 10-JUL-2023 18:37
Operator : JGR Inst ID: nt17.i
Smp Info : SEQ-ICB1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Meth Date : 18-Jul-2023 10:01 jrains Quant Type: ISTD
Cal Date : 10-JUL-2023 16:44 Cal File: NT1707102308.D
Als bottle: 11 QC Sample: DFTPP
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	500.000	Volume of final extract (uL)
Vo	500.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/ml)
$ 1	2-Fluorophenol	112	Compound Not Detected.					
$ 2	Phenol-d5	99	Compound Not Detected.					
3	Phenol	94	Compound Not Detected.					
$ 5	2-Chlorophenol-d4	132	Compound Not Detected.					
4	Bis(2-Chloroethyl)ether	93	Compound Not Detected.					
6	2-Chlorophenol	128	Compound Not Detected.					
7	1,3-Dichlorobenzene	146	Compound Not Detected.					
* 8	1,4-Dichlorobenzene-d4	152	8.610	8.610	(1.000)	357755	4.00000	
9	1,4-Dichlorobenzene	146	Compound Not Detected.					
$ 10	1,2-Dichlorobenzene-d4	152	Compound Not Detected.					
12	1,2-Dichlorobenzene	146	Compound Not Detected.					
11	Benzyl alcohol	108	Compound Not Detected.					
14	2,2'-oxybis(1-Chloropropane)	121	Compound Not Detected.					
13	2-Methylphenol	108	Compound Not Detected.					
17	Hexachloroethane	117	Compound Not Detected.					
16	N-Nitroso-di-n-propylamine	70	Compound Not Detected.					
15	4-Methylphenol	108	Compound Not Detected.					
$ 18	Nitrobenzene-d5	82	Compound Not Detected.					
19	Nitrobenzene	77	Compound Not Detected.					
20	Isophorone	82	Compound Not Detected.					
21	2-Nitrophenol	139	Compound Not Detected.					
22	2,4-Dimethylphenol	107	Compound Not Detected.					
23	Bis(2-Chloroethoxy)methane	93	Compound Not Detected.					

			QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/mL)	(ug/ml)	
	24	Benzoic acid	105	Compound Not Detected.						
	25	2,4-Dichlorophenol	162	Compound Not Detected.						
	26	1,2,4-Trichlorobenzene	180	Compound Not Detected.						
*	27	Naphthalene-d8	136	11.037	11.037	(1.000)	1320796	4.00000		
	28	Naphthalene	128	Compound Not Detected.						
	29	4-Chloroaniline	127	Compound Not Detected.						
	30	Hexachlorobutadiene	225	Compound Not Detected.						
	31	4-Chloro-3-methylphenol	107	Compound Not Detected.						
	32	2-Methylnaphthalene	142	Compound Not Detected.						
	33	Hexachlorocyclopentadiene	237	Compound Not Detected.						
	34	2,4,6-Trichlorophenol	196	Compound Not Detected.						
	35	2,4,5-Trichlorophenol	196	Compound Not Detected.						
$	36	2-Fluorobiphenyl	172	Compound Not Detected.						
	37	2-Chloronaphthalene	162	Compound Not Detected.						
	38	2-Nitroaniline	65	Compound Not Detected.						
	39	Dimethylphthalate	163	Compound Not Detected.						
	40	Acenaphthylene	152	Compound Not Detected.						
	41	2,6-Dinitrotoluene	165	Compound Not Detected.						
*	42	Acenaphthene-d10	164	14.595	14.595	(1.000)	564896	4.00000		
	43	3-Nitroaniline	138	Compound Not Detected.						
	44	Acenaphthene	153	Compound Not Detected.						
	45	2,4-Dinitrophenol	184	Compound Not Detected.						
	46	Dibenzofuran	168	Compound Not Detected.						
	47	4-Nitrophenol	109	Compound Not Detected.						
	48	2,4-Dinitrotoluene	165	14.990	15.092	(1.027)	500	0.00842	0.008418	
	50	Diethylphthalate	149	Compound Not Detected.						
	49	Fluorene	166	Compound Not Detected.						
	51	4-Chlorophenyl-phenylether	204	Compound Not Detected.						
	52	4-Nitroaniline	138	Compound Not Detected.						
	53	4,6-Dinitro-2-methylphenol	198	Compound Not Detected.						
	54	N-Nitrosodiphenylamine	169	Compound Not Detected.						
$	55	2,4,6-Tribromophenol	330	Compound Not Detected.						
	56	4-Bromophenyl-phenylether	248	Compound Not Detected.						
	57	Hexachlorobenzene	284	Compound Not Detected.						
	58	Pentachlorophenol	266	Compound Not Detected.						
*	59	Phenanthrene-d10	188	17.589	17.588	(1.000)	906550	4.00000		
	60	Phenanthrene	178	Compound Not Detected.						
	61	Anthracene	178	Compound Not Detected.						
	62	Carbazole	167	Compound Not Detected.						
	63	Di-n-butylphthalate	149	Compound Not Detected.						
	64	Fluoranthene	202	Compound Not Detected.						
	65	Pyrene	202	Compound Not Detected.						
$	66	Terphenyl-d14	244	Compound Not Detected.						
	67	Butylbenzylphthalate	149	Compound Not Detected.						
	68	Benzo(a)anthracene	228	Compound Not Detected.						
*	69	Chrysene-d12	240	22.639	22.639	(1.000)	593878	4.00000		
	70	3,3'-Dichlorobenzidine	252	Compound Not Detected.						
	71	Chrysene	228	Compound Not Detected.						
	72	bis(2-Ethylhexyl)phthalate	149	Compound Not Detected.						
*	134	Di-n-octylphthalate-d4	153	23.711	23.711	(1.000)	850240	4.00000		(H)
	73	Di-n-octylphthalate	149	Compound Not Detected.						
	74	Benzo(b)fluoranthene	252	Compound Not Detected.						
	75	Benzo(k)fluoranthene	252	Compound Not Detected.						
	76	Benzo(a)pyrene	252	Compound Not Detected.						

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/ml)
* 77	Perylene-d12	264	25.037	25.037	(1.000)	596393	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
79	Dibenzo(a,h)anthracene	278	Compound Not Detected.					
80	Benzo(g,h,i)perylene	276	Compound Not Detected.					
90	N-Nitrosodimethylamine	74	Compound Not Detected.					
91	Aniline	93	Compound Not Detected.					
93	Benzidine	184	Compound Not Detected.					
103	Pyridine	79	Compound Not Detected.					
105	1-methylnaphthalene	142	Compound Not Detected.					
111	Azobenzene (1,2-DP-Hydrazine)	77	Compound Not Detected.					
187	Total Benzofluoranthenes	252	Compound Not Detected.					
120	2,3,4,6-Tetrachlorophenol	232	Compound Not Detected.					

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt17.i
Lab File ID: NT1707102311.D
Lab Smp Id: SEQ-ICB1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Misc Info:

Calibration Date: 10-JUL-2023
Calibration Time: 14:14
Level: LOW
Sample Type: WATER

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	288953	144477	577906	357755	23.81
27 Naphthalene-d8	1098716	549358	2197432	1320796	20.21
42 Acenaphthene-d10	552014	276007	1104028	564896	2.33
59 Phenanthrene-d10	884794	442397	1769588	906550	2.46
69 Chrysene-d12	564549	282275	1129098	593878	5.20
134 Di-n-octylphthala	1047332	523666	2094664	850240	-18.82
77 Perylene-d12	526075	263038	1052150	596393	13.37

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	8.61	8.11	9.11	8.61	0.00
27 Naphthalene-d8	11.04	10.54	11.54	11.04	0.00
42 Acenaphthene-d10	14.60	14.10	15.10	14.60	0.00
59 Phenanthrene-d10	17.59	17.09	18.09	17.59	0.00
69 Chrysene-d12	22.64	22.14	23.14	22.64	0.00
134 Di-n-octylphthala	23.71	23.21	24.21	23.71	0.00
77 Perylene-d12	25.04	24.54	25.54	25.04	0.00

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

REVIEW SUMMARY FOR FILE - NT1707102311.D

Lab ID: SEQ-ICB1
nt17.i, ABN.m, 10-JUL-2023 18:37

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

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

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
1.027	1.034	-0.0070	2,4-Dinitrotoluene

RRT check based on Ccal File: NT1707102308.D

On Column LOD for nt17.i, ABN.m, ICAL.sub = 0.0000

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

Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102312.D

Date : 10-JUL-2023 19:15

Client ID:

Instrument: nt17.i

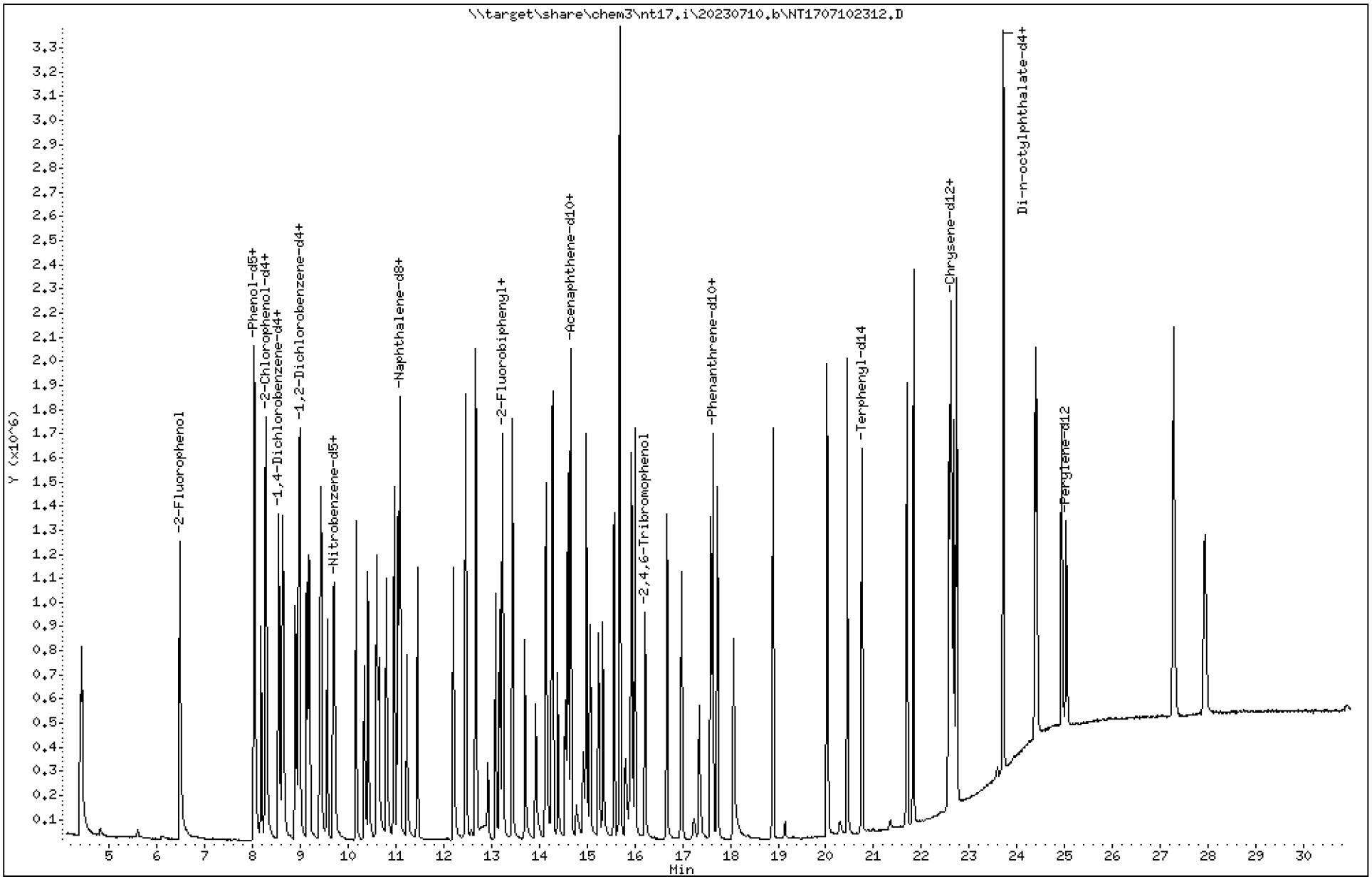
Sample Info: SEQ-SCV1

Volume Injected (uL): 1.0

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102312.D

Date : 10-JUL-2023 19:15

Client ID:

Instrument: nt17.i

Sample Info: SEQ-SCV1

Volume Injected (uL): 1.0

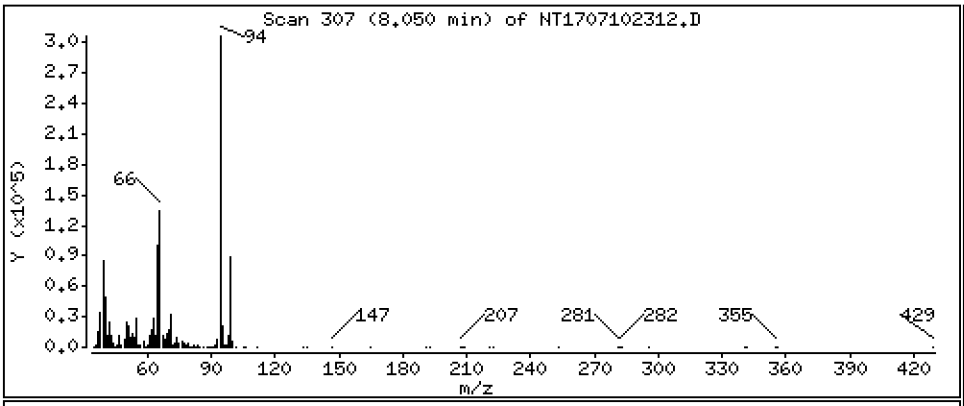
Operator: JGR

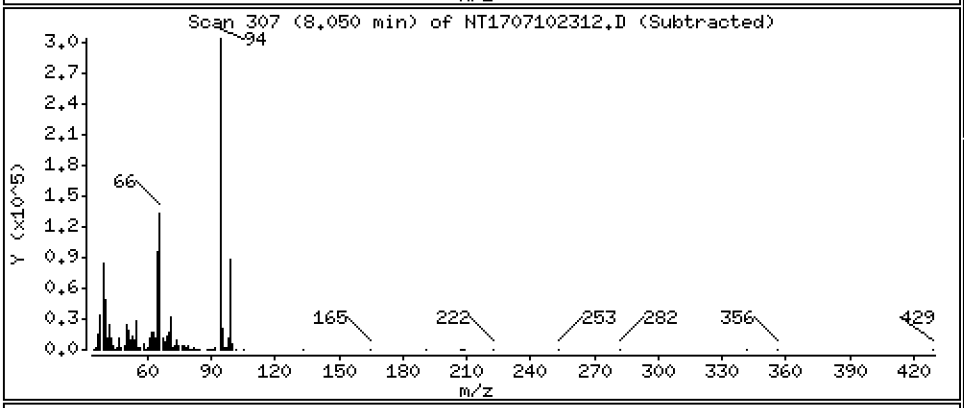
Column phase: ZB-5msi

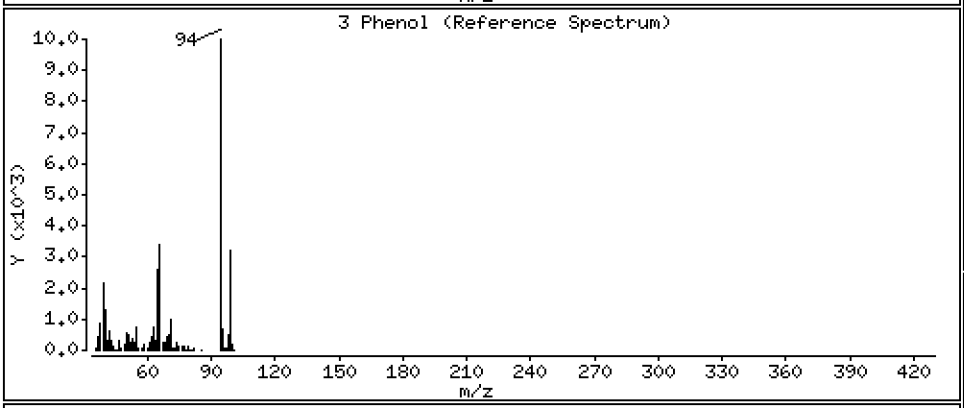
Column diameter: 0.25

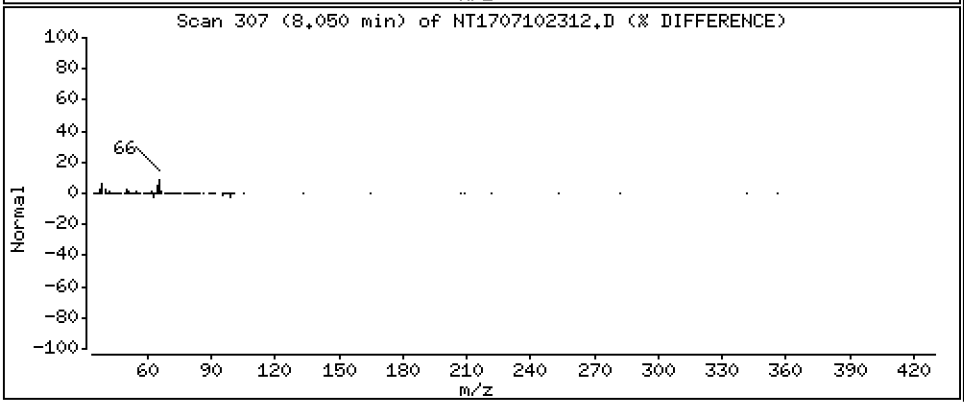
3 Phenol

Concentration: 3.871 ug/ml









Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102312.D

Date : 10-JUL-2023 19:15

Client ID:

Instrument: nt17.i

Sample Info: SEQ-SCV1

Volume Injected (uL): 1.0

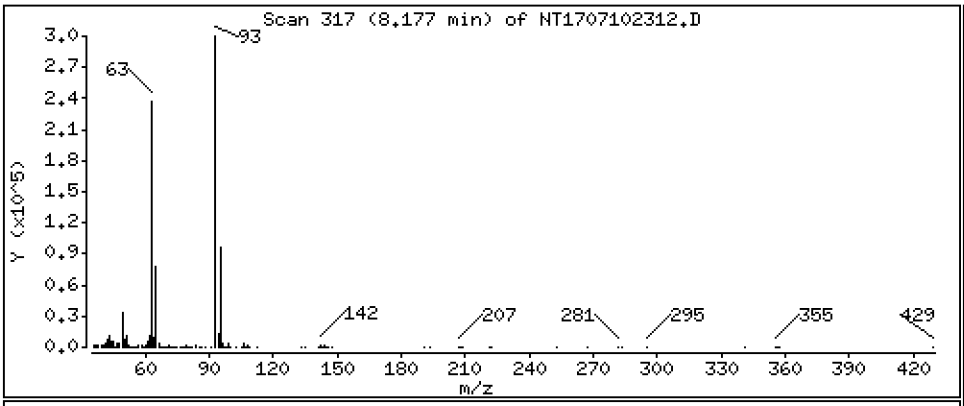
Operator: JGR

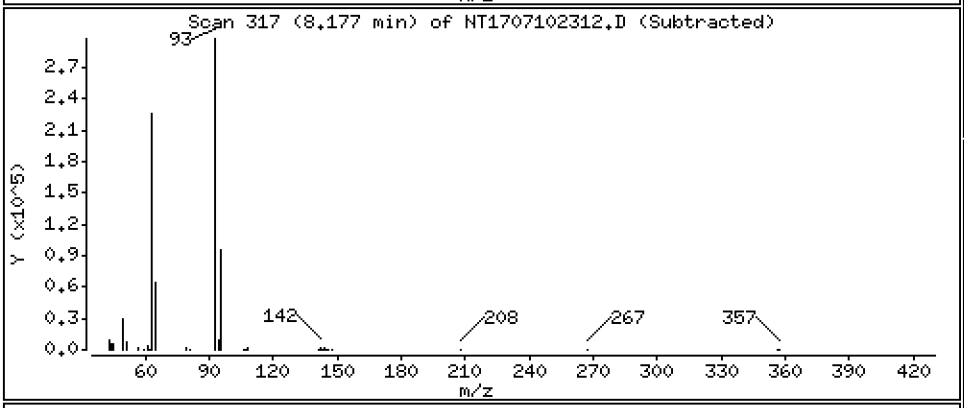
Column phase: ZB-5msi

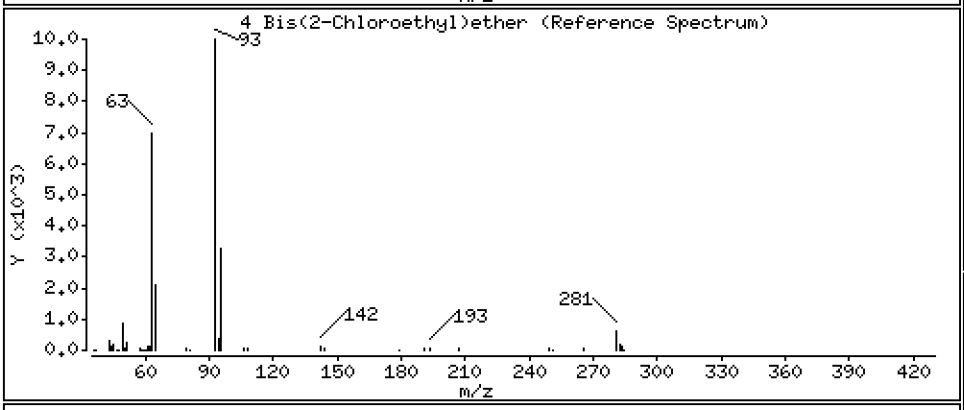
Column diameter: 0.25

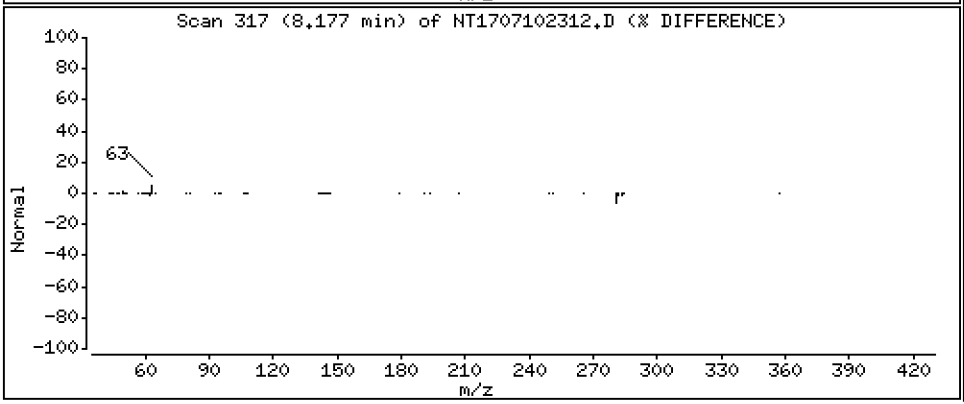
4 Bis(2-Chloroethyl)ether

Concentration: 5.565 ug/ml









ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt17.i\20230710.b\NT1707102312.D
Lab Smp Id: SEQ-SCV1
Inj Date : 10-JUL-2023 19:15
Operator : JGR Inst ID: nt17.i
Smp Info : SEQ-SCV1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Meth Date : 18-Jul-2023 10:03 jrains Quant Type: ISTD
Cal Date : 10-JUL-2023 16:44 Cal File: NT1707102308.D
Als bottle: 12 QC Sample: DFTPP
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	500.000	Volume of final extract (uL)
Vo	500.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/ml)
$ 1	2-Fluorophenol	112	6.469	6.571	(0.751)	730354	7.57042	7.570
$ 2	Phenol-d5	99	8.024	8.062	(0.932)	992031	7.41605	7.416
3	Phenol	94	8.049	8.088	(0.935)	690421	3.87079	3.871
$ 5	2-Chlorophenol-d4	132	8.266	8.291	(0.960)	742765	6.82537	6.825
4	Bis(2-Chloroethyl)ether	93	8.177	8.202	(0.950)	575437	5.56465	5.565
6	2-Chlorophenol	128	8.291	8.317	(0.963)	586198	4.61238	4.612
7	1,3-Dichlorobenzene	146	8.546	8.559	(0.993)	583816	5.05128	5.051
* 8	1,4-Dichlorobenzene-d4	152	8.610	8.610	(1.000)	273909	4.00000	
9	1,4-Dichlorobenzene	146	8.636	8.649	(1.003)	642853	5.15782	5.158
$ 10	1,2-Dichlorobenzene-d4	152	8.955	8.981	(1.040)	333926	4.97697	4.977
12	1,2-Dichlorobenzene	146	8.981	9.006	(1.043)	553113	5.06034	5.060
11	Benzyl alcohol	108	8.891	9.019	(1.033)	344222	5.12539	5.125(H)
14	2,2'-oxybis(1-Chloropropane)	121	9.185	9.198	(1.067)	184795	5.16722	5.167
13	2-Methylphenol	108	9.134	9.172	(1.061)	440428	4.12618	4.126
17	Hexachloroethane	117	9.556	9.568	(1.110)	249907	5.07396	5.074
16	N-Nitroso-di-n-propylamine	70	9.428	9.454	(1.095)	443392	5.39147	5.391
15	4-Methylphenol	108	9.402	9.466	(1.092)	488281	4.68459	4.685
$ 18	Nitrobenzene-d5	82	9.683	9.722	(0.877)	605436	5.09830	5.098
19	Nitrobenzene	77	9.709	9.760	(0.880)	654019	5.37015	5.370
20	Isophorone	82	10.156	10.182	(0.920)	1323604	7.21838	7.218
21	2-Nitrophenol	139	10.335	10.386	(0.936)	224974	4.43438	4.434
22	2,4-Dimethylphenol	107	10.411	10.437	(0.943)	417118	3.69146	3.691
23	Bis(2-Chloroethoxy)methane	93	10.590	10.616	(0.960)	647961	6.21131	6.211

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/ml)
	24 Benzoic acid	105	10.641	10.629	(0.964)	621939	7.39450	7.395
	25 2,4-Dichlorophenol	162	10.794	10.858	(0.978)	436438	5.15655	5.157
	26 1,2,4-Trichlorobenzene	180	10.960	10.973	(0.993)	424191	4.64777	4.648
*	27 Naphthalene-d8	136	11.037	11.037	(1.000)	1035709	4.00000	
	28 Naphthalene	128	11.075	11.088	(1.003)	1565914	5.43139	5.431
	29 4-Chloroaniline	127	11.228	11.266	(1.017)	500819	3.85295	3.853
	30 Hexachlorobutadiene	225	11.444	11.457	(1.037)	229061	5.02385	5.024
	31 4-Chloro-3-methylphenol	107	12.197	12.235	(1.105)	460485	4.84031	4.840
	32 2-Methylnaphthalene	142	12.452	12.477	(1.128)	1028268	5.13076	5.131
	33 Hexachlorocyclopentadiene	237	12.924	12.924	(0.886)	65053	2.78177	2.782
	34 2,4,6-Trichlorophenol	196	13.090	13.102	(0.897)	252806	4.85446	4.854
	35 2,4,5-Trichlorophenol	196	13.166	13.204	(0.902)	263748	4.87781	4.878
$	36 2-Fluorobiphenyl	172	13.230	13.243	(0.906)	956827	4.76079	4.761
	37 2-Chloronaphthalene	162	13.434	13.447	(0.920)	880023	5.00130	5.001
	38 2-Nitroaniline	65	13.702	13.727	(0.939)	340351	4.79919	4.799
	39 Dimethylphthalate	163	14.135	14.135	(0.969)	968520	5.31652	5.317
	40 Acenaphthylene	152	14.288	14.289	(0.979)	1421899	5.25809	5.258
	41 2,6-Dinitrotoluene	165	14.263	14.263	(0.977)	211236	4.98091	4.981
*	42 Acenaphthene-d10	164	14.594	14.595	(1.000)	521998	4.00000	
	43 3-Nitroaniline	138	14.544	14.595	(0.997)	187583	4.04851	4.049
	44 Acenaphthene	153	14.658	14.658	(1.004)	896659	5.30663	5.307
	45 2,4-Dinitrophenol	184	14.773	14.939	(1.012)	46553	2.37444	2.374(H)
	46 Dibenzofuran	168	14.990	15.002	(1.027)	1210085	5.14216	5.142
	47 4-Nitrophenol	109	14.913	14.990	(1.022)	102914	3.77906	3.779
	48 2,4-Dinitrotoluene	165	15.066	15.092	(1.032)	262026	4.77389	4.774
	50 Diethylphthalate	149	15.576	15.576	(1.067)	980070	4.74285	4.743
	49 Fluorene	166	15.691	15.691	(1.075)	1094737	5.34107	5.341
	51 4-Chlorophenyl-phenylether	204	15.691	15.691	(1.075)	503869	5.17889	5.179
	52 4-Nitroaniline	138	15.805	15.856	(1.083)	153891	3.75941	3.759
	53 4,6-Dinitro-2-methylphenol	198	15.894	15.932	(0.904)	108512	3.45015	3.450
	54 N-Nitrosodiphenylamine	169	15.932	15.945	(0.906)	657693	5.12860	5.129
$	55 2,4,6-Tribromophenol	330	16.212	16.225	(1.111)	181706	7.52390	7.524
	56 4-Bromophenyl-phenylether	248	16.670	16.683	(0.948)	278375	5.61553	5.616
	57 Hexachlorobenzene	284	16.989	16.989	(0.966)	274867	4.75119	4.751
	58 Pentachlorophenol	266	17.346	17.372	(0.986)	125024	3.82216	3.822
*	59 Phenanthrene-d10	188	17.588	17.588	(1.000)	856143	4.00000	
	60 Phenanthrene	178	17.627	17.639	(1.002)	1290930	5.20835	5.208
	61 Anthracene	178	17.729	17.741	(1.008)	1095808	4.76811	4.768
	62 Carbazole	167	18.060	18.086	(1.027)	998189	5.19052	5.191
	63 Di-n-butylphthalate	149	18.889	18.902	(1.074)	1555814	5.00690	5.007
	64 Fluoranthene	202	20.024	20.037	(0.884)	1355626	5.27303	5.273
	65 Pyrene	202	20.445	20.458	(0.903)	1545327	5.32145	5.321
$	66 Terphenyl-d14	244	20.751	20.764	(0.917)	933849	4.62819	4.628
	67 Butylbenzylphthalate	149	21.695	21.695	(0.958)	624579	5.01954	5.020
	68 Benzo(a)anthracene	228	22.613	22.613	(0.999)	1082623	5.26942	5.269
*	69 Chrysene-d12	240	22.639	22.639	(1.000)	580475	4.00000	
	70 3,3'-Dichlorobenzidine	252	22.575	22.588	(0.997)	527553	9.59519	9.595
	71 Chrysene	228	22.690	22.690	(1.002)	1019893	5.29667	5.297
	72 bis(2-Ethylhexyl)phthalate	149	22.741	22.741	(0.959)	877138	5.95049	5.950
*	134 Di-n-octylphthalate-d4	153	23.710	23.711	(1.000)	1040512	4.00000	
	73 Di-n-octylphthalate	149	23.723	23.723	(1.001)	1506165	5.20804	5.208
	74 Benzo(b)fluoranthene	252	24.387	24.399	(0.974)	1004017	4.74064	4.741
	75 Benzo(k)fluoranthene	252	24.425	24.438	(0.976)	1238376	5.76040	5.760
	76 Benzo(a)pyrene	252	24.935	24.961	(0.996)	907581	5.89036	5.890

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/ml)
*	77 Perylene-d12	264	25.037	25.037	(1.000)	571758	4.00000	
	78 Indeno(1,2,3-cd)pyrene	276	27.285	27.311	(1.090)	1117151	5.38122	5.381
	79 Dibenzo(a,h)anthracene	278	27.285	27.311	(1.090)	945279	5.11750	5.117
	80 Benzo(g,h,i)perylene	276	27.937	27.975	(1.116)	949221	4.98308	4.983
	90 N-Nitrosodimethylamine	74	4.380	4.457	(0.509)	404104	5.59416	5.594
	91 Aniline	93	Compound Not Detected.					
	93 Benzidine	184	20.292	20.317	(0.896)	69334	2.18630	2.186
	103 Pyridine	79	4.418	4.495	(0.513)	636959	5.60793	5.608
	105 1-methylnaphthalene	142	12.669	12.681	(1.148)	1014575	5.47029	5.470
	111 Azobenzene (1,2-DP-Hydrazine)	77	16.009	16.009	(1.097)	1316007	5.12248	5.122
	187 Total Benzofluoranthenes	252	24.387	24.399	(0.974)	2002604	10.5300	10.53
	120 2,3,4,6-Tetrachlorophenol	232	15.334	15.359	(1.051)	223082	4.89144	4.891

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt17.i
Lab File ID: NT1707102312.D
Lab Smp Id: SEQ-SCV1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Misc Info:

Calibration Date: 10-JUL-2023
Calibration Time: 14:14
Level: LOW
Sample Type: WATER

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	288953	144477	577906	273909	-5.21
27 Naphthalene-d8	1098716	549358	2197432	1035709	-5.73
42 Acenaphthene-d10	552014	276007	1104028	521998	-5.44
59 Phenanthrene-d10	884794	442397	1769588	856143	-3.24
69 Chrysene-d12	564549	282275	1129098	580475	2.82
134 Di-n-octylphthala	1047332	523666	2094664	1040512	-0.65
77 Perylene-d12	526075	263038	1052150	571758	8.68

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	8.61	8.11	9.11	8.61	-0.00
27 Naphthalene-d8	11.04	10.54	11.54	11.04	-0.00
42 Acenaphthene-d10	14.60	14.10	15.10	14.59	-0.00
59 Phenanthrene-d10	17.59	17.09	18.09	17.59	-0.00
69 Chrysene-d12	22.64	22.14	23.14	22.64	-0.00
134 Di-n-octylphthala	23.71	23.21	24.21	23.71	-0.00
77 Perylene-d12	25.04	24.54	25.54	25.04	-0.00

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

REVIEW SUMMARY FOR FILE - NT1707102312.D

Lab ID: SEQ-SCV1
nt17.i, ABN.m, 10-JUL-2023 19:15

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

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
1.033	1.047	-0.0148	Benzyl alcohol
1.092	1.099	-0.0074	4-Methylphenol
0.978	0.984	-0.0058	2,4-Dichlorophenol
0.964	0.000	0.9642	Benzoic acid
0.997	0.000	0.9965	3-Nitroaniline
1.012	1.024	-0.0113	2,4-Dinitrophenol
1.022	0.000	1.0218	4-Nitrophenol
0.509	0.518	-0.0089	N-Nitrosodimethylamine
0.513	0.522	-0.0089	Pyridine
0.751	0.763	-0.0119	2-Fluorophenol

RRT check based on Ccal File: NT1707102308.D

On Column LOD for nt17.i, ABN.m, ICAL.sub = 0.0000

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

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8270E

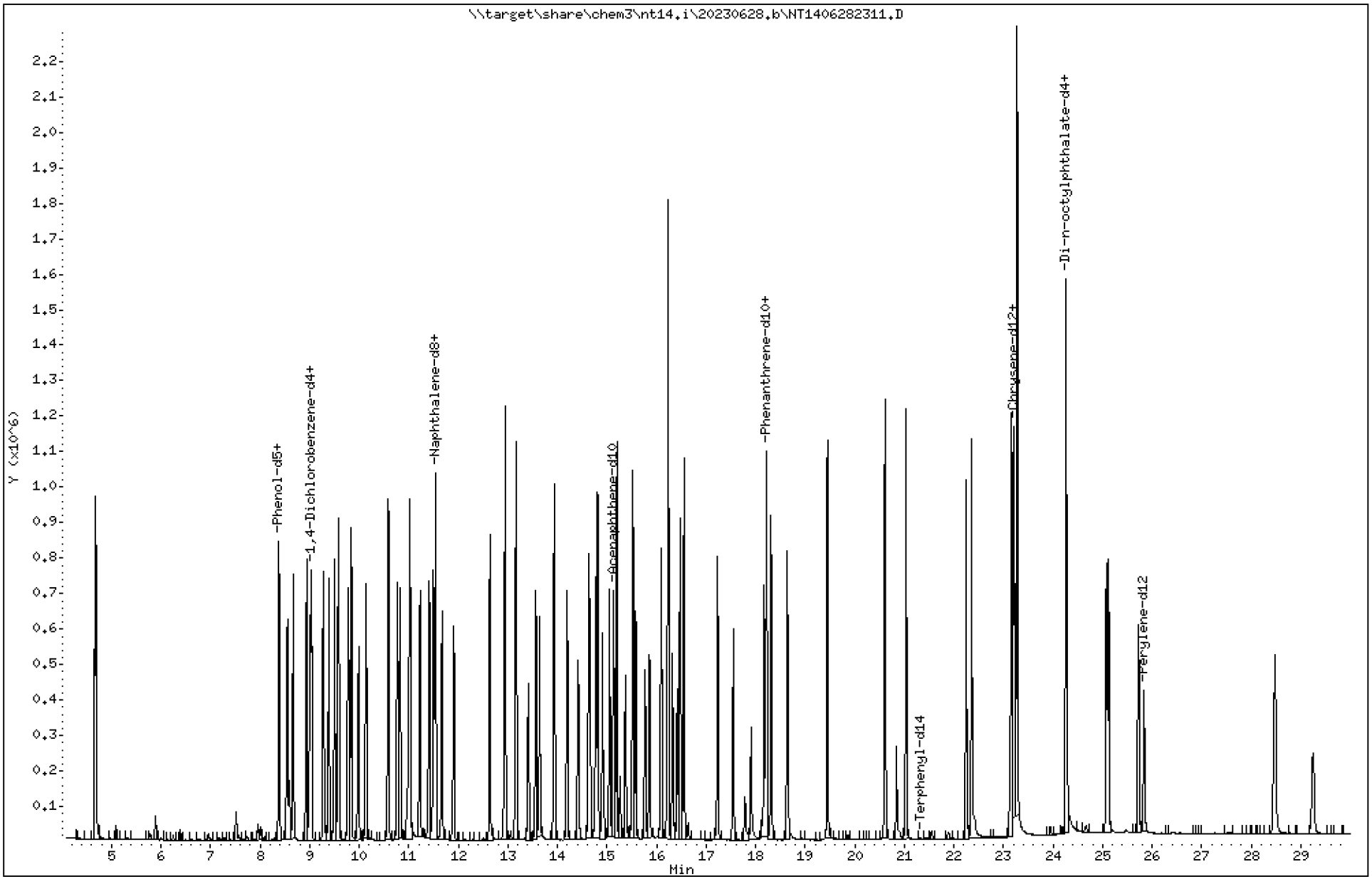
Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GF00097
Laboratory ID: SLF0467-SCV1
Sequence: SLF0467
Sequence Name: SCV 5.0
Standard ID: L006700

ANALYTE	EXPECTED (ug/mL)	FOUND (ug/mL)	% DRIFT	QC LIMIT
Naphthalene	5.0000	5.5	10.4	20.00
2-Methylnaphthalene	5.0000	5.1	1.3	20.00
Acenaphthylene	5.0000	5.6	12.4	20.00
Acenaphthene	5.0000	5.6	12.9	20.00
Fluorene	5.0000	5.5	9.4	20.00
Phenanthrene	5.0000	5.6	12.4	20.00
Anthracene	5.0000	5.0	-0.4	20.00
Fluoranthene	5.0000	5.8	15.1	20.00
Pyrene	5.0000	5.8	16.8	20.00
Benzo(a)anthracene	5.0000	5.5	10.9	20.00
Chrysene	5.0000	5.6	11.9	20.00
Benzofluoranthenes, Total	10.000	11.6	15.8	20.00
Benzo(a)pyrene	5.0000	6.4	27.8	20.00
Indeno(1,2,3-cd)pyrene	5.0000	6.1	21.9	20.00
Dibenzo(a,h)anthracene	5.0000	5.9	18.7	20.00
Benzo(g,h,i)perylene	5.0000	5.6	11.4	20.00
1,2-Dichlorobenzene-d4	5.0000	0.00		20.00
Nitrobenzene-d5	5.0000	0.00		20.00
2-Fluorobiphenyl	5.0000	0.00		20.00
p-Terphenyl-d14	5.0000	0.0141	-99.7	20.00

* Indicates values outside of QC limits

Data File: \\target\share\chem3\nt14.i\20230628.b\NT1406282311.D
Date : 28-JUN-2023 23:38
Client ID:
Sample Info: SLF0467-SCV1

Instrument: nt14.i
Operator: JGR
Column phase: ZB-5msi
Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230628.b\NT1406282311.D
Lab Smp Id: SLF0467-SCV1
Inj Date : 28-JUN-2023 23:38 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : SLF0467-SCV1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230628.b\ABN.m
Meth Date : 03-Jul-2023 15:05 yev Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 11 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: ORGDATA102

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
$ 1	2-Fluorophenol	112	Compound Not Detected.					
$ 2	Phenol-d5	99	8.366	8.366	(0.930)	1531	7.50000	0.02318
3	Phenol	94	8.382	8.382	(0.931)	358734	5.00000	4.486
$ 5	2-Chlorophenol-d4	132	Compound Not Detected.					
4	Bis(2-Chloroethyl)ether	93	8.551	8.551	(0.950)	311433	5.00000	5.599
6	2-Chlorophenol	128	8.667	8.667	(0.963)	279261	5.00000	4.814
7	1,3-Dichlorobenzene	146	8.938	8.938	(0.993)	267188	5.00000	5.168
* 8	1,4-Dichlorobenzene-d4	152	9.000	9.000	(1.000)	128354	4.00000	
9	1,4-Dichlorobenzene	146	9.039	9.039	(1.004)	260977	5.00000	5.120
$ 10	1,2-Dichlorobenzene-d4	152	Compound Not Detected.					
12	1,2-Dichlorobenzene	146	9.388	9.388	(1.043)	254243	5.00000	5.149
11	Benzyl alcohol	108	9.272	9.272	(1.030)	178390	5.00000	5.709
14	2,2'-oxybis(1-Chloropropane)	121	9.582	9.582	(1.065)	93021	5.00000	5.824
13	2-Methylphenol	108	9.505	9.505	(1.056)	230056	5.00000	4.564
17	Hexachloroethane	117	9.986	9.986	(1.110)	125989	5.00000	5.381
16	N-Nitroso-di-n-propylamine	70	9.839	9.839	(1.093)	246429	5.00000	5.449
15	4-Methylphenol	108	9.776	9.776	(1.086)	275884	5.00000	4.942
$ 18	Nitrobenzene-d5	82	Compound Not Detected.					
19	Nitrobenzene	77	10.133	10.133	(0.881)	342851	5.00000	5.234
20	Isophorone	82	10.584	10.584	(0.921)	688938	5.00000	7.561
21	2-Nitrophenol	139	10.770	10.770	(0.937)	127147	5.00000	4.114
22	2,4-Dimethylphenol	107	10.824	10.824	(0.941)	210514	10.0000	4.007
23	Bis(2-Chloroethoxy)methane	93	11.026	11.026	(0.959)	367536	5.00000	6.313
24	Benzoic acid	105	11.018	11.018	(0.958)	224723	20.0000	7.003
25	2,4-Dichlorophenol	162	11.227	11.227	(0.976)	194589	10.0000	5.009
26	1,2,4-Trichlorobenzene	180	11.413	11.413	(0.993)	194178	5.00000	5.014
* 27	Naphthalene-d8	136	11.498	11.498	(1.000)	519660	4.00000	
28	Naphthalene	128	11.544	11.544	(1.004)	749328	5.00000	5.520
29	4-Chloroaniline	127	11.667	11.667	(1.015)	252592	10.0000	3.990
30	Hexachlorobutadiene	225	11.907	11.907	(1.036)	93169	5.00000	5.158
31	4-Chloro-3-methylphenol	107	12.634	12.634	(1.099)	240444	10.0000	4.935
32	2-Methylnaphthalene	142	12.944	12.944	(1.126)	509818	5.00000	5.063
33	Hexachlorocyclopentadiene	237	13.416	13.416	(0.887)	93021	10.0000	4.926

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
34	2,4,6-Trichlorophenol	196	13.563	13.563	(0.897)	117483	10.0000	4.896
35	2,4,5-Trichlorophenol	196	13.641	13.641	(0.902)	123559	10.0000	4.949
$ 36	2-Fluorobiphenyl	172	Compound Not Detected.					
37	2-Chloronaphthalene	162	13.935	13.935	(0.921)	435248	5.00000	5.321
38	2-Nitroaniline	65	14.198	14.198	(0.939)	212525	10.0000	5.361
39	Dimethylphthalate	163	14.631	14.631	(0.967)	457780	5.00000	5.456
40	Acenaphthylene	152	14.817	14.817	(0.980)	709296	5.00000	5.620
41	2,6-Dinitrotoluene	165	14.771	14.771	(0.976)	102094	10.0000	5.783
* 42	Acenaphthene-d10	164	15.126	15.126	(1.000)	249651	4.00000	
43	3-Nitroaniline	138	15.049	15.049	(0.995)	134057	10.0000	5.668
44	Acenaphthene	153	15.196	15.196	(1.005)	421843	5.00000	5.647
45	2,4-Dinitrophenol	184	15.266	15.266	(1.009)	25611	20.0000	2.352
46	Dibenzofuran	168	15.521	15.521	(1.026)	581754	5.00000	5.344
47	4-Nitrophenol	109	15.374	15.374	(1.016)	73738	10.0000	4.280
48	2,4-Dinitrotoluene	165	15.575	15.575	(1.030)	138404	10.0000	5.606
50	Diethylphthalate	149	16.093	16.093	(1.064)	572899	5.00000	5.904
49	Fluorene	166	16.232	16.232	(1.073)	520914	5.00000	5.472
51	4-Chlorophenyl-phenylether	204	16.224	16.224	(1.073)	220136	5.00000	5.356
52	4-Nitroaniline	138	16.317	16.317	(1.079)	118618	10.0000	4.939
53	4,6-Dinitro-2-methylphenol	198	16.417	16.417	(0.904)	54175	20.0000	4.060
54	N-Nitrosodiphenylamine	169	16.479	16.479	(0.907)	318426	5.00000	5.378
$ 55	2,4,6-Tribromophenol	330	Compound Not Detected.					
56	4-Bromophenyl-phenylether	248	17.234	17.234	(0.948)	102449	5.00000	5.674
57	Hexachlorobenzene	284	17.551	17.551	(0.966)	99464	5.00000	5.207
58	Pentachlorophenol	266	17.907	17.907	(0.986)	45853	10.0000	3.987
* 59	Phenanthrene-d10	188	18.170	18.170	(1.000)	419362	4.00000	
60	Phenanthrene	178	18.217	18.217	(1.003)	637811	5.00000	5.622
61	Anthracene	178	18.310	18.310	(1.008)	546172	5.00000	4.982
62	Carbazole	167	18.642	18.642	(1.026)	585034	5.00000	5.305
63	Di-n-butylphthalate	149	19.447	19.447	(1.070)	838559	5.00000	5.787
64	Fluoranthene	202	20.607	20.607	(0.887)	676844	5.00000	5.753
65	Pyrene	202	21.033	21.033	(0.906)	694120	5.00000	5.840
$ 66	Terphenyl-d14	244	21.319	21.319	(0.918)	1130	5.00000	0.01413
67	Butylbenzylphthalate	149	22.248	22.248	(0.958)	308364	5.00000	5.494
68	Benzo(a)anthracene	228	23.201	23.201	(0.999)	558885	5.00000	5.546
* 69	Chrysene-d12	240	23.224	23.224	(1.000)	287830	4.00000	
70	3,3'-Dichlorobenzidine	252	23.154	23.154	(0.997)	330788	15.0000	11.43
71	Chrysene	228	23.271	23.271	(1.002)	504838	5.00000	5.596
72	bis(2-Ethylhexyl)phthalate	149	24.269	24.269	(1.001)	718841	5.00000	5.687
* 134	Di-n-octylphthalate-d4	153	24.254	24.254	(1.000)	491823	4.00000	
73	Di-n-octylphthalate	149	24.269	24.269	(1.001)	718841	5.00000	5.687
74	Benzo(b)fluoranthene	252	25.074	25.074	(0.971)	490492	5.00000	6.128
75	Benzo(k)fluoranthene	252	25.121	25.121	(0.972)	497504	5.00000	5.537(H)
76	Benzo(a)pyrene	252	25.725	25.725	(0.996)	401522	5.00000	6.392
* 77	Perylene-d12	264	25.833	25.833	(1.000)	243501	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	28.470	28.470	(1.102)	345159	5.00000	6.093
79	Dibenzo(a,h)anthracene	278	28.478	28.478	(1.102)	284447	5.00000	5.934
80	Benzo(g,h,i)perylene	276	29.247	29.247	(1.132)	260483	5.00000	5.569
90	N-Nitrosodimethylamine	74	4.658	4.658	(0.518)	209812	10.0000	5.698
91	Aniline	93	Compound Not Detected.					
93	Benzidine	184	20.840	20.840	(0.897)	158741	10.0000	4.460
103	Pyridine	79	4.681	4.681	(0.520)	318653	5.00000	2.747
105	1-methylnaphthalene	142	13.168	13.168	(1.145)	491308	5.00000	5.470
111	Azobenzene (1,2-DP-Hydrazine)	77	16.548	16.548	(1.094)	718859	5.00000	5.202

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
187 Total Benzofluoranthenes	252	25.121	25.121	(0.972)	940527	10.0000	11.58
120 2,3,4,6-Tetrachlorophenol	232	15.861	15.861	(1.049)	87501	5.00000	4.484

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1406282311.D
Lab Smp Id: SLF0467-SCV1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Misc Info:

Calibration Date: 28-JUN-2023
Calibration Time: 19:18
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	128354	64177	256708	128354	0.00
27 Naphthalene-d8	519660	259830	1039320	519660	0.00
42 Acenaphthene-d10	249651	124826	499302	249651	0.00
59 Phenanthrene-d10	419362	209681	838724	419362	0.00
69 Chrysene-d12	287830	143915	575660	287830	0.00
134 Di-n-octylphthala	491823	245912	983646	491823	0.00
77 Perylene-d12	243501	121751	487002	243501	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.00	8.50	9.50	9.00	0.00
27 Naphthalene-d8	11.50	11.00	12.00	11.50	0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	0.00
59 Phenanthrene-d10	18.17	17.67	18.67	18.17	0.00
69 Chrysene-d12	23.22	22.72	23.72	23.22	0.00
134 Di-n-octylphthala	24.25	23.75	24.75	24.25	0.00
77 Perylene-d12	25.83	25.33	26.33	25.83	0.00

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

REVIEW SUMMARY FOR FILE - NT1406282311.D

Lab ID: SLF0467-SCV1
nt14.i, ABN.m, 28-JUN-2023 23:38

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

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

No RRT check. Ccal file.

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

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

Q-FLAG SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230628.b

Instrument: nt14.i Date: 28-JUN-2023 Method: ABN.m

INITIAL CAL: 21-APR-2023

Compound	%RSD or R^2
NO Q-FLAGS	

ICV CAL: NT1406282311.D 28-JUN-2023 23:38

Compound	%D
Isophorone	51.21
2,4-Dimethylphenol	-59.93
Bis(2-Chloroethoxy)methane	26.25
2,4-Dichlorophenol	-49.91
Benzoic acid	-65.0
4-Chloroaniline	-60.10
4-Chloro-3-methylphenol	-50.65
Hexachlorocyclopentadiene	-50.7
2,4,6-Trichlorophenol	-51.04
2,4,5-Trichlorophenol	-50.51
2-Nitroaniline	-46.39
2,6-Dinitrotoluene	-42.17
3-Nitroaniline	-43.32
2,4-Dinitrophenol	-88.2
4-Nitrophenol	-57.2
2,4-Dinitrotoluene	-43.94
4-Nitroaniline	-50.6
4,6-Dinitro-2-methylphenol	-79.7
Pentachlorophenol	-60.1
3,3'-Dichlorobenzidine	-23.8
Benzo(b)fluoranthene	22.57
Benzo(a)pyrene	27.84
Indeno(1,2,3-cd)pyrene	21.85
N-Nitrosodimethylamine	-43.02
Aniline	ND
Benzidine	-55.40
Pyridine	-45.05
2-Fluorophenol	ND
Phenol-d5	-99.69
2-Chlorophenol-d4	ND
1,2-Dichlorobenzene-d4	ND
Nitrobenzene-d5	ND
2-Fluorobiphenyl	ND
2,4,6-Tribromophenol	ND
Terphenyl-d14	-99.72

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8270E

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GG00040
Laboratory ID: SLG0194-SCV1
Sequence: SLG0194
Sequence Name: SCV 5.0
Standard ID: L006700

ANALYTE	EXPECTED (ug/mL)	FOUND (ug/mL)	% DRIFT	QC LIMIT
Naphthalene	5.0000	5.4	8.6	20.00
2-Methylnaphthalene	5.0000	5.1	2.6	20.00
Acenaphthylene	5.0000	5.3	5.2	20.00
Acenaphthene	5.0000	5.3	6.1	20.00
Fluorene	5.0000	5.3	6.8	20.00
Phenanthrene	5.0000	5.2	4.2	20.00
Anthracene	5.0000	4.8	-4.6	20.00
Fluoranthene	5.0000	5.3	5.5	20.00
Pyrene	5.0000	5.3	6.4	20.00
Benzo(a)anthracene	5.0000	5.3	5.4	20.00
Chrysene	5.0000	5.3	5.9	20.00
Benzofluoranthenes, Total	10.000	10.5	5.3	20.00
Benzo(a)pyrene	5.0000	5.9	17.8	20.00
Indeno(1,2,3-cd)pyrene	5.0000	5.4	7.6	20.00
Dibenzo(a,h)anthracene	5.0000	5.1	2.4	20.00
Benzo(g,h,i)perylene	5.0000	5.0	-0.3	20.00
1,2-Dichlorobenzene-d4	5.0000	4.98	-0.5	20.00
Nitrobenzene-d5	5.0000	5.10	2.0	20.00
2-Fluorobiphenyl	5.0000	4.76	-4.8	20.00
p-Terphenyl-d14	5.0000	4.63	-7.4	20.00

* Indicates values outside of QC limits

Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102312.D

Date : 10-JUL-2023 19:15

Client ID:

Instrument: nt17.i

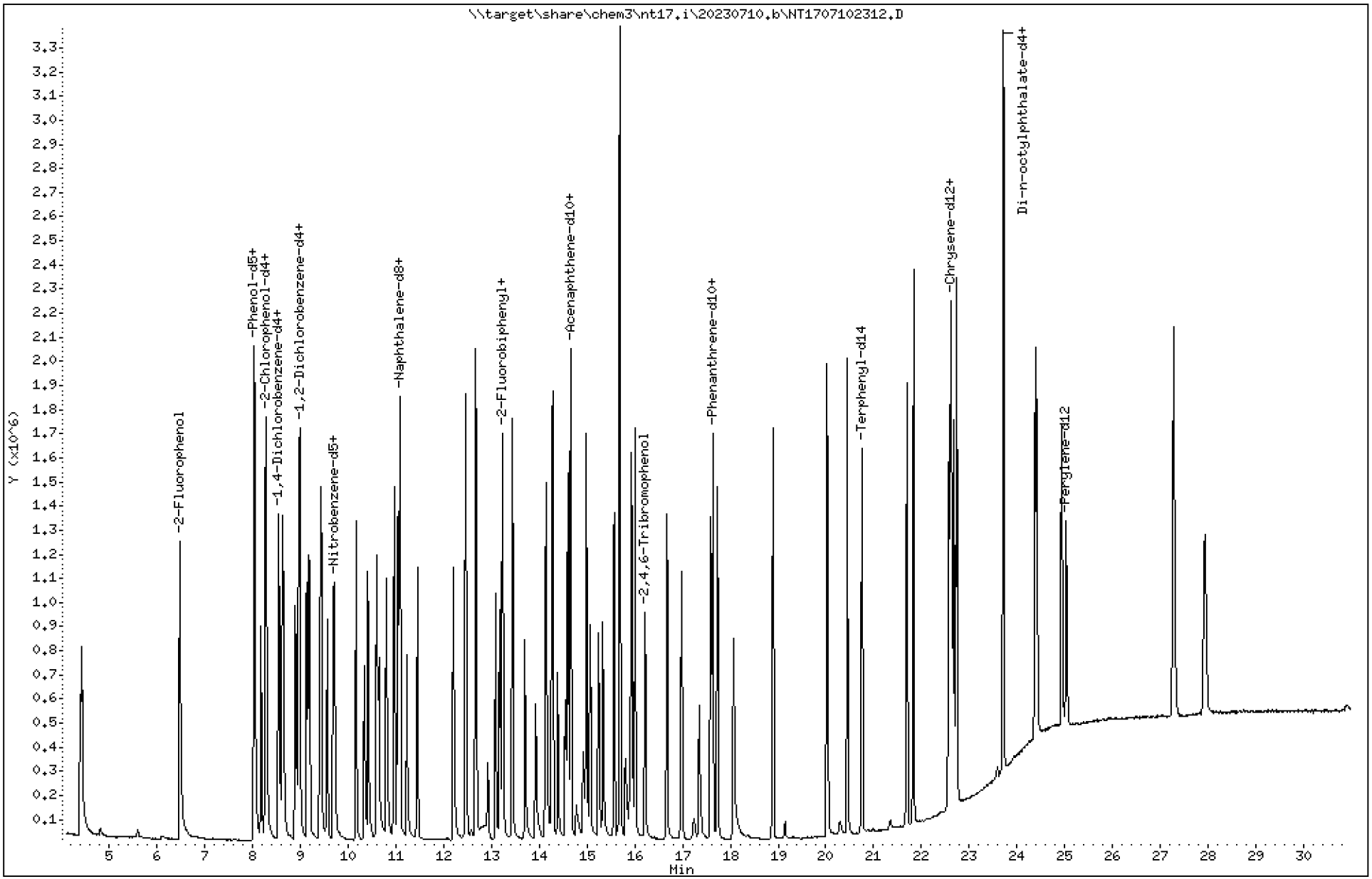
Sample Info: SEQ-SCV1

Volume Injected (uL): 1.0

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102312.D

Date : 10-JUL-2023 19:15

Client ID:

Instrument: nt17.i

Sample Info: SEQ-SCV1

Volume Injected (uL): 1.0

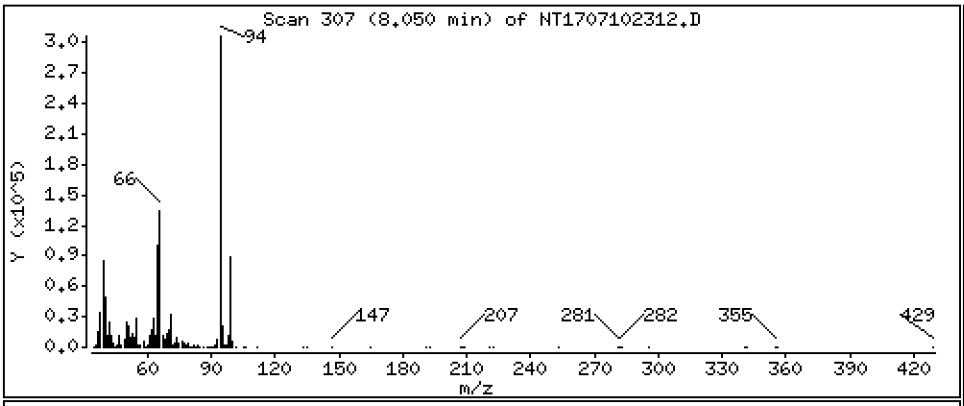
Operator: JGR

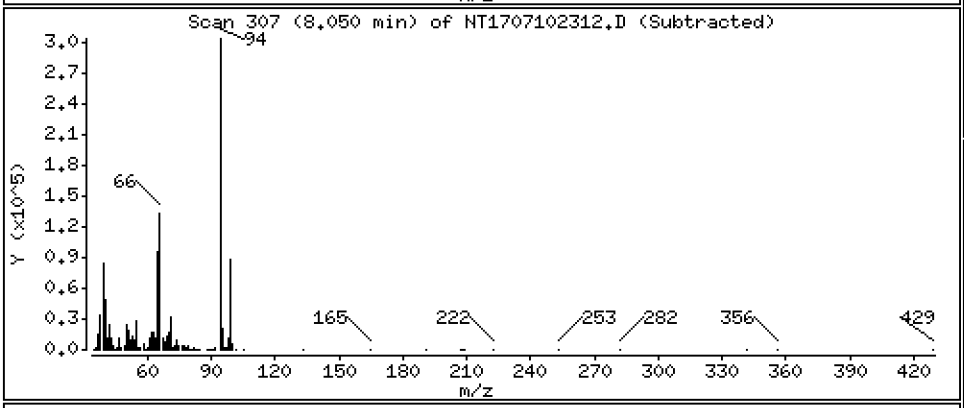
Column phase: ZB-5msi

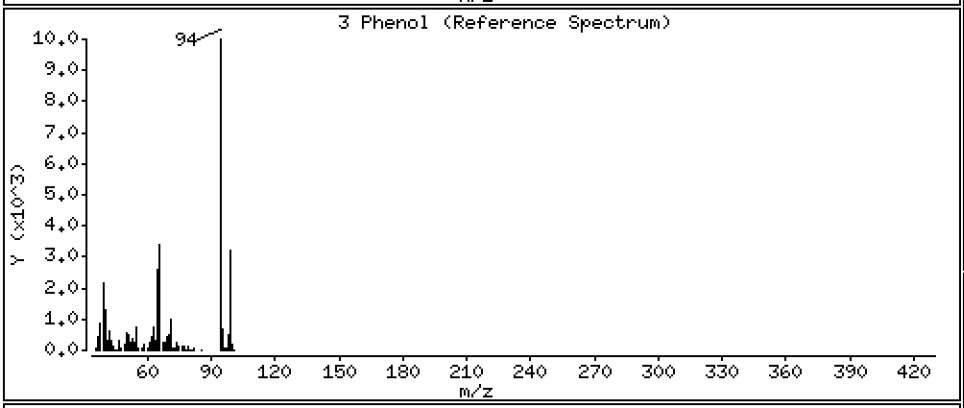
Column diameter: 0.25

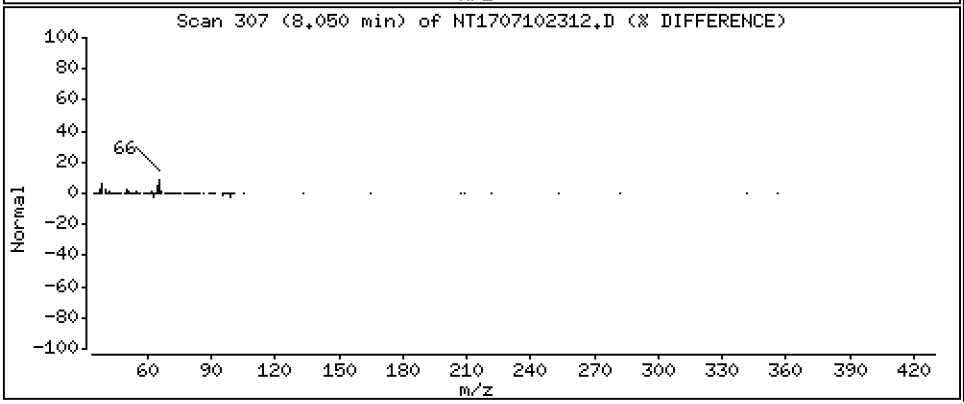
3 Phenol

Concentration: 3.871 ug/ml









Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102312.D

Date : 10-JUL-2023 19:15

Client ID:

Instrument: nt17.i

Sample Info: SEQ-SCV1

Volume Injected (uL): 1.0

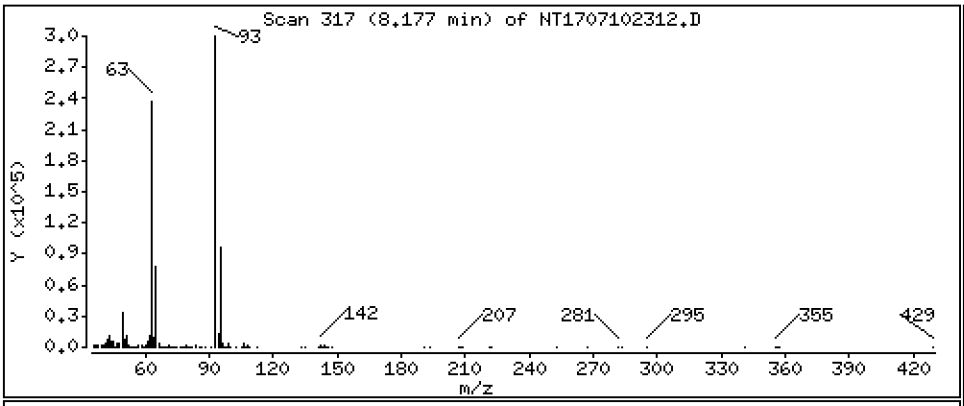
Operator: JGR

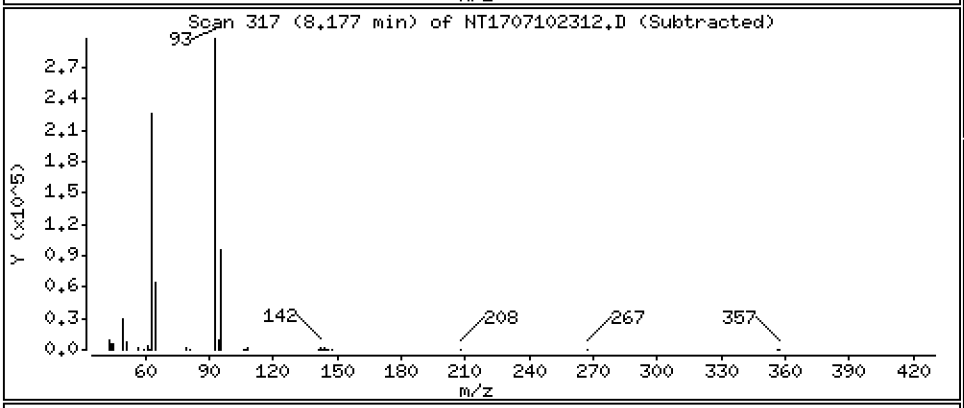
Column phase: ZB-5msi

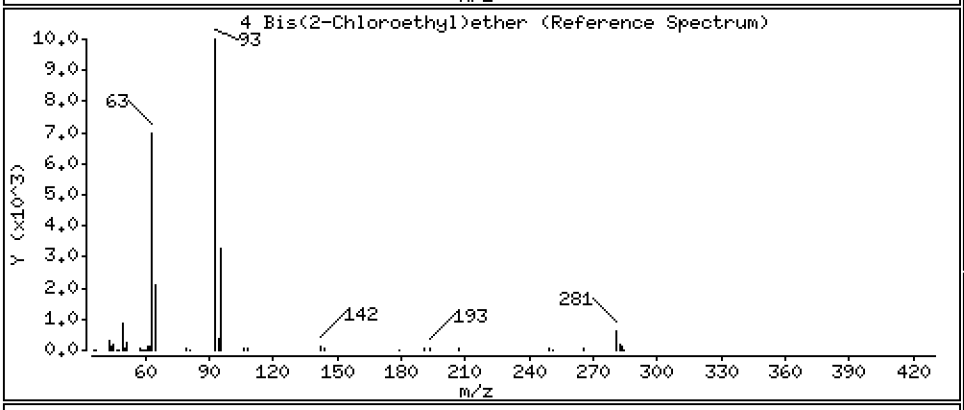
Column diameter: 0.25

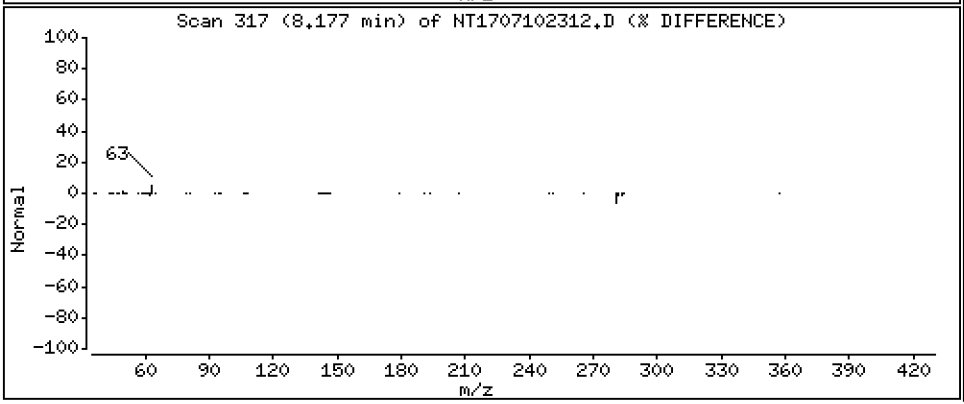
4 Bis(2-Chloroethyl)ether

Concentration: 5.565 ug/ml









ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt17.i\20230710.b\NT1707102312.D
Lab Smp Id: SEQ-SCV1
Inj Date : 10-JUL-2023 19:15
Operator : JGR Inst ID: nt17.i
Smp Info : SEQ-SCV1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Meth Date : 18-Jul-2023 10:03 jrains Quant Type: ISTD
Cal Date : 10-JUL-2023 16:44 Cal File: NT1707102308.D
Als bottle: 12 QC Sample: DFTPP
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	500.000	Volume of final extract (uL)
Vo	500.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/ml)
$ 1	2-Fluorophenol	112	6.469	6.571	(0.751)	730354	7.57042	7.570
$ 2	Phenol-d5	99	8.024	8.062	(0.932)	992031	7.41605	7.416
3	Phenol	94	8.049	8.088	(0.935)	690421	3.87079	3.871
$ 5	2-Chlorophenol-d4	132	8.266	8.291	(0.960)	742765	6.82537	6.825
4	Bis(2-Chloroethyl)ether	93	8.177	8.202	(0.950)	575437	5.56465	5.565
6	2-Chlorophenol	128	8.291	8.317	(0.963)	586198	4.61238	4.612
7	1,3-Dichlorobenzene	146	8.546	8.559	(0.993)	583816	5.05128	5.051
* 8	1,4-Dichlorobenzene-d4	152	8.610	8.610	(1.000)	273909	4.00000	
9	1,4-Dichlorobenzene	146	8.636	8.649	(1.003)	642853	5.15782	5.158
$ 10	1,2-Dichlorobenzene-d4	152	8.955	8.981	(1.040)	333926	4.97697	4.977
12	1,2-Dichlorobenzene	146	8.981	9.006	(1.043)	553113	5.06034	5.060
11	Benzyl alcohol	108	8.891	9.019	(1.033)	344222	5.12539	5.125(H)
14	2,2'-oxybis(1-Chloropropane)	121	9.185	9.198	(1.067)	184795	5.16722	5.167
13	2-Methylphenol	108	9.134	9.172	(1.061)	440428	4.12618	4.126
17	Hexachloroethane	117	9.556	9.568	(1.110)	249907	5.07396	5.074
16	N-Nitroso-di-n-propylamine	70	9.428	9.454	(1.095)	443392	5.39147	5.391
15	4-Methylphenol	108	9.402	9.466	(1.092)	488281	4.68459	4.685
$ 18	Nitrobenzene-d5	82	9.683	9.722	(0.877)	605436	5.09830	5.098
19	Nitrobenzene	77	9.709	9.760	(0.880)	654019	5.37015	5.370
20	Isophorone	82	10.156	10.182	(0.920)	1323604	7.21838	7.218
21	2-Nitrophenol	139	10.335	10.386	(0.936)	224974	4.43438	4.434
22	2,4-Dimethylphenol	107	10.411	10.437	(0.943)	417118	3.69146	3.691
23	Bis(2-Chloroethoxy)methane	93	10.590	10.616	(0.960)	647961	6.21131	6.211

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/ml)
	24 Benzoic acid	105	10.641	10.629	(0.964)	621939	7.39450	7.395
	25 2,4-Dichlorophenol	162	10.794	10.858	(0.978)	436438	5.15655	5.157
	26 1,2,4-Trichlorobenzene	180	10.960	10.973	(0.993)	424191	4.64777	4.648
*	27 Naphthalene-d8	136	11.037	11.037	(1.000)	1035709	4.00000	
	28 Naphthalene	128	11.075	11.088	(1.003)	1565914	5.43139	5.431
	29 4-Chloroaniline	127	11.228	11.266	(1.017)	500819	3.85295	3.853
	30 Hexachlorobutadiene	225	11.444	11.457	(1.037)	229061	5.02385	5.024
	31 4-Chloro-3-methylphenol	107	12.197	12.235	(1.105)	460485	4.84031	4.840
	32 2-Methylnaphthalene	142	12.452	12.477	(1.128)	1028268	5.13076	5.131
	33 Hexachlorocyclopentadiene	237	12.924	12.924	(0.886)	65053	2.78177	2.782
	34 2,4,6-Trichlorophenol	196	13.090	13.102	(0.897)	252806	4.85446	4.854
	35 2,4,5-Trichlorophenol	196	13.166	13.204	(0.902)	263748	4.87781	4.878
$	36 2-Fluorobiphenyl	172	13.230	13.243	(0.906)	956827	4.76079	4.761
	37 2-Chloronaphthalene	162	13.434	13.447	(0.920)	880023	5.00130	5.001
	38 2-Nitroaniline	65	13.702	13.727	(0.939)	340351	4.79919	4.799
	39 Dimethylphthalate	163	14.135	14.135	(0.969)	968520	5.31652	5.317
	40 Acenaphthylene	152	14.288	14.289	(0.979)	1421899	5.25809	5.258
	41 2,6-Dinitrotoluene	165	14.263	14.263	(0.977)	211236	4.98091	4.981
*	42 Acenaphthene-d10	164	14.594	14.595	(1.000)	521998	4.00000	
	43 3-Nitroaniline	138	14.544	14.595	(0.997)	187583	4.04851	4.049
	44 Acenaphthene	153	14.658	14.658	(1.004)	896659	5.30663	5.307
	45 2,4-Dinitrophenol	184	14.773	14.939	(1.012)	46553	2.37444	2.374(H)
	46 Dibenzofuran	168	14.990	15.002	(1.027)	1210085	5.14216	5.142
	47 4-Nitrophenol	109	14.913	14.990	(1.022)	102914	3.77906	3.779
	48 2,4-Dinitrotoluene	165	15.066	15.092	(1.032)	262026	4.77389	4.774
	50 Diethylphthalate	149	15.576	15.576	(1.067)	980070	4.74285	4.743
	49 Fluorene	166	15.691	15.691	(1.075)	1094737	5.34107	5.341
	51 4-Chlorophenyl-phenylether	204	15.691	15.691	(1.075)	503869	5.17889	5.179
	52 4-Nitroaniline	138	15.805	15.856	(1.083)	153891	3.75941	3.759
	53 4,6-Dinitro-2-methylphenol	198	15.894	15.932	(0.904)	108512	3.45015	3.450
	54 N-Nitrosodiphenylamine	169	15.932	15.945	(0.906)	657693	5.12860	5.129
$	55 2,4,6-Tribromophenol	330	16.212	16.225	(1.111)	181706	7.52390	7.524
	56 4-Bromophenyl-phenylether	248	16.670	16.683	(0.948)	278375	5.61553	5.616
	57 Hexachlorobenzene	284	16.989	16.989	(0.966)	274867	4.75119	4.751
	58 Pentachlorophenol	266	17.346	17.372	(0.986)	125024	3.82216	3.822
*	59 Phenanthrene-d10	188	17.588	17.588	(1.000)	856143	4.00000	
	60 Phenanthrene	178	17.627	17.639	(1.002)	1290930	5.20835	5.208
	61 Anthracene	178	17.729	17.741	(1.008)	1095808	4.76811	4.768
	62 Carbazole	167	18.060	18.086	(1.027)	998189	5.19052	5.191
	63 Di-n-butylphthalate	149	18.889	18.902	(1.074)	1555814	5.00690	5.007
	64 Fluoranthene	202	20.024	20.037	(0.884)	1355626	5.27303	5.273
	65 Pyrene	202	20.445	20.458	(0.903)	1545327	5.32145	5.321
$	66 Terphenyl-d14	244	20.751	20.764	(0.917)	933849	4.62819	4.628
	67 Butylbenzylphthalate	149	21.695	21.695	(0.958)	624579	5.01954	5.020
	68 Benzo(a)anthracene	228	22.613	22.613	(0.999)	1082623	5.26942	5.269
*	69 Chrysene-d12	240	22.639	22.639	(1.000)	580475	4.00000	
	70 3,3'-Dichlorobenzidine	252	22.575	22.588	(0.997)	527553	9.59519	9.595
	71 Chrysene	228	22.690	22.690	(1.002)	1019893	5.29667	5.297
	72 bis(2-Ethylhexyl)phthalate	149	22.741	22.741	(0.959)	877138	5.95049	5.950
*	134 Di-n-octylphthalate-d4	153	23.710	23.711	(1.000)	1040512	4.00000	
	73 Di-n-octylphthalate	149	23.723	23.723	(1.001)	1506165	5.20804	5.208
	74 Benzo(b)fluoranthene	252	24.387	24.399	(0.974)	1004017	4.74064	4.741
	75 Benzo(k)fluoranthene	252	24.425	24.438	(0.976)	1238376	5.76040	5.760
	76 Benzo(a)pyrene	252	24.935	24.961	(0.996)	907581	5.89036	5.890

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/ml)
*	77 Perylene-d12	264	25.037	25.037	(1.000)	571758	4.00000	
	78 Indeno(1,2,3-cd)pyrene	276	27.285	27.311	(1.090)	1117151	5.38122	5.381
	79 Dibenzo(a,h)anthracene	278	27.285	27.311	(1.090)	945279	5.11750	5.117
	80 Benzo(g,h,i)perylene	276	27.937	27.975	(1.116)	949221	4.98308	4.983
	90 N-Nitrosodimethylamine	74	4.380	4.457	(0.509)	404104	5.59416	5.594
	91 Aniline	93	Compound Not Detected.					
	93 Benzidine	184	20.292	20.317	(0.896)	69334	2.18630	2.186
	103 Pyridine	79	4.418	4.495	(0.513)	636959	5.60793	5.608
	105 1-methylnaphthalene	142	12.669	12.681	(1.148)	1014575	5.47029	5.470
	111 Azobenzene (1,2-DP-Hydrazine)	77	16.009	16.009	(1.097)	1316007	5.12248	5.122
	187 Total Benzofluoranthenes	252	24.387	24.399	(0.974)	2002604	10.5300	10.53
	120 2,3,4,6-Tetrachlorophenol	232	15.334	15.359	(1.051)	223082	4.89144	4.891

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt17.i
Lab File ID: NT1707102312.D
Lab Smp Id: SEQ-SCV1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Misc Info:

Calibration Date: 10-JUL-2023
Calibration Time: 14:14
Level: LOW
Sample Type: WATER

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	288953	144477	577906	273909	-5.21
27 Naphthalene-d8	1098716	549358	2197432	1035709	-5.73
42 Acenaphthene-d10	552014	276007	1104028	521998	-5.44
59 Phenanthrene-d10	884794	442397	1769588	856143	-3.24
69 Chrysene-d12	564549	282275	1129098	580475	2.82
134 Di-n-octylphthala	1047332	523666	2094664	1040512	-0.65
77 Perylene-d12	526075	263038	1052150	571758	8.68

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	8.61	8.11	9.11	8.61	-0.00
27 Naphthalene-d8	11.04	10.54	11.54	11.04	-0.00
42 Acenaphthene-d10	14.60	14.10	15.10	14.59	-0.00
59 Phenanthrene-d10	17.59	17.09	18.09	17.59	-0.00
69 Chrysene-d12	22.64	22.14	23.14	22.64	-0.00
134 Di-n-octylphthala	23.71	23.21	24.21	23.71	-0.00
77 Perylene-d12	25.04	24.54	25.54	25.04	-0.00

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

REVIEW SUMMARY FOR FILE - NT1707102312.D

Lab ID: SEQ-SCV1
nt17.i, ABN.m, 10-JUL-2023 19:15

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

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
1.033	1.047	-0.0148	Benzyl alcohol
1.092	1.099	-0.0074	4-Methylphenol
0.978	0.984	-0.0058	2,4-Dichlorophenol
0.964	0.000	0.9642	Benzoic acid
0.997	0.000	0.9965	3-Nitroaniline
1.012	1.024	-0.0113	2,4-Dinitrophenol
1.022	0.000	1.0218	4-Nitrophenol
0.509	0.518	-0.0089	N-Nitrosodimethylamine
0.513	0.522	-0.0089	Pyridine
0.751	0.763	-0.0119	2-Fluorophenol

RRT check based on Ccal File: NT1707102308.D

On Column LOD for nt17.i, ABN.m, ICAL.sub = 0.0000

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

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8270E

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GF00097
Laboratory ID: SLF0467-SCV1
Sequence: SLF0467
Standard ID: L006700

ANALYTE	EXPECTED (ug/mL)	FOUND (ug/mL)	% DRIFT	QC LIMIT
Naphthalene	5.0000	5.5	10.4	20.00
2-Methylnaphthalene	5.0000	5.1	1.3	20.00
Acenaphthylene	5.0000	5.6	12.4	20.00
Acenaphthene	5.0000	5.6	12.9	20.00
Fluorene	5.0000	5.5	9.4	20.00
Phenanthrene	5.0000	5.6	12.4	20.00
Anthracene	5.0000	5.0	-0.4	20.00
Fluoranthene	5.0000	5.8	15.1	20.00
Pyrene	5.0000	5.8	16.8	20.00
Benzo(a)anthracene	5.0000	5.5	10.9	20.00
Chrysene	5.0000	5.6	11.9	20.00
Benzofluoranthenes, Total	10.000	11.6	15.8	20.00
Benzo(a)pyrene	5.0000	6.4	27.8	20.00
Indeno(1,2,3-cd)pyrene	5.0000	6.1	21.9	20.00
Dibenzo(a,h)anthracene	5.0000	5.9	18.7	20.00
Benzo(g,h,i)perylene	5.0000	5.6	11.4	20.00
1,2-Dichlorobenzene-d4	5.0000	0.00		20.00
Nitrobenzene-d5	5.0000	0.00		20.00
2-Fluorobiphenyl	5.0000	0.00		20.00
p-Terphenyl-d14	5.0000	0.0141	-99.7	20.00

* Values outside of QC limits

Data File: \\target\share\chem3\nt14.i\20230628.b\NT1406282311.D

Date : 28-JUN-2023 23:38

Client ID:

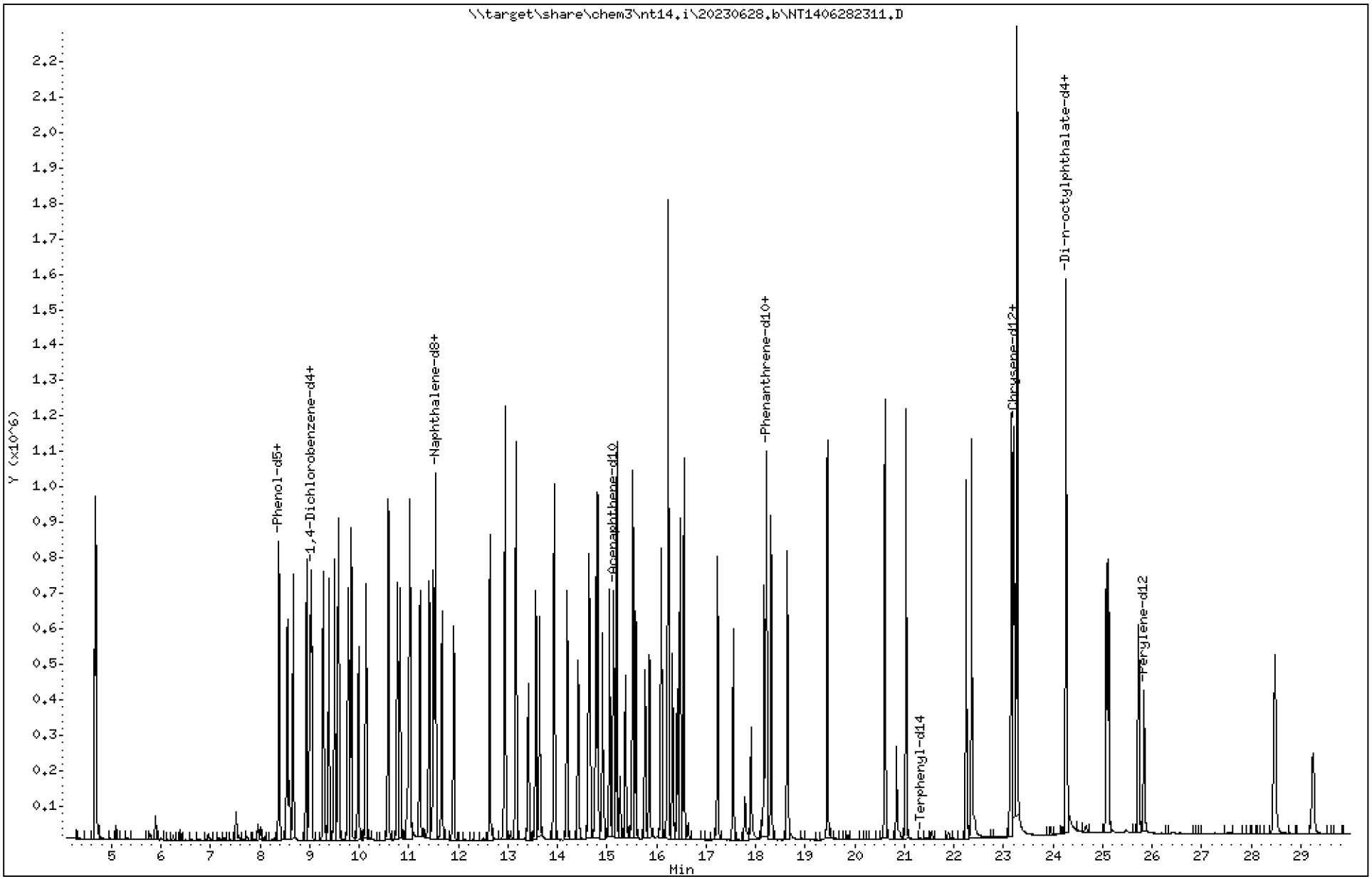
Instrument: nt14.i

Sample Info: SLF0467-SCV1

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230628.b\NT1406282311.D
Lab Smp Id: SLF0467-SCV1
Inj Date : 28-JUN-2023 23:38 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : SLF0467-SCV1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230628.b\ABN.m
Meth Date : 03-Jul-2023 15:05 yev Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 11 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: ORGDATA102

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
$ 1	2-Fluorophenol	112	Compound Not Detected.					
$ 2	Phenol-d5	99	8.366	8.366	(0.930)	1531	7.50000	0.02318
3	Phenol	94	8.382	8.382	(0.931)	358734	5.00000	4.486
$ 5	2-Chlorophenol-d4	132	Compound Not Detected.					
4	Bis(2-Chloroethyl)ether	93	8.551	8.551	(0.950)	311433	5.00000	5.599
6	2-Chlorophenol	128	8.667	8.667	(0.963)	279261	5.00000	4.814
7	1,3-Dichlorobenzene	146	8.938	8.938	(0.993)	267188	5.00000	5.168
* 8	1,4-Dichlorobenzene-d4	152	9.000	9.000	(1.000)	128354	4.00000	
9	1,4-Dichlorobenzene	146	9.039	9.039	(1.004)	260977	5.00000	5.120
$ 10	1,2-Dichlorobenzene-d4	152	Compound Not Detected.					
12	1,2-Dichlorobenzene	146	9.388	9.388	(1.043)	254243	5.00000	5.149
11	Benzyl alcohol	108	9.272	9.272	(1.030)	178390	5.00000	5.709
14	2,2'-oxybis(1-Chloropropane)	121	9.582	9.582	(1.065)	93021	5.00000	5.824
13	2-Methylphenol	108	9.505	9.505	(1.056)	230056	5.00000	4.564
17	Hexachloroethane	117	9.986	9.986	(1.110)	125989	5.00000	5.381
16	N-Nitroso-di-n-propylamine	70	9.839	9.839	(1.093)	246429	5.00000	5.449
15	4-Methylphenol	108	9.776	9.776	(1.086)	275884	5.00000	4.942
$ 18	Nitrobenzene-d5	82	Compound Not Detected.					
19	Nitrobenzene	77	10.133	10.133	(0.881)	342851	5.00000	5.234
20	Isophorone	82	10.584	10.584	(0.921)	688938	5.00000	7.561
21	2-Nitrophenol	139	10.770	10.770	(0.937)	127147	5.00000	4.114
22	2,4-Dimethylphenol	107	10.824	10.824	(0.941)	210514	10.0000	4.007
23	Bis(2-Chloroethoxy)methane	93	11.026	11.026	(0.959)	367536	5.00000	6.313
24	Benzoic acid	105	11.018	11.018	(0.958)	224723	20.0000	7.003
25	2,4-Dichlorophenol	162	11.227	11.227	(0.976)	194589	10.0000	5.009
26	1,2,4-Trichlorobenzene	180	11.413	11.413	(0.993)	194178	5.00000	5.014
* 27	Naphthalene-d8	136	11.498	11.498	(1.000)	519660	4.00000	
28	Naphthalene	128	11.544	11.544	(1.004)	749328	5.00000	5.520
29	4-Chloroaniline	127	11.667	11.667	(1.015)	252592	10.0000	3.990
30	Hexachlorobutadiene	225	11.907	11.907	(1.036)	93169	5.00000	5.158
31	4-Chloro-3-methylphenol	107	12.634	12.634	(1.099)	240444	10.0000	4.935
32	2-Methylnaphthalene	142	12.944	12.944	(1.126)	509818	5.00000	5.063
33	Hexachlorocyclopentadiene	237	13.416	13.416	(0.887)	93021	10.0000	4.926

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
34	2,4,6-Trichlorophenol	196	13.563	13.563	(0.897)	117483	10.0000	4.896
35	2,4,5-Trichlorophenol	196	13.641	13.641	(0.902)	123559	10.0000	4.949
$ 36	2-Fluorobiphenyl	172	Compound Not Detected.					
37	2-Chloronaphthalene	162	13.935	13.935	(0.921)	435248	5.00000	5.321
38	2-Nitroaniline	65	14.198	14.198	(0.939)	212525	10.0000	5.361
39	Dimethylphthalate	163	14.631	14.631	(0.967)	457780	5.00000	5.456
40	Acenaphthylene	152	14.817	14.817	(0.980)	709296	5.00000	5.620
41	2,6-Dinitrotoluene	165	14.771	14.771	(0.976)	102094	10.0000	5.783
* 42	Acenaphthene-d10	164	15.126	15.126	(1.000)	249651	4.00000	
43	3-Nitroaniline	138	15.049	15.049	(0.995)	134057	10.0000	5.668
44	Acenaphthene	153	15.196	15.196	(1.005)	421843	5.00000	5.647
45	2,4-Dinitrophenol	184	15.266	15.266	(1.009)	25611	20.0000	2.352
46	Dibenzofuran	168	15.521	15.521	(1.026)	581754	5.00000	5.344
47	4-Nitrophenol	109	15.374	15.374	(1.016)	73738	10.0000	4.280
48	2,4-Dinitrotoluene	165	15.575	15.575	(1.030)	138404	10.0000	5.606
50	Diethylphthalate	149	16.093	16.093	(1.064)	572899	5.00000	5.904
49	Fluorene	166	16.232	16.232	(1.073)	520914	5.00000	5.472
51	4-Chlorophenyl-phenylether	204	16.224	16.224	(1.073)	220136	5.00000	5.356
52	4-Nitroaniline	138	16.317	16.317	(1.079)	118618	10.0000	4.939
53	4,6-Dinitro-2-methylphenol	198	16.417	16.417	(0.904)	54175	20.0000	4.060
54	N-Nitrosodiphenylamine	169	16.479	16.479	(0.907)	318426	5.00000	5.378
$ 55	2,4,6-Tribromophenol	330	Compound Not Detected.					
56	4-Bromophenyl-phenylether	248	17.234	17.234	(0.948)	102449	5.00000	5.674
57	Hexachlorobenzene	284	17.551	17.551	(0.966)	99464	5.00000	5.207
58	Pentachlorophenol	266	17.907	17.907	(0.986)	45853	10.0000	3.987
* 59	Phenanthrene-d10	188	18.170	18.170	(1.000)	419362	4.00000	
60	Phenanthrene	178	18.217	18.217	(1.003)	637811	5.00000	5.622
61	Anthracene	178	18.310	18.310	(1.008)	546172	5.00000	4.982
62	Carbazole	167	18.642	18.642	(1.026)	585034	5.00000	5.305
63	Di-n-butylphthalate	149	19.447	19.447	(1.070)	838559	5.00000	5.787
64	Fluoranthene	202	20.607	20.607	(0.887)	676844	5.00000	5.753
65	Pyrene	202	21.033	21.033	(0.906)	694120	5.00000	5.840
$ 66	Terphenyl-d14	244	21.319	21.319	(0.918)	1130	5.00000	0.01413
67	Butylbenzylphthalate	149	22.248	22.248	(0.958)	308364	5.00000	5.494
68	Benzo(a)anthracene	228	23.201	23.201	(0.999)	558885	5.00000	5.546
* 69	Chrysene-d12	240	23.224	23.224	(1.000)	287830	4.00000	
70	3,3'-Dichlorobenzidine	252	23.154	23.154	(0.997)	330788	15.0000	11.43
71	Chrysene	228	23.271	23.271	(1.002)	504838	5.00000	5.596
72	bis(2-Ethylhexyl)phthalate	149	24.269	24.269	(1.001)	718841	5.00000	5.687
* 134	Di-n-octylphthalate-d4	153	24.254	24.254	(1.000)	491823	4.00000	
73	Di-n-octylphthalate	149	24.269	24.269	(1.001)	718841	5.00000	5.687
74	Benzo(b)fluoranthene	252	25.074	25.074	(0.971)	490492	5.00000	6.128
75	Benzo(k)fluoranthene	252	25.121	25.121	(0.972)	497504	5.00000	5.537(H)
76	Benzo(a)pyrene	252	25.725	25.725	(0.996)	401522	5.00000	6.392
* 77	Perylene-d12	264	25.833	25.833	(1.000)	243501	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	28.470	28.470	(1.102)	345159	5.00000	6.093
79	Dibenzo(a,h)anthracene	278	28.478	28.478	(1.102)	284447	5.00000	5.934
80	Benzo(g,h,i)perylene	276	29.247	29.247	(1.132)	260483	5.00000	5.569
90	N-Nitrosodimethylamine	74	4.658	4.658	(0.518)	209812	10.0000	5.698
91	Aniline	93	Compound Not Detected.					
93	Benzidine	184	20.840	20.840	(0.897)	158741	10.0000	4.460
103	Pyridine	79	4.681	4.681	(0.520)	318653	5.00000	2.747
105	1-methylnaphthalene	142	13.168	13.168	(1.145)	491308	5.00000	5.470
111	Azobenzene (1,2-DP-Hydrazine)	77	16.548	16.548	(1.094)	718859	5.00000	5.202

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
187 Total Benzofluoranthenes	252	25.121	25.121	(0.972)	940527	10.0000	11.58
120 2,3,4,6-Tetrachlorophenol	232	15.861	15.861	(1.049)	87501	5.00000	4.484

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1406282311.D
Lab Smp Id: SLF0467-SCV1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Misc Info:

Calibration Date: 28-JUN-2023
Calibration Time: 19:18
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	128354	64177	256708	128354	0.00
27 Naphthalene-d8	519660	259830	1039320	519660	0.00
42 Acenaphthene-d10	249651	124826	499302	249651	0.00
59 Phenanthrene-d10	419362	209681	838724	419362	0.00
69 Chrysene-d12	287830	143915	575660	287830	0.00
134 Di-n-octylphthala	491823	245912	983646	491823	0.00
77 Perylene-d12	243501	121751	487002	243501	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.00	8.50	9.50	9.00	0.00
27 Naphthalene-d8	11.50	11.00	12.00	11.50	0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	0.00
59 Phenanthrene-d10	18.17	17.67	18.67	18.17	0.00
69 Chrysene-d12	23.22	22.72	23.72	23.22	0.00
134 Di-n-octylphthala	24.25	23.75	24.75	24.25	0.00
77 Perylene-d12	25.83	25.33	26.33	25.83	0.00

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

REVIEW SUMMARY FOR FILE - NT1406282311.D

Lab ID: SLF0467-SCV1
nt14.i, ABN.m, 28-JUN-2023 23:38

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

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

No RRT check. Ccal file.

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

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

Q-FLAG SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230628.b

Instrument: nt14.i Date: 28-JUN-2023 Method: ABN.m

INITIAL CAL: 21-APR-2023

Compound	%RSD or R^2
NO Q-FLAGS	

ICV CAL: NT1406282311.D 28-JUN-2023 23:38

Compound	%D
Isophorone	51.21
2,4-Dimethylphenol	-59.93
Bis(2-Chloroethoxy)methane	26.25
2,4-Dichlorophenol	-49.91
Benzoic acid	-65.0
4-Chloroaniline	-60.10
4-Chloro-3-methylphenol	-50.65
Hexachlorocyclopentadiene	-50.7
2,4,6-Trichlorophenol	-51.04
2,4,5-Trichlorophenol	-50.51
2-Nitroaniline	-46.39
2,6-Dinitrotoluene	-42.17
3-Nitroaniline	-43.32
2,4-Dinitrophenol	-88.2
4-Nitrophenol	-57.2
2,4-Dinitrotoluene	-43.94
4-Nitroaniline	-50.6
4,6-Dinitro-2-methylphenol	-79.7
Pentachlorophenol	-60.1
3,3'-Dichlorobenzidine	-23.8
Benzo(b)fluoranthene	22.57
Benzo(a)pyrene	27.84
Indeno(1,2,3-cd)pyrene	21.85
N-Nitrosodimethylamine	-43.02
Aniline	ND
Benzidine	-55.40
Pyridine	-45.05
2-Fluorophenol	ND
Phenol-d5	-99.69
2-Chlorophenol-d4	ND
1,2-Dichlorobenzene-d4	ND
Nitrobenzene-d5	ND
2-Fluorobiphenyl	ND
2,4,6-Tribromophenol	ND
Terphenyl-d14	-99.72

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8270E

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GG00040
Laboratory ID: SLG0194-SCV1
Sequence: SLG0194
Standard ID: L006700

ANALYTE	EXPECTED (ug/mL)	FOUND (ug/mL)	% DRIFT	QC LIMIT
Naphthalene	5.0000	5.4	8.6	20.00
2-Methylnaphthalene	5.0000	5.1	2.6	20.00
Acenaphthylene	5.0000	5.3	5.2	20.00
Acenaphthene	5.0000	5.3	6.1	20.00
Fluorene	5.0000	5.3	6.8	20.00
Phenanthrene	5.0000	5.2	4.2	20.00
Anthracene	5.0000	4.8	-4.6	20.00
Fluoranthene	5.0000	5.3	5.5	20.00
Pyrene	5.0000	5.3	6.4	20.00
Benzo(a)anthracene	5.0000	5.3	5.4	20.00
Chrysene	5.0000	5.3	5.9	20.00
Benzofluoranthenes, Total	10.000	10.5	5.3	20.00
Benzo(a)pyrene	5.0000	5.9	17.8	20.00
Indeno(1,2,3-cd)pyrene	5.0000	5.4	7.6	20.00
Dibenzo(a,h)anthracene	5.0000	5.1	2.4	20.00
Benzo(g,h,i)perylene	5.0000	5.0	-0.3	20.00
1,2-Dichlorobenzene-d4	5.0000	4.98	-0.5	20.00
Nitrobenzene-d5	5.0000	5.10	2.0	20.00
2-Fluorobiphenyl	5.0000	4.76	-4.8	20.00
p-Terphenyl-d14	5.0000	4.63	-7.4	20.00

* Values outside of QC limits

Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102312.D

Date : 10-JUL-2023 19:15

Client ID:

Instrument: nt17.i

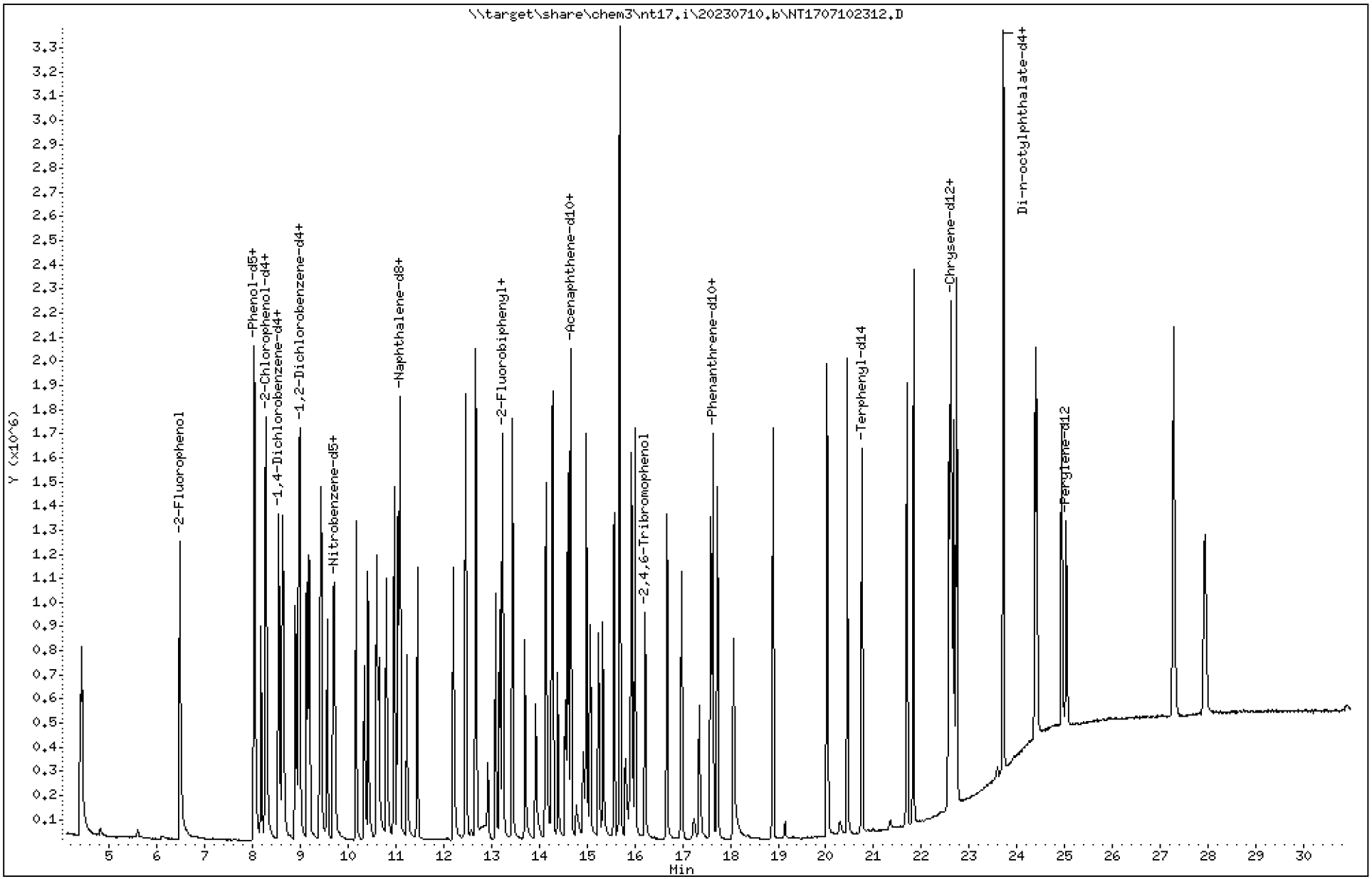
Sample Info: SEQ-SCV1

Volume Injected (uL): 1.0

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102312.D

Date : 10-JUL-2023 19:15

Client ID:

Instrument: nt17.i

Sample Info: SEQ-SCV1

Volume Injected (uL): 1.0

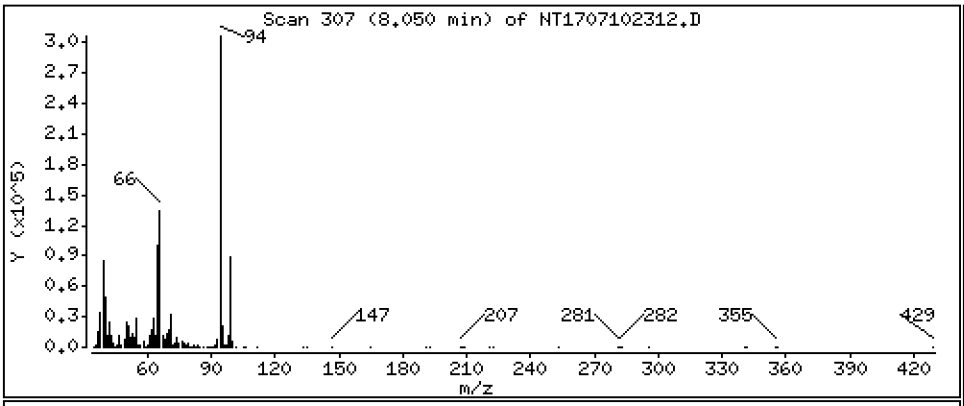
Operator: JGR

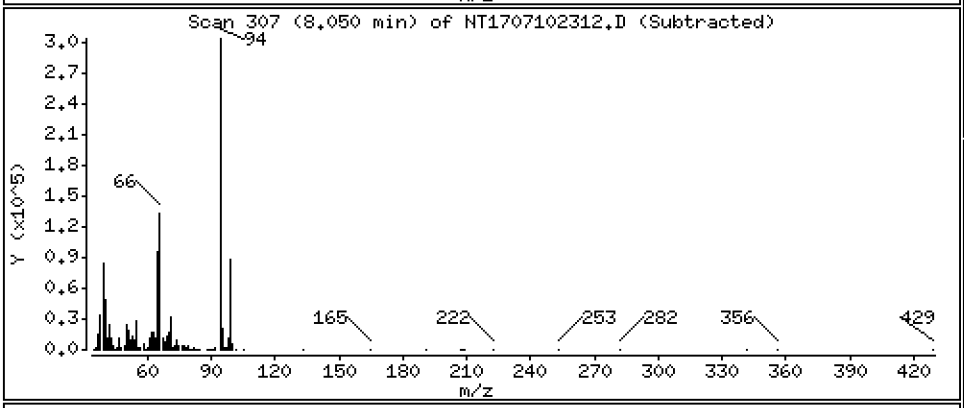
Column phase: ZB-5msi

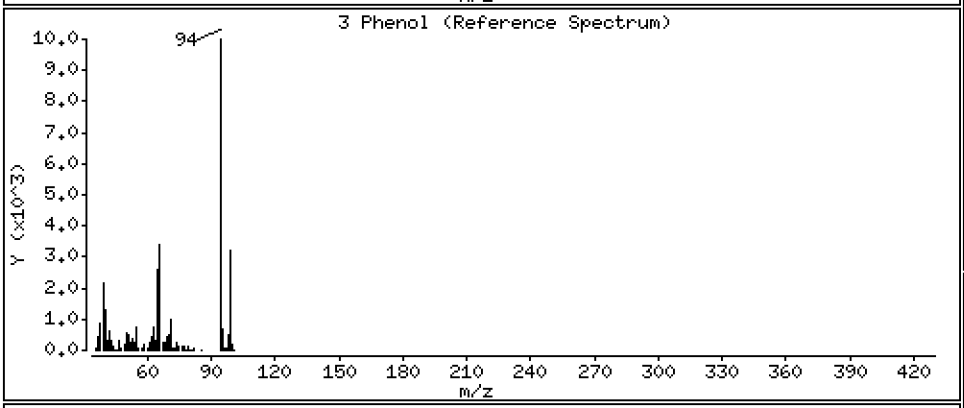
Column diameter: 0.25

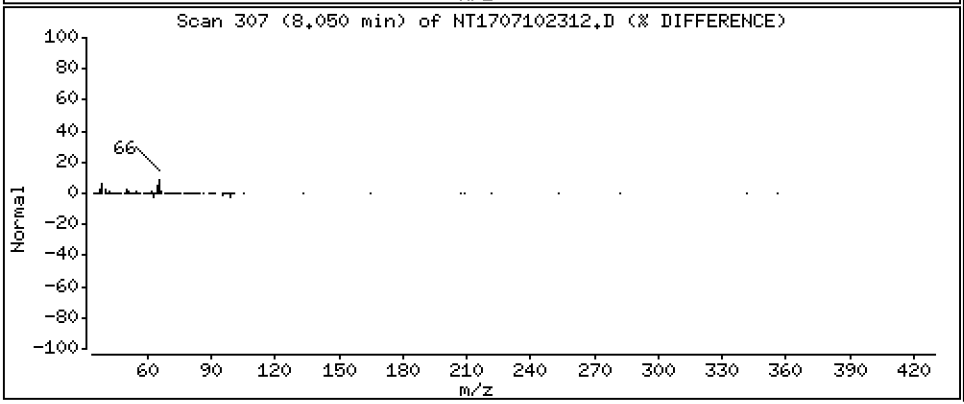
3 Phenol

Concentration: 3.871 ug/ml









Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102312.D

Date : 10-JUL-2023 19:15

Client ID:

Instrument: nt17.i

Sample Info: SEQ-SCV1

Volume Injected (uL): 1.0

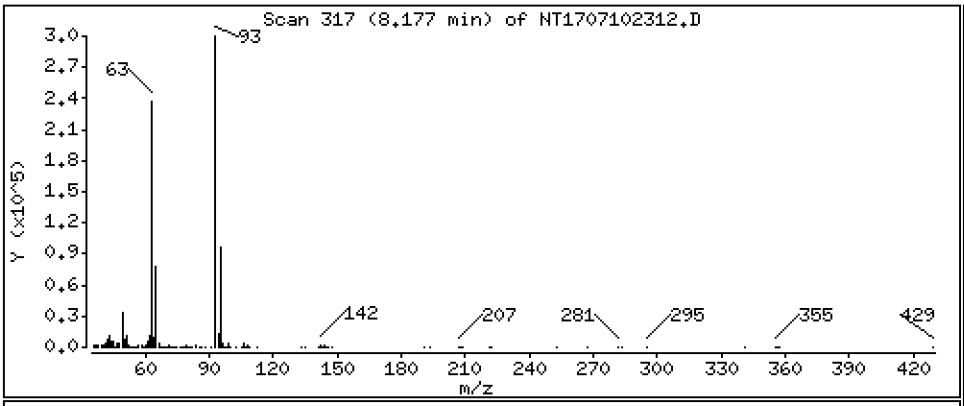
Operator: JGR

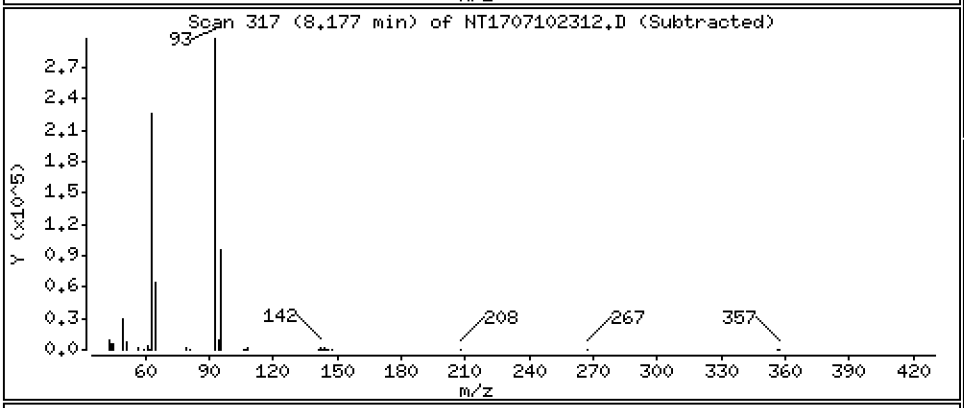
Column phase: ZB-5msi

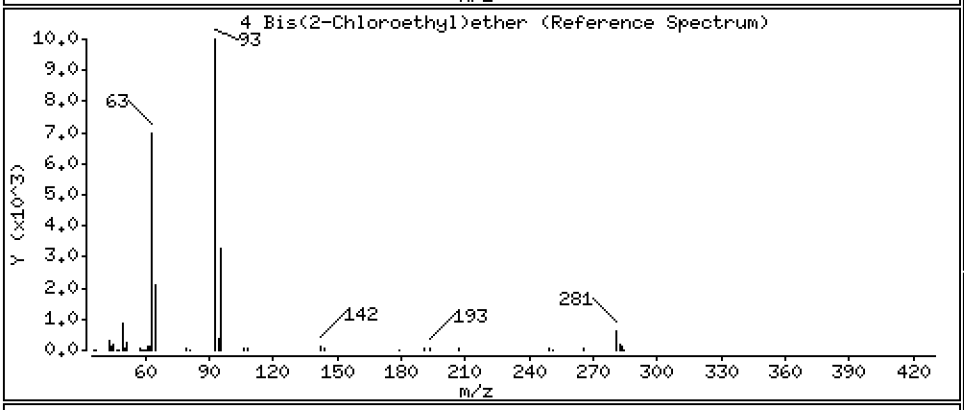
Column diameter: 0.25

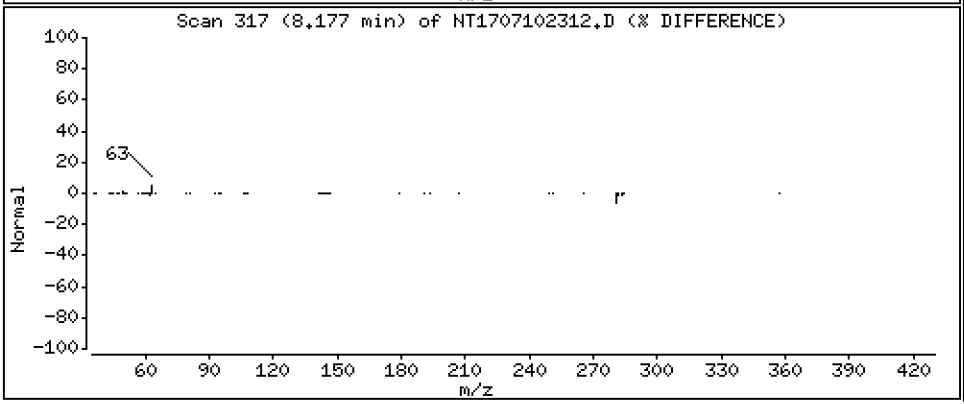
4 Bis(2-Chloroethyl)ether

Concentration: 5.565 ug/ml









ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt17.i\20230710.b\NT1707102312.D
Lab Smp Id: SEQ-SCV1
Inj Date : 10-JUL-2023 19:15
Operator : JGR Inst ID: nt17.i
Smp Info : SEQ-SCV1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Meth Date : 18-Jul-2023 10:03 jrains Quant Type: ISTD
Cal Date : 10-JUL-2023 16:44 Cal File: NT1707102308.D
Als bottle: 12 QC Sample: DFTPP
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	500.000	Volume of final extract (uL)
Vo	500.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/ml)
$	1	2-Fluorophenol	112	6.469	6.571	(0.751)	730354	7.57042	7.570
$	2	Phenol-d5	99	8.024	8.062	(0.932)	992031	7.41605	7.416
	3	Phenol	94	8.049	8.088	(0.935)	690421	3.87079	3.871
$	5	2-Chlorophenol-d4	132	8.266	8.291	(0.960)	742765	6.82537	6.825
	4	Bis(2-Chloroethyl)ether	93	8.177	8.202	(0.950)	575437	5.56465	5.565
	6	2-Chlorophenol	128	8.291	8.317	(0.963)	586198	4.61238	4.612
	7	1,3-Dichlorobenzene	146	8.546	8.559	(0.993)	583816	5.05128	5.051
*	8	1,4-Dichlorobenzene-d4	152	8.610	8.610	(1.000)	273909	4.00000	
	9	1,4-Dichlorobenzene	146	8.636	8.649	(1.003)	642853	5.15782	5.158
$	10	1,2-Dichlorobenzene-d4	152	8.955	8.981	(1.040)	333926	4.97697	4.977
	12	1,2-Dichlorobenzene	146	8.981	9.006	(1.043)	553113	5.06034	5.060
	11	Benzyl alcohol	108	8.891	9.019	(1.033)	344222	5.12539	5.125(H)
	14	2,2'-oxybis(1-Chloropropane)	121	9.185	9.198	(1.067)	184795	5.16722	5.167
	13	2-Methylphenol	108	9.134	9.172	(1.061)	440428	4.12618	4.126
	17	Hexachloroethane	117	9.556	9.568	(1.110)	249907	5.07396	5.074
	16	N-Nitroso-di-n-propylamine	70	9.428	9.454	(1.095)	443392	5.39147	5.391
	15	4-Methylphenol	108	9.402	9.466	(1.092)	488281	4.68459	4.685
$	18	Nitrobenzene-d5	82	9.683	9.722	(0.877)	605436	5.09830	5.098
	19	Nitrobenzene	77	9.709	9.760	(0.880)	654019	5.37015	5.370
	20	Isophorone	82	10.156	10.182	(0.920)	1323604	7.21838	7.218
	21	2-Nitrophenol	139	10.335	10.386	(0.936)	224974	4.43438	4.434
	22	2,4-Dimethylphenol	107	10.411	10.437	(0.943)	417118	3.69146	3.691
	23	Bis(2-Chloroethoxy)methane	93	10.590	10.616	(0.960)	647961	6.21131	6.211

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/ml)
	24 Benzoic acid	105	10.641	10.629	(0.964)	621939	7.39450	7.395
	25 2,4-Dichlorophenol	162	10.794	10.858	(0.978)	436438	5.15655	5.157
	26 1,2,4-Trichlorobenzene	180	10.960	10.973	(0.993)	424191	4.64777	4.648
*	27 Naphthalene-d8	136	11.037	11.037	(1.000)	1035709	4.00000	
	28 Naphthalene	128	11.075	11.088	(1.003)	1565914	5.43139	5.431
	29 4-Chloroaniline	127	11.228	11.266	(1.017)	500819	3.85295	3.853
	30 Hexachlorobutadiene	225	11.444	11.457	(1.037)	229061	5.02385	5.024
	31 4-Chloro-3-methylphenol	107	12.197	12.235	(1.105)	460485	4.84031	4.840
	32 2-Methylnaphthalene	142	12.452	12.477	(1.128)	1028268	5.13076	5.131
	33 Hexachlorocyclopentadiene	237	12.924	12.924	(0.886)	65053	2.78177	2.782
	34 2,4,6-Trichlorophenol	196	13.090	13.102	(0.897)	252806	4.85446	4.854
	35 2,4,5-Trichlorophenol	196	13.166	13.204	(0.902)	263748	4.87781	4.878
$	36 2-Fluorobiphenyl	172	13.230	13.243	(0.906)	956827	4.76079	4.761
	37 2-Chloronaphthalene	162	13.434	13.447	(0.920)	880023	5.00130	5.001
	38 2-Nitroaniline	65	13.702	13.727	(0.939)	340351	4.79919	4.799
	39 Dimethylphthalate	163	14.135	14.135	(0.969)	968520	5.31652	5.317
	40 Acenaphthylene	152	14.288	14.289	(0.979)	1421899	5.25809	5.258
	41 2,6-Dinitrotoluene	165	14.263	14.263	(0.977)	211236	4.98091	4.981
*	42 Acenaphthene-d10	164	14.594	14.595	(1.000)	521998	4.00000	
	43 3-Nitroaniline	138	14.544	14.595	(0.997)	187583	4.04851	4.049
	44 Acenaphthene	153	14.658	14.658	(1.004)	896659	5.30663	5.307
	45 2,4-Dinitrophenol	184	14.773	14.939	(1.012)	46553	2.37444	2.374(H)
	46 Dibenzofuran	168	14.990	15.002	(1.027)	1210085	5.14216	5.142
	47 4-Nitrophenol	109	14.913	14.990	(1.022)	102914	3.77906	3.779
	48 2,4-Dinitrotoluene	165	15.066	15.092	(1.032)	262026	4.77389	4.774
	50 Diethylphthalate	149	15.576	15.576	(1.067)	980070	4.74285	4.743
	49 Fluorene	166	15.691	15.691	(1.075)	1094737	5.34107	5.341
	51 4-Chlorophenyl-phenylether	204	15.691	15.691	(1.075)	503869	5.17889	5.179
	52 4-Nitroaniline	138	15.805	15.856	(1.083)	153891	3.75941	3.759
	53 4,6-Dinitro-2-methylphenol	198	15.894	15.932	(0.904)	108512	3.45015	3.450
	54 N-Nitrosodiphenylamine	169	15.932	15.945	(0.906)	657693	5.12860	5.129
$	55 2,4,6-Tribromophenol	330	16.212	16.225	(1.111)	181706	7.52390	7.524
	56 4-Bromophenyl-phenylether	248	16.670	16.683	(0.948)	278375	5.61553	5.616
	57 Hexachlorobenzene	284	16.989	16.989	(0.966)	274867	4.75119	4.751
	58 Pentachlorophenol	266	17.346	17.372	(0.986)	125024	3.82216	3.822
*	59 Phenanthrene-d10	188	17.588	17.588	(1.000)	856143	4.00000	
	60 Phenanthrene	178	17.627	17.639	(1.002)	1290930	5.20835	5.208
	61 Anthracene	178	17.729	17.741	(1.008)	1095808	4.76811	4.768
	62 Carbazole	167	18.060	18.086	(1.027)	998189	5.19052	5.191
	63 Di-n-butylphthalate	149	18.889	18.902	(1.074)	1555814	5.00690	5.007
	64 Fluoranthene	202	20.024	20.037	(0.884)	1355626	5.27303	5.273
	65 Pyrene	202	20.445	20.458	(0.903)	1545327	5.32145	5.321
$	66 Terphenyl-d14	244	20.751	20.764	(0.917)	933849	4.62819	4.628
	67 Butylbenzylphthalate	149	21.695	21.695	(0.958)	624579	5.01954	5.020
	68 Benzo(a)anthracene	228	22.613	22.613	(0.999)	1082623	5.26942	5.269
*	69 Chrysene-d12	240	22.639	22.639	(1.000)	580475	4.00000	
	70 3,3'-Dichlorobenzidine	252	22.575	22.588	(0.997)	527553	9.59519	9.595
	71 Chrysene	228	22.690	22.690	(1.002)	1019893	5.29667	5.297
	72 bis(2-Ethylhexyl)phthalate	149	22.741	22.741	(0.959)	877138	5.95049	5.950
*	134 Di-n-octylphthalate-d4	153	23.710	23.711	(1.000)	1040512	4.00000	
	73 Di-n-octylphthalate	149	23.723	23.723	(1.001)	1506165	5.20804	5.208
	74 Benzo(b)fluoranthene	252	24.387	24.399	(0.974)	1004017	4.74064	4.741
	75 Benzo(k)fluoranthene	252	24.425	24.438	(0.976)	1238376	5.76040	5.760
	76 Benzo(a)pyrene	252	24.935	24.961	(0.996)	907581	5.89036	5.890

		QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/mL)	(ug/ml)
*	77 Perylene-d12	264	25.037	25.037	(1.000)	571758	4.00000	
	78 Indeno(1,2,3-cd)pyrene	276	27.285	27.311	(1.090)	1117151	5.38122	5.381
	79 Dibenzo(a,h)anthracene	278	27.285	27.311	(1.090)	945279	5.11750	5.117
	80 Benzo(g,h,i)perylene	276	27.937	27.975	(1.116)	949221	4.98308	4.983
	90 N-Nitrosodimethylamine	74	4.380	4.457	(0.509)	404104	5.59416	5.594
	91 Aniline	93	Compound Not Detected.					
	93 Benzidine	184	20.292	20.317	(0.896)	69334	2.18630	2.186
	103 Pyridine	79	4.418	4.495	(0.513)	636959	5.60793	5.608
	105 1-methylnaphthalene	142	12.669	12.681	(1.148)	1014575	5.47029	5.470
	111 Azobenzene (1,2-DP-Hydrazine)	77	16.009	16.009	(1.097)	1316007	5.12248	5.122
	187 Total Benzofluoranthenes	252	24.387	24.399	(0.974)	2002604	10.5300	10.53
	120 2,3,4,6-Tetrachlorophenol	232	15.334	15.359	(1.051)	223082	4.89144	4.891

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt17.i
Lab File ID: NT1707102312.D
Lab Smp Id: SEQ-SCV1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Misc Info:

Calibration Date: 10-JUL-2023
Calibration Time: 14:14
Level: LOW
Sample Type: WATER

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	288953	144477	577906	273909	-5.21
27 Naphthalene-d8	1098716	549358	2197432	1035709	-5.73
42 Acenaphthene-d10	552014	276007	1104028	521998	-5.44
59 Phenanthrene-d10	884794	442397	1769588	856143	-3.24
69 Chrysene-d12	564549	282275	1129098	580475	2.82
134 Di-n-octylphthala	1047332	523666	2094664	1040512	-0.65
77 Perylene-d12	526075	263038	1052150	571758	8.68

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	8.61	8.11	9.11	8.61	-0.00
27 Naphthalene-d8	11.04	10.54	11.54	11.04	-0.00
42 Acenaphthene-d10	14.60	14.10	15.10	14.59	-0.00
59 Phenanthrene-d10	17.59	17.09	18.09	17.59	-0.00
69 Chrysene-d12	22.64	22.14	23.14	22.64	-0.00
134 Di-n-octylphthala	23.71	23.21	24.21	23.71	-0.00
77 Perylene-d12	25.04	24.54	25.54	25.04	-0.00

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

REVIEW SUMMARY FOR FILE - NT1707102312.D

Lab ID: SEQ-SCV1
nt17.i, ABN.m, 10-JUL-2023 19:15

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

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
1.033	1.047	-0.0148	Benzyl alcohol
1.092	1.099	-0.0074	4-Methylphenol
0.978	0.984	-0.0058	2,4-Dichlorophenol
0.964	0.000	0.9642	Benzoic acid
0.997	0.000	0.9965	3-Nitroaniline
1.012	1.024	-0.0113	2,4-Dinitrophenol
1.022	0.000	1.0218	4-Nitrophenol
0.509	0.518	-0.0089	N-Nitrosodimethylamine
0.513	0.522	-0.0089	Pyridine
0.751	0.763	-0.0119	2-Fluorophenol

RRT check based on Ccal File: NT1707102308.D

On Column LOD for nt17.i, ABN.m, ICAL.sub = 0.0000

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

LOW-CONCENTRATION CALIBRATION VERIFICATION

EPA 8270E

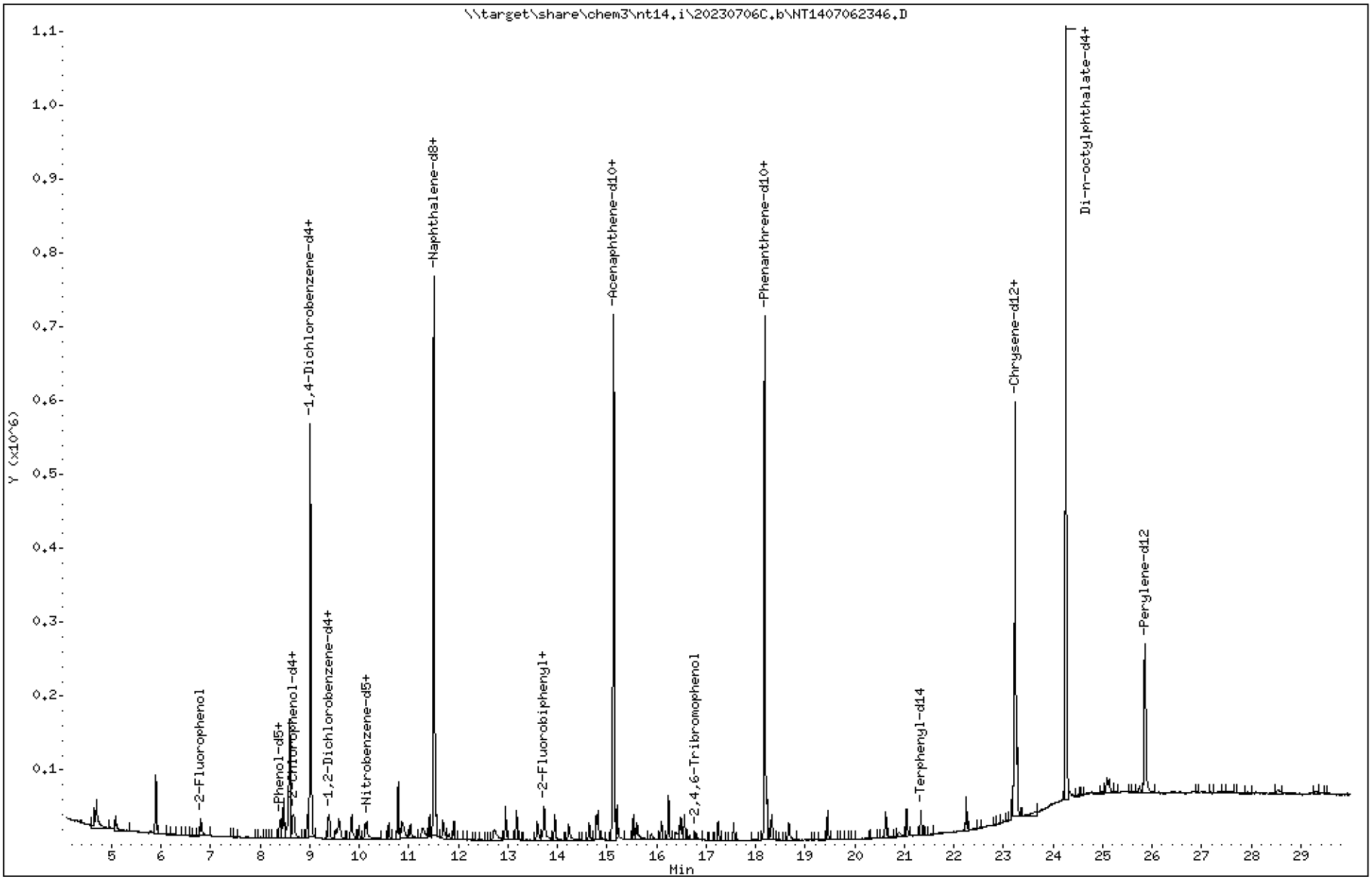
Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GF00097
Laboratory ID: SLG0081-LCV2
Sequence: SLG0081
Standard ID: L007253

ANALYTE	EXPECTED (ug/mL)	FOUND (ug/mL)	% DRIFT	QC LIMIT
Naphthalene	0.20000	0.2	2.8	50.00
2-Methylnaphthalene	0.20000	0.2	-5.5	50.00
Acenaphthylene	0.20000	0.2	2.5	50.00
Acenaphthene	0.20000	0.2	2.9	50.00
Fluorene	0.20000	0.2	-6.6	50.00
Phenanthrene	0.20000	0.2	2.4	50.00
Anthracene	0.20000	0.2	2.0	50.00
Fluoranthene	0.20000	0.2	8.6	50.00
Pyrene	0.20000	0.2	13.7	50.00
Benzo(a)anthracene	0.20000	0.2	4.8	50.00
Chrysene	0.20000	0.2	8.8	50.00
Benzofluoranthenes, Total	0.40000	0.5	14.8	50.00
Benzo(a)pyrene	0.20000	0.2	6.8	50.00
Indeno(1,2,3-cd)pyrene	0.20000	0.1	-27.0	50.00
Dibenzo(a,h)anthracene	0.20000	0.2	-15.0	50.00
Benzo(g,h,i)perylene	0.20000	0.2	-23.4	50.00
1,2-Dichlorobenzene-d4	0.20000	0.205	2.4	50.00
Nitrobenzene-d5	0.20000	0.193	-3.4	50.00
2-Fluorobiphenyl	0.20000	0.213	6.4	50.00
p-Terphenyl-d14	0.20000	0.242	21.2	50.00

* Values outside of QC limits

Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D
Date : 07-JUL-2023 17:38
Client ID:
Sample Info: SLG0081-LCV1

Instrument: nt14.i
Operator: JGR
Column phase: ZB-5msi
Column diameter: 0.25



Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D

Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

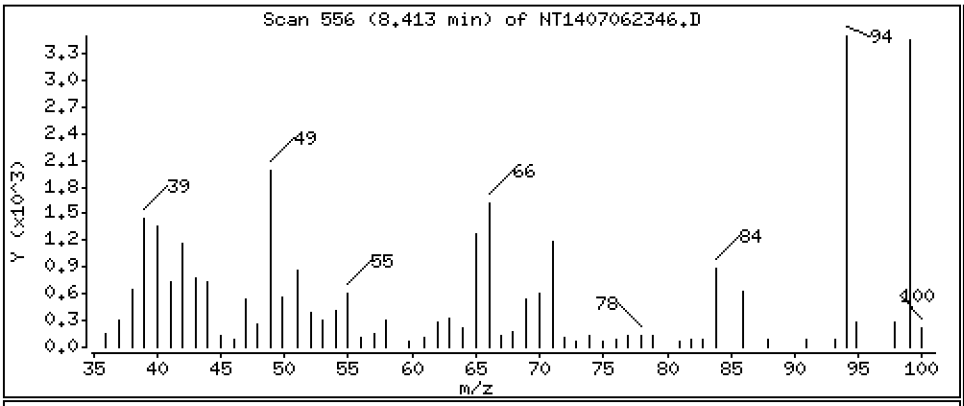
Operator: JGR

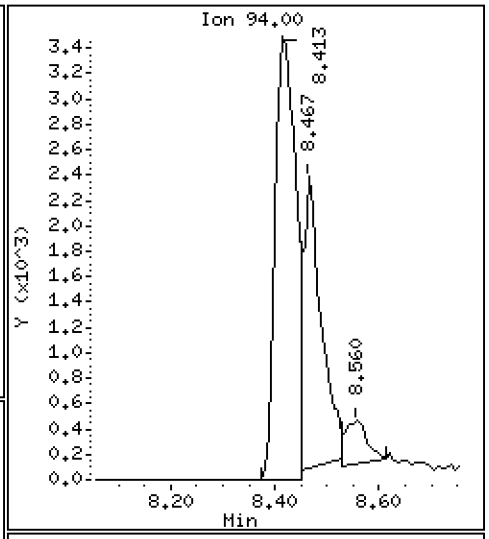
Column phase: ZB-5msi

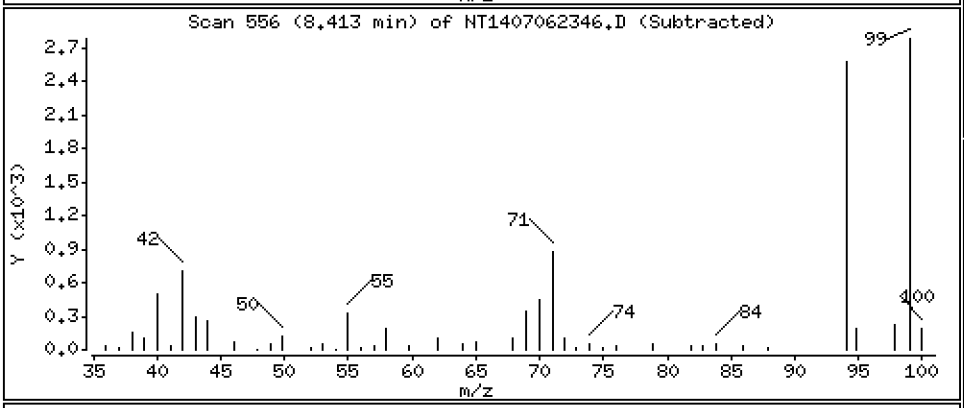
Column diameter: 0.25

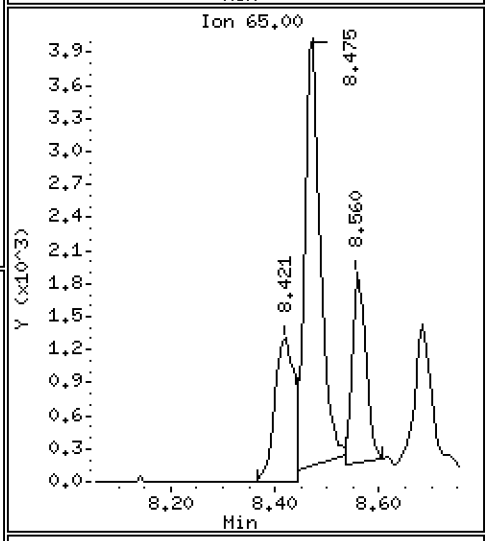
3 Phenol

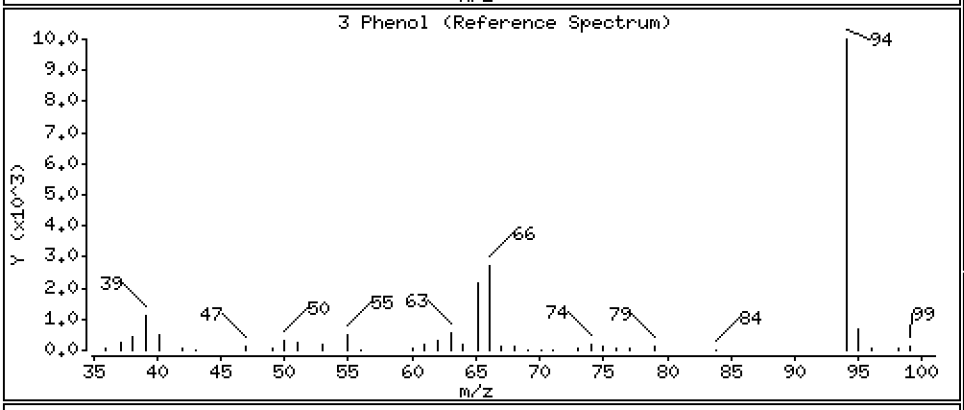
Concentration: 0.1175 ug/mL

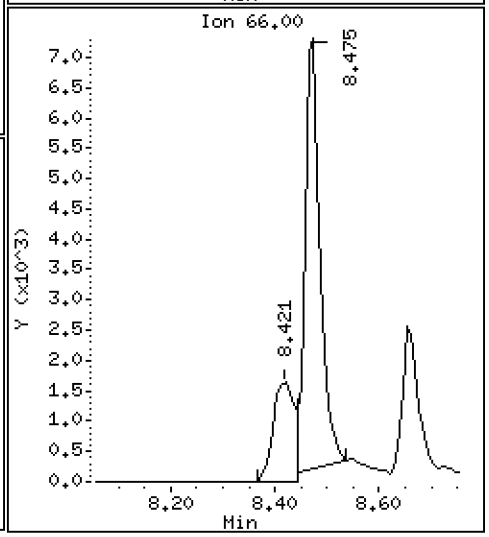


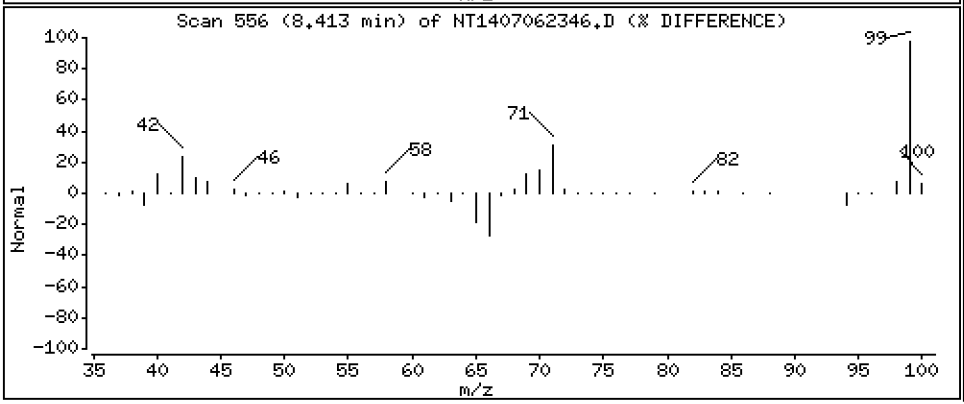












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D

Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

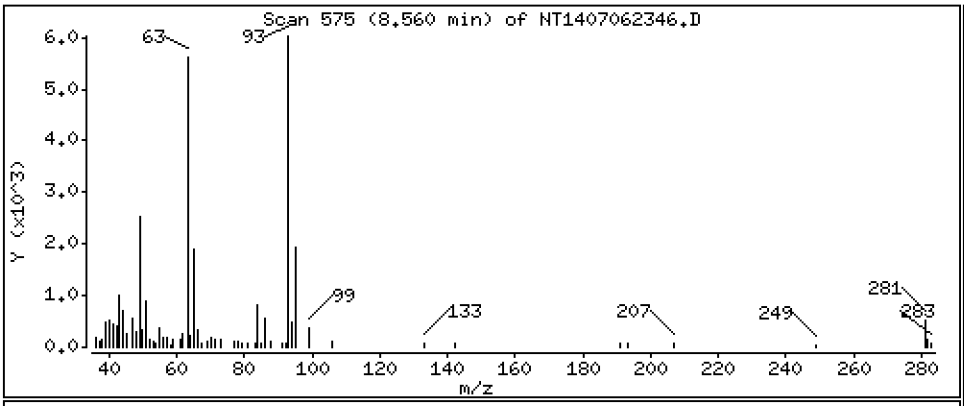
Operator: JGR

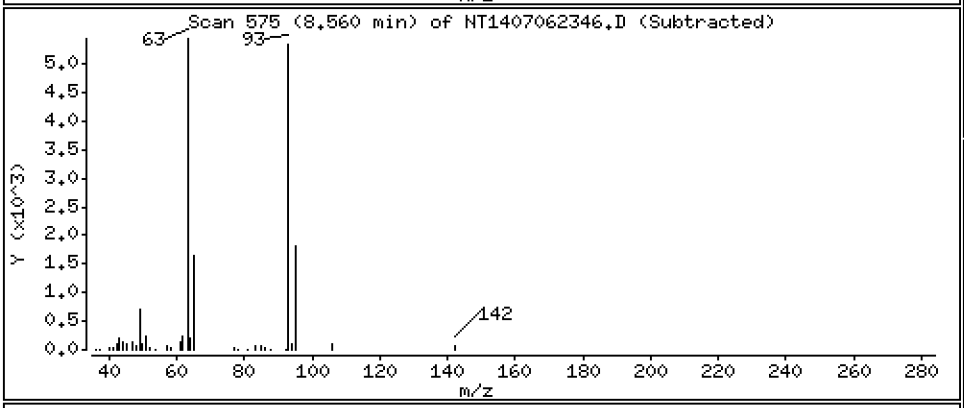
Column phase: ZB-5msi

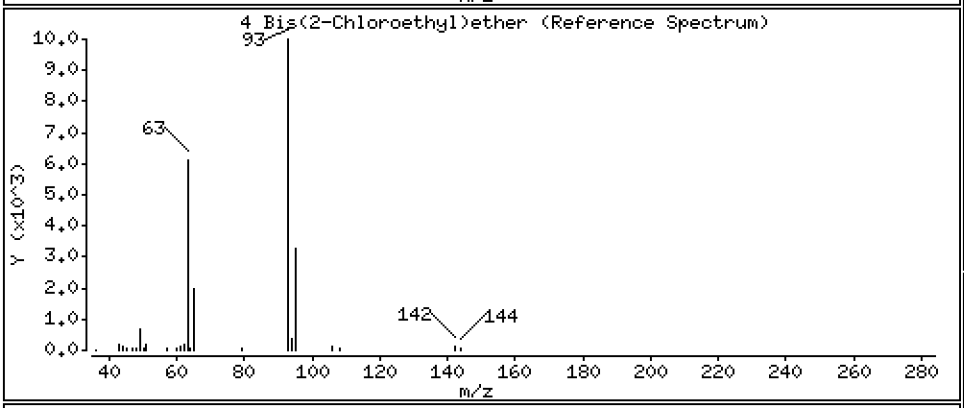
Column diameter: 0.25

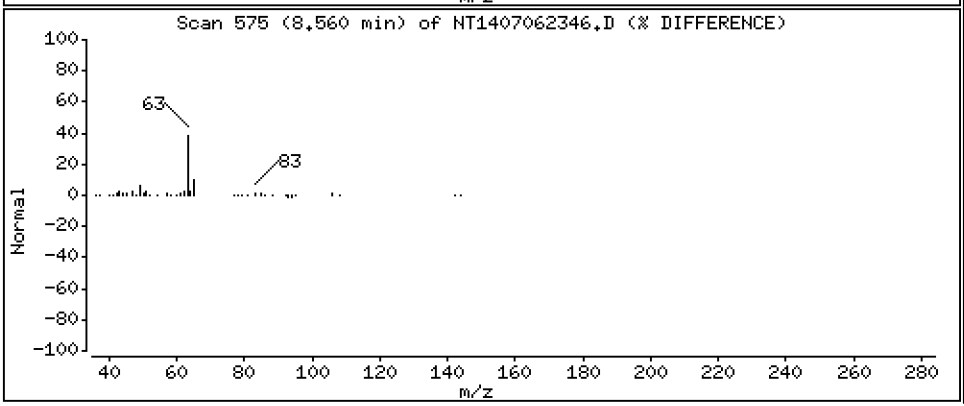
4 Bis(2-Chloroethyl)ether

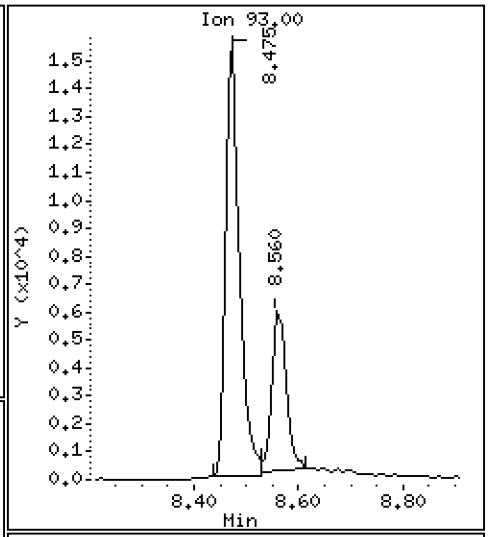
Concentration: 0.1808 ug/mL

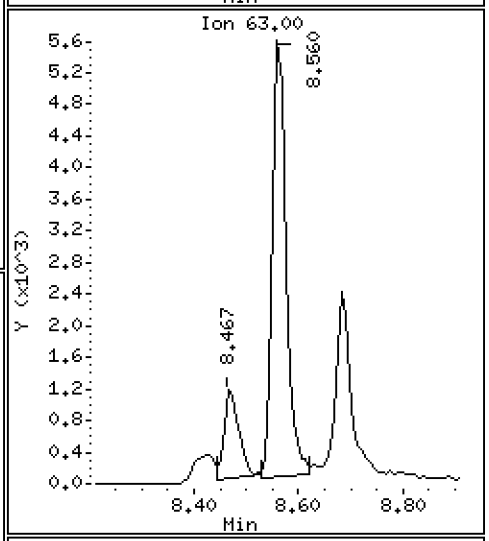


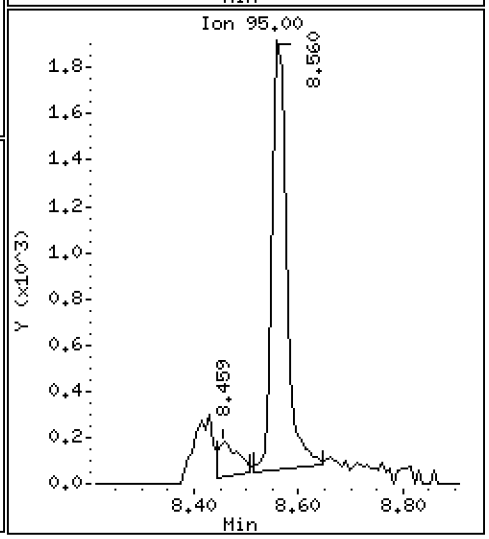












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D

Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

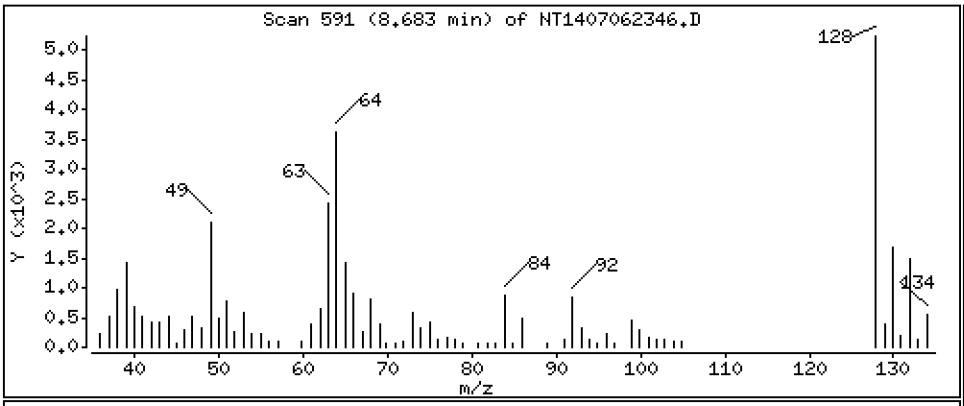
Operator: JGR

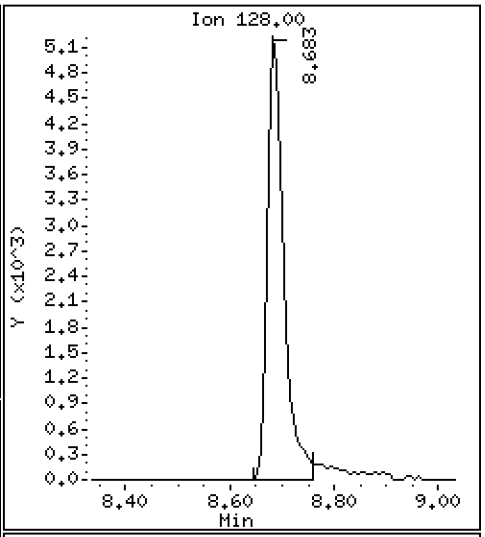
Column phase: ZB-5msi

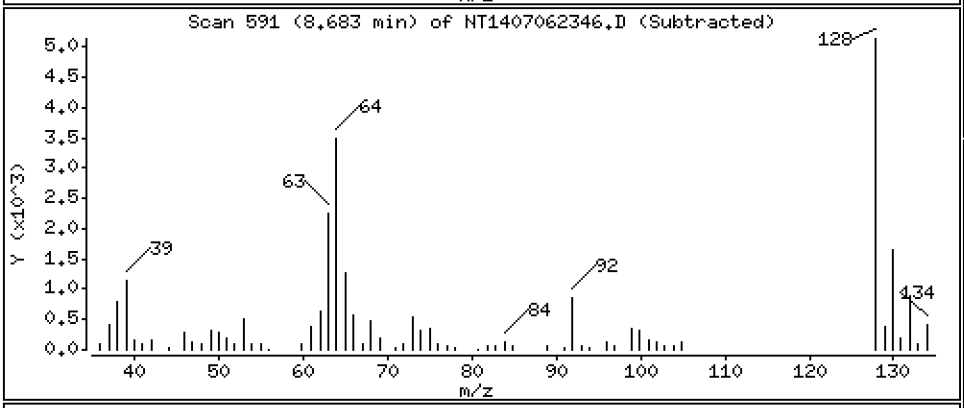
Column diameter: 0.25

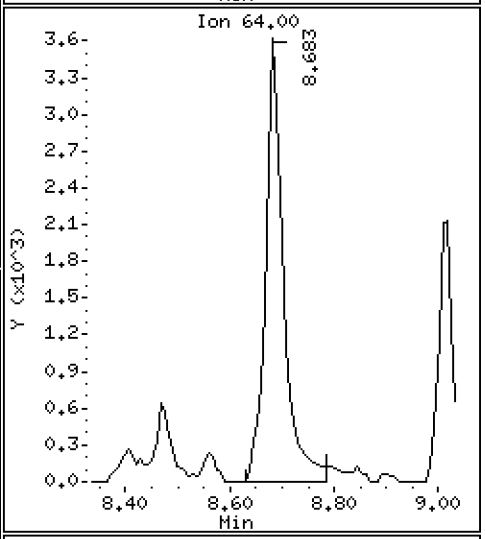
6 2-Chlorophenol

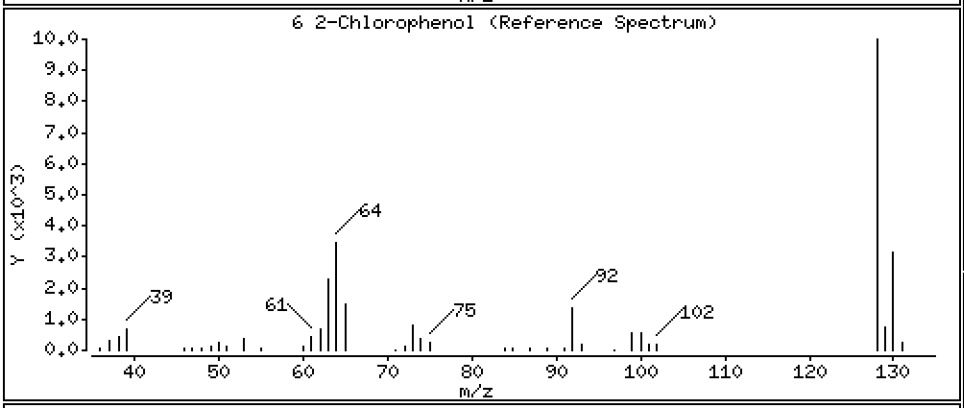
Concentration: 0.1857 ug/mL

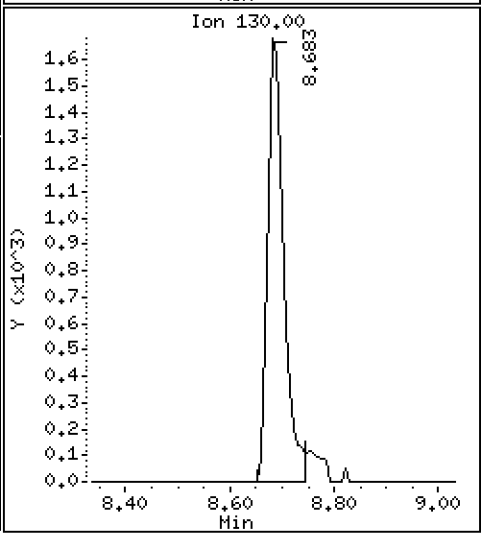


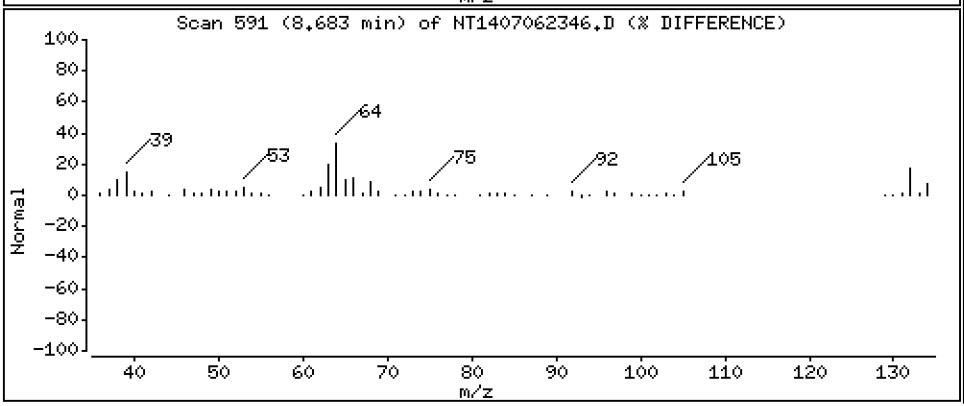












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

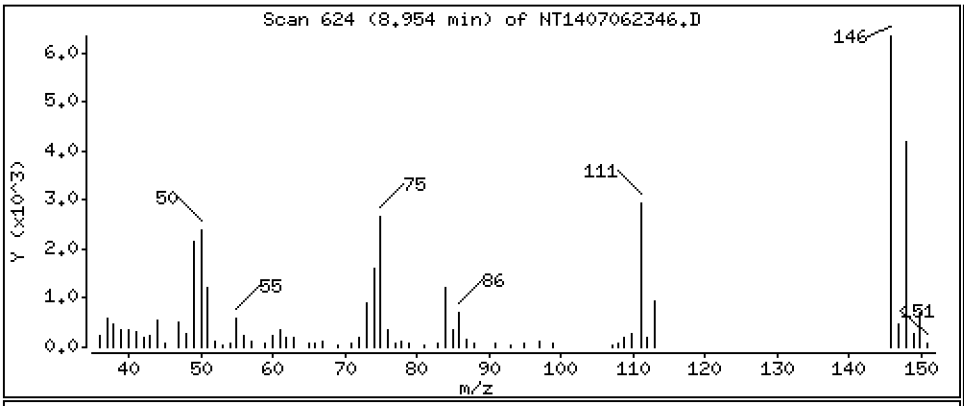
Operator: JGR

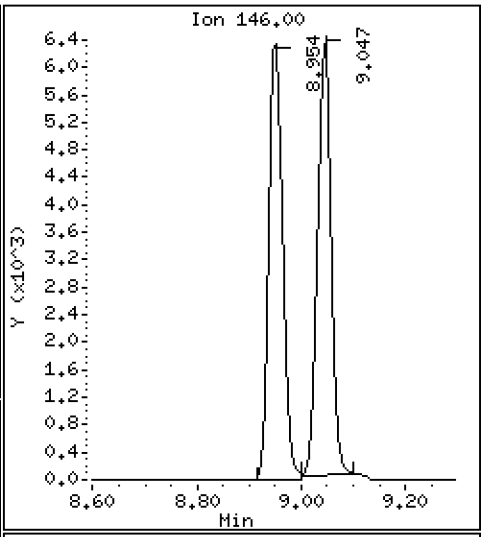
Column phase: ZB-5msi

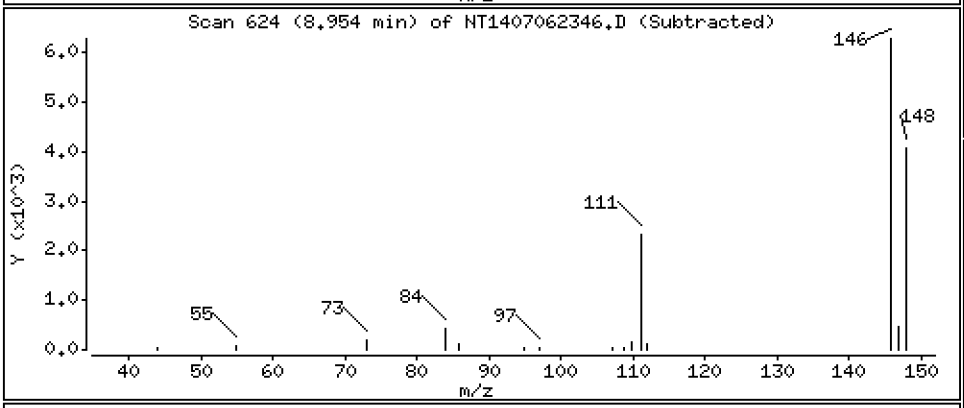
Column diameter: 0.25

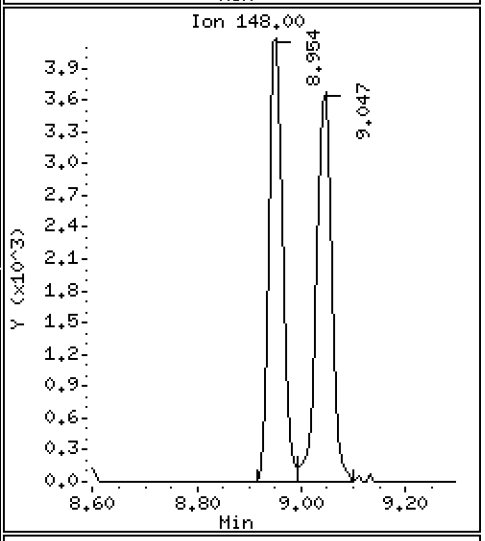
7 1,3-Dichlorobenzene

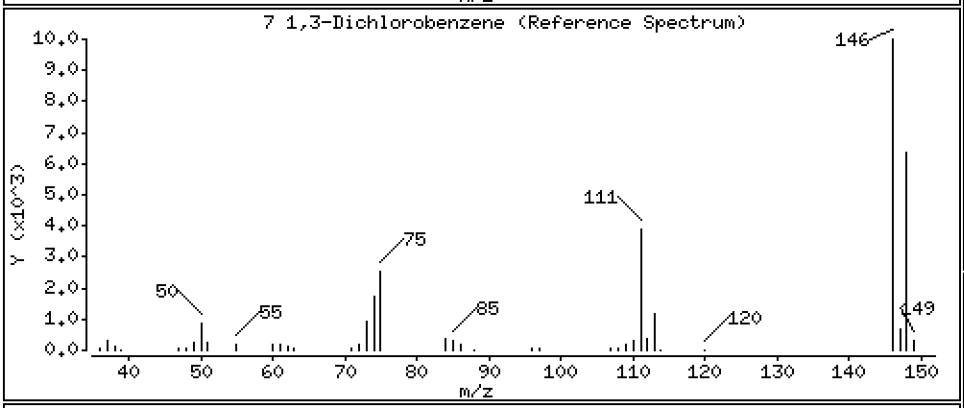
Concentration: 0.2117 ug/mL

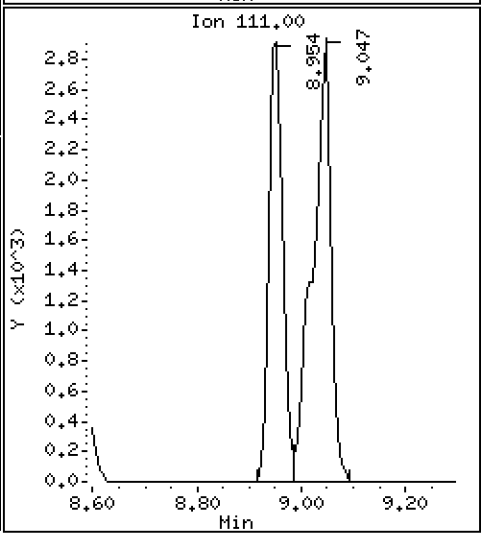


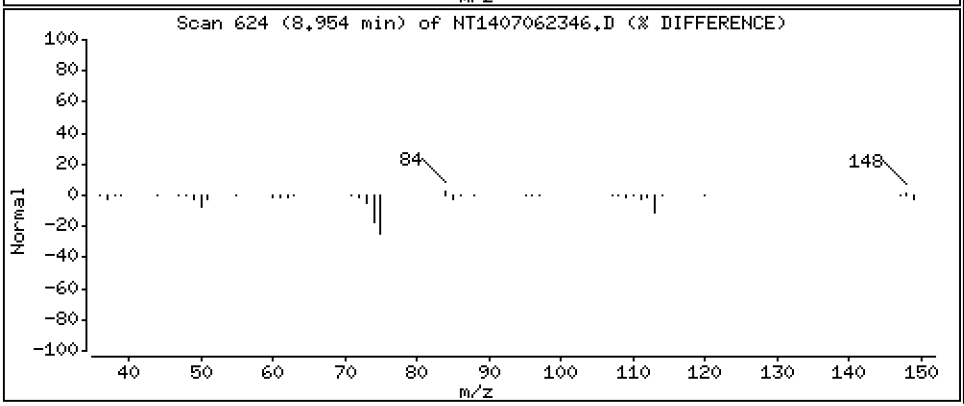












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D

Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

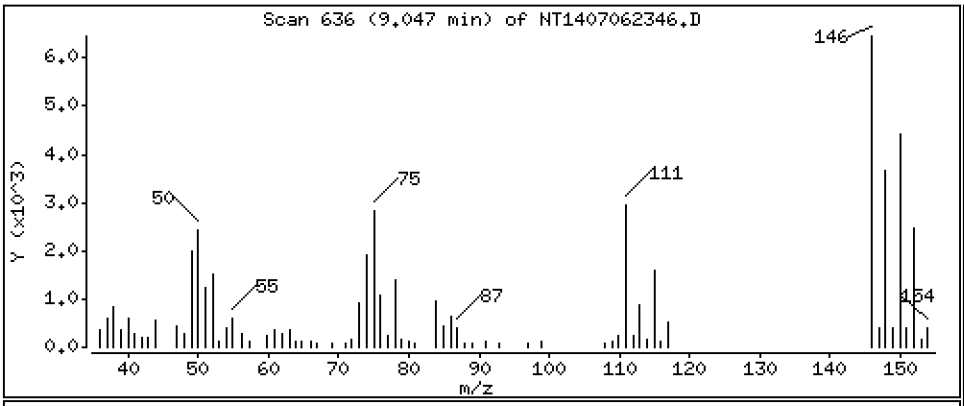
Operator: JGR

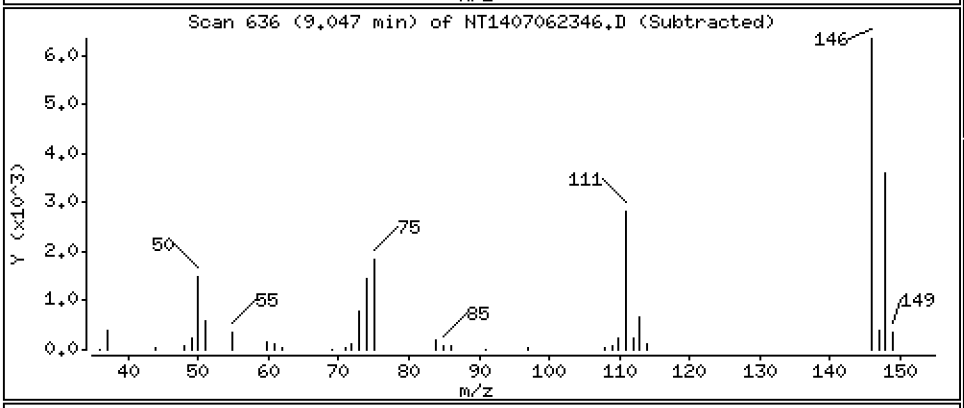
Column phase: ZB-5msi

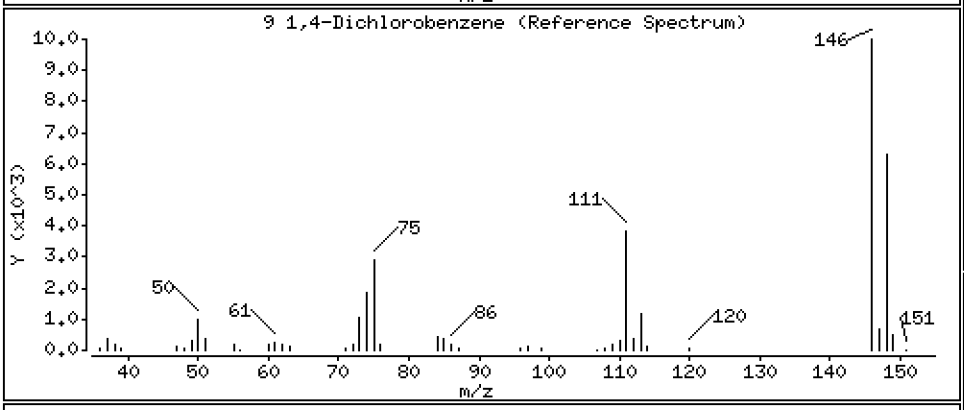
Column diameter: 0.25

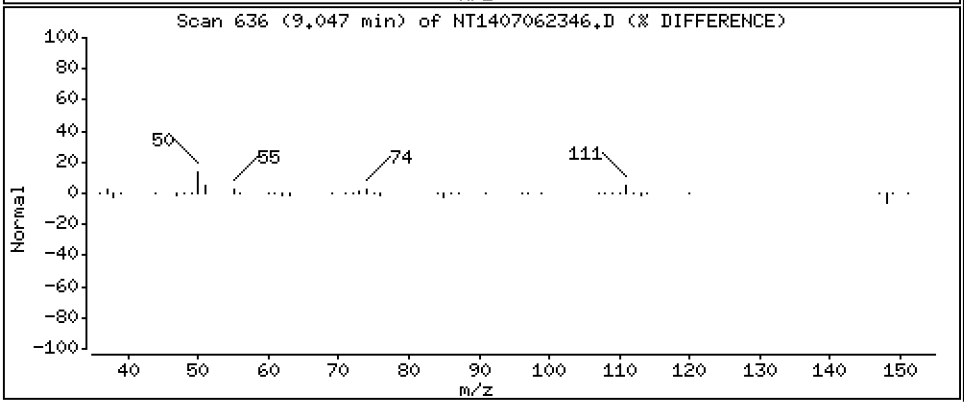
9 1,4-Dichlorobenzene

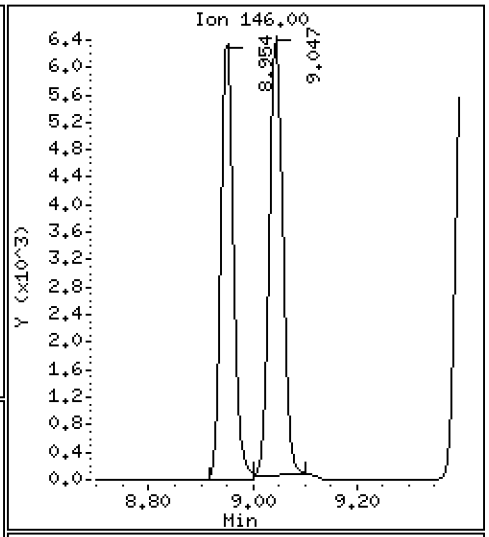
Concentration: 0.2087 ug/mL

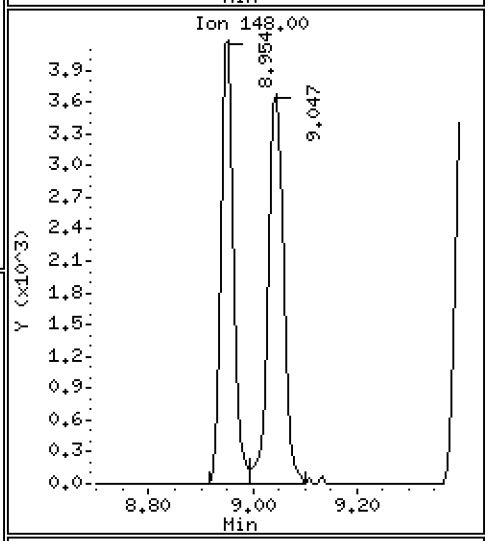


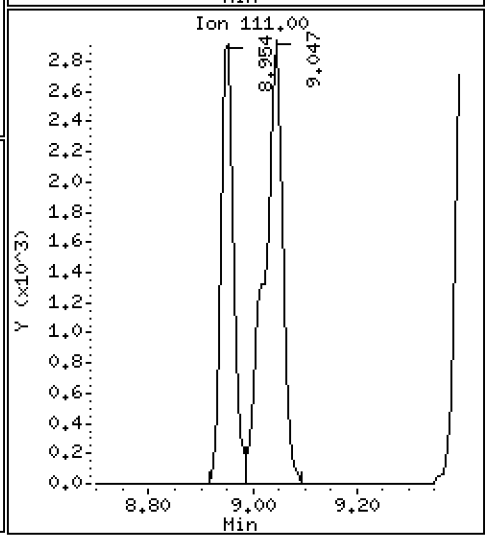












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D

Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

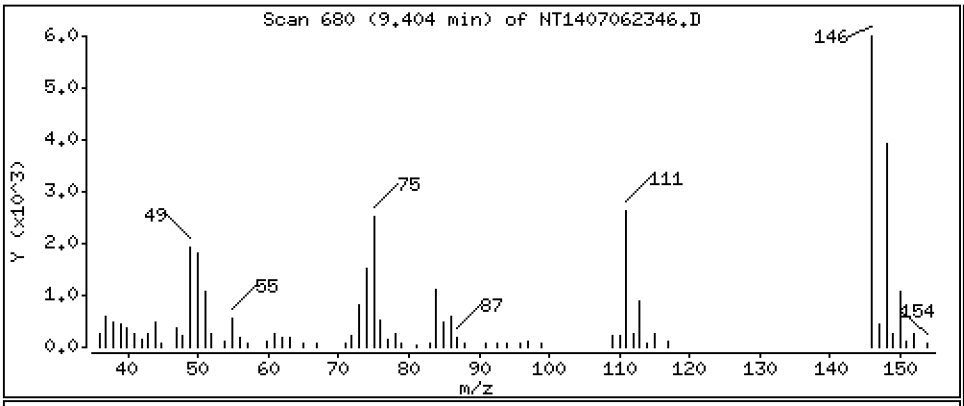
Operator: JGR

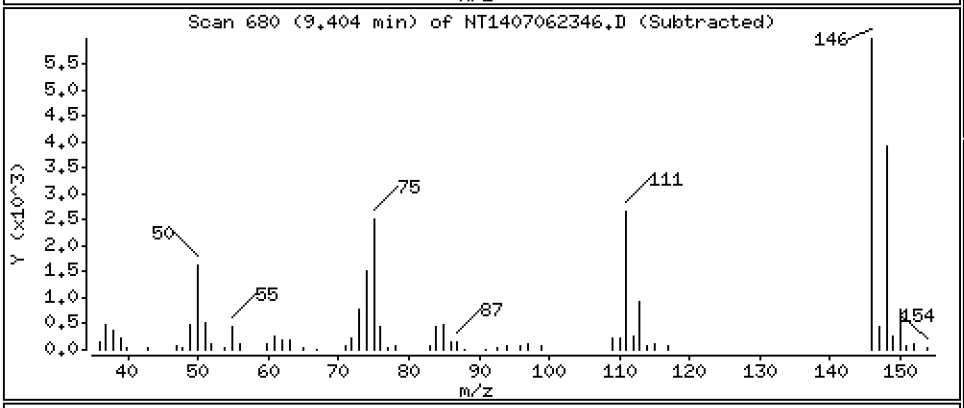
Column phase: ZB-5msi

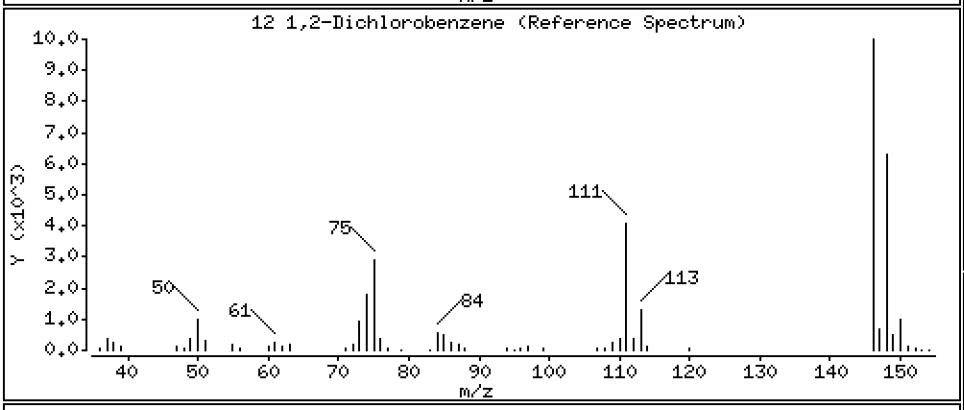
Column diameter: 0.25

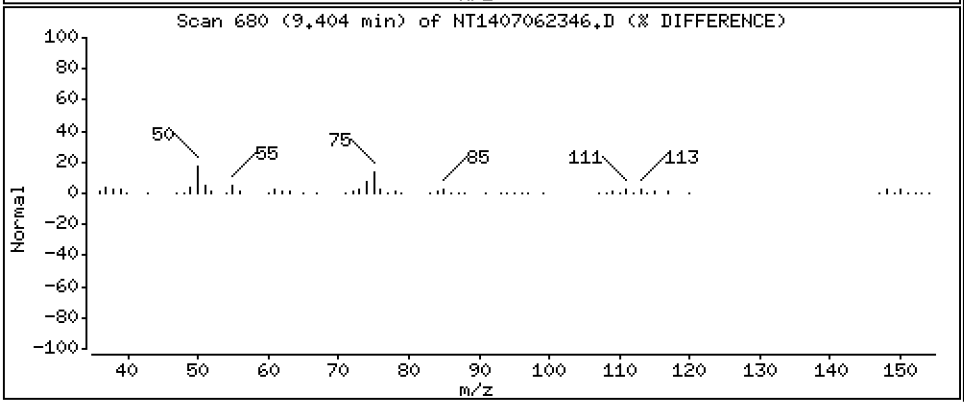
12 1,2-Dichlorobenzene

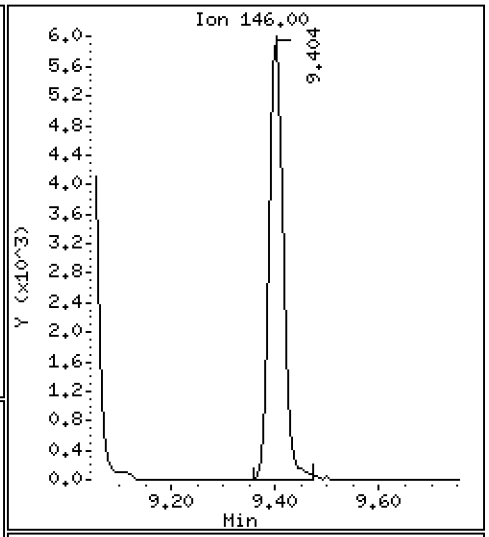
Concentration: 0.2133 ug/mL

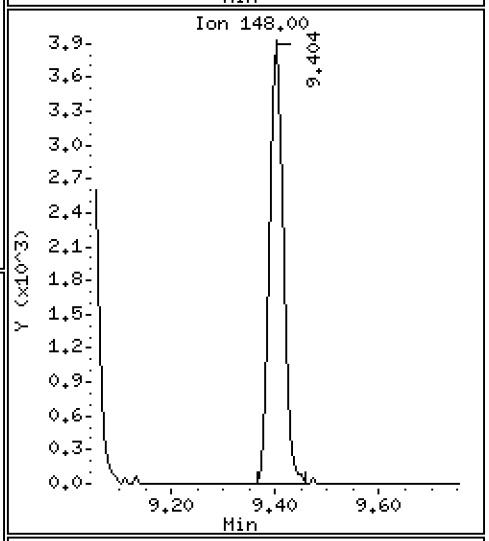


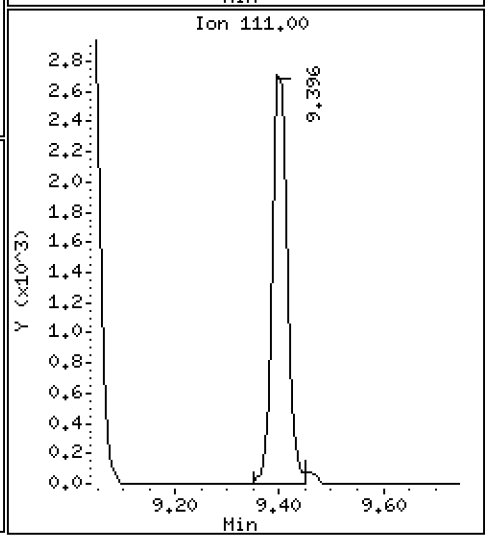












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

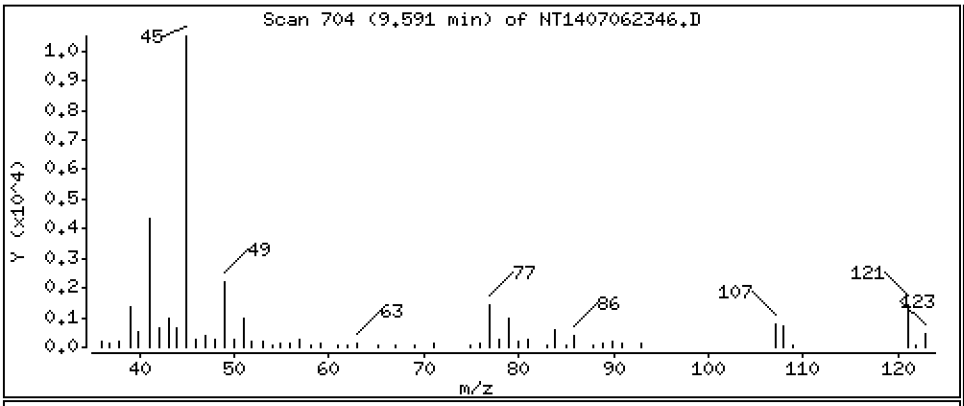
Operator: JGR

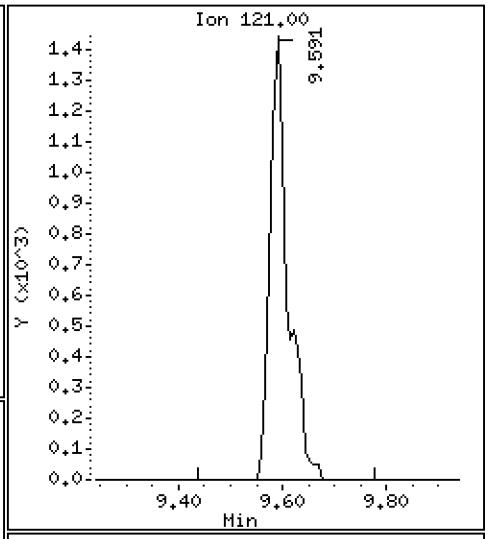
Column phase: ZB-5msi

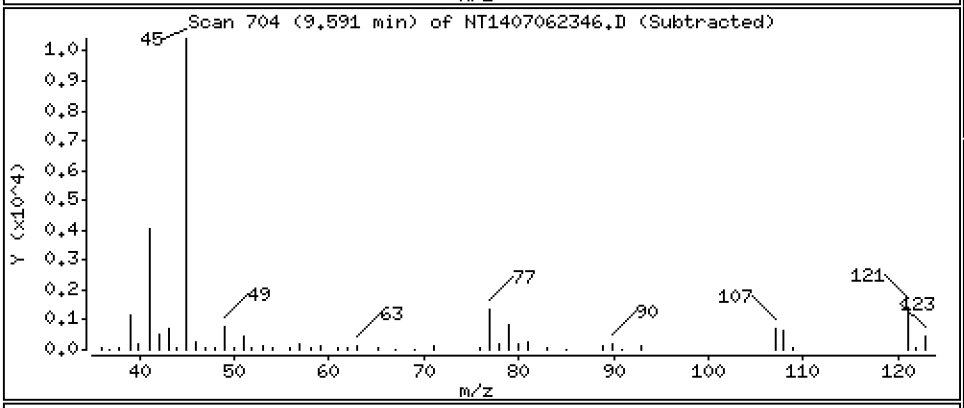
Column diameter: 0.25

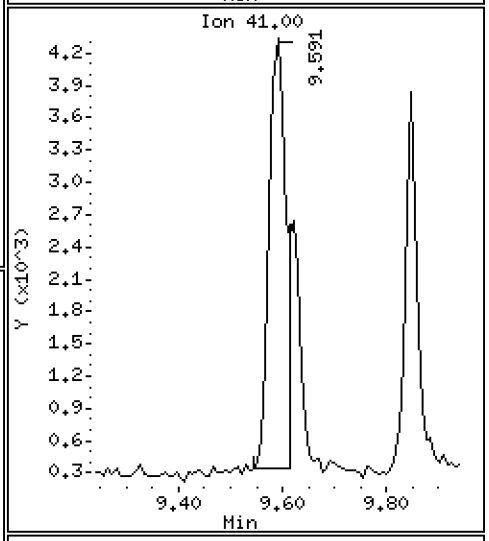
14 2,2'-oxybis(1-Chloropropane)

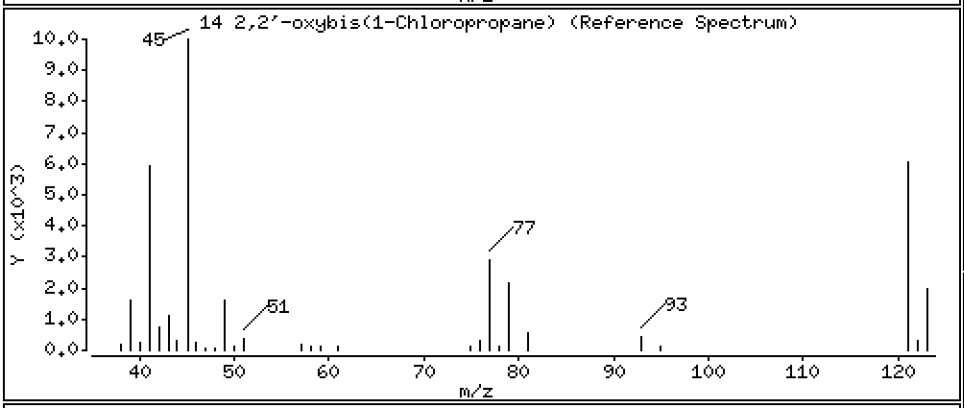
Concentration: 0.2153 ug/mL

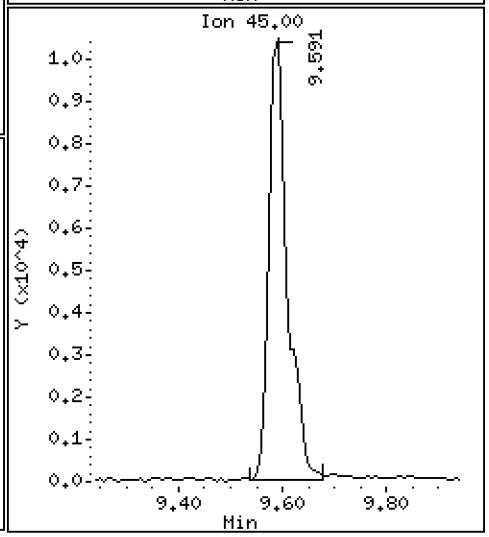


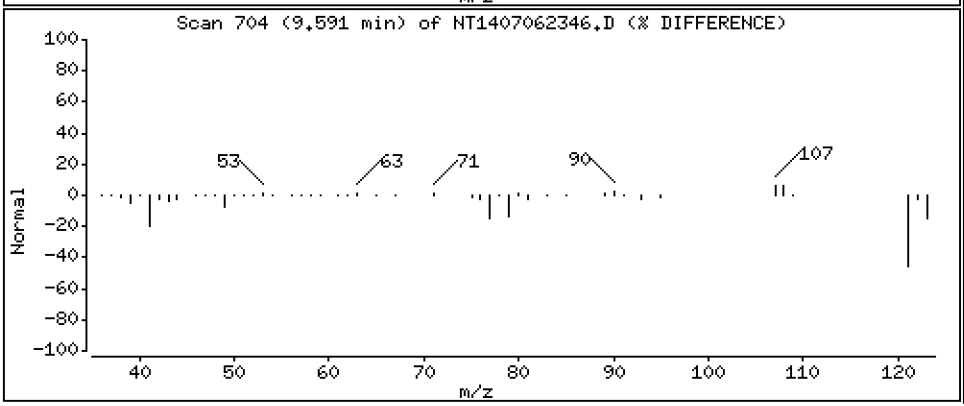












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

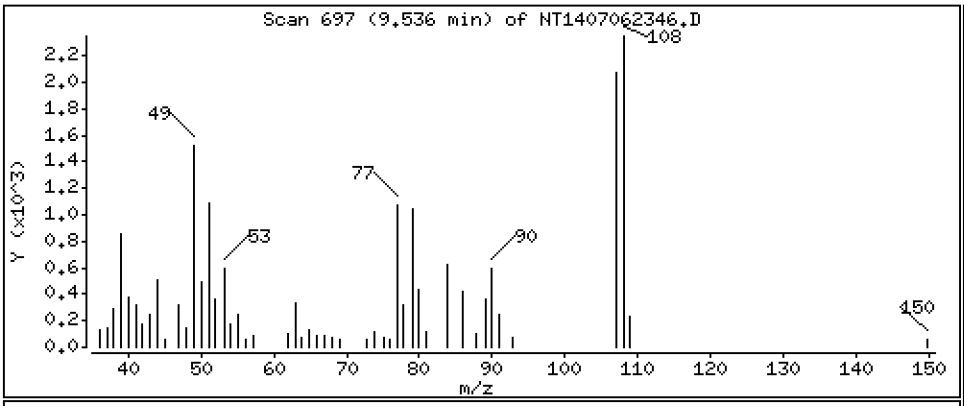
Operator: JGR

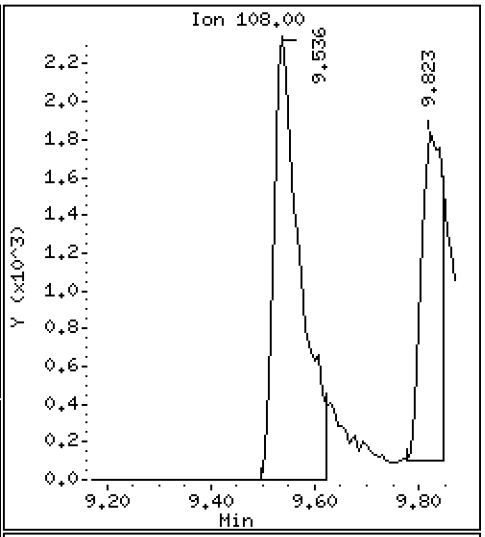
Column phase: ZB-5msi

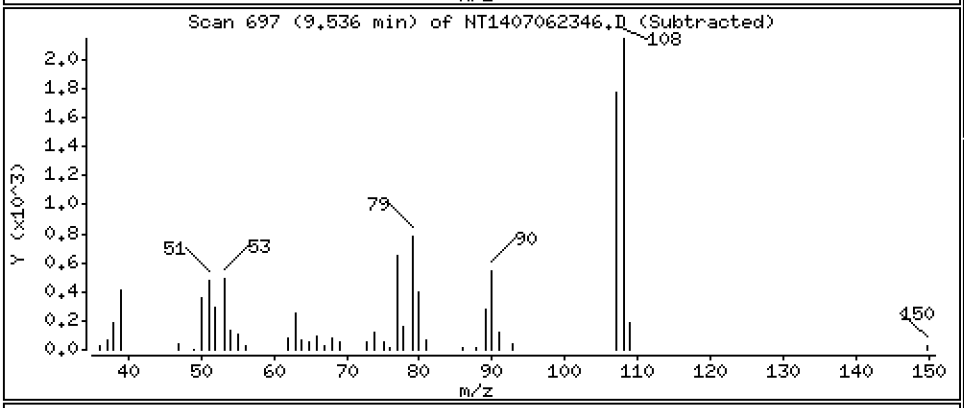
Column diameter: 0.25

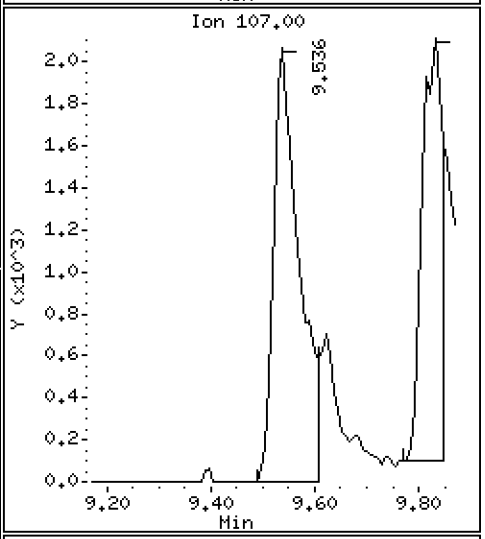
13 2-Methylphenol

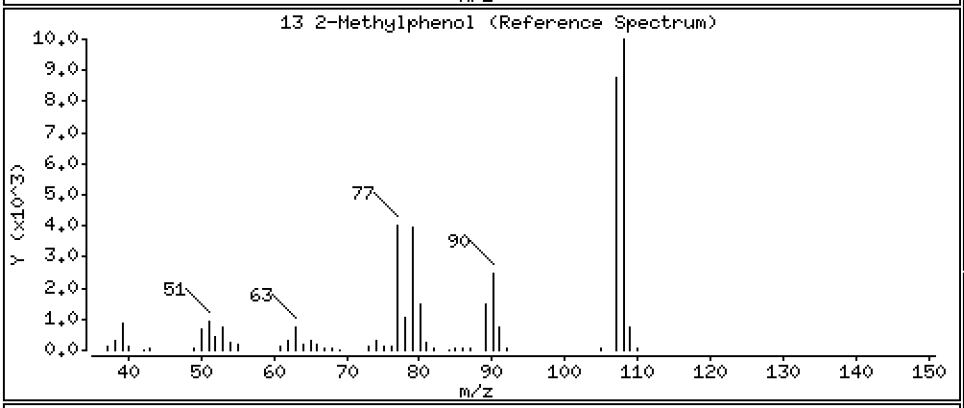
Concentration: 0.1600 ug/mL

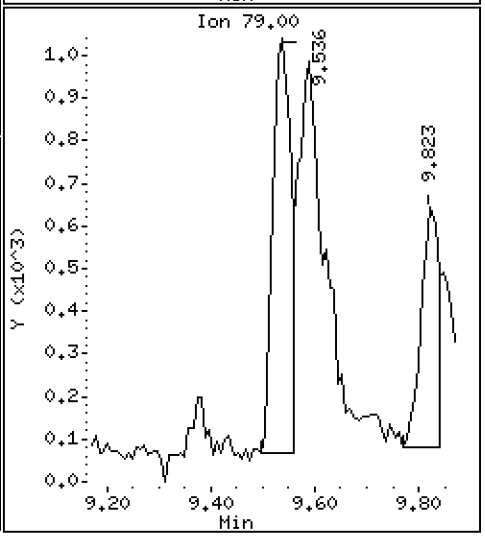


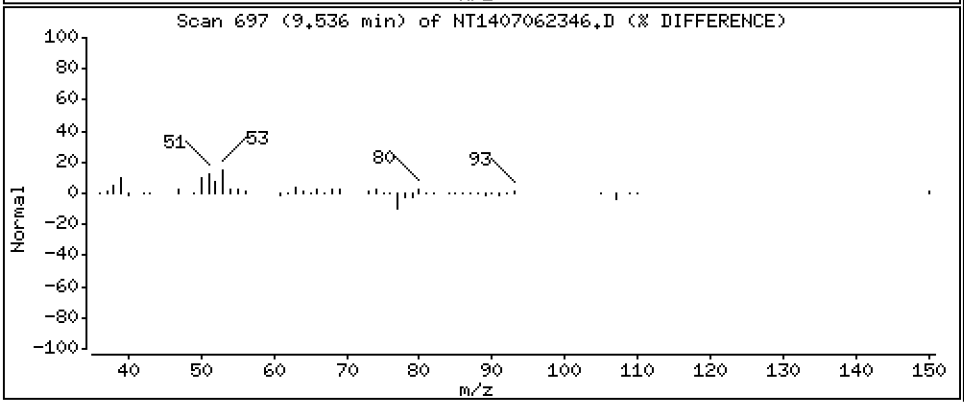












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

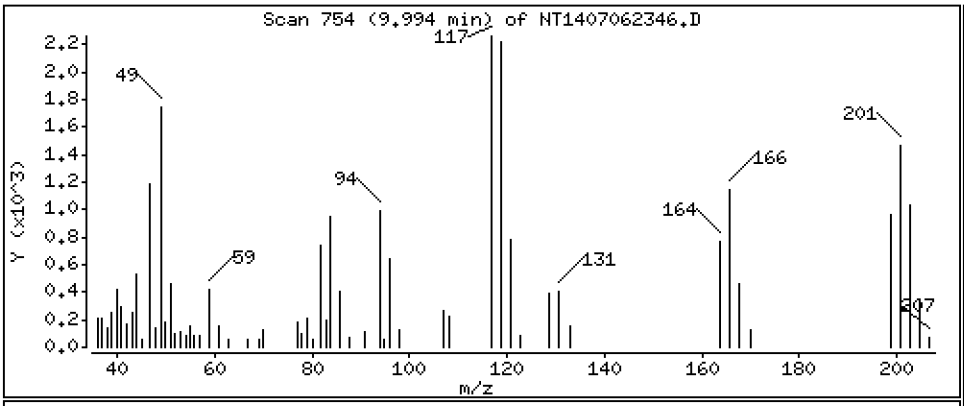
Operator: JGR

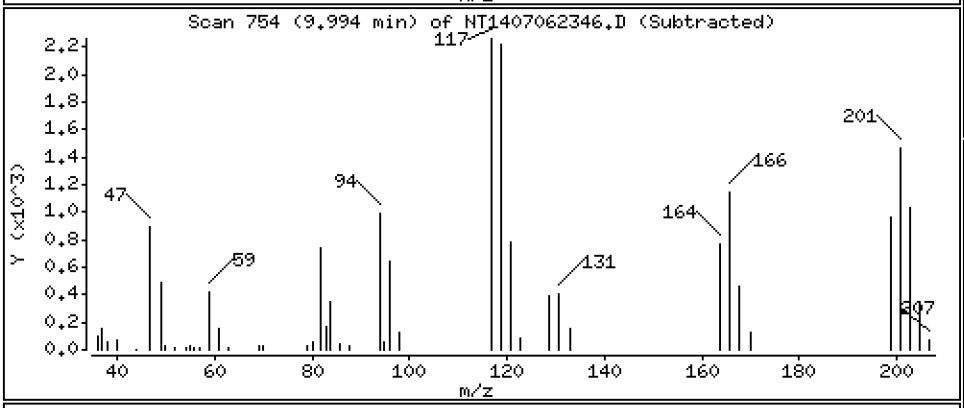
Column phase: ZB-5msi

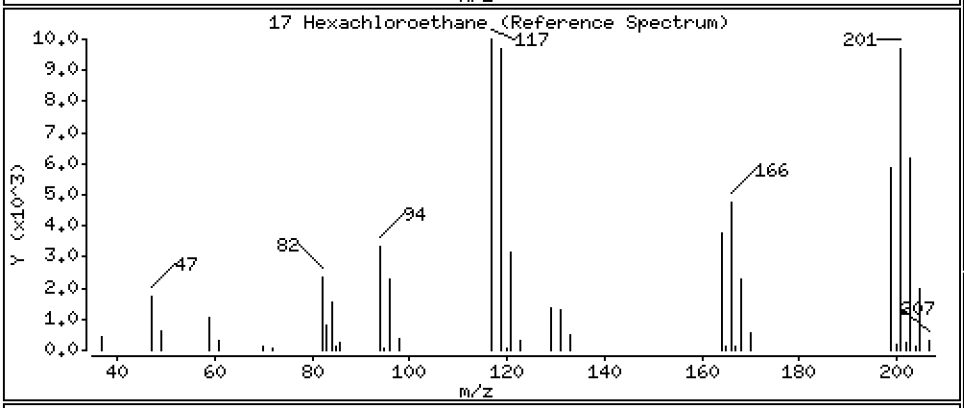
Column diameter: 0.25

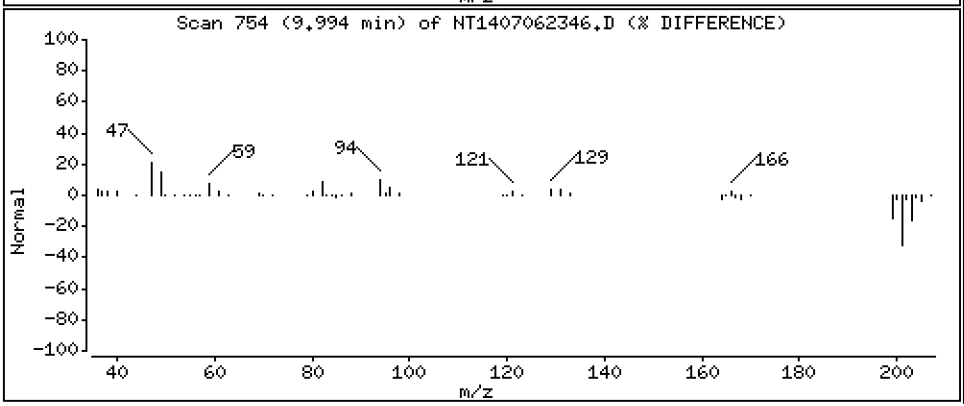
17 Hexachloroethane

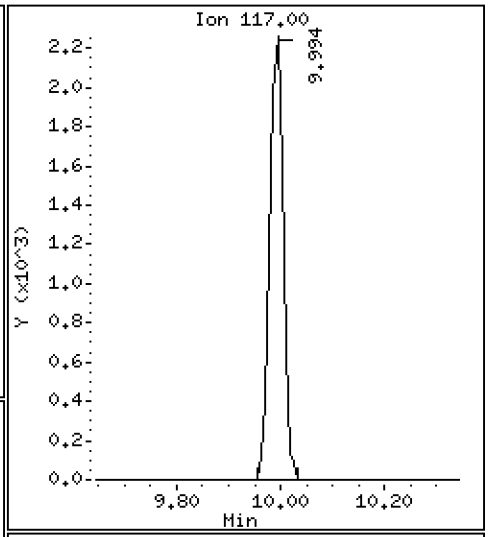
Concentration: 0.1611 ug/mL

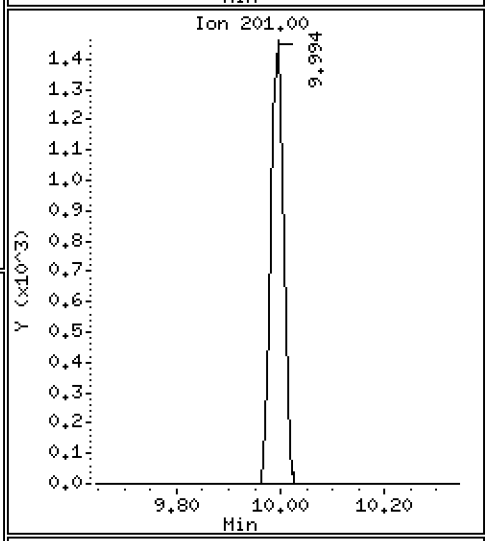


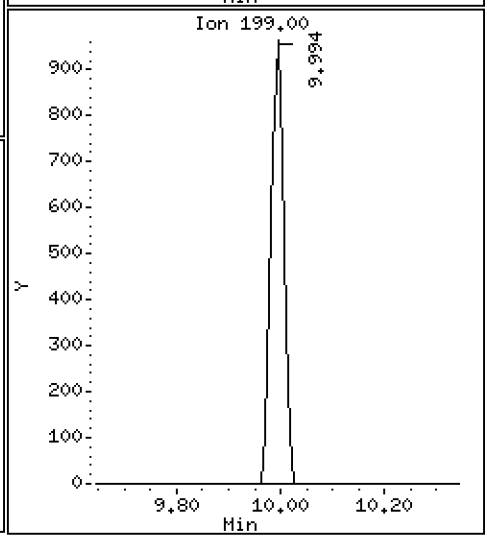












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

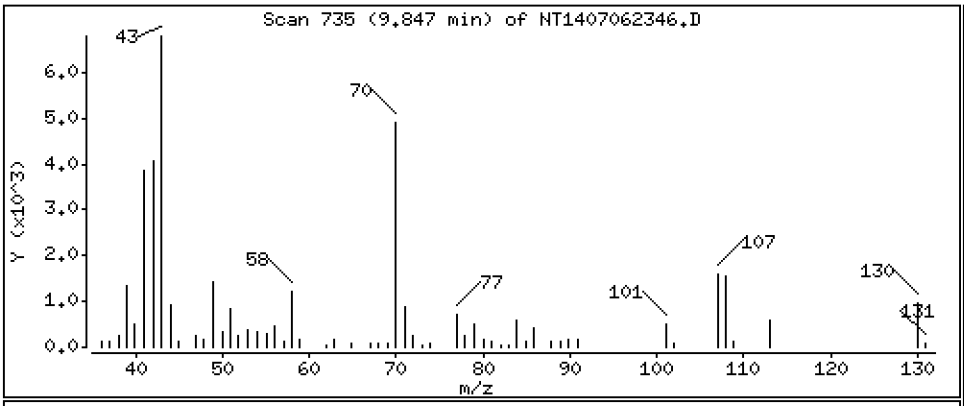
Operator: JGR

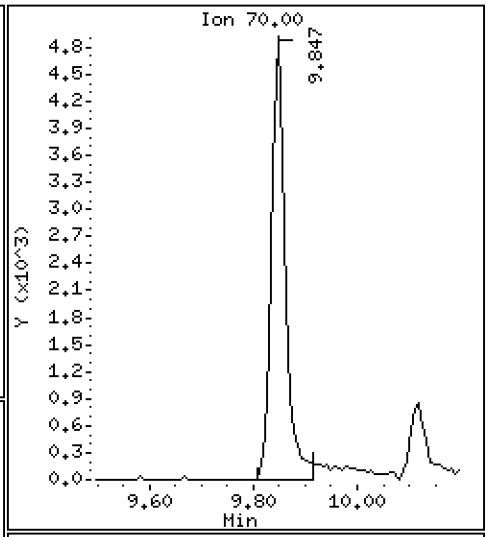
Column phase: ZB-5msi

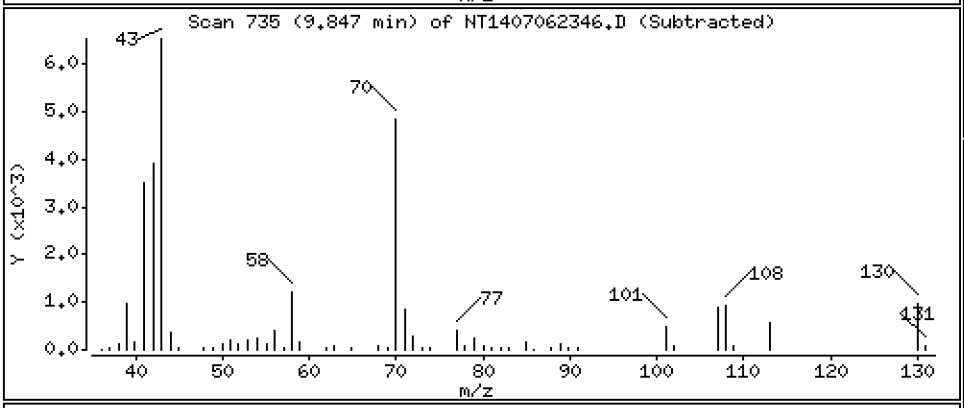
Column diameter: 0.25

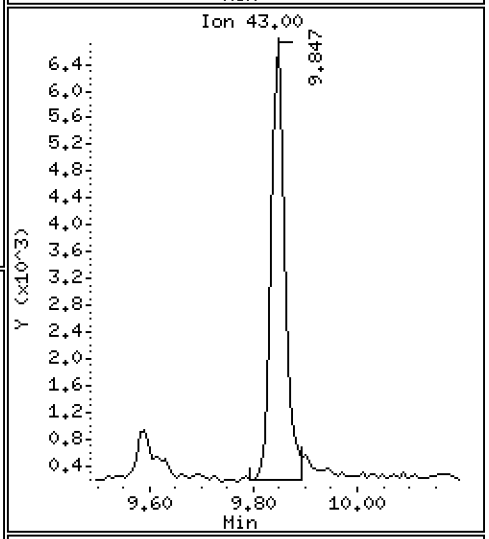
16 N-Nitroso-di-n-propylamine

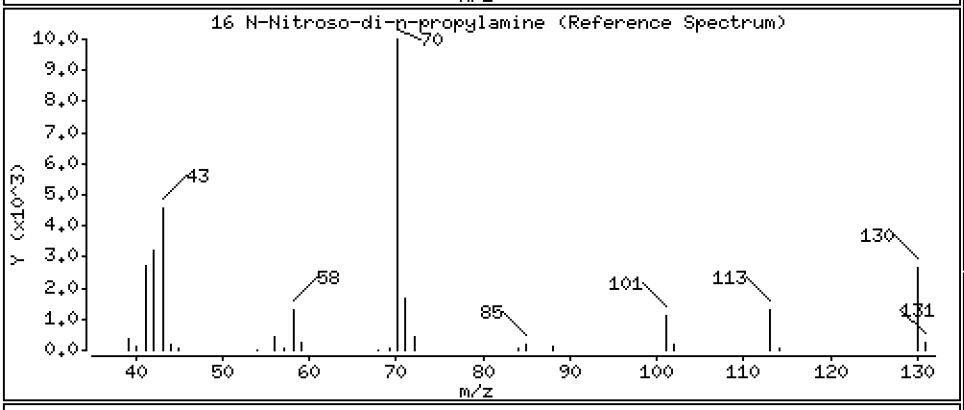
Concentration: 0.1862 ug/mL

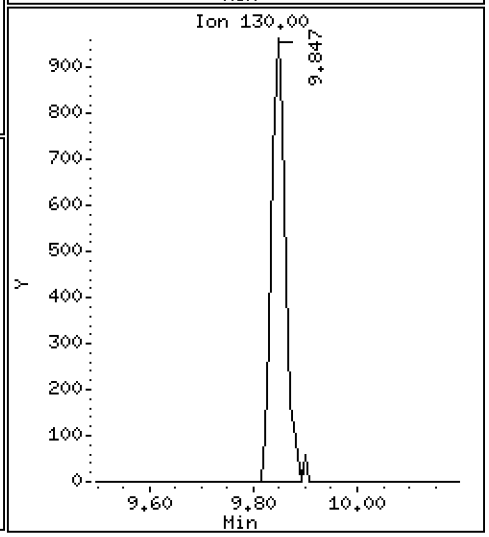


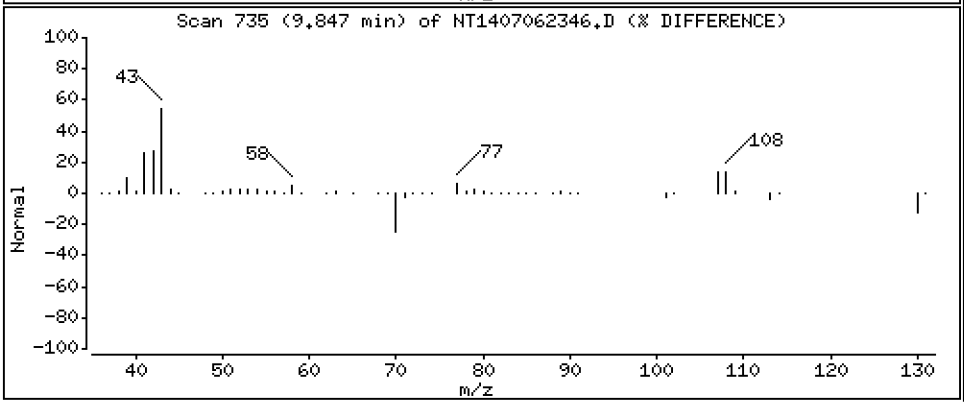












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

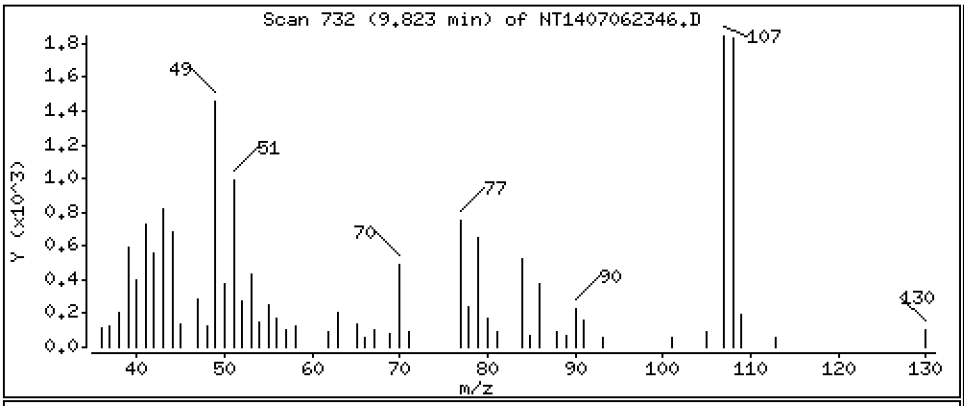
Operator: JGR

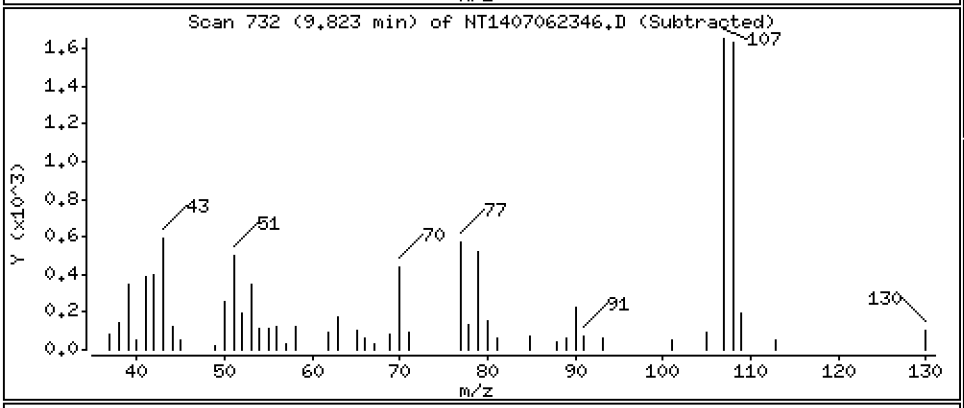
Column phase: ZB-5msi

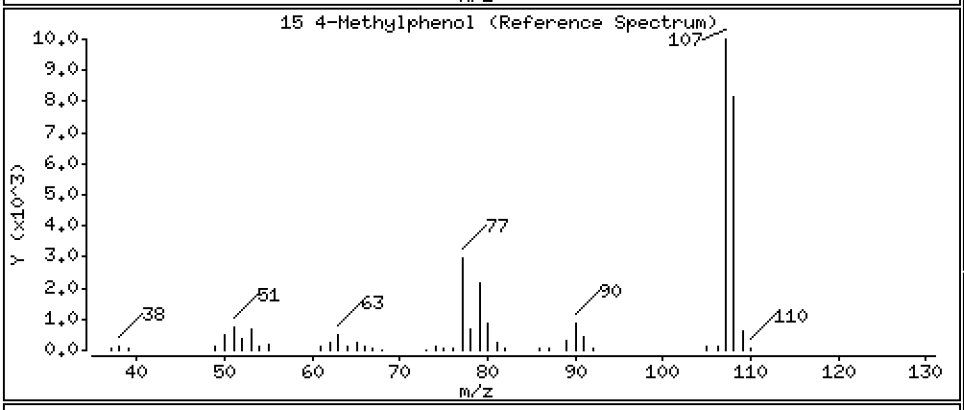
Column diameter: 0.25

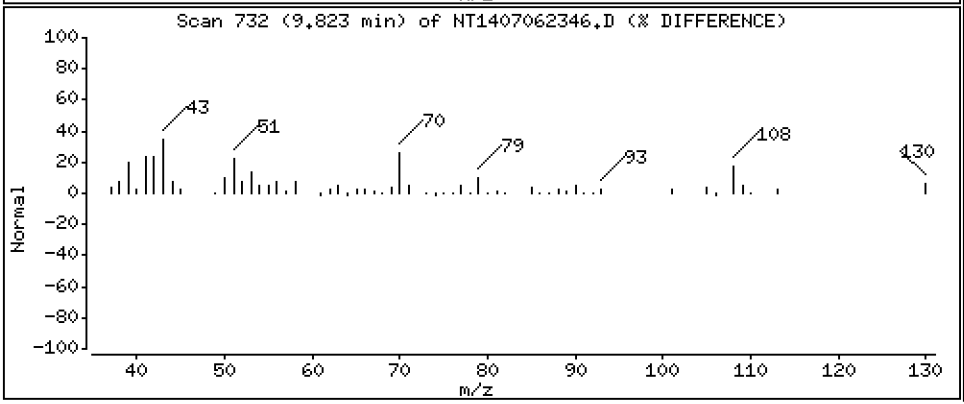
15 4-Methylphenol

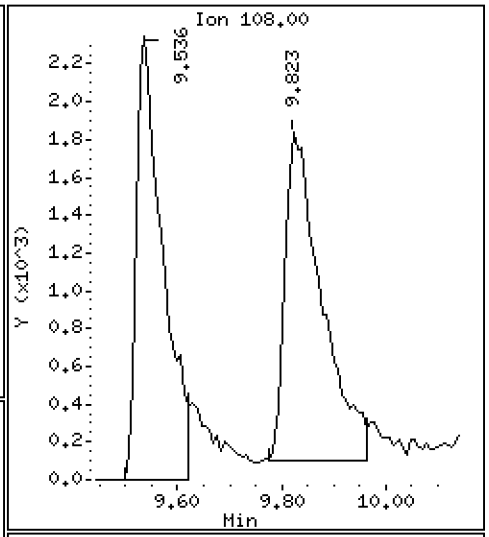
Concentration: 0.1507 ug/mL

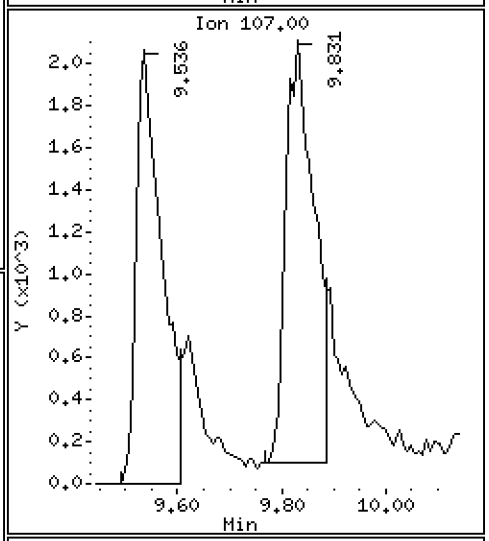


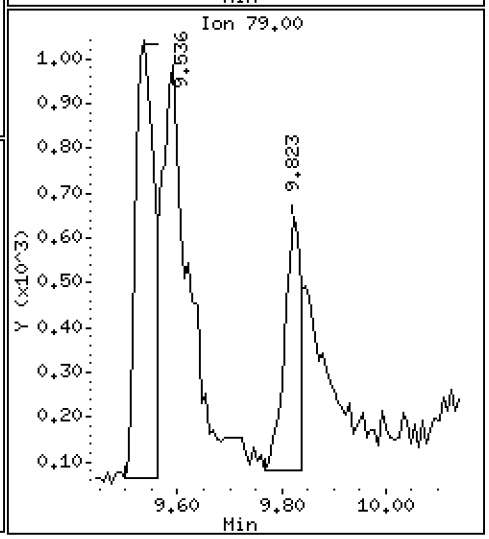












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

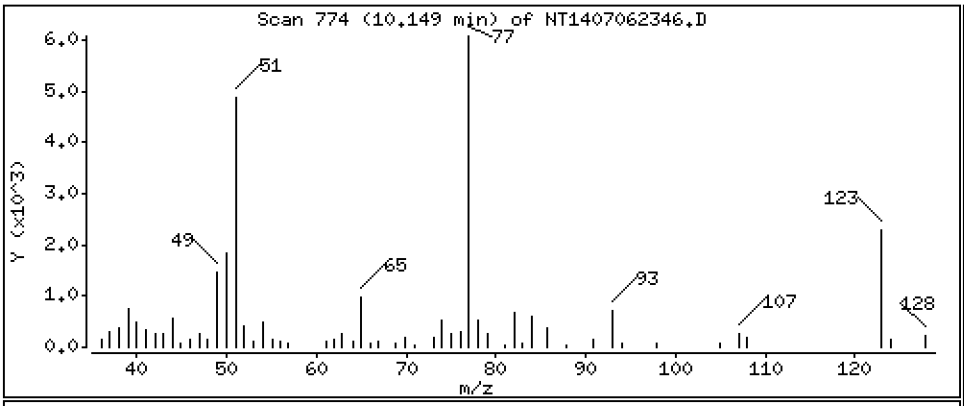
Operator: JGR

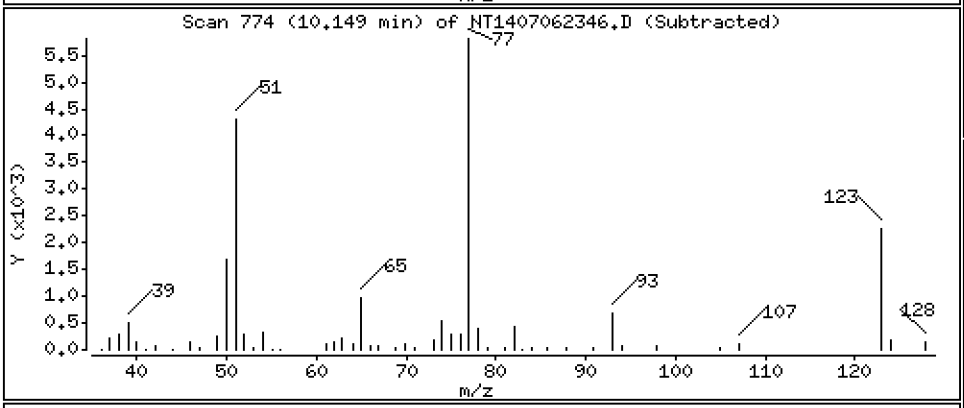
Column phase: ZB-5msi

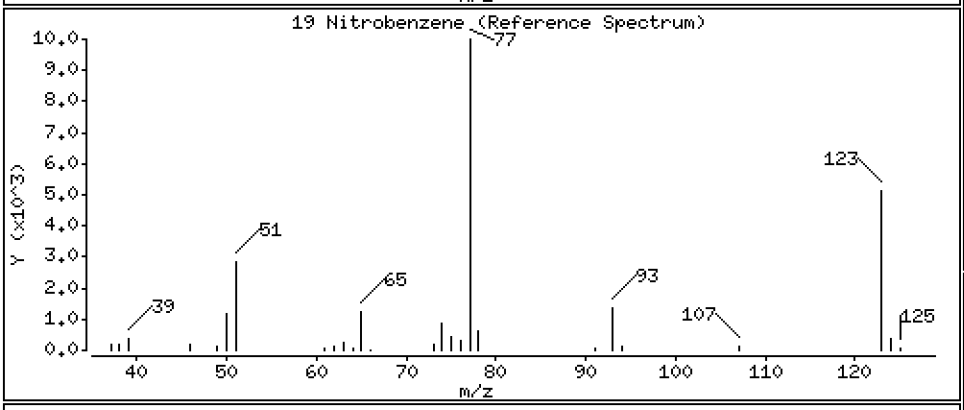
Column diameter: 0.25

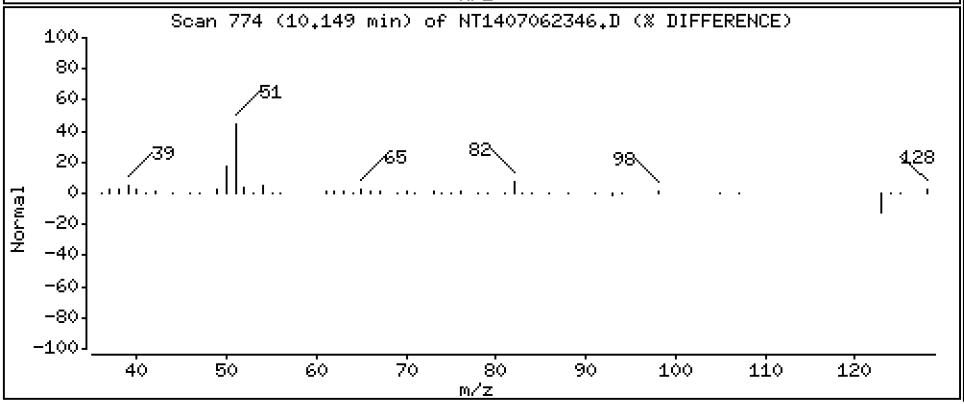
19 Nitrobenzene

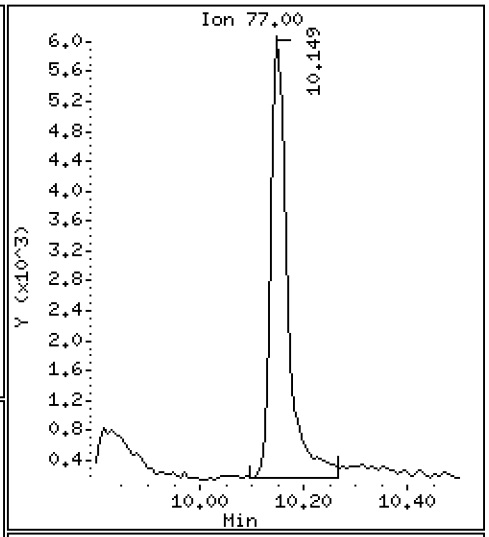
Concentration: 0.1906 ug/mL

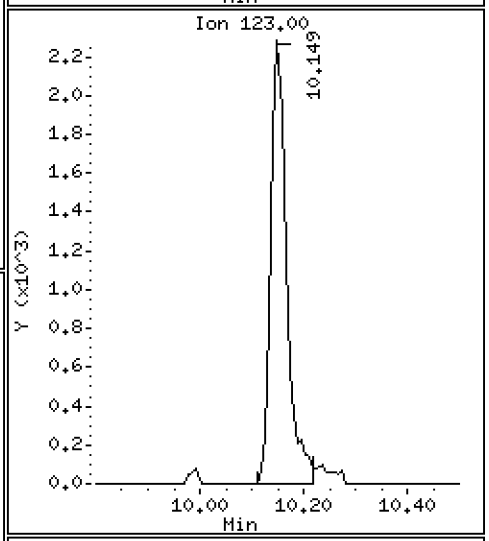


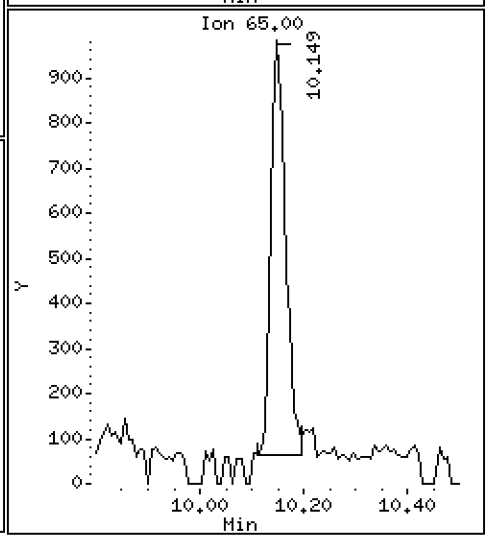












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

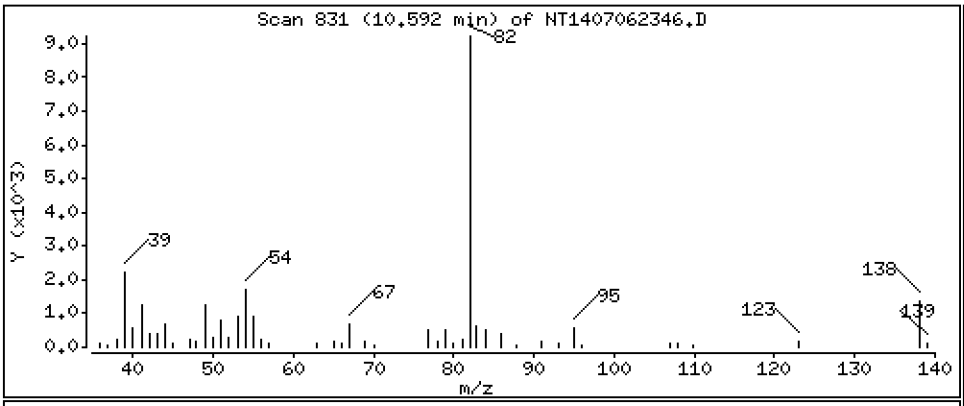
Operator: JGR

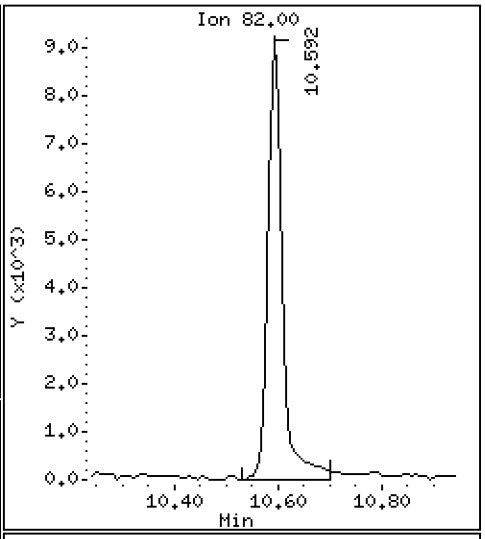
Column phase: ZB-5msi

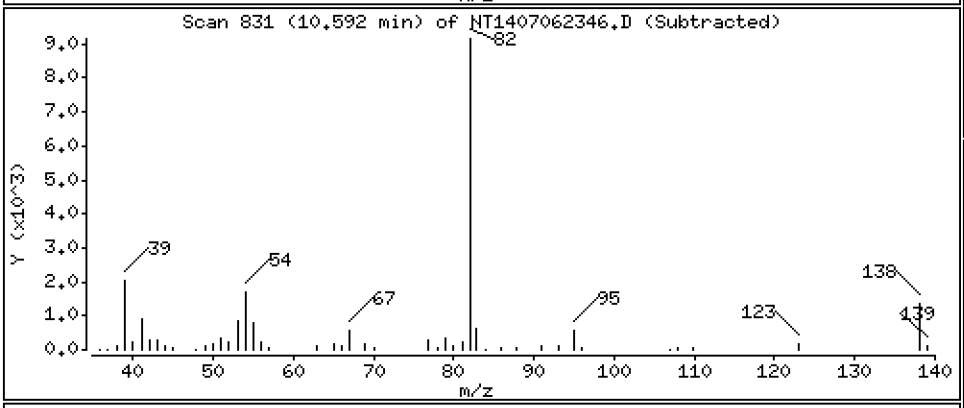
Column diameter: 0.25

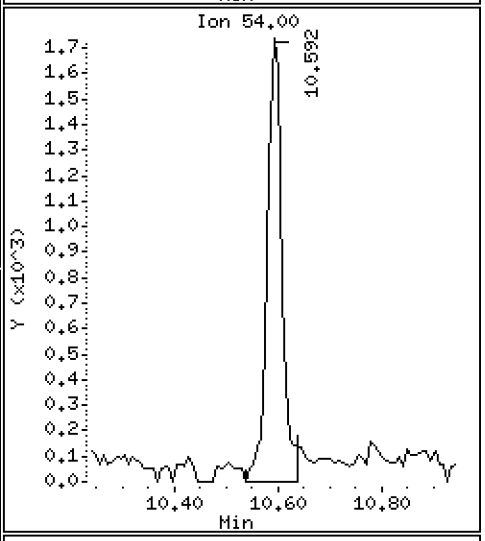
20 Isophorone

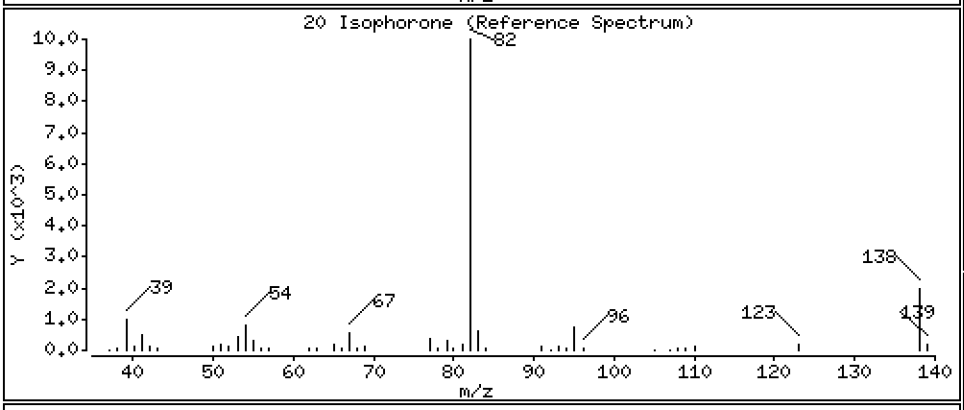
Concentration: 0.2006 ug/mL

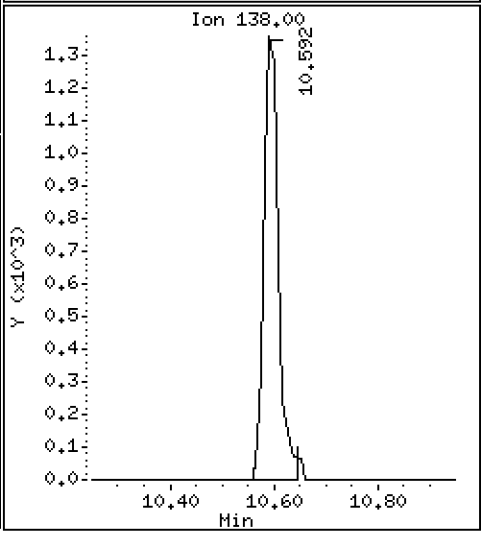


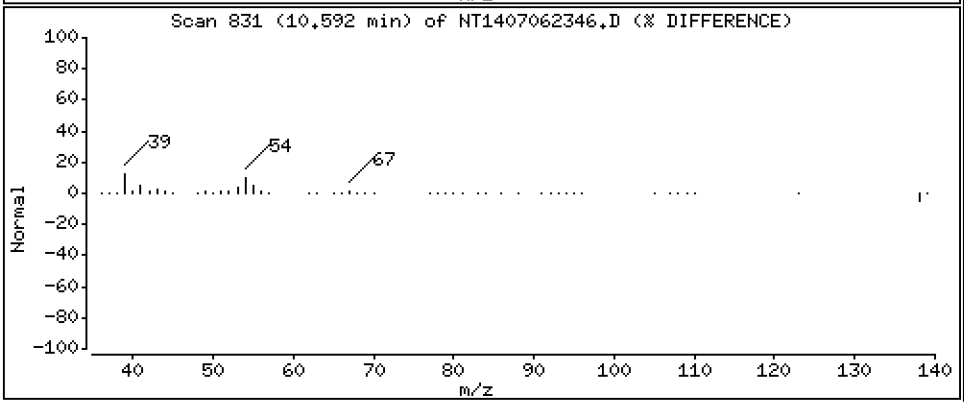












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

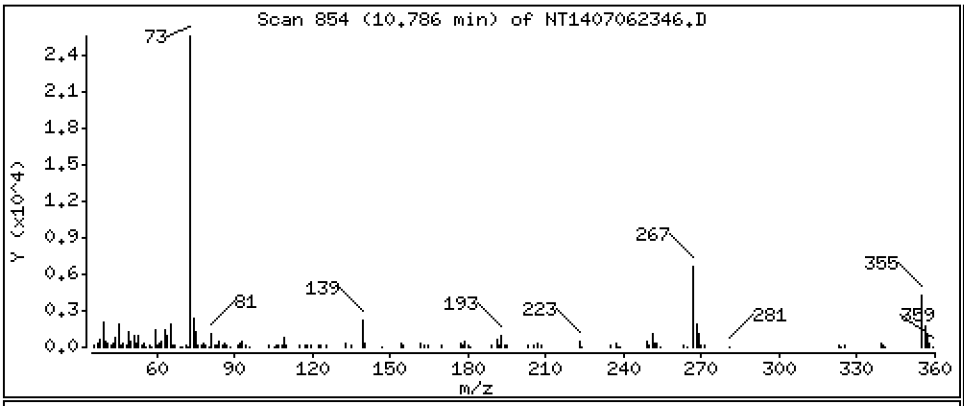
Operator: JGR

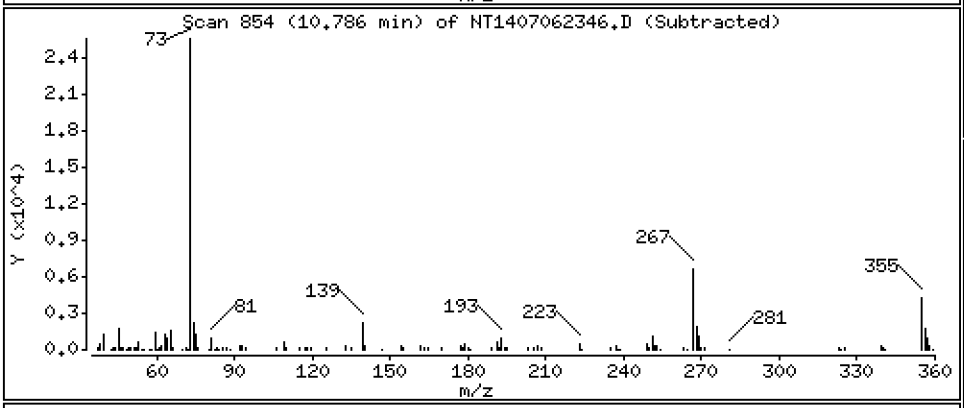
Column phase: ZB-5msi

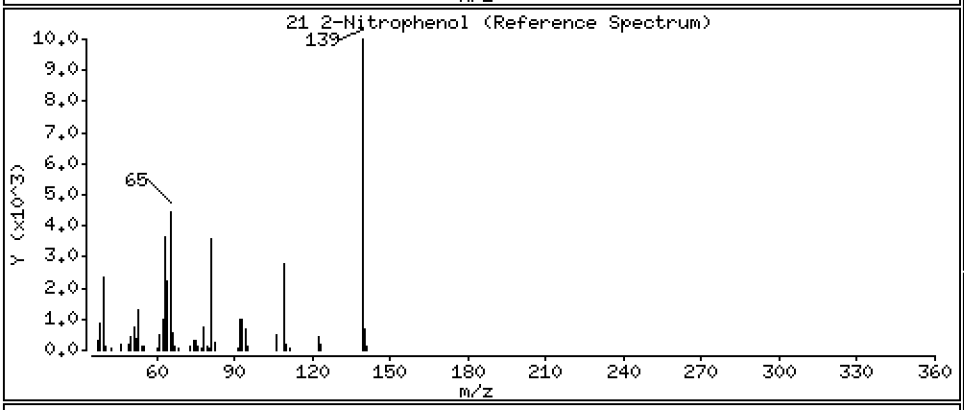
Column diameter: 0.25

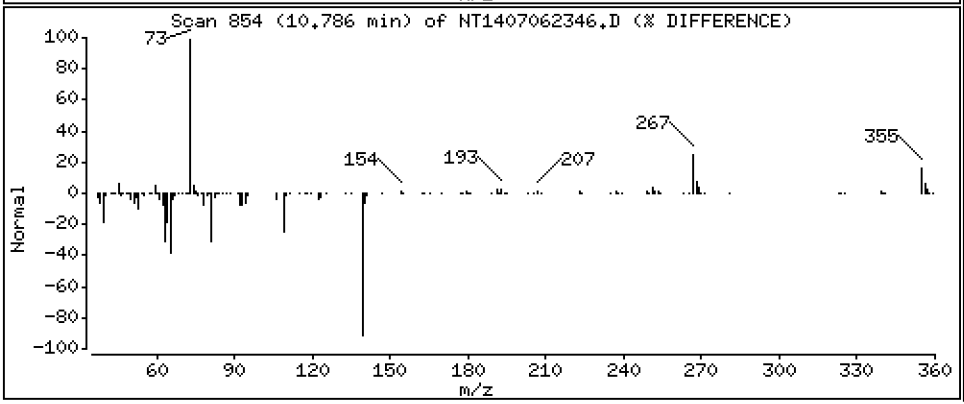
21 2-Nitrophenol

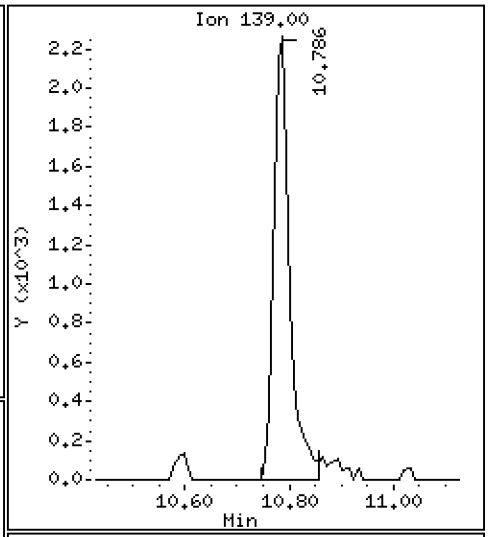
Concentration: 0.1469 ug/mL

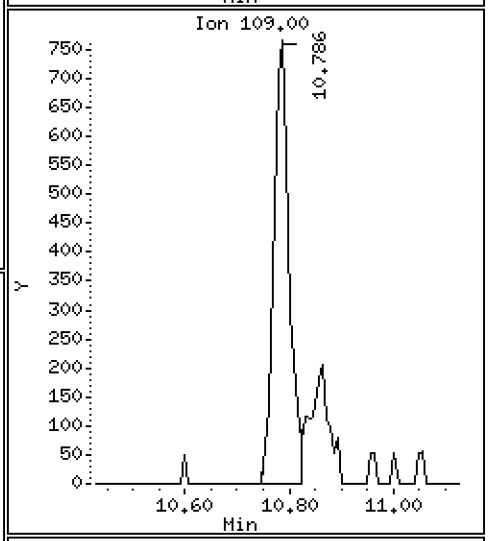


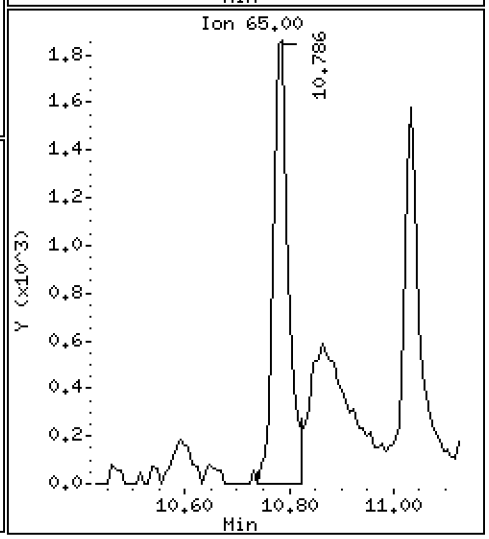












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

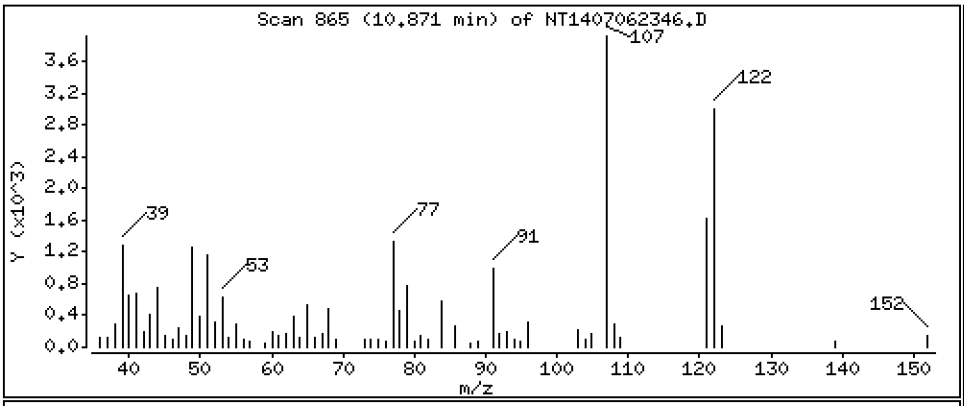
Operator: JGR

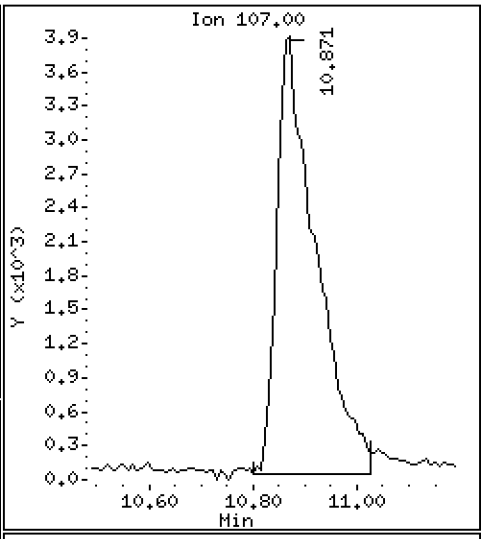
Column phase: ZB-5msi

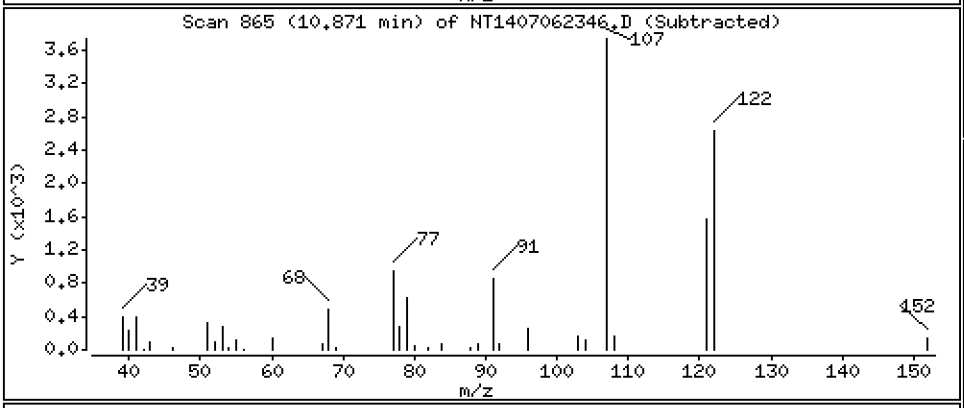
Column diameter: 0.25

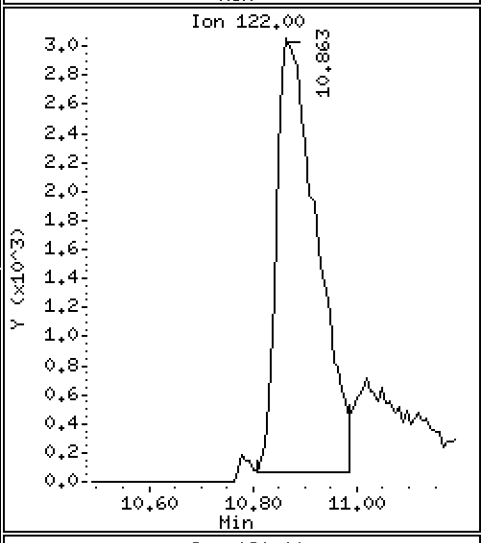
22 2,4-Dimethylphenol

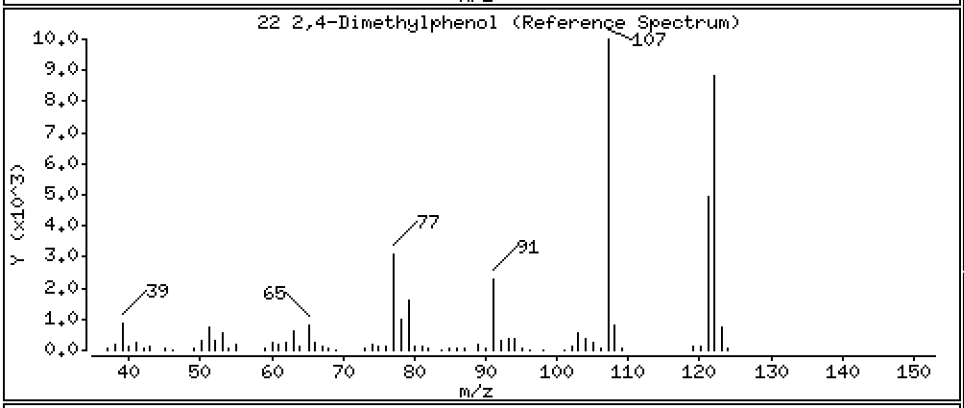
Concentration: 0.3788 ug/mL

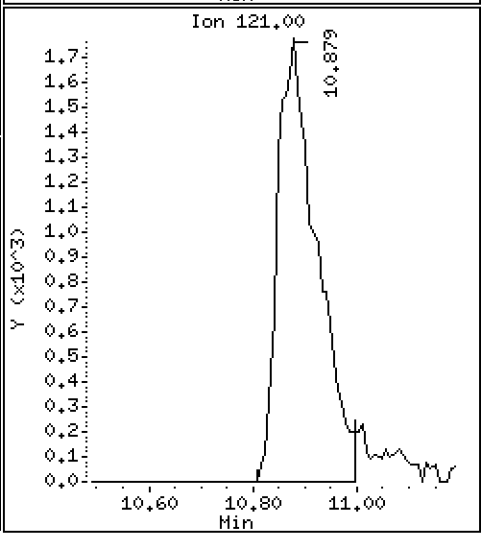


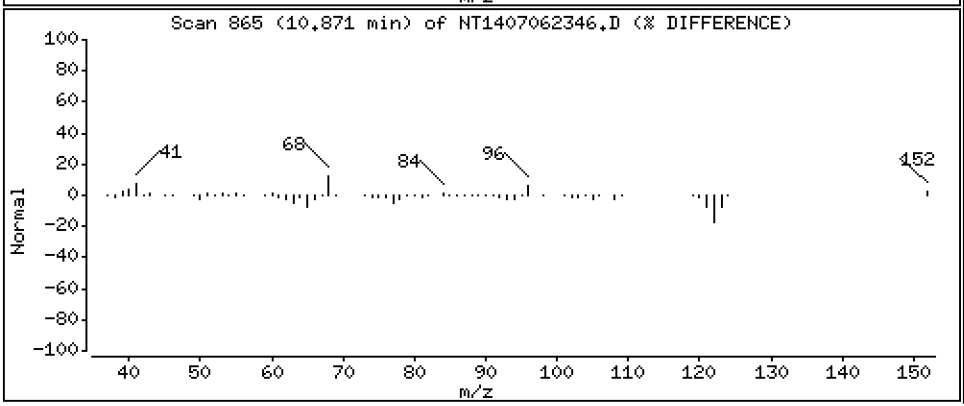












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

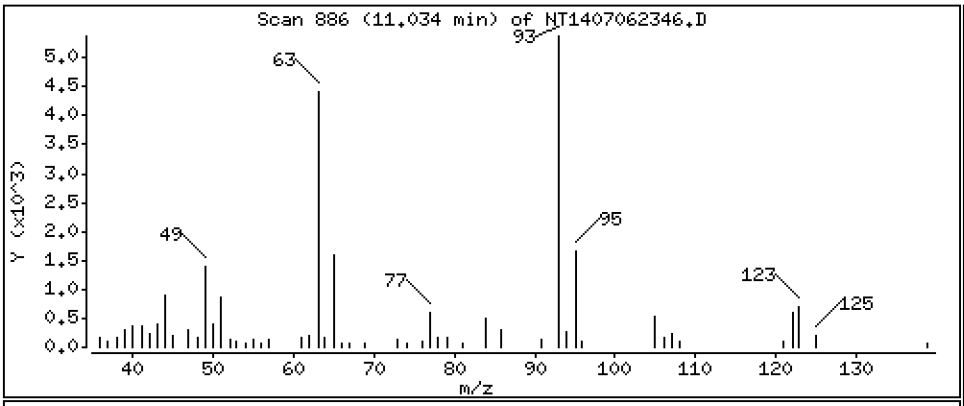
Operator: JGR

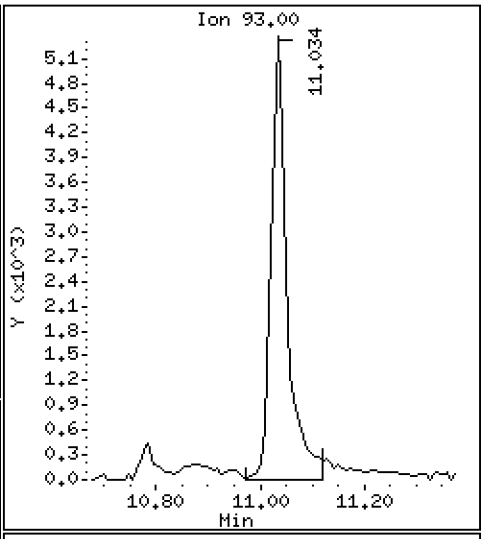
Column phase: ZB-5msi

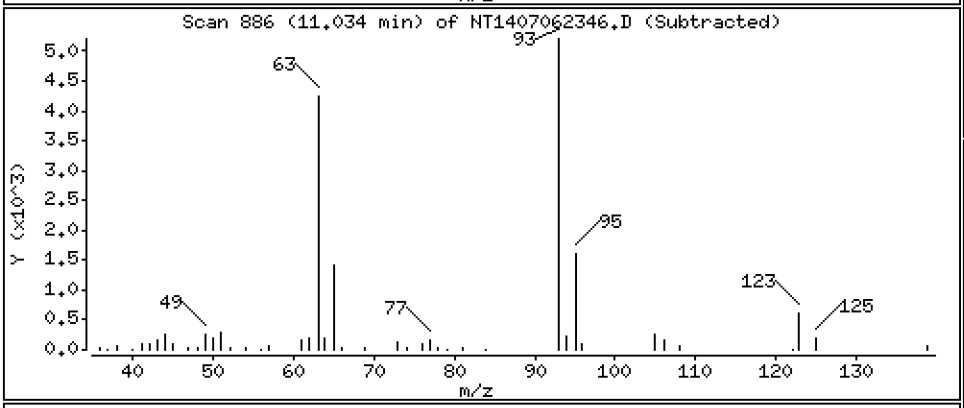
Column diameter: 0.25

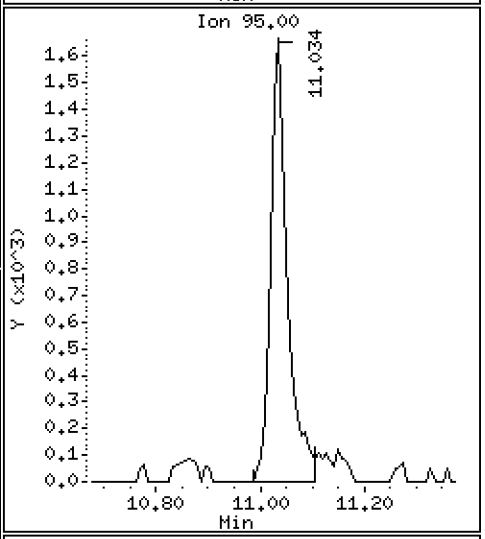
23 Bis(2-Chloroethoxy)methane

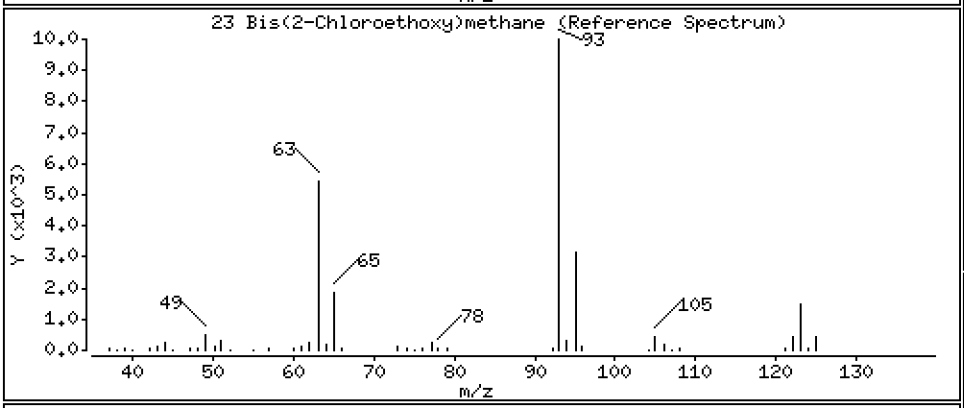
Concentration: 0.1921 ug/mL

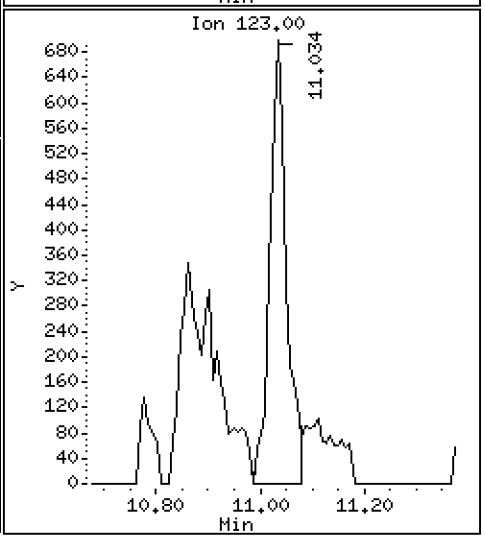


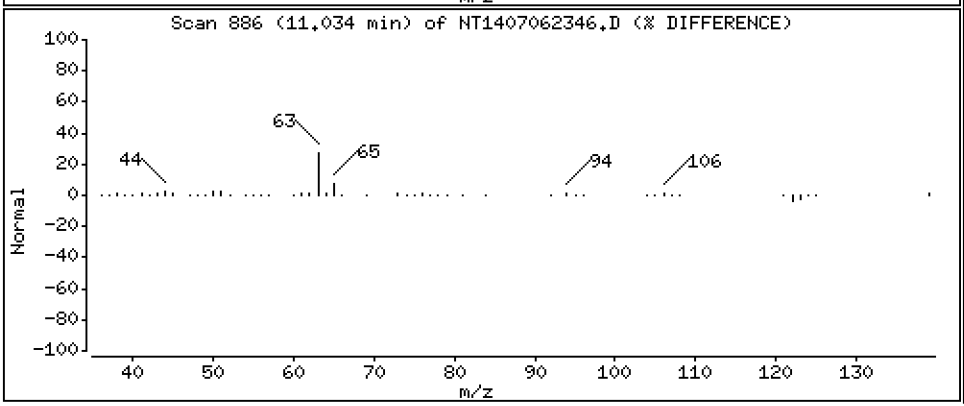












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

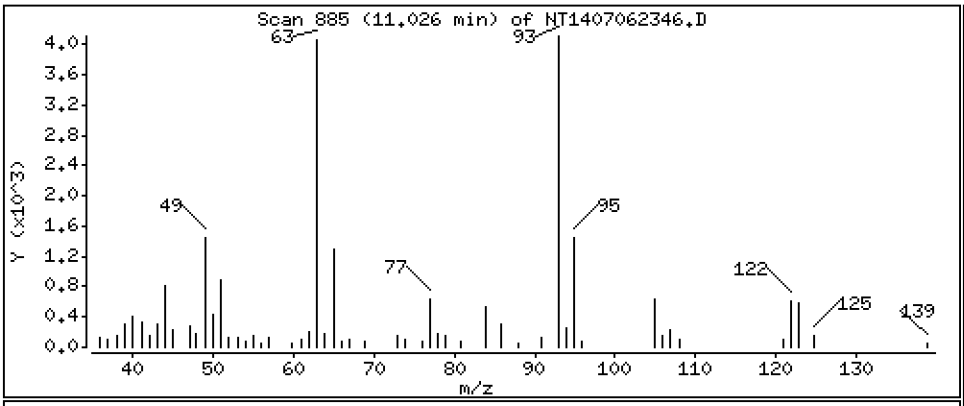
Operator: JGR

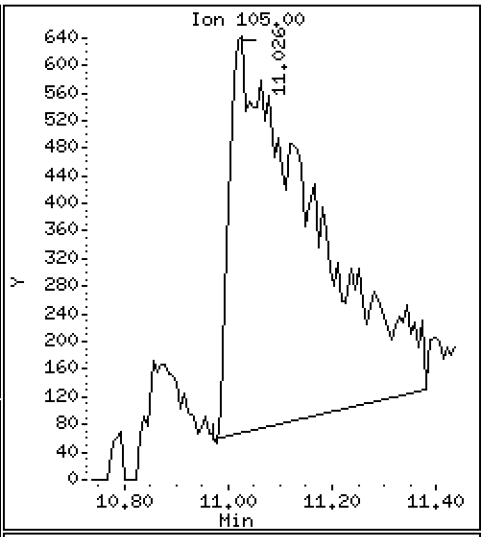
Column phase: ZB-5msi

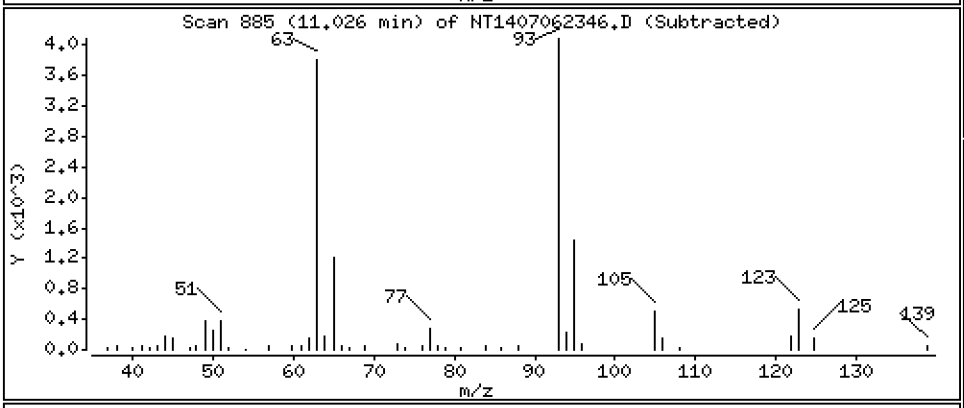
Column diameter: 0.25

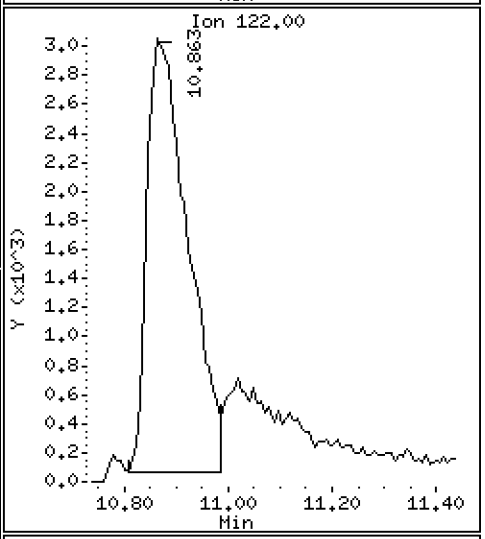
24 Benzoic acid

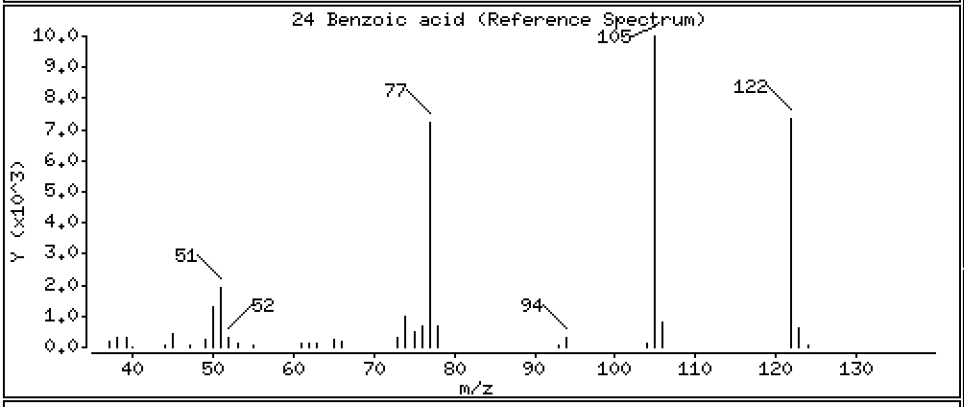
Concentration: 0.1983 ug/mL

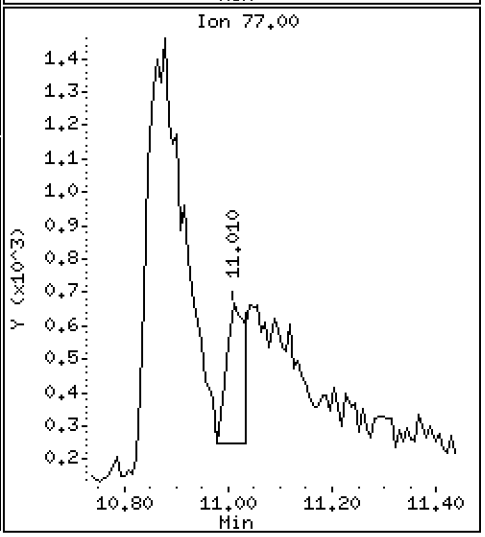


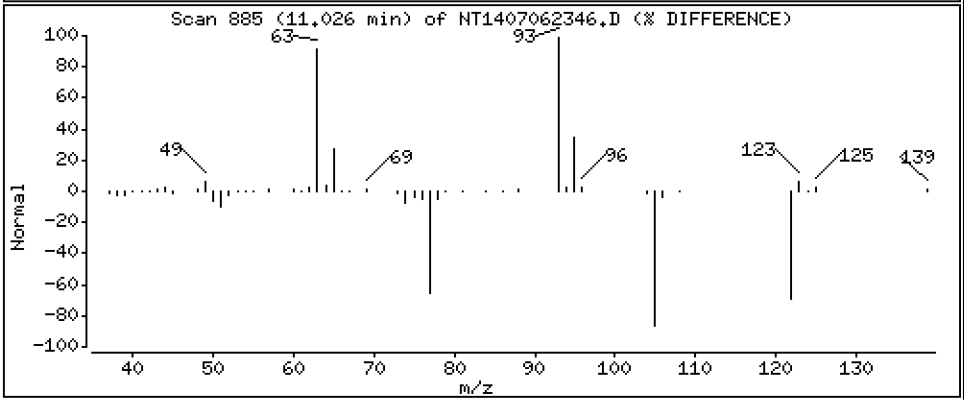












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

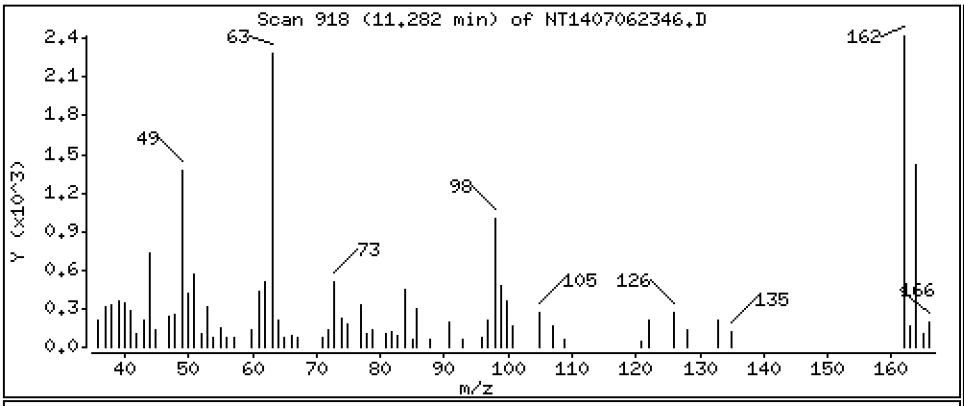
Operator: JGR

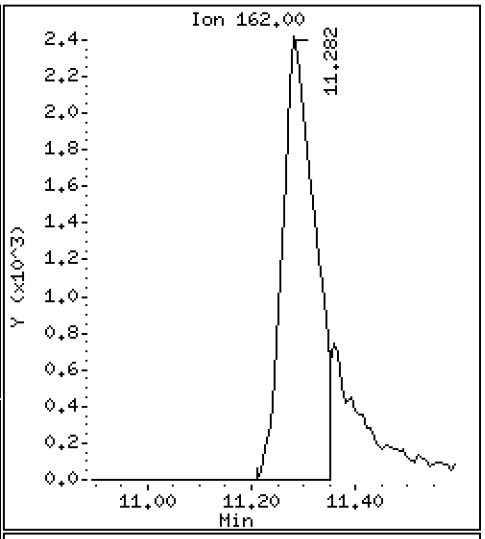
Column phase: ZB-5msi

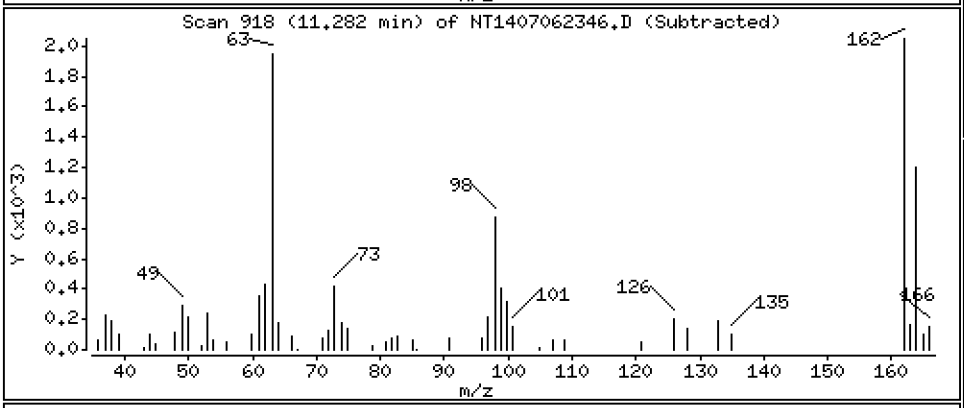
Column diameter: 0.25

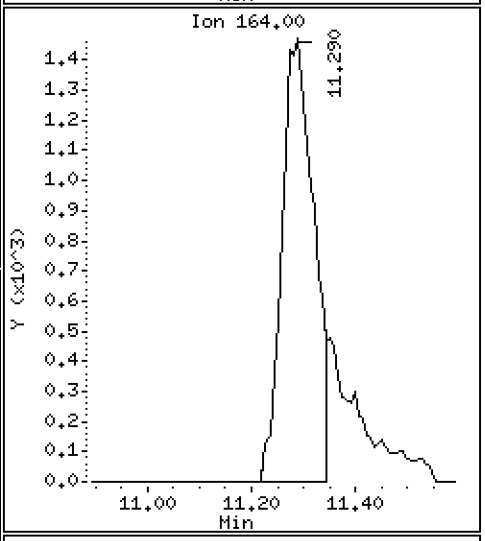
25 2,4-Dichlorophenol

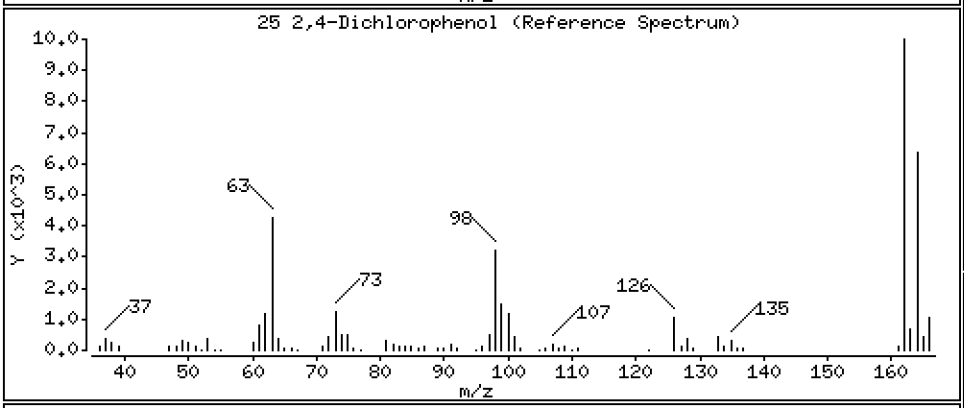
Concentration: 0.2452 ug/mL

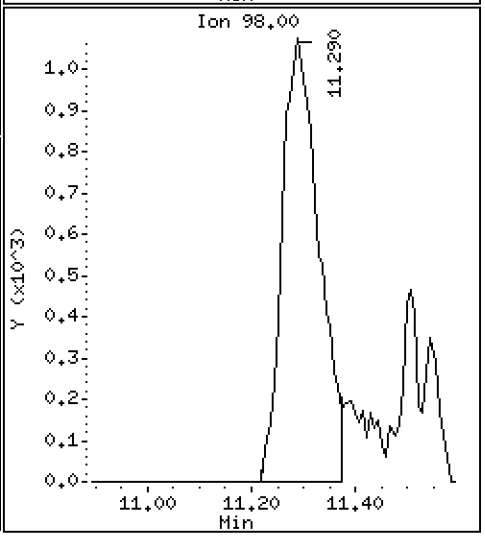


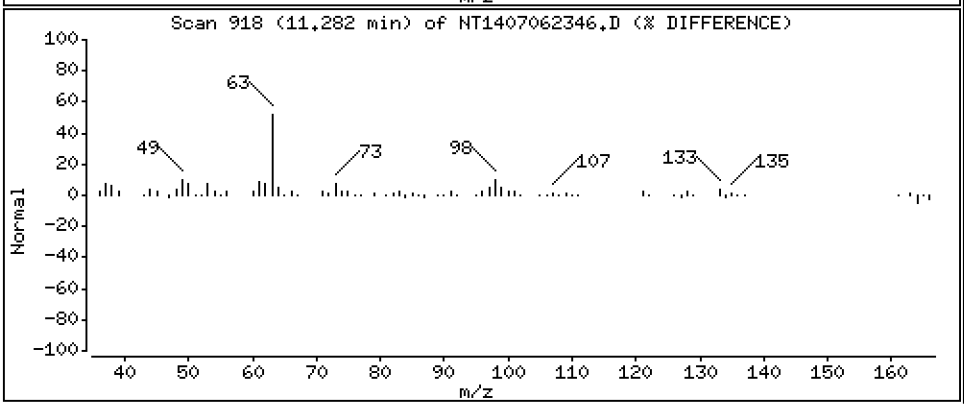












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

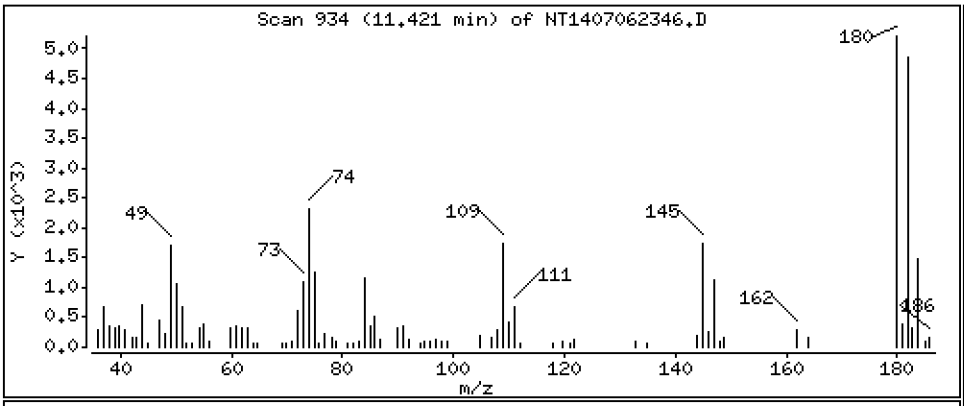
Operator: JGR

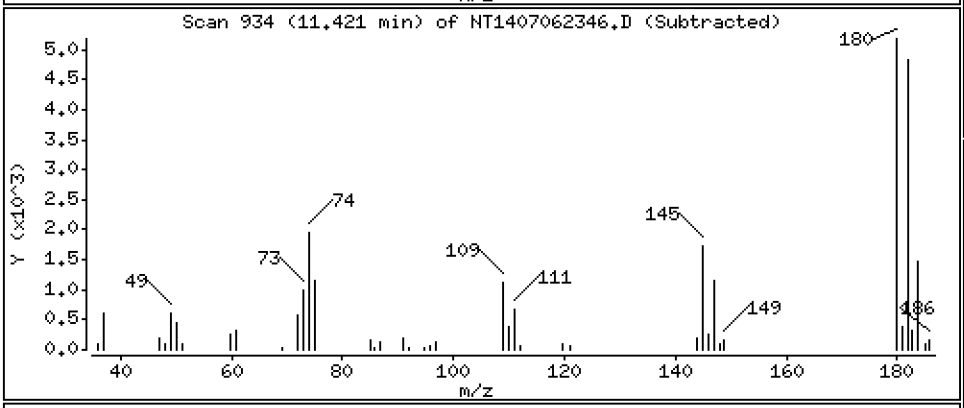
Column phase: ZB-5msi

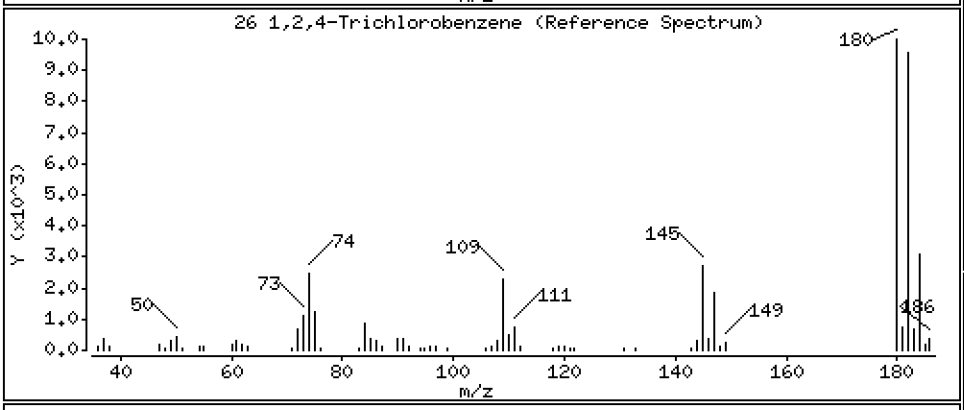
Column diameter: 0.25

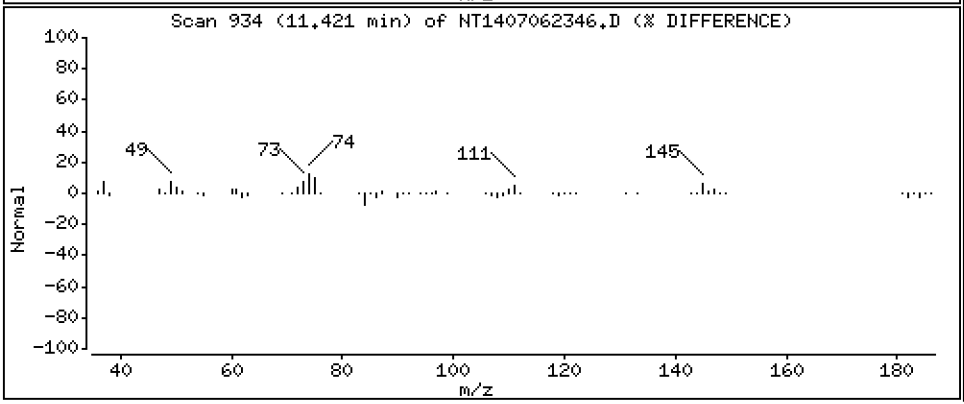
26 1,2,4-Trichlorobenzene

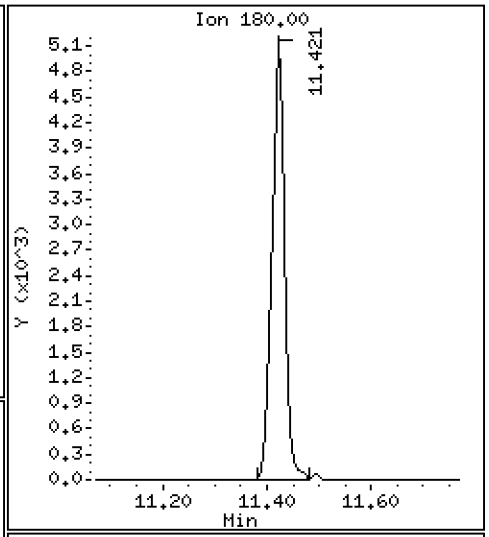
Concentration: 0.2141 ug/mL

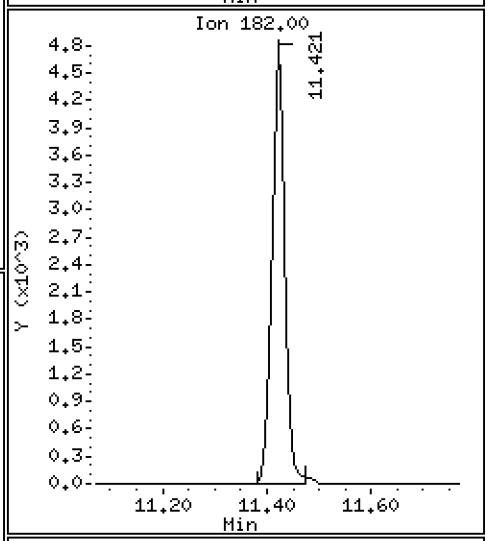


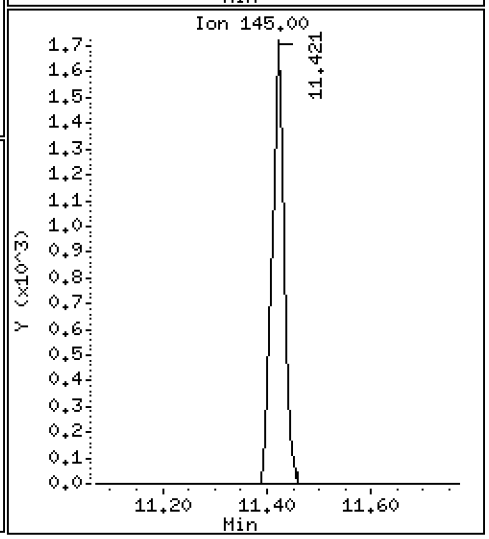












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

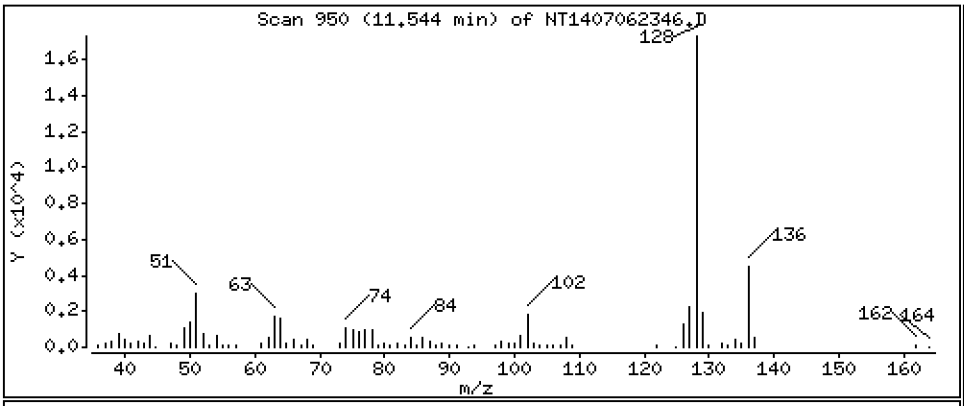
Operator: JGR

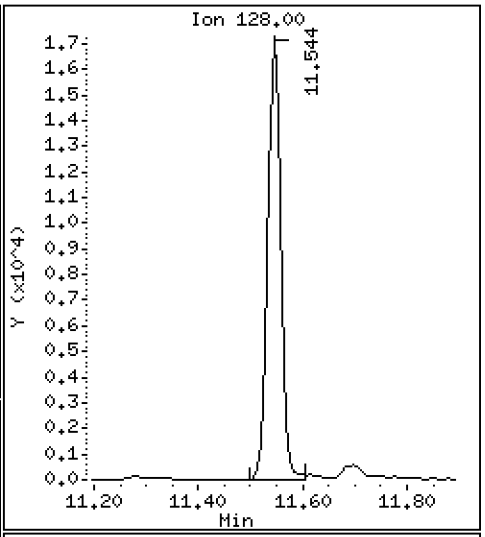
Column phase: ZB-5msi

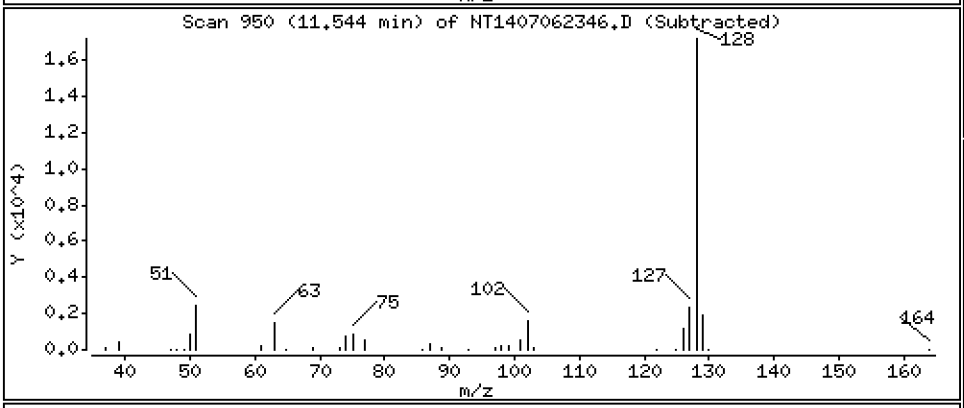
Column diameter: 0.25

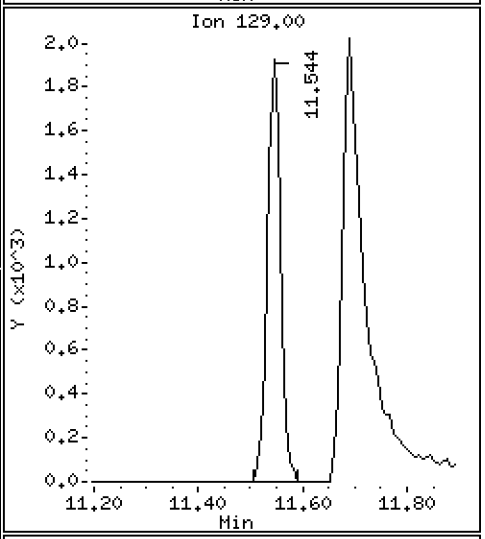
28 Naphthalene

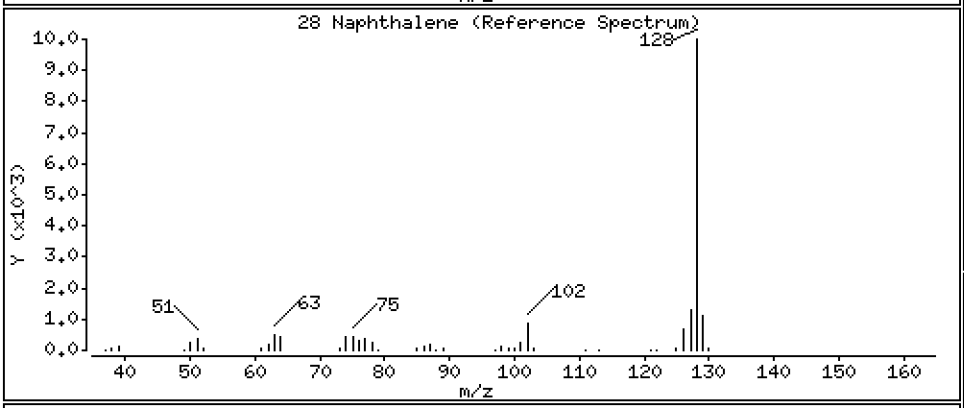
Concentration: 0.2056 ug/mL

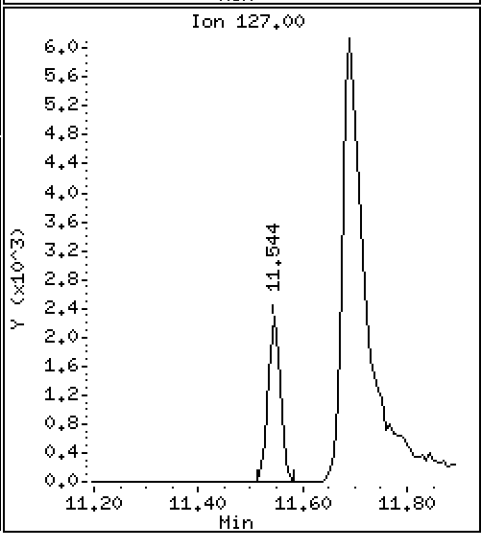


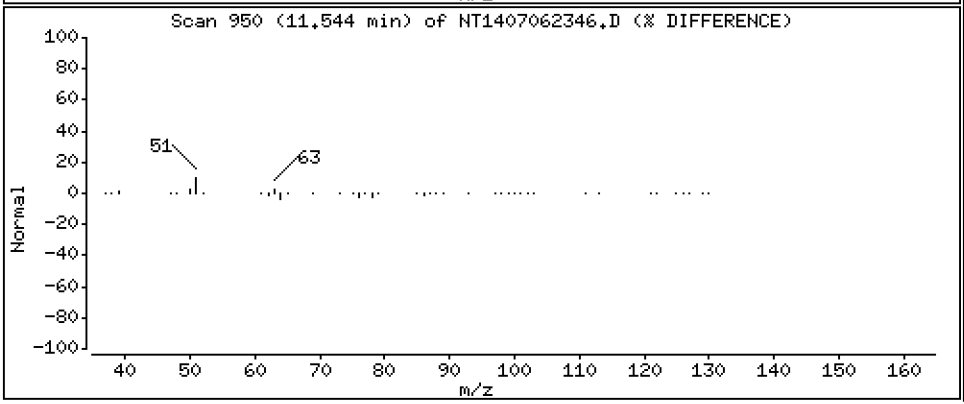












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

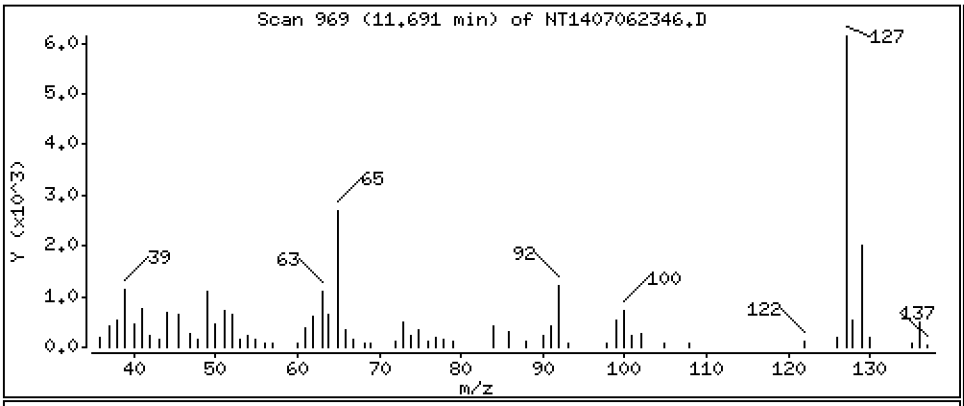
Operator: JGR

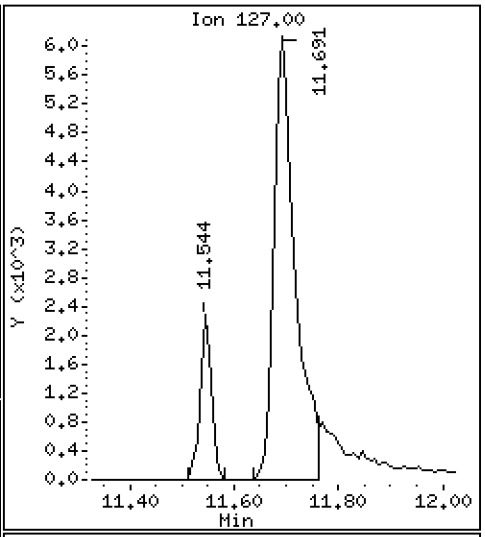
Column phase: ZB-5msi

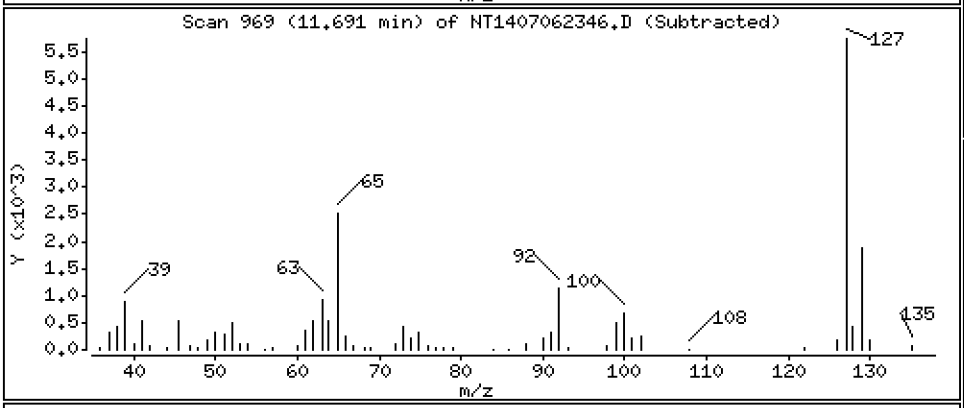
Column diameter: 0.25

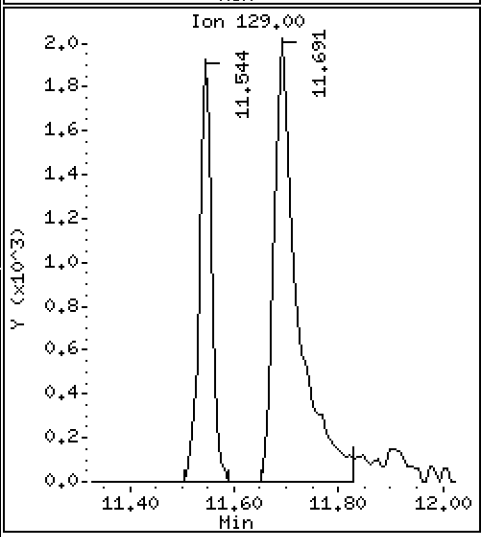
29 4-Chloroaniline

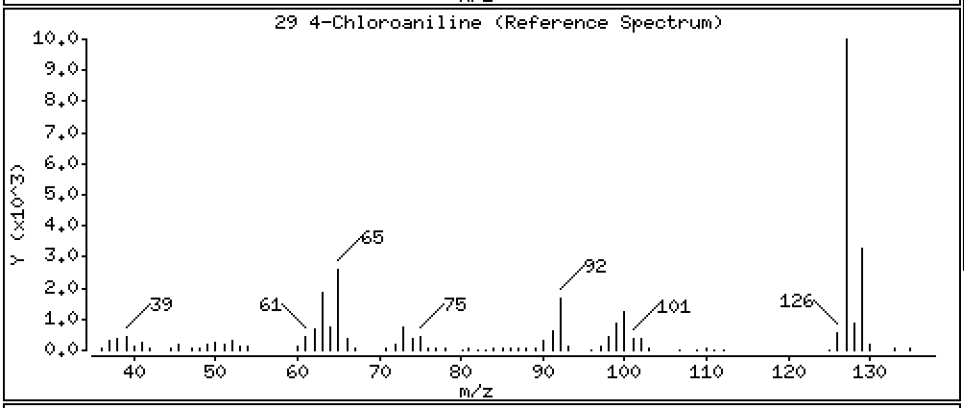
Concentration: 0.2662 ug/mL

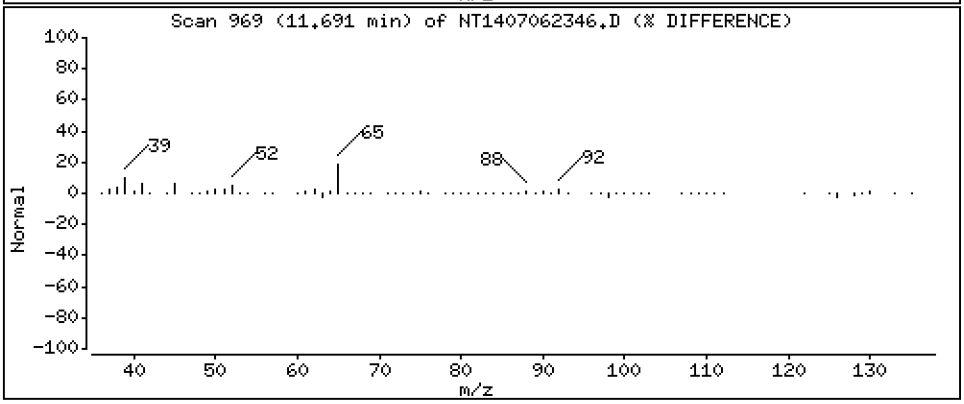












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

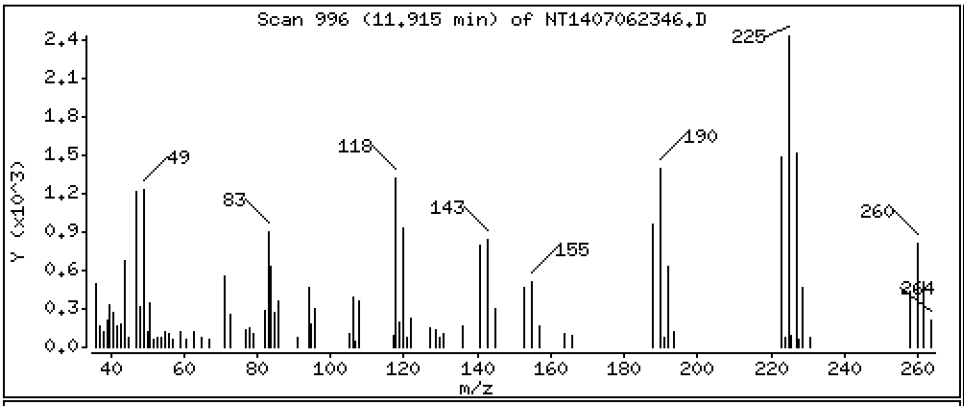
Operator: JGR

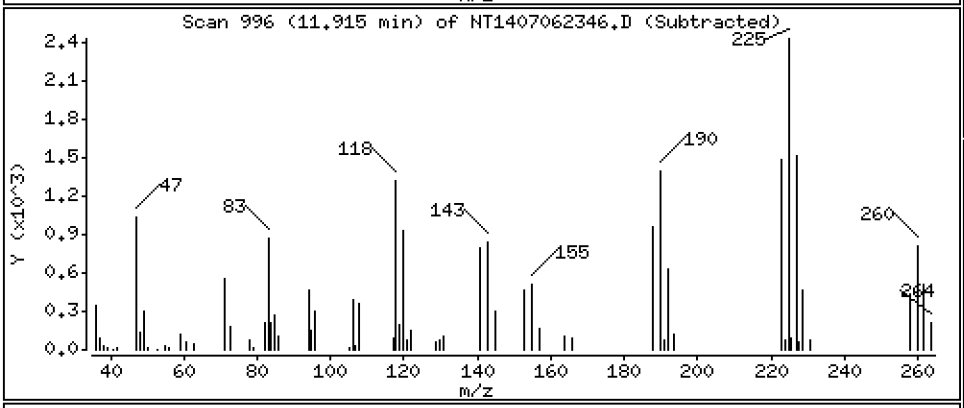
Column phase: ZB-5msi

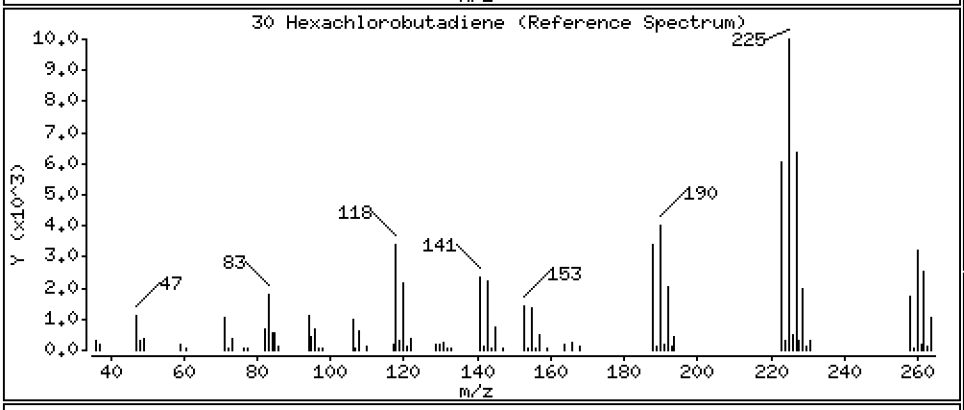
Column diameter: 0.25

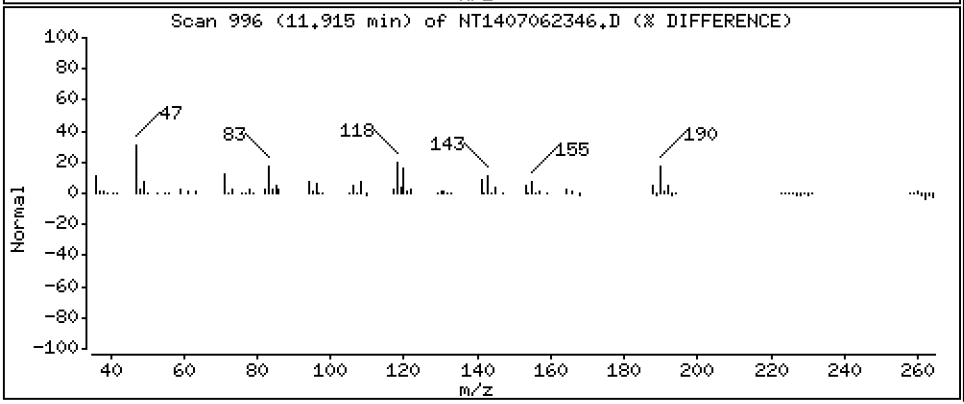
30 Hexachlorobutadiene

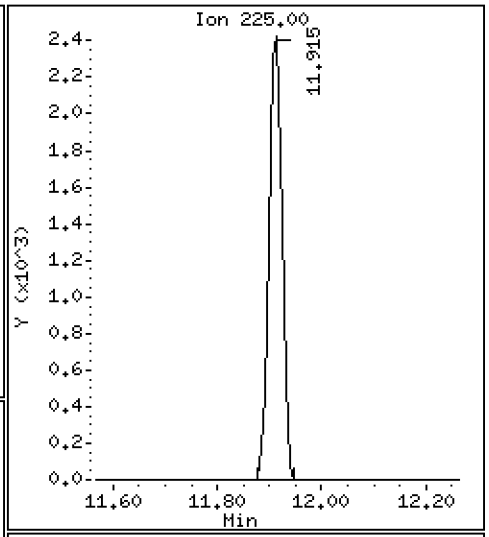
Concentration: 0.2191 ug/mL

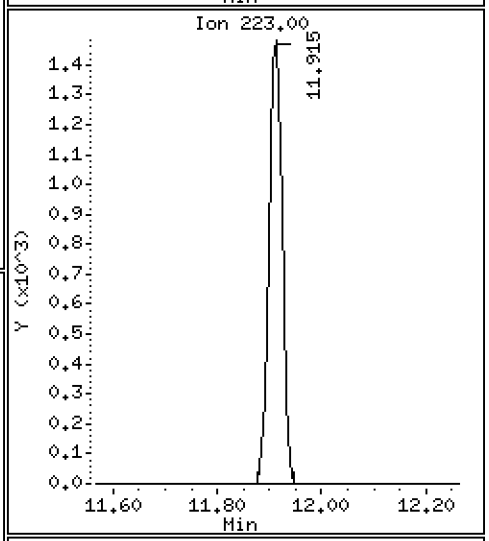


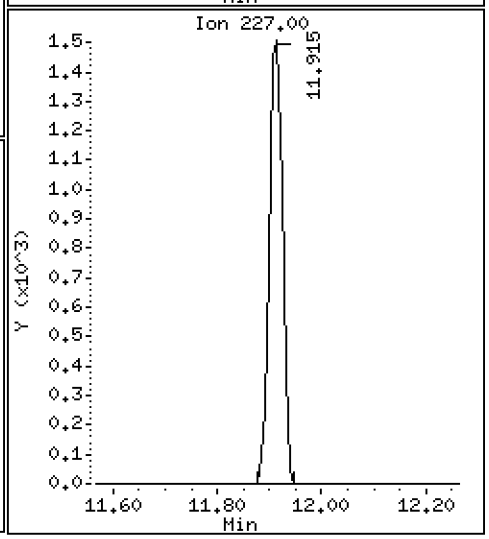












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

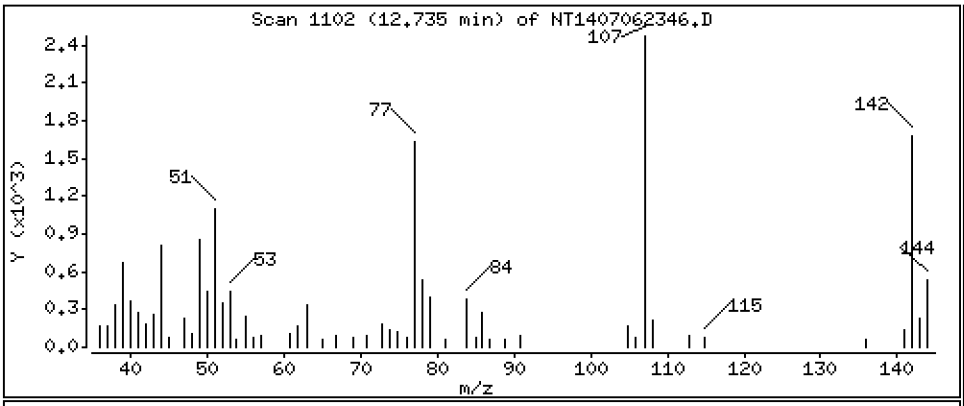
Operator: JGR

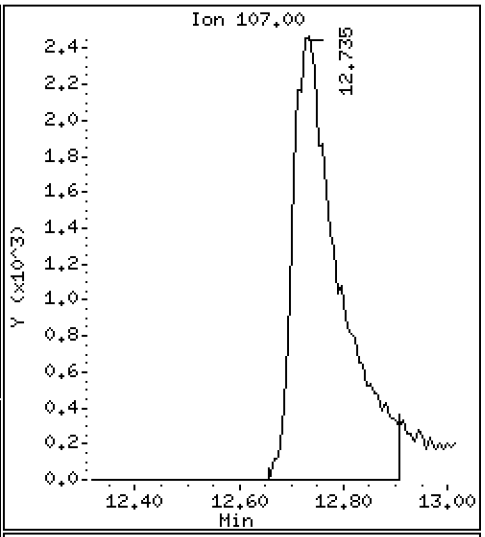
Column phase: ZB-5msi

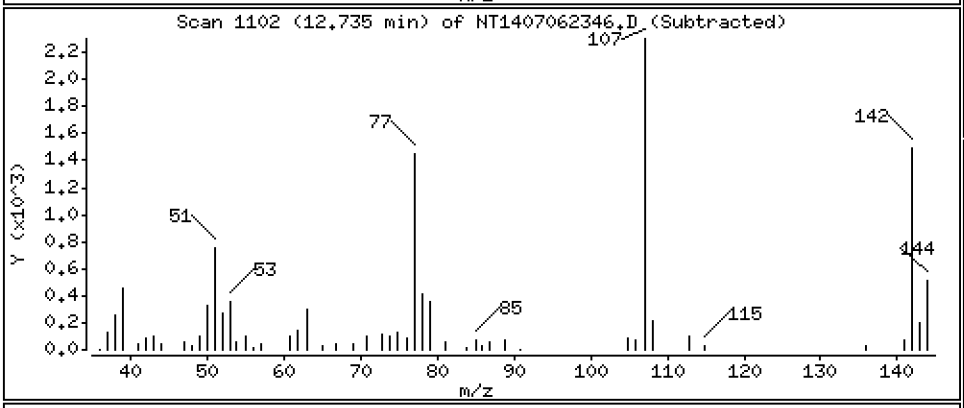
Column diameter: 0.25

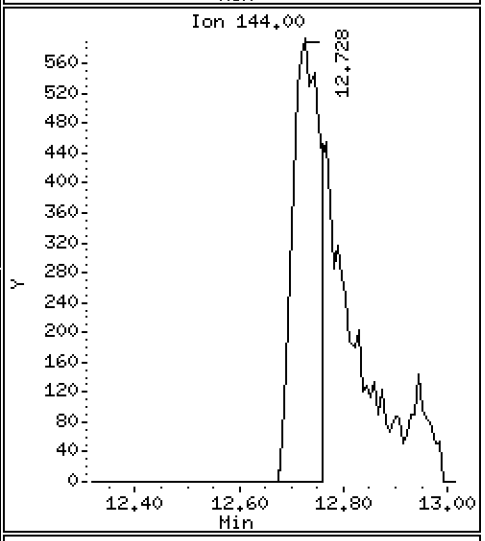
31 4-Chloro-3-methylphenol

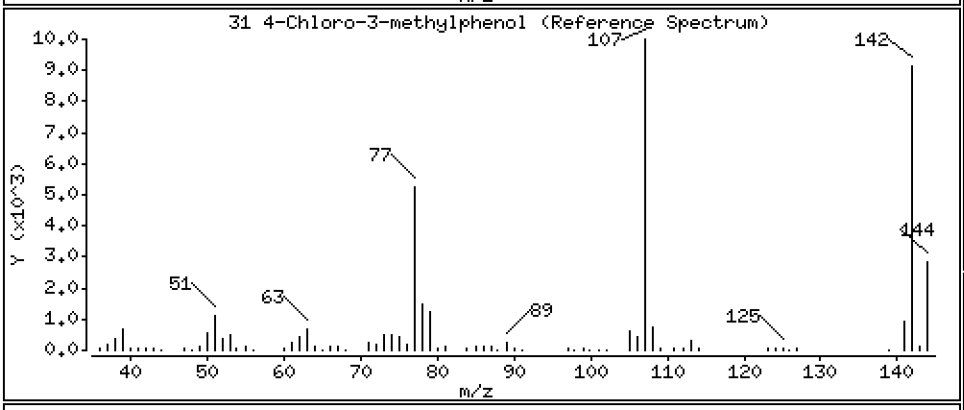
Concentration: 0.3087 ug/mL

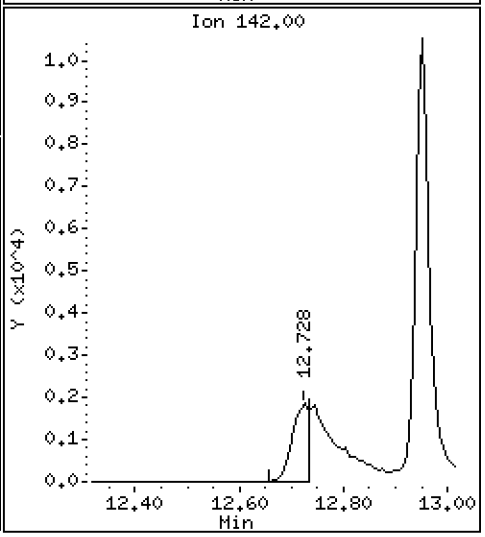


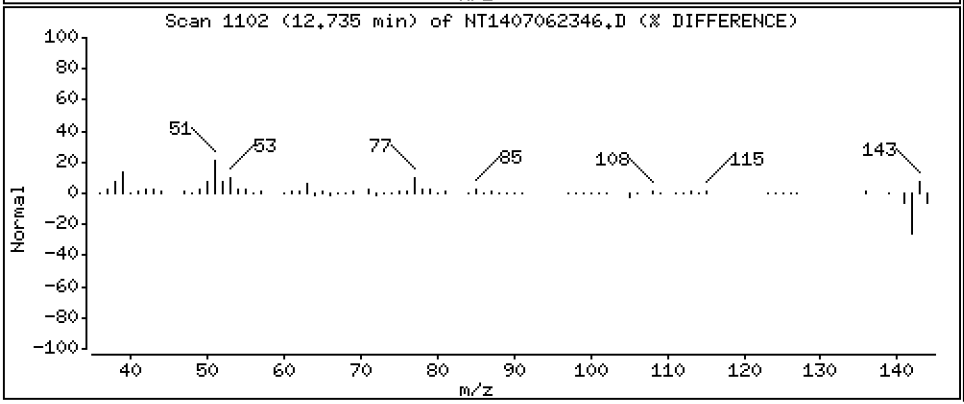












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

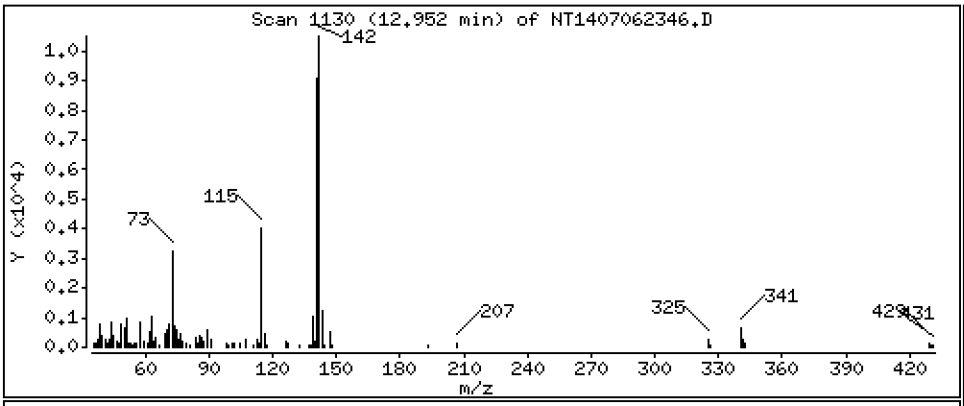
Operator: JGR

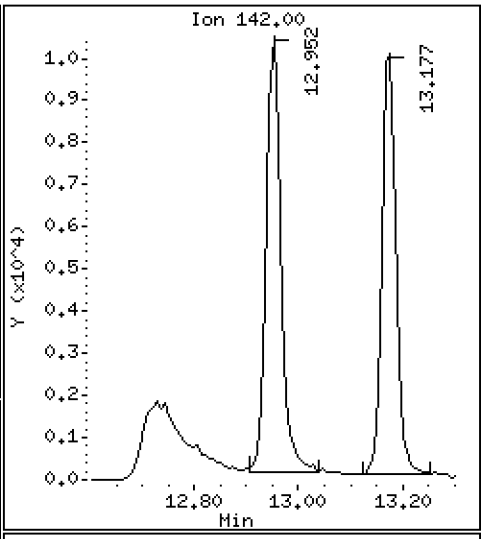
Column phase: ZB-5msi

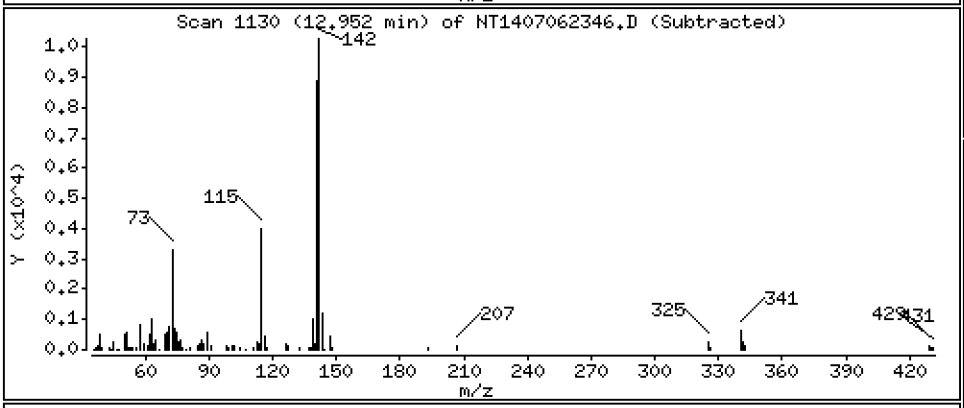
Column diameter: 0.25

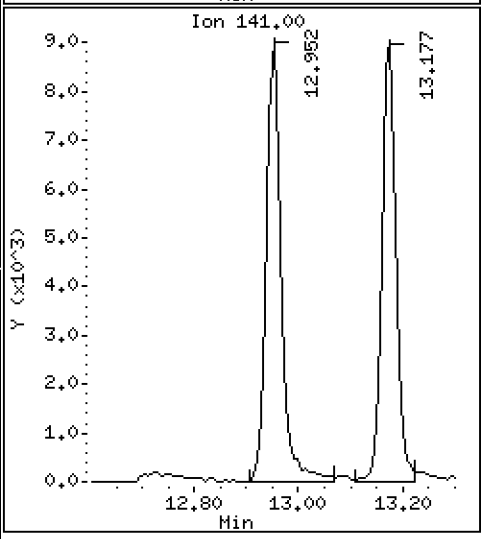
32 2-Methylnaphthalene

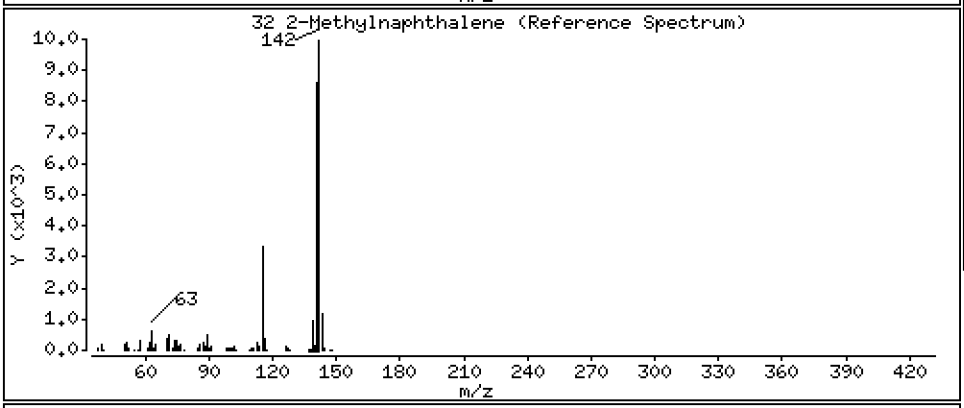
Concentration: 0.1890 ug/mL

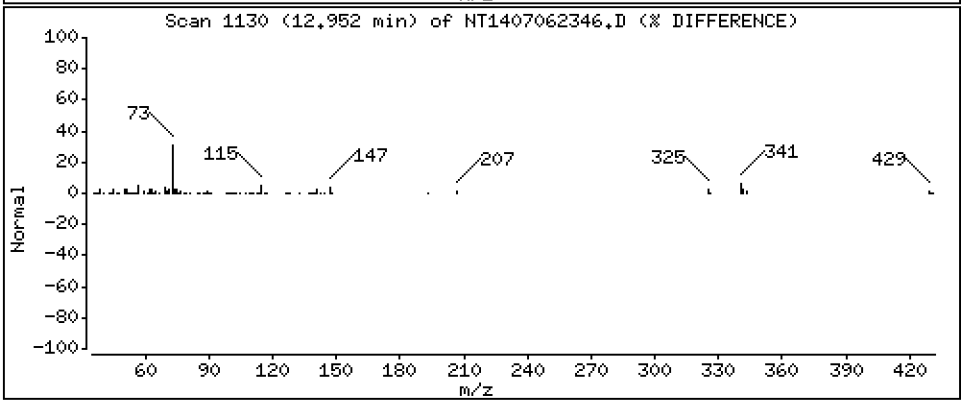












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

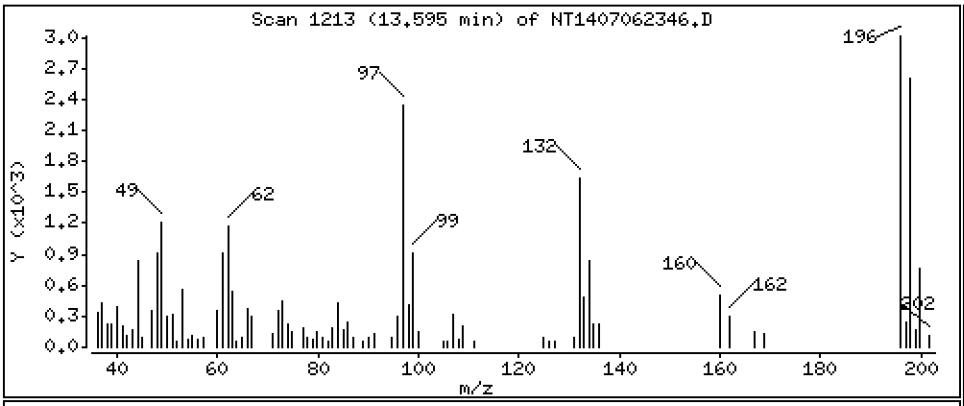
Operator: JGR

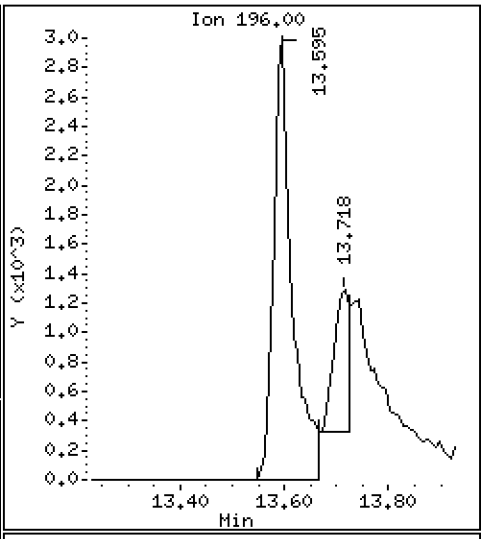
Column phase: ZB-5msi

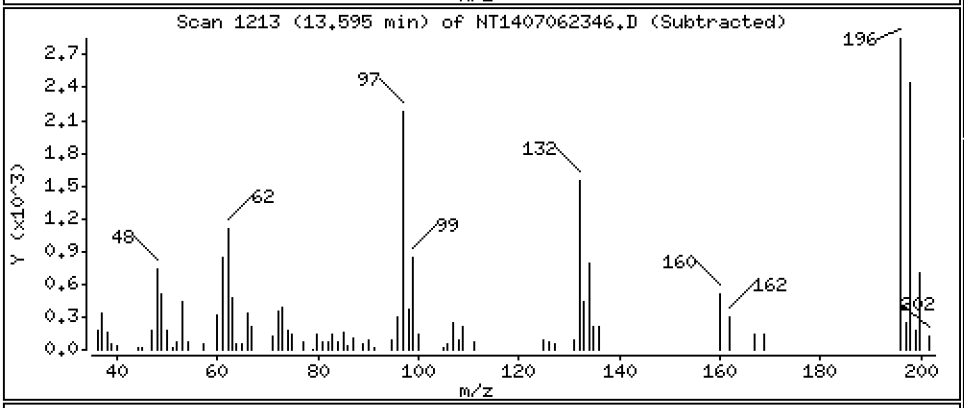
Column diameter: 0.25

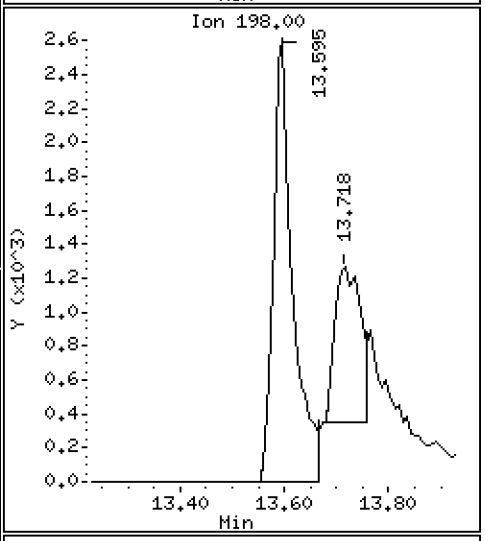
34 2,4,6-Trichlorophenol

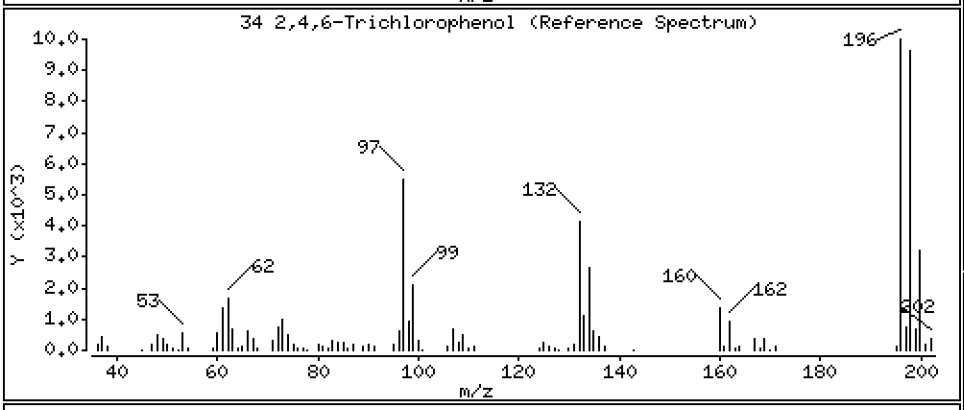
Concentration: 0.3043 ug/mL

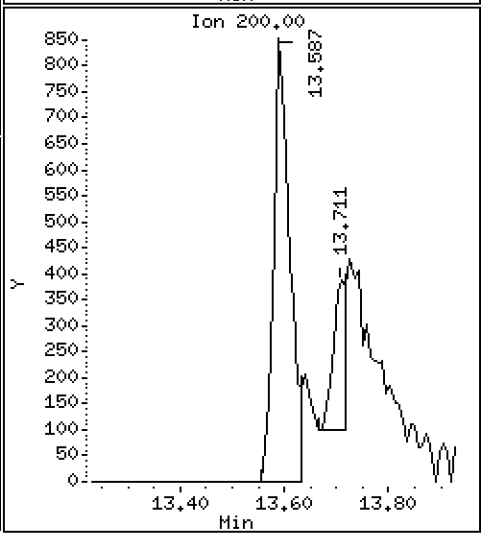


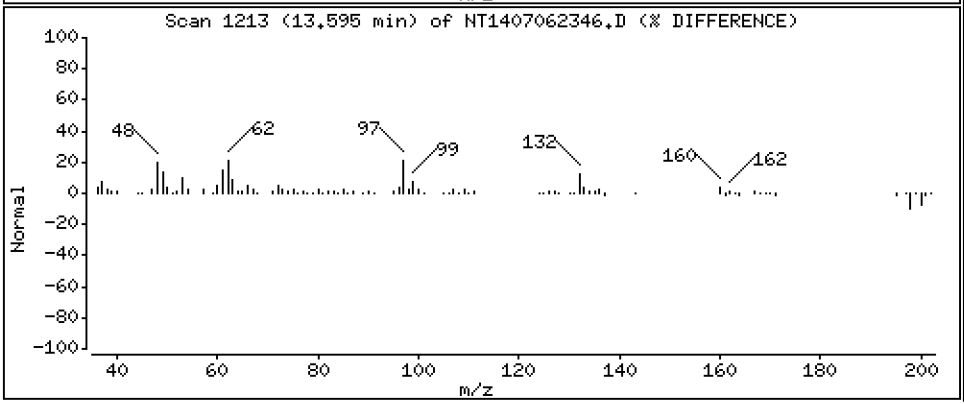












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

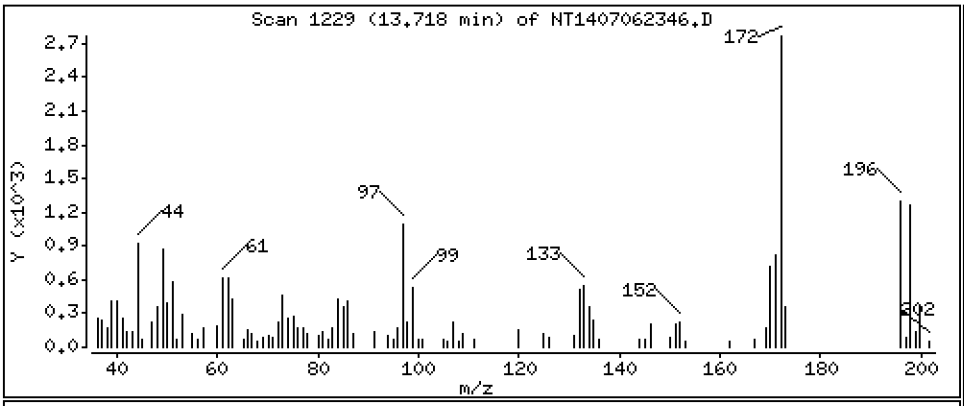
Operator: JGR

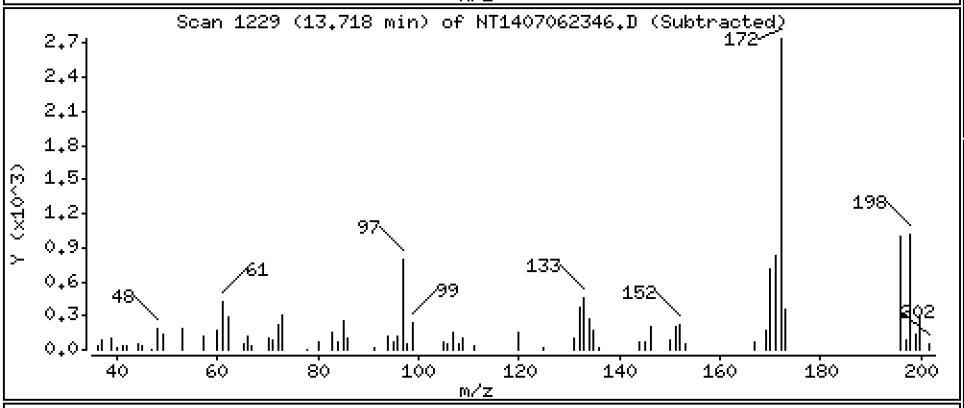
Column phase: ZB-5msi

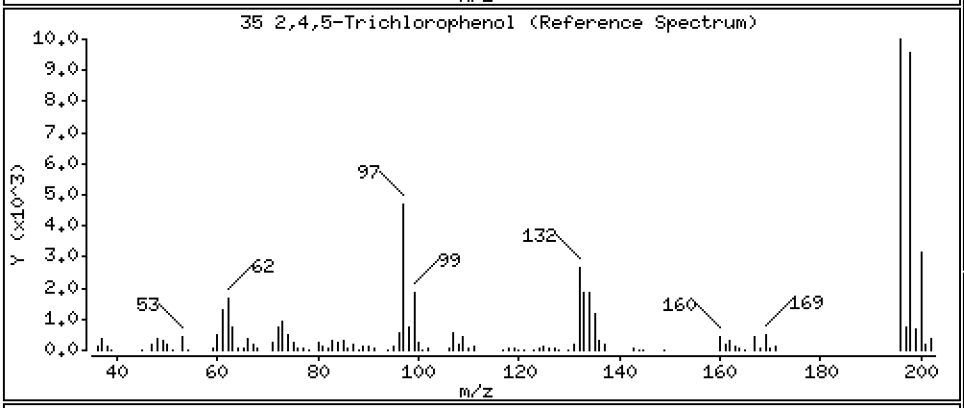
Column diameter: 0.25

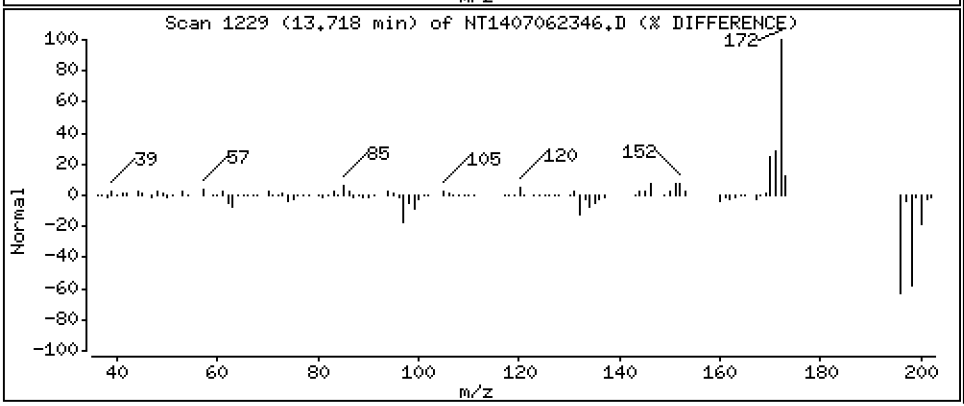
35 2,4,5-Trichlorophenol

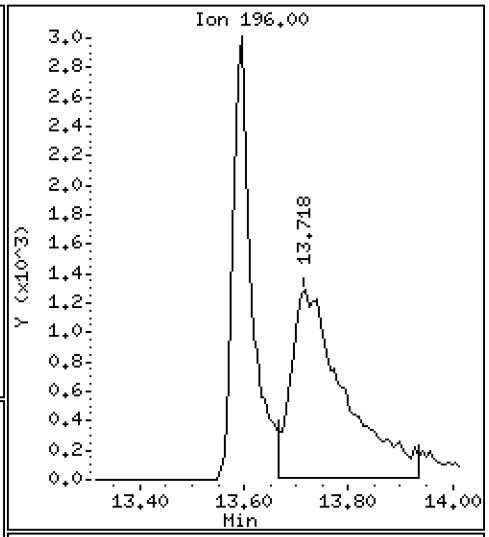
Concentration: 0.3587 ug/mL

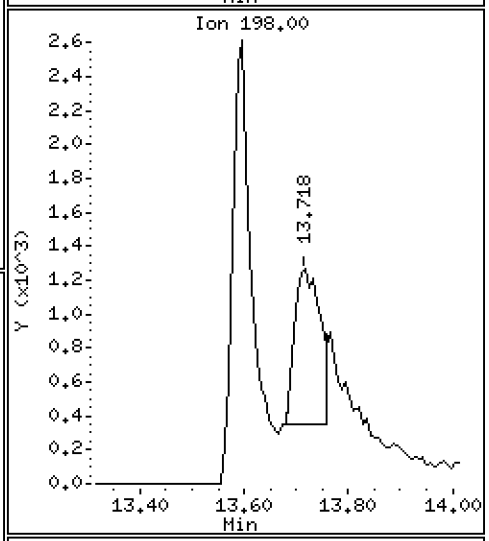


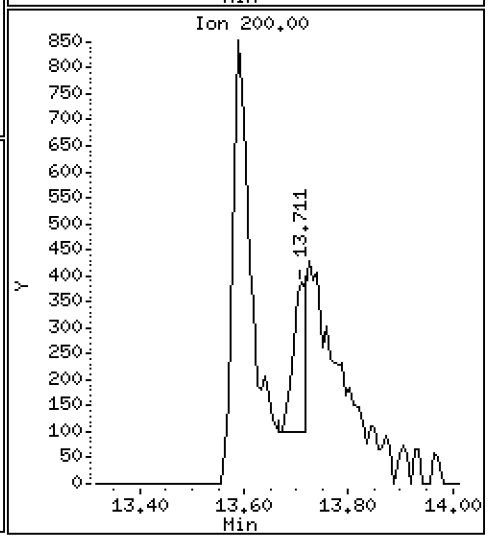












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

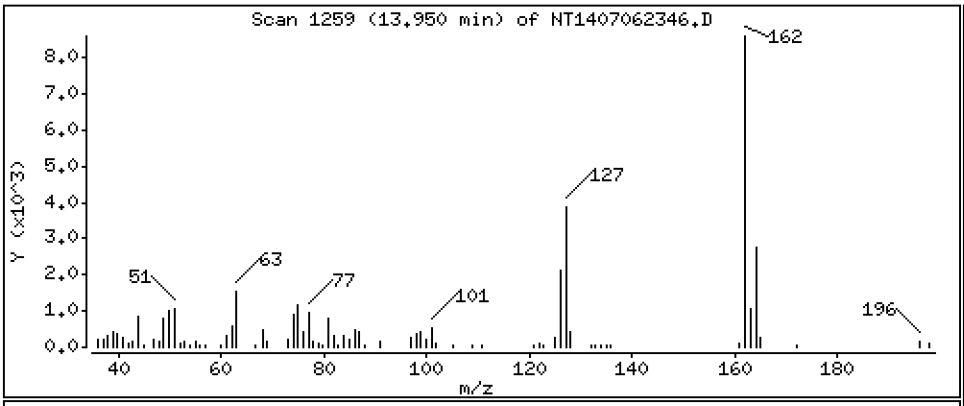
Operator: JGR

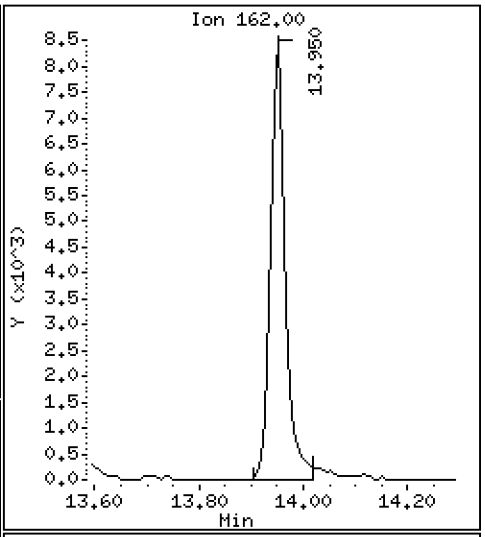
Column phase: ZB-5msi

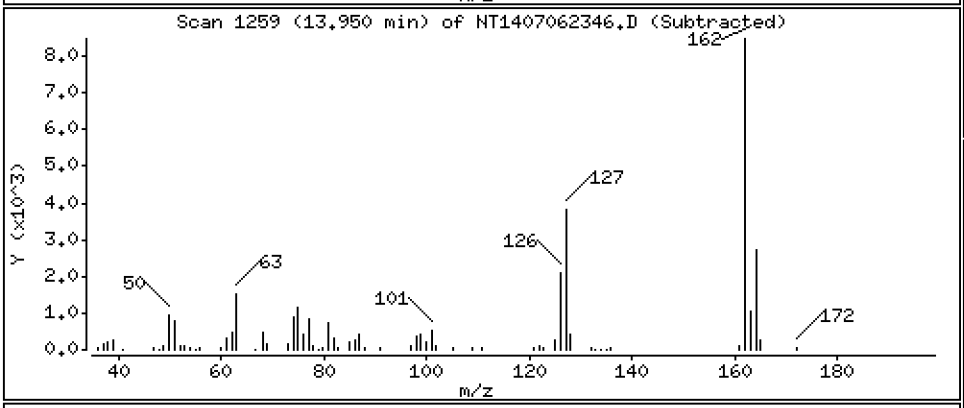
Column diameter: 0.25

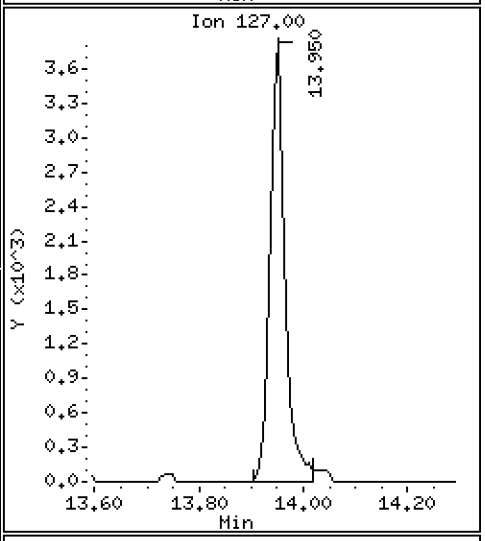
37 2-Chloronaphthalene

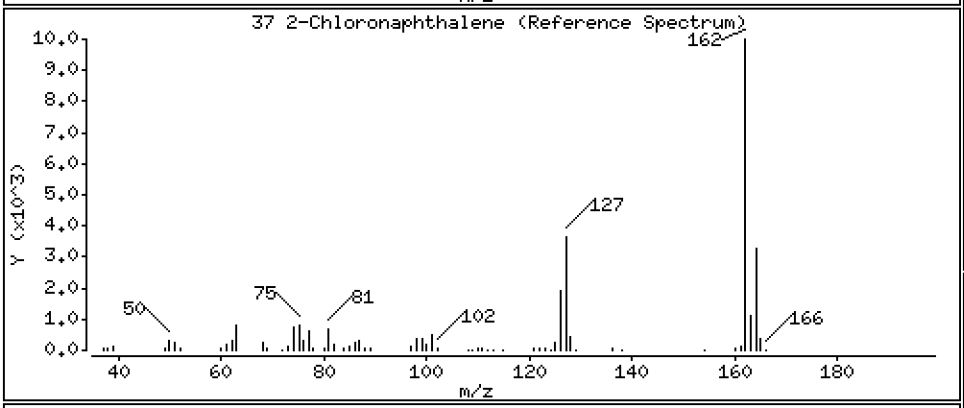
Concentration: 0.1952 ug/mL

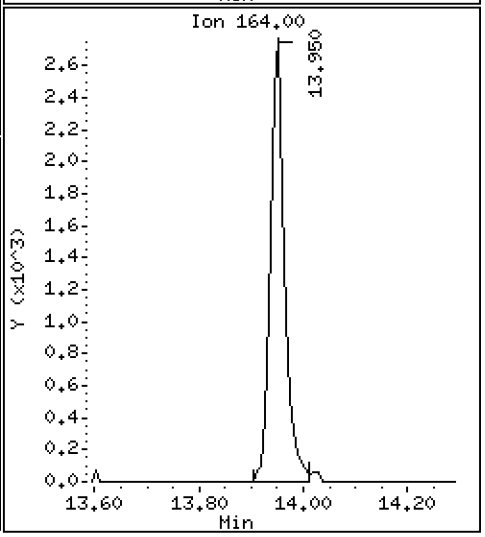


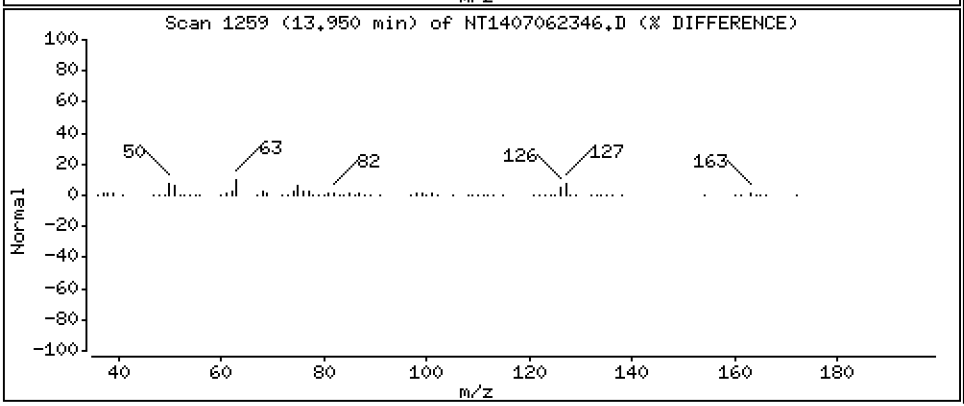












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

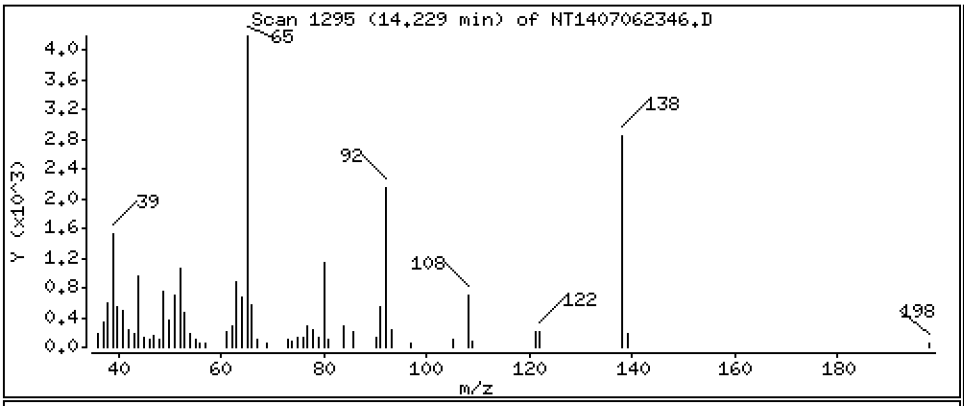
Operator: JGR

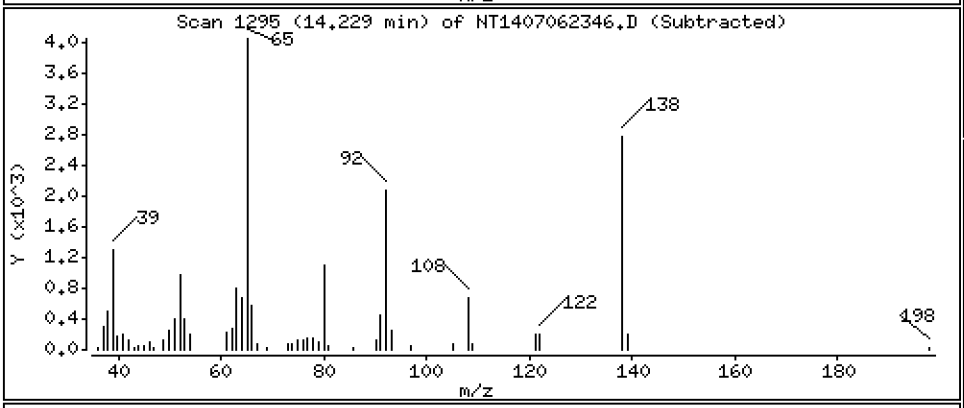
Column phase: ZB-5msi

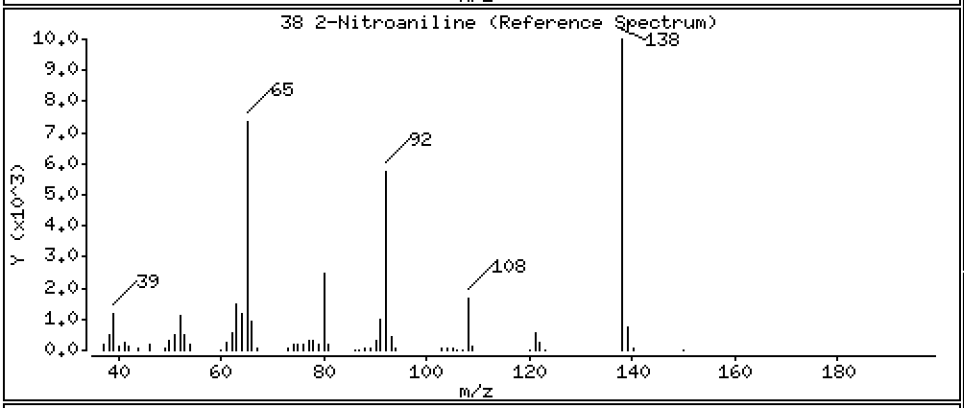
Column diameter: 0.25

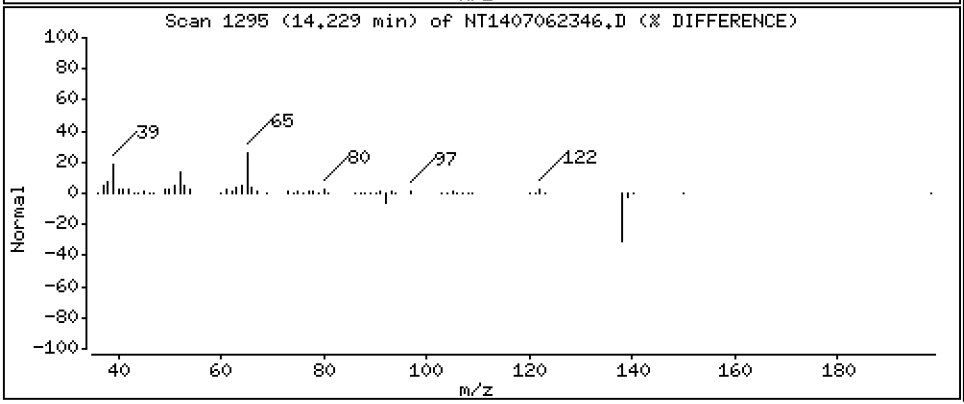
38 2-Nitroaniline

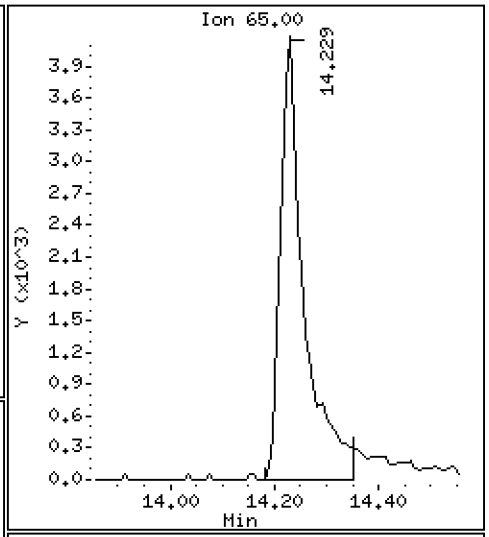
Concentration: 0.3261 ug/mL

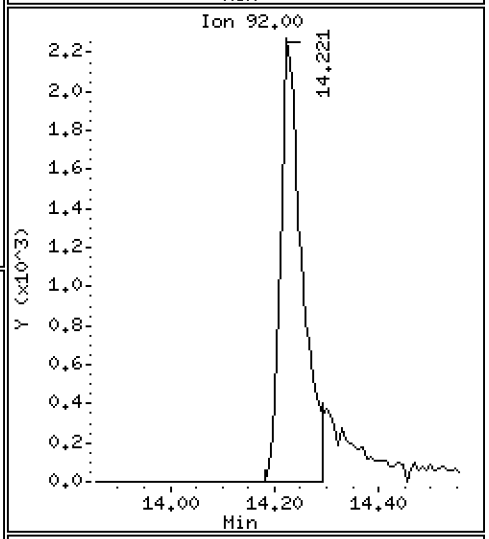


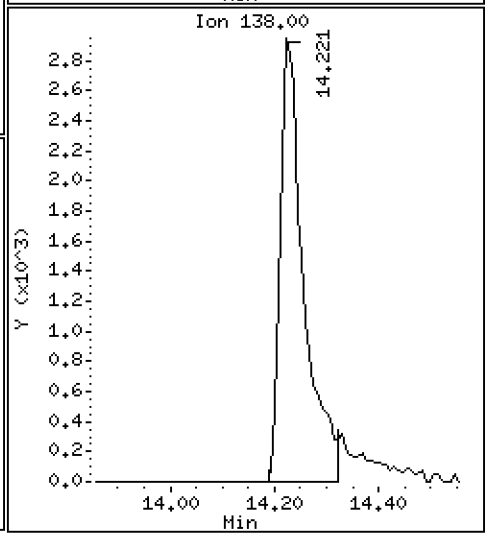












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

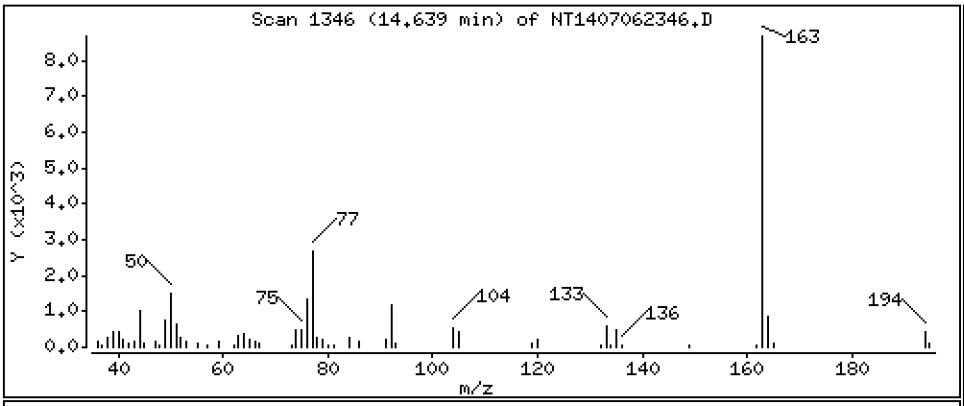
Operator: JGR

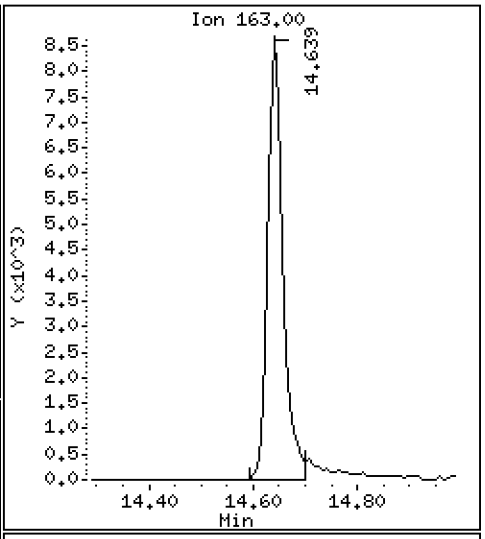
Column phase: ZB-5msi

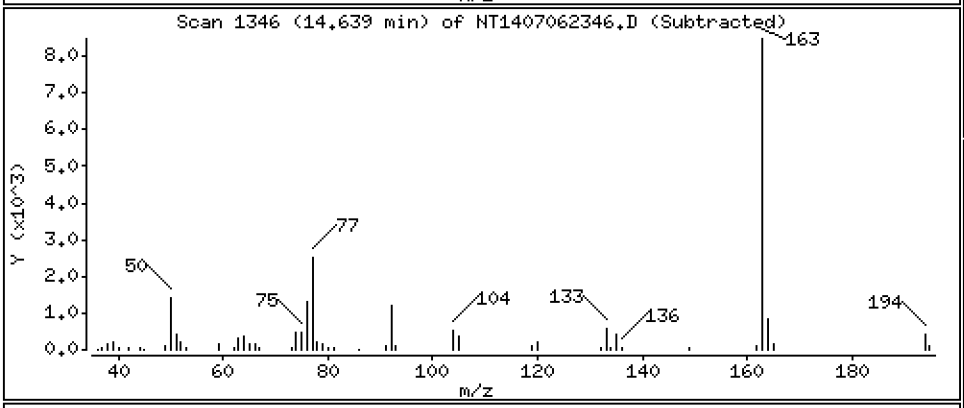
Column diameter: 0.25

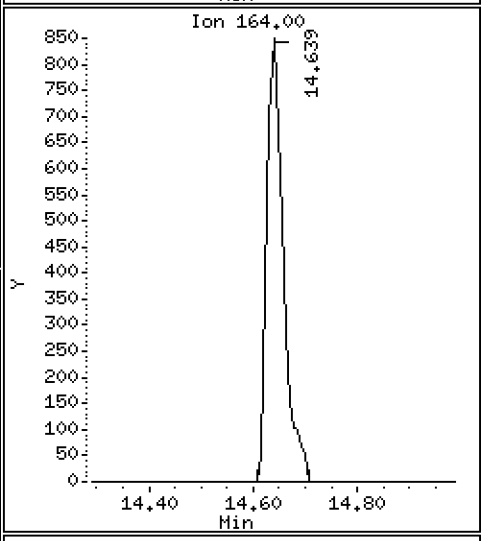
39 Dimethylphthalate

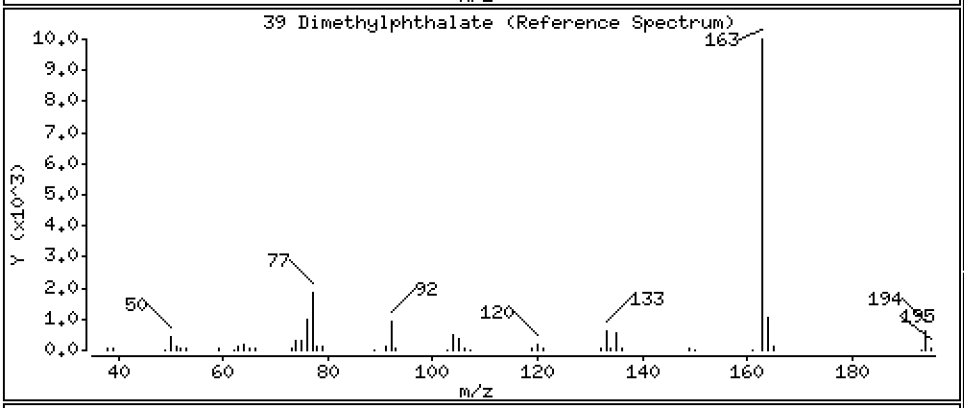
Concentration: 0.1975 ug/mL

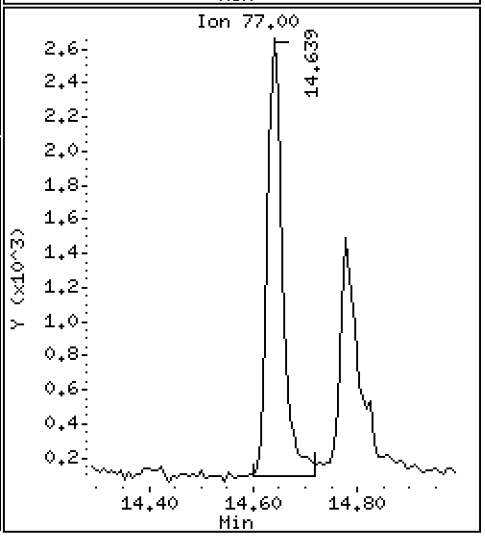


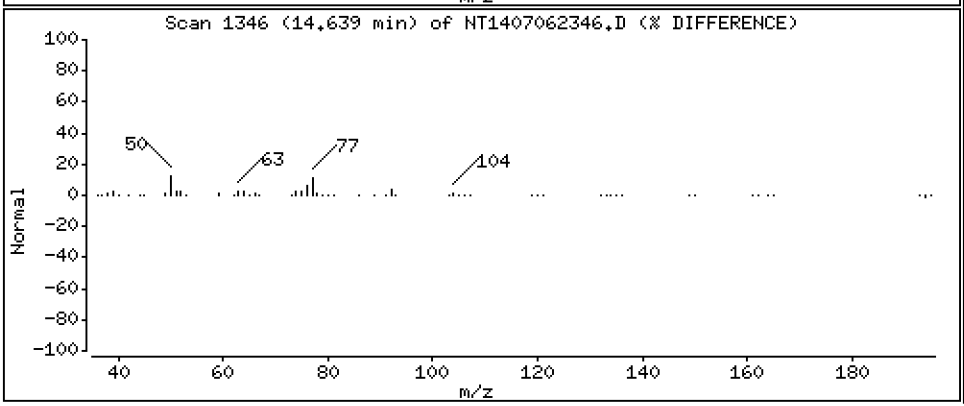












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

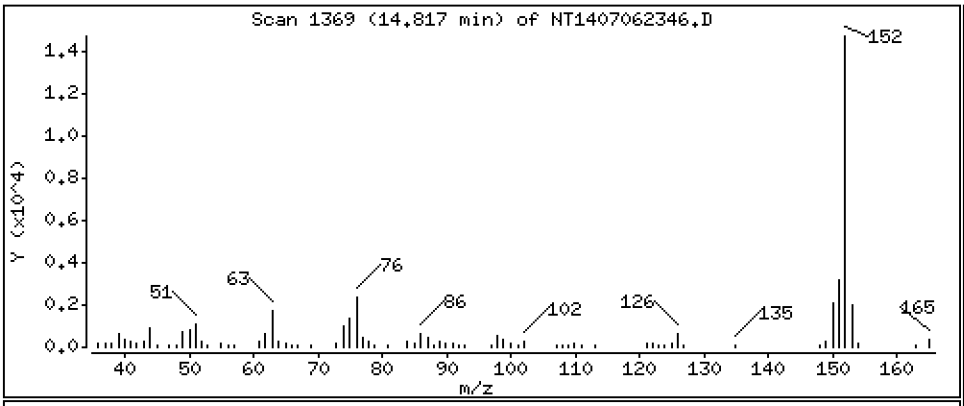
Operator: JGR

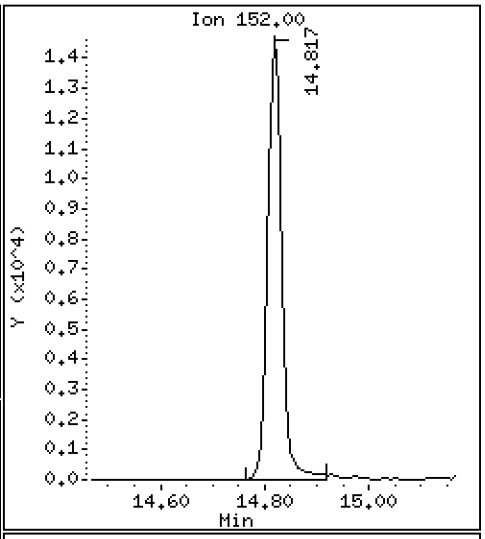
Column phase: ZB-5msi

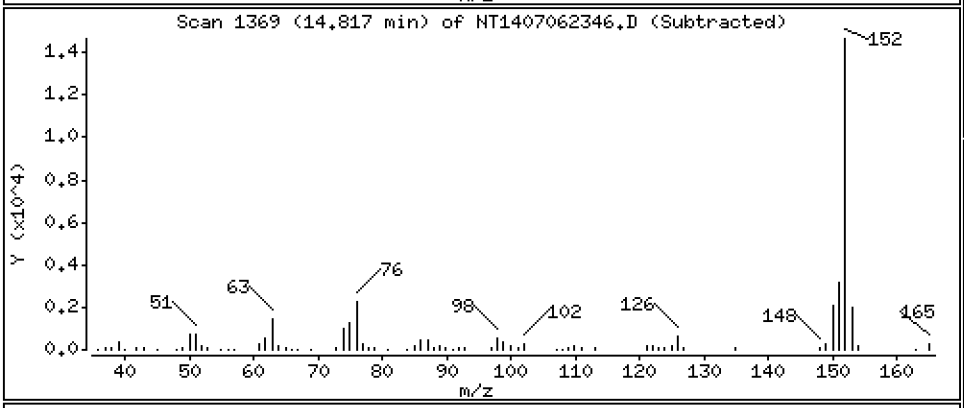
Column diameter: 0.25

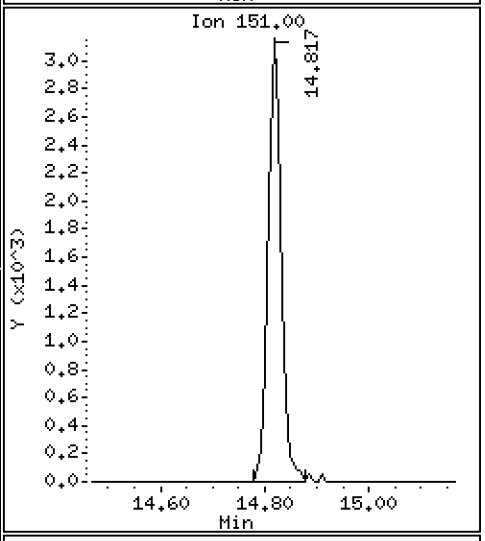
40 Acenaphthylene

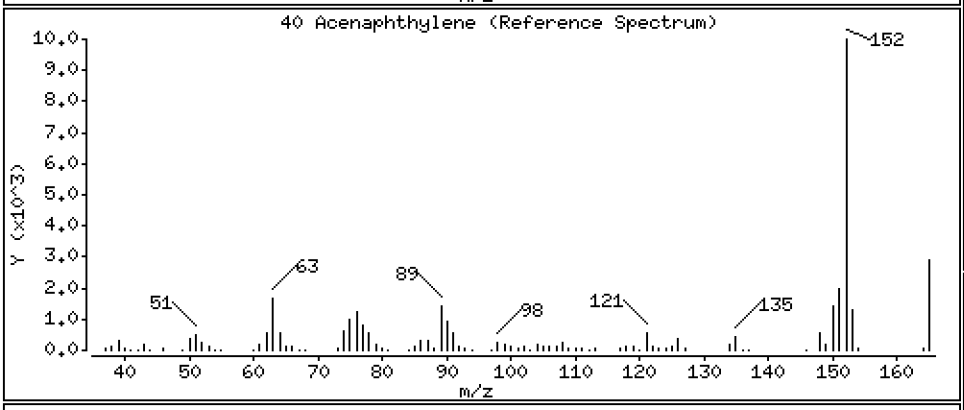
Concentration: 0.2049 ug/mL

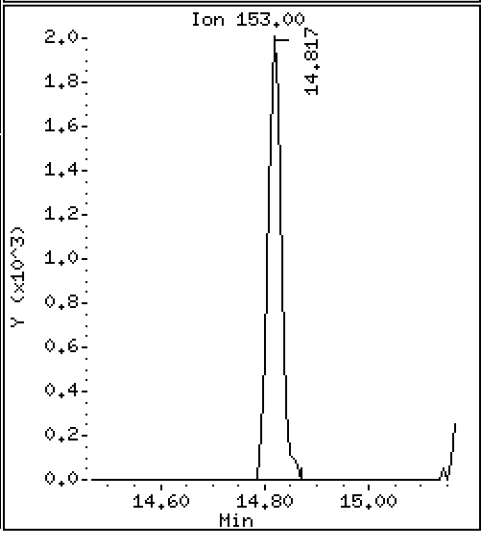


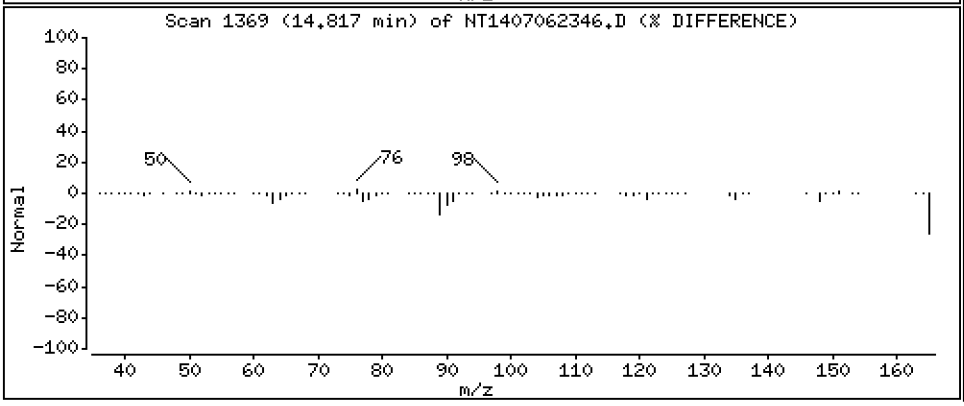












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

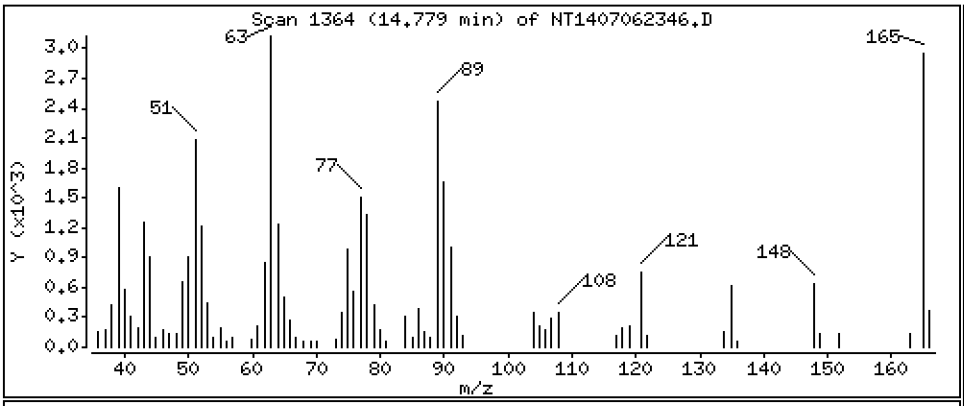
Operator: JGR

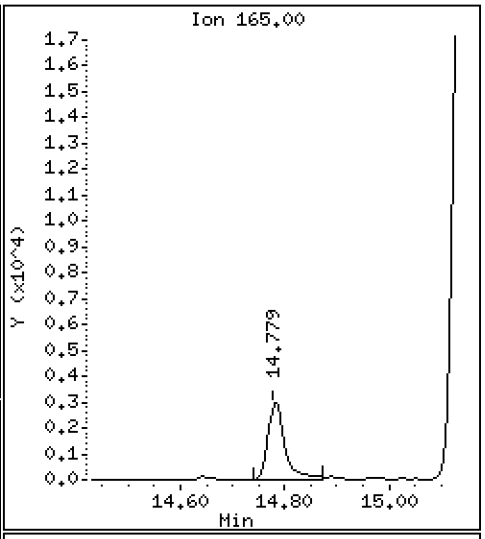
Column phase: ZB-5msi

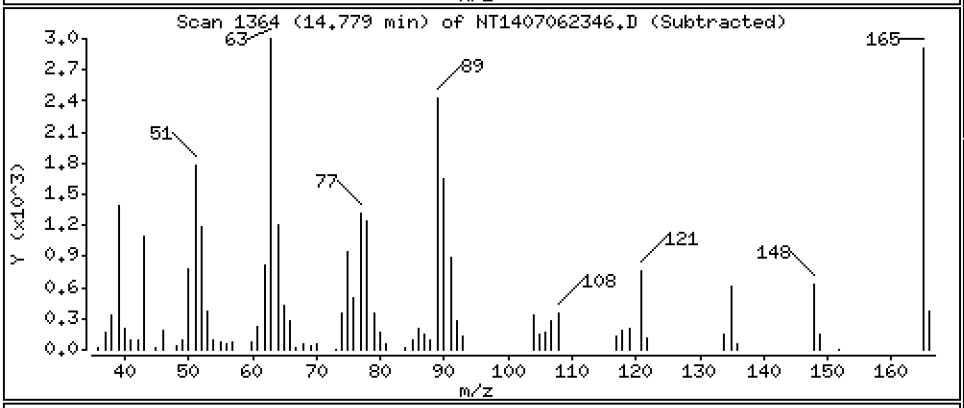
Column diameter: 0.25

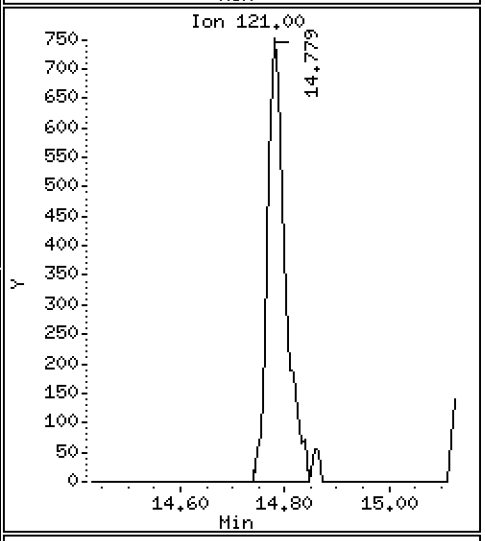
41 2,6-Dinitrotoluene

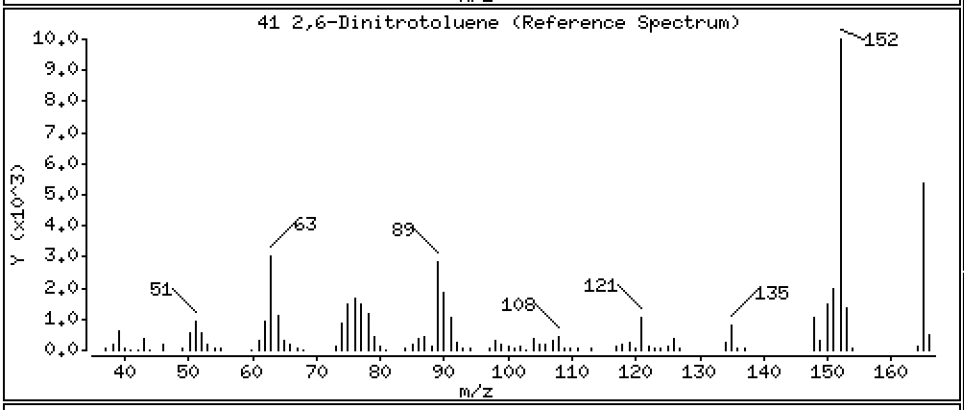
Concentration: 0.3642 ug/mL

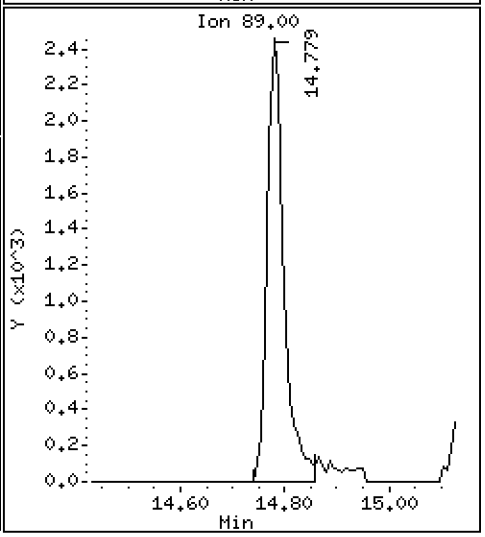


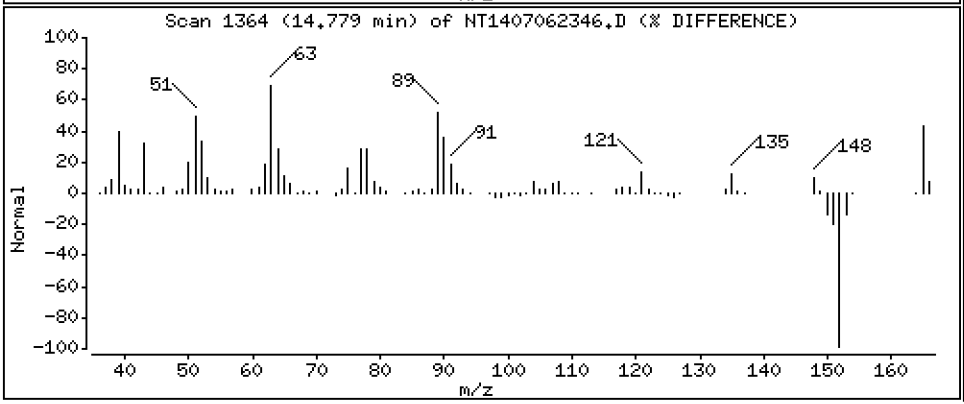












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D

Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

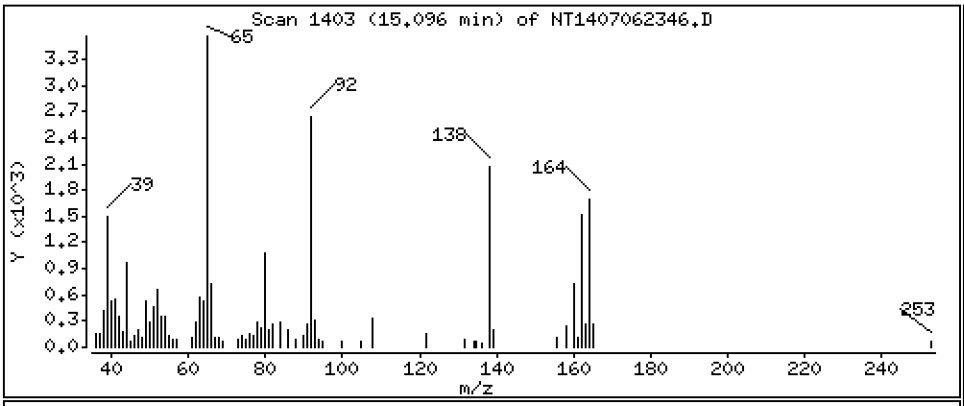
Operator: JGR

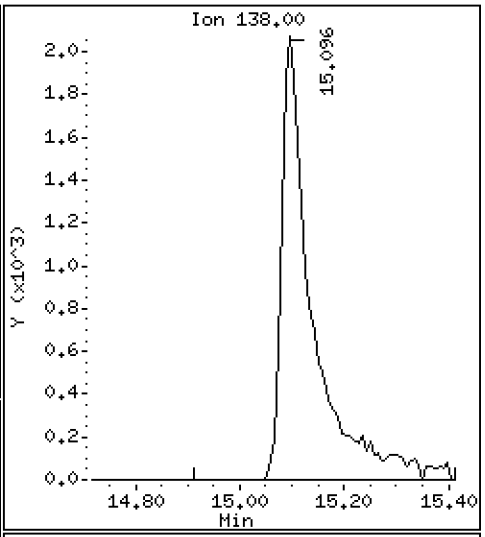
Column phase: ZB-5msi

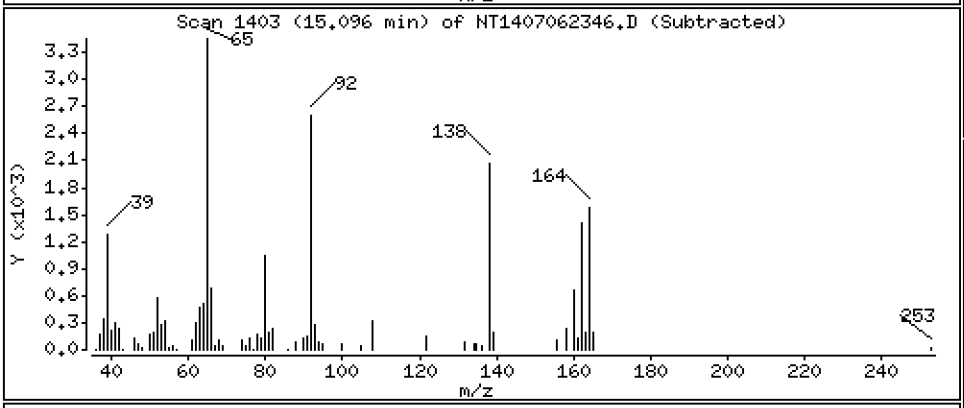
Column diameter: 0.25

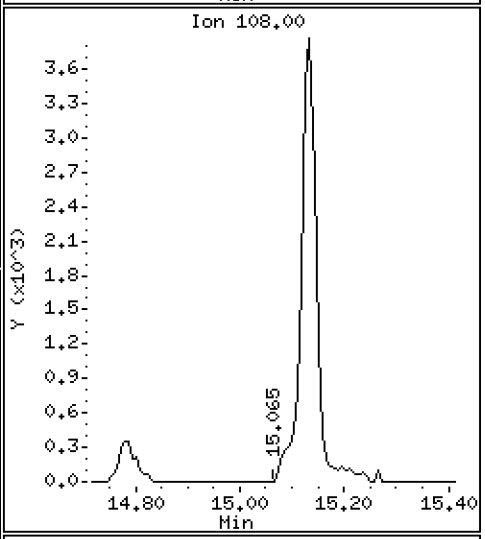
43 3-Nitroaniline

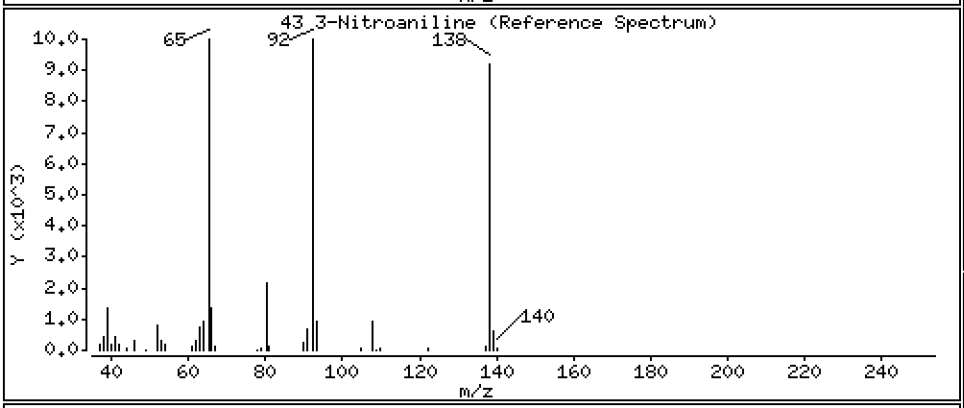
Concentration: 0.3714 ug/mL

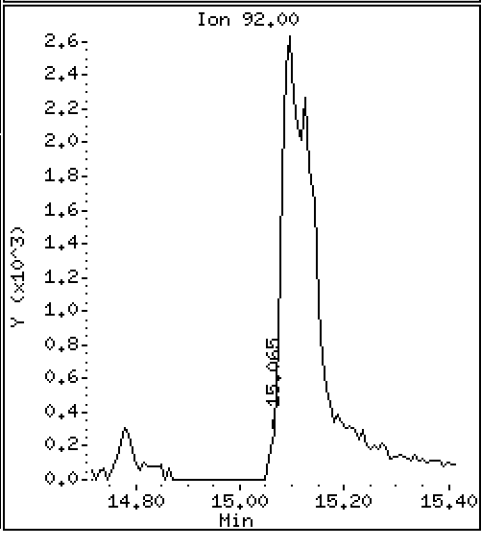


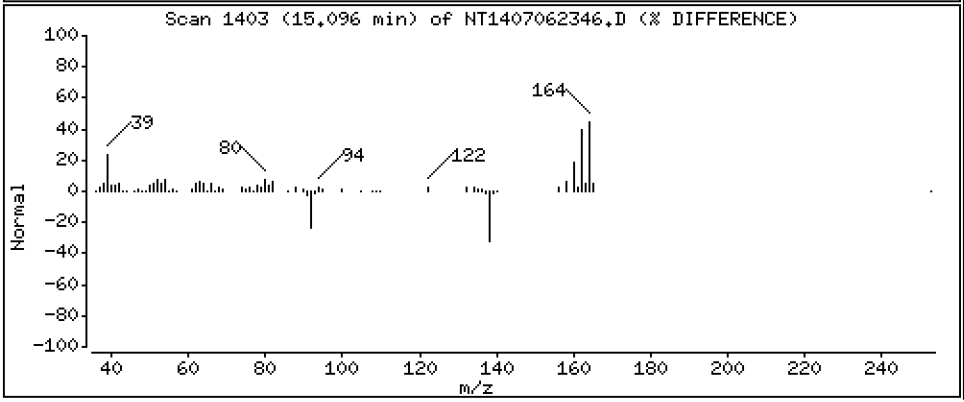












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

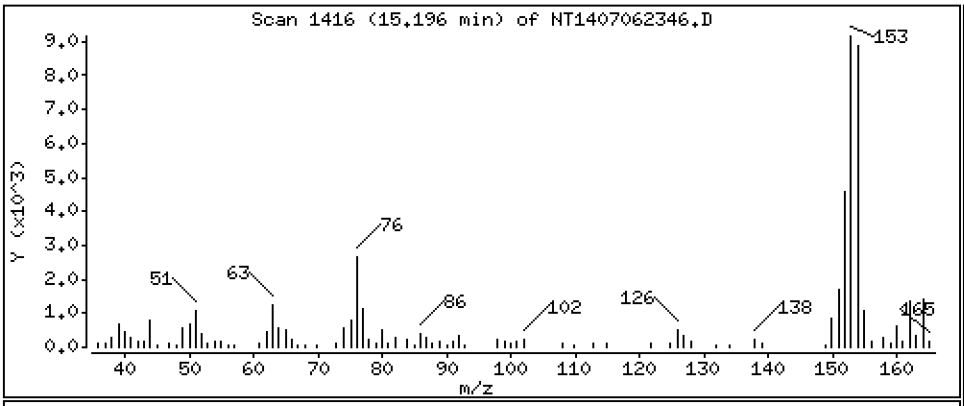
Operator: JGR

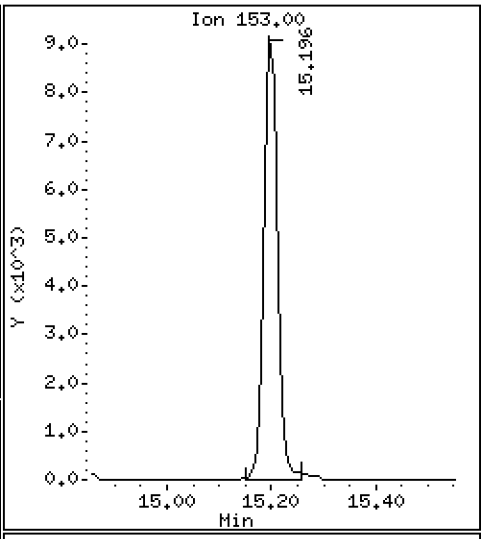
Column phase: ZB-5msi

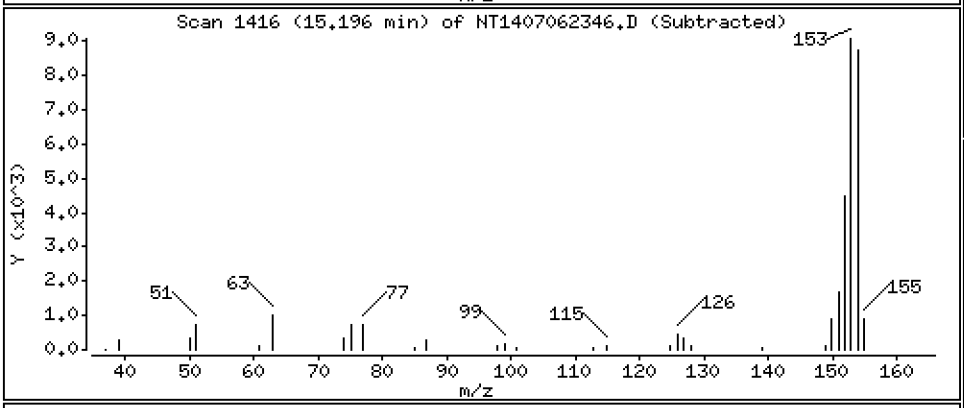
Column diameter: 0.25

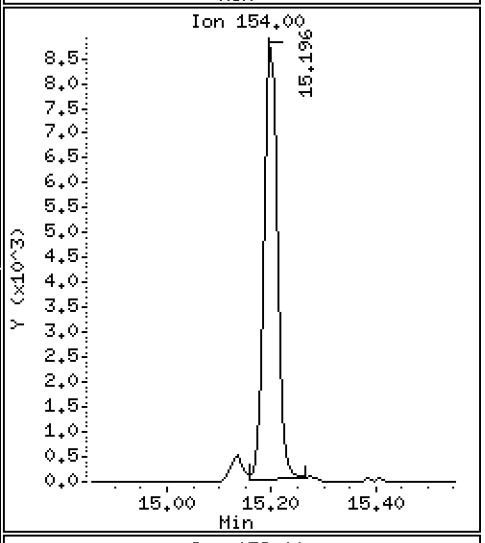
44 Acenaphthene

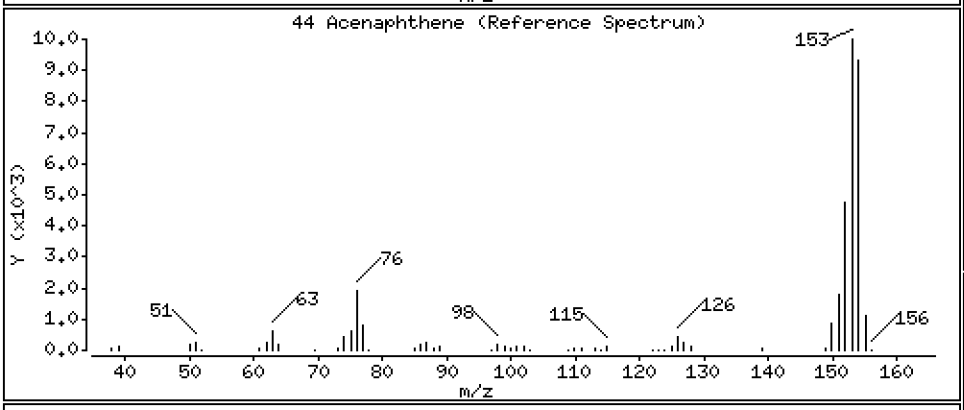
Concentration: 0.2058 ug/mL

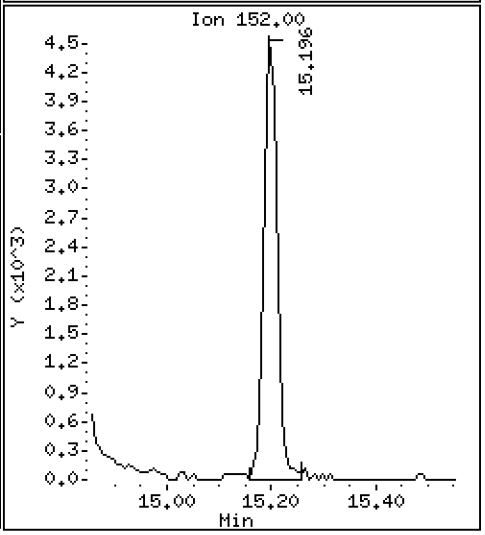


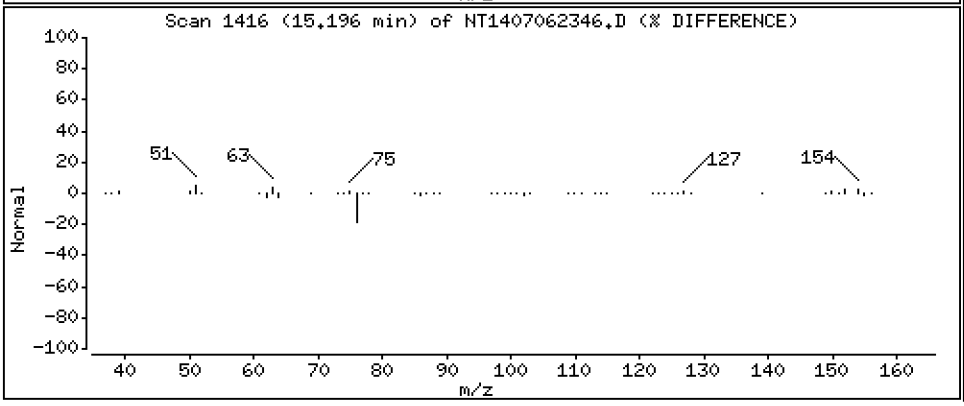












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

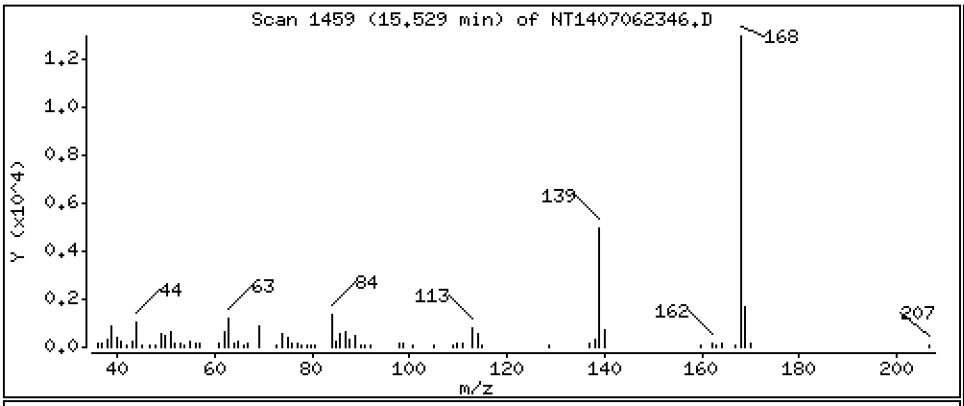
Operator: JGR

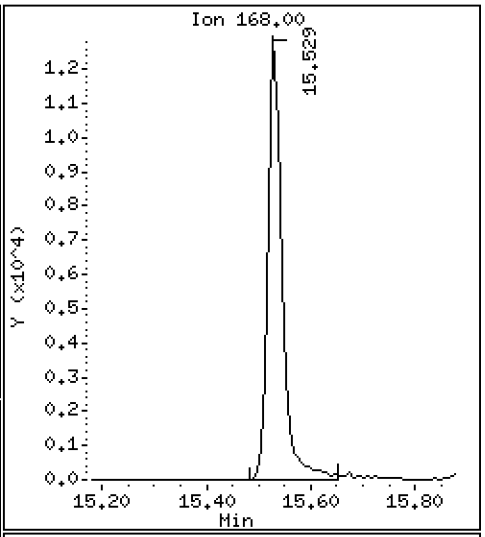
Column phase: ZB-5msi

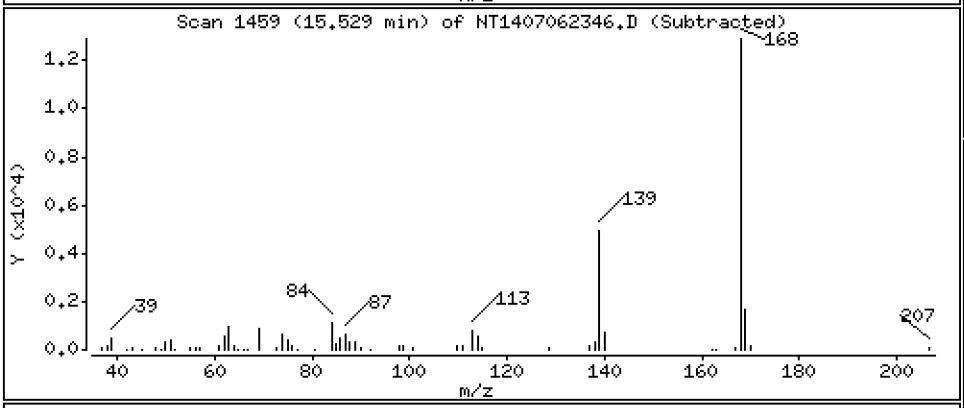
Column diameter: 0.25

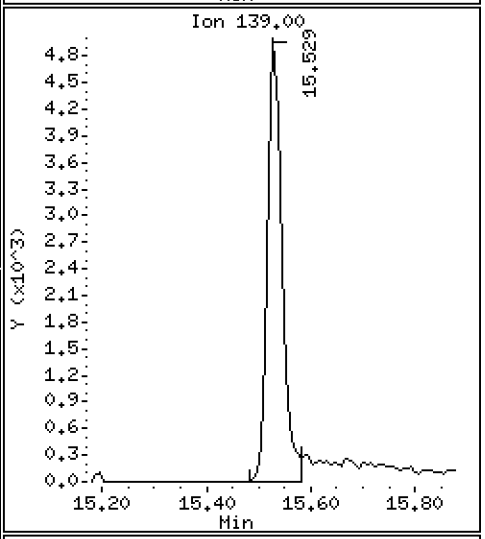
46 Dibenzofuran

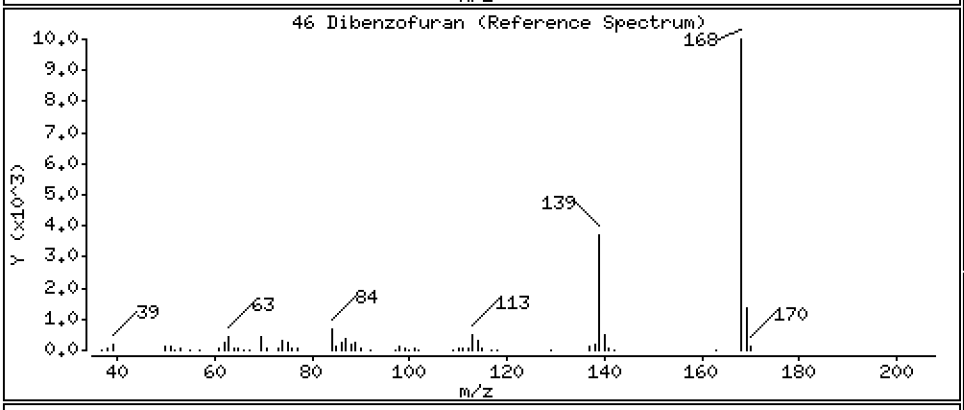
Concentration: 0.2089 ug/mL

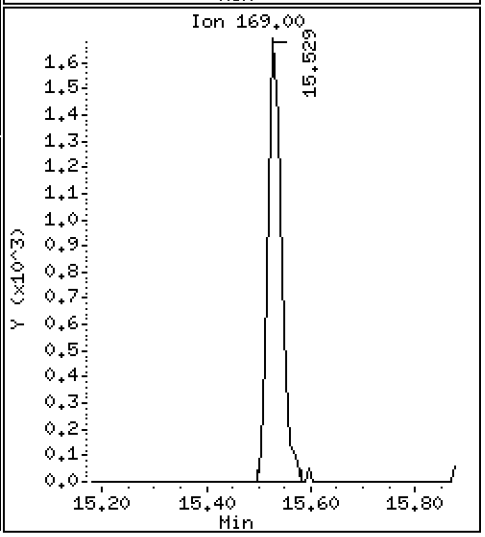


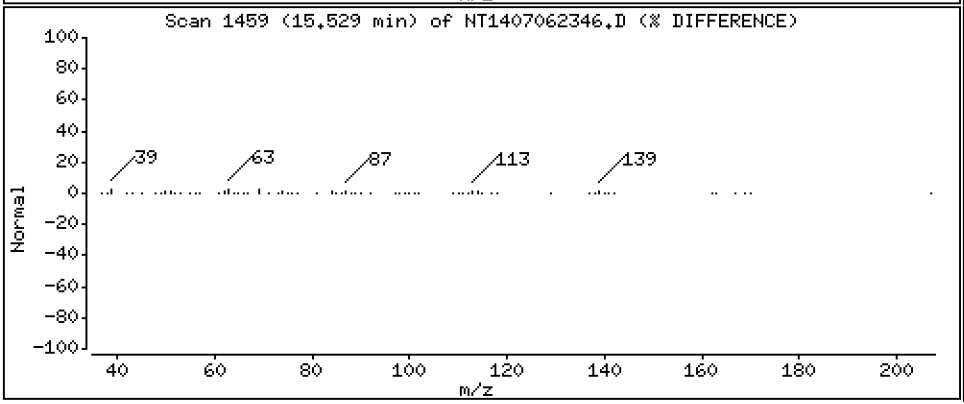












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

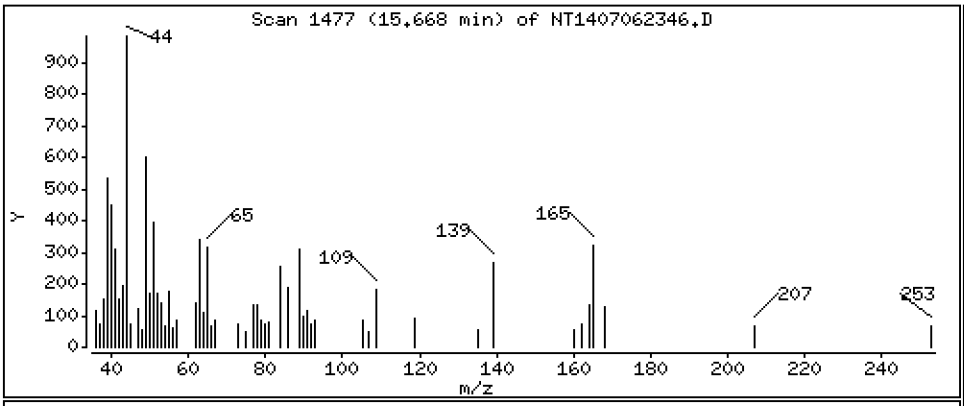
Operator: JGR

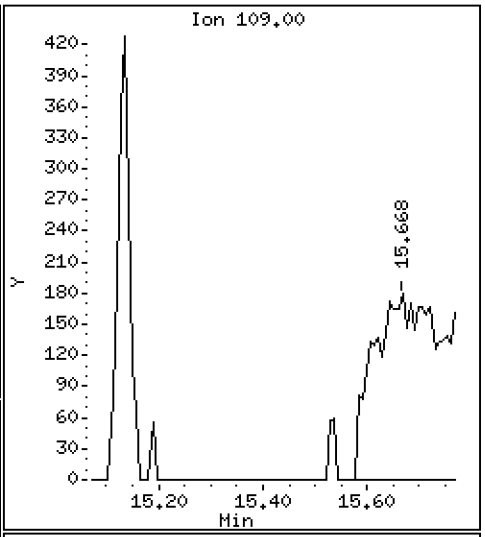
Column phase: ZB-5msi

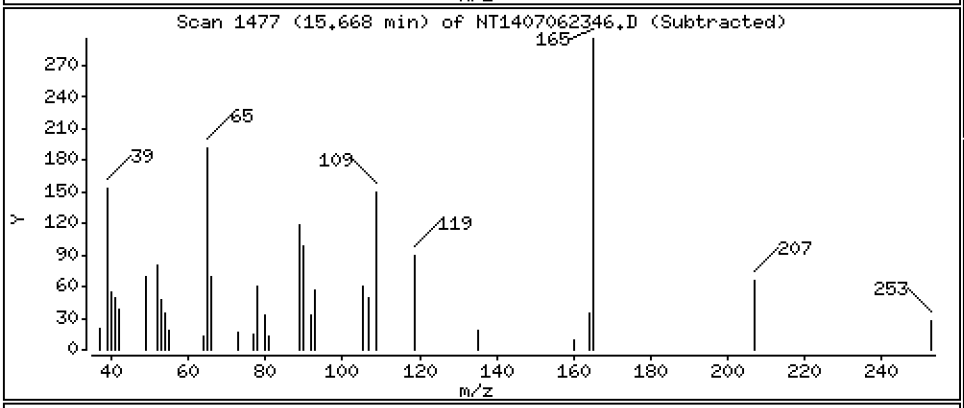
Column diameter: 0.25

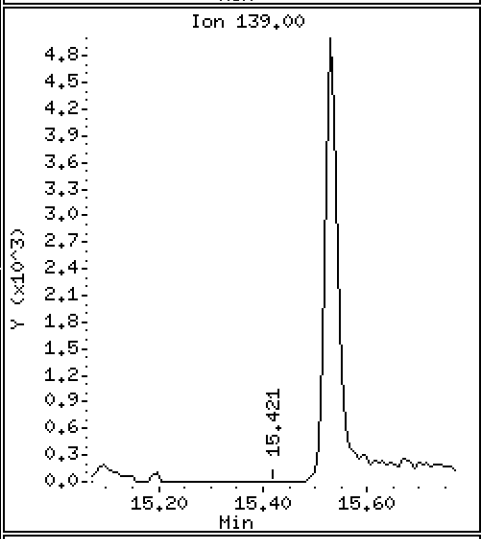
47 4-Nitrophenol

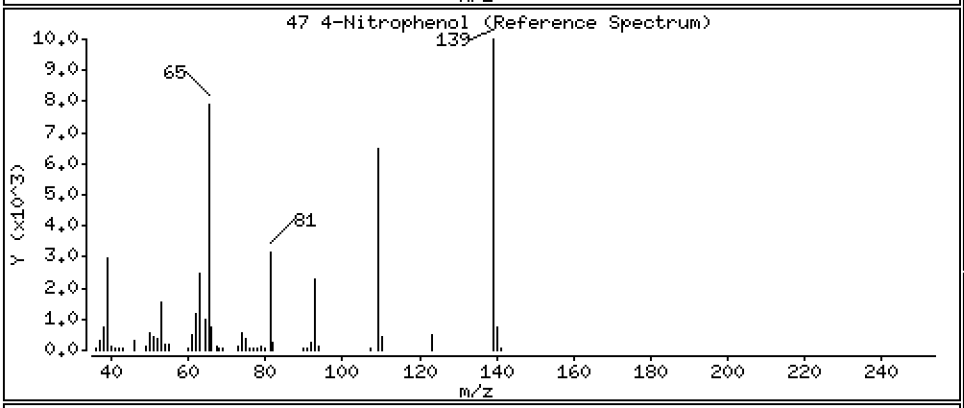
Concentration: 0.1879 ug/mL

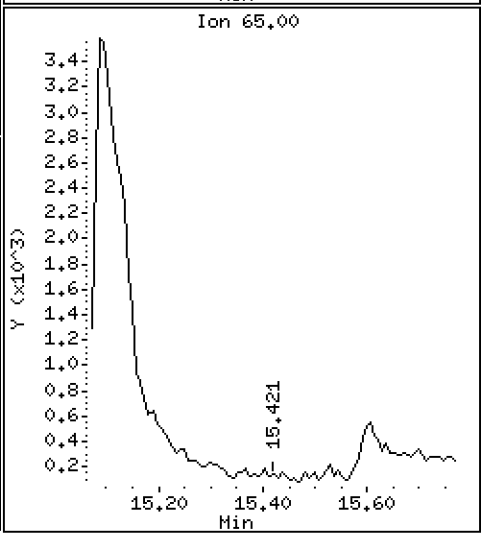


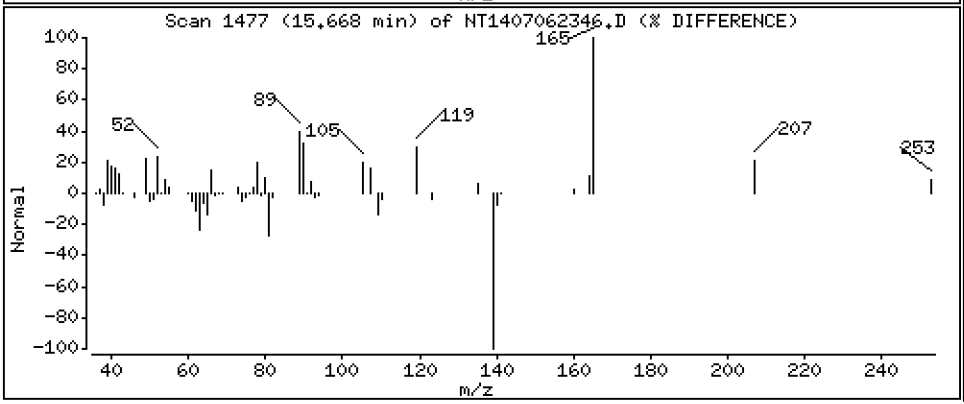












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

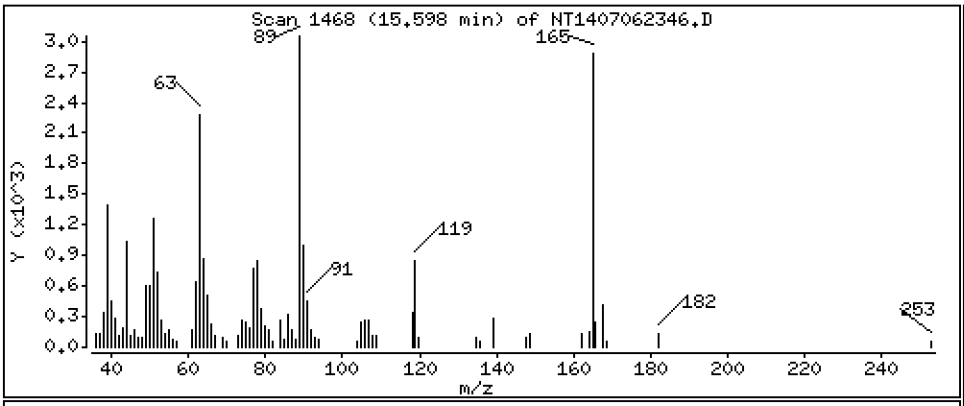
Operator: JGR

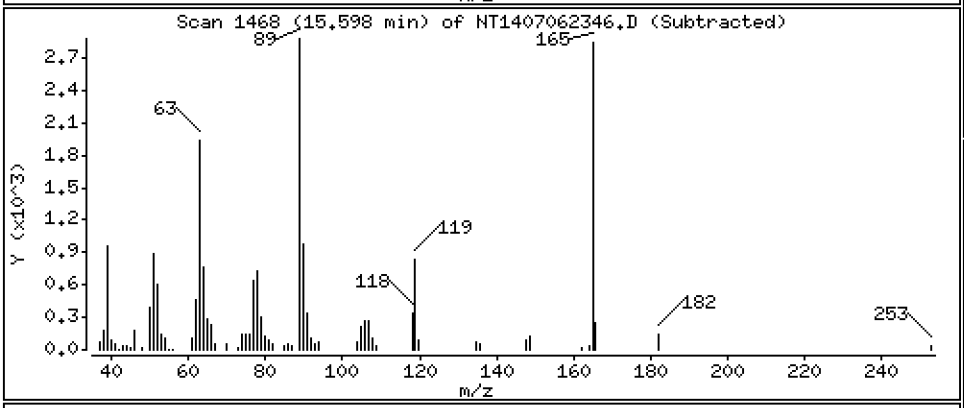
Column phase: ZB-5msi

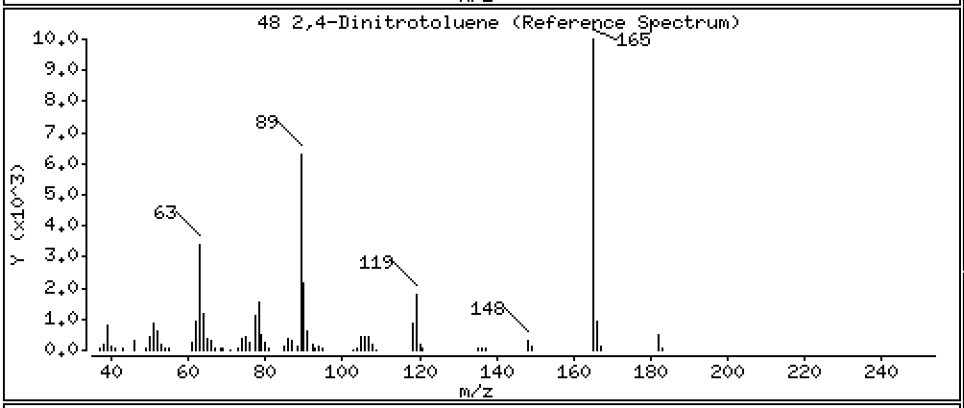
Column diameter: 0.25

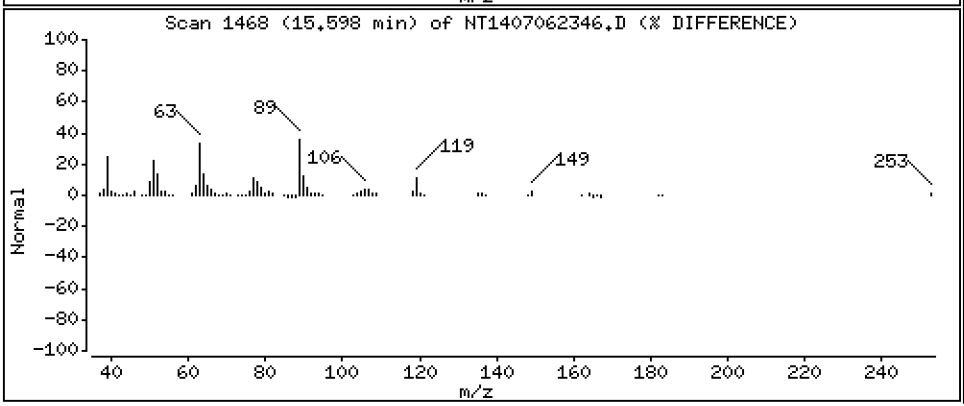
48 2,4-Dinitrotoluene

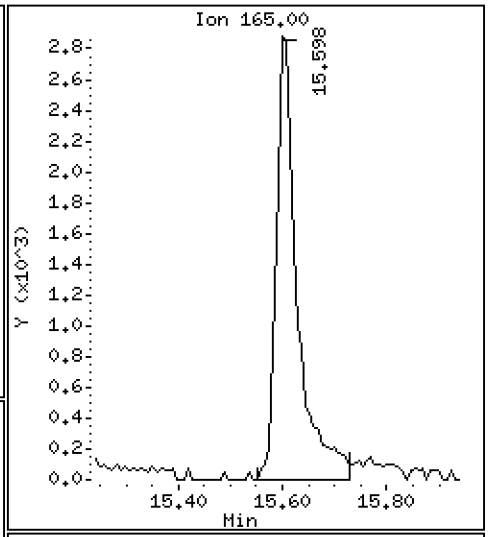
Concentration: 0.3205 ug/mL

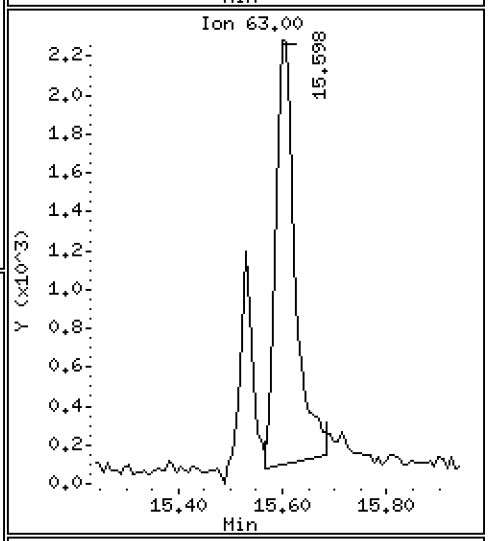


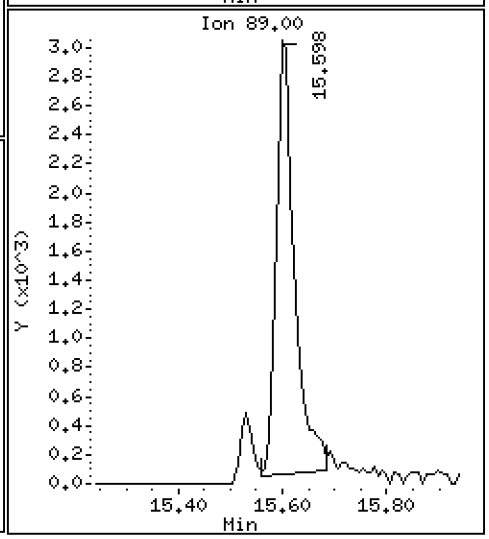












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

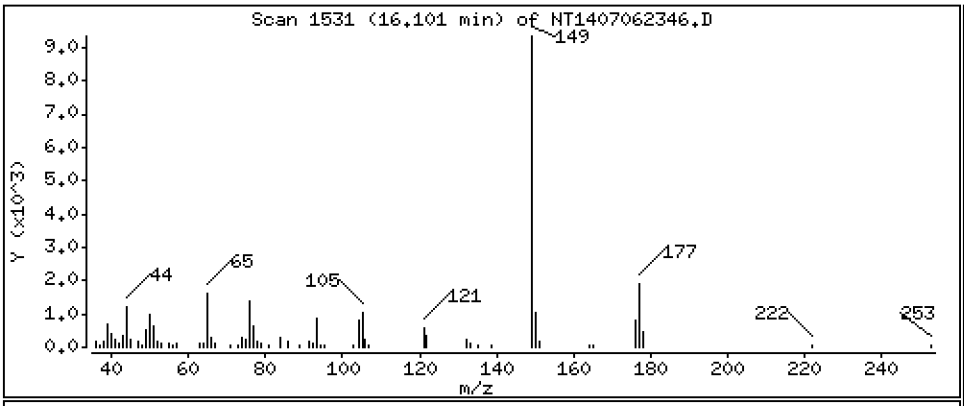
Operator: JGR

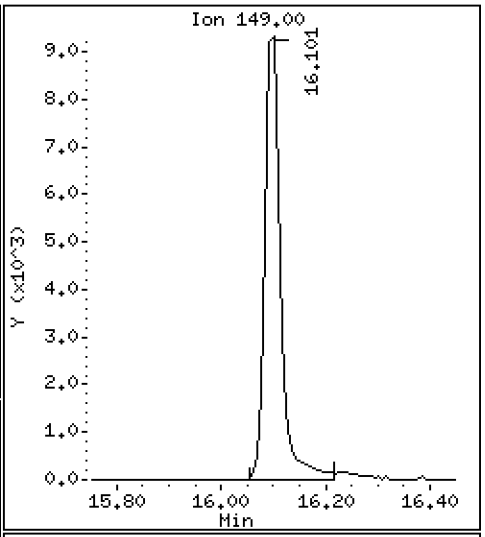
Column phase: ZB-5msi

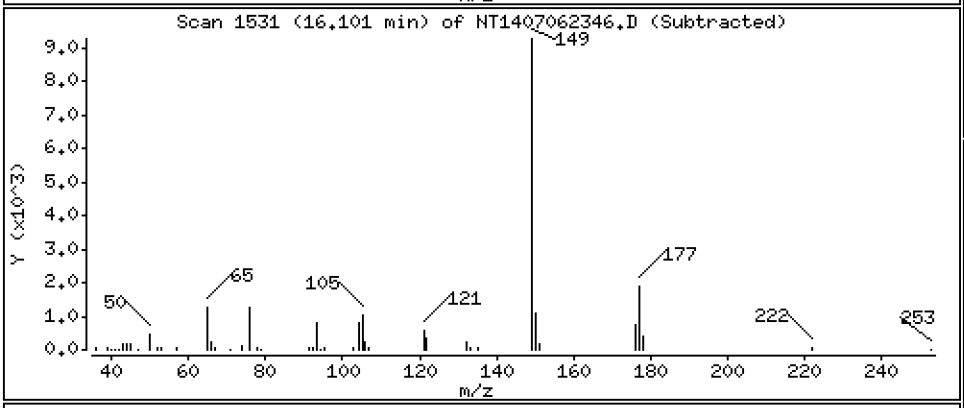
Column diameter: 0.25

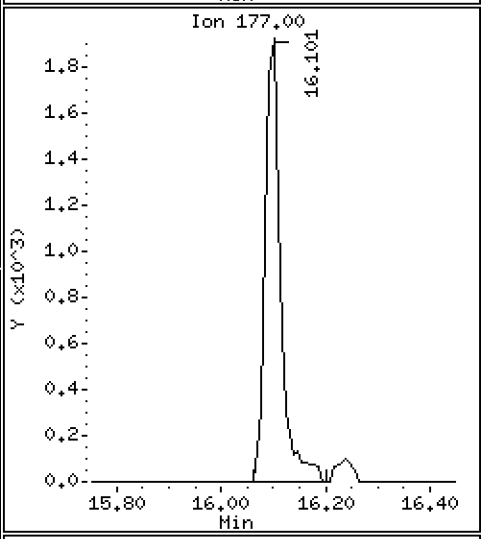
50 Diethylphthalate

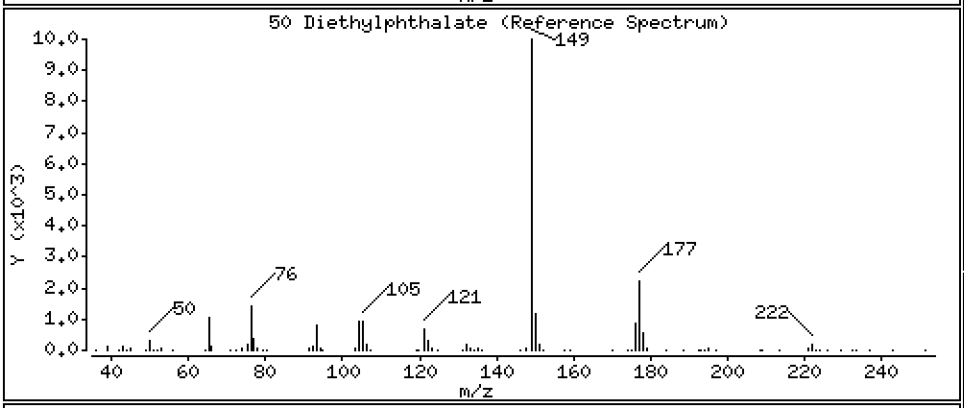
Concentration: 0.2064 ug/mL

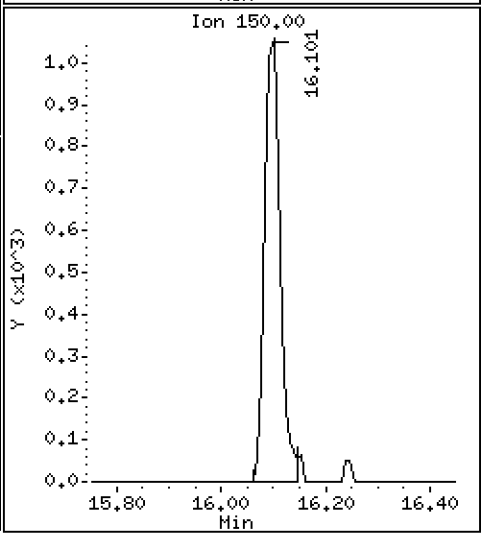


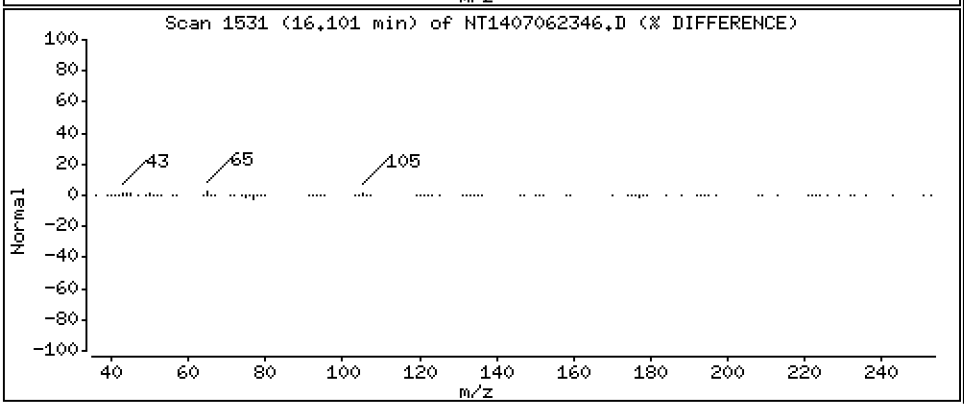












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

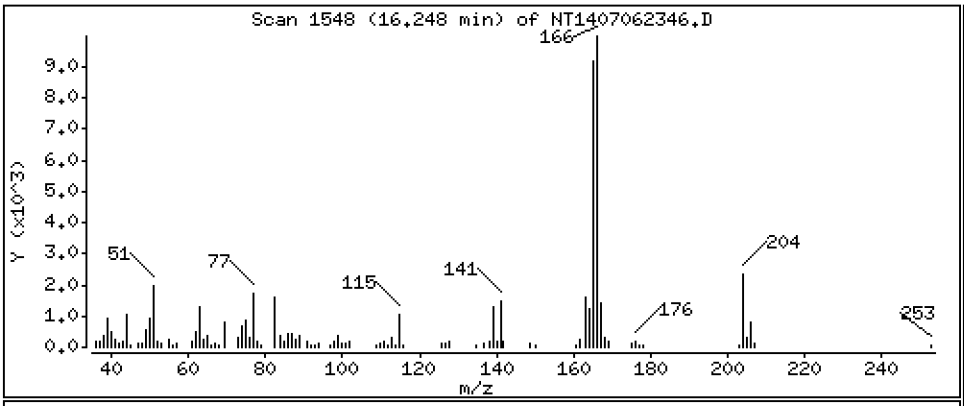
Operator: JGR

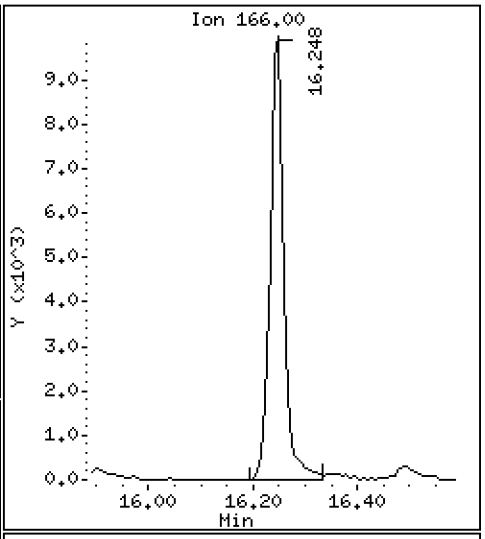
Column phase: ZB-5msi

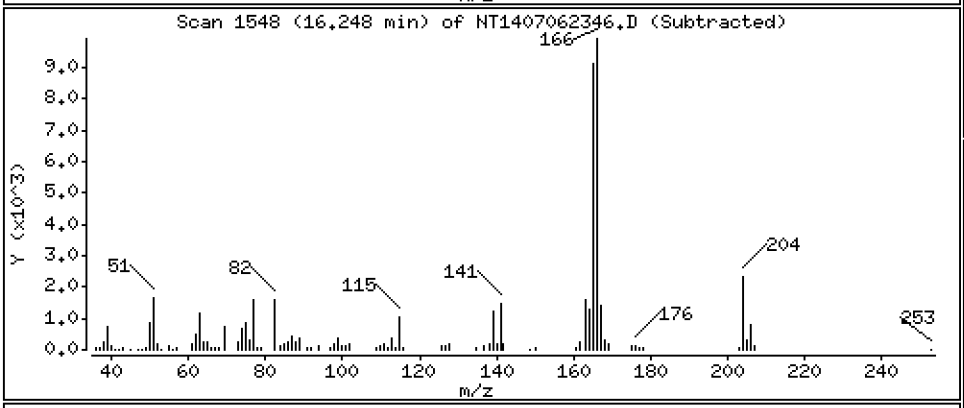
Column diameter: 0.25

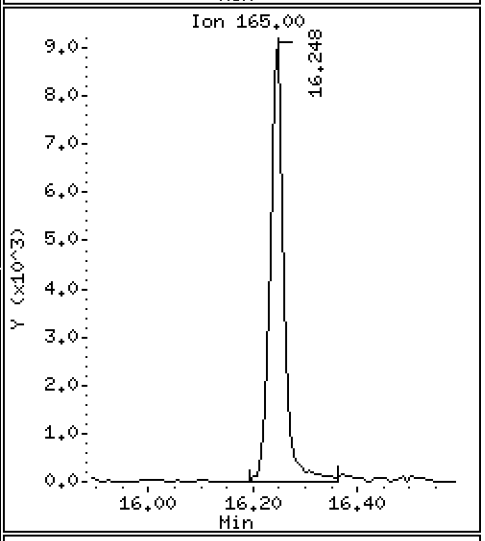
49 Fluorene

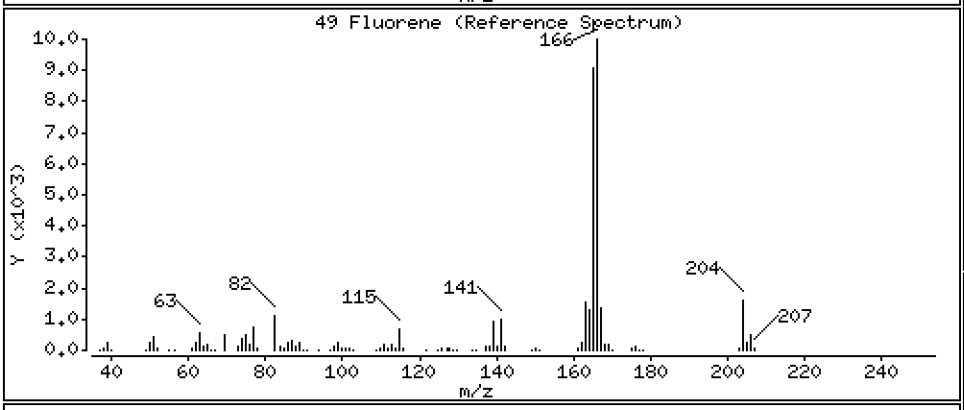
Concentration: 0.1869 ug/mL

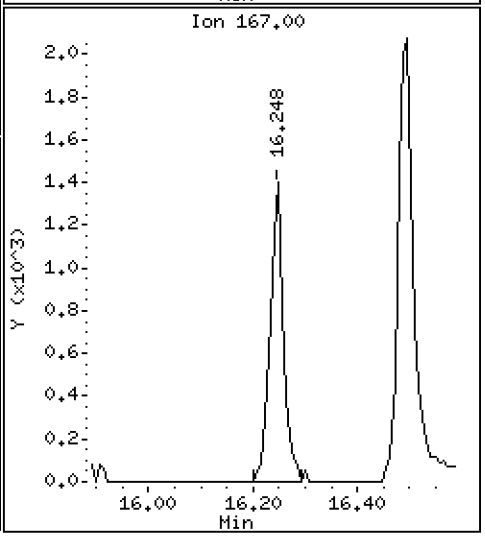


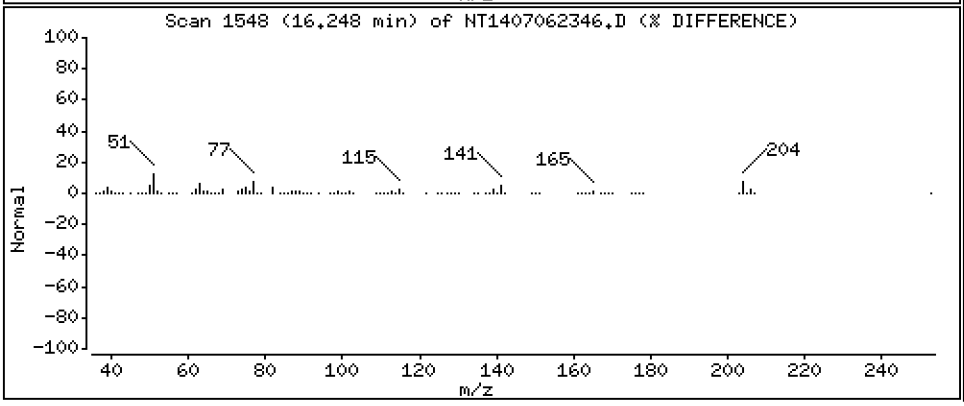












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D

Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

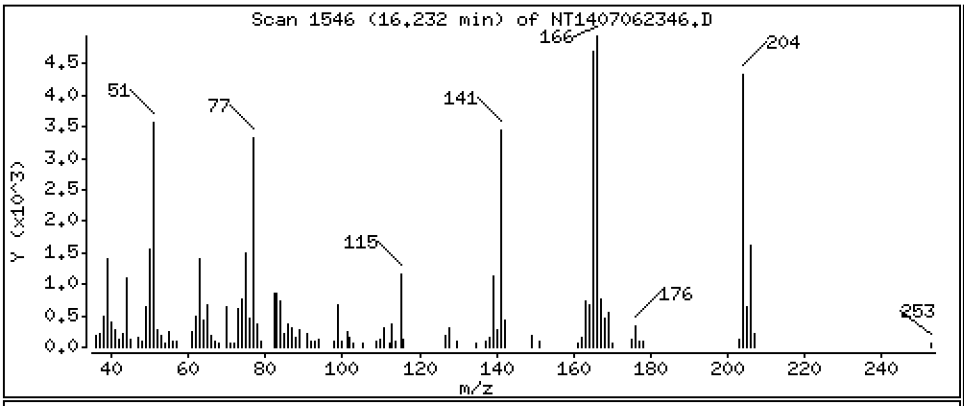
Operator: JGR

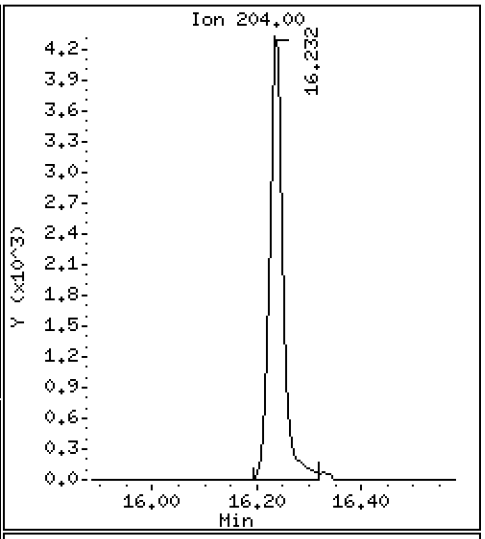
Column phase: ZB-5msi

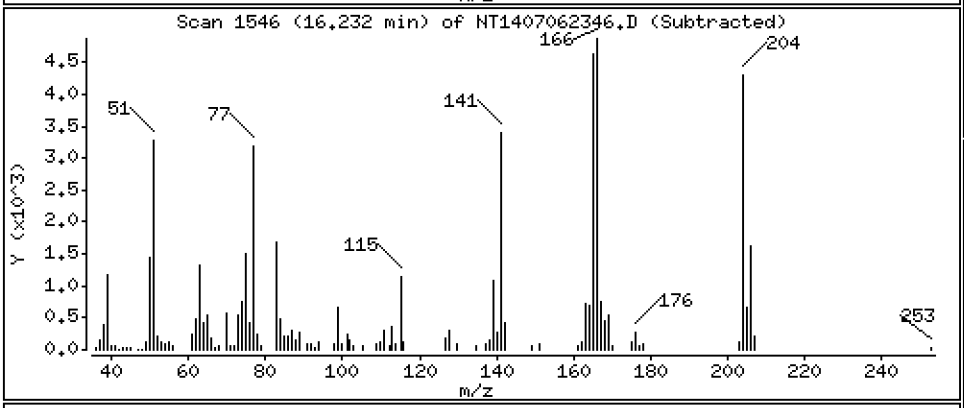
Column diameter: 0.25

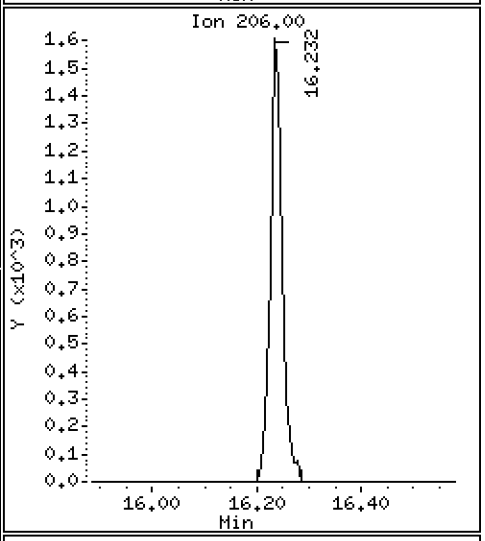
51 4-Chlorophenyl-phenylether

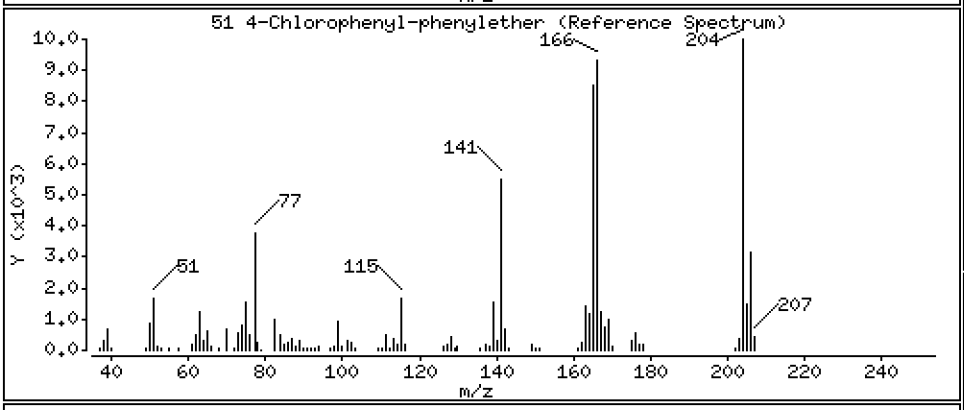
Concentration: 0.1840 ug/mL

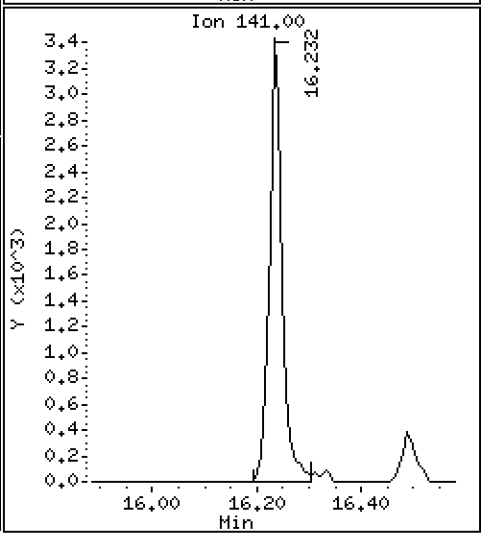


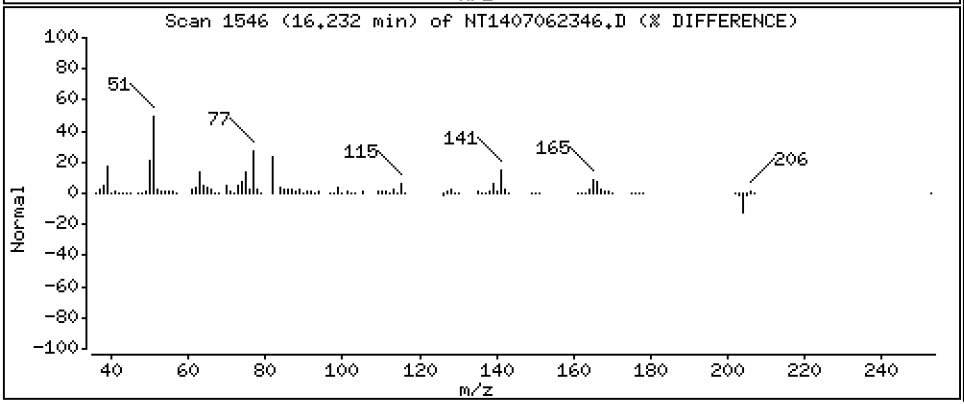












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

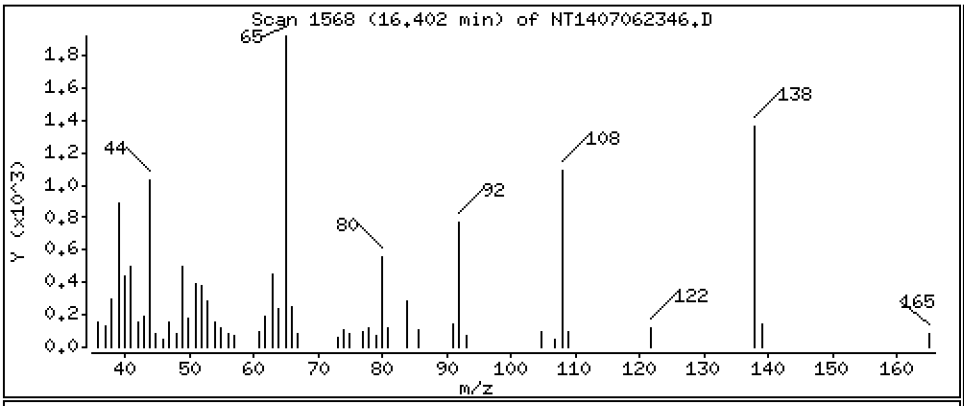
Operator: JGR

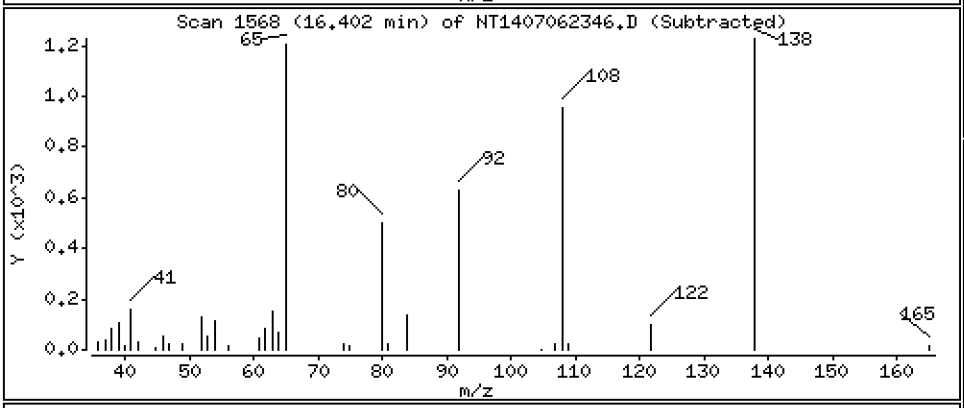
Column phase: ZB-5msi

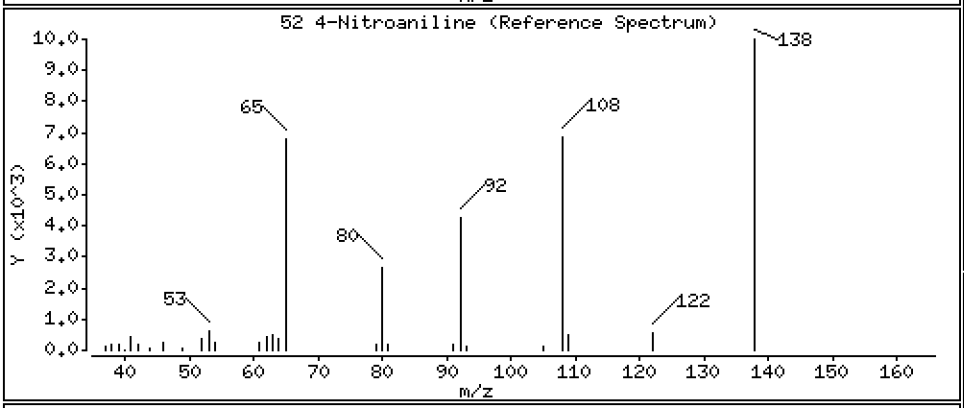
Column diameter: 0.25

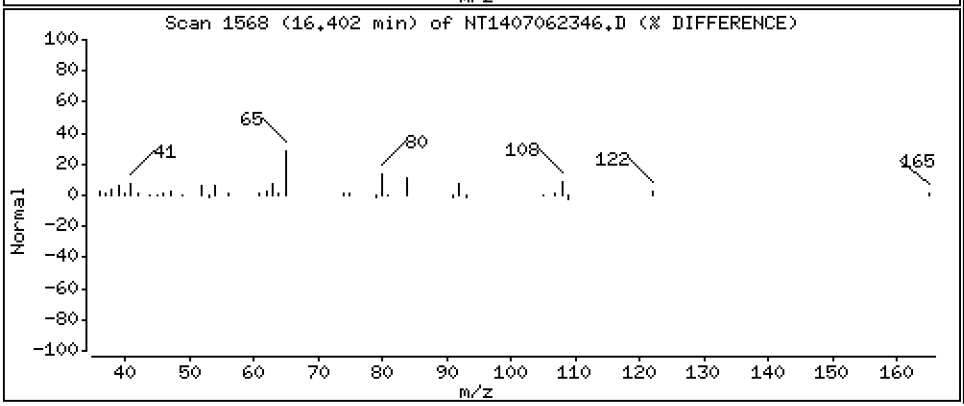
52 4-Nitroaniline

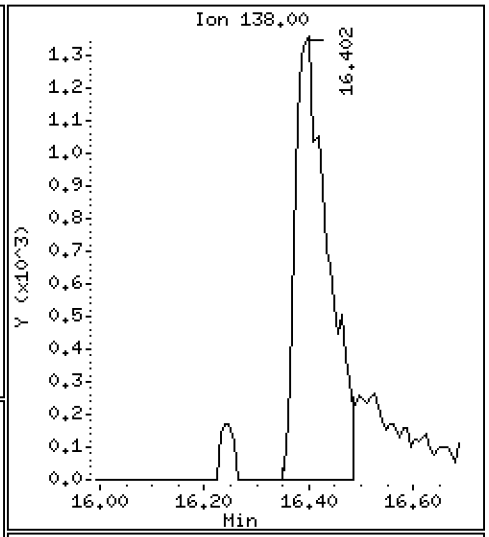
Concentration: 0.2435 ug/mL

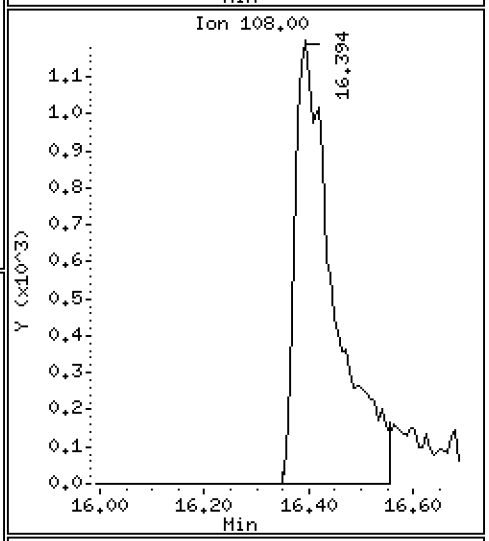


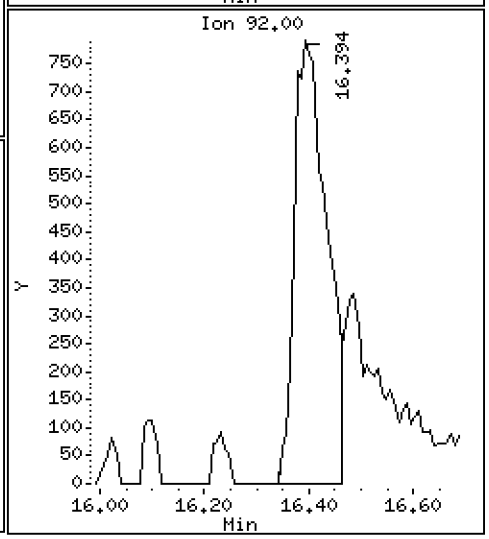












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

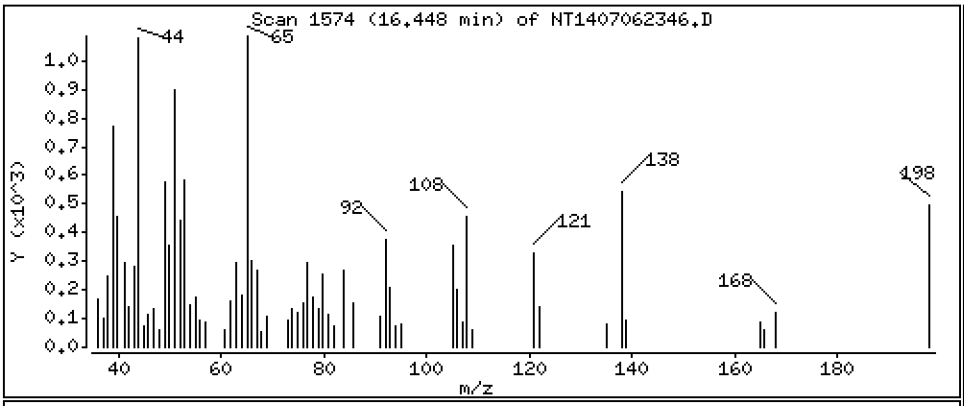
Operator: JGR

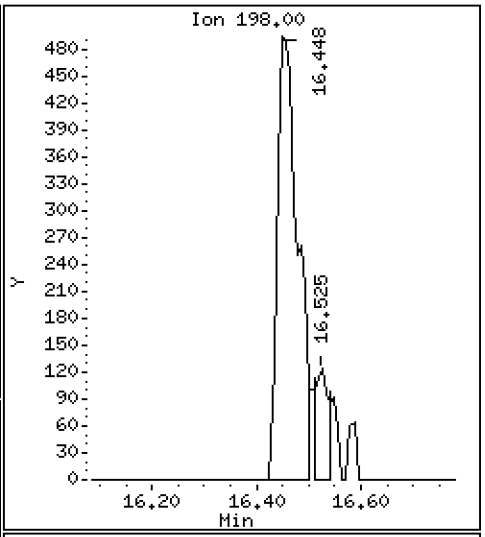
Column phase: ZB-5msi

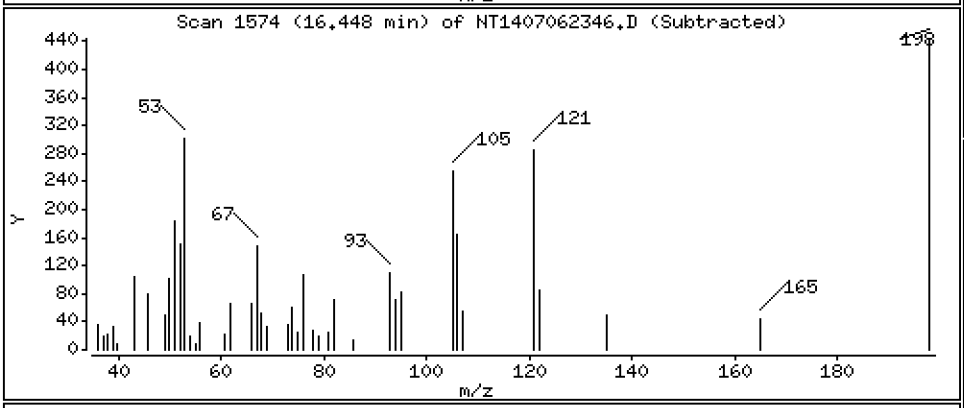
Column diameter: 0.25

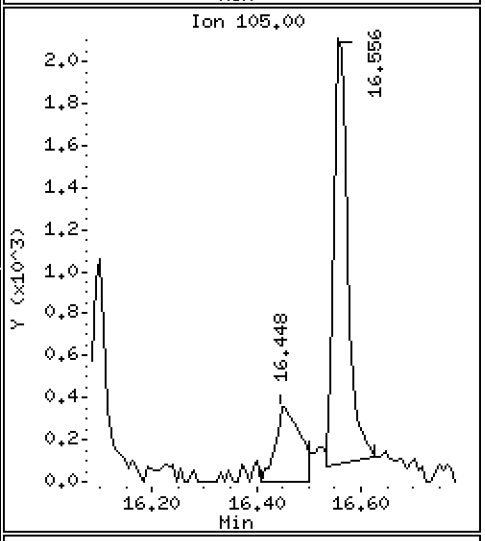
53 4,6-Dinitro-2-methylphenol

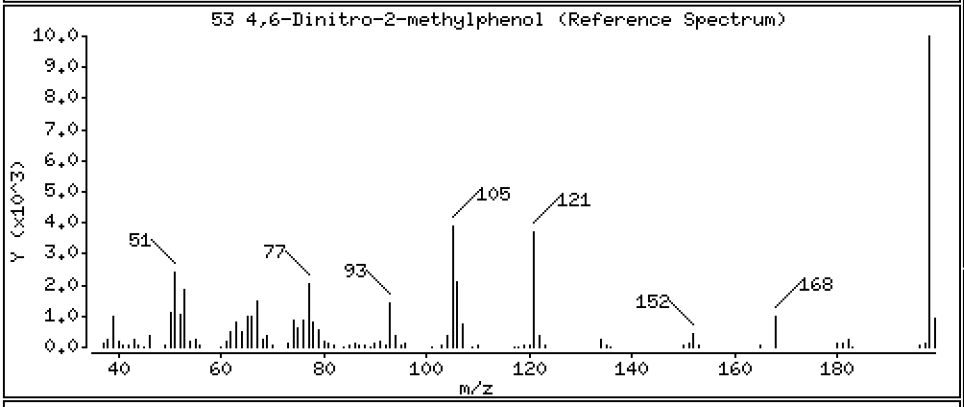
Concentration: 0.09804 ug/mL

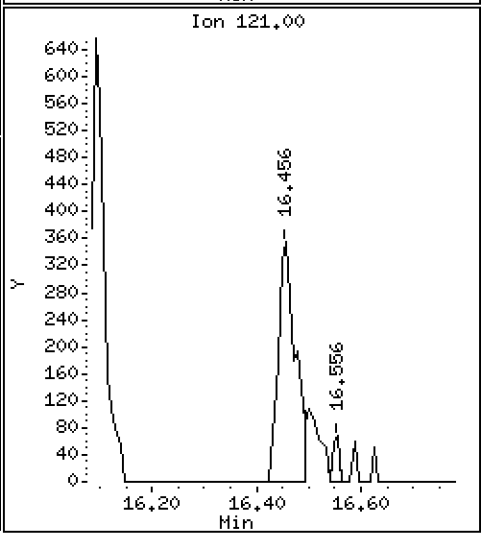


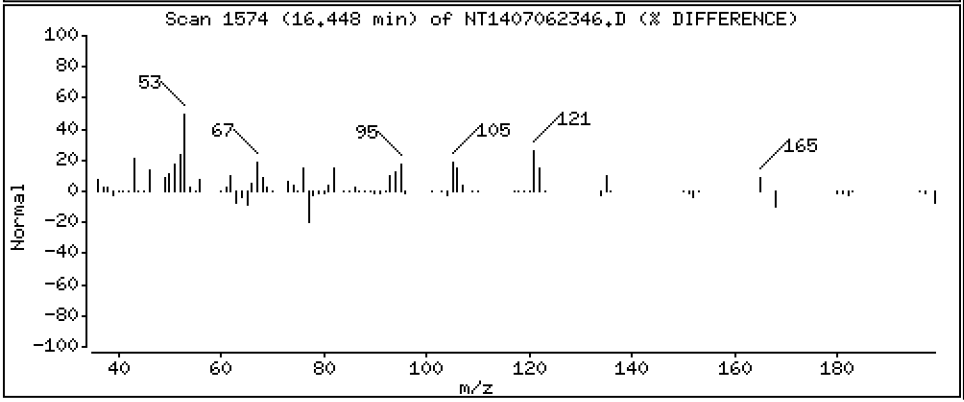












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

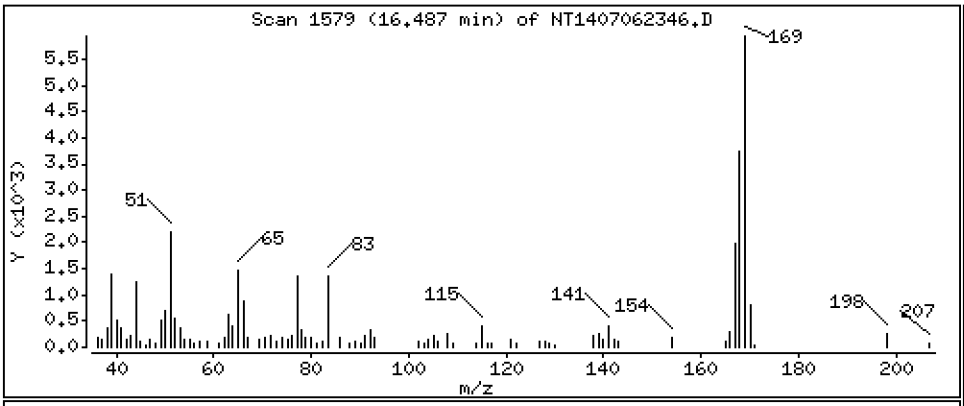
Operator: JGR

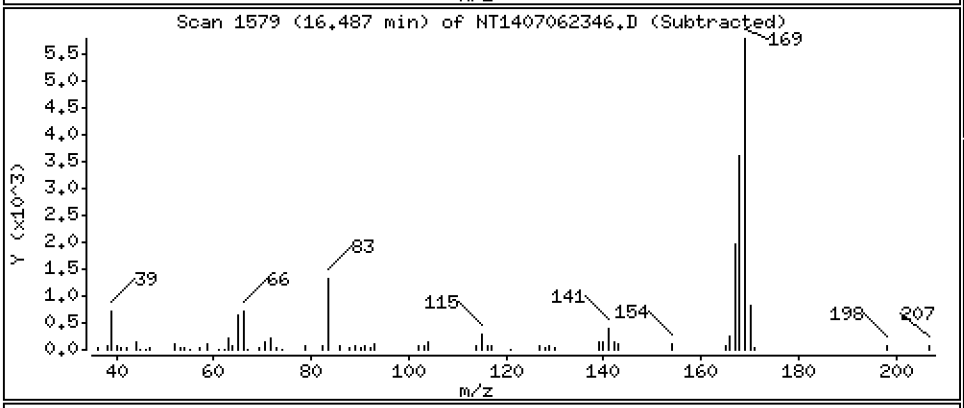
Column phase: ZB-5msi

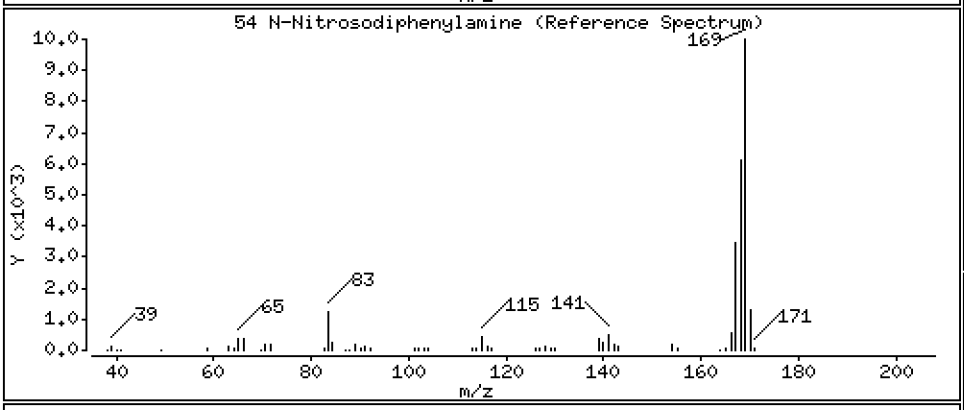
Column diameter: 0.25

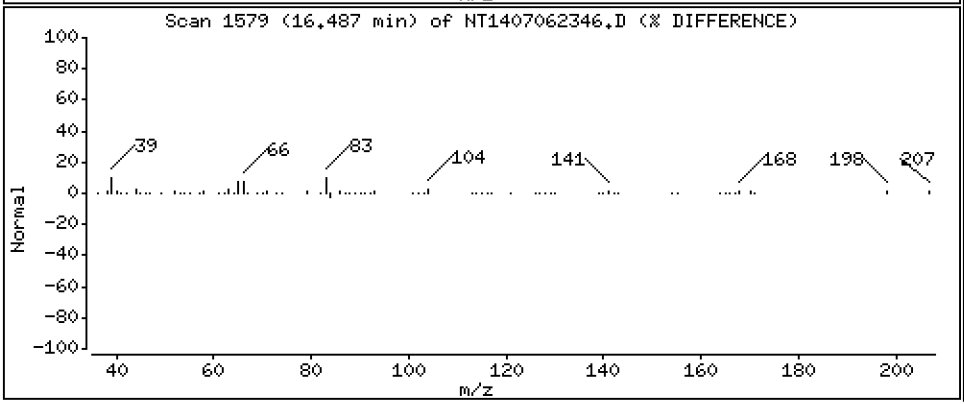
54 N-Nitrosodiphenylamine

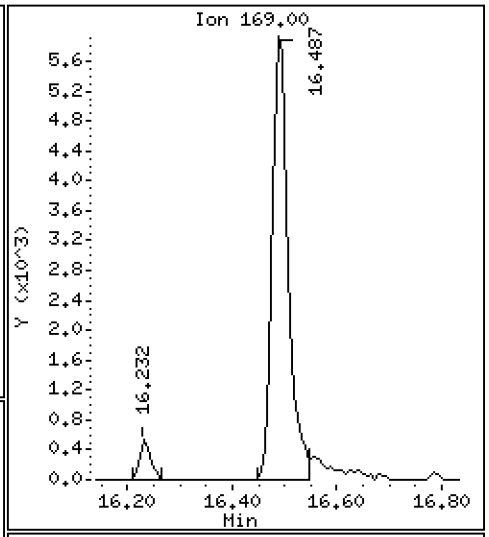
Concentration: 0.1924 ug/mL

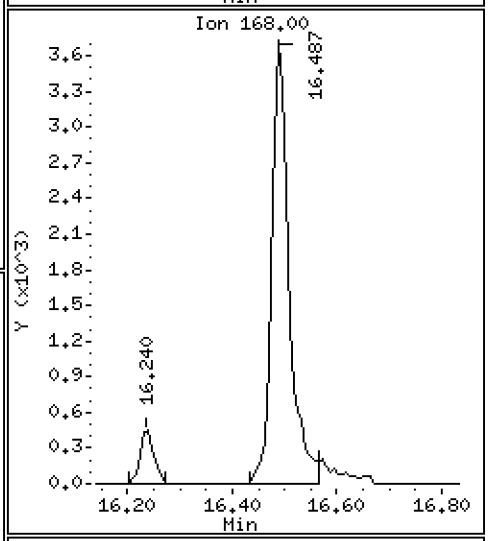


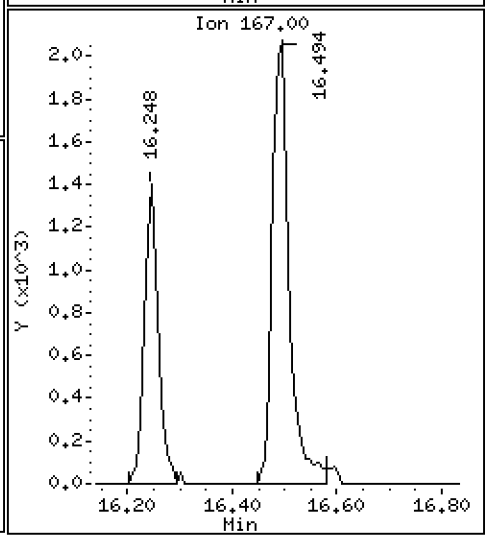












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

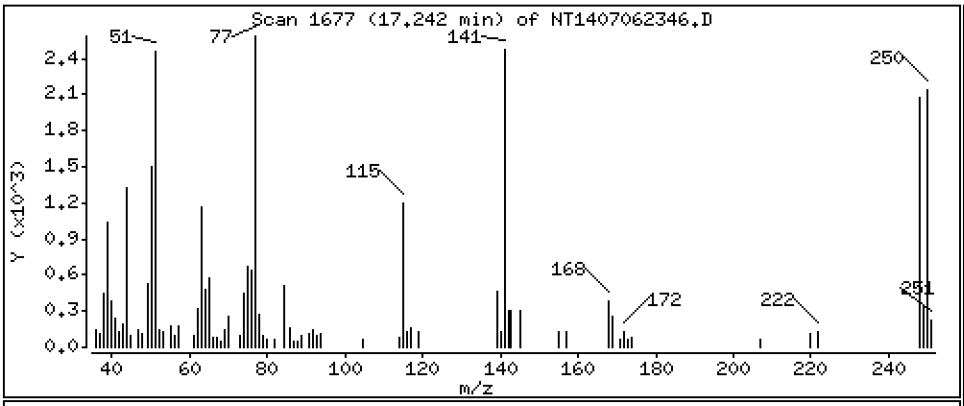
Operator: JGR

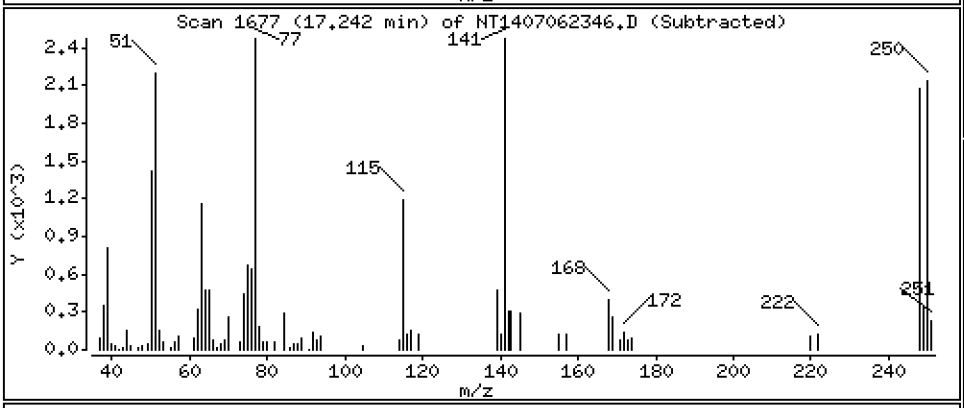
Column phase: ZB-5msi

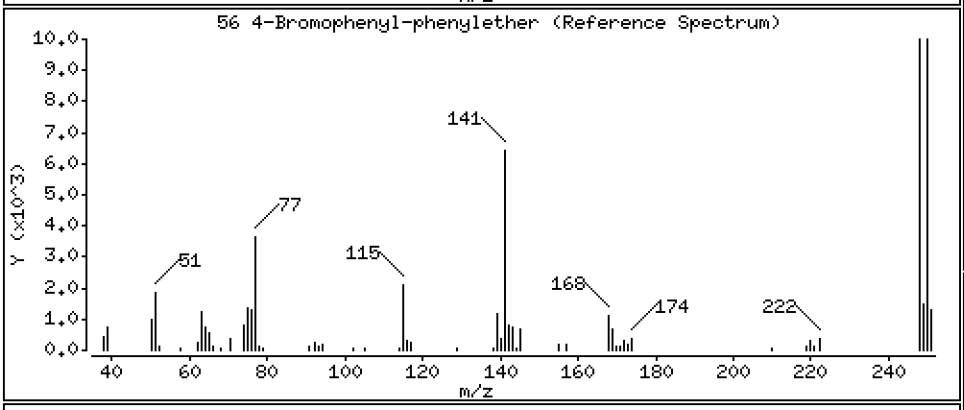
Column diameter: 0.25

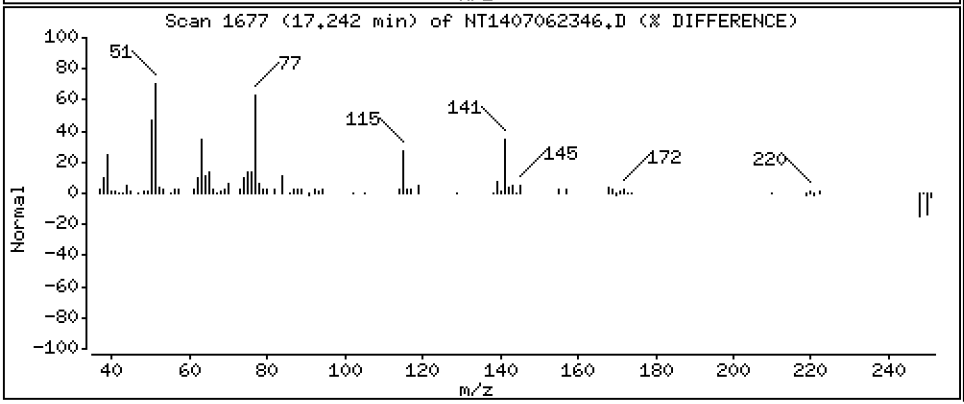
56 4-Bromophenyl-phenylether

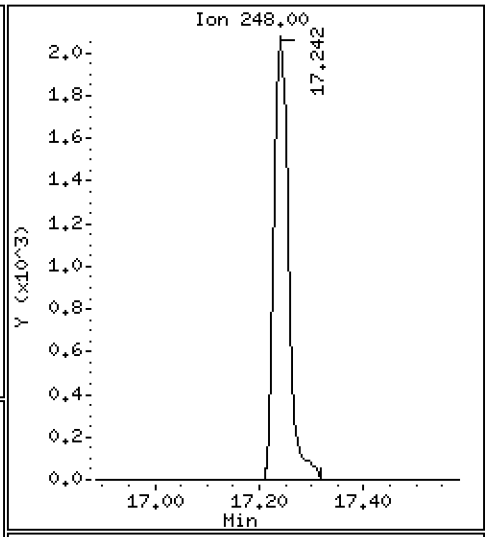
Concentration: 0.1987 ug/mL

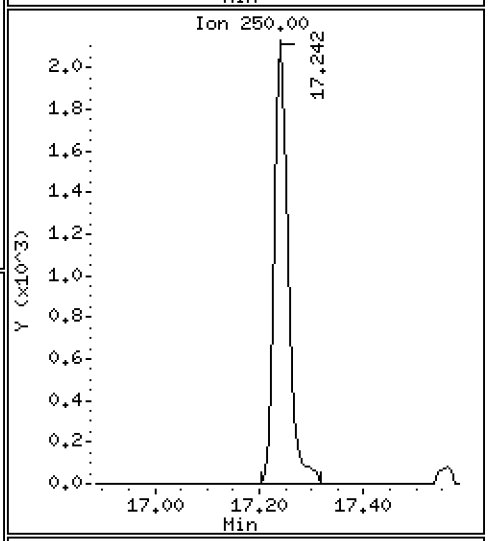


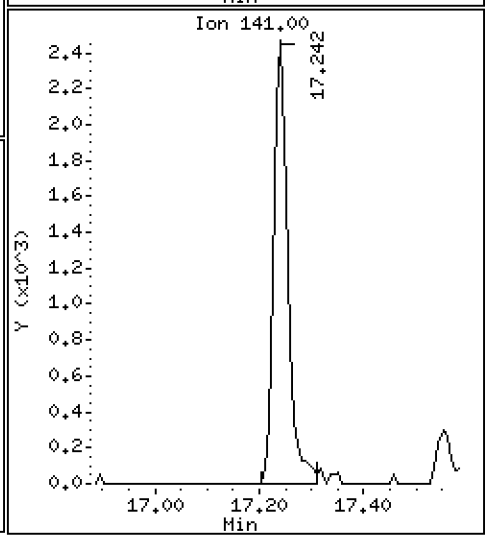












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

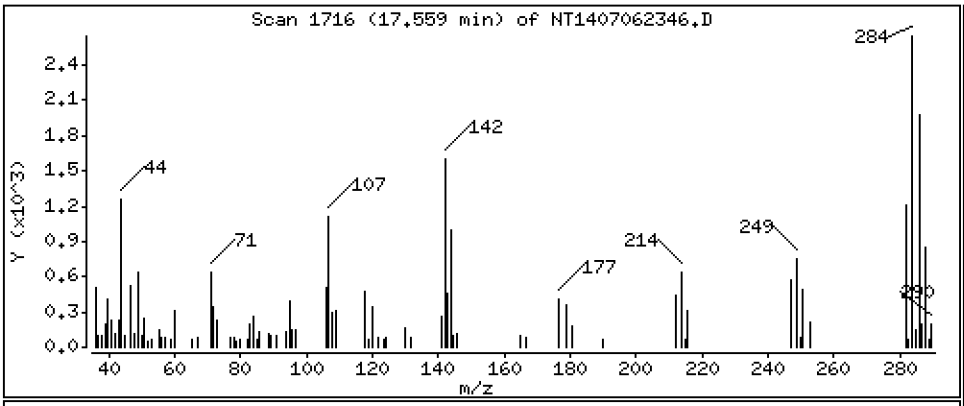
Operator: JGR

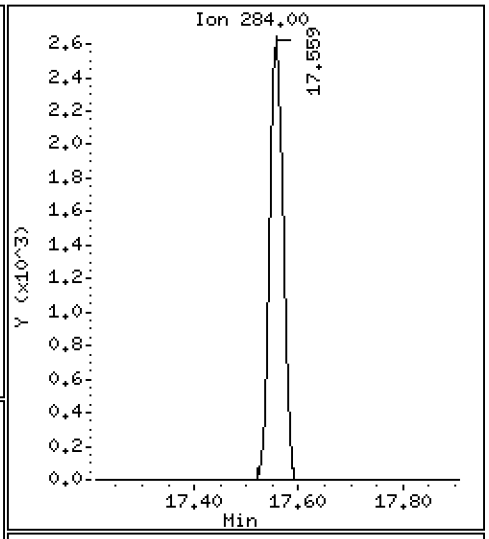
Column phase: ZB-5msi

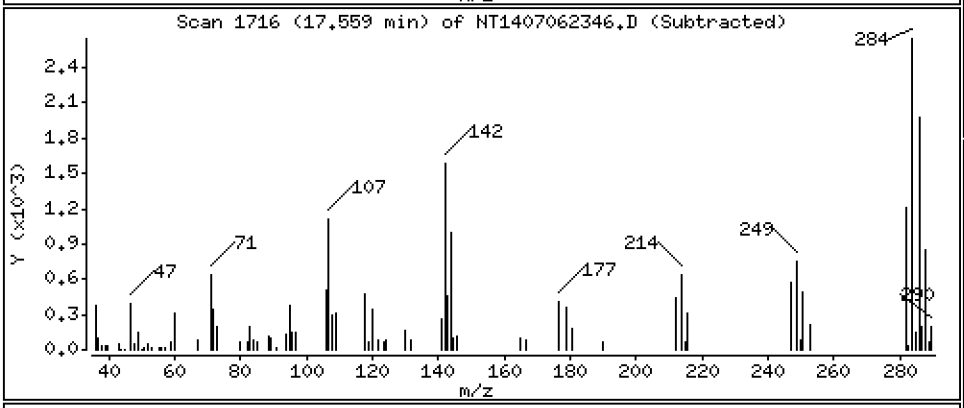
Column diameter: 0.25

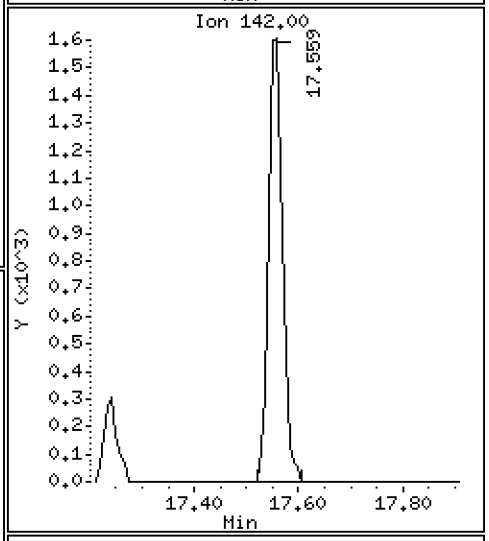
57 Hexachlorobenzene

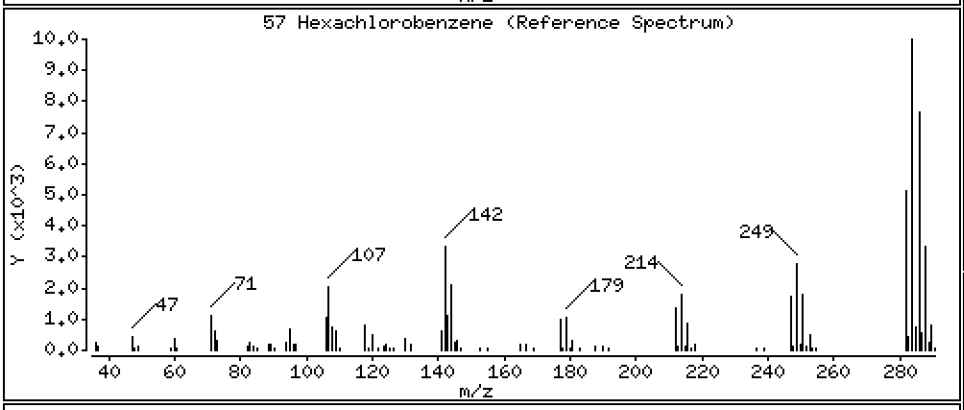
Concentration: 0.2196 ug/mL

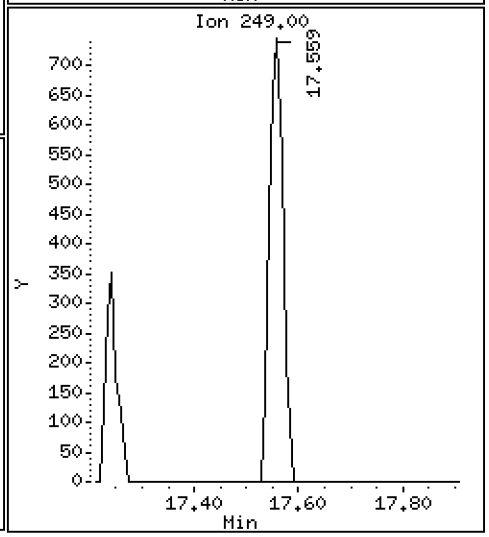


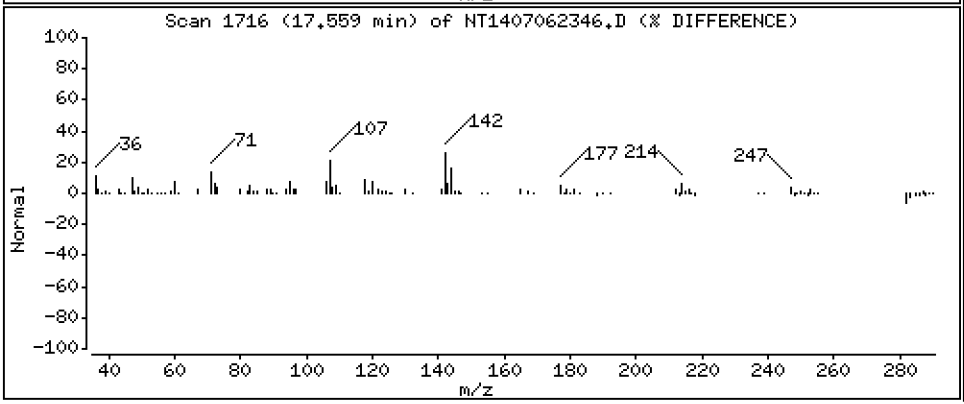












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

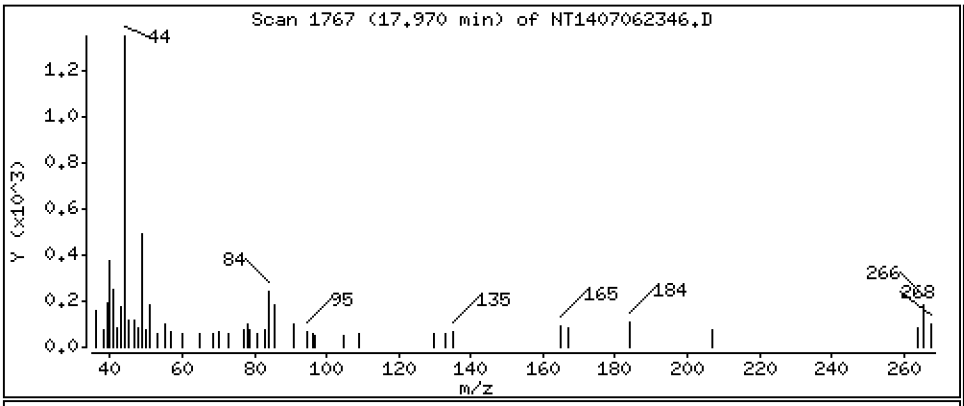
Operator: JGR

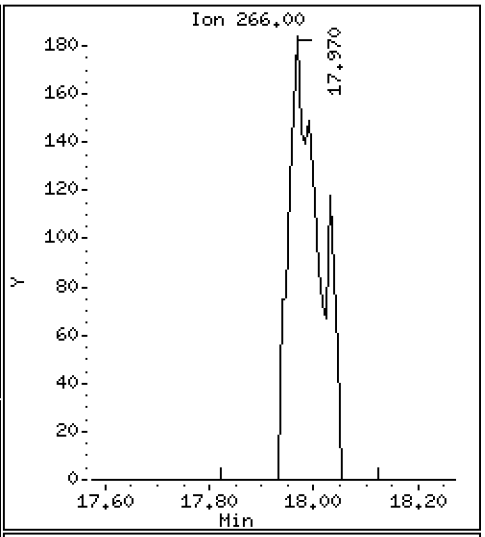
Column phase: ZB-5msi

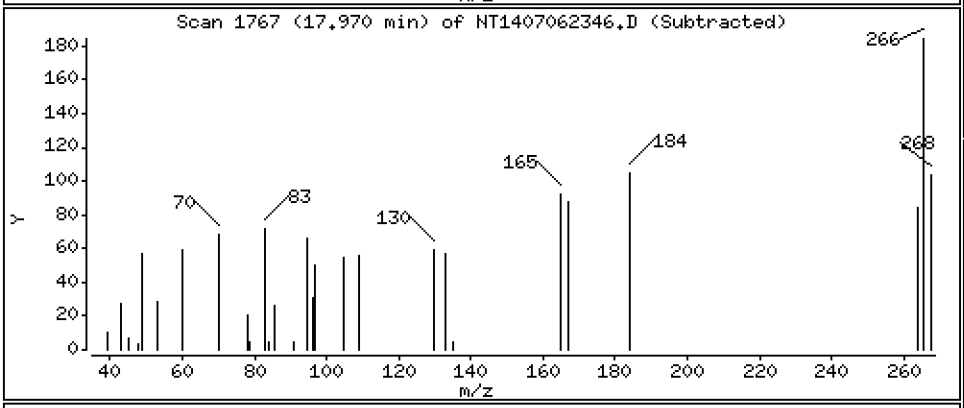
Column diameter: 0.25

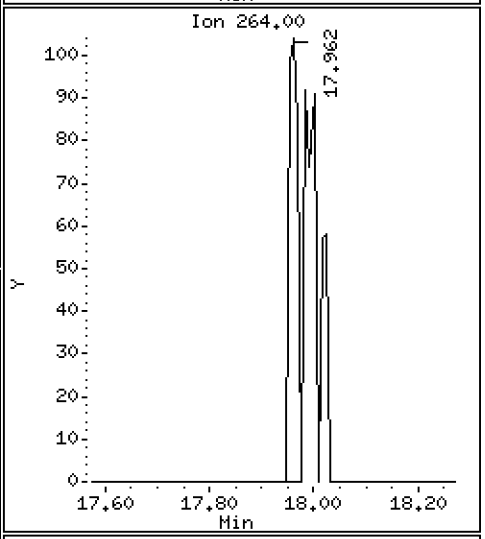
58 Pentachlorophenol

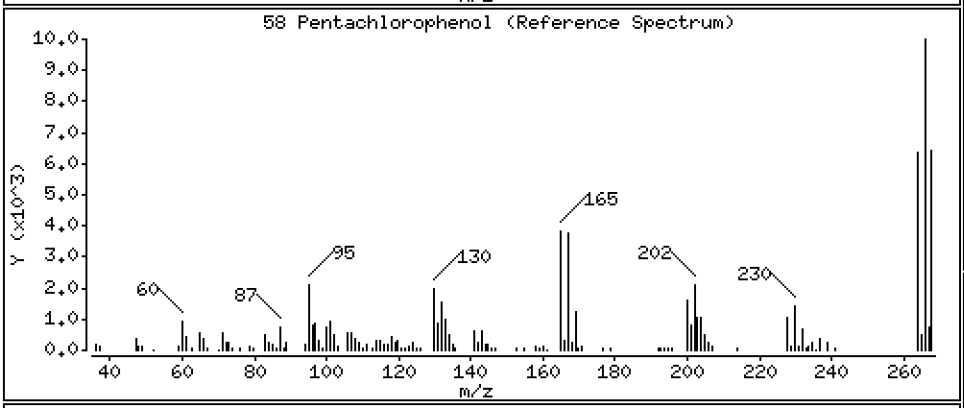
Concentration: 0.06232 ug/mL

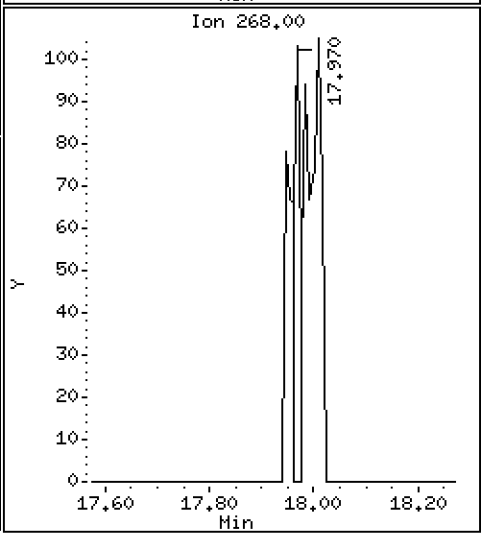


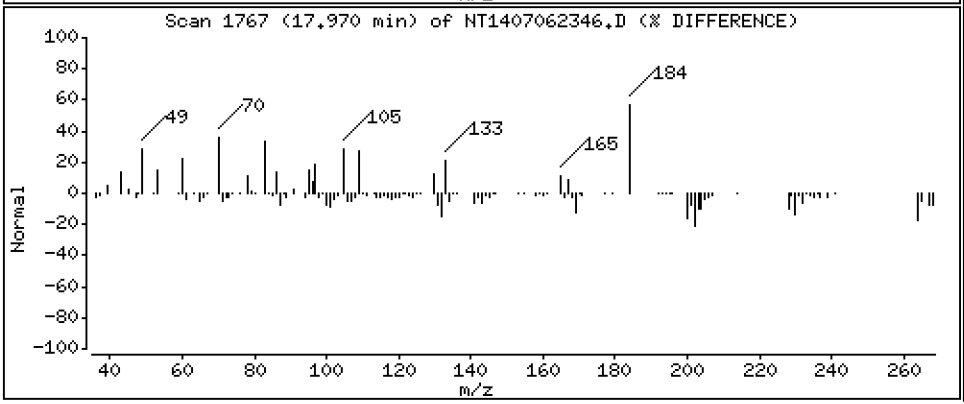












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

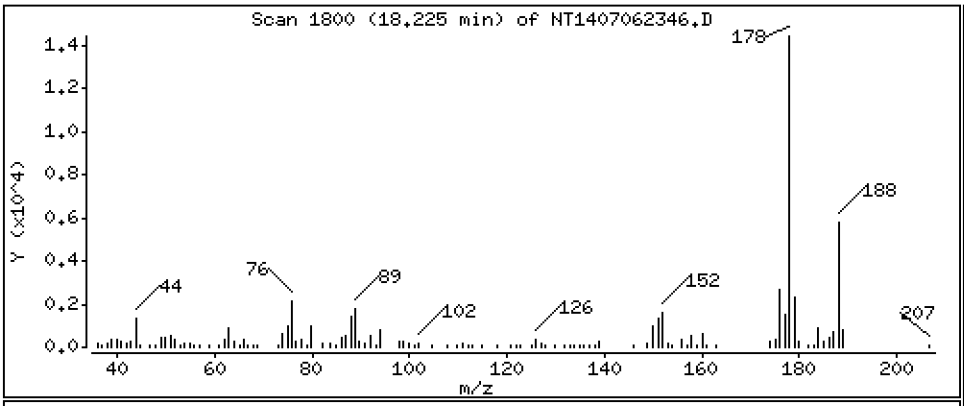
Operator: JGR

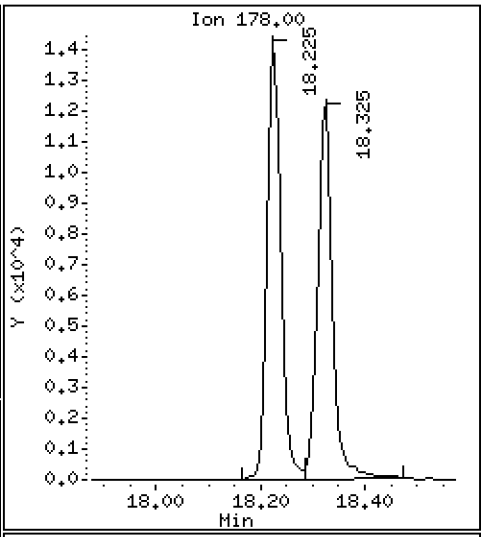
Column phase: ZB-5msi

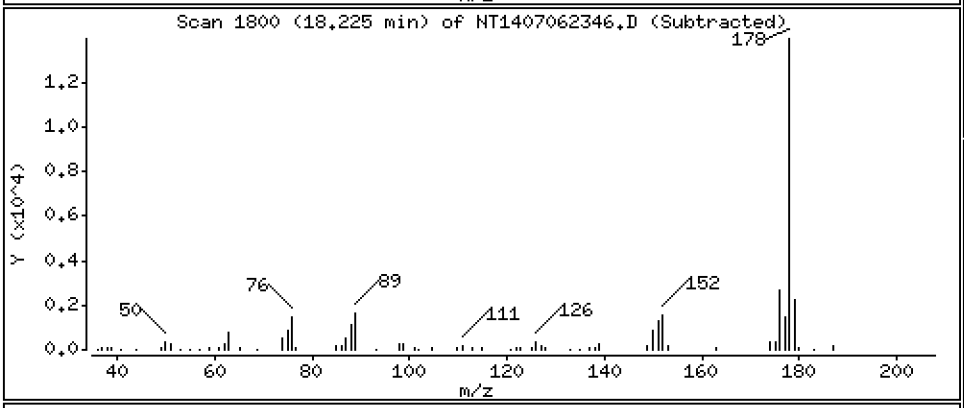
Column diameter: 0.25

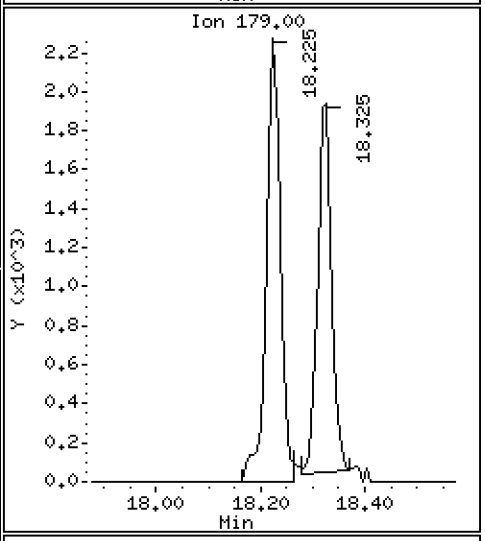
60 Phenanthrene

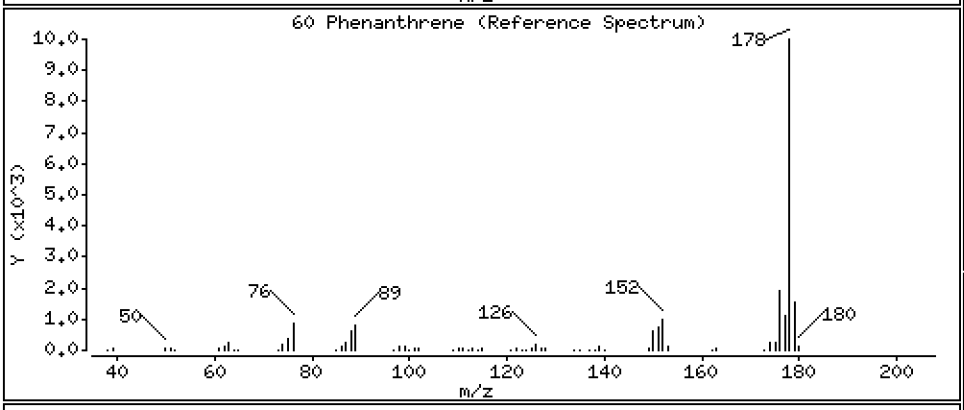
Concentration: 0.2047 ug/mL

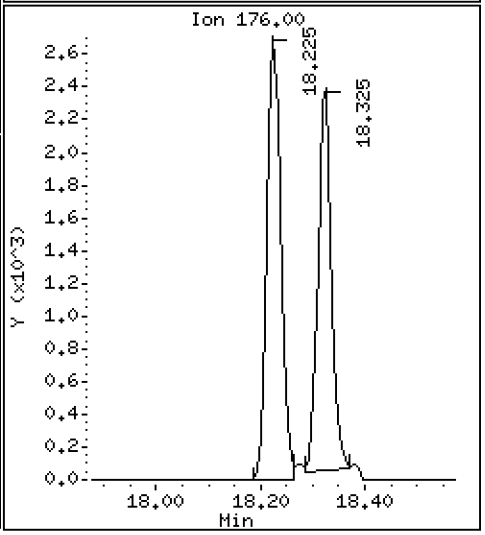


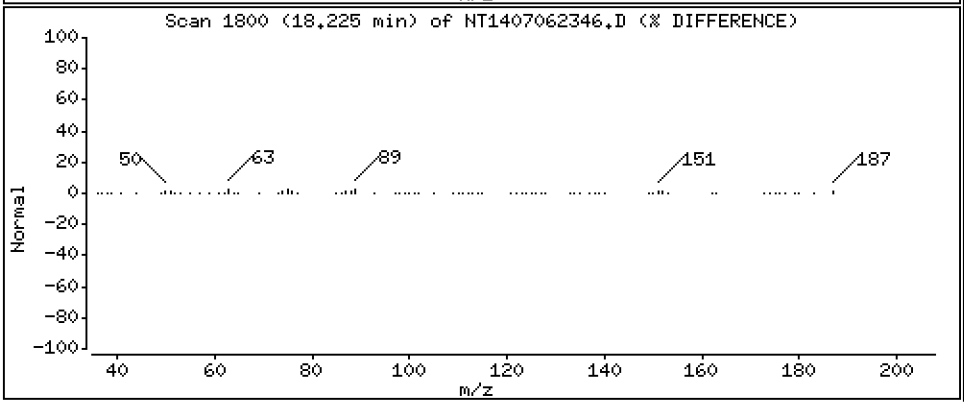












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

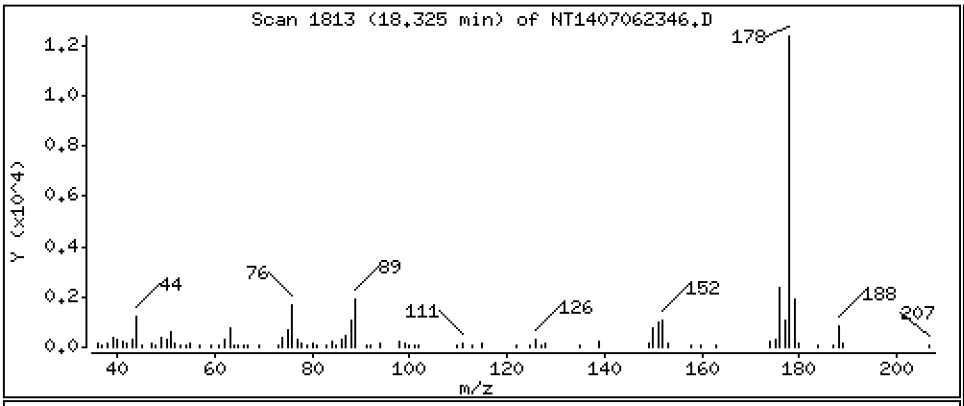
Operator: JGR

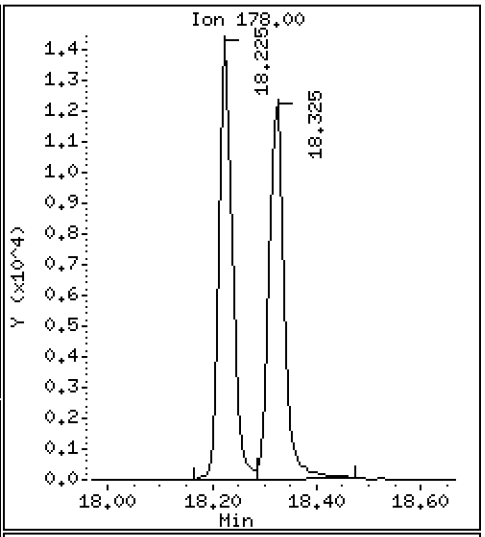
Column phase: ZB-5msi

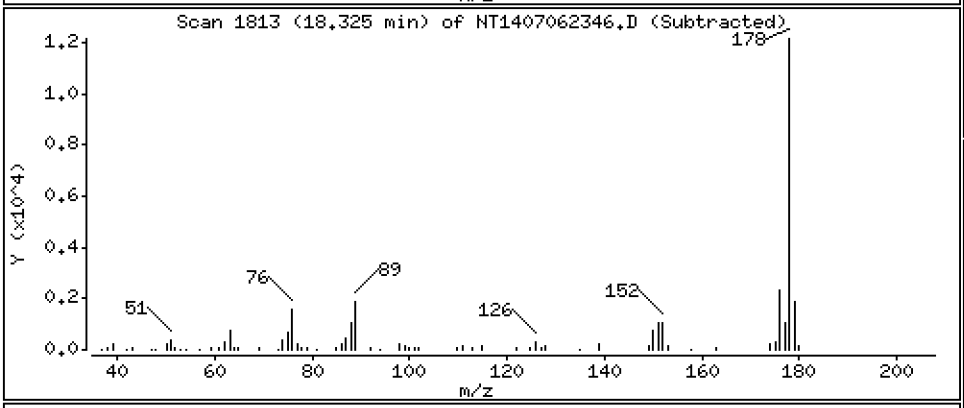
Column diameter: 0.25

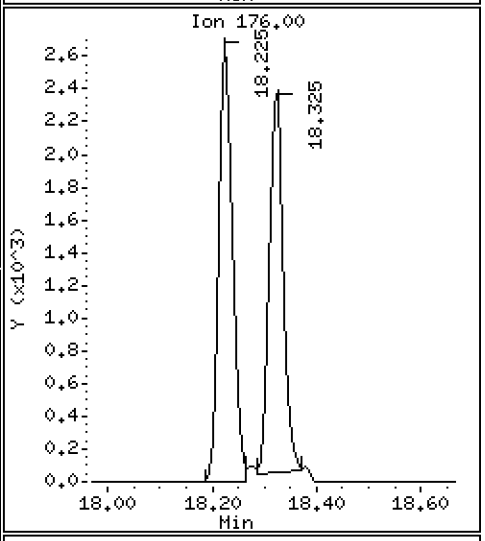
61 Anthracene

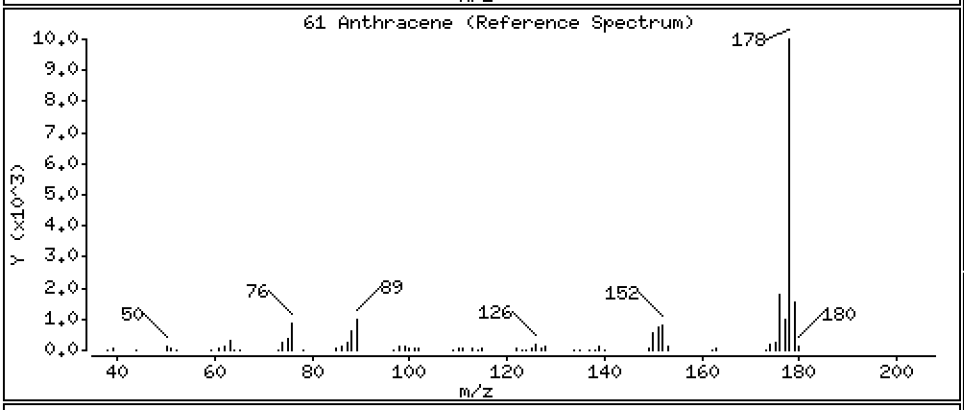
Concentration: 0.2040 ug/mL

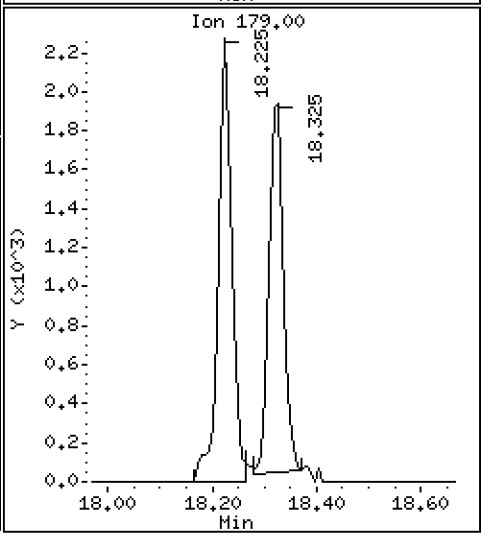


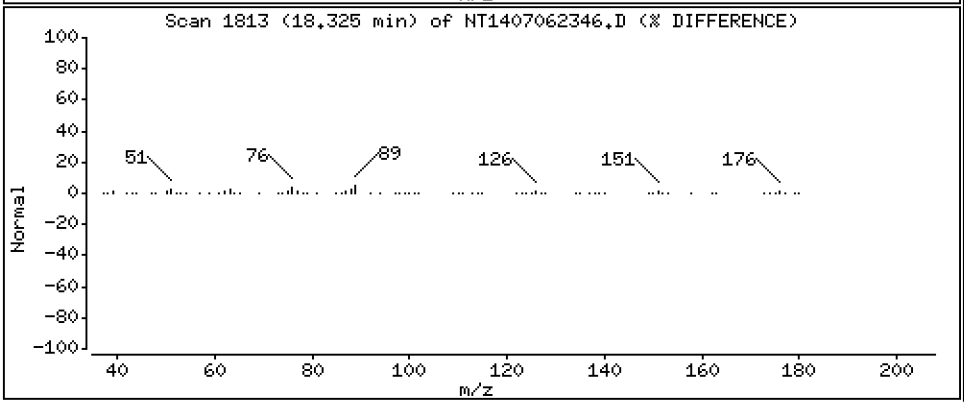












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

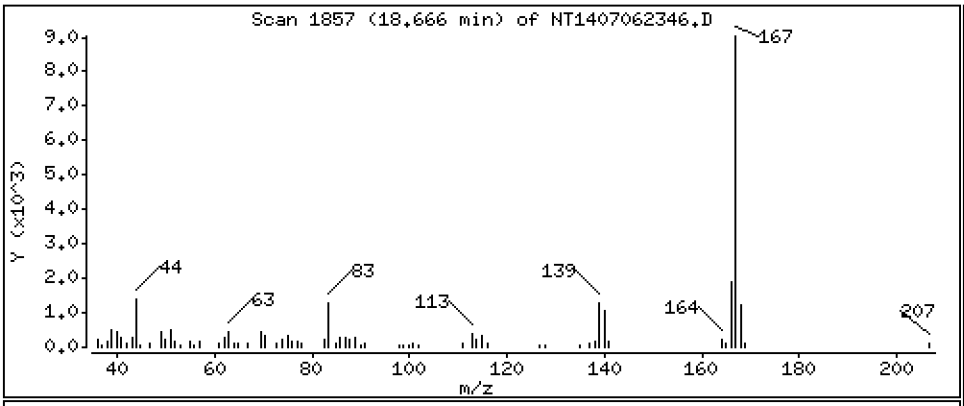
Operator: JGR

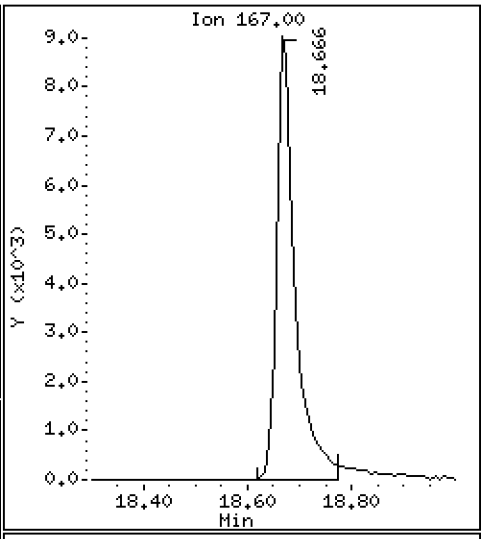
Column phase: ZB-5msi

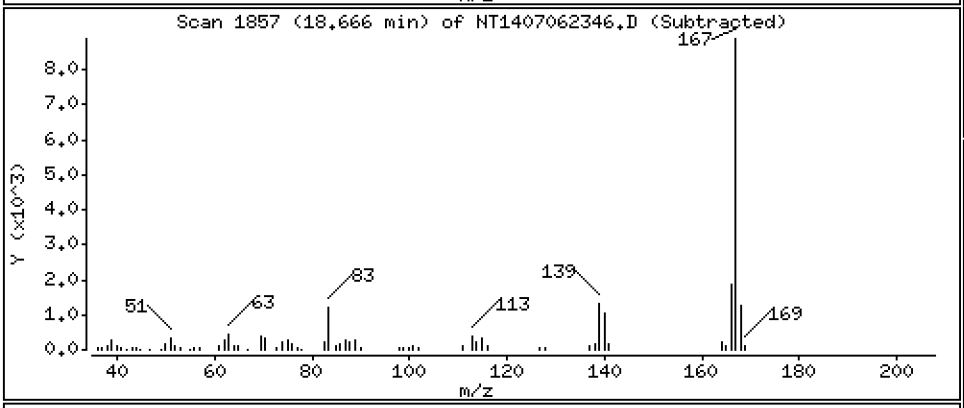
Column diameter: 0.25

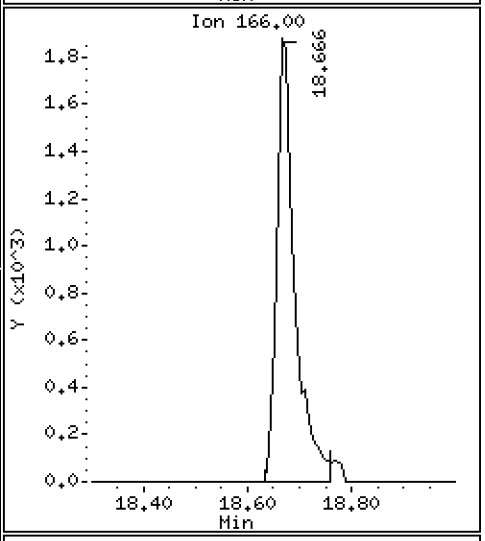
62 Carbazole

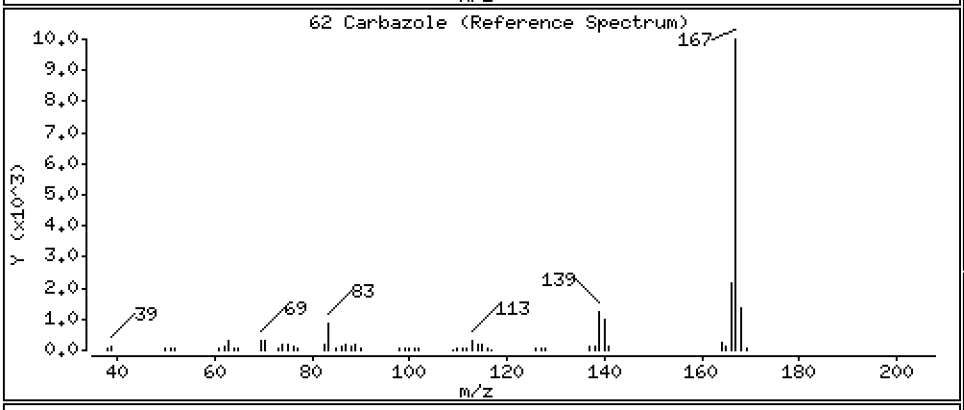
Concentration: 0.1919 ug/mL

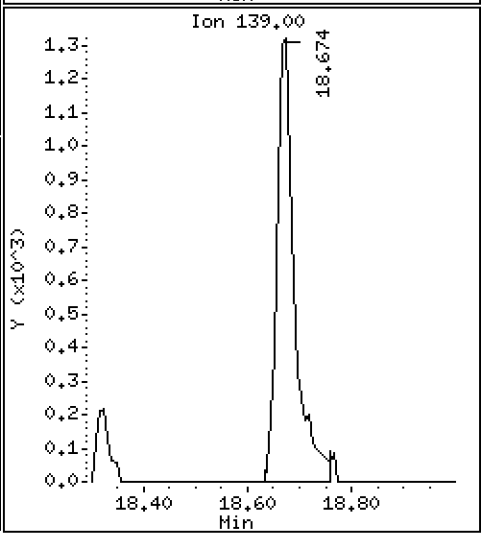


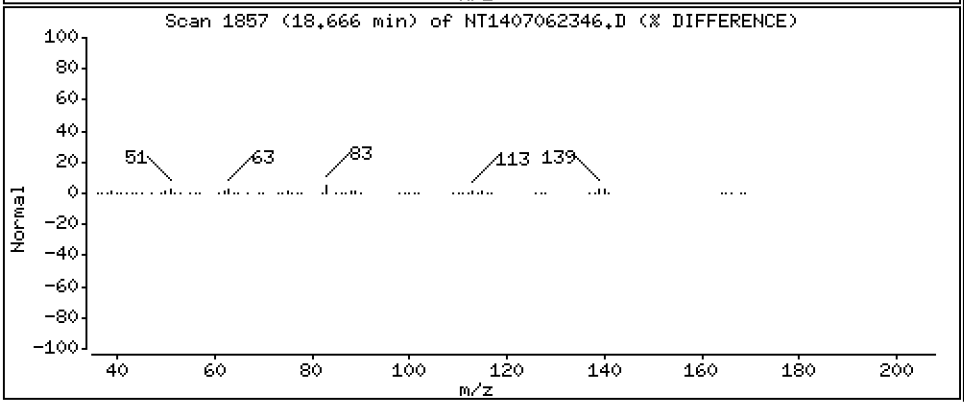












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

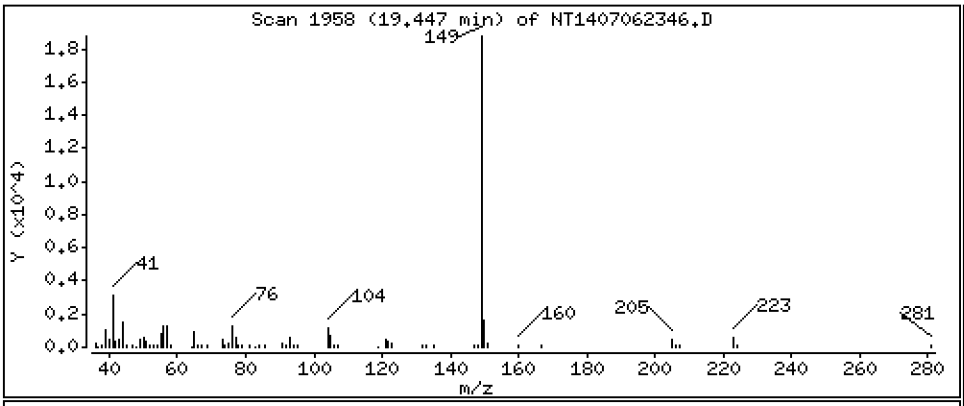
Operator: JGR

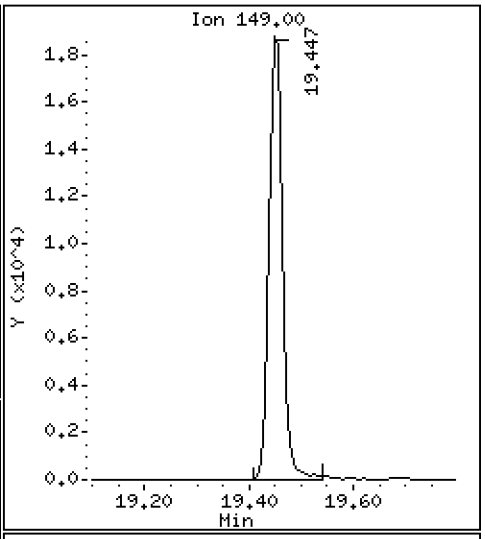
Column phase: ZB-5msi

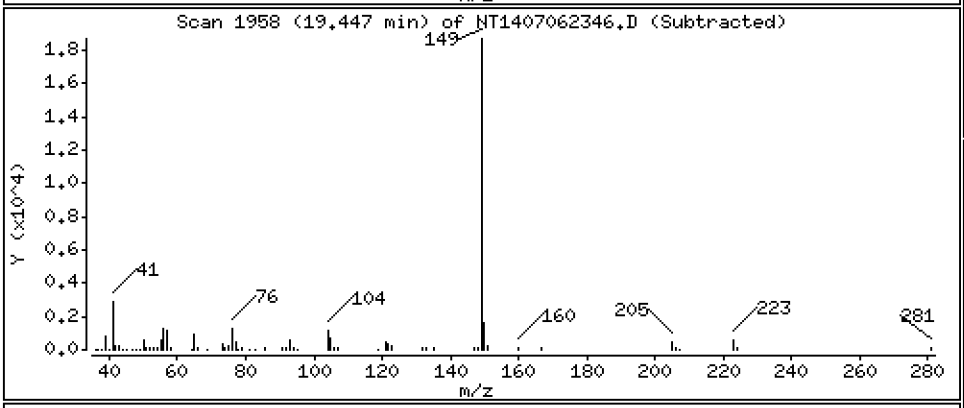
Column diameter: 0.25

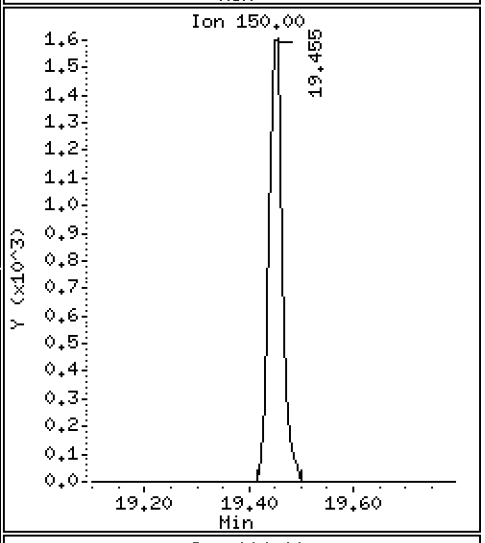
63 Di-n-butylphthalate

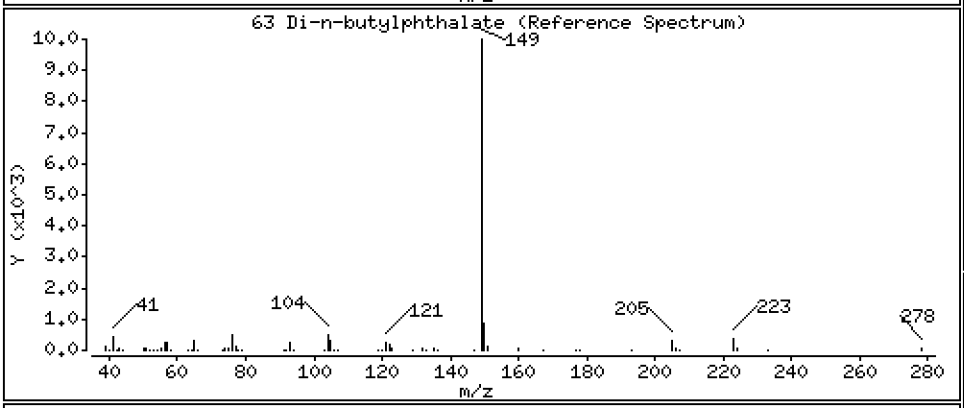
Concentration: 0.2081 ug/mL

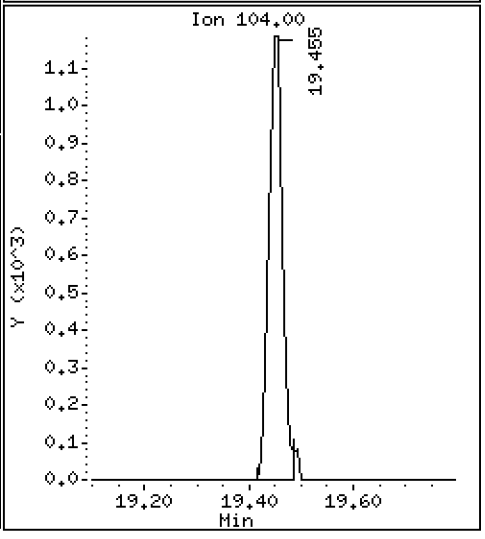


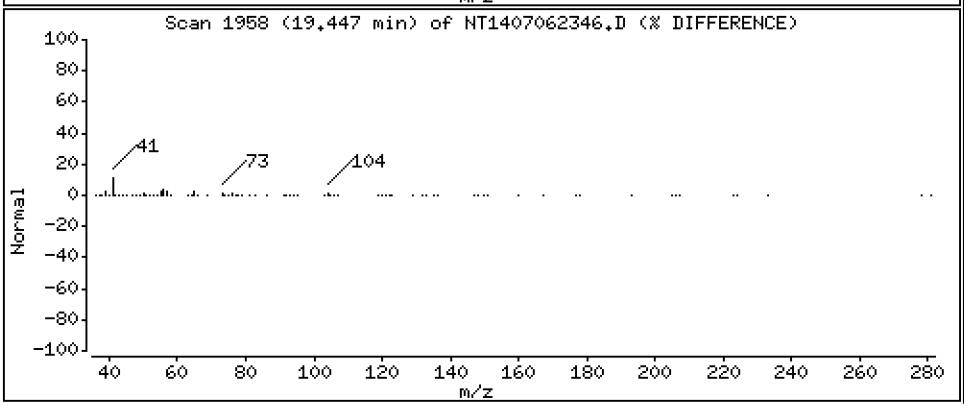












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

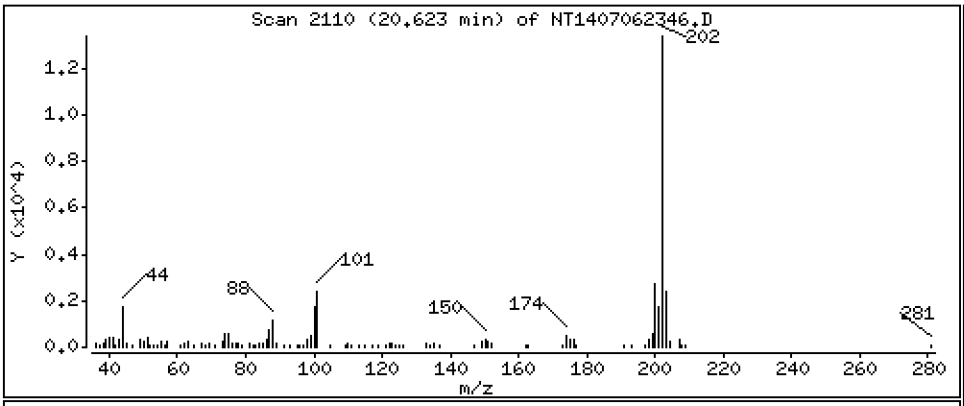
Operator: JGR

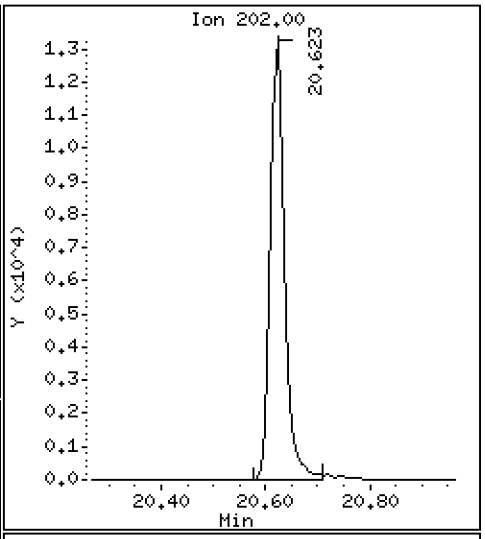
Column phase: ZB-5msi

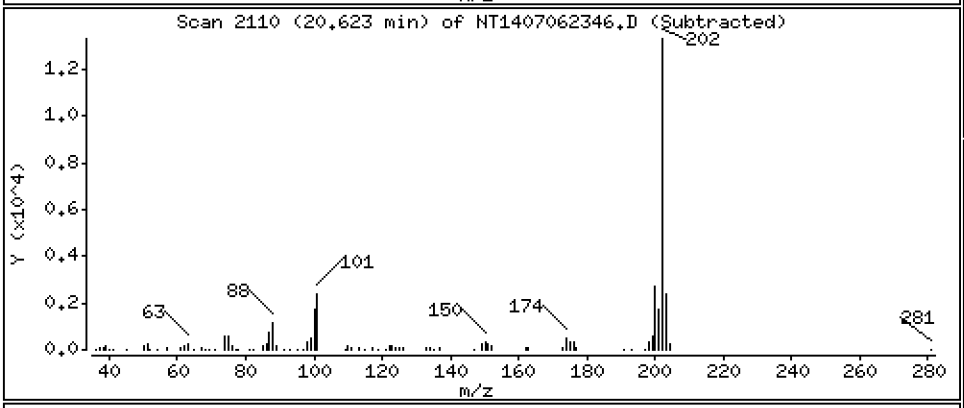
Column diameter: 0.25

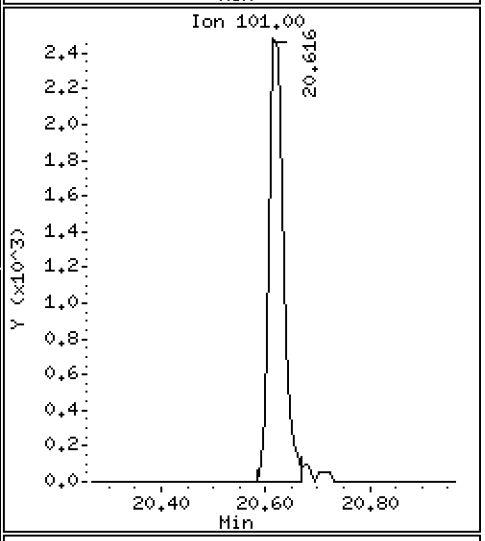
64 Fluoranthene

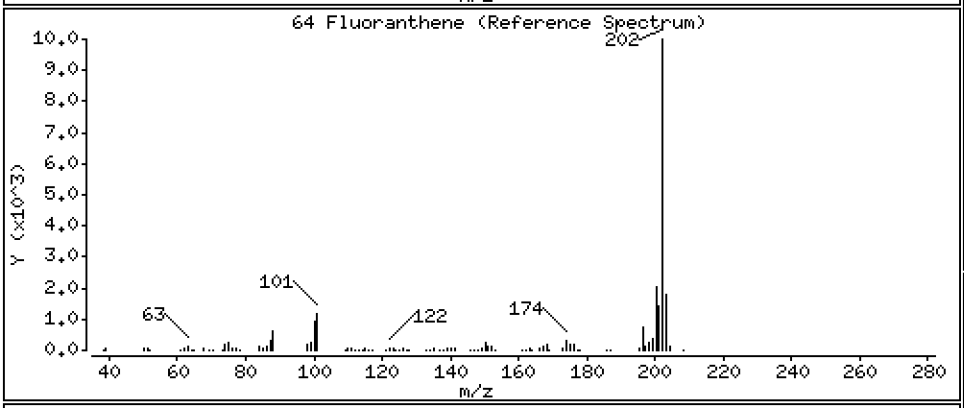
Concentration: 0.2172 ug/mL

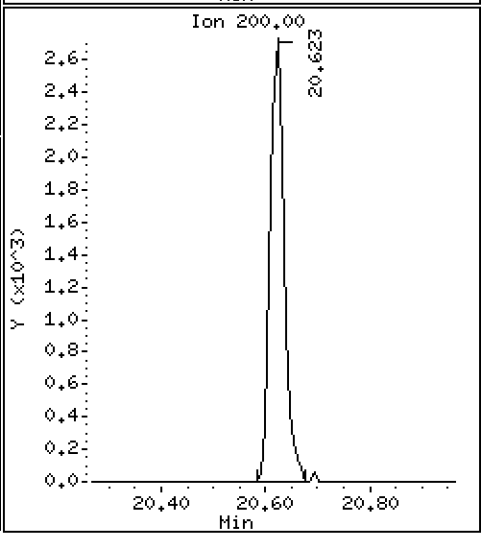


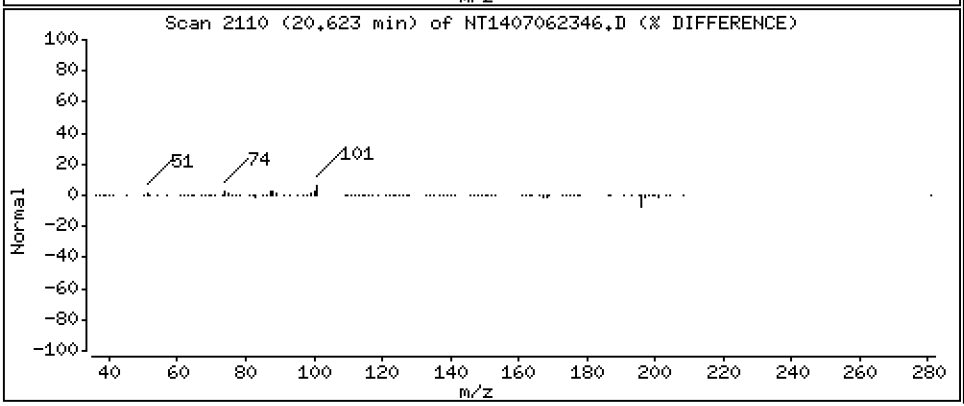












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

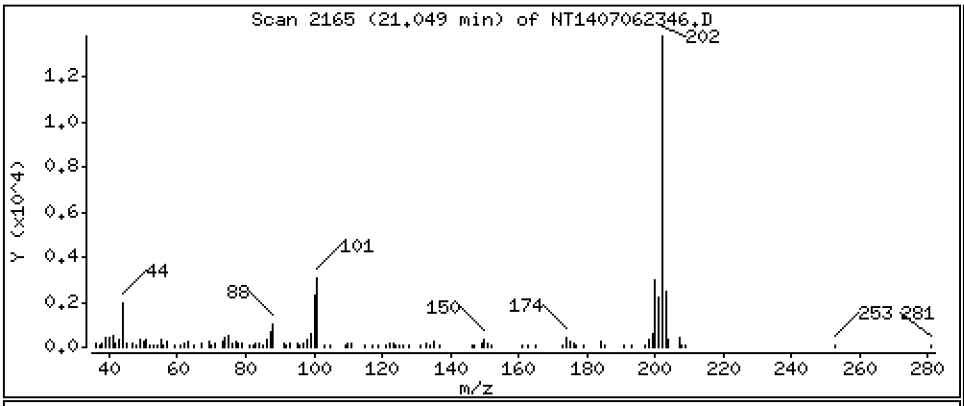
Operator: JGR

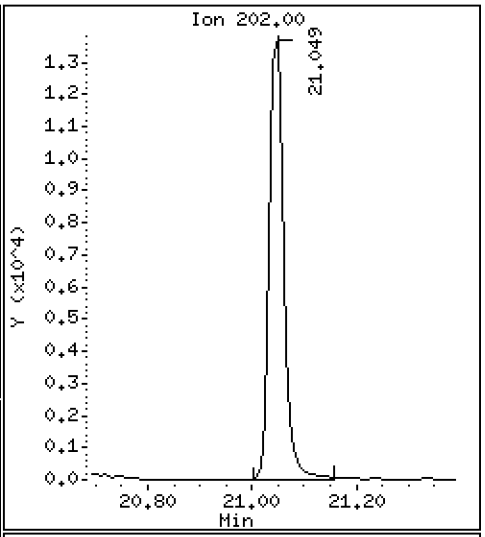
Column phase: ZB-5msi

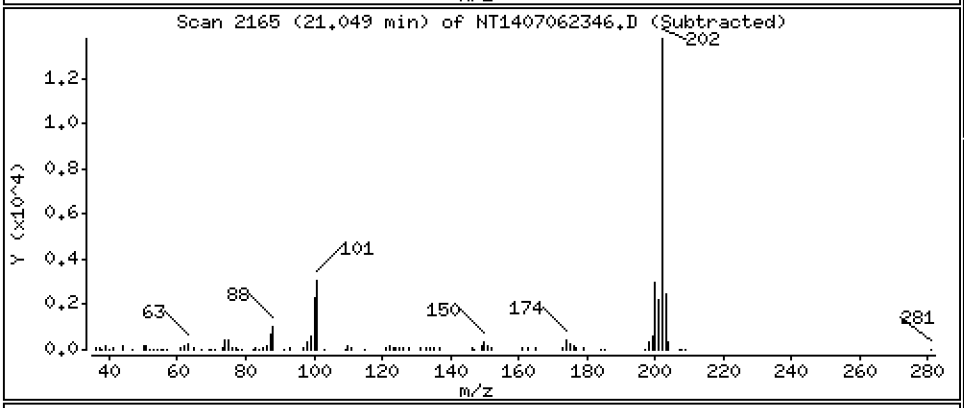
Column diameter: 0.25

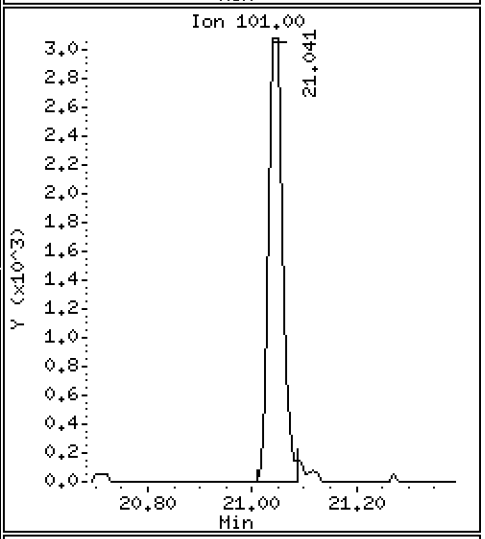
65 Pyrene

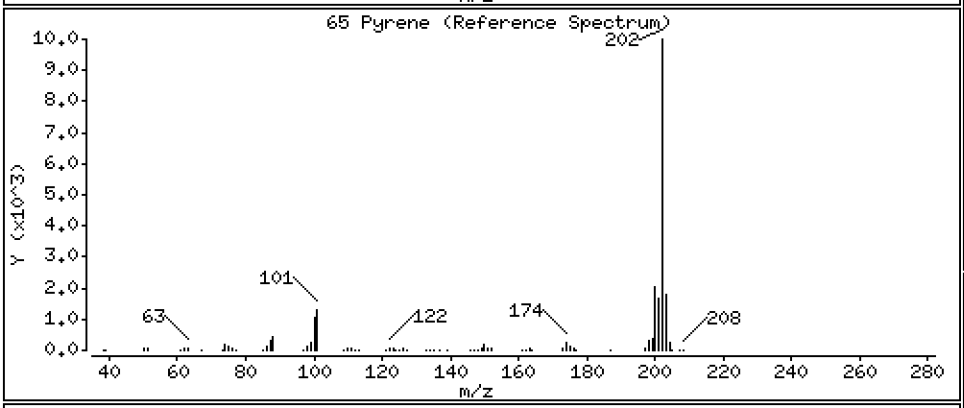
Concentration: 0.2274 ug/mL

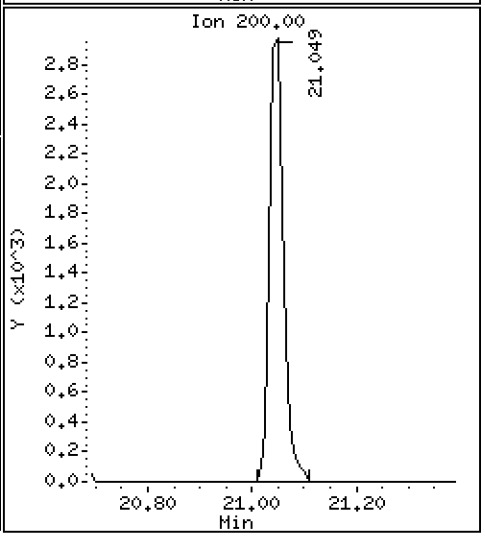


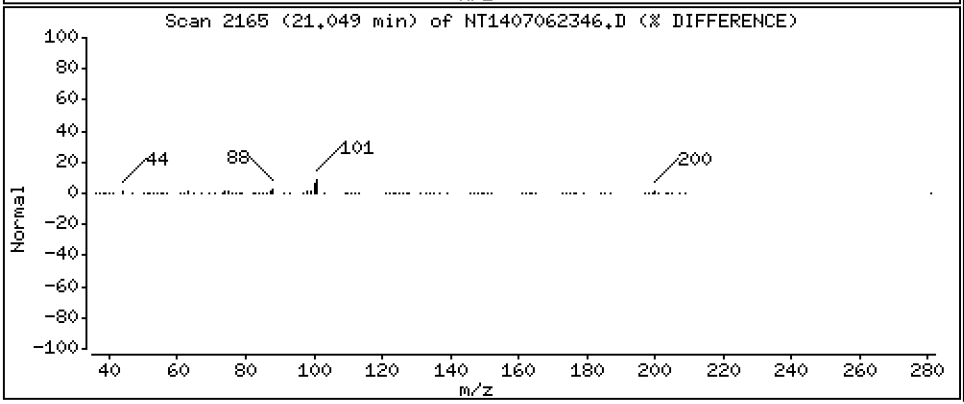












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

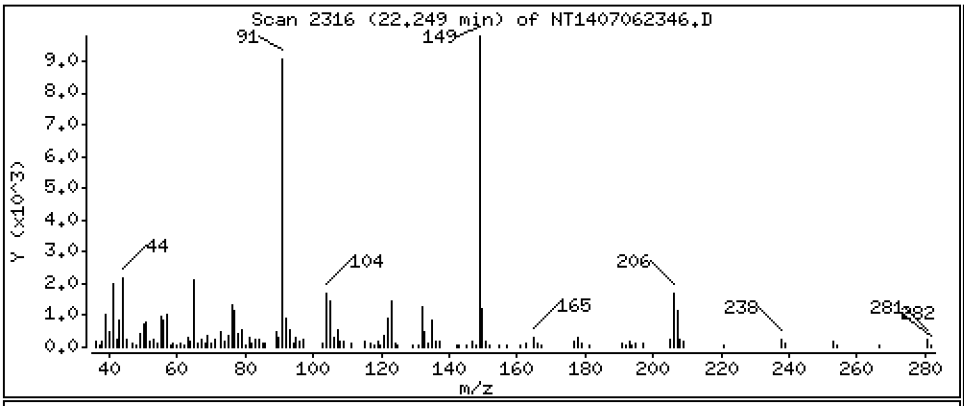
Operator: JGR

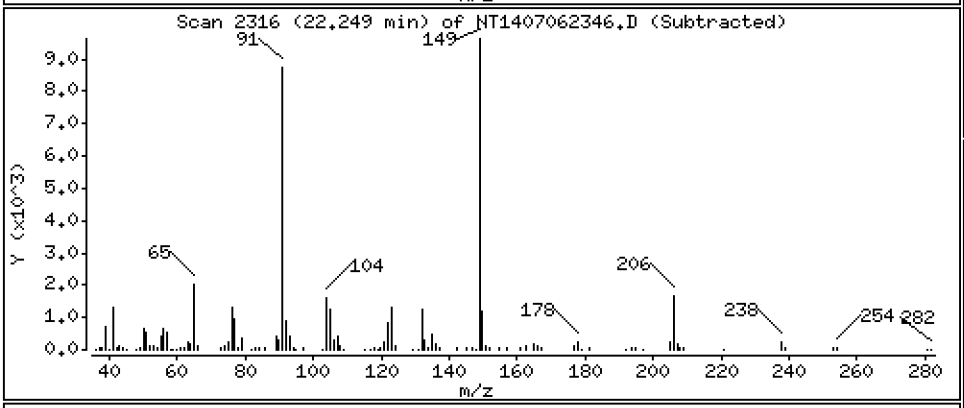
Column phase: ZB-5msi

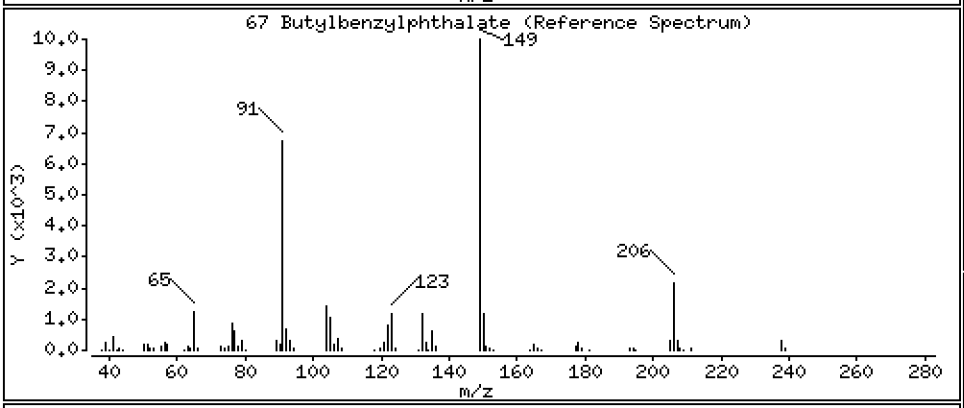
Column diameter: 0.25

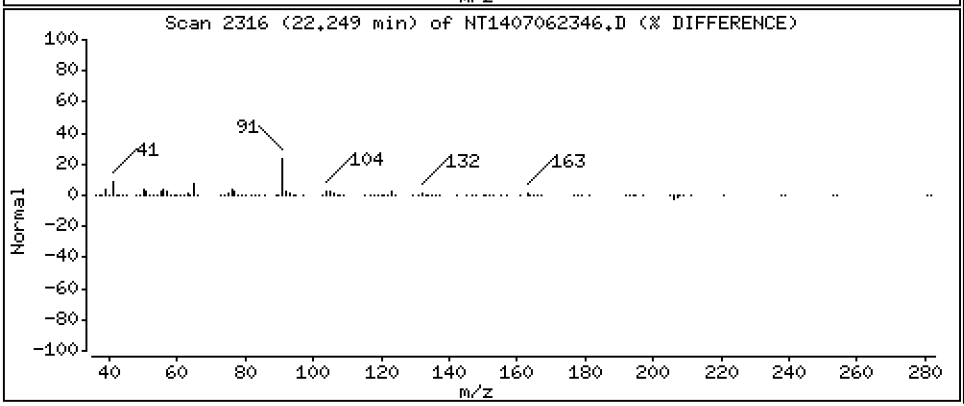
67 Butylbenzylphthalate

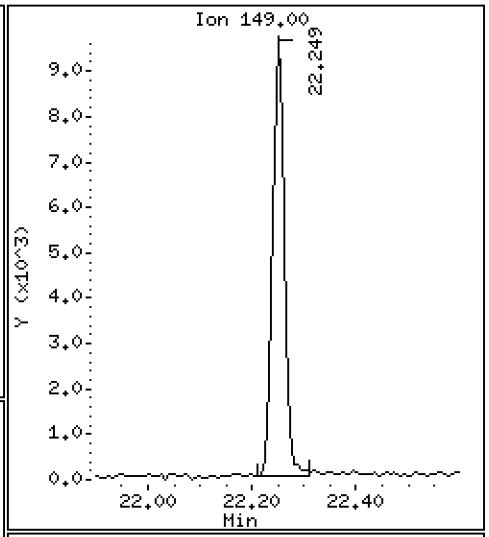
Concentration: 0.2626 ug/mL

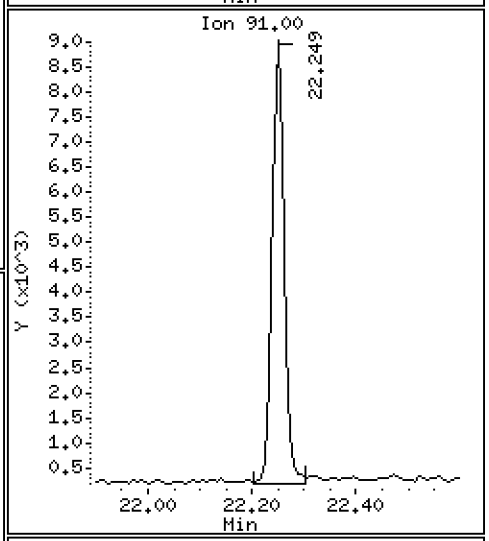


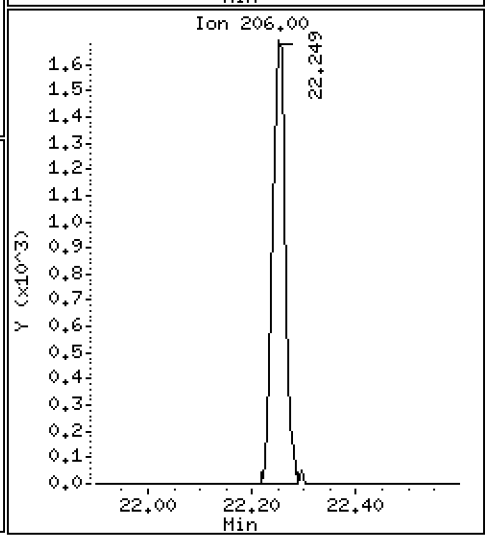












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

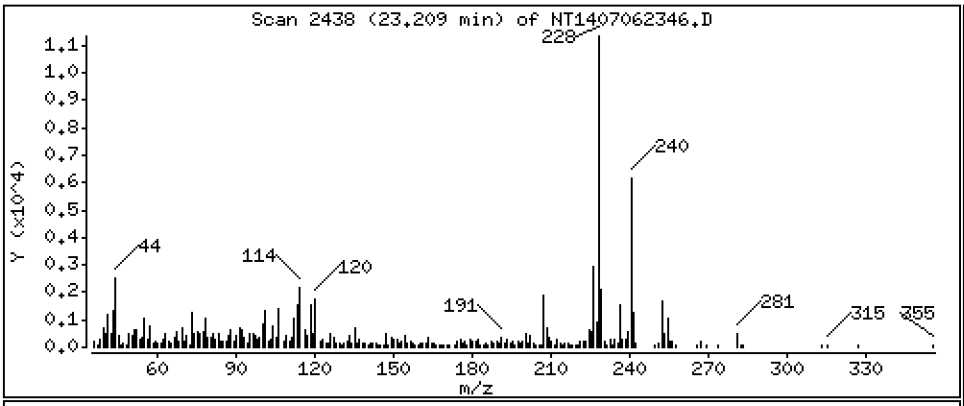
Operator: JGR

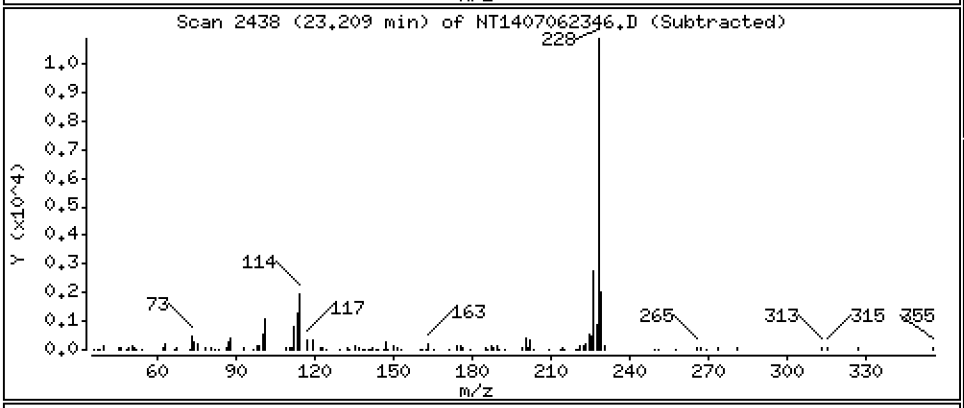
Column phase: ZB-5msi

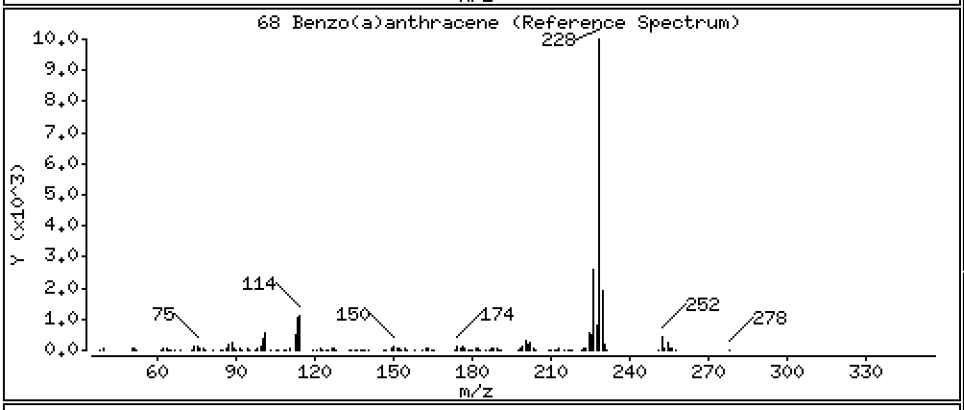
Column diameter: 0.25

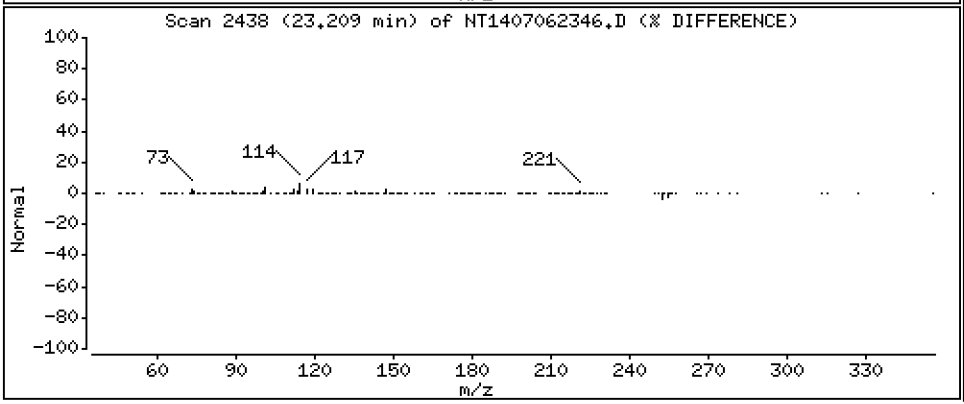
68 Benzo(a)anthracene

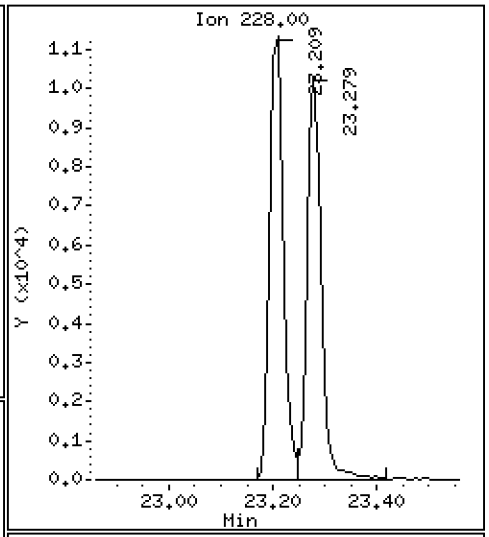
Concentration: 0.2096 ug/mL

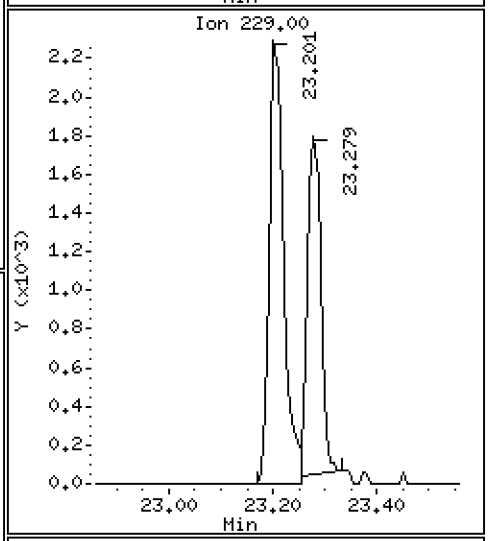


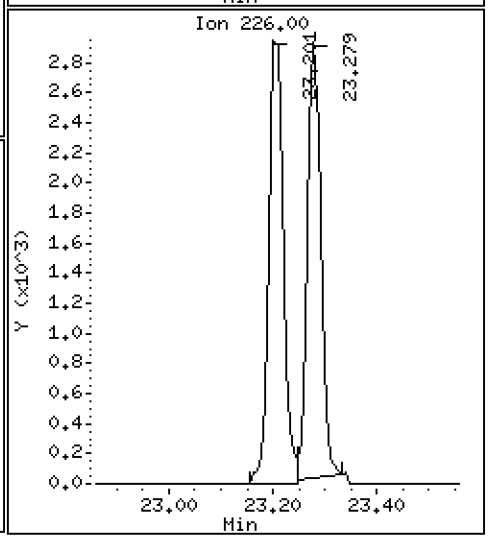












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

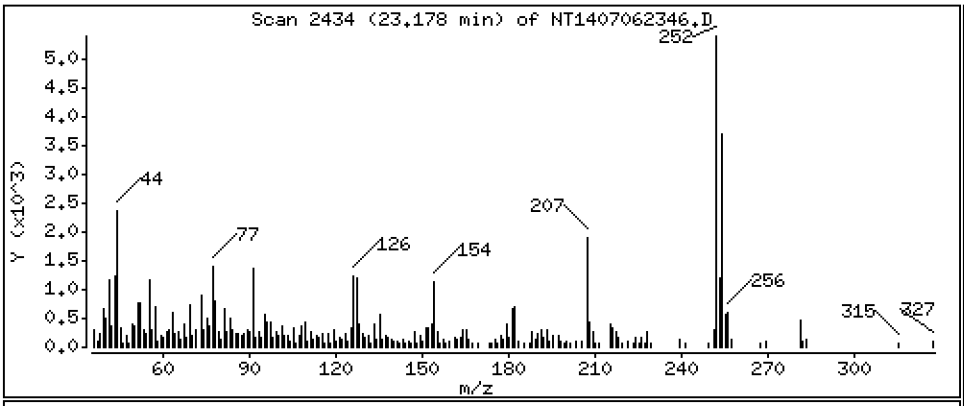
Operator: JGR

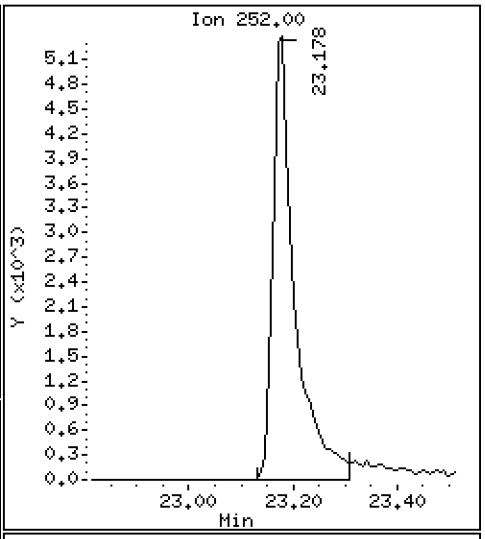
Column phase: ZB-5msi

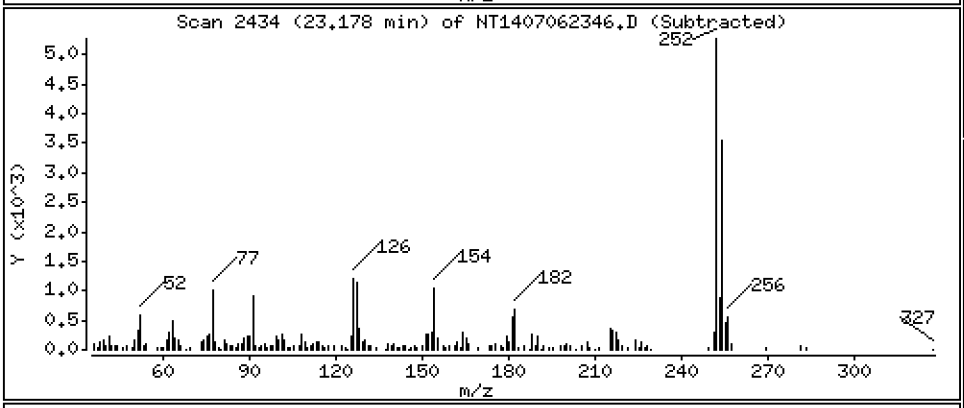
Column diameter: 0.25

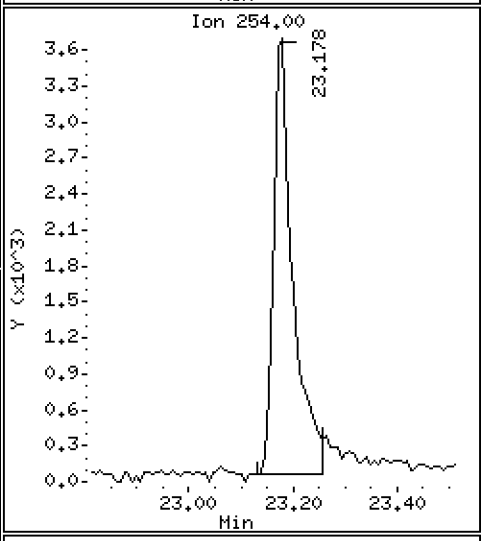
70 3,3'-Dichlorobenzidine

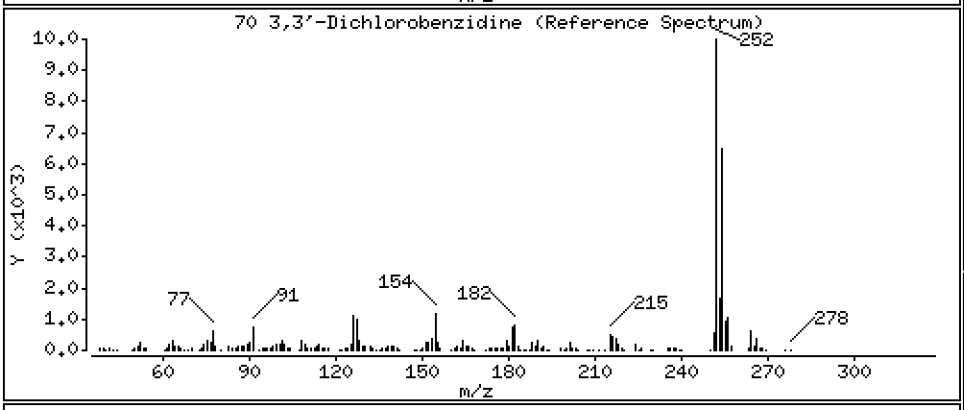
Concentration: 0.5992 ug/mL

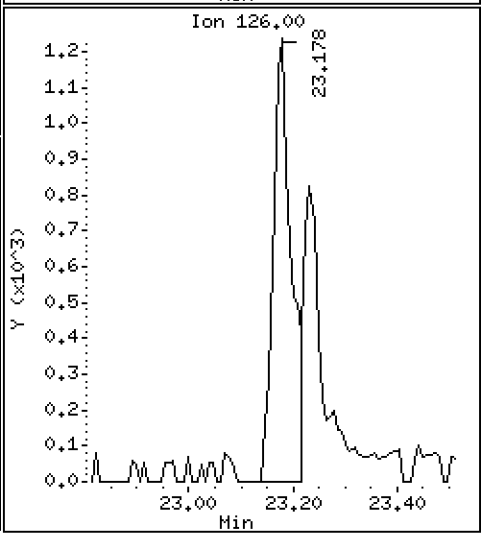


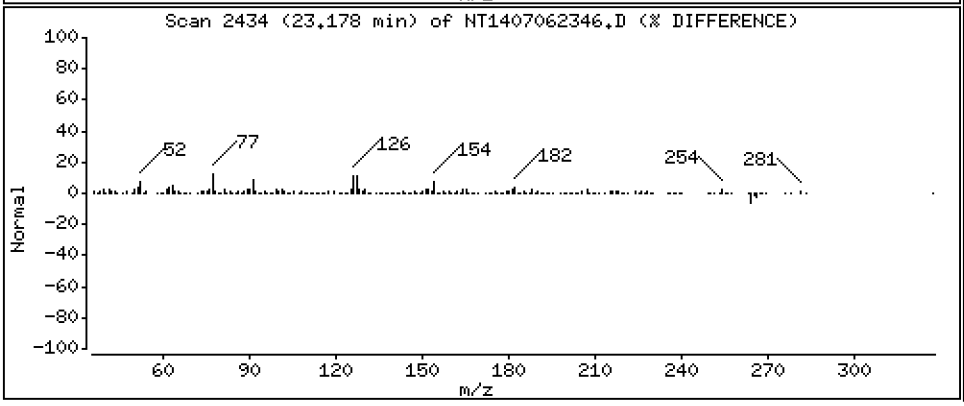












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

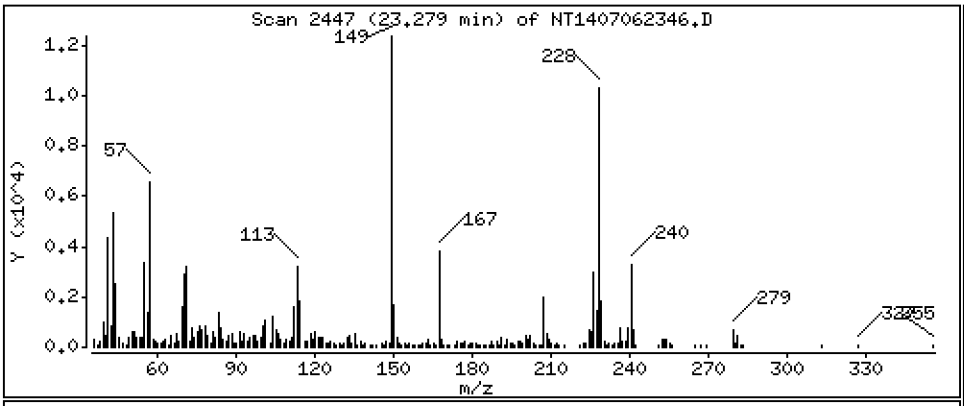
Operator: JGR

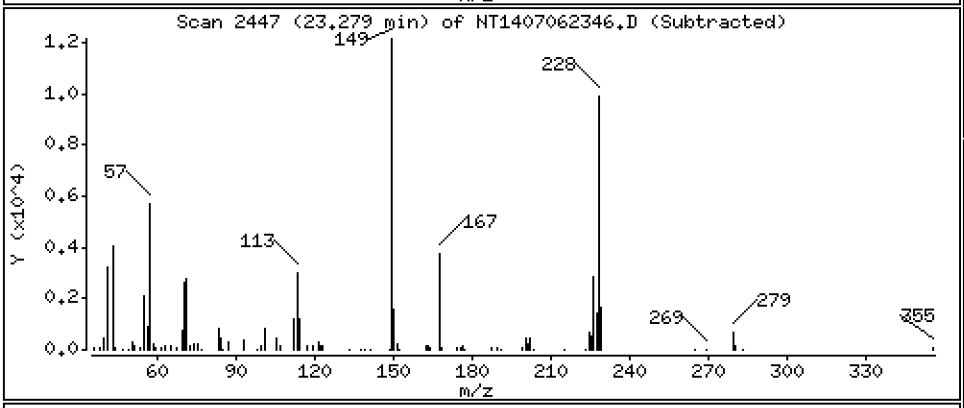
Column phase: ZB-5msi

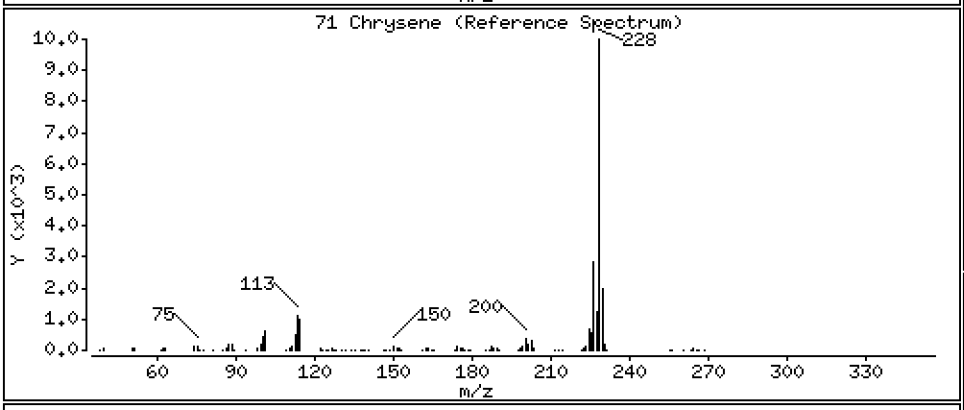
Column diameter: 0.25

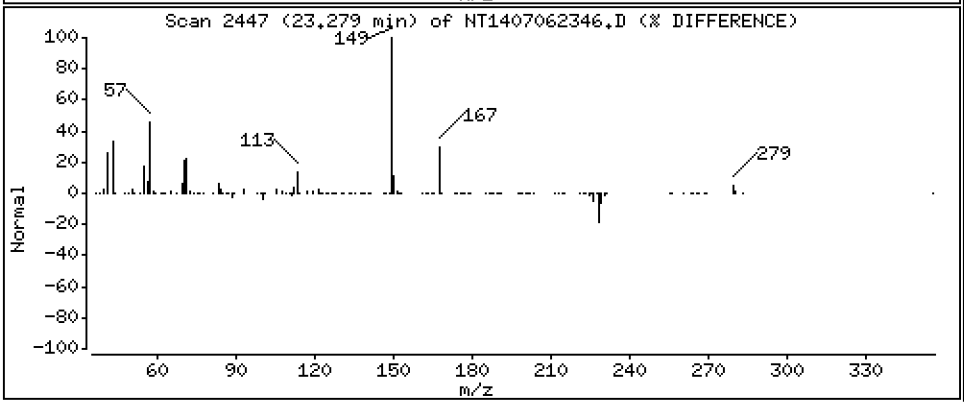
71 Chrysene

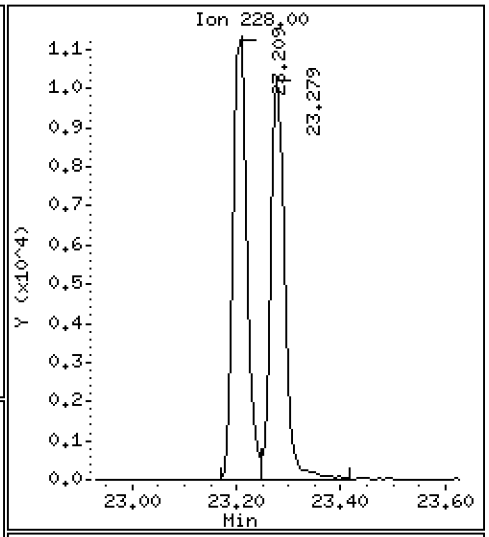
Concentration: 0.2176 ug/mL

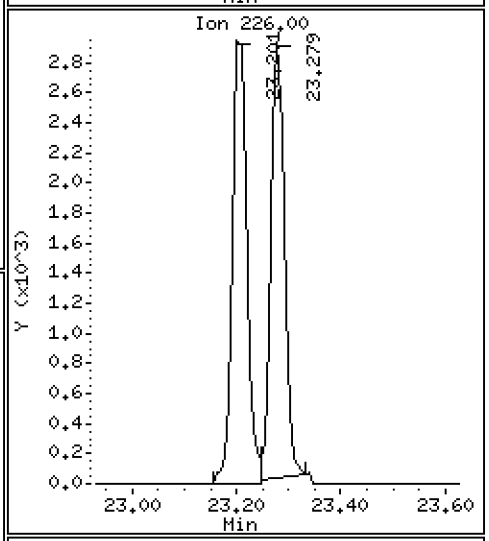


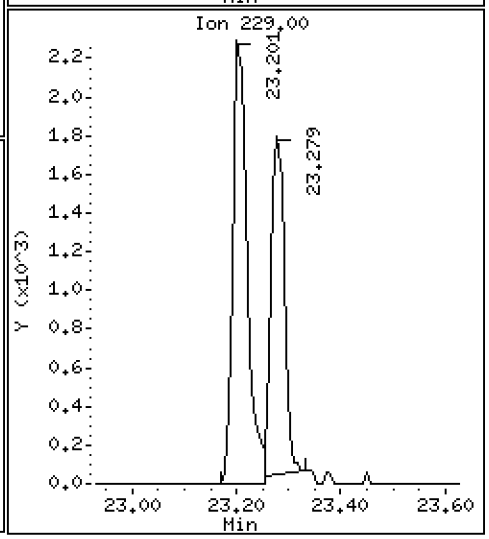












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

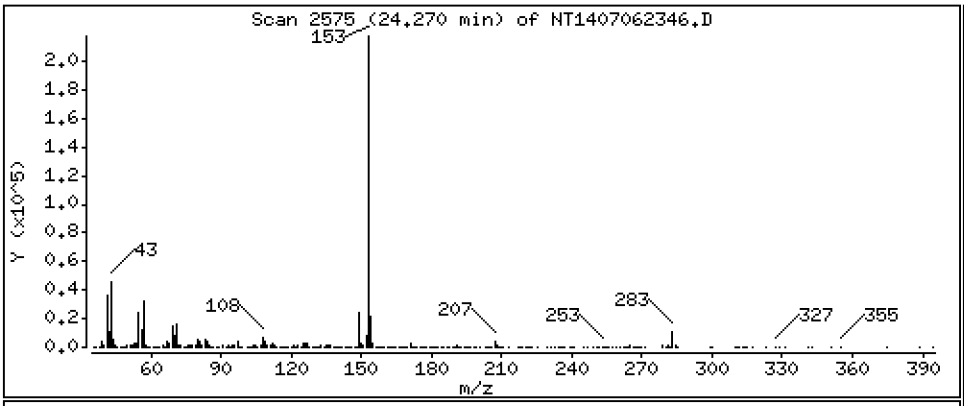
Operator: JGR

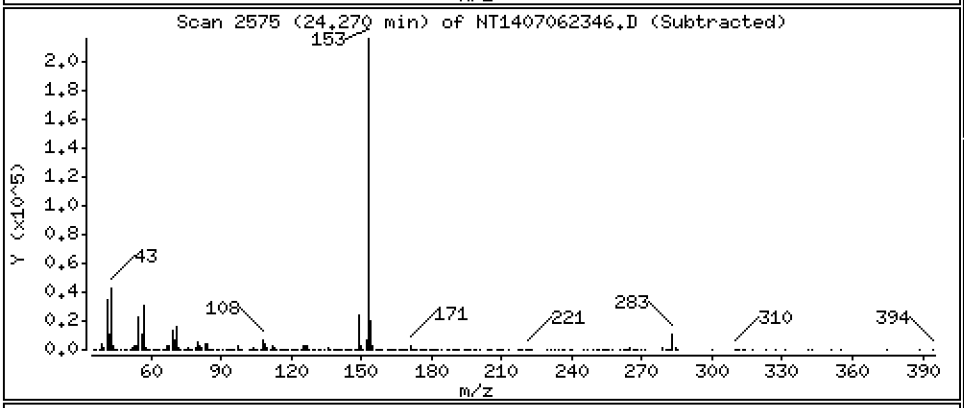
Column phase: ZB-5msi

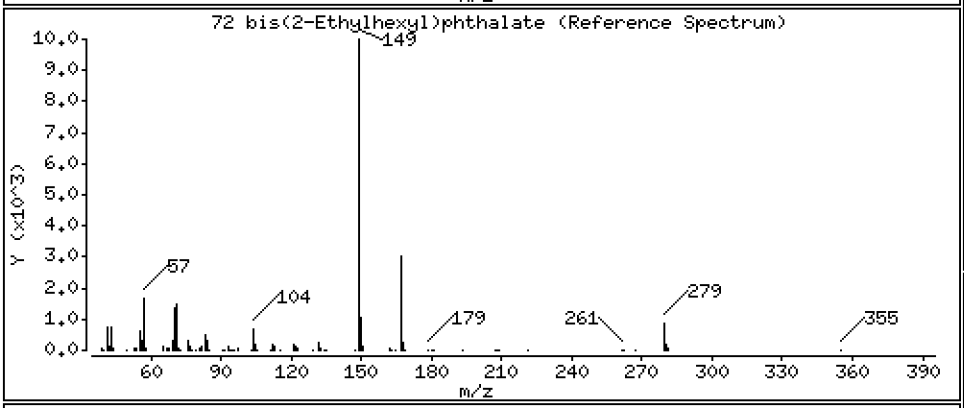
Column diameter: 0.25

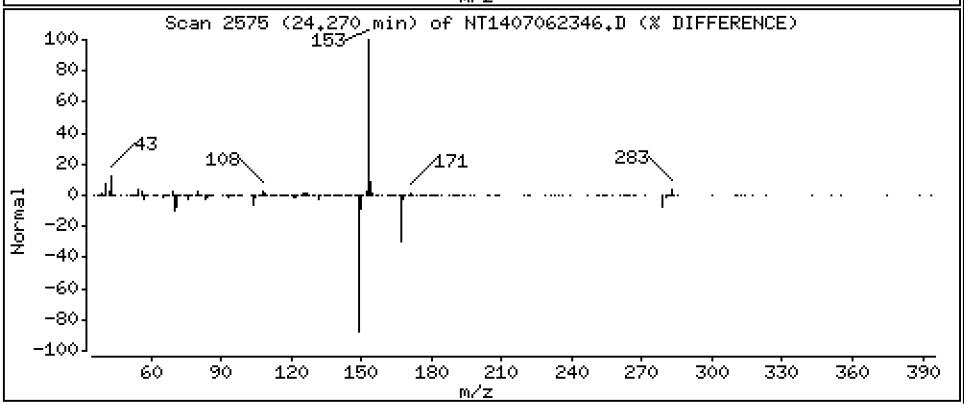
72 bis(2-Ethylhexyl)phthalate

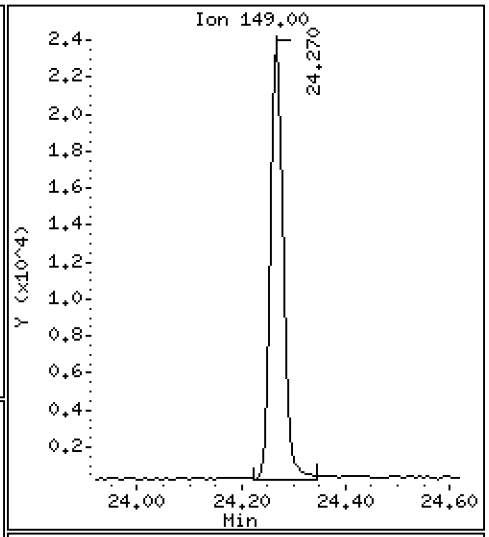
Concentration: 0.2156 ug/mL

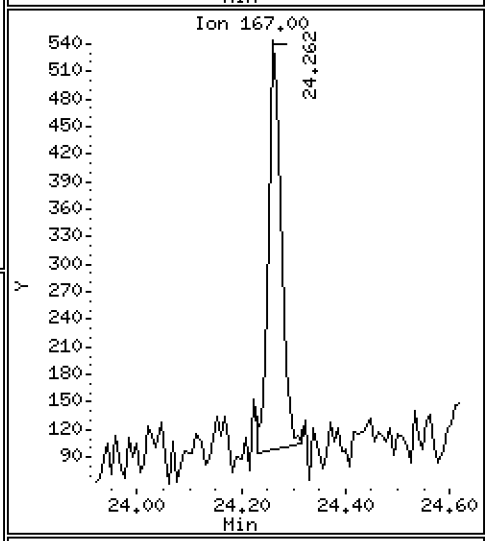


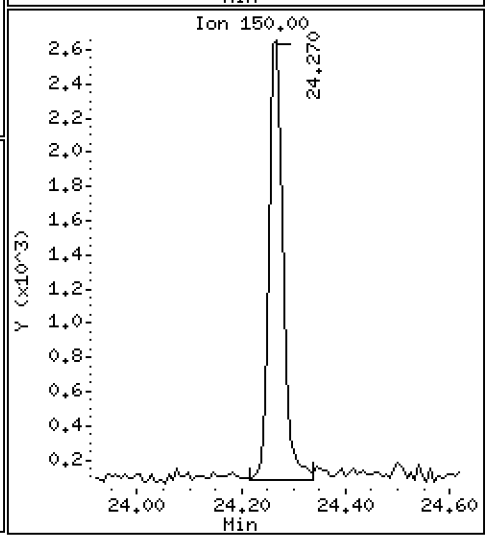












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

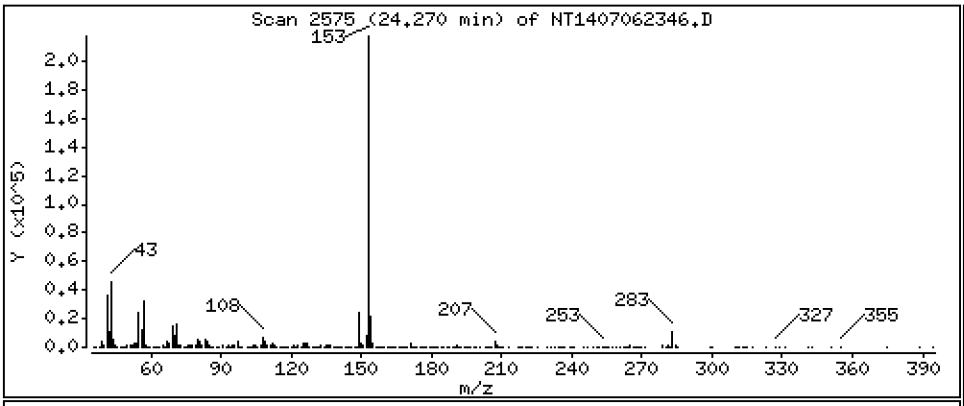
Operator: JGR

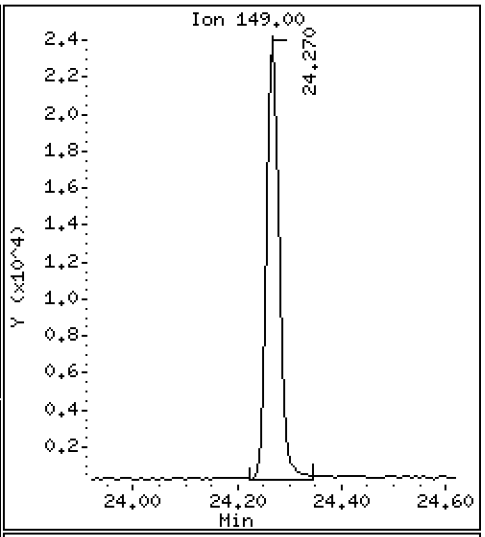
Column phase: ZB-5msi

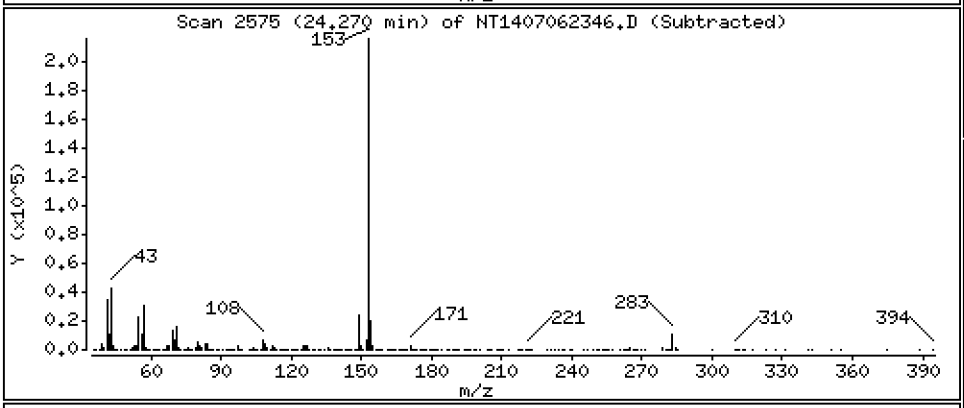
Column diameter: 0.25

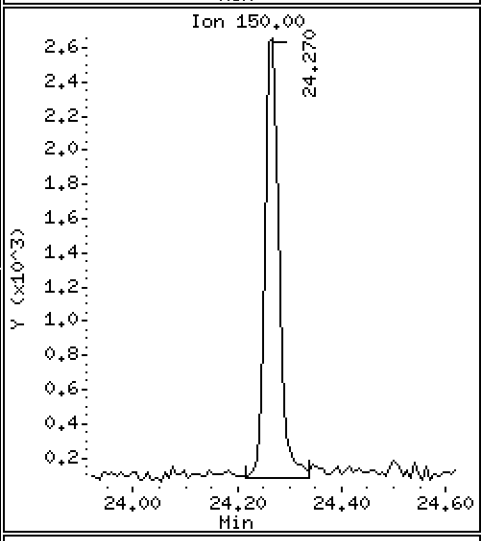
73 Di-n-octylphthalate

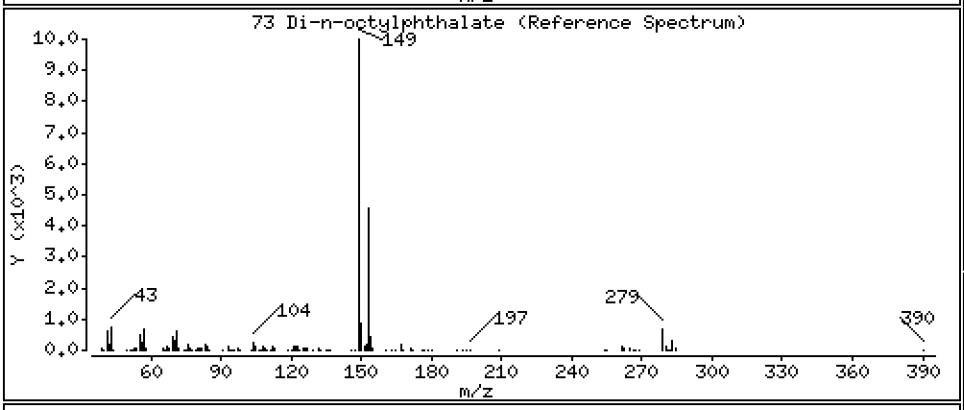
Concentration: 0.2156 ug/mL

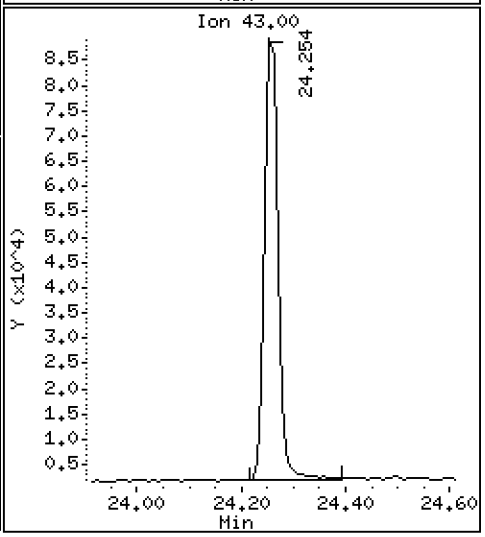


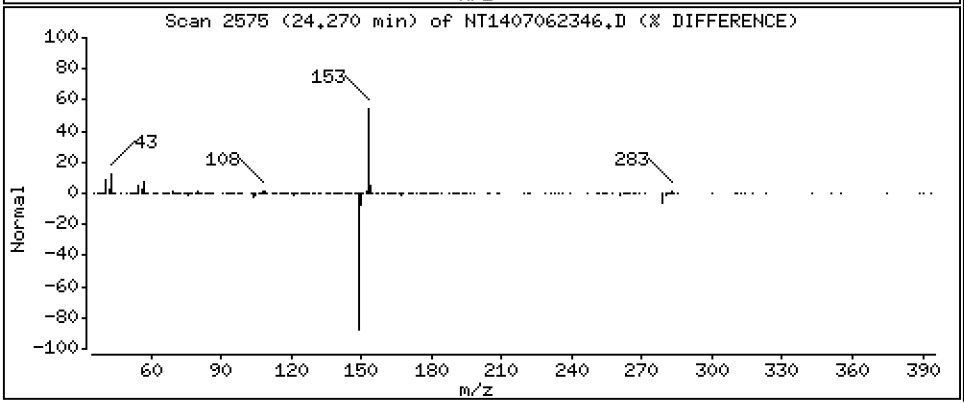












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

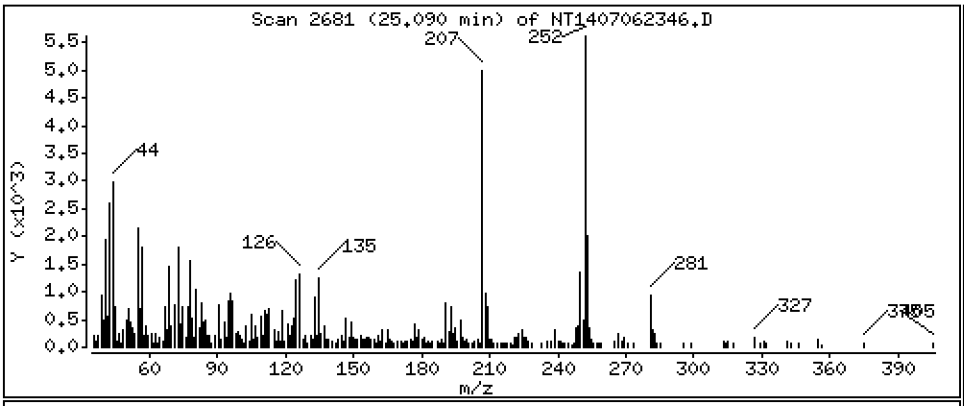
Operator: JGR

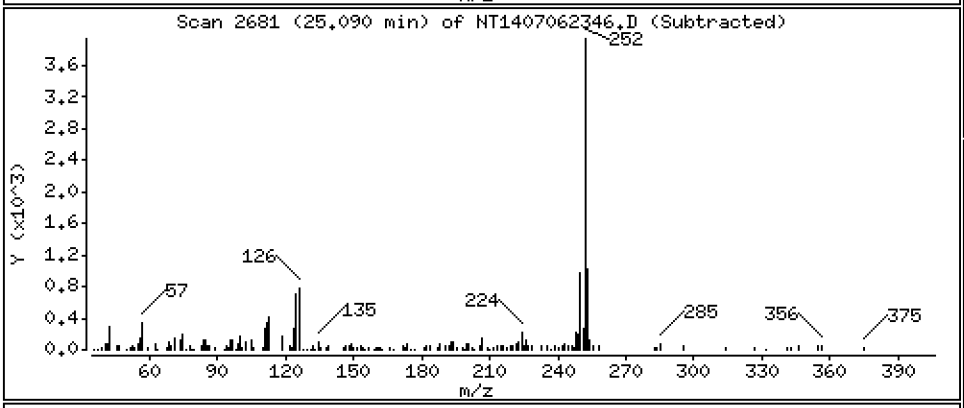
Column phase: ZB-5msi

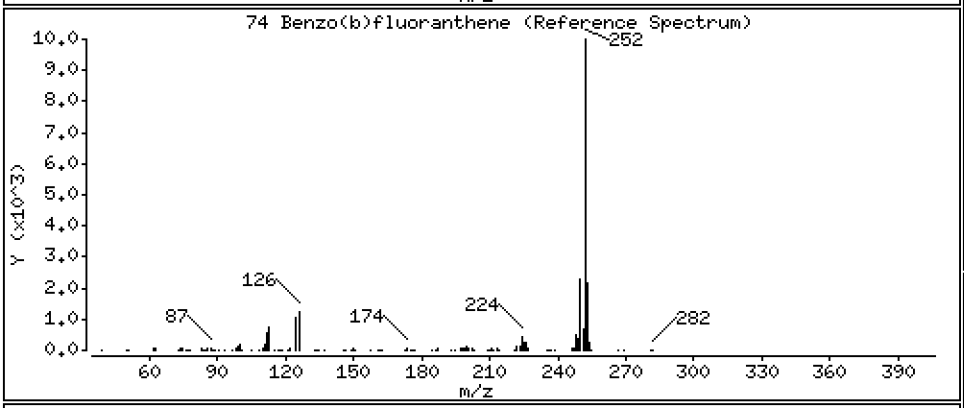
Column diameter: 0.25

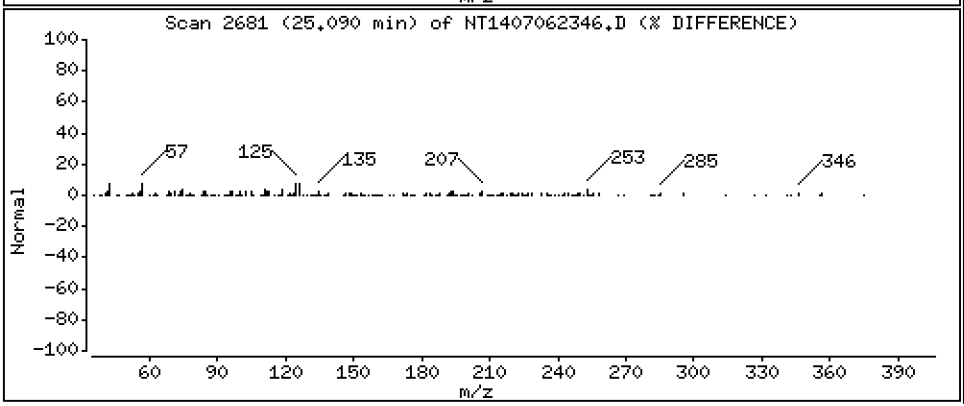
74 Benzo(b)fluoranthene

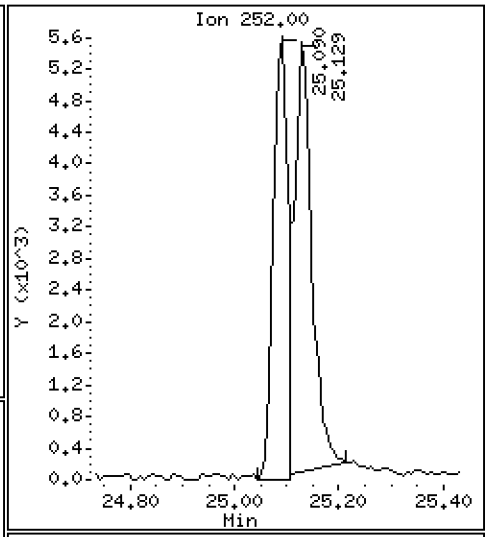
Concentration: 0.2139 ug/mL

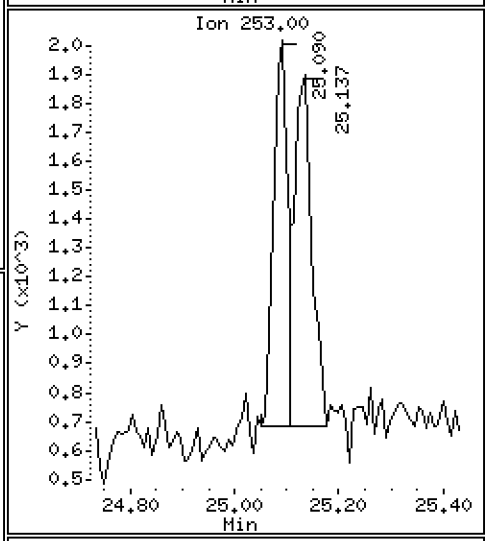


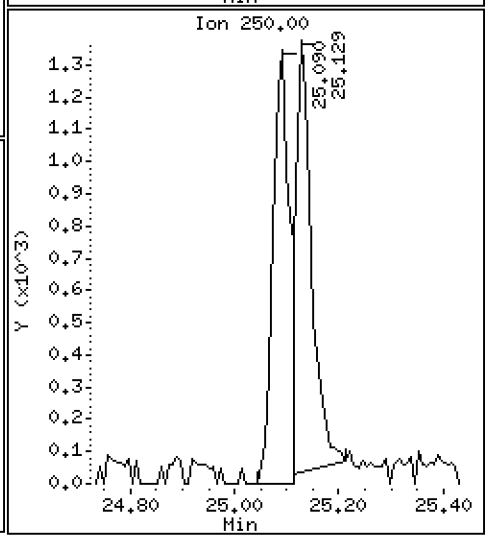












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

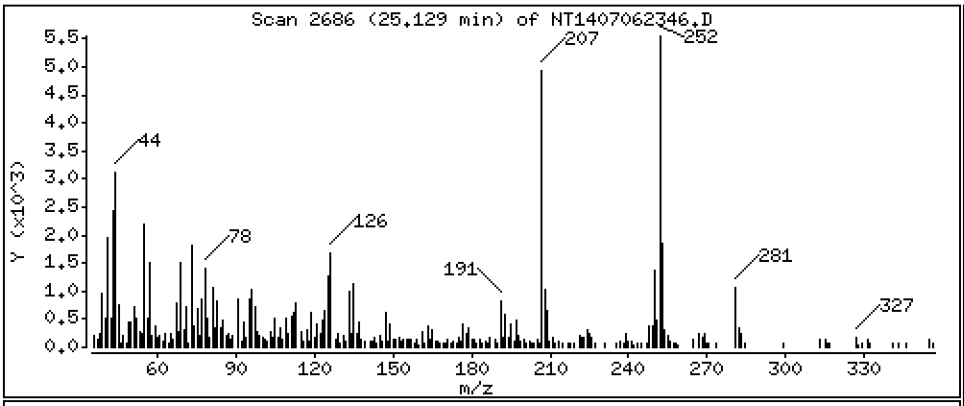
Operator: JGR

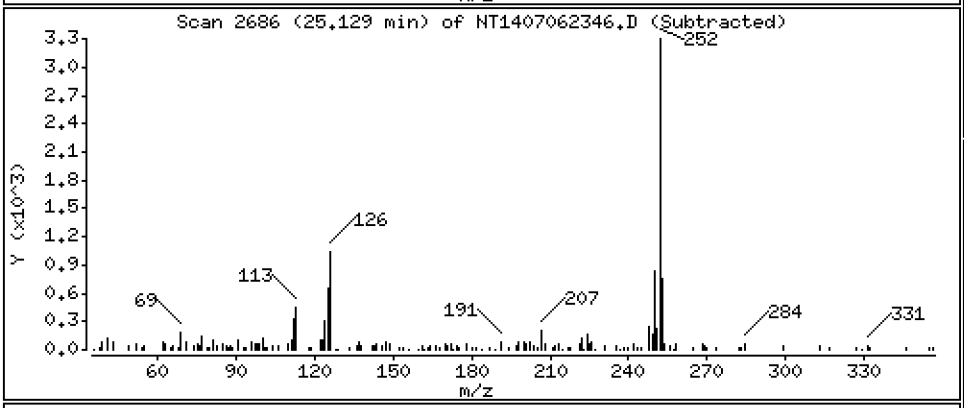
Column phase: ZB-5msi

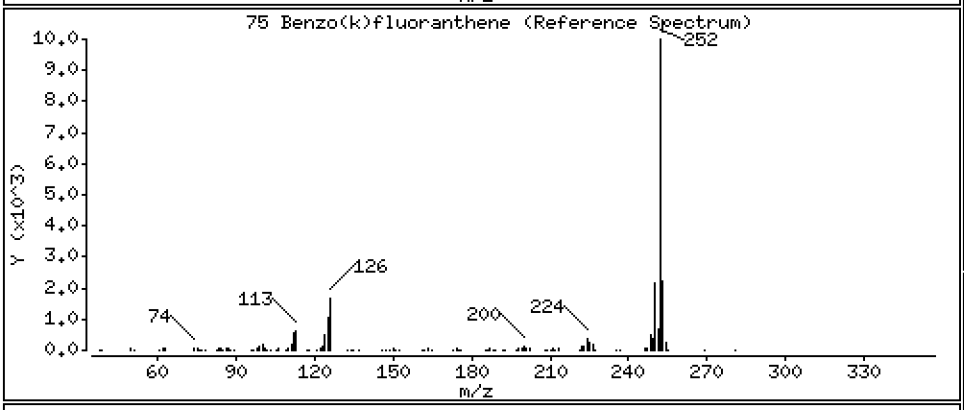
Column diameter: 0.25

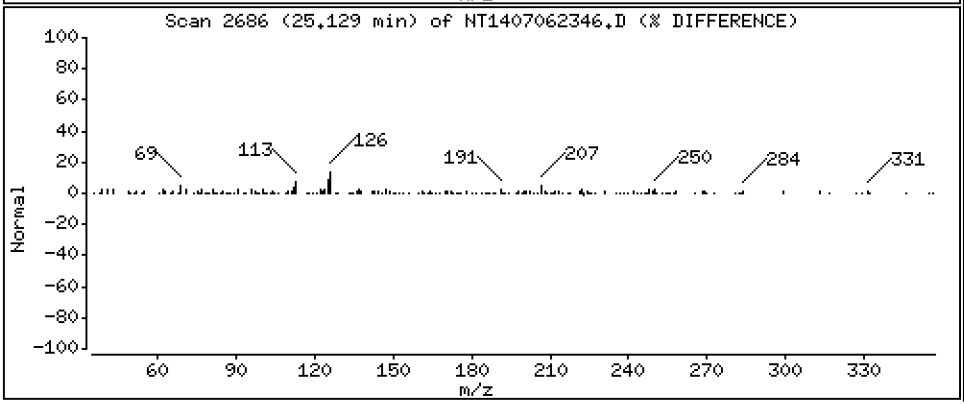
75 Benzo(k)fluoranthene

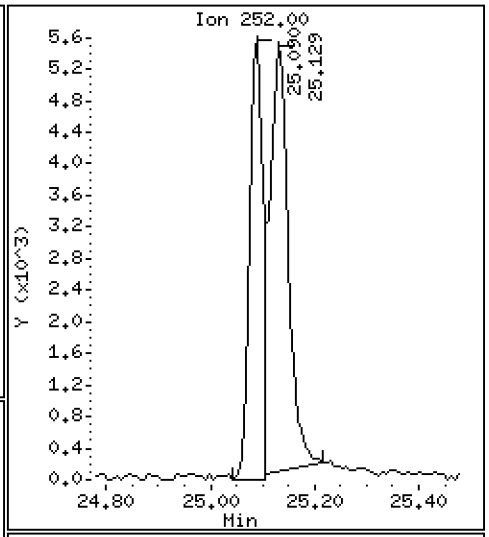
Concentration: 0.2447 ug/mL

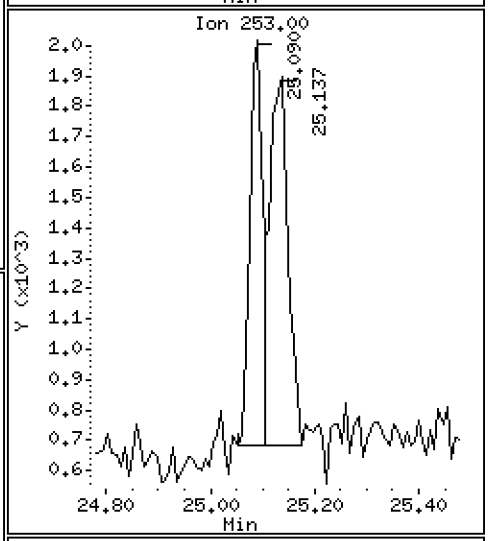


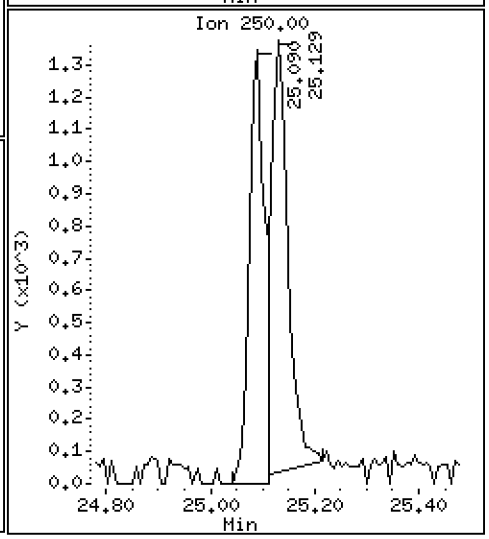












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

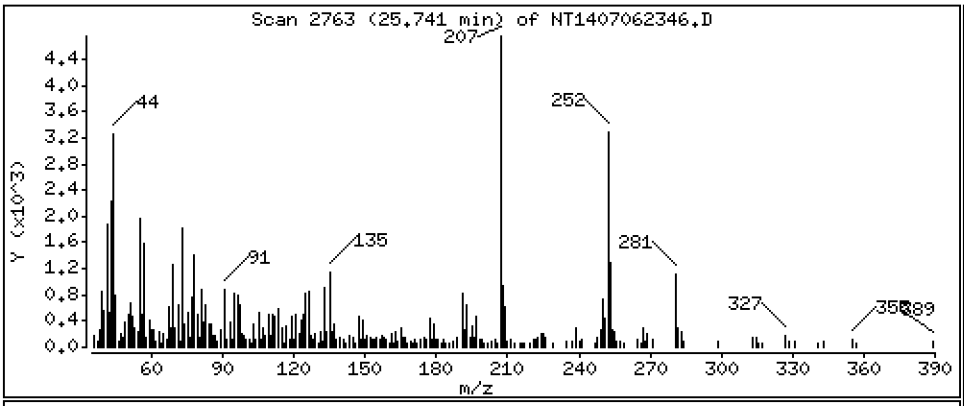
Operator: JGR

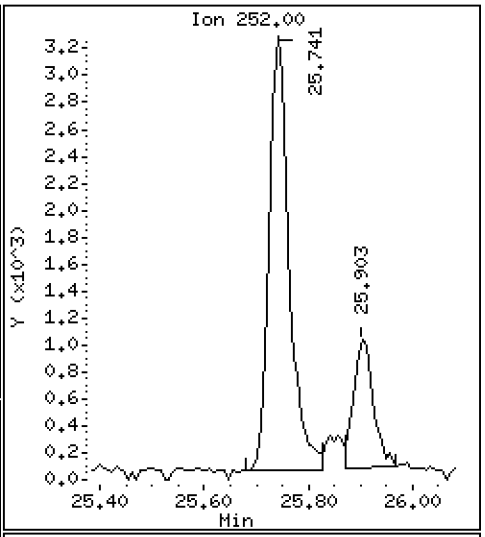
Column phase: ZB-5msi

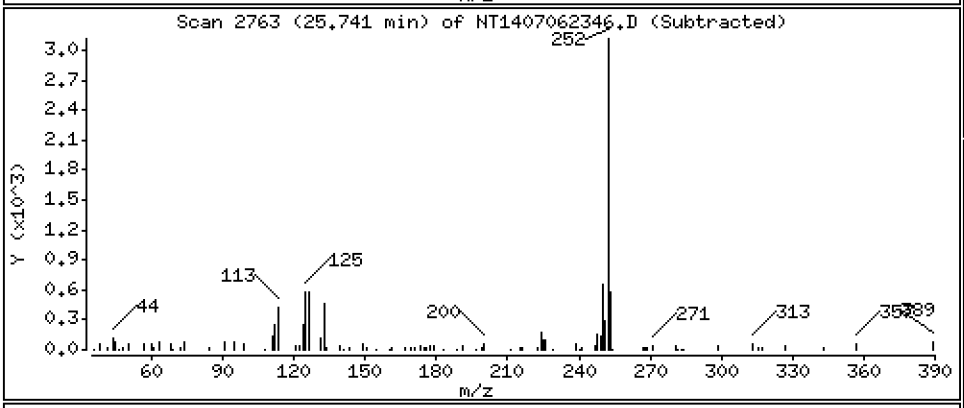
Column diameter: 0.25

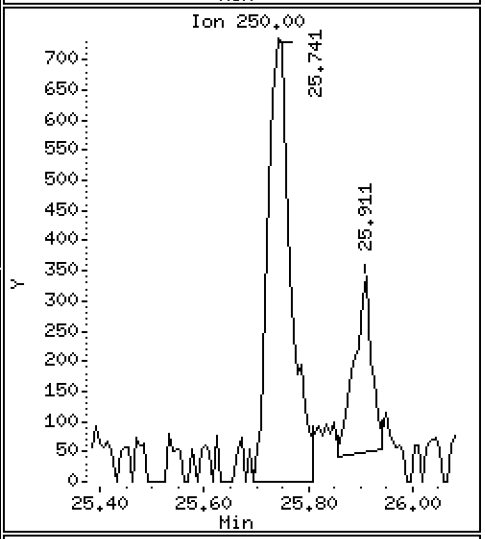
76 Benzo(a)pyrene

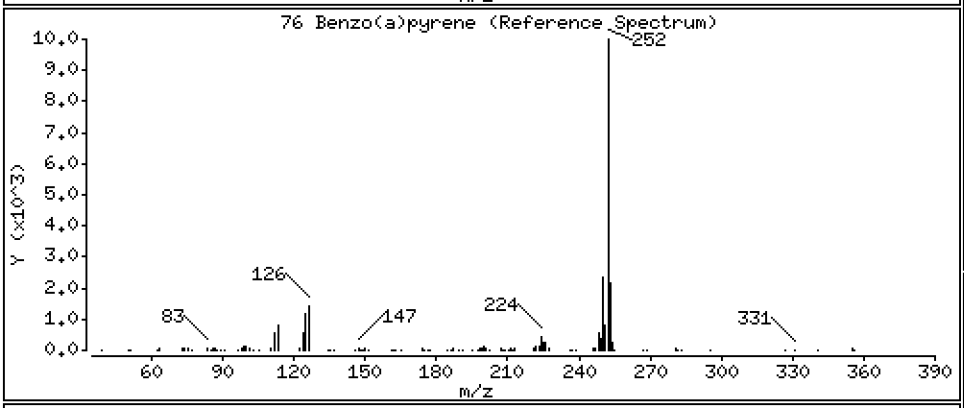
Concentration: 0.2136 ug/mL

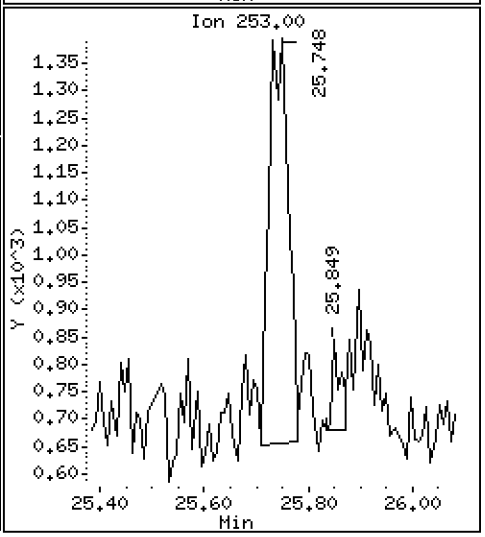


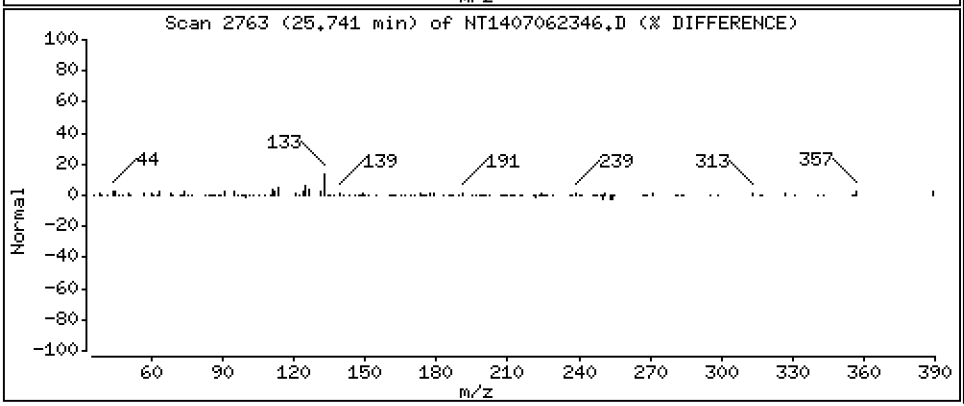












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

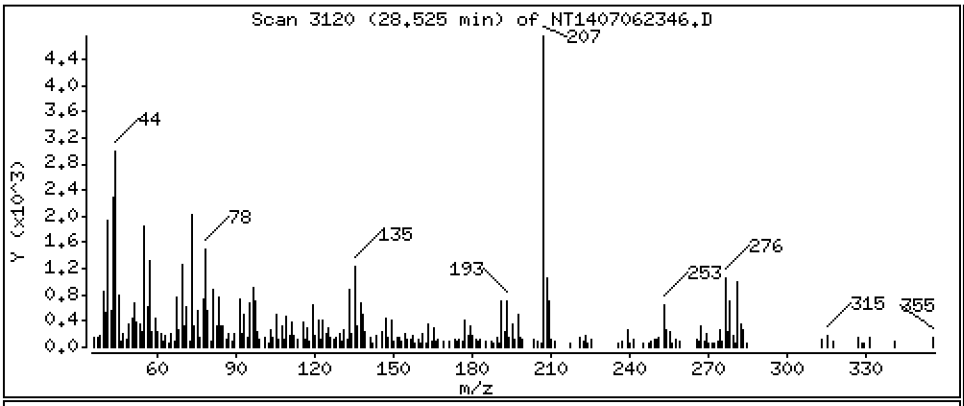
Operator: JGR

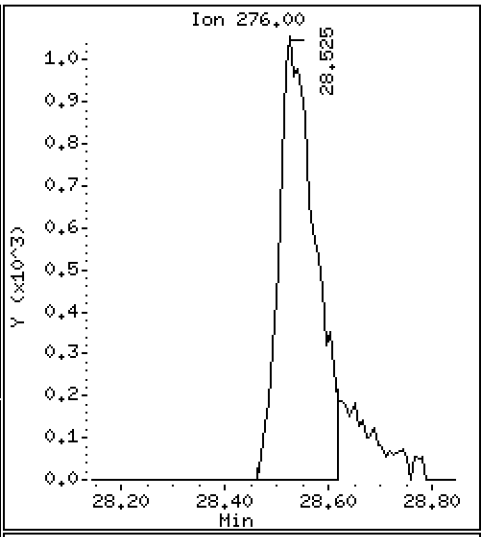
Column phase: ZB-5msi

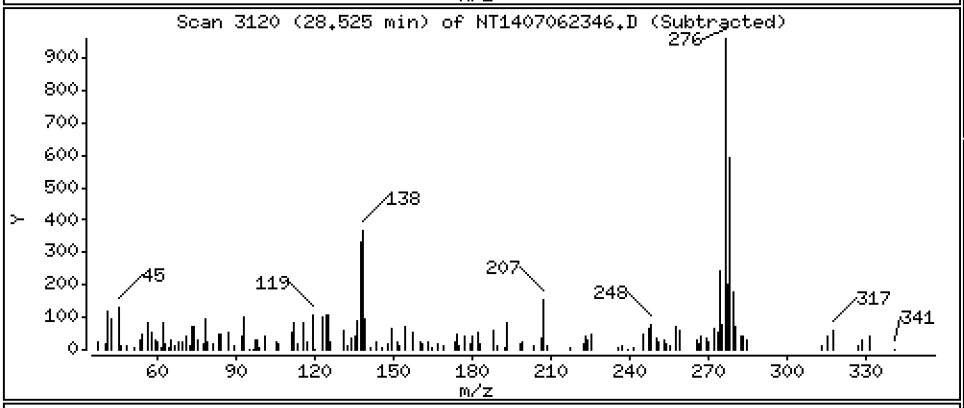
Column diameter: 0.25

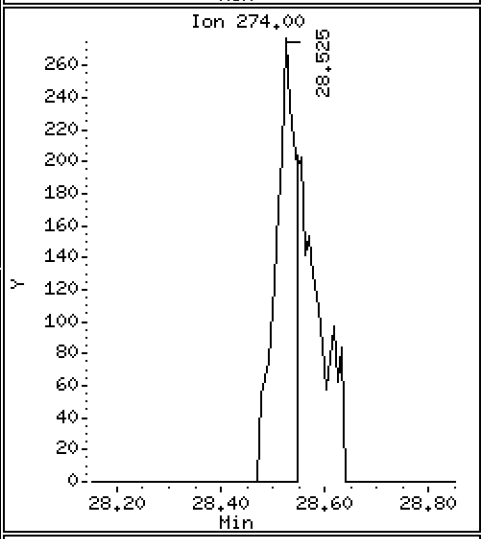
78 Indeno(1,2,3-cd)pyrene

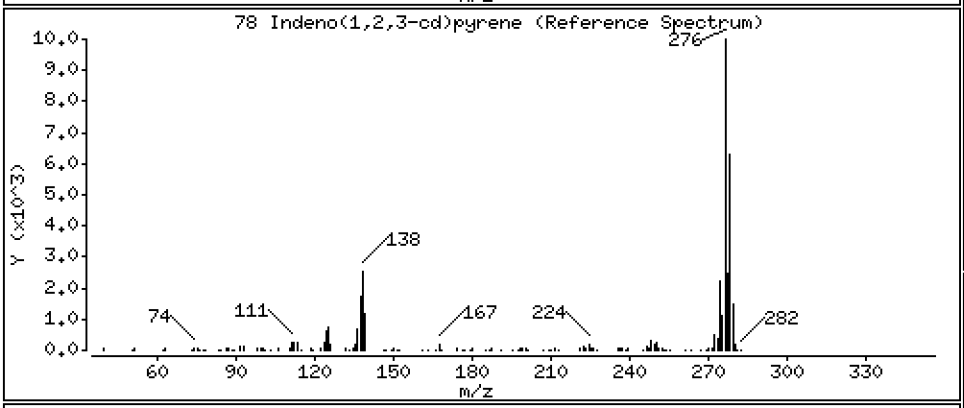
Concentration: 0.1460 ug/mL

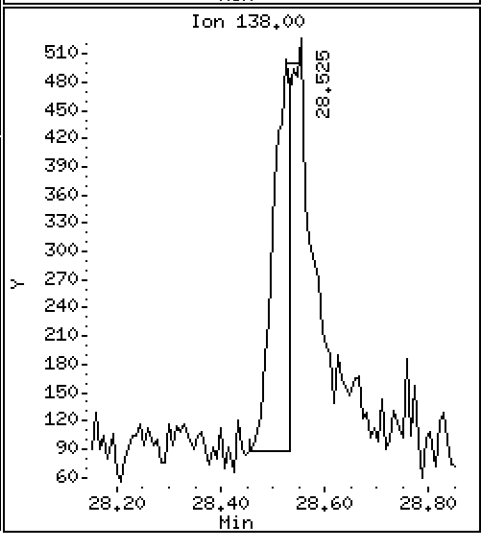


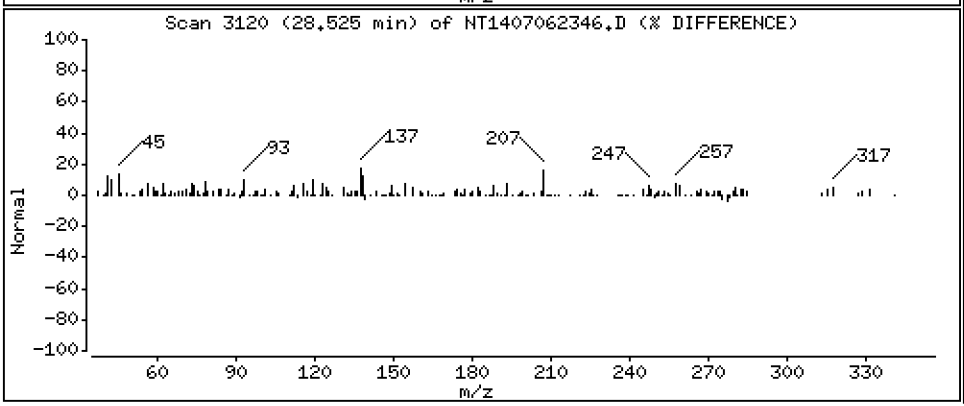












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

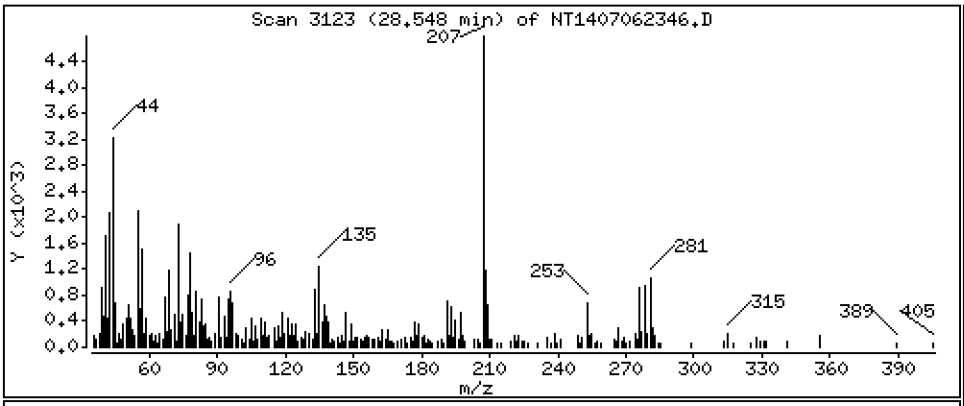
Operator: JGR

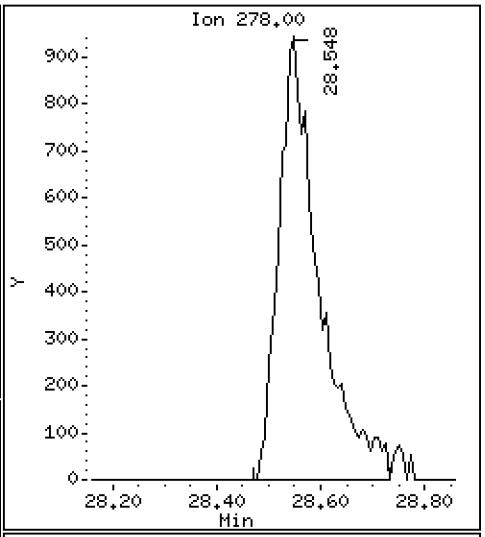
Column phase: ZB-5msi

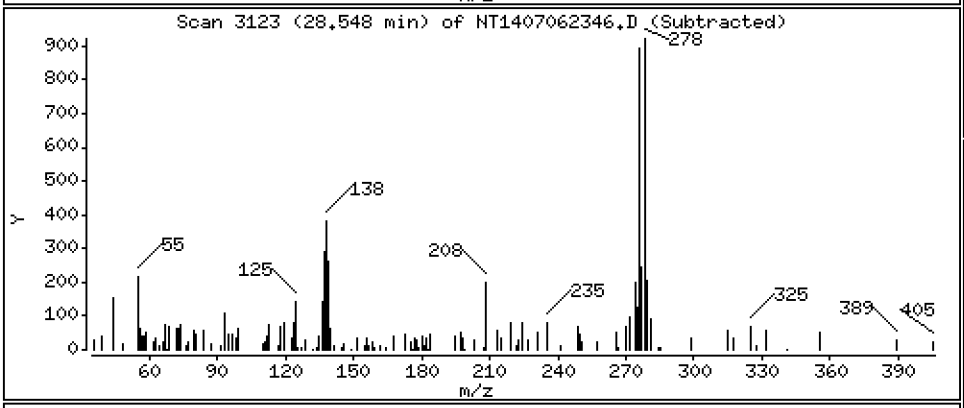
Column diameter: 0.25

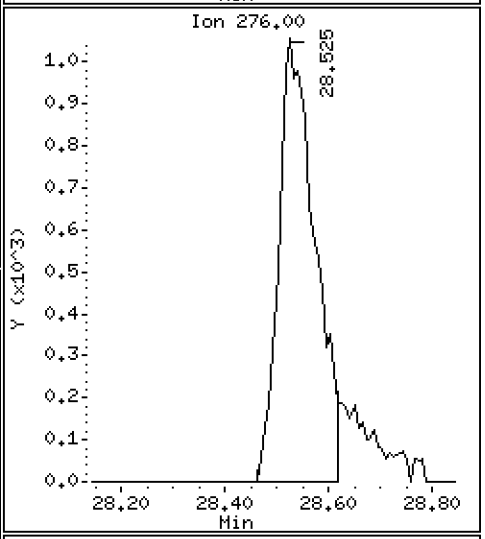
79 Dibenzo(a,h)anthracene

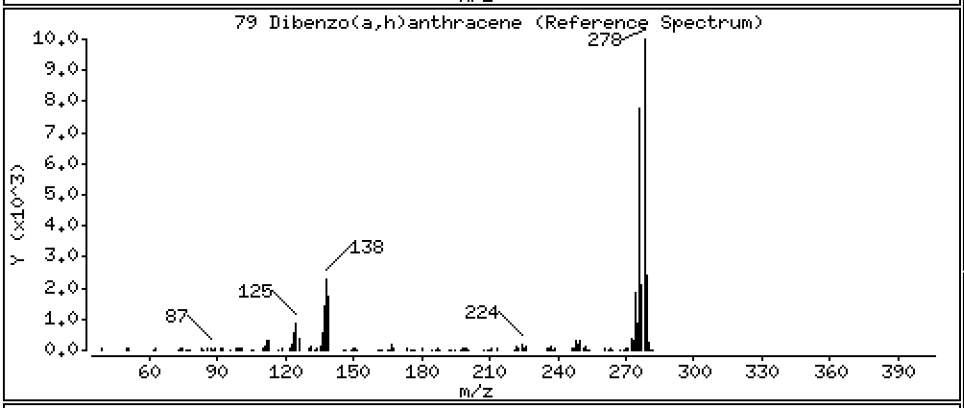
Concentration: 0.1700 ug/mL

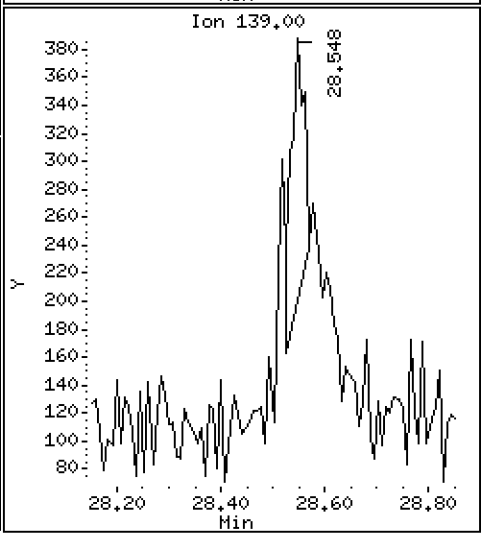


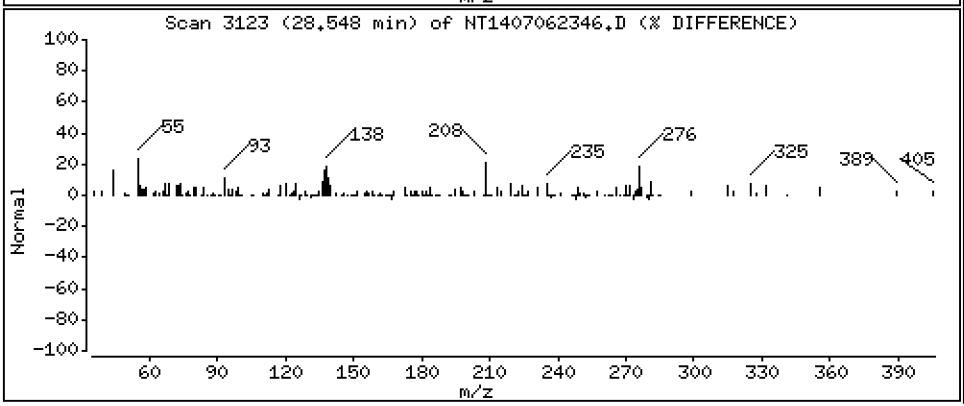












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

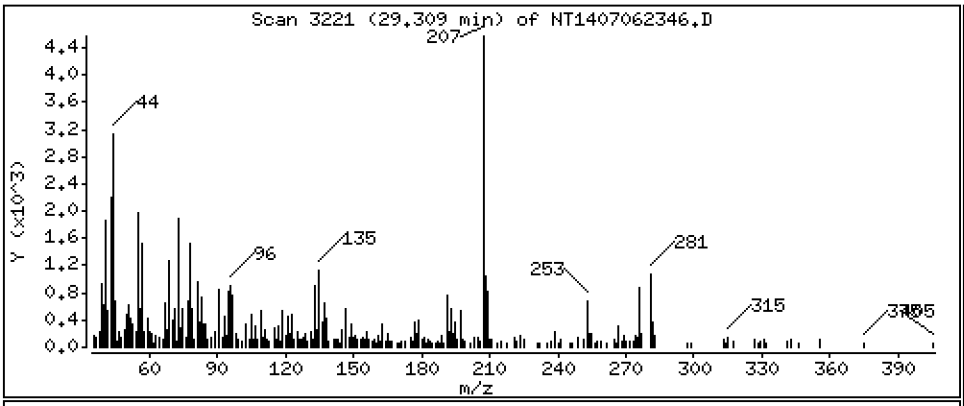
Operator: JGR

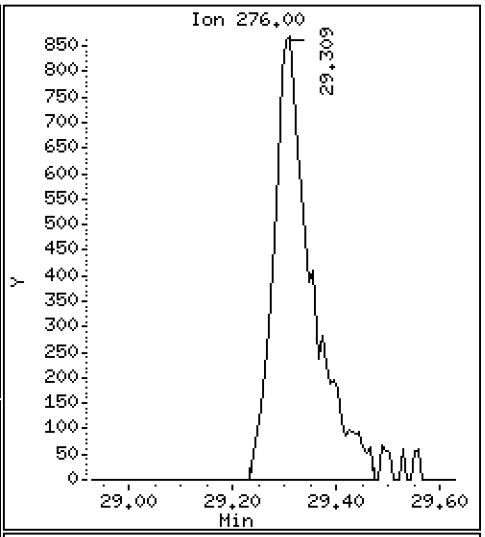
Column phase: ZB-5msi

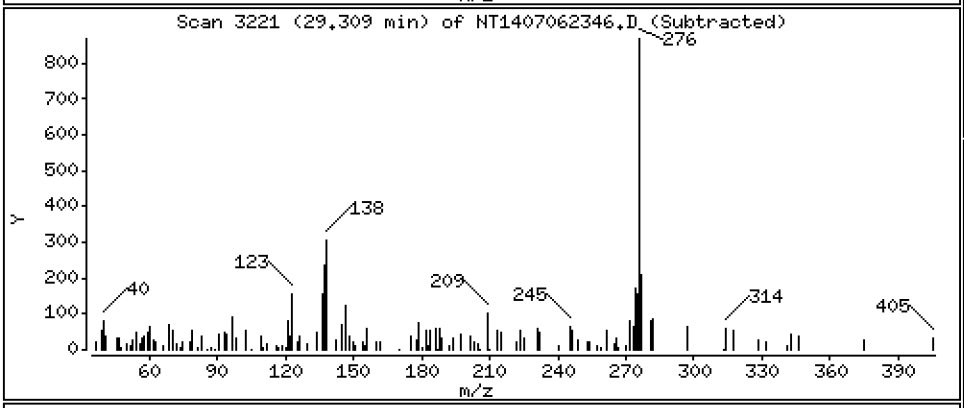
Column diameter: 0.25

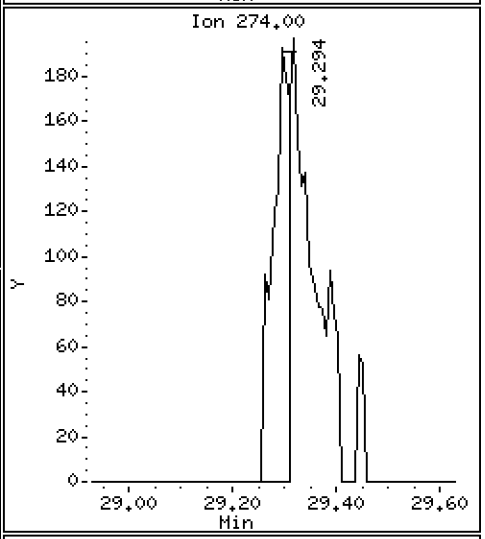
80 Benzo(g,h,i)perylene

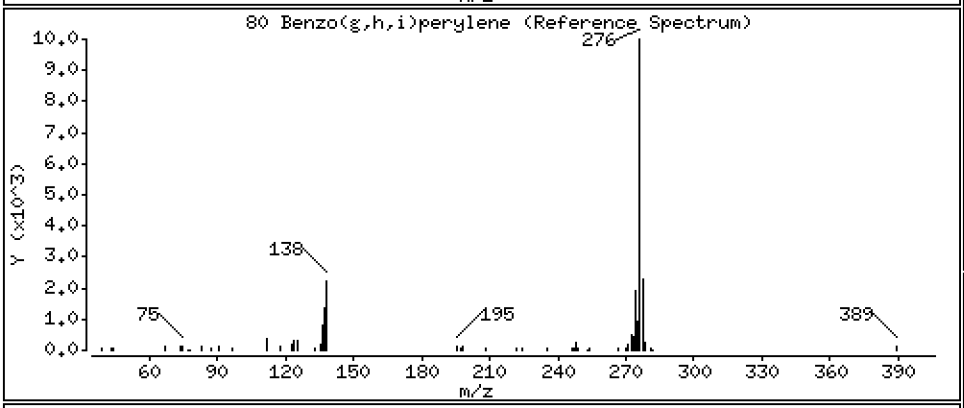
Concentration: 0.1531 ug/mL

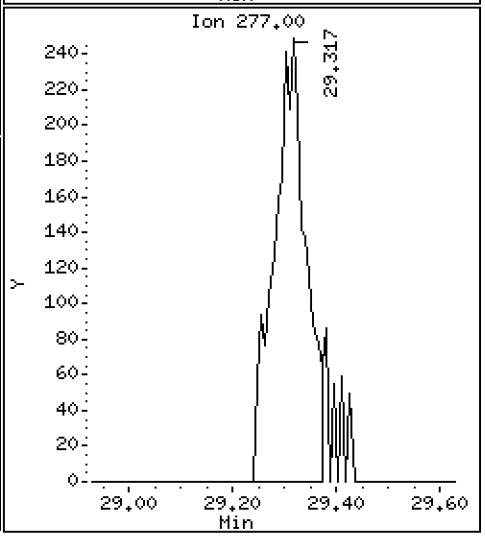


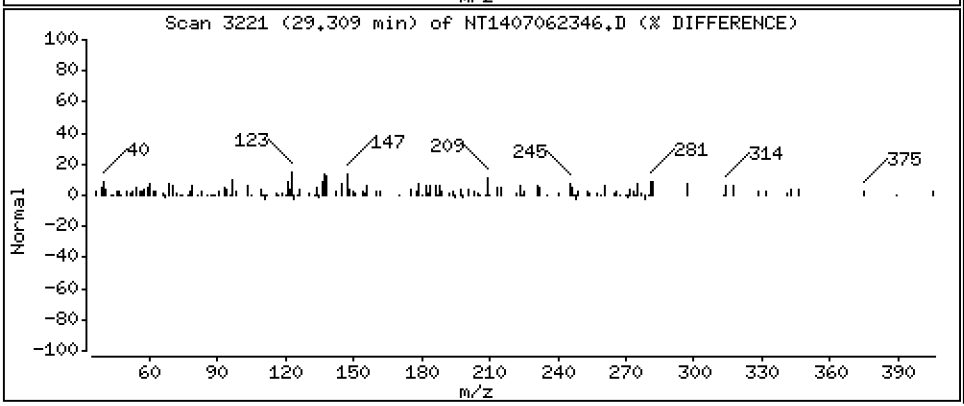












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

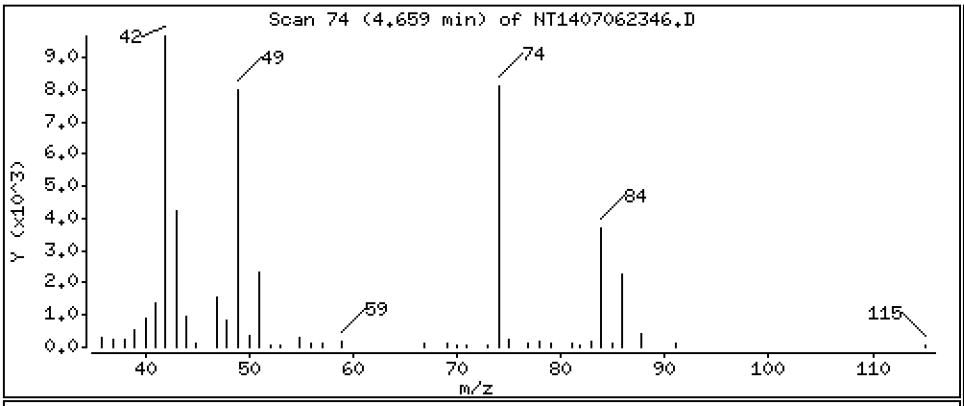
Operator: JGR

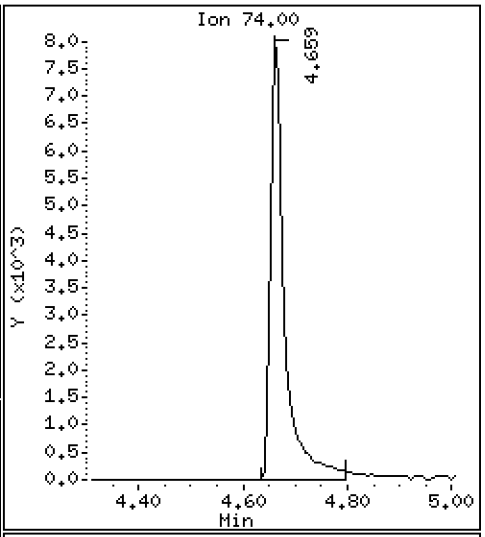
Column phase: ZB-5msi

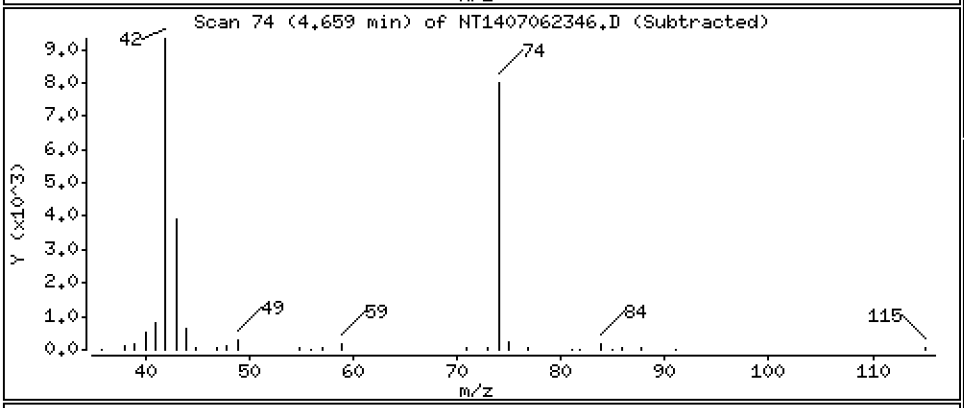
Column diameter: 0.25

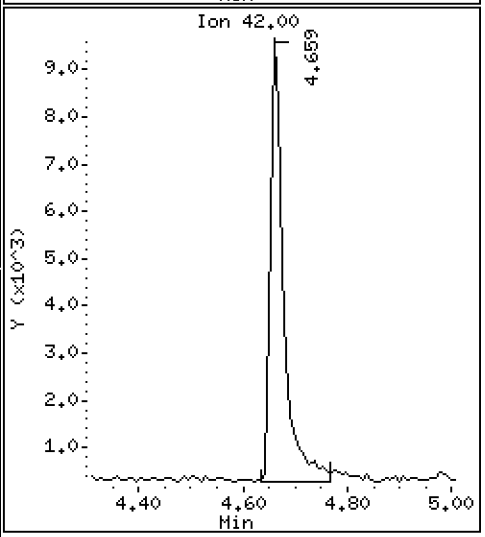
90 N-Nitrosodimethylamine

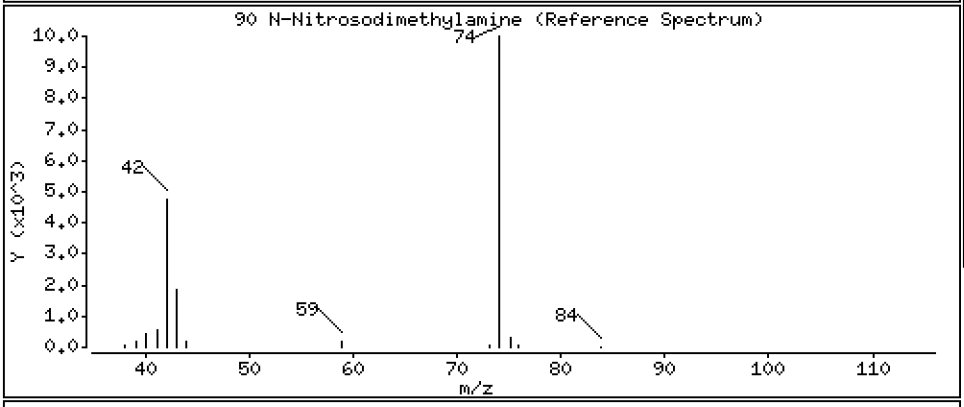
Concentration: 0.3815 ug/mL

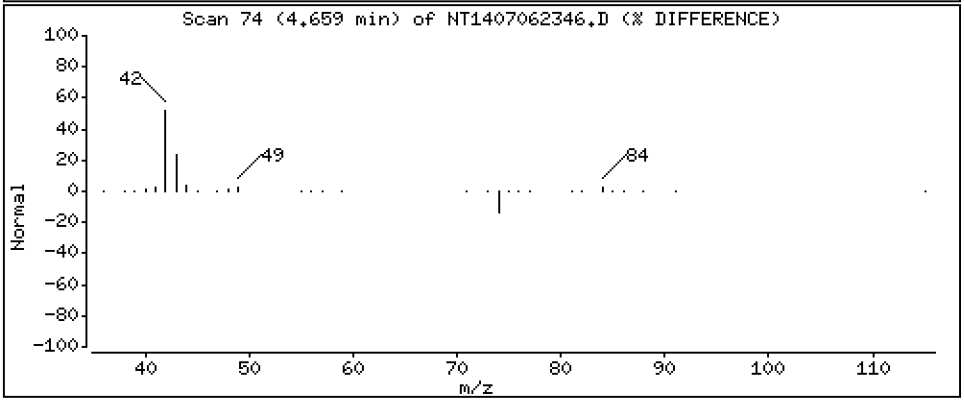












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D

Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

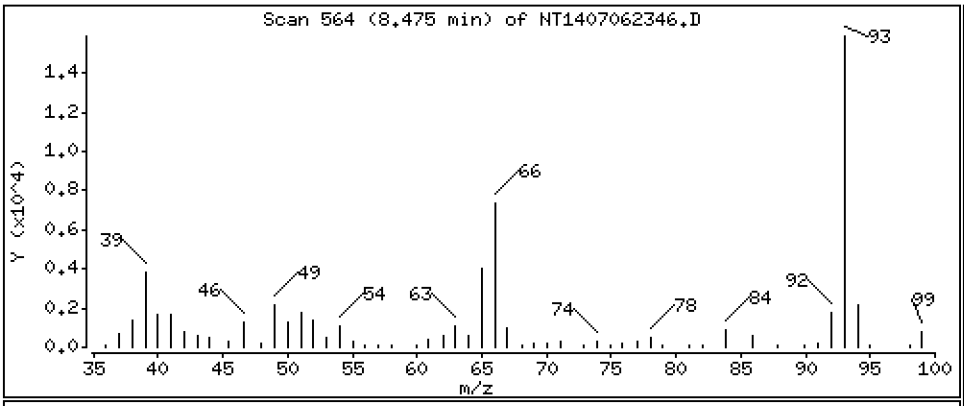
Operator: JGR

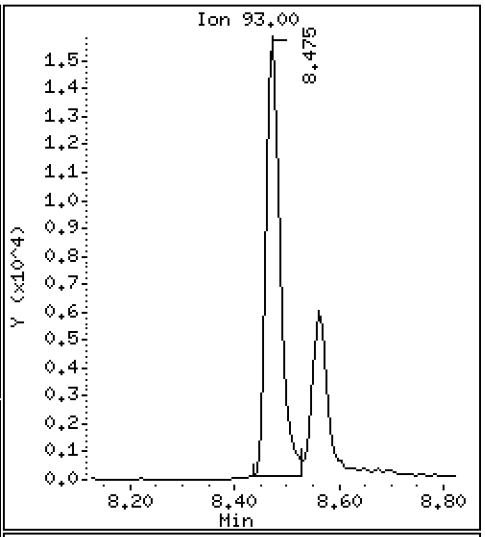
Column phase: ZB-5msi

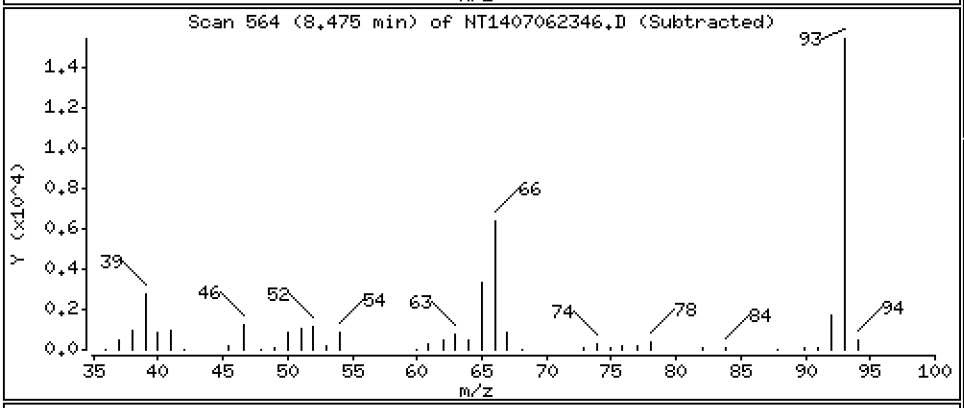
Column diameter: 0.25

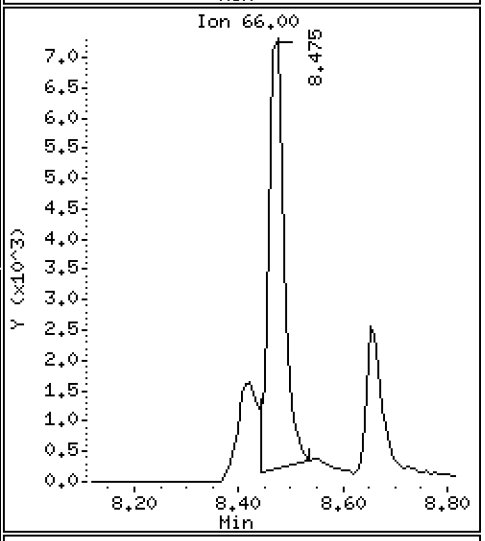
91 Aniline

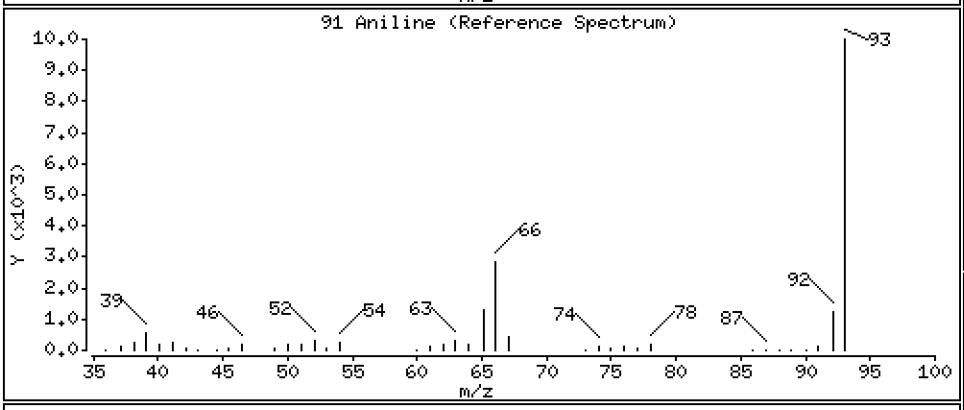
Concentration: 0.3518 ug/mL

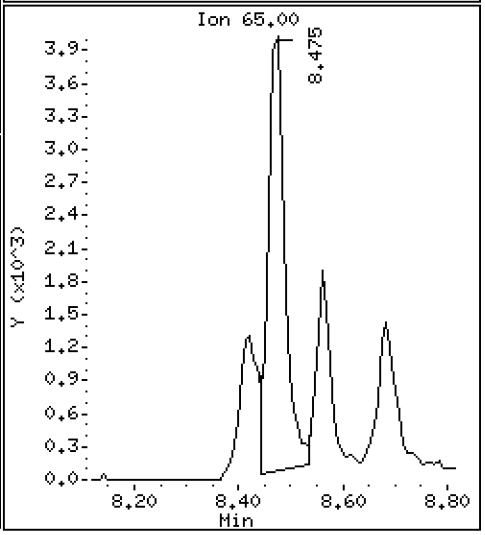


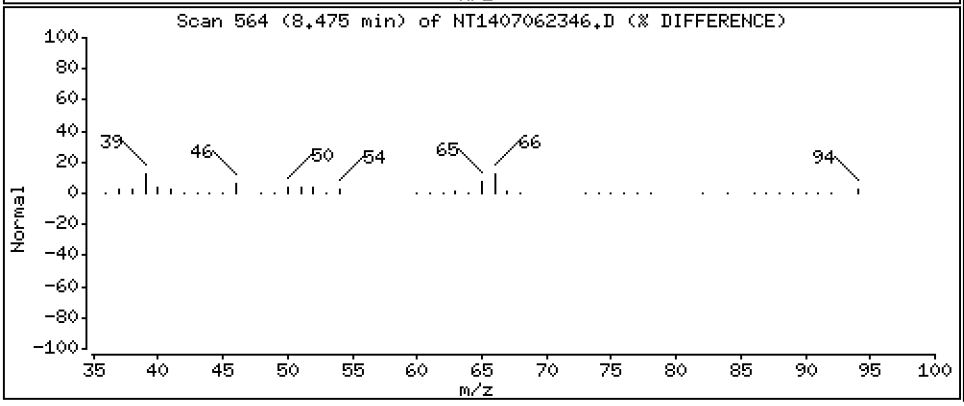












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

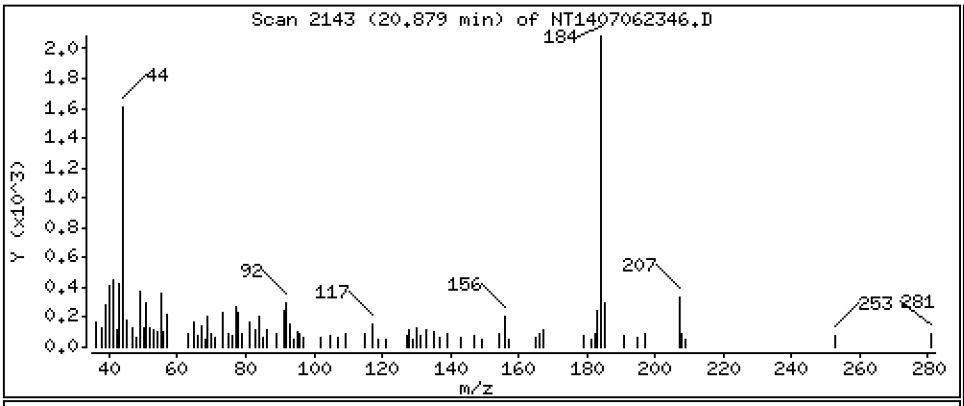
Operator: JGR

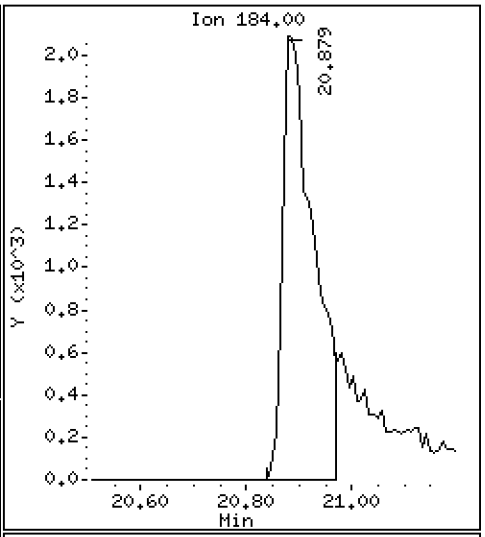
Column phase: ZB-5msi

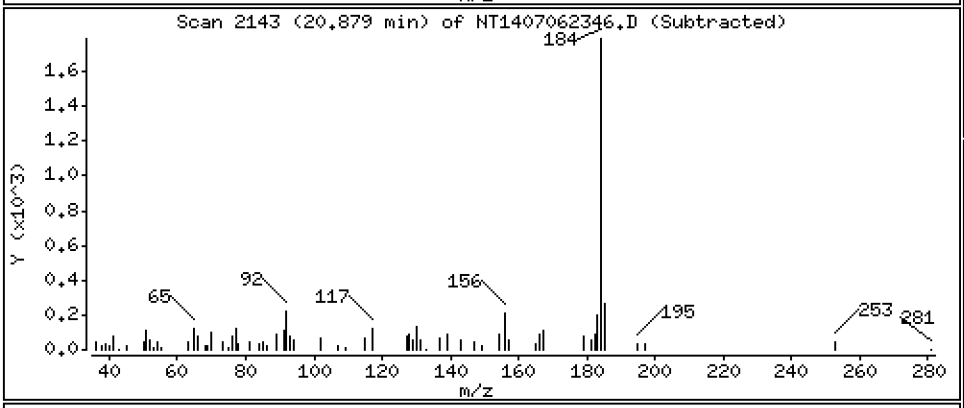
Column diameter: 0.25

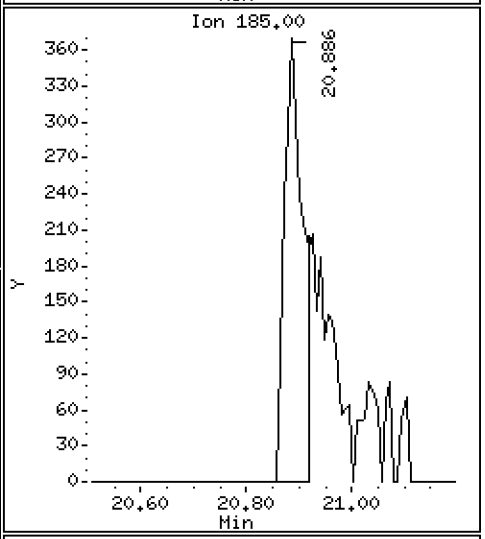
93 Benzidine

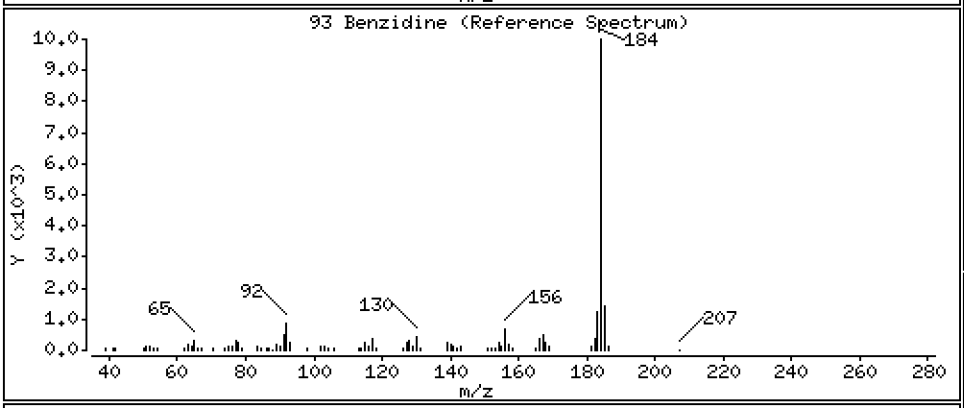
Concentration: 0.2646 ug/mL

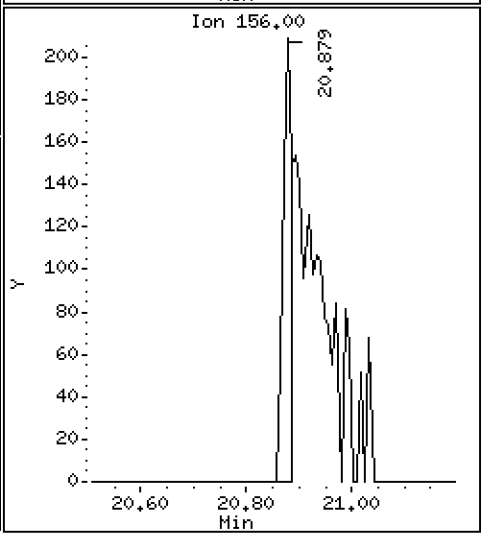


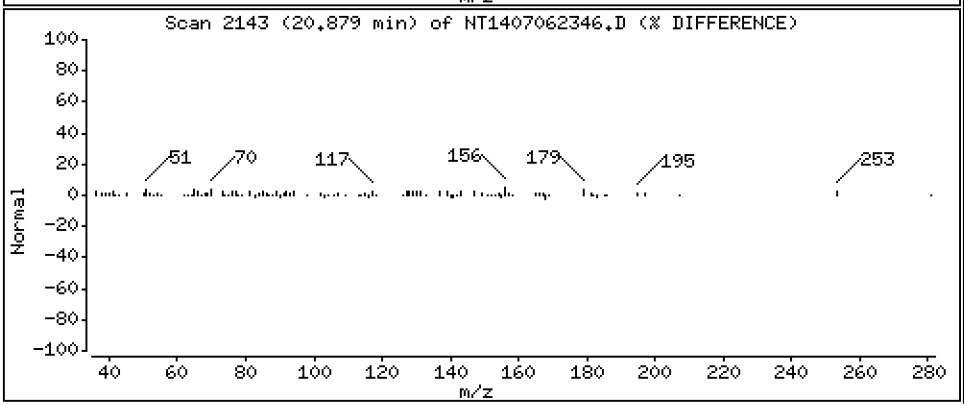












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

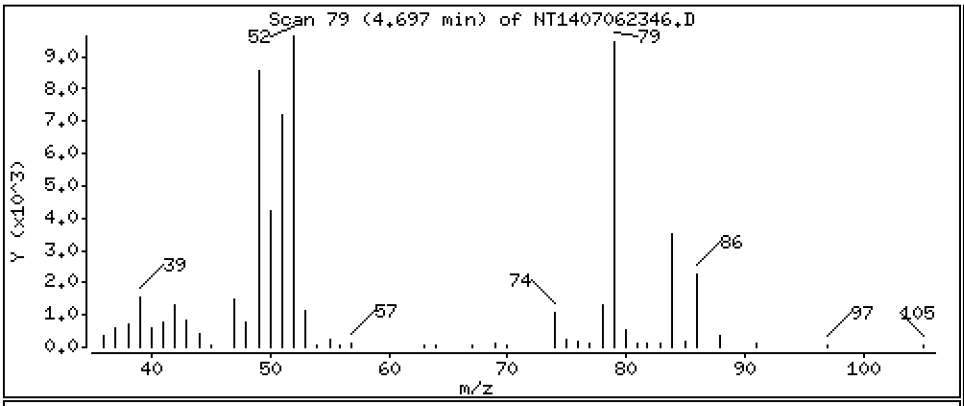
Operator: JGR

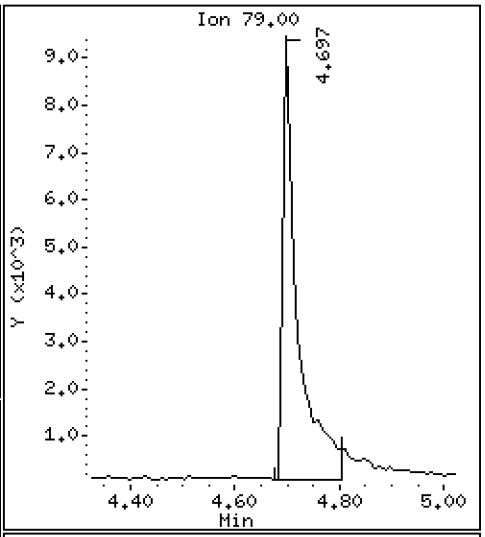
Column phase: ZB-5msi

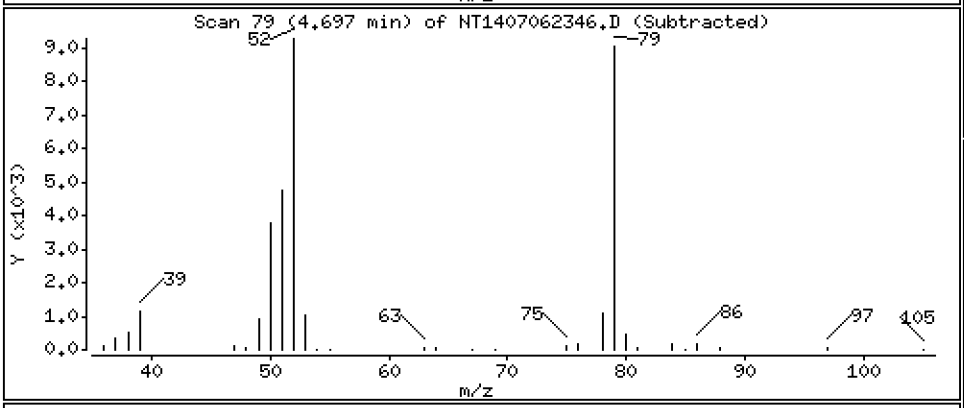
Column diameter: 0.25

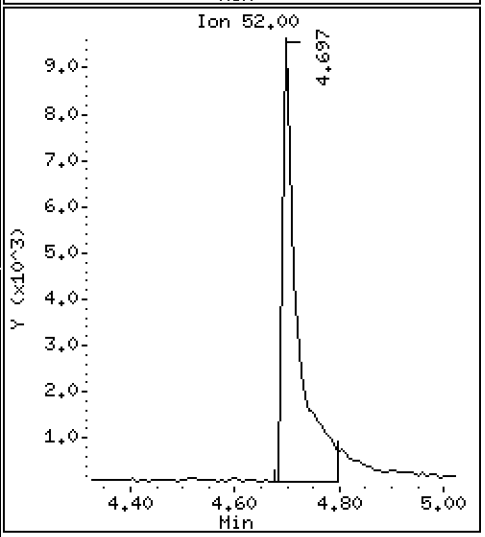
103 Pyridine

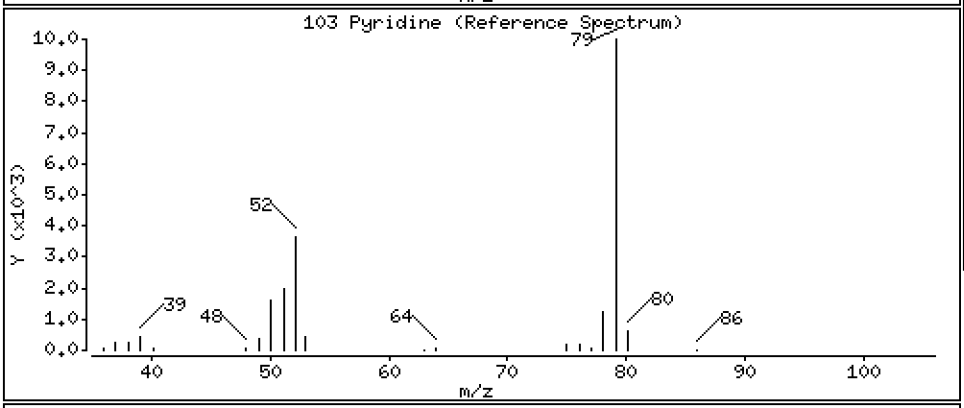
Concentration: 0.3179 ug/mL

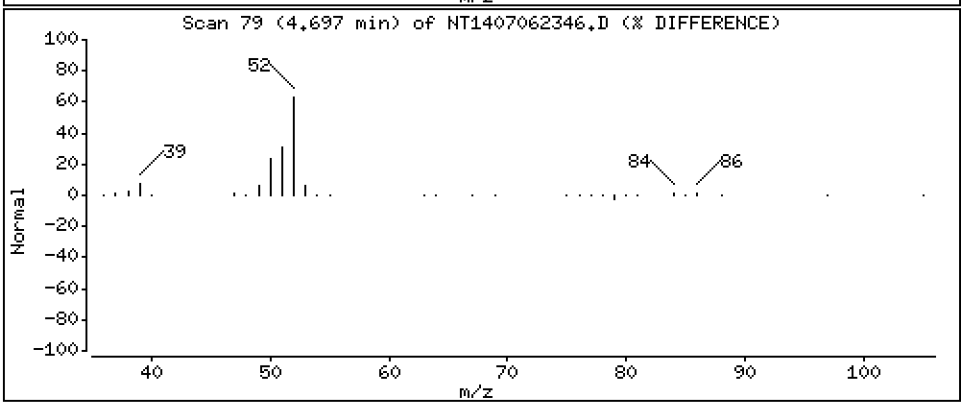












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D

Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

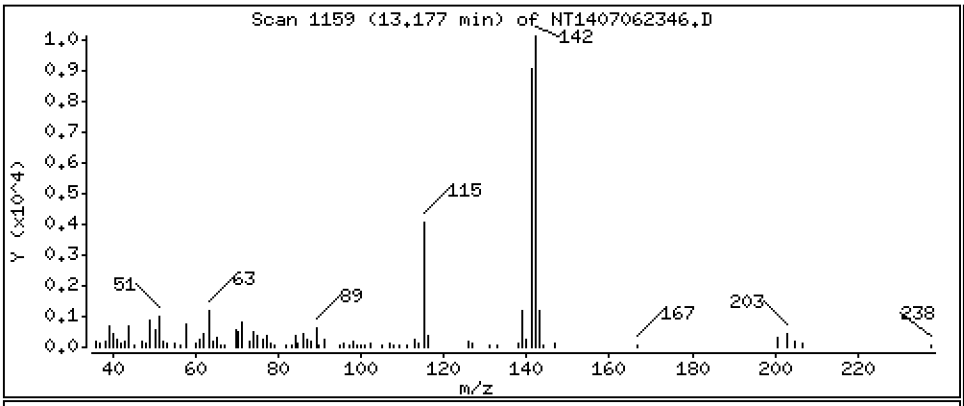
Operator: JGR

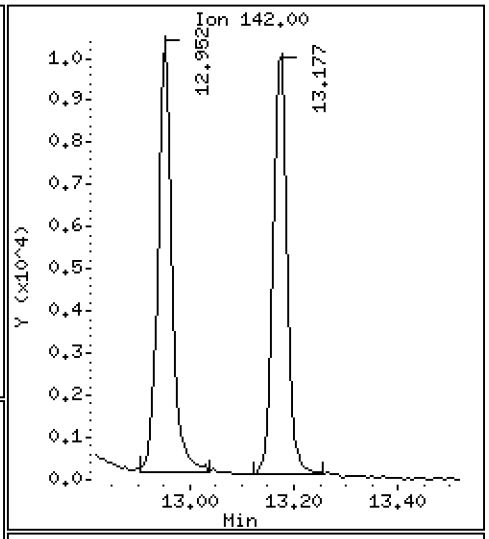
Column phase: ZB-5msi

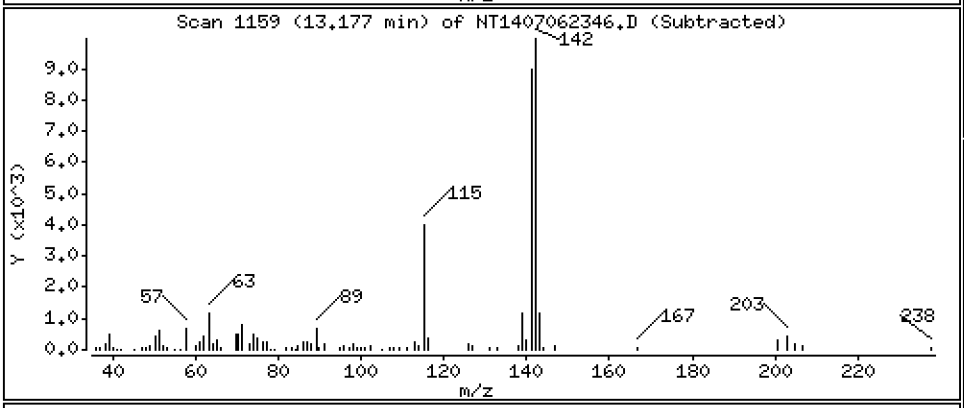
Column diameter: 0.25

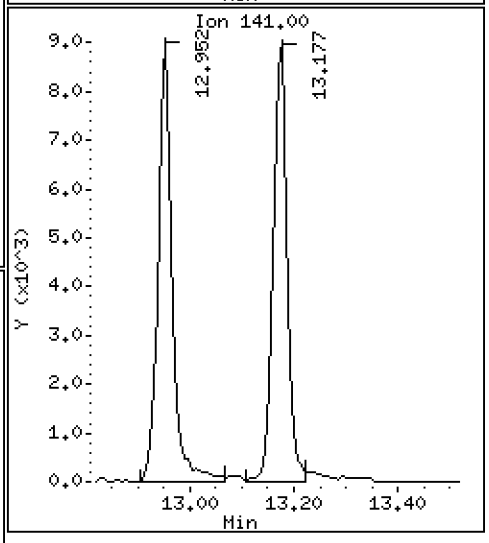
105 1-methylnaphthalene

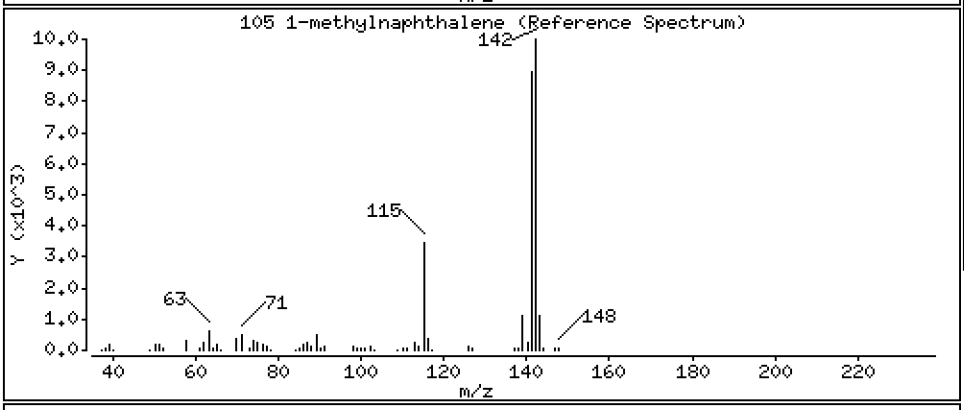
Concentration: 0.1938 ug/mL

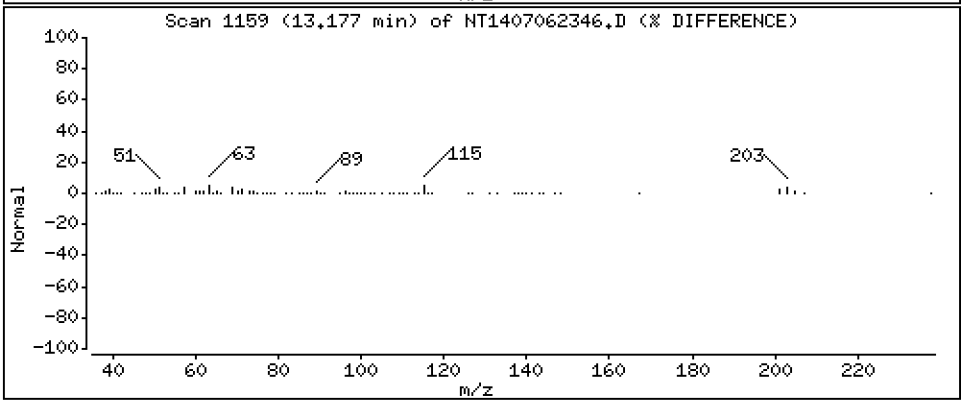












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

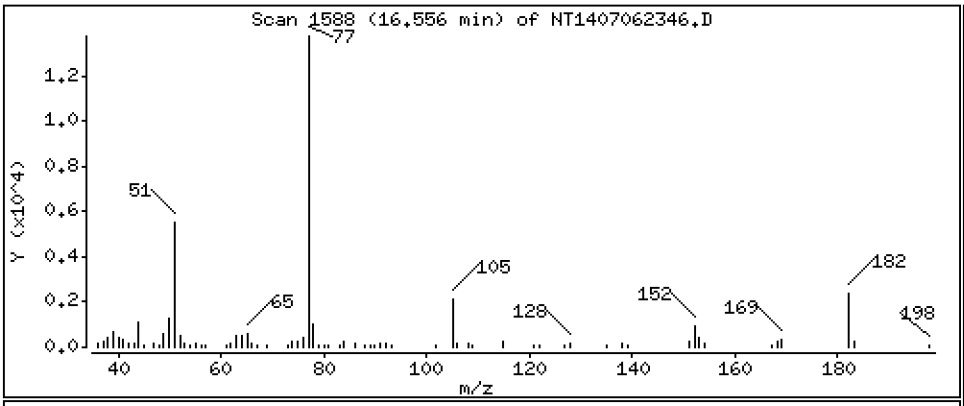
Operator: JGR

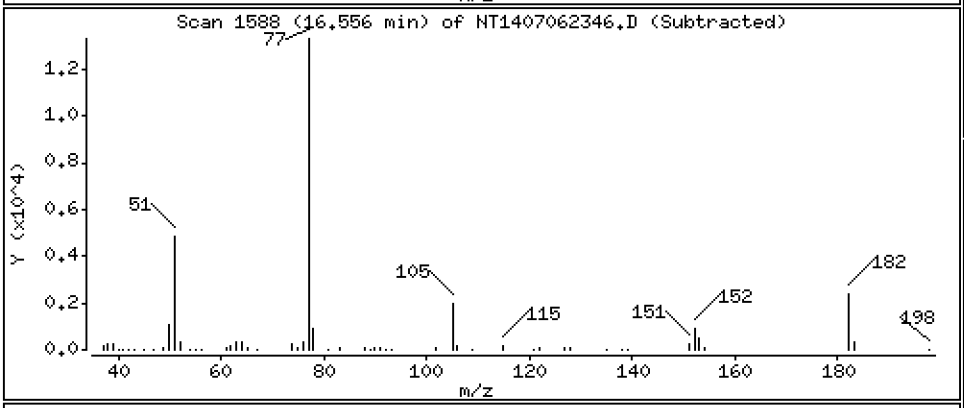
Column phase: ZB-5msi

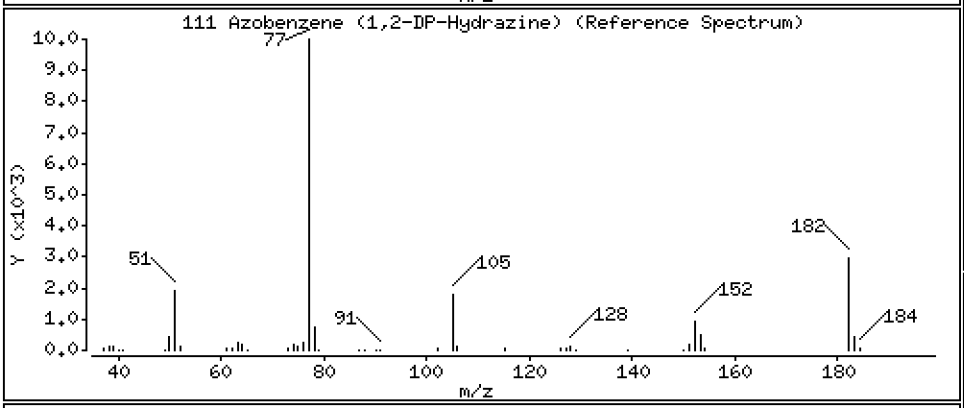
Column diameter: 0.25

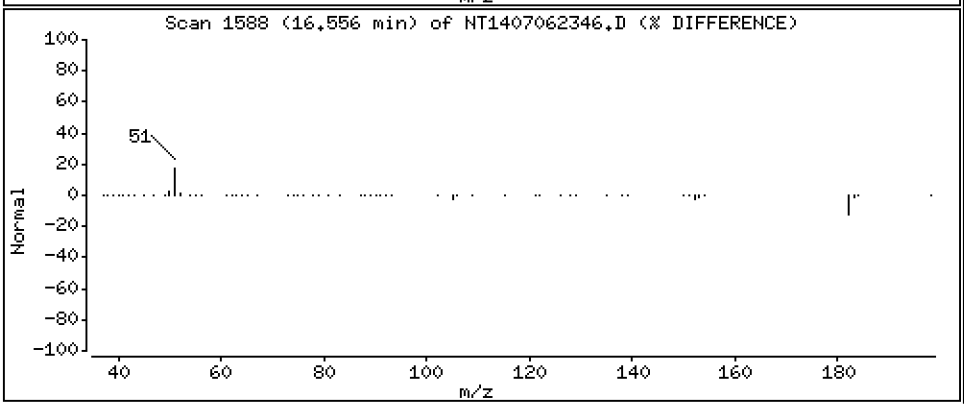
111 Azobenzene (1,2-DP-Hydrazine)

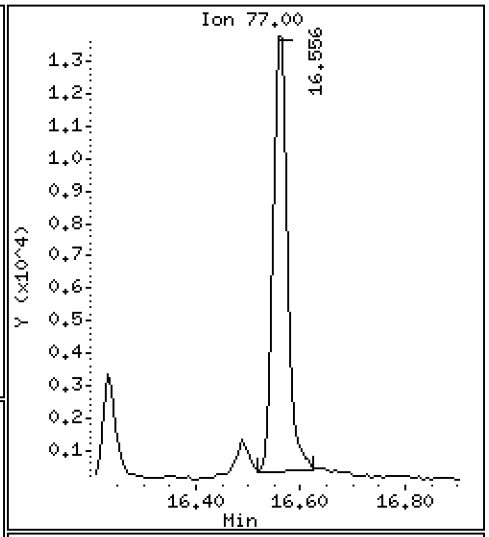
Concentration: 0.1741 ug/mL

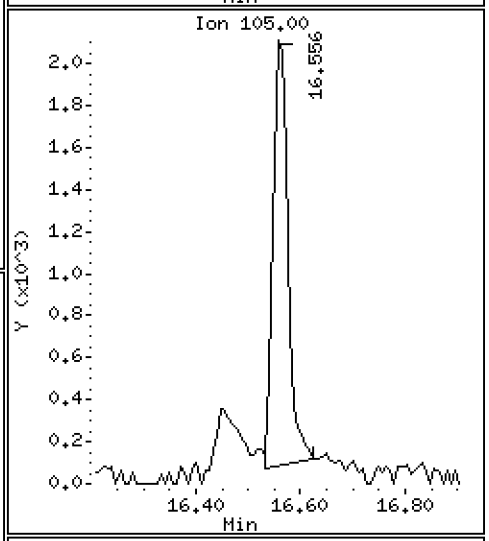


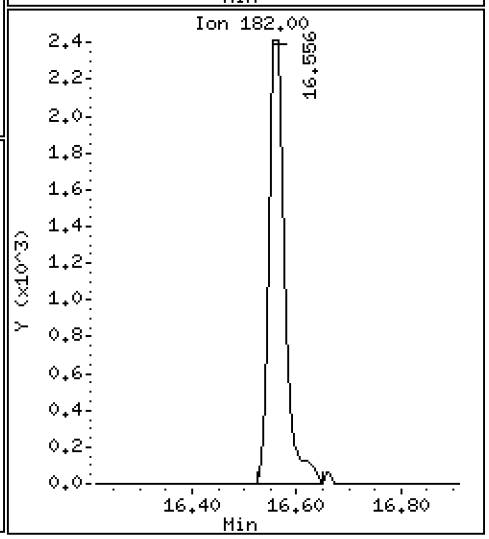












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

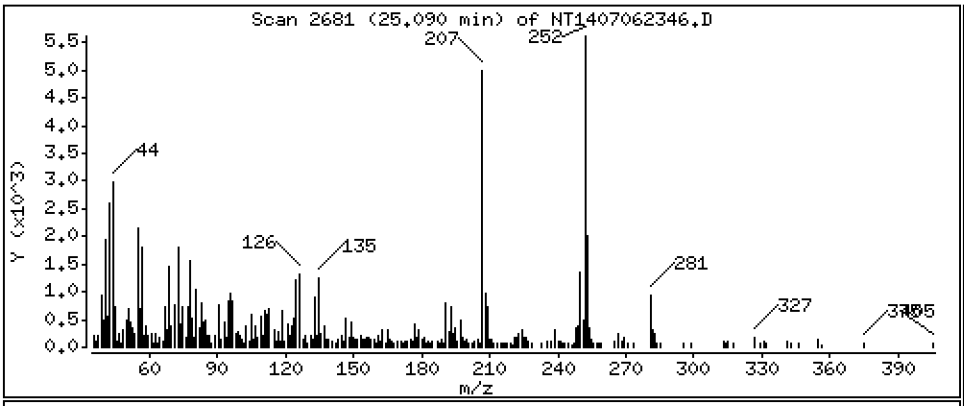
Operator: JGR

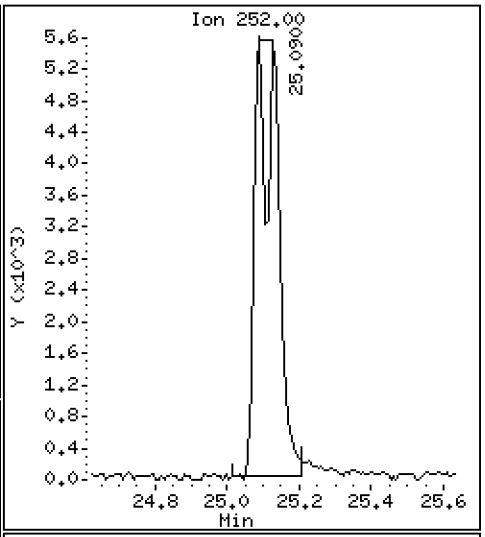
Column phase: ZB-5msi

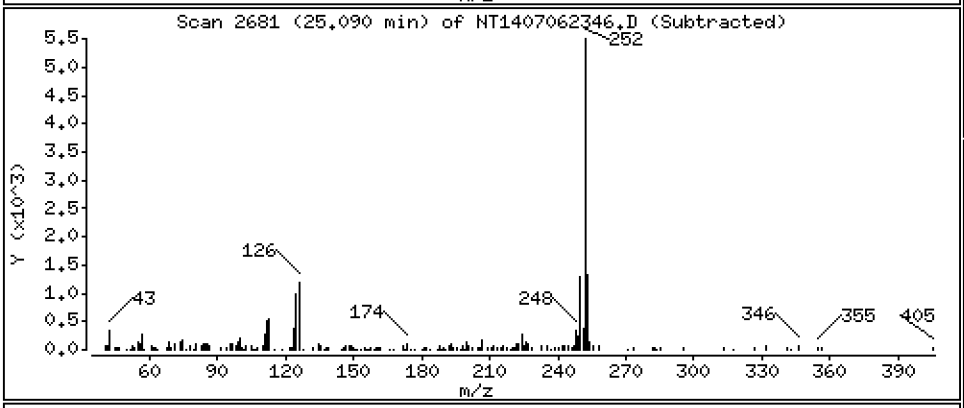
Column diameter: 0.25

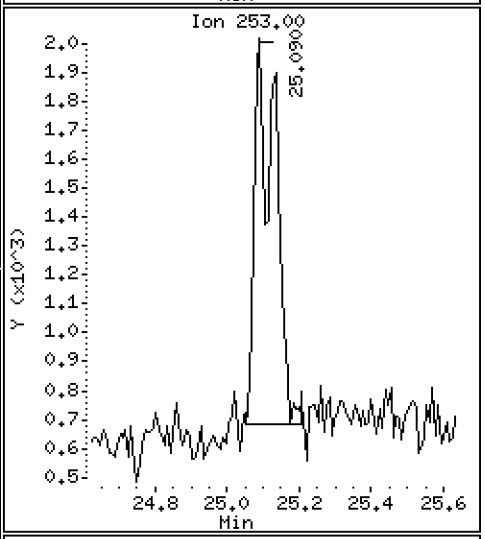
187 Total Benzofluoranthenes

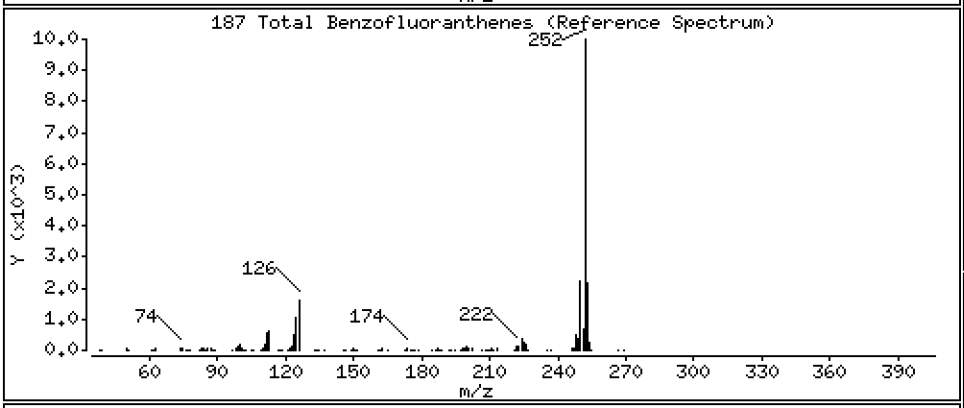
Concentration: 0.4593 ug/mL

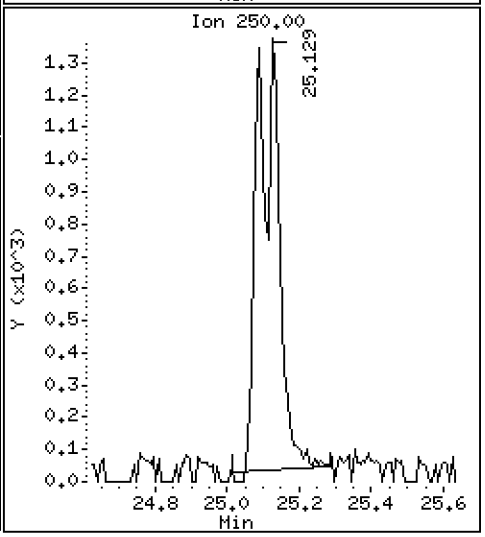


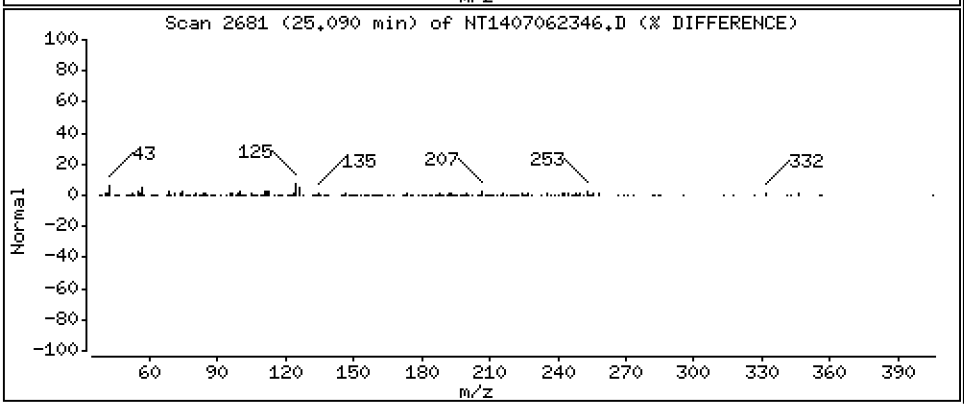












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D

Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

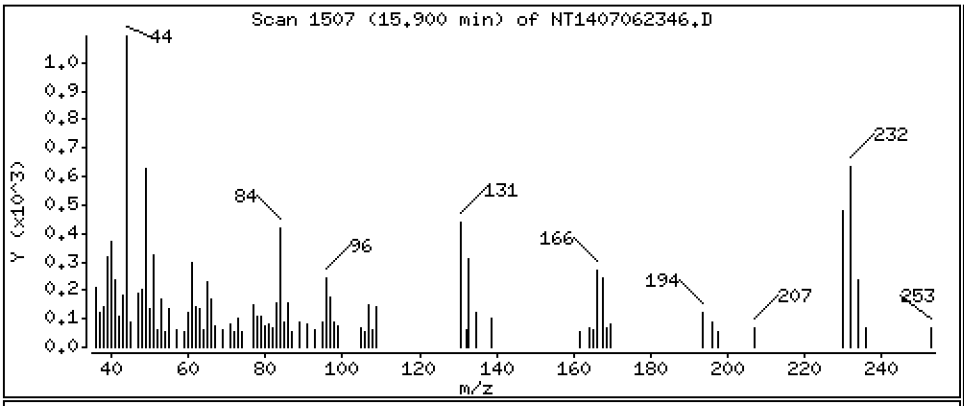
Operator: JGR

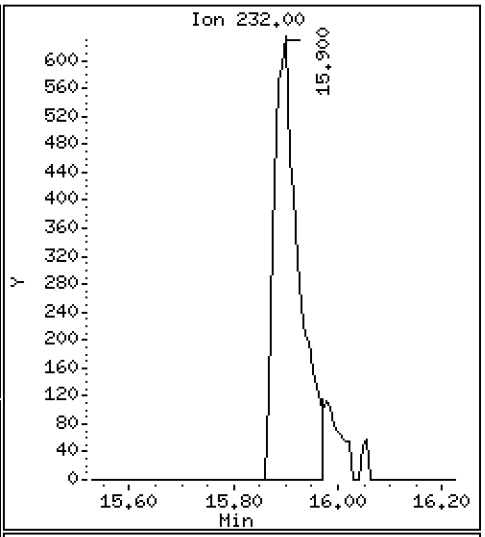
Column phase: ZB-5msi

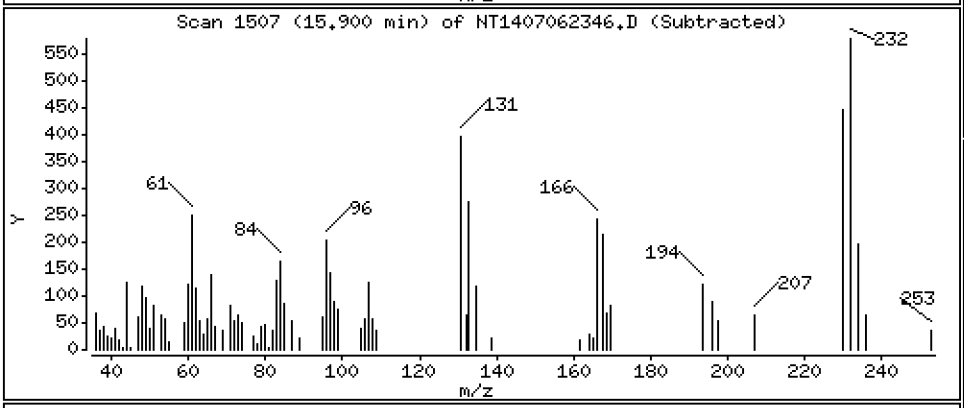
Column diameter: 0.25

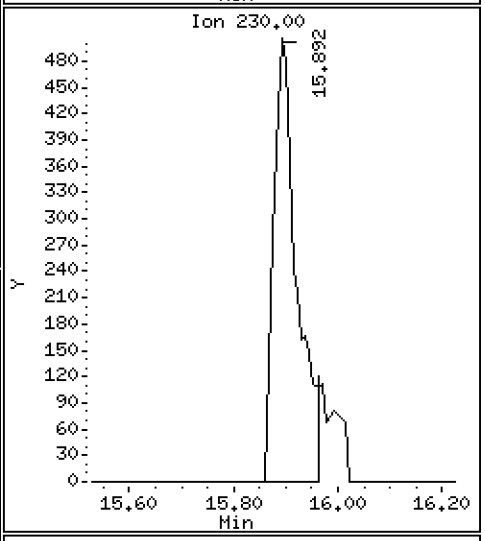
120 2,3,4,6-Tetrachlorophenol

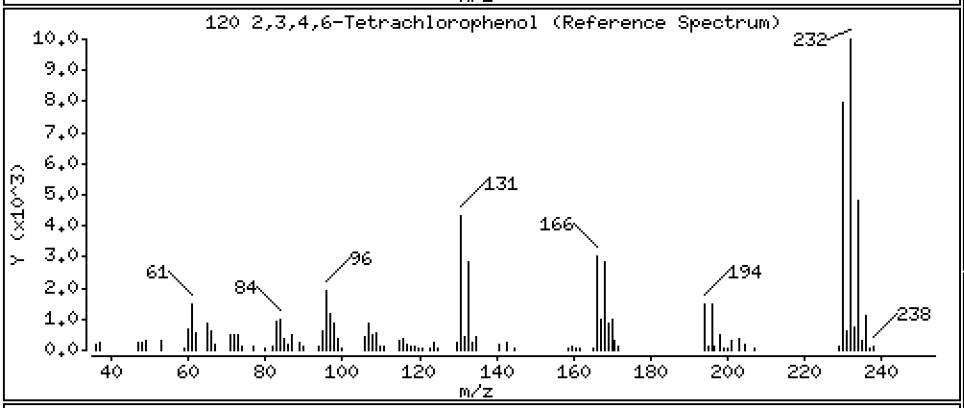
Concentration: 0.1060 ug/mL

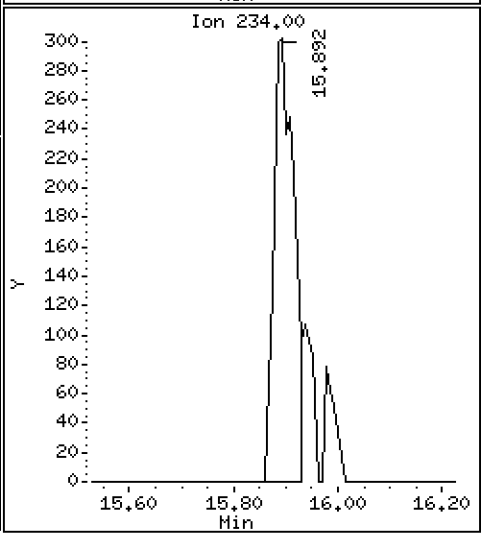


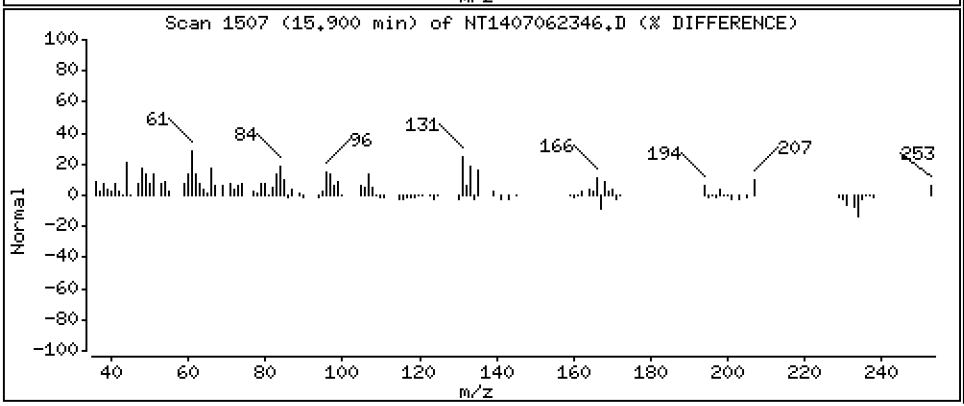












ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D
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Inj Date : 07-JUL-2023 17:38 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : SLG0081-LCV1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Meth Date : 08-Jul-2023 11:17 van Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: VANS-201906

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
$	1 2-Fluorophenol	112	6.805	6.798	(0.755)	12962	0.25722	0.2572
$	2 Phenol-d5	99	8.397	8.382	(0.931)	16657	0.24384	0.2438
	3 Phenol	94	8.412	8.405	(0.933)	9723	0.11755	0.1175
$	5 2-Chlorophenol-d4	132	8.659	8.652	(0.960)	13996	0.27725	0.2772
	4 Bis(2-Chloroethyl)ether	93	8.559	8.559	(0.949)	10402	0.18080	0.1808
	6 2-Chlorophenol	128	8.683	8.683	(0.963)	11143	0.18569	0.1857
	7 1,3-Dichlorobenzene	146	8.954	8.946	(0.993)	11321	0.21168	0.2117
*	8 1,4-Dichlorobenzene-d4	152	9.016	9.016	(1.000)	132771	4.00000	
	9 1,4-Dichlorobenzene	146	9.047	9.047	(1.003)	11004	0.20871	0.2087
$	10 1,2-Dichlorobenzene-d4	152	9.373	9.373	(1.040)	6539	0.20478	0.2048
	12 1,2-Dichlorobenzene	146	9.404	9.404	(1.043)	10897	0.21333	0.2133
	11 Benzyl alcohol	108	Compound Not Detected.					
	14 2,2'-oxybis(1-Chloropropane)	121	9.590	9.590	(1.064)	3558	0.21534	0.2153(M)
	13 2-Methylphenol	108	9.536	9.520	(1.058)	8341	0.15998	0.1600
	17 Hexachloroethane	117	9.994	9.994	(1.108)	3901	0.16108	0.1611
	16 N-Nitroso-di-n-propylamine	70	9.846	9.846	(1.092)	8713	0.18624	0.1862
	15 4-Methylphenol	108	9.823	9.792	(1.090)	8703	0.15071	0.1507
$	18 Nitrobenzene-d5	82	10.118	10.110	(0.879)	12110	0.19324	0.1932
	19 Nitrobenzene	77	10.149	10.149	(0.882)	12764	0.19058	0.1906
	20 Isophorone	82	10.591	10.591	(0.921)	18684	0.20055	0.2006
	21 2-Nitrophenol	139	10.785	10.778	(0.937)	4727	0.14694	0.1469
	22 2,4-Dimethylphenol	107	10.870	10.840	(0.945)	20351	0.37883	0.3788
	23 Bis(2-Chloroethoxy)methane	93	11.033	11.026	(0.959)	11433	0.19206	0.1921
	24 Benzoic acid	105	11.025	11.088	(0.958)	6440	0.19825	0.1983(M)
	25 2,4-Dichlorophenol	162	11.281	11.243	(0.981)	9741	0.24524	0.2452
	26 1,2,4-Trichlorobenzene	180	11.420	11.420	(0.993)	8475	0.21406	0.2141
*	27 Naphthalene-d8	136	11.505	11.505	(1.000)	531300	4.00000	
	28 Naphthalene	128	11.544	11.544	(1.003)	28530	0.20556	0.2056
	29 4-Chloroaniline	127	11.691	11.675	(1.016)	17230	0.26622	0.2662
	30 Hexachlorobutadiene	225	11.915	11.915	(1.036)	4047	0.21914	0.2191
	31 4-Chloro-3-methylphenol	107	12.735	12.665	(1.107)	15381	0.30875	0.3087
	32 2-Methylnaphthalene	142	12.952	12.952	(1.126)	19457	0.18900	0.1890
	33 Hexachlorocyclopentadiene	237	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
34	2,4,6-Trichlorophenol	196	13.594	13.579	(0.898)	7465	0.30425	0.3043
35	2,4,5-Trichlorophenol	196	13.718	13.664	(0.906)	9159	0.35875	0.3587(MH)
$ 36	2-Fluorobiphenyl	172	13.733	13.733	(0.907)	19348	0.21281	0.2128
37	2-Chloronaphthalene	162	13.950	13.942	(0.922)	16324	0.19517	0.1952
38	2-Nitroaniline	65	14.229	14.206	(0.940)	13217	0.32607	0.3261
39	Dimethylphthalate	163	14.639	14.639	(0.967)	16947	0.19753	0.1975
40	Acenaphthylene	152	14.817	14.817	(0.979)	26445	0.20490	0.2049
41	2,6-Dinitrotoluene	165	14.778	14.778	(0.976)	6574	0.36416	0.3642
* 42	Acenaphthene-d10	164	15.134	15.134	(1.000)	255269	4.00000	
43	3-Nitroaniline	138	15.095	15.065	(0.997)	8982	0.37140	0.3714(M)
44	Acenaphthene	153	15.196	15.204	(1.004)	15719	0.20581	0.2058
45	2,4-Dinitrophenol	184	Compound Not Detected.					
46	Dibenzofuran	168	15.528	15.528	(1.026)	23246	0.20885	0.2089
47	4-Nitrophenol	109	15.667	15.420	(1.035)	3301	0.18795	0.1879(M)
48	2,4-Dinitrotoluene	165	15.598	15.590	(1.031)	8091	0.32052	0.3205
50	Diethylphthalate	149	16.100	16.101	(1.064)	20475	0.20637	0.2064
49	Fluorene	166	16.247	16.240	(1.074)	18191	0.18689	0.1869
51	4-Chlorophenyl-phenylether	204	16.232	16.232	(1.073)	7733	0.18400	0.1840
52	4-Nitroaniline	138	16.401	16.340	(1.084)	5998	0.24346	0.2435
53	4,6-Dinitro-2-methylphenol	198	16.448	16.432	(0.905)	1406	0.09804	0.09804
54	N-Nitrosodiphenylamine	169	16.486	16.486	(0.907)	12291	0.19237	0.1924
$ 55	2,4,6-Tribromophenol	330	16.795	16.779	(1.110)	1611	0.20459	0.2046
56	4-Bromophenyl-phenylether	248	17.242	17.234	(0.949)	3872	0.19873	0.1987
57	Hexachlorobenzene	284	17.559	17.559	(0.966)	4527	0.21964	0.2196
58	Pentachlorophenol	266	17.969	17.923	(0.989)	763	0.06232	0.06232(M)
* 59	Phenanthrene-d10	188	18.178	18.178	(1.000)	452490	4.00000	
60	Phenanthrene	178	18.224	18.225	(1.003)	25059	0.20472	0.2047
61	Anthracene	178	18.325	18.317	(1.008)	24135	0.20404	0.2040
62	Carbazole	167	18.665	18.650	(1.027)	22832	0.19186	0.1919
63	Di-n-butylphthalate	149	19.447	19.447	(1.070)	32540	0.20812	0.2081
64	Fluoranthene	202	20.623	20.615	(0.888)	24045	0.21716	0.2172
65	Pyrene	202	21.048	21.041	(0.906)	25439	0.22743	0.2274
$ 66	Terphenyl-d14	244	21.335	21.327	(0.918)	18251	0.24244	0.2424
67	Butylbenzylphthalate	149	22.248	22.249	(0.958)	14085	0.26258	0.2626
68	Benzo(a)anthracene	228	23.208	23.209	(0.999)	19875	0.20955	0.2096
* 69	Chrysene-d12	240	23.232	23.232	(1.000)	270873	4.00000	
70	3,3'-Dichlorobenzidine	252	23.178	23.162	(0.998)	15817	0.59917	0.5992
71	Chrysene	228	23.278	23.278	(1.002)	18472	0.21758	0.2176
72	bis(2-Ethylhexyl)phthalate	149	24.269	24.269	(1.000)	38252	0.21562	0.2156
* 134	Di-n-octylphthalate-d4	153	24.261	24.262	(1.000)	690231	4.00000	
73	Di-n-octylphthalate	149	24.269	24.269	(1.000)	38252	0.21562	0.2156
74	Benzo(b)fluoranthene	252	25.090	25.082	(0.971)	10730	0.21386	0.2139
75	Benzo(k)fluoranthene	252	25.128	25.129	(0.972)	13782	0.24469	0.2447
76	Benzo(a)pyrene	252	25.740	25.733	(0.996)	8412	0.21363	0.2136
* 77	Perylene-d12	264	25.849	25.849	(1.000)	152641	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	28.524	28.494	(1.104)	5186	0.14603	0.1460
79	Dibenzo(a,h)anthracene	278	28.548	28.509	(1.104)	5107	0.16996	0.1700(M)
80	Benzo(g,h,i)perylene	276	29.309	29.278	(1.134)	4490	0.15315	0.1531(M)
90	N-Nitrosodimethylamine	74	4.658	4.658	(0.517)	14533	0.38152	0.3815
91	Aniline	93	8.474	8.474	(0.940)	28368	0.35175	0.3518
93	Benzidine	184	20.878	20.855	(0.899)	8864	0.26462	0.2646
103	Pyridine	79	4.697	4.674	(0.521)	19072	0.31794	0.3179
105	1-methylnaphthalene	142	13.176	13.169	(1.145)	17798	0.19380	0.1938
111	Azobenzene (1,2-DP-Hydrazine)	77	16.556	16.556	(1.094)	24597	0.17407	0.1741

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.090	25.129	(0.971)	23393	0.45928	0.4593
120 2,3,4,6-Tetrachlorophenol	232	15.899	15.876	(1.051)	2076	0.10603	0.1060

QC Flag Legend

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

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1407062346.D
Lab Smp Id: SLG0081-LCV1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Misc Info:

Calibration Date: 07-JUL-2023
Calibration Time: 16:23
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	132670	66335	265340	132771	0.08
27 Naphthalene-d8	538082	269041	1076164	531300	-1.26
42 Acenaphthene-d10	270232	135116	540464	255269	-5.54
59 Phenanthrene-d10	462568	231284	925136	452490	-2.18
69 Chrysene-d12	289075	144538	578150	270873	-6.30
134 Di-n-octylphthala	772331	386166	1544662	690231	-10.63
77 Perylene-d12	173349	86675	346698	152641	-11.95

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.02	8.52	9.52	9.02	-0.00
27 Naphthalene-d8	11.51	11.01	12.01	11.51	-0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	-0.00
59 Phenanthrene-d10	18.18	17.68	18.68	18.18	-0.00
69 Chrysene-d12	23.23	22.73	23.73	23.23	-0.00
134 Di-n-octylphthala	24.26	23.76	24.76	24.26	-0.00
77 Perylene-d12	25.85	25.35	26.35	25.85	-0.00

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

REVIEW SUMMARY FOR FILE - NT1407062346.D

Lab ID: SLG0081-LCV1
nt14.i, ABN.m, 07-JUL-2023 17:38

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.958	0.964	-0.0054	Benzoic acid
1.107	1.101	0.0060	4-Chloro-3-methylphenol
1.035	1.019	0.0163	4-Nitrophenol

RRT check based on Ccal File: NT1407062344.D

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

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

Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230706C.b/NT1407062346.D
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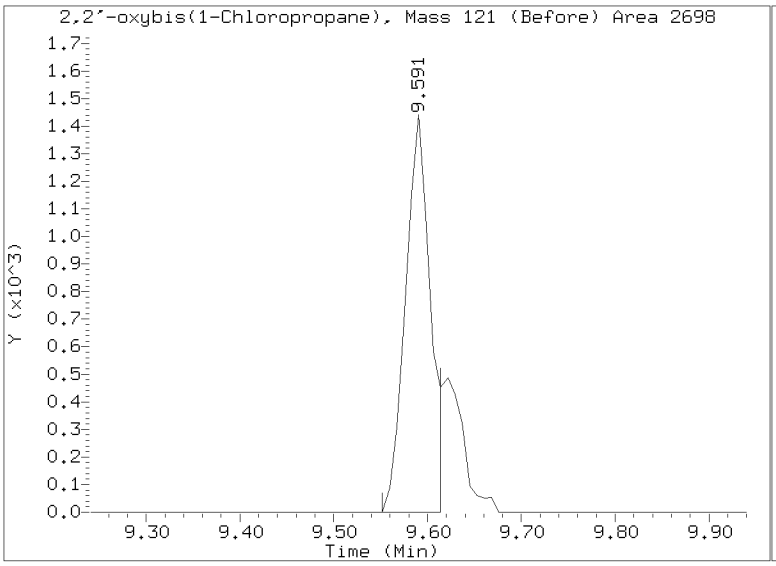
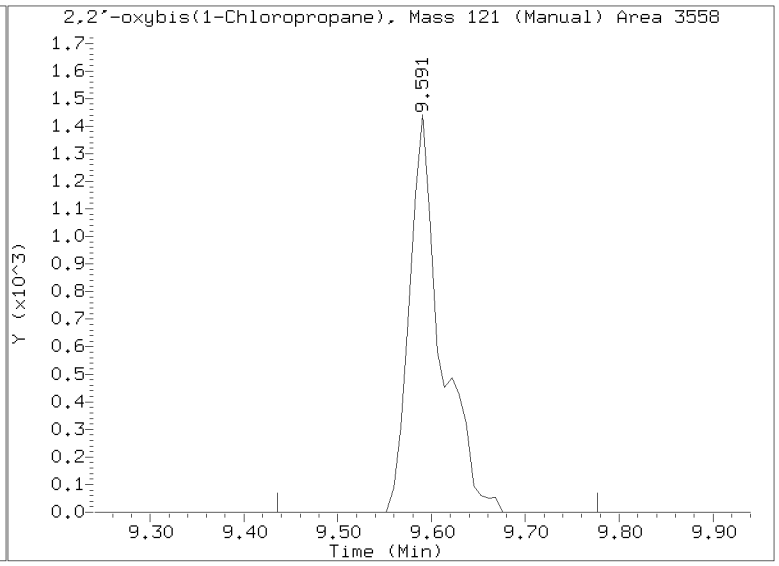
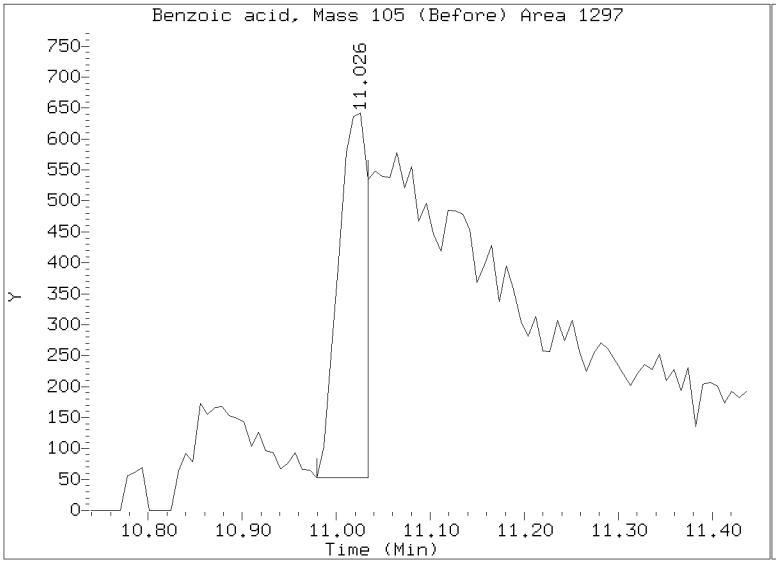
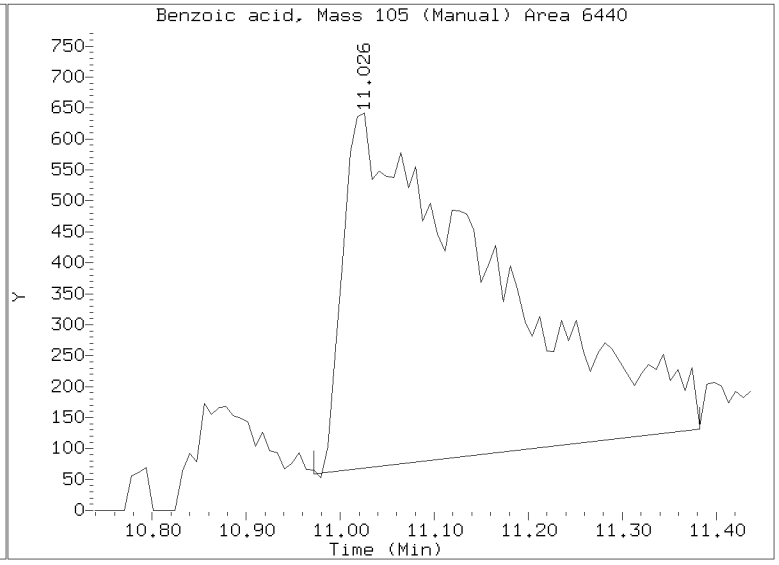
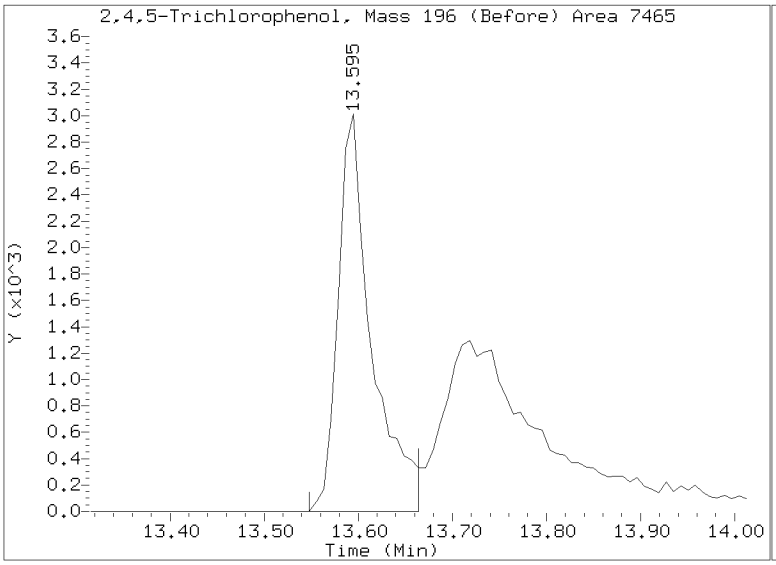
Lab ID:SLG0081-LCV1 Client ID:
Report Date: 07/08/2023 11:18

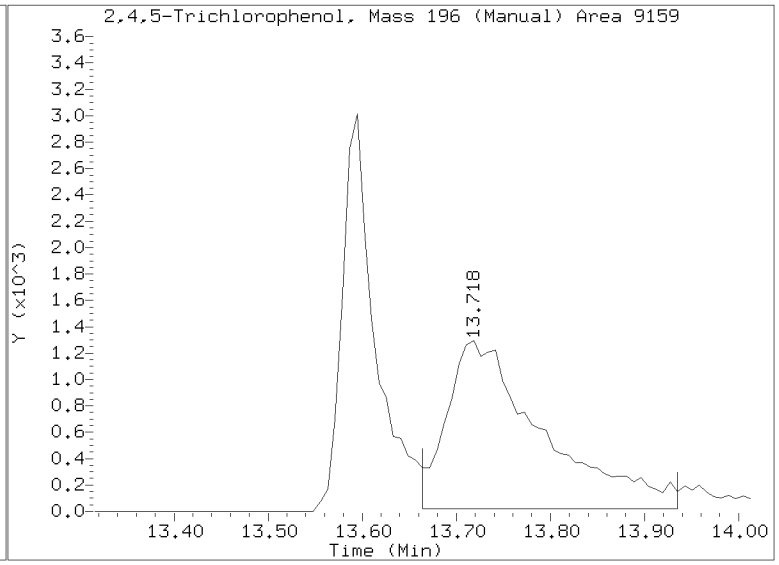












Quant Ion Manual Peak Adjustment Report

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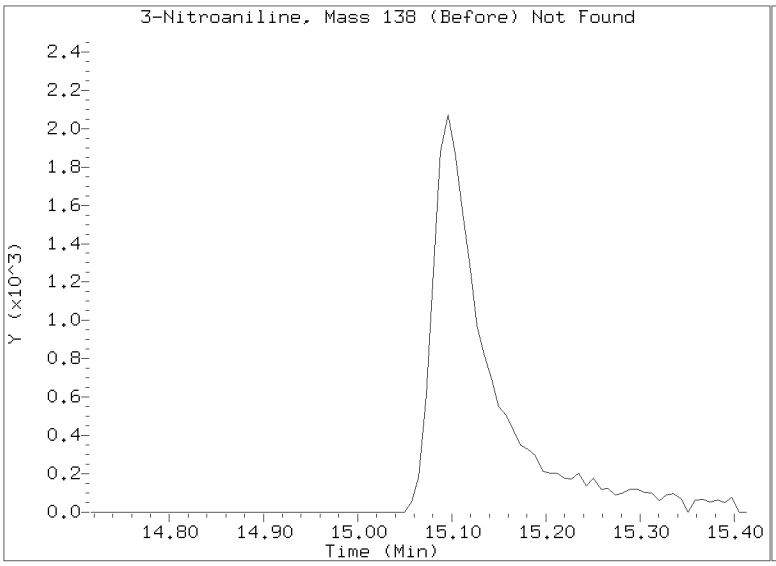
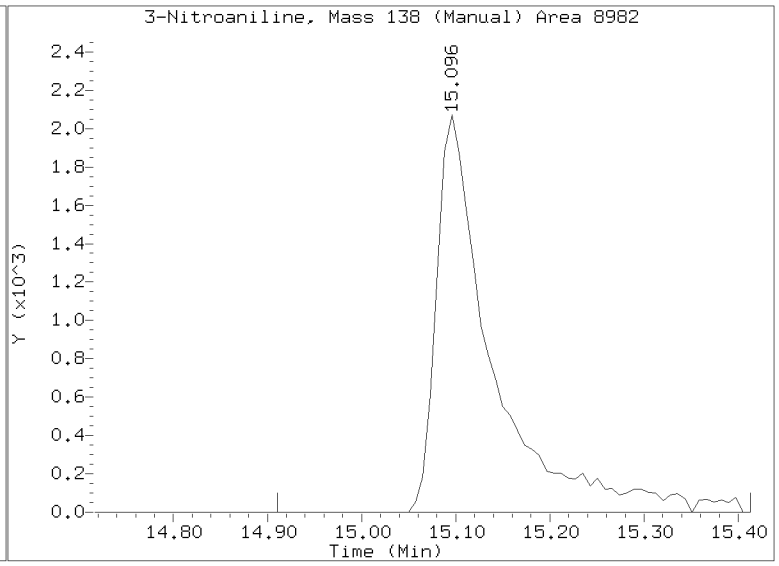
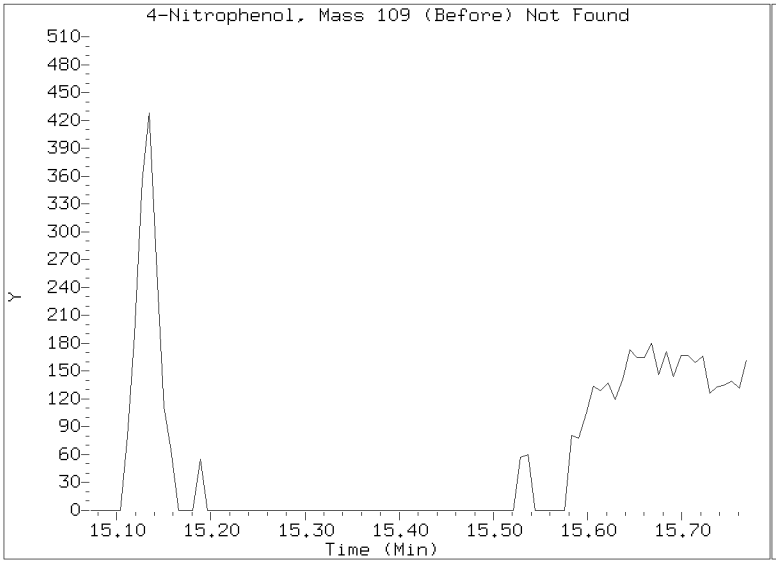
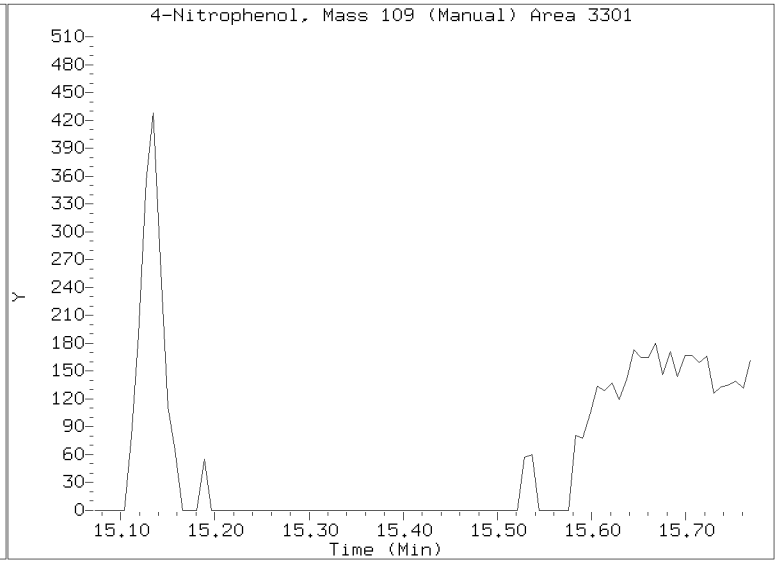
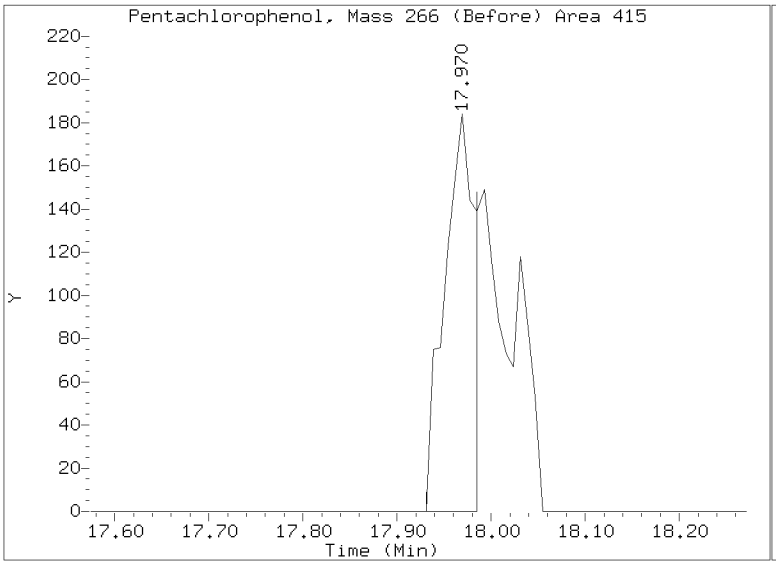
Injection Date: 07-JUL-2023 17:38
Lab ID:SLG0081-LCV1 Client ID:
Report Date: 07/08/2023 11:18

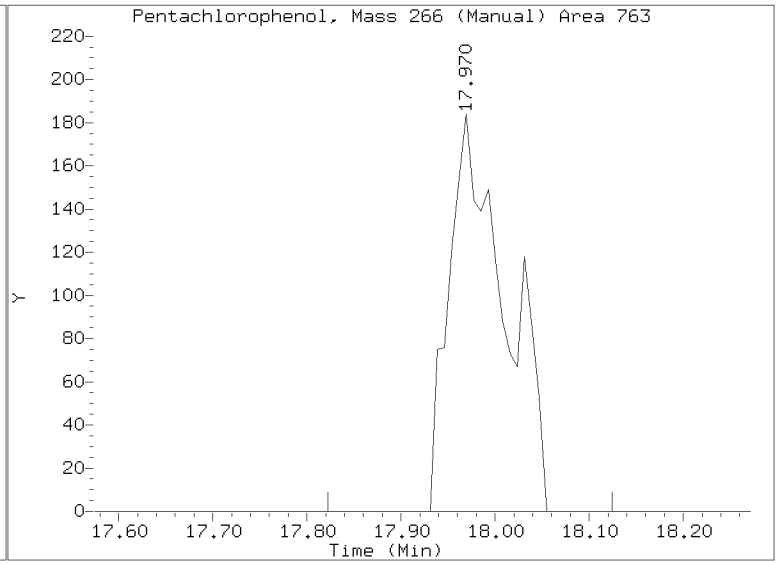












Quant Ion Manual Peak Adjustment Report

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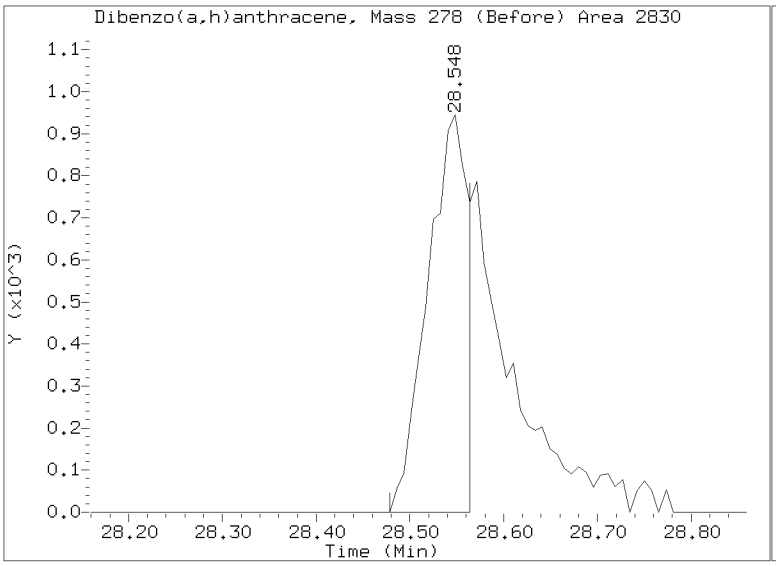
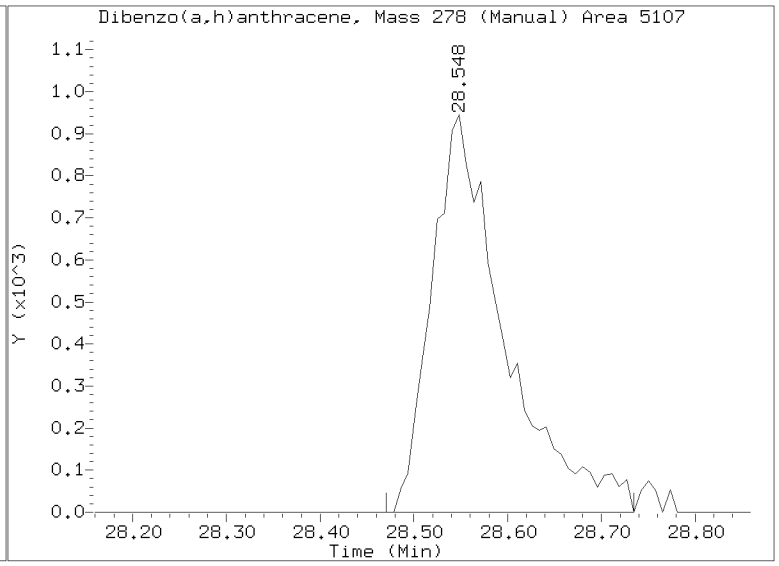
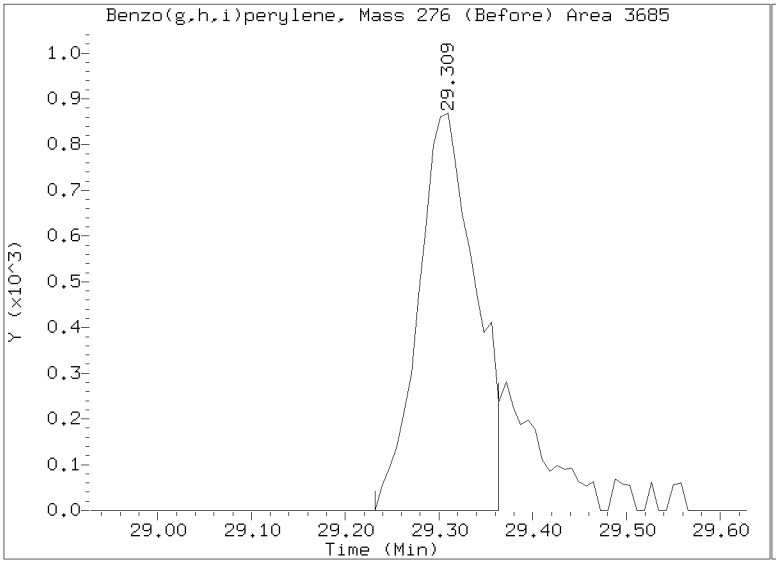
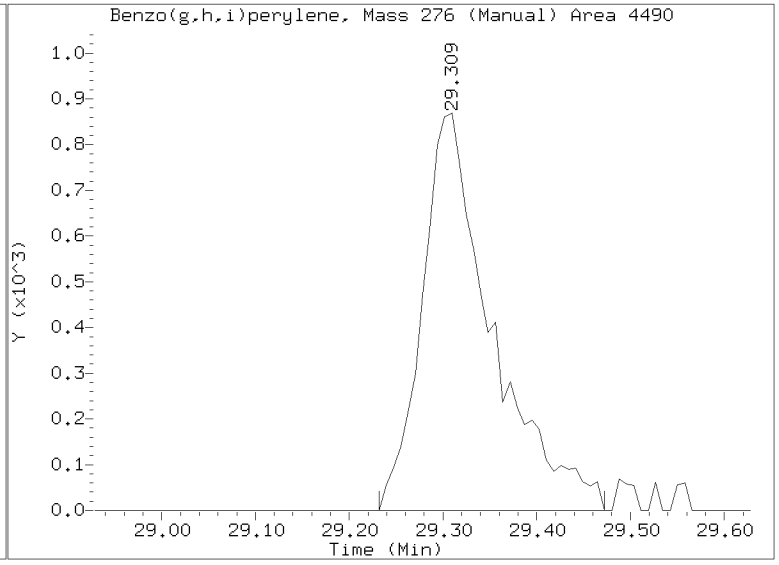
Lab ID:SLG0081-LCV1 Client ID:
Report Date: 07/08/2023 11:18









LOW-CONCENTRATION CALIBRATION VERIFICATION

EPA 8270E

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GG00040
Laboratory ID: SLG0263-LCV1
Sequence: SLG0263
Standard ID: L007252

ANALYTE	EXPECTED (ug/mL)	FOUND (ug/mL)	% DRIFT	QC LIMIT
Naphthalene	0.50000	0.5	-7.1	50.00
2-Methylnaphthalene	0.50000	0.5	-6.1	50.00
Acenaphthylene	0.50000	0.5	-6.0	50.00
Acenaphthene	0.50000	0.5	-9.3	50.00
Fluorene	0.50000	0.5	5.0	50.00
Phenanthrene	0.50000	0.4	-10.9	50.00
Anthracene	0.50000	0.4	-14.6	50.00
Fluoranthene	0.50000	0.5	-7.4	50.00
Pyrene	0.50000	0.5	-5.4	50.00
Benzo(a)anthracene	0.50000	0.5	-4.0	50.00
Chrysene	0.50000	0.4	-12.1	50.00
Benzofluoranthenes, Total	1.0000	1.0	-3.7	50.00
Benzo(a)pyrene	0.50000	0.4	-10.2	50.00
Indeno(1,2,3-cd)pyrene	0.50000	0.4	-21.2	50.00
Dibenzo(a,h)anthracene	0.50000	0.4	-19.1	50.00
Benzo(g,h,i)perylene	0.50000	0.4	-22.6	50.00
1,2-Dichlorobenzene-d4	0.50000	0.499	-0.2	50.00
Nitrobenzene-d5	0.50000	0.482	-3.6	50.00
2-Fluorobiphenyl	0.50000	0.458	-8.4	50.00
p-Terphenyl-d14	0.50000	0.485	-3.1	50.00

* Values outside of QC limits

Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D

Page 1

Date : 21-JUL-2023 02:35

Client ID:

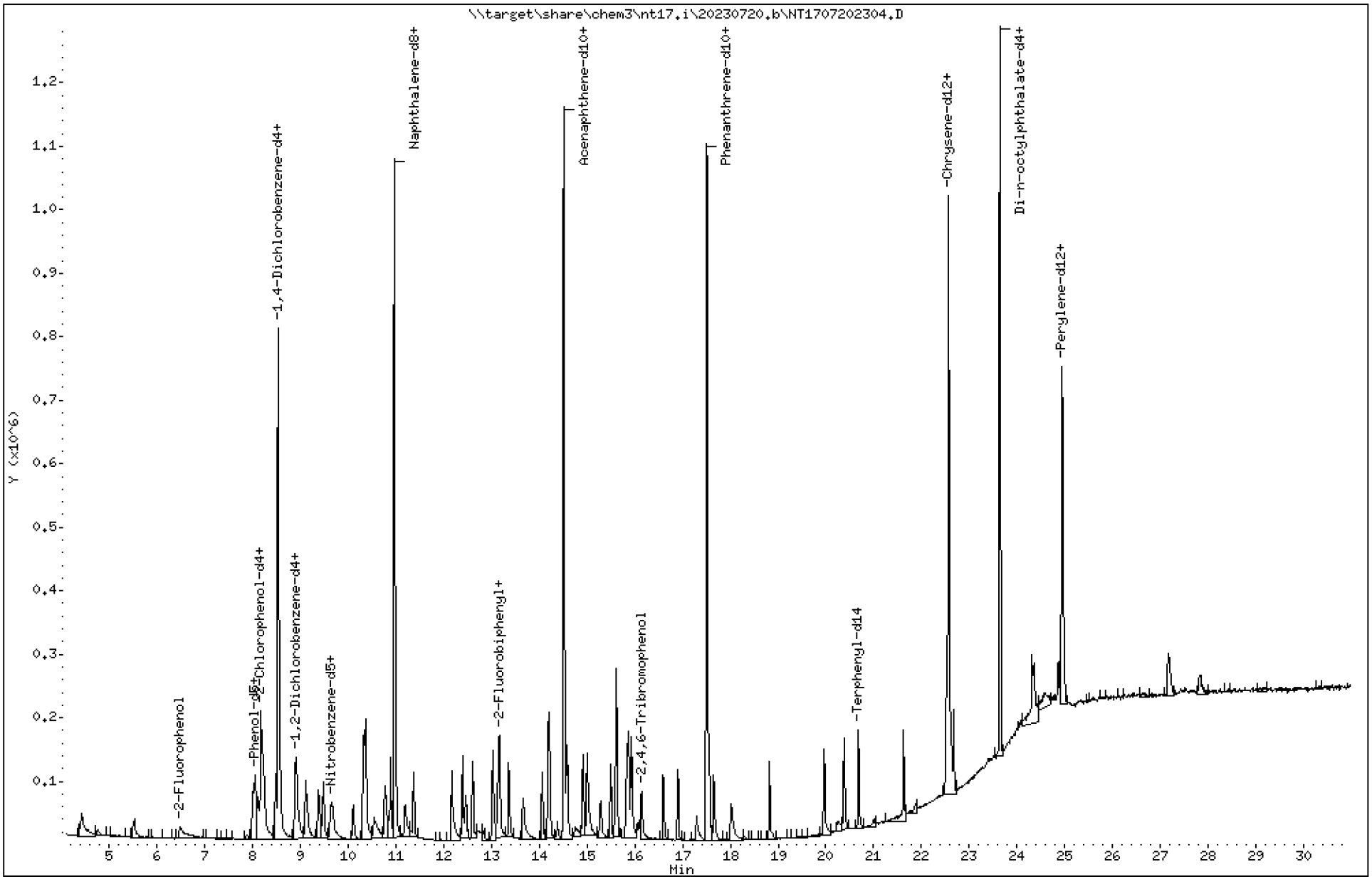
Instrument: nt17.i

Sample Info: SLG0263-LCV1

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

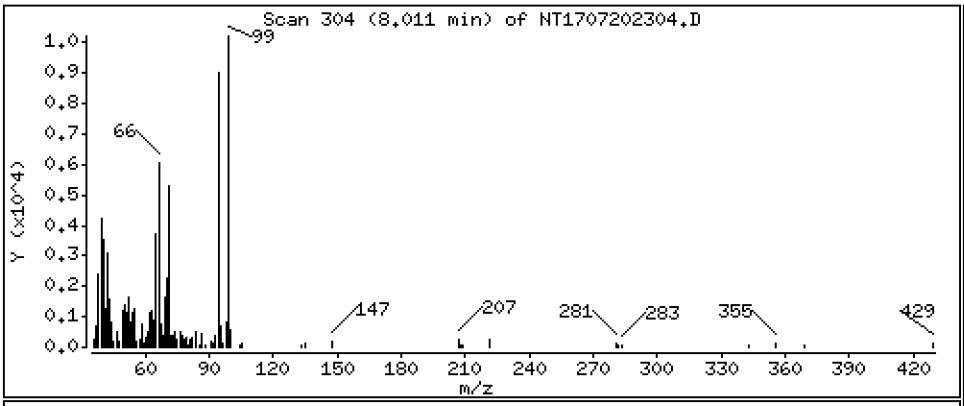
Operator: JGR

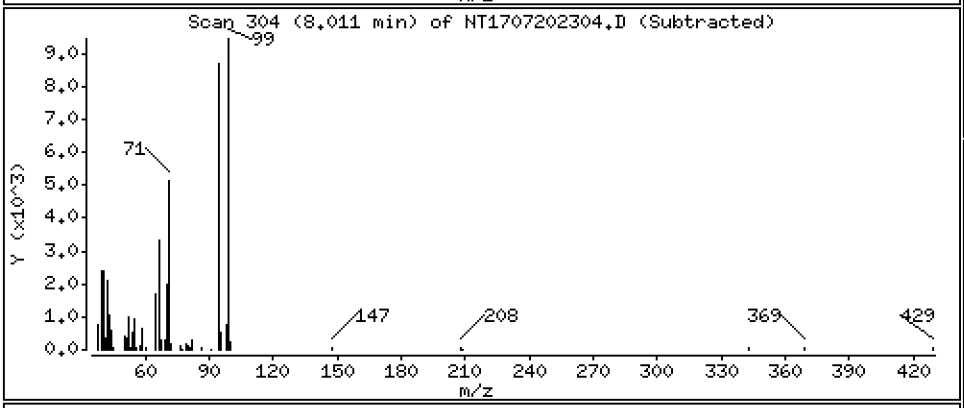
Column phase: ZB-5msi

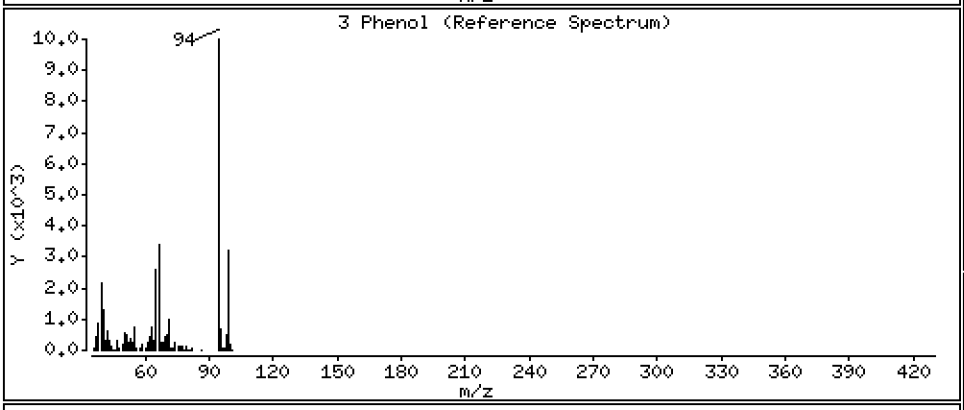
Column diameter: 0.25

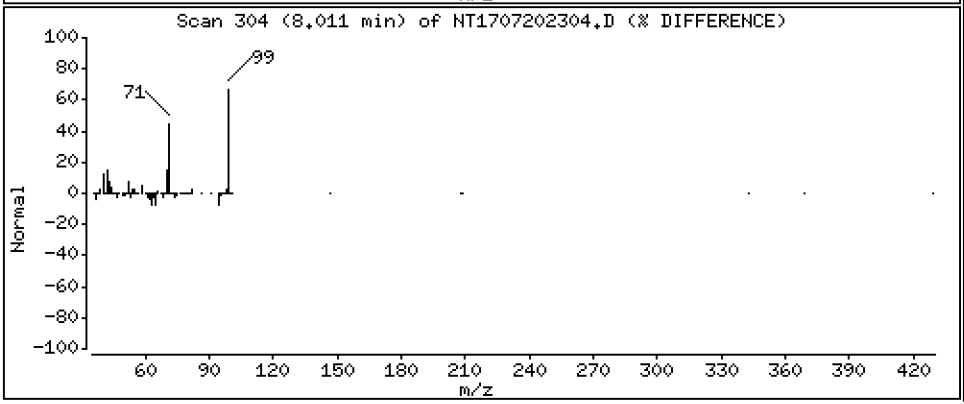
3 Phenol

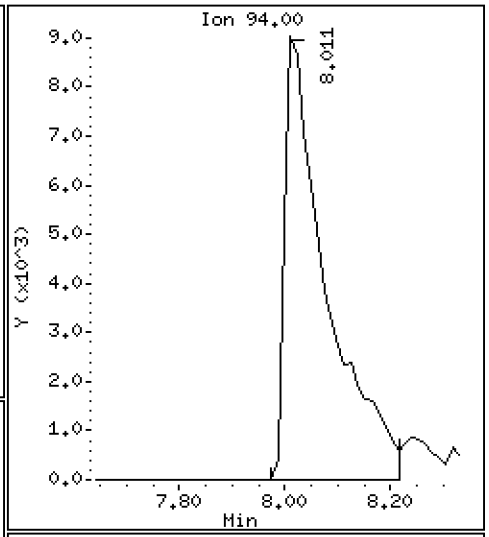
Concentration: 0.3841 ug/mL

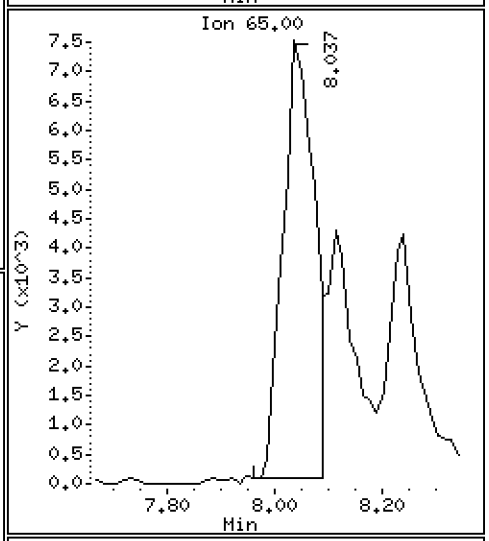


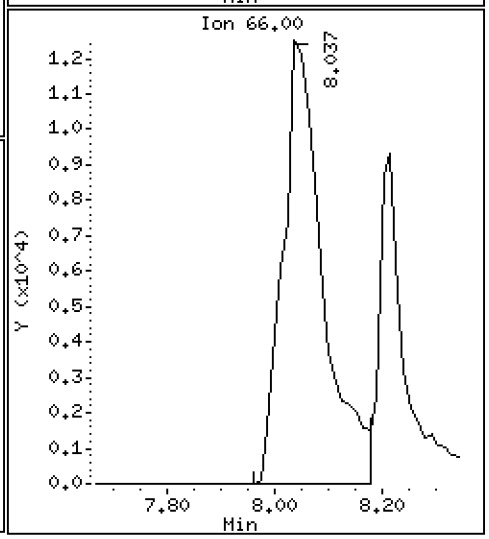












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

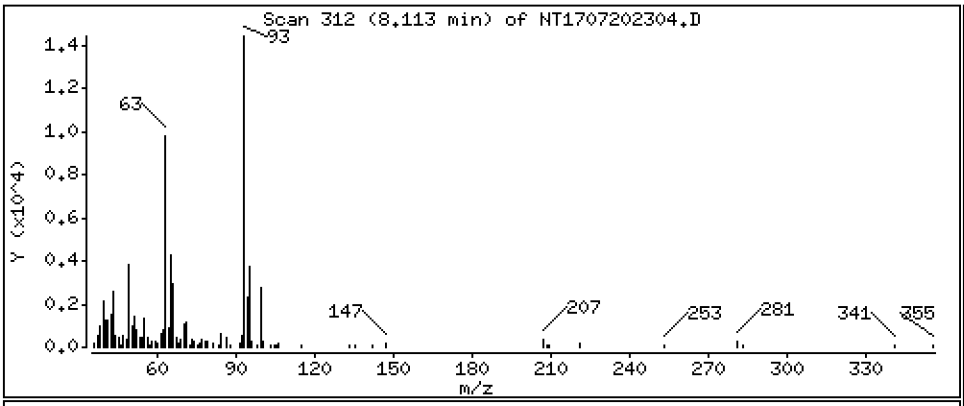
Operator: JGR

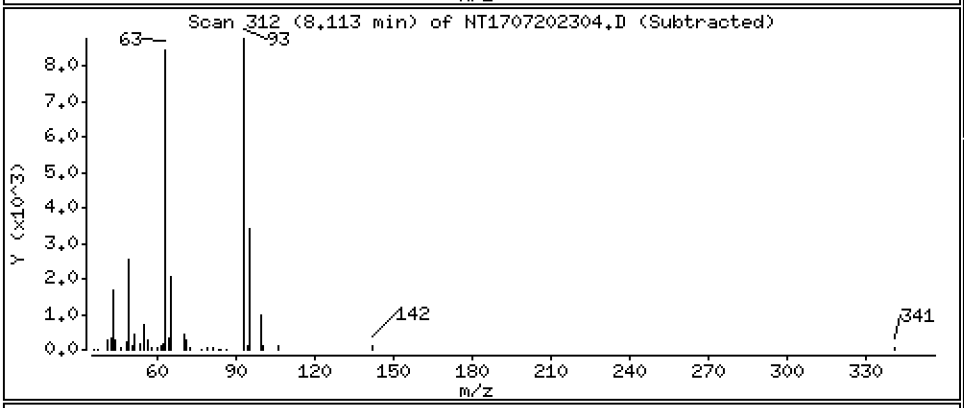
Column phase: ZB-5msi

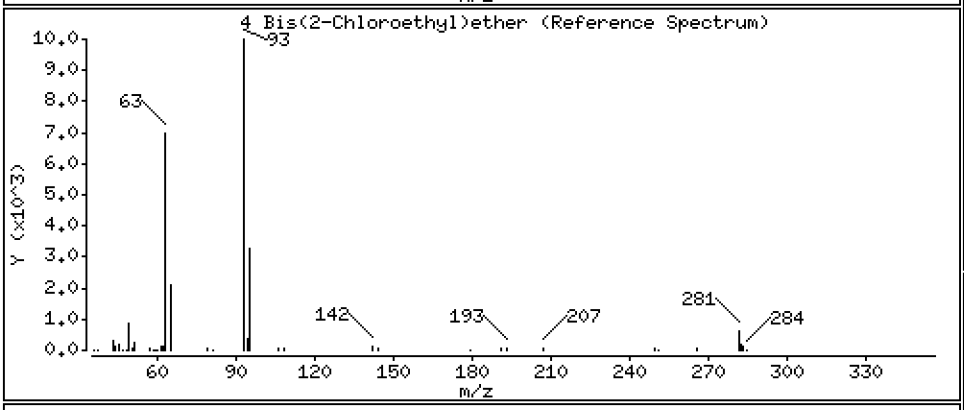
Column diameter: 0.25

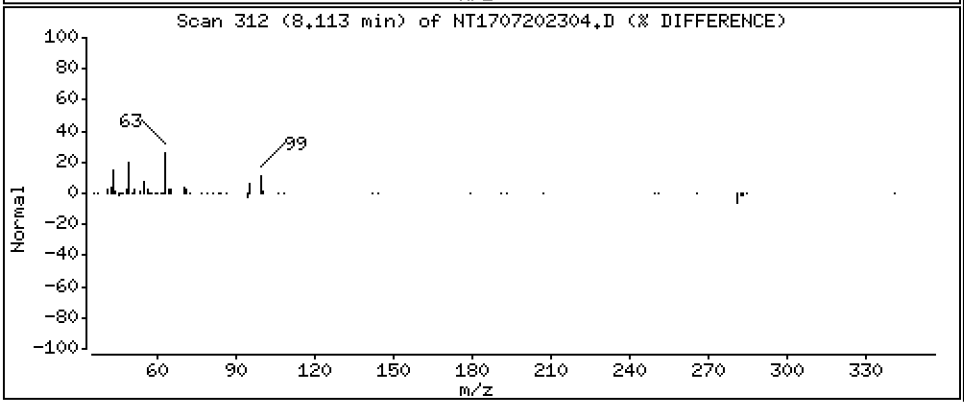
4 Bis(2-Chloroethyl)ether

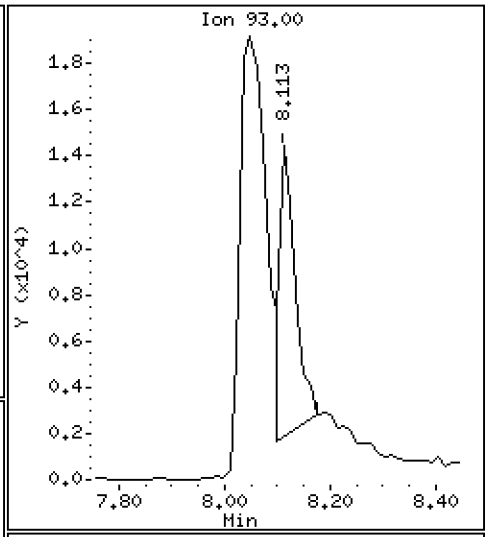
Concentration: 0.3675 ug/mL

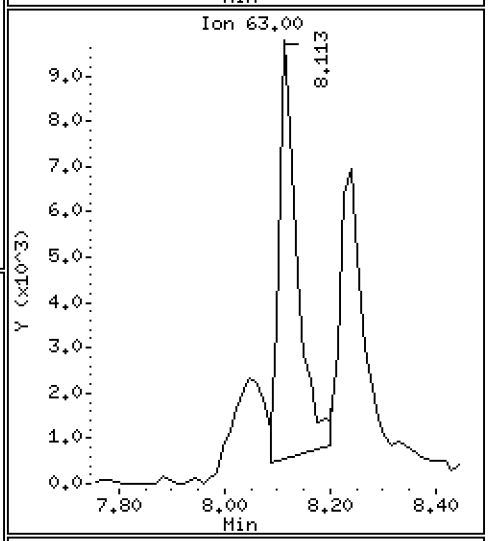


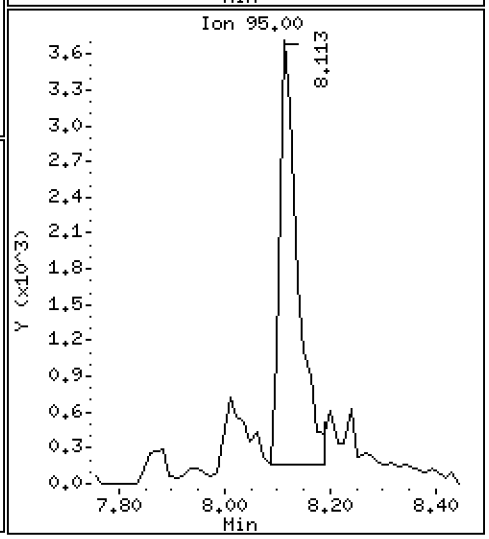












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

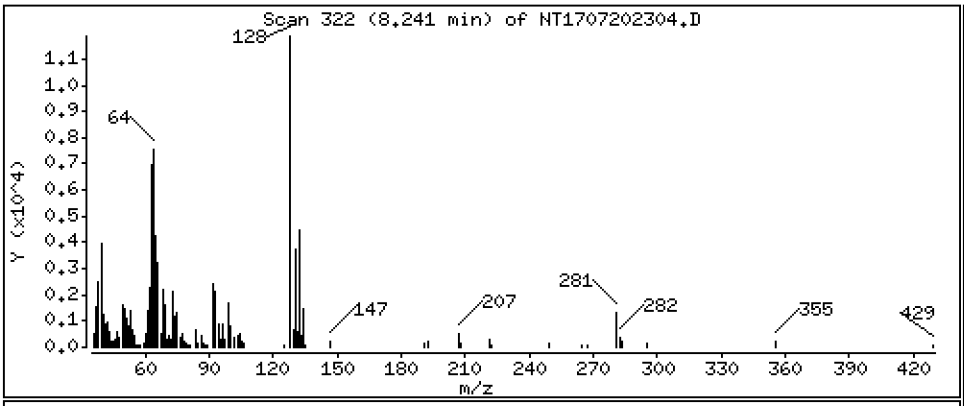
Operator: JGR

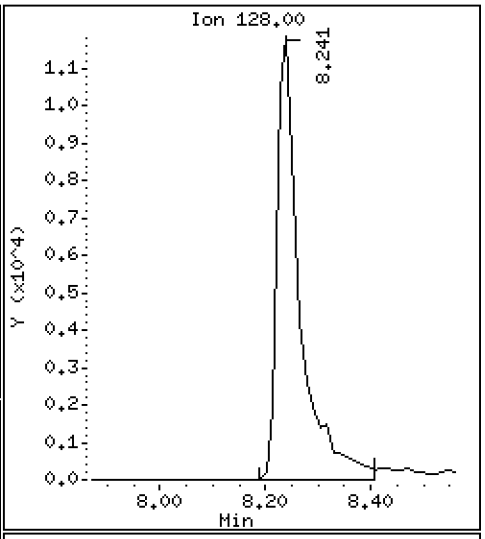
Column phase: ZB-5msi

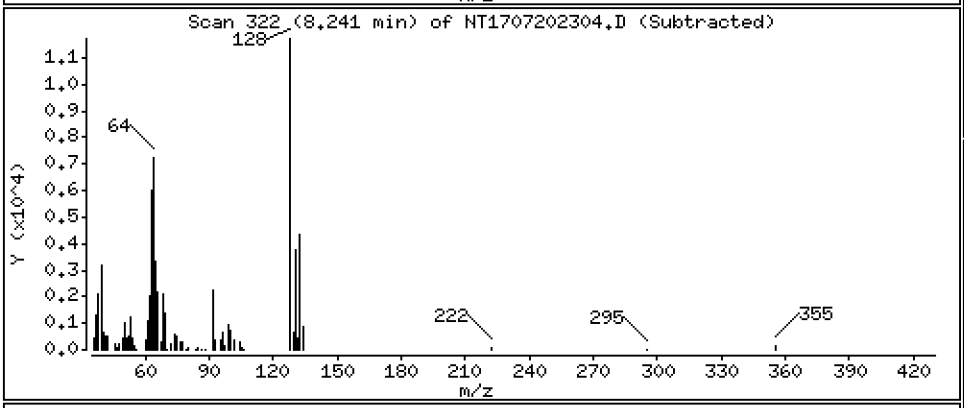
Column diameter: 0.25

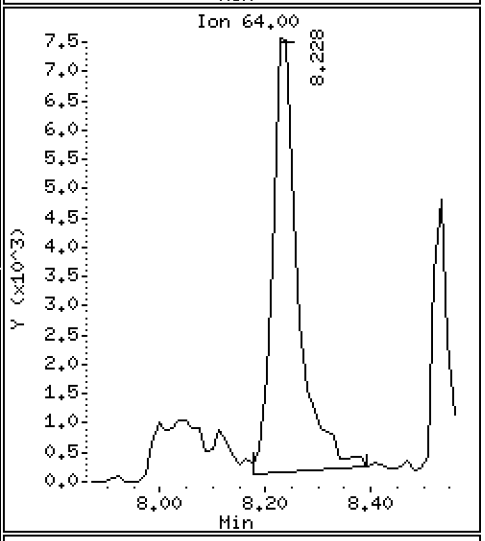
6 2-Chlorophenol

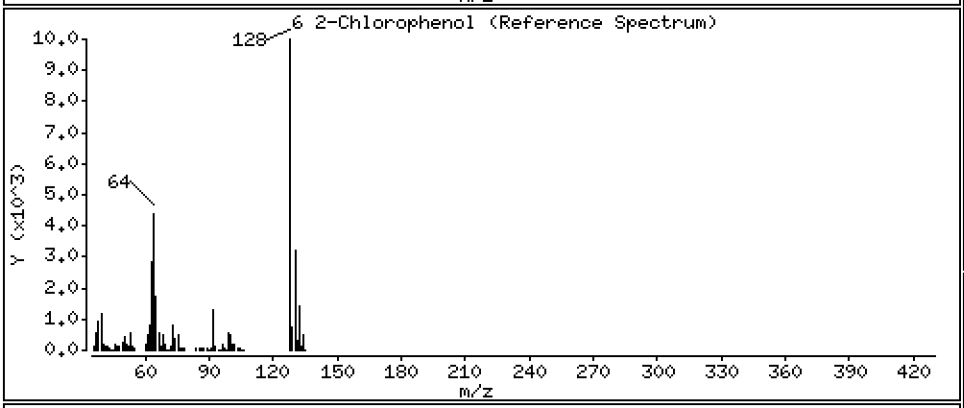
Concentration: 0.4323 ug/mL

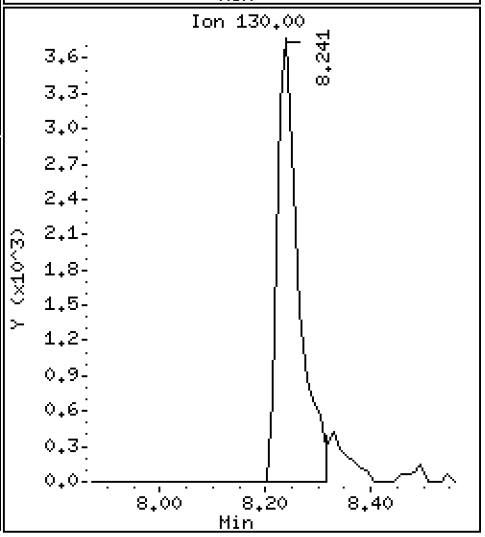


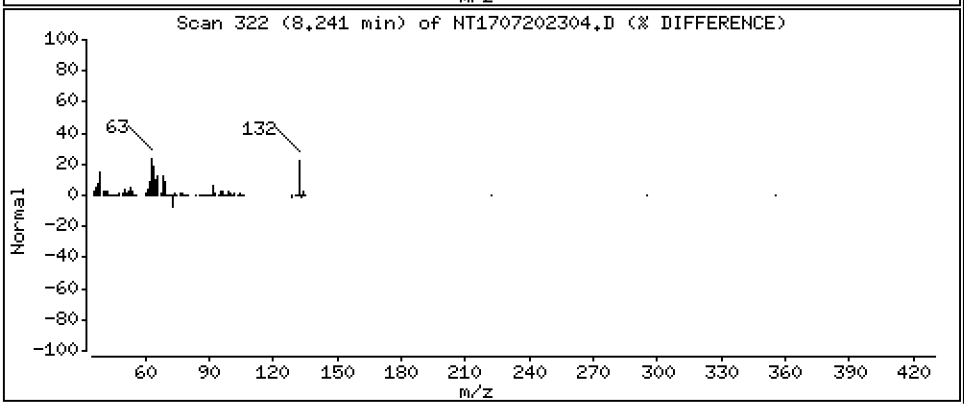












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

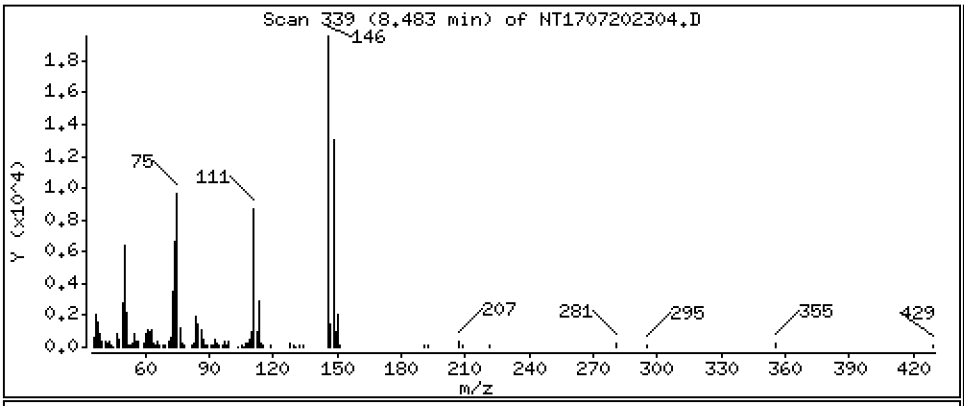
Operator: JGR

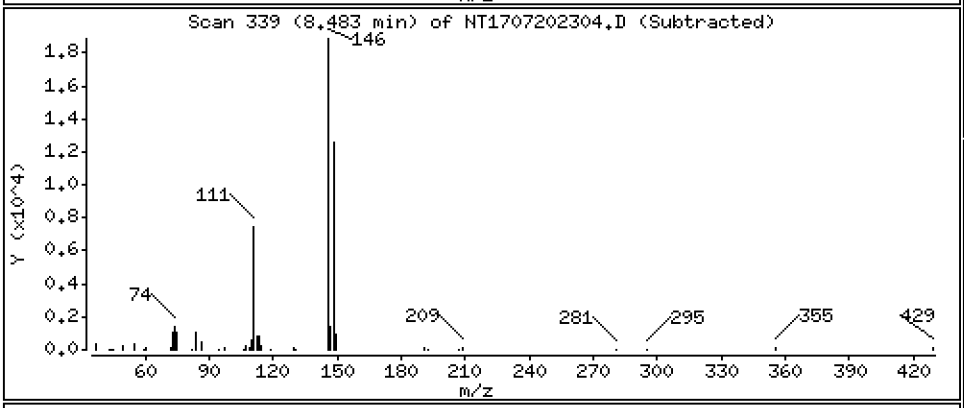
Column phase: ZB-5msi

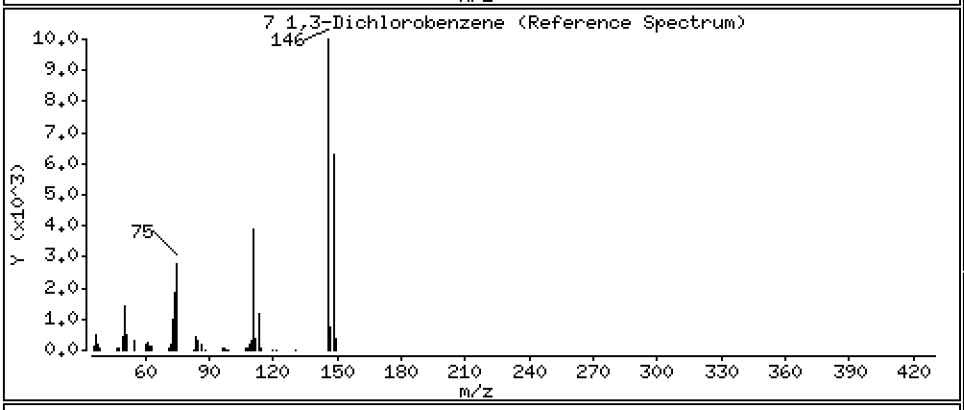
Column diameter: 0.25

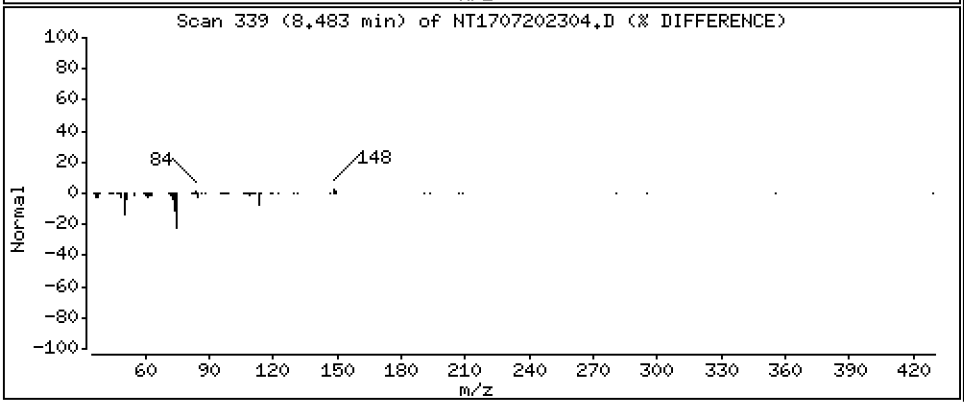
7 1,3-Dichlorobenzene

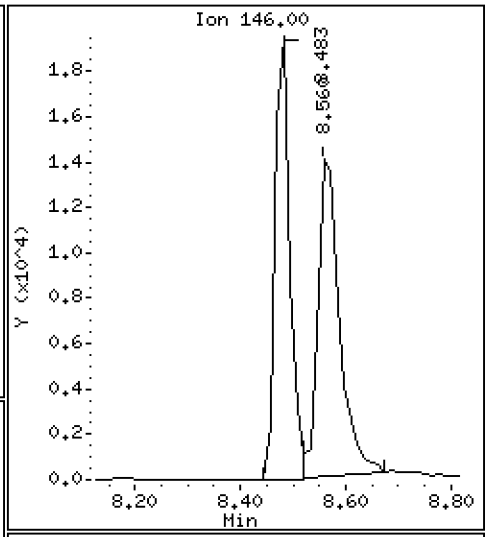
Concentration: 0.4614 ug/mL

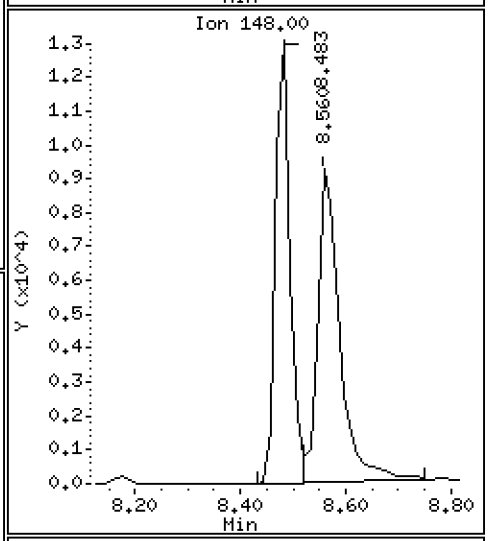


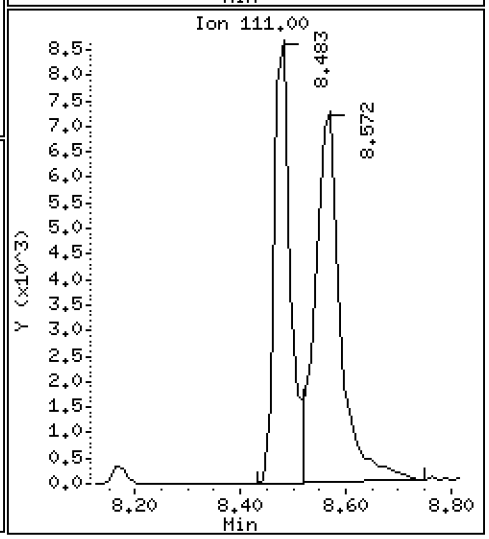












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

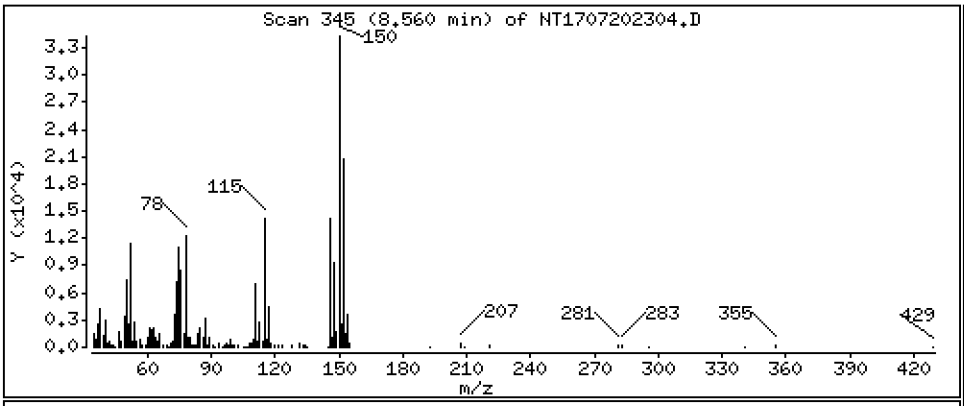
Operator: JGR

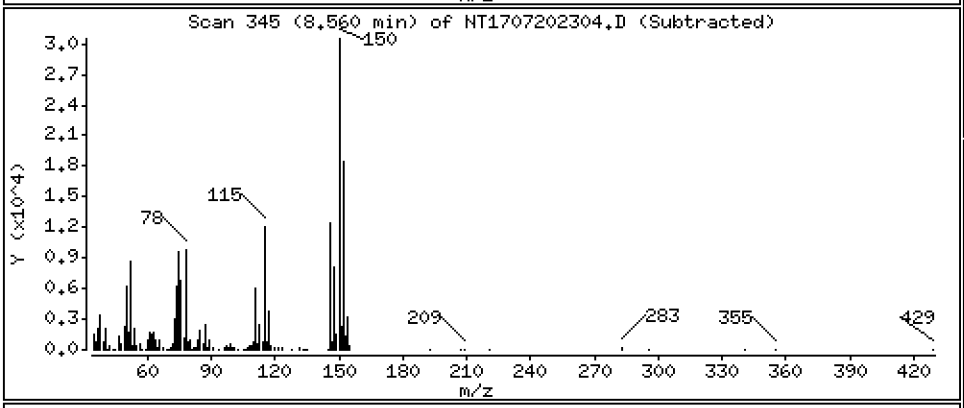
Column phase: ZB-5msi

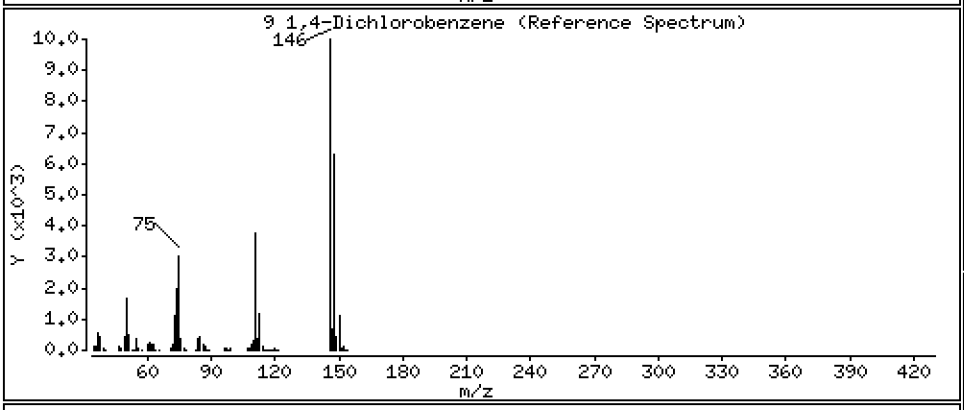
Column diameter: 0.25

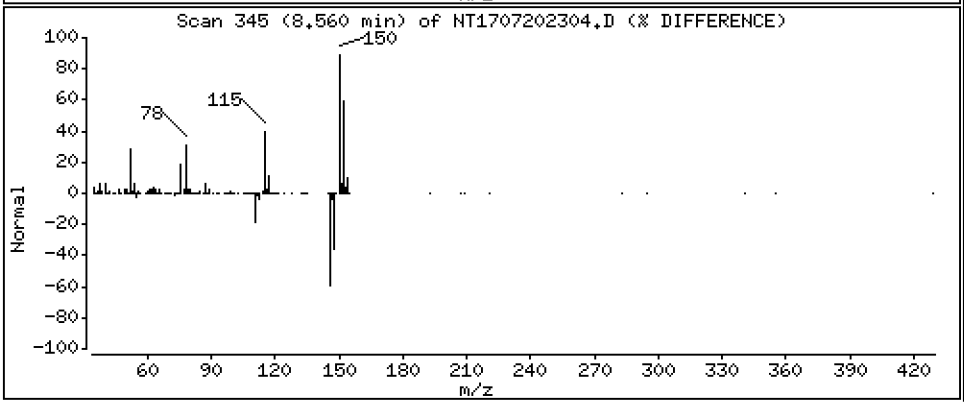
9 1,4-Dichlorobenzene

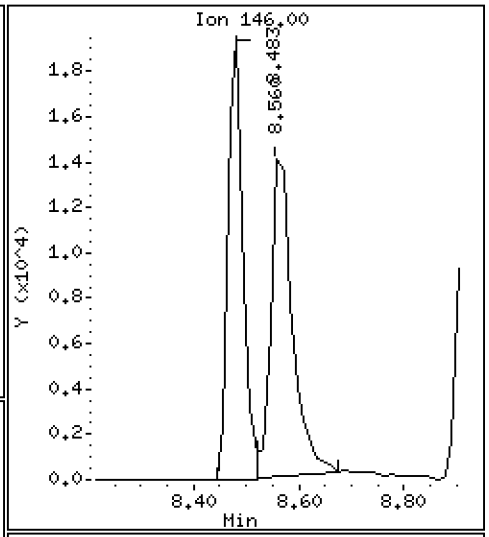
Concentration: 0.4434 ug/mL

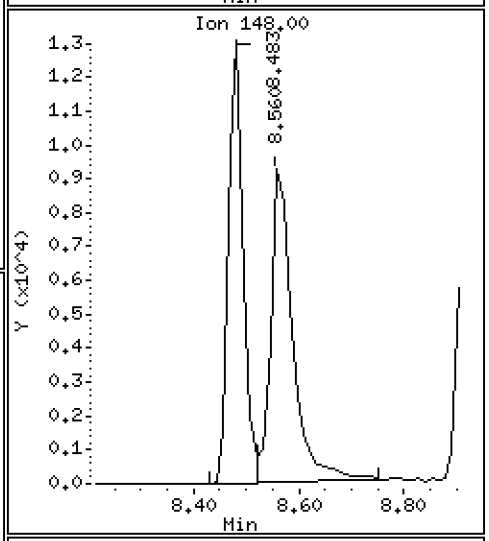


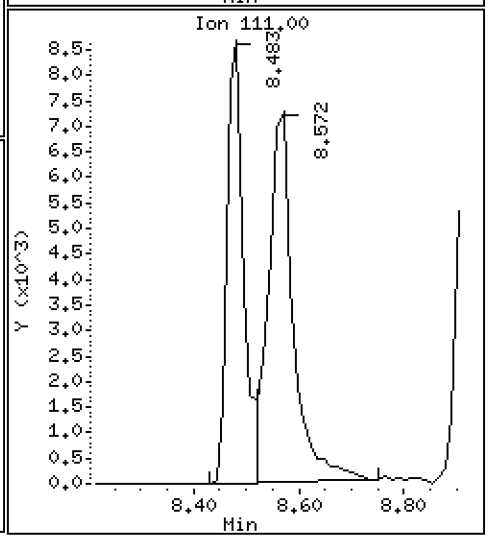












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

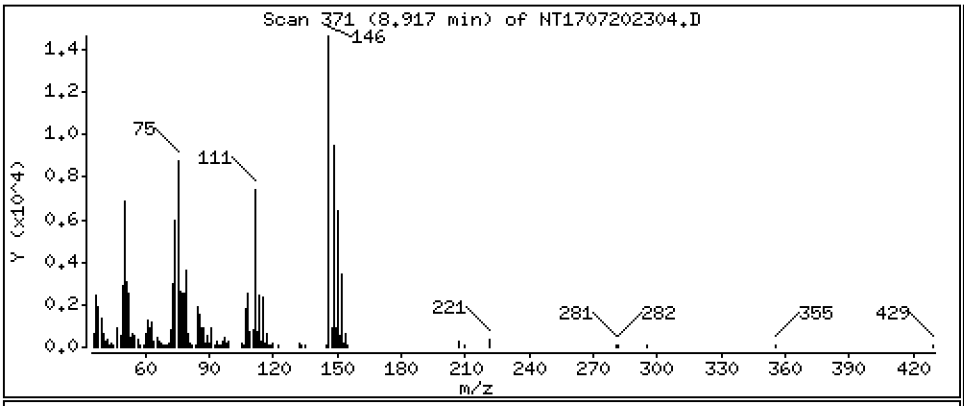
Operator: JGR

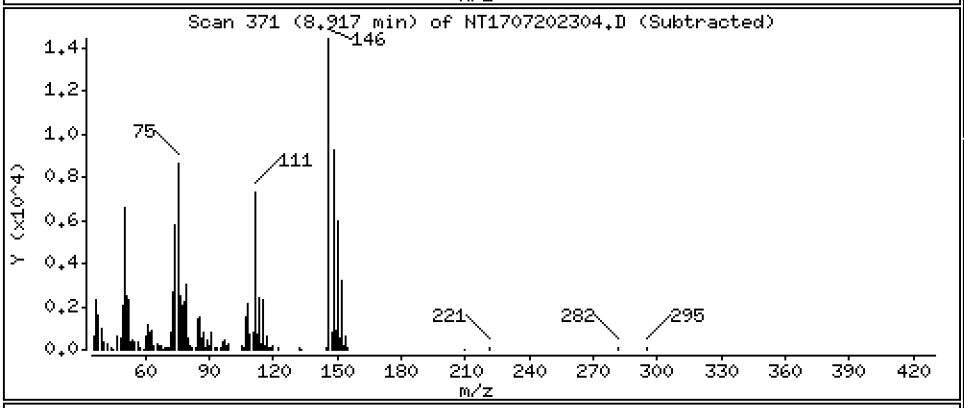
Column phase: ZB-5msi

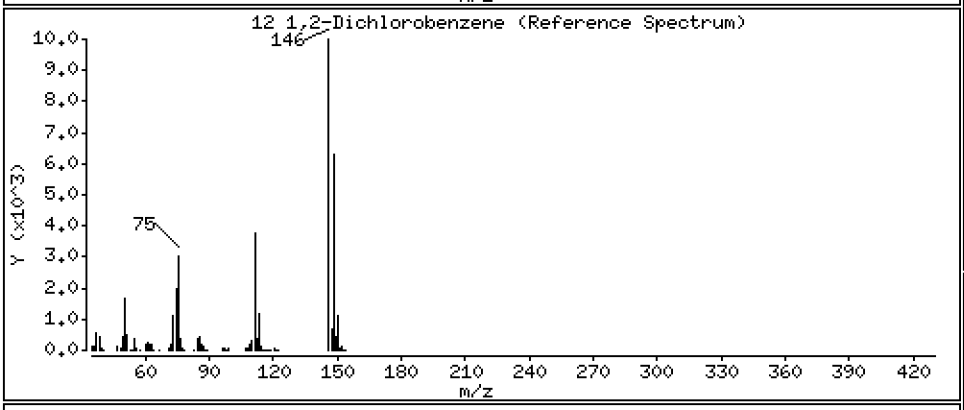
Column diameter: 0.25

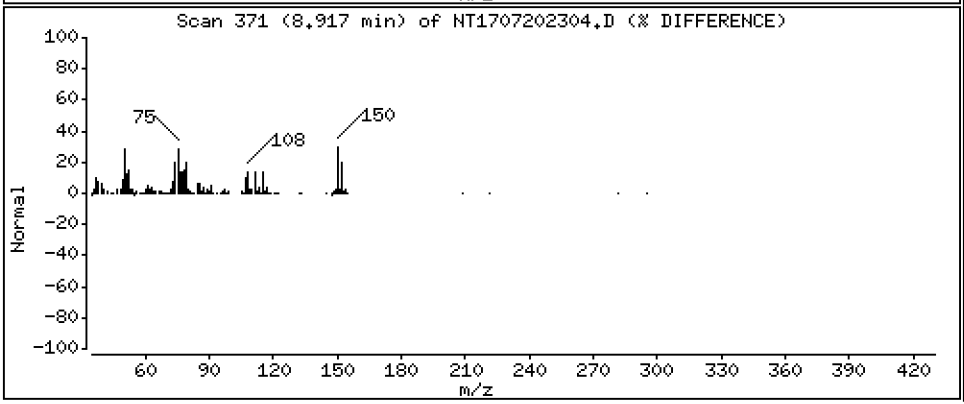
12 1,2-Dichlorobenzene

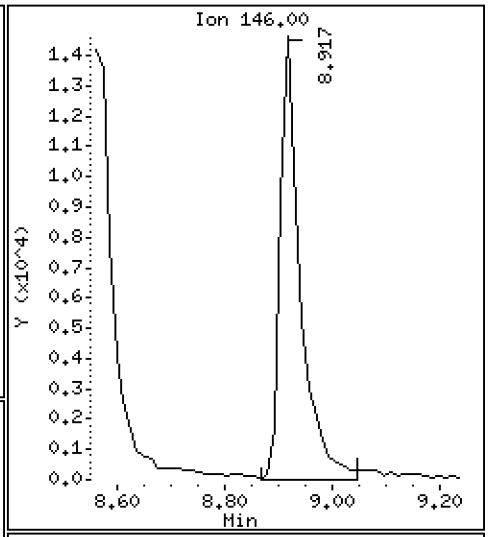
Concentration: 0.4856 ug/mL

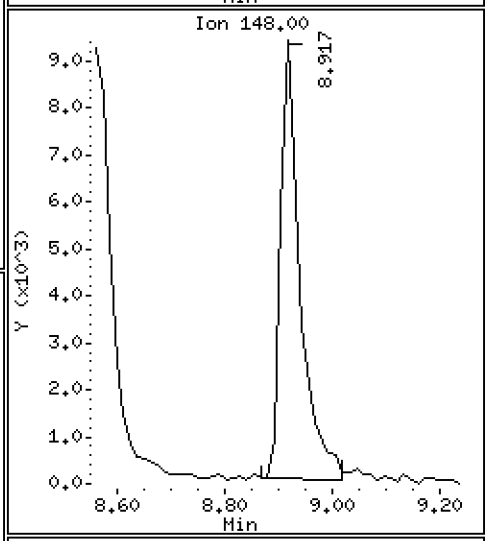


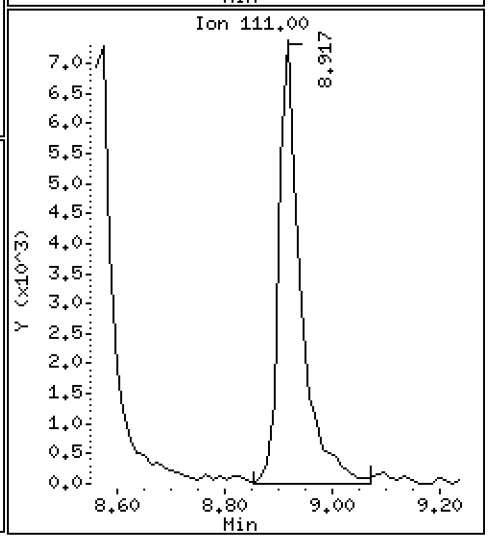












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

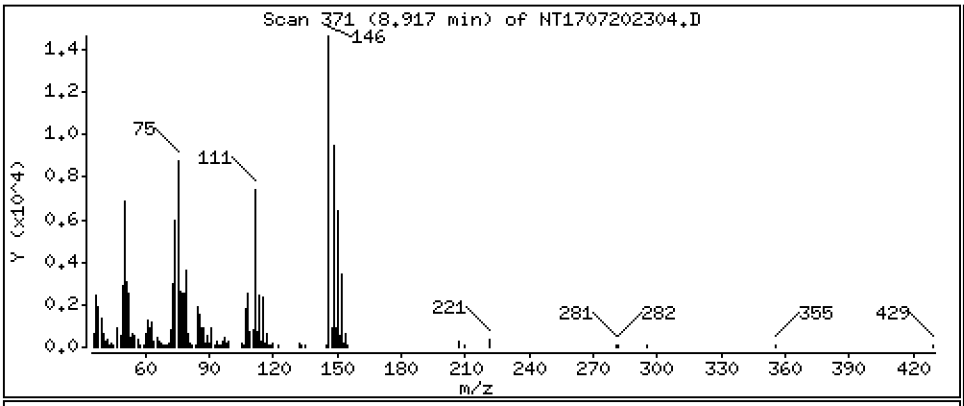
Operator: JGR

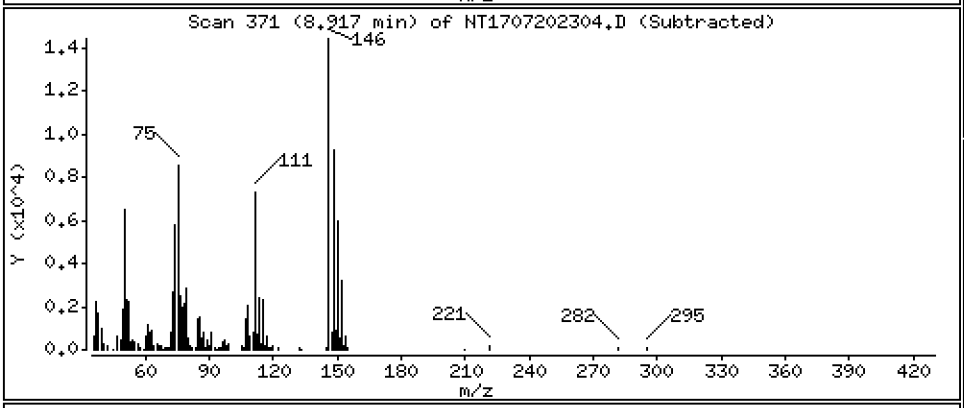
Column phase: ZB-5msi

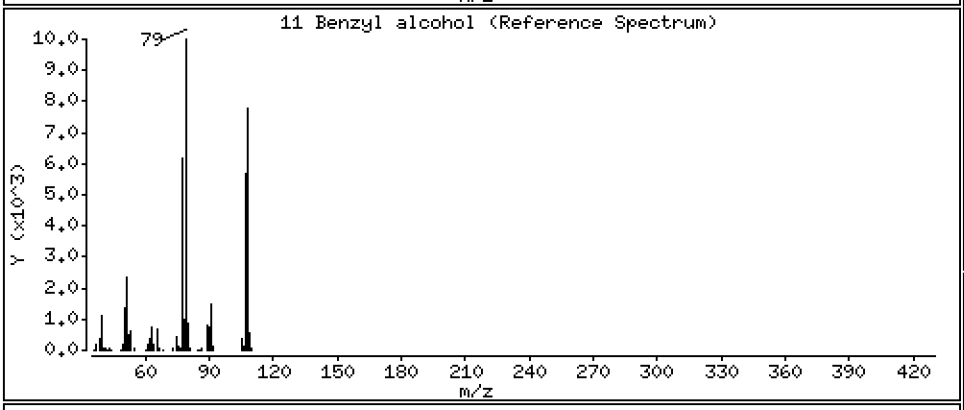
Column diameter: 0.25

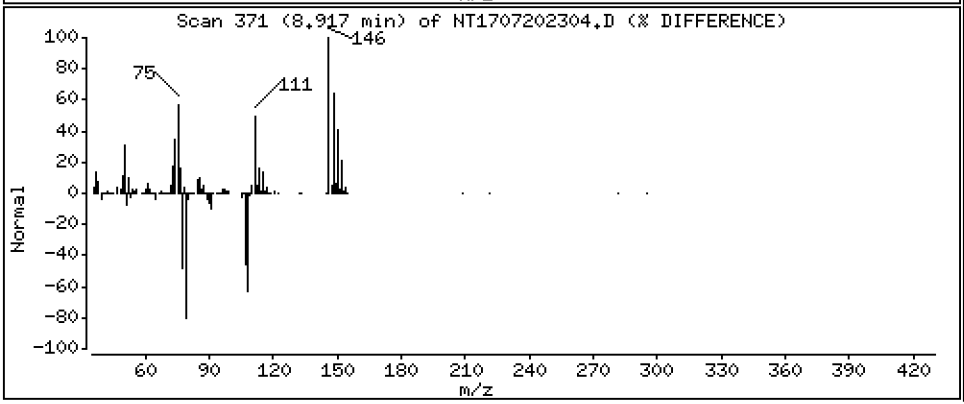
11 Benzyl alcohol

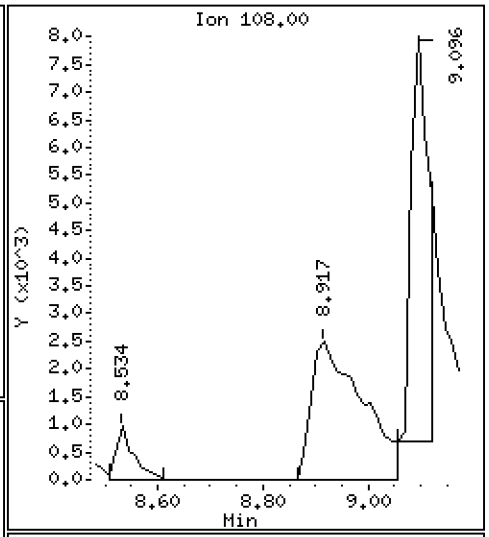
Concentration: 0.3469 ug/mL

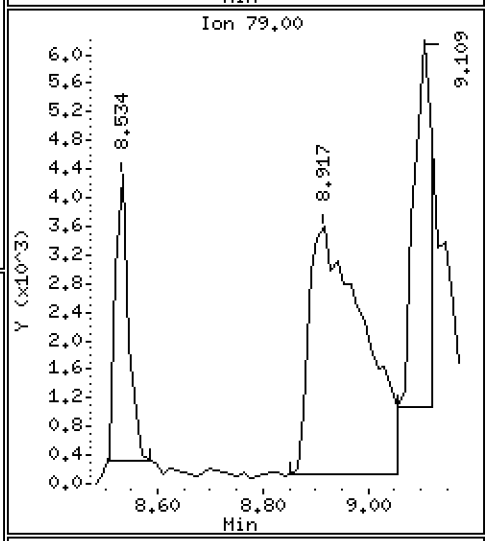


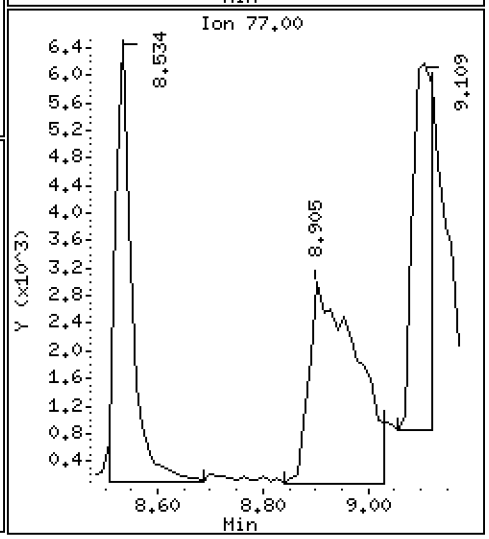












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

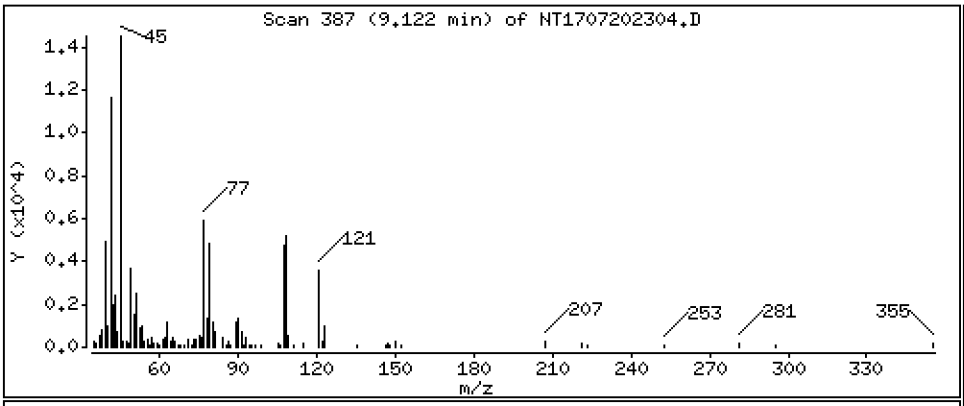
Operator: JGR

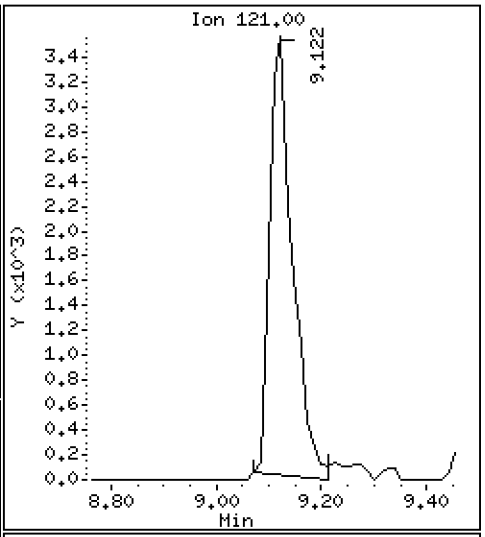
Column phase: ZB-5msi

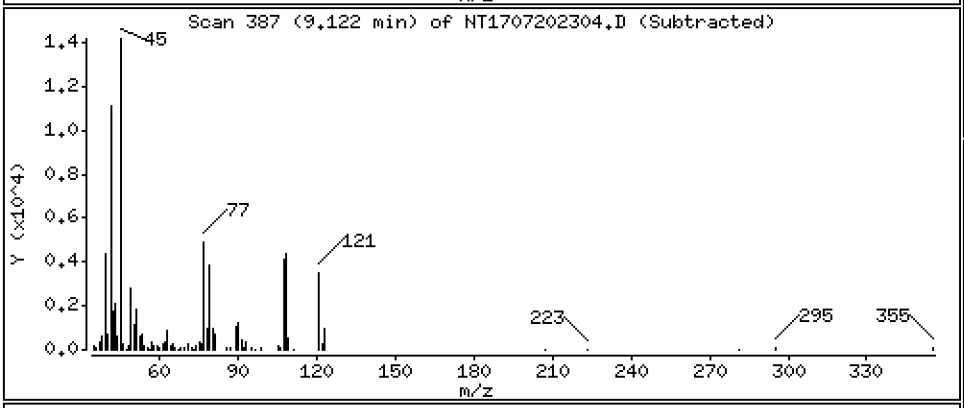
Column diameter: 0.25

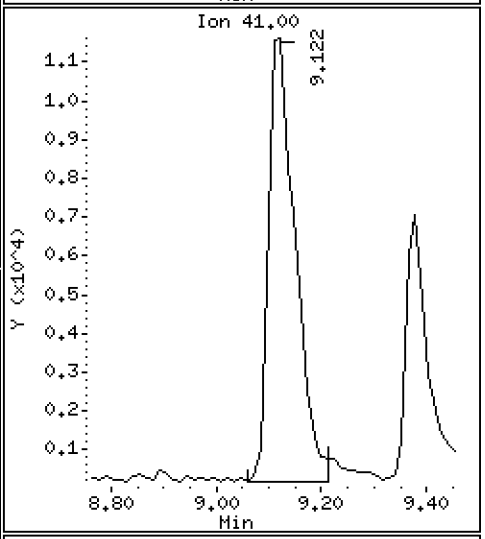
14 2,2'-oxybis(1-Chloropropane)

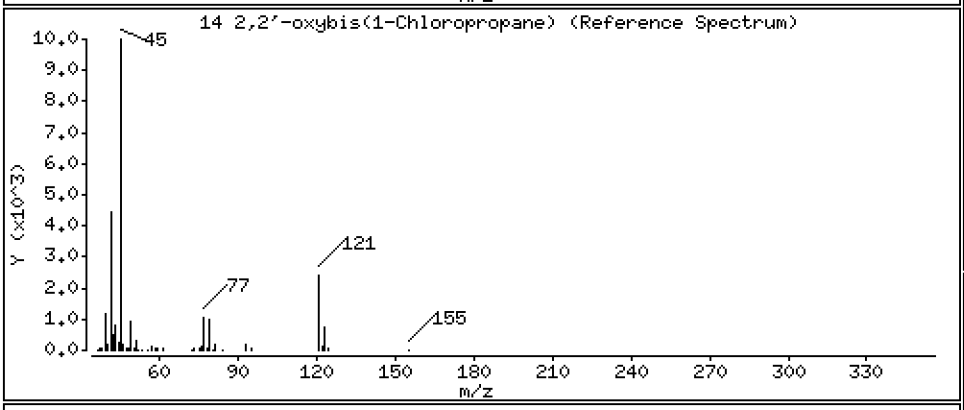
Concentration: 0.4064 ug/mL

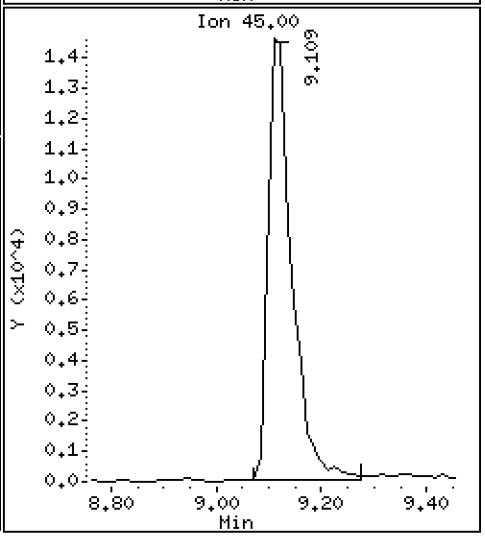


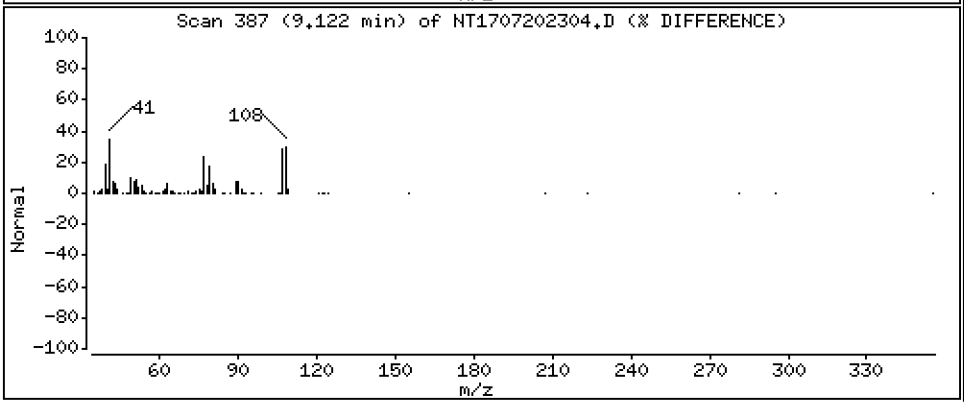












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

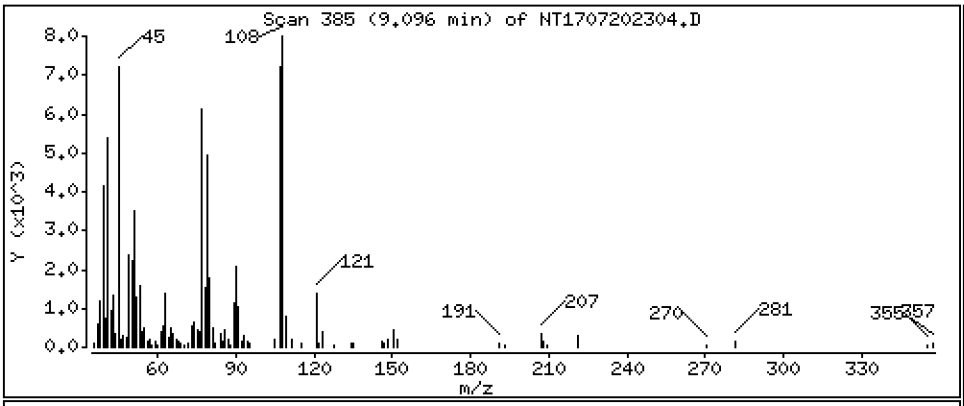
Operator: JGR

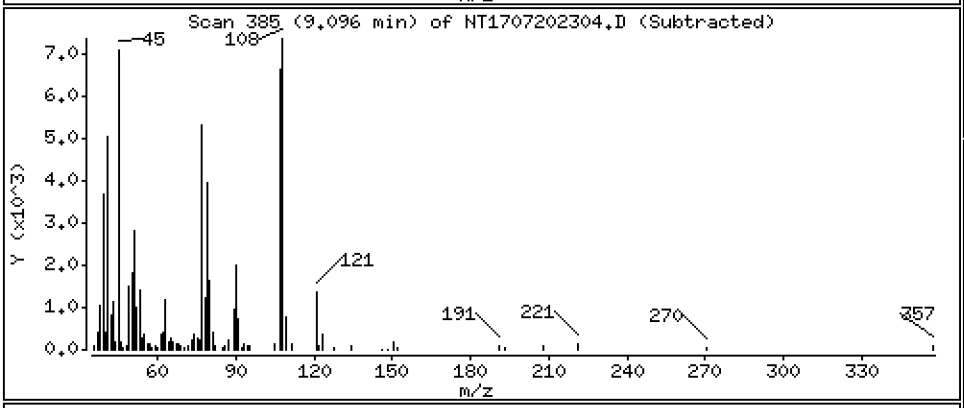
Column phase: ZB-5msi

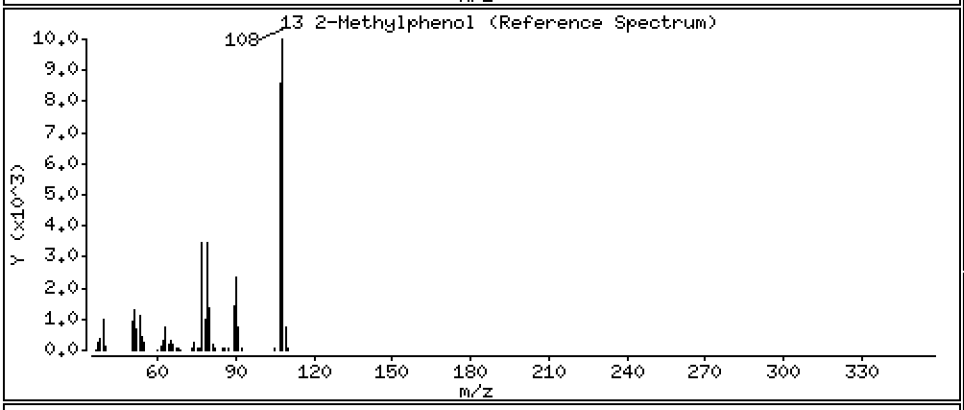
Column diameter: 0.25

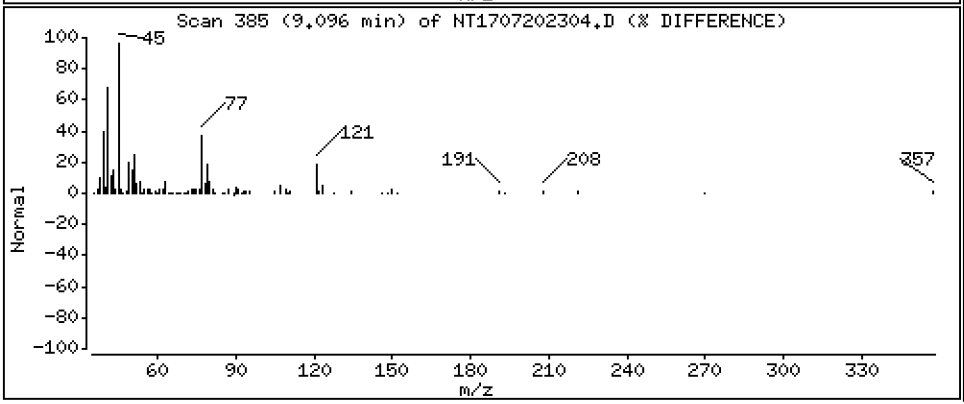
13 2-Methylphenol

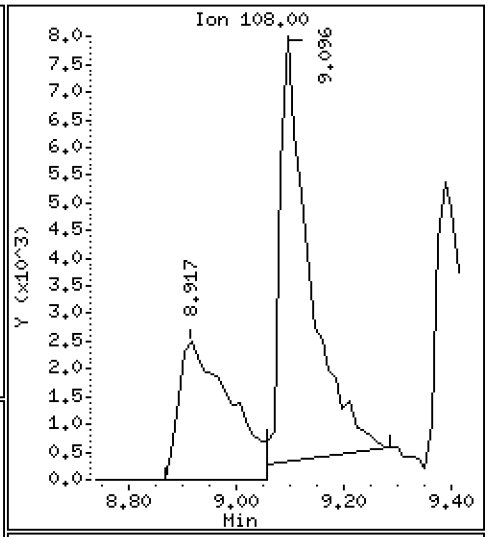
Concentration: 0.4217 ug/mL

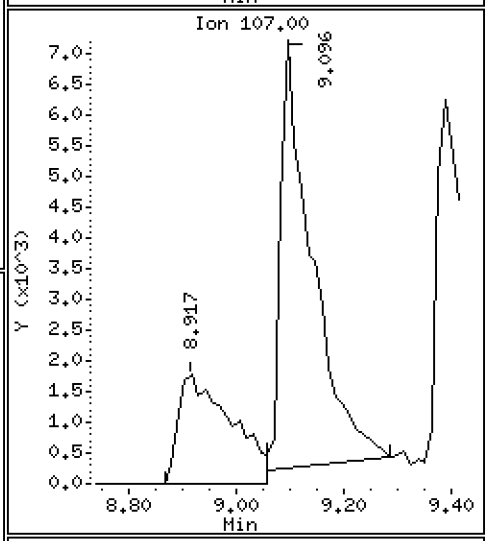


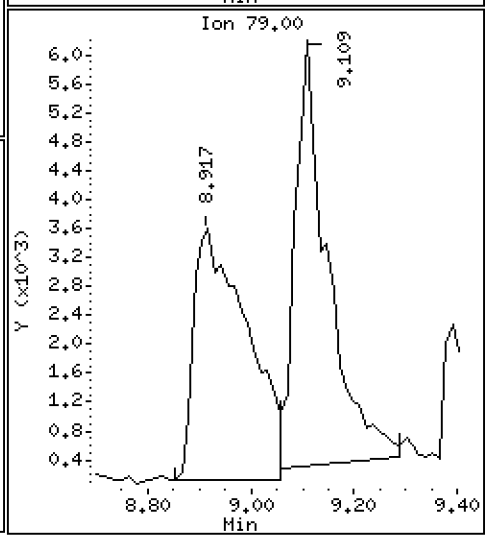












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

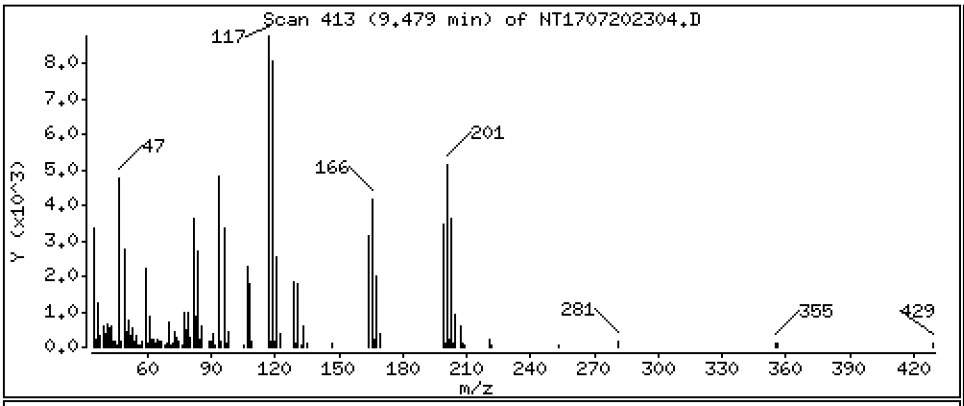
Operator: JGR

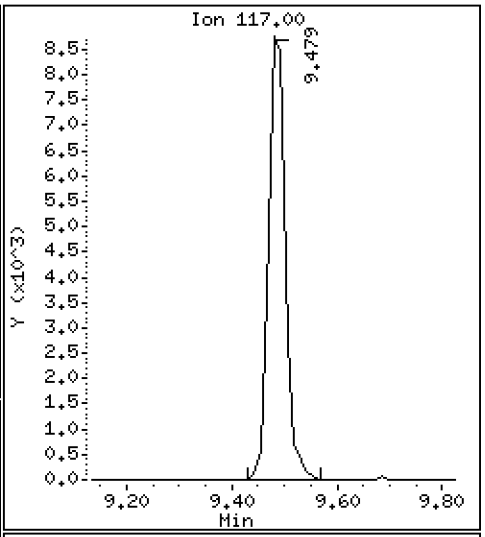
Column phase: ZB-5msi

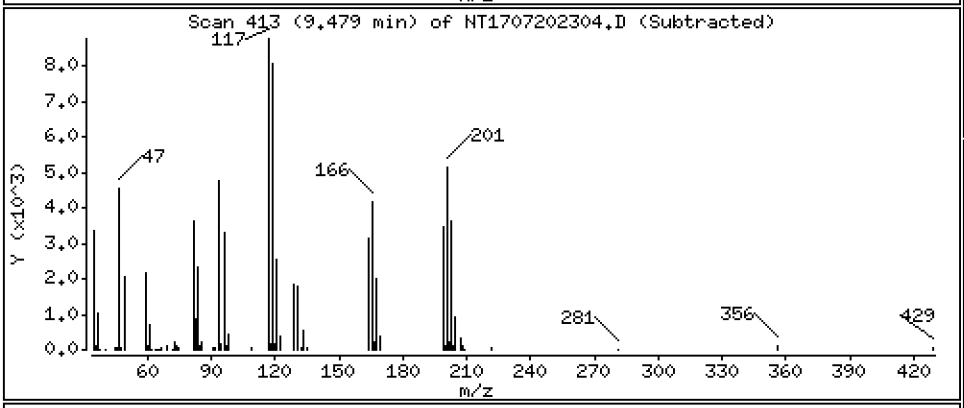
Column diameter: 0.25

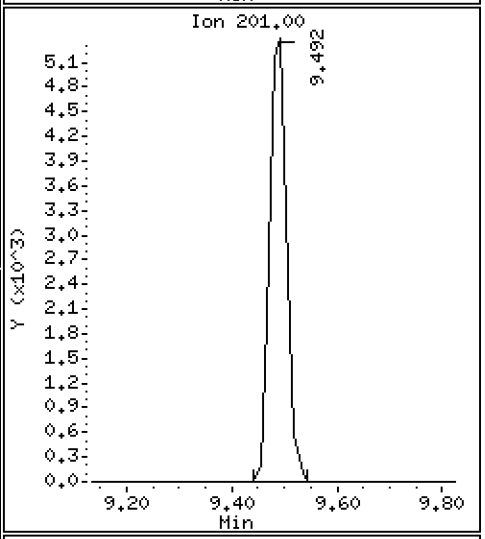
17 Hexachloroethane

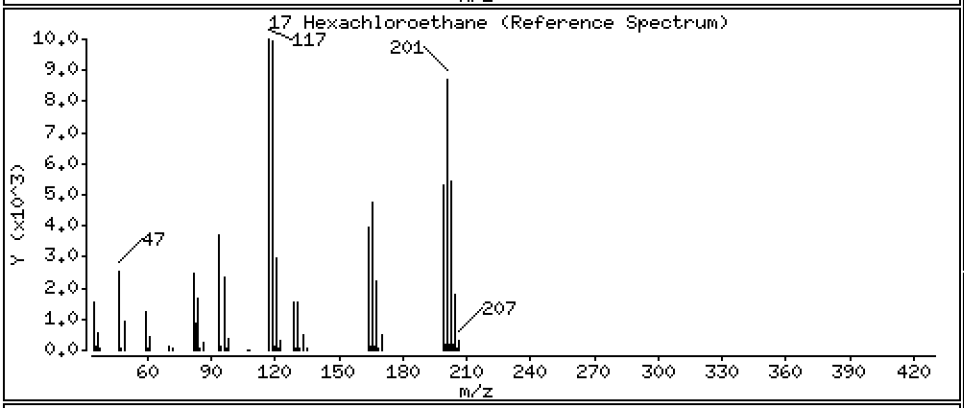
Concentration: 0.5470 ug/mL

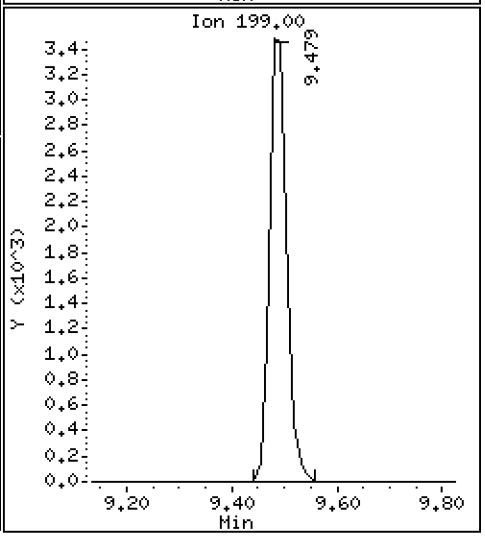


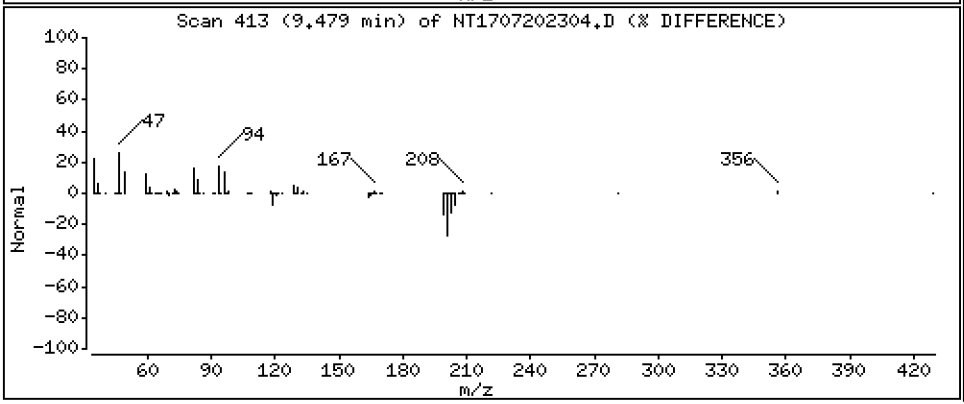












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

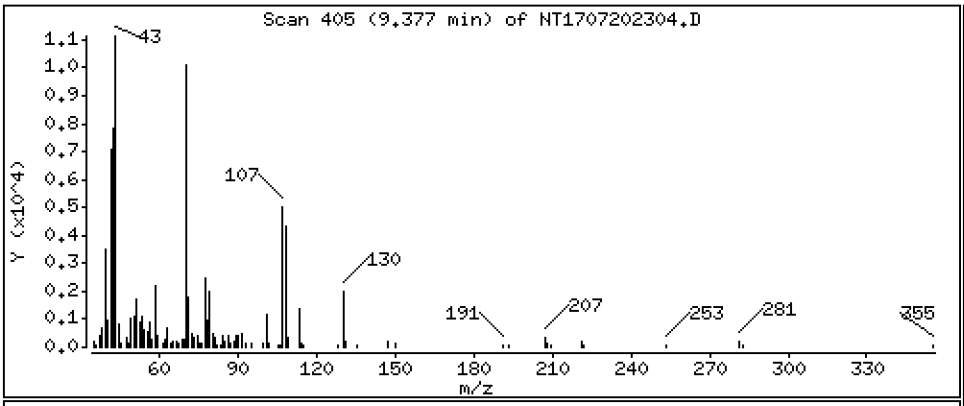
Operator: JGR

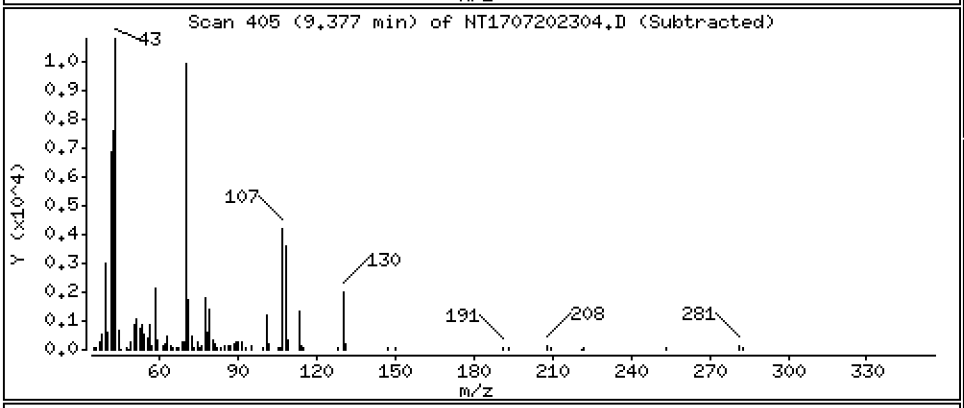
Column phase: ZB-5msi

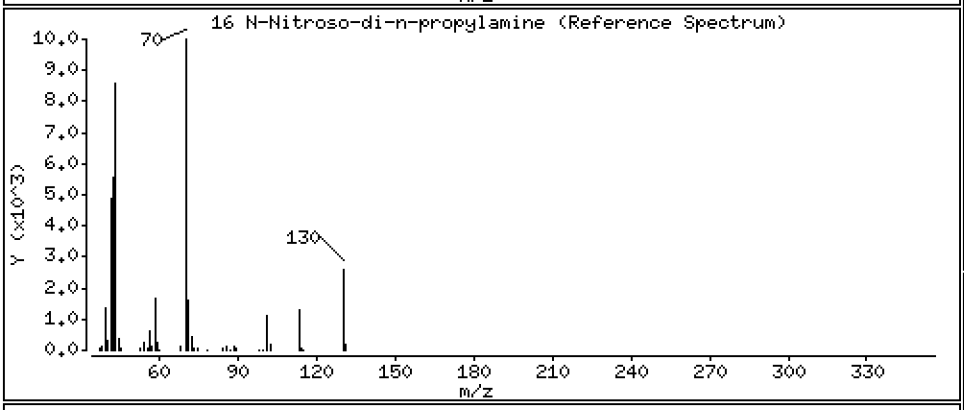
Column diameter: 0.25

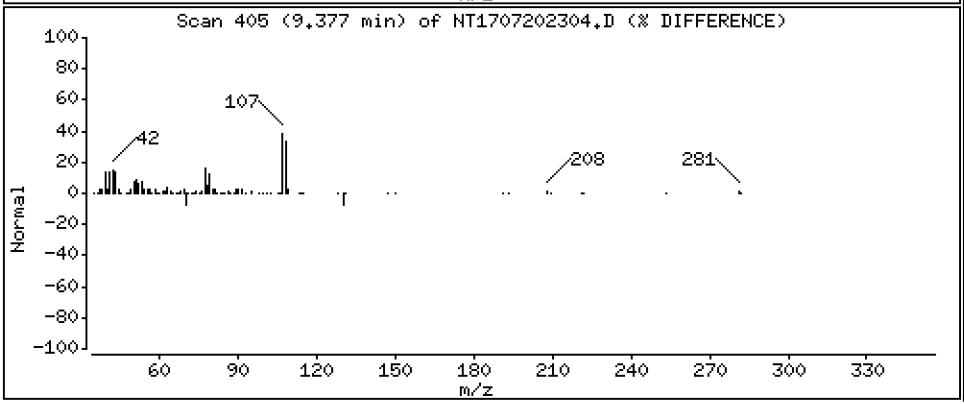
16 N-Nitroso-di-n-propylamine

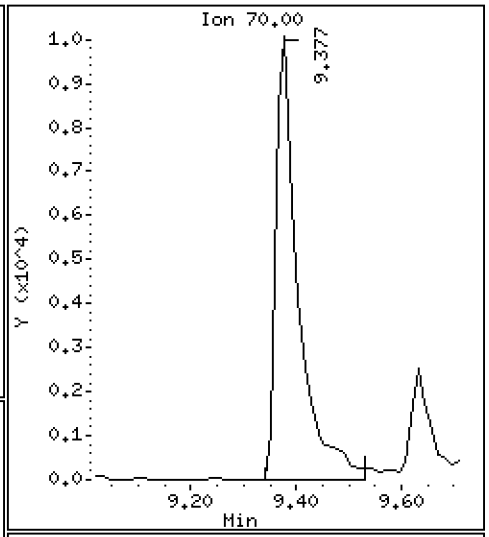
Concentration: 0.4983 ug/mL

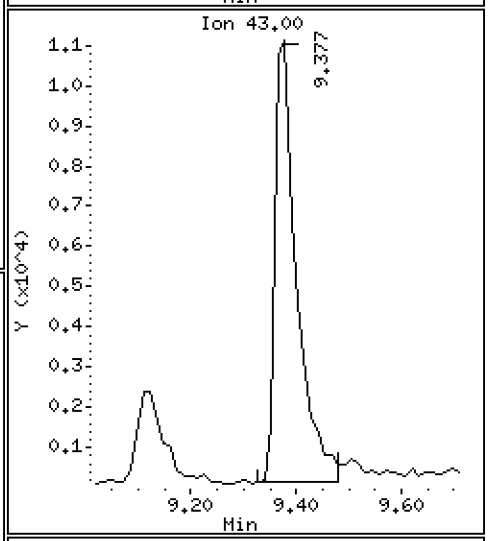


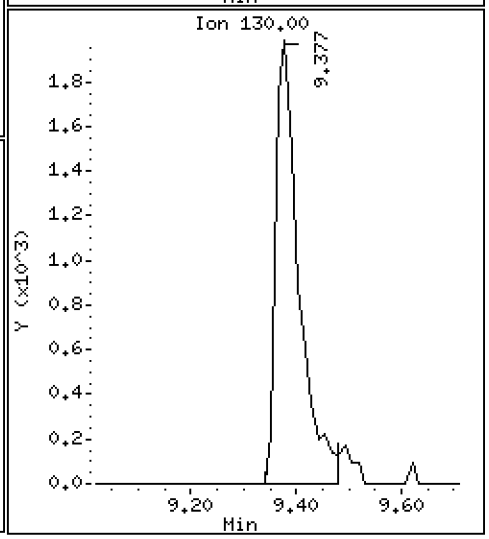












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

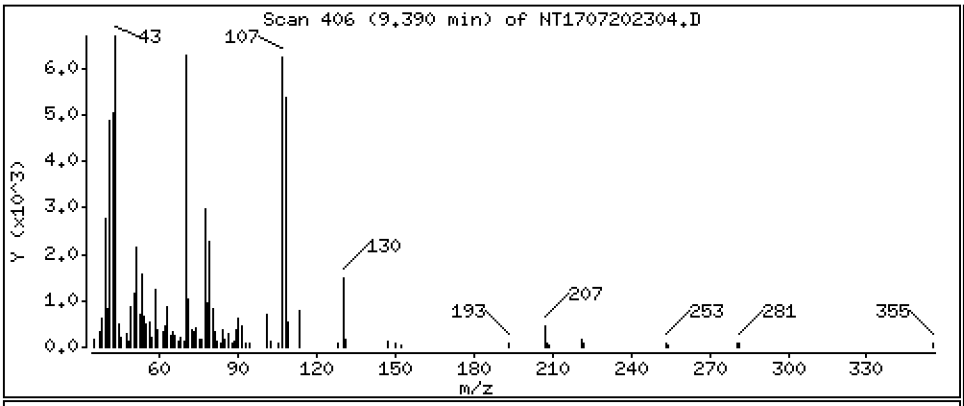
Operator: JGR

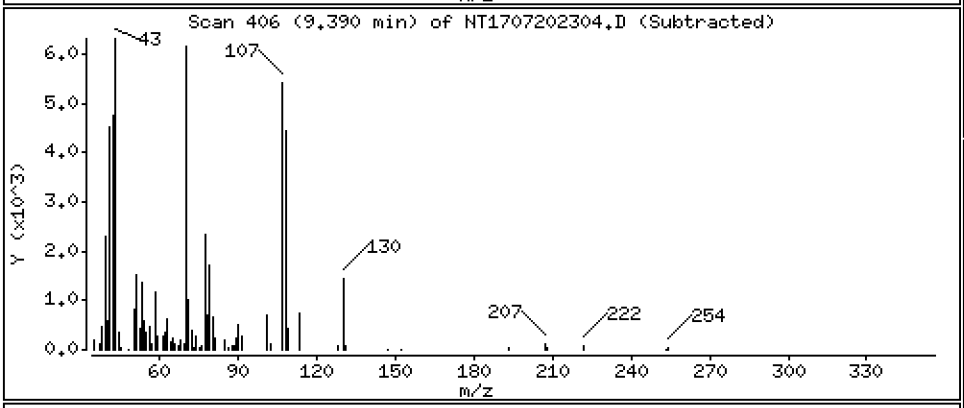
Column phase: ZB-5msi

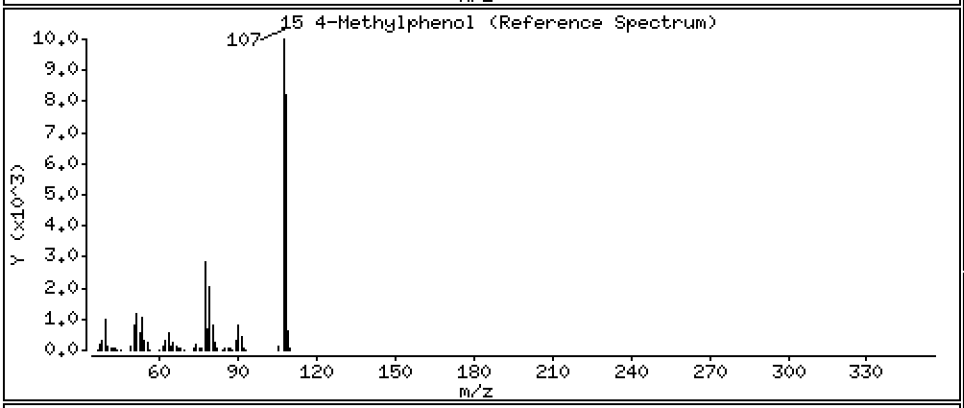
Column diameter: 0.25

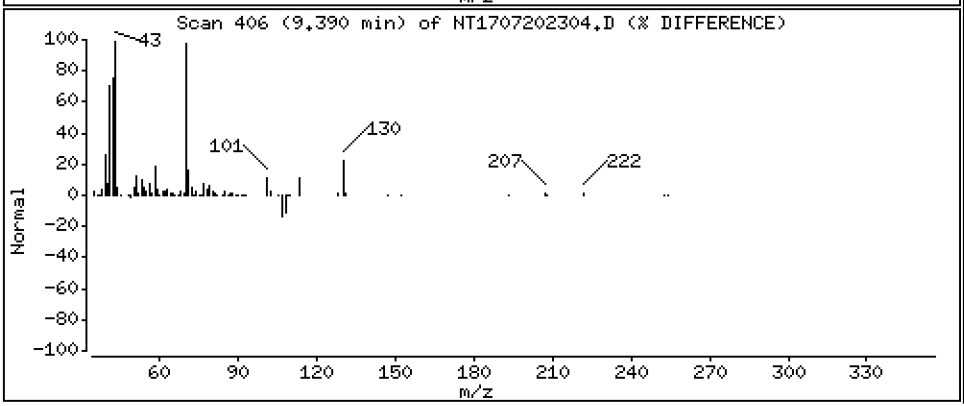
15 4-Methylphenol

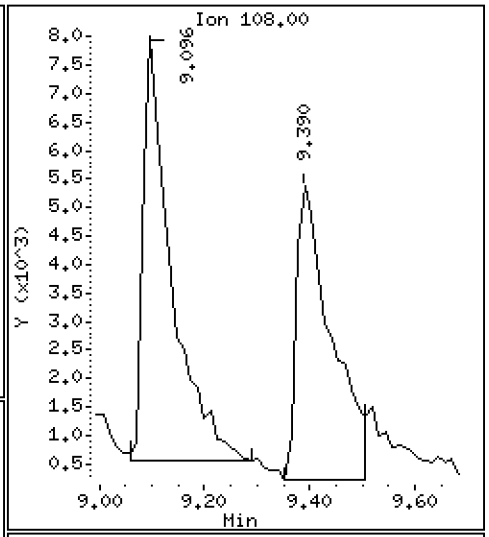
Concentration: 0.3177 ug/mL

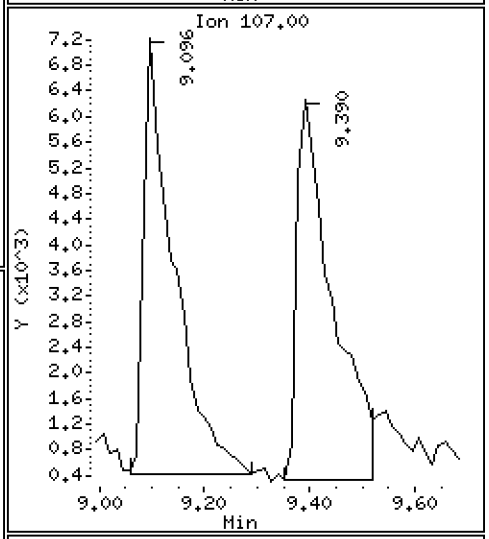


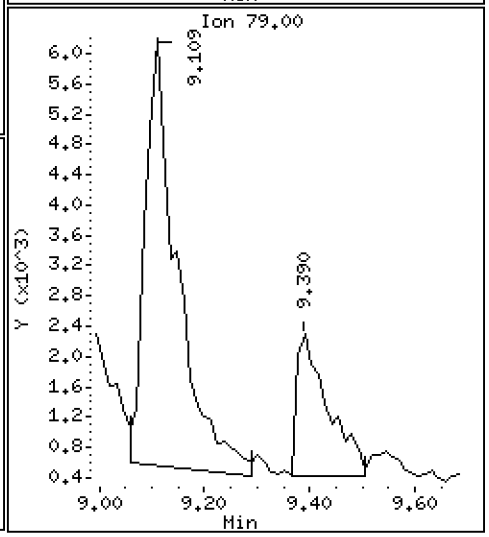












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

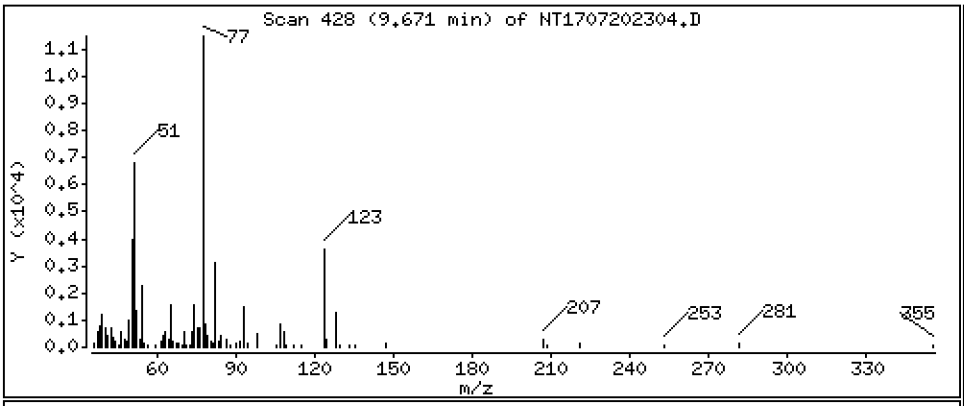
Operator: JGR

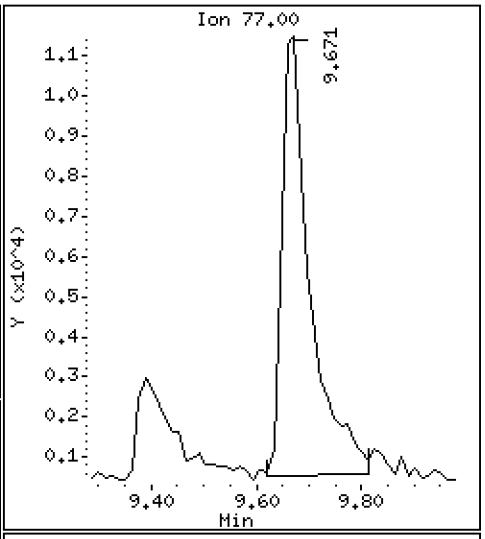
Column phase: ZB-5msi

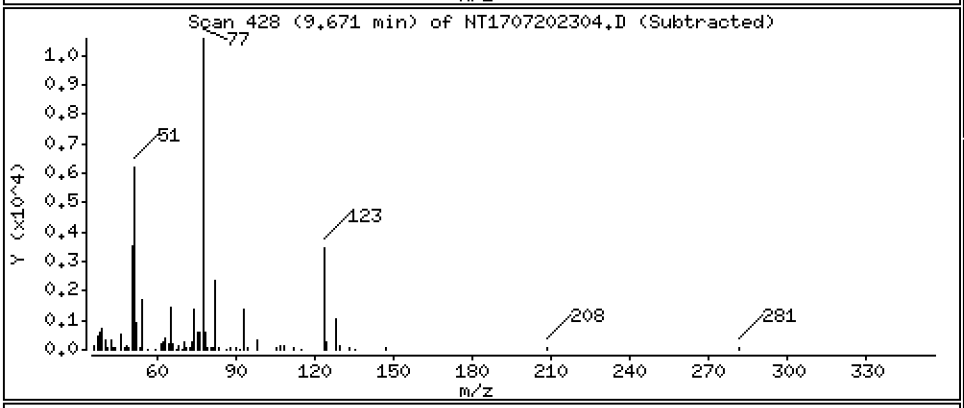
Column diameter: 0.25

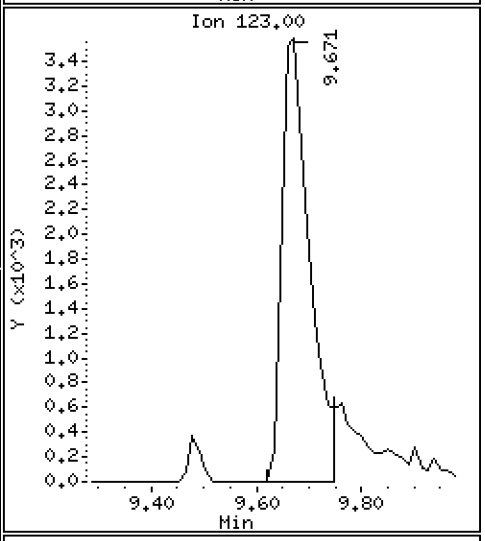
19 Nitrobenzene

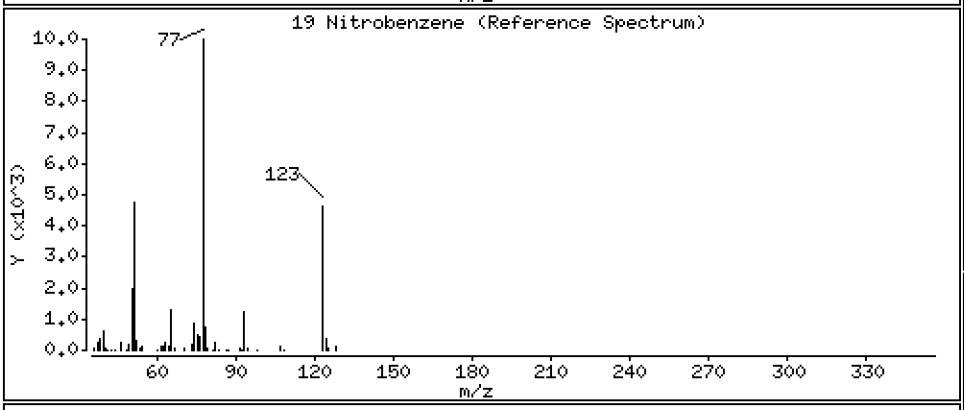
Concentration: 0.4460 ug/mL

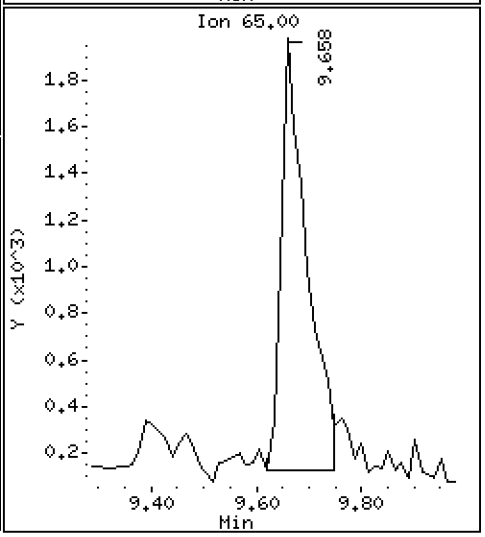


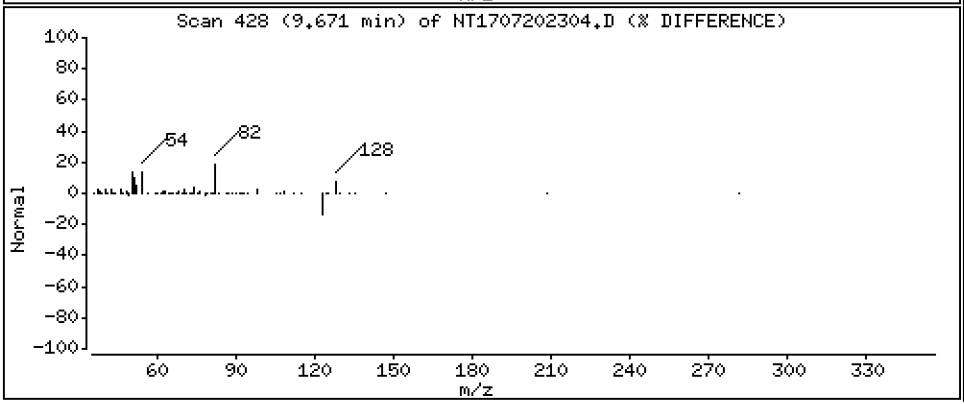












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

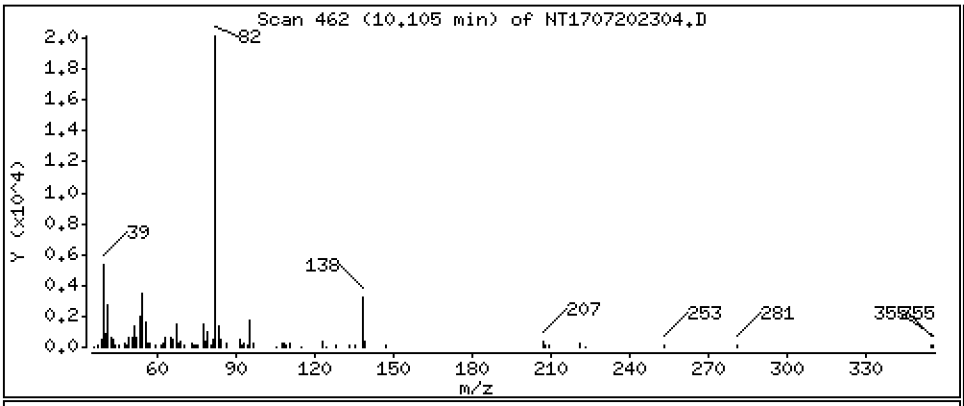
Operator: JGR

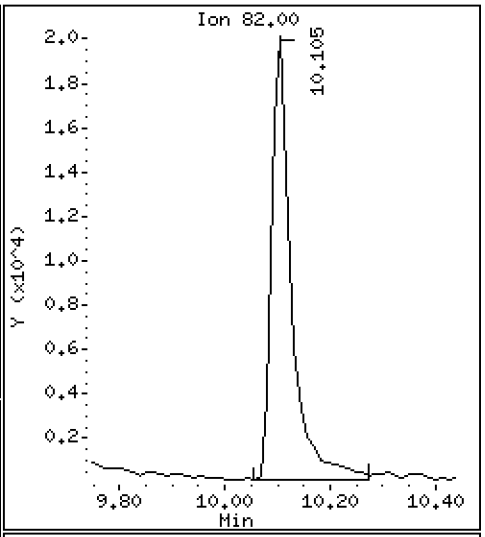
Column phase: ZB-5msi

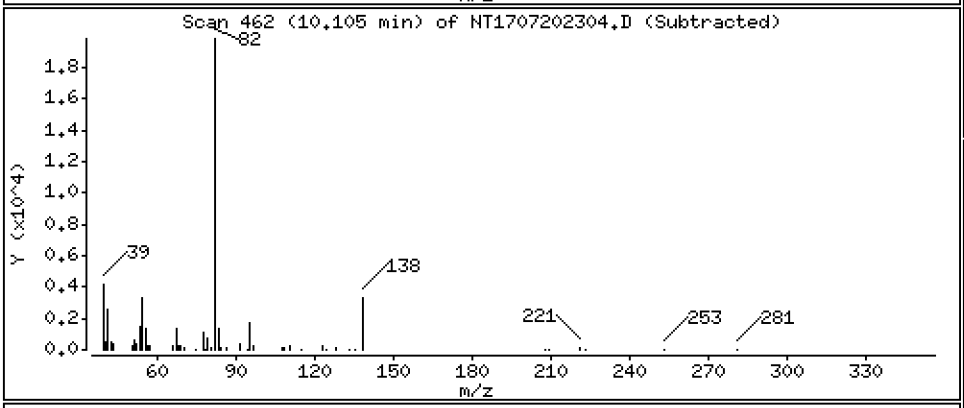
Column diameter: 0.25

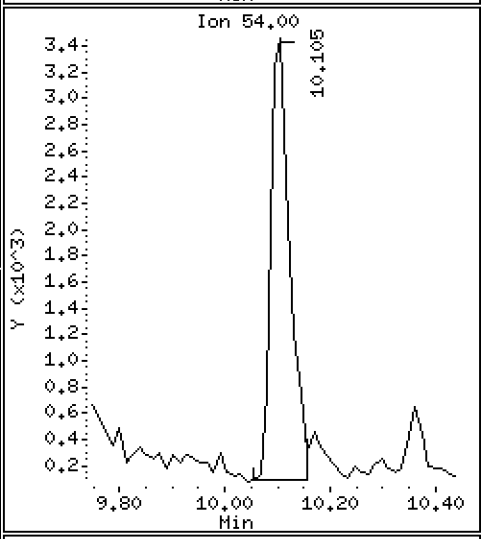
20 Isophorone

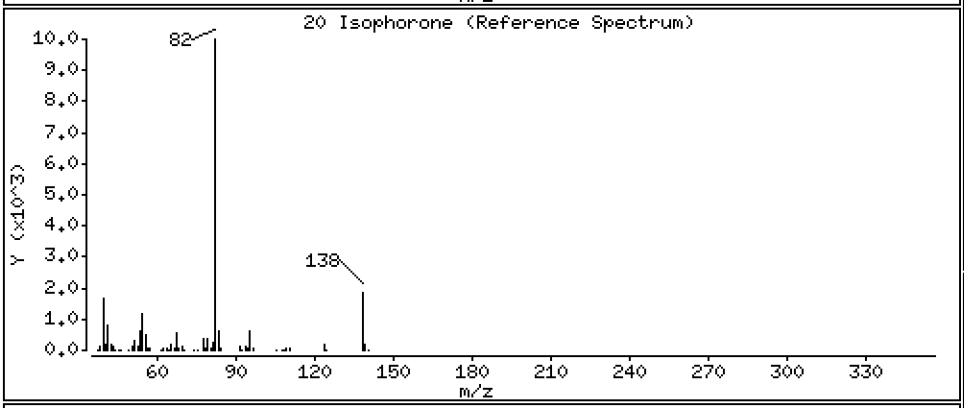
Concentration: 0.4231 ug/mL

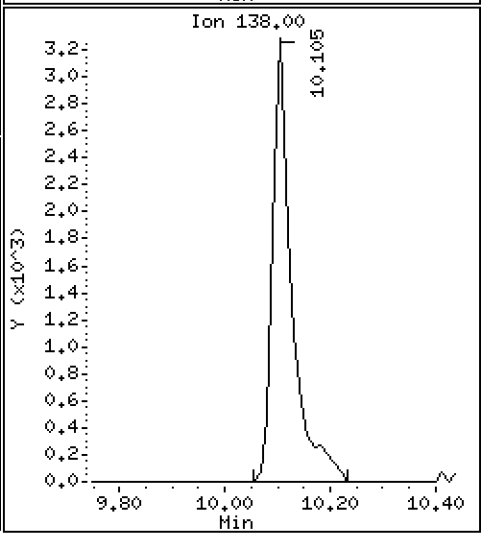


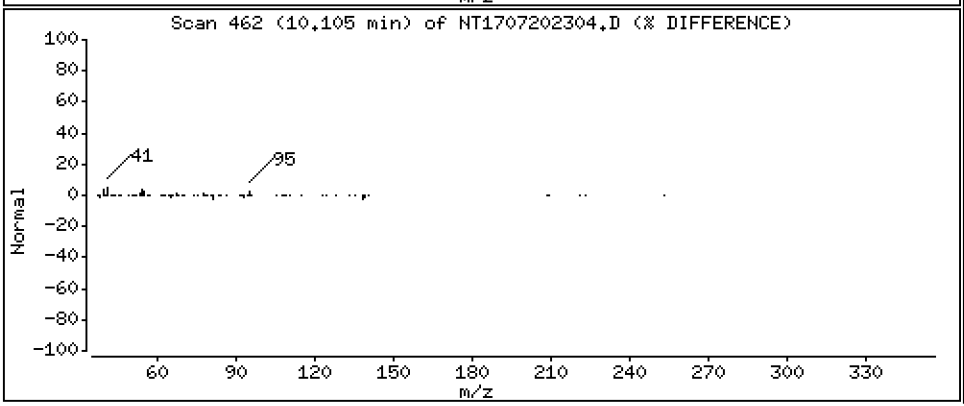












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

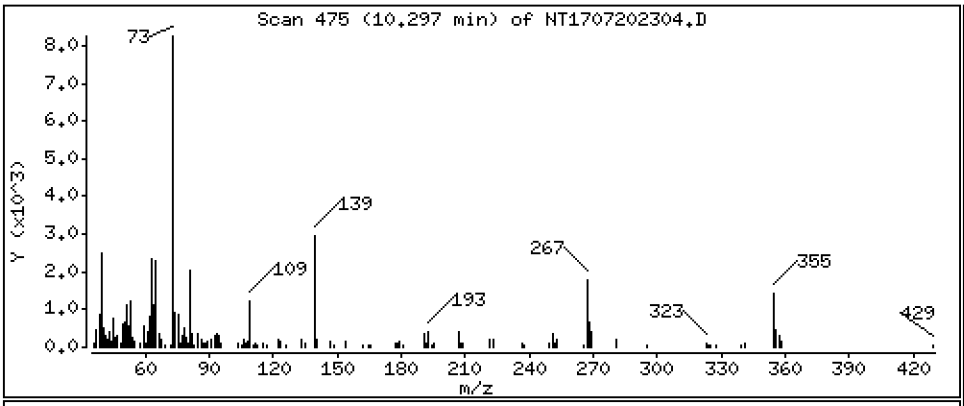
Operator: JGR

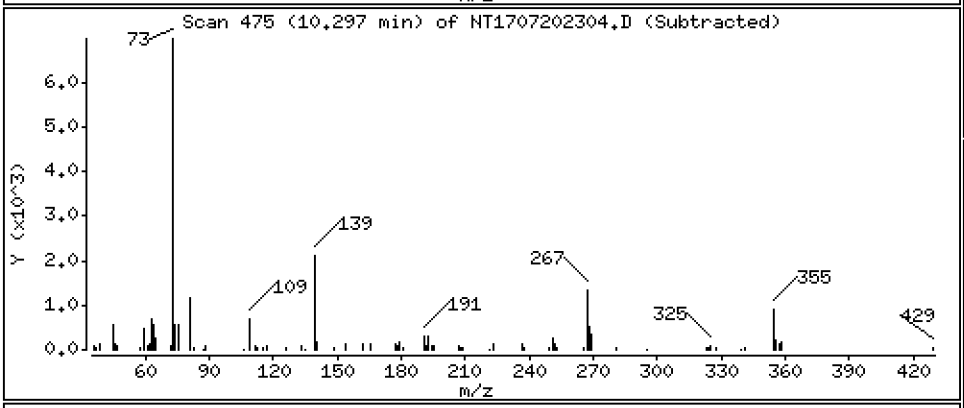
Column phase: ZB-5msi

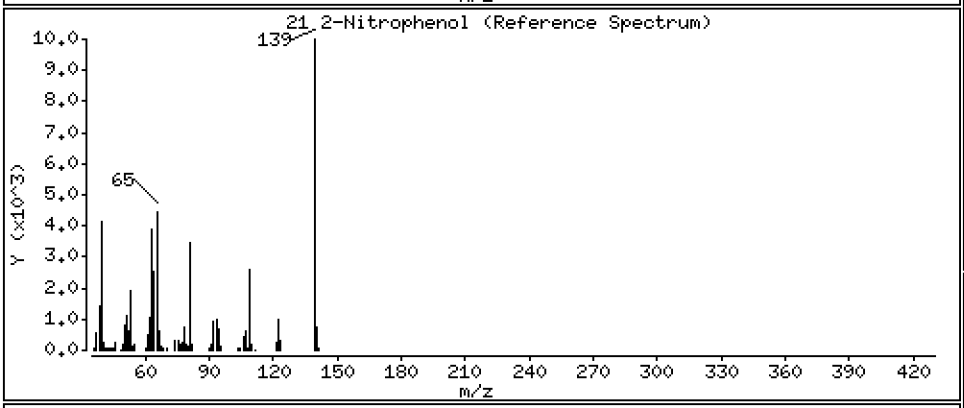
Column diameter: 0.25

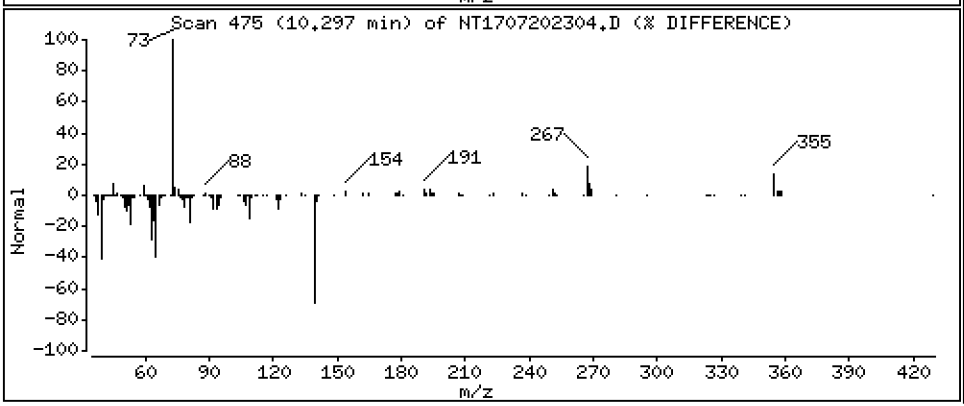
21 2-Nitrophenol

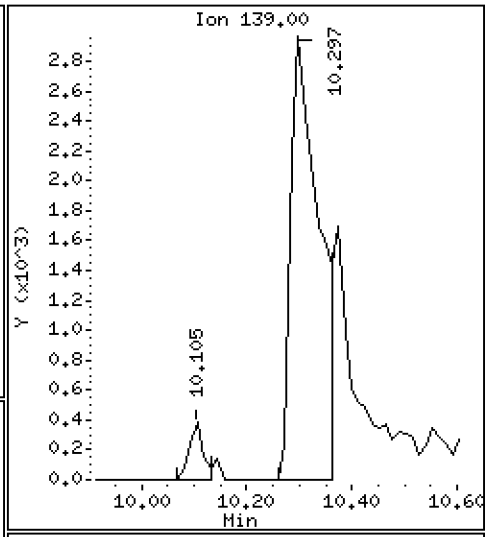
Concentration: 0.2948 ug/mL

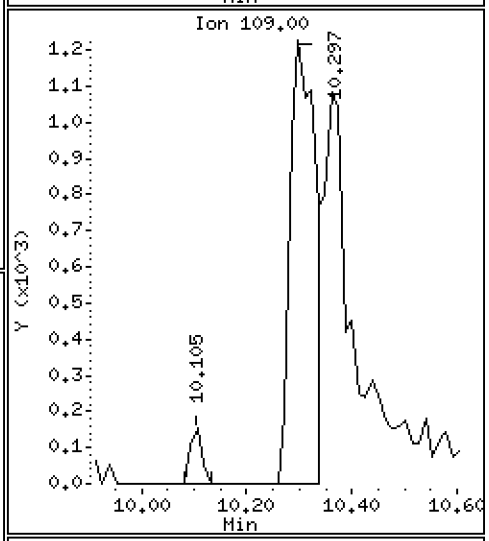


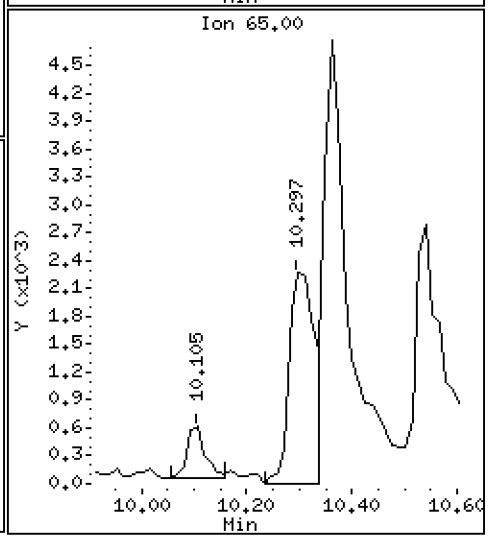












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

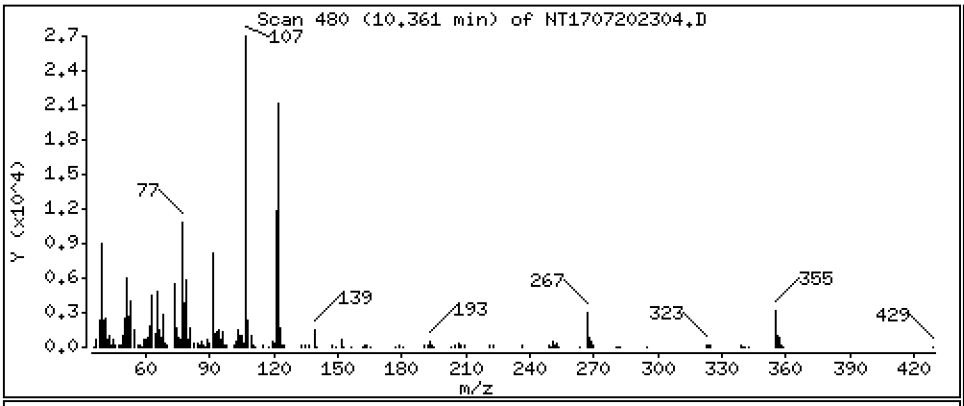
Operator: JGR

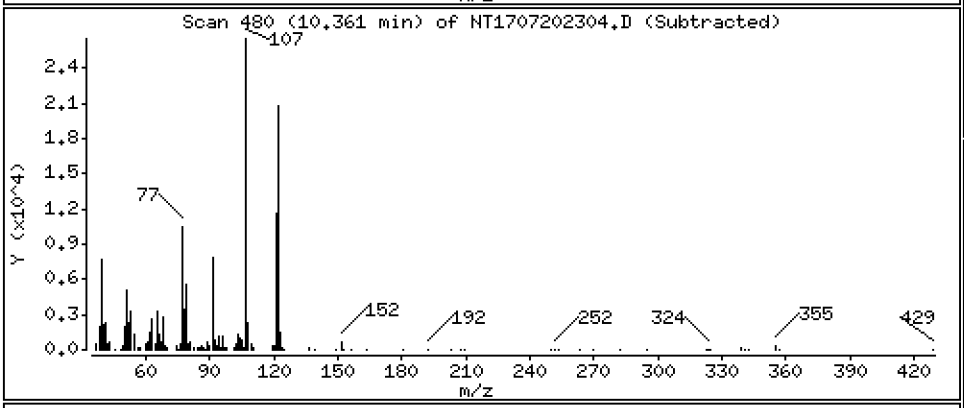
Column phase: ZB-5msi

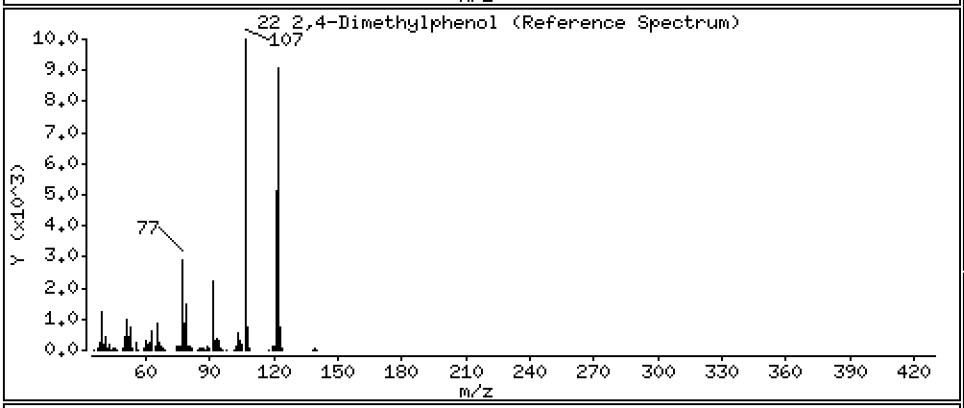
Column diameter: 0.25

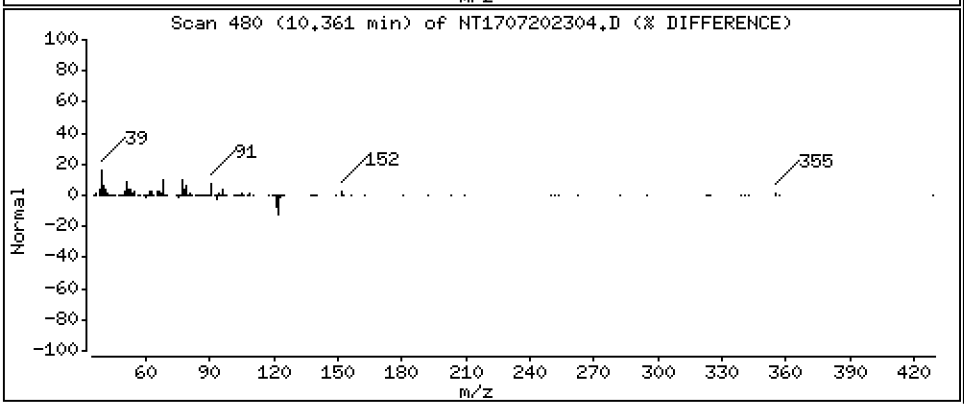
22 2,4-Dimethylphenol

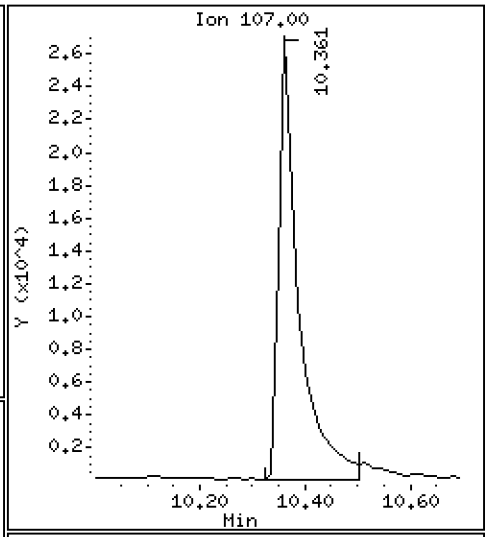
Concentration: 0.8328 ug/mL

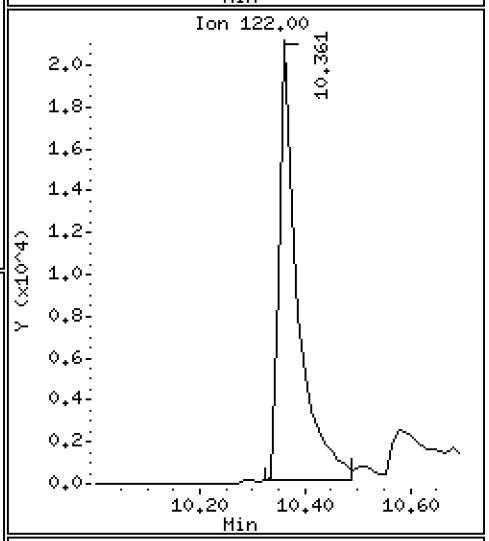


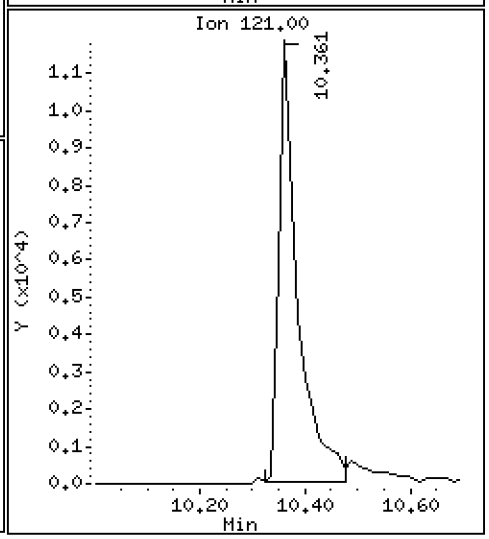












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

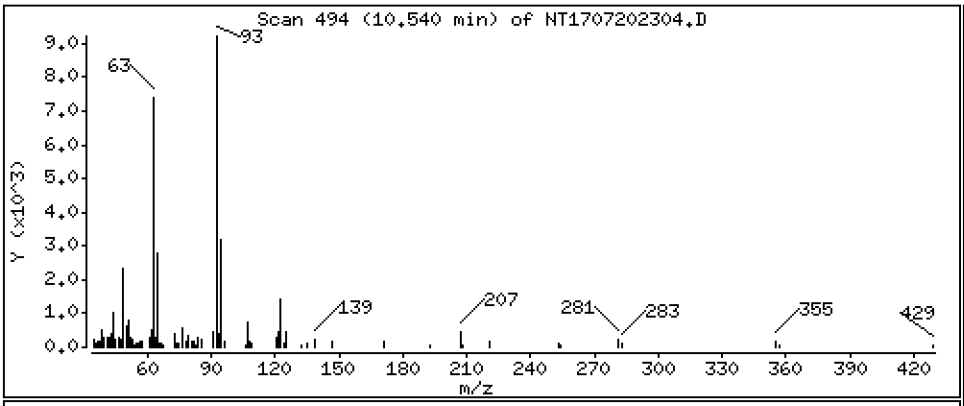
Operator: JGR

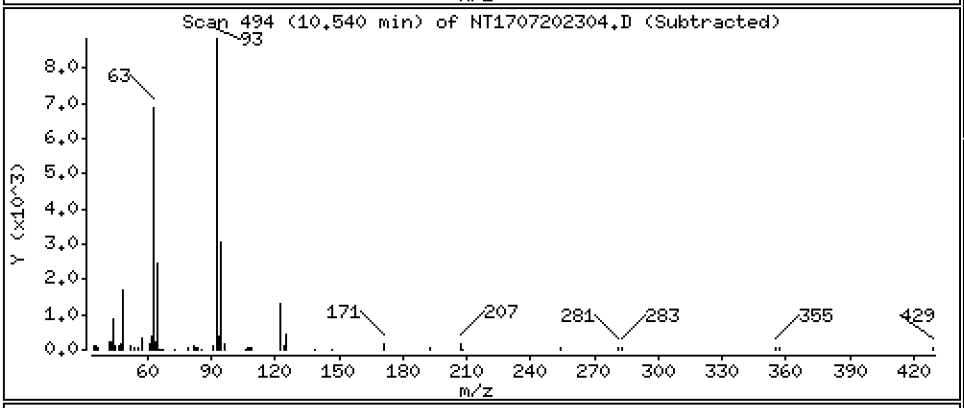
Column phase: ZB-5msi

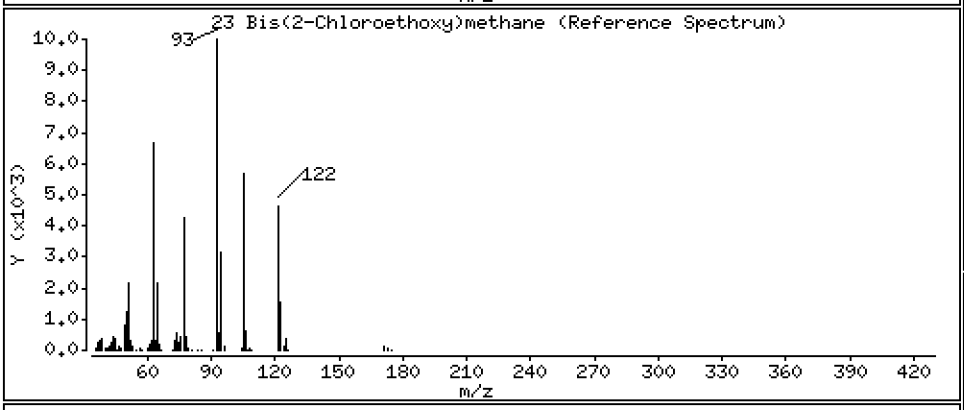
Column diameter: 0.25

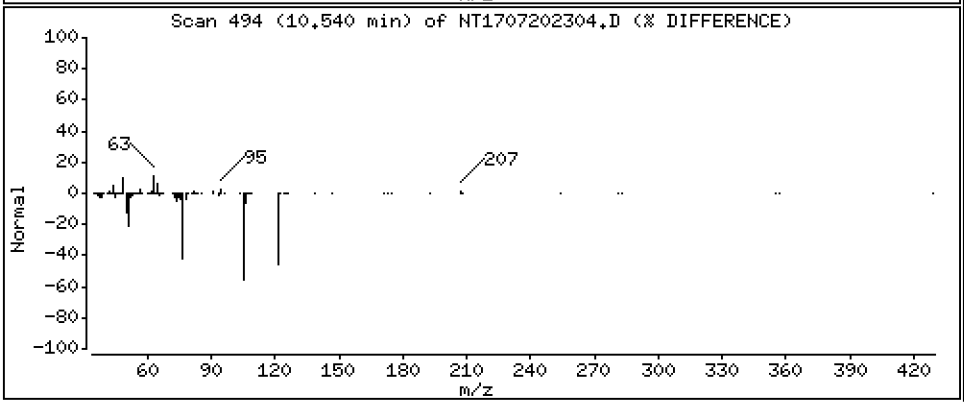
23 Bis(2-Chloroethoxy)methane

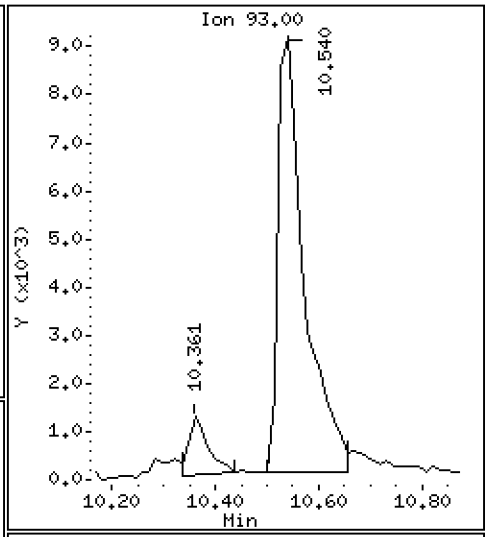
Concentration: 0.4123 ug/mL

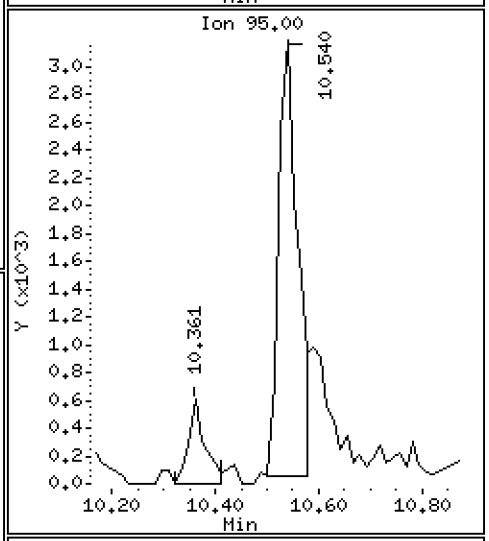


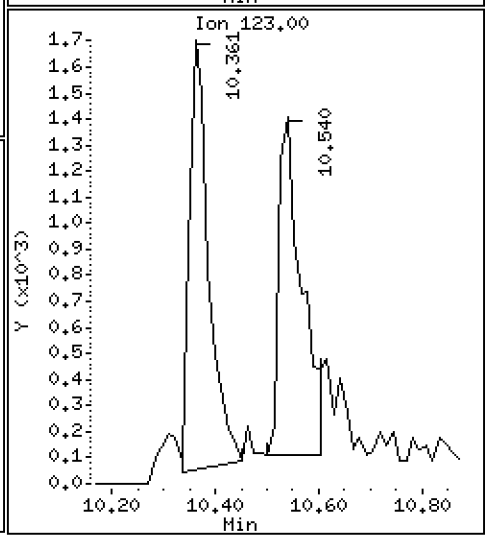












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

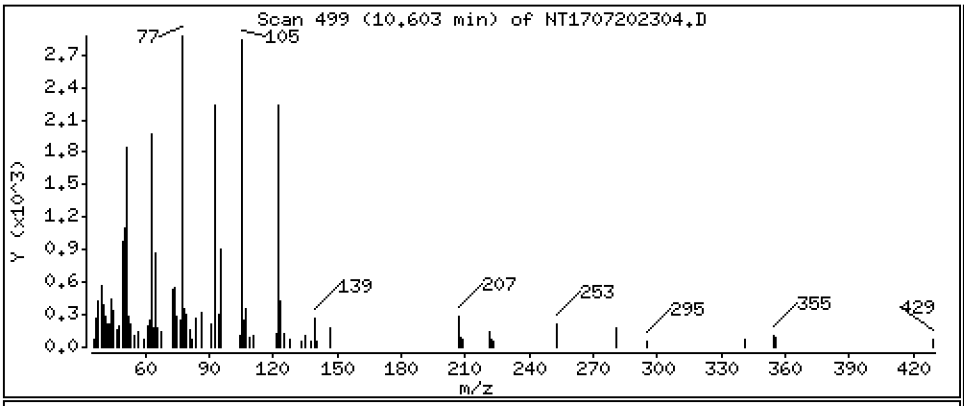
Operator: JGR

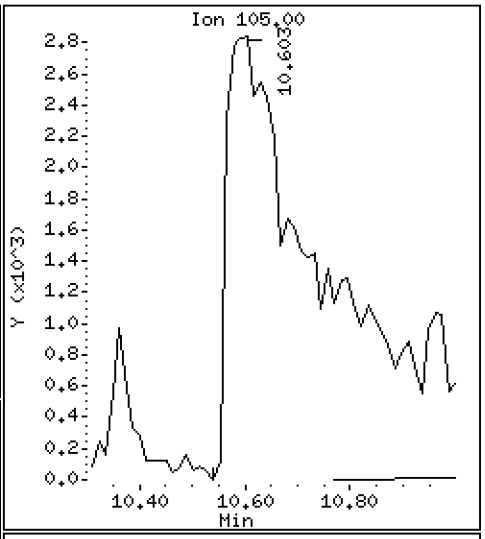
Column phase: ZB-5msi

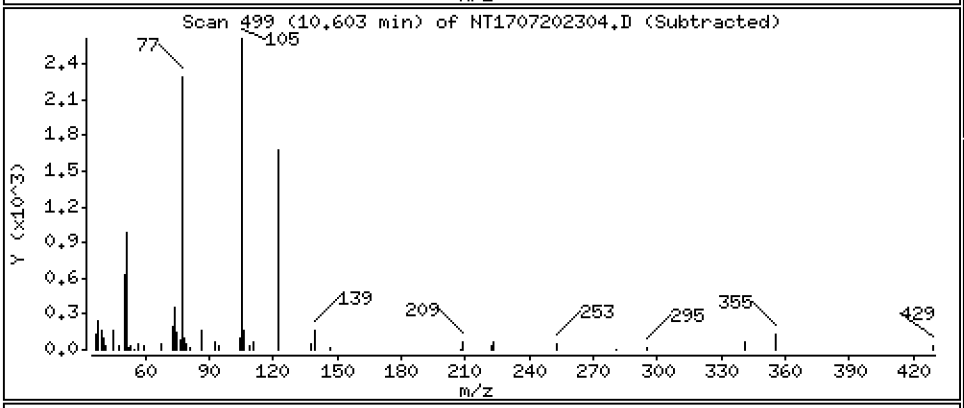
Column diameter: 0.25

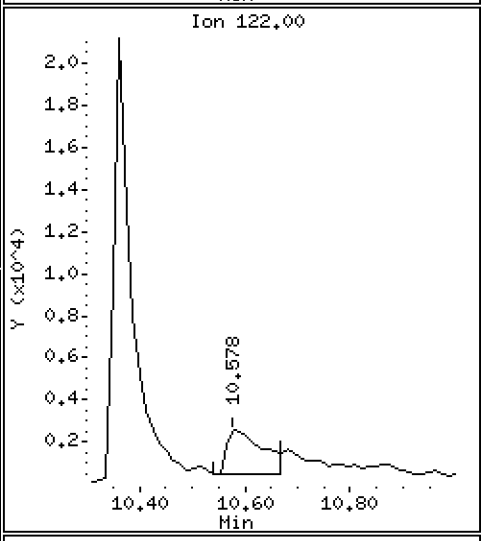
24 Benzoic acid

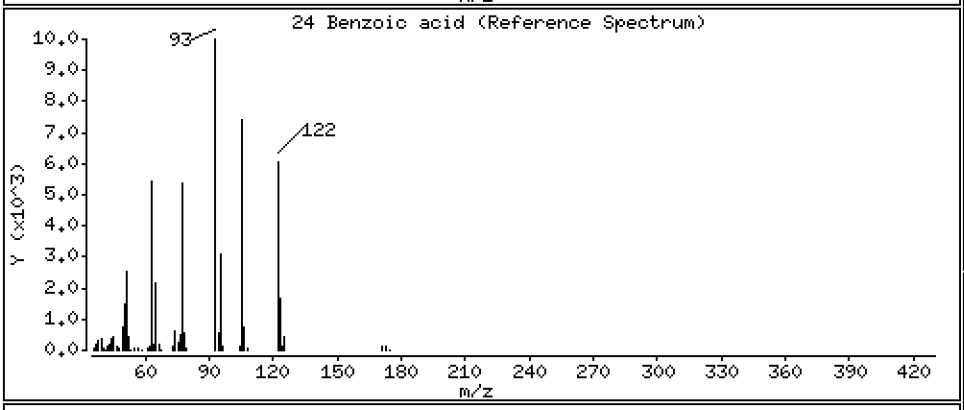
Concentration: 0.6590 ug/mL

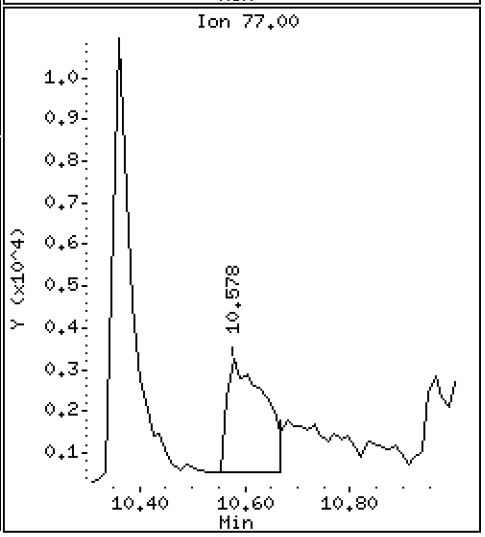


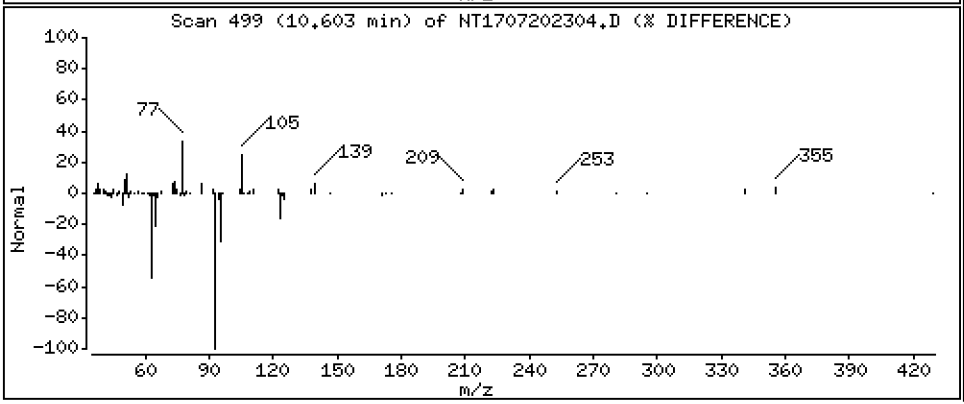












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

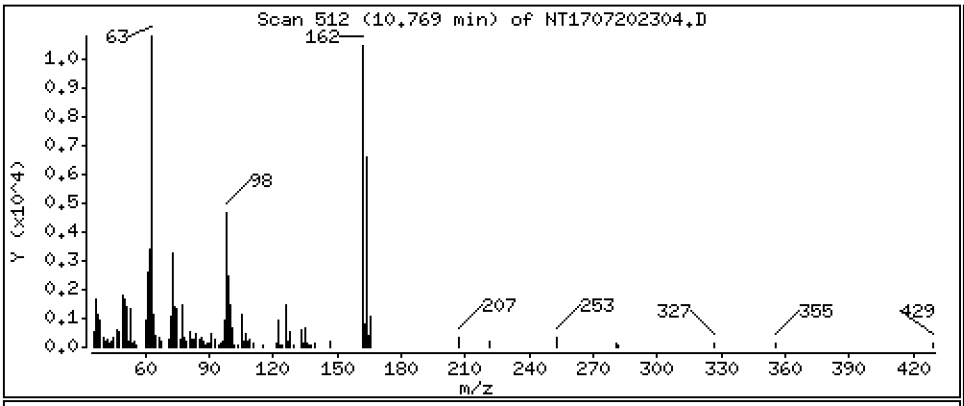
Operator: JGR

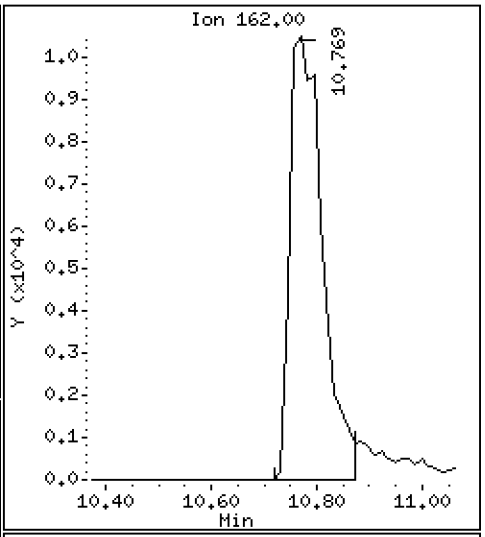
Column phase: ZB-5msi

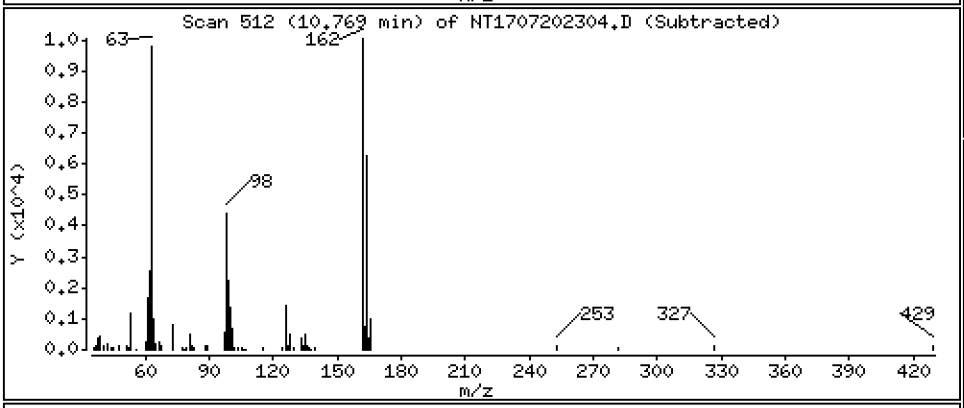
Column diameter: 0.25

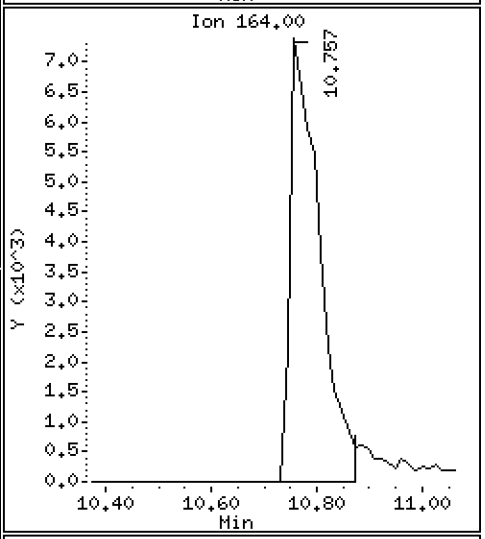
25 2,4-Dichlorophenol

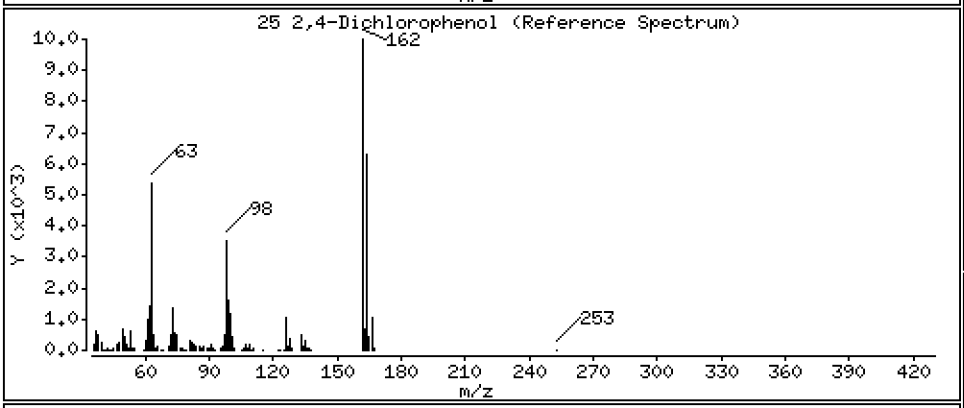
Concentration: 0.8192 ug/mL

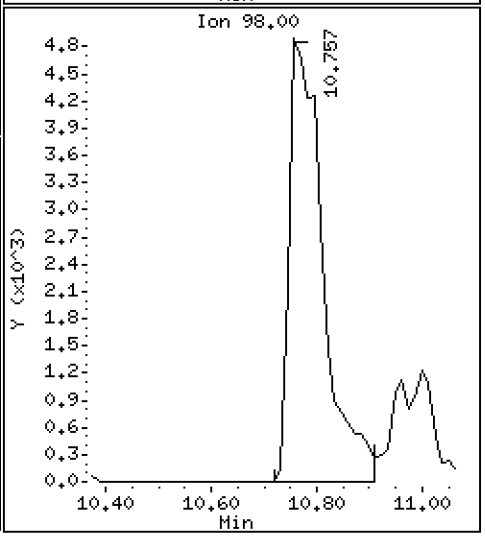


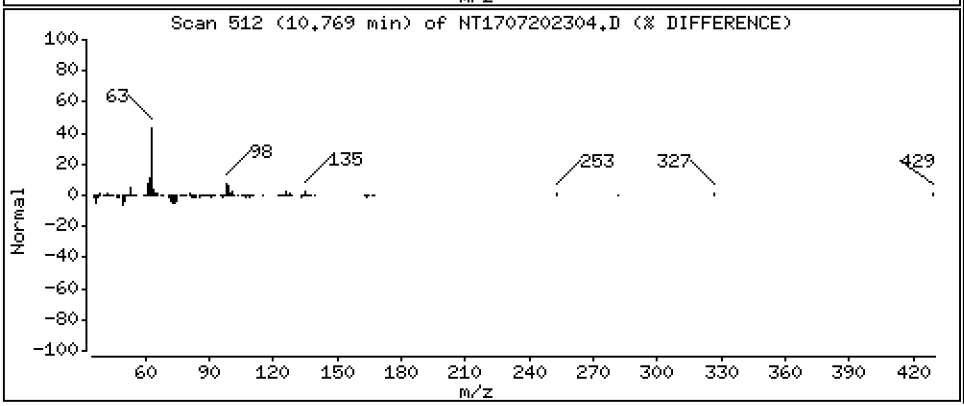












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

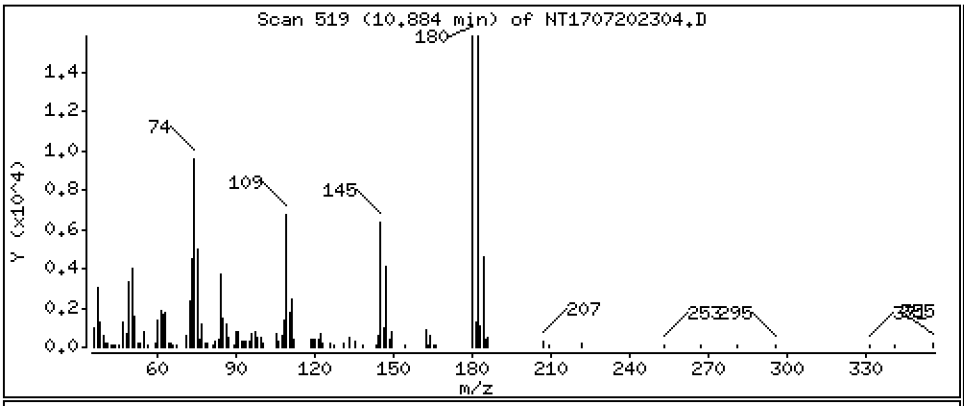
Operator: JGR

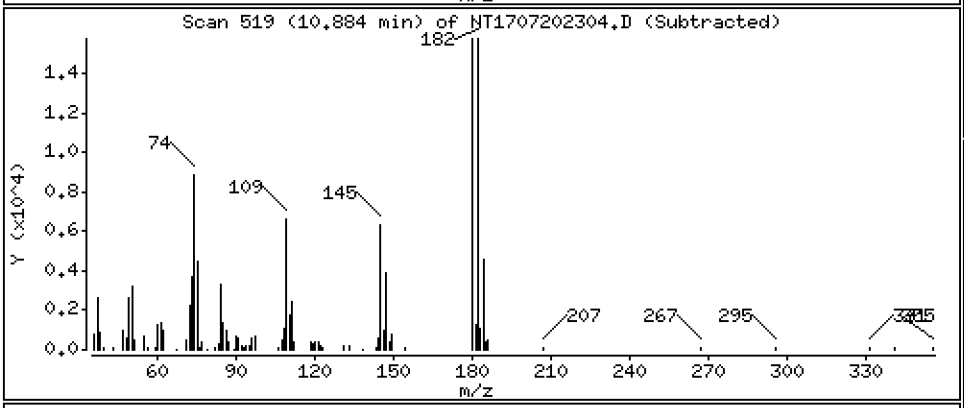
Column phase: ZB-5msi

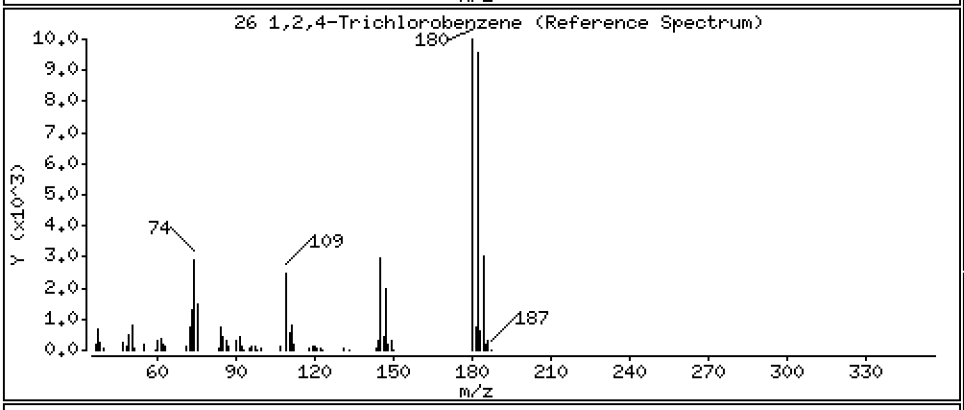
Column diameter: 0.25

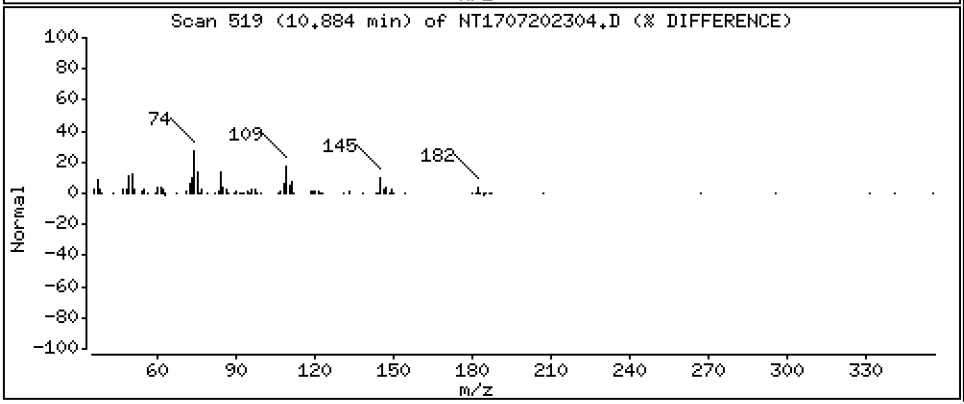
26 1,2,4-Trichlorobenzene

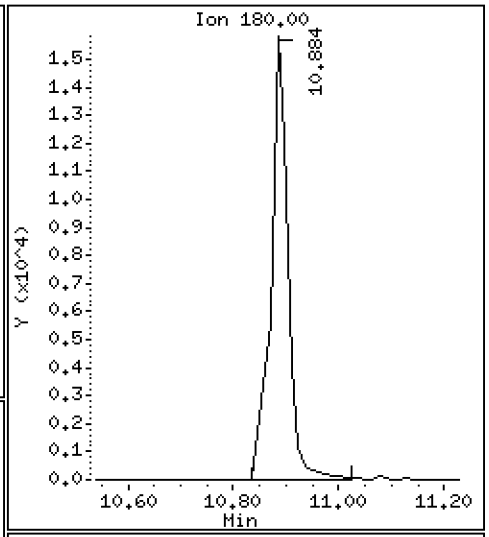
Concentration: 0.5229 ug/mL

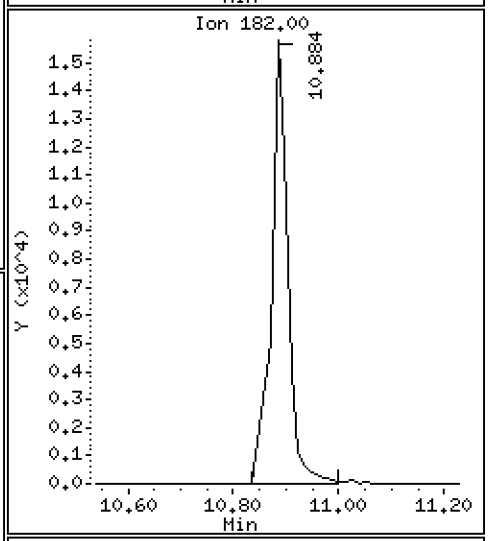


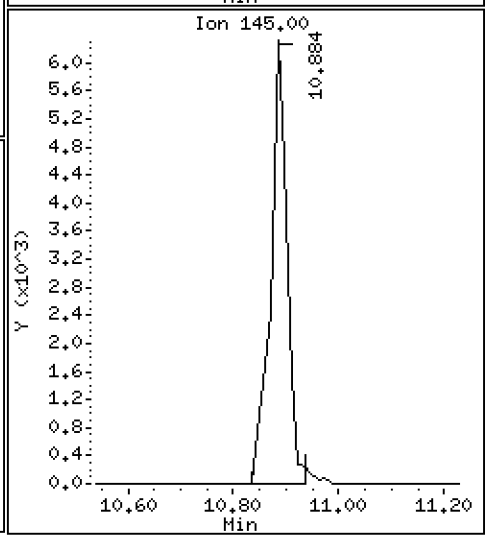












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

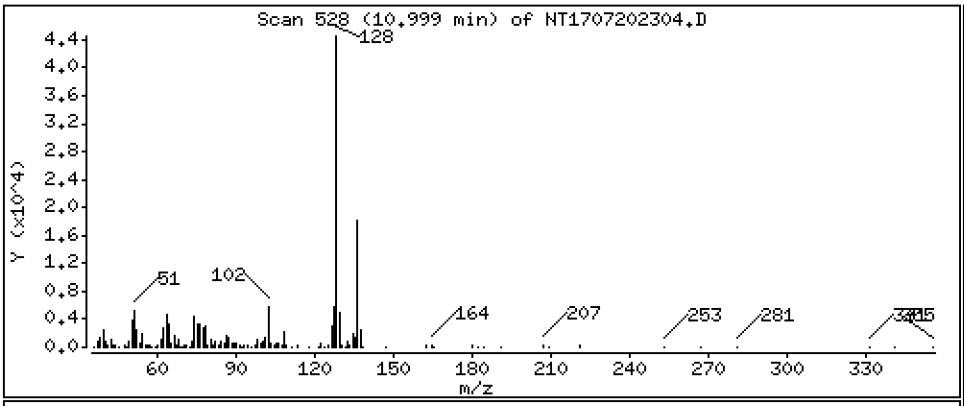
Operator: JGR

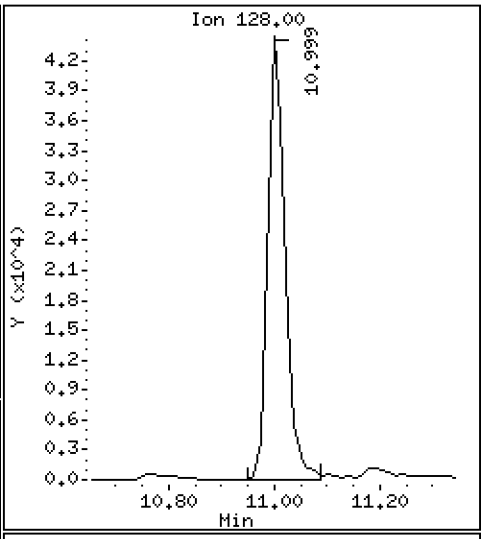
Column phase: ZB-5msi

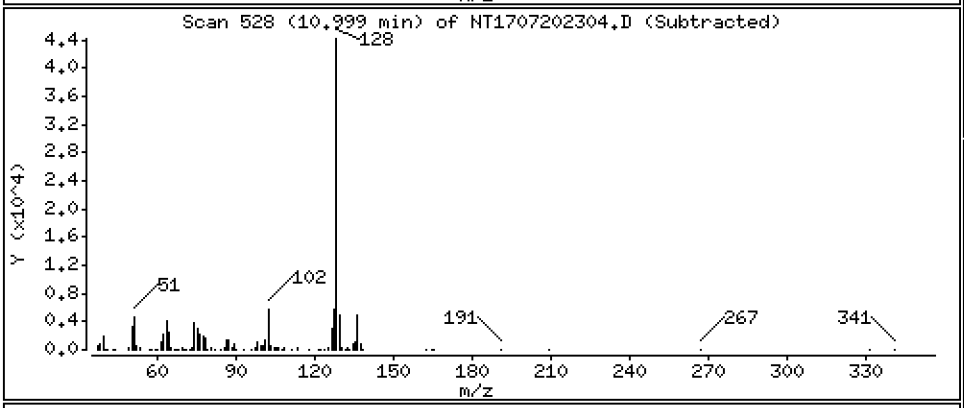
Column diameter: 0.25

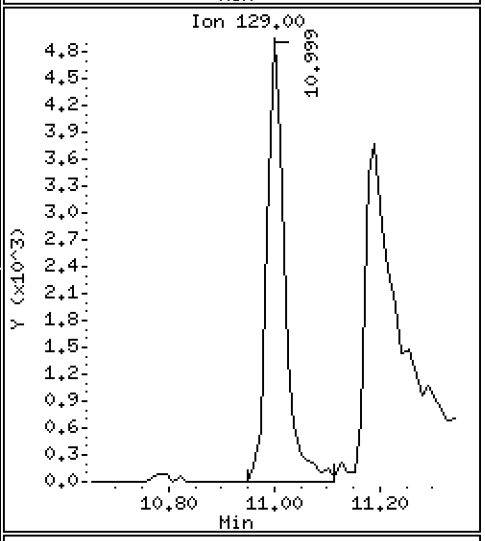
28 Naphthalene

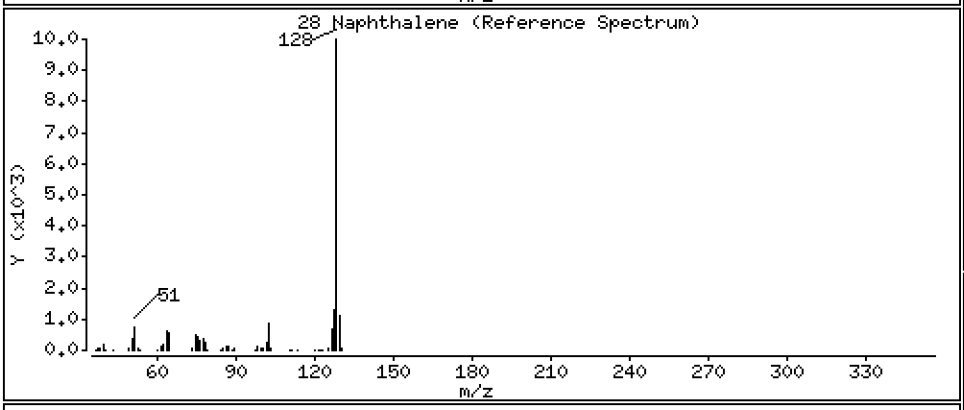
Concentration: 0.4647 ug/mL

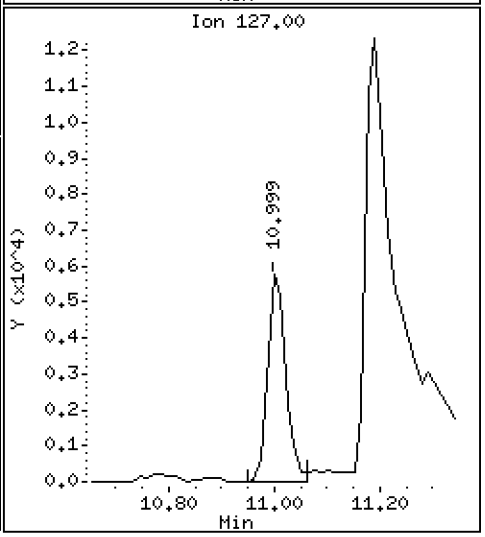


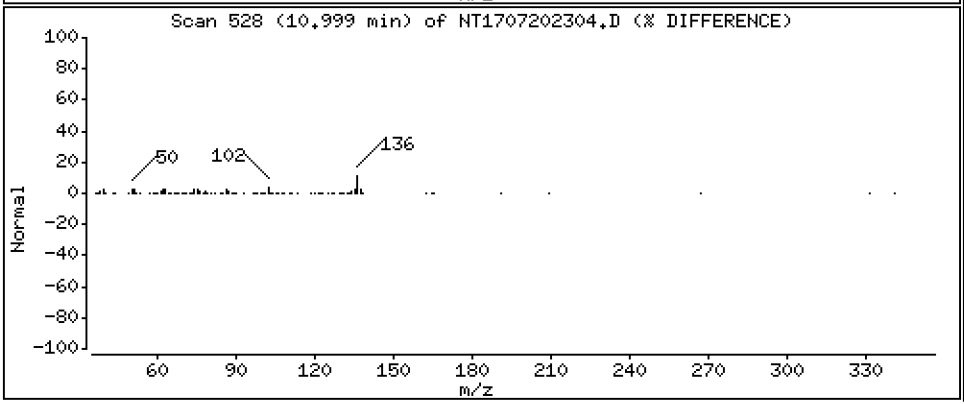












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

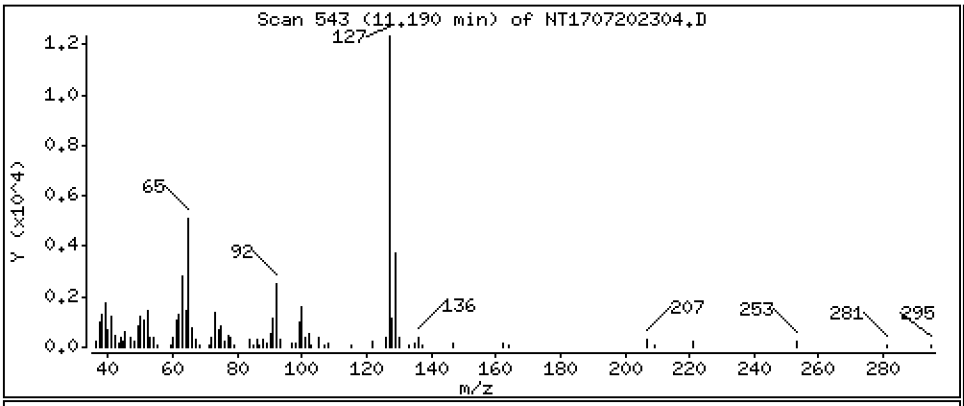
Operator: JGR

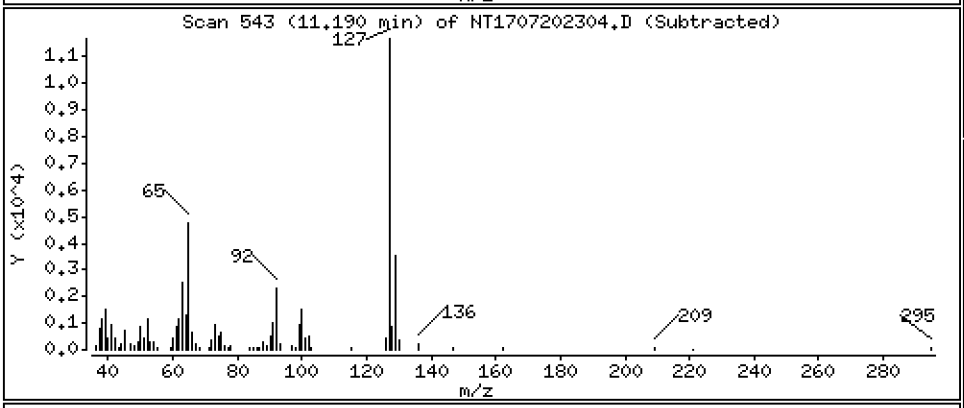
Column phase: ZB-5msi

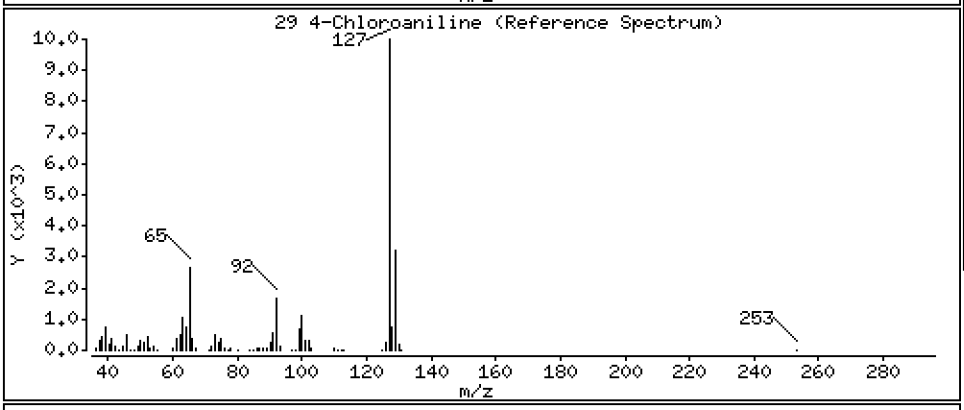
Column diameter: 0.25

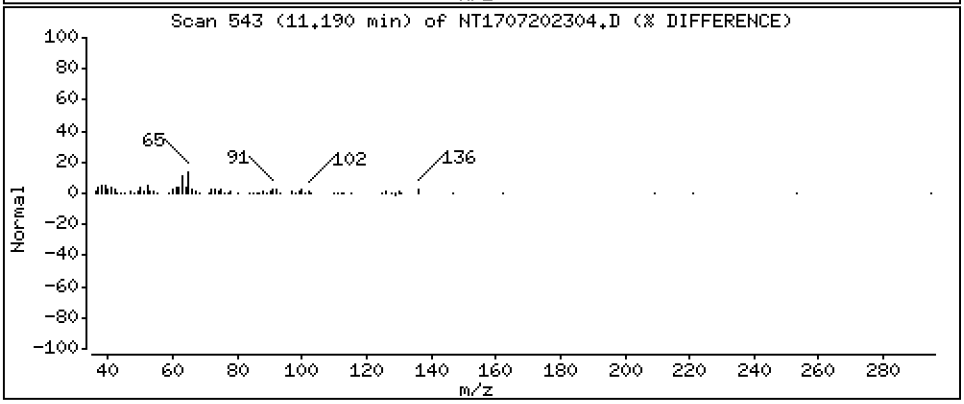
29 4-Chloroaniline

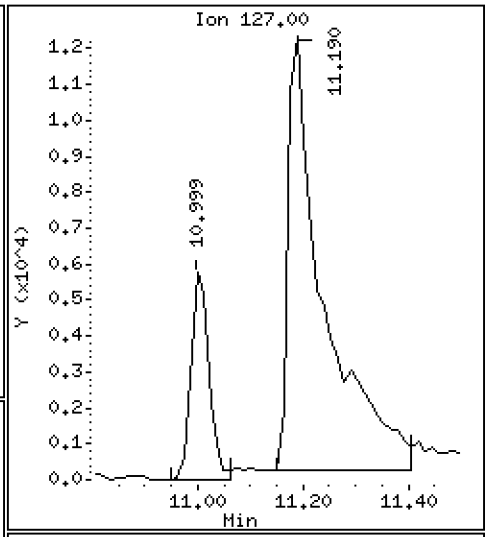
Concentration: 0.6096 ug/mL

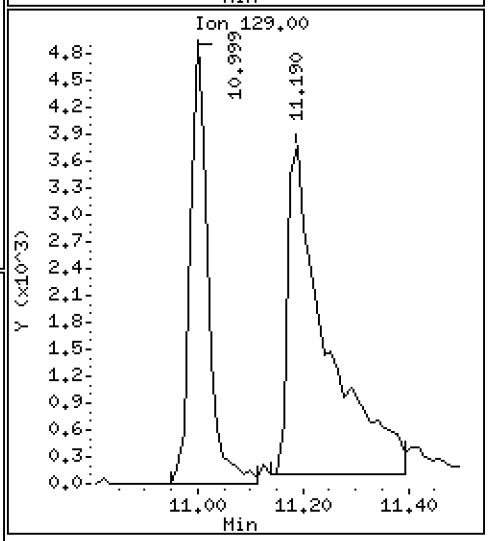












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

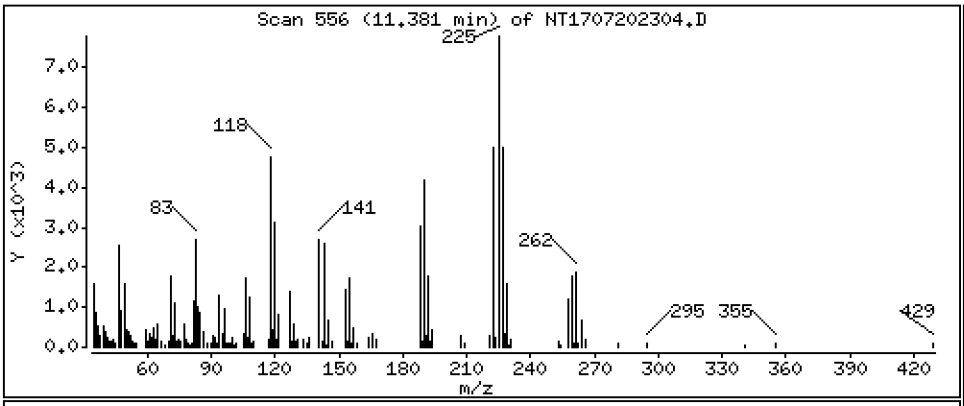
Operator: JGR

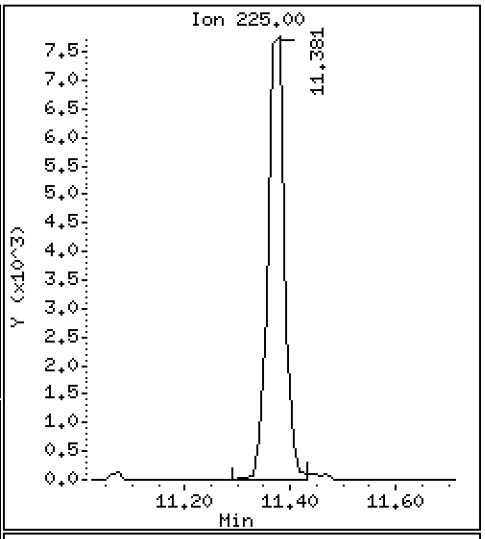
Column phase: ZB-5msi

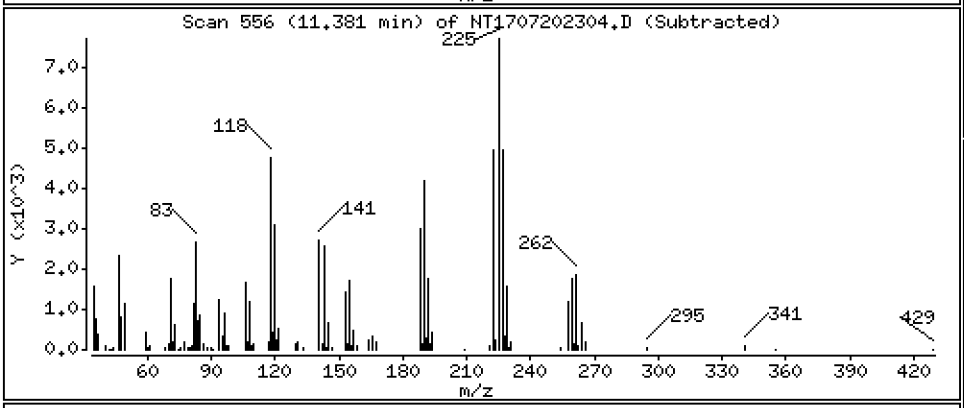
Column diameter: 0.25

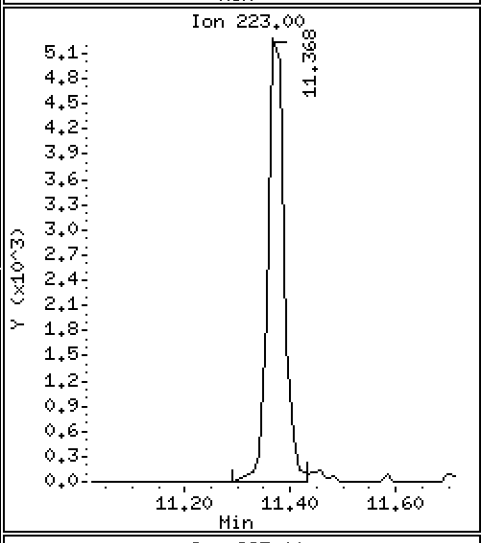
30 Hexachlorobutadiene

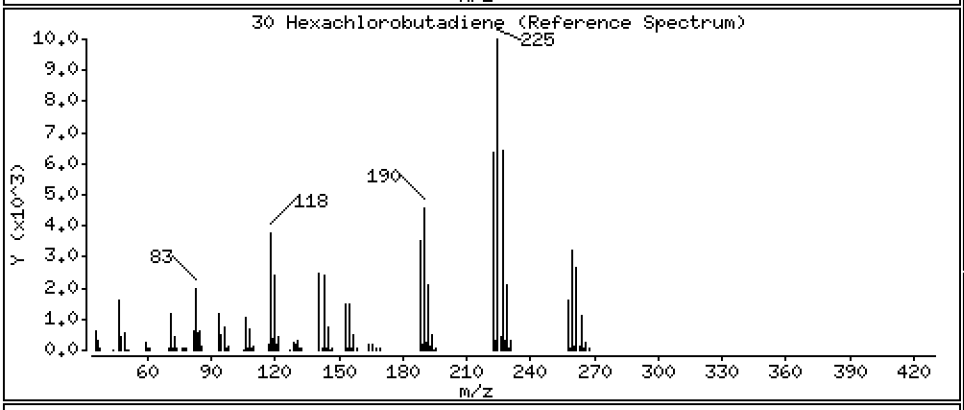
Concentration: 0.6204 ug/mL

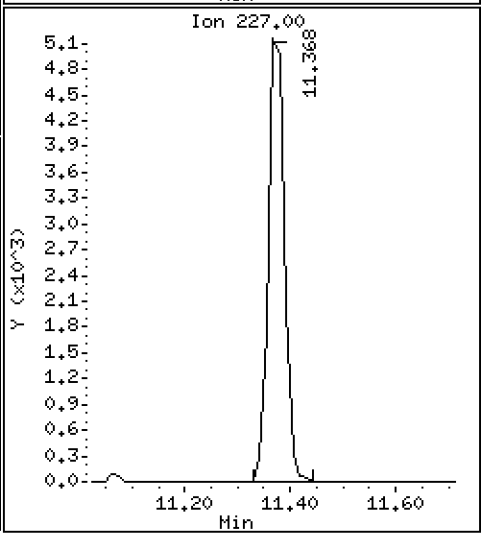


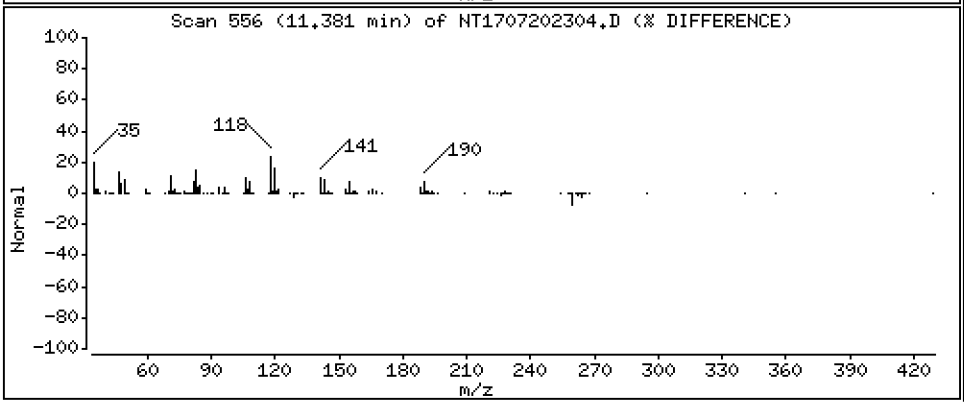












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

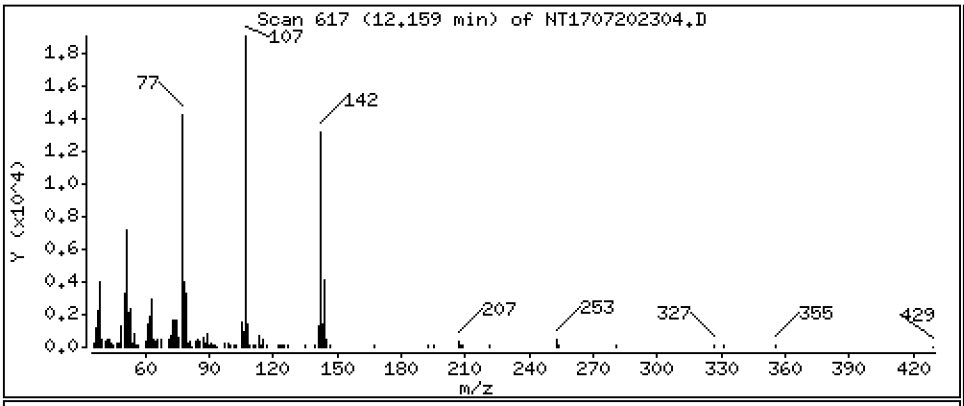
Operator: JGR

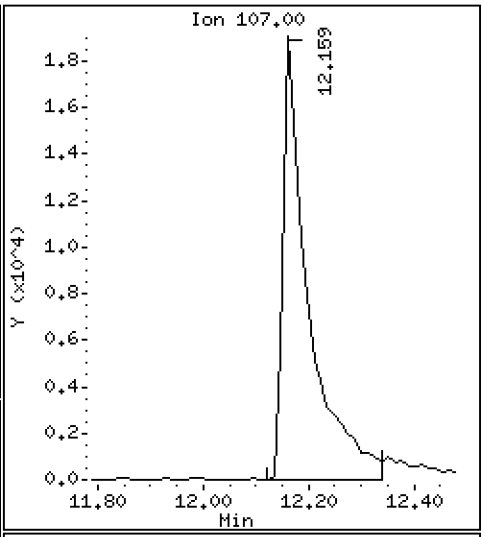
Column phase: ZB-5msi

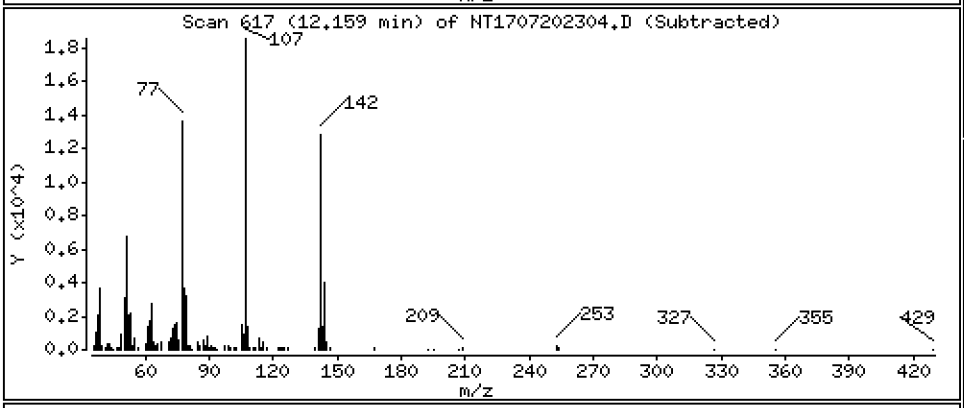
Column diameter: 0.25

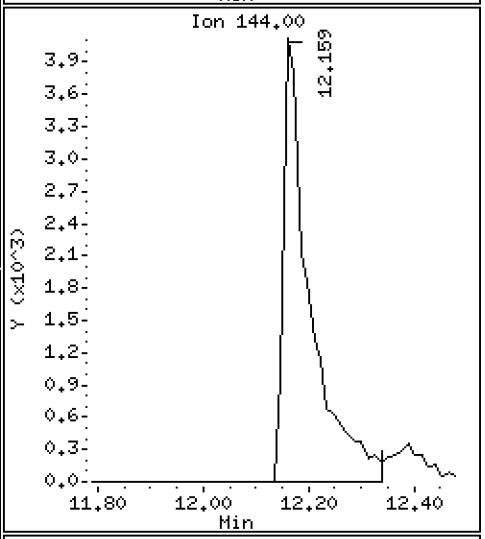
31 4-Chloro-3-methylphenol

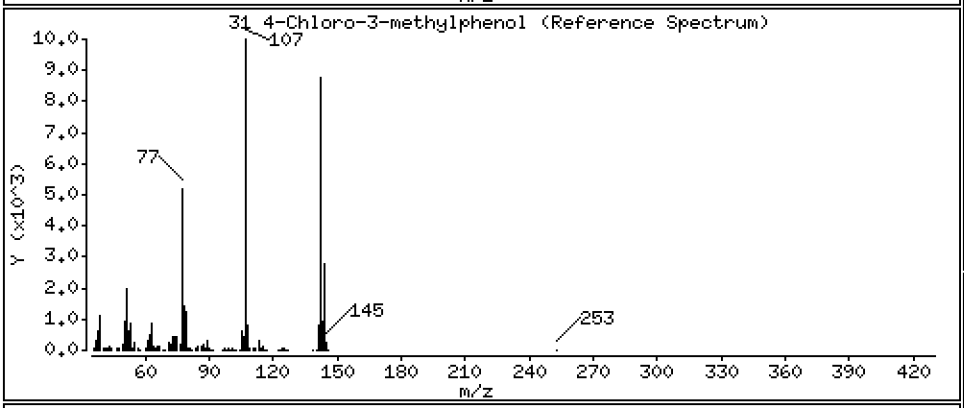
Concentration: 0.8978 ug/mL

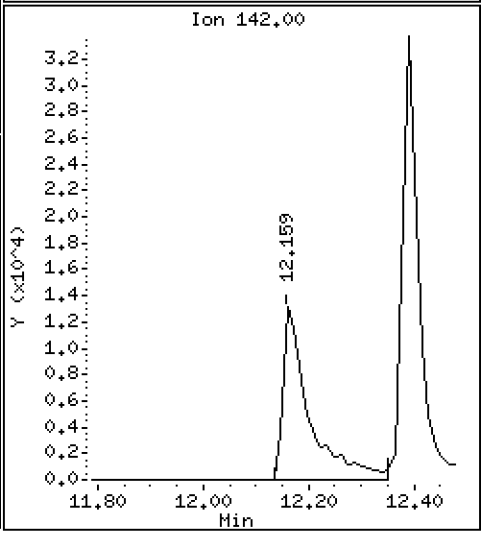


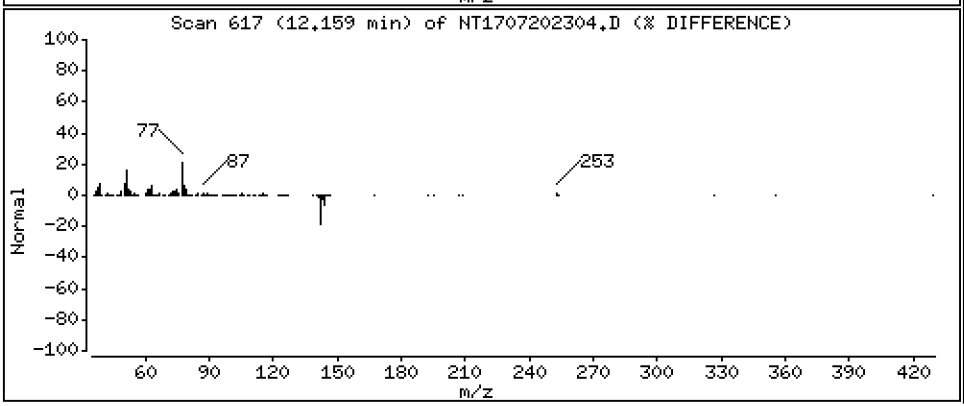












Date : 21-JUL-2023 02:35

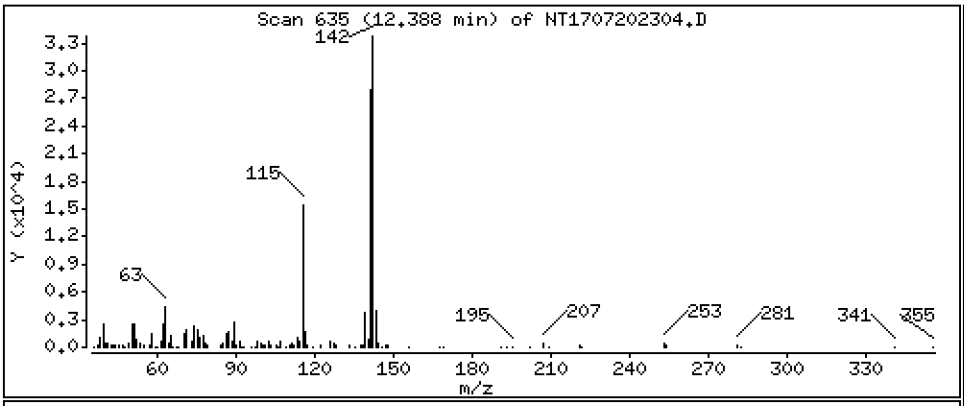
Client ID: Instrument: nt17.i

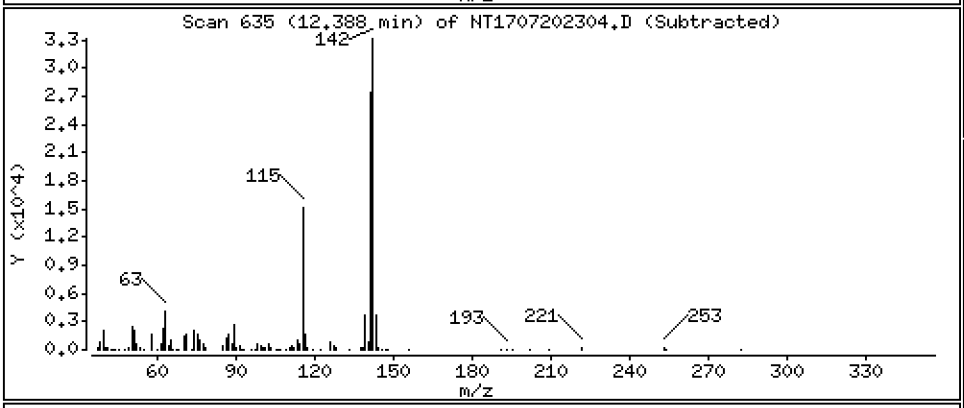
Sample Info: SLG0263-LCV1

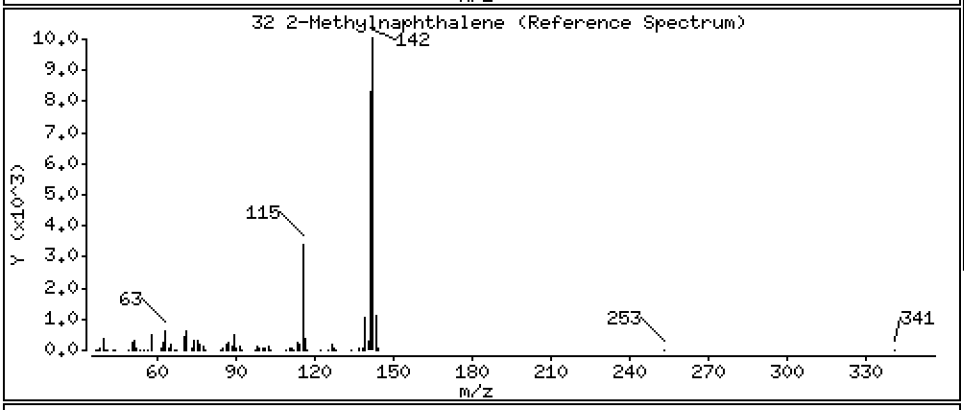
Operator: JGR

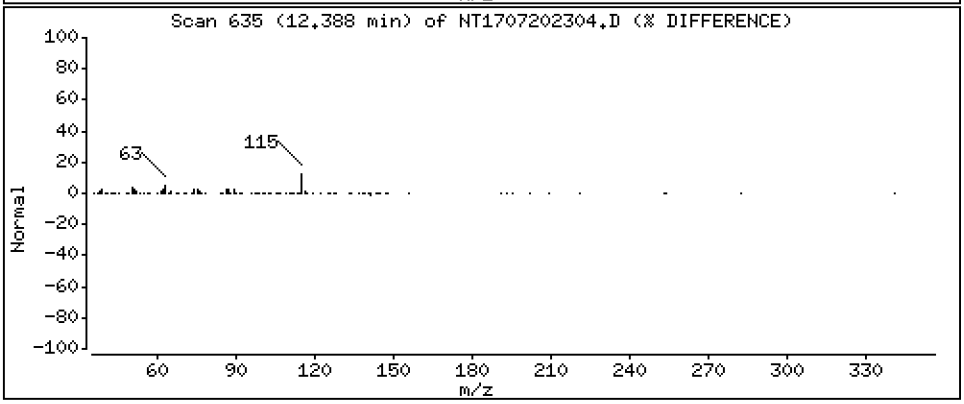
Column phase: ZB-5msi Column diameter: 0.25

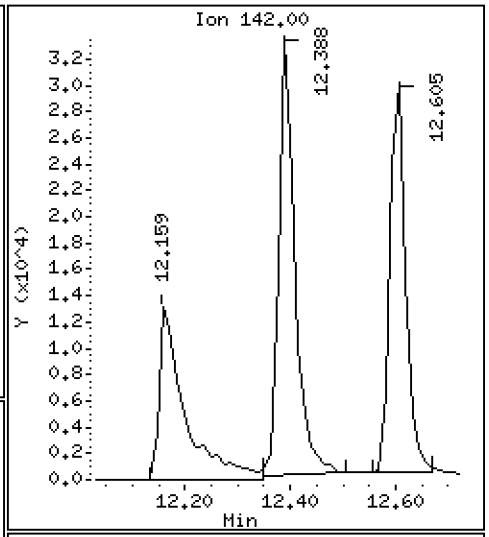
32 2-Methylnaphthalene Concentration: 0.4693 ug/mL

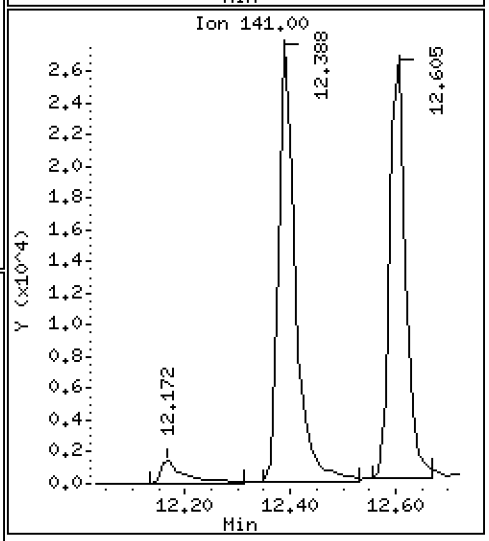












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D

Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

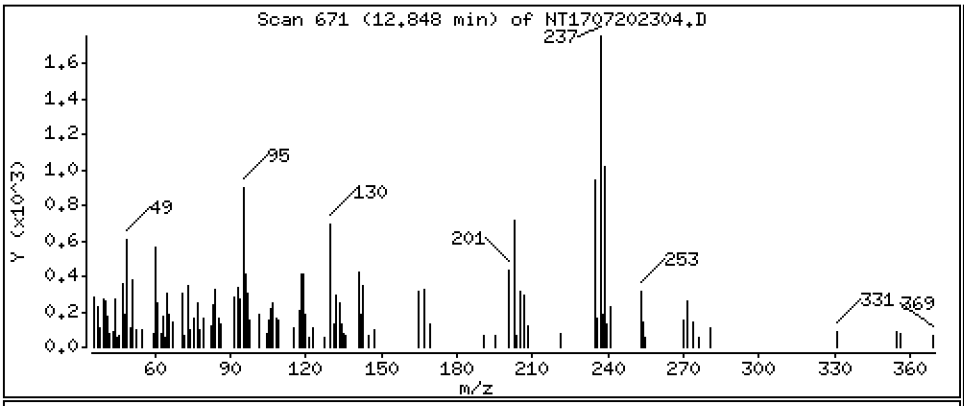
Operator: JGR

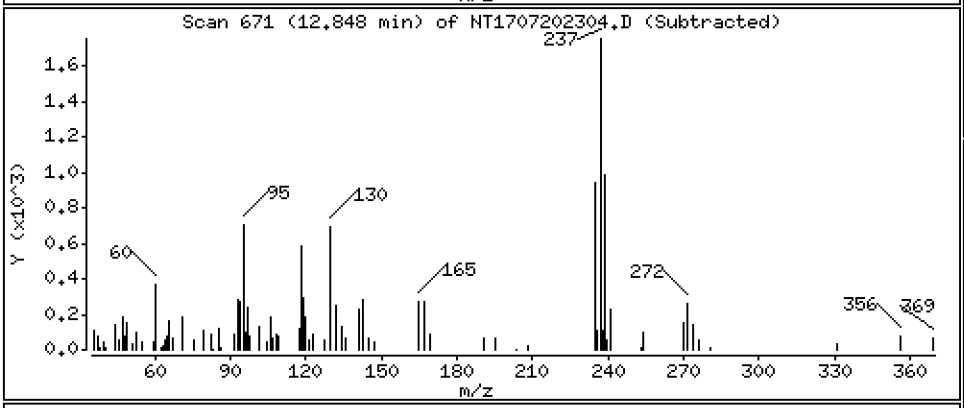
Column phase: ZB-5msi

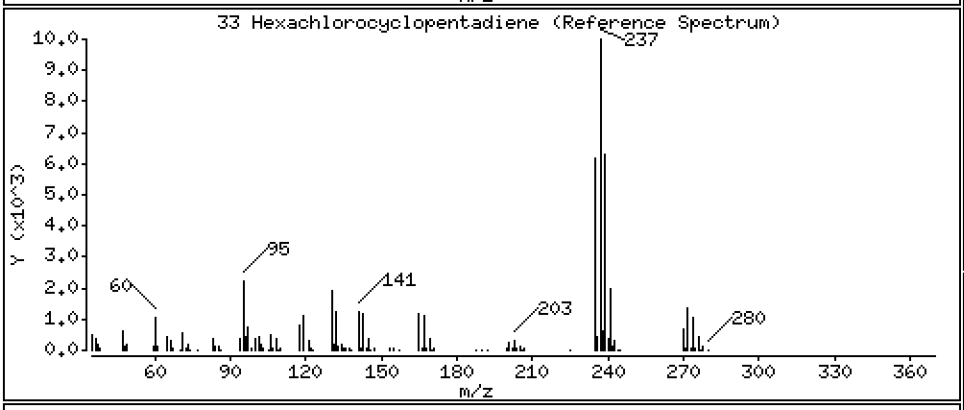
Column diameter: 0.25

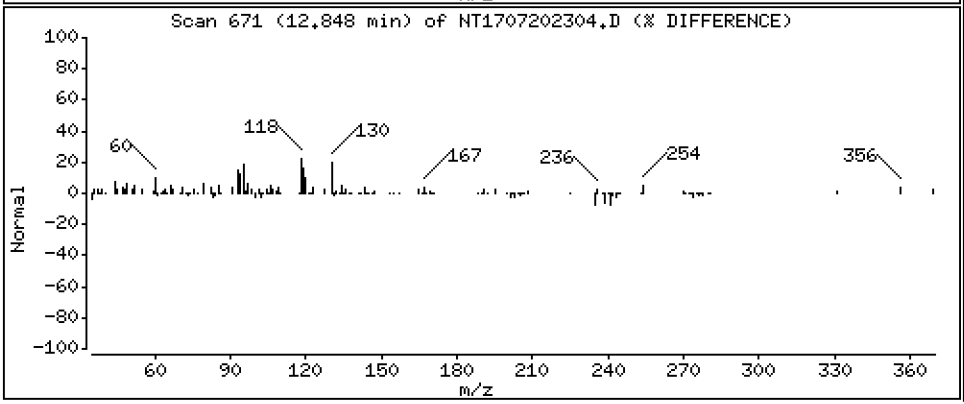
33 Hexachlorocyclopentadiene

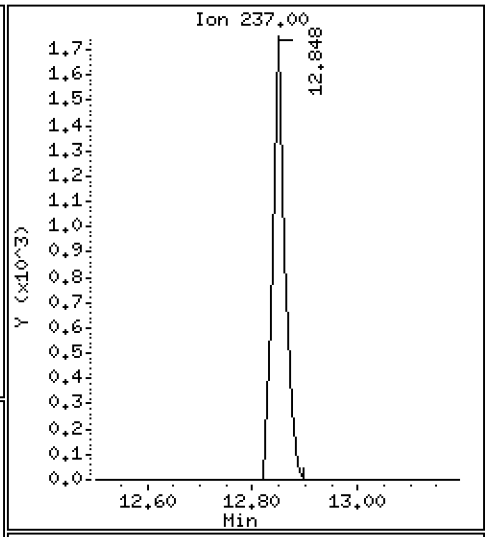
Concentration: 0.1517 ug/mL

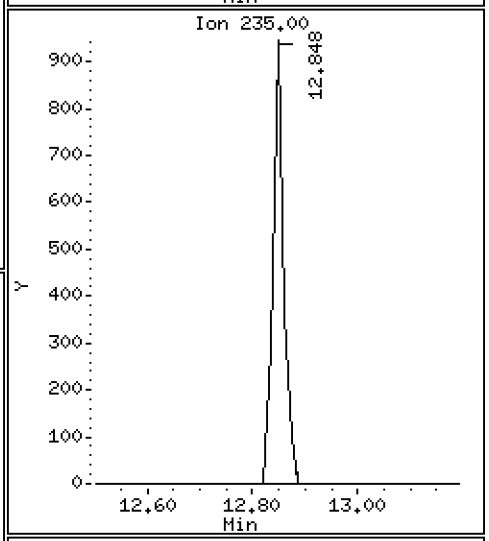


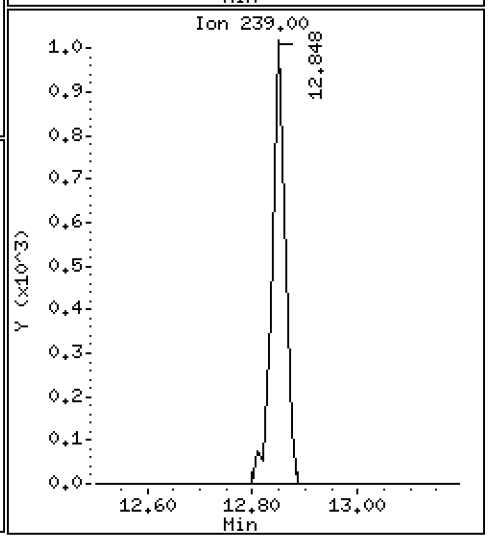












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

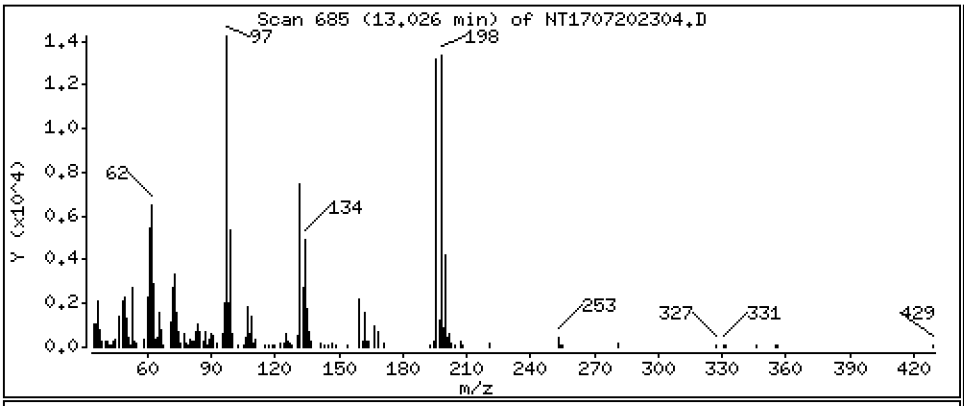
Operator: JGR

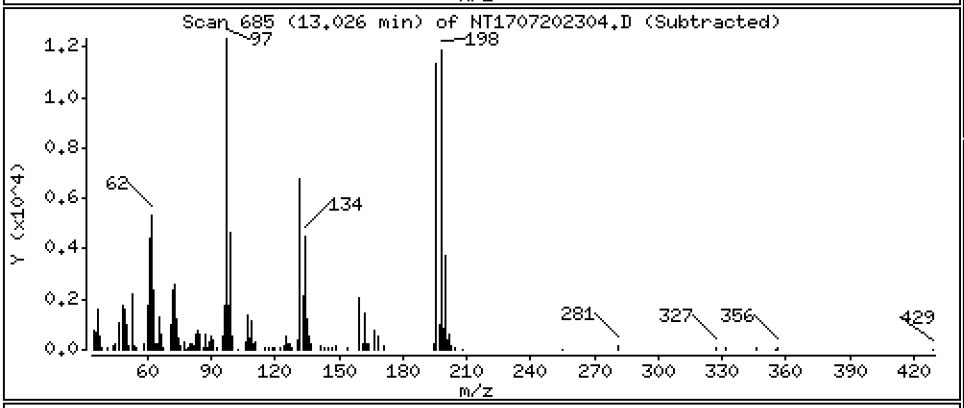
Column phase: ZB-5msi

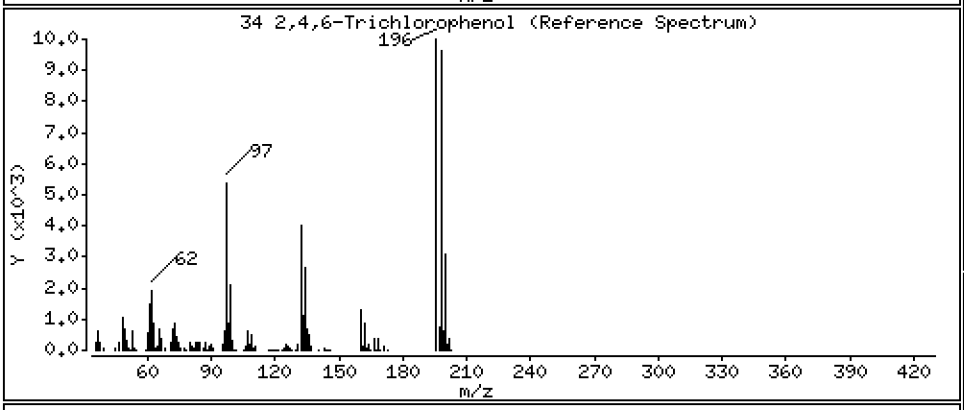
Column diameter: 0.25

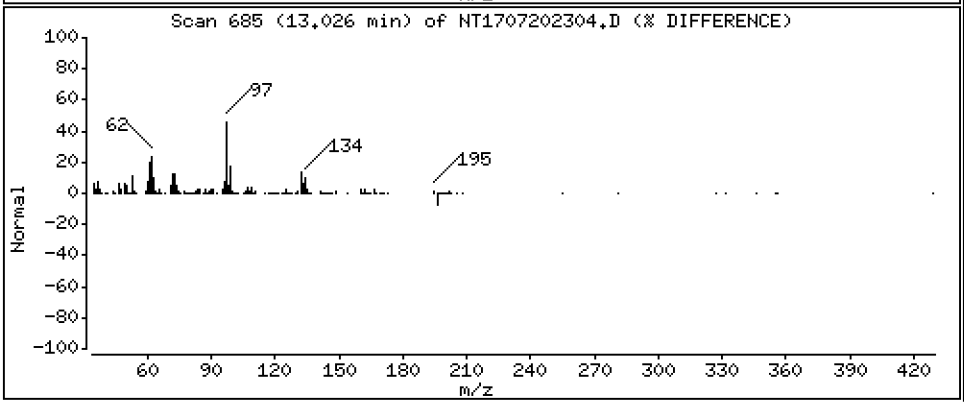
34 2,4,6-Trichlorophenol

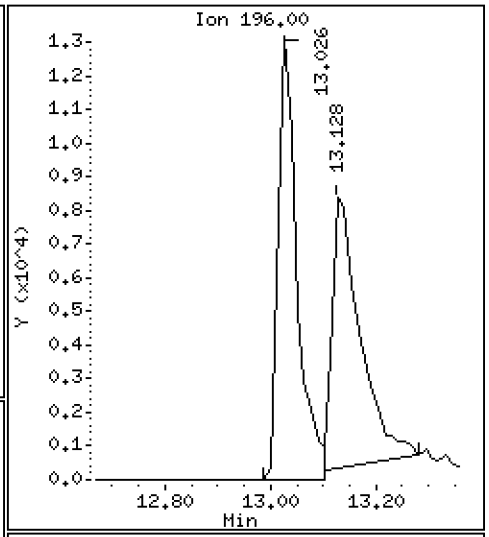
Concentration: 0.7801 ug/mL

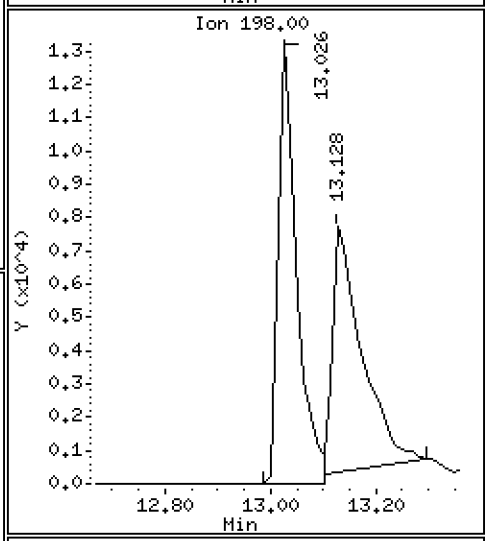


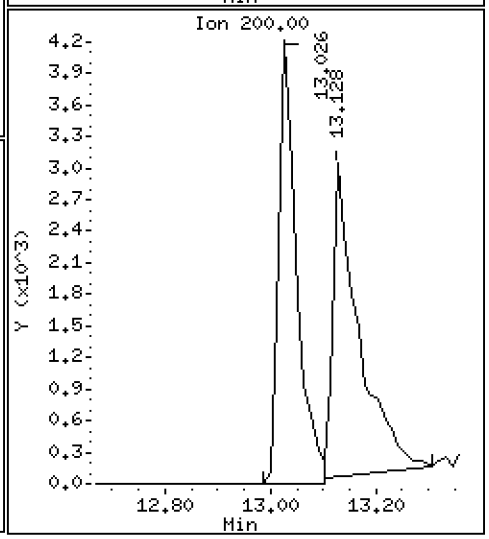












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

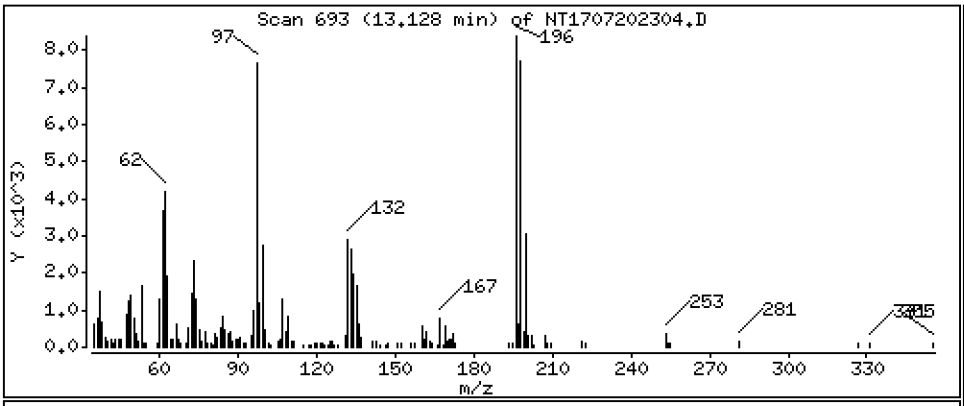
Operator: JGR

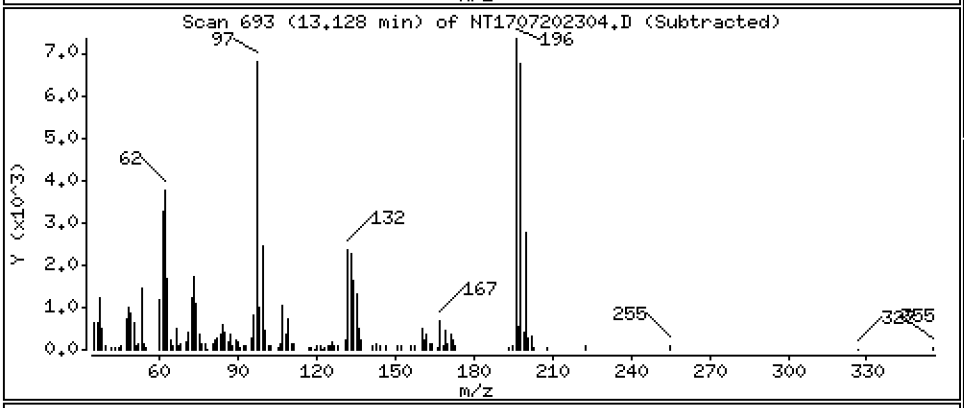
Column phase: ZB-5msi

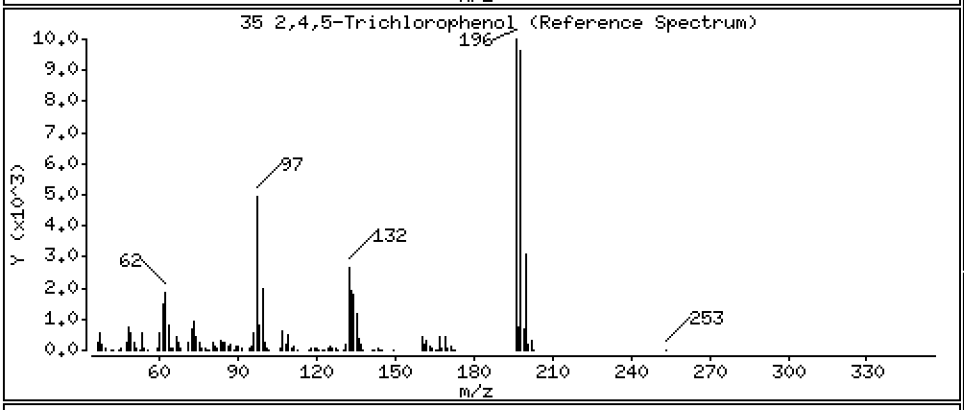
Column diameter: 0.25

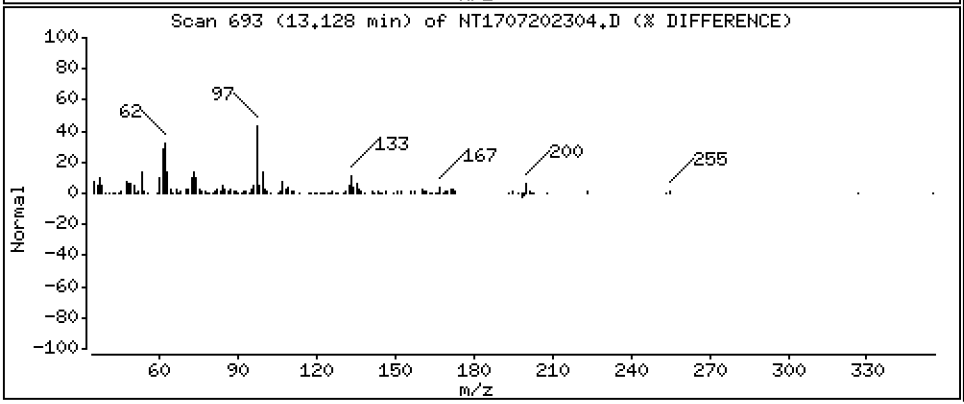
35 2,4,5-Trichlorophenol

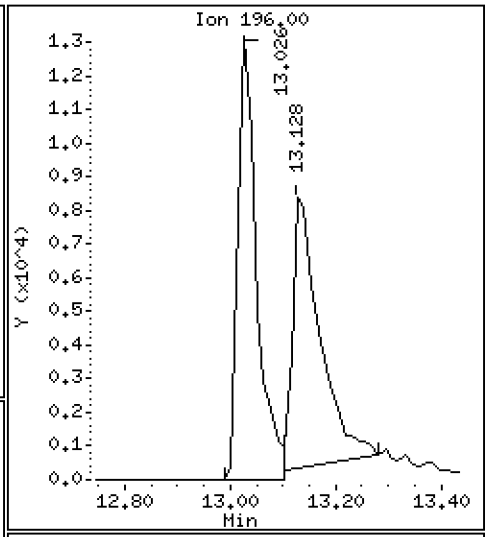
Concentration: 0.6867 ug/mL

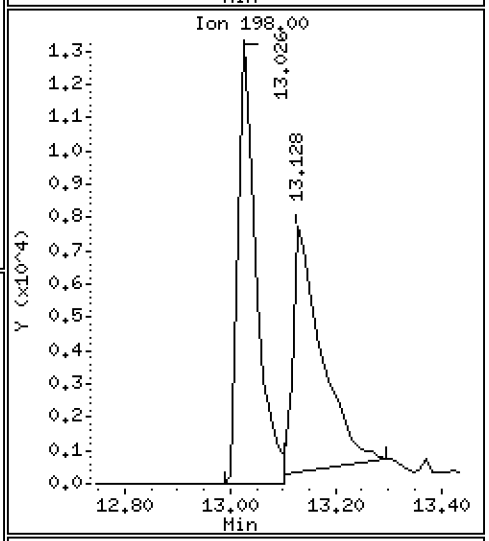


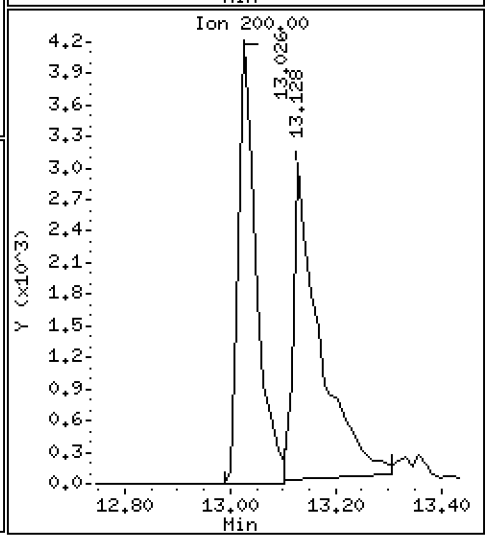












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

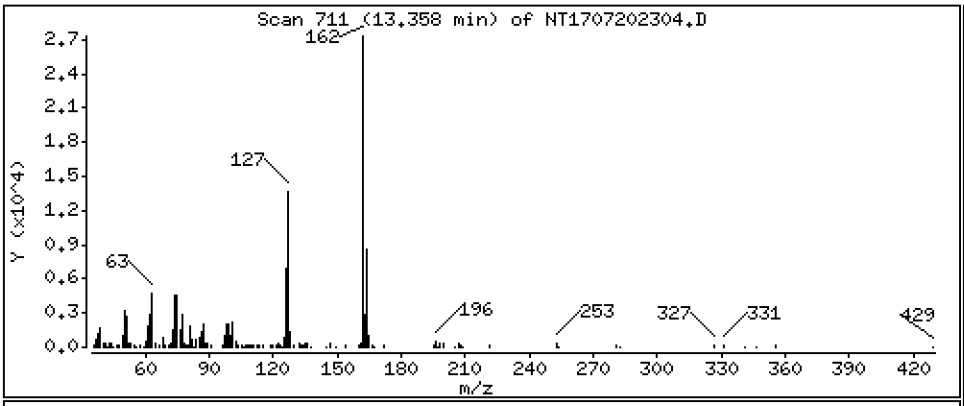
Operator: JGR

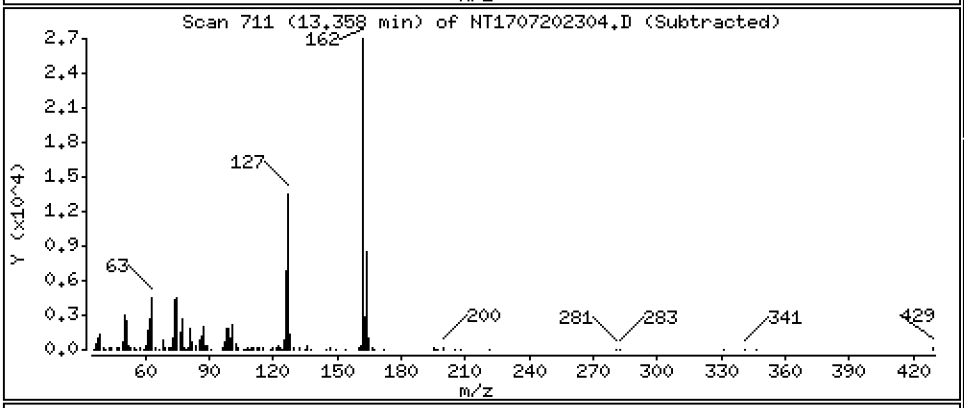
Column phase: ZB-5msi

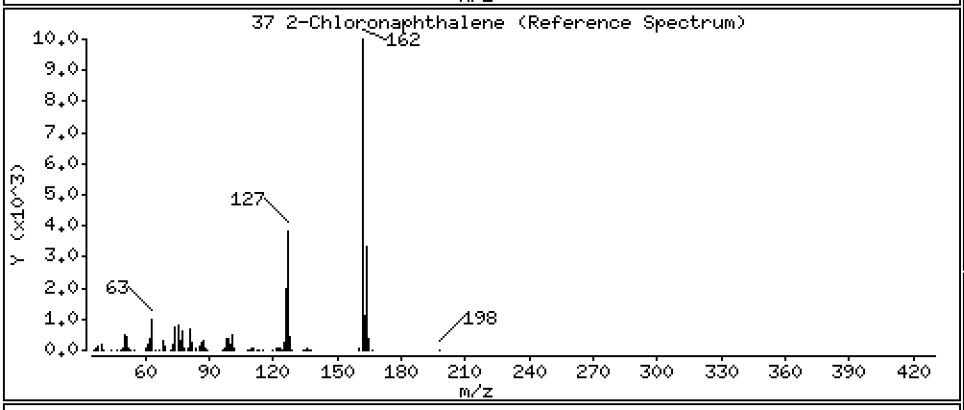
Column diameter: 0.25

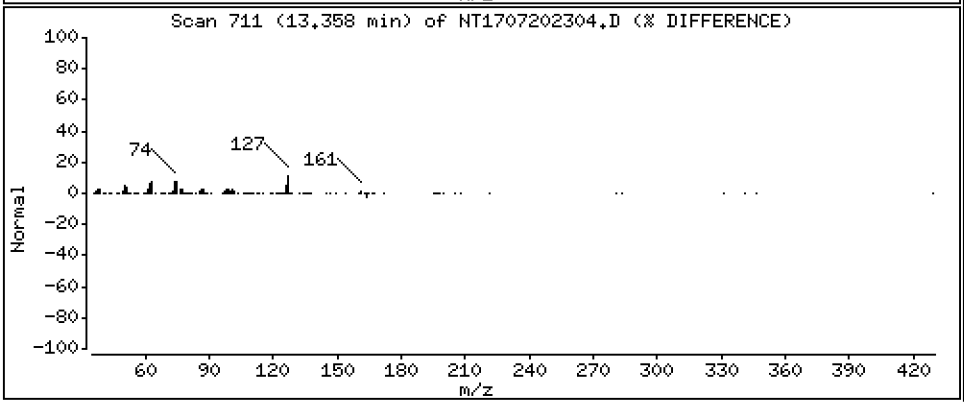
37 2-Chloronaphthalene

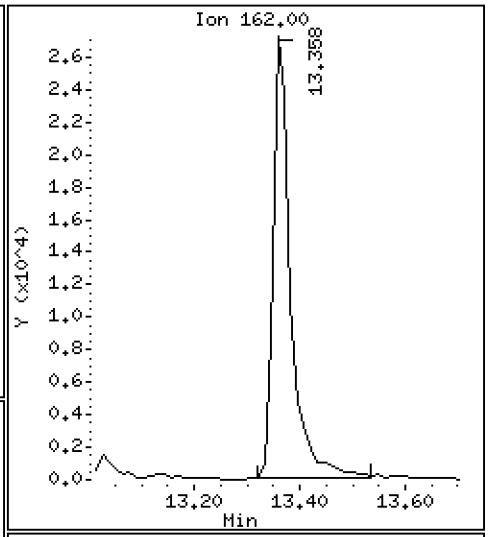
Concentration: 0.4681 ug/mL

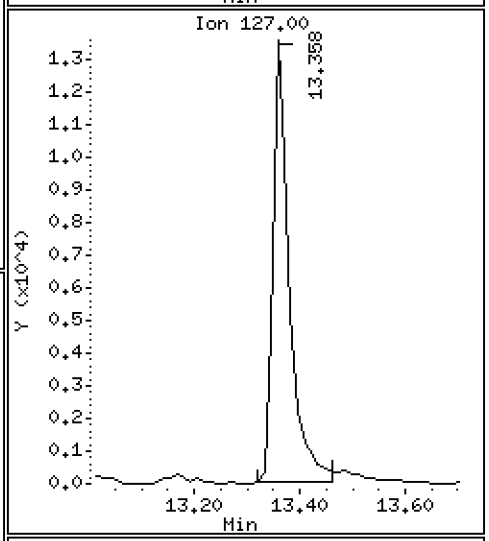


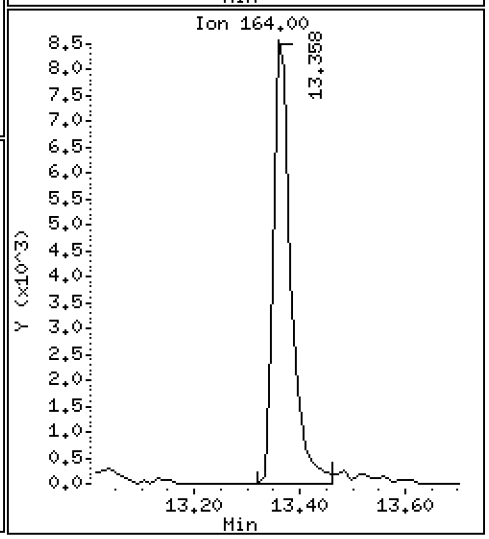












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

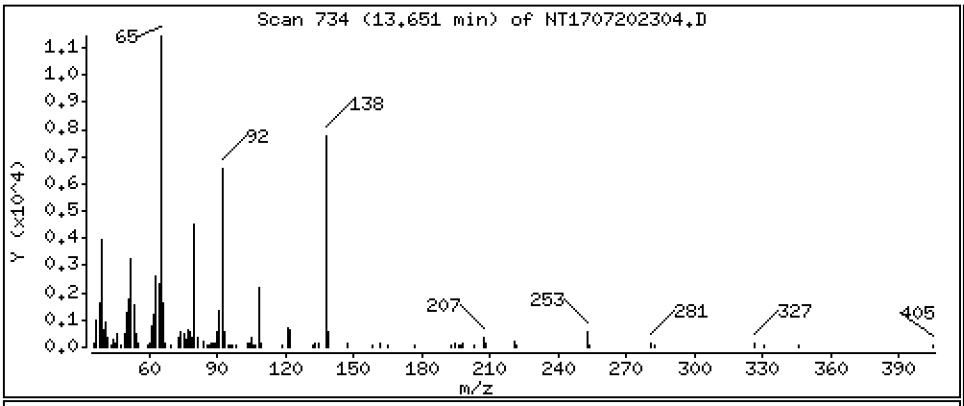
Operator: JGR

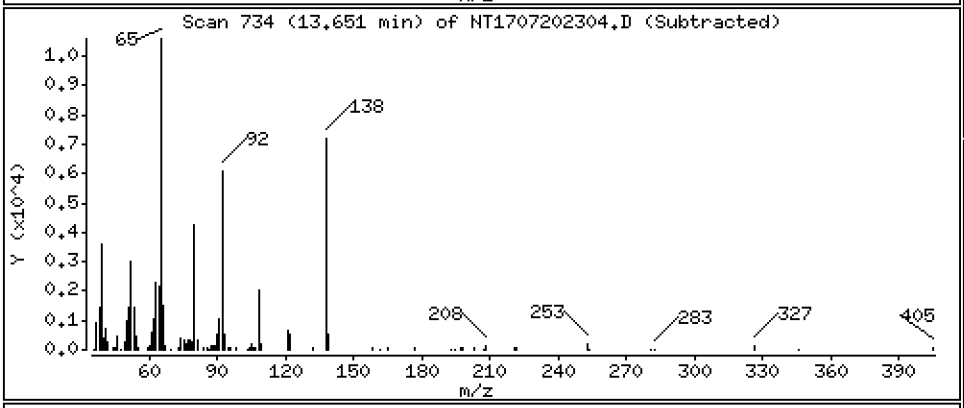
Column phase: ZB-5msi

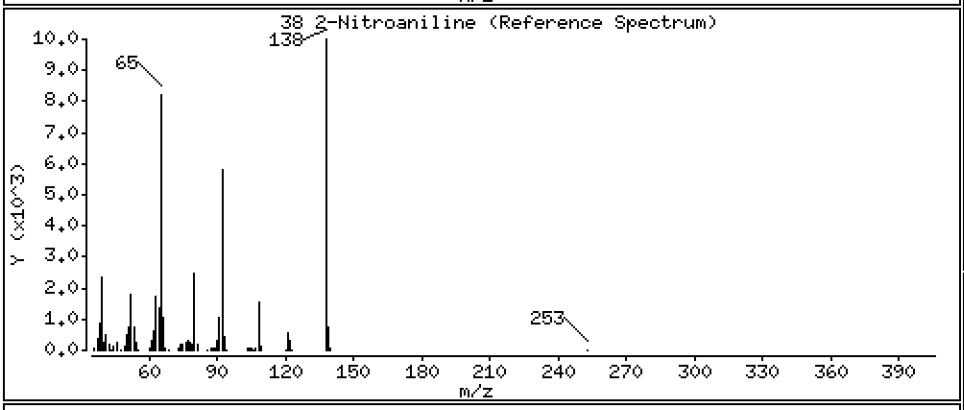
Column diameter: 0.25

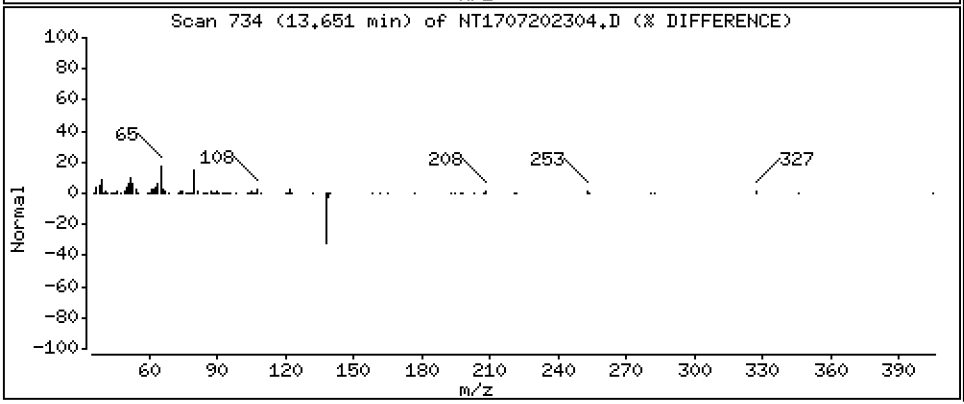
38 2-Nitroaniline

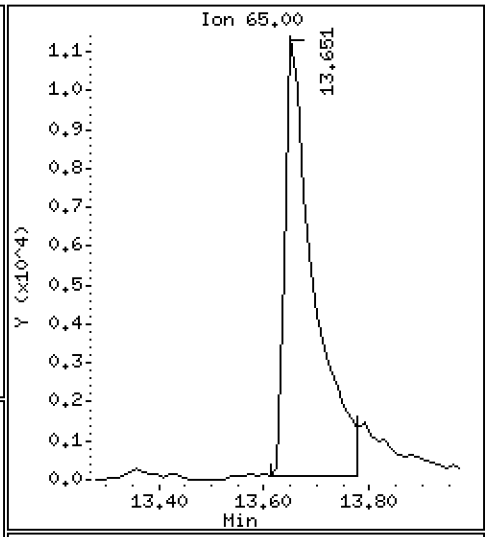
Concentration: 0.7672 ug/mL

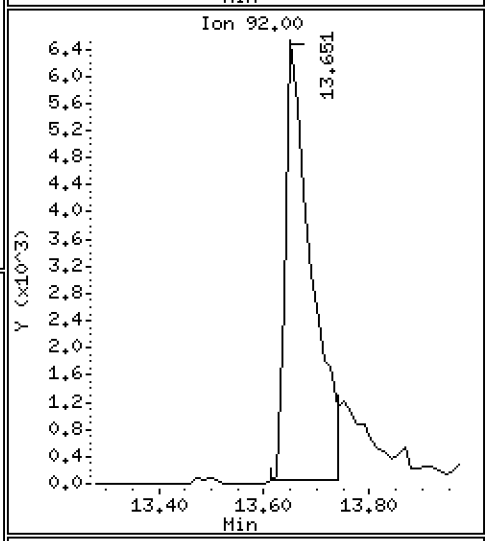


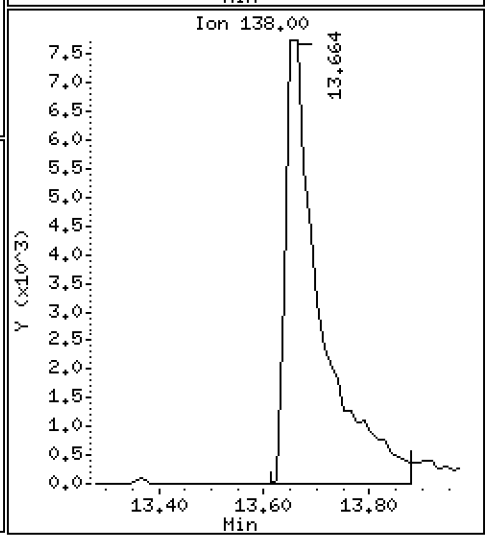












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

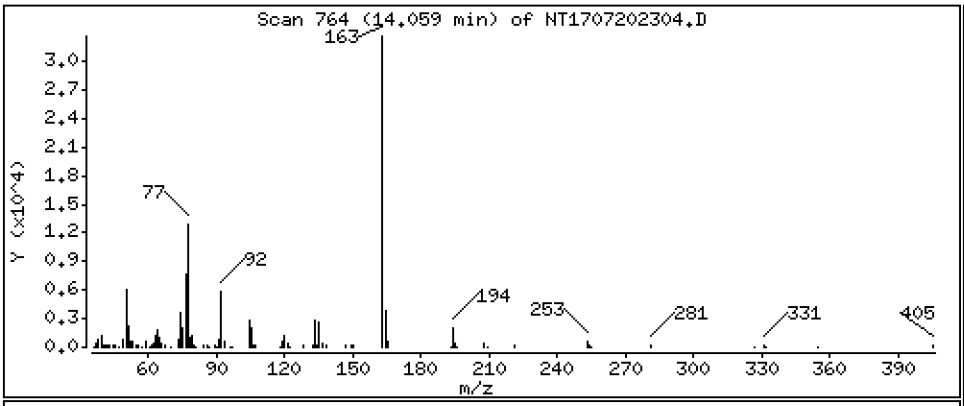
Operator: JGR

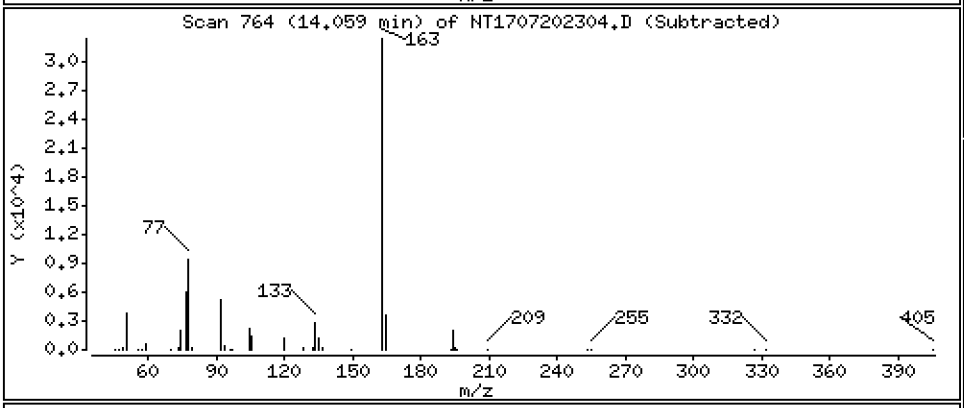
Column phase: ZB-5msi

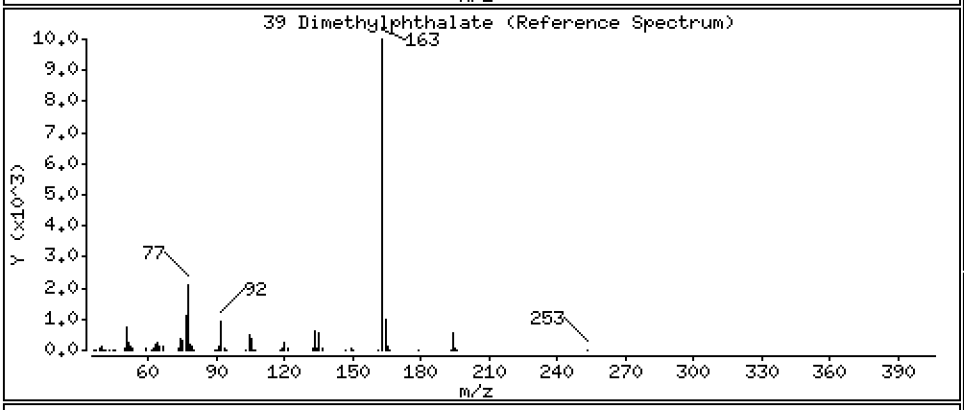
Column diameter: 0.25

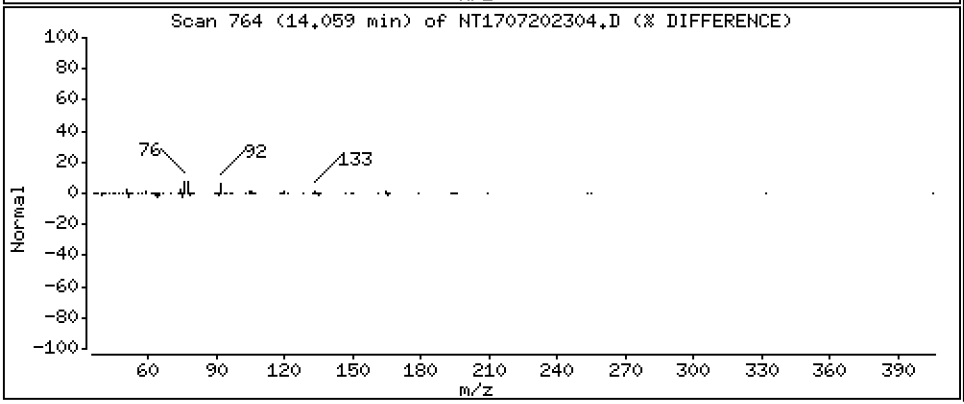
39 Dimethylphthalate

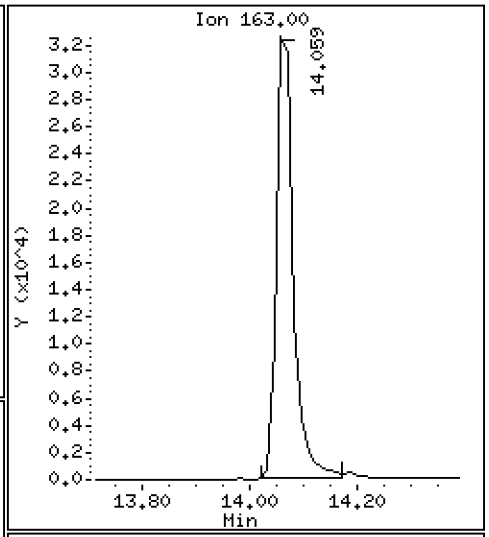
Concentration: 0.5047 ug/mL

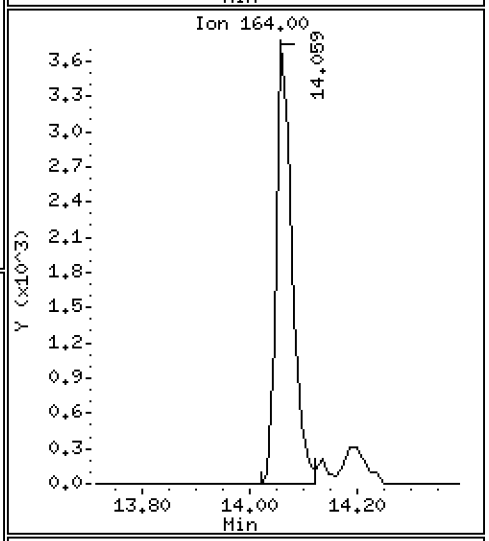


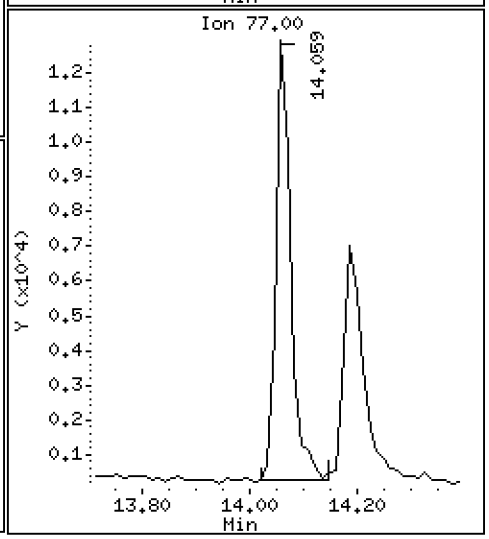












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

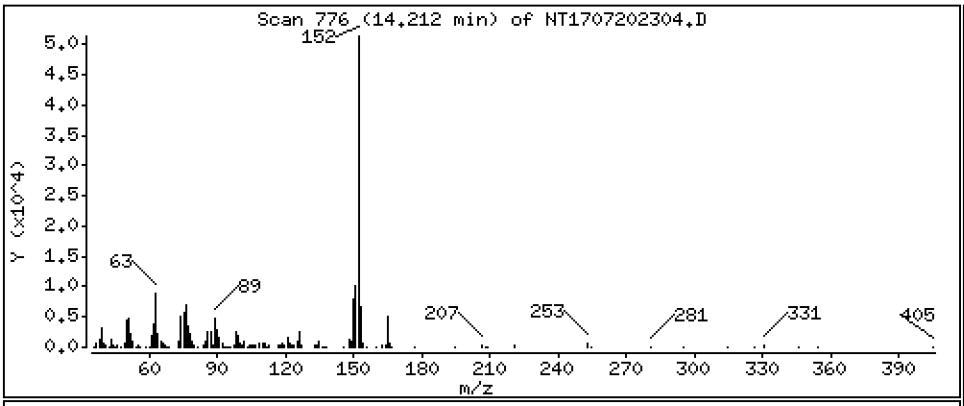
Operator: JGR

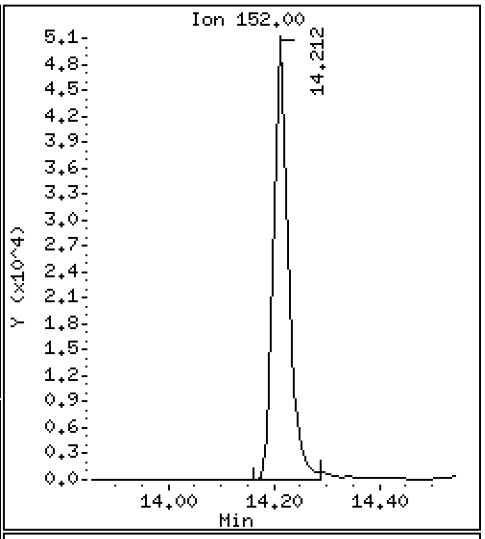
Column phase: ZB-5msi

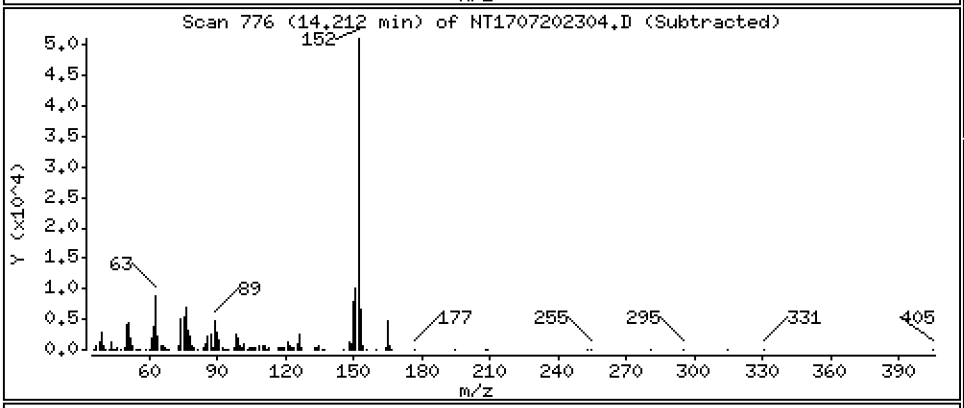
Column diameter: 0.25

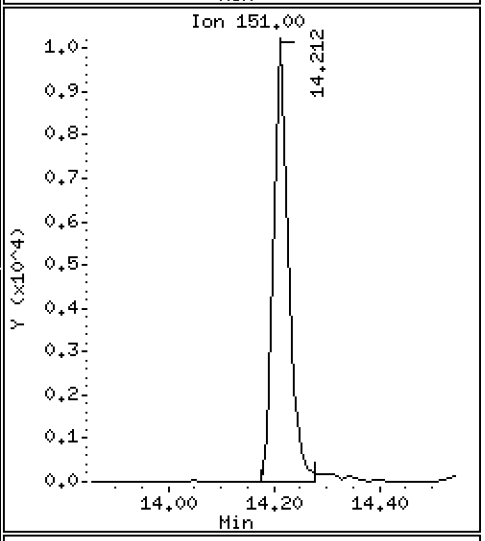
40 Acenaphthylene

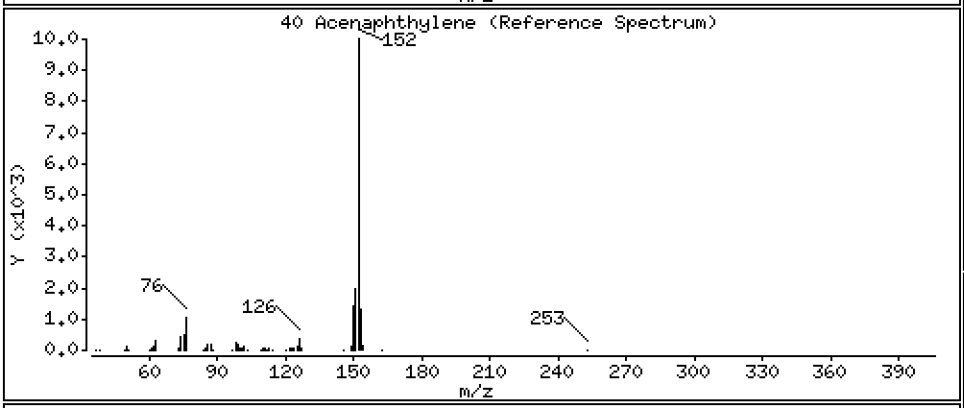
Concentration: 0.4701 ug/mL

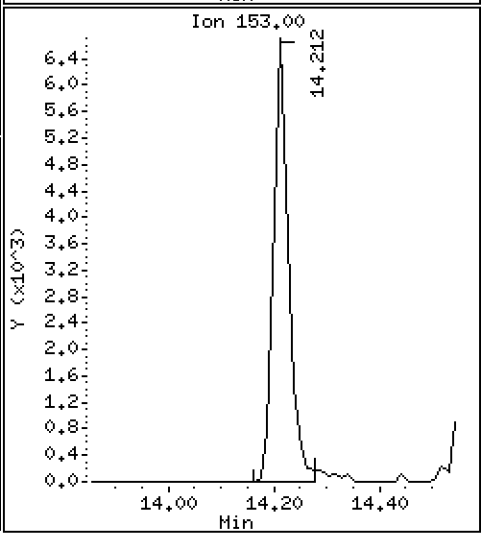


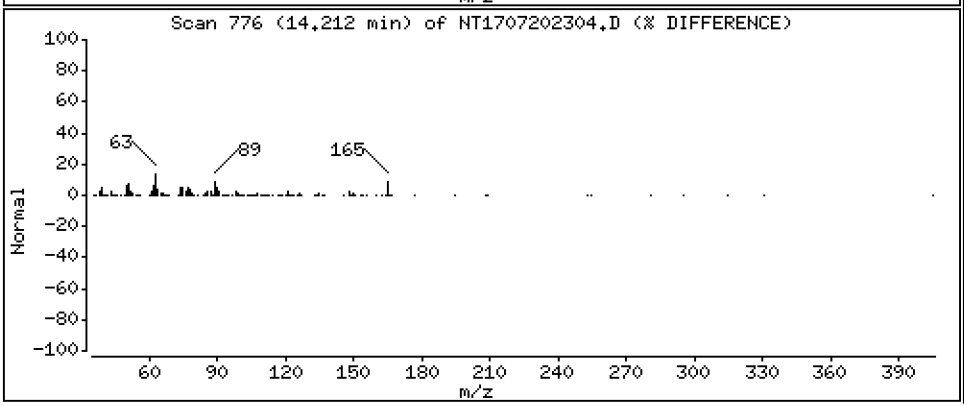












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

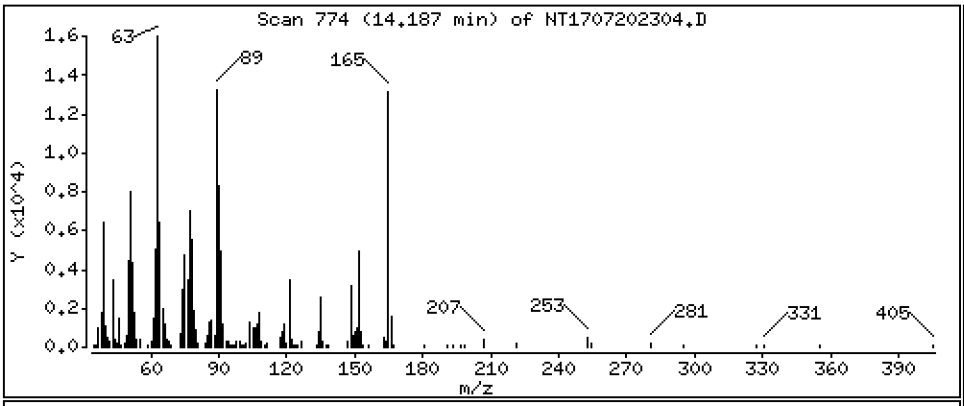
Operator: JGR

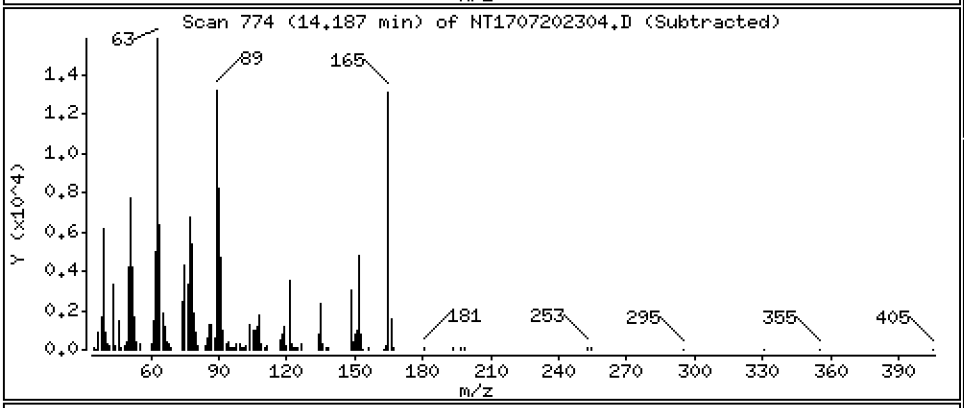
Column phase: ZB-5msi

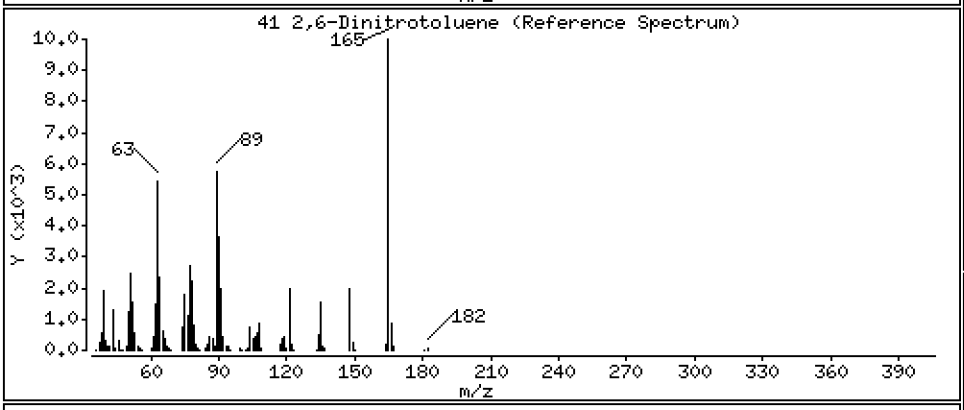
Column diameter: 0.25

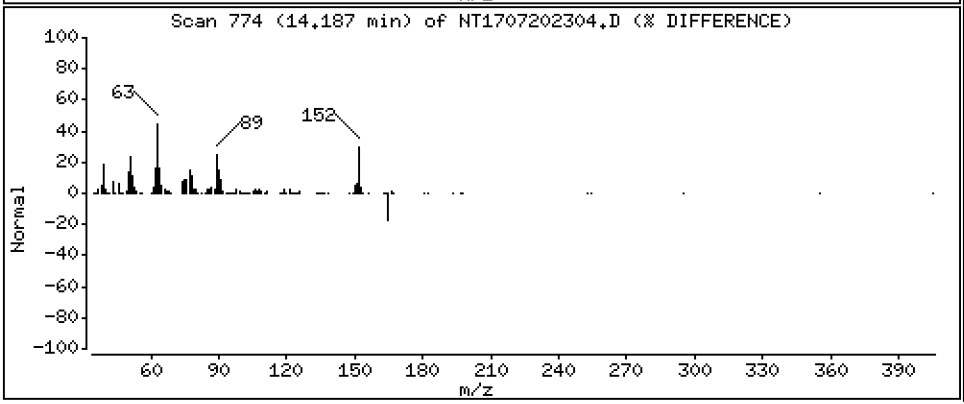
41 2,6-Dinitrotoluene

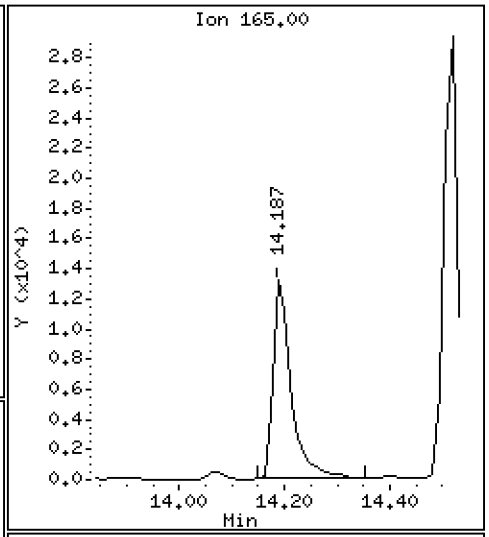
Concentration: 0.9241 ug/mL

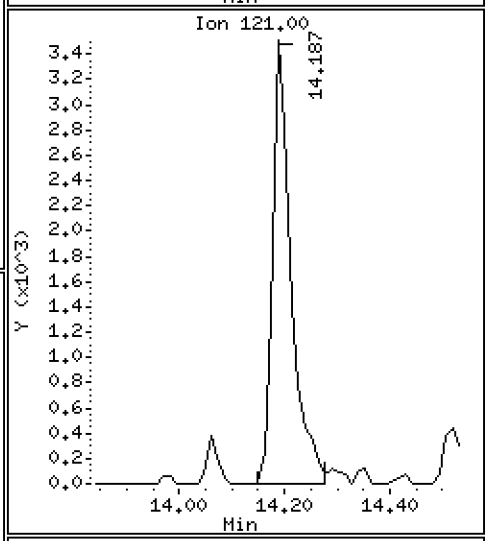


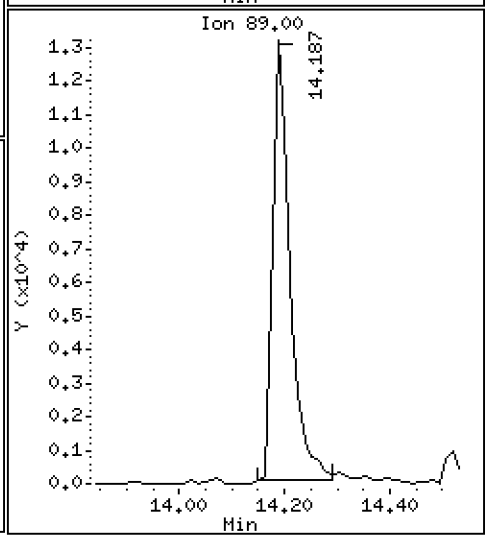












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

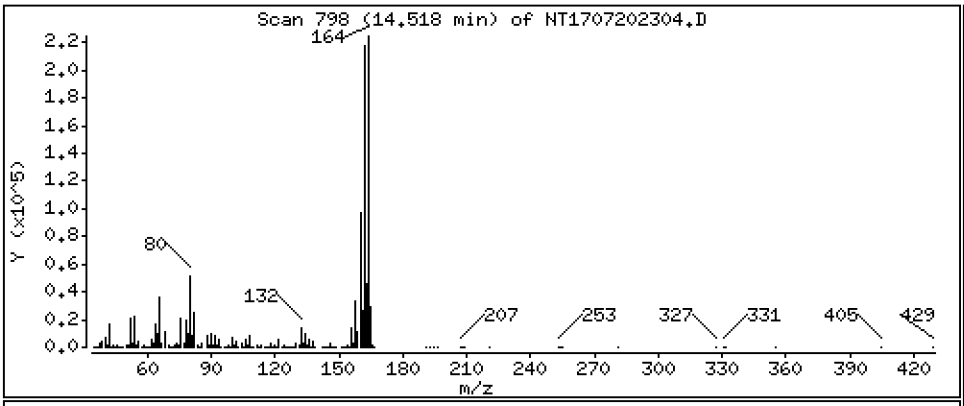
Operator: JGR

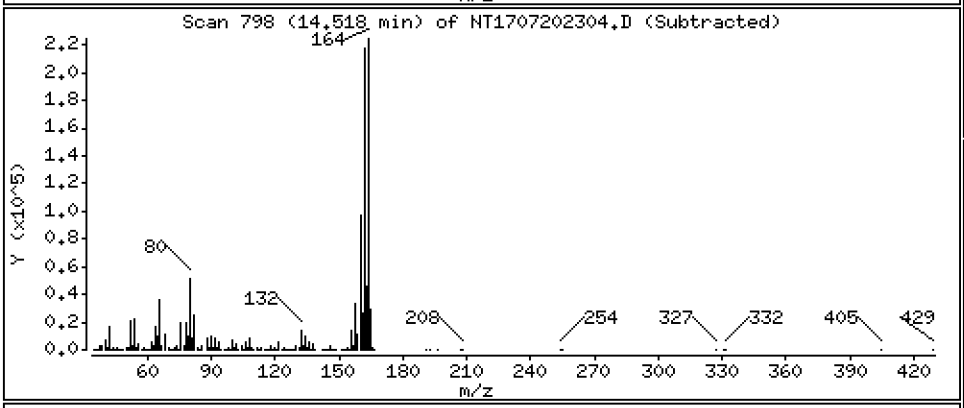
Column phase: ZB-5msi

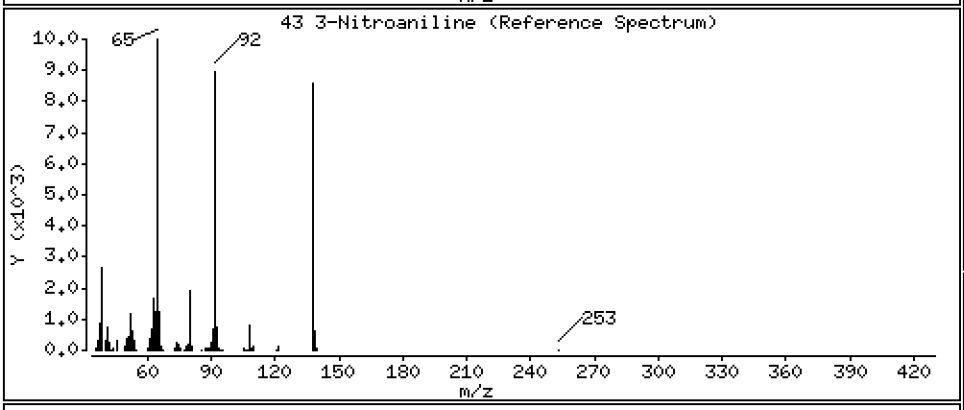
Column diameter: 0.25

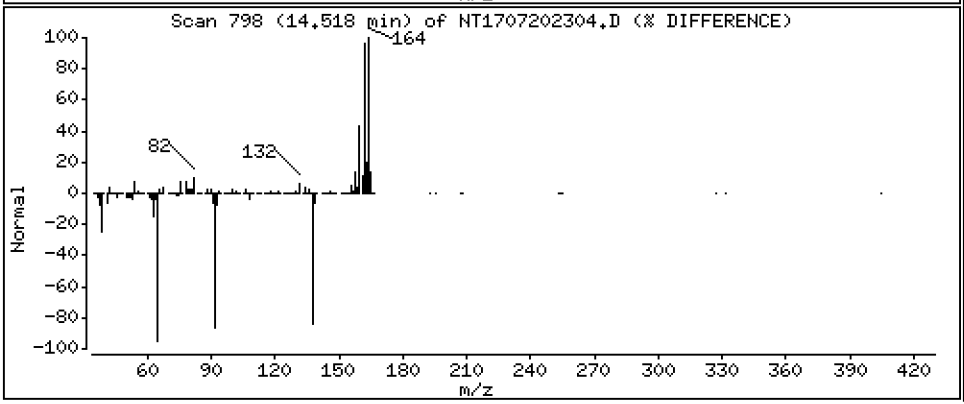
43 3-Nitroaniline

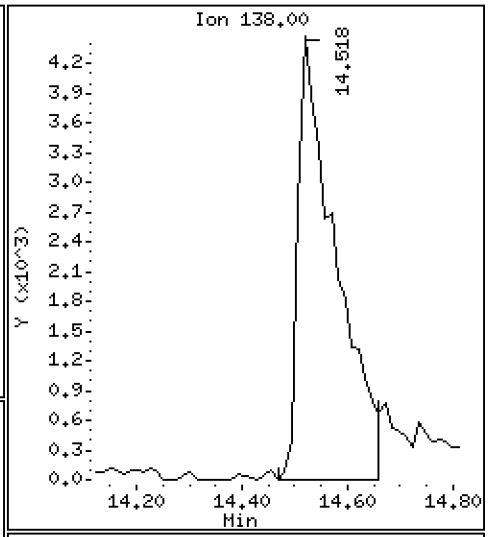
Concentration: 0.6095 ug/mL

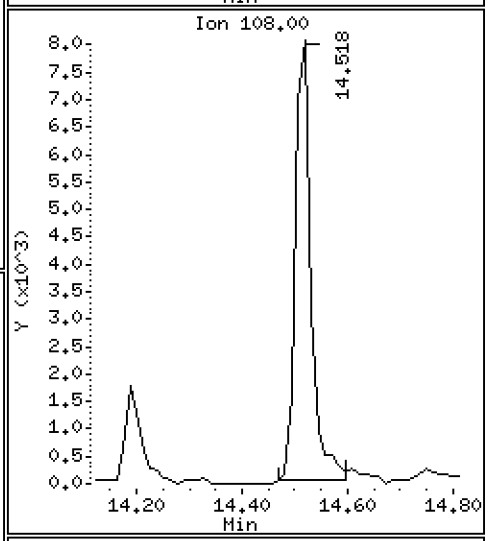


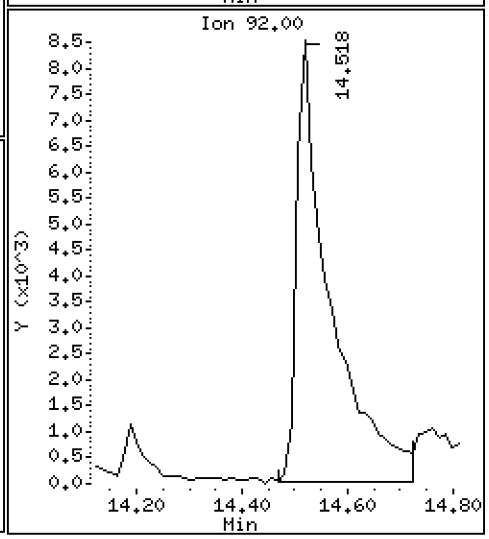












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

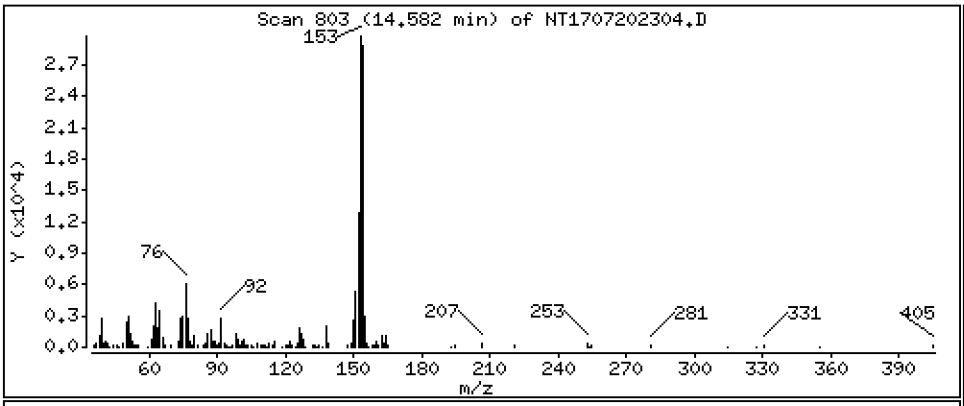
Operator: JGR

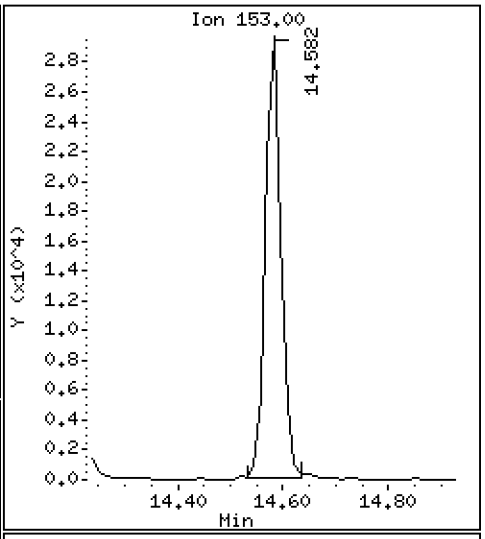
Column phase: ZB-5msi

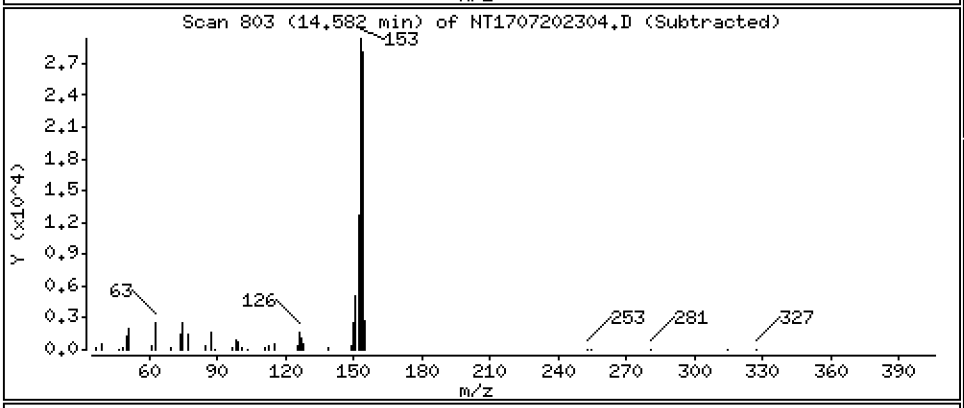
Column diameter: 0.25

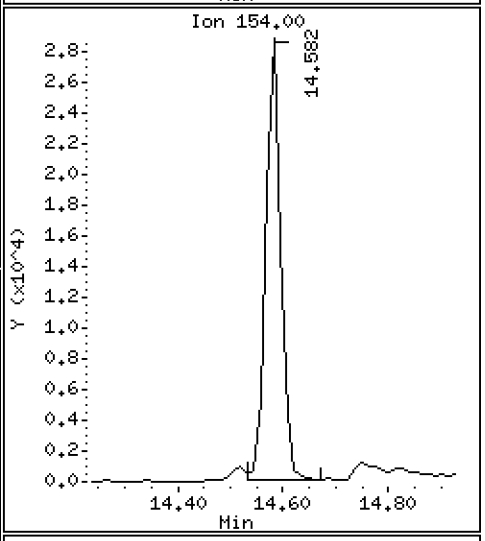
44 Acenaphthene

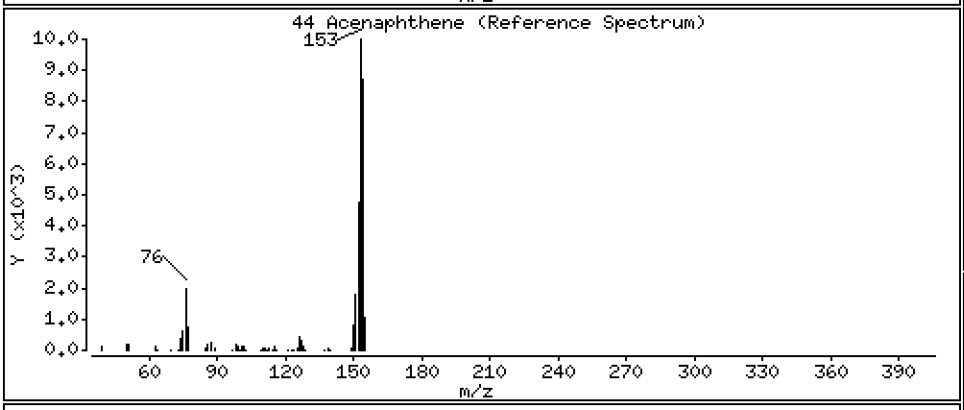
Concentration: 0.4534 ug/mL

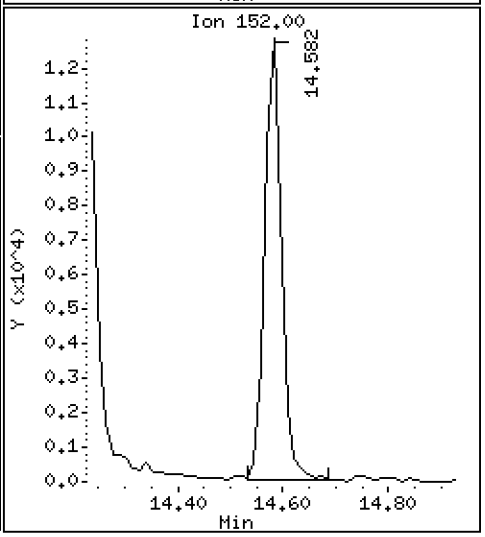


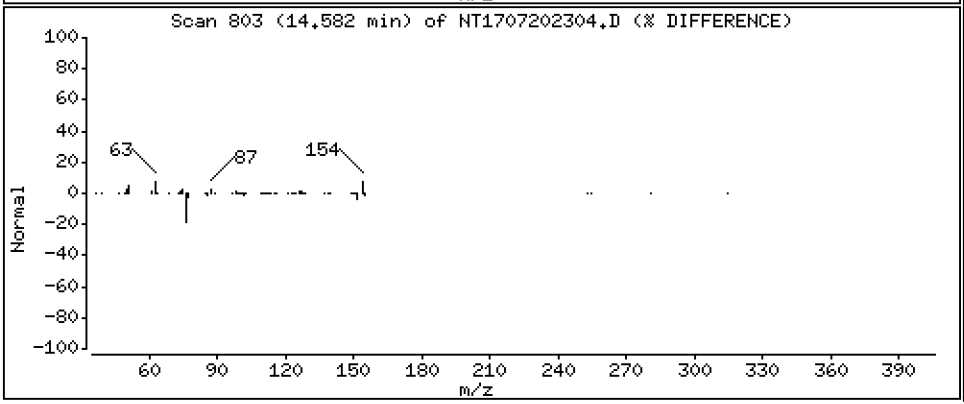












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

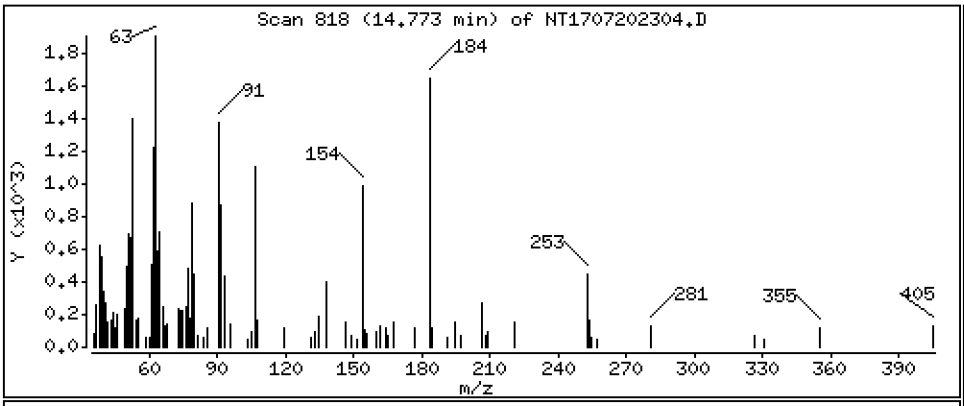
Operator: JGR

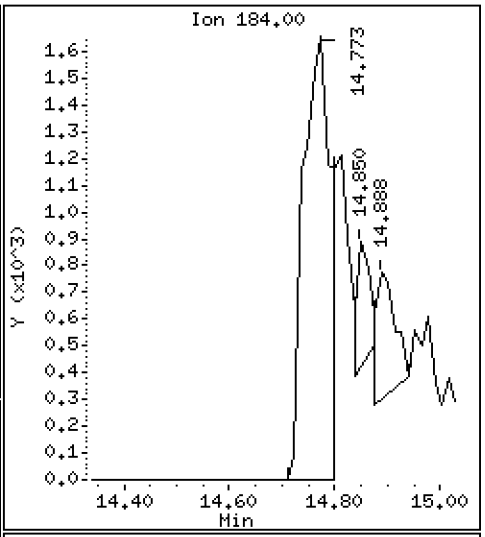
Column phase: ZB-5msi

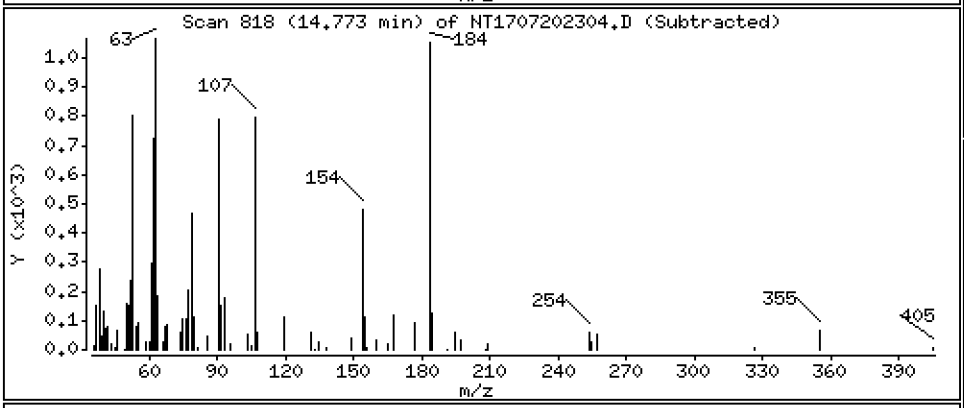
Column diameter: 0.25

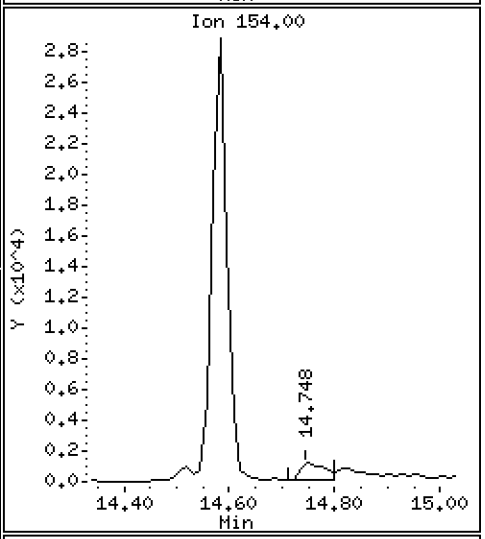
45 2,4-Dinitrophenol

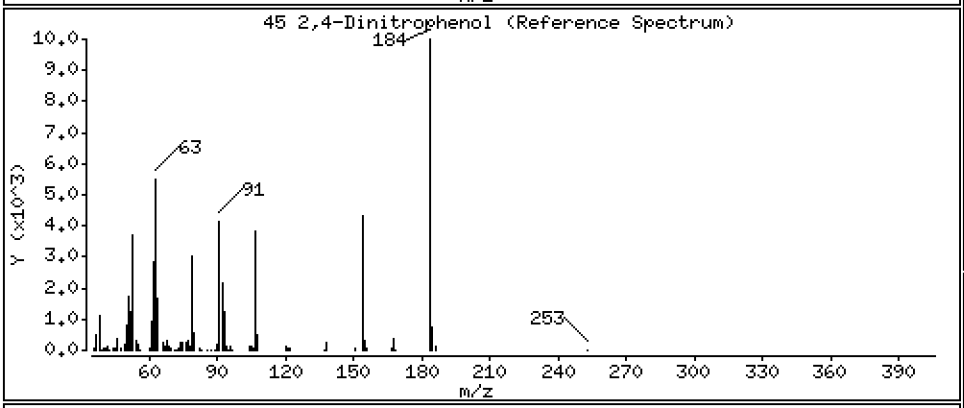
Concentration: 0.3955 ug/mL

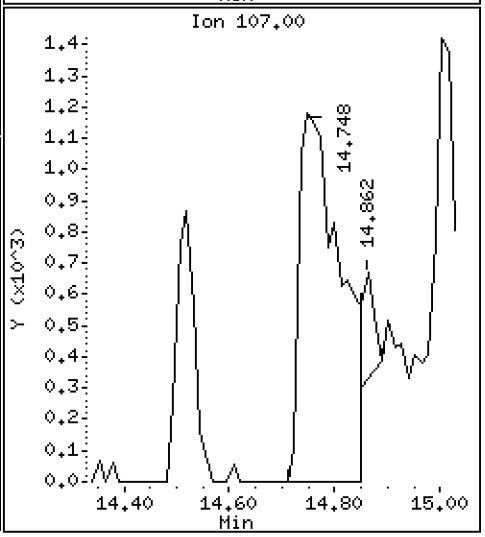


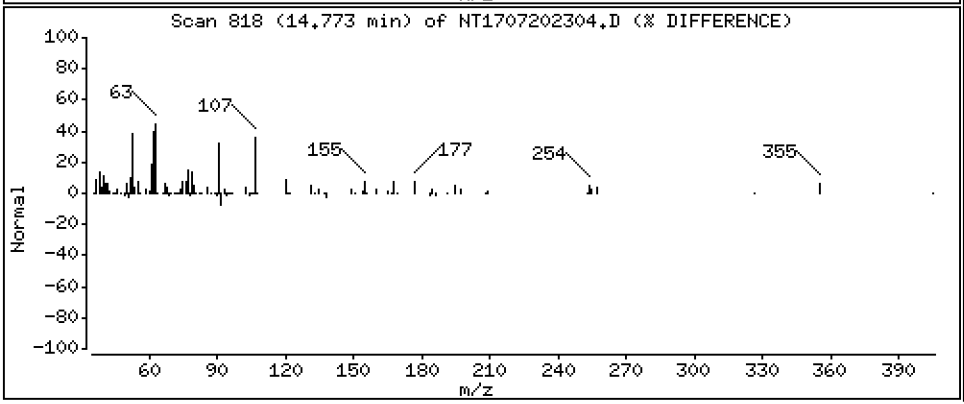












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

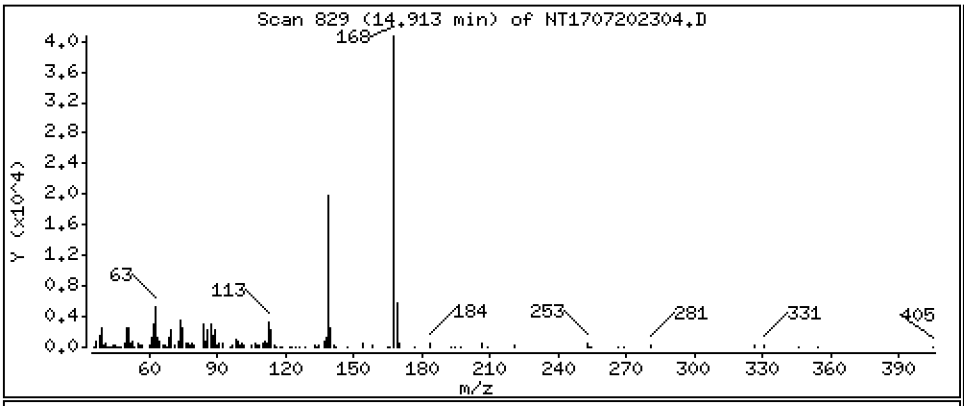
Operator: JGR

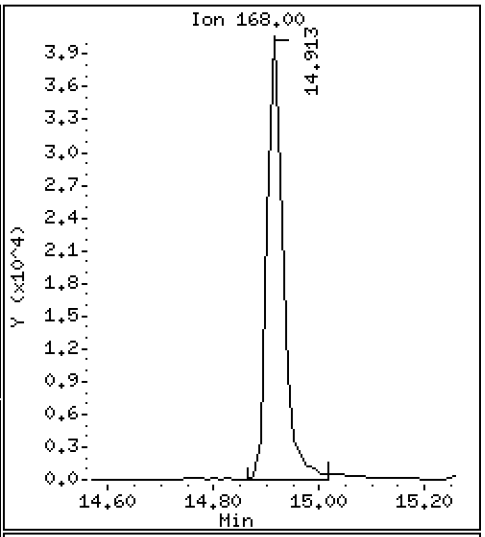
Column phase: ZB-5msi

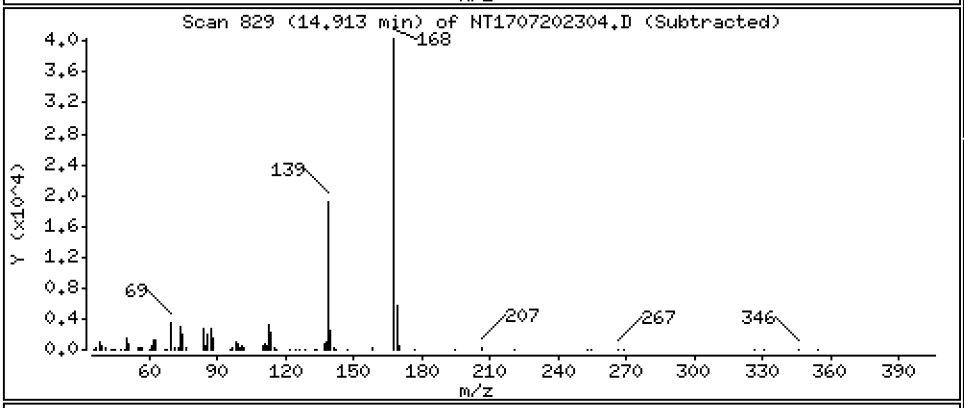
Column diameter: 0.25

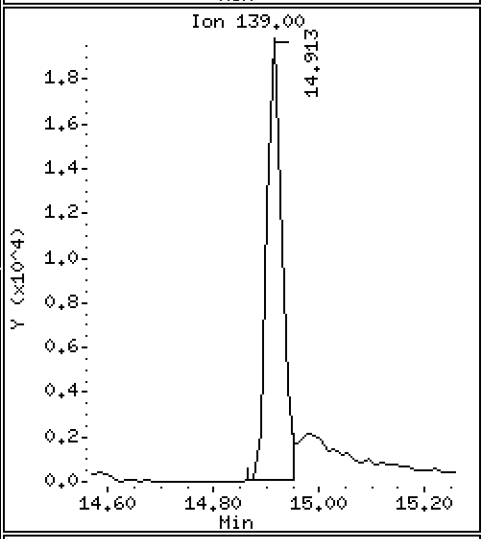
46 Dibenzofuran

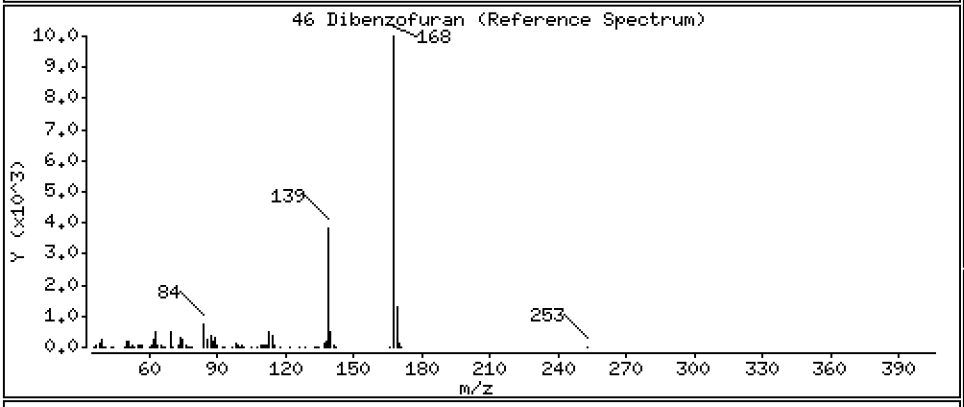
Concentration: 0.4685 ug/mL

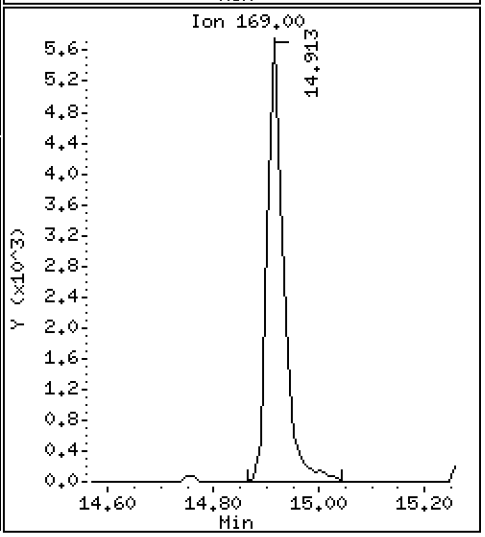


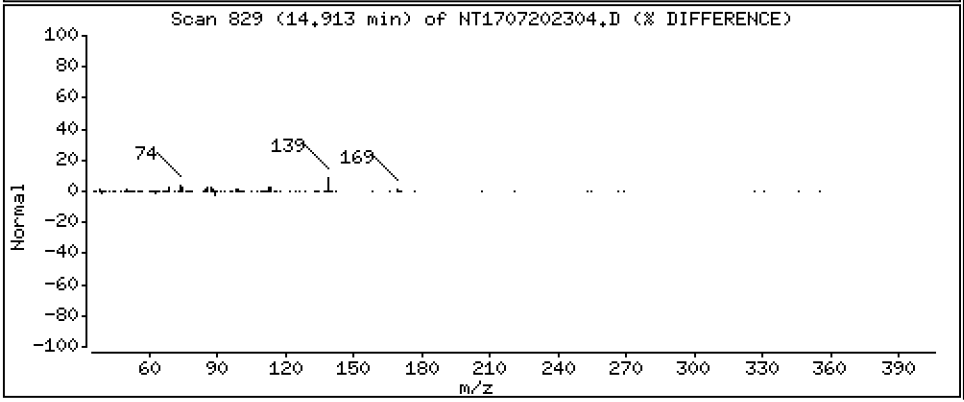












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

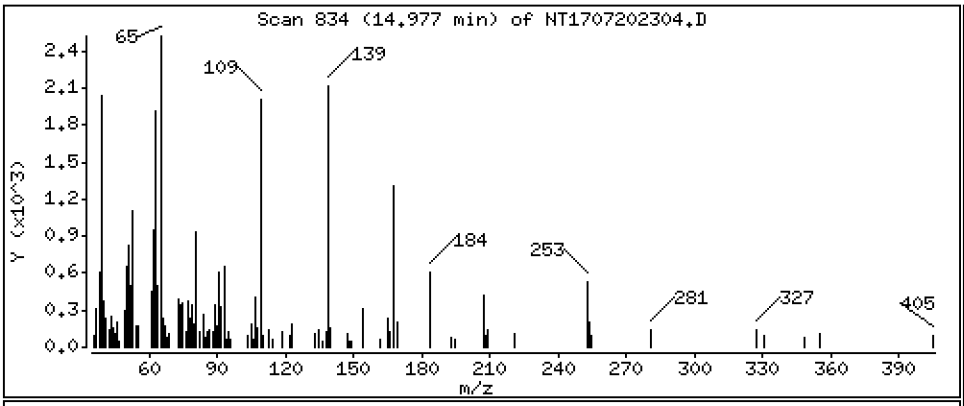
Operator: JGR

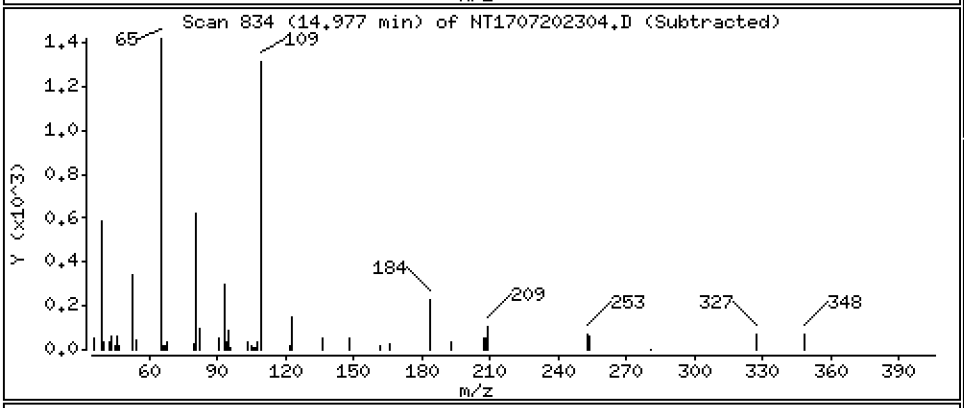
Column phase: ZB-5msi

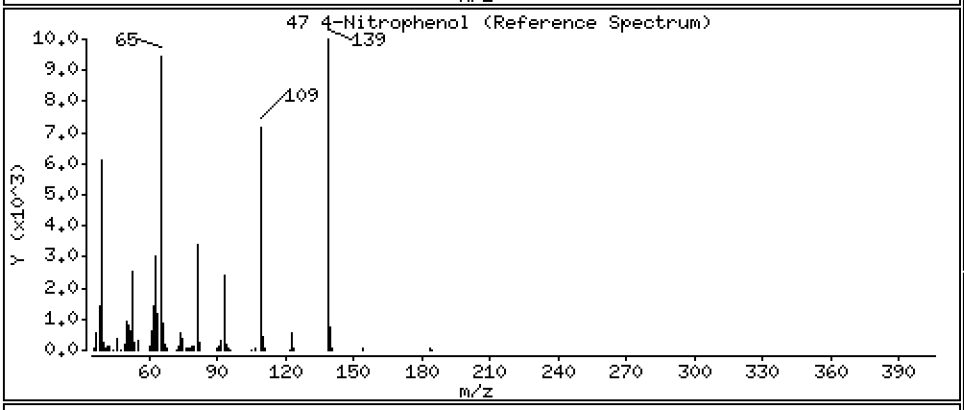
Column diameter: 0.25

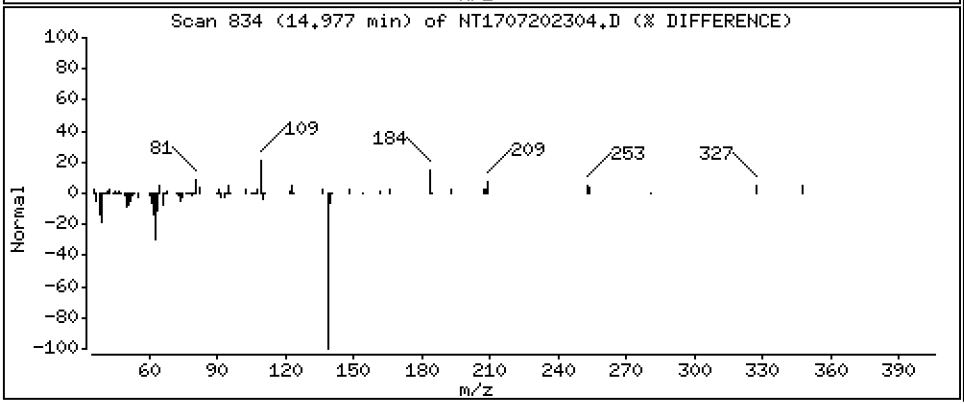
47 4-Nitrophenol

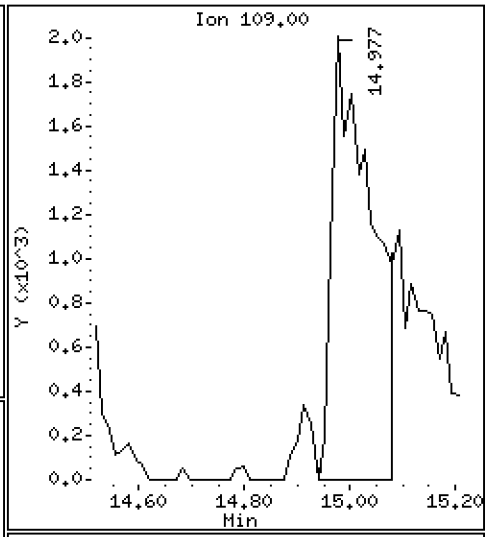
Concentration: 0.4860 ug/mL

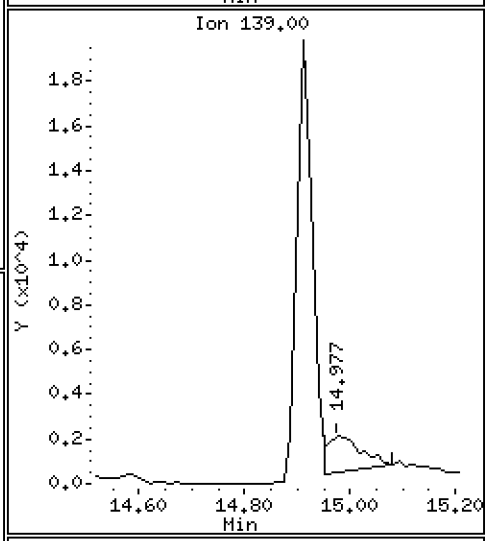


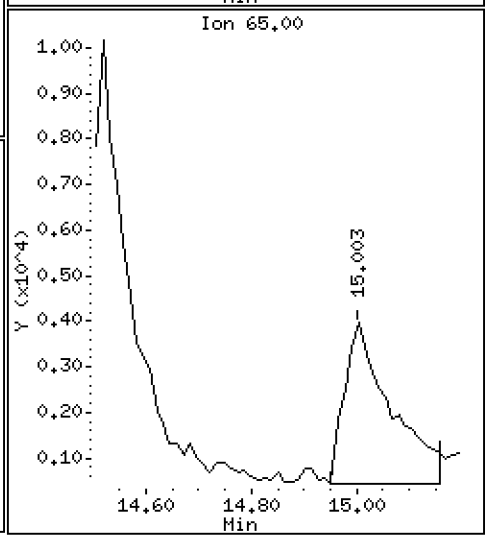












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

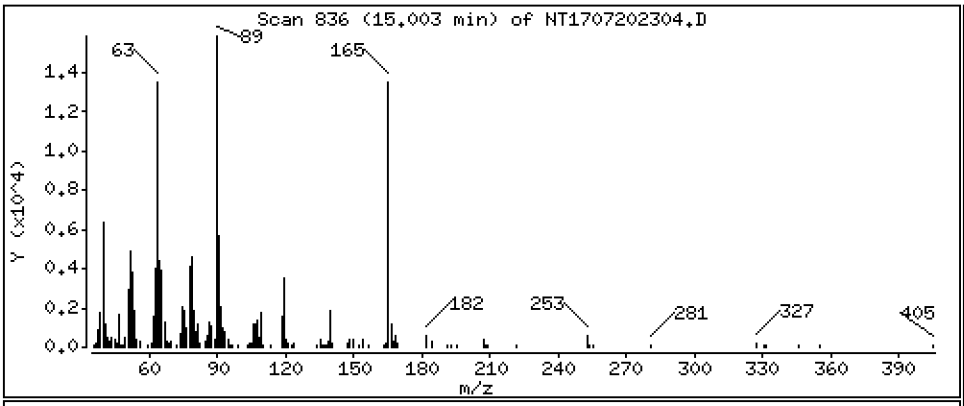
Operator: JGR

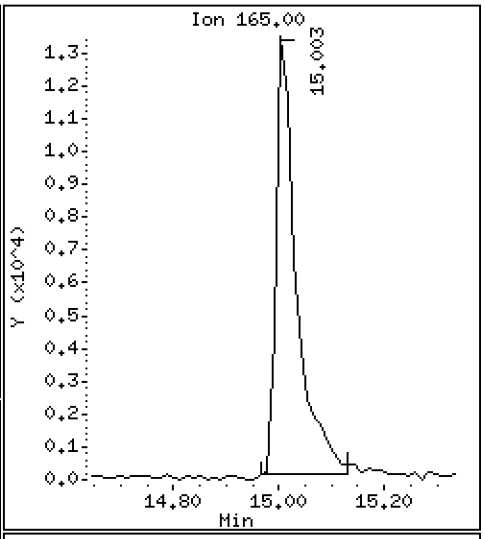
Column phase: ZB-5msi

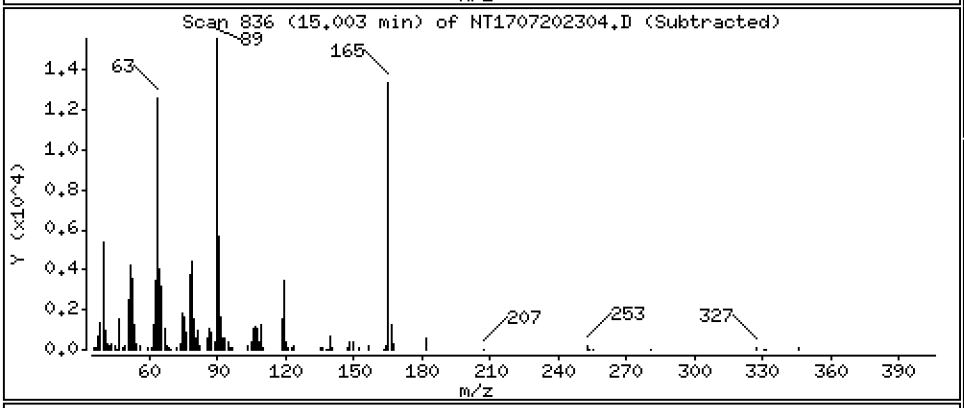
Column diameter: 0.25

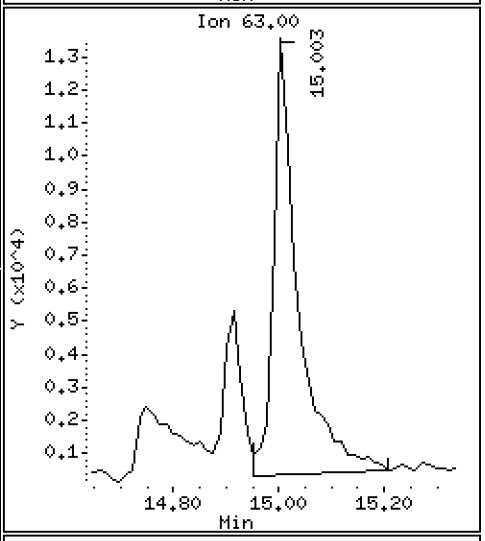
48 2,4-Dinitrotoluene

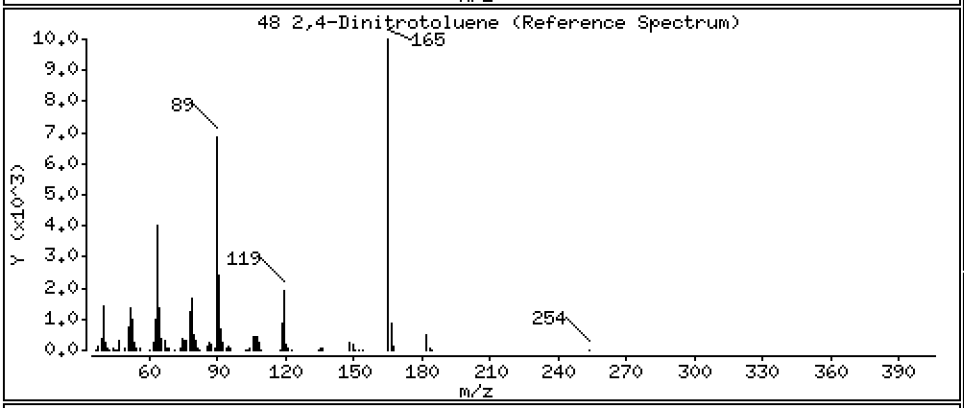
Concentration: 0.8305 ug/mL

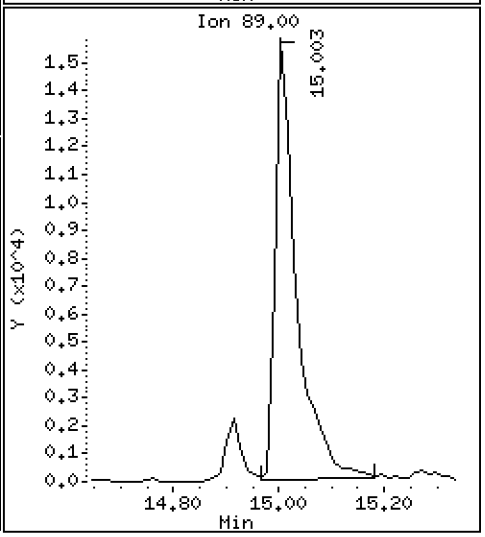


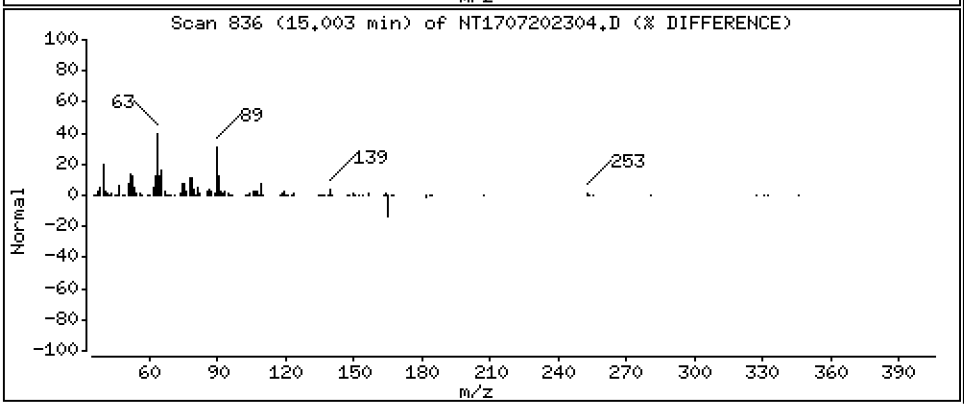












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D

Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

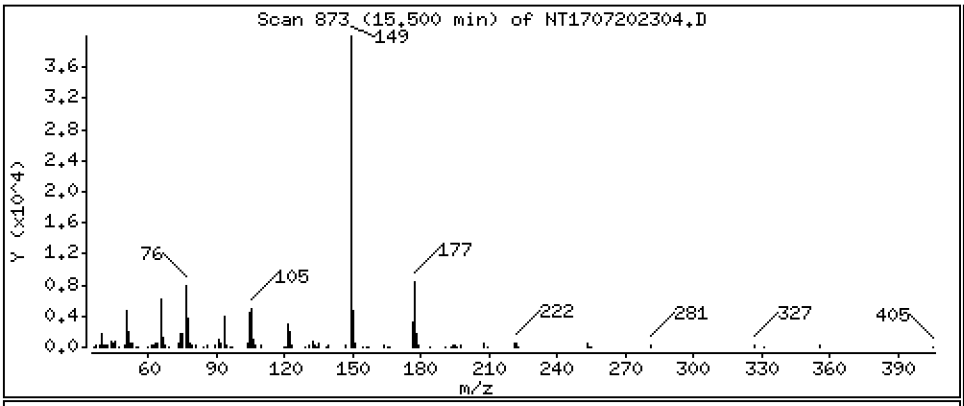
Operator: JGR

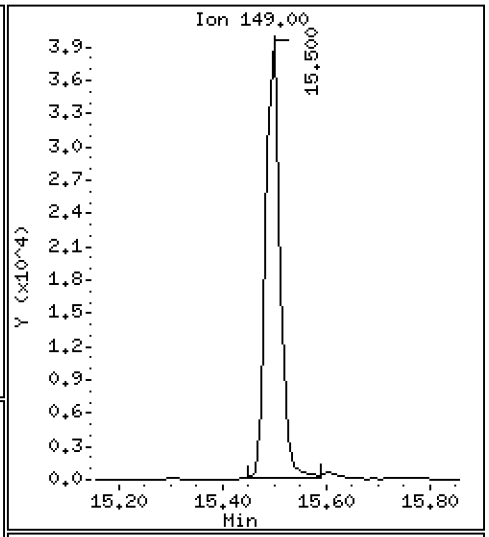
Column phase: ZB-5msi

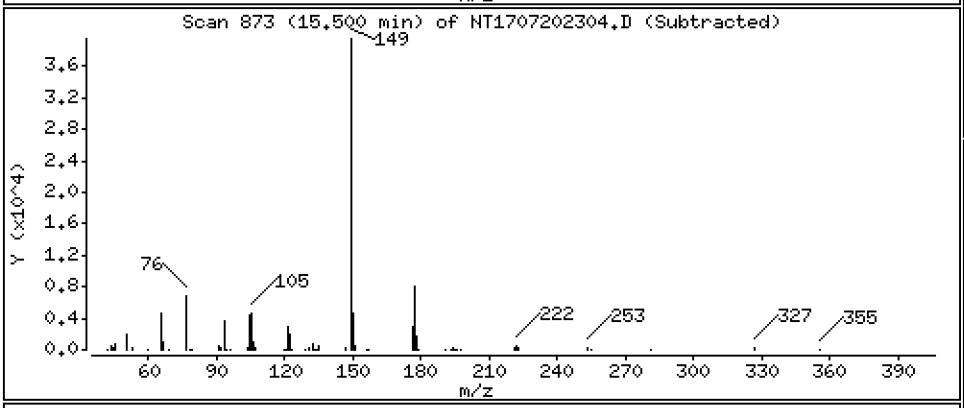
Column diameter: 0.25

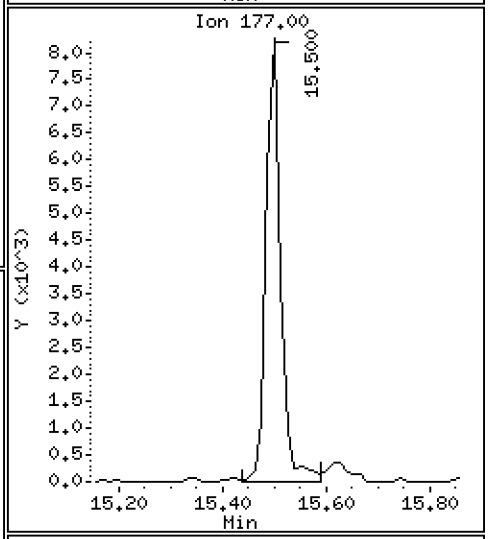
50 Diethylphthalate

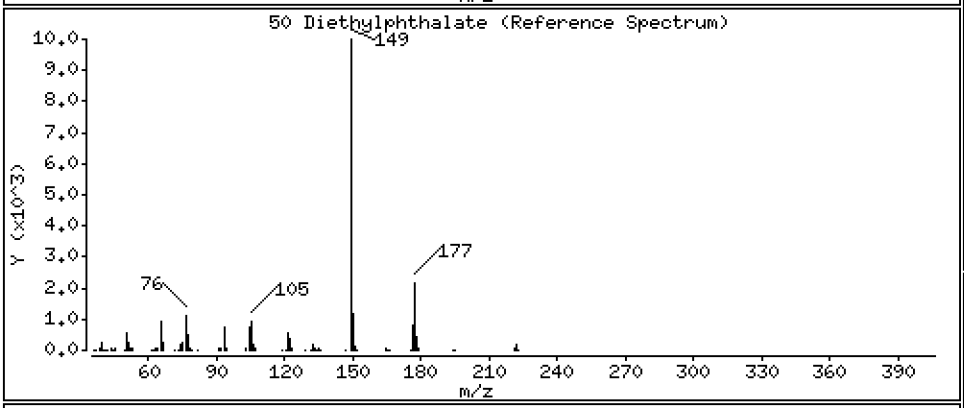
Concentration: 0.5637 ug/mL

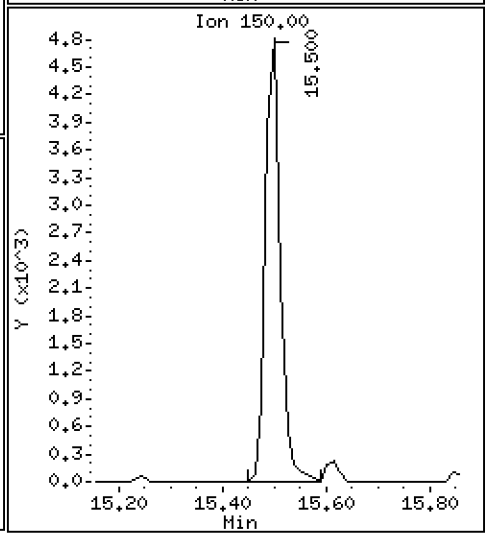


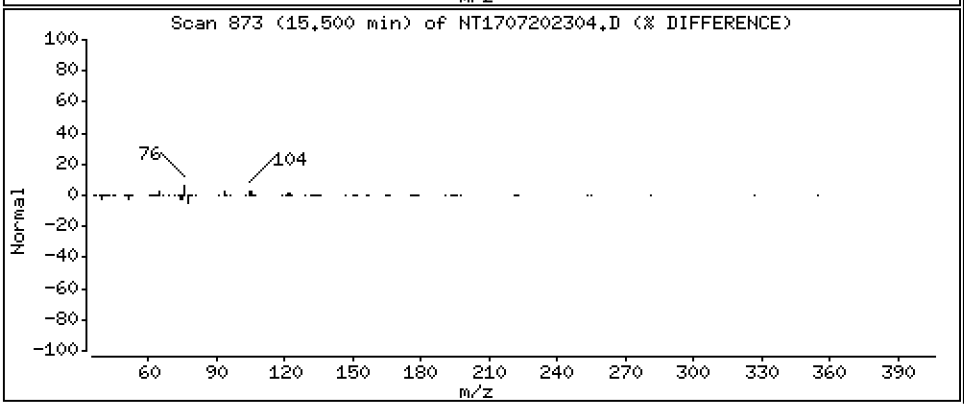












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

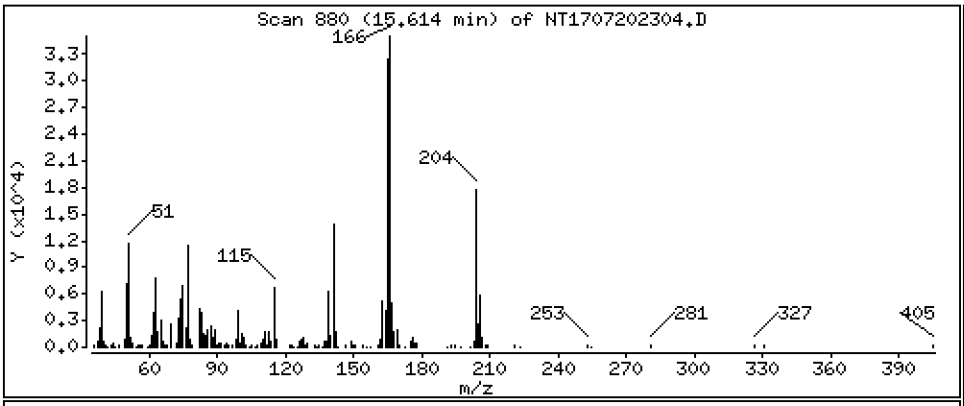
Operator: JGR

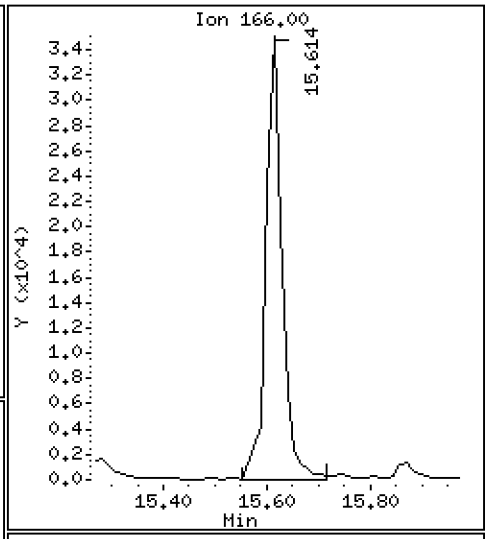
Column phase: ZB-5msi

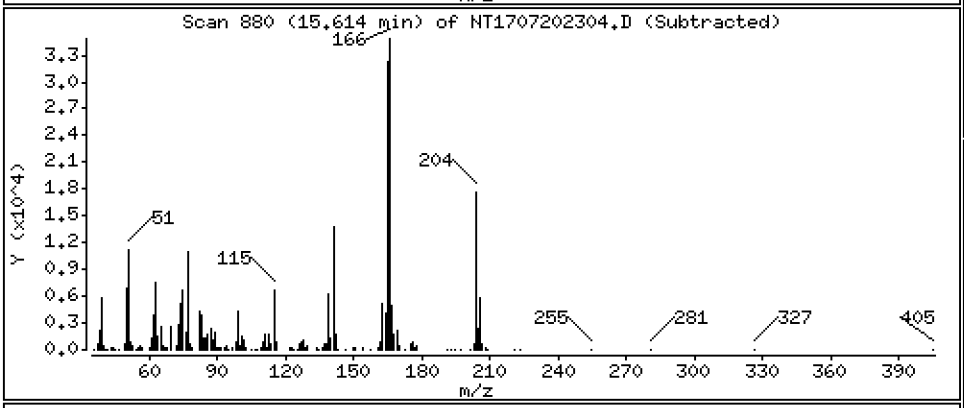
Column diameter: 0.25

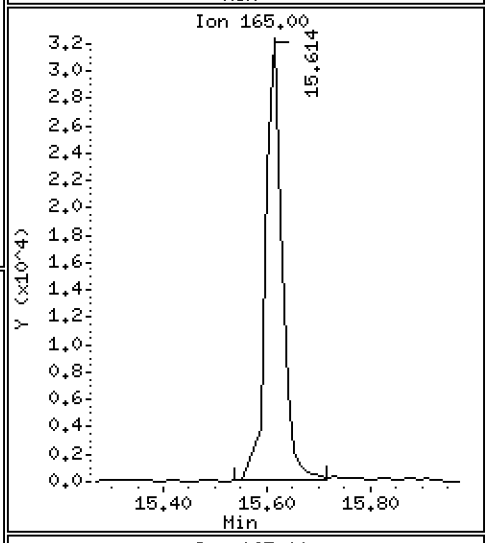
49 Fluorene

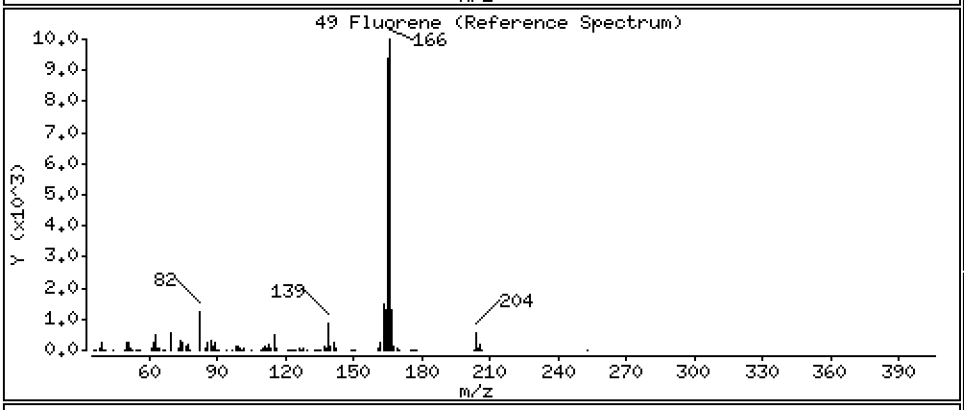
Concentration: 0.5251 ug/mL

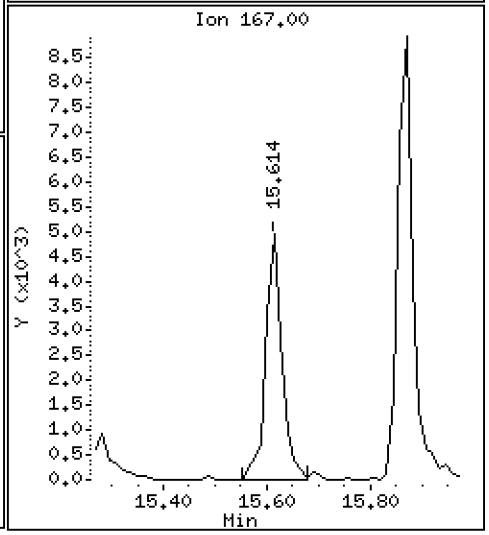


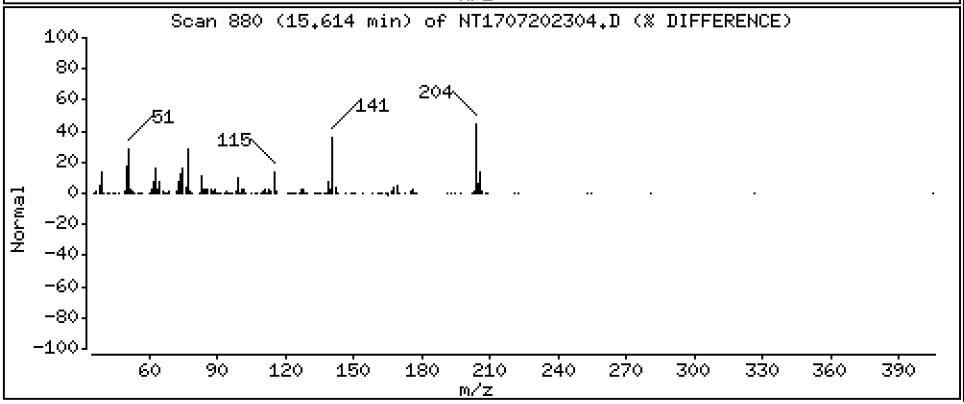












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

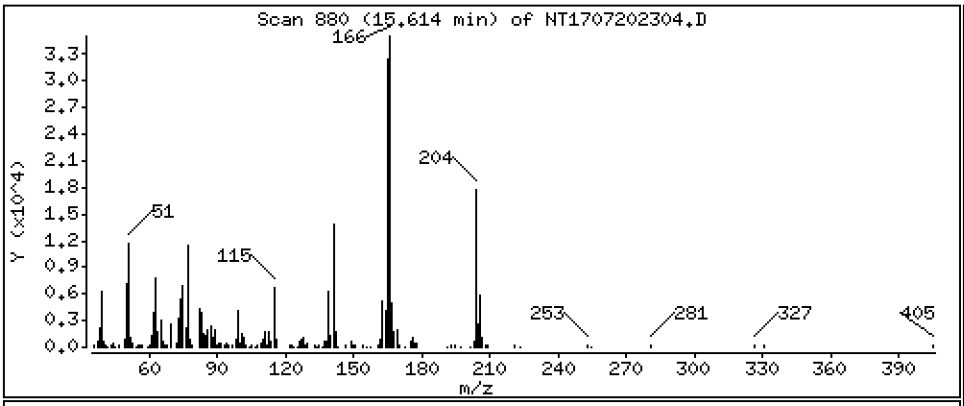
Operator: JGR

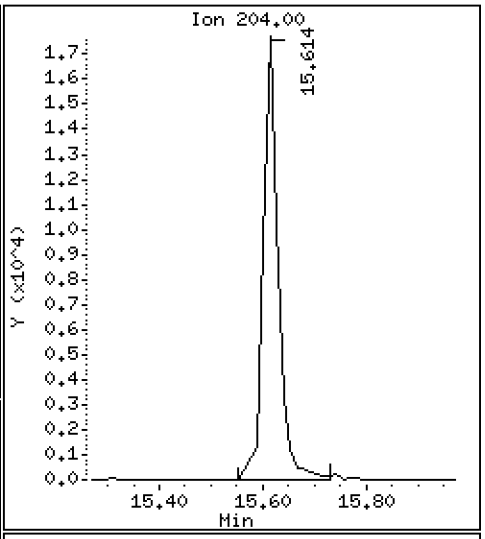
Column phase: ZB-5msi

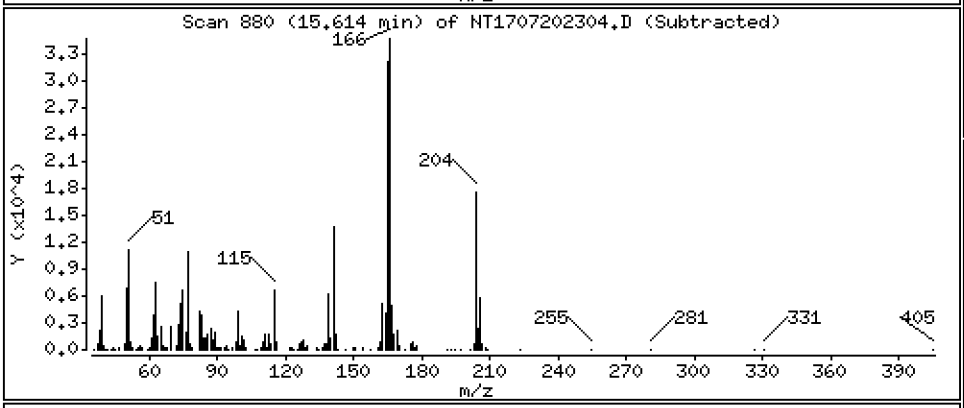
Column diameter: 0.25

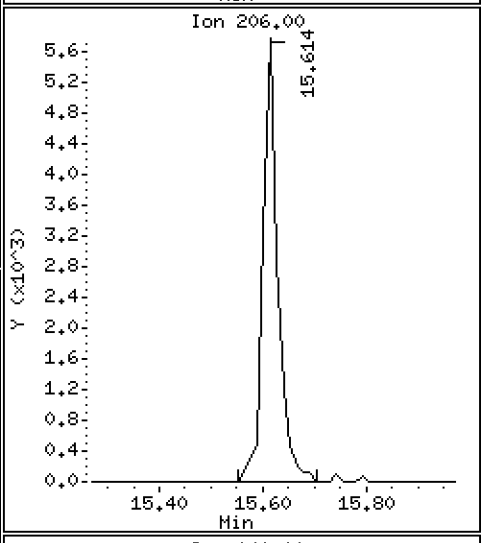
51 4-Chlorophenyl-phenylether

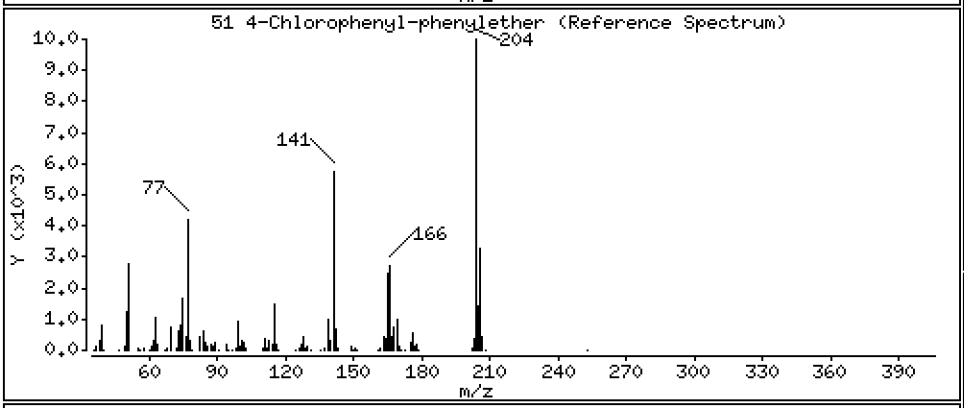
Concentration: 0.5194 ug/mL

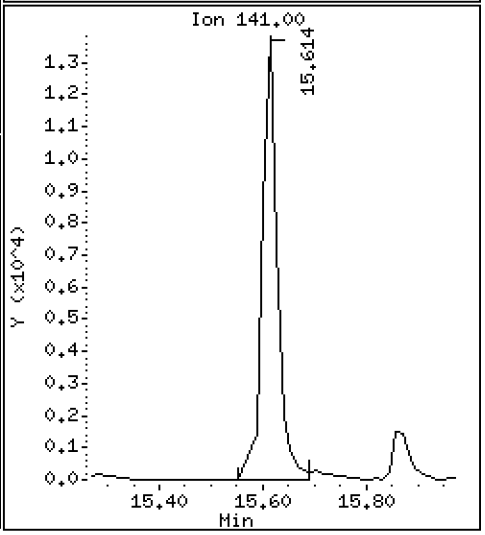


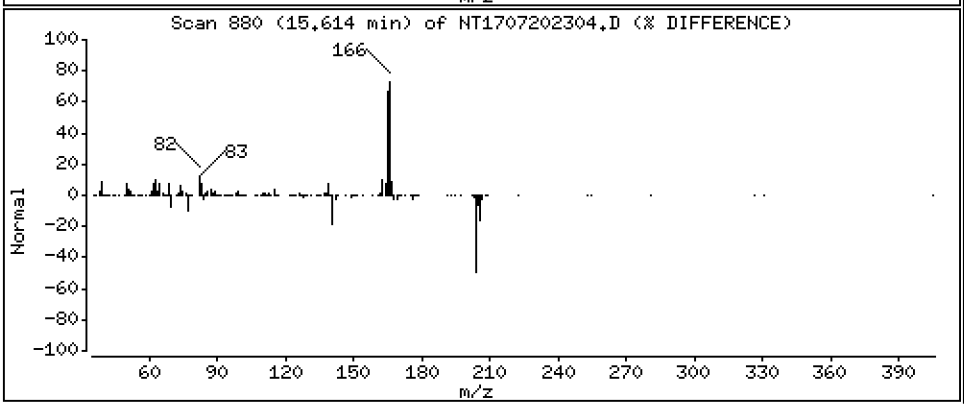












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

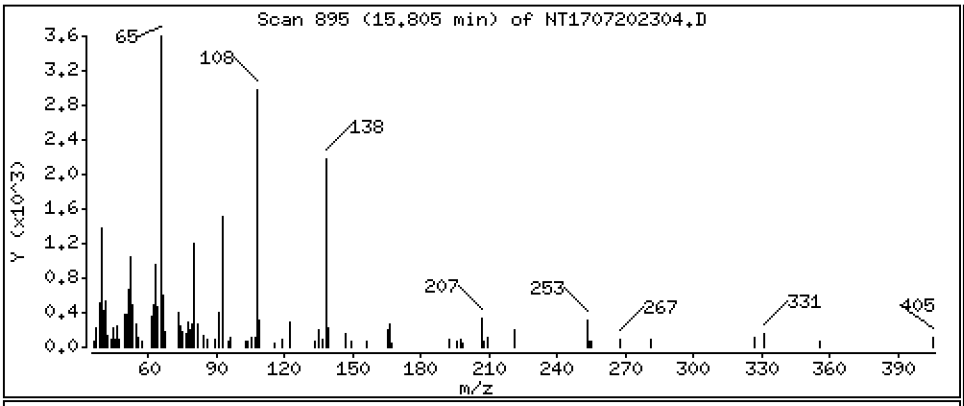
Operator: JGR

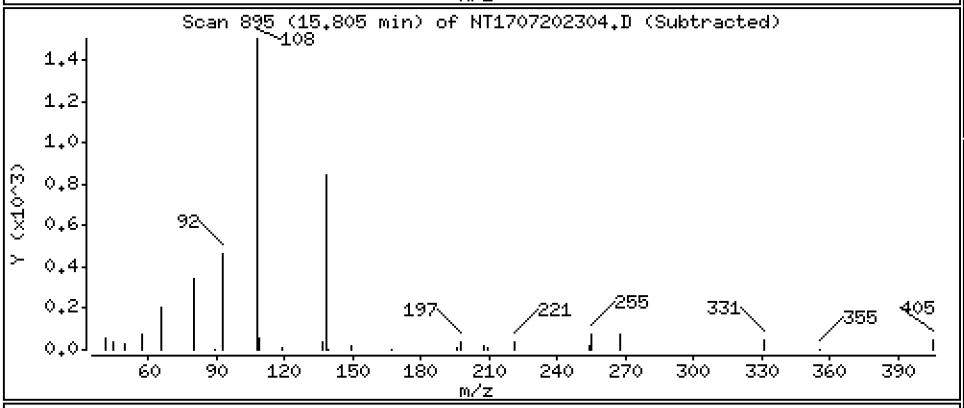
Column phase: ZB-5msi

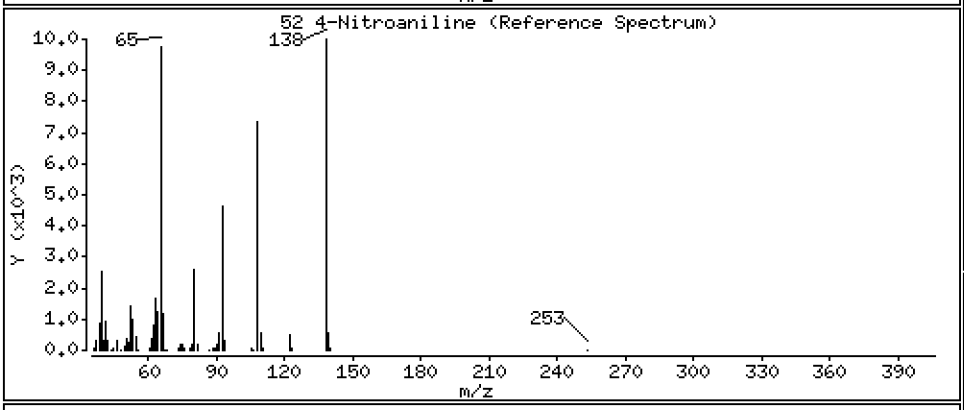
Column diameter: 0.25

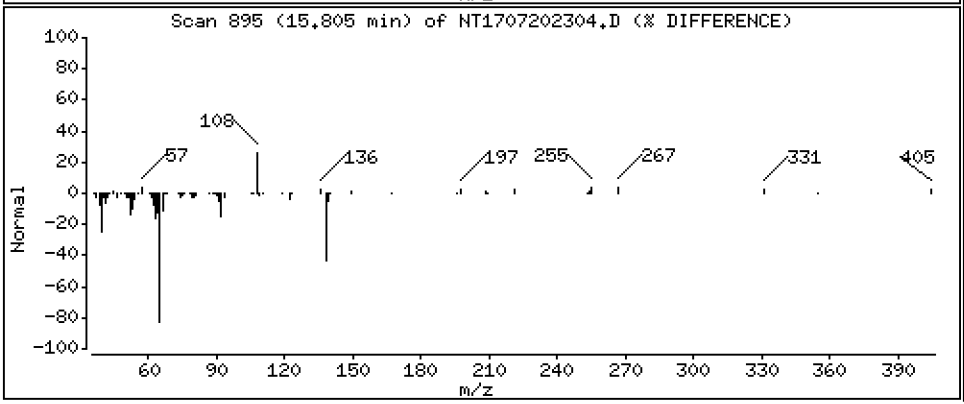
52 4-Nitroaniline

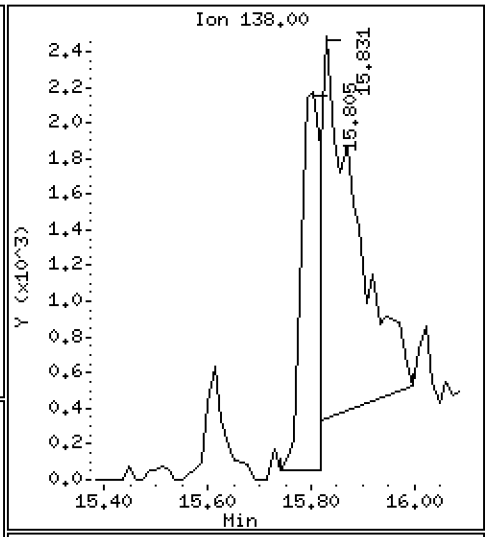
Concentration: 0.1775 ug/mL

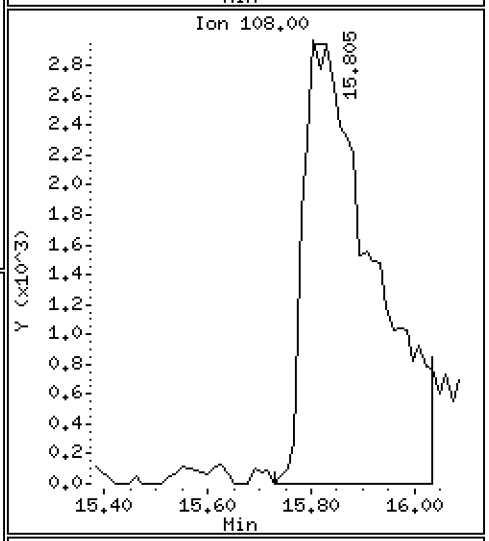


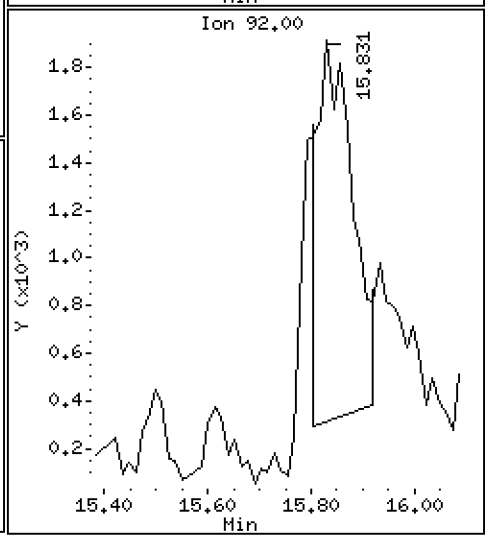












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

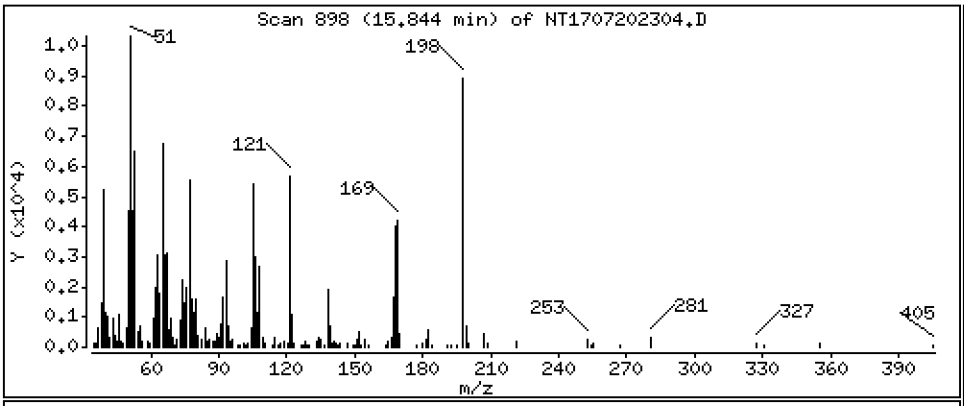
Operator: JGR

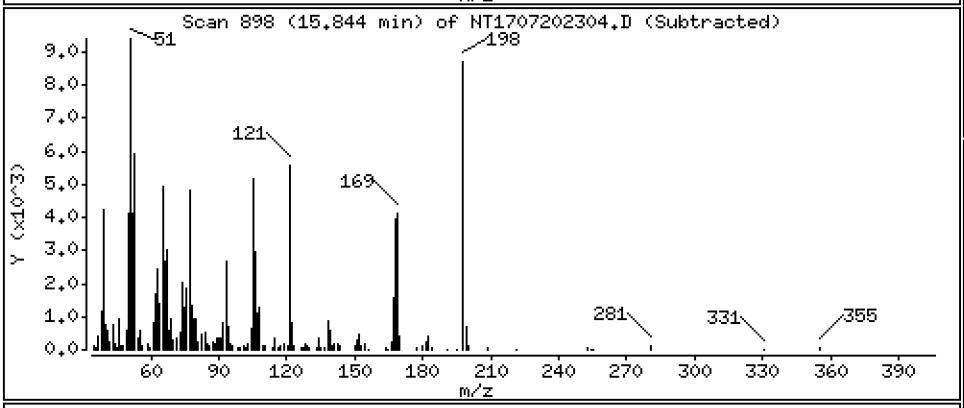
Column phase: ZB-5msi

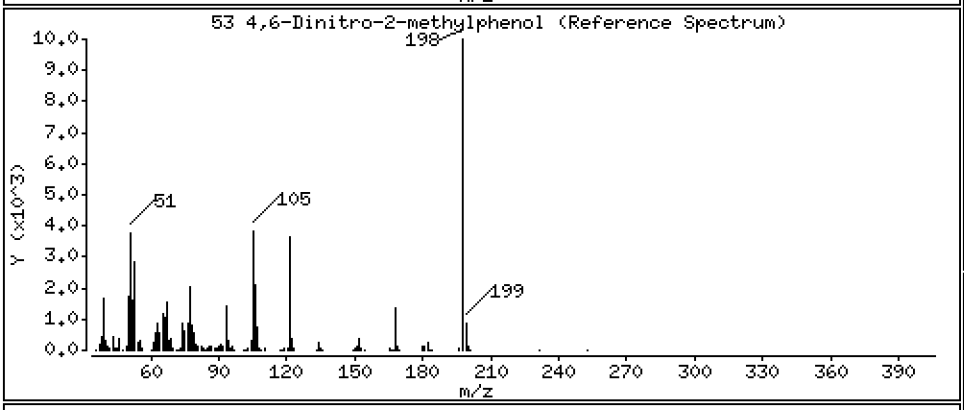
Column diameter: 0.25

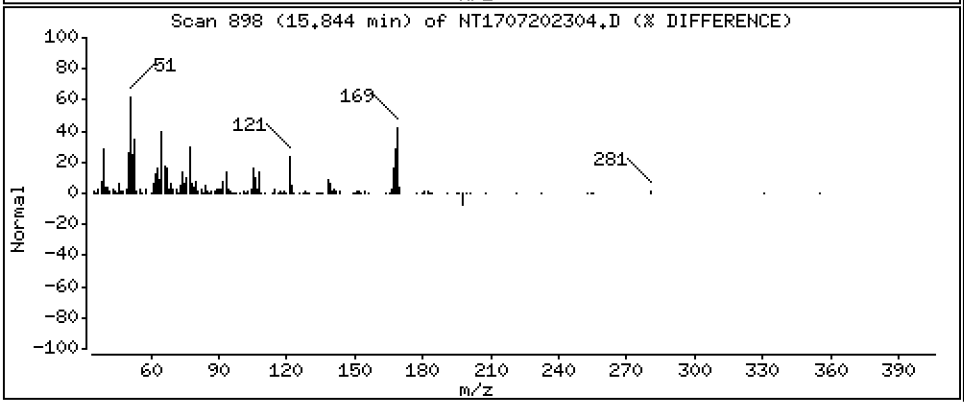
53 4,6-Dinitro-2-methylphenol

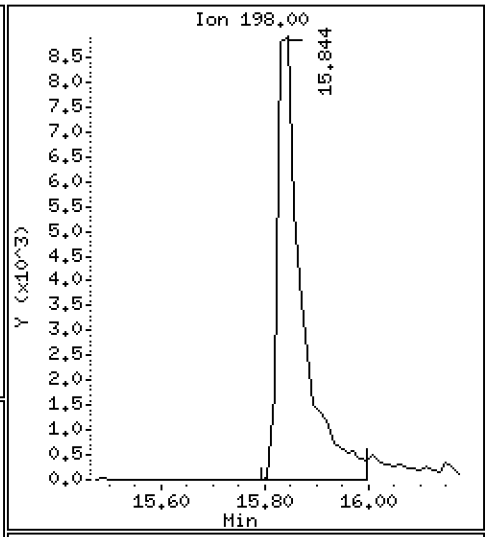
Concentration: 1.028 ug/mL

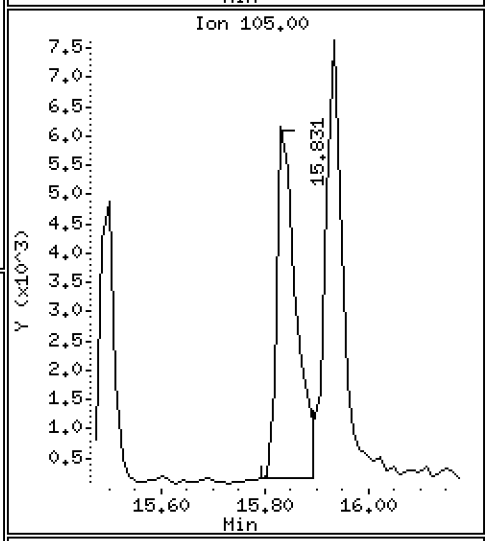


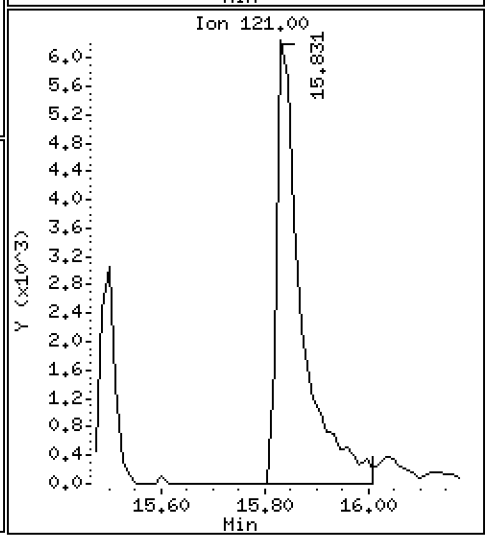












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

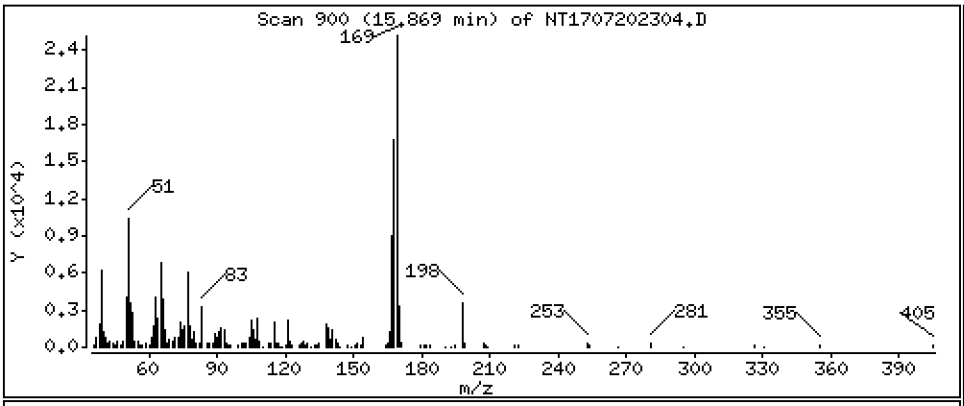
Operator: JGR

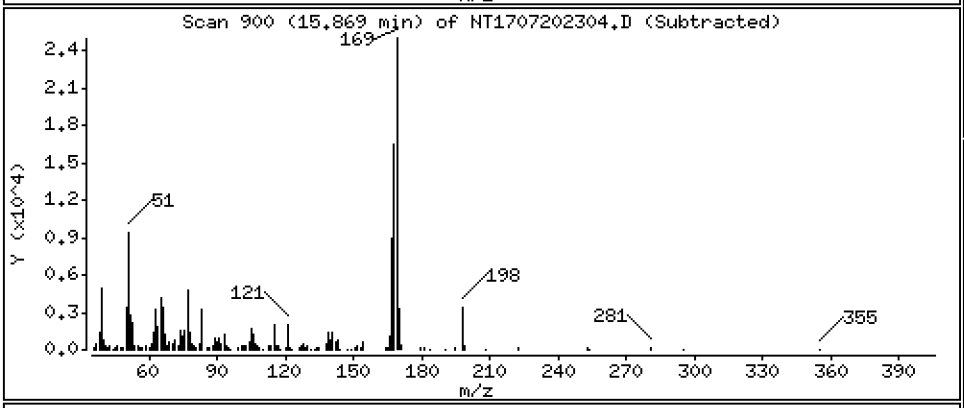
Column phase: ZB-5msi

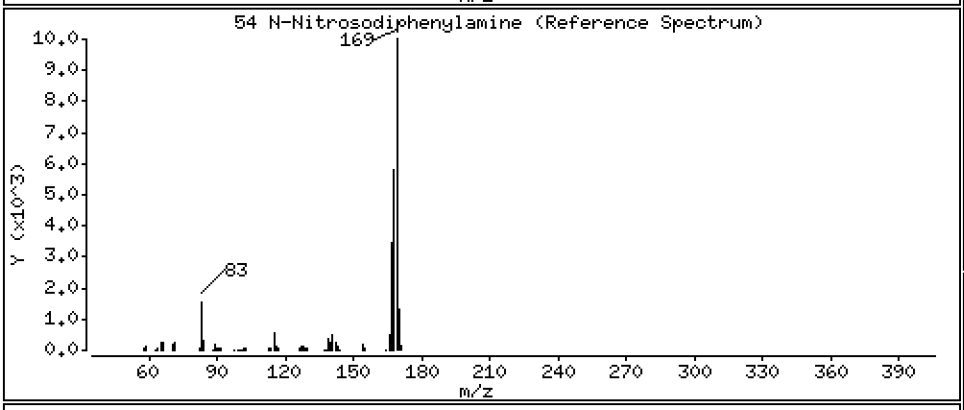
Column diameter: 0.25

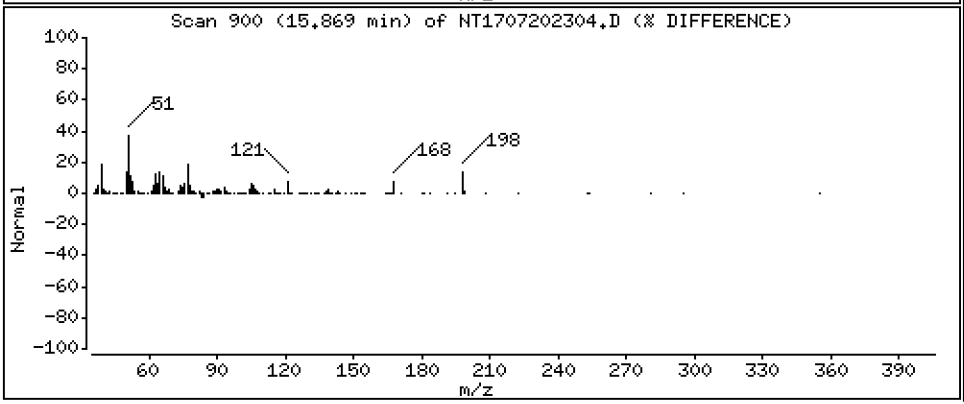
54 N-Nitrosodiphenylamine

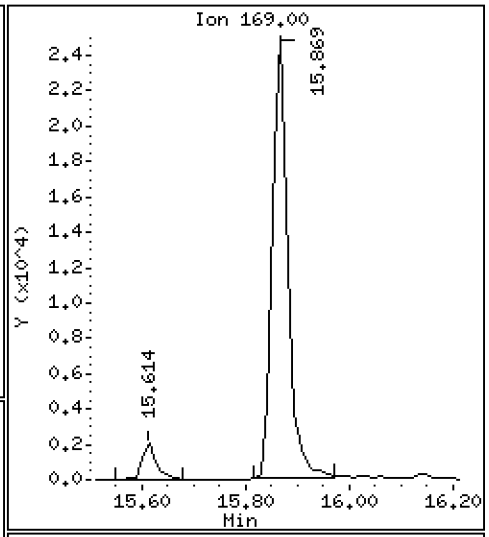
Concentration: 0.4417 ug/mL

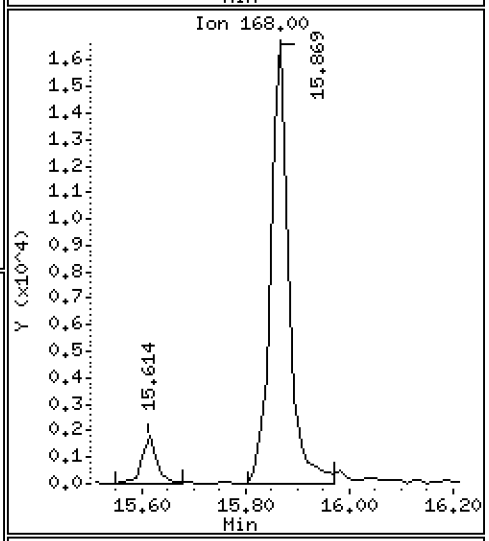


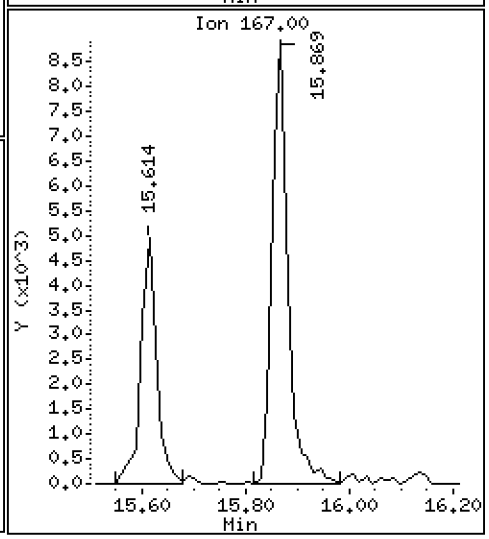












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D

Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

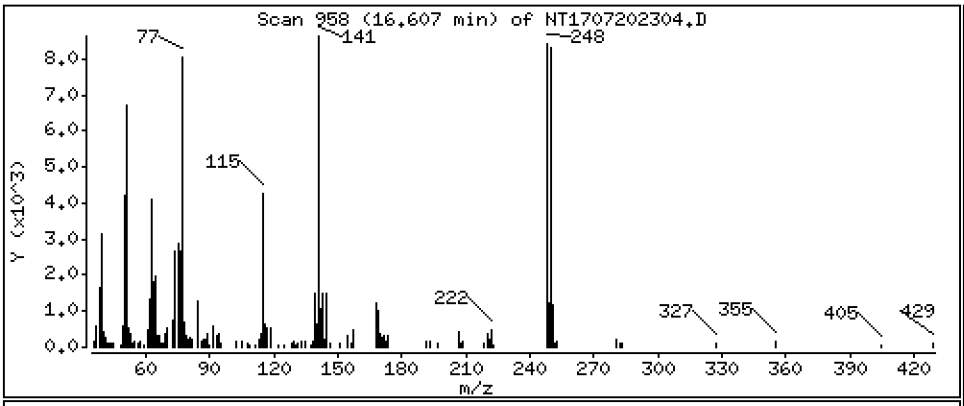
Operator: JGR

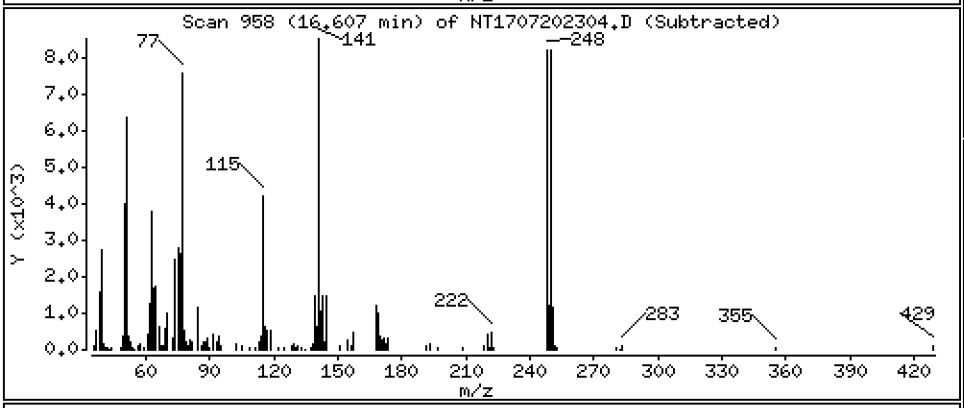
Column phase: ZB-5msi

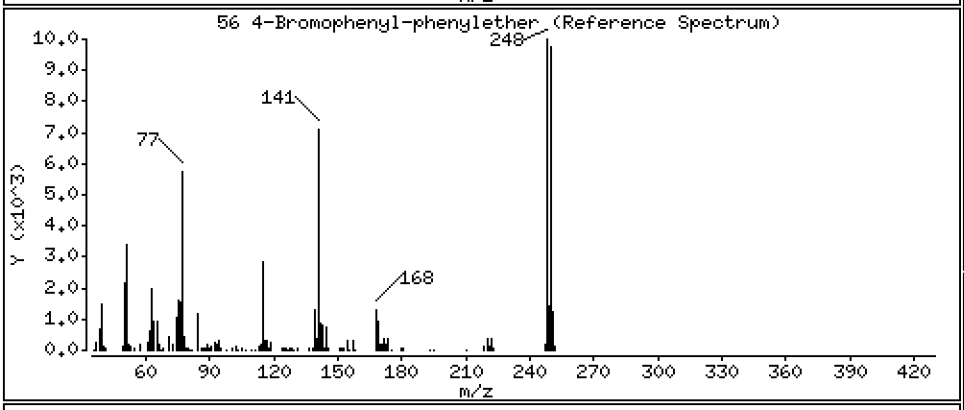
Column diameter: 0.25

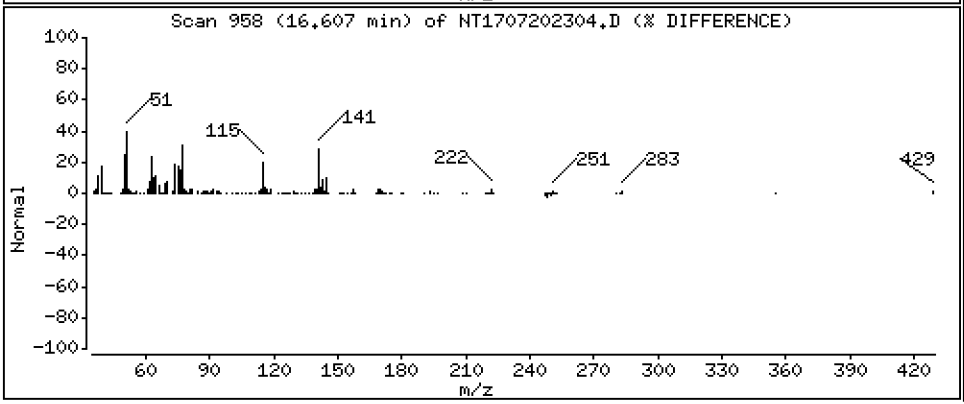
56 4-Bromophenyl-phenylether

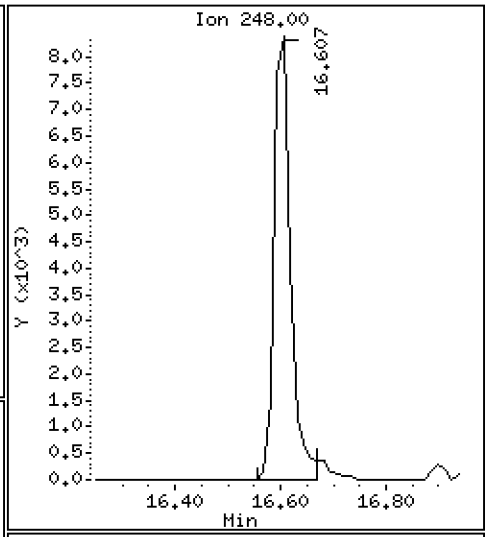
Concentration: 0.4146 ug/mL

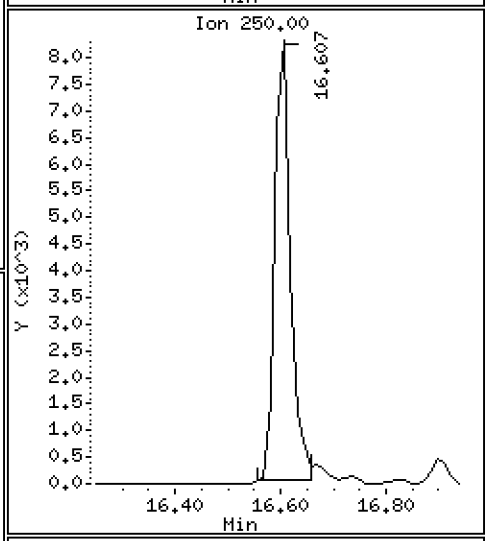


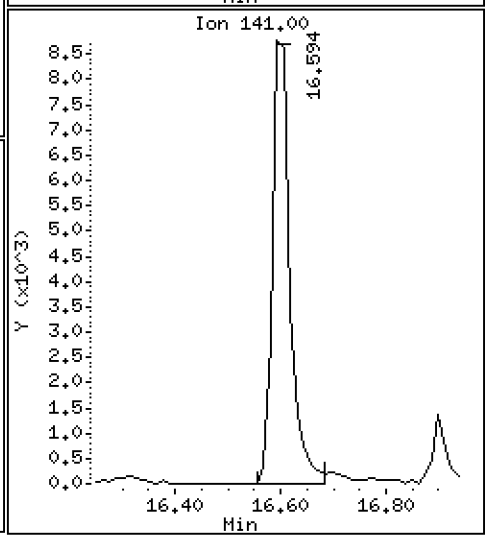












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

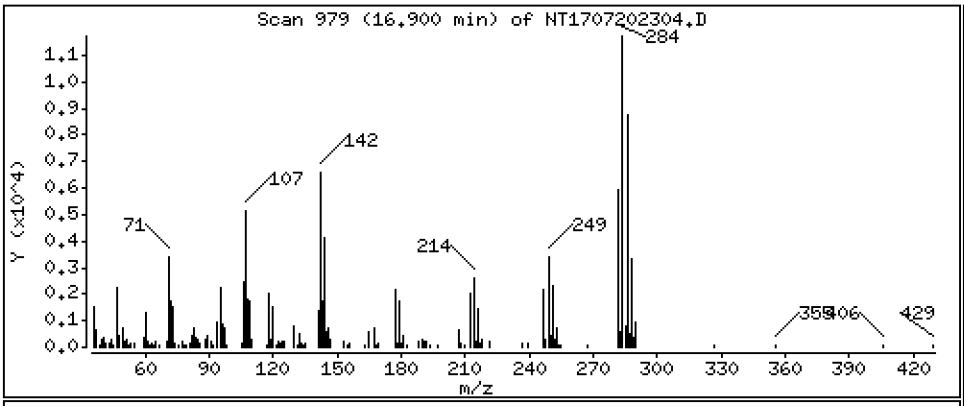
Operator: JGR

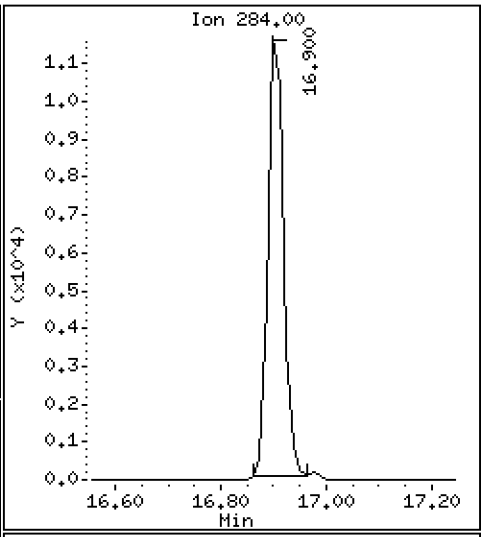
Column phase: ZB-5msi

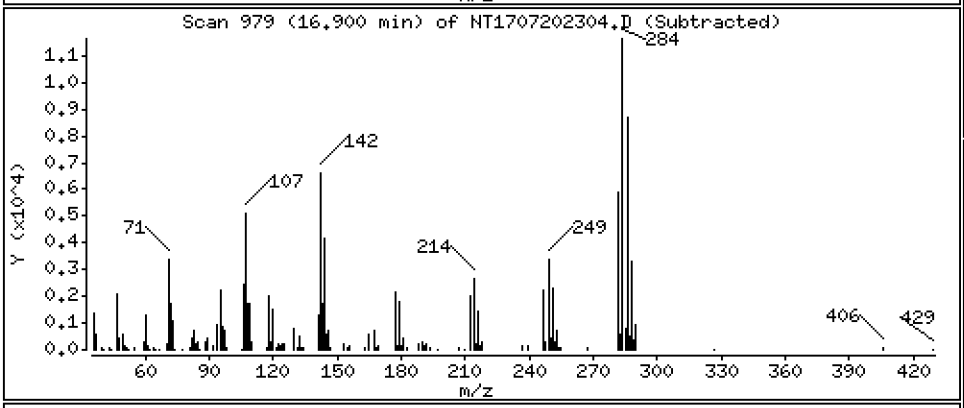
Column diameter: 0.25

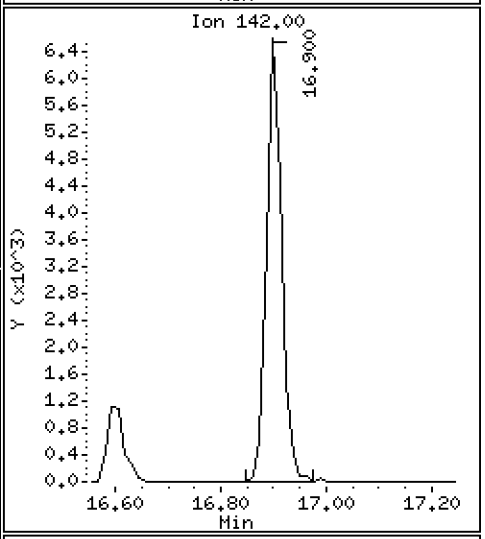
57 Hexachlorobenzene

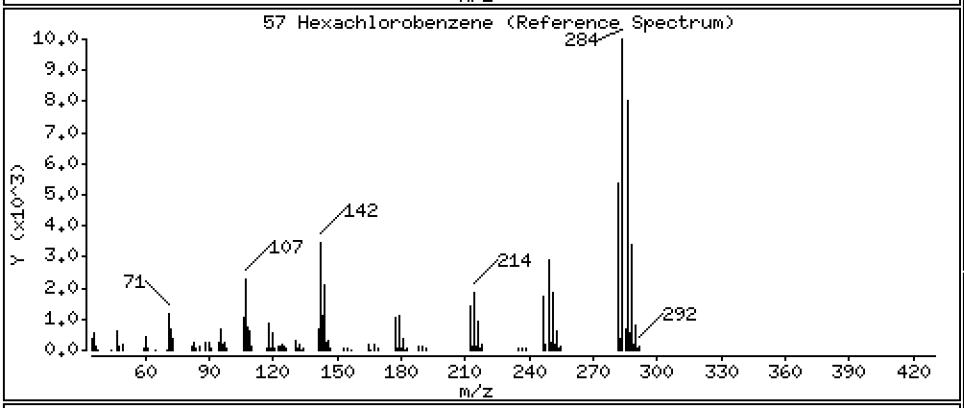
Concentration: 0.4555 ug/mL

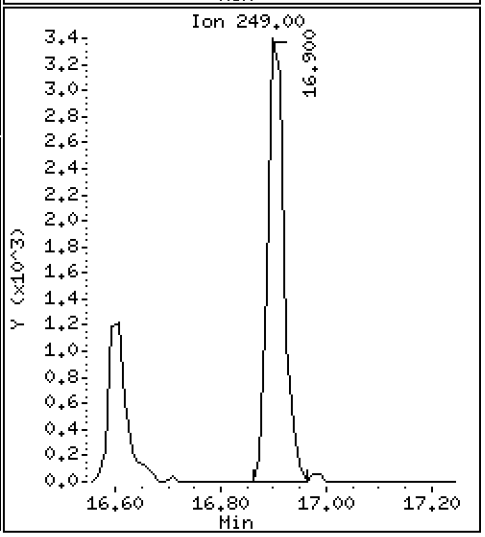


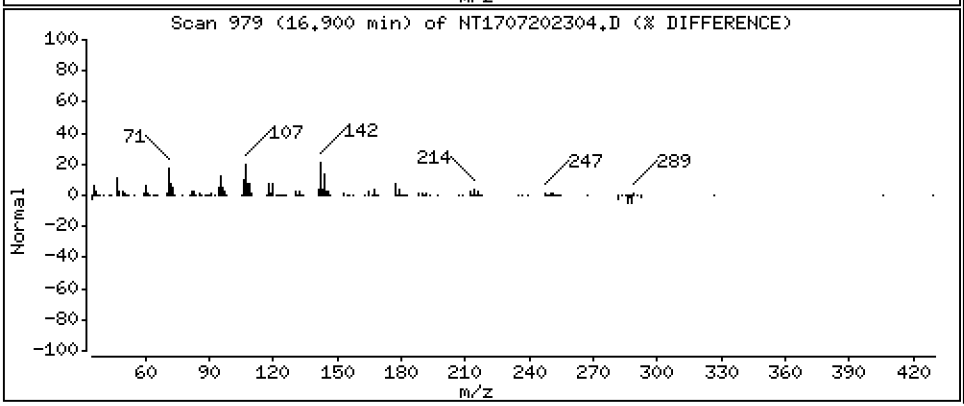












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

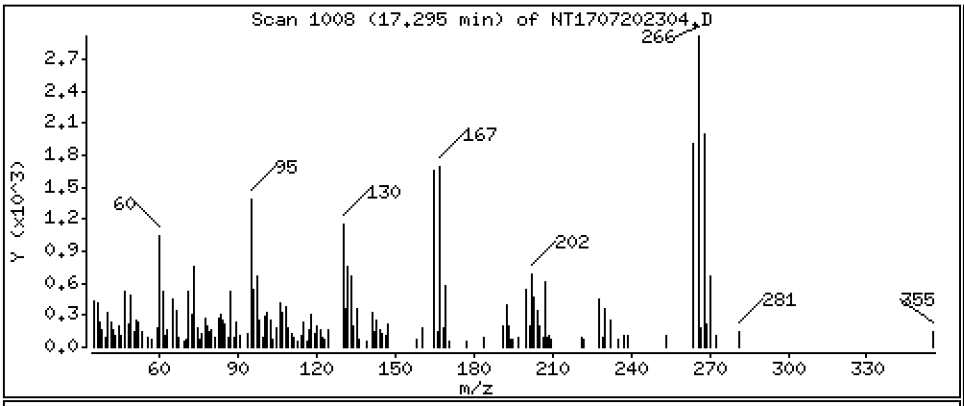
Operator: JGR

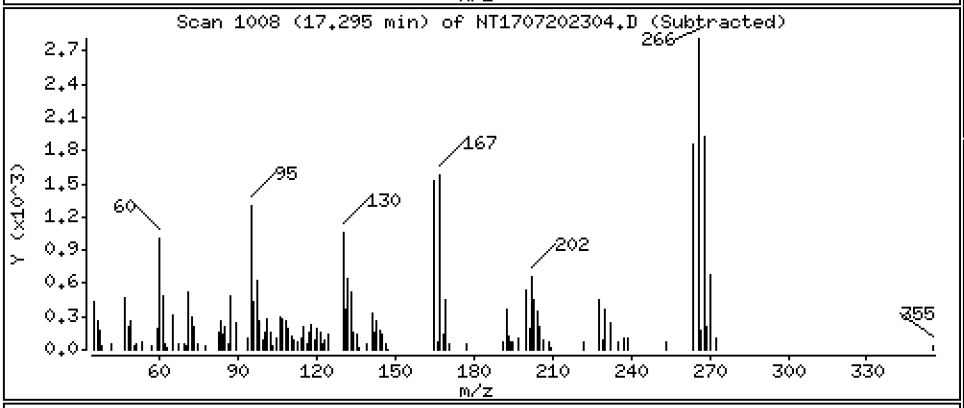
Column phase: ZB-5msi

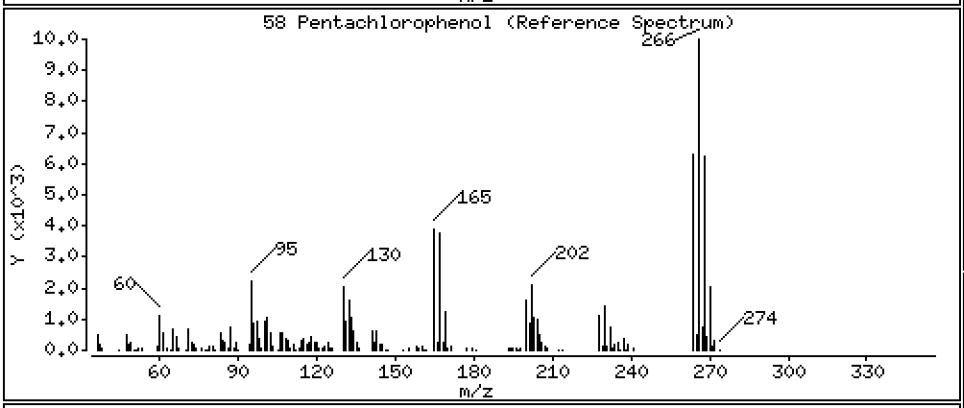
Column diameter: 0.25

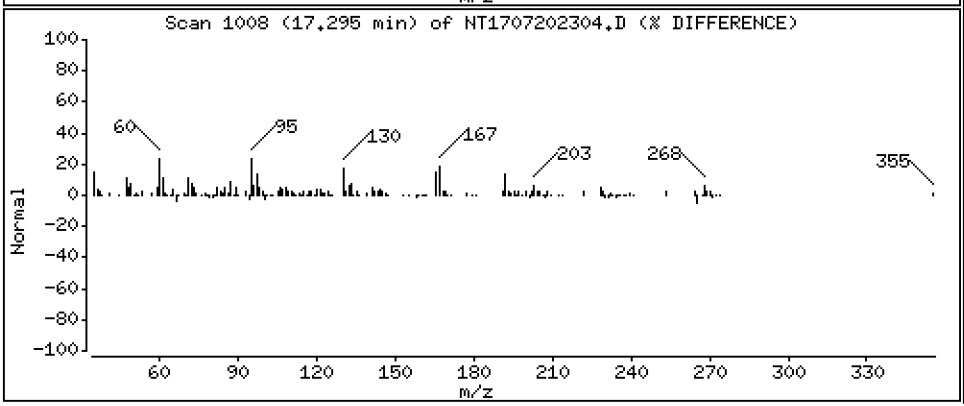
58 Pentachlorophenol

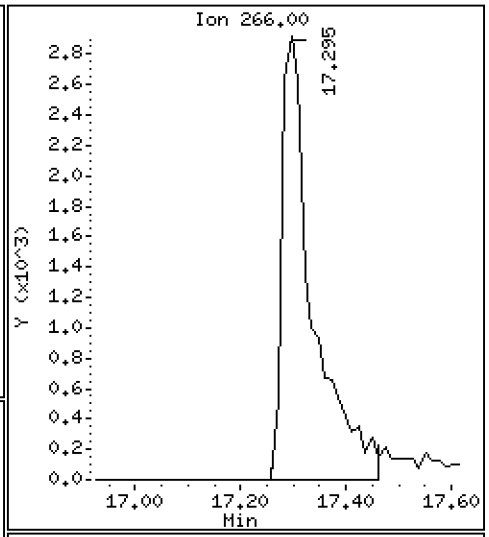
Concentration: 0.4021 ug/mL

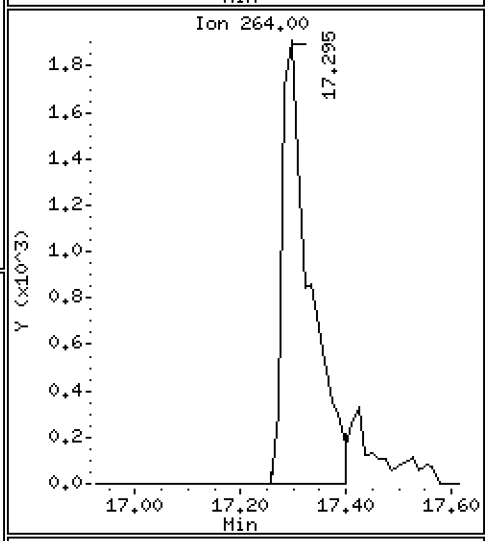


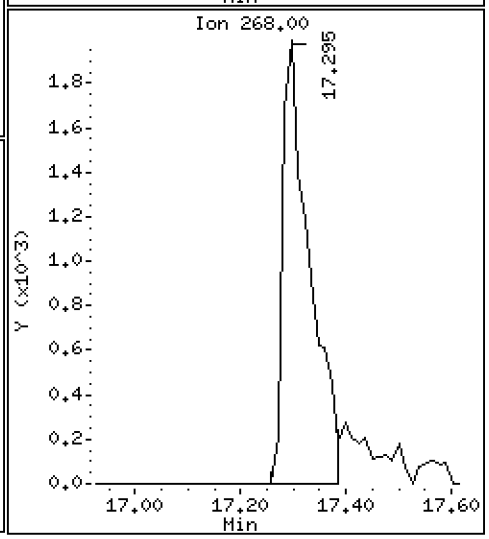












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

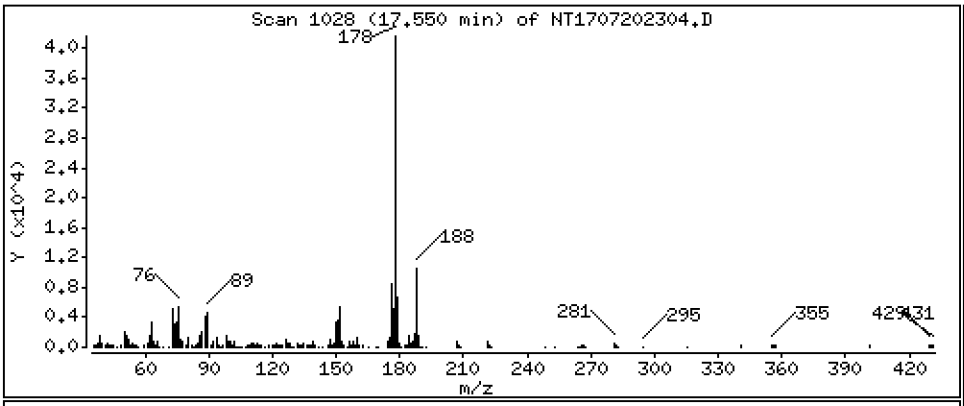
Operator: JGR

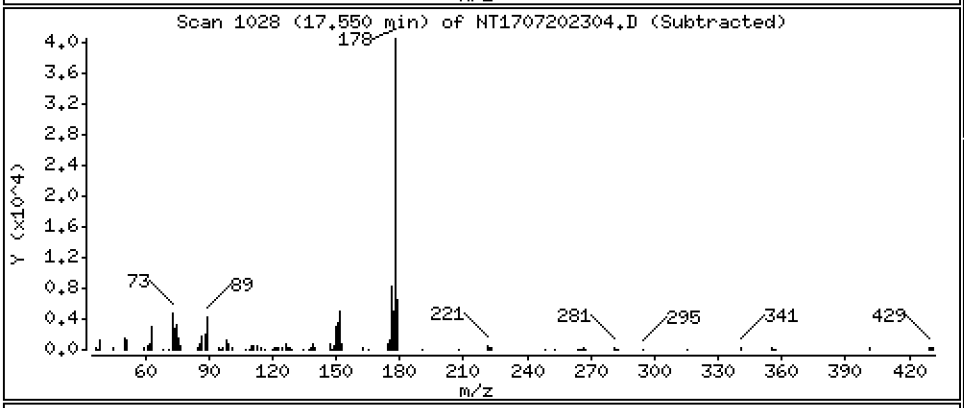
Column phase: ZB-5msi

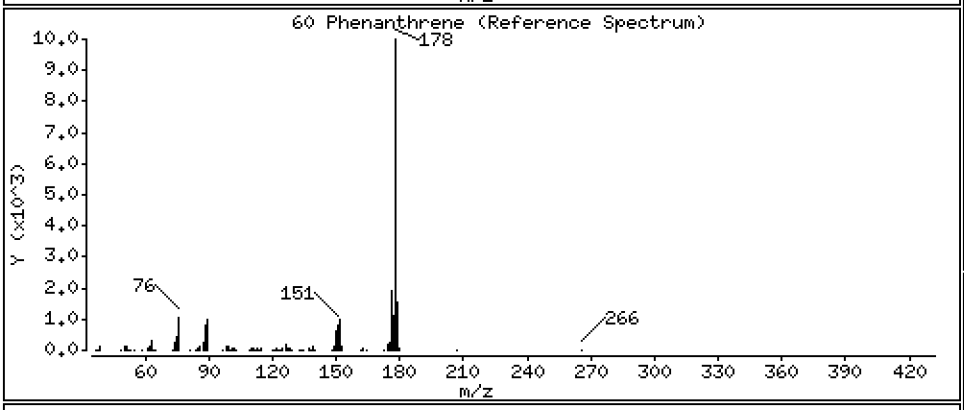
Column diameter: 0.25

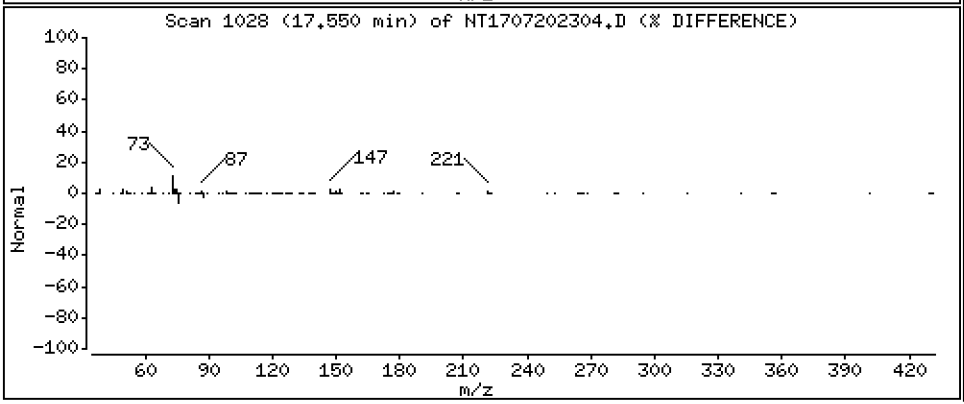
60 Phenanthrene

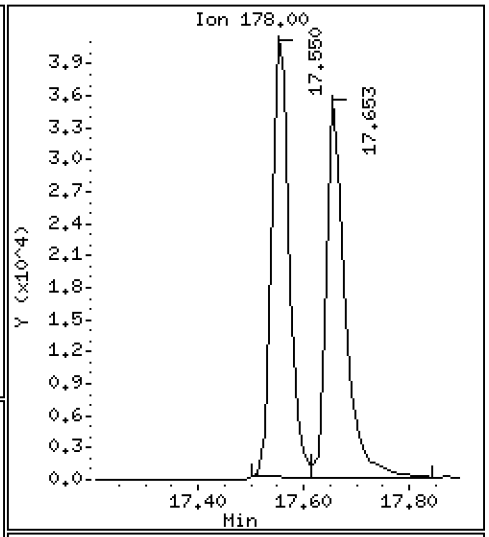
Concentration: 0.4455 ug/mL

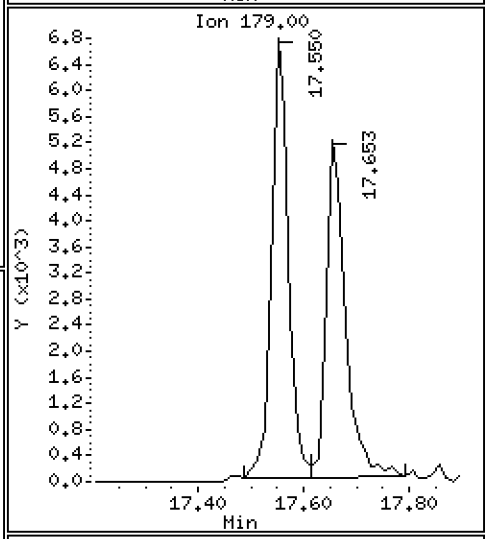


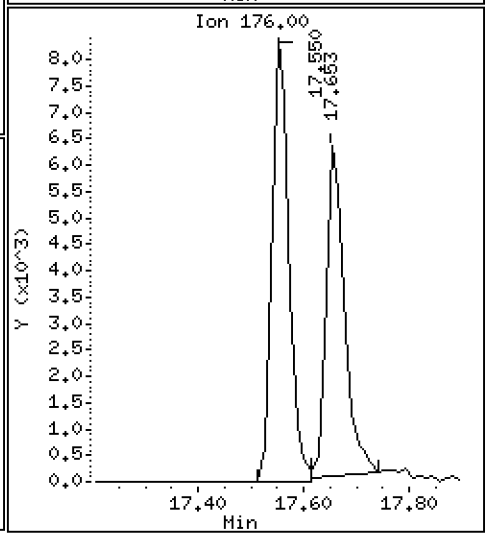












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

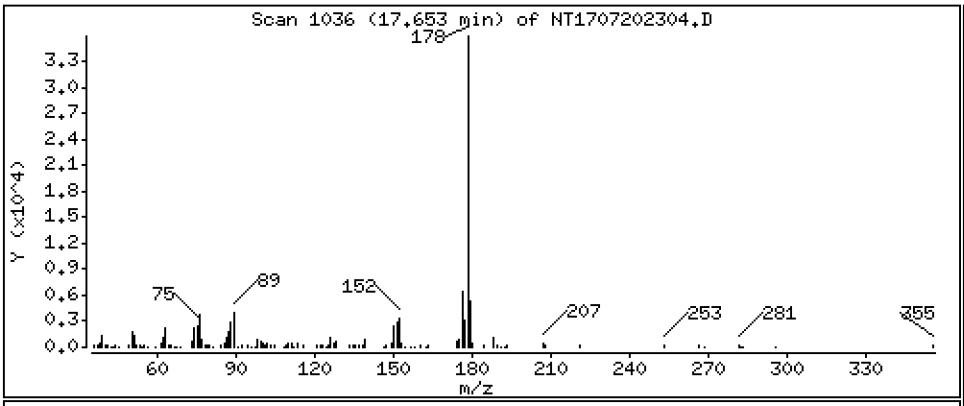
Operator: JGR

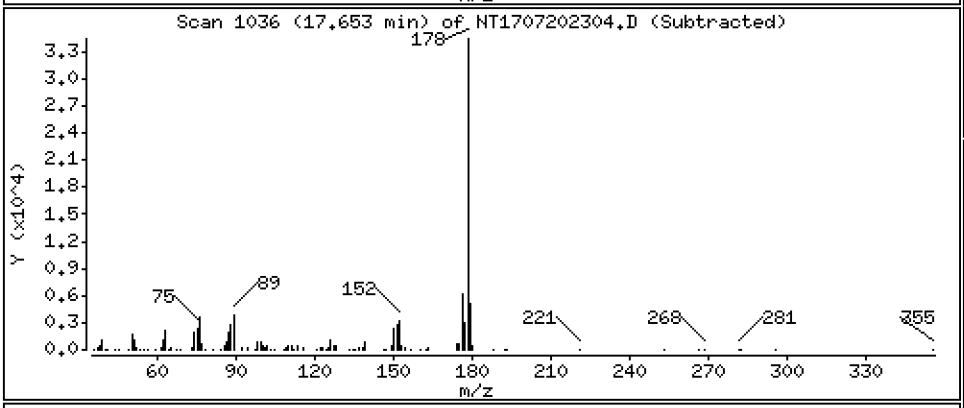
Column phase: ZB-5msi

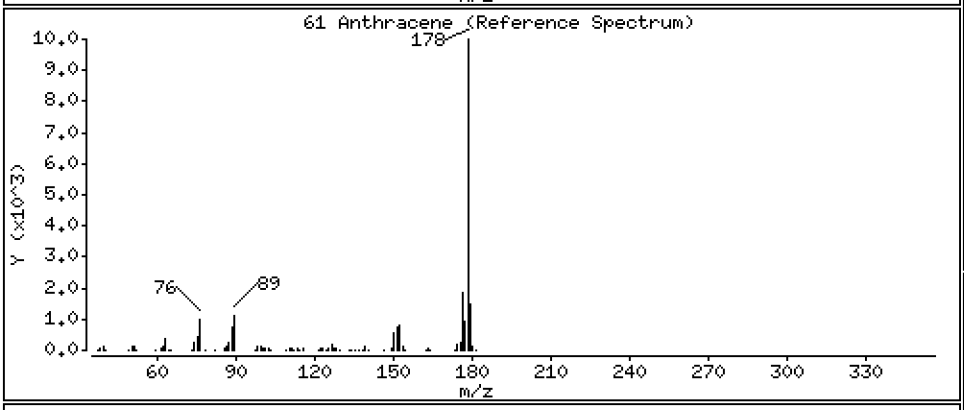
Column diameter: 0.25

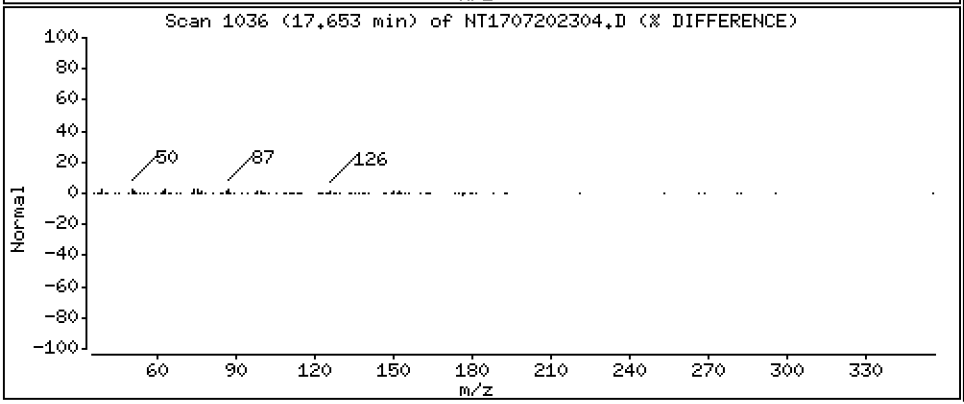
61 Anthracene

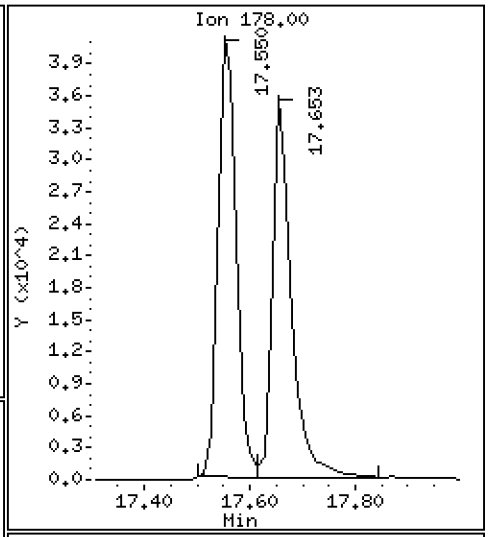
Concentration: 0.4271 ug/mL

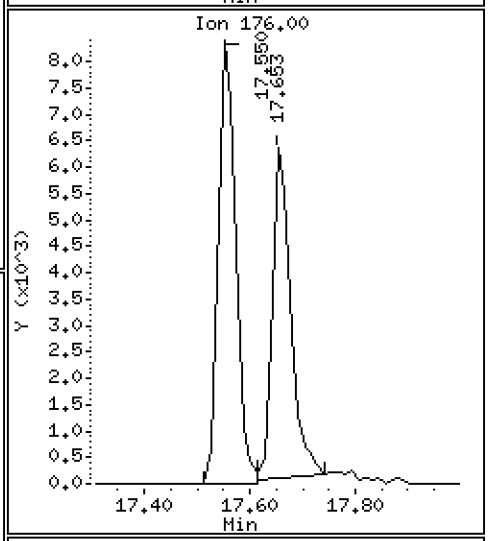


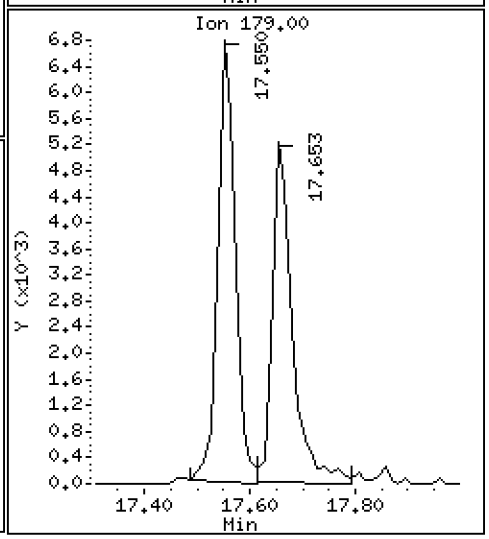












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

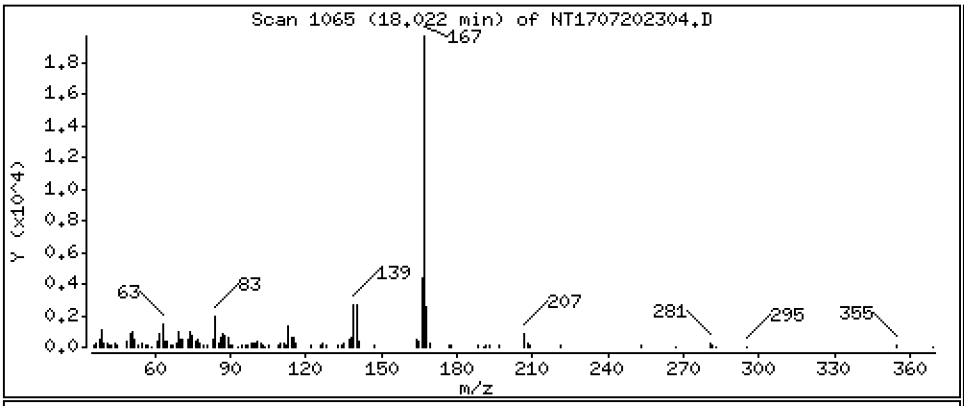
Operator: JGR

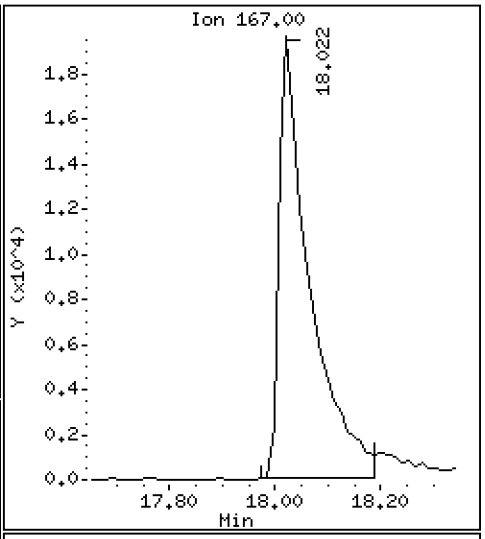
Column phase: ZB-5msi

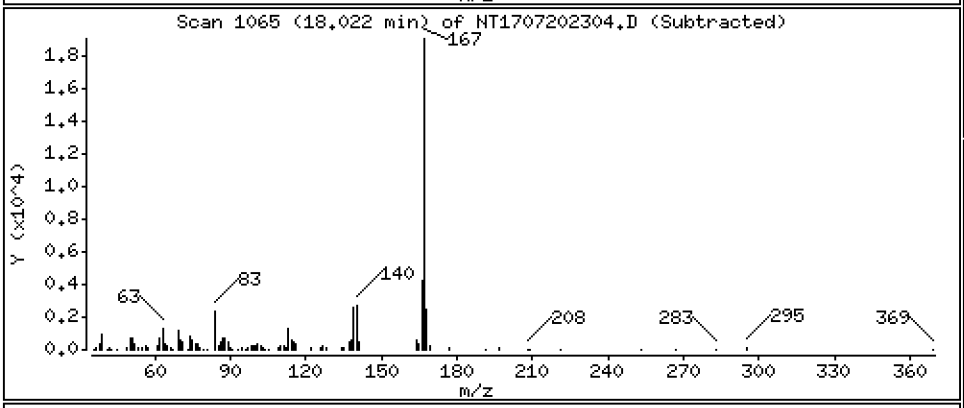
Column diameter: 0.25

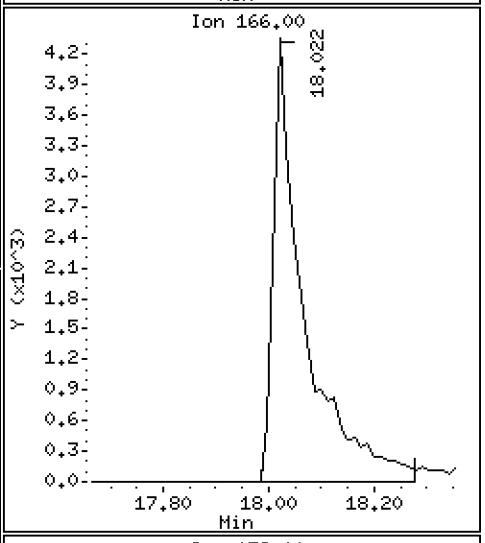
62 Carbazole

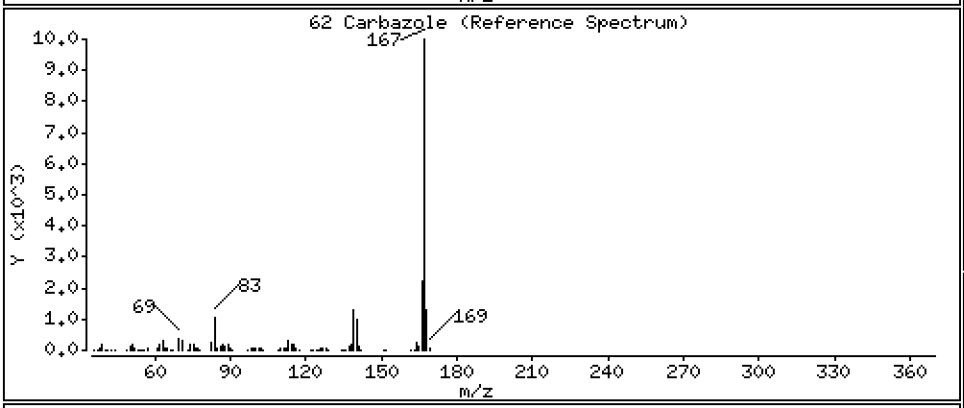
Concentration: 0.4565 ug/mL

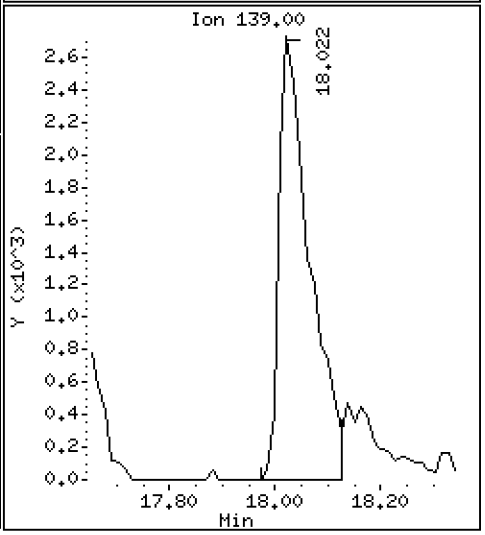


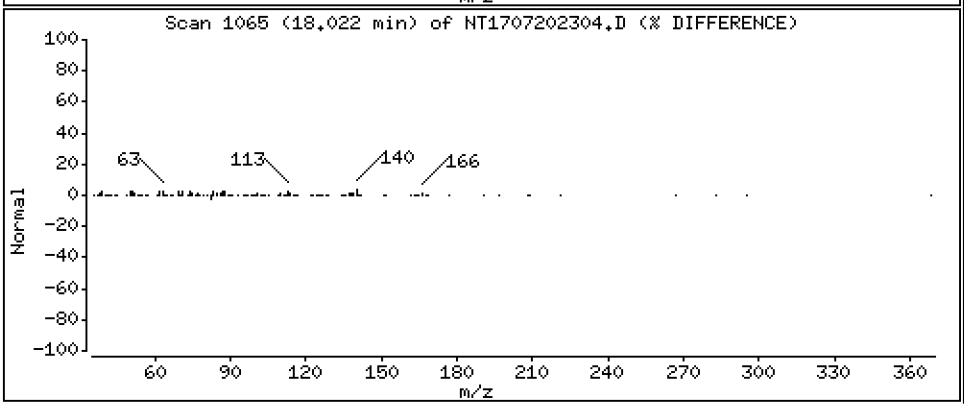












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

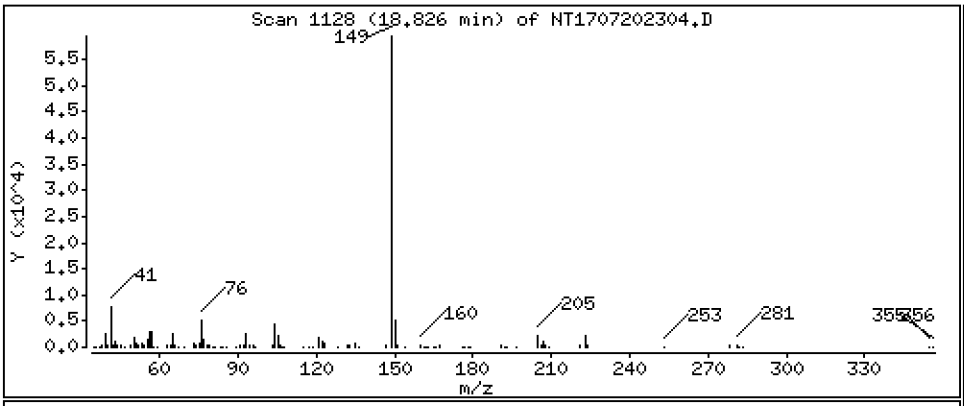
Operator: JGR

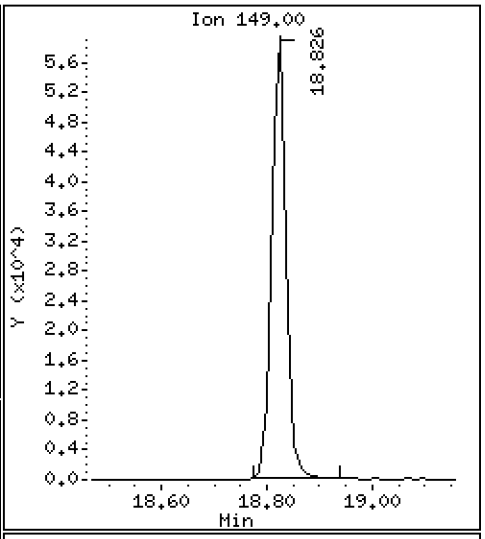
Column phase: ZB-5msi

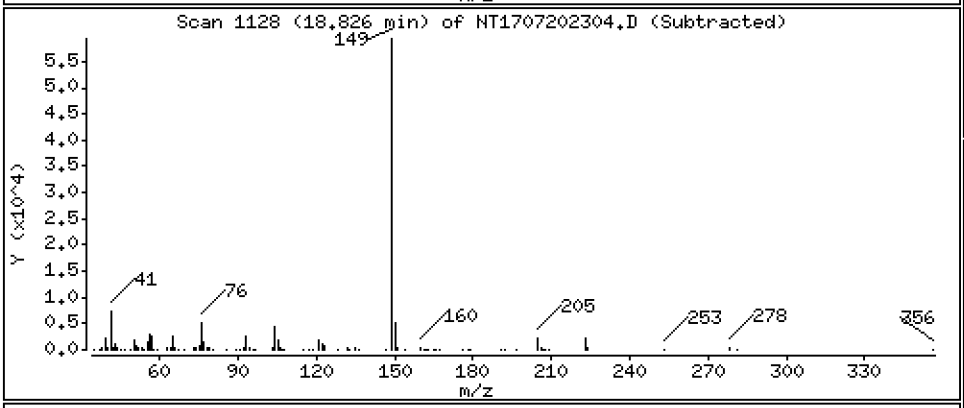
Column diameter: 0.25

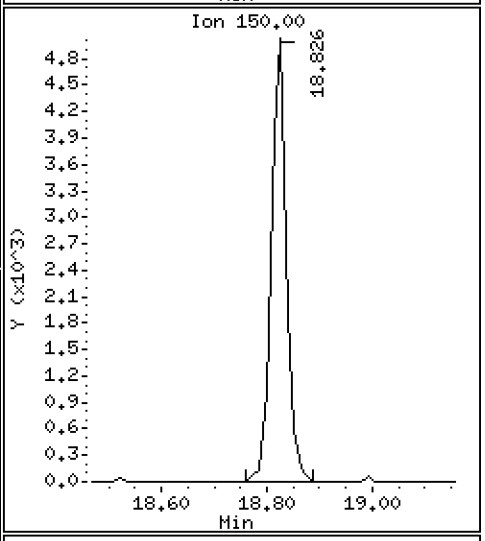
63 Di-n-butylphthalate

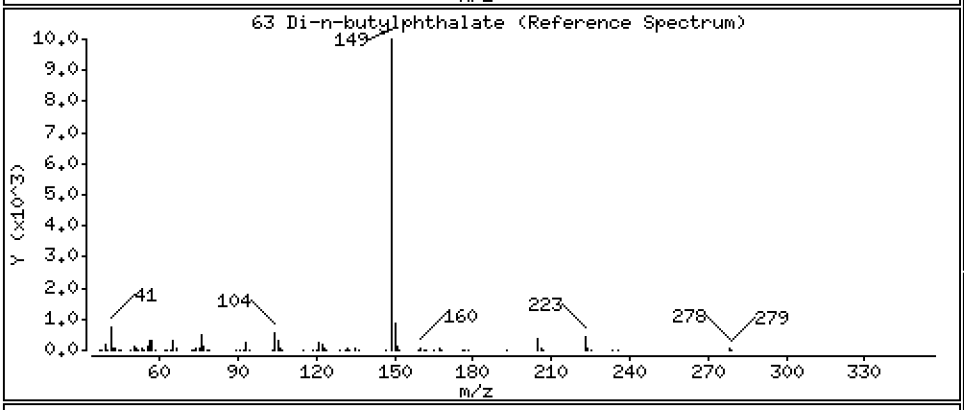
Concentration: 0.3961 ug/mL

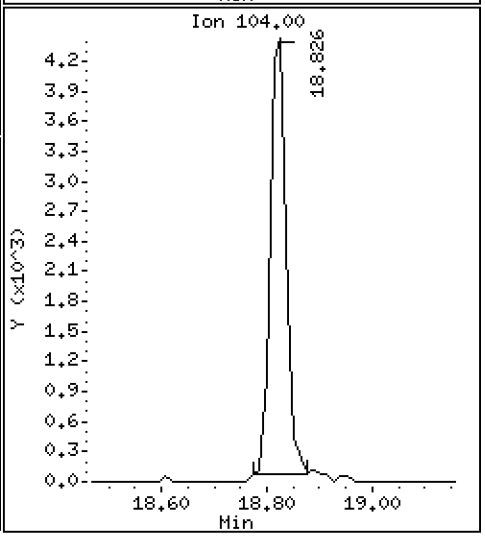


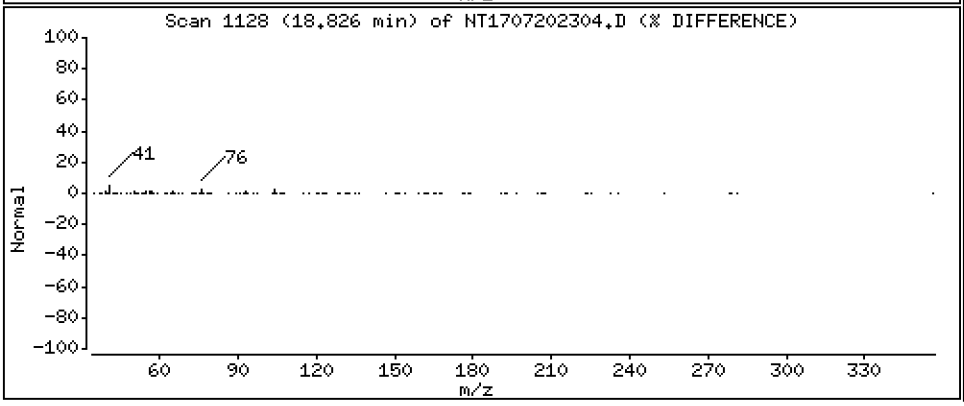












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D

Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

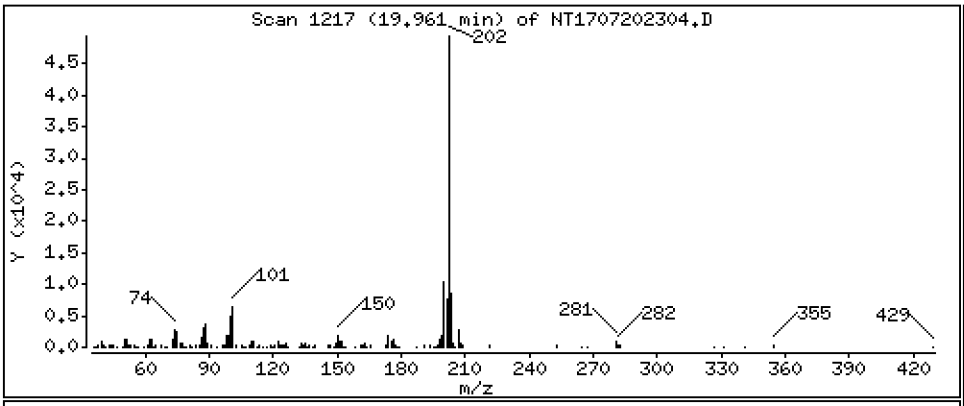
Operator: JGR

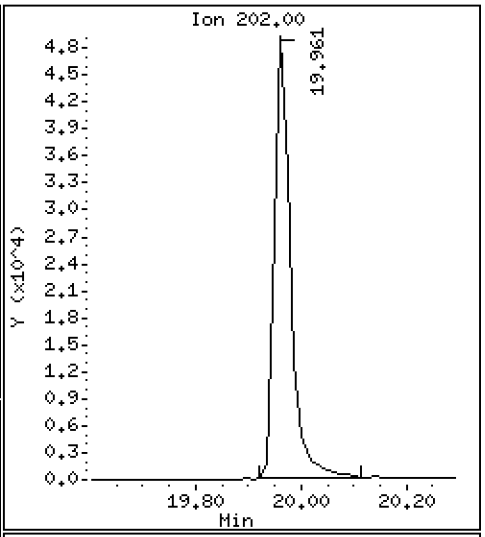
Column phase: ZB-5msi

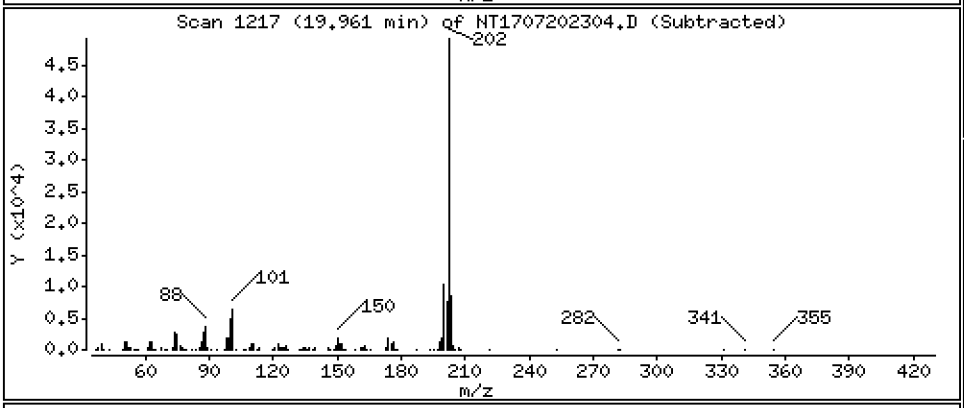
Column diameter: 0.25

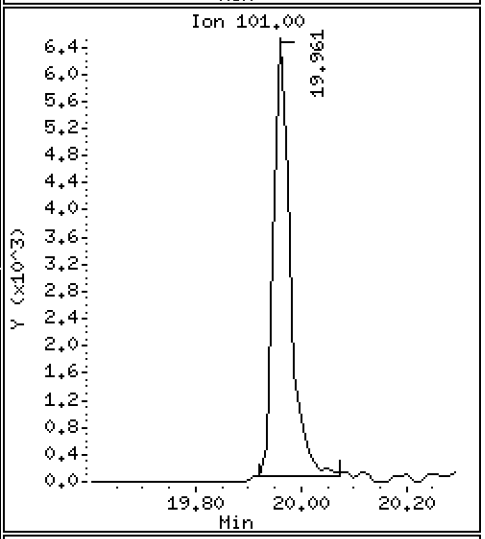
64 Fluoranthene

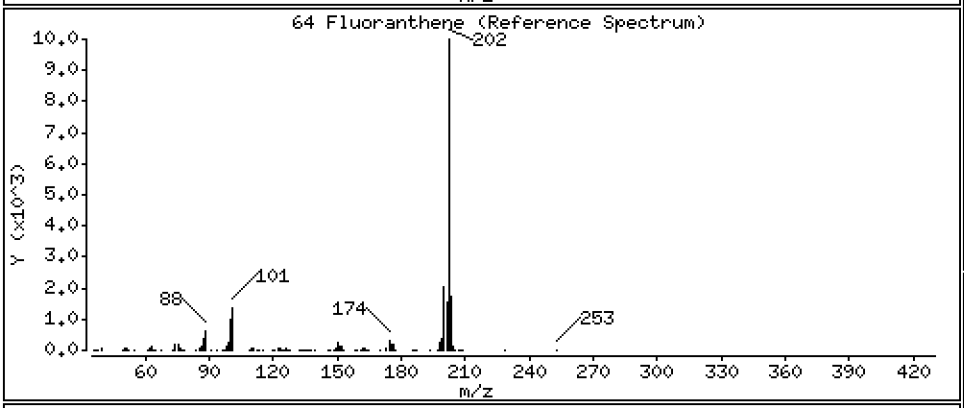
Concentration: 0.4632 ug/mL

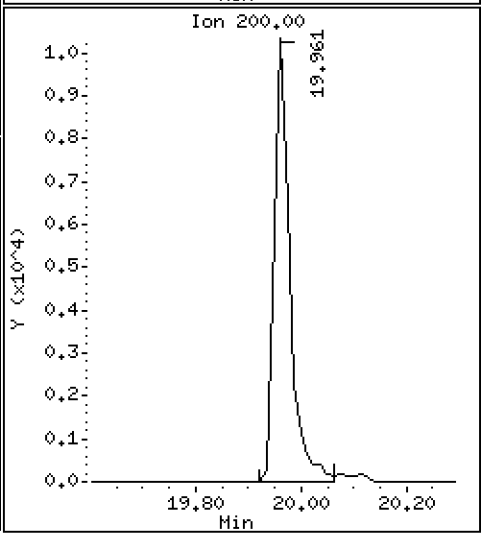


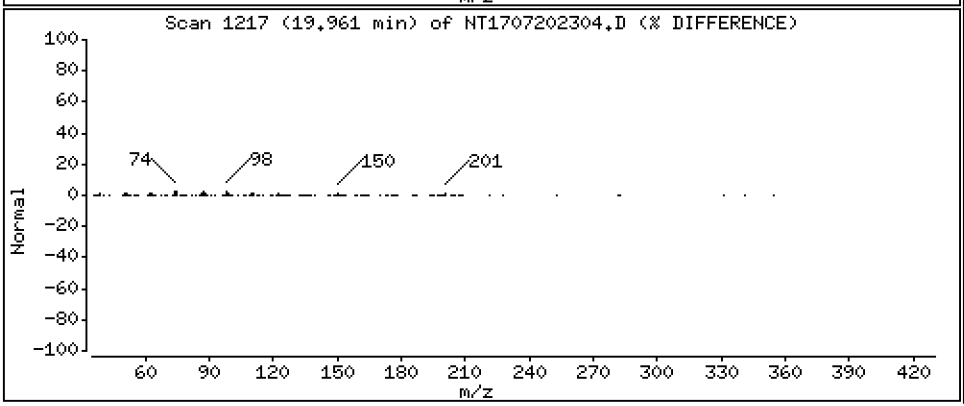












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D

Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

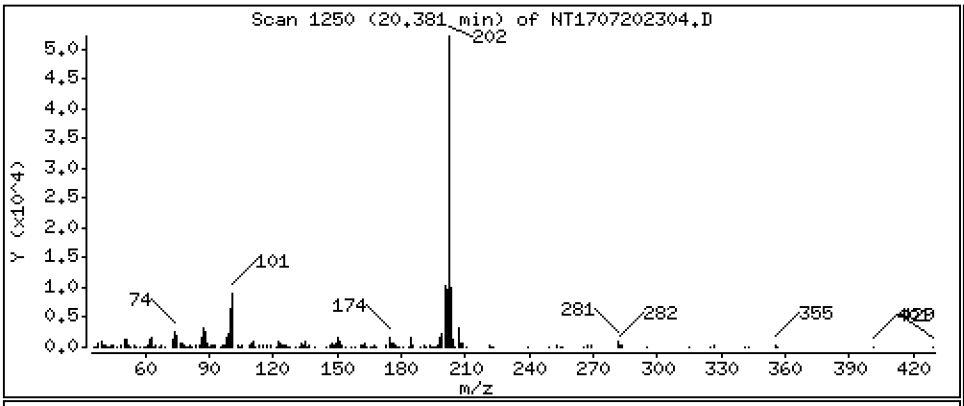
Operator: JGR

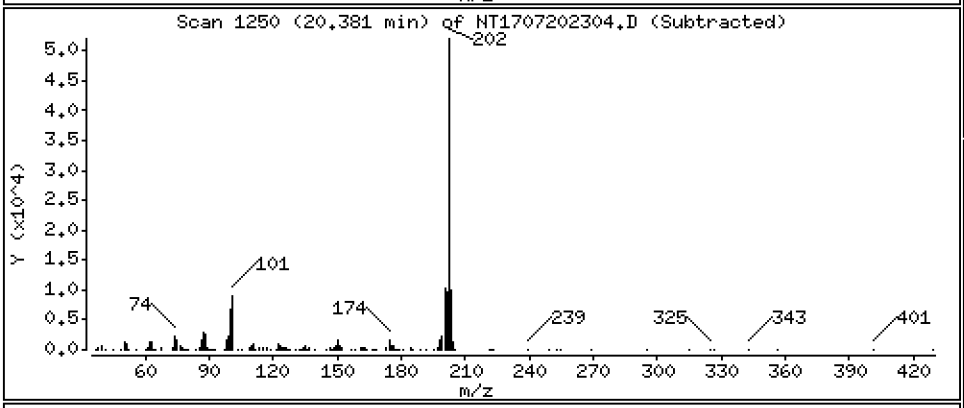
Column phase: ZB-5msi

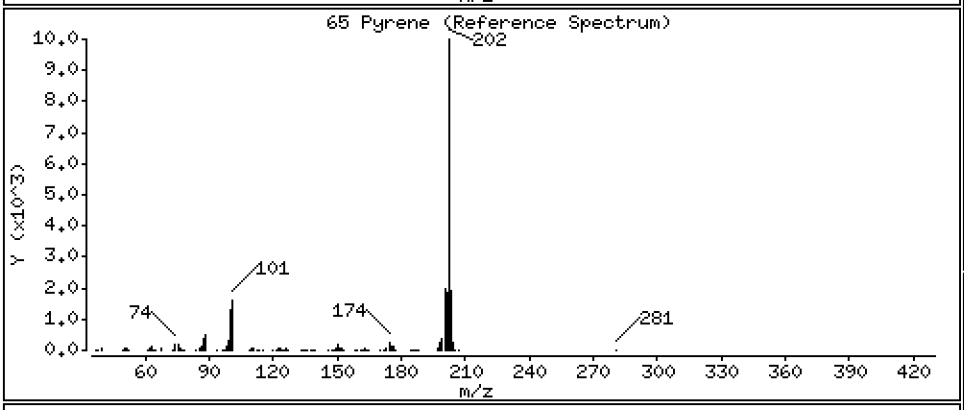
Column diameter: 0.25

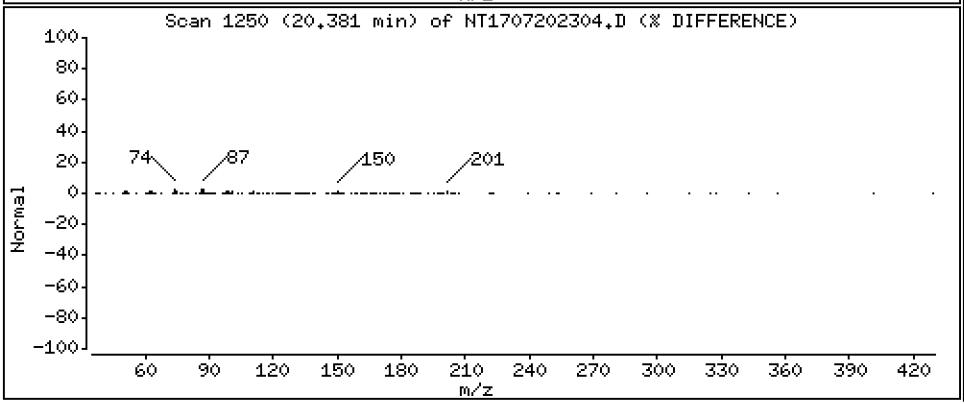
65 Pyrene

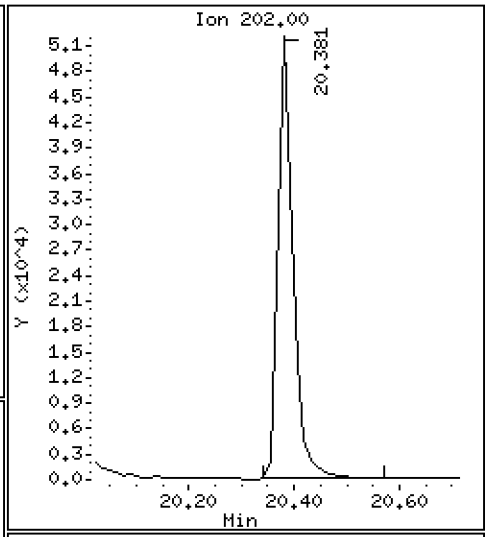
Concentration: 0.4731 ug/mL

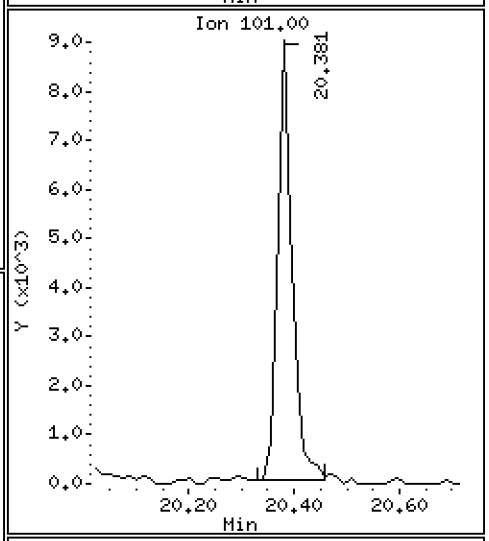


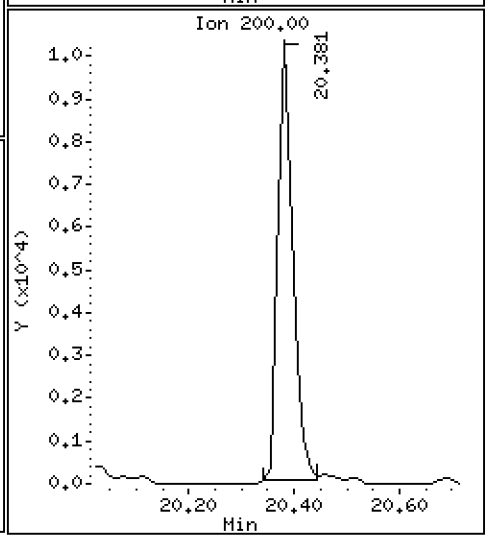












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

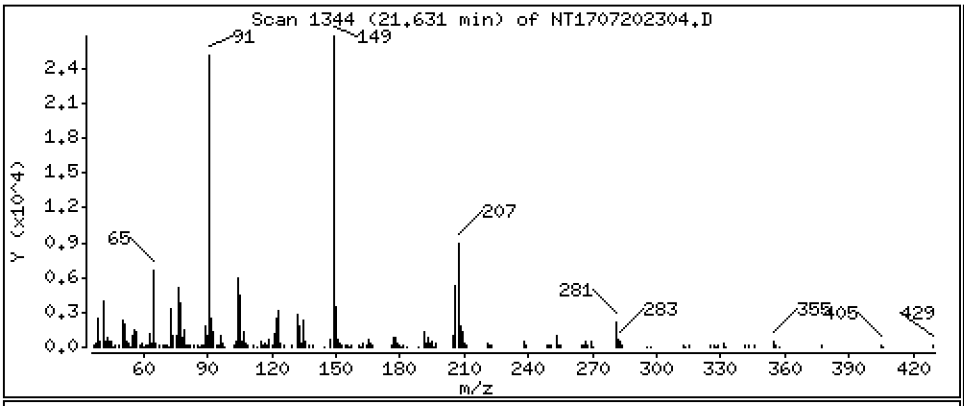
Operator: JGR

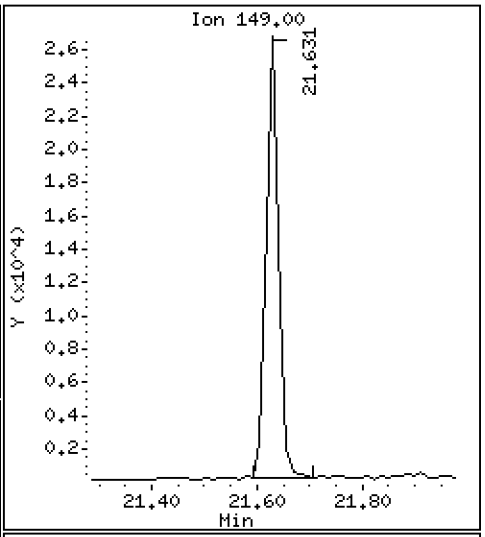
Column phase: ZB-5msi

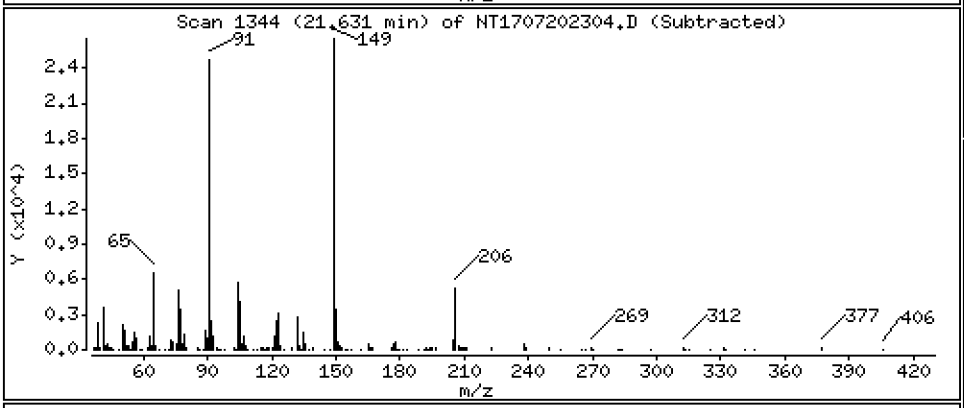
Column diameter: 0.25

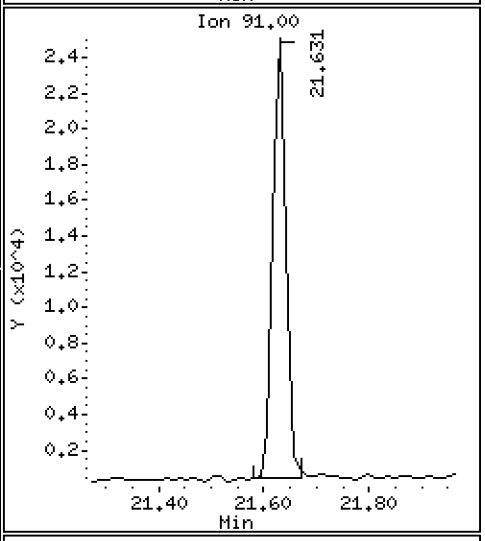
67 Butylbenzylphthalate

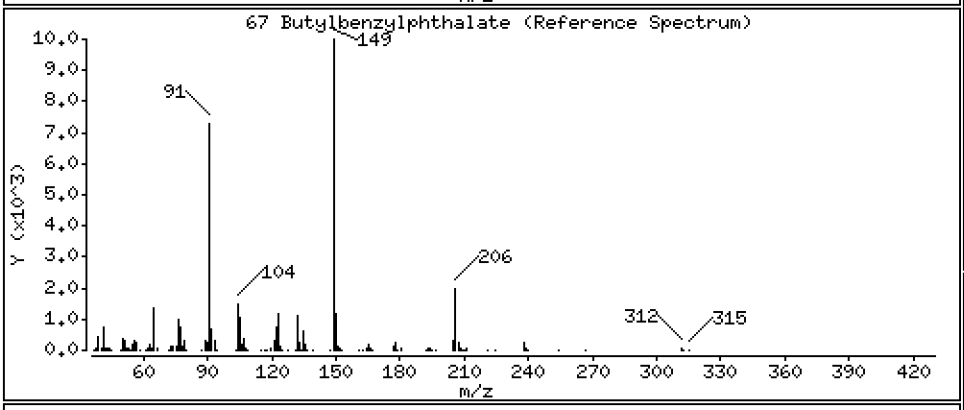
Concentration: 0.4110 ug/mL

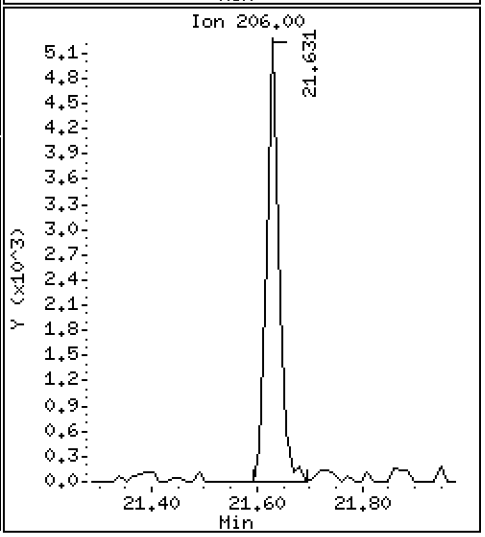


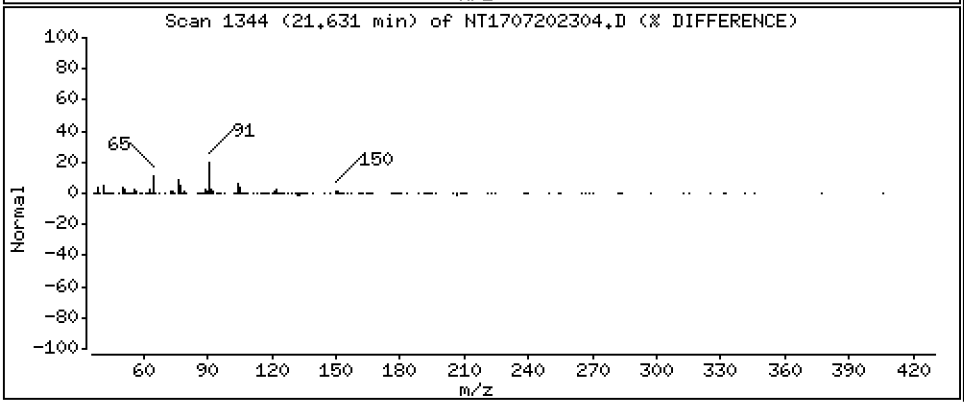












Date : 21-JUL-2023 02:35

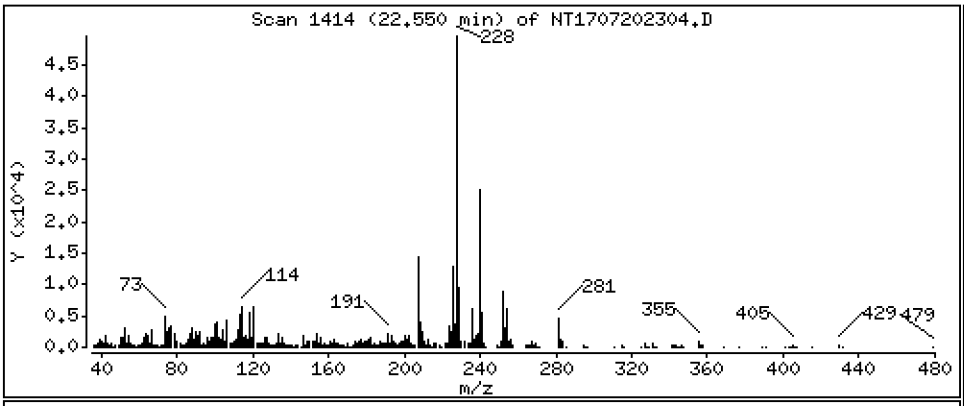
Client ID: Instrument: nt17.i

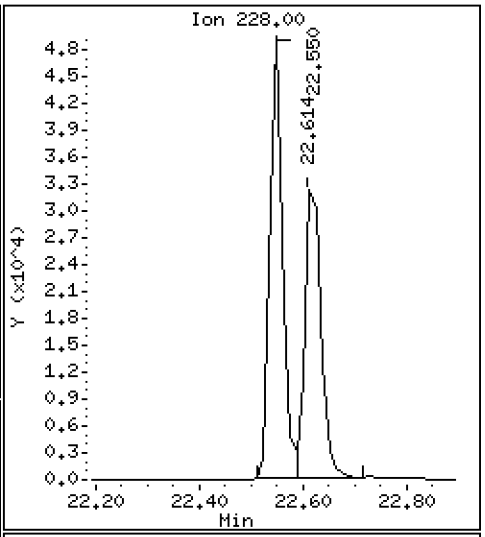
Sample Info: SLG0263-LCV1

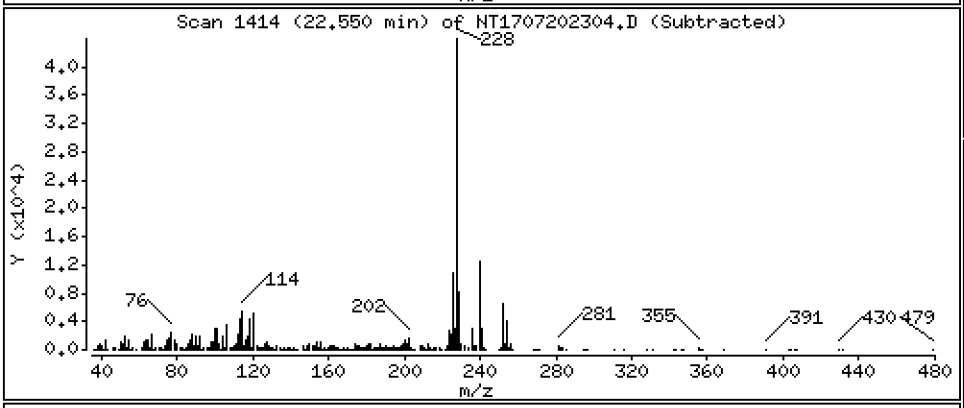
Operator: JGR

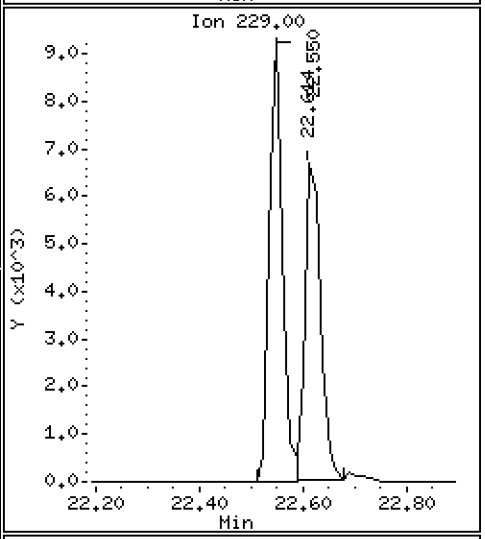
Column phase: ZB-5msi Column diameter: 0.25

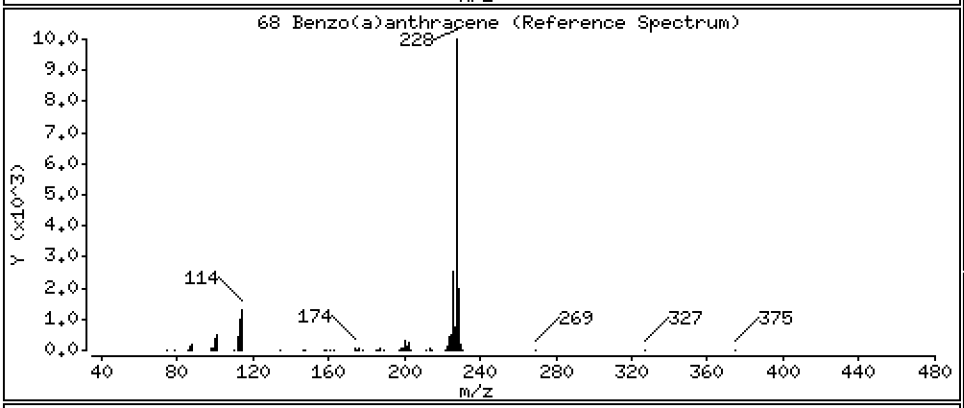
68 Benzo(a)anthracene Concentration: 0.4801 ug/mL

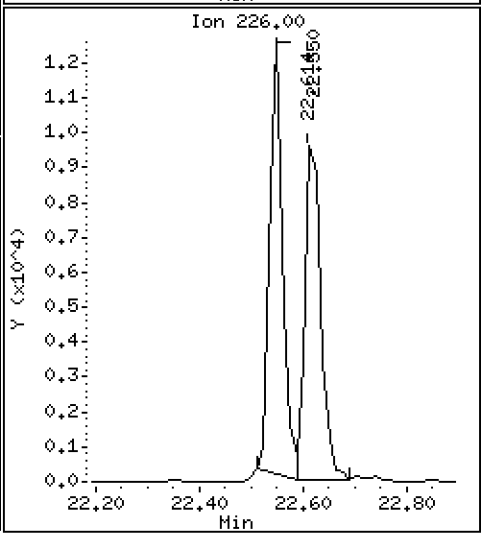


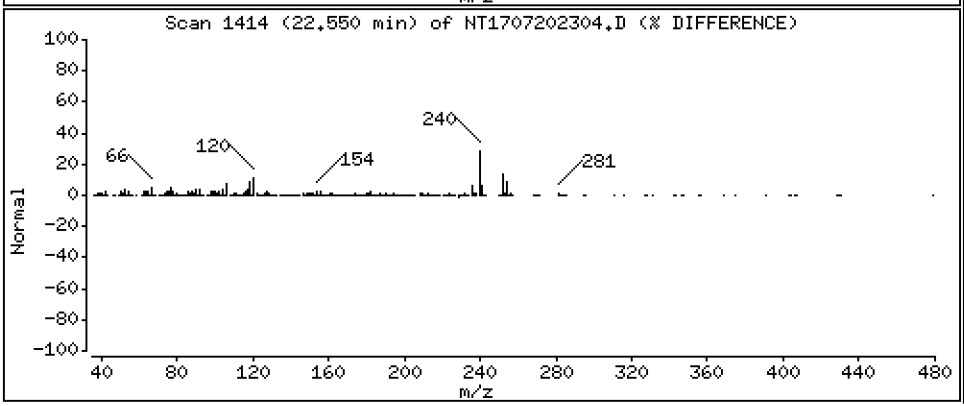












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

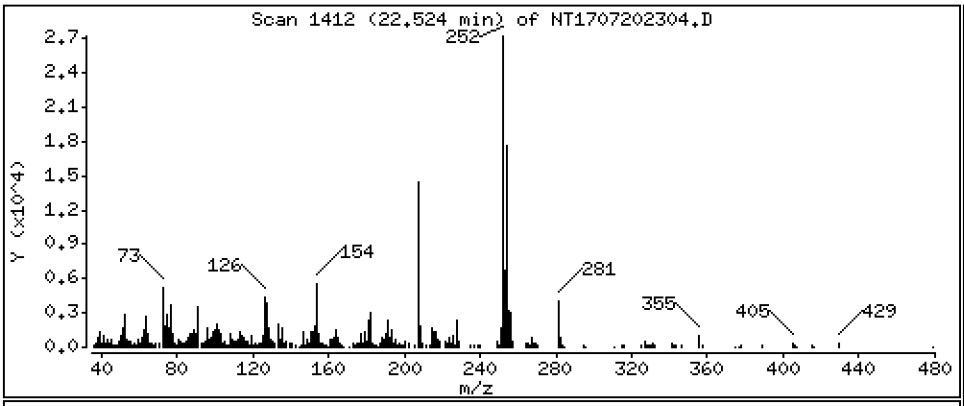
Operator: JGR

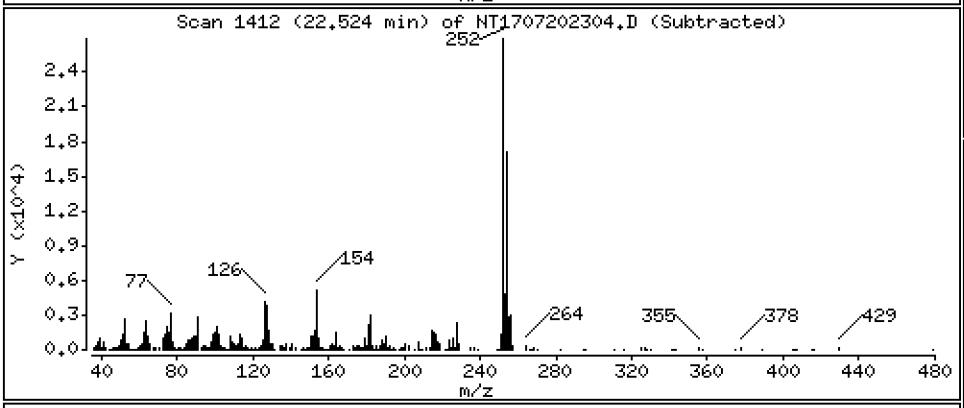
Column phase: ZB-5msi

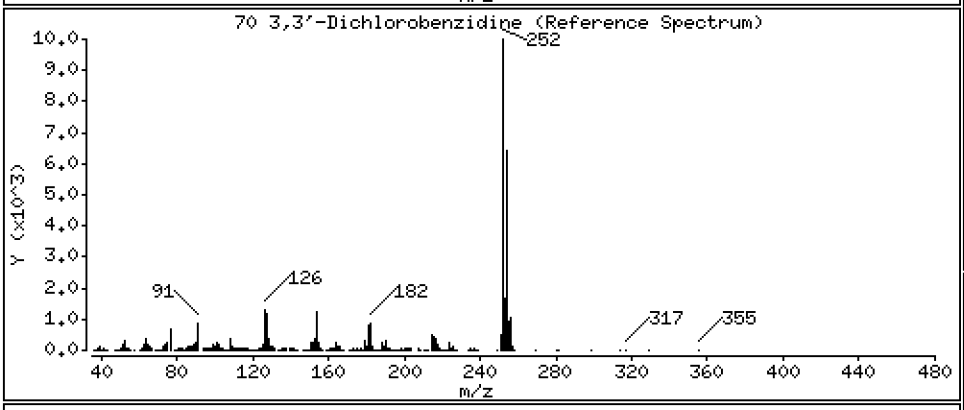
Column diameter: 0.25

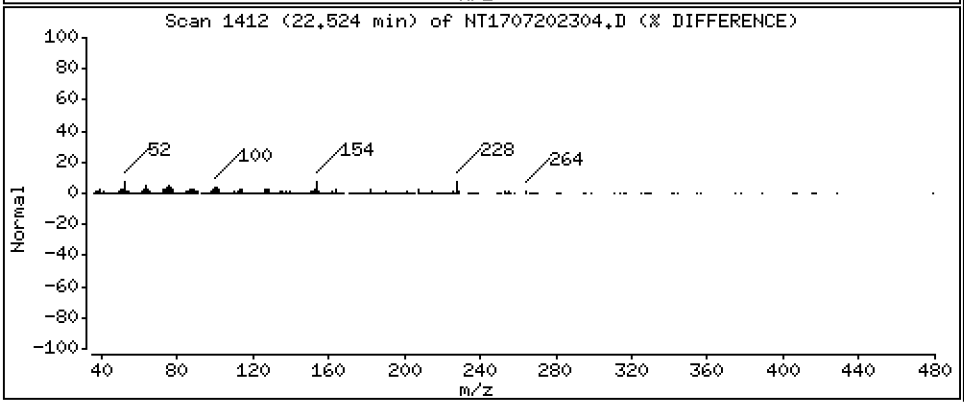
70 3,3'-Dichlorobenzidine

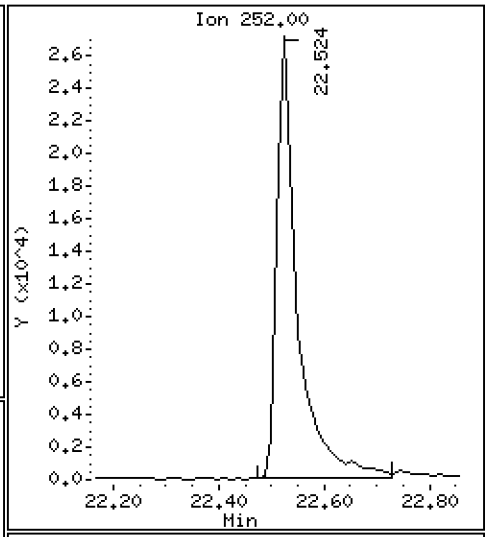
Concentration: 1.628 ug/mL

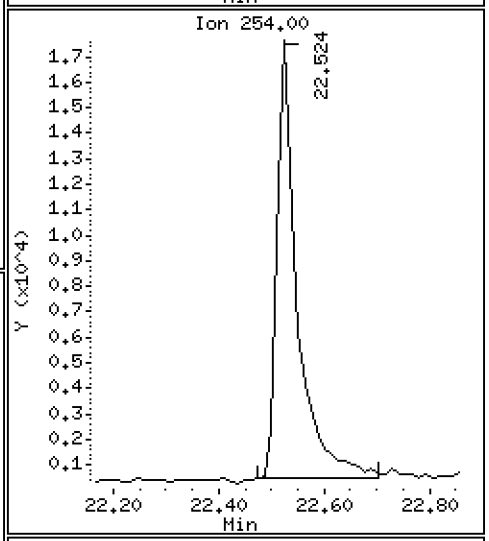


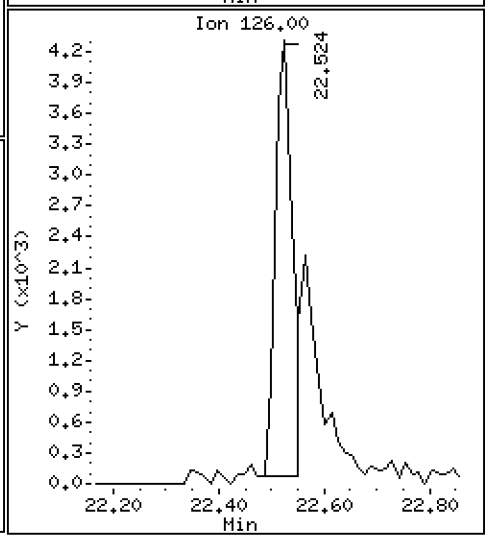












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLC0263-LCV1

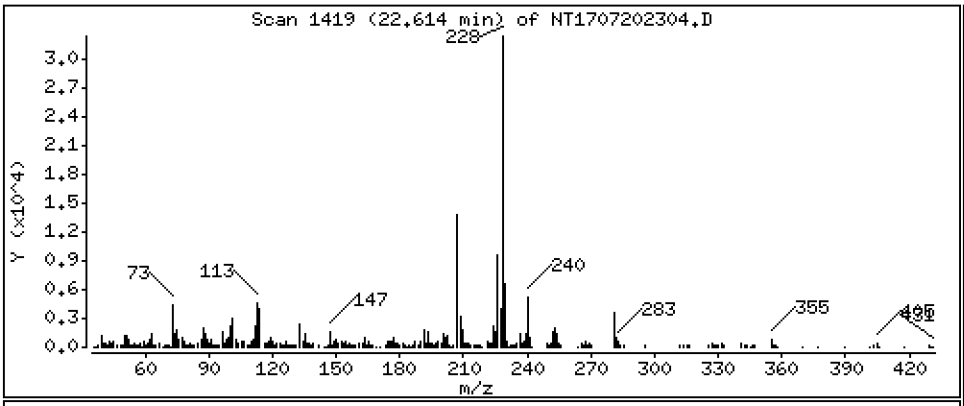
Operator: JGR

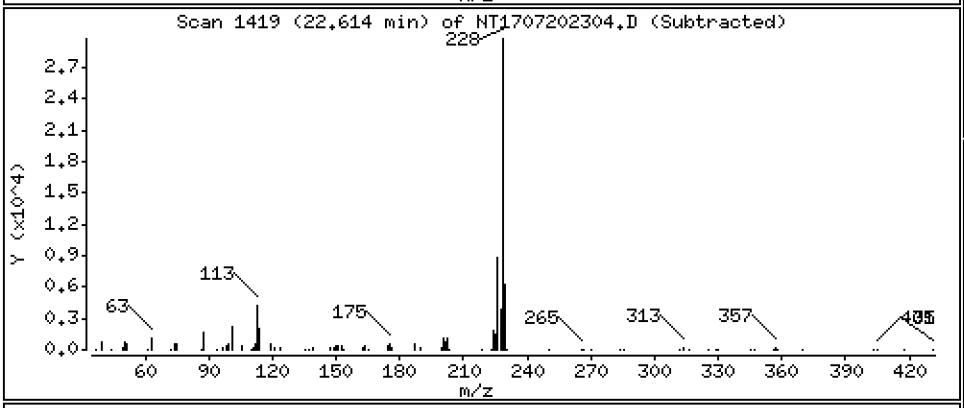
Column phase: ZB-5msi

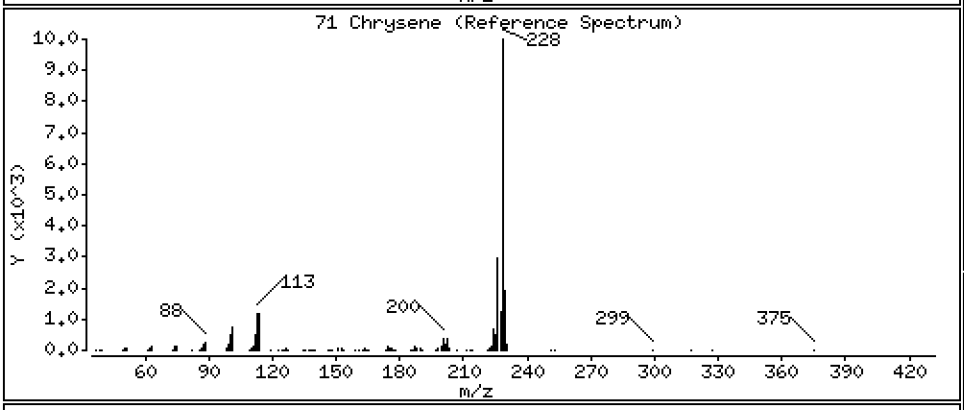
Column diameter: 0.25

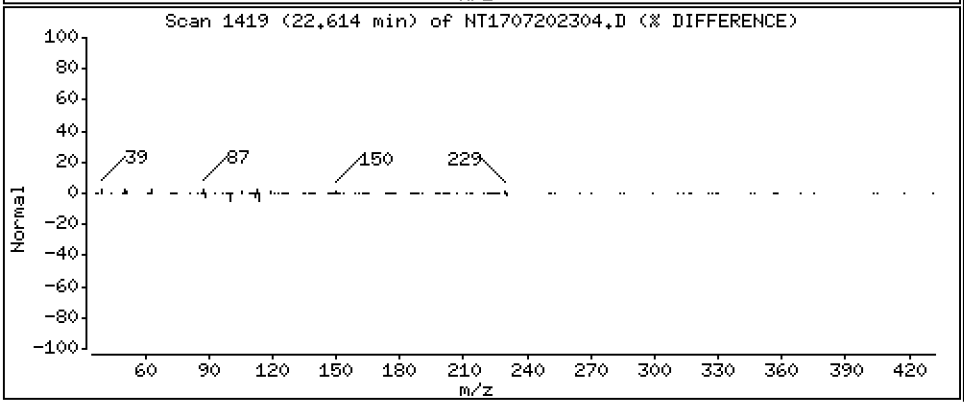
71 Chrysene

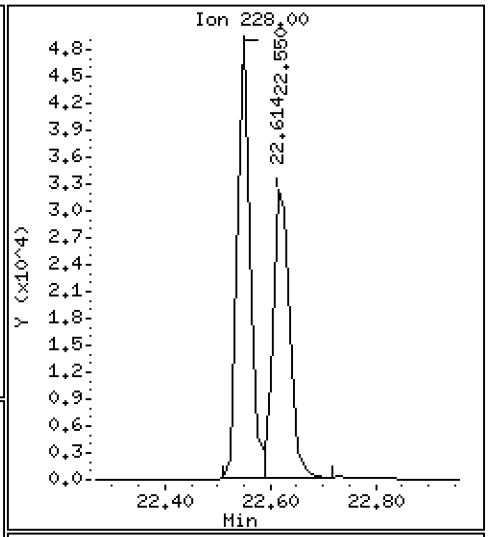
Concentration: 0.4397 ug/mL

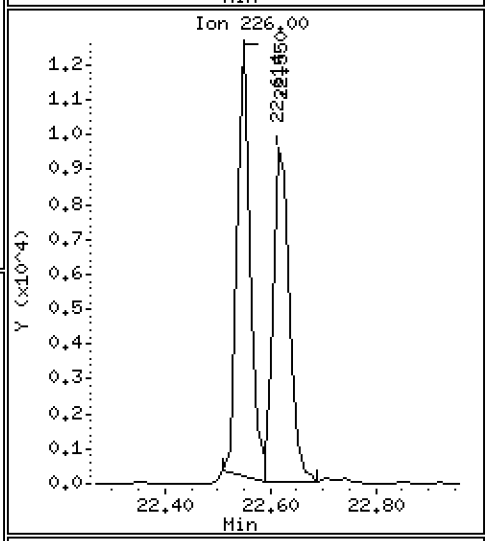


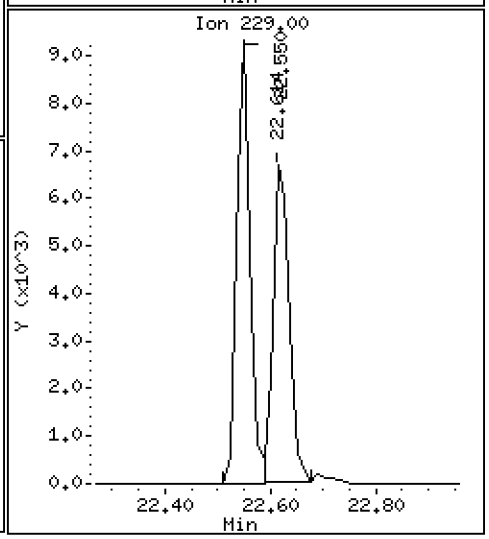












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

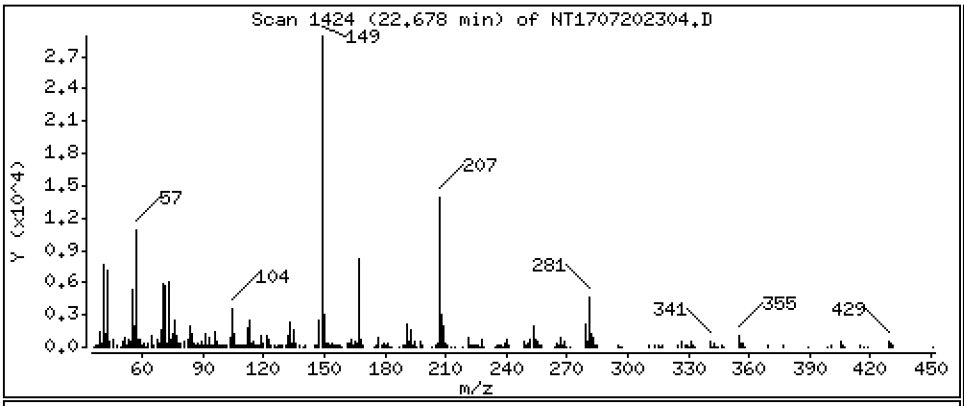
Operator: JGR

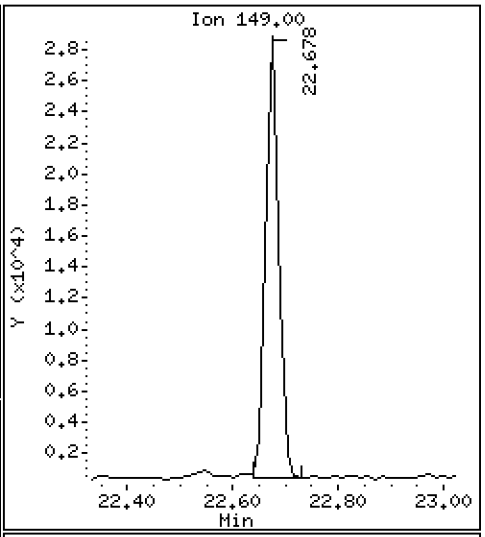
Column phase: ZB-5msi

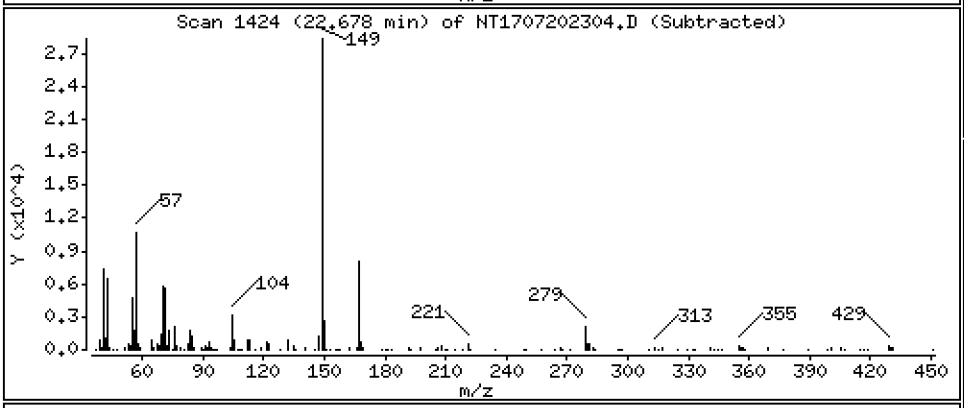
Column diameter: 0.25

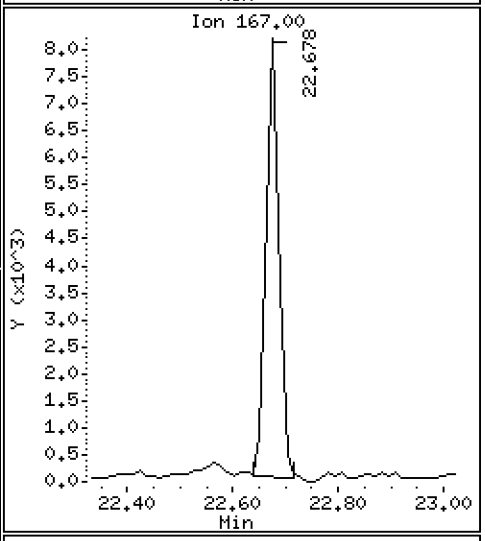
72 bis(2-Ethylhexyl)phthalate

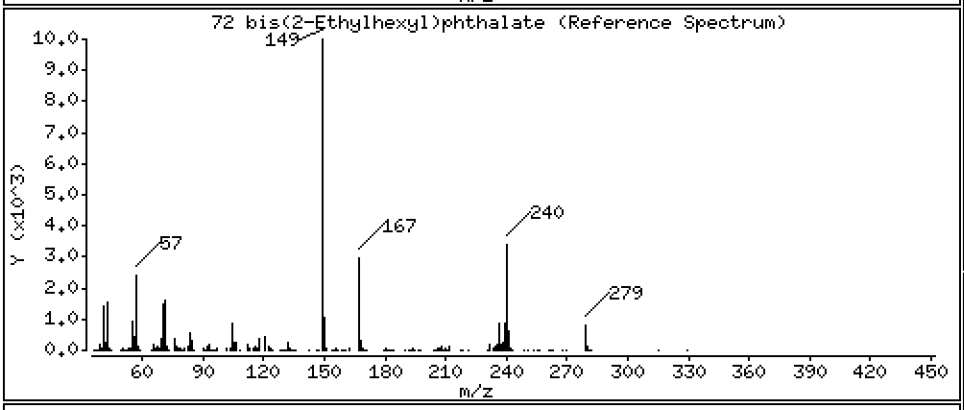
Concentration: 0.4850 ug/mL

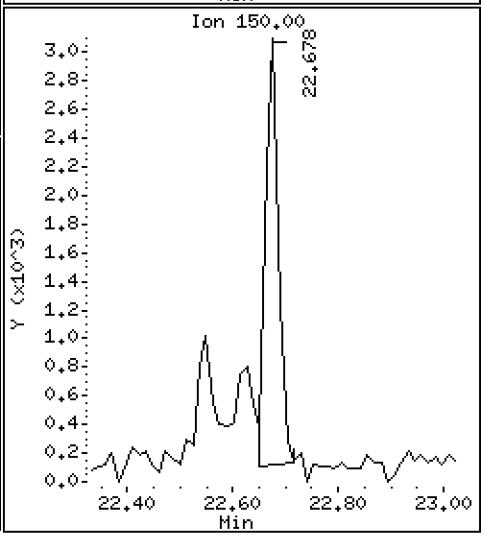


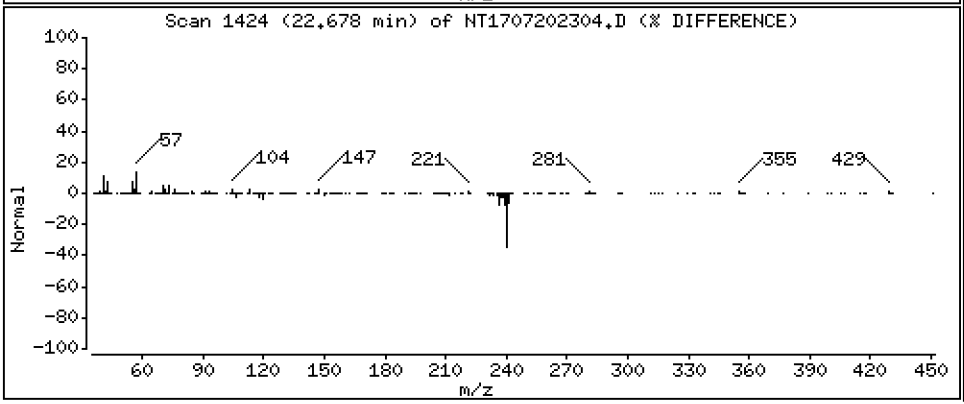












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

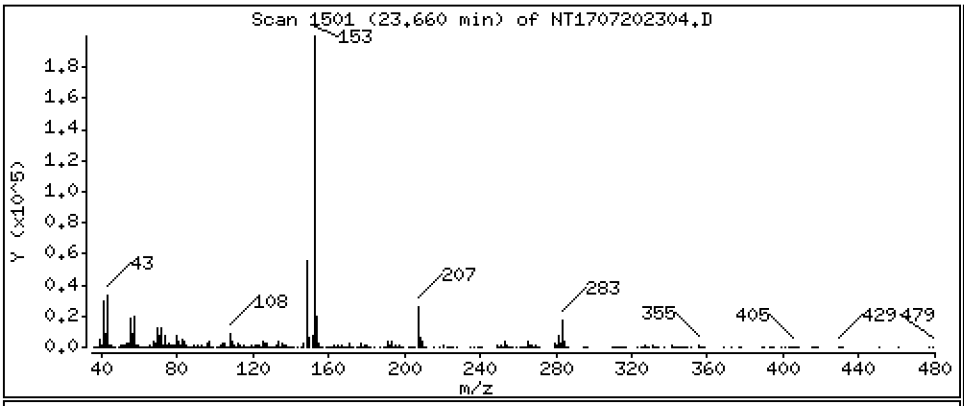
Operator: JGR

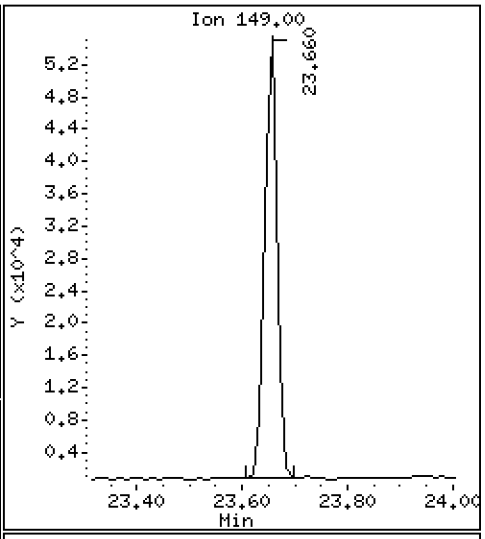
Column phase: ZB-5msi

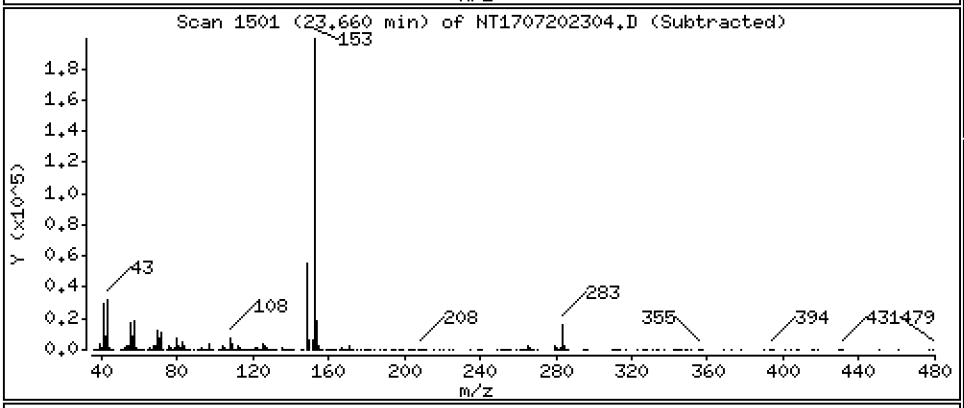
Column diameter: 0.25

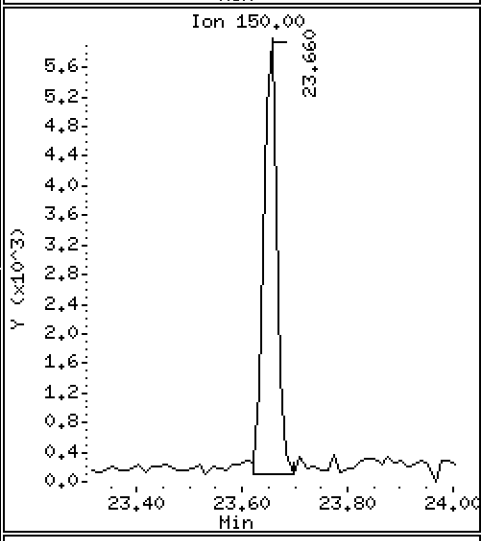
73 Di-n-octylphthalate

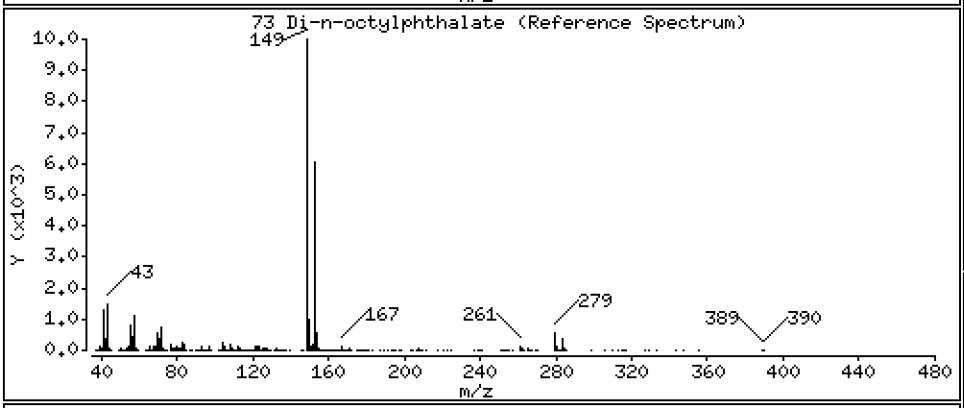
Concentration: 0.4659 ug/mL

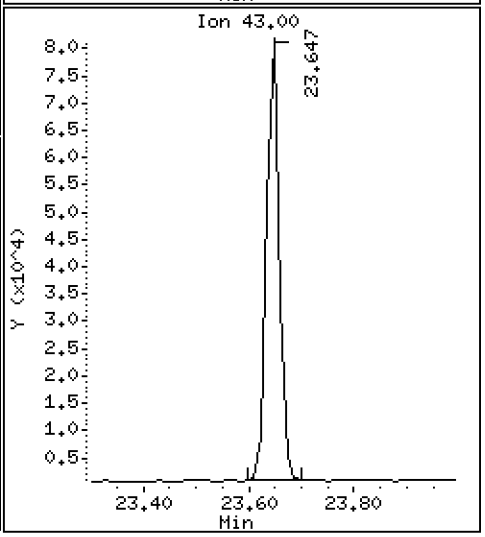


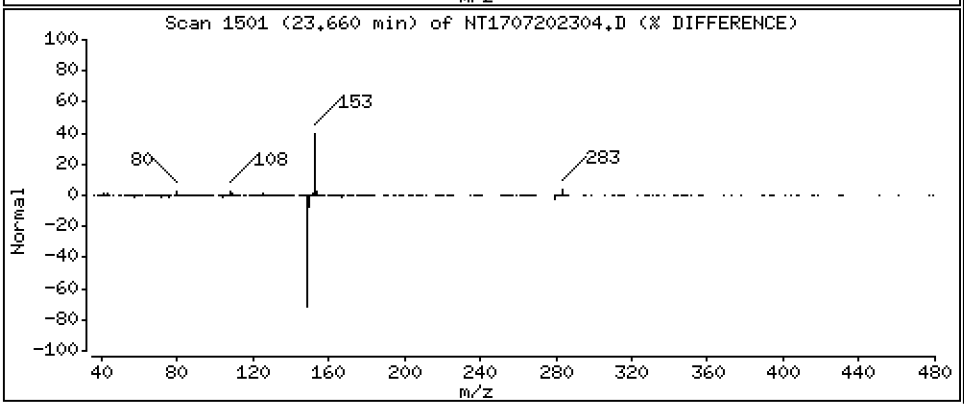












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

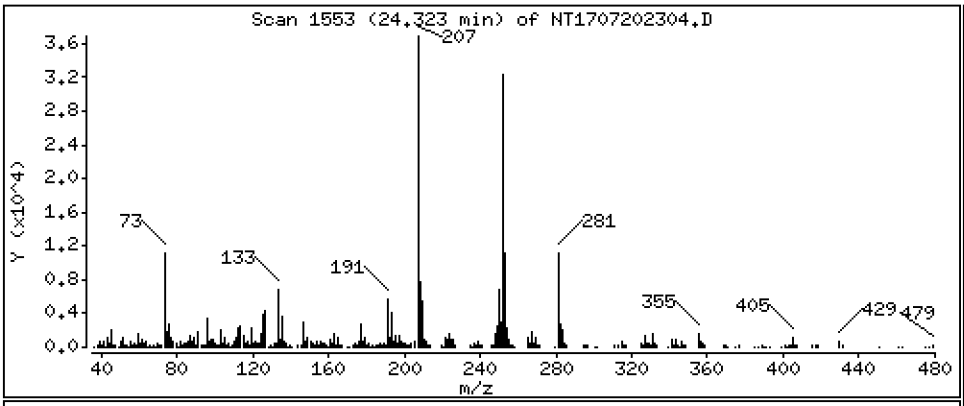
Operator: JGR

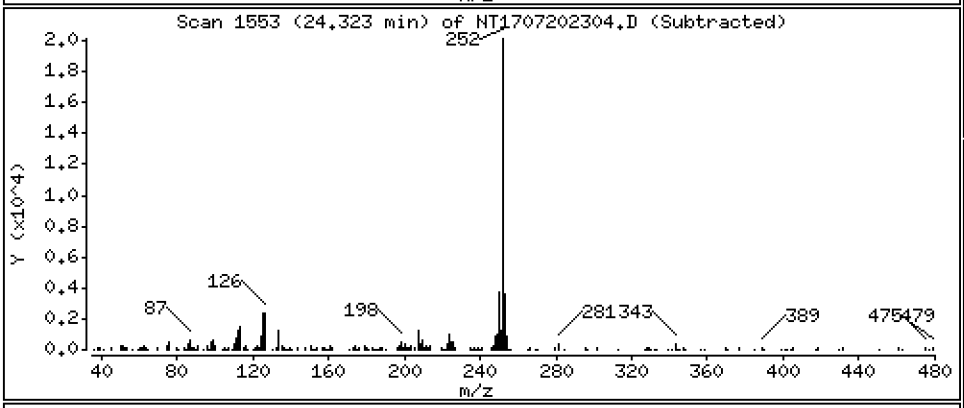
Column phase: ZB-5msi

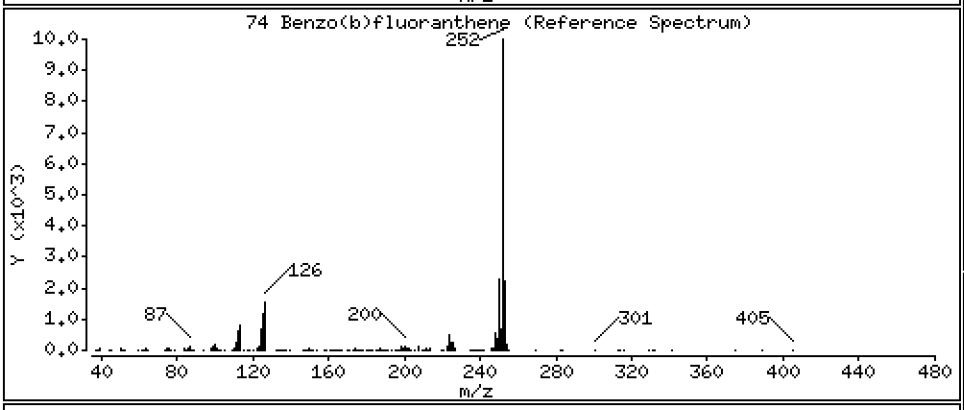
Column diameter: 0.25

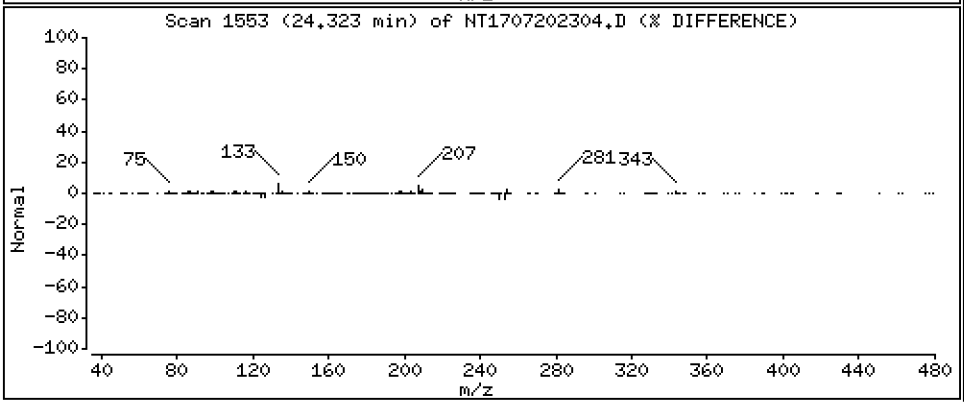
74 Benzo(b)fluoranthene

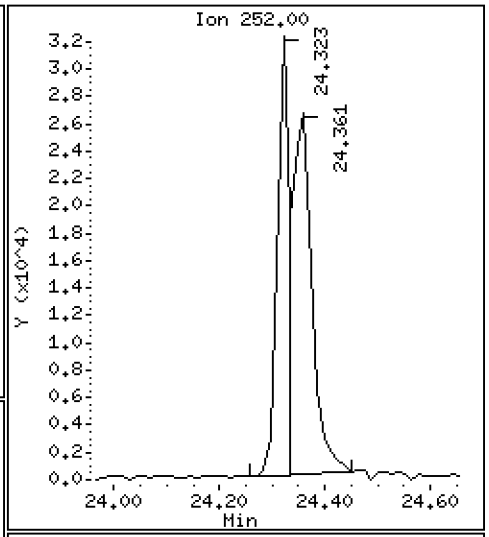
Concentration: 0.4156 ug/mL

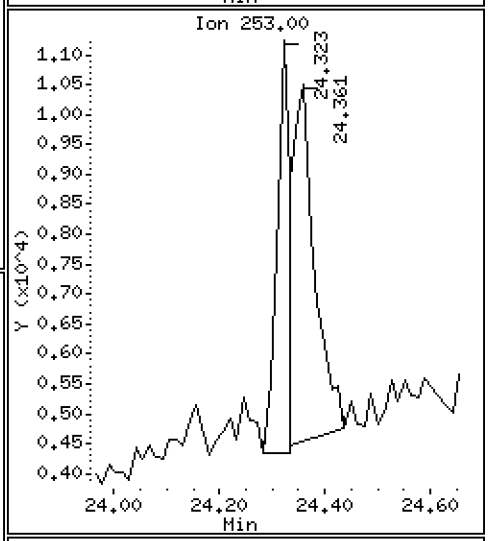


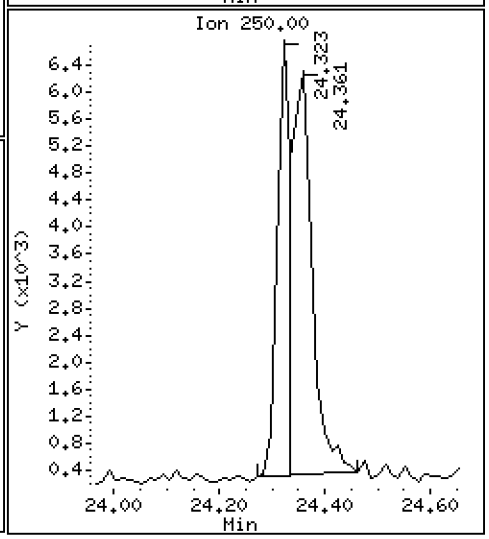












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

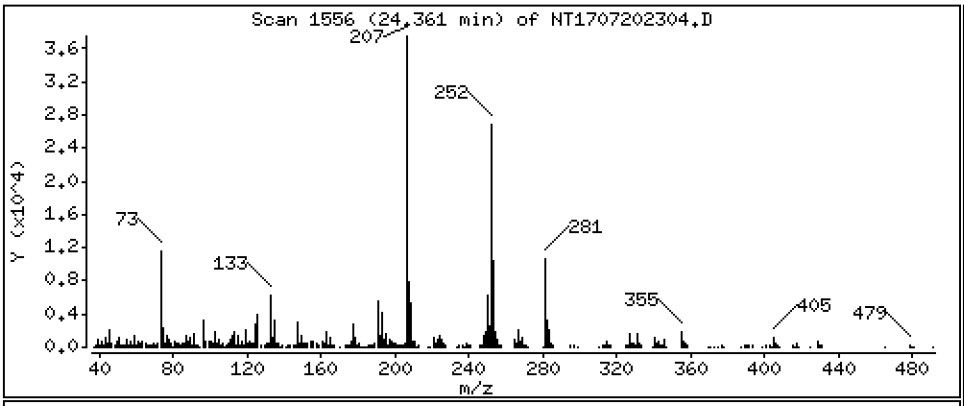
Operator: JGR

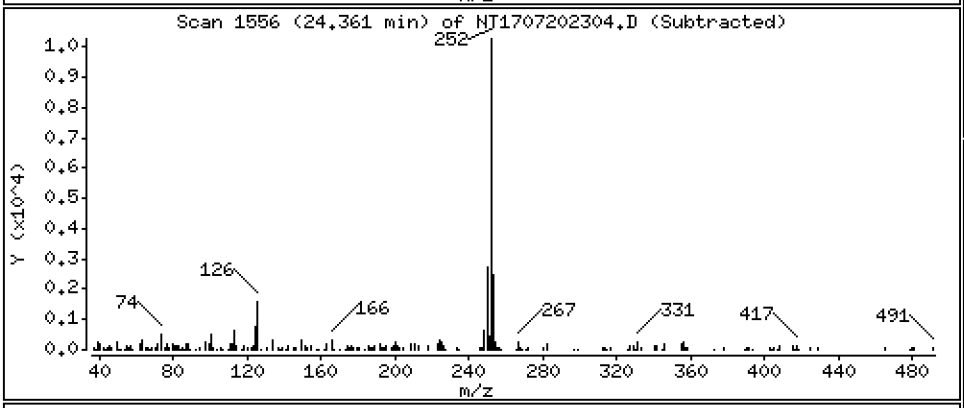
Column phase: ZB-5msi

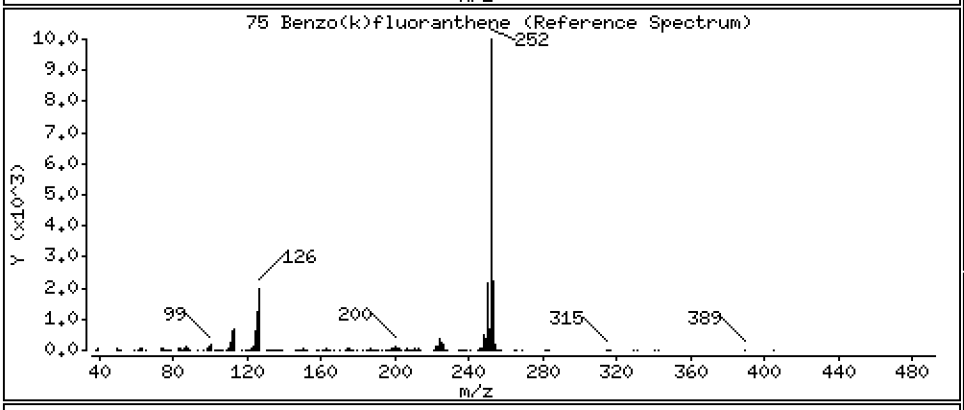
Column diameter: 0.25

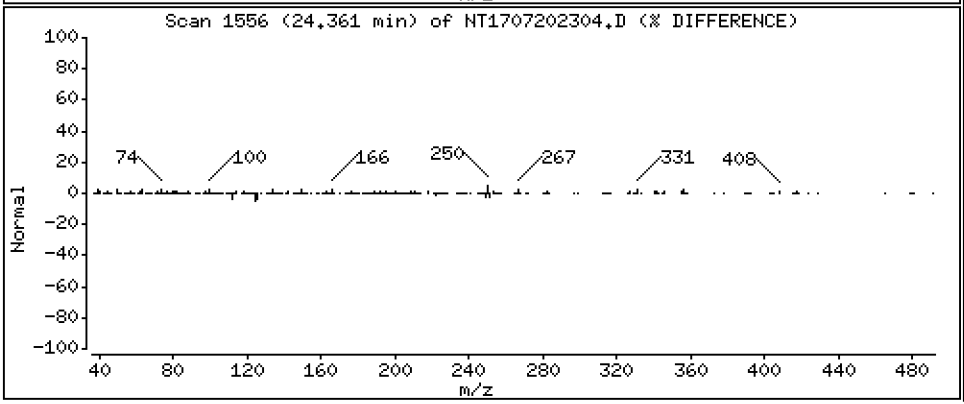
75 Benzo(k)fluoranthene

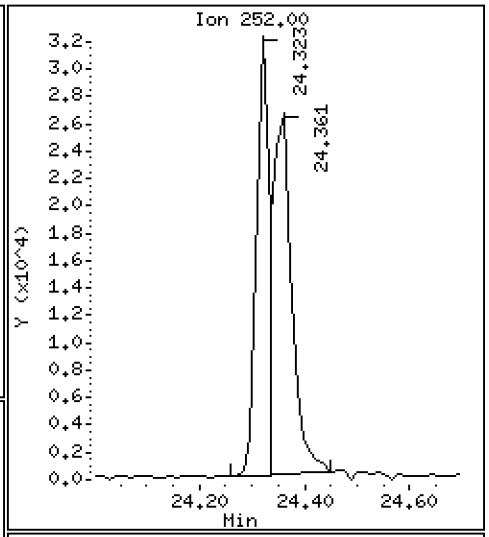
Concentration: 0.5261 ug/mL

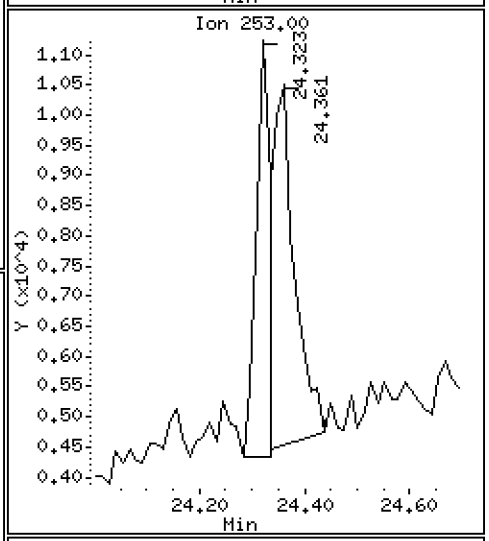


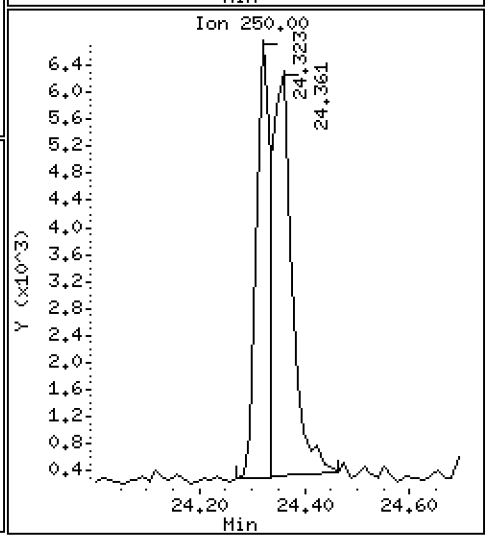












Date : 21-JUL-2023 02:35

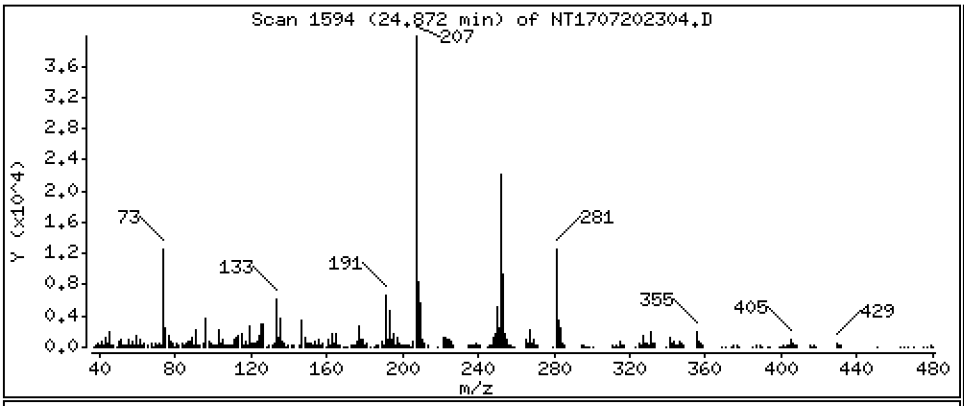
Client ID: Instrument: nt17.i

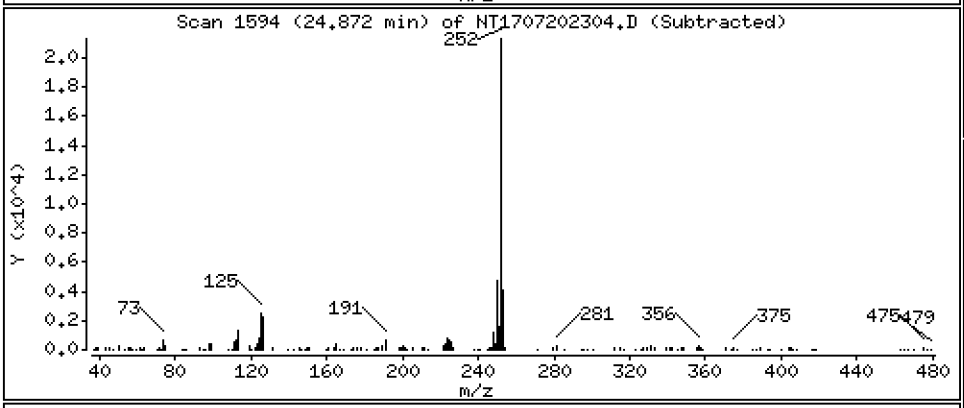
Sample Info: SLG0263-LCV1

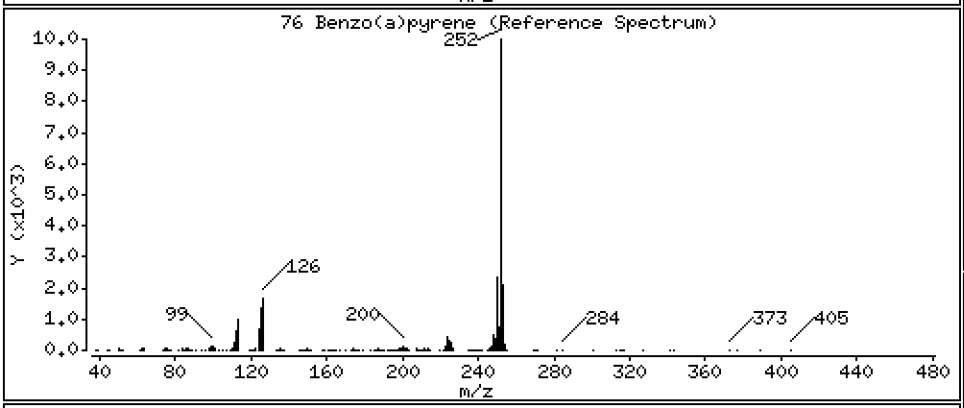
Operator: JGR

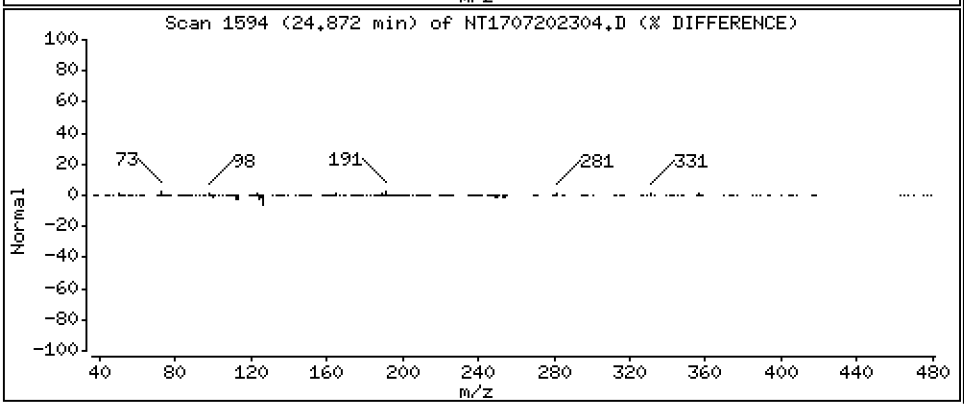
Column phase: ZB-5msi Column diameter: 0.25

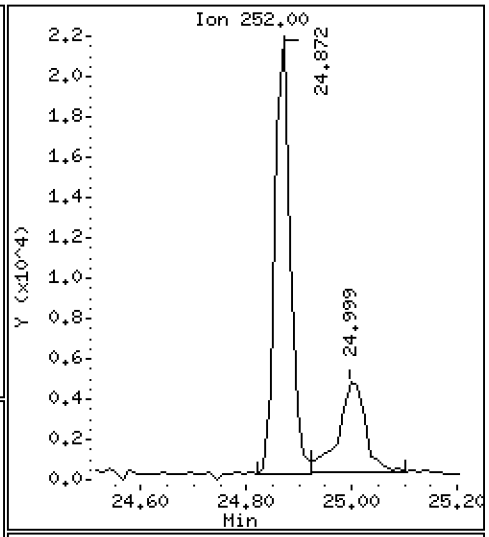
76 Benzo(a)pyrene Concentration: 0.4491 ug/mL

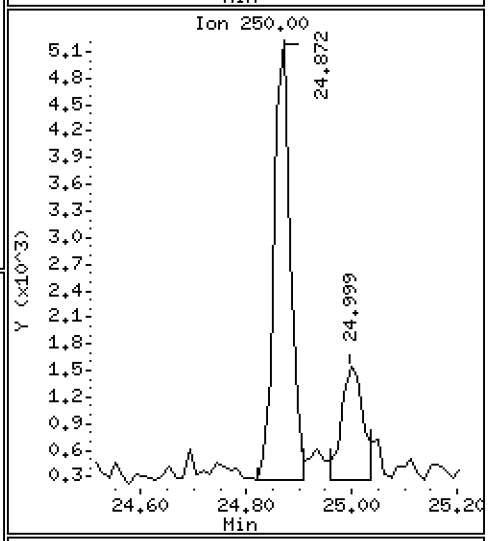


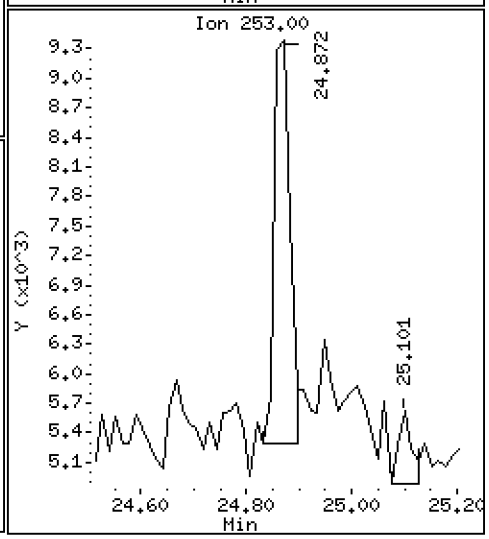












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

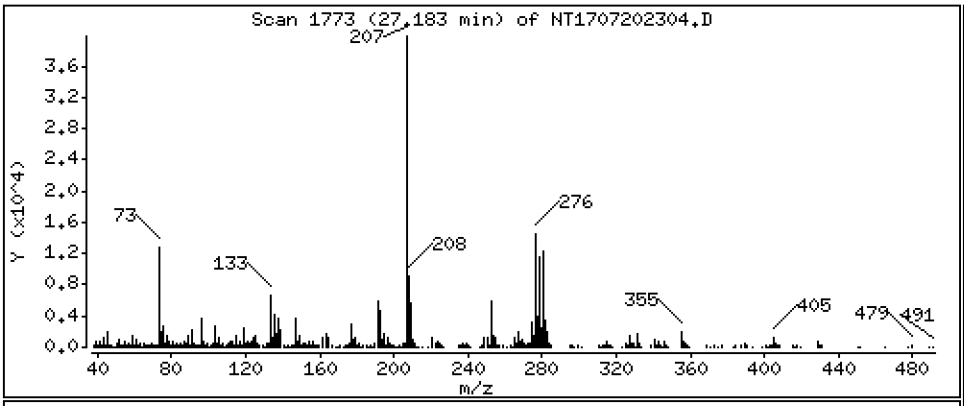
Operator: JGR

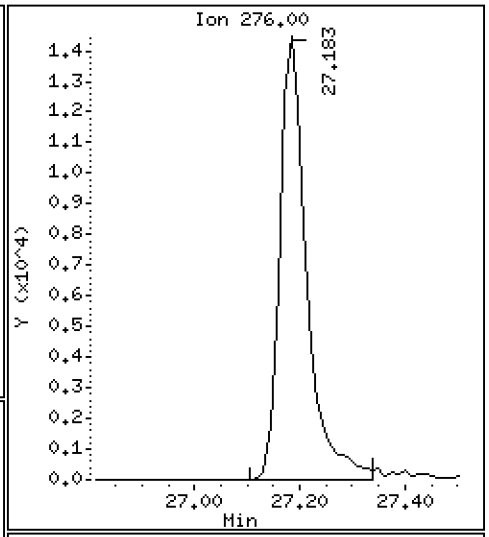
Column phase: ZB-5msi

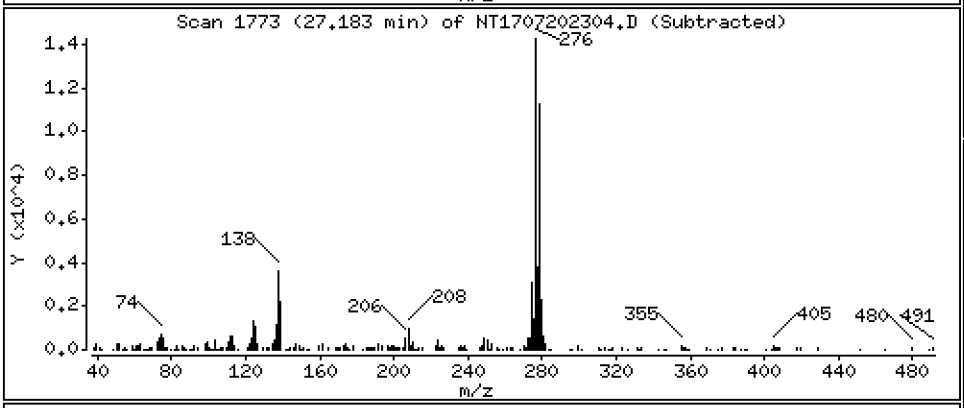
Column diameter: 0.25

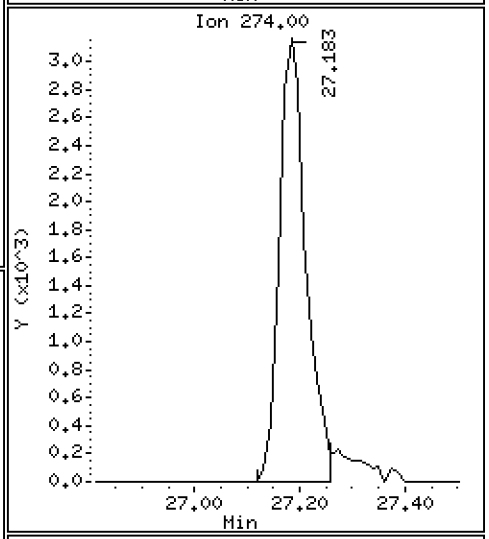
78 Indeno(1,2,3-cd)pyrene

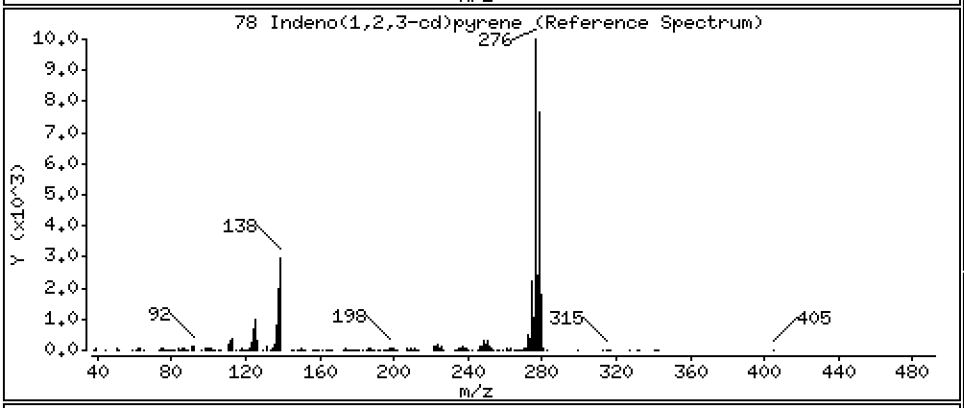
Concentration: 0.3941 ug/mL

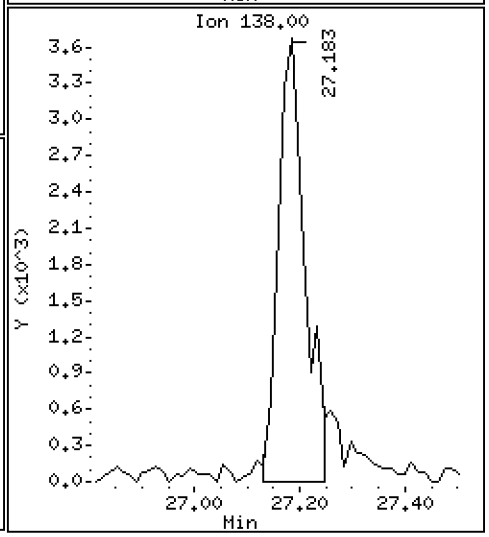


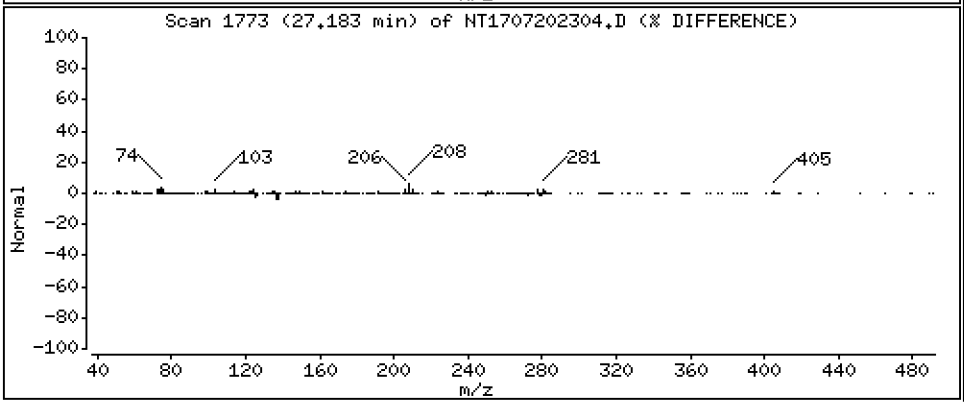












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

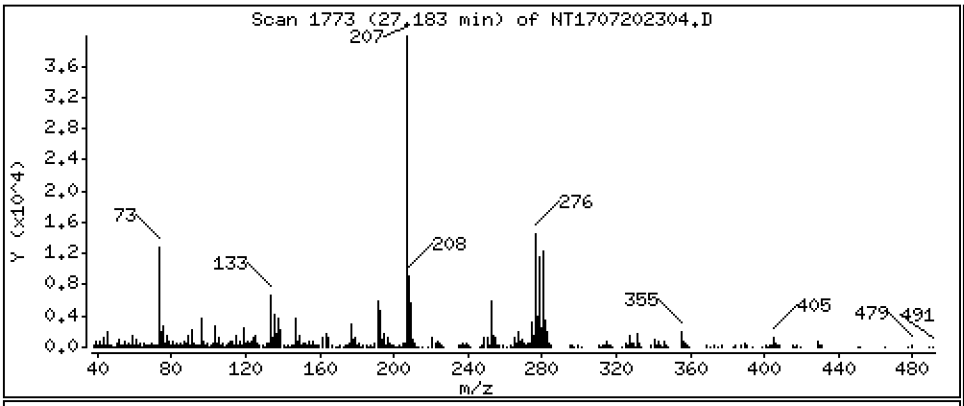
Operator: JGR

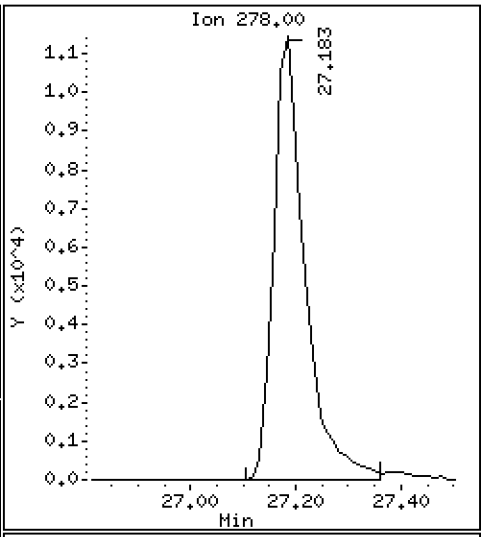
Column phase: ZB-5msi

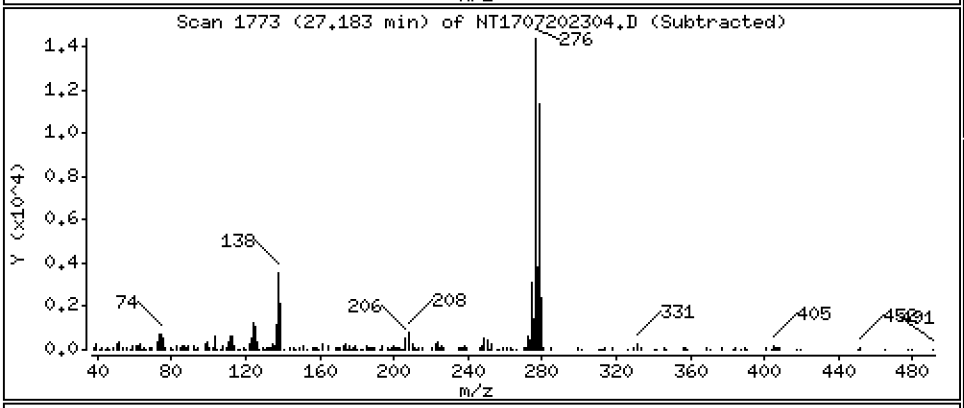
Column diameter: 0.25

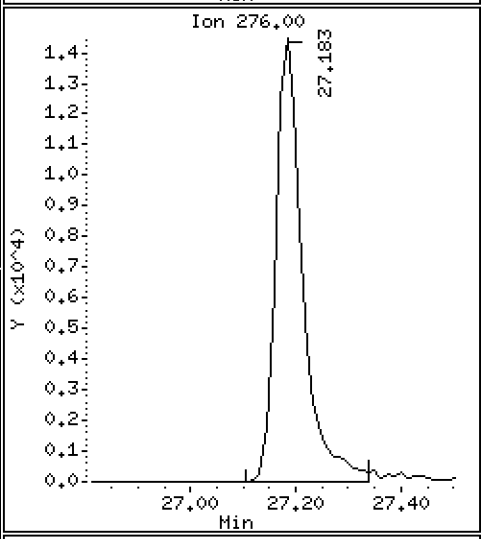
79 Dibenzo(a,h)anthracene

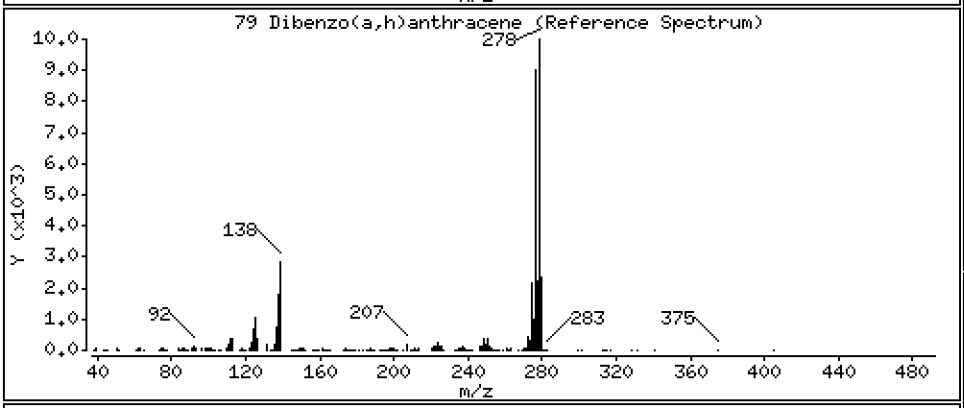
Concentration: 0.4043 ug/mL

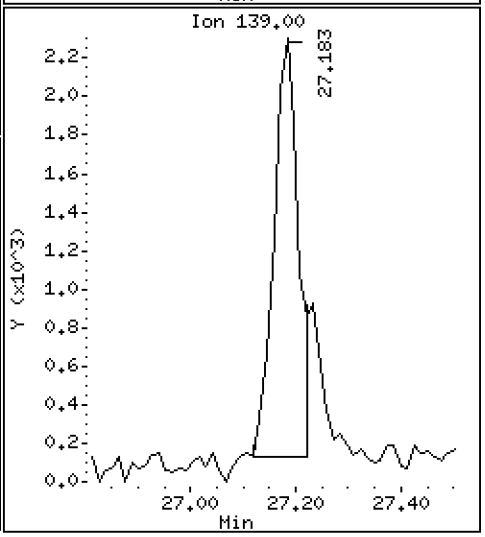


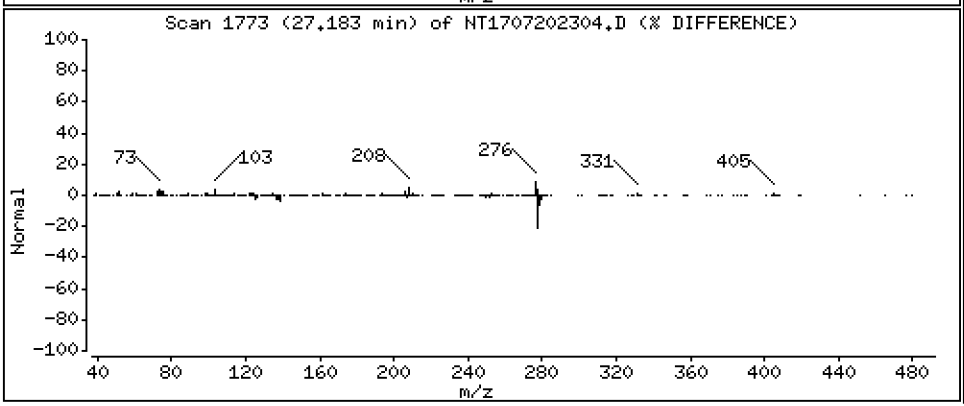












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D

Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

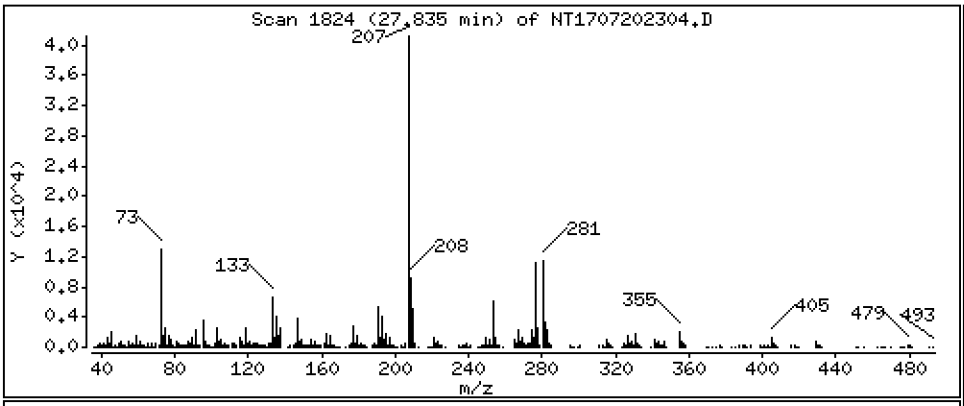
Operator: JGR

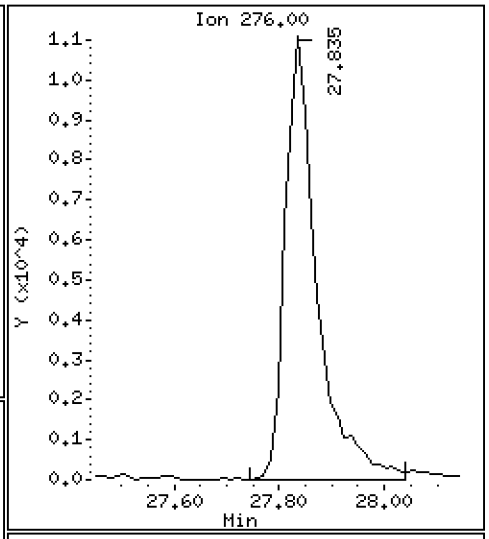
Column phase: ZB-5msi

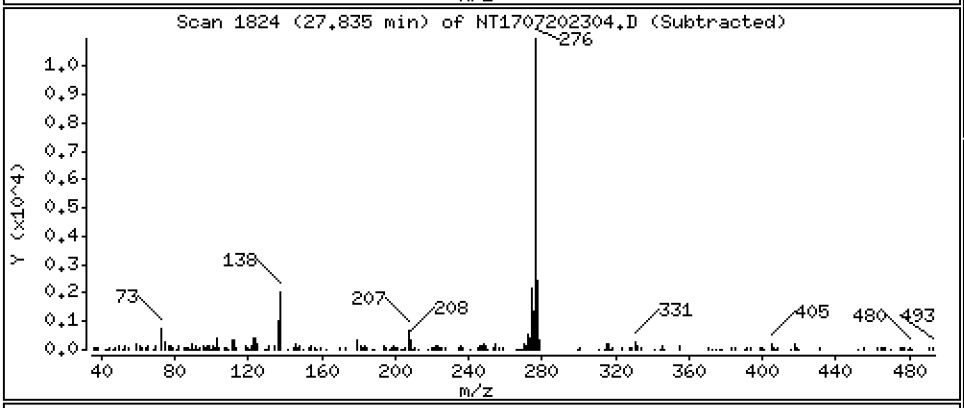
Column diameter: 0.25

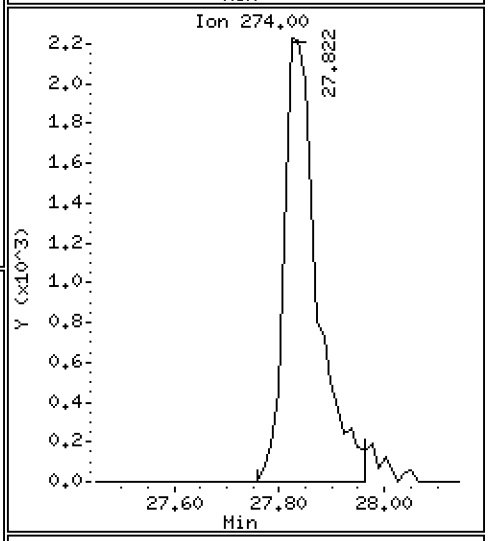
80 Benzo(g,h,i)perylene

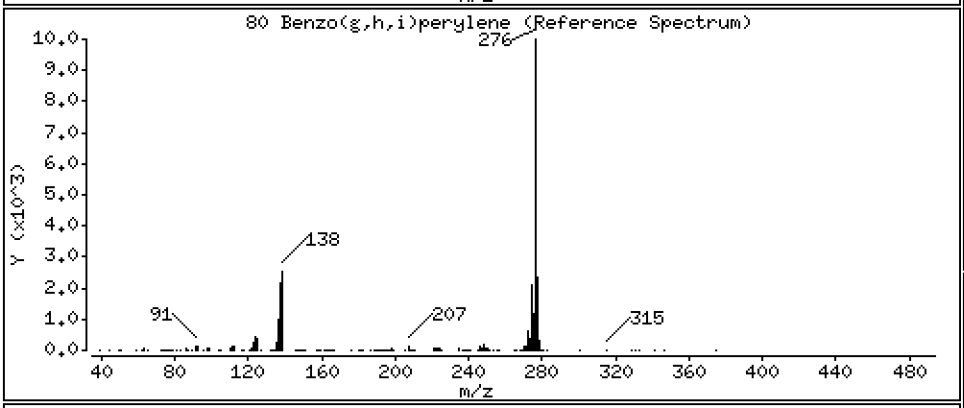
Concentration: 0.3868 ug/mL

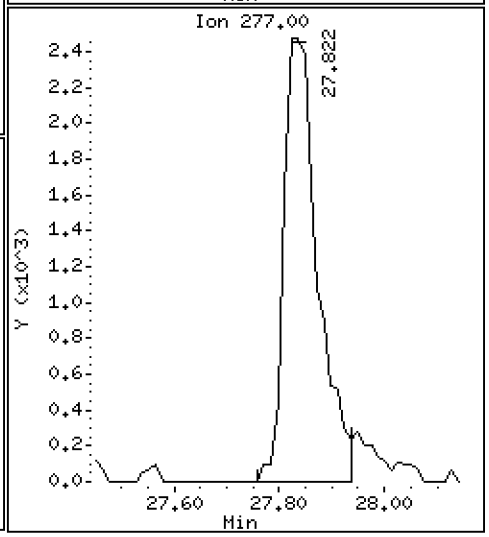


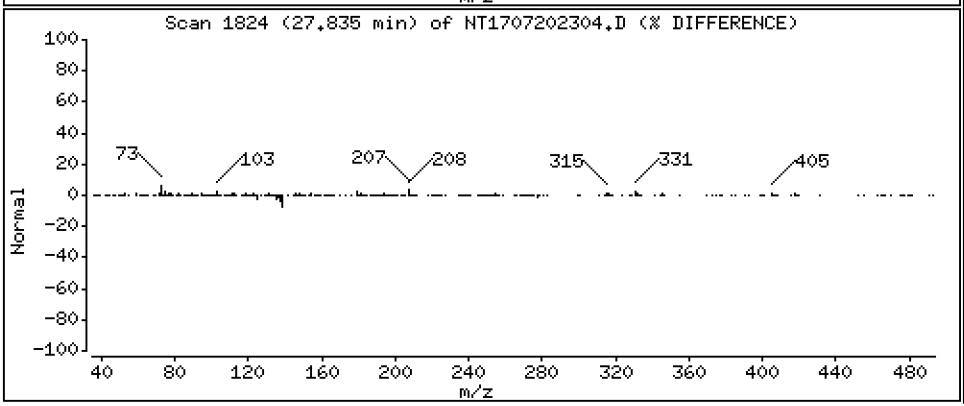












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

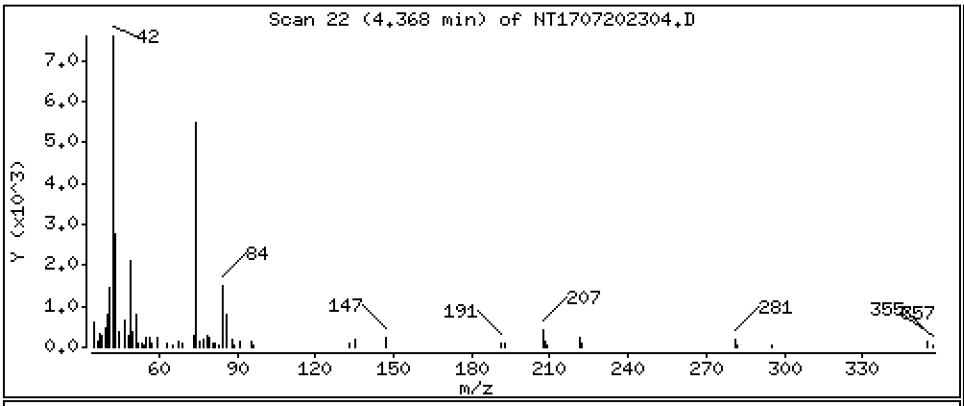
Operator: JGR

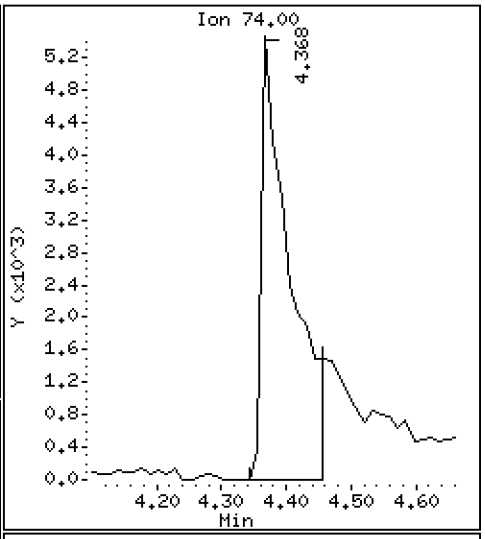
Column phase: ZB-5msi

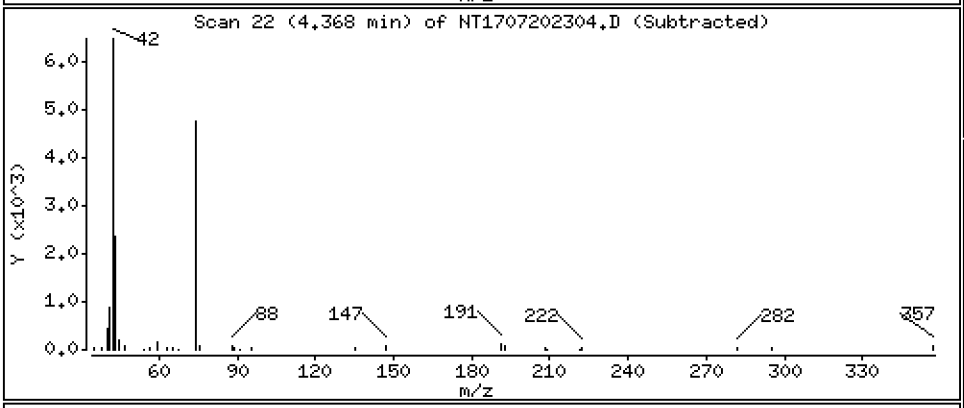
Column diameter: 0.25

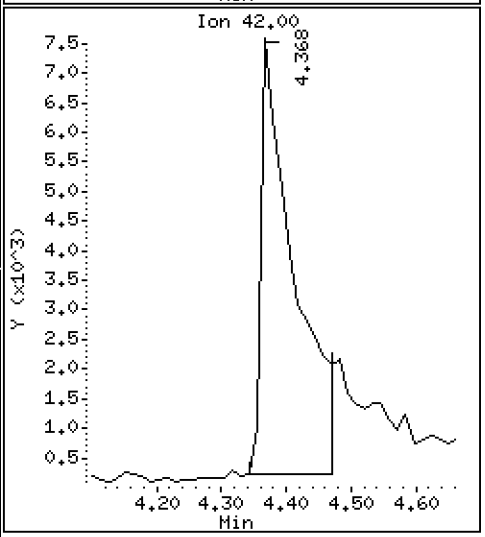
90 N-Nitrosodimethylamine

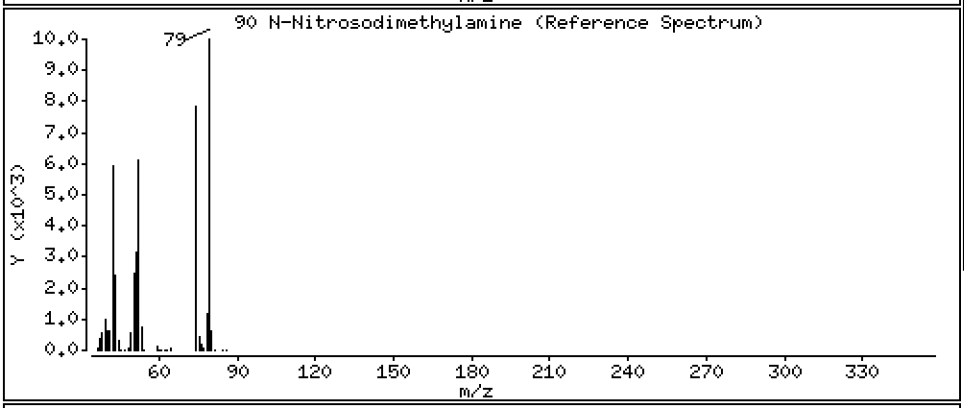
Concentration: 0.3307 ug/mL

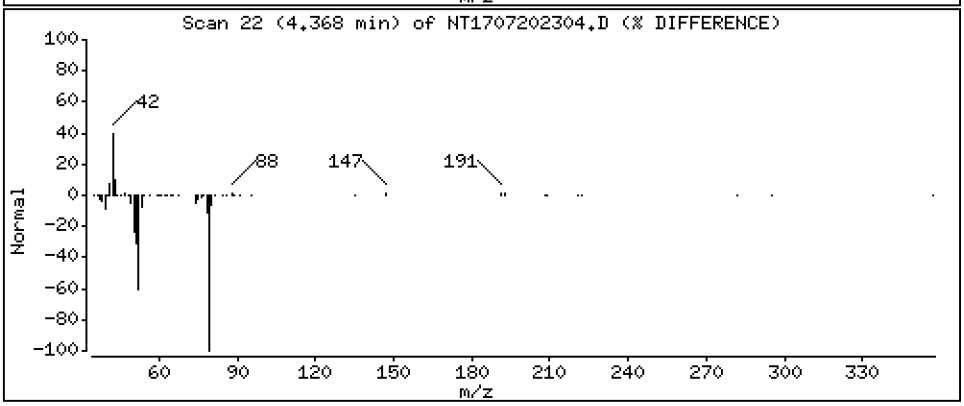












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

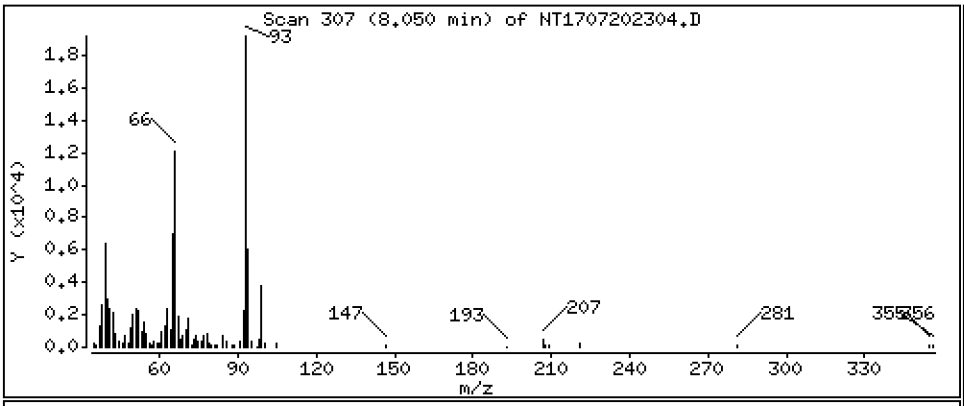
Operator: JGR

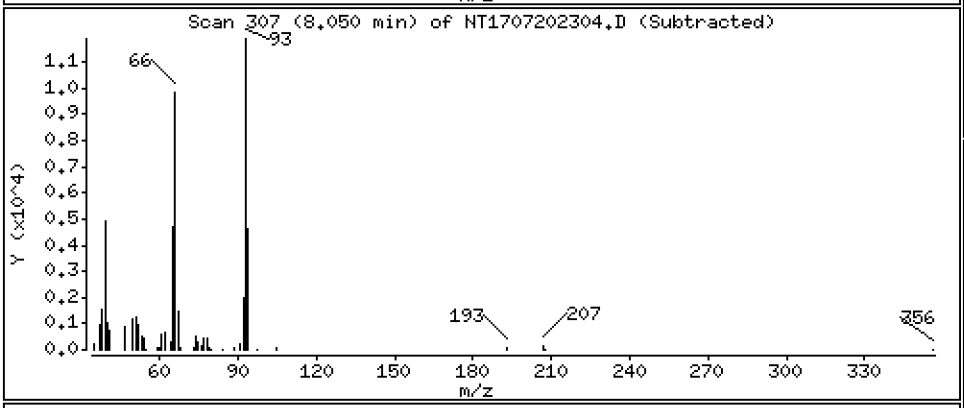
Column phase: ZB-5msi

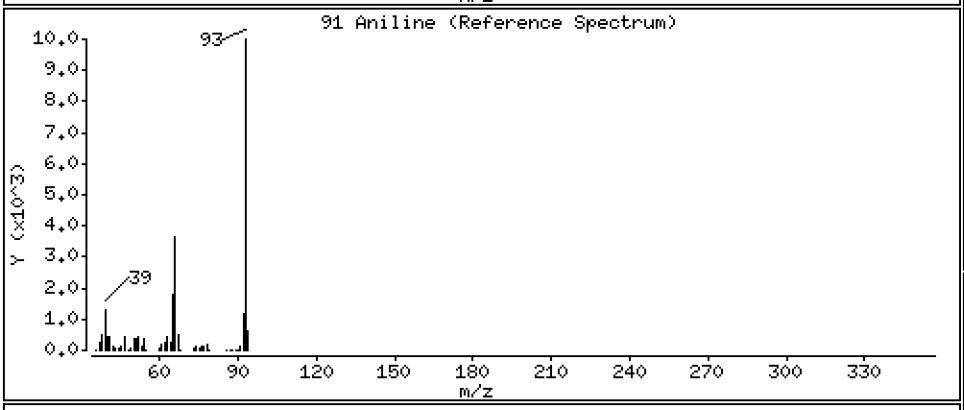
Column diameter: 0.25

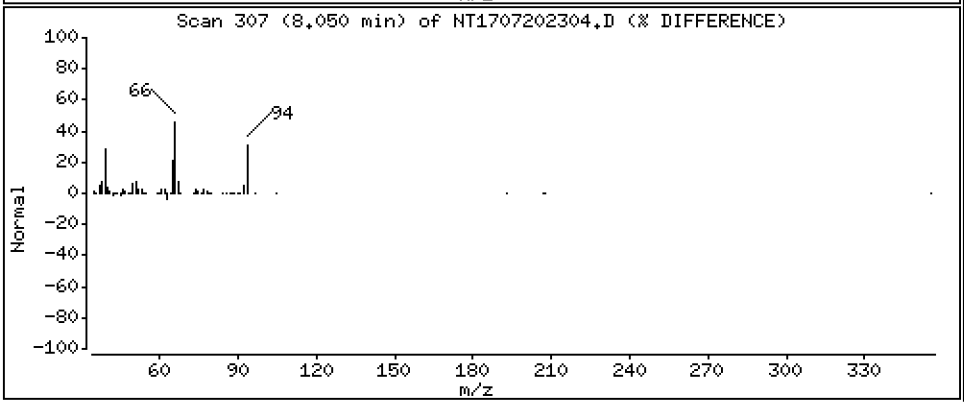
91 Aniline

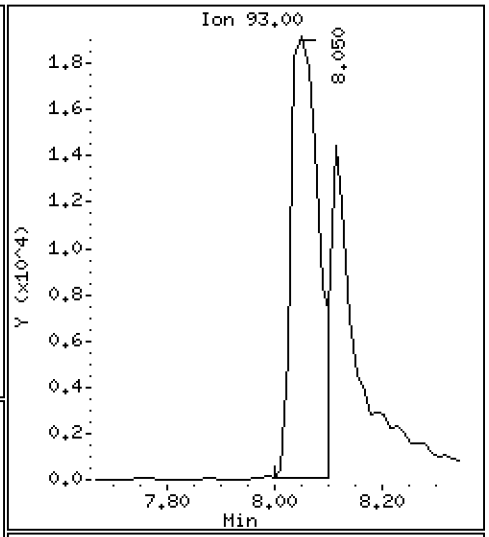
Concentration: 0.6811 ug/mL

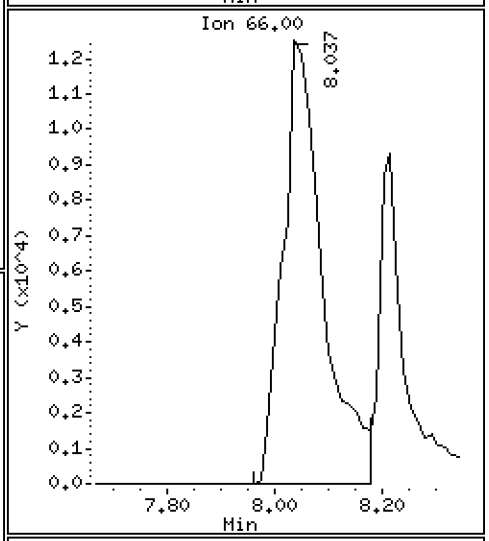


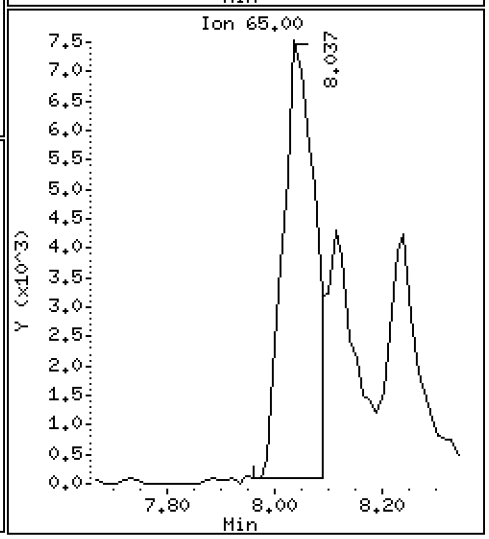












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

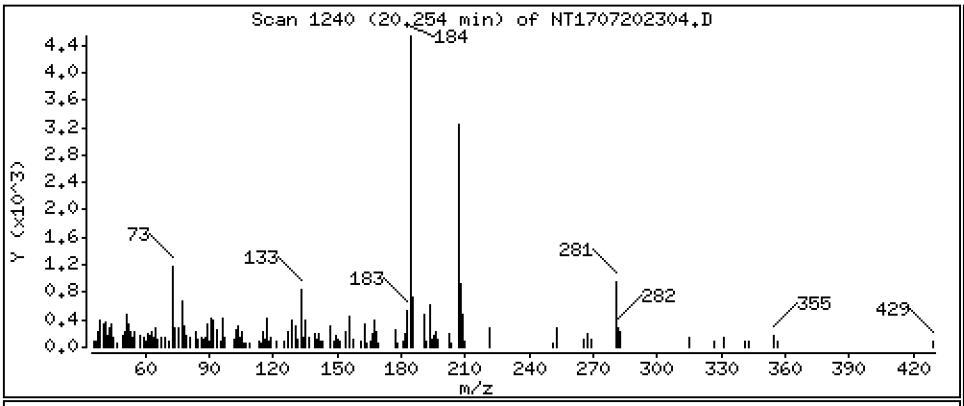
Operator: JGR

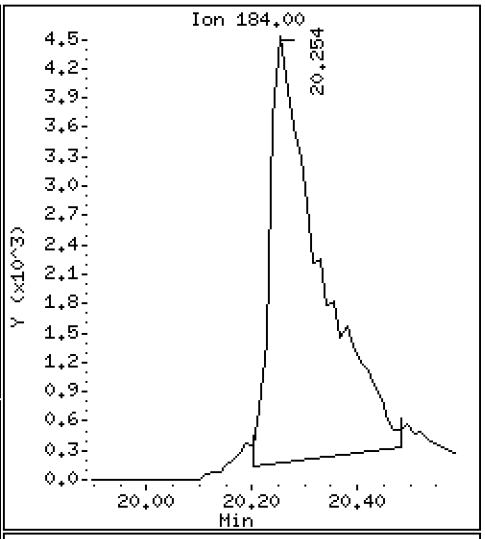
Column phase: ZB-5msi

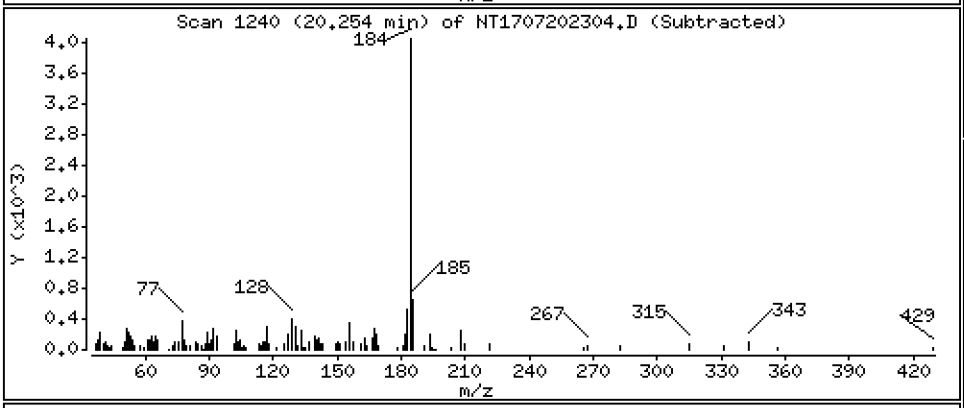
Column diameter: 0.25

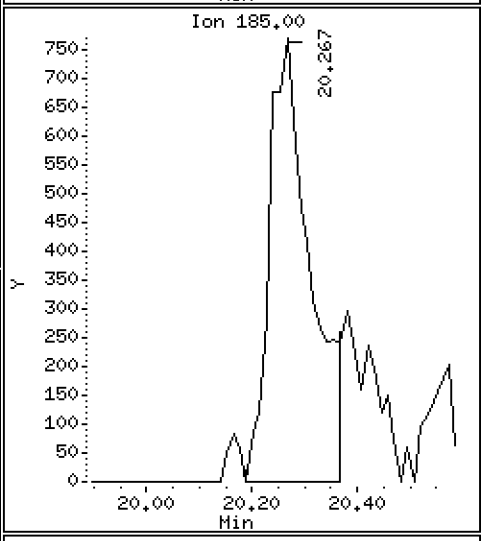
93 Benzidine

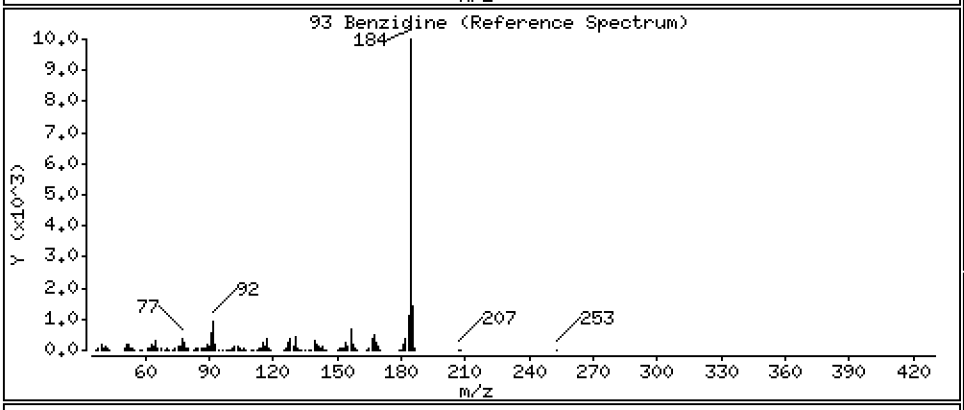
Concentration: 1.055 ug/mL

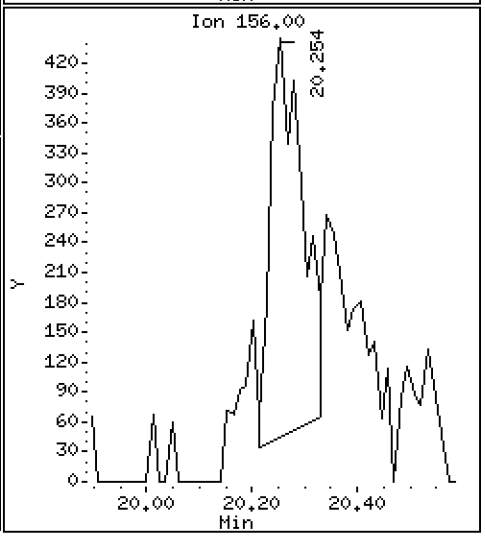


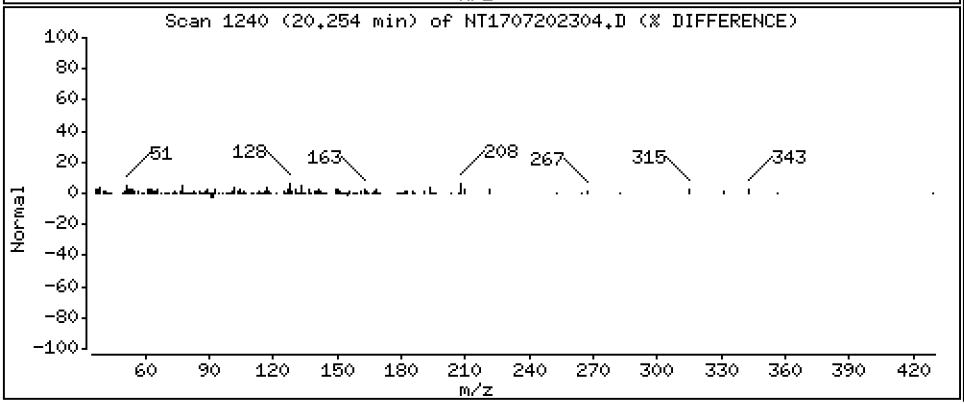












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

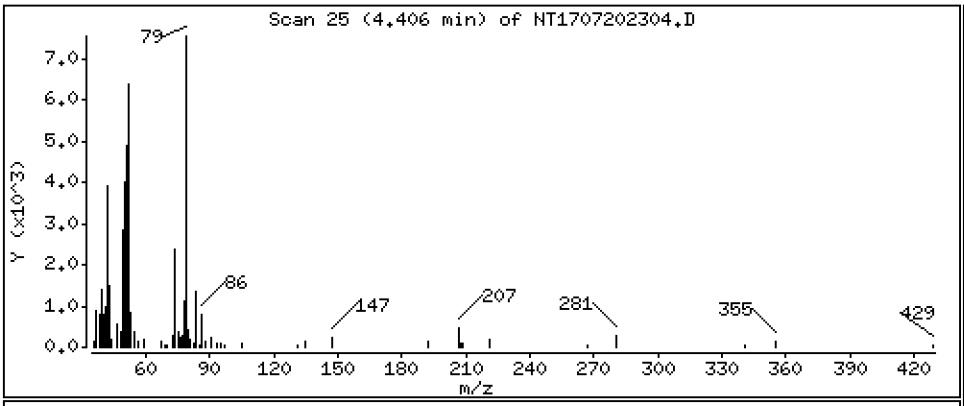
Operator: JGR

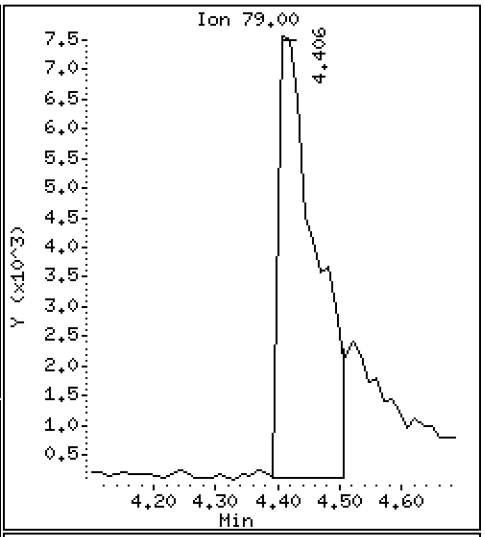
Column phase: ZB-5msi

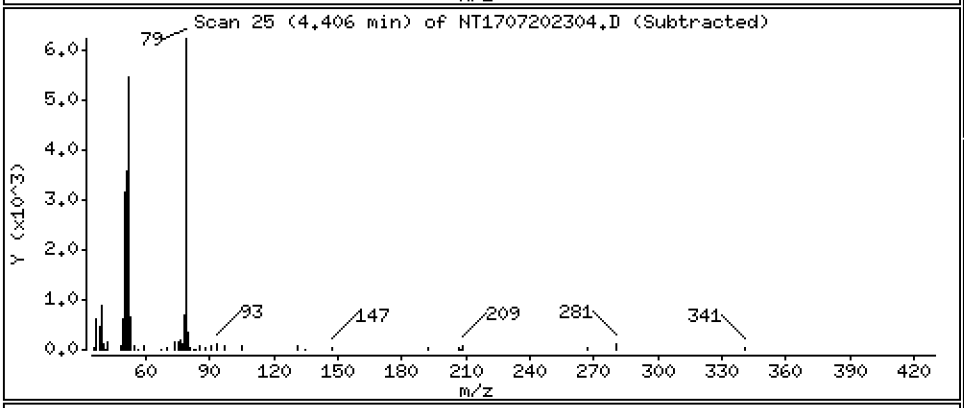
Column diameter: 0.25

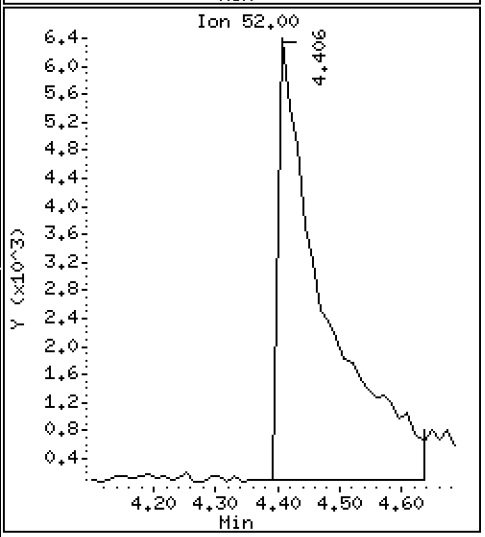
103 Pyridine

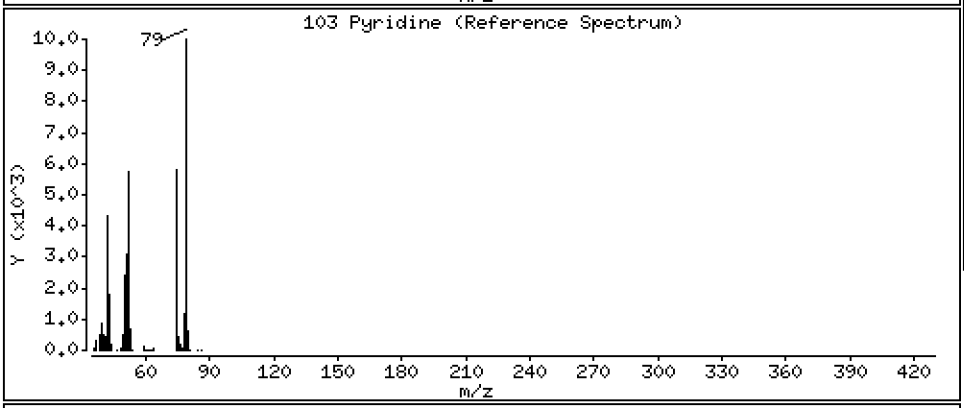
Concentration: 0.3824 ug/mL

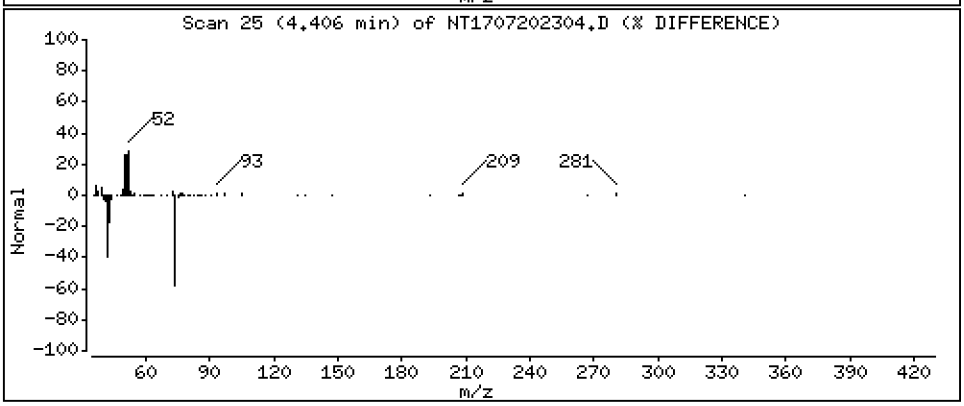












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

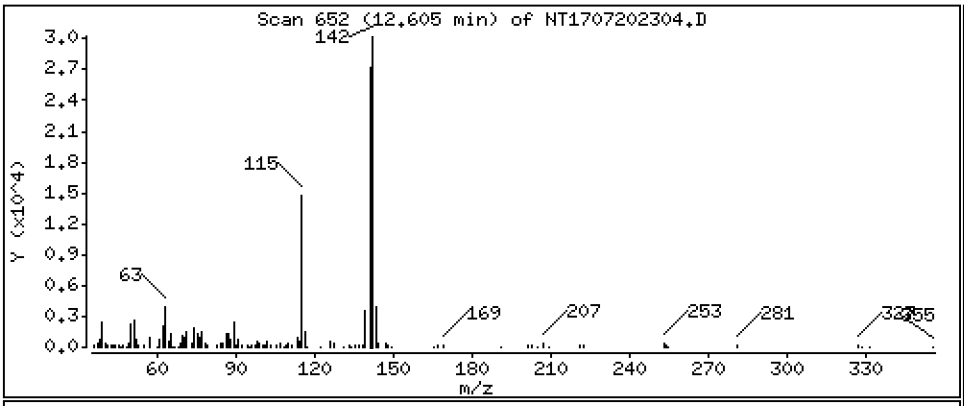
Operator: JGR

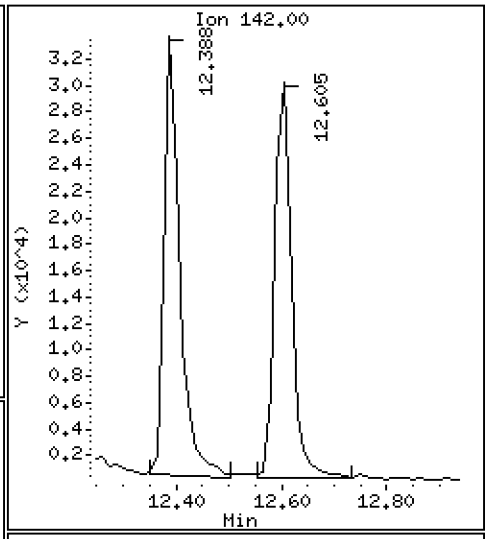
Column phase: ZB-5msi

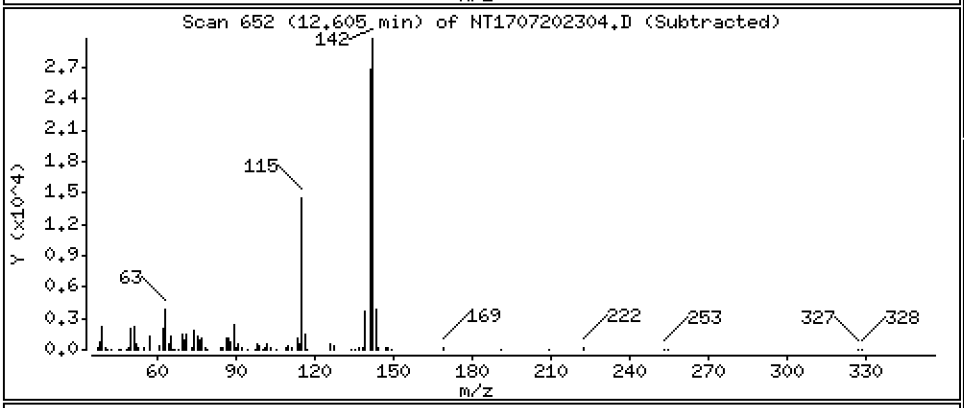
Column diameter: 0.25

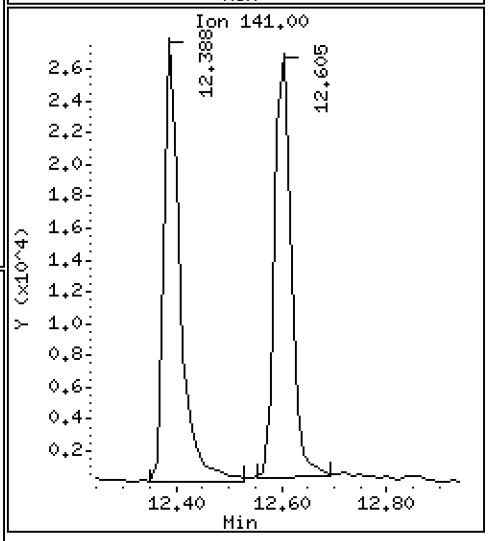
105 1-methylnaphthalene

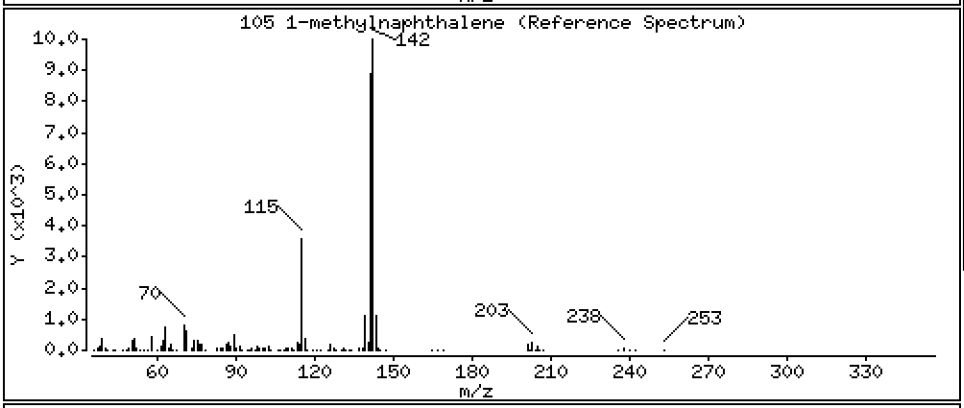
Concentration: 0.4680 ug/mL

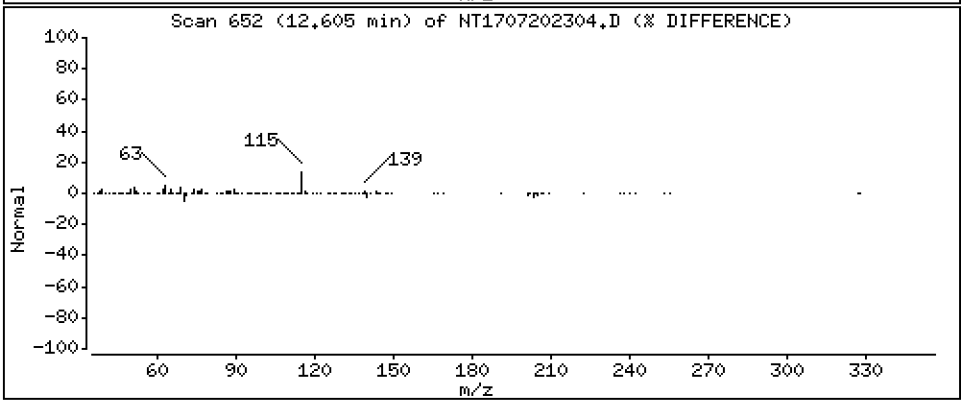












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

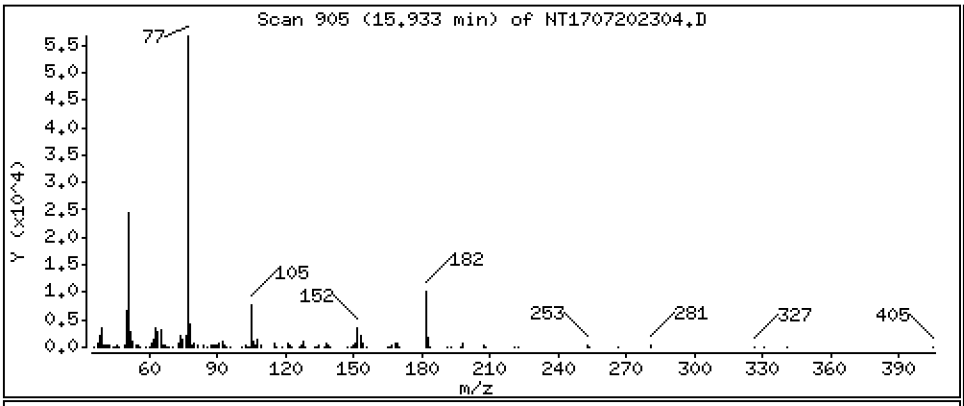
Operator: JGR

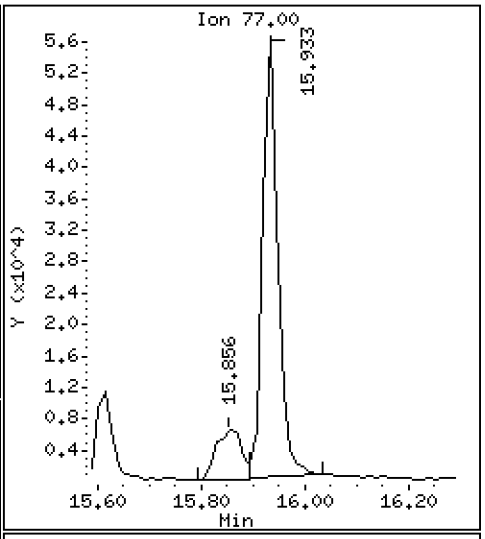
Column phase: ZB-5msi

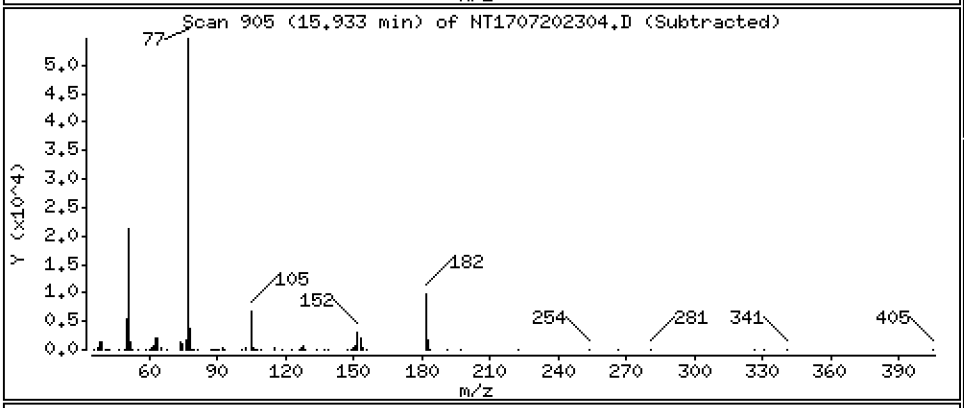
Column diameter: 0.25

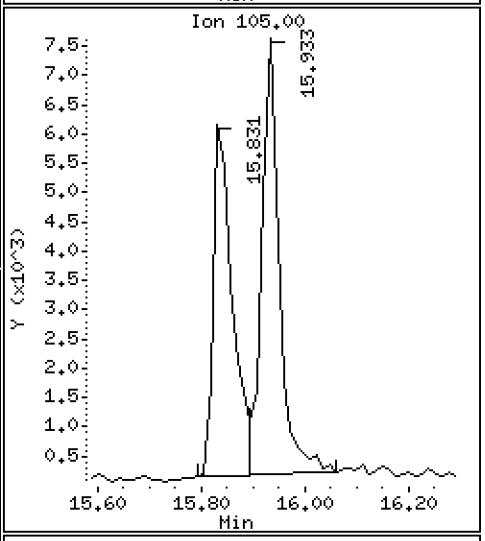
111 Azobenzene (1,2-DP-Hydrazine)

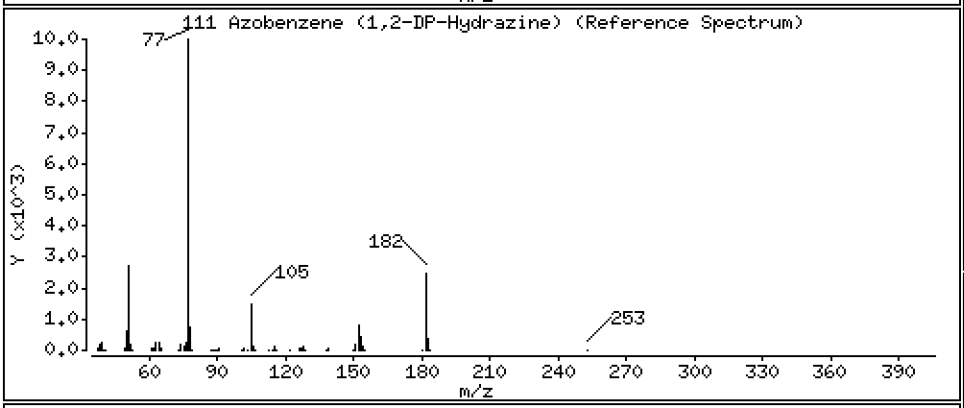
Concentration: 0.5595 ug/mL

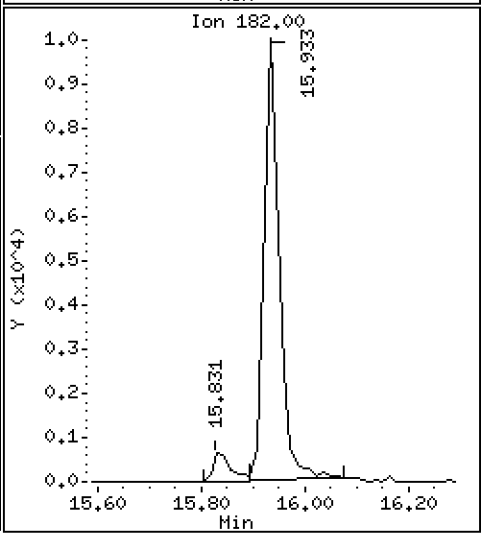


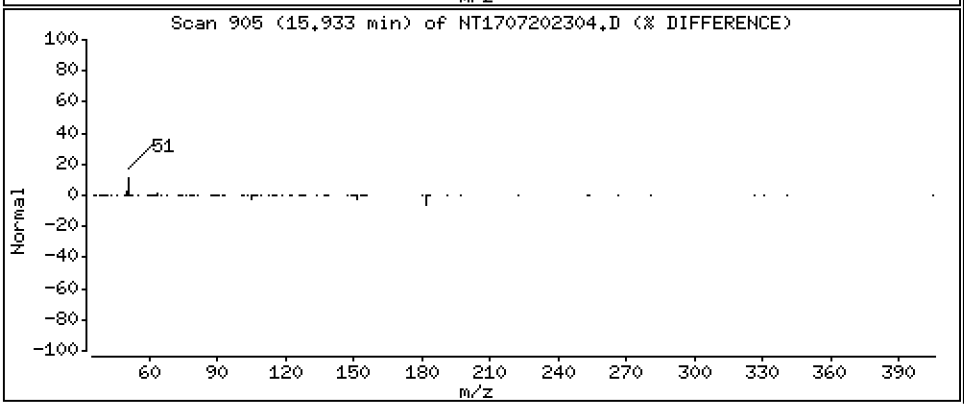












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

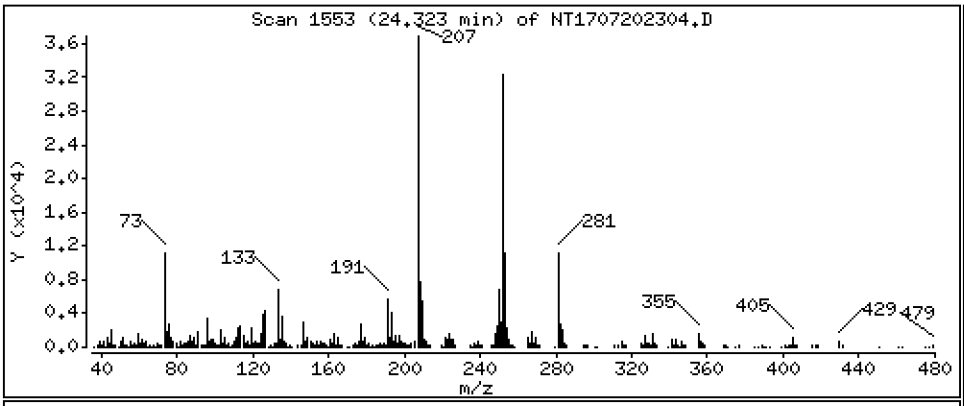
Operator: JGR

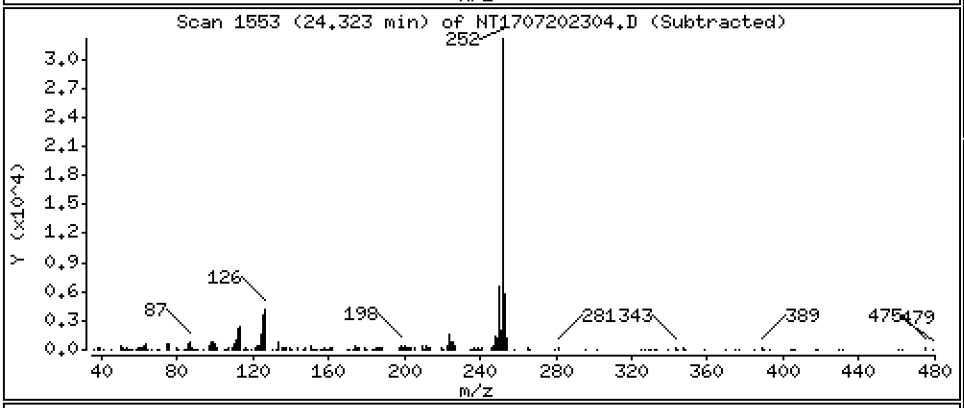
Column phase: ZB-5msi

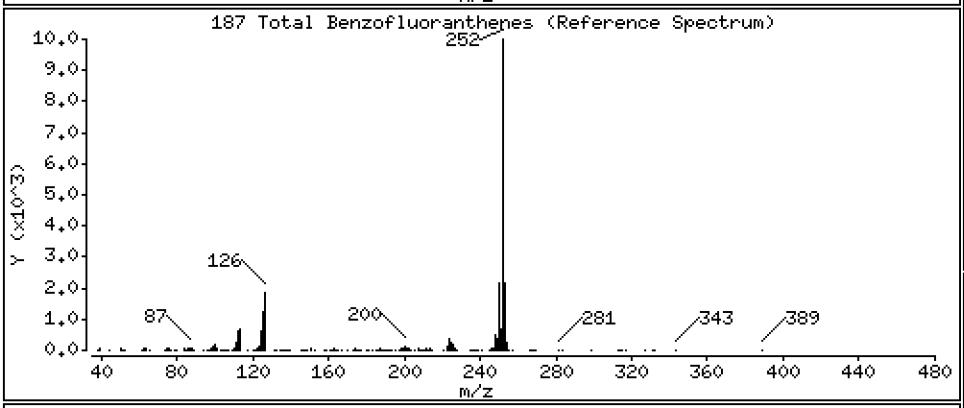
Column diameter: 0.25

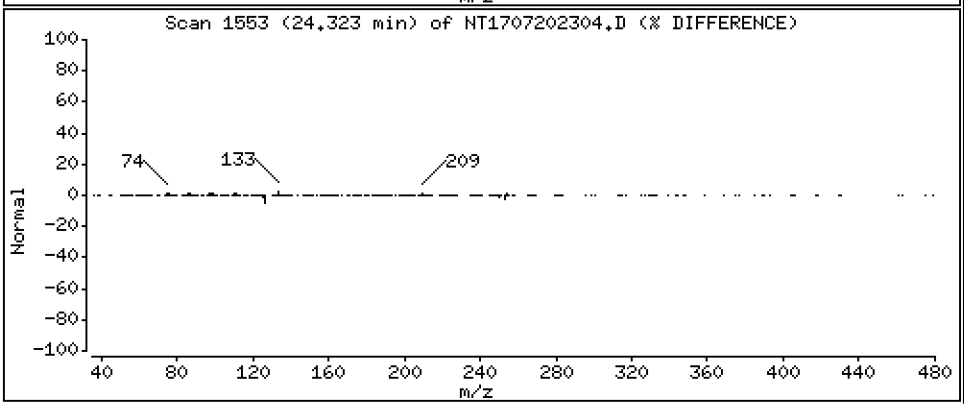
187 Total Benzofluoranthenes

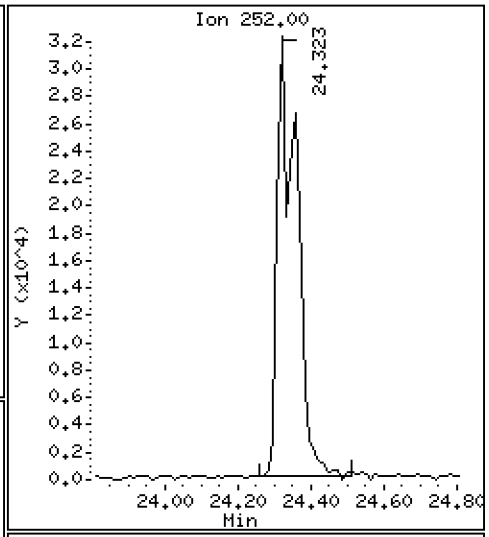
Concentration: 0.9635 ug/mL

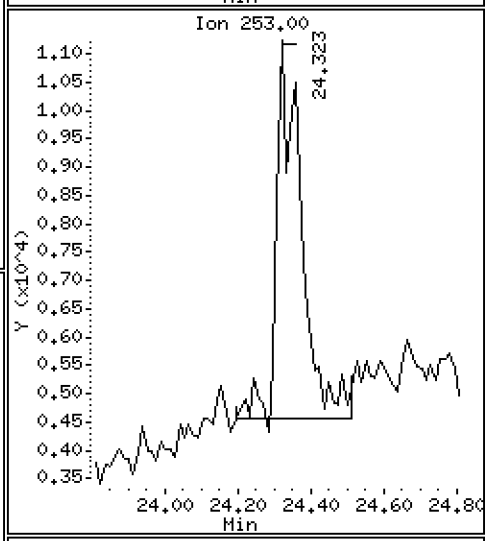


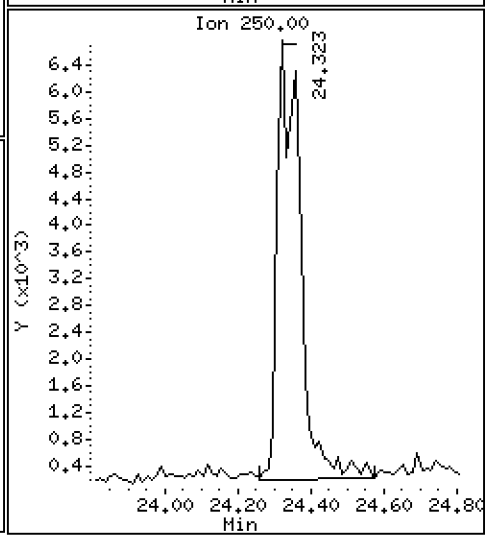












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

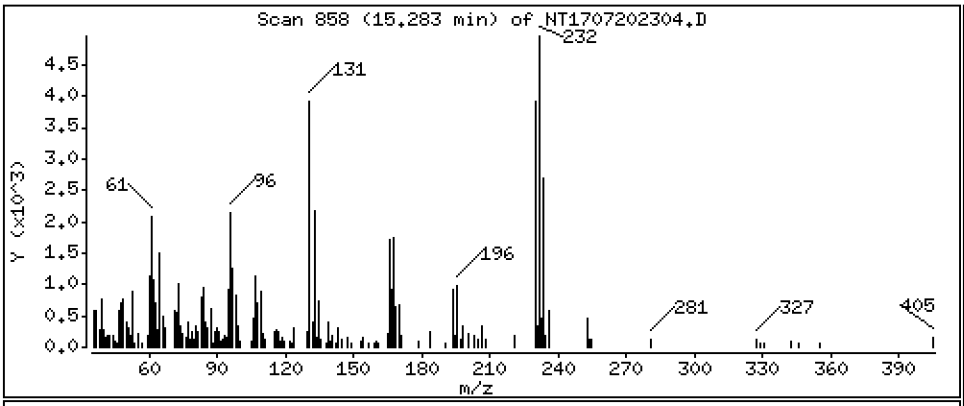
Operator: JGR

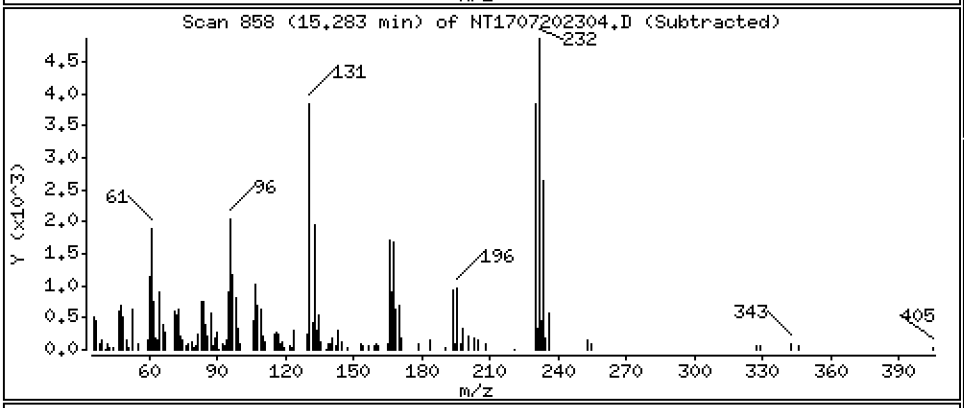
Column phase: ZB-5msi

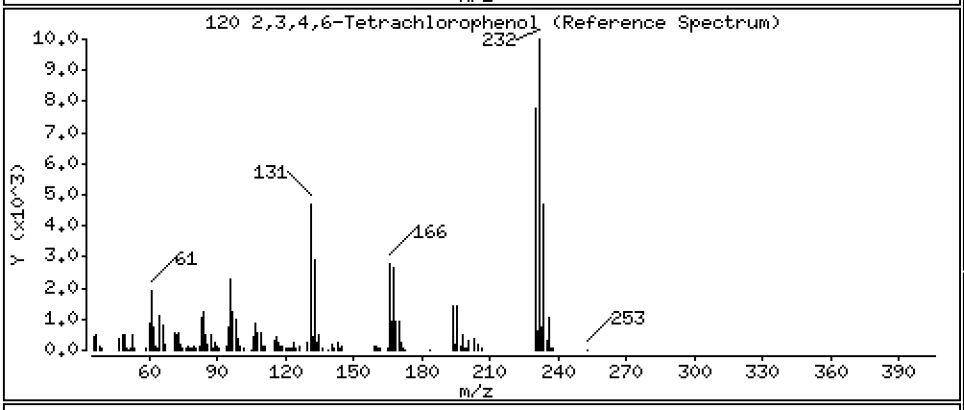
Column diameter: 0.25

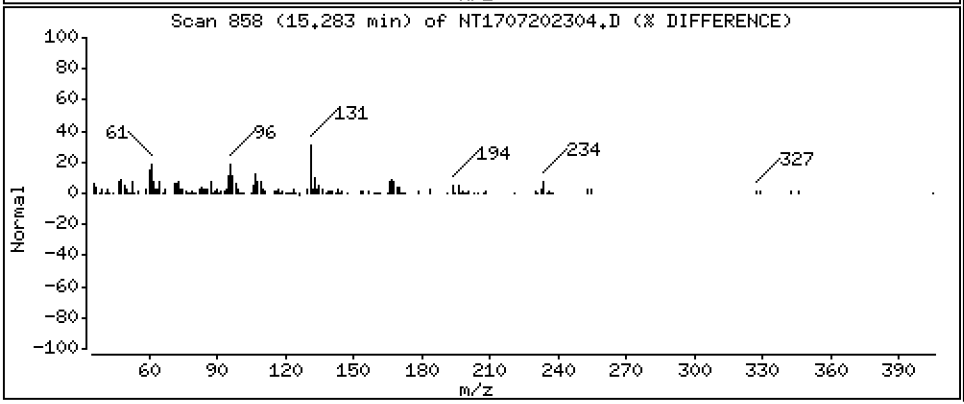
120 2,3,4,6-Tetrachlorophenol

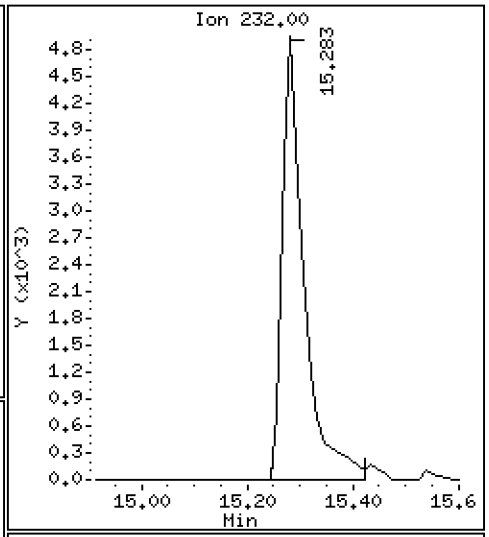
Concentration: 0.4486 ug/mL

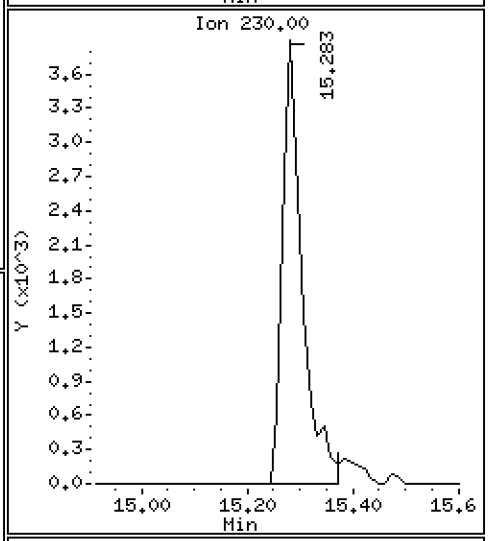


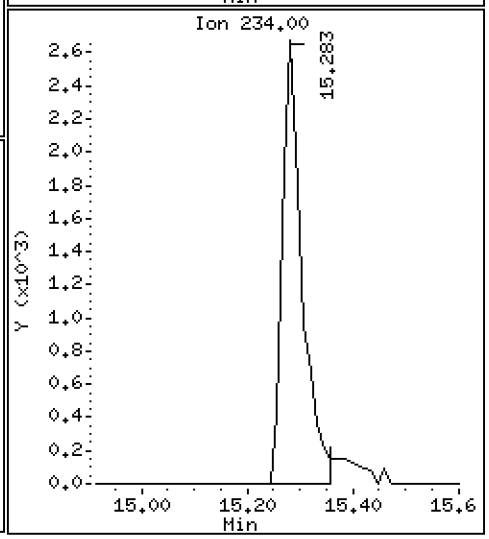












ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

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Lab Smp Id: SLG0263-LCV1
Inj Date : 21-JUL-2023 02:35
Operator : JGR Inst ID: nt17.i
Smp Info : SLG0263-LCV1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt17.i\20230720.b\ABN.m
Meth Date : 21-Jul-2023 14:01 yev Quant Type: ISTD
Cal Date : 10-JUL-2023 16:44 Cal File: NT1707102308.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: ORGDATA102

							CONCENTRATIONS	
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
$	1 2-Fluorophenol	112	6.482	6.406	(0.760)	21648	0.30788	0.3079
$	2 Phenol-d5	99	7.998	7.960	(0.937)	47320	0.48537	0.4854
	3 Phenol	94	8.011	7.986	(0.939)	49930	0.38408	0.3841
$	5 2-Chlorophenol-d4	132	8.215	8.189	(0.963)	53125	0.66981	0.6698
	4 Bis(2-Chloroethyl)ether	93	8.113	8.100	(0.951)	27694	0.36745	0.3675
	6 2-Chlorophenol	128	8.240	8.215	(0.966)	40046	0.43233	0.4323
	7 1,3-Dichlorobenzene	146	8.482	8.470	(0.994)	38869	0.46143	0.4614
*	8 1,4-Dichlorobenzene-d4	152	8.534	8.534	(1.000)	199631	4.00000	
	9 1,4-Dichlorobenzene	146	8.559	8.559	(1.003)	40280	0.44343	0.4434
$	10 1,2-Dichlorobenzene-d4	152	8.891	8.879	(1.042)	24413	0.49925	0.4992
	12 1,2-Dichlorobenzene	146	8.917	8.904	(1.045)	38682	0.48557	0.4856
	11 Benzyl alcohol	108	8.917	8.827	(1.045)	16979	0.34688	0.3469
	14 2,2'-oxybis(1-Chloropropane)	121	9.121	9.109	(1.069)	10594	0.40645	0.4064
	13 2-Methylphenol	108	9.096	9.070	(1.066)	32807	0.42171	0.4217
	17 Hexachloroethane	117	9.479	9.479	(1.111)	19635	0.54699	0.5470
	16 N-Nitroso-di-n-propylamine	70	9.377	9.364	(1.099)	29869	0.49833	0.4983
	15 4-Methylphenol	108	9.390	9.339	(1.100)	24135	0.31771	0.3177
$	18 Nitrobenzene-d5	82	9.632	9.607	(0.879)	43009	0.48190	0.4819
	19 Nitrobenzene	77	9.671	9.632	(0.882)	40827	0.44605	0.4460
	20 Isophorone	82	10.105	10.092	(0.922)	58301	0.42305	0.4231
	21 2-Nitrophenol	139	10.297	10.258	(0.939)	11241	0.29481	0.2948
	22 2,4-Dimethylphenol	107	10.360	10.348	(0.945)	70721	0.83277	0.8328
	23 Bis(2-Chloroethoxy)methane	93	10.539	10.514	(0.962)	32326	0.41231	0.4123
	24 Benzoic acid	105	10.603	10.654	(0.967)	41660	0.65905	0.6590(M)
	25 2,4-Dichlorophenol	162	10.769	10.718	(0.983)	52111	0.81922	0.8192
	26 1,2,4-Trichlorobenzene	180	10.884	10.884	(0.993)	35864	0.52285	0.5229
*	27 Naphthalene-d8	136	10.960	10.960	(1.000)	778397	4.00000	
	28 Naphthalene	128	10.998	10.998	(1.003)	100696	0.46472	0.4647
	29 4-Chloroaniline	127	11.189	11.151	(1.021)	59556	0.60964	0.6096
	30 Hexachlorobutadiene	225	11.380	11.368	(1.038)	21260	0.62042	0.6204
	31 4-Chloro-3-methylphenol	107	12.158	12.133	(1.109)	64195	0.89783	0.8978
	32 2-Methylnaphthalene	142	12.388	12.375	(1.130)	70681	0.46926	0.4693
	33 Hexachlorocyclopentadiene	237	12.847	12.847	(0.885)	2767	0.15165	0.1517

			QUANT SIG					CONCENTRATIONS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
	34	2,4,6-Trichlorophenol	196	13.026	13.013	(0.897)	32195	0.78007	0.7801
	35	2,4,5-Trichlorophenol	196	13.128	13.090	(0.904)	29428	0.68673	0.6867
$	36	2-Fluorobiphenyl	172	13.166	13.153	(0.907)	72978	0.45817	0.4582
	37	2-Chloronaphthalene	162	13.357	13.357	(0.920)	65281	0.46813	0.4681
	38	2-Nitroaniline	65	13.651	13.625	(0.940)	43117	0.76715	0.7672
	39	Dimethylphthalate	163	14.059	14.059	(0.968)	72866	0.50470	0.5047
	40	Acenaphthylene	152	14.212	14.199	(0.979)	100758	0.47014	0.4701
	41	2,6-Dinitrotoluene	165	14.186	14.186	(0.977)	31060	0.92413	0.9241
*	42	Acenaphthene-d10	164	14.518	14.518	(1.000)	413692	4.00000	
	43	3-Nitroaniline	138	14.518	14.467	(1.000)	22380	0.60947	0.6095
	44	Acenaphthene	153	14.582	14.582	(1.004)	60718	0.45342	0.4534
	45	2,4-Dinitrophenol	184	14.773	14.684	(1.018)	6116	0.39555	0.3955
	46	Dibenzofuran	168	14.913	14.913	(1.027)	87367	0.46846	0.4685
	47	4-Nitrophenol	109	14.977	14.862	(1.032)	10490	0.48605	0.4860
	48	2,4-Dinitrotoluene	165	15.002	14.990	(1.033)	36127	0.83052	0.8305
	50	Diethylphthalate	149	15.499	15.499	(1.068)	92313	0.56369	0.5637
	49	Fluorene	166	15.614	15.614	(1.075)	85299	0.52511	0.5251
	51	4-Chlorophenyl-phenylether	204	15.614	15.614	(1.075)	40049	0.51940	0.5194
	52	4-Nitroaniline	138	15.805	15.729	(1.089)	5759	0.17752	0.1775
	53	4,6-Dinitro-2-methylphenol	198	15.843	15.818	(0.905)	29318	1.02834	1.028
	54	N-Nitrosodiphenylamine	169	15.868	15.856	(0.906)	51347	0.44170	0.4417
$	55	2,4,6-Tribromophenol	330	16.148	16.136	(1.112)	14459	0.75545	0.7554
	56	4-Bromophenyl-phenylether	248	16.607	16.594	(0.948)	18632	0.41463	0.4146
	57	Hexachlorobenzene	284	16.899	16.900	(0.965)	23889	0.45553	0.4555
	58	Pentachlorophenol	266	17.295	17.270	(0.988)	11924	0.40214	0.4021
*	59	Phenanthrene-d10	188	17.512	17.512	(1.000)	776079	4.00000	
	60	Phenanthrene	178	17.550	17.550	(1.002)	100098	0.44552	0.4455
	61	Anthracene	178	17.652	17.652	(1.008)	88974	0.42709	0.4271
	62	Carbazole	167	18.022	17.996	(1.029)	79580	0.45650	0.4565
	63	Di-n-butylphthalate	149	18.825	18.813	(1.075)	111578	0.39612	0.3961
	64	Fluoranthene	202	19.960	19.947	(0.884)	101138	0.46316	0.4632
	65	Pyrene	202	20.381	20.368	(0.903)	116706	0.47315	0.4731
$	66	Terphenyl-d14	244	20.687	20.687	(0.916)	83045	0.48455	0.4846
	67	Butylbenzylphthalate	149	21.631	21.631	(0.958)	43438	0.41100	0.4110
	68	Benzo(a)anthracene	228	22.549	22.550	(0.999)	83790	0.48014	0.4801
*	69	Chrysene-d12	240	22.575	22.575	(1.000)	493050	4.00000	
	70	3,3'-Dichlorobenzidine	252	22.524	22.511	(0.998)	73773	1.62798	1.628
	71	Chrysene	228	22.613	22.613	(1.002)	71921	0.43974	0.4397
	72	bis(2-Ethylhexyl)phthalate	149	22.677	22.677	(0.959)	48019	0.48495	0.4850
*	134	Di-n-octylphthalate-d4	153	23.647	23.647	(1.000)	698947	4.00000	
	73	Di-n-octylphthalate	149	23.659	23.659	(1.001)	90514	0.46593	0.4659
	74	Benzo(b)fluoranthene	252	24.323	24.310	(0.975)	56819	0.41561	0.4156
	75	Benzo(k)fluoranthene	252	24.361	24.348	(0.976)	73006	0.52608	0.5261
	76	Benzo(a)pyrene	252	24.871	24.859	(0.997)	44668	0.44911	0.4491
*	77	Perylene-d12	264	24.948	24.948	(1.000)	369077	4.00000	
	78	Indeno(1,2,3-cd)pyrene	276	27.183	27.157	(1.090)	52819	0.39414	0.3941
	79	Dibenzo(a,h)anthracene	278	27.183	27.157	(1.090)	48205	0.40428	0.4043
	80	Benzo(g,h,i)perylene	276	27.835	27.796	(1.116)	47559	0.38677	0.3868
	90	N-Nitrosodimethylamine	74	4.367	4.317	(0.512)	17410	0.33069	0.3307
	91	Aniline	93	8.049	8.011	(0.943)	68851	0.68108	0.6811
	93	Benzidine	184	20.253	20.241	(0.897)	28425	1.05525	1.055
	103	Pyridine	79	4.406	4.342	(0.516)	31657	0.38242	0.3824
	105	1-methylnaphthalene	142	12.605	12.592	(1.150)	65232	0.46798	0.4680
	111	Azobenzene (1,2-DP-Hydrazine)	77	15.932	15.932	(1.097)	113915	0.55949	0.5595

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
187 Total Benzofluoranthenes	252	24.323	24.310	(0.975)	118280	0.96348	0.9635
120 2,3,4,6-Tetrachlorophenol	232	15.283	15.257	(1.053)	16214	0.44859	0.4486

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt17.i
Lab File ID: NT1707202304.D
Lab Smp Id: SLG0263-LCV1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt17.i\20230720.b\ABN.m
Misc Info:

Calibration Date: 21-JUL-2023
Calibration Time: 01:21
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	169554	84777	339108	199631	17.74
27 Naphthalene-d8	681387	340694	1362774	778397	14.24
42 Acenaphthene-d10	390289	195145	780578	413692	6.00
59 Phenanthrene-d10	698326	349163	1396652	776079	11.13
69 Chrysene-d12	446763	223382	893526	493050	10.36
134 Di-n-octylphthala	703373	351687	1406746	698947	-0.63
77 Perylene-d12	323620	161810	647240	369077	14.05

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	8.53	8.03	9.03	8.53	-0.00
27 Naphthalene-d8	10.96	10.46	11.46	10.96	-0.00
42 Acenaphthene-d10	14.52	14.02	15.02	14.52	-0.00
59 Phenanthrene-d10	17.51	17.01	18.01	17.51	-0.00
69 Chrysene-d12	22.58	22.08	23.08	22.58	-0.00
134 Di-n-octylphthala	23.65	23.15	24.15	23.65	-0.00
77 Perylene-d12	24.95	24.45	25.45	24.95	-0.00

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

REVIEW SUMMARY FOR FILE - NT1707202304.D

Lab ID: SLG0263-LCV1
nt17.i, ABN.m, 21-JUL-2023 02:35

RT	CO-ELUTION COMPOUNDS
8.917	1,2-Dichlorobenzene and Benzyl alcohol
14.518	Acenaphthene-d10 and 3-Nitroaniline
27.183	Indeno(1,2,3-cd)pyrene and Dibenzo(a,h)anthracene
27.183	Dibenzo(a,h)anthracene and Indeno(1,2,3-cd)pyrene

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
1.045	1.034	0.0105	Benzyl alcohol
1.100	1.094	0.0060	4-Methylphenol
1.018	1.011	0.0061	2,4-Dinitrophenol
1.032	1.024	0.0079	4-Nitrophenol
1.089	1.083	0.0052	4-Nitroaniline
0.512	0.506	0.0060	N-Nitrosodimethylamine
0.516	0.509	0.0074	Pyridine
0.760	0.751	0.0090	2-Fluorophenol

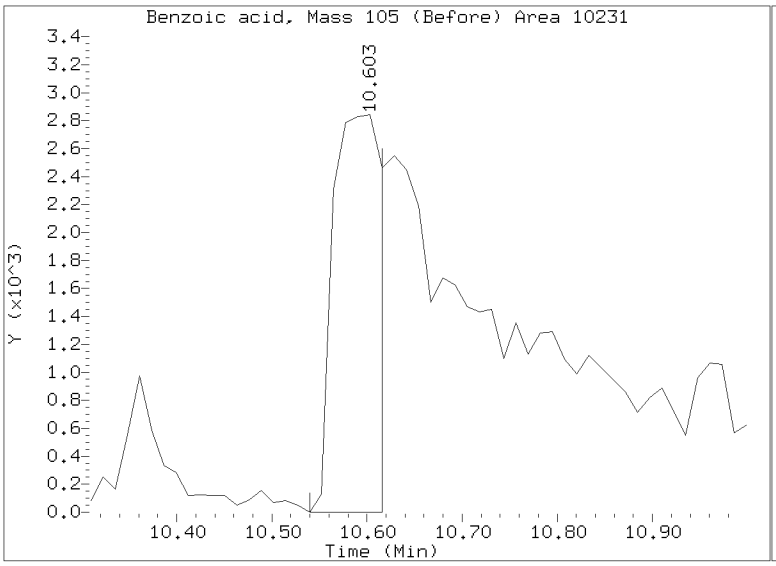
RRT check based on Ccal File: NT1707202302.D

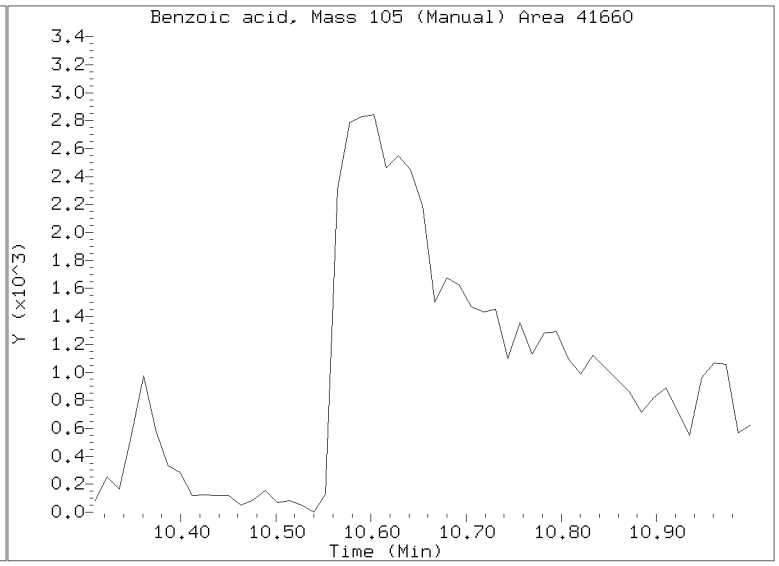
On Column LOD for nt17.i, ABN.m, ICAL.sub = 0.0000

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

Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt17.i/20230720.b/NT1707202304.D
Injection Date: 21-JUL-2023 02:35
Lab ID:SLG0263-LCV1 Client ID:
Report Date: 07/21/2023 14:01





Analytical Resources, LLC
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK
EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	NT14	Calibration:	GF00097
Lab File ID:	NT1407062344ICV.D	Calibration Date:	06/30/2023
Sequence:	SLG0081	Injection Date:	07/07/23
Lab Sample ID:	SLG0081-ICV1	Injection Time:	16:23
Sequence Name:	Initial Cal Check		

		CONC. (ug/mL)		RESPONSE FACTOR			% DRIFT/DIFF		
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT	
Naphthalene	A	5.0000	5.0	1.0449260	1.0472680		0.2	+/-20	
2-Methylnaphthalene	A	5.0000	4.9	0.7750559	0.7599883		-1.9	+/-20	
Acenaphthylene	A	5.0000	5.4	2.0223380	2.1828920		7.9	+/-20	
Acenaphthene	A	5.0000	5.0	1.1968170	1.1947660		-0.2	+/-20	
Fluorene	A	5.0000	5.0	1.5252430	1.5261170		0.06	+/-20	
Phenanthrene	A	5.0000	5.0	1.0820920	1.0781840		-0.4	+/-20	
Anthracene	A	5.0000	5.2	1.0456190	1.0841410		3.7	+/-20	
Fluoranthene	A	5.0000	5.4	1.6350890	1.7699490		8.2	+/-20	
Pyrene	A	5.0000	5.6	1.6517700	1.8353550		11.1	+/-20	
Benzo(a)anthracene	A	5.0000	5.2	1.4005720	1.4522870		3.7	+/-20	
Chrysene	A	5.0000	5.3	1.2536770	1.3187190		5.2	+/-20	
Benzofluoranthenes, Total	A	10.000	11.5	1.3347330	1.5301110		14.6	+/-20	
Benzo(a)pyrene	A	5.0000	5.3	1.0318650	1.0893580		5.6	+/-20	
Indeno(1,2,3-cd)pyrene	A	5.0000	3.9	0.9306078	0.7187720		-22.8	+/-20	*
Dibenzo(a,h)anthracene	A	5.0000	4.2	0.7874172	0.6615648		-16.0	+/-20	
Benzo(g,h,i)perylene	A	5.0000	3.5	0.7682964	0.5382344		-29.9	+/-20	*
1,2-Dichlorobenzene-d4	A	5.0000	5.15	0.9620152	0.9898907		2.9	+/-20	
Nitrobenzene-d5	A	5.0000	5.18	0.4718073	0.4882735		3.5	+/-20	
2-Fluorobiphenyl	A	5.0000	5.22	1.4246390	1.4870330		4.4	+/-20	
p-Terphenyl-d14	A	5.0000	5.81	1.1116870	1.2905990		16.1	+/-20	
1,4-Dichlorobenzene-d4	A	4.0000	4.0	31519.2900	1.0000		0.0		
Naphthalene-d8	A	4.0000	4.0	139200.5000	1.0000				
Acenaphthene-d10	A	4.0000	4.0	60579.0000	1.0000		0.0		
Phenanthrene-d10	A	4.0000	4.0	102159.6000	1.0000		0.0		
Chrysene-d12	A	4.0000	4.0	69642.6400	1.0000		0.0		
Di-n-Octylphthalate-d4	A	4.0000	4.0	112337.2000	1.0000		0.0		
Perylene-d12	A	4.0000	4.0	58645.4300	1.0000		0.0		

* Values outside of QC limits

Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062344ICV.D

Date : 07-JUL-2023 16:23

Client ID:

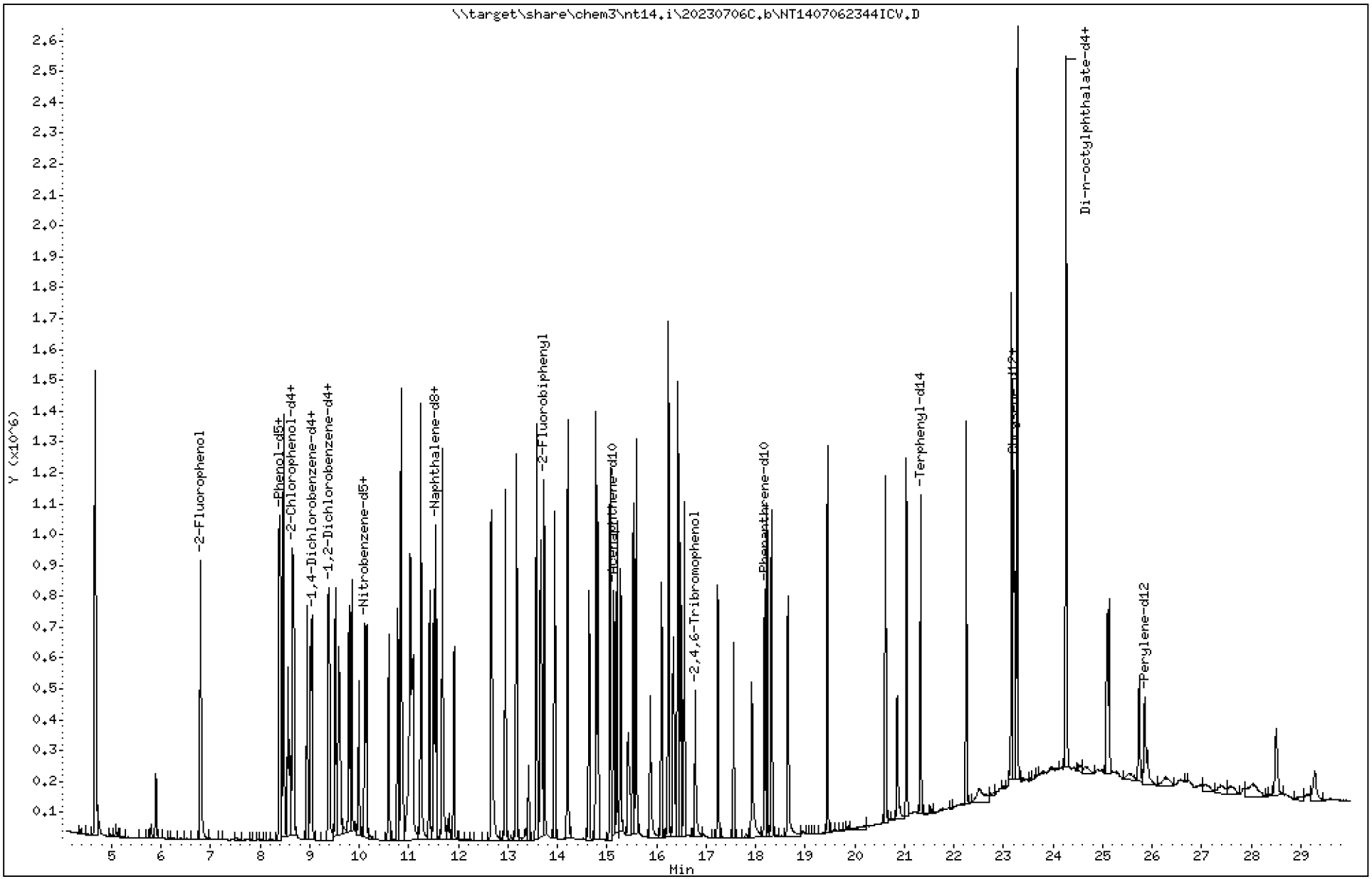
Instrument: nt14.i

Sample Info: SLG0081-ICV1

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230706C.b\NT1407062344ICV.D
Lab Smp Id: SLG0081-ICV1
Inj Date : 07-JUL-2023 16:23 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : SLG0081-ICV1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Meth Date : 08-Jul-2023 11:21 van Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: VANS-201906

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
$	1 2-Fluorophenol	112	6.798	6.798	(0.754)	378136	7.50000	7.510
$	2 Phenol-d5	99	8.382	8.382	(0.930)	510601	7.50000	7.480
	3 Phenol	94	8.405	8.405	(0.932)	374741	5.00000	4.534
$	5 2-Chlorophenol-d4	132	8.652	8.652	(0.960)	409827	7.50000	8.124
	4 Bis(2-Chloroethyl)ether	93	8.559	8.559	(0.949)	266029	5.00000	4.627
	6 2-Chlorophenol	128	8.683	8.683	(0.963)	314217	5.00000	5.240
	7 1,3-Dichlorobenzene	146	8.946	8.946	(0.992)	266650	5.00000	4.990
*	8 1,4-Dichlorobenzene-d4	152	9.016	9.016	(1.000)	132670	4.00000	
	9 1,4-Dichlorobenzene	146	9.047	9.047	(1.003)	278894	5.00000	5.294
$	10 1,2-Dichlorobenzene-d4	152	9.373	9.373	(1.040)	164161	5.00000	5.145
	12 1,2-Dichlorobenzene	146	9.404	9.404	(1.043)	254935	5.00000	4.995
	11 Benzyl alcohol	108	Compound Not Detected.					
	14 2,2'-oxybis(1-Chloropropane)	121	9.590	9.590	(1.064)	79706	5.00000	4.828
	13 2-Methylphenol	108	9.520	9.520	(1.056)	270051	5.00000	5.184
	17 Hexachloroethane	117	9.994	9.994	(1.108)	105125	5.00000	4.344
	16 N-Nitroso-di-n-propylamine	70	9.846	9.846	(1.092)	221755	5.00000	4.744
	15 4-Methylphenol	108	9.792	9.792	(1.086)	300093	5.00000	5.201
$	18 Nitrobenzene-d5	82	10.110	10.110	(0.879)	328414	5.00000	5.175
	19 Nitrobenzene	77	10.149	10.149	(0.882)	336883	5.00000	4.967
	20 Isophorone	82	10.591	10.591	(0.921)	492811	5.00000	5.223
	21 2-Nitrophenol	139	10.778	10.778	(0.937)	159671	5.00000	5.009
	22 2,4-Dimethylphenol	107	10.840	10.840	(0.942)	560619	10.0000	10.30
	23 Bis(2-Chloroethoxy)methane	93	11.026	11.026	(0.958)	291836	5.00000	4.841
	24 Benzoic acid	105	11.088	11.088	(0.964)	674962	20.0000	19.92
	25 2,4-Dichlorophenol	162	11.243	11.243	(0.977)	414658	10.0000	10.31
	26 1,2,4-Trichlorobenzene	180	11.420	11.420	(0.993)	202319	5.00000	5.046
*	27 Naphthalene-d8	136	11.505	11.505	(1.000)	538082	4.00000	
	28 Naphthalene	128	11.544	11.544	(1.003)	704395	5.00000	5.011
	29 4-Chloroaniline	127	11.675	11.675	(1.015)	633627	10.0000	9.667
	30 Hexachlorobutadiene	225	11.915	11.915	(1.036)	99066	5.00000	5.297
	31 4-Chloro-3-methylphenol	107	12.665	12.665	(1.101)	508064	10.0000	10.07
	32 2-Methylnaphthalene	142	12.952	12.952	(1.126)	511170	5.00000	4.903
	33 Hexachlorocyclopentadiene	237	13.416	13.416	(0.886)	48275	10.0000	2.373

		QUANT SIG					AMOUNTS	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
	34 2,4,6-Trichlorophenol	196	13.579	13.579	(0.897)	261157	10.0000	10.05
	35 2,4,5-Trichlorophenol	196	13.664	13.664	(0.903)	295995	10.0000	10.95
$	36 2-Fluorobiphenyl	172	13.733	13.733	(0.907)	502305	5.00000	5.219
	37 2-Chloronaphthalene	162	13.942	13.942	(0.921)	443165	5.00000	5.005
	38 2-Nitroaniline	65	14.206	14.206	(0.939)	430488	10.0000	10.03
	39 Dimethylphthalate	163	14.639	14.639	(0.967)	467963	5.00000	5.152
	40 Acenaphthylene	152	14.817	14.817	(0.979)	737359	5.00000	5.397
	41 2,6-Dinitrotoluene	165	14.778	14.778	(0.976)	213129	10.0000	11.15
*	42 Acenaphthene-d10	164	15.134	15.134	(1.000)	270232	4.00000	
	43 3-Nitroaniline	138	15.065	15.065	(0.995)	260329	10.0000	10.17
	44 Acenaphthene	153	15.204	15.204	(1.005)	403580	5.00000	4.991
	45 2,4-Dinitrophenol	184	15.273	15.273	(1.009)	143808	20.0000	11.99
	46 Dibenzofuran	168	15.528	15.528	(1.026)	597276	5.00000	5.069
	47 4-Nitrophenol	109	15.420	15.420	(1.019)	123689	10.0000	6.622
	48 2,4-Dinitrotoluene	165	15.590	15.590	(1.030)	294932	10.0000	11.04
	50 Diethylphthalate	149	16.101	16.101	(1.064)	487959	5.00000	4.646
	49 Fluorene	166	16.240	16.240	(1.073)	515507	5.00000	5.003
	51 4-Chlorophenyl-phenylether	204	16.232	16.232	(1.073)	228485	5.00000	5.136
	52 4-Nitroaniline	138	16.340	16.340	(1.080)	238982	10.0000	9.218
	53 4,6-Dinitro-2-methylphenol	198	16.432	16.432	(0.904)	226830	20.0000	15.23
	54 N-Nitrosodiphenylamine	169	16.486	16.486	(0.907)	327747	5.00000	5.018
$	55 2,4,6-Tribromophenol	330	16.779	16.779	(1.109)	65506	7.50000	7.683
	56 4-Bromophenyl-phenylether	248	17.234	17.234	(0.948)	106480	5.00000	5.346
	57 Hexachlorobenzene	284	17.559	17.559	(0.966)	109253	5.00000	5.185
	58 Pentachlorophenol	266	17.923	17.923	(0.986)	111141	10.0000	8.617
*	59 Phenanthrene-d10	188	18.178	18.178	(1.000)	462568	4.00000	
	60 Phenanthrene	178	18.225	18.225	(1.003)	623417	5.00000	4.982
	61 Anthracene	178	18.317	18.317	(1.008)	626861	5.00000	5.184
	62 Carbazole	167	18.650	18.650	(1.026)	604571	5.00000	4.970
	63 Di-n-butylphthalate	149	19.447	19.447	(1.070)	916313	5.00000	5.733
	64 Fluoranthene	202	20.615	20.615	(0.887)	639560	5.00000	5.412
	65 Pyrene	202	21.041	21.041	(0.906)	663194	5.00000	5.556
$	66 Terphenyl-d14	244	21.327	21.327	(0.918)	466350	5.00000	5.805
	67 Butylbenzylphthalate	149	22.249	22.249	(0.958)	379246	5.00000	6.752
	68 Benzo(a)anthracene	228	23.209	23.209	(0.999)	524775	5.00000	5.185
*	69 Chrysene-d12	240	23.232	23.232	(1.000)	289075	4.00000	
	70 3,3'-Dichlorobenzidine	252	23.162	23.162	(0.997)	470629	15.0000	15.97
	71 Chrysene	228	23.278	23.278	(1.002)	476511	5.00000	5.259
	72 bis(2-Ethylhexyl)phthalate	149	24.269	24.269	(1.000)	979774	5.00000	4.936
*	134 Di-n-octylphthalate-d4	153	24.262	24.262	(1.000)	772331	4.00000	
	73 Di-n-octylphthalate	149	24.269	24.269	(1.000)	979774	5.00000	4.936
	74 Benzo(b)fluoranthene	252	25.082	25.082	(0.970)	329717	5.00000	5.787
	75 Benzo(k)fluoranthene	252	25.129	25.129	(0.972)	364128	5.00000	5.692
	76 Benzo(a)pyrene	252	25.733	25.733	(0.996)	236049	5.00000	5.279
*	77 Perylene-d12	264	25.849	25.849	(1.000)	173349	4.00000	
	78 Indeno(1,2,3-cd)pyrene	276	28.494	28.494	(1.102)	155748	5.00000	3.862
	79 Dibenzo(a,h)anthracene	278	28.509	28.509	(1.103)	143352	5.00000	4.201
	80 Benzo(g,h,i)perylene	276	29.278	29.278	(1.133)	116628	5.00000	3.503
	90 N-Nitrosodimethylamine	74	4.658	4.658	(0.517)	361147	10.0000	9.488
	91 Aniline	93	8.474	8.474	(0.940)	752392	10.0000	9.337
	93 Benzidine	184	20.855	20.855	(0.898)	283596	10.0000	7.933
	103 Pyridine	79	4.674	4.674	(0.518)	548817	10.0000	9.156
	105 1-methylnaphthalene	142	13.169	13.169	(1.145)	470014	5.00000	5.053
	111 Azobenzene (1,2-DP-Hydrazine)	77	16.556	16.556	(1.094)	712443	5.00000	4.763

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
187 Total Benzofluoranthenes	252	25.129	25.129	(0.972)	663108	10.0000	11.46
120 2,3,4,6-Tetrachlorophenol	232	15.876	15.876	(1.049)	105889	5.00000	5.002

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1407062344ICV.D
Lab Smp Id: SLG0081-ICV1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Misc Info:

Calibration Date: 07-JUL-2023
Calibration Time: 16:23
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	132670	66335	265340	132670	0.00
27 Naphthalene-d8	538082	269041	1076164	538082	0.00
42 Acenaphthene-d10	270232	135116	540464	270232	0.00
59 Phenanthrene-d10	462568	231284	925136	462568	0.00
69 Chrysene-d12	289075	144538	578150	289075	0.00
134 Di-n-octylphthala	772331	386166	1544662	772331	0.00
77 Perylene-d12	173349	86675	346698	173349	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.02	8.52	9.52	9.02	0.00
27 Naphthalene-d8	11.51	11.01	12.01	11.51	0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	0.00
59 Phenanthrene-d10	18.18	17.68	18.68	18.18	0.00
69 Chrysene-d12	23.23	22.73	23.73	23.23	0.00
134 Di-n-octylphthala	24.26	23.76	24.76	24.26	0.00
77 Perylene-d12	25.85	25.35	26.35	25.85	0.00

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

REVIEW SUMMARY FOR FILE - NT1407062344ICV.D

Lab ID: SLG0081-ICV1
nt14.i, ABN.m, 07-JUL-2023 16:23

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

No RRT check. Ccal file.

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

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

Q-FLAG SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230706C.b

Instrument: nt14.i Date: 07-JUL-2023 Method: ABN.m

INITIAL CAL: 21-APR-2023

Compound	%RSD or R^2
NO Q-FLAGS	

ICV CAL: NT1407062344ICV.D 07-JUL-2023 16:23

Compound	%D
Benzyl alcohol	ND
Hexachlorocyclopentadiene	-76.3
2,4-Dinitrophenol	-40.1
4-Nitrophenol	-33.8
4,6-Dinitro-2-methylphenol	-23.8
Butylbenzylphthalate	35.0
Indeno(1,2,3-cd)pyrene	-22.76
Benzo(g,h,i)perylene	-29.94
Benzidine	-20.67

Analytical Resources, LLC
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK
EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	NT17	Calibration:	GG00040
Lab File ID:	NT1707202302.D	Calibration Date:	07/10/2023
Sequence:	SLG0263	Injection Date:	07/21/23
Lab Sample ID:	SLG0263-ICV1	Injection Time:	01:21
Sequence Name:	Initial Cal Check		

		CONC. (ug/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Naphthalene	A	5.0000	4.6	1.1134720	5.1663150		-7.2	+/-20
2-Methylnaphthalene	A	5.0000	5.2	0.7740106	4.0122220		3.7	+/-20
Acenaphthylene	A	5.0000	4.7	2.0721990	9.8402260		-5.0	+/-20
Acenaphthene	A	5.0000	4.6	1.2947910	5.9601470		-7.9	+/-20
Fluorene	A	5.0000	5.6	1.5706250	8.7170790		11.0	+/-20
Phenanthrene	A	5.0000	4.6	1.1580190	5.3240060		-8.0	+/-20
Anthracene	A	5.0000	4.8	1.0737470	5.1083250		-4.9	+/-20
Fluoranthene	A	5.0000	5.0	1.7715610	8.8759360		0.2	+/-20
Pyrene	A	5.0000	5.0	2.0010910	9.9116530		-0.9	+/-20
Benzo(a)anthracene	A	5.0000	4.9	1.4157630	6.9392500		-2.0	+/-20
Chrysene	A	5.0000	4.5	1.3268690	5.9969070		-9.6	+/-20
Benzofluoranthenes, Total	A	10.000	10.4	1.3304960	6.9204680		4.0	+/-20
Benzo(a)pyrene	A	5.0000	4.8	1.0779320	5.2126440		-3.3	+/-20
Indeno(1,2,3-cd)pyrene	A	5.0000	4.3	1.4523740	6.2564240		-13.8	+/-20
Dibenzo(a,h)anthracene	A	5.0000	4.3	1.2922610	5.5839440		-13.6	+/-20
Benzo(g,h,i)perylene	A	5.0000	4.0	1.3326540	5.3399910		-19.9	+/-20
1,2-Dichlorobenzene-d4	A	5.0000	4.94	0.9798026	4.8423980		-1.2	+/-20
Nitrobenzene-d5	A	5.0000	5.43	0.4586332	2.4906840		8.6	+/-20
2-Fluorobiphenyl	A	5.0000	4.66	1.5400870	7.1696920		-6.9	+/-20
p-Terphenyl-d14	A	5.0000	5.05	1.3904070	7.0220230		1.0	+/-20
1,4-Dichlorobenzene-d4	A	20.000	4.0	72238.2500	1.0000			
Naphthalene-d8	A	20.000	4.0	274679.0000	1.0000			
Acenaphthene-d10	A	20.000	4.0	138003.5000	1.0000			
Phenanthrene-d10	A	20.000	4.0	221198.5000	1.0000			
Chrysene-d12	A	20.000	4.0	141137.3000	1.0000			
Di-n-Octylphthalate-d4	A	20.000	4.0	261833.0000	1.0000			
Perylene-d12	A	20.000	4.0	131518.8000	1.0000			

* Values outside of QC limits

Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202302.D

Date : 21-JUL-2023 01:21

Client ID:

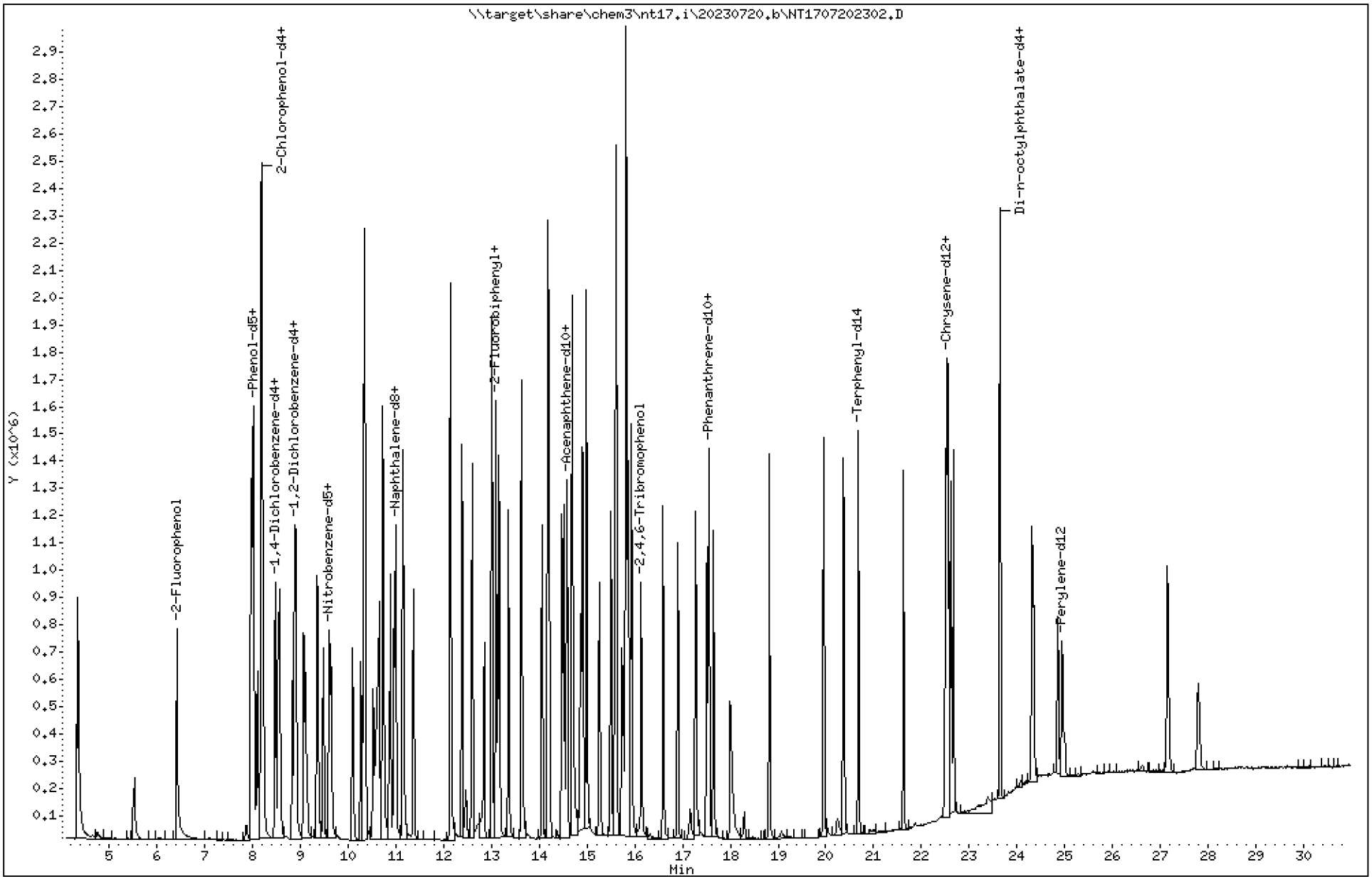
Instrument: nt17.i

Sample Info: SLG0263-ICV1

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt17.i\20230720.b\NT1707202302.D
Lab Smp Id: SLG0263-ICV1
Inj Date : 21-JUL-2023 01:21
Operator : JGR Inst ID: nt17.i
Smp Info : SLG0263-ICV1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt17.i\20230720.b\ABN.m
Meth Date : 21-Jul-2023 14:01 yev Quant Type: ISTD
Cal Date : 10-JUL-2023 16:44 Cal File: NT1707102308.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: ORGDATA102

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
$	1 2-Fluorophenol	112	6.406	6.406	(0.751)	403187	7.50000	6.751
$	2 Phenol-d5	99	7.960	7.960	(0.933)	598471	7.50000	7.228
	3 Phenol	94	7.986	7.986	(0.936)	506478	5.00000	4.587
$	5 2-Chlorophenol-d4	132	8.189	8.189	(0.960)	516352	7.50000	7.665
	4 Bis(2-Chloroethyl)ether	93	8.100	8.100	(0.949)	287831	5.00000	4.497
	6 2-Chlorophenol	128	8.215	8.215	(0.963)	354888	5.00000	4.511
	7 1,3-Dichlorobenzene	146	8.470	8.470	(0.993)	338294	5.00000	4.728
*	8 1,4-Dichlorobenzene-d4	152	8.534	8.534	(1.000)	169554	4.00000	
	9 1,4-Dichlorobenzene	146	8.559	8.559	(1.003)	335080	5.00000	4.343
$	10 1,2-Dichlorobenzene-d4	152	8.879	8.879	(1.040)	205262	5.00000	4.942
	12 1,2-Dichlorobenzene	146	8.904	8.904	(1.043)	329905	5.00000	4.876
	11 Benzyl alcohol	108	8.827	8.827	(1.034)	197689	5.00000	4.755
	14 2,2'-oxybis(1-Chloropropane)	121	9.109	9.109	(1.067)	94603	5.00000	4.273
	13 2-Methylphenol	108	9.070	9.070	(1.063)	320670	5.00000	4.853
	17 Hexachloroethane	117	9.479	9.479	(1.111)	157199	5.00000	5.156
	16 N-Nitroso-di-n-propylamine	70	9.364	9.364	(1.097)	271531	5.00000	5.334
	15 4-Methylphenol	108	9.339	9.339	(1.094)	292559	5.00000	4.534
$	18 Nitrobenzene-d5	82	9.607	9.607	(0.877)	424280	5.00000	5.431
	19 Nitrobenzene	77	9.632	9.632	(0.879)	422701	5.00000	5.276
	20 Isophorone	82	10.092	10.092	(0.921)	614964	5.00000	5.098
	21 2-Nitrophenol	139	10.258	10.258	(0.936)	177158	5.00000	5.308
	22 2,4-Dimethylphenol	107	10.348	10.348	(0.944)	582049	10.0000	7.830(M)
	23 Bis(2-Chloroethoxy)methane	93	10.514	10.514	(0.959)	321363	5.00000	4.682
	24 Benzoic acid	105	10.654	10.654	(0.972)	891982	20.0000	16.12(M)
	25 2,4-Dichlorophenol	162	10.718	10.718	(0.978)	542160	10.0000	9.737
	26 1,2,4-Trichlorobenzene	180	10.884	10.884	(0.993)	293955	5.00000	4.896
*	27 Naphthalene-d8	136	10.960	10.960	(1.000)	681387	4.00000	
	28 Naphthalene	128	10.998	10.998	(1.003)	880065	5.00000	4.640
	29 4-Chloroaniline	127	11.151	11.151	(1.017)	812602	10.0000	9.502
	30 Hexachlorobutadiene	225	11.368	11.368	(1.037)	182183	5.00000	6.073
	31 4-Chloro-3-methylphenol	107	12.133	12.133	(1.107)	701591	10.0000	11.21
	32 2-Methylnaphthalene	142	12.375	12.375	(1.129)	683469	5.00000	5.184
	33 Hexachlorocyclopentadiene	237	12.847	12.847	(0.885)	156349	10.0000	8.612

			QUANT SIG					AMOUNTS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
	34	2,4,6-Trichlorophenol	196	13.013	13.013	(0.896)	384121	10.0000	9.865
	35	2,4,5-Trichlorophenol	196	13.090	13.090	(0.902)	389173	10.0000	9.626
$	36	2-Fluorobiphenyl	172	13.153	13.153	(0.906)	699563	5.00000	4.655
	37	2-Chloronaphthalene	162	13.357	13.357	(0.920)	603509	5.00000	4.587
	38	2-Nitroaniline	65	13.625	13.625	(0.939)	600251	10.0000	11.32
	39	Dimethylphthalate	163	14.059	14.059	(0.968)	700983	5.00000	5.146
	40	Acenaphthylene	152	14.199	14.199	(0.978)	960133	5.00000	4.749
	41	2,6-Dinitrotoluene	165	14.186	14.186	(0.977)	328446	10.0000	10.36
*	42	Acenaphthene-d10	164	14.518	14.518	(1.000)	390289	4.00000	
	43	3-Nitroaniline	138	14.467	14.467	(0.996)	321176	10.0000	9.271
	44	Acenaphthene	153	14.582	14.582	(1.004)	581545	5.00000	4.603
	45	2,4-Dinitrophenol	184	14.684	14.684	(1.011)	377002	20.0000	24.23
	46	Dibenzofuran	168	14.913	14.913	(1.027)	886061	5.00000	5.036
	47	4-Nitrophenol	109	14.862	14.862	(1.024)	286008	10.0000	14.05
	48	2,4-Dinitrotoluene	165	14.990	14.990	(1.032)	465045	10.0000	11.33
	50	Diethylphthalate	149	15.499	15.499	(1.068)	914137	5.00000	5.917
	49	Fluorene	166	15.614	15.614	(1.075)	850545	5.00000	5.550
	51	4-Chlorophenyl-phenylether	204	15.614	15.614	(1.075)	354801	5.00000	4.877
	52	4-Nitroaniline	138	15.729	15.729	(1.083)	329468	10.0000	10.76
	53	4,6-Dinitro-2-methylphenol	198	15.818	15.818	(0.903)	519383	20.0000	20.25
	54	N-Nitrosodiphenylamine	169	15.856	15.856	(0.905)	467039	5.00000	4.465
$	55	2,4,6-Tribromophenol	330	16.136	16.136	(1.111)	155360	7.50000	8.604
	56	4-Bromophenyl-phenylether	248	16.594	16.594	(0.948)	184480	5.00000	4.562
	57	Hexachlorobenzene	284	16.900	16.900	(0.965)	218600	5.00000	4.633
	58	Pentachlorophenol	266	17.270	17.270	(0.986)	220909	10.0000	8.280
*	59	Phenanthrene-d10	188	17.512	17.512	(1.000)	698326	4.00000	
	60	Phenanthrene	178	17.550	17.550	(1.002)	929473	5.00000	4.598
	61	Anthracene	178	17.652	17.652	(1.008)	891819	5.00000	4.757
	62	Carbazole	167	17.996	17.996	(1.028)	772401	5.00000	4.924
	63	Di-n-butylphthalate	149	18.813	18.813	(1.074)	1202992	5.00000	4.746
	64	Fluoranthene	202	19.947	19.947	(0.884)	991360	5.00000	5.010
	65	Pyrene	202	20.368	20.368	(0.902)	1107040	5.00000	4.953
$	66	Terphenyl-d14	244	20.687	20.687	(0.916)	784295	5.00000	5.050
	67	Butylbenzylphthalate	149	21.631	21.631	(0.958)	480763	5.00000	5.020
	68	Benzo(a)anthracene	228	22.550	22.550	(0.999)	775050	5.00000	4.901
*	69	Chrysene-d12	240	22.575	22.575	(1.000)	446763	4.00000	
	70	3,3'-Dichlorobenzidine	252	22.511	22.511	(0.997)	529023	15.0000	12.36
	71	Chrysene	228	22.613	22.613	(1.002)	669799	5.00000	4.520
	72	bis(2-Ethylhexyl)phthalate	149	22.677	22.677	(0.959)	545338	5.00000	5.473
*	134	Di-n-octylphthalate-d4	153	23.647	23.647	(1.000)	703373	4.00000	
	73	Di-n-octylphthalate	149	23.659	23.659	(1.001)	868106	5.00000	4.441
	74	Benzo(b)fluoranthene	252	24.310	24.310	(0.974)	704778	5.00000	5.879
	75	Benzo(k)fluoranthene	252	24.348	24.348	(0.976)	577457	5.00000	4.746
	76	Benzo(a)pyrene	252	24.859	24.859	(0.996)	421729	5.00000	4.836
*	77	Perylene-d12	264	24.948	24.948	(1.000)	323620	4.00000	
	78	Indeno(1,2,3-cd)pyrene	276	27.157	27.157	(1.089)	506176	5.00000	4.308
	79	Dibenzo(a,h)anthracene	278	27.157	27.157	(1.089)	451769	5.00000	4.321
	80	Benzo(g,h,i)perylene	276	27.796	27.796	(1.114)	432032	5.00000	4.007(M)
	90	N-Nitrosodimethylamine	74	4.317	4.317	(0.506)	311649	10.0000	6.970
	91	Aniline	93	8.011	8.011	(0.939)	830183	10.0000	9.669
	93	Benzidine	184	20.241	20.241	(0.897)	85076	10.0000	3.486
	103	Pyridine	79	4.342	4.342	(0.509)	482997	10.0000	6.870
	105	1-methylnaphthalene	142	12.592	12.592	(1.149)	596720	5.00000	4.890
	111	Azobenzene (1,2-DP-Hydrazine)	77	15.932	15.932	(1.097)	1109055	5.00000	5.774

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
187 Total Benzofluoranthenes	252	24.310	24.310	(0.974)	1119801	10.0000	10.40
120 2,3,4,6-Tetrachlorophenol	232	15.257	15.257	(1.051)	167160	5.00000	4.902

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt17.i
Lab File ID: NT1707202302.D
Lab Smp Id: SLG0263-ICV1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt17.i\20230720.b\ABN.m
Misc Info:

Calibration Date: 10-JUL-2023
Calibration Time: 14:14
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	169554	84777	339108	169554	0.00
27 Naphthalene-d8	681387	340694	1362774	681387	0.00
42 Acenaphthene-d10	390289	195145	780578	390289	0.00
59 Phenanthrene-d10	698326	349163	1396652	698326	0.00
69 Chrysene-d12	446763	223382	893526	446763	0.00
134 Di-n-octylphthala	703373	351687	1406746	703373	0.00
77 Perylene-d12	323620	161810	647240	323620	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	8.53	8.03	9.03	8.53	0.00
27 Naphthalene-d8	10.96	10.46	11.46	10.96	0.00
42 Acenaphthene-d10	14.52	14.02	15.02	14.52	0.00
59 Phenanthrene-d10	17.51	17.01	18.01	17.51	0.00
69 Chrysene-d12	22.58	22.08	23.08	22.58	0.00
134 Di-n-octylphthala	23.65	23.15	24.15	23.65	0.00
77 Perylene-d12	24.95	24.45	25.45	24.95	0.00

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

REVIEW SUMMARY FOR FILE - NT1707202302.D

Lab ID: SLG0263-ICV1
nt17.i, ABN.m, 21-JUL-2023 01:21

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

Quant Method: ICAL

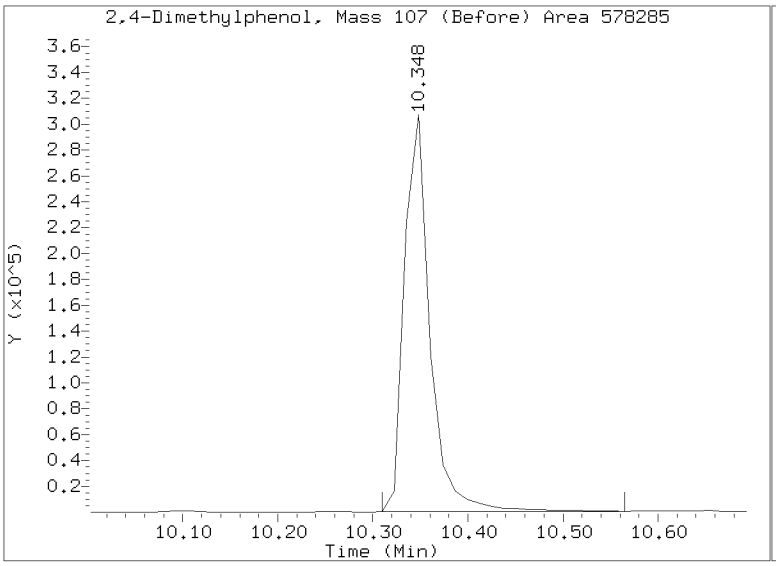
No RRT check. Ccal file.

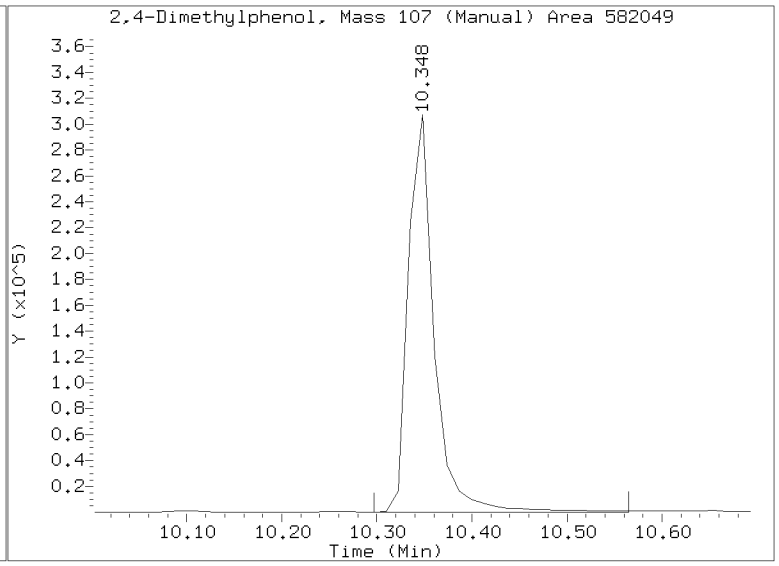
On Column LOD for nt17.i, ABN.m, ICAL.sub = 0.0000

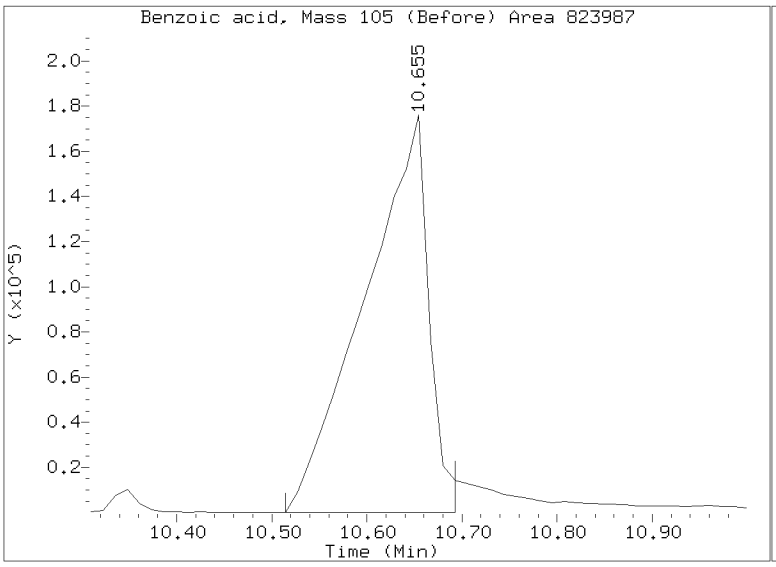
* Only compounds listed in the work order have been verified by the analyst *

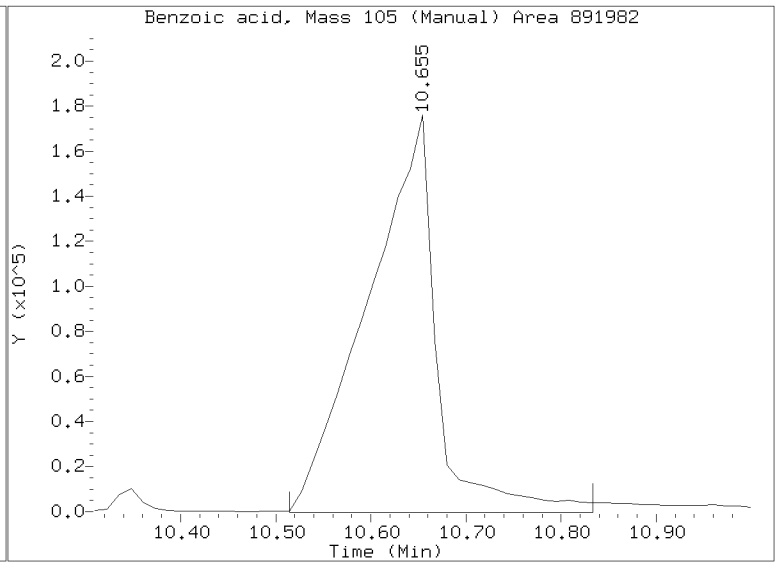
Quant Ion Manual Peak Adjustment Report

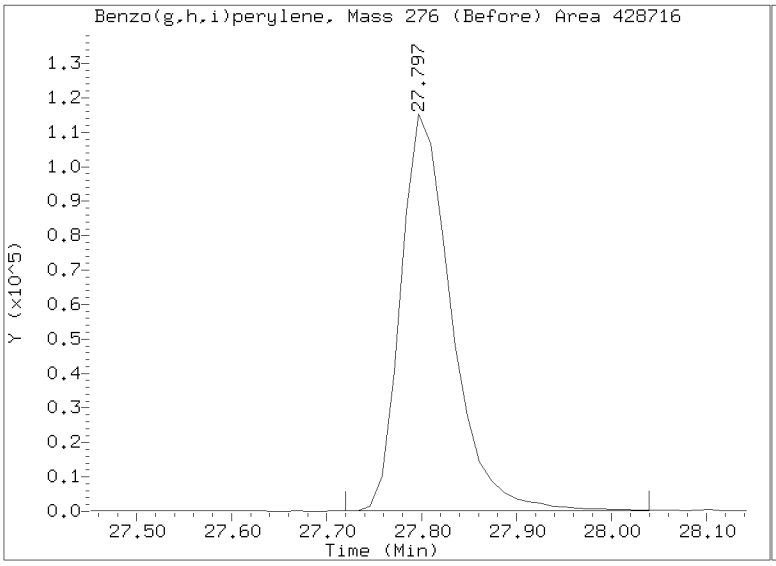
Datafile: //target/share/chem3/nt17.i/20230720.b/NT1707202302.D
Injection Date: 21-JUL-2023 01:21
Lab ID:SLG0263-ICV1 Client ID:
Report Date: 07/21/2023 14:01

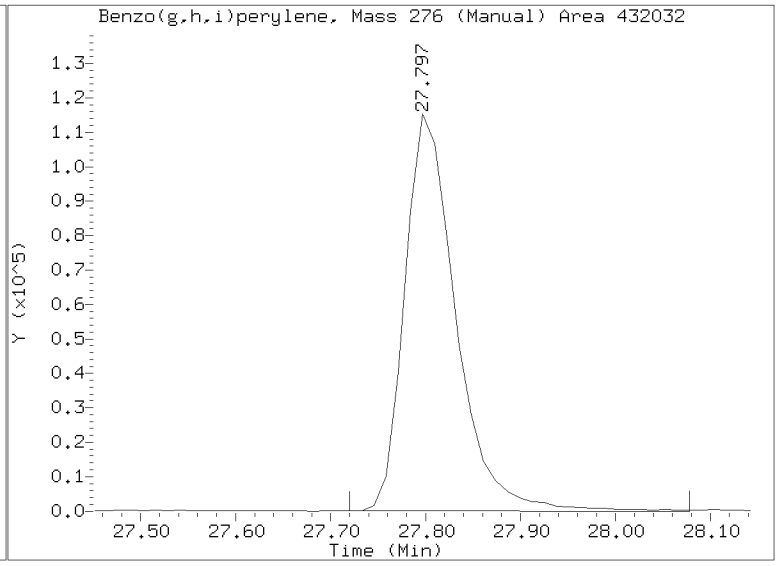












Q-FLAG SUMMARY FOR DATABATCH - \\target\share\chem3\nt17.i\20230720.b

Instrument: nt17.i Date: 21-JUL-2023 Method: ABN.m

INITIAL CAL: 10-JUL-2023

Compound	%RSD or R^2
Benzidine	64.2

ICV CAL: NT1707202302.D 21-JUL-2023 01:21

Compound	%D
2,4-Dimethylphenol	-21.70
Hexachlorobutadiene	21.47
2,4-Dinitrophenol	21.2
4-Nitrophenol	40.5
N-Nitrosodimethylamine	-30.30
Benzidine	-65.14
Pyridine	-31.3

Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8270E

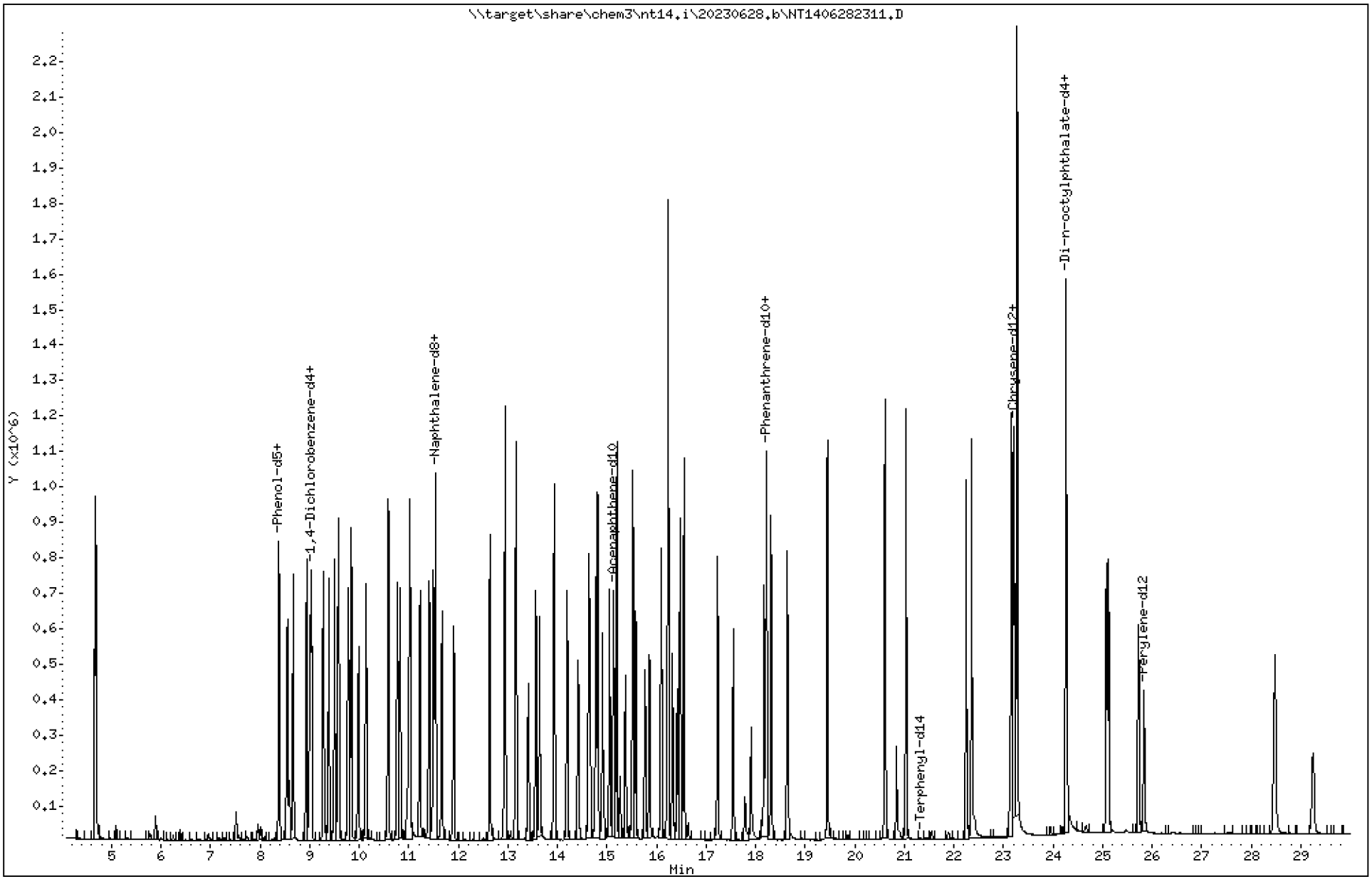
Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	NT14	Calibration:	GF00097
Lab File ID:	NT1406282311.D	Calibration Date:	06/30/2023
Sequence:	SLF0467	Injection Date:	06/28/23
Lab Sample ID:	SLF0467-SCV1	Injection Time:	23:38
Sequence Name:	SCV 5.0		

		CONC. (ug/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Naphthalene	A	5.0000	5.5	1.0449260	1.1535670		10.4	+/-20
2-Methylnaphthalene	A	5.0000	5.1	0.7750559	0.7848486		1.3	+/-20
Acenaphthylene	A	5.0000	5.6	2.0223380	2.2729200		12.4	+/-20
Acenaphthene	A	5.0000	5.6	1.1968170	1.3517850		12.9	+/-20
Fluorene	A	5.0000	5.5	1.5252430	1.6692550		9.4	+/-20
Phenanthrene	A	5.0000	5.6	1.0820920	1.2167260		12.4	+/-20
Anthracene	A	5.0000	5.0	1.0456190	1.0419100		-0.4	+/-20
Fluoranthene	A	5.0000	5.8	1.6350890	1.8812330		15.1	+/-20
Pyrene	A	5.0000	5.8	1.6517700	1.9292500		16.8	+/-20
Benzo(a)anthracene	A	5.0000	5.5	1.4005720	1.5533750		10.9	+/-20
Chrysene	A	5.0000	5.6	1.2536770	1.4031560		11.9	+/-20
Benzofluoranthenes, Total	A	10.000	11.6	1.3347330	1.5450070		15.8	+/-20
Benzo(a)pyrene	A	5.0000	6.4	1.0318650	1.3191630		27.8	+/-20
Indeno(1,2,3-cd)pyrene	A	5.0000	6.1	0.9306078	1.1339880		21.9	+/-20
Dibenzo(a,h)anthracene	A	5.0000	5.9	0.7874172	0.9345243		18.7	+/-20
Benzo(g,h,i)perylene	A	5.0000	5.6	0.7682964	0.8557928		11.4	+/-20
1,2-Dichlorobenzene-d4	A	5.0000	0.00	0.9620152				+/-20
Nitrobenzene-d5	A	5.0000	0.00	0.4718073				+/-20
2-Fluorobiphenyl	A	5.0000	0.00	1.4246390				+/-20
p-Terphenyl-d14	A	5.0000	0.0141	1.1116870	0.0031407		-99.7	+/-20

* Values outside of QC limits

Data File: \\target\share\chem3\nt14.i\20230628.b\NT1406282311.D
Date : 28-JUN-2023 23:38
Client ID:
Sample Info: SLF0467-SCV1

Instrument: nt14.i
Operator: JGR
Column phase: ZB-5msi
Column diameter: 0.25



ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230628.b\NT1406282311.D
Lab Smp Id: SLF0467-SCV1
Inj Date : 28-JUN-2023 23:38 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : SLF0467-SCV1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230628.b\ABN.m
Meth Date : 03-Jul-2023 15:05 yev Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 11 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: ORGDATA102

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
$ 1	2-Fluorophenol	112	Compound Not Detected.					
$ 2	Phenol-d5	99	8.366	8.366	(0.930)	1531	7.50000	0.02318
3	Phenol	94	8.382	8.382	(0.931)	358734	5.00000	4.486
$ 5	2-Chlorophenol-d4	132	Compound Not Detected.					
4	Bis(2-Chloroethyl)ether	93	8.551	8.551	(0.950)	311433	5.00000	5.599
6	2-Chlorophenol	128	8.667	8.667	(0.963)	279261	5.00000	4.814
7	1,3-Dichlorobenzene	146	8.938	8.938	(0.993)	267188	5.00000	5.168
* 8	1,4-Dichlorobenzene-d4	152	9.000	9.000	(1.000)	128354	4.00000	
9	1,4-Dichlorobenzene	146	9.039	9.039	(1.004)	260977	5.00000	5.120
$ 10	1,2-Dichlorobenzene-d4	152	Compound Not Detected.					
12	1,2-Dichlorobenzene	146	9.388	9.388	(1.043)	254243	5.00000	5.149
11	Benzyl alcohol	108	9.272	9.272	(1.030)	178390	5.00000	5.709
14	2,2'-oxybis(1-Chloropropane)	121	9.582	9.582	(1.065)	93021	5.00000	5.824
13	2-Methylphenol	108	9.505	9.505	(1.056)	230056	5.00000	4.564
17	Hexachloroethane	117	9.986	9.986	(1.110)	125989	5.00000	5.381
16	N-Nitroso-di-n-propylamine	70	9.839	9.839	(1.093)	246429	5.00000	5.449
15	4-Methylphenol	108	9.776	9.776	(1.086)	275884	5.00000	4.942
$ 18	Nitrobenzene-d5	82	Compound Not Detected.					
19	Nitrobenzene	77	10.133	10.133	(0.881)	342851	5.00000	5.234
20	Isophorone	82	10.584	10.584	(0.921)	688938	5.00000	7.561
21	2-Nitrophenol	139	10.770	10.770	(0.937)	127147	5.00000	4.114
22	2,4-Dimethylphenol	107	10.824	10.824	(0.941)	210514	10.0000	4.007
23	Bis(2-Chloroethoxy)methane	93	11.026	11.026	(0.959)	367536	5.00000	6.313
24	Benzoic acid	105	11.018	11.018	(0.958)	224723	20.0000	7.003
25	2,4-Dichlorophenol	162	11.227	11.227	(0.976)	194589	10.0000	5.009
26	1,2,4-Trichlorobenzene	180	11.413	11.413	(0.993)	194178	5.00000	5.014
* 27	Naphthalene-d8	136	11.498	11.498	(1.000)	519660	4.00000	
28	Naphthalene	128	11.544	11.544	(1.004)	749328	5.00000	5.520
29	4-Chloroaniline	127	11.667	11.667	(1.015)	252592	10.0000	3.990
30	Hexachlorobutadiene	225	11.907	11.907	(1.036)	93169	5.00000	5.158
31	4-Chloro-3-methylphenol	107	12.634	12.634	(1.099)	240444	10.0000	4.935
32	2-Methylnaphthalene	142	12.944	12.944	(1.126)	509818	5.00000	5.063
33	Hexachlorocyclopentadiene	237	13.416	13.416	(0.887)	93021	10.0000	4.926

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
34	2,4,6-Trichlorophenol	196	13.563	13.563	(0.897)	117483	10.0000	4.896
35	2,4,5-Trichlorophenol	196	13.641	13.641	(0.902)	123559	10.0000	4.949
$ 36	2-Fluorobiphenyl	172	Compound Not Detected.					
37	2-Chloronaphthalene	162	13.935	13.935	(0.921)	435248	5.00000	5.321
38	2-Nitroaniline	65	14.198	14.198	(0.939)	212525	10.0000	5.361
39	Dimethylphthalate	163	14.631	14.631	(0.967)	457780	5.00000	5.456
40	Acenaphthylene	152	14.817	14.817	(0.980)	709296	5.00000	5.620
41	2,6-Dinitrotoluene	165	14.771	14.771	(0.976)	102094	10.0000	5.783
* 42	Acenaphthene-d10	164	15.126	15.126	(1.000)	249651	4.00000	
43	3-Nitroaniline	138	15.049	15.049	(0.995)	134057	10.0000	5.668
44	Acenaphthene	153	15.196	15.196	(1.005)	421843	5.00000	5.647
45	2,4-Dinitrophenol	184	15.266	15.266	(1.009)	25611	20.0000	2.352
46	Dibenzofuran	168	15.521	15.521	(1.026)	581754	5.00000	5.344
47	4-Nitrophenol	109	15.374	15.374	(1.016)	73738	10.0000	4.280
48	2,4-Dinitrotoluene	165	15.575	15.575	(1.030)	138404	10.0000	5.606
50	Diethylphthalate	149	16.093	16.093	(1.064)	572899	5.00000	5.904
49	Fluorene	166	16.232	16.232	(1.073)	520914	5.00000	5.472
51	4-Chlorophenyl-phenylether	204	16.224	16.224	(1.073)	220136	5.00000	5.356
52	4-Nitroaniline	138	16.317	16.317	(1.079)	118618	10.0000	4.939
53	4,6-Dinitro-2-methylphenol	198	16.417	16.417	(0.904)	54175	20.0000	4.060
54	N-Nitrosodiphenylamine	169	16.479	16.479	(0.907)	318426	5.00000	5.378
$ 55	2,4,6-Tribromophenol	330	Compound Not Detected.					
56	4-Bromophenyl-phenylether	248	17.234	17.234	(0.948)	102449	5.00000	5.674
57	Hexachlorobenzene	284	17.551	17.551	(0.966)	99464	5.00000	5.207
58	Pentachlorophenol	266	17.907	17.907	(0.986)	45853	10.0000	3.987
* 59	Phenanthrene-d10	188	18.170	18.170	(1.000)	419362	4.00000	
60	Phenanthrene	178	18.217	18.217	(1.003)	637811	5.00000	5.622
61	Anthracene	178	18.310	18.310	(1.008)	546172	5.00000	4.982
62	Carbazole	167	18.642	18.642	(1.026)	585034	5.00000	5.305
63	Di-n-butylphthalate	149	19.447	19.447	(1.070)	838559	5.00000	5.787
64	Fluoranthene	202	20.607	20.607	(0.887)	676844	5.00000	5.753
65	Pyrene	202	21.033	21.033	(0.906)	694120	5.00000	5.840
$ 66	Terphenyl-d14	244	21.319	21.319	(0.918)	1130	5.00000	0.01413
67	Butylbenzylphthalate	149	22.248	22.248	(0.958)	308364	5.00000	5.494
68	Benzo(a)anthracene	228	23.201	23.201	(0.999)	558885	5.00000	5.546
* 69	Chrysene-d12	240	23.224	23.224	(1.000)	287830	4.00000	
70	3,3'-Dichlorobenzidine	252	23.154	23.154	(0.997)	330788	15.0000	11.43
71	Chrysene	228	23.271	23.271	(1.002)	504838	5.00000	5.596
72	bis(2-Ethylhexyl)phthalate	149	24.269	24.269	(1.001)	718841	5.00000	5.687
* 134	Di-n-octylphthalate-d4	153	24.254	24.254	(1.000)	491823	4.00000	
73	Di-n-octylphthalate	149	24.269	24.269	(1.001)	718841	5.00000	5.687
74	Benzo(b)fluoranthene	252	25.074	25.074	(0.971)	490492	5.00000	6.128
75	Benzo(k)fluoranthene	252	25.121	25.121	(0.972)	497504	5.00000	5.537(H)
76	Benzo(a)pyrene	252	25.725	25.725	(0.996)	401522	5.00000	6.392
* 77	Perylene-d12	264	25.833	25.833	(1.000)	243501	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	28.470	28.470	(1.102)	345159	5.00000	6.093
79	Dibenzo(a,h)anthracene	278	28.478	28.478	(1.102)	284447	5.00000	5.934
80	Benzo(g,h,i)perylene	276	29.247	29.247	(1.132)	260483	5.00000	5.569
90	N-Nitrosodimethylamine	74	4.658	4.658	(0.518)	209812	10.0000	5.698
91	Aniline	93	Compound Not Detected.					
93	Benzidine	184	20.840	20.840	(0.897)	158741	10.0000	4.460
103	Pyridine	79	4.681	4.681	(0.520)	318653	5.00000	2.747
105	1-methylnaphthalene	142	13.168	13.168	(1.145)	491308	5.00000	5.470
111	Azobenzene (1,2-DP-Hydrazine)	77	16.548	16.548	(1.094)	718859	5.00000	5.202

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
187 Total Benzofluoranthenes	252	25.121	25.121	(0.972)	940527	10.0000	11.58
120 2,3,4,6-Tetrachlorophenol	232	15.861	15.861	(1.049)	87501	5.00000	4.484

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1406282311.D
Lab Smp Id: SLF0467-SCV1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230628.b\ABN.m
Misc Info:

Calibration Date: 28-JUN-2023
Calibration Time: 19:18
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	128354	64177	256708	128354	0.00
27 Naphthalene-d8	519660	259830	1039320	519660	0.00
42 Acenaphthene-d10	249651	124826	499302	249651	0.00
59 Phenanthrene-d10	419362	209681	838724	419362	0.00
69 Chrysene-d12	287830	143915	575660	287830	0.00
134 Di-n-octylphthala	491823	245912	983646	491823	0.00
77 Perylene-d12	243501	121751	487002	243501	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.00	8.50	9.50	9.00	0.00
27 Naphthalene-d8	11.50	11.00	12.00	11.50	0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	0.00
59 Phenanthrene-d10	18.17	17.67	18.67	18.17	0.00
69 Chrysene-d12	23.22	22.72	23.72	23.22	0.00
134 Di-n-octylphthala	24.25	23.75	24.75	24.25	0.00
77 Perylene-d12	25.83	25.33	26.33	25.83	0.00

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

REVIEW SUMMARY FOR FILE - NT1406282311.D

Lab ID: SLF0467-SCV1
nt14.i, ABN.m, 28-JUN-2023 23:38

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

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

No RRT check. Ccal file.

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

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

Q-FLAG SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230628.b

Instrument: nt14.i Date: 28-JUN-2023 Method: ABN.m

INITIAL CAL: 21-APR-2023

Compound	%RSD or R^2
NO Q-FLAGS	

ICV CAL: NT1406282311.D 28-JUN-2023 23:38

Compound	%D
Isophorone	51.21
2,4-Dimethylphenol	-59.93
Bis(2-Chloroethoxy)methane	26.25
2,4-Dichlorophenol	-49.91
Benzoic acid	-65.0
4-Chloroaniline	-60.10
4-Chloro-3-methylphenol	-50.65
Hexachlorocyclopentadiene	-50.7
2,4,6-Trichlorophenol	-51.04
2,4,5-Trichlorophenol	-50.51
2-Nitroaniline	-46.39
2,6-Dinitrotoluene	-42.17
3-Nitroaniline	-43.32
2,4-Dinitrophenol	-88.2
4-Nitrophenol	-57.2
2,4-Dinitrotoluene	-43.94
4-Nitroaniline	-50.6
4,6-Dinitro-2-methylphenol	-79.7
Pentachlorophenol	-60.1
3,3'-Dichlorobenzidine	-23.8
Benzo(b)fluoranthene	22.57
Benzo(a)pyrene	27.84
Indeno(1,2,3-cd)pyrene	21.85
N-Nitrosodimethylamine	-43.02
Aniline	ND
Benzidine	-55.40
Pyridine	-45.05
2-Fluorophenol	ND
Phenol-d5	-99.69
2-Chlorophenol-d4	ND
1,2-Dichlorobenzene-d4	ND
Nitrobenzene-d5	ND
2-Fluorobiphenyl	ND
2,4,6-Tribromophenol	ND
Terphenyl-d14	-99.72

Analytical Resources, LLC
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	NT14	Calibration:	GF00097
Lab File ID:	NT1407062362.D	Calibration Date:	06/30/2023
Sequence:	SLG0081	Injection Date:	07/08/23
Lab Sample ID:	SLG0081-CCV1	Injection Time:	03:30
Sequence Name:	Calibration Check		

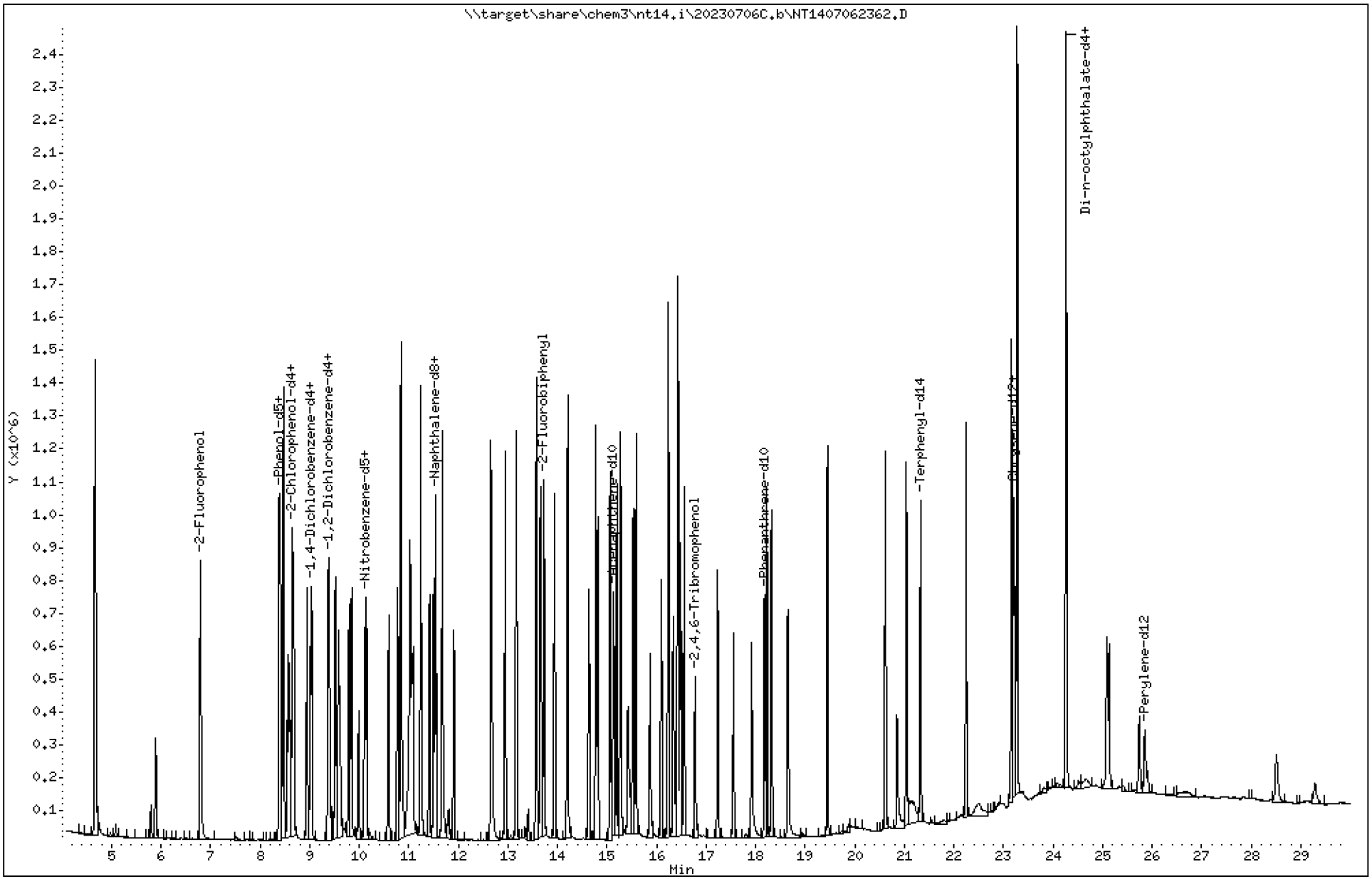
		CONC. (ug/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Naphthalene	A	5.0000	5.0	1.0449260	1.0376220		-0.7	+/-50
2-Methylnaphthalene	A	5.0000	5.0	0.7750559	0.7688118		-0.8	+/-50
Acenaphthylene	A	5.0000	5.3	2.0223380	2.1522640		6.4	+/-50
Acenaphthene	A	5.0000	5.0	1.1968170	1.1859440		-0.9	+/-50
Fluorene	A	5.0000	5.0	1.5252430	1.5273860		0.1	+/-50
Phenanthrene	A	5.0000	5.0	1.0820920	1.0843610		0.2	+/-50
Anthracene	A	5.0000	5.3	1.0456190	1.1001120		5.2	+/-50
Fluoranthene	A	5.0000	6.0	1.6350890	1.9489490		19.2	+/-50
Pyrene	A	5.0000	6.0	1.6517700	1.9838250		20.1	+/-50
Benzo(a)anthracene	A	5.0000	5.1	1.4005720	1.4339480		2.4	+/-50
Chrysene	A	5.0000	5.2	1.2536770	1.2978150		3.5	+/-50
Benzofluoranthenes, Total	A	10.000	12.1	1.3347330	1.6118790		20.8	+/-50
Benzo(a)pyrene	A	5.0000	5.3	1.0318650	1.0954900		6.2	+/-50
Indeno(1,2,3-cd)pyrene	A	5.0000	3.7	0.9306078	0.6801696		-26.9	+/-50
Dibenzo(a,h)anthracene	A	5.0000	3.9	0.7874172	0.6213271		-21.1	+/-50
Benzo(g,h,i)perylene	A	5.0000	3.5	0.7682964	0.5334026		-30.6	+/-50
1,2-Dichlorobenzene-d4	A	5.0000	5.16	0.9620152	0.9933088		3.3	+/-50
Nitrobenzene-d5	A	5.0000	5.32	0.4718073	0.5016334		6.3	+/-50
2-Fluorobiphenyl	A	5.0000	5.21	1.4246390	1.4833200		4.1	+/-50
p-Terphenyl-d14	A	5.0000	6.32	1.1116870	1.4041210		26.3	+/-50

* Values outside of QC limits

* Values outside of QC limits

Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062362.D
Date : 08-JUL-2023 03:30
Client ID:
Sample Info: SLG0081-CCV1

Instrument: nt14.i
Operator: JGR
Column phase: ZB-5msi
Column diameter: 0.25



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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

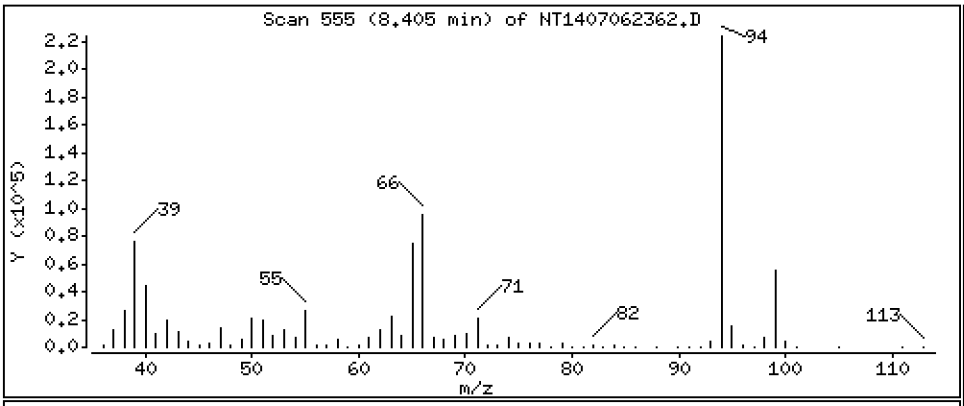
Operator: JGR

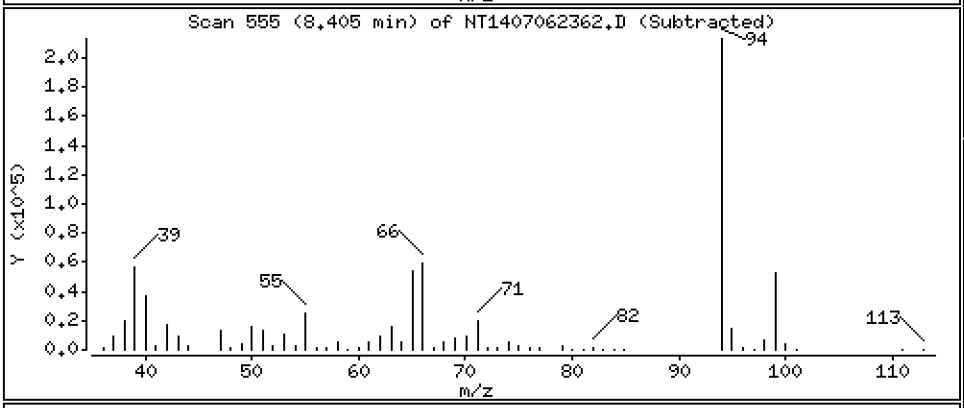
Column phase: ZB-5msi

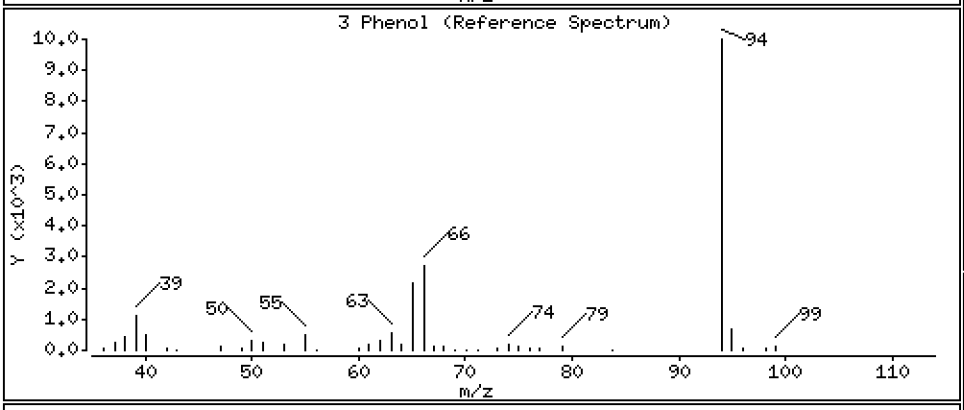
Column diameter: 0.25

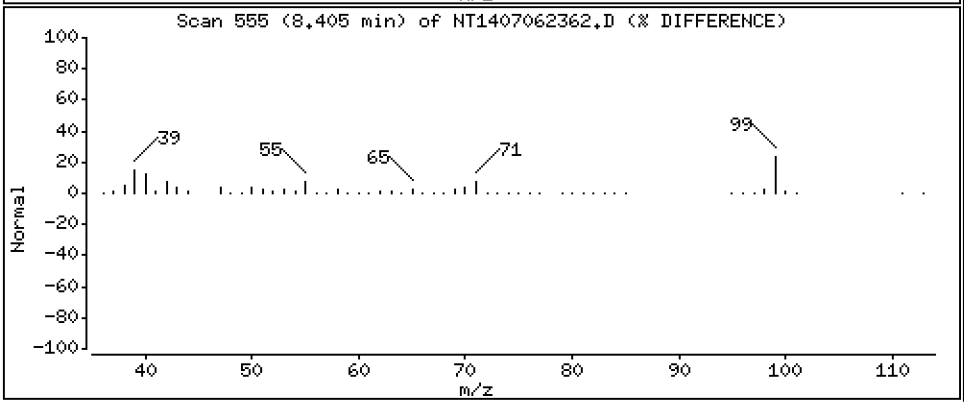
3 Phenol

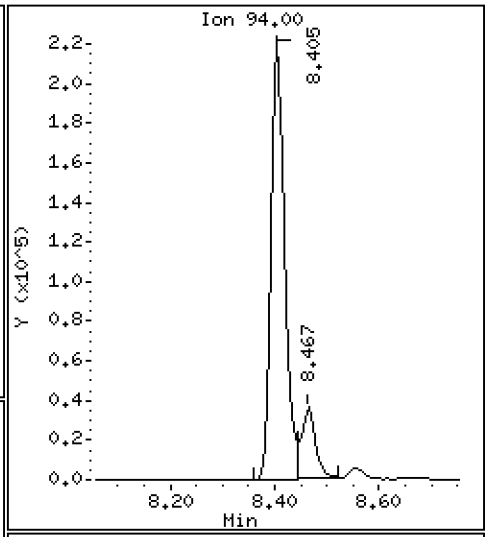
Concentration: 4.752 ug/mL

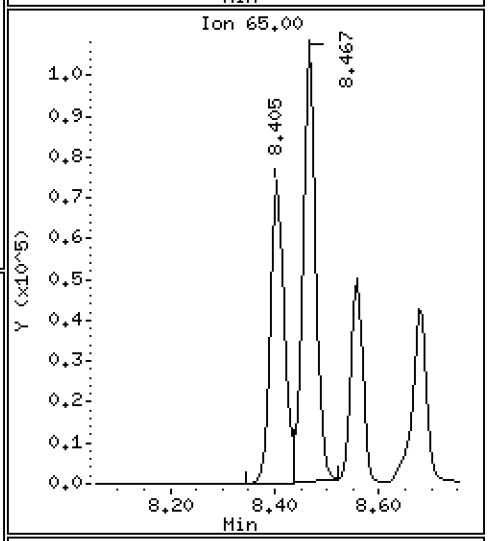


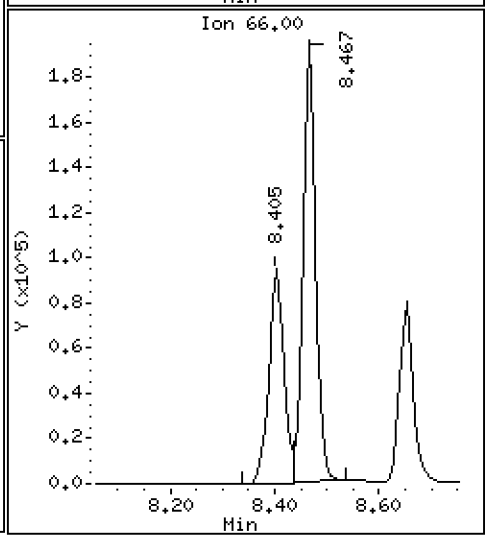












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062362.D

Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

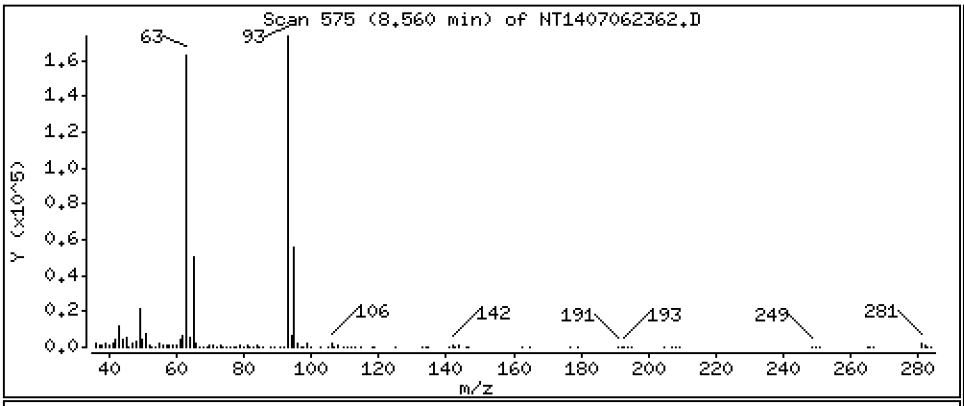
Operator: JGR

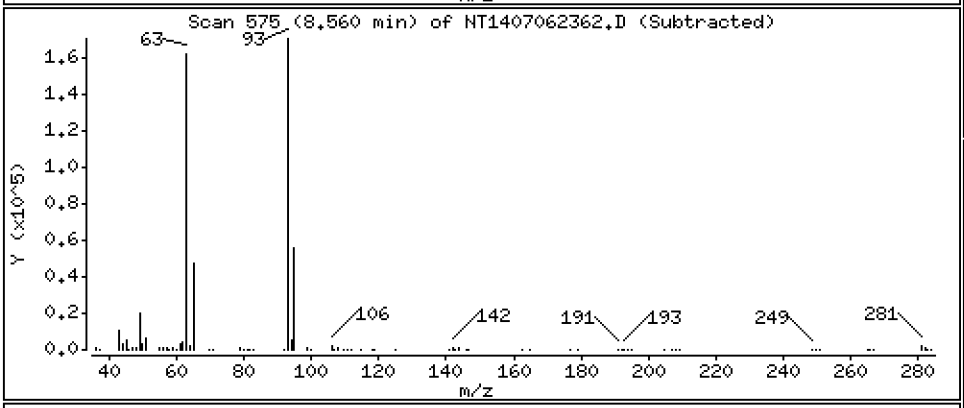
Column phase: ZB-5msi

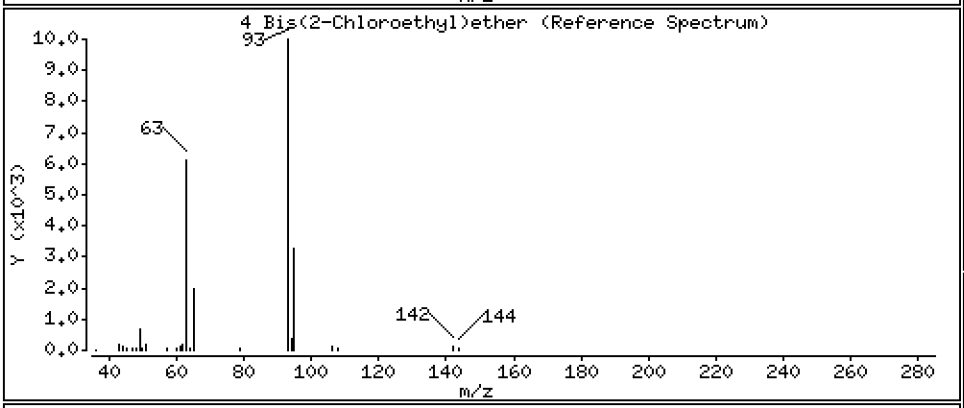
Column diameter: 0.25

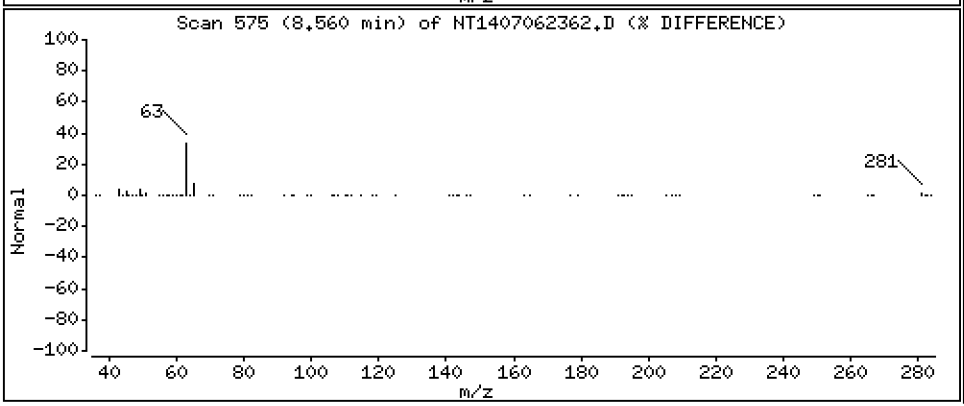
4 Bis(2-Chloroethyl)ether

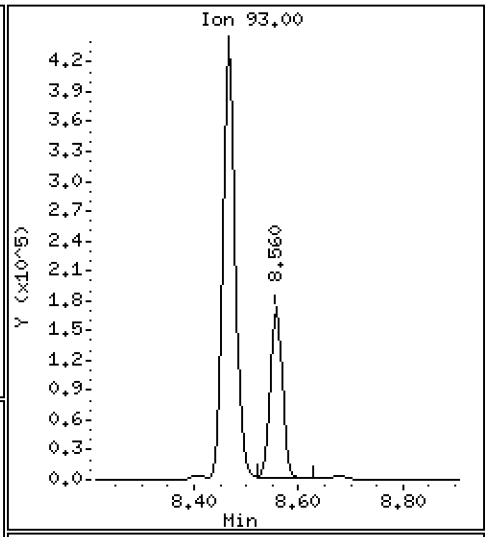
Concentration: 4.700 ug/mL

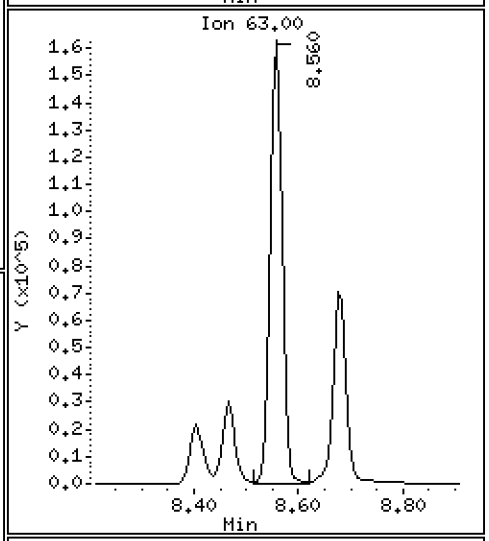


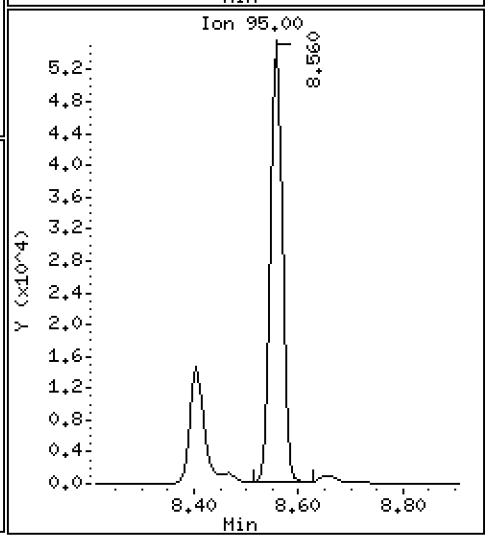












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062362.D

Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

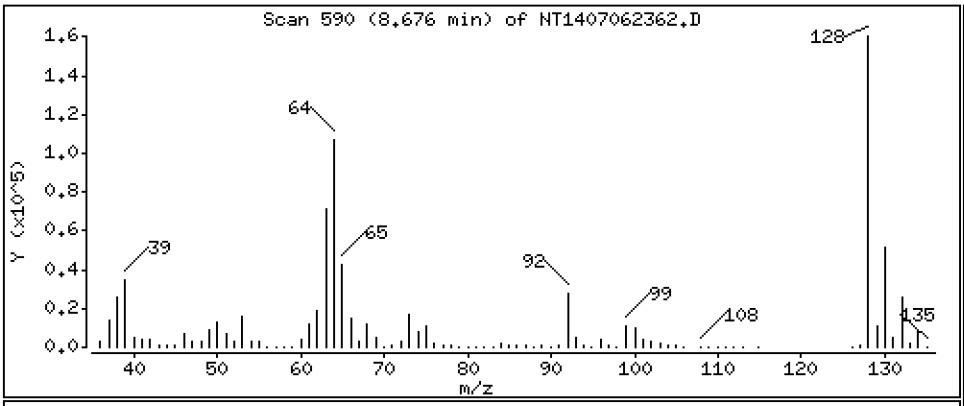
Operator: JGR

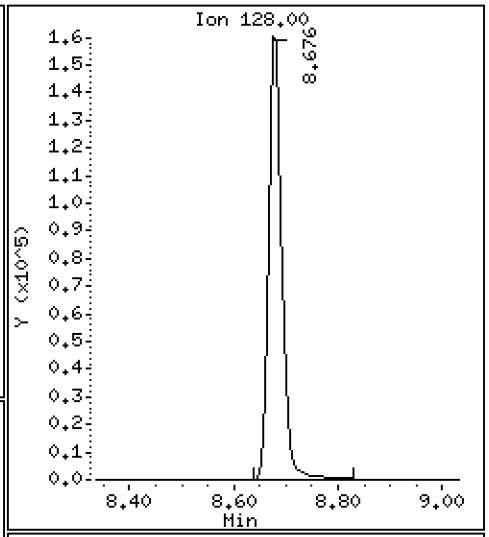
Column phase: ZB-5msi

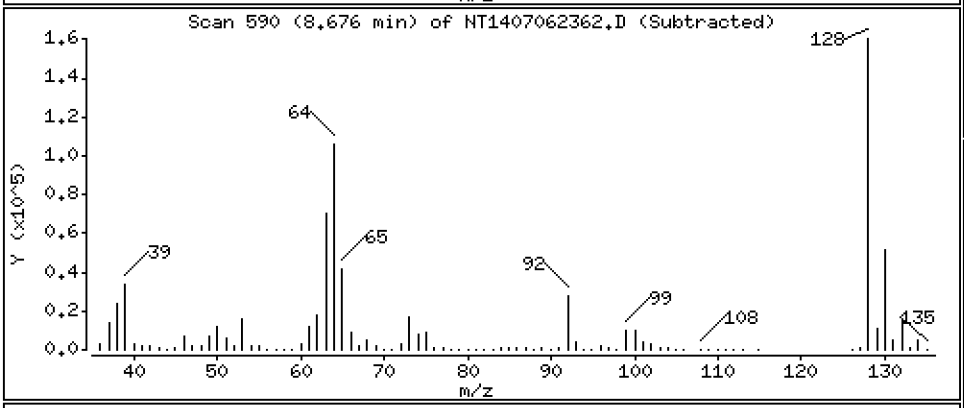
Column diameter: 0.25

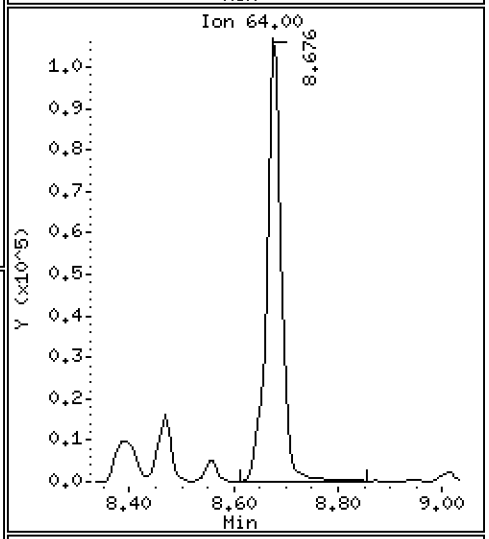
6 2-Chlorophenol

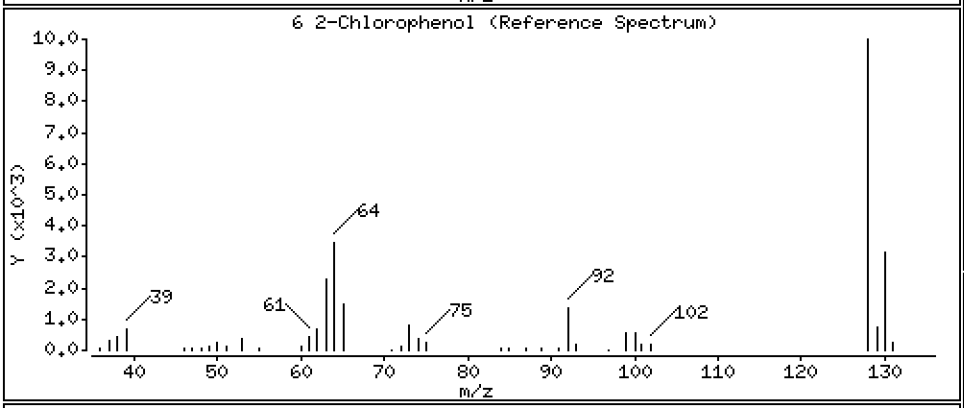
Concentration: 5.272 ug/mL

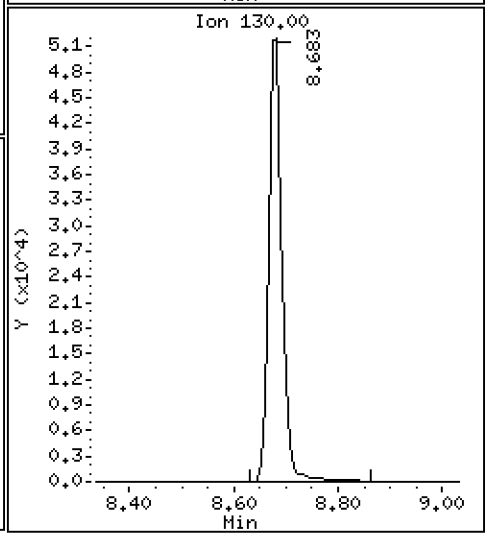


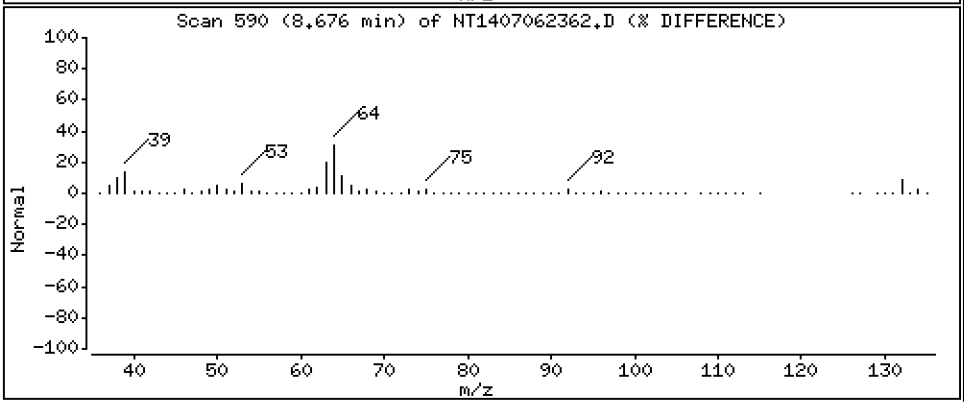












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

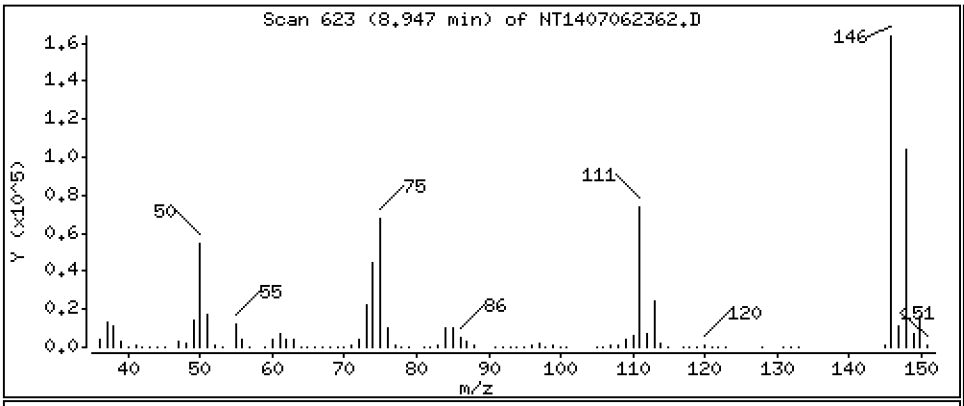
Operator: JGR

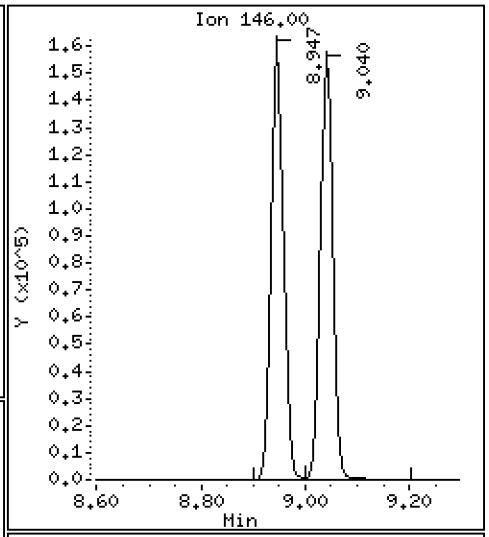
Column phase: ZB-5msi

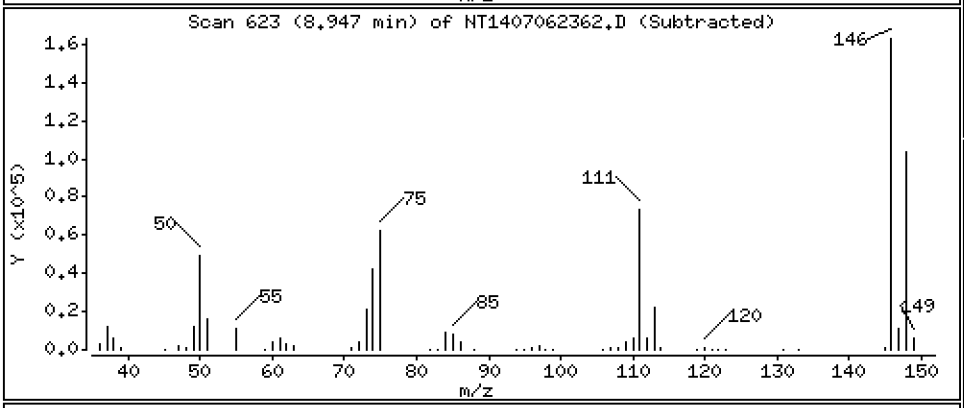
Column diameter: 0.25

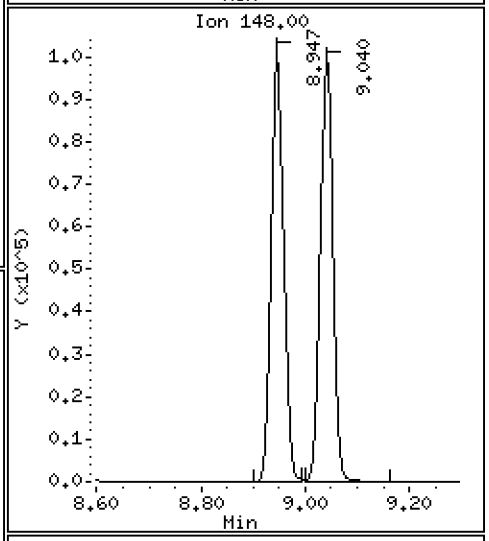
7 1,3-Dichlorobenzene

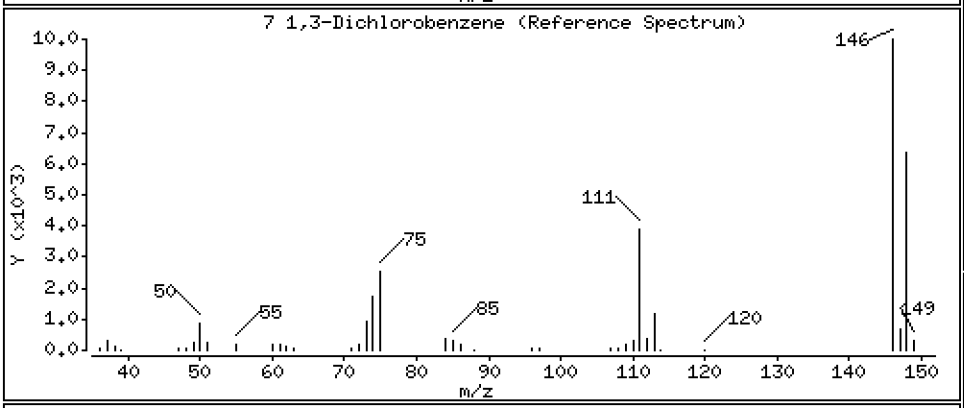
Concentration: 5.009 ug/mL

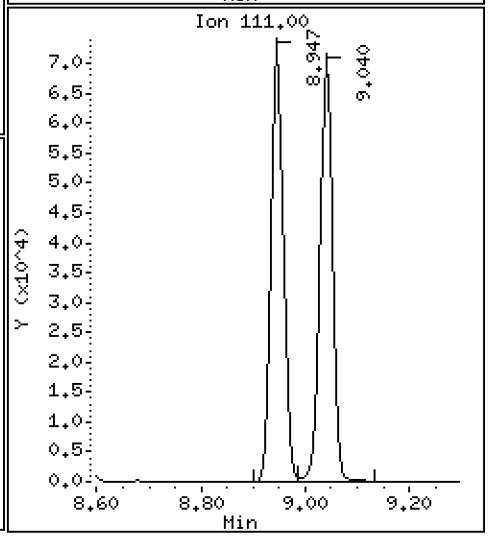


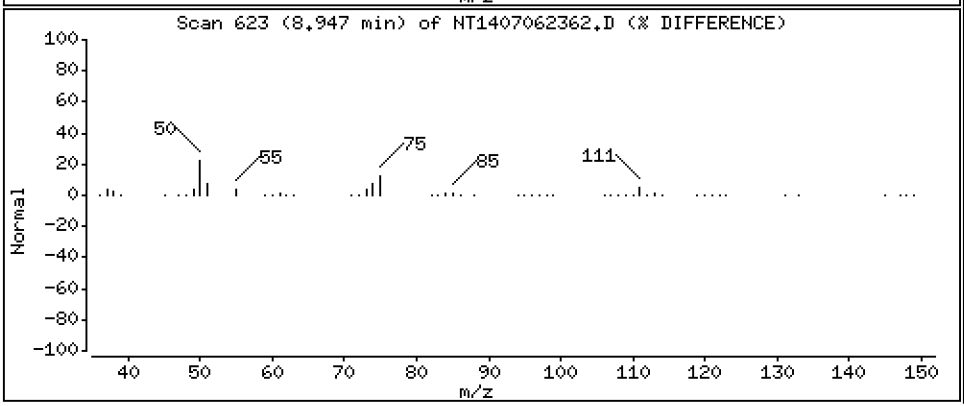












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

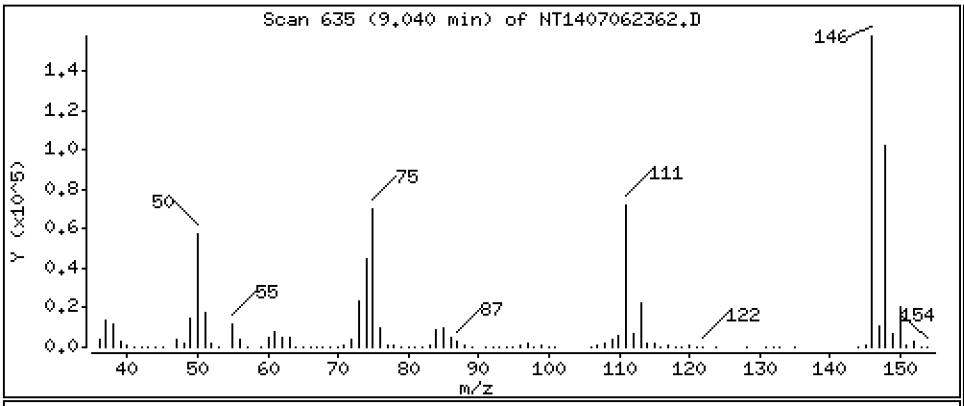
Operator: JGR

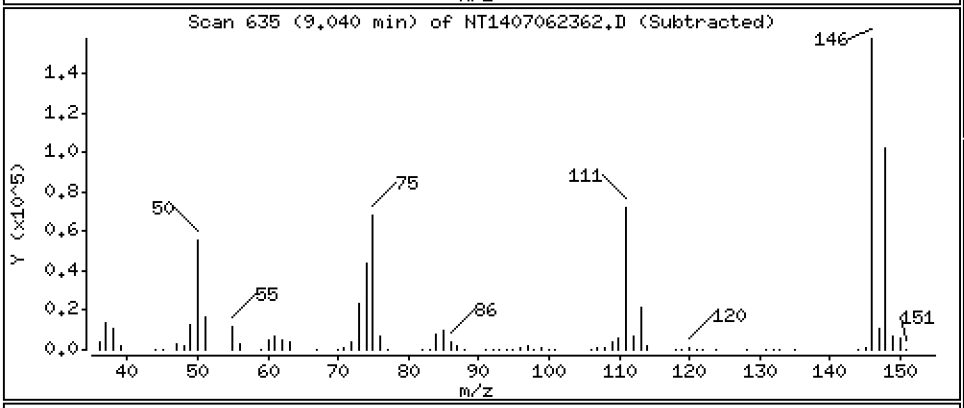
Column phase: ZB-5msi

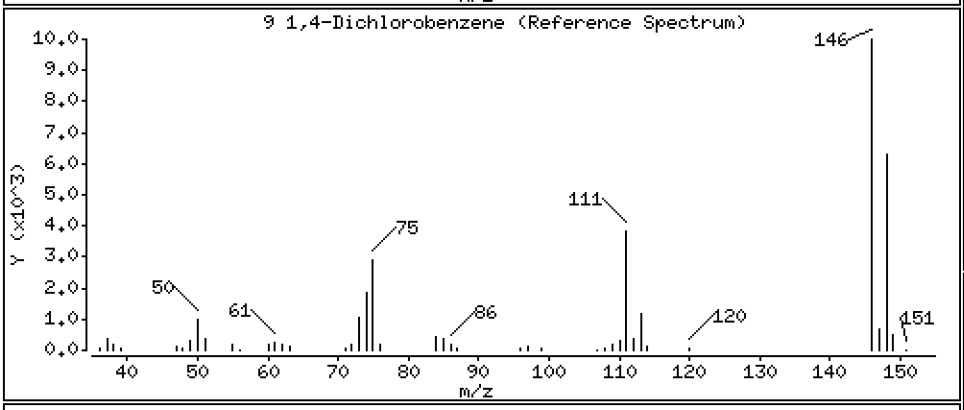
Column diameter: 0.25

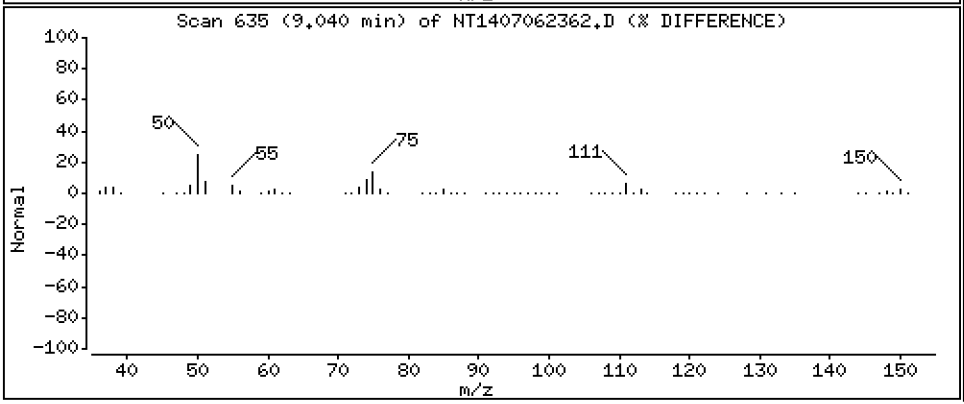
9 1,4-Dichlorobenzene

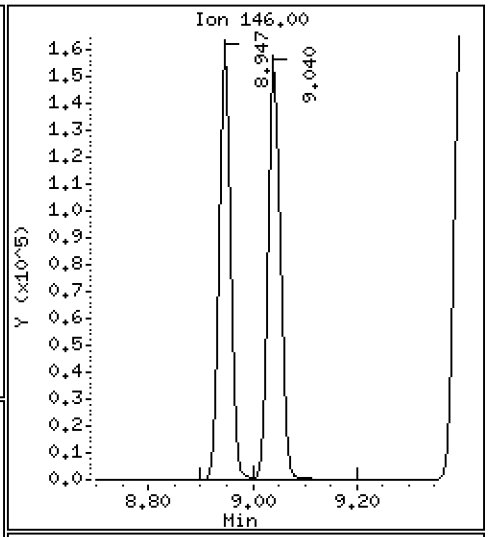
Concentration: 5.275 ug/mL

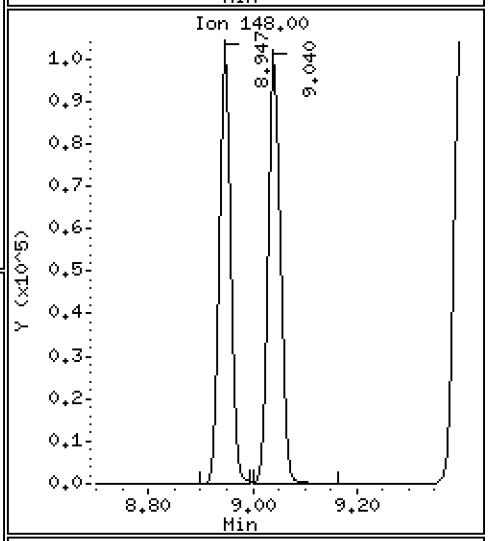


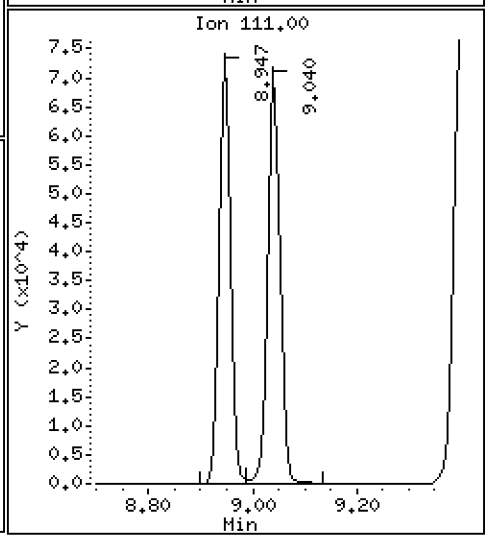












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

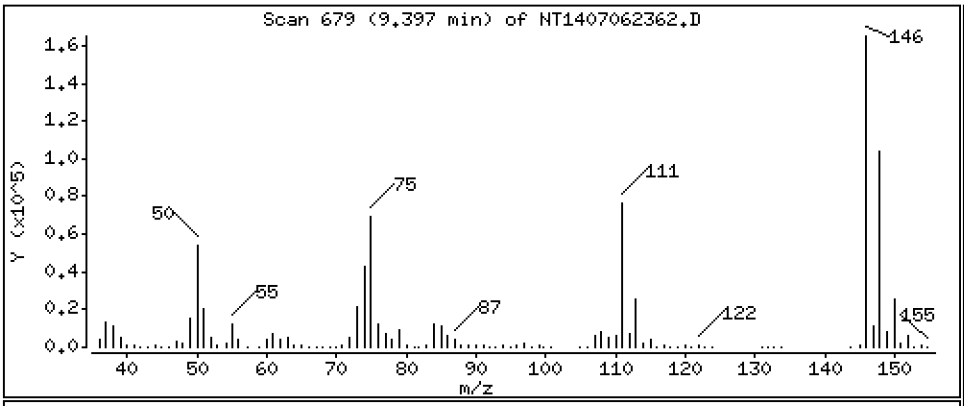
Operator: JGR

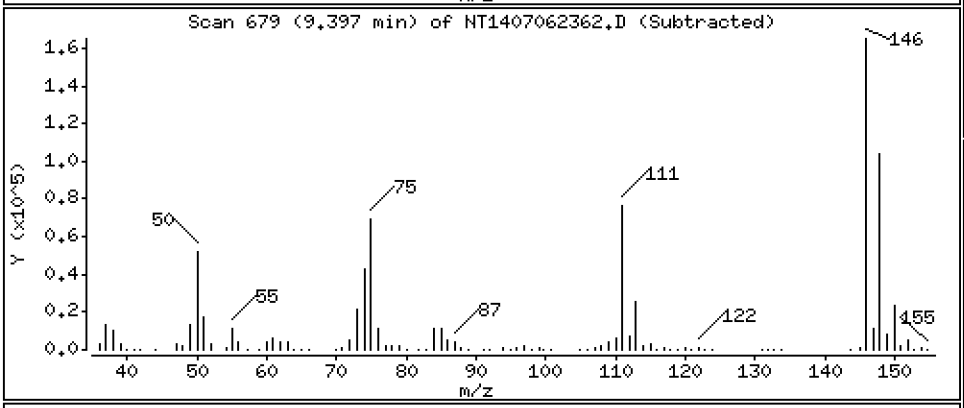
Column phase: ZB-5msi

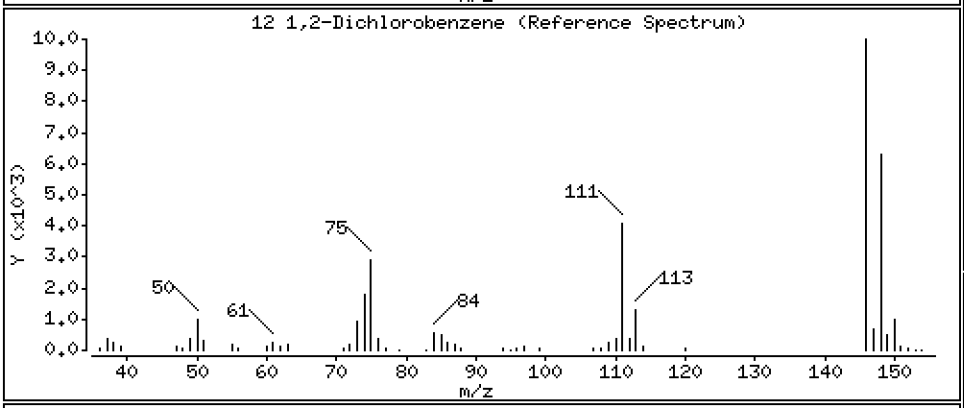
Column diameter: 0.25

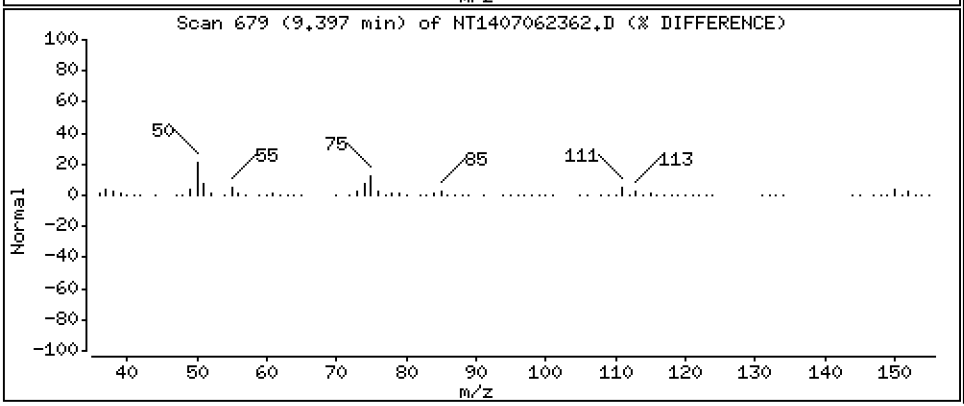
12 1,2-Dichlorobenzene

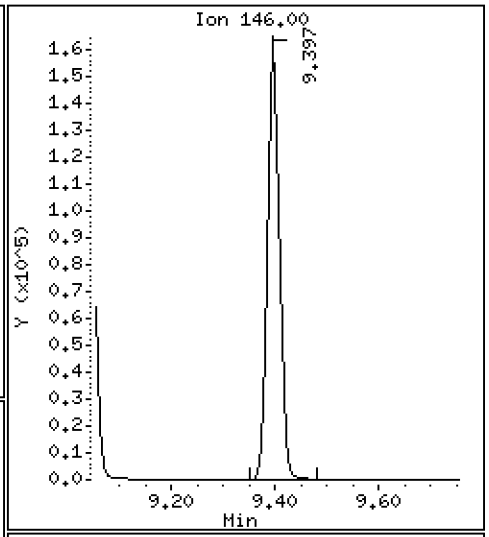
Concentration: 5.110 ug/mL

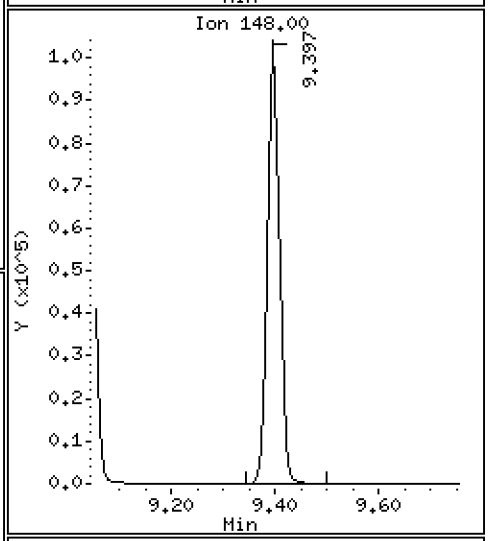


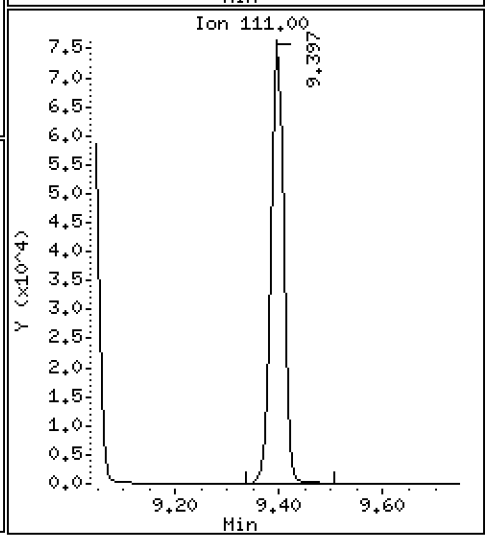












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

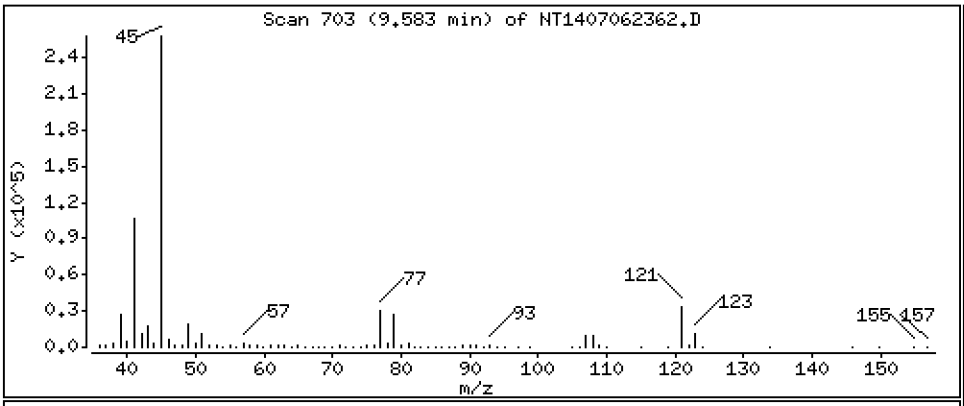
Operator: JGR

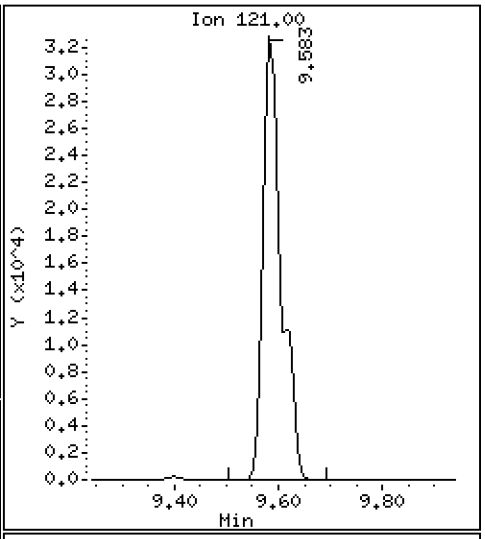
Column phase: ZB-5msi

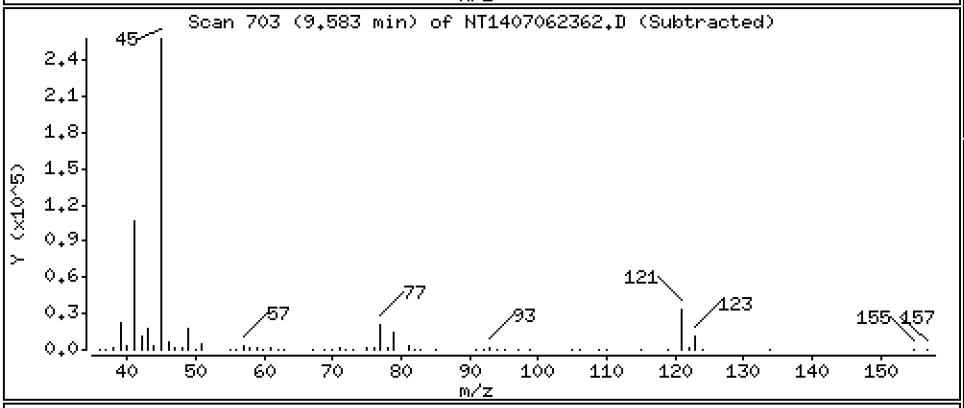
Column diameter: 0.25

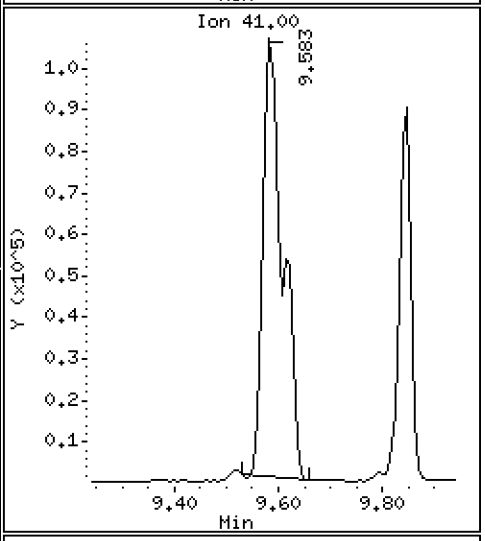
14 2,2'-oxybis(1-Chloropropane)

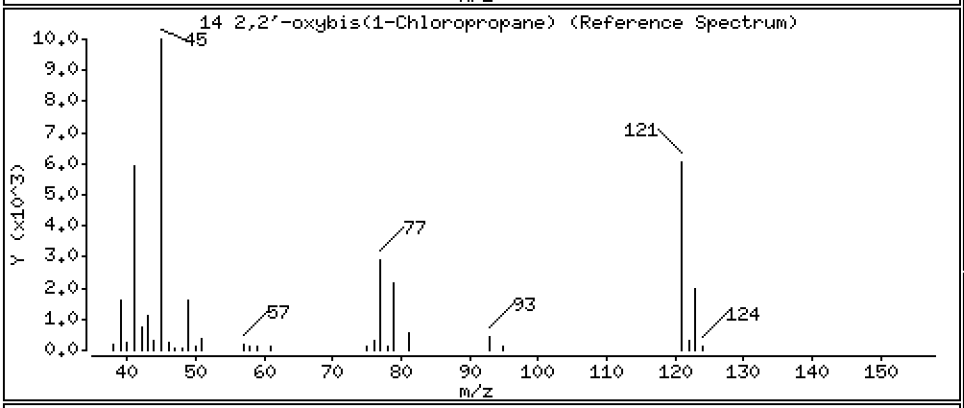
Concentration: 4.866 ug/mL

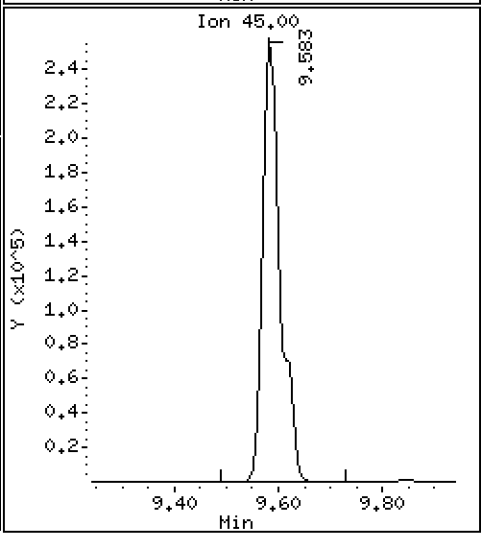


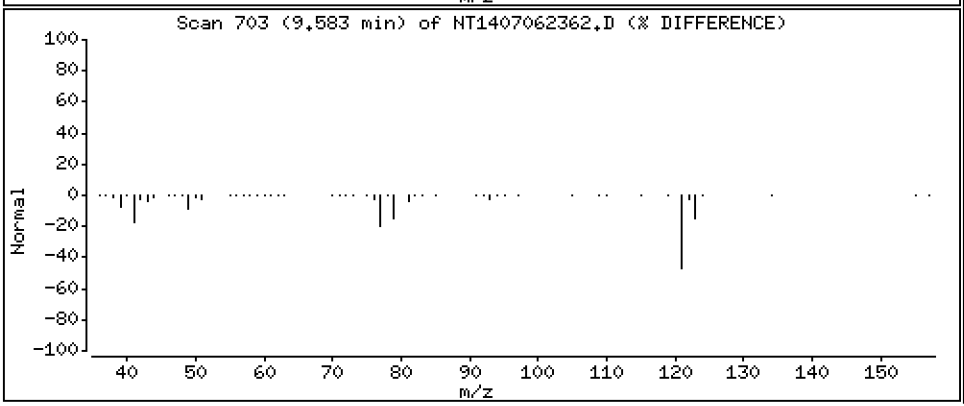












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

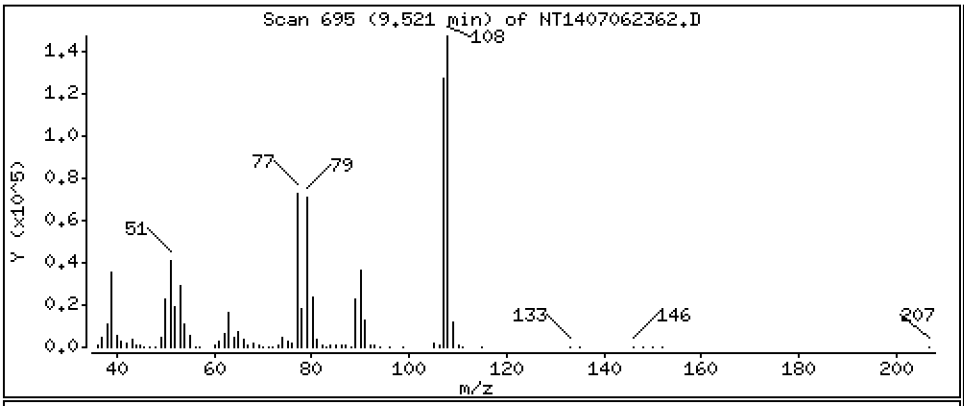
Operator: JGR

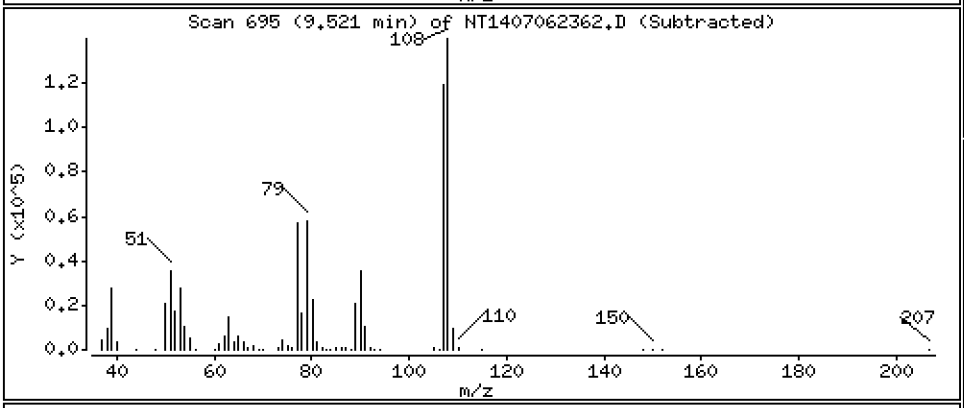
Column phase: ZB-5msi

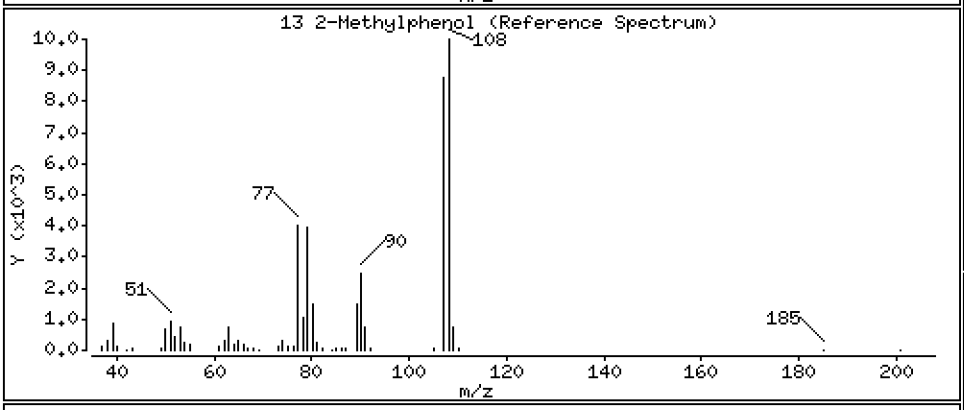
Column diameter: 0.25

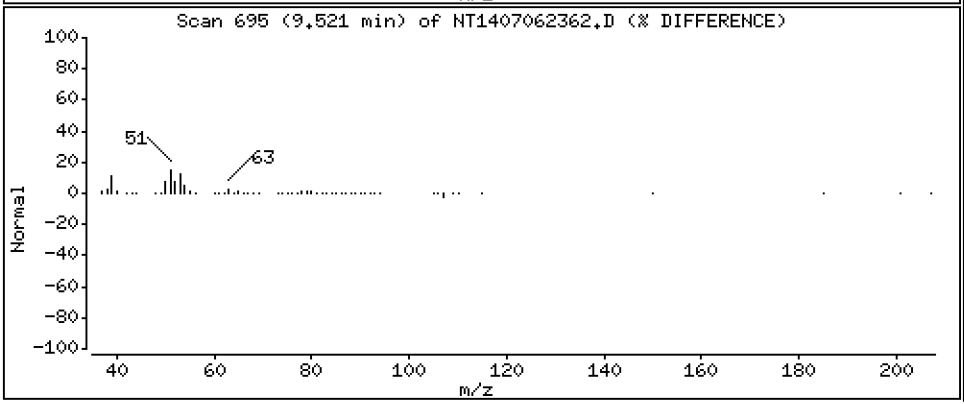
13 2-Methylphenol

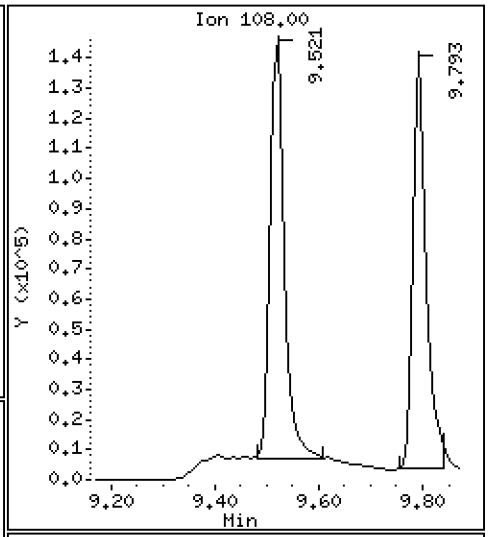
Concentration: 4.959 ug/mL

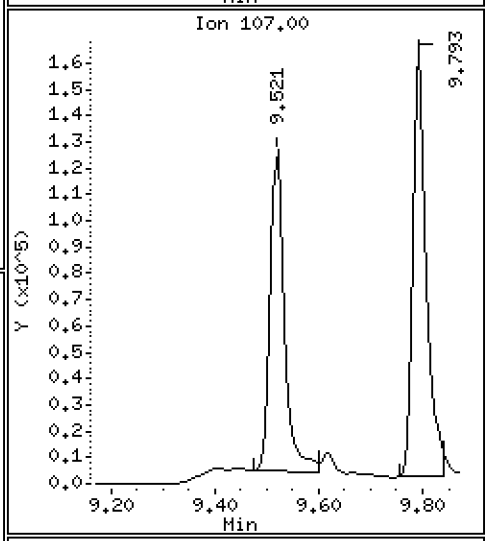


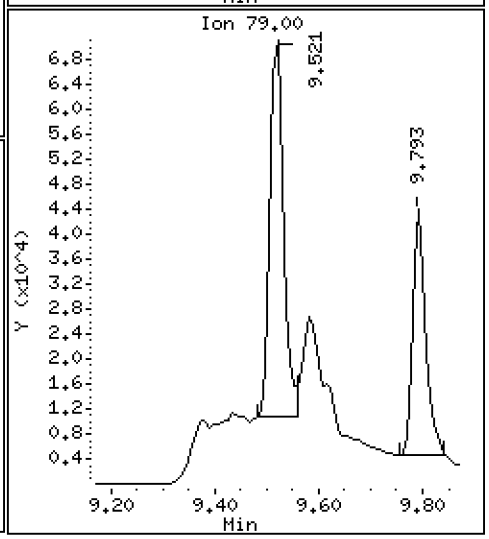












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

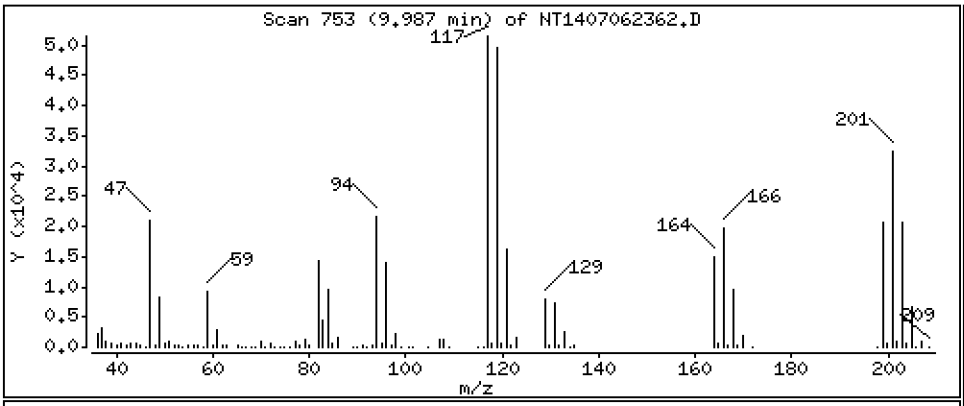
Operator: JGR

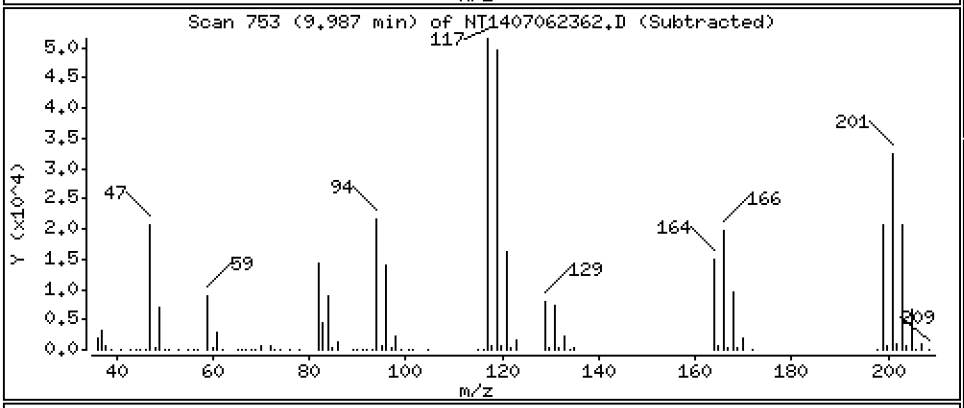
Column phase: ZB-5msi

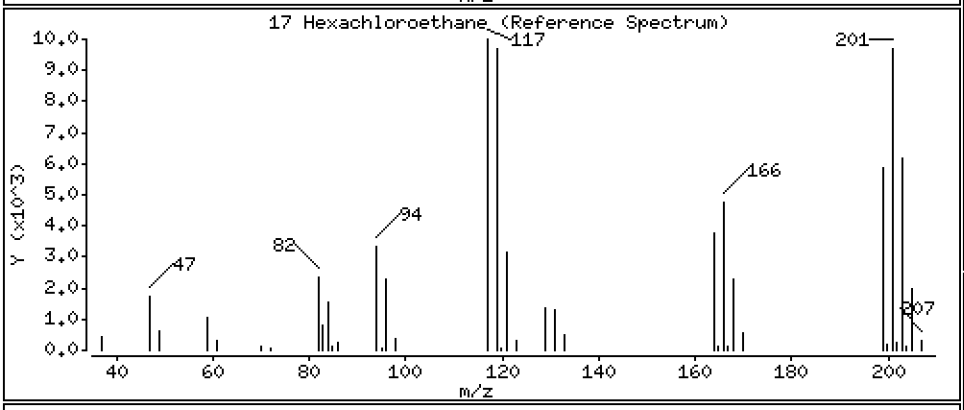
Column diameter: 0.25

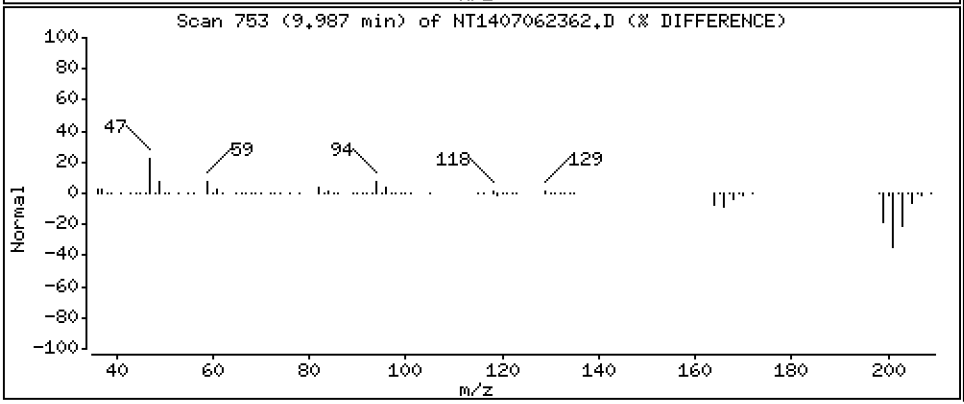
17 Hexachloroethane

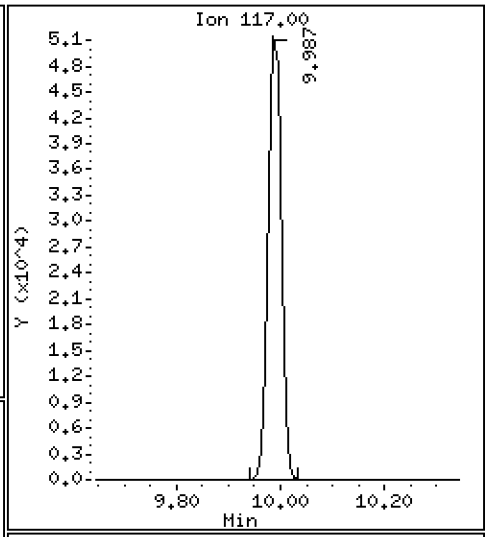
Concentration: 3.676 ug/mL

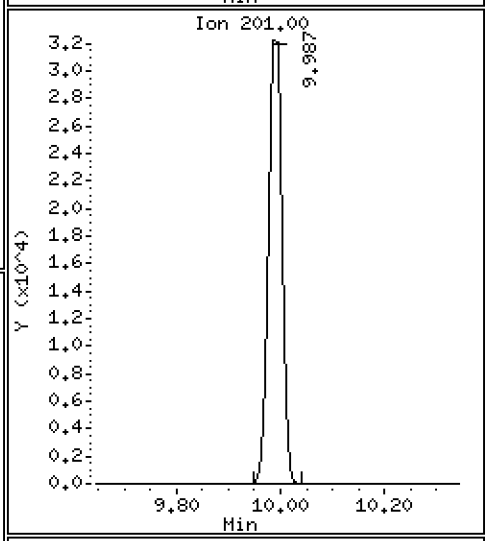


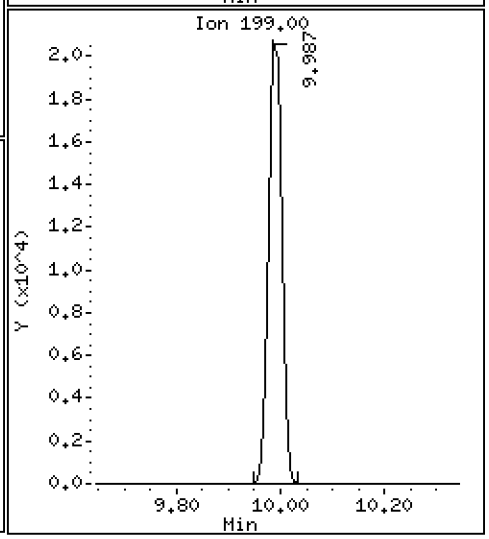












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

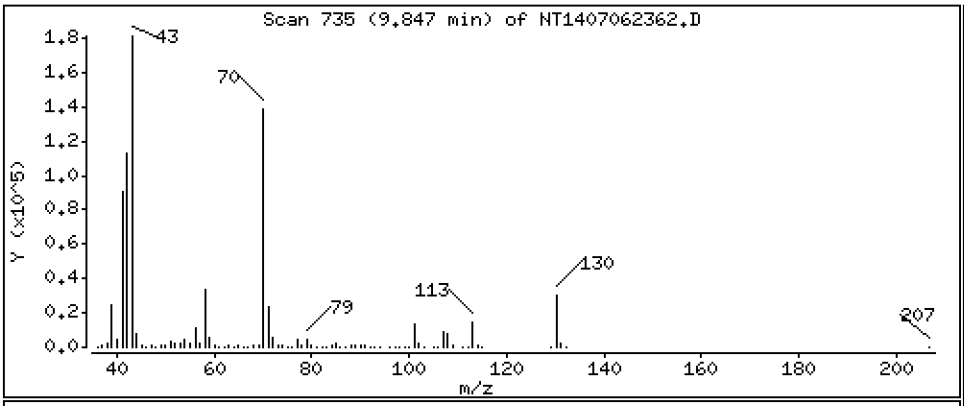
Operator: JGR

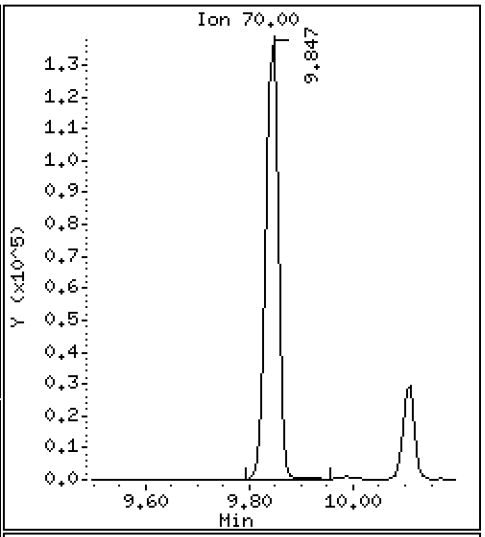
Column phase: ZB-5msi

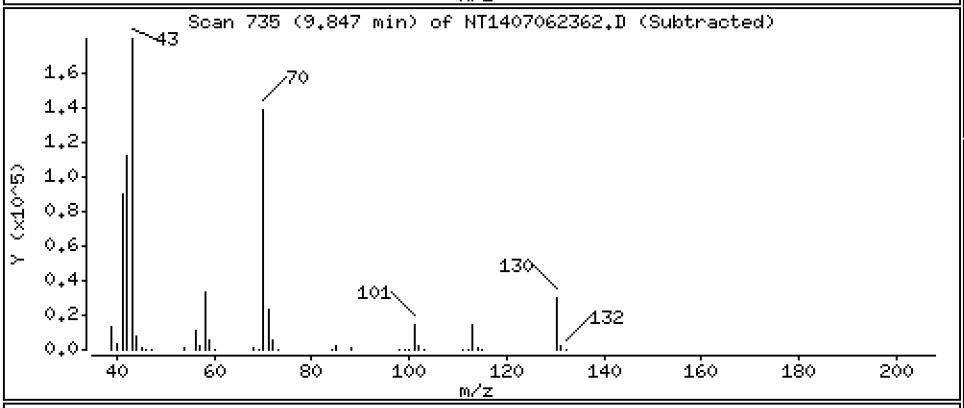
Column diameter: 0.25

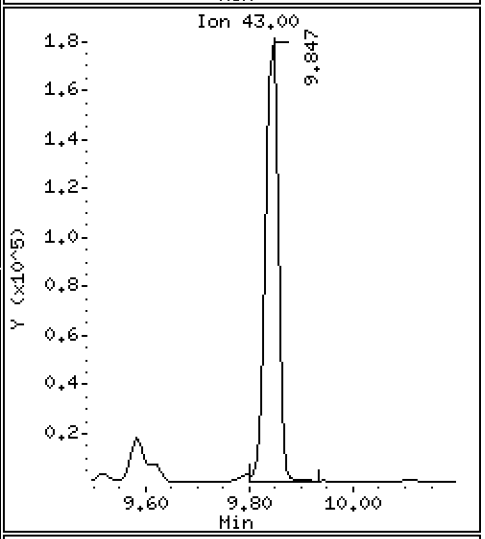
16 N-Nitroso-di-n-propylamine

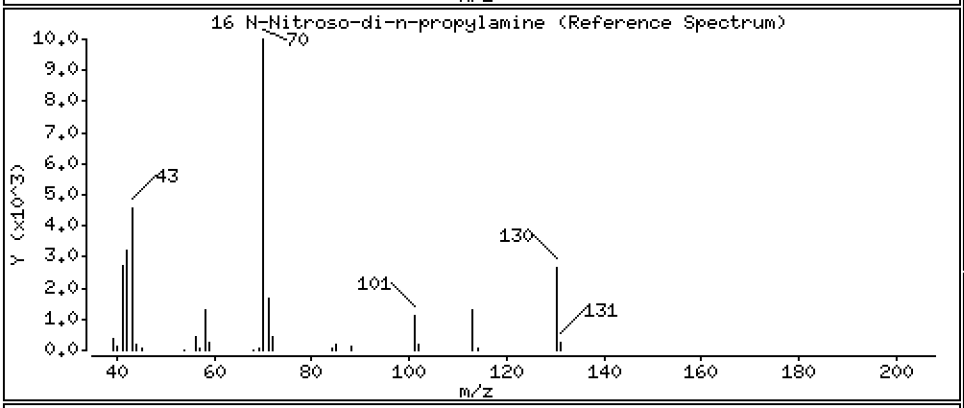
Concentration: 4.837 ug/mL

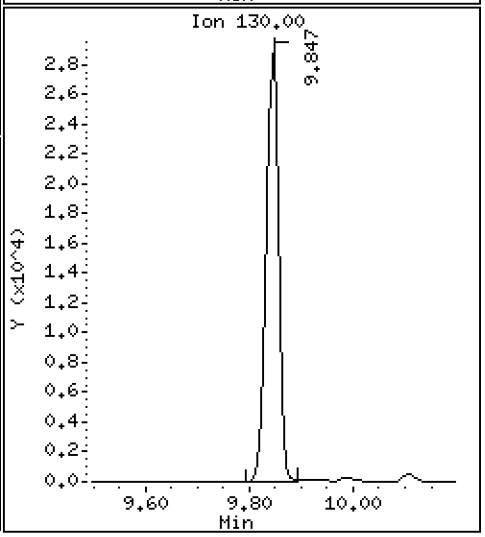


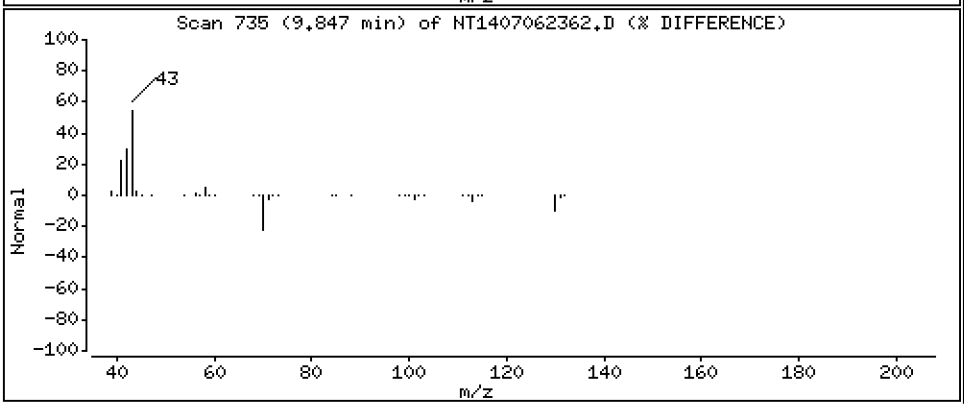












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

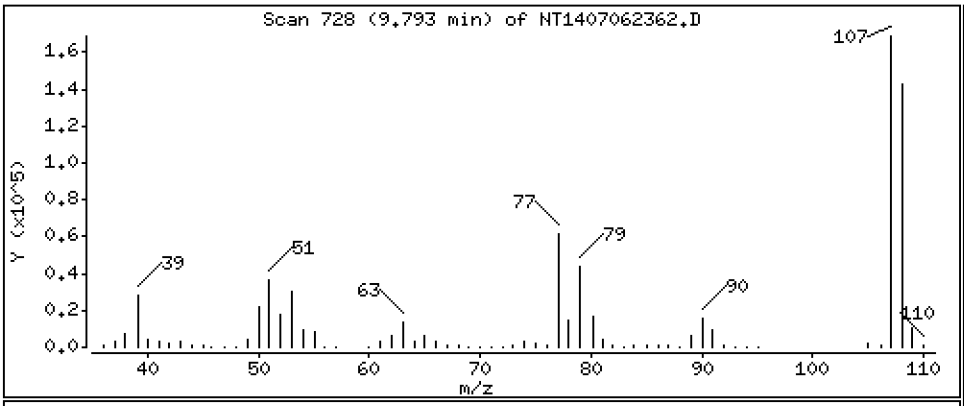
Operator: JGR

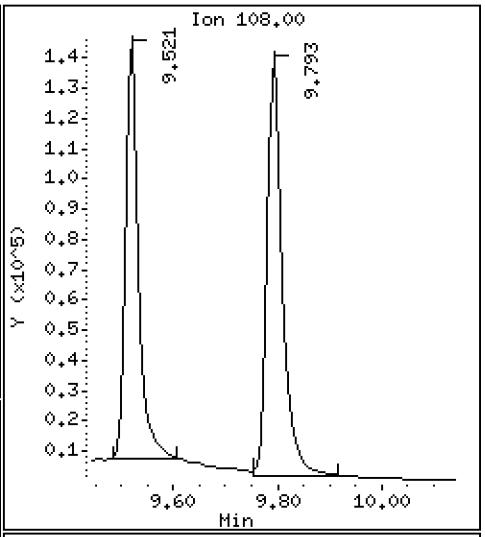
Column phase: ZB-5msi

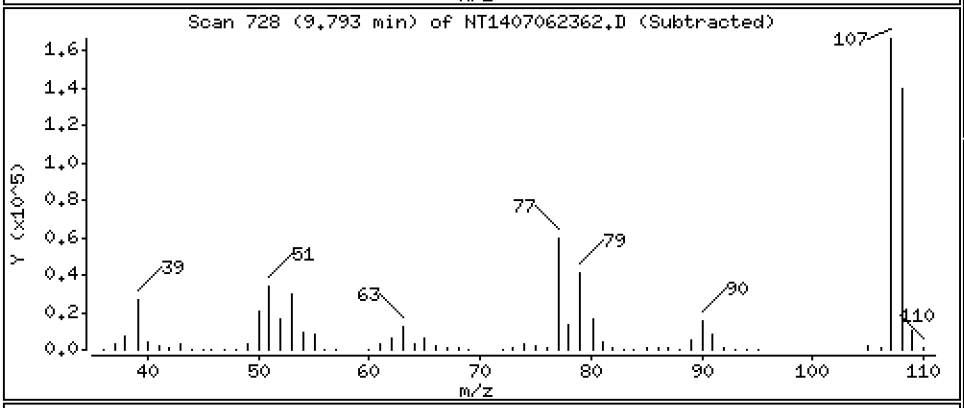
Column diameter: 0.25

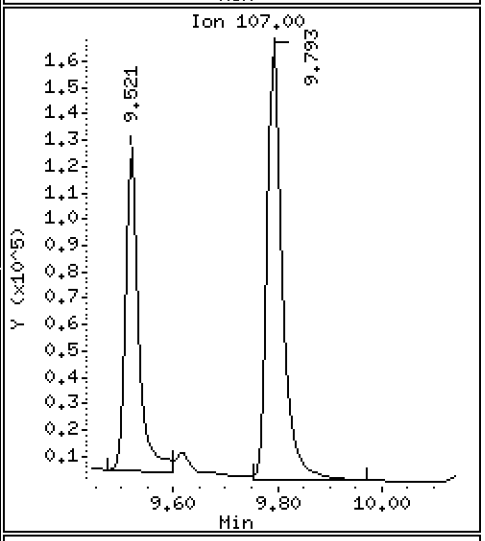
15 4-Methylphenol

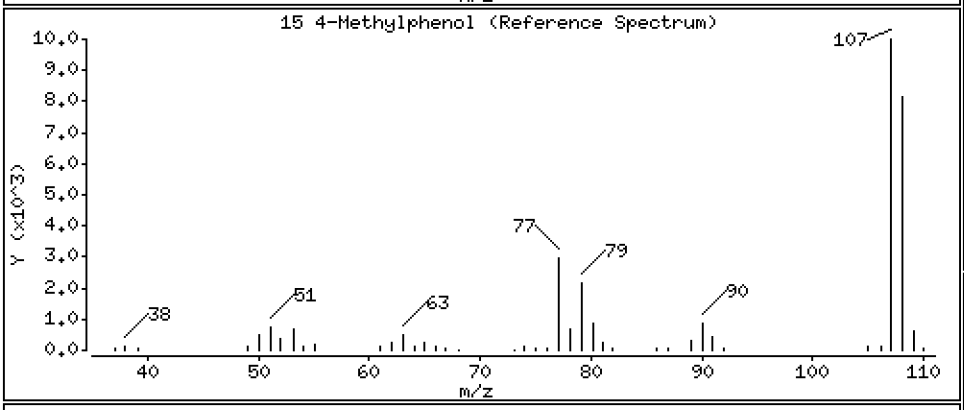
Concentration: 4.869 ug/mL

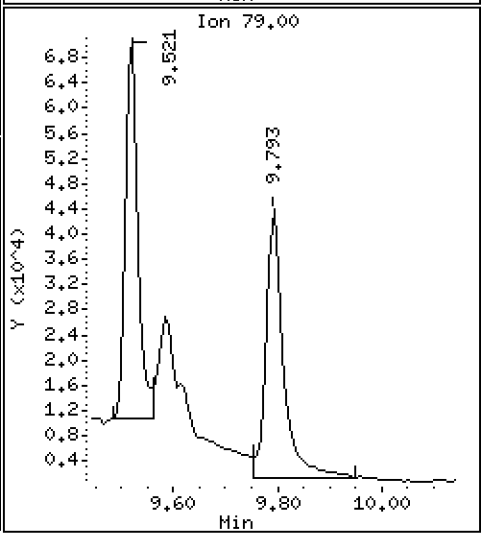


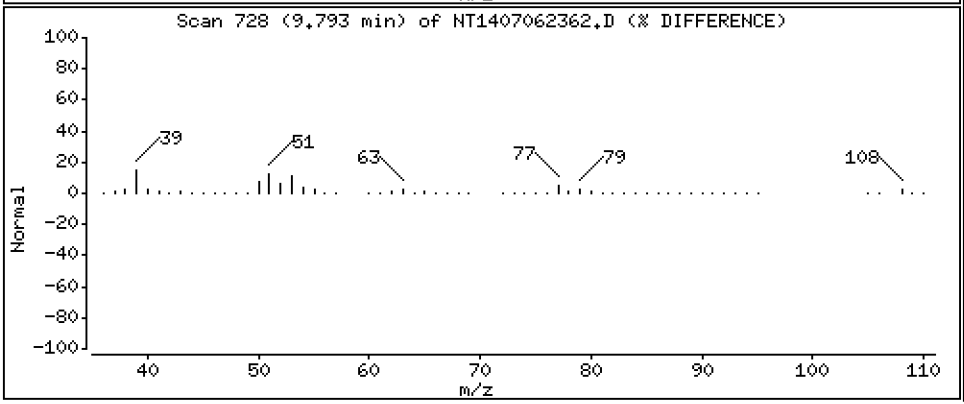












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

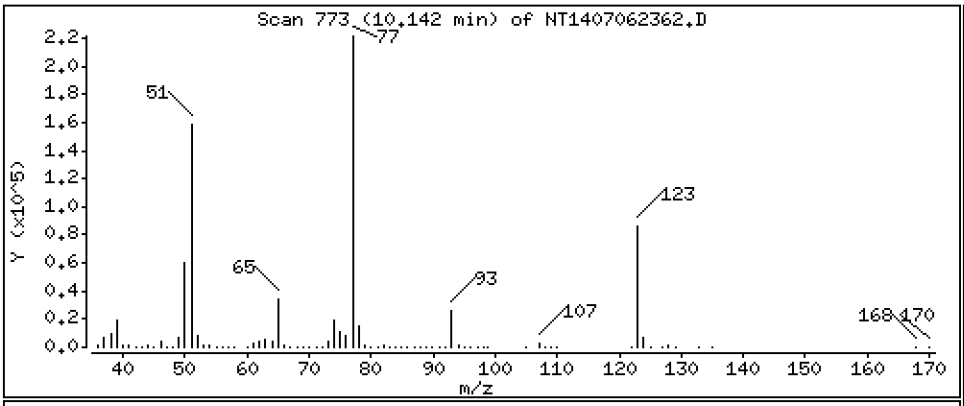
Operator: JGR

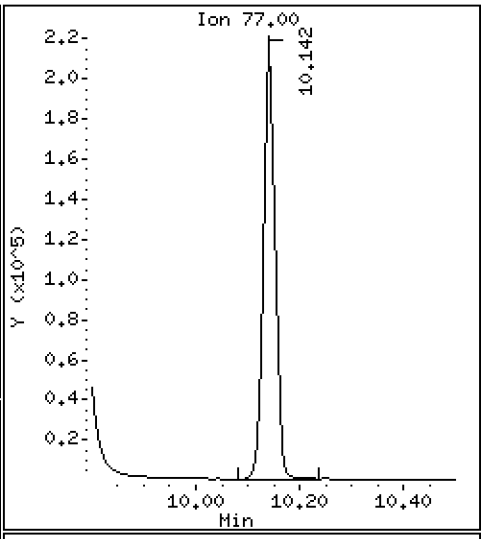
Column phase: ZB-5msi

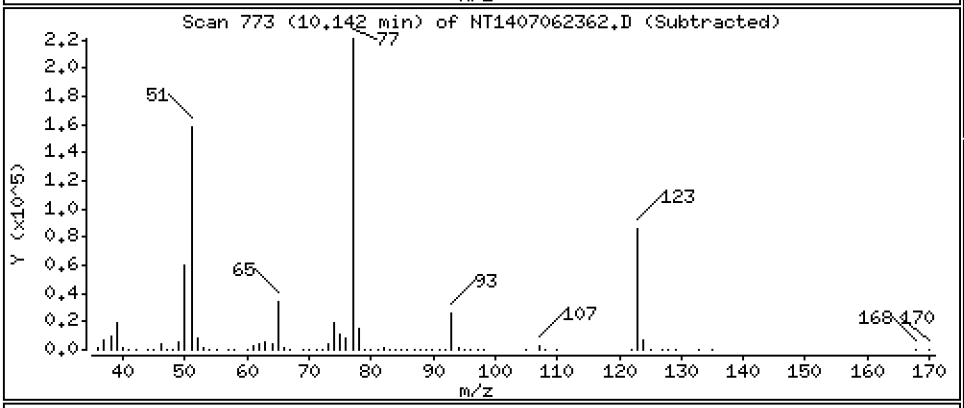
Column diameter: 0.25

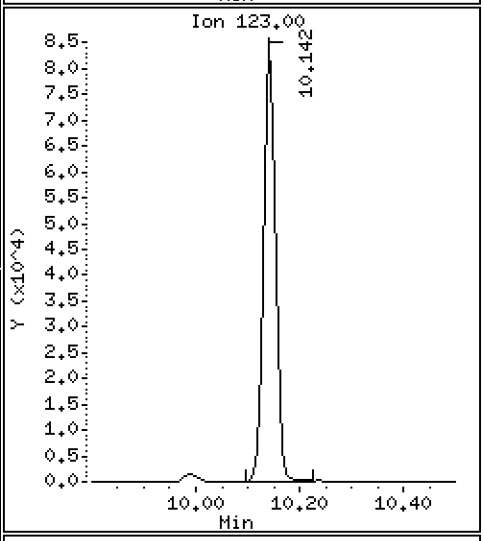
19 Nitrobenzene

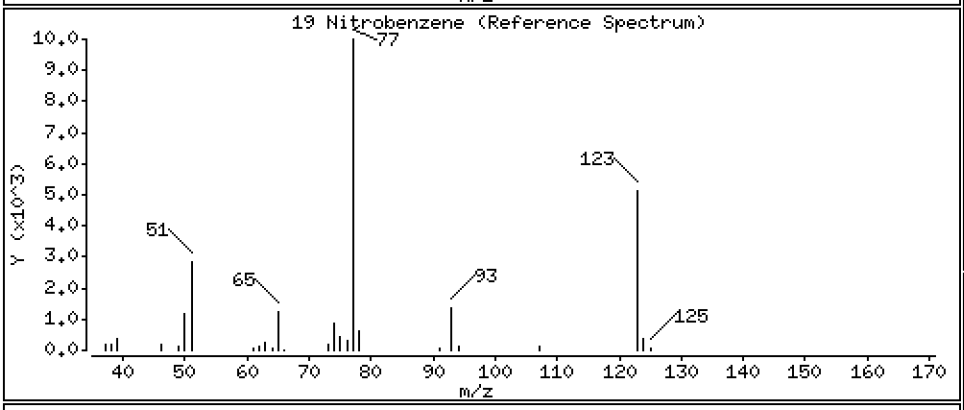
Concentration: 5.008 ug/mL

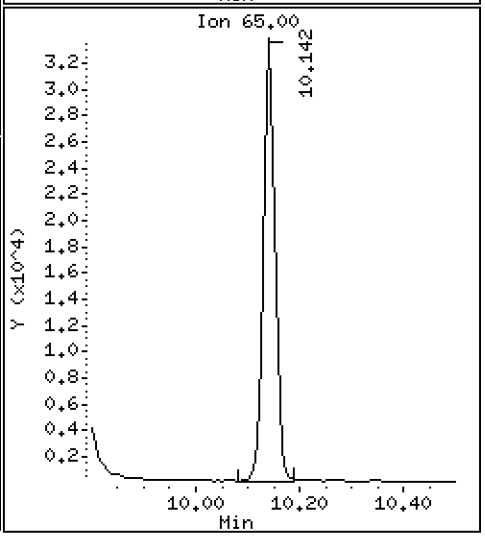


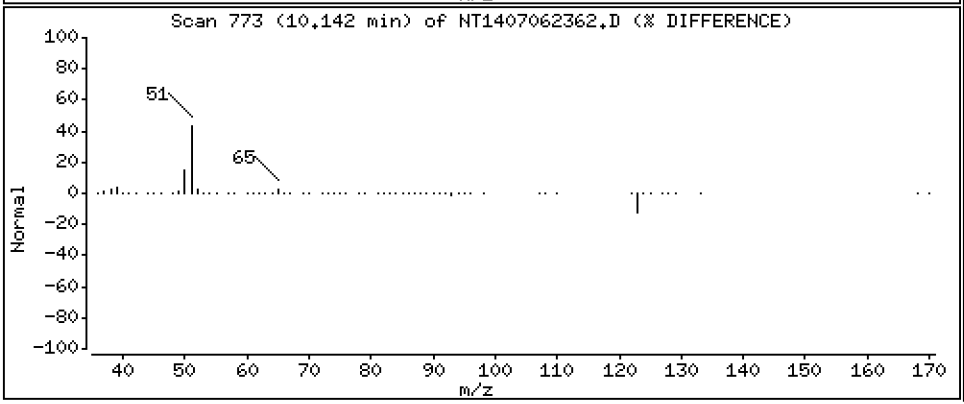












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

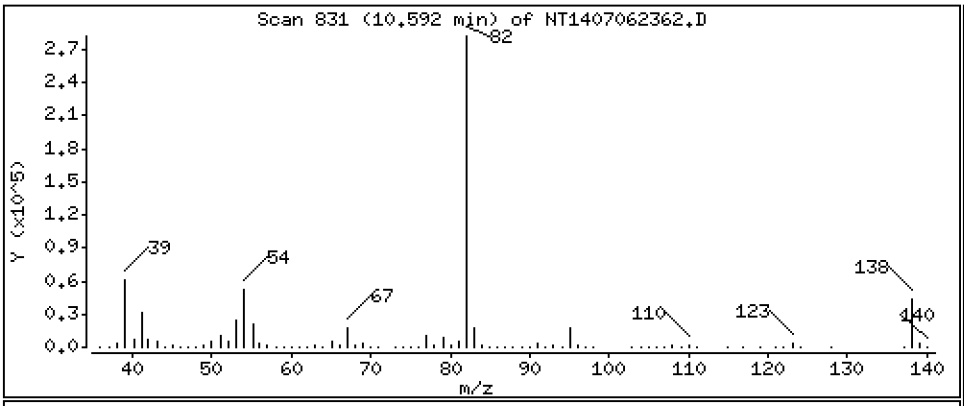
Operator: JGR

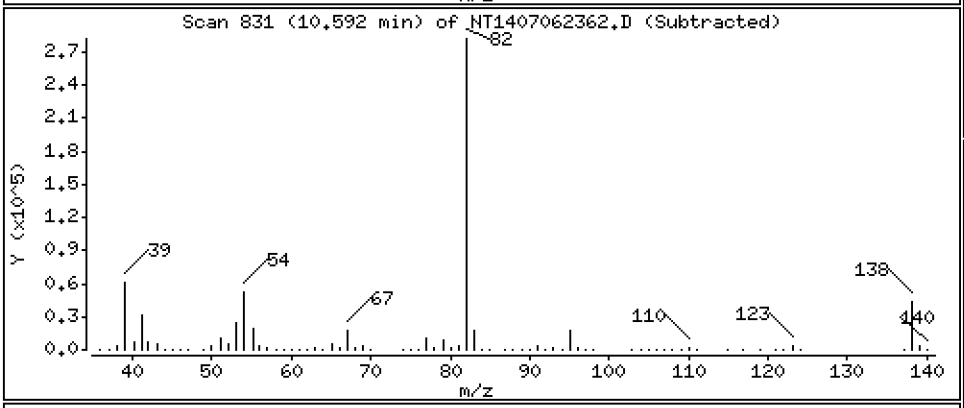
Column phase: ZB-5msi

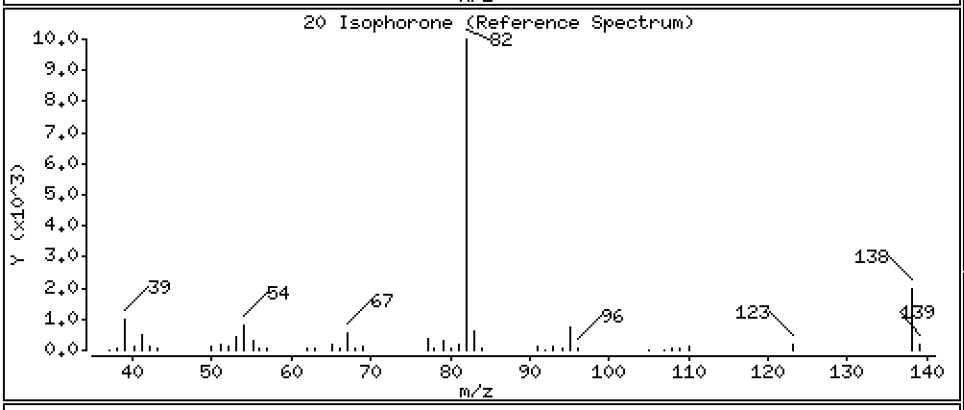
Column diameter: 0.25

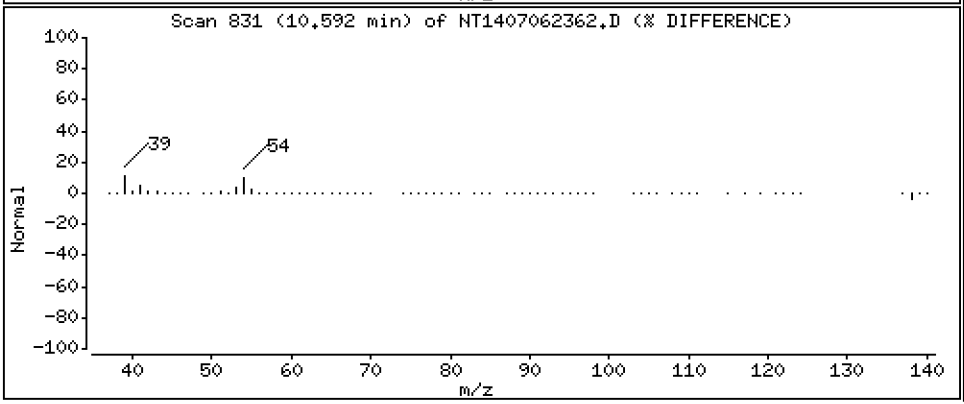
20 Isophorone

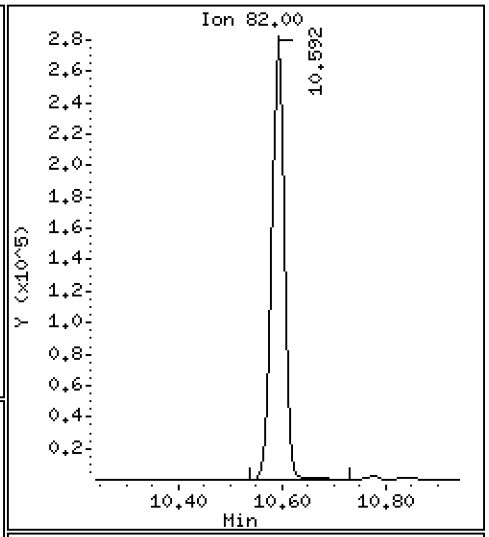
Concentration: 5.276 ug/mL

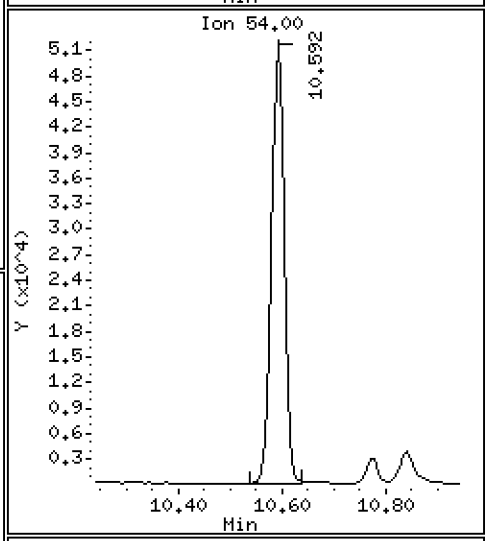


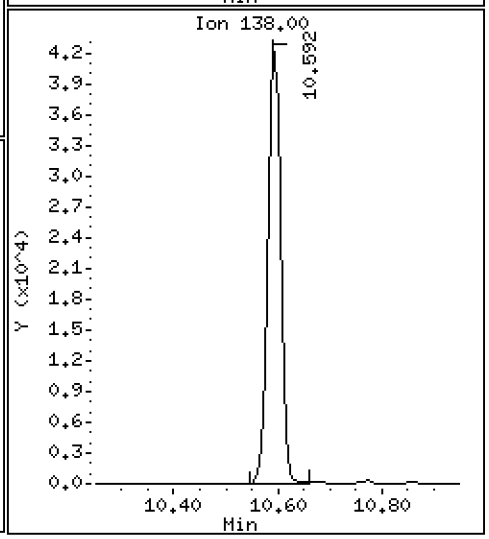












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

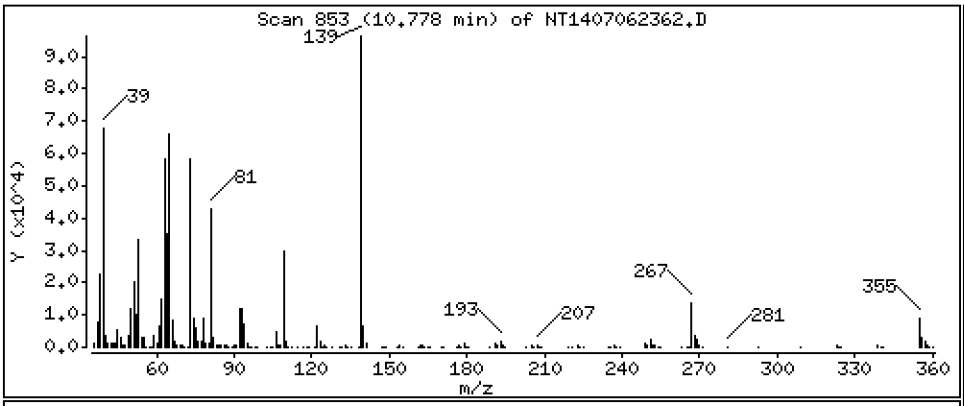
Operator: JGR

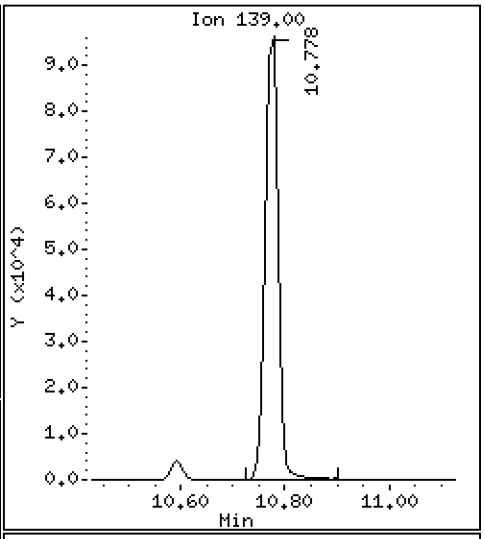
Column phase: ZB-5msi

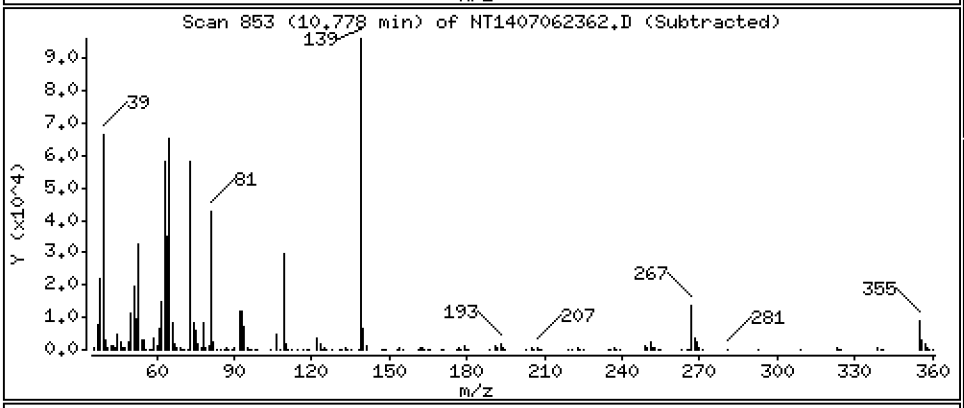
Column diameter: 0.25

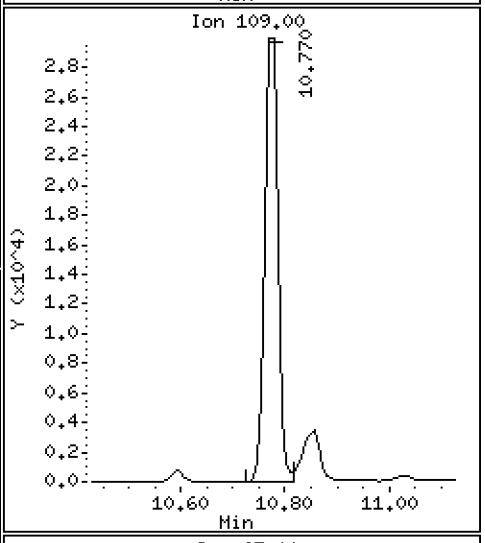
21 2-Nitrophenol

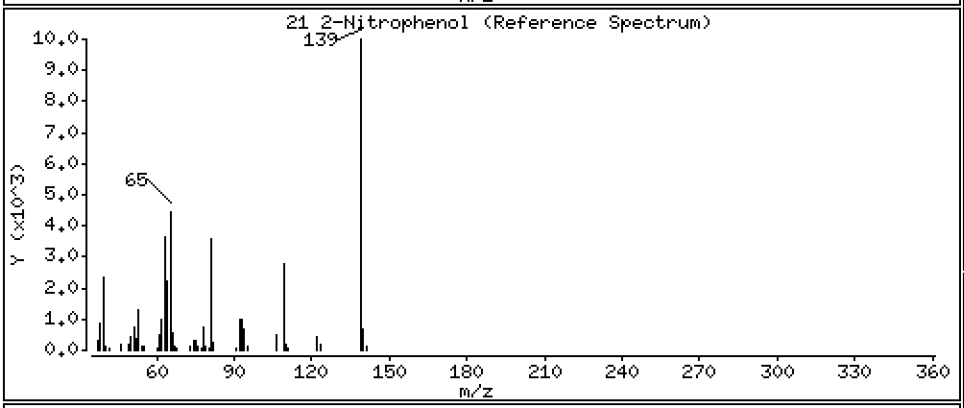
Concentration: 5.095 ug/mL

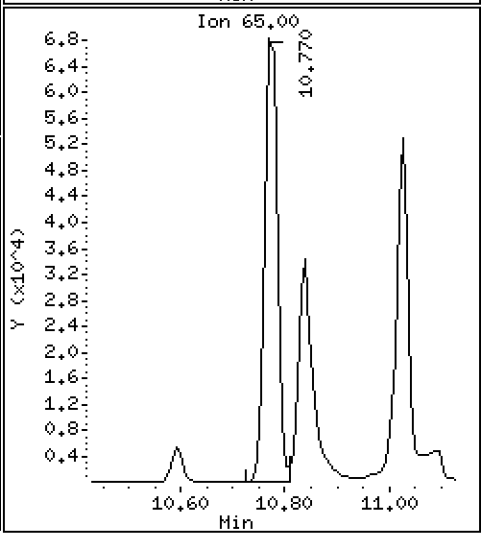


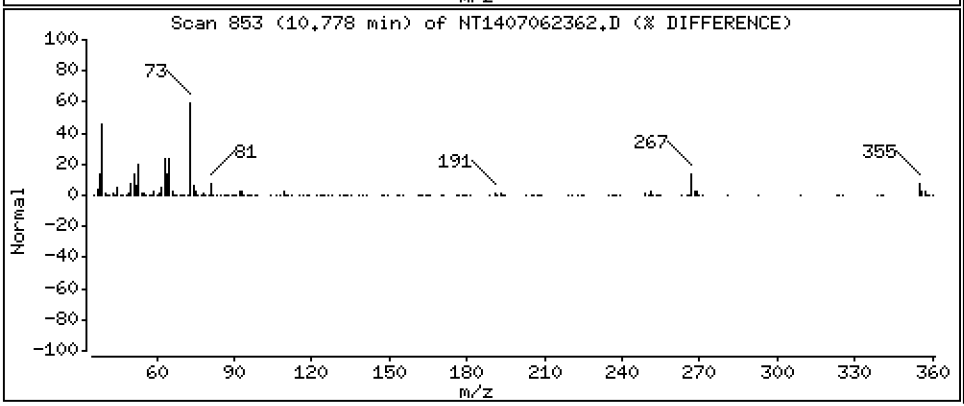












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

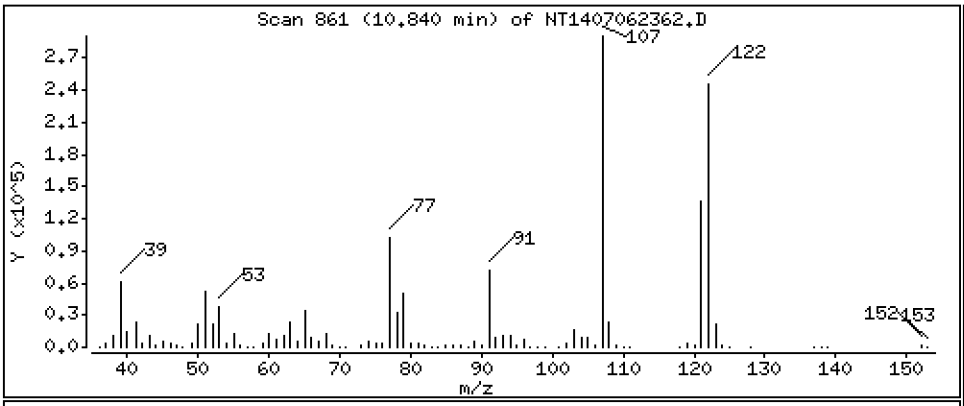
Operator: JGR

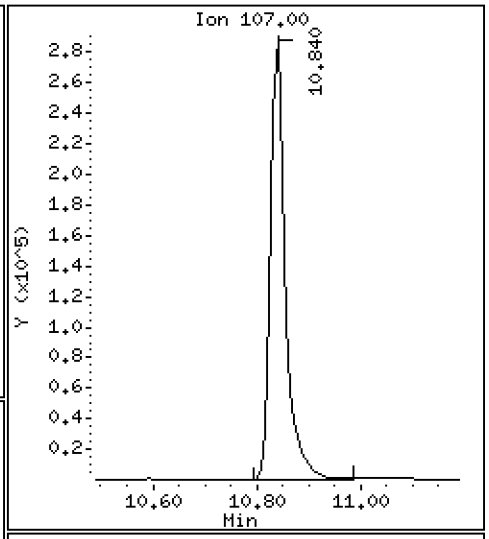
Column phase: ZB-5msi

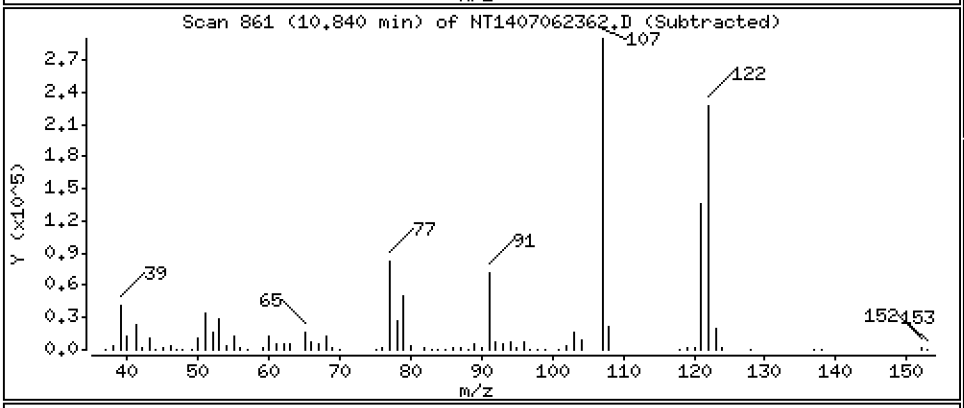
Column diameter: 0.25

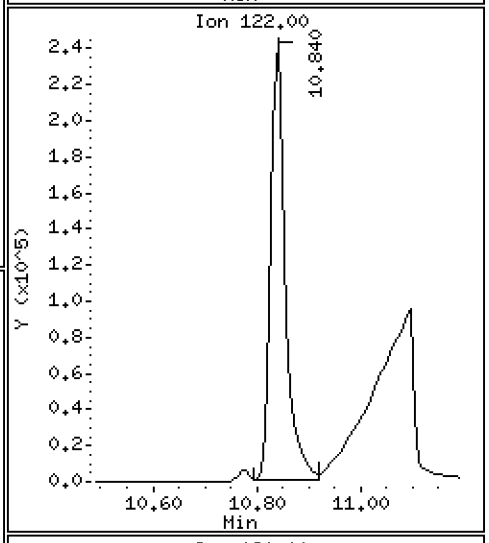
22 2,4-Dimethylphenol

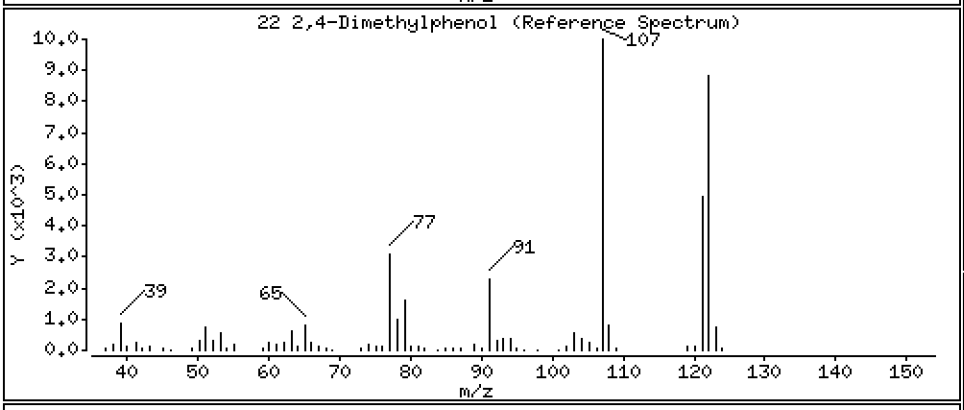
Concentration: 10.31 ug/mL

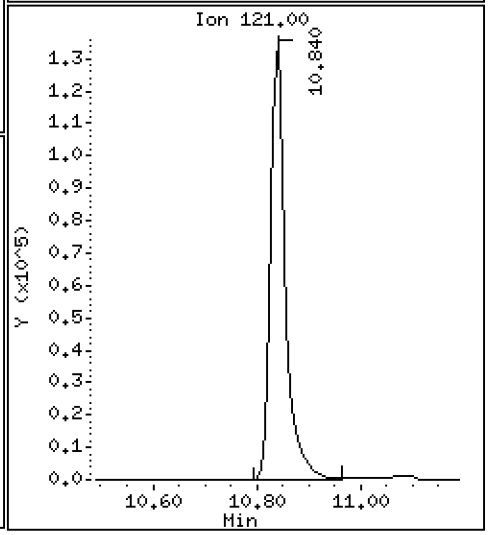


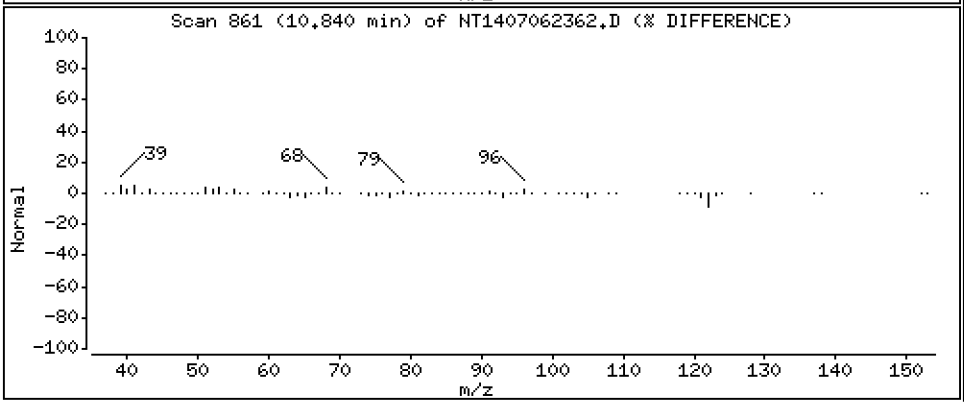












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

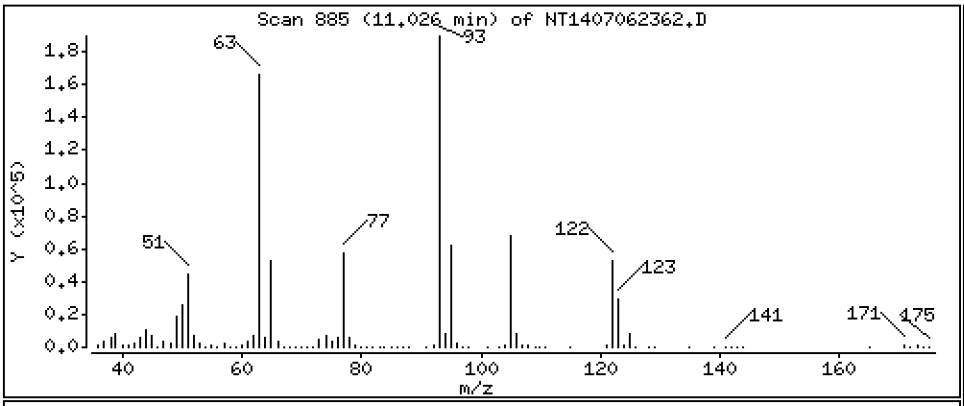
Operator: JGR

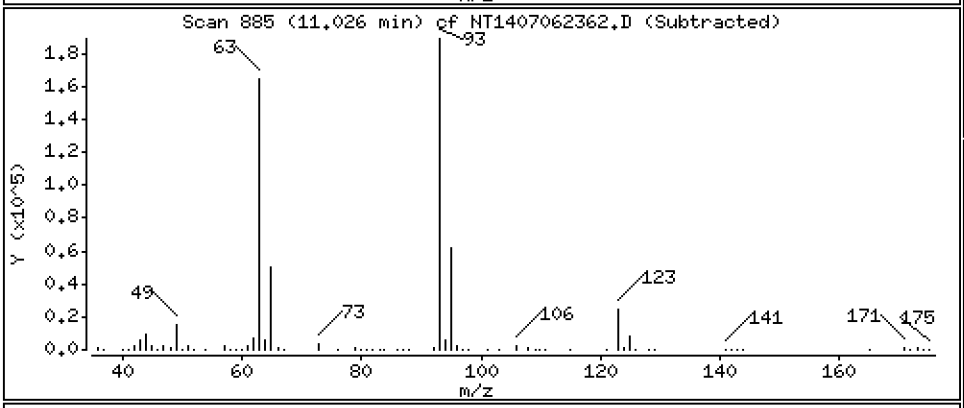
Column phase: ZB-5msi

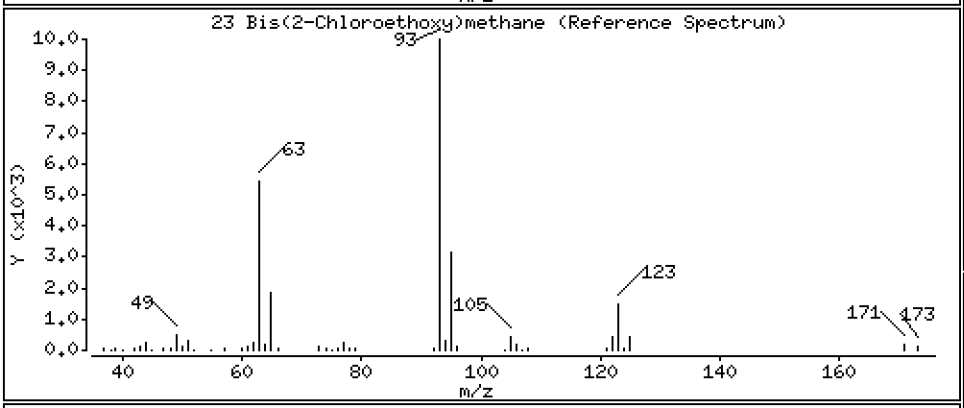
Column diameter: 0.25

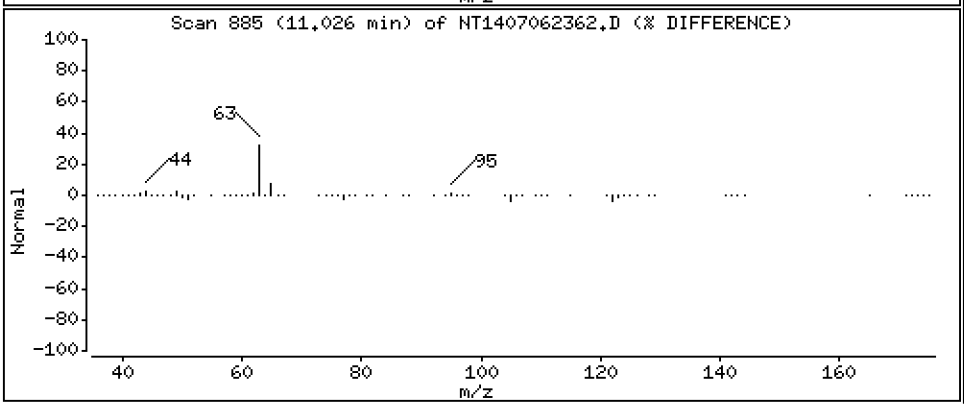
23 Bis(2-Chloroethoxy)methane

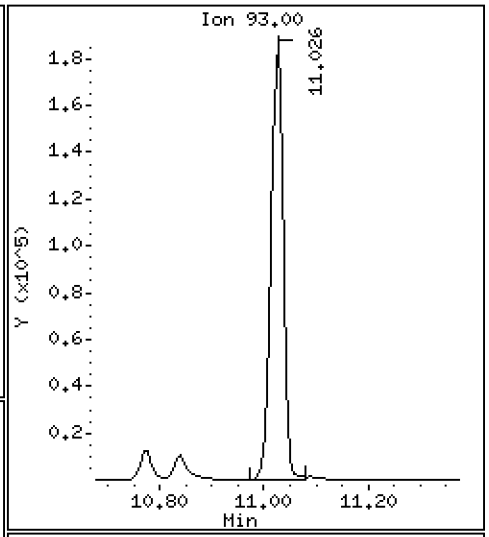
Concentration: 4.874 ug/mL

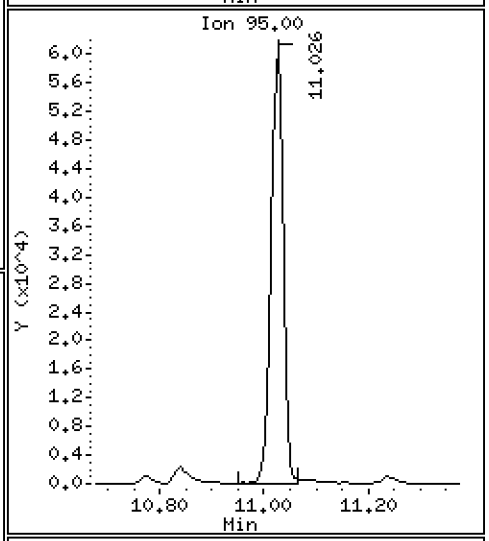


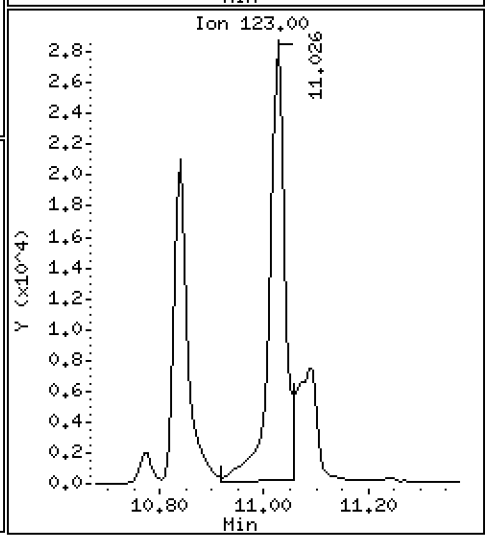












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

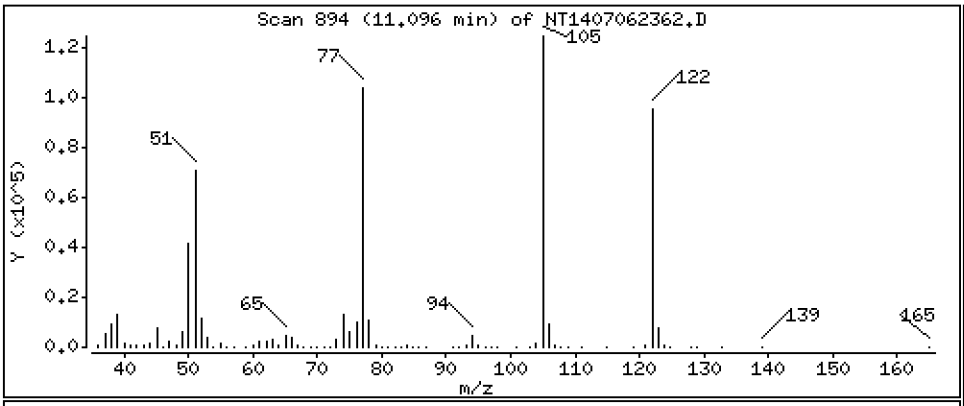
Operator: JGR

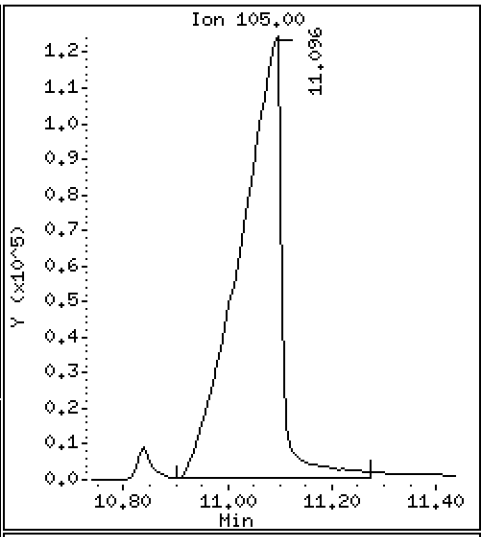
Column phase: ZB-5msi

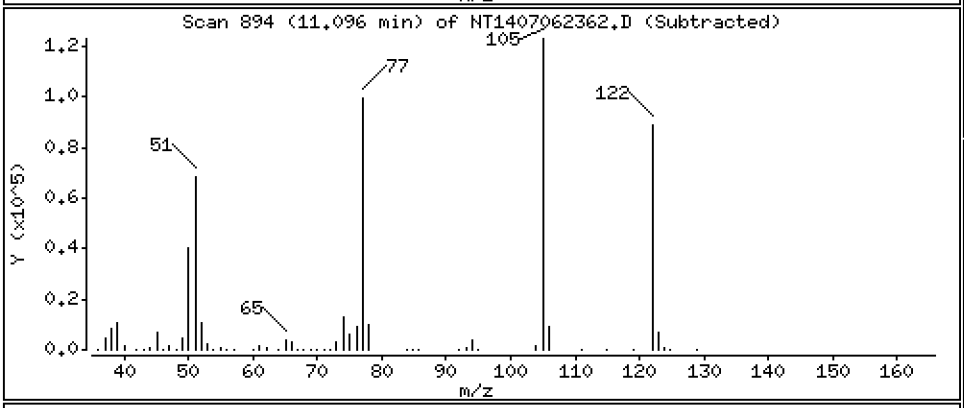
Column diameter: 0.25

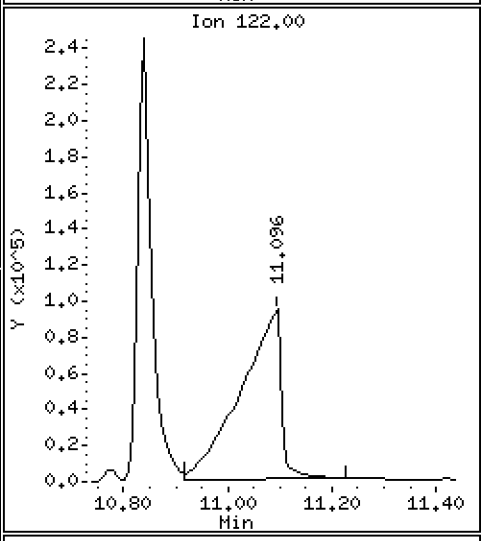
24 Benzoic acid

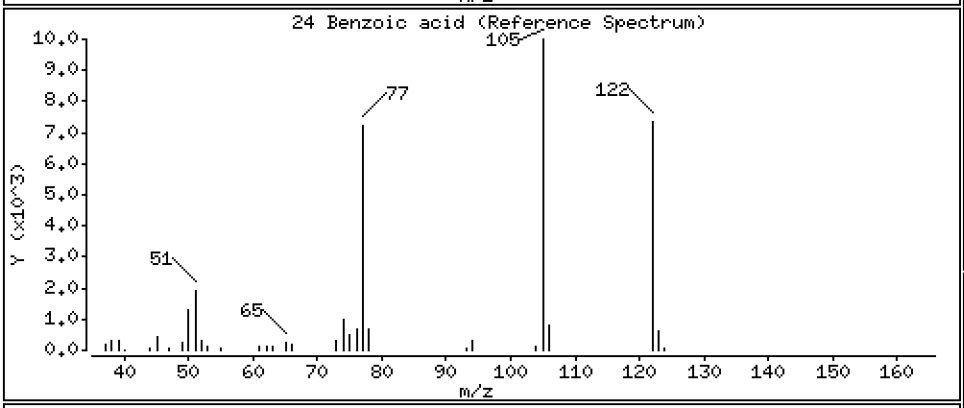
Concentration: 21.17 ug/mL

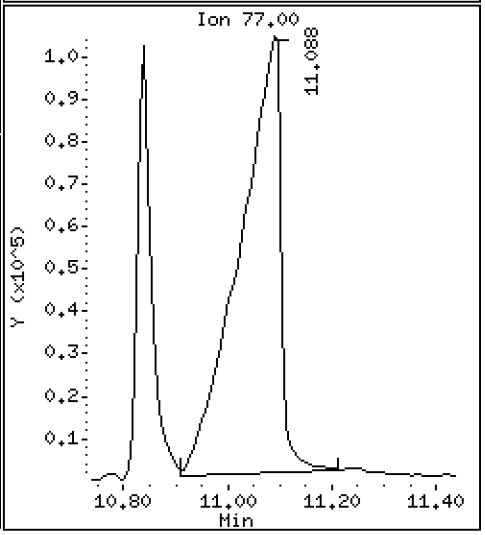


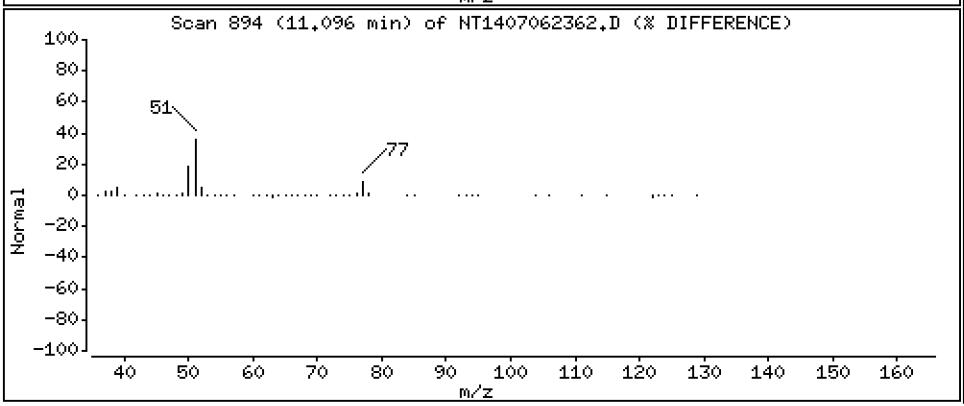












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

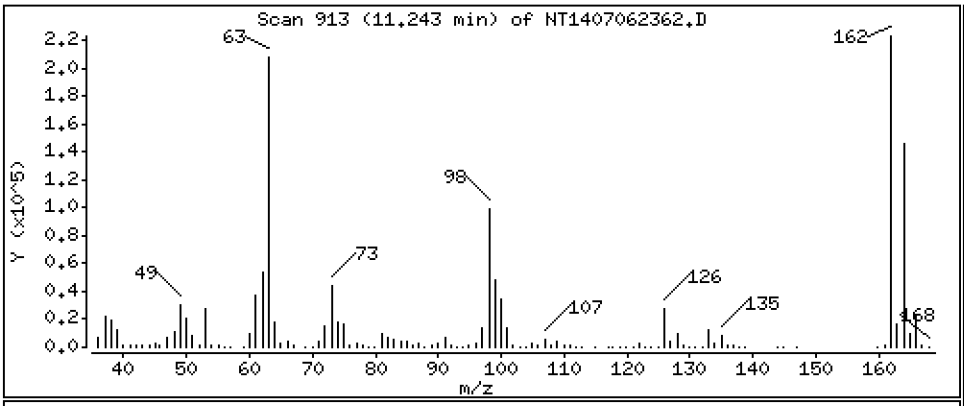
Operator: JGR

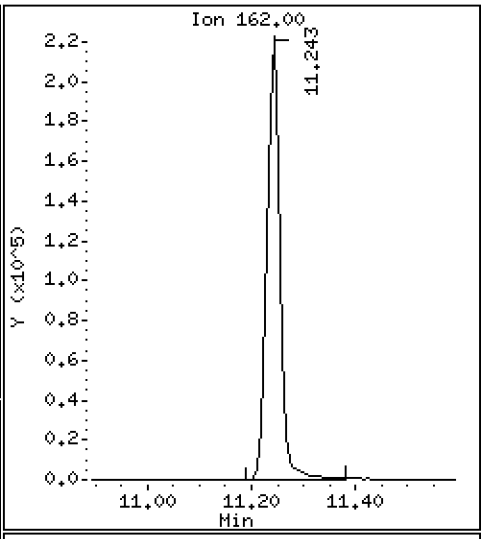
Column phase: ZB-5msi

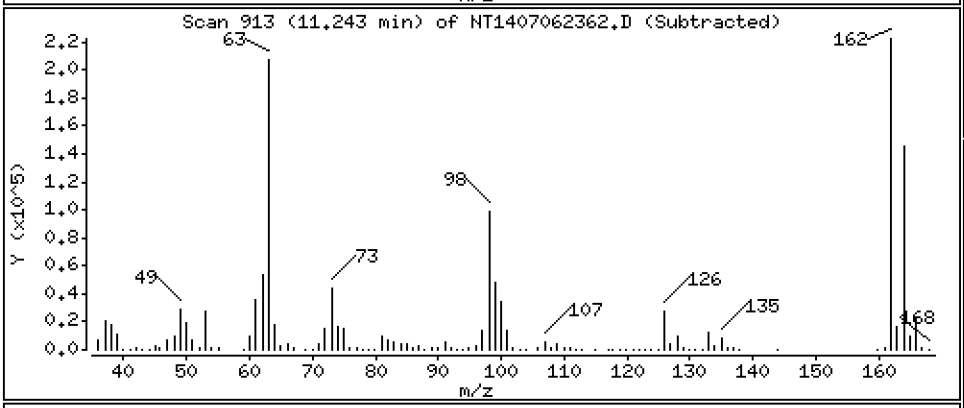
Column diameter: 0.25

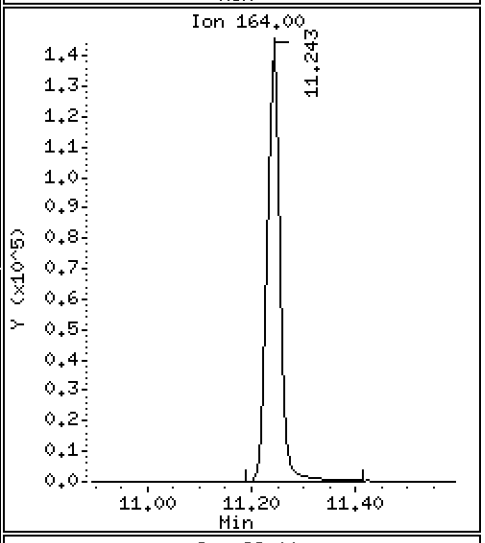
25 2,4-Dichlorophenol

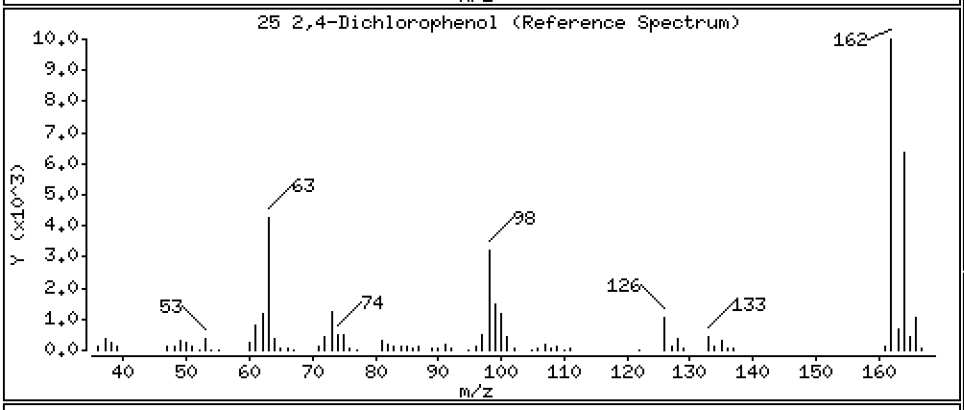
Concentration: 10.40 ug/mL

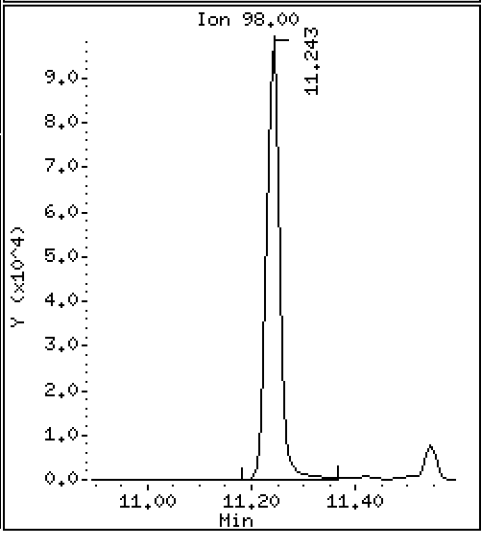


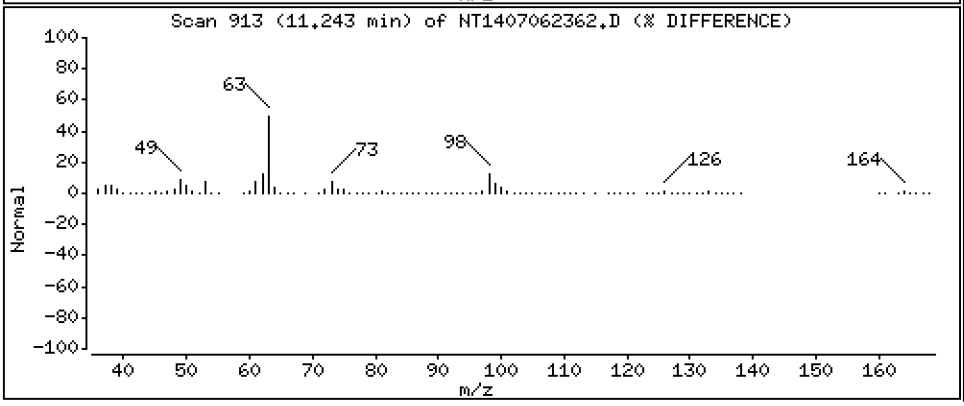












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

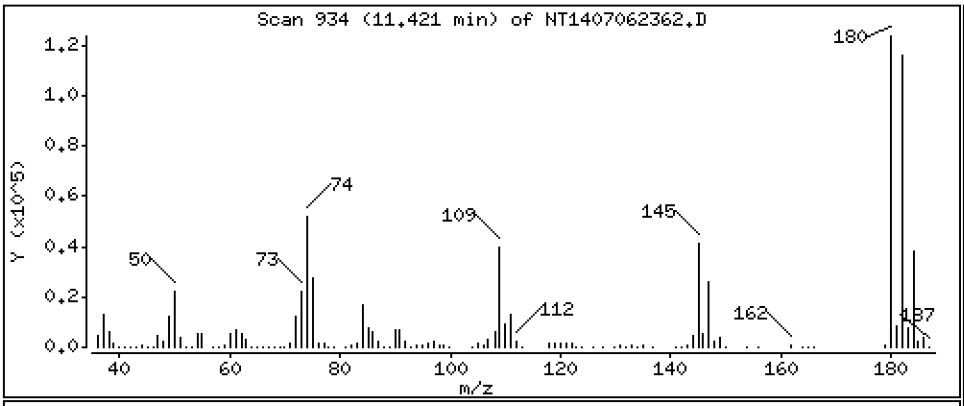
Operator: JGR

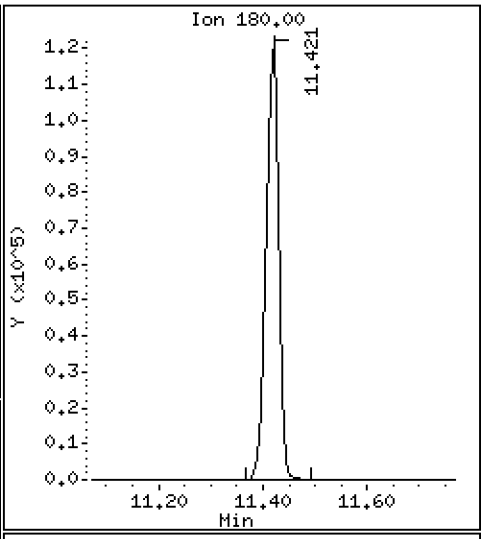
Column phase: ZB-5msi

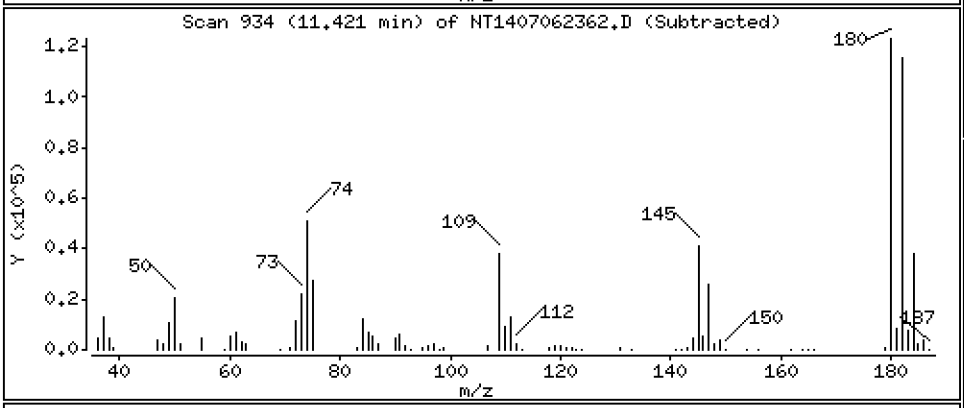
Column diameter: 0.25

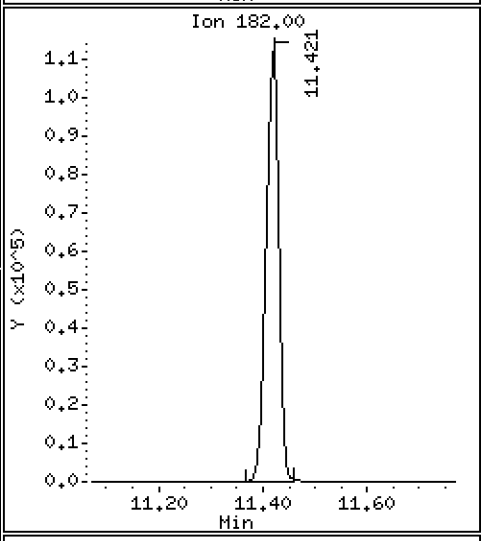
26 1,2,4-Trichlorobenzene

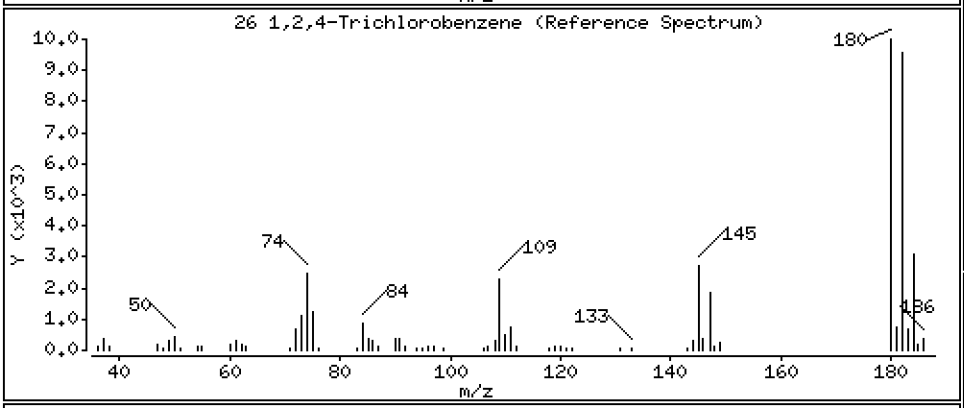
Concentration: 5.046 ug/mL

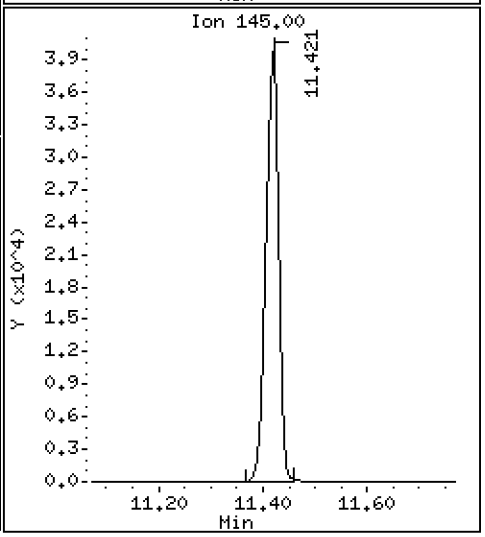


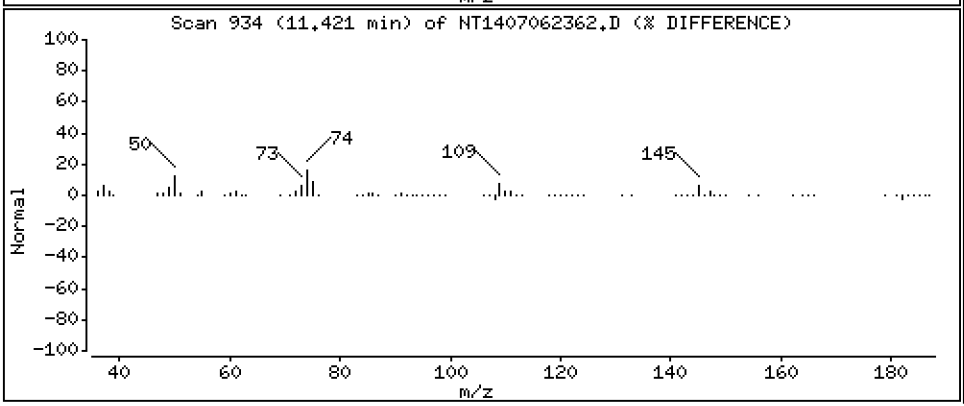












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

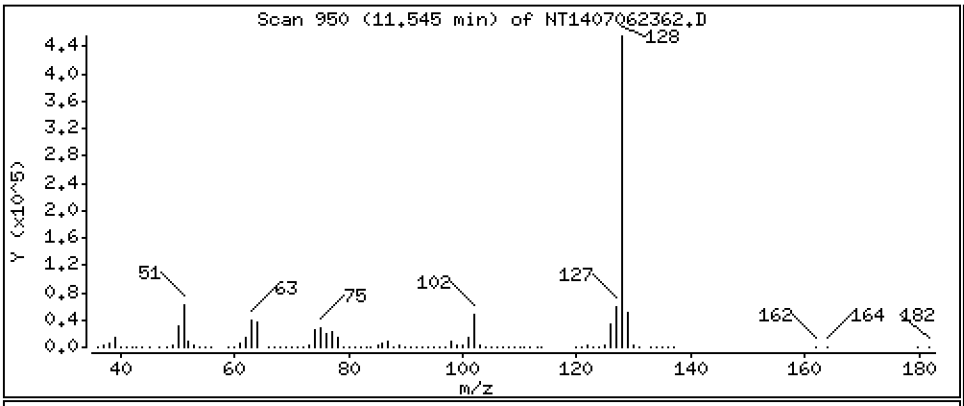
Operator: JGR

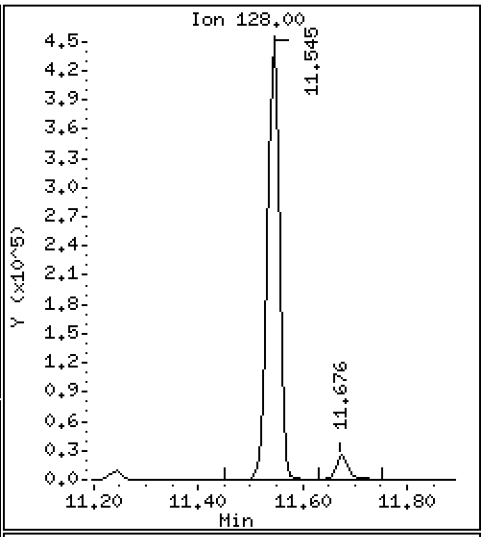
Column phase: ZB-5msi

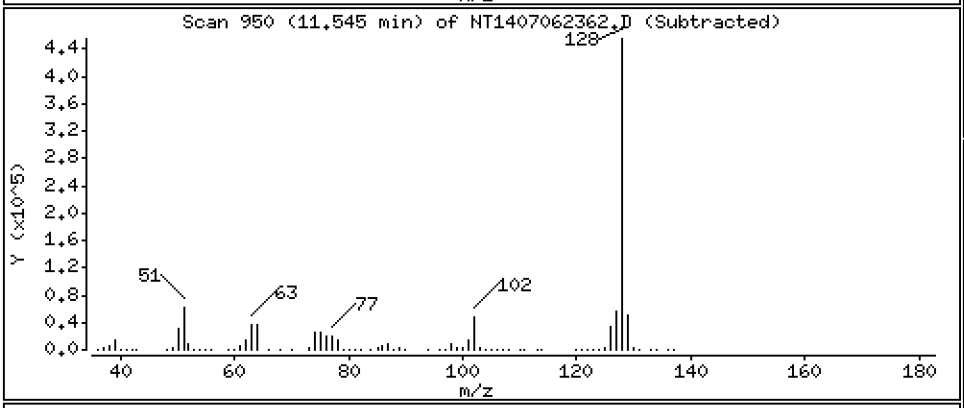
Column diameter: 0.25

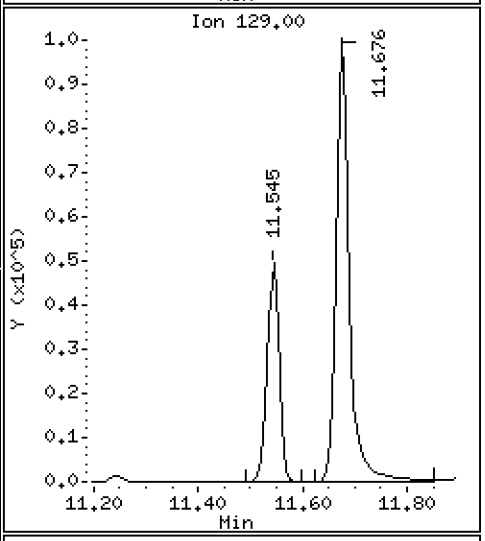
28 Naphthalene

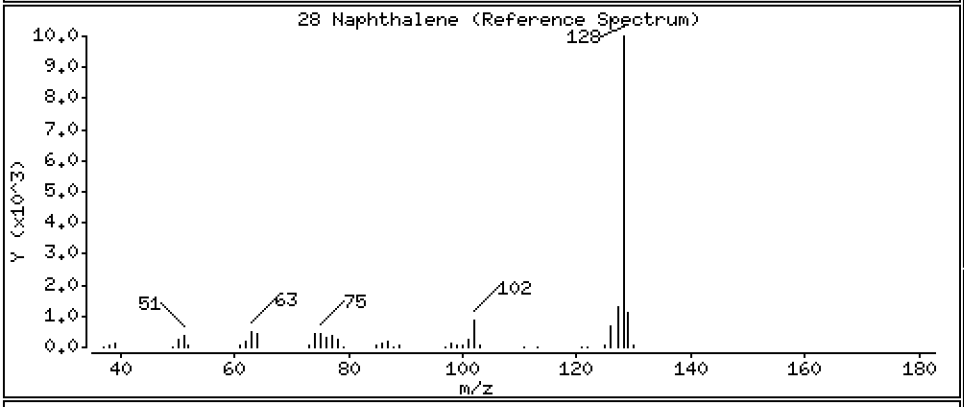
Concentration: 4.965 ug/mL

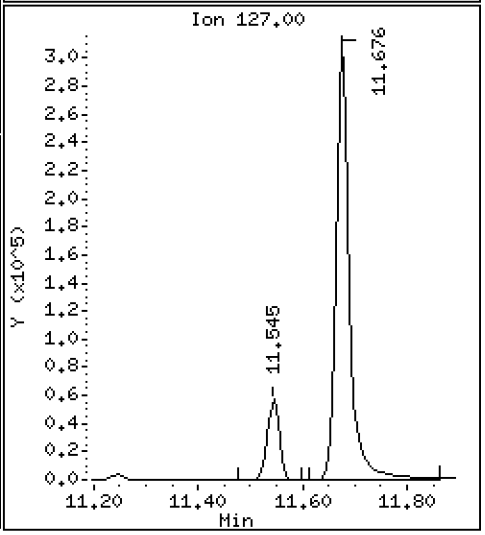


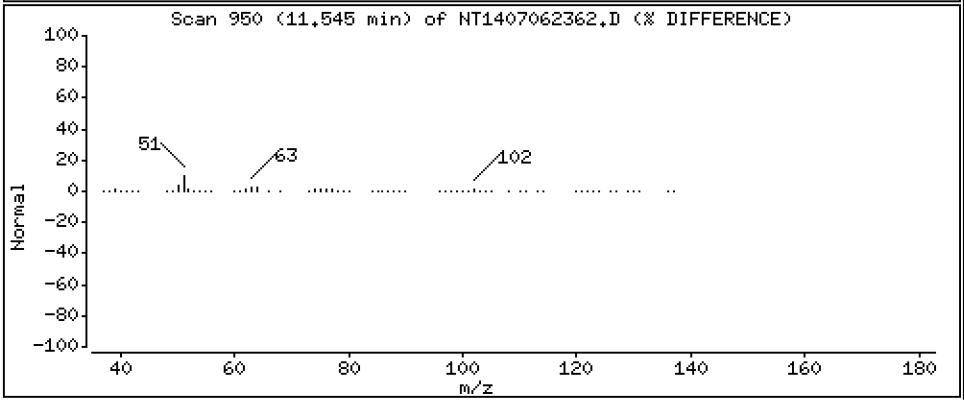












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

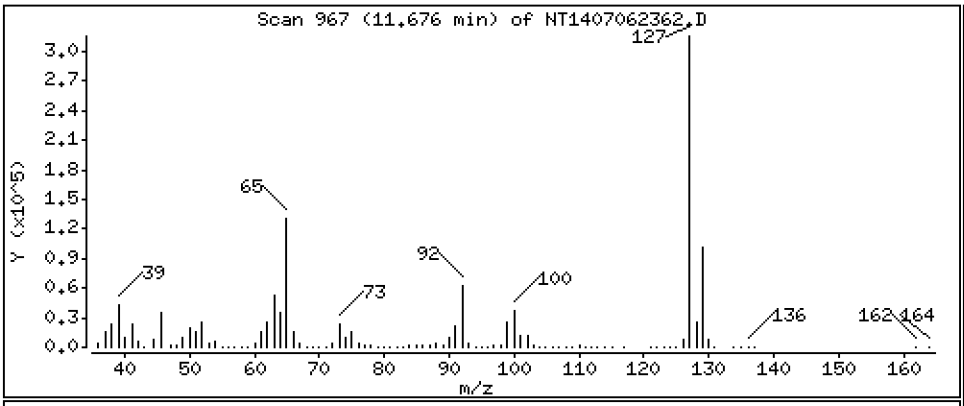
Operator: JGR

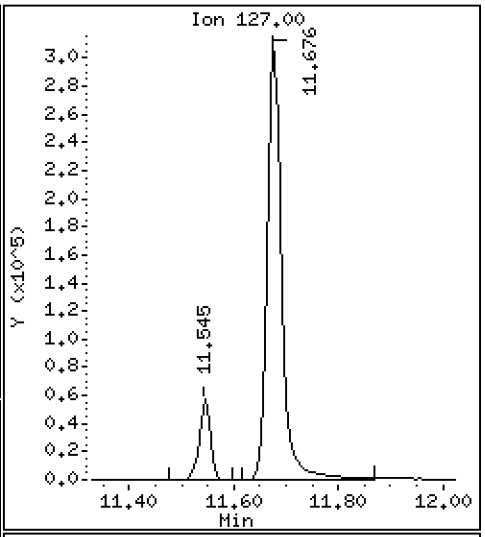
Column phase: ZB-5msi

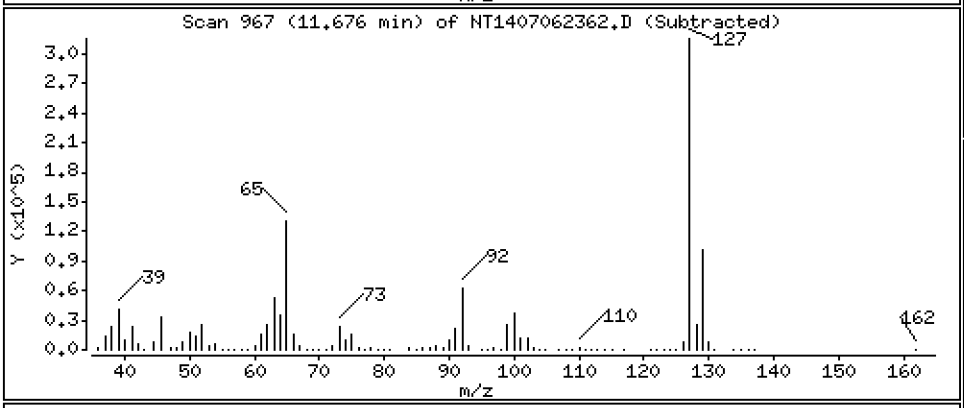
Column diameter: 0.25

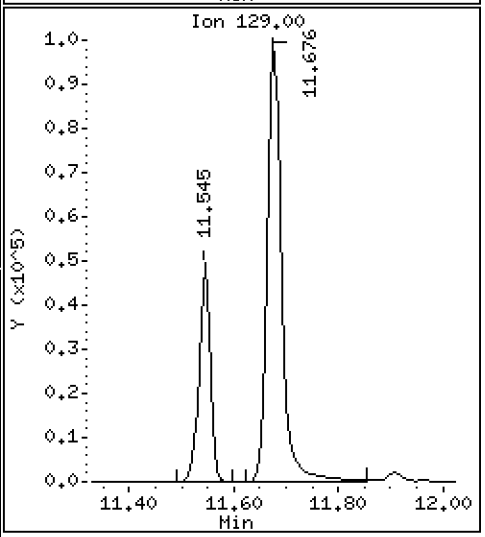
29 4-Chloroaniline

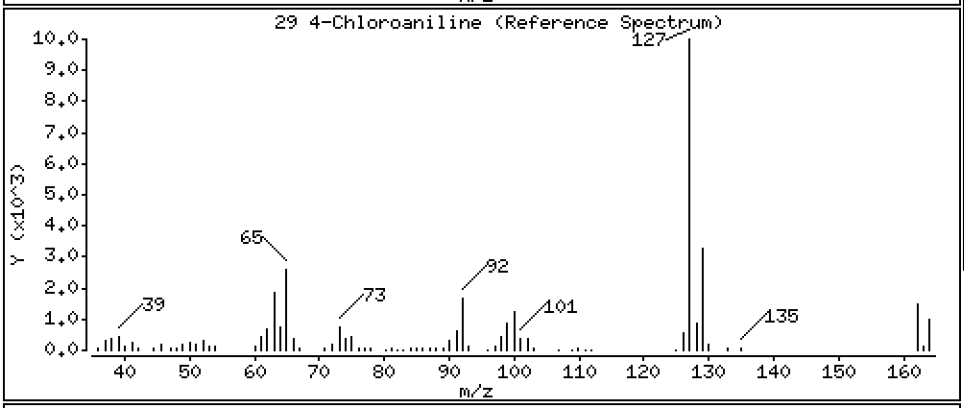
Concentration: 9.435 ug/mL

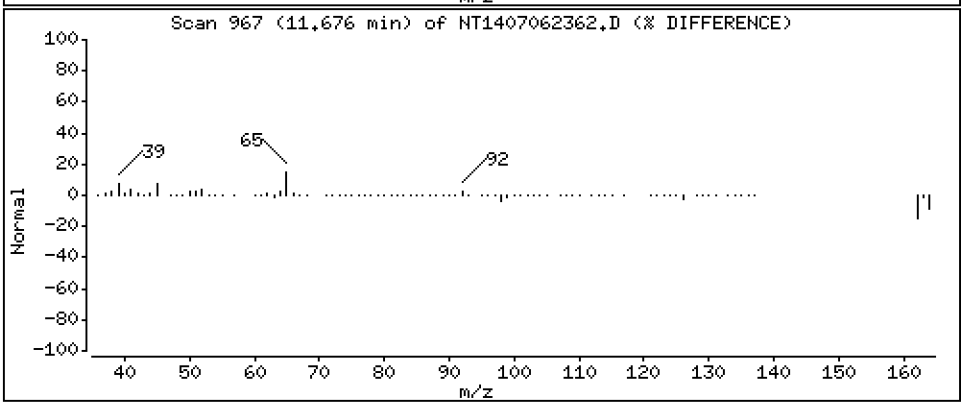












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062362.D

Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

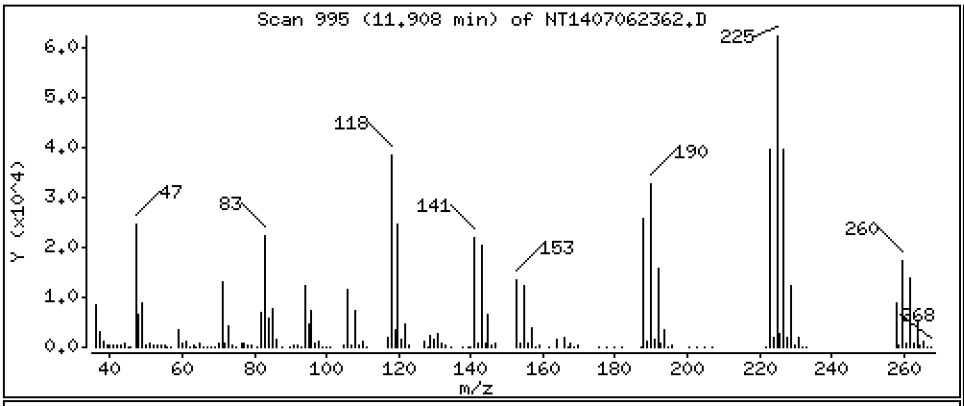
Operator: JGR

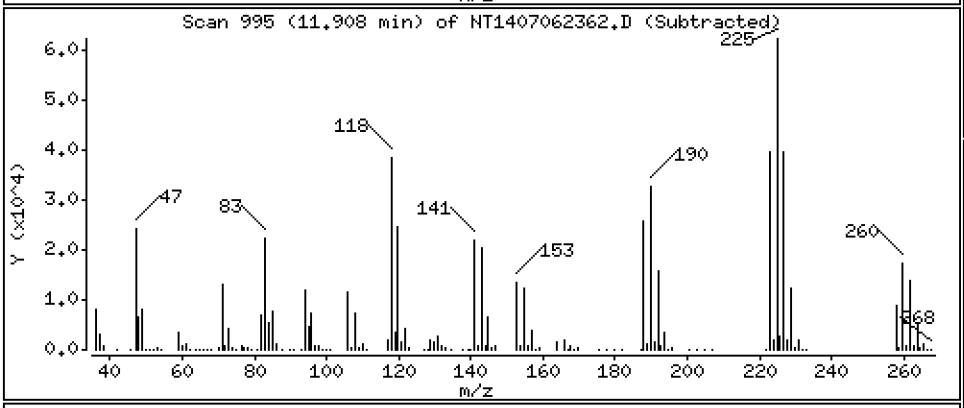
Column phase: ZB-5msi

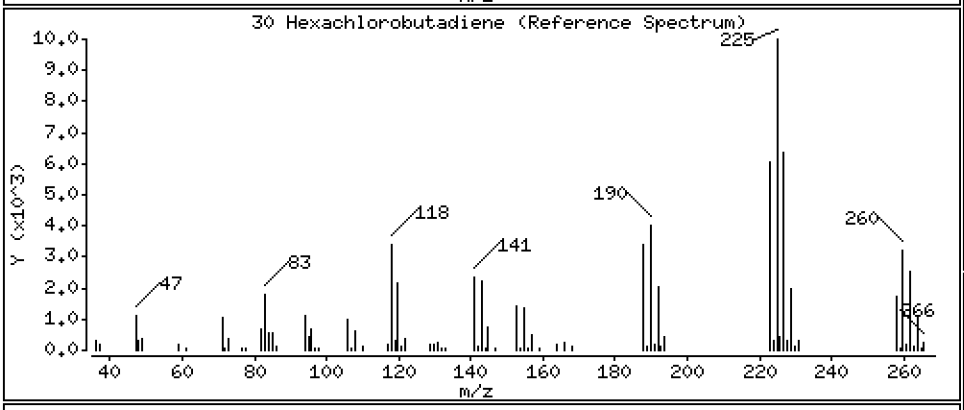
Column diameter: 0.25

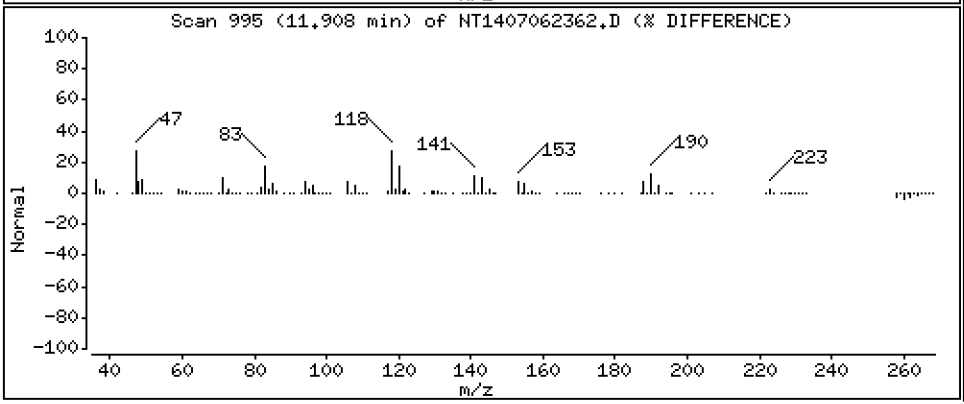
30 Hexachlorobutadiene

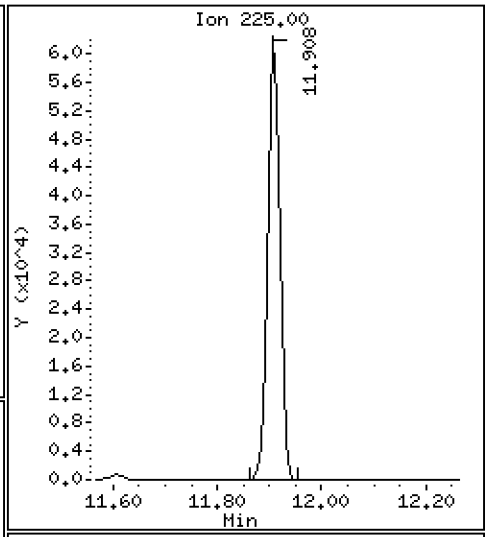
Concentration: 5.363 ug/mL

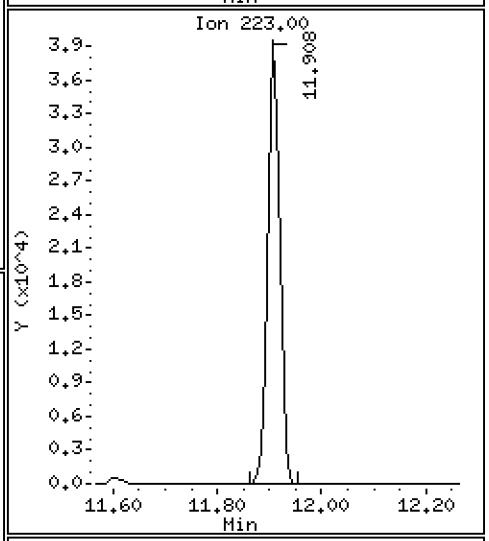


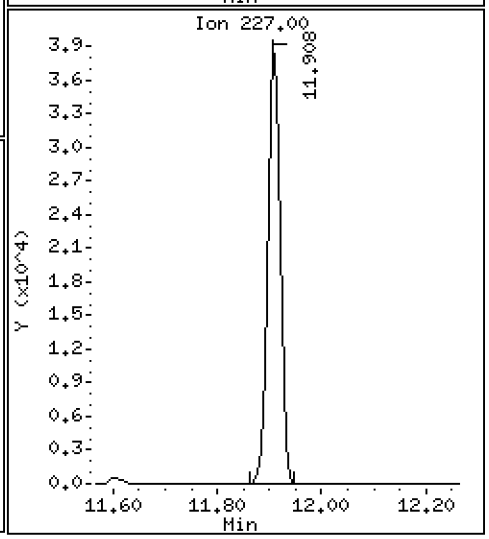












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

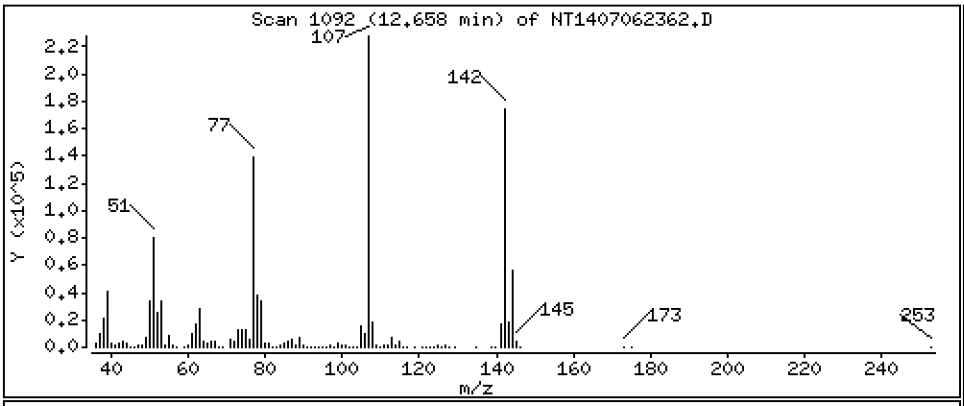
Operator: JGR

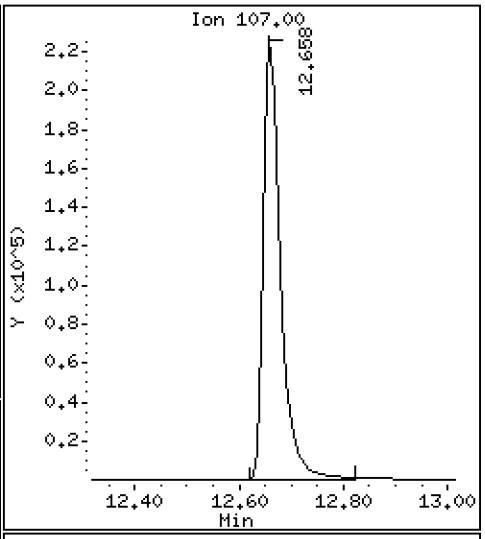
Column phase: ZB-5msi

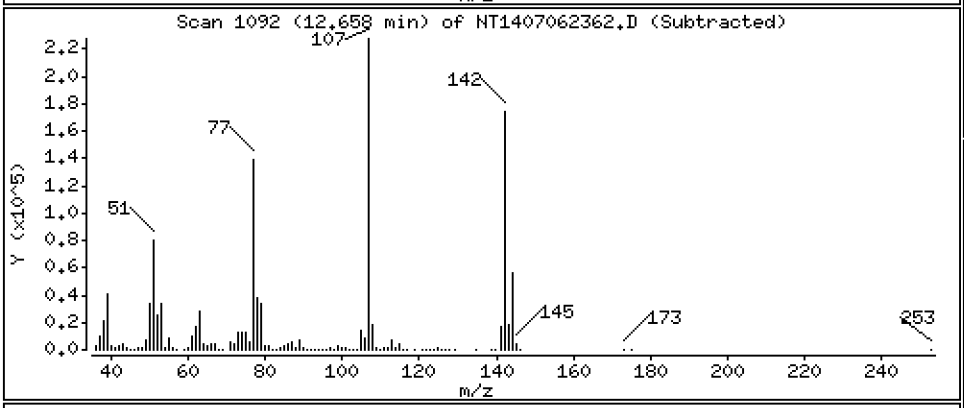
Column diameter: 0.25

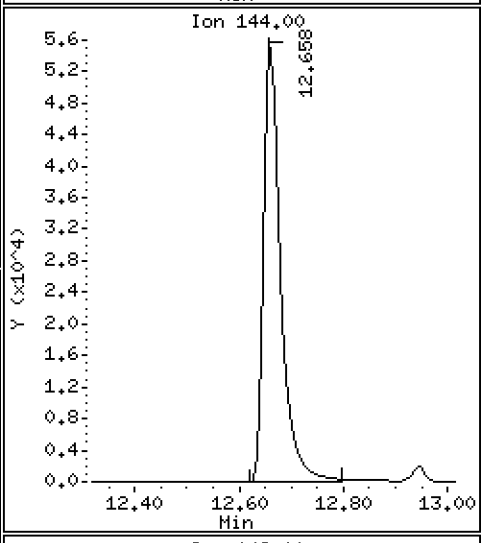
31 4-Chloro-3-methylphenol

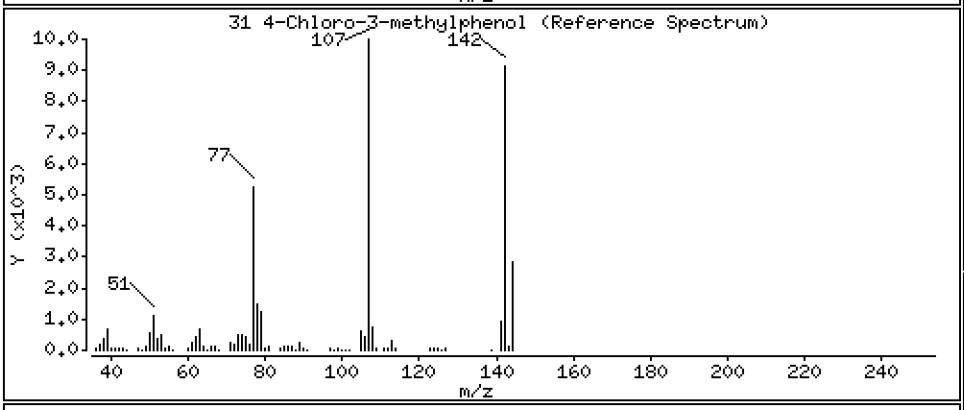
Concentration: 10.19 ug/mL

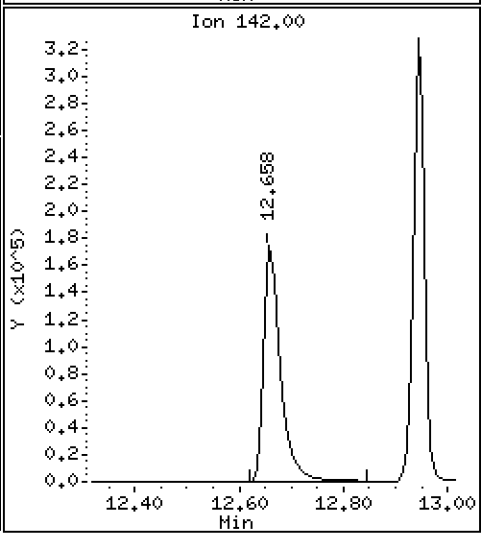


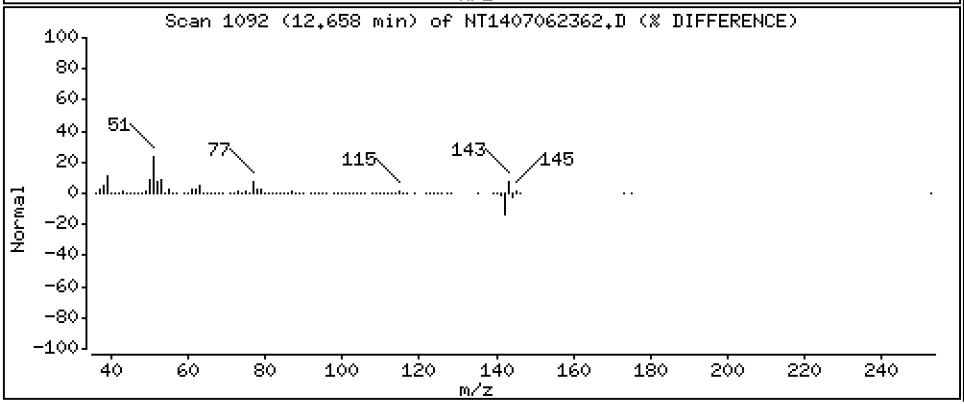












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

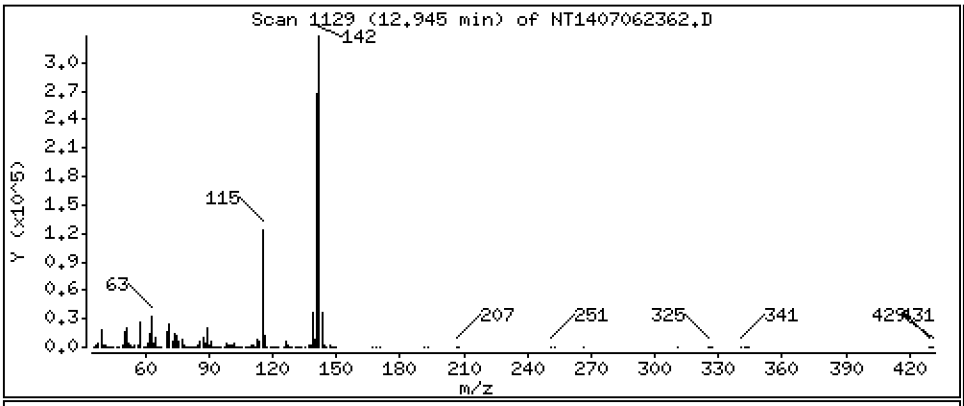
Operator: JGR

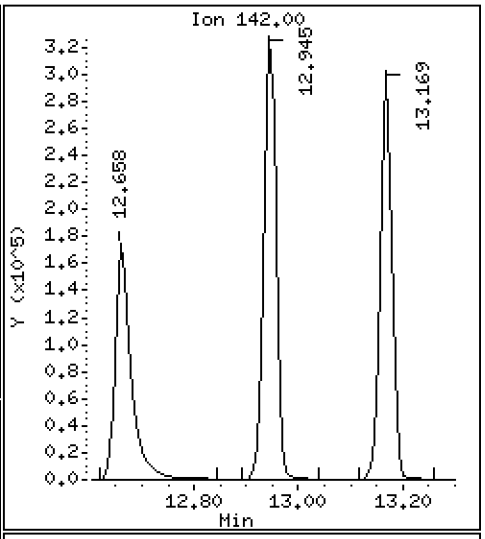
Column phase: ZB-5msi

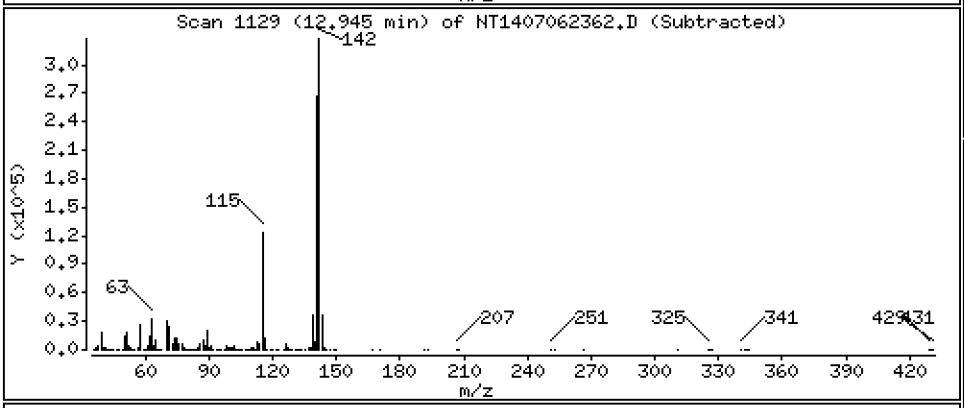
Column diameter: 0.25

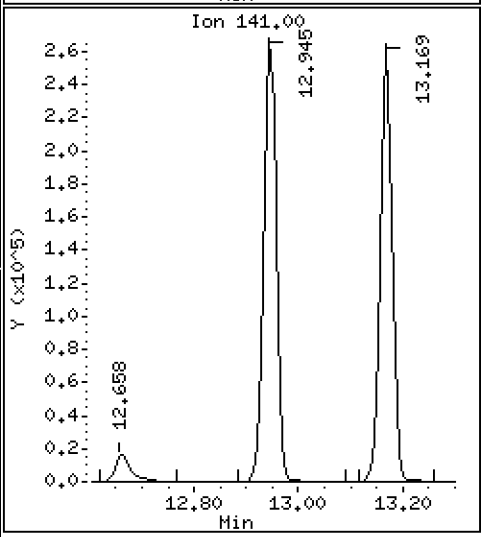
32 2-Methylnaphthalene

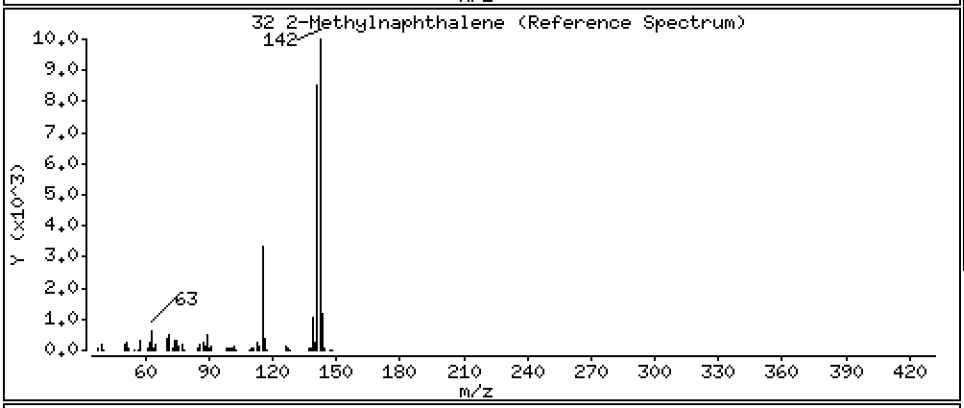
Concentration: 4.960 ug/mL

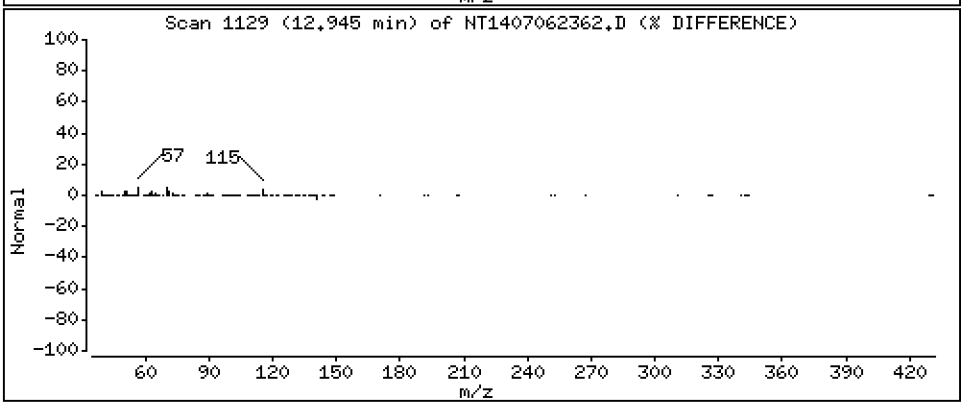












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

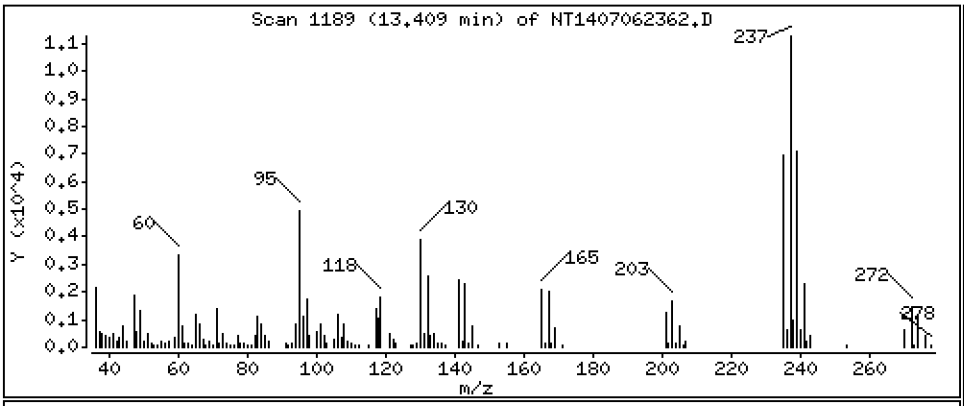
Operator: JGR

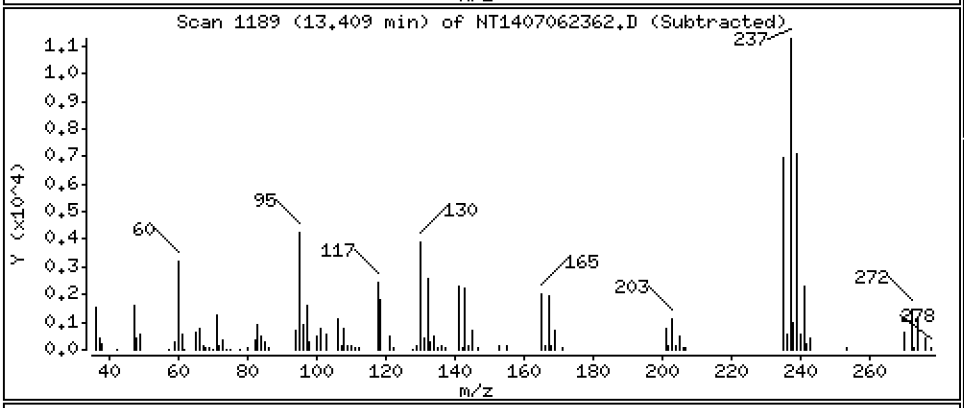
Column phase: ZB-5msi

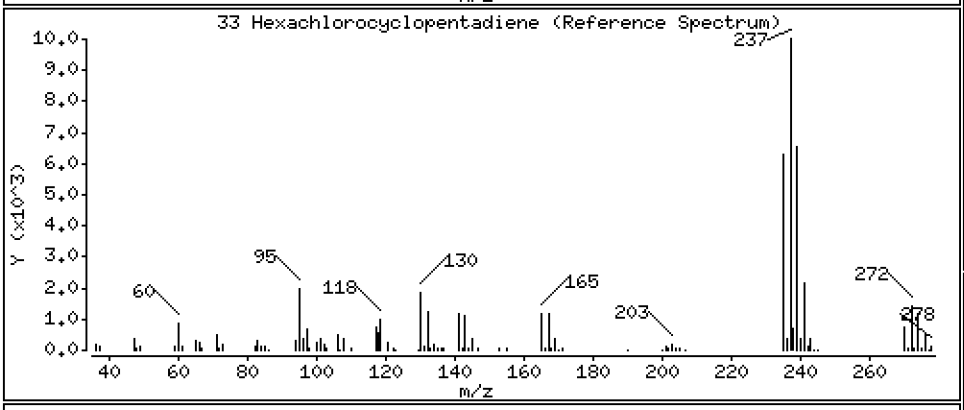
Column diameter: 0.25

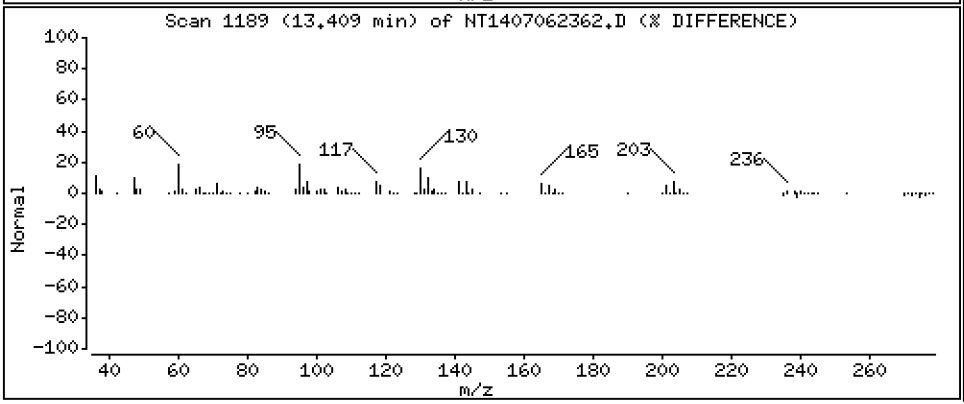
33 Hexachlorocyclopentadiene

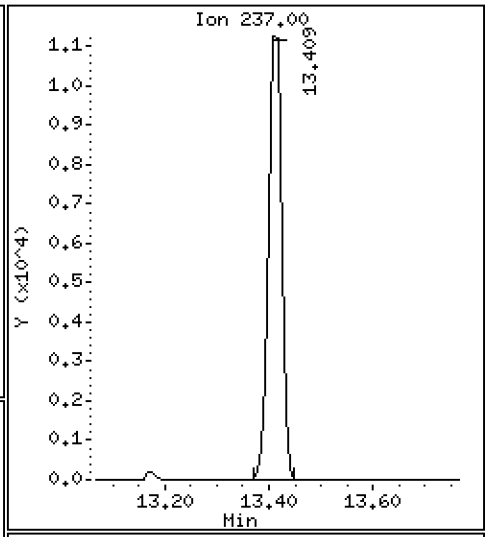
Concentration: 0.9434 ug/mL

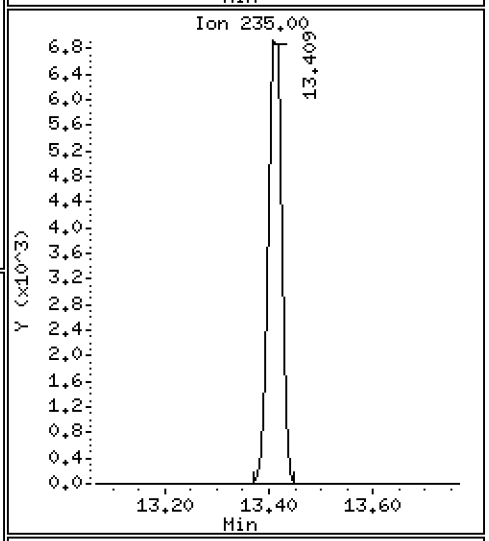


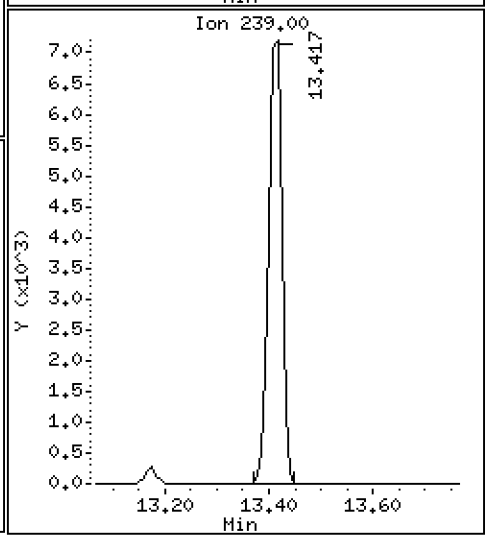












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

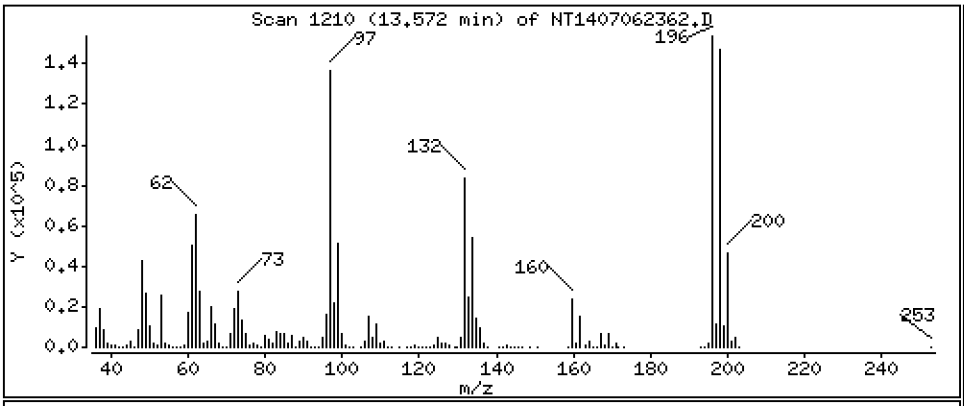
Operator: JGR

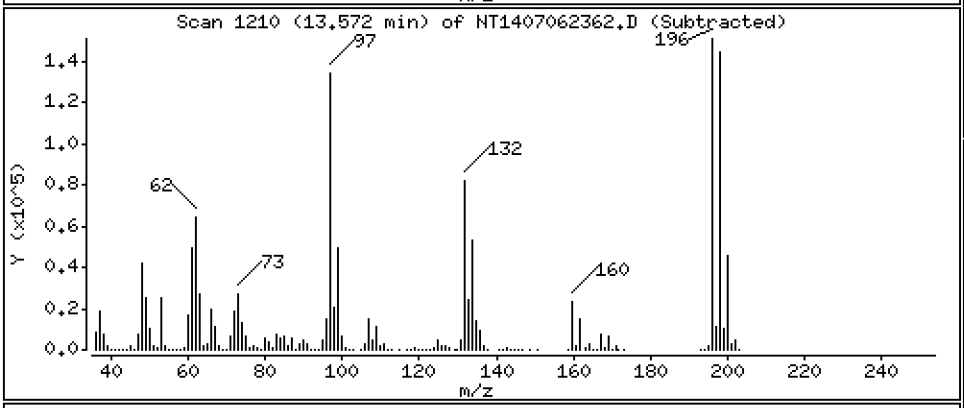
Column phase: ZB-5msi

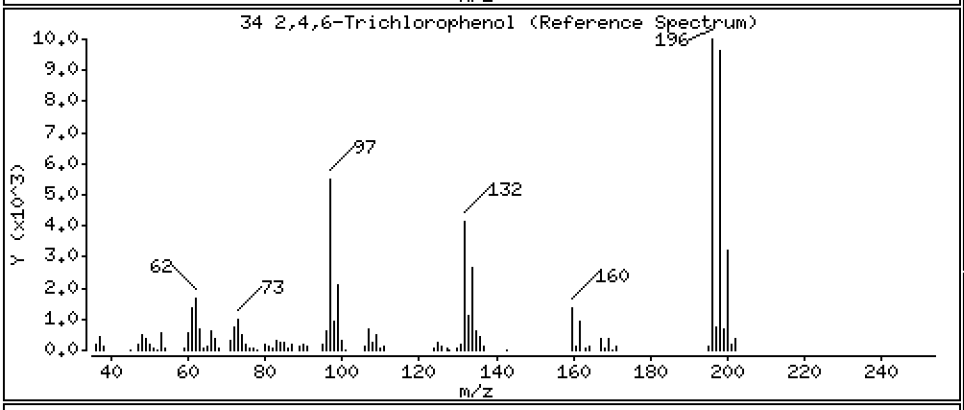
Column diameter: 0.25

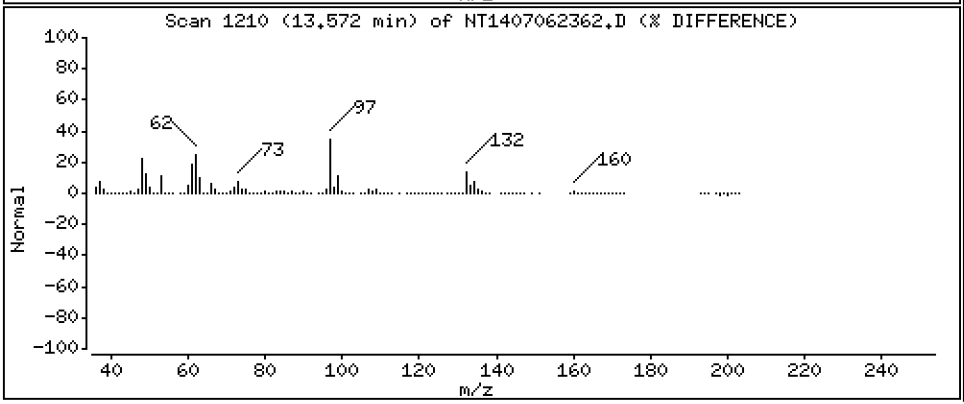
34 2,4,6-Trichlorophenol

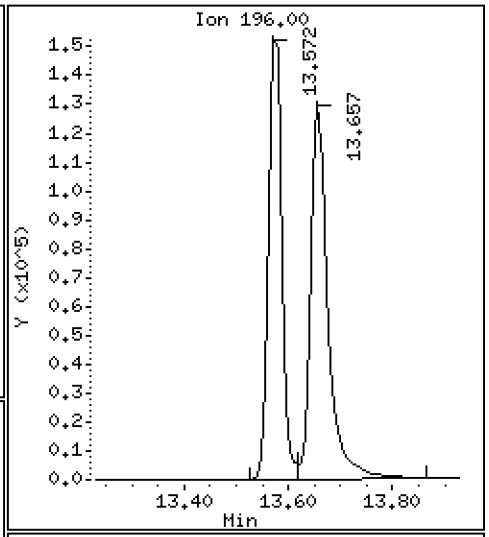
Concentration: 10.18 ug/mL

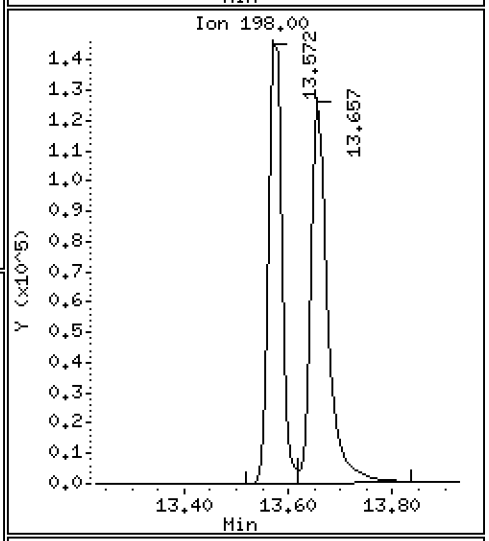


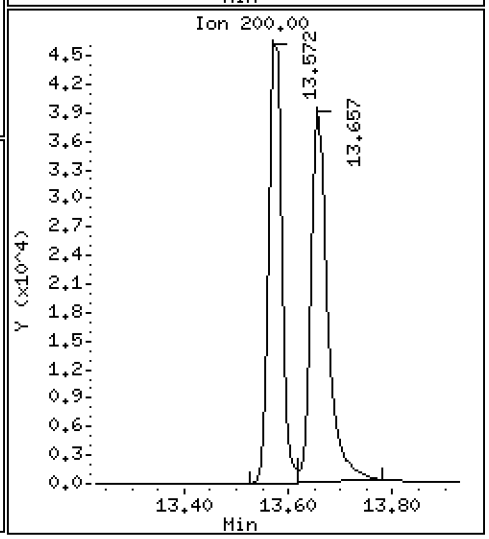












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

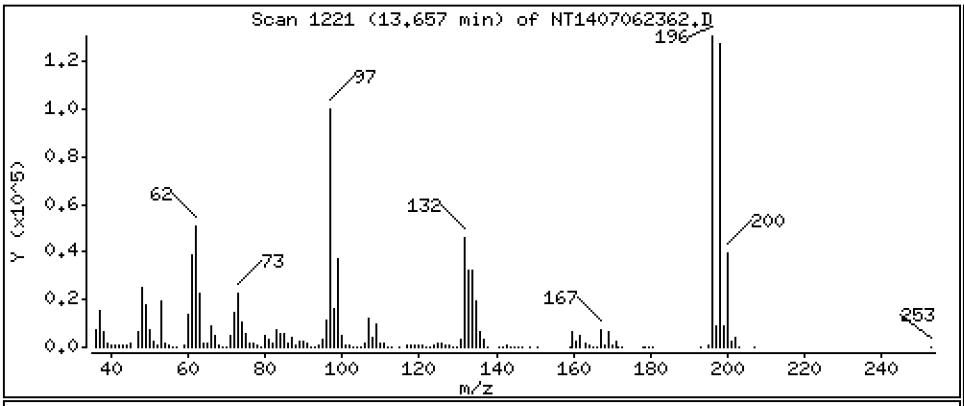
Operator: JGR

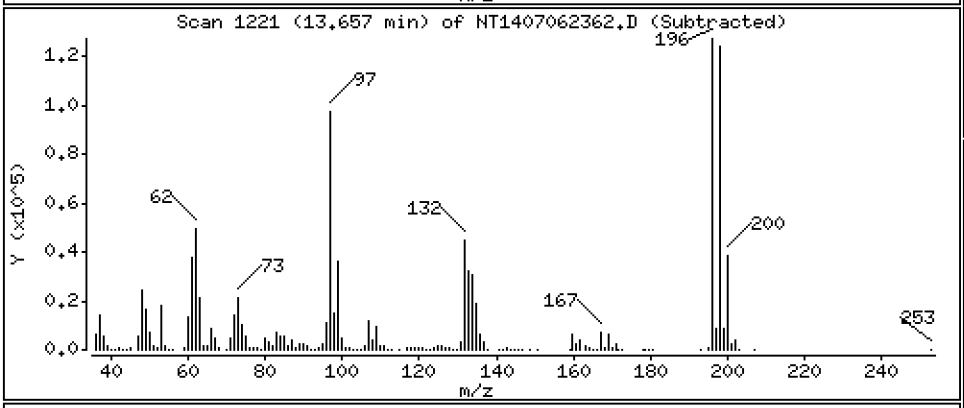
Column phase: ZB-5msi

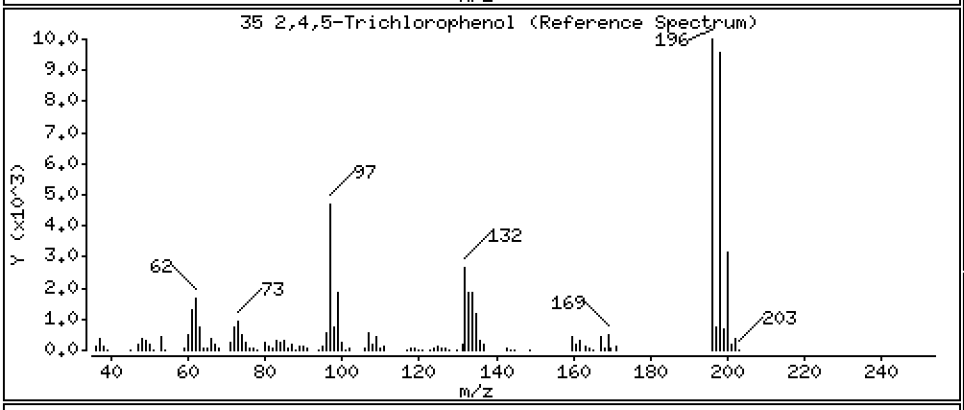
Column diameter: 0.25

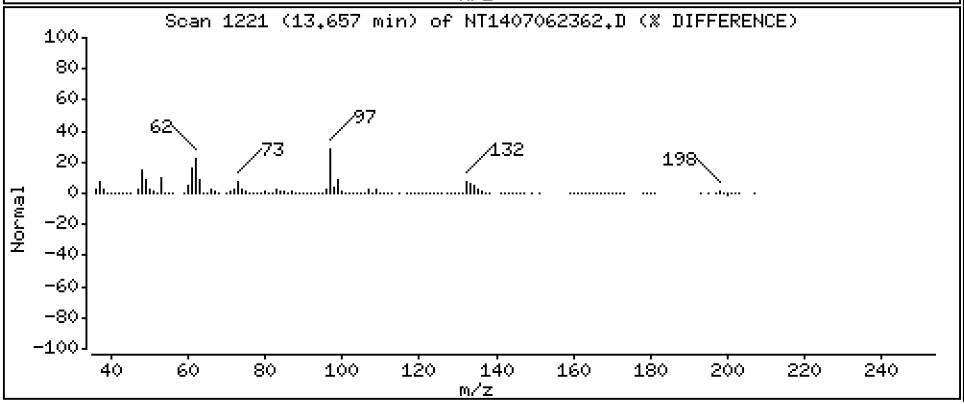
35 2,4,5-Trichlorophenol

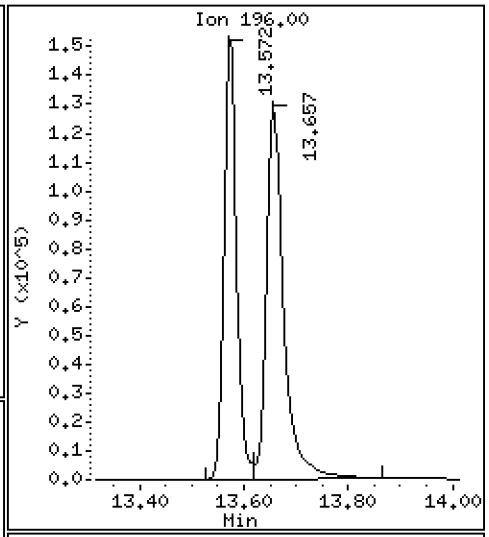
Concentration: 10.87 ug/mL

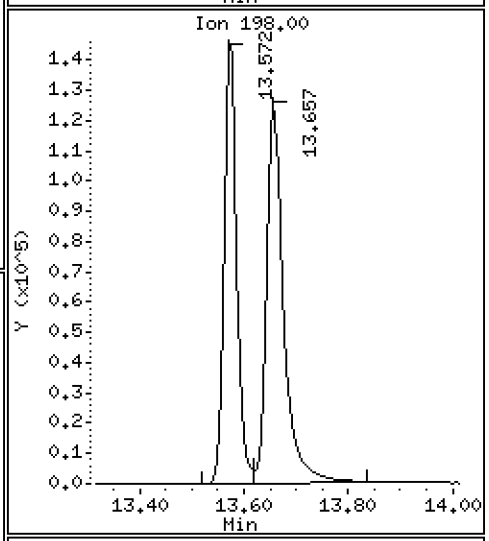


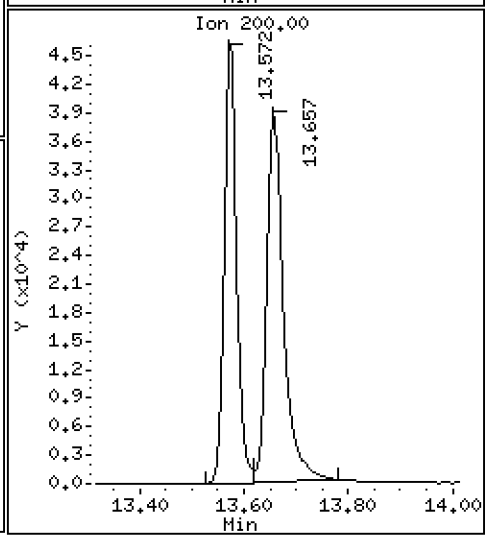












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

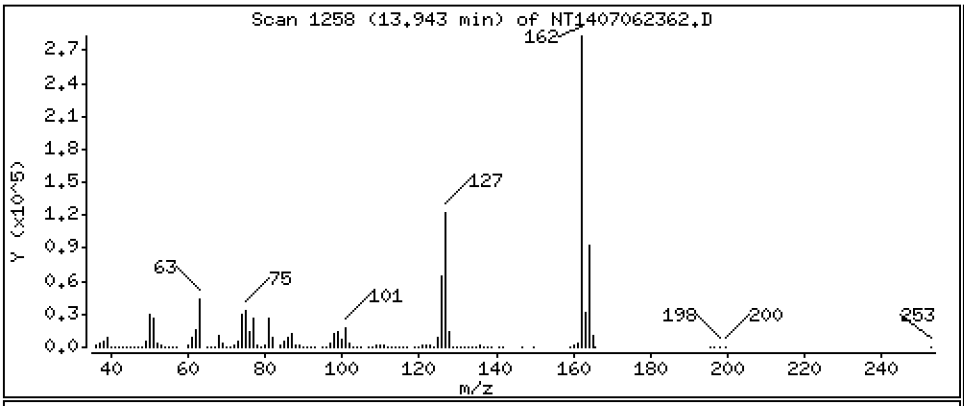
Operator: JGR

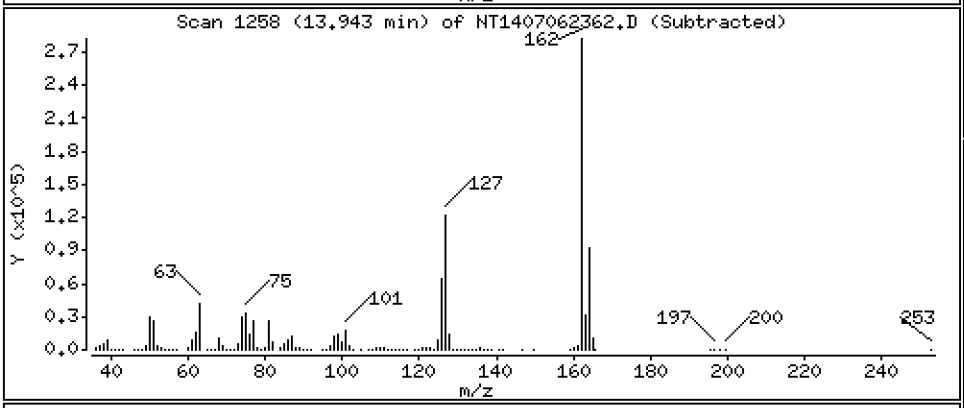
Column phase: ZB-5msi

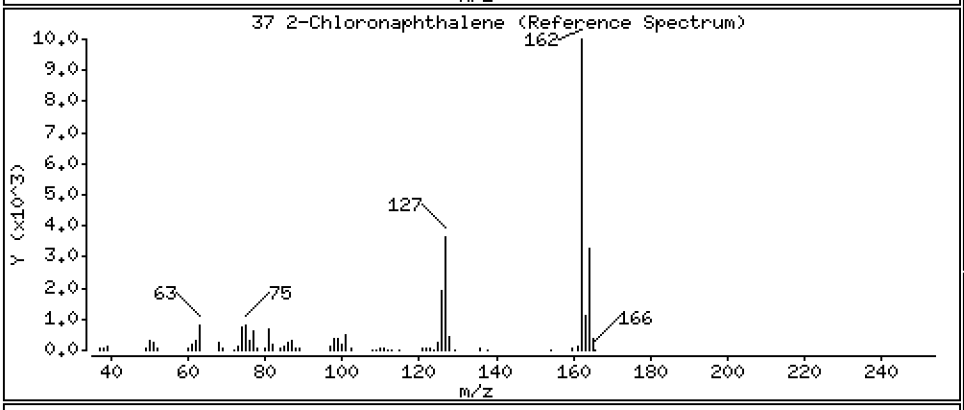
Column diameter: 0.25

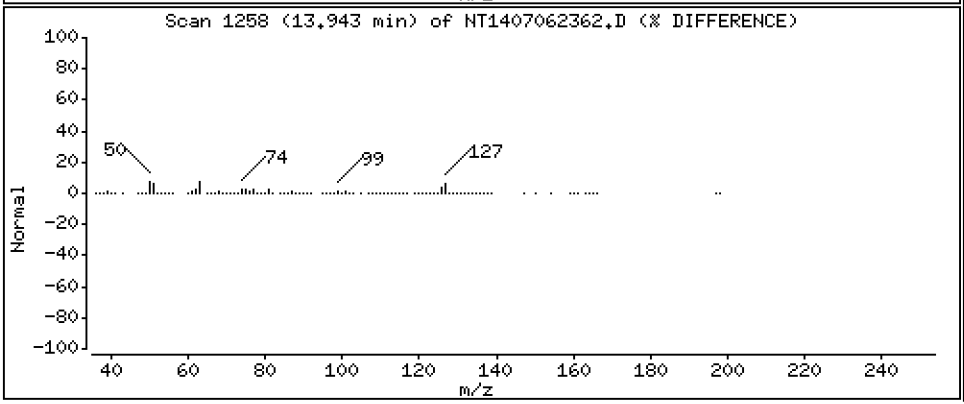
37 2-Chloronaphthalene

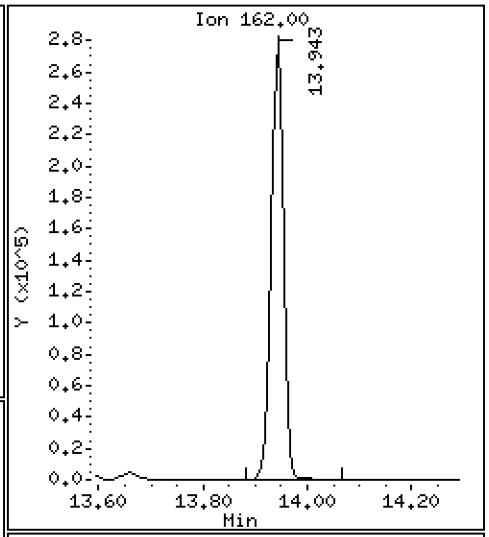
Concentration: 4.991 ug/mL

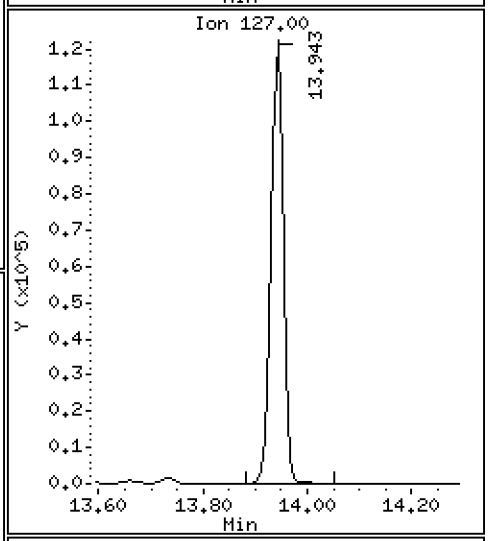


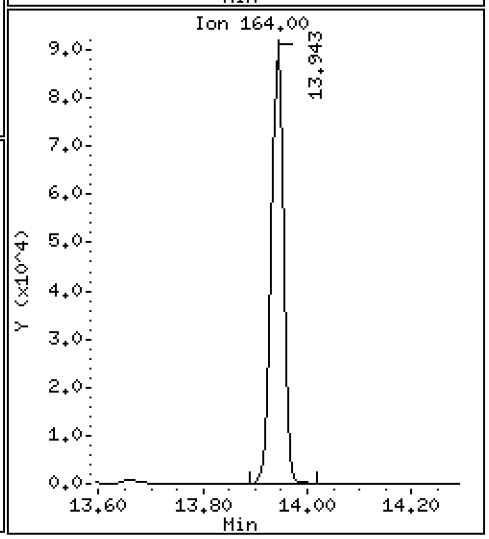












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

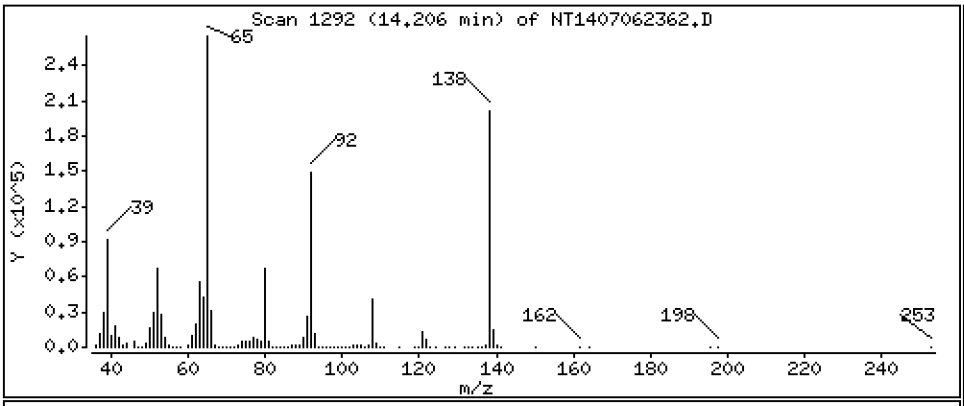
Operator: JGR

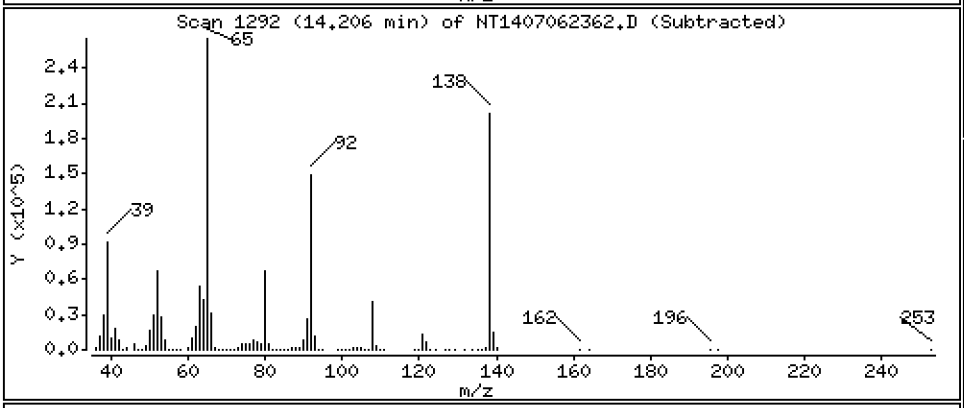
Column phase: ZB-5msi

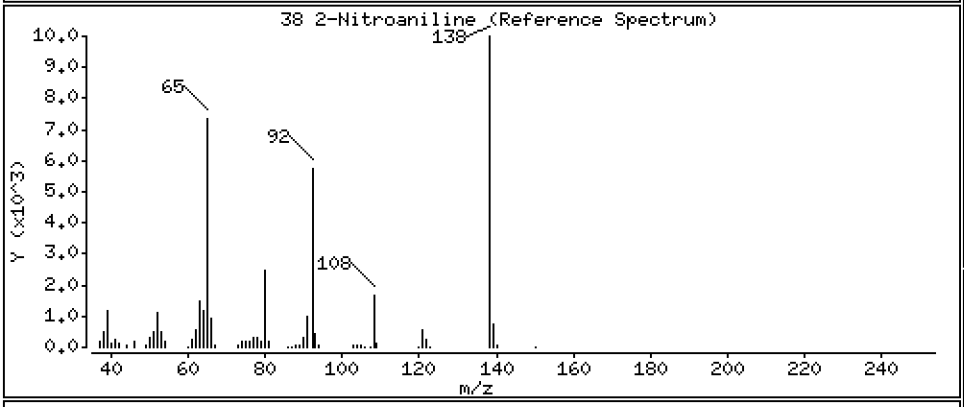
Column diameter: 0.25

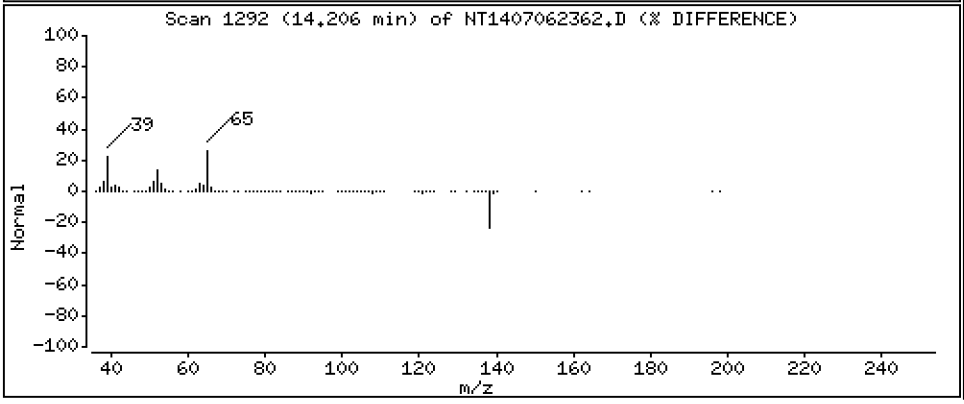
38 2-Nitroaniline

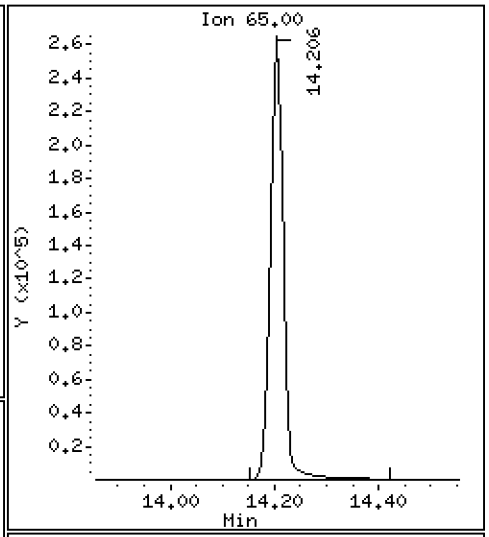
Concentration: 10.74 ug/mL

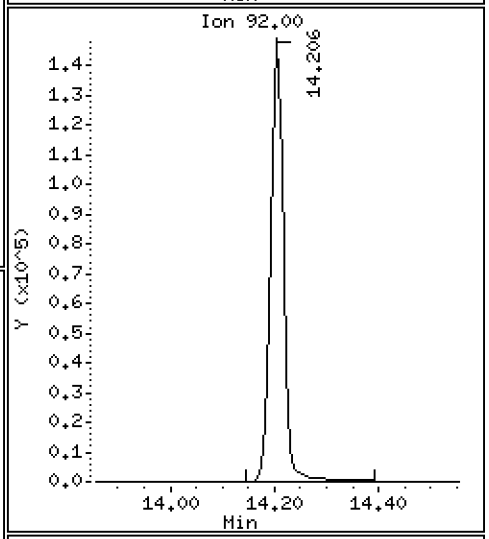


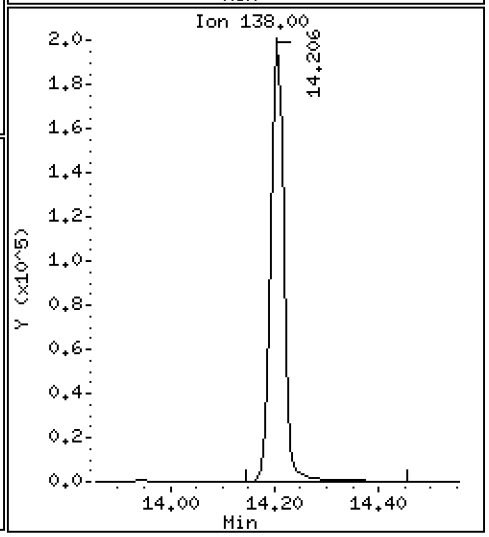












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

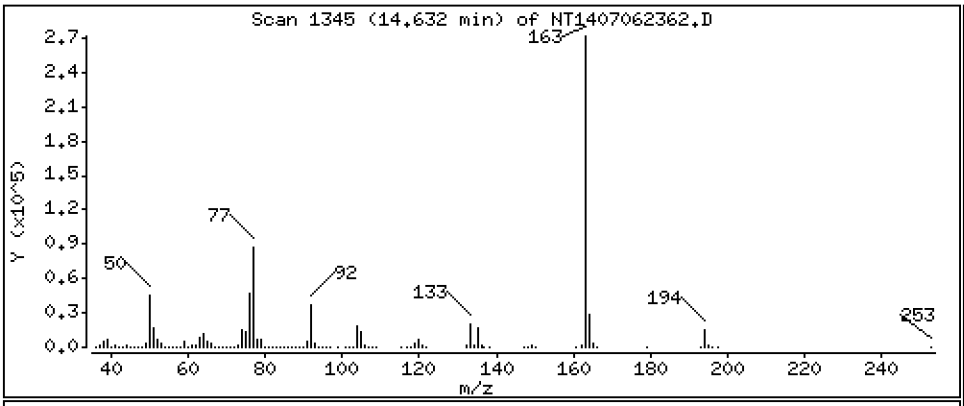
Operator: JGR

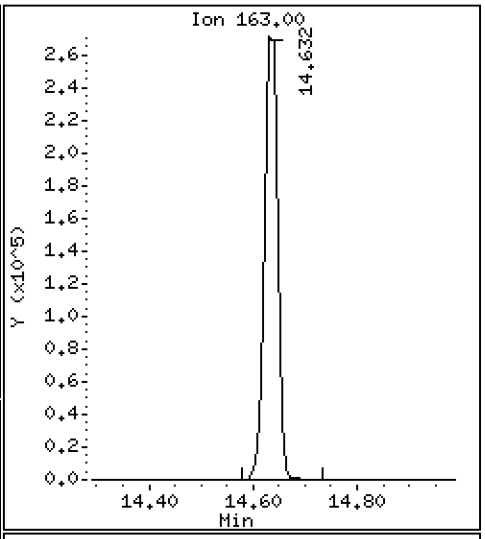
Column phase: ZB-5msi

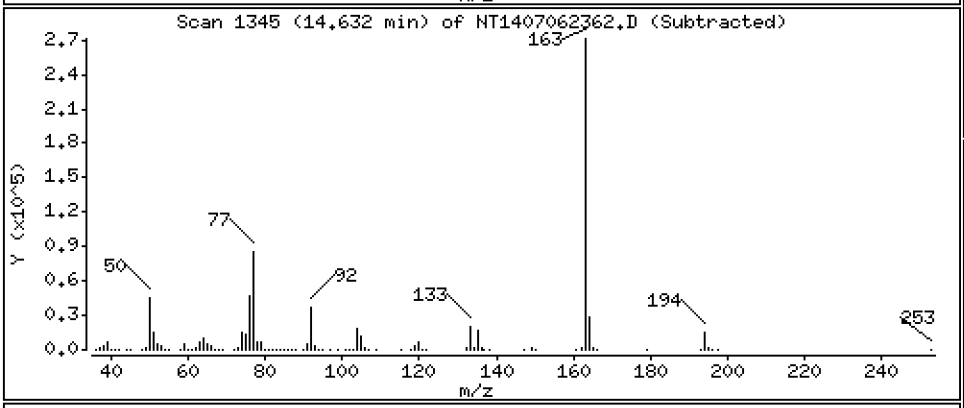
Column diameter: 0.25

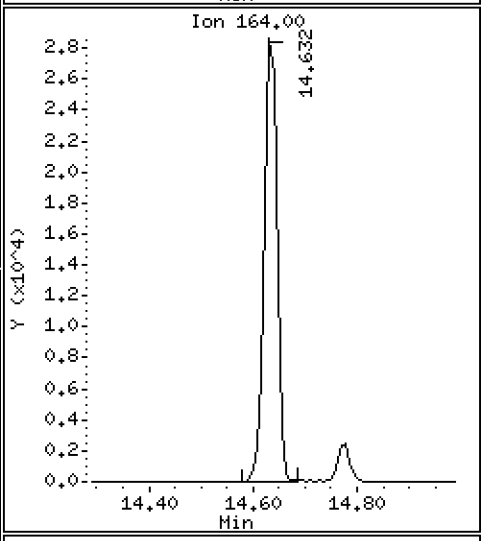
39 Dimethylphthalate

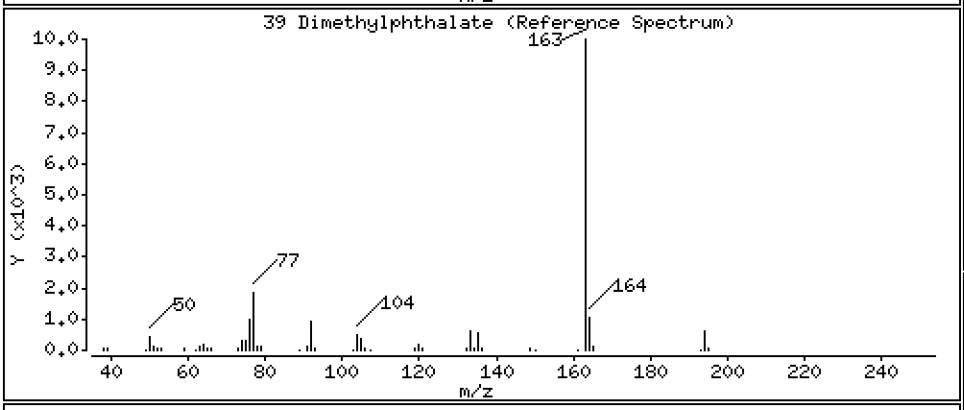
Concentration: 5.078 ug/mL

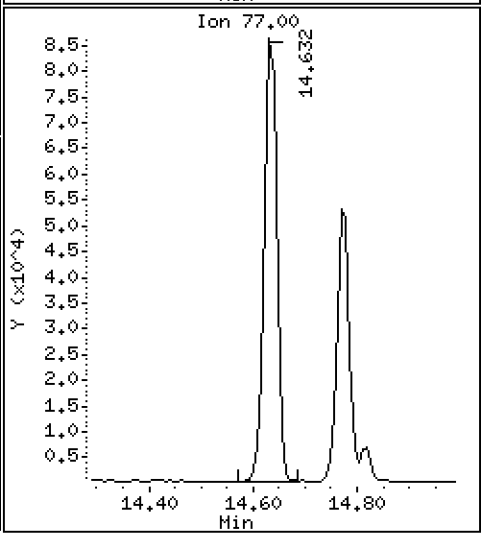


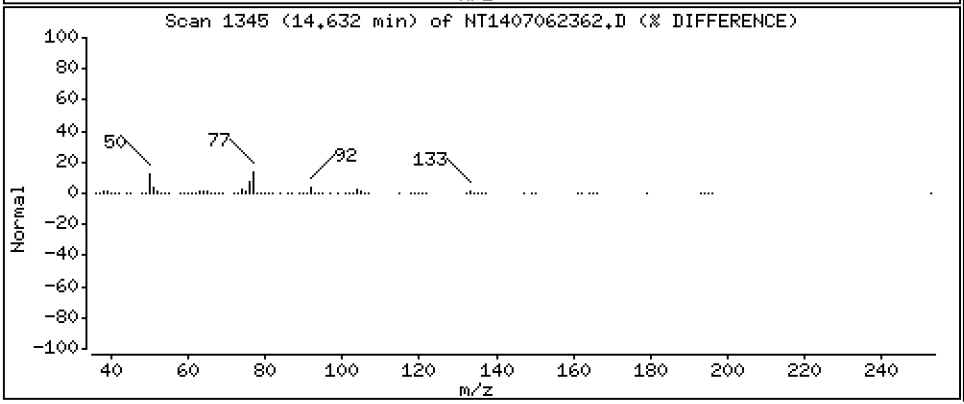












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

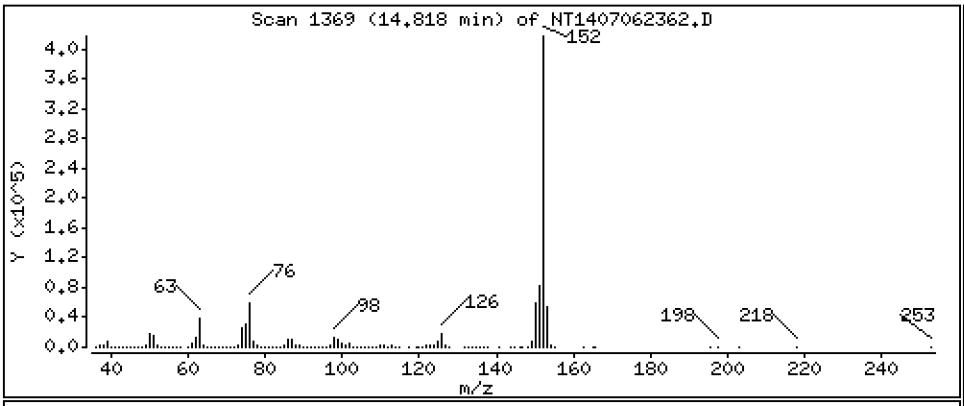
Operator: JGR

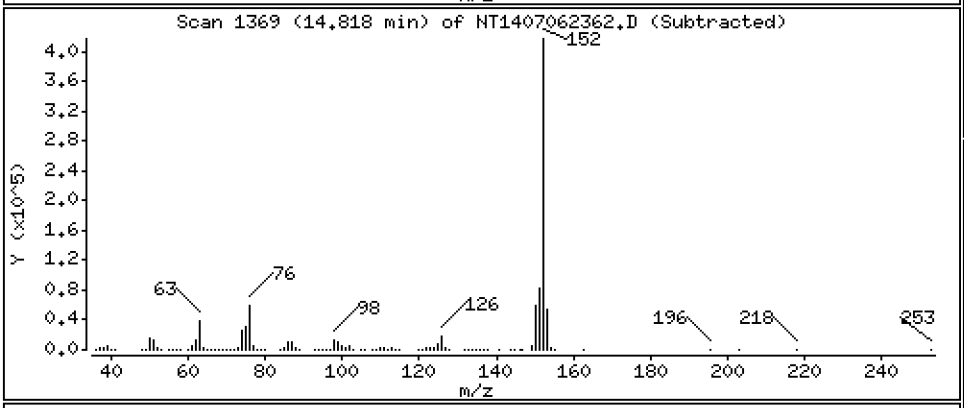
Column phase: ZB-5msi

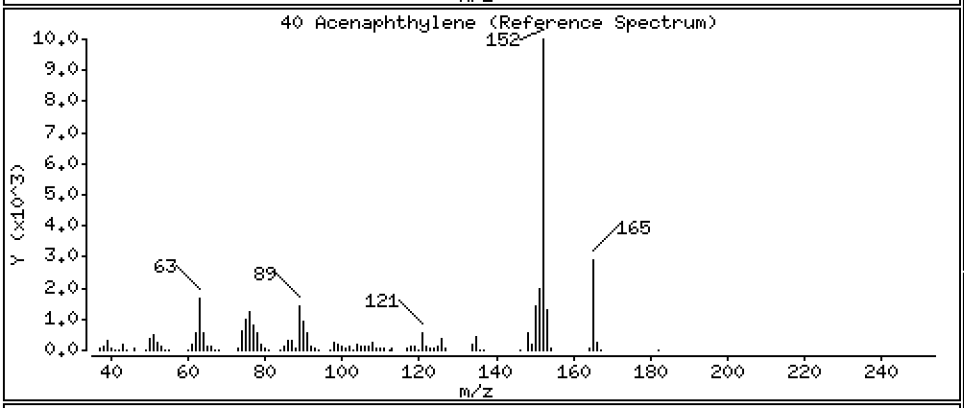
Column diameter: 0.25

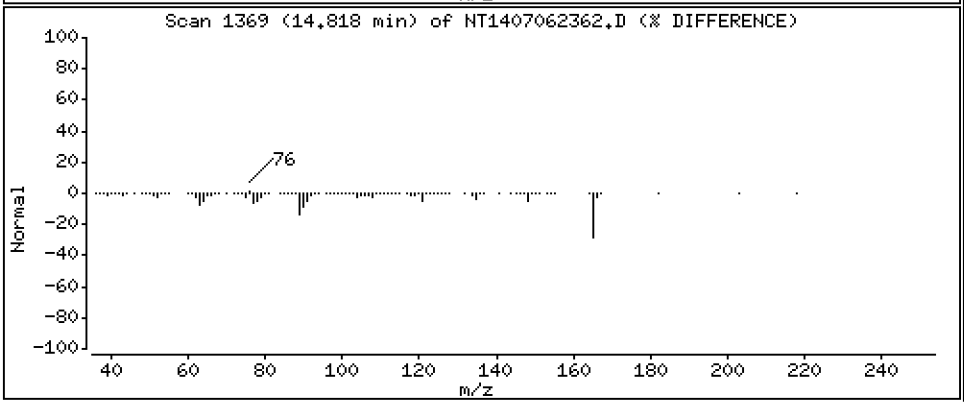
40 Acenaphthylene

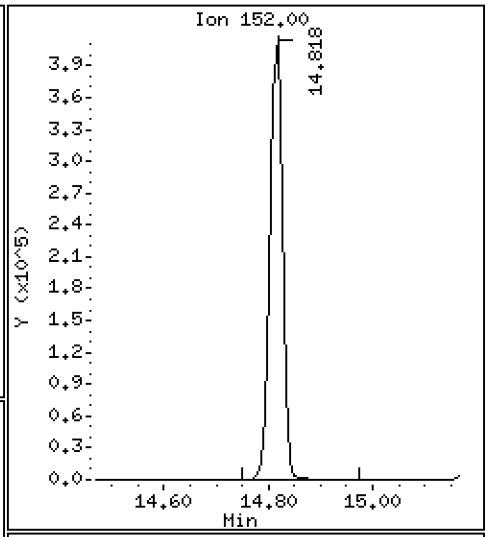
Concentration: 5.321 ug/mL

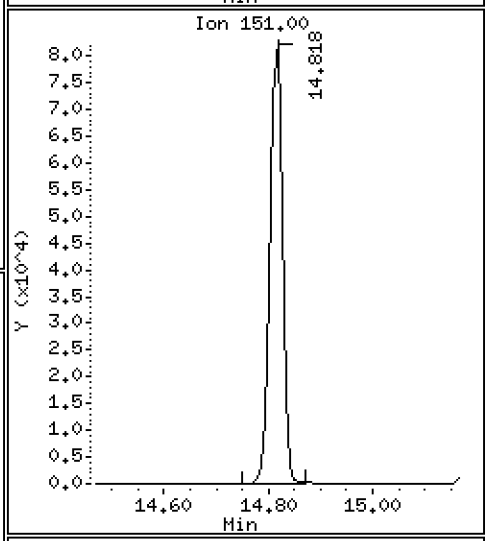


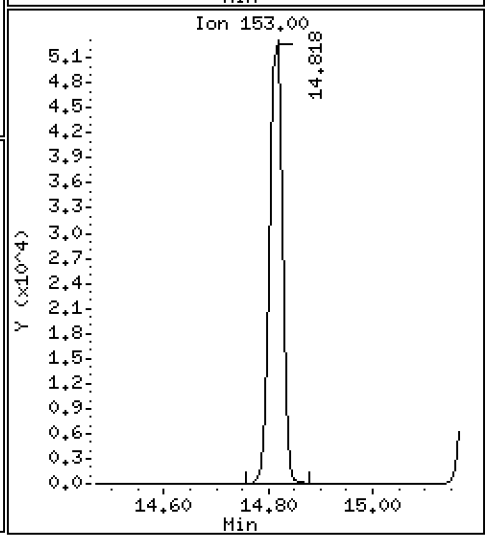












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

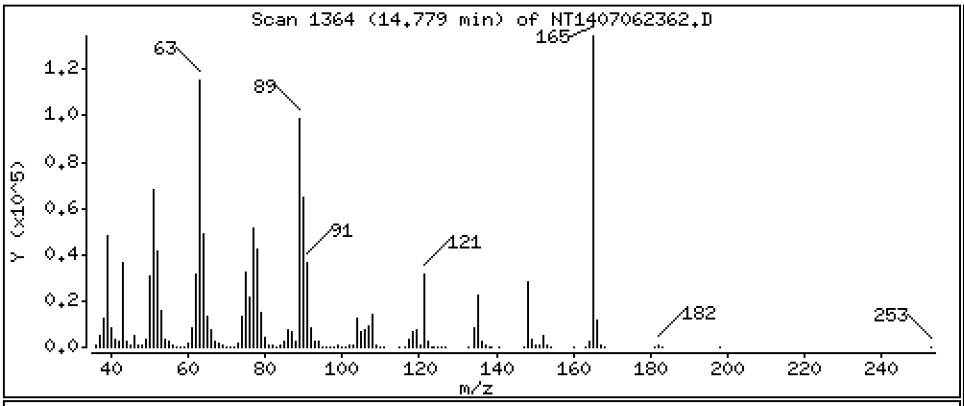
Operator: JGR

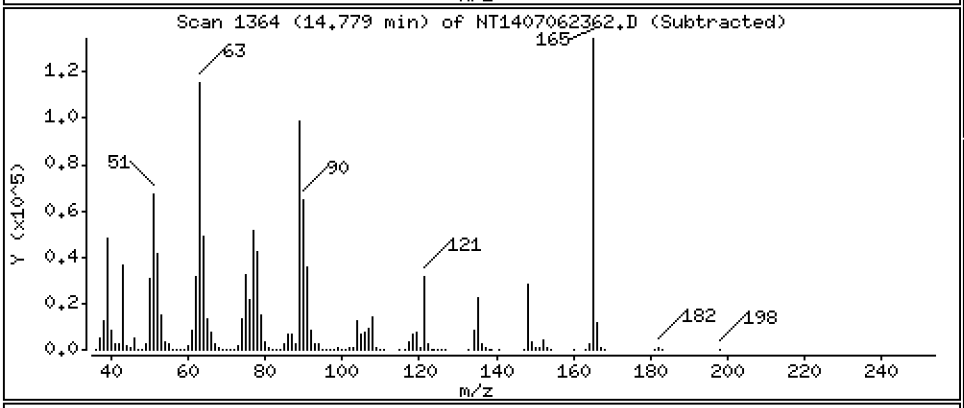
Column phase: ZB-5msi

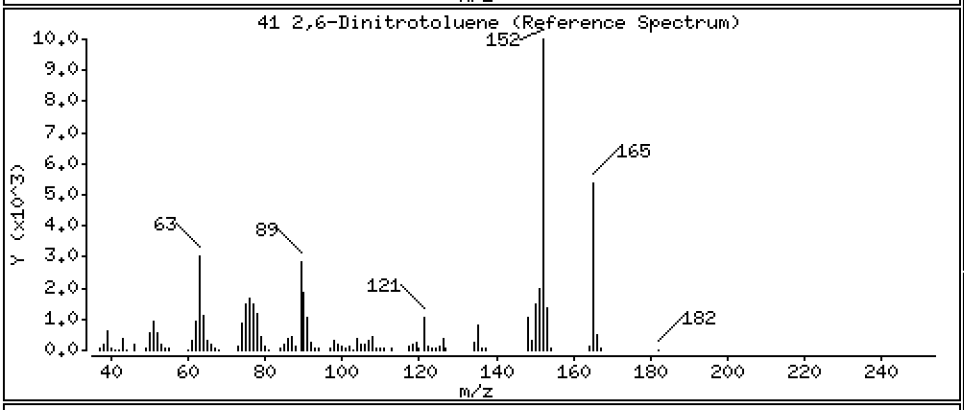
Column diameter: 0.25

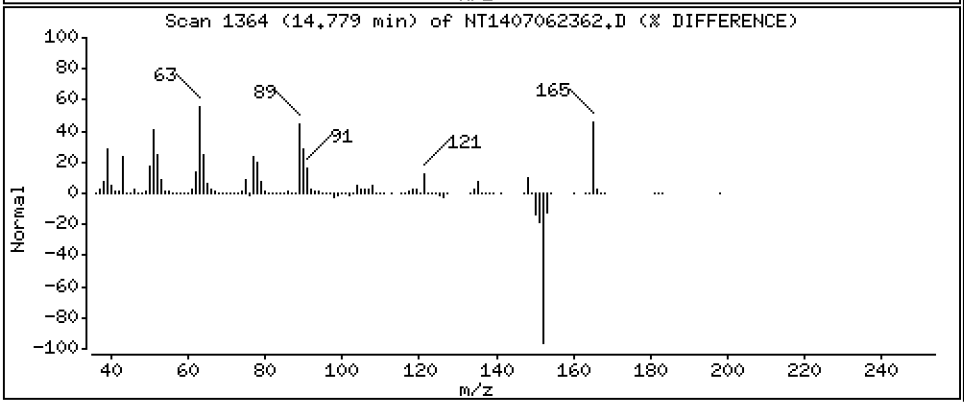
41 2,6-Dinitrotoluene

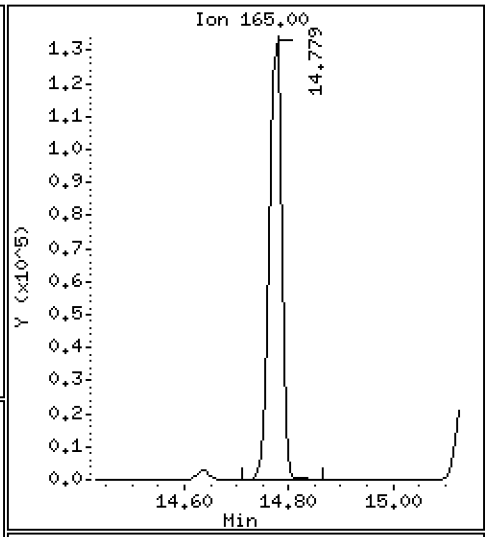
Concentration: 11.21 ug/mL

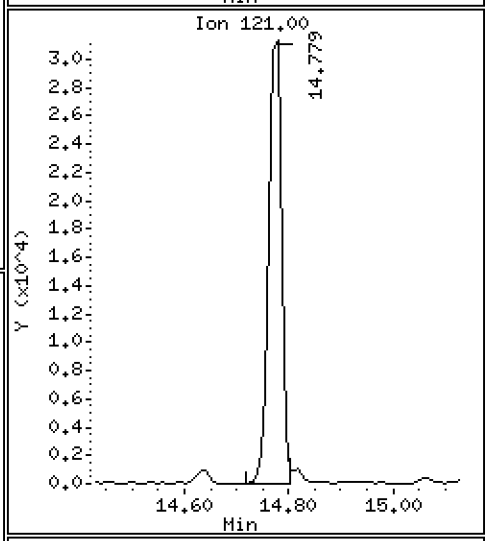


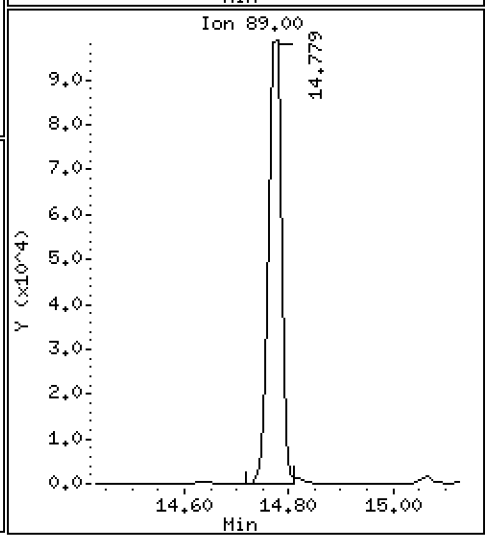












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

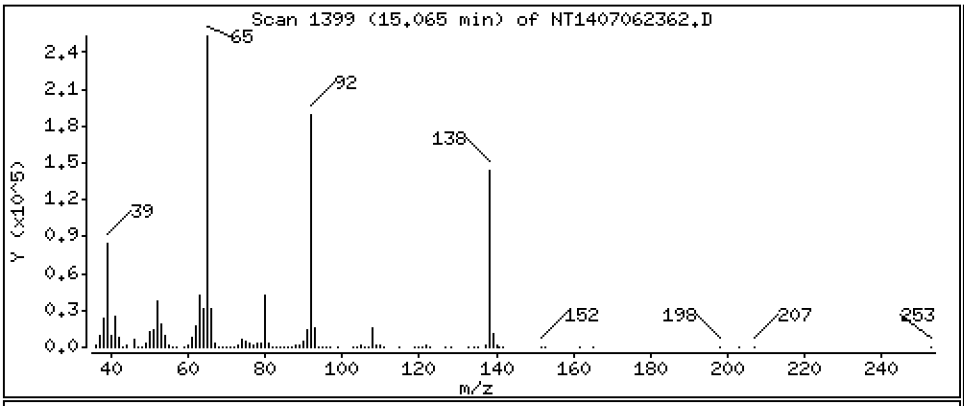
Operator: JGR

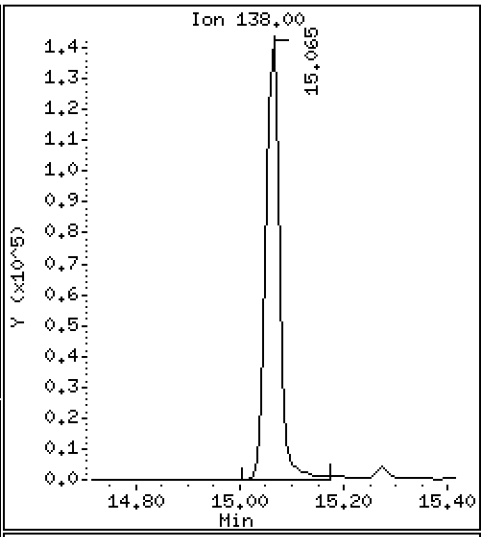
Column phase: ZB-5msi

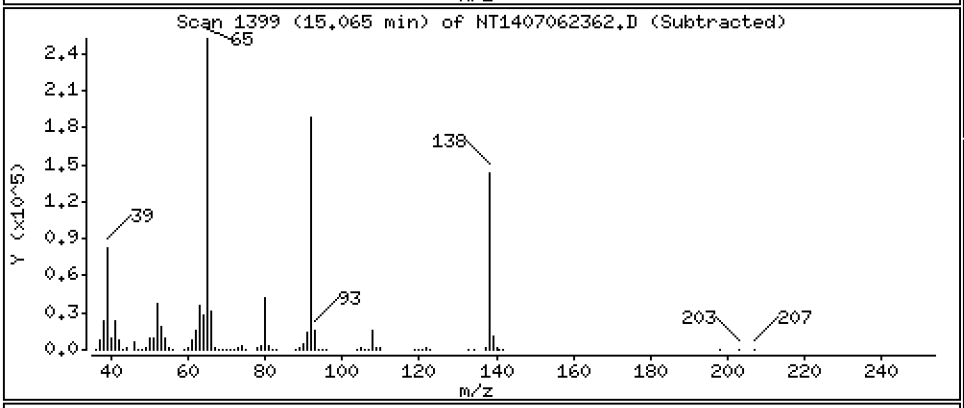
Column diameter: 0.25

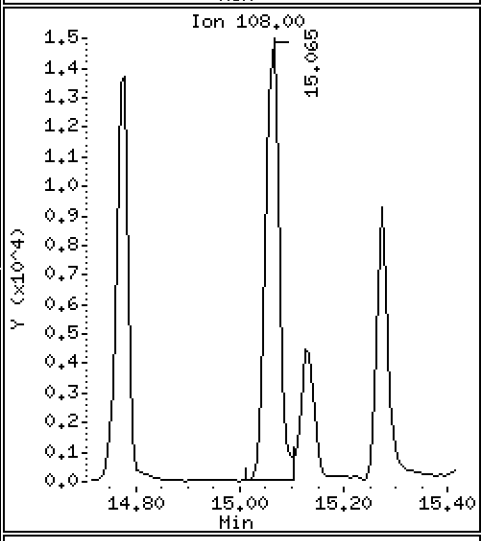
43 3-Nitroaniline

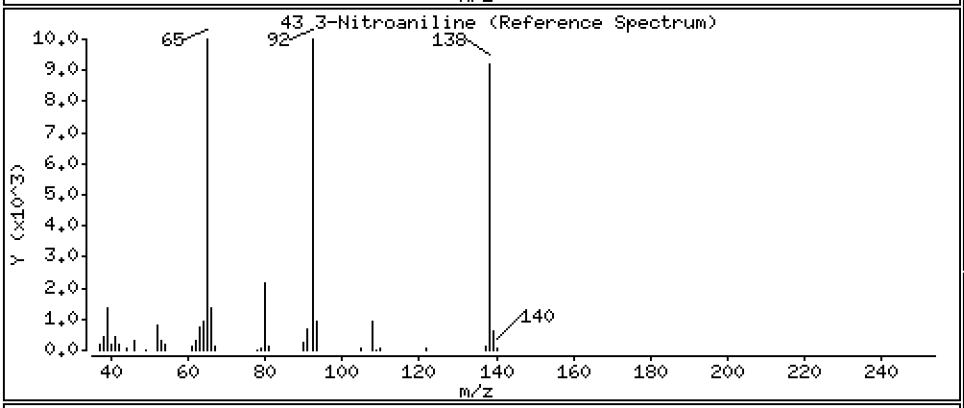
Concentration: 10.01 ug/mL

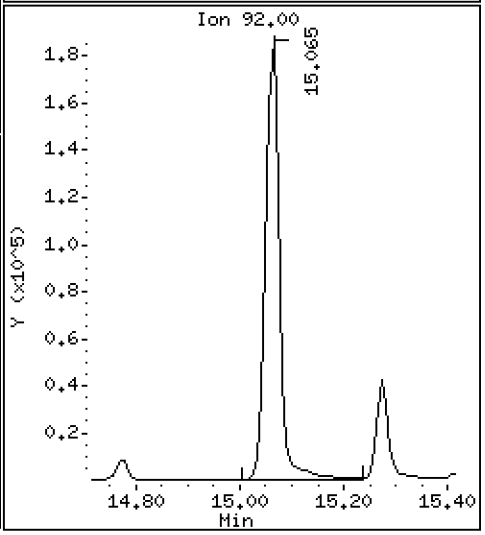


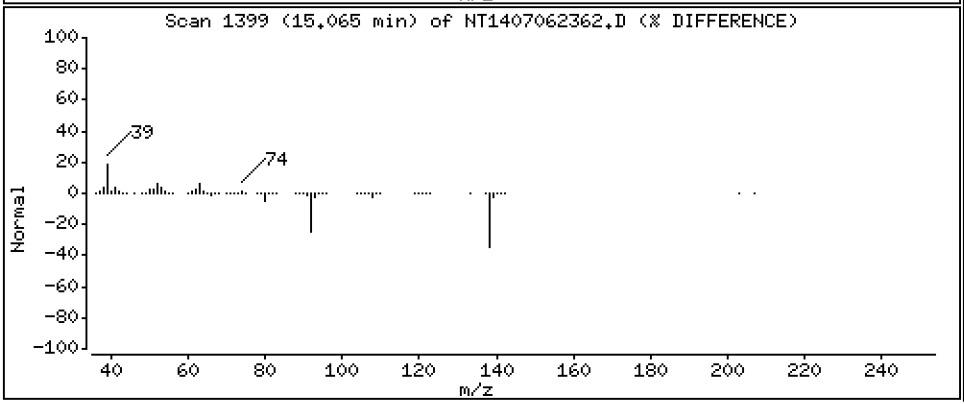












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

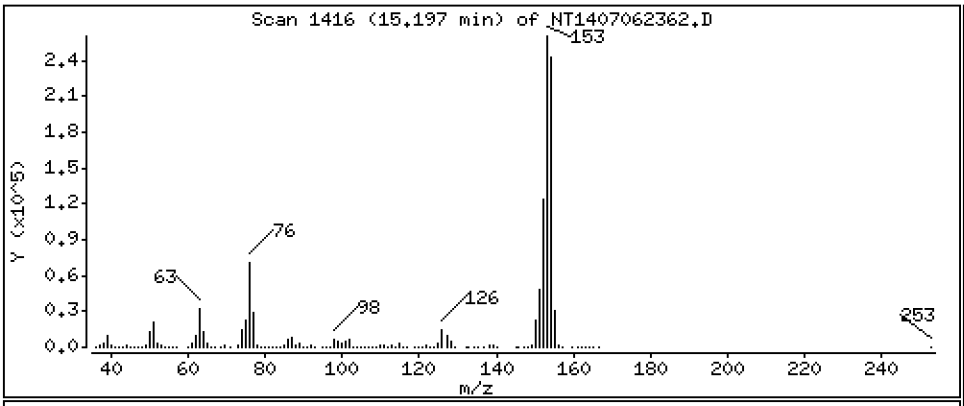
Operator: JGR

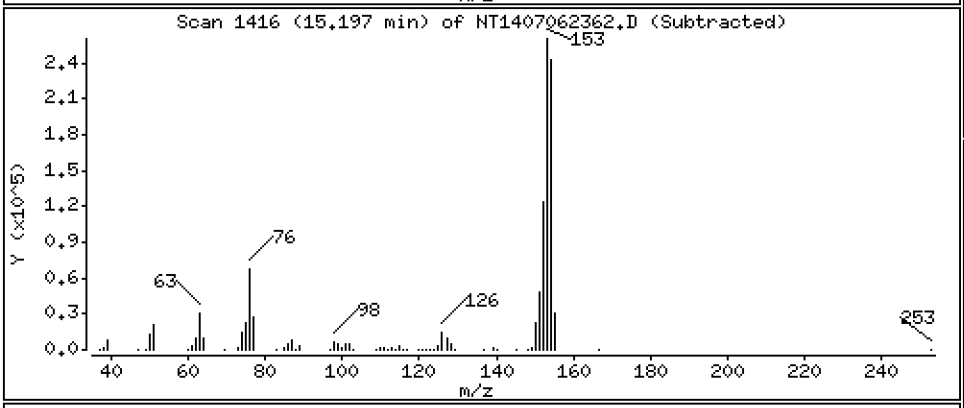
Column phase: ZB-5msi

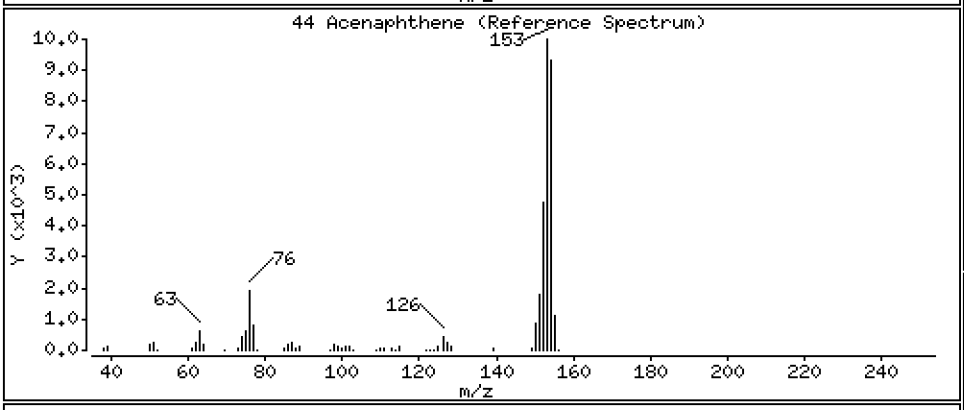
Column diameter: 0.25

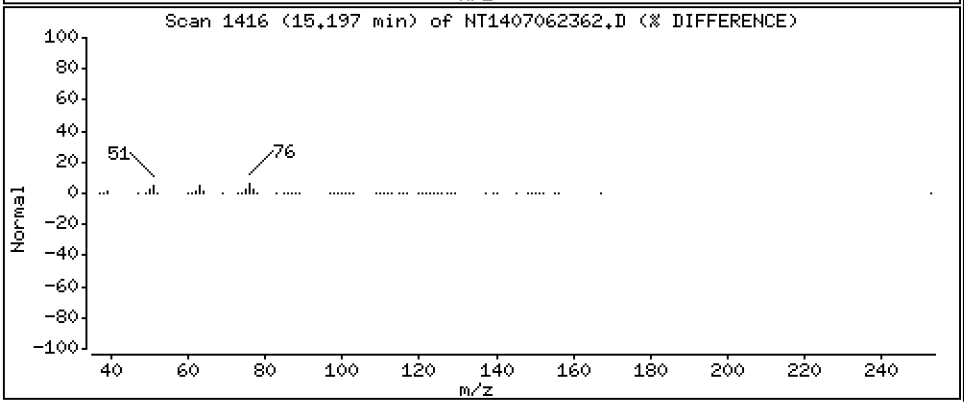
44 Acenaphthene

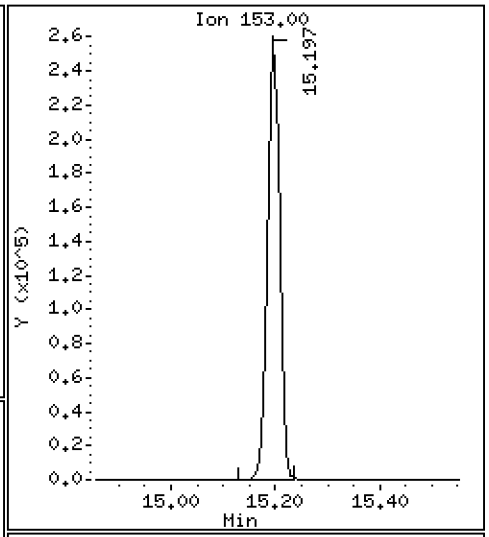
Concentration: 4.955 ug/mL

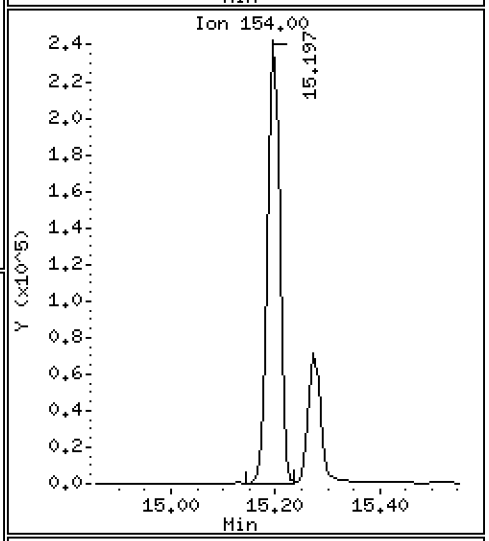


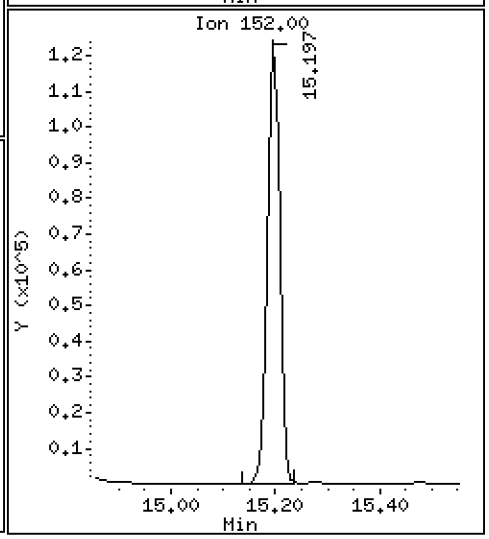












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

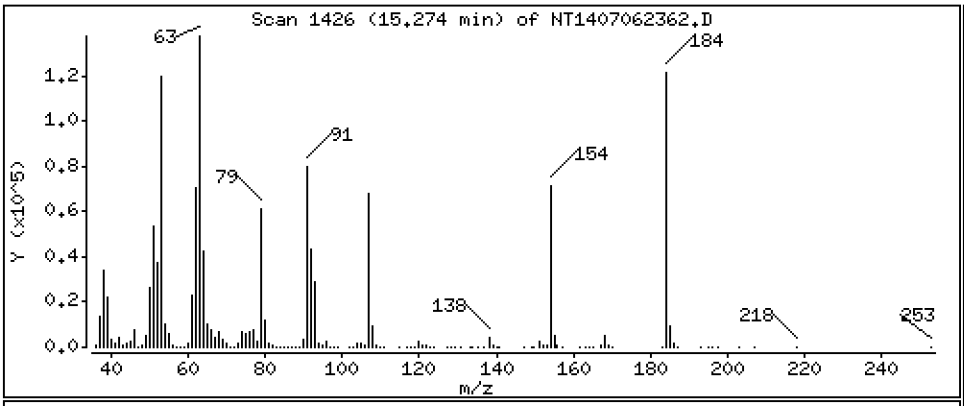
Operator: JGR

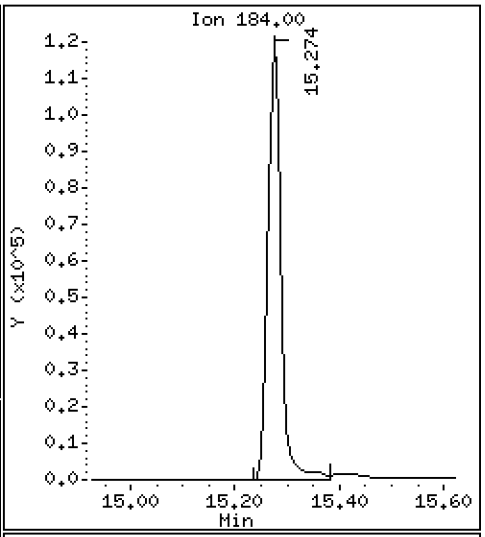
Column phase: ZB-5msi

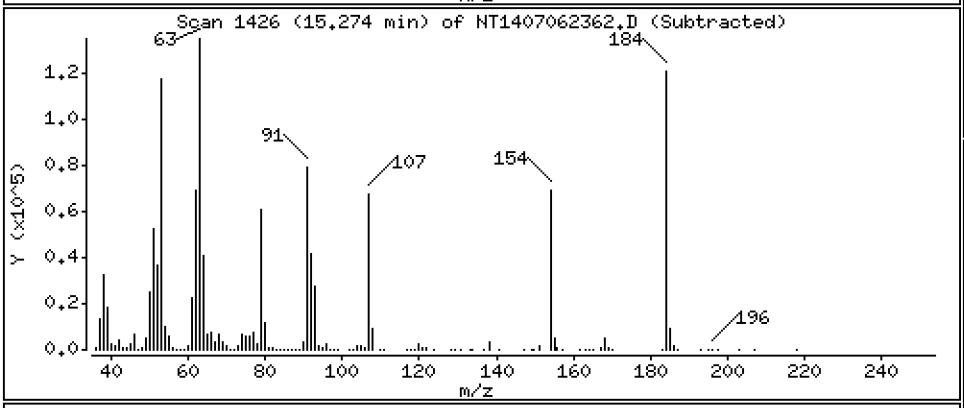
Column diameter: 0.25

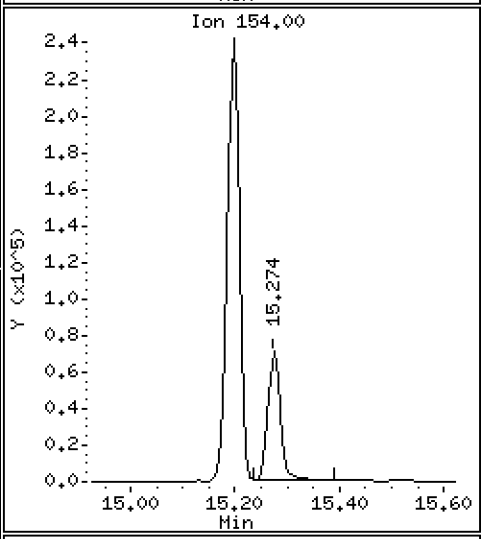
45 2,4-Dinitrophenol

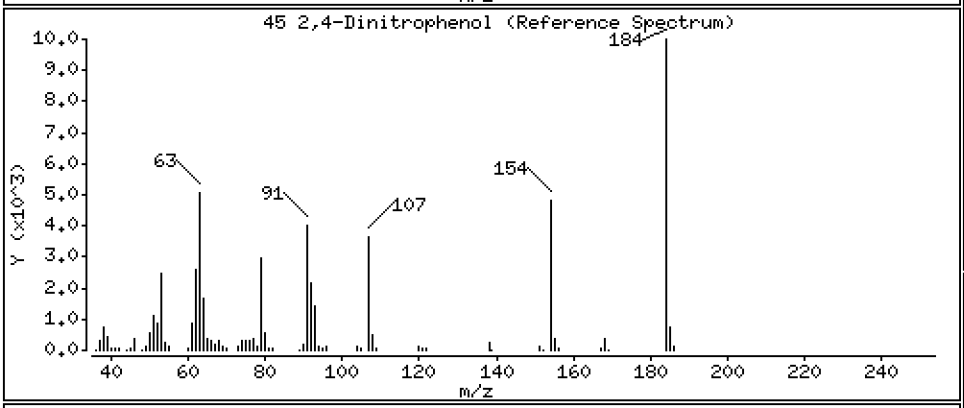
Concentration: 16.73 ug/mL

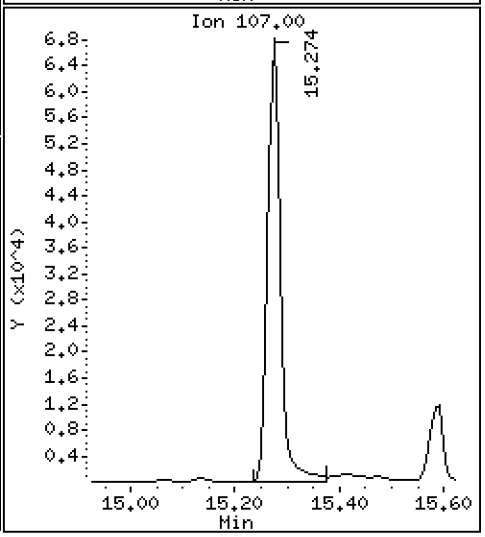


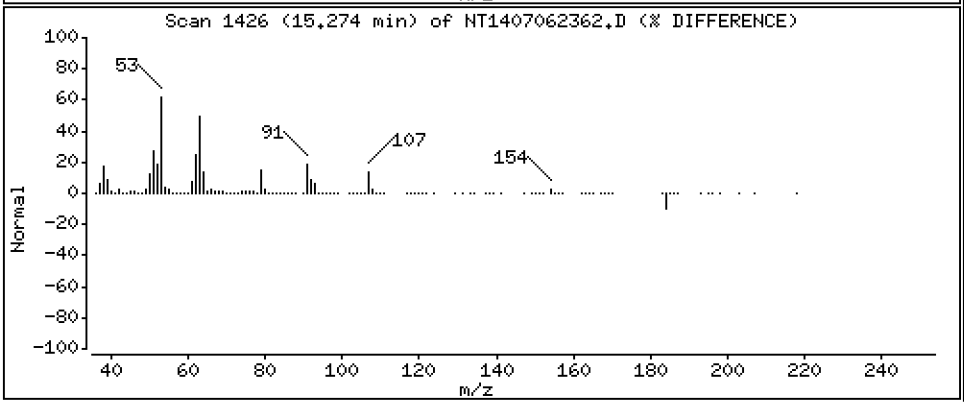












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

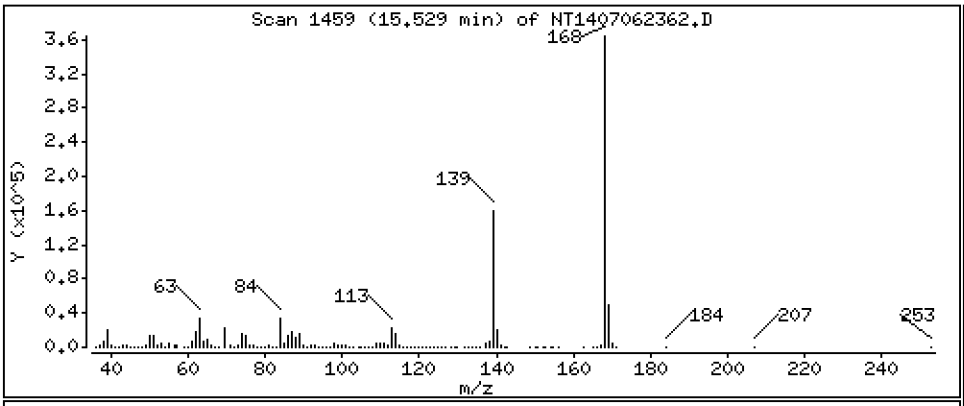
Operator: JGR

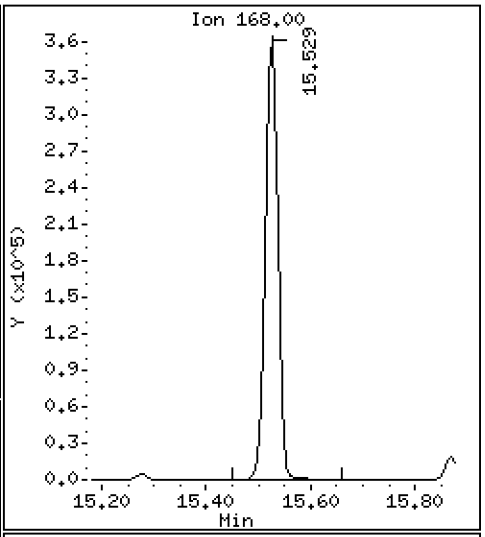
Column phase: ZB-5msi

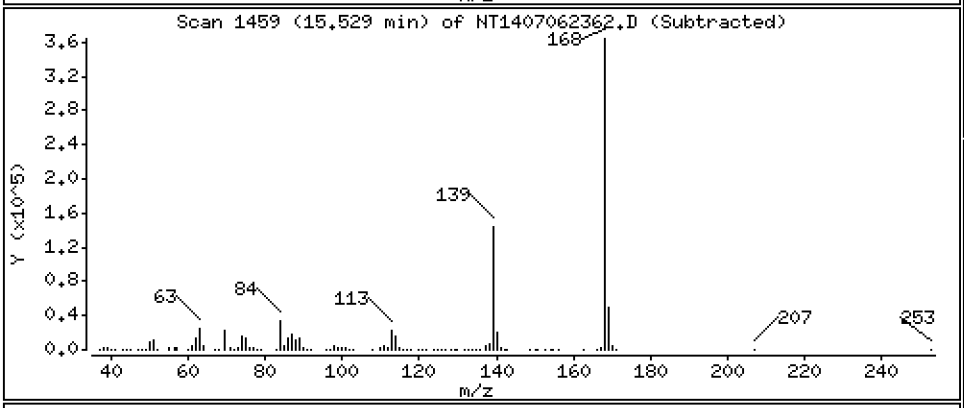
Column diameter: 0.25

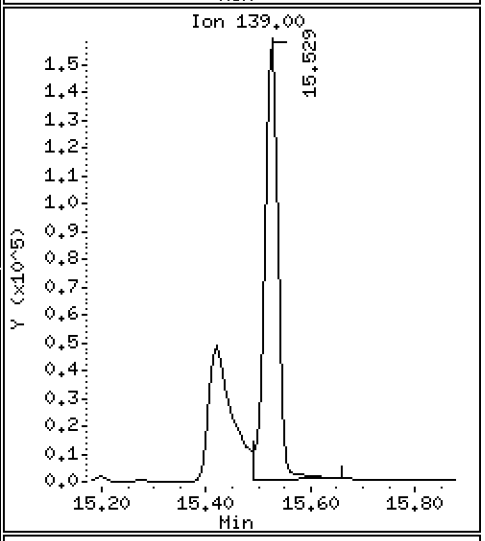
46 Dibenzofuran

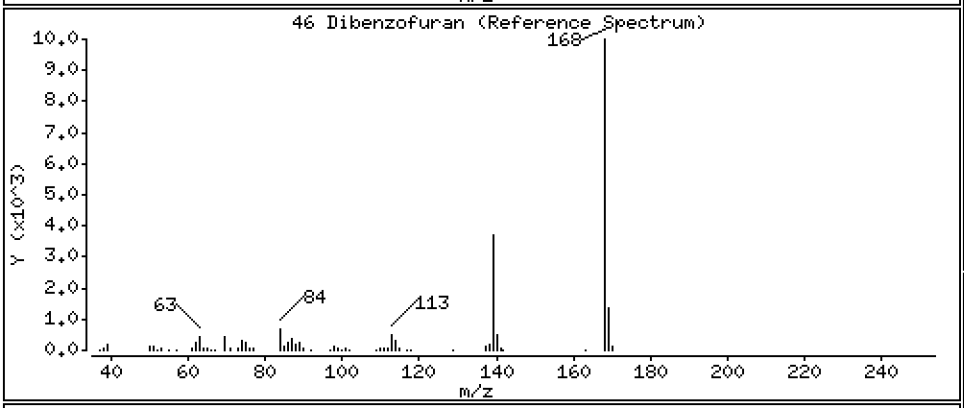
Concentration: 5.015 ug/mL

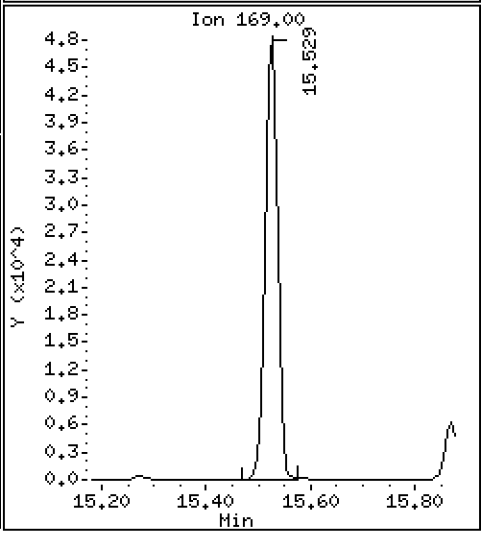


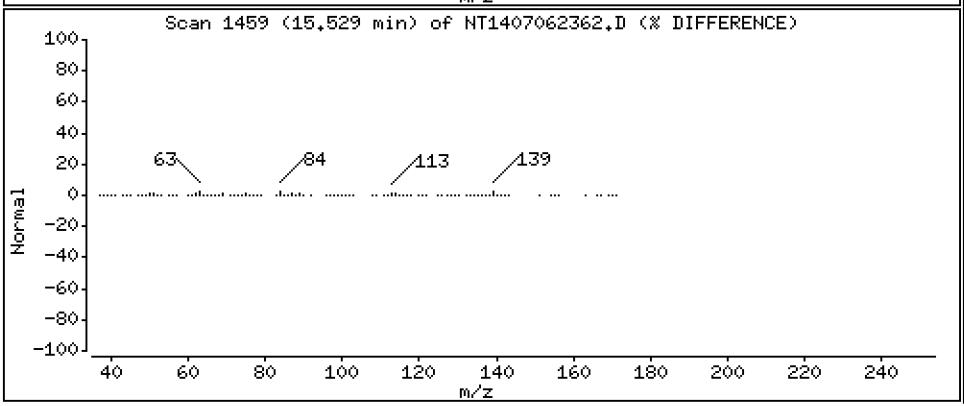












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

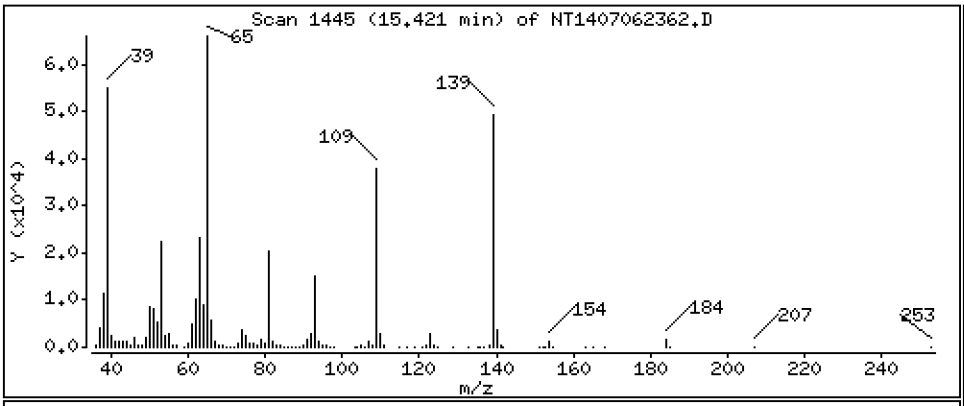
Operator: JGR

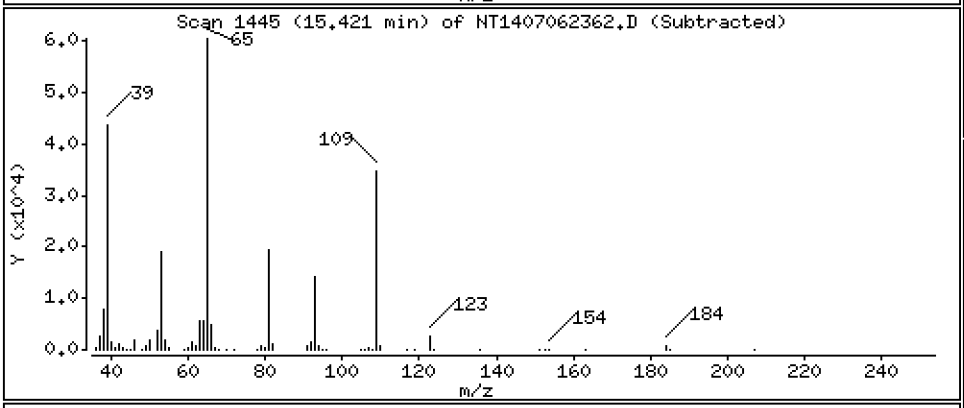
Column phase: ZB-5msi

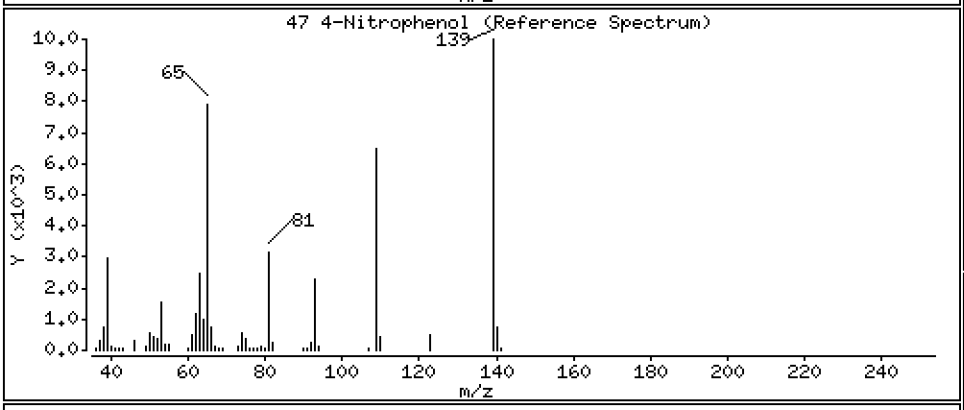
Column diameter: 0.25

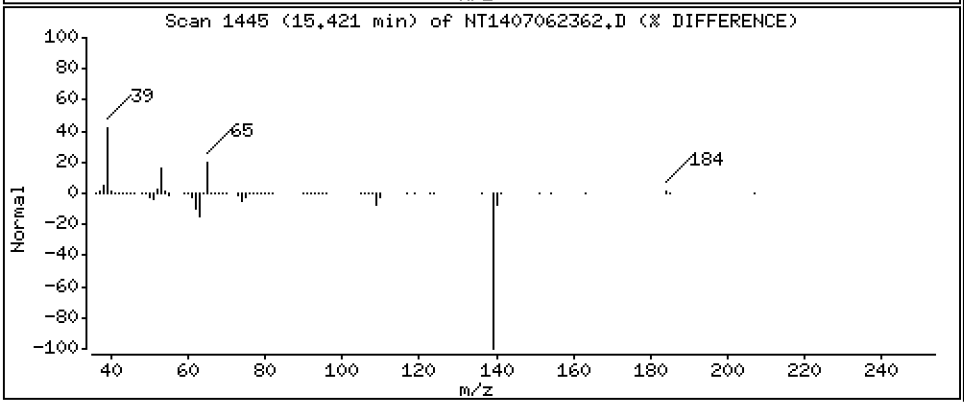
47 4-Nitrophenol

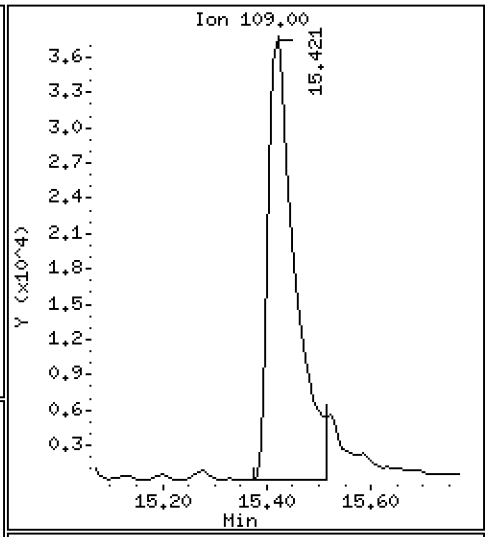
Concentration: 7.248 ug/mL

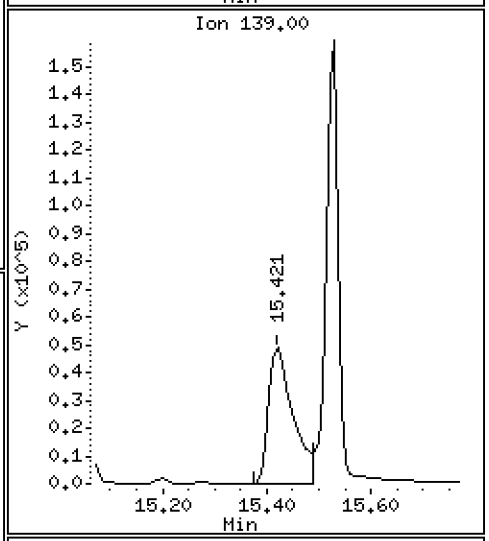


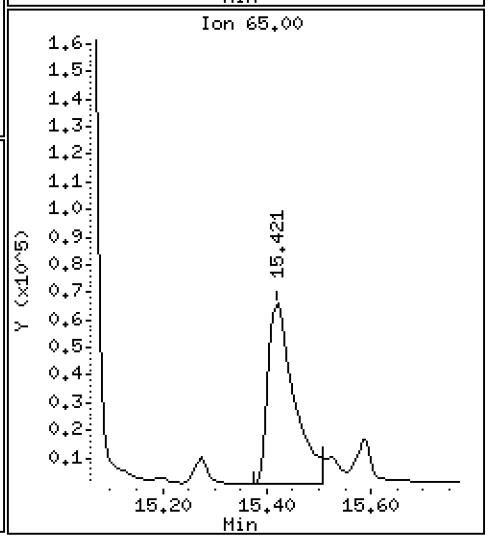












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

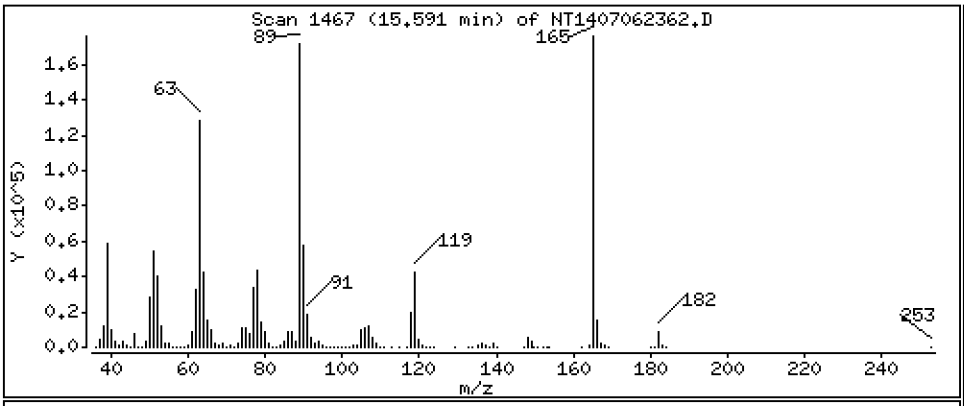
Operator: JGR

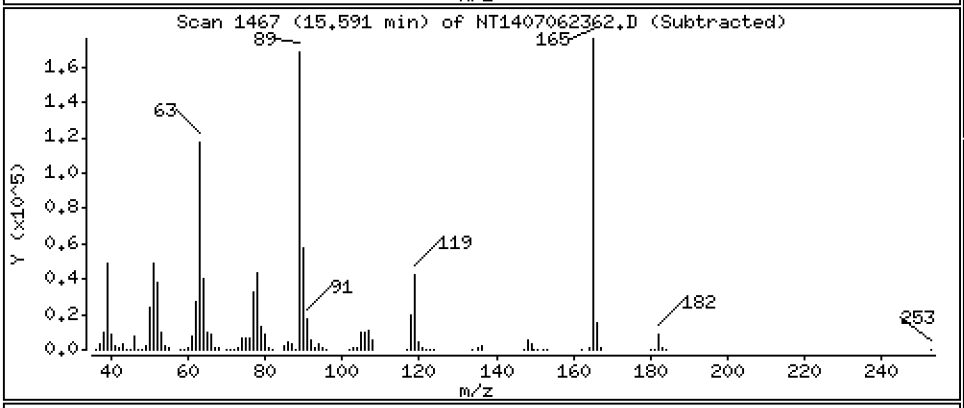
Column phase: ZB-5msi

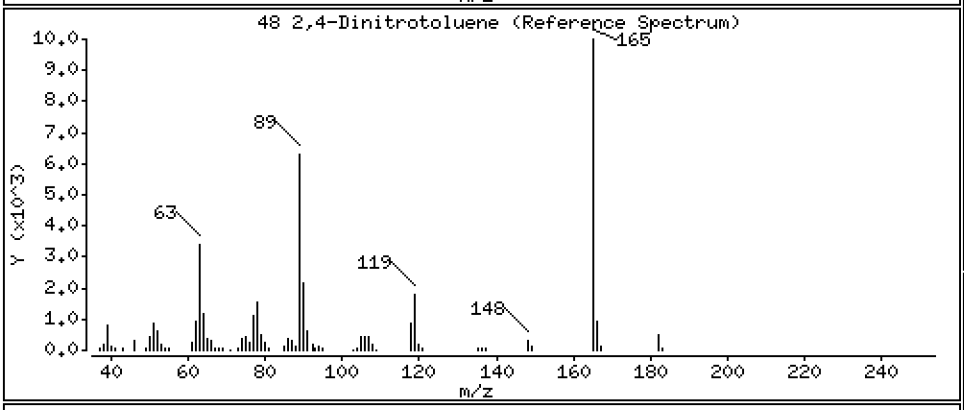
Column diameter: 0.25

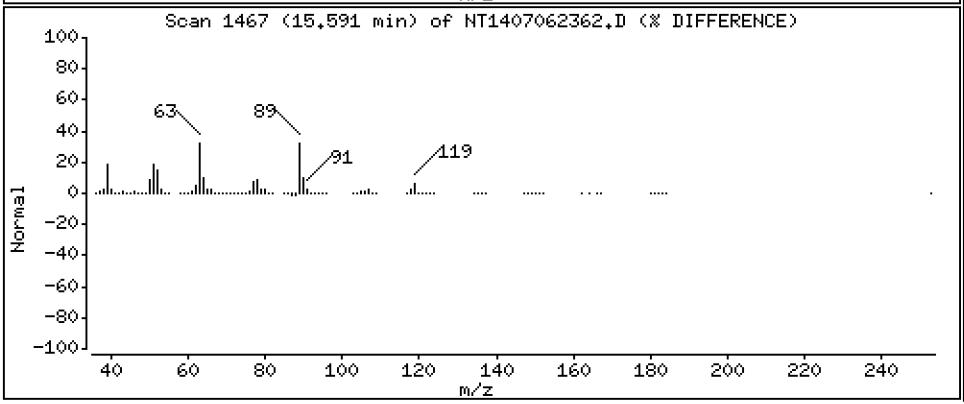
48 2,4-Dinitrotoluene

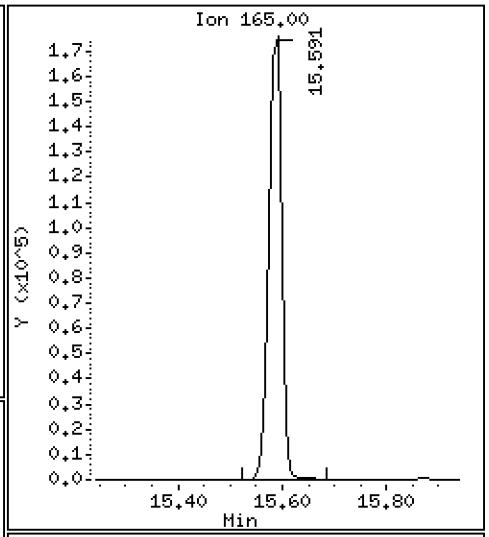
Concentration: 10.90 ug/mL

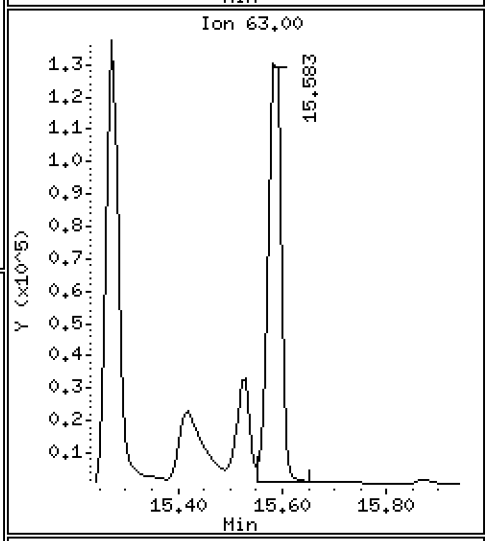


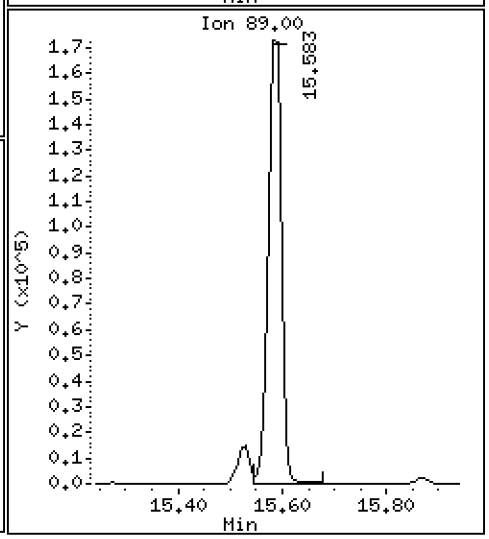












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

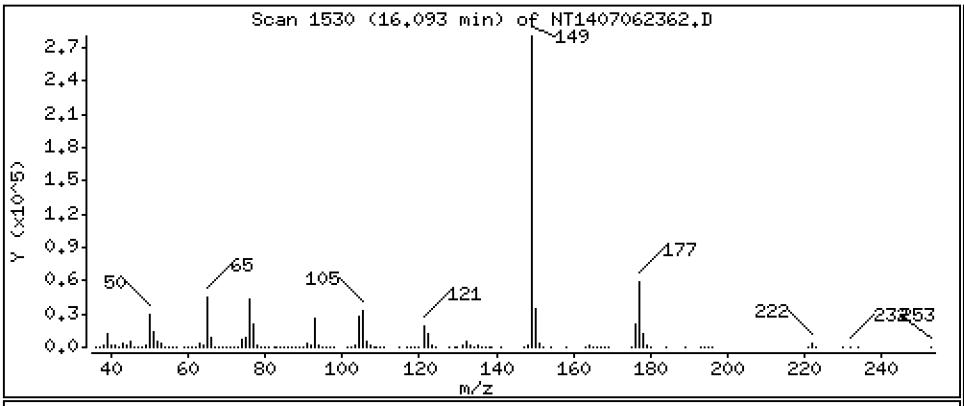
Operator: JGR

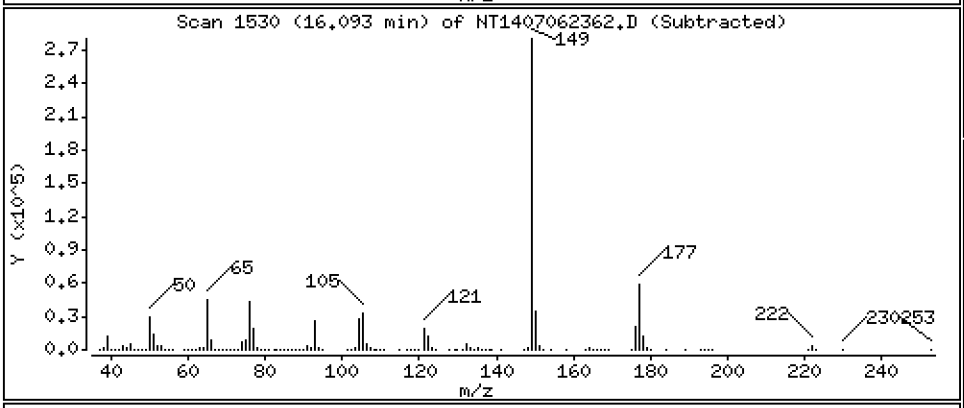
Column phase: ZB-5msi

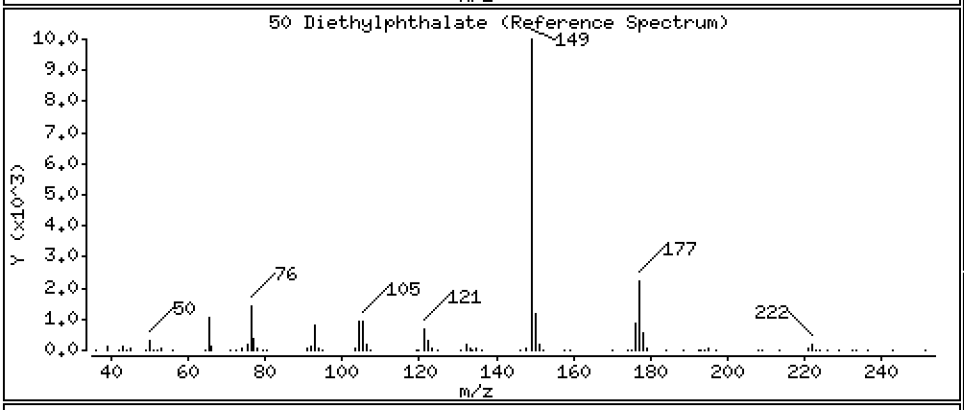
Column diameter: 0.25

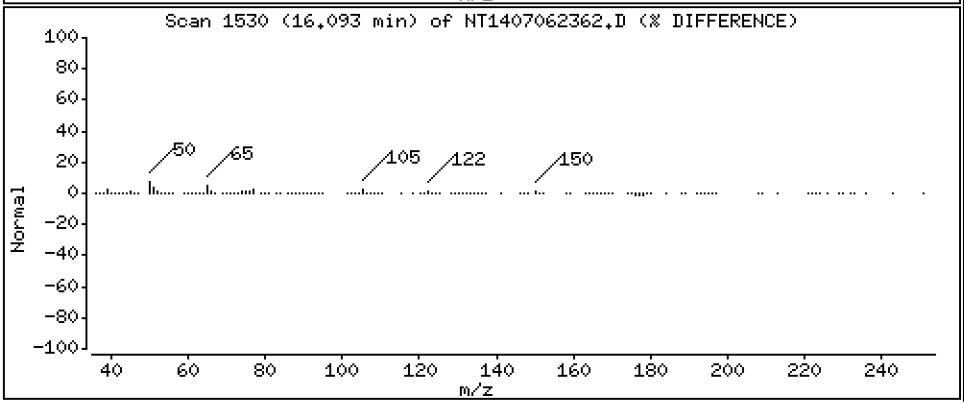
50 Diethylphthalate

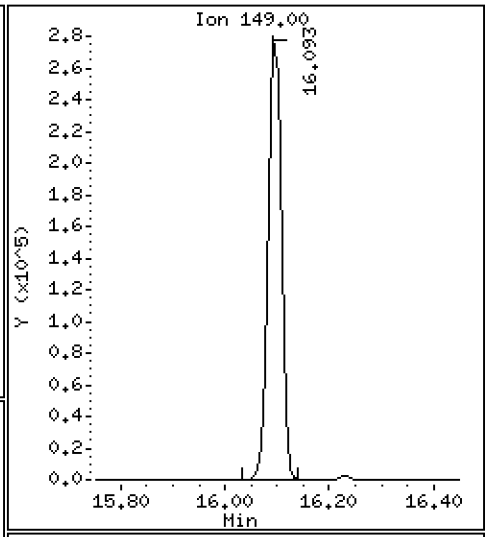
Concentration: 4.549 ug/mL

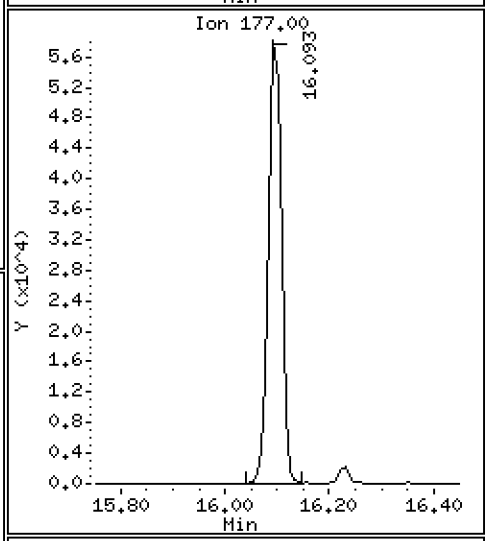


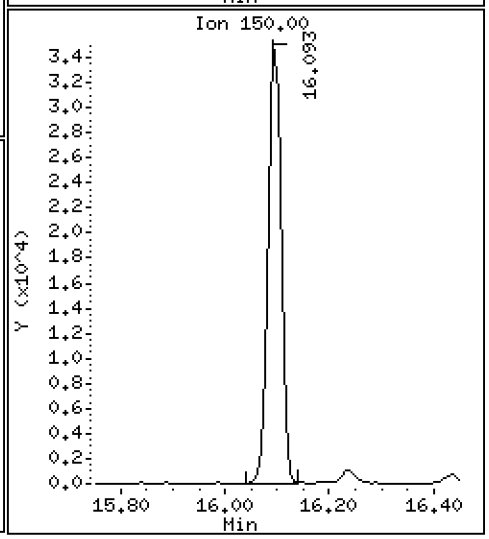












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

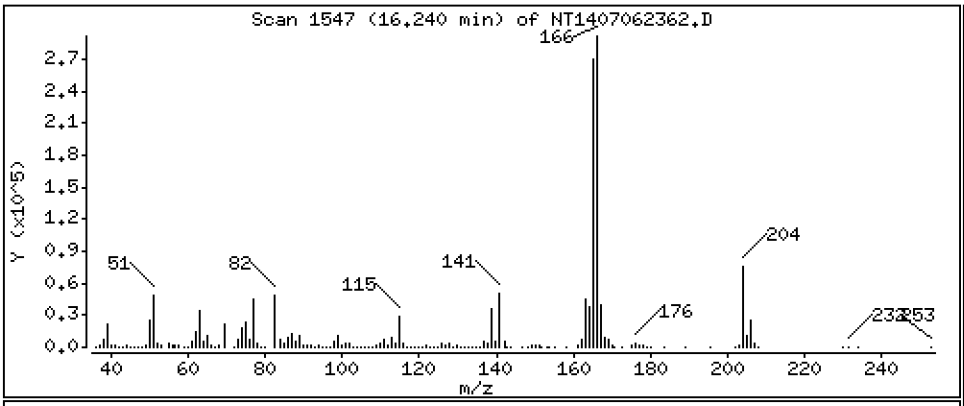
Operator: JGR

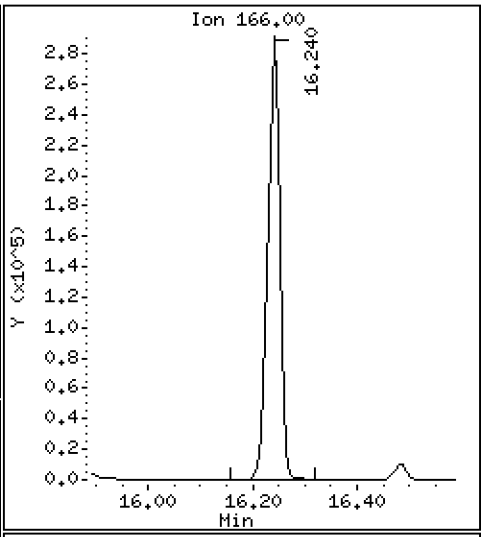
Column phase: ZB-5msi

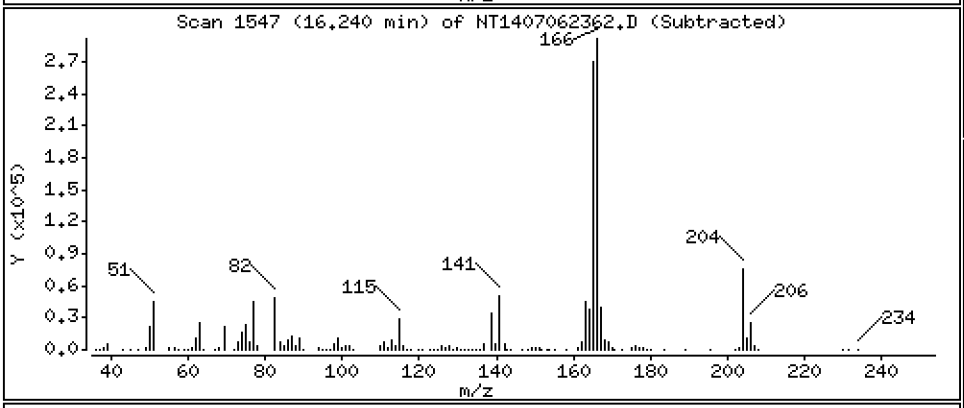
Column diameter: 0.25

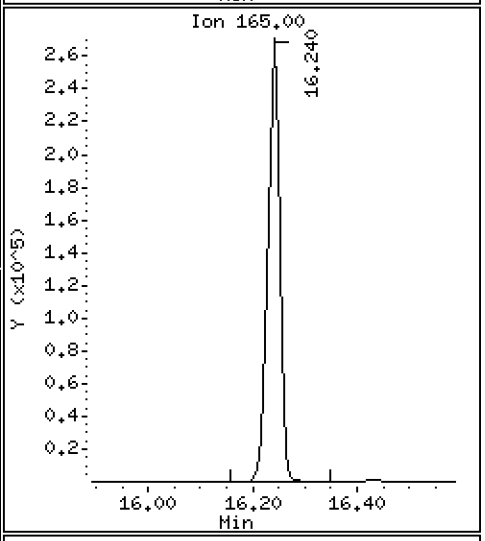
49 Fluorene

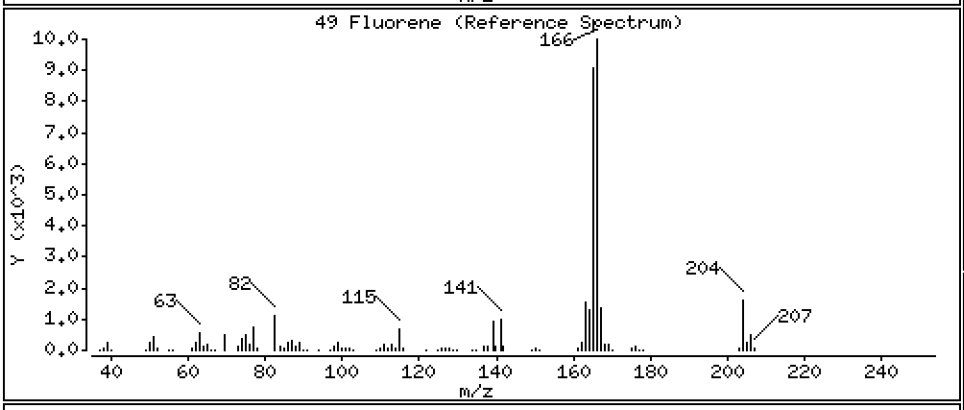
Concentration: 5.007 ug/mL

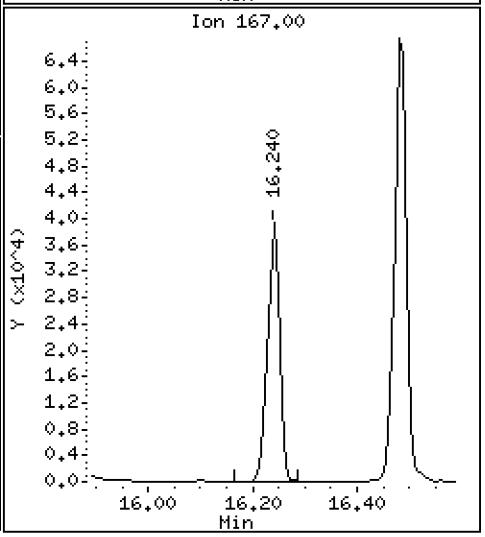


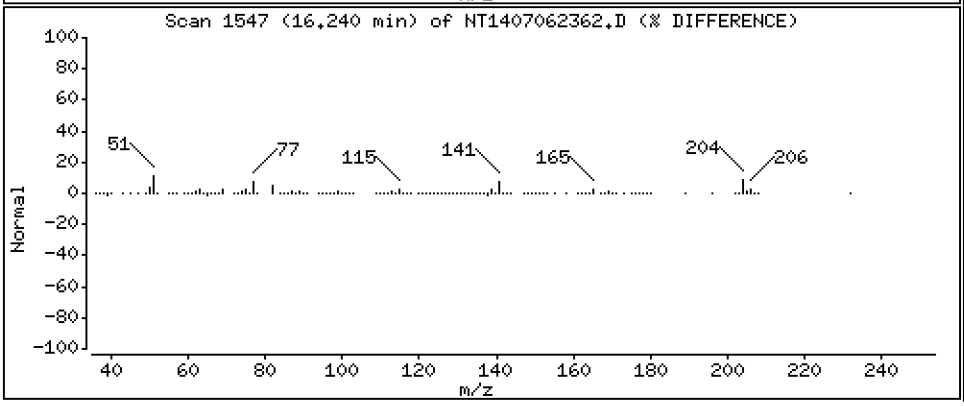












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

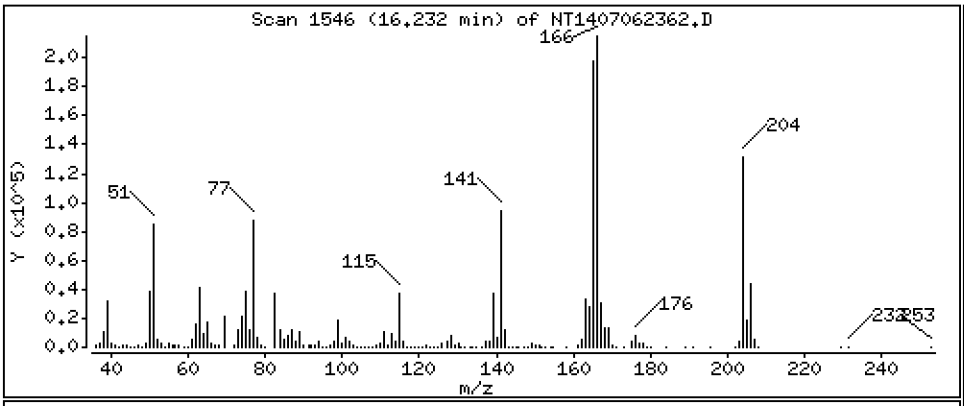
Operator: JGR

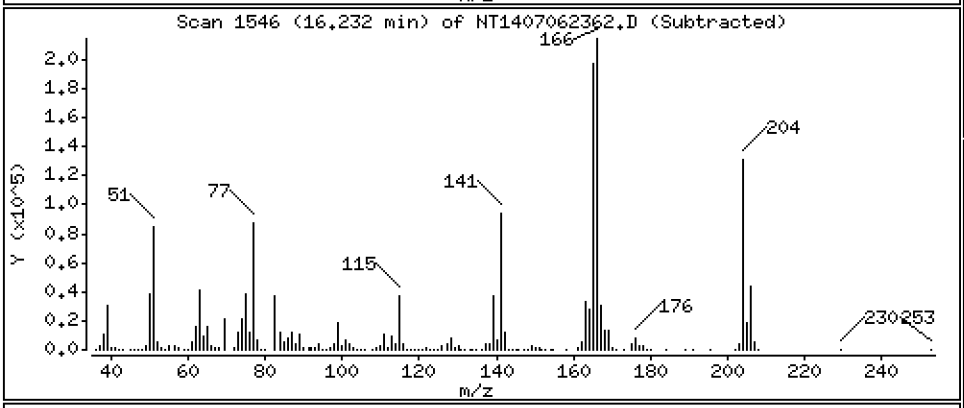
Column phase: ZB-5msi

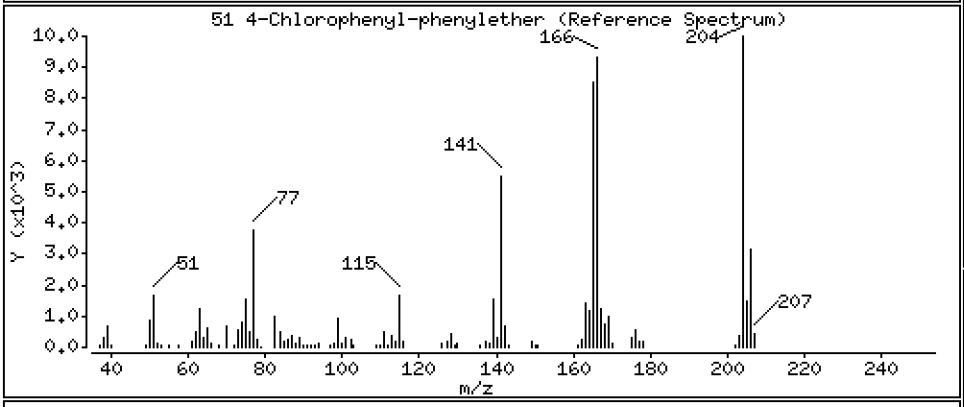
Column diameter: 0.25

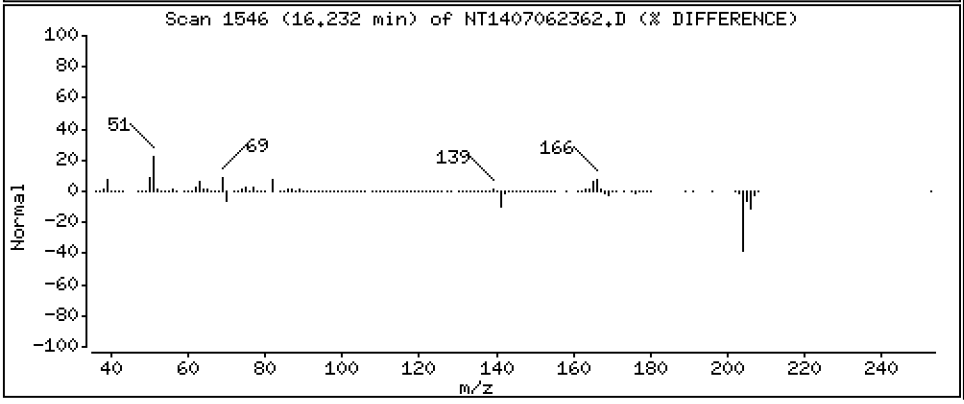
51 4-Chlorophenyl-phenylether

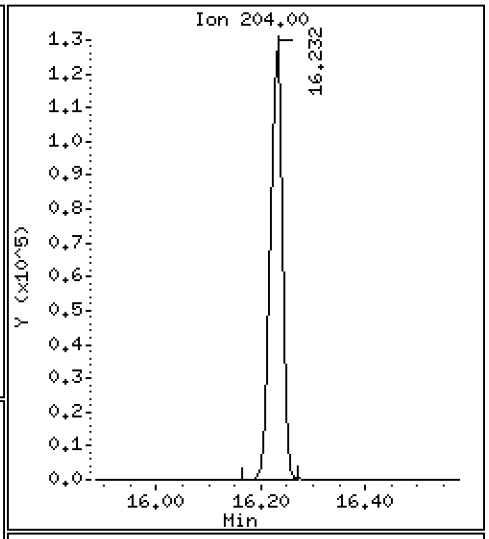
Concentration: 5.311 ug/mL

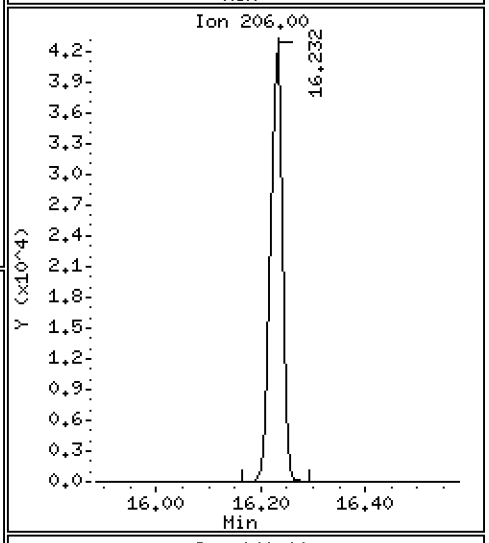


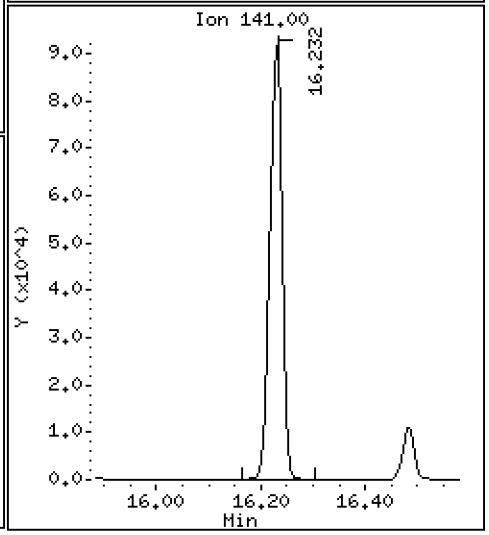












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

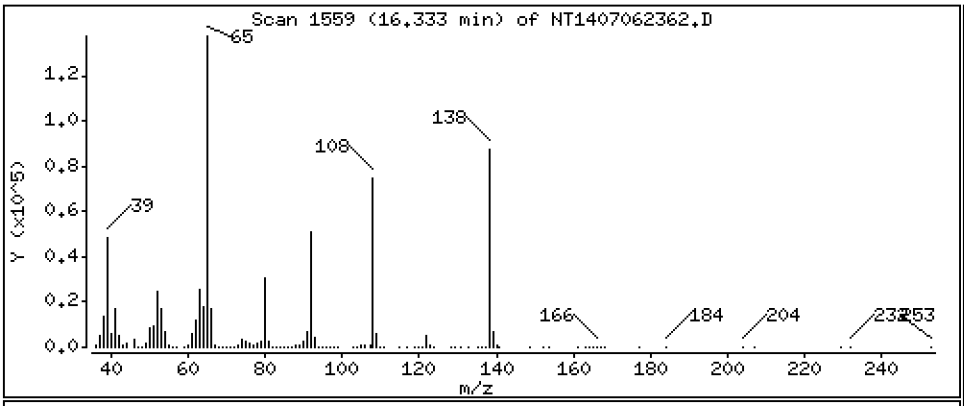
Operator: JGR

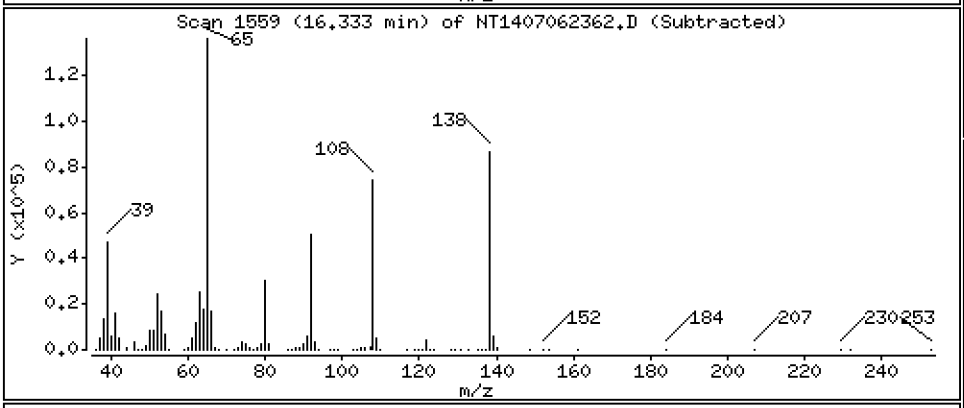
Column phase: ZB-5msi

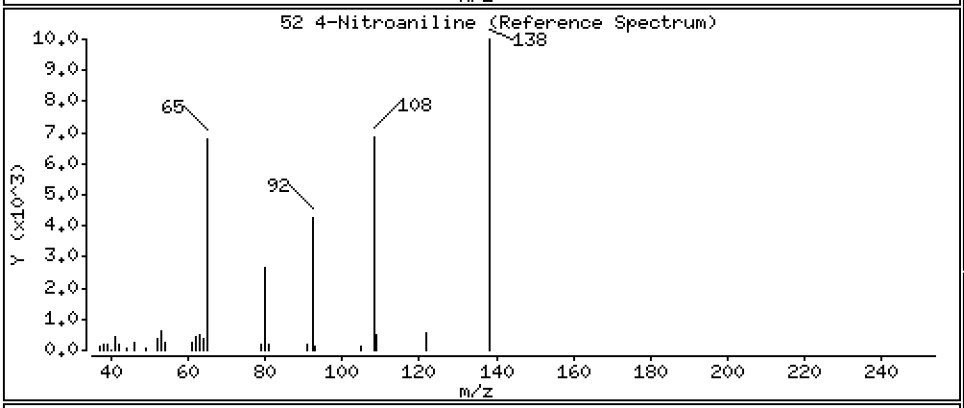
Column diameter: 0.25

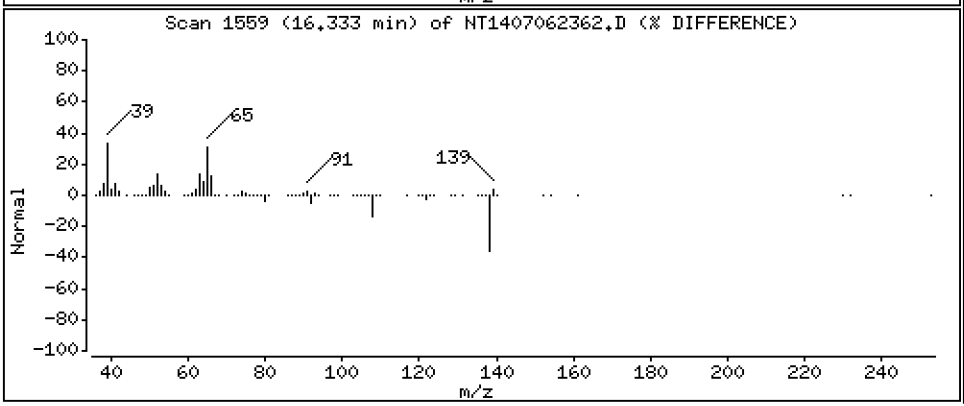
52 4-Nitroaniline

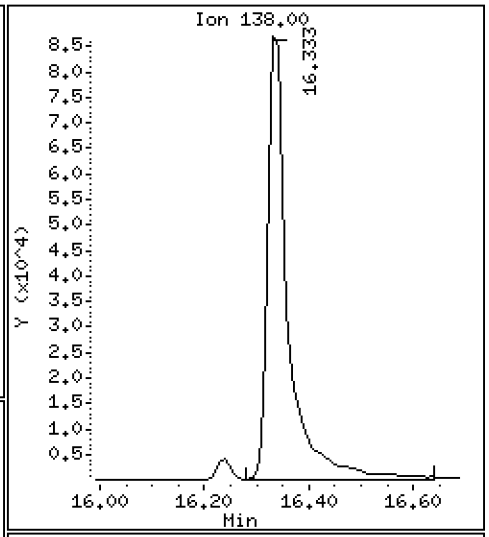
Concentration: 9.014 ug/mL

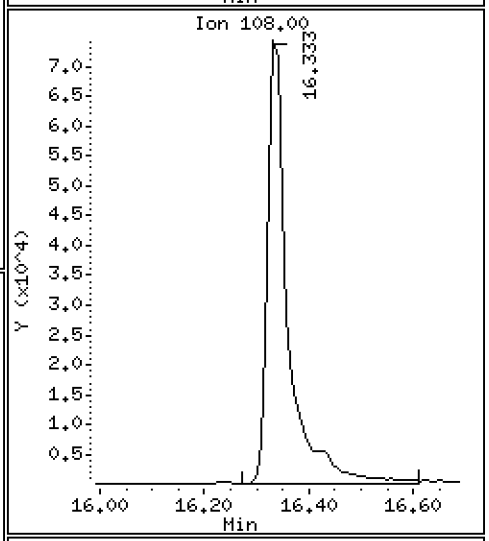


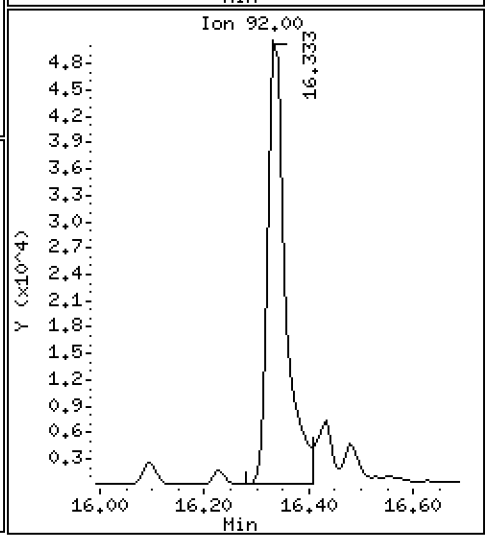












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

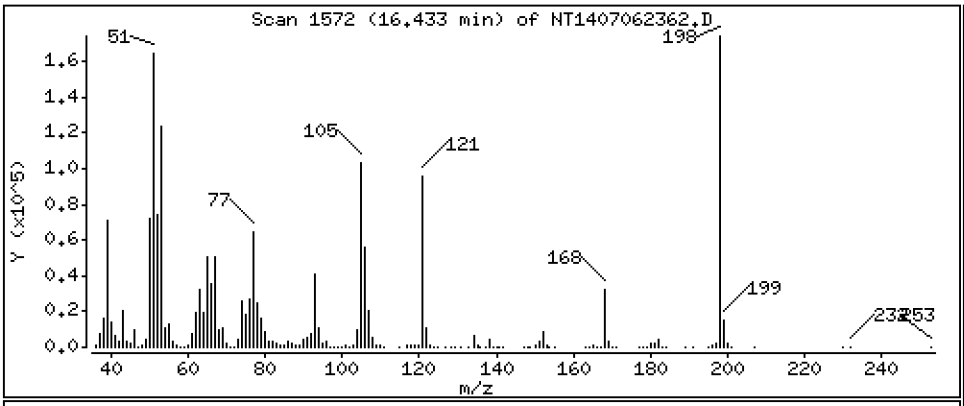
Operator: JGR

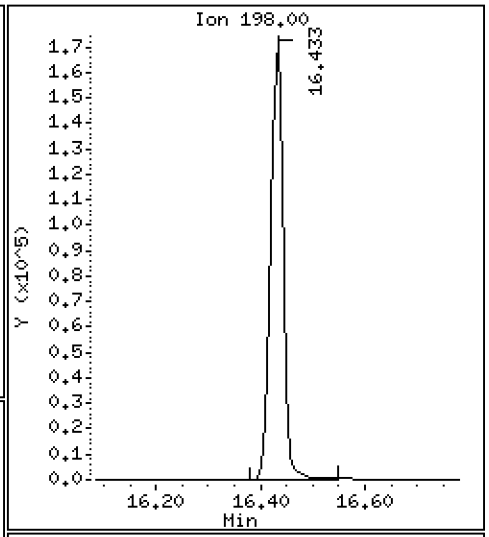
Column phase: ZB-5msi

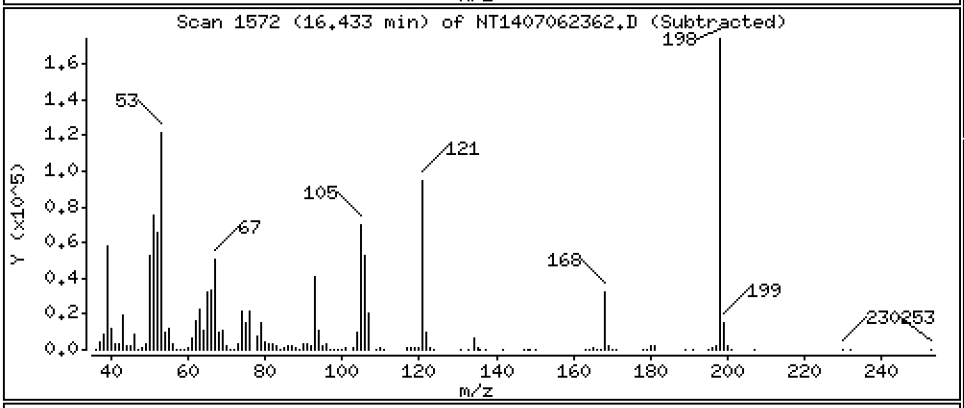
Column diameter: 0.25

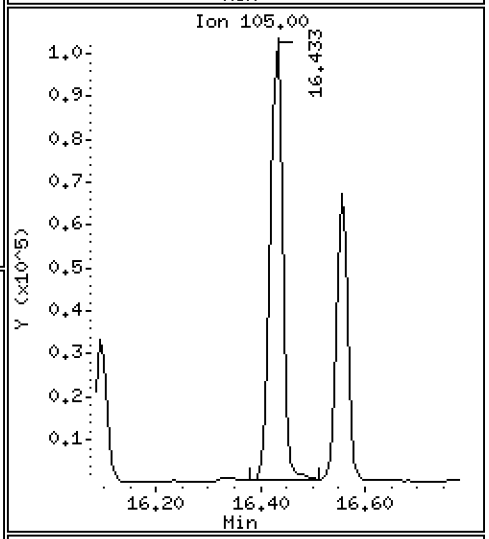
53 4,6-Dinitro-2-methylphenol

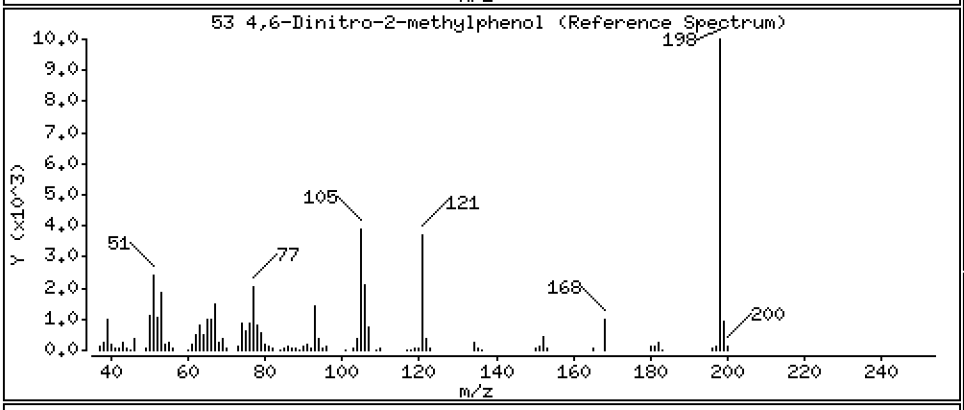
Concentration: 18.97 ug/mL

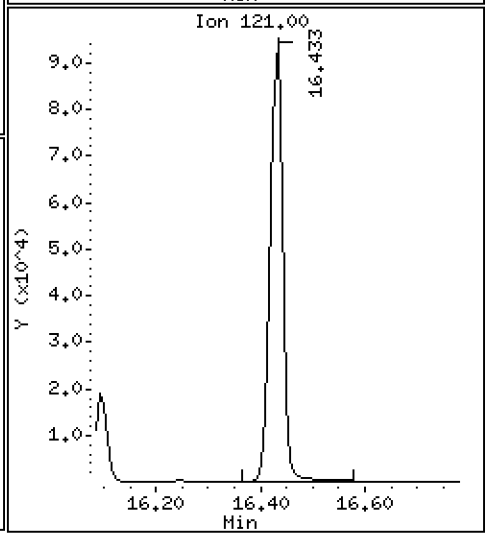


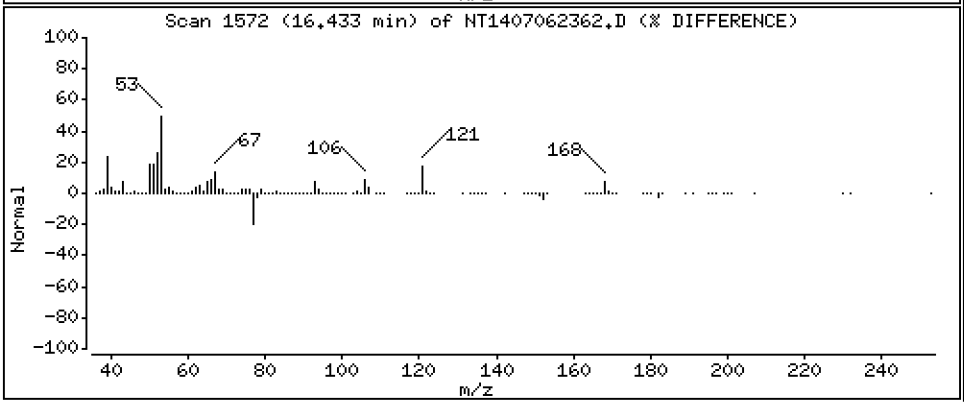












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

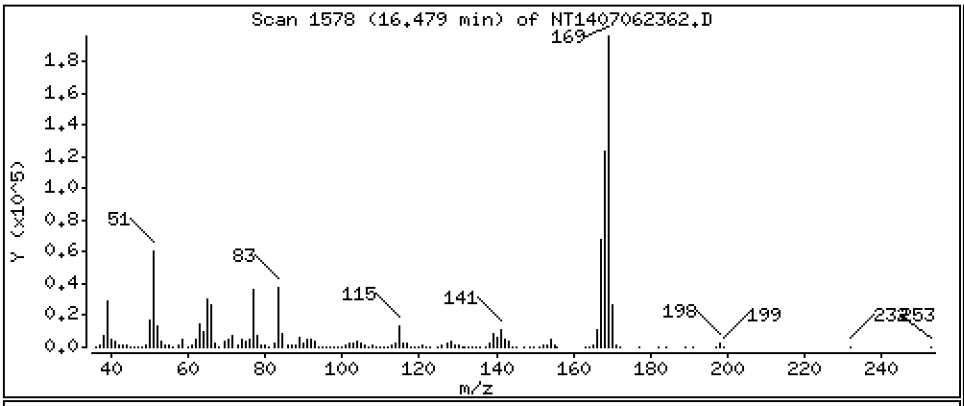
Operator: JGR

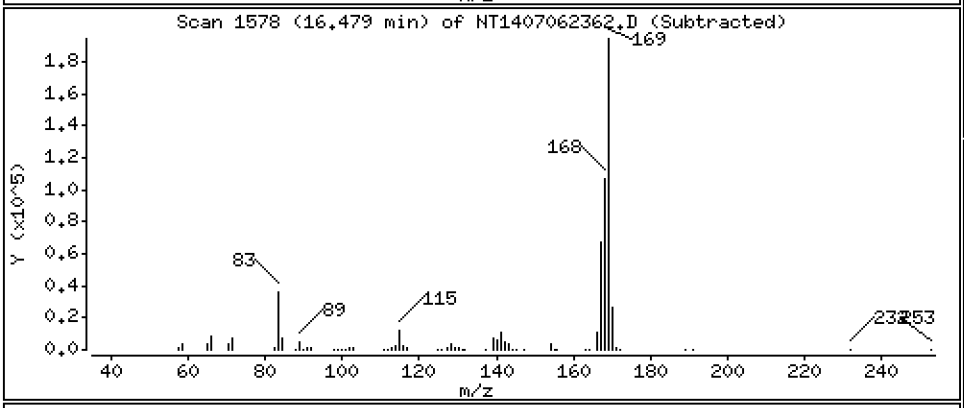
Column phase: ZB-5msi

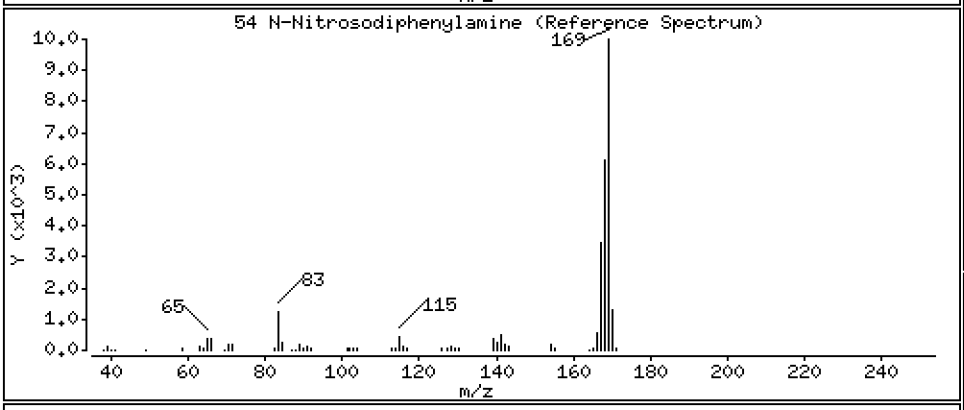
Column diameter: 0.25

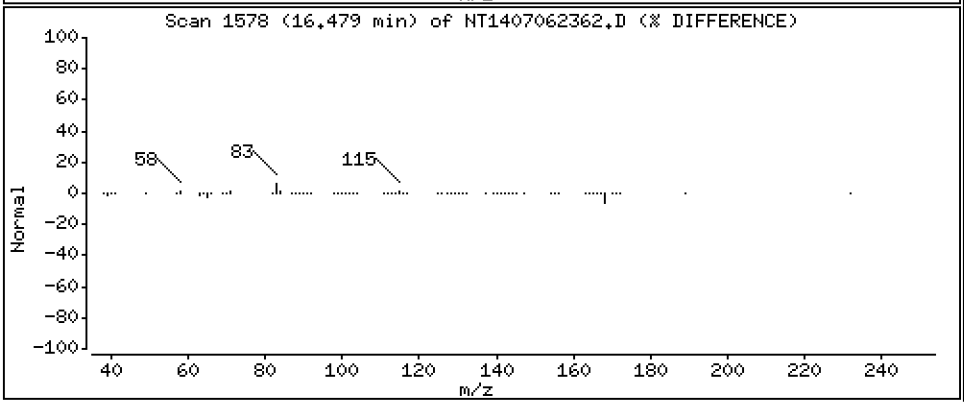
54 N-Nitrosodiphenylamine

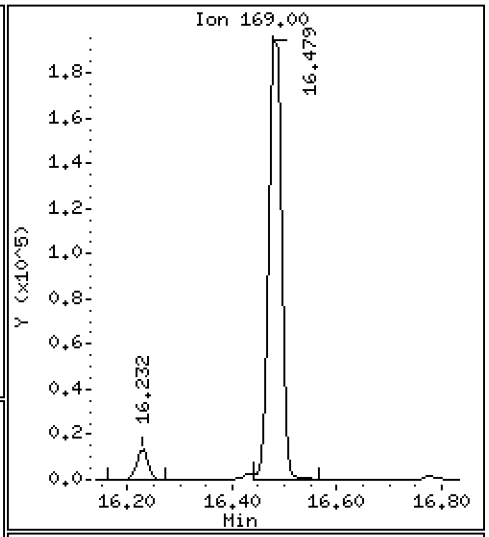
Concentration: 4.925 ug/mL

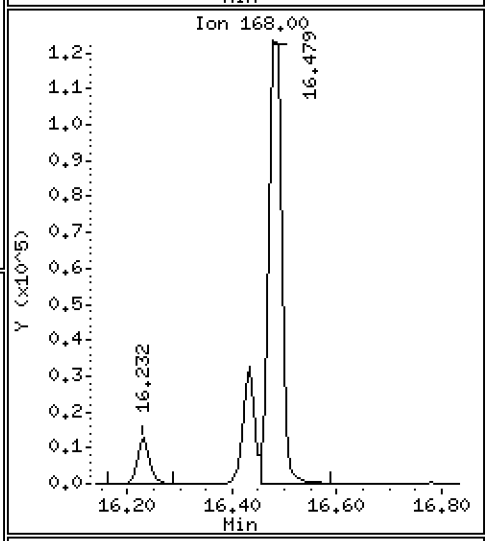


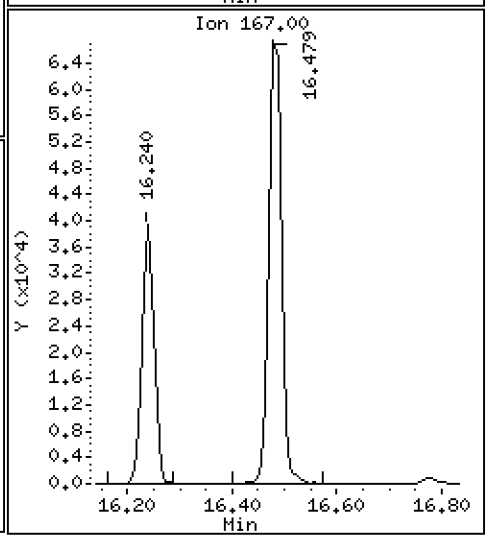












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

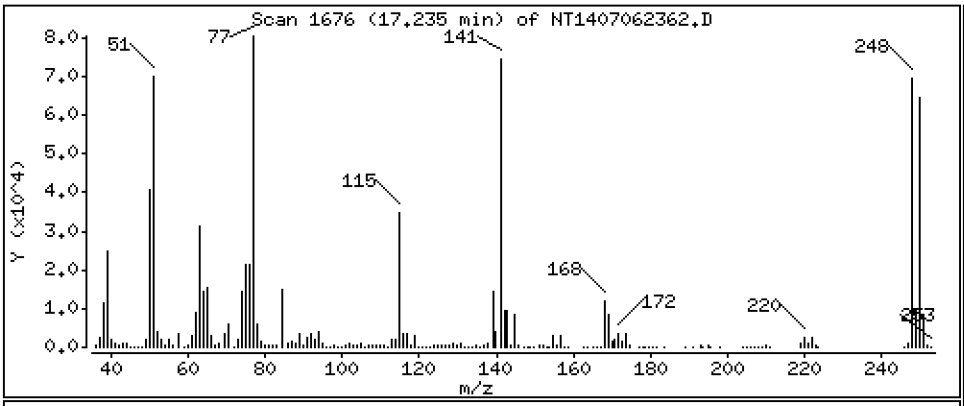
Operator: JGR

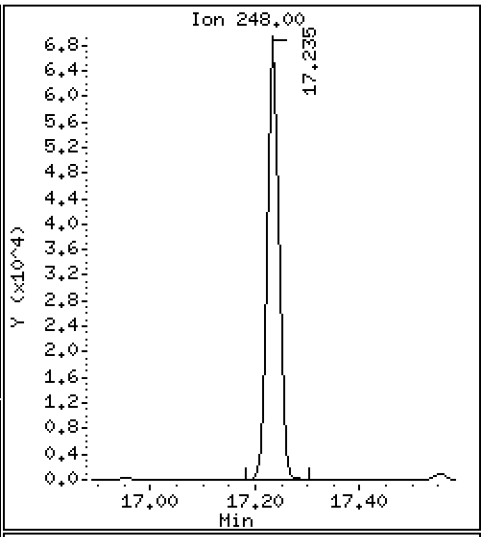
Column phase: ZB-5msi

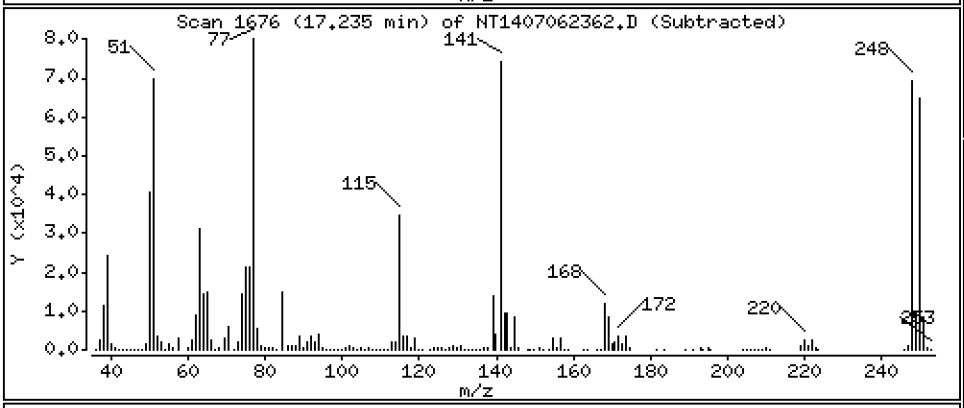
Column diameter: 0.25

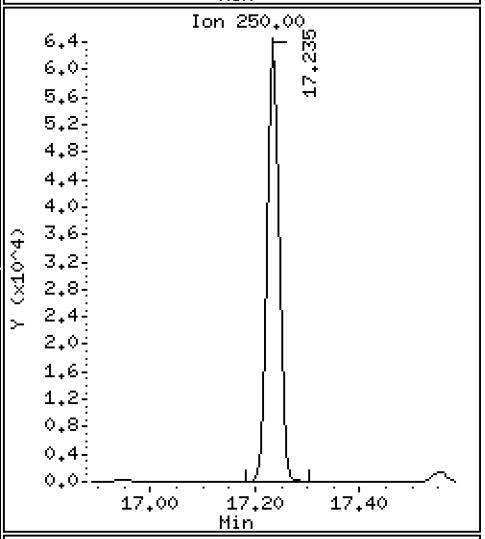
56 4-Bromophenyl-phenylether

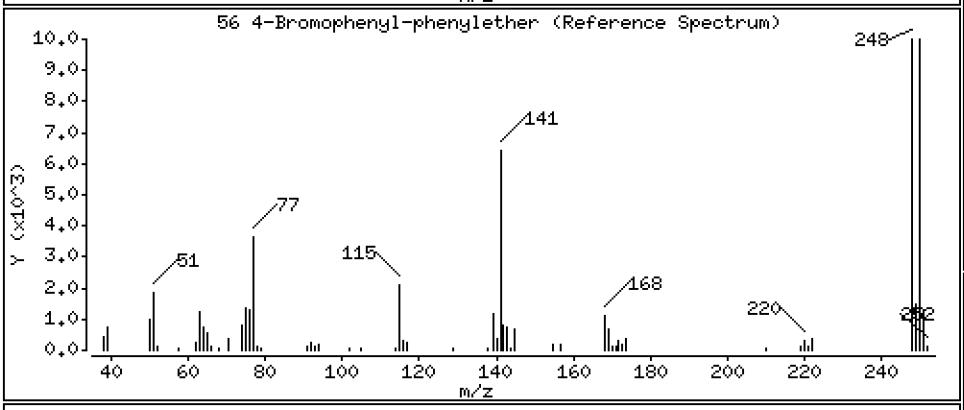
Concentration: 5.441 ug/mL

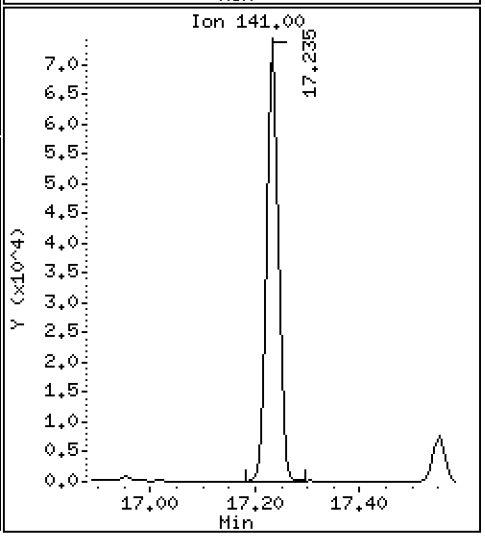


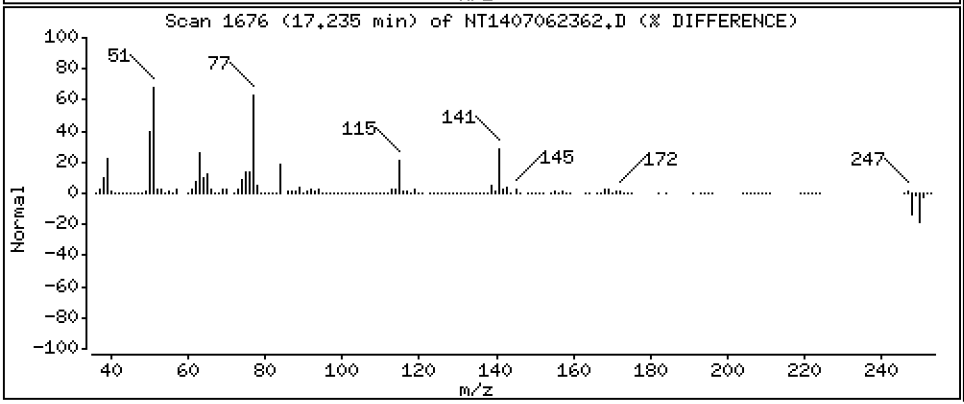












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

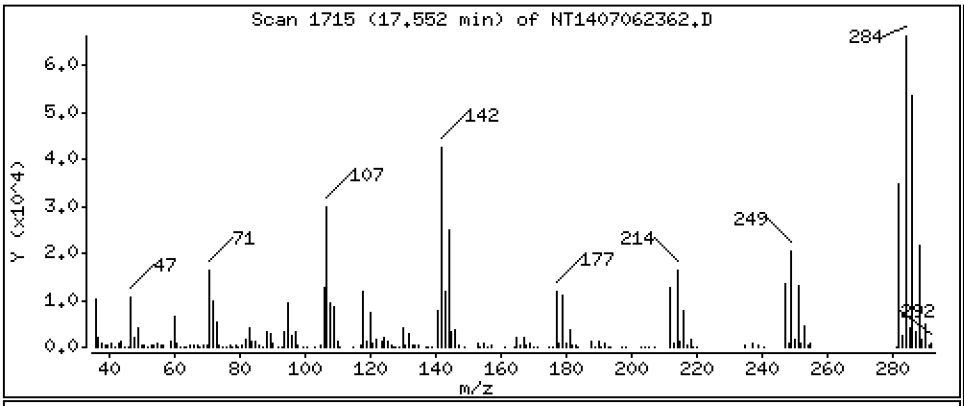
Operator: JGR

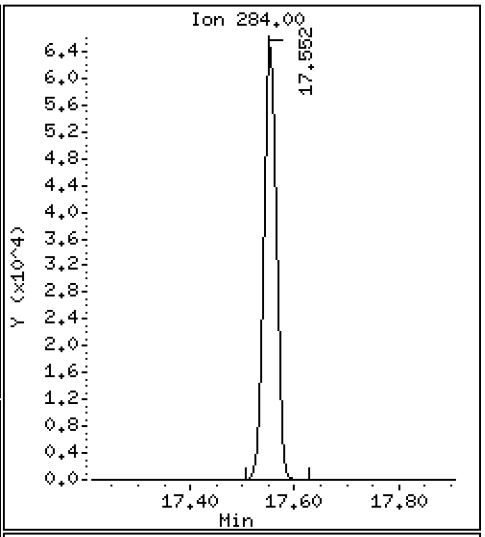
Column phase: ZB-5msi

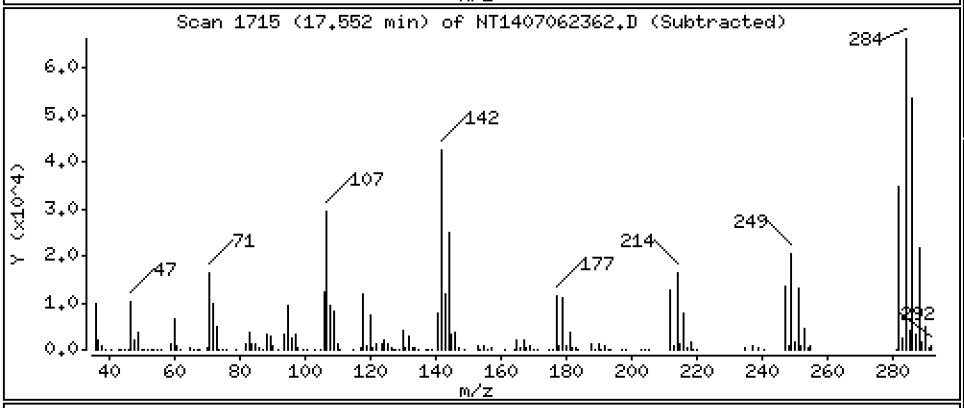
Column diameter: 0.25

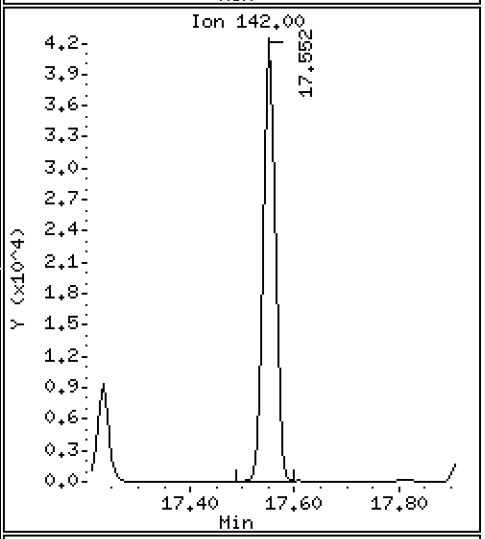
57 Hexachlorobenzene

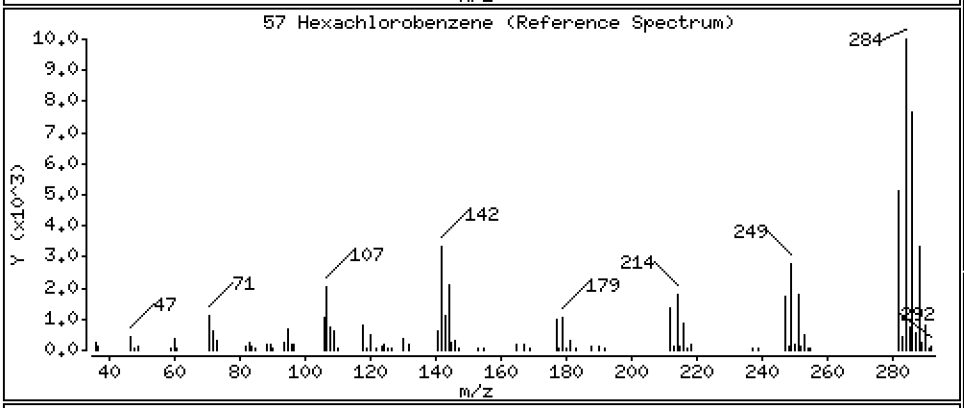
Concentration: 5.248 ug/mL

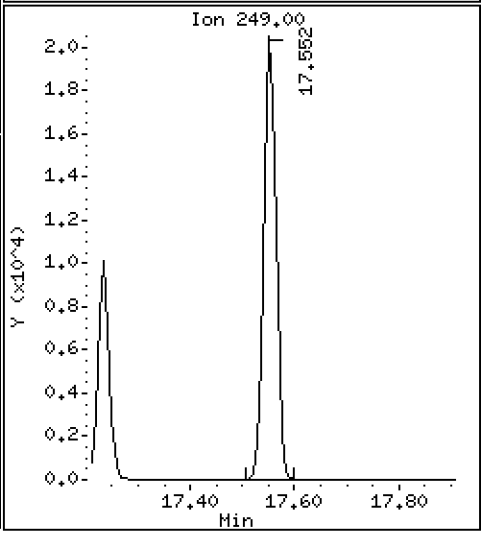


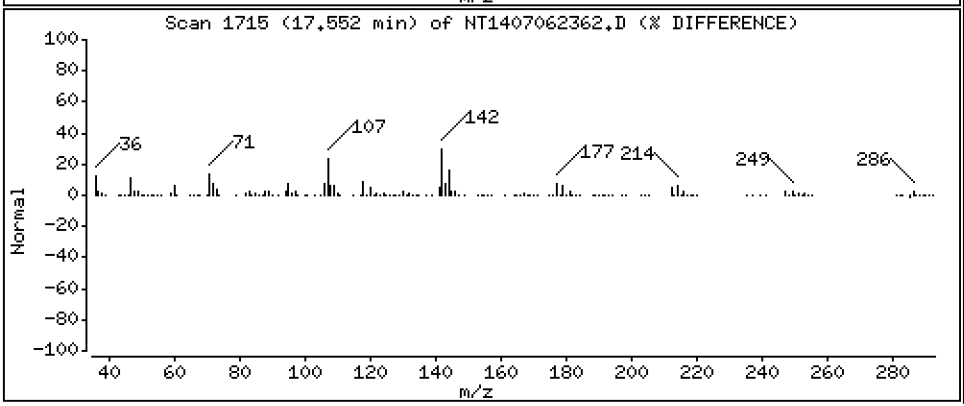












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

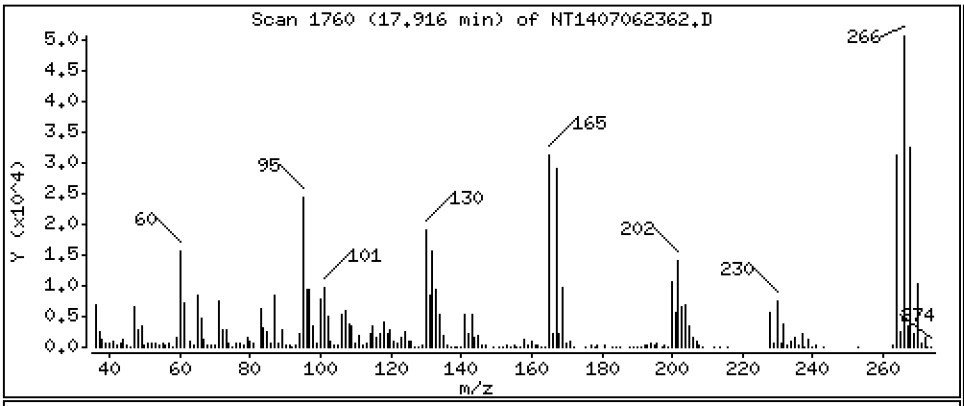
Operator: JGR

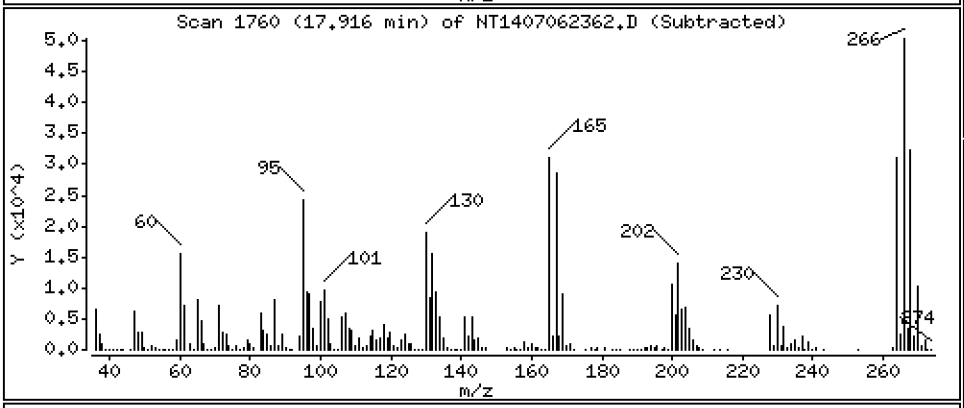
Column phase: ZB-5msi

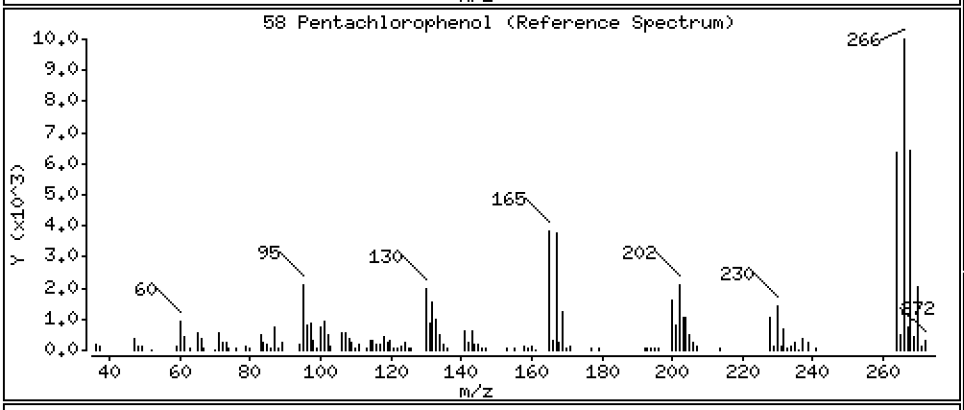
Column diameter: 0.25

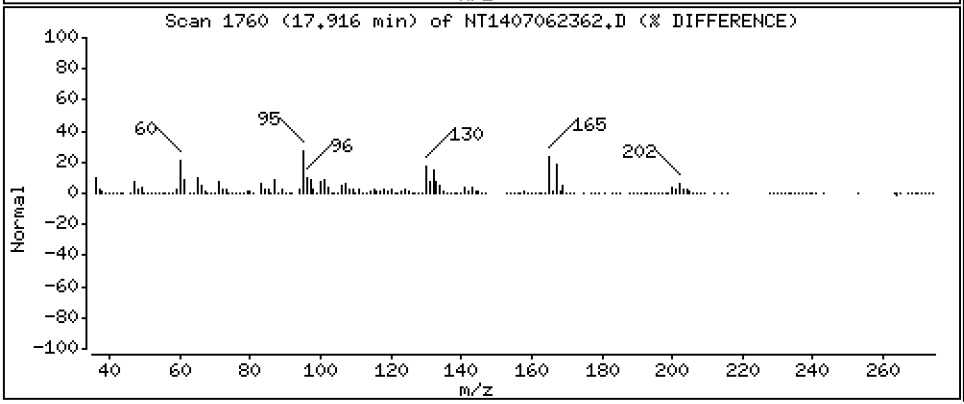
58 Pentachlorophenol

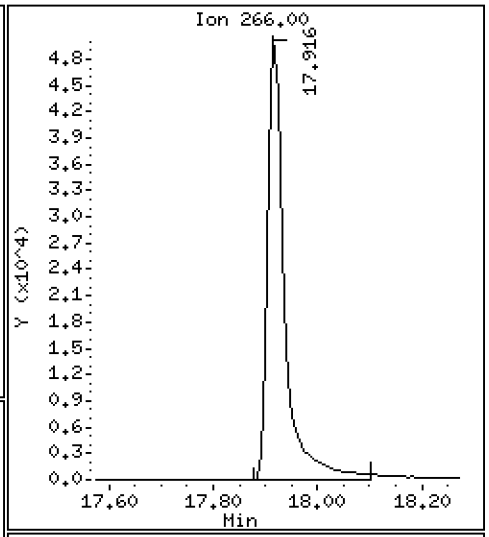
Concentration: 8.880 ug/mL

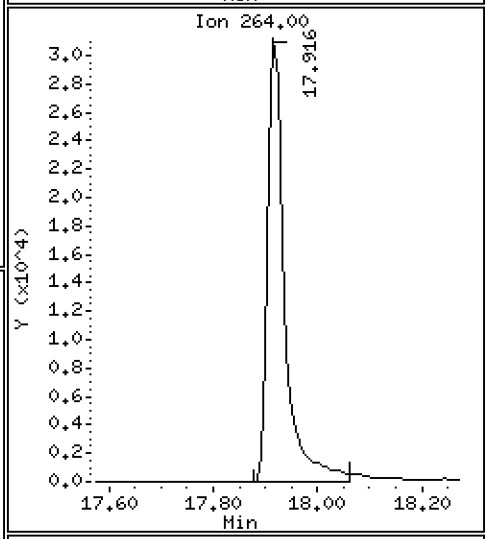


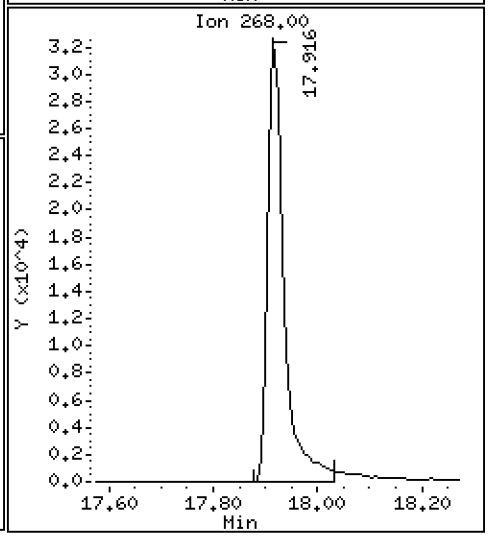












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062362.D

Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

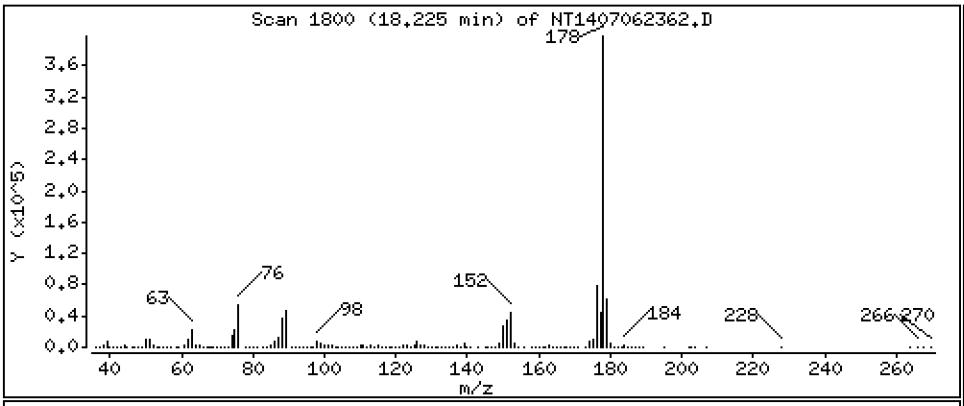
Operator: JGR

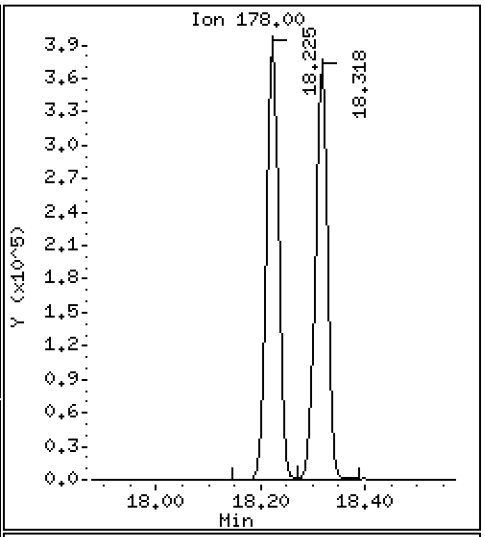
Column phase: ZB-5msi

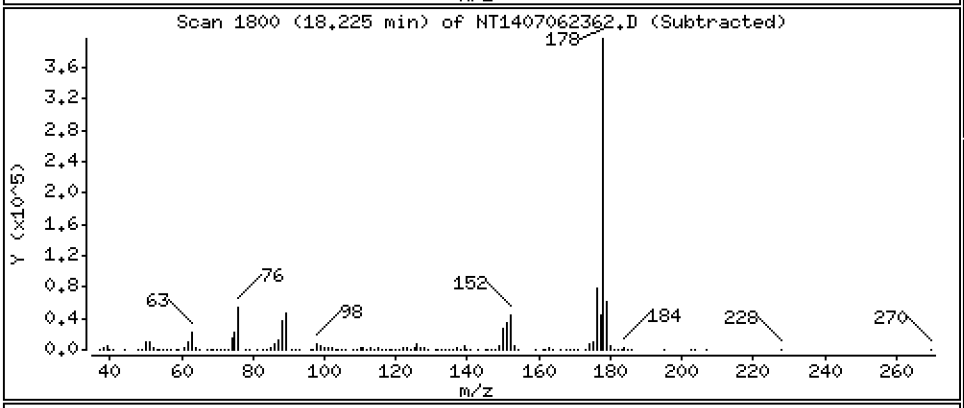
Column diameter: 0.25

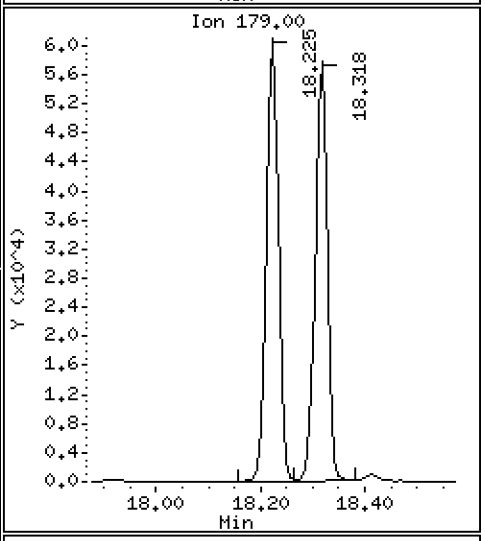
60 Phenanthrene

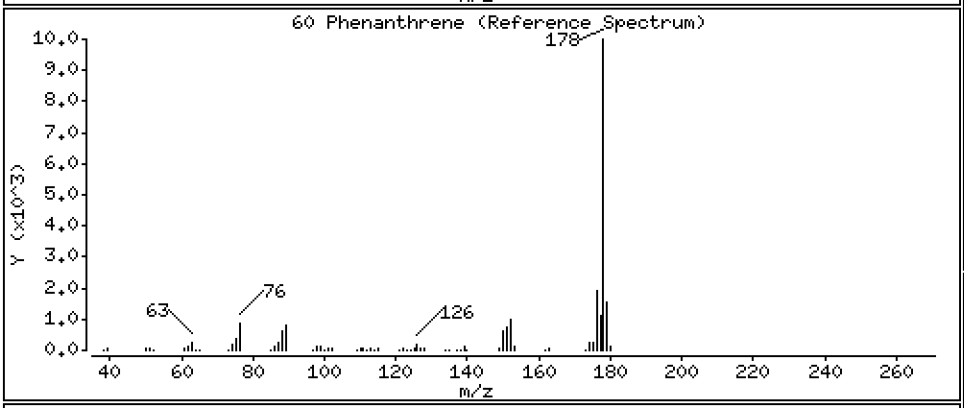
Concentration: 5.010 ug/mL

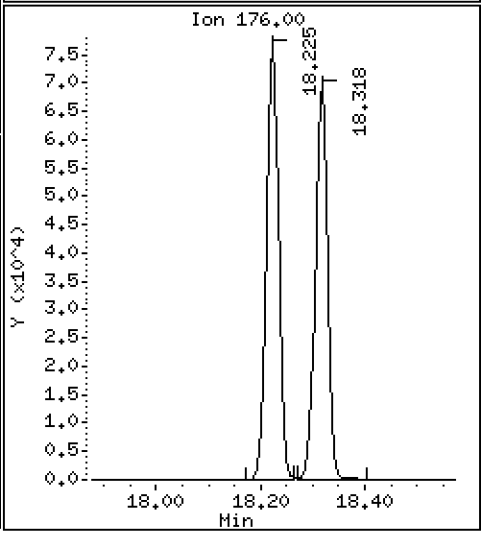


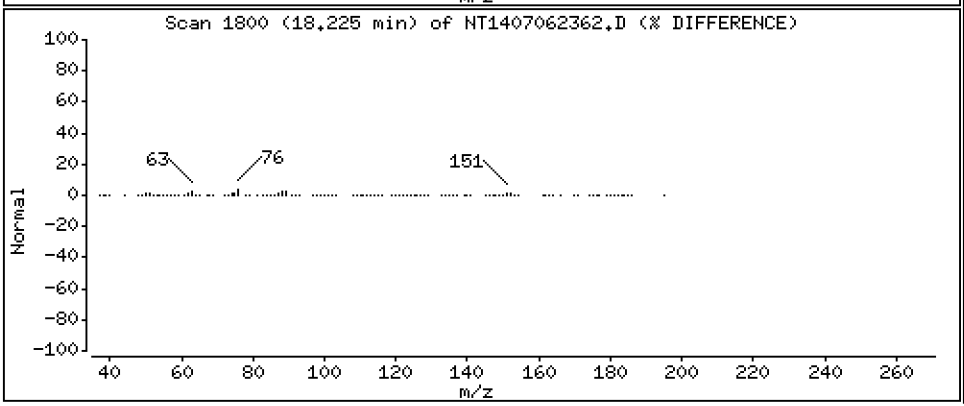












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

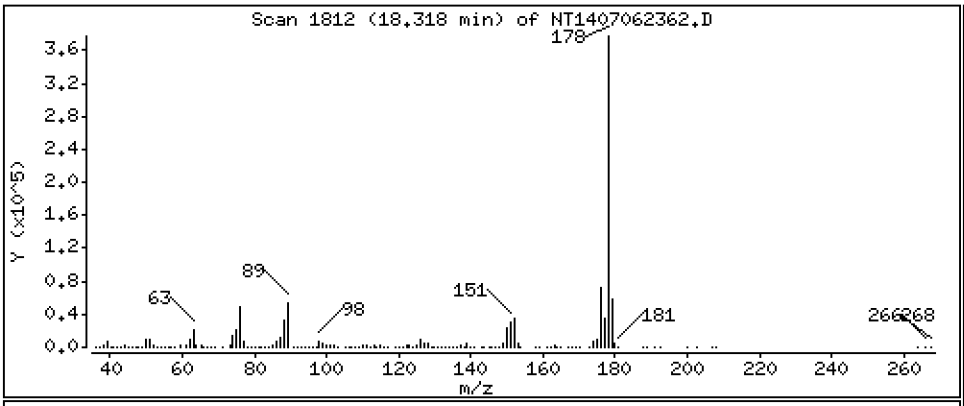
Operator: JGR

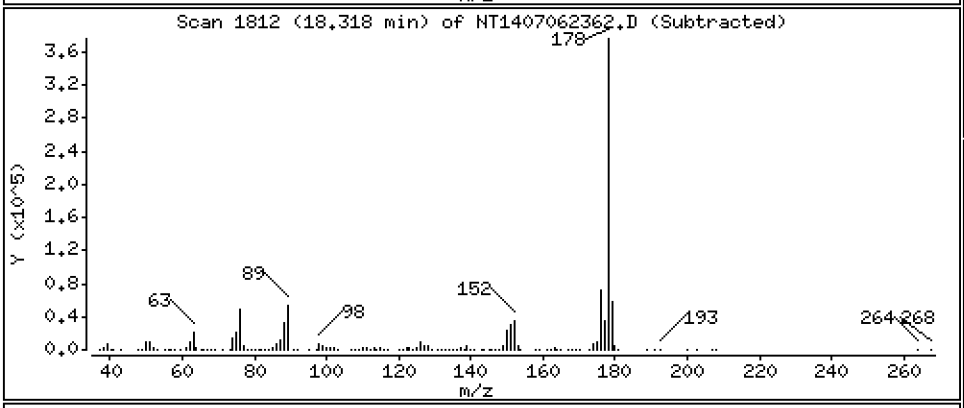
Column phase: ZB-5msi

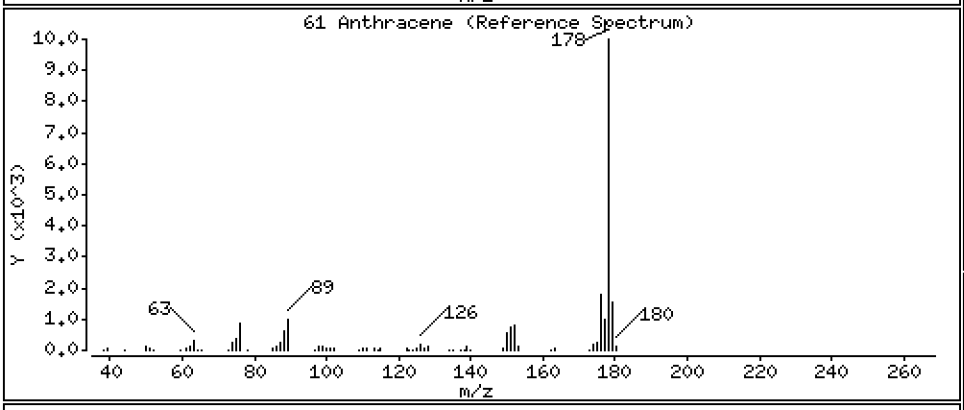
Column diameter: 0.25

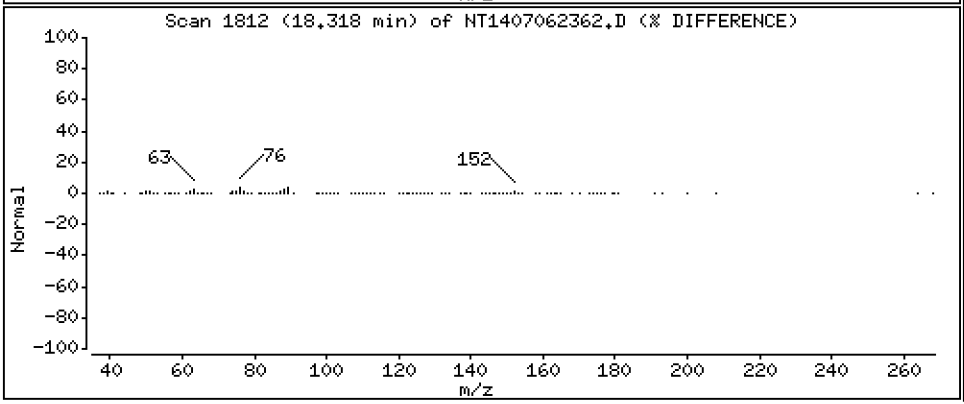
61 Anthracene

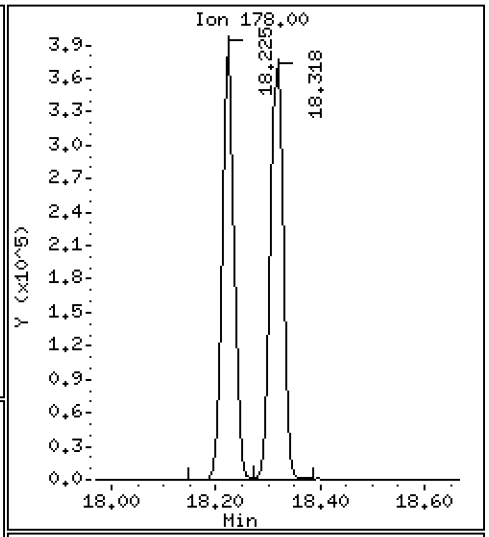
Concentration: 5.261 ug/mL

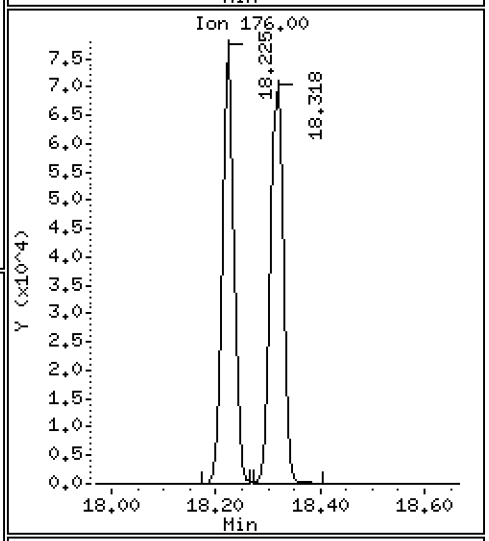


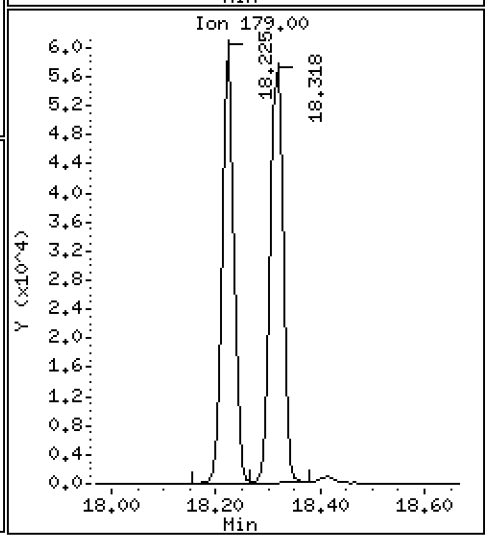












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

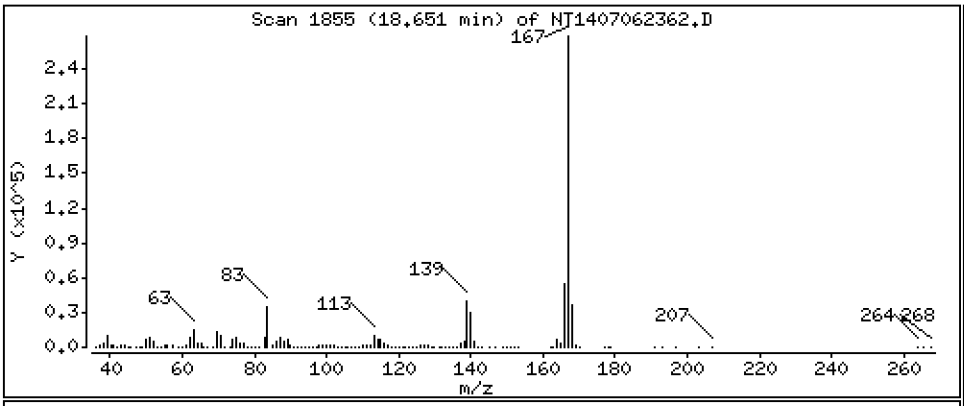
Operator: JGR

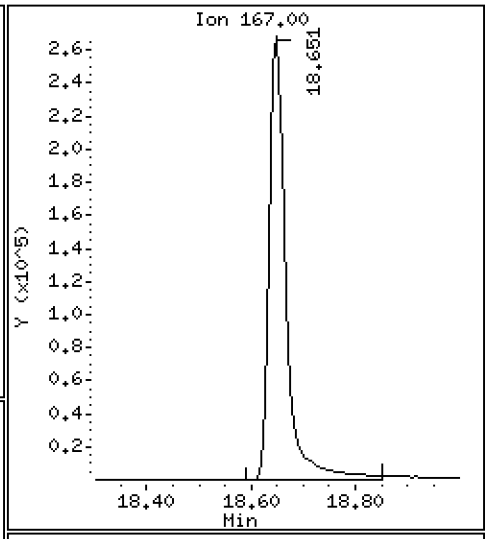
Column phase: ZB-5msi

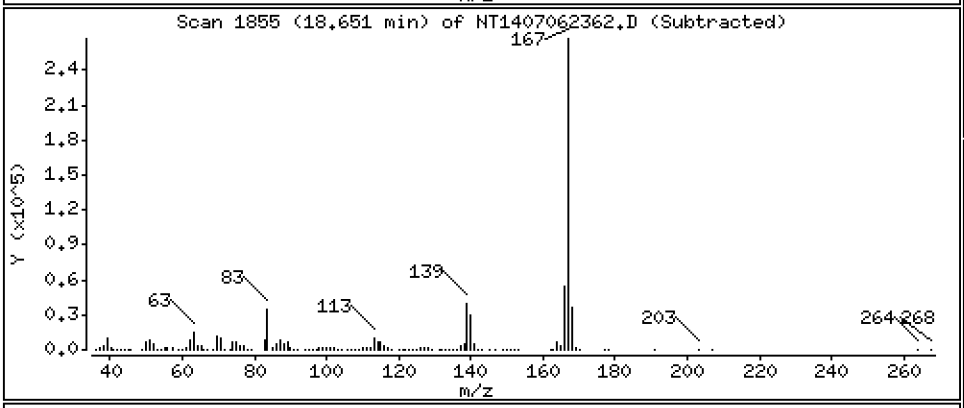
Column diameter: 0.25

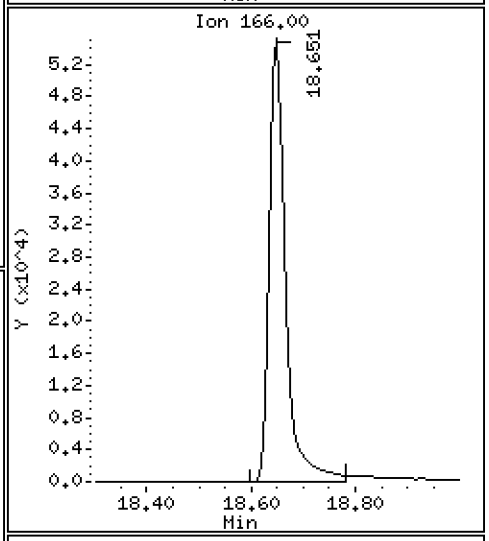
62 Carbazole

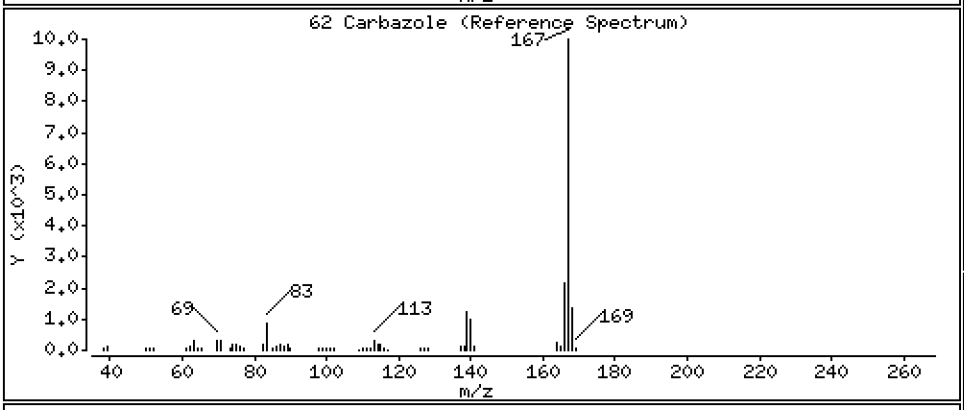
Concentration: 4.978 ug/mL

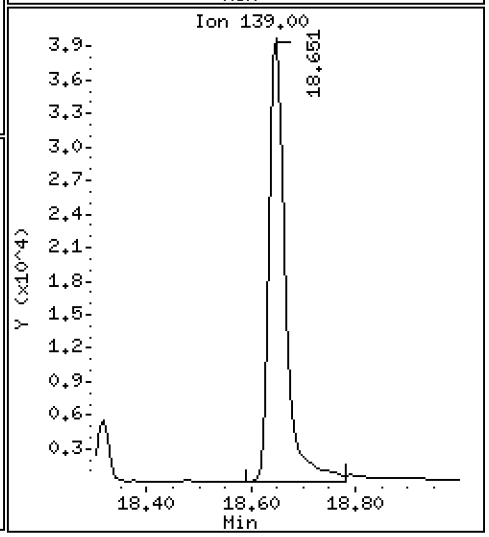


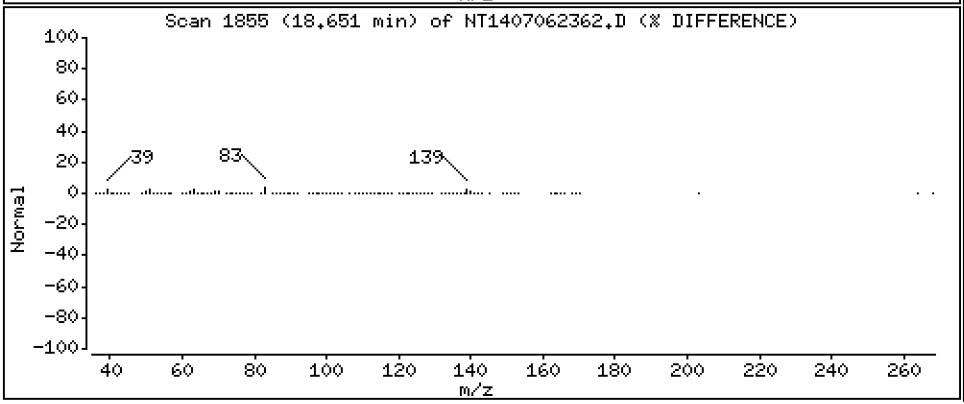












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

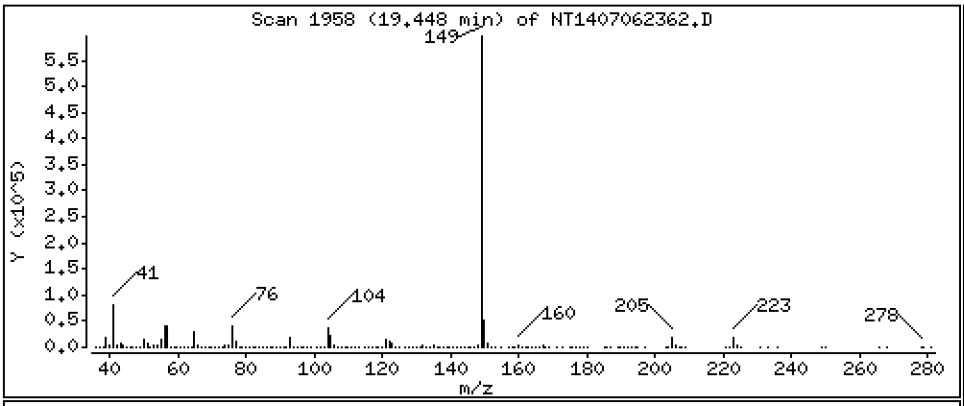
Operator: JGR

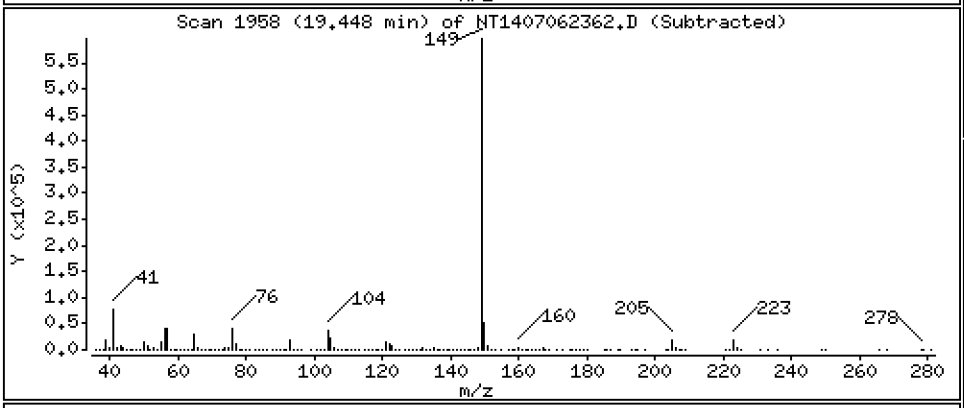
Column phase: ZB-5msi

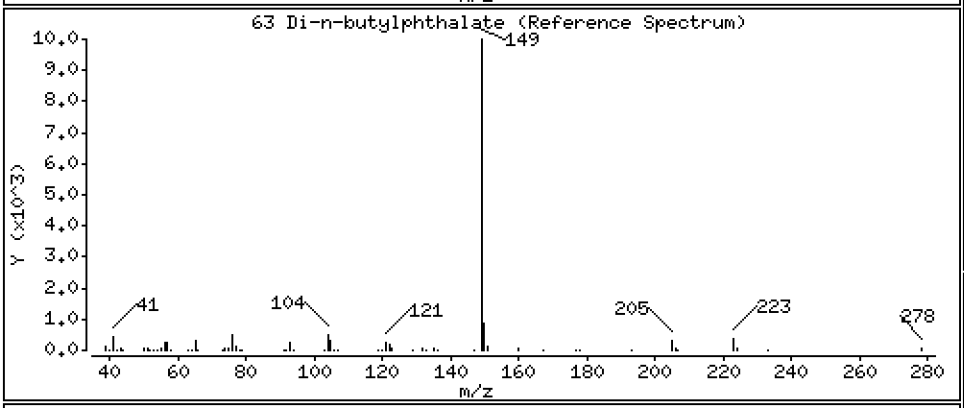
Column diameter: 0.25

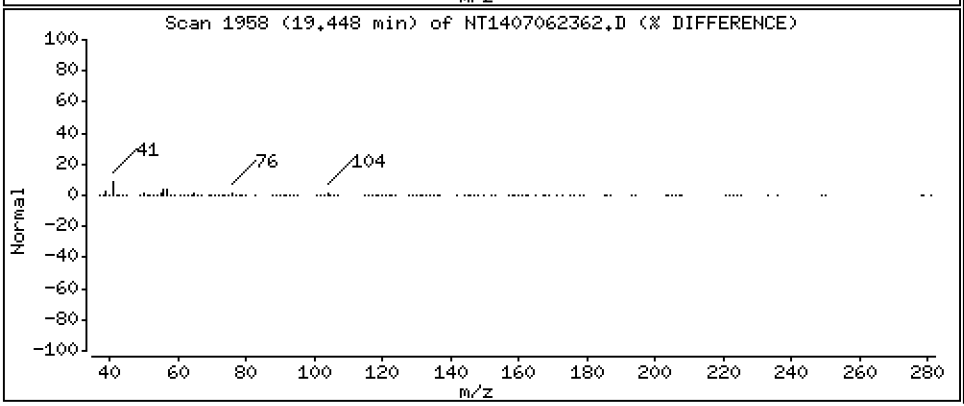
63 Di-n-butylphthalate

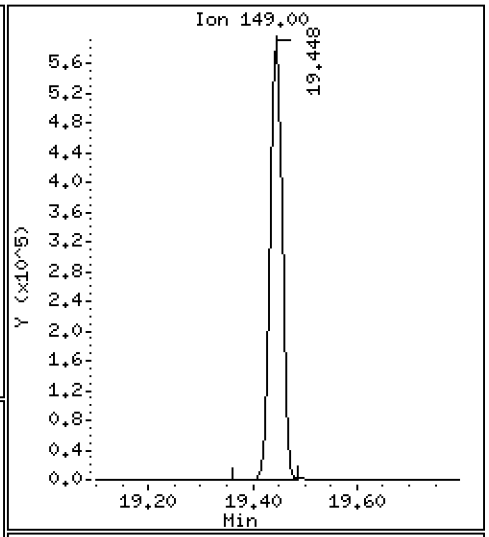
Concentration: 5.841 ug/mL

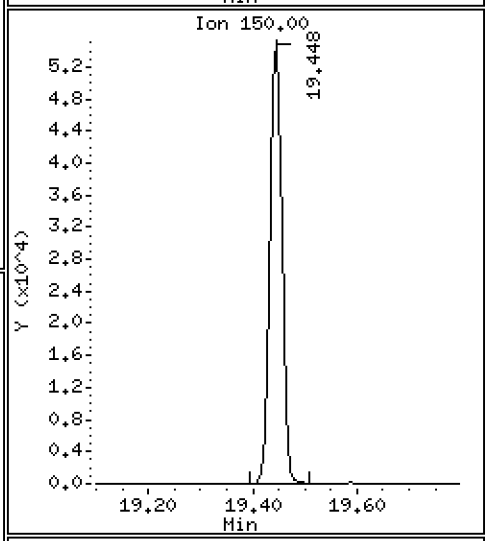


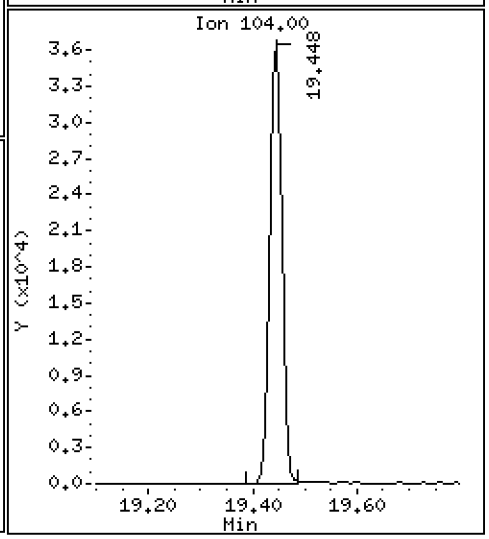












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

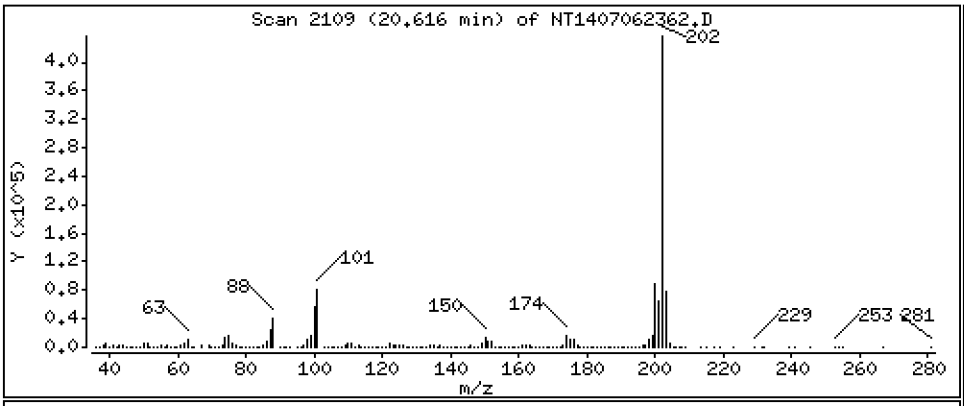
Operator: JGR

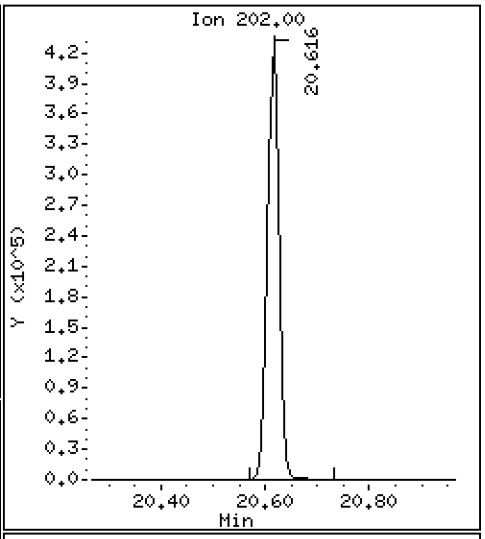
Column phase: ZB-5msi

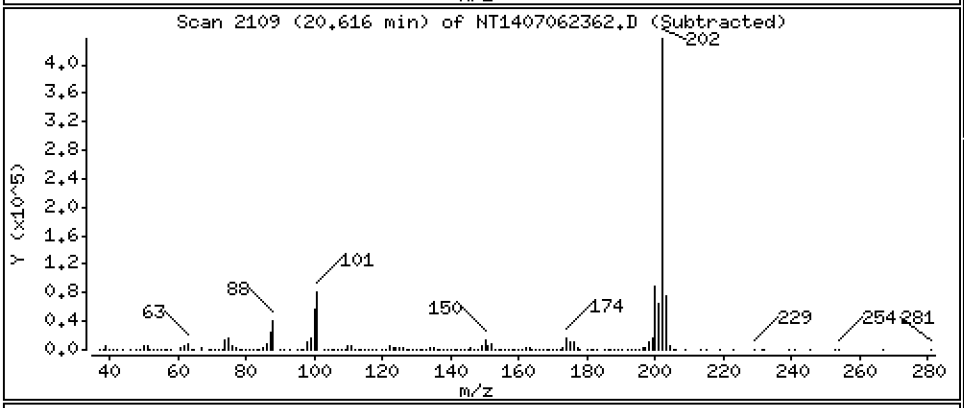
Column diameter: 0.25

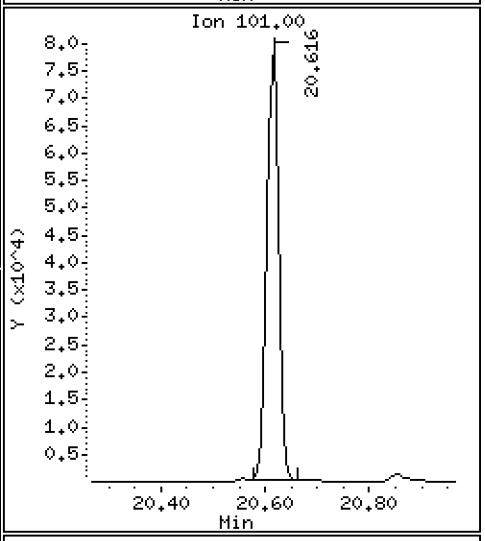
64 Fluoranthene

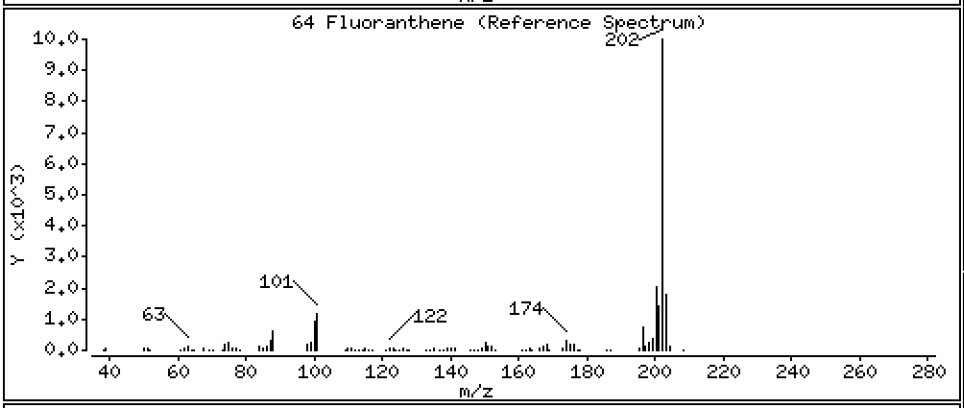
Concentration: 5.960 ug/mL

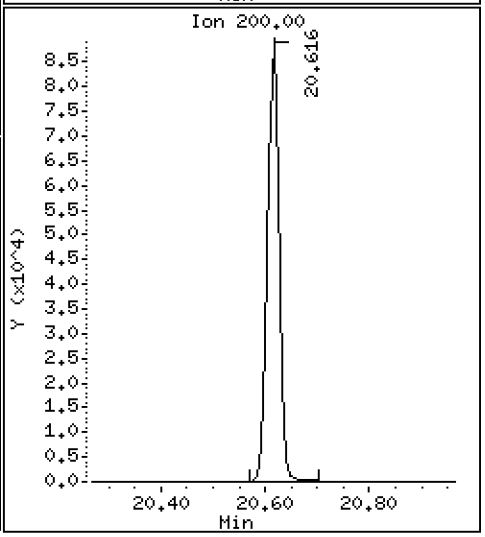


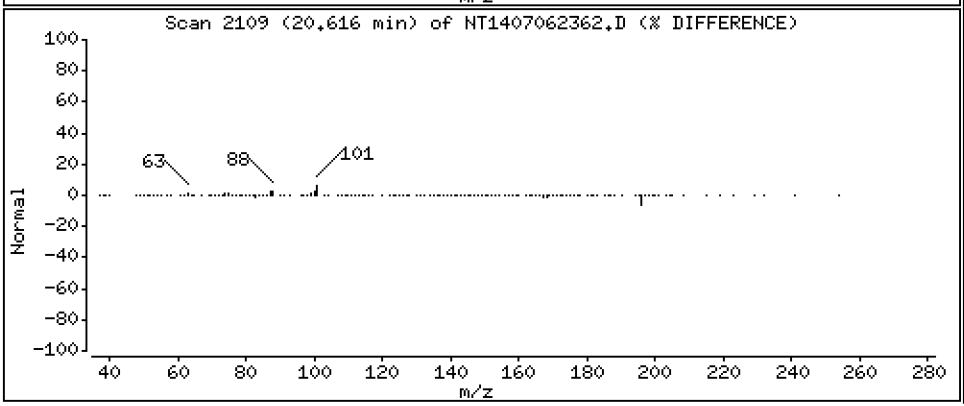












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

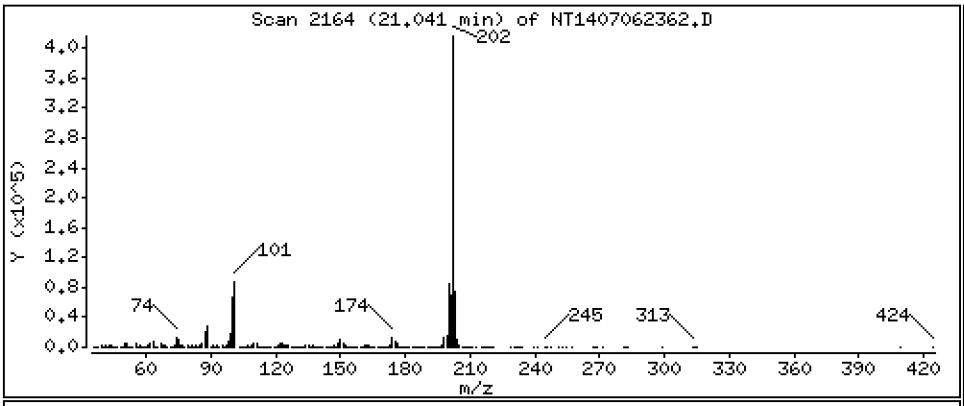
Operator: JGR

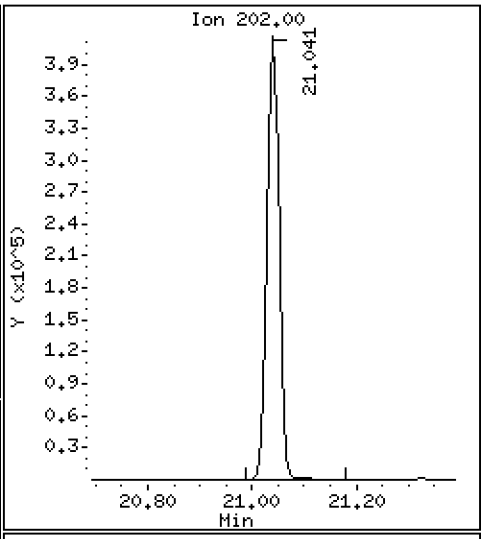
Column phase: ZB-5msi

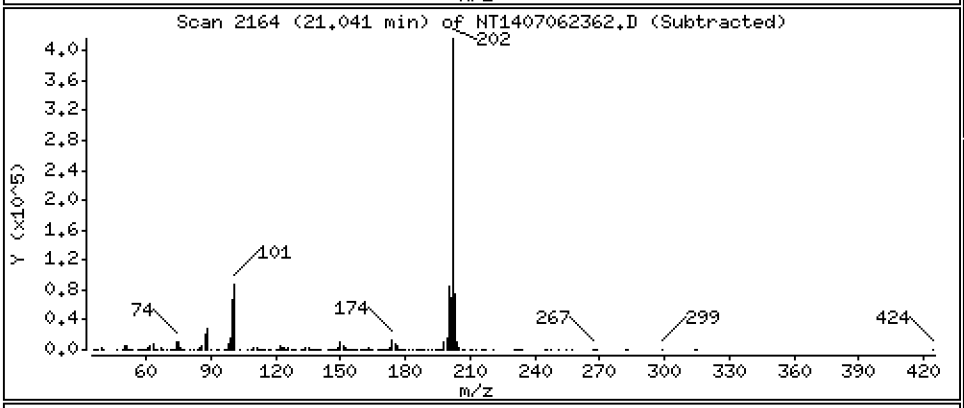
Column diameter: 0.25

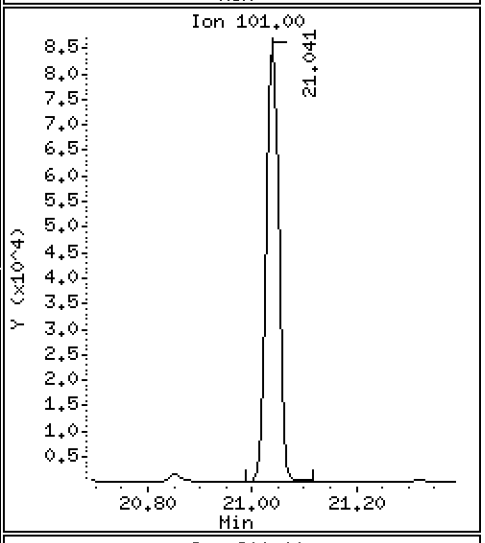
65 Pyrene

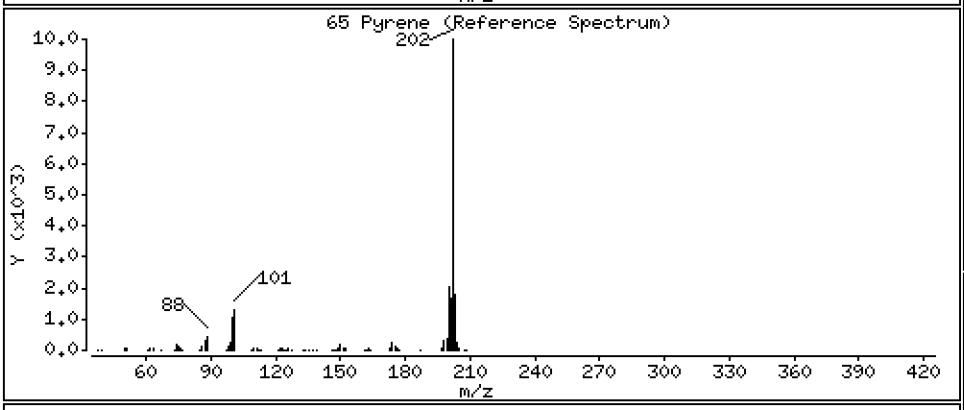
Concentration: 6.005 ug/mL

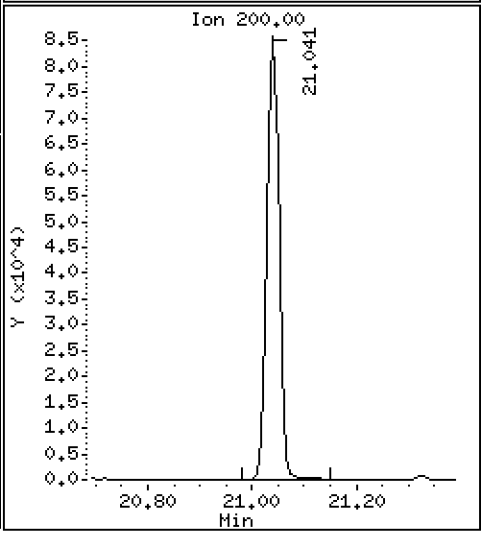


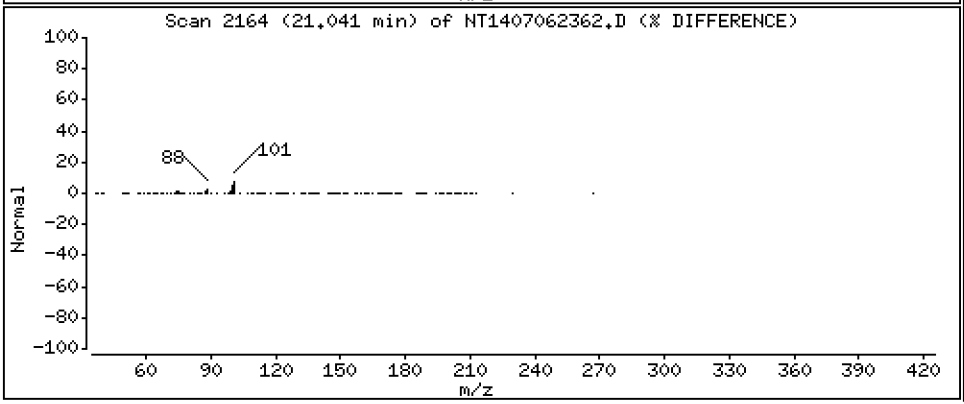












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

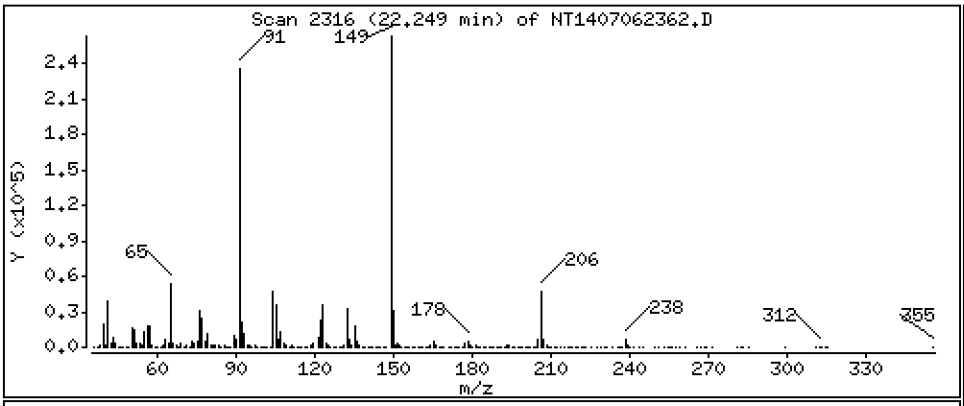
Operator: JGR

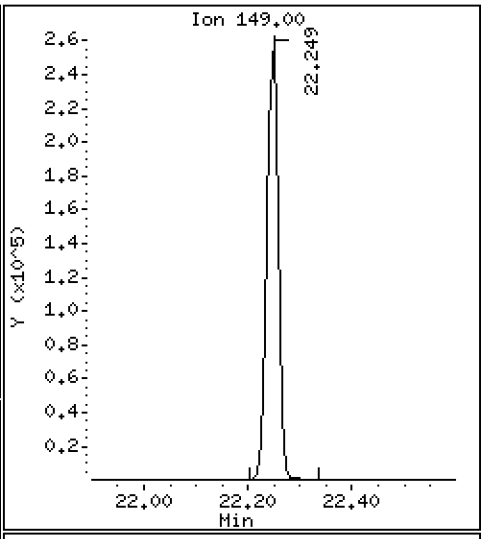
Column phase: ZB-5msi

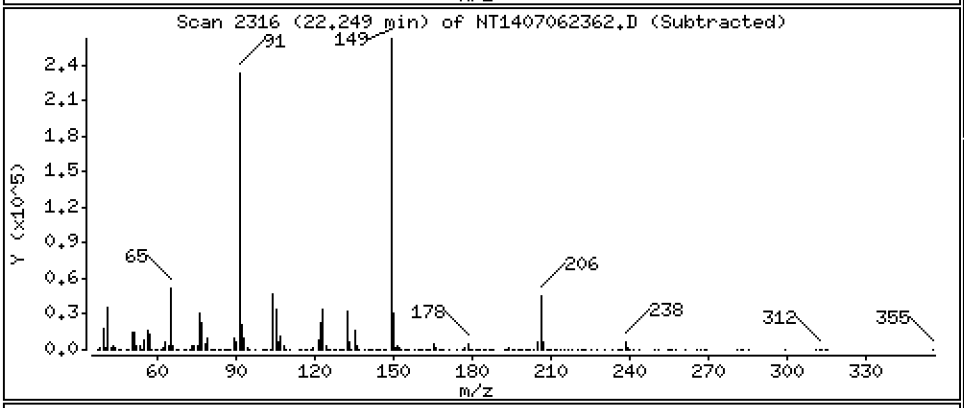
Column diameter: 0.25

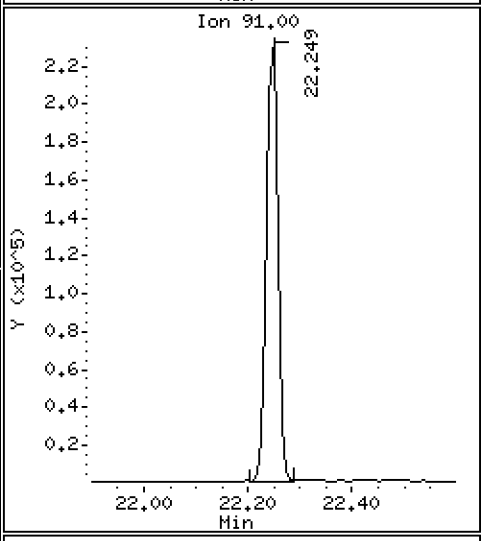
67 Butylbenzylphthalate

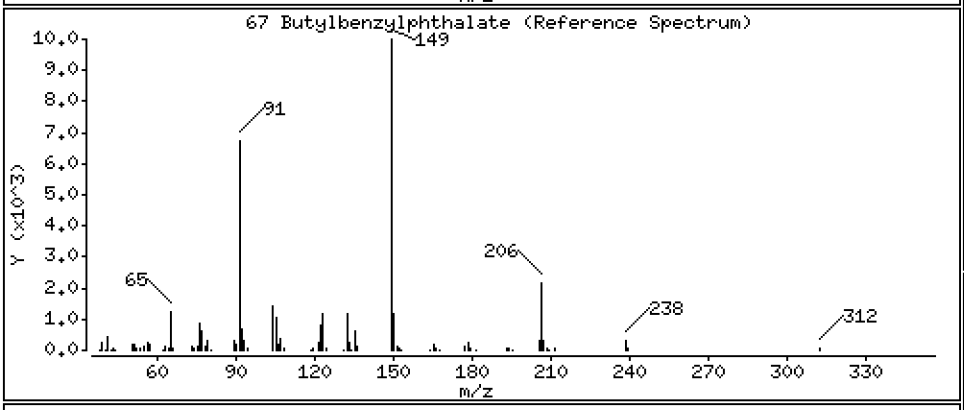
Concentration: 7.344 ug/mL

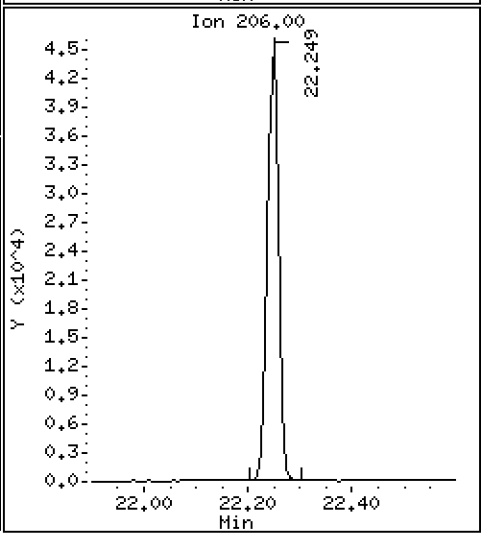


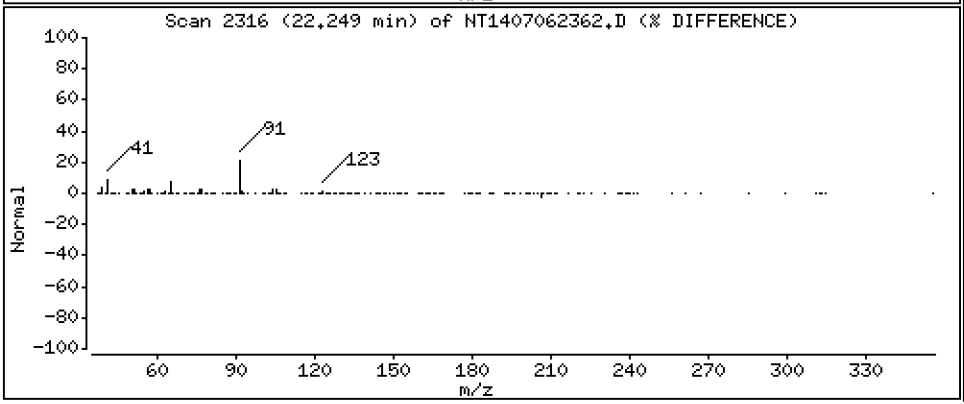












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

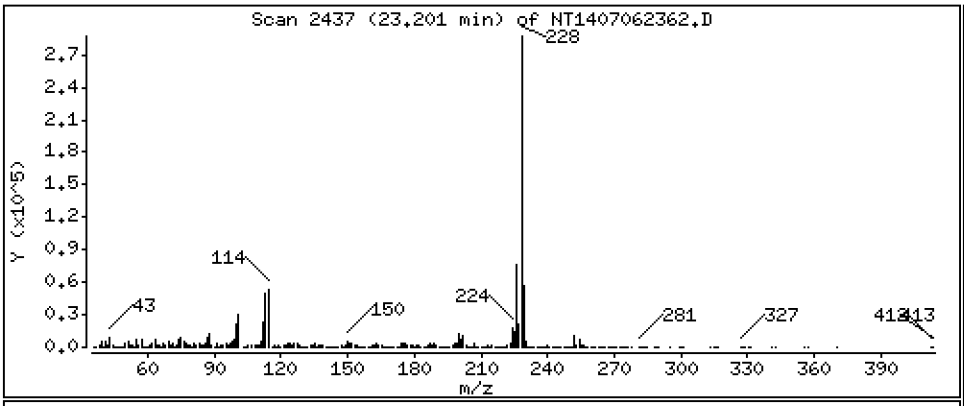
Operator: JGR

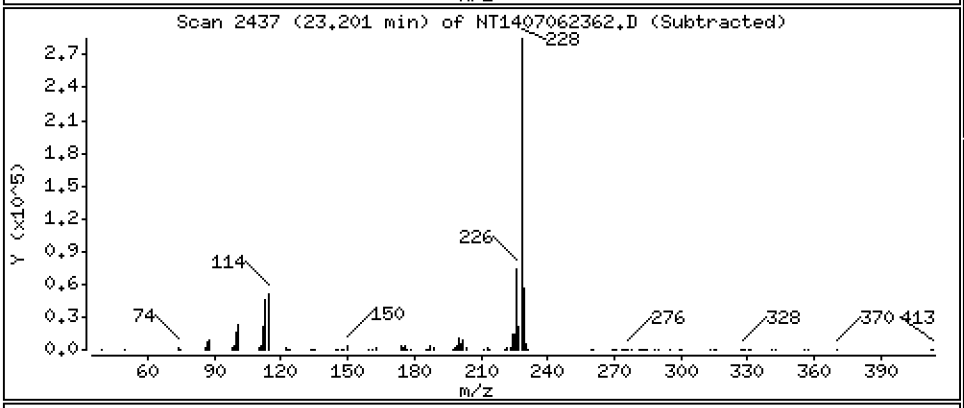
Column phase: ZB-5msi

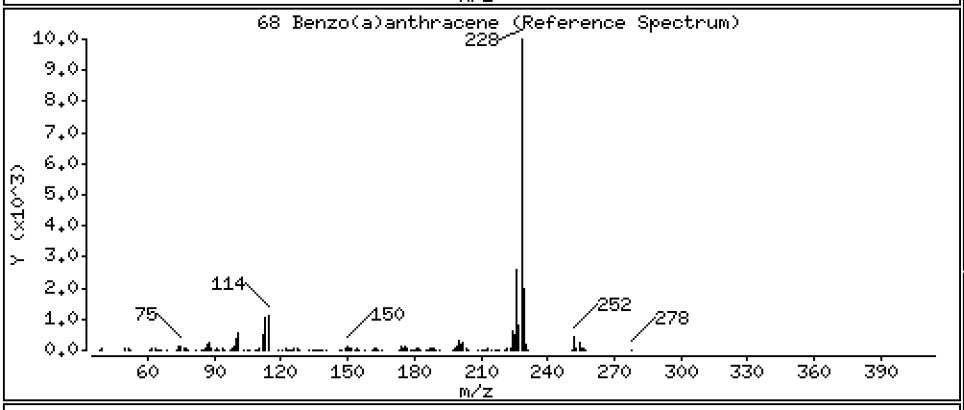
Column diameter: 0.25

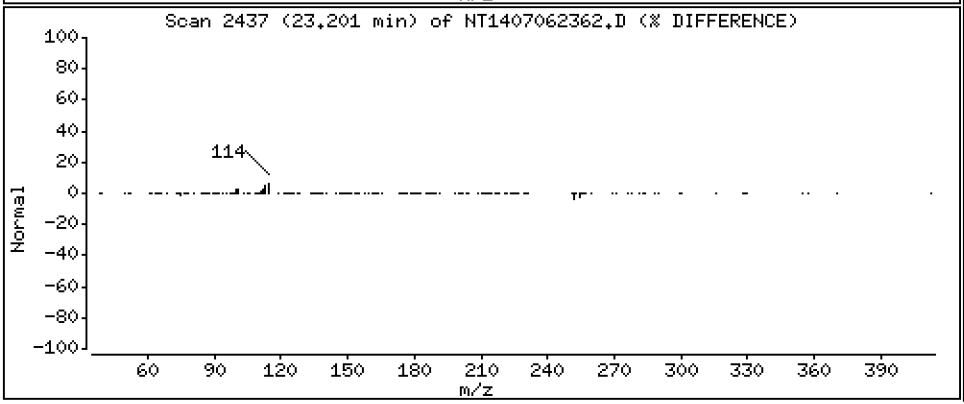
68 Benzo(a)anthracene

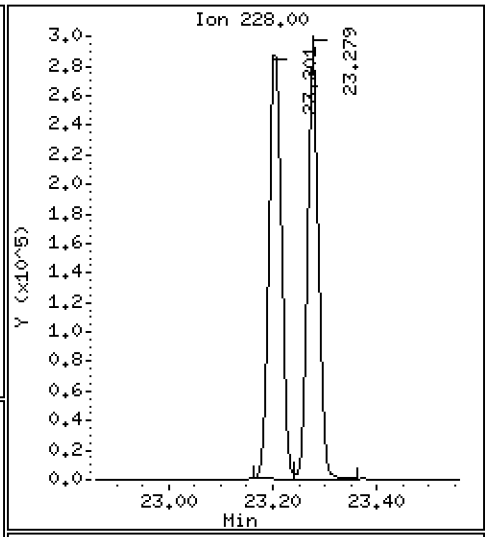
Concentration: 5.119 ug/mL

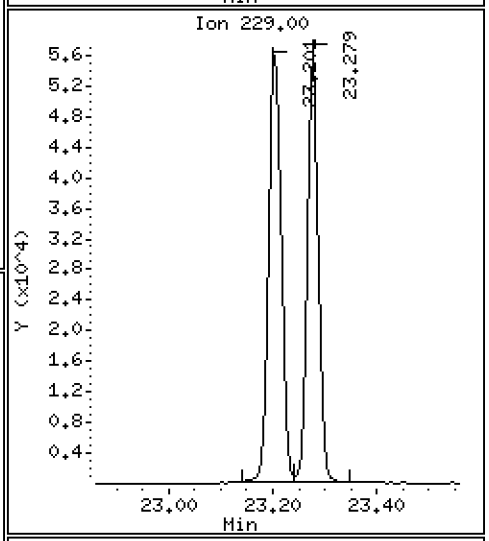


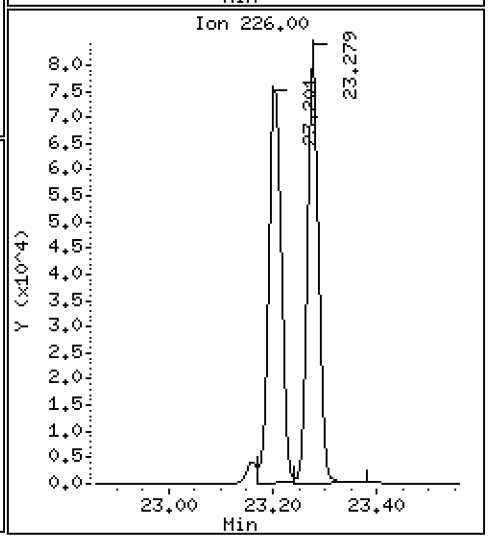












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

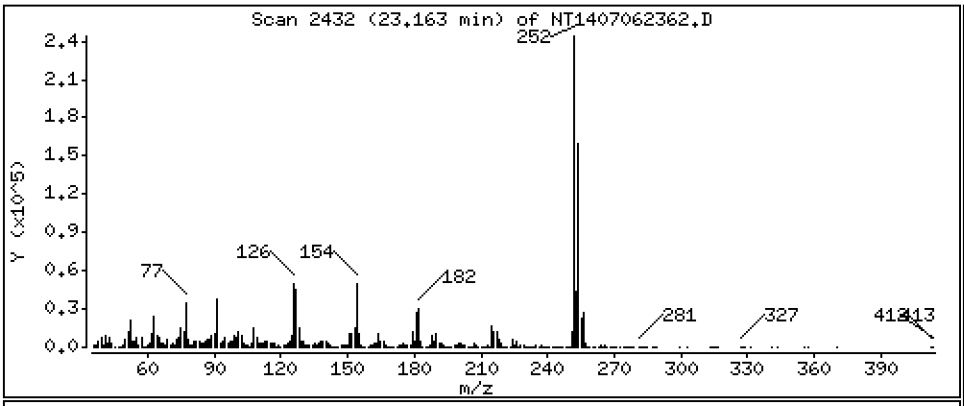
Operator: JGR

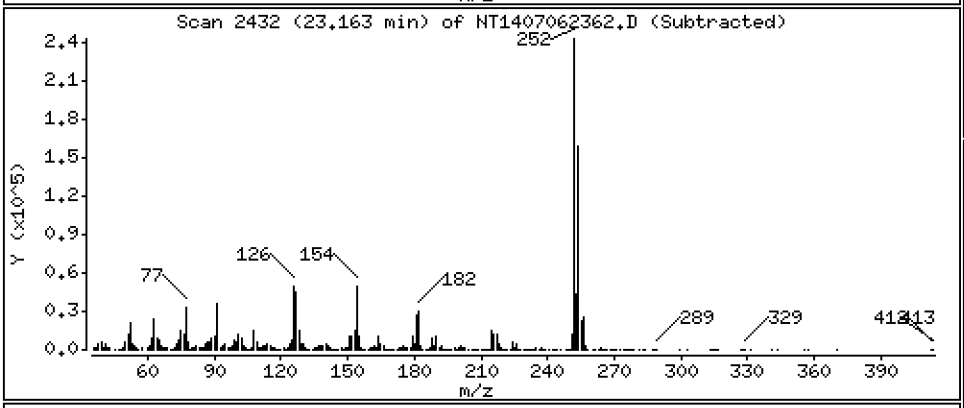
Column phase: ZB-5msi

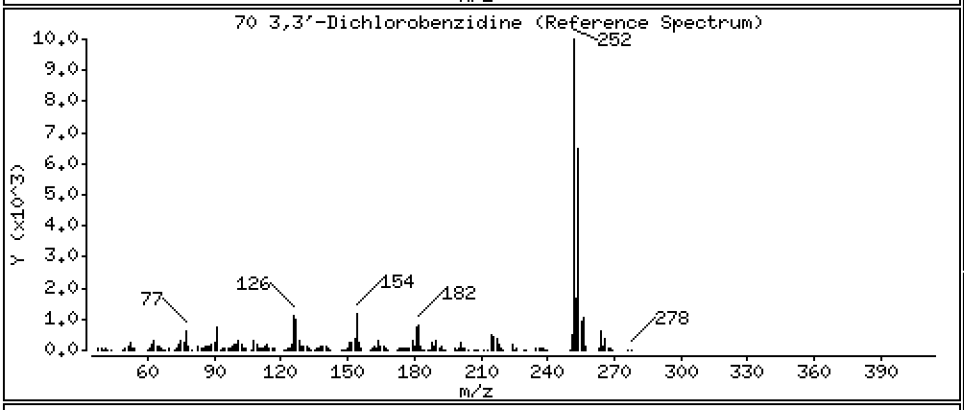
Column diameter: 0.25

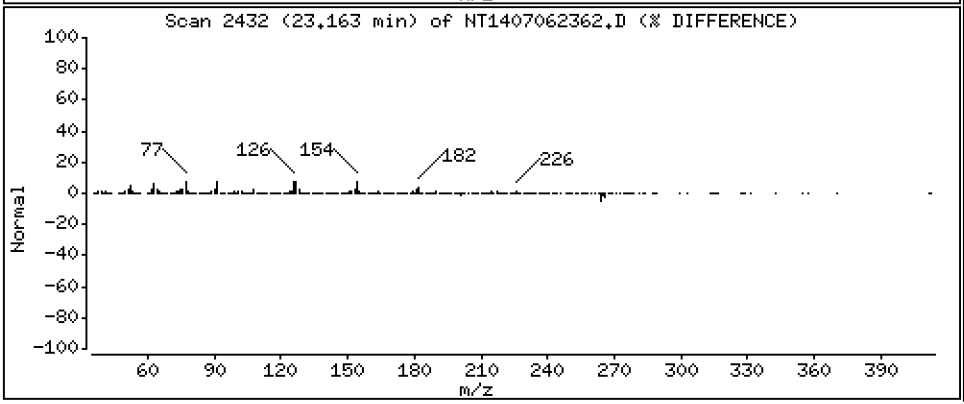
70 3,3'-Dichlorobenzidine

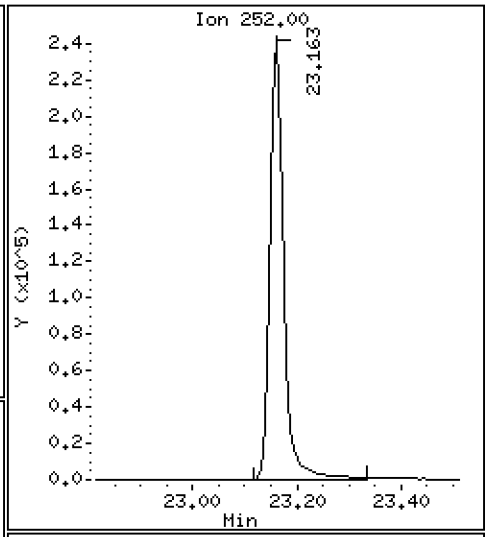
Concentration: 16.11 ug/mL

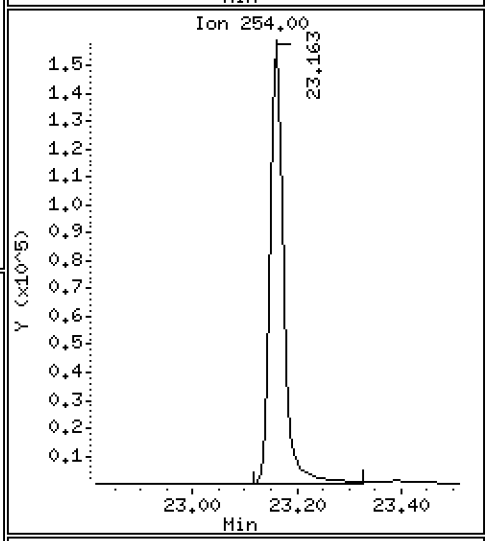


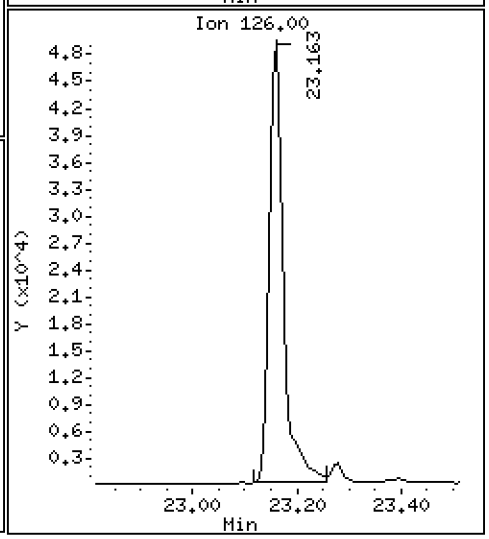












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

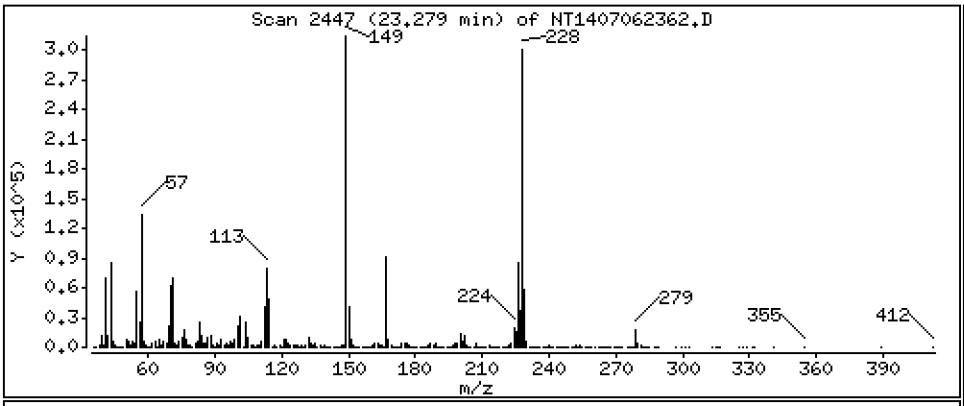
Operator: JGR

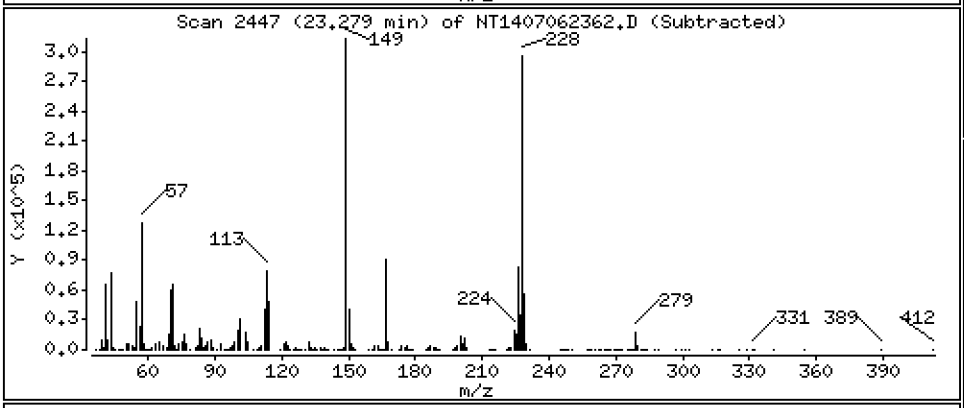
Column phase: ZB-5msi

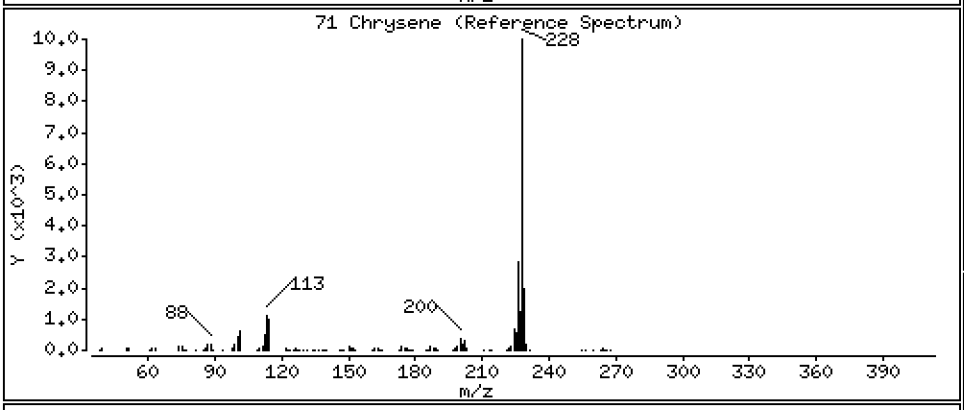
Column diameter: 0.25

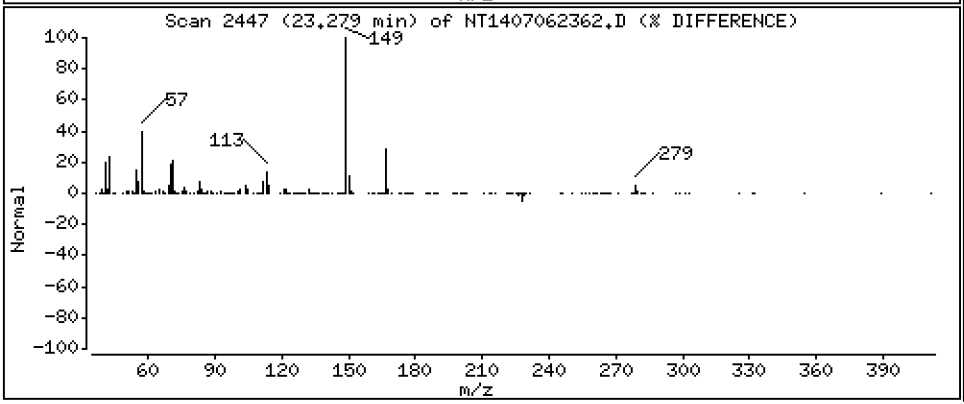
71 Chrysene

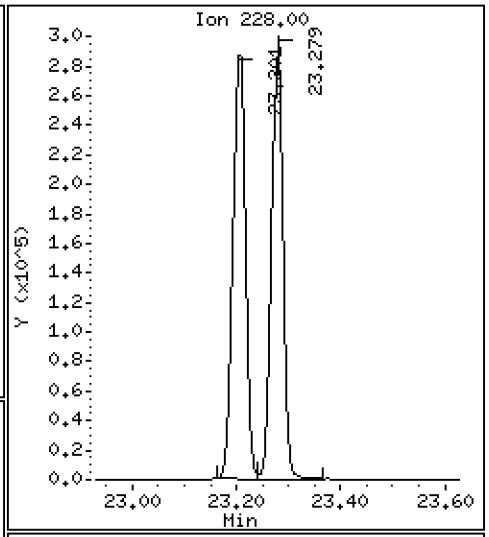
Concentration: 5.176 ug/mL

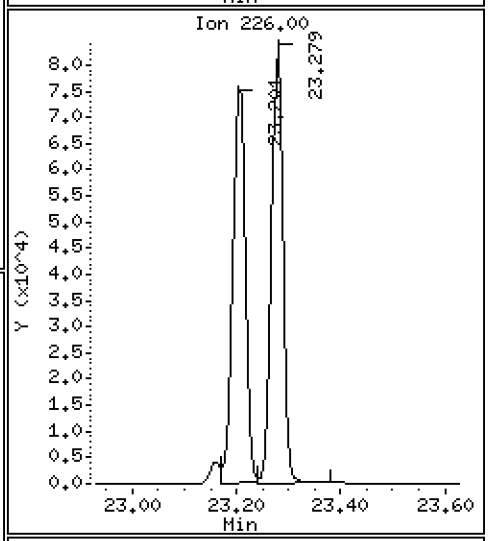


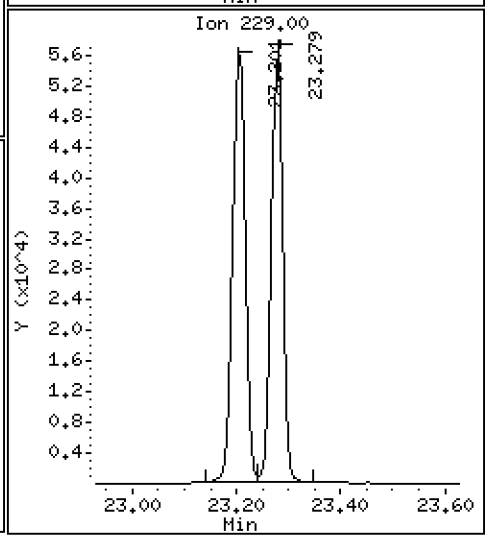












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

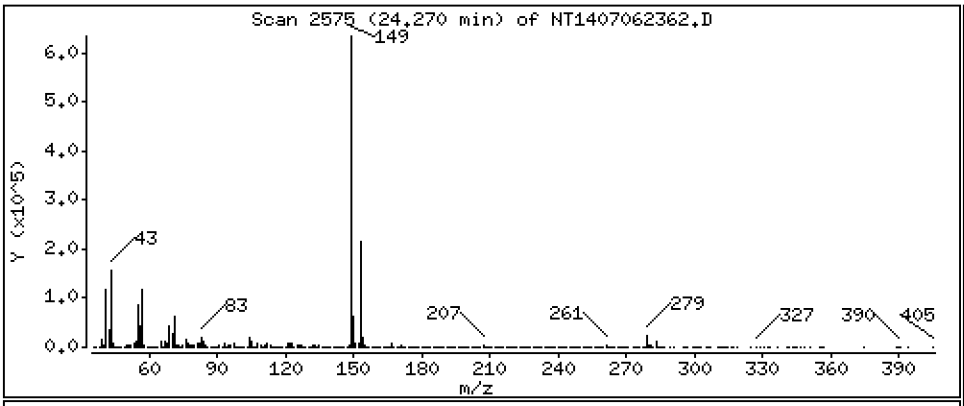
Operator: JGR

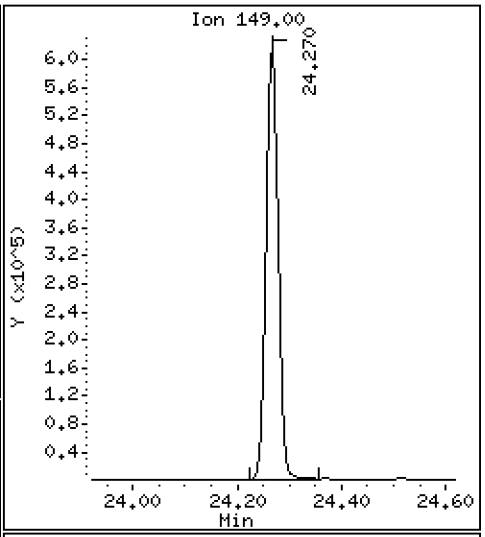
Column phase: ZB-5msi

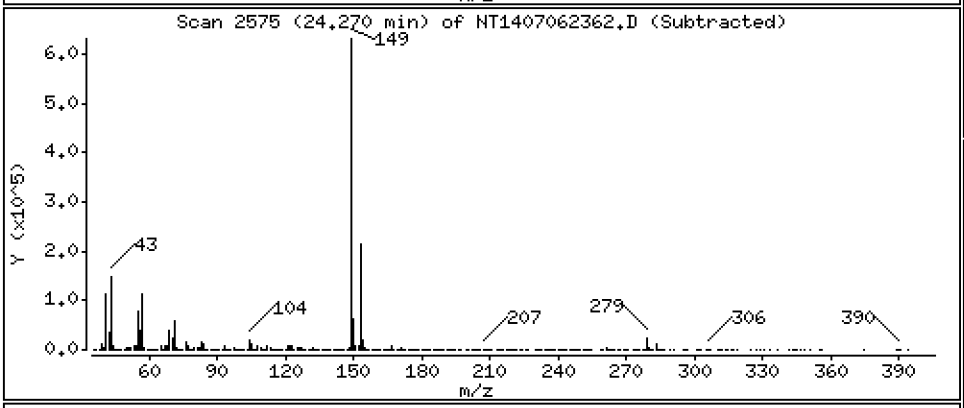
Column diameter: 0.25

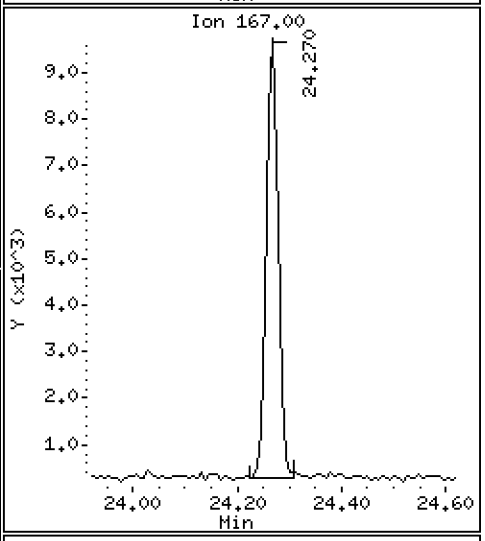
72 bis(2-Ethylhexyl)phthalate

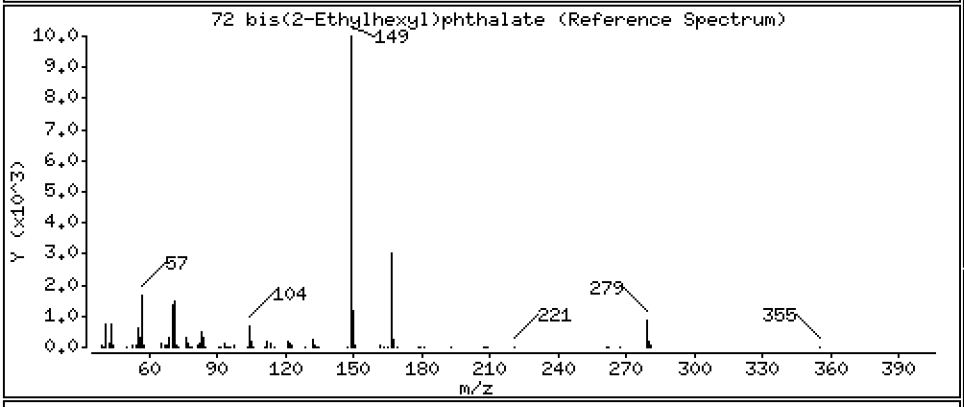
Concentration: 4.951 ug/mL

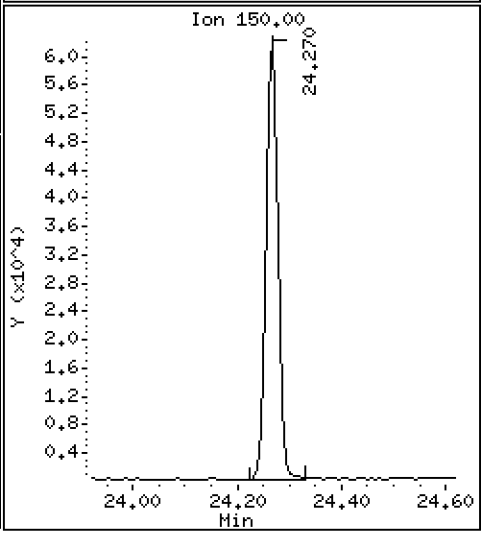


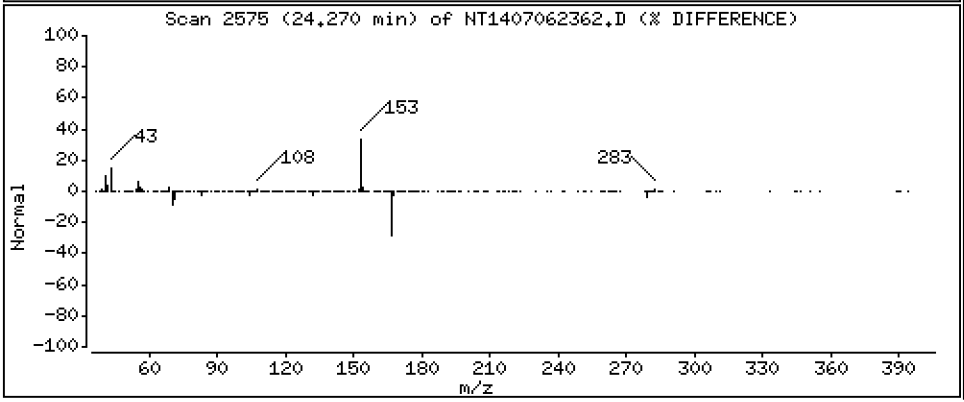












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

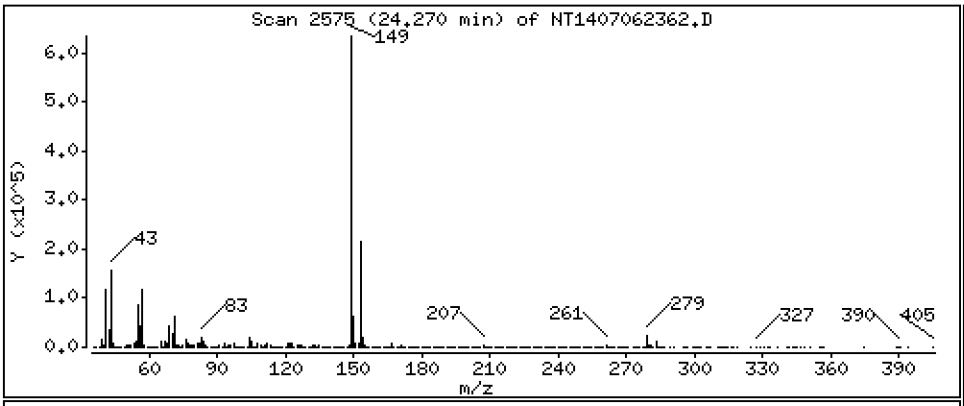
Operator: JGR

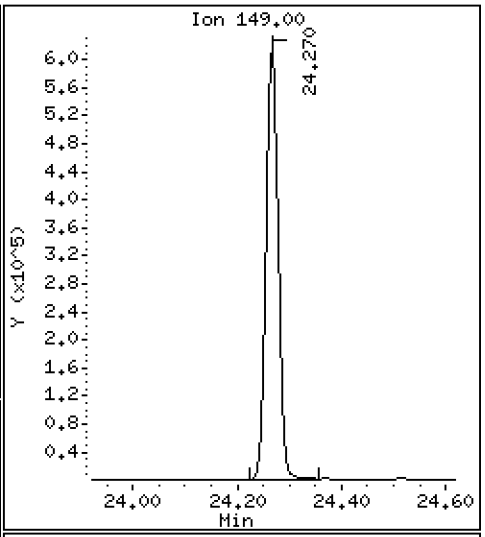
Column phase: ZB-5msi

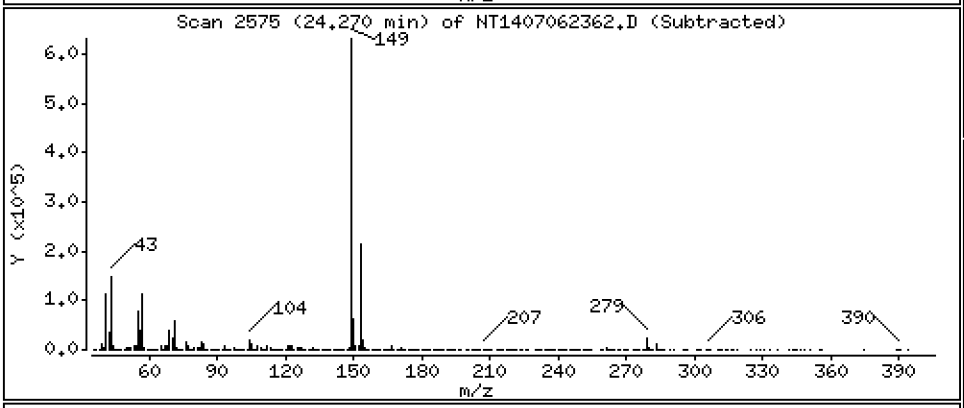
Column diameter: 0.25

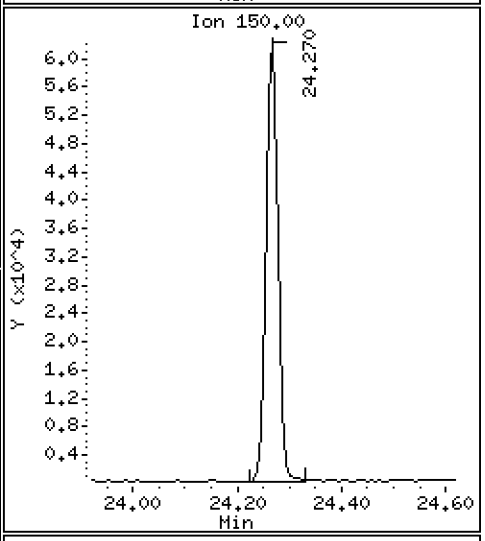
73 Di-n-octylphthalate

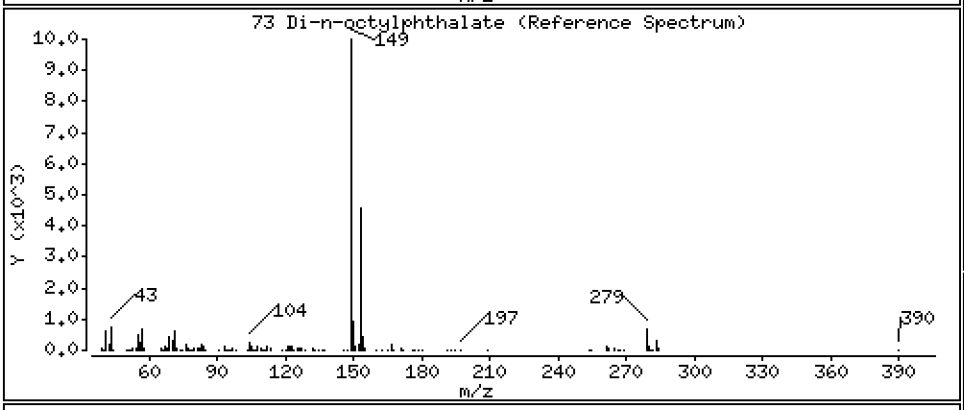
Concentration: 4.951 ug/mL

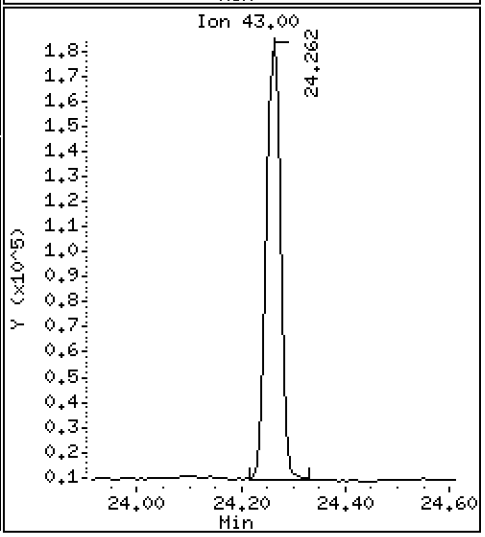


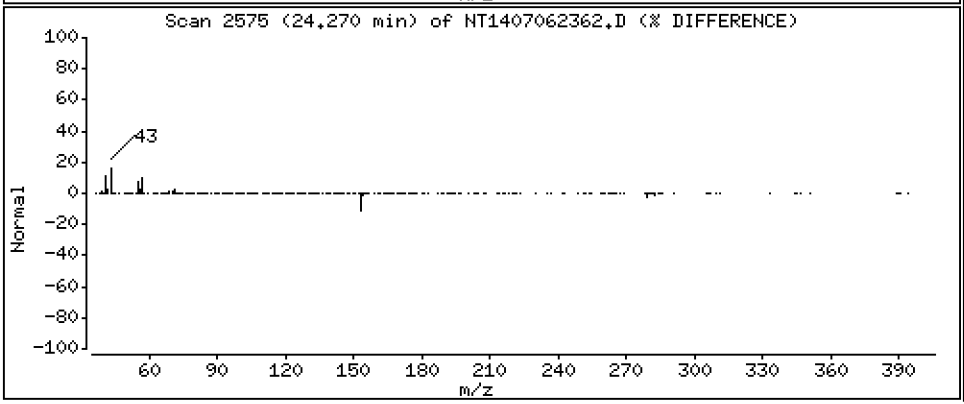












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

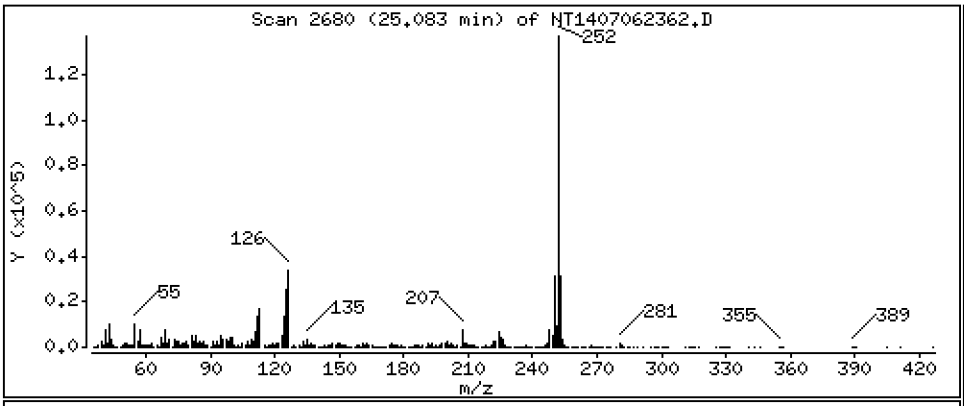
Operator: JGR

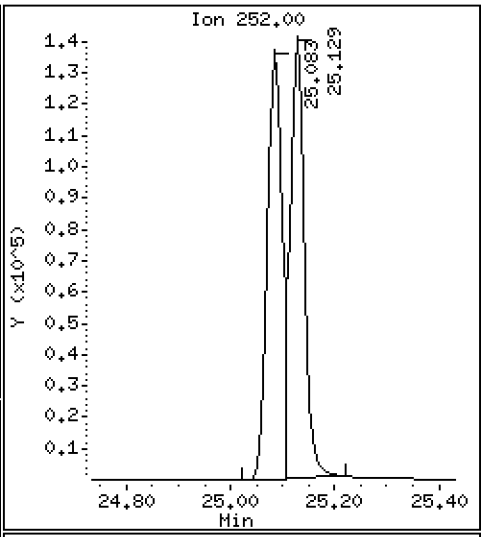
Column phase: ZB-5msi

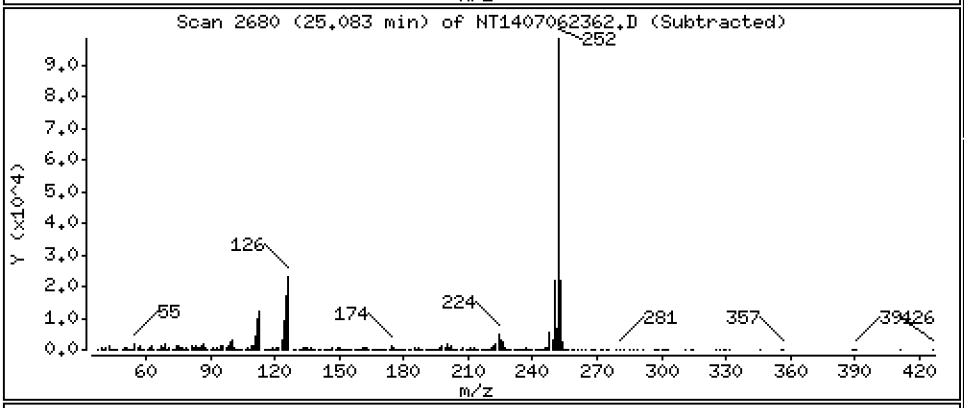
Column diameter: 0.25

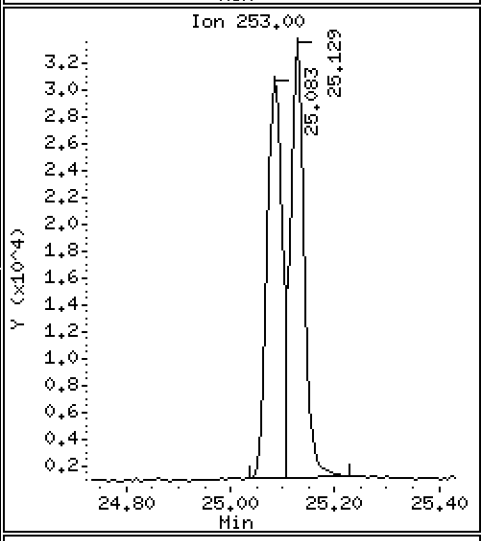
74 Benzo(b)fluoranthene

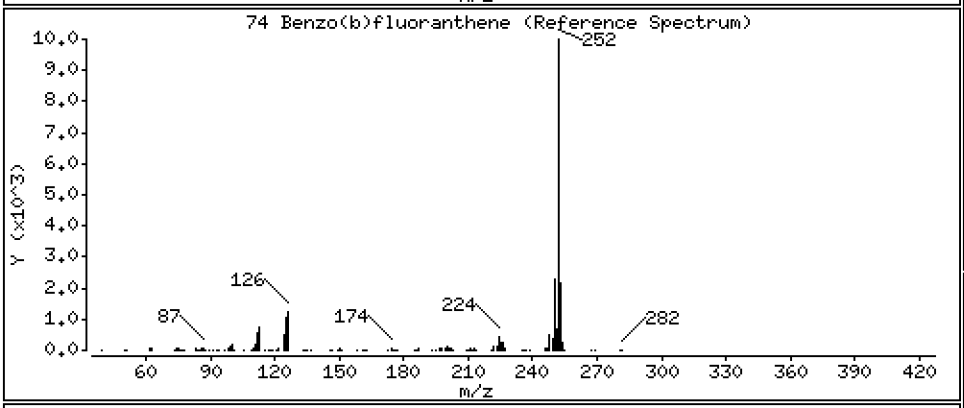
Concentration: 6.145 ug/mL

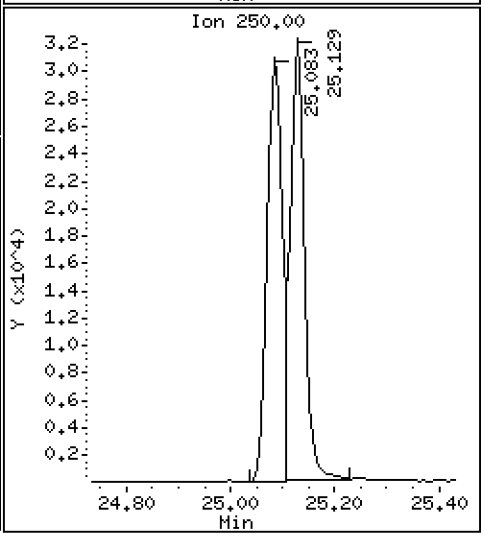


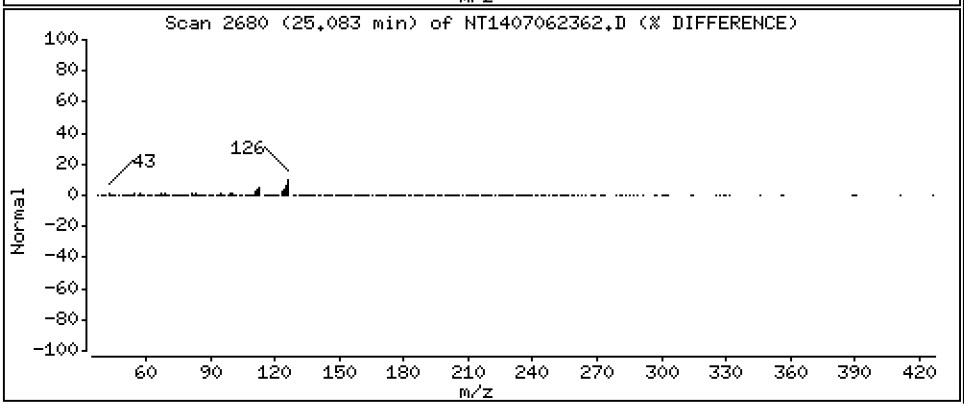












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

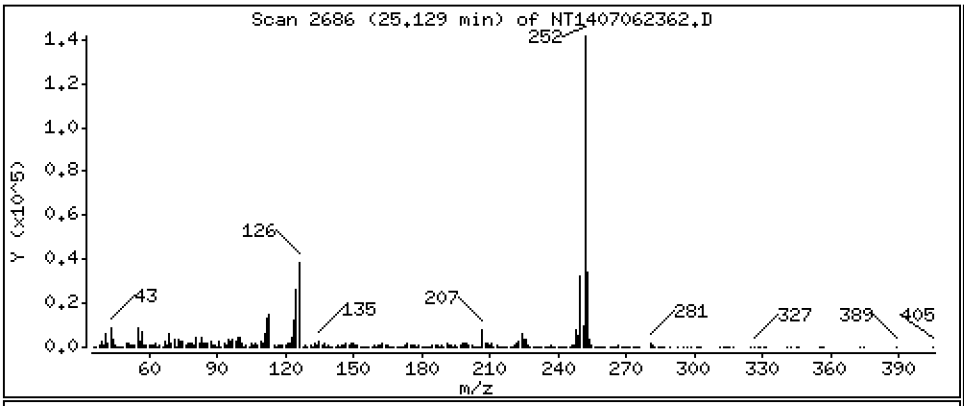
Operator: JGR

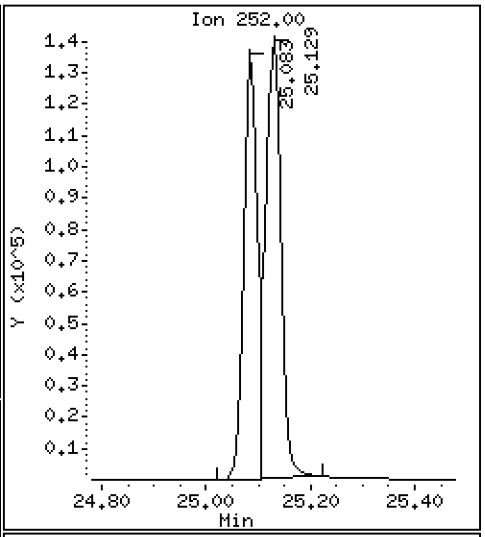
Column phase: ZB-5msi

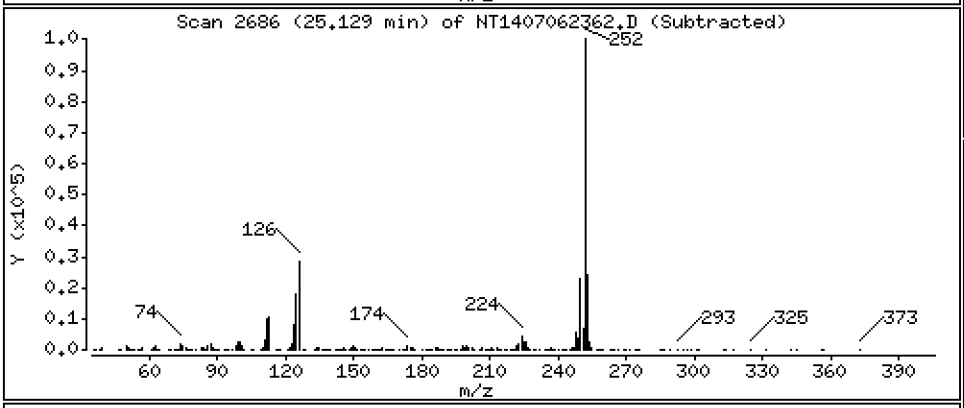
Column diameter: 0.25

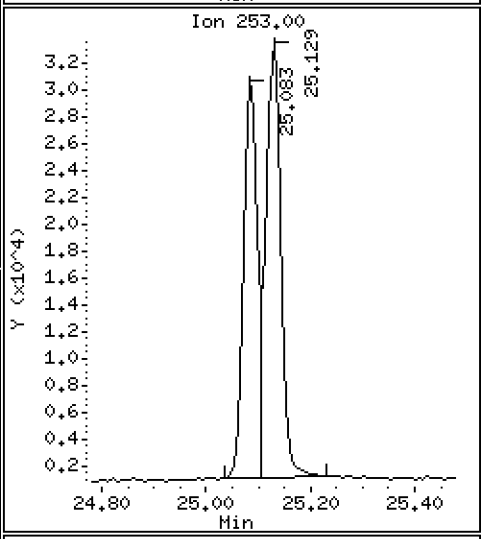
75 Benzo(k)fluoranthene

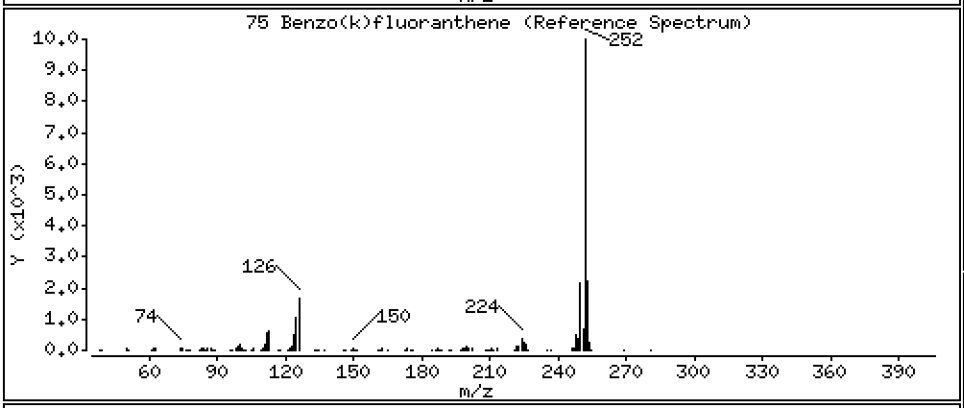
Concentration: 5.945 ug/mL

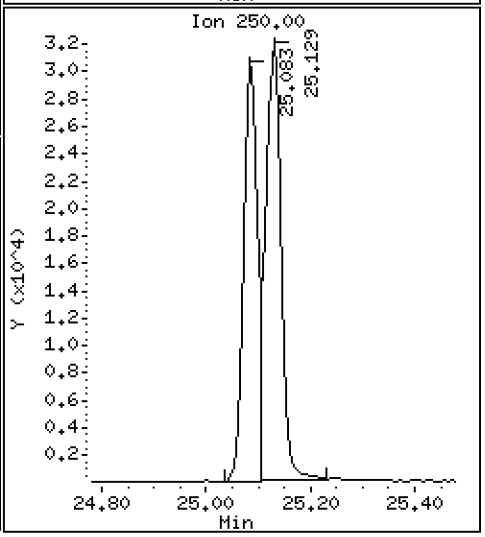


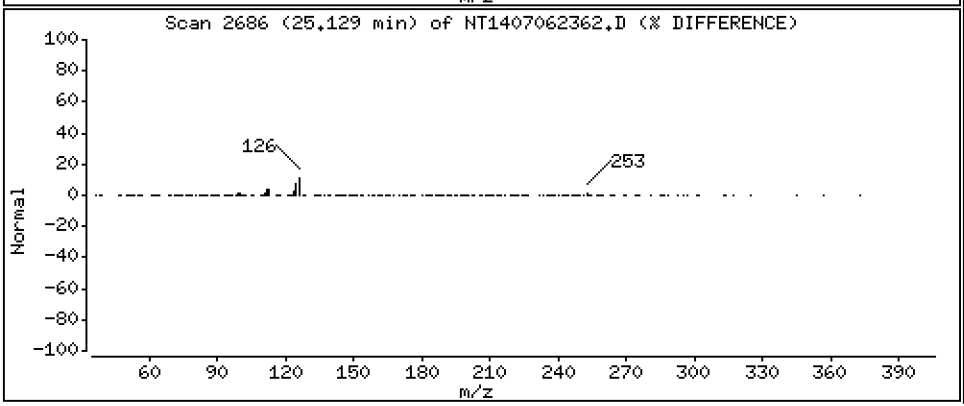












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

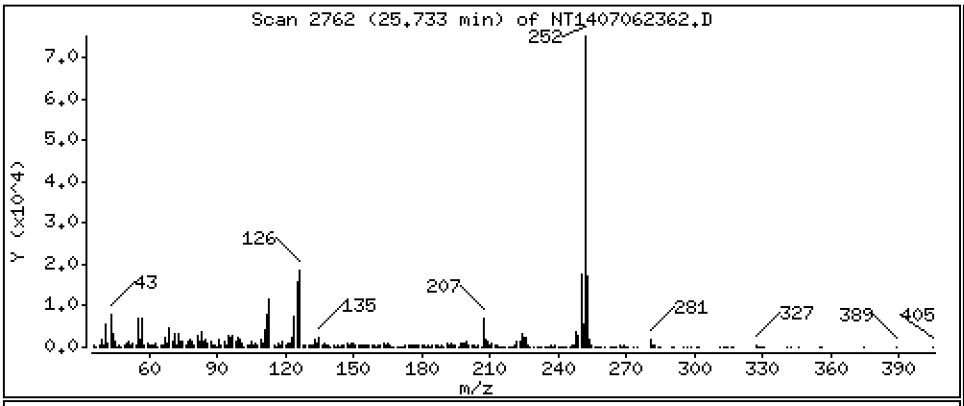
Operator: JGR

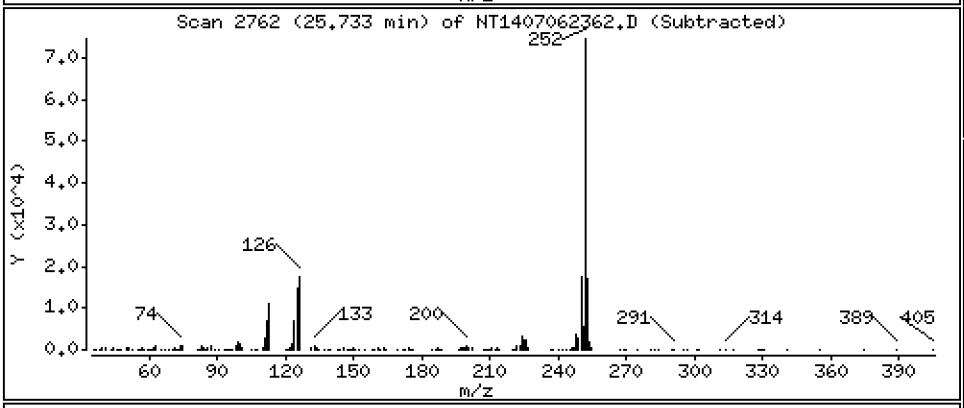
Column phase: ZB-5msi

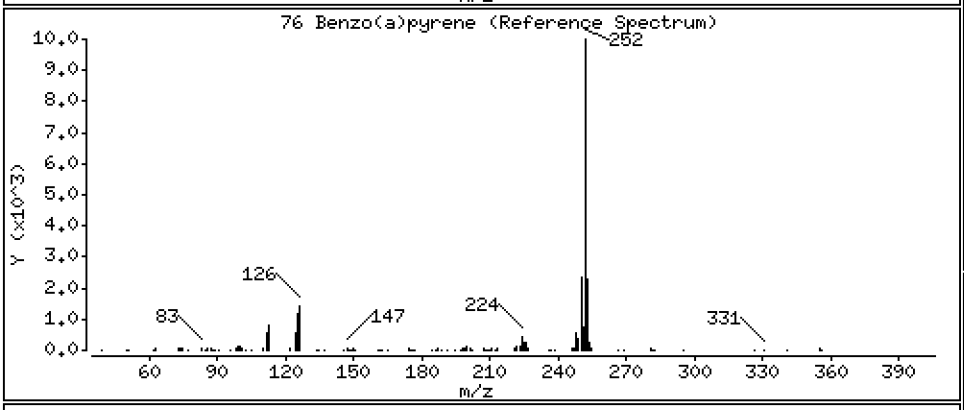
Column diameter: 0.25

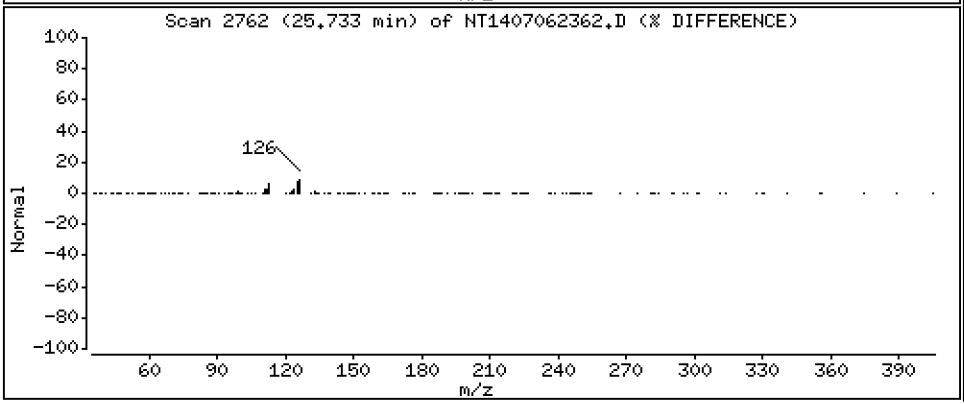
76 Benzo(a)pyrene

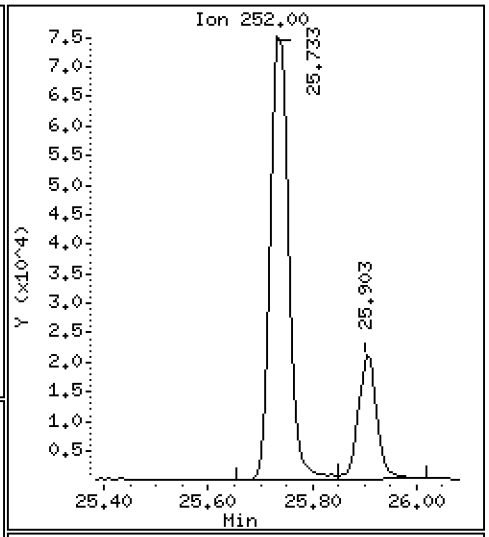
Concentration: 5.308 ug/mL

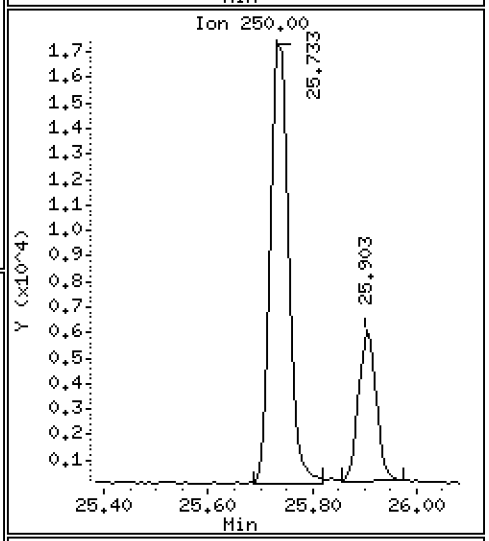


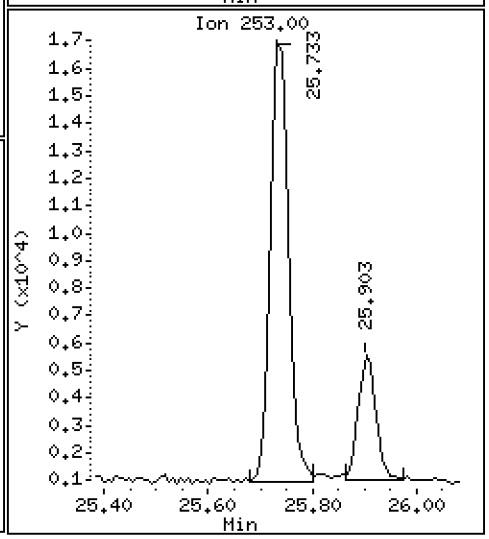












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

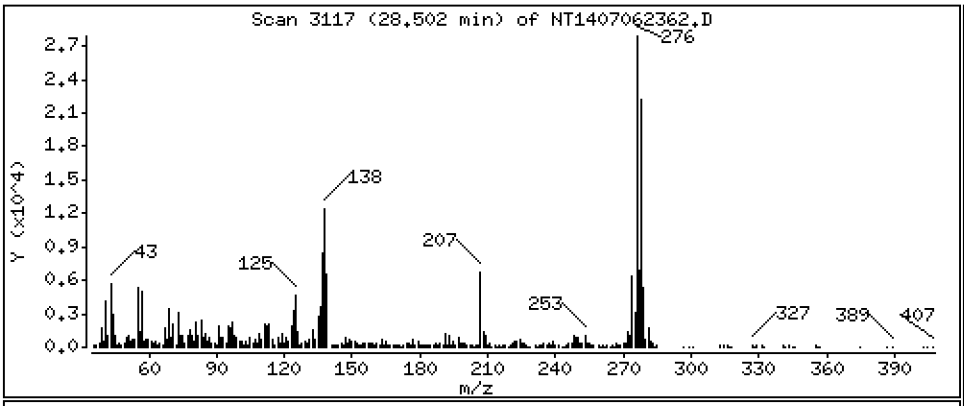
Operator: JGR

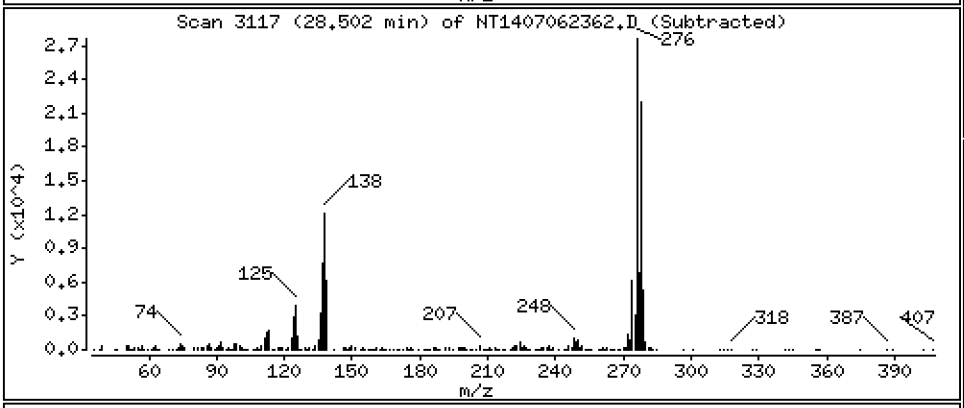
Column phase: ZB-5msi

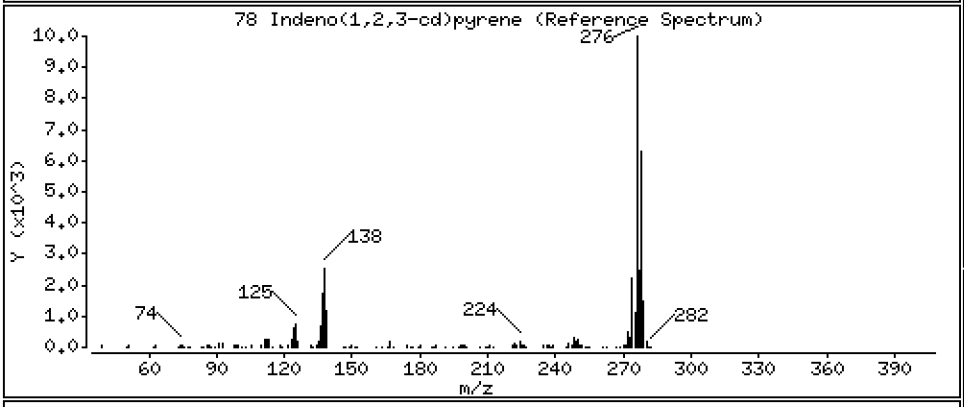
Column diameter: 0.25

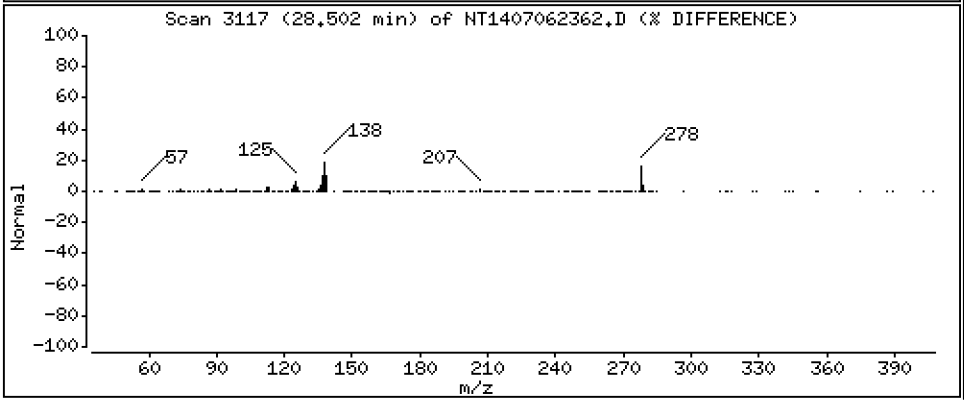
78 Indeno(1,2,3-cd)pyrene

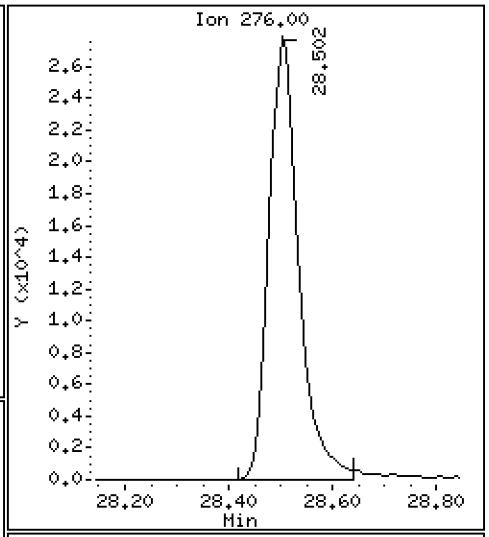
Concentration: 3.654 ug/mL

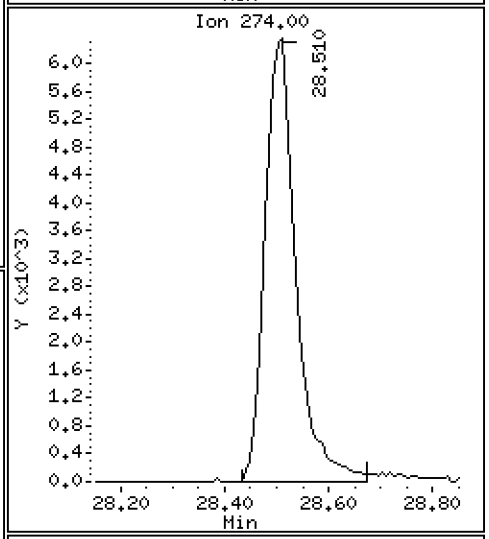


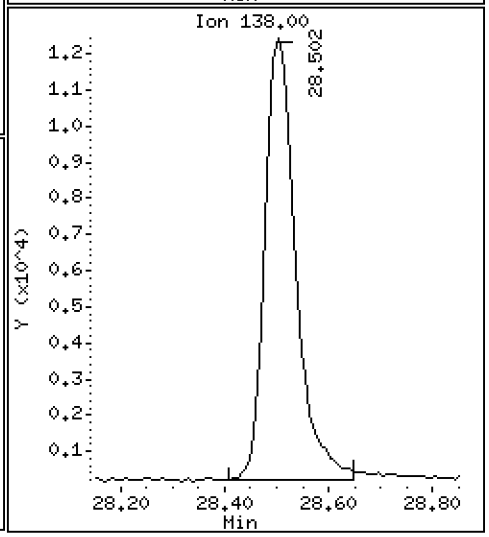












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

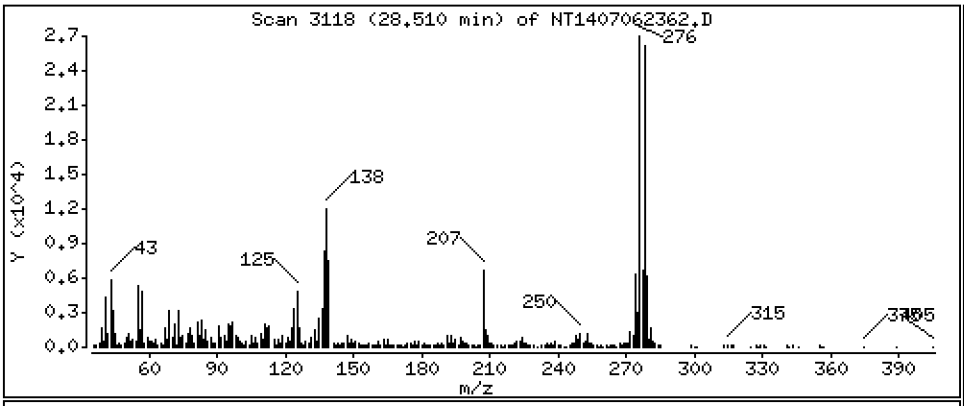
Operator: JGR

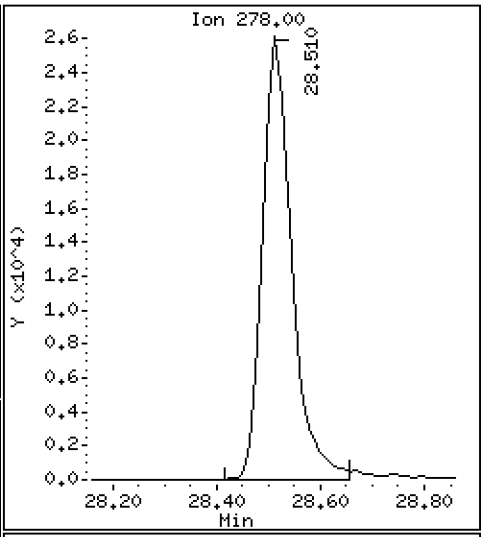
Column phase: ZB-5msi

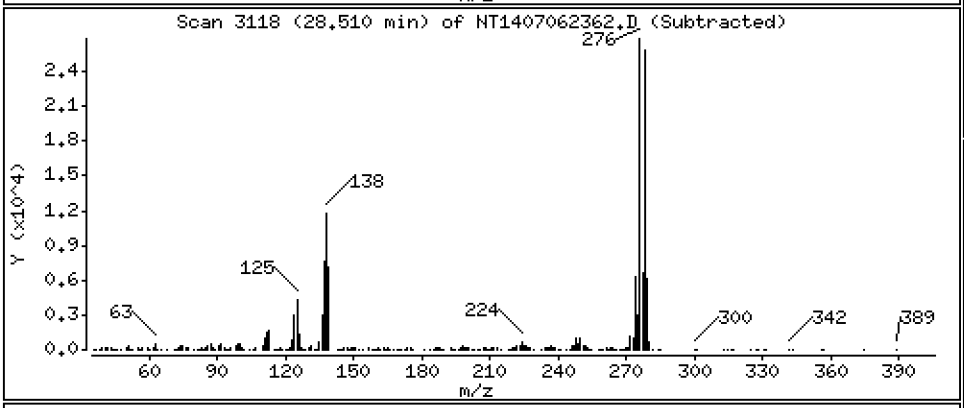
Column diameter: 0.25

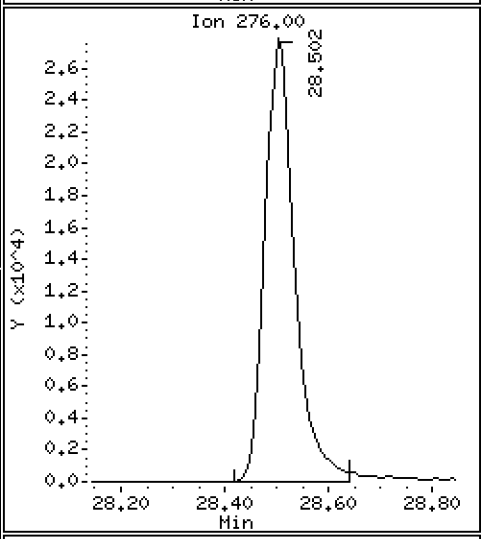
79 Dibenzo(a,h)anthracene

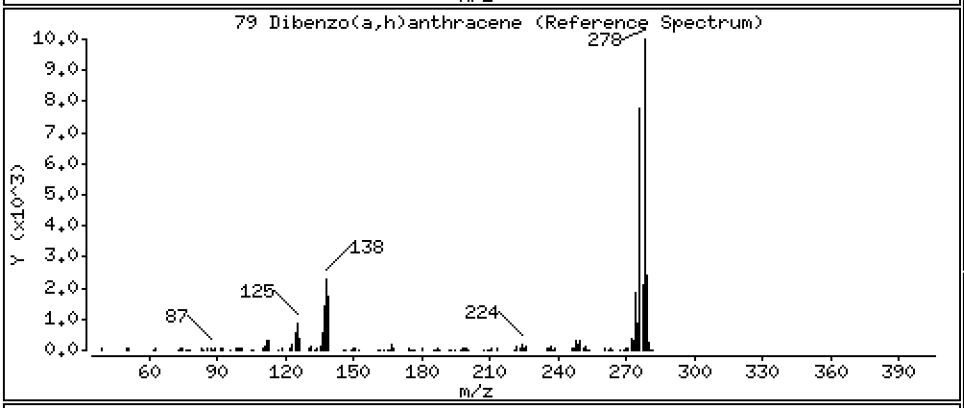
Concentration: 3.945 ug/mL

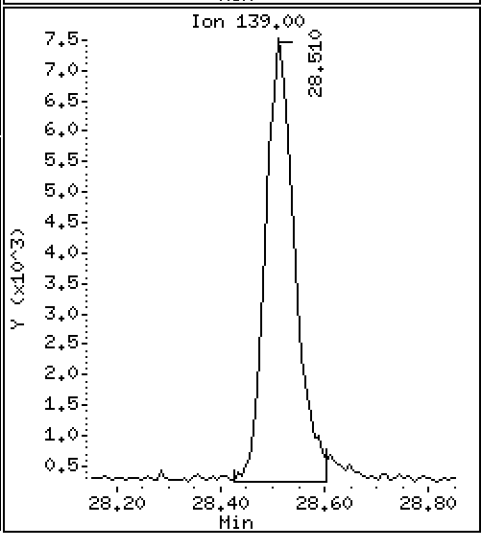


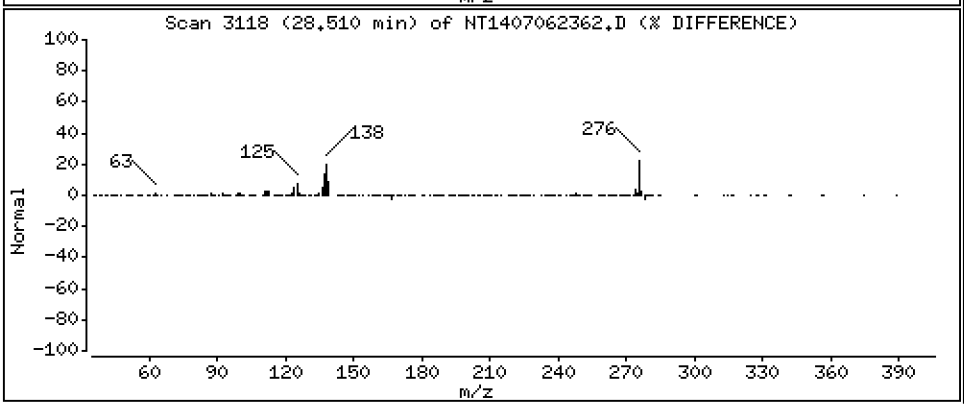












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

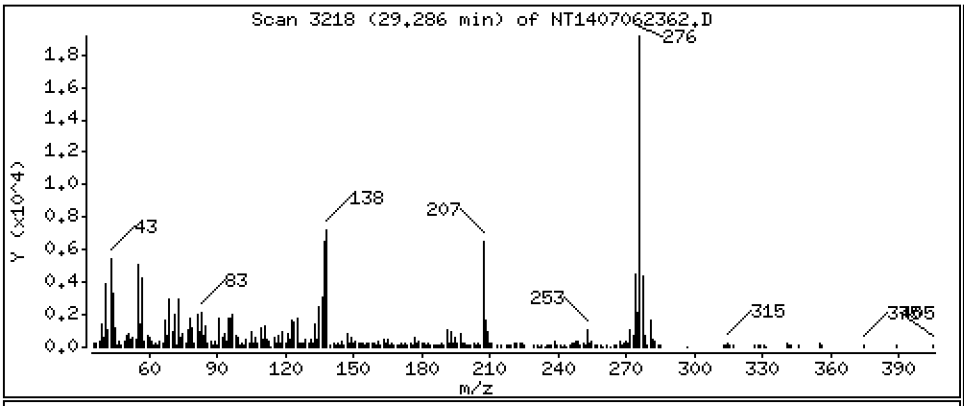
Operator: JGR

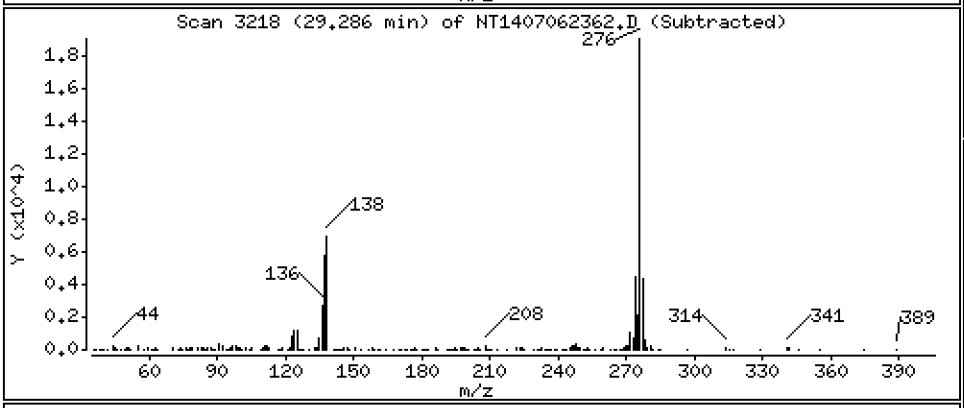
Column phase: ZB-5msi

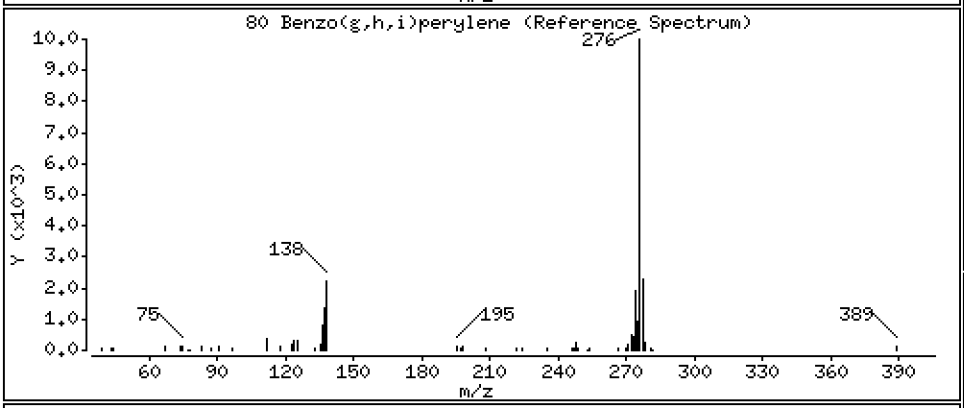
Column diameter: 0.25

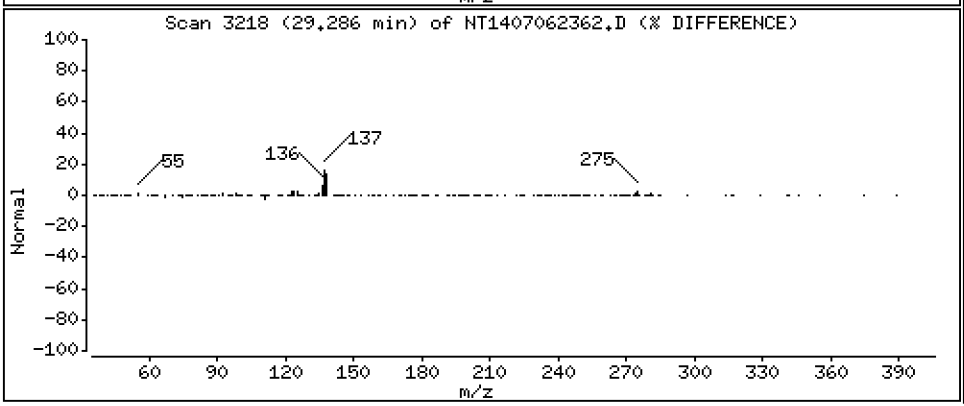
80 Benzo(g,h,i)perylene

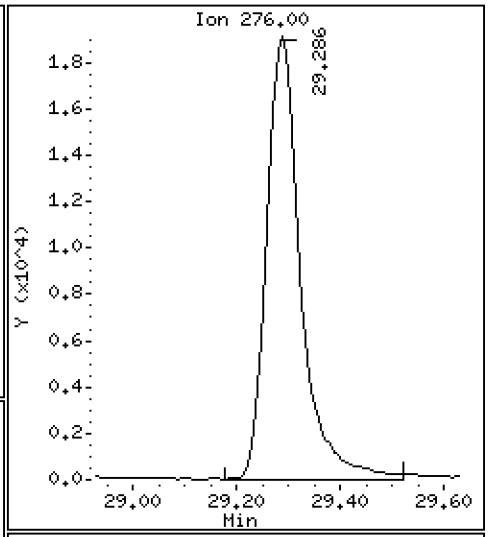
Concentration: 3.471 ug/mL

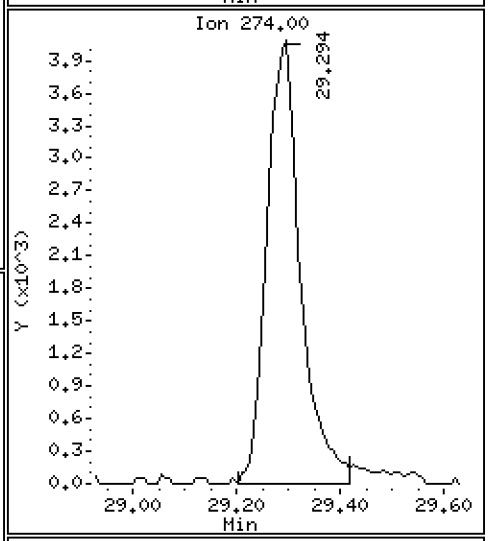


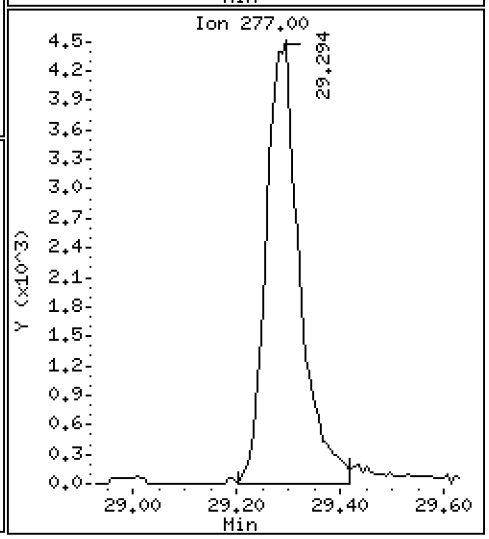












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

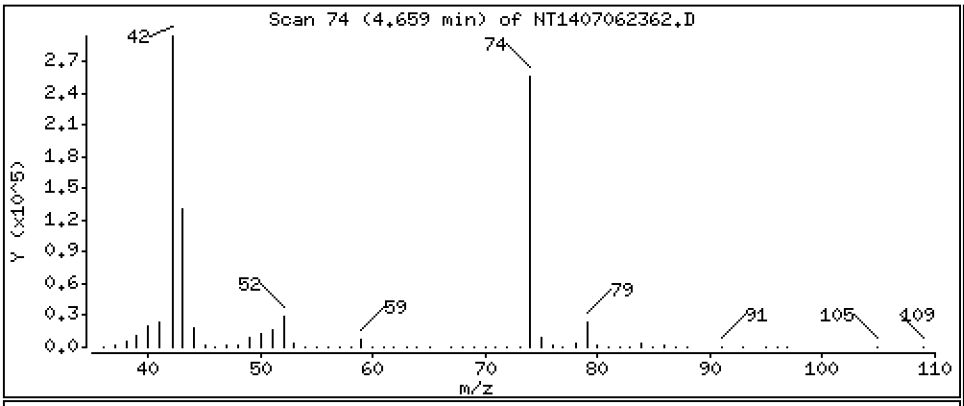
Operator: JGR

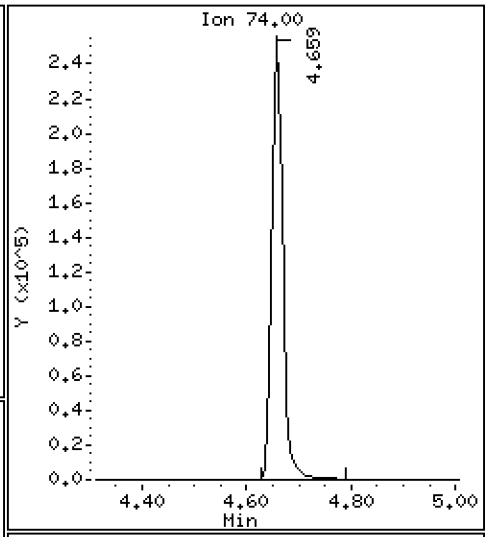
Column phase: ZB-5msi

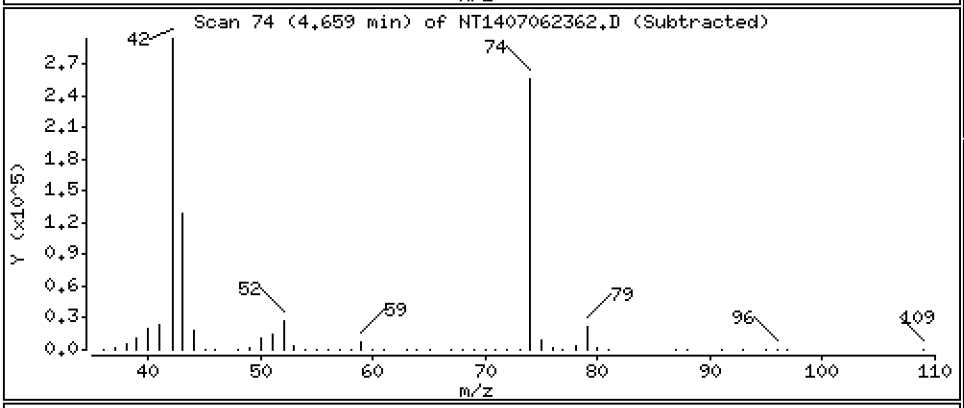
Column diameter: 0.25

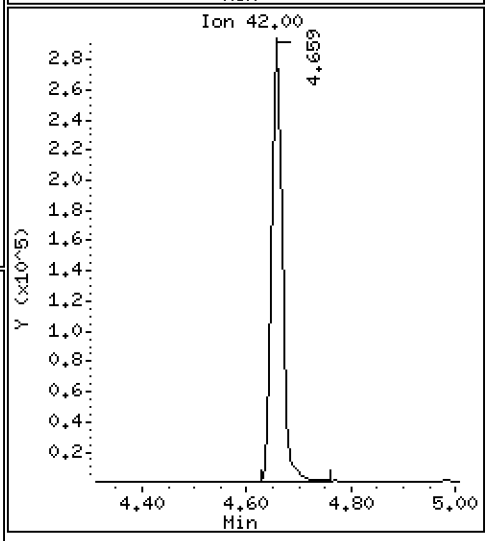
90 N-Nitrosodimethylamine

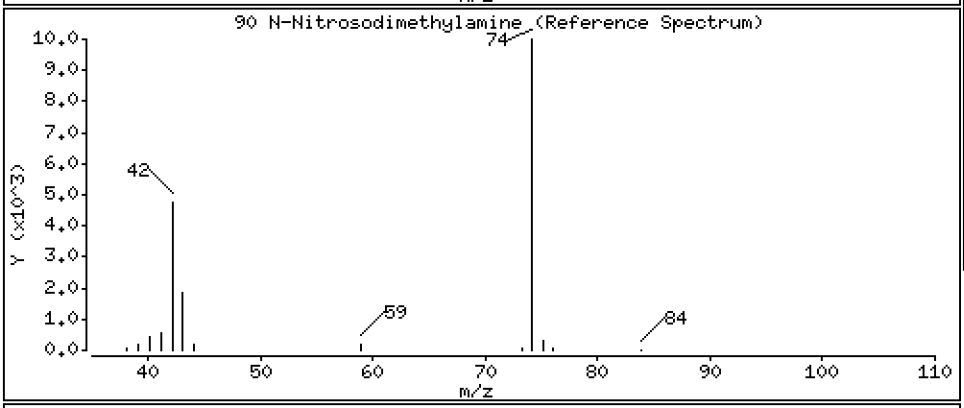
Concentration: 9.447 ug/mL

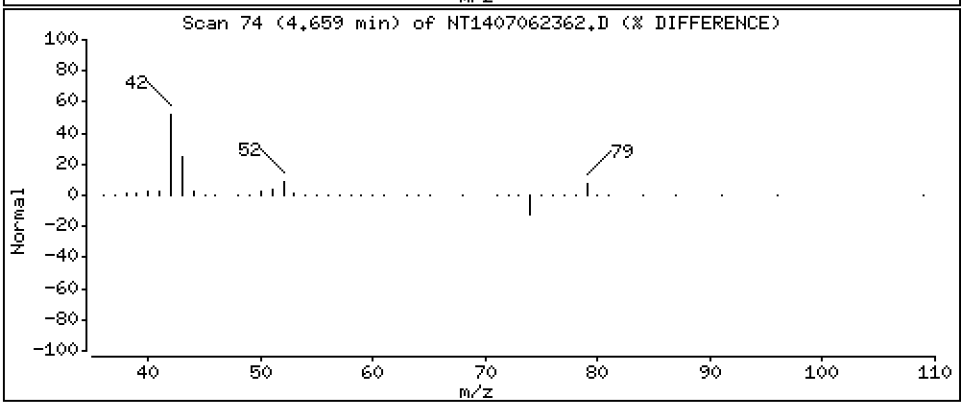












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

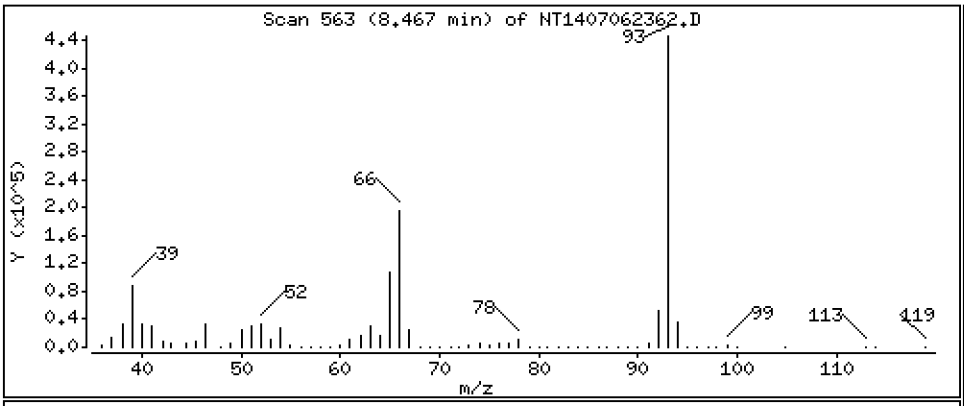
Operator: JGR

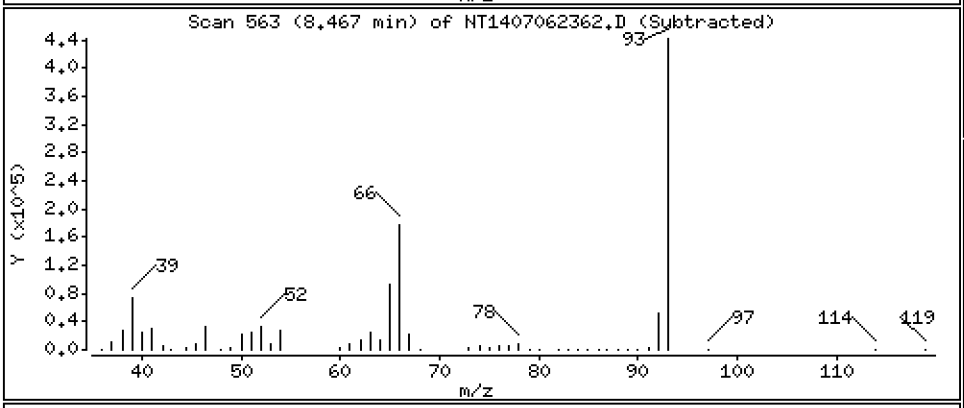
Column phase: ZB-5msi

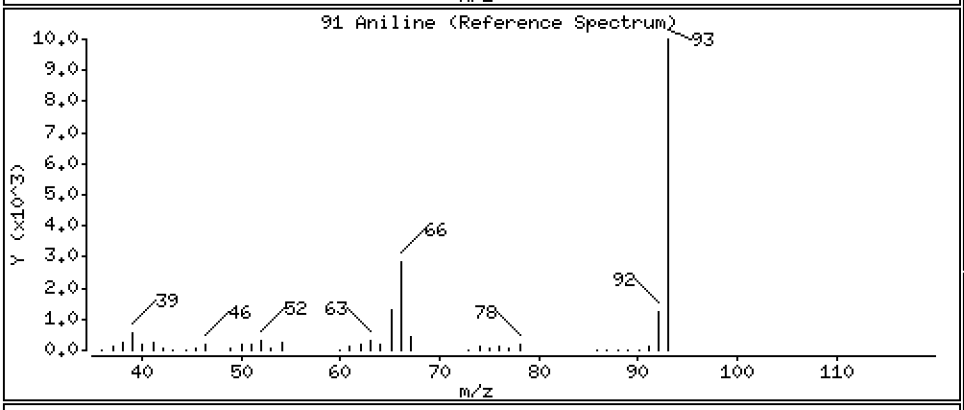
Column diameter: 0.25

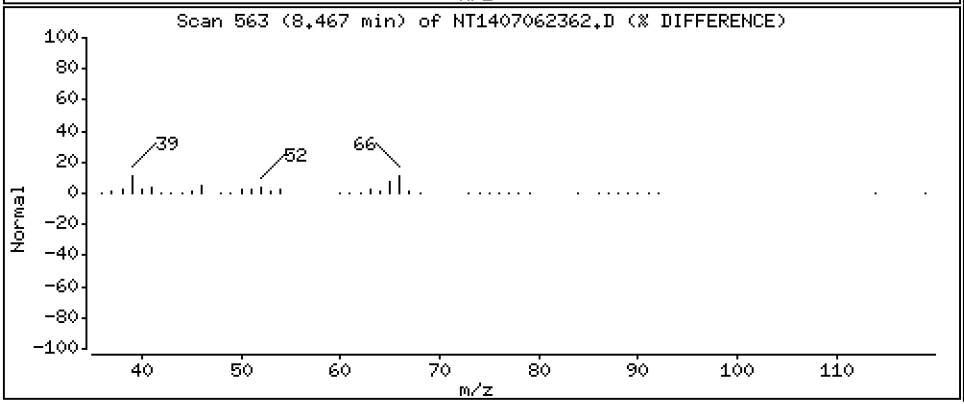
91 Aniline

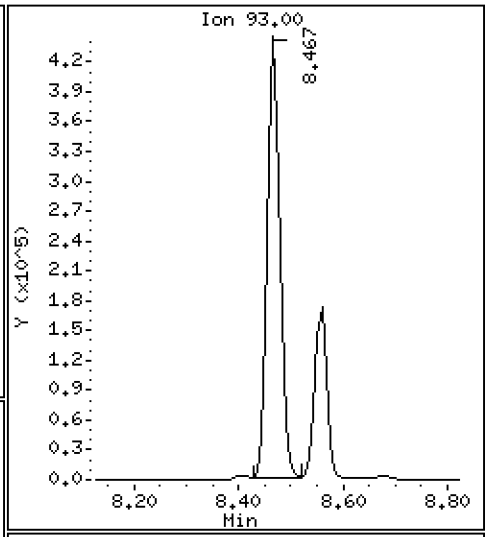
Concentration: 9.377 ug/mL

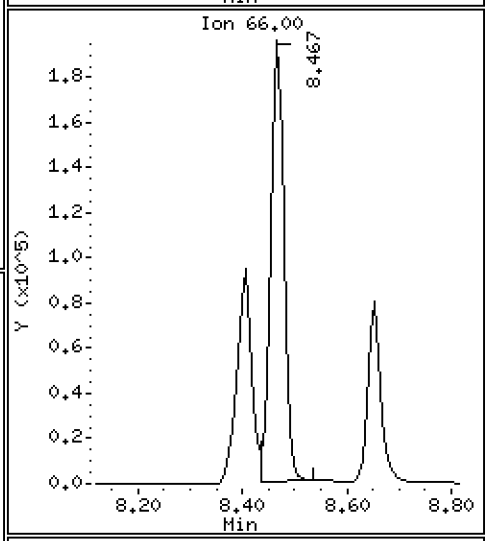


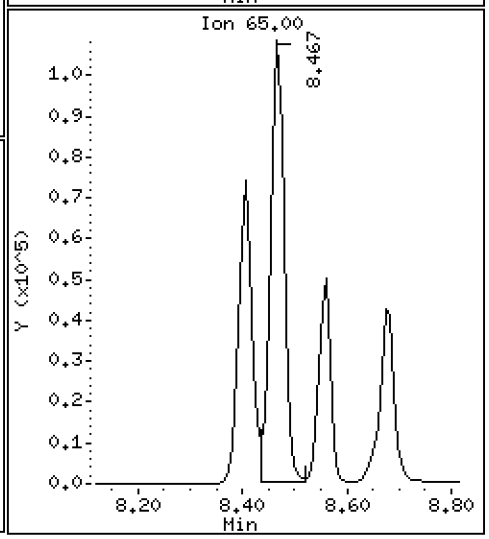












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

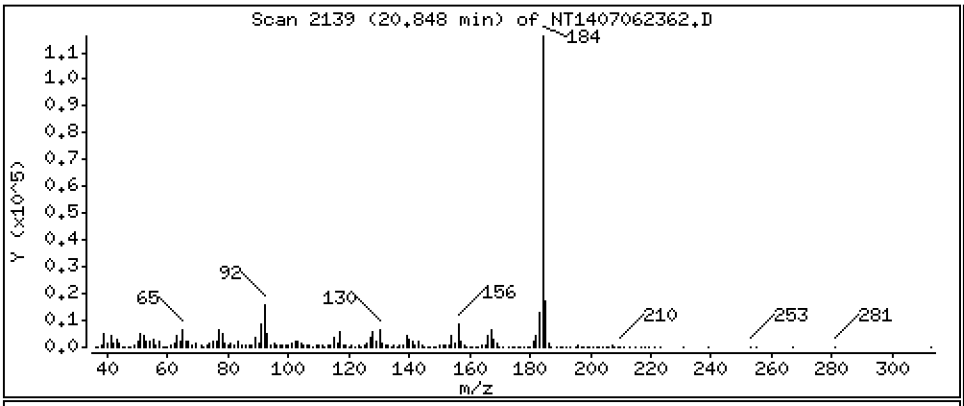
Operator: JGR

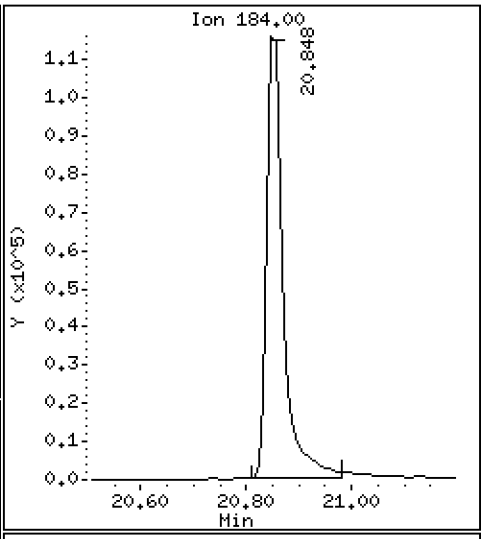
Column phase: ZB-5msi

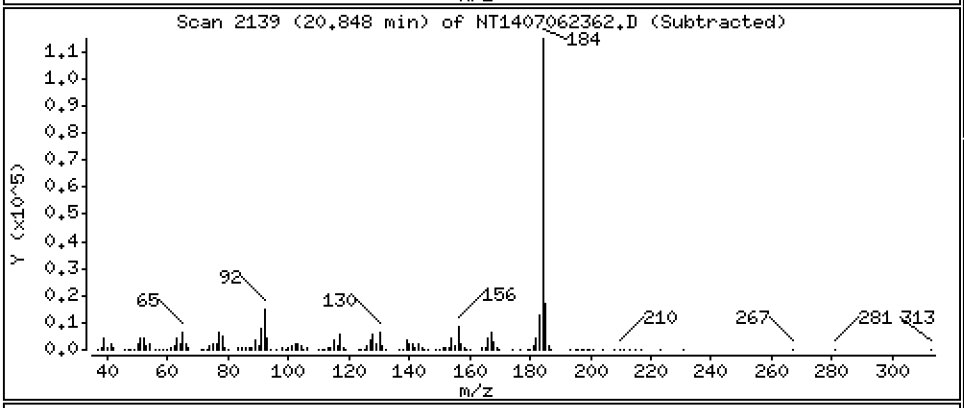
Column diameter: 0.25

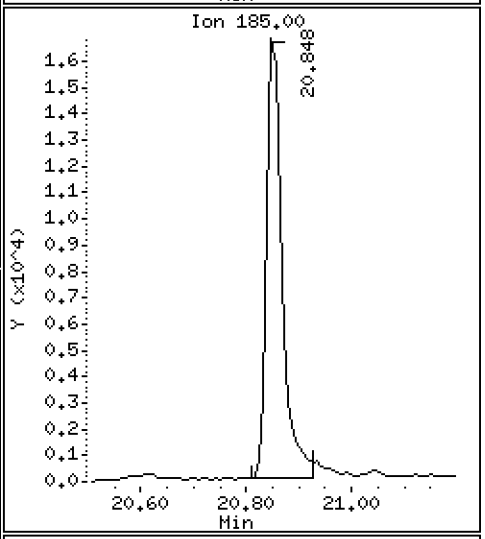
93 Benzidine

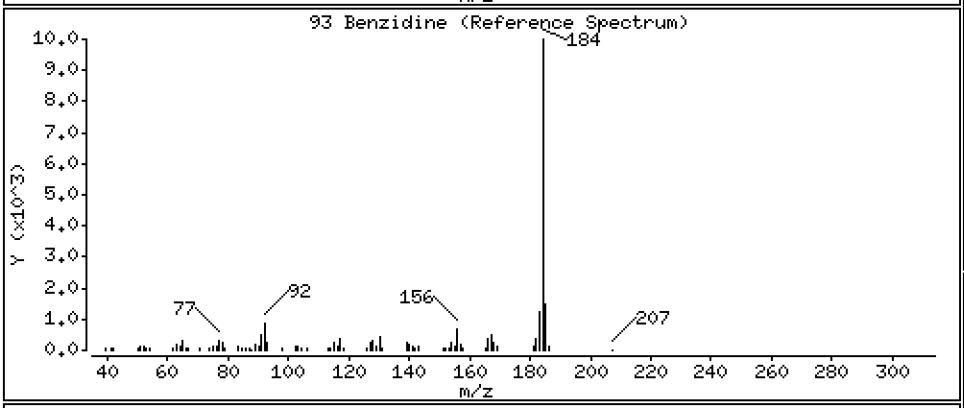
Concentration: 7.690 ug/mL

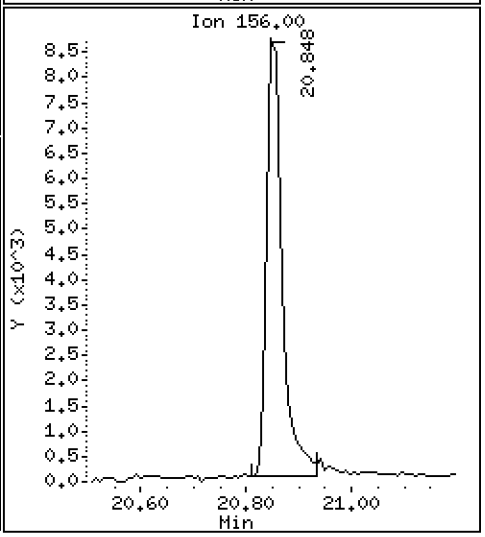


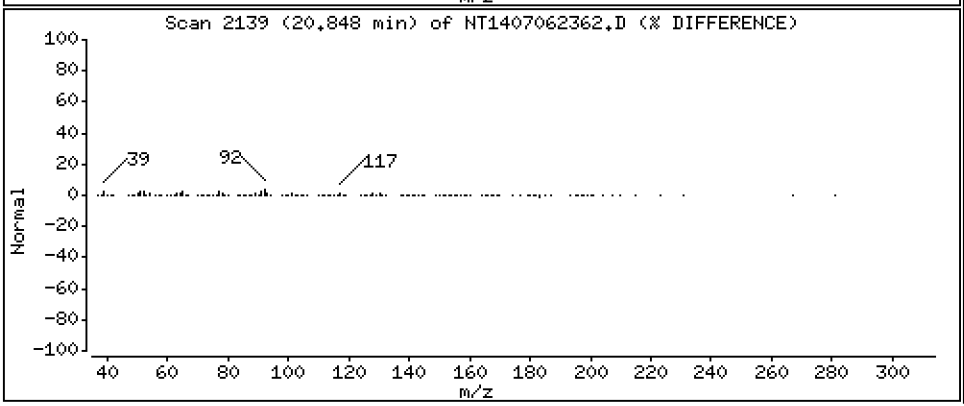












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

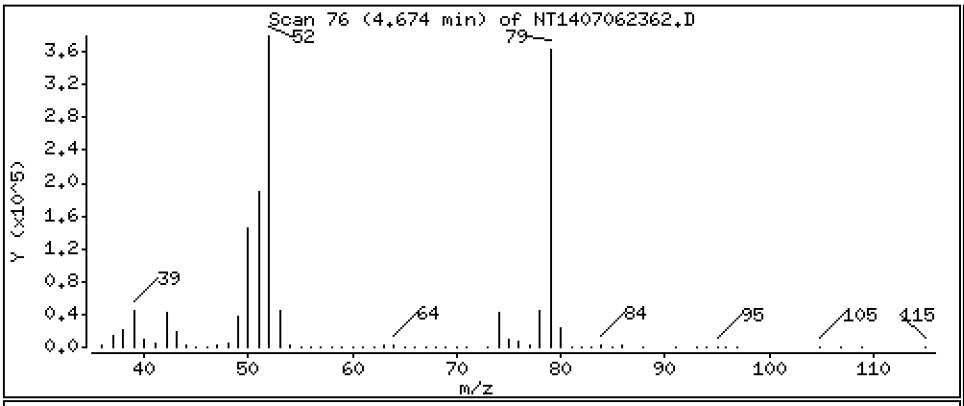
Operator: JGR

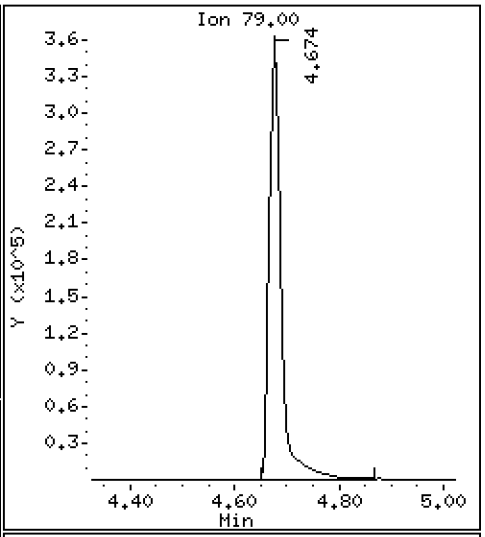
Column phase: ZB-5msi

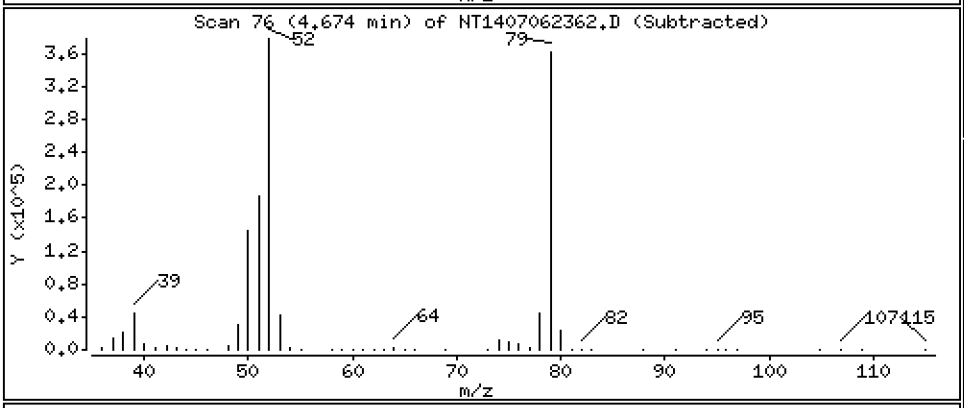
Column diameter: 0.25

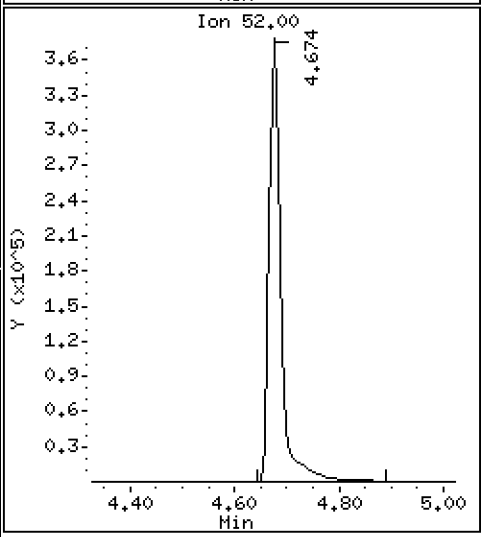
103 Pyridine

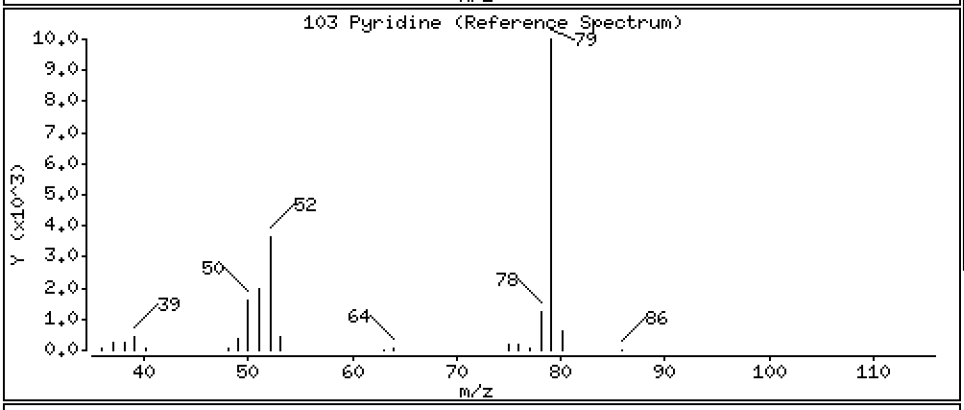
Concentration: 9.280 ug/mL

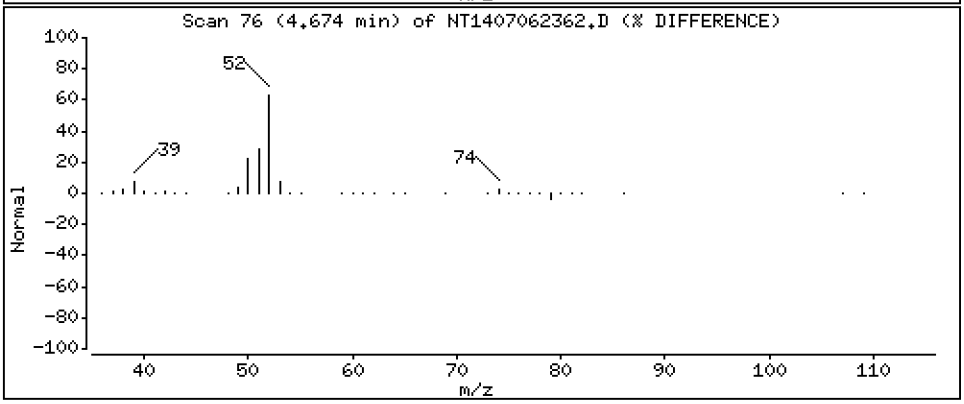












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

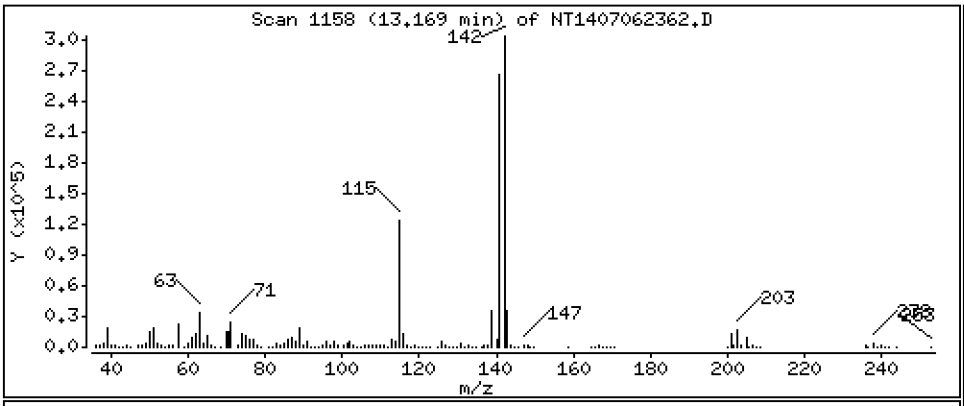
Operator: JGR

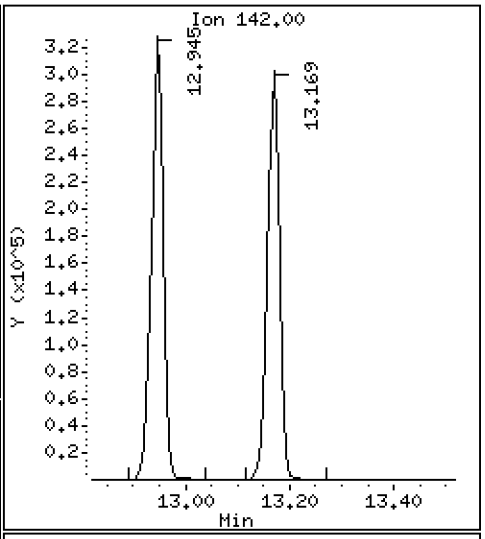
Column phase: ZB-5msi

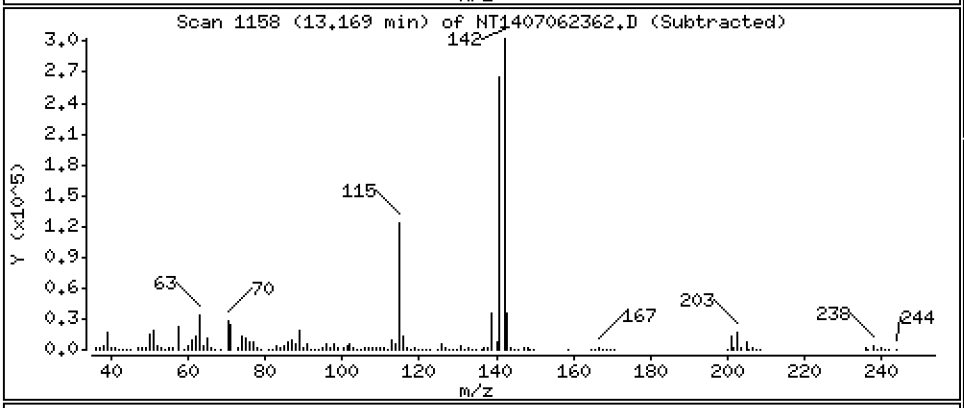
Column diameter: 0.25

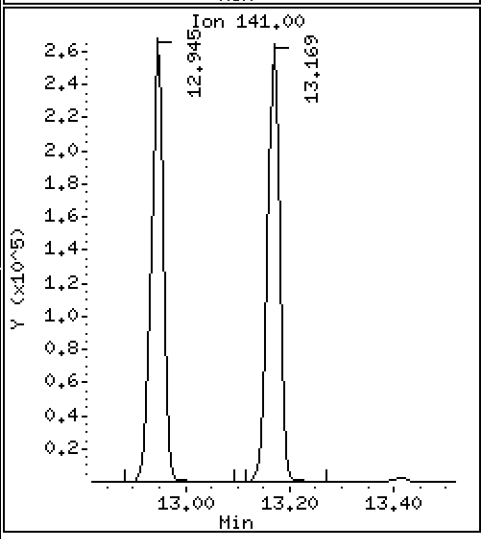
105 1-methylnaphthalene

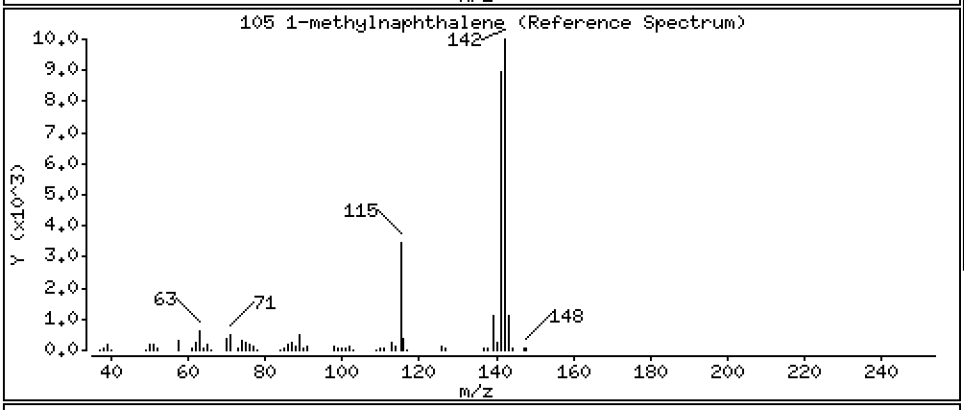
Concentration: 5.051 ug/mL

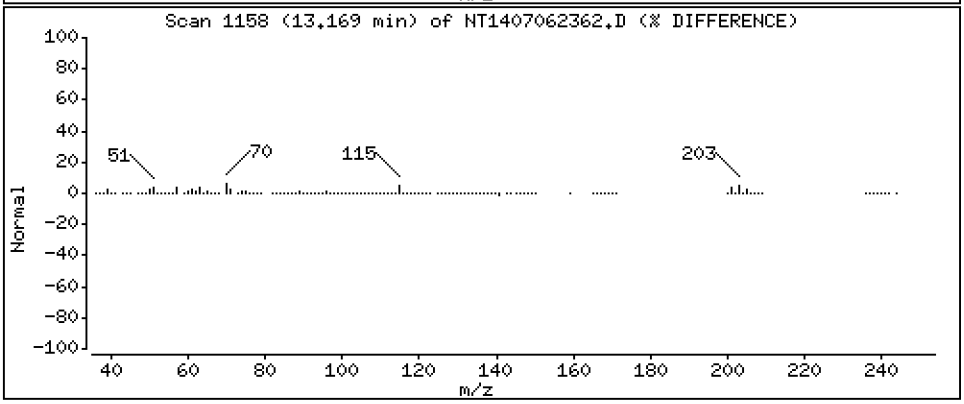












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

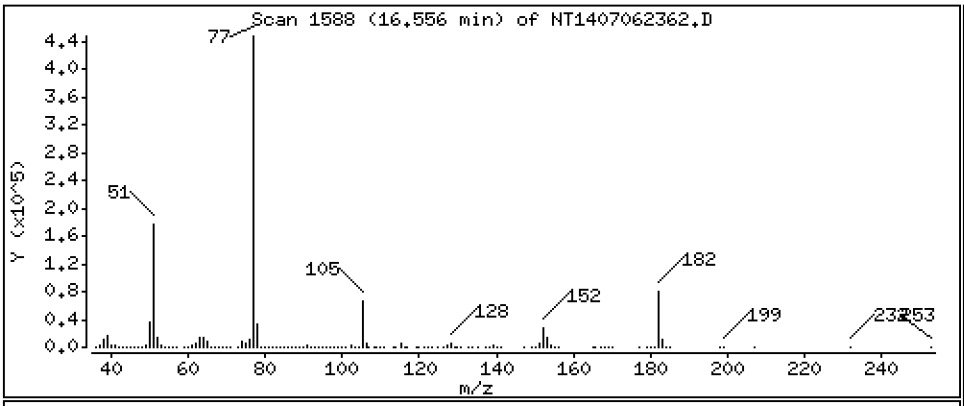
Operator: JGR

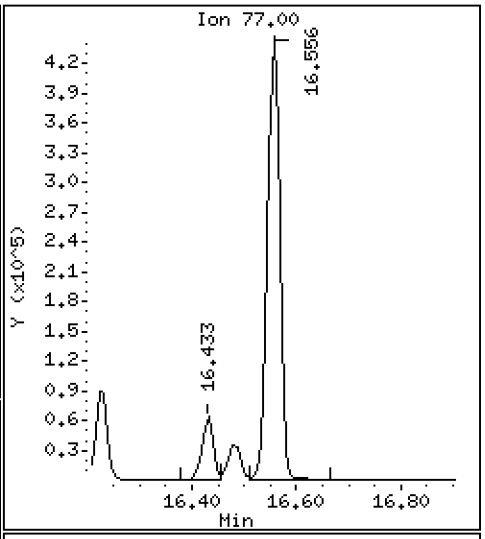
Column phase: ZB-5msi

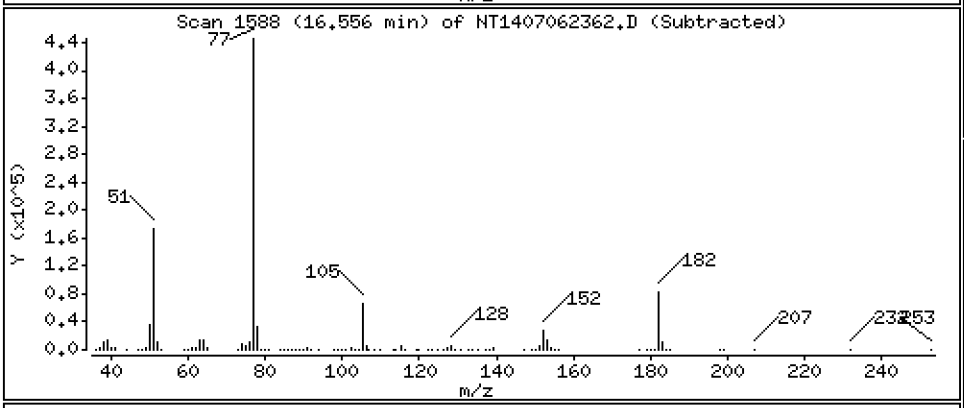
Column diameter: 0.25

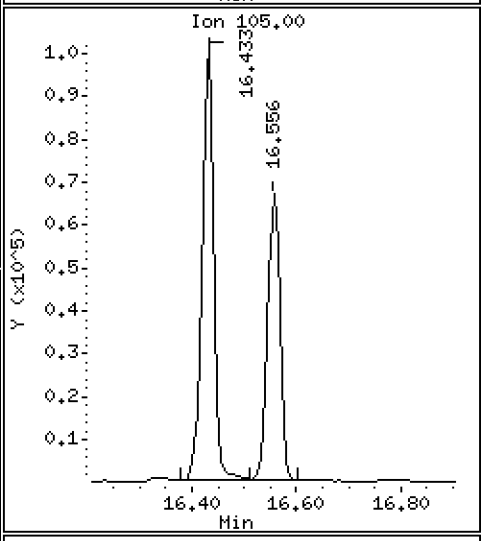
111 Azobenzene (1,2-DP-Hydrazine)

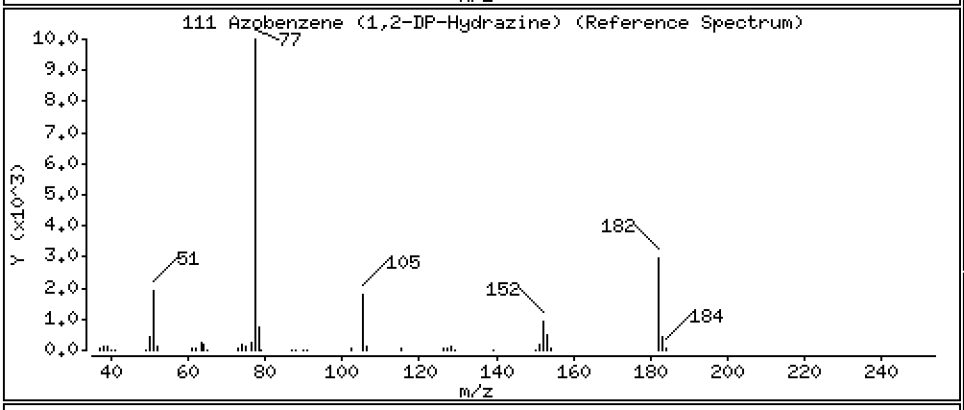
Concentration: 4.759 ug/mL

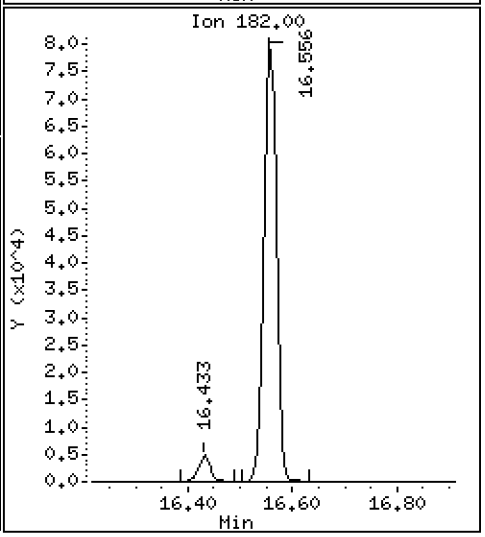


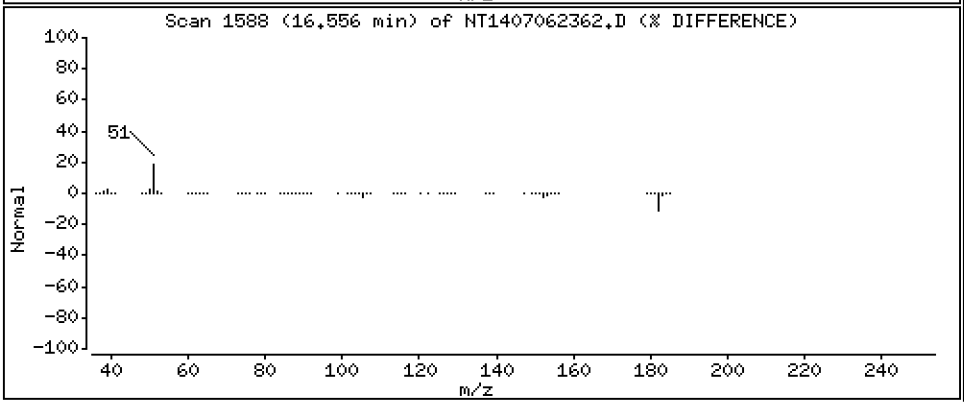












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

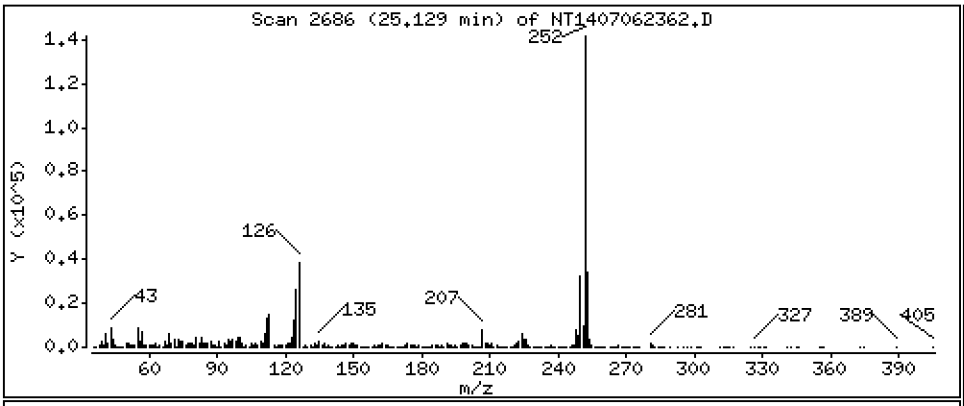
Operator: JGR

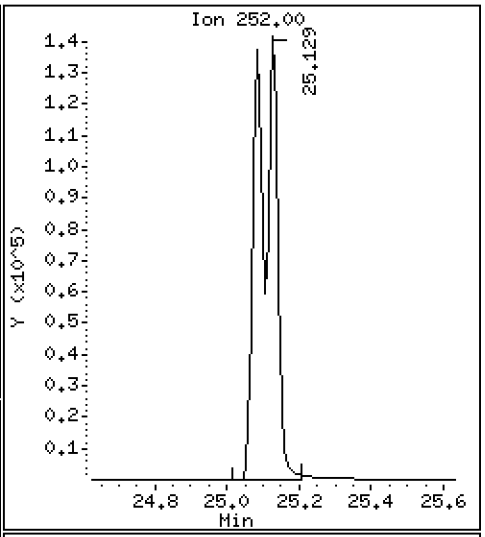
Column phase: ZB-5msi

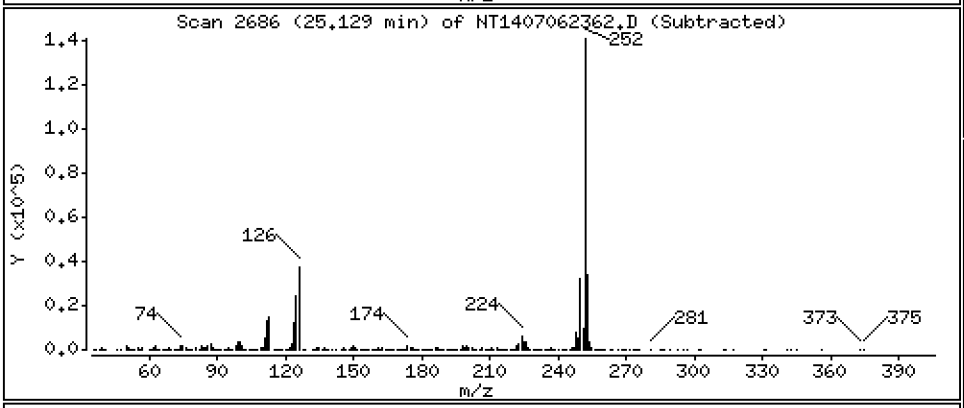
Column diameter: 0.25

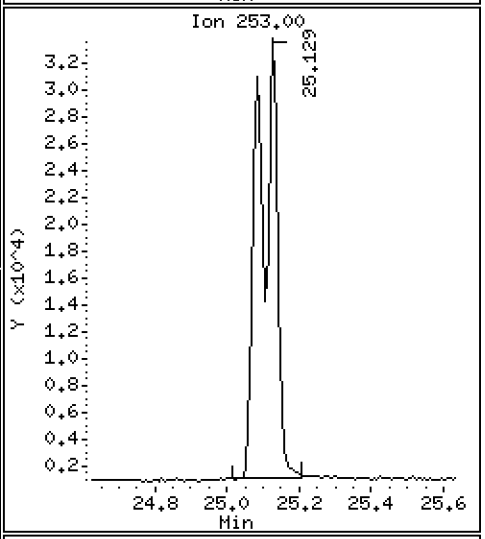
187 Total Benzofluoranthenes

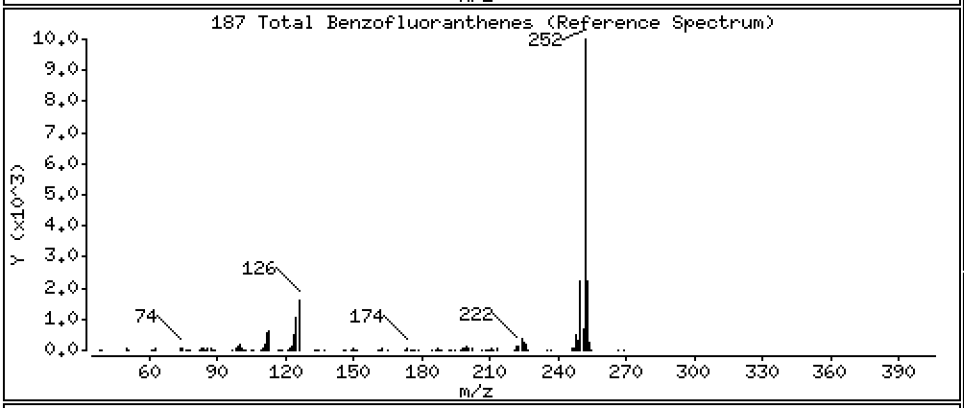
Concentration: 12.08 ug/mL

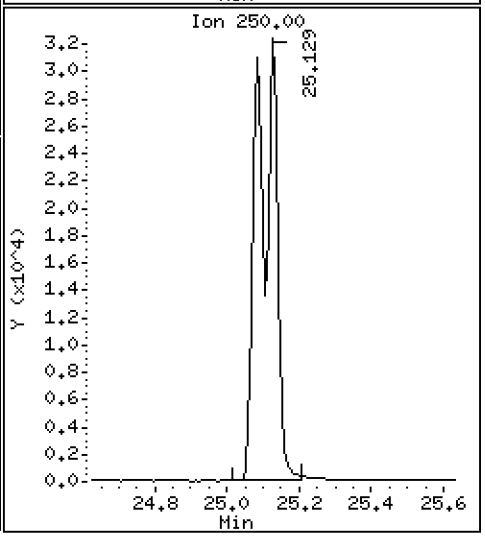


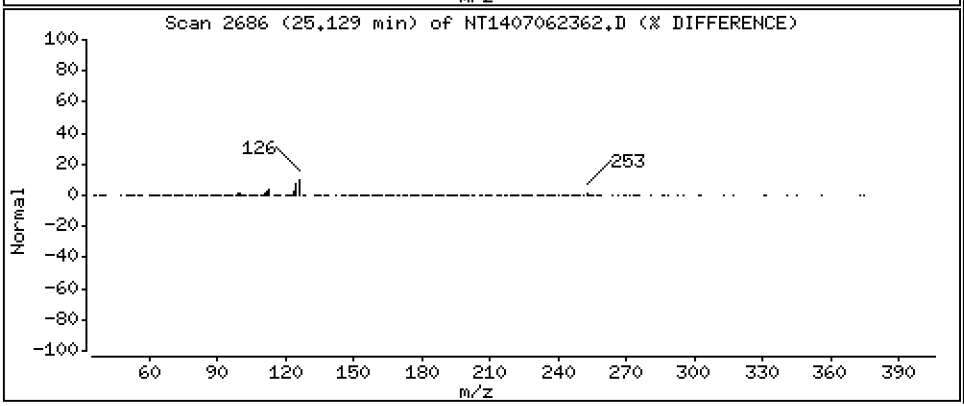












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Date : 08-JUL-2023 03:30

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-CCV1

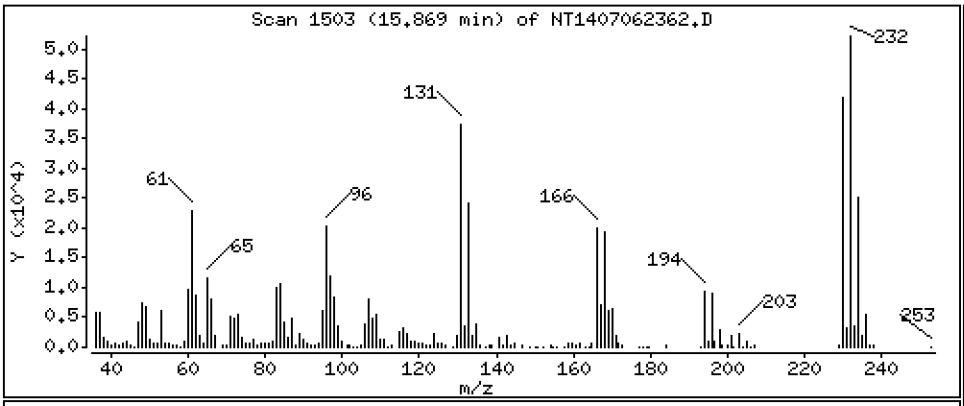
Operator: JGR

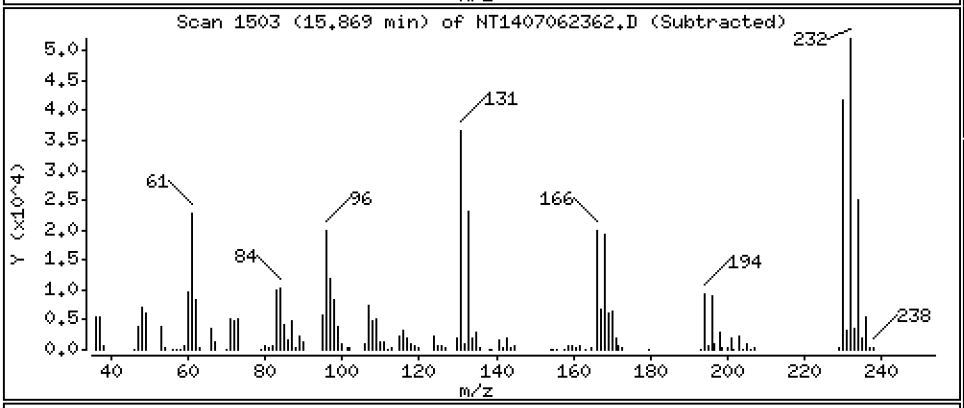
Column phase: ZB-5msi

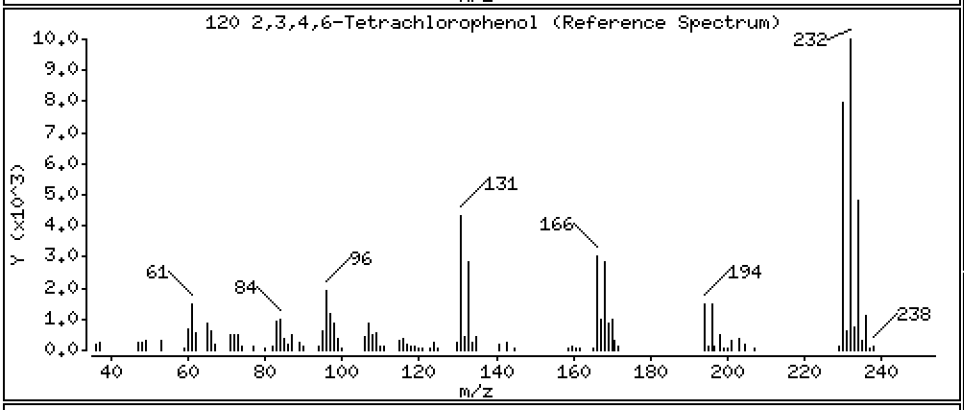
Column diameter: 0.25

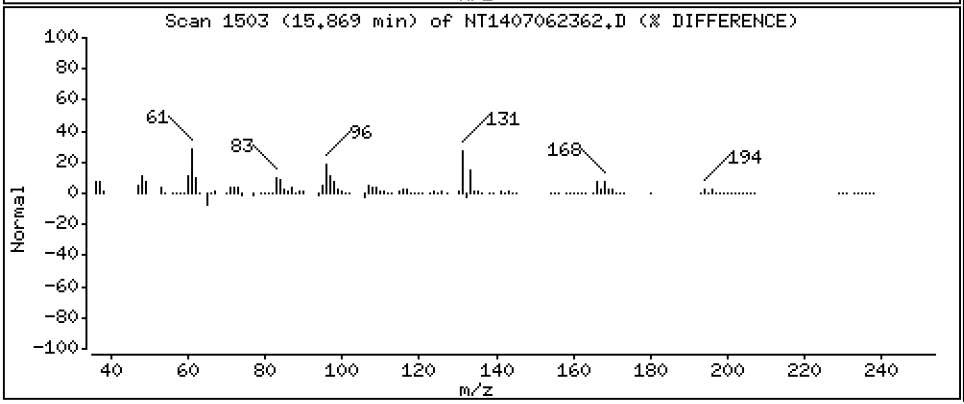
120 2,3,4,6-Tetrachlorophenol

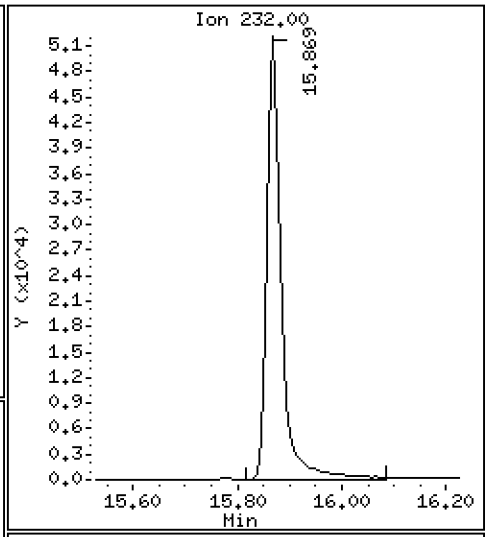
Concentration: 5.048 ug/mL

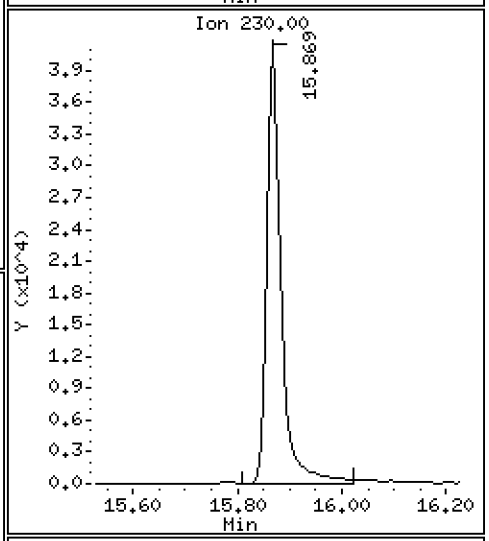


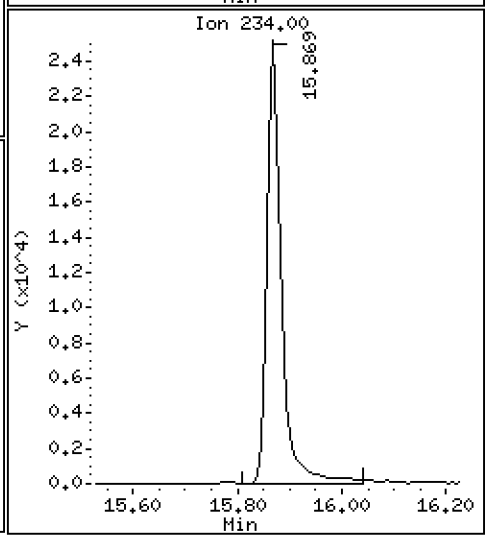












ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

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Lab Smp Id: SLG0081-CCV1
Inj Date : 08-JUL-2023 03:30 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : SLG0081-CCV1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Meth Date : 08-Jul-2023 11:21 van Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: VANS-201906

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/mL)
$	1 2-Fluorophenol	112	6.798	6.798	(0.755)	375434	7.70889	7.709
$	2 Phenol-d5	99	8.382	8.382	(0.930)	498022	7.54366	7.544
	3 Phenol	94	8.405	8.405	(0.933)	379896	4.75230	4.752
$	5 2-Chlorophenol-d4	132	8.652	8.652	(0.960)	400221	8.20318	8.203
	4 Bis(2-Chloroethyl)ether	93	8.559	8.559	(0.950)	261326	4.69980	4.700
	6 2-Chlorophenol	128	8.675	8.683	(0.963)	305734	5.27180	5.272
	7 1,3-Dichlorobenzene	146	8.946	8.946	(0.993)	258915	5.00919	5.009
*	8 1,4-Dichlorobenzene-d4	152	9.008	9.016	(1.000)	128317	4.00000	
	9 1,4-Dichlorobenzene	146	9.039	9.047	(1.003)	268786	5.27500	5.275
$	10 1,2-Dichlorobenzene-d4	152	9.373	9.373	(1.040)	159323	5.16265	5.163
	12 1,2-Dichlorobenzene	146	9.396	9.404	(1.043)	252259	5.10982	5.110
	11 Benzyl alcohol	108	Compound Not Detected.					
	14 2,2'-oxybis(1-Chloropropane)	121	9.583	9.590	(1.064)	77694	4.86553	4.866(M)
	13 2-Methylphenol	108	9.520	9.520	(1.057)	249895	4.95942	4.959
	17 Hexachloroethane	117	9.986	9.994	(1.109)	86040	3.67604	3.676
	16 N-Nitroso-di-n-propylamine	70	9.846	9.846	(1.093)	218685	4.83676	4.837
	15 4-Methylphenol	108	9.792	9.792	(1.087)	271740	4.86899	4.869
$	18 Nitrobenzene-d5	82	10.110	10.110	(0.879)	327070	5.31608	5.316
	19 Nitrobenzene	77	10.141	10.149	(0.881)	329300	5.00825	5.008
	20 Isophorone	82	10.591	10.591	(0.921)	482563	5.27607	5.276
	21 2-Nitrophenol	139	10.778	10.778	(0.937)	157370	5.09481	5.095
	22 2,4-Dimethylphenol	107	10.840	10.840	(0.942)	543982	10.3144	10.31
	23 Bis(2-Chloroethoxy)methane	93	11.026	11.026	(0.958)	284842	4.87402	4.874
	24 Benzoic acid	105	11.095	11.088	(0.964)	696787	21.1673	21.17
	25 2,4-Dichlorophenol	162	11.243	11.243	(0.977)	405488	10.3984	10.40
	26 1,2,4-Trichlorobenzene	180	11.421	11.420	(0.993)	196137	5.04612	5.046
*	27 Naphthalene-d8	136	11.505	11.505	(1.000)	521608	4.00000	
	28 Naphthalene	128	11.544	11.544	(1.003)	676540	4.96505	4.965
	29 4-Chloroaniline	127	11.675	11.675	(1.015)	599470	9.43464	9.435
	30 Hexachlorobutadiene	225	11.907	11.915	(1.035)	97230	5.36272	5.363
	31 4-Chloro-3-methylphenol	107	12.658	12.665	(1.100)	498572	10.1939	10.19
	32 2-Methylnaphthalene	142	12.944	12.952	(1.125)	501273	4.95972	4.960
	33 Hexachlorocyclopentadiene	237	13.408	13.416	(0.886)	18722	0.94344	0.9434

			QUANT SIG					CONCENTRATIONS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
	34	2,4,6-Trichlorophenol	196	13.571	13.579	(0.897)	258779	10.1841	10.18
	35	2,4,5-Trichlorophenol	196	13.656	13.664	(0.902)	287462	10.8721	10.87
$	36	2-Fluorobiphenyl	172	13.734	13.733	(0.907)	490178	5.20595	5.206
	37	2-Chloronaphthalene	162	13.942	13.942	(0.921)	432343	4.99129	4.991
	38	2-Nitroaniline	65	14.206	14.206	(0.939)	450932	10.7420	10.74
	39	Dimethylphthalate	163	14.631	14.639	(0.967)	451169	5.07764	5.078
	40	Acenaphthylene	152	14.817	14.817	(0.979)	711237	5.32123	5.321
	41	2,6-Dinitrotoluene	165	14.778	14.778	(0.976)	209501	11.2058	11.21
*	42	Acenaphthene-d10	164	15.134	15.134	(1.000)	264368	4.00000	
	43	3-Nitroaniline	138	15.065	15.065	(0.995)	250815	10.0140	10.01
	44	Acenaphthene	153	15.196	15.204	(1.004)	391907	4.95458	4.955
	45	2,4-Dinitrophenol	184	15.273	15.273	(1.009)	198196	16.7340	16.73
	46	Dibenzofuran	168	15.528	15.528	(1.026)	578117	5.01530	5.015
	47	4-Nitrophenol	109	15.420	15.420	(1.019)	132490	7.24751	7.248
	48	2,4-Dinitrotoluene	165	15.590	15.590	(1.030)	284966	10.9001	10.90
	50	Diethylphthalate	149	16.093	16.101	(1.063)	467468	4.54947	4.549
	49	Fluorene	166	16.240	16.240	(1.073)	504740	5.00702	5.007
	51	4-Chlorophenyl-phenylether	204	16.232	16.232	(1.073)	231179	5.31139	5.311
	52	4-Nitroaniline	138	16.332	16.340	(1.079)	228640	9.01390	9.014
	53	4,6-Dinitro-2-methylphenol	198	16.432	16.432	(0.904)	272530	18.9695	18.97
	54	N-Nitrosodiphenylamine	169	16.479	16.486	(0.907)	309137	4.92526	4.925
$	55	2,4,6-Tribromophenol	330	16.779	16.779	(1.109)	67935	8.13340	8.133
	56	4-Bromophenyl-phenylether	248	17.234	17.234	(0.948)	104140	5.44093	5.441
	57	Hexachlorobenzene	284	17.551	17.559	(0.966)	106256	5.24764	5.248
	58	Pentachlorophenol	266	17.915	17.923	(0.986)	110166	8.87993	8.880
*	59	Phenanthrene-d10	188	18.178	18.178	(1.000)	444520	4.00000	
	60	Phenanthrene	178	18.225	18.225	(1.003)	602525	5.01048	5.010
	61	Anthracene	178	18.317	18.317	(1.008)	611277	5.26058	5.261
	62	Carbazole	167	18.650	18.650	(1.026)	581963	4.97811	4.978
	63	Di-n-butylphthalate	149	19.447	19.447	(1.070)	897229	5.84135	5.841
	64	Fluoranthene	202	20.615	20.615	(0.887)	624268	5.95976	5.960
	65	Pyrene	202	21.041	21.041	(0.906)	635439	6.00515	6.005
$	66	Terphenyl-d14	244	21.327	21.327	(0.918)	449754	6.31527	6.315
	67	Butylbenzylphthalate	149	22.249	22.249	(0.958)	365074	7.34421	7.344
	68	Benzo(a)anthracene	228	23.201	23.209	(0.999)	459308	5.11915	5.119
*	69	Chrysene-d12	240	23.232	23.232	(1.000)	256248	4.00000	
	70	3,3'-Dichlorobenzidine	252	23.162	23.162	(0.997)	421033	16.1063	16.11
	71	Chrysene	228	23.278	23.278	(1.002)	415703	5.17603	5.176
	72	bis(2-Ethylhexyl)phthalate	149	24.269	24.269	(1.001)	940612	4.95076	4.951
*	134	Di-n-octylphthalate-d4	153	24.254	24.262	(1.000)	739220	4.00000	
	73	Di-n-octylphthalate	149	24.269	24.269	(1.001)	940612	4.95076	4.951
	74	Benzo(b)fluoranthene	252	25.082	25.082	(0.970)	264378	6.14534	6.145
	75	Benzo(k)fluoranthene	252	25.129	25.129	(0.972)	287130	5.94506	5.945
	76	Benzo(a)pyrene	252	25.733	25.733	(0.996)	179229	5.30830	5.308
*	77	Perylene-d12	264	25.849	25.849	(1.000)	130885	4.00000	
	78	Indeno(1,2,3-cd)pyrene	276	28.501	28.494	(1.103)	111280	3.65444	3.654
	79	Dibenzo(a,h)anthracene	278	28.509	28.509	(1.103)	101653	3.94535	3.945
	80	Benzo(g,h,i)perylene	276	29.286	29.278	(1.133)	87268	3.47133	3.471
	90	N-Nitrosodimethylamine	74	4.658	4.658	(0.517)	347776	9.44668	9.447
	91	Aniline	93	8.467	8.474	(0.940)	730865	9.37707	9.377
	93	Benzidine	184	20.847	20.855	(0.897)	243682	7.69000	7.690
	103	Pyridine	79	4.674	4.674	(0.519)	537999	9.28002	9.280
	105	1-methylnaphthalene	142	13.169	13.169	(1.145)	455401	5.05096	5.051
	111	Azobenzene (1,2-DP-Hydrazine)	77	16.556	16.556	(1.094)	696500	4.75940	4.759

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.129	25.129	(0.972)	527427	12.0764	12.08
120 2,3,4,6-Tetrachlorophenol	232	15.869	15.876	(1.049)	104571	5.04794	5.048

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1407062362.D
Lab Smp Id: SLG0081-CCV1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Misc Info:

Calibration Date: 07-JUL-2023
Calibration Time: 16:23
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	132670	66335	265340	128317	-3.28
27 Naphthalene-d8	538082	269041	1076164	521608	-3.06
42 Acenaphthene-d10	270232	135116	540464	264368	-2.17
59 Phenanthrene-d10	462568	231284	925136	444520	-3.90
69 Chrysene-d12	289075	144538	578150	256248	-11.36
134 Di-n-octylphthala	772331	386166	1544662	739220	-4.29
77 Perylene-d12	173349	86675	346698	130885	-24.50

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.02	8.52	9.52	9.01	-0.09
27 Naphthalene-d8	11.51	11.01	12.01	11.51	0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	0.00
59 Phenanthrene-d10	18.18	17.68	18.68	18.18	0.00
69 Chrysene-d12	23.23	22.73	23.73	23.23	0.00
134 Di-n-octylphthala	24.26	23.76	24.76	24.25	-0.03
77 Perylene-d12	25.85	25.35	26.35	25.85	0.00

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

REVIEW SUMMARY FOR FILE - NT1407062362.D

Lab ID: SLG0081-CCV1
nt14.i, ABN.m, 08-JUL-2023 03:30

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

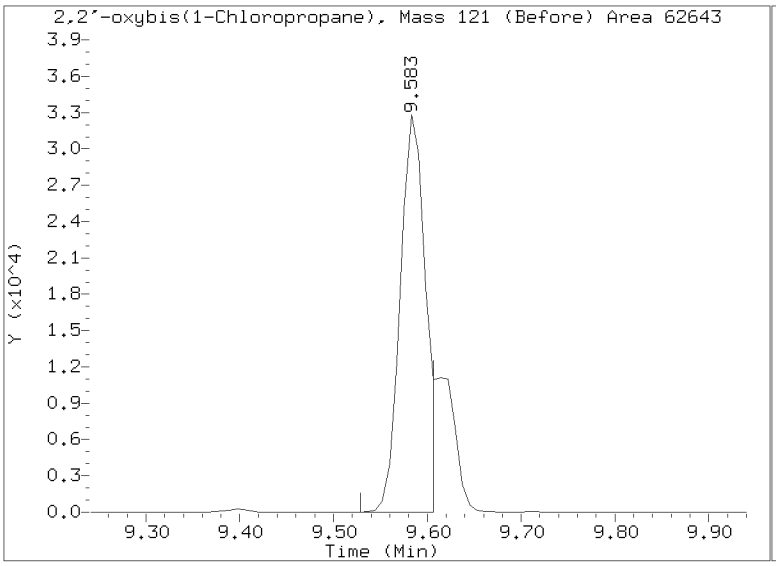
RRT check based on Ccal File: NT1407062344ICV.D

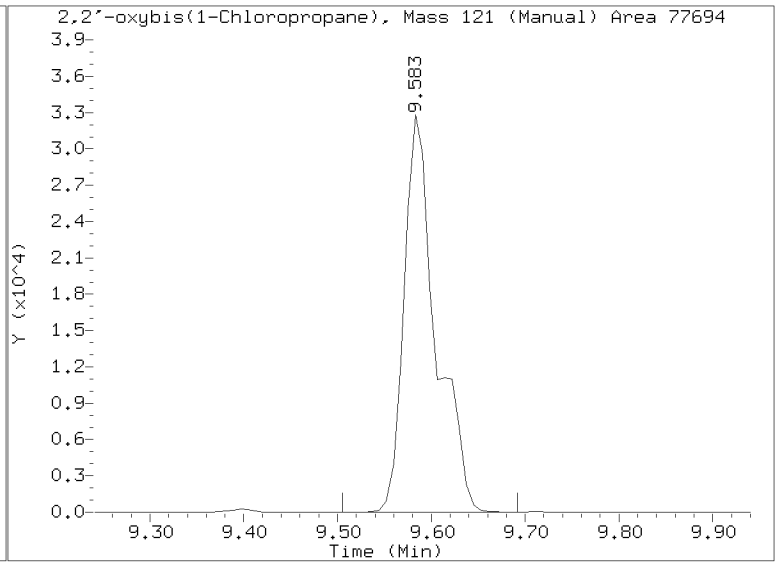
On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

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

Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt14.i/20230706C.b/NT1407062362.D
Injection Date: 08-JUL-2023 03:30
Lab ID:SLG0081-CCV1 Client ID:
Report Date: 07/08/2023 12:08





Analytical Resources, LLC
Analytical Chemists and Consultants

LOW-CONCENTRATION
CONTINUING CALIBRATION CHECK
EPA 8270E

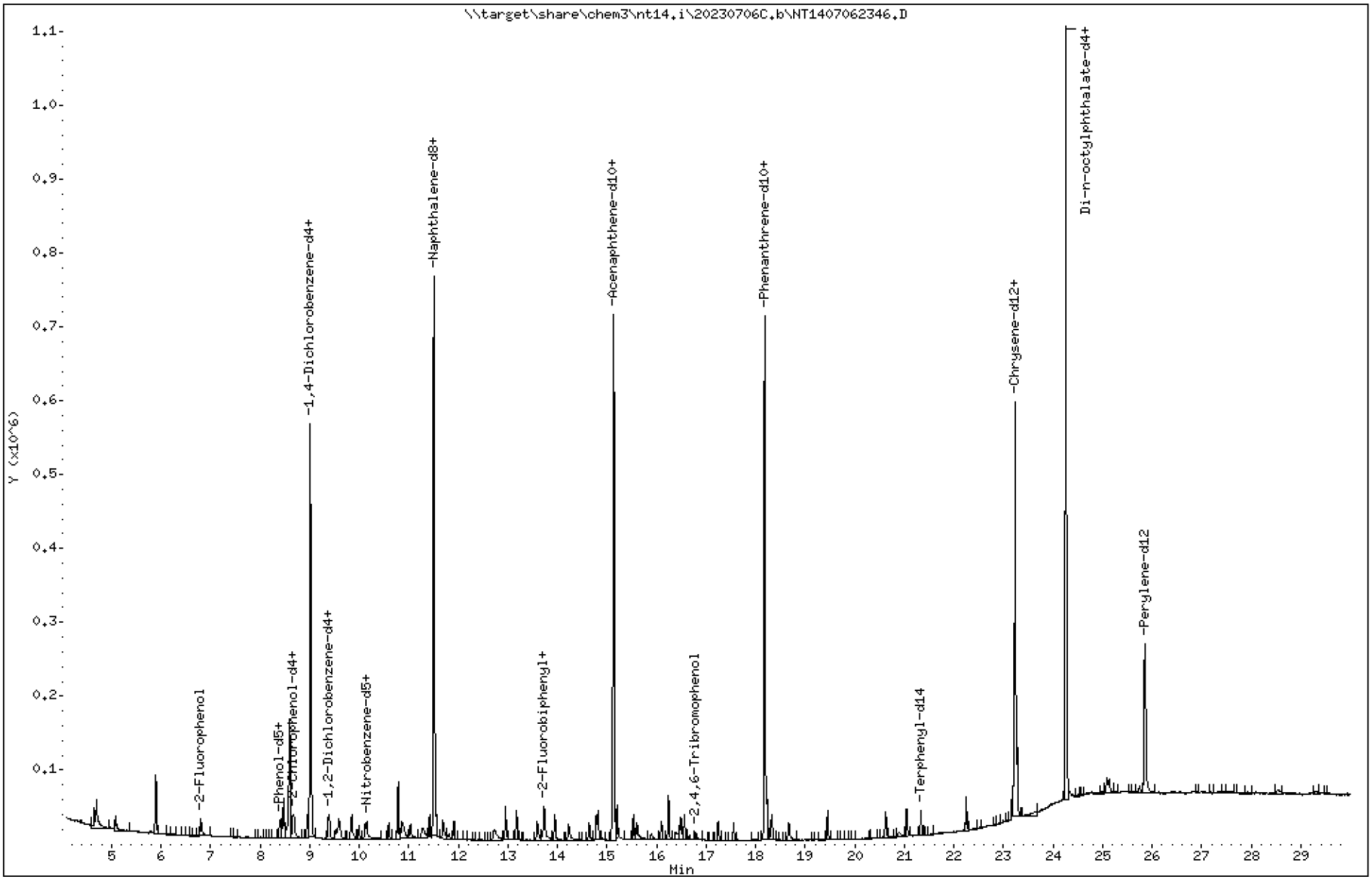
Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	NT14	Calibration:	GF00097
Lab File ID:	NT1407062346.D	Calibration Date:	06/30/2023
Sequence:	SLG0081	Injection Date:	07/07/23
Lab Sample ID:	SLG0081-LCV2	Injection Time:	17:38
Sequence Name:	ABN 0.2		

		CONC. (ug/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Naphthalene	A	0.20000	0.2	1.0449260	1.0739700		2.8	+/-50
2-Methylnaphthalene	A	0.20000	0.2	0.7750559	0.7324299		-5.5	+/-50
Acenaphthylene	A	0.20000	0.2	2.0223380	2.0719320		2.5	+/-50
Acenaphthene	A	0.20000	0.2	1.1968170	1.2315640		2.9	+/-50
Fluorene	A	0.20000	0.2	1.5252430	1.4252420		-6.6	+/-50
Phenanthrene	A	0.20000	0.2	1.0820920	1.1076050		2.4	+/-50
Anthracene	A	0.20000	0.2	1.0456190	1.0667640		2.0	+/-50
Fluoranthene	A	0.20000	0.2	1.6350890	1.7753710		8.6	+/-50
Pyrene	A	0.20000	0.2	1.6517700	1.8782970		13.7	+/-50
Benzo(a)anthracene	A	0.20000	0.2	1.4005720	1.4674770		4.8	+/-50
Chrysene	A	0.20000	0.2	1.2536770	1.3638860		8.8	+/-50
Benzofluoranthenes, Total	A	0.40000	0.5	1.3347330	1.5325500		14.8	+/-50
Benzo(a)pyrene	A	0.20000	0.2	1.0318650	1.1021940		6.8	+/-50
Indeno(1,2,3-cd)pyrene	A	0.20000	0.1	0.9306078	0.6795029		-27.0	+/-50
Dibenzo(a,h)anthracene	A	0.20000	0.2	0.7874172	0.6691518		-15.0	+/-50
Benzo(g,h,i)perylene	A	0.20000	0.2	0.7682964	0.5883085		-23.4	+/-50
1,2-Dichlorobenzene-d4	A	0.20000	0.205	0.9620152	0.9850043		2.4	+/-50
Nitrobenzene-d5	A	0.20000	0.193	0.4718073	0.4558630		-3.4	+/-50
2-Fluorobiphenyl	A	0.20000	0.213	1.4246390	1.5158910		6.4	+/-50
p-Terphenyl-d14	A	0.20000	0.242	1.1116870	1.3475690		21.2	+/-50

* Values outside of QC limits

Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D
Date : 07-JUL-2023 17:38
Client ID:
Sample Info: SLG0081-LCV1

Instrument: nt14.i
Operator: JGR
Column phase: ZB-5msi
Column diameter: 0.25



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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

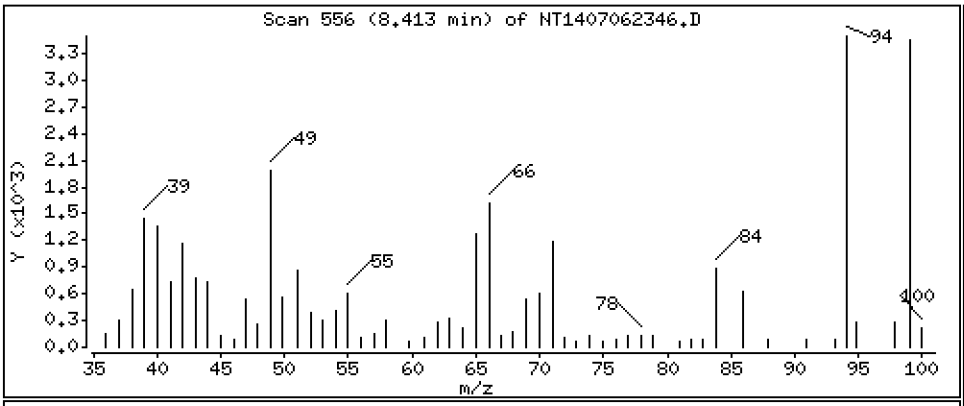
Operator: JGR

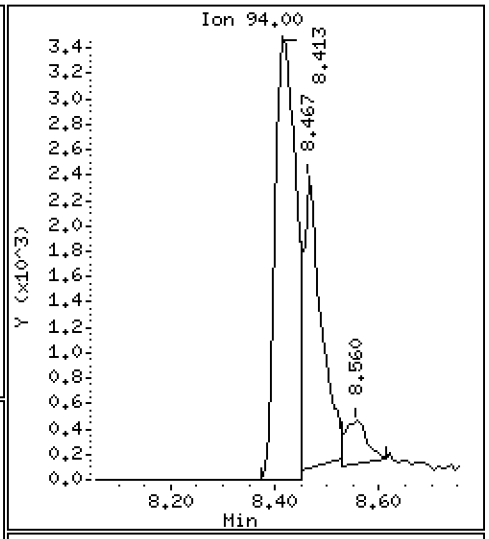
Column phase: ZB-5msi

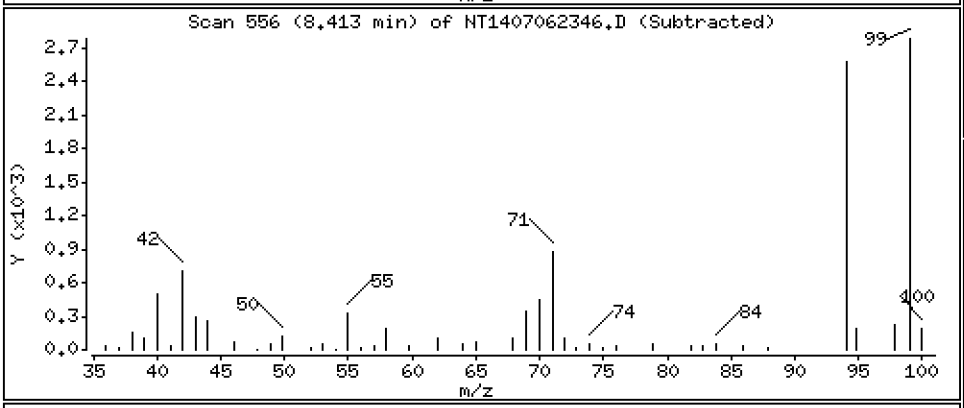
Column diameter: 0.25

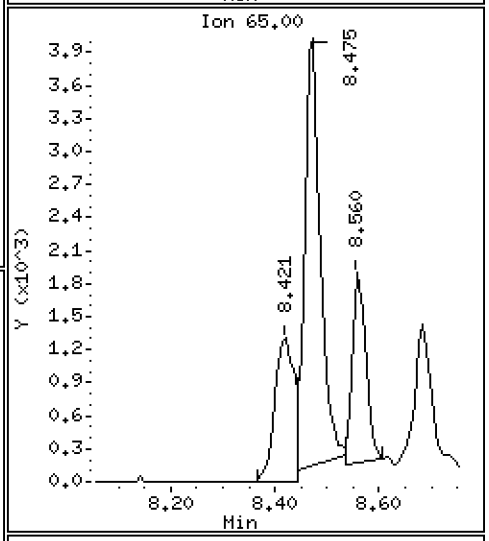
3 Phenol

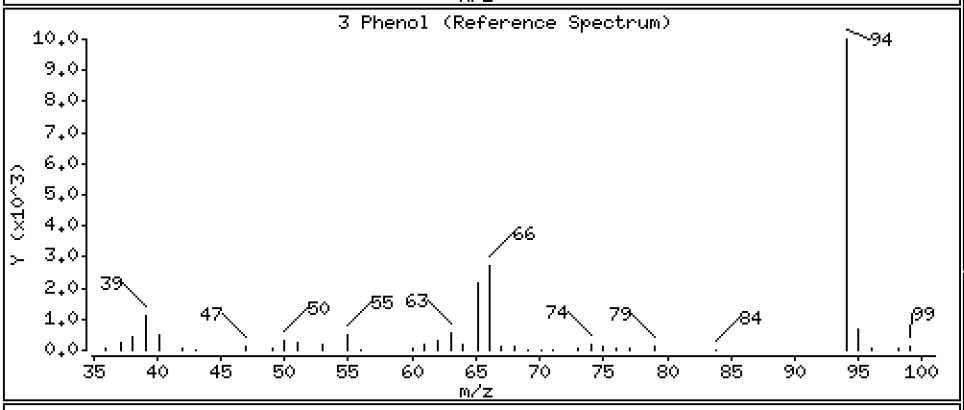
Concentration: 0.1175 ug/mL

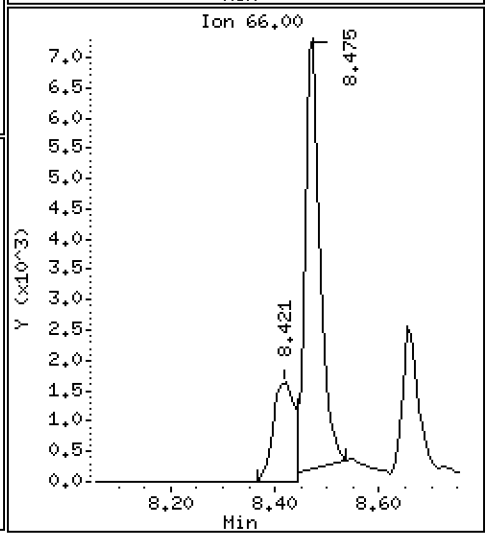


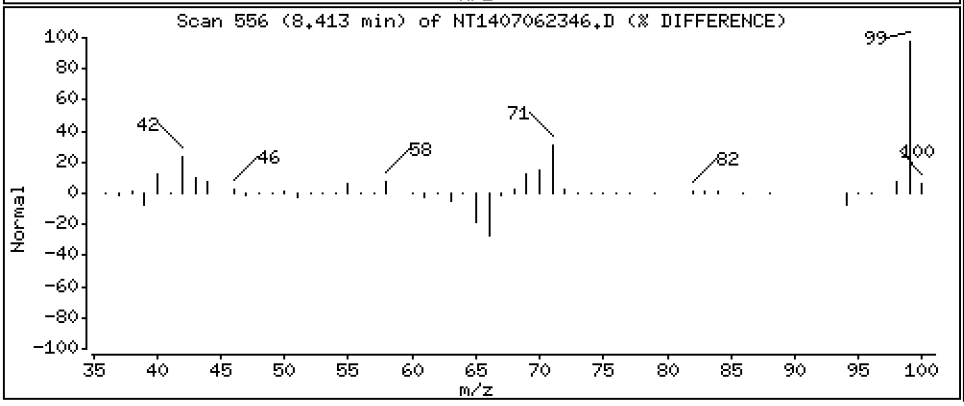












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

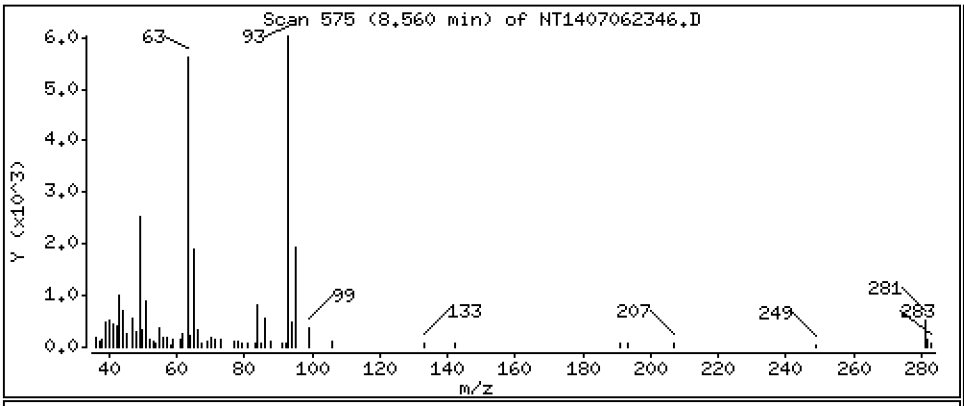
Operator: JGR

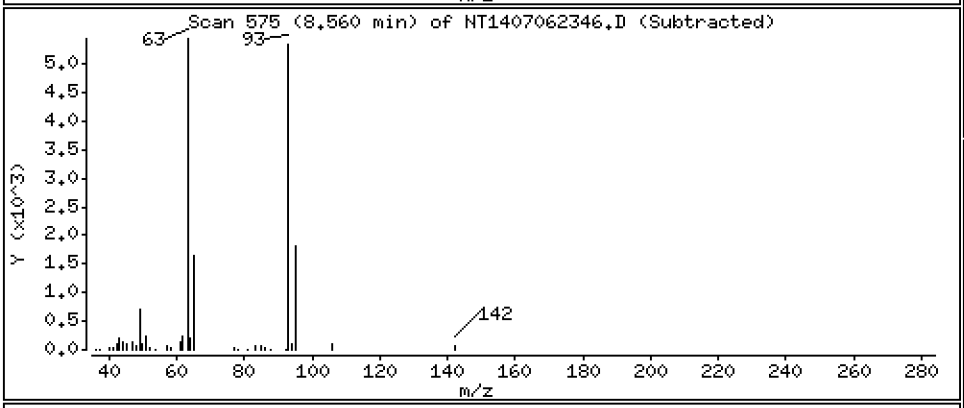
Column phase: ZB-5msi

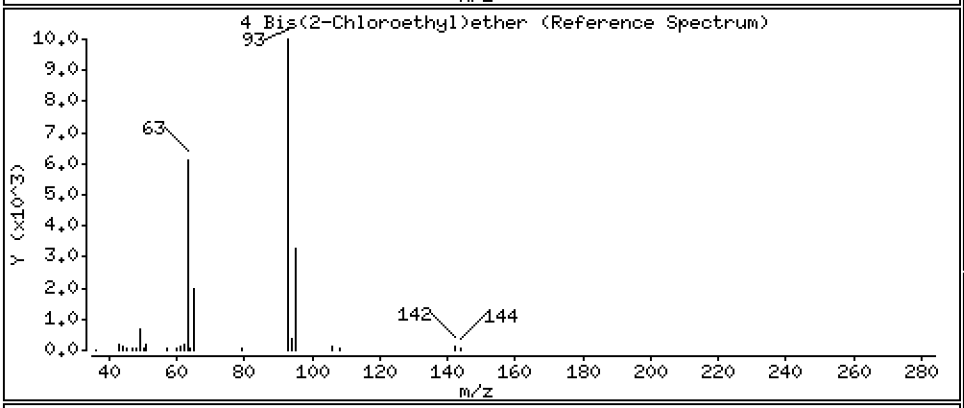
Column diameter: 0.25

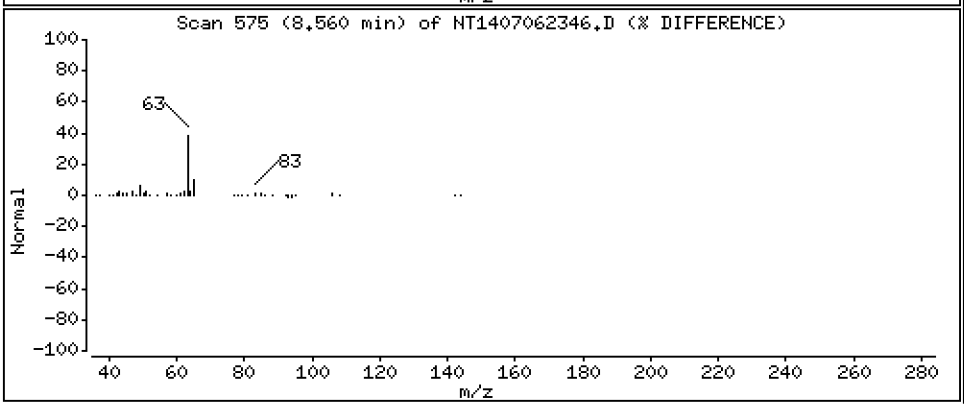
4 Bis(2-Chloroethyl)ether

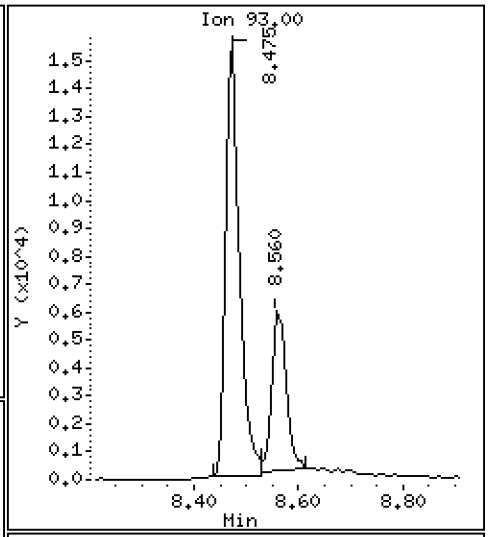
Concentration: 0.1808 ug/mL

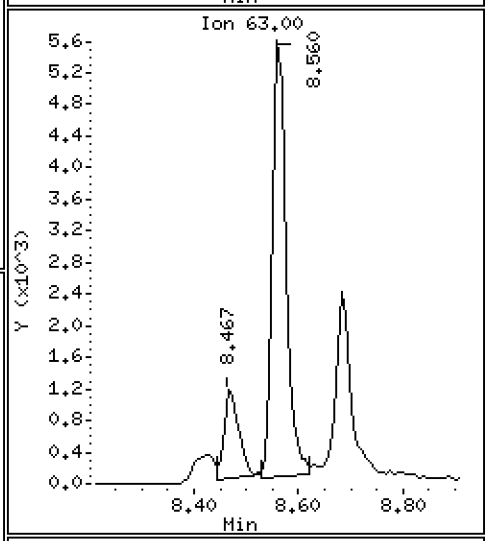


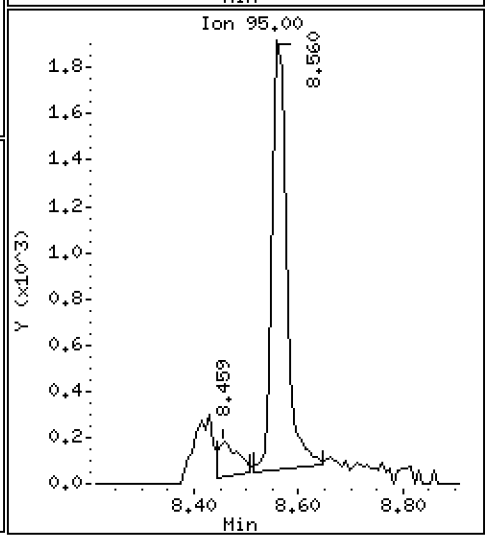












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

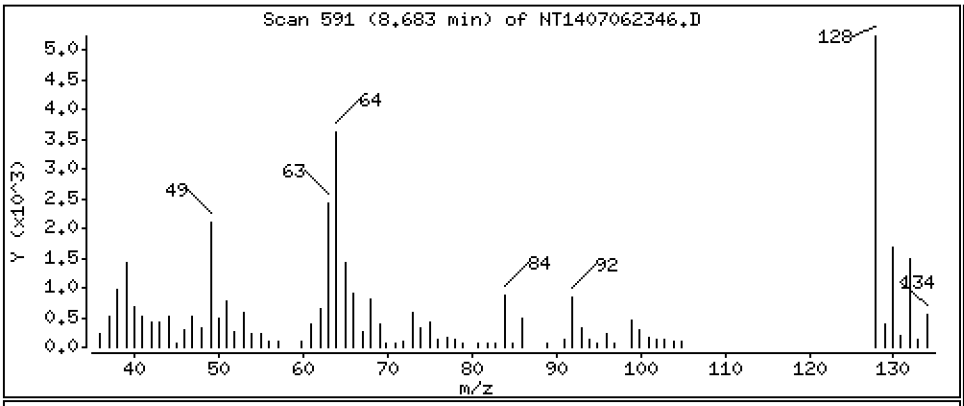
Operator: JGR

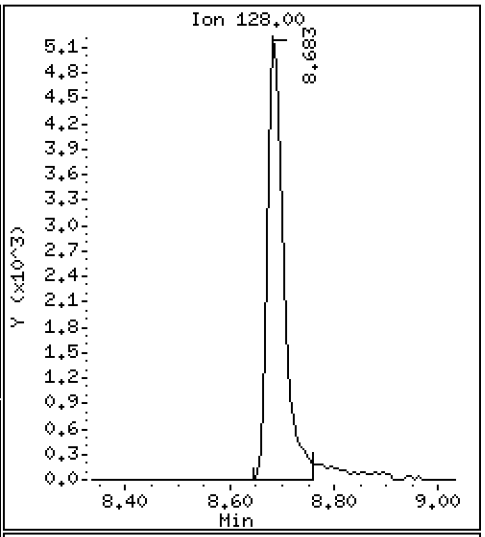
Column phase: ZB-5msi

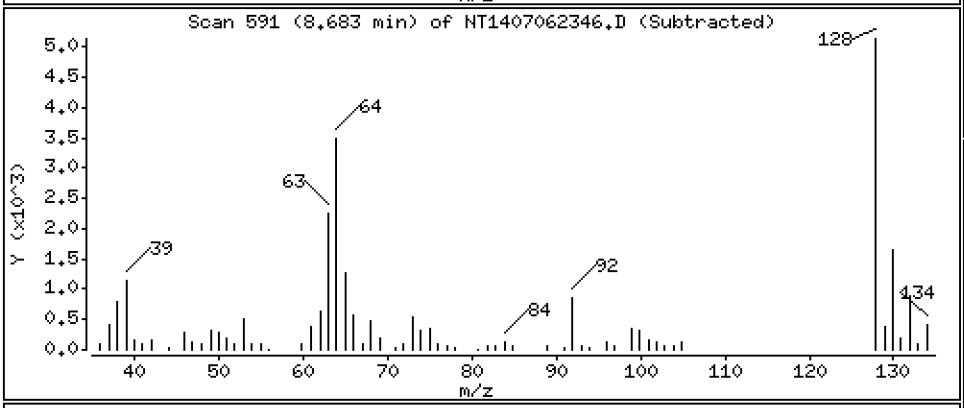
Column diameter: 0.25

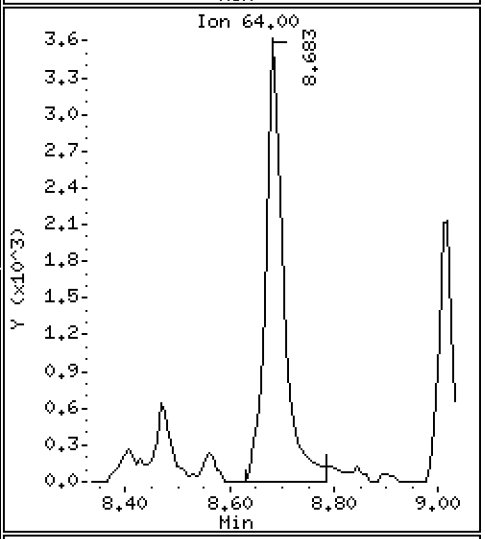
6 2-Chlorophenol

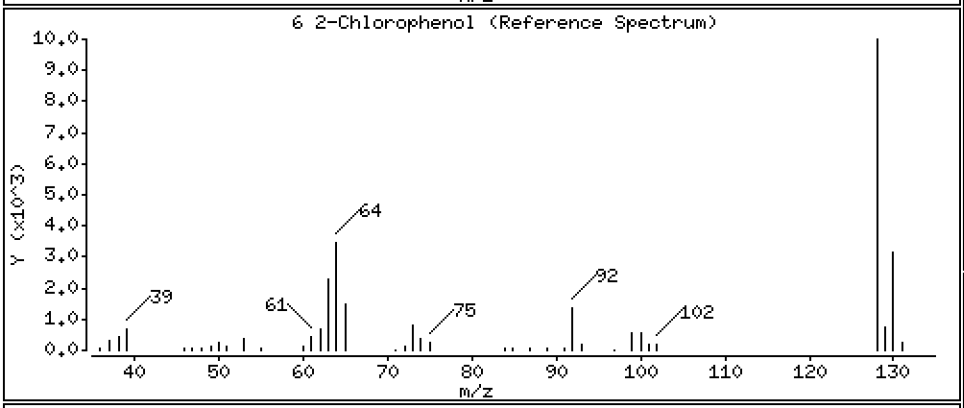
Concentration: 0.1857 ug/mL

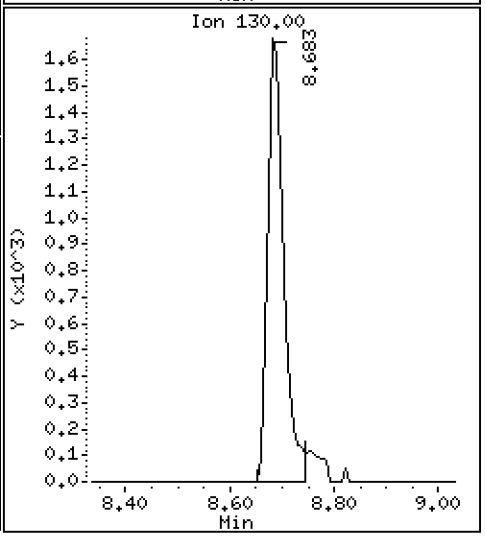


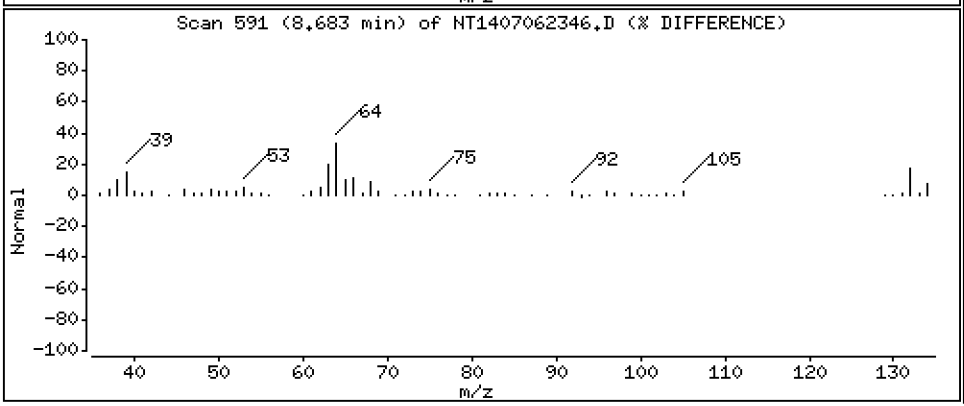












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

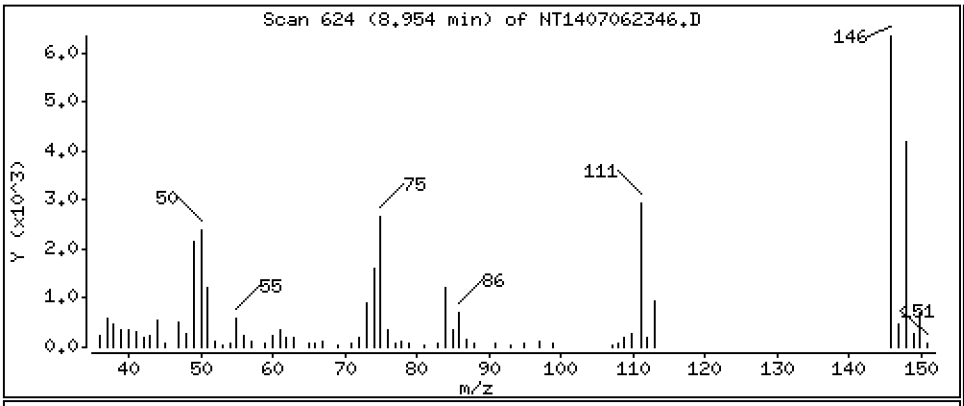
Operator: JGR

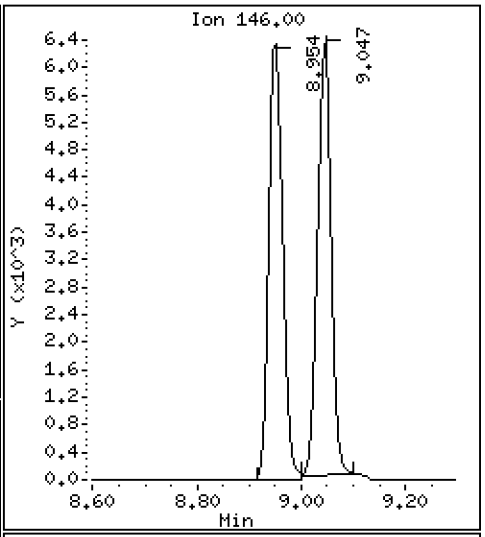
Column phase: ZB-5msi

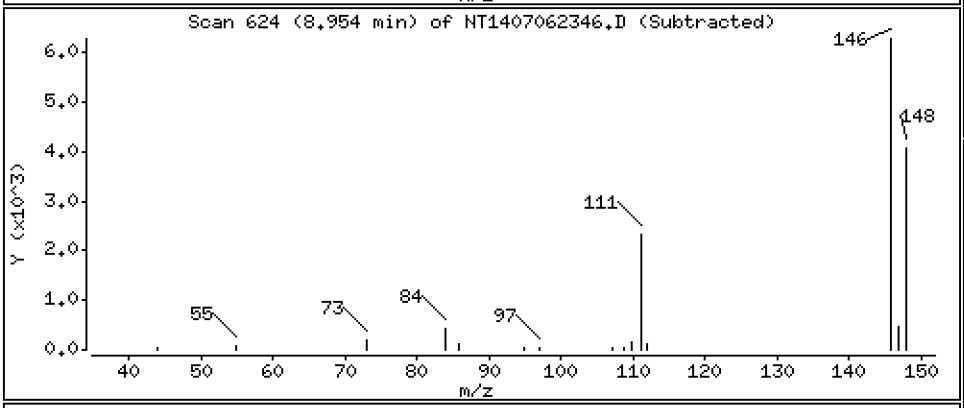
Column diameter: 0.25

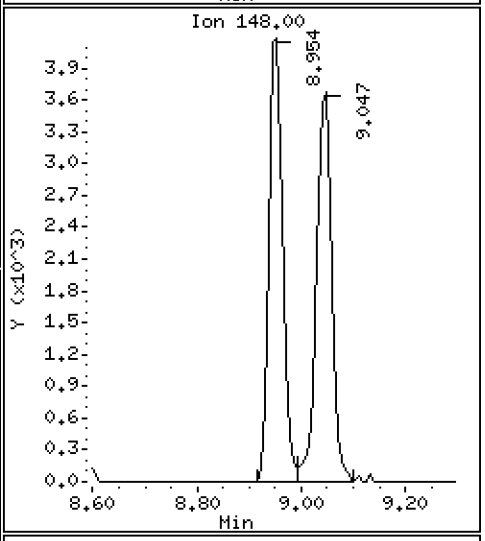
7 1,3-Dichlorobenzene

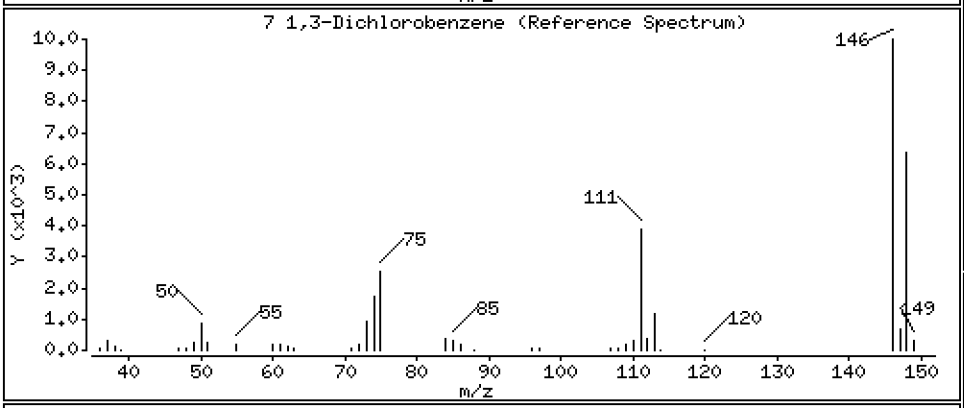
Concentration: 0.2117 ug/mL

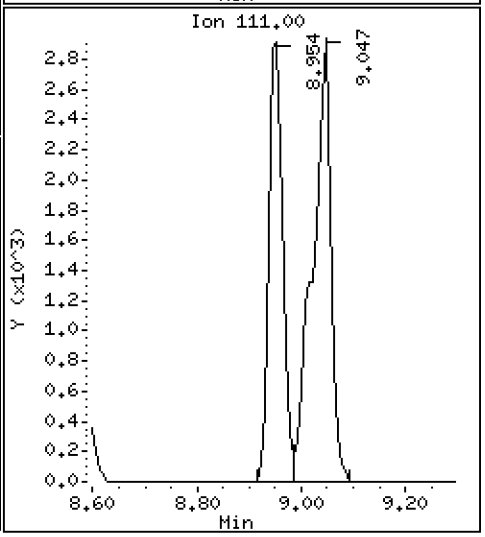


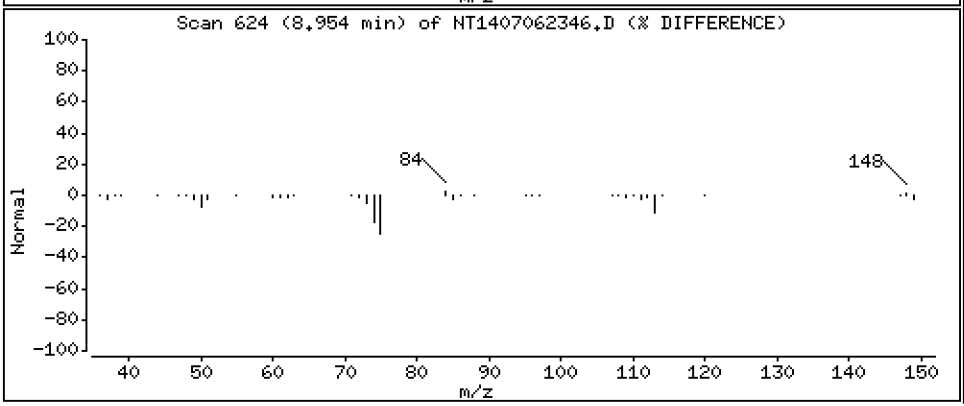












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

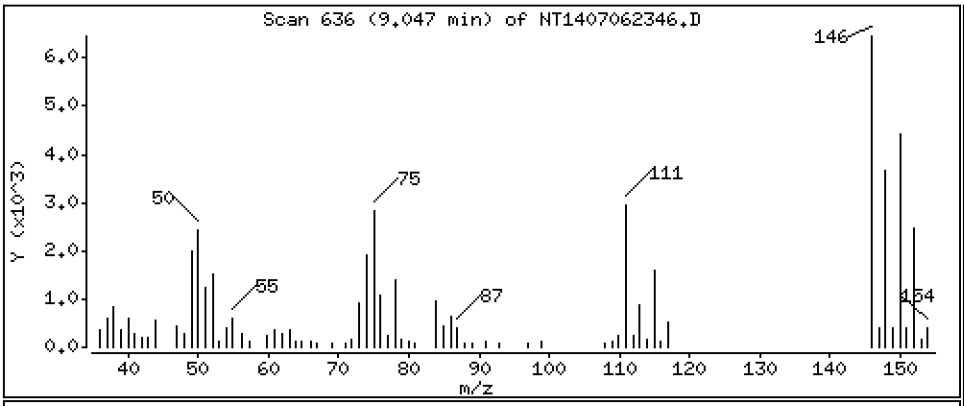
Operator: JGR

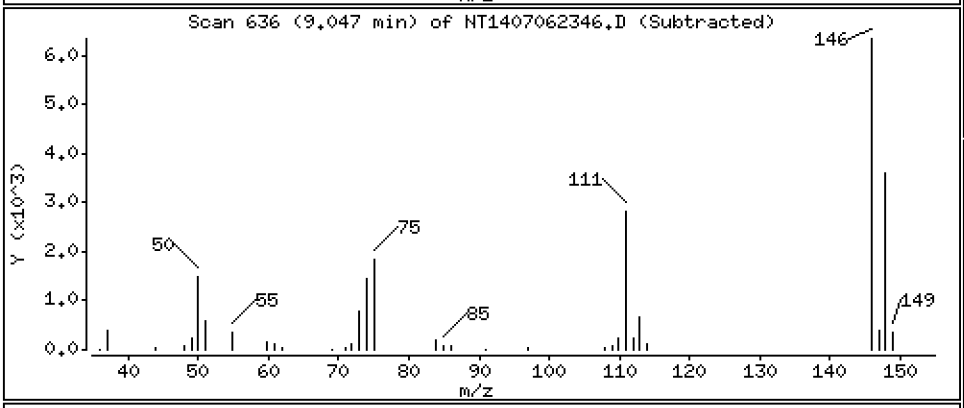
Column phase: ZB-5msi

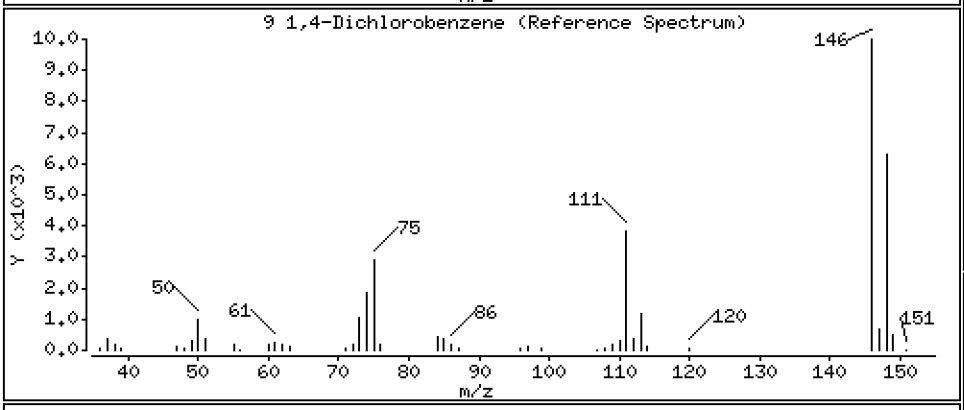
Column diameter: 0.25

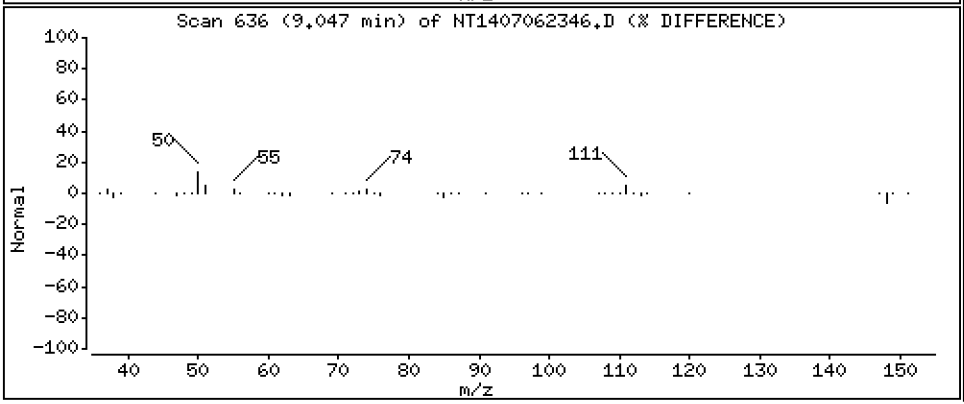
9 1,4-Dichlorobenzene

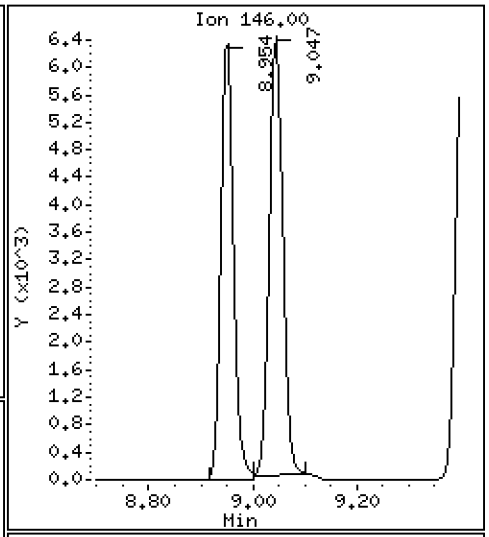
Concentration: 0.2087 ug/mL

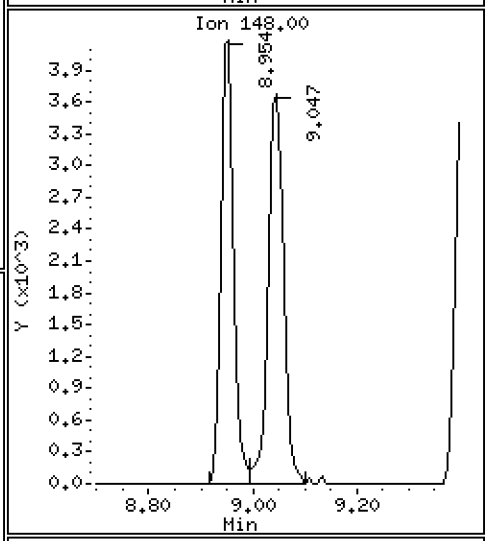


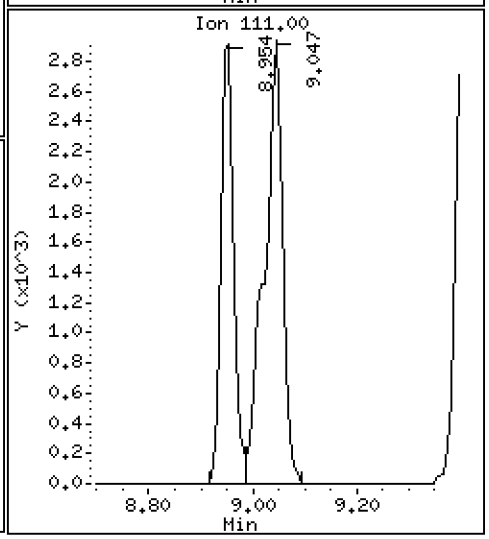












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

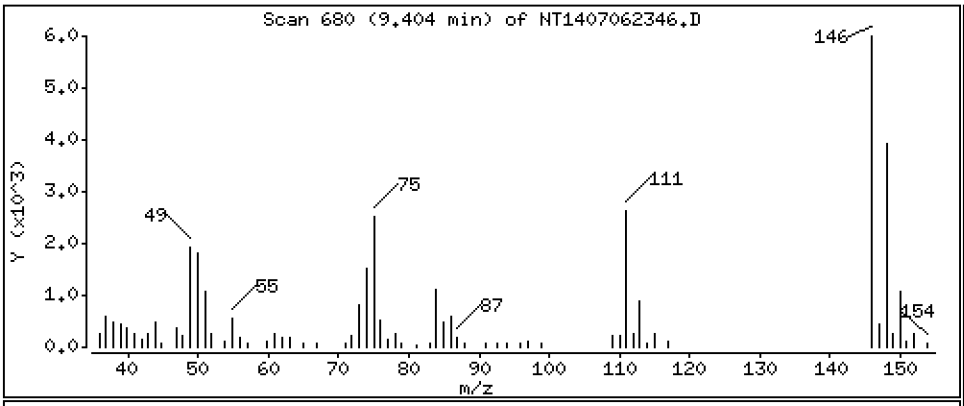
Operator: JGR

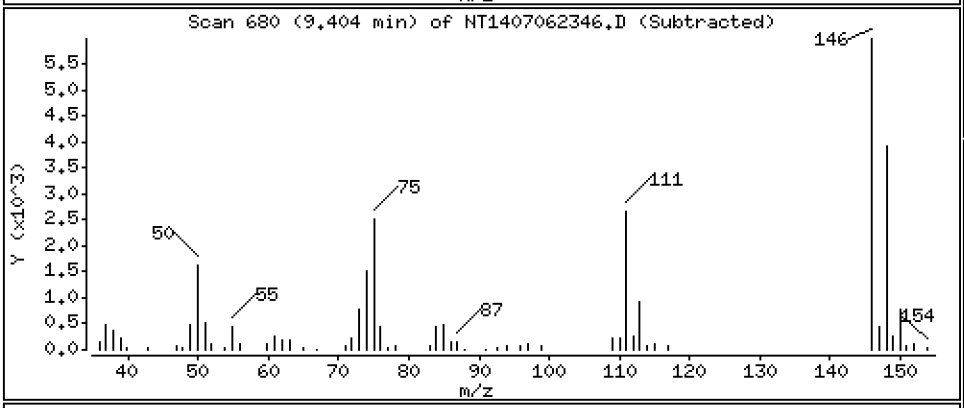
Column phase: ZB-5msi

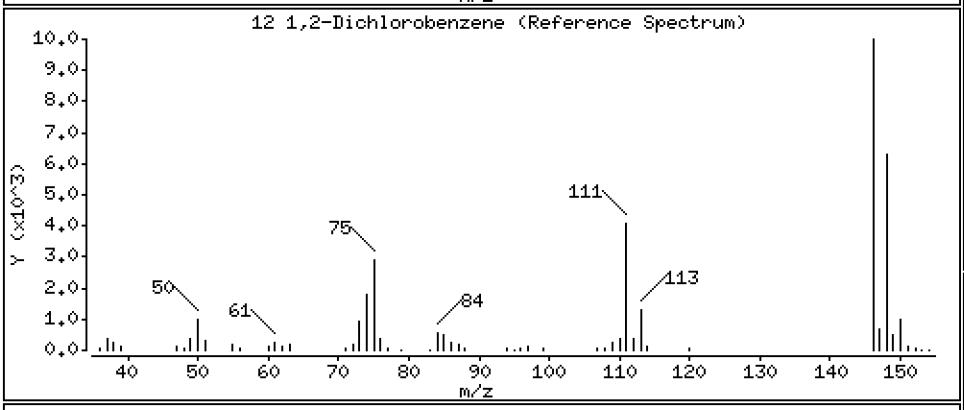
Column diameter: 0.25

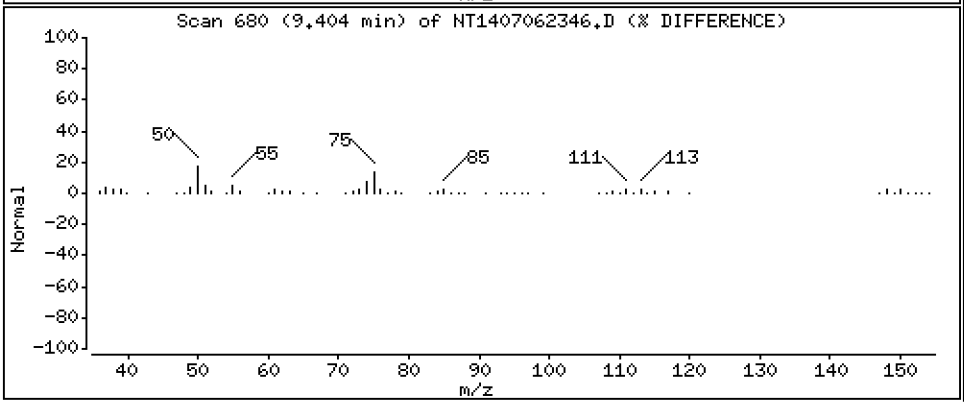
12 1,2-Dichlorobenzene

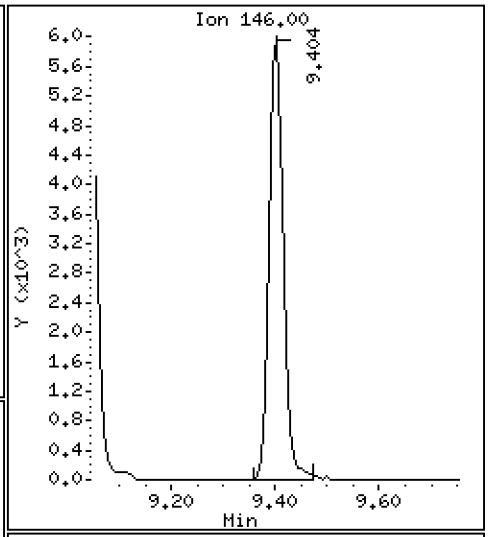
Concentration: 0.2133 ug/mL

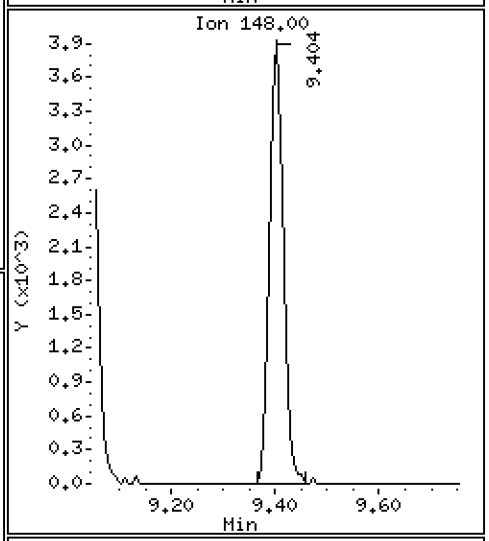


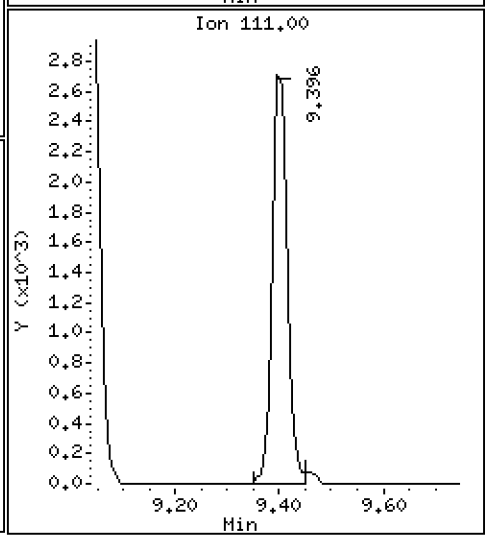












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

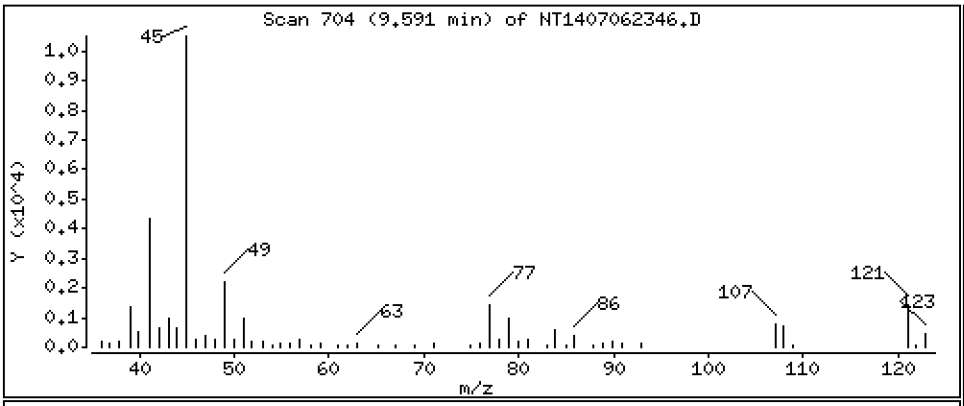
Operator: JGR

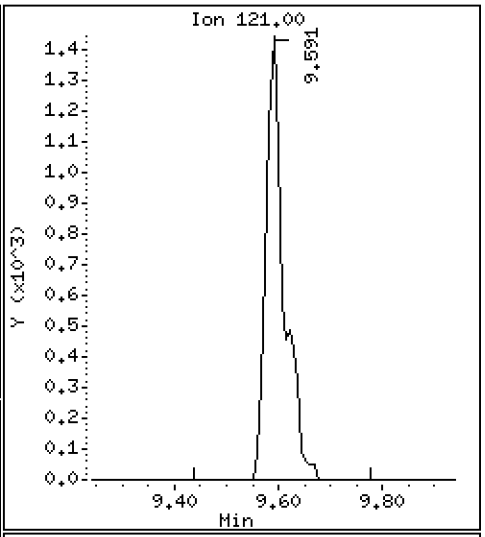
Column phase: ZB-5msi

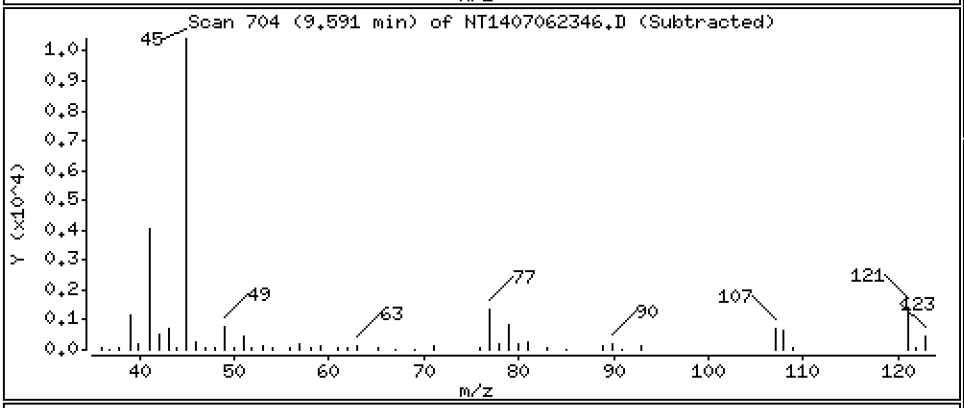
Column diameter: 0.25

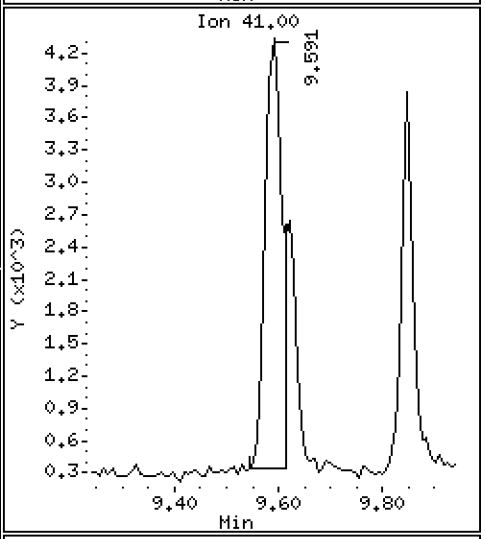
14 2,2'-oxybis(1-Chloropropane)

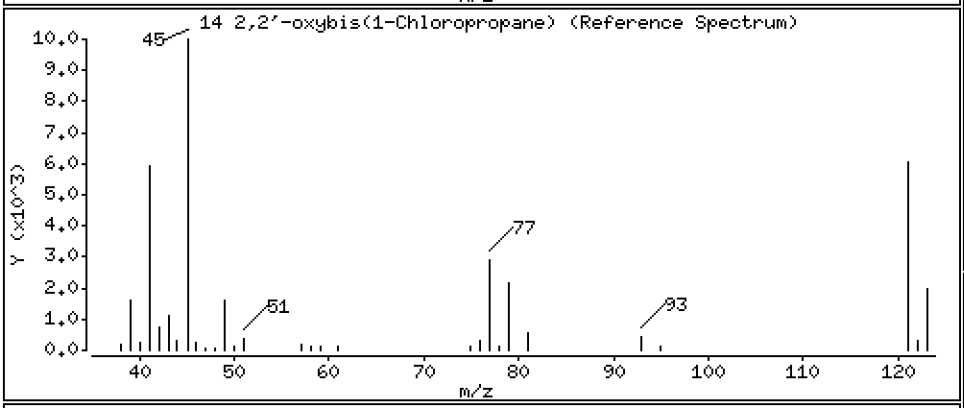
Concentration: 0.2153 ug/mL

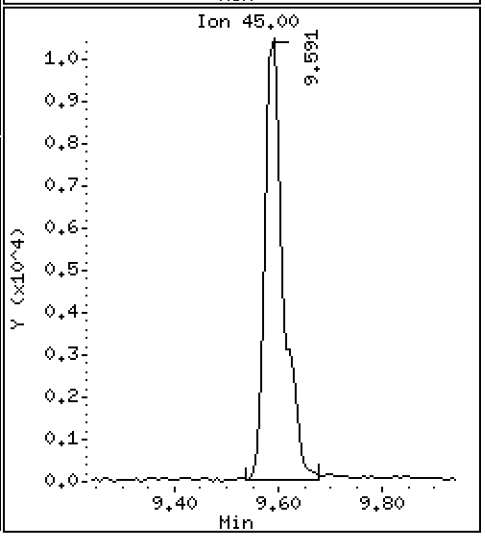


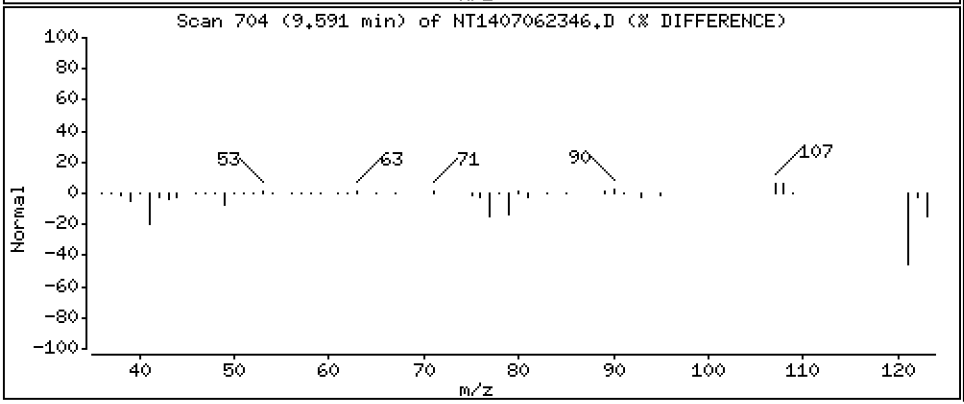












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

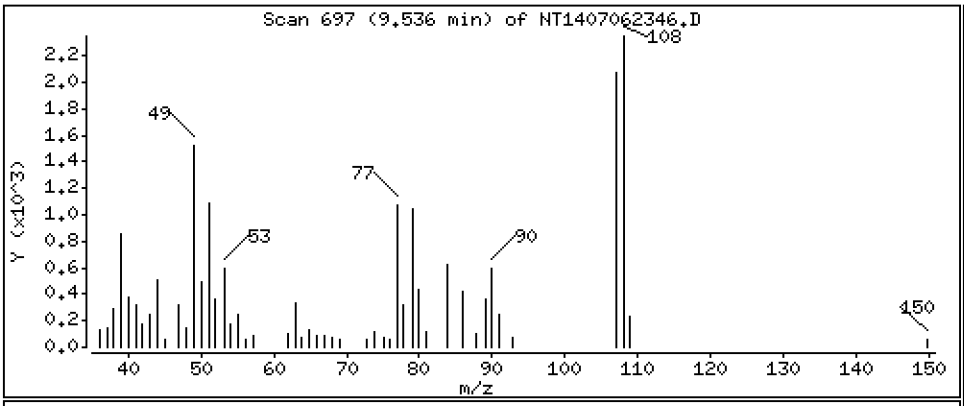
Operator: JGR

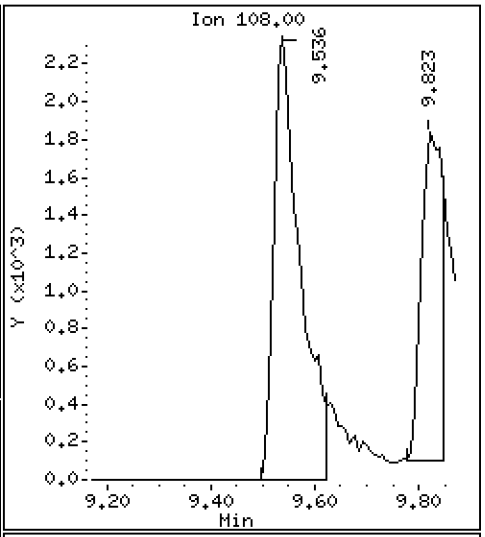
Column phase: ZB-5msi

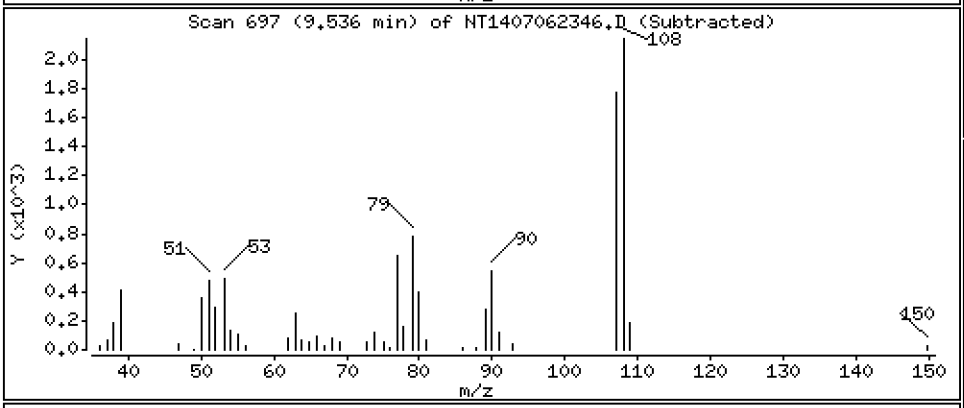
Column diameter: 0.25

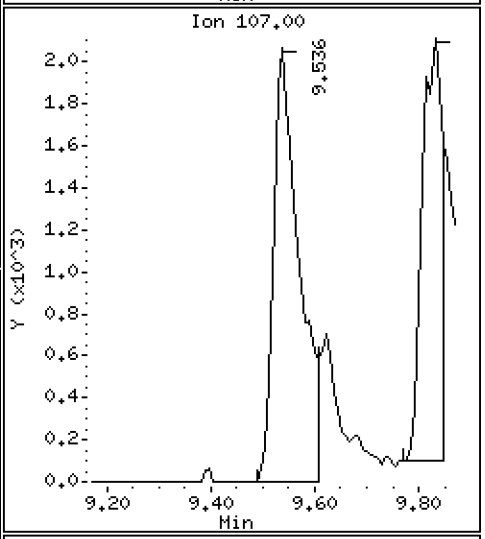
13 2-Methylphenol

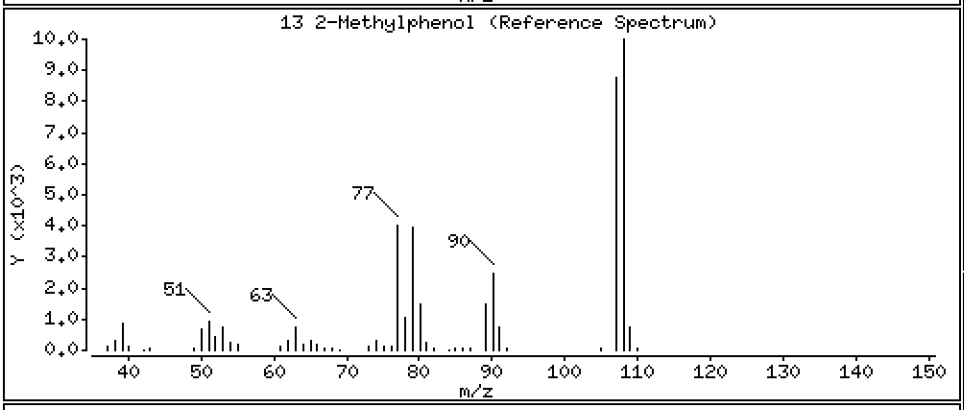
Concentration: 0.1600 ug/mL

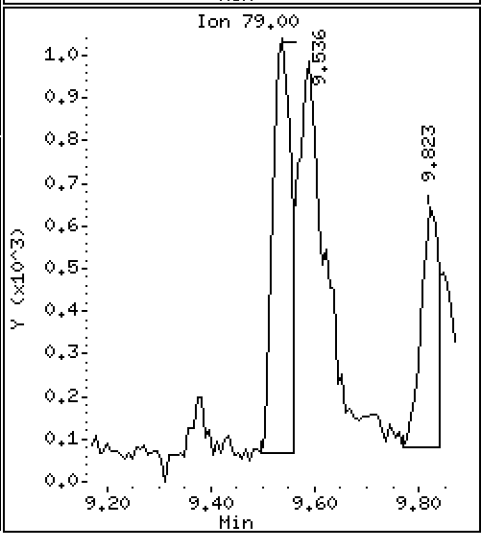


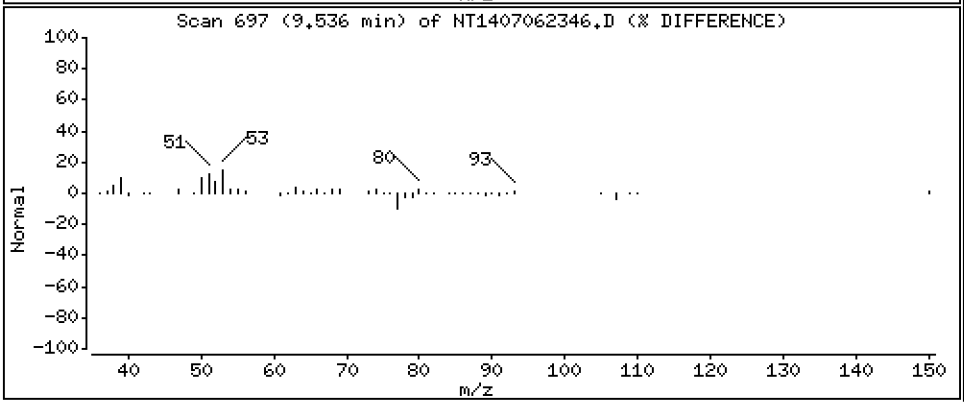












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

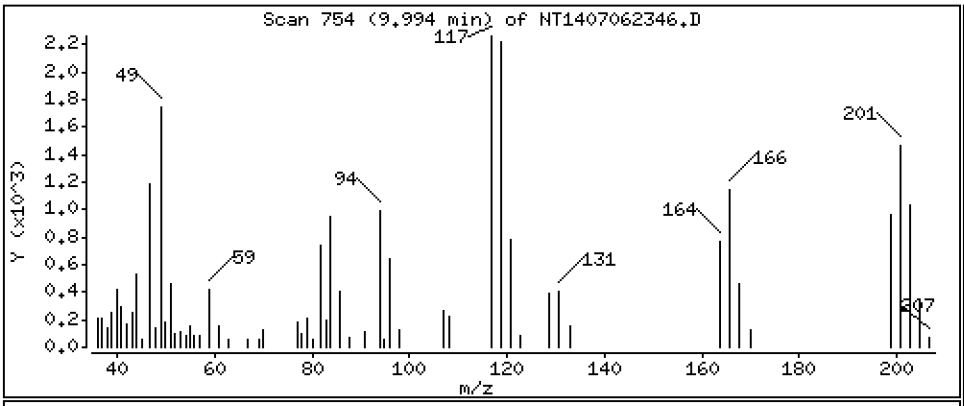
Operator: JGR

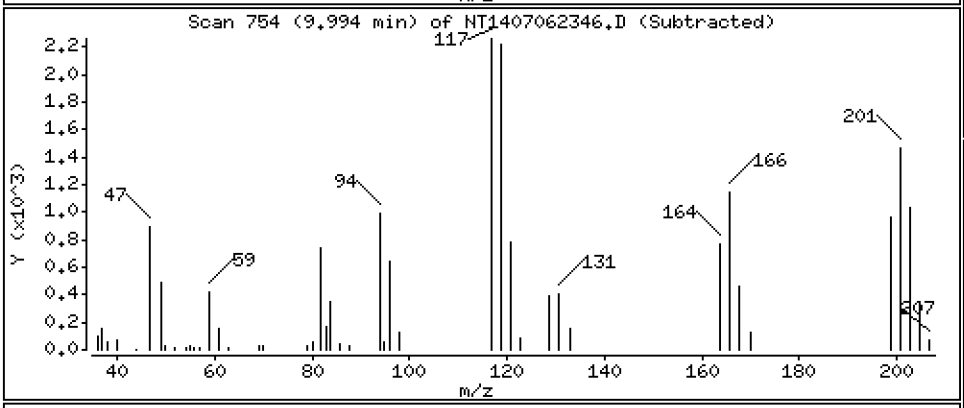
Column phase: ZB-5msi

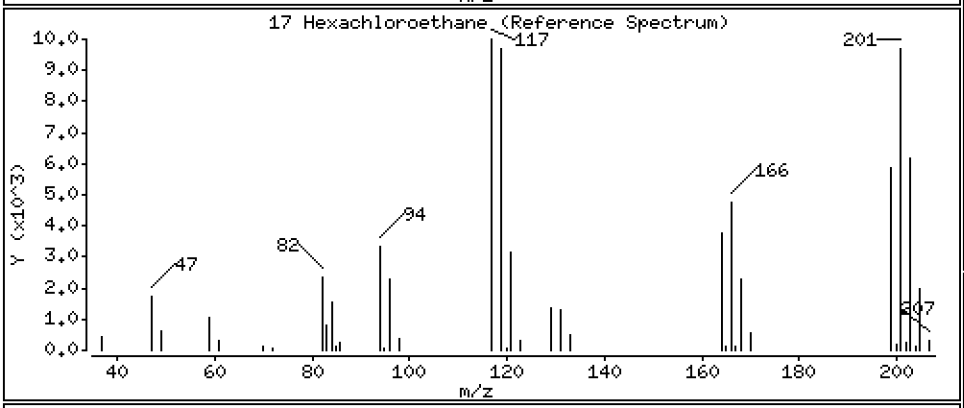
Column diameter: 0.25

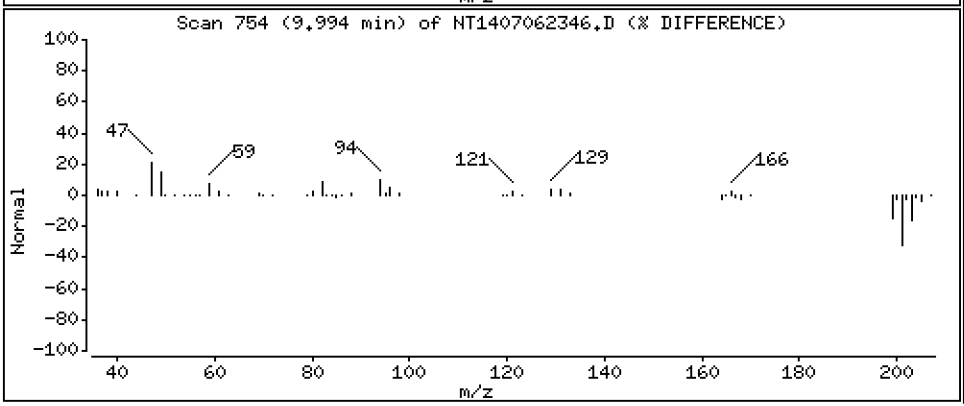
17 Hexachloroethane

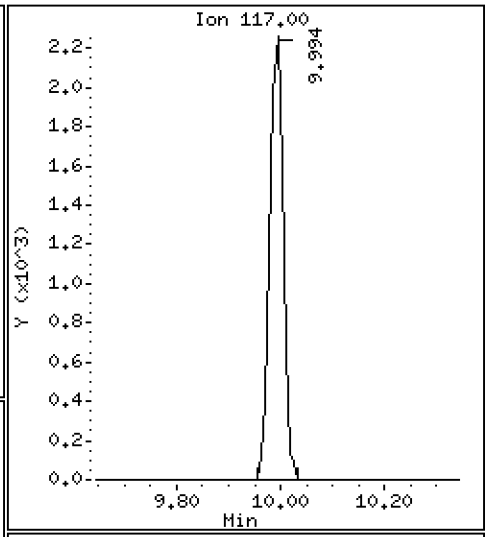
Concentration: 0.1611 ug/mL

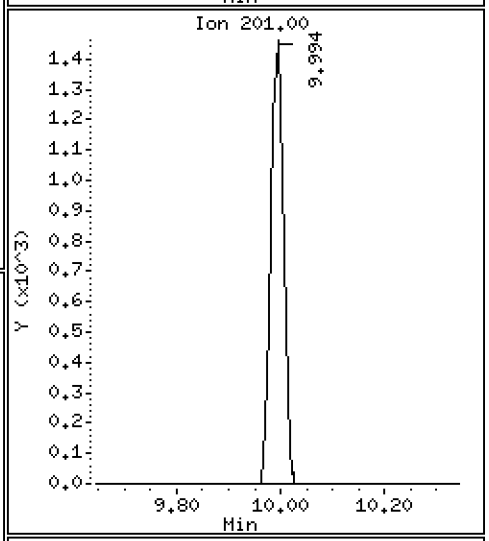


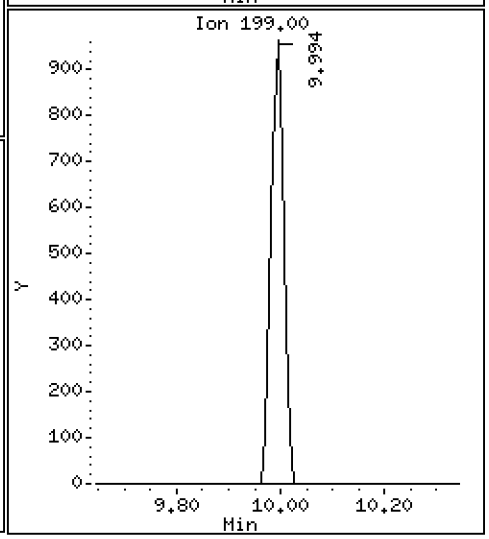












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

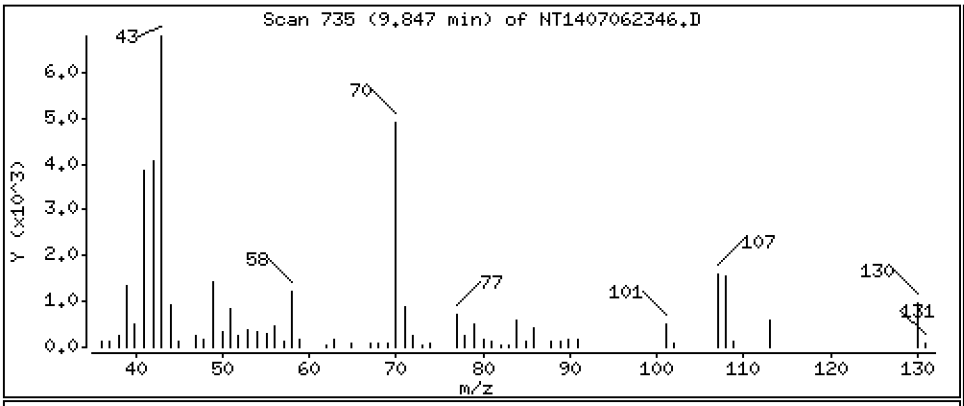
Operator: JGR

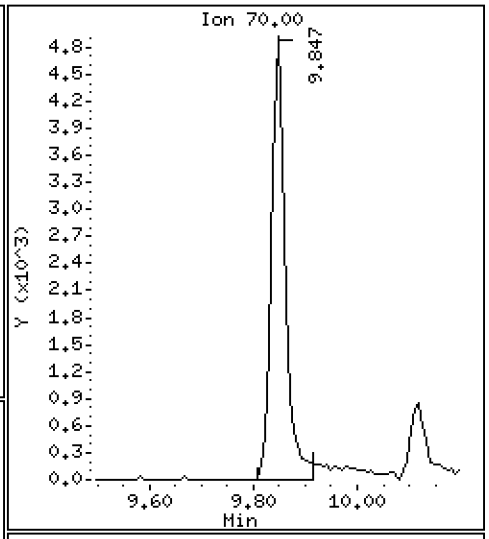
Column phase: ZB-5msi

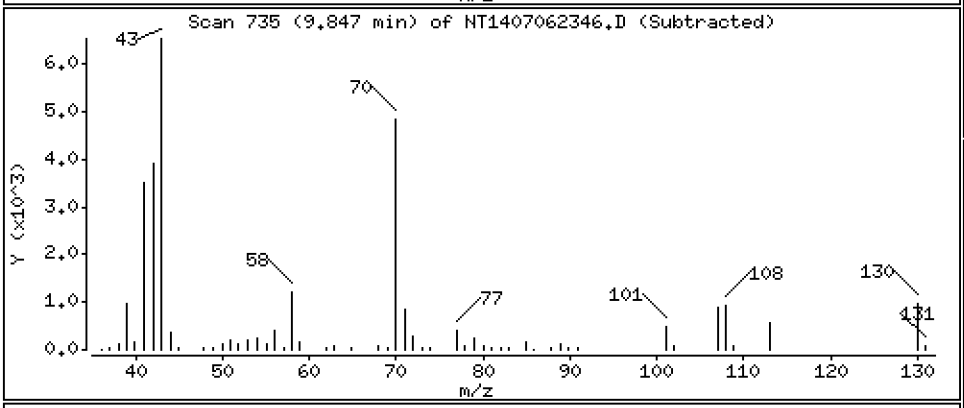
Column diameter: 0.25

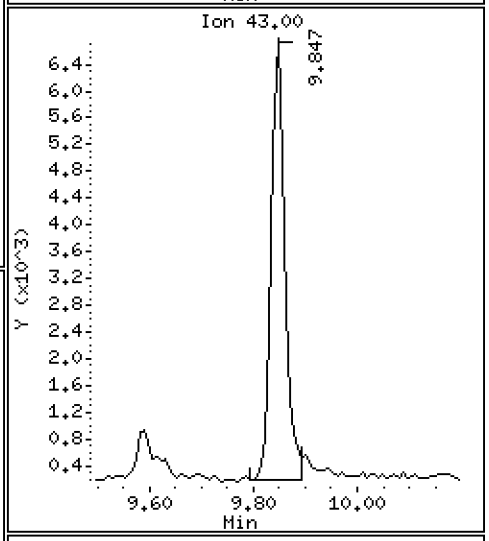
16 N-Nitroso-di-n-propylamine

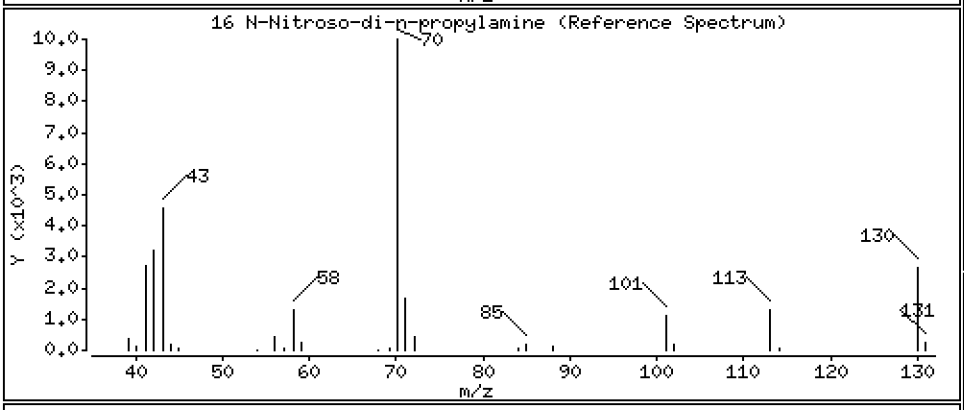
Concentration: 0.1862 ug/mL

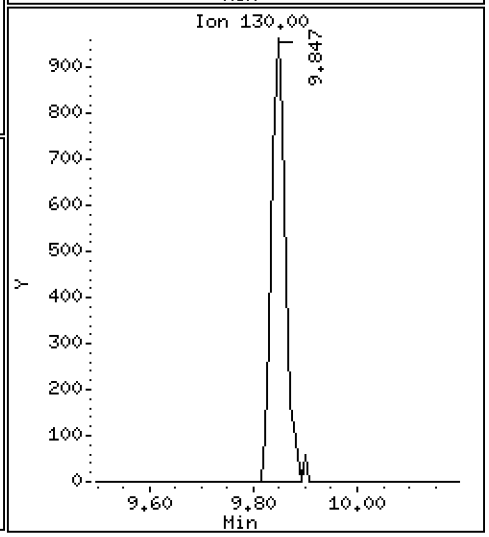


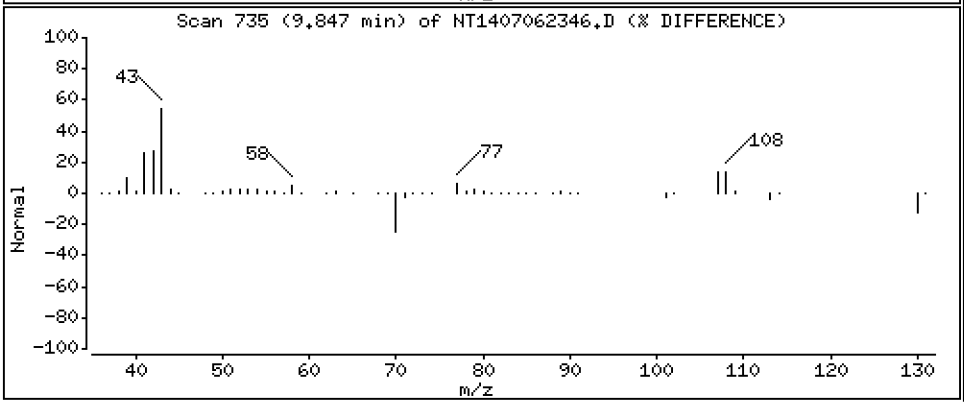












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

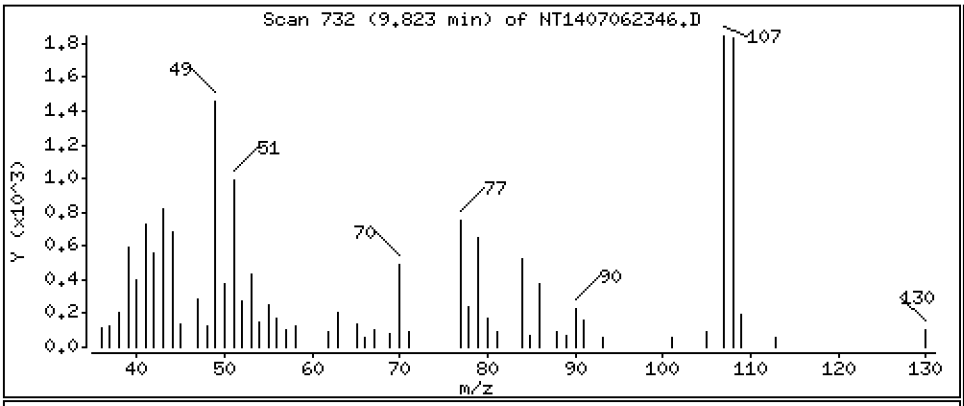
Operator: JGR

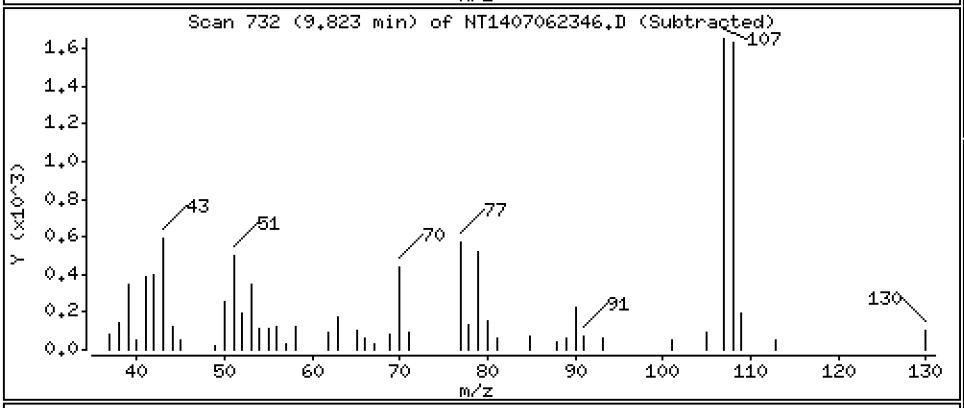
Column phase: ZB-5msi

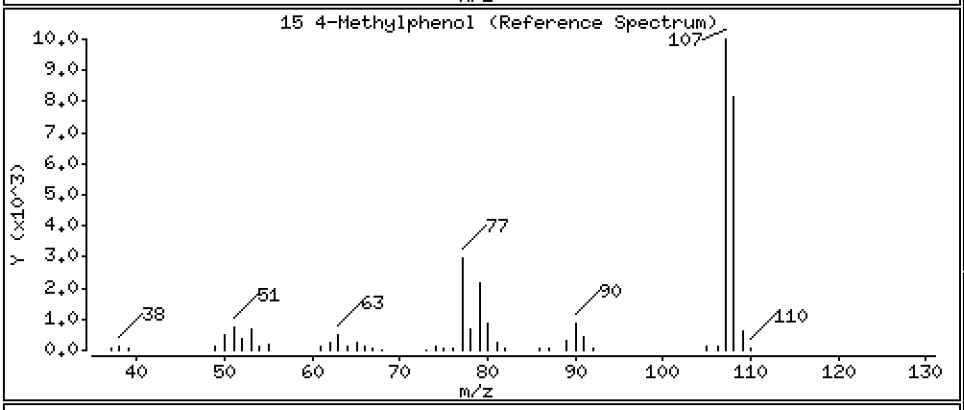
Column diameter: 0.25

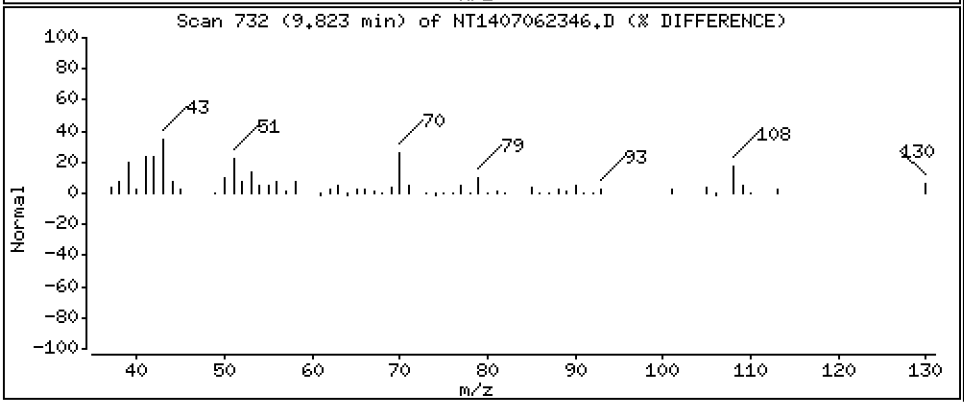
15 4-Methylphenol

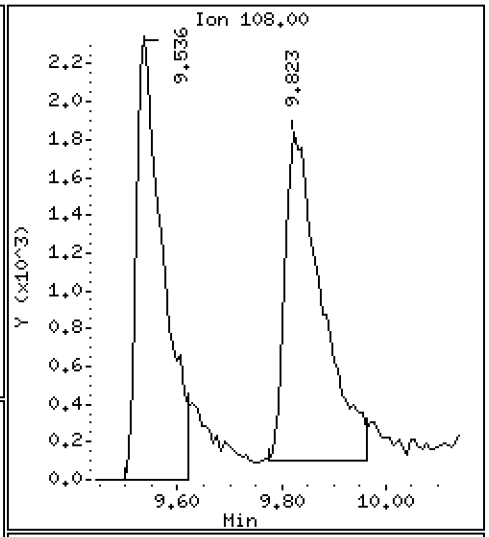
Concentration: 0.1507 ug/mL

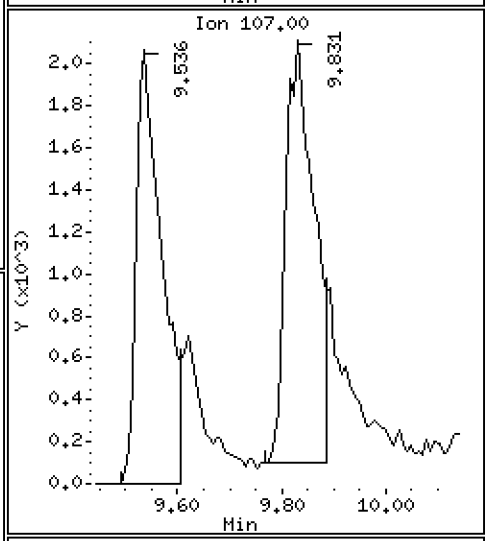


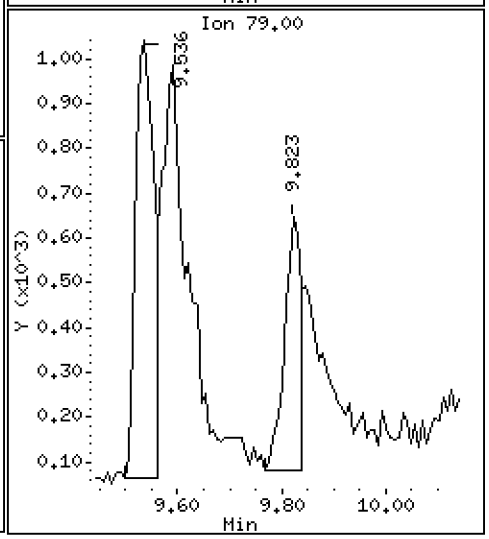












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

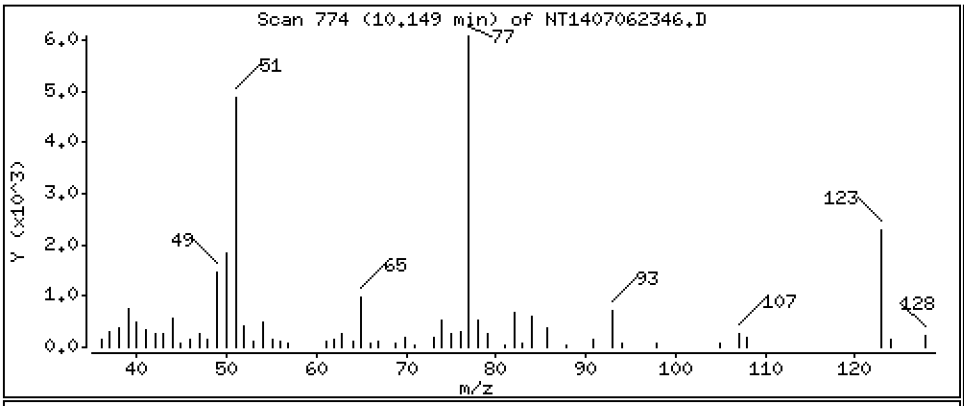
Operator: JGR

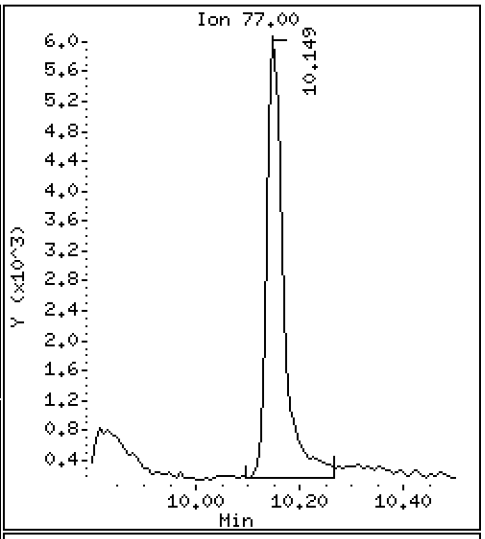
Column phase: ZB-5msi

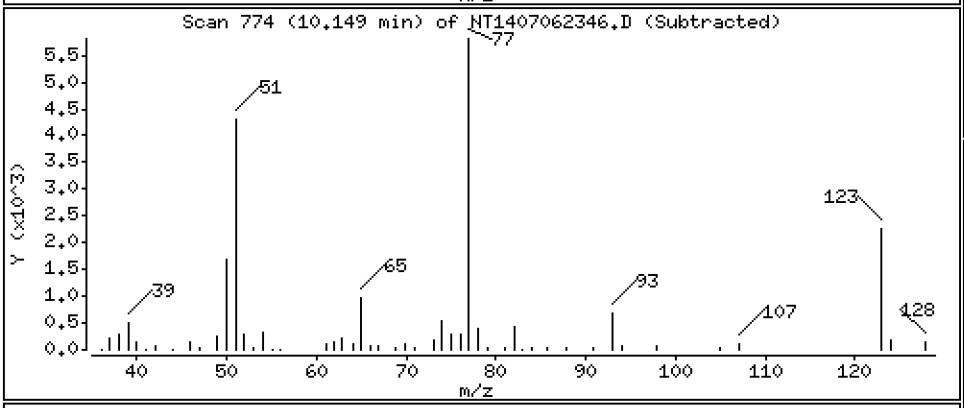
Column diameter: 0.25

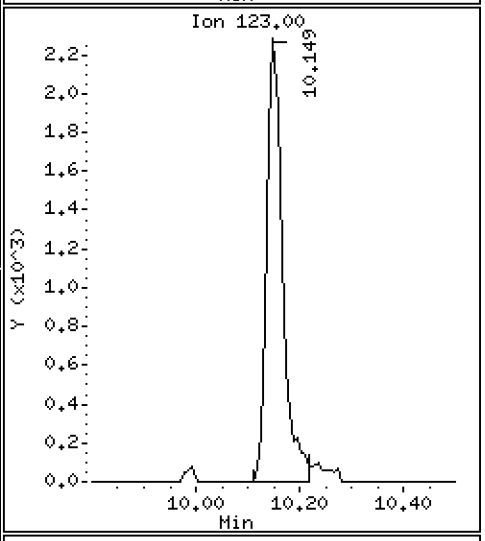
19 Nitrobenzene

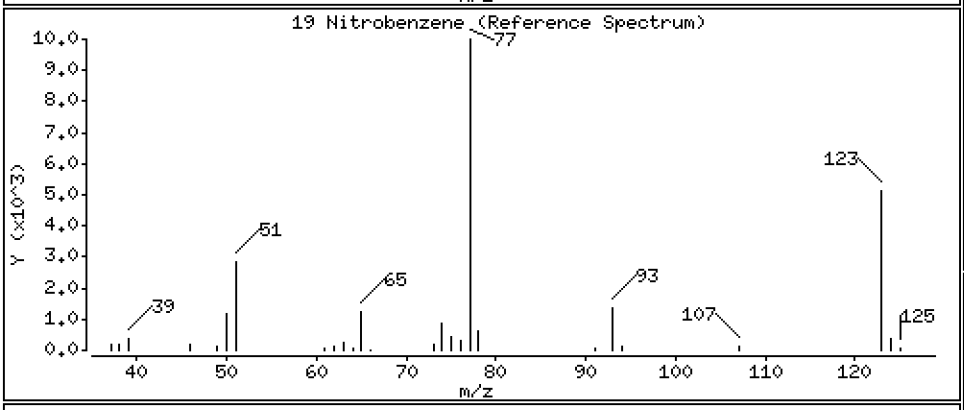
Concentration: 0.1906 ug/mL

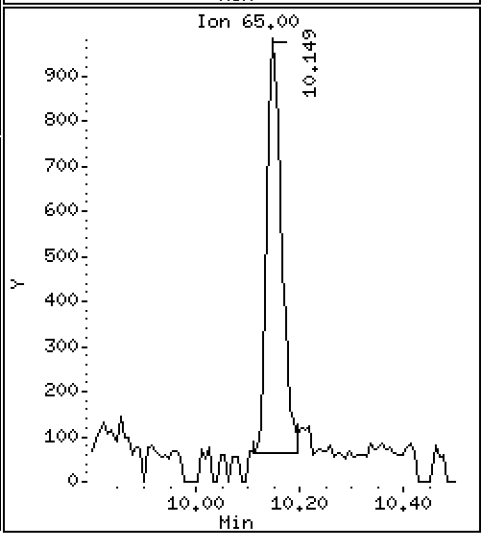


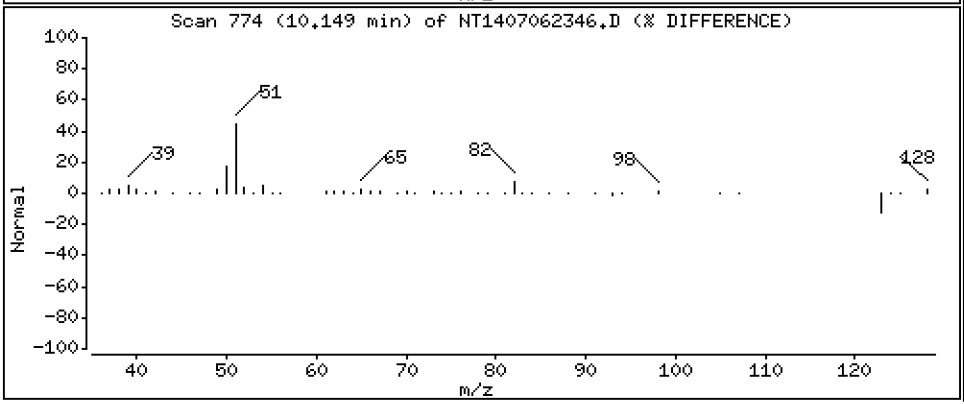












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

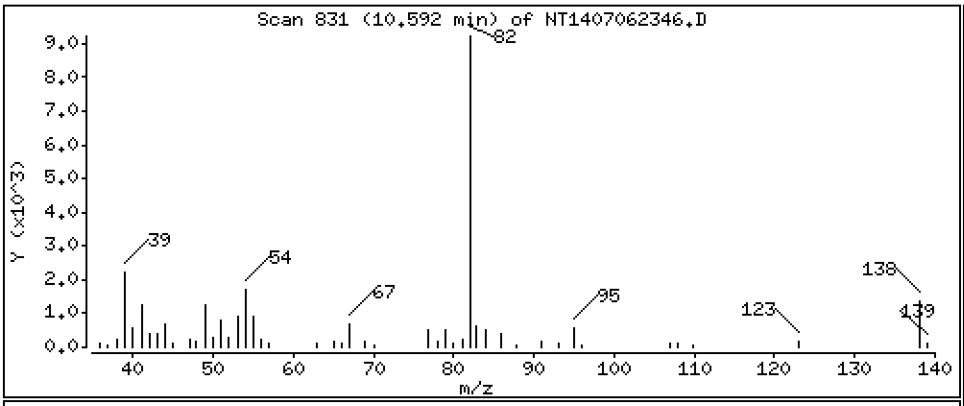
Operator: JGR

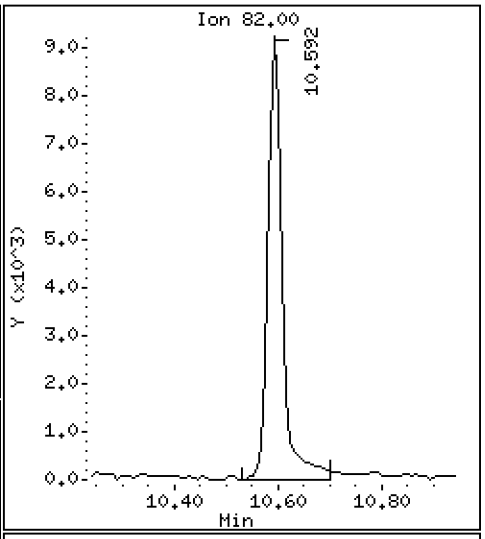
Column phase: ZB-5msi

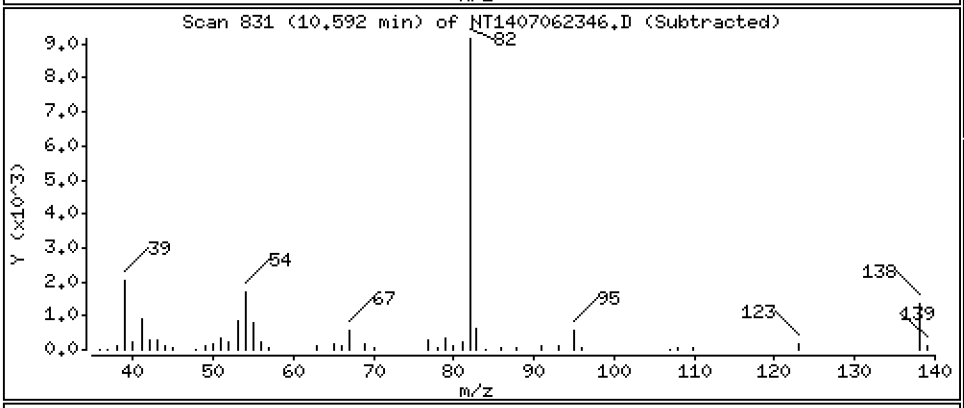
Column diameter: 0.25

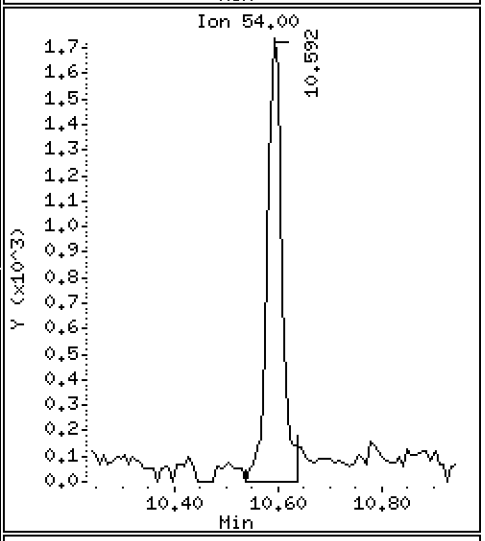
20 Isophorone

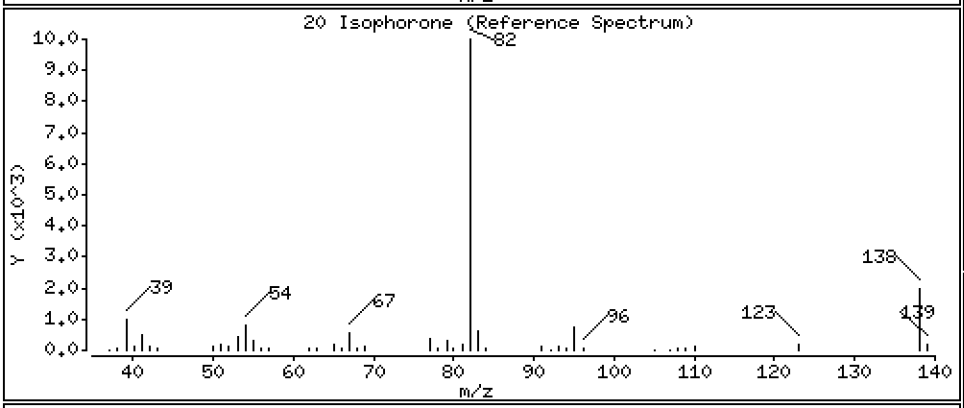
Concentration: 0.2006 ug/mL

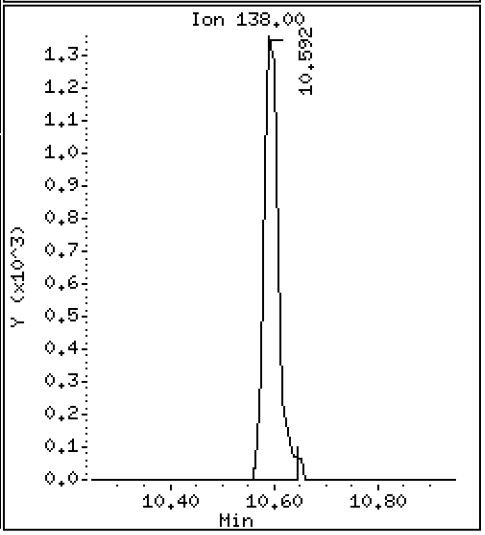


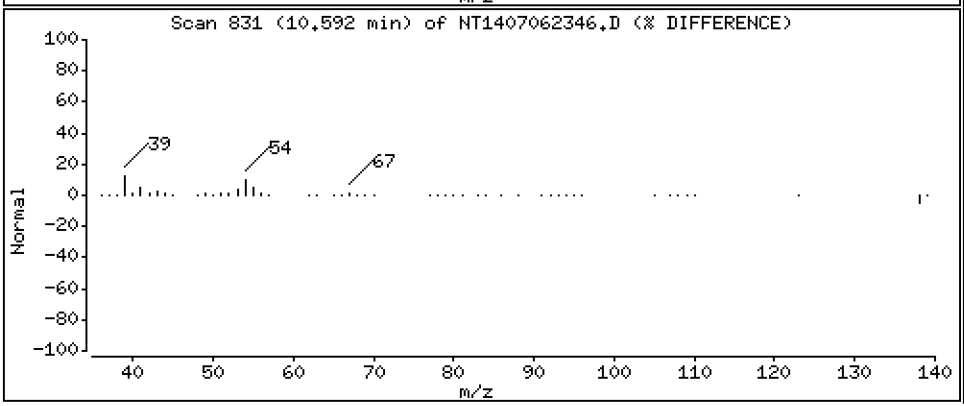












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

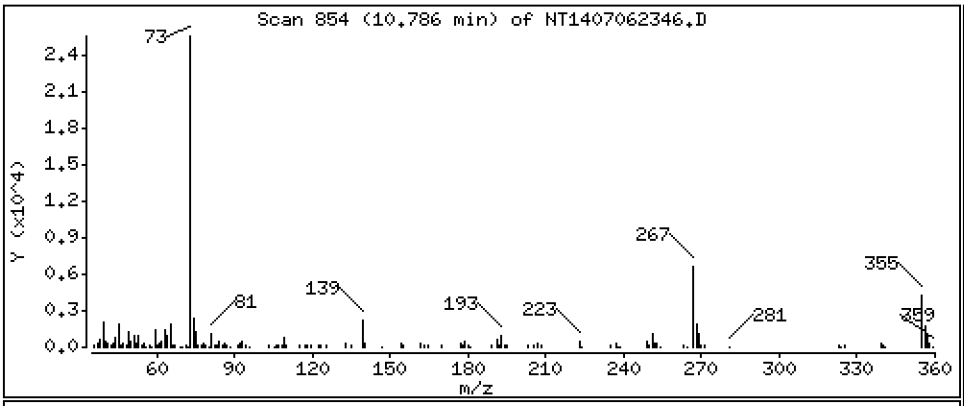
Operator: JGR

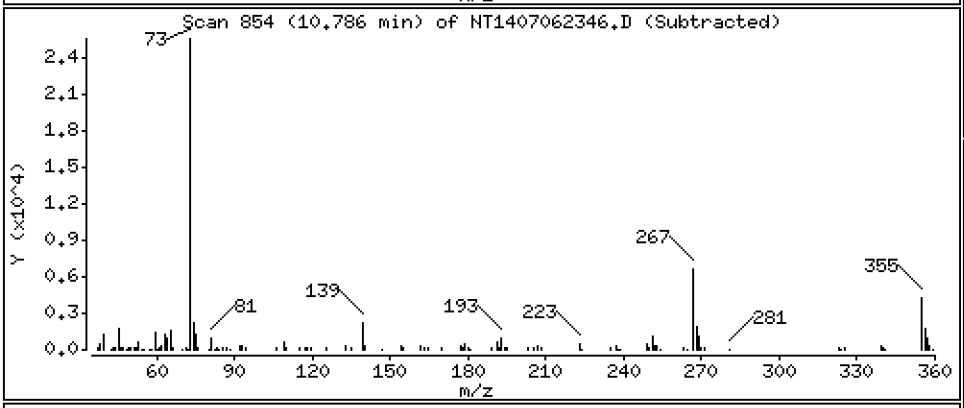
Column phase: ZB-5msi

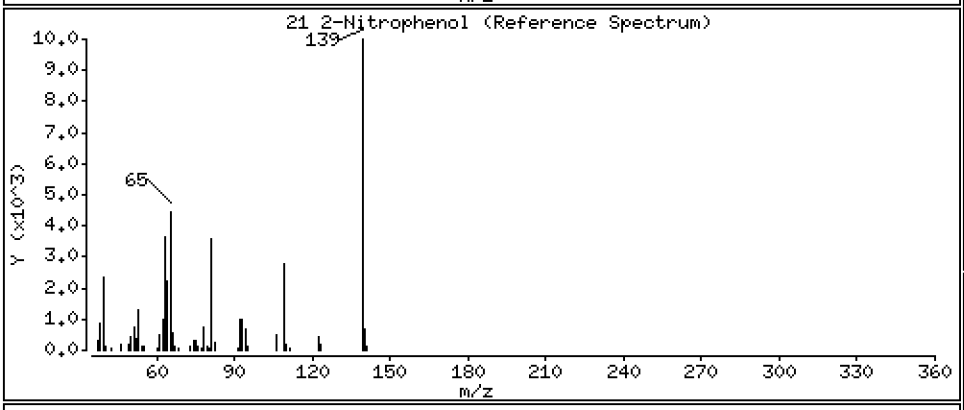
Column diameter: 0.25

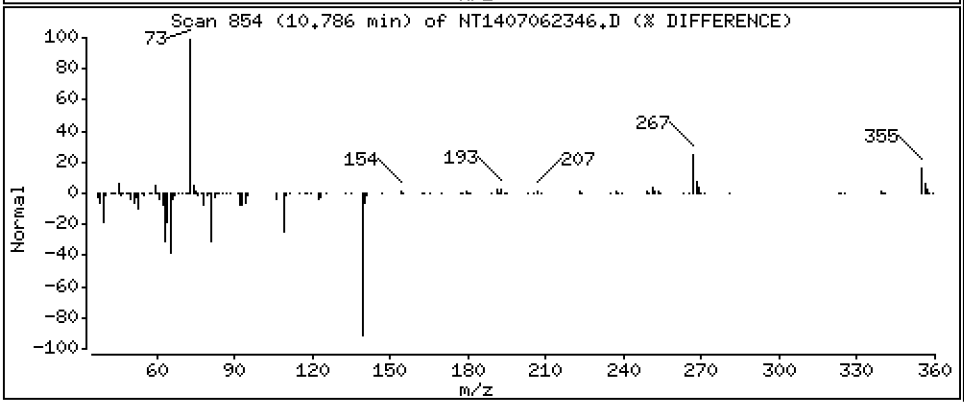
21 2-Nitrophenol

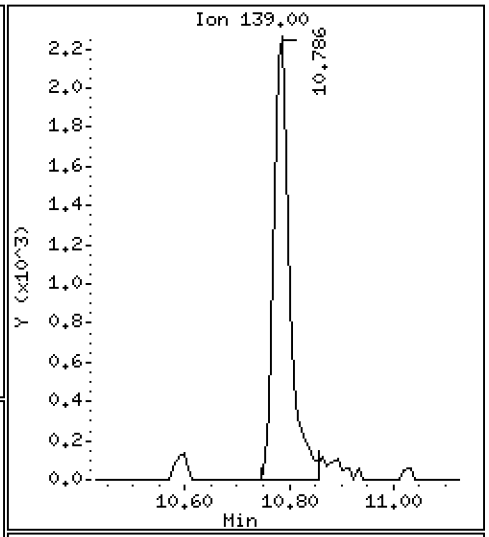
Concentration: 0.1469 ug/mL

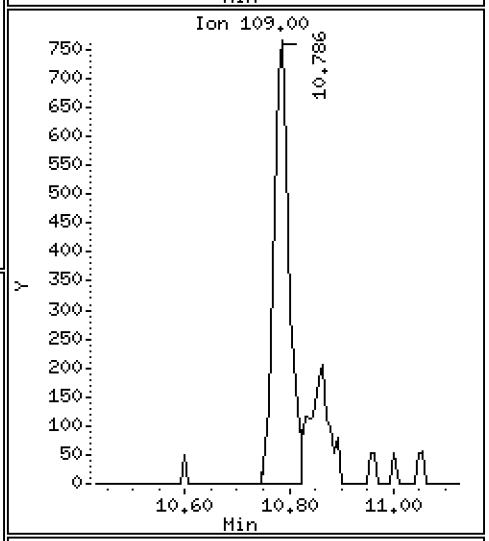


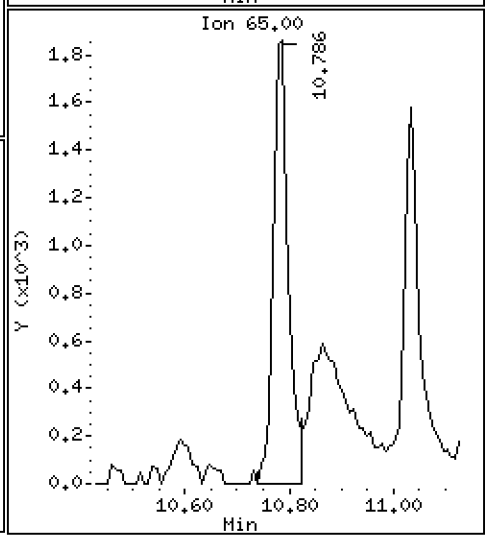












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

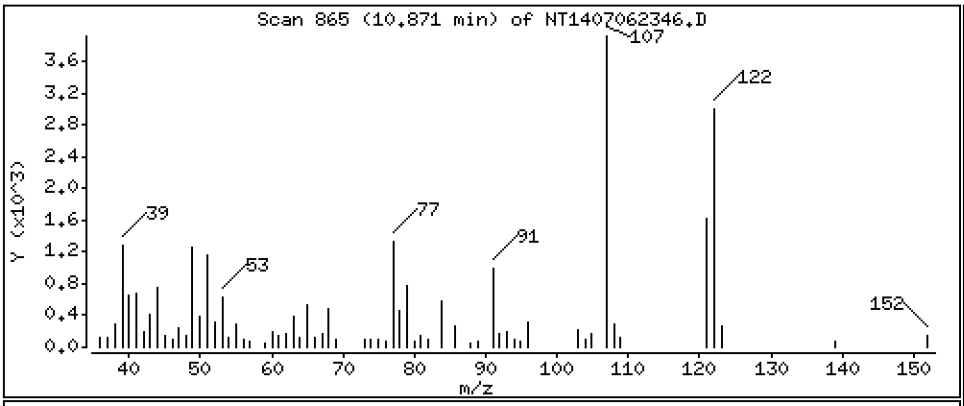
Operator: JGR

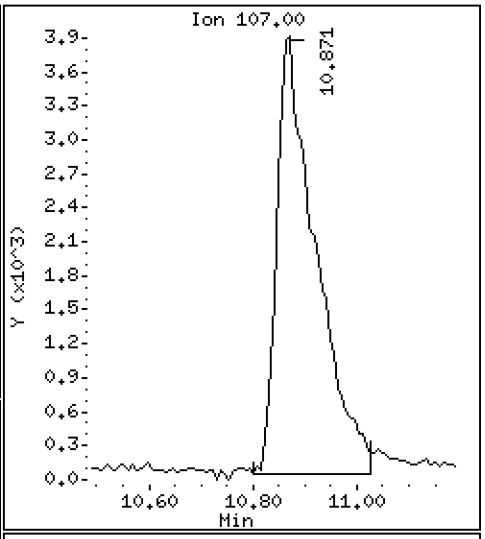
Column phase: ZB-5msi

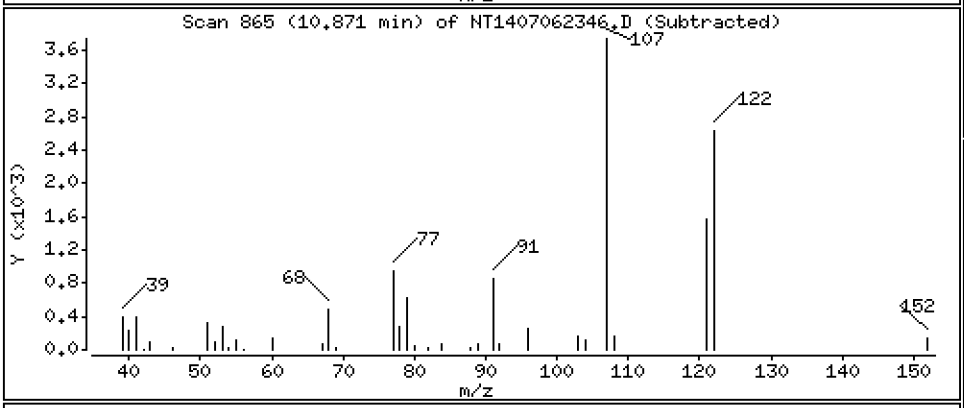
Column diameter: 0.25

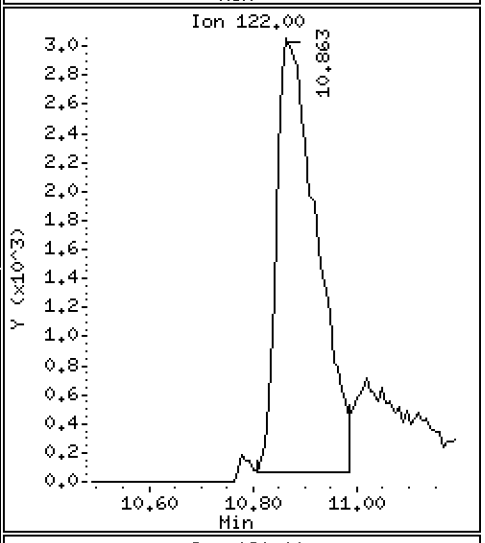
22 2,4-Dimethylphenol

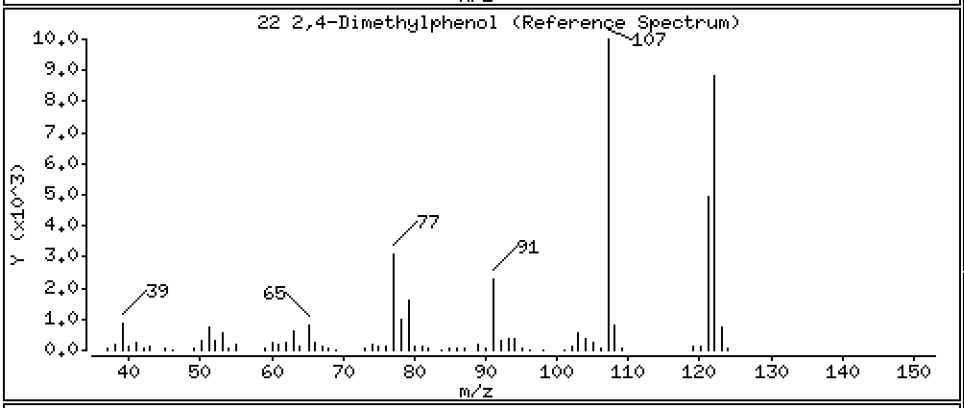
Concentration: 0.3788 ug/mL

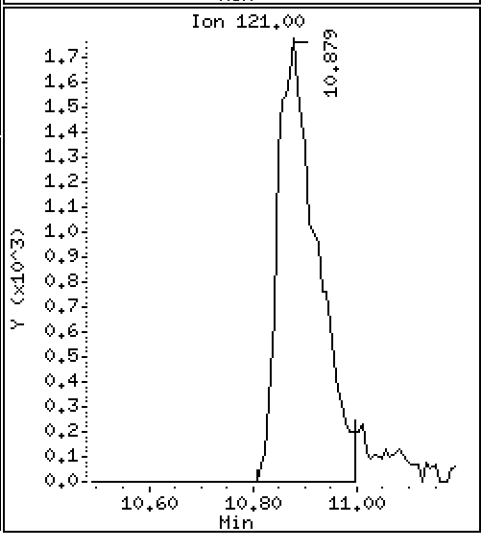


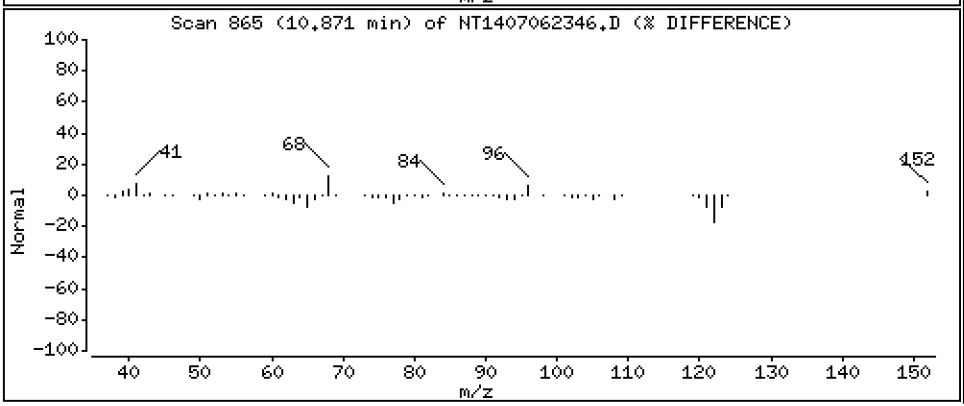












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

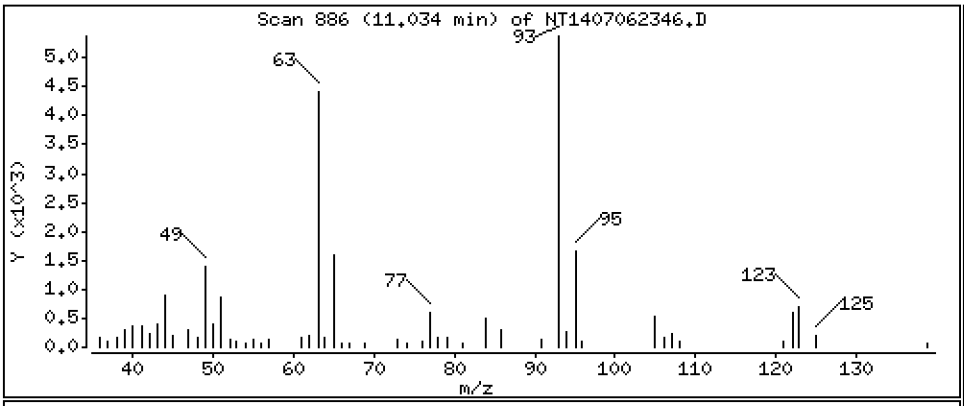
Operator: JGR

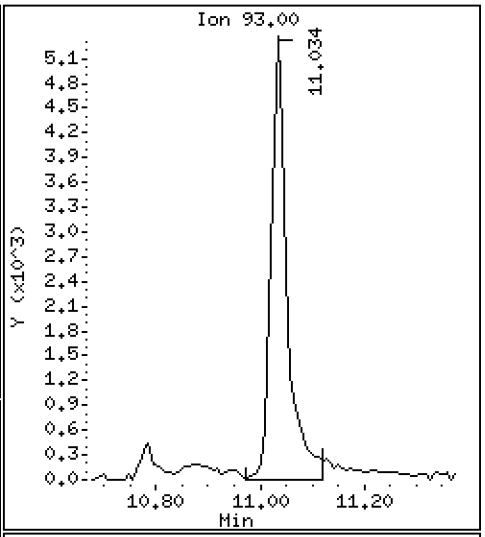
Column phase: ZB-5msi

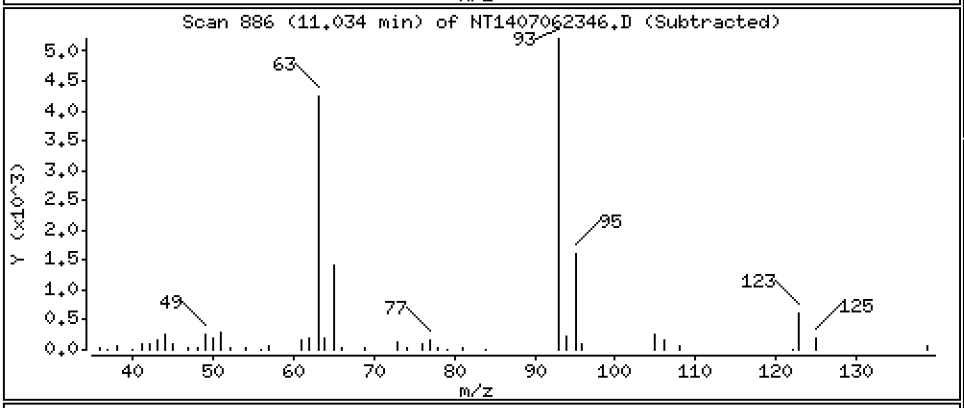
Column diameter: 0.25

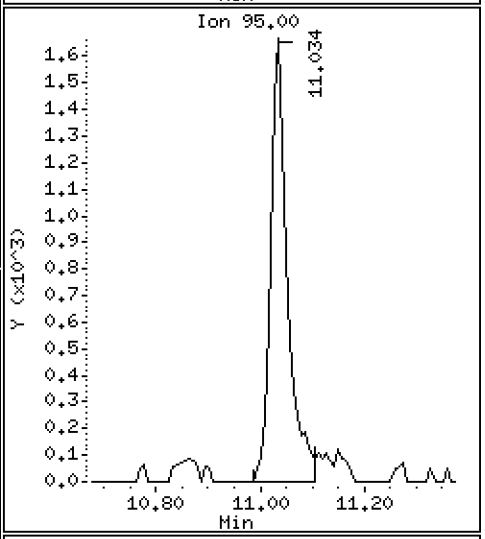
23 Bis(2-Chloroethoxy)methane

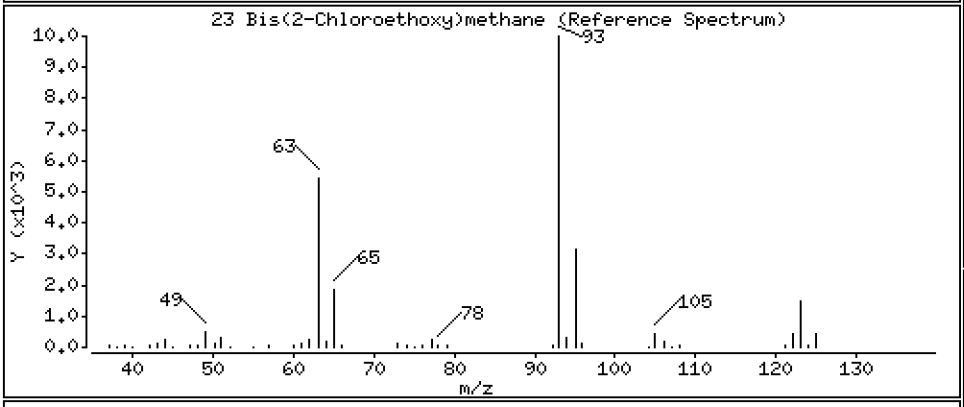
Concentration: 0.1921 ug/mL

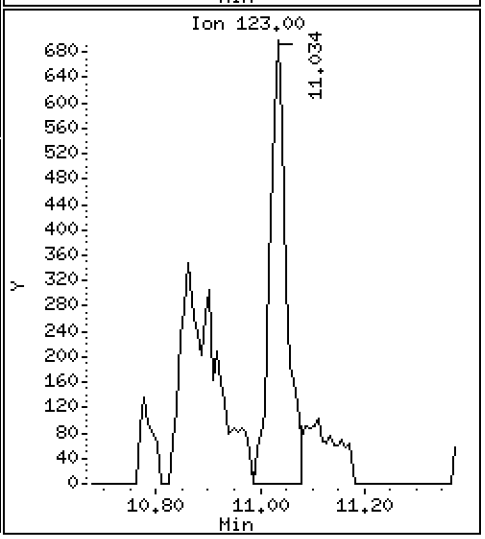


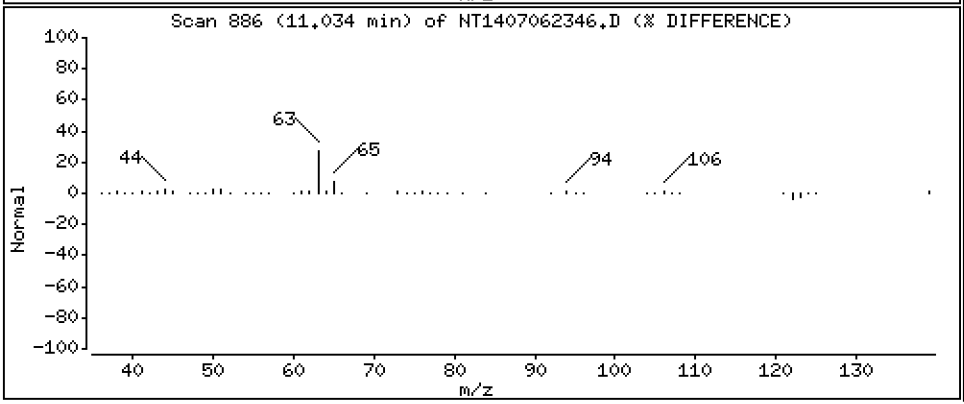












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

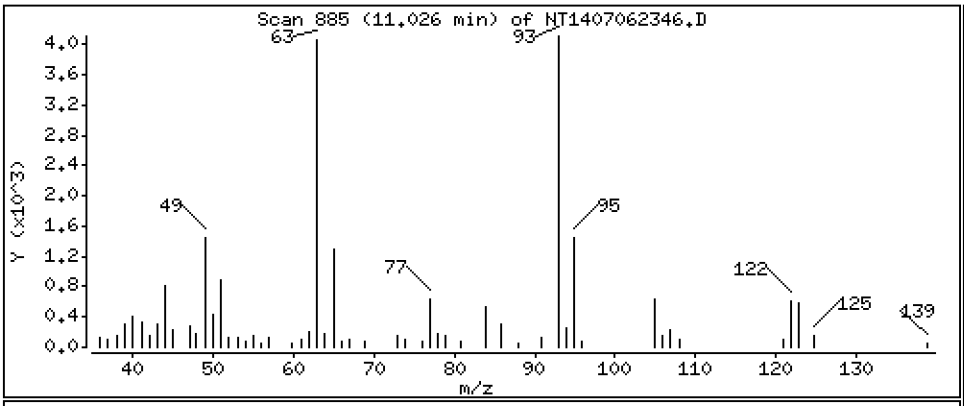
Operator: JGR

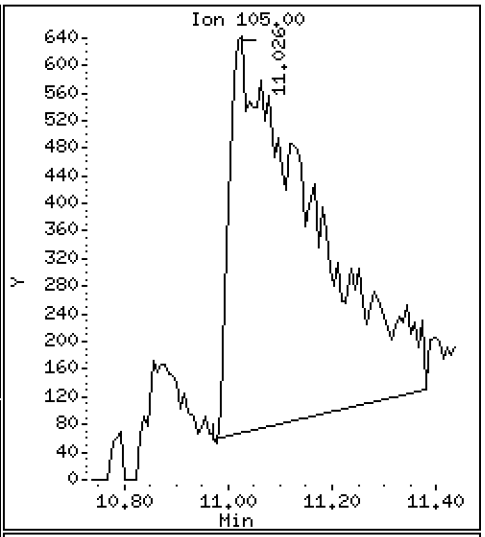
Column phase: ZB-5msi

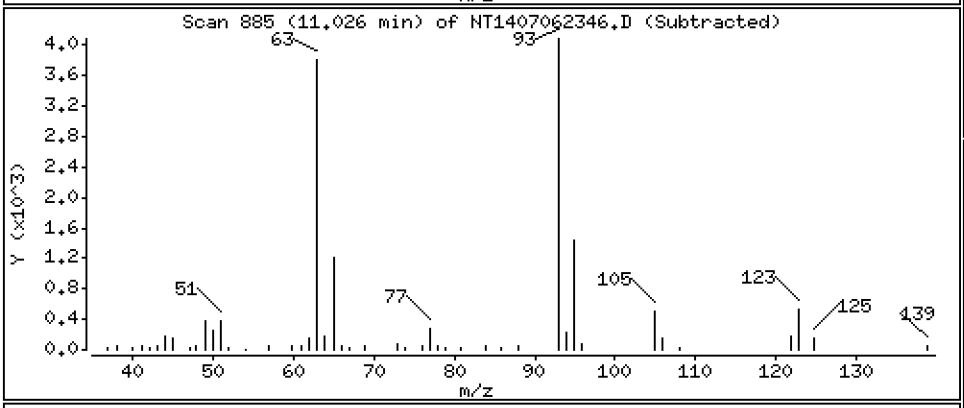
Column diameter: 0.25

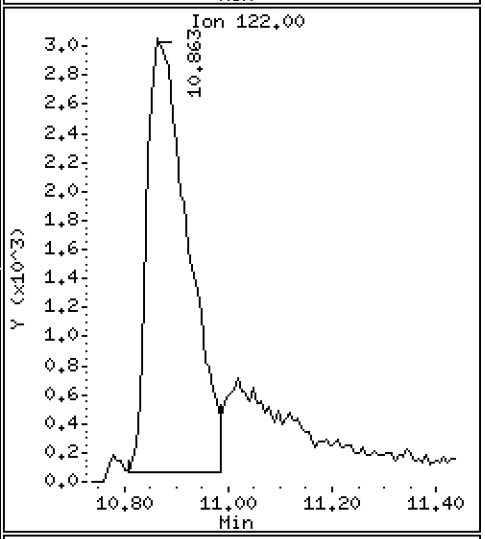
24 Benzoic acid

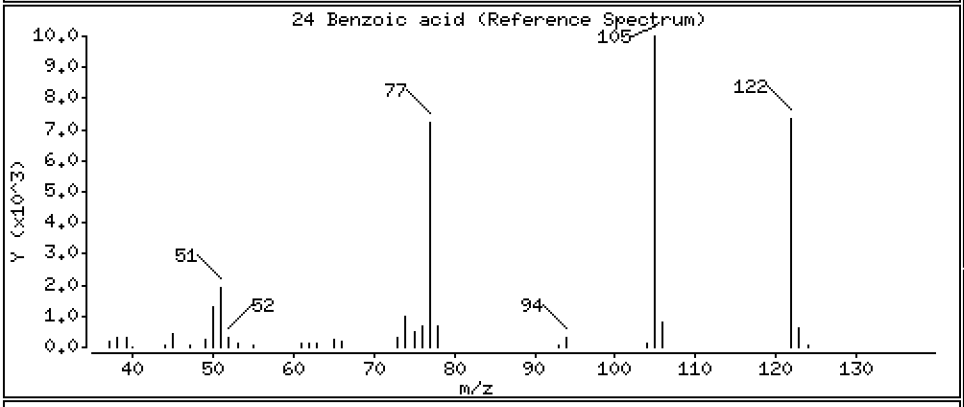
Concentration: 0.1983 ug/mL

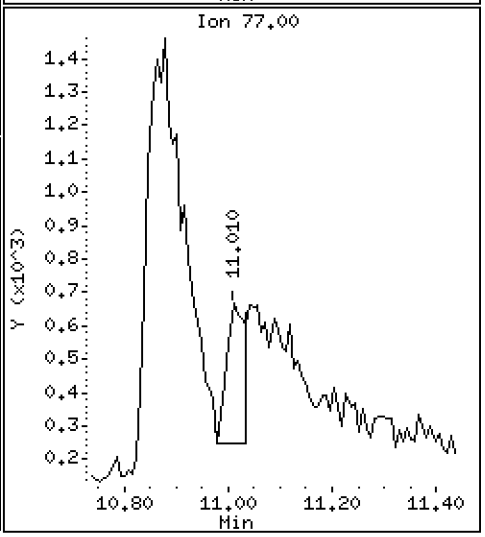


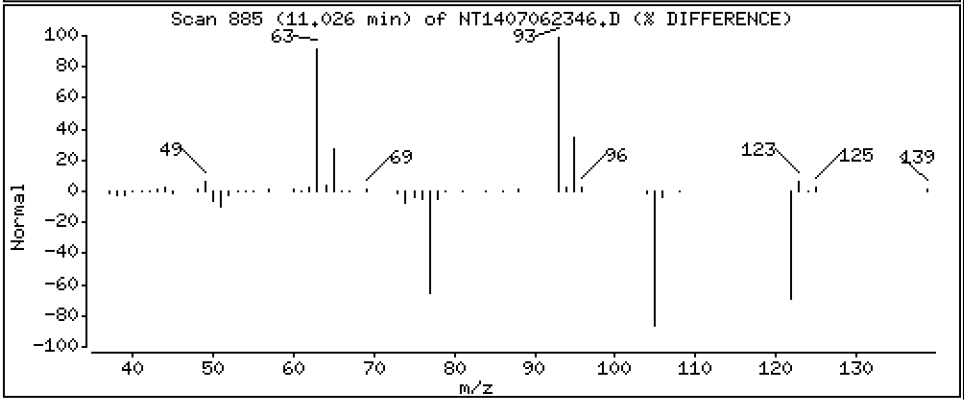












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

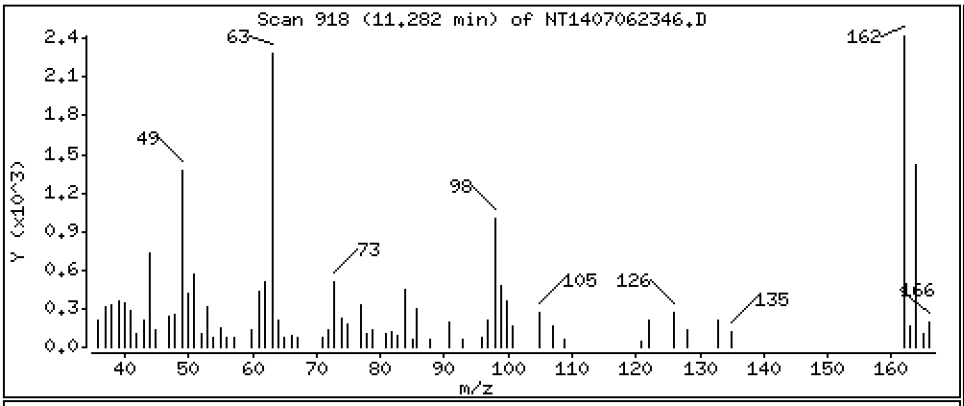
Operator: JGR

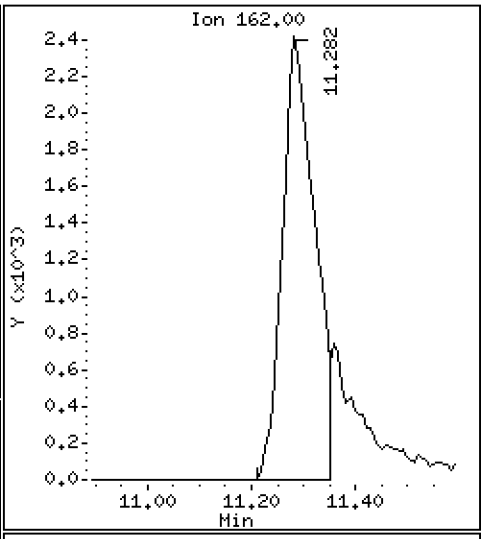
Column phase: ZB-5msi

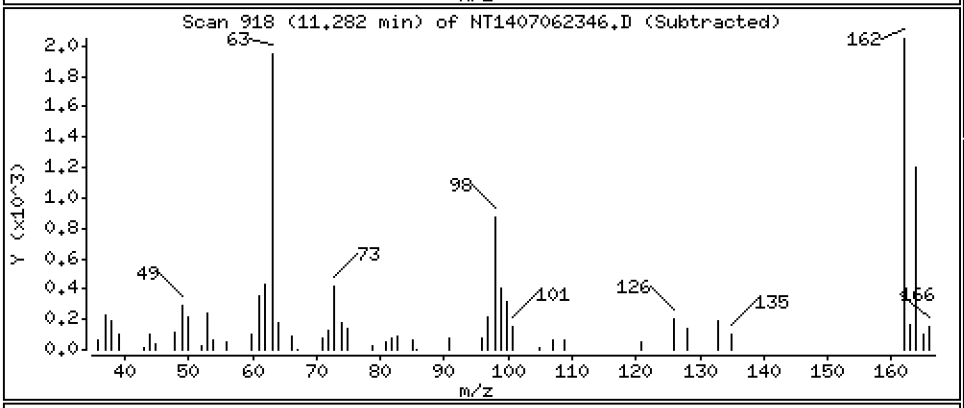
Column diameter: 0.25

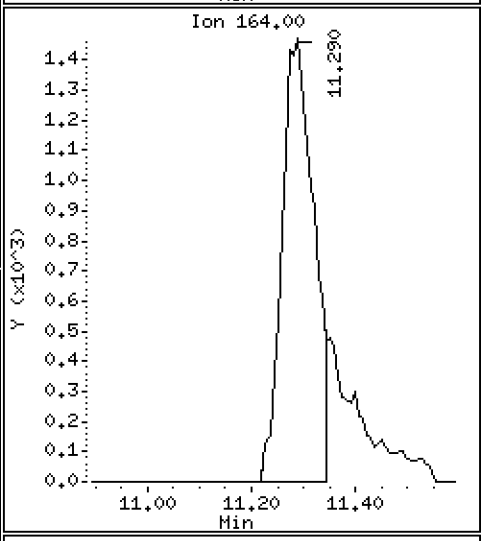
25 2,4-Dichlorophenol

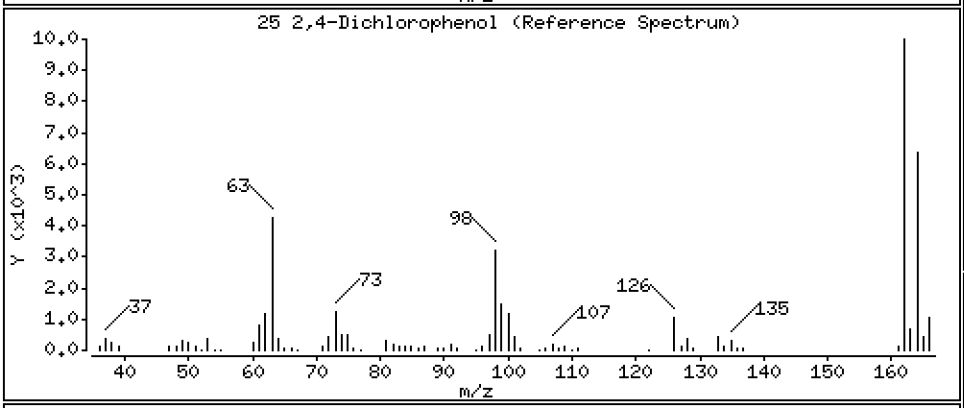
Concentration: 0.2452 ug/mL

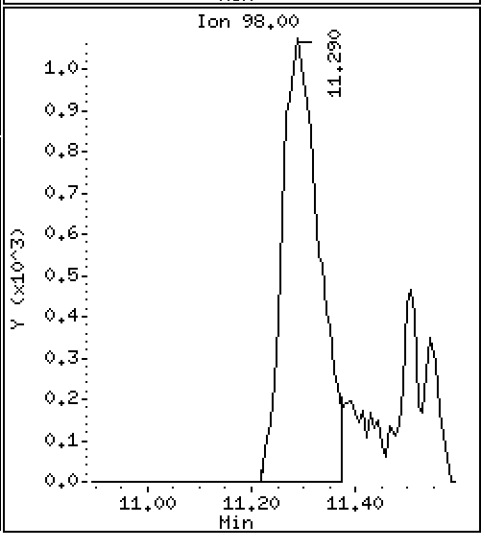


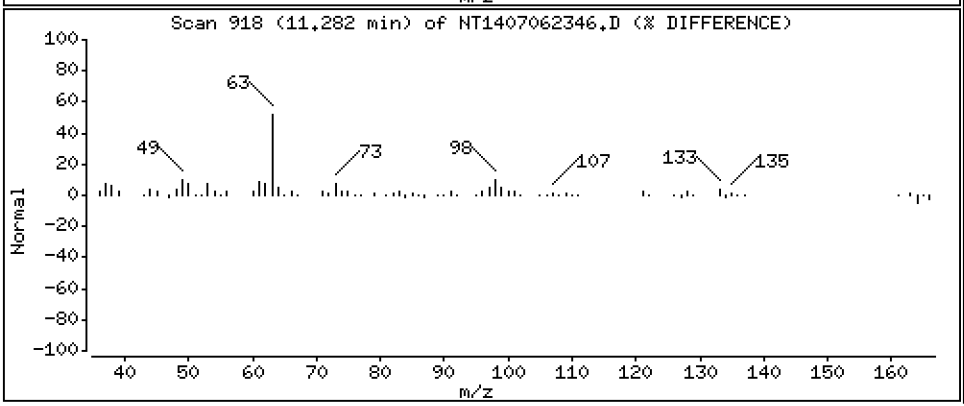












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

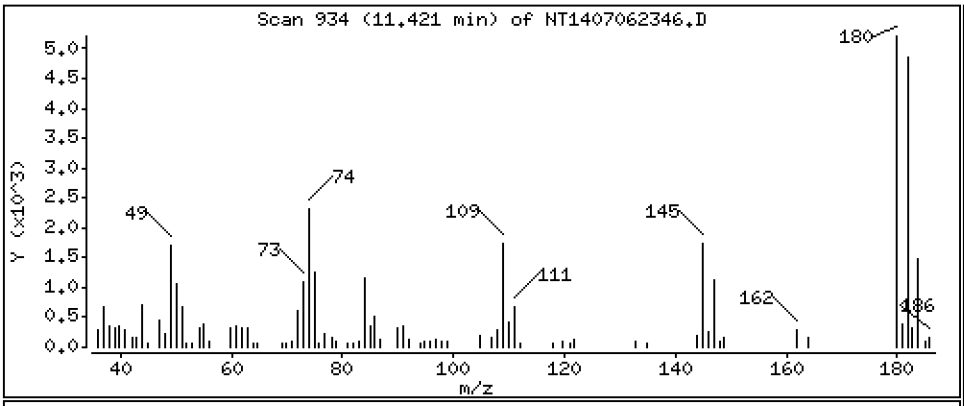
Operator: JGR

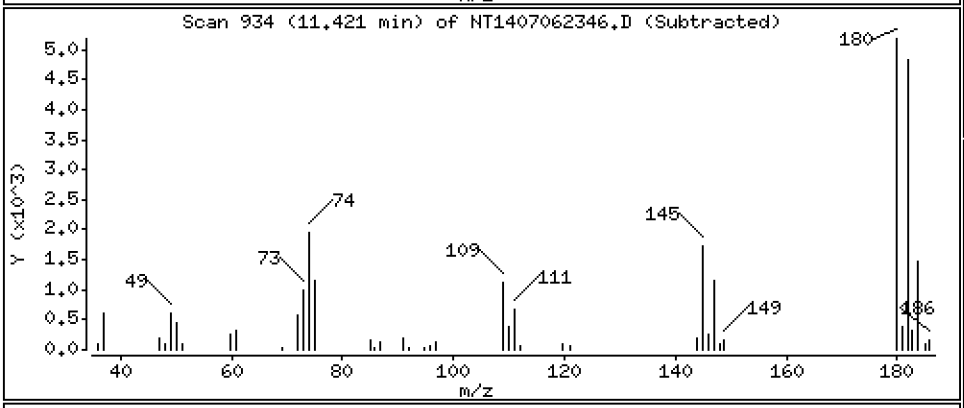
Column phase: ZB-5msi

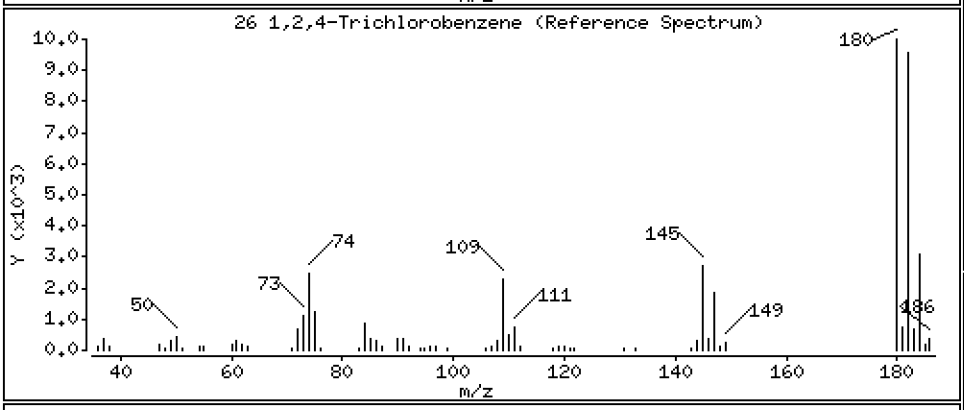
Column diameter: 0.25

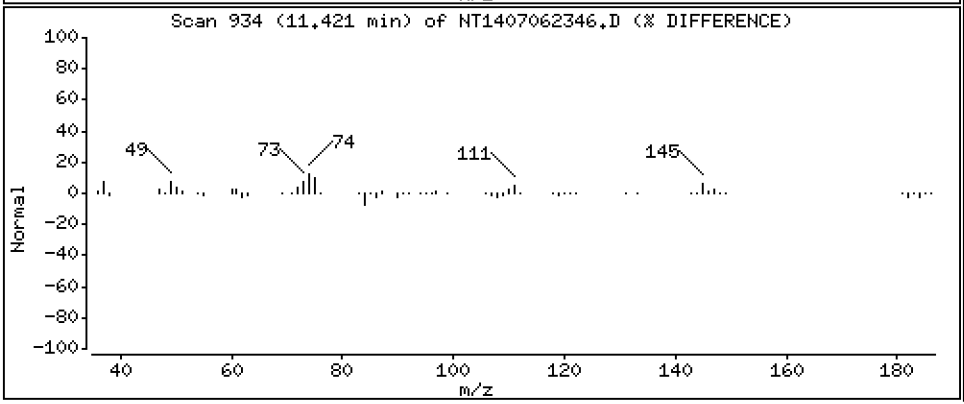
26 1,2,4-Trichlorobenzene

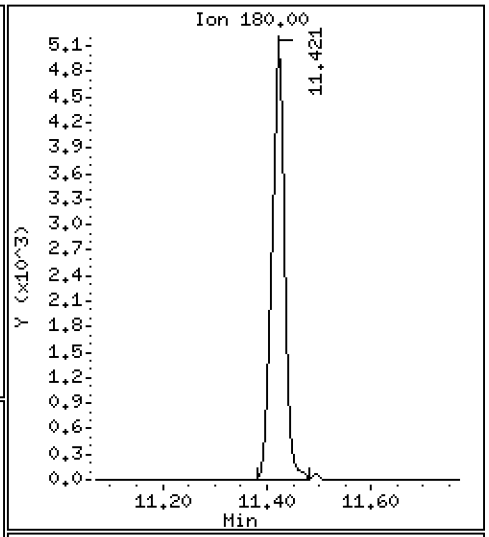
Concentration: 0.2141 ug/mL

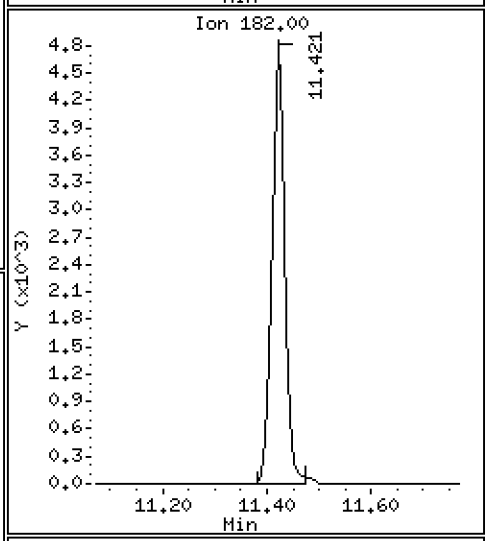


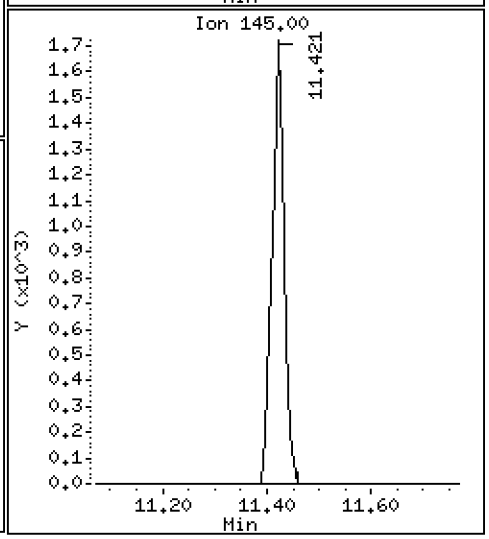












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

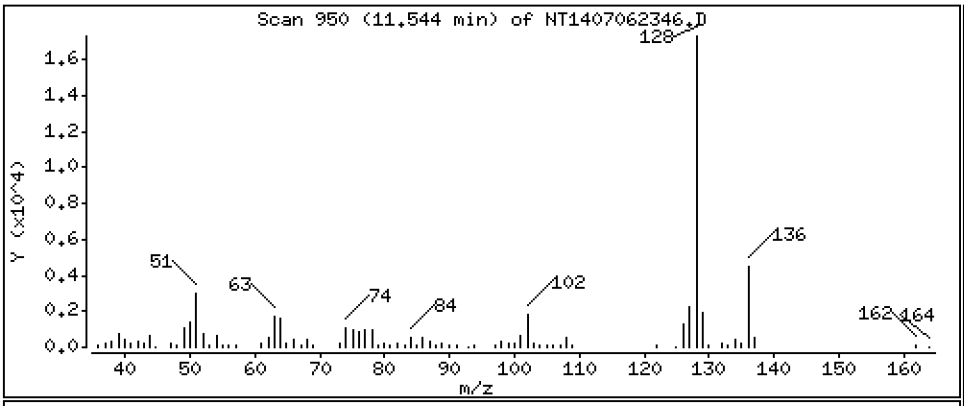
Operator: JGR

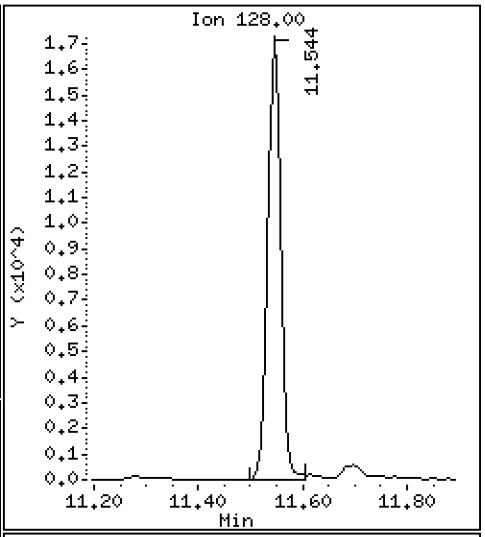
Column phase: ZB-5msi

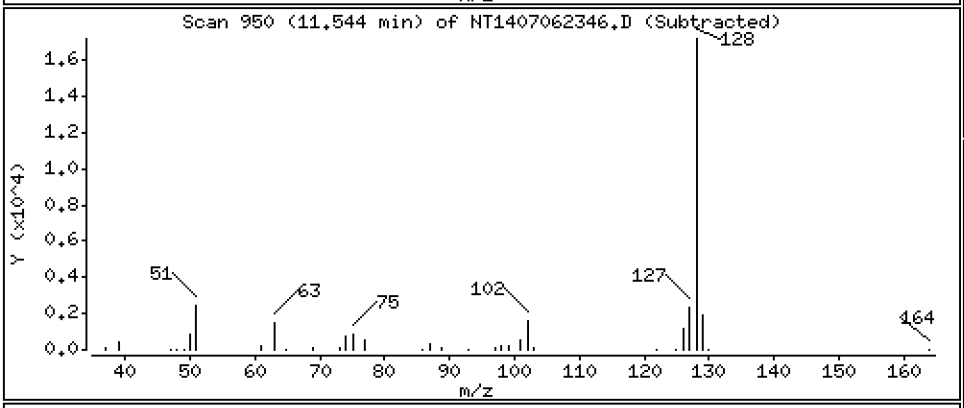
Column diameter: 0.25

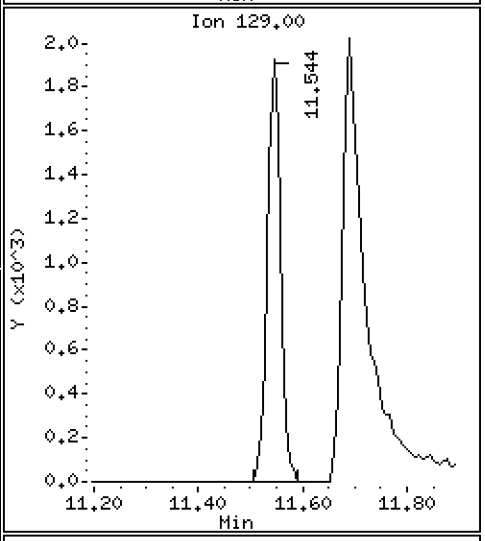
28 Naphthalene

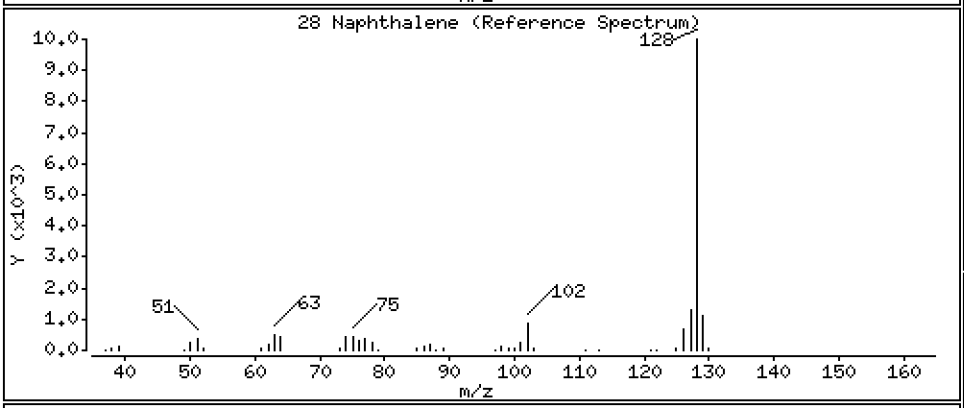
Concentration: 0.2056 ug/mL

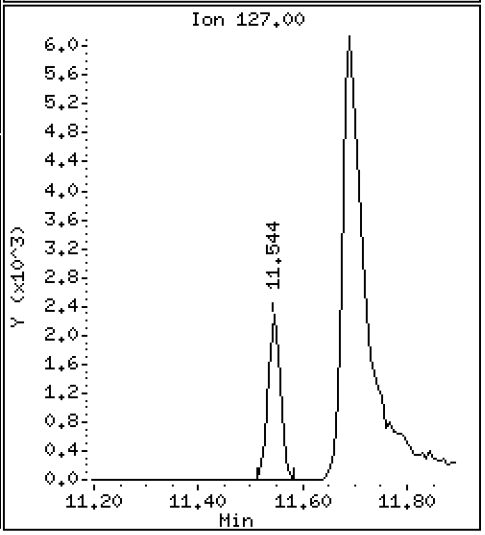


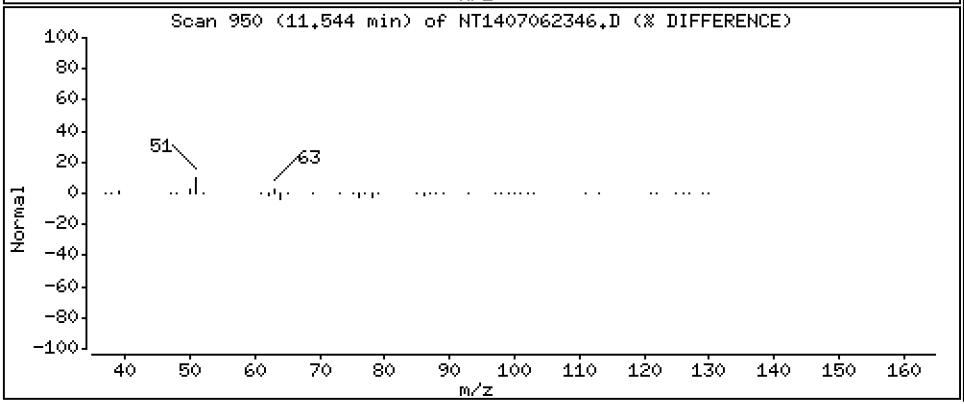












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

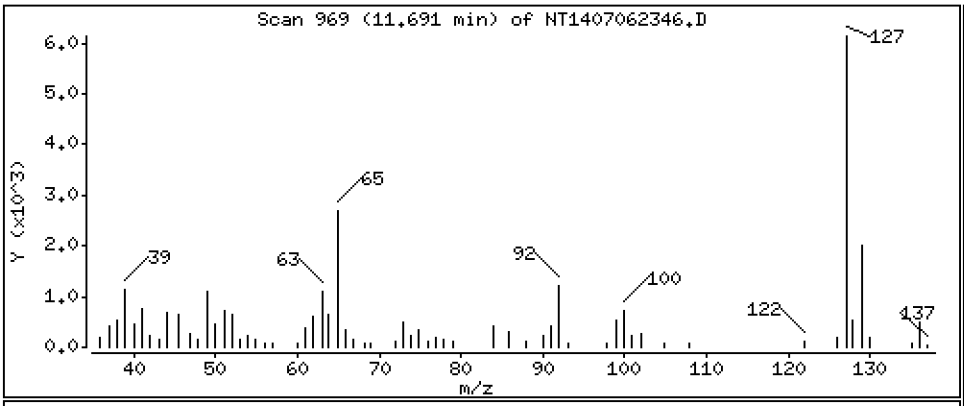
Operator: JGR

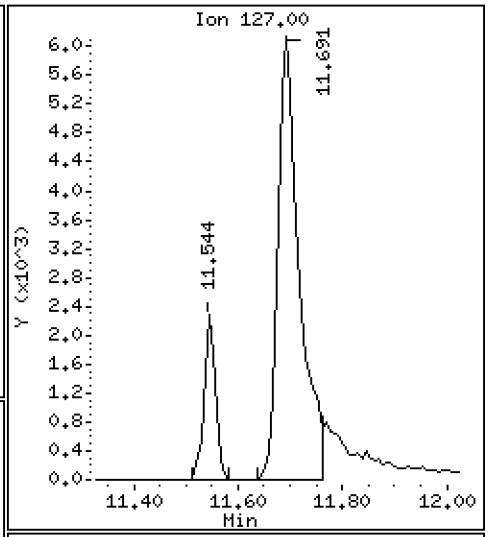
Column phase: ZB-5msi

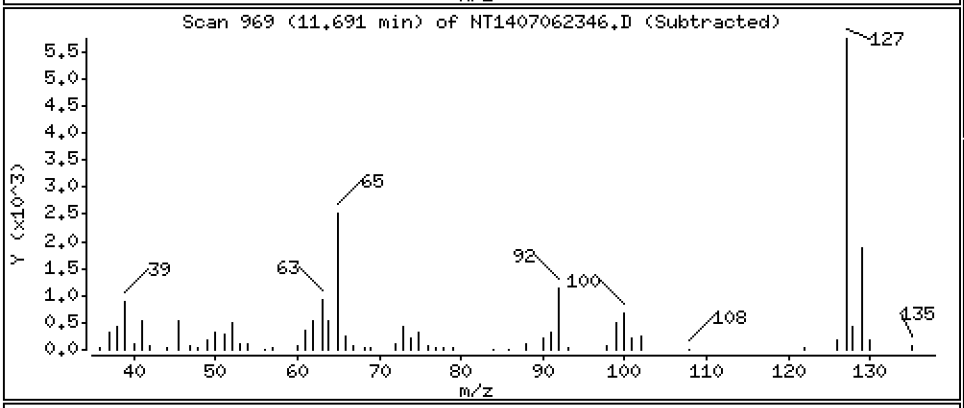
Column diameter: 0.25

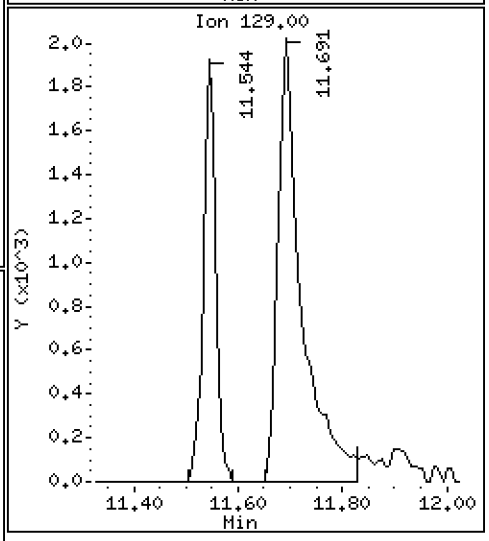
29 4-Chloroaniline

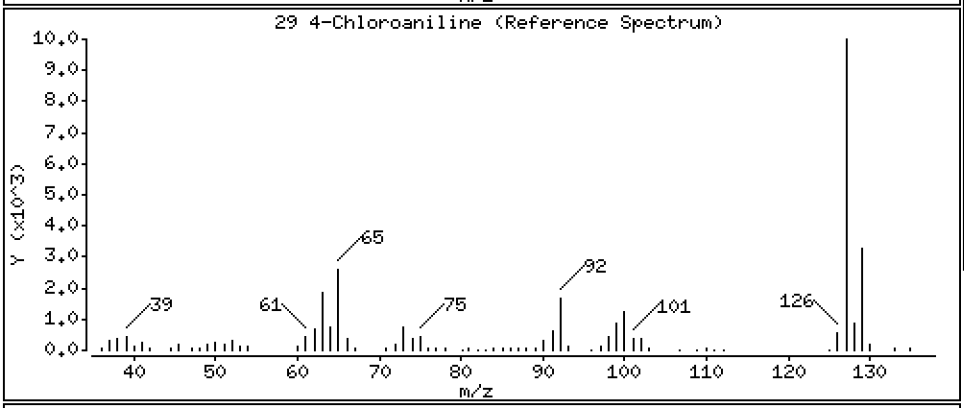
Concentration: 0.2662 ug/mL

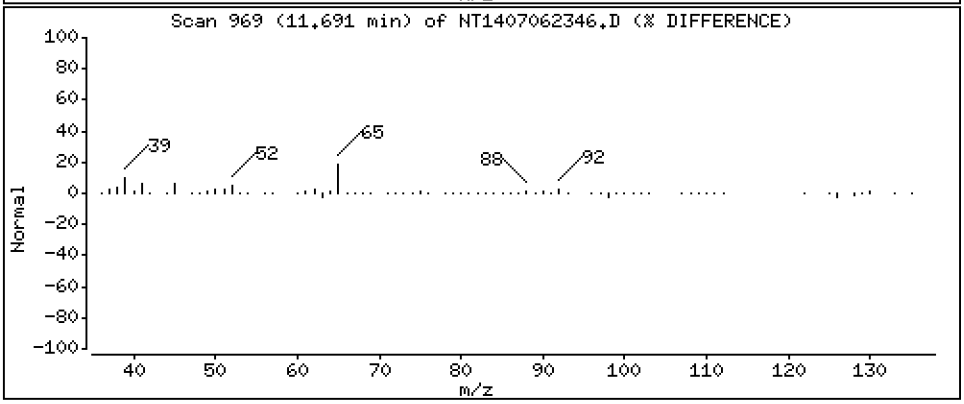












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D

Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

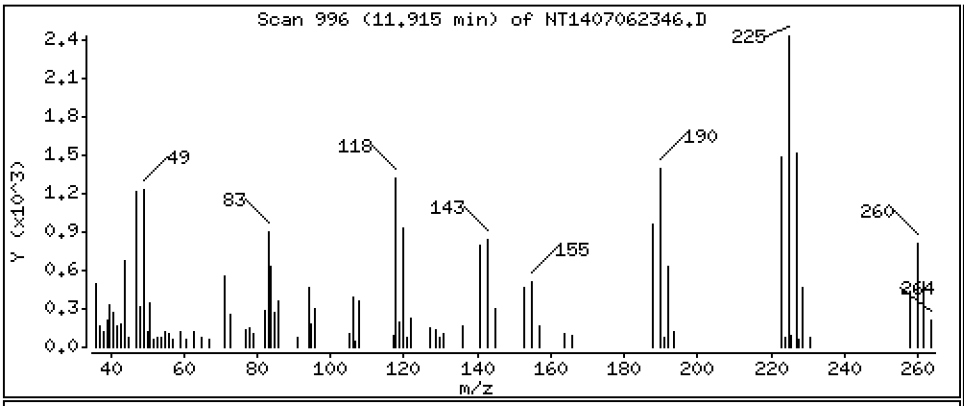
Operator: JGR

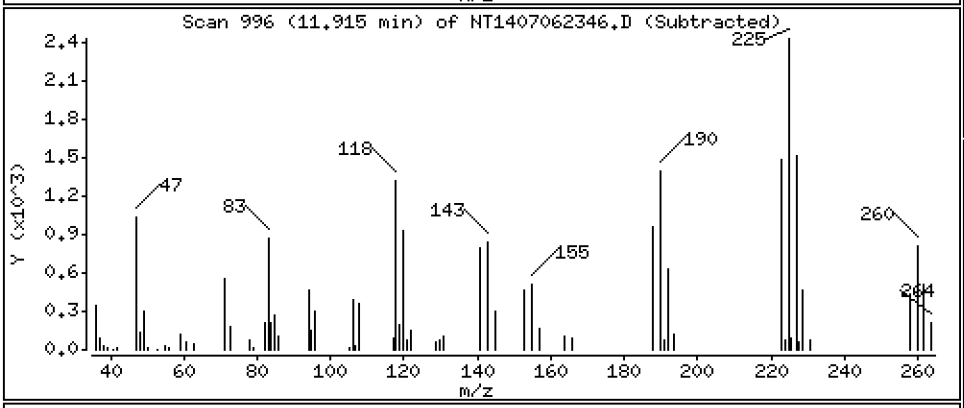
Column phase: ZB-5msi

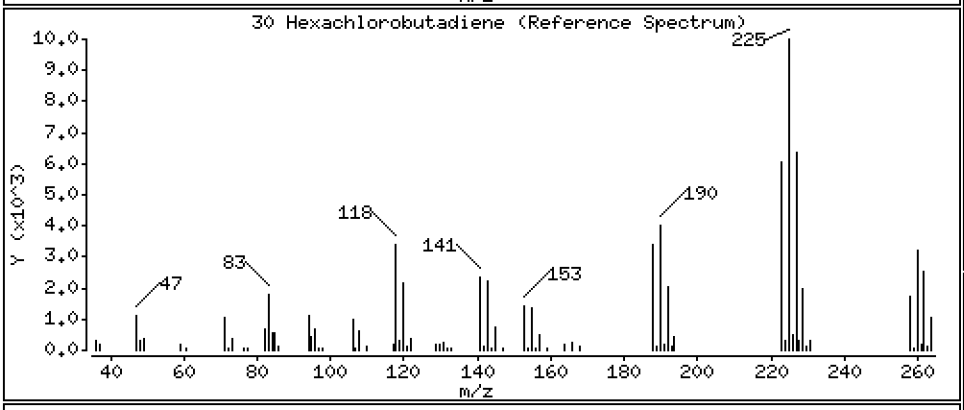
Column diameter: 0.25

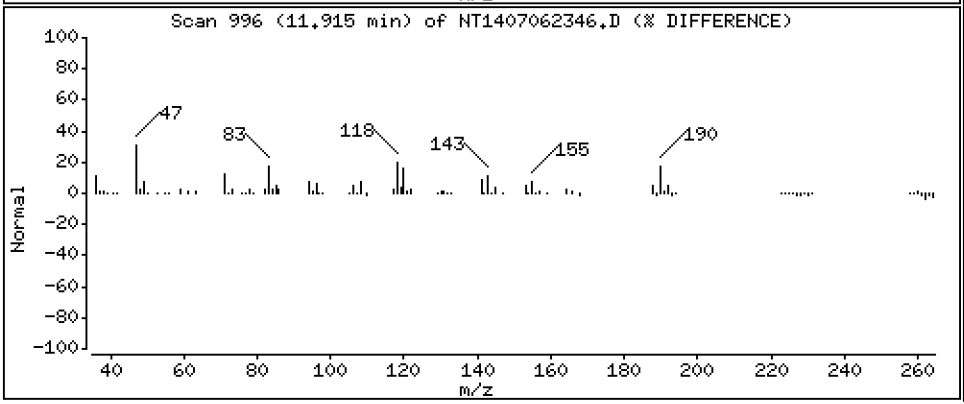
30 Hexachlorobutadiene

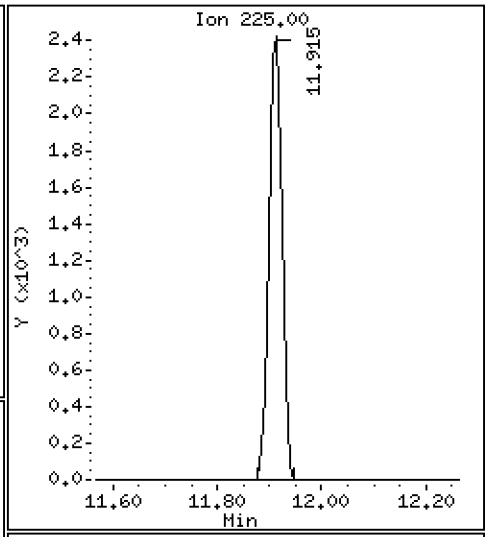
Concentration: 0.2191 ug/mL

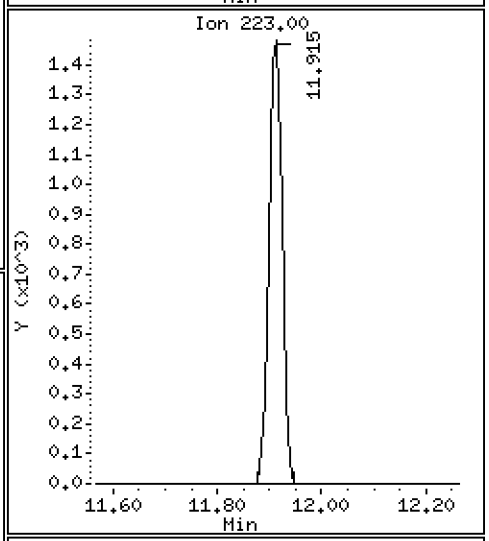


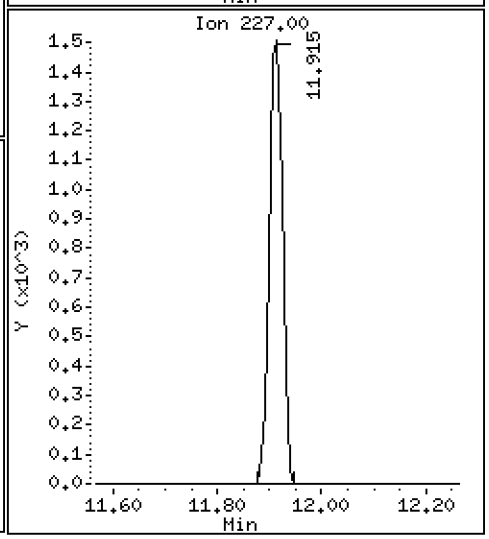












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

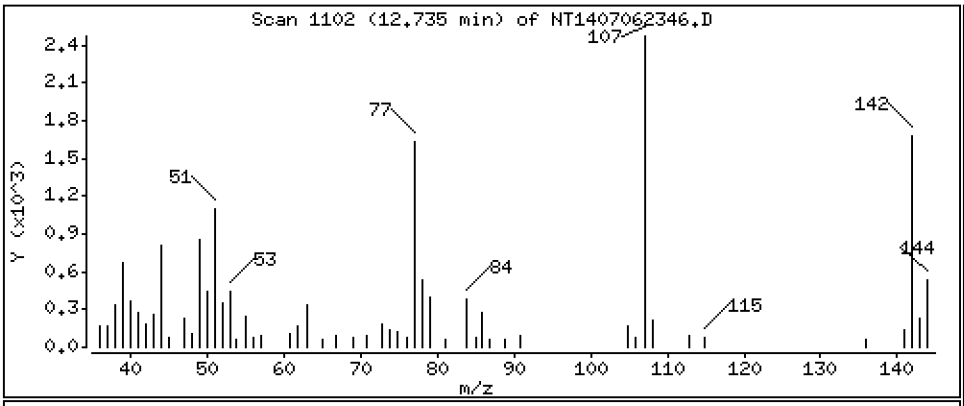
Operator: JGR

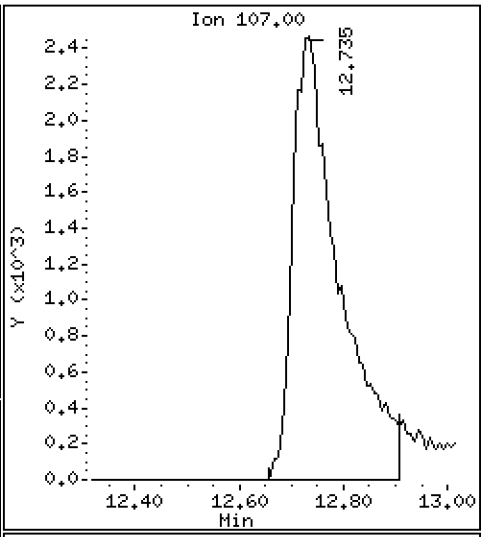
Column phase: ZB-5msi

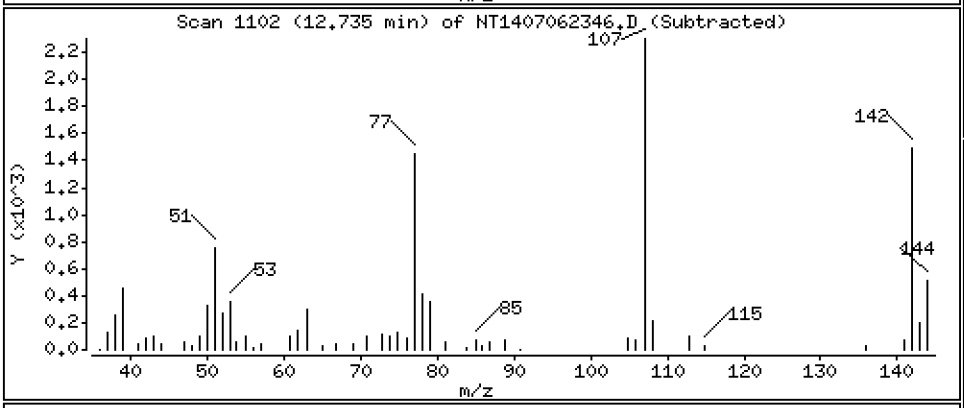
Column diameter: 0.25

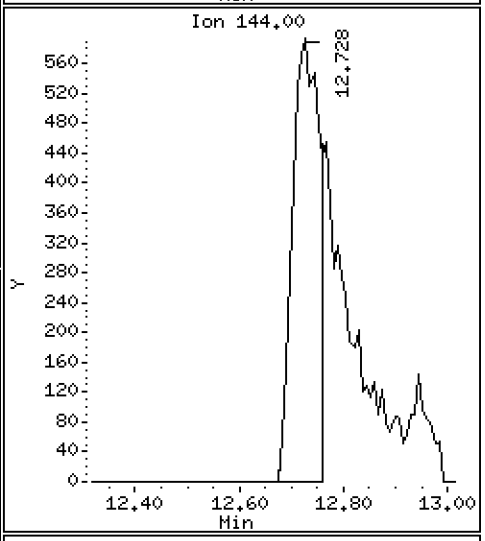
31 4-Chloro-3-methylphenol

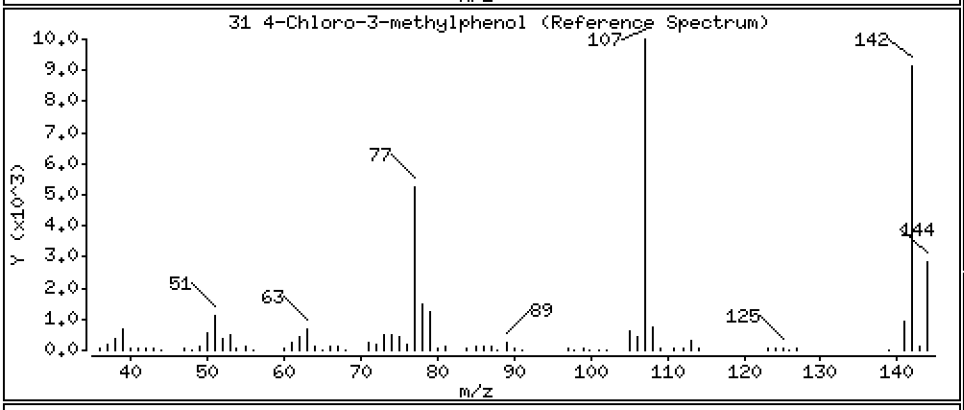
Concentration: 0.3087 ug/mL

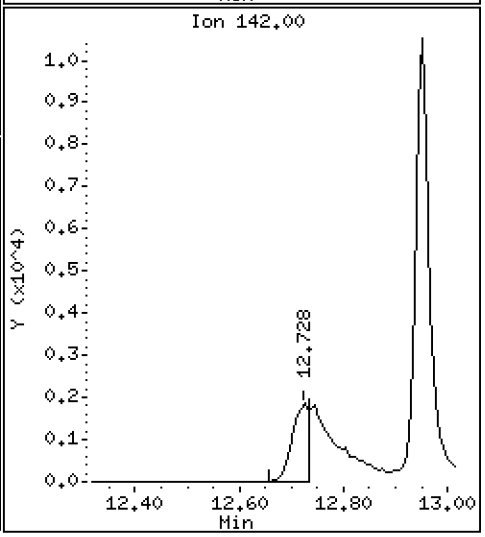


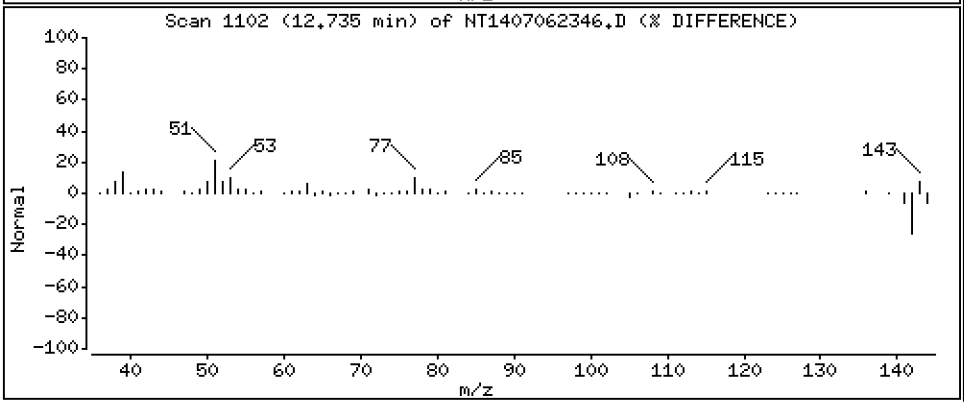












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

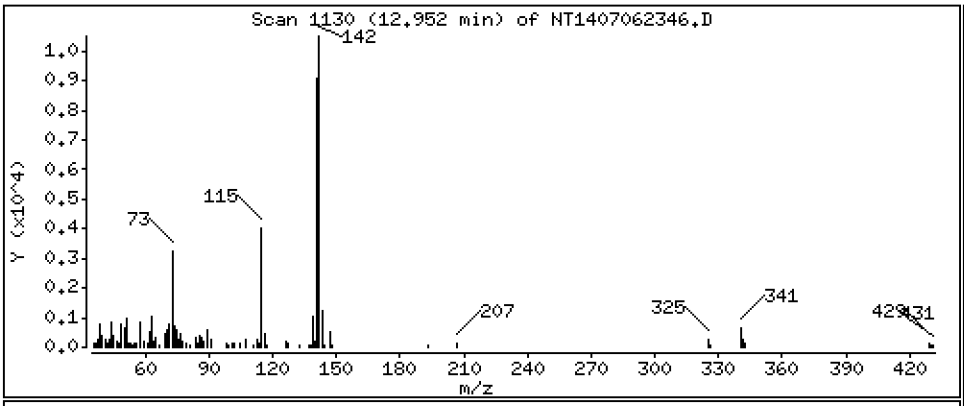
Operator: JGR

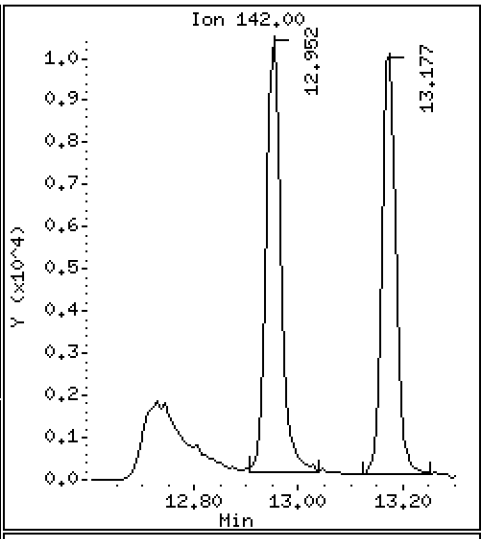
Column phase: ZB-5msi

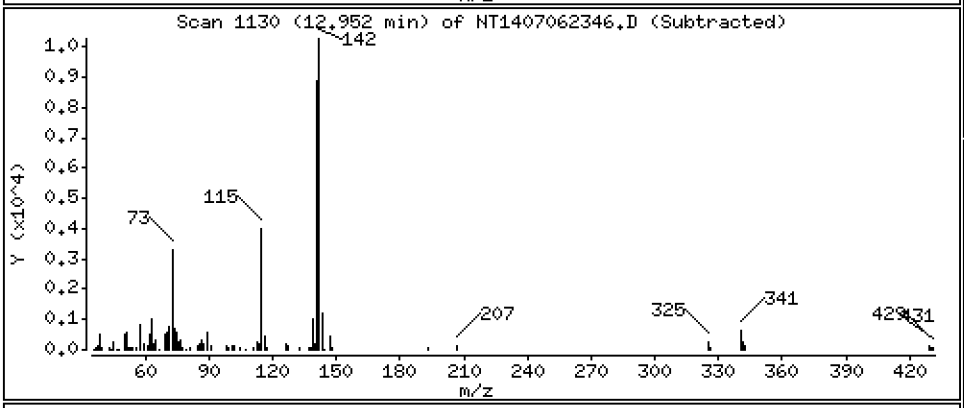
Column diameter: 0.25

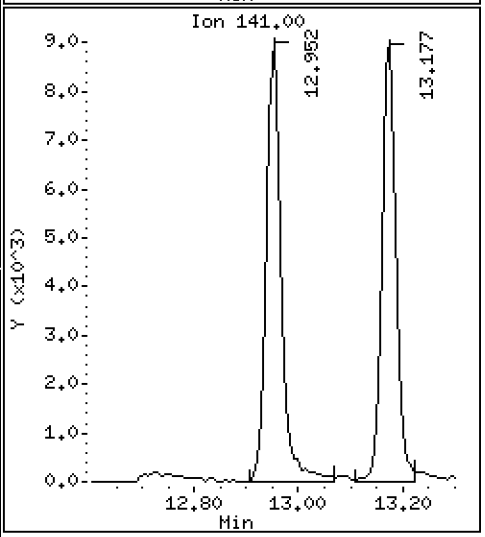
32 2-Methylnaphthalene

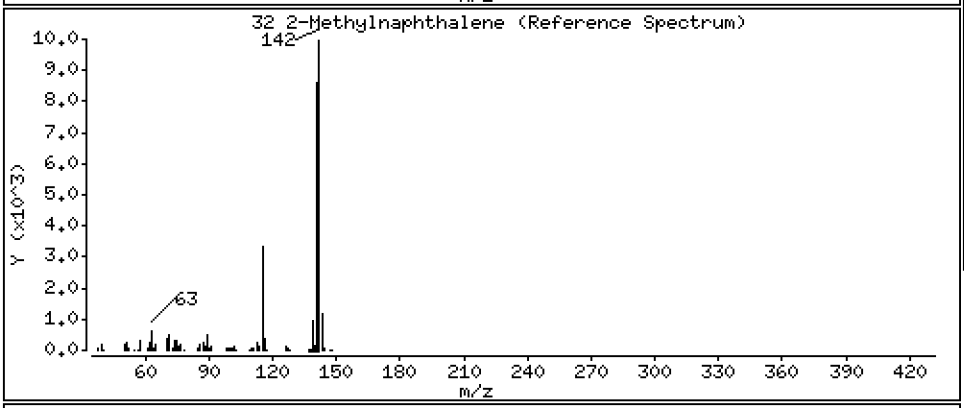
Concentration: 0.1890 ug/mL

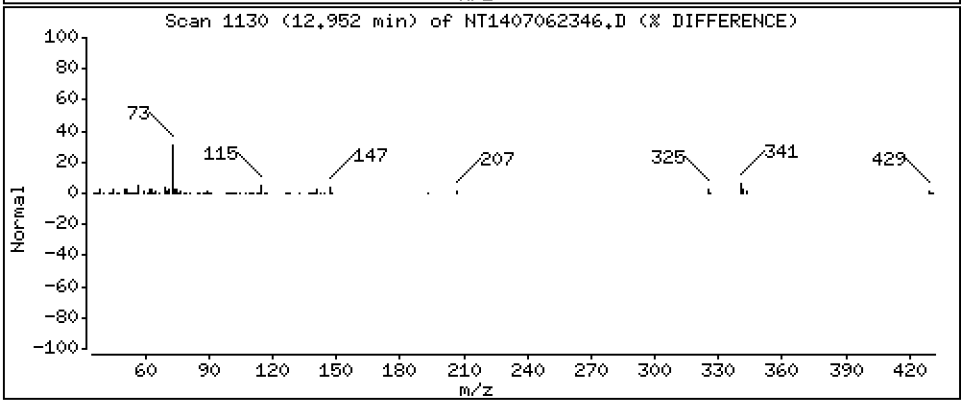












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

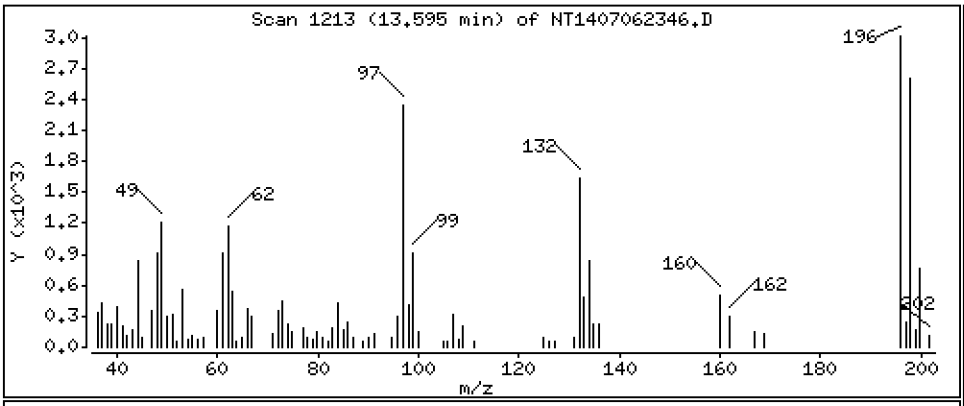
Operator: JGR

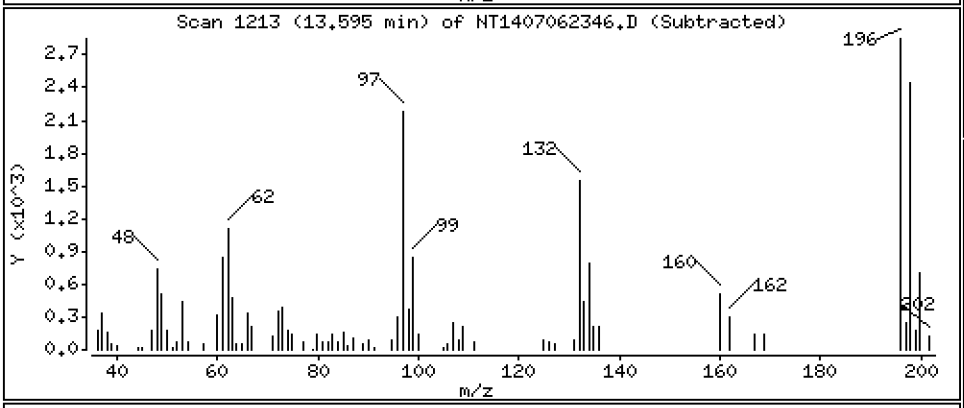
Column phase: ZB-5msi

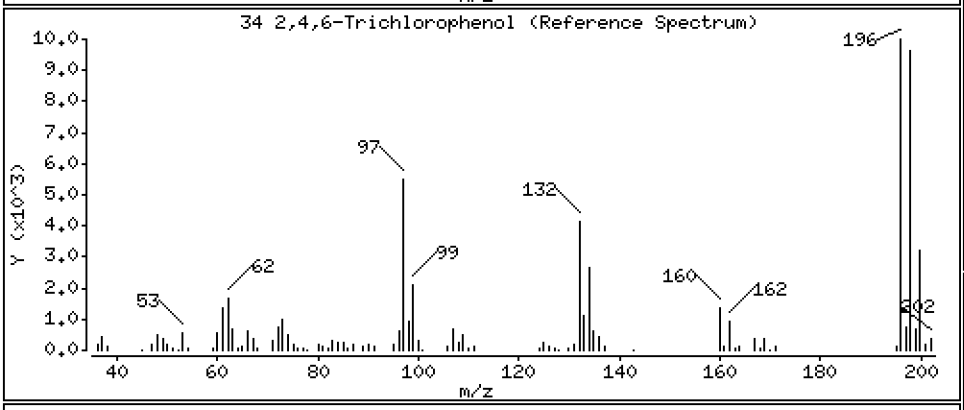
Column diameter: 0.25

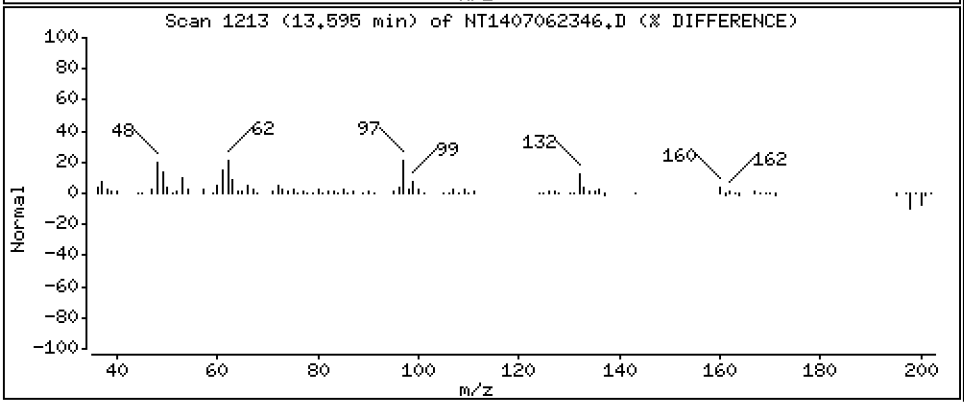
34 2,4,6-Trichlorophenol

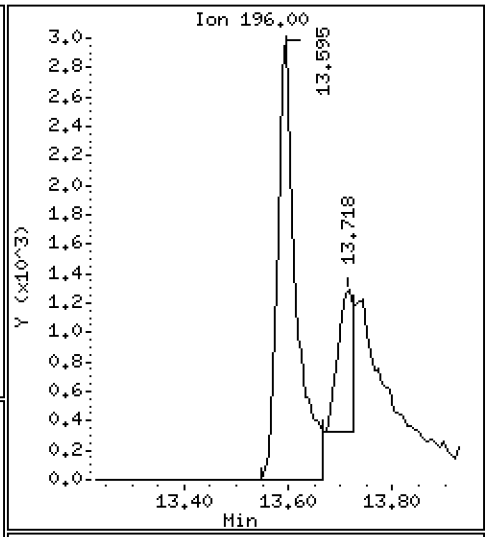
Concentration: 0.3043 ug/mL

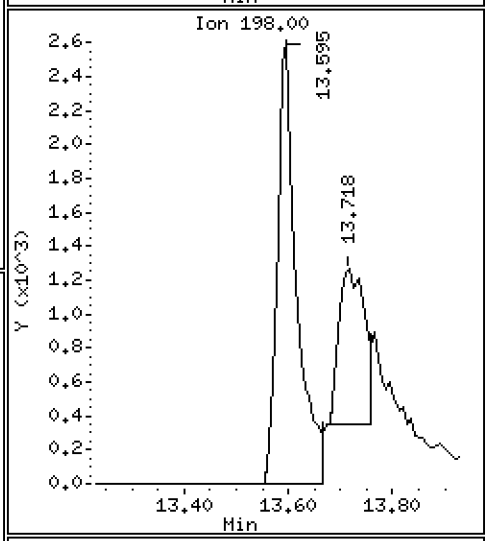


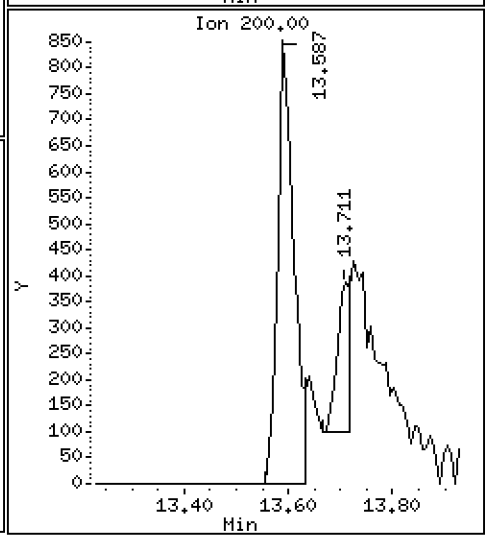












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

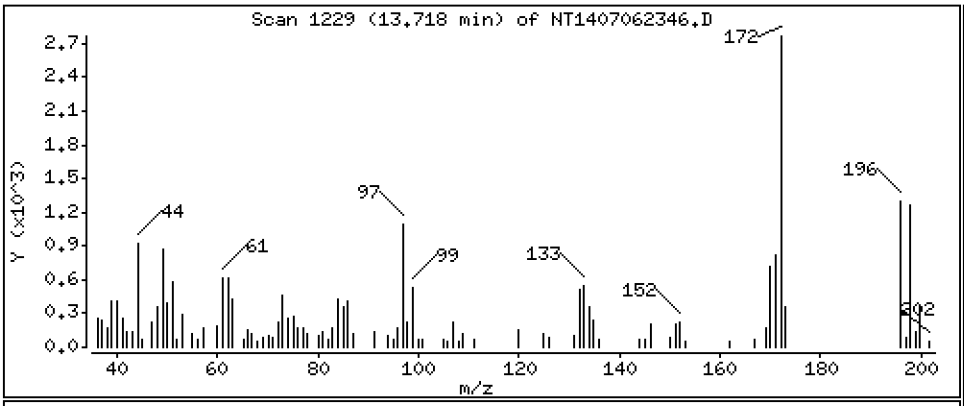
Operator: JGR

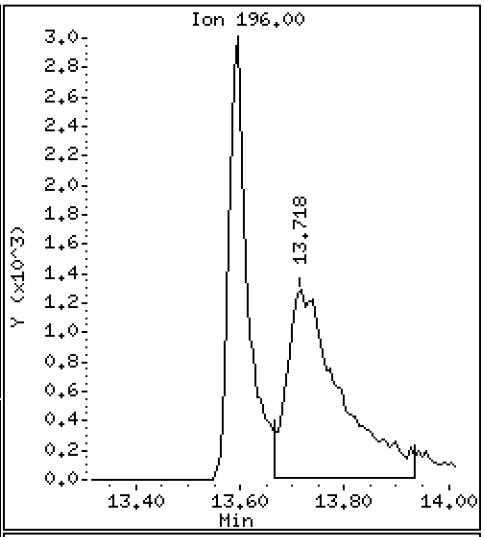
Column phase: ZB-5msi

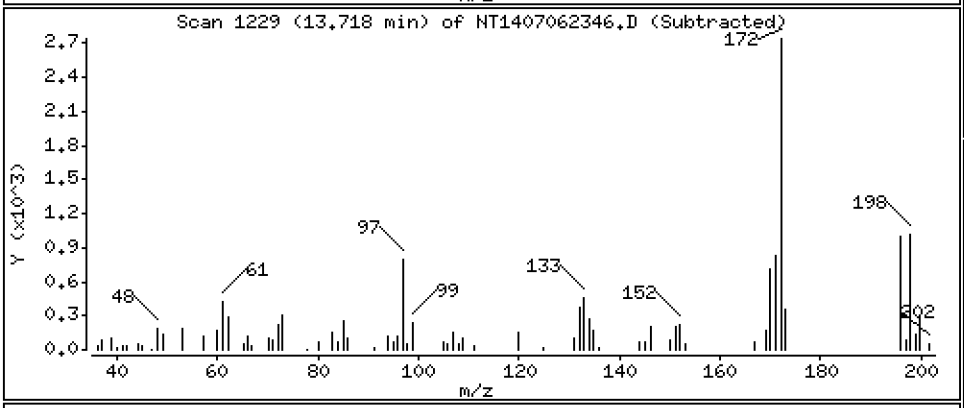
Column diameter: 0.25

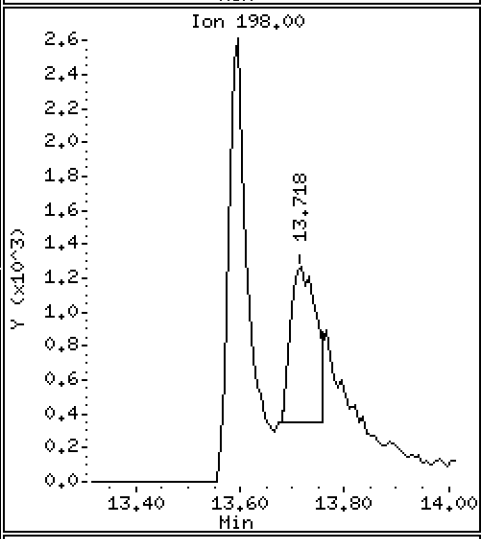
35 2,4,5-Trichlorophenol

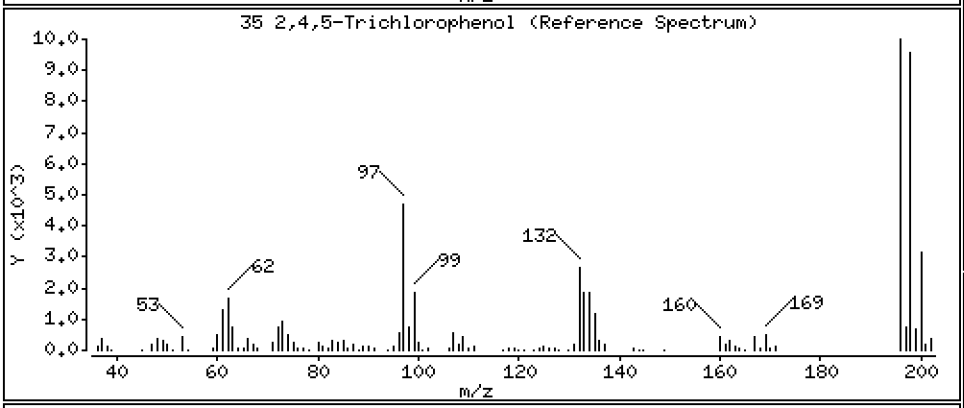
Concentration: 0.3587 ug/mL

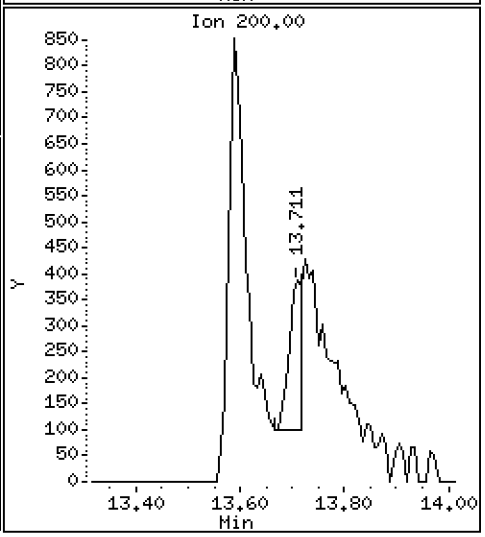


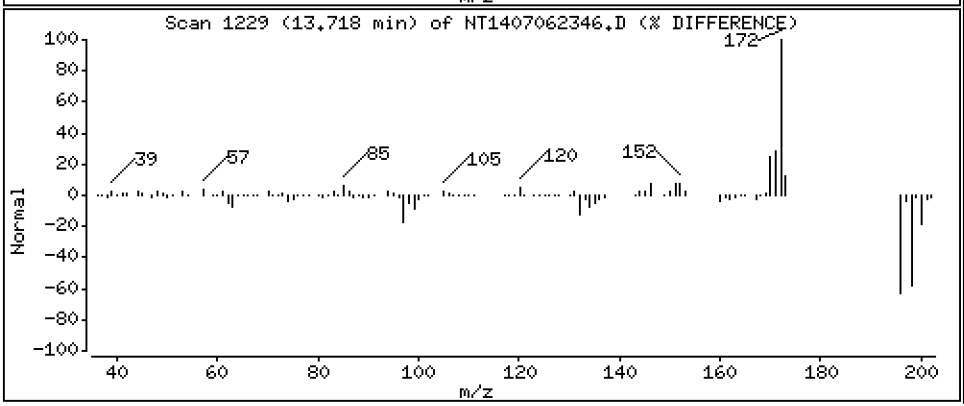












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

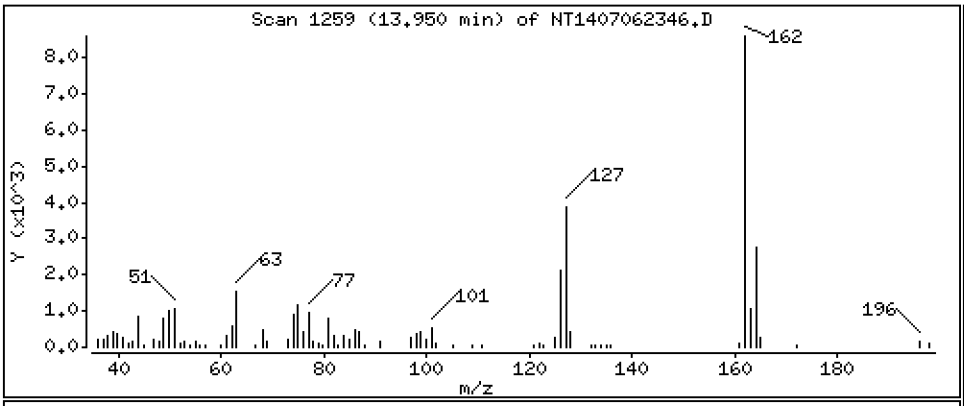
Operator: JGR

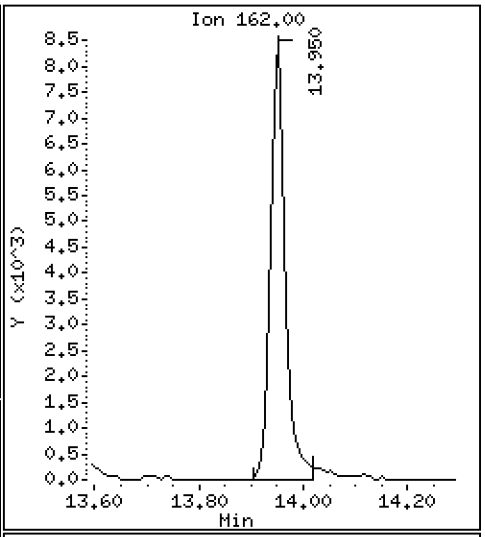
Column phase: ZB-5msi

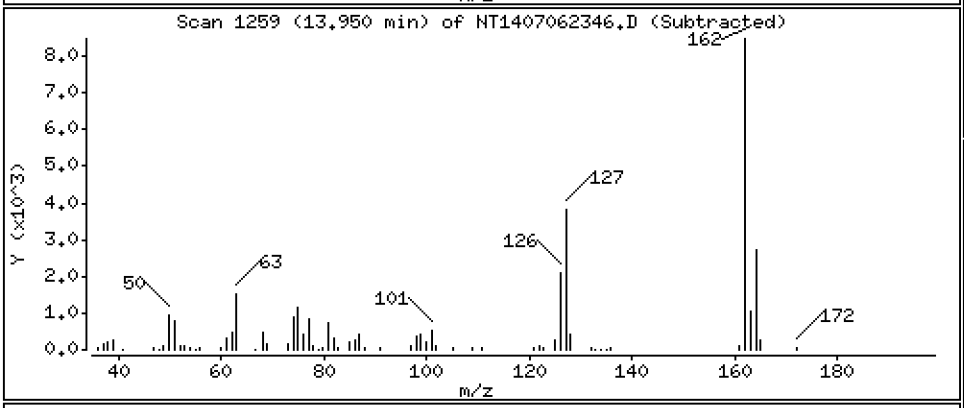
Column diameter: 0.25

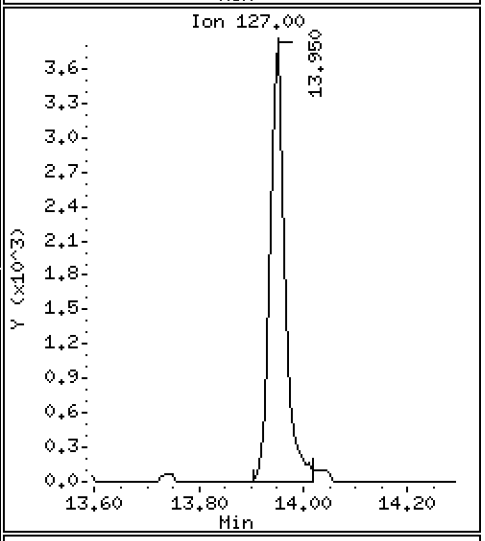
37 2-Chloronaphthalene

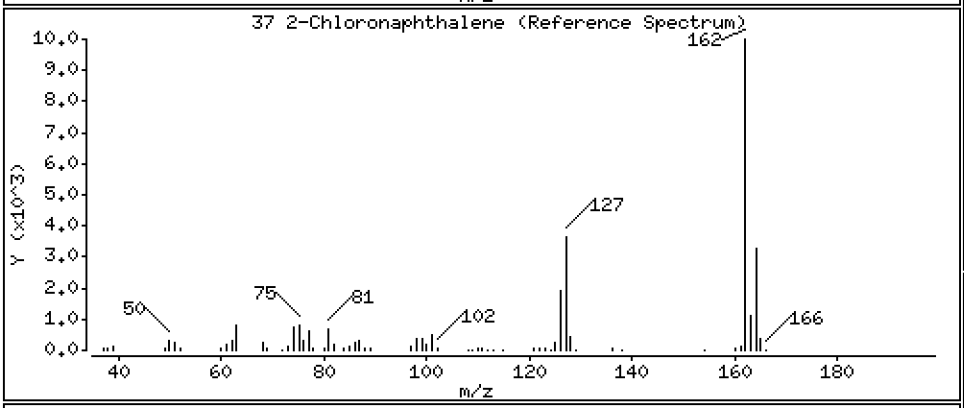
Concentration: 0.1952 ug/mL

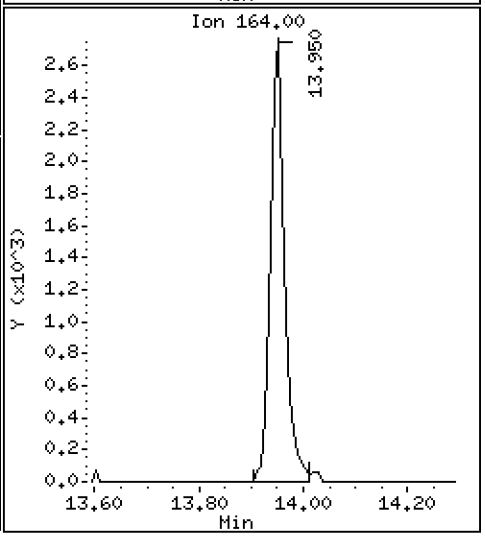


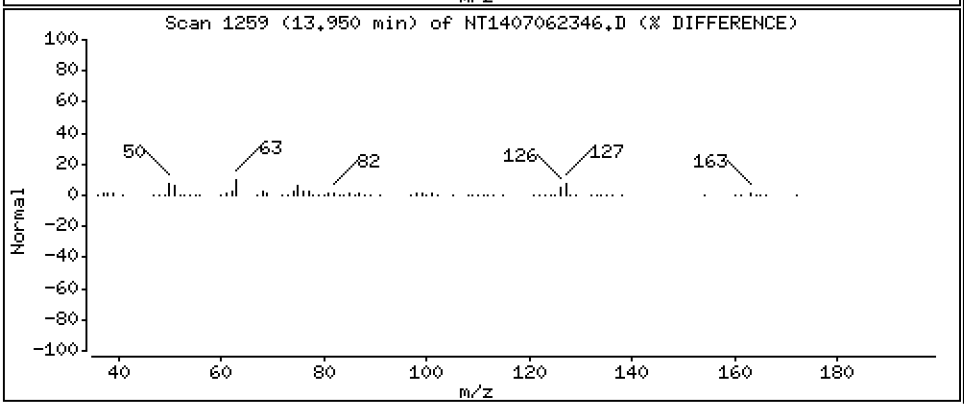












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

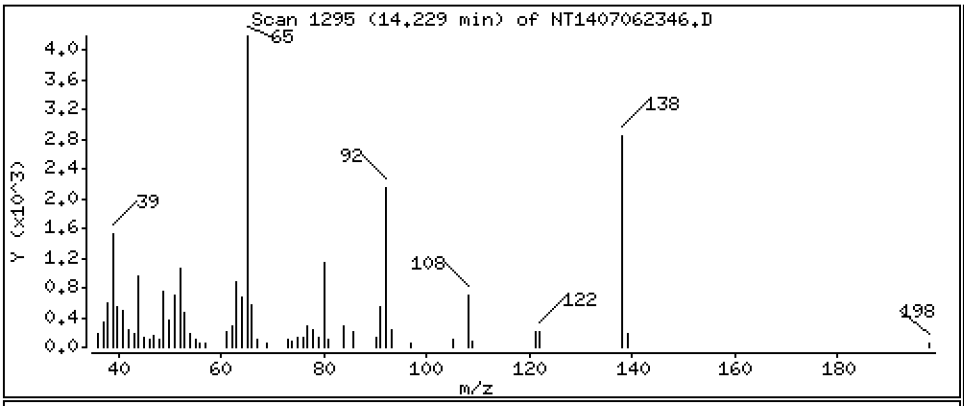
Operator: JGR

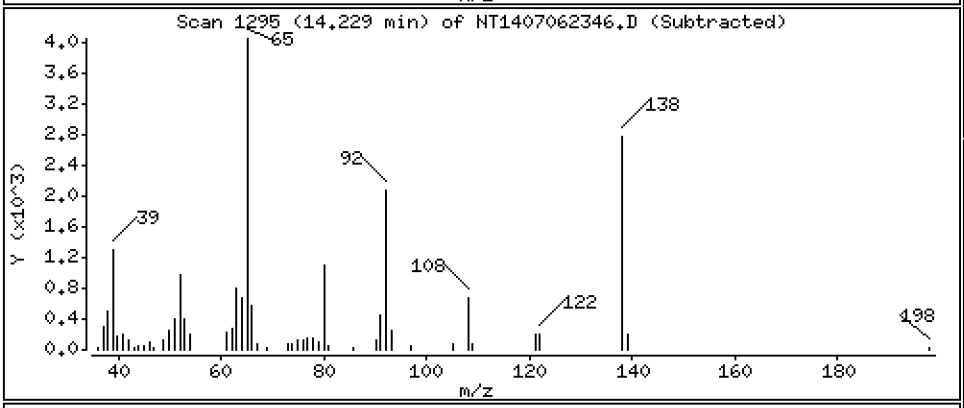
Column phase: ZB-5msi

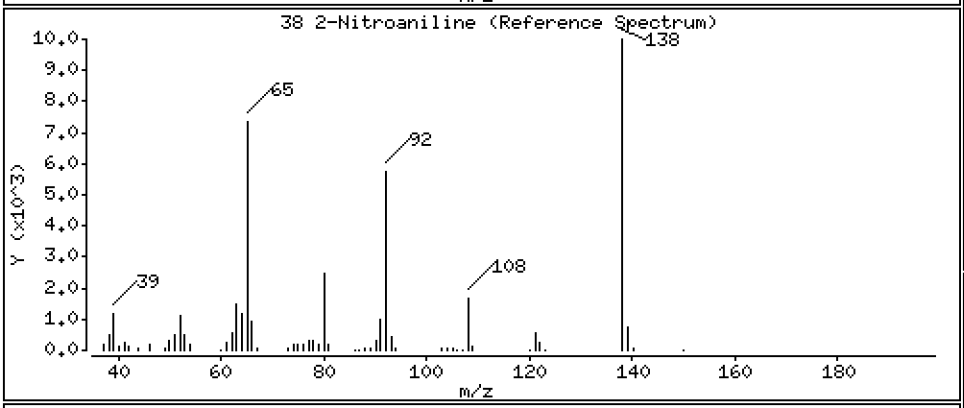
Column diameter: 0.25

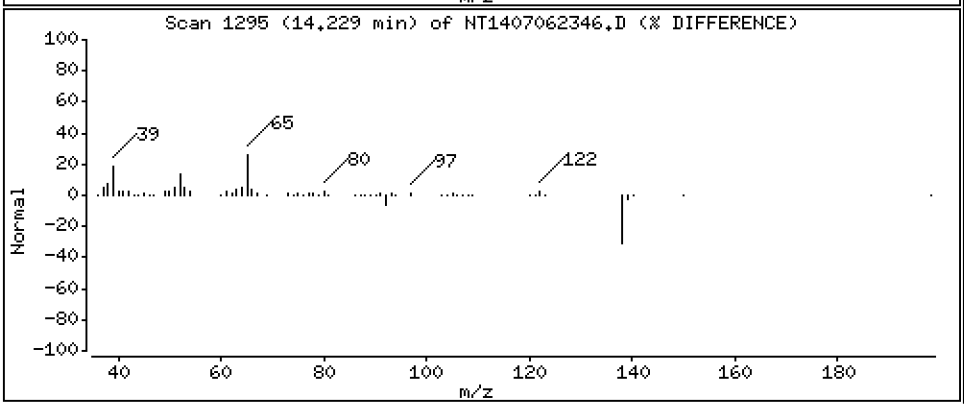
38 2-Nitroaniline

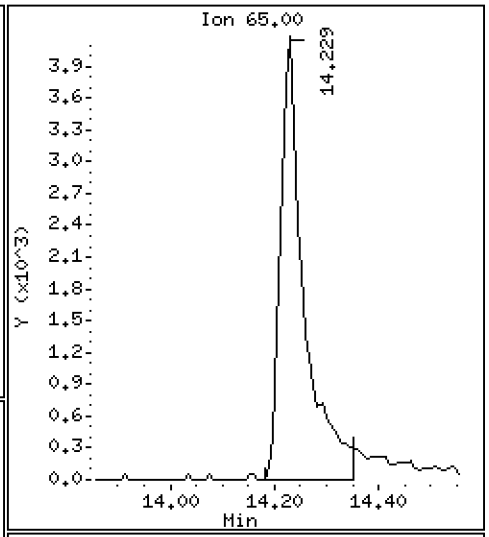
Concentration: 0.3261 ug/mL

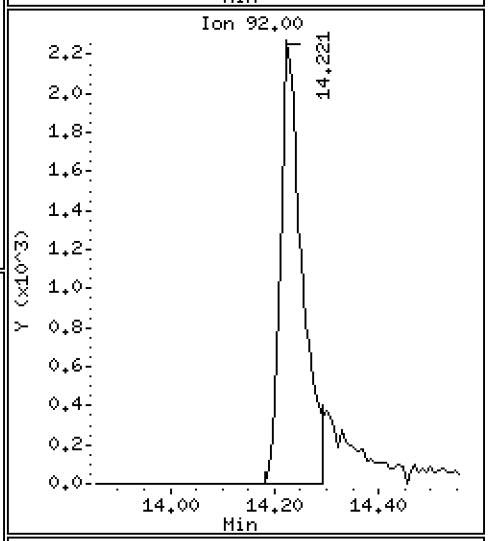


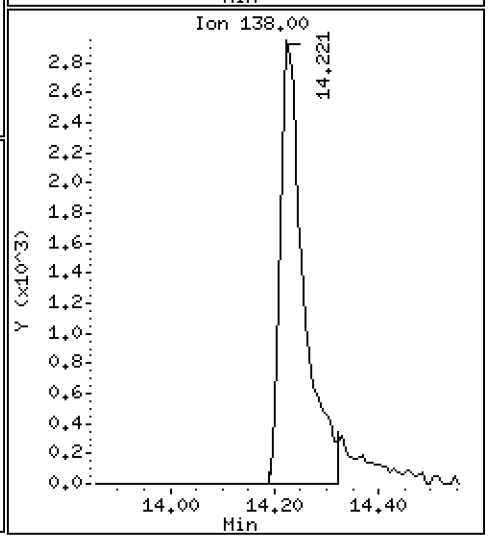












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

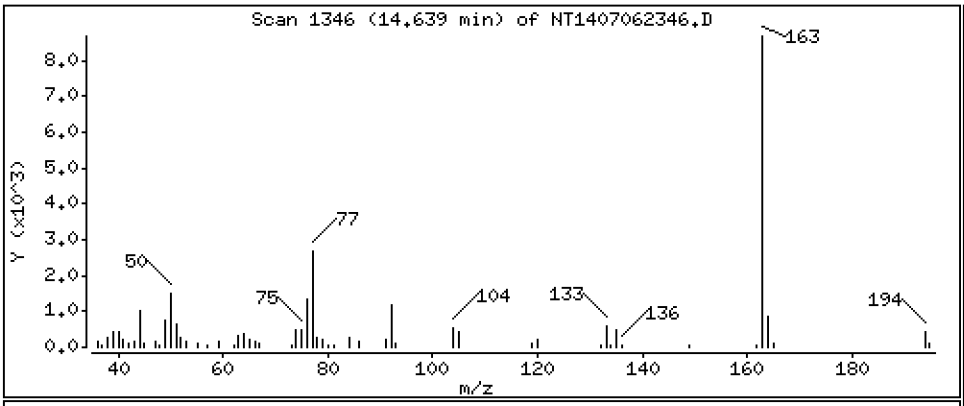
Operator: JGR

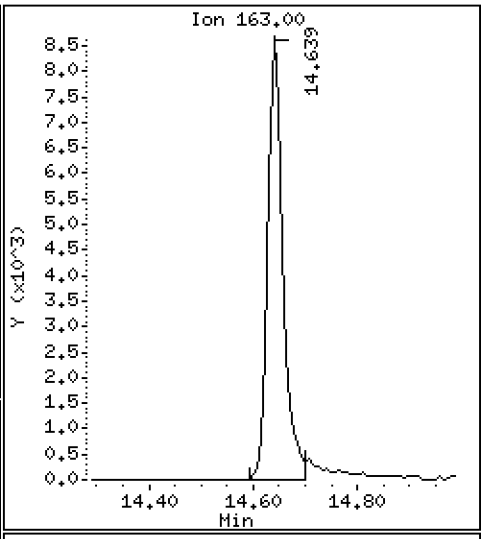
Column phase: ZB-5msi

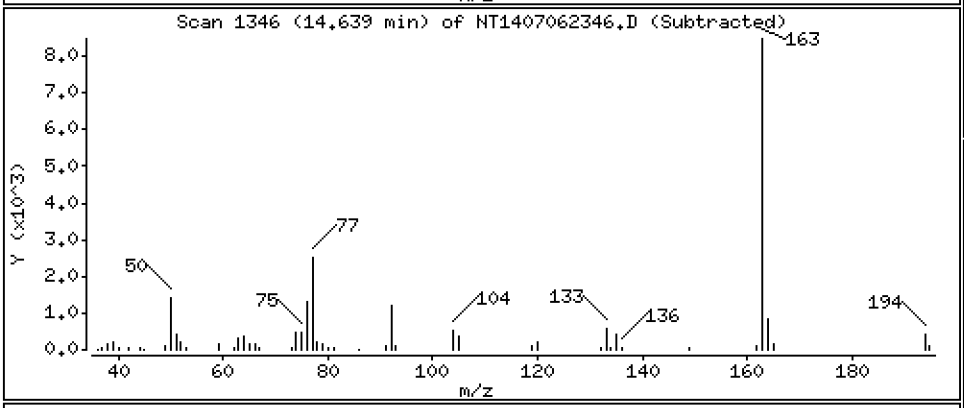
Column diameter: 0.25

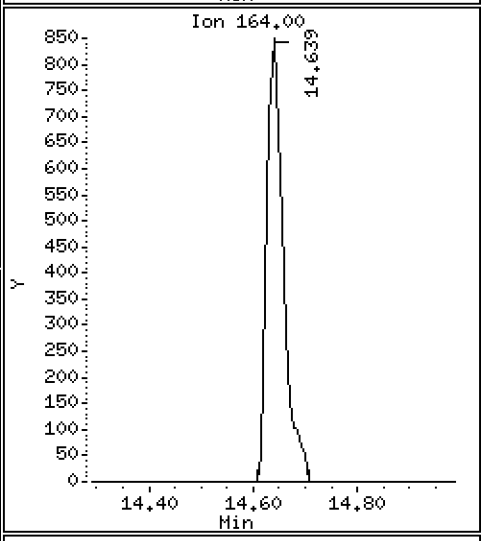
39 Dimethylphthalate

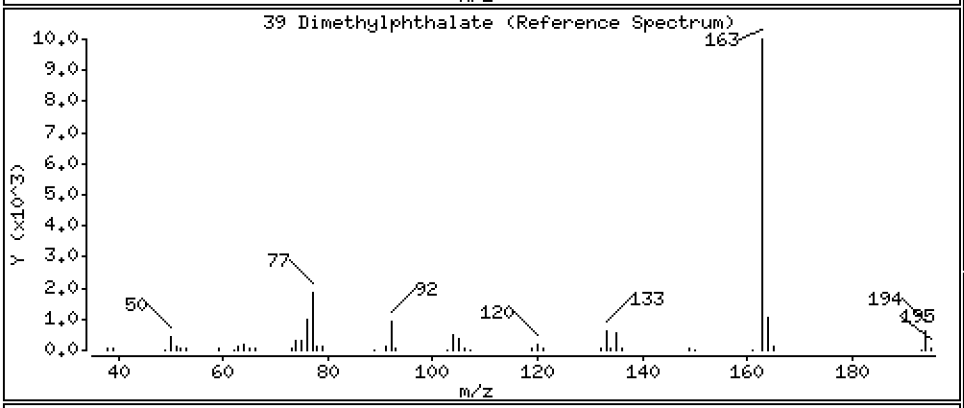
Concentration: 0.1975 ug/mL

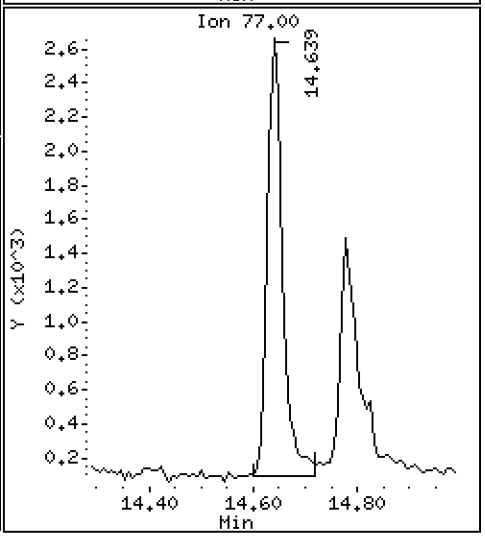


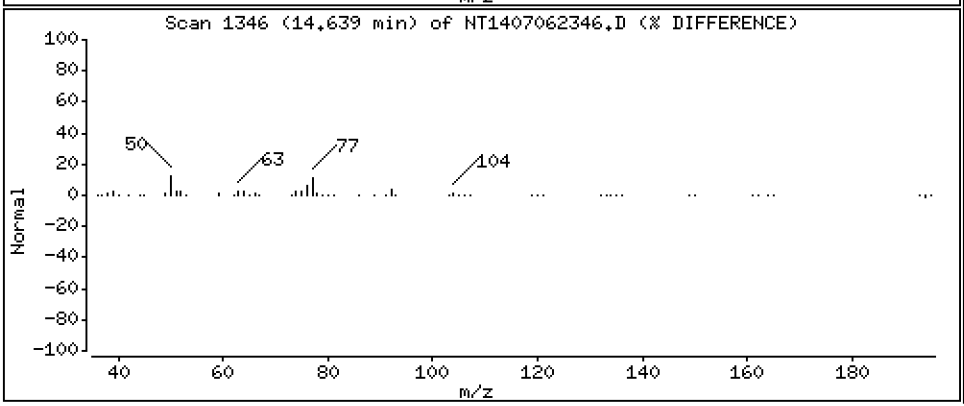












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

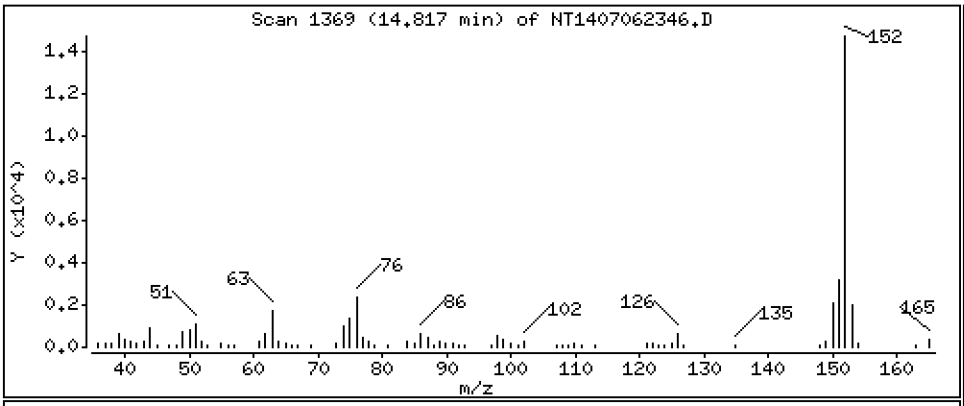
Operator: JGR

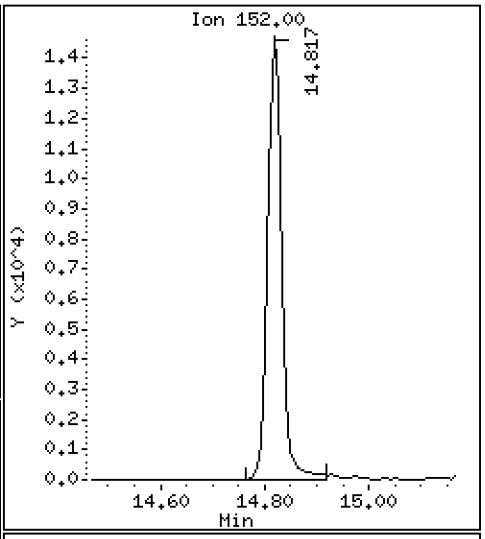
Column phase: ZB-5msi

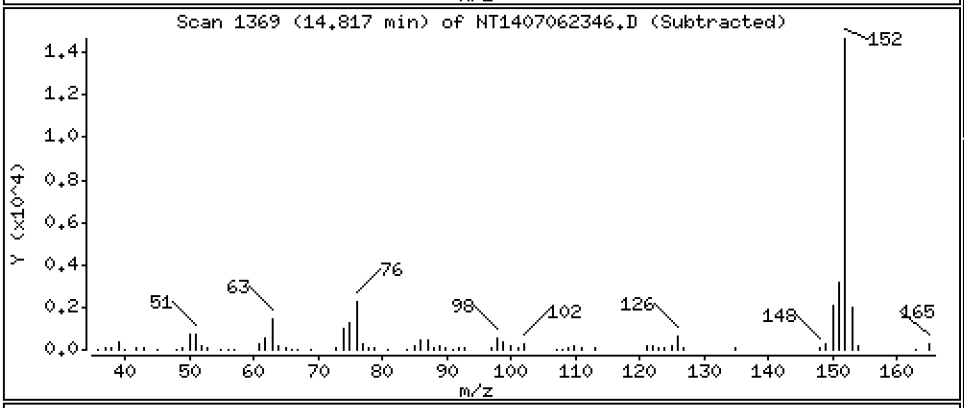
Column diameter: 0.25

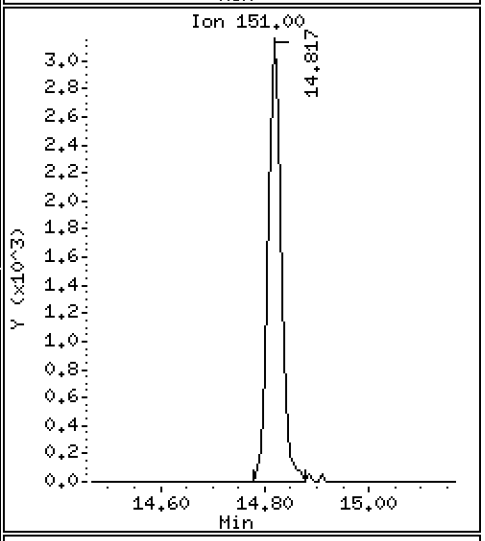
40 Acenaphthylene

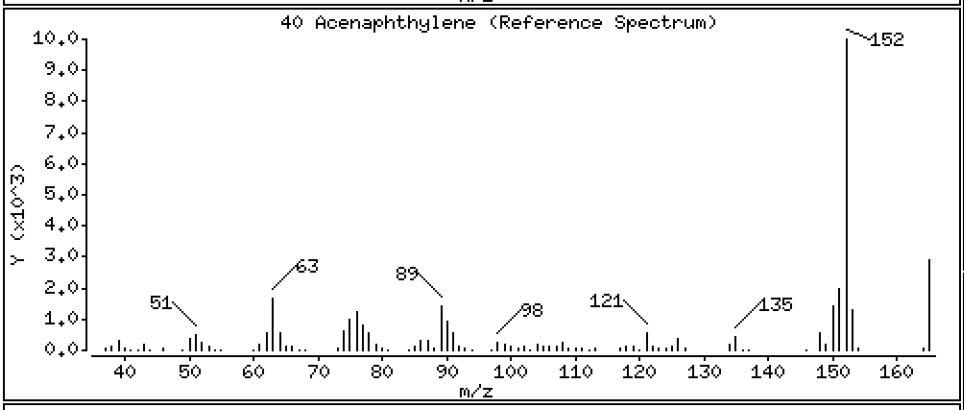
Concentration: 0.2049 ug/mL

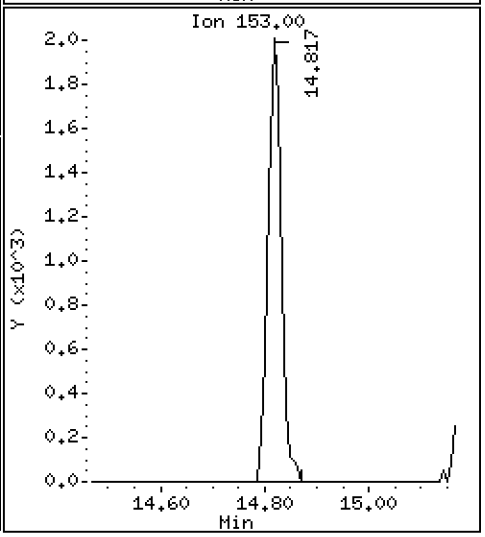


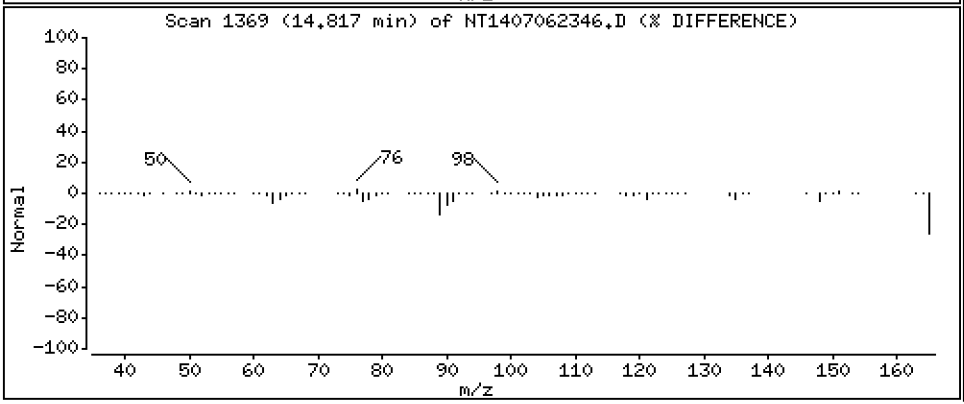












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

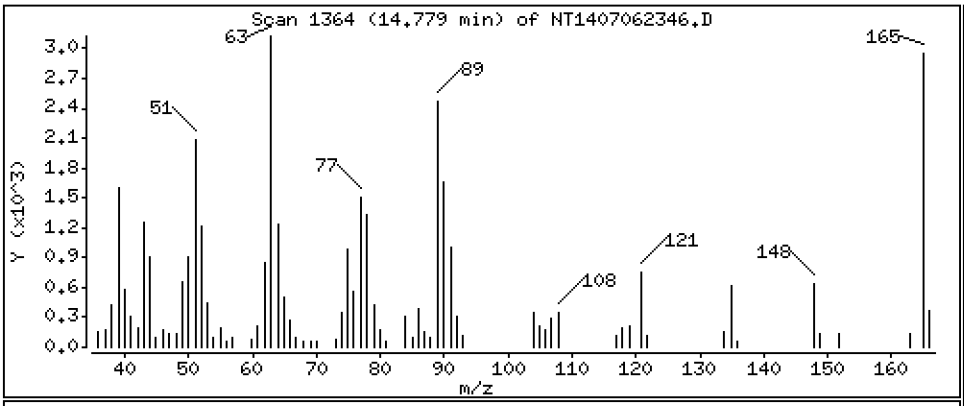
Operator: JGR

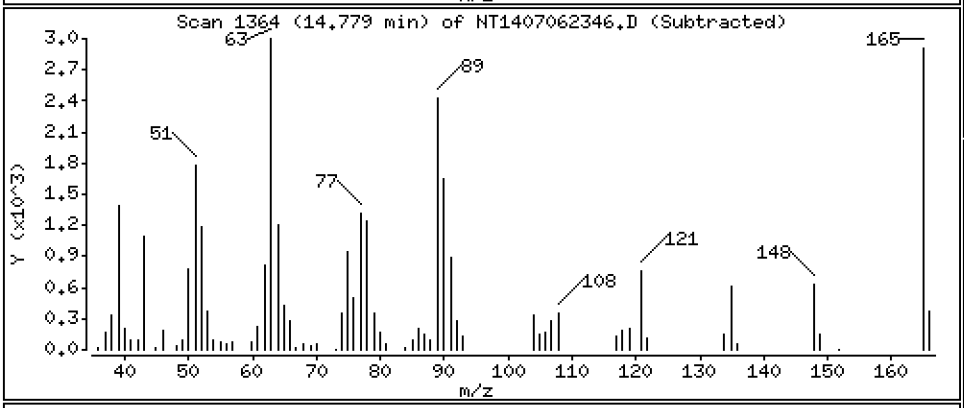
Column phase: ZB-5msi

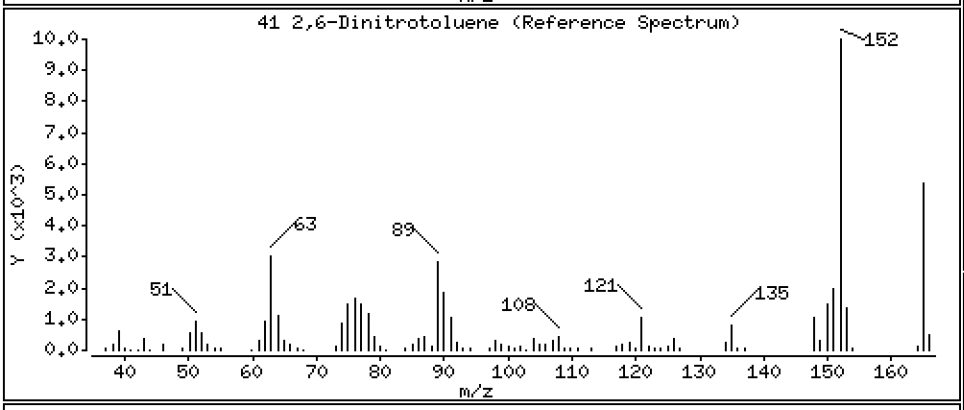
Column diameter: 0.25

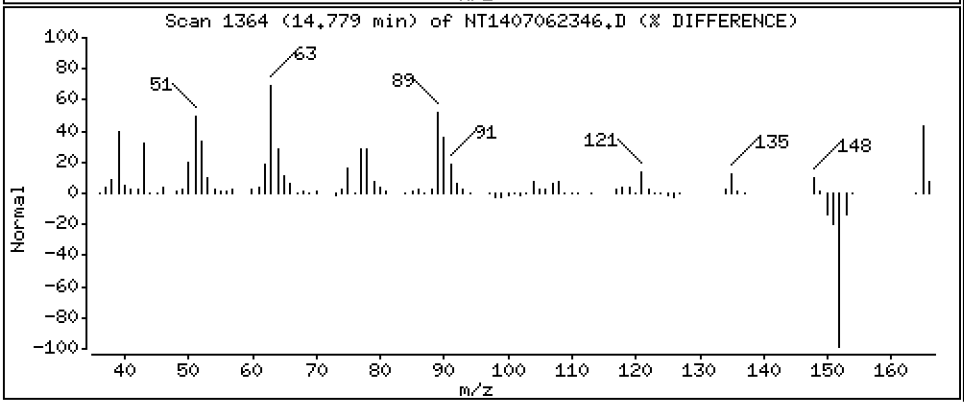
41 2,6-Dinitrotoluene

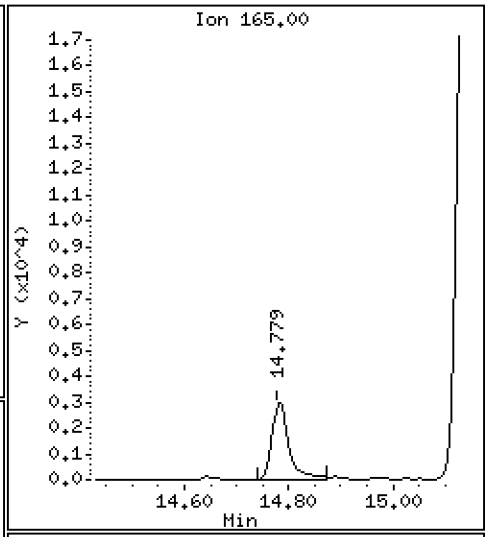
Concentration: 0.3642 ug/mL

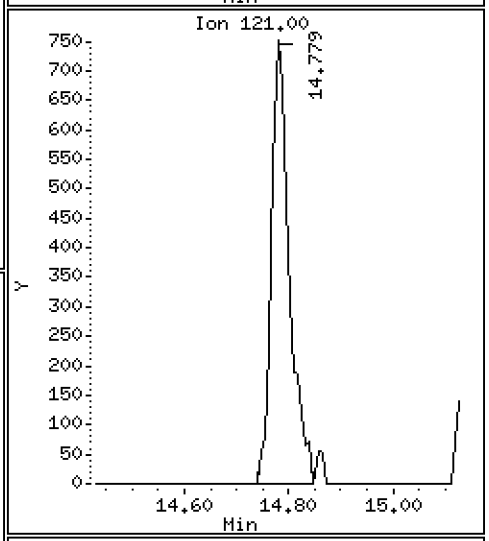


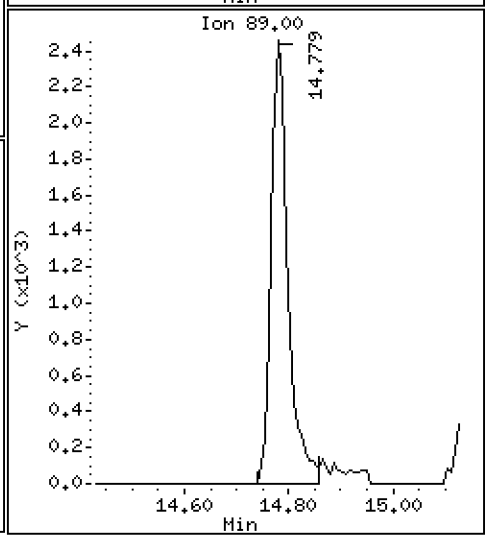












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

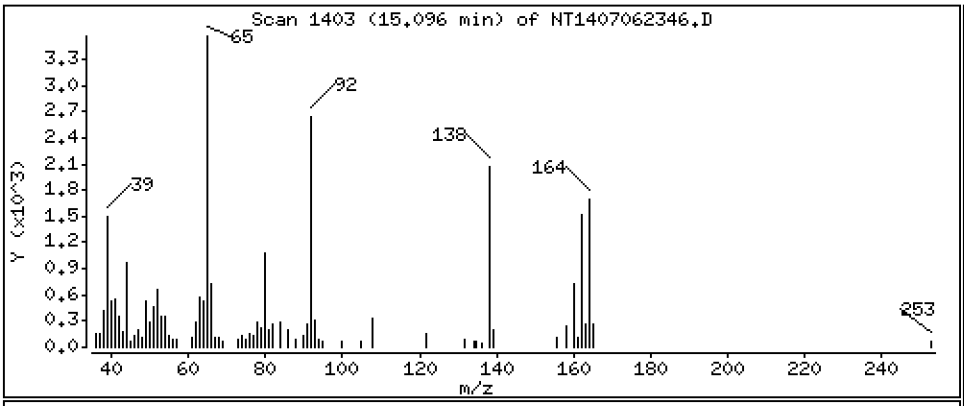
Operator: JGR

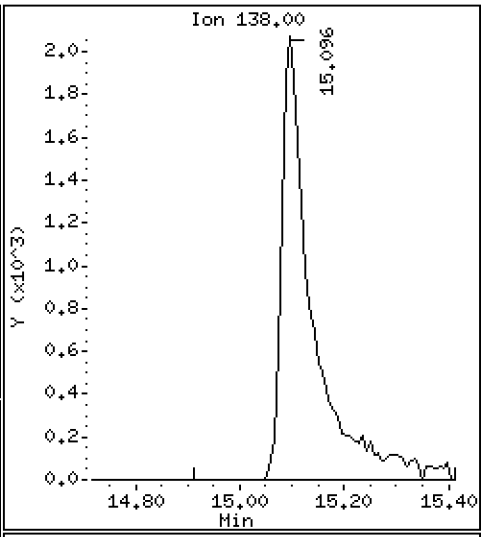
Column phase: ZB-5msi

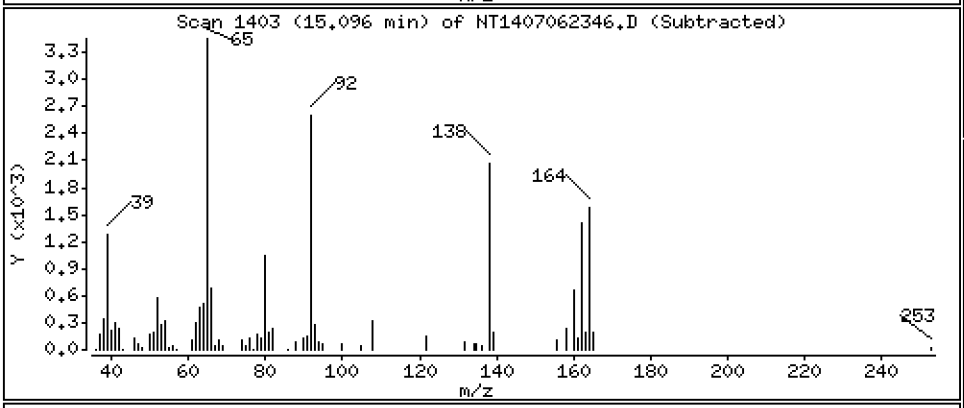
Column diameter: 0.25

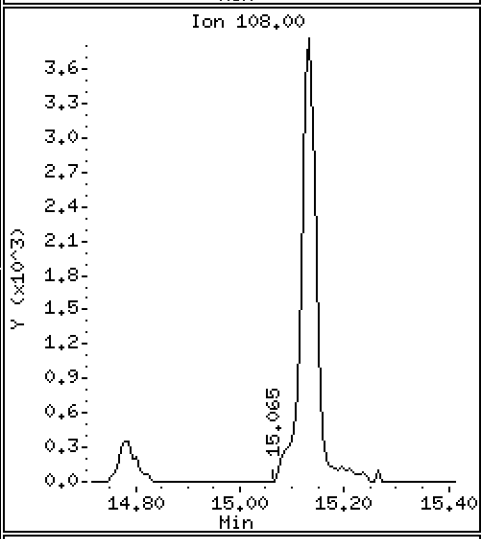
43 3-Nitroaniline

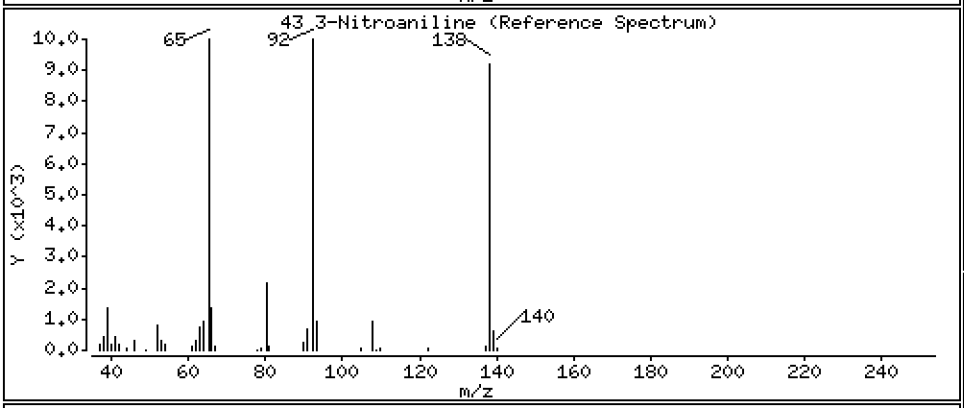
Concentration: 0.3714 ug/mL

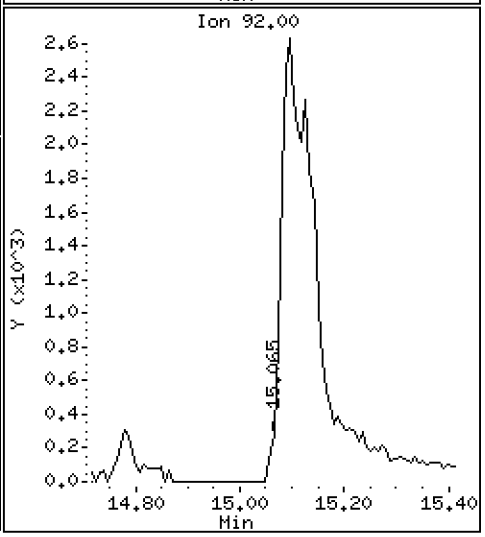


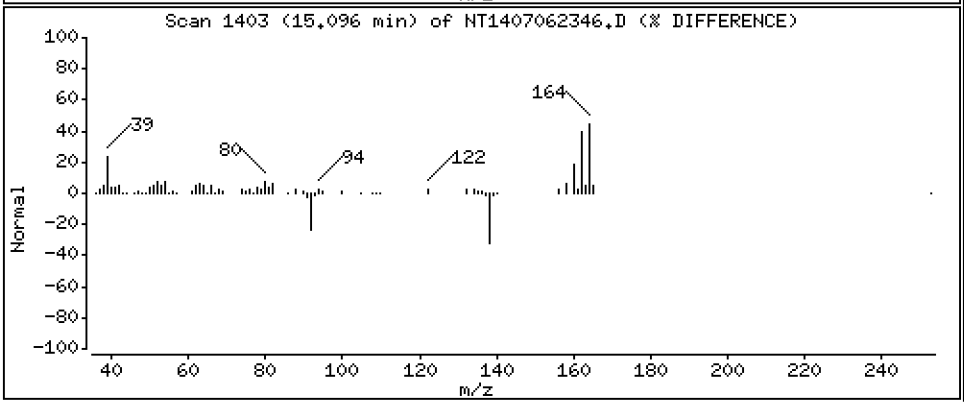












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

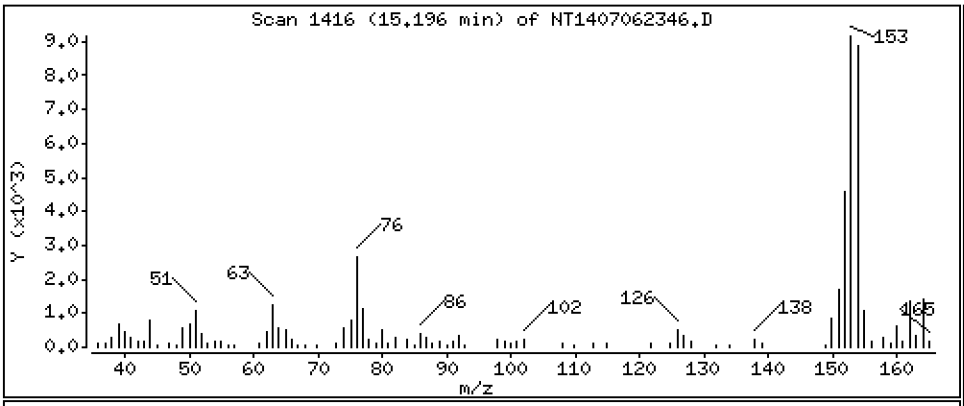
Operator: JGR

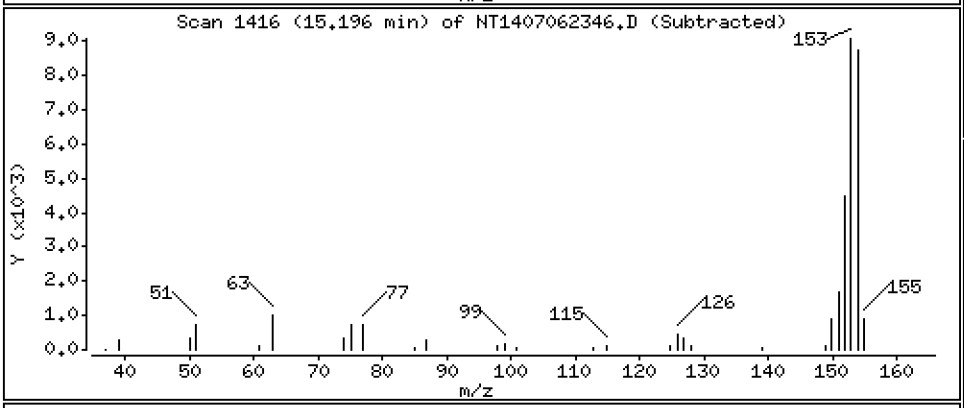
Column phase: ZB-5msi

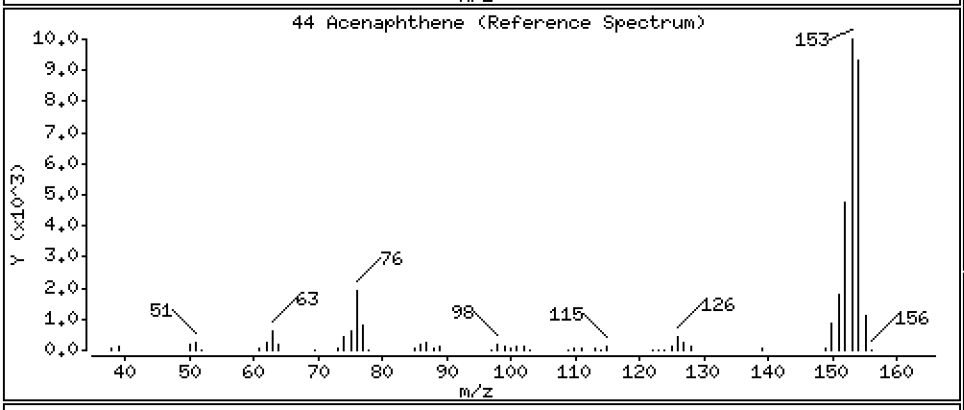
Column diameter: 0.25

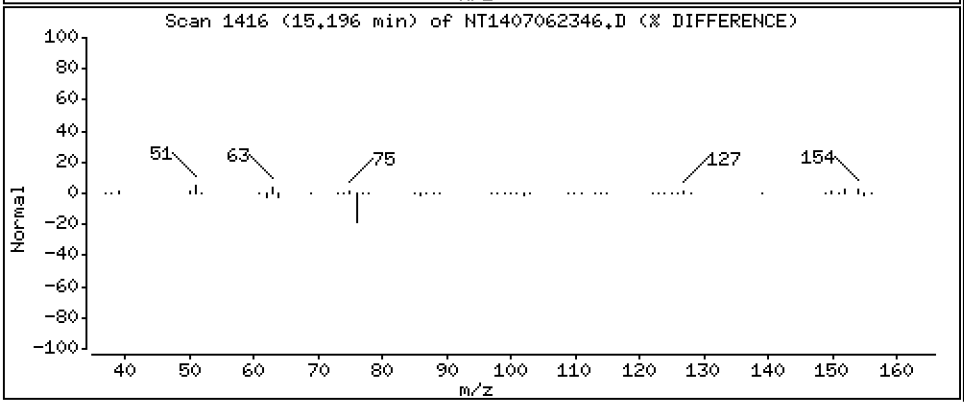
44 Acenaphthene

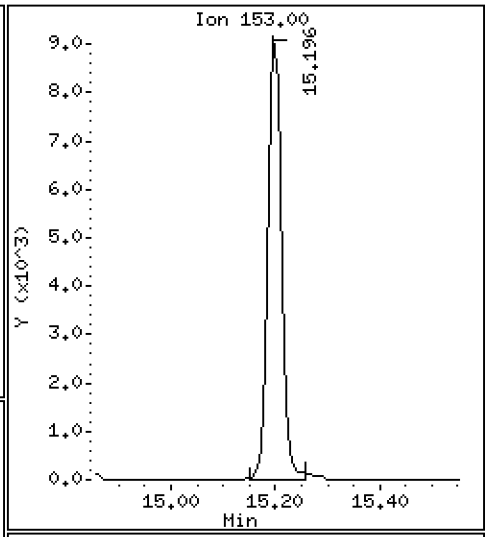
Concentration: 0.2058 ug/mL

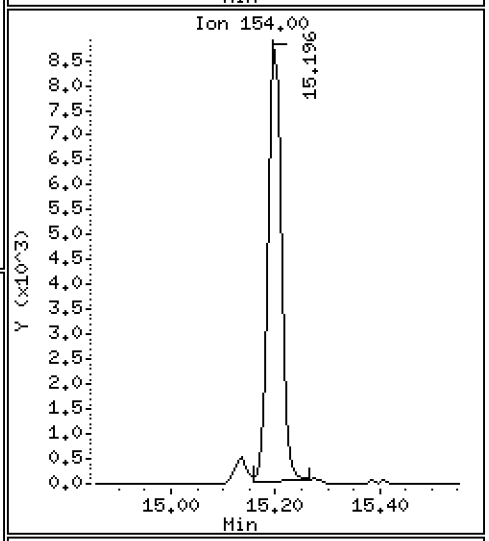


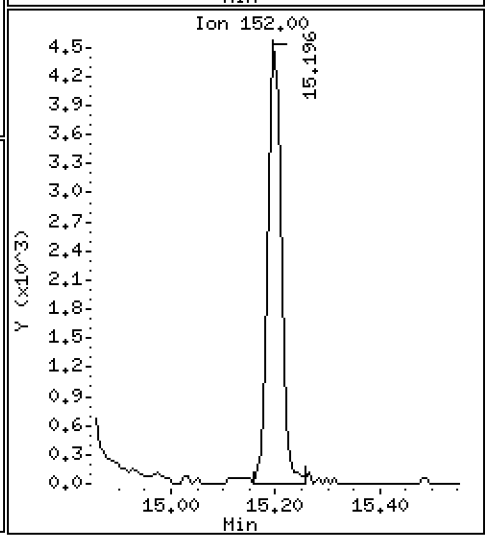












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

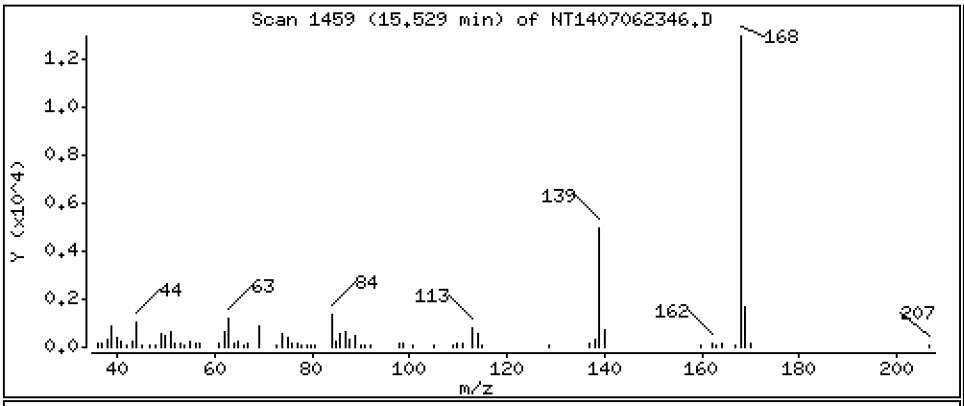
Operator: JGR

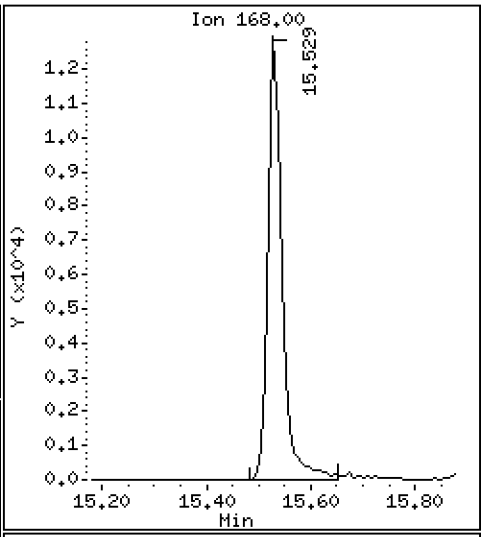
Column phase: ZB-5msi

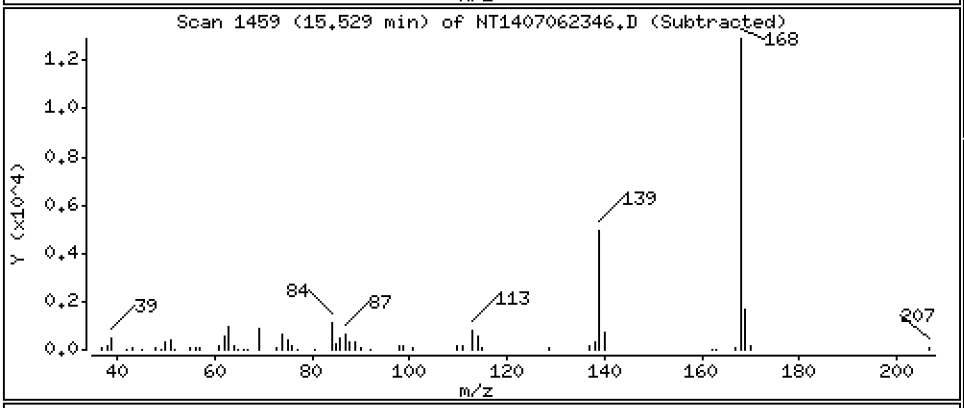
Column diameter: 0.25

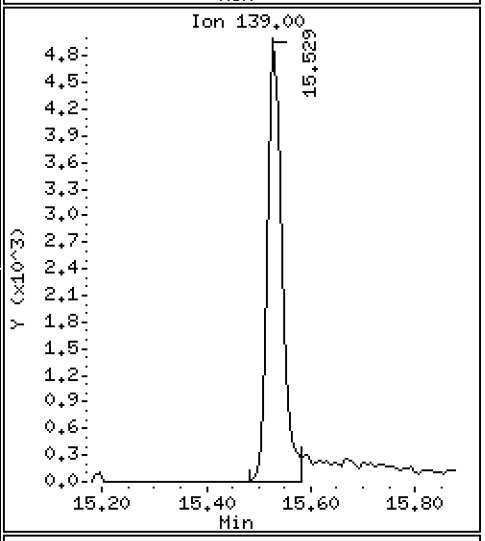
46 Dibenzofuran

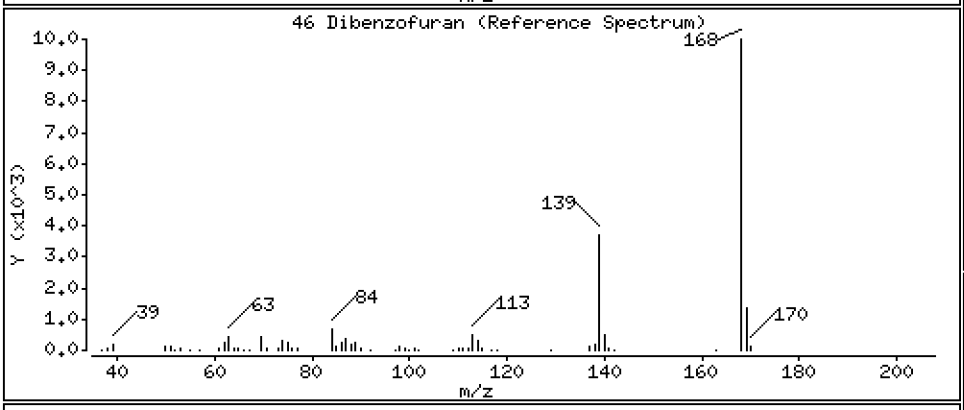
Concentration: 0.2089 ug/mL

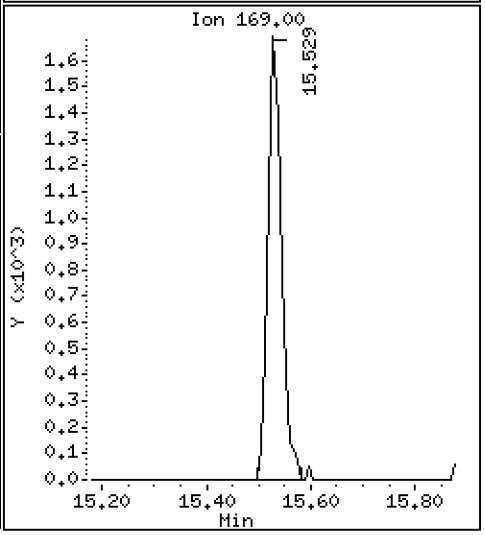


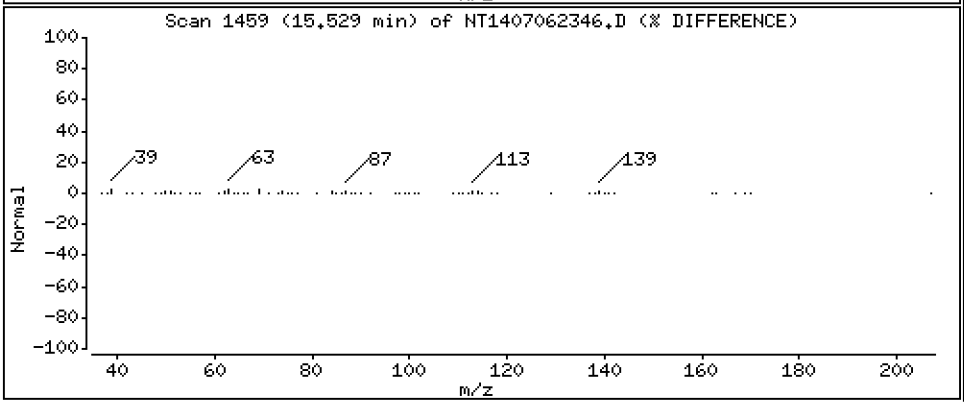












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

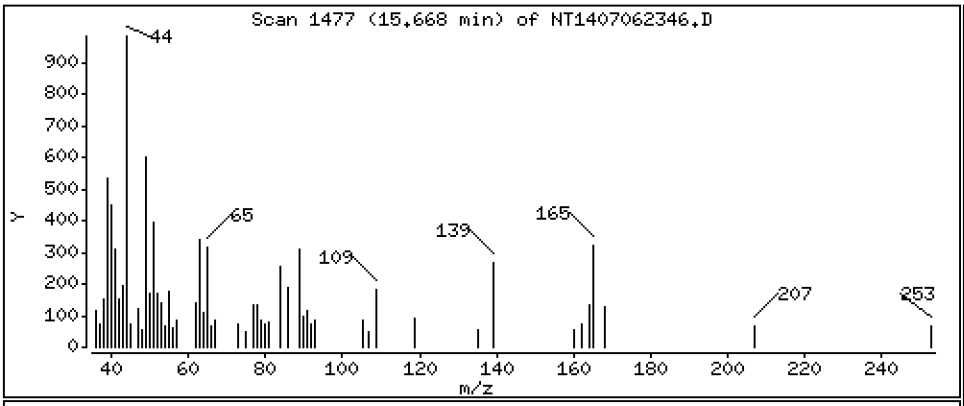
Operator: JGR

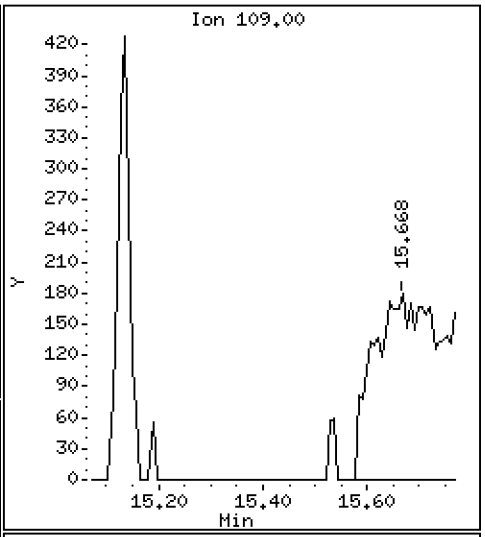
Column phase: ZB-5msi

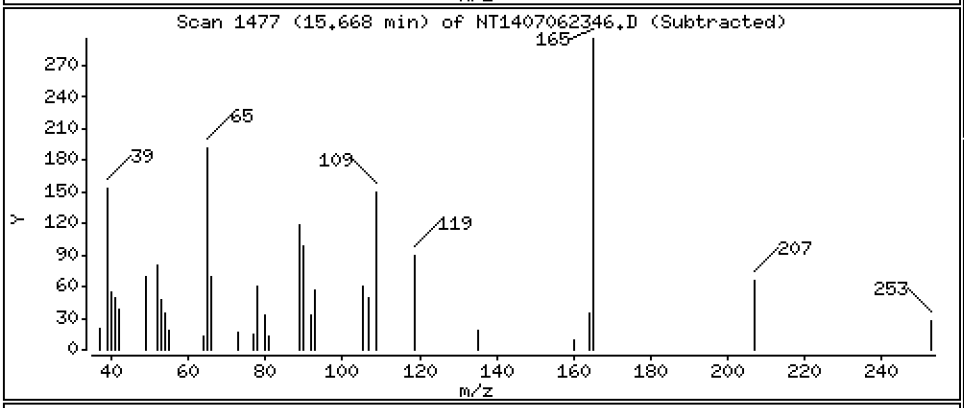
Column diameter: 0.25

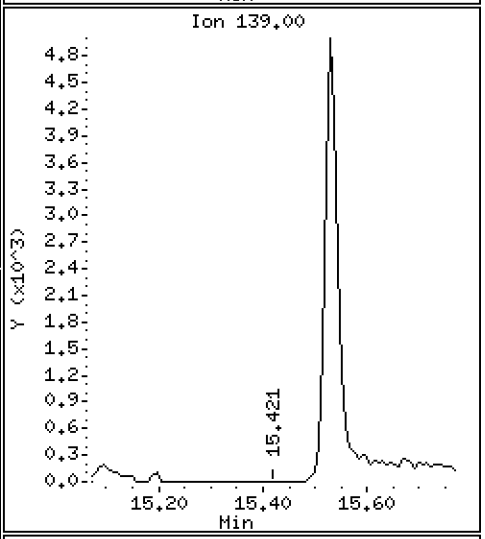
47 4-Nitrophenol

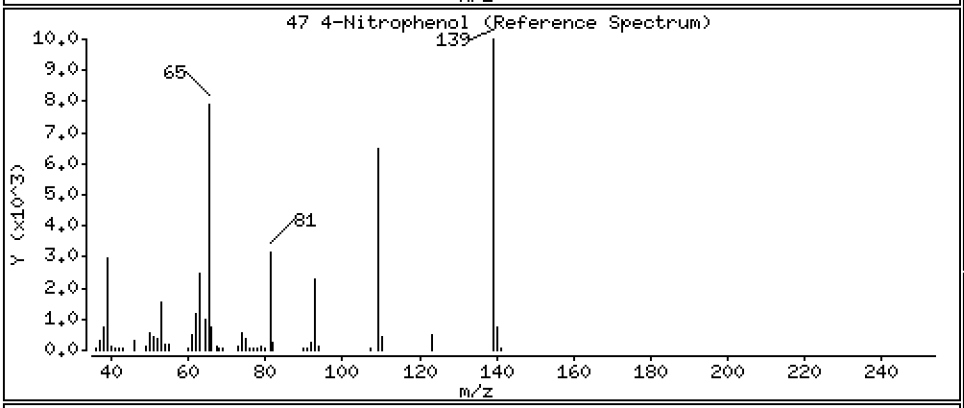
Concentration: 0.1879 ug/mL

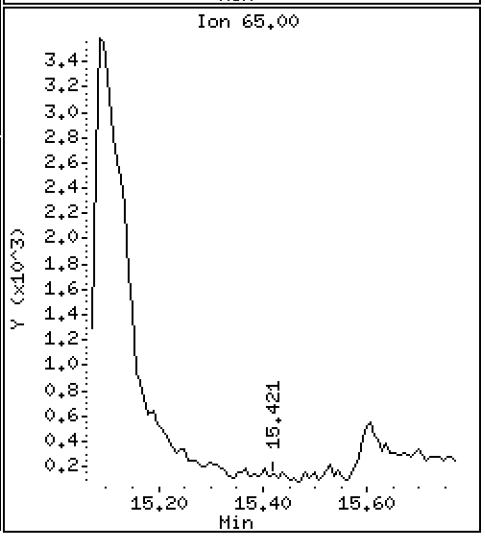


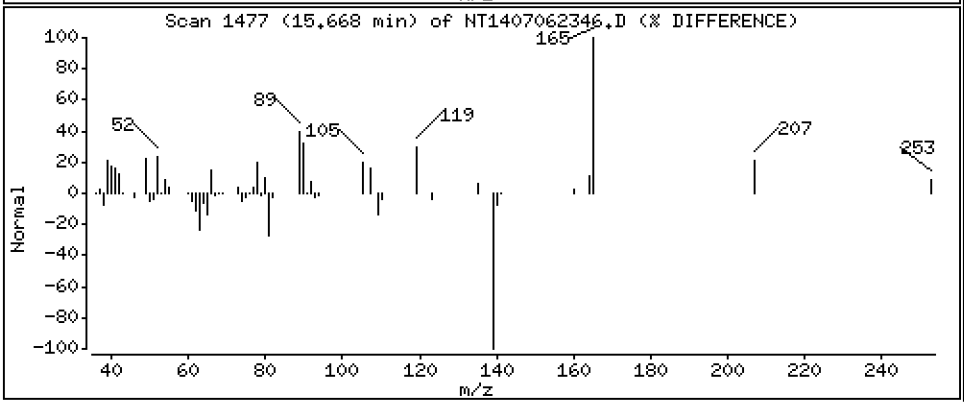












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

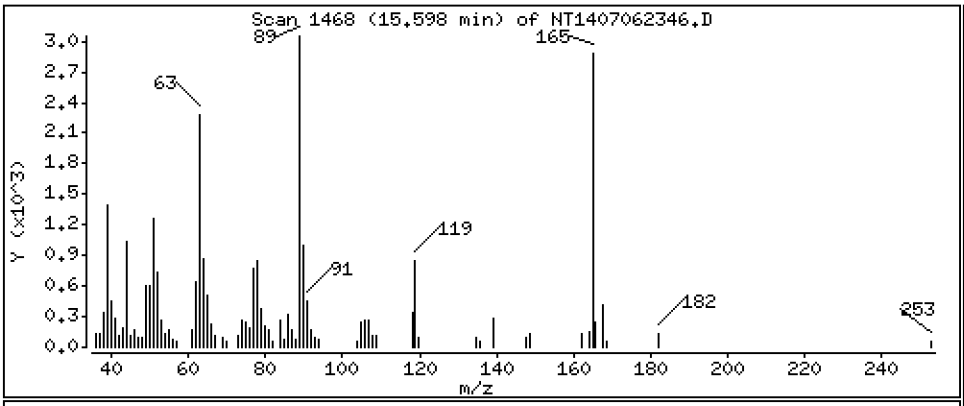
Operator: JGR

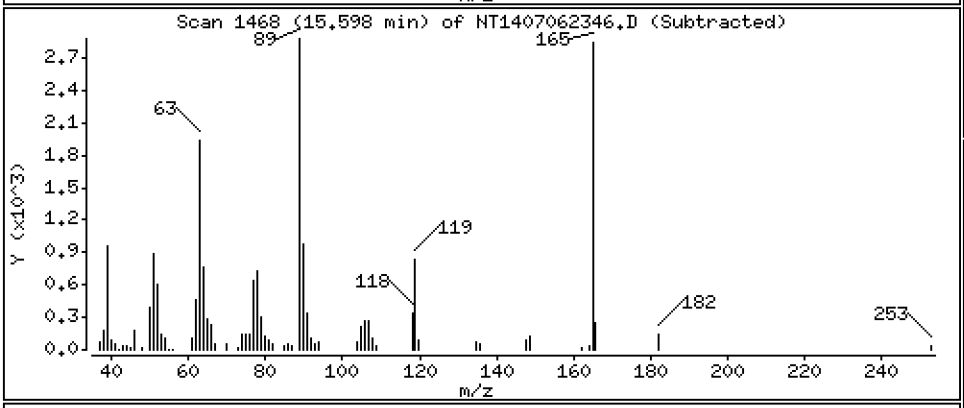
Column phase: ZB-5msi

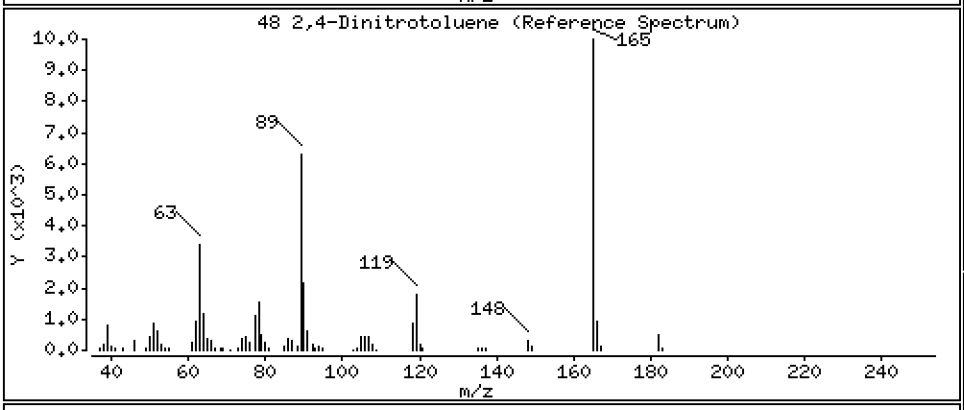
Column diameter: 0.25

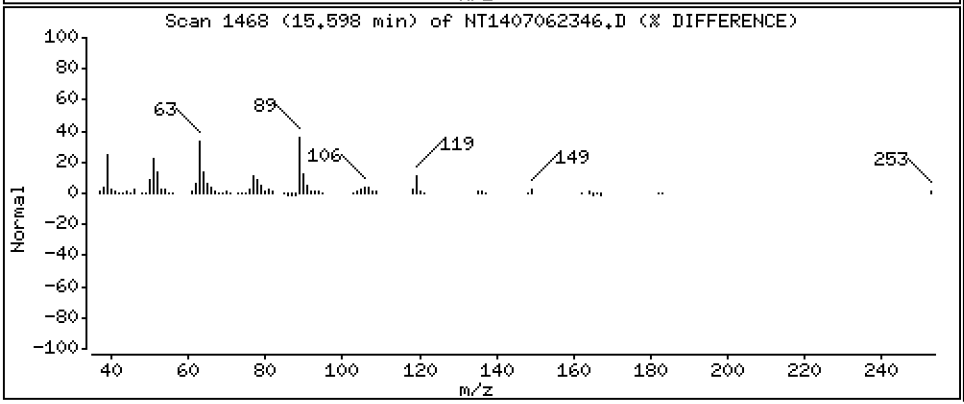
48 2,4-Dinitrotoluene

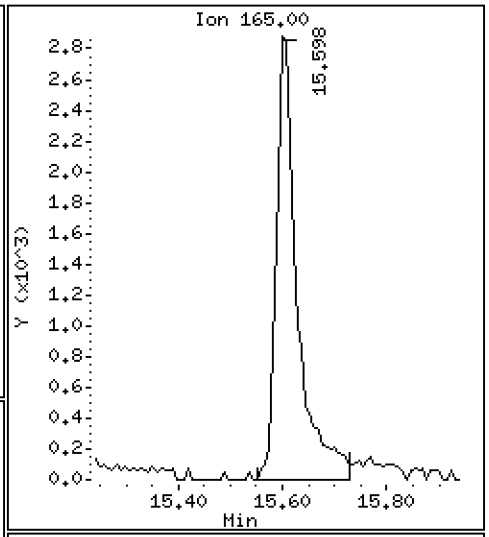
Concentration: 0.3205 ug/mL

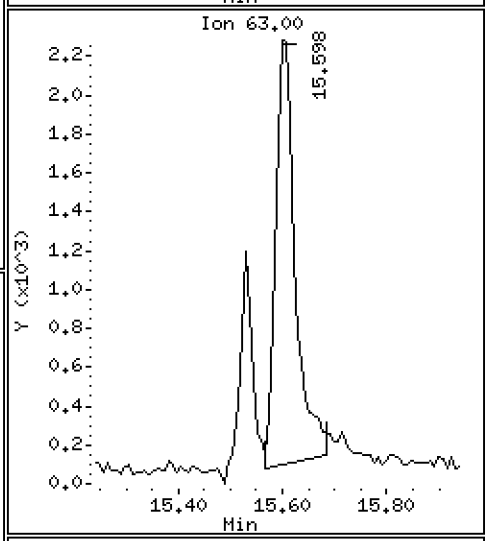


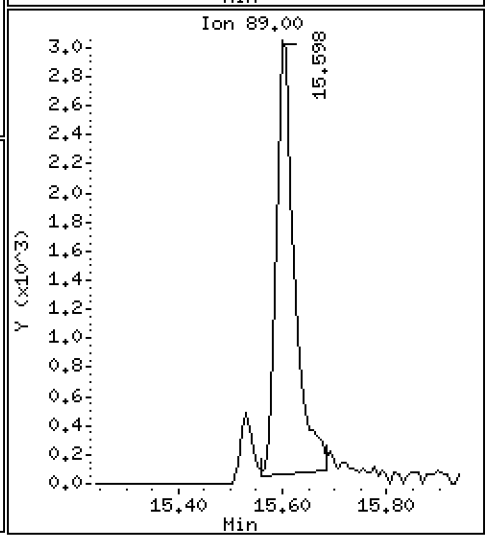












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

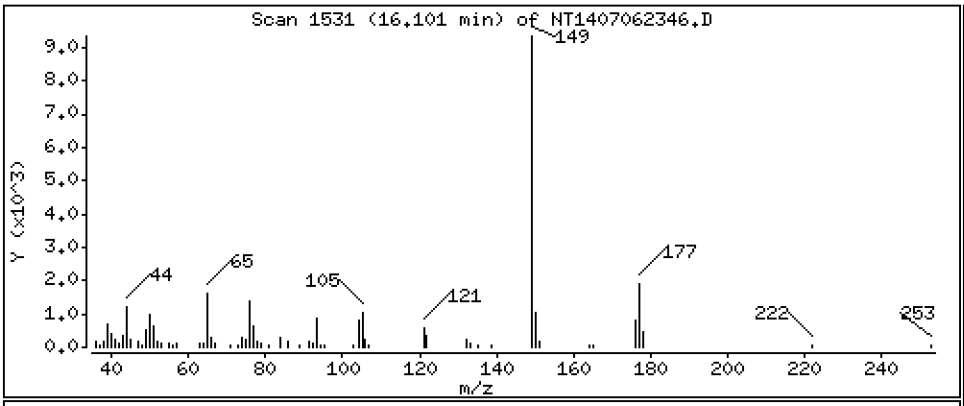
Operator: JGR

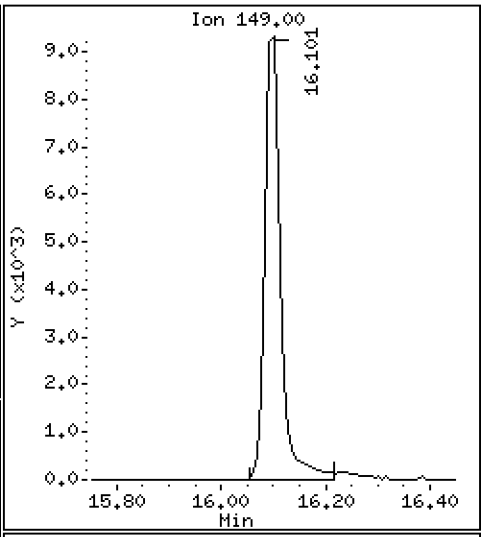
Column phase: ZB-5msi

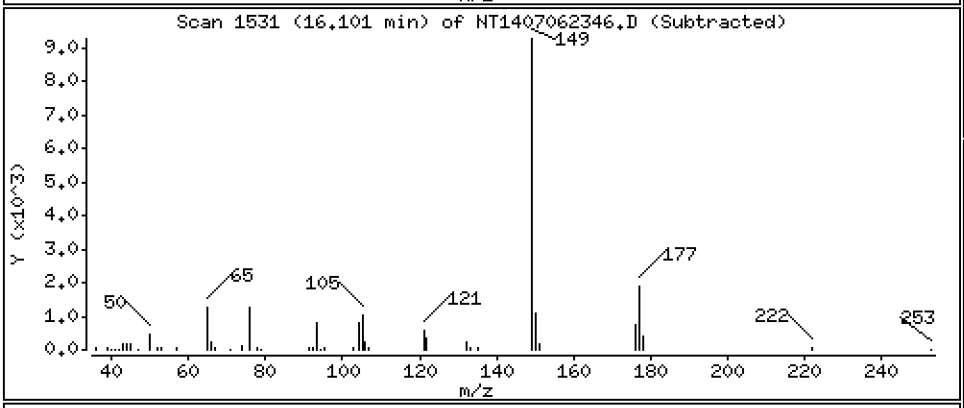
Column diameter: 0.25

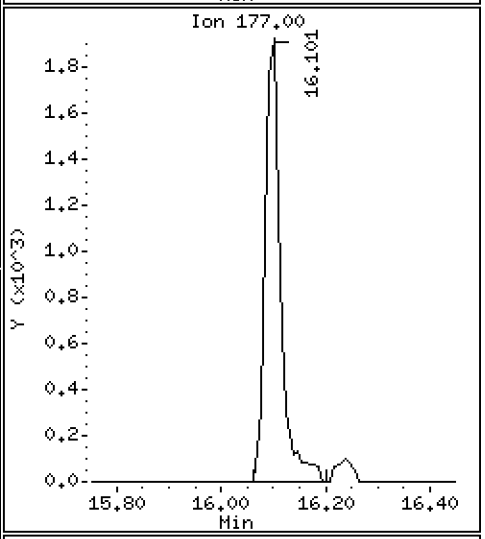
50 Diethylphthalate

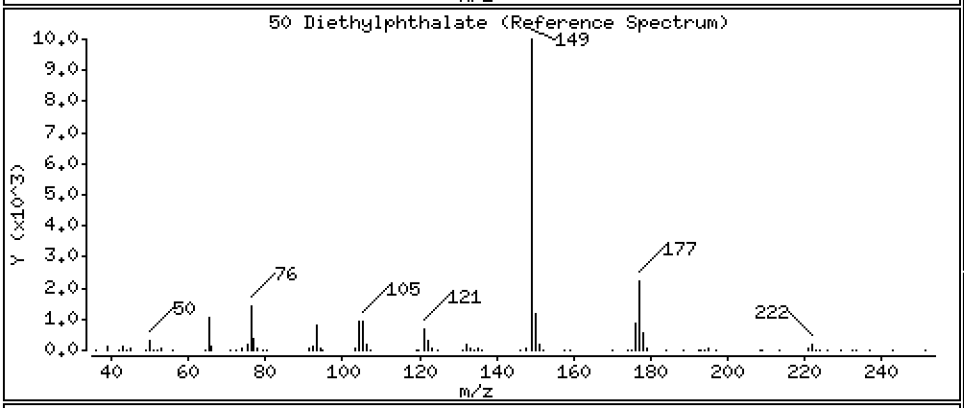
Concentration: 0.2064 ug/mL

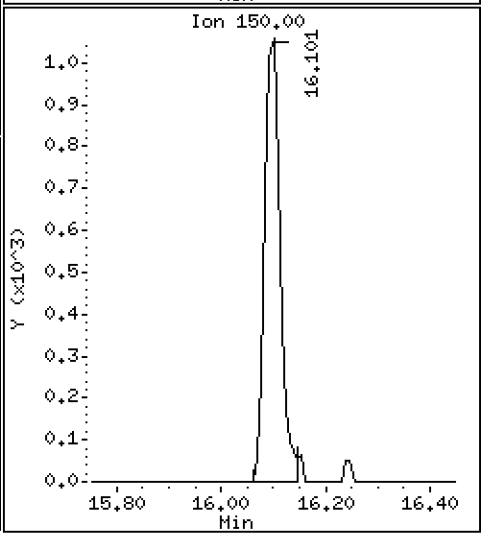


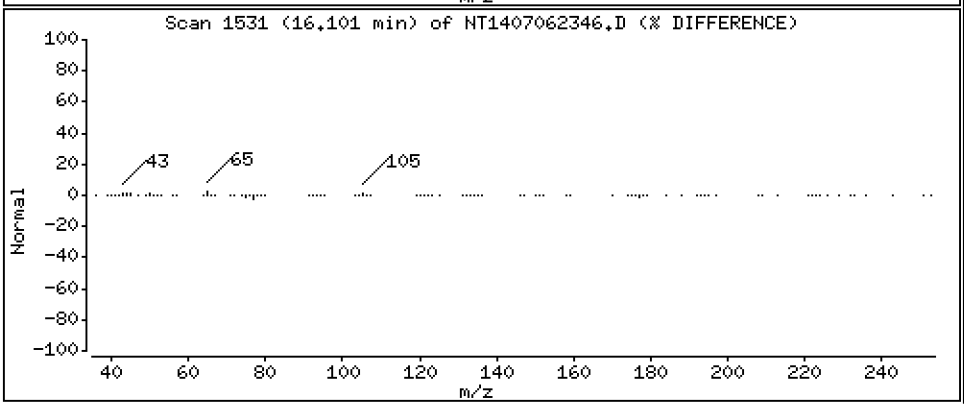












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

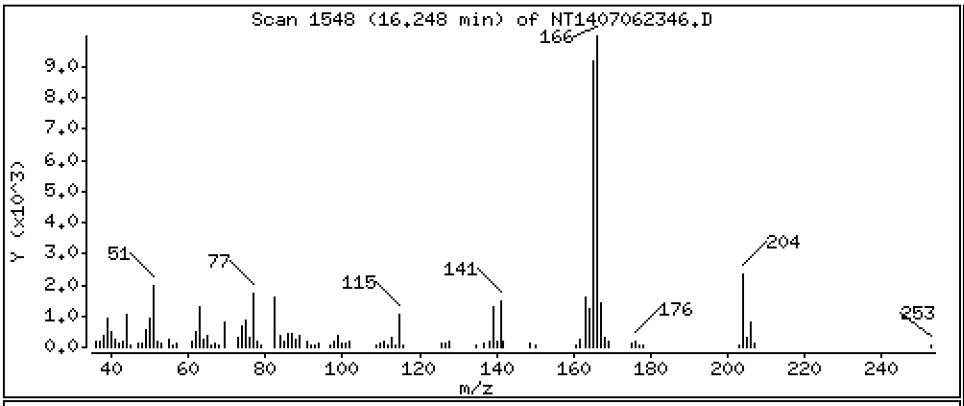
Operator: JGR

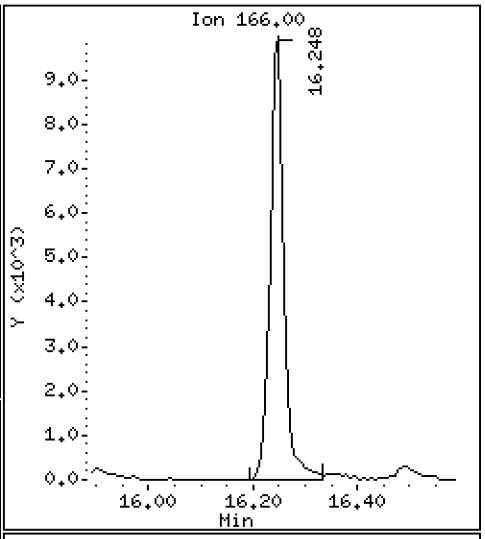
Column phase: ZB-5msi

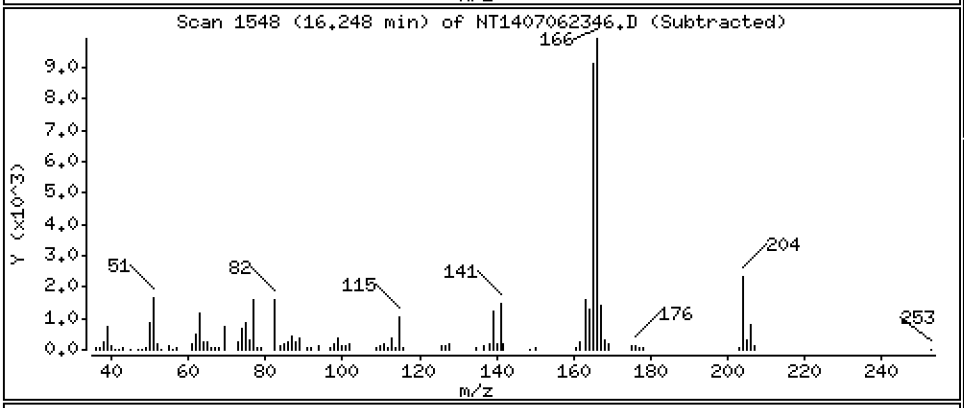
Column diameter: 0.25

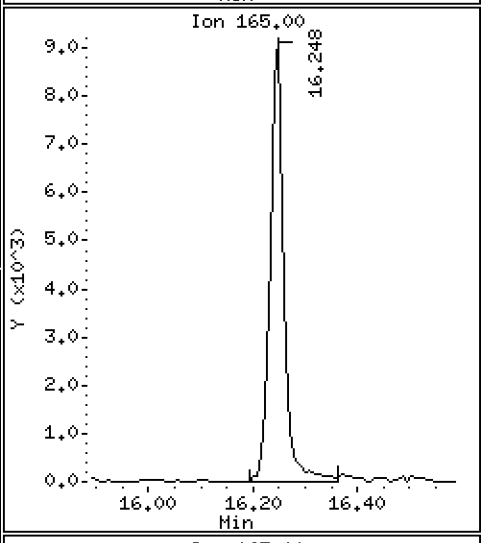
49 Fluorene

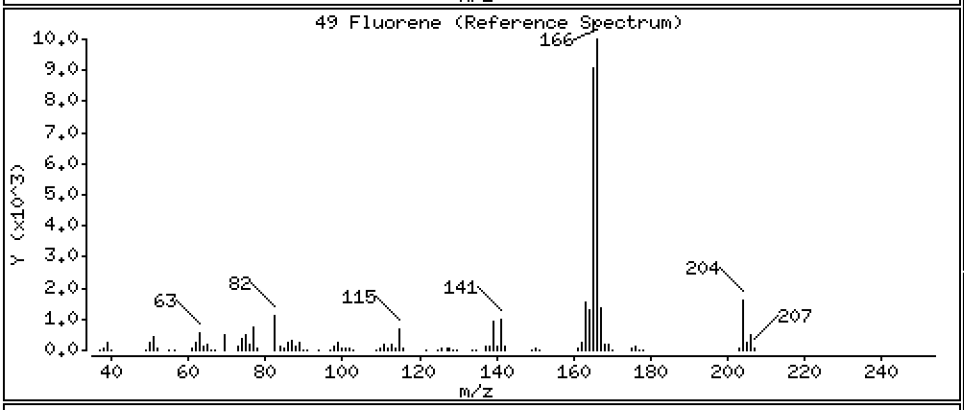
Concentration: 0.1869 ug/mL

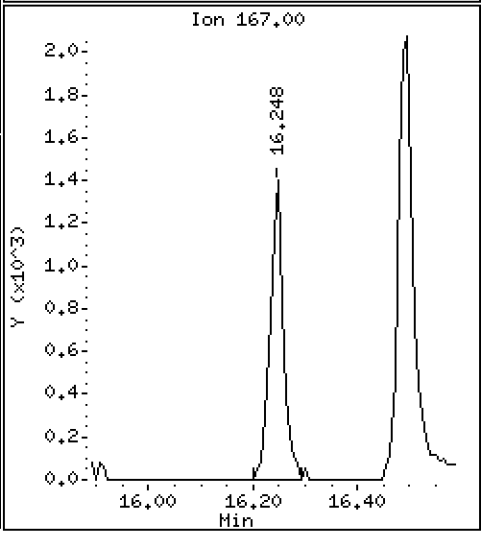


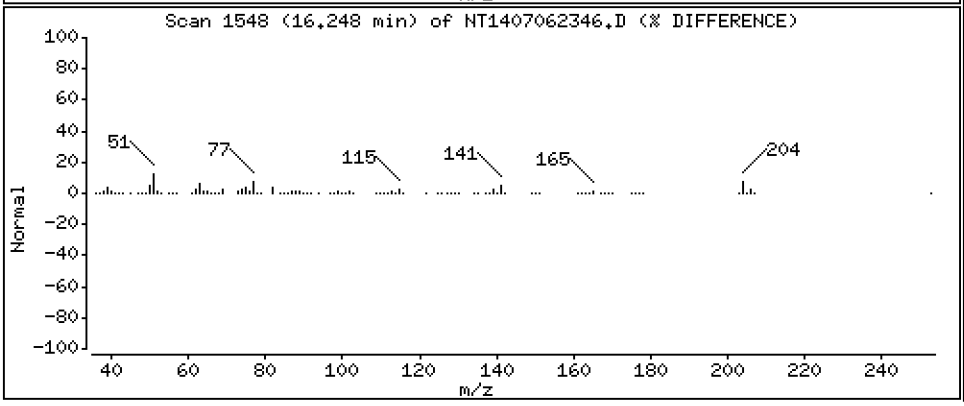












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

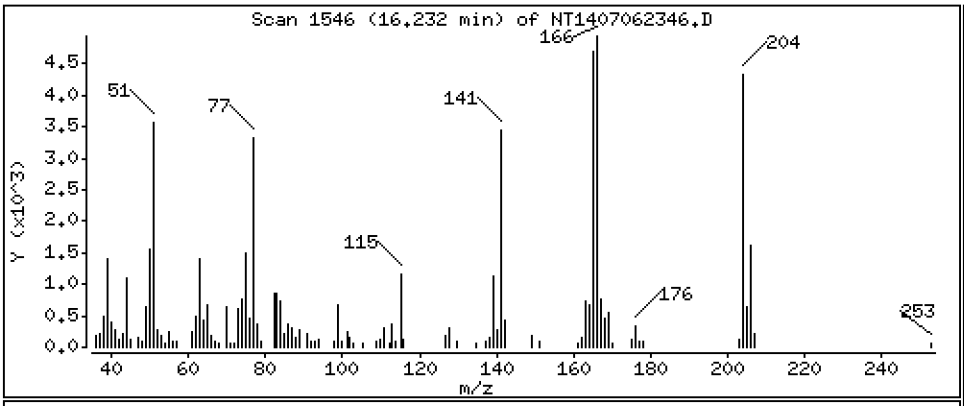
Operator: JGR

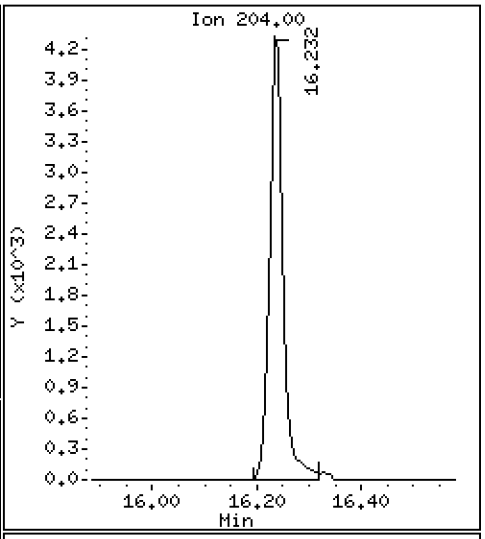
Column phase: ZB-5msi

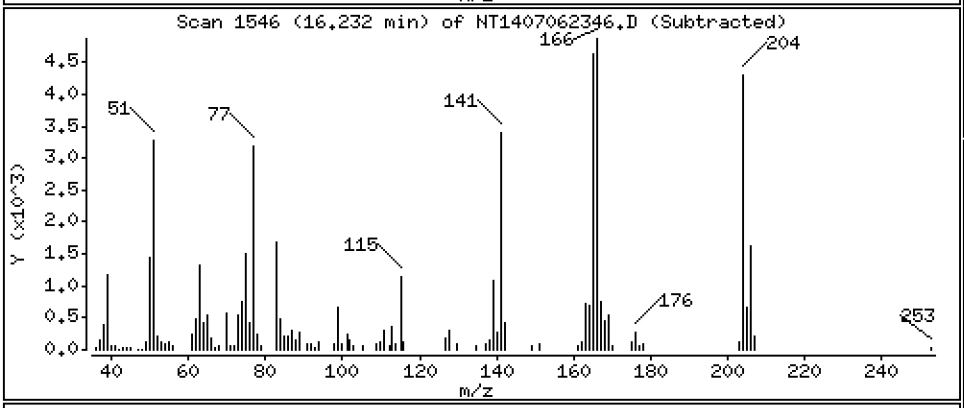
Column diameter: 0.25

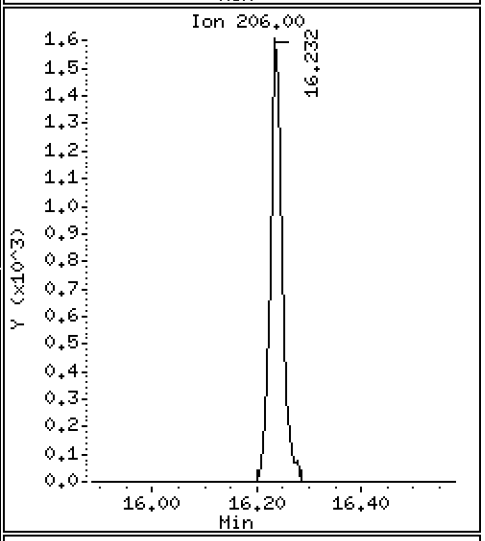
51 4-Chlorophenyl-phenylether

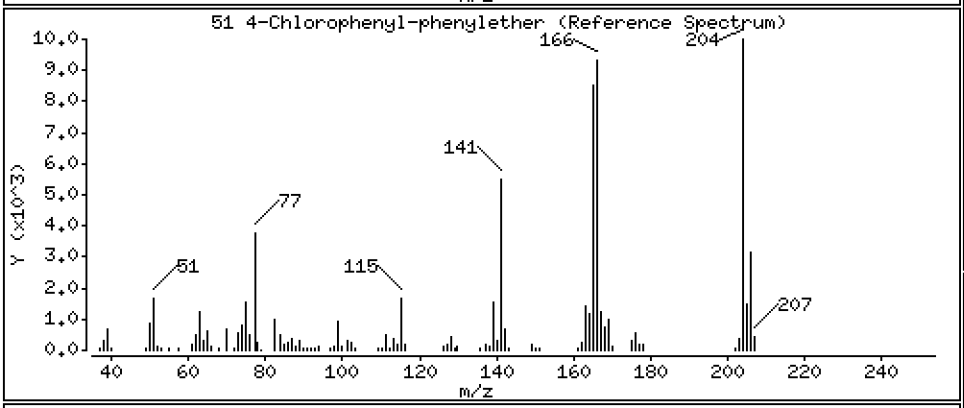
Concentration: 0.1840 ug/mL

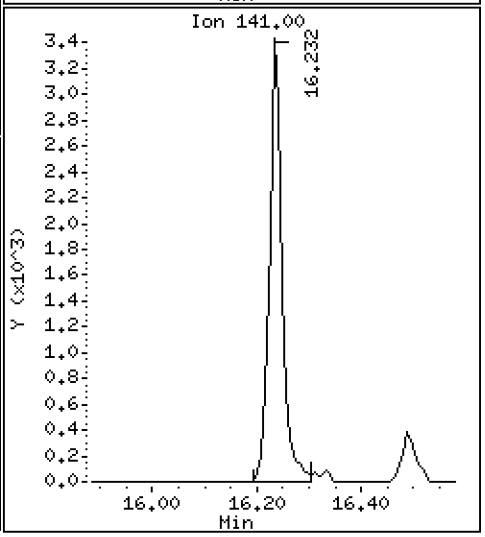


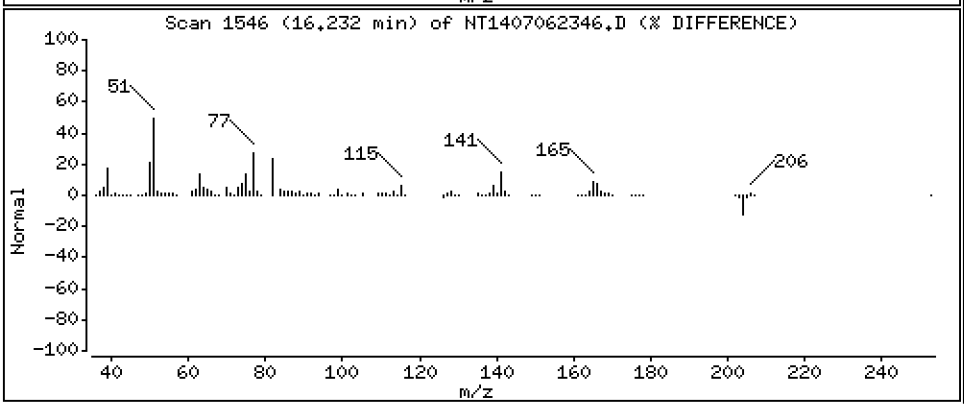












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

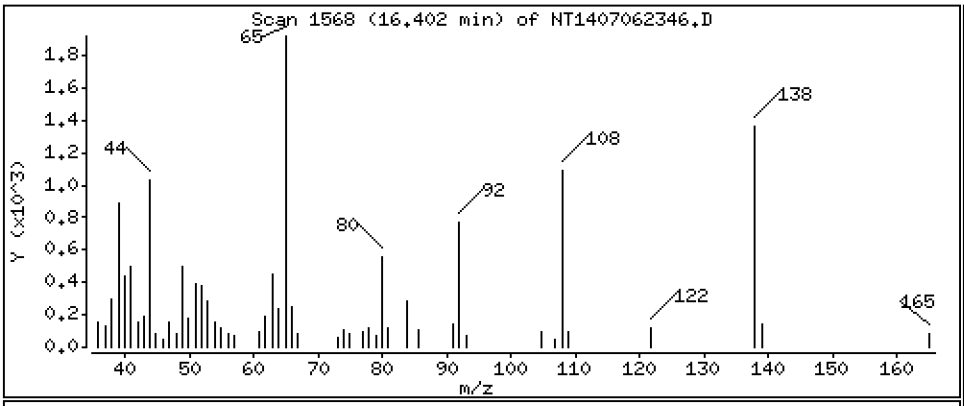
Operator: JGR

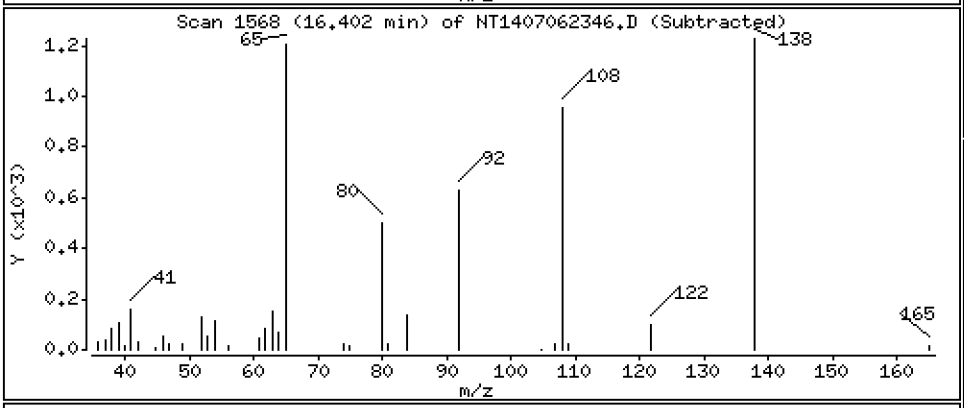
Column phase: ZB-5msi

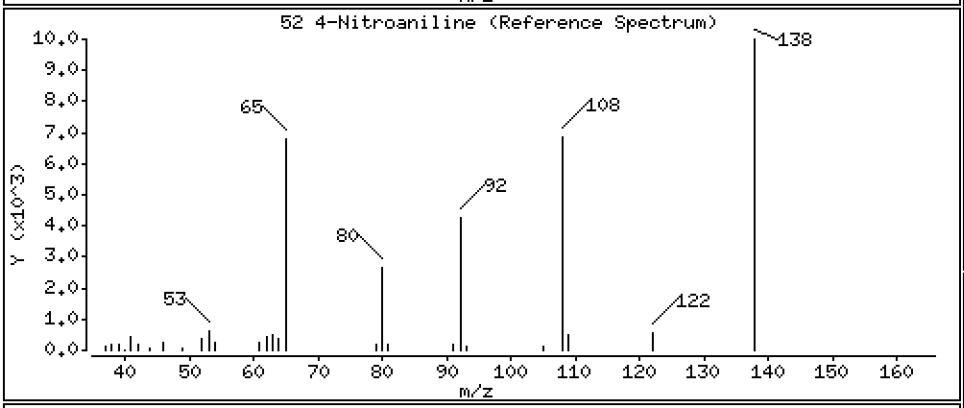
Column diameter: 0.25

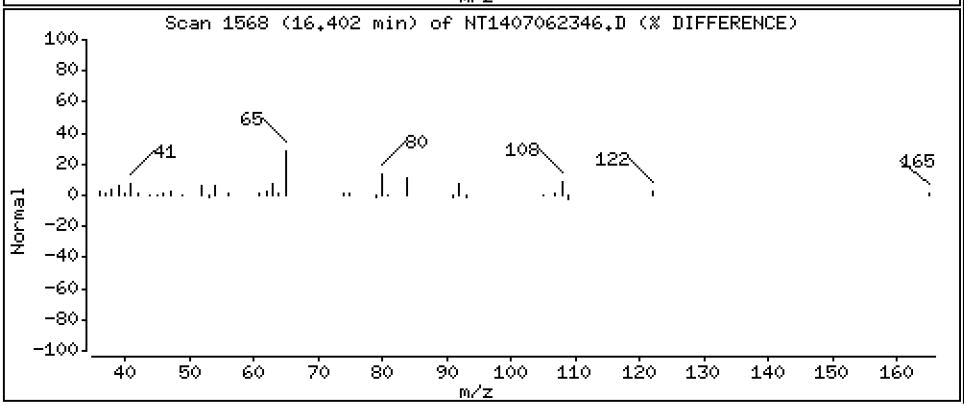
52 4-Nitroaniline

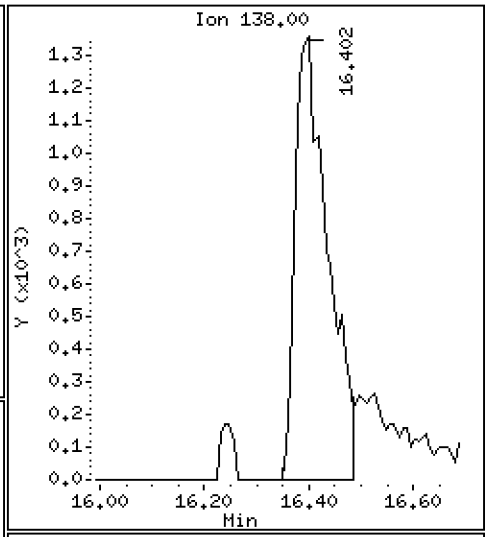
Concentration: 0.2435 ug/mL

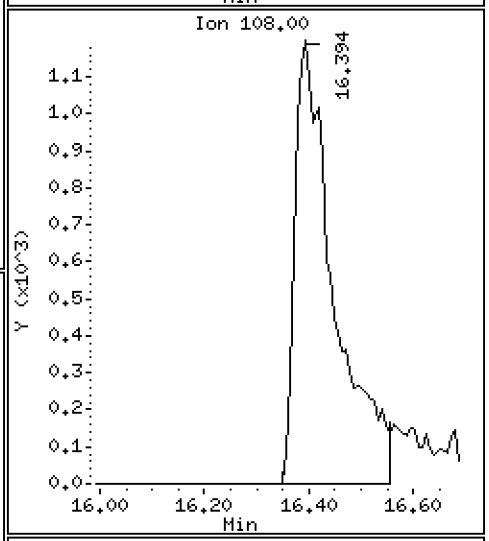


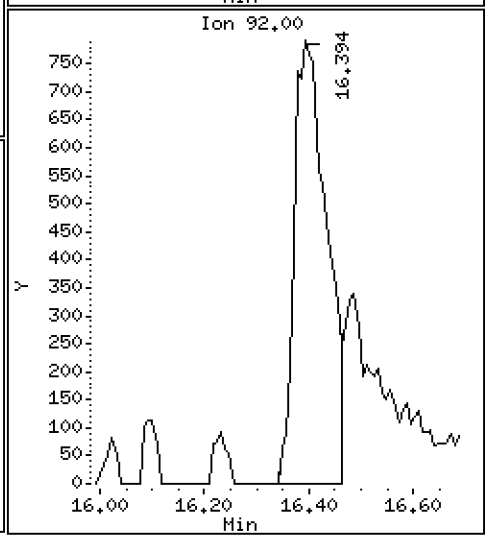












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

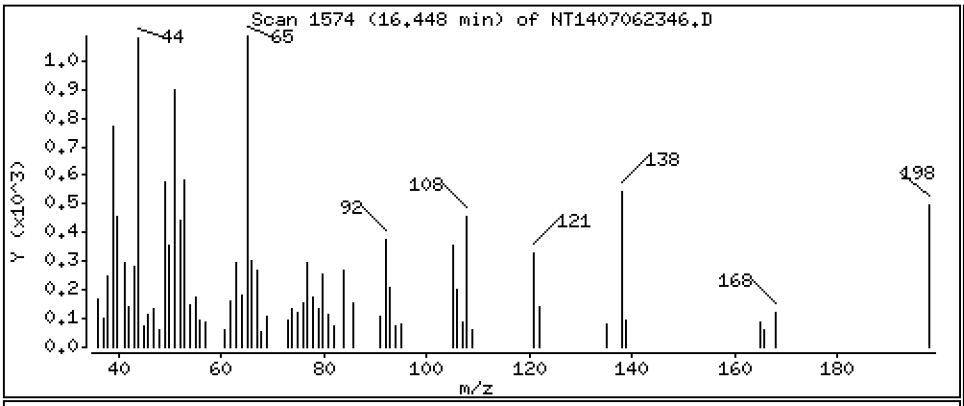
Operator: JGR

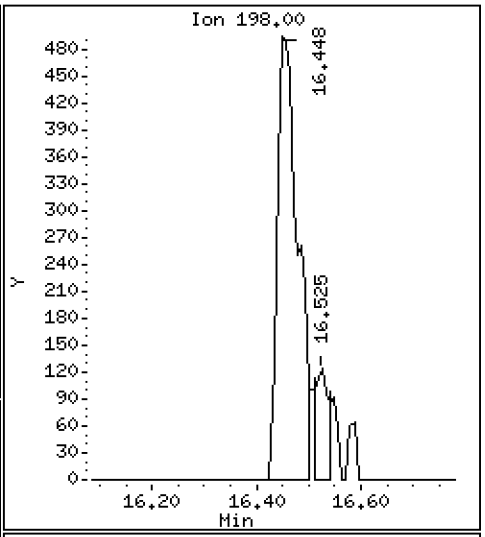
Column phase: ZB-5msi

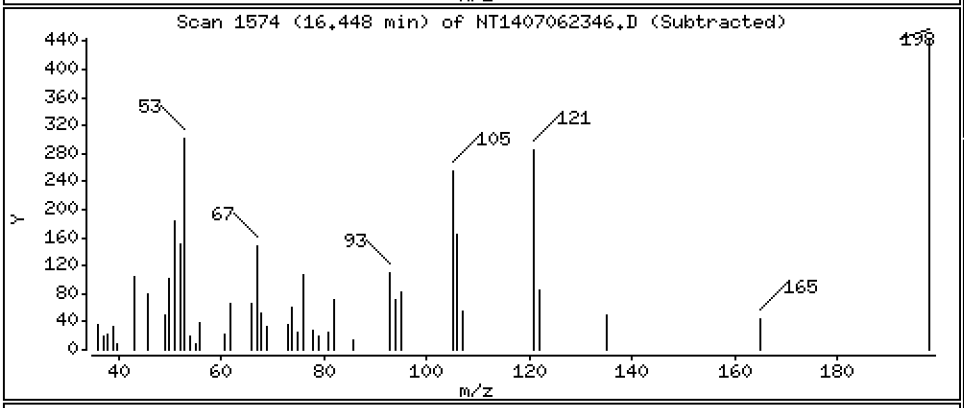
Column diameter: 0.25

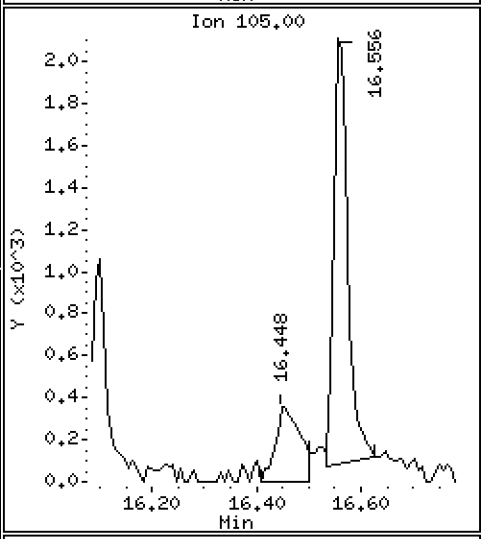
53 4,6-Dinitro-2-methylphenol

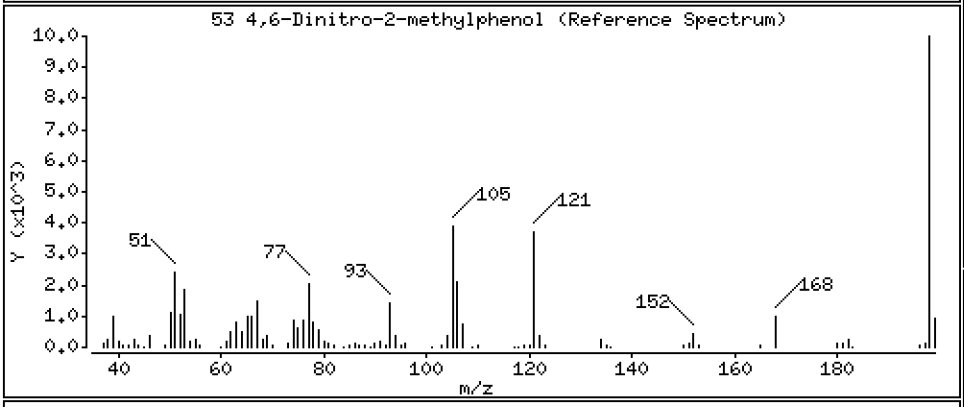
Concentration: 0.09804 ug/mL

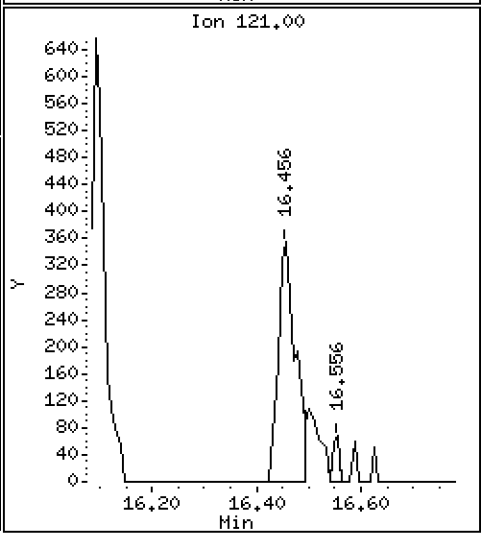


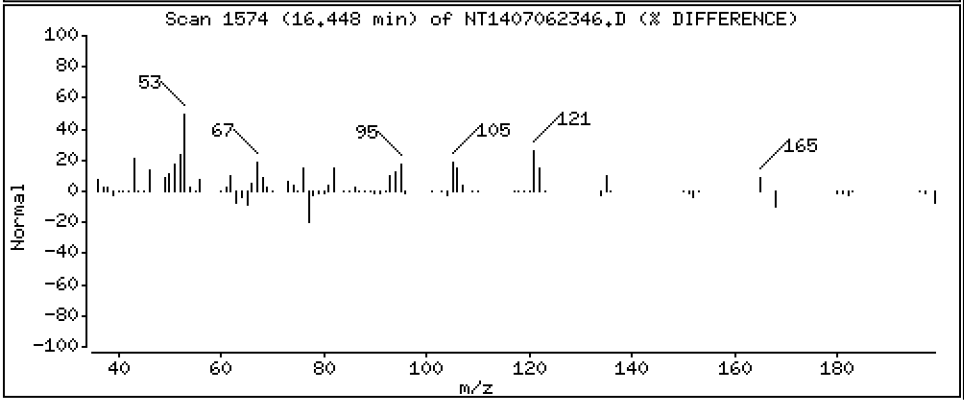












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

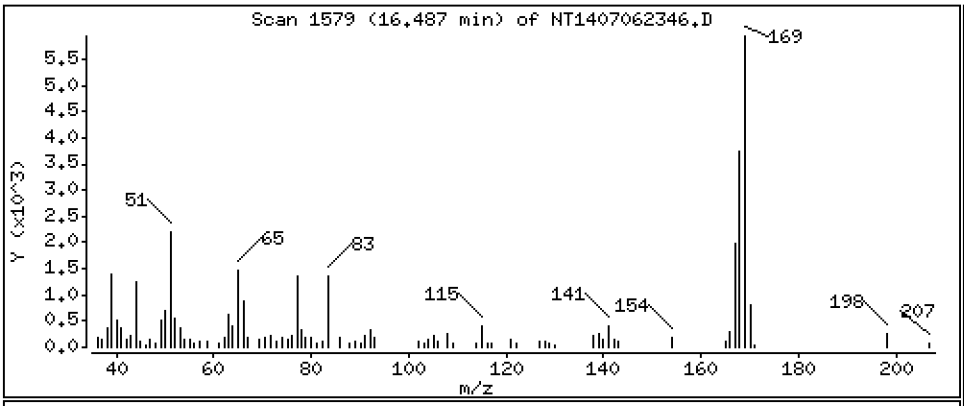
Operator: JGR

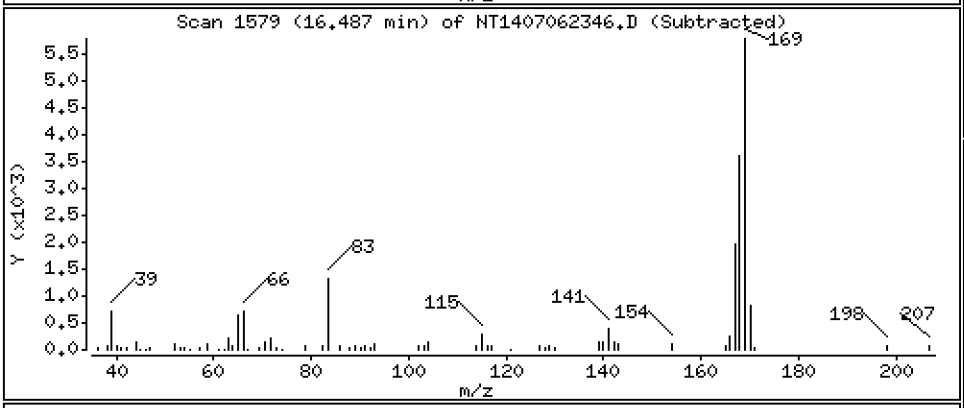
Column phase: ZB-5msi

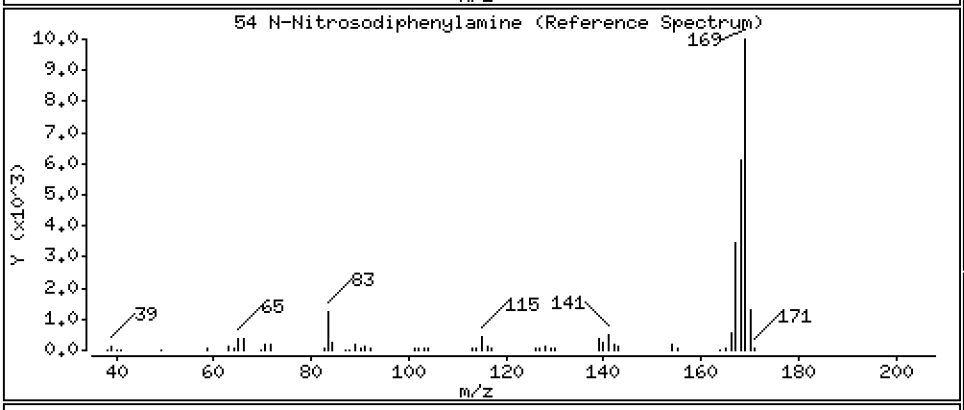
Column diameter: 0.25

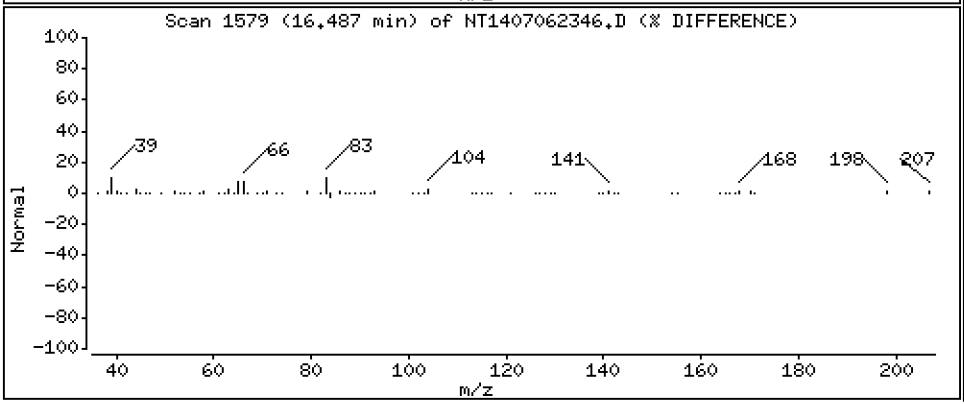
54 N-Nitrosodiphenylamine

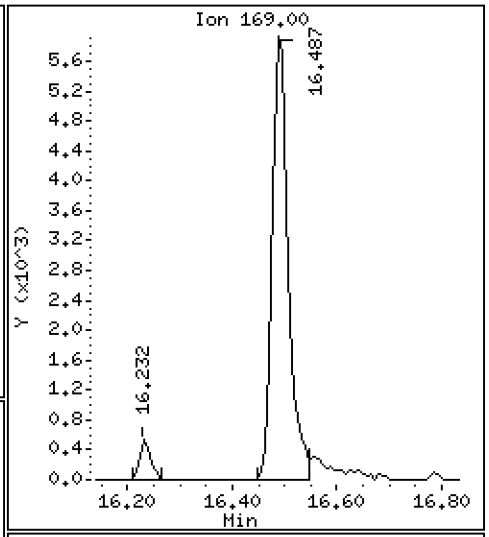
Concentration: 0.1924 ug/mL

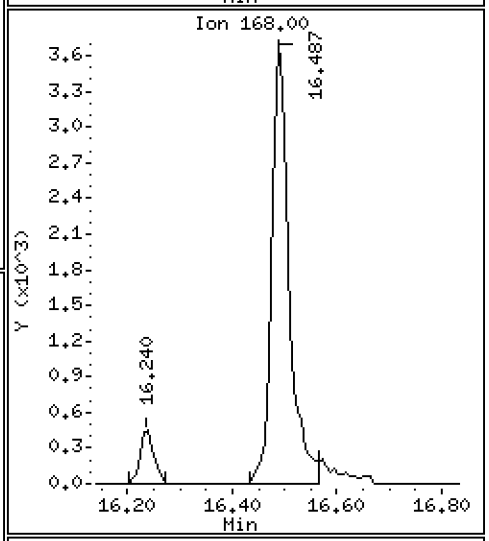


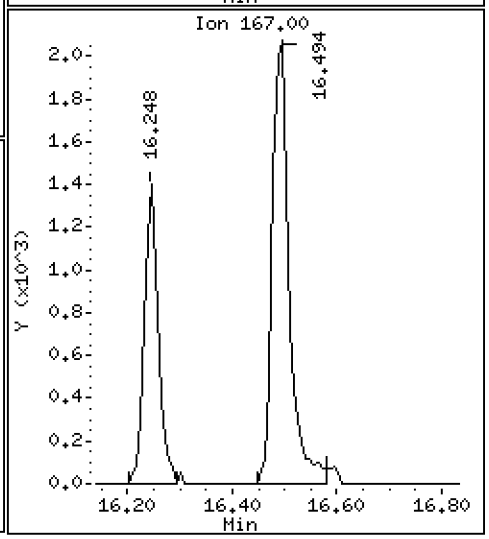












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

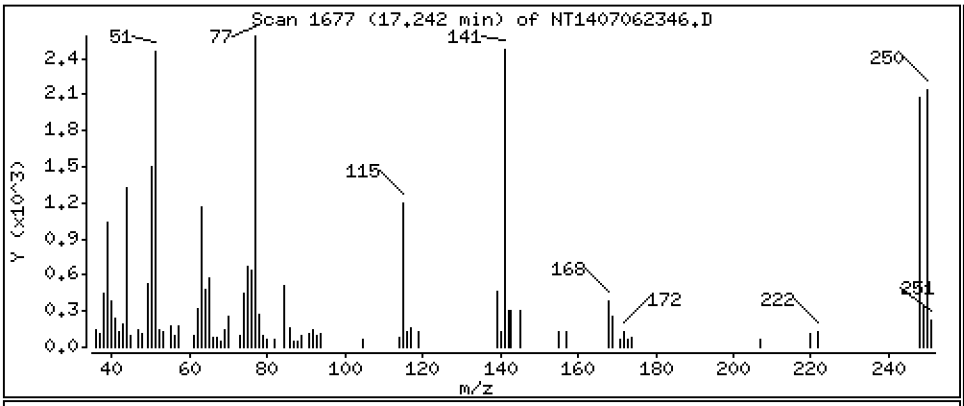
Operator: JGR

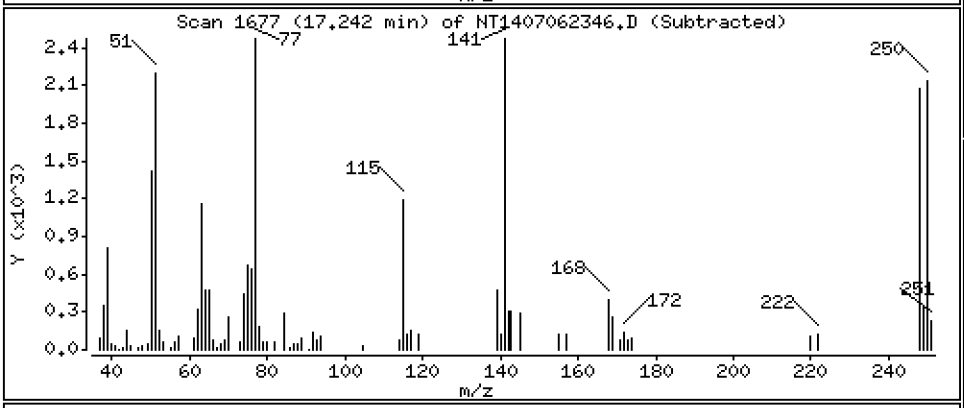
Column phase: ZB-5msi

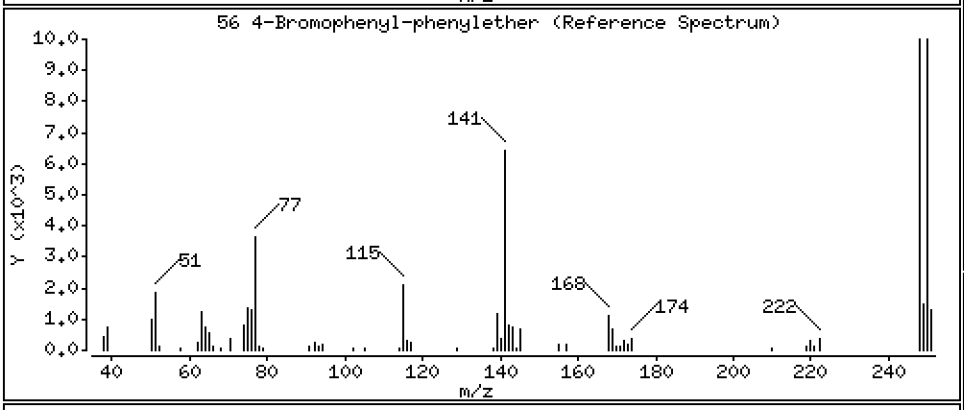
Column diameter: 0.25

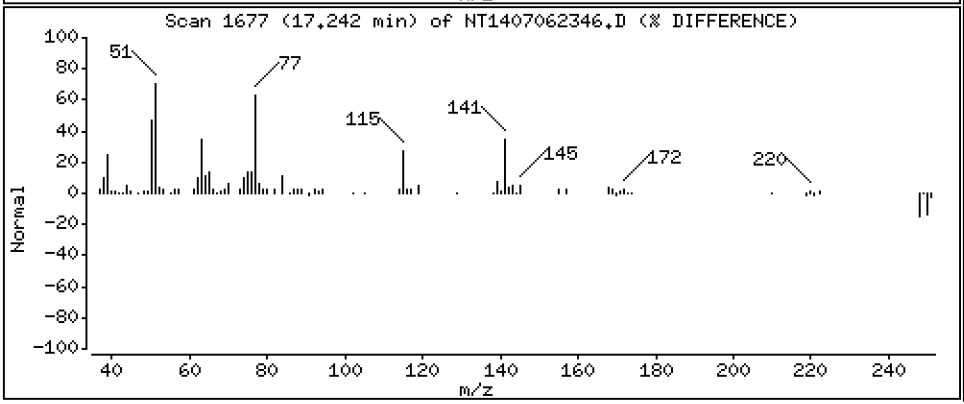
56 4-Bromophenyl-phenylether

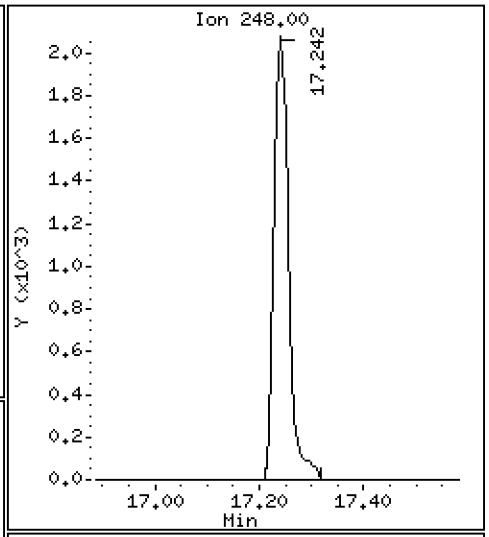
Concentration: 0.1987 ug/mL

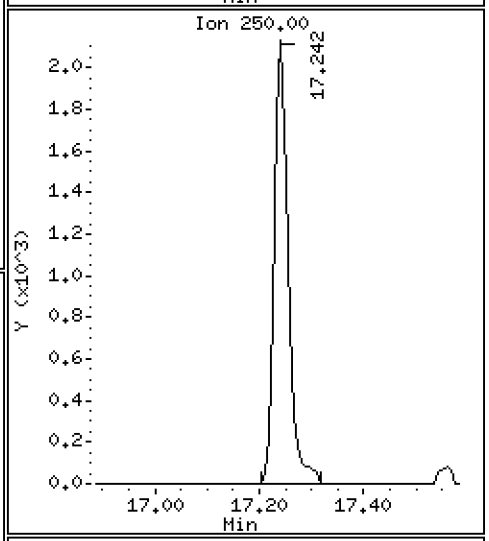


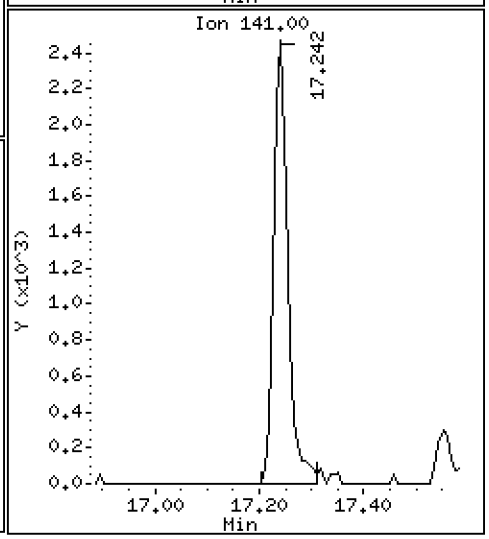












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

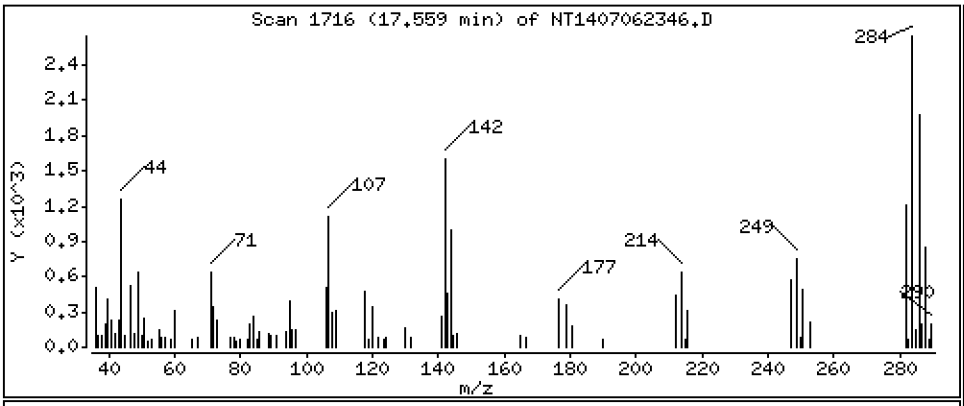
Operator: JGR

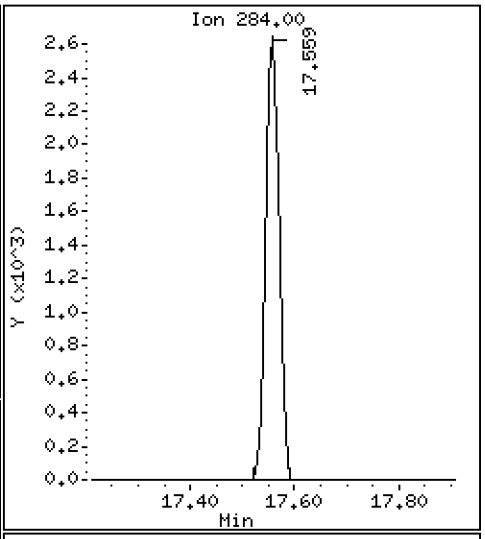
Column phase: ZB-5msi

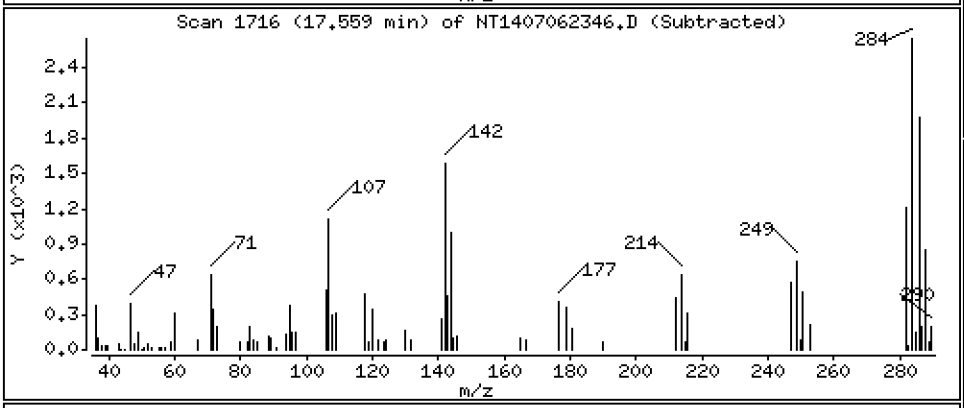
Column diameter: 0.25

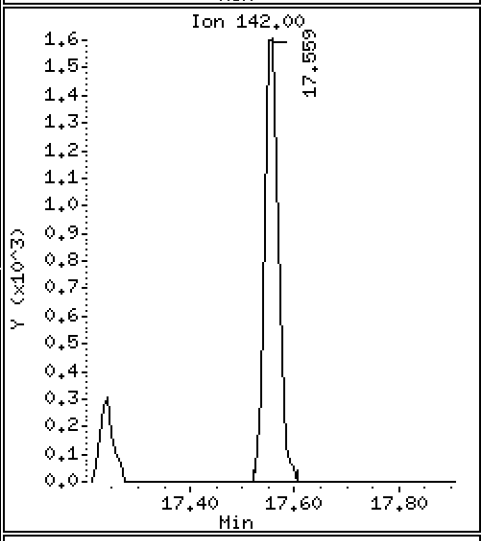
57 Hexachlorobenzene

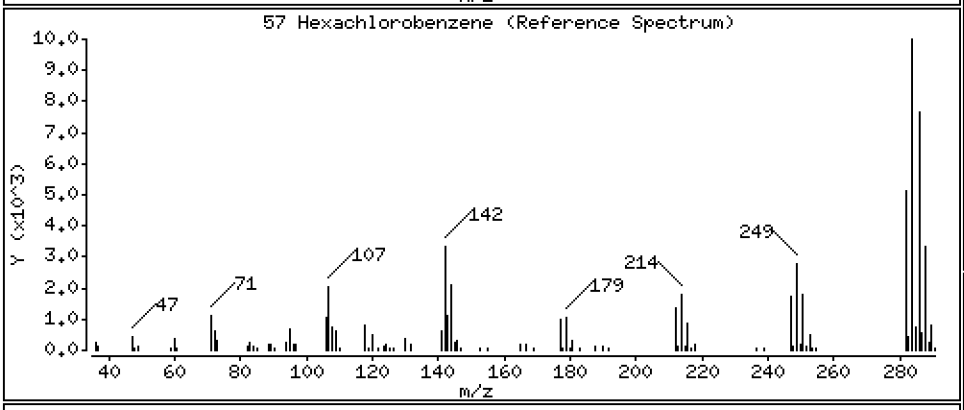
Concentration: 0.2196 ug/mL

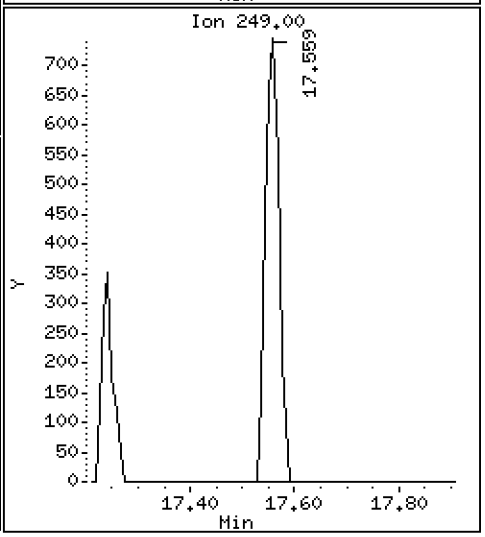


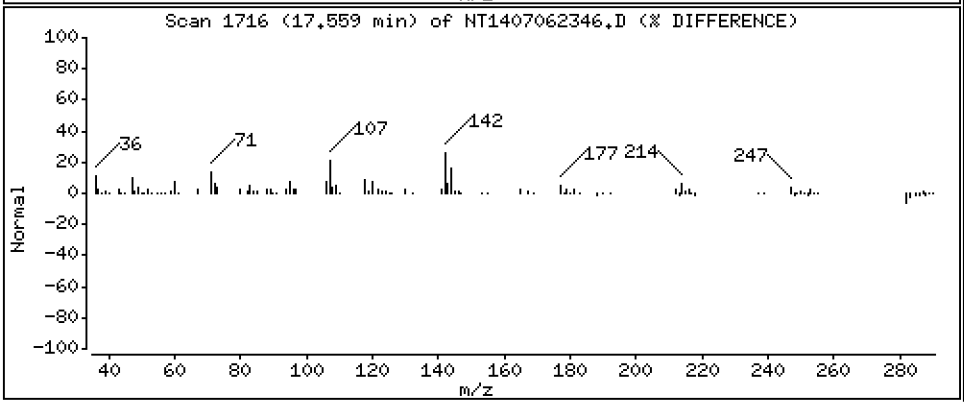












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

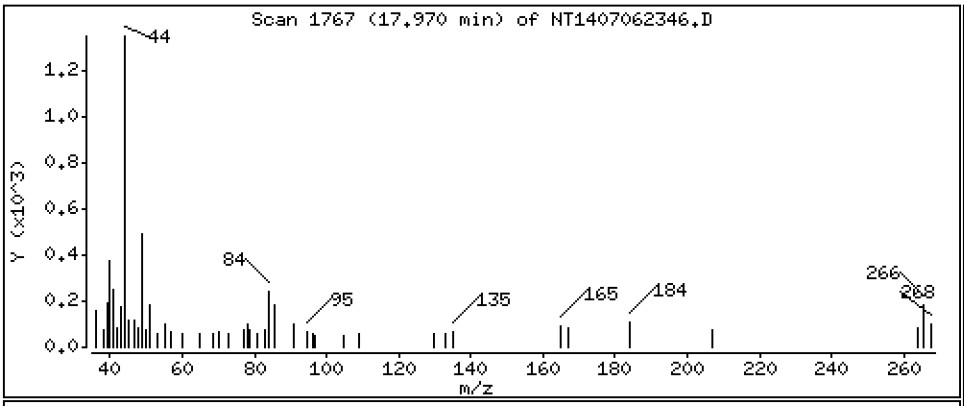
Operator: JGR

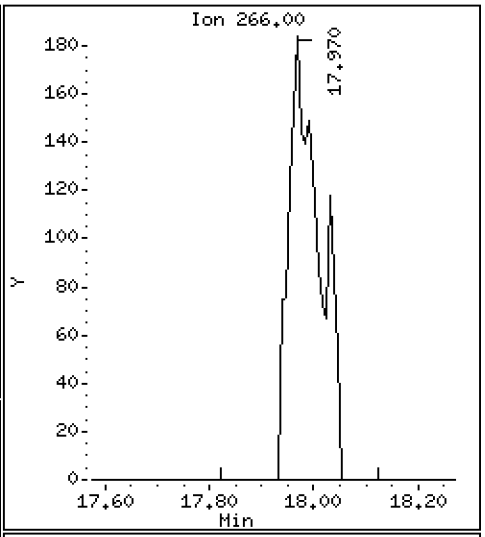
Column phase: ZB-5msi

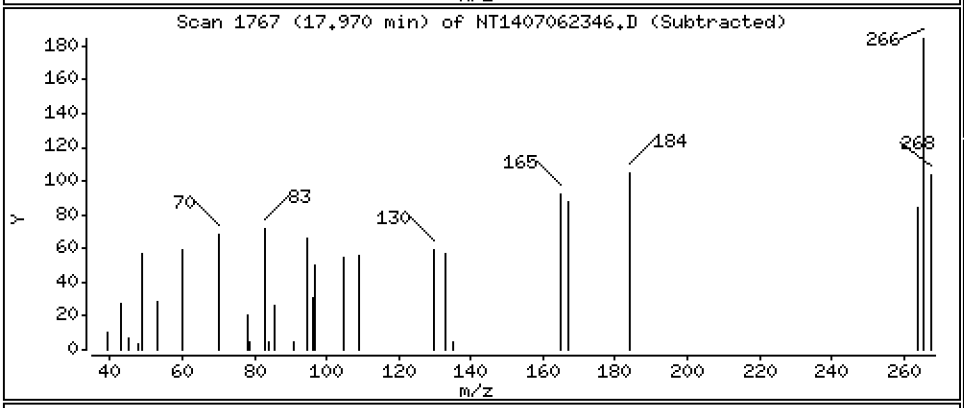
Column diameter: 0.25

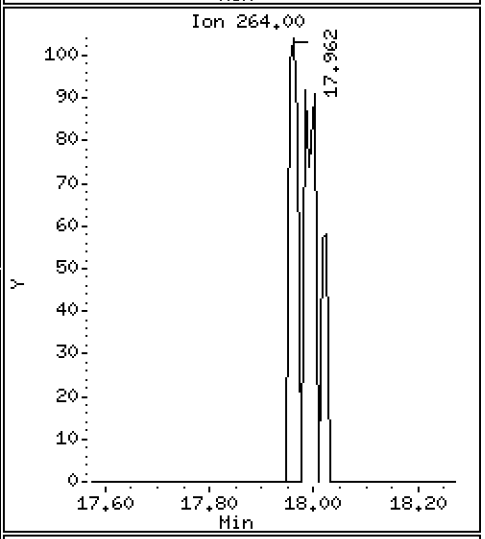
58 Pentachlorophenol

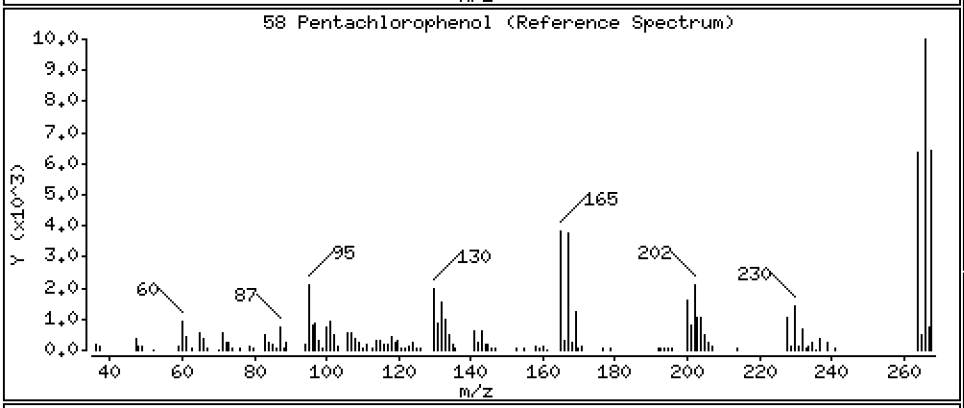
Concentration: 0.06232 ug/mL

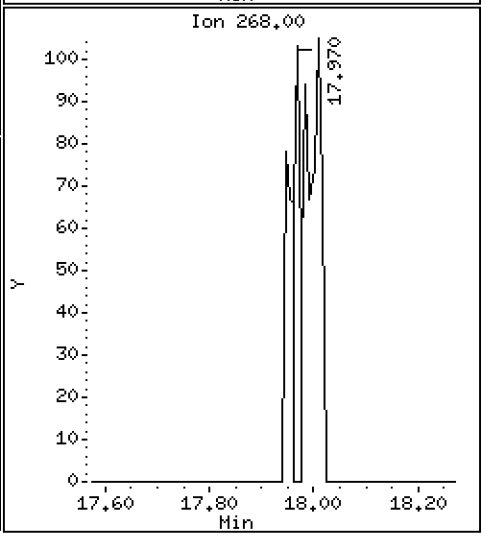


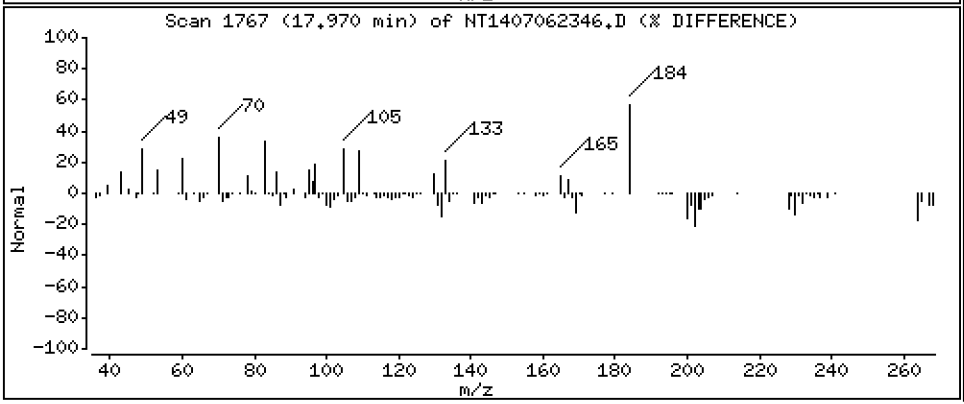












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

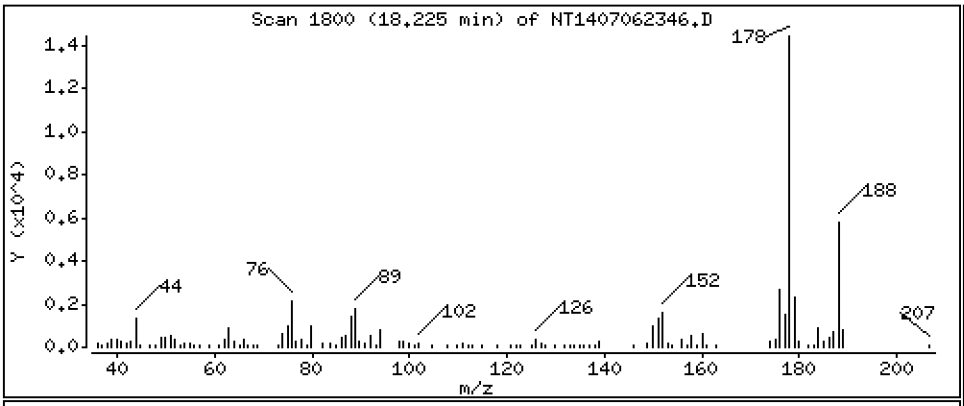
Operator: JGR

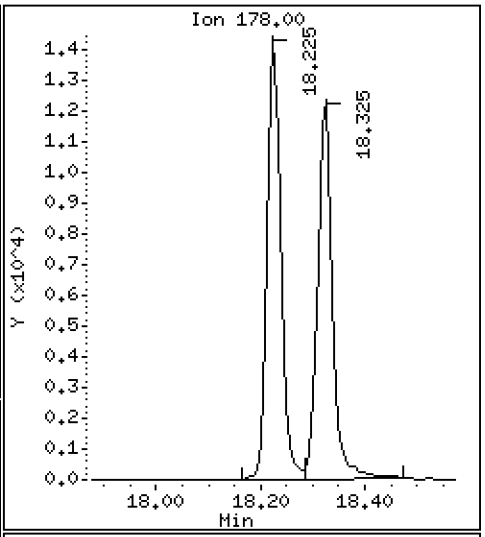
Column phase: ZB-5msi

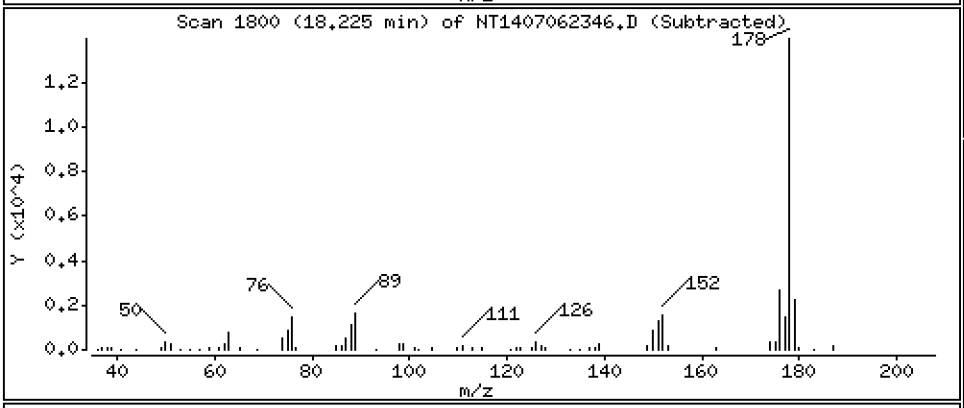
Column diameter: 0.25

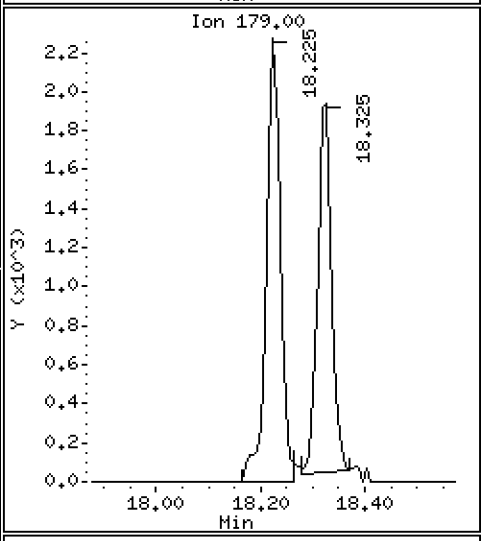
60 Phenanthrene

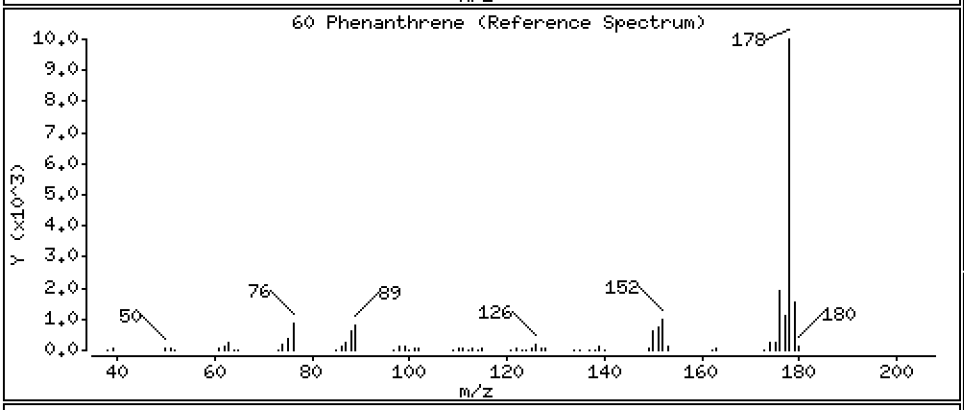
Concentration: 0.2047 ug/mL

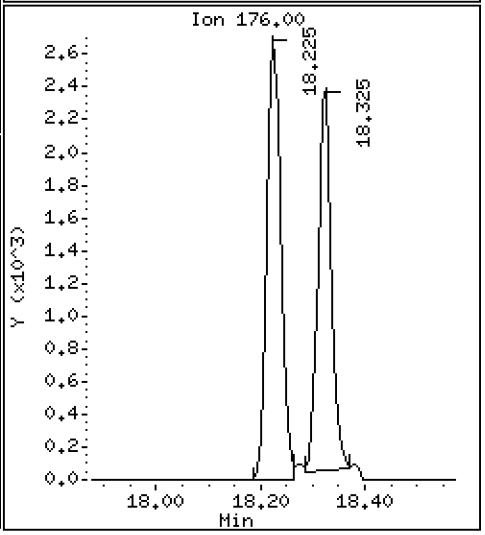


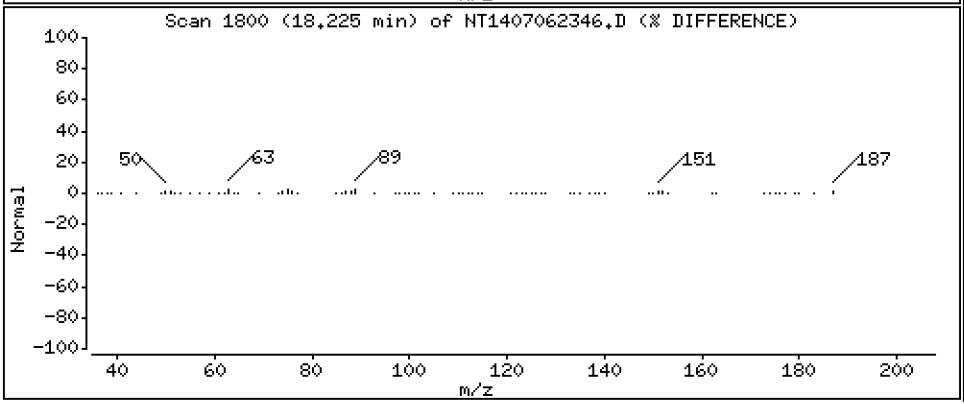












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

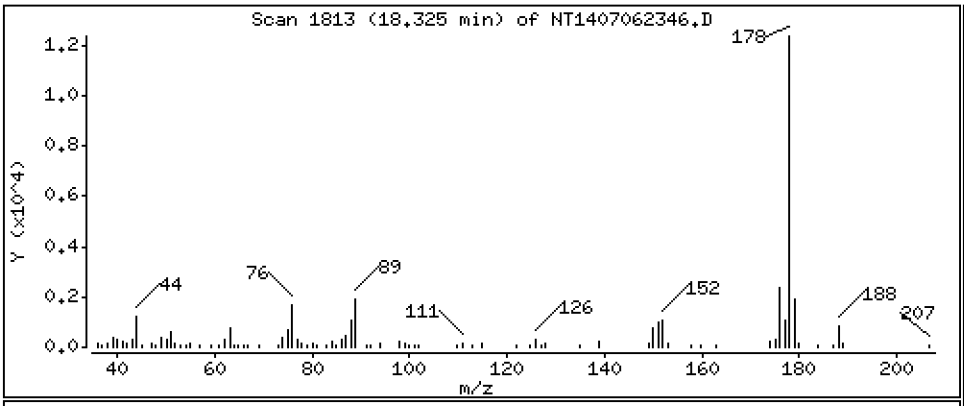
Operator: JGR

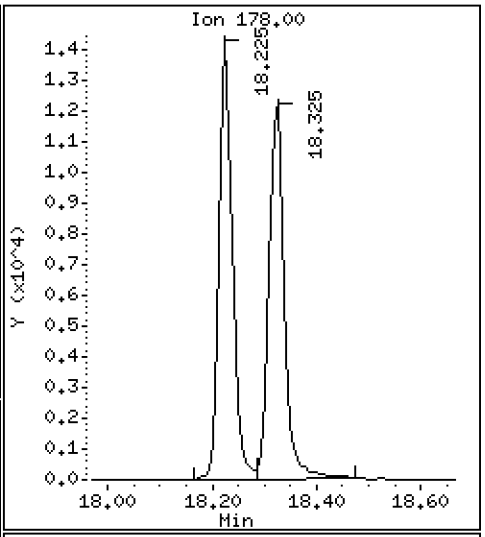
Column phase: ZB-5msi

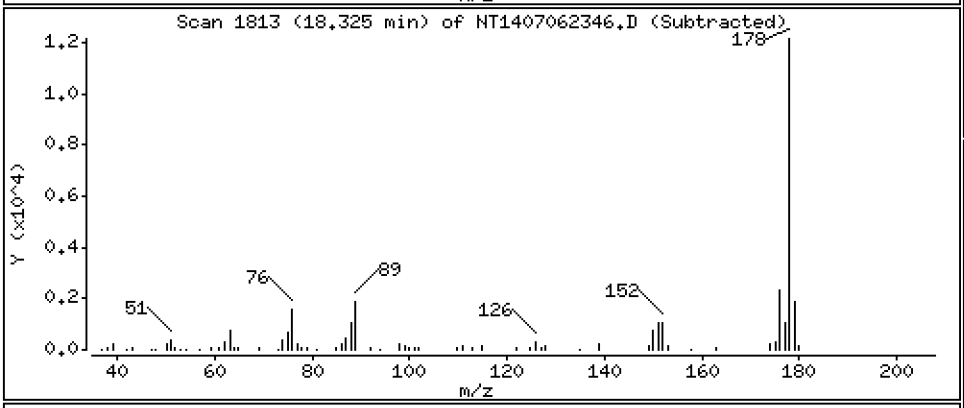
Column diameter: 0.25

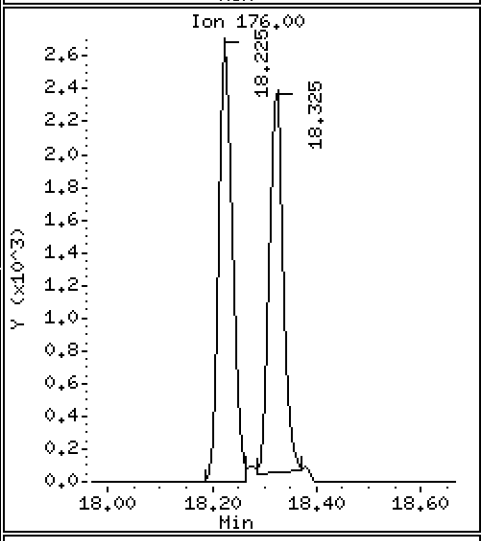
61 Anthracene

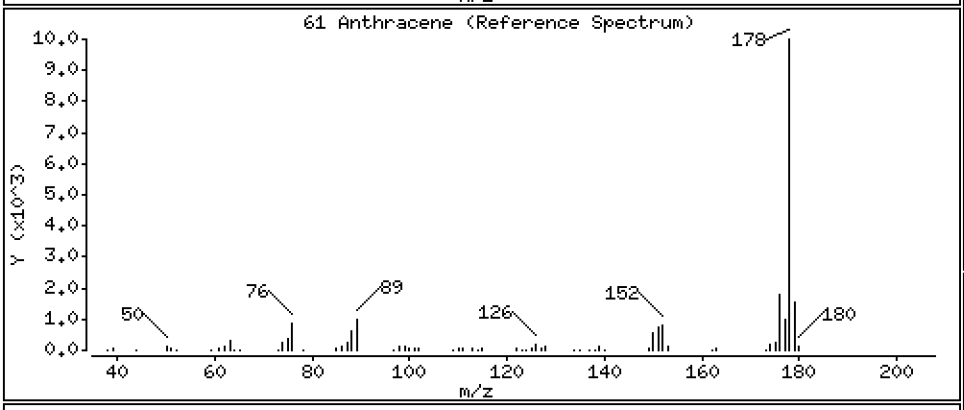
Concentration: 0.2040 ug/mL

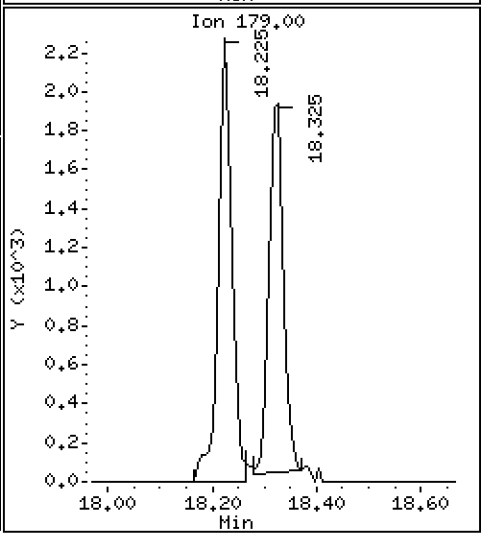


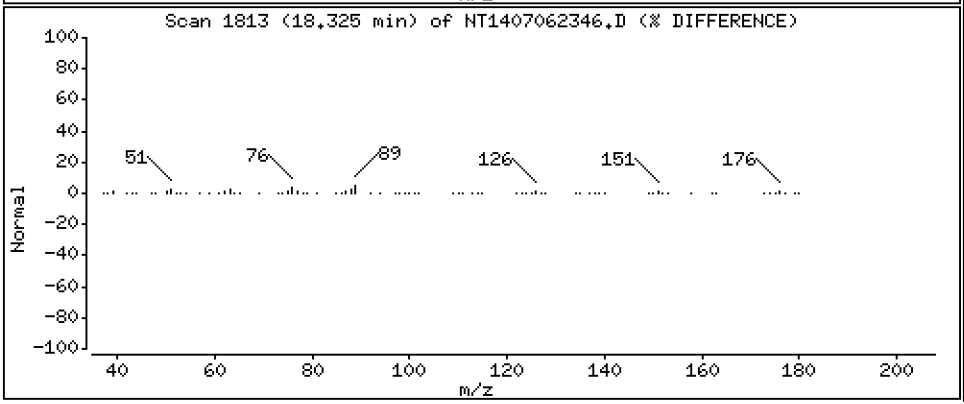












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D

Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

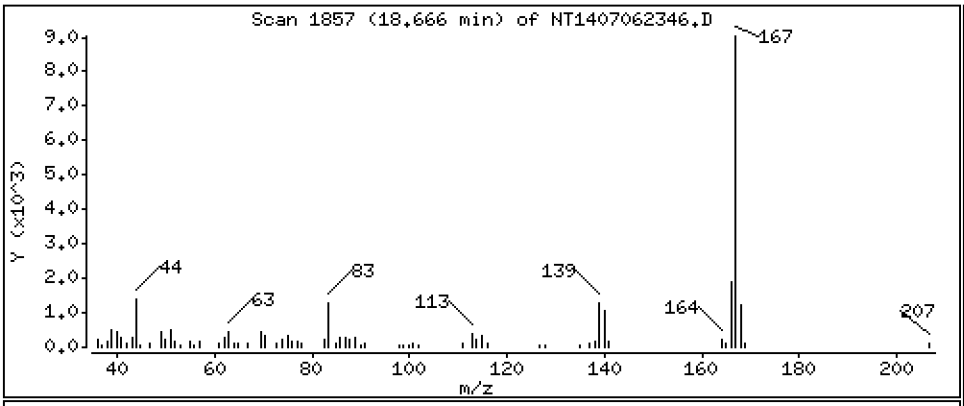
Operator: JGR

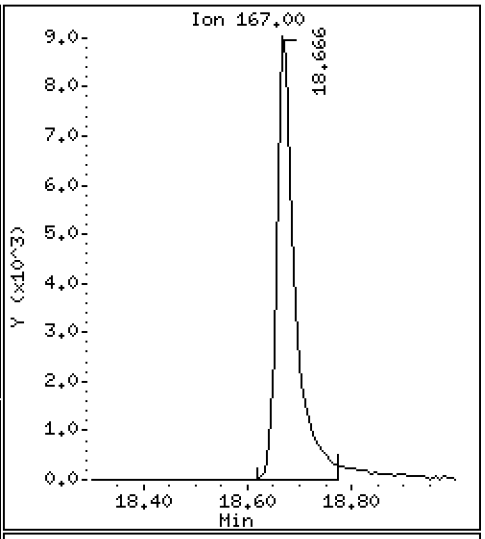
Column phase: ZB-5msi

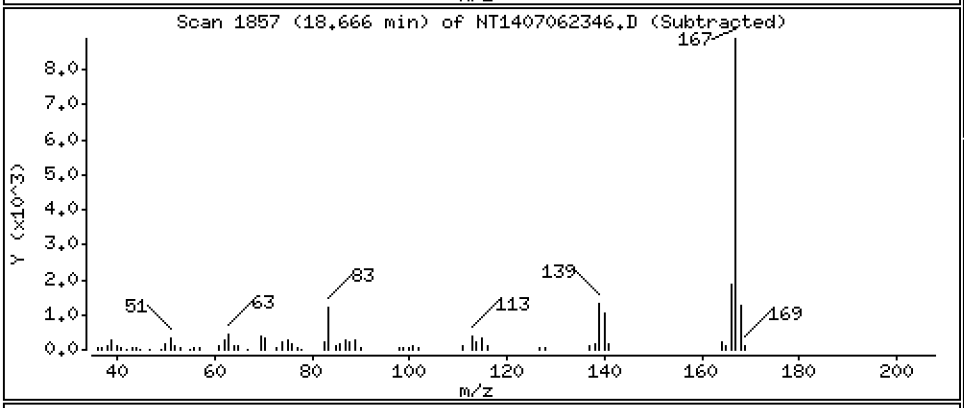
Column diameter: 0.25

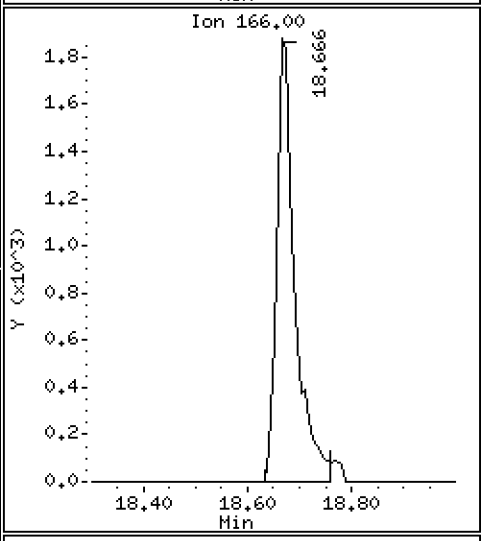
62 Carbazole

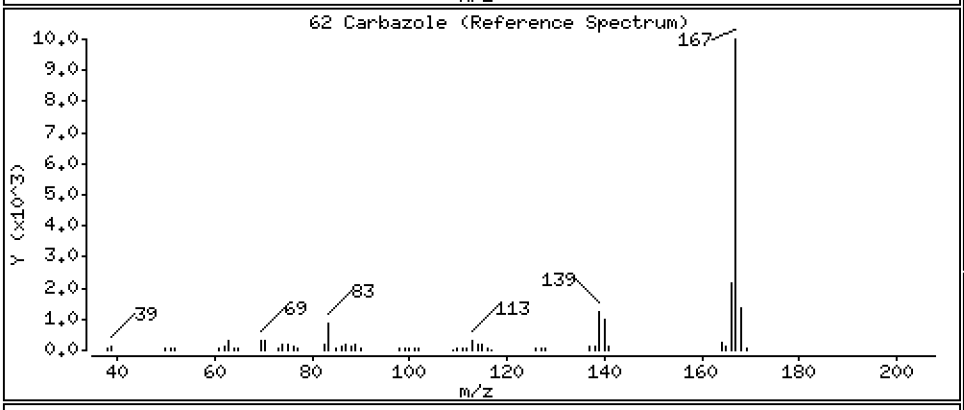
Concentration: 0.1919 ug/mL

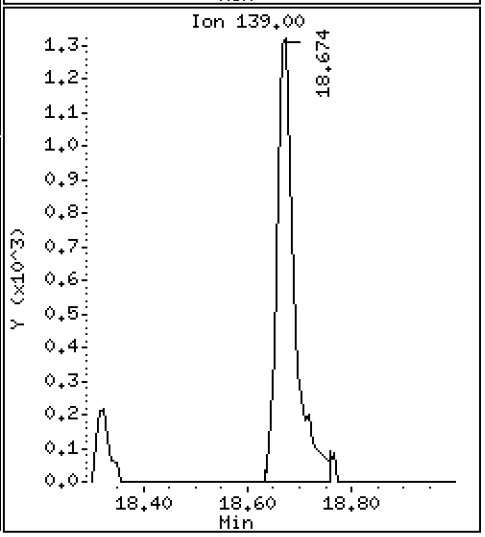


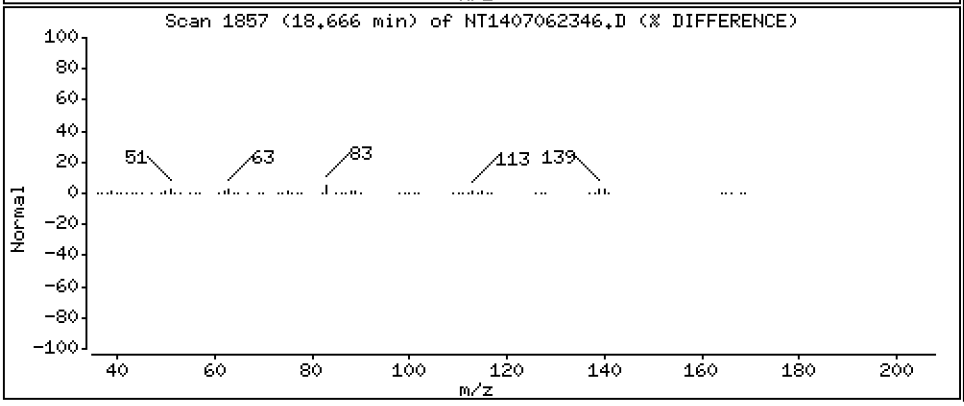












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

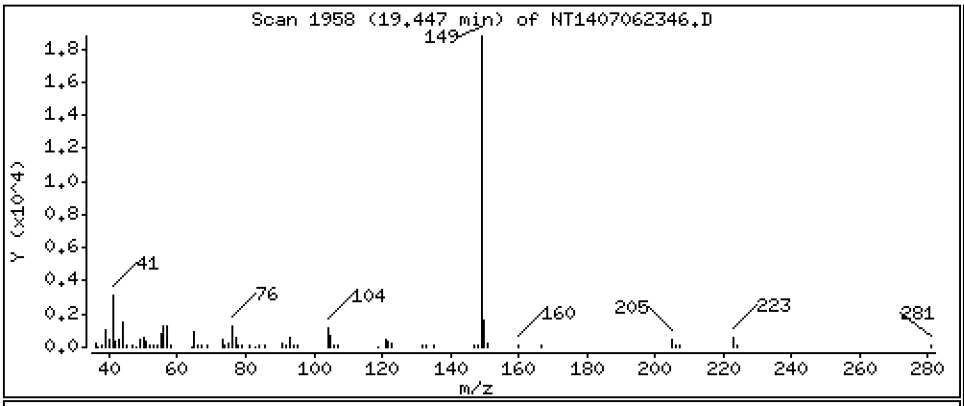
Operator: JGR

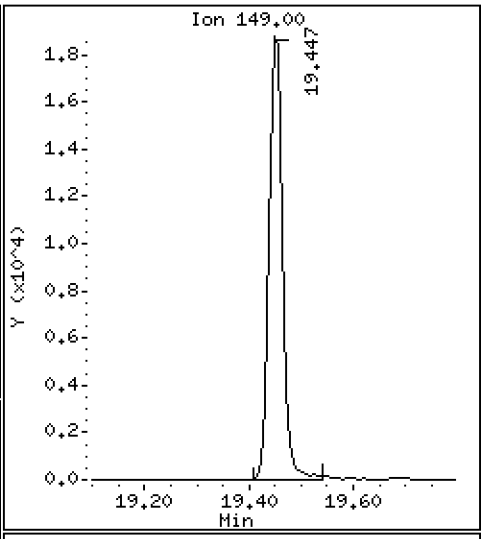
Column phase: ZB-5msi

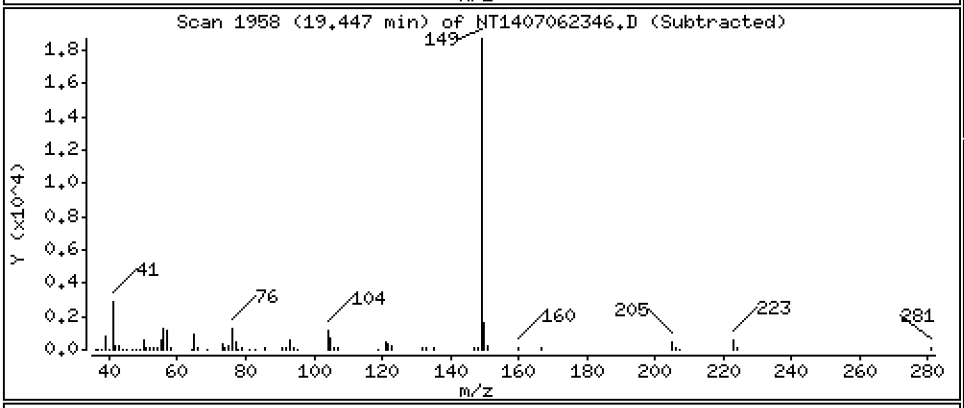
Column diameter: 0.25

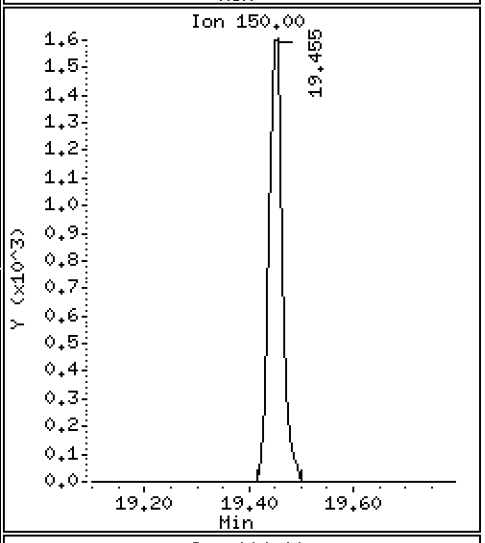
63 Di-n-butylphthalate

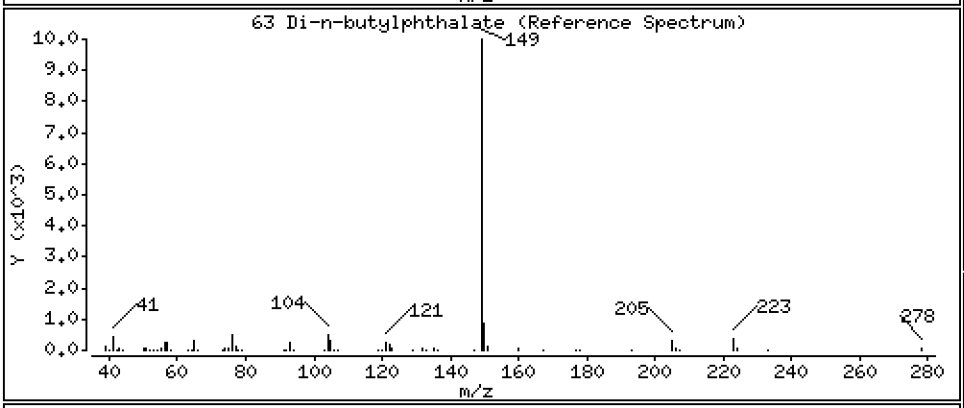
Concentration: 0.2081 ug/mL

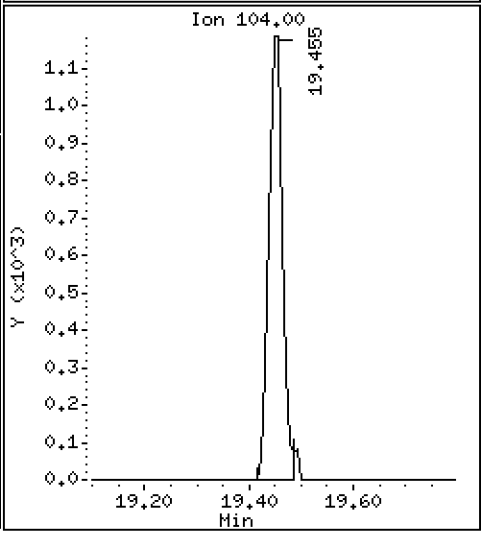


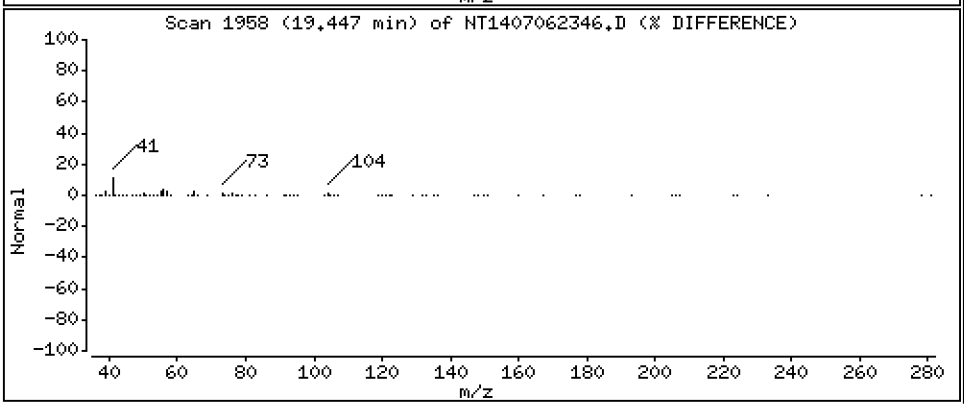












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

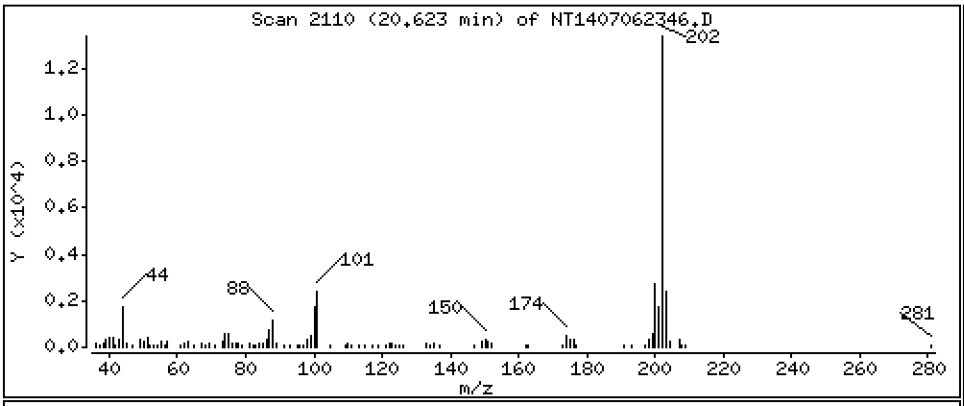
Operator: JGR

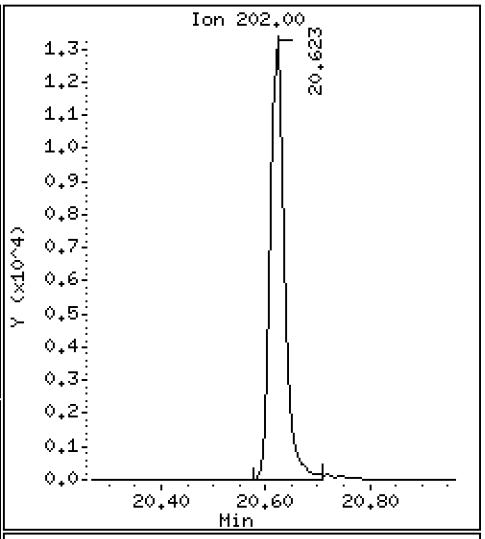
Column phase: ZB-5msi

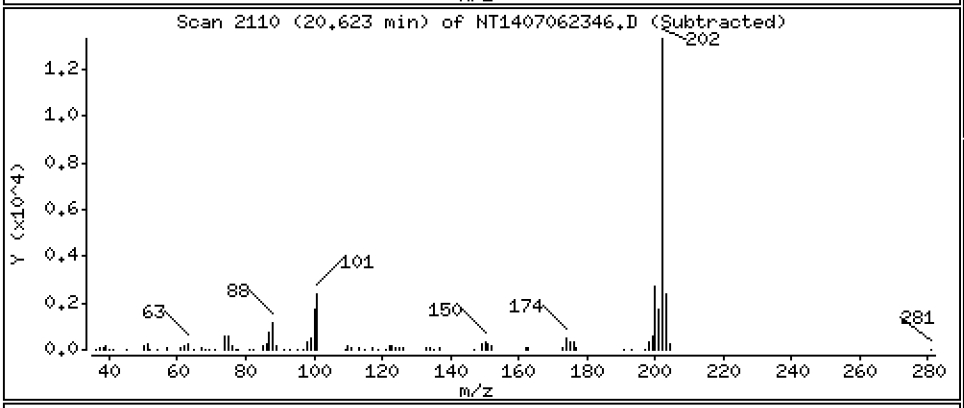
Column diameter: 0.25

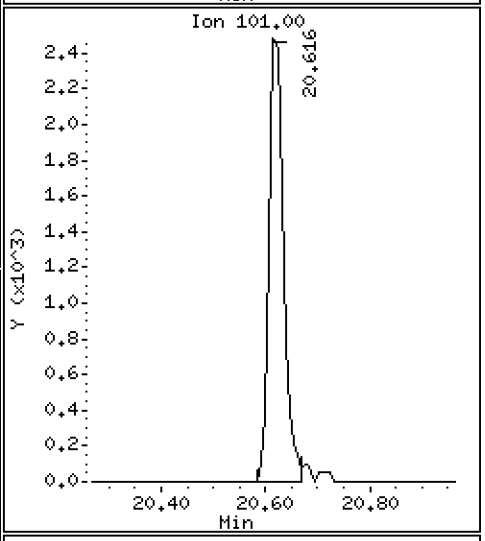
64 Fluoranthene

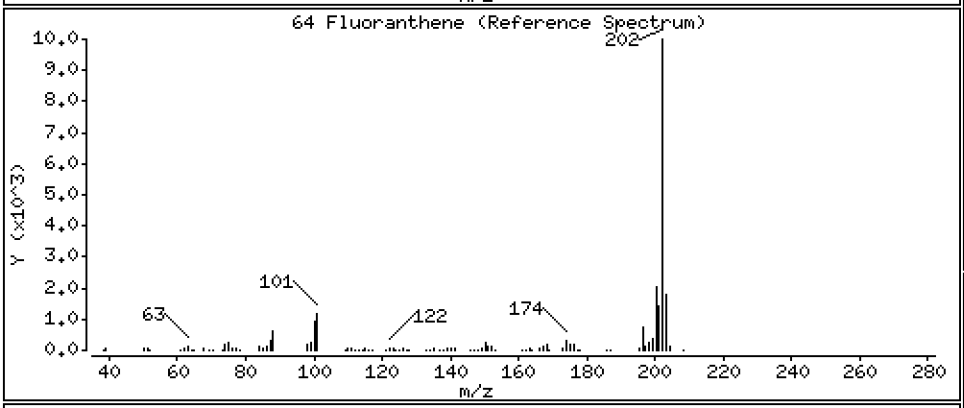
Concentration: 0.2172 ug/mL

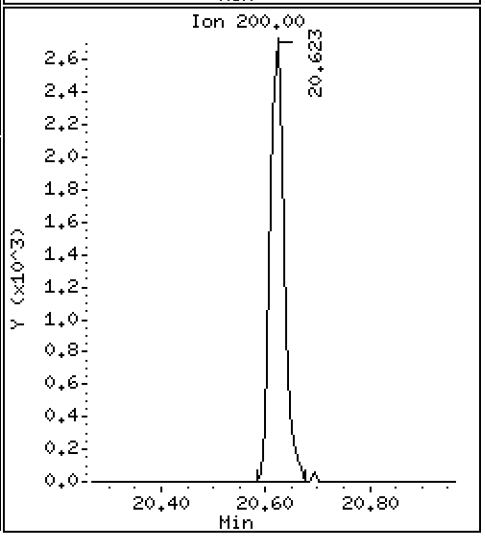


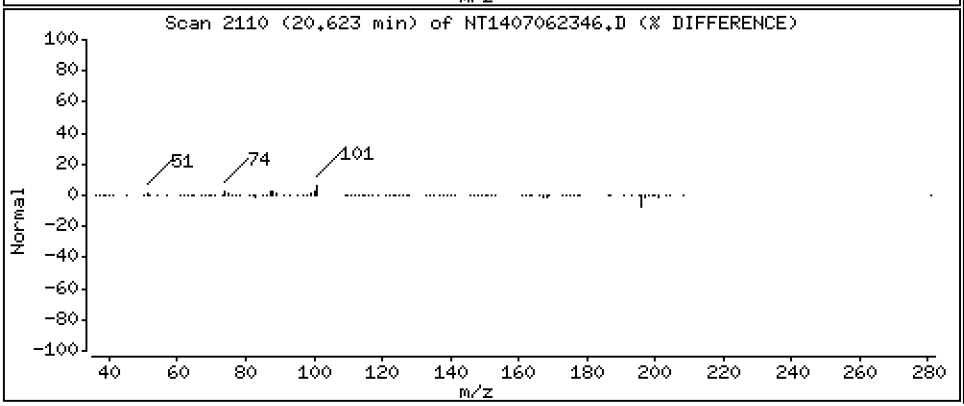












Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

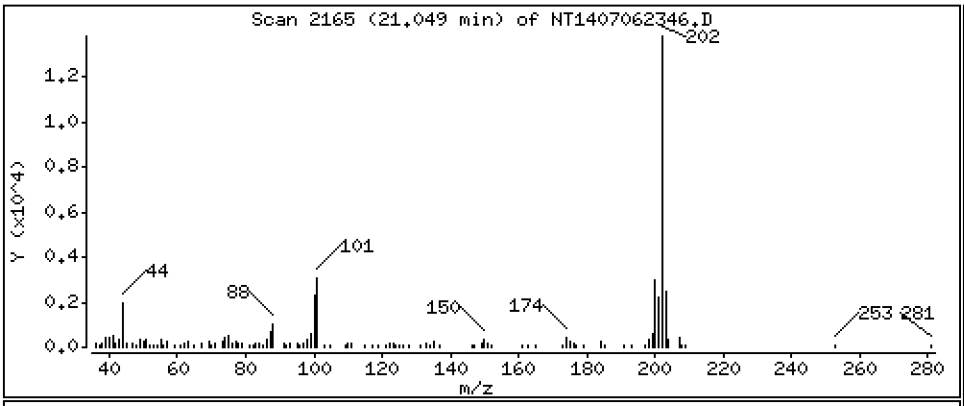
Operator: JGR

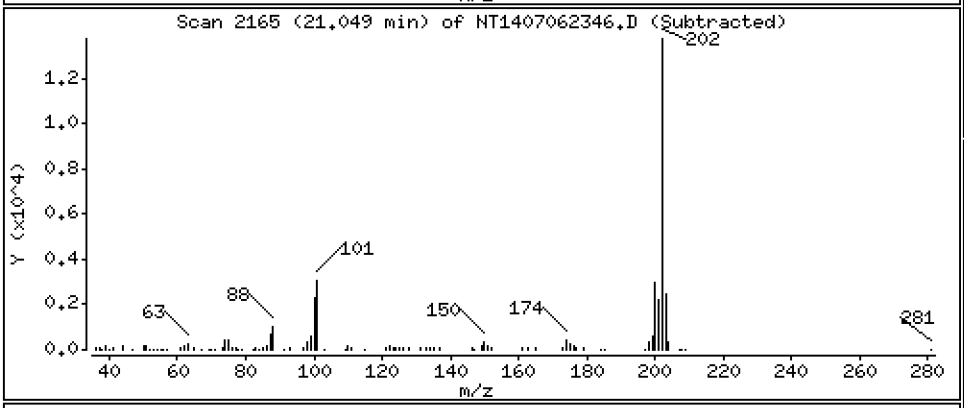
Column phase: ZB-5msi

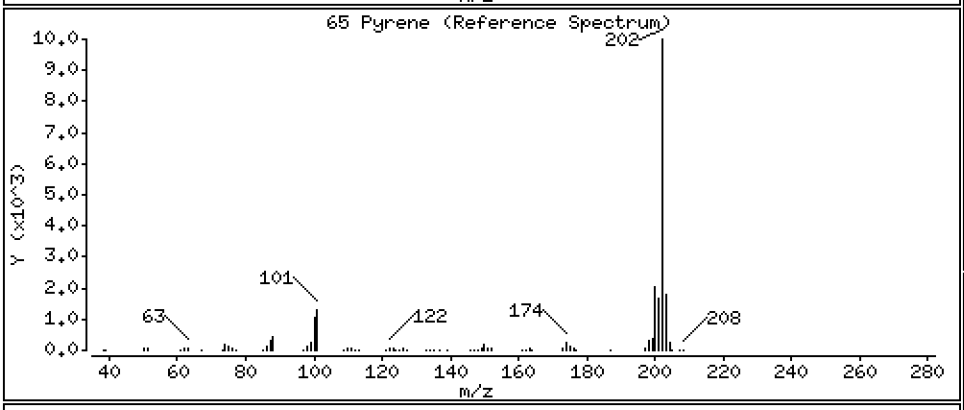
Column diameter: 0.25

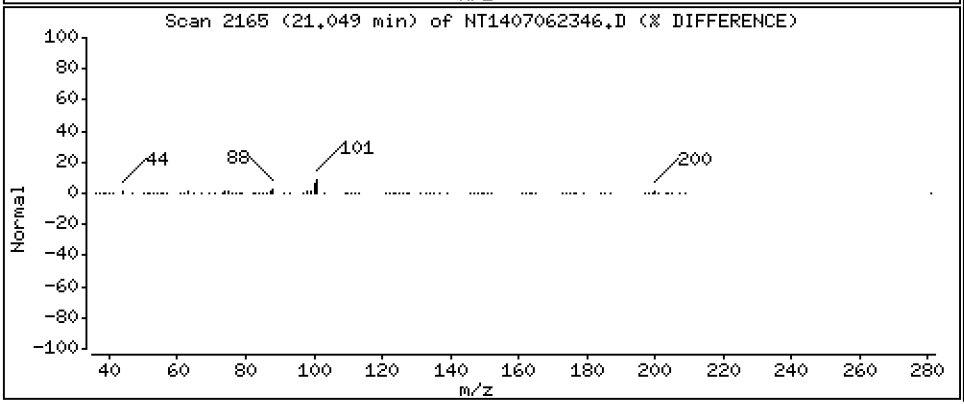
65 Pyrene

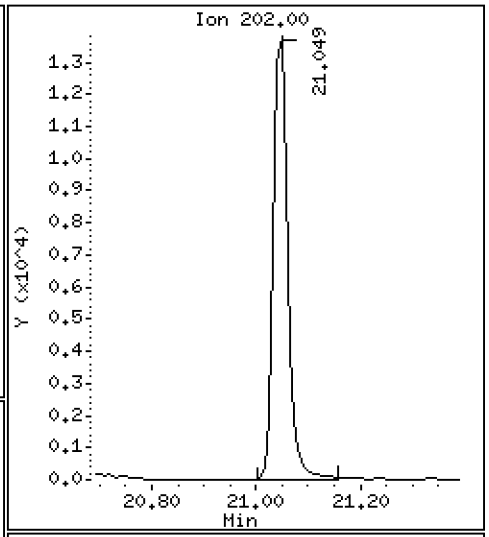
Concentration: 0.2274 ug/mL

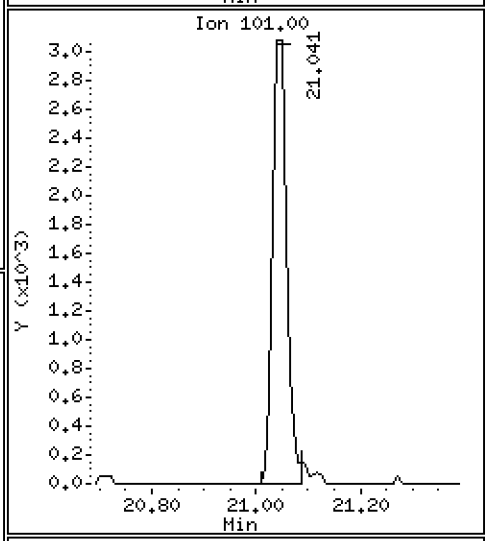


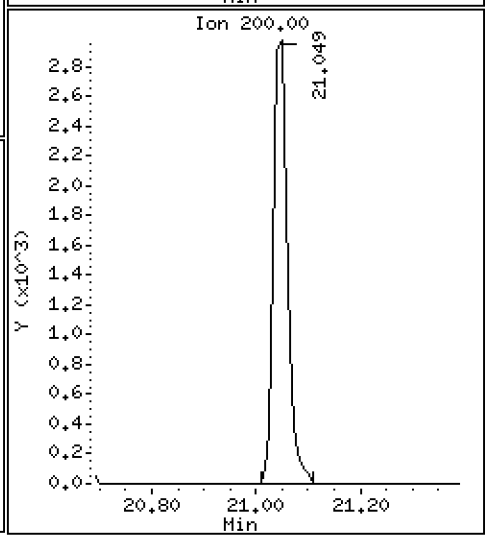












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

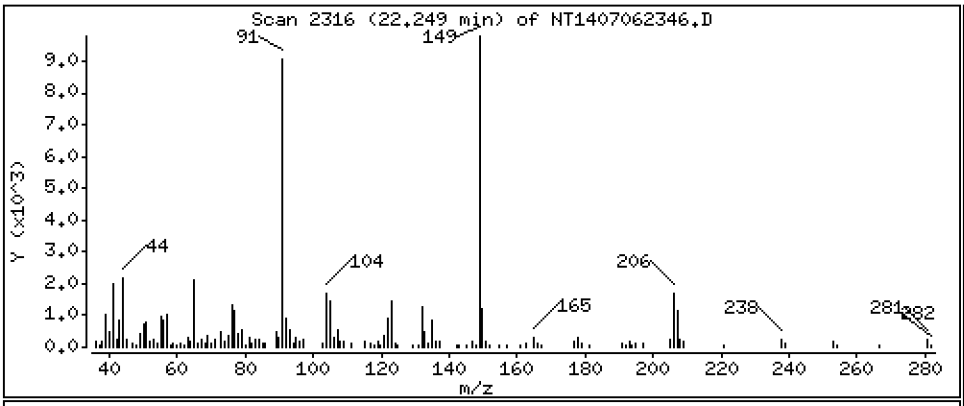
Operator: JGR

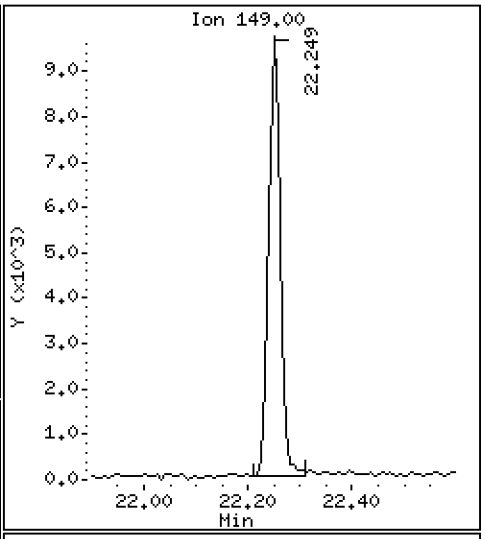
Column phase: ZB-5msi

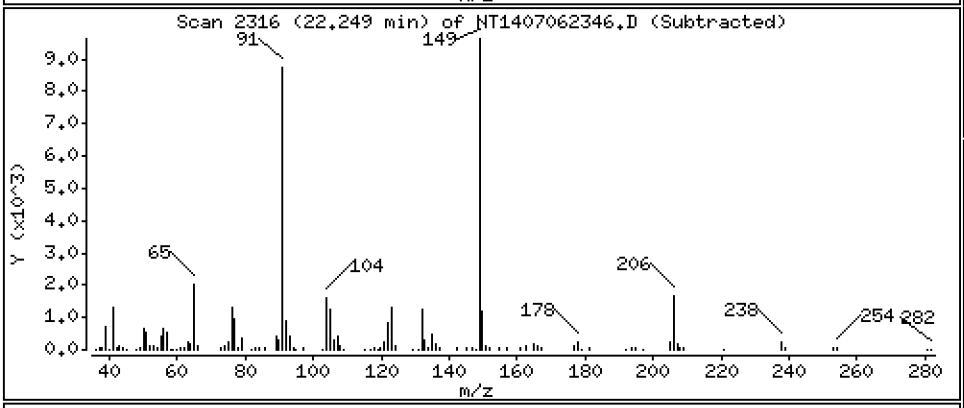
Column diameter: 0.25

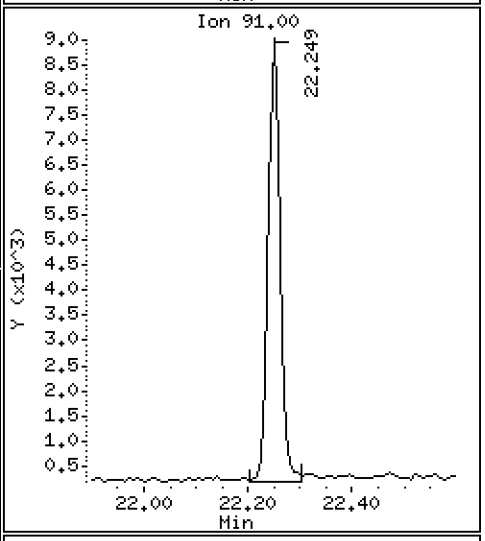
67 Butylbenzylphthalate

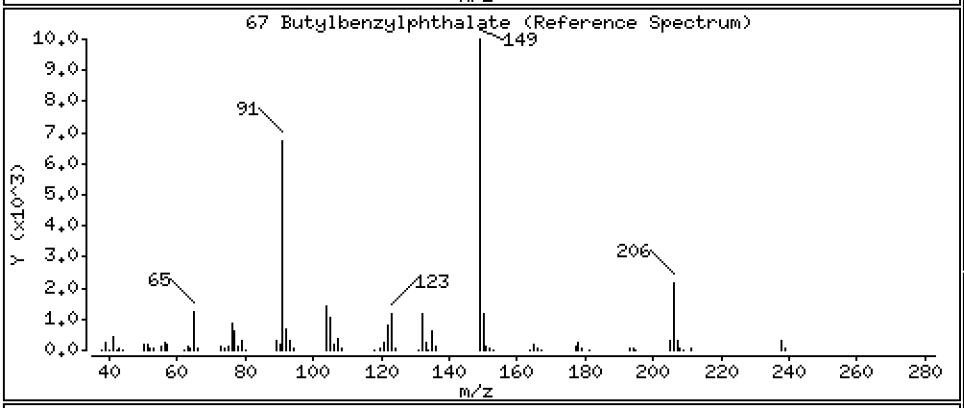
Concentration: 0.2626 ug/mL

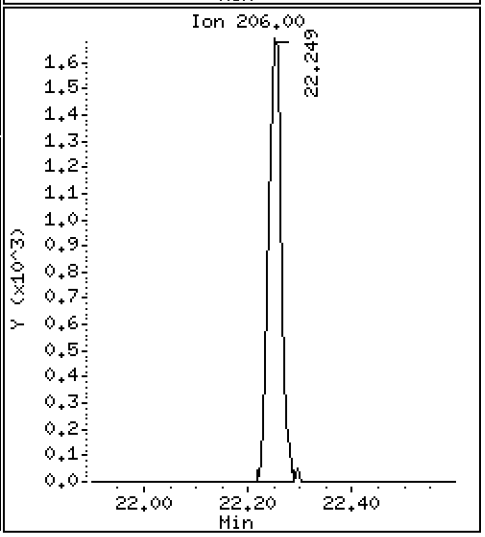


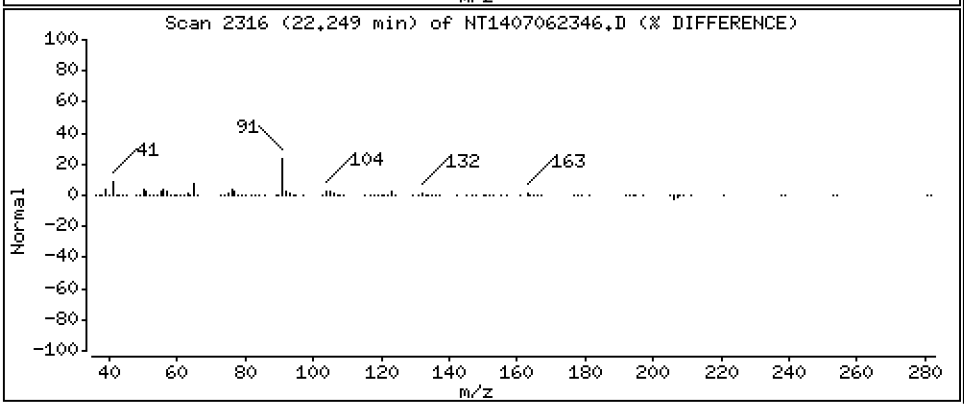












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

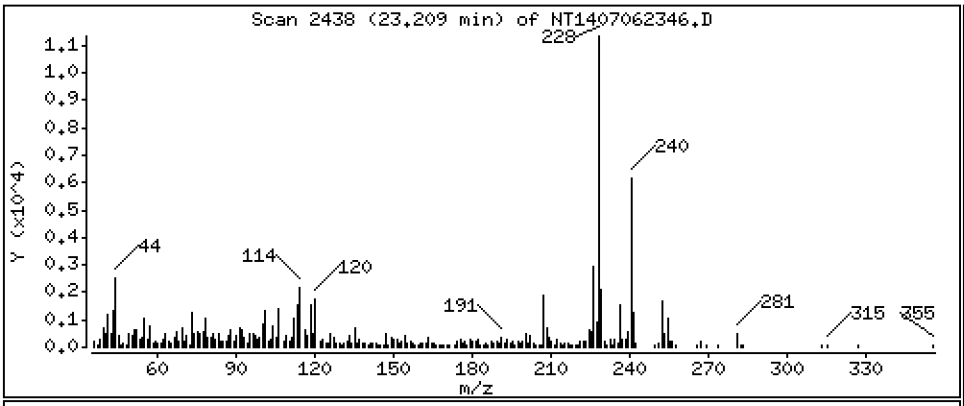
Operator: JGR

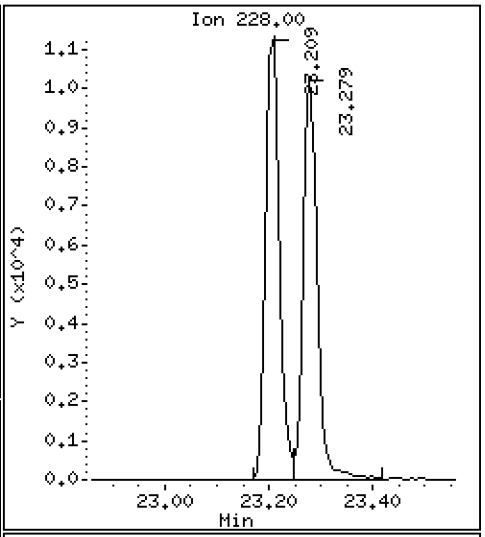
Column phase: ZB-5msi

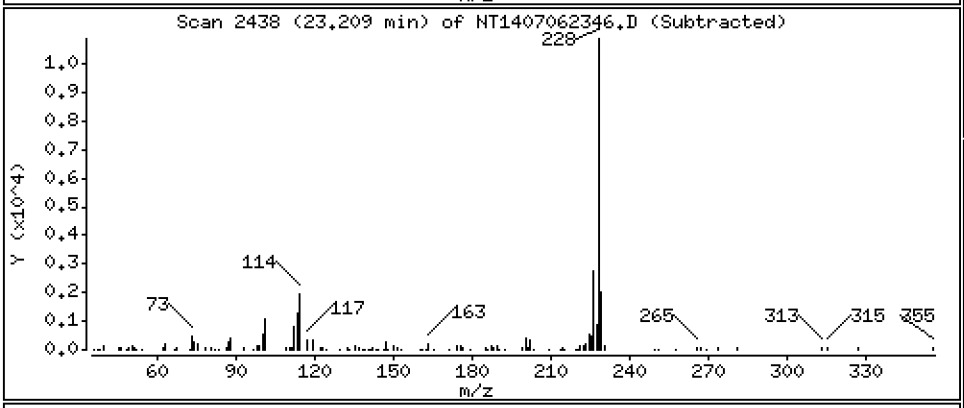
Column diameter: 0.25

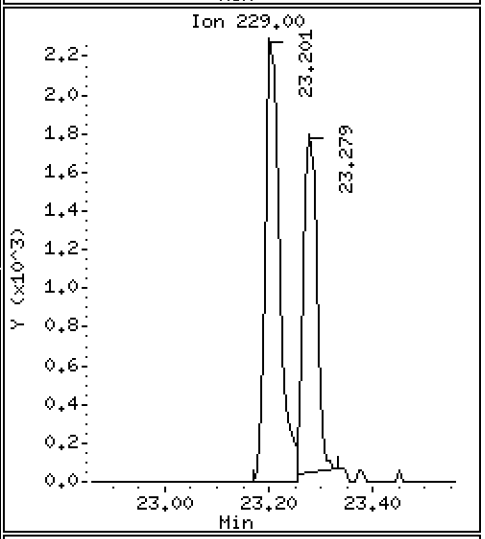
68 Benzo(a)anthracene

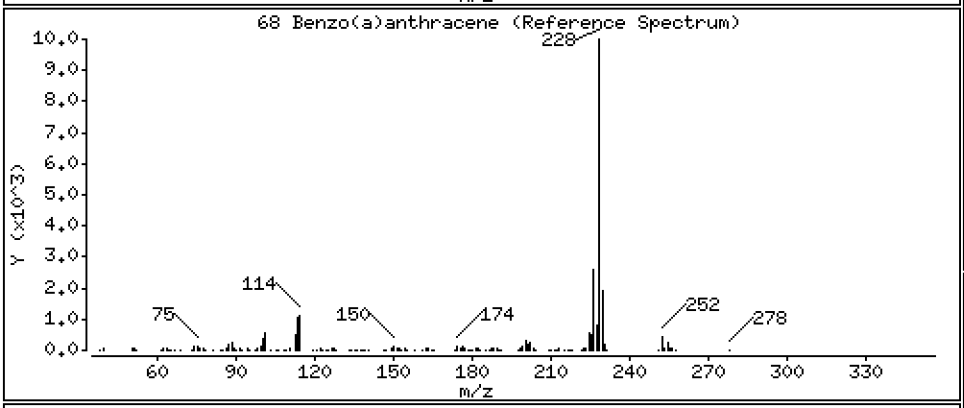
Concentration: 0.2096 ug/mL

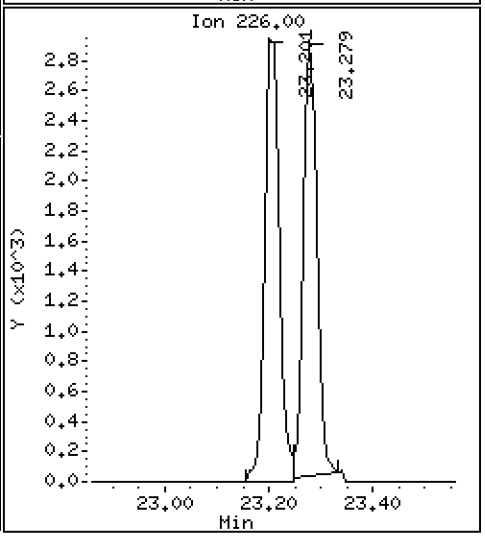


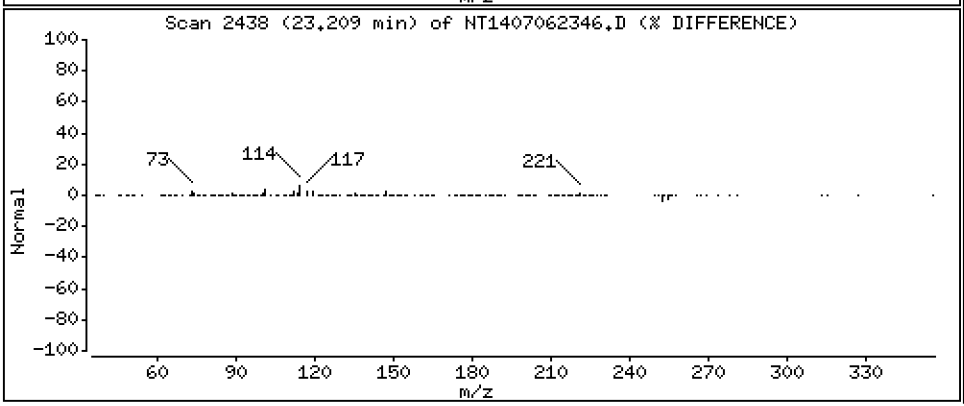












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D

Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

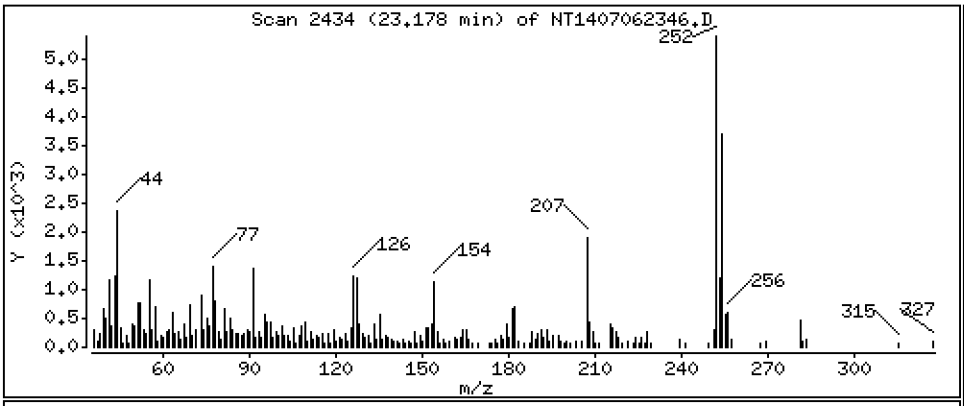
Operator: JGR

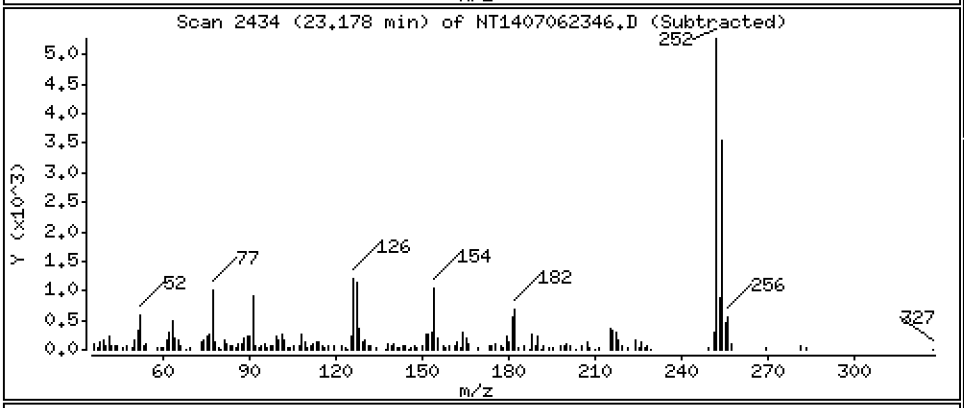
Column phase: ZB-5msi

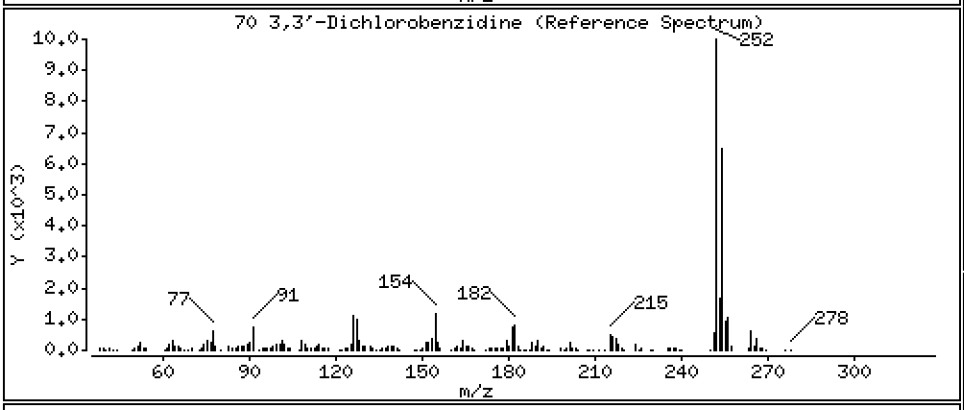
Column diameter: 0.25

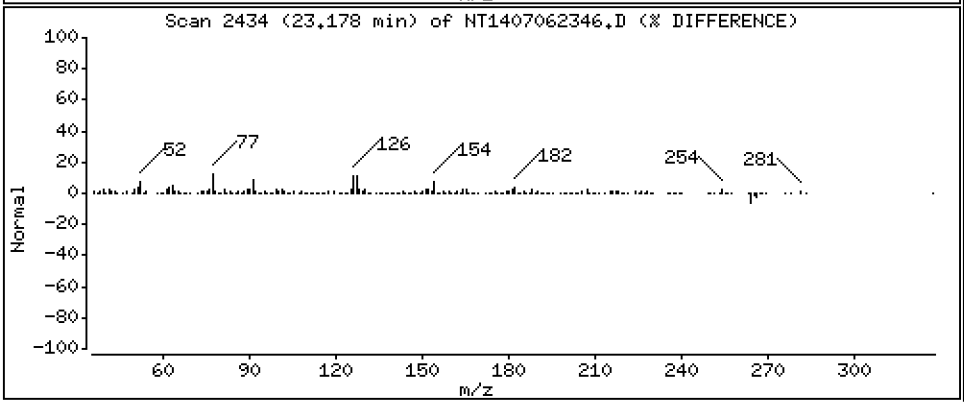
70 3,3'-Dichlorobenzidine

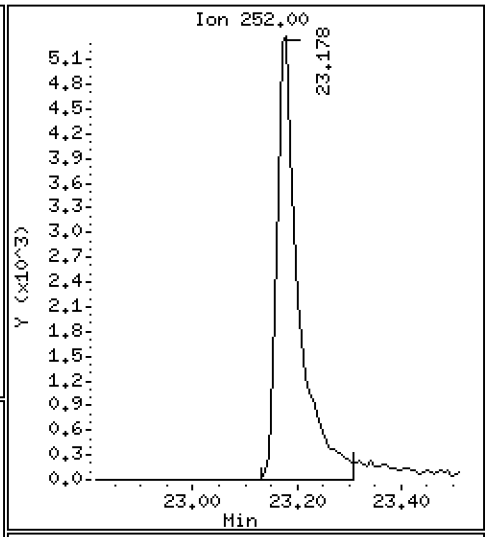
Concentration: 0.5992 ug/mL

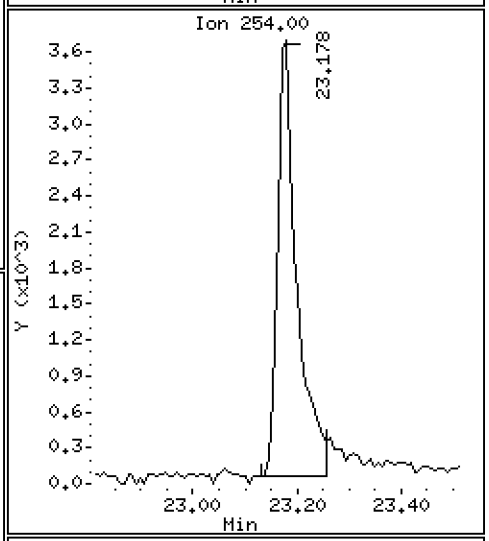


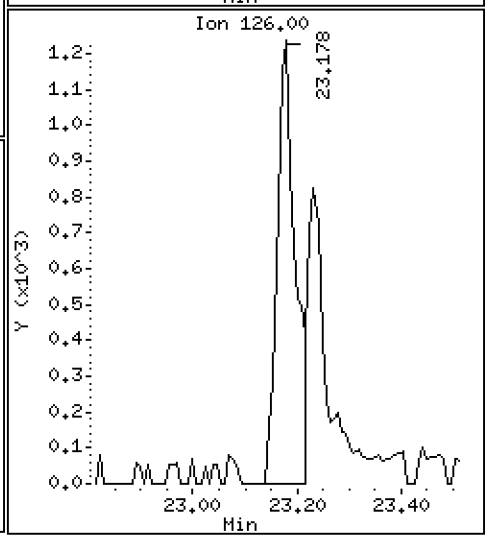












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D

Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

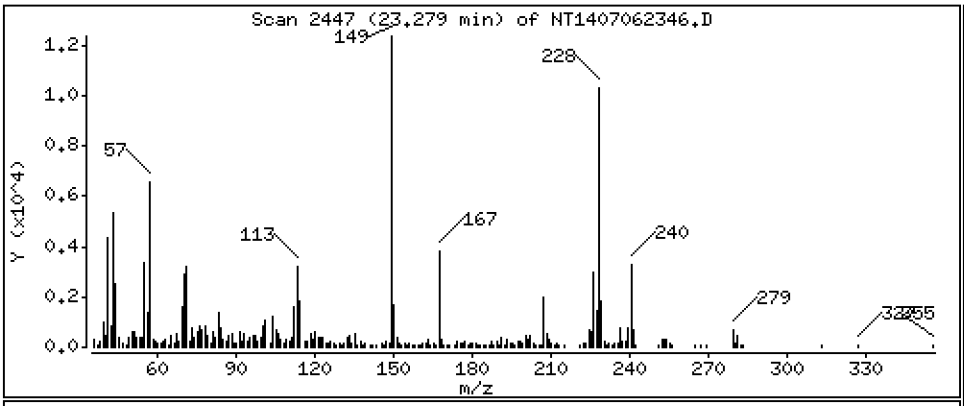
Operator: JGR

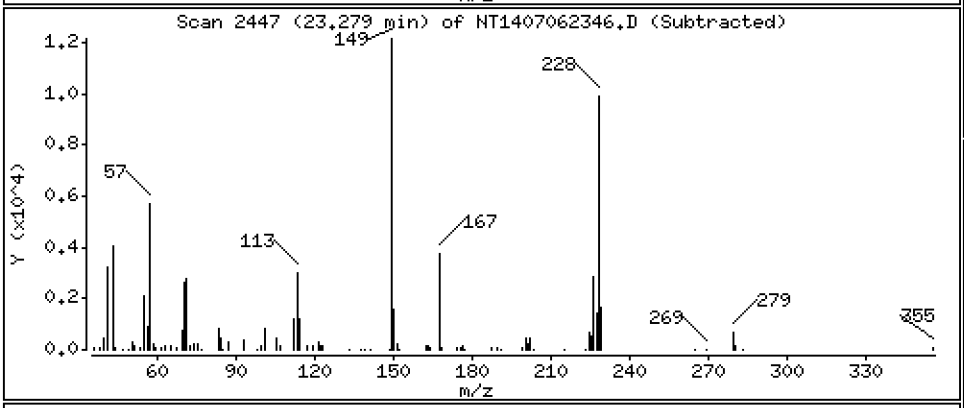
Column phase: ZB-5msi

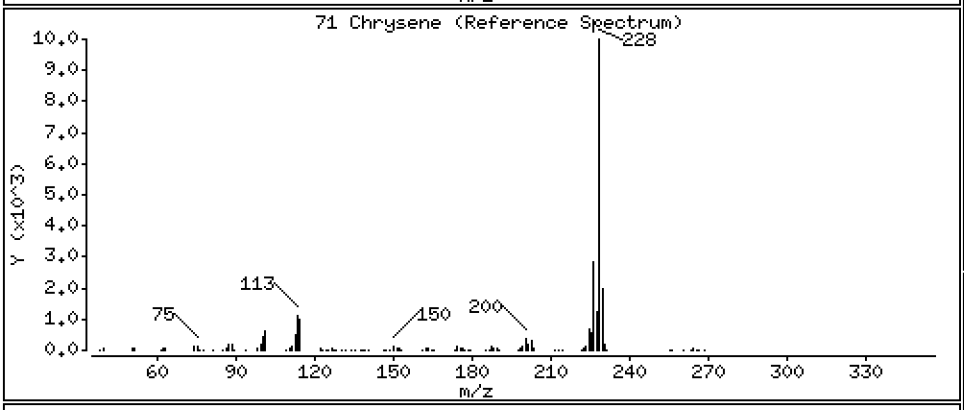
Column diameter: 0.25

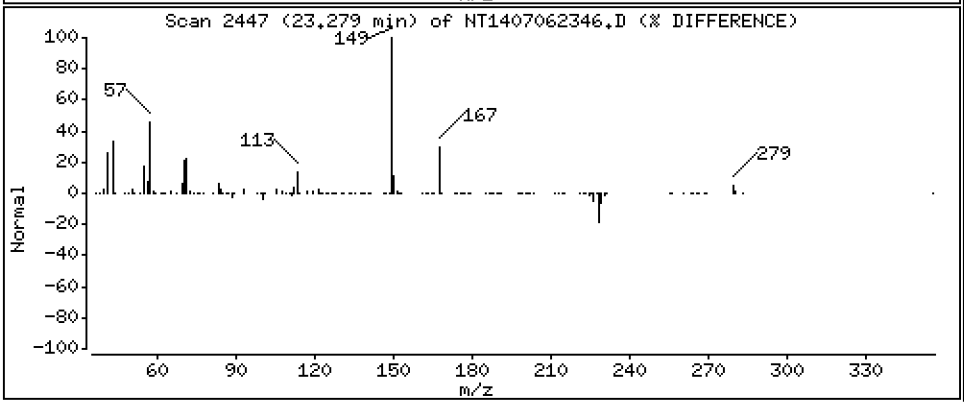
71 Chrysene

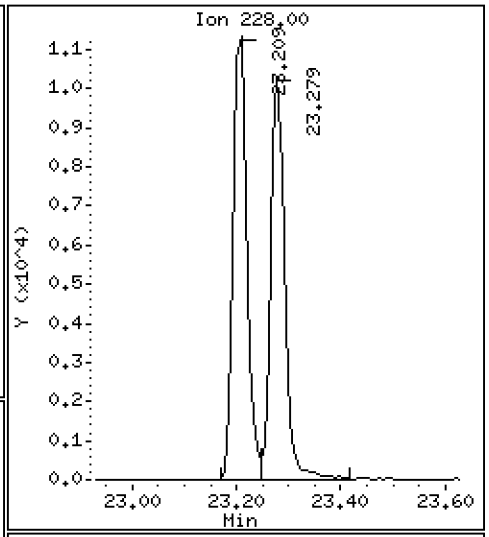
Concentration: 0.2176 ug/mL

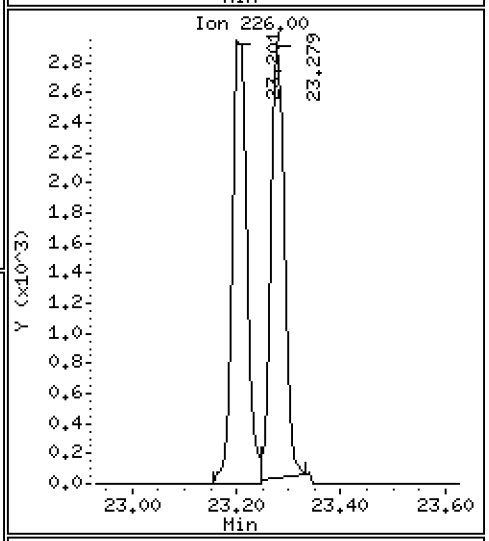


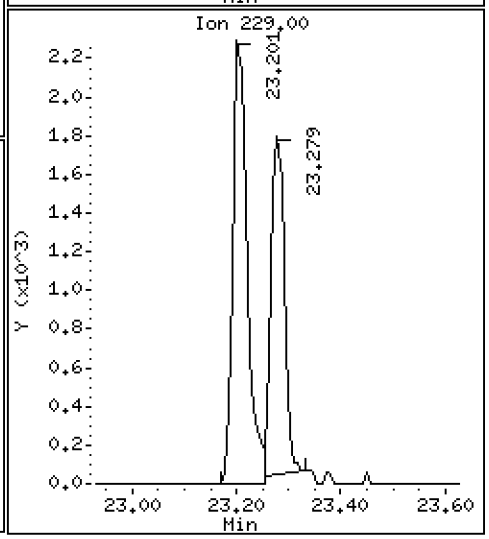












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

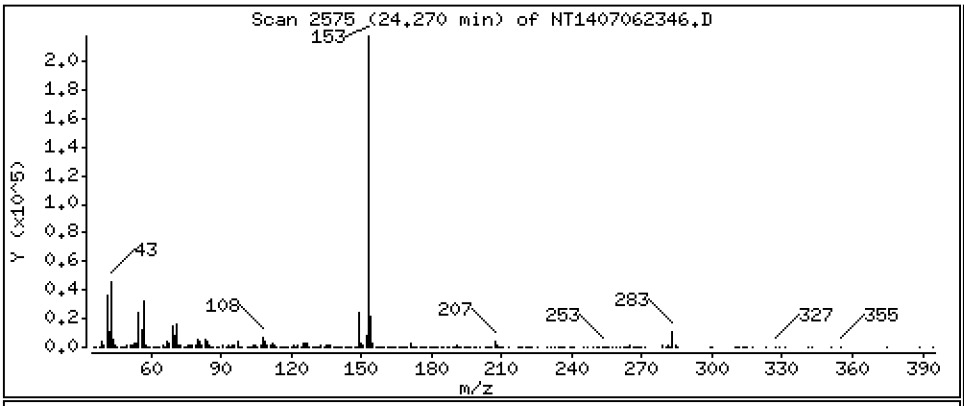
Operator: JGR

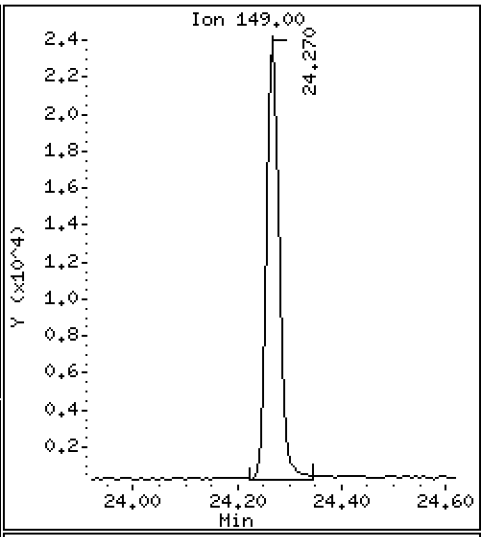
Column phase: ZB-5msi

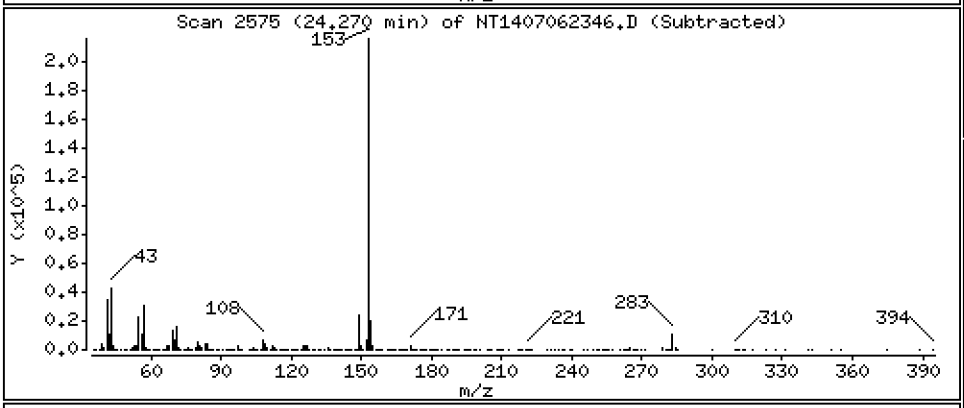
Column diameter: 0.25

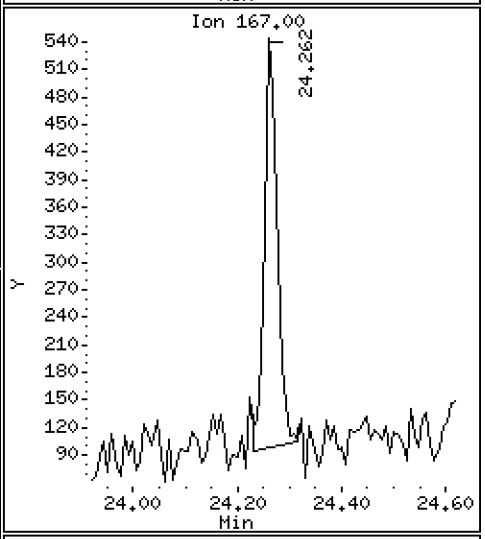
72 bis(2-Ethylhexyl)phthalate

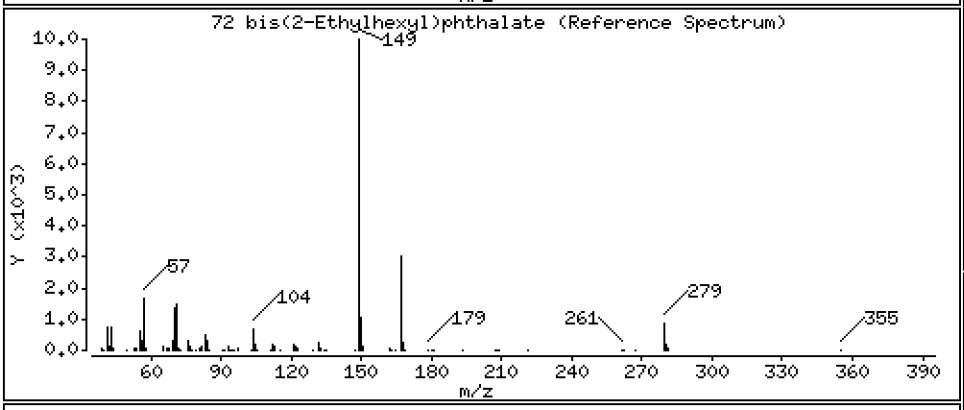
Concentration: 0.2156 ug/mL

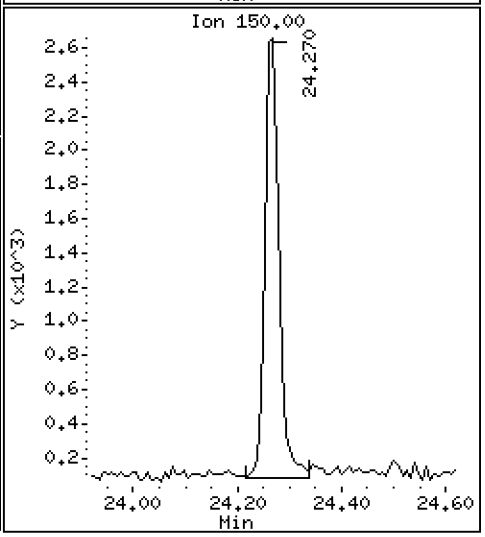


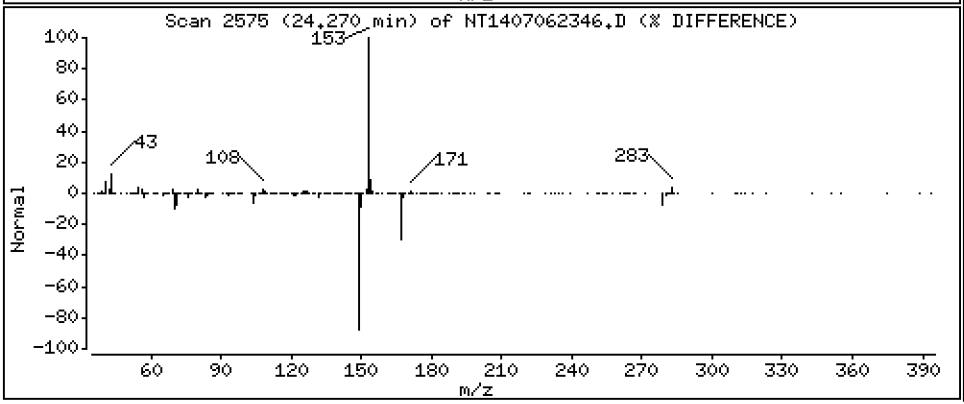












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

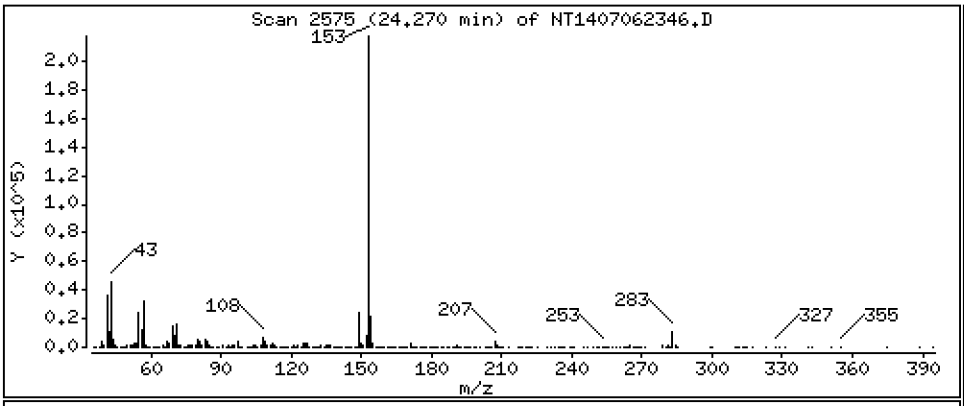
Operator: JGR

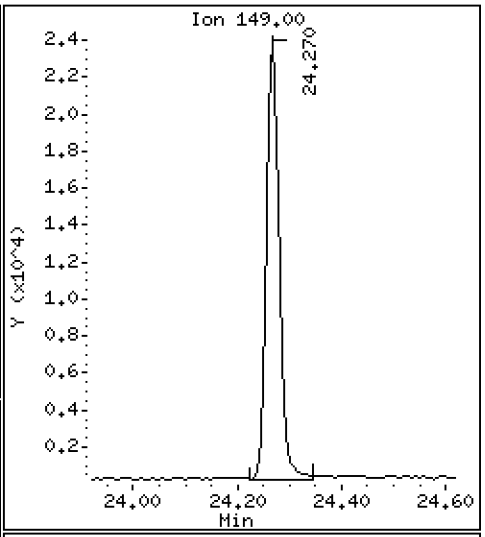
Column phase: ZB-5msi

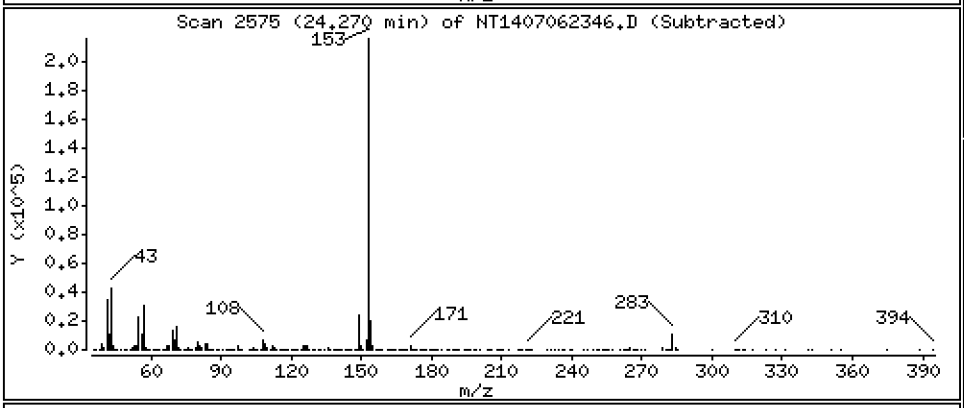
Column diameter: 0.25

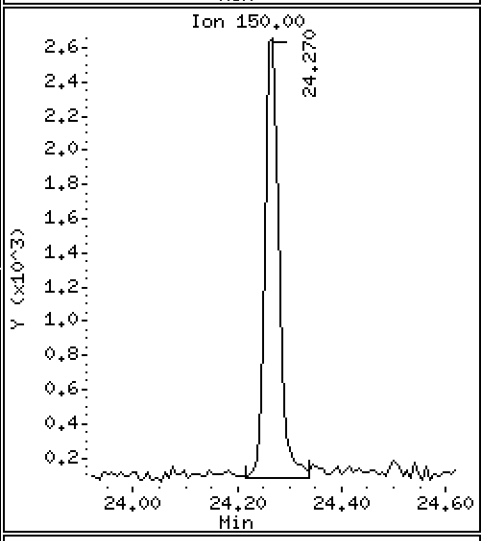
73 Di-n-octylphthalate

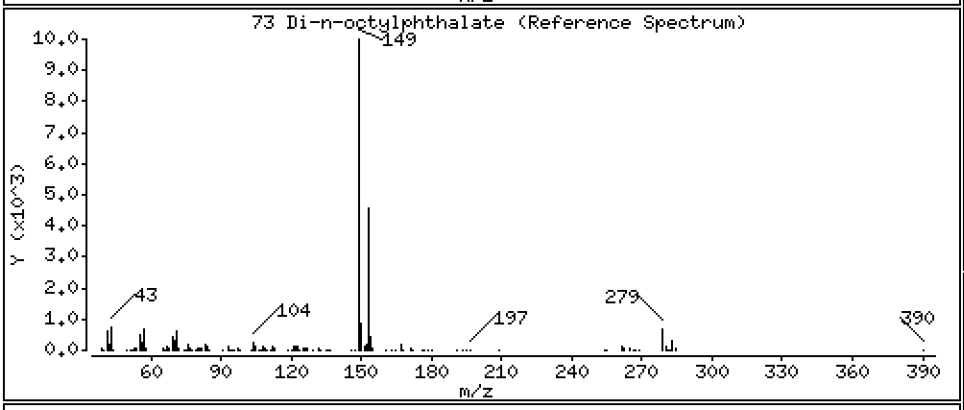
Concentration: 0.2156 ug/mL

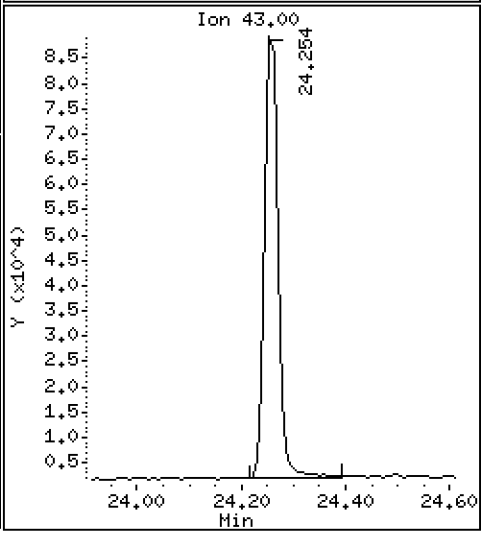


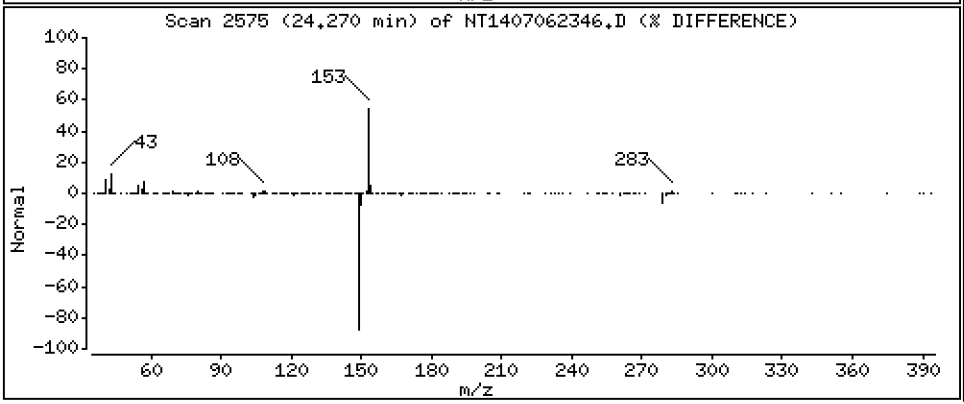












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

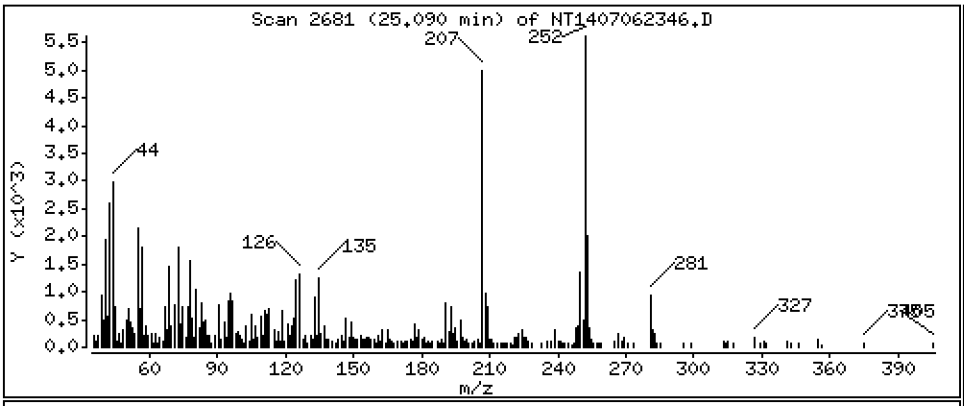
Operator: JGR

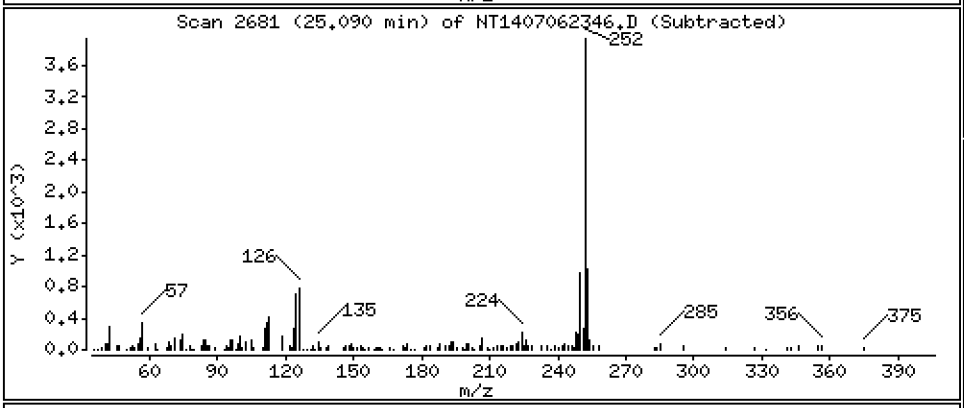
Column phase: ZB-5msi

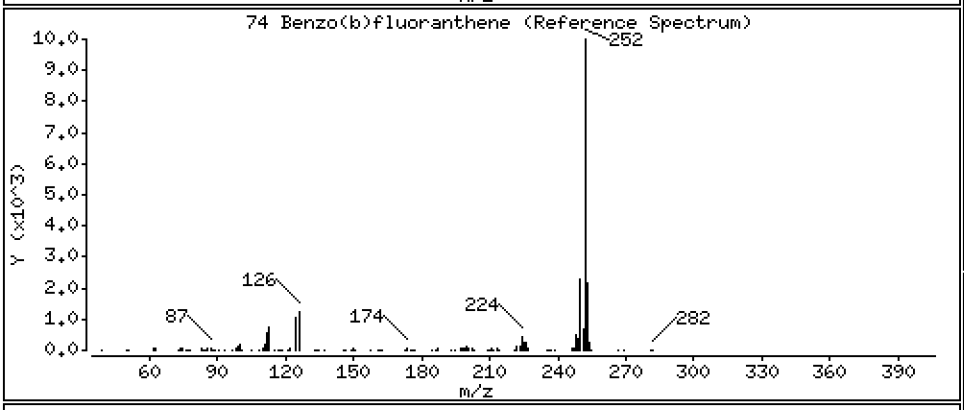
Column diameter: 0.25

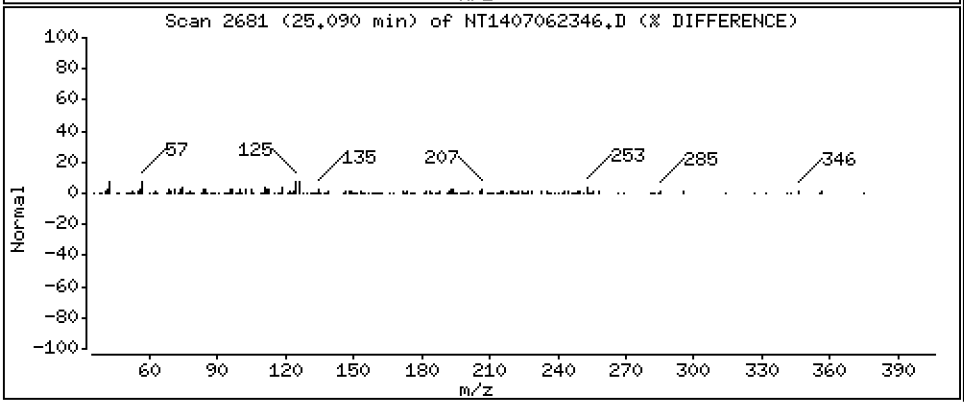
74 Benzo(b)fluoranthene

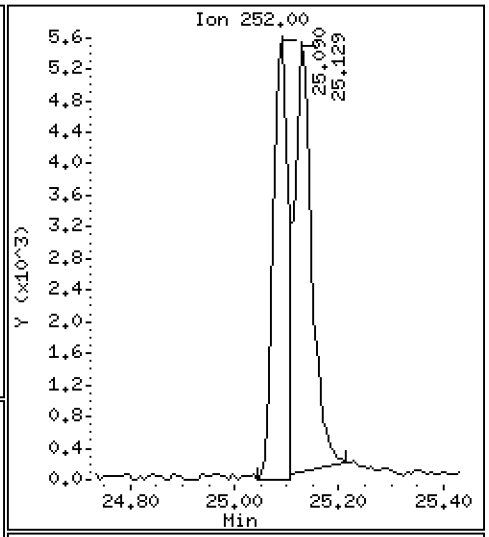
Concentration: 0.2139 ug/mL

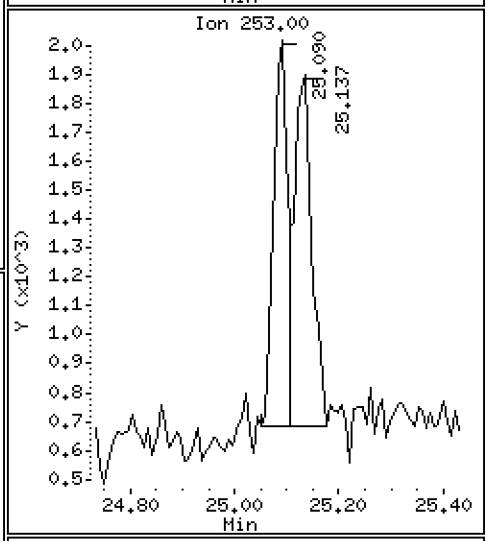


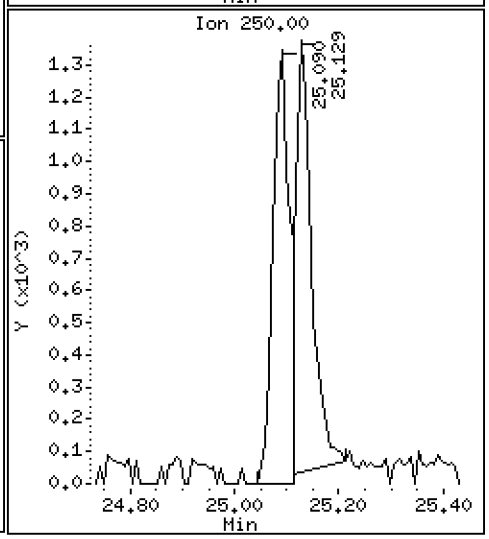












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

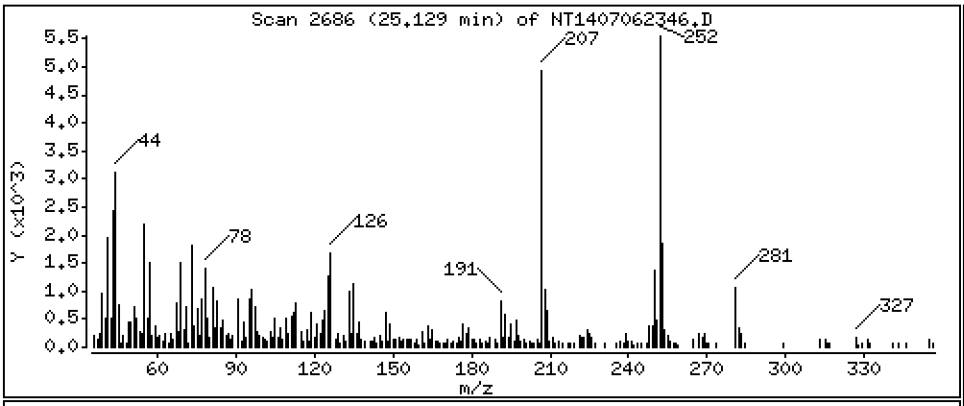
Operator: JGR

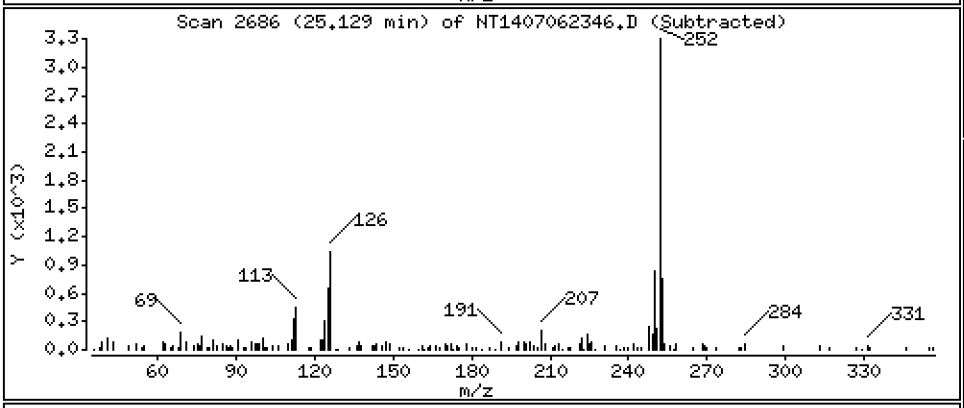
Column phase: ZB-5msi

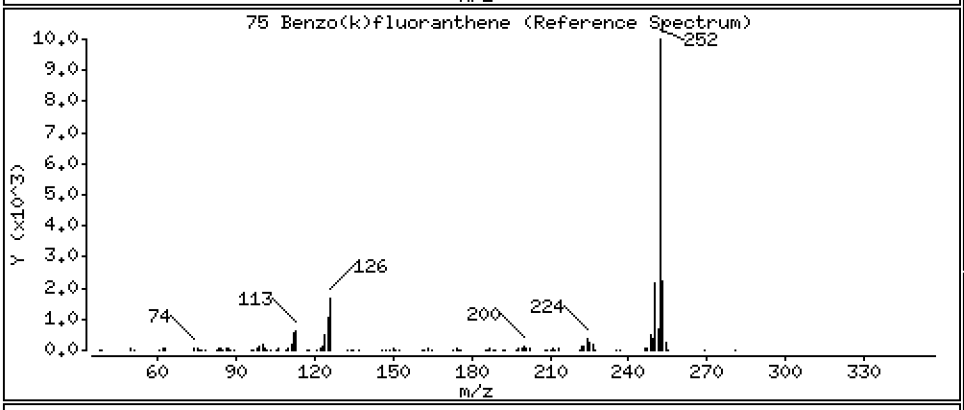
Column diameter: 0.25

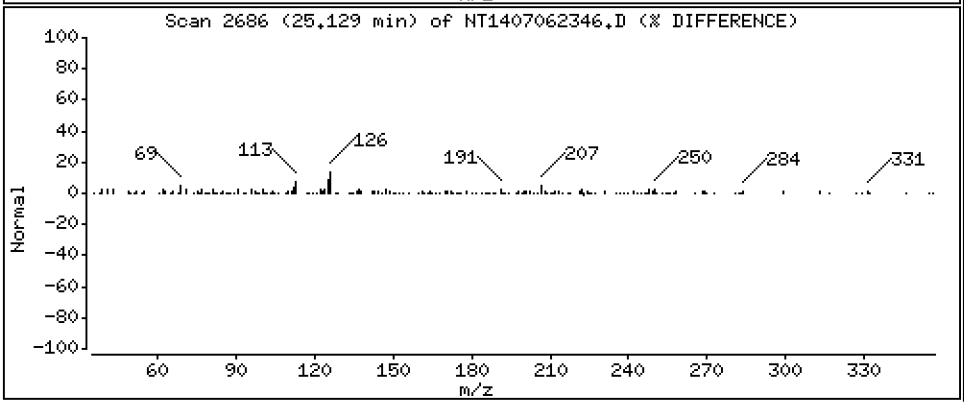
75 Benzo(k)fluoranthene

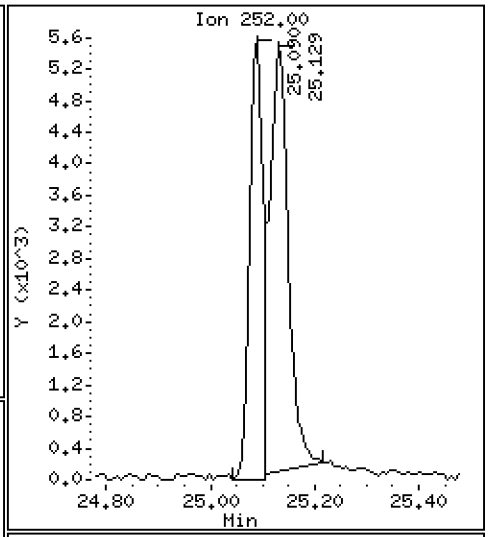
Concentration: 0.2447 ug/mL

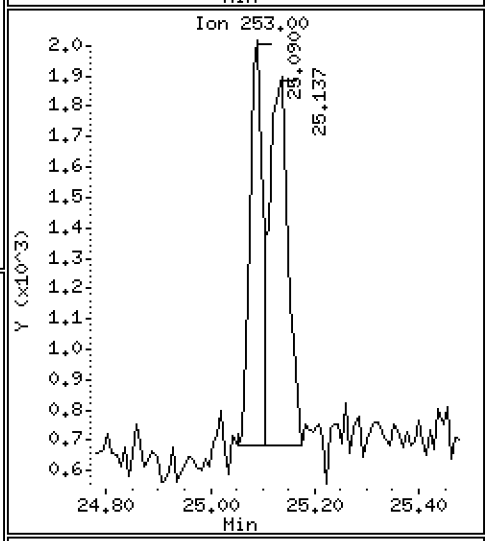


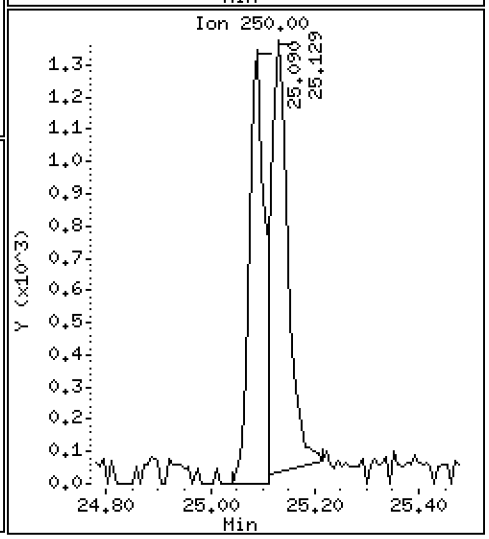












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

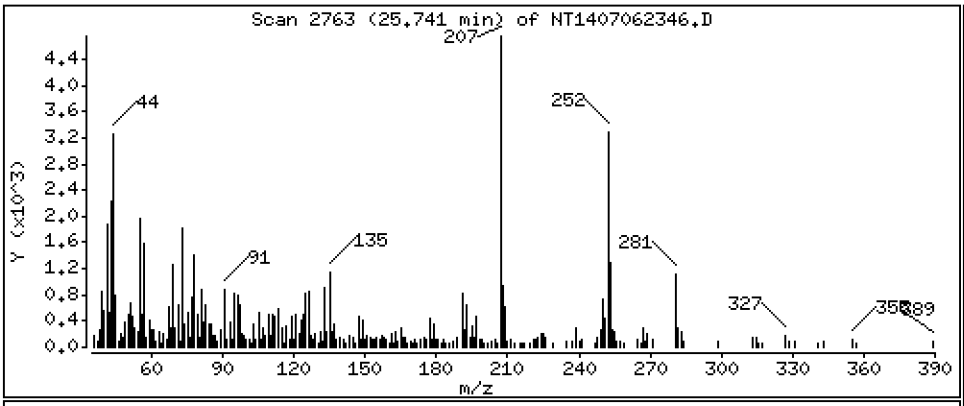
Operator: JGR

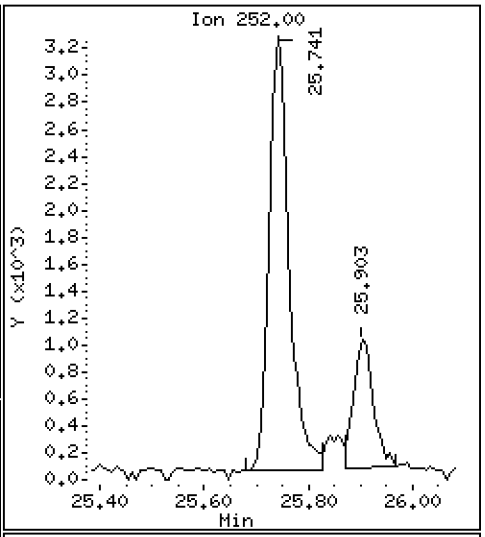
Column phase: ZB-5msi

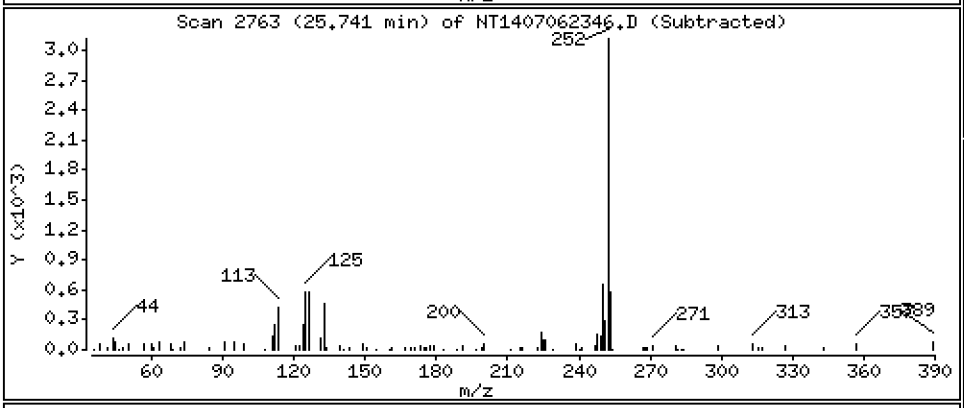
Column diameter: 0.25

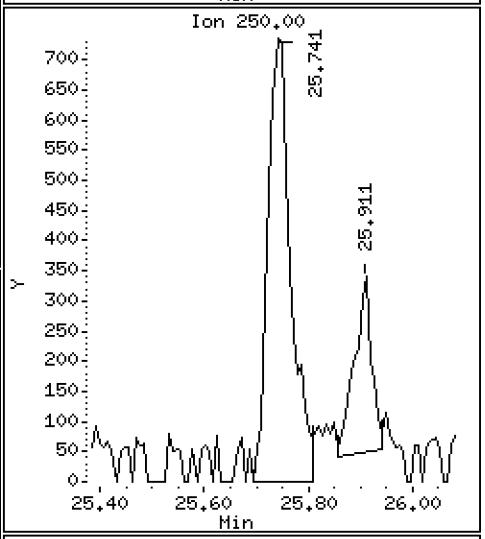
76 Benzo(a)pyrene

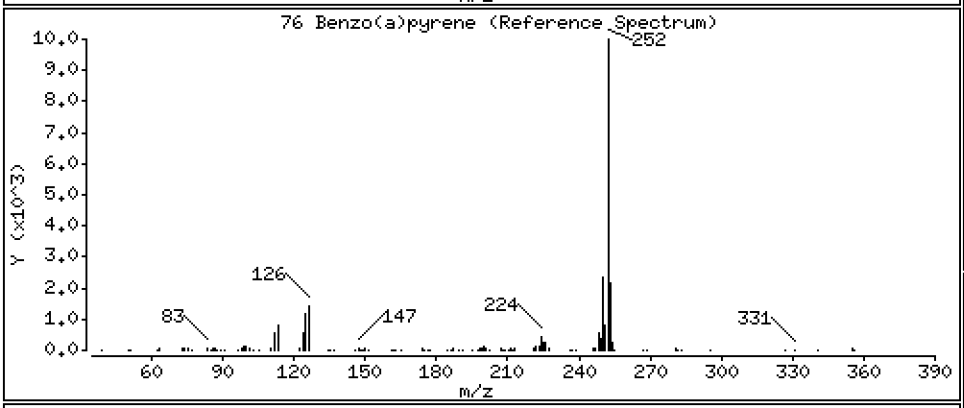
Concentration: 0.2136 ug/mL

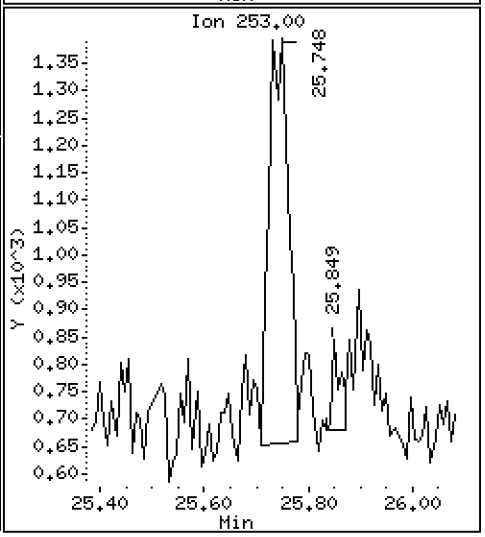


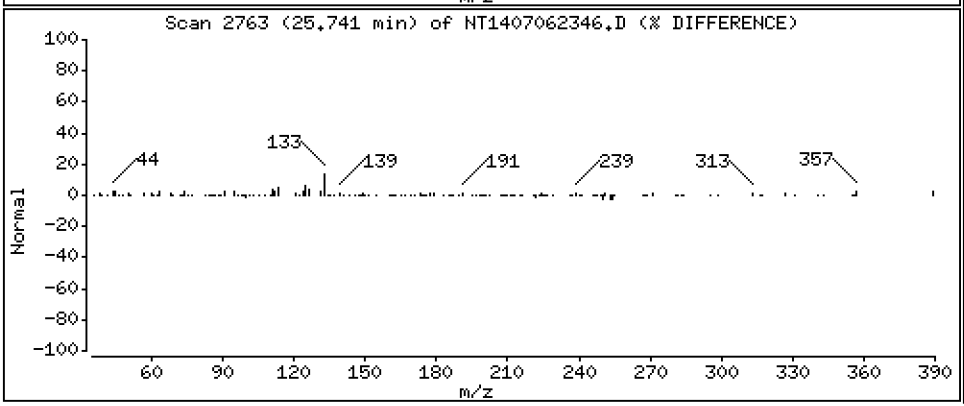












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D

Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

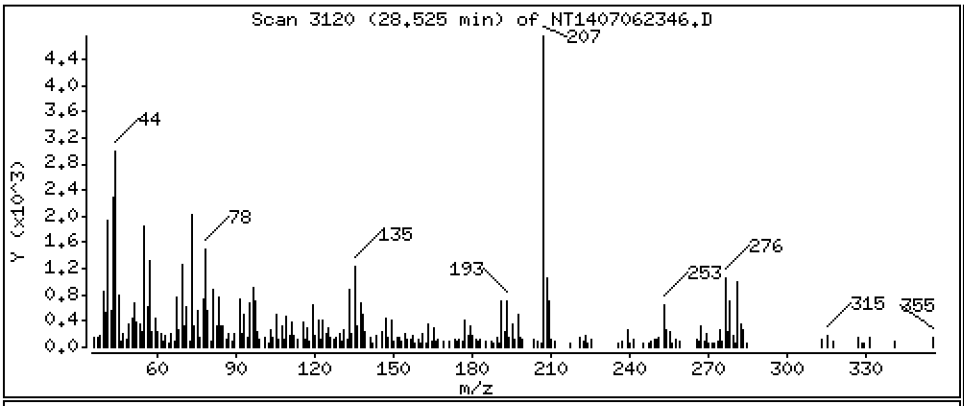
Operator: JGR

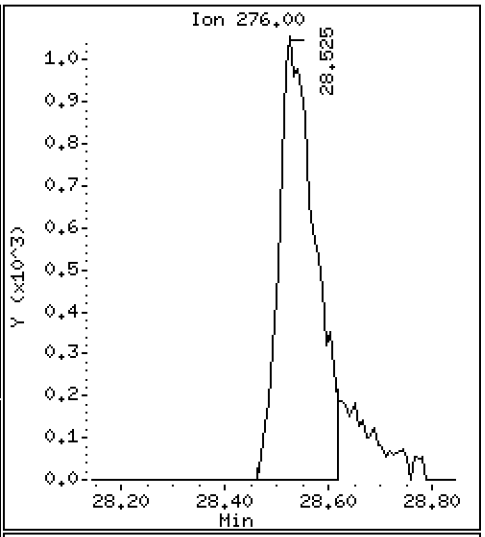
Column phase: ZB-5msi

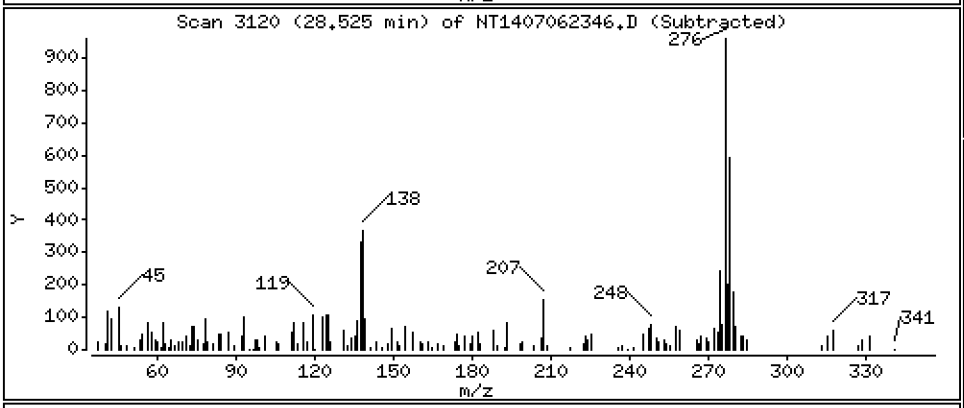
Column diameter: 0.25

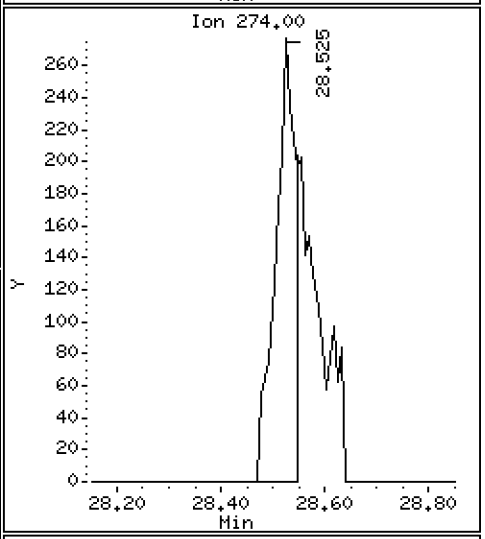
78 Indeno(1,2,3-cd)pyrene

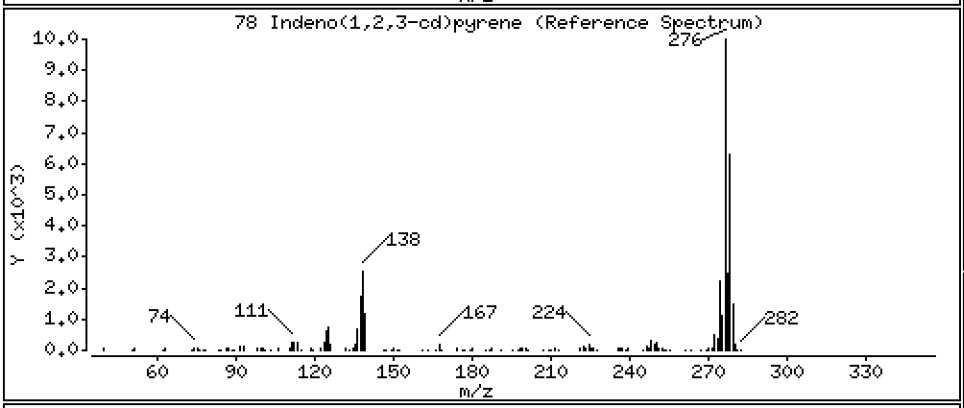
Concentration: 0.1460 ug/mL

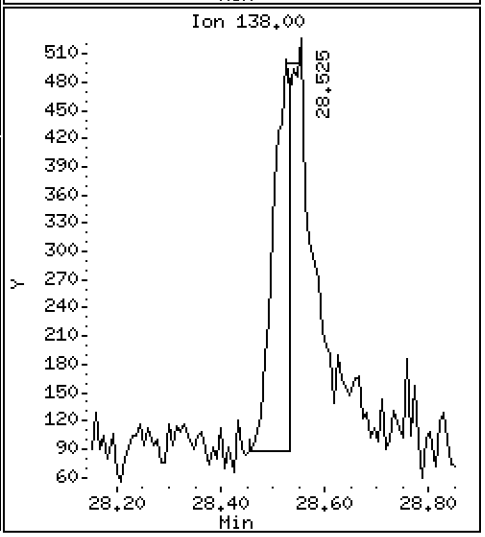


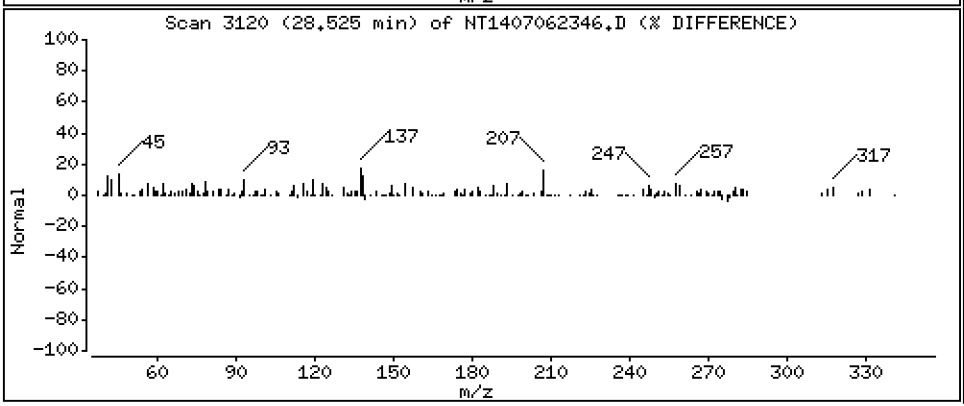












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

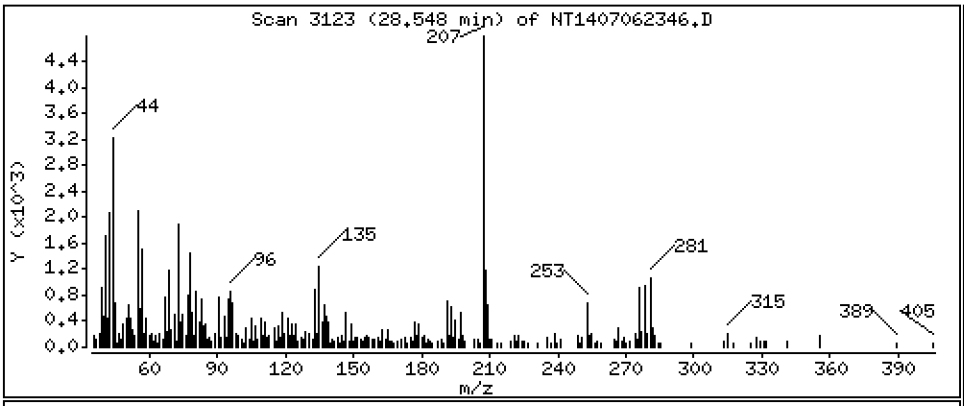
Operator: JGR

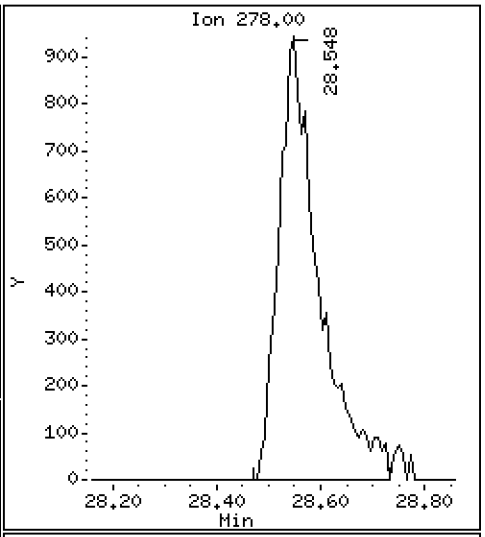
Column phase: ZB-5msi

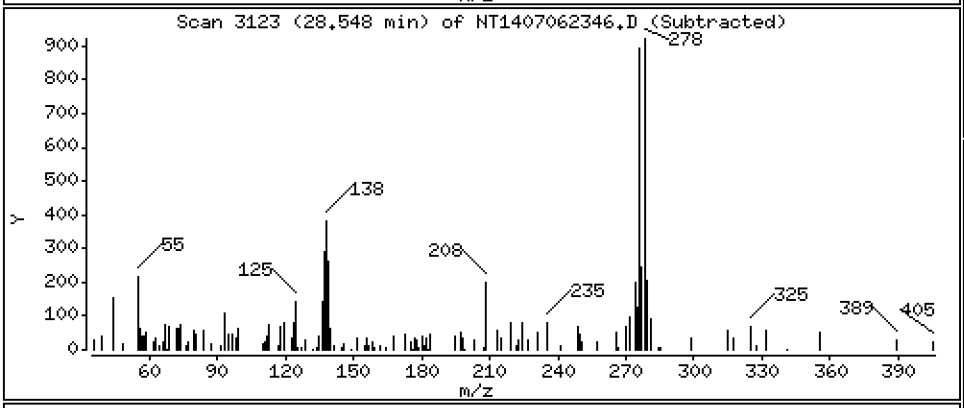
Column diameter: 0.25

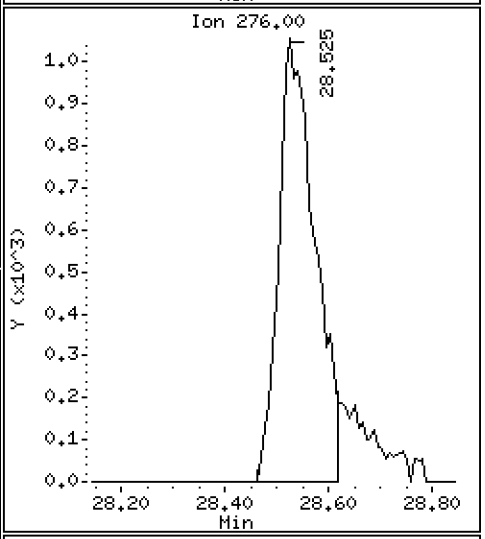
79 Dibenzo(a,h)anthracene

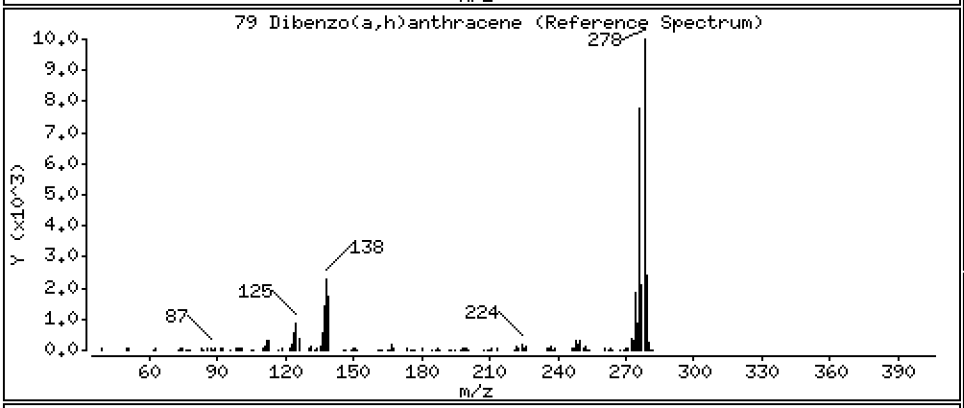
Concentration: 0.1700 ug/mL

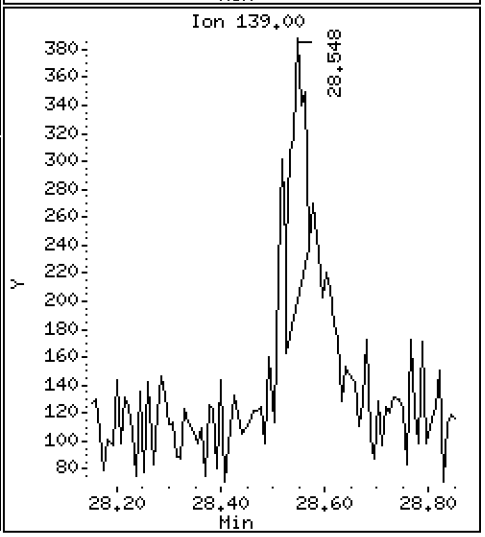


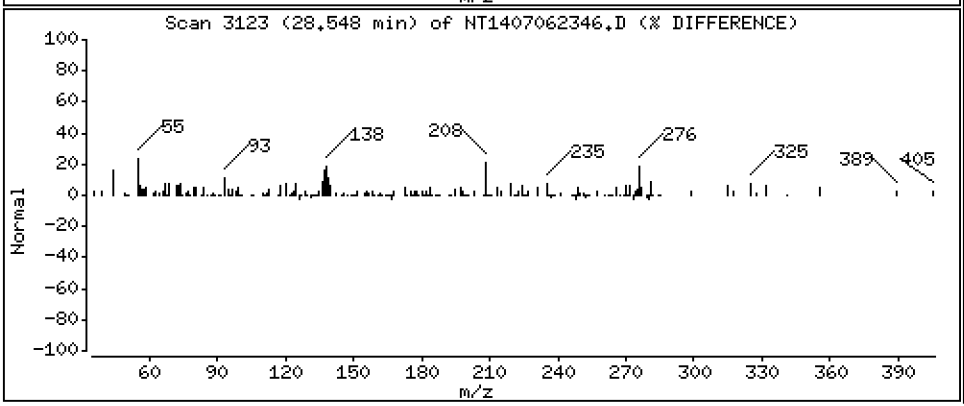












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D

Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

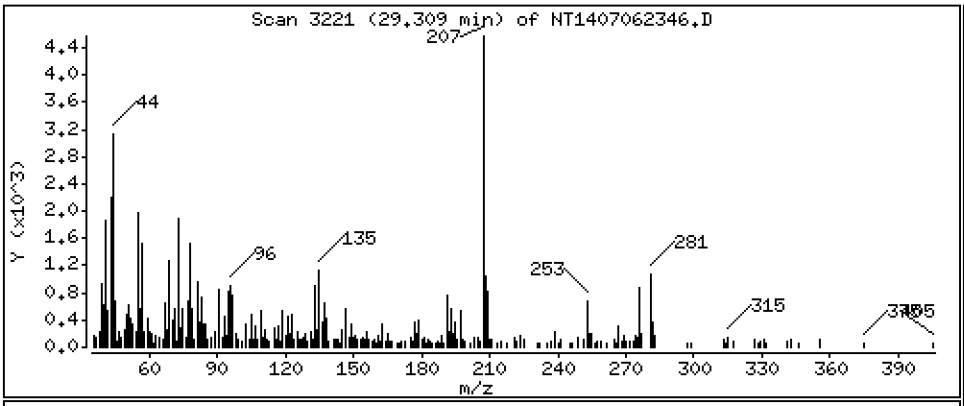
Operator: JGR

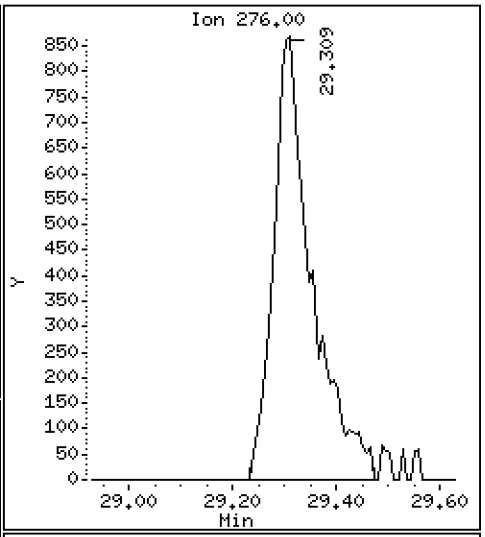
Column phase: ZB-5msi

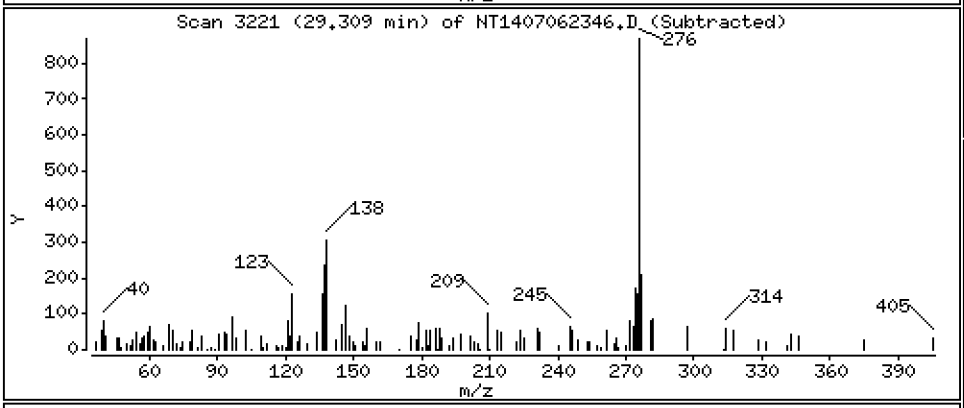
Column diameter: 0.25

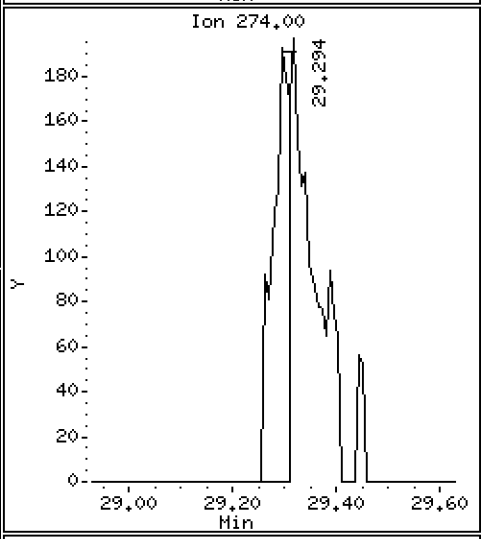
80 Benzo(g,h,i)perylene

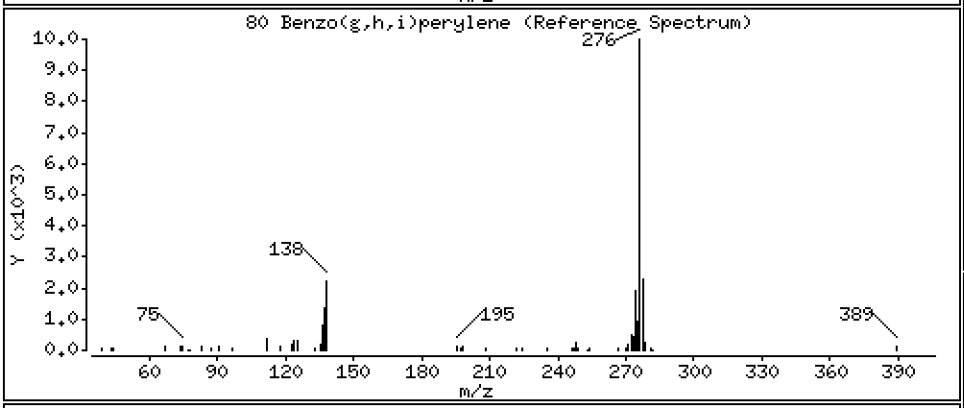
Concentration: 0.1531 ug/mL

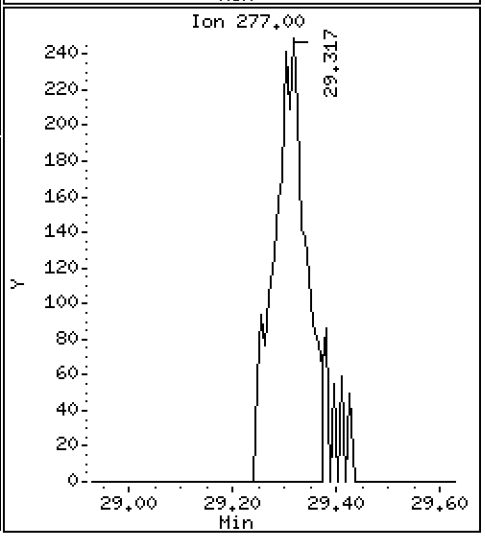


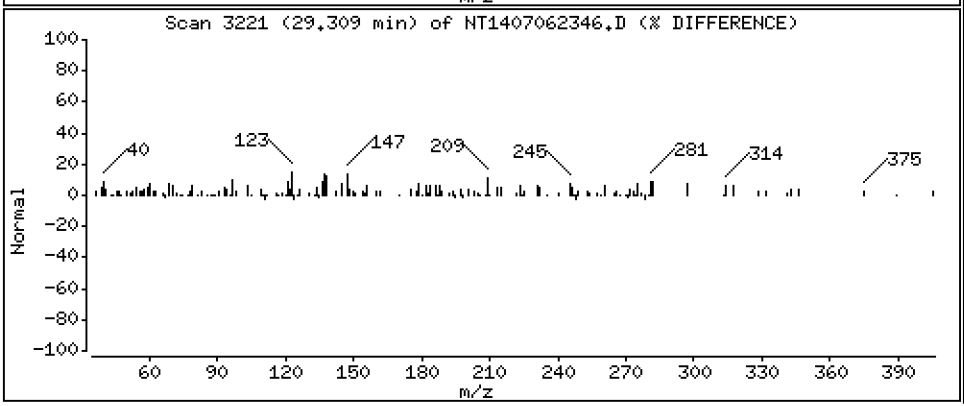












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

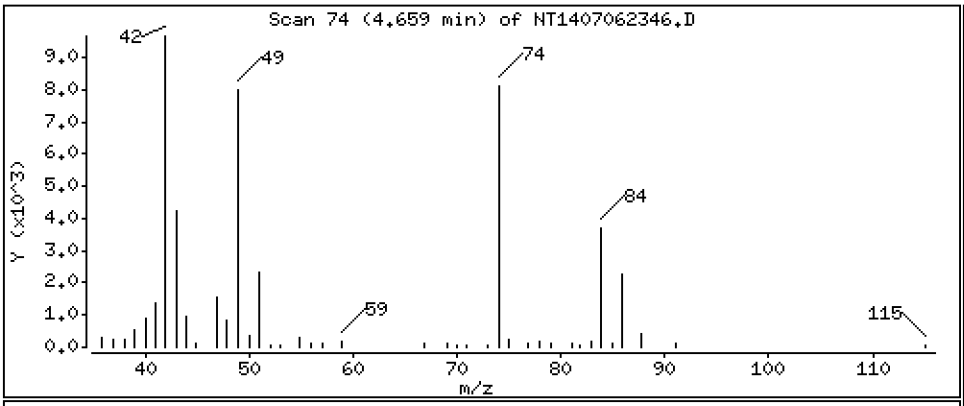
Operator: JGR

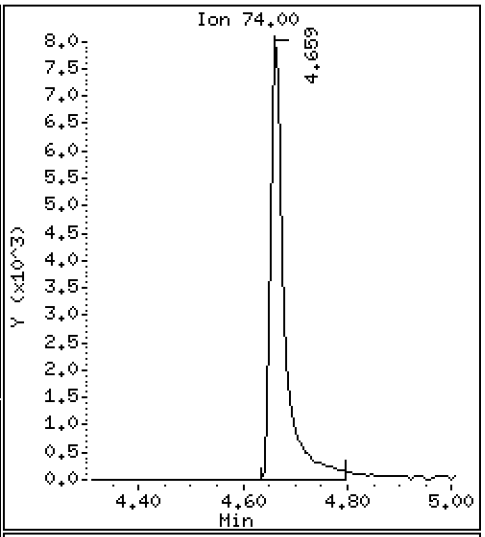
Column phase: ZB-5msi

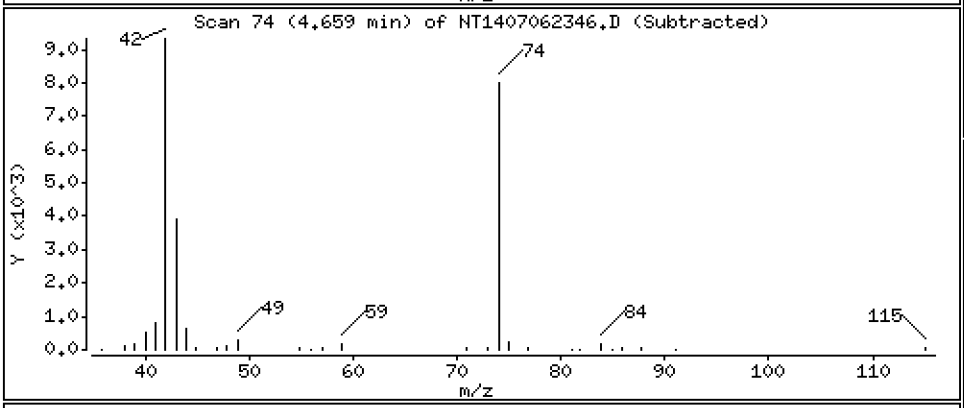
Column diameter: 0.25

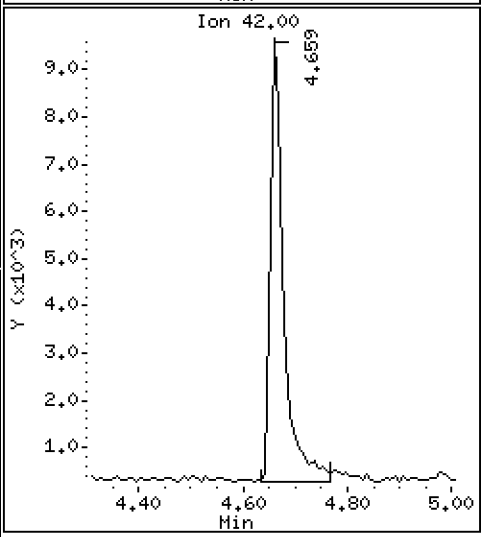
90 N-Nitrosodimethylamine

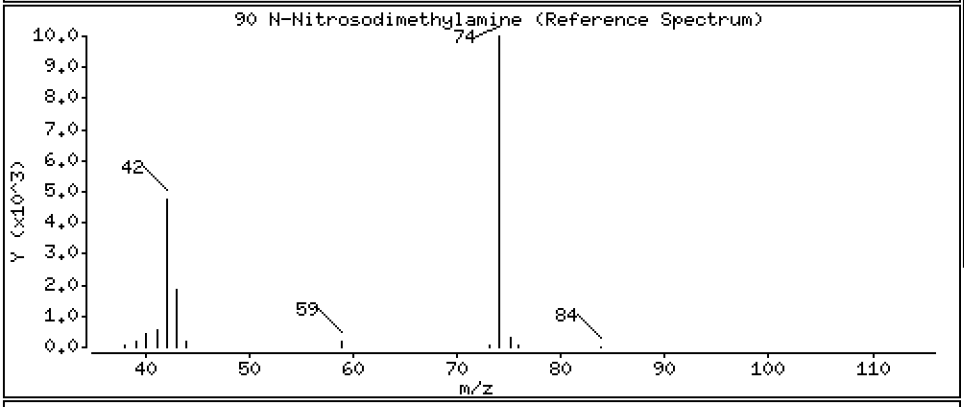
Concentration: 0.3815 ug/mL

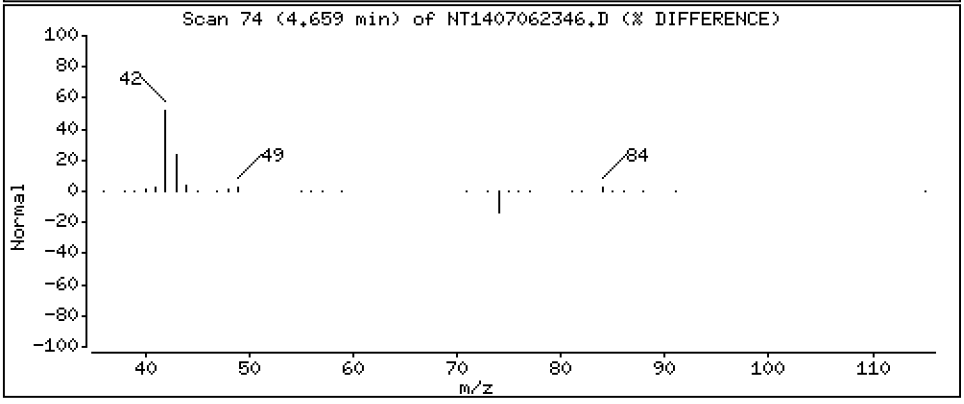












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

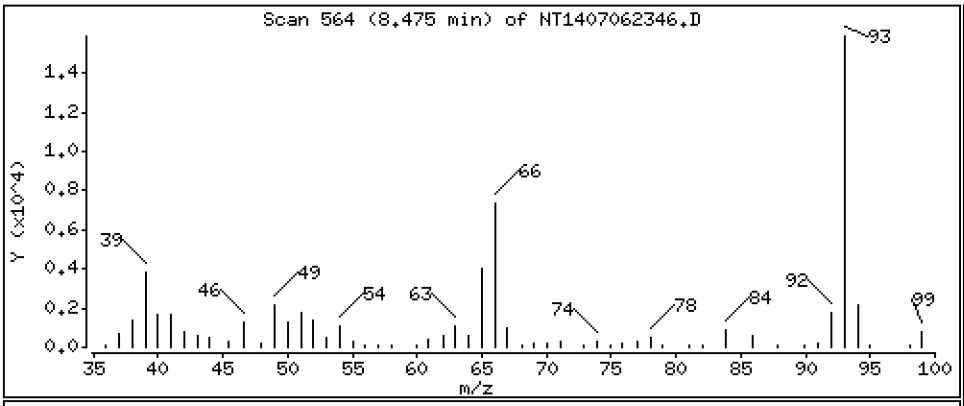
Operator: JGR

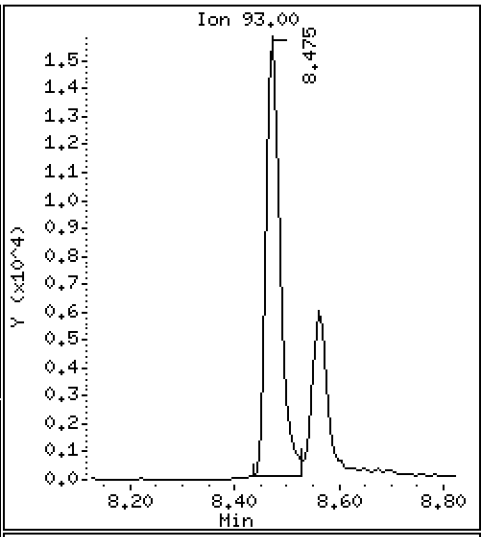
Column phase: ZB-5msi

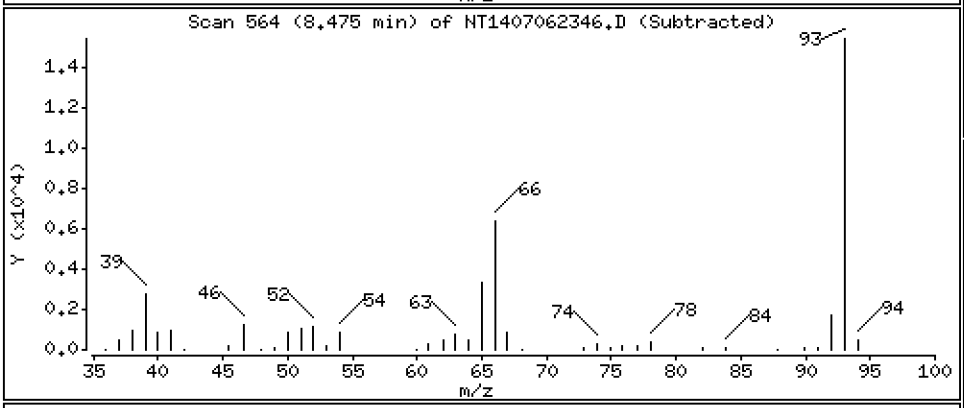
Column diameter: 0.25

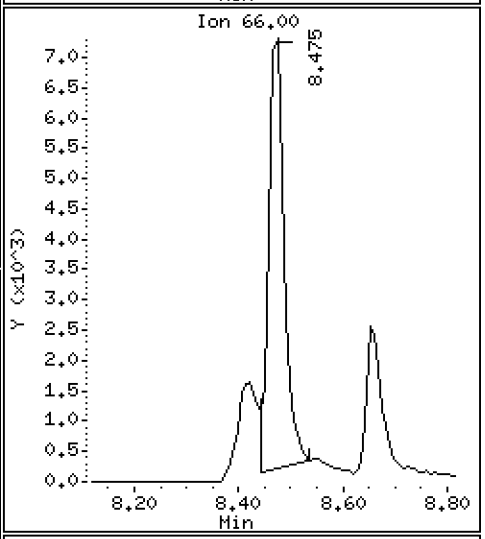
91 Aniline

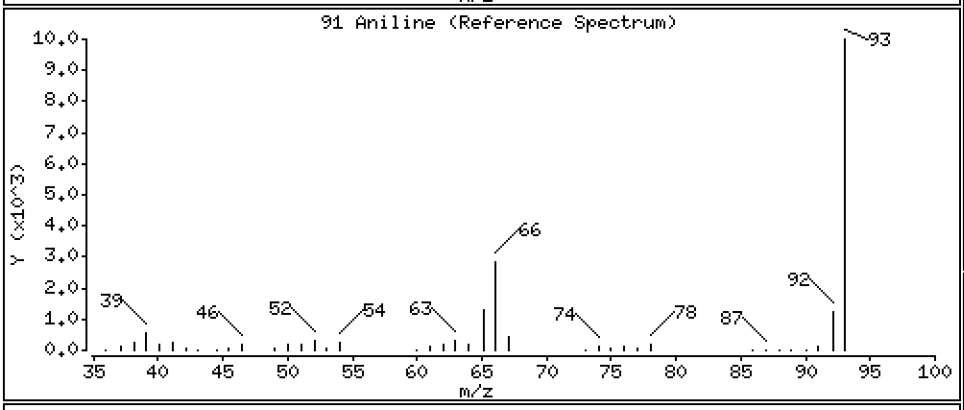
Concentration: 0.3518 ug/mL

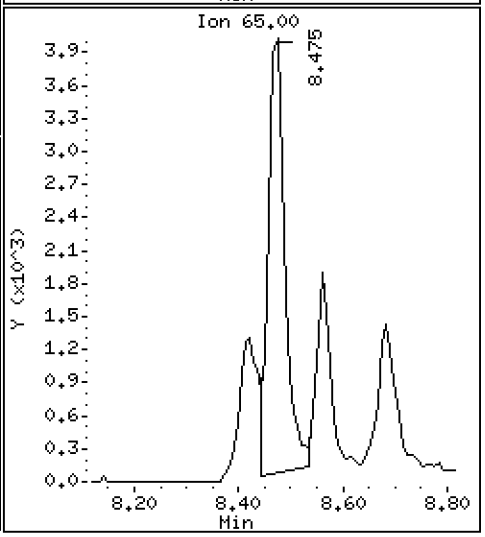


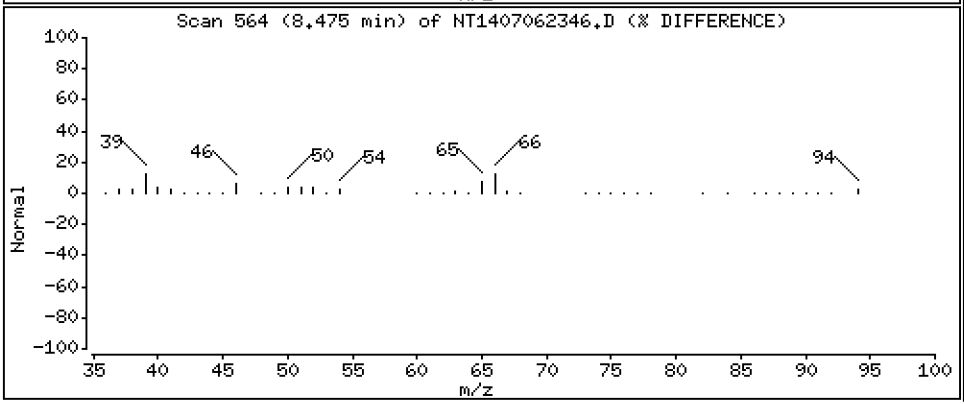












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

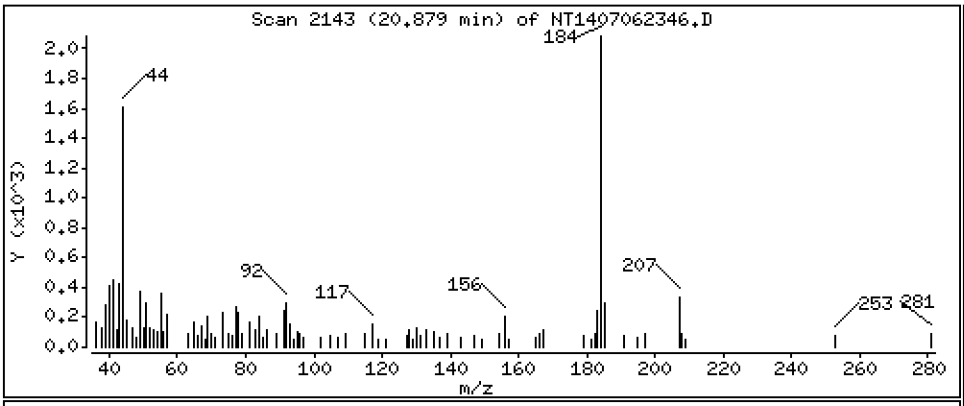
Operator: JGR

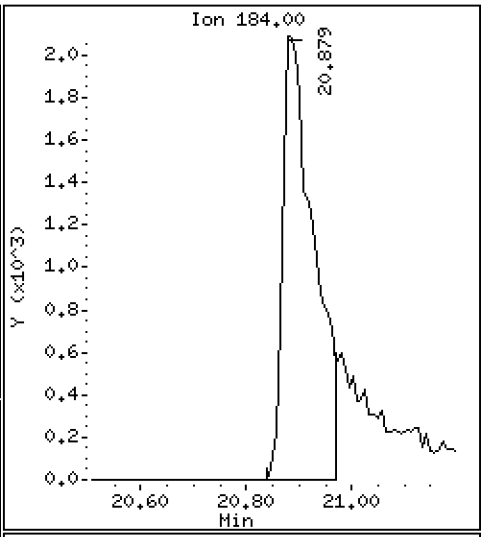
Column phase: ZB-5msi

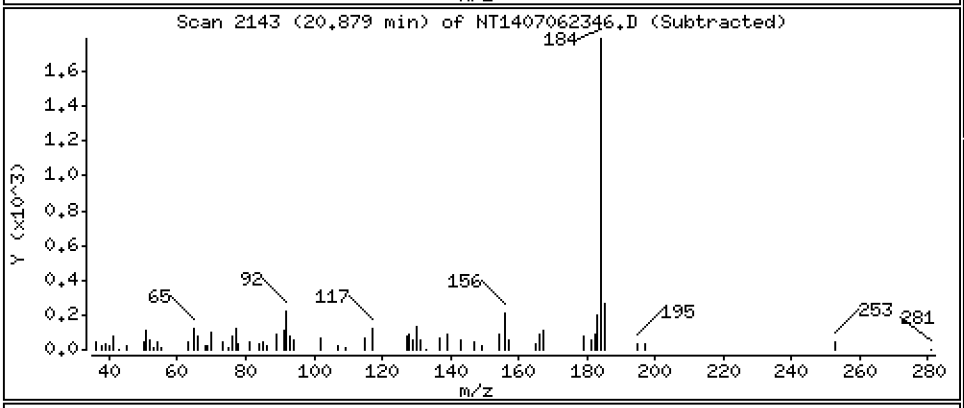
Column diameter: 0.25

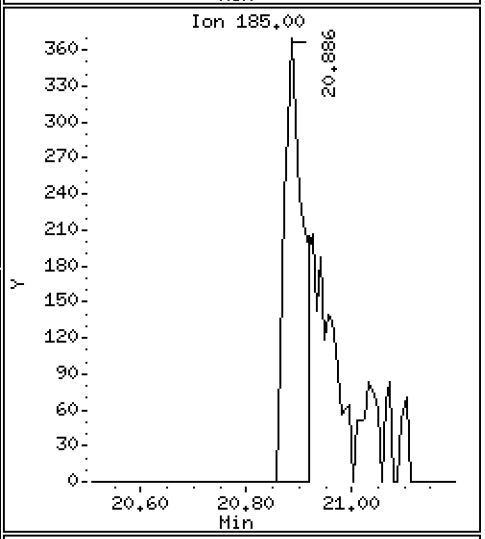
93 Benzidine

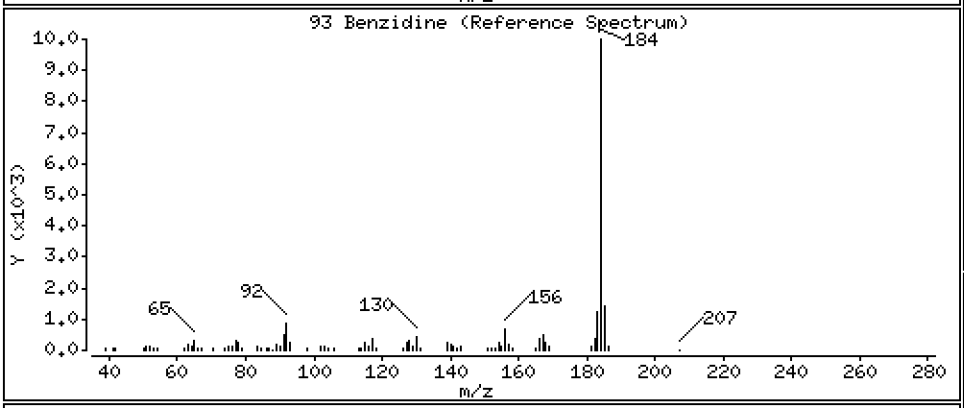
Concentration: 0.2646 ug/mL

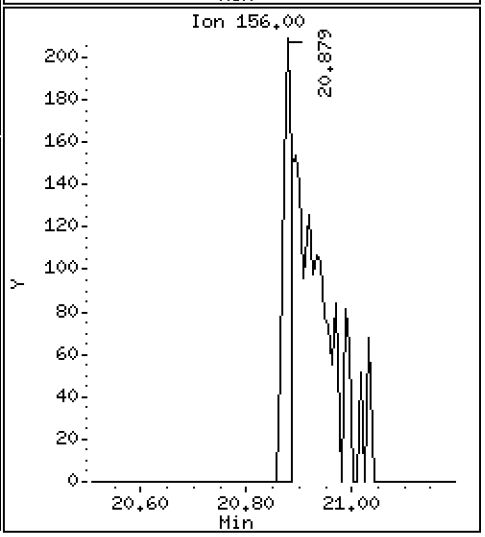


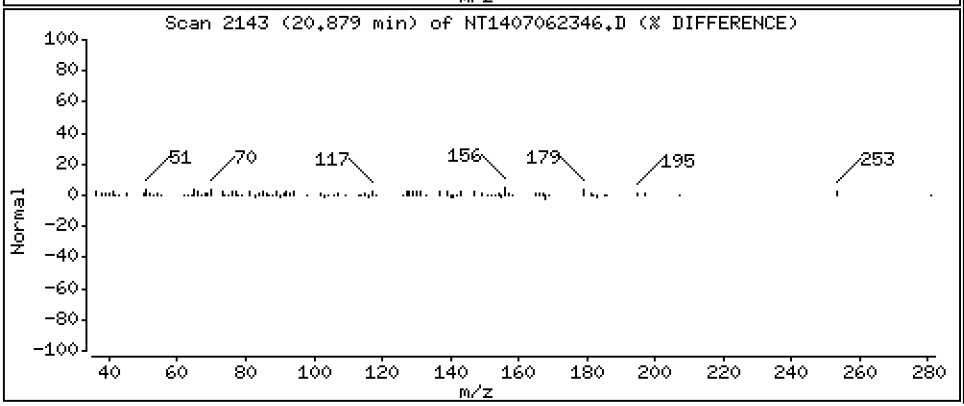












Data File: \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D

Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

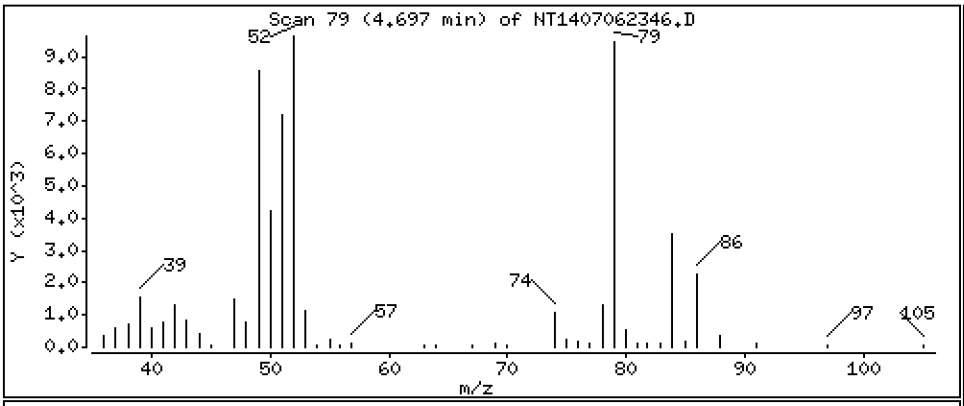
Operator: JGR

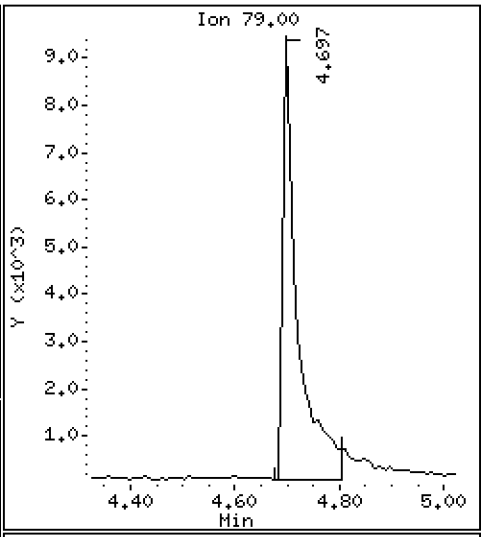
Column phase: ZB-5msi

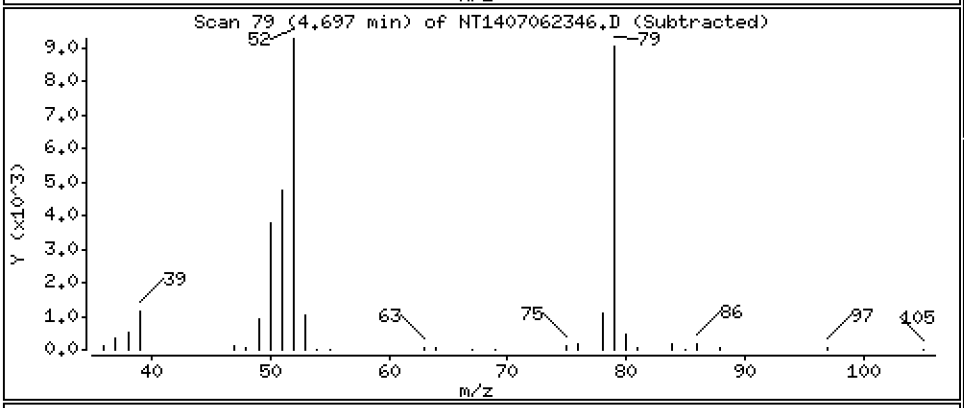
Column diameter: 0.25

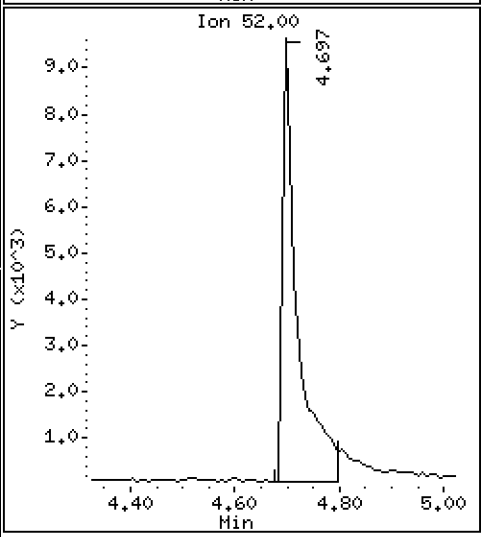
103 Pyridine

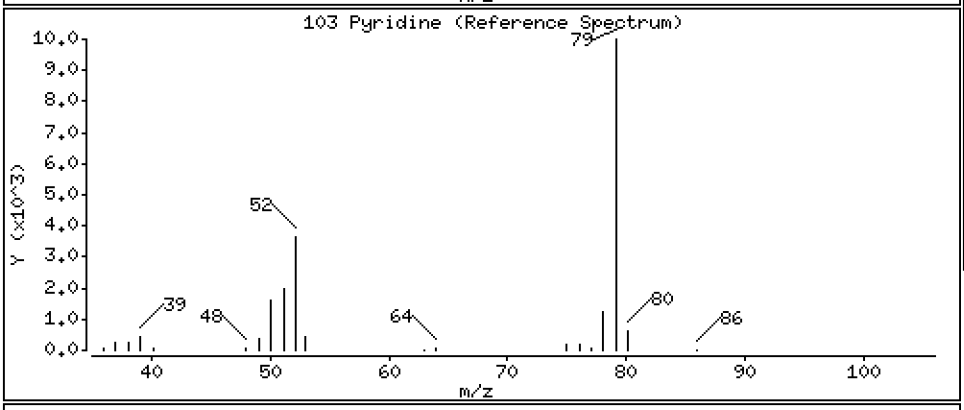
Concentration: 0.3179 ug/mL

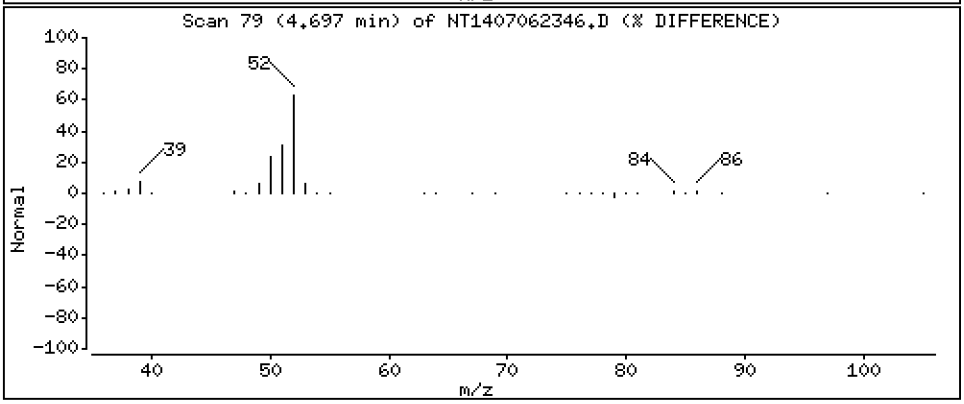












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

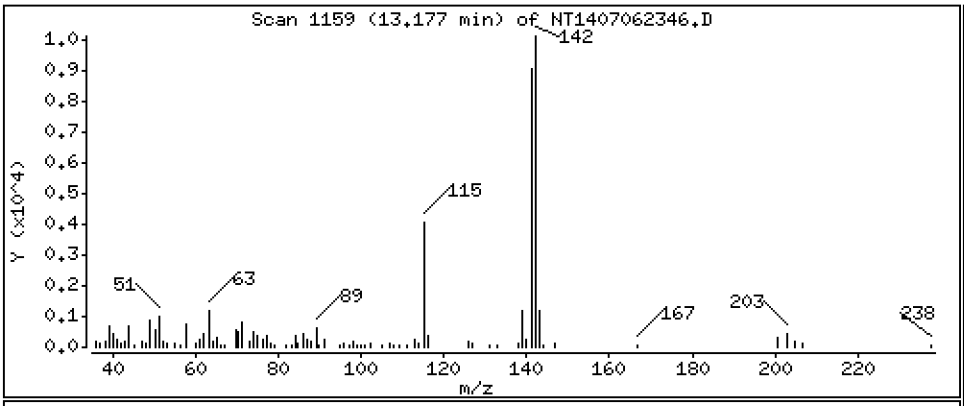
Operator: JGR

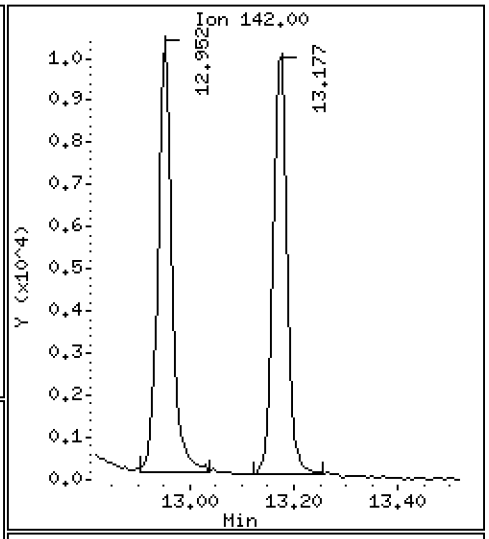
Column phase: ZB-5msi

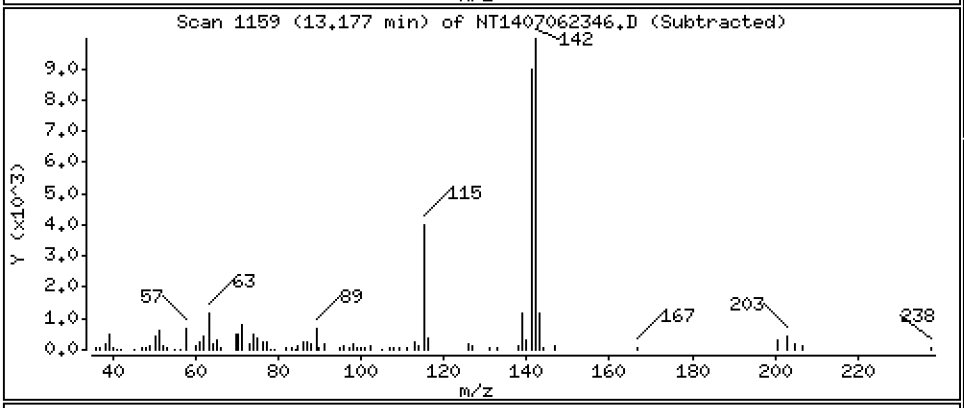
Column diameter: 0.25

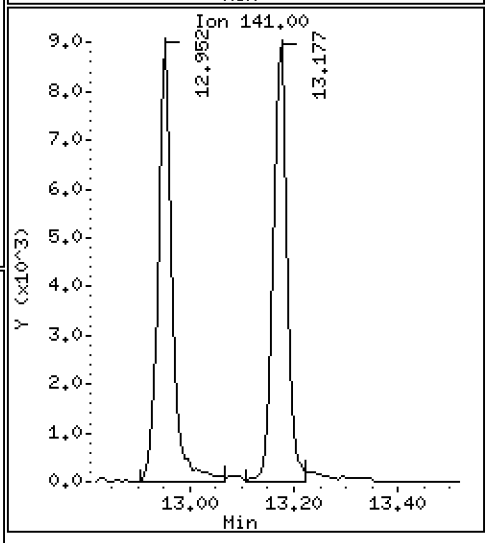
105 1-methylnaphthalene

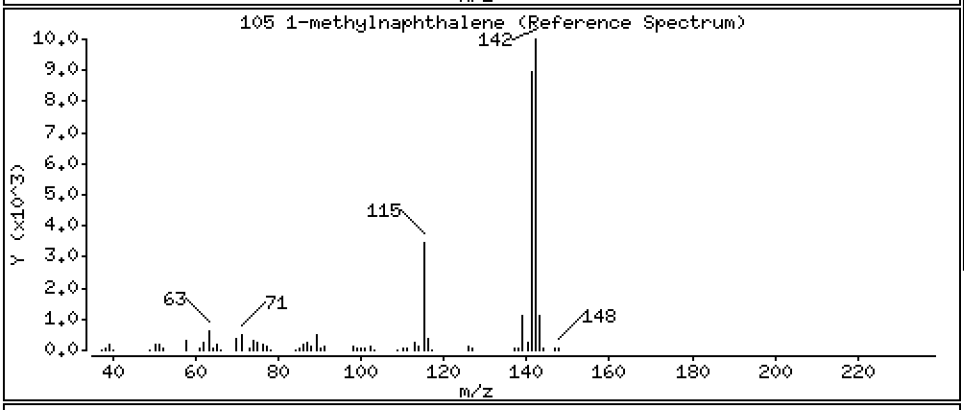
Concentration: 0.1938 ug/mL

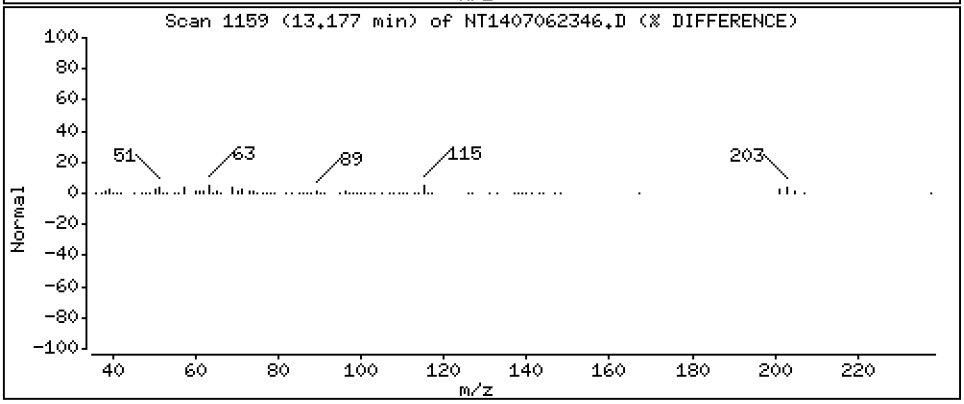












Date : 07-JUL-2023 17:38

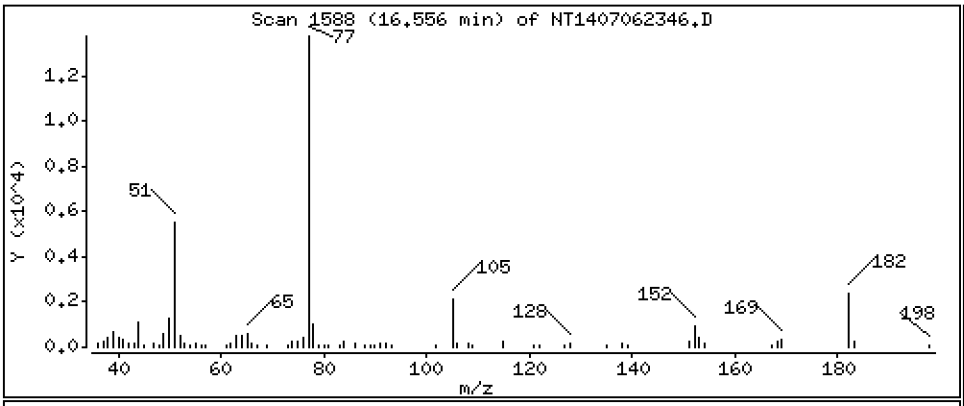
Client ID: Instrument: nt14.i

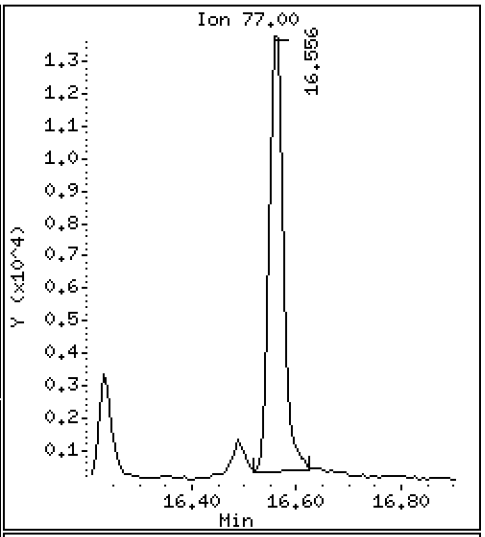
Sample Info: SLG0081-LCV1

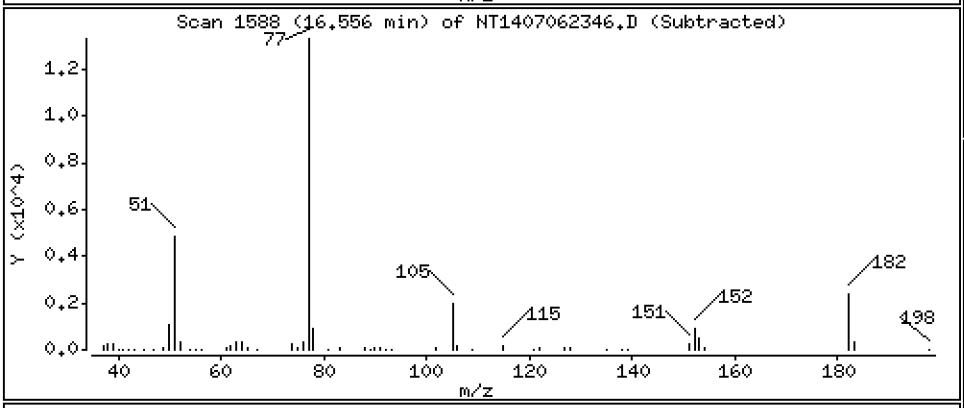
Operator: JGR

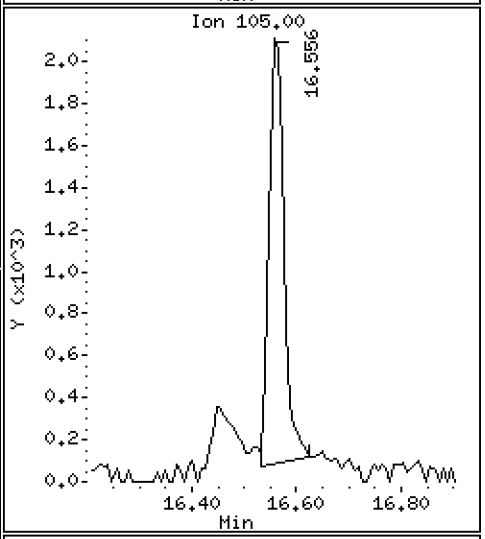
Column phase: ZB-5msi Column diameter: 0.25

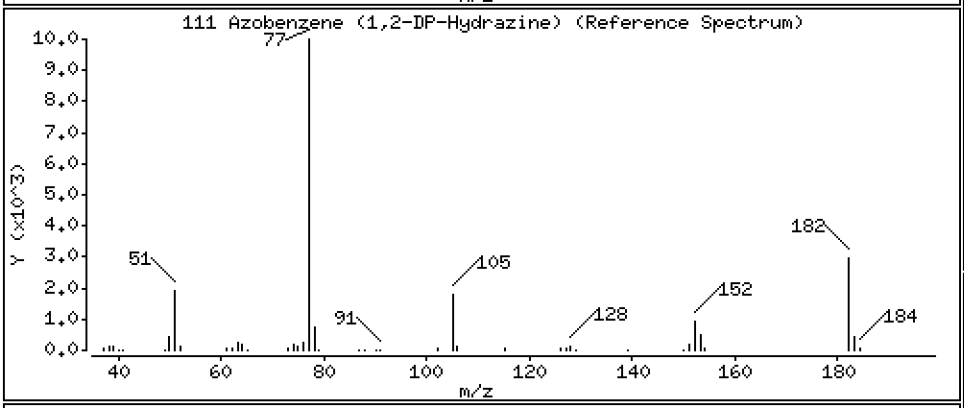
111 Azobenzene (1,2-DP-Hydrazine) Concentration: 0.1741 ug/mL

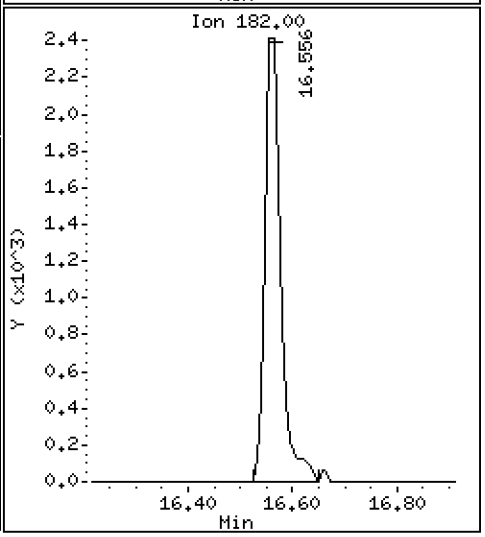


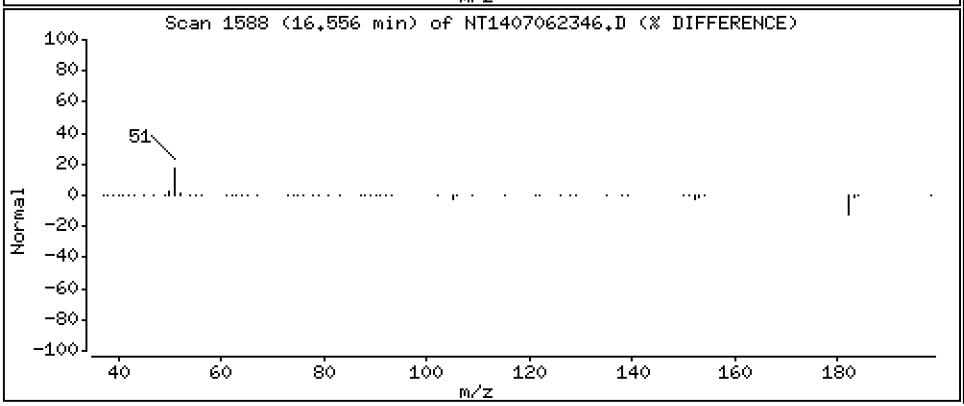












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

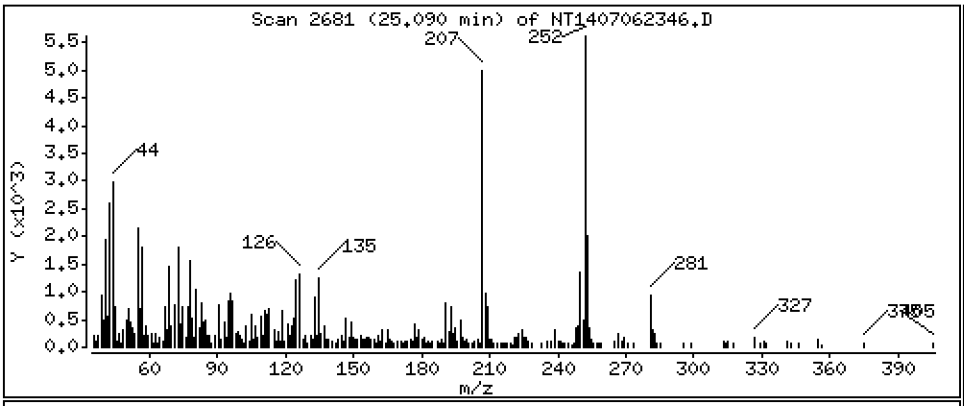
Operator: JGR

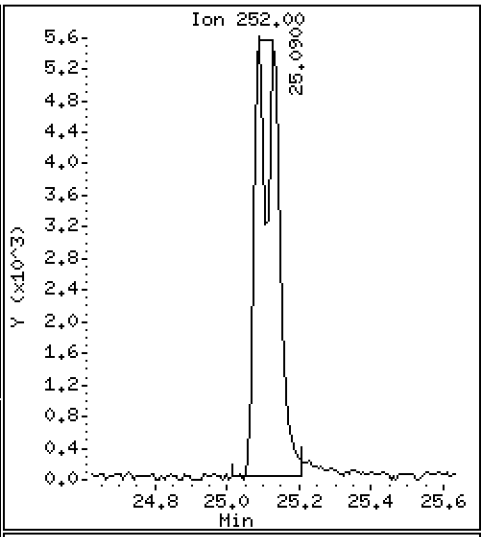
Column phase: ZB-5msi

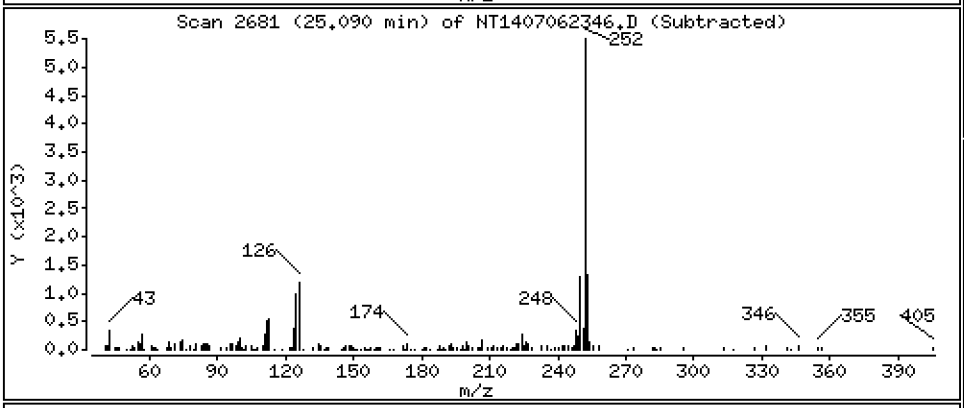
Column diameter: 0.25

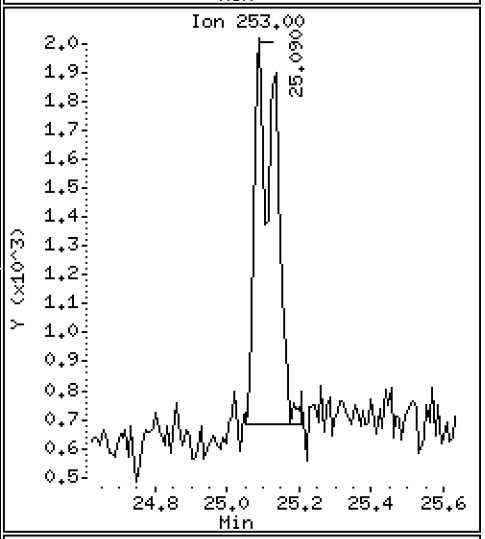
187 Total Benzofluoranthenes

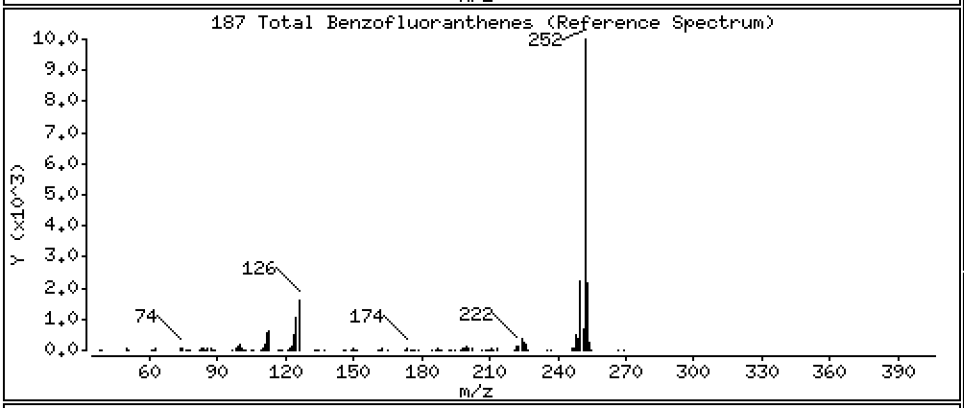
Concentration: 0.4593 ug/mL

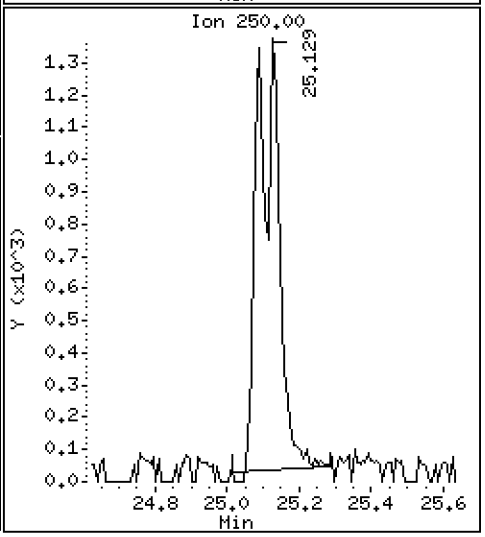


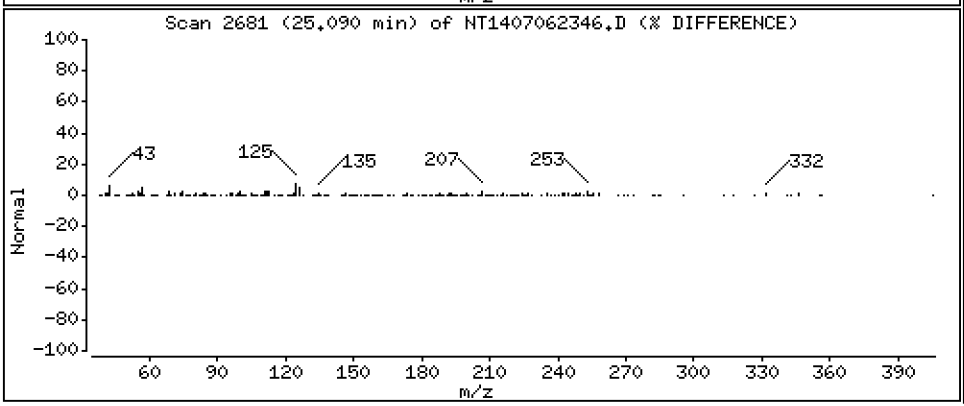












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Date : 07-JUL-2023 17:38

Client ID:

Instrument: nt14.i

Sample Info: SLG0081-LCV1

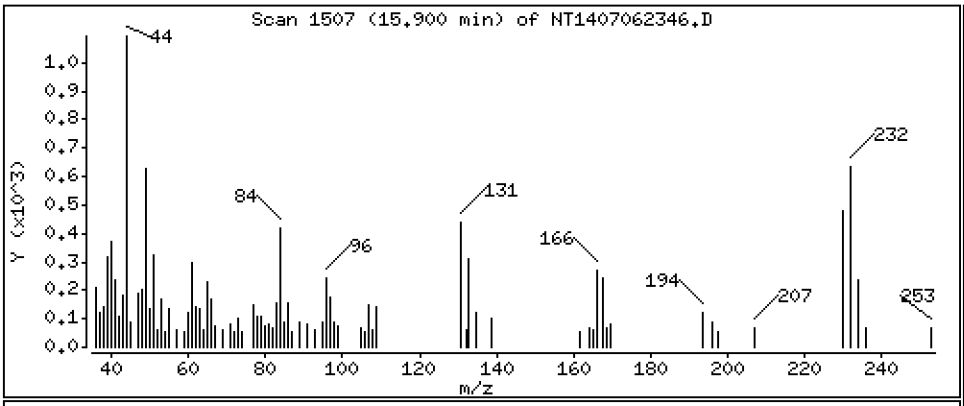
Operator: JGR

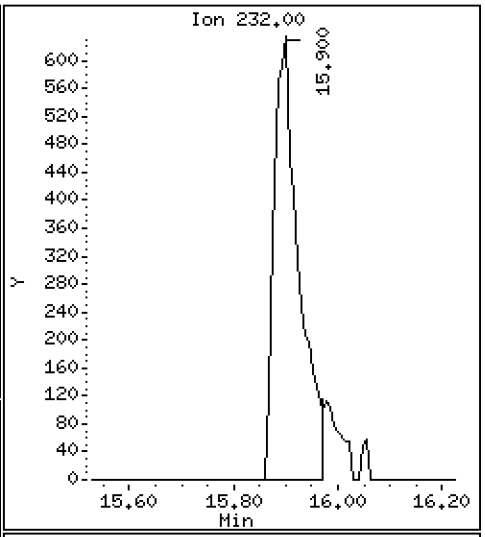
Column phase: ZB-5msi

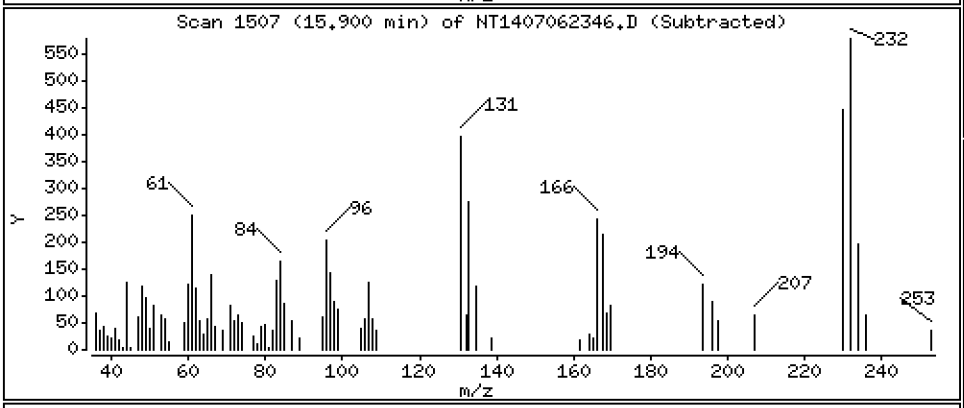
Column diameter: 0.25

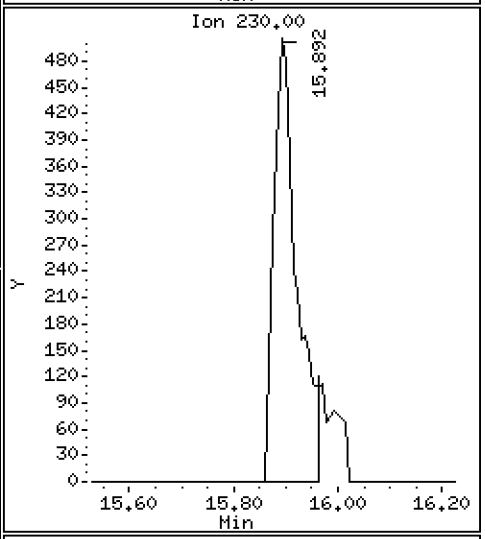
120 2,3,4,6-Tetrachlorophenol

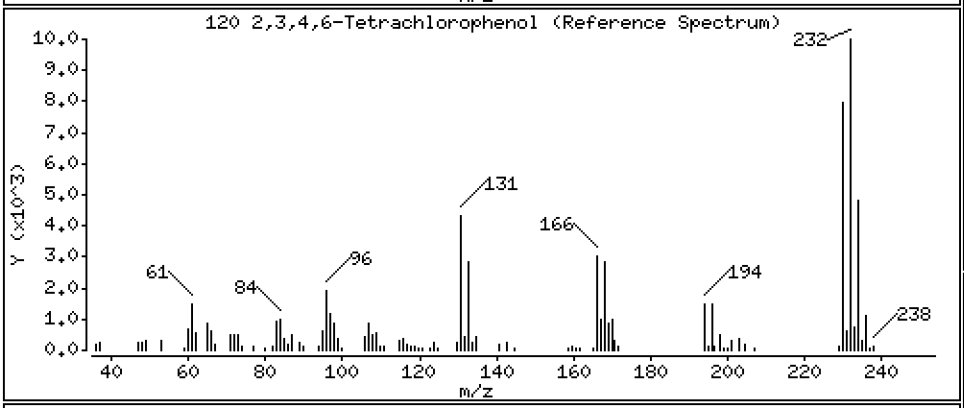
Concentration: 0.1060 ug/mL

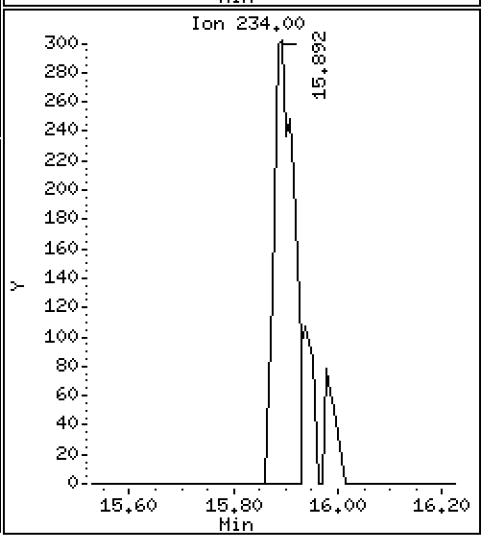


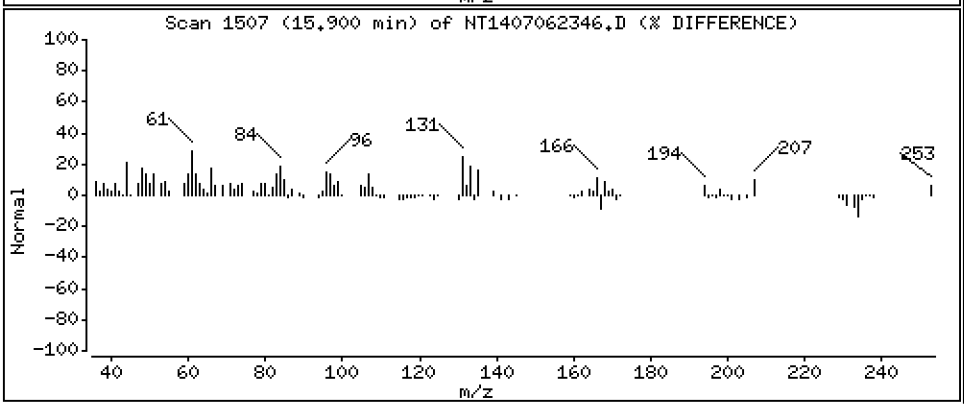












ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt14.i\20230706C.b\NT1407062346.D
Lab Smp Id: SLG0081-LCV1
Inj Date : 07-JUL-2023 17:38 MS Autotune Date: 11-MAR-2023 16:01
Operator : JGR Inst ID: nt14.i
Smp Info : SLG0081-LCV1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Meth Date : 08-Jul-2023 11:17 van Quant Type: ISTD
Cal Date : 28-JUN-2023 21:47 Cal File: NT1406282308.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: VANS-201906

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
$	1 2-Fluorophenol	112	6.805	6.798	(0.755)	12962	0.25722	0.2572
$	2 Phenol-d5	99	8.397	8.382	(0.931)	16657	0.24384	0.2438
	3 Phenol	94	8.412	8.405	(0.933)	9723	0.11755	0.1175
$	5 2-Chlorophenol-d4	132	8.659	8.652	(0.960)	13996	0.27725	0.2772
	4 Bis(2-Chloroethyl)ether	93	8.559	8.559	(0.949)	10402	0.18080	0.1808
	6 2-Chlorophenol	128	8.683	8.683	(0.963)	11143	0.18569	0.1857
	7 1,3-Dichlorobenzene	146	8.954	8.946	(0.993)	11321	0.21168	0.2117
*	8 1,4-Dichlorobenzene-d4	152	9.016	9.016	(1.000)	132771	4.00000	
	9 1,4-Dichlorobenzene	146	9.047	9.047	(1.003)	11004	0.20871	0.2087
$	10 1,2-Dichlorobenzene-d4	152	9.373	9.373	(1.040)	6539	0.20478	0.2048
	12 1,2-Dichlorobenzene	146	9.404	9.404	(1.043)	10897	0.21333	0.2133
	11 Benzyl alcohol	108	Compound Not Detected.					
	14 2,2'-oxybis(1-Chloropropane)	121	9.590	9.590	(1.064)	3558	0.21534	0.2153(M)
	13 2-Methylphenol	108	9.536	9.520	(1.058)	8341	0.15998	0.1600
	17 Hexachloroethane	117	9.994	9.994	(1.108)	3901	0.16108	0.1611
	16 N-Nitroso-di-n-propylamine	70	9.846	9.846	(1.092)	8713	0.18624	0.1862
	15 4-Methylphenol	108	9.823	9.792	(1.090)	8703	0.15071	0.1507
$	18 Nitrobenzene-d5	82	10.118	10.110	(0.879)	12110	0.19324	0.1932
	19 Nitrobenzene	77	10.149	10.149	(0.882)	12764	0.19058	0.1906
	20 Isophorone	82	10.591	10.591	(0.921)	18684	0.20055	0.2006
	21 2-Nitrophenol	139	10.785	10.778	(0.937)	4727	0.14694	0.1469
	22 2,4-Dimethylphenol	107	10.870	10.840	(0.945)	20351	0.37883	0.3788
	23 Bis(2-Chloroethoxy)methane	93	11.033	11.026	(0.959)	11433	0.19206	0.1921
	24 Benzoic acid	105	11.025	11.088	(0.958)	6440	0.19825	0.1983(M)
	25 2,4-Dichlorophenol	162	11.281	11.243	(0.981)	9741	0.24524	0.2452
	26 1,2,4-Trichlorobenzene	180	11.420	11.420	(0.993)	8475	0.21406	0.2141
*	27 Naphthalene-d8	136	11.505	11.505	(1.000)	531300	4.00000	
	28 Naphthalene	128	11.544	11.544	(1.003)	28530	0.20556	0.2056
	29 4-Chloroaniline	127	11.691	11.675	(1.016)	17230	0.26622	0.2662
	30 Hexachlorobutadiene	225	11.915	11.915	(1.036)	4047	0.21914	0.2191
	31 4-Chloro-3-methylphenol	107	12.735	12.665	(1.107)	15381	0.30875	0.3087
	32 2-Methylnaphthalene	142	12.952	12.952	(1.126)	19457	0.18900	0.1890
	33 Hexachlorocyclopentadiene	237	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
34	2,4,6-Trichlorophenol	196	13.594	13.579	(0.898)	7465	0.30425	0.3043
35	2,4,5-Trichlorophenol	196	13.718	13.664	(0.906)	9159	0.35875	0.3587(MH)
$ 36	2-Fluorobiphenyl	172	13.733	13.733	(0.907)	19348	0.21281	0.2128
37	2-Chloronaphthalene	162	13.950	13.942	(0.922)	16324	0.19517	0.1952
38	2-Nitroaniline	65	14.229	14.206	(0.940)	13217	0.32607	0.3261
39	Dimethylphthalate	163	14.639	14.639	(0.967)	16947	0.19753	0.1975
40	Acenaphthylene	152	14.817	14.817	(0.979)	26445	0.20490	0.2049
41	2,6-Dinitrotoluene	165	14.778	14.778	(0.976)	6574	0.36416	0.3642
* 42	Acenaphthene-d10	164	15.134	15.134	(1.000)	255269	4.00000	
43	3-Nitroaniline	138	15.095	15.065	(0.997)	8982	0.37140	0.3714(M)
44	Acenaphthene	153	15.196	15.204	(1.004)	15719	0.20581	0.2058
45	2,4-Dinitrophenol	184	Compound Not Detected.					
46	Dibenzofuran	168	15.528	15.528	(1.026)	23246	0.20885	0.2089
47	4-Nitrophenol	109	15.667	15.420	(1.035)	3301	0.18795	0.1879(M)
48	2,4-Dinitrotoluene	165	15.598	15.590	(1.031)	8091	0.32052	0.3205
50	Diethylphthalate	149	16.100	16.101	(1.064)	20475	0.20637	0.2064
49	Fluorene	166	16.247	16.240	(1.074)	18191	0.18689	0.1869
51	4-Chlorophenyl-phenylether	204	16.232	16.232	(1.073)	7733	0.18400	0.1840
52	4-Nitroaniline	138	16.401	16.340	(1.084)	5998	0.24346	0.2435
53	4,6-Dinitro-2-methylphenol	198	16.448	16.432	(0.905)	1406	0.09804	0.09804
54	N-Nitrosodiphenylamine	169	16.486	16.486	(0.907)	12291	0.19237	0.1924
$ 55	2,4,6-Tribromophenol	330	16.795	16.779	(1.110)	1611	0.20459	0.2046
56	4-Bromophenyl-phenylether	248	17.242	17.234	(0.949)	3872	0.19873	0.1987
57	Hexachlorobenzene	284	17.559	17.559	(0.966)	4527	0.21964	0.2196
58	Pentachlorophenol	266	17.969	17.923	(0.989)	763	0.06232	0.06232(M)
* 59	Phenanthrene-d10	188	18.178	18.178	(1.000)	452490	4.00000	
60	Phenanthrene	178	18.224	18.225	(1.003)	25059	0.20472	0.2047
61	Anthracene	178	18.325	18.317	(1.008)	24135	0.20404	0.2040
62	Carbazole	167	18.665	18.650	(1.027)	22832	0.19186	0.1919
63	Di-n-butylphthalate	149	19.447	19.447	(1.070)	32540	0.20812	0.2081
64	Fluoranthene	202	20.623	20.615	(0.888)	24045	0.21716	0.2172
65	Pyrene	202	21.048	21.041	(0.906)	25439	0.22743	0.2274
$ 66	Terphenyl-d14	244	21.335	21.327	(0.918)	18251	0.24244	0.2424
67	Butylbenzylphthalate	149	22.248	22.249	(0.958)	14085	0.26258	0.2626
68	Benzo(a)anthracene	228	23.208	23.209	(0.999)	19875	0.20955	0.2096
* 69	Chrysene-d12	240	23.232	23.232	(1.000)	270873	4.00000	
70	3,3'-Dichlorobenzidine	252	23.178	23.162	(0.998)	15817	0.59917	0.5992
71	Chrysene	228	23.278	23.278	(1.002)	18472	0.21758	0.2176
72	bis(2-Ethylhexyl)phthalate	149	24.269	24.269	(1.000)	38252	0.21562	0.2156
* 134	Di-n-octylphthalate-d4	153	24.261	24.262	(1.000)	690231	4.00000	
73	Di-n-octylphthalate	149	24.269	24.269	(1.000)	38252	0.21562	0.2156
74	Benzo(b)fluoranthene	252	25.090	25.082	(0.971)	10730	0.21386	0.2139
75	Benzo(k)fluoranthene	252	25.128	25.129	(0.972)	13782	0.24469	0.2447
76	Benzo(a)pyrene	252	25.740	25.733	(0.996)	8412	0.21363	0.2136
* 77	Perylene-d12	264	25.849	25.849	(1.000)	152641	4.00000	
78	Indeno(1,2,3-cd)pyrene	276	28.524	28.494	(1.104)	5186	0.14603	0.1460
79	Dibenzo(a,h)anthracene	278	28.548	28.509	(1.104)	5107	0.16996	0.1700(M)
80	Benzo(g,h,i)perylene	276	29.309	29.278	(1.134)	4490	0.15315	0.1531(M)
90	N-Nitrosodimethylamine	74	4.658	4.658	(0.517)	14533	0.38152	0.3815
91	Aniline	93	8.474	8.474	(0.940)	28368	0.35175	0.3518
93	Benzidine	184	20.878	20.855	(0.899)	8864	0.26462	0.2646
103	Pyridine	79	4.697	4.674	(0.521)	19072	0.31794	0.3179
105	1-methylnaphthalene	142	13.176	13.169	(1.145)	17798	0.19380	0.1938
111	Azobenzene (1,2-DP-Hydrazine)	77	16.556	16.556	(1.094)	24597	0.17407	0.1741

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
187 Total Benzofluoranthenes	252	25.090	25.129	(0.971)	23393	0.45928	0.4593
120 2,3,4,6-Tetrachlorophenol	232	15.899	15.876	(1.051)	2076	0.10603	0.1060

QC Flag Legend

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

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt14.i
Lab File ID: NT1407062346.D
Lab Smp Id: SLG0081-LCV1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt14.i\20230706C.b\ABN.m
Misc Info:

Calibration Date: 07-JUL-2023
Calibration Time: 16:23
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	132670	66335	265340	132771	0.08
27 Naphthalene-d8	538082	269041	1076164	531300	-1.26
42 Acenaphthene-d10	270232	135116	540464	255269	-5.54
59 Phenanthrene-d10	462568	231284	925136	452490	-2.18
69 Chrysene-d12	289075	144538	578150	270873	-6.30
134 Di-n-octylphthala	772331	386166	1544662	690231	-10.63
77 Perylene-d12	173349	86675	346698	152641	-11.95

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	9.02	8.52	9.52	9.02	-0.00
27 Naphthalene-d8	11.51	11.01	12.01	11.51	-0.00
42 Acenaphthene-d10	15.13	14.63	15.63	15.13	-0.00
59 Phenanthrene-d10	18.18	17.68	18.68	18.18	-0.00
69 Chrysene-d12	23.23	22.73	23.73	23.23	-0.00
134 Di-n-octylphthala	24.26	23.76	24.76	24.26	-0.00
77 Perylene-d12	25.85	25.35	26.35	25.85	-0.00

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

REVIEW SUMMARY FOR FILE - NT1407062346.D

Lab ID: SLG0081-LCV1
nt14.i, ABN.m, 07-JUL-2023 17:38

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.958	0.964	-0.0054	Benzoic acid
1.107	1.101	0.0060	4-Chloro-3-methylphenol
1.035	1.019	0.0163	4-Nitrophenol

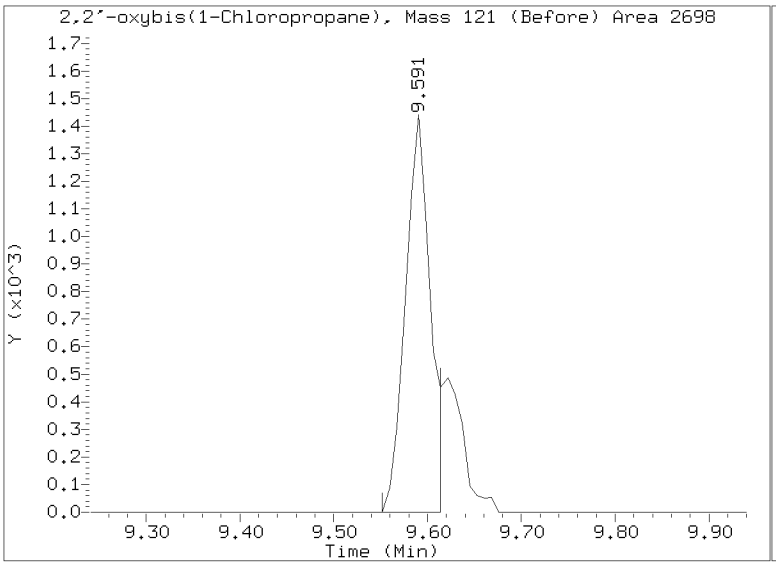
RRT check based on Ccal File: NT1407062344.D

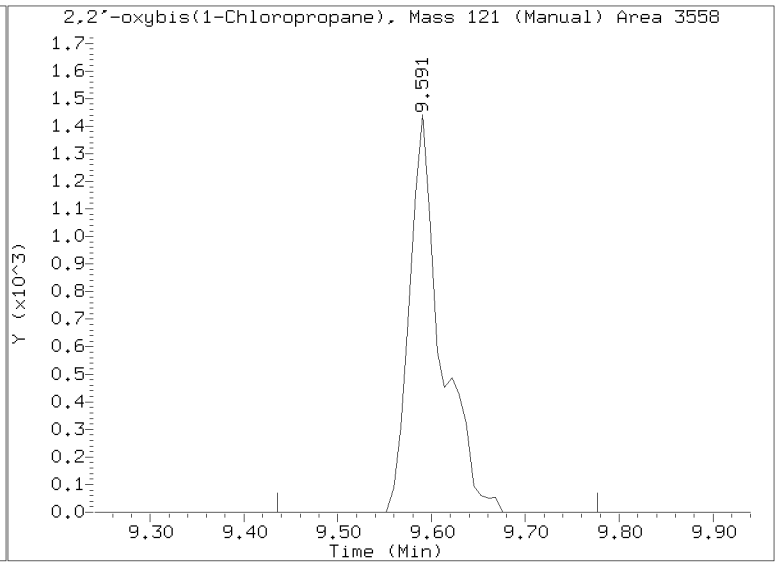
On Column LOD for nt14.i, ABN.m, ICAL.sub = 0.0000

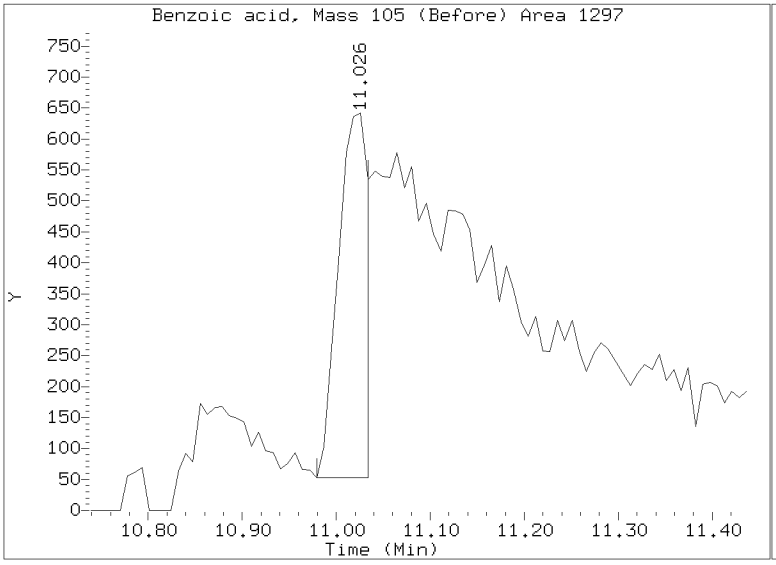
* Only compounds listed in the work order have been verified by the analyst *

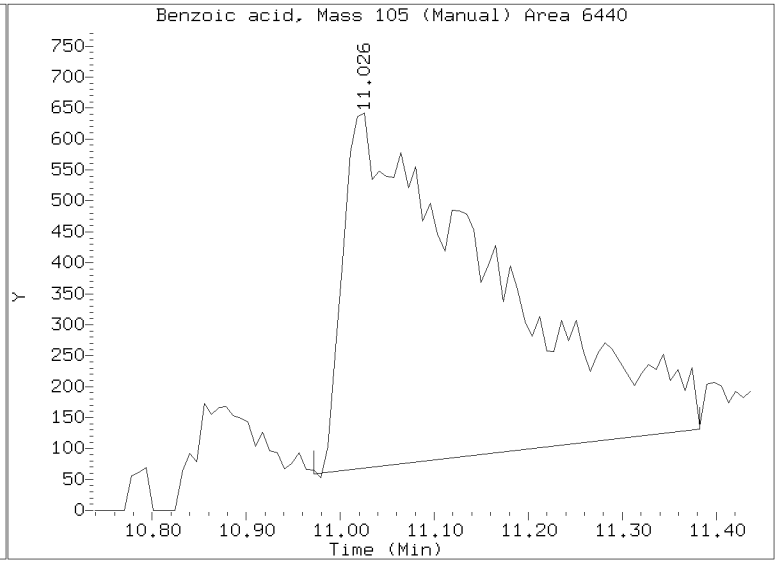
Quant Ion Manual Peak Adjustment Report

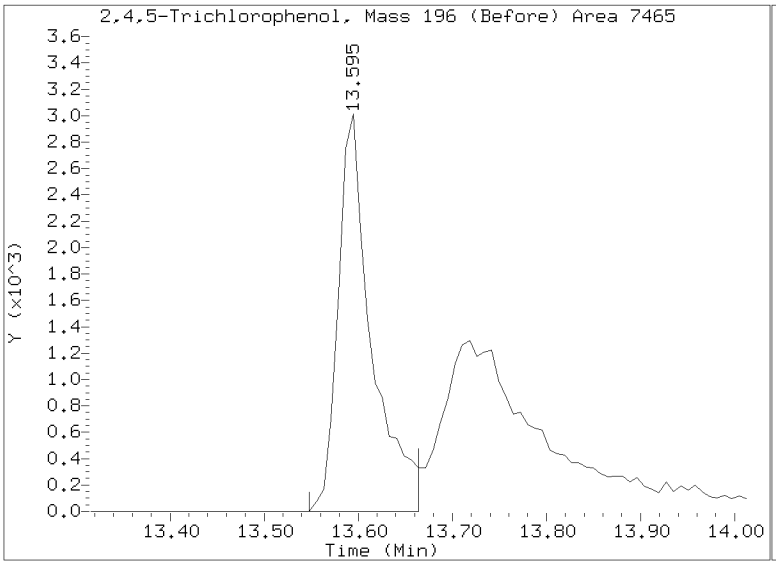
Datafile: //target/share/chem3/nt14.i/20230706C.b/NT1407062346.D
Injection Date: 07-JUL-2023 17:38
Lab ID:SLG0081-LCV1 Client ID:
Report Date: 07/08/2023 11:18

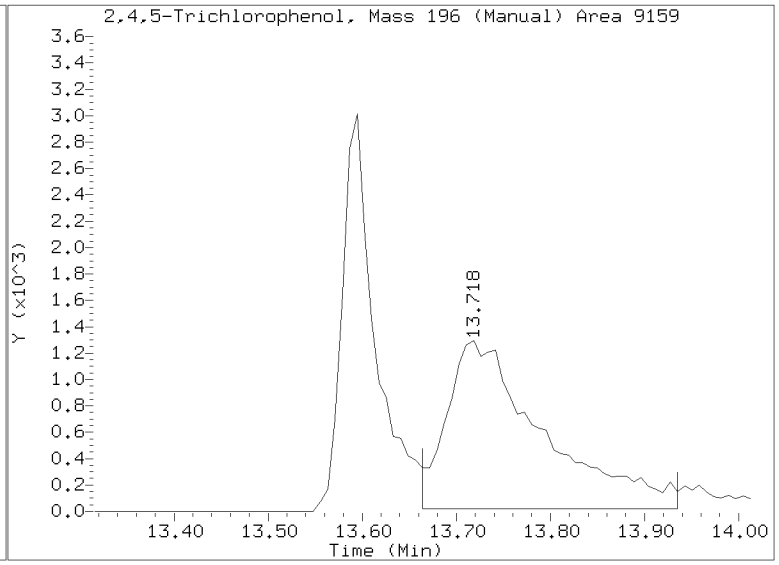






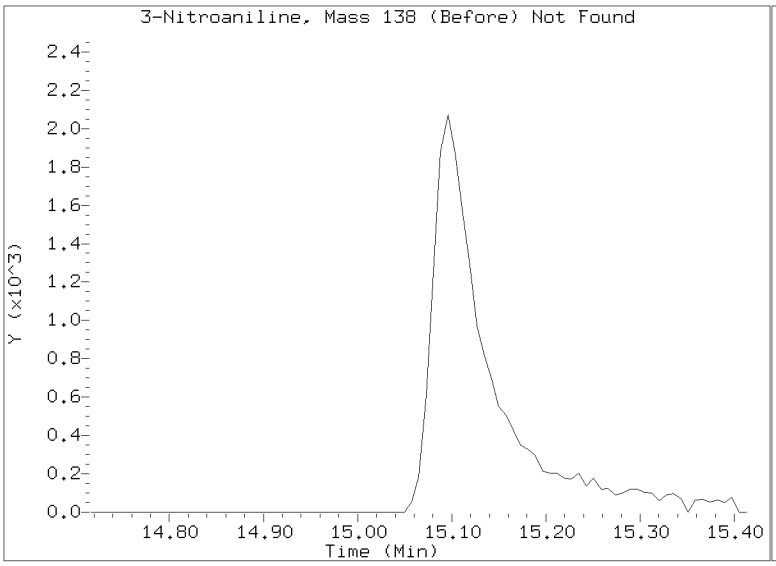


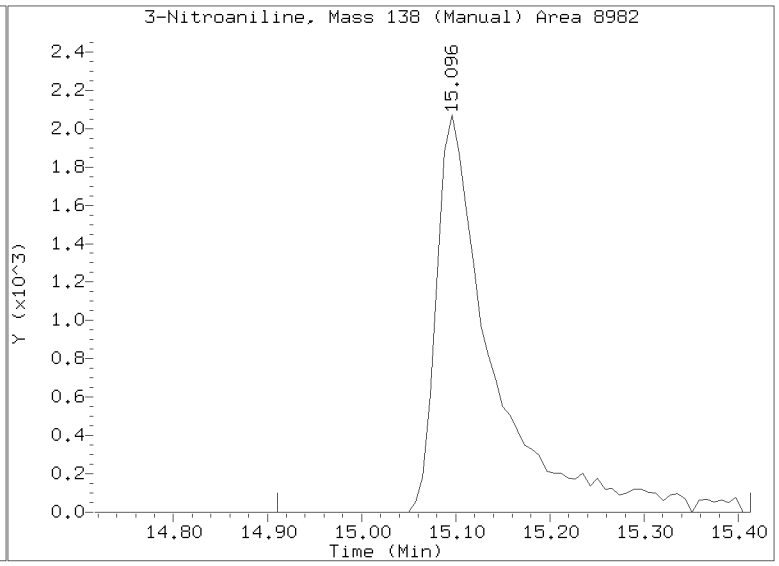


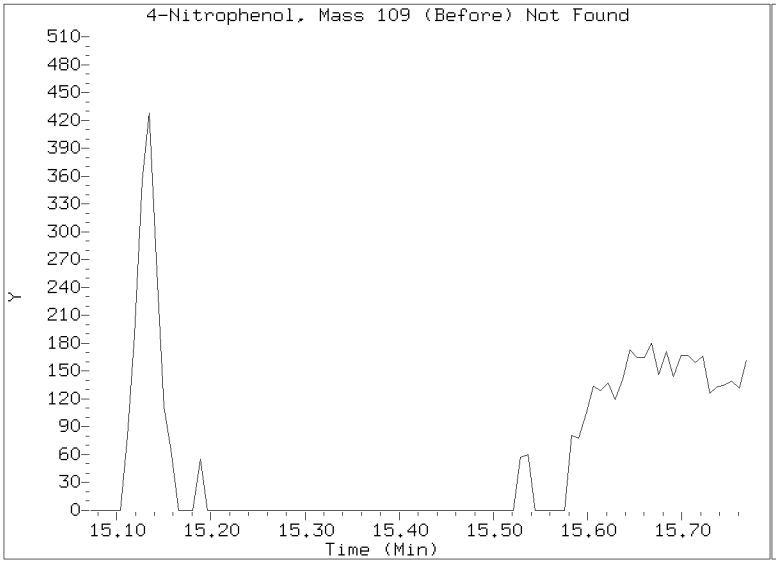


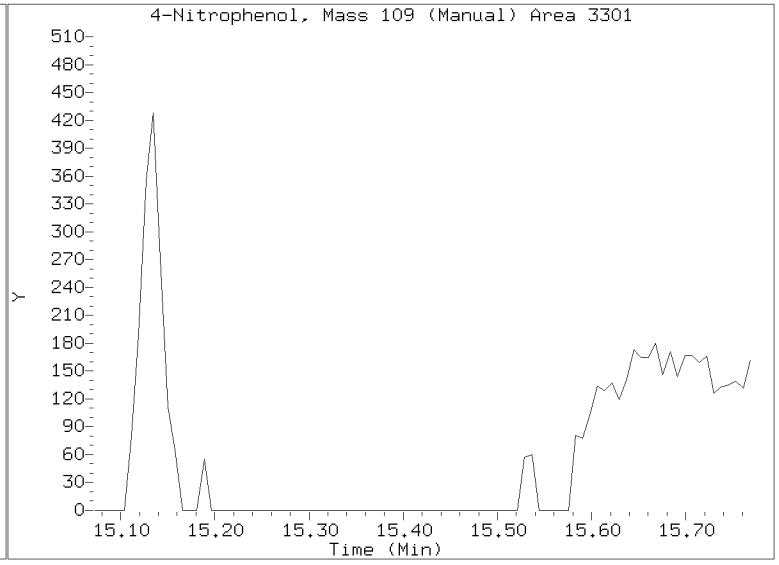
Quant Ion Manual Peak Adjustment Report

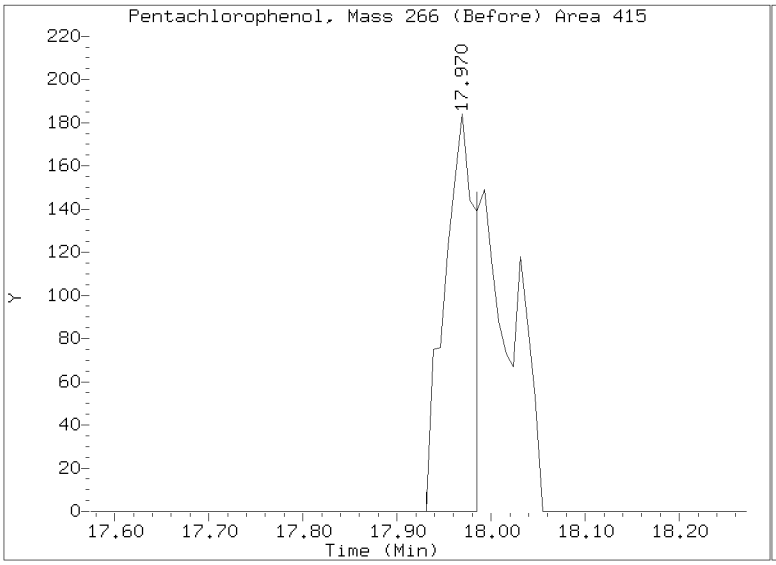
Datafile: //target/share/chem3/nt14.i/20230706C.b/NT1407062346.D
Injection Date: 07-JUL-2023 17:38
Lab ID:SLG0081-LCV1 Client ID:
Report Date: 07/08/2023 11:18

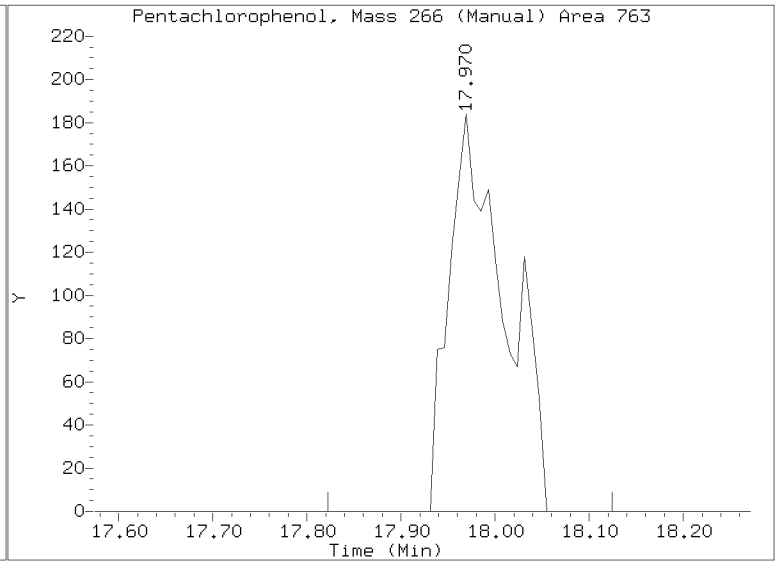












Quant Ion Manual Peak Adjustment Report

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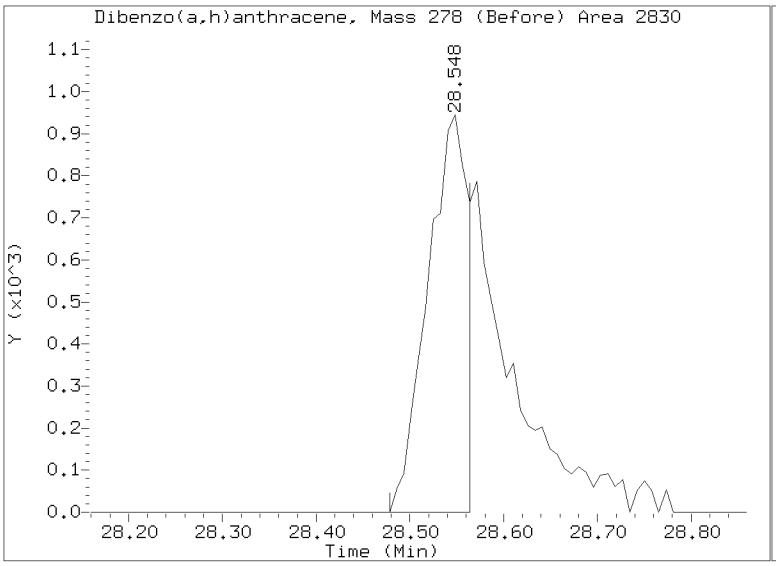
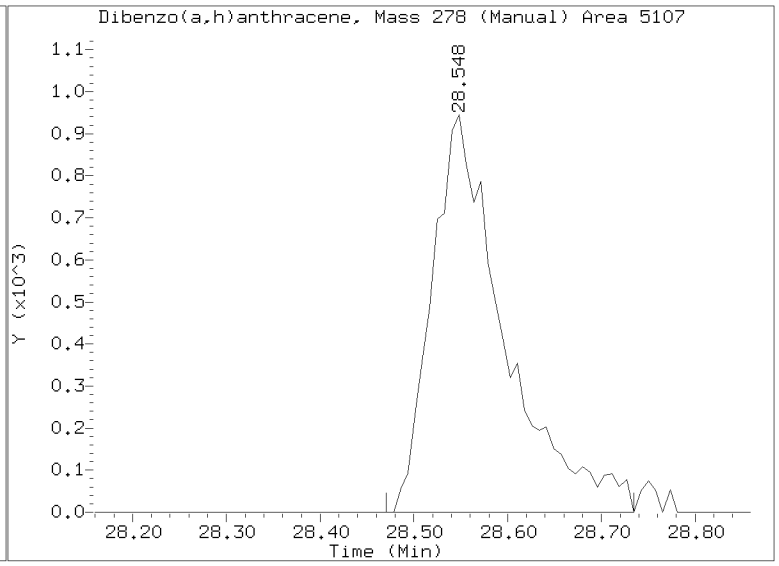
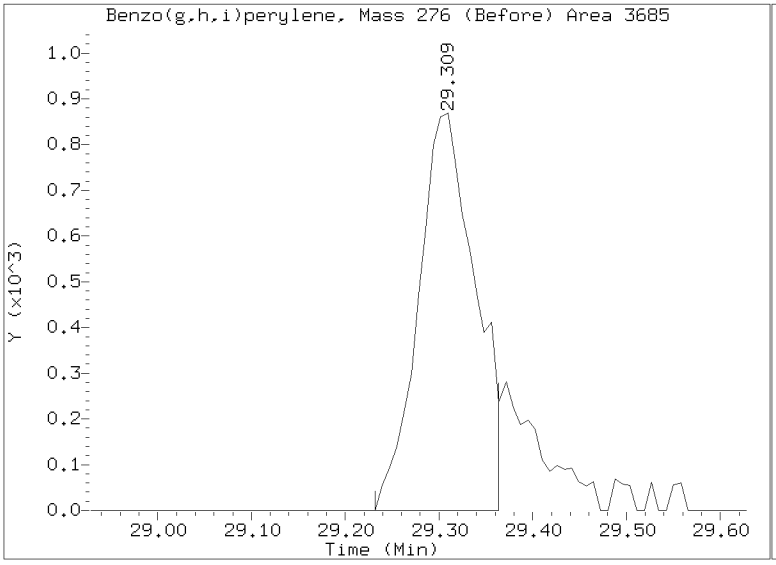
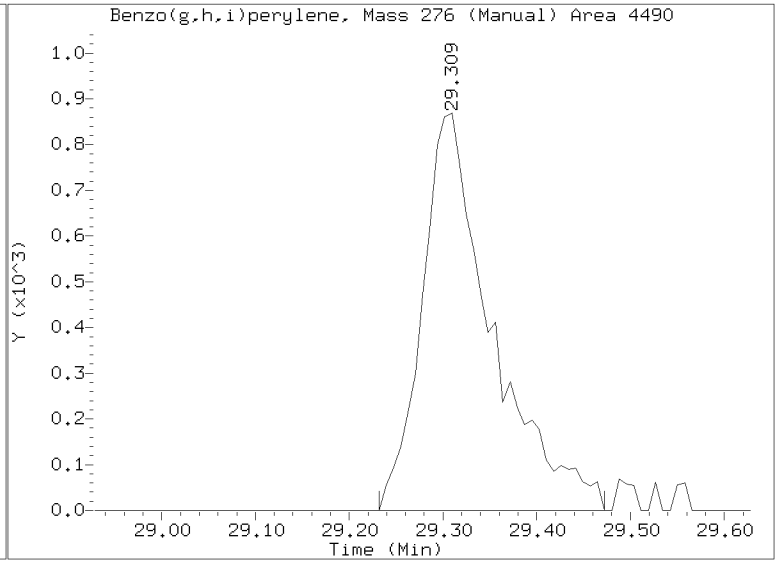
Injection Date: 07-JUL-2023 17:38
Lab ID:SLG0081-LCV1 Client ID:
Report Date: 07/08/2023 11:18









Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	NT17	Calibration:	GG00040
Lab File ID:	NT1707102312.D	Calibration Date:	07/10/2023
Sequence:	SLG0194	Injection Date:	07/10/23
Lab Sample ID:	SLG0194-SCV1	Injection Time:	19:15
Sequence Name:	SCV 5.0		

		CONC. (ug/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Naphthalene	A	5.0000	5.4	1.1134720	1.2095400		8.6	+/-20
2-Methylnaphthalene	A	5.0000	5.1	0.7740106	0.7942524		2.6	+/-20
Acenaphthylene	A	5.0000	5.3	2.0721990	2.1791640		5.2	+/-20
Acenaphthene	A	5.0000	5.3	1.2947910	1.3741950		6.1	+/-20
Fluorene	A	5.0000	5.3	1.5706250	1.6777640		6.8	+/-20
Phenanthrene	A	5.0000	5.2	1.1580190	1.2062750		4.2	+/-20
Anthracene	A	5.0000	4.8	1.0737470	1.0239490		-4.6	+/-20
Fluoranthene	A	5.0000	5.3	1.7715610	1.8682990		5.5	+/-20
Pyrene	A	5.0000	5.3	2.0010910	2.1297410		6.4	+/-20
Benzo(a)anthracene	A	5.0000	5.3	1.4157630	1.4920510		5.4	+/-20
Chrysene	A	5.0000	5.3	1.3268690	1.4055980		5.9	+/-20
Benzofluoranthenes, Total	A	10.000	10.5	1.3304960	1.4010150		5.3	+/-20
Benzo(a)pyrene	A	5.0000	5.9	1.0779320	1.2698810		17.8	+/-20
Indeno(1,2,3-cd)pyrene	A	5.0000	5.4	1.4523740	1.5631100		7.6	+/-20
Dibenzo(a,h)anthracene	A	5.0000	5.1	1.2922610	1.3226280		2.4	+/-20
Benzo(g,h,i)perylene	A	5.0000	5.0	1.3326540	1.3281440		-0.3	+/-20
1,2-Dichlorobenzene-d4	A	5.0000	4.98	0.9798026	0.9752903		-0.5	+/-20
Nitrobenzene-d5	A	5.0000	5.10	0.4586332	0.4676495		2.0	+/-20
2-Fluorobiphenyl	A	5.0000	4.76	1.5400870	1.4664070		-4.8	+/-20
p-Terphenyl-d14	A	5.0000	4.63	1.3904070	1.2870140		-7.4	+/-20

* Values outside of QC limits

Data File: \\target\share\chem3\nt17.i\20230710.b\NT1707102312.D

Date : 10-JUL-2023 19:15

Client ID:

Instrument: nt17.i

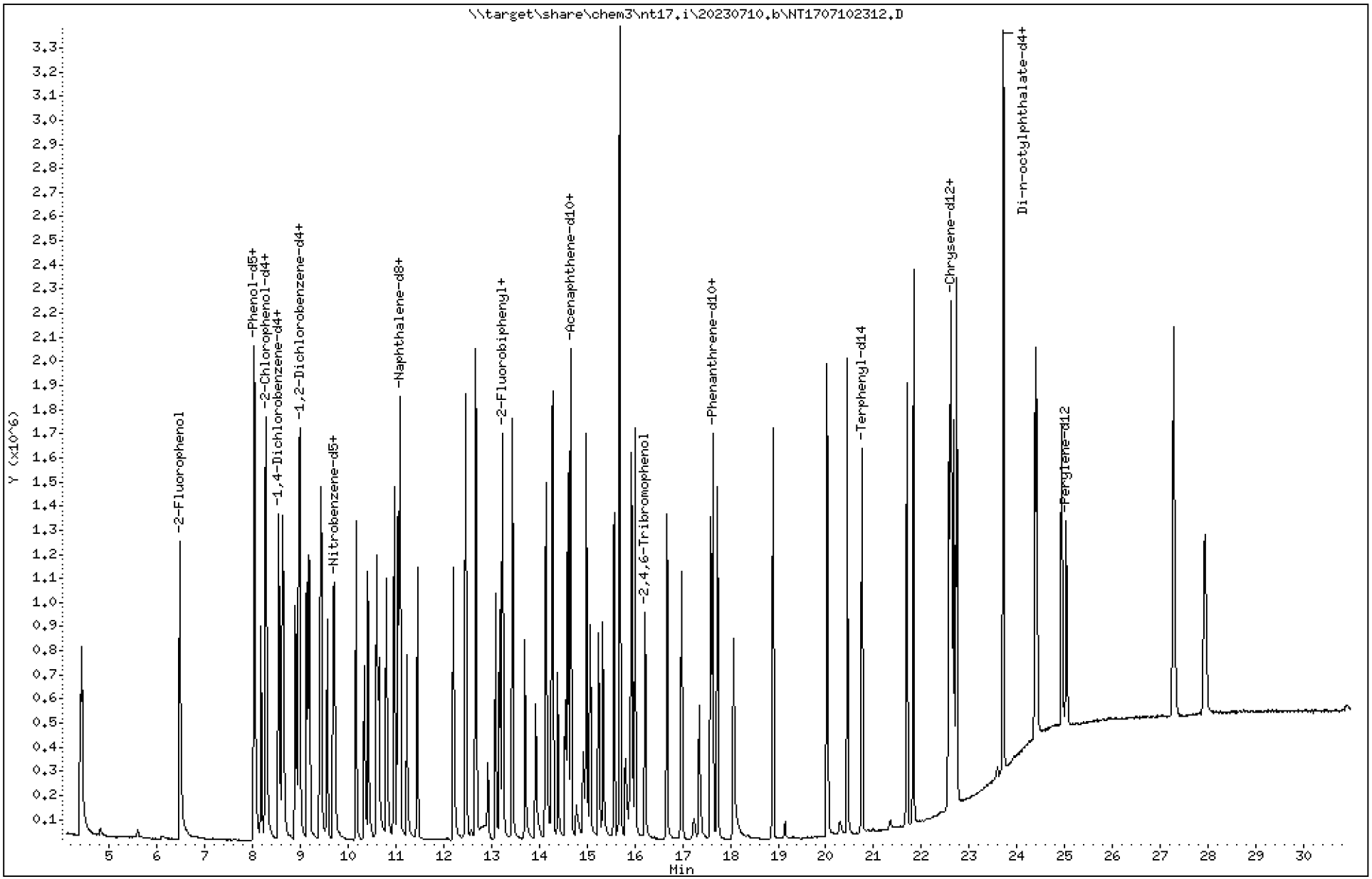
Sample Info: SEQ-SCV1

Volume Injected (uL): 1.0

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



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Date : 10-JUL-2023 19:15

Client ID:

Instrument: nt17.i

Sample Info: SEQ-SCV1

Volume Injected (uL): 1.0

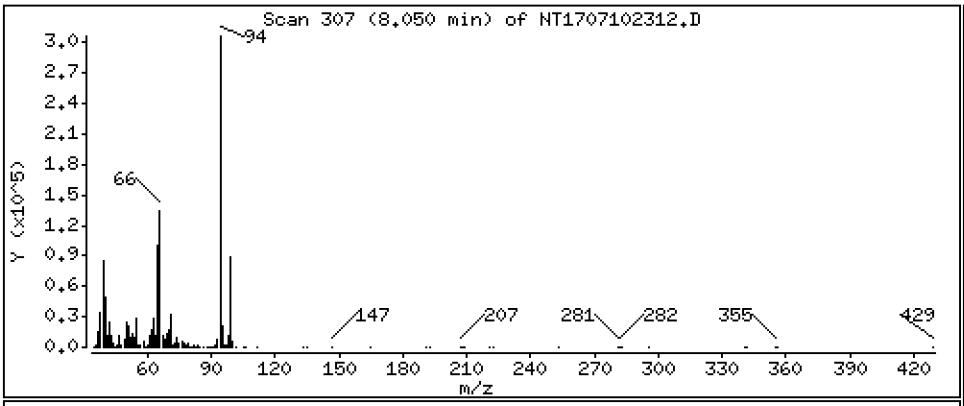
Operator: JGR

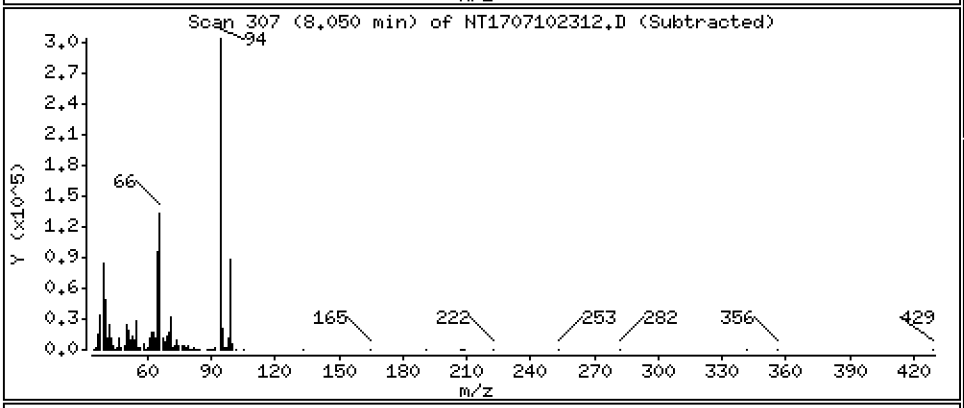
Column phase: ZB-5msi

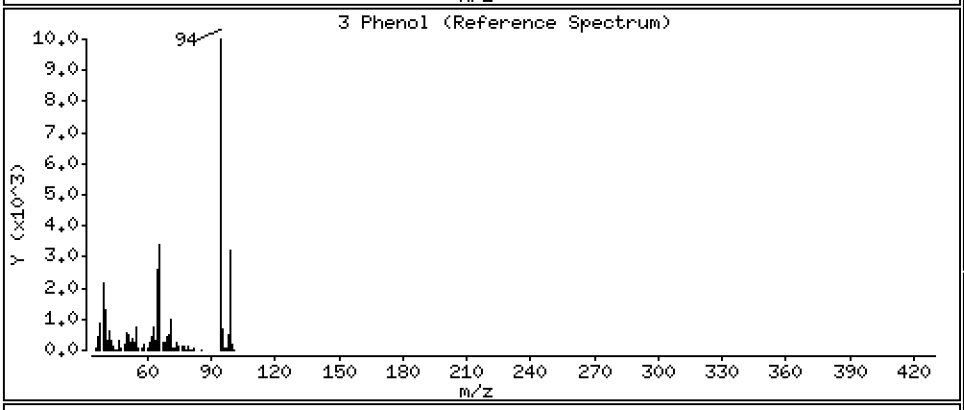
Column diameter: 0.25

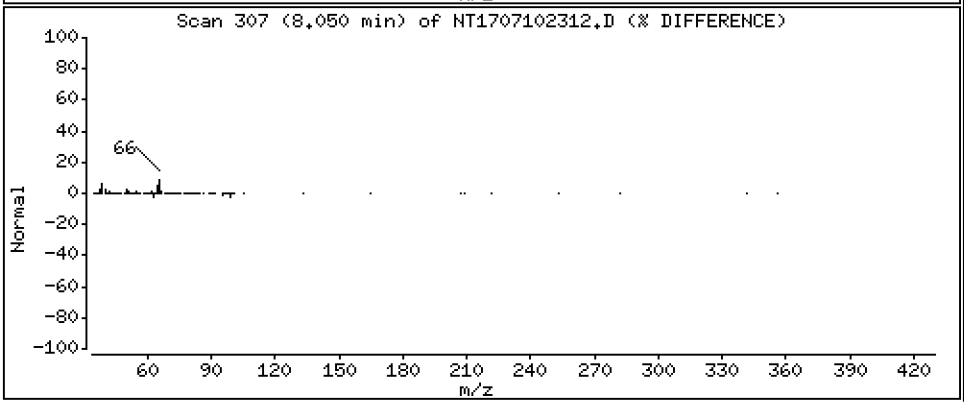
3 Phenol

Concentration: 3.871 ug/ml









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Date : 10-JUL-2023 19:15

Client ID:

Instrument: nt17.i

Sample Info: SEQ-SCV1

Volume Injected (uL): 1.0

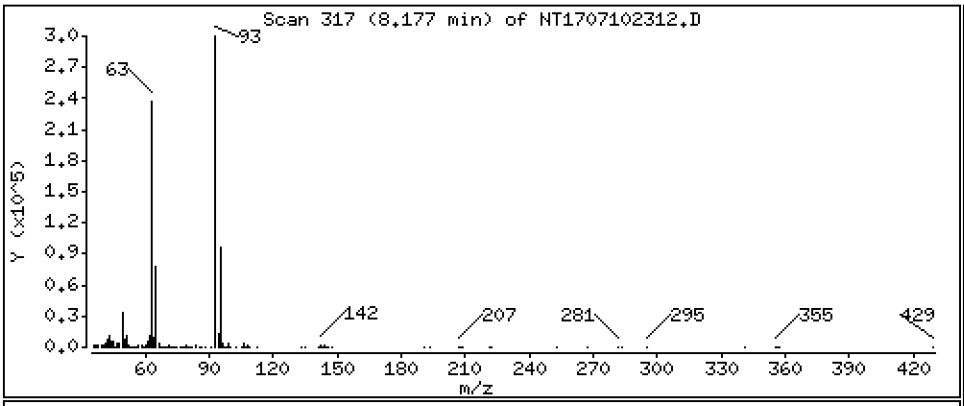
Operator: JGR

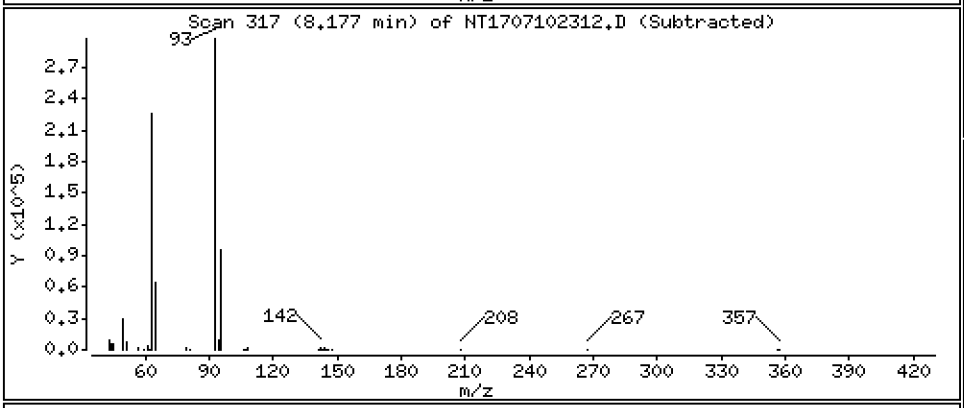
Column phase: ZB-5msi

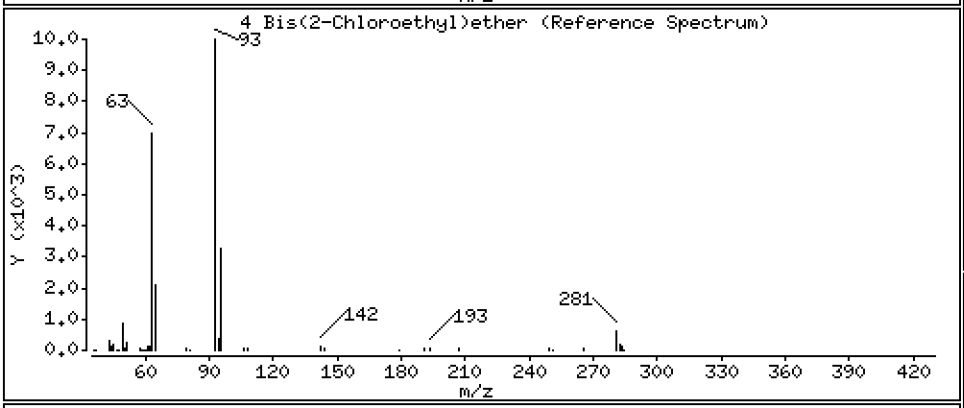
Column diameter: 0.25

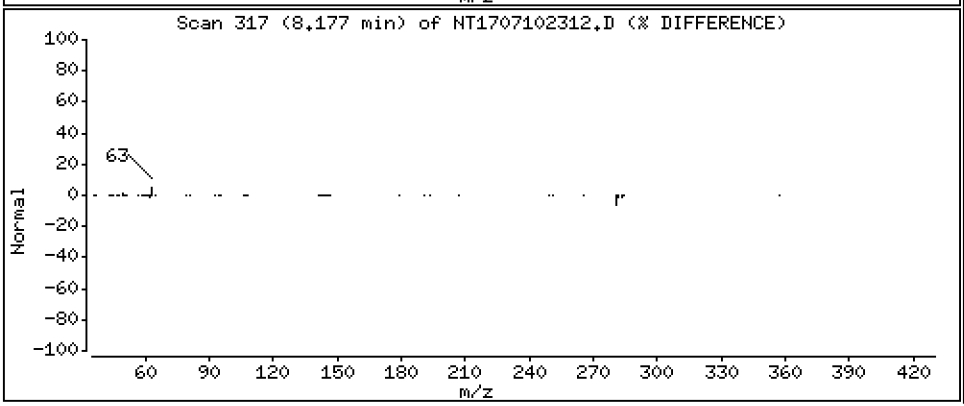
4 Bis(2-Chloroethyl)ether

Concentration: 5.565 ug/ml









ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

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Inj Date : 10-JUL-2023 19:15
Operator : JGR Inst ID: nt17.i
Smp Info : SEQ-SCV1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt17.i\20230710.b\ABN.m
Meth Date : 18-Jul-2023 10:03 jrains Quant Type: ISTD
Cal Date : 10-JUL-2023 16:44 Cal File: NT1707102308.D
Als bottle: 12 QC Sample: DFTPP
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	500.000	Volume of final extract (uL)
Vo	500.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/ml)
$	1	2-Fluorophenol	112	6.469	6.571	(0.751)	730354	7.57042	7.570
$	2	Phenol-d5	99	8.024	8.062	(0.932)	992031	7.41605	7.416
	3	Phenol	94	8.049	8.088	(0.935)	690421	3.87079	3.871
$	5	2-Chlorophenol-d4	132	8.266	8.291	(0.960)	742765	6.82537	6.825
	4	Bis(2-Chloroethyl)ether	93	8.177	8.202	(0.950)	575437	5.56465	5.565
	6	2-Chlorophenol	128	8.291	8.317	(0.963)	586198	4.61238	4.612
	7	1,3-Dichlorobenzene	146	8.546	8.559	(0.993)	583816	5.05128	5.051
*	8	1,4-Dichlorobenzene-d4	152	8.610	8.610	(1.000)	273909	4.00000	
	9	1,4-Dichlorobenzene	146	8.636	8.649	(1.003)	642853	5.15782	5.158
$	10	1,2-Dichlorobenzene-d4	152	8.955	8.981	(1.040)	333926	4.97697	4.977
	12	1,2-Dichlorobenzene	146	8.981	9.006	(1.043)	553113	5.06034	5.060
	11	Benzyl alcohol	108	8.891	9.019	(1.033)	344222	5.12539	5.125(H)
	14	2,2'-oxybis(1-Chloropropane)	121	9.185	9.198	(1.067)	184795	5.16722	5.167
	13	2-Methylphenol	108	9.134	9.172	(1.061)	440428	4.12618	4.126
	17	Hexachloroethane	117	9.556	9.568	(1.110)	249907	5.07396	5.074
	16	N-Nitroso-di-n-propylamine	70	9.428	9.454	(1.095)	443392	5.39147	5.391
	15	4-Methylphenol	108	9.402	9.466	(1.092)	488281	4.68459	4.685
$	18	Nitrobenzene-d5	82	9.683	9.722	(0.877)	605436	5.09830	5.098
	19	Nitrobenzene	77	9.709	9.760	(0.880)	654019	5.37015	5.370
	20	Isophorone	82	10.156	10.182	(0.920)	1323604	7.21838	7.218
	21	2-Nitrophenol	139	10.335	10.386	(0.936)	224974	4.43438	4.434
	22	2,4-Dimethylphenol	107	10.411	10.437	(0.943)	417118	3.69146	3.691
	23	Bis(2-Chloroethoxy)methane	93	10.590	10.616	(0.960)	647961	6.21131	6.211

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/ml)
	24 Benzoic acid	105	10.641	10.629	(0.964)	621939	7.39450	7.395
	25 2,4-Dichlorophenol	162	10.794	10.858	(0.978)	436438	5.15655	5.157
	26 1,2,4-Trichlorobenzene	180	10.960	10.973	(0.993)	424191	4.64777	4.648
*	27 Naphthalene-d8	136	11.037	11.037	(1.000)	1035709	4.00000	
	28 Naphthalene	128	11.075	11.088	(1.003)	1565914	5.43139	5.431
	29 4-Chloroaniline	127	11.228	11.266	(1.017)	500819	3.85295	3.853
	30 Hexachlorobutadiene	225	11.444	11.457	(1.037)	229061	5.02385	5.024
	31 4-Chloro-3-methylphenol	107	12.197	12.235	(1.105)	460485	4.84031	4.840
	32 2-Methylnaphthalene	142	12.452	12.477	(1.128)	1028268	5.13076	5.131
	33 Hexachlorocyclopentadiene	237	12.924	12.924	(0.886)	65053	2.78177	2.782
	34 2,4,6-Trichlorophenol	196	13.090	13.102	(0.897)	252806	4.85446	4.854
	35 2,4,5-Trichlorophenol	196	13.166	13.204	(0.902)	263748	4.87781	4.878
$	36 2-Fluorobiphenyl	172	13.230	13.243	(0.906)	956827	4.76079	4.761
	37 2-Chloronaphthalene	162	13.434	13.447	(0.920)	880023	5.00130	5.001
	38 2-Nitroaniline	65	13.702	13.727	(0.939)	340351	4.79919	4.799
	39 Dimethylphthalate	163	14.135	14.135	(0.969)	968520	5.31652	5.317
	40 Acenaphthylene	152	14.288	14.289	(0.979)	1421899	5.25809	5.258
	41 2,6-Dinitrotoluene	165	14.263	14.263	(0.977)	211236	4.98091	4.981
*	42 Acenaphthene-d10	164	14.594	14.595	(1.000)	521998	4.00000	
	43 3-Nitroaniline	138	14.544	14.595	(0.997)	187583	4.04851	4.049
	44 Acenaphthene	153	14.658	14.658	(1.004)	896659	5.30663	5.307
	45 2,4-Dinitrophenol	184	14.773	14.939	(1.012)	46553	2.37444	2.374(H)
	46 Dibenzofuran	168	14.990	15.002	(1.027)	1210085	5.14216	5.142
	47 4-Nitrophenol	109	14.913	14.990	(1.022)	102914	3.77906	3.779
	48 2,4-Dinitrotoluene	165	15.066	15.092	(1.032)	262026	4.77389	4.774
	50 Diethylphthalate	149	15.576	15.576	(1.067)	980070	4.74285	4.743
	49 Fluorene	166	15.691	15.691	(1.075)	1094737	5.34107	5.341
	51 4-Chlorophenyl-phenylether	204	15.691	15.691	(1.075)	503869	5.17889	5.179
	52 4-Nitroaniline	138	15.805	15.856	(1.083)	153891	3.75941	3.759
	53 4,6-Dinitro-2-methylphenol	198	15.894	15.932	(0.904)	108512	3.45015	3.450
	54 N-Nitrosodiphenylamine	169	15.932	15.945	(0.906)	657693	5.12860	5.129
$	55 2,4,6-Tribromophenol	330	16.212	16.225	(1.111)	181706	7.52390	7.524
	56 4-Bromophenyl-phenylether	248	16.670	16.683	(0.948)	278375	5.61553	5.616
	57 Hexachlorobenzene	284	16.989	16.989	(0.966)	274867	4.75119	4.751
	58 Pentachlorophenol	266	17.346	17.372	(0.986)	125024	3.82216	3.822
*	59 Phenanthrene-d10	188	17.588	17.588	(1.000)	856143	4.00000	
	60 Phenanthrene	178	17.627	17.639	(1.002)	1290930	5.20835	5.208
	61 Anthracene	178	17.729	17.741	(1.008)	1095808	4.76811	4.768
	62 Carbazole	167	18.060	18.086	(1.027)	998189	5.19052	5.191
	63 Di-n-butylphthalate	149	18.889	18.902	(1.074)	1555814	5.00690	5.007
	64 Fluoranthene	202	20.024	20.037	(0.884)	1355626	5.27303	5.273
	65 Pyrene	202	20.445	20.458	(0.903)	1545327	5.32145	5.321
$	66 Terphenyl-d14	244	20.751	20.764	(0.917)	933849	4.62819	4.628
	67 Butylbenzylphthalate	149	21.695	21.695	(0.958)	624579	5.01954	5.020
	68 Benzo(a)anthracene	228	22.613	22.613	(0.999)	1082623	5.26942	5.269
*	69 Chrysene-d12	240	22.639	22.639	(1.000)	580475	4.00000	
	70 3,3'-Dichlorobenzidine	252	22.575	22.588	(0.997)	527553	9.59519	9.595
	71 Chrysene	228	22.690	22.690	(1.002)	1019893	5.29667	5.297
	72 bis(2-Ethylhexyl)phthalate	149	22.741	22.741	(0.959)	877138	5.95049	5.950
*	134 Di-n-octylphthalate-d4	153	23.710	23.711	(1.000)	1040512	4.00000	
	73 Di-n-octylphthalate	149	23.723	23.723	(1.001)	1506165	5.20804	5.208
	74 Benzo(b)fluoranthene	252	24.387	24.399	(0.974)	1004017	4.74064	4.741
	75 Benzo(k)fluoranthene	252	24.425	24.438	(0.976)	1238376	5.76040	5.760
	76 Benzo(a)pyrene	252	24.935	24.961	(0.996)	907581	5.89036	5.890

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/ml)
*	77 Perylene-d12	264	25.037	25.037	(1.000)	571758	4.00000	
	78 Indeno(1,2,3-cd)pyrene	276	27.285	27.311	(1.090)	1117151	5.38122	5.381
	79 Dibenzo(a,h)anthracene	278	27.285	27.311	(1.090)	945279	5.11750	5.117
	80 Benzo(g,h,i)perylene	276	27.937	27.975	(1.116)	949221	4.98308	4.983
	90 N-Nitrosodimethylamine	74	4.380	4.457	(0.509)	404104	5.59416	5.594
	91 Aniline	93	Compound Not Detected.					
	93 Benzidine	184	20.292	20.317	(0.896)	69334	2.18630	2.186
	103 Pyridine	79	4.418	4.495	(0.513)	636959	5.60793	5.608
	105 1-methylnaphthalene	142	12.669	12.681	(1.148)	1014575	5.47029	5.470
	111 Azobenzene (1,2-DP-Hydrazine)	77	16.009	16.009	(1.097)	1316007	5.12248	5.122
	187 Total Benzofluoranthenes	252	24.387	24.399	(0.974)	2002604	10.5300	10.53
	120 2,3,4,6-Tetrachlorophenol	232	15.334	15.359	(1.051)	223082	4.89144	4.891

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt17.i
Lab File ID: NT1707102312.D
Lab Smp Id: SEQ-SCV1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt17.i\20230710.b\ABN.m
Misc Info:

Calibration Date: 10-JUL-2023
Calibration Time: 14:14
Level: LOW
Sample Type: WATER

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	288953	144477	577906	273909	-5.21
27 Naphthalene-d8	1098716	549358	2197432	1035709	-5.73
42 Acenaphthene-d10	552014	276007	1104028	521998	-5.44
59 Phenanthrene-d10	884794	442397	1769588	856143	-3.24
69 Chrysene-d12	564549	282275	1129098	580475	2.82
134 Di-n-octylphthala	1047332	523666	2094664	1040512	-0.65
77 Perylene-d12	526075	263038	1052150	571758	8.68

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	8.61	8.11	9.11	8.61	-0.00
27 Naphthalene-d8	11.04	10.54	11.54	11.04	-0.00
42 Acenaphthene-d10	14.60	14.10	15.10	14.59	-0.00
59 Phenanthrene-d10	17.59	17.09	18.09	17.59	-0.00
69 Chrysene-d12	22.64	22.14	23.14	22.64	-0.00
134 Di-n-octylphthala	23.71	23.21	24.21	23.71	-0.00
77 Perylene-d12	25.04	24.54	25.54	25.04	-0.00

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

REVIEW SUMMARY FOR FILE - NT1707102312.D

Lab ID: SEQ-SCV1
nt17.i, ABN.m, 10-JUL-2023 19:15

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

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
1.033	1.047	-0.0148	Benzyl alcohol
1.092	1.099	-0.0074	4-Methylphenol
0.978	0.984	-0.0058	2,4-Dichlorophenol
0.964	0.000	0.9642	Benzoic acid
0.997	0.000	0.9965	3-Nitroaniline
1.012	1.024	-0.0113	2,4-Dinitrophenol
1.022	0.000	1.0218	4-Nitrophenol
0.509	0.518	-0.0089	N-Nitrosodimethylamine
0.513	0.522	-0.0089	Pyridine
0.751	0.763	-0.0119	2-Fluorophenol

RRT check based on Ccal File: NT1707102308.D

On Column LOD for nt17.i, ABN.m, ICAL.sub = 0.0000

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

Analytical Resources, LLC
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	NT17	Calibration:	GG00040
Lab File ID:	NT1707202307.D	Calibration Date:	07/10/2023
Sequence:	SLG0263	Injection Date:	07/21/23
Lab Sample ID:	SLG0263-CCV1	Injection Time:	04:26
Sequence Name:	Calibration Check		

		CONC. (ug/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Naphthalene	A	5.0000	4.6	1.1134720	5.1740850		-7.1	+/-50
2-Methylnaphthalene	A	5.0000	5.1	0.7740106	3.9704350		2.6	+/-50
Acenaphthylene	A	5.0000	5.3	2.0721990	11.05276		6.7	+/-50
Acenaphthene	A	5.0000	4.8	1.2947910	6.1647210		-4.8	+/-50
Fluorene	A	5.0000	5.3	1.5706250	8.3725490		6.6	+/-50
Phenanthrene	A	5.0000	4.6	1.1580190	5.3259720		-8.0	+/-50
Anthracene	A	5.0000	4.7	1.0737470	5.0923680		-5.1	+/-50
Fluoranthene	A	5.0000	5.2	1.7715610	9.2405260		4.3	+/-50
Pyrene	A	5.0000	4.5	2.0010910	9.0554960		-9.5	+/-50
Benzo(a)anthracene	A	5.0000	5.0	1.4157630	7.0445930		-0.5	+/-50
Chrysene	A	5.0000	4.5	1.3268690	5.9345060		-10.5	+/-50
Benzofluoranthenes, Total	A	10.000	10.3	1.3304960	6.8850810		3.5	+/-50
Benzo(a)pyrene	A	5.0000	4.8	1.0779320	5.1617230		-4.2	+/-50
Indeno(1,2,3-cd)pyrene	A	5.0000	4.3	1.4523740	6.2135730		-14.4	+/-50
Dibenzo(a,h)anthracene	A	5.0000	4.2	1.2922610	5.4858600		-15.1	+/-50
Benzo(g,h,i)perylene	A	5.0000	4.0	1.3326540	5.3372010		-19.9	+/-50
1,2-Dichlorobenzene-d4	A	5.0000	4.97	0.9798026	4.8720340		-0.6	+/-50
Nitrobenzene-d5	A	5.0000	5.54	0.4586332	2.5424190		10.9	+/-50
2-Fluorobiphenyl	A	5.0000	4.74	1.5400870	7.2934860		-5.3	+/-50
p-Terphenyl-d14	A	5.0000	5.23	1.3904070	7.2701810		4.6	+/-50

* Values outside of QC limits

* Values outside of QC limits

Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202307.D

Page 1

Date : 21-JUL-2023 04:26

Client ID:

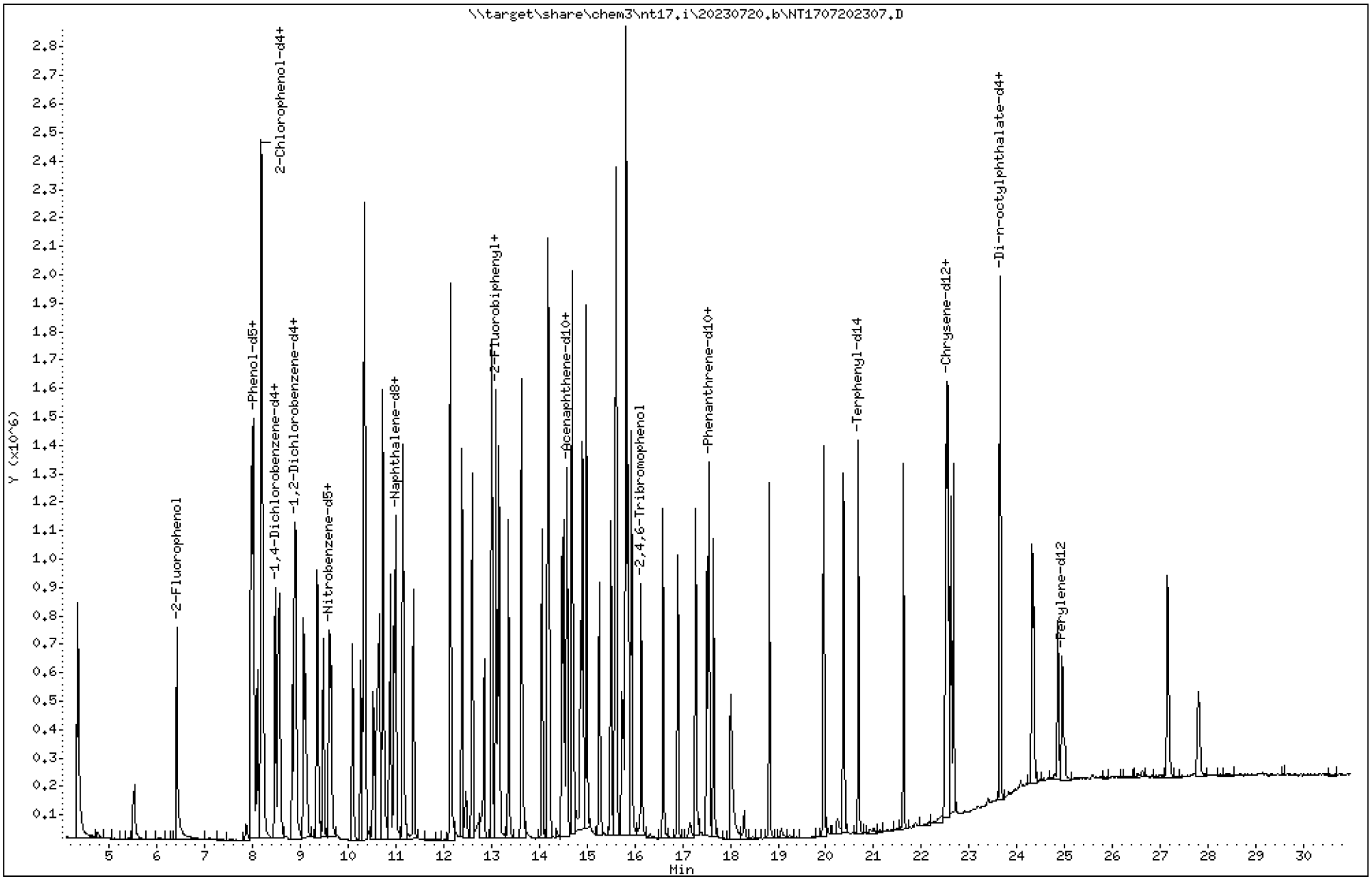
Instrument: nt17.i

Sample Info: SLG0263-CCV1

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

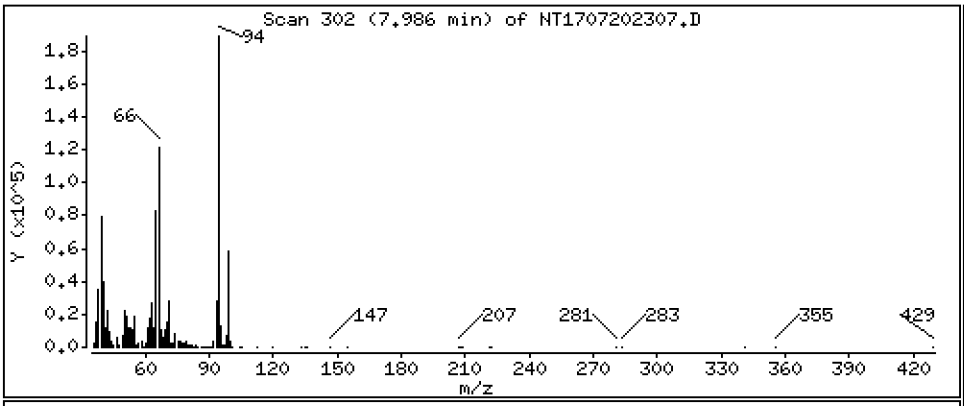
Operator: JGR

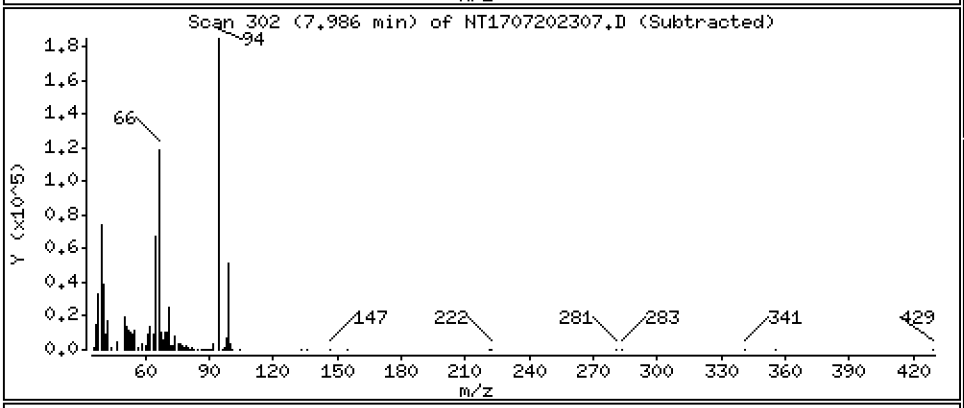
Column phase: ZB-5msi

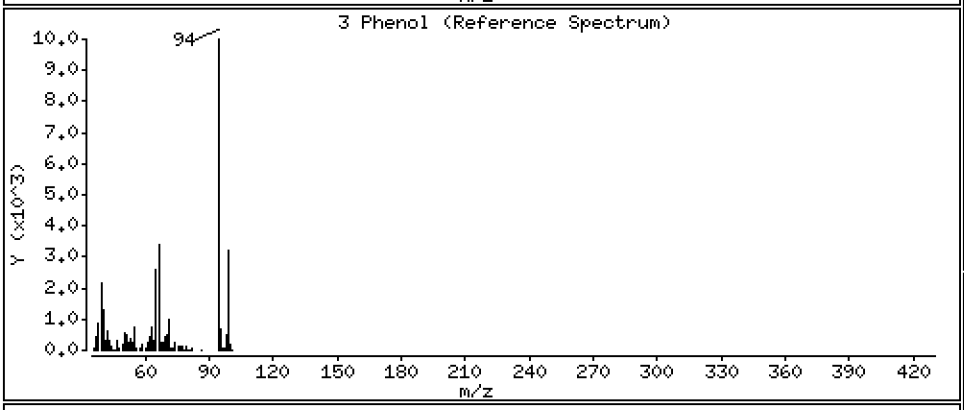
Column diameter: 0.25

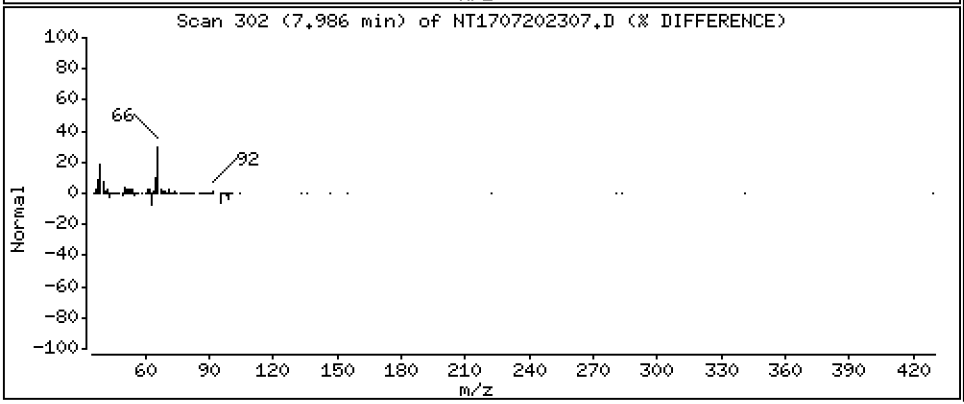
3 Phenol

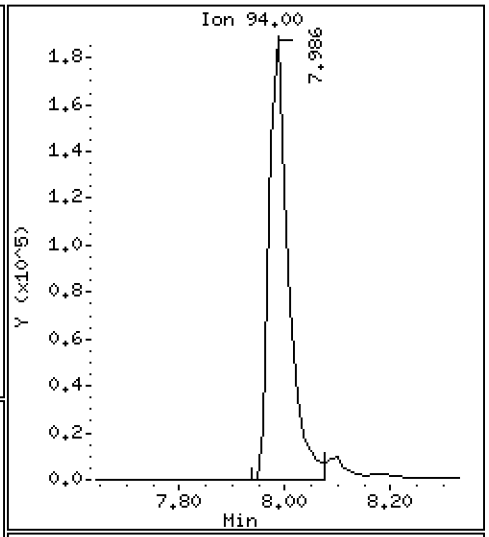
Concentration: 4.654 ug/mL

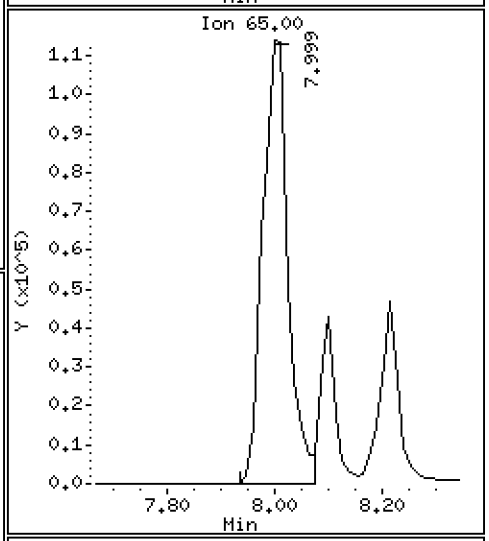


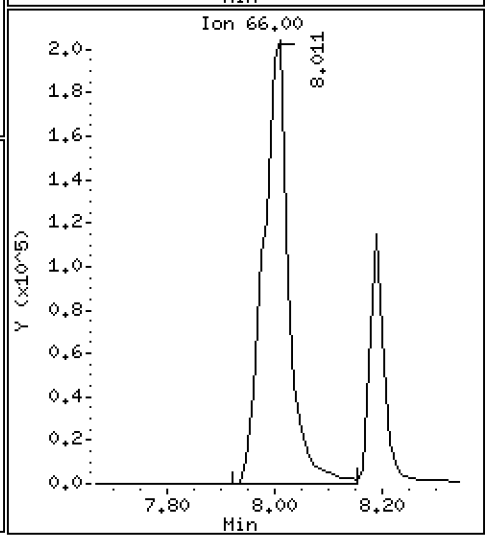












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

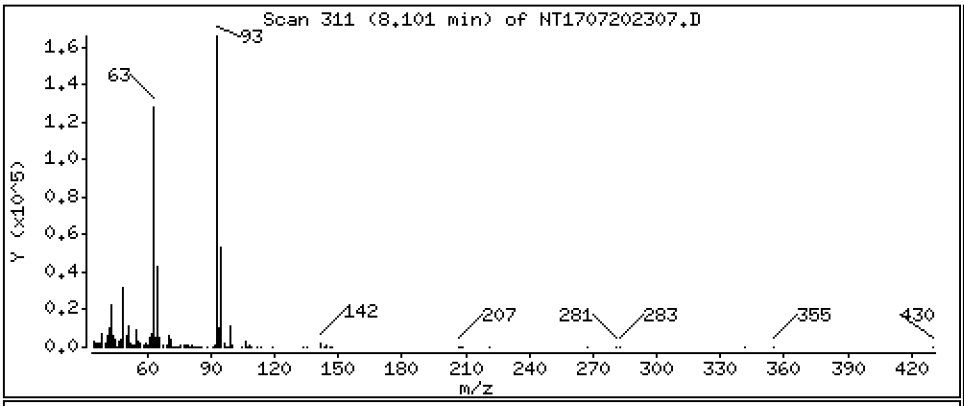
Operator: JGR

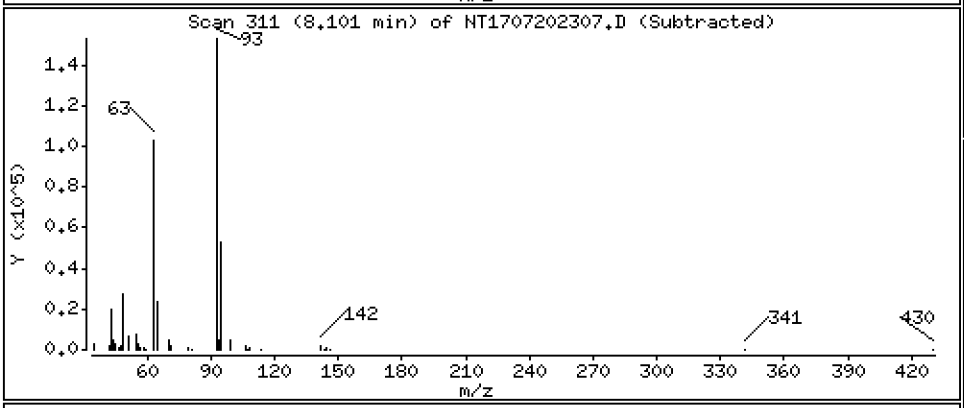
Column phase: ZB-5msi

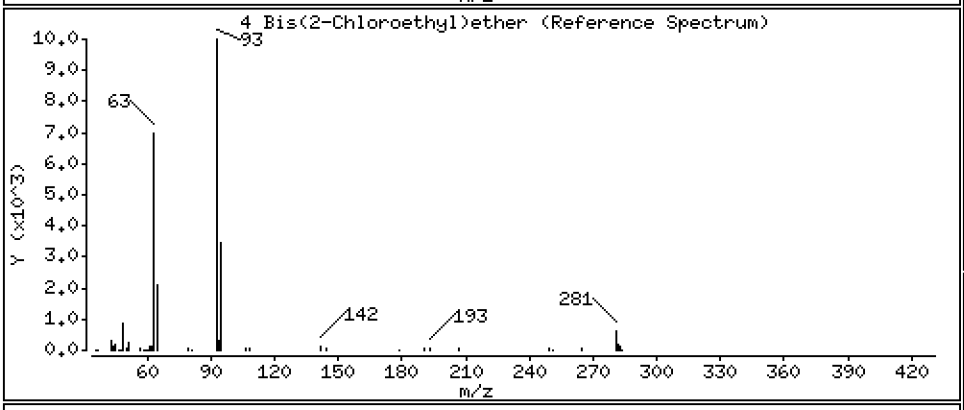
Column diameter: 0.25

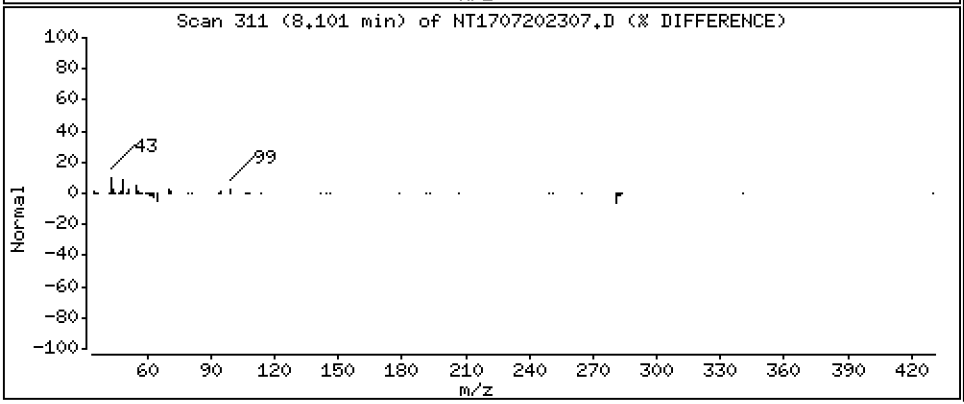
4 Bis(2-Chloroethyl)ether

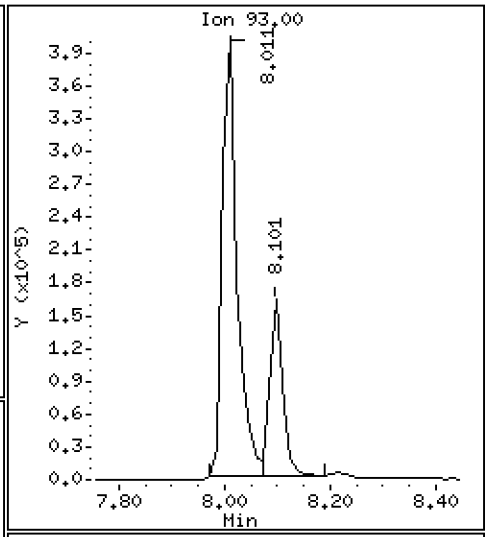
Concentration: 4.626 ug/mL

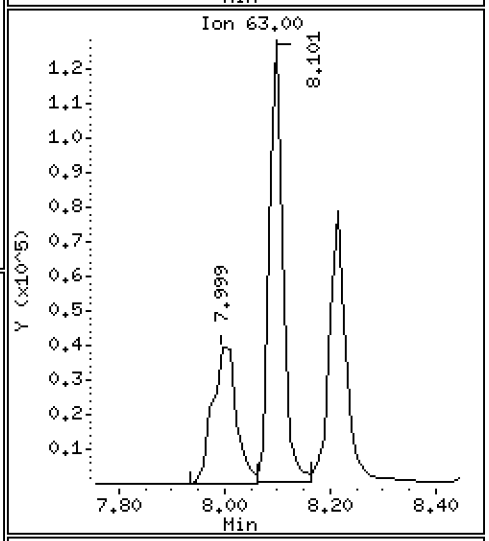


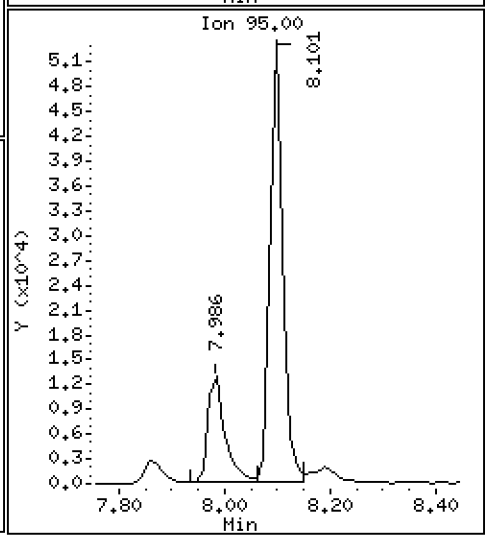












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

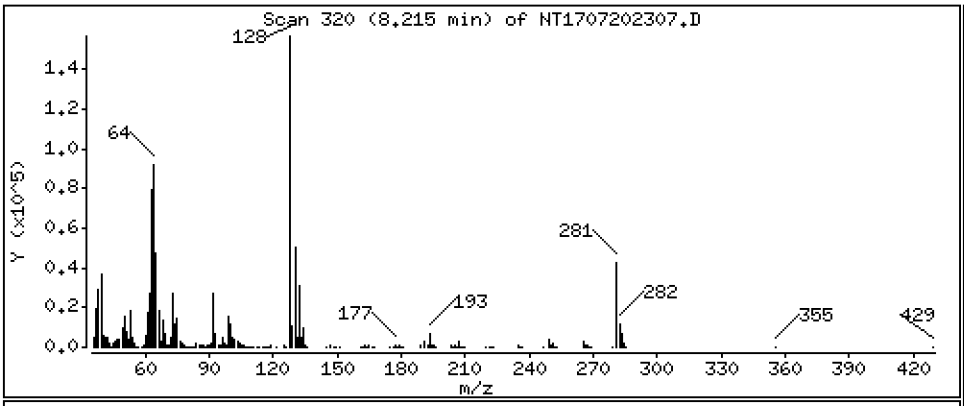
Operator: JGR

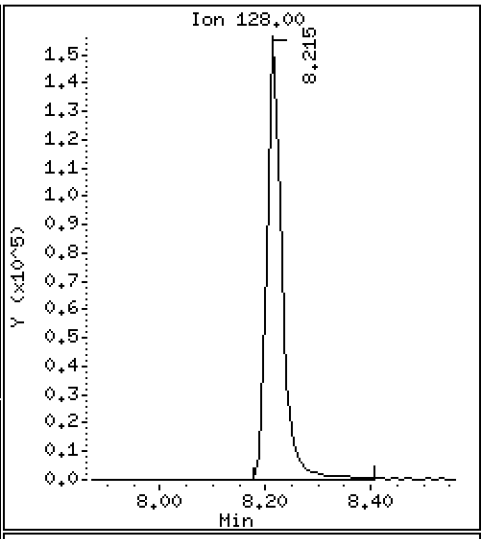
Column phase: ZB-5msi

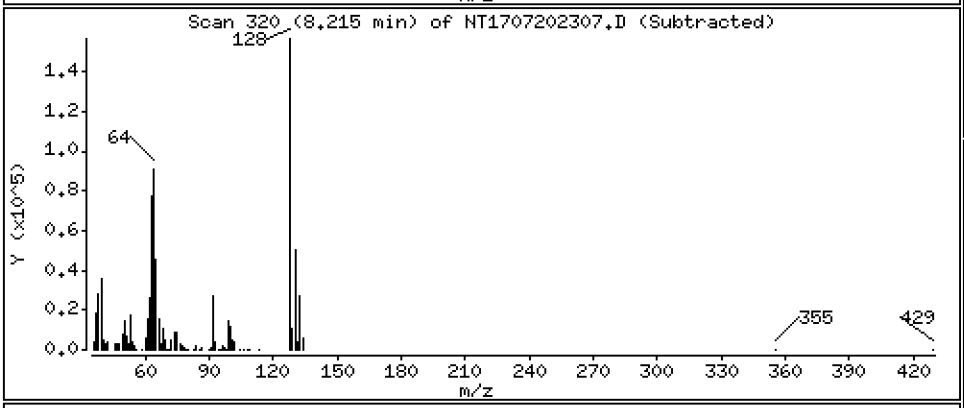
Column diameter: 0.25

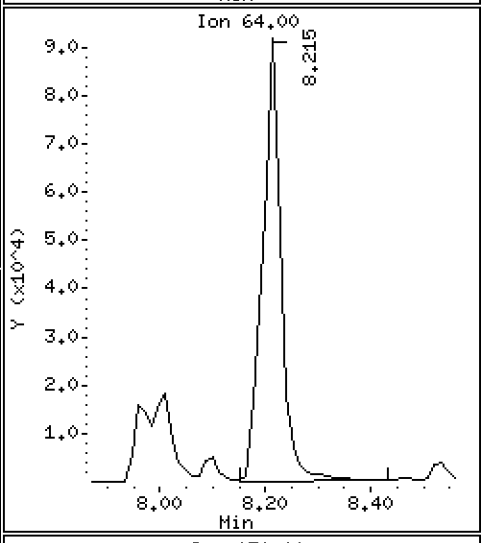
6 2-Chlorophenol

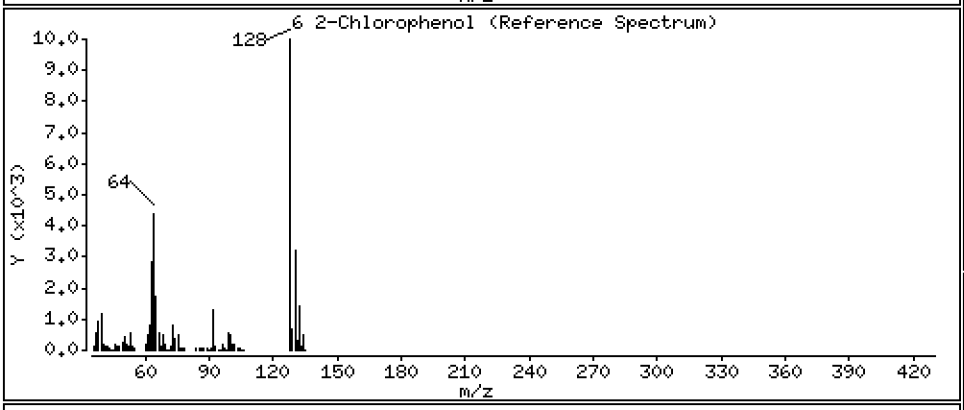
Concentration: 4.687 ug/mL

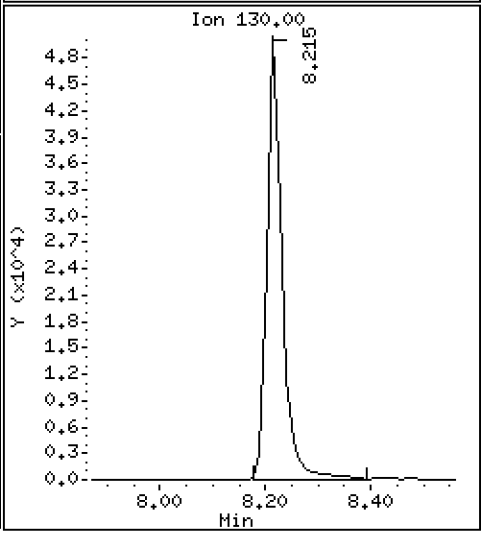


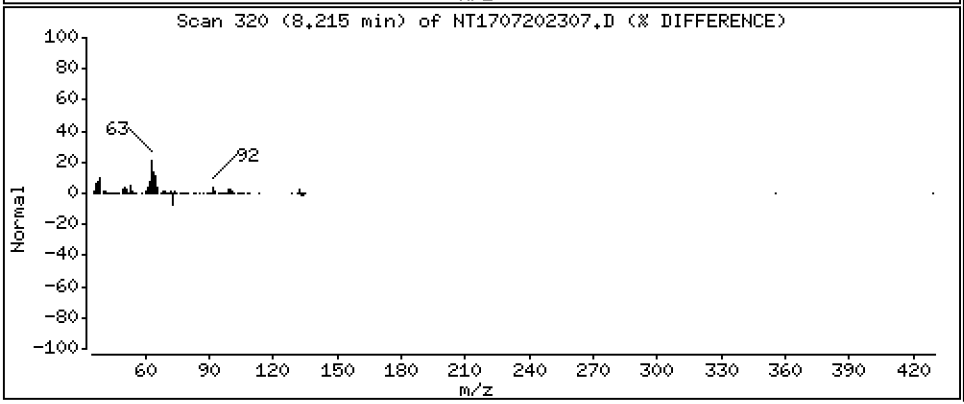












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

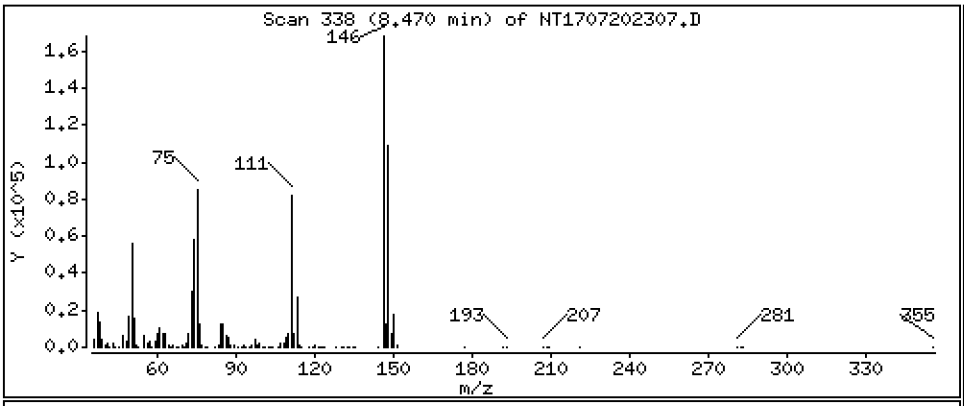
Operator: JGR

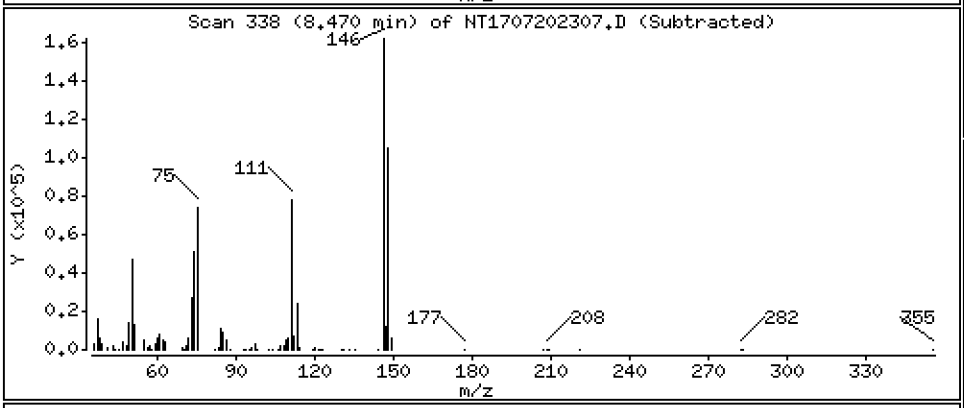
Column phase: ZB-5msi

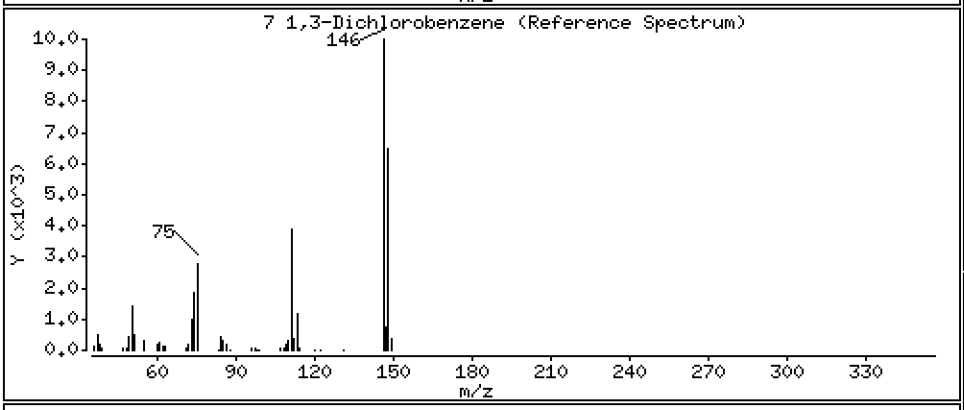
Column diameter: 0.25

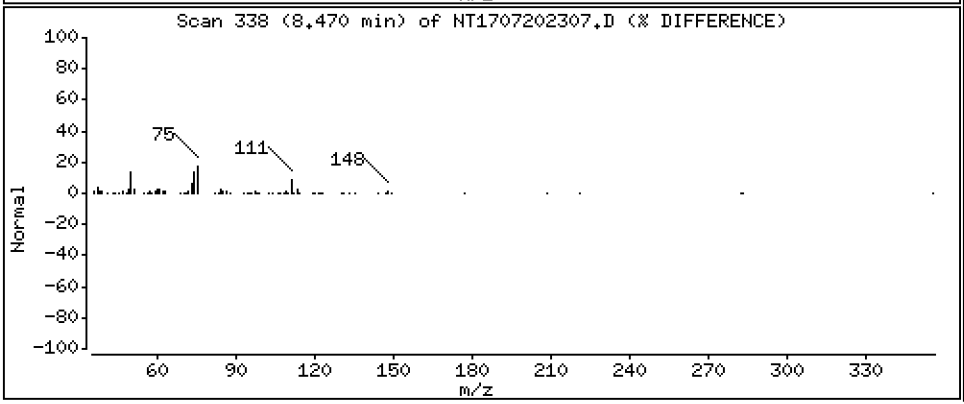
7 1,3-Dichlorobenzene

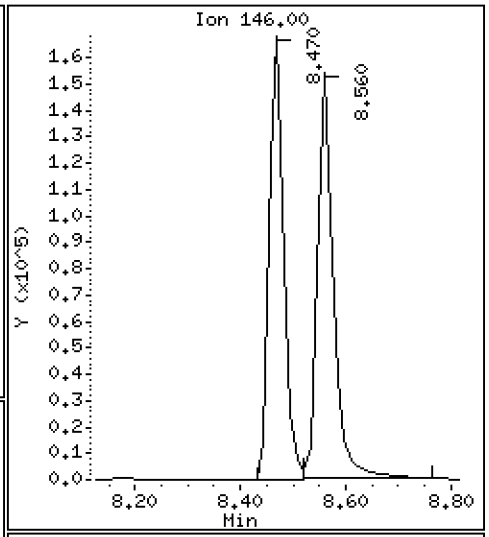
Concentration: 4.750 ug/mL

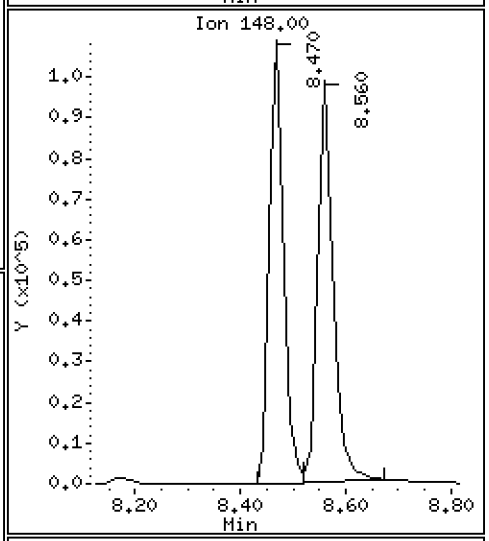


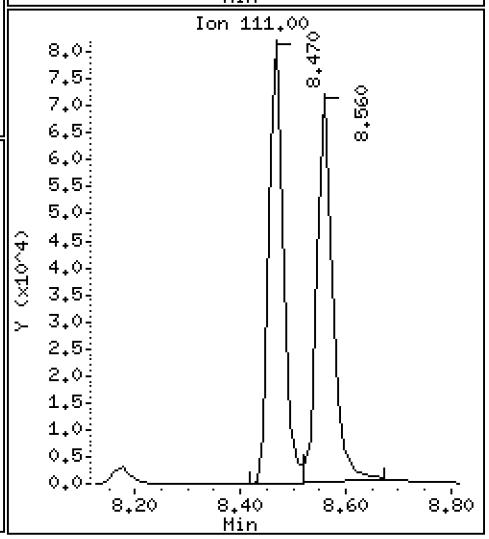












Date : 21-JUL-2023 04:26

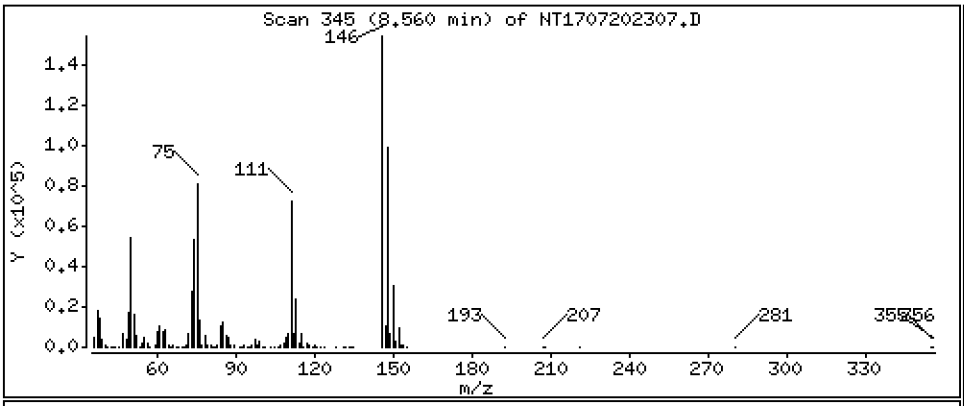
Client ID: Instrument: nt17.i

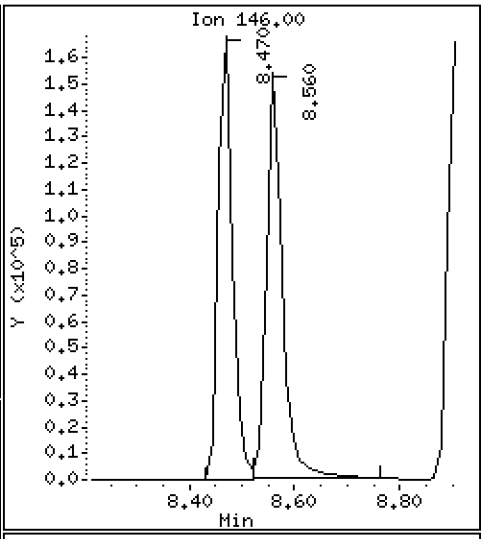
Sample Info: SLG0263-CCV1

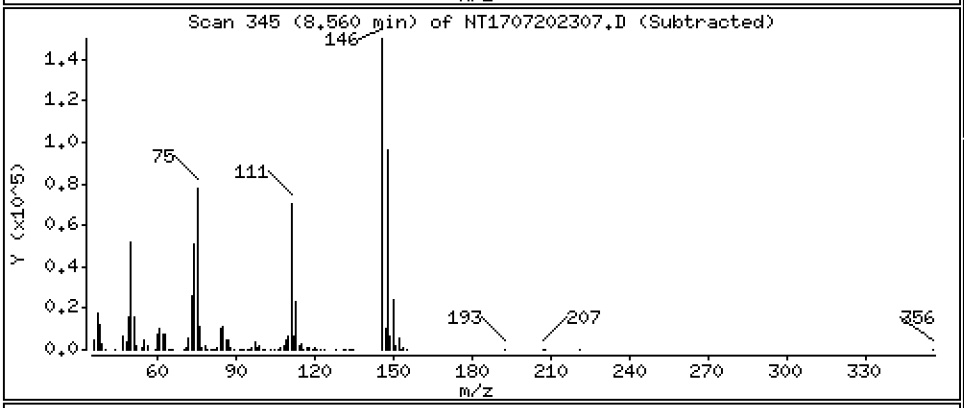
Operator: JGR

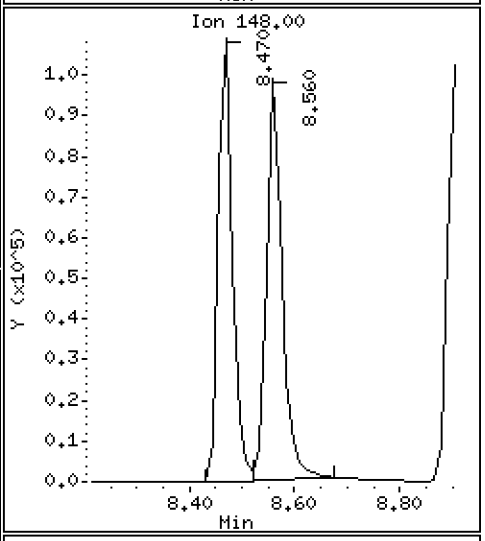
Column phase: ZB-5msi Column diameter: 0.25

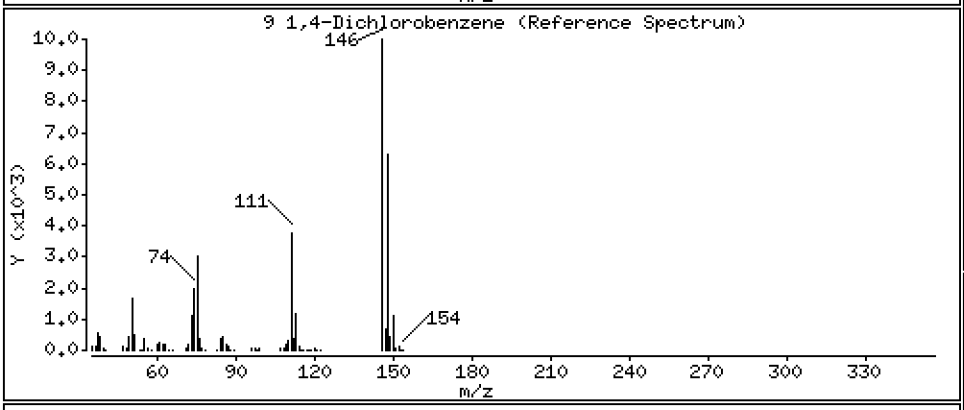
9 1,4-Dichlorobenzene Concentration: 5.000 ug/mL

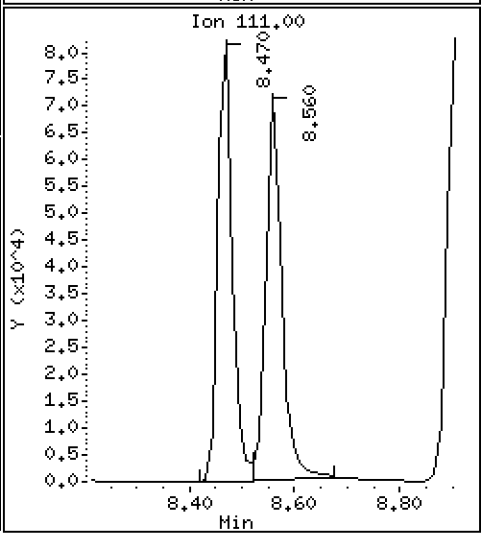


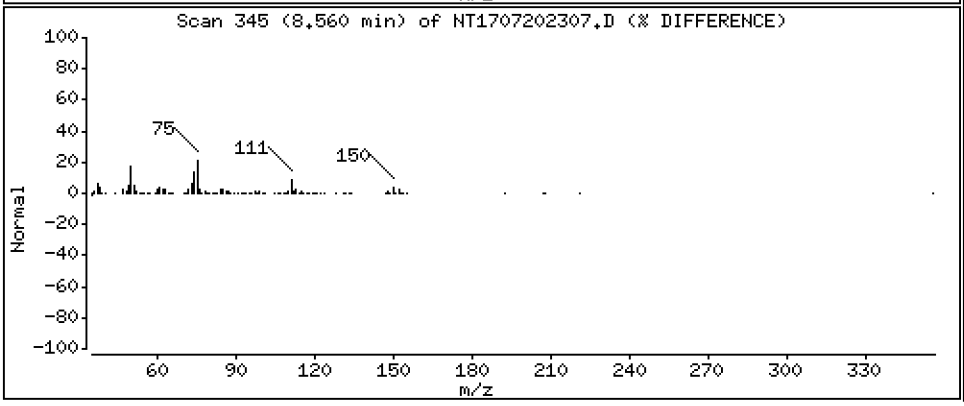












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

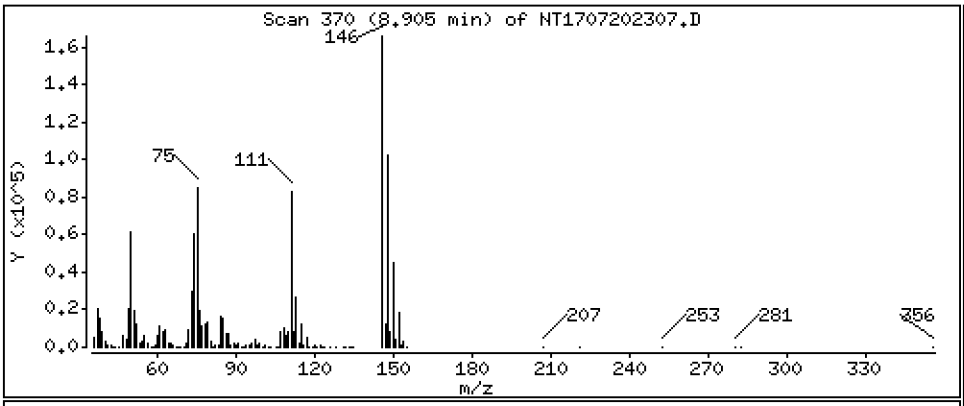
Operator: JGR

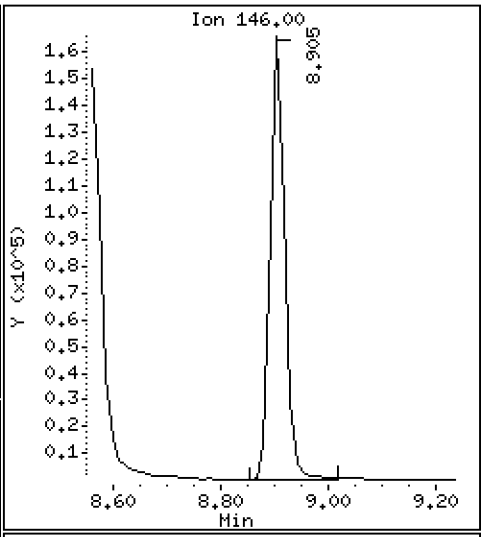
Column phase: ZB-5msi

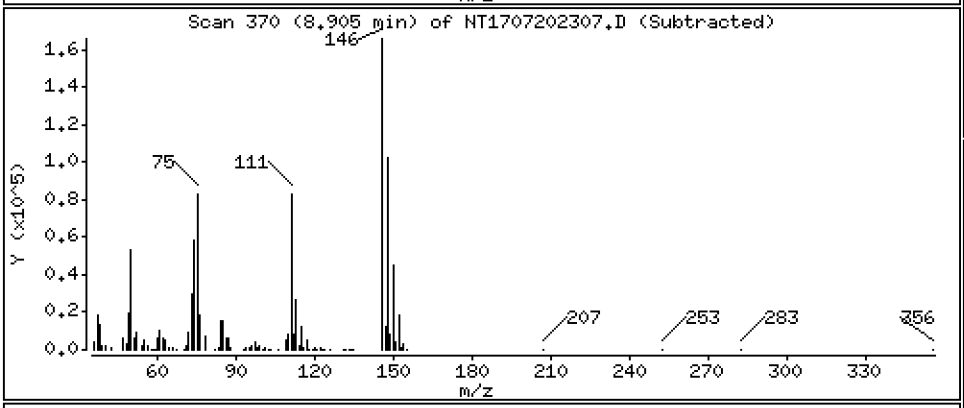
Column diameter: 0.25

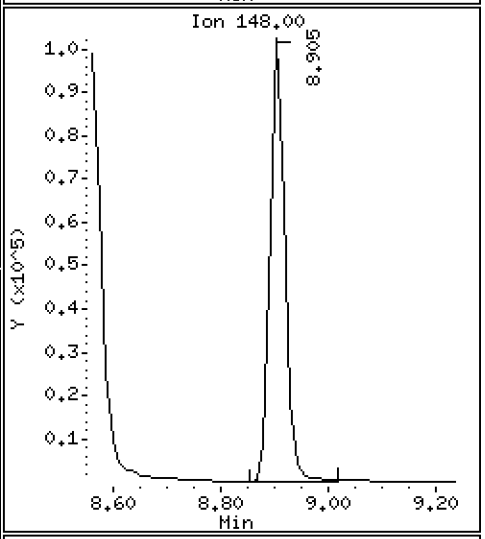
12 1,2-Dichlorobenzene

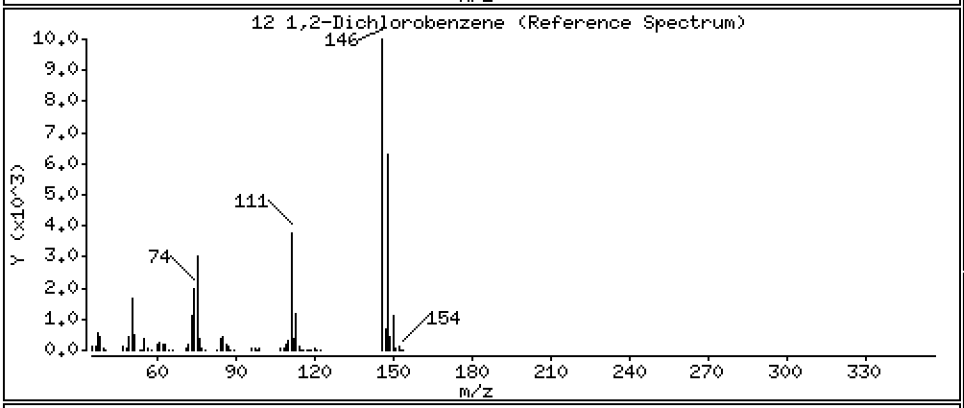
Concentration: 4.964 ug/mL

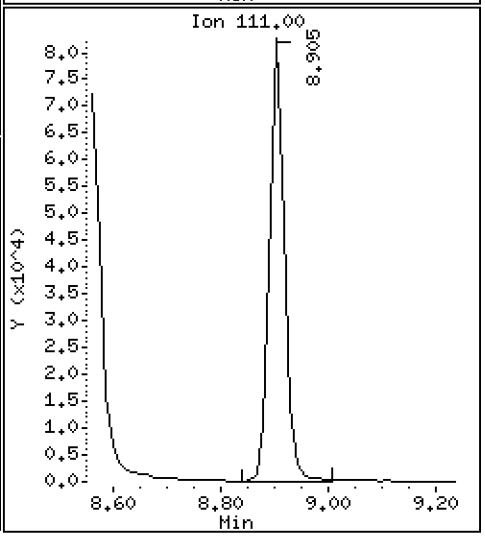


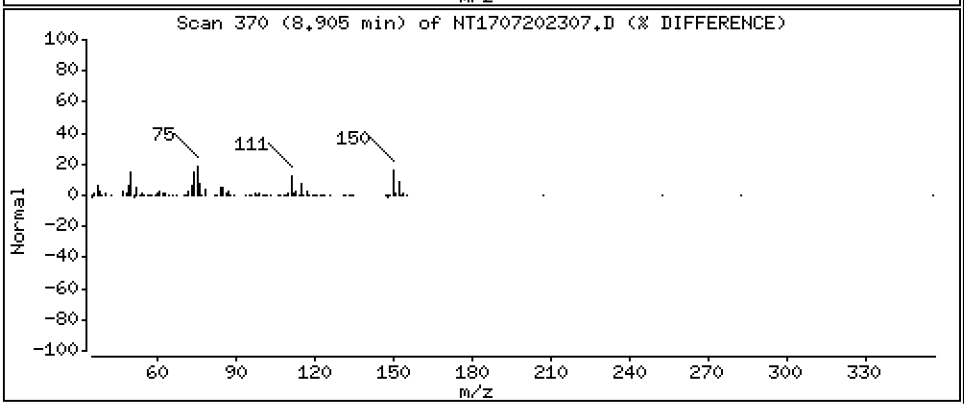












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

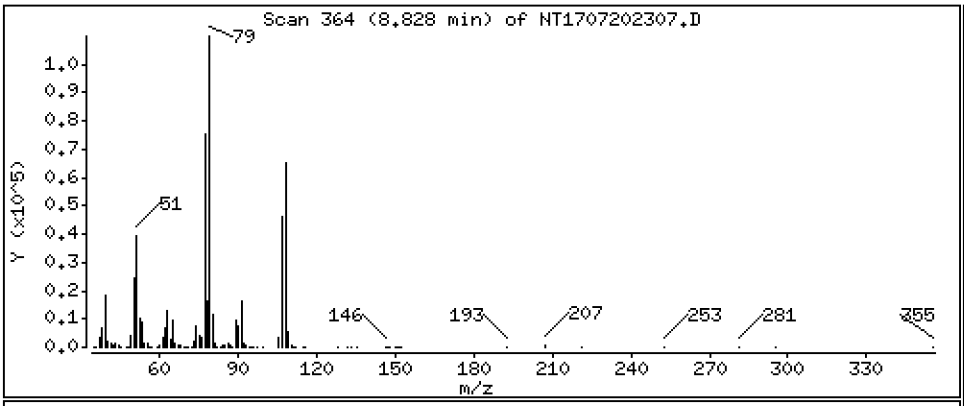
Operator: JGR

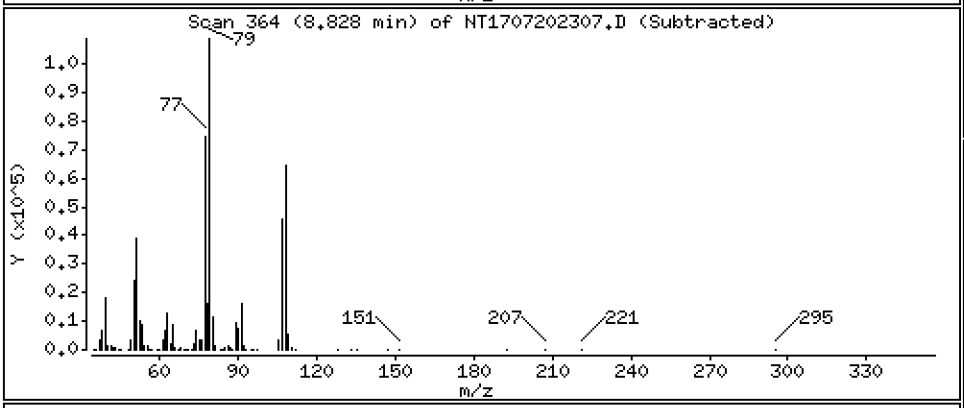
Column phase: ZB-5msi

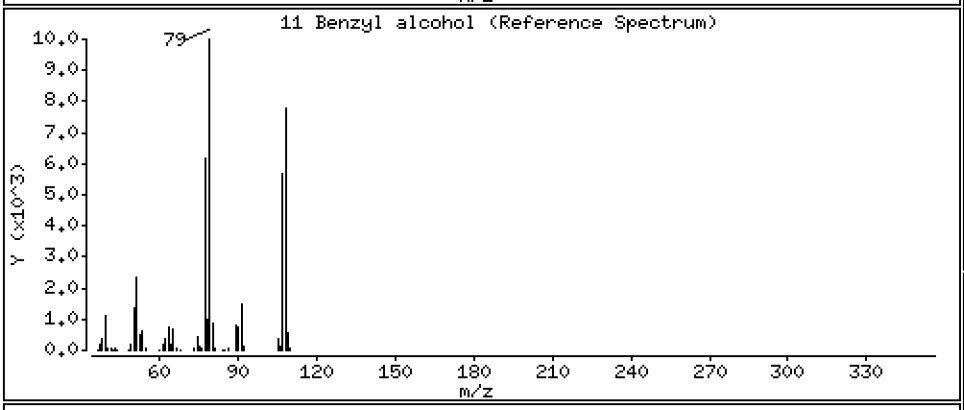
Column diameter: 0.25

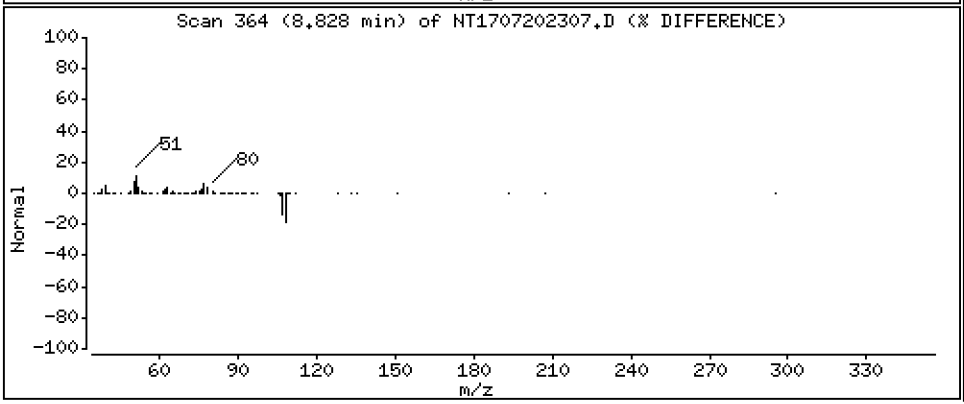
11 Benzyl alcohol

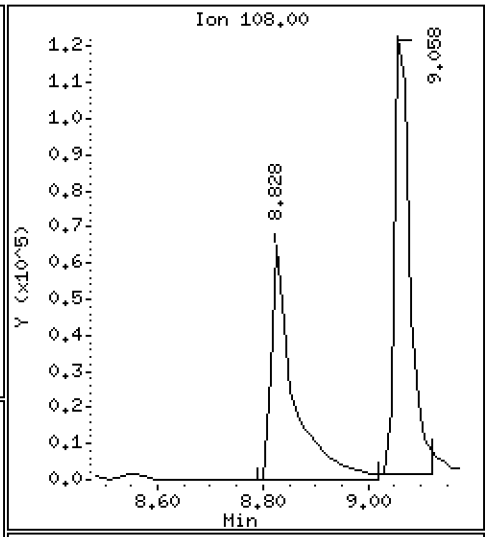
Concentration: 4.858 ug/mL

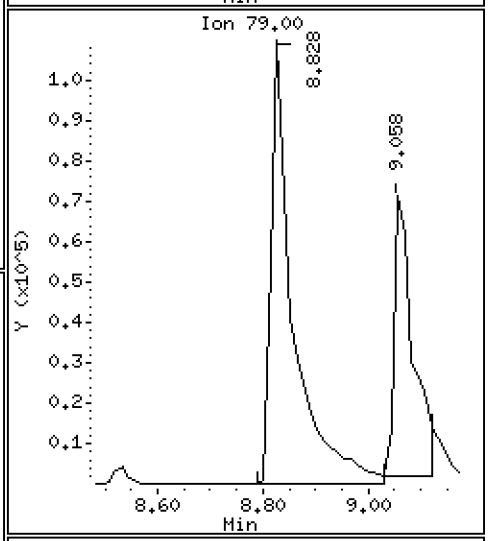


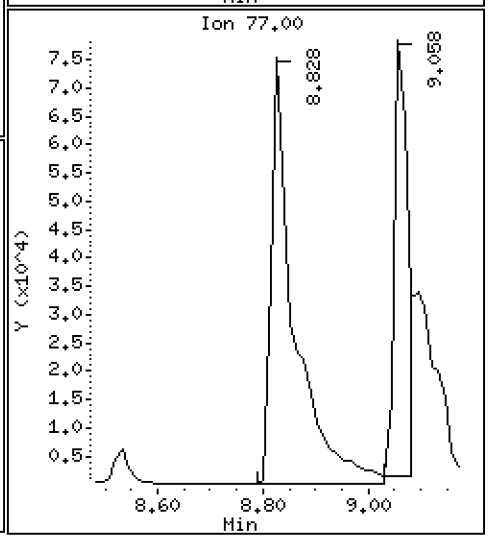












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

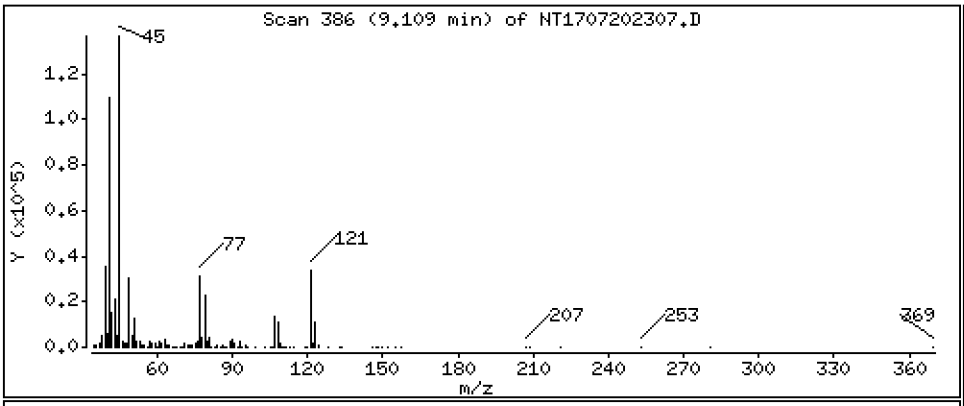
Operator: JGR

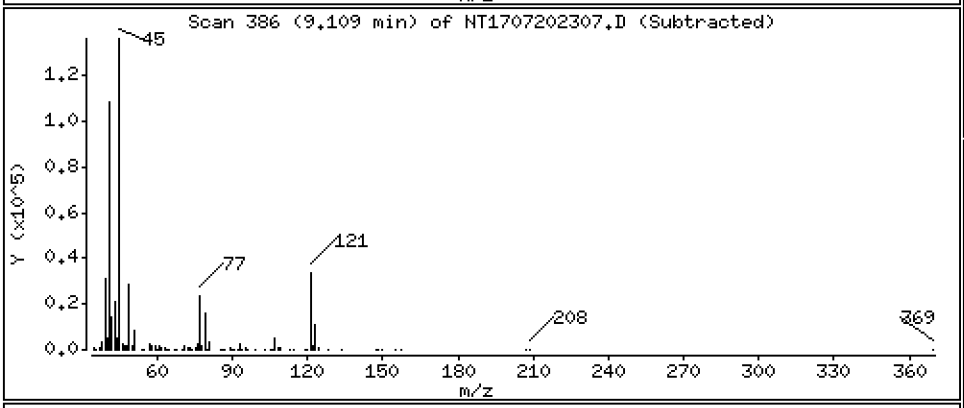
Column phase: ZB-5msi

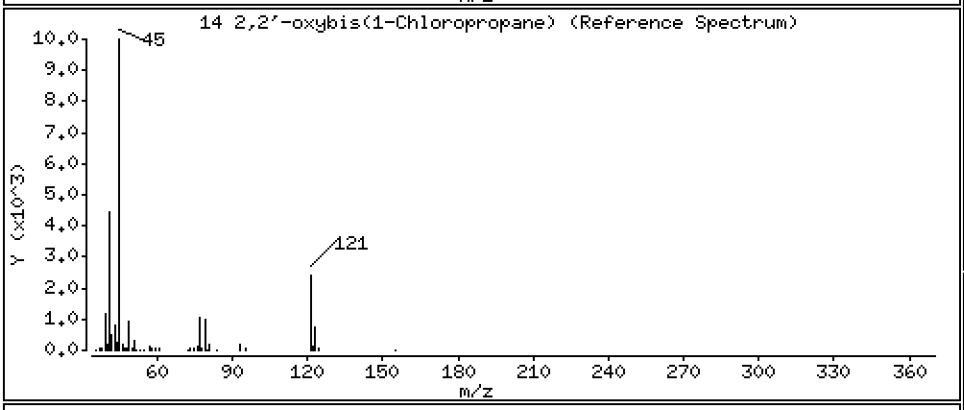
Column diameter: 0.25

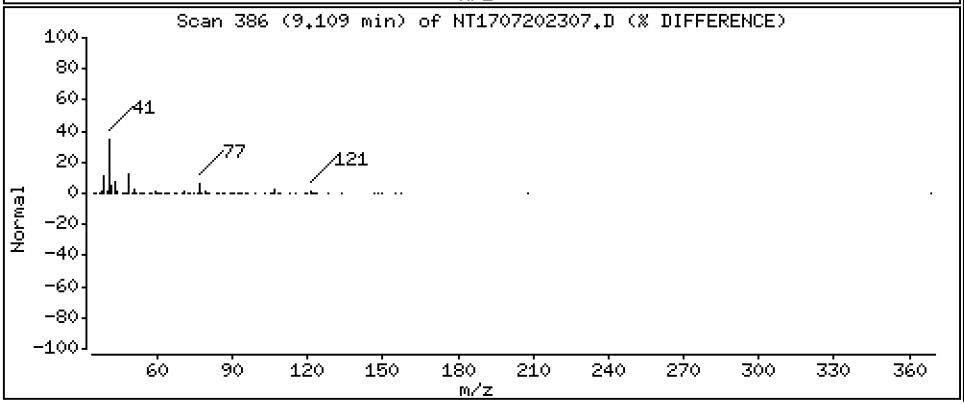
14 2,2'-oxybis(1-Chloropropane)

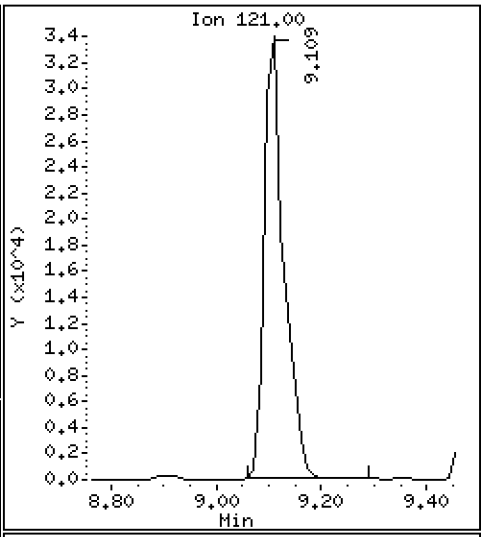
Concentration: 4.808 ug/mL

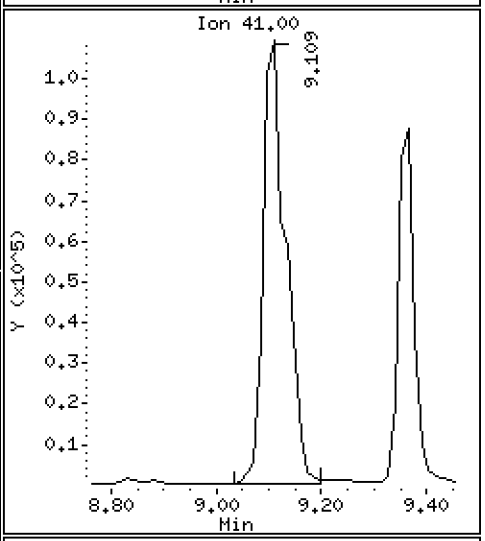


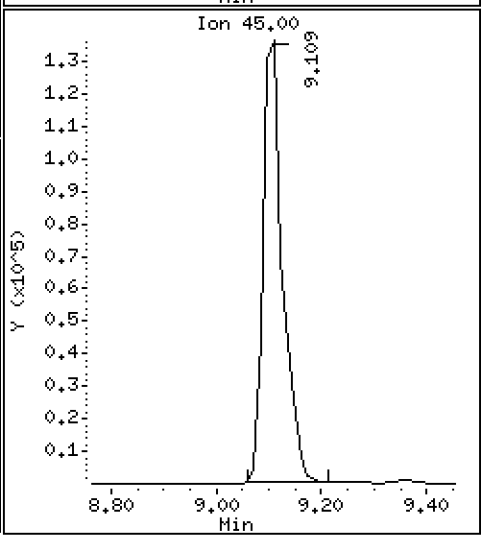












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

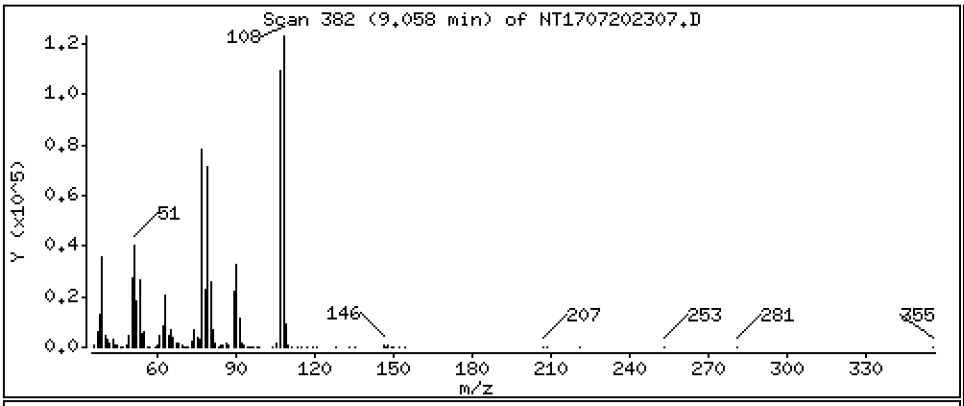
Operator: JGR

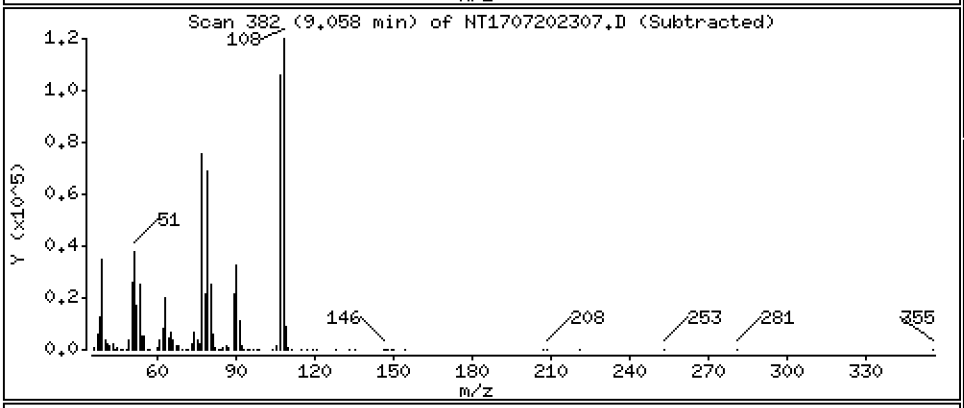
Column phase: ZB-5msi

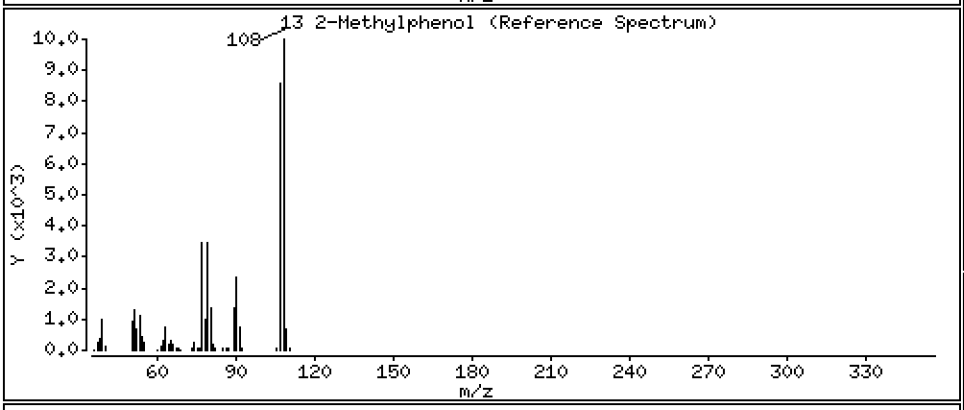
Column diameter: 0.25

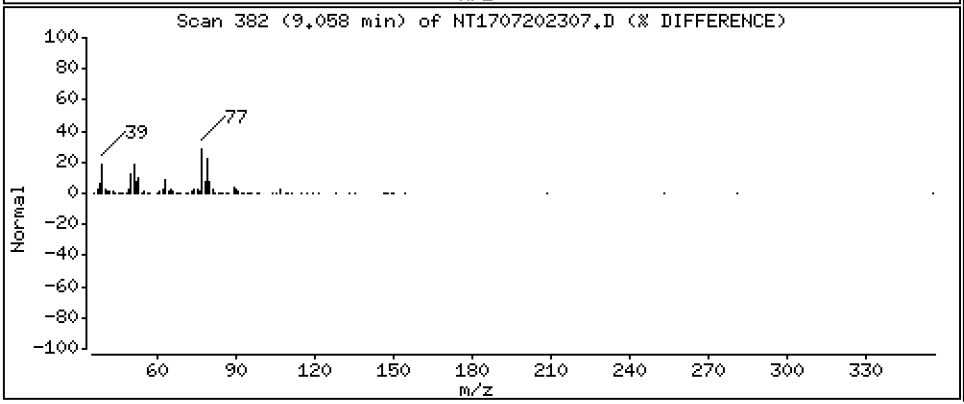
13 2-Methylphenol

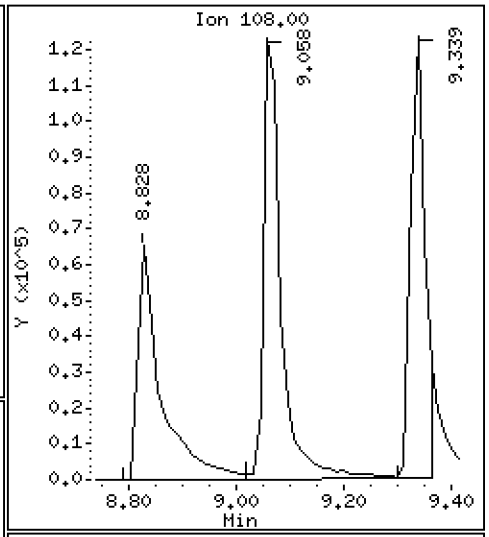
Concentration: 4.923 ug/mL

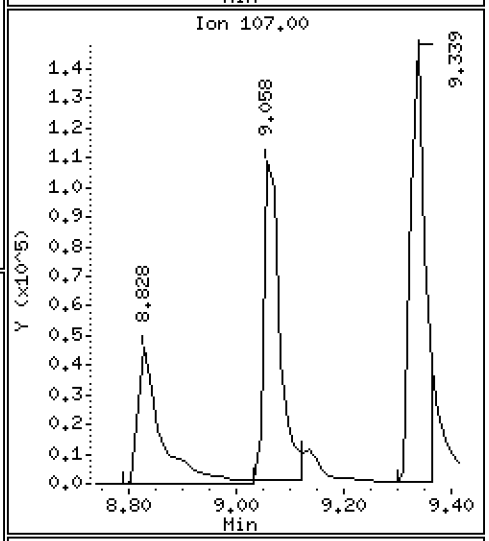


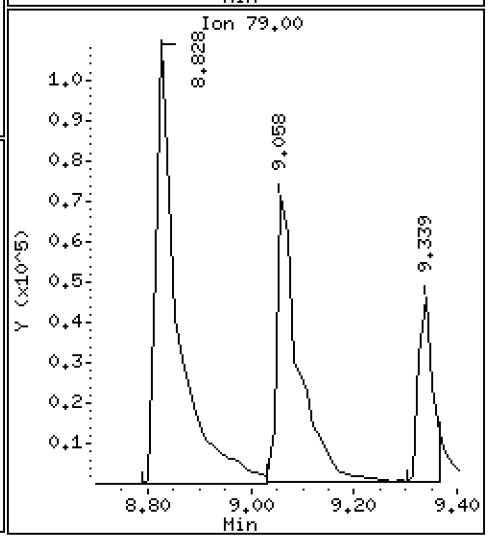












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

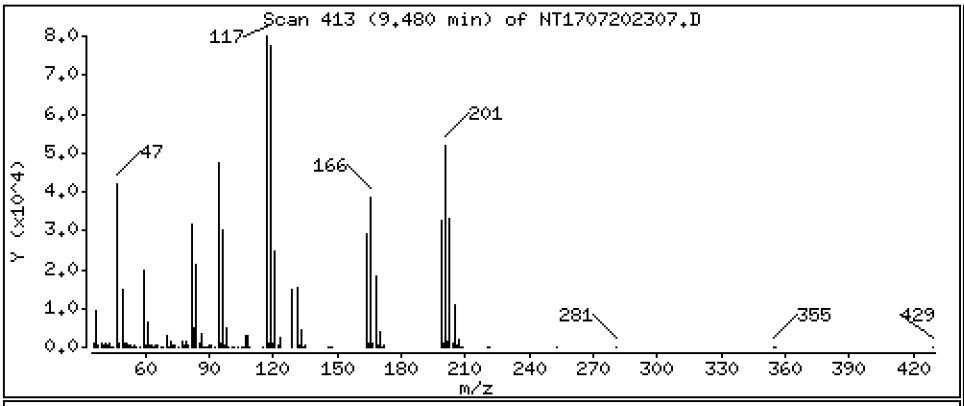
Operator: JGR

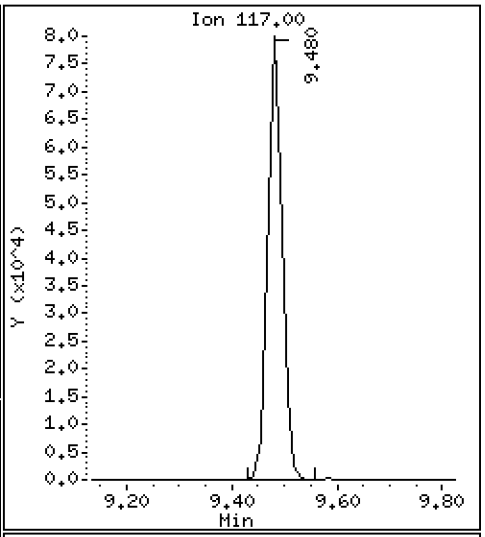
Column phase: ZB-5msi

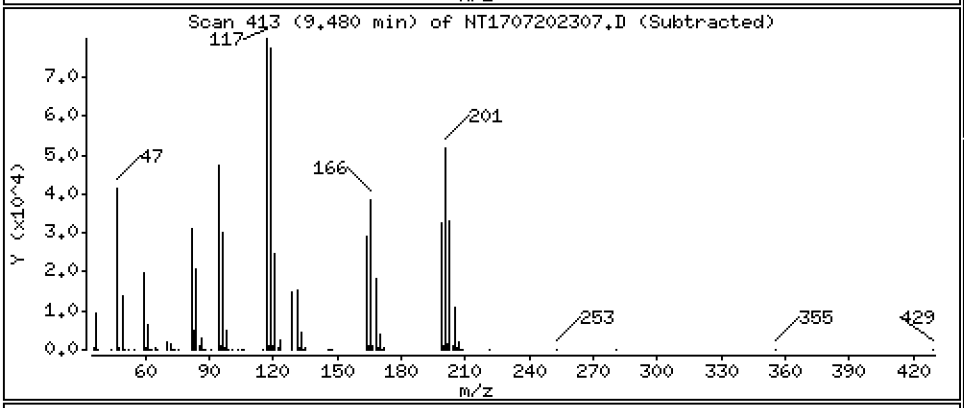
Column diameter: 0.25

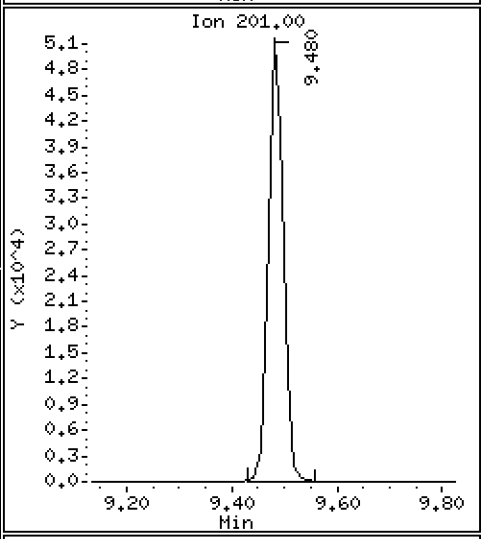
17 Hexachloroethane

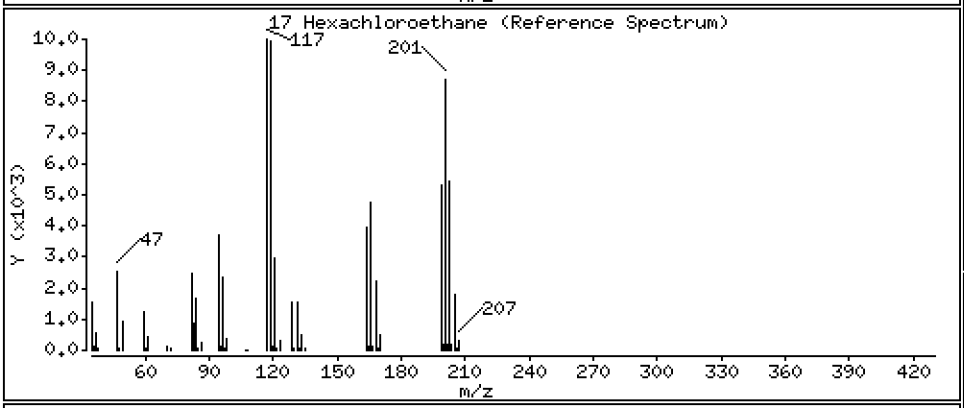
Concentration: 5.320 ug/mL

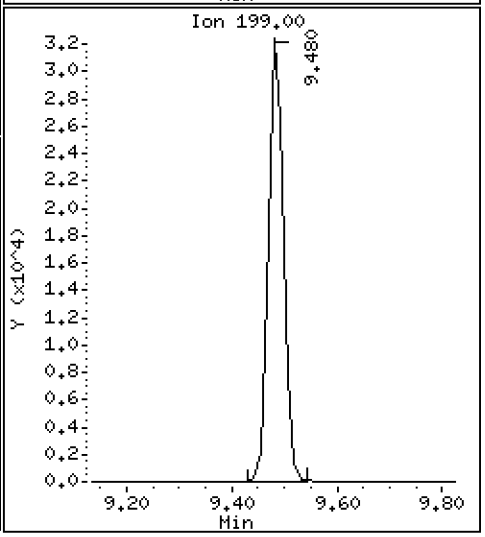


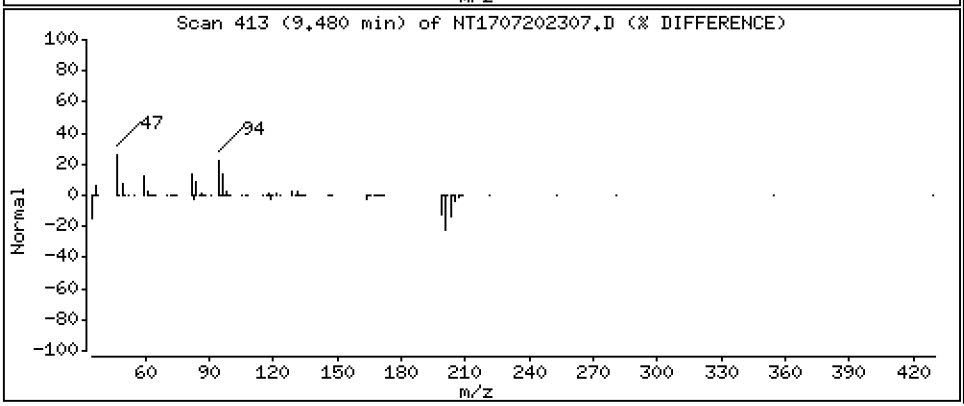












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

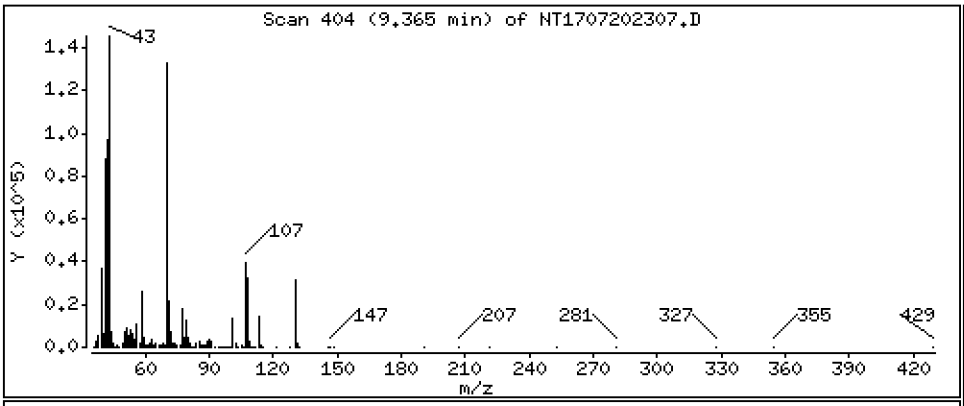
Operator: JGR

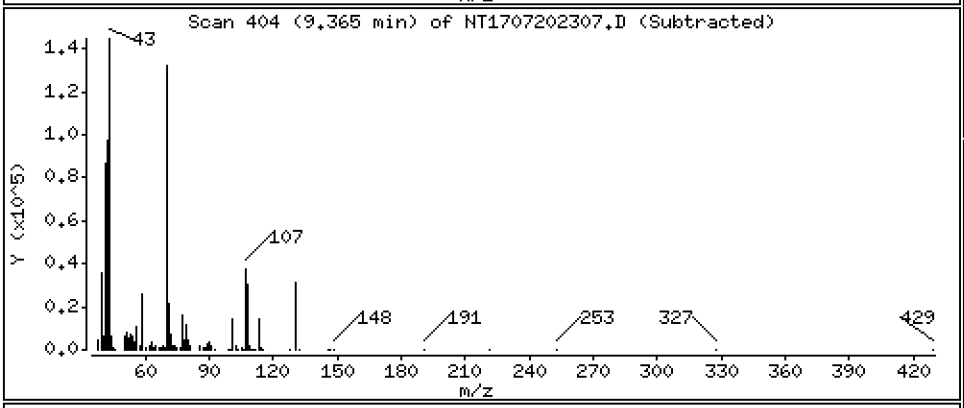
Column phase: ZB-5msi

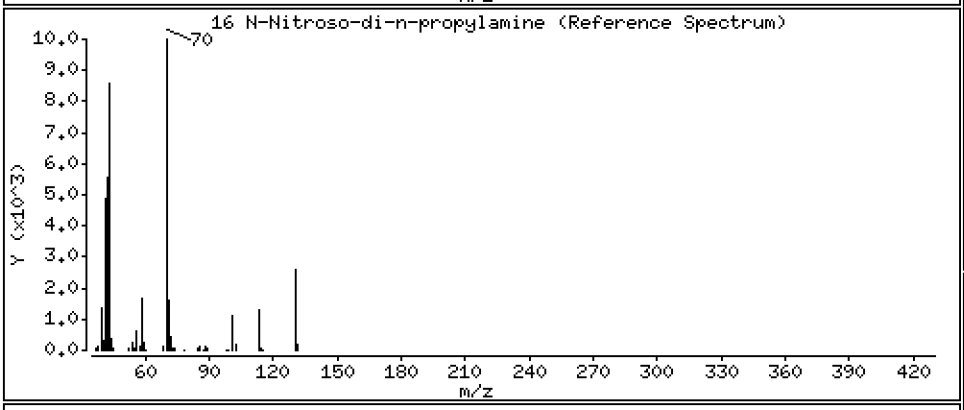
Column diameter: 0.25

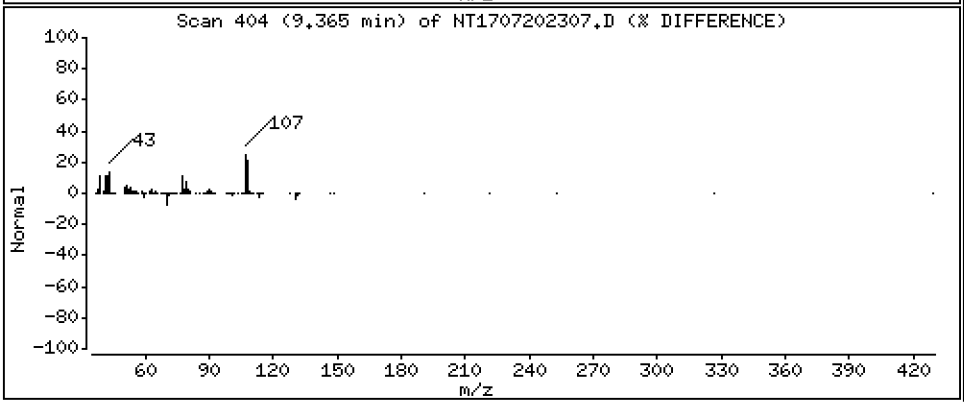
16 N-Nitroso-di-n-propylamine

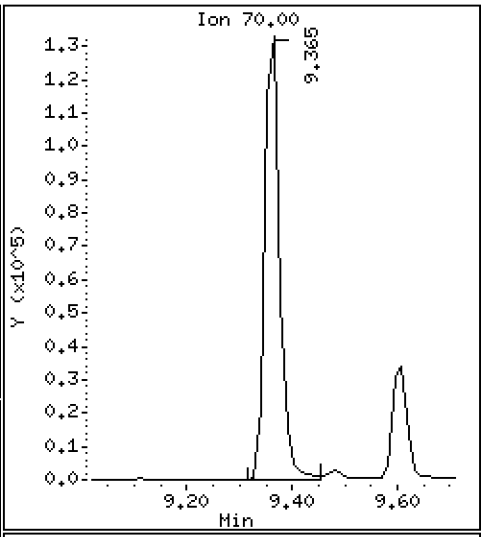
Concentration: 5.542 ug/mL

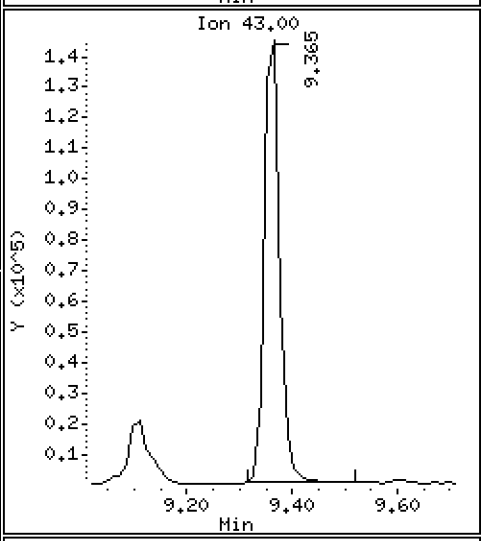


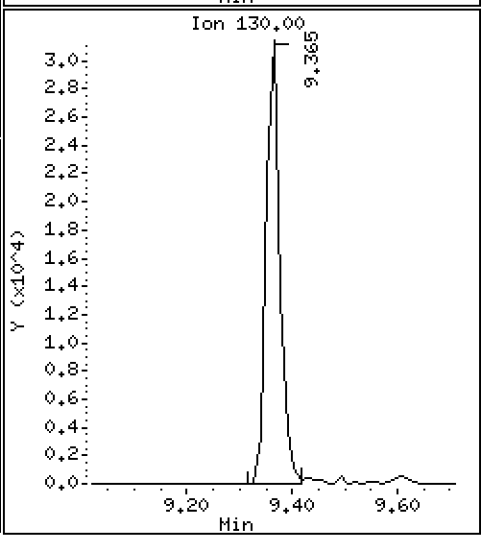












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

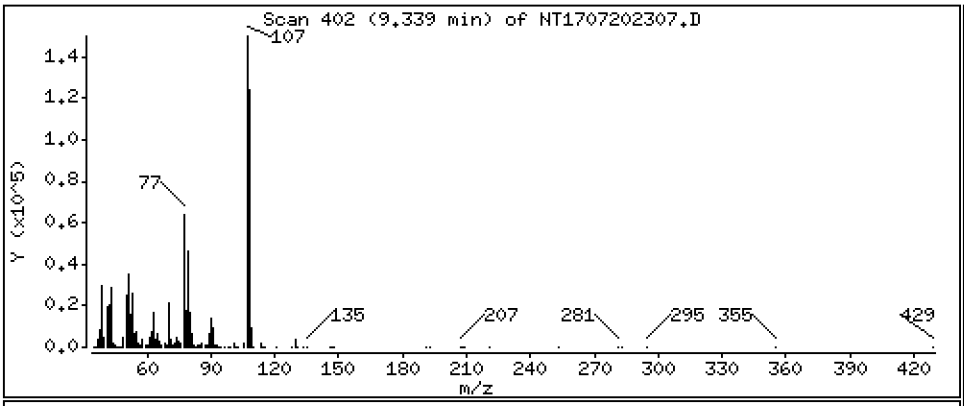
Operator: JGR

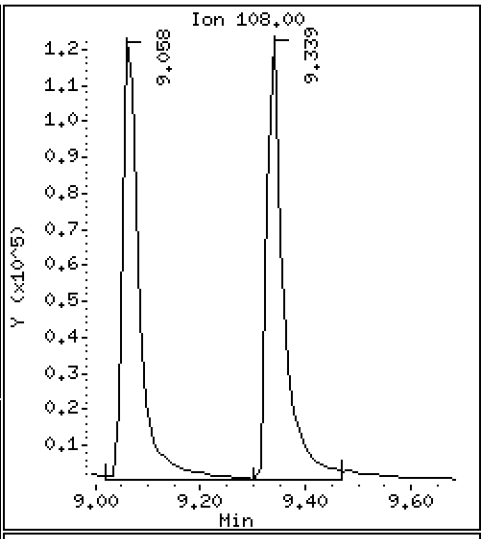
Column phase: ZB-5msi

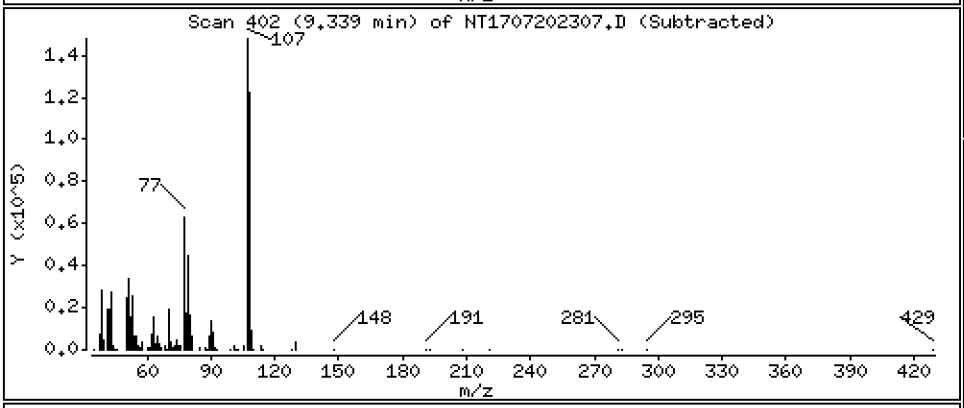
Column diameter: 0.25

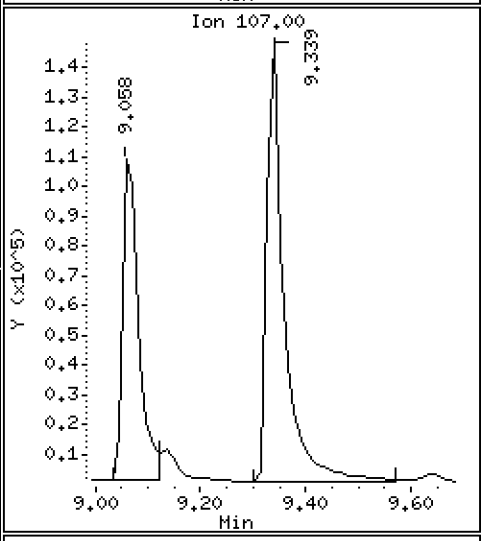
15 4-Methylphenol

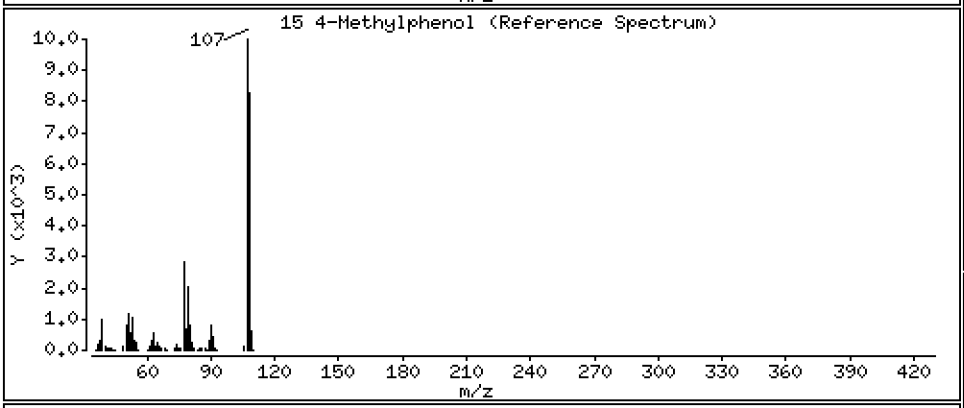
Concentration: 4.530 ug/mL

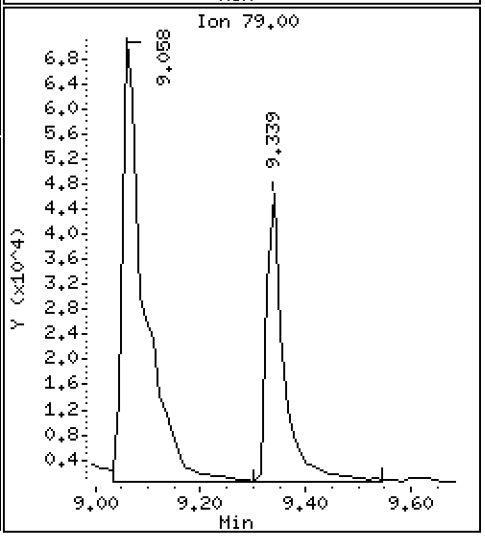


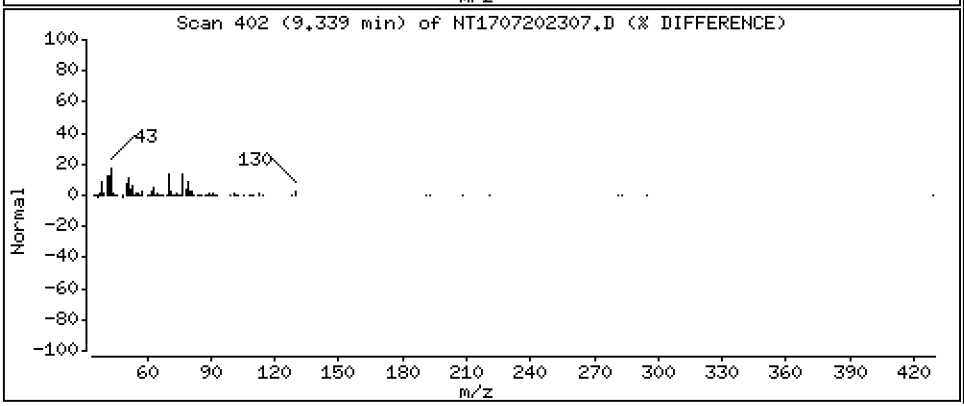












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

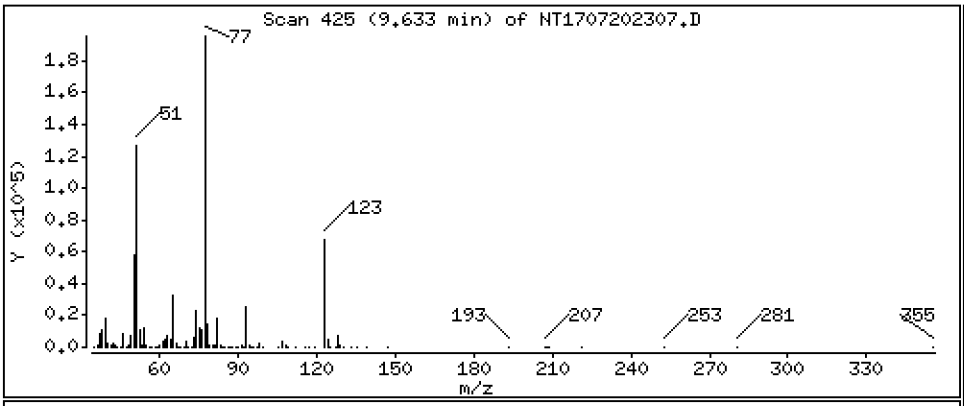
Operator: JGR

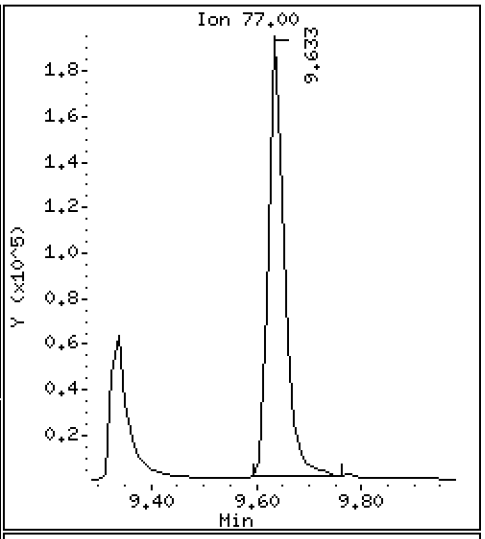
Column phase: ZB-5msi

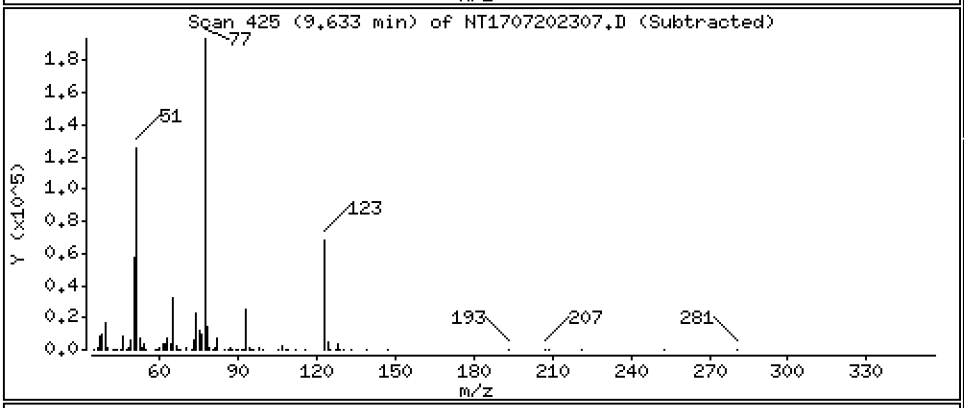
Column diameter: 0.25

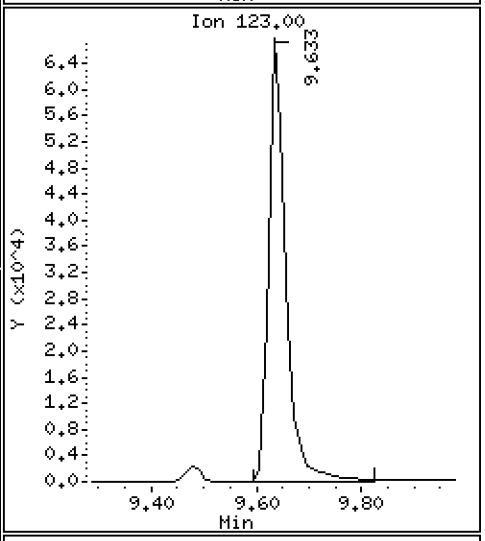
19 Nitrobenzene

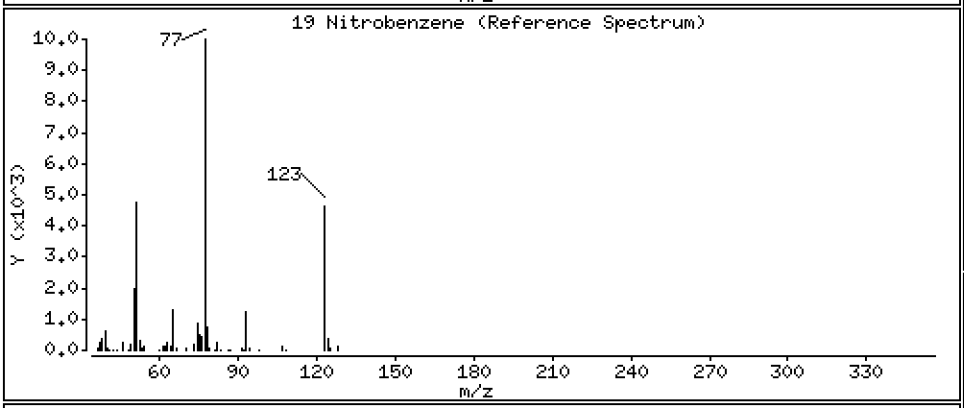
Concentration: 5.322 ug/mL

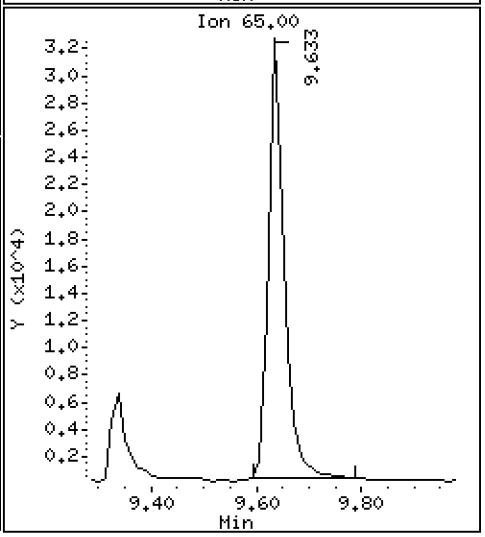


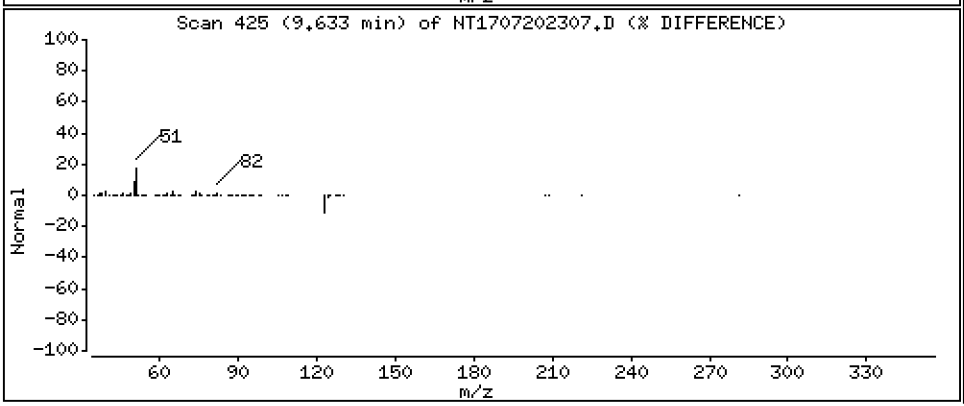












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

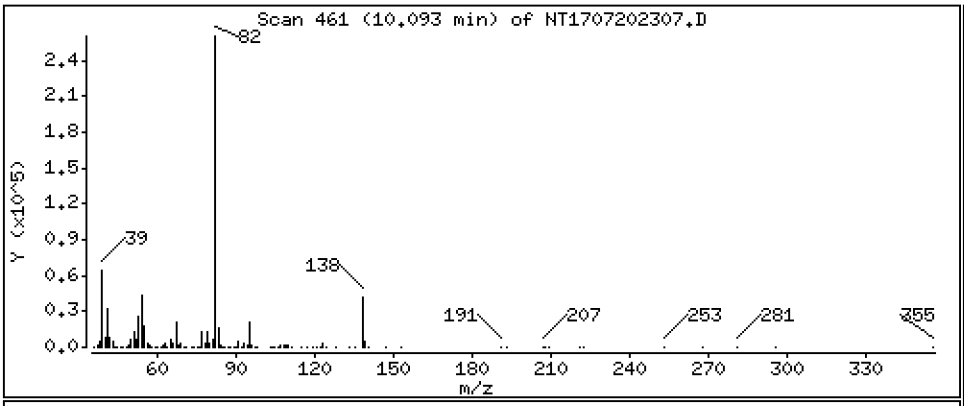
Operator: JGR

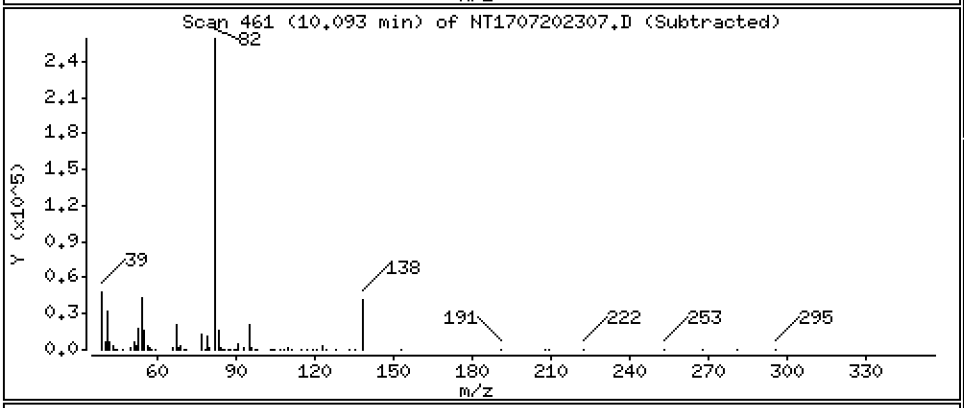
Column phase: ZB-5msi

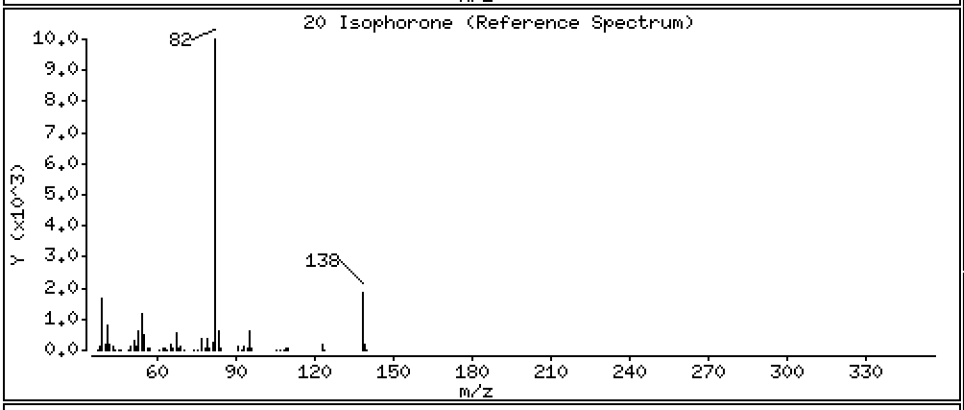
Column diameter: 0.25

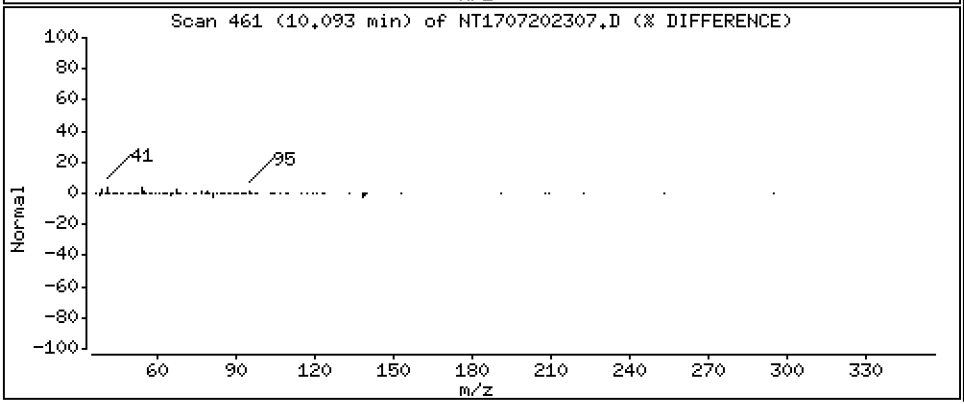
20 Isophorone

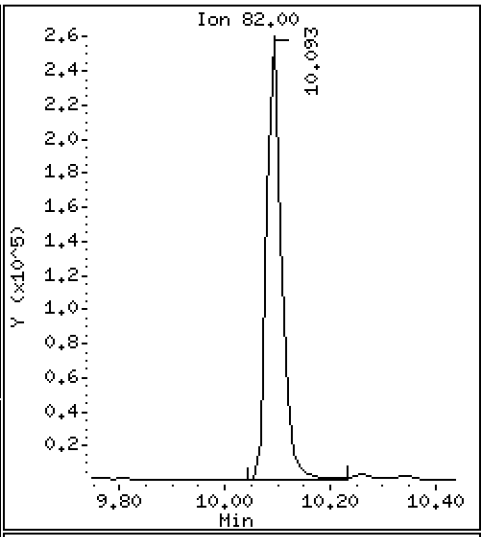
Concentration: 5.217 ug/mL

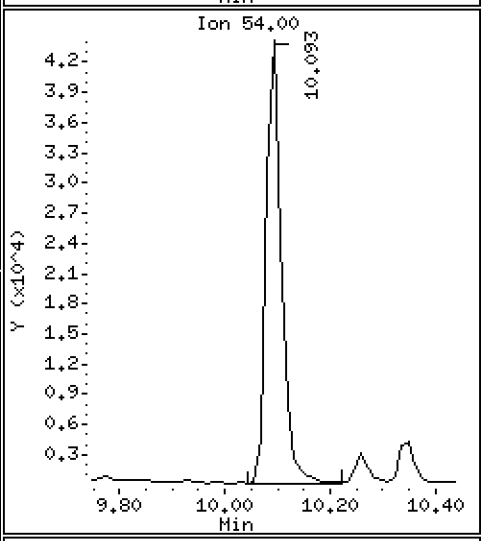


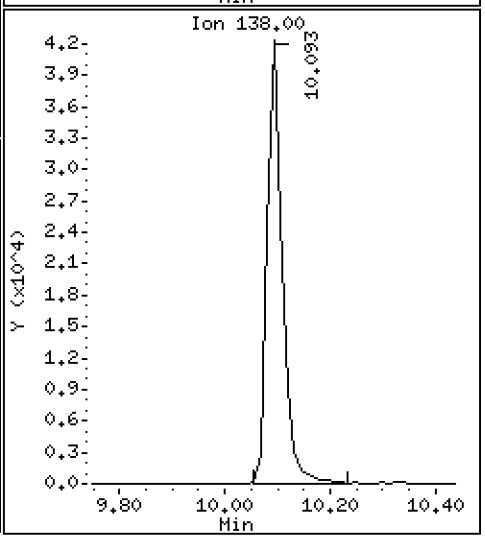












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

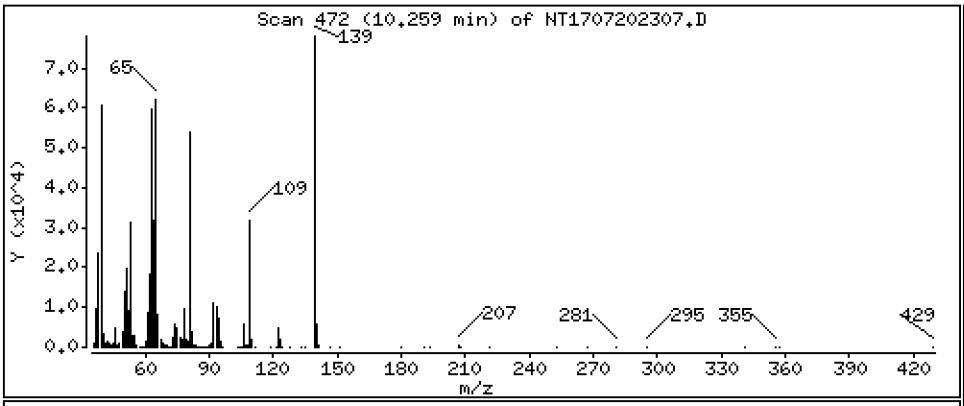
Operator: JGR

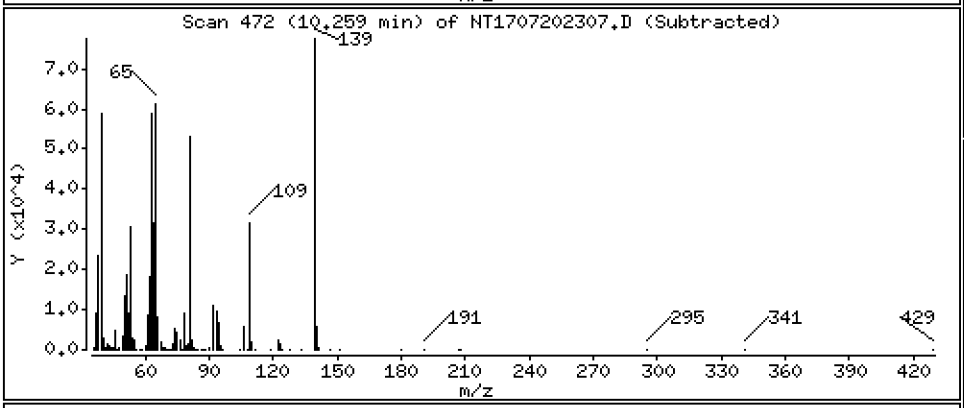
Column phase: ZB-5msi

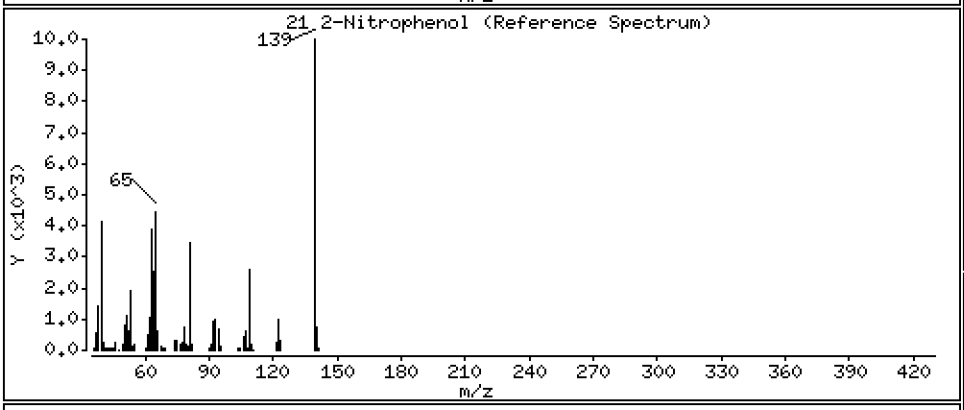
Column diameter: 0.25

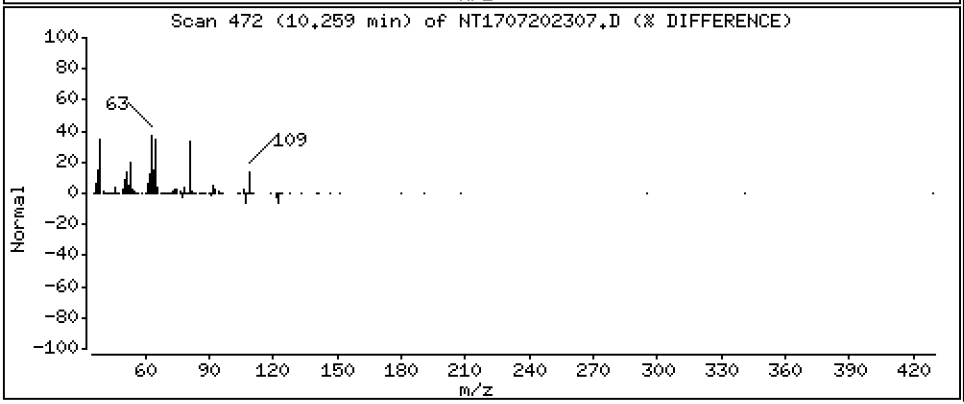
21 2-Nitrophenol

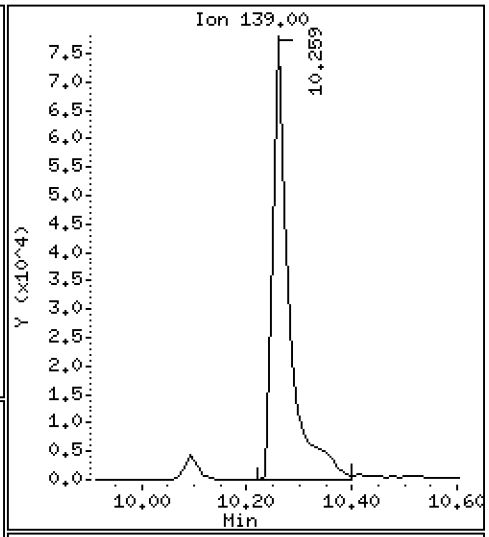
Concentration: 5.361 ug/mL

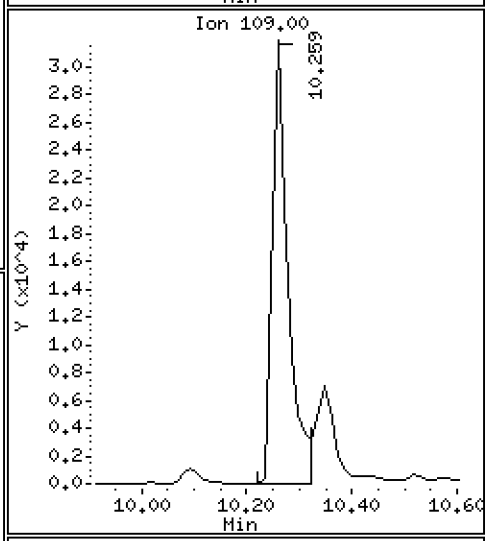


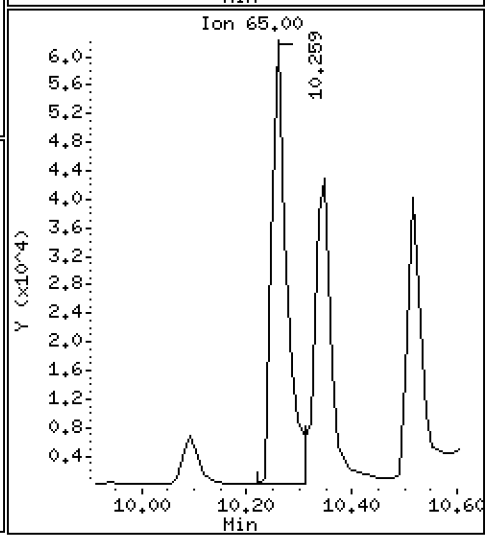












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

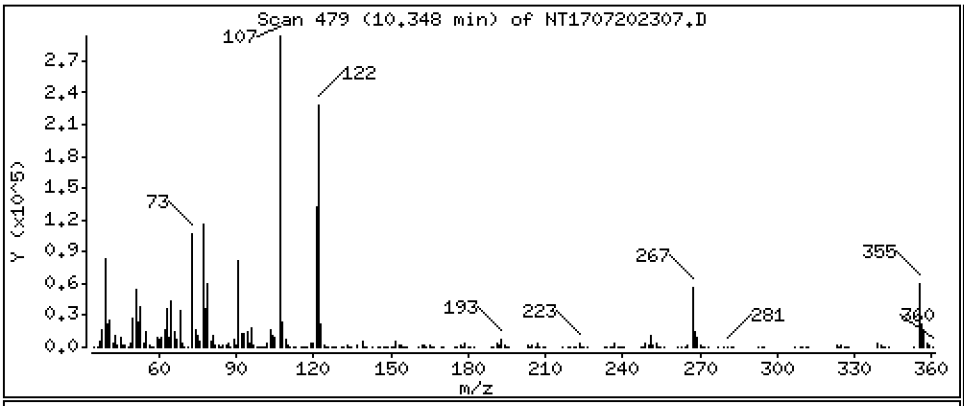
Operator: JGR

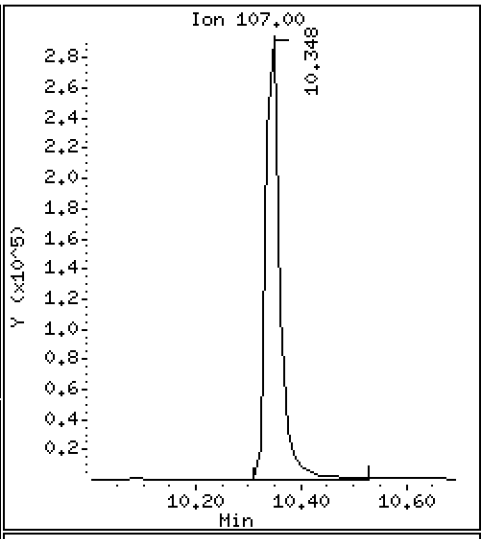
Column phase: ZB-5msi

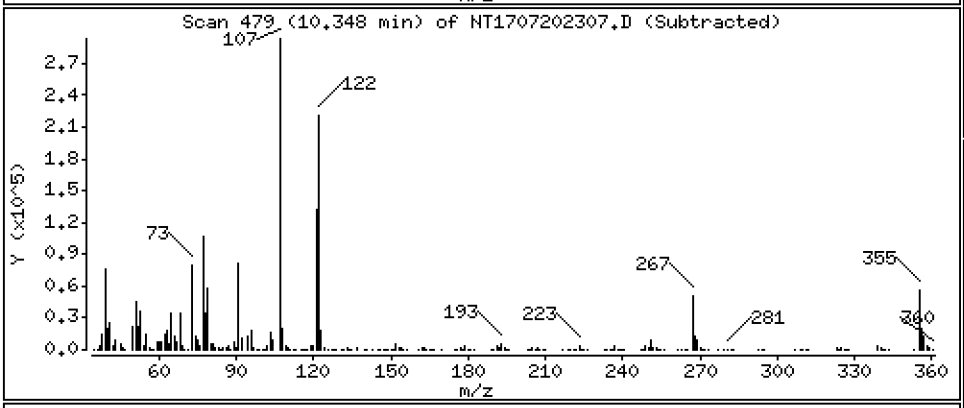
Column diameter: 0.25

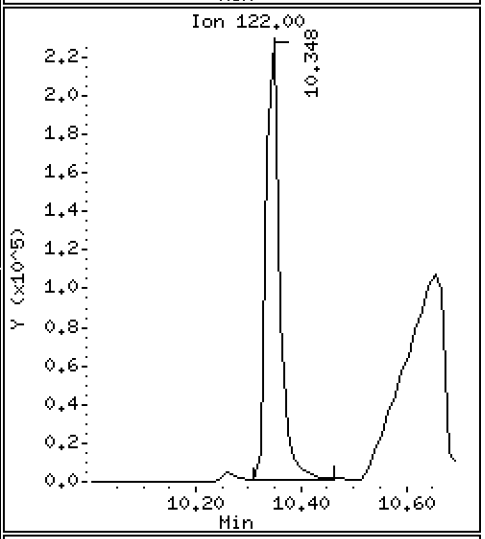
22 2,4-Dimethylphenol

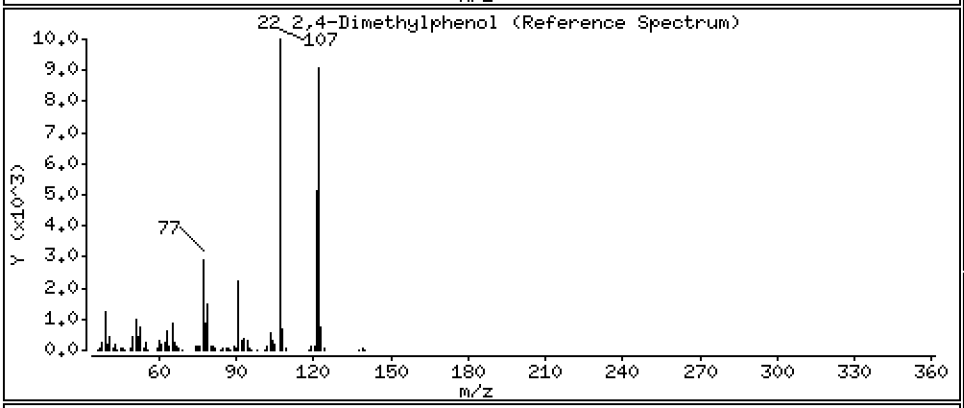
Concentration: 8.022 ug/mL

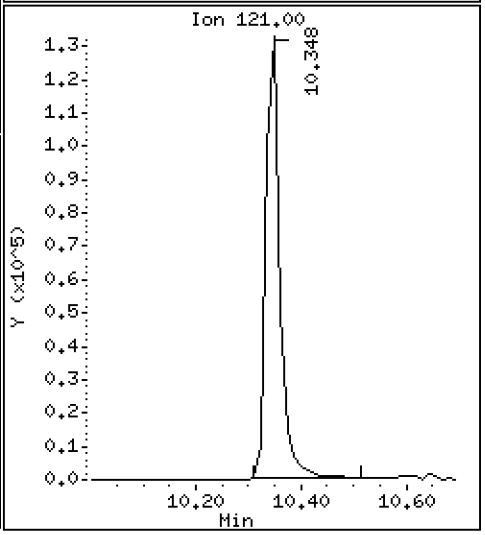


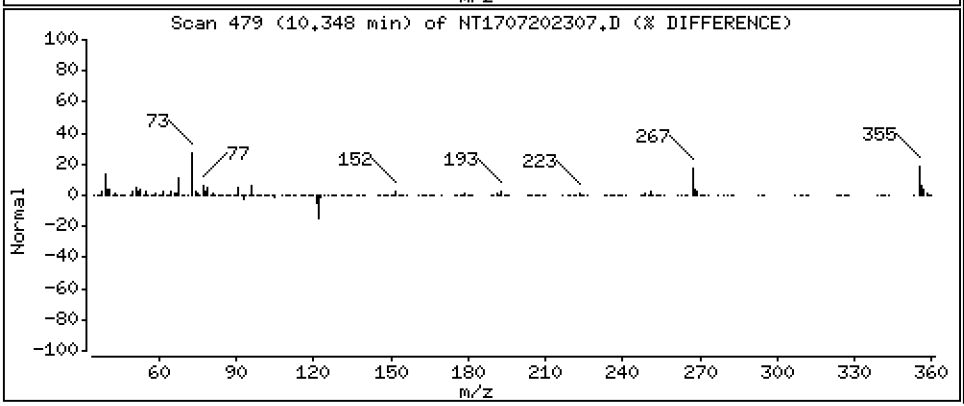












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

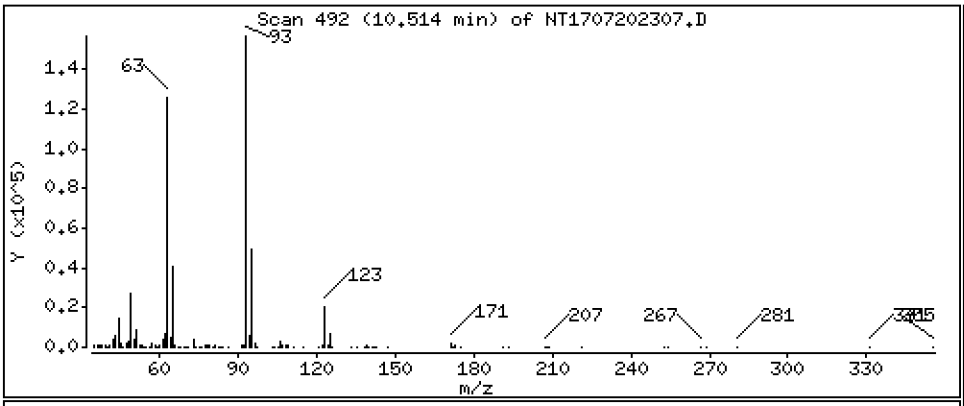
Operator: JGR

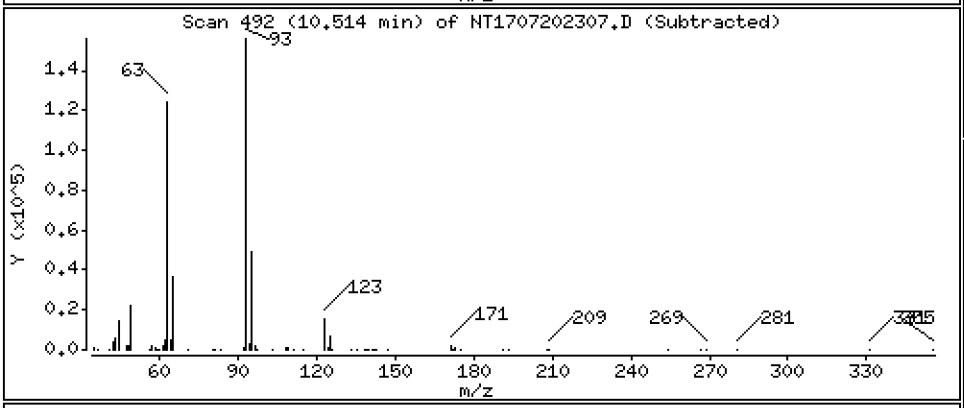
Column phase: ZB-5msi

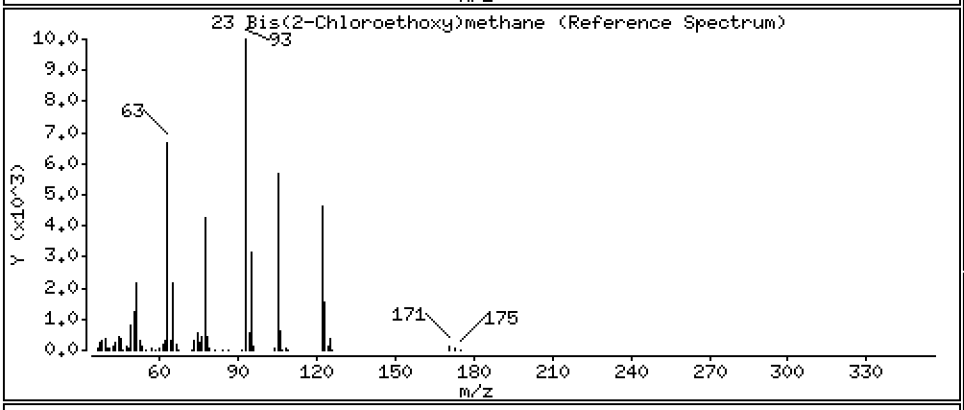
Column diameter: 0.25

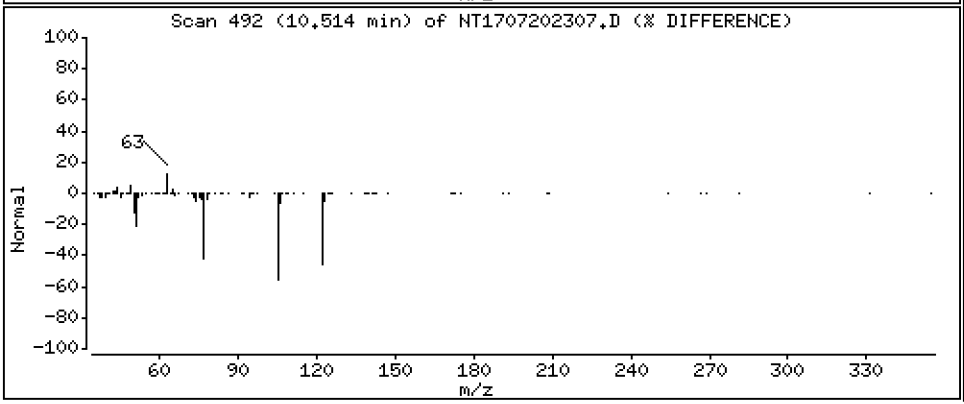
23 Bis(2-Chloroethoxy)methane

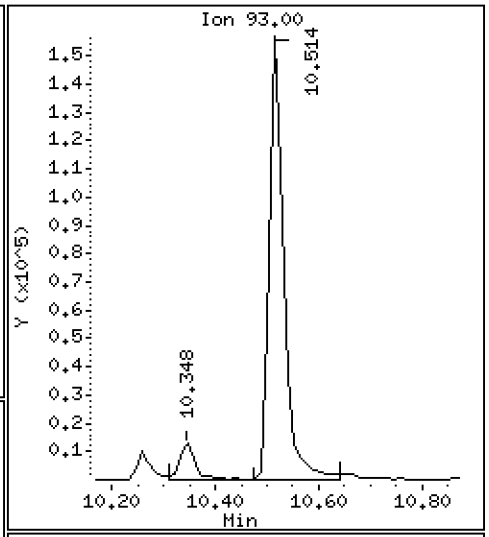
Concentration: 4.653 ug/mL

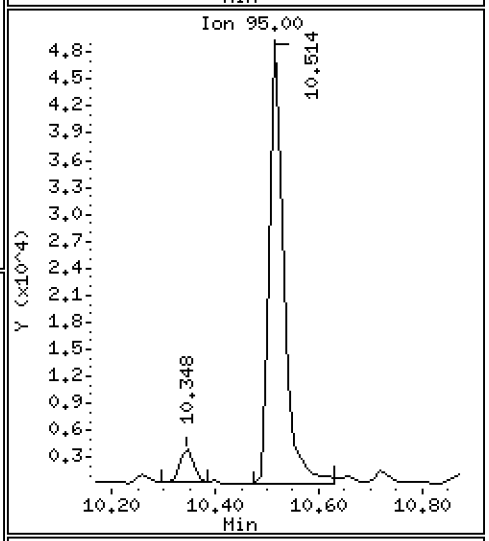


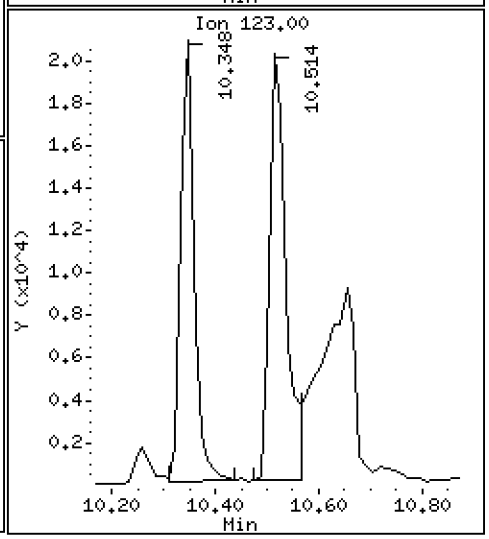












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

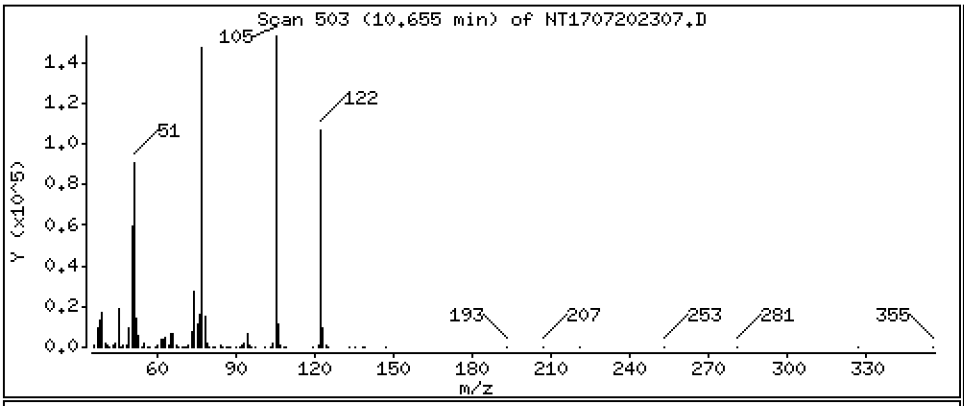
Operator: JGR

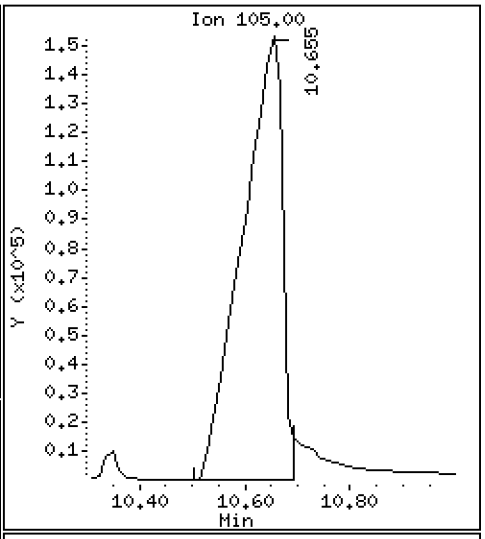
Column phase: ZB-5msi

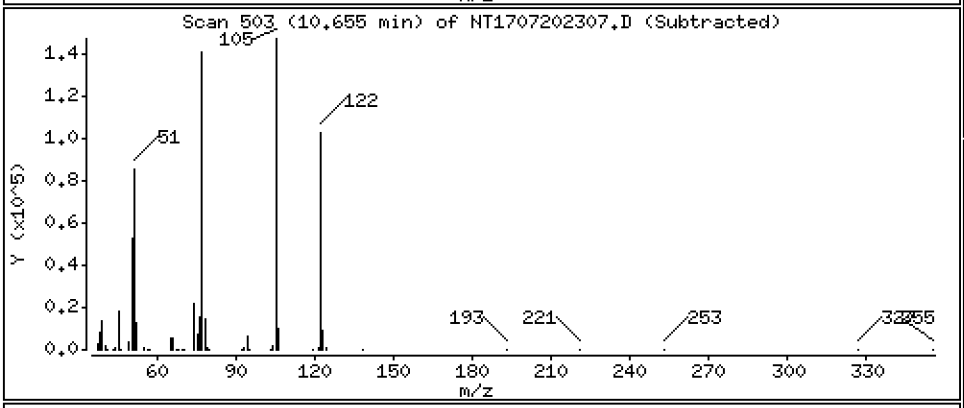
Column diameter: 0.25

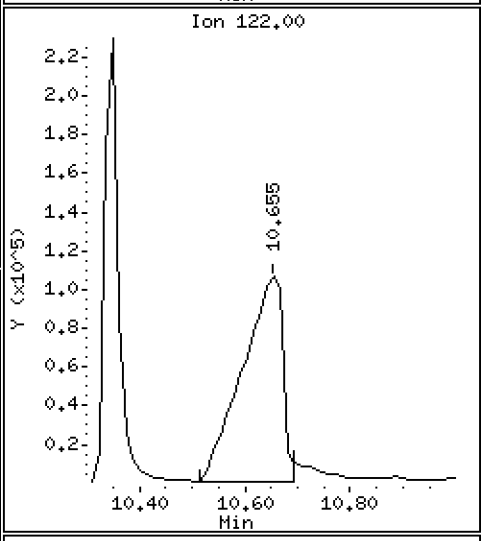
24 Benzoic acid

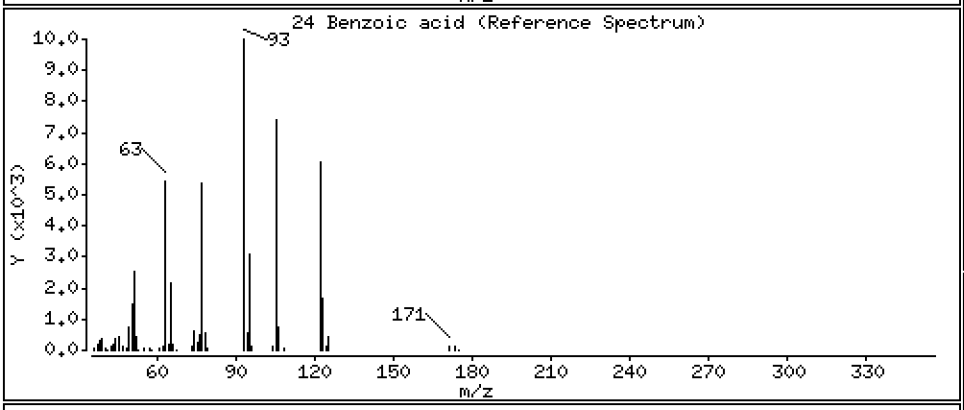
Concentration: 15.60 ug/mL

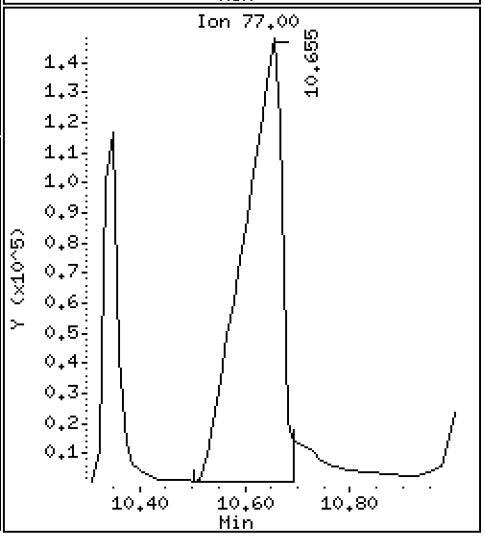


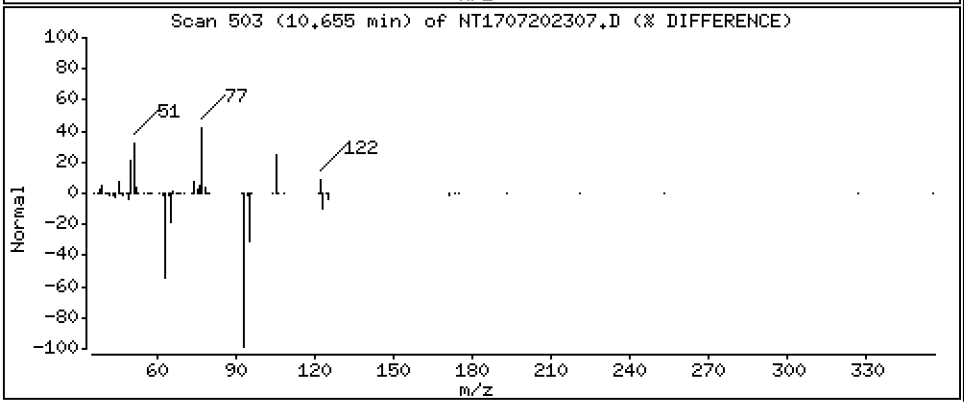












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

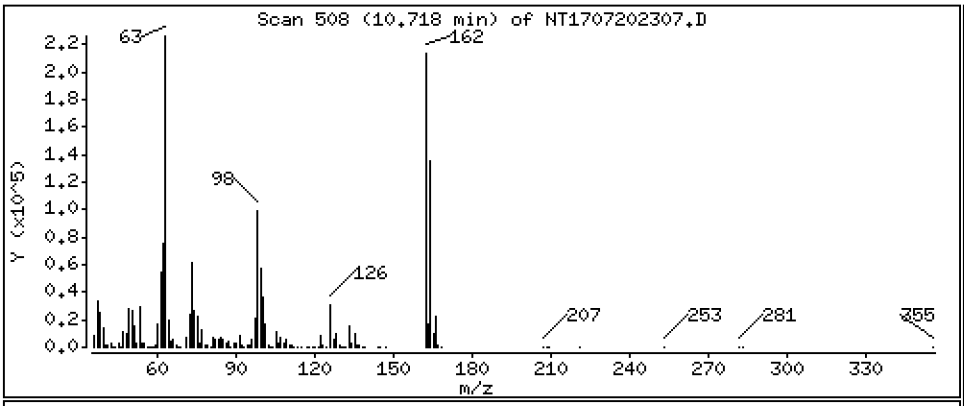
Operator: JGR

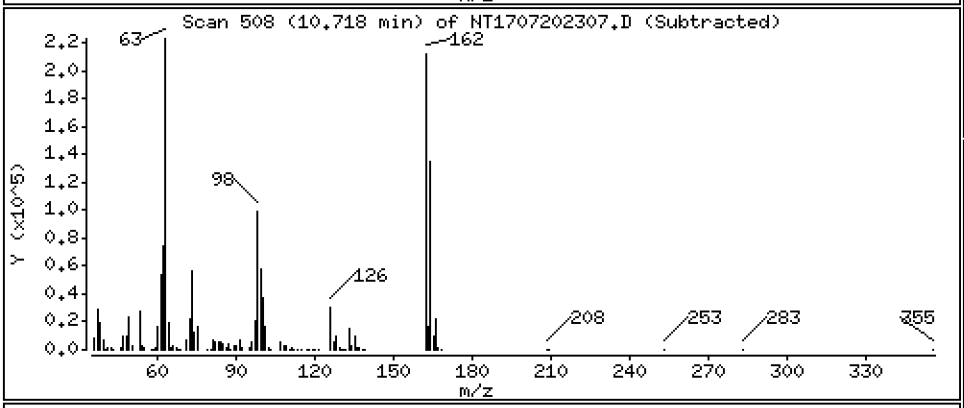
Column phase: ZB-5msi

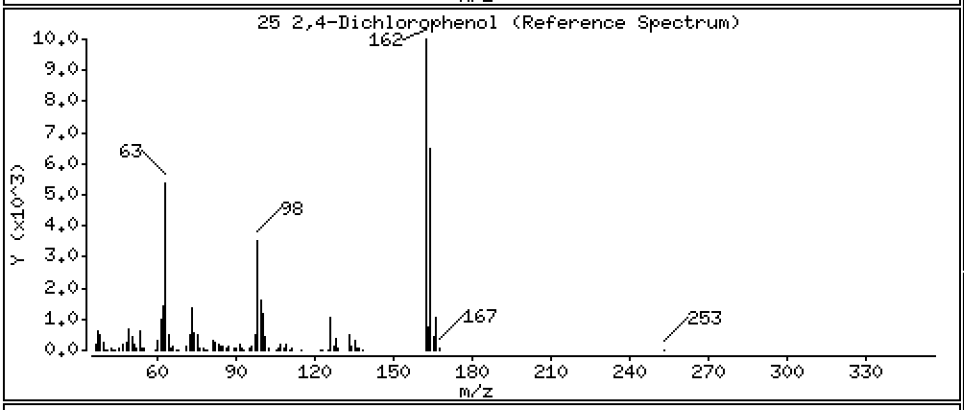
Column diameter: 0.25

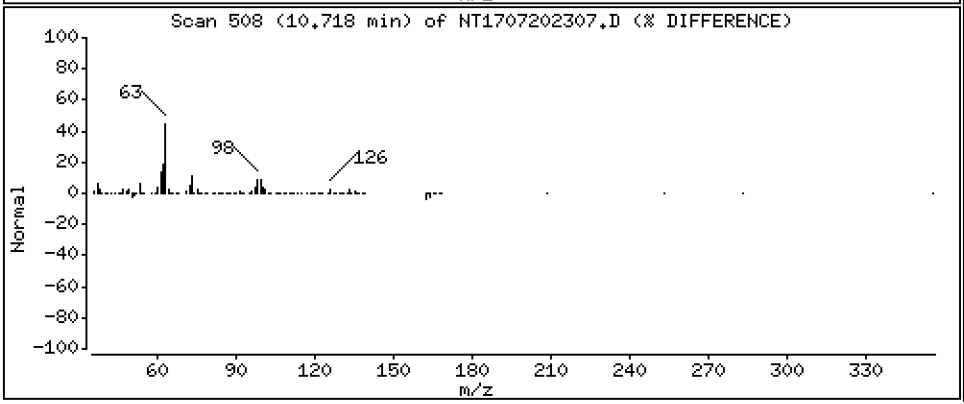
25 2,4-Dichlorophenol

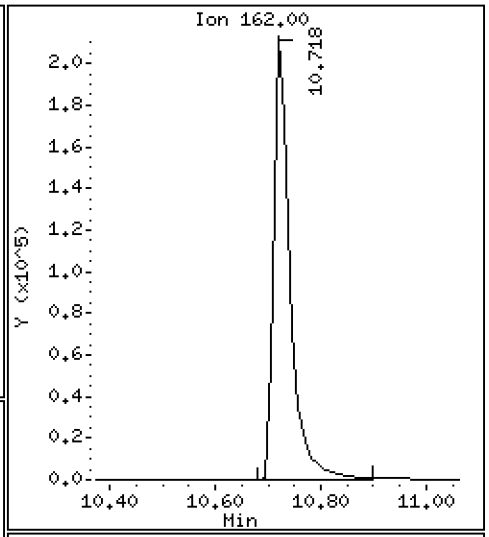
Concentration: 9.865 ug/mL

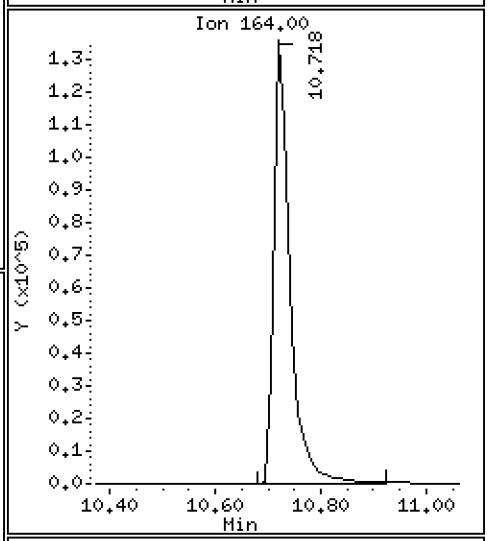


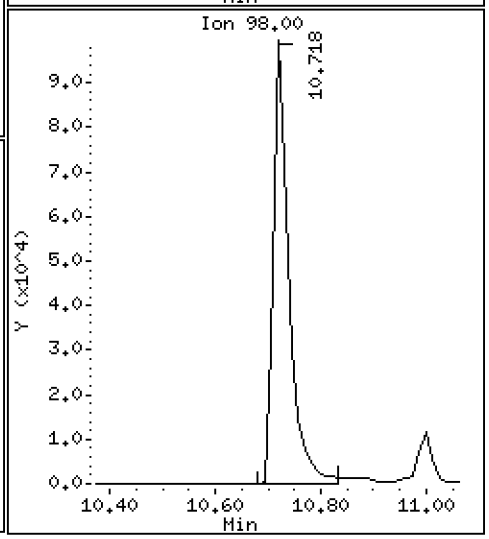












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

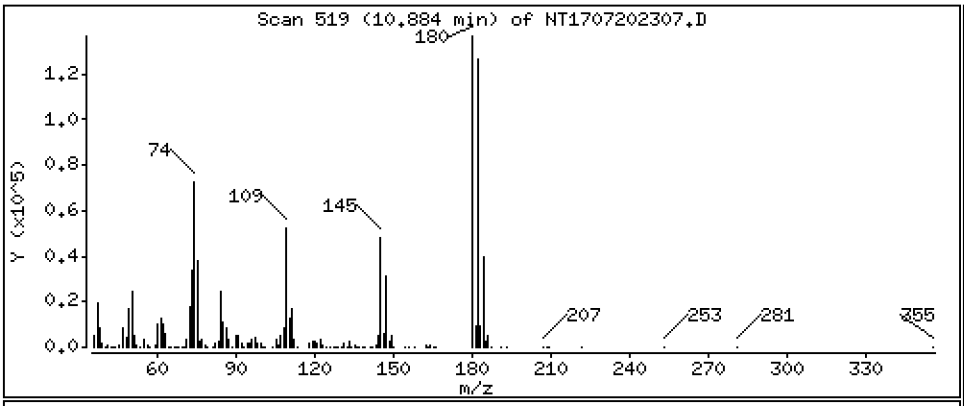
Operator: JGR

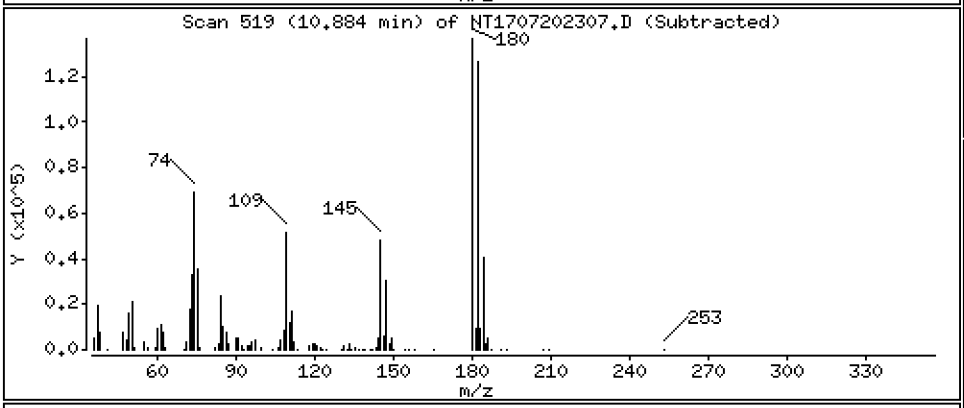
Column phase: ZB-5msi

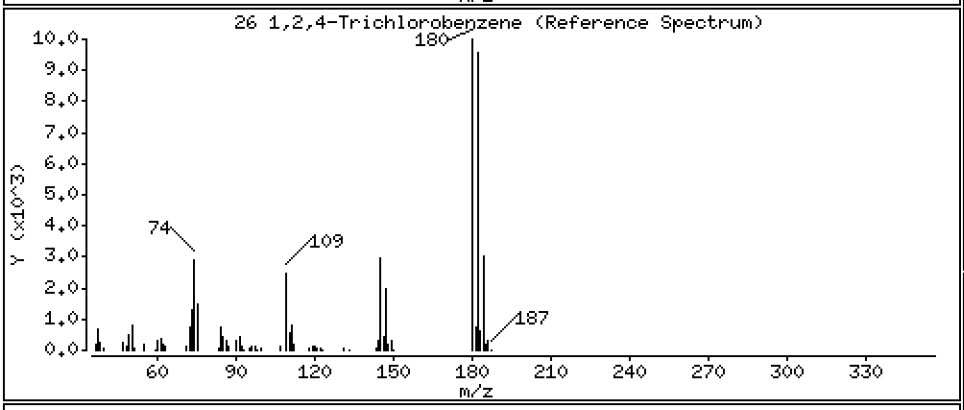
Column diameter: 0.25

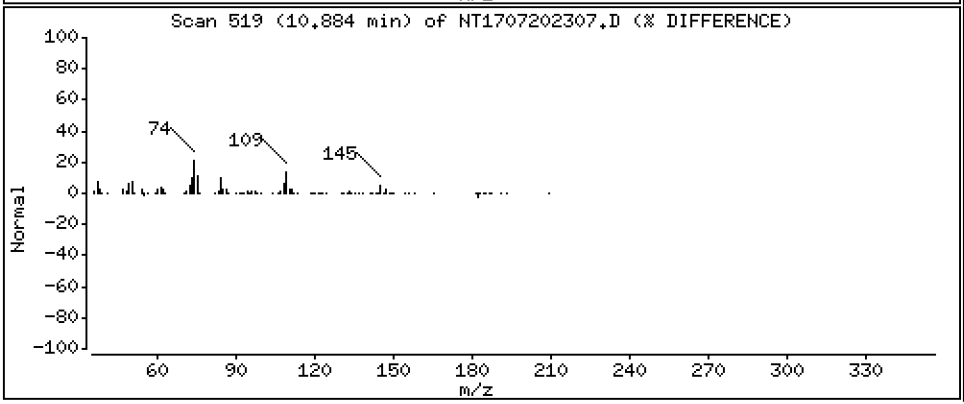
26 1,2,4-Trichlorobenzene

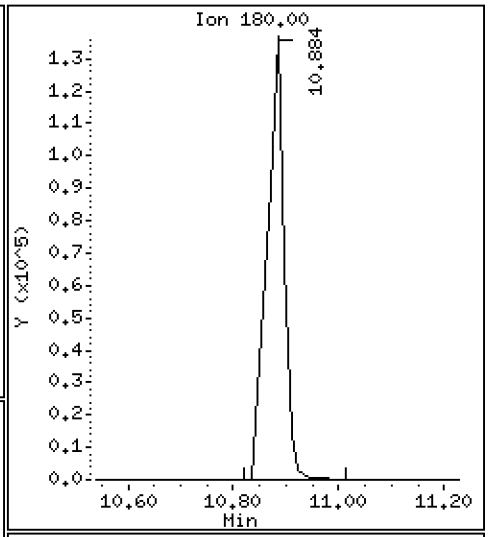
Concentration: 4.902 ug/mL

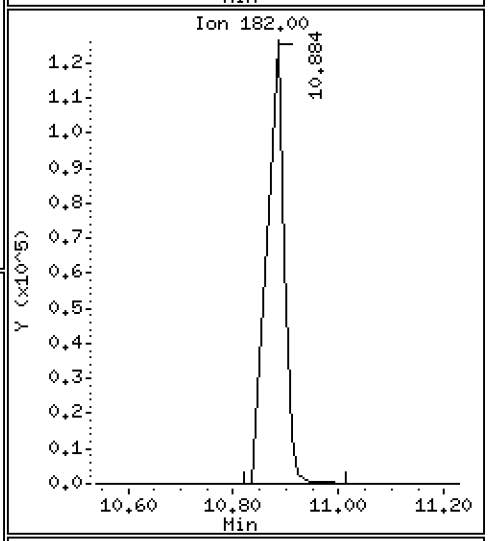


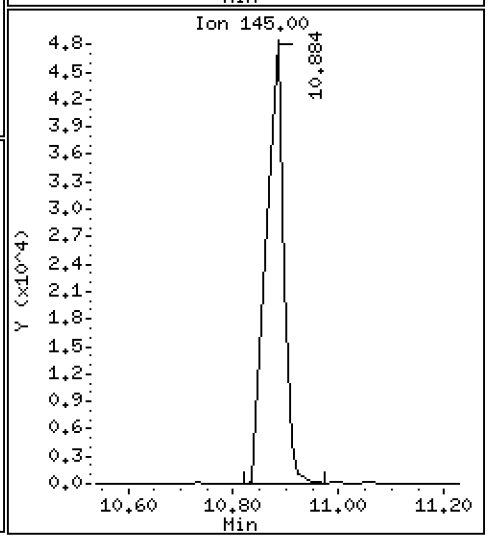












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

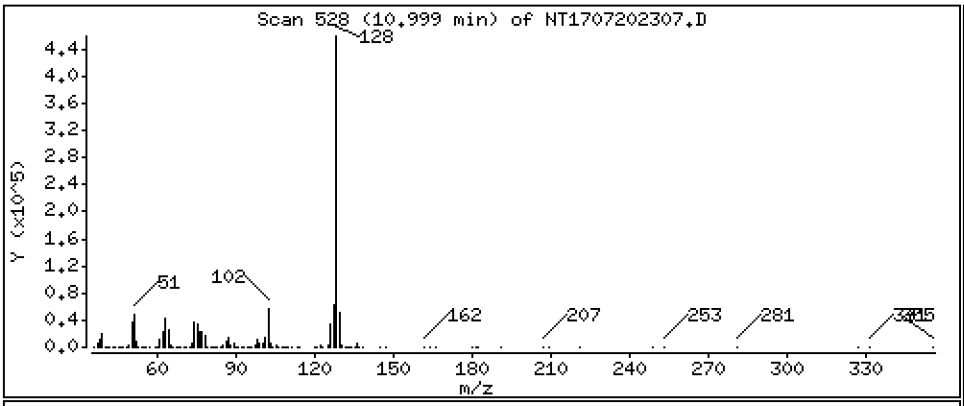
Operator: JGR

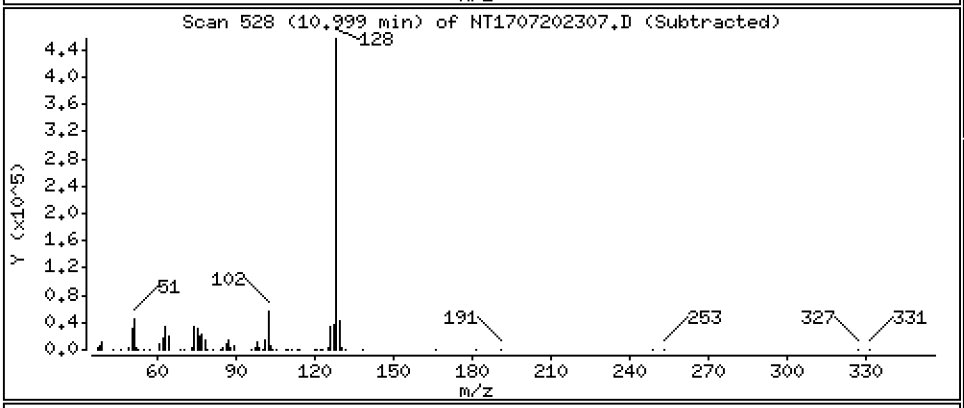
Column phase: ZB-5msi

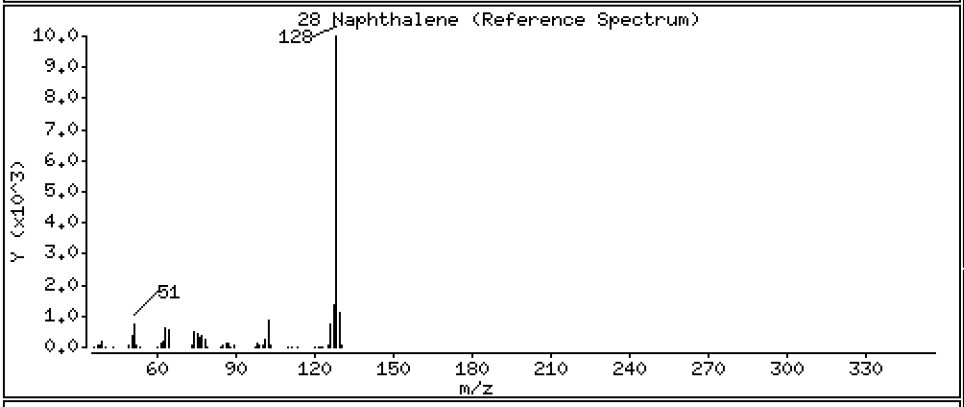
Column diameter: 0.25

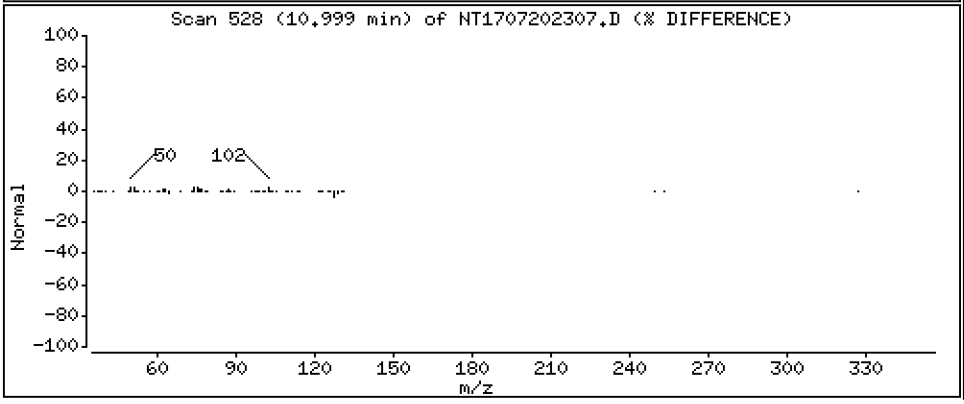
28 Naphthalene

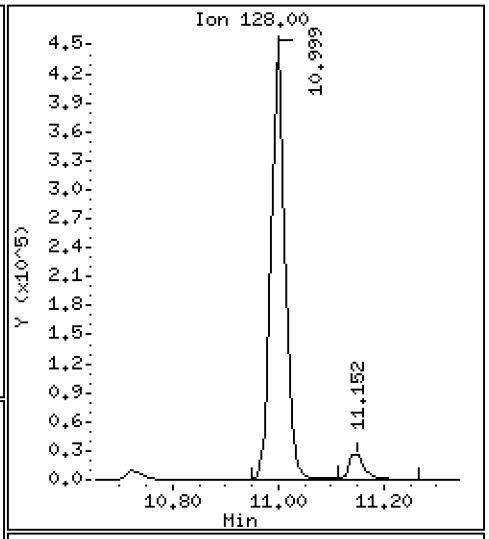
Concentration: 4.647 ug/mL

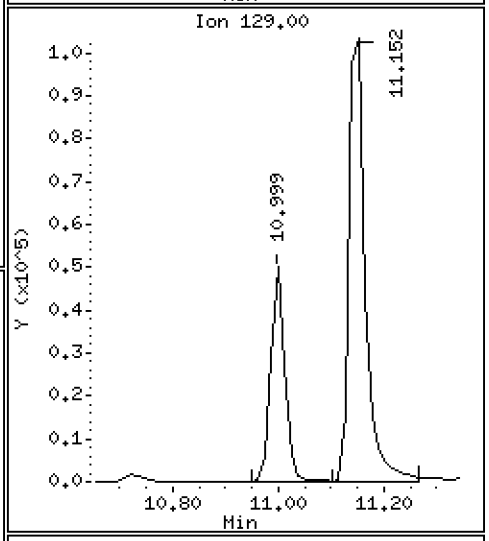


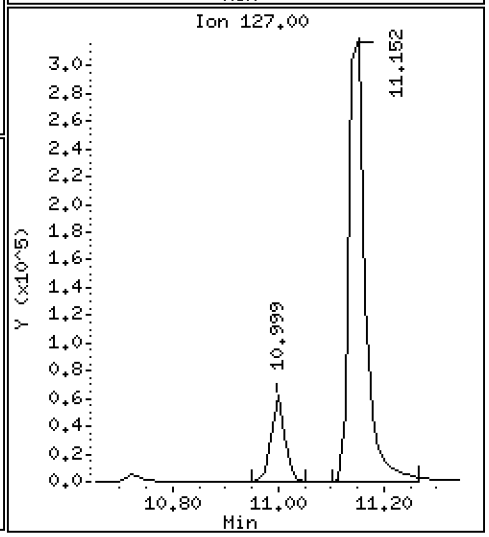












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202307.D

Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

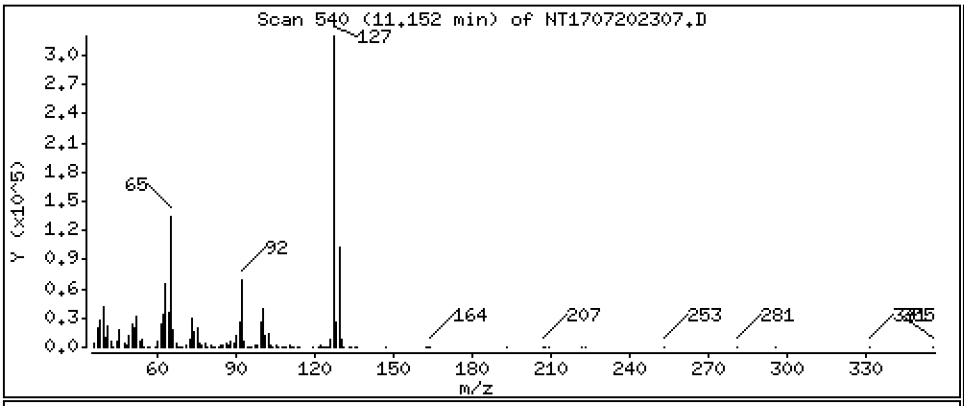
Operator: JGR

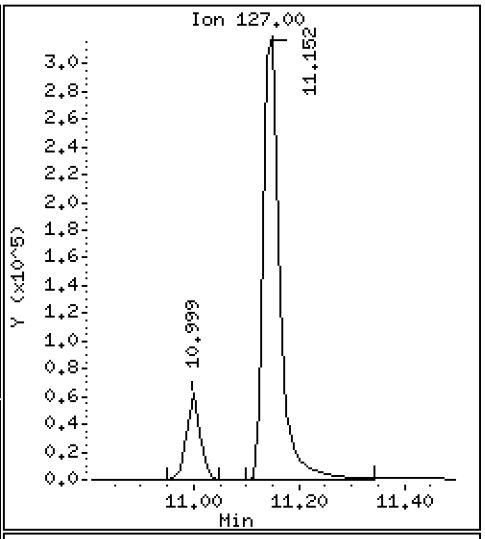
Column phase: ZB-5msi

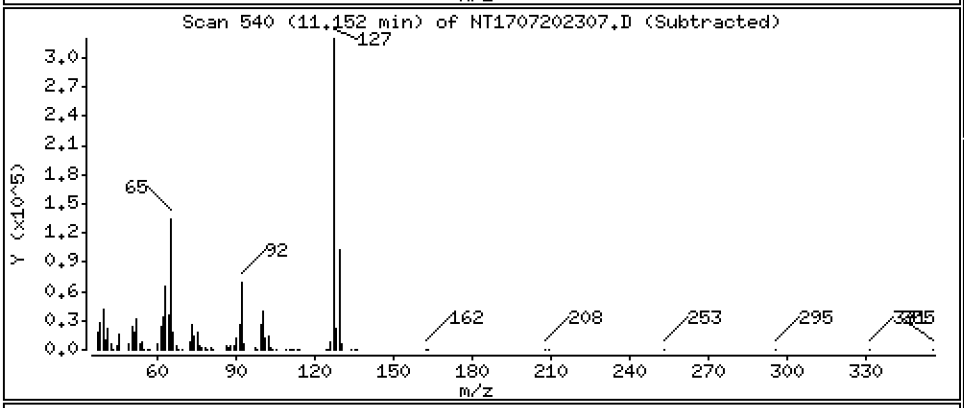
Column diameter: 0.25

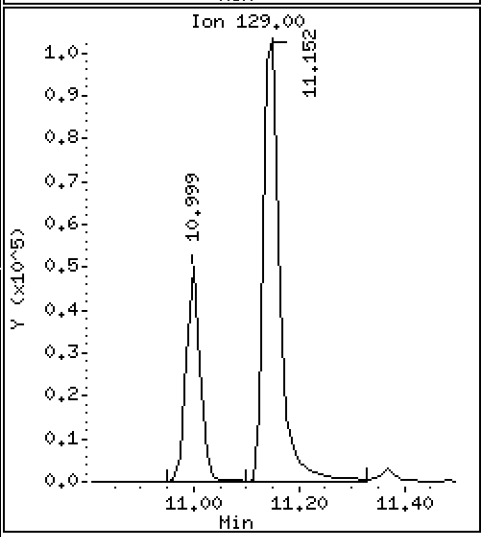
29 4-Chloroaniline

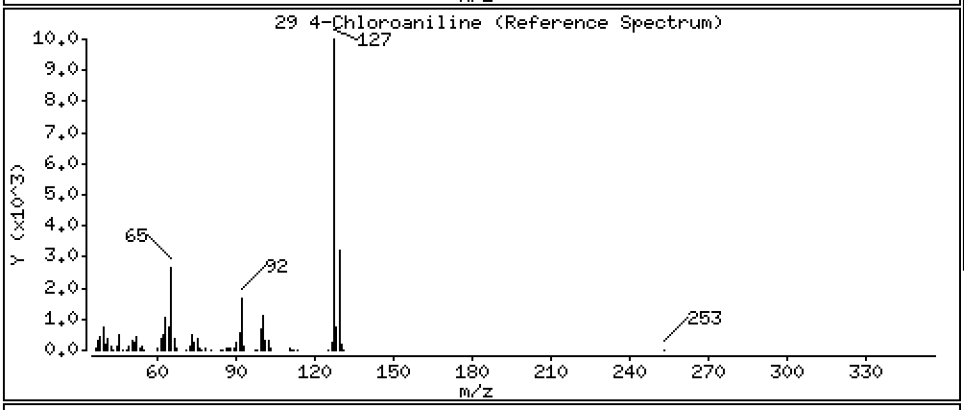
Concentration: 9.689 ug/mL

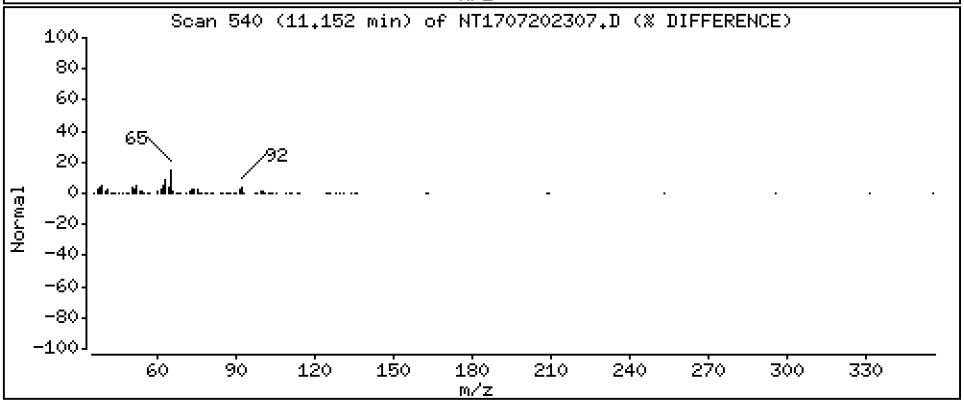












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

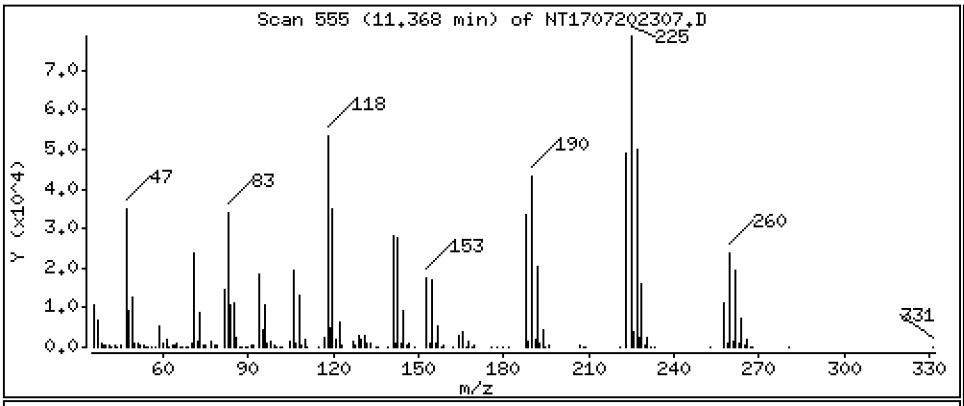
Operator: JGR

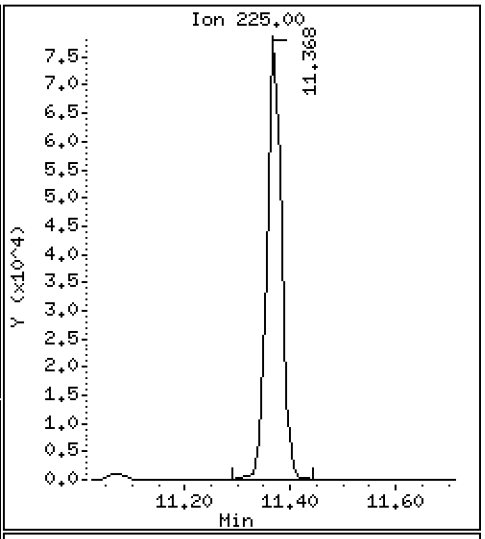
Column phase: ZB-5msi

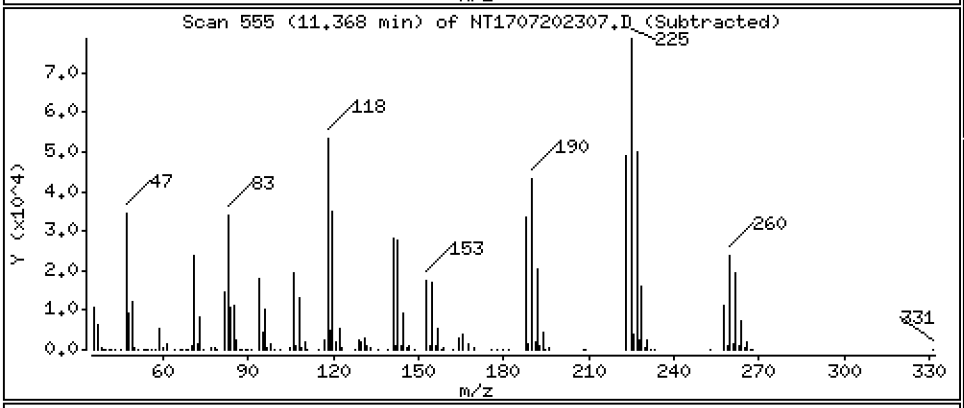
Column diameter: 0.25

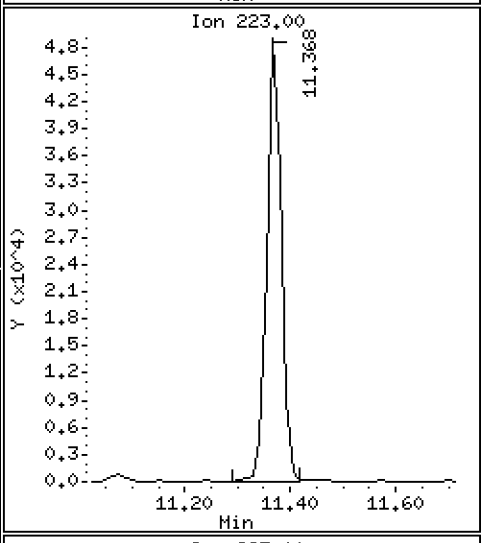
30 Hexachlorobutadiene

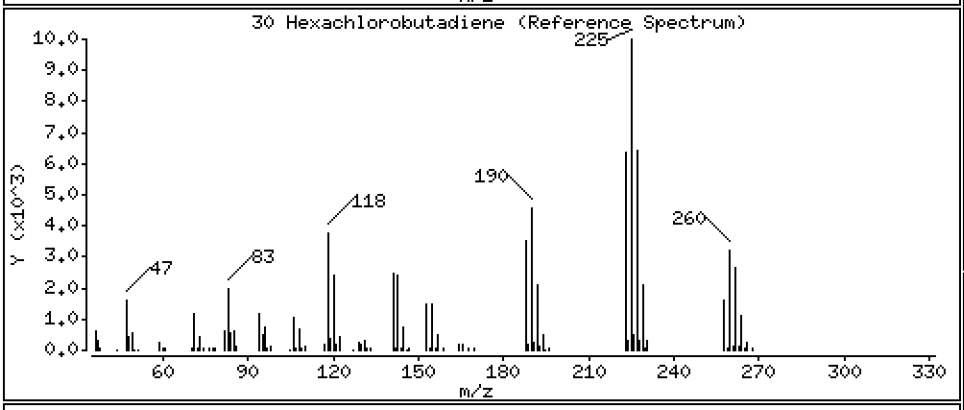
Concentration: 6.378 ug/mL

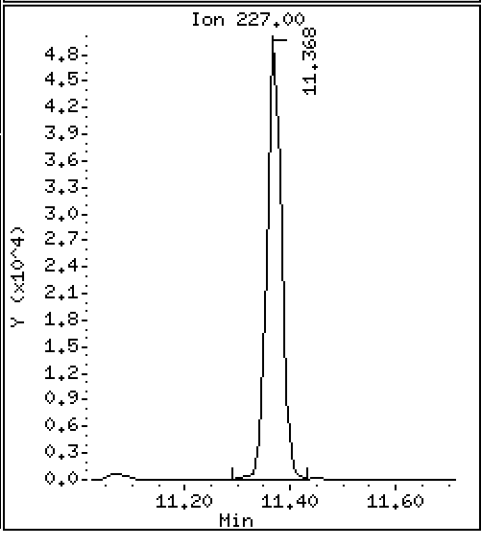


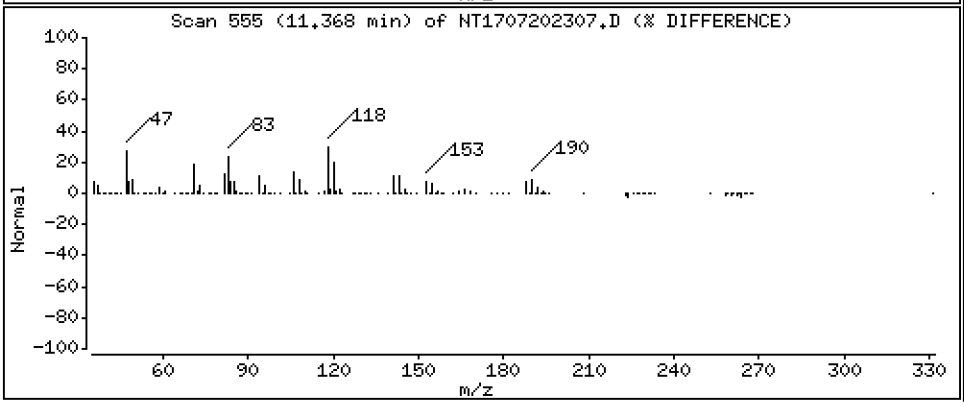












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

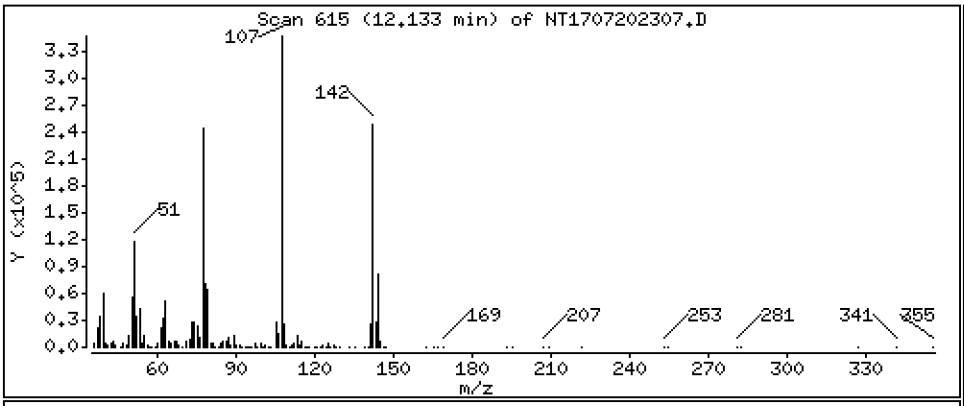
Operator: JGR

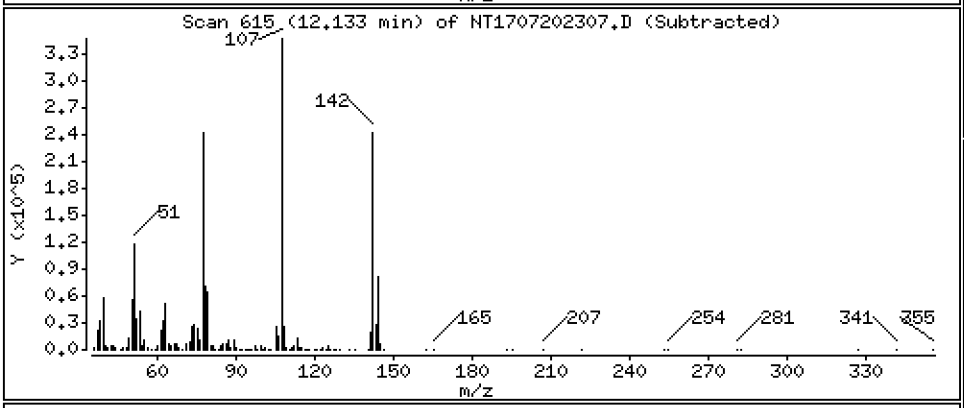
Column phase: ZB-5msi

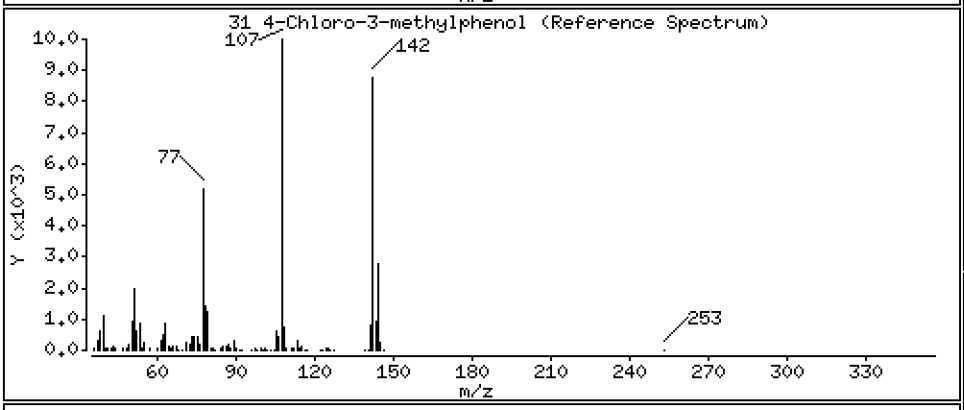
Column diameter: 0.25

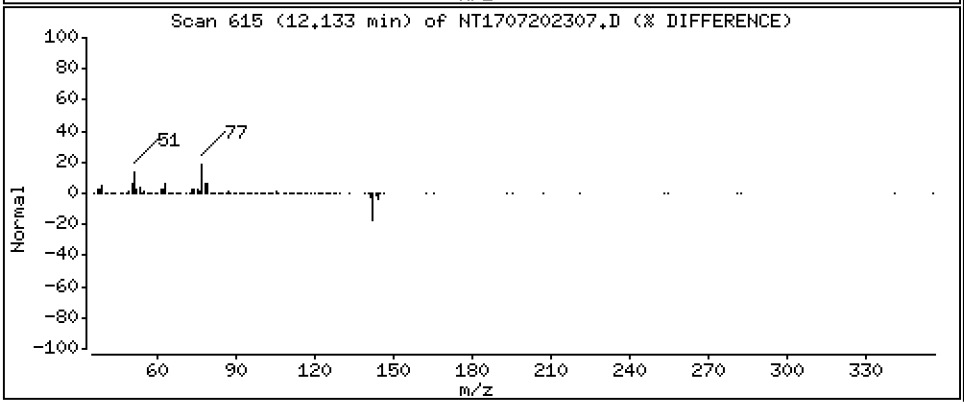
31 4-Chloro-3-methylphenol

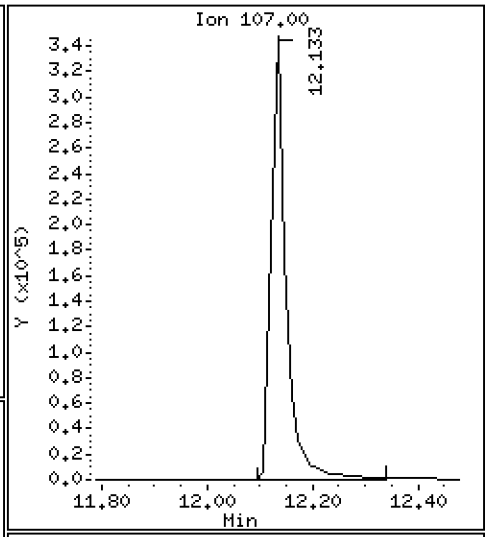
Concentration: 11.29 ug/mL

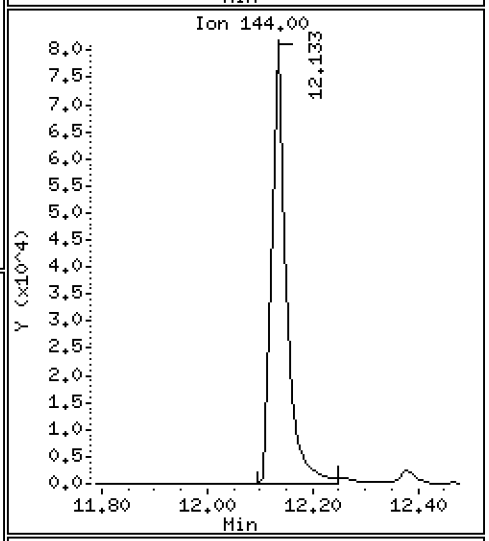


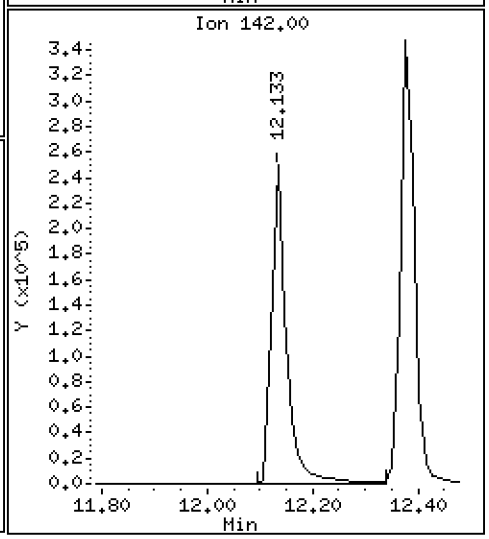












Date : 21-JUL-2023 04:26

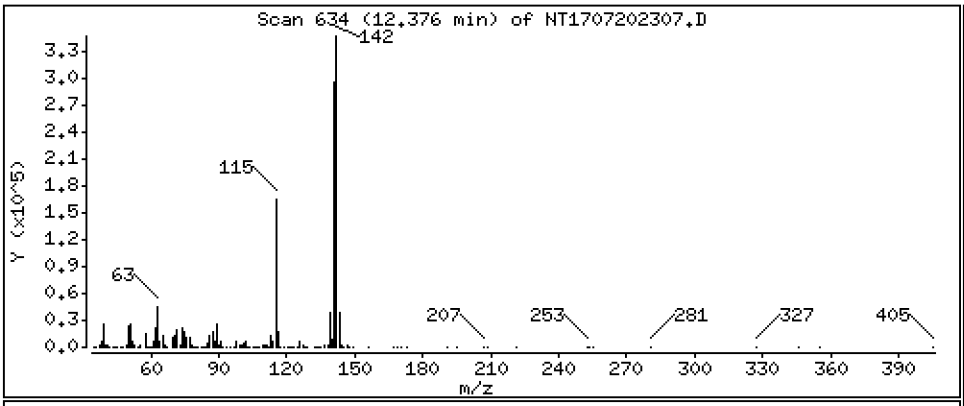
Client ID: Instrument: nt17.i

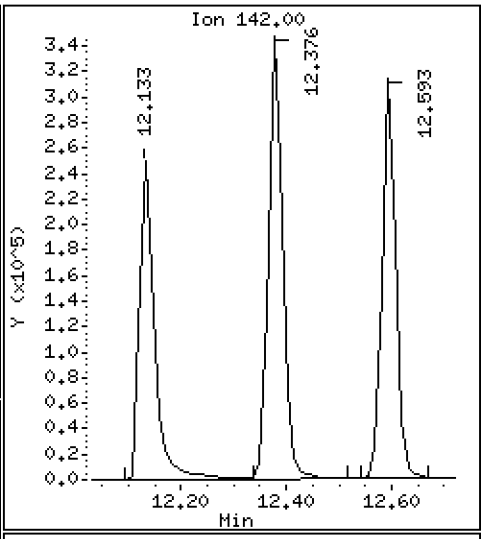
Sample Info: SLG0263-CCV1

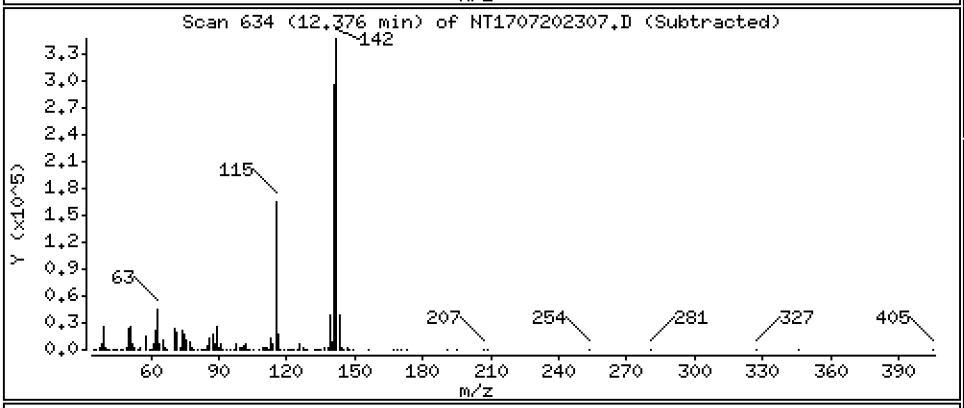
Operator: JGR

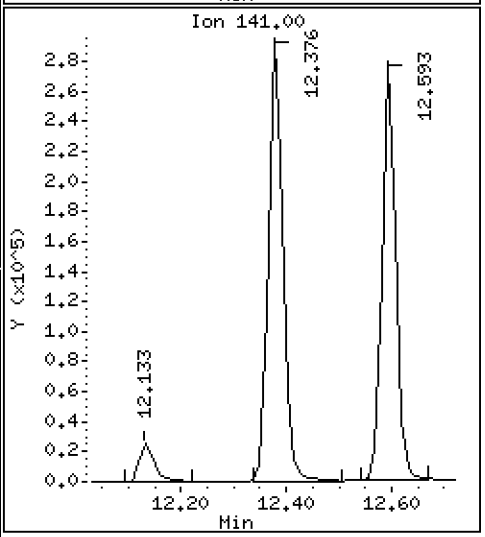
Column phase: ZB-5msi Column diameter: 0.25

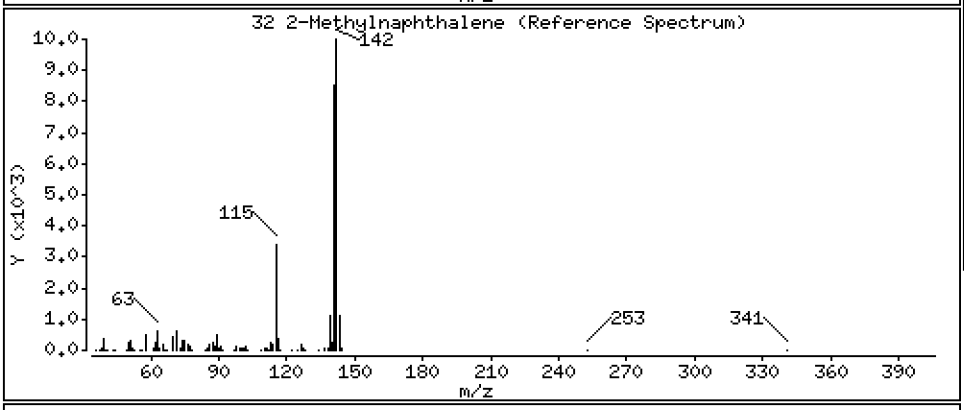
32 2-Methylnaphthalene Concentration: 5.130 ug/mL

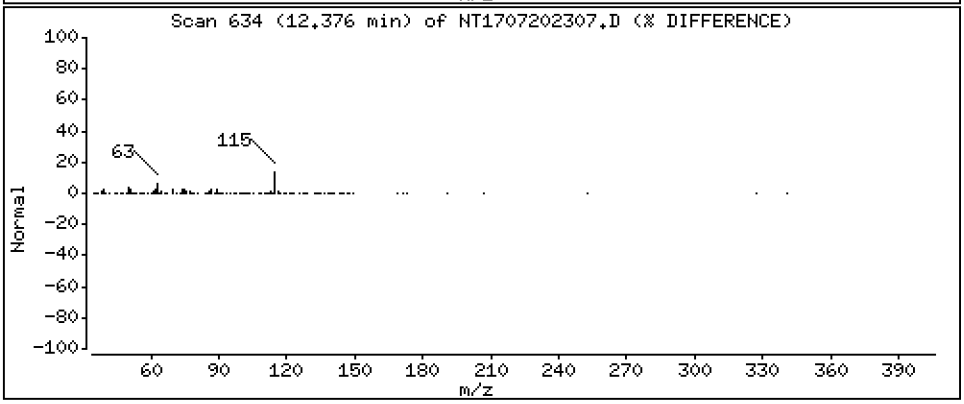












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

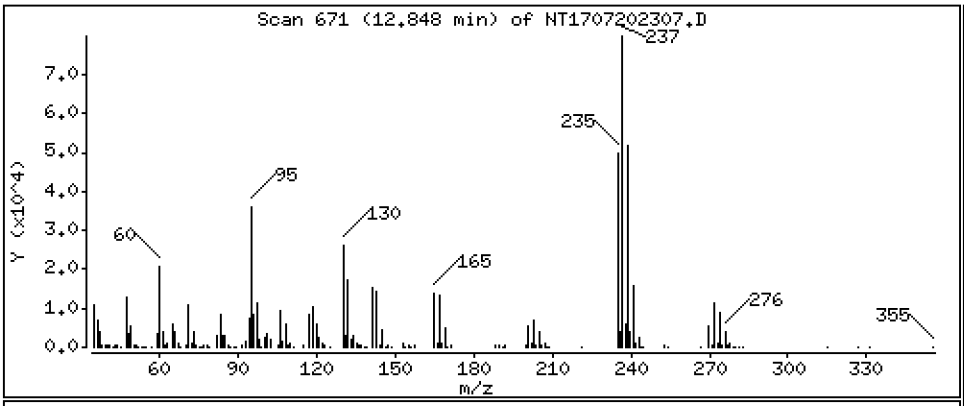
Operator: JGR

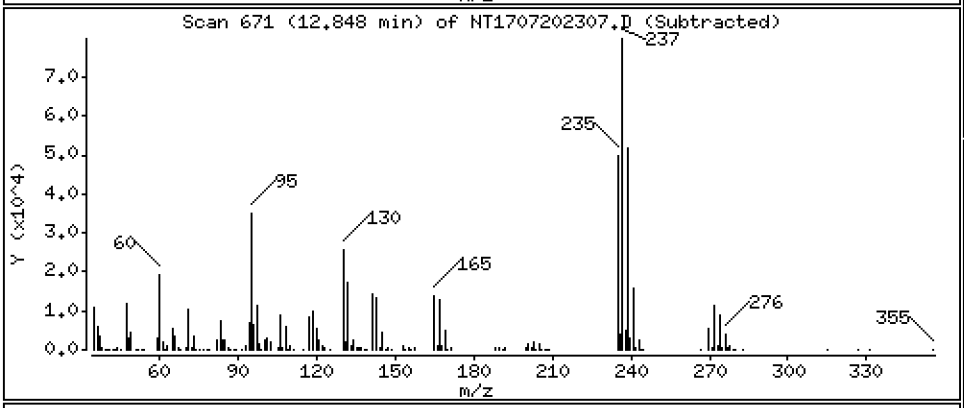
Column phase: ZB-5msi

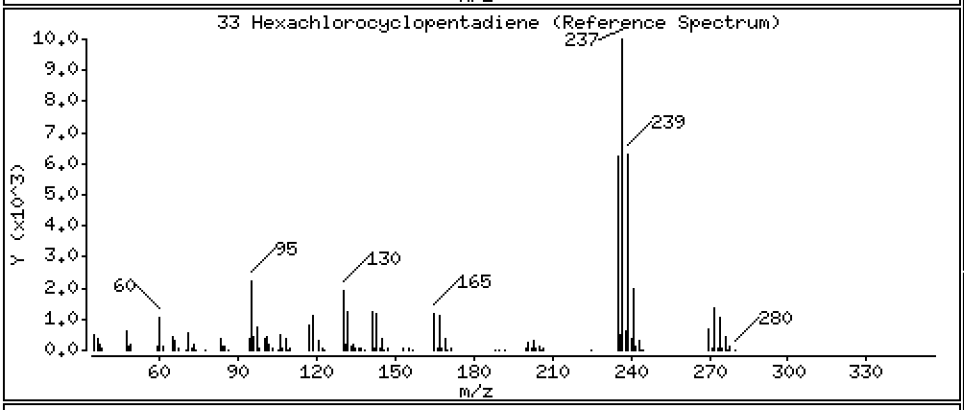
Column diameter: 0.25

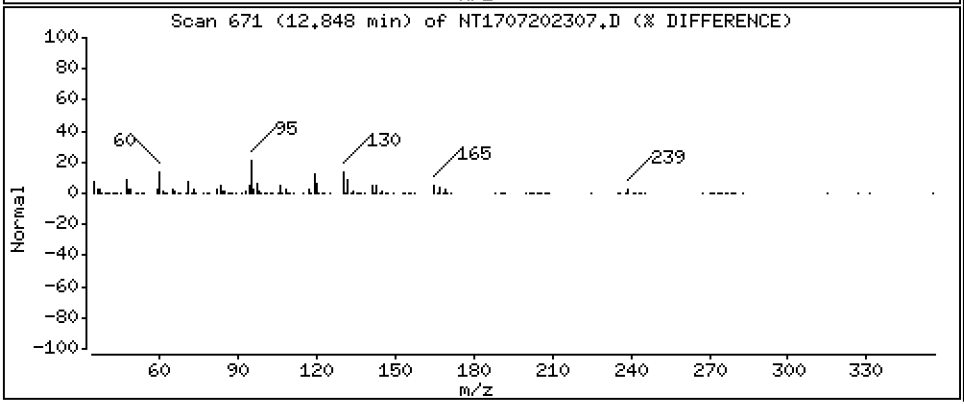
33 Hexachlorocyclopentadiene

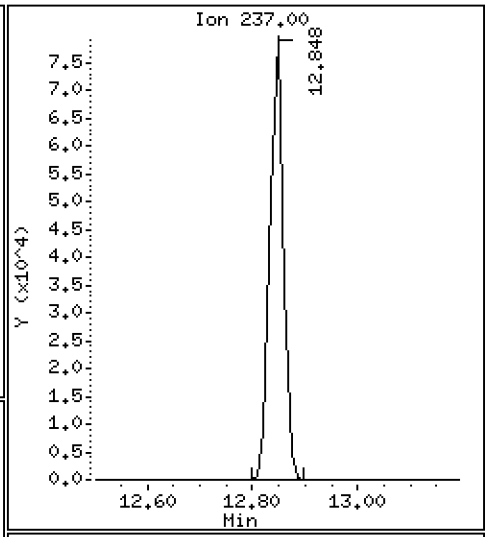
Concentration: 8.234 ug/mL

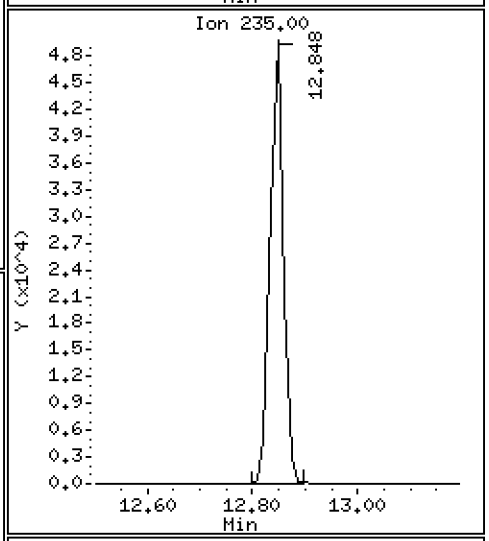


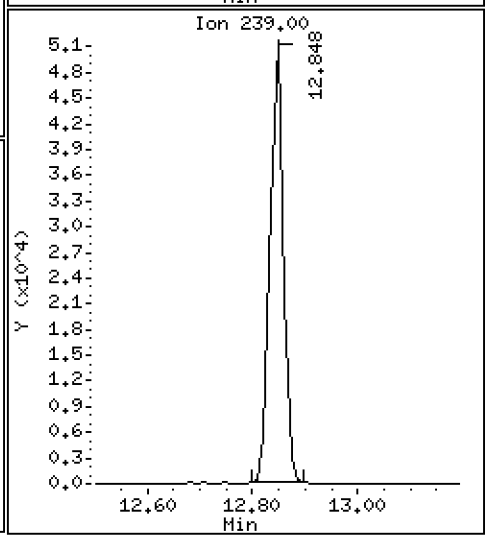












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

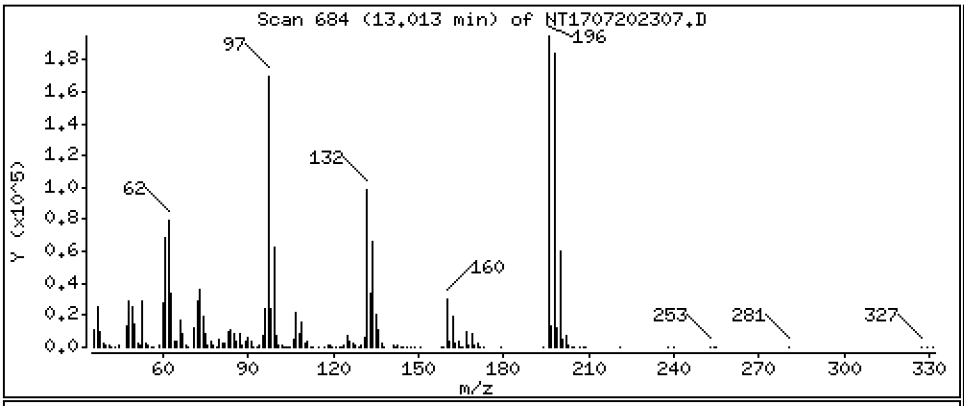
Operator: JGR

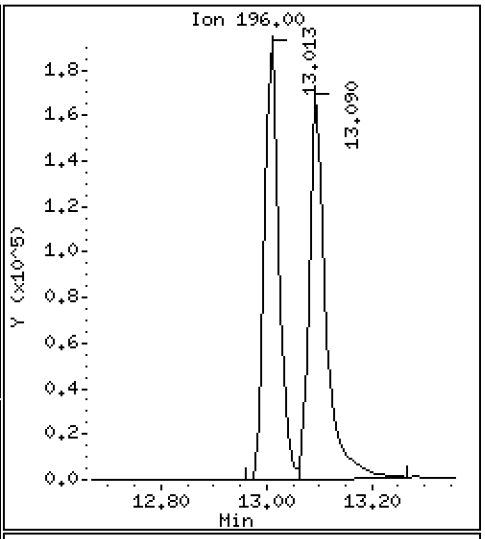
Column phase: ZB-5msi

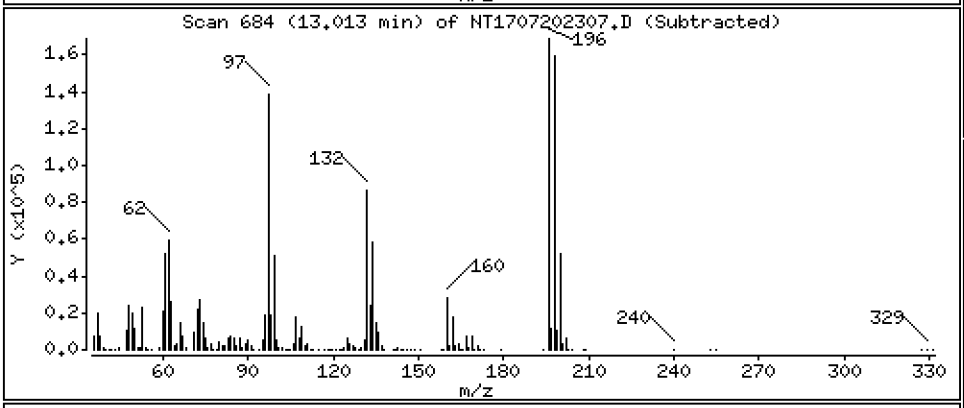
Column diameter: 0.25

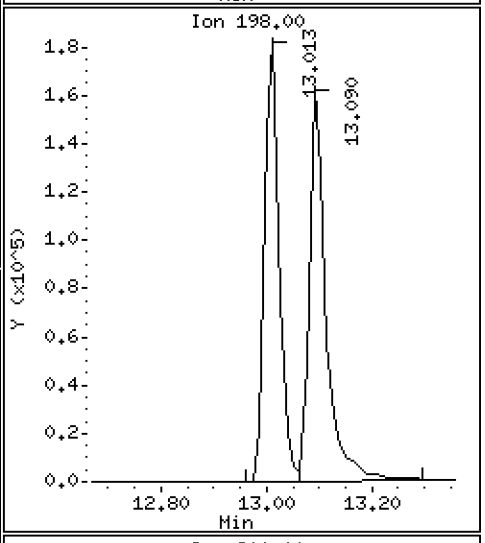
34 2,4,6-Trichlorophenol

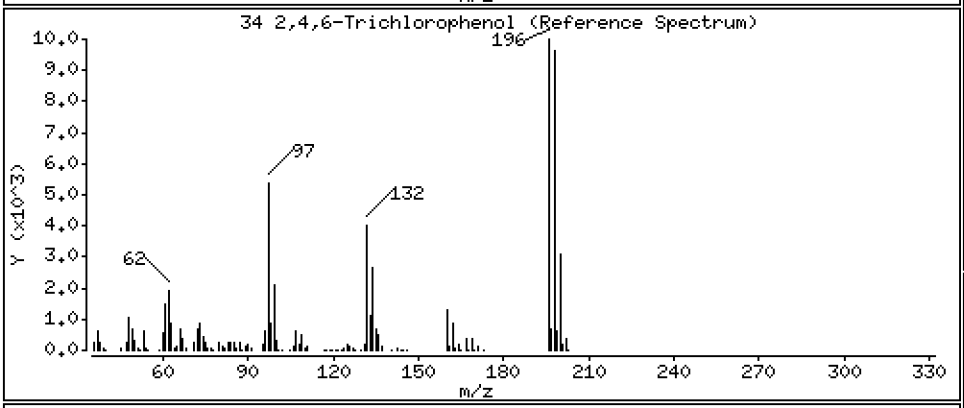
Concentration: 10.22 ug/mL

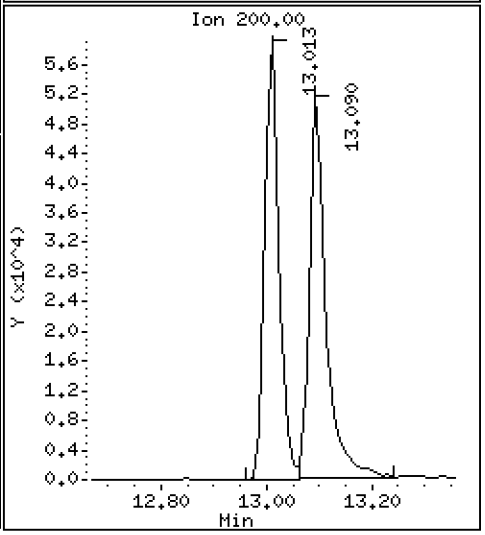


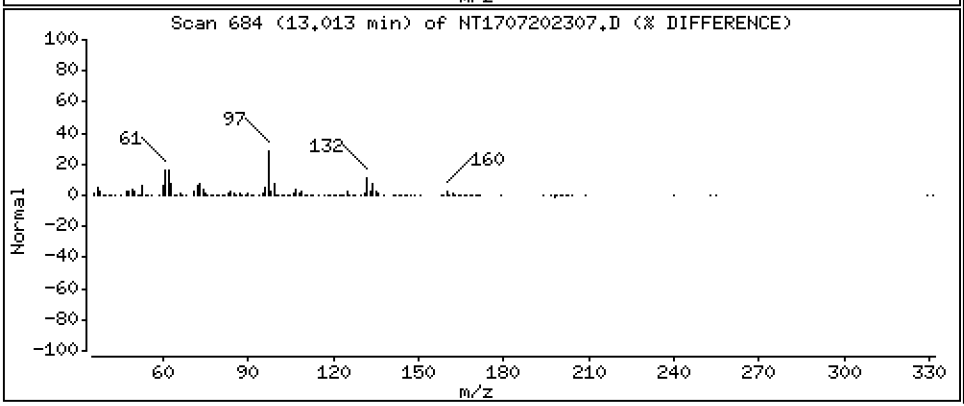












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202307.D

Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

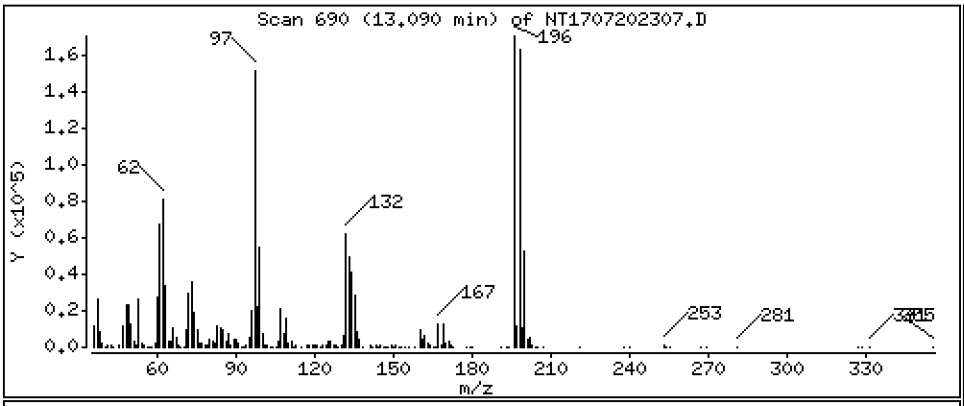
Operator: JGR

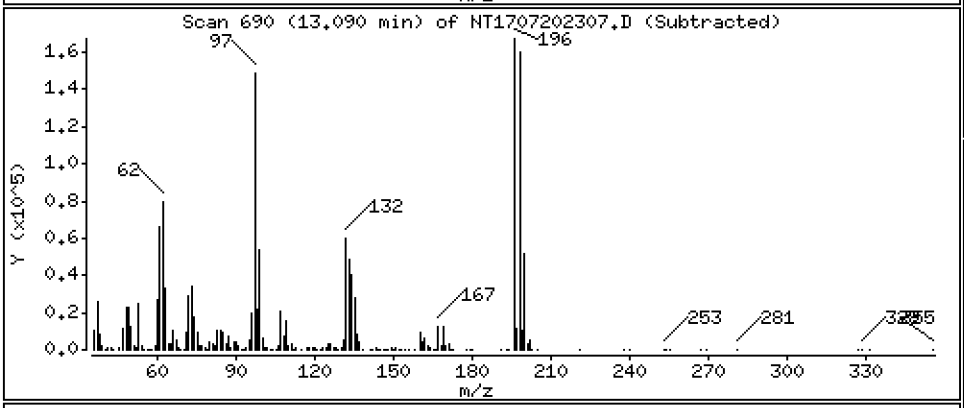
Column phase: ZB-5msi

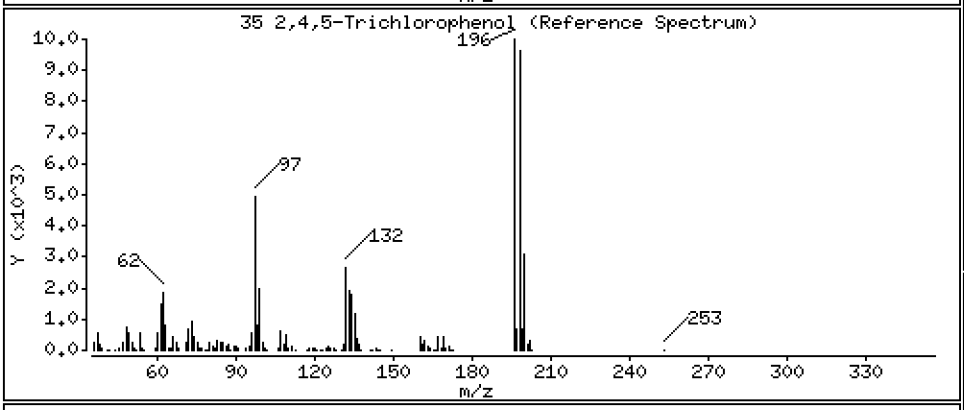
Column diameter: 0.25

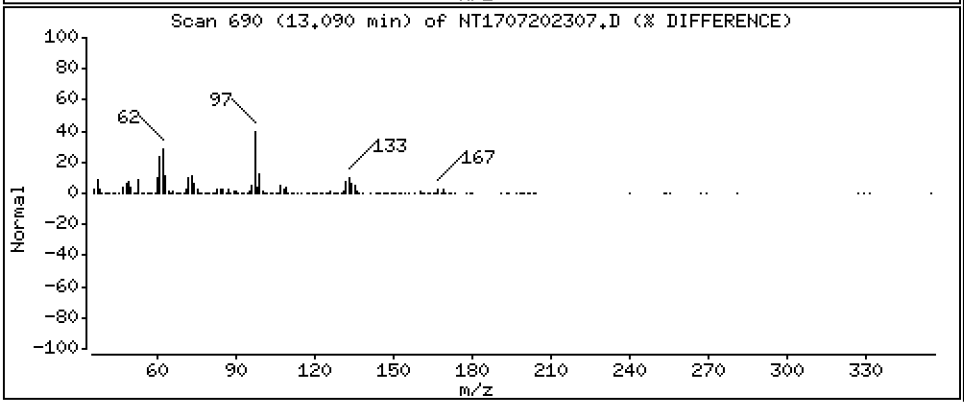
35 2,4,5-Trichlorophenol

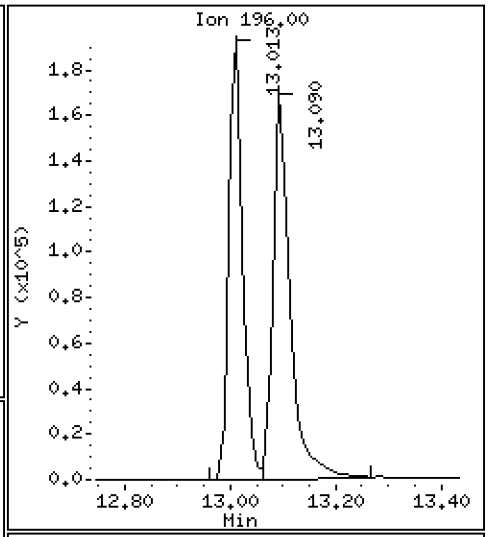
Concentration: 10.07 ug/mL

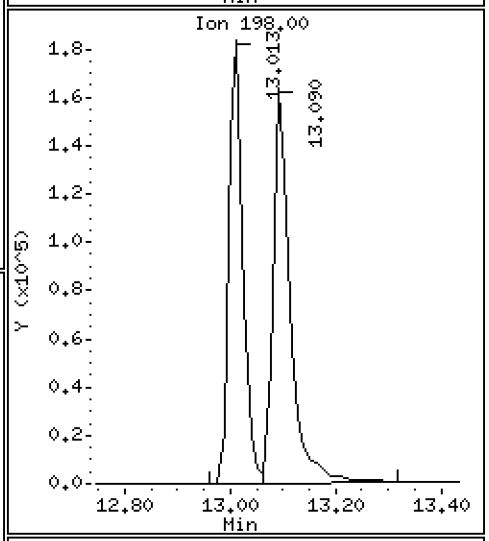


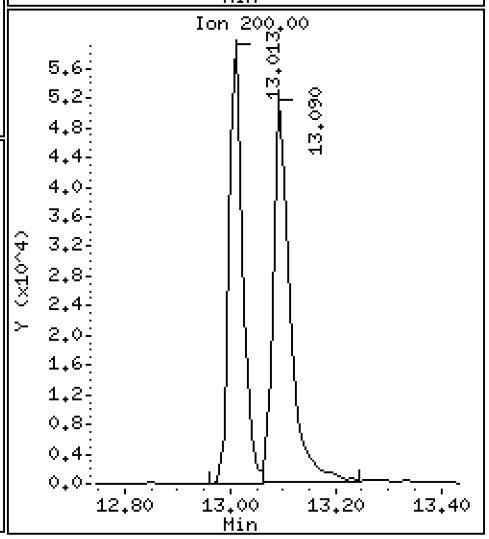












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

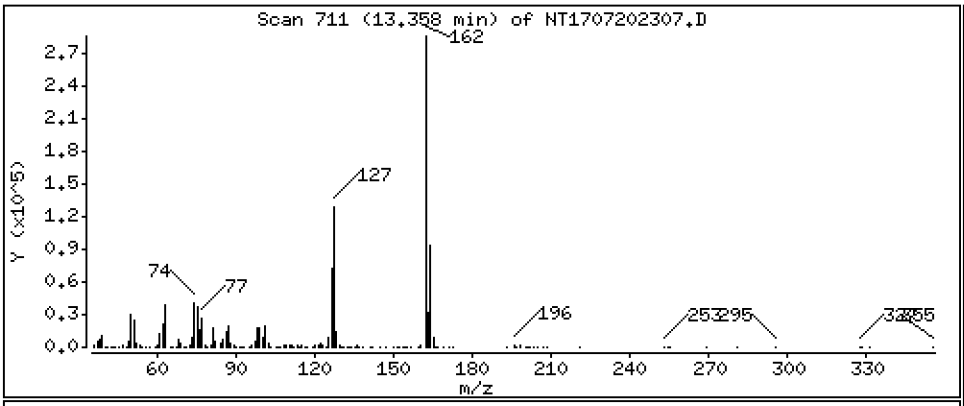
Operator: JGR

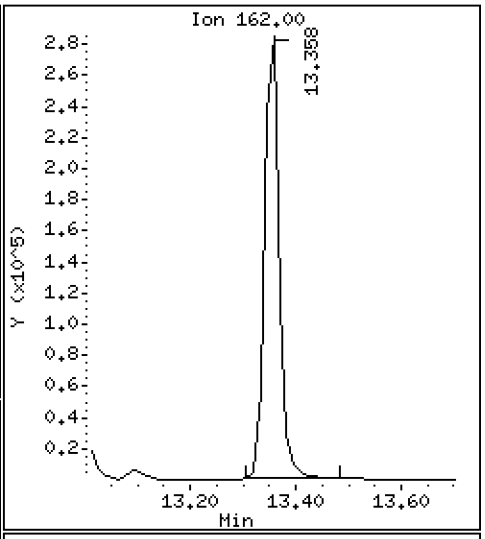
Column phase: ZB-5msi

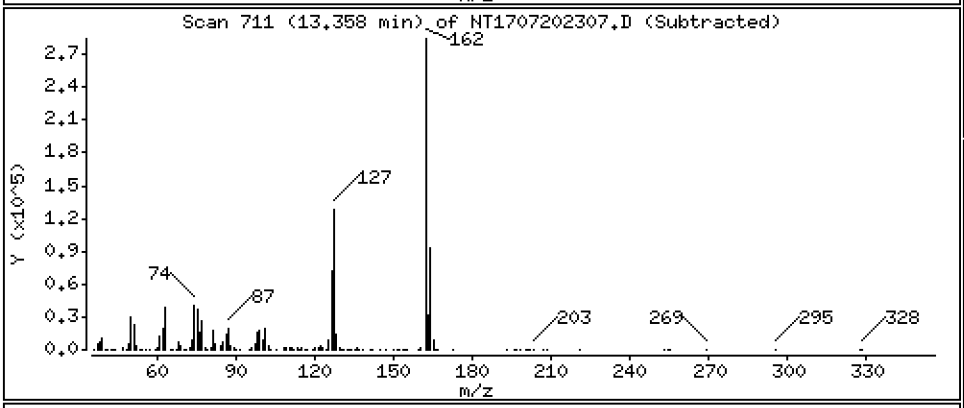
Column diameter: 0.25

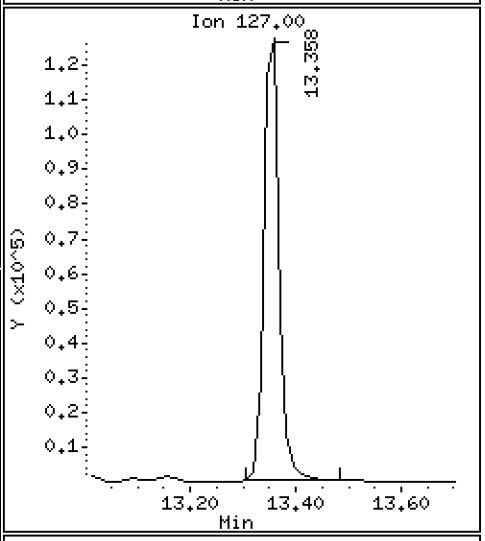
37 2-Chloronaphthalene

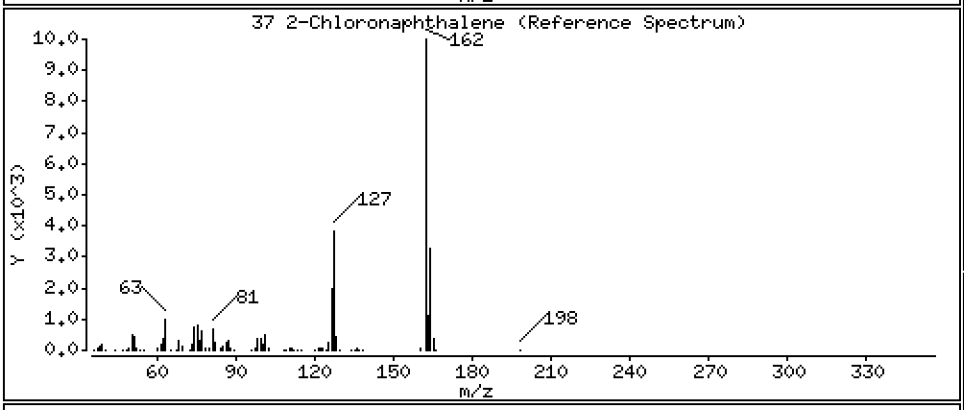
Concentration: 4.676 ug/mL

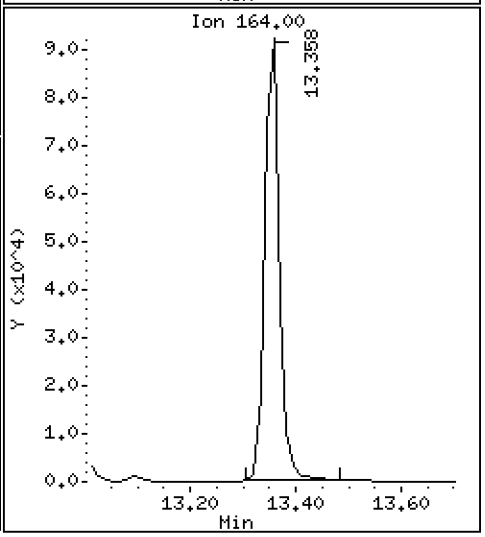


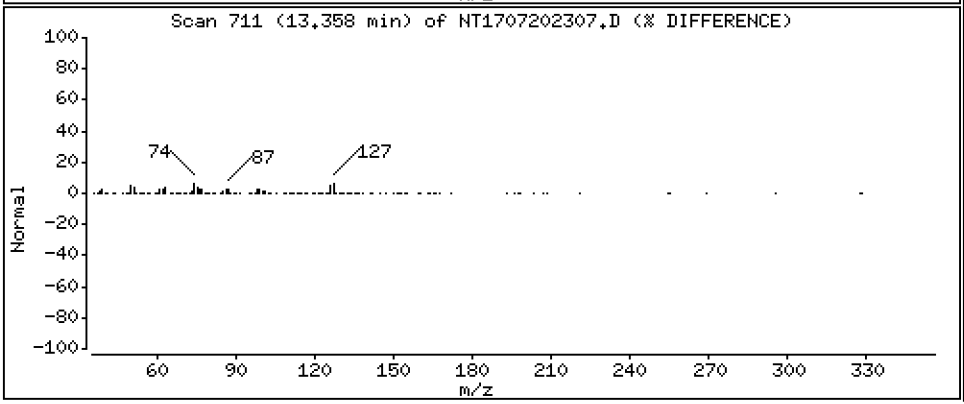












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

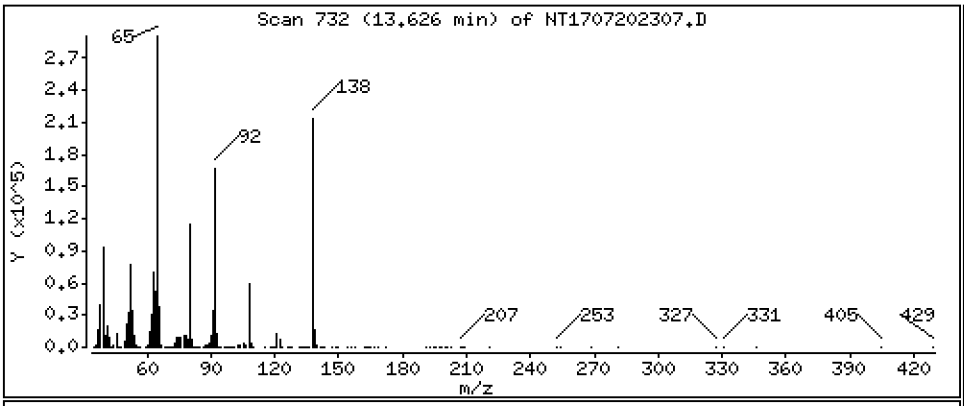
Operator: JGR

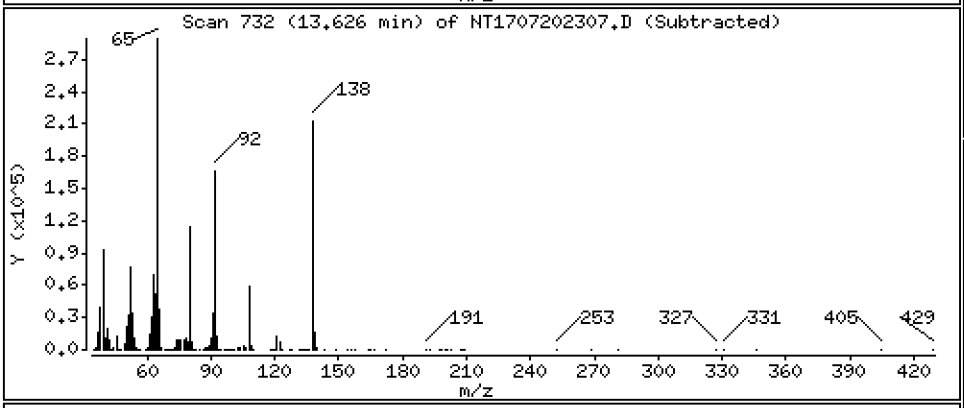
Column phase: ZB-5msi

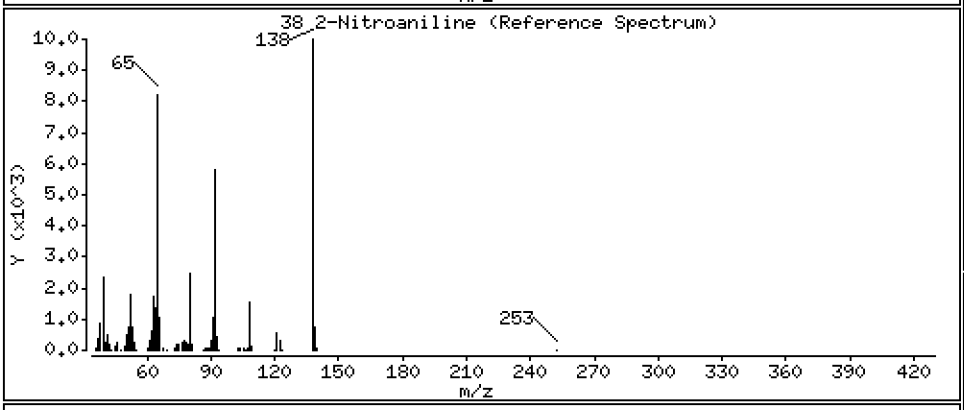
Column diameter: 0.25

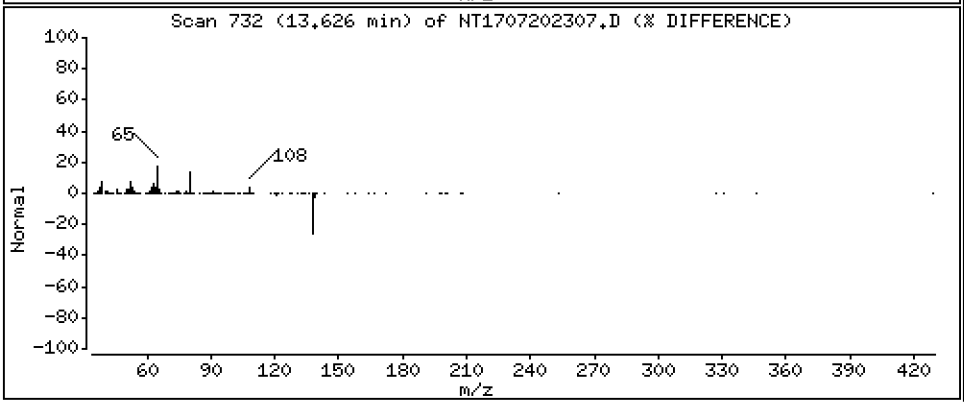
38 2-Nitroaniline

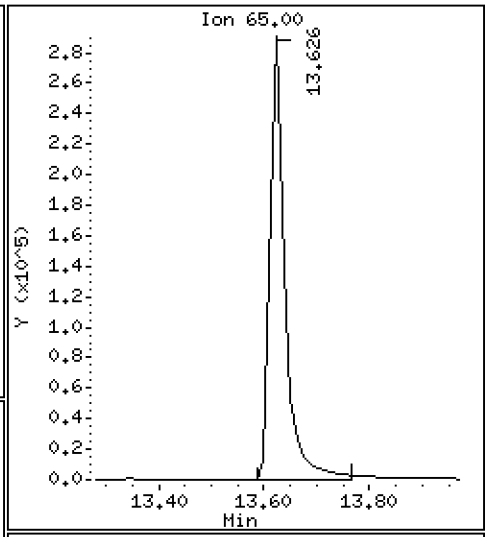
Concentration: 11.75 ug/mL

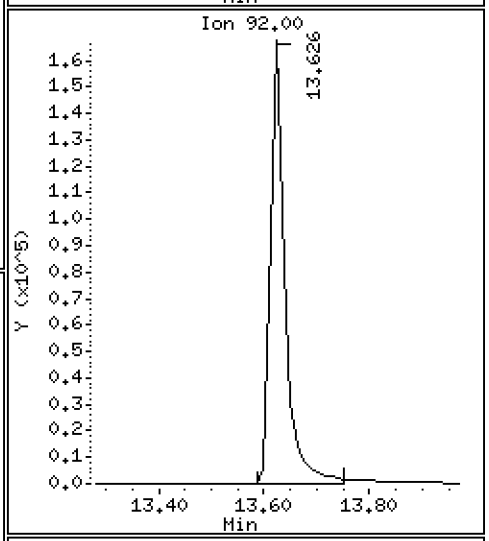


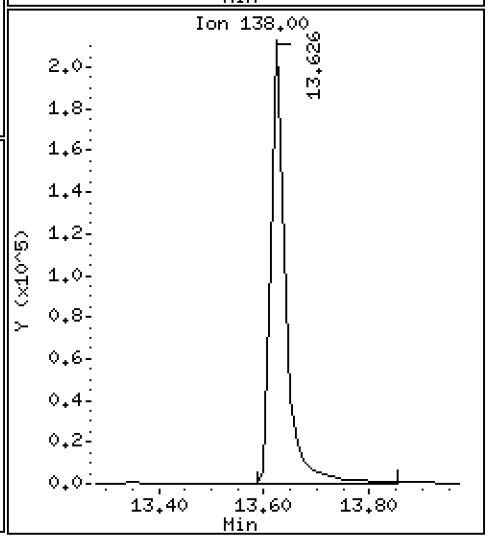












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

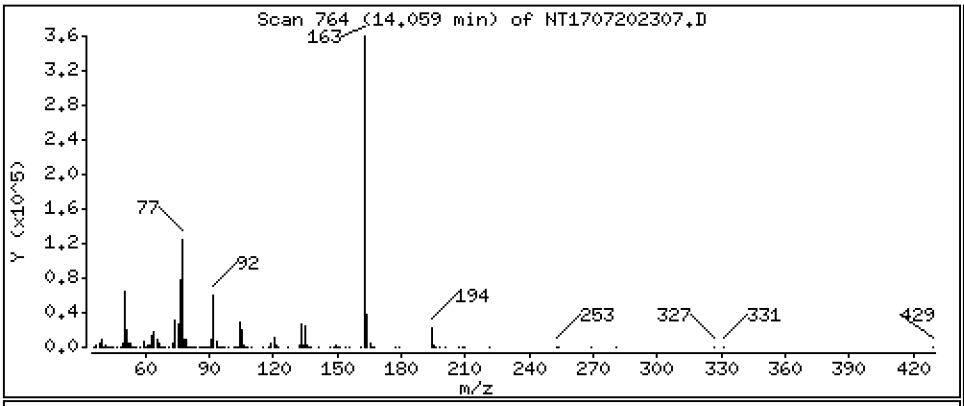
Operator: JGR

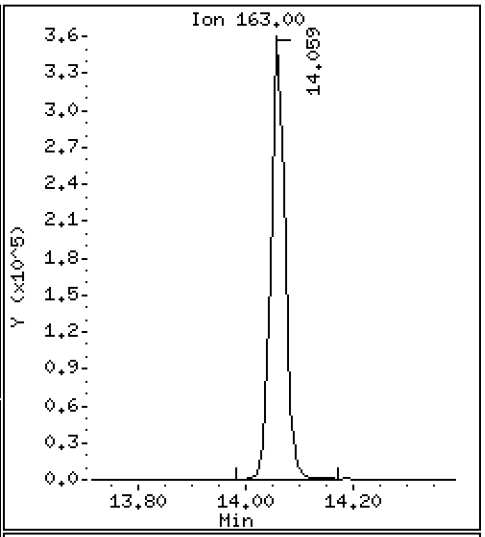
Column phase: ZB-5msi

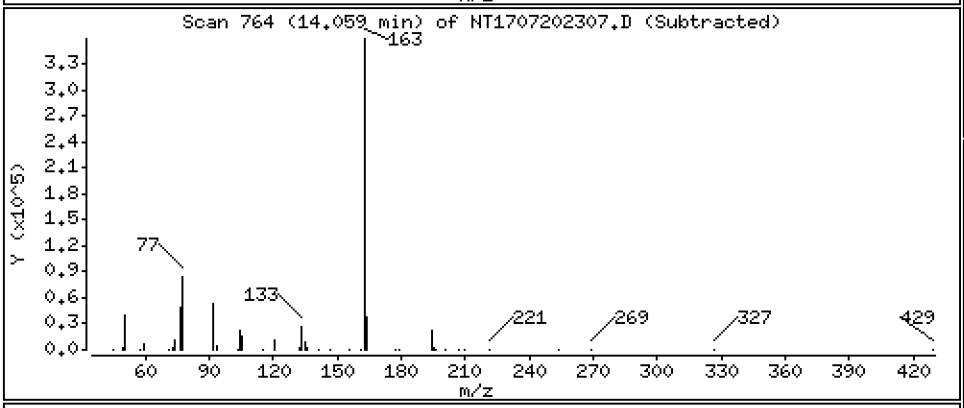
Column diameter: 0.25

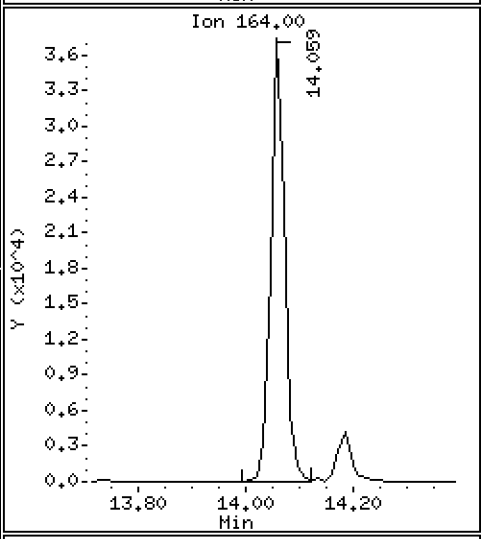
39 Dimethylphthalate

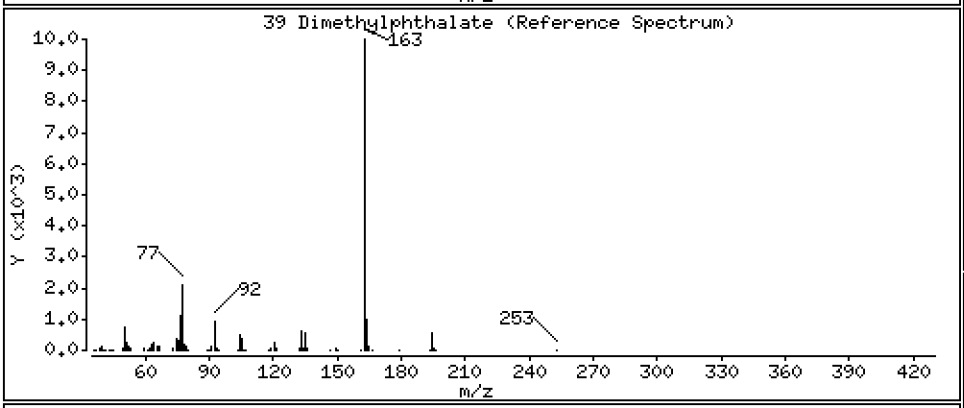
Concentration: 5.373 ug/mL

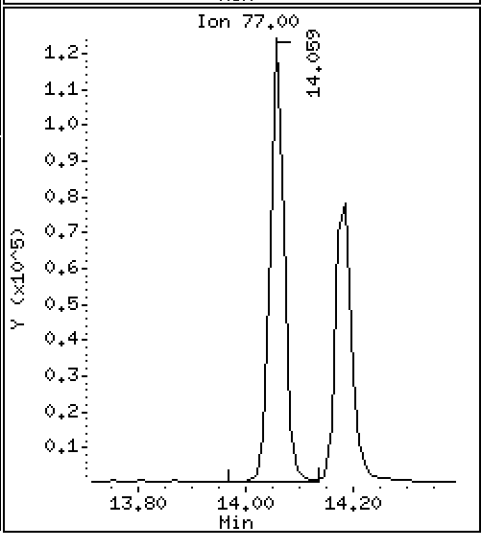


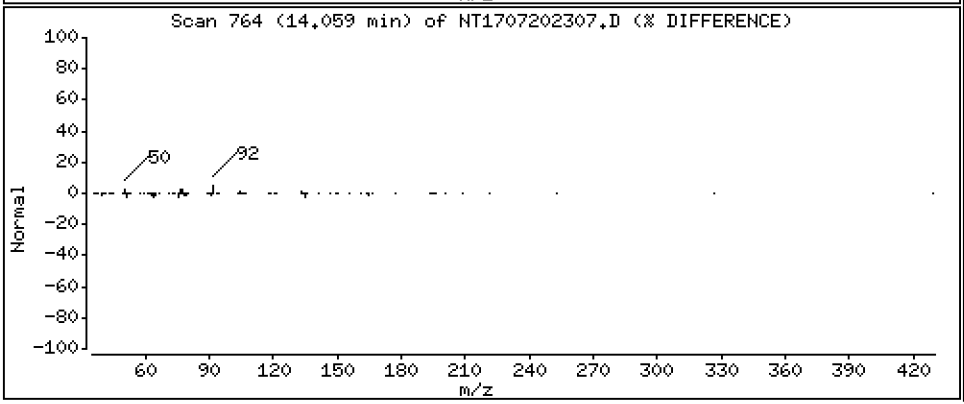












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

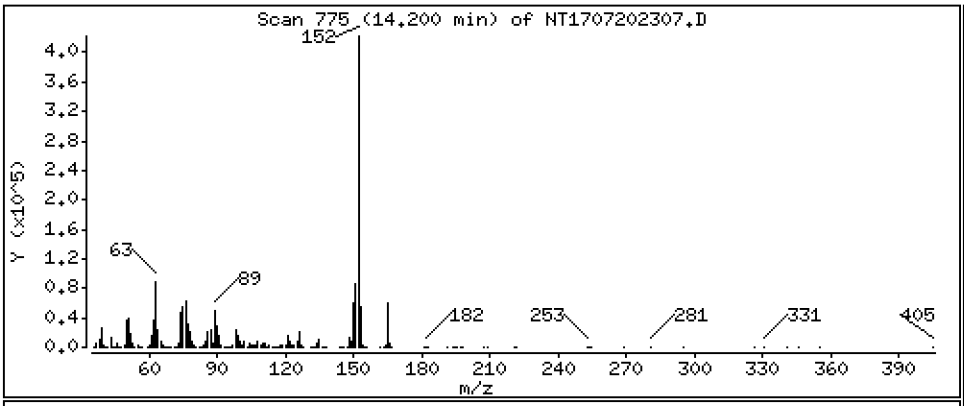
Operator: JGR

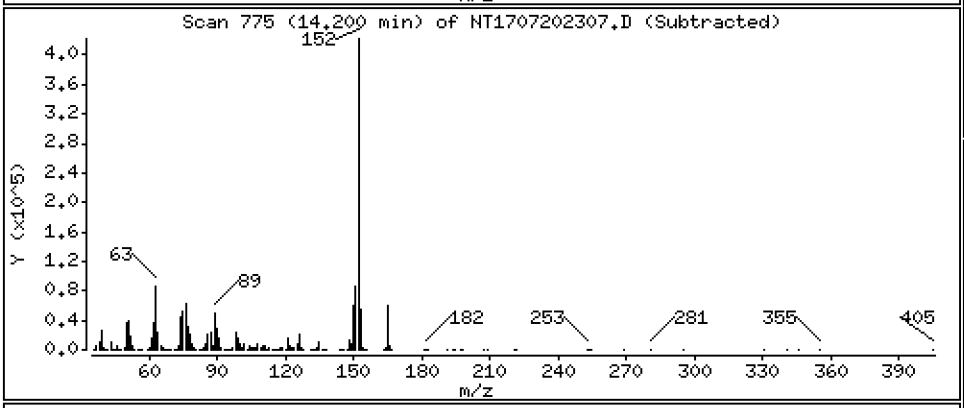
Column phase: ZB-5msi

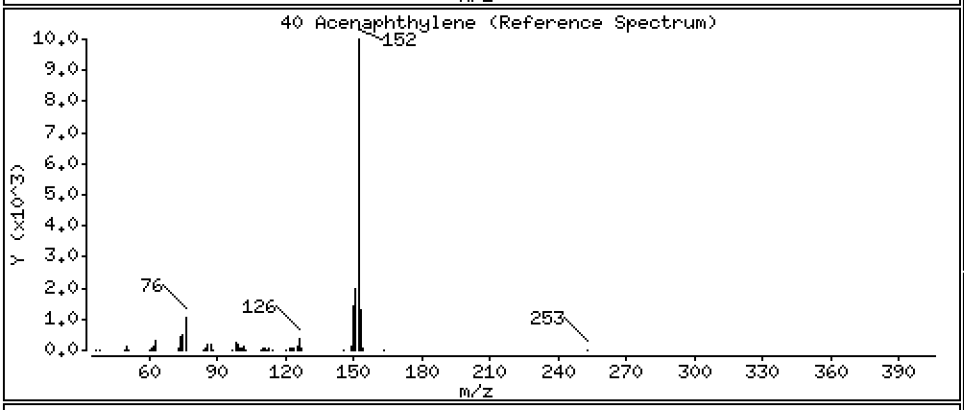
Column diameter: 0.25

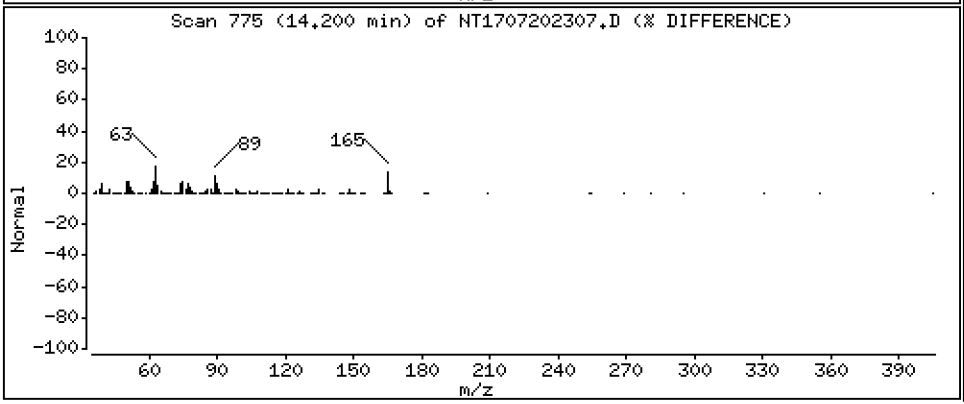
40 Acenaphthylene

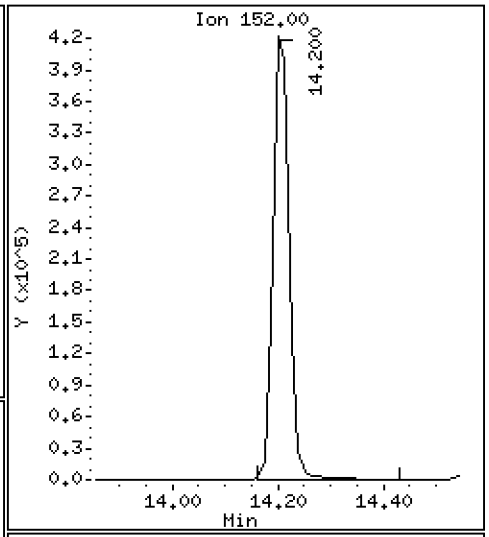
Concentration: 5.334 ug/mL

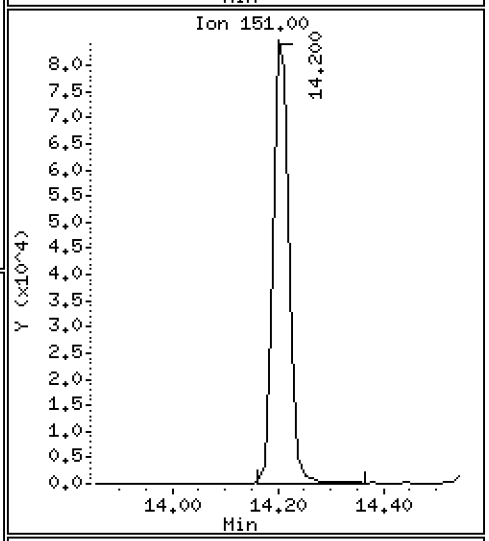


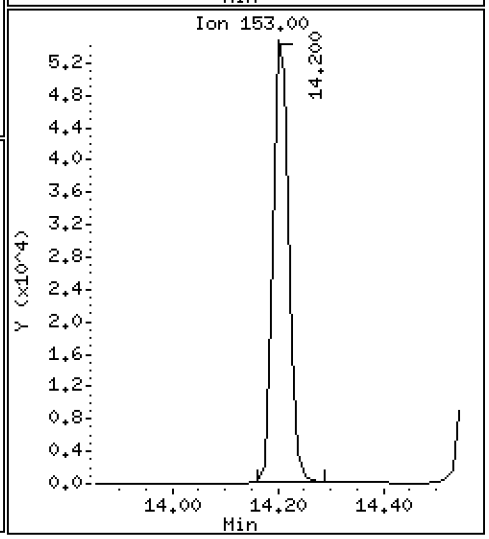












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

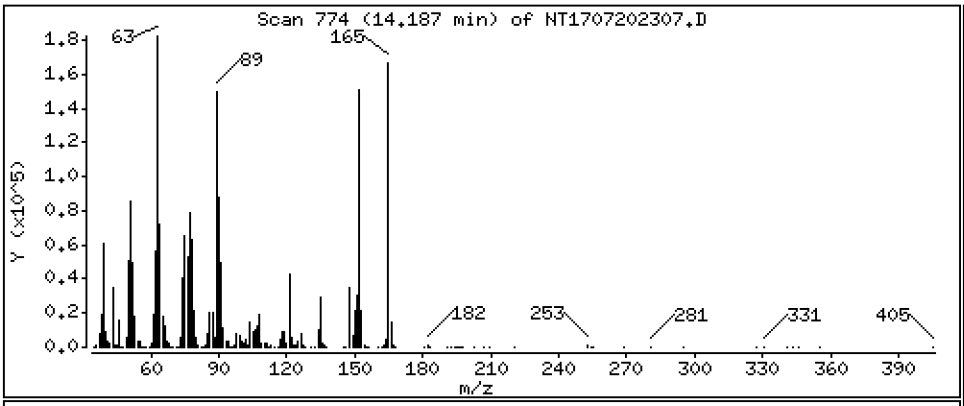
Operator: JGR

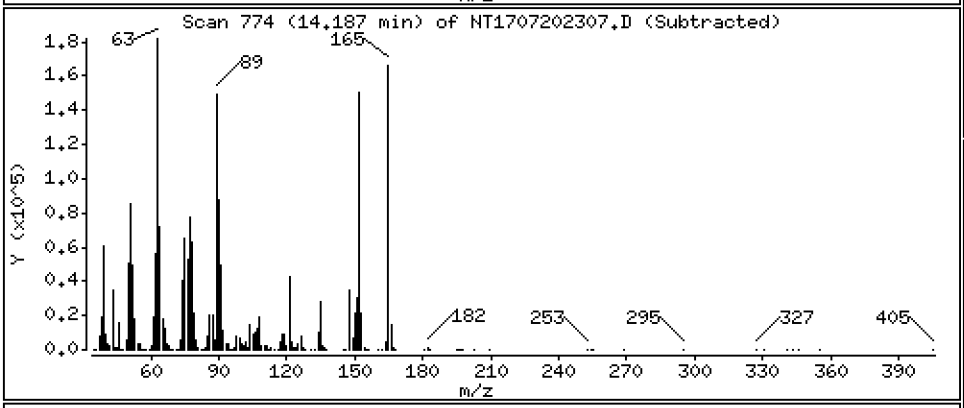
Column phase: ZB-5msi

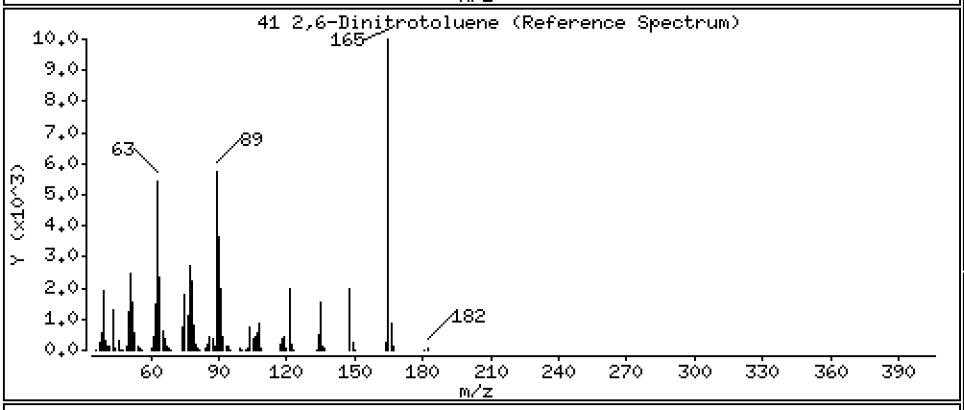
Column diameter: 0.25

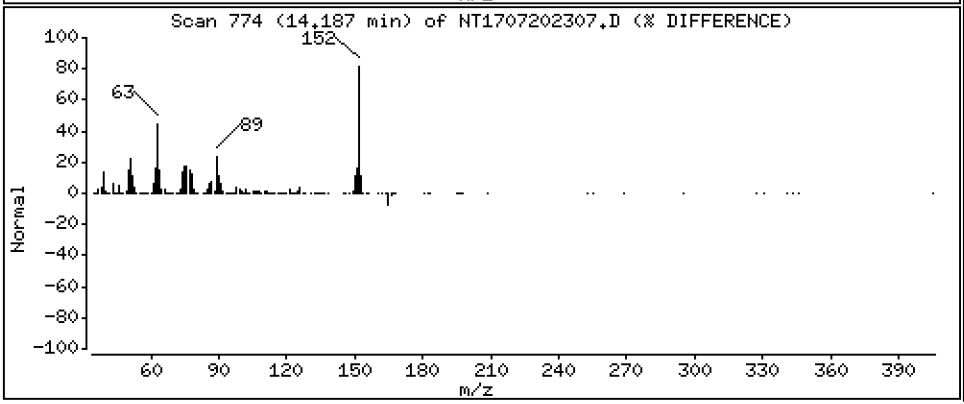
41 2,6-Dinitrotoluene

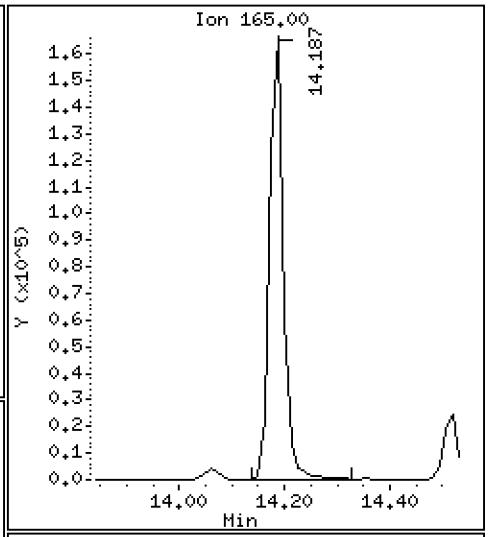
Concentration: 10.44 ug/mL

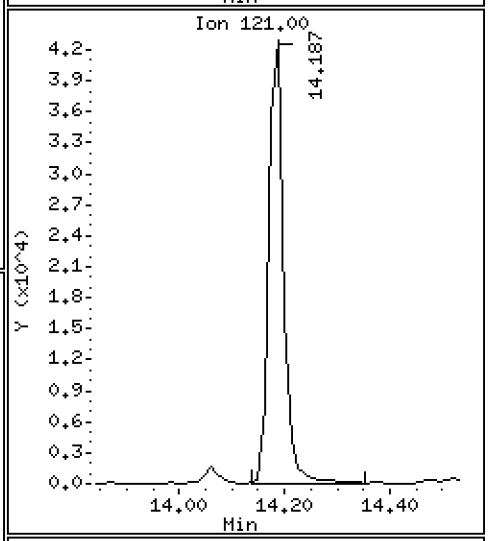


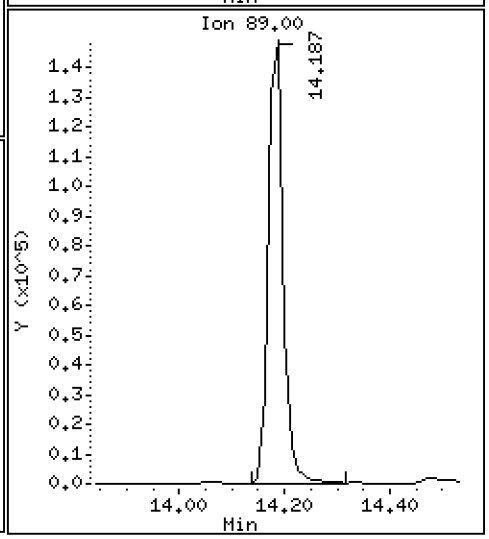












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

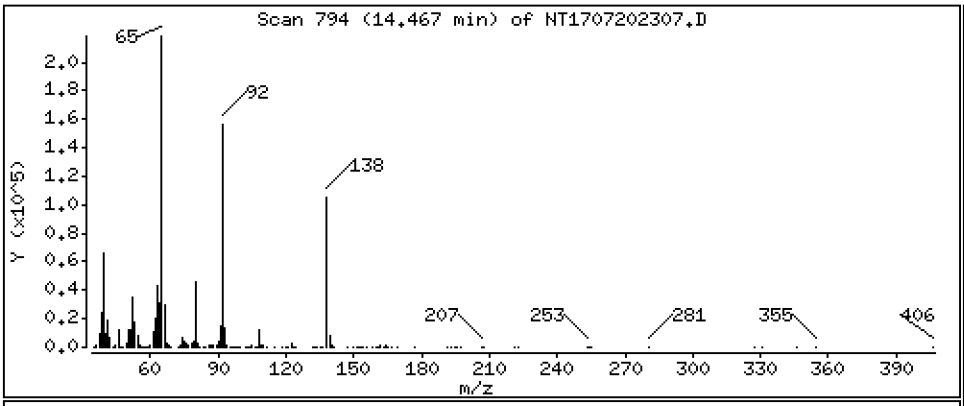
Operator: JGR

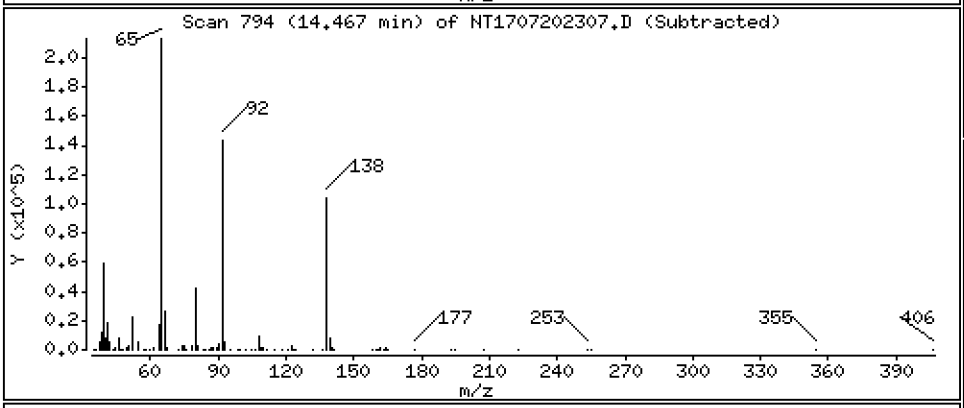
Column phase: ZB-5msi

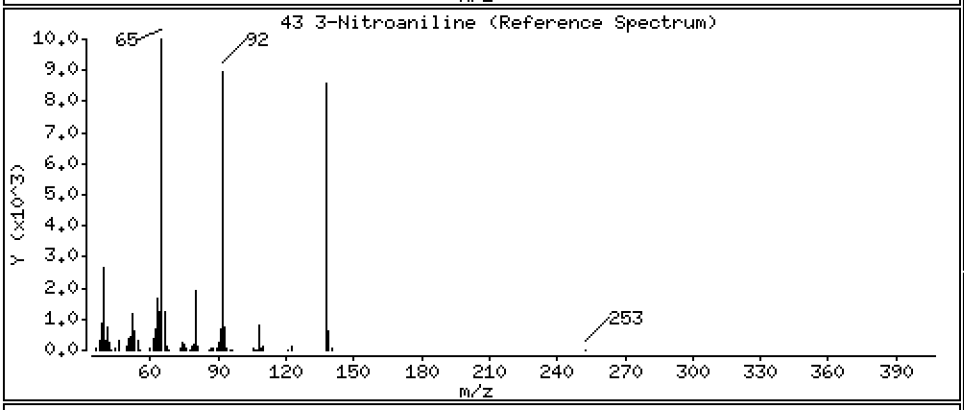
Column diameter: 0.25

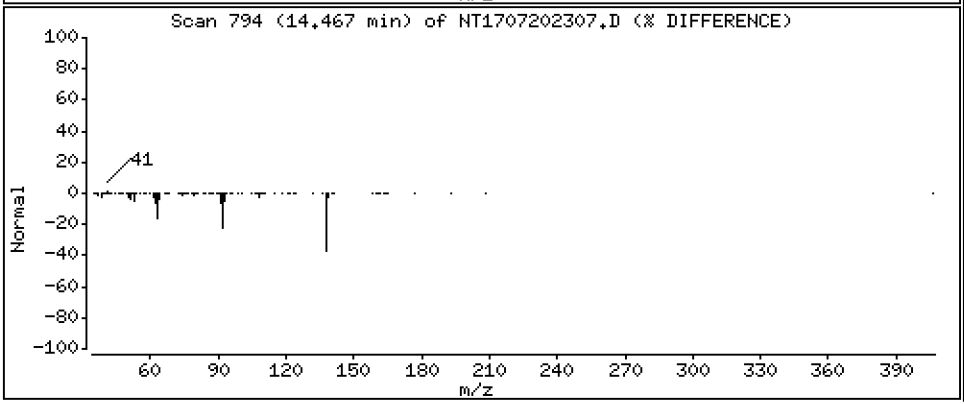
43 3-Nitroaniline

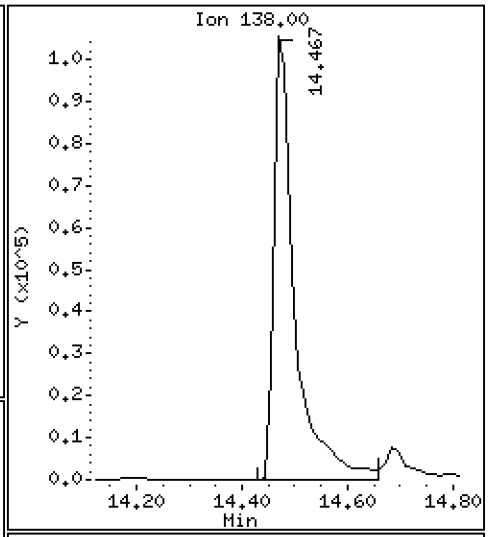
Concentration: 9.153 ug/mL

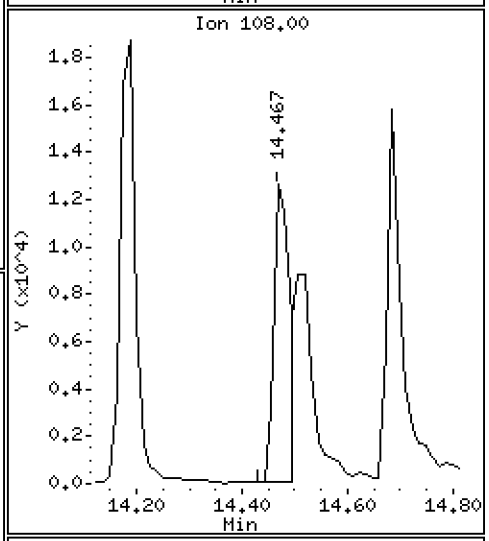


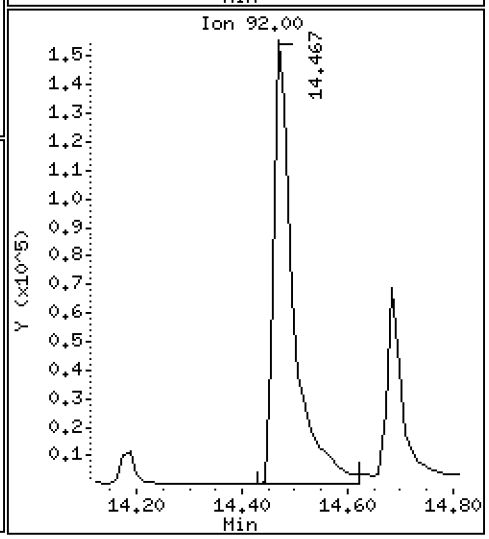












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

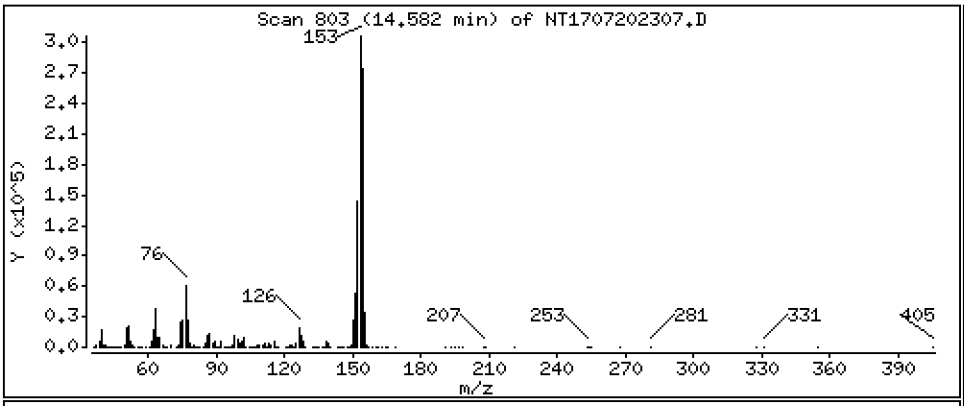
Operator: JGR

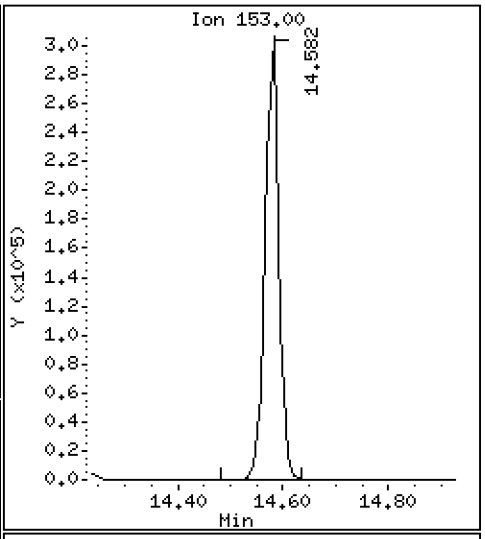
Column phase: ZB-5msi

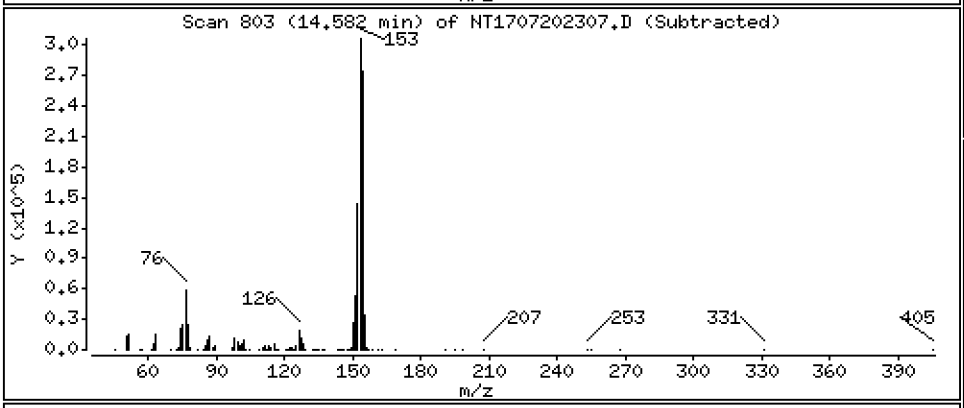
Column diameter: 0.25

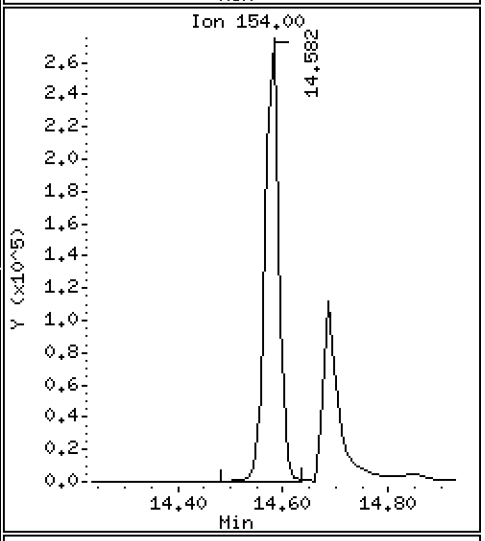
44 Acenaphthene

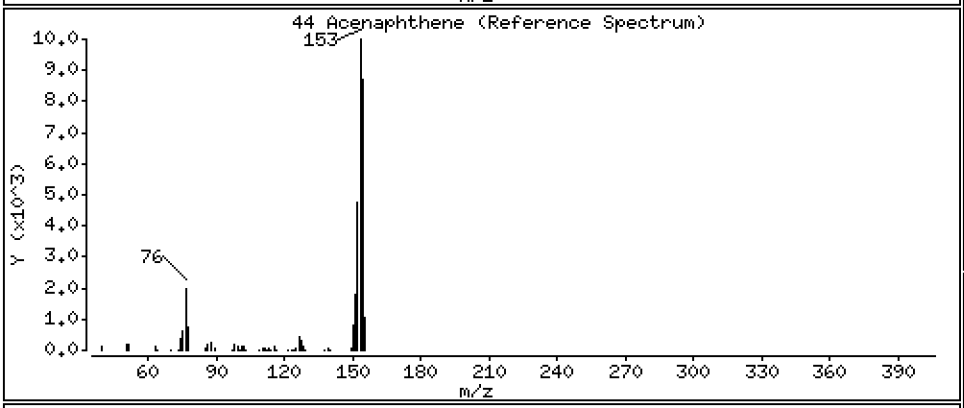
Concentration: 4.761 ug/mL

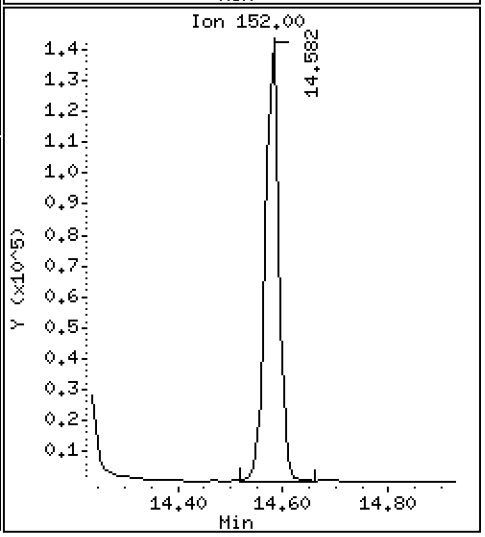


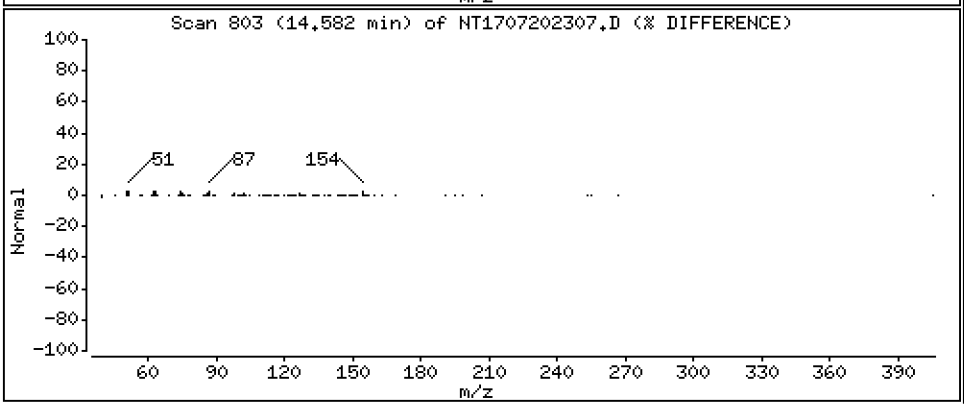












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

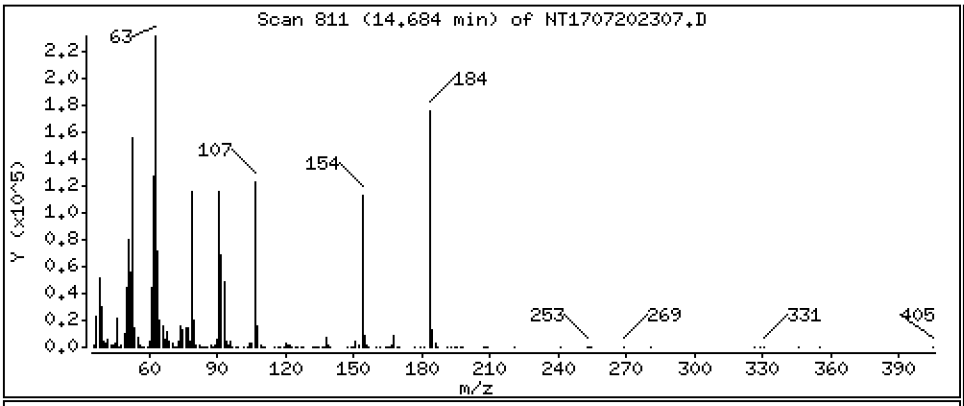
Operator: JGR

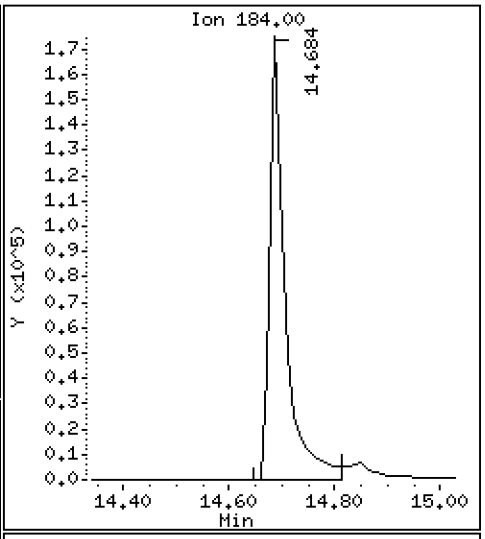
Column phase: ZB-5msi

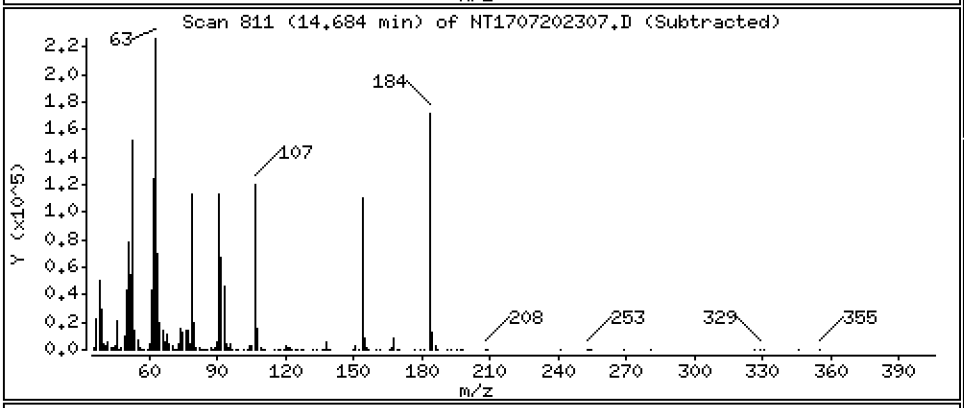
Column diameter: 0.25

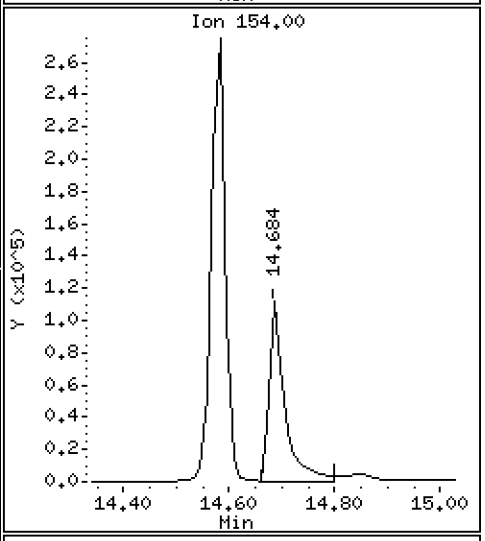
45 2,4-Dinitrophenol

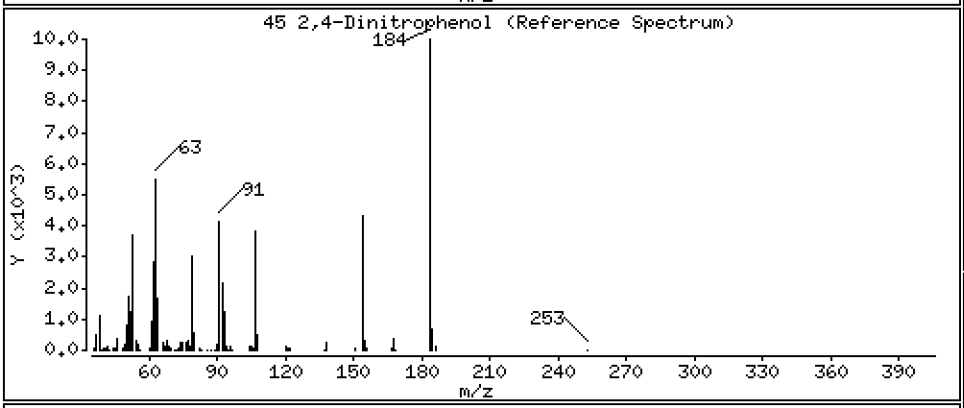
Concentration: 25.00 ug/mL

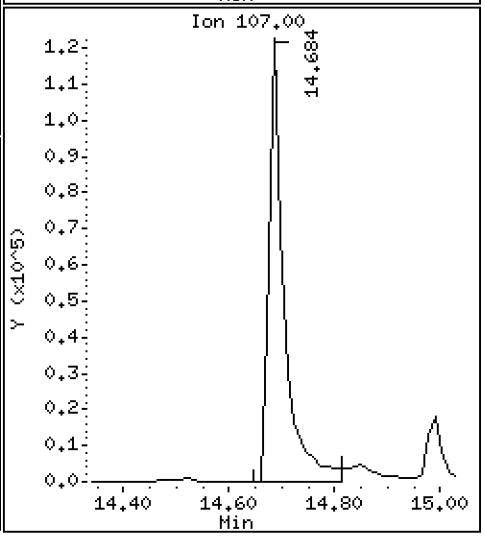


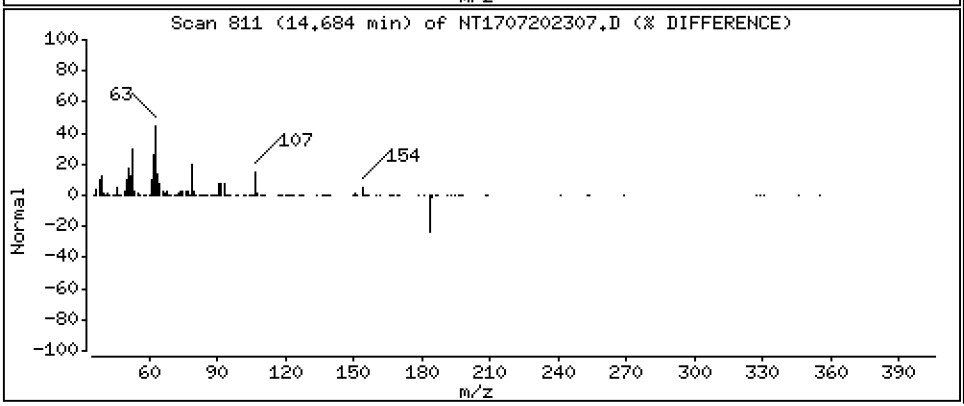












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

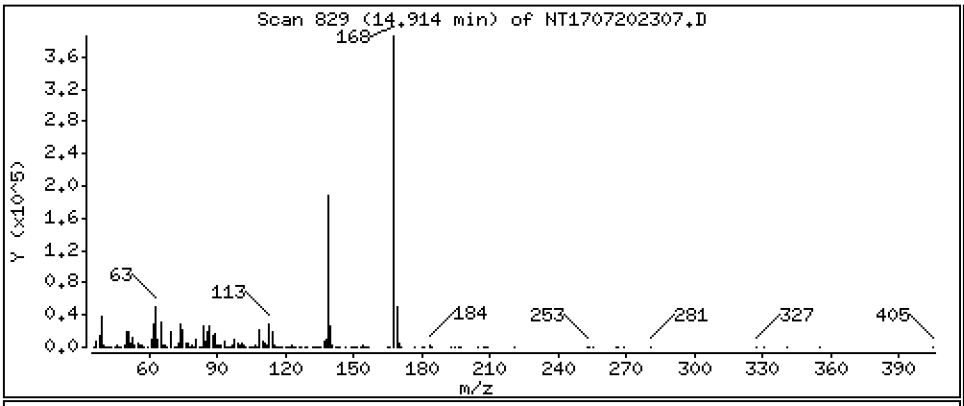
Operator: JGR

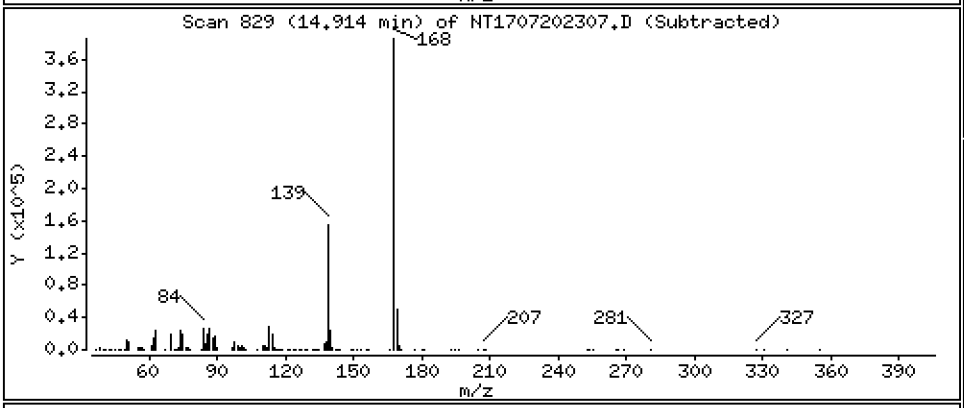
Column phase: ZB-5msi

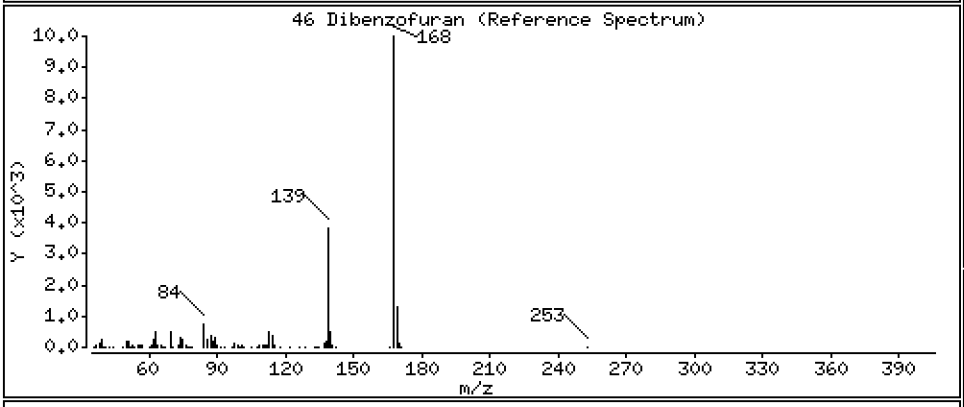
Column diameter: 0.25

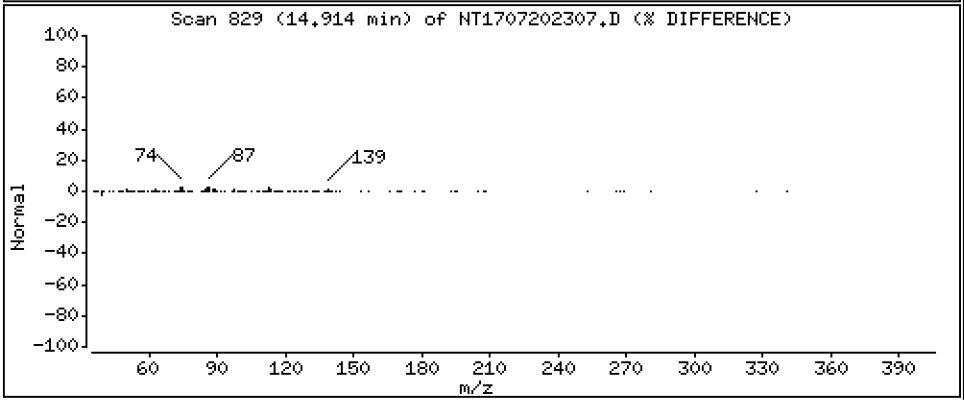
46 Dibenzofuran

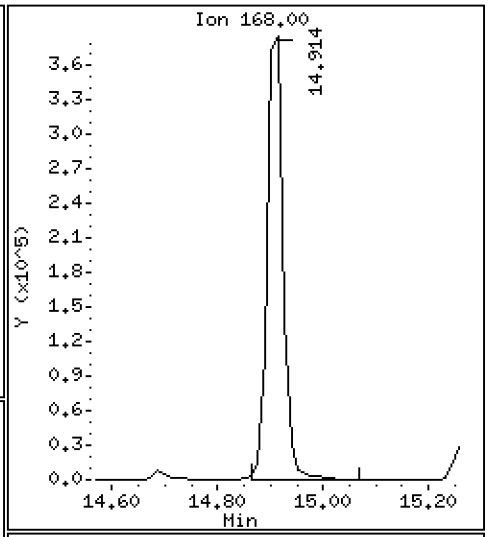
Concentration: 5.074 ug/mL

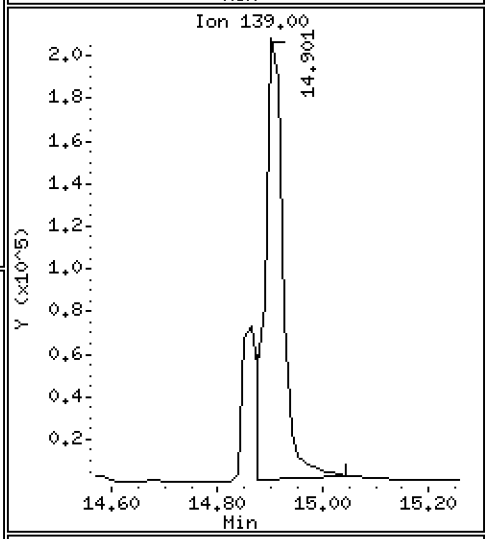


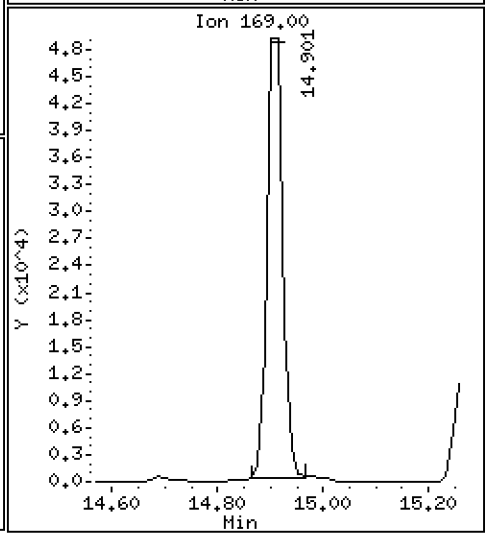












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

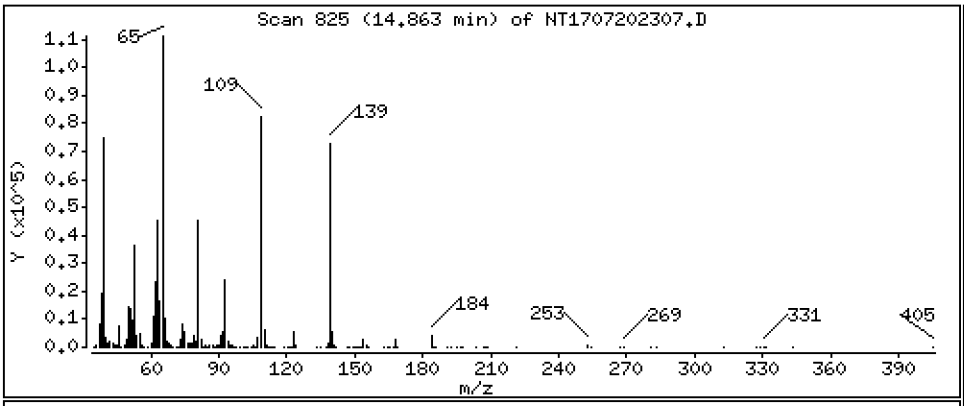
Operator: JGR

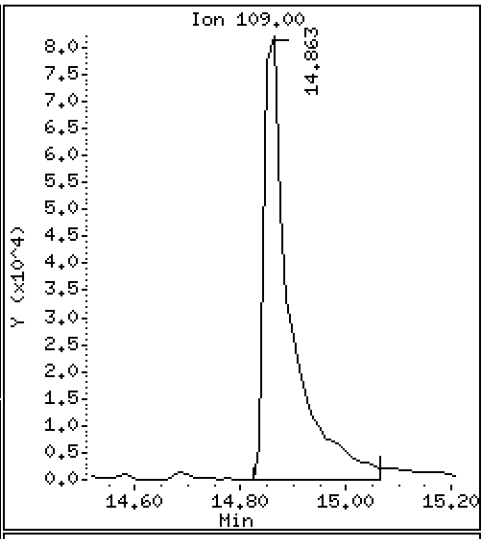
Column phase: ZB-5msi

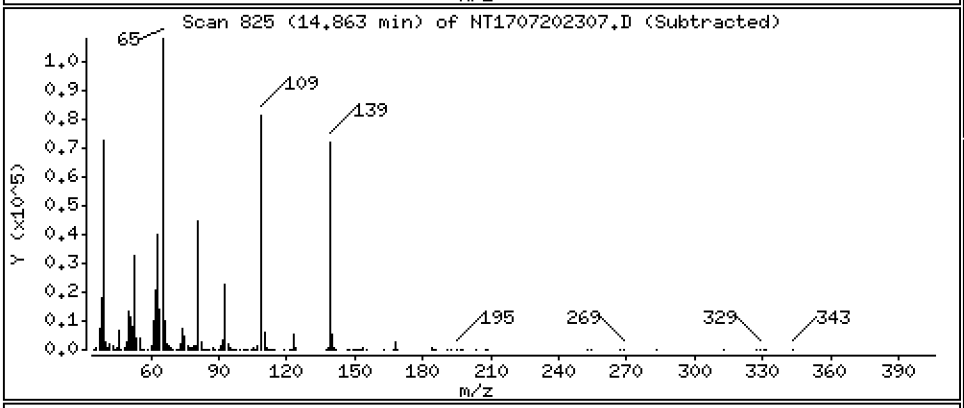
Column diameter: 0.25

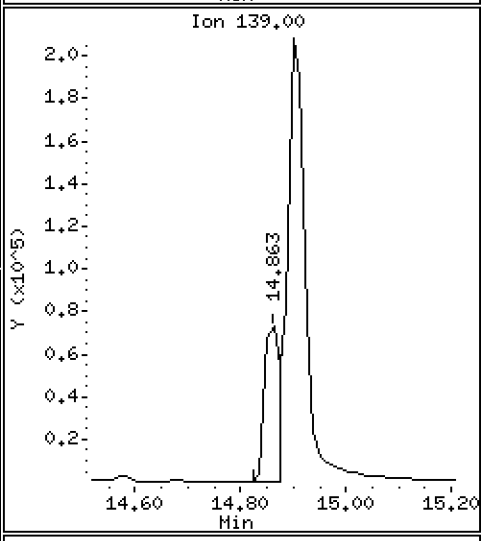
47 4-Nitrophenol

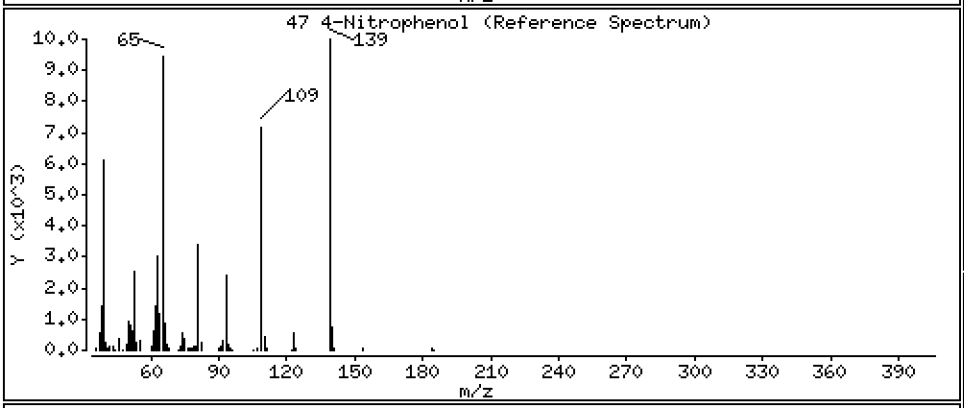
Concentration: 15.10 ug/mL

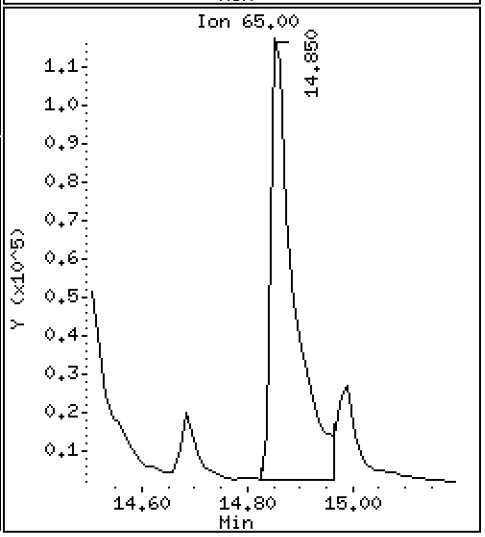


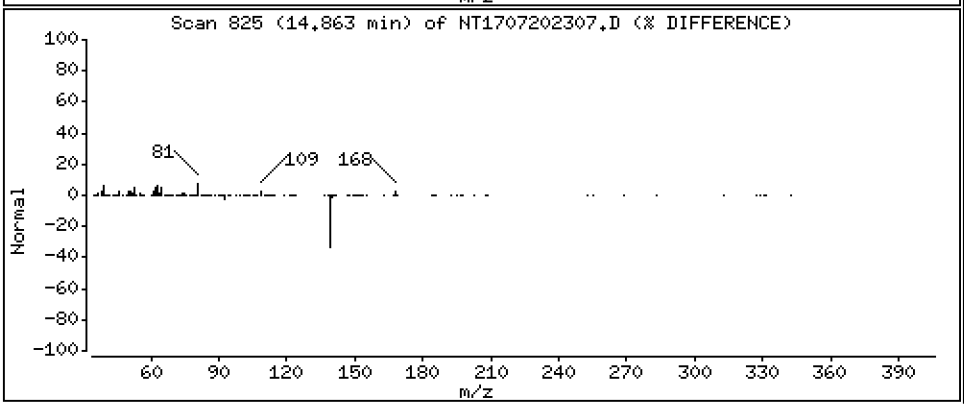












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

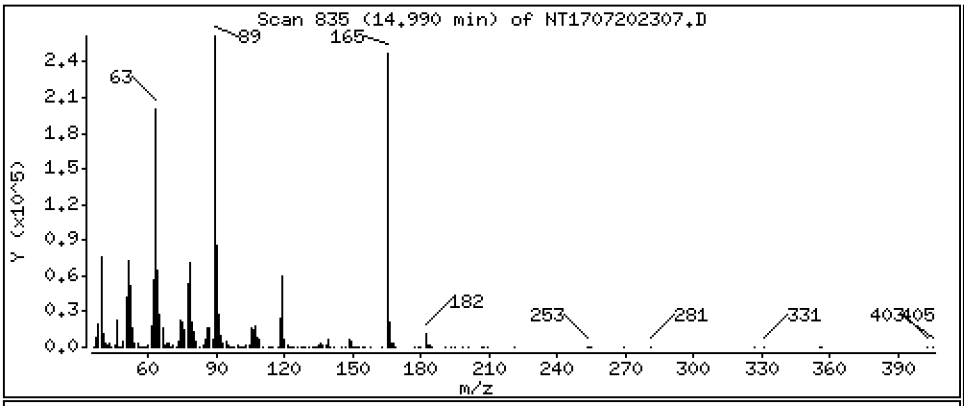
Operator: JGR

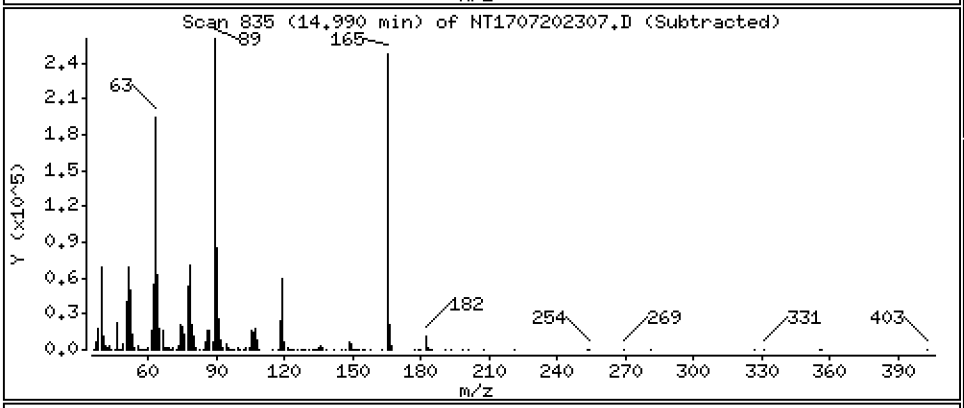
Column phase: ZB-5msi

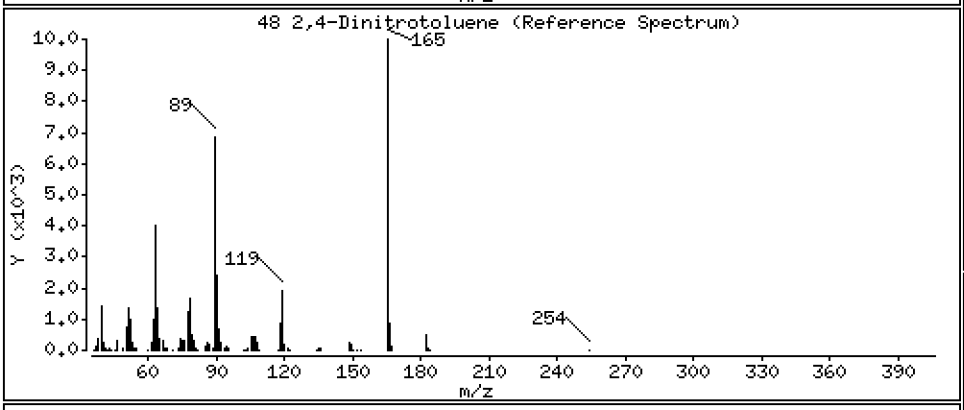
Column diameter: 0.25

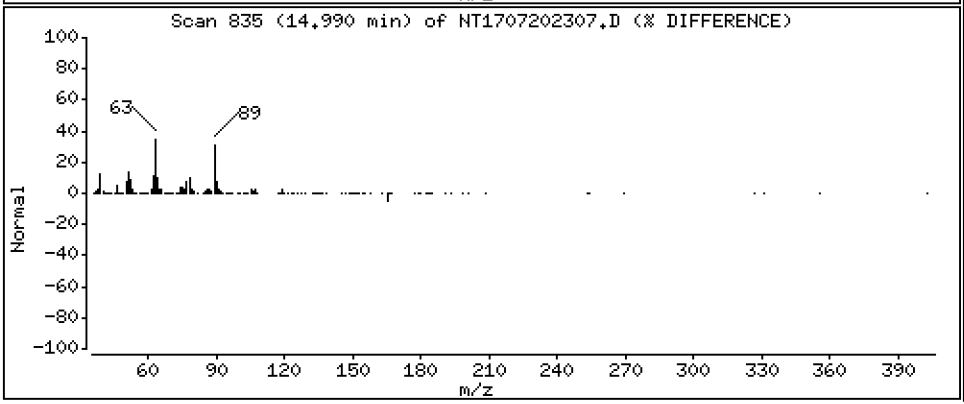
48 2,4-Dinitrotoluene

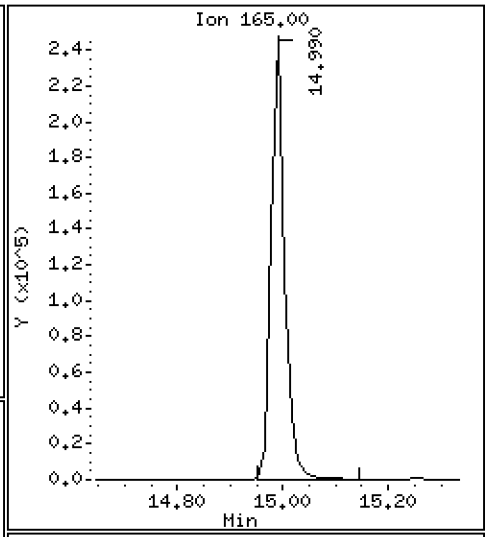
Concentration: 11.55 ug/mL

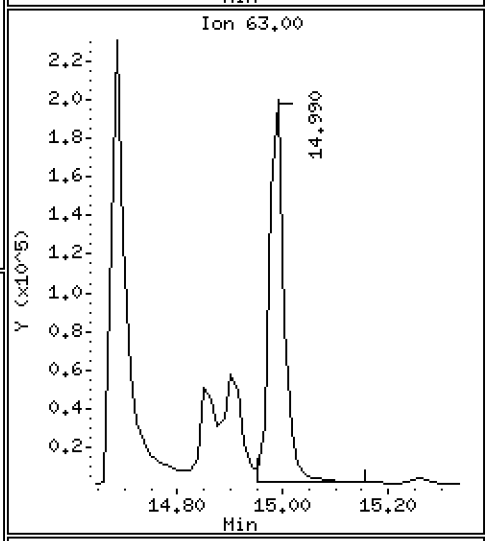


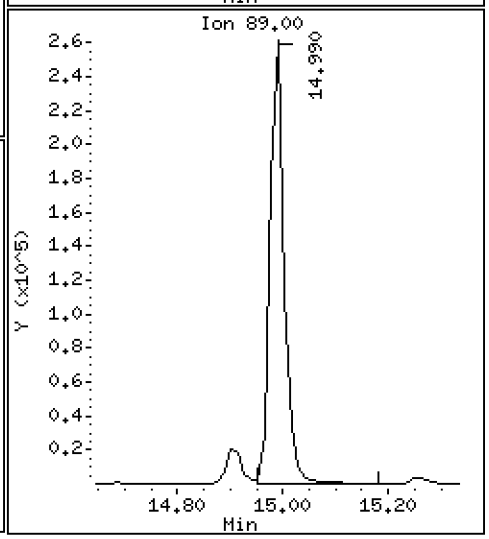












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

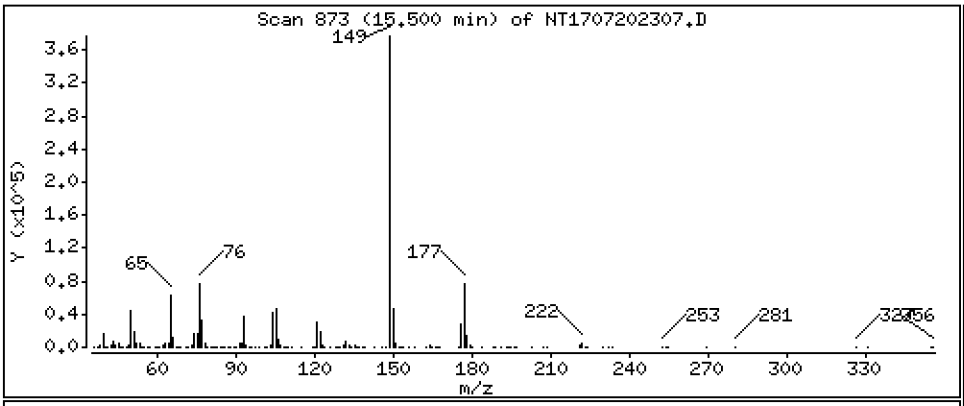
Operator: JGR

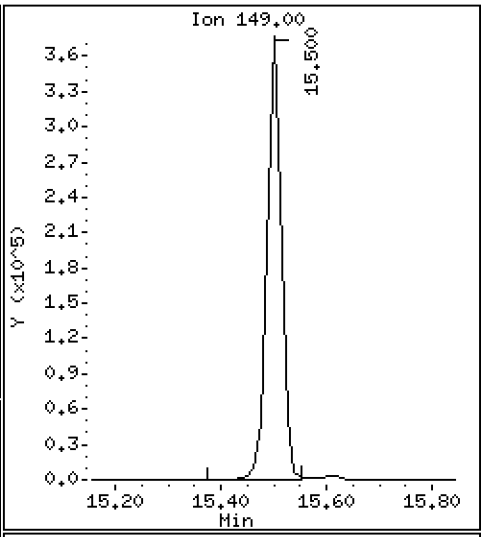
Column phase: ZB-5msi

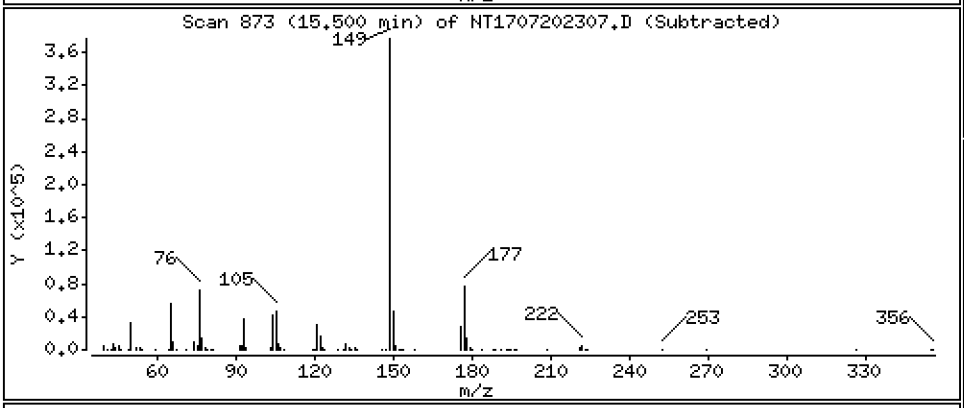
Column diameter: 0.25

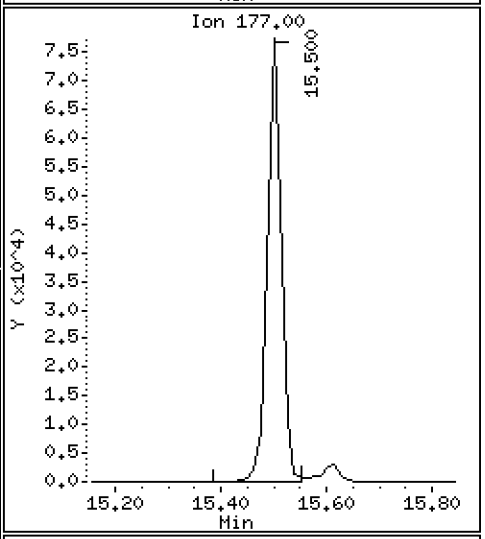
50 Diethylphthalate

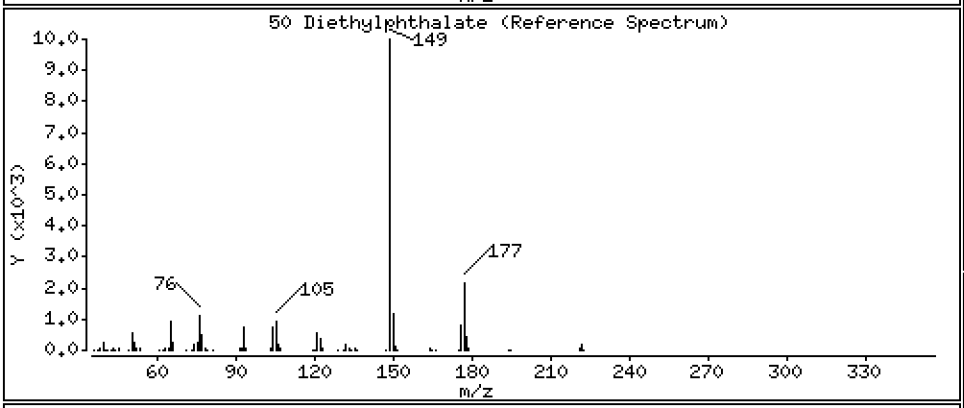
Concentration: 5.892 ug/mL

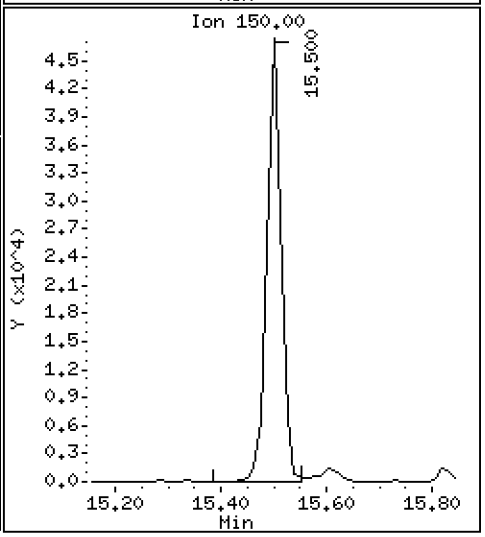


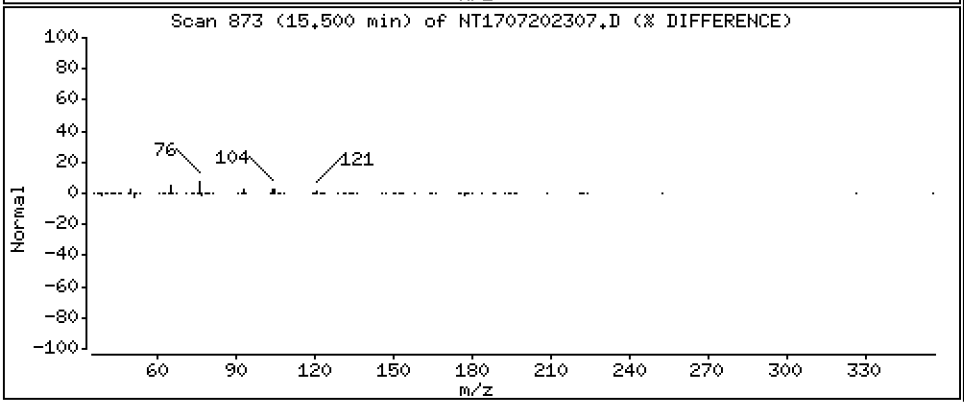












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

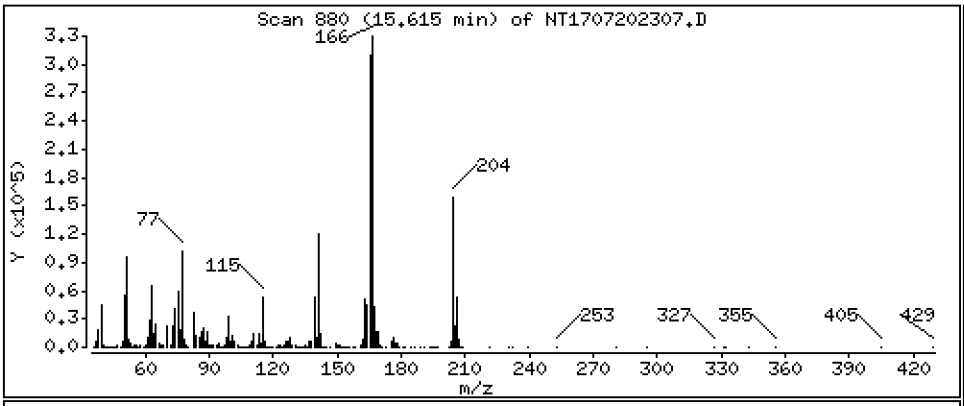
Operator: JGR

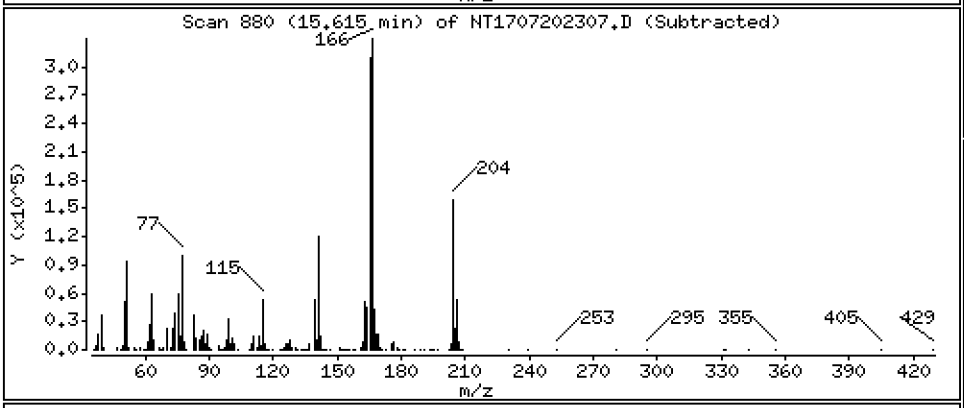
Column phase: ZB-5msi

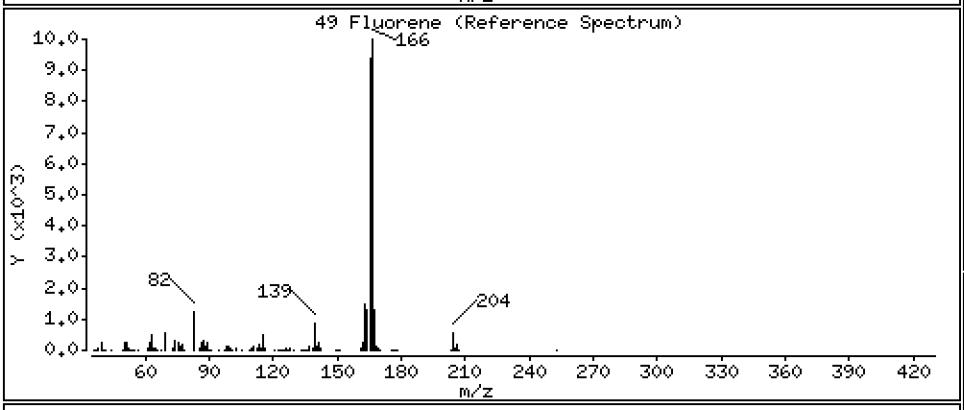
Column diameter: 0.25

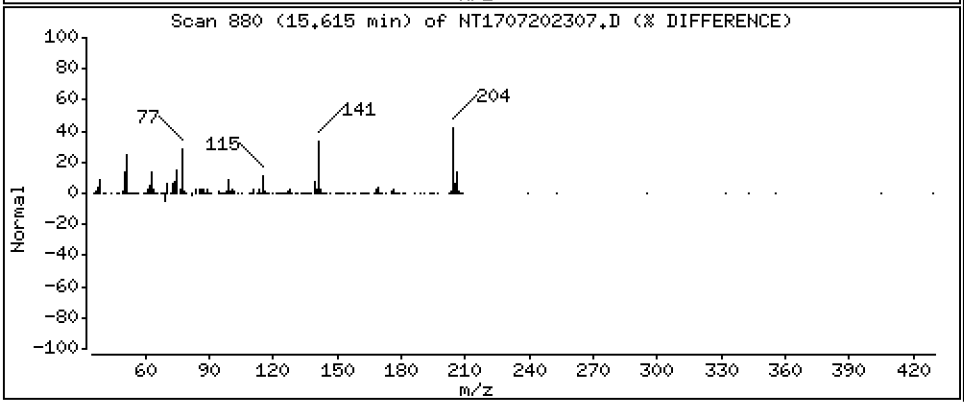
49 Fluorene

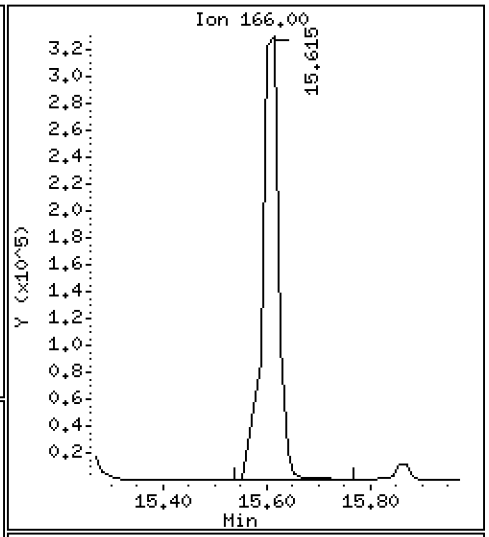
Concentration: 5.331 ug/mL

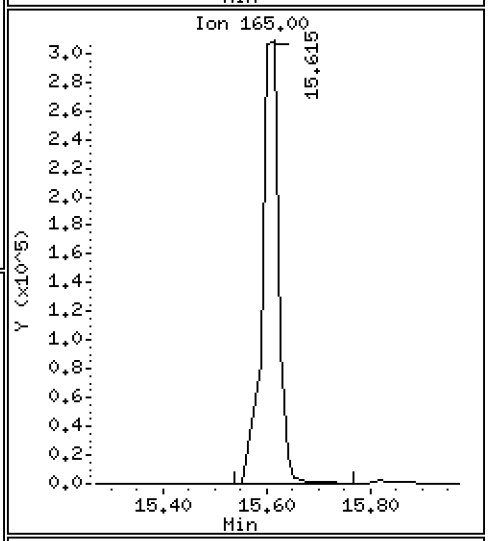


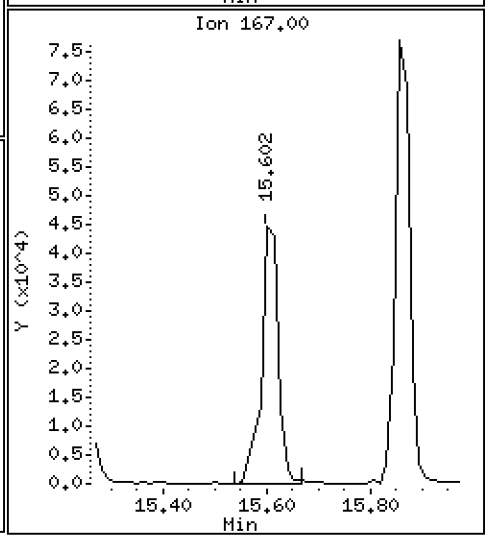












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

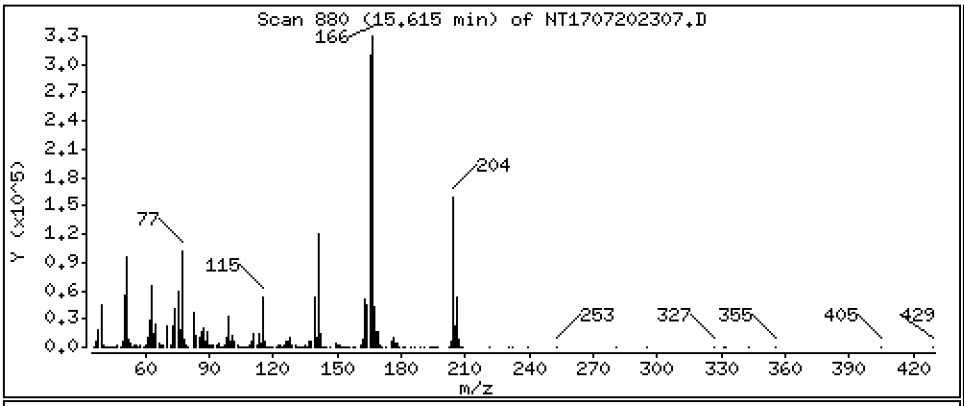
Operator: JGR

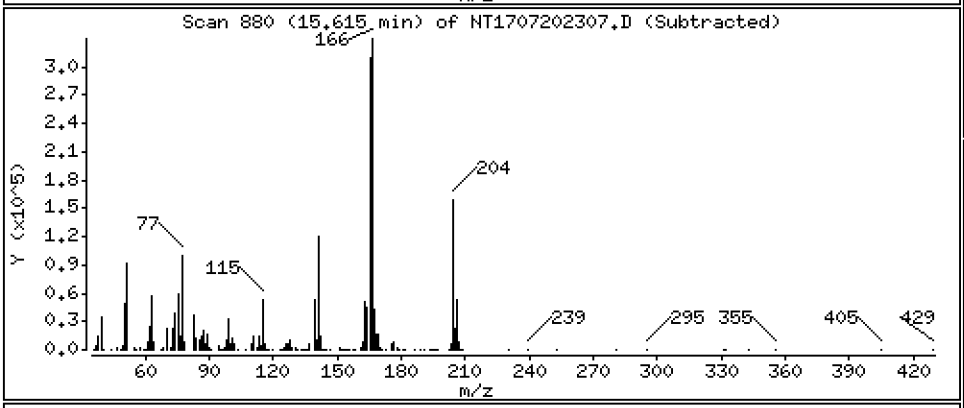
Column phase: ZB-5msi

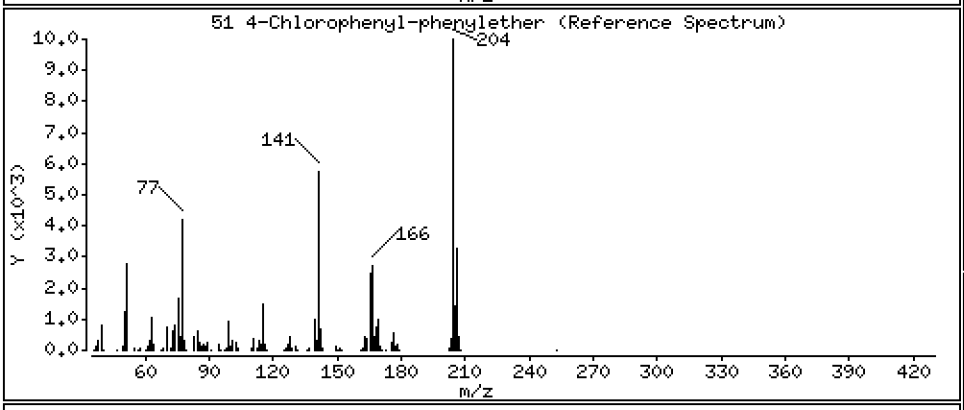
Column diameter: 0.25

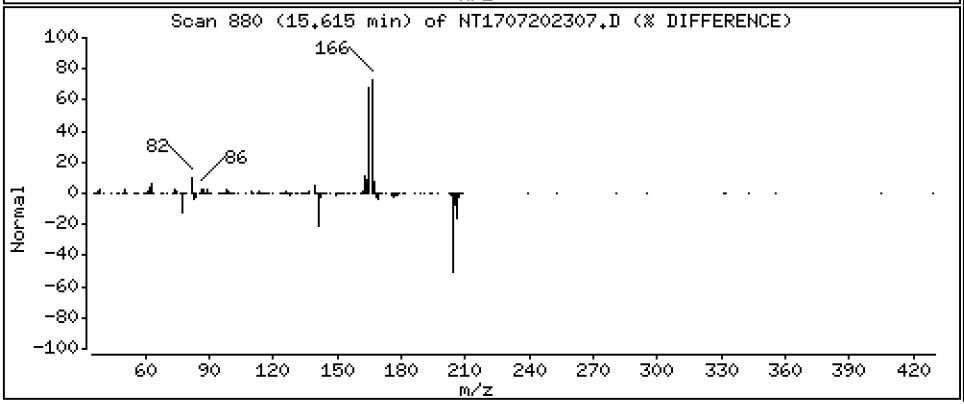
51 4-Chlorophenyl-phenylether

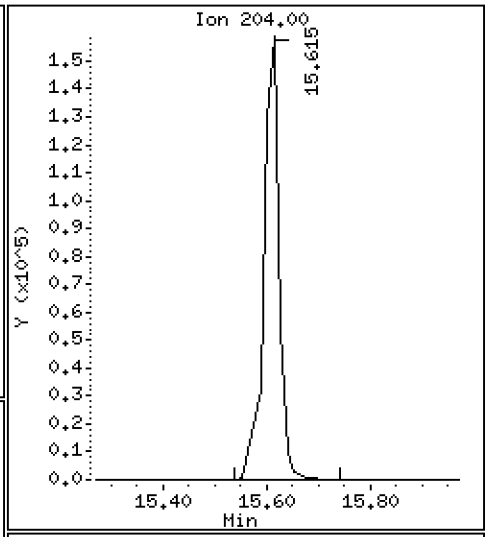
Concentration: 5.091 ug/mL

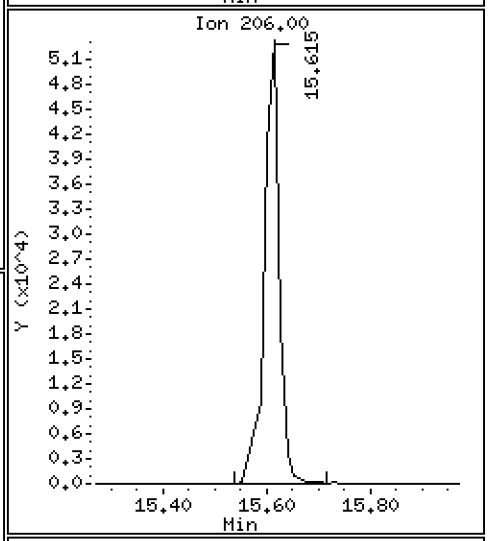


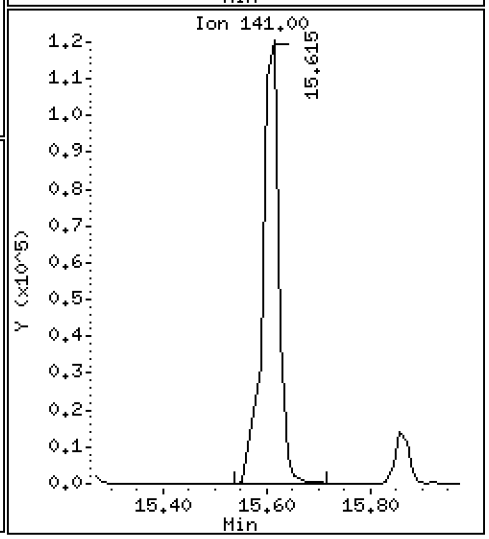












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

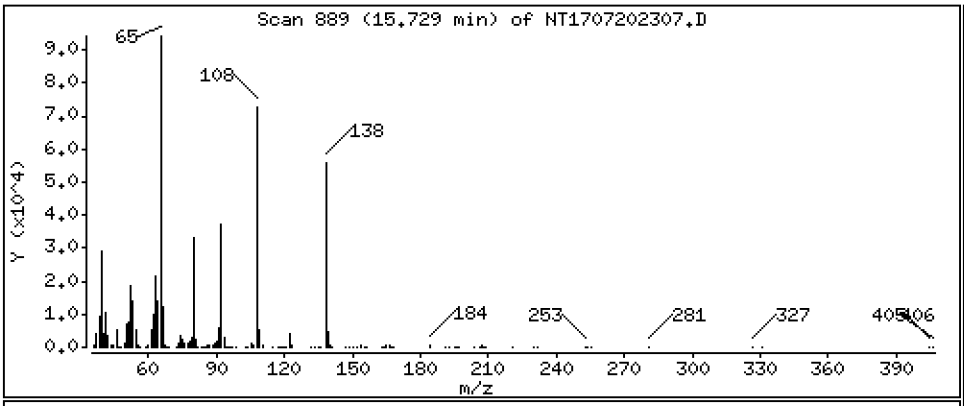
Operator: JGR

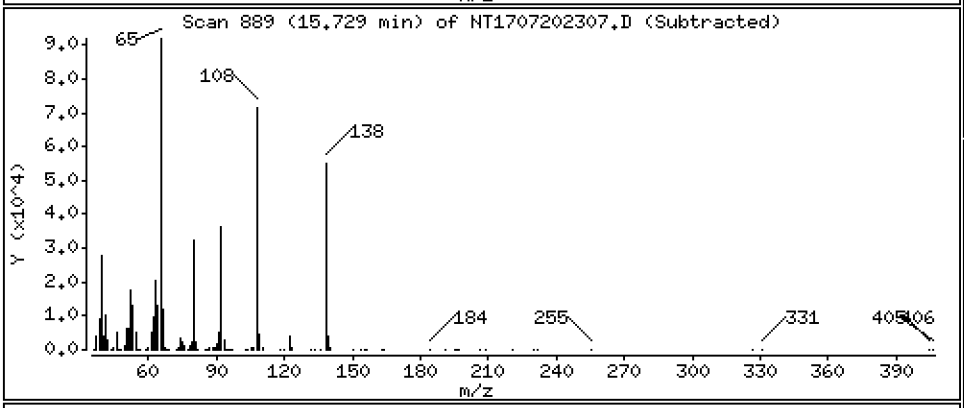
Column phase: ZB-5msi

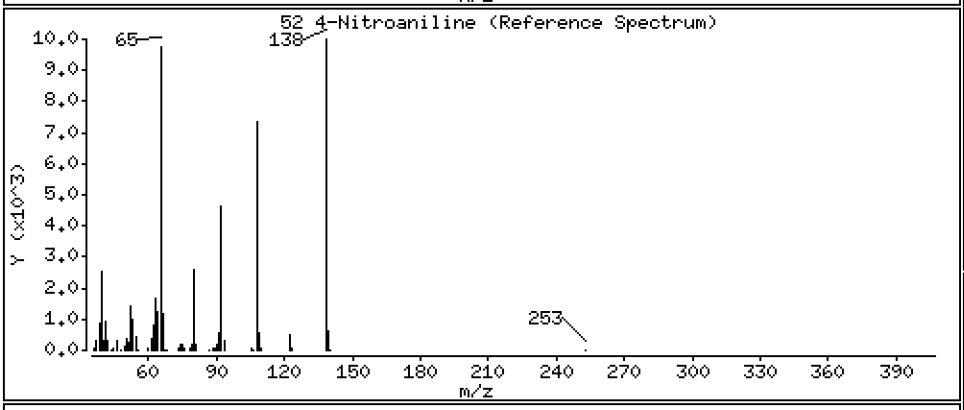
Column diameter: 0.25

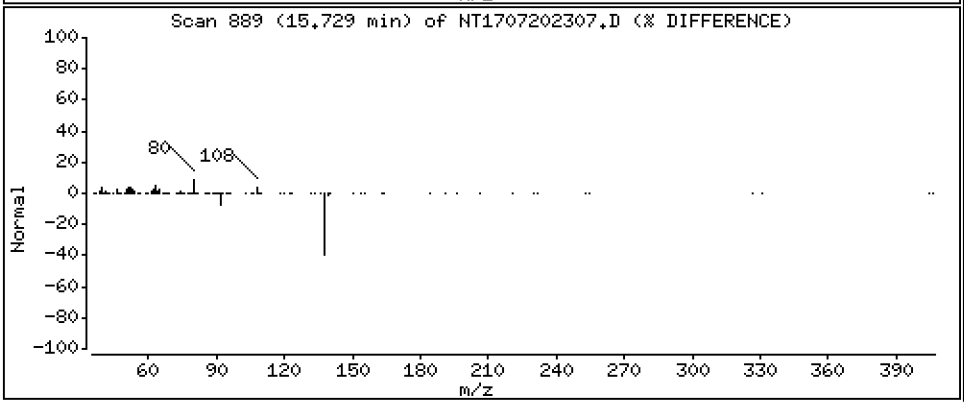
52 4-Nitroaniline

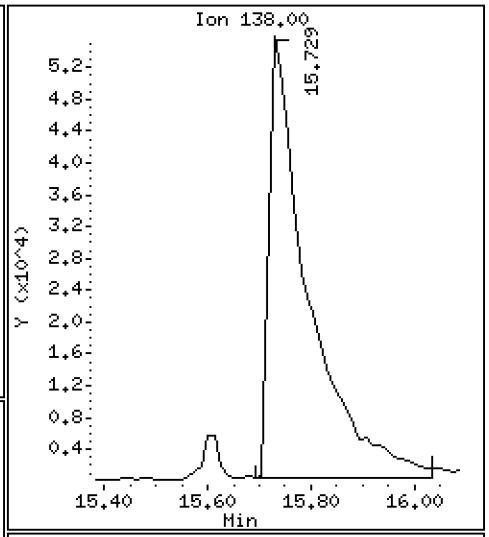
Concentration: 10.27 ug/mL

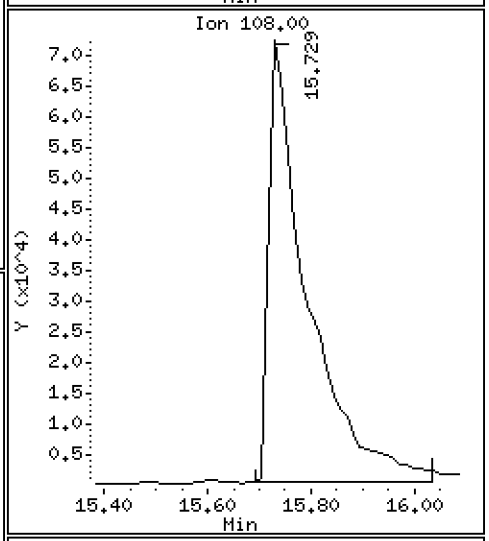


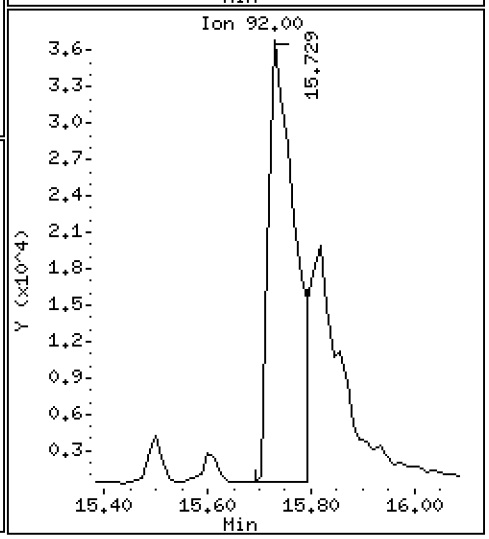












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

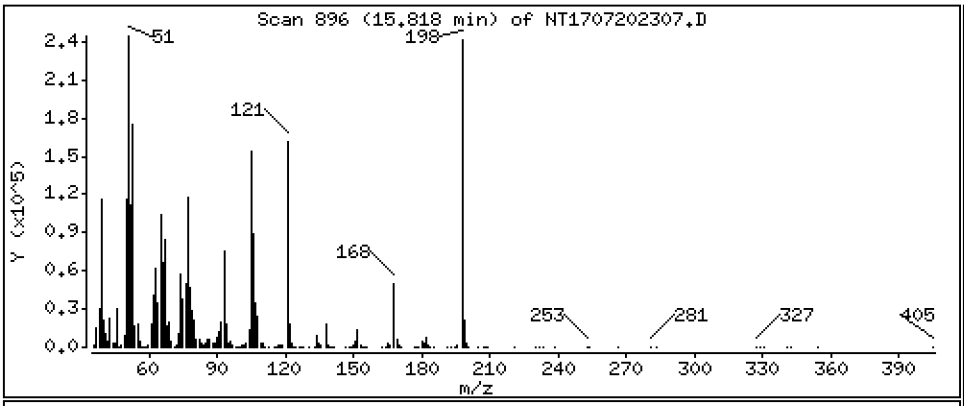
Operator: JGR

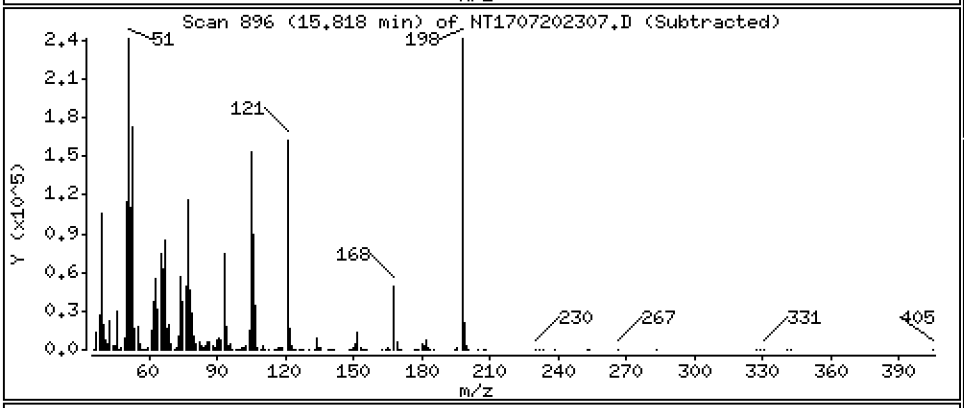
Column phase: ZB-5msi

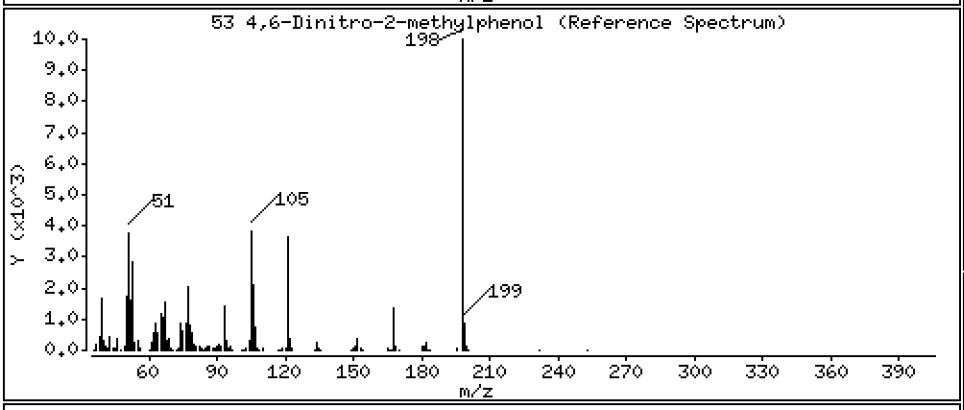
Column diameter: 0.25

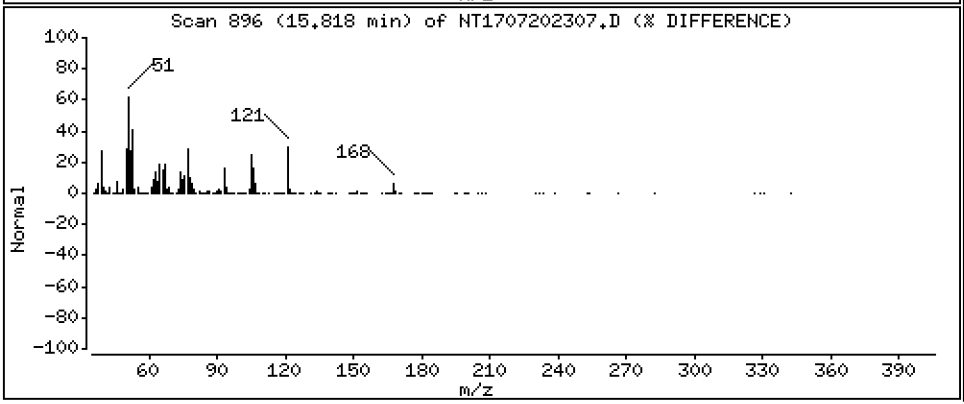
53 4,6-Dinitro-2-methylphenol

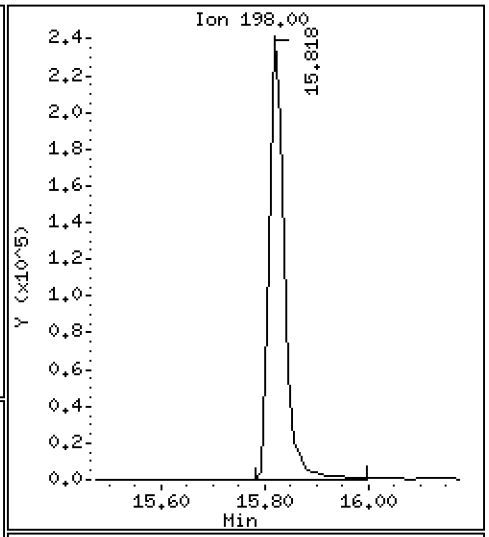
Concentration: 20.65 ug/mL

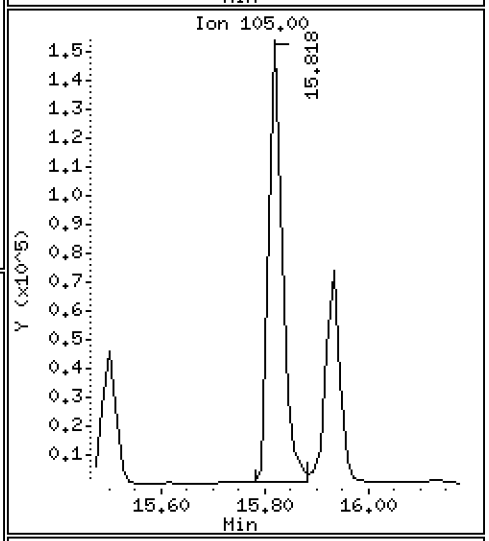


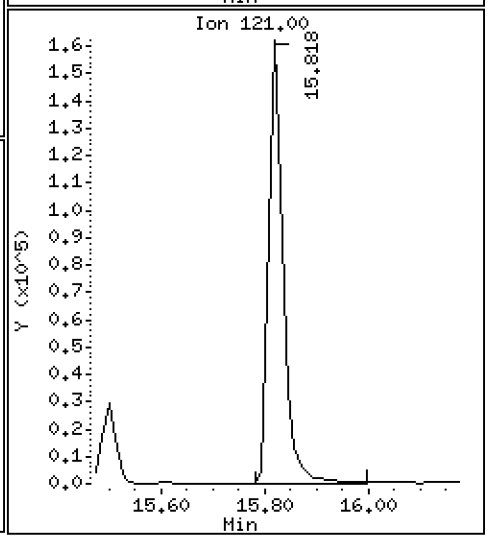












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

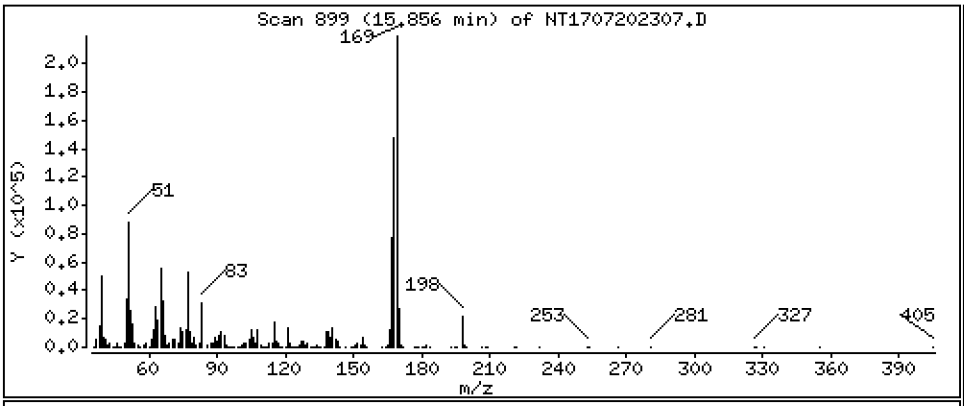
Operator: JGR

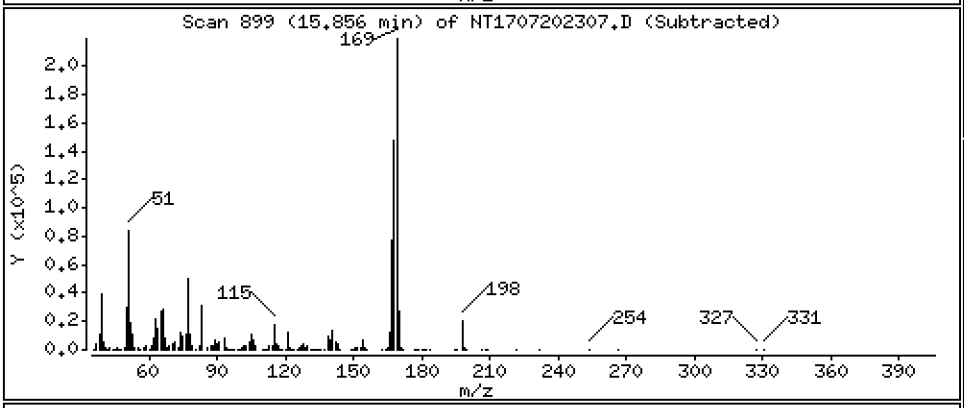
Column phase: ZB-5msi

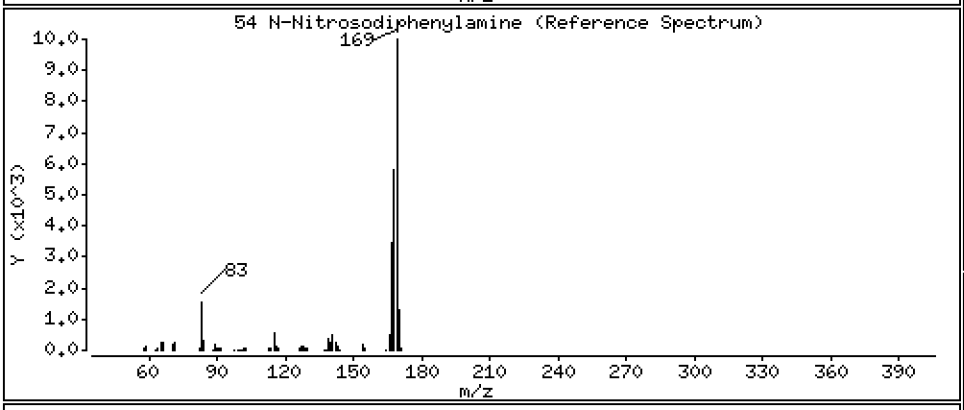
Column diameter: 0.25

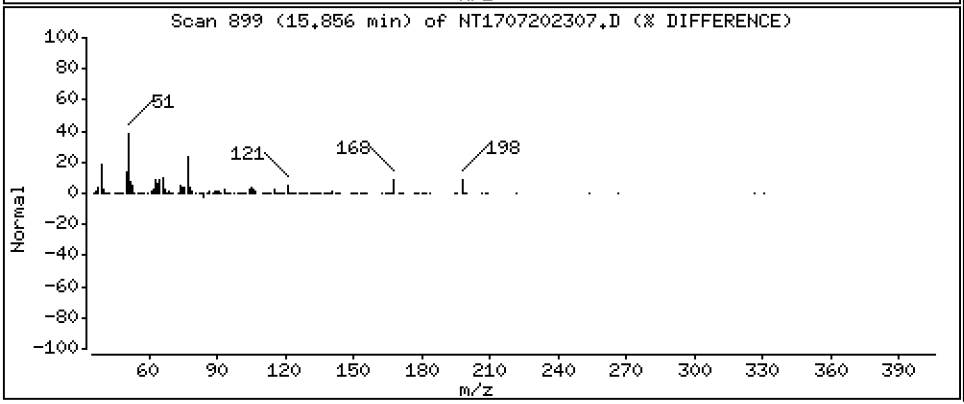
54 N-Nitrosodiphenylamine

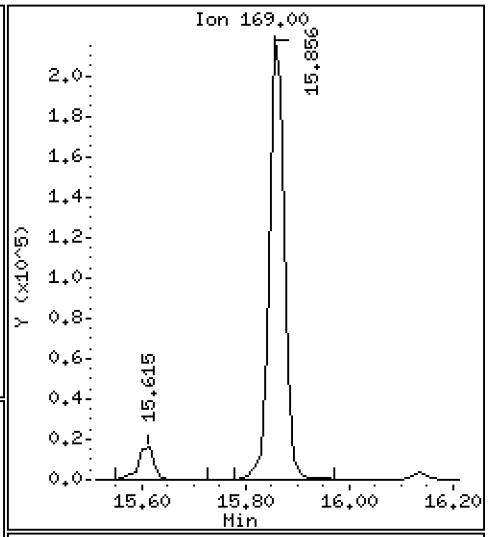
Concentration: 4.565 ug/mL

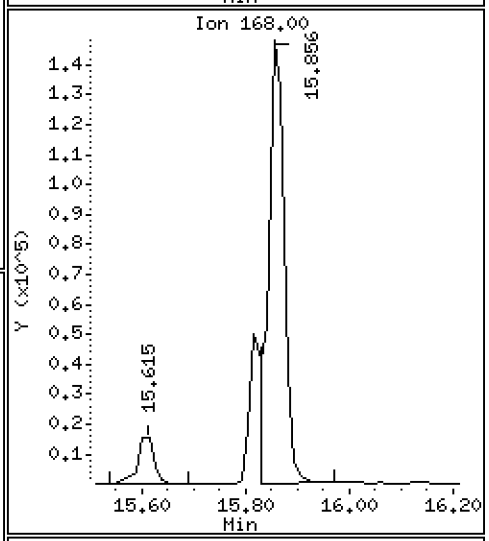


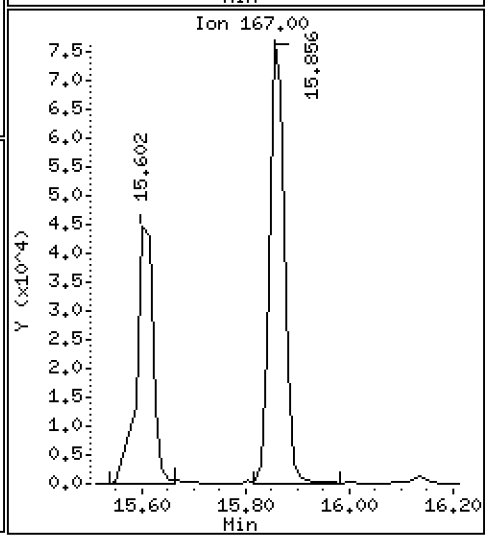












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

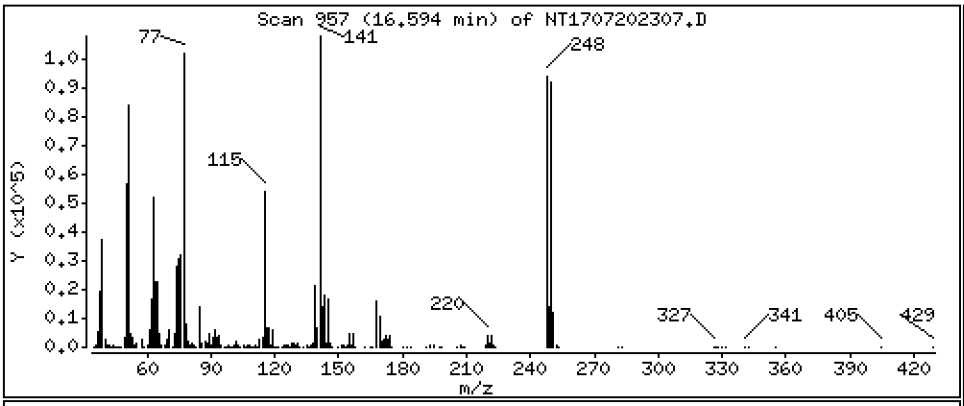
Operator: JGR

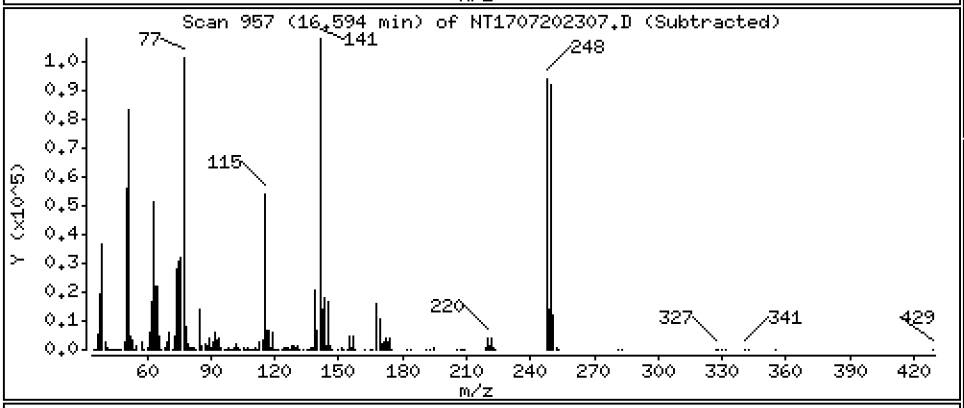
Column phase: ZB-5msi

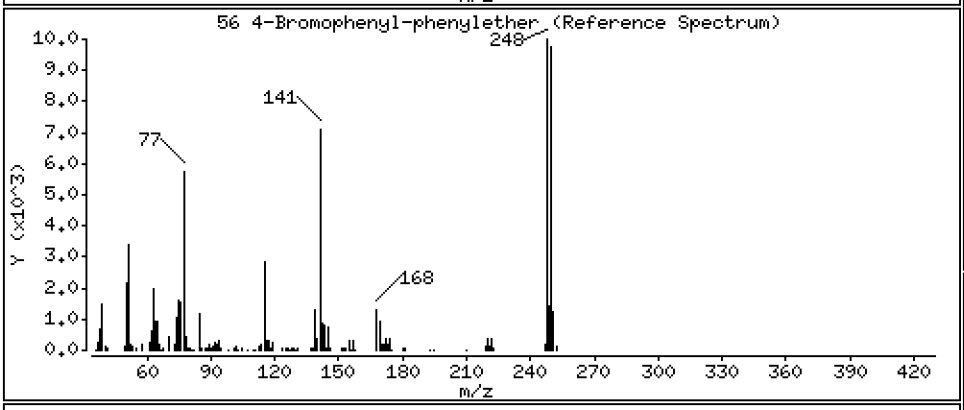
Column diameter: 0.25

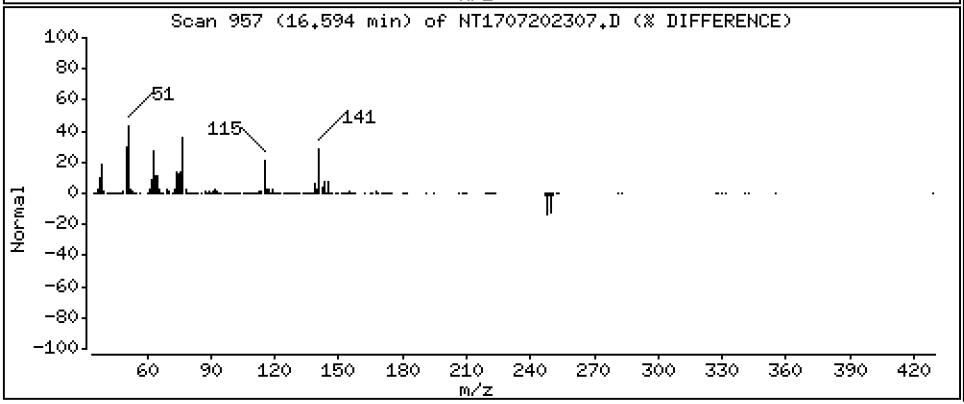
56 4-Bromophenyl-phenylether

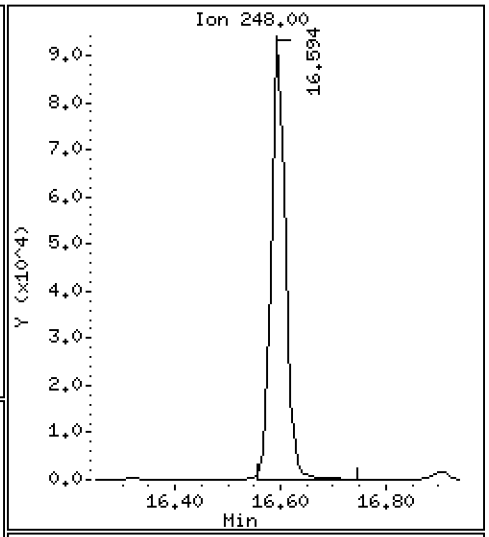
Concentration: 4.715 ug/mL

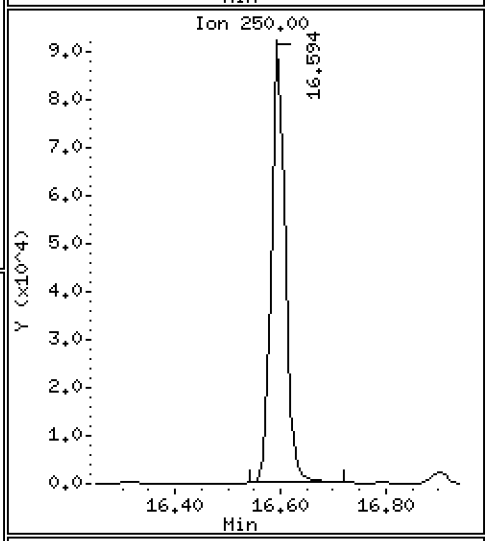


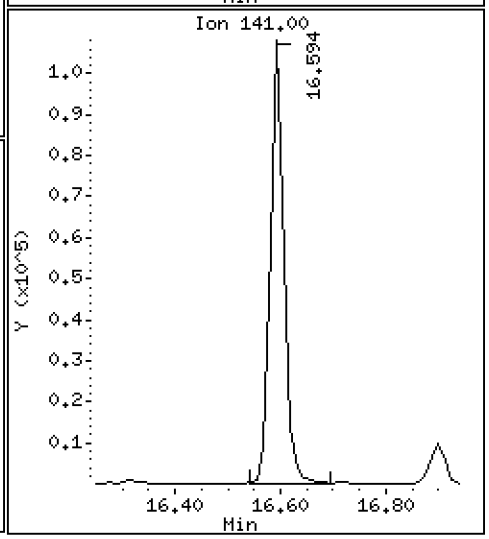












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

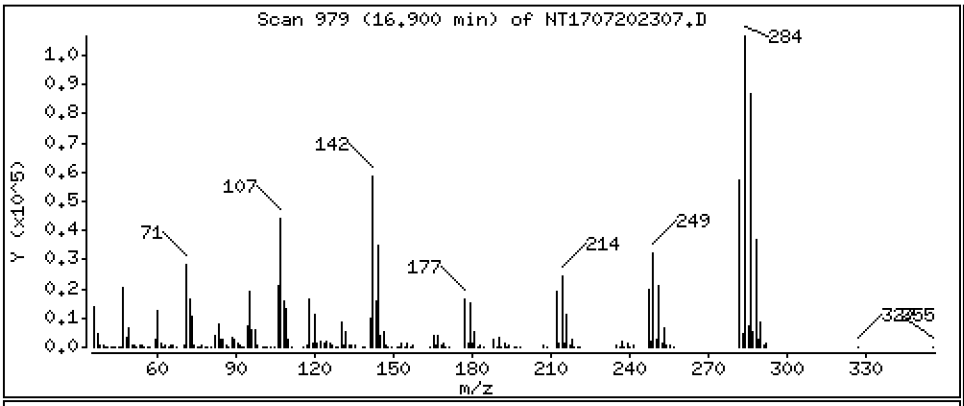
Operator: JGR

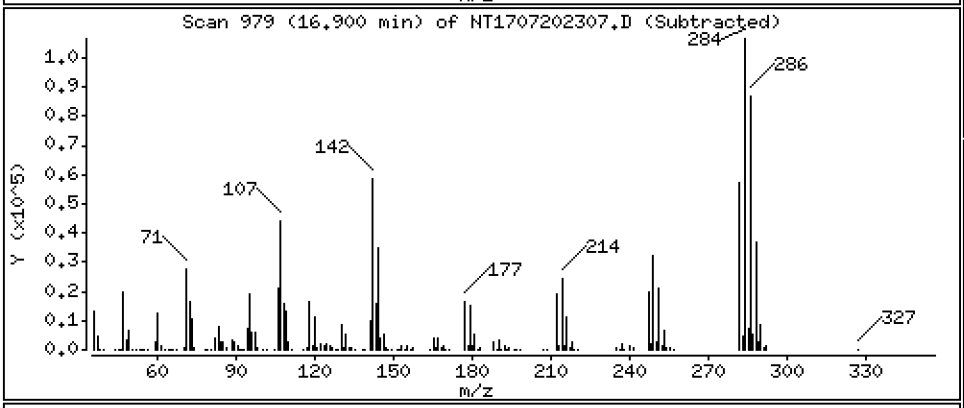
Column phase: ZB-5msi

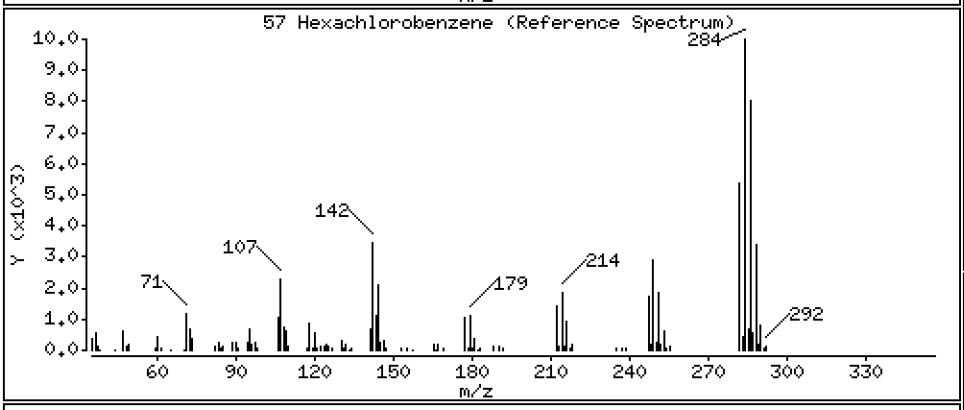
Column diameter: 0.25

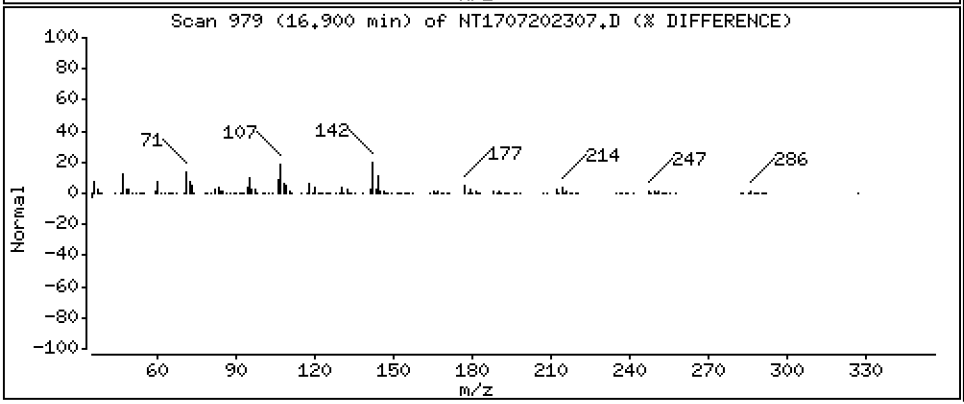
57 Hexachlorobenzene

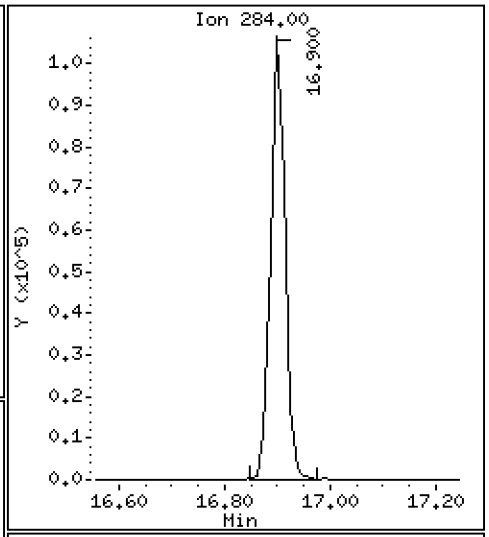
Concentration: 4.678 ug/mL

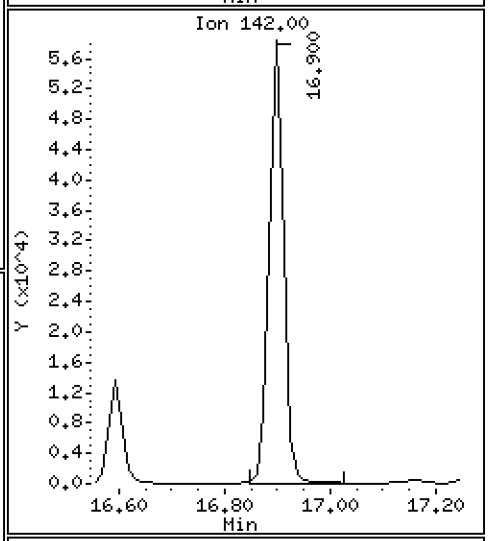


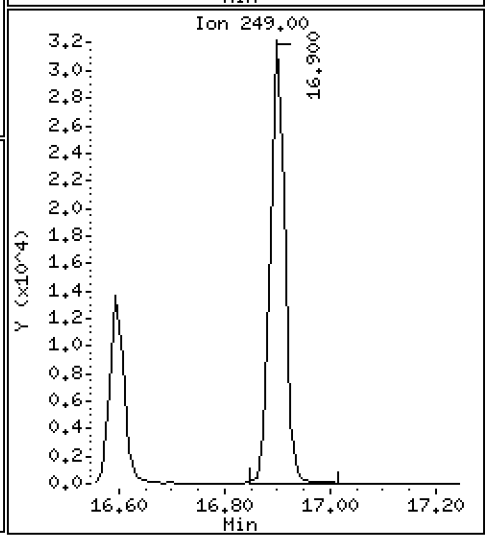












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202307.D

Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

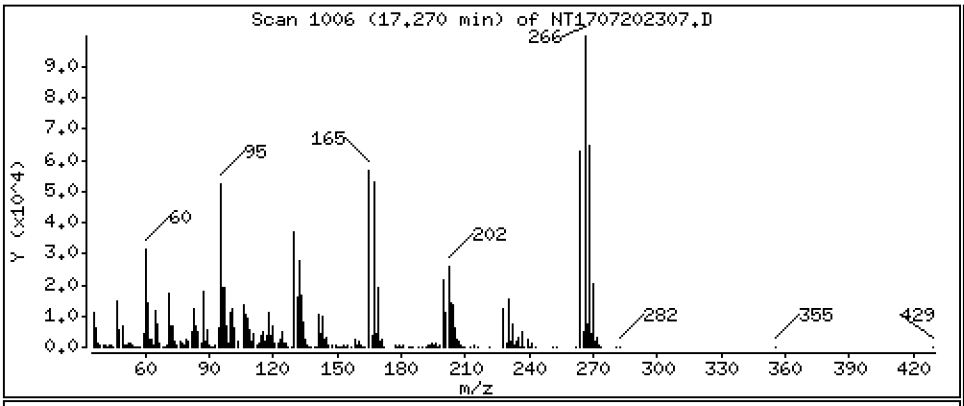
Operator: JGR

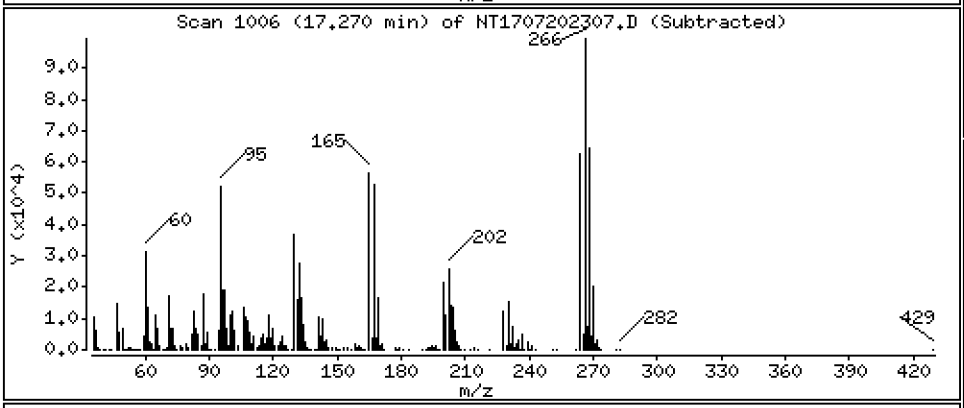
Column phase: ZB-5msi

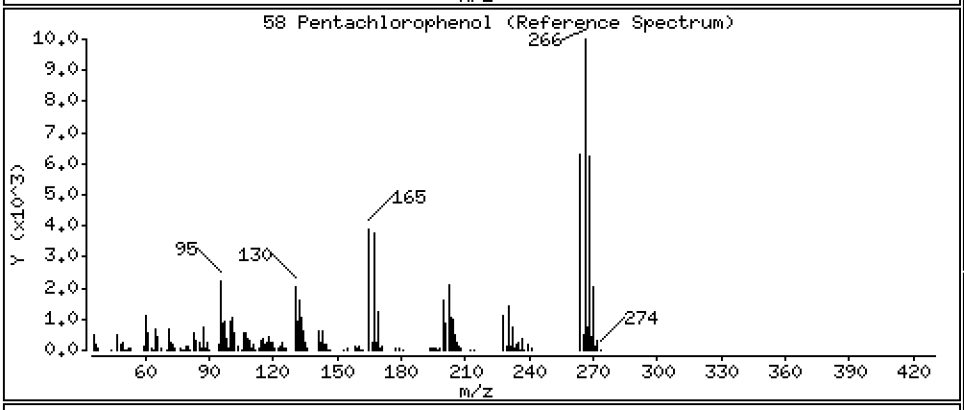
Column diameter: 0.25

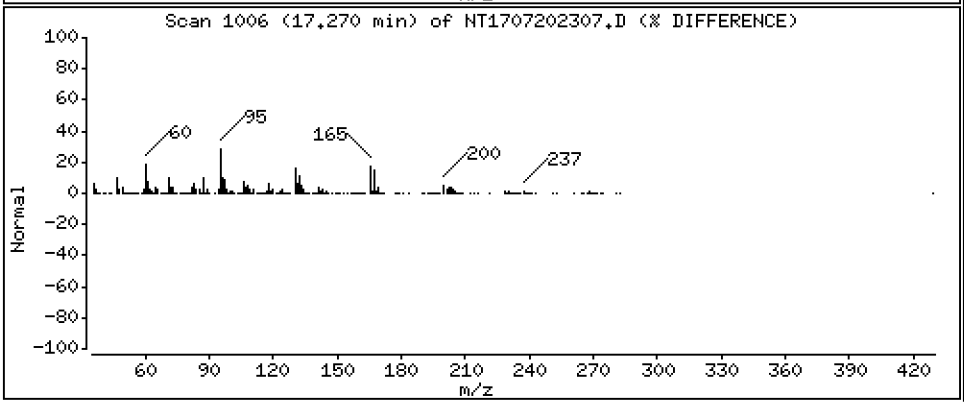
58 Pentachlorophenol

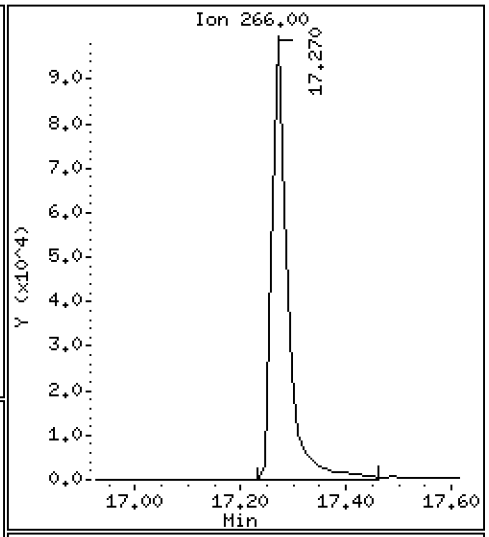
Concentration: 8.556 ug/mL

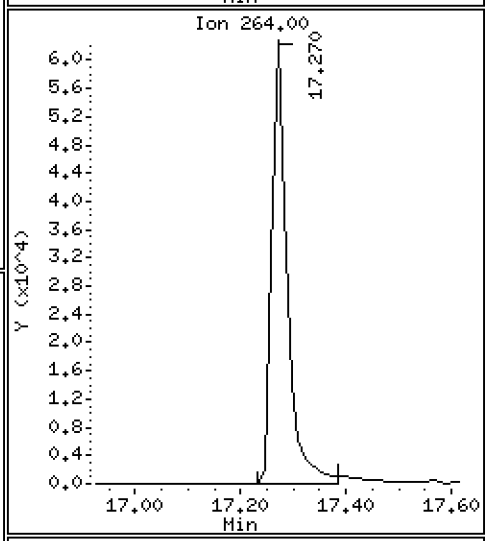


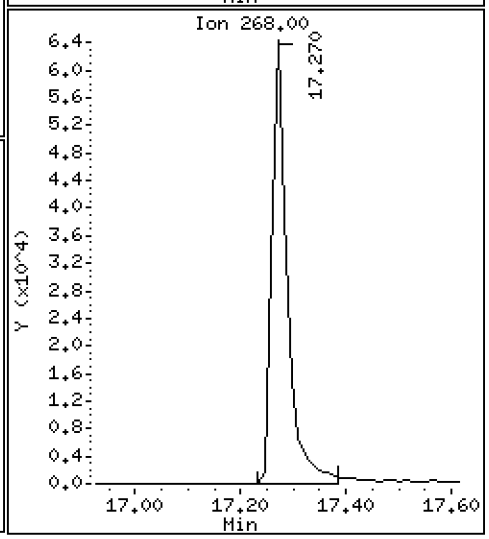












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

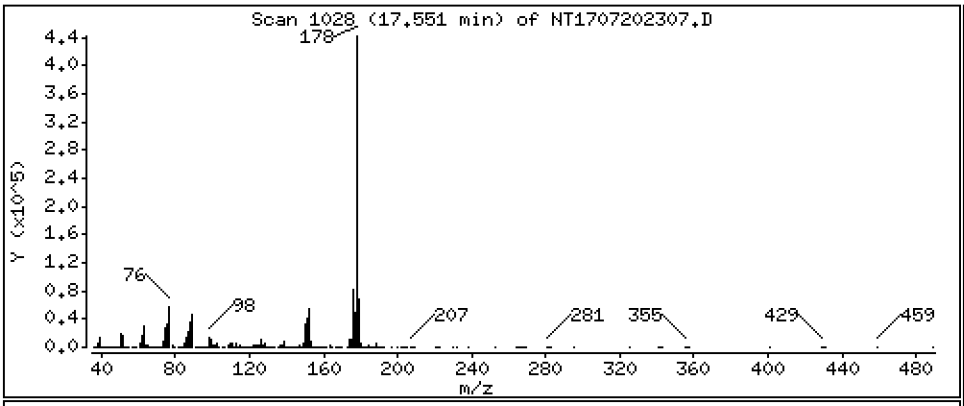
Operator: JGR

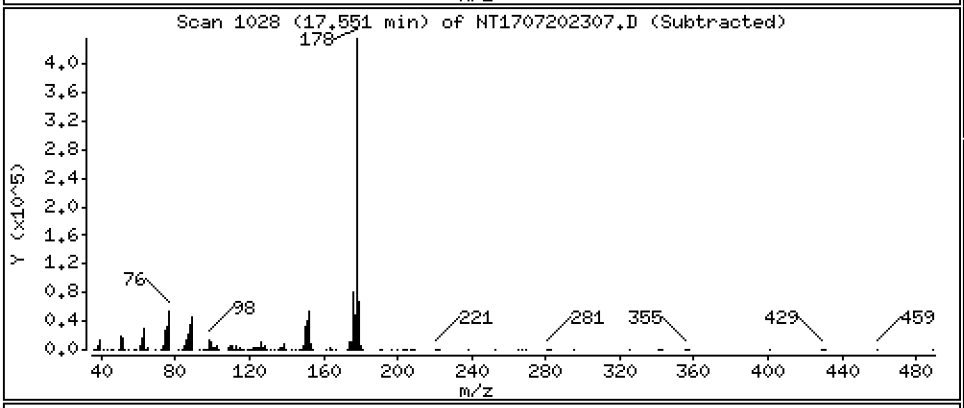
Column phase: ZB-5msi

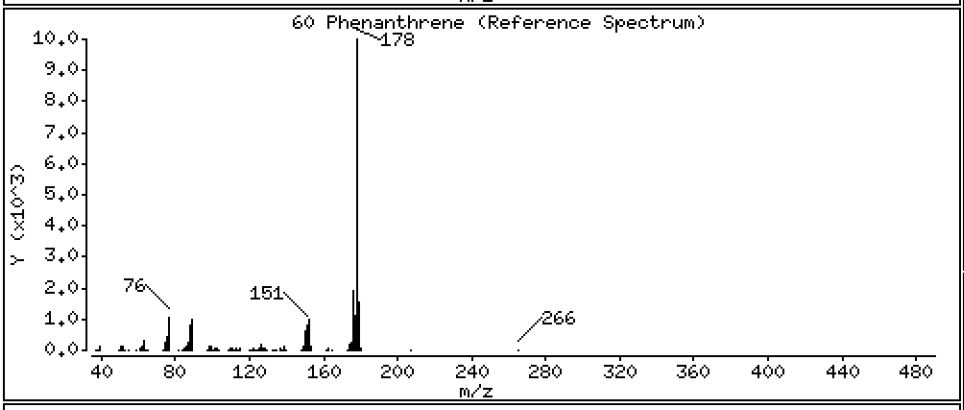
Column diameter: 0.25

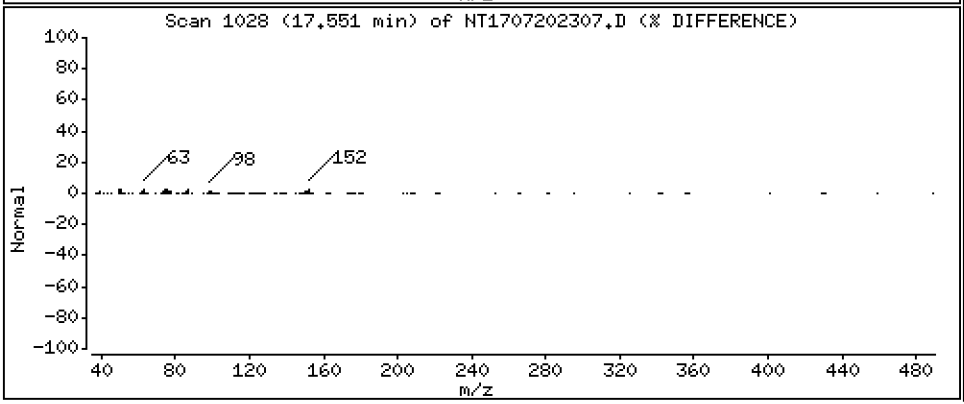
60 Phenanthrene

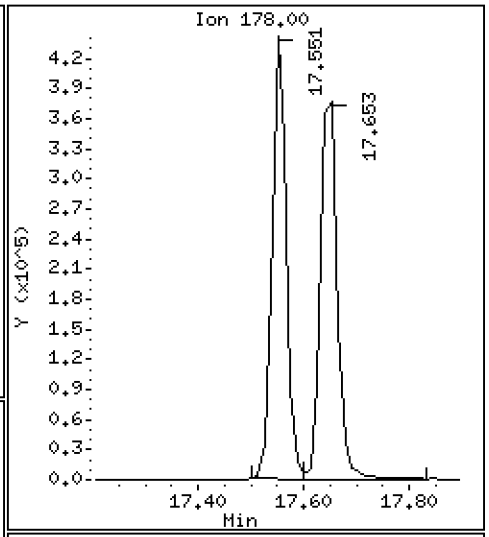
Concentration: 4.599 ug/mL

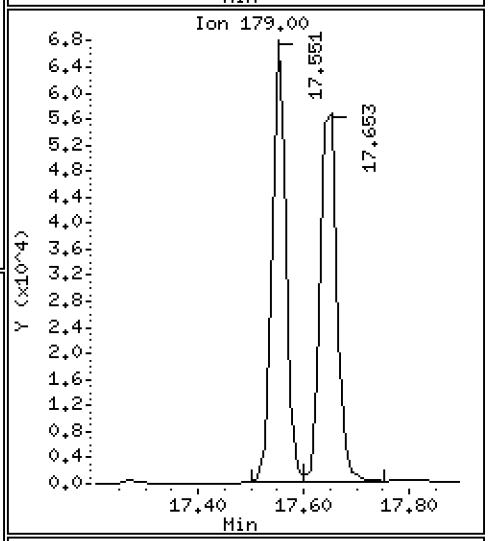


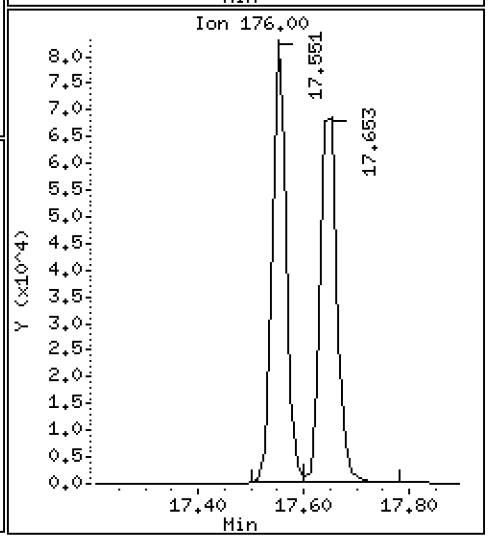












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

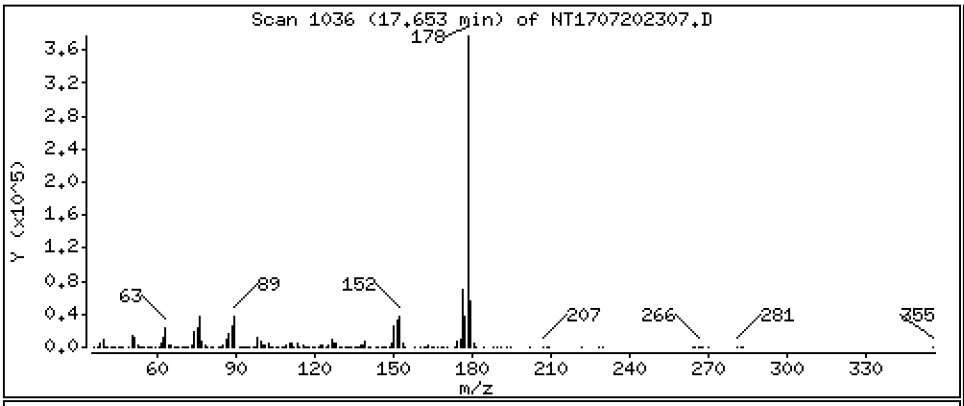
Operator: JGR

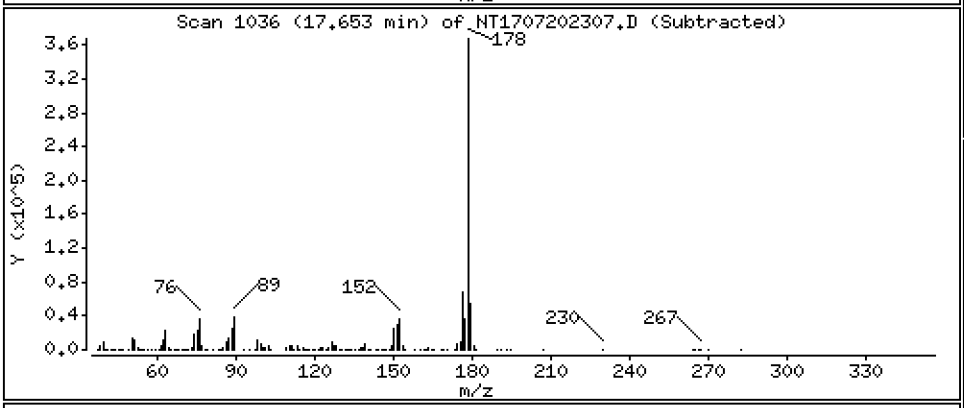
Column phase: ZB-5msi

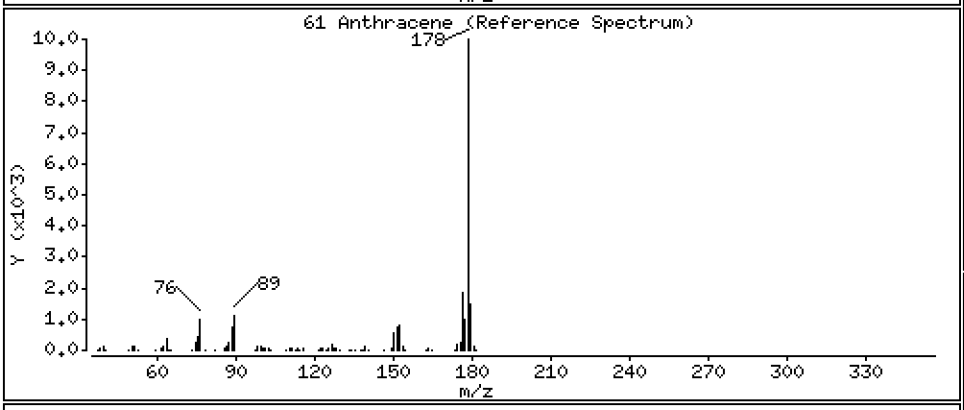
Column diameter: 0.25

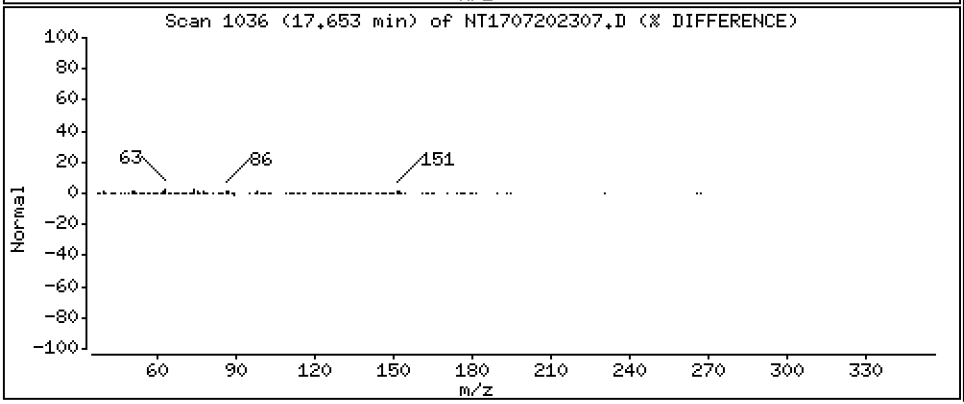
61 Anthracene

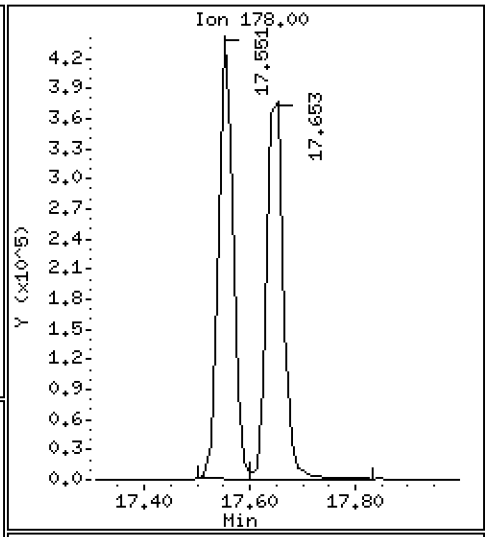
Concentration: 4.743 ug/mL

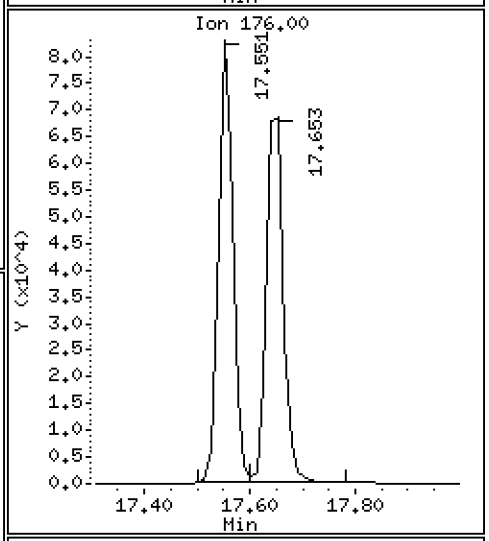


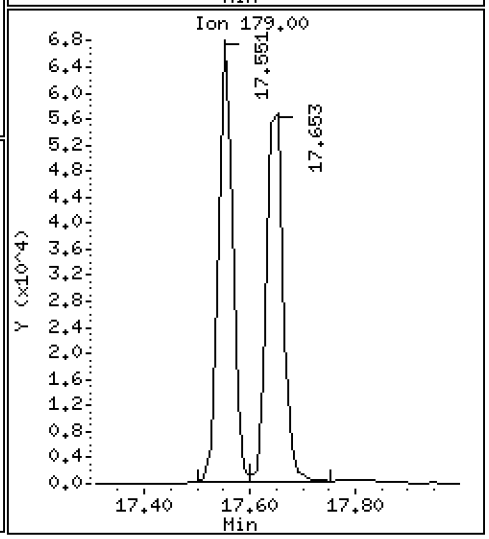












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

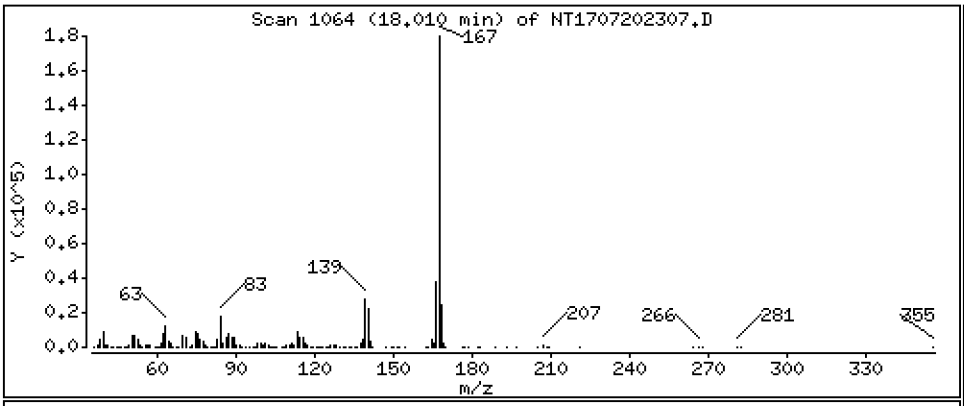
Operator: JGR

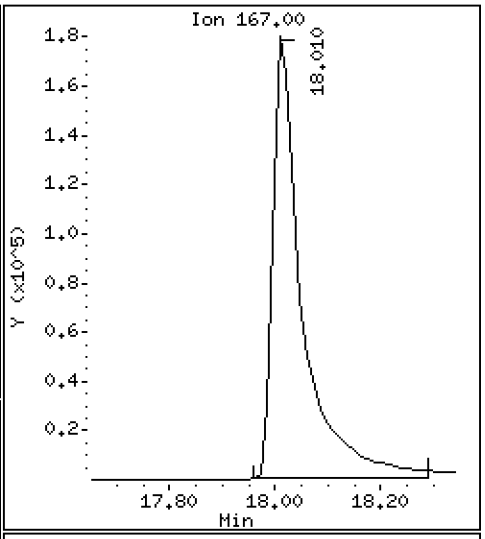
Column phase: ZB-5msi

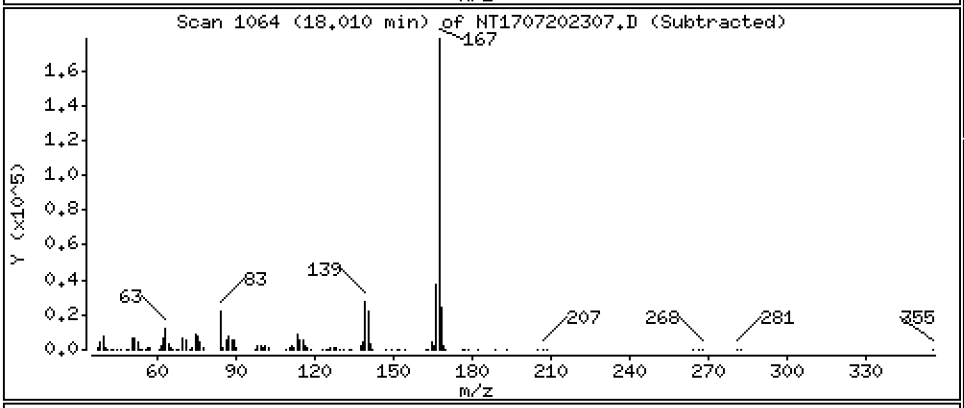
Column diameter: 0.25

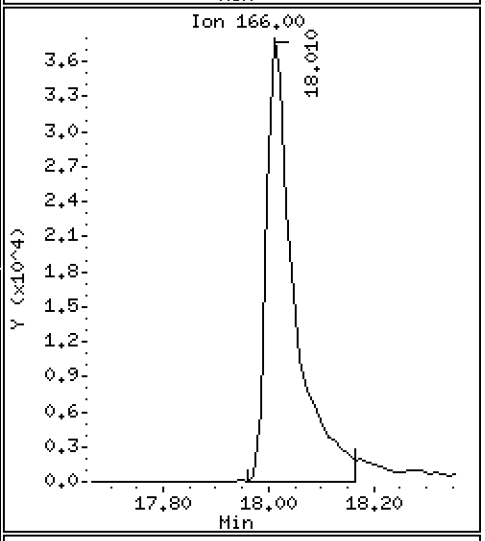
62 Carbazole

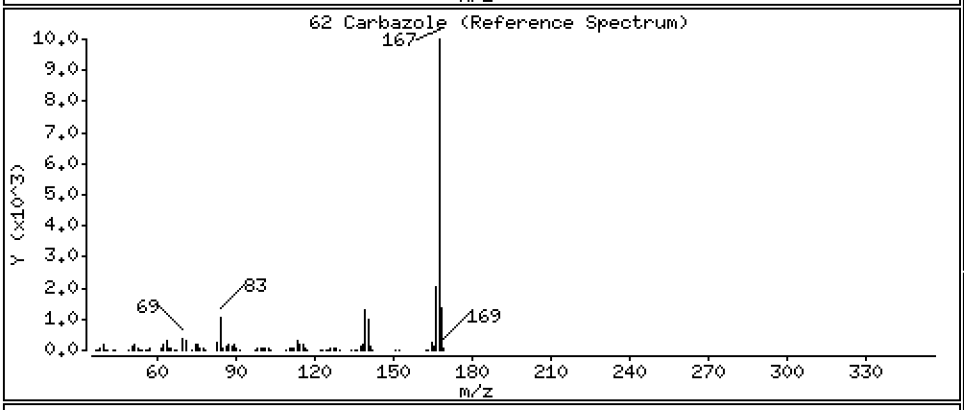
Concentration: 4.974 ug/mL

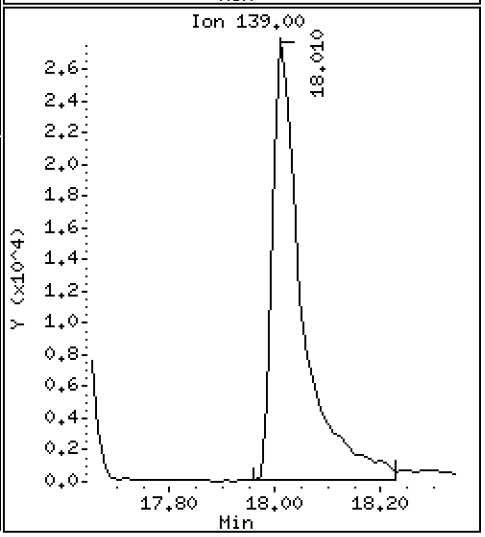


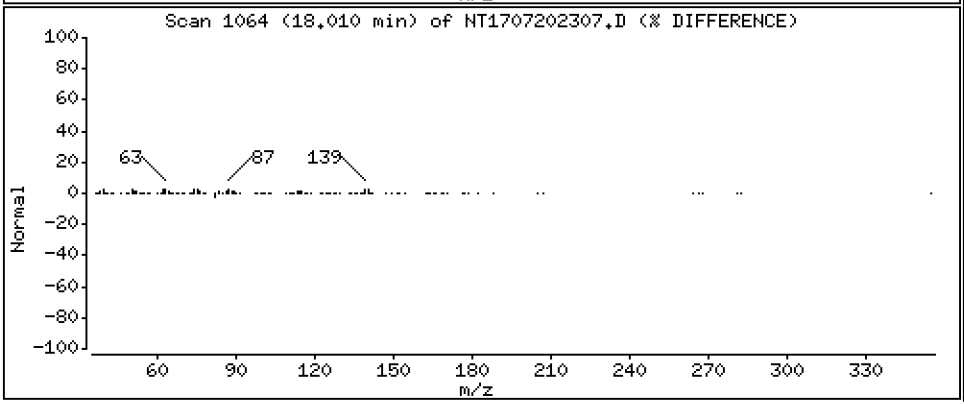












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

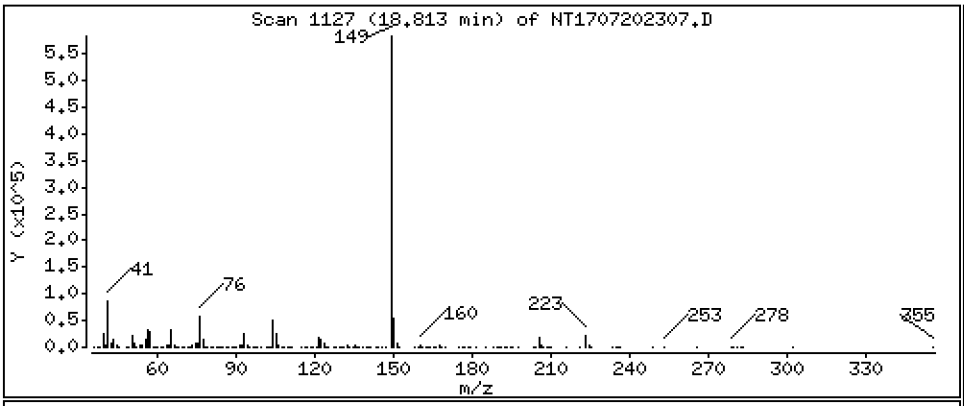
Operator: JGR

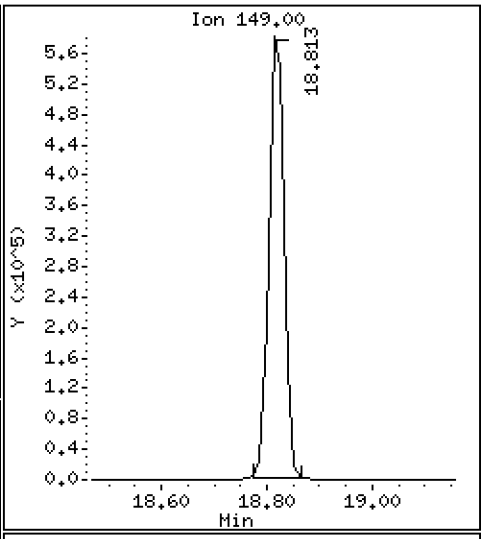
Column phase: ZB-5msi

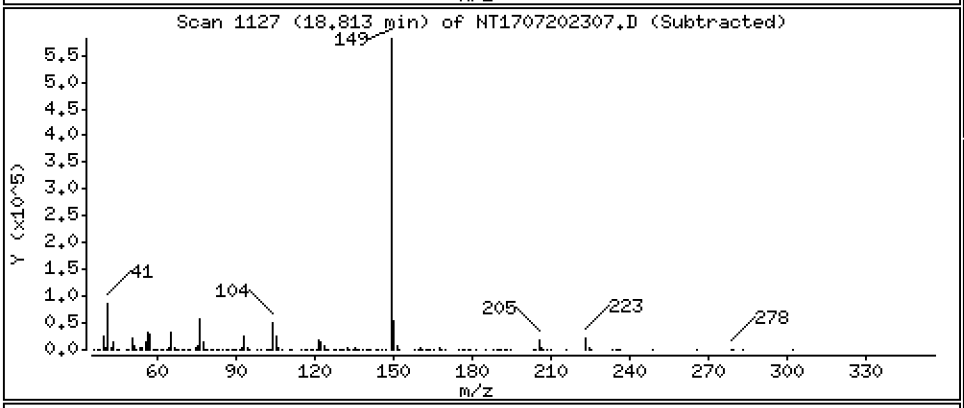
Column diameter: 0.25

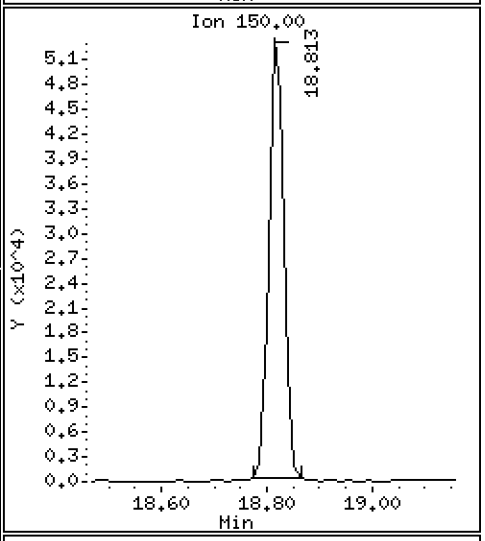
63 Di-n-butylphthalate

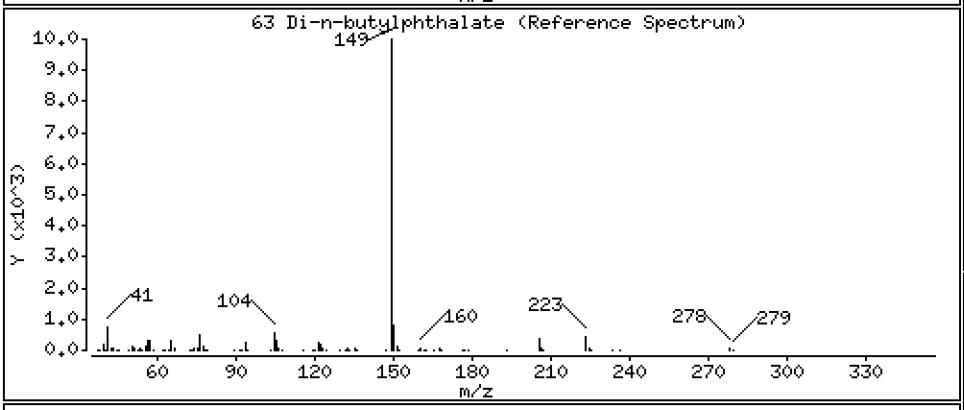
Concentration: 4.925 ug/mL

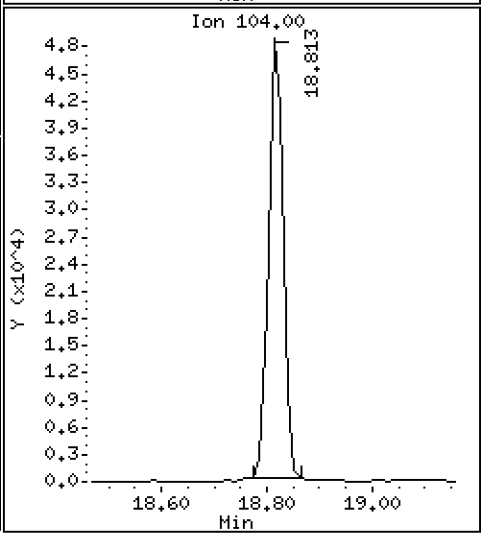


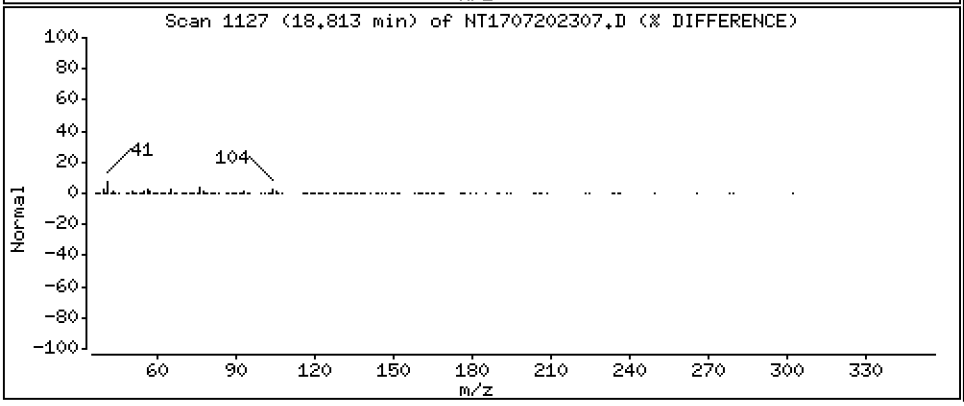












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

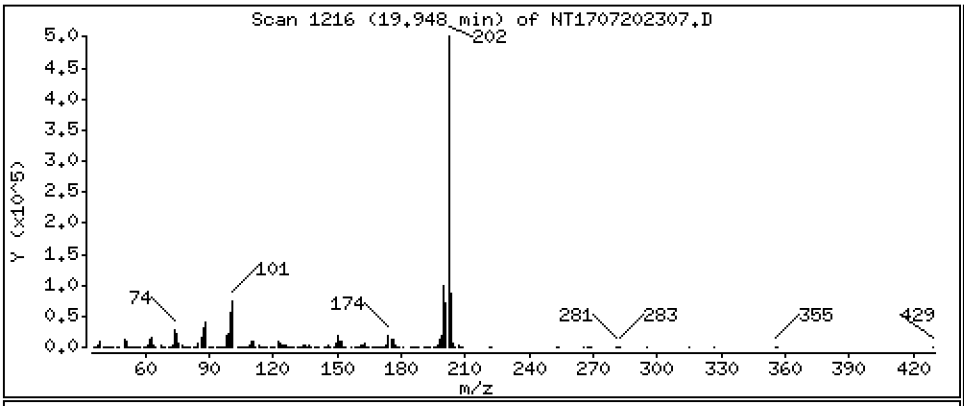
Operator: JGR

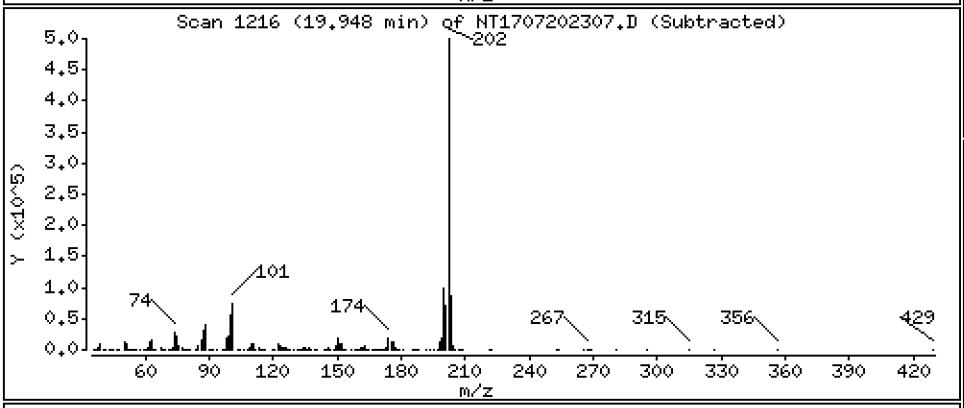
Column phase: ZB-5msi

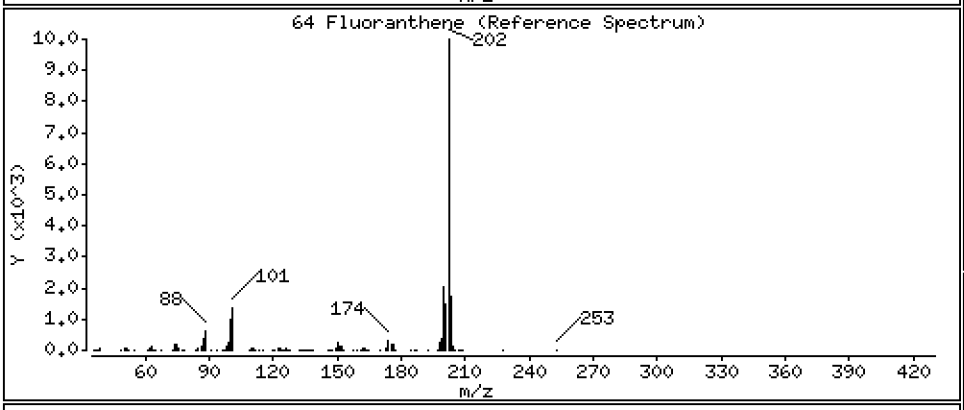
Column diameter: 0.25

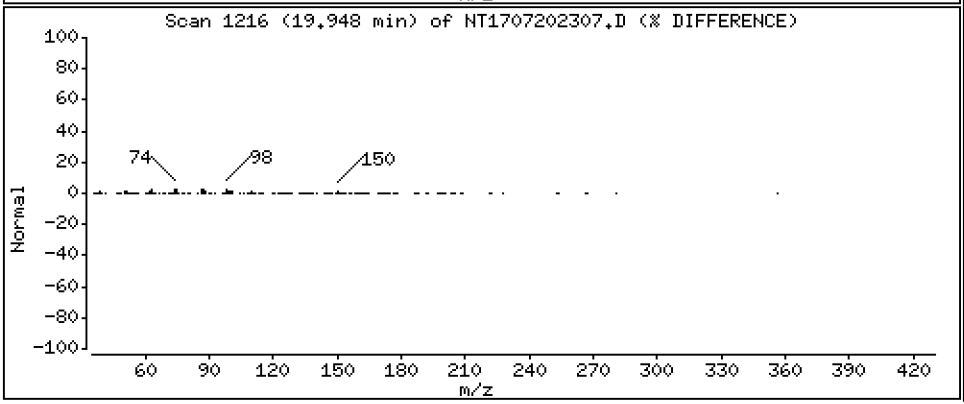
64 Fluoranthene

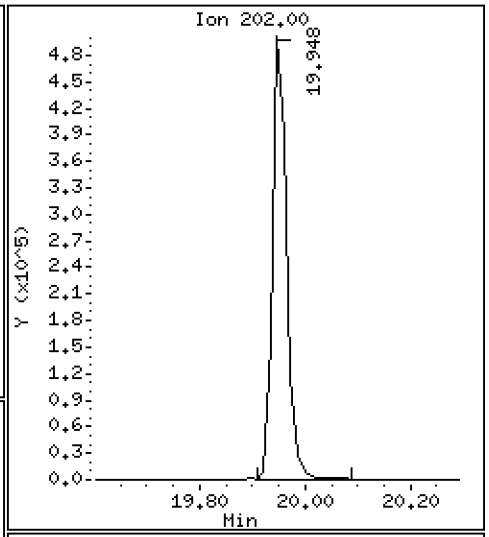
Concentration: 5.216 ug/mL

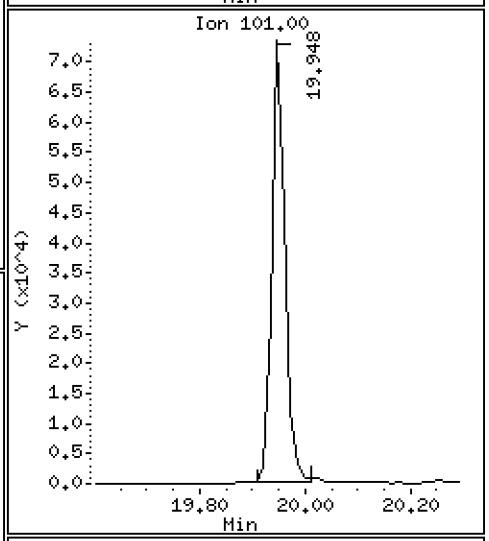


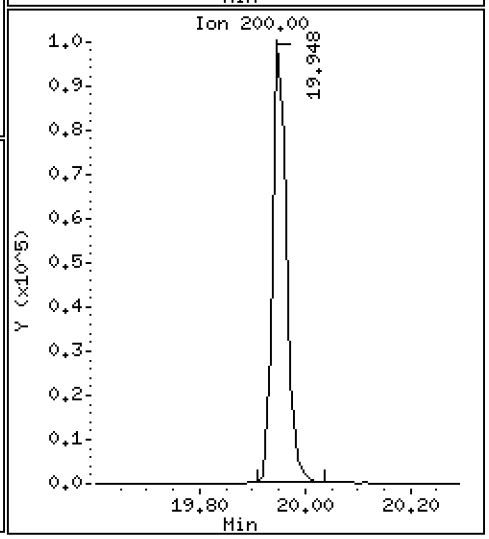












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

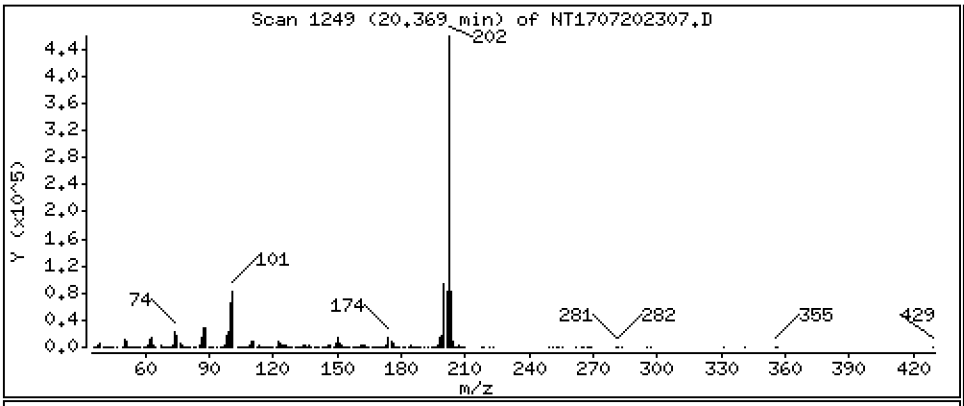
Operator: JGR

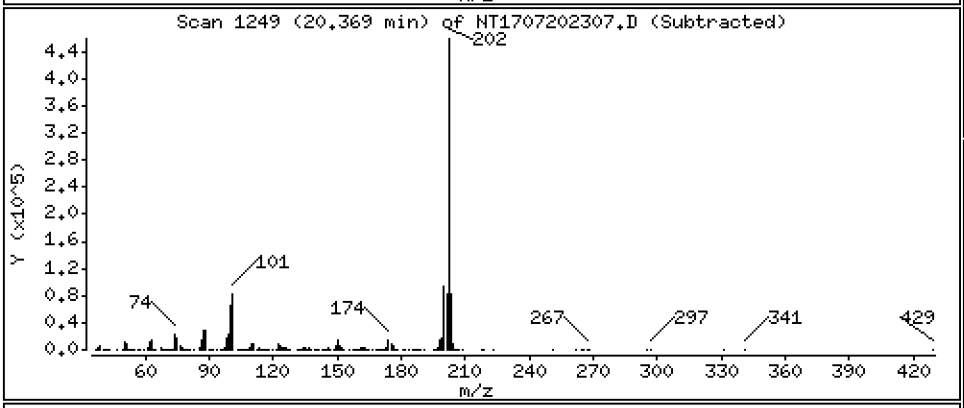
Column phase: ZB-5msi

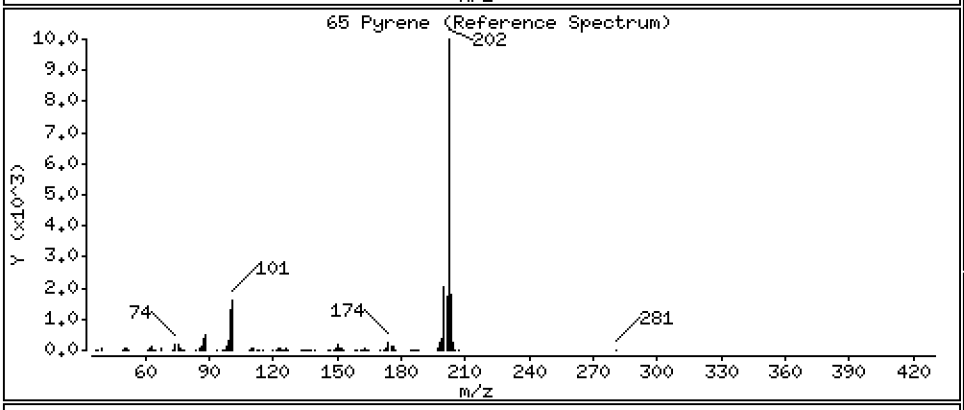
Column diameter: 0.25

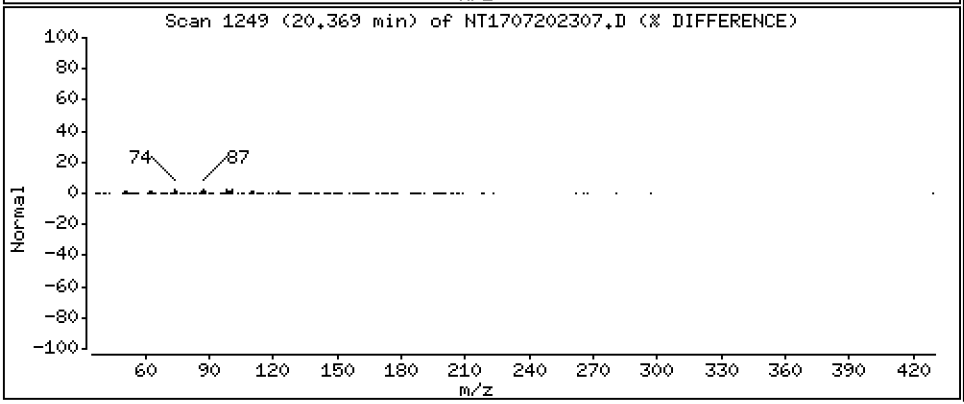
65 Pyrene

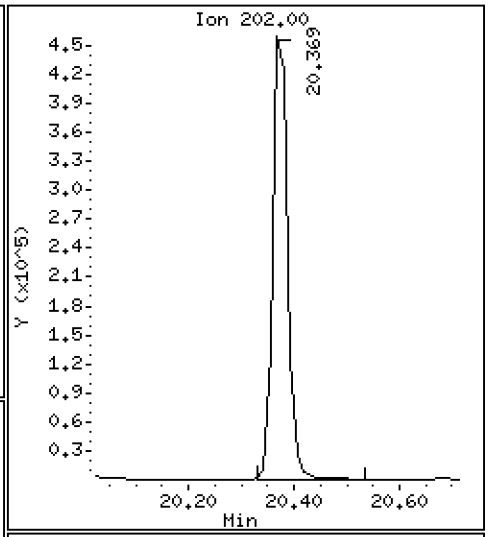
Concentration: 4.525 ug/mL

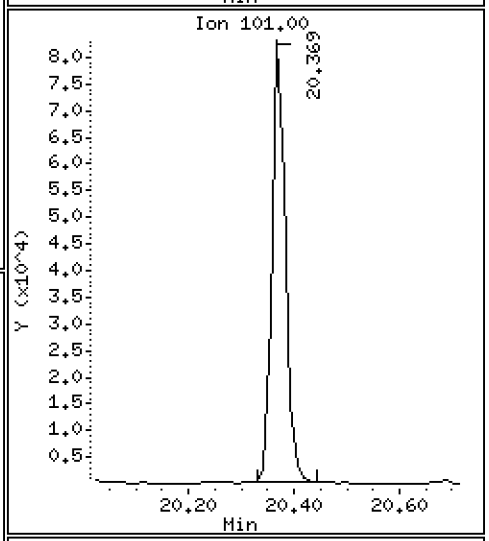


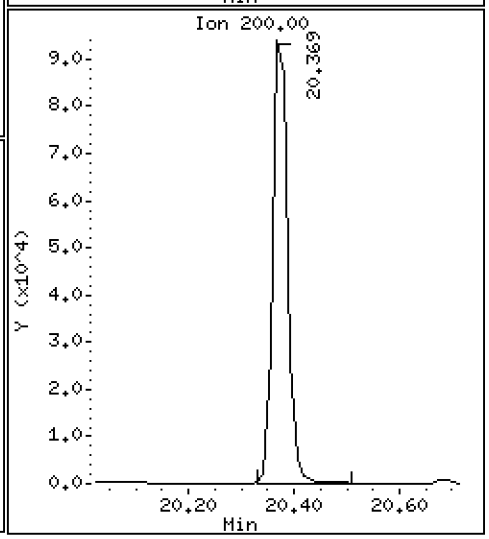












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202307.D

Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

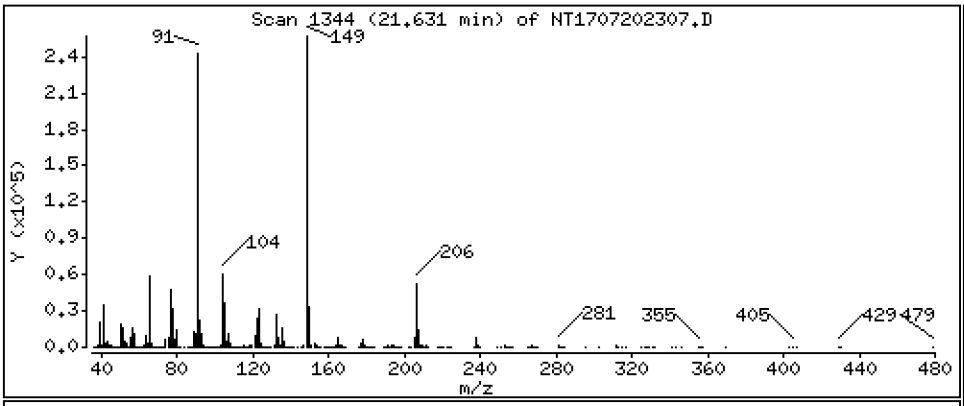
Operator: JGR

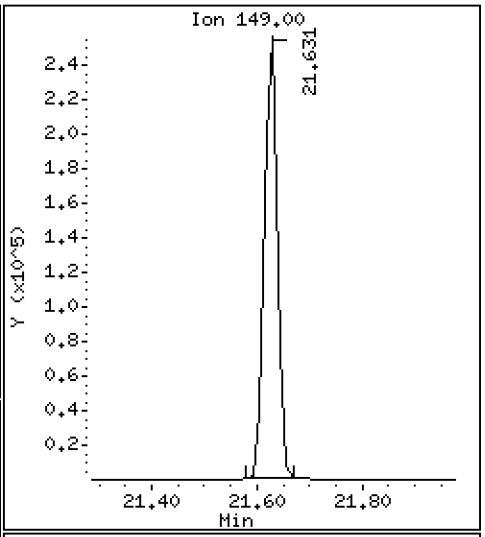
Column phase: ZB-5msi

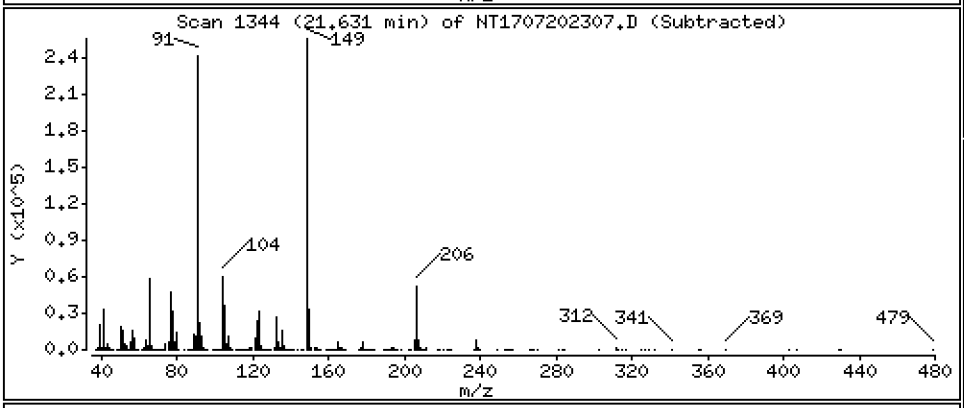
Column diameter: 0.25

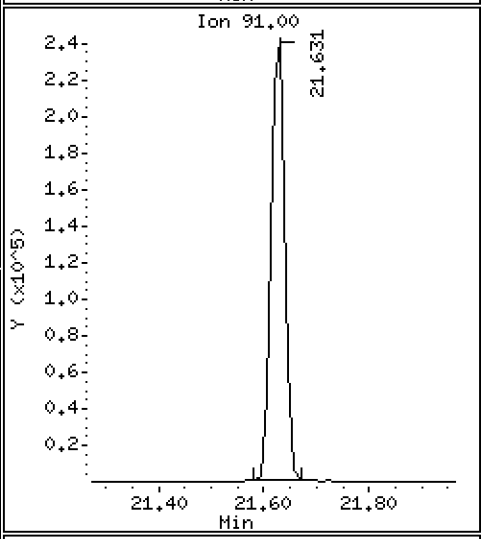
67 Butylbenzylphthalate

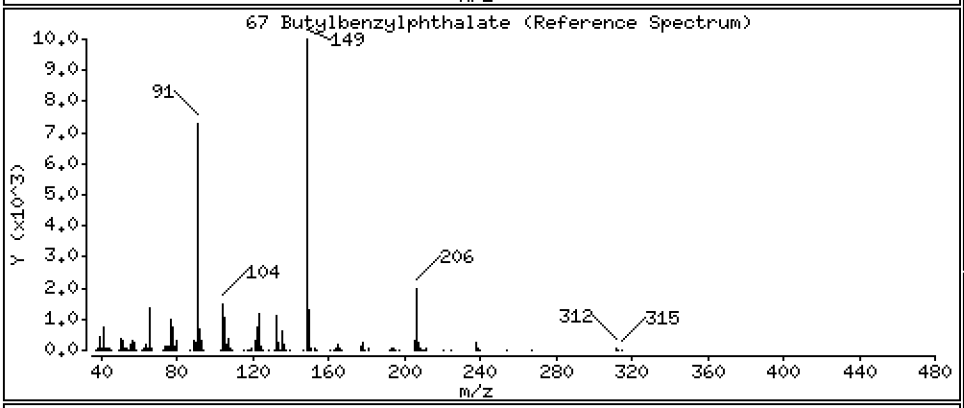
Concentration: 5.139 ug/mL

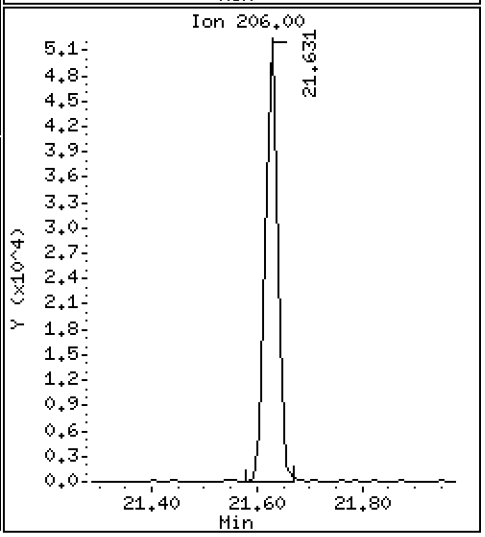


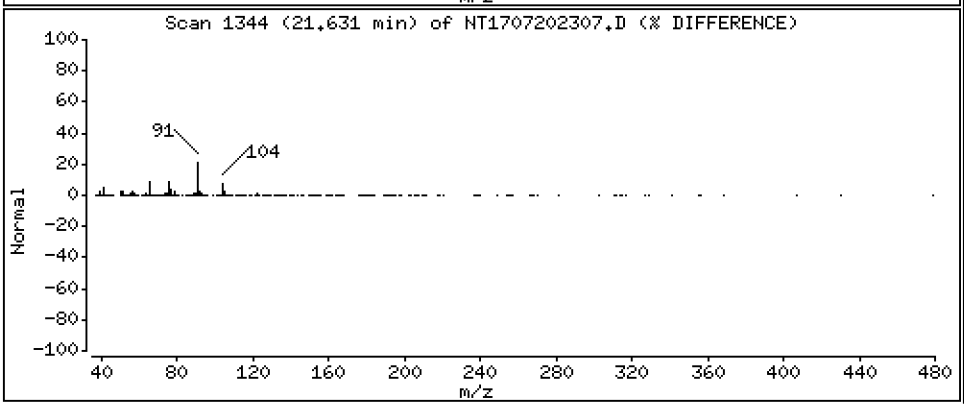












Date : 21-JUL-2023 04:26

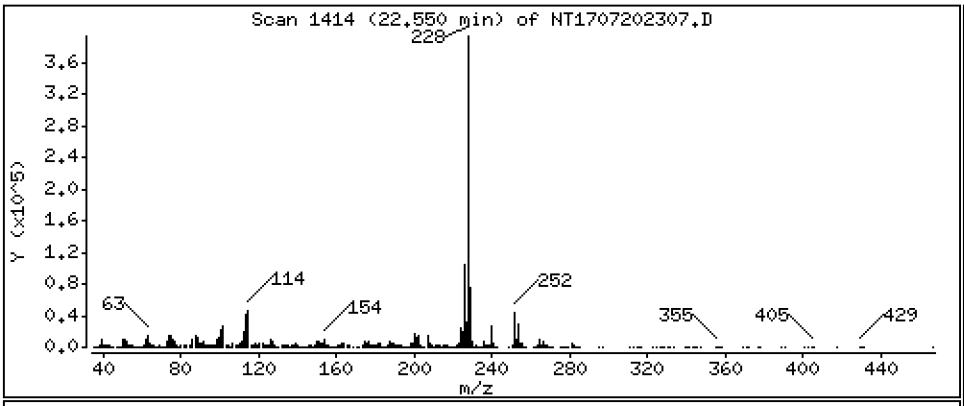
Client ID: Instrument: nt17.i

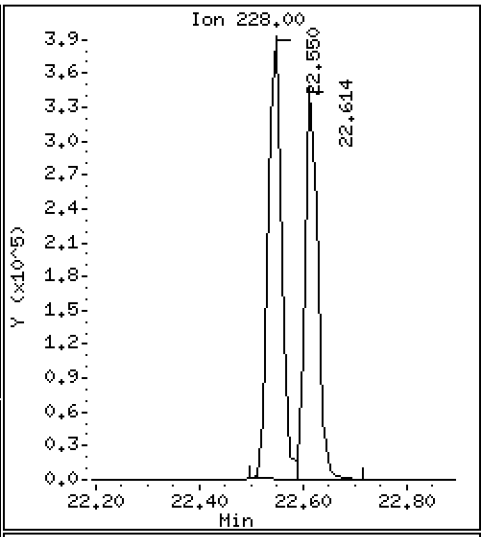
Sample Info: SLG0263-CCV1

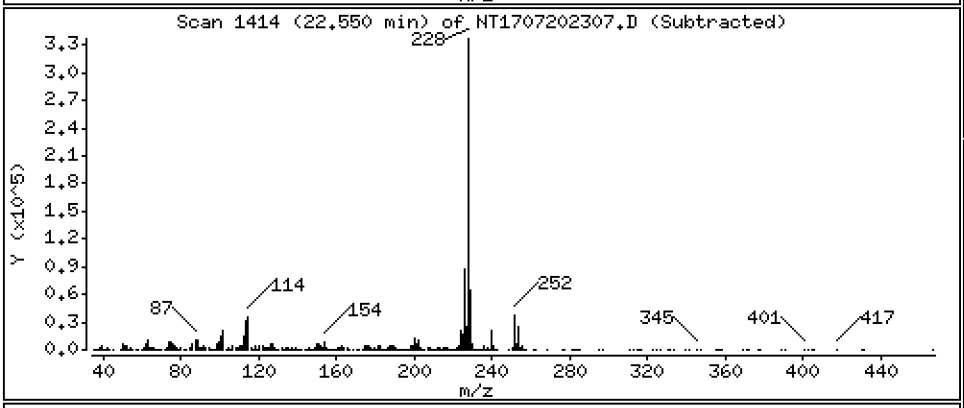
Operator: JGR

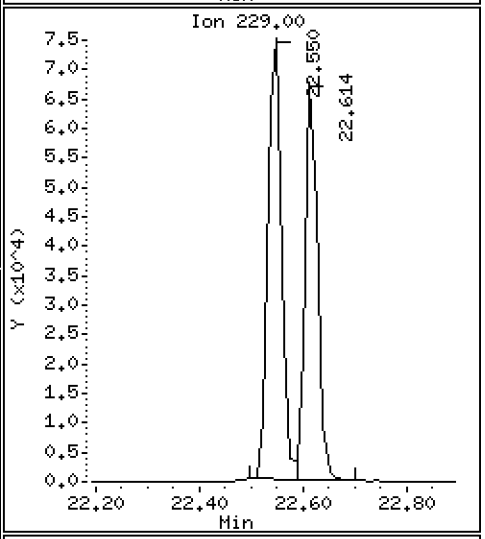
Column phase: ZB-5msi Column diameter: 0.25

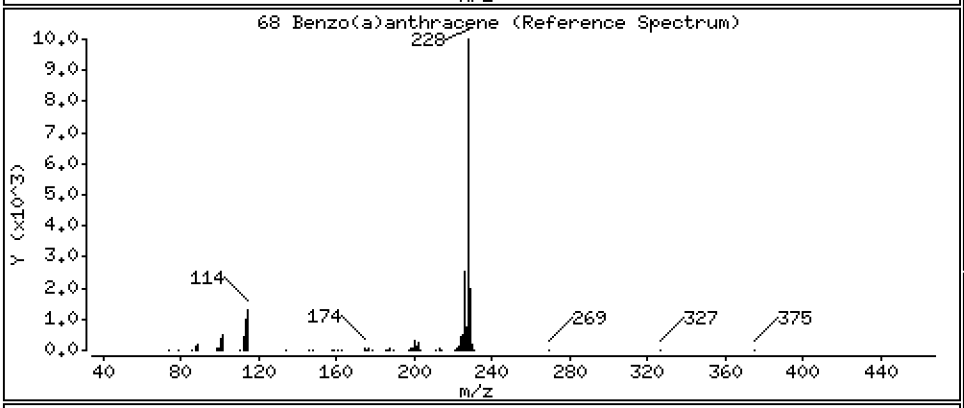
68 Benzo(a)anthracene Concentration: 4.976 ug/mL

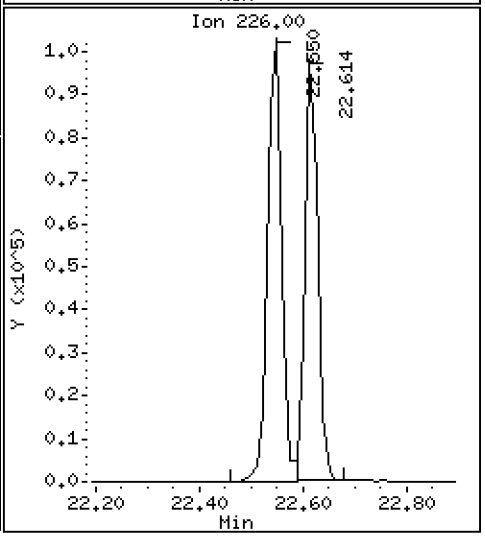


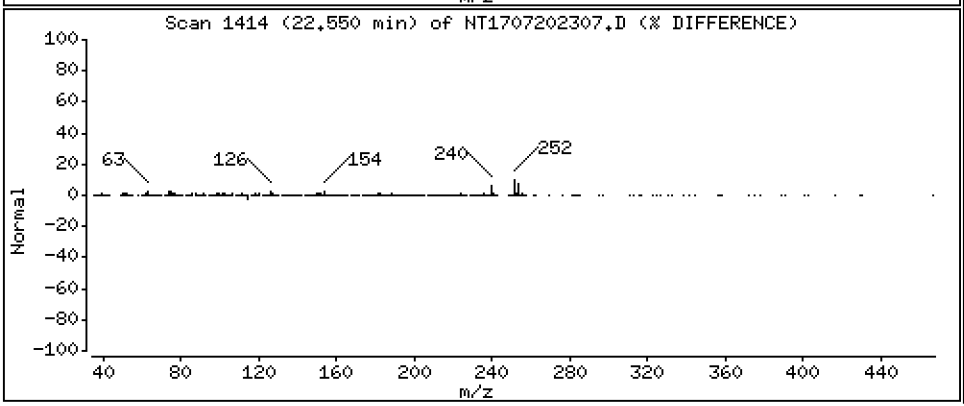












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

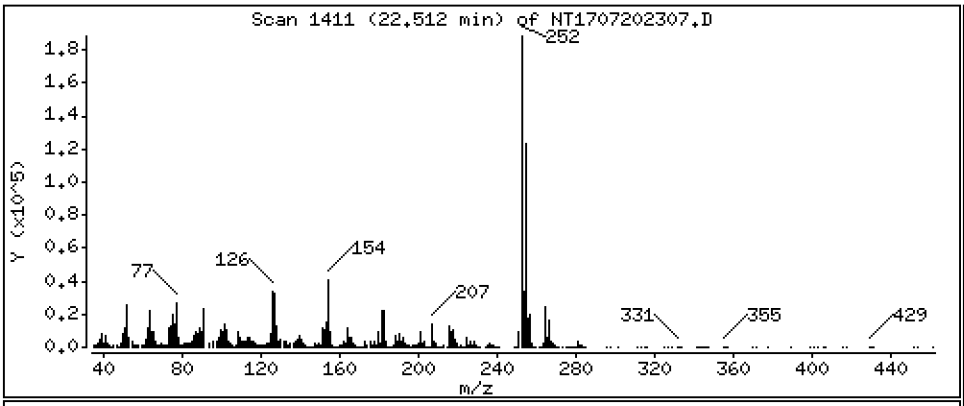
Operator: JGR

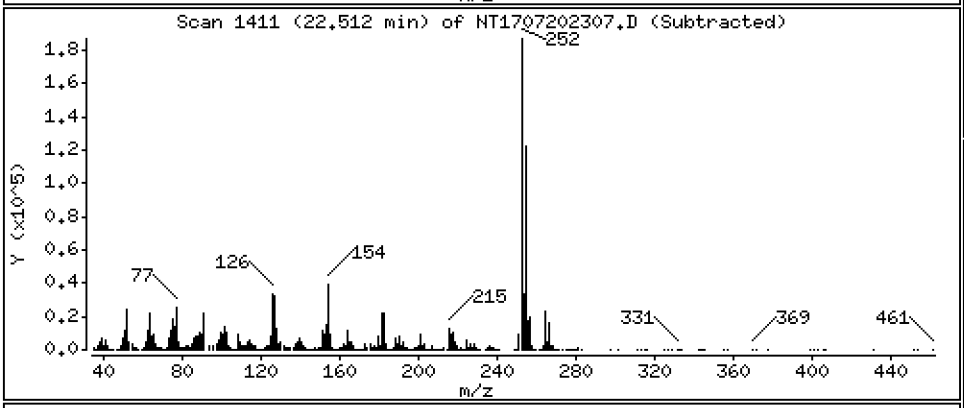
Column phase: ZB-5msi

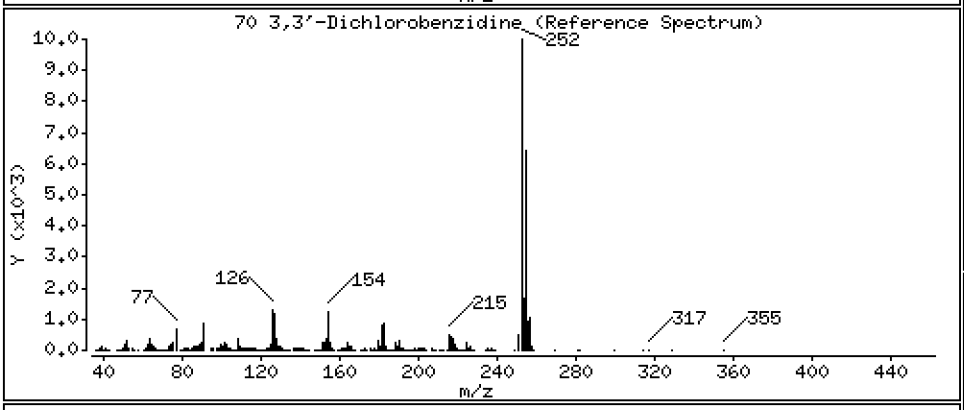
Column diameter: 0.25

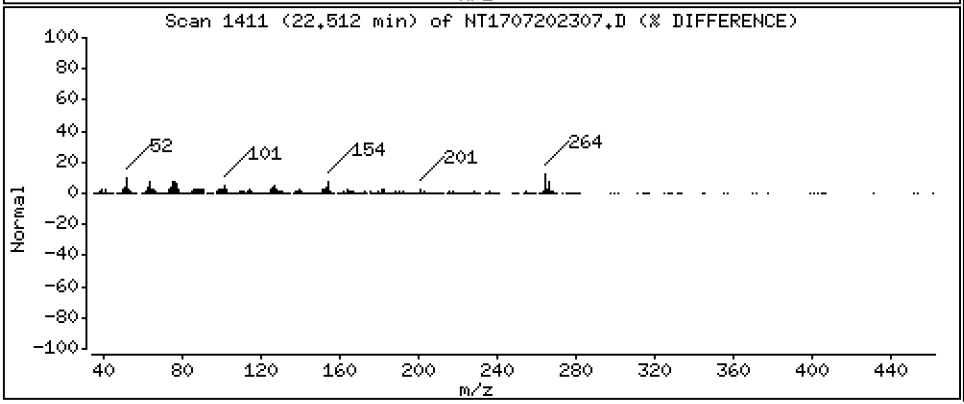
70 3,3'-Dichlorobenzidine

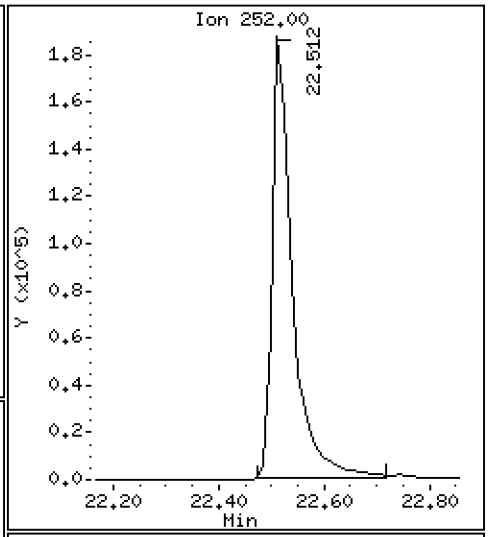
Concentration: 12.64 ug/mL

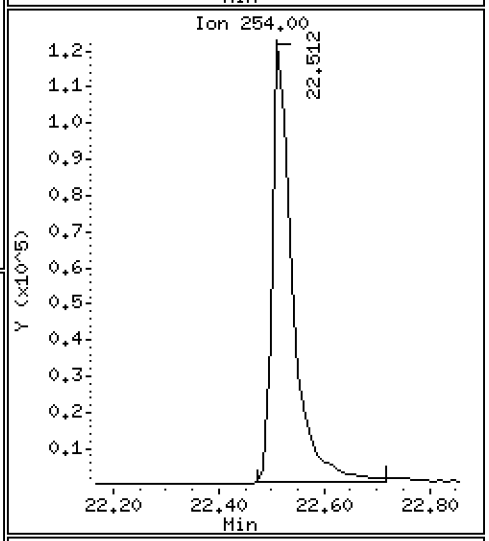


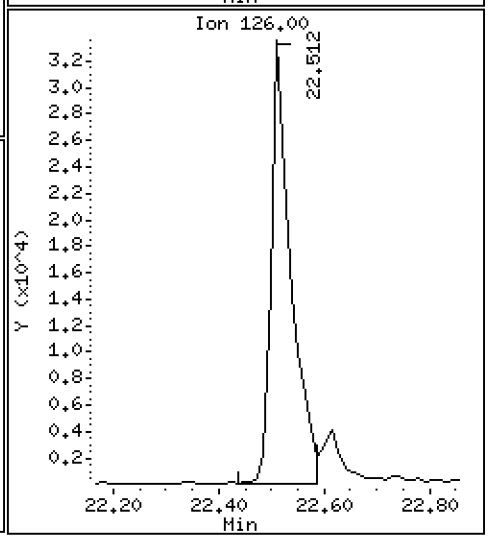












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

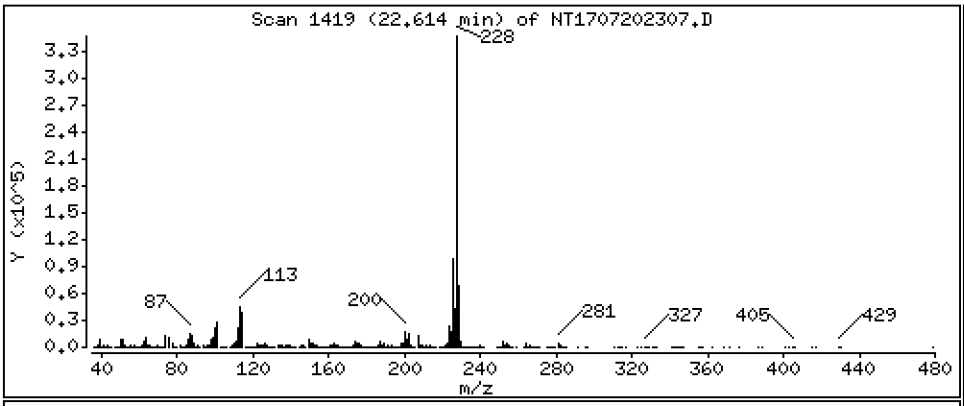
Operator: JGR

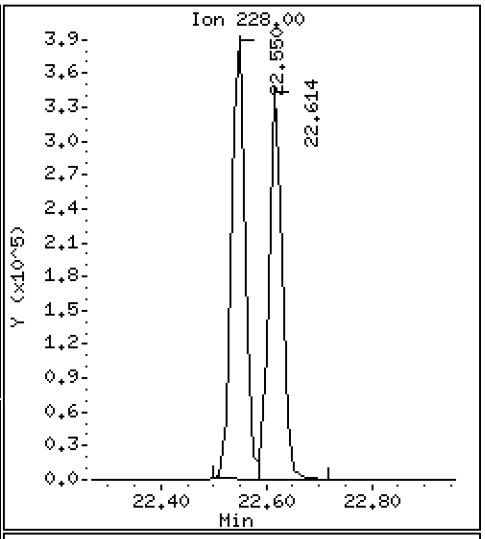
Column phase: ZB-5msi

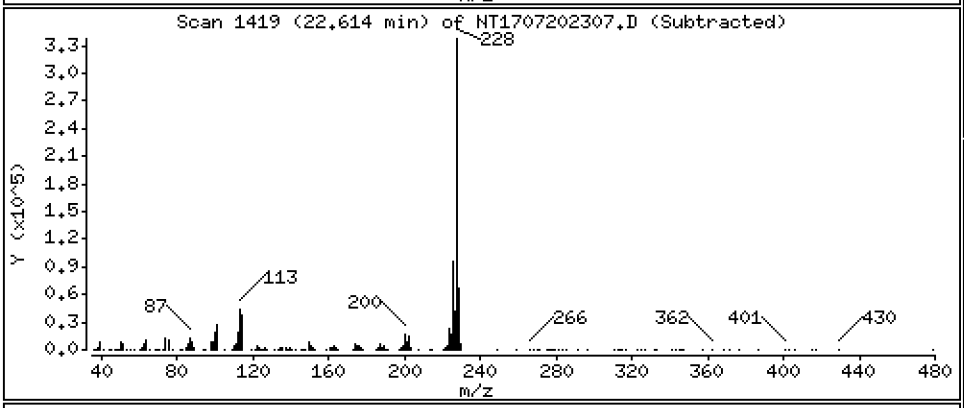
Column diameter: 0.25

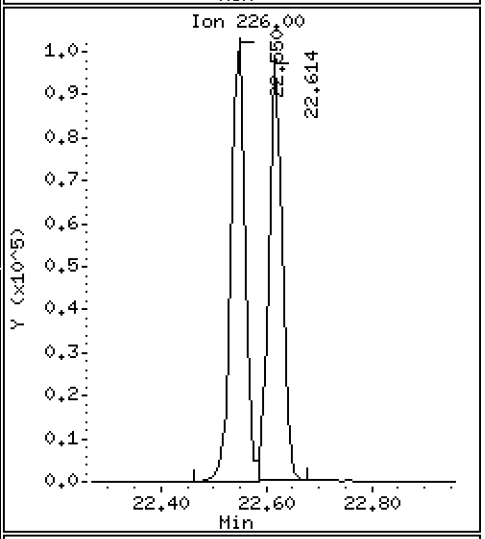
71 Chrysene

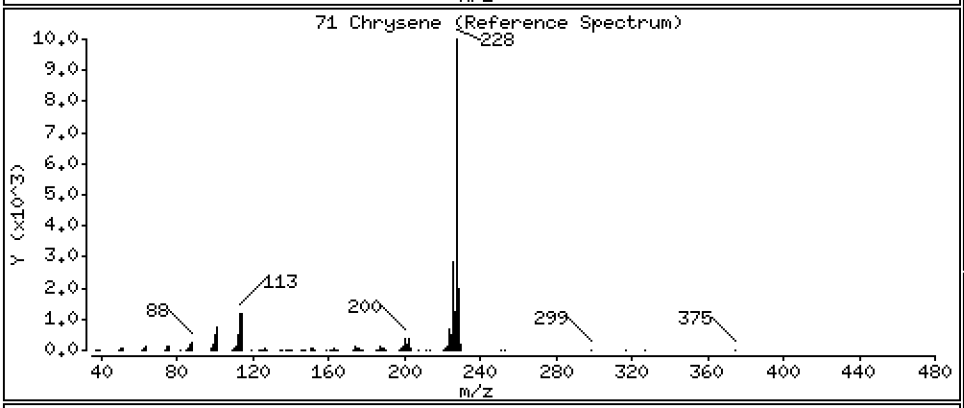
Concentration: 4.473 ug/mL

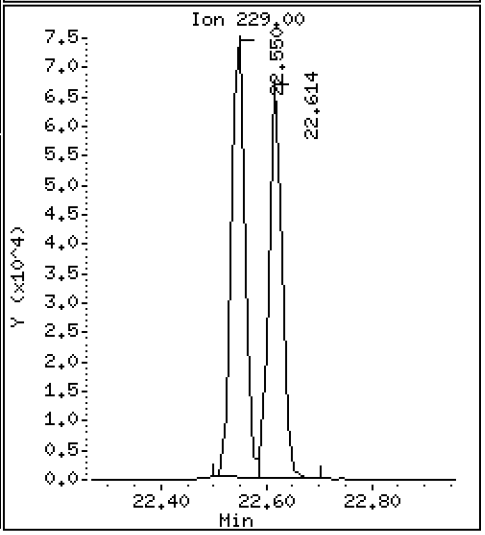


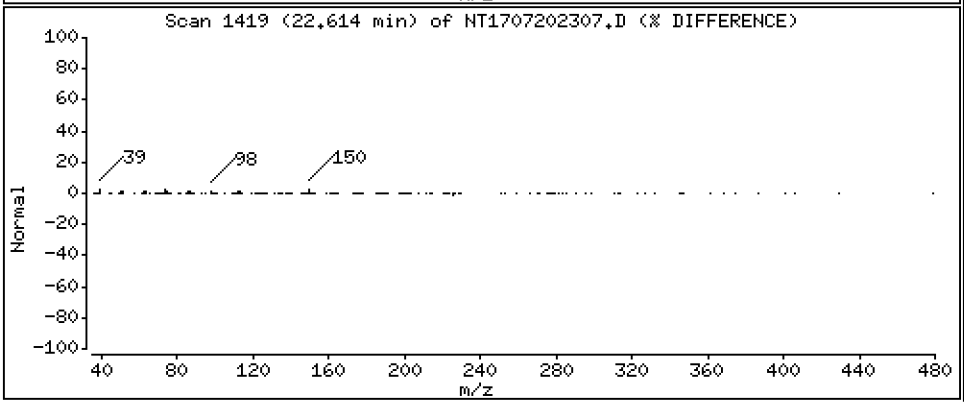












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

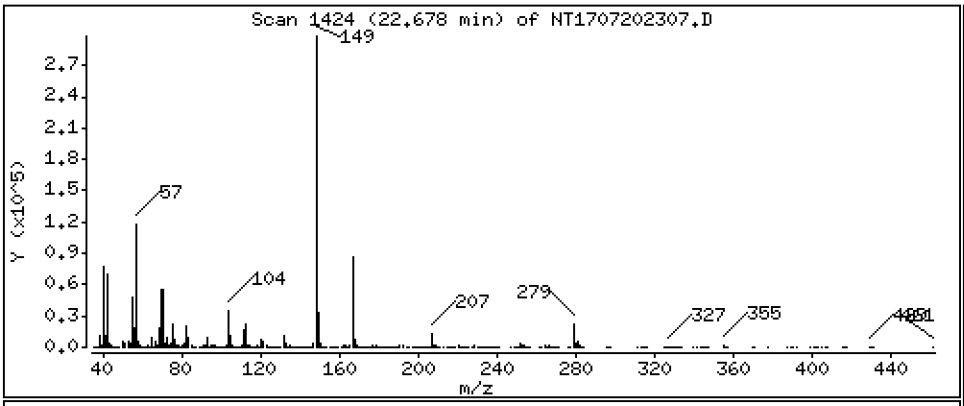
Operator: JGR

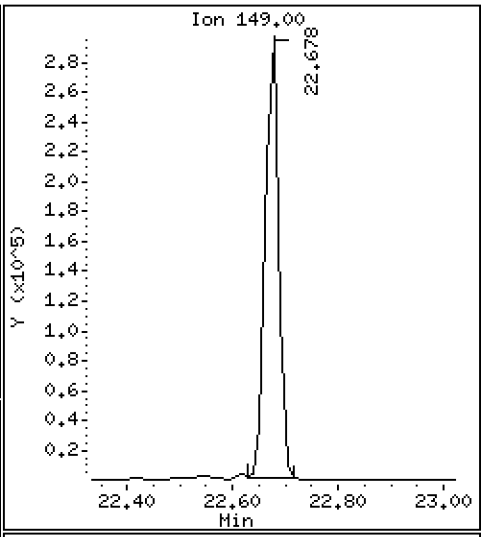
Column phase: ZB-5msi

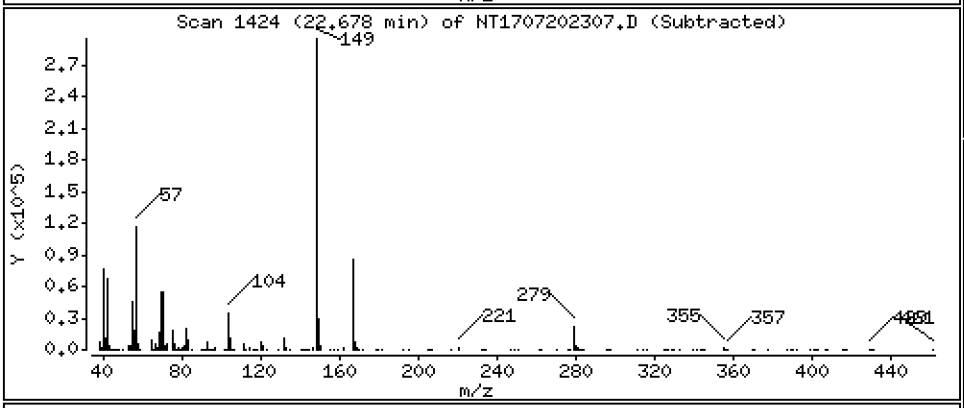
Column diameter: 0.25

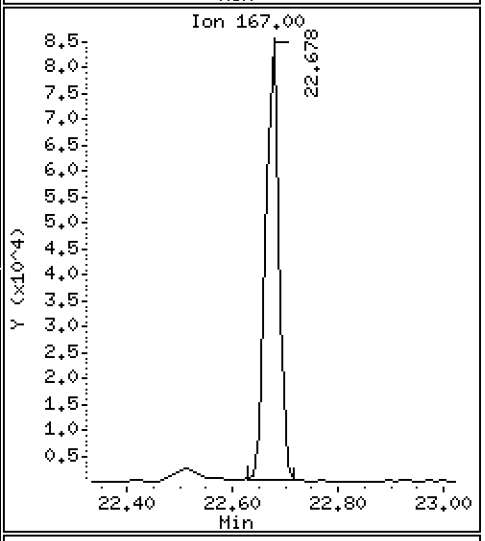
72 bis(2-Ethylhexyl)phthalate

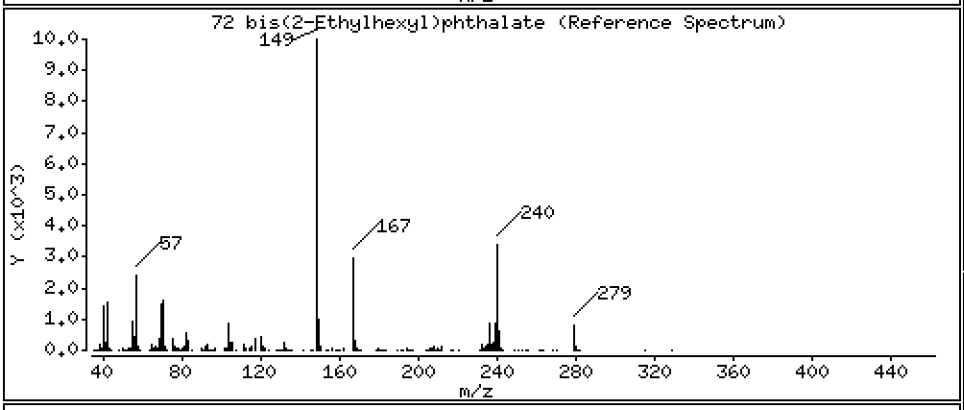
Concentration: 5.472 ug/mL

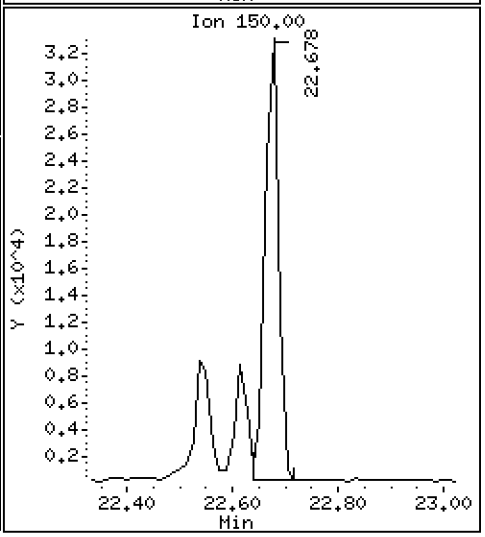


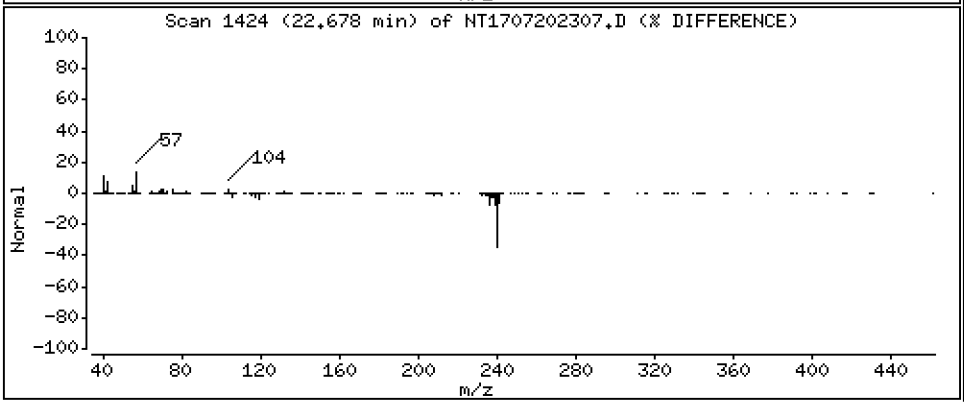












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

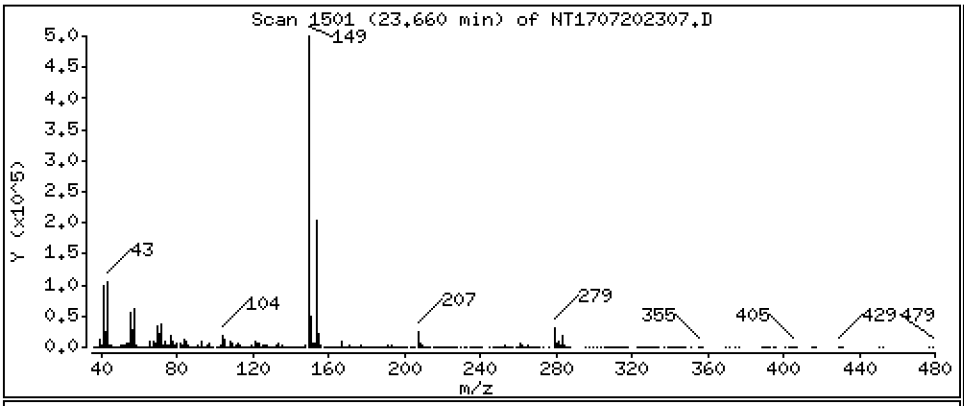
Operator: JGR

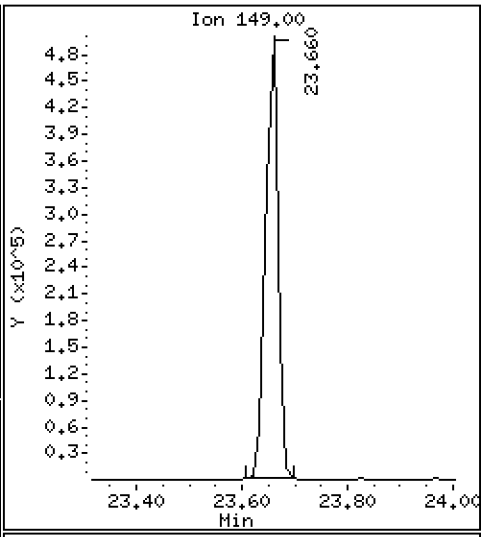
Column phase: ZB-5msi

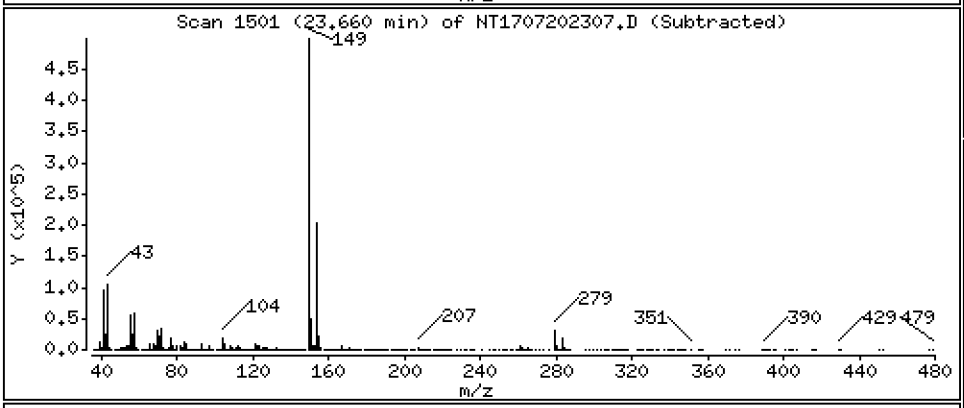
Column diameter: 0.25

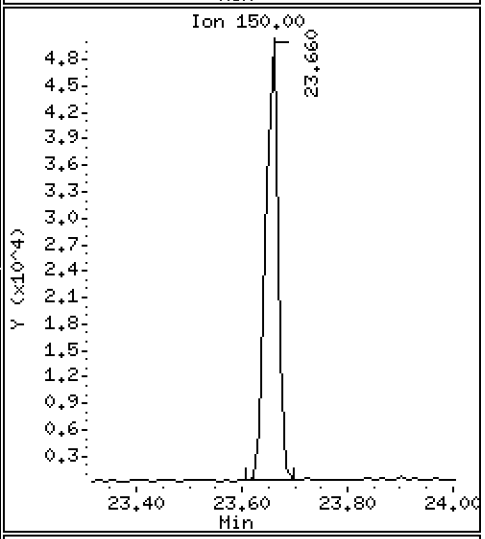
73 Di-n-octylphthalate

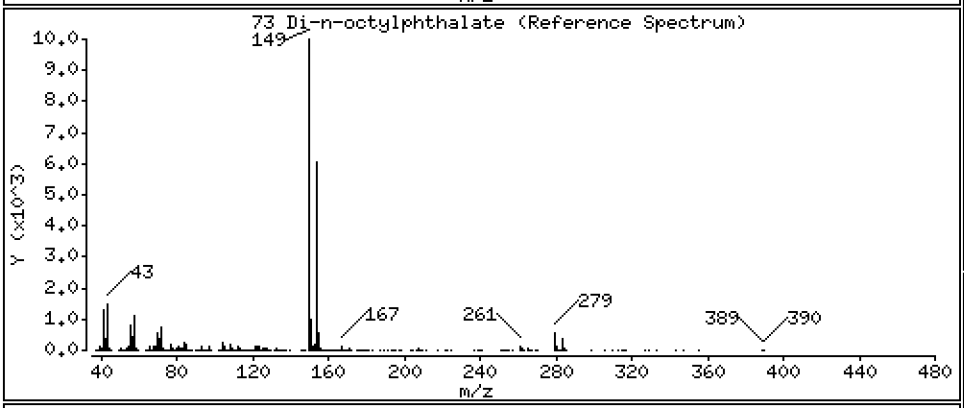
Concentration: 4.434 ug/mL

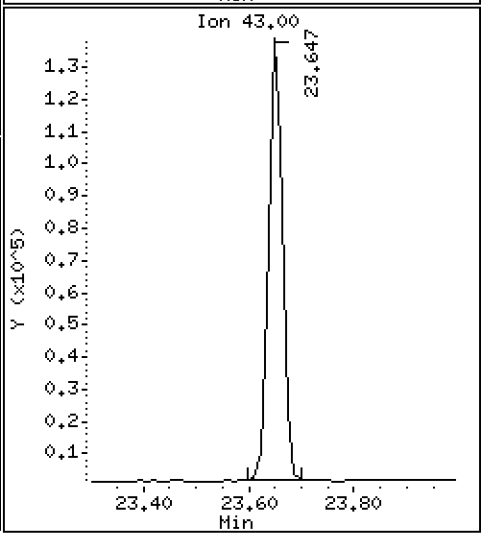


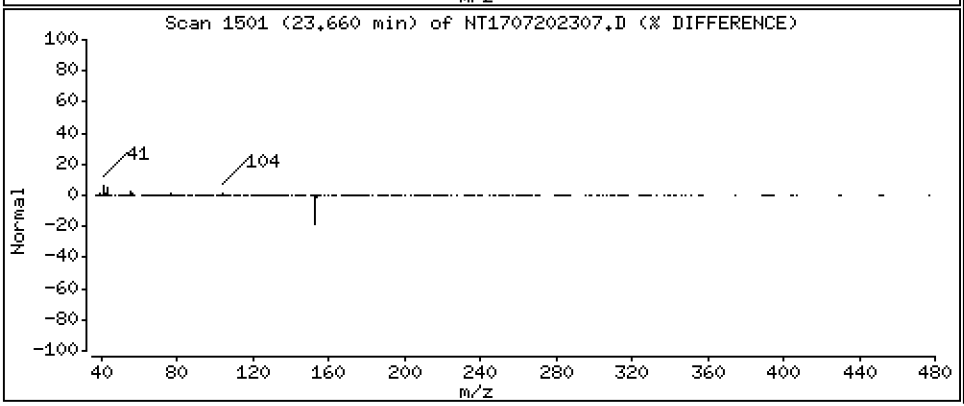












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

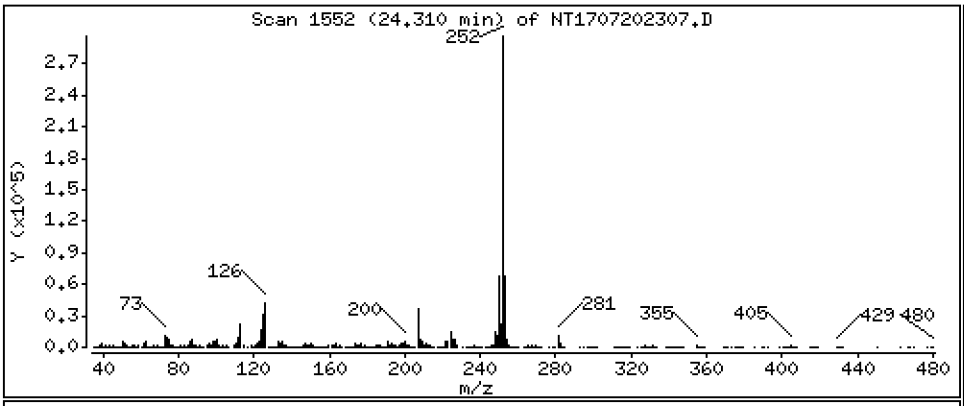
Operator: JGR

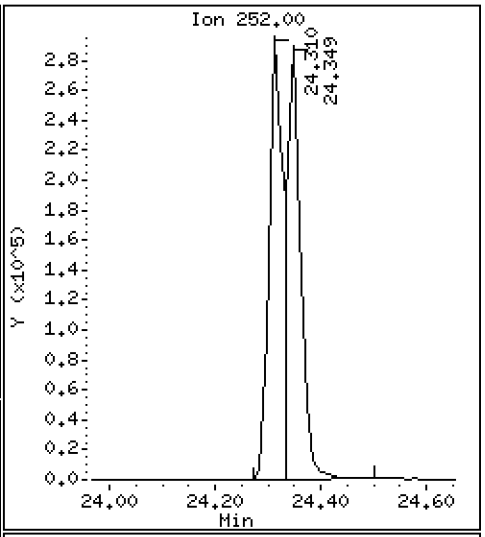
Column phase: ZB-5msi

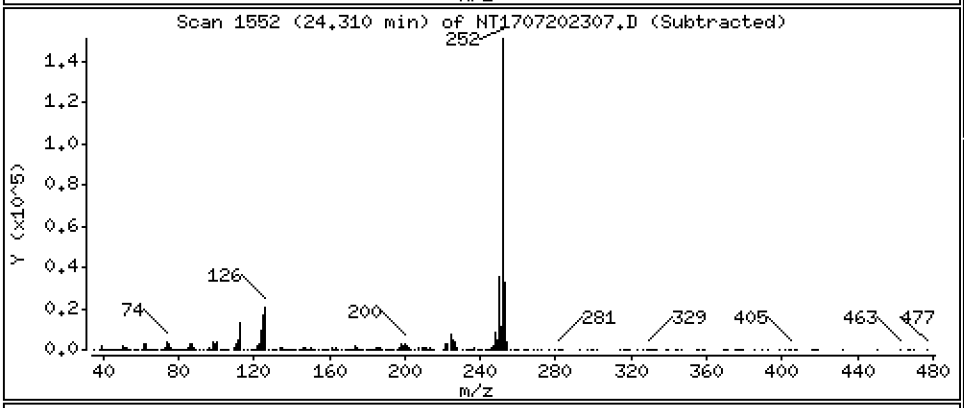
Column diameter: 0.25

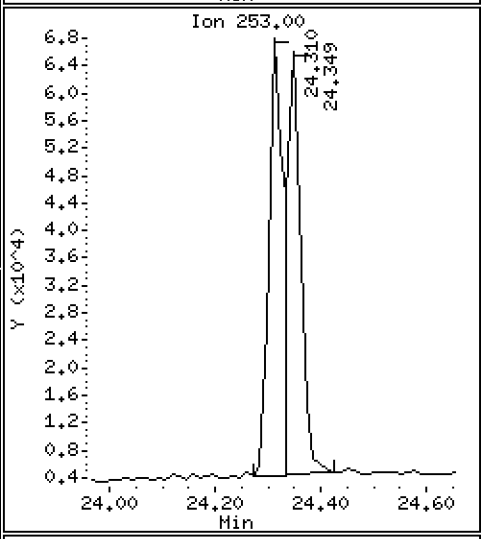
74 Benzo(b)fluoranthene

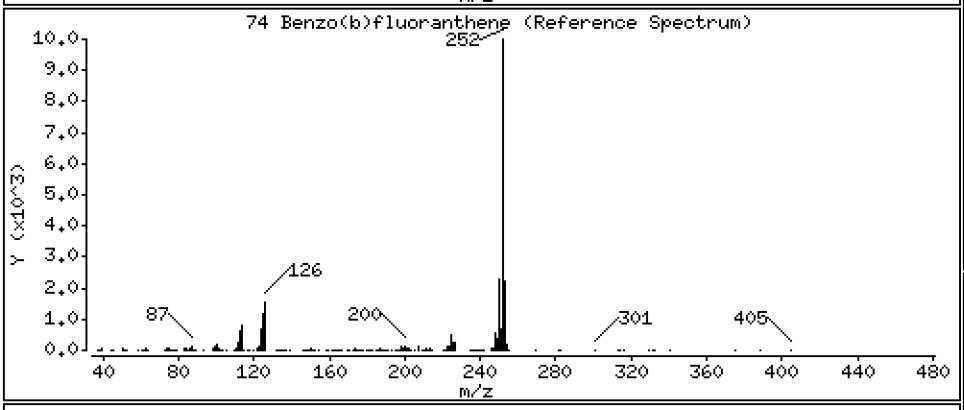
Concentration: 5.603 ug/mL

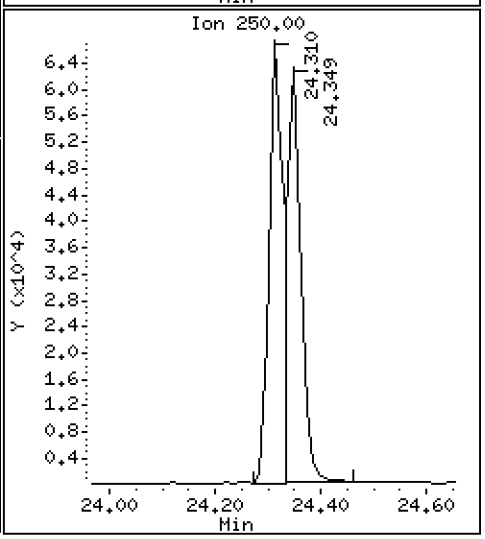


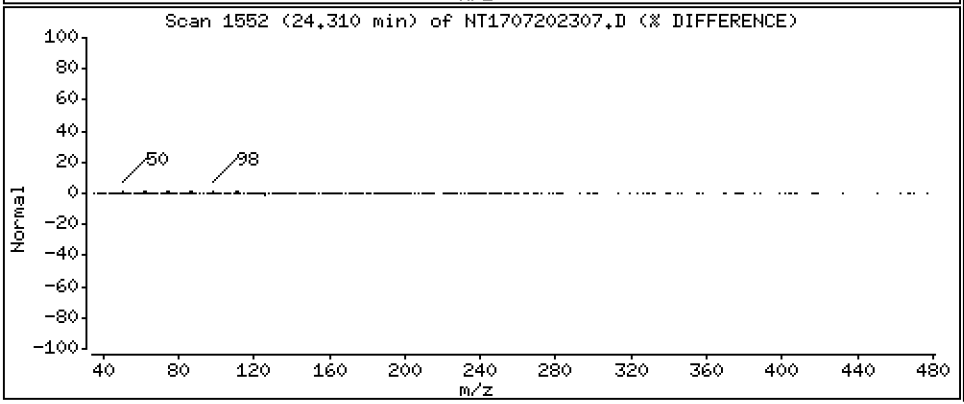












Date : 21-JUL-2023 04:26

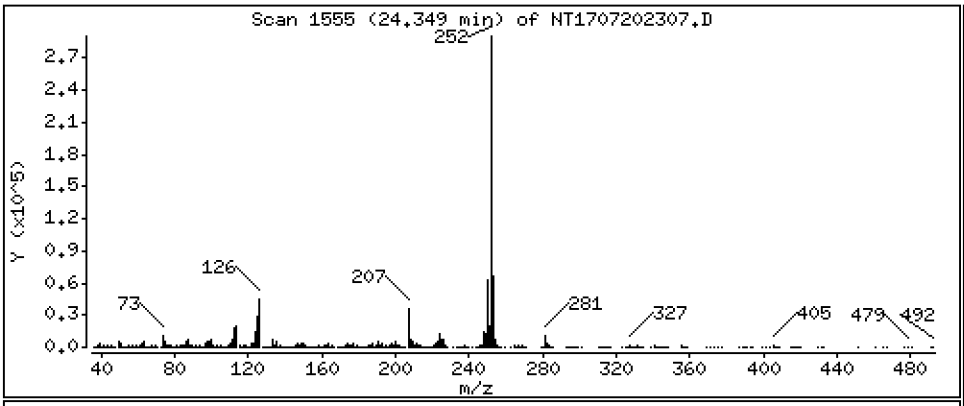
Client ID: Instrument: nt17.i

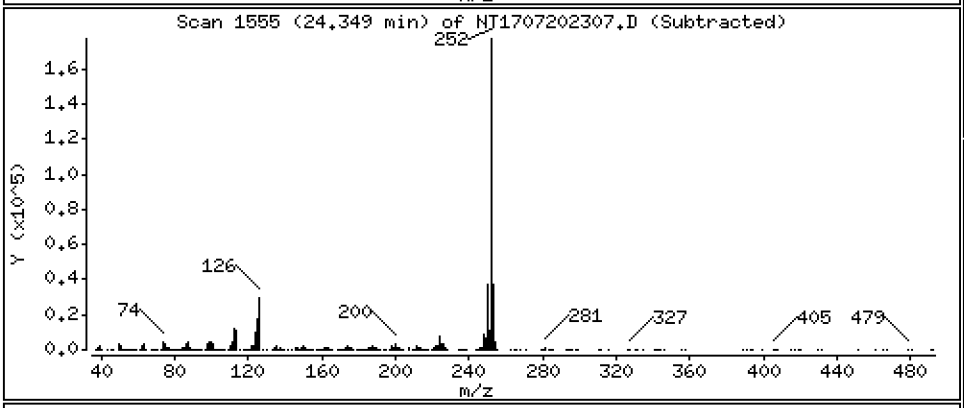
Sample Info: SLG0263-CCV1

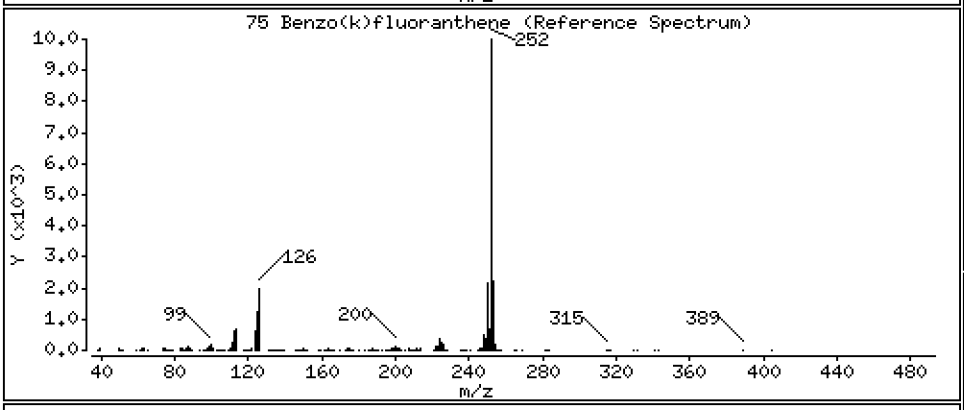
Operator: JGR

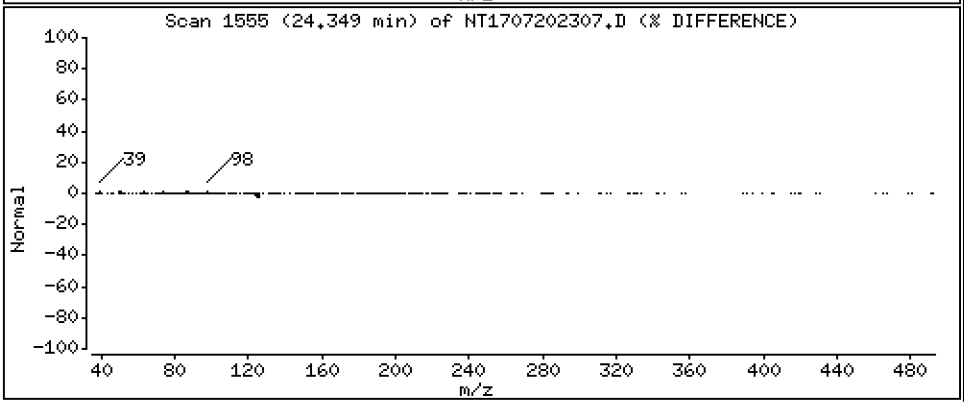
Column phase: ZB-5msi Column diameter: 0.25

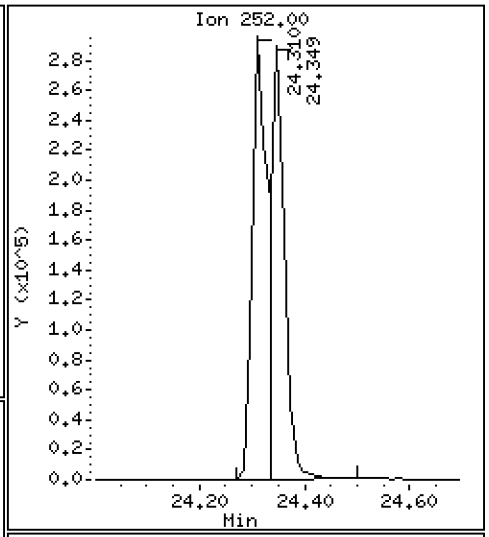
75 Benzo(k)fluoranthene Concentration: 4.891 ug/mL

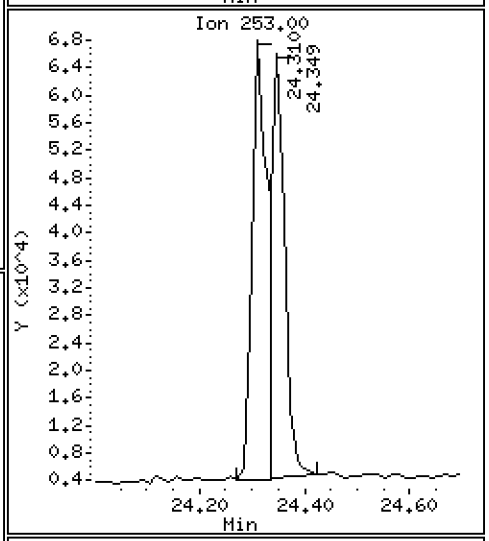


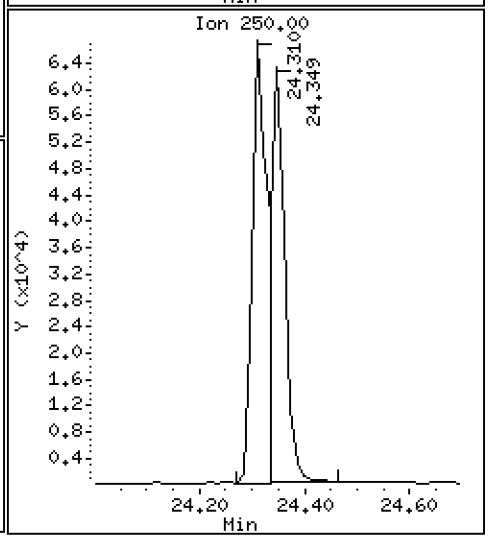












Date : 21-JUL-2023 04:26

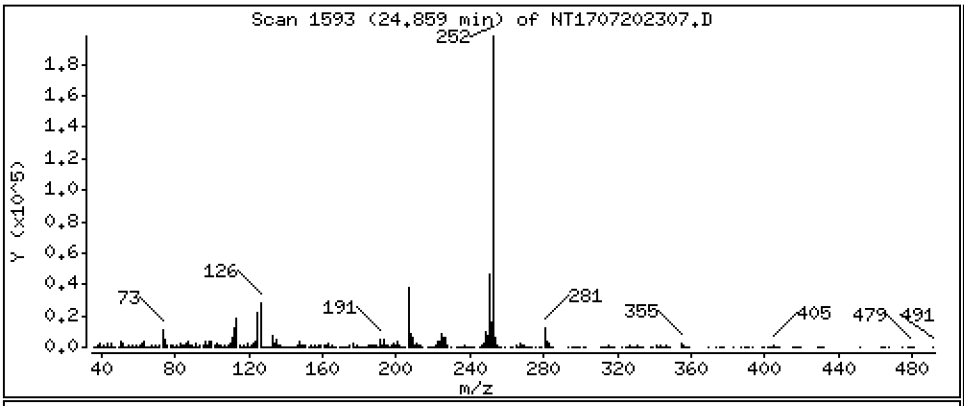
Client ID: Instrument: nt17.i

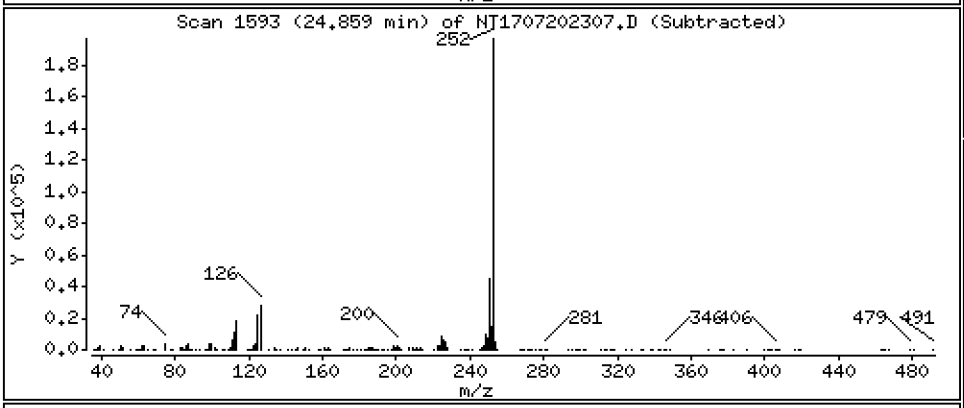
Sample Info: SLG0263-CCV1

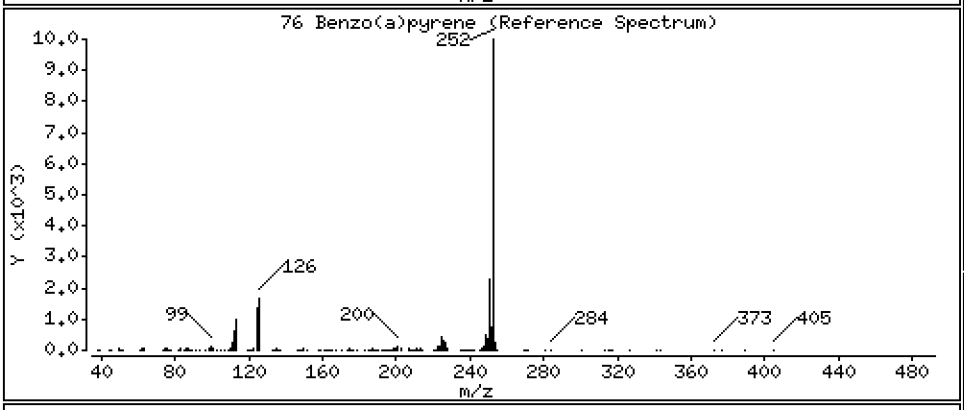
Operator: JGR

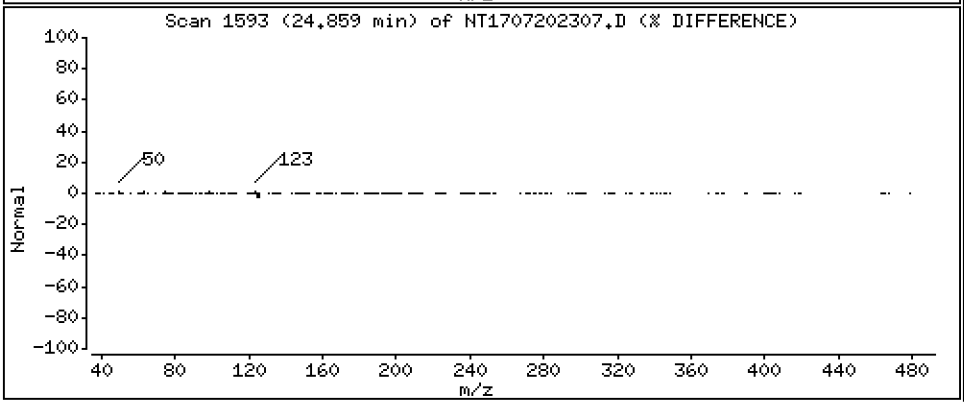
Column phase: ZB-5msi Column diameter: 0.25

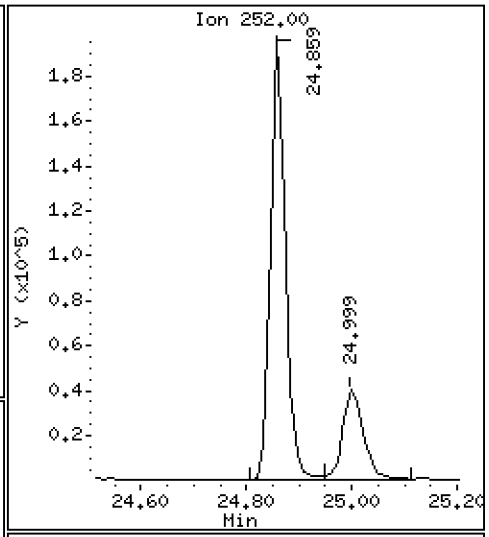
76 Benzo(a)pyrene Concentration: 4.789 ug/mL

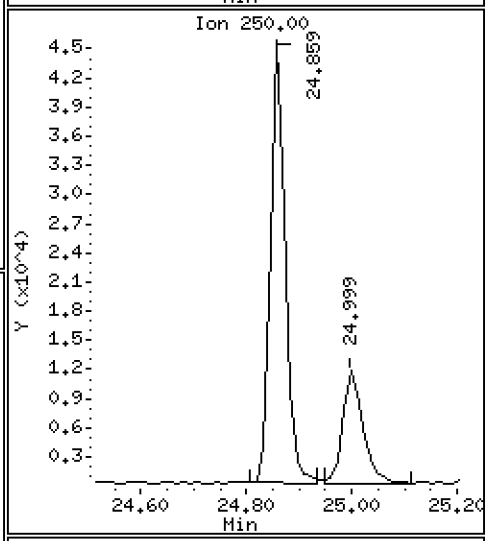


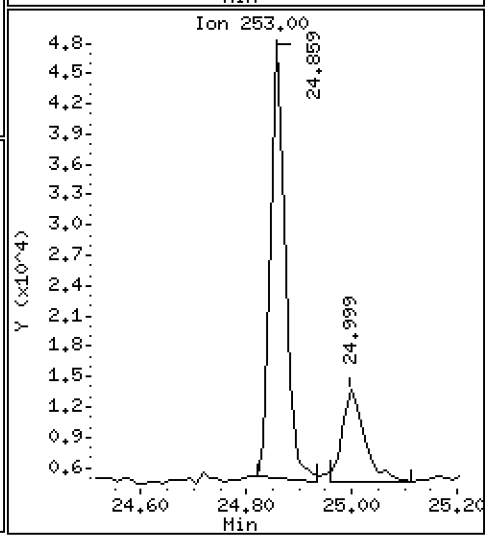












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

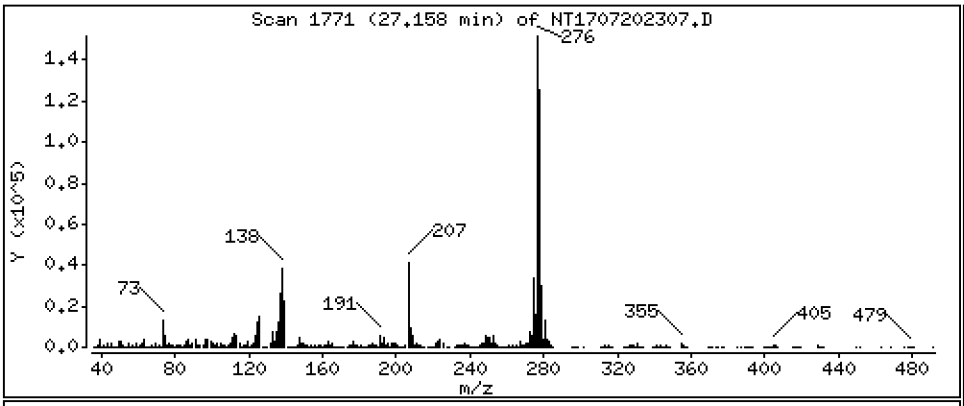
Operator: JGR

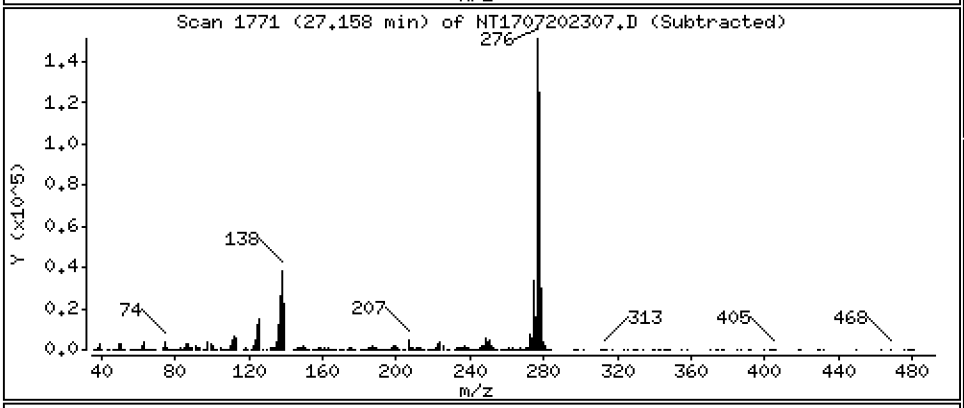
Column phase: ZB-5msi

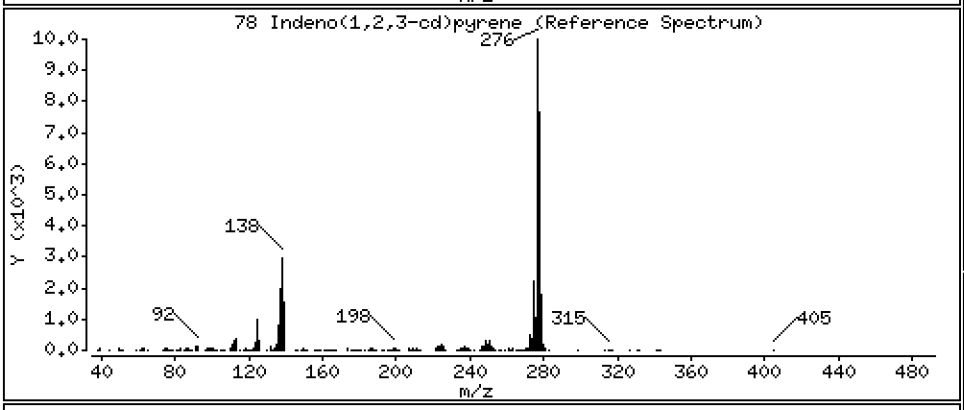
Column diameter: 0.25

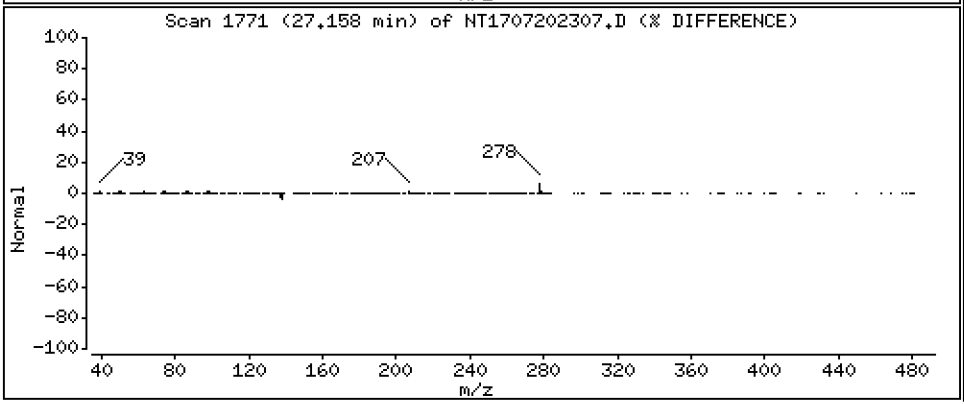
78 Indeno(1,2,3-cd)pyrene

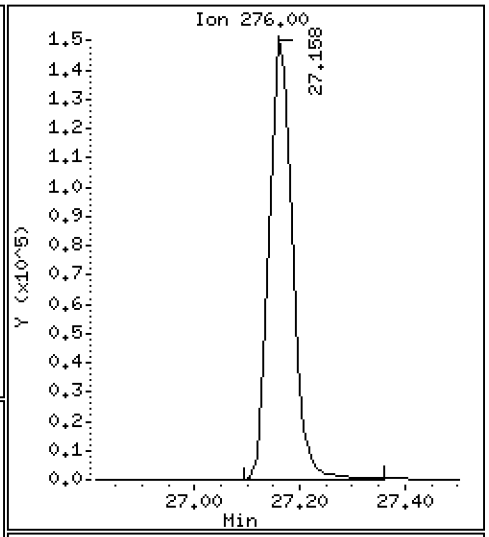
Concentration: 4.278 ug/mL

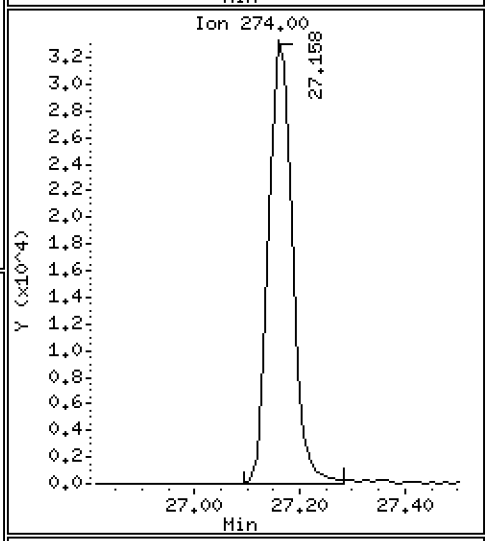


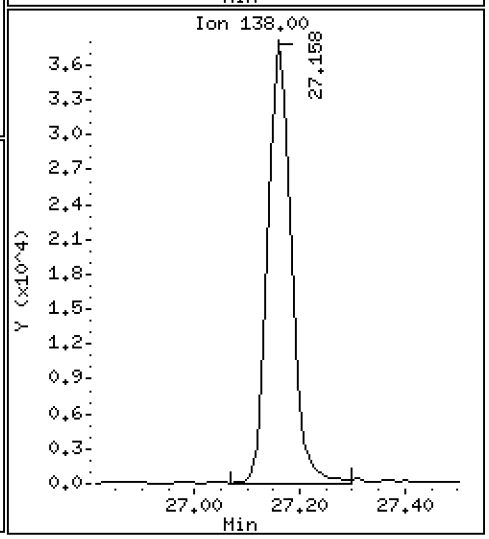












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

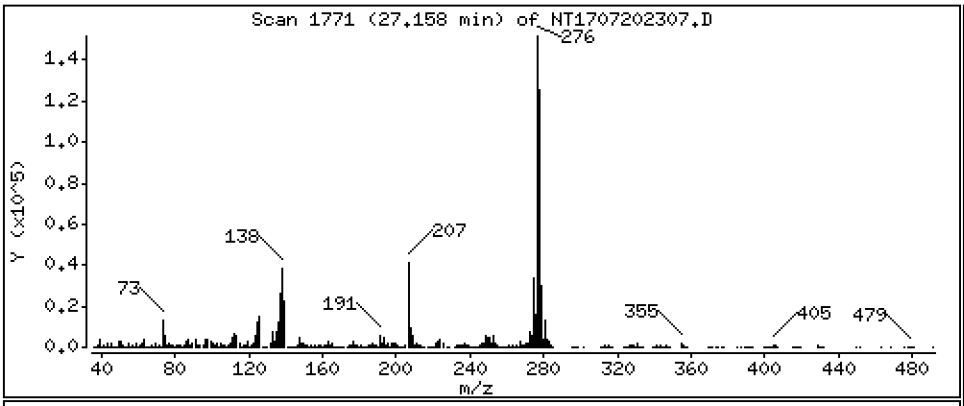
Operator: JGR

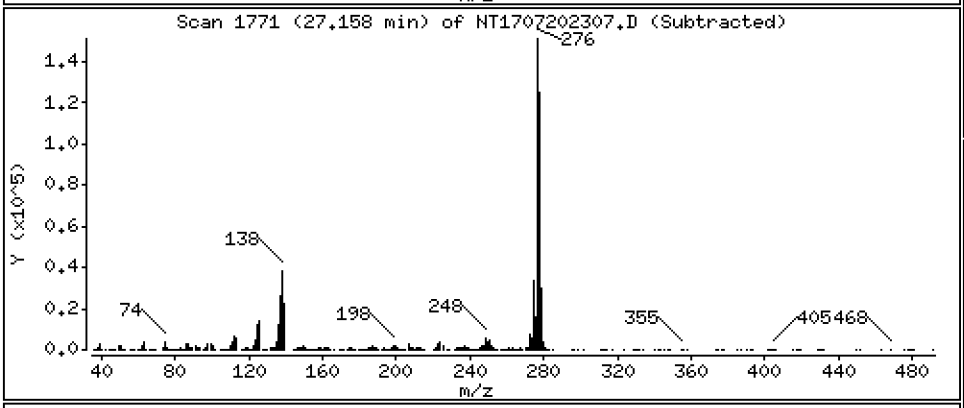
Column phase: ZB-5msi

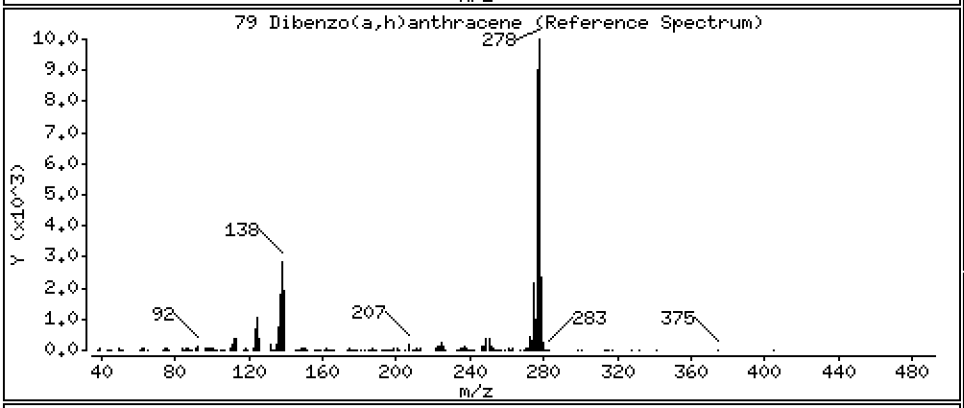
Column diameter: 0.25

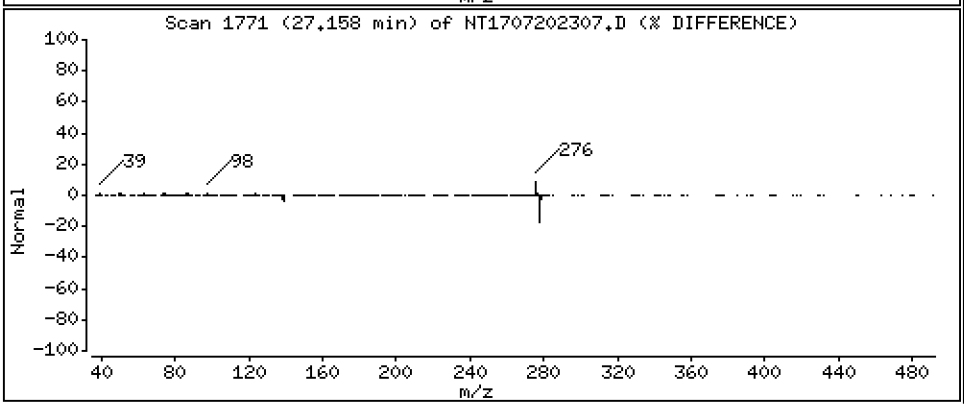
79 Dibenzo(a,h)anthracene

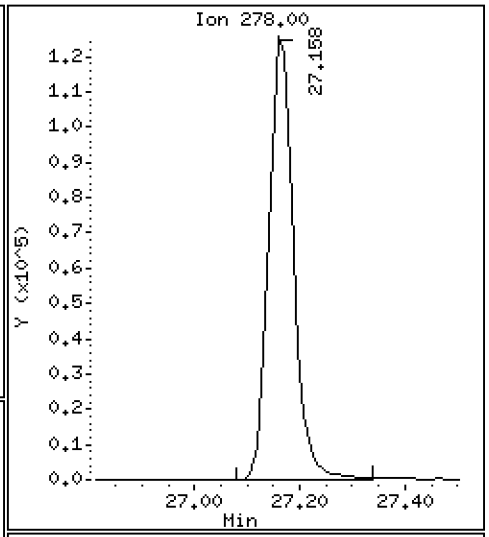
Concentration: 4.245 ug/mL

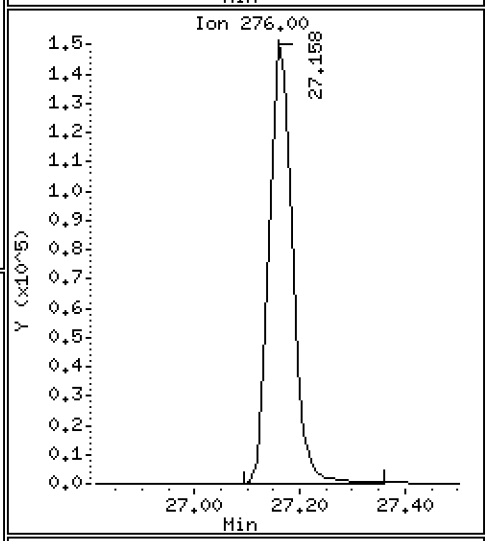


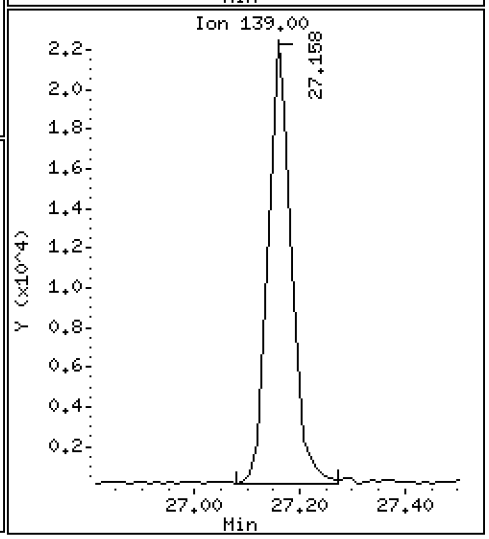












Date : 21-JUL-2023 04:26

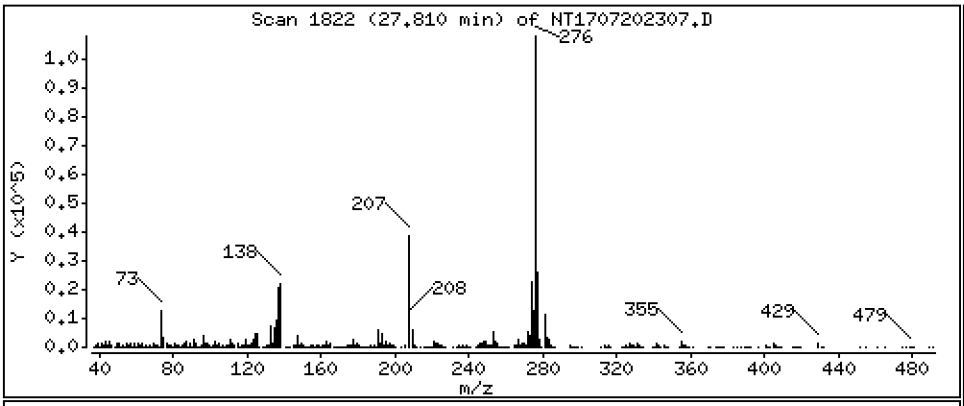
Client ID: Instrument: nt17.i

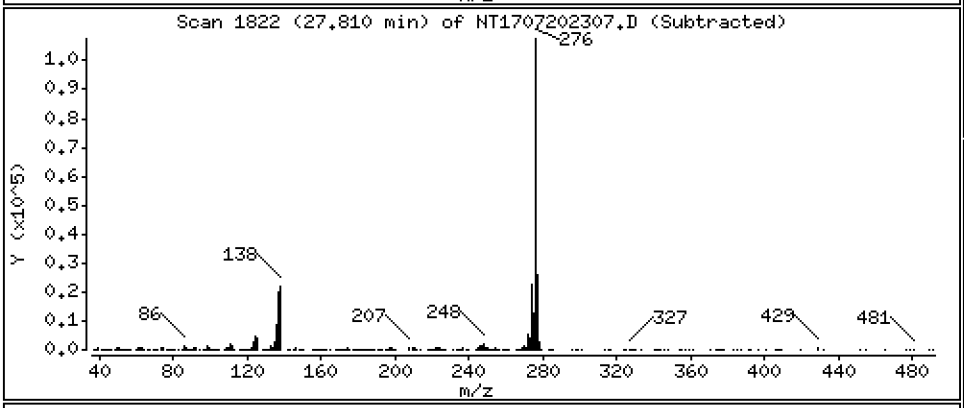
Sample Info: SLG0263-CCV1

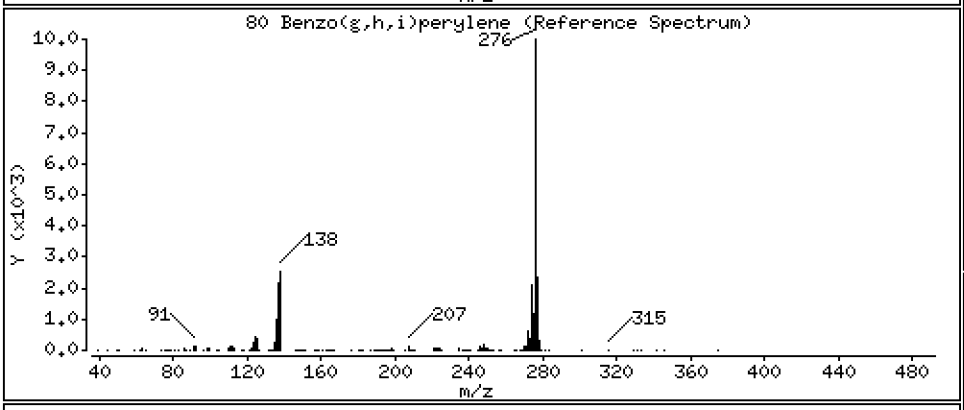
Operator: JGR

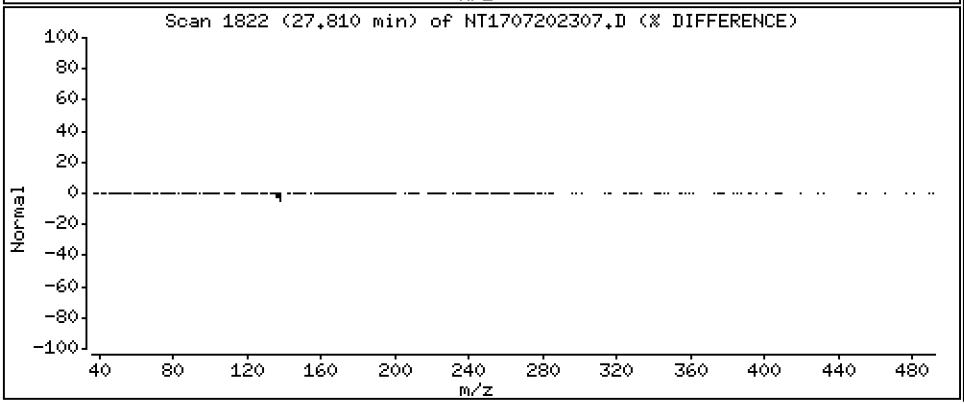
Column phase: ZB-5msi Column diameter: 0.25

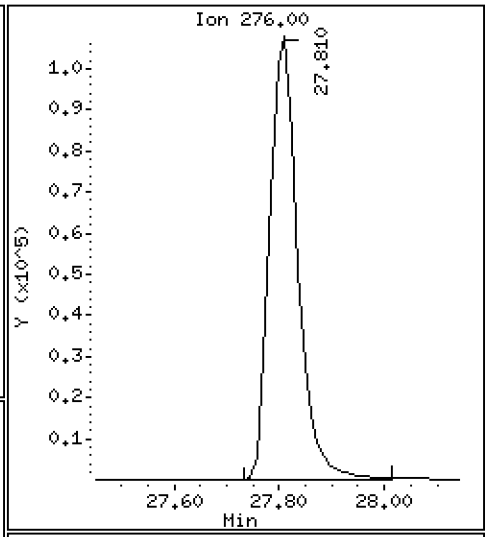
80 Benzo(g,h,i)perylene Concentration: 4.005 ug/mL

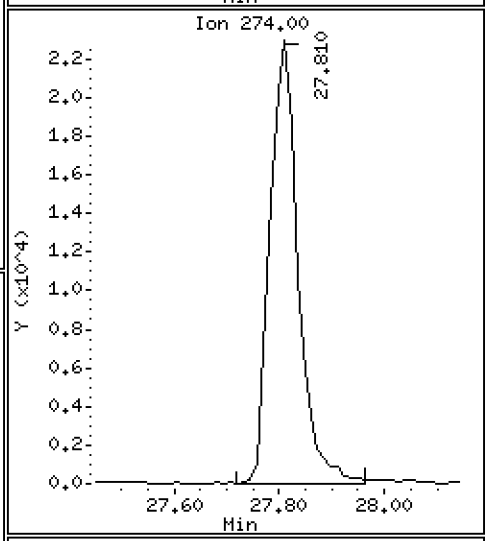


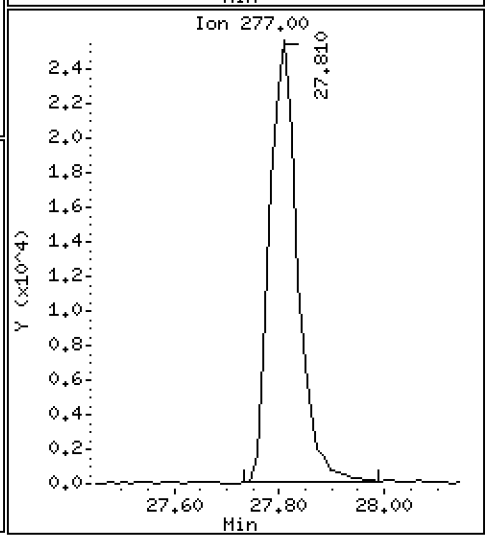












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

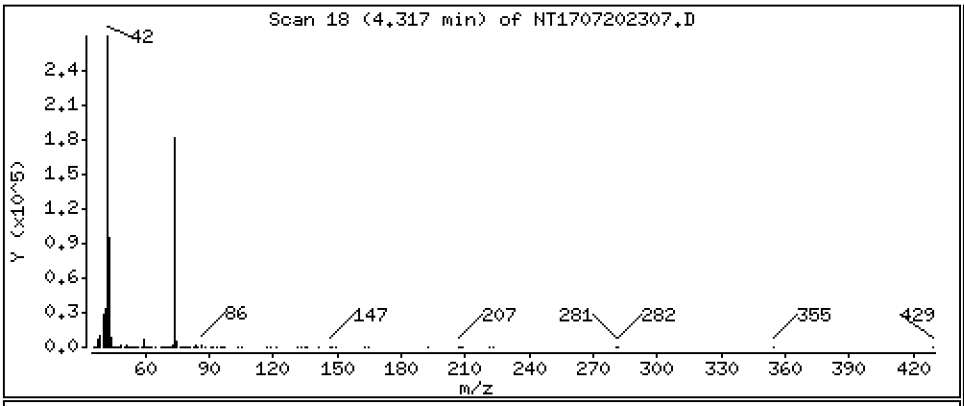
Operator: JGR

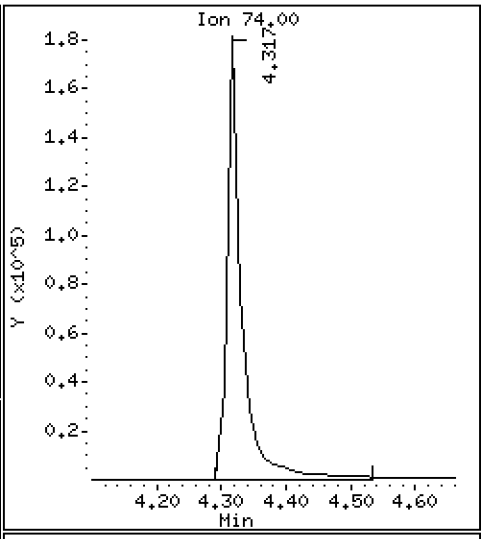
Column phase: ZB-5msi

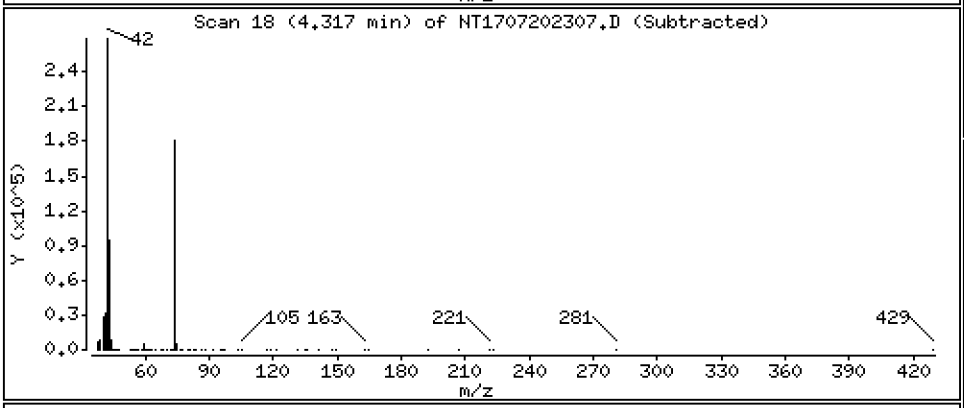
Column diameter: 0.25

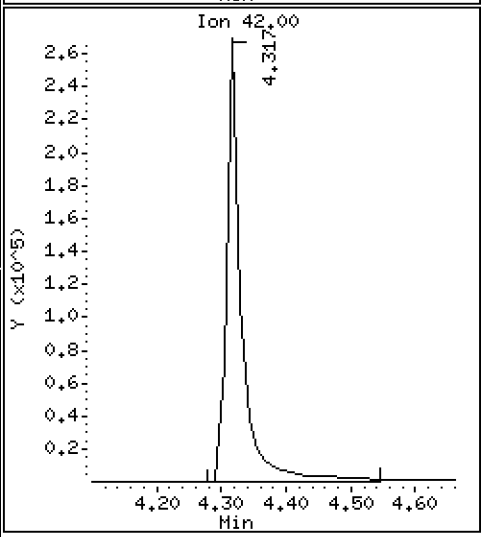
90 N-Nitrosodimethylamine

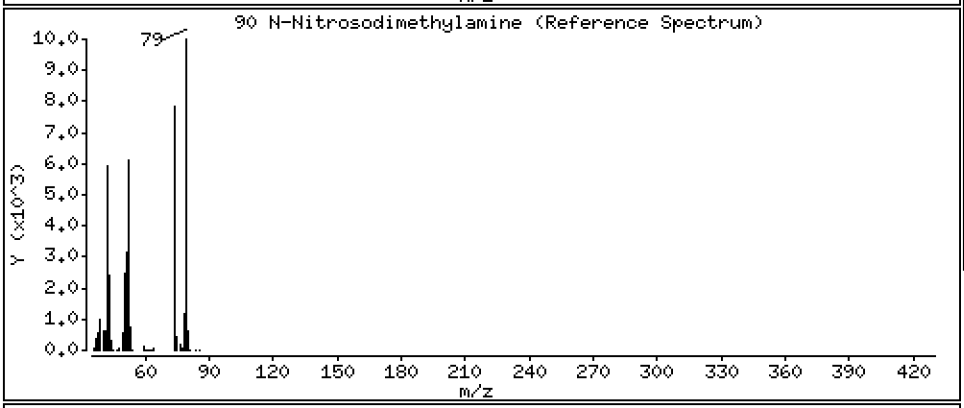
Concentration: 6.905 ug/mL

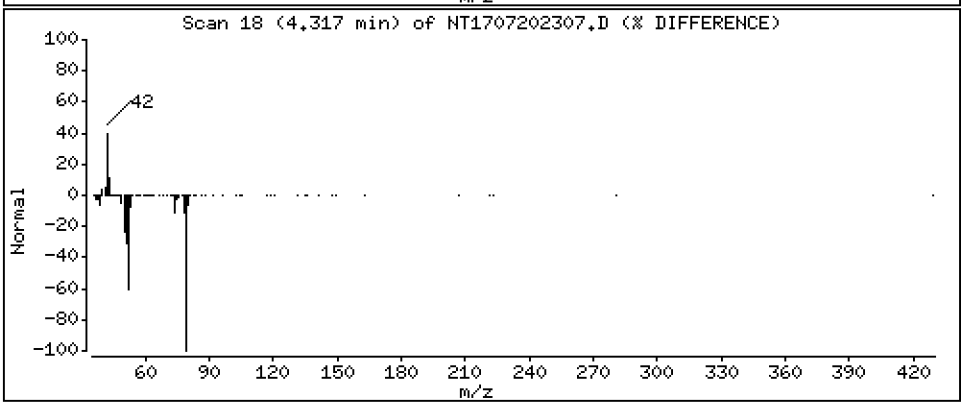












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202307.D

Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

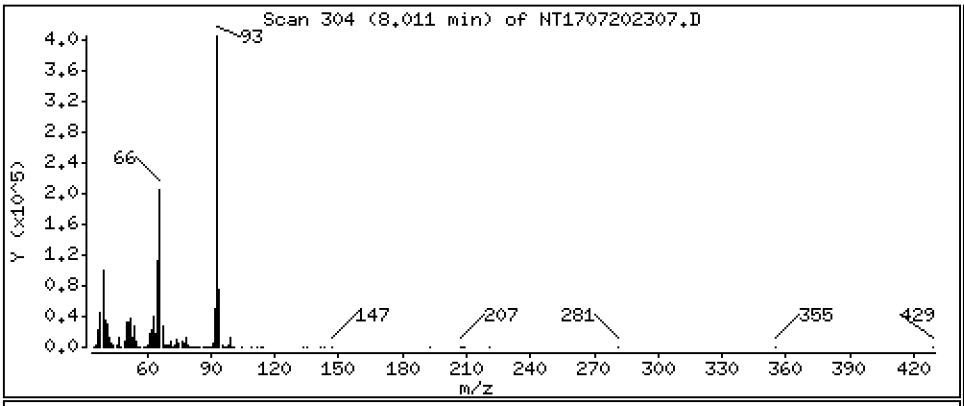
Operator: JGR

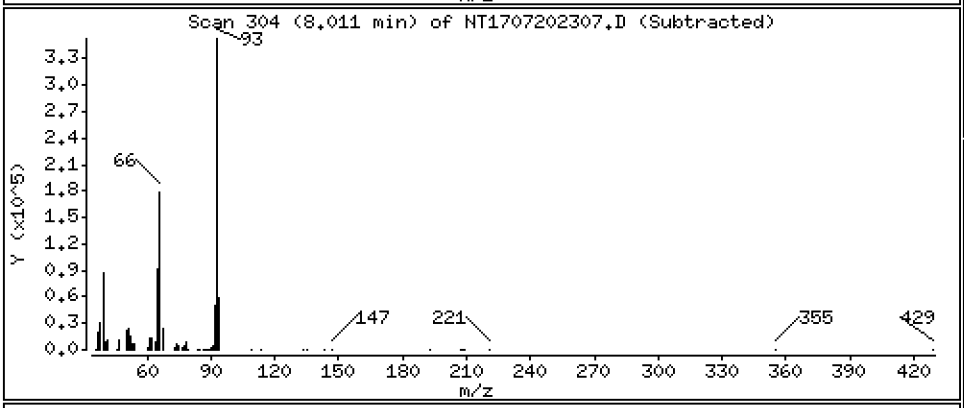
Column phase: ZB-5msi

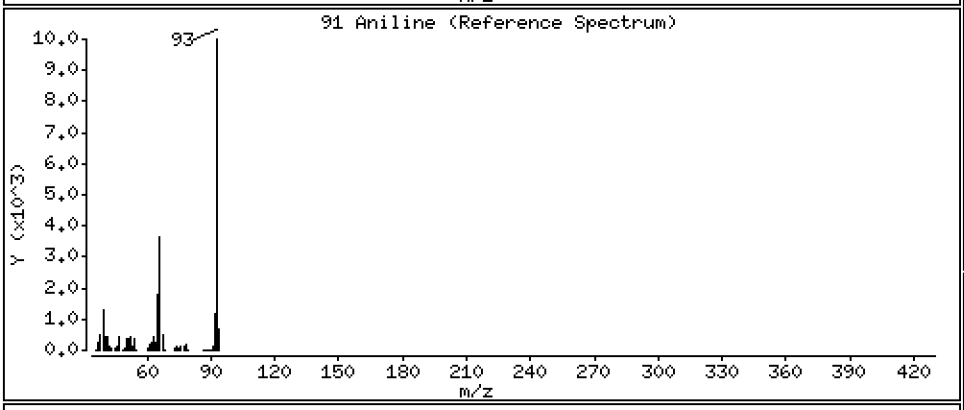
Column diameter: 0.25

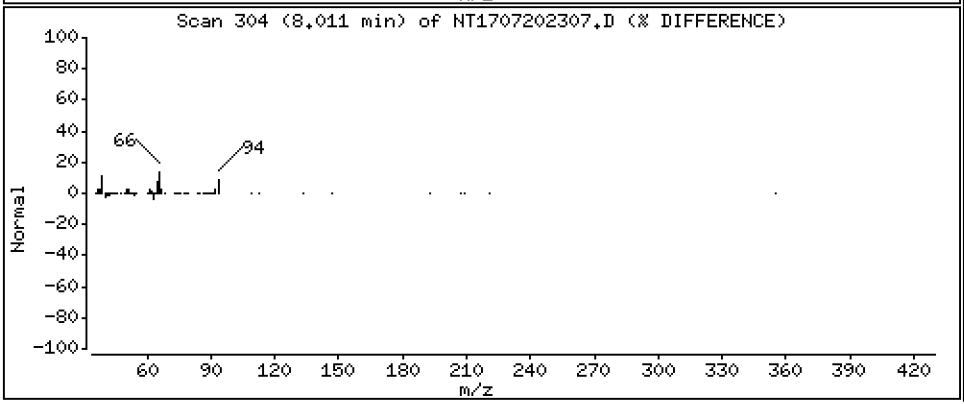
91 Aniline

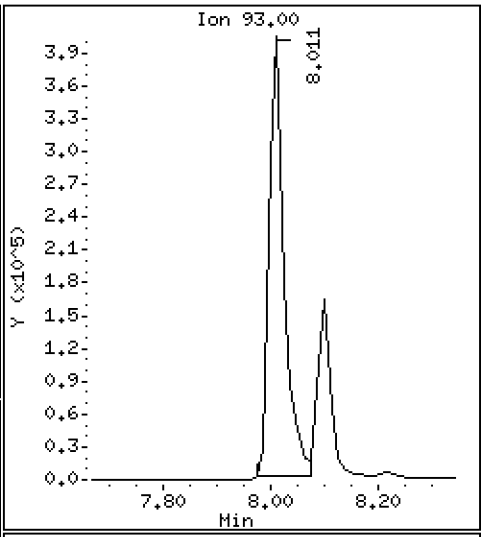
Concentration: 9.863 ug/mL

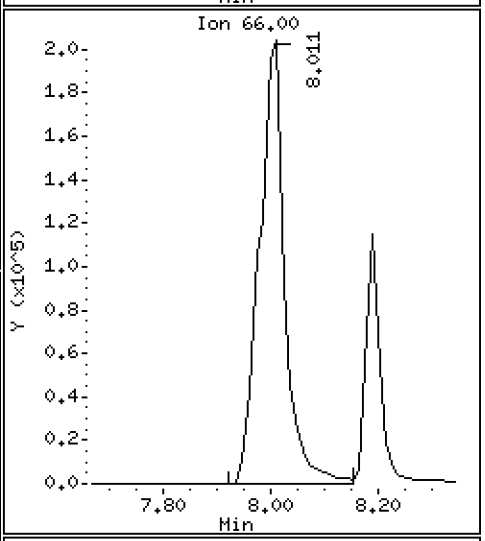


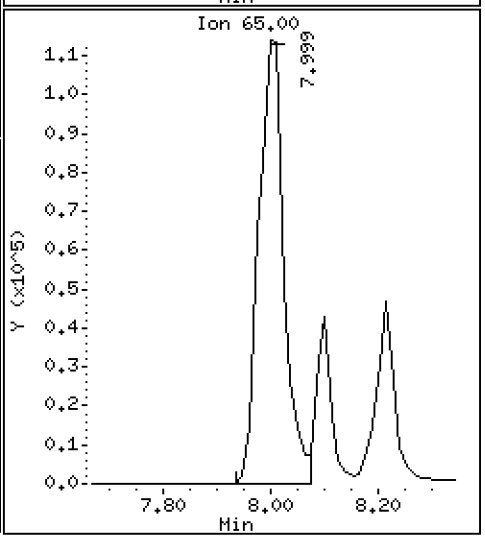












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

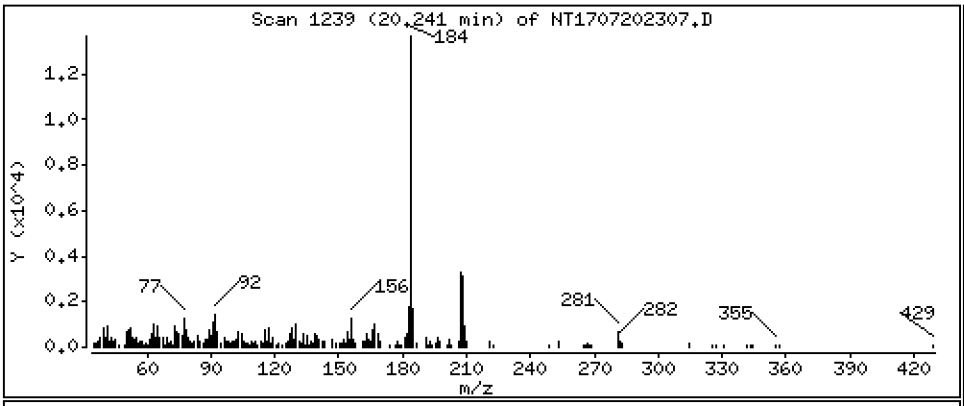
Operator: JGR

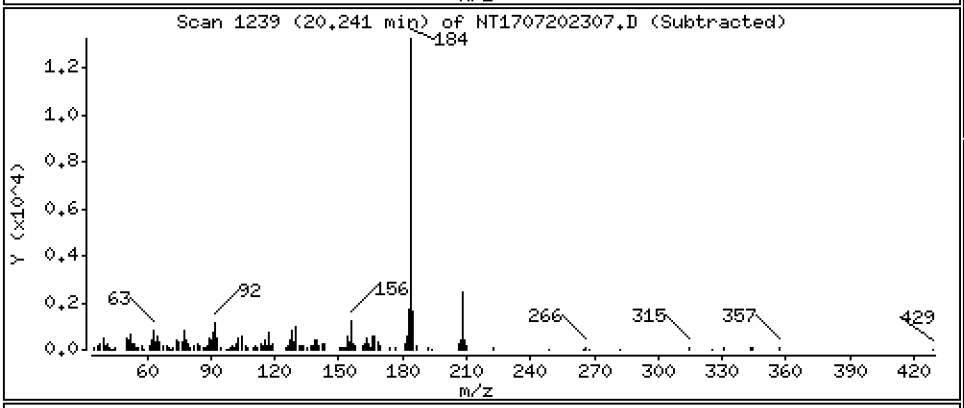
Column phase: ZB-5msi

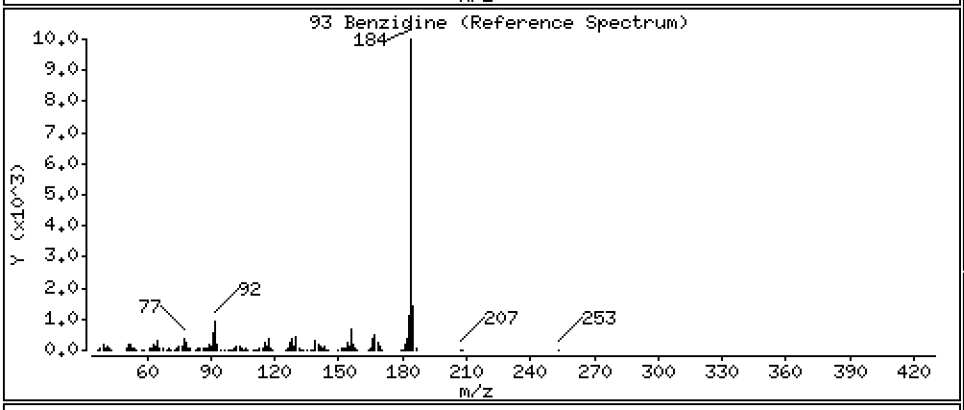
Column diameter: 0.25

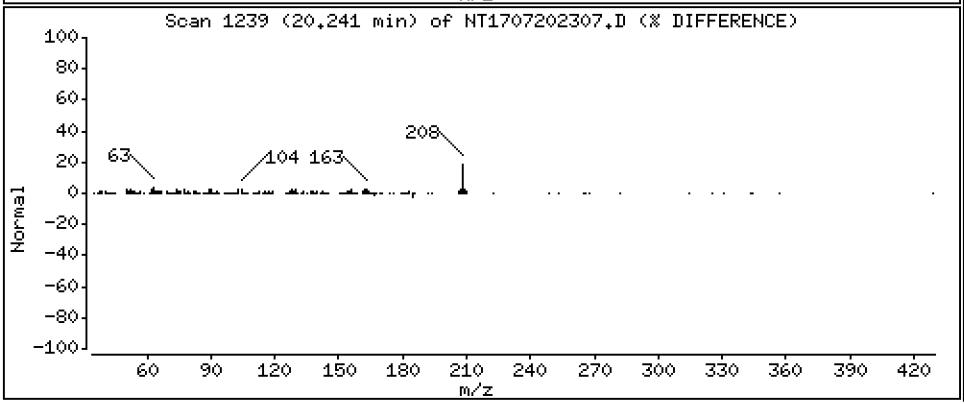
93 Benzidine

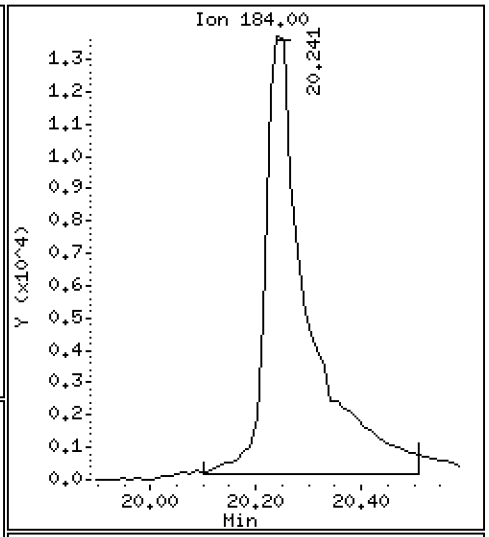
Concentration: 3.444 ug/mL

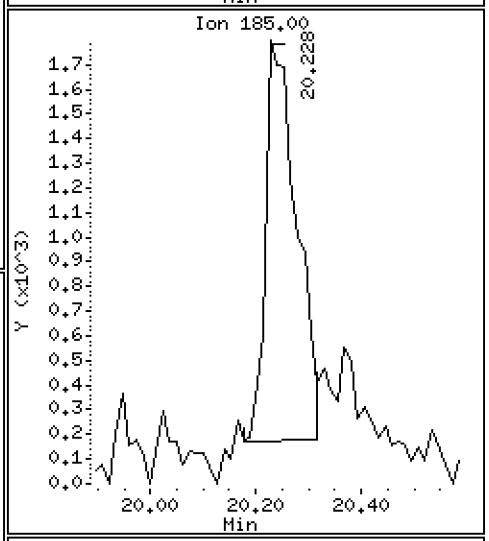


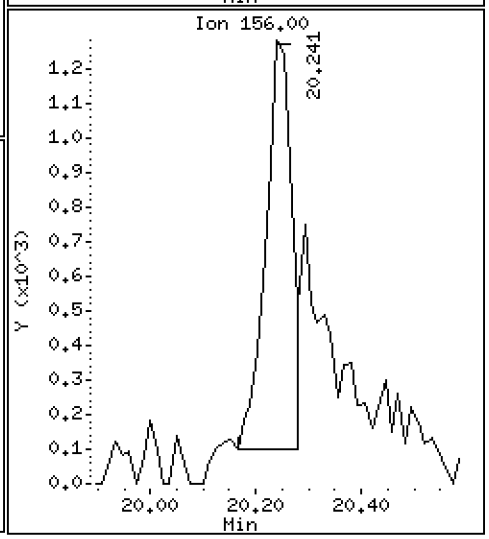












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202307.D

Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

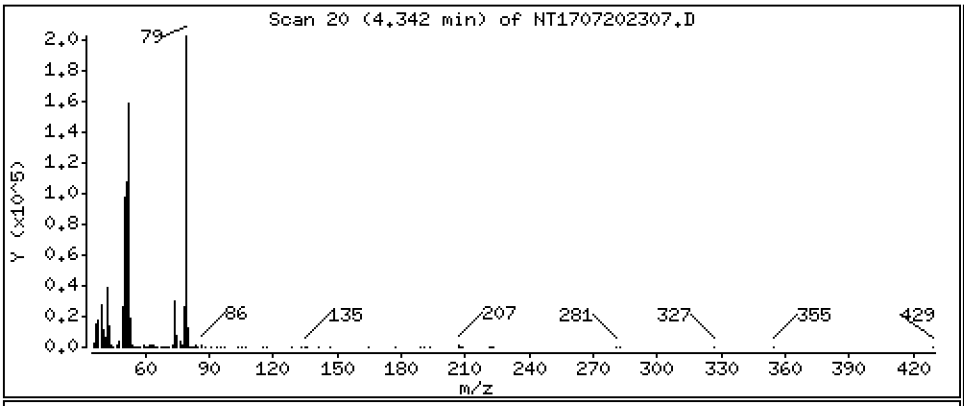
Operator: JGR

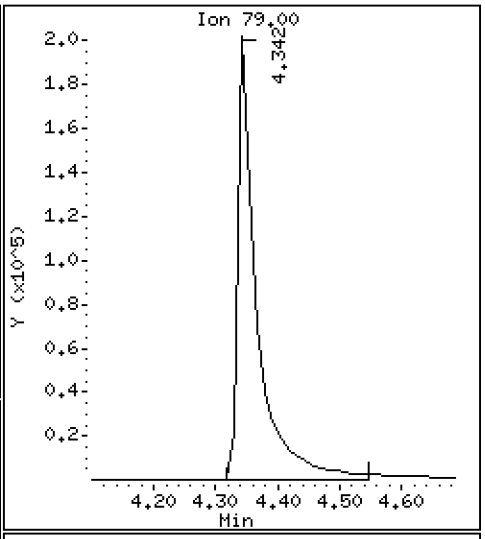
Column phase: ZB-5msi

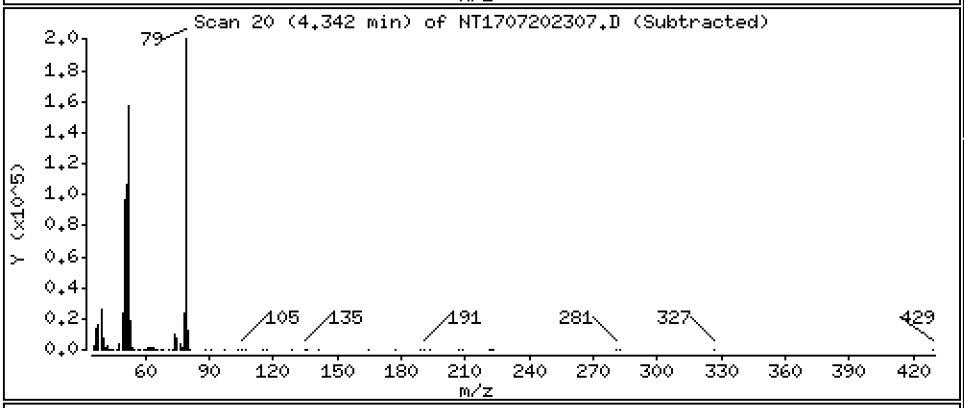
Column diameter: 0.25

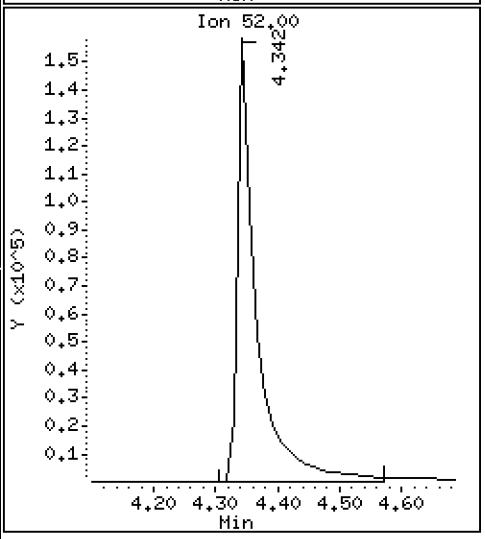
103 Pyridine

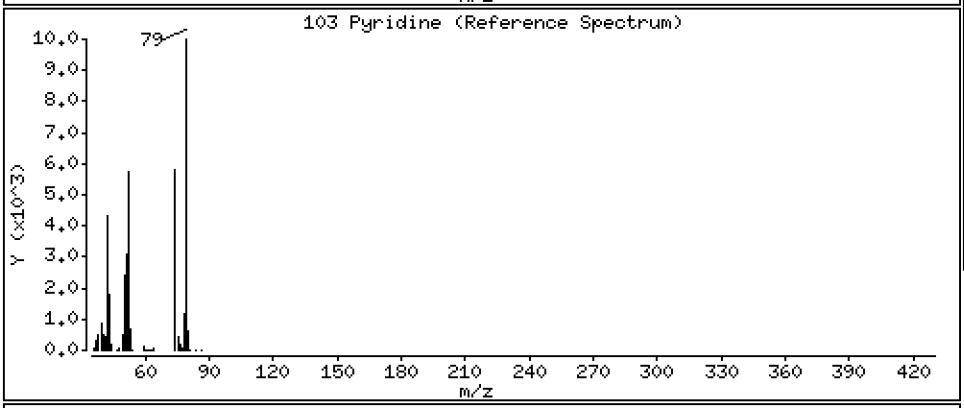
Concentration: 6.615 ug/mL

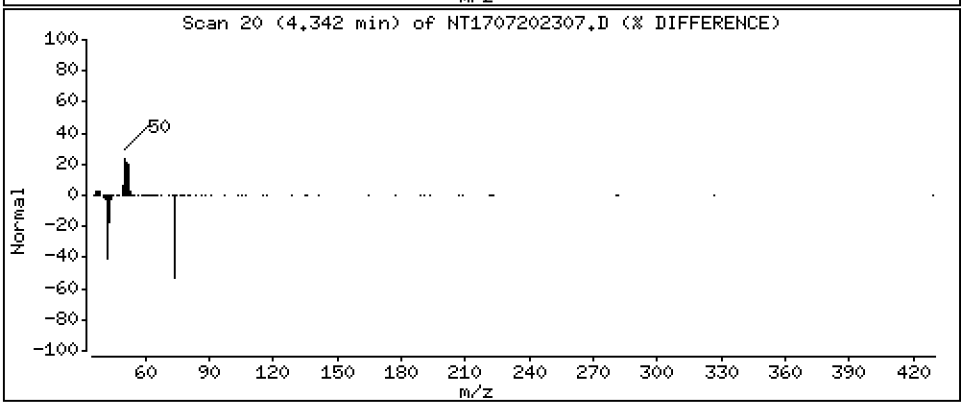












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202307.D

Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

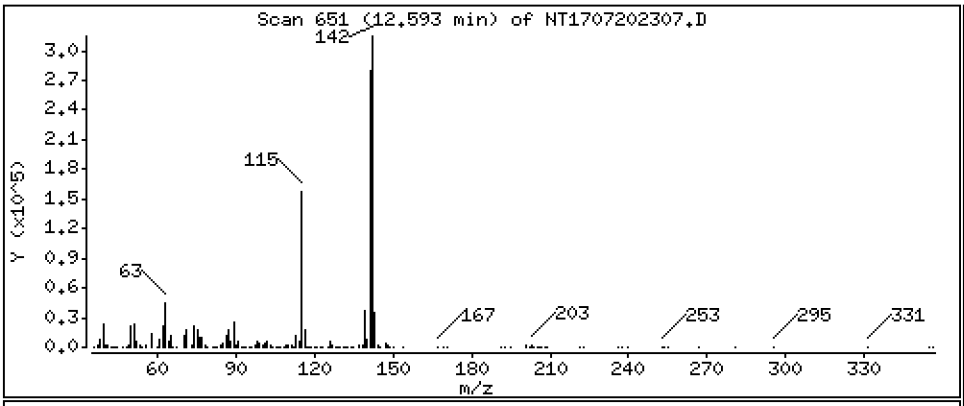
Operator: JGR

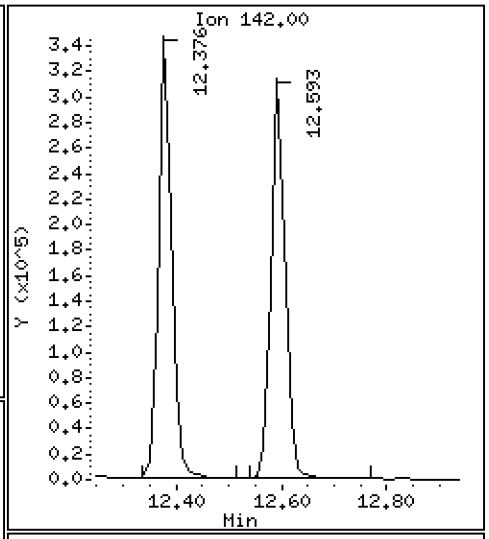
Column phase: ZB-5msi

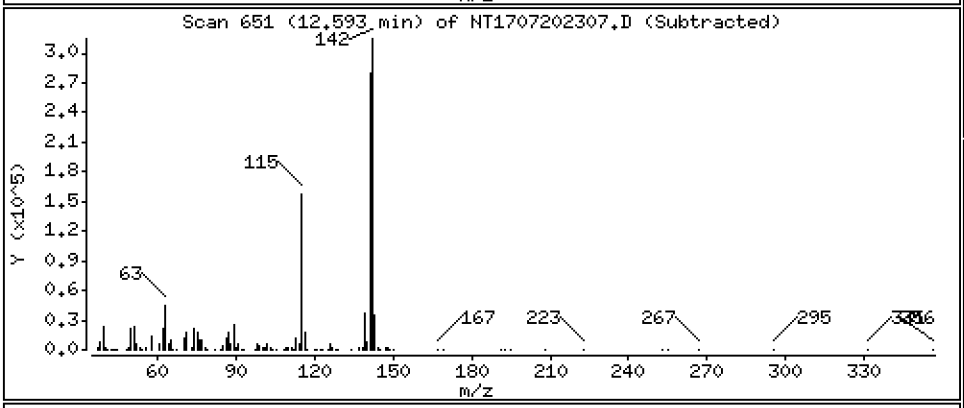
Column diameter: 0.25

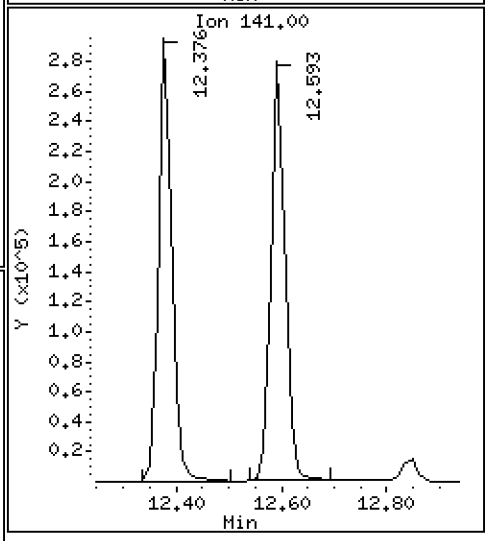
105 1-methylnaphthalene

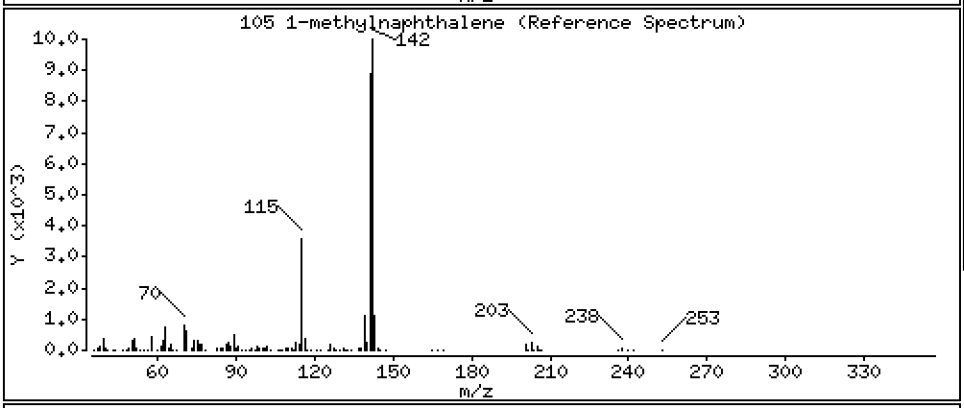
Concentration: 4.901 ug/mL

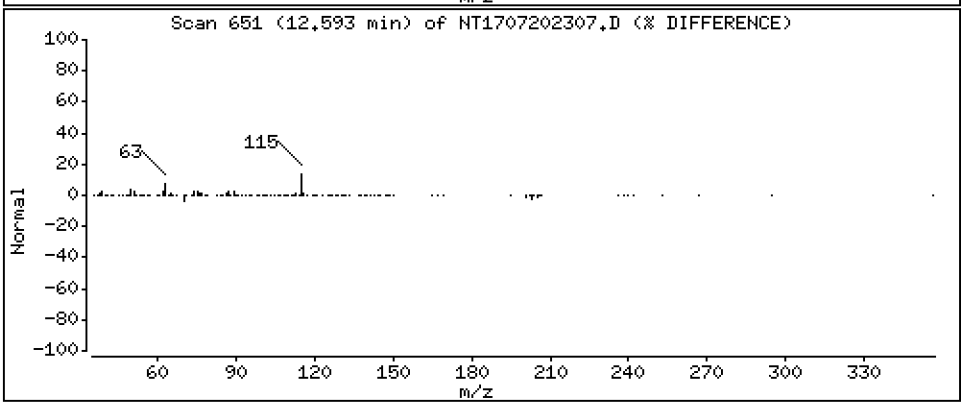












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202307.D

Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

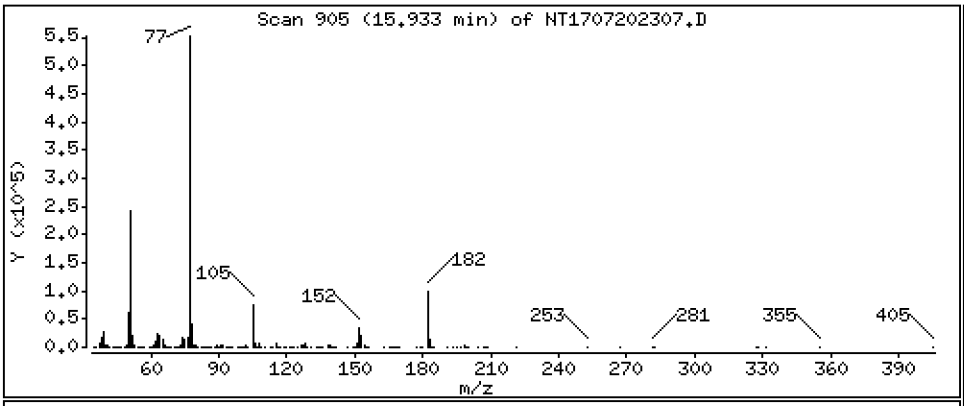
Operator: JGR

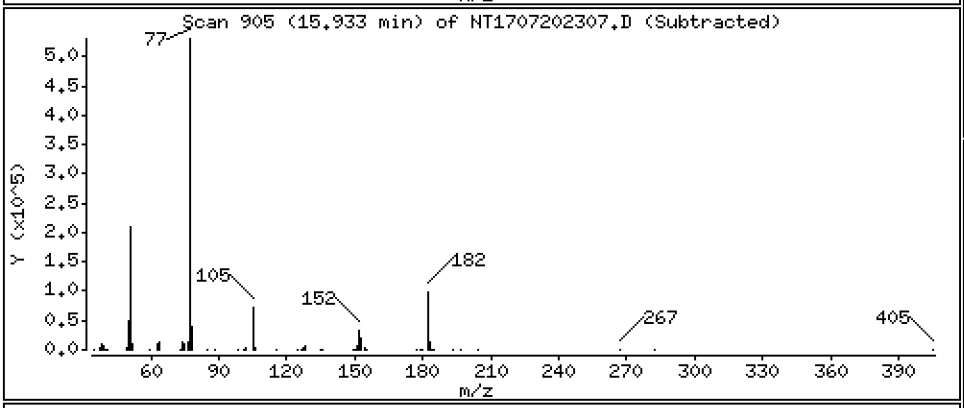
Column phase: ZB-5msi

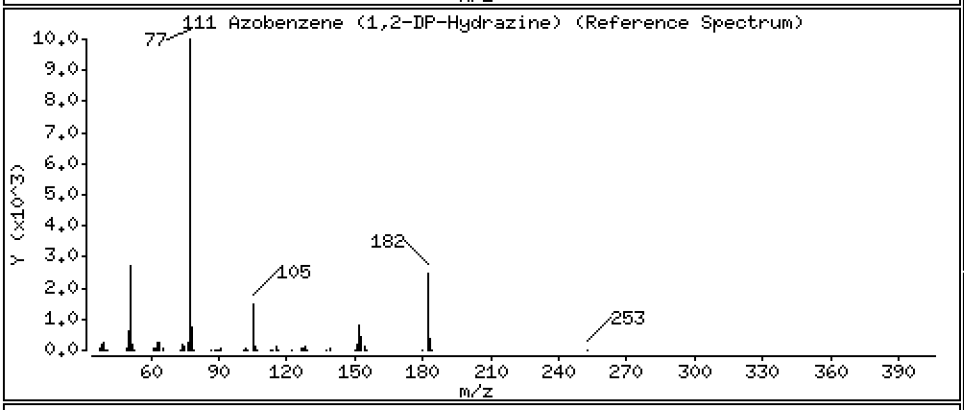
Column diameter: 0.25

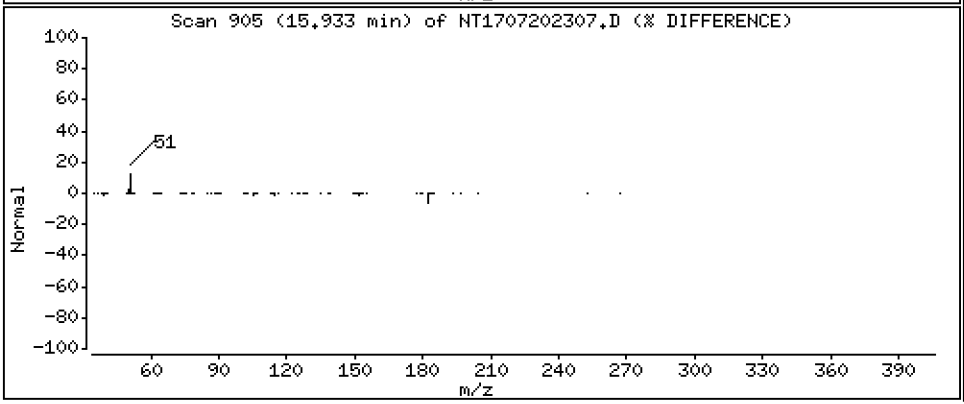
111 Azobenzene (1,2-DP-Hydrazine)

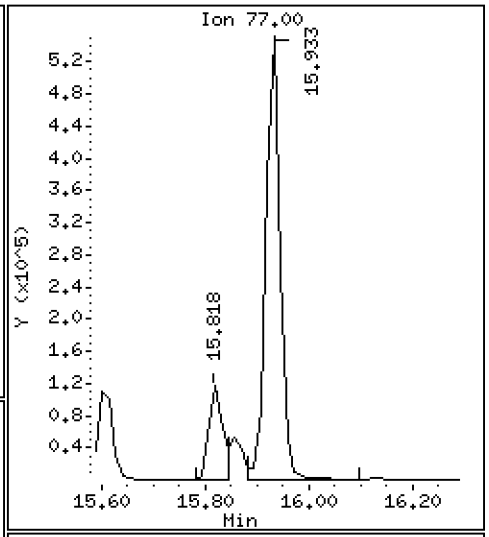
Concentration: 5.892 ug/mL

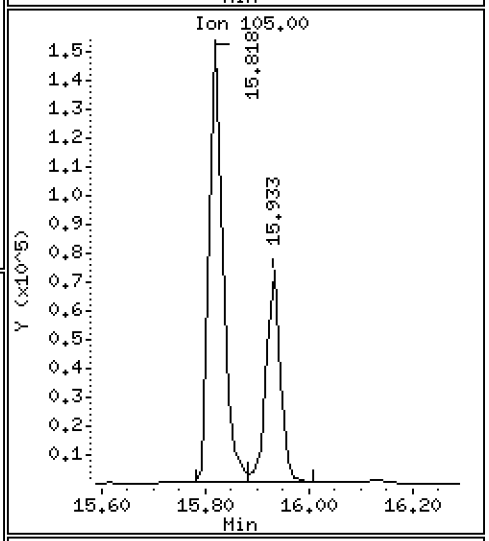


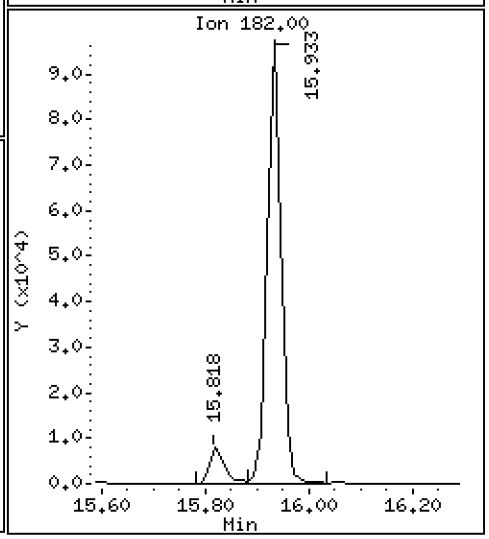












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Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

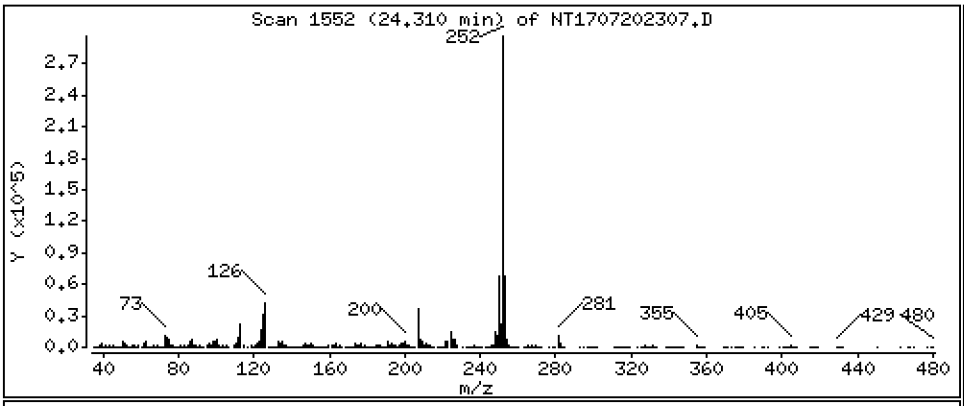
Operator: JGR

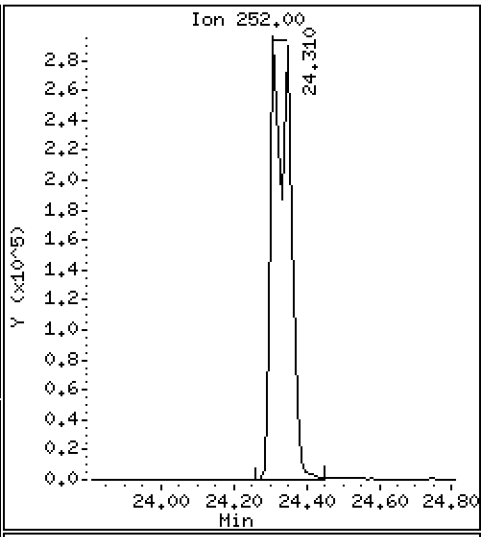
Column phase: ZB-5msi

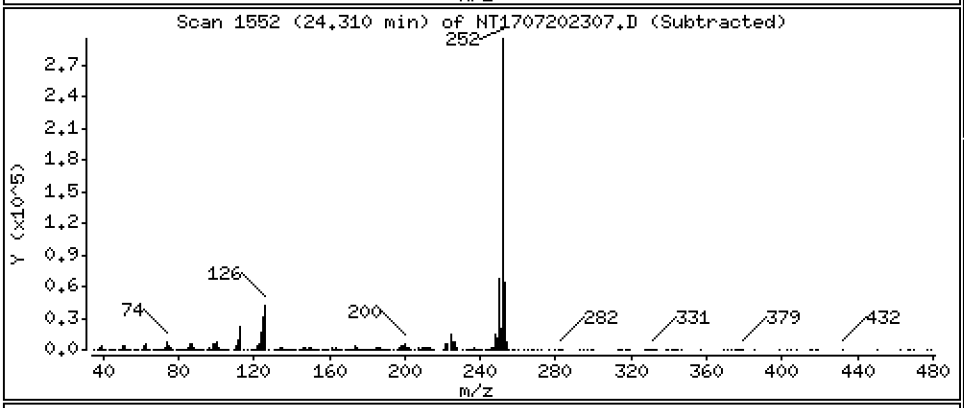
Column diameter: 0.25

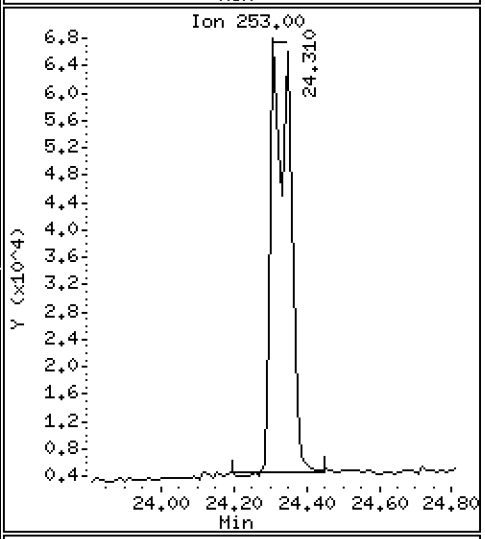
187 Total Benzofluoranthenes

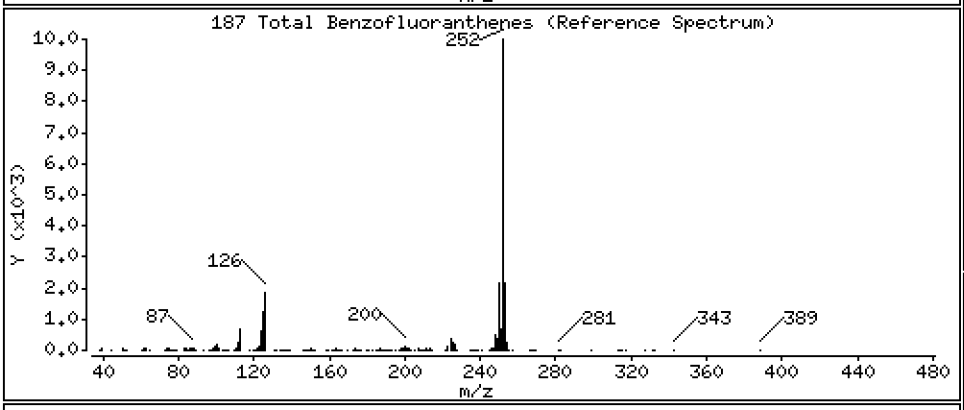
Concentration: 10.35 ug/mL

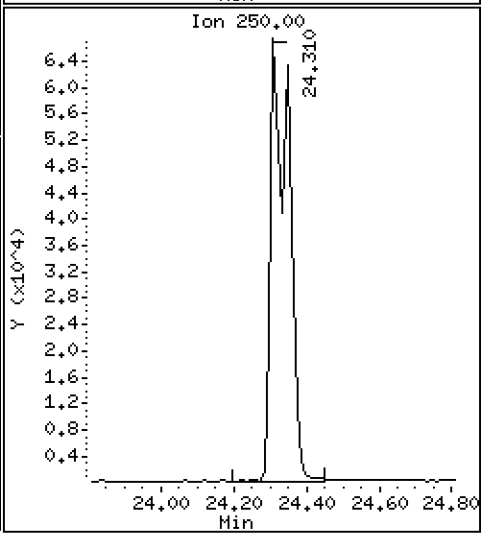


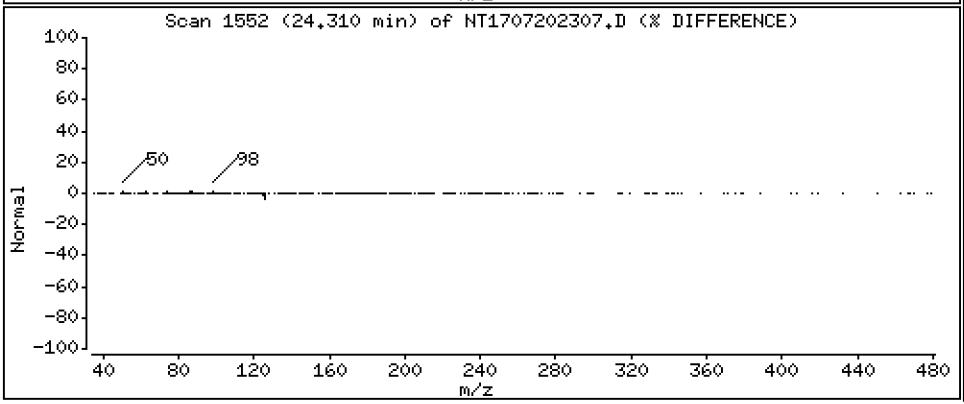












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202307.D

Date : 21-JUL-2023 04:26

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-CCV1

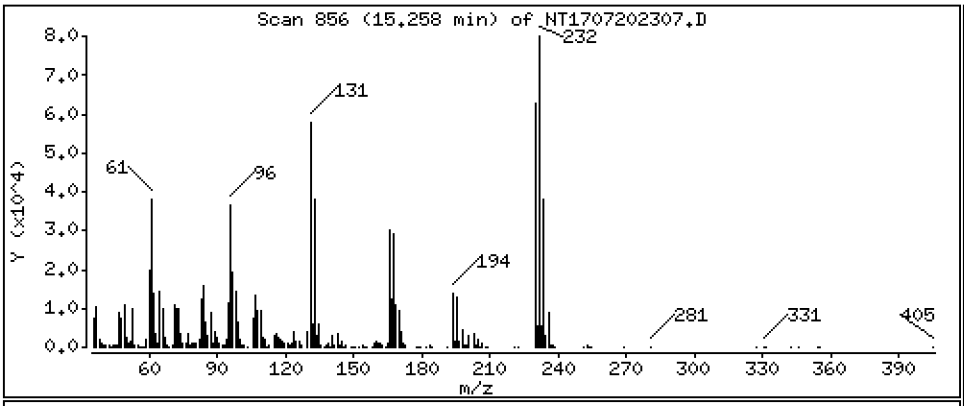
Operator: JGR

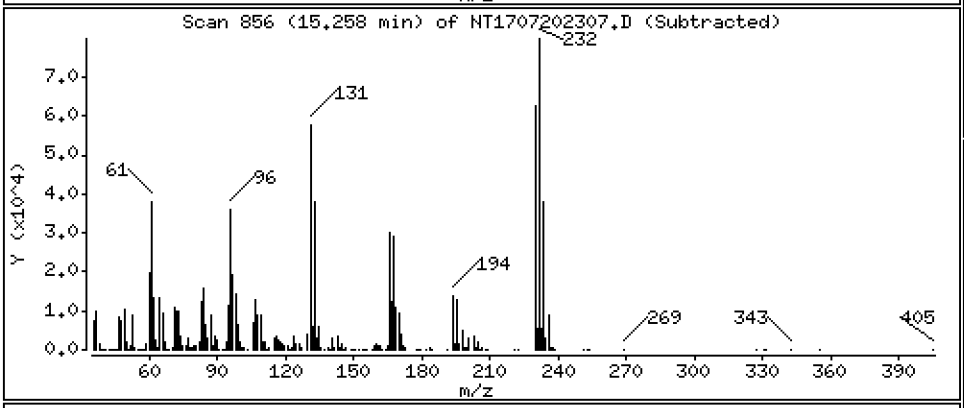
Column phase: ZB-5msi

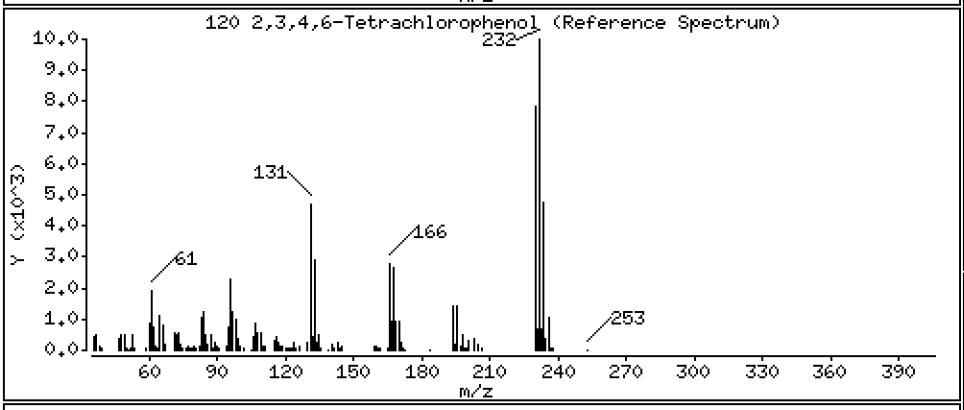
Column diameter: 0.25

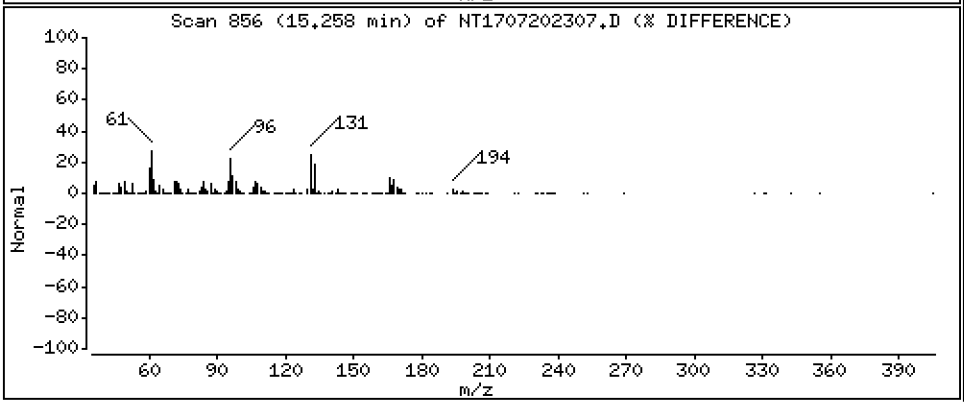
120 2,3,4,6-Tetrachlorophenol

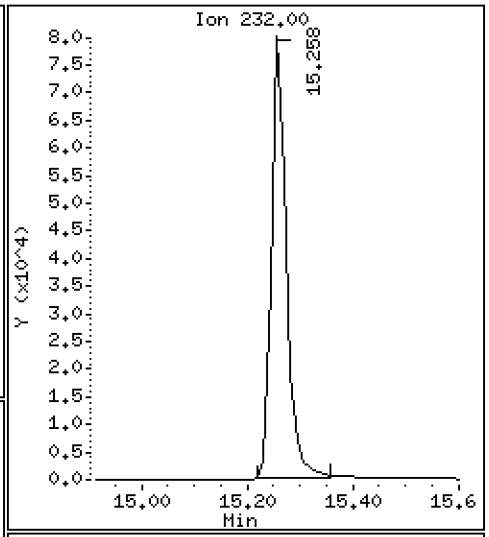
Concentration: 4.973 ug/mL

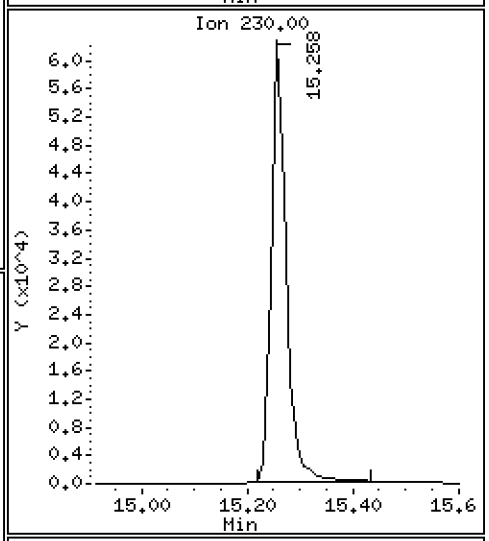


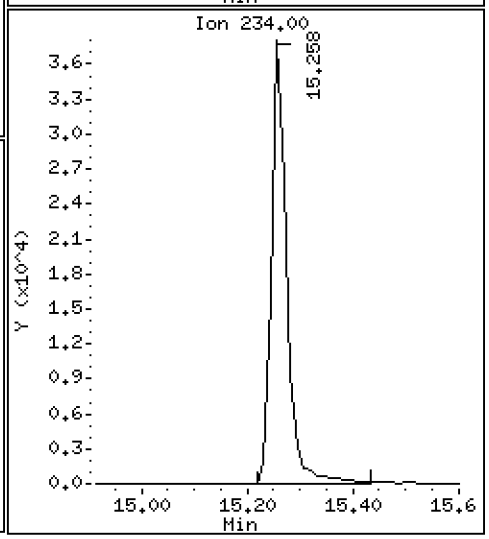












ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt17.i\20230720.b\NT1707202307.D
Lab Smp Id: SLG0263-CCV1
Inj Date : 21-JUL-2023 04:26
Operator : JGR Inst ID: nt17.i
Smp Info : SLG0263-CCV1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt17.i\20230720.b\ABN.m
Meth Date : 21-Jul-2023 14:01 yev Quant Type: ISTD
Cal Date : 10-JUL-2023 16:44 Cal File: NT1707102308.D
Als bottle: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: ORGDATA102

							CONCENTRATIONS	
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
$	1 2-Fluorophenol	112	6.406	6.406	(0.751)	378714	6.72570	6.726
$	2 Phenol-d5	99	7.960	7.960	(0.933)	566692	7.25828	7.258
	3 Phenol	94	7.985	7.986	(0.936)	484470	4.65362	4.654
$	5 2-Chlorophenol-d4	132	8.189	8.189	(0.960)	511913	8.05954	8.060
	4 Bis(2-Chloroethyl)ether	93	8.100	8.100	(0.949)	279185	4.62563	4.626
	6 2-Chlorophenol	128	8.215	8.215	(0.963)	347706	4.68740	4.687
	7 1,3-Dichlorobenzene	146	8.470	8.470	(0.993)	320433	4.75010	4.750
*	8 1,4-Dichlorobenzene-d4	152	8.534	8.534	(1.000)	159870	4.00000	
	9 1,4-Dichlorobenzene	146	8.559	8.559	(1.003)	363715	4.99983	5.000
$	10 1,2-Dichlorobenzene-d4	152	8.878	8.879	(1.040)	194723	4.97246	4.972
	12 1,2-Dichlorobenzene	146	8.904	8.904	(1.043)	316661	4.96364	4.964
	11 Benzyl alcohol	108	8.827	8.827	(1.034)	190420	4.85780	4.858
	14 2,2'-oxybis(1-Chloropropane)	121	9.109	9.109	(1.067)	100364	4.80822	4.808
	13 2-Methylphenol	108	9.057	9.070	(1.061)	306703	4.92300	4.923
	17 Hexachloroethane	117	9.479	9.479	(1.111)	152931	5.31990	5.320
	16 N-Nitroso-di-n-propylamine	70	9.364	9.364	(1.097)	266026	5.54220	5.542
	15 4-Methylphenol	108	9.339	9.339	(1.094)	275592	4.53009	4.530
$	18 Nitrobenzene-d5	82	9.607	9.607	(0.877)	408990	5.54347	5.543
	19 Nitrobenzene	77	9.632	9.632	(0.879)	402676	5.32187	5.322
	20 Isophorone	82	10.092	10.092	(0.921)	594342	5.21711	5.217
	21 2-Nitrophenol	139	10.258	10.258	(0.936)	168981	5.36106	5.361
	22 2,4-Dimethylphenol	107	10.348	10.348	(0.944)	563143	8.02176	8.022
	23 Bis(2-Chloroethoxy)methane	93	10.514	10.514	(0.959)	301561	4.65288	4.653
	24 Benzoic acid	105	10.654	10.654	(0.972)	815202	15.6005	15.60
	25 2,4-Dichlorophenol	162	10.718	10.718	(0.978)	518730	9.86485	9.865
	26 1,2,4-Trichlorobenzene	180	10.884	10.884	(0.993)	277959	4.90203	4.902
*	27 Naphthalene-d8	136	10.960	10.960	(1.000)	643466	4.00000	
	28 Naphthalene	128	10.998	10.998	(1.003)	832337	4.64680	4.647
	29 4-Chloroaniline	127	11.151	11.151	(1.017)	782470	9.68929	9.689
	30 Hexachlorobutadiene	225	11.368	11.368	(1.037)	180680	6.37834	6.378
	31 4-Chloro-3-methylphenol	107	12.133	12.133	(1.107)	667441	11.2923	11.29
	32 2-Methylnaphthalene	142	12.375	12.375	(1.129)	638710	5.12969	5.130
	33 Hexachlorocyclopentadiene	237	12.847	12.847	(0.885)	137154	8.23403	8.234

			QUANT SIG					CONCENTRATIONS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
	34	2,4,6-Trichlorophenol	196	13.013	13.013	(0.896)	366072	10.2208	10.22
	35	2,4,5-Trichlorophenol	196	13.089	13.090	(0.902)	374387	10.0675	10.07
$	36	2-Fluorobiphenyl	172	13.153	13.153	(0.906)	654605	4.73576	4.736
	37	2-Chloronaphthalene	162	13.357	13.357	(0.920)	565904	4.67623	4.676
	38	2-Nitroaniline	65	13.625	13.625	(0.939)	573166	11.7513	11.75
	39	Dimethylphthalate	163	14.059	14.059	(0.968)	673149	5.37273	5.373
	40	Acenaphthylene	152	14.199	14.199	(0.978)	992007	5.33383	5.334
	41	2,6-Dinitrotoluene	165	14.186	14.186	(0.977)	304518	10.4404	10.44
*	42	Acenaphthene-d10	164	14.518	14.518	(1.000)	359008	4.00000	
	43	3-Nitroaniline	138	14.467	14.467	(0.996)	291684	9.15332	9.153
	44	Acenaphthene	153	14.582	14.582	(1.004)	553296	4.76117	4.761
	45	2,4-Dinitrophenol	184	14.684	14.684	(1.011)	358646	25.0013	25.00
	46	Dibenzofuran	168	14.913	14.913	(1.027)	821267	5.07433	5.074
	47	4-Nitrophenol	109	14.862	14.862	(1.024)	282843	15.1015	15.10
	48	2,4-Dinitrotoluene	165	14.989	14.990	(1.032)	435872	11.5465	11.55
	50	Diethylphthalate	149	15.499	15.499	(1.068)	837427	5.89242	5.892
	49	Fluorene	166	15.614	15.614	(1.075)	751453	5.33071	5.331
	51	4-Chlorophenyl-phenylether	204	15.614	15.614	(1.075)	340629	5.09055	5.091
	52	4-Nitroaniline	138	15.729	15.729	(1.083)	289151	10.2706	10.27
	53	4,6-Dinitro-2-methylphenol	198	15.818	15.818	(0.903)	486163	20.6502	20.65
	54	N-Nitrosodiphenylamine	169	15.856	15.856	(0.905)	438205	4.56495	4.565
$	55	2,4,6-Tribromophenol	330	16.136	16.136	(1.111)	145114	8.73670	8.737
	56	4-Bromophenyl-phenylether	248	16.594	16.594	(0.948)	174966	4.71516	4.715
	57	Hexachlorobenzene	284	16.900	16.900	(0.965)	202564	4.67762	4.678
	58	Pentachlorophenol	266	17.270	17.270	(0.986)	209493	8.55593	8.556
*	59	Phenanthrene-d10	188	17.512	17.512	(1.000)	640861	4.00000	
	60	Phenanthrene	178	17.550	17.550	(1.002)	853302	4.59921	4.599
	61	Anthracene	178	17.652	17.652	(1.008)	815875	4.74261	4.743
	62	Carbazole	167	18.009	17.996	(1.028)	715989	4.97379	4.974
	63	Di-n-butylphthalate	149	18.812	18.813	(1.074)	1145503	4.92482	4.925
	64	Fluoranthene	202	19.947	19.947	(0.884)	925903	5.21604	5.216
	65	Pyrene	202	20.368	20.368	(0.902)	907363	4.52528	4.525
$	66	Terphenyl-d14	244	20.687	20.687	(0.916)	728474	5.22882	5.229
	67	Butylbenzylphthalate	149	21.631	21.631	(0.958)	441543	5.13931	5.139
	68	Benzo(a)anthracene	228	22.550	22.550	(0.999)	705870	4.97583	4.976
*	69	Chrysene-d12	240	22.575	22.575	(1.000)	400801	4.00000	
	70	3,3'-Dichlorobenzidine	252	22.511	22.511	(0.997)	485761	12.6396	12.64
	71	Chrysene	228	22.613	22.613	(1.002)	594639	4.47256	4.473
	72	bis(2-Ethylhexyl)phthalate	149	22.677	22.677	(0.959)	509006	5.47201	5.472
*	134	Di-n-octylphthalate-d4	153	23.647	23.647	(1.000)	656611	4.00000	
	73	Di-n-octylphthalate	149	23.659	23.659	(1.001)	809123	4.43359	4.434
	74	Benzo(b)fluoranthene	252	24.310	24.310	(0.974)	618164	5.60316	5.603
	75	Benzo(k)fluoranthene	252	24.348	24.348	(0.976)	547776	4.89144	4.891
	76	Benzo(a)pyrene	252	24.858	24.859	(0.996)	384338	4.78854	4.789
*	77	Perylene-d12	264	24.948	24.948	(1.000)	297837	4.00000	
	78	Indeno(1,2,3-cd)pyrene	276	27.157	27.157	(1.089)	462658	4.27822	4.278
	79	Dibenzo(a,h)anthracene	278	27.157	27.157	(1.089)	408473	4.24516	4.245
	80	Benzo(g,h,i)perylene	276	27.809	27.796	(1.115)	397404	4.00494	4.005
	90	N-Nitrosodimethylamine	74	4.316	4.317	(0.506)	291113	6.90466	6.905
	91	Aniline	93	8.011	8.011	(0.939)	798482	9.86316	9.863
	93	Benzidine	184	20.241	20.241	(0.897)	75422	3.44442	3.444
	103	Pyridine	79	4.342	4.342	(0.509)	438505	6.61462	6.615
	105	1-methylnaphthalene	142	12.592	12.592	(1.149)	564760	4.90120	4.901
	111	Azobenzene (1,2-DP-Hydrazine)	77	15.932	15.932	(1.097)	1041144	5.89248	5.892

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
187 Total Benzofluoranthenes	252	24.310	24.310	(0.974)	1025316	10.3496	10.35
120 2,3,4,6-Tetrachlorophenol	232	15.257	15.257	(1.051)	155978	4.97279	4.973

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt17.i
Lab File ID: NT1707202307.D
Lab Smp Id: SLG0263-CCV1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt17.i\20230720.b\ABN.m
Misc Info:

Calibration Date: 21-JUL-2023
Calibration Time: 01:21
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	169554	84777	339108	159870	-5.71
27 Naphthalene-d8	681387	340694	1362774	643466	-5.57
42 Acenaphthene-d10	390289	195145	780578	359008	-8.01
59 Phenanthrene-d10	698326	349163	1396652	640861	-8.23
69 Chrysene-d12	446763	223382	893526	400801	-10.29
134 Di-n-octylphthala	703373	351687	1406746	656611	-6.65
77 Perylene-d12	323620	161810	647240	297837	-7.97

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	8.53	8.03	9.03	8.53	-0.00
27 Naphthalene-d8	10.96	10.46	11.46	10.96	-0.00
42 Acenaphthene-d10	14.52	14.02	15.02	14.52	-0.00
59 Phenanthrene-d10	17.51	17.01	18.01	17.51	-0.00
69 Chrysene-d12	22.58	22.08	23.08	22.58	-0.00
134 Di-n-octylphthala	23.65	23.15	24.15	23.65	-0.00
77 Perylene-d12	24.95	24.45	25.45	24.95	-0.00

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

REVIEW SUMMARY FOR FILE - NT1707202307.D

Lab ID: SLG0263-CCV1
nt17.i, ABN.m, 21-JUL-2023 04:26

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

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
NONE			

RRT check based on Ccal File: NT1707202302.D

On Column LOD for nt17.i, ABN.m, ICAL.sub = 0.0000

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

Analytical Resources, LLC
Analytical Chemists and Consultants

LOW-CONCENTRATION
CONTINUING CALIBRATION CHECK
EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	NT17	Calibration:	GG00040
Lab File ID:	NT1707202304.D	Calibration Date:	07/10/2023
Sequence:	SLG0263	Injection Date:	07/21/23
Lab Sample ID:	SLG0263-LCV1	Injection Time:	02:35
Sequence Name:	ABN 0.5		

		CONC. (ug/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Naphthalene	A	0.50000	0.5	1.1134720	1.0349060		-7.1	+/-50
2-Methylnaphthalene	A	0.50000	0.5	0.7740106	0.7264262		-6.1	+/-50
Acenaphthylene	A	0.50000	0.5	2.0721990	1.9484640		-6.0	+/-50
Acenaphthene	A	0.50000	0.5	1.2947910	1.1741680		-9.3	+/-50
Fluorene	A	0.50000	0.5	1.5706250	1.6495170		5.0	+/-50
Phenanthrene	A	0.50000	0.4	1.1580190	1.0318330		-10.9	+/-50
Anthracene	A	0.50000	0.4	1.0737470	0.9171644		-14.6	+/-50
Fluoranthene	A	0.50000	0.5	1.7715610	1.6410180		-7.4	+/-50
Pyrene	A	0.50000	0.5	2.0010910	1.8936170		-5.4	+/-50
Benzo(a)anthracene	A	0.50000	0.5	1.4157630	1.3595380		-4.0	+/-50
Chrysene	A	0.50000	0.4	1.3268690	1.1669570		-12.1	+/-50
Benzofluoranthenes, Total	A	1.0000	1.0	1.3304960	1.2819010		-3.7	+/-50
Benzo(a)pyrene	A	0.50000	0.4	1.0779320	0.9682099		-10.2	+/-50
Indeno(1,2,3-cd)pyrene	A	0.50000	0.4	1.4523740	1.1448880		-21.2	+/-50
Dibenzo(a,h)anthracene	A	0.50000	0.4	1.2922610	1.0448770		-19.1	+/-50
Benzo(g,h,i)perylene	A	0.50000	0.4	1.3326540	1.0308740		-22.6	+/-50
1,2-Dichlorobenzene-d4	A	0.50000	0.499	0.9798026	0.9783250		-0.2	+/-50
Nitrobenzene-d5	A	0.50000	0.482	0.4586332	0.4420264		-3.6	+/-50
2-Fluorobiphenyl	A	0.50000	0.458	1.5400870	1.4112530		-8.4	+/-50
p-Terphenyl-d14	A	0.50000	0.485	1.3904070	1.3474500		-3.1	+/-50

* Values outside of QC limits

Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D

Page 1

Date : 21-JUL-2023 02:35

Client ID:

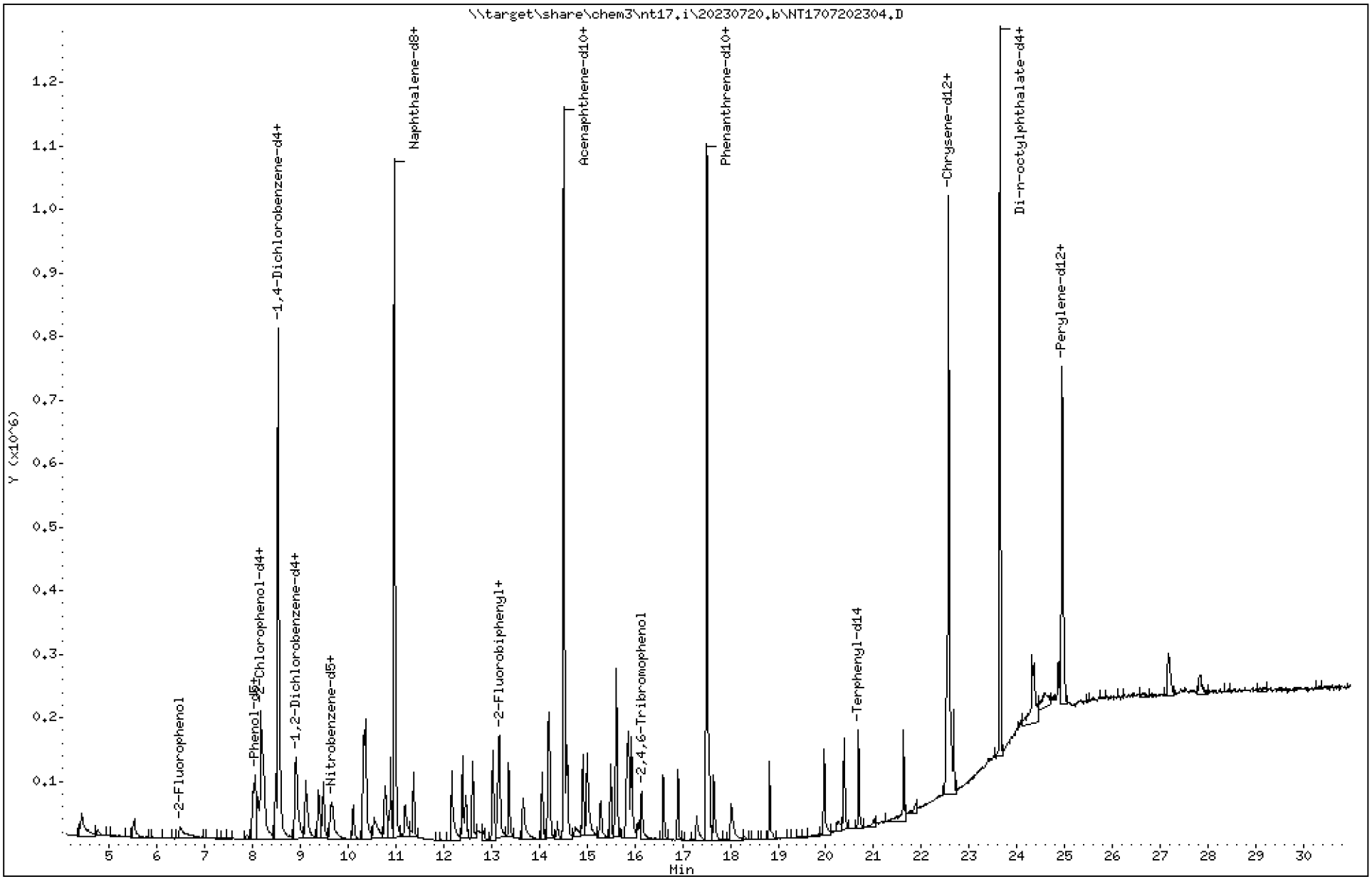
Instrument: nt17.i

Sample Info: SLG0263-LCV1

Operator: JGR

Column phase: ZB-5msi

Column diameter: 0.25



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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

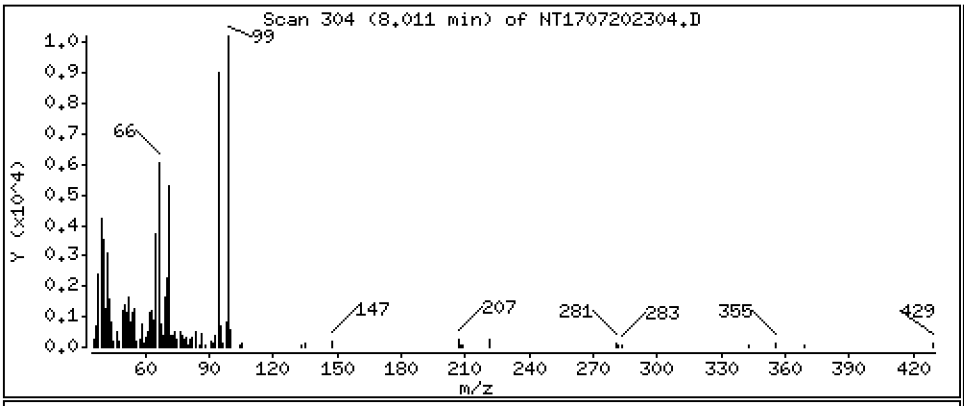
Operator: JGR

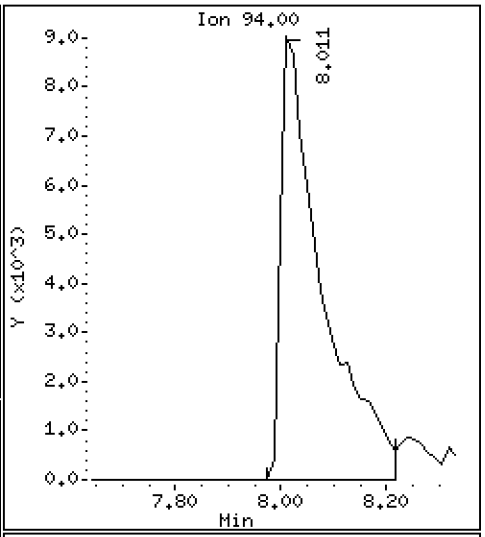
Column phase: ZB-5msi

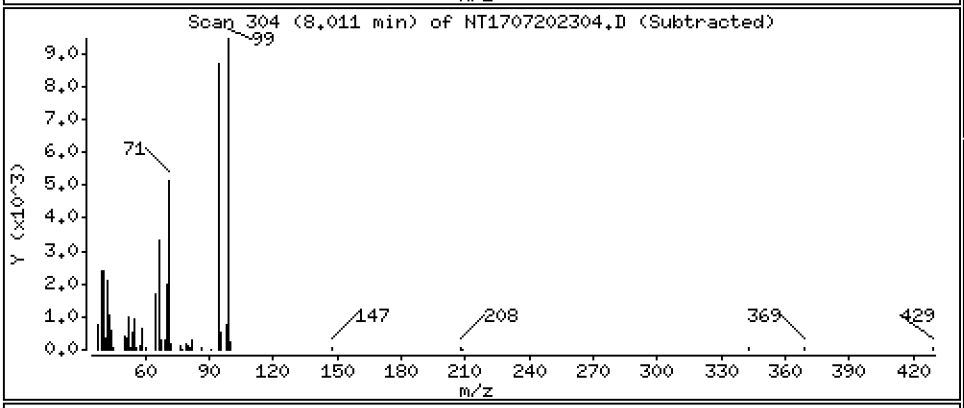
Column diameter: 0.25

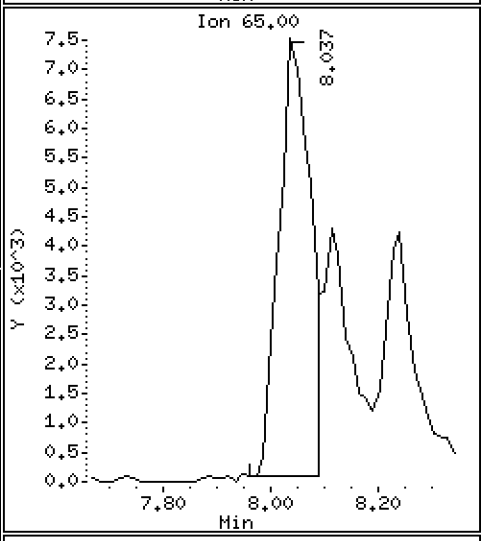
3 Phenol

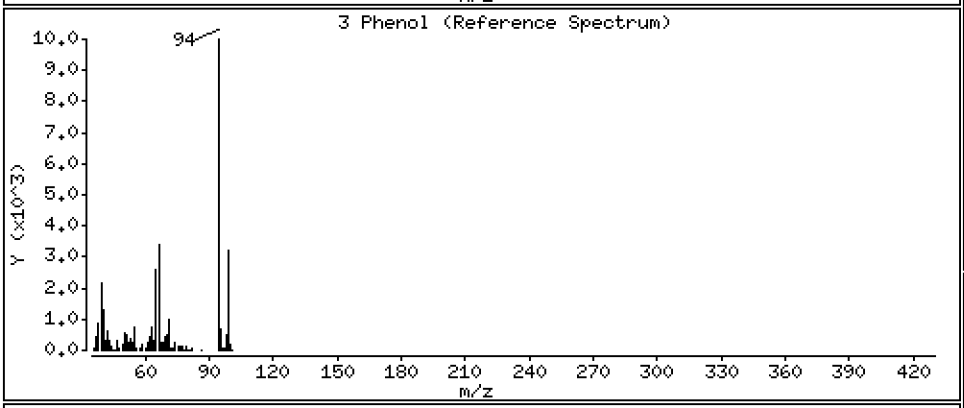
Concentration: 0.3841 ug/mL

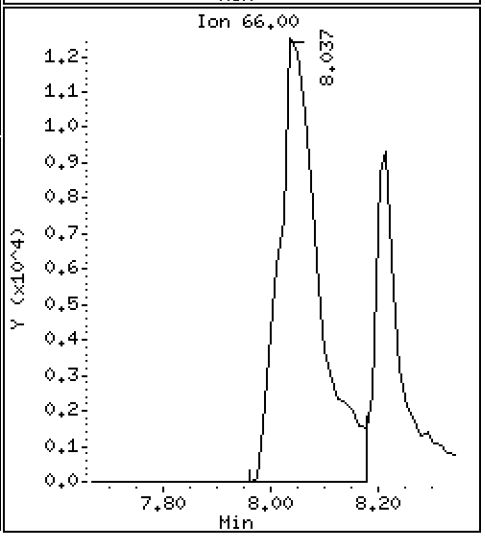


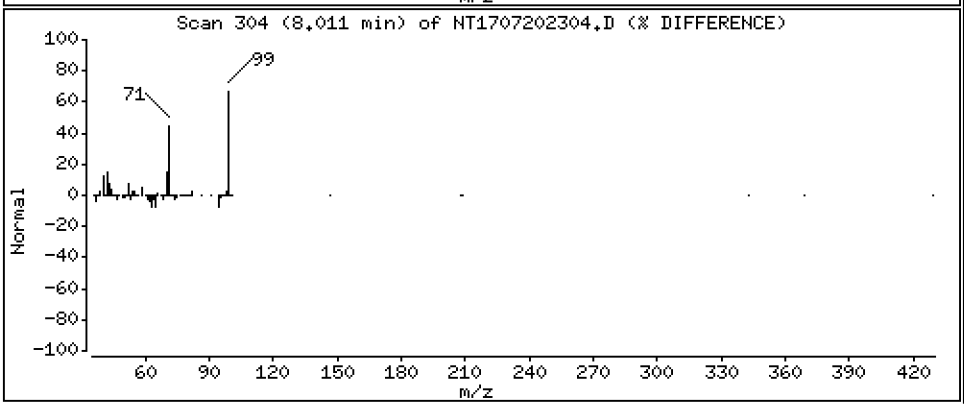












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

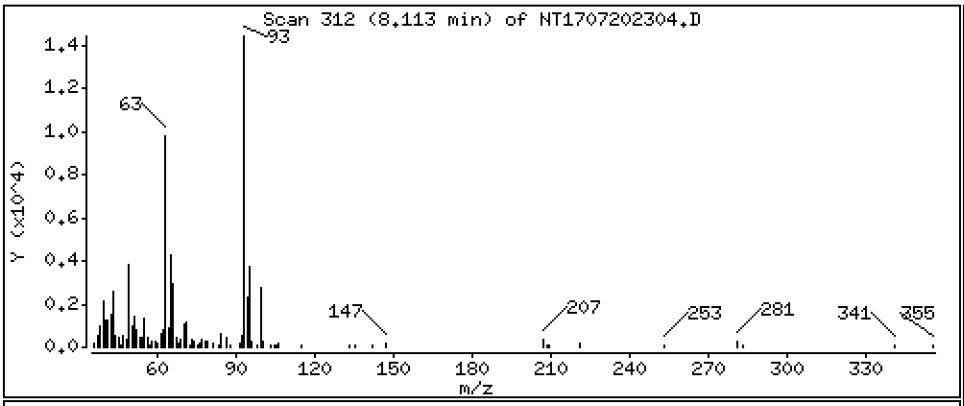
Operator: JGR

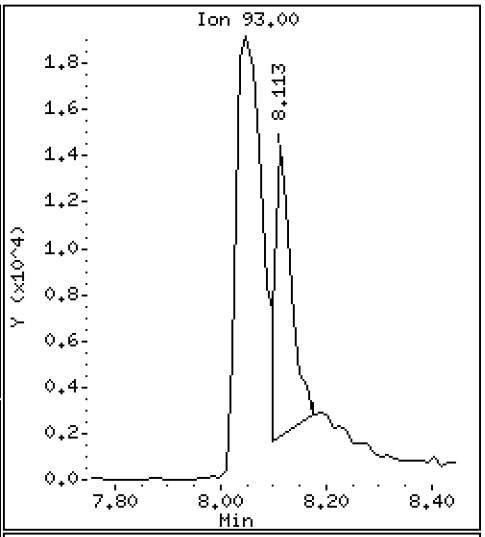
Column phase: ZB-5msi

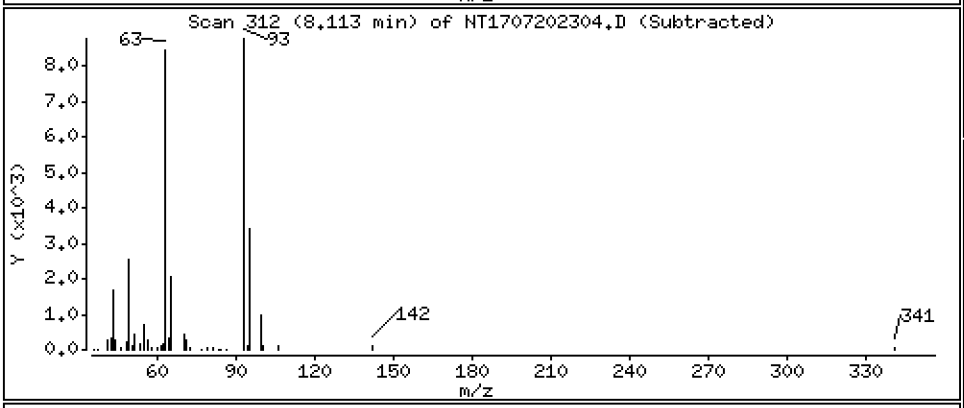
Column diameter: 0.25

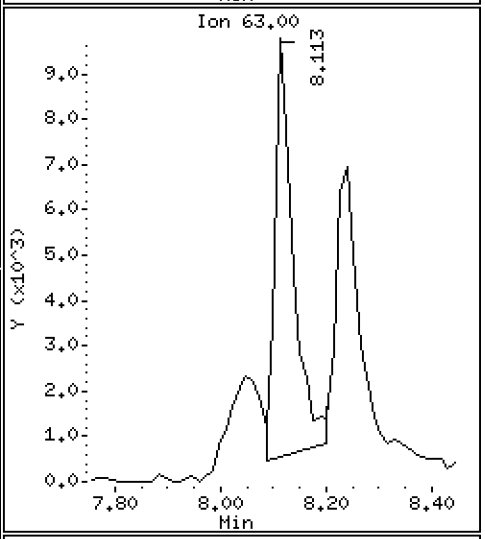
4 Bis(2-Chloroethyl)ether

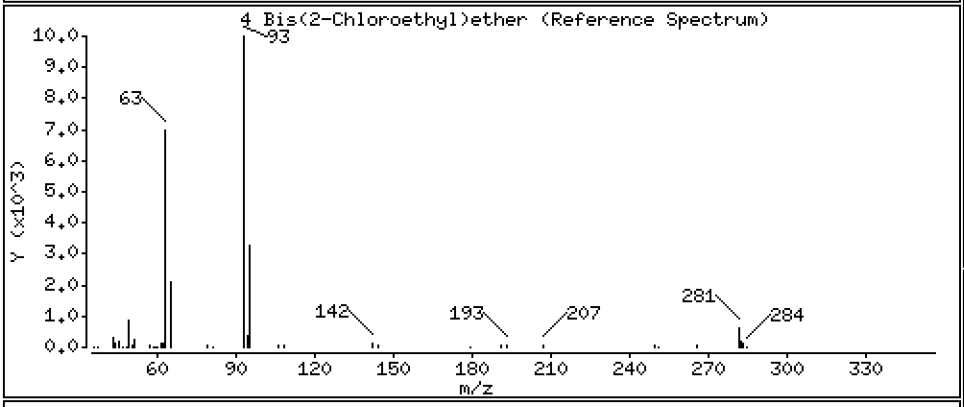
Concentration: 0.3675 ug/mL

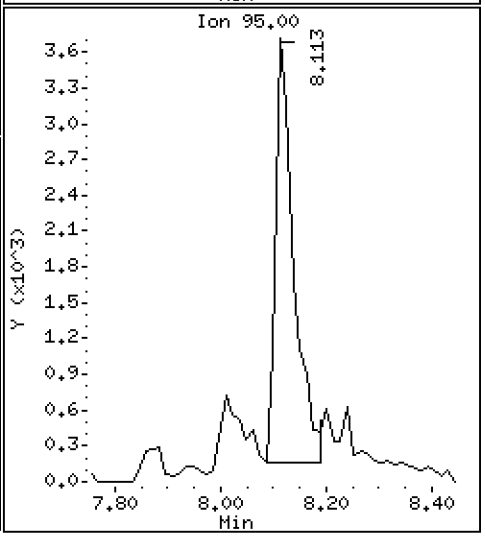


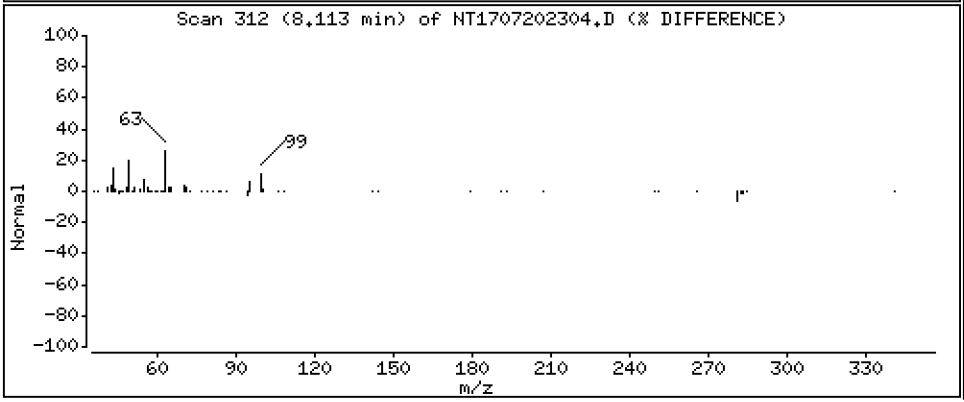












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

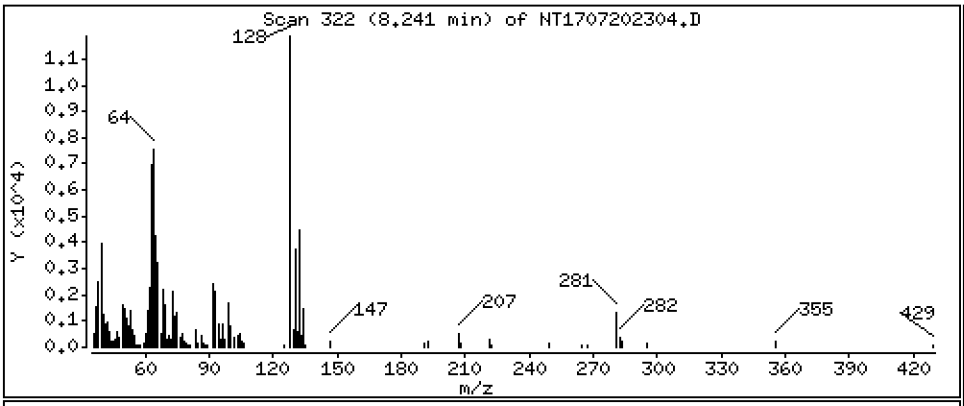
Operator: JGR

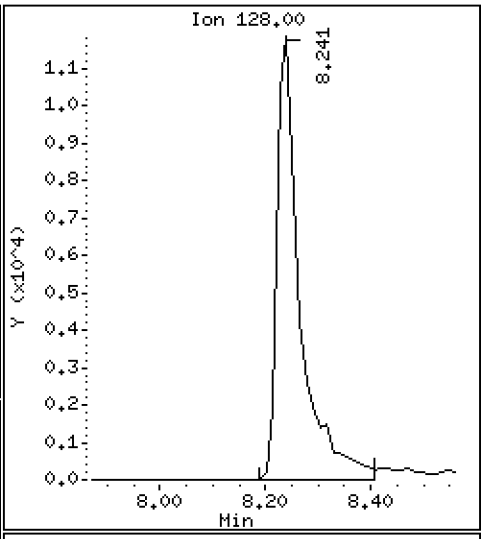
Column phase: ZB-5msi

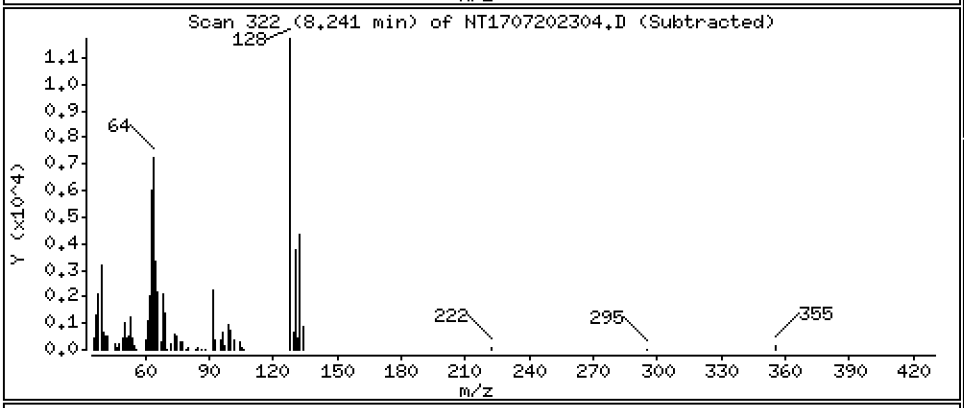
Column diameter: 0.25

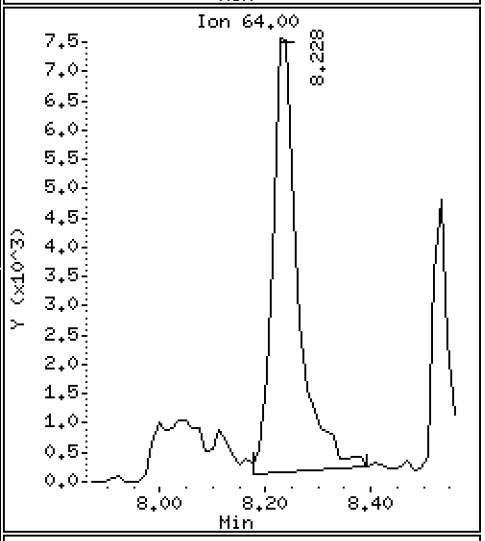
6 2-Chlorophenol

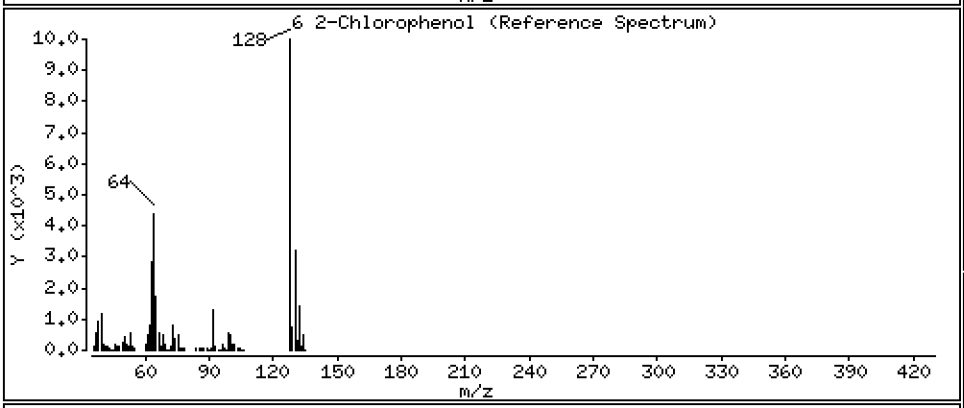
Concentration: 0.4323 ug/mL

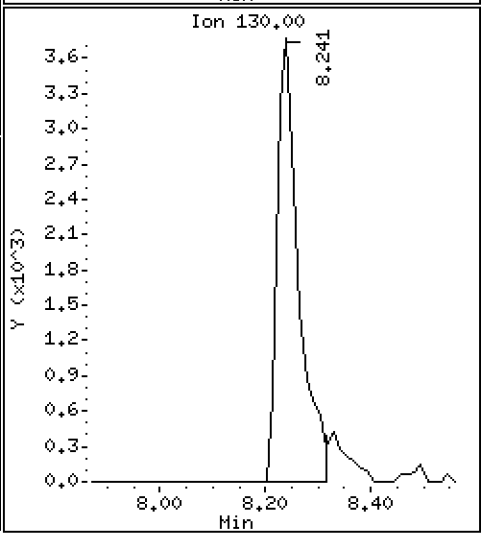


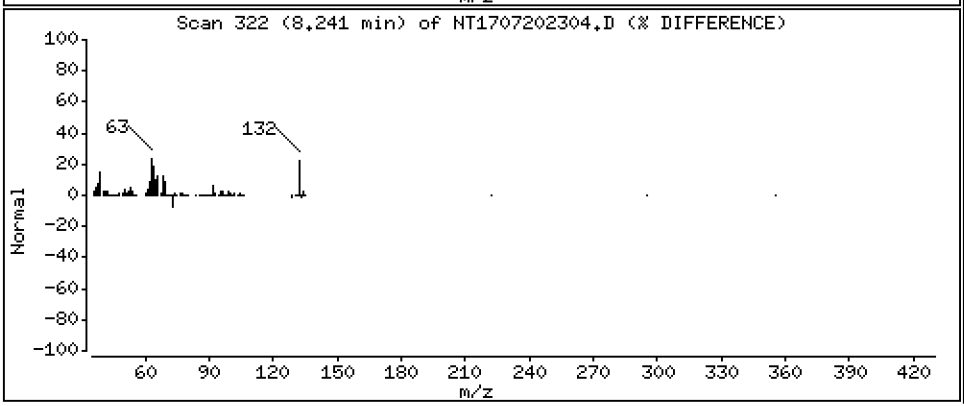












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

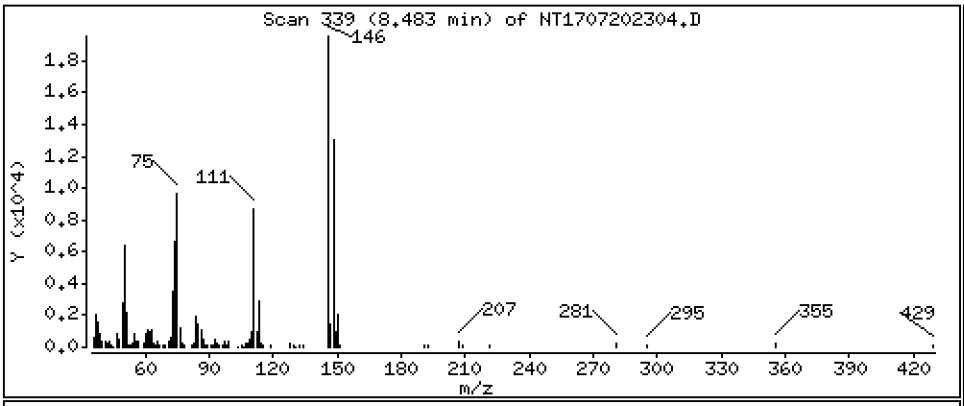
Operator: JGR

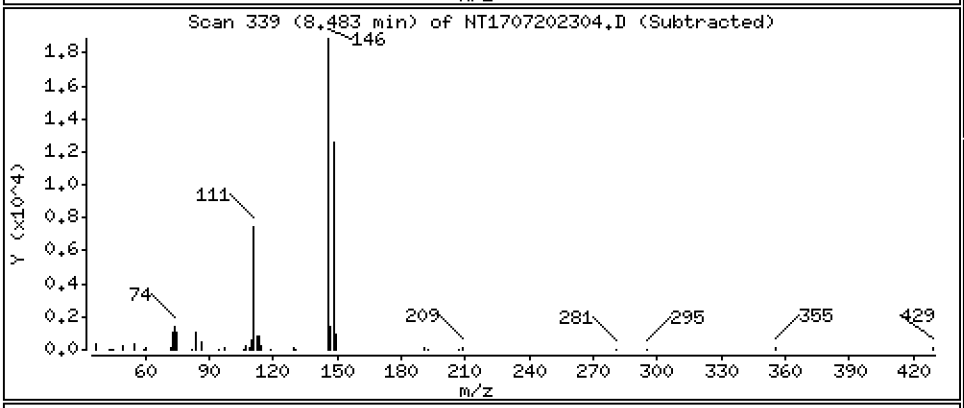
Column phase: ZB-5msi

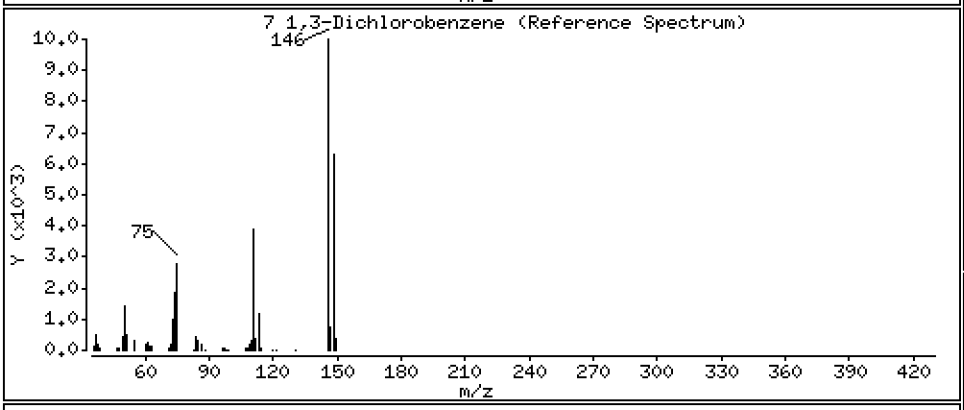
Column diameter: 0.25

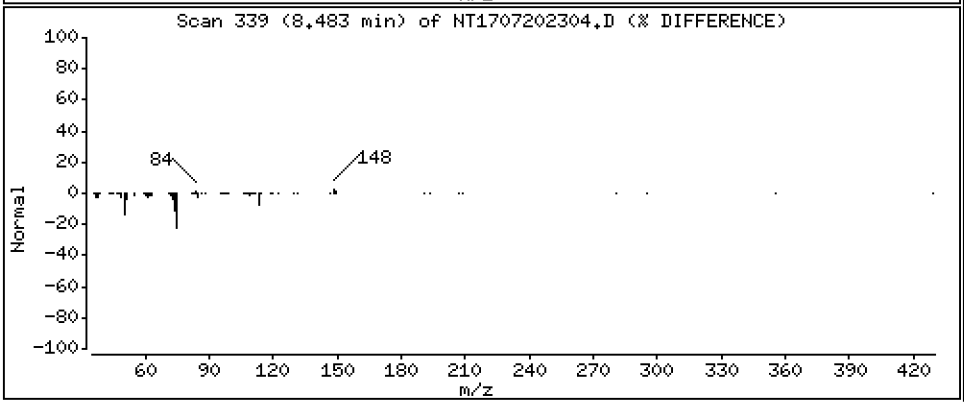
7 1,3-Dichlorobenzene

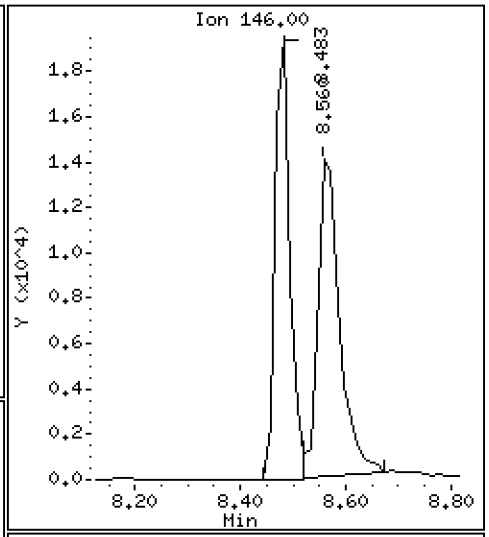
Concentration: 0.4614 ug/mL

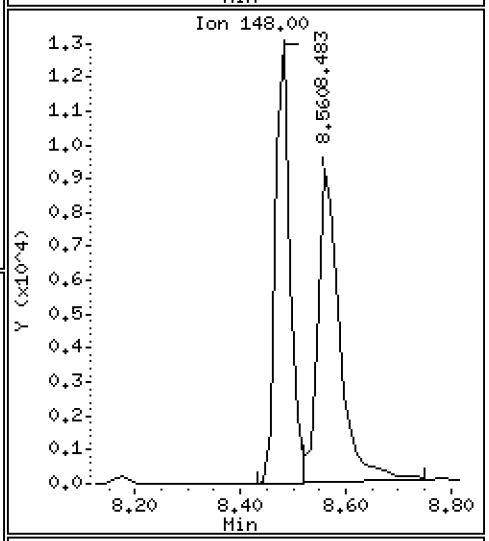


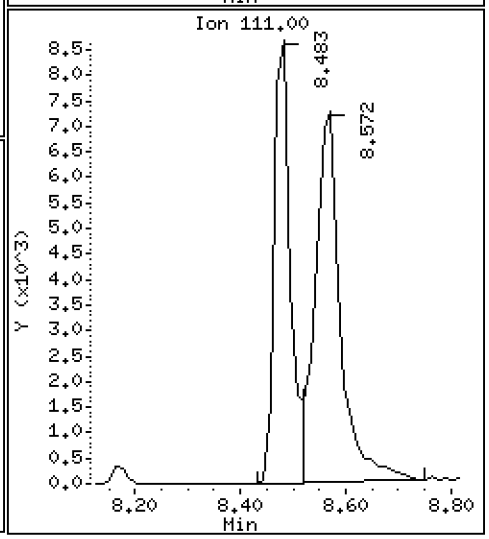












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

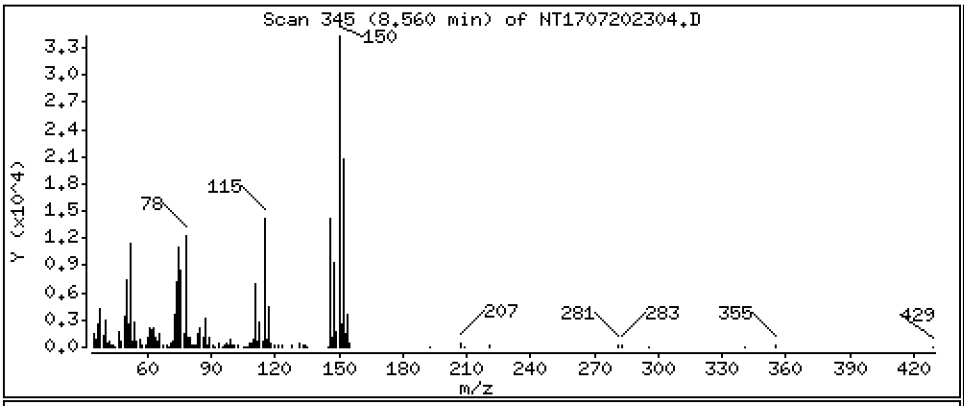
Operator: JGR

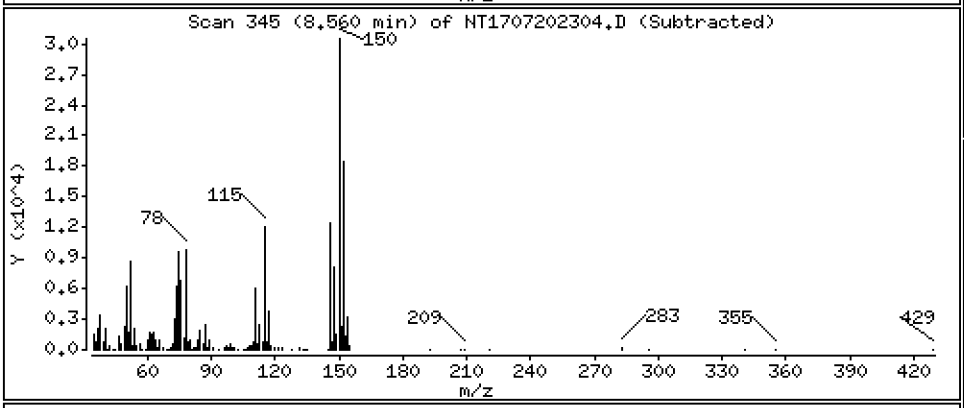
Column phase: ZB-5msi

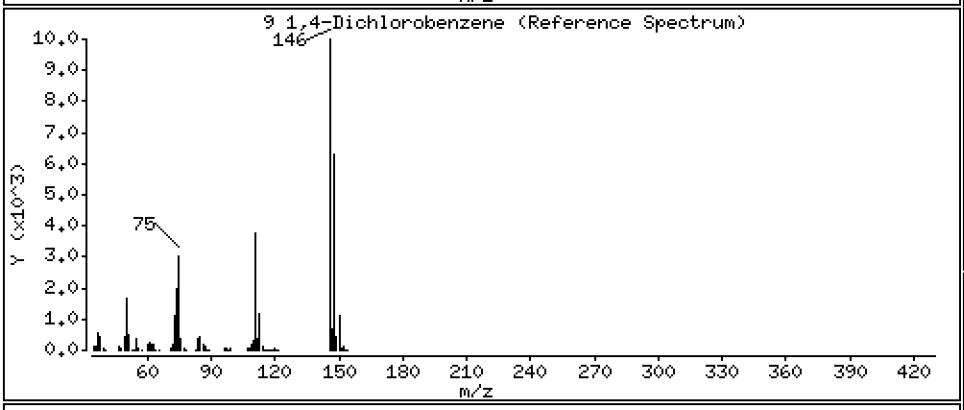
Column diameter: 0.25

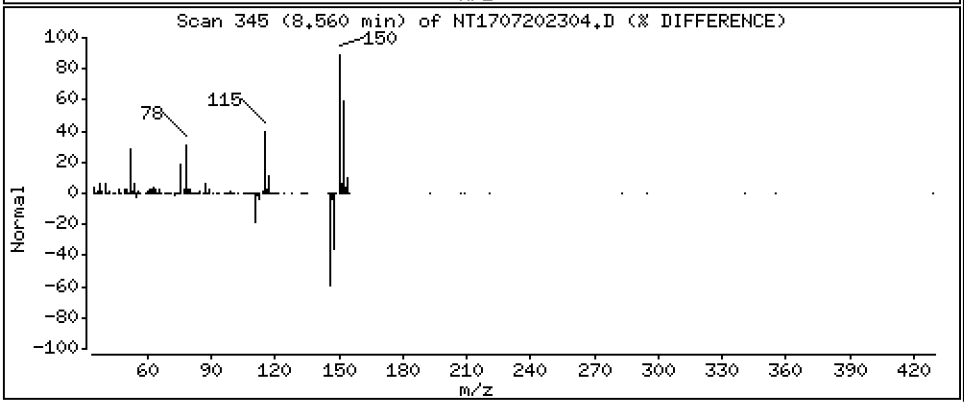
9 1,4-Dichlorobenzene

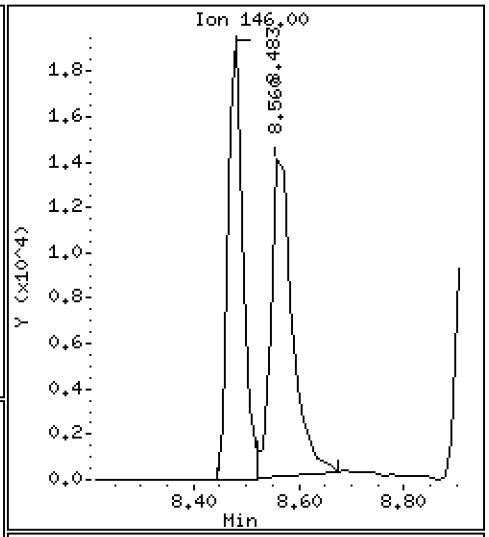
Concentration: 0.4434 ug/mL

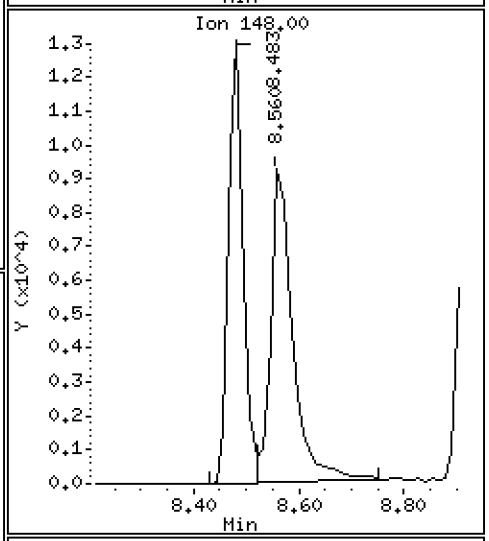


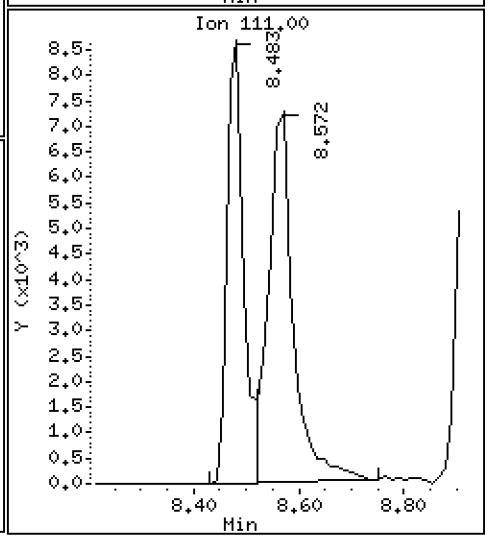












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

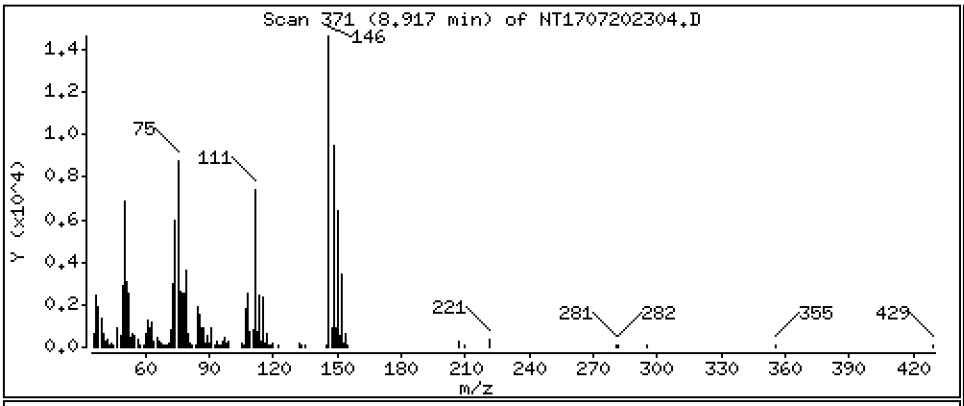
Operator: JGR

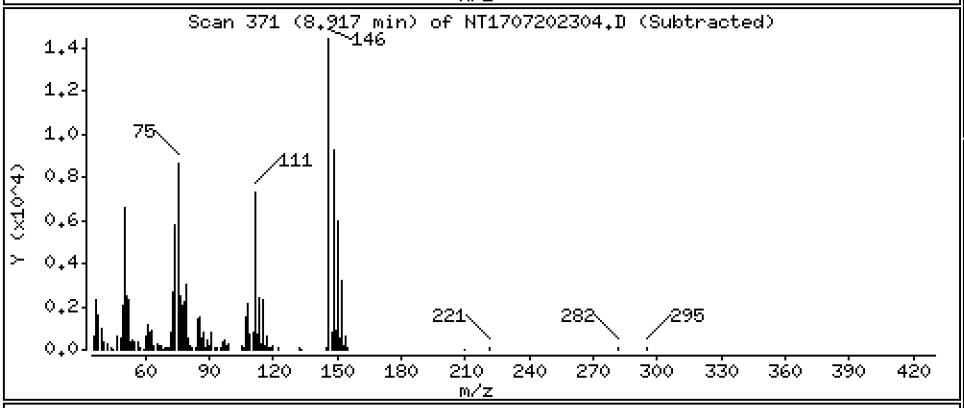
Column phase: ZB-5msi

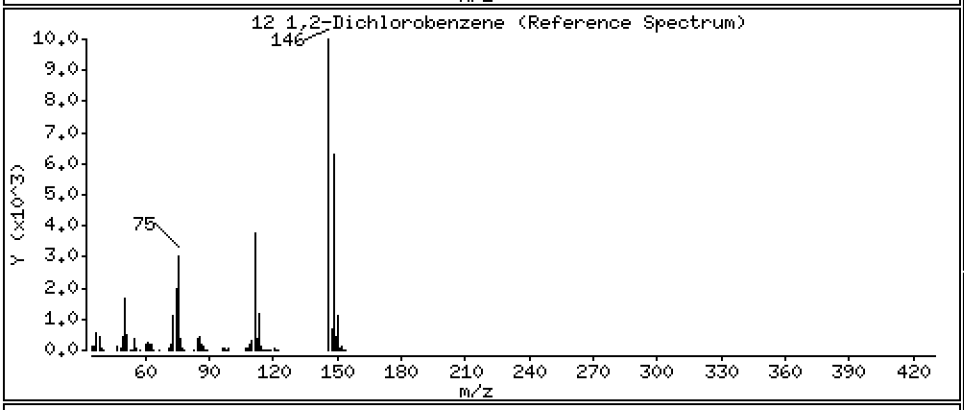
Column diameter: 0.25

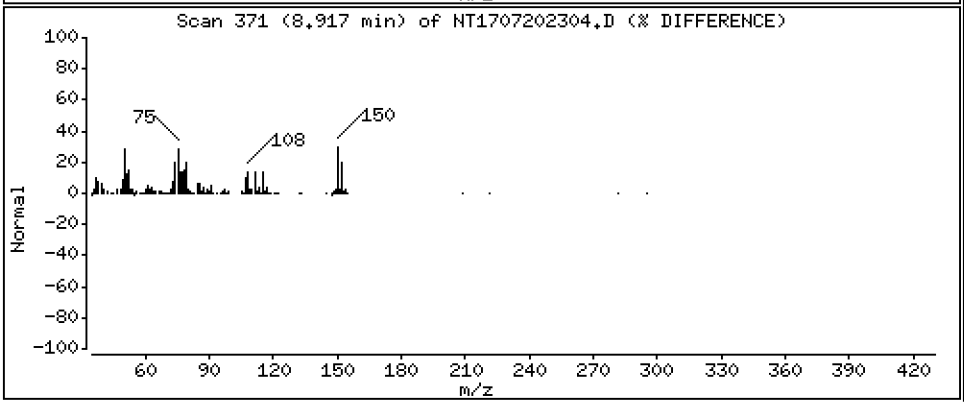
12 1,2-Dichlorobenzene

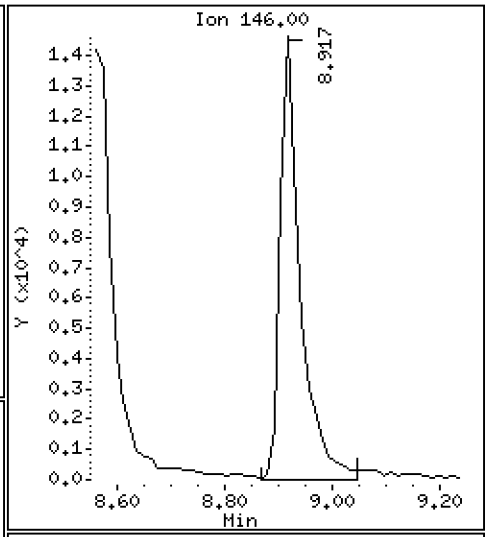
Concentration: 0.4856 ug/mL

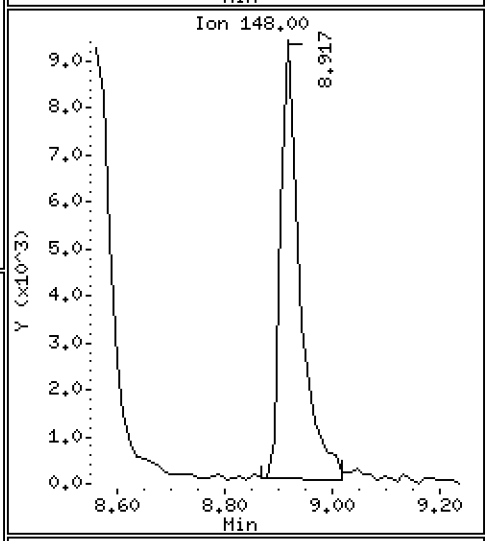


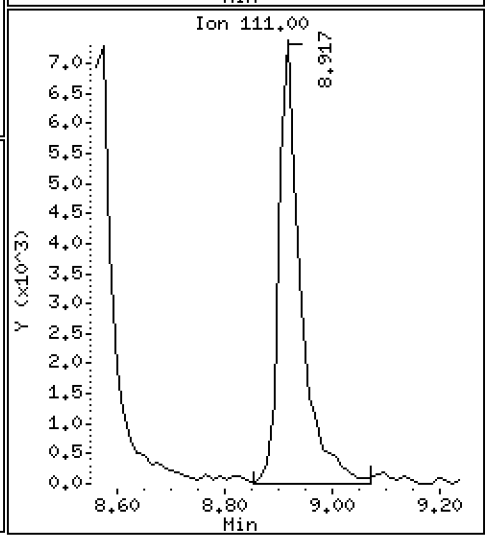












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

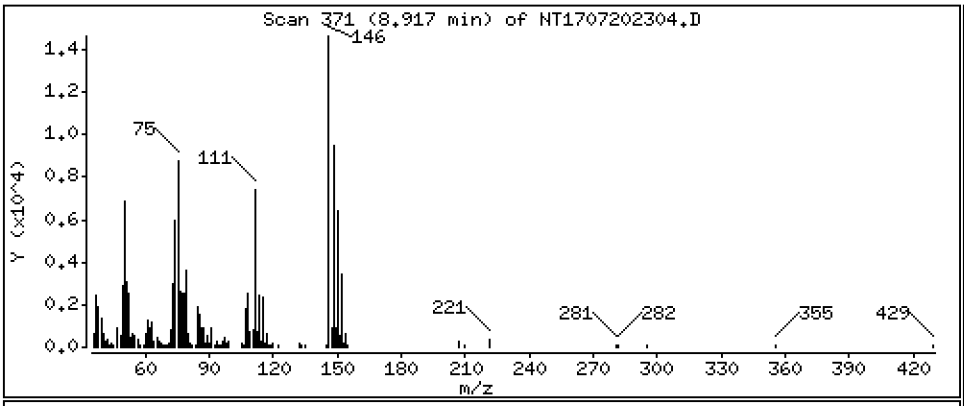
Operator: JGR

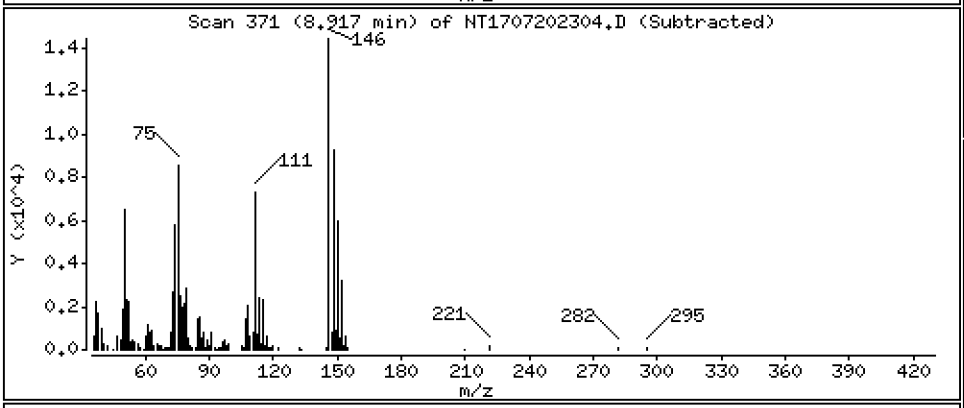
Column phase: ZB-5msi

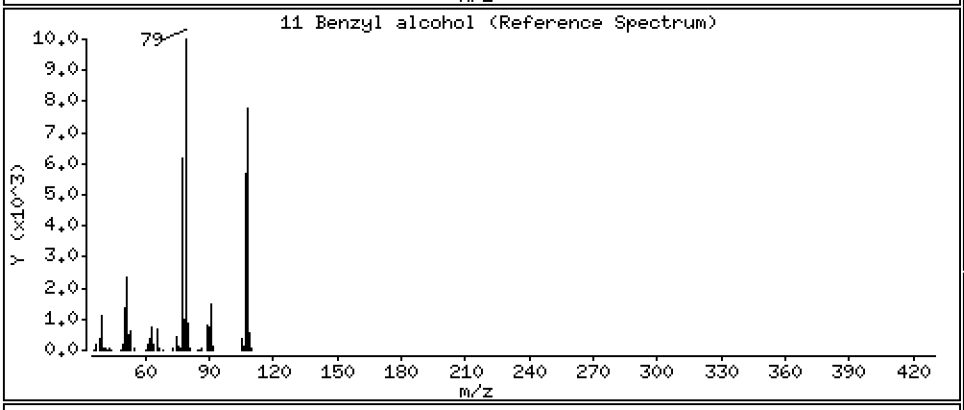
Column diameter: 0.25

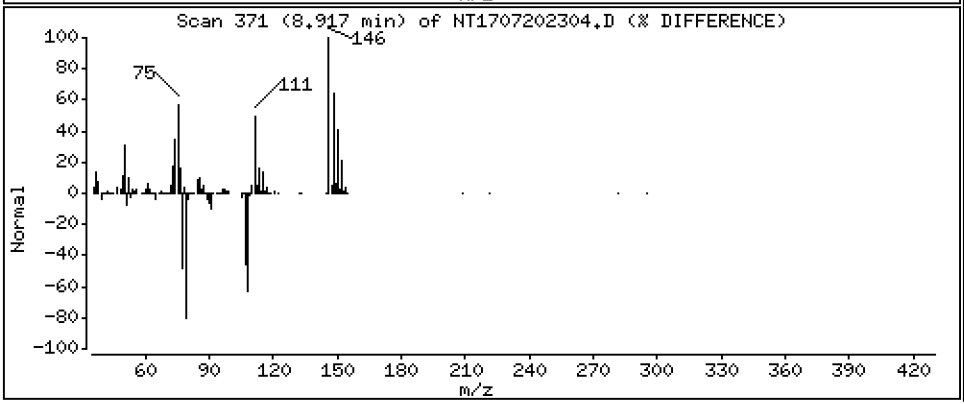
11 Benzyl alcohol

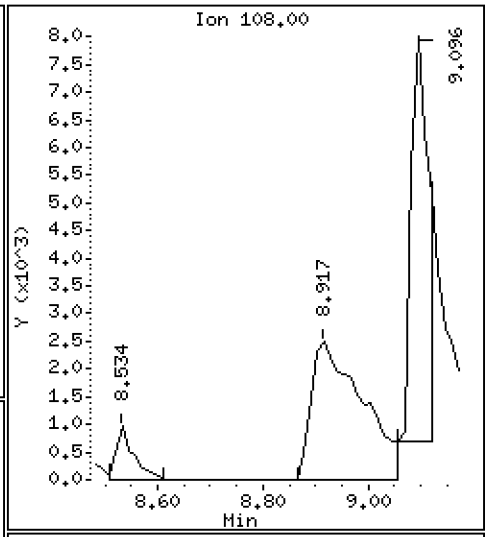
Concentration: 0.3469 ug/mL

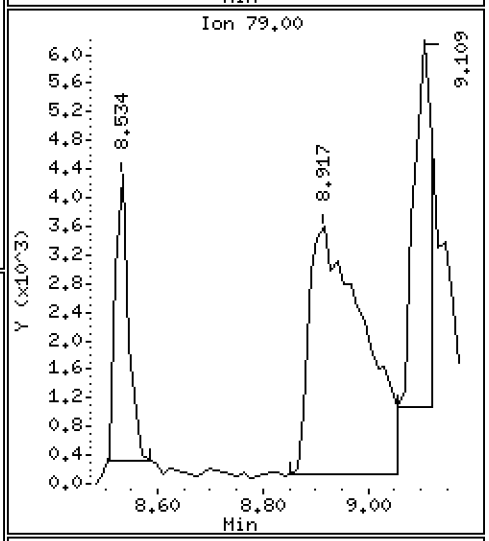


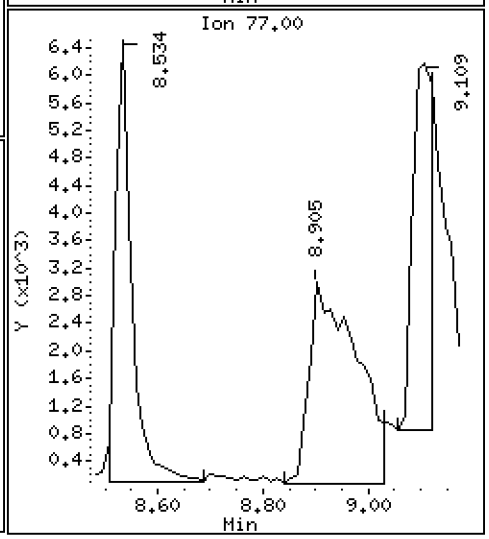












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

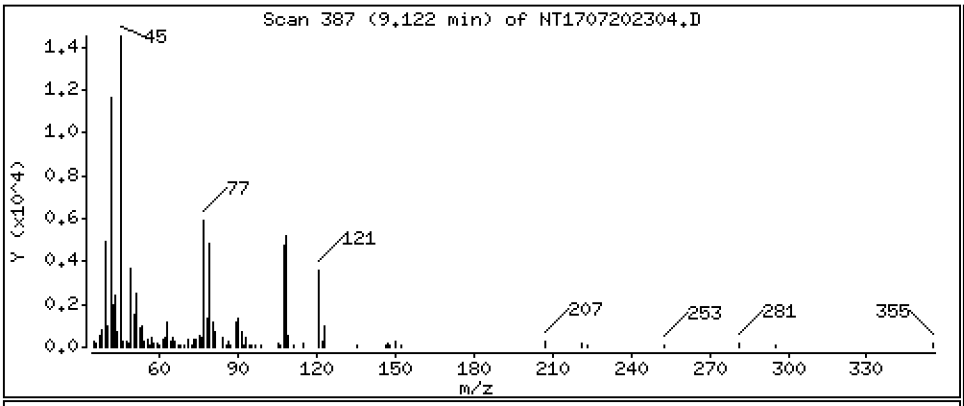
Operator: JGR

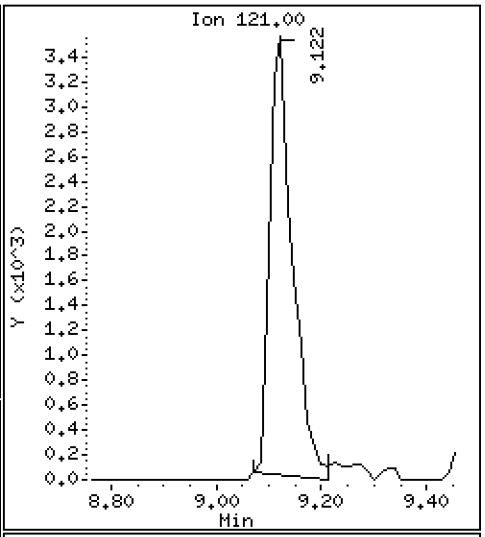
Column phase: ZB-5msi

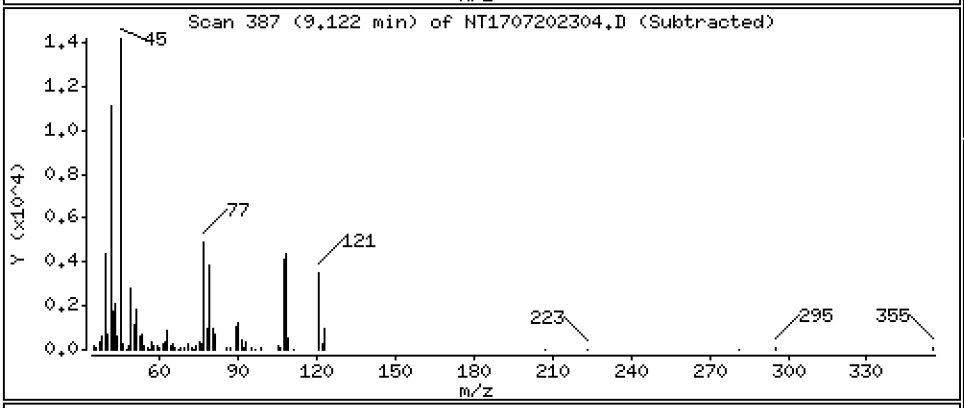
Column diameter: 0.25

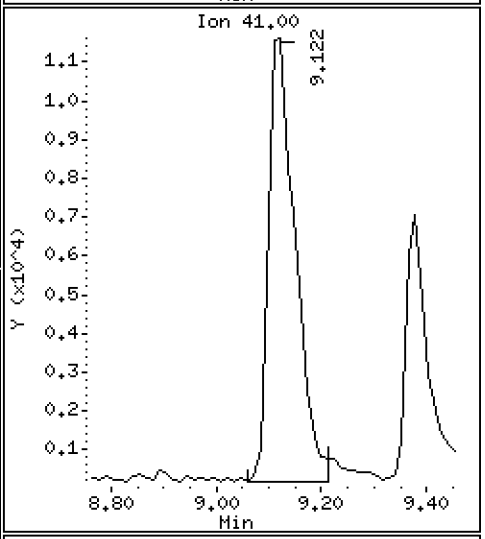
14 2,2'-oxybis(1-Chloropropane)

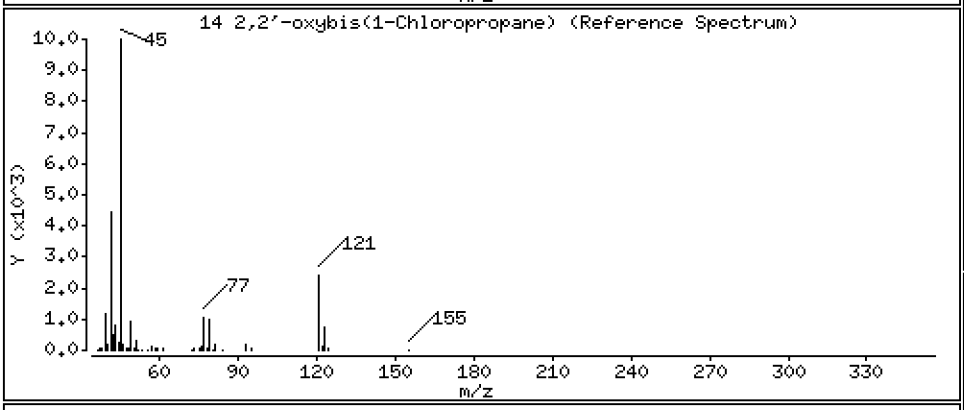
Concentration: 0.4064 ug/mL

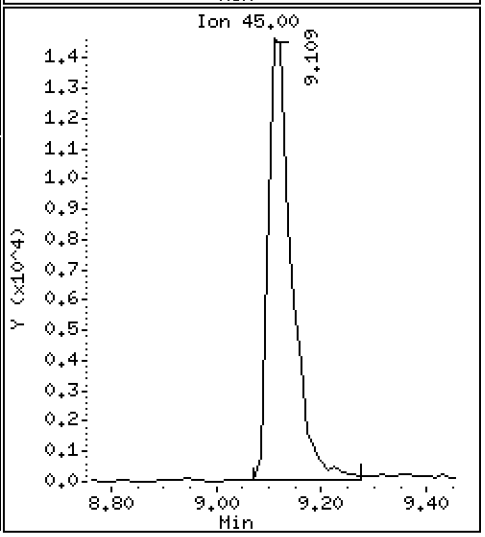


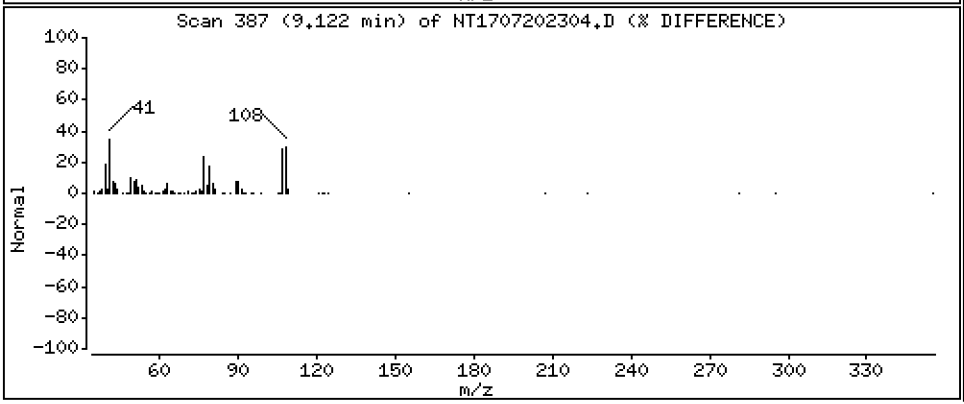












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

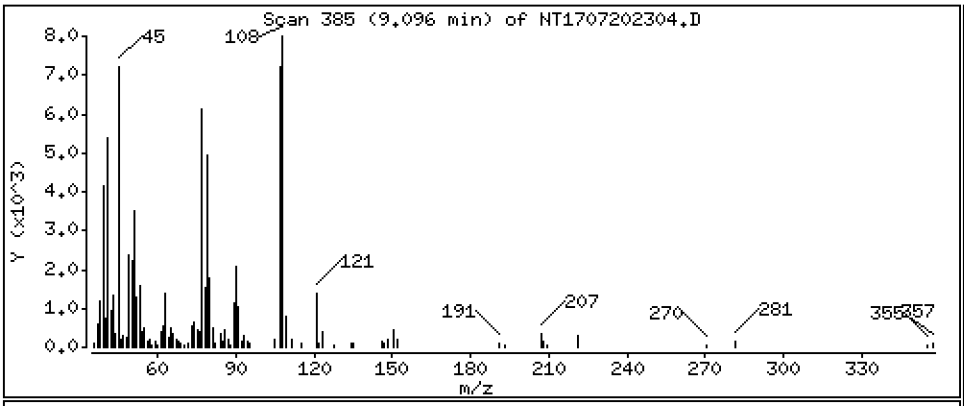
Operator: JGR

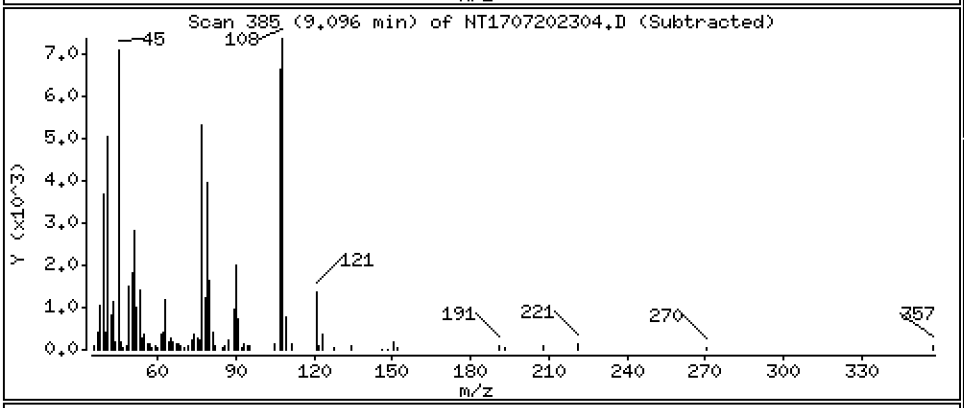
Column phase: ZB-5msi

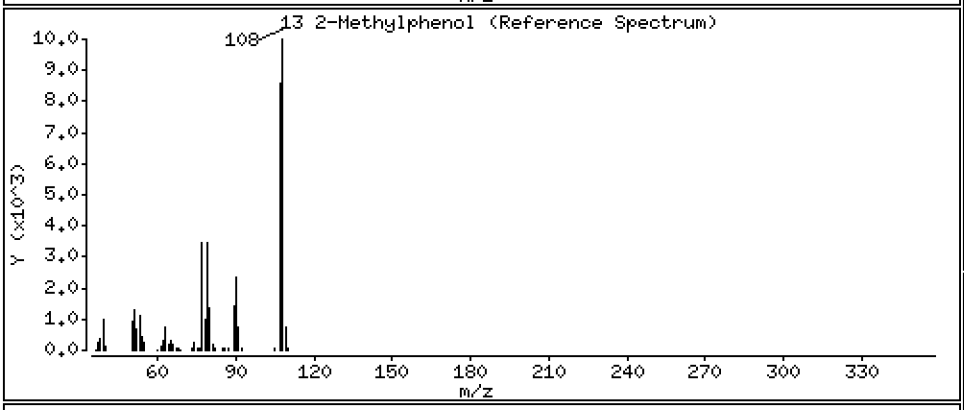
Column diameter: 0.25

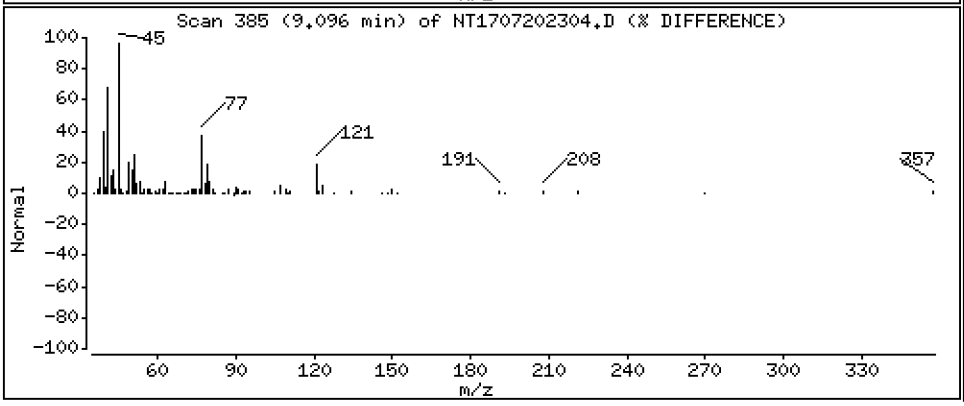
13 2-Methylphenol

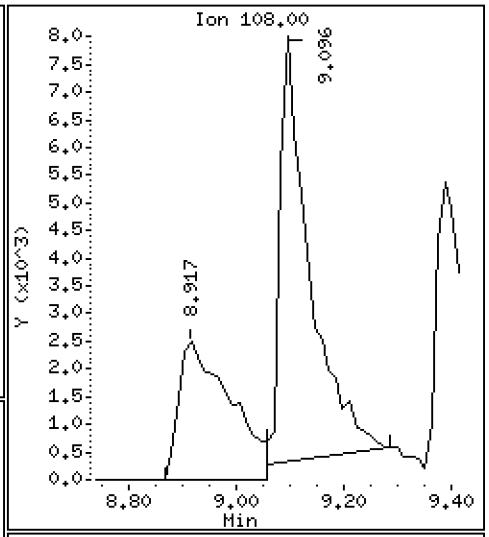
Concentration: 0.4217 ug/mL

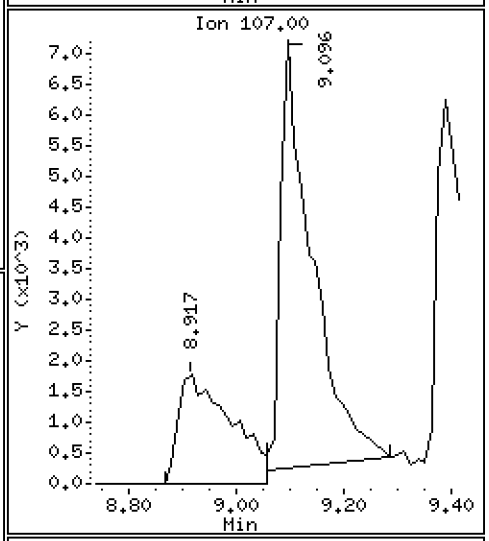


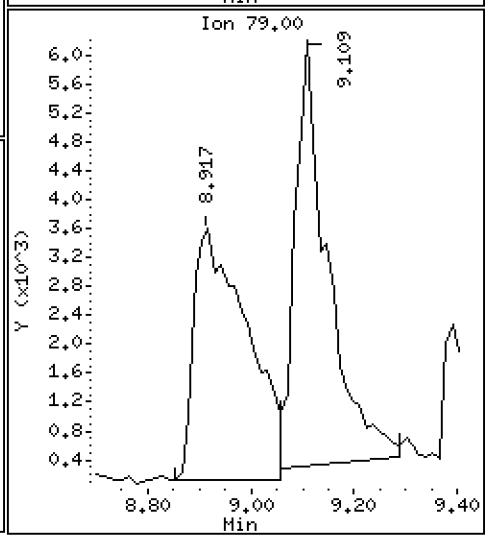












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

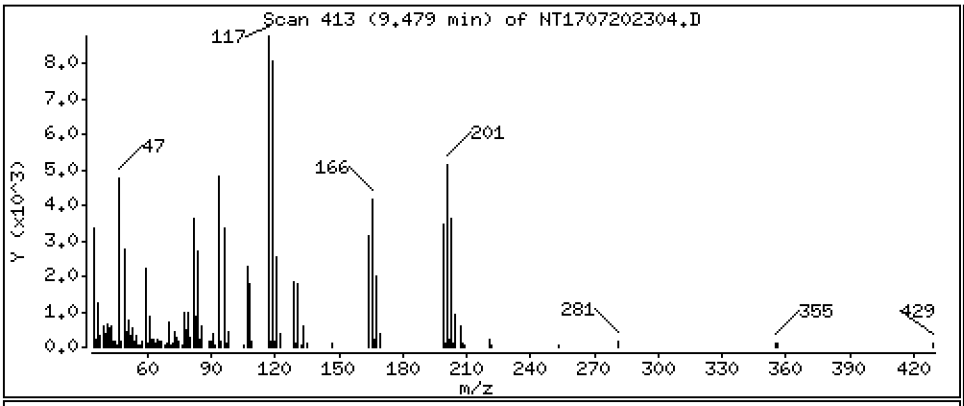
Operator: JGR

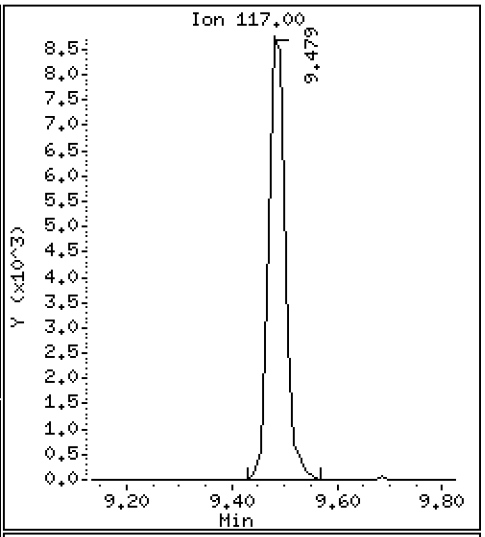
Column phase: ZB-5msi

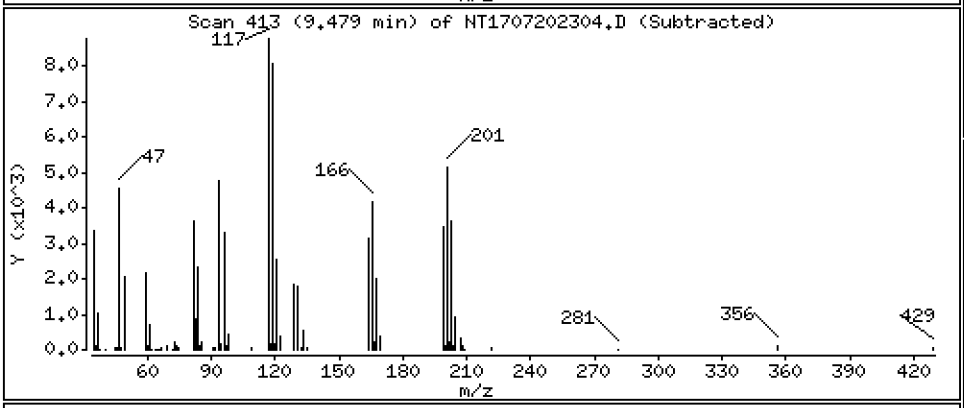
Column diameter: 0.25

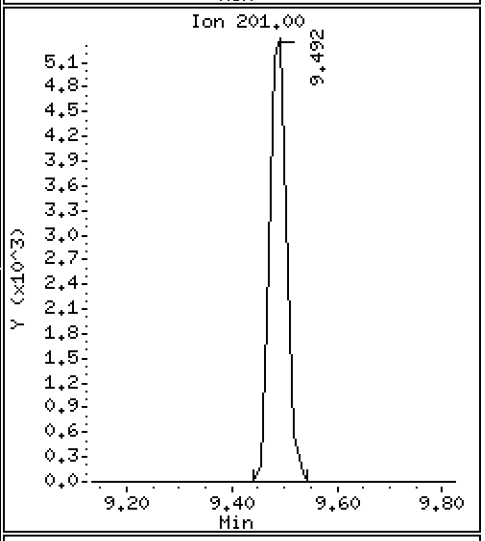
17 Hexachloroethane

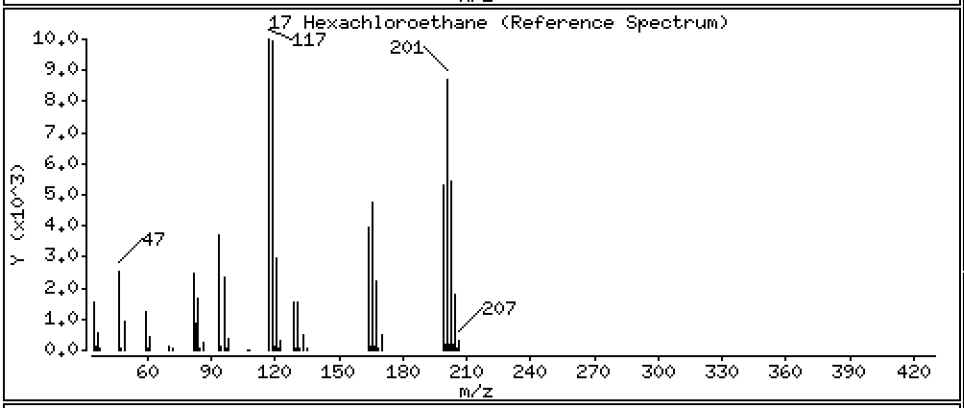
Concentration: 0.5470 ug/mL

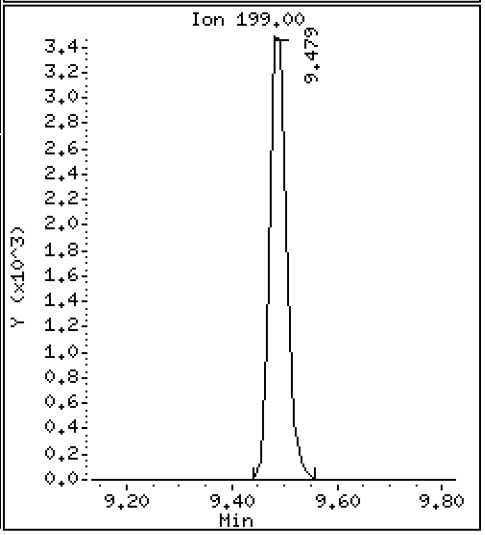


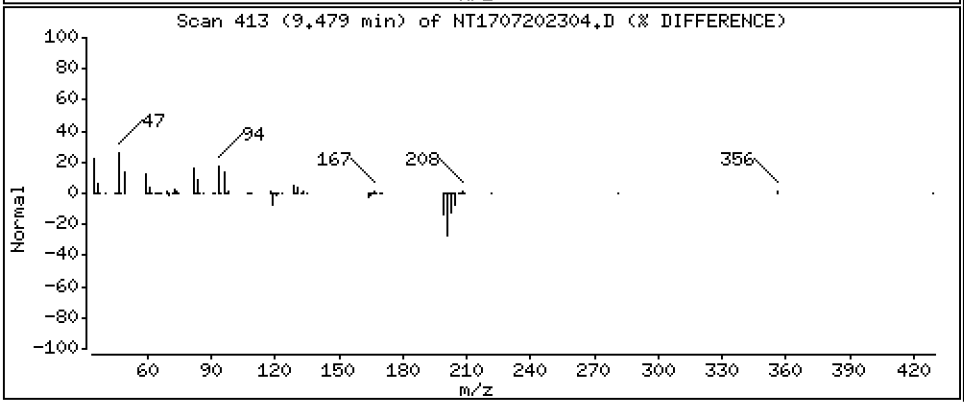












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

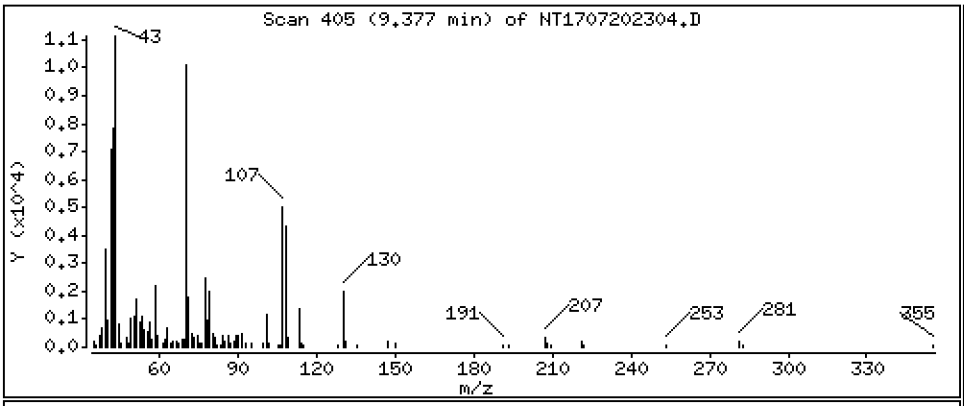
Operator: JGR

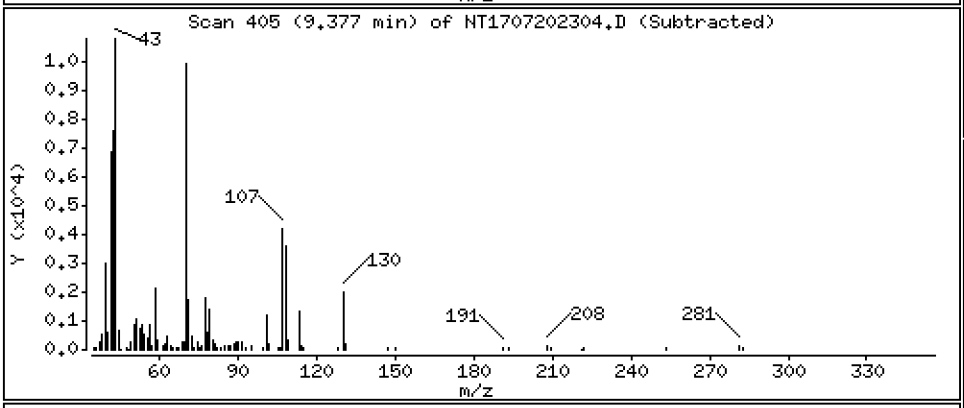
Column phase: ZB-5msi

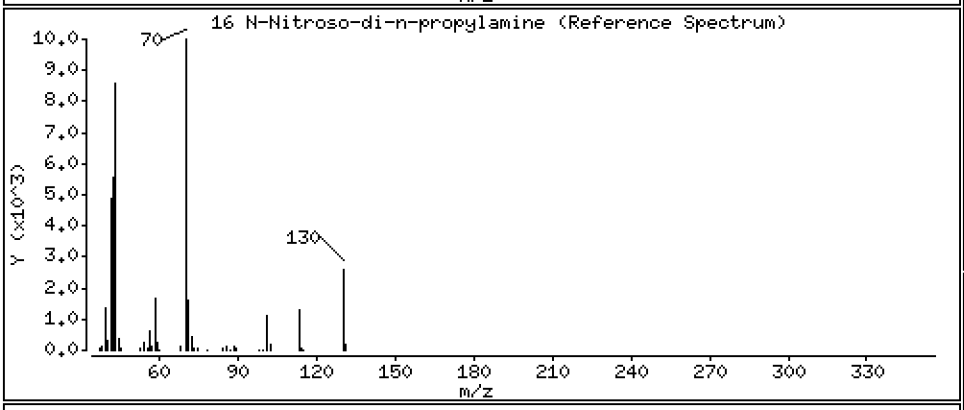
Column diameter: 0.25

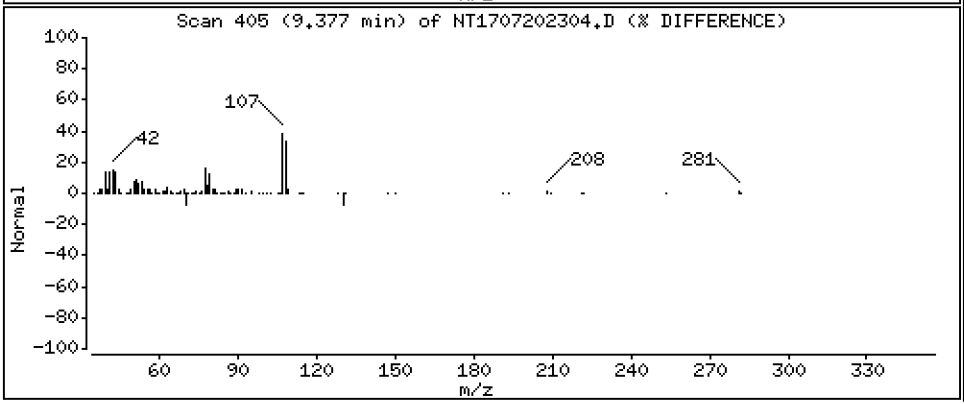
16 N-Nitroso-di-n-propylamine

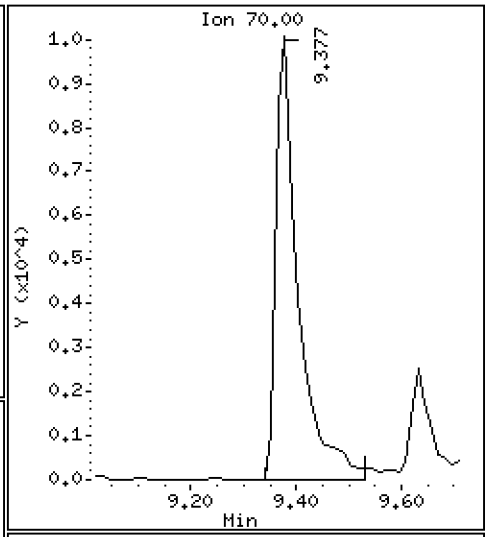
Concentration: 0.4983 ug/mL

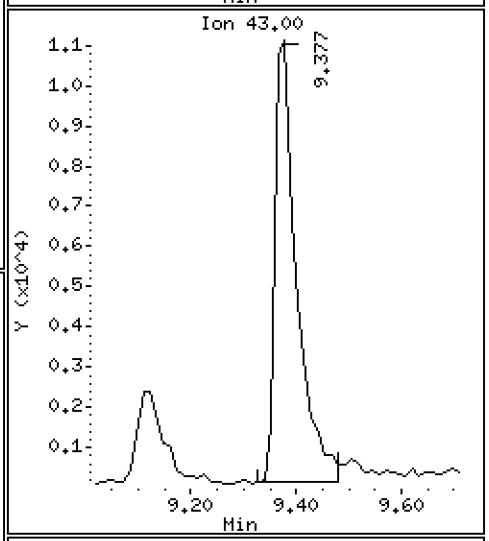


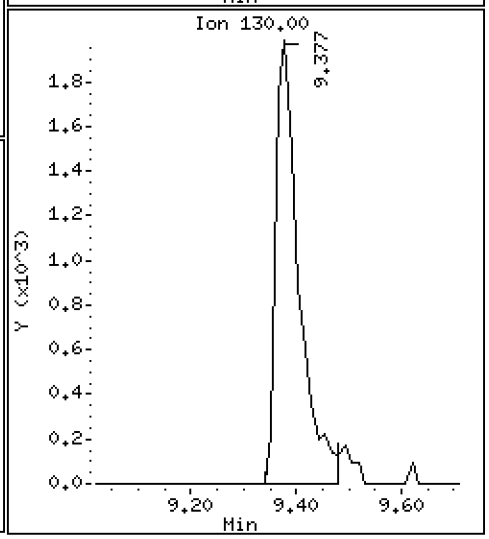












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

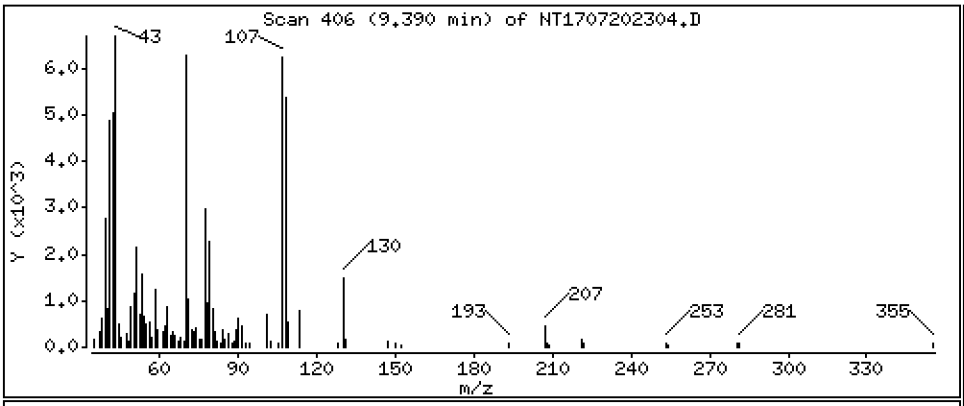
Operator: JGR

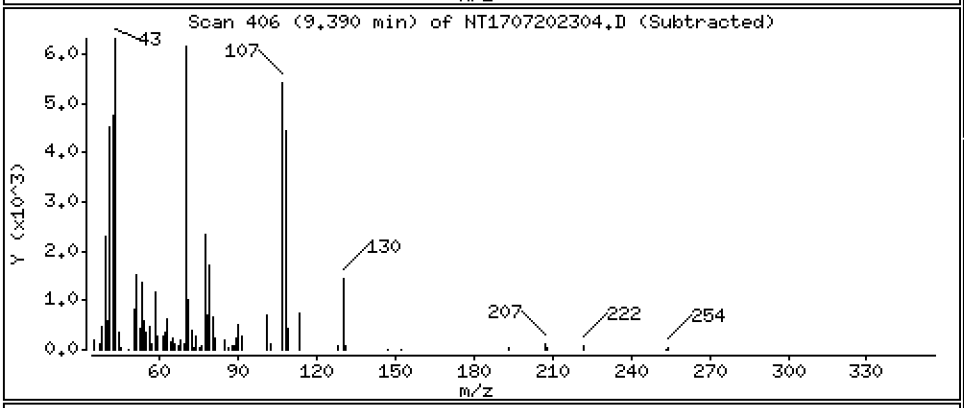
Column phase: ZB-5msi

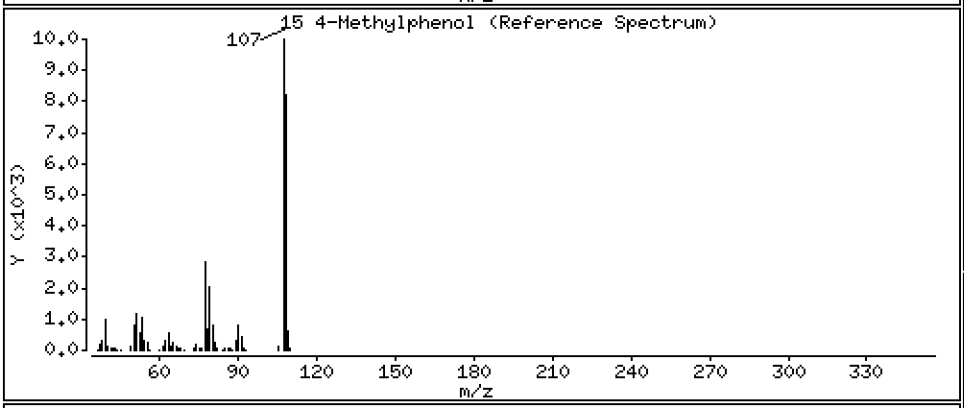
Column diameter: 0.25

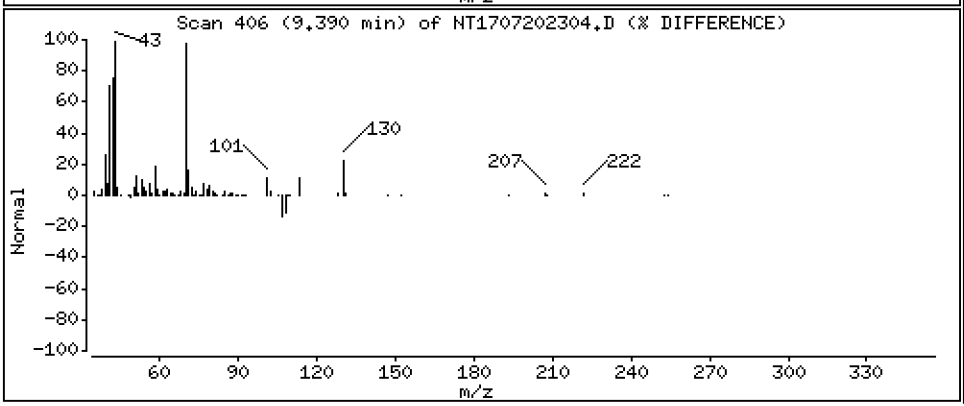
15 4-Methylphenol

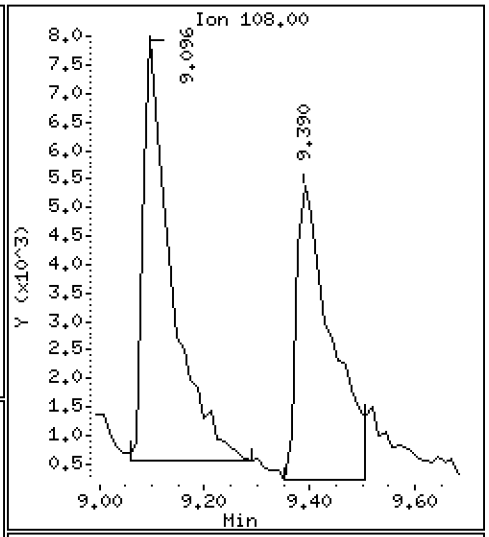
Concentration: 0.3177 ug/mL

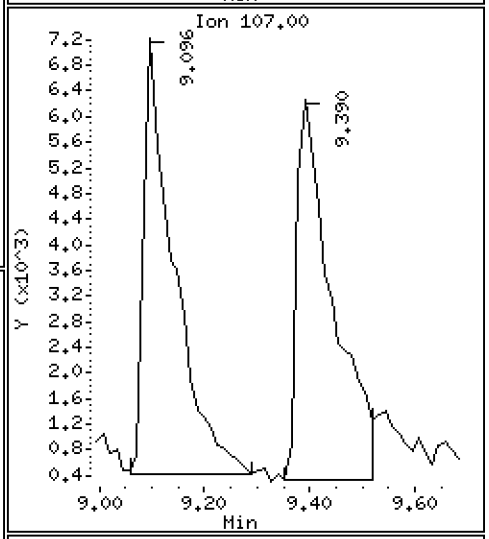


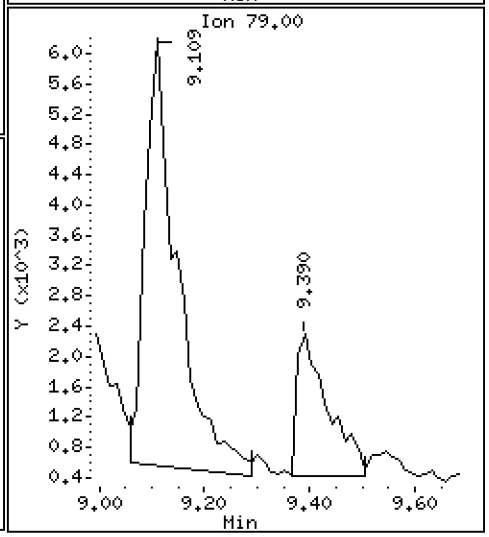












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

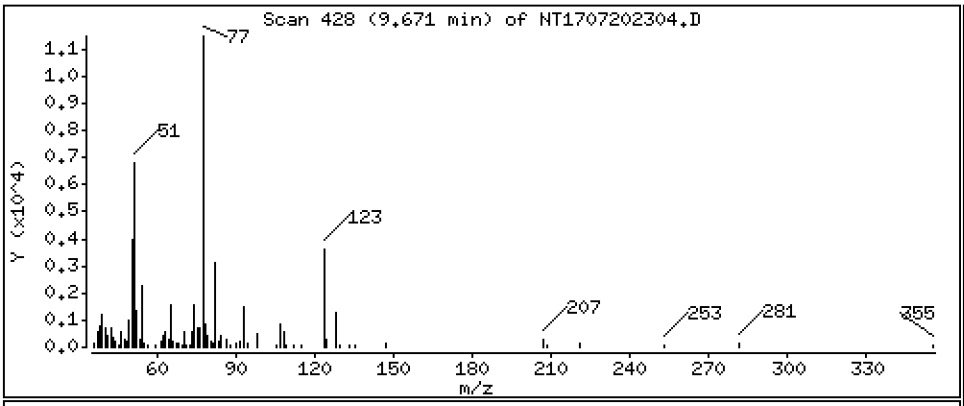
Operator: JGR

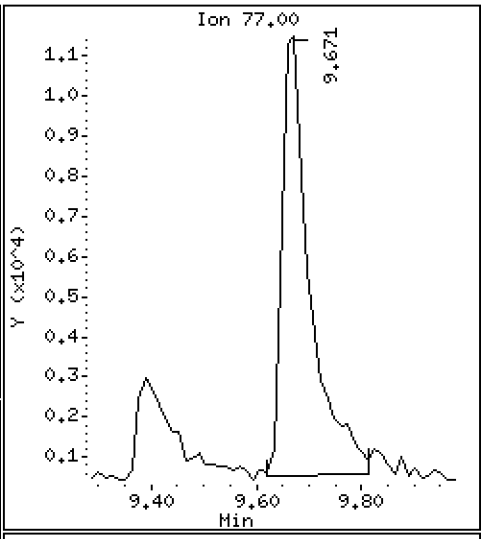
Column phase: ZB-5msi

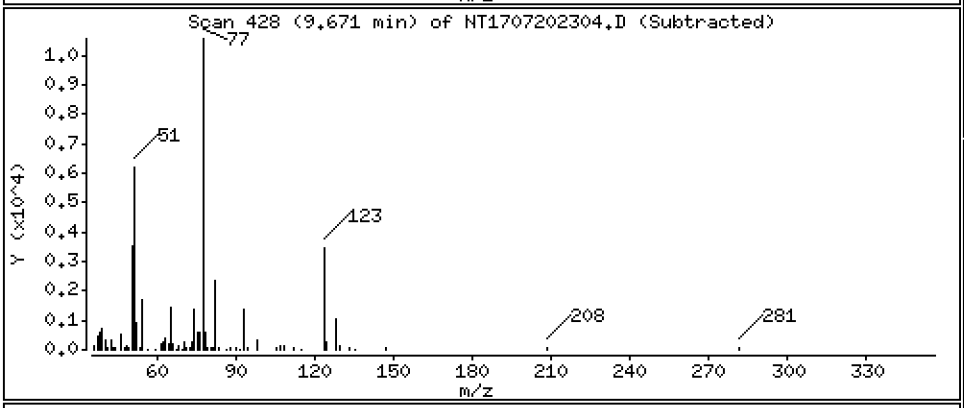
Column diameter: 0.25

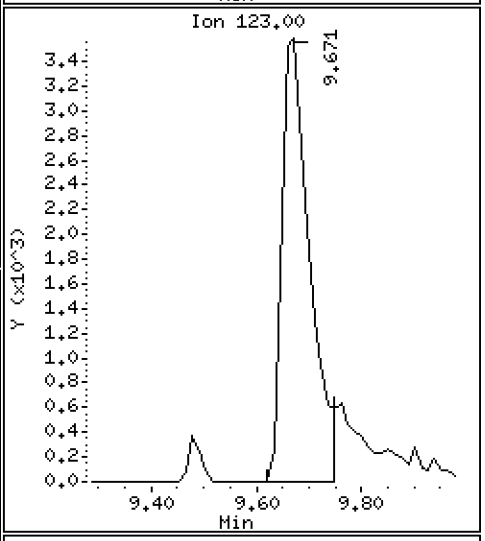
19 Nitrobenzene

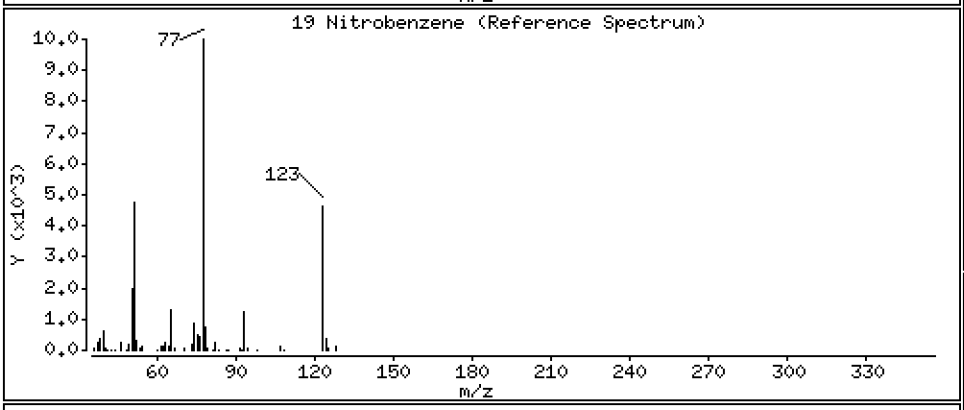
Concentration: 0.4460 ug/mL

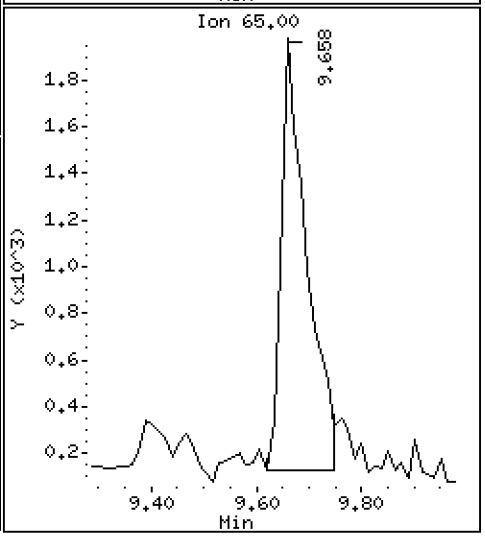


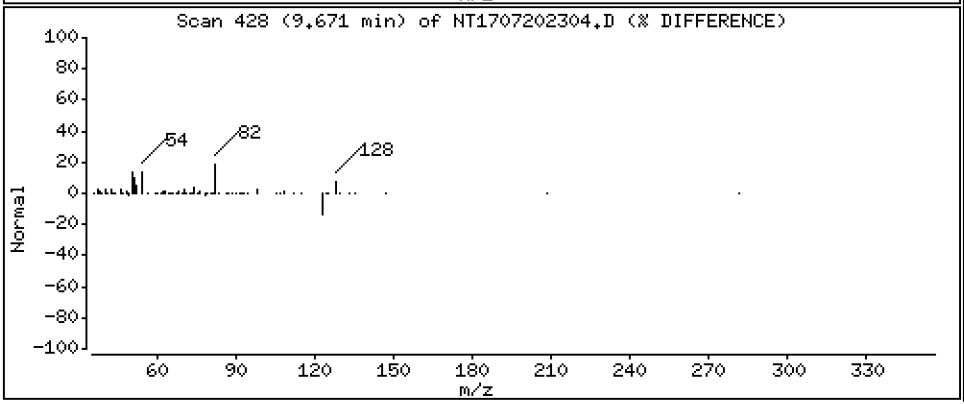












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

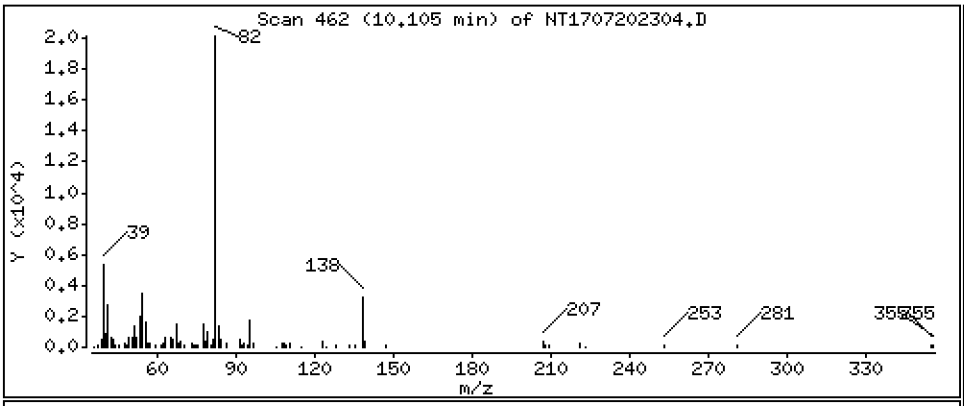
Operator: JGR

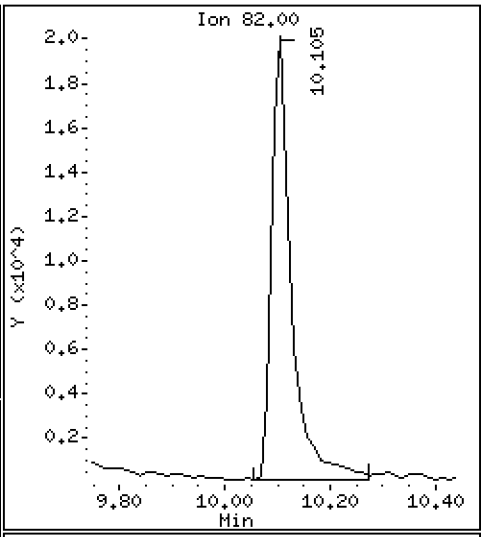
Column phase: ZB-5msi

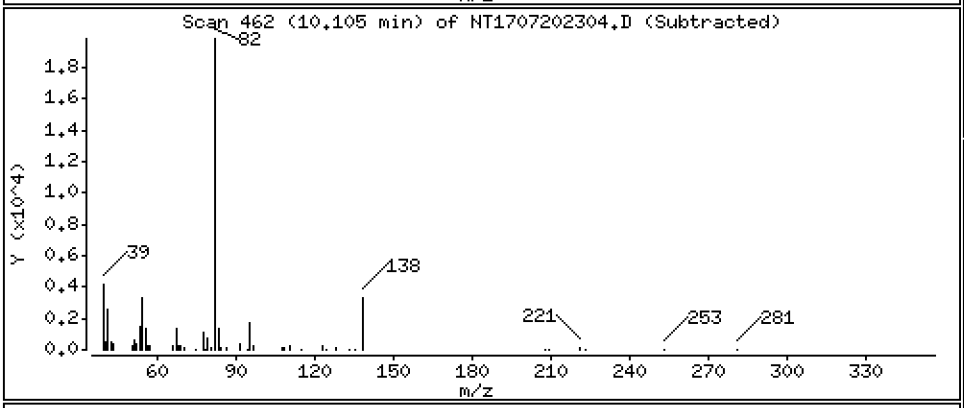
Column diameter: 0.25

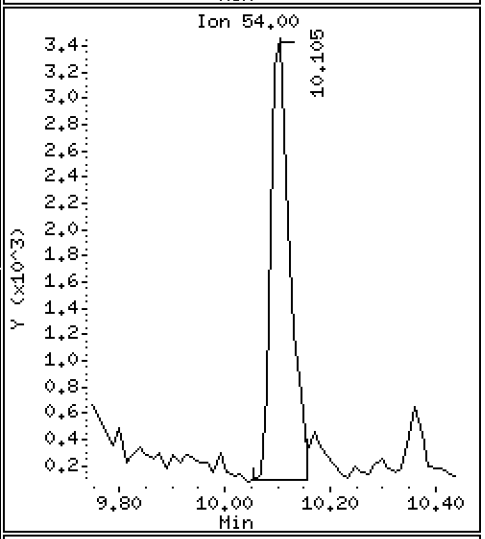
20 Isophorone

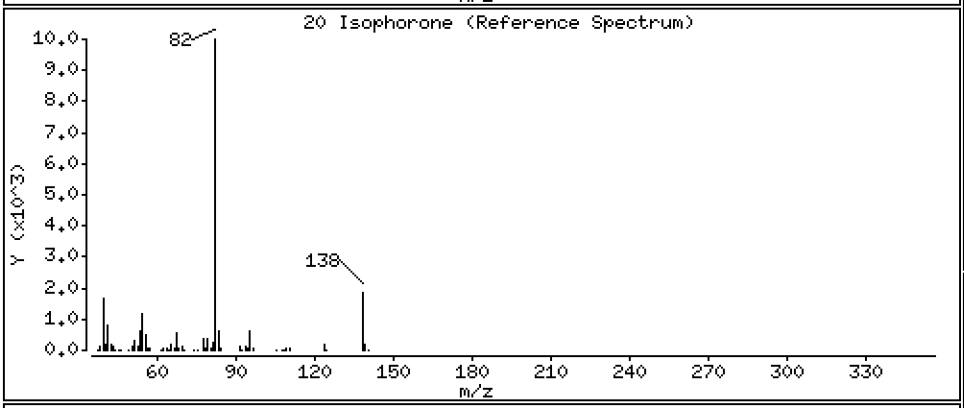
Concentration: 0.4231 ug/mL

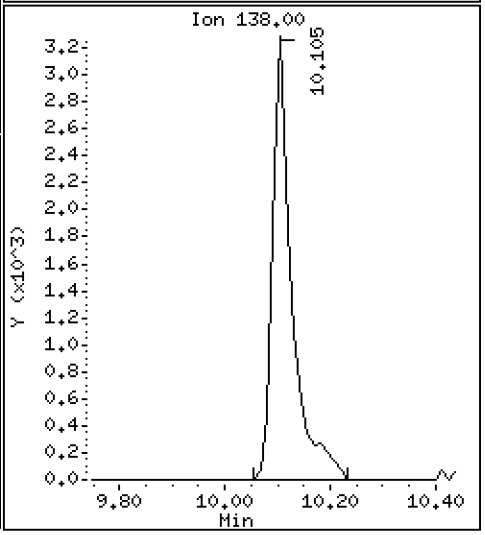


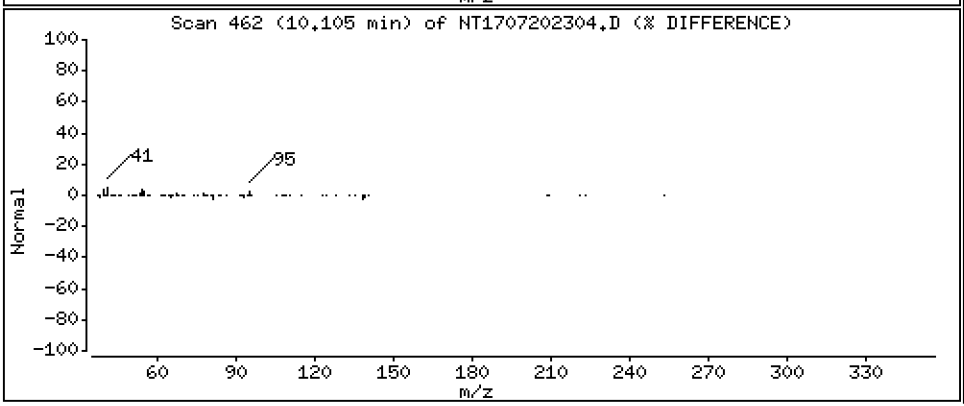












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

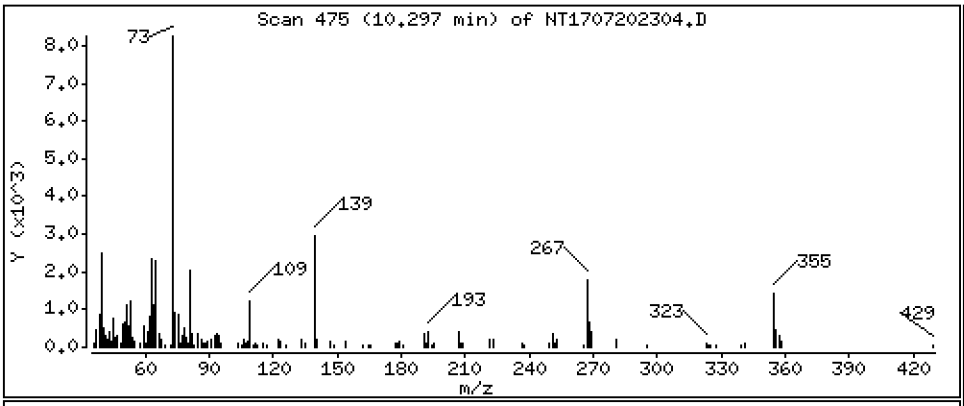
Operator: JGR

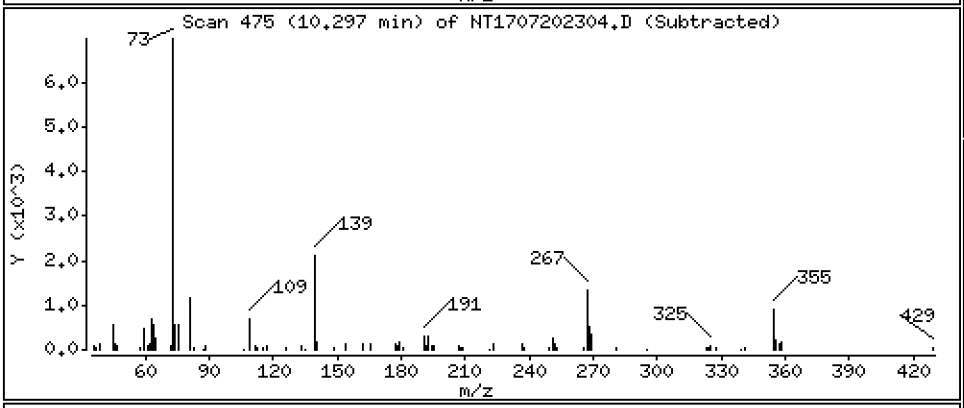
Column phase: ZB-5msi

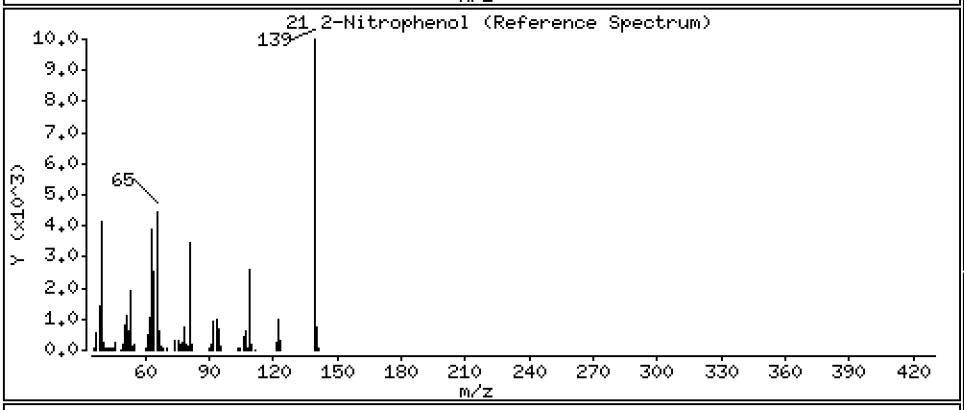
Column diameter: 0.25

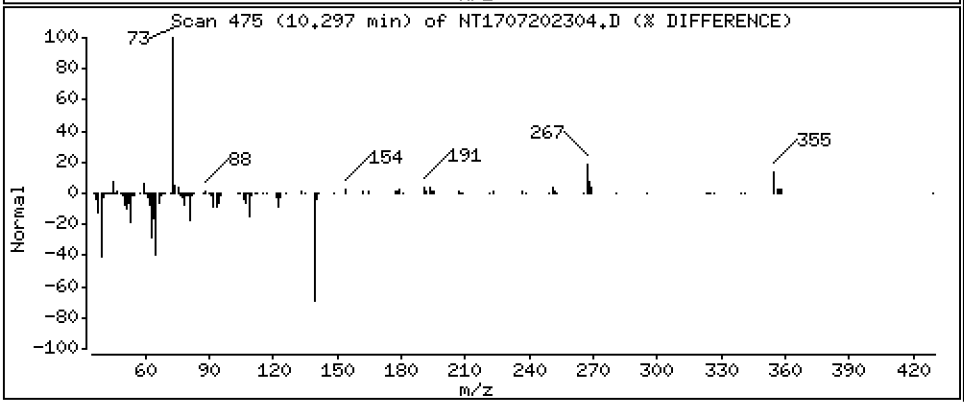
21 2-Nitrophenol

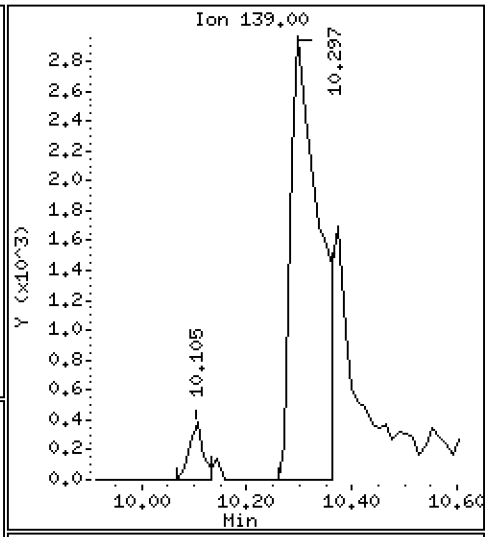
Concentration: 0.2948 ug/mL

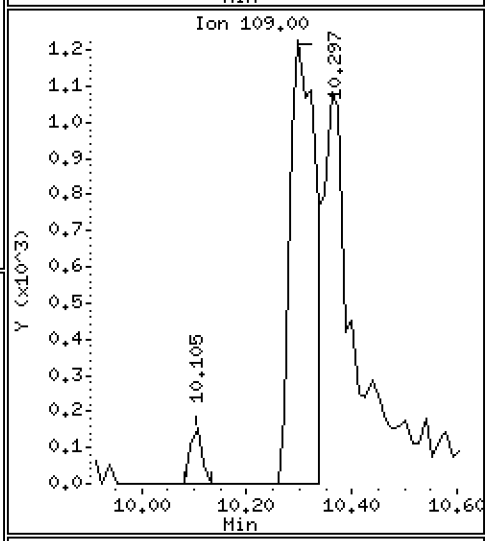


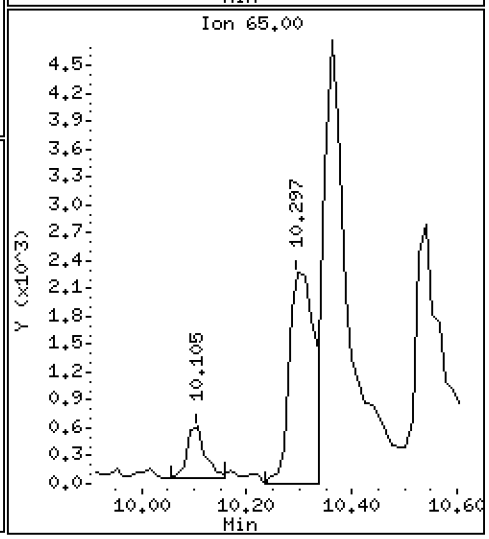












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

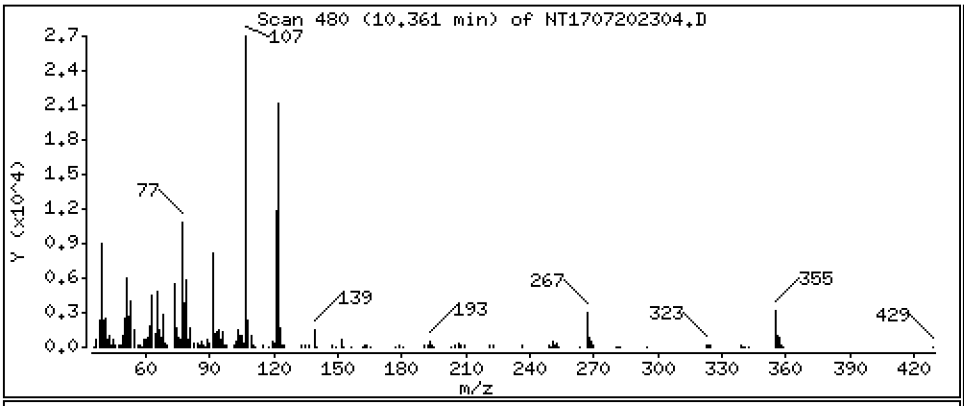
Operator: JGR

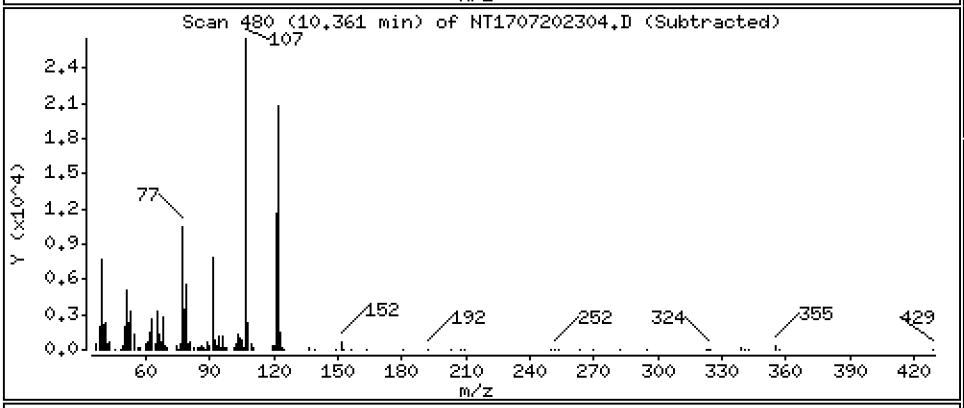
Column phase: ZB-5msi

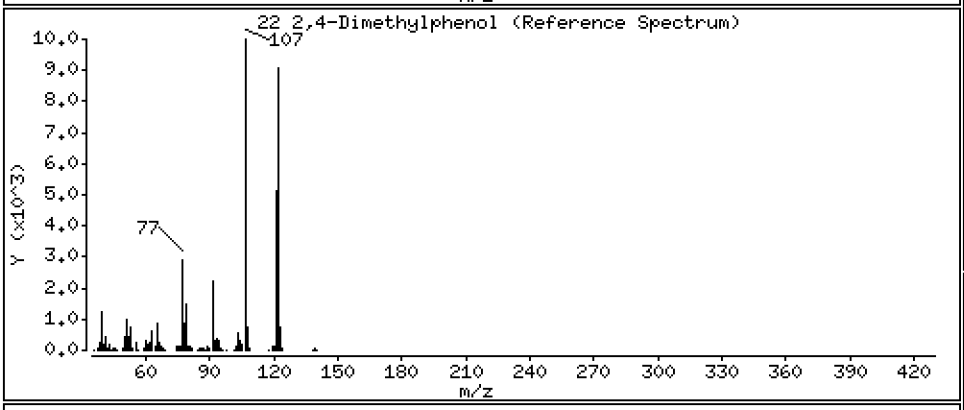
Column diameter: 0.25

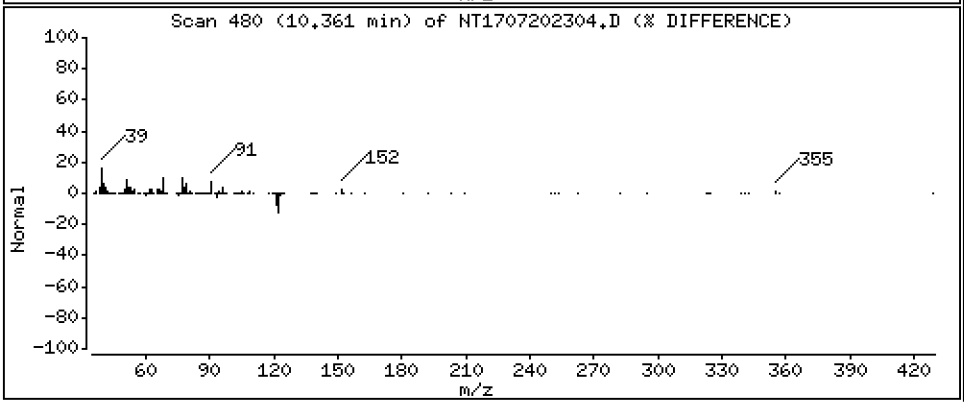
22 2,4-Dimethylphenol

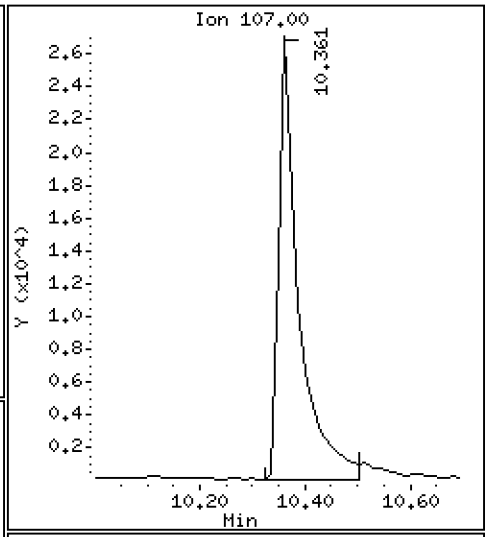
Concentration: 0.8328 ug/mL

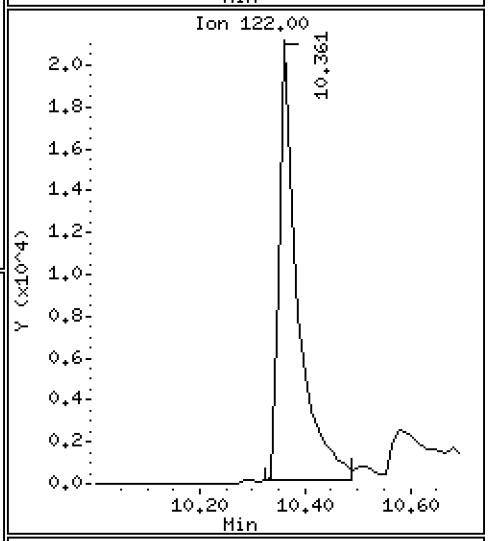


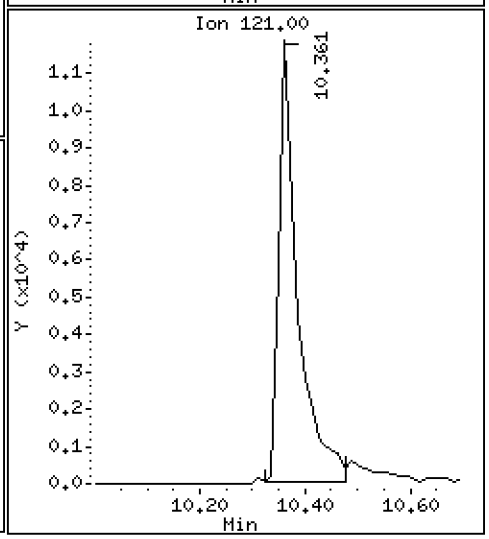












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

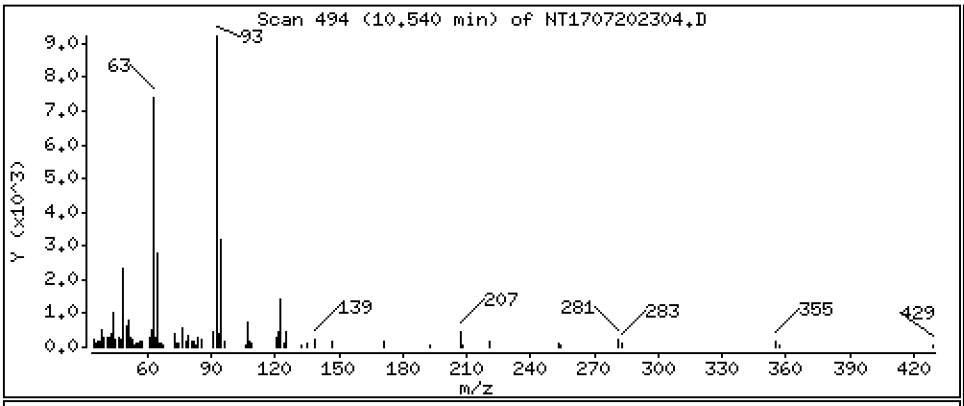
Operator: JGR

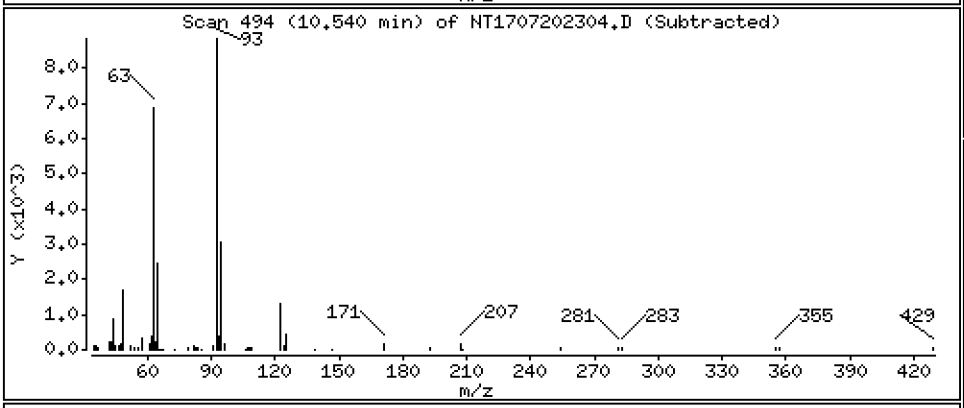
Column phase: ZB-5msi

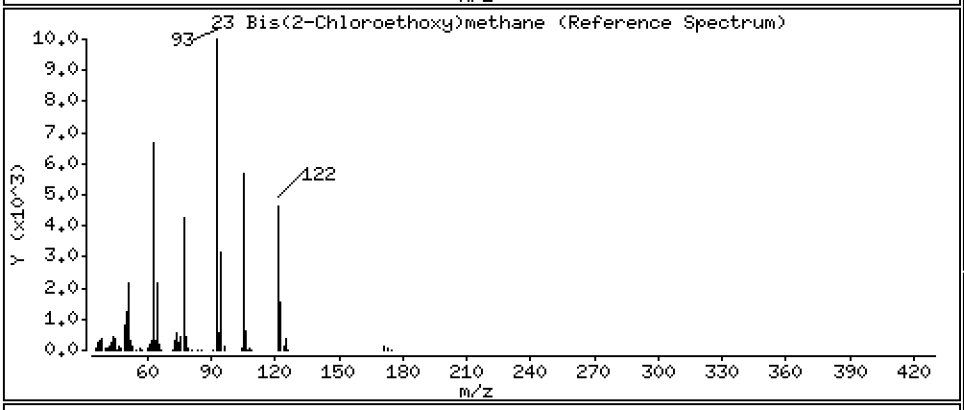
Column diameter: 0.25

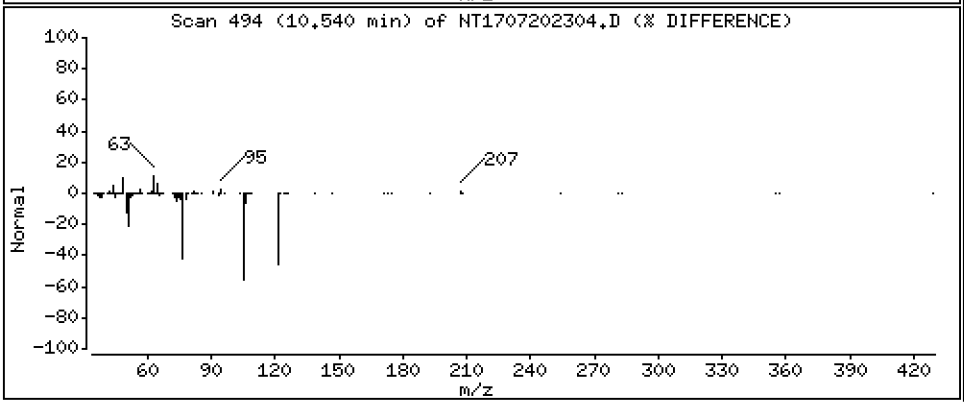
23 Bis(2-Chloroethoxy)methane

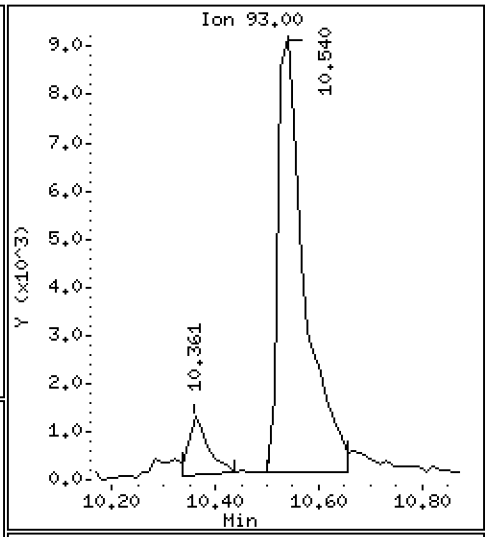
Concentration: 0.4123 ug/mL

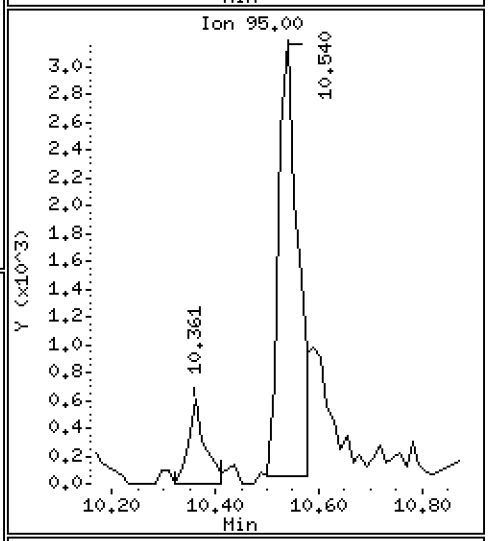


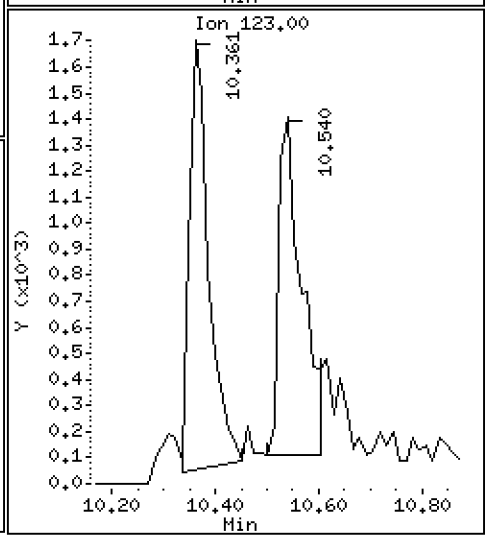












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

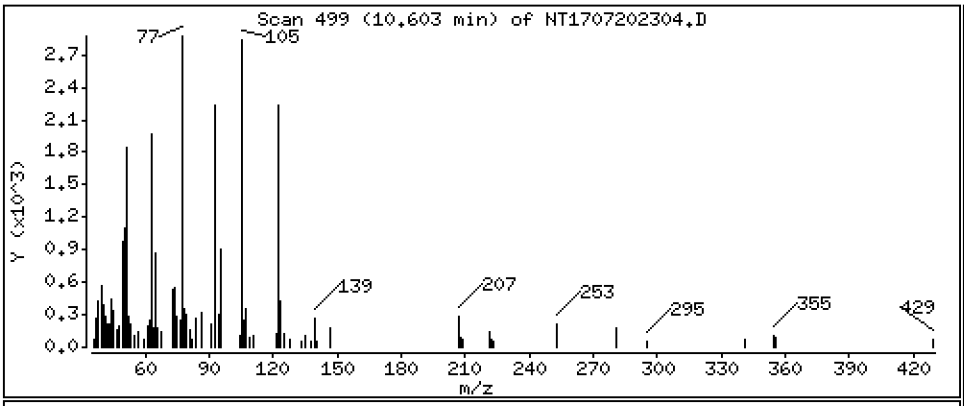
Operator: JGR

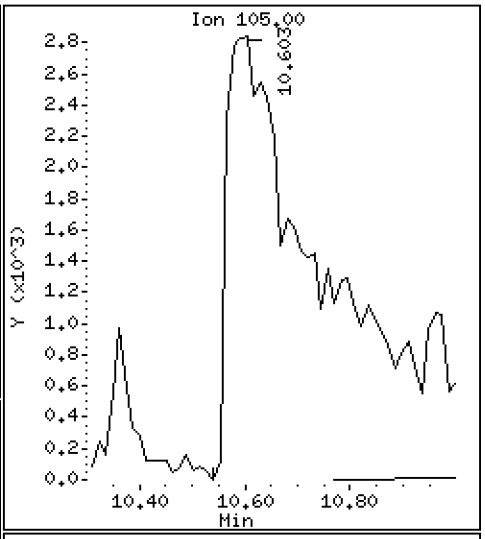
Column phase: ZB-5msi

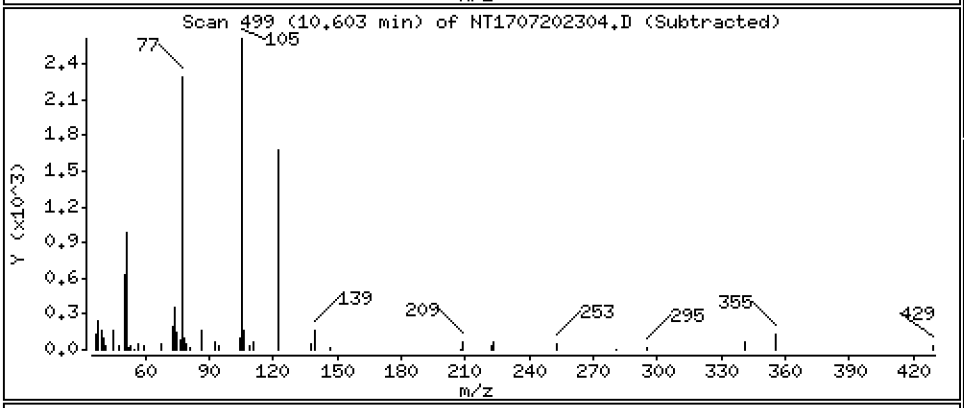
Column diameter: 0.25

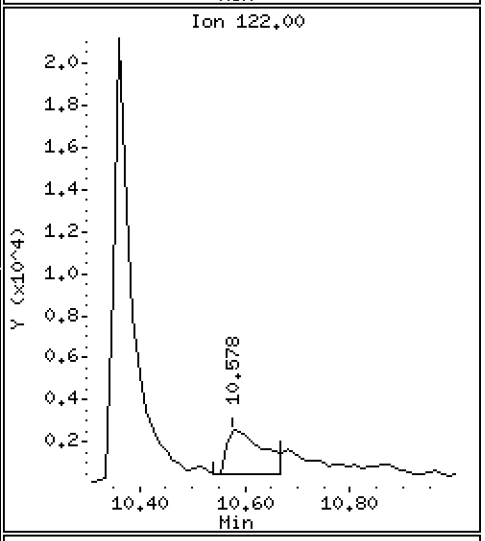
24 Benzoic acid

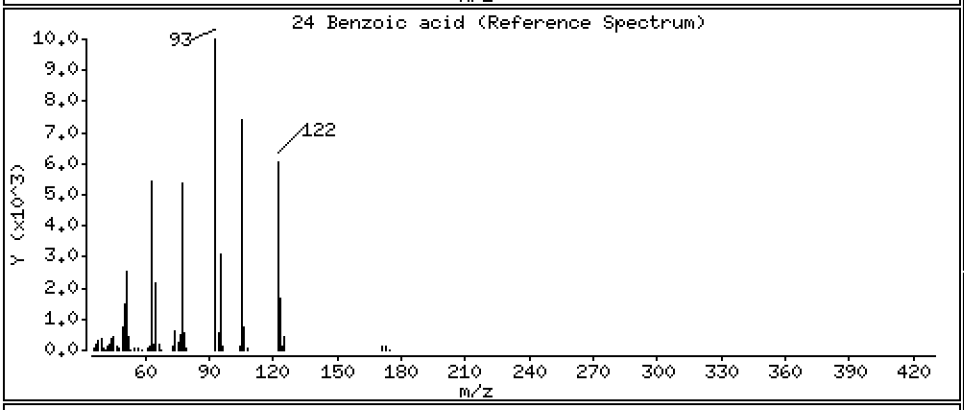
Concentration: 0.6590 ug/mL

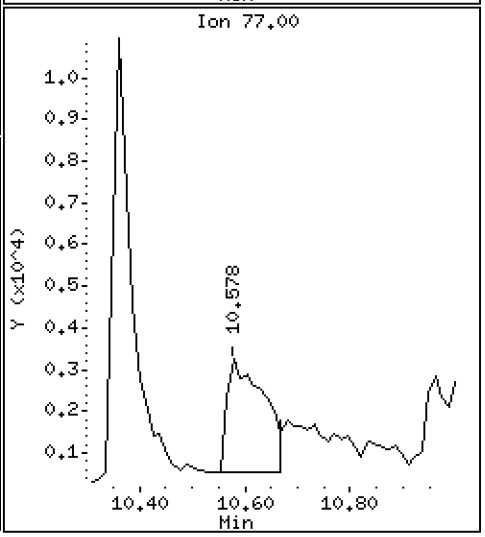


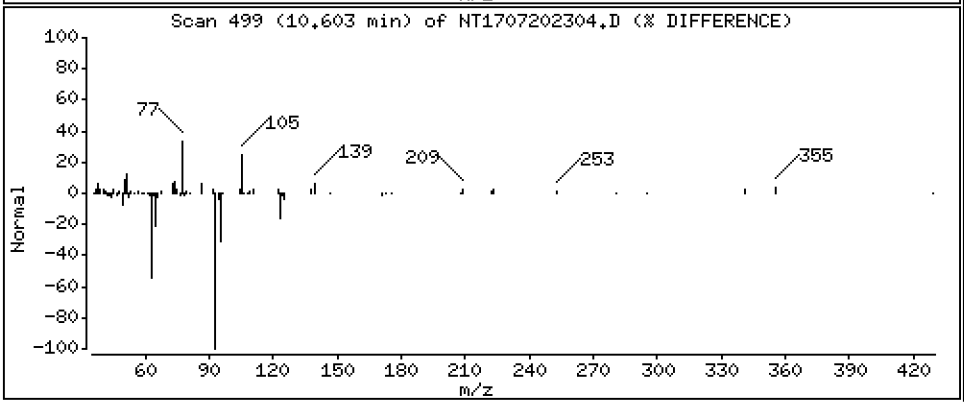












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

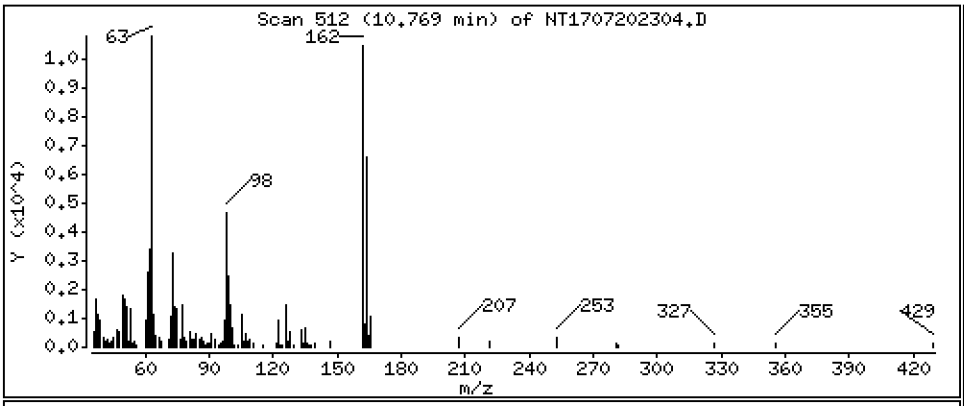
Operator: JGR

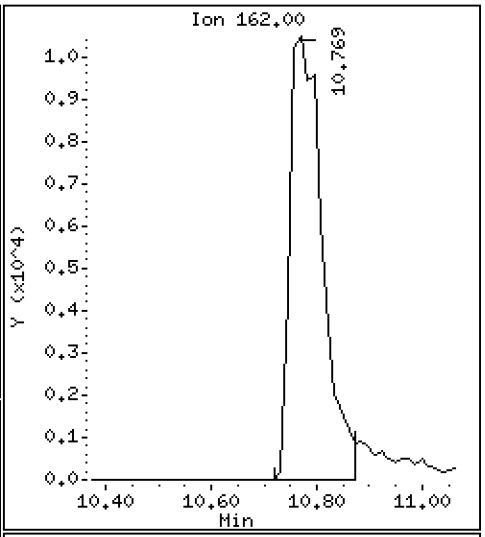
Column phase: ZB-5msi

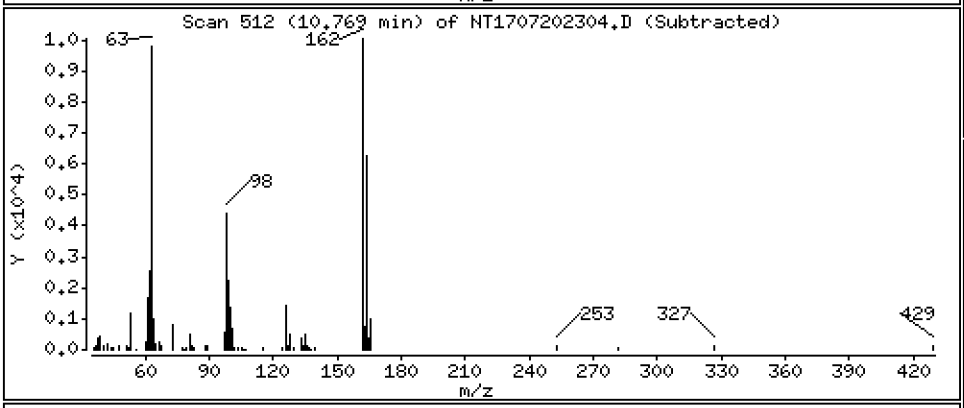
Column diameter: 0.25

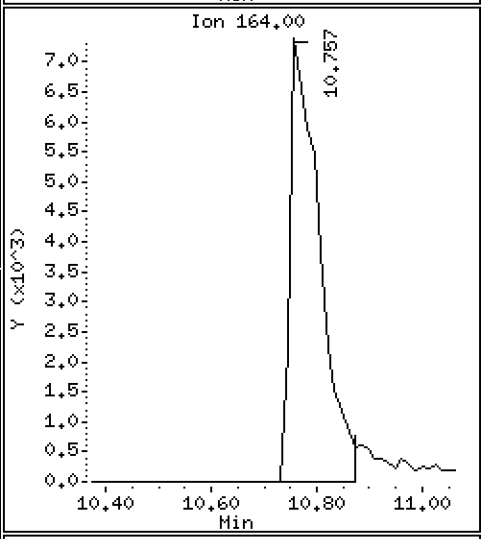
25 2,4-Dichlorophenol

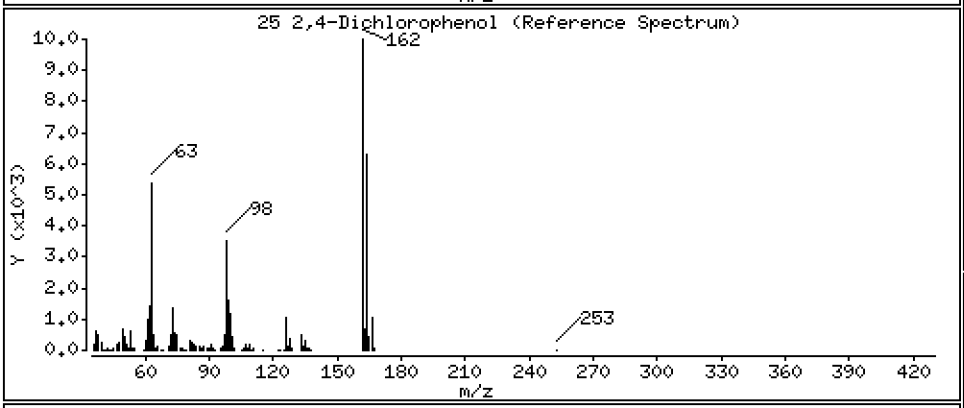
Concentration: 0.8192 ug/mL

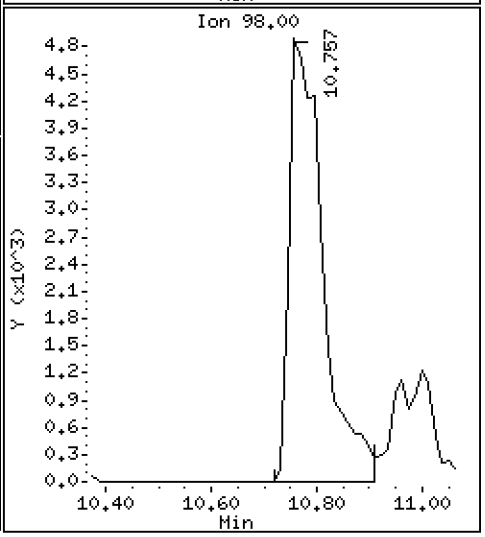


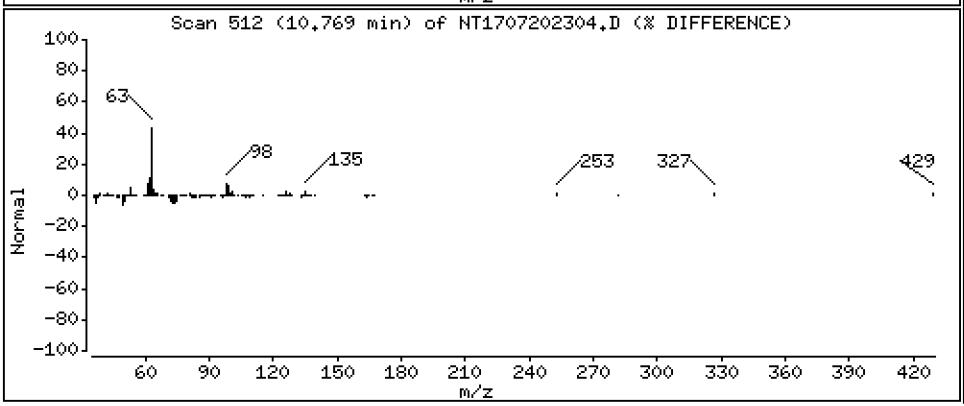












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

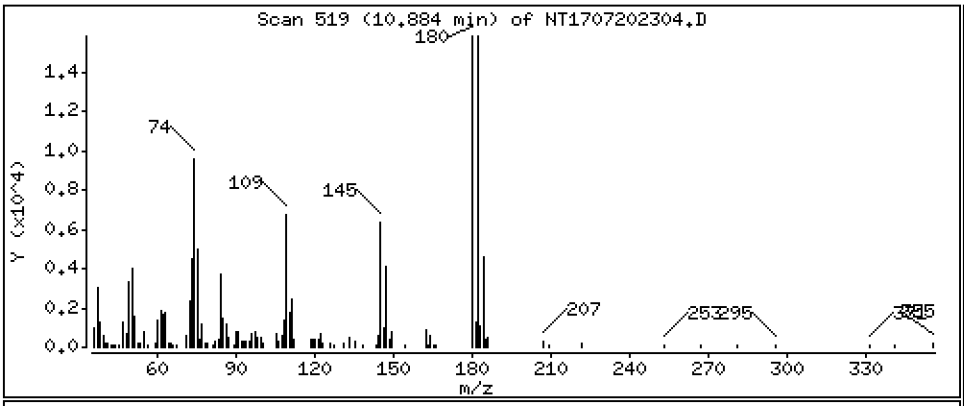
Operator: JGR

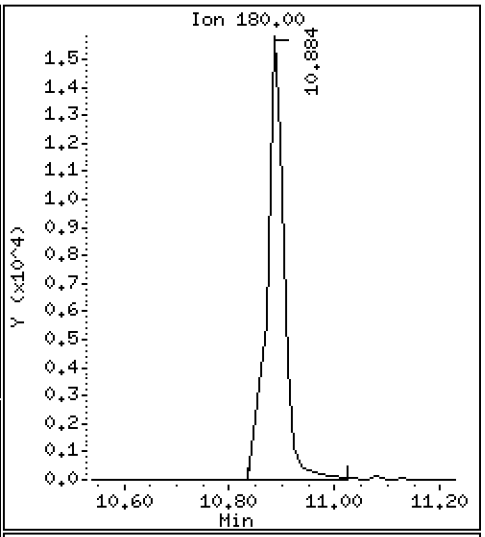
Column phase: ZB-5msi

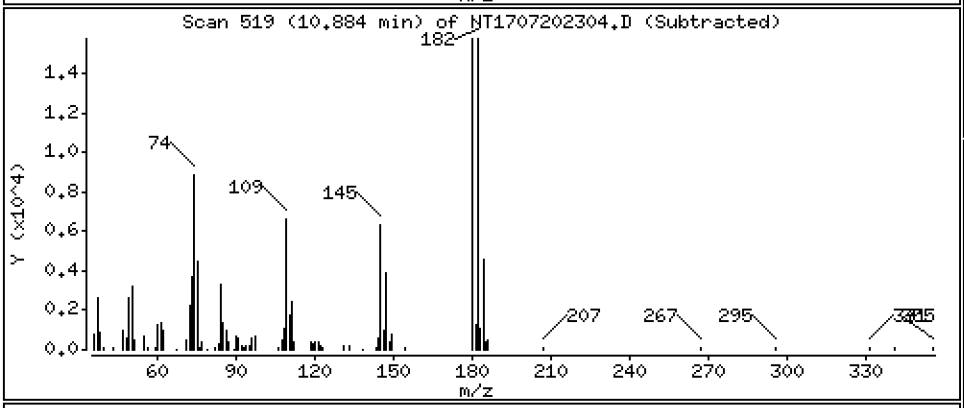
Column diameter: 0.25

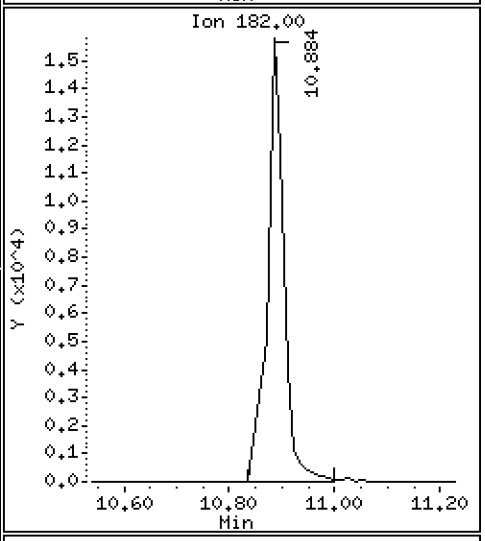
26 1,2,4-Trichlorobenzene

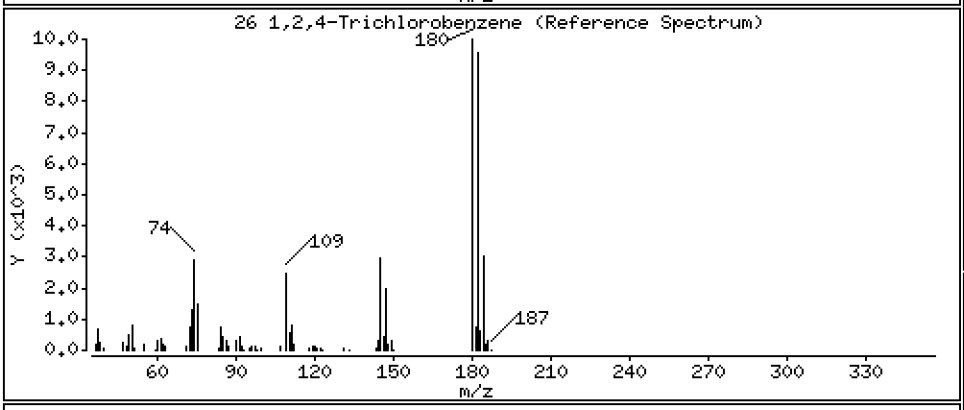
Concentration: 0.5229 ug/mL

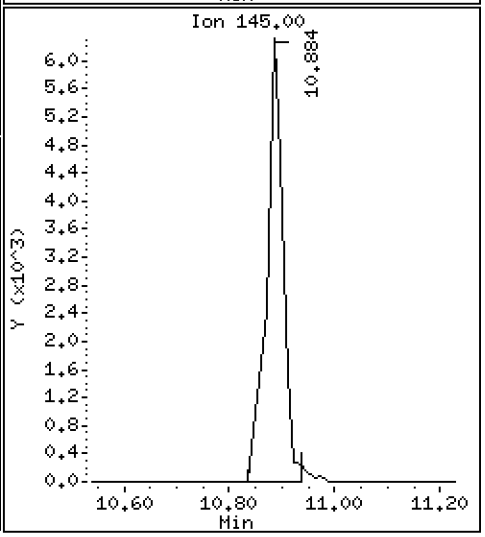


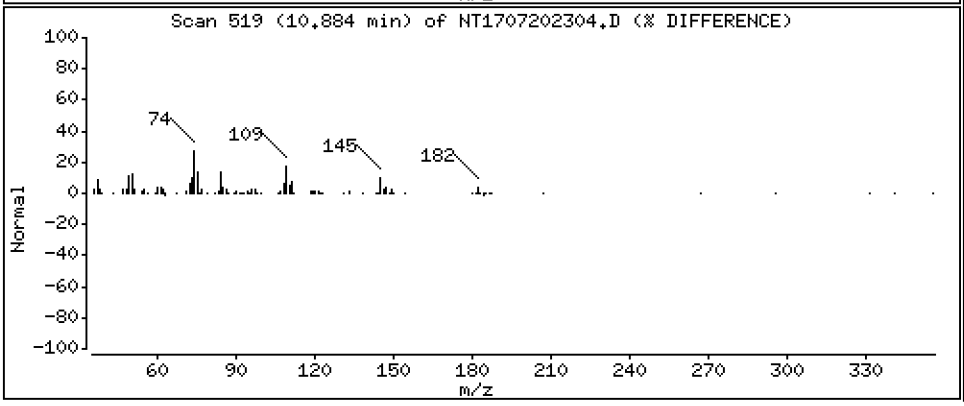












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

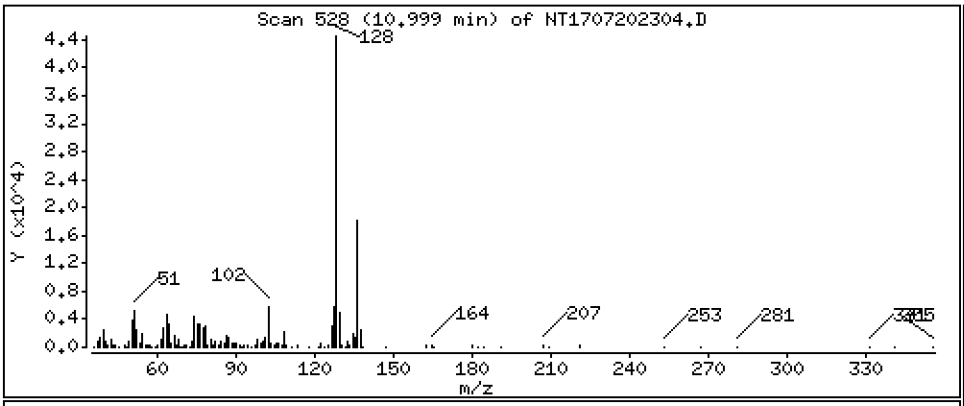
Operator: JGR

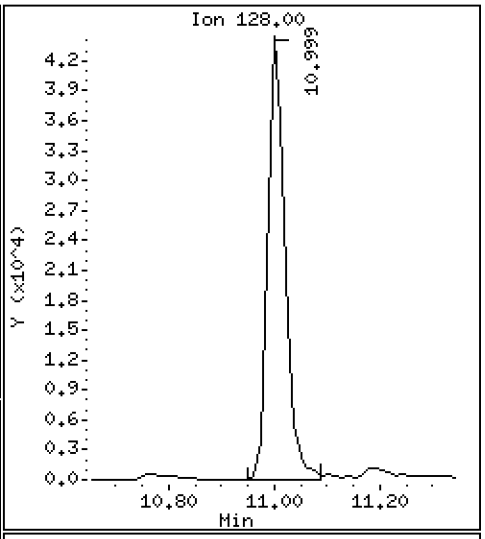
Column phase: ZB-5msi

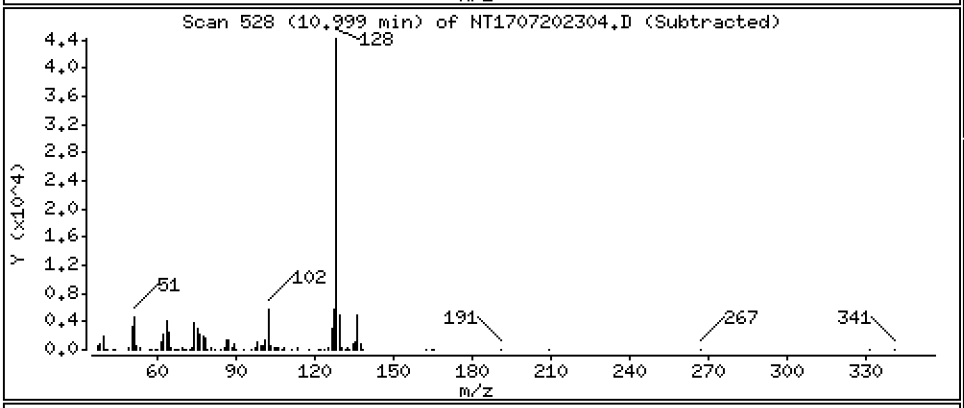
Column diameter: 0.25

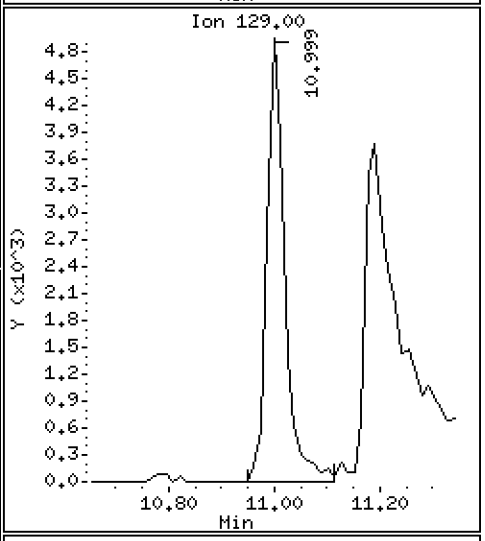
28 Naphthalene

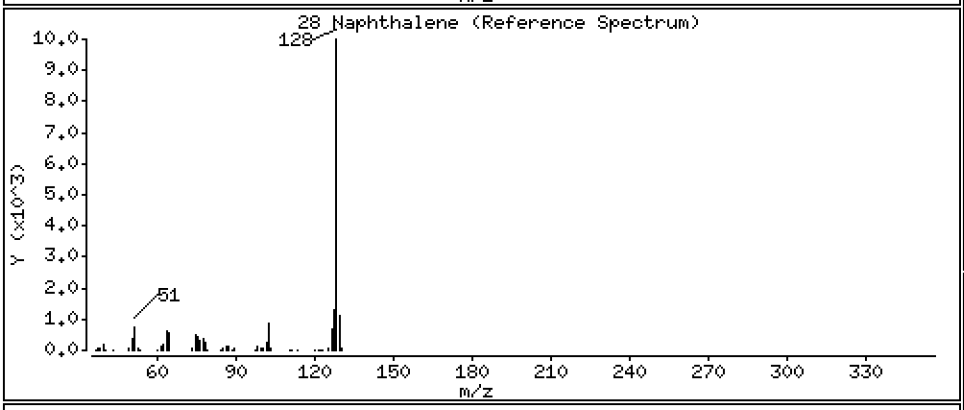
Concentration: 0.4647 ug/mL

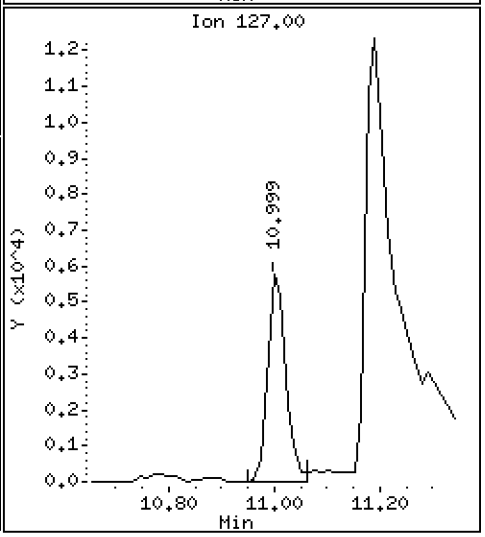


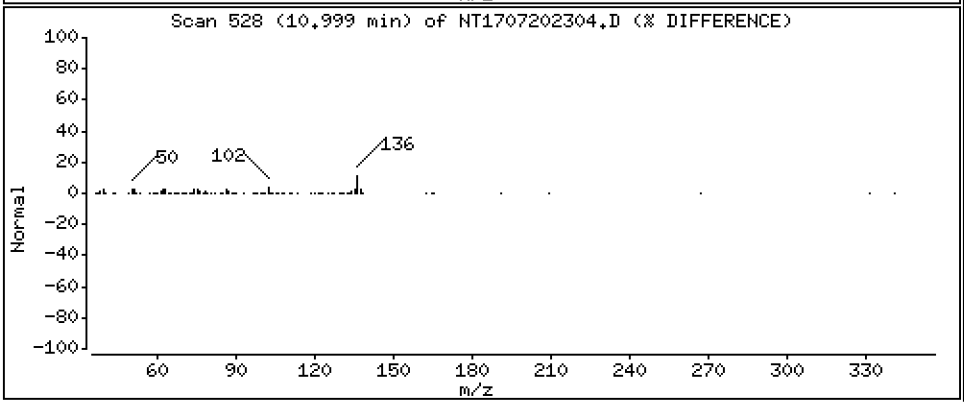












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D

Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

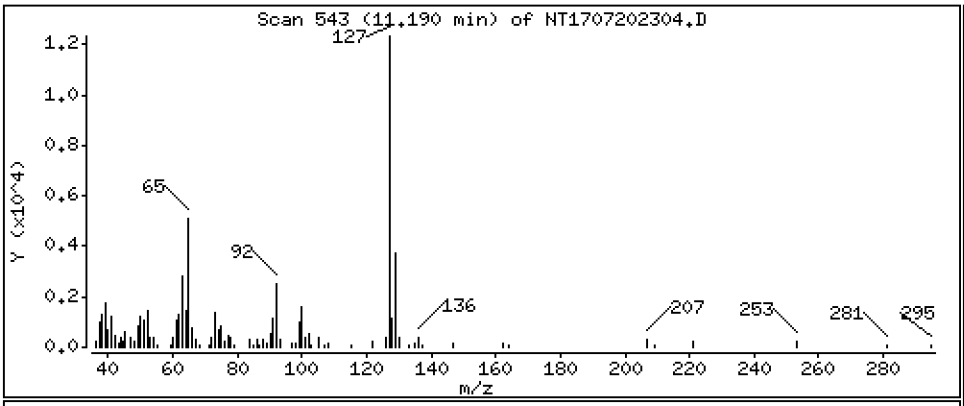
Operator: JGR

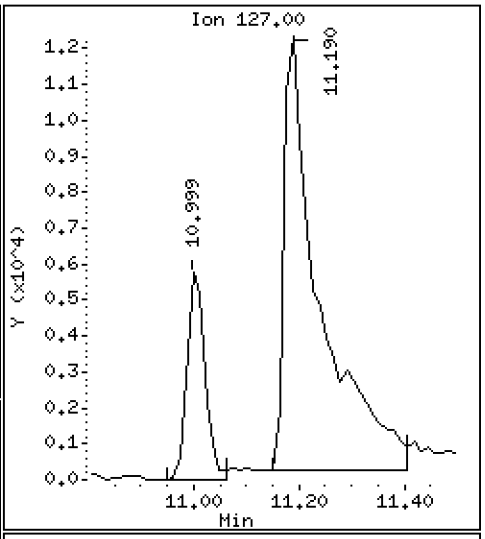
Column phase: ZB-5msi

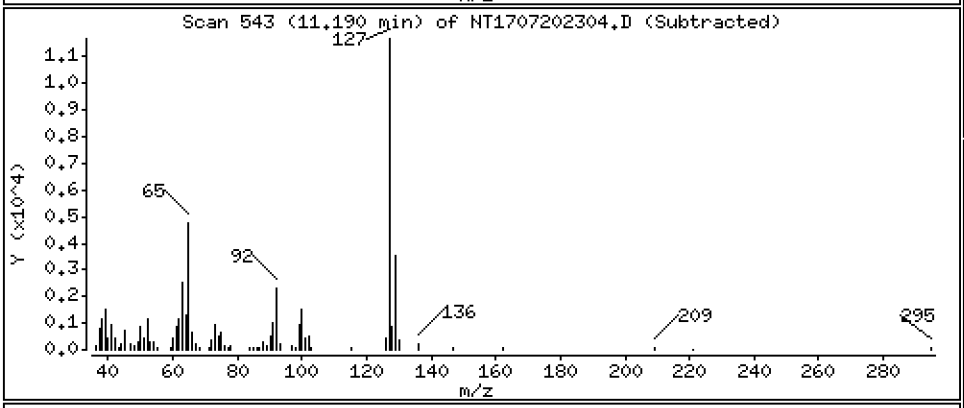
Column diameter: 0.25

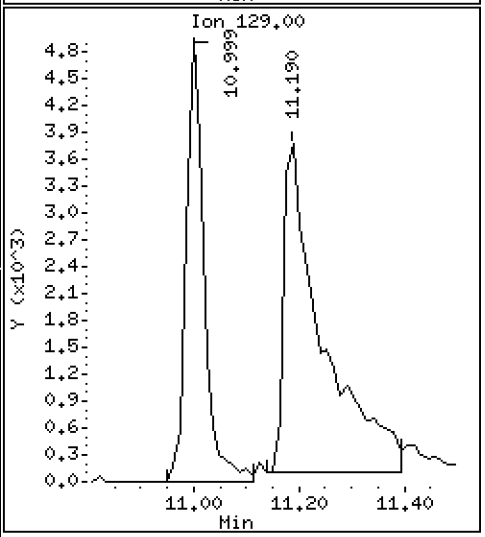
29 4-Chloroaniline

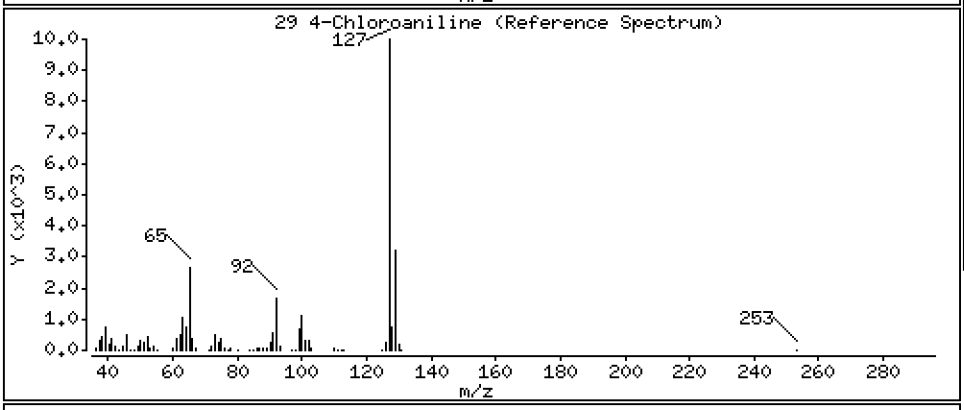
Concentration: 0.6096 ug/mL

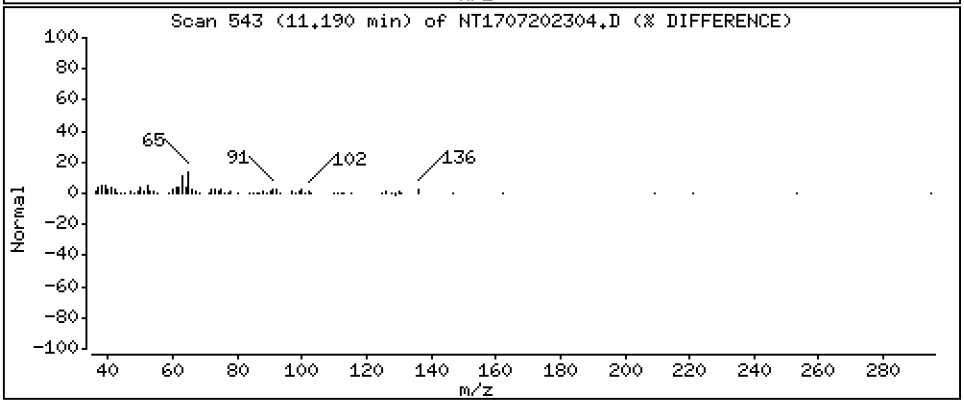












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D

Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

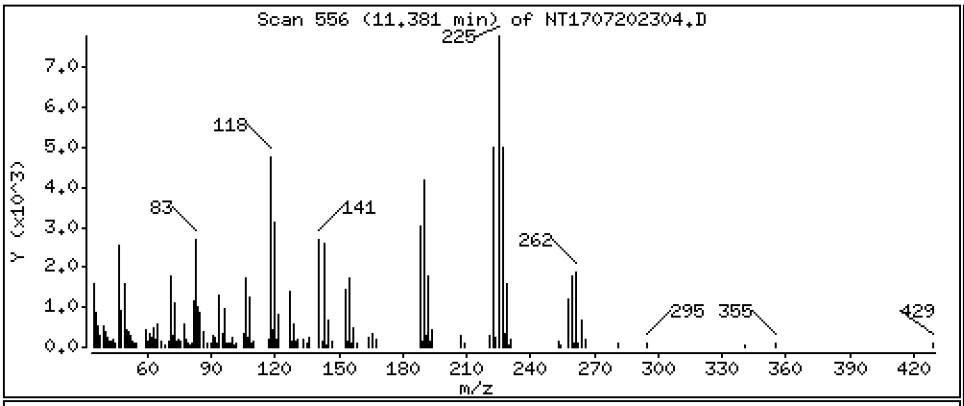
Operator: JGR

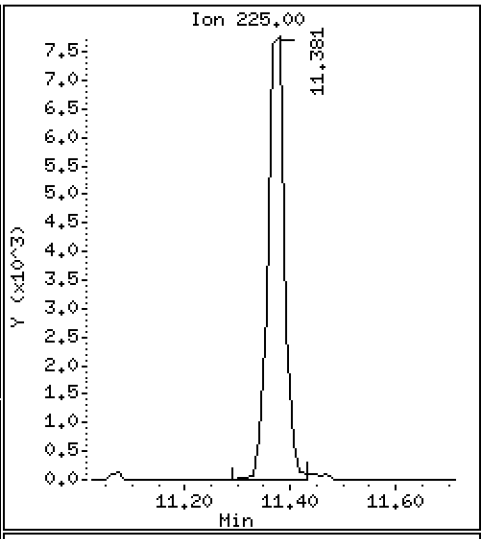
Column phase: ZB-5msi

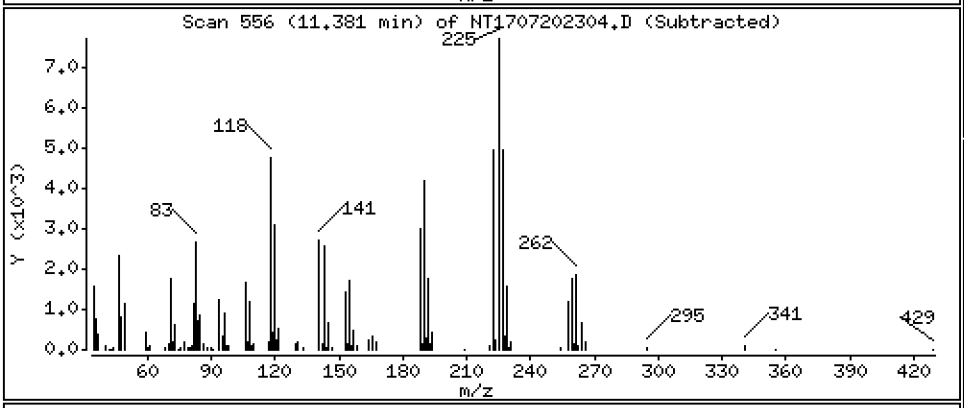
Column diameter: 0.25

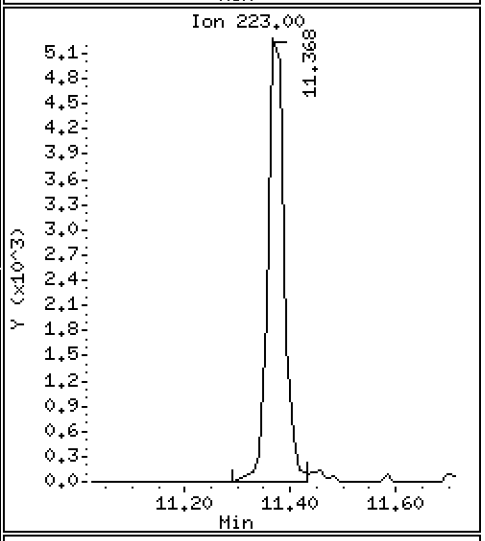
30 Hexachlorobutadiene

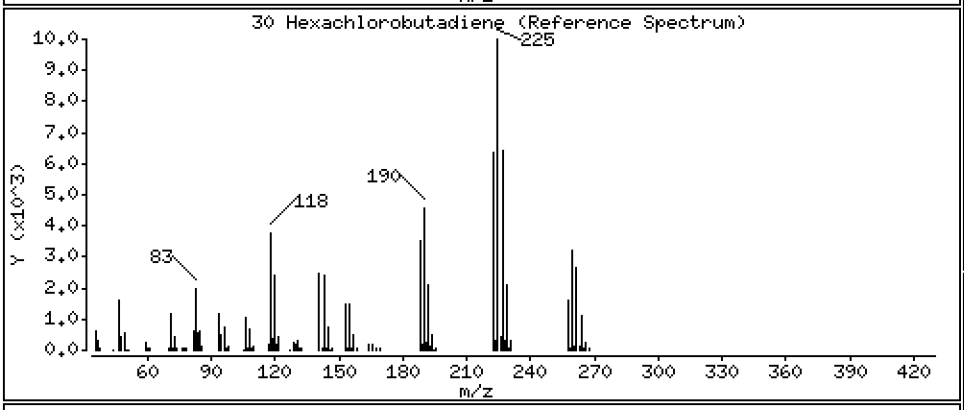
Concentration: 0.6204 ug/mL

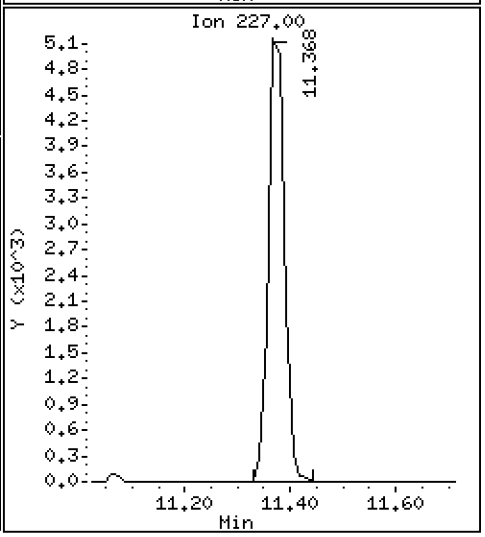


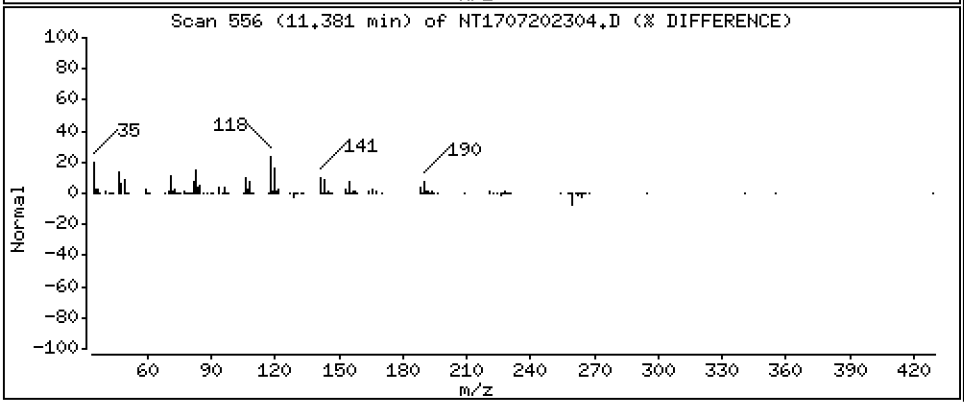












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D

Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

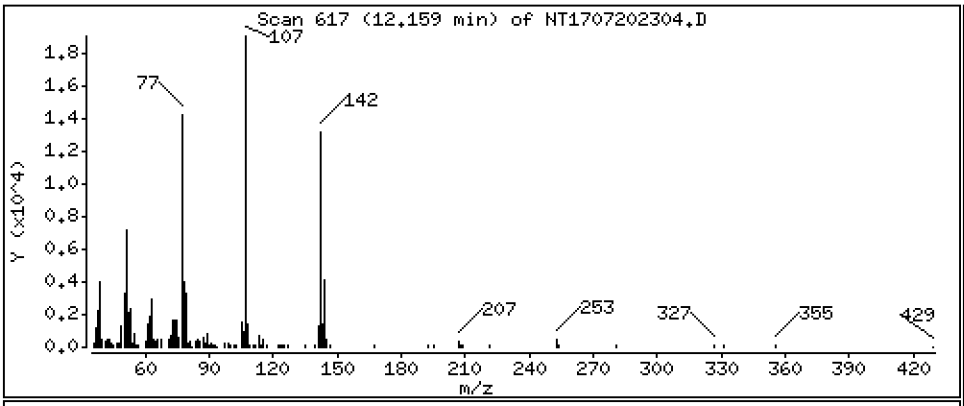
Operator: JGR

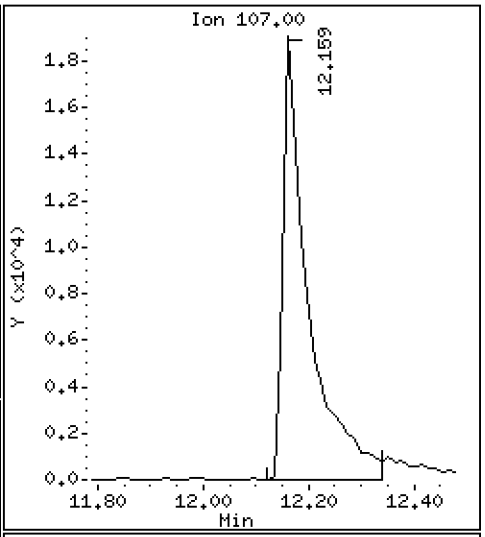
Column phase: ZB-5msi

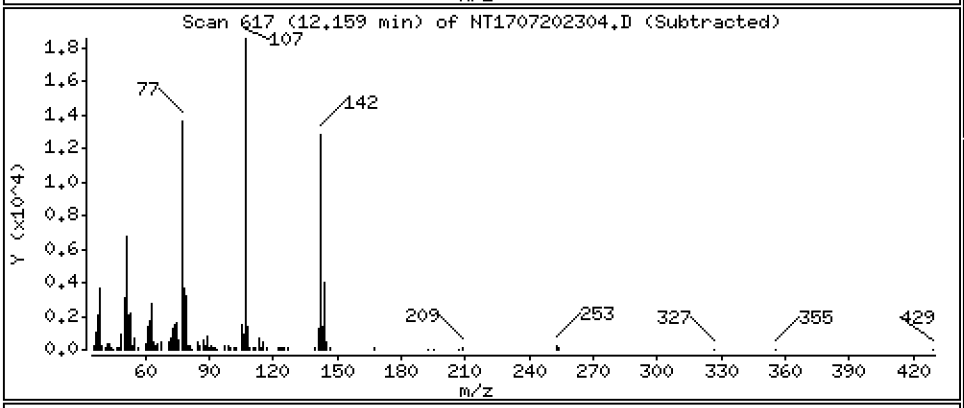
Column diameter: 0.25

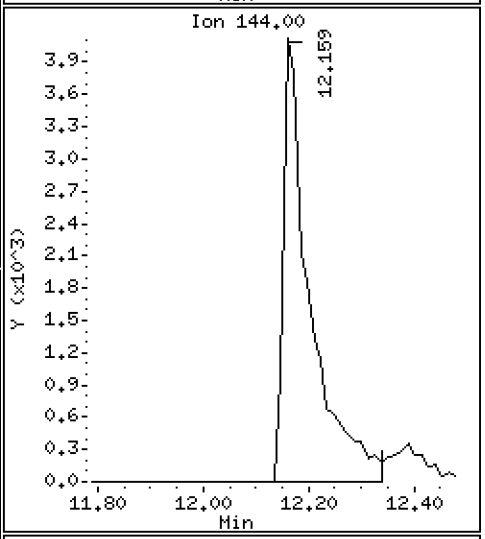
31 4-Chloro-3-methylphenol

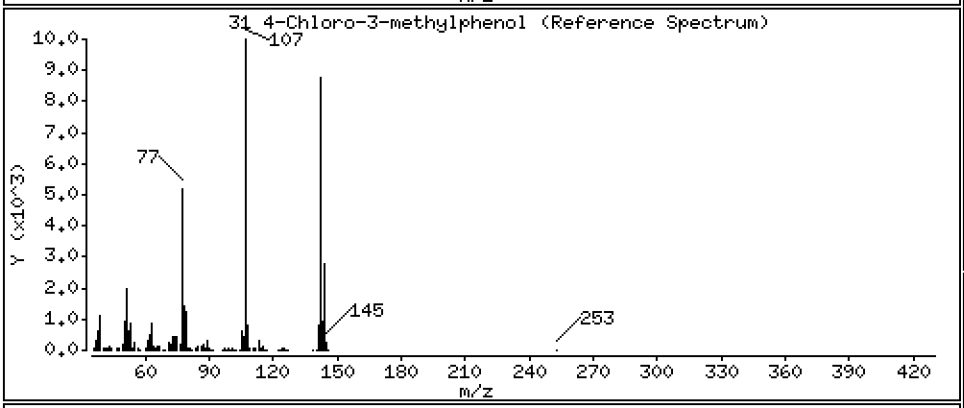
Concentration: 0.8978 ug/mL

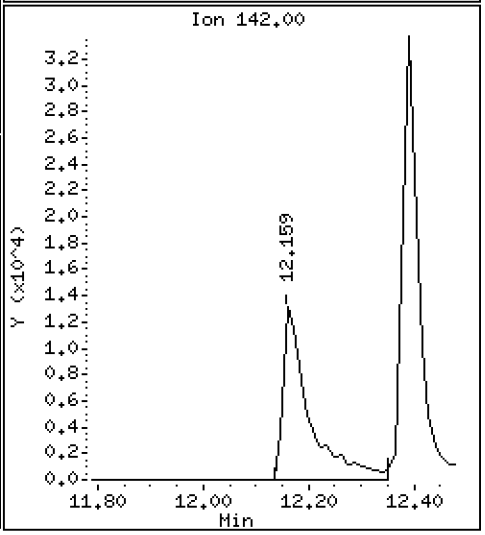


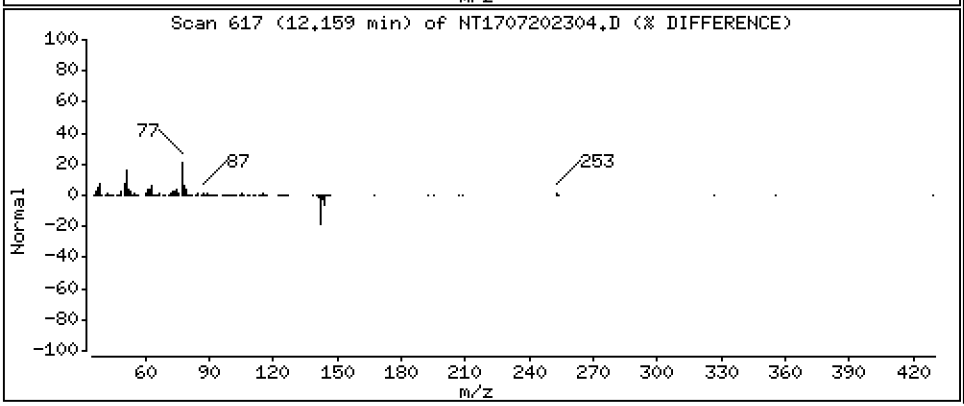












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

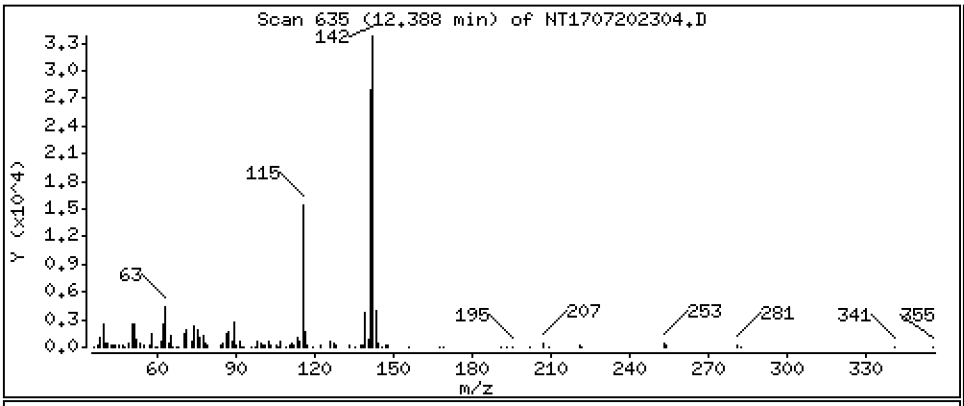
Operator: JGR

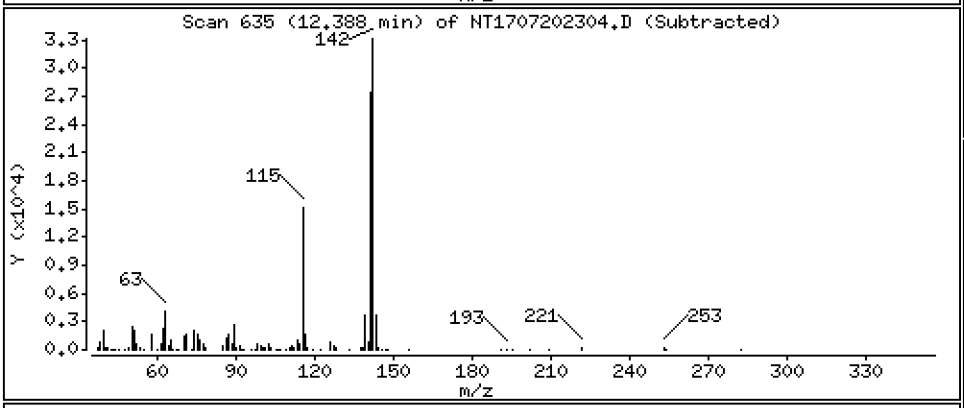
Column phase: ZB-5msi

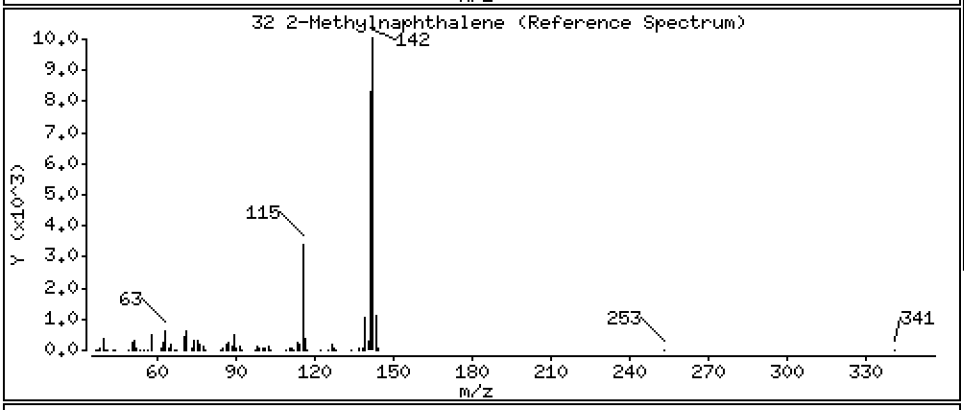
Column diameter: 0.25

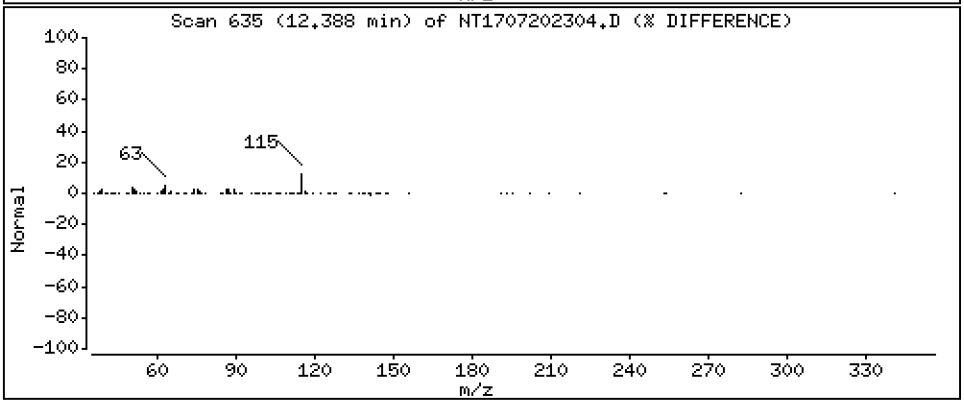
32 2-Methylnaphthalene

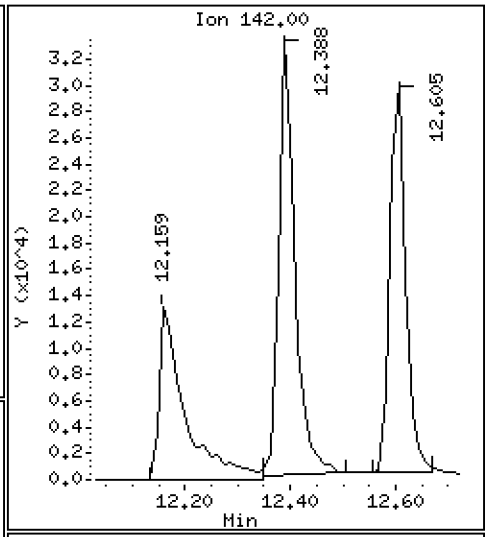
Concentration: 0.4693 ug/mL

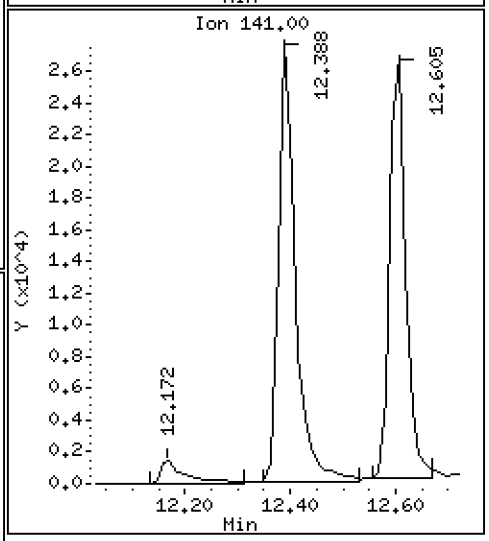












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D

Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

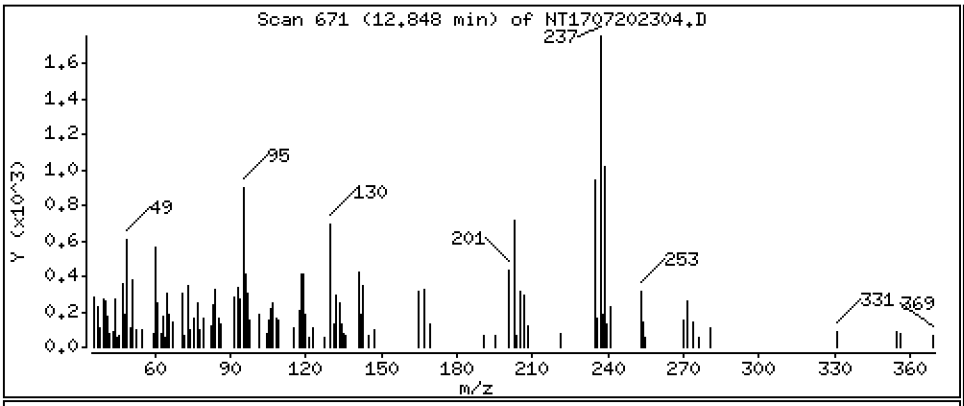
Operator: JGR

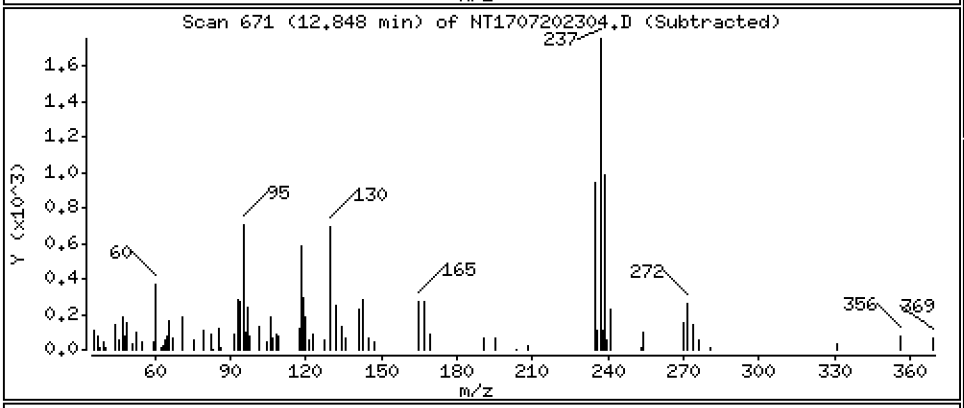
Column phase: ZB-5msi

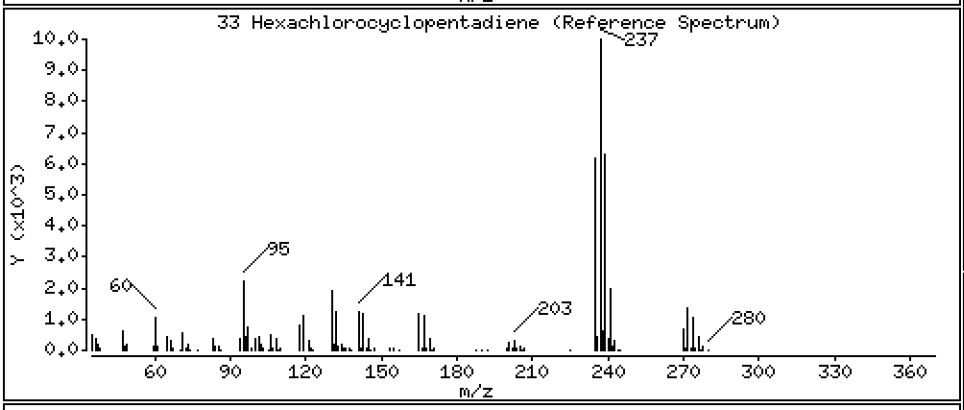
Column diameter: 0.25

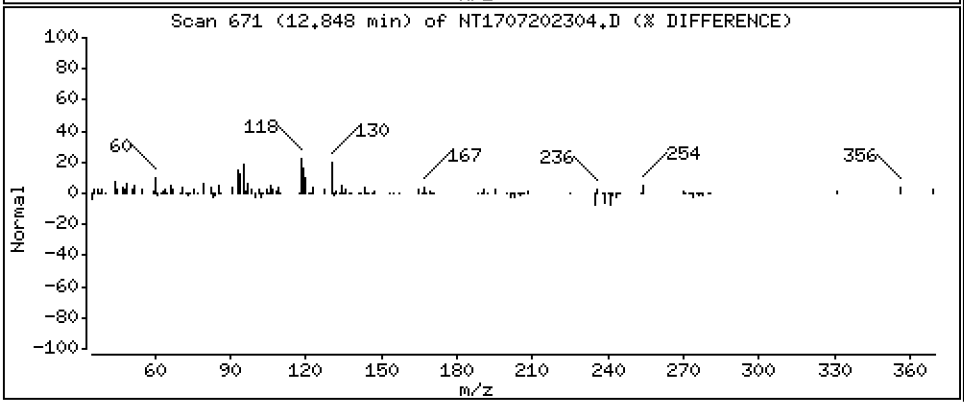
33 Hexachlorocyclopentadiene

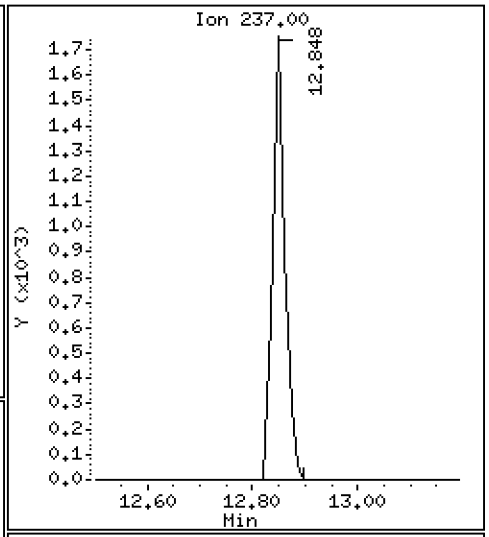
Concentration: 0.1517 ug/mL

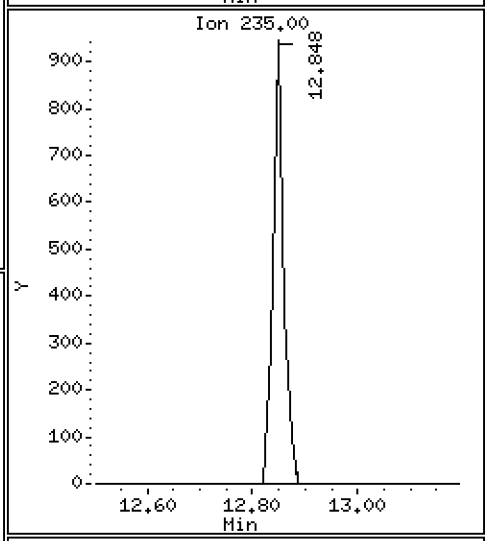


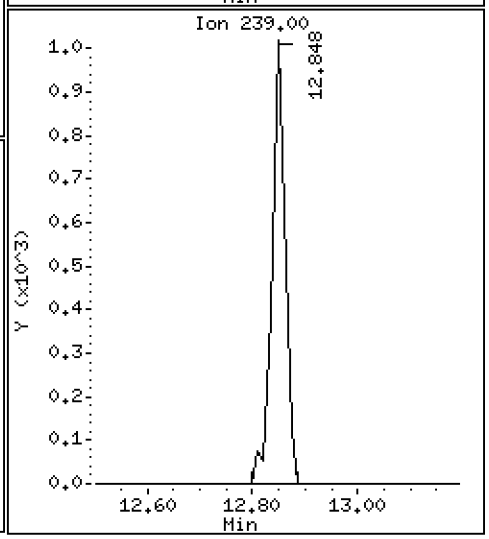












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

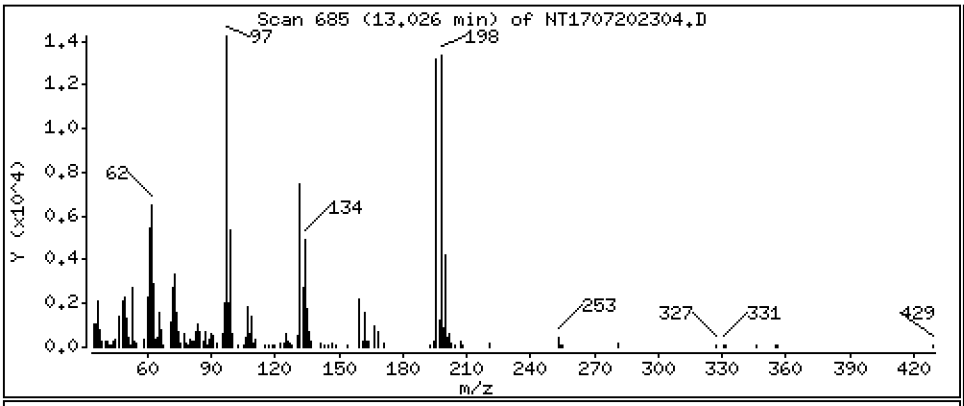
Operator: JGR

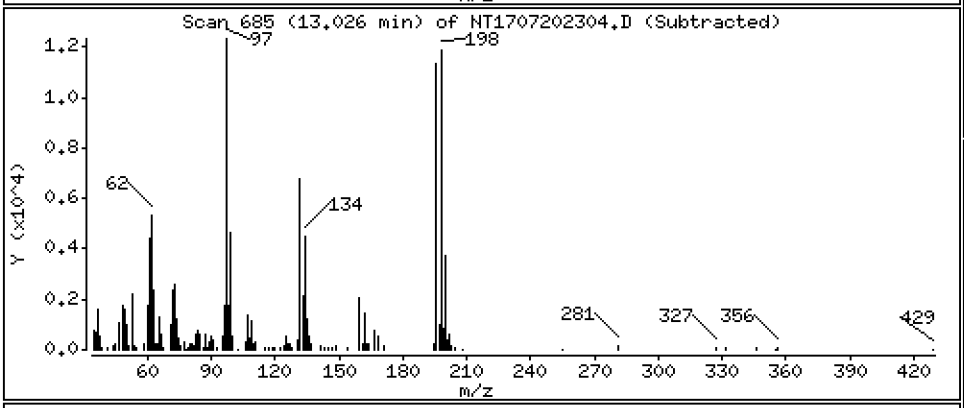
Column phase: ZB-5msi

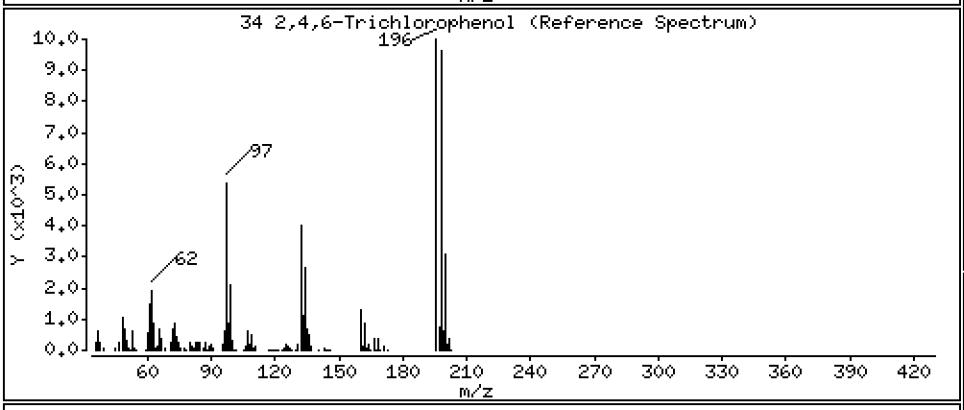
Column diameter: 0.25

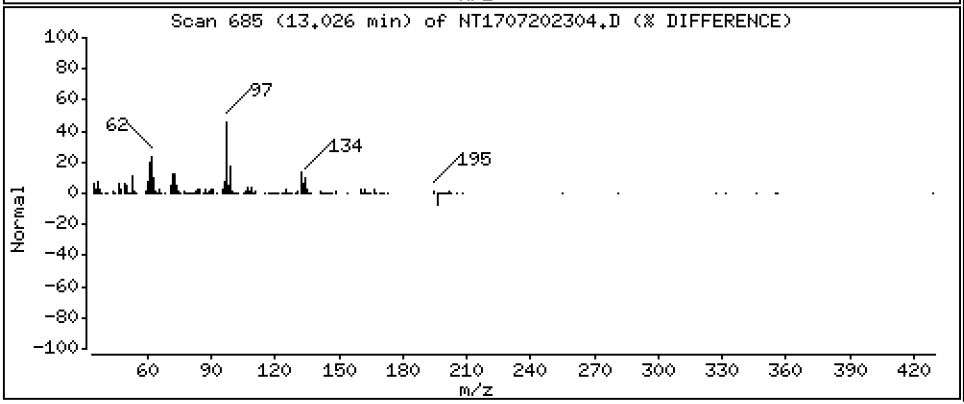
34 2,4,6-Trichlorophenol

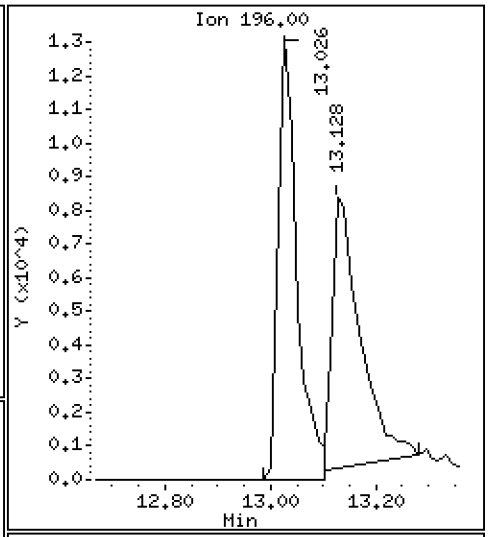
Concentration: 0.7801 ug/mL

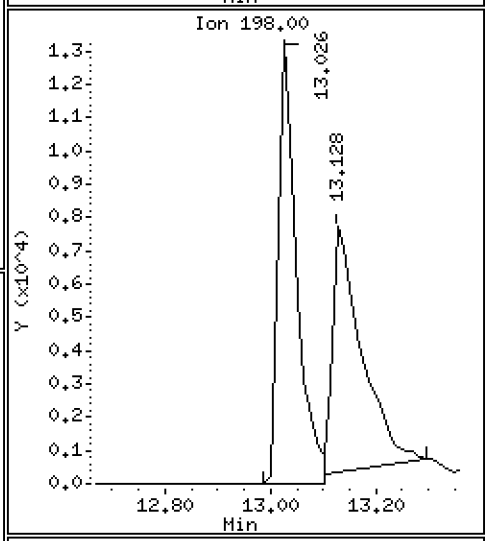


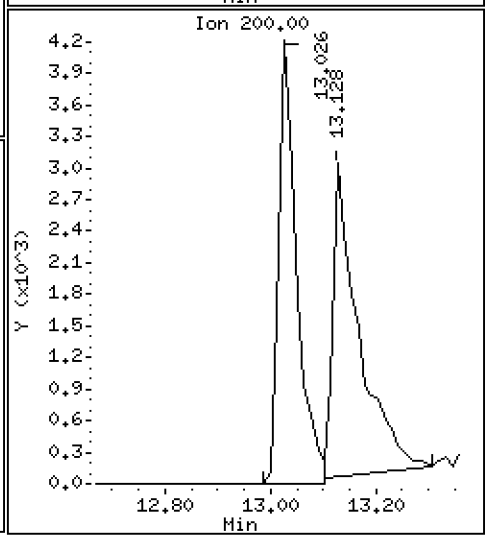












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

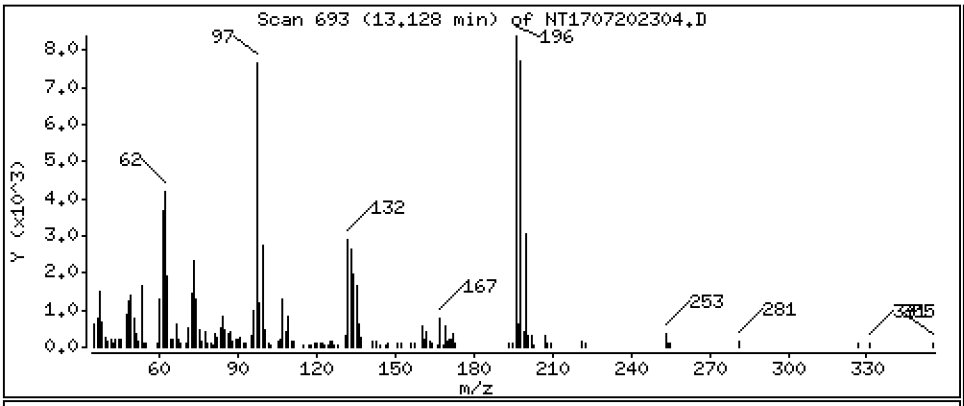
Operator: JGR

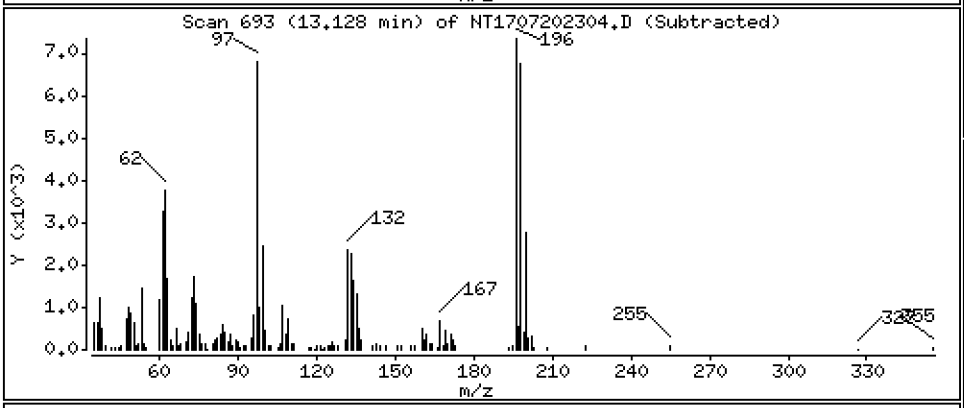
Column phase: ZB-5msi

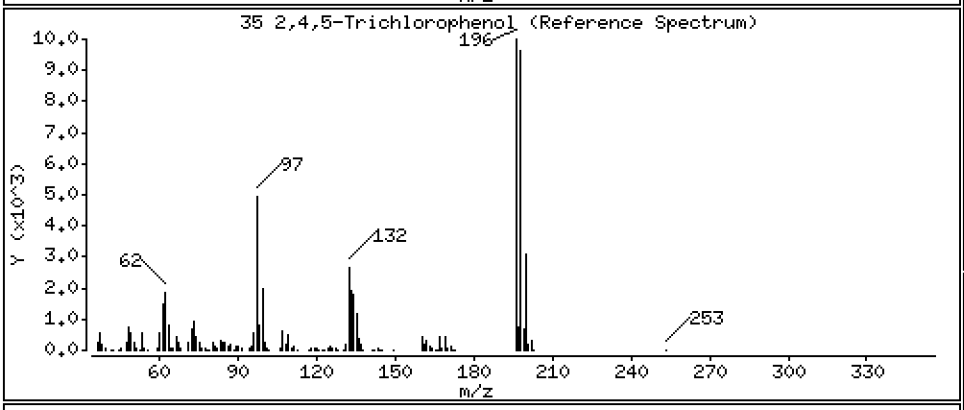
Column diameter: 0.25

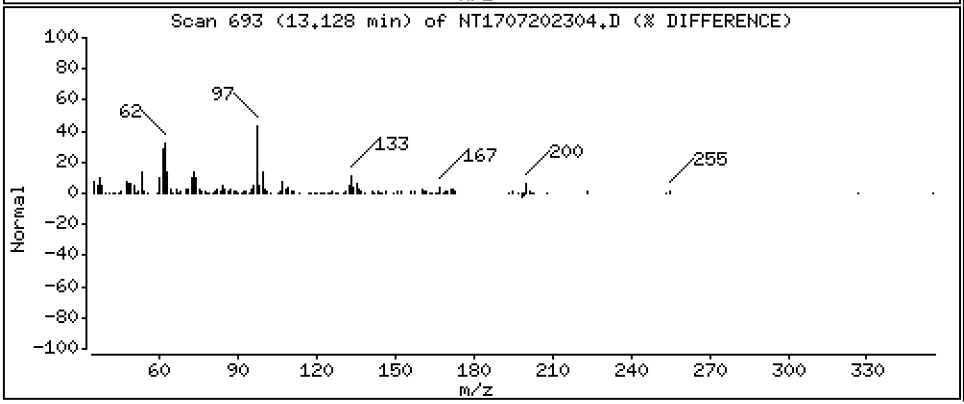
35 2,4,5-Trichlorophenol

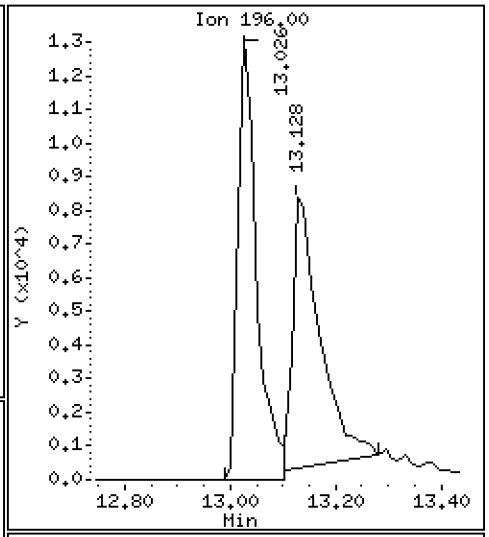
Concentration: 0.6867 ug/mL

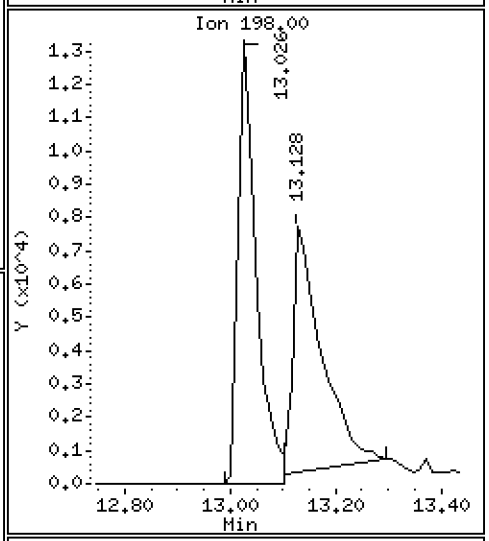


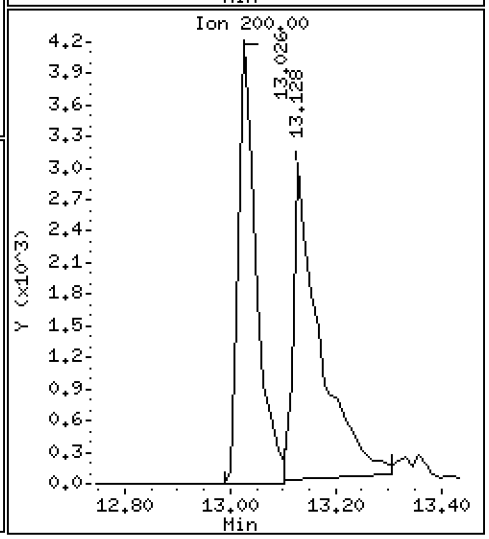












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

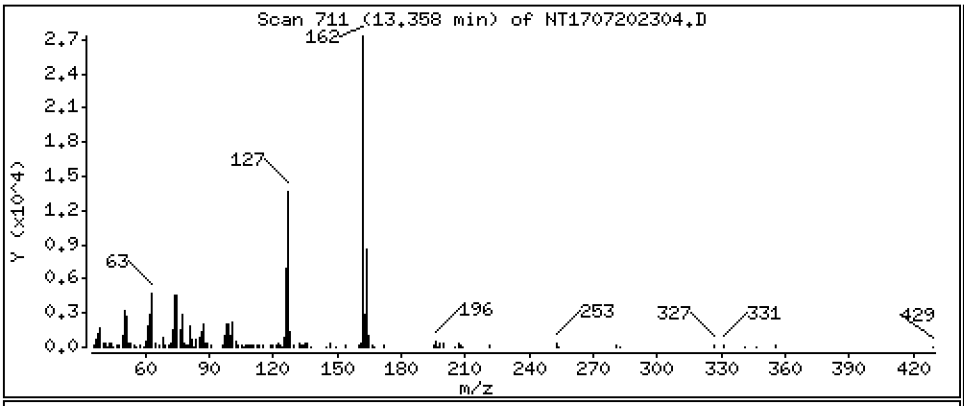
Operator: JGR

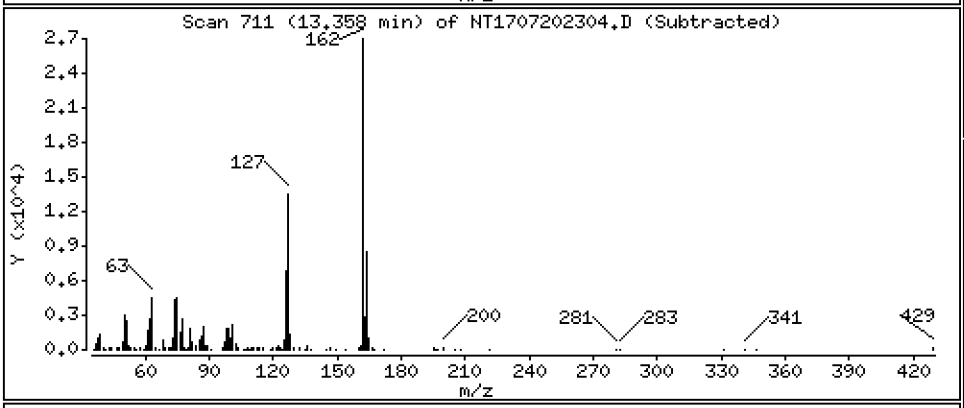
Column phase: ZB-5msi

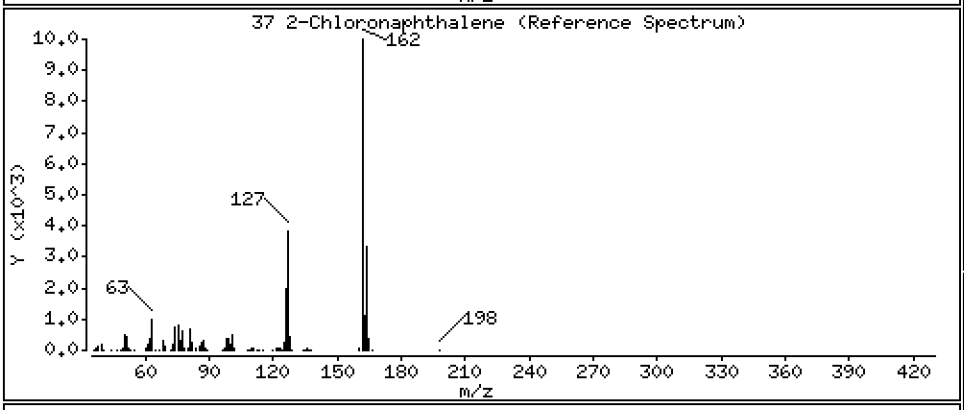
Column diameter: 0.25

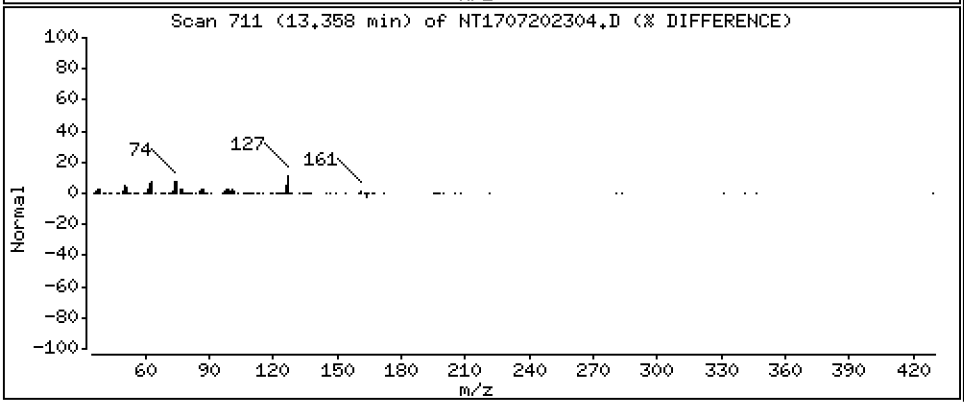
37 2-Chloronaphthalene

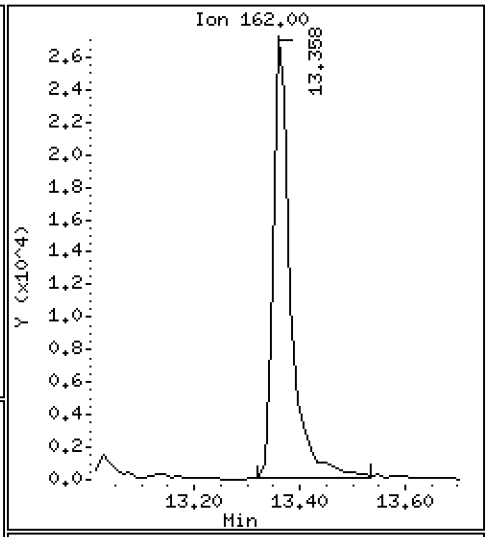
Concentration: 0.4681 ug/mL

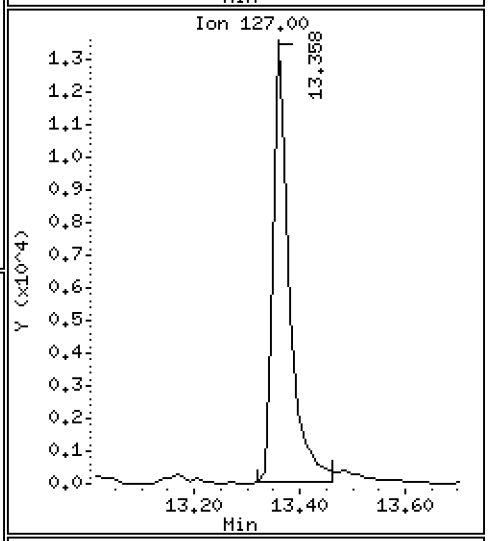


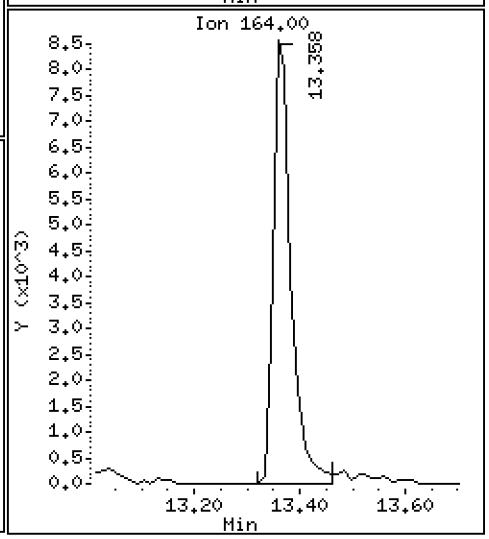












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

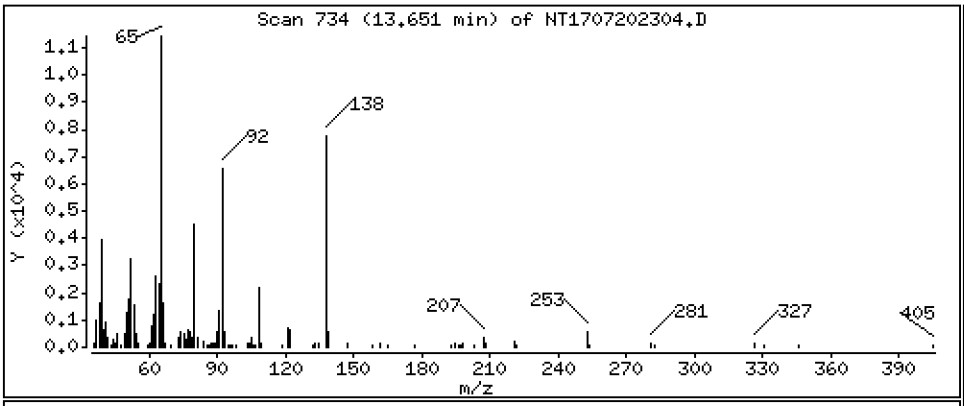
Operator: JGR

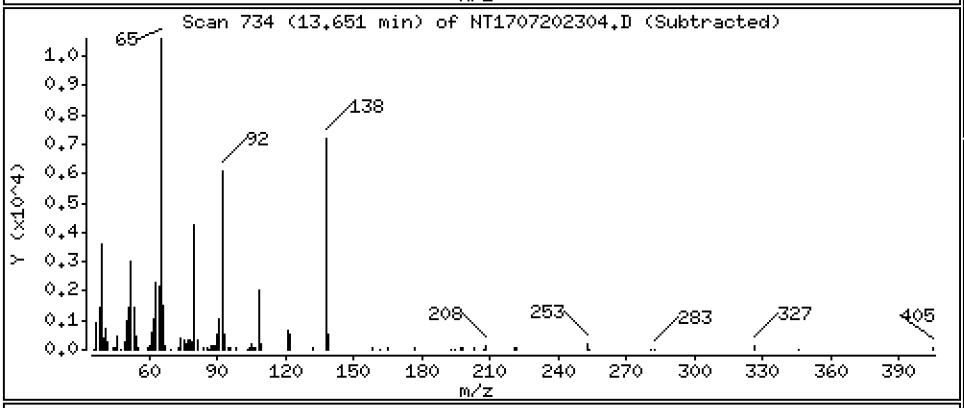
Column phase: ZB-5msi

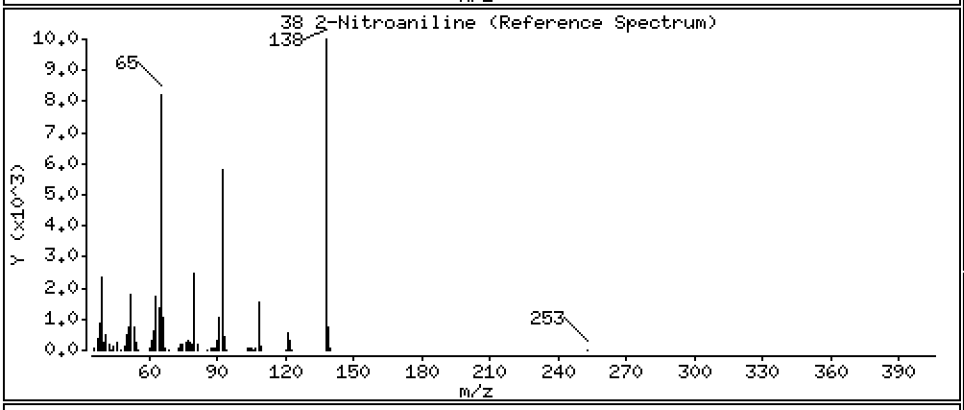
Column diameter: 0.25

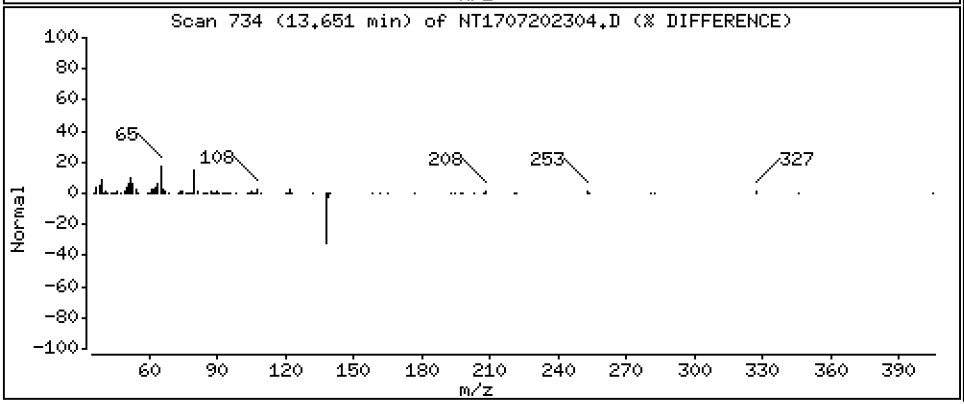
38 2-Nitroaniline

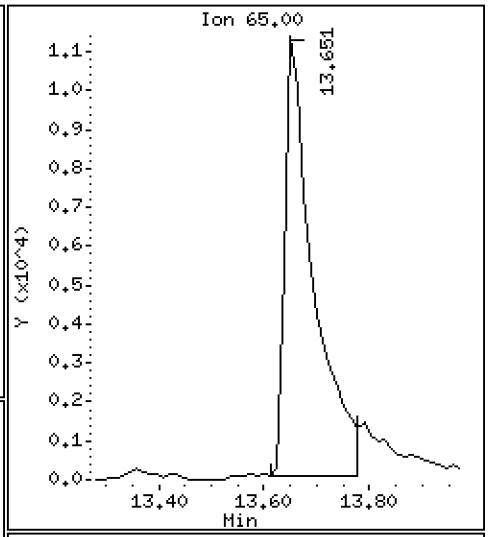
Concentration: 0.7672 ug/mL

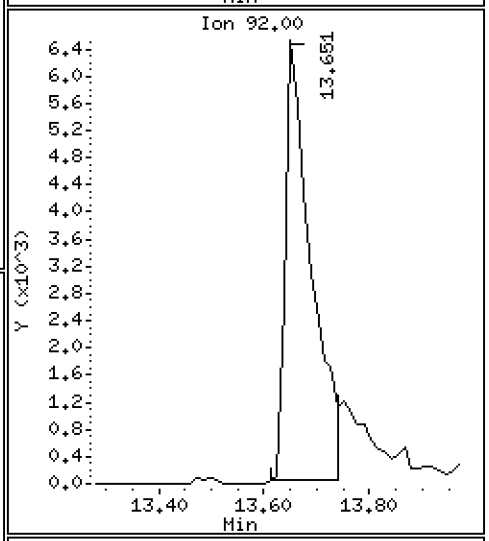


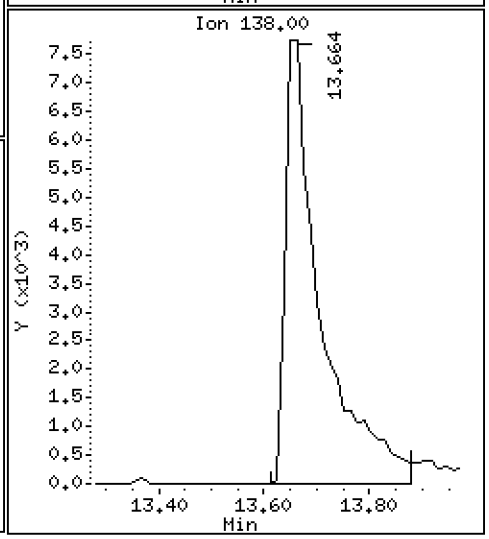












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

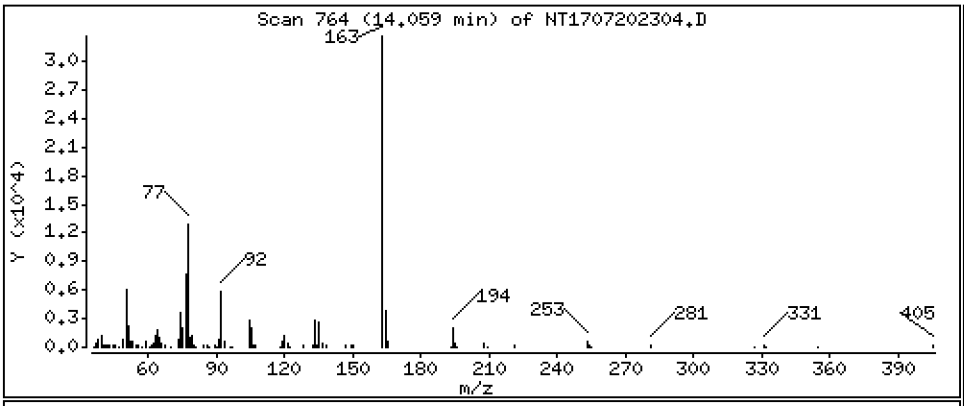
Operator: JGR

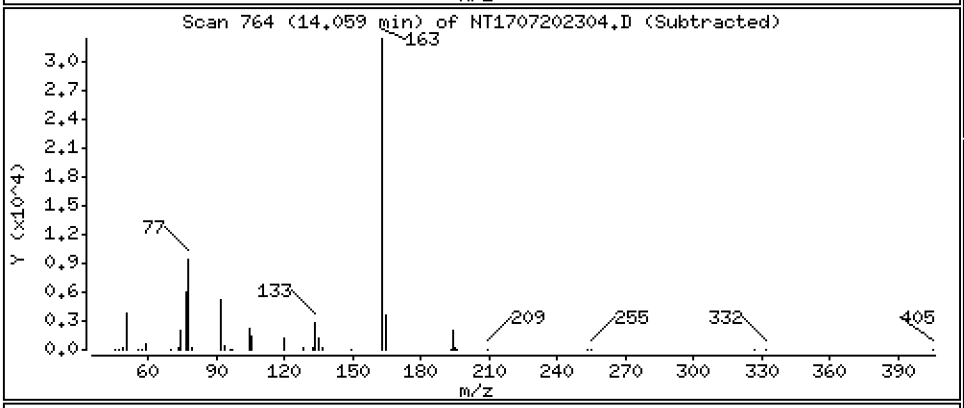
Column phase: ZB-5msi

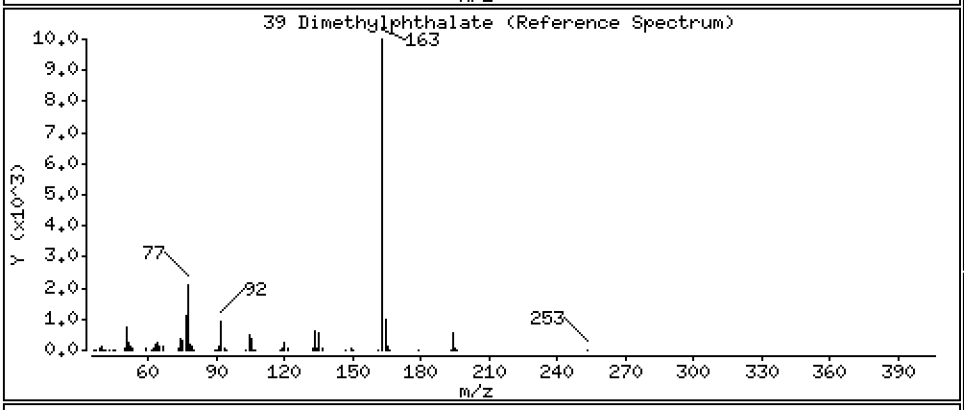
Column diameter: 0.25

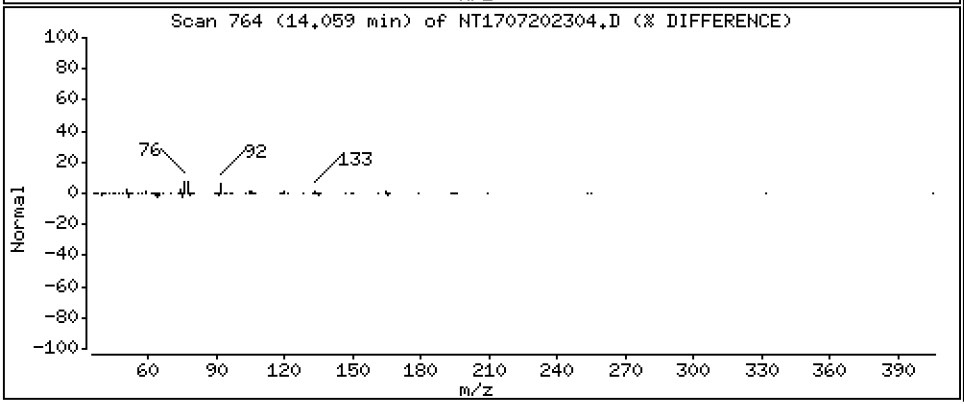
39 Dimethylphthalate

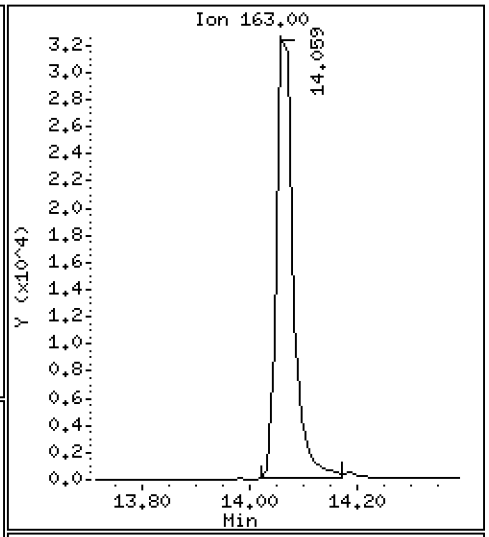
Concentration: 0.5047 ug/mL

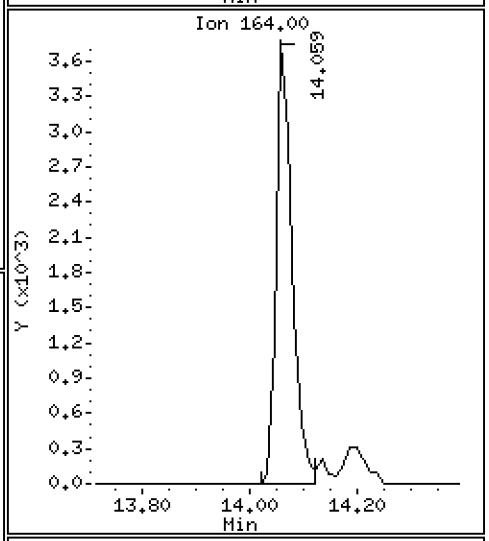


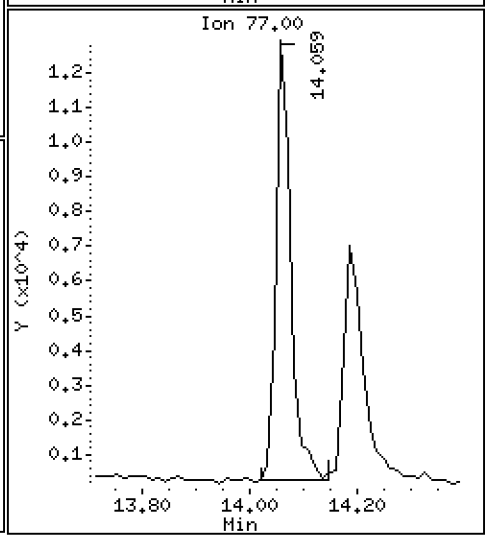












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

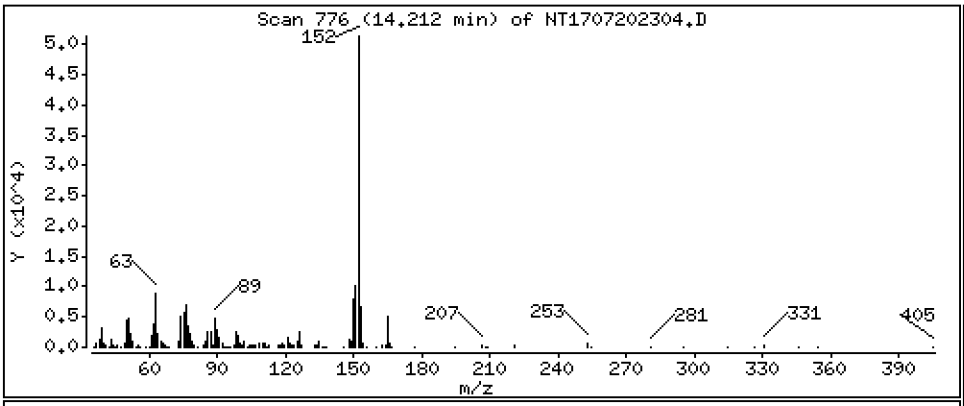
Operator: JGR

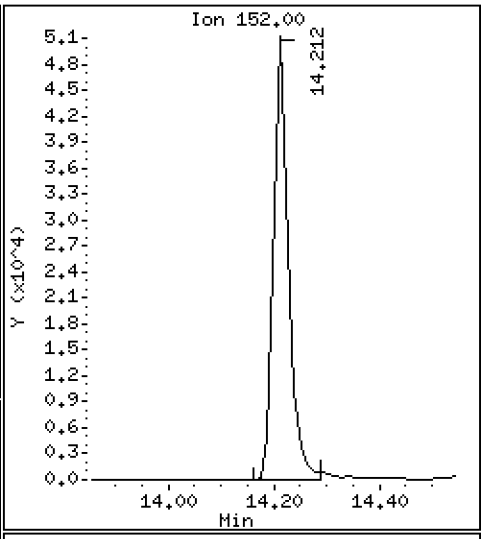
Column phase: ZB-5msi

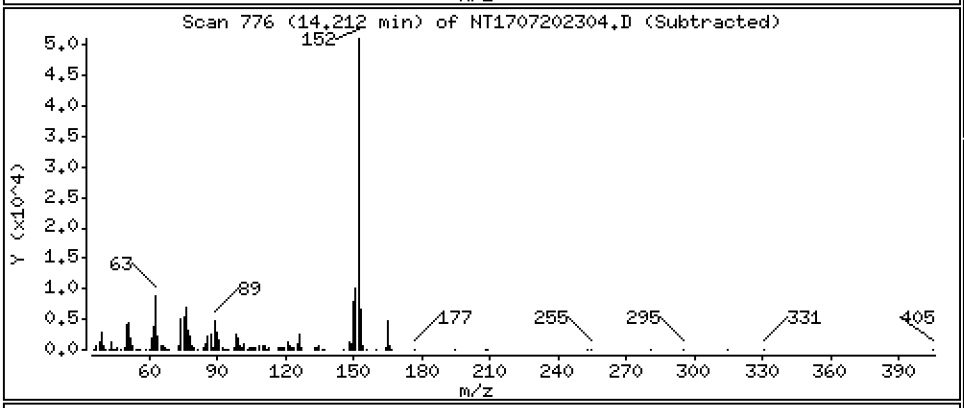
Column diameter: 0.25

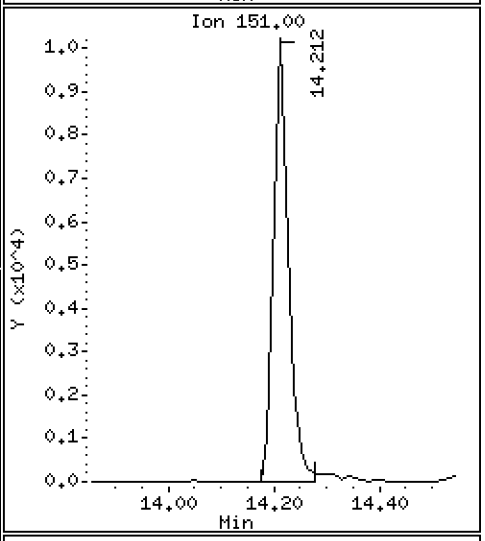
40 Acenaphthylene

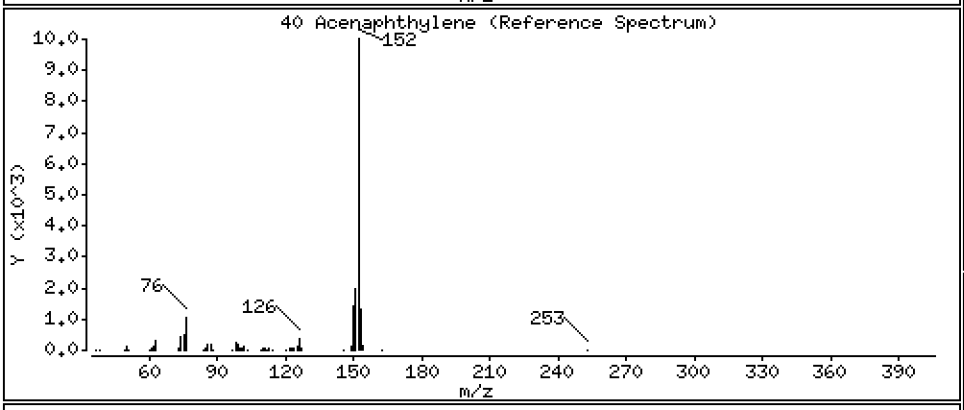
Concentration: 0.4701 ug/mL

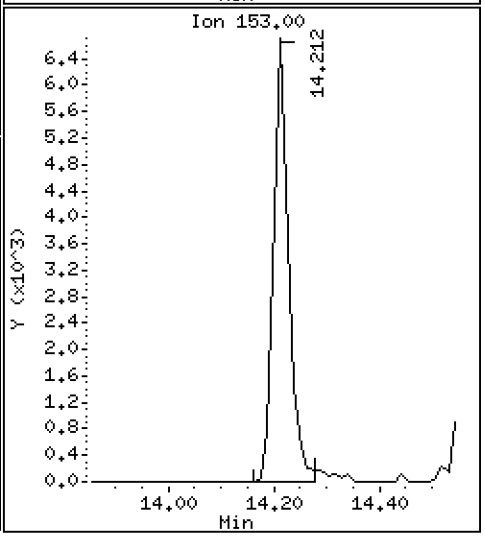


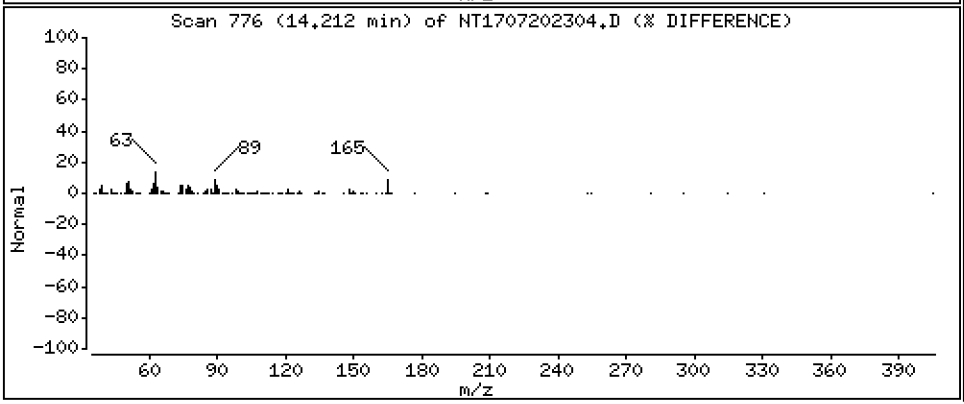












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

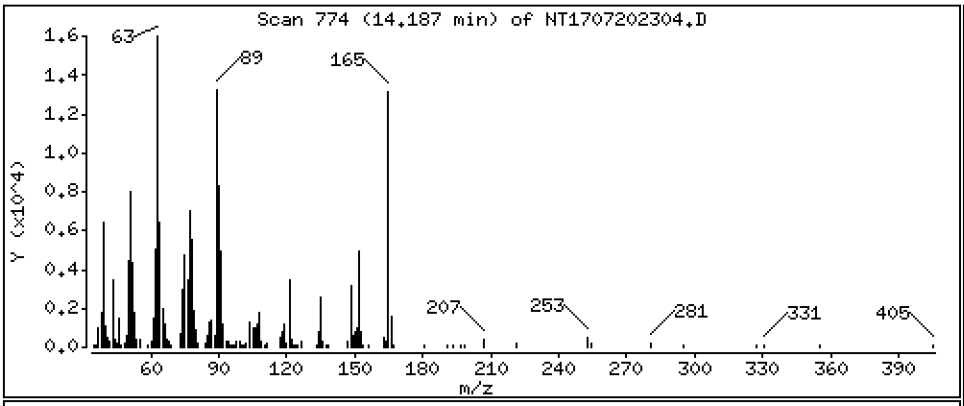
Operator: JGR

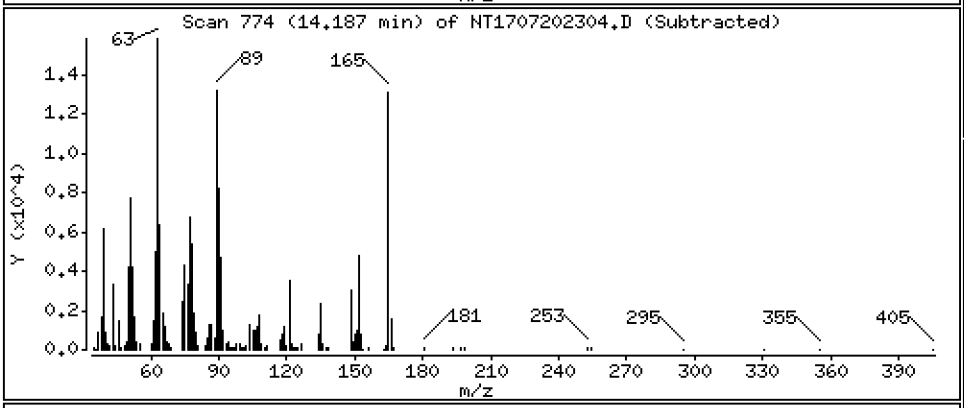
Column phase: ZB-5msi

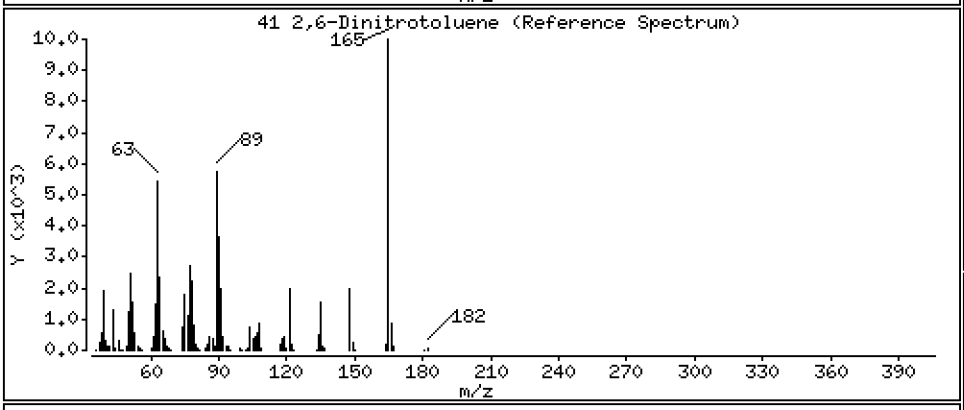
Column diameter: 0.25

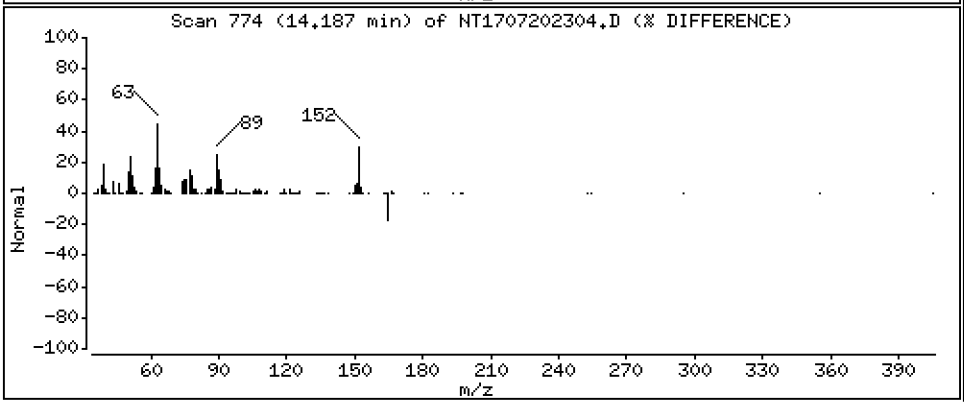
41 2,6-Dinitrotoluene

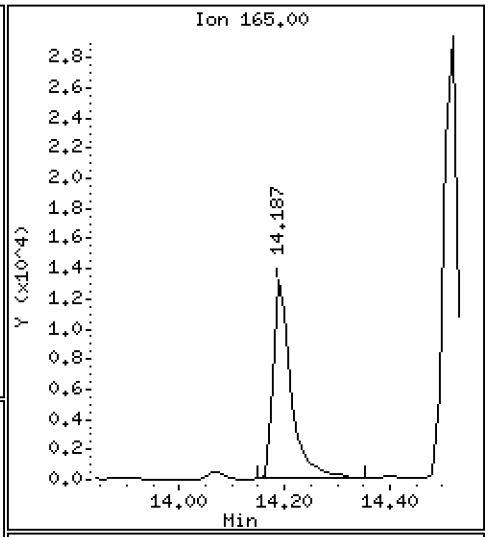
Concentration: 0.9241 ug/mL

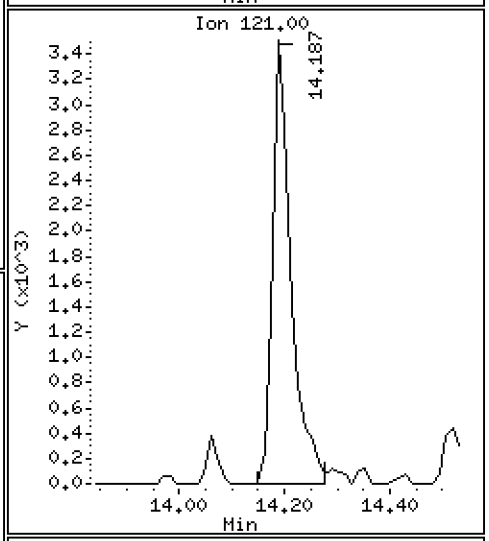


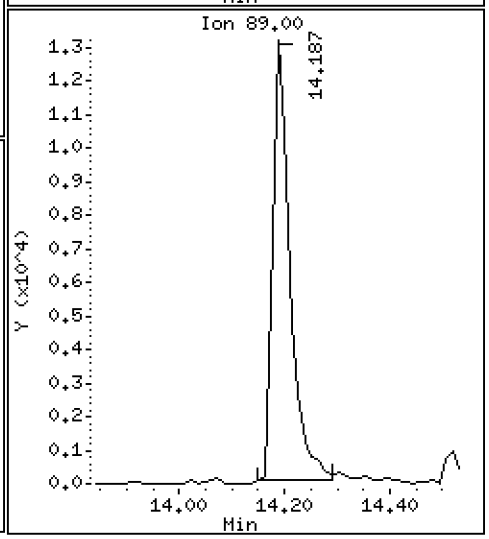












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

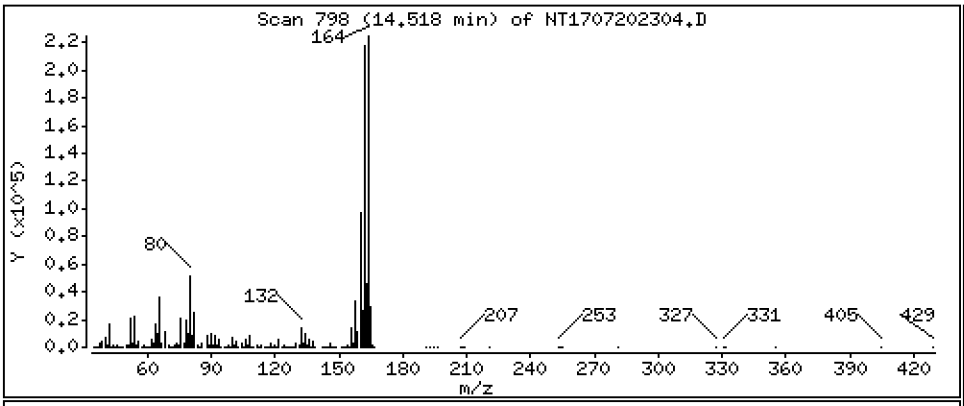
Operator: JGR

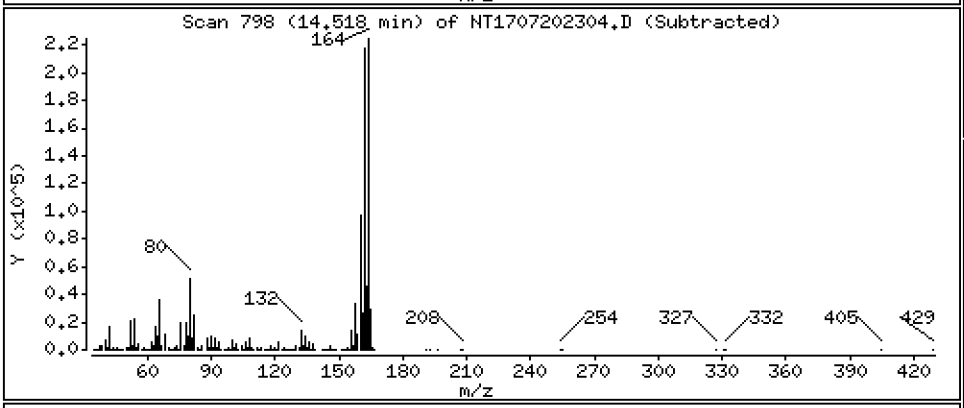
Column phase: ZB-5msi

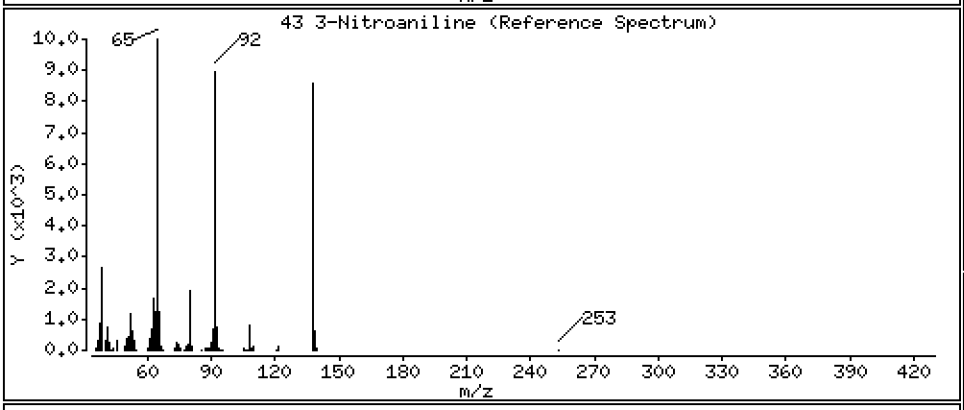
Column diameter: 0.25

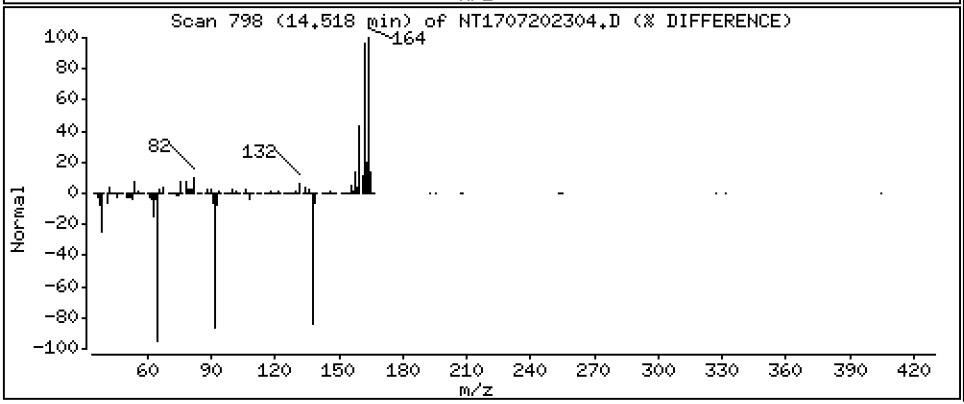
43 3-Nitroaniline

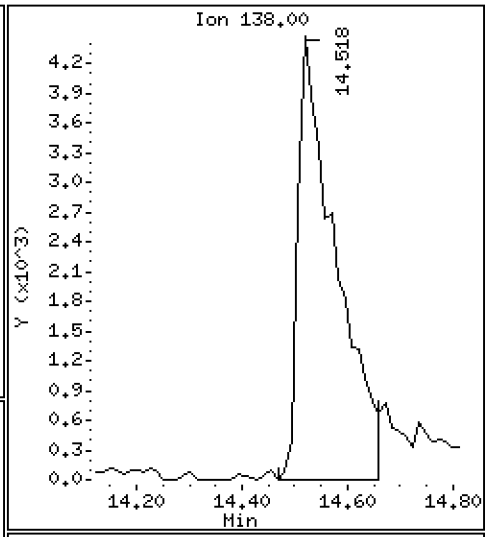
Concentration: 0.6095 ug/mL

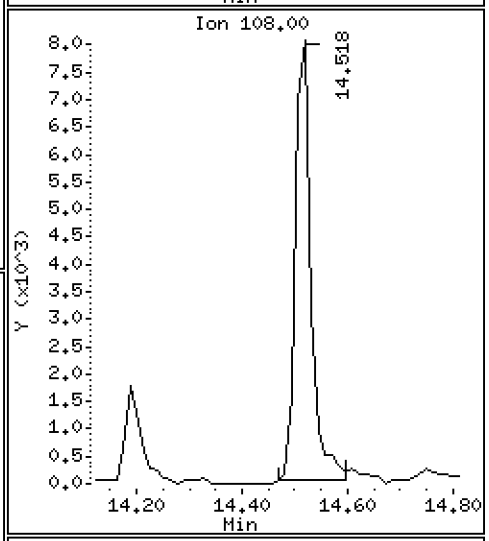


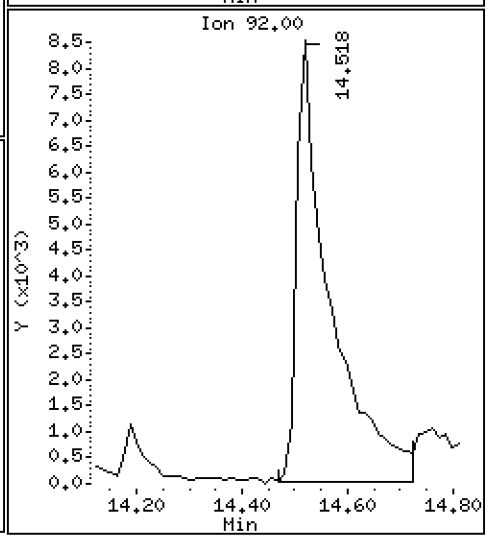












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

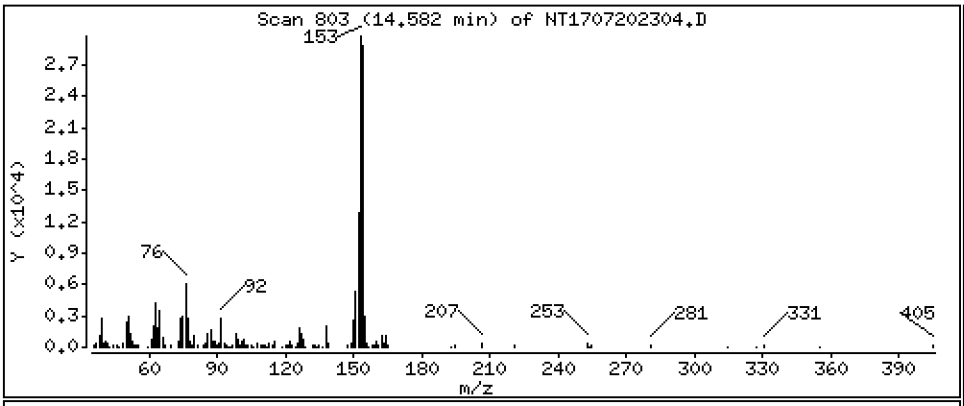
Operator: JGR

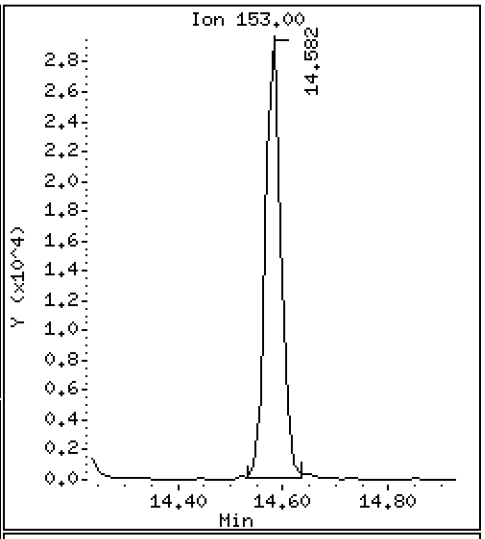
Column phase: ZB-5msi

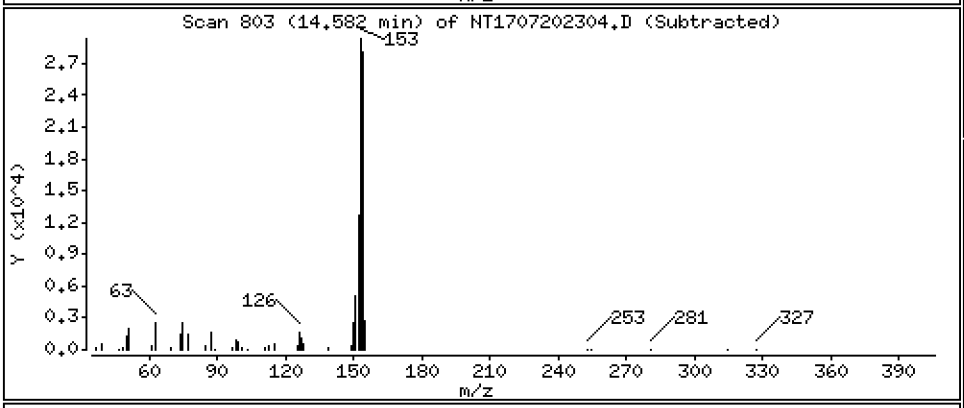
Column diameter: 0.25

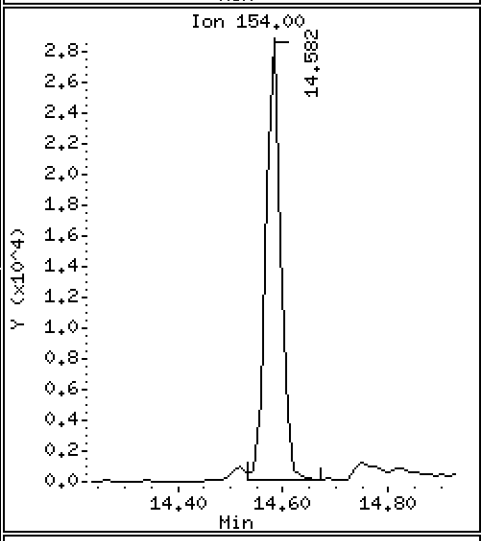
44 Acenaphthene

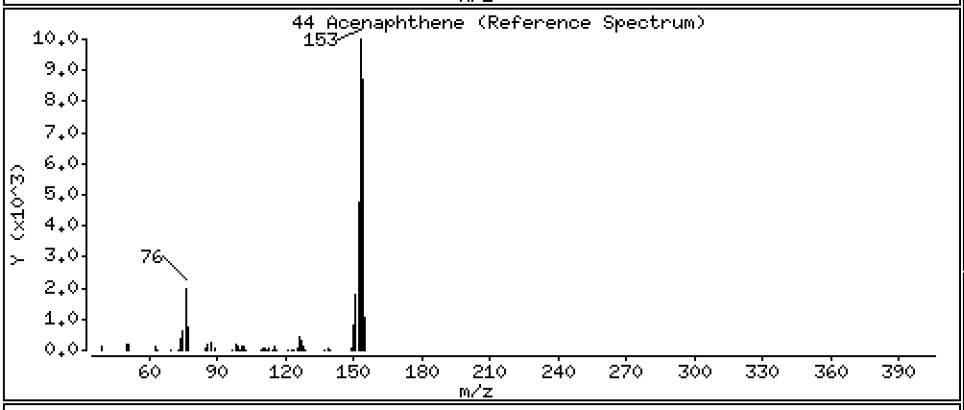
Concentration: 0.4534 ug/mL

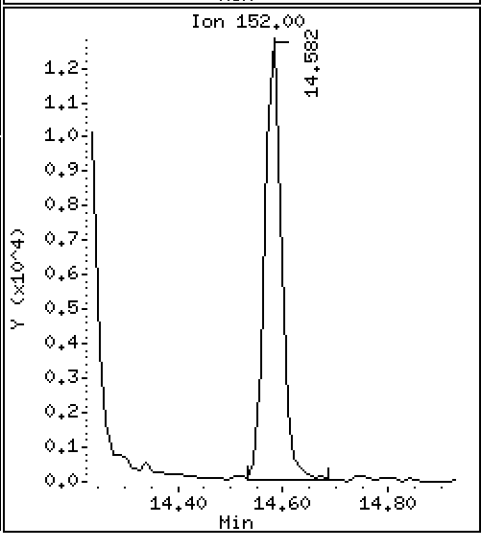


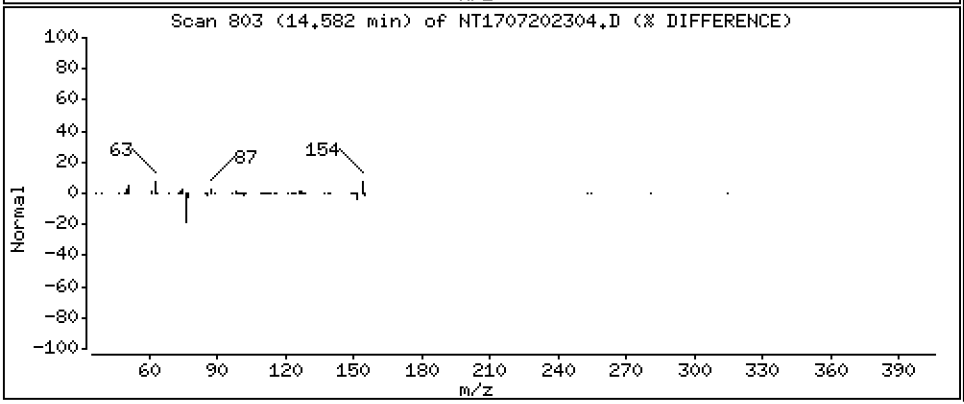












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

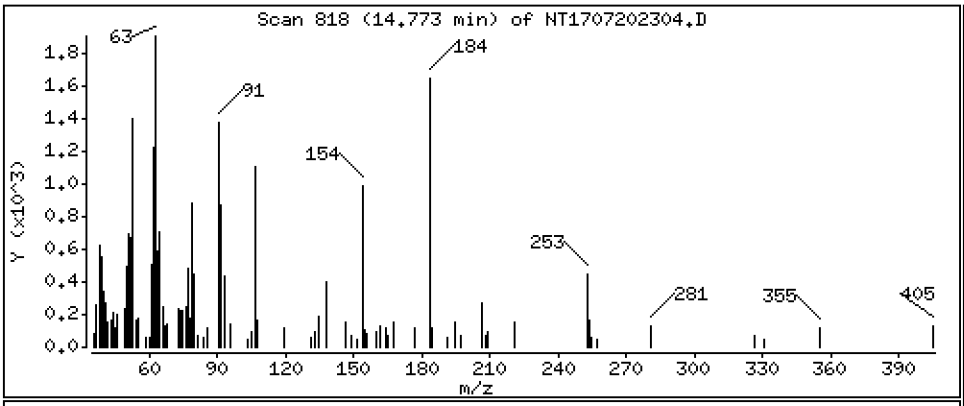
Operator: JGR

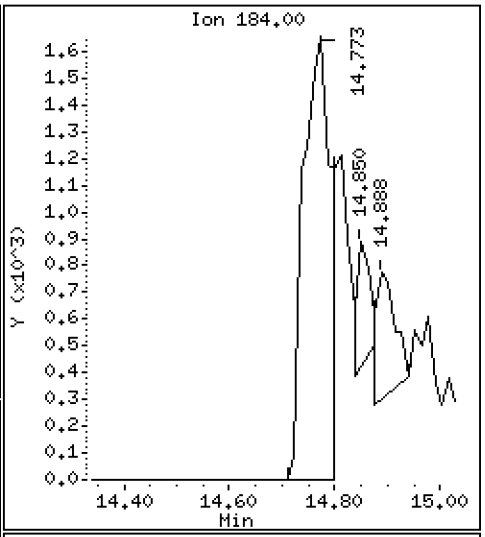
Column phase: ZB-5msi

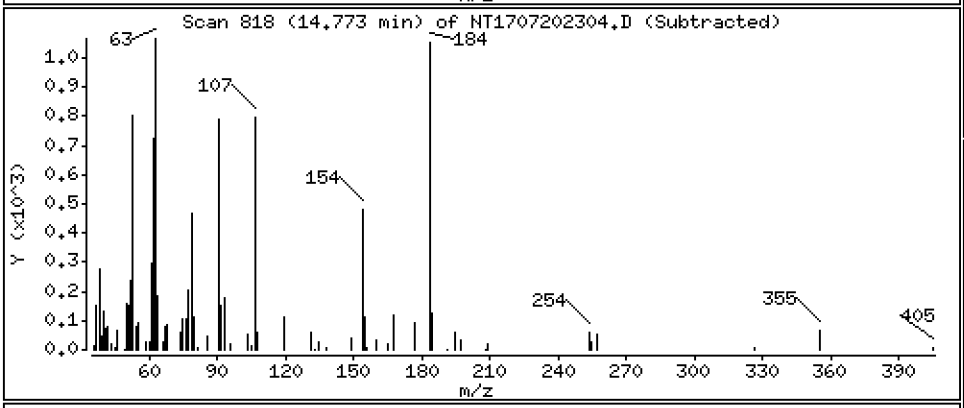
Column diameter: 0.25

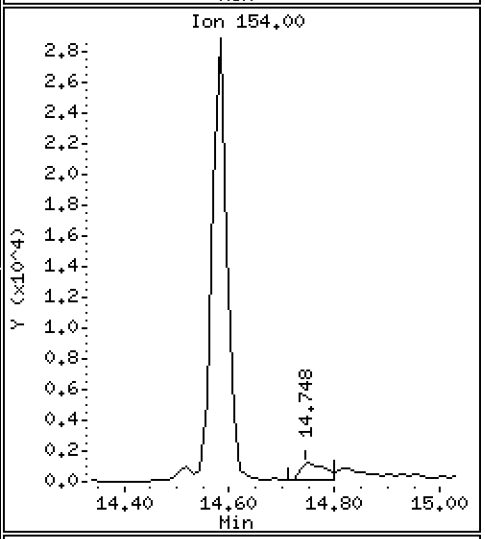
45 2,4-Dinitrophenol

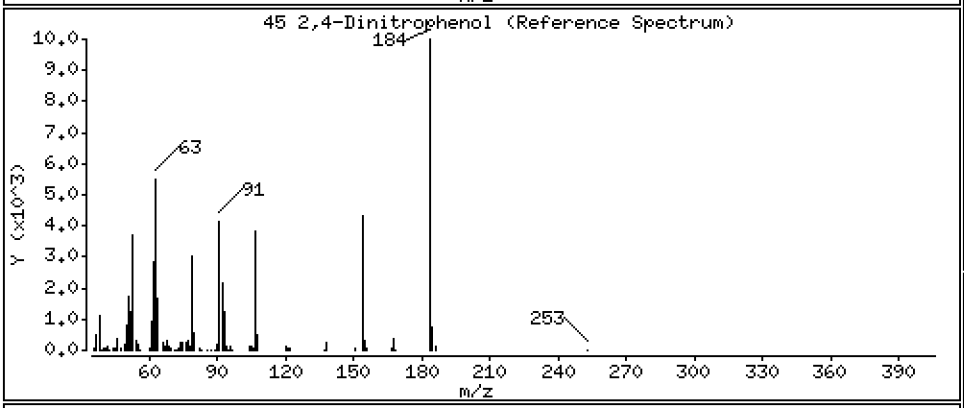
Concentration: 0.3955 ug/mL

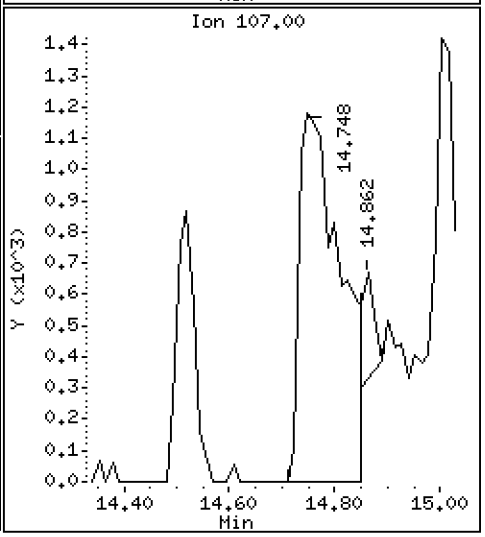


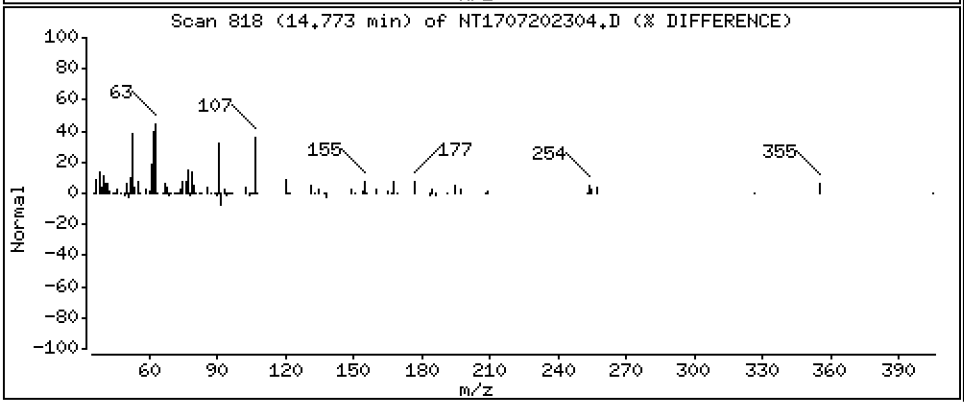












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

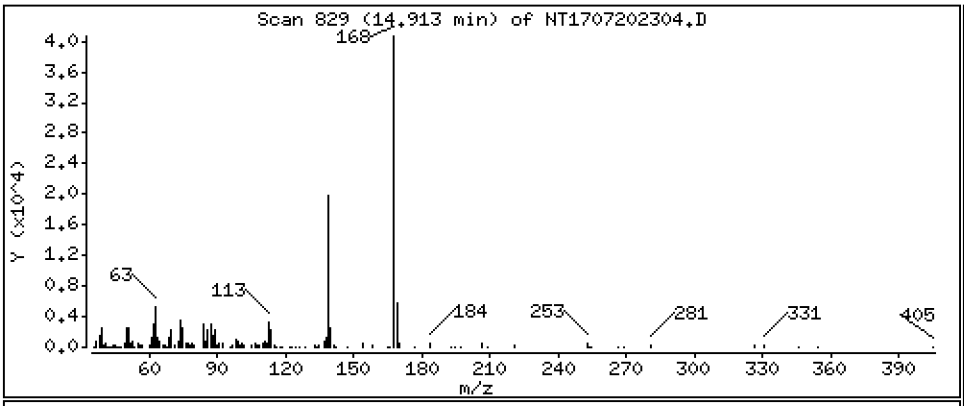
Operator: JGR

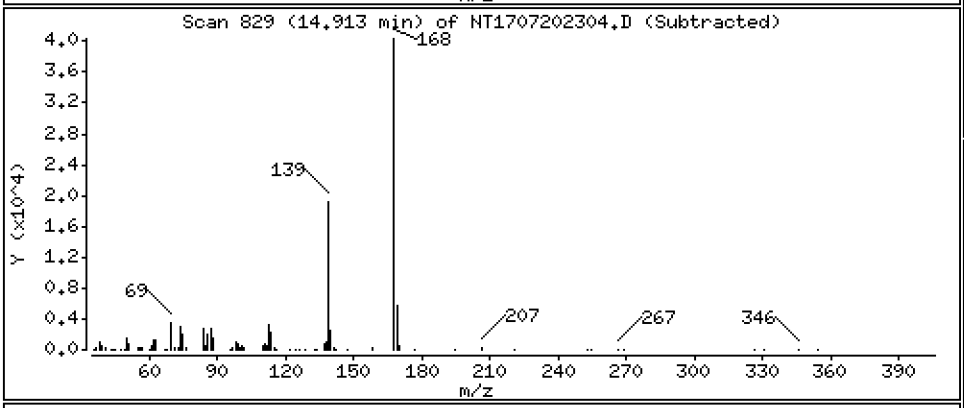
Column phase: ZB-5msi

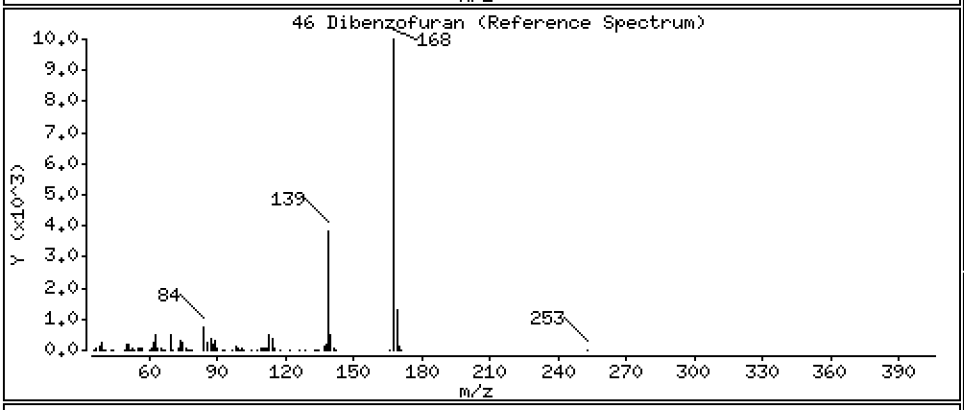
Column diameter: 0.25

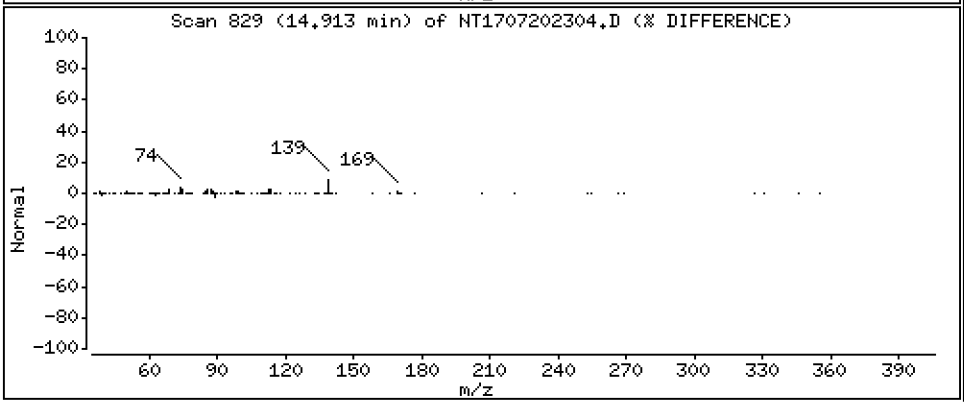
46 Dibenzofuran

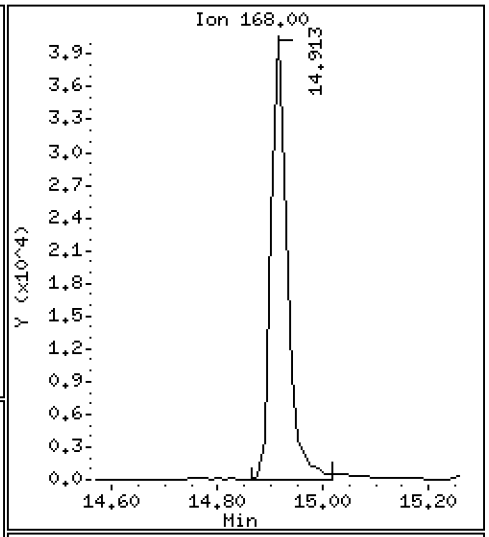
Concentration: 0.4685 ug/mL

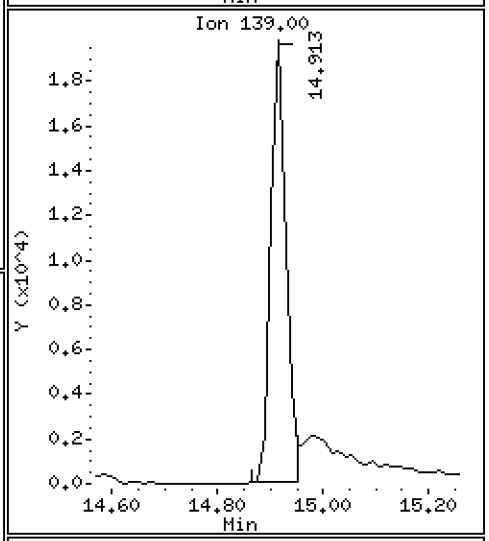


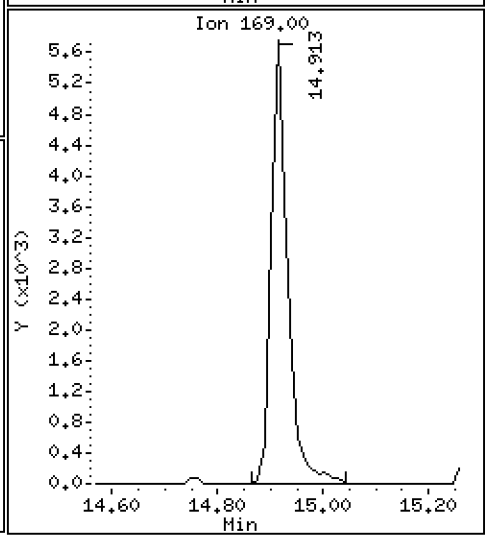












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

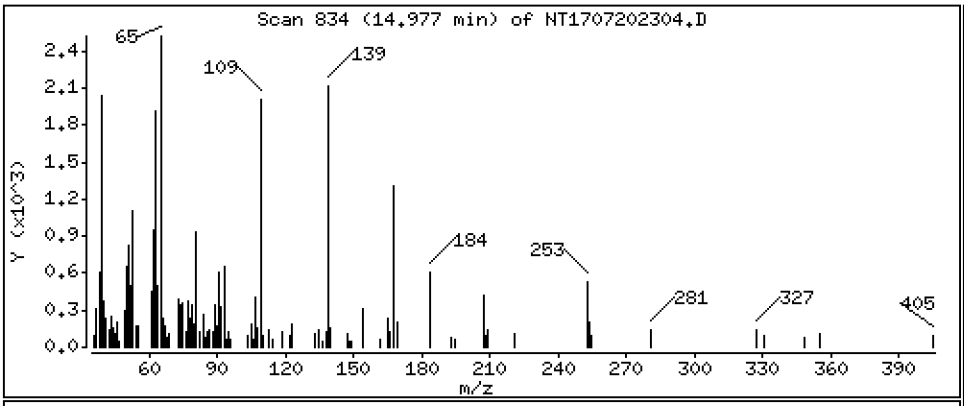
Operator: JGR

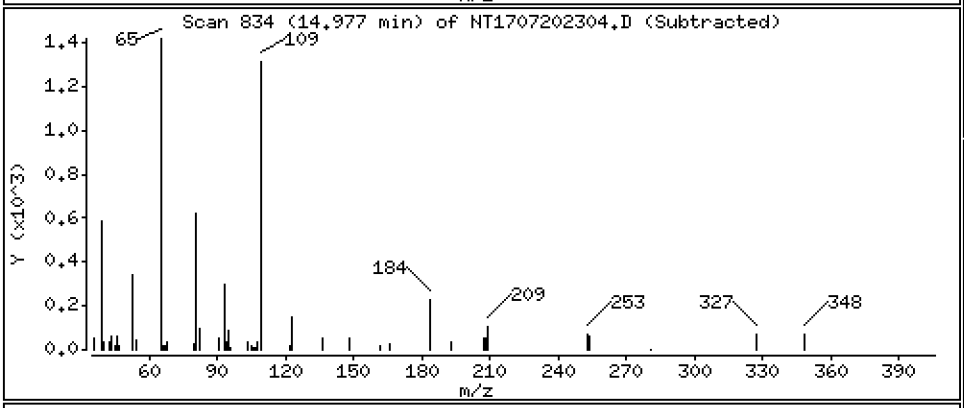
Column phase: ZB-5msi

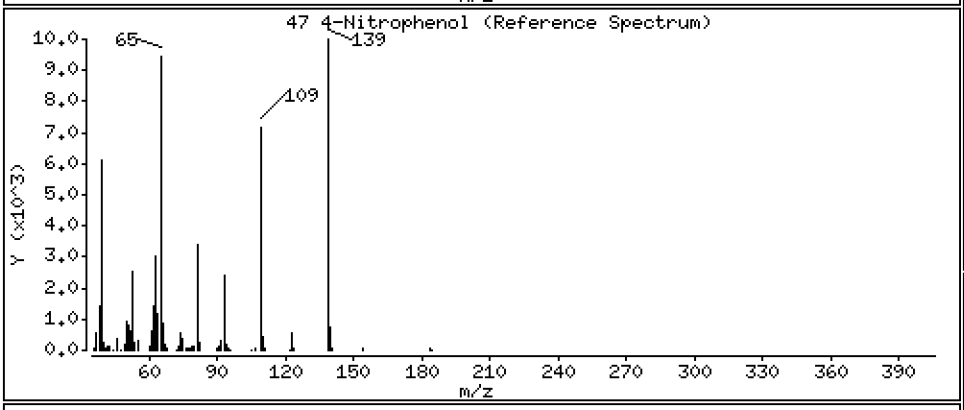
Column diameter: 0.25

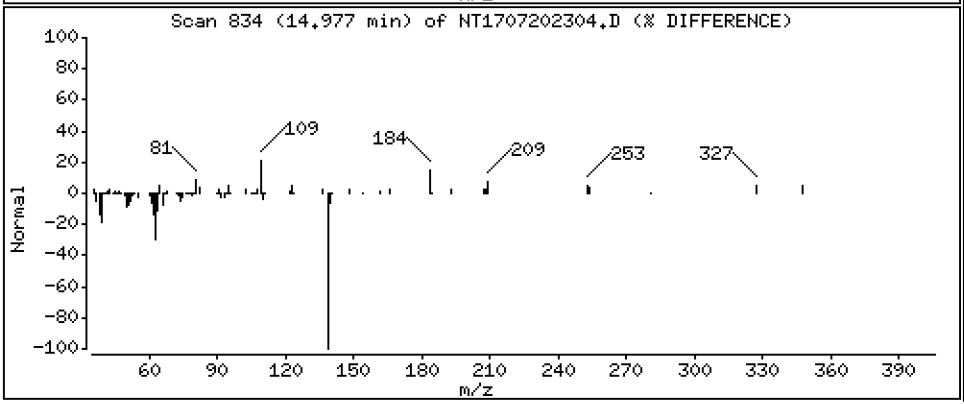
47 4-Nitrophenol

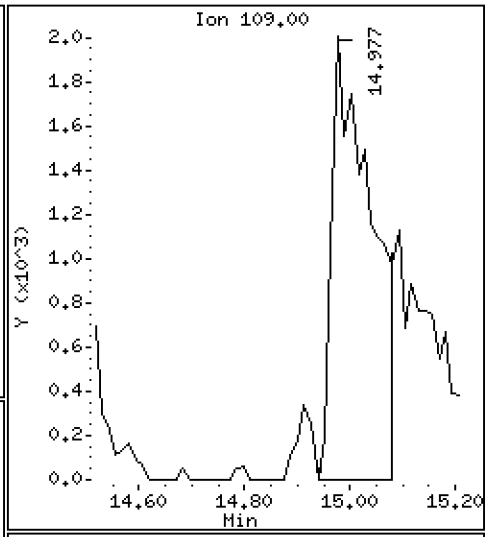
Concentration: 0.4860 ug/mL

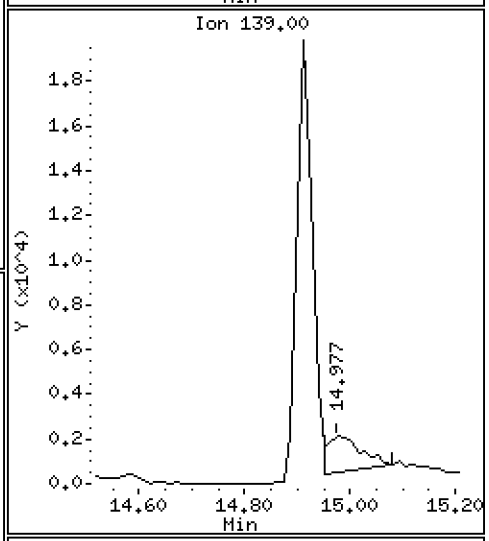


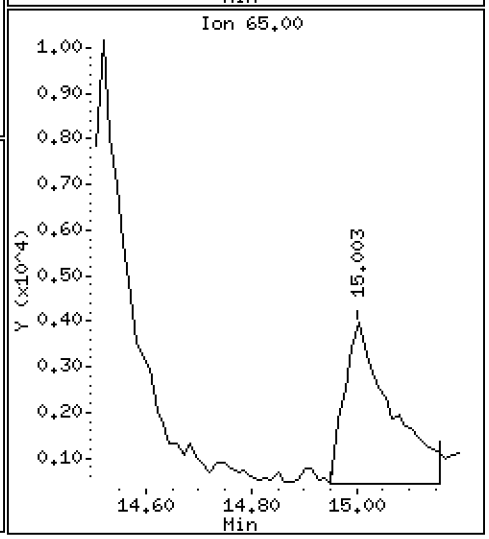












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

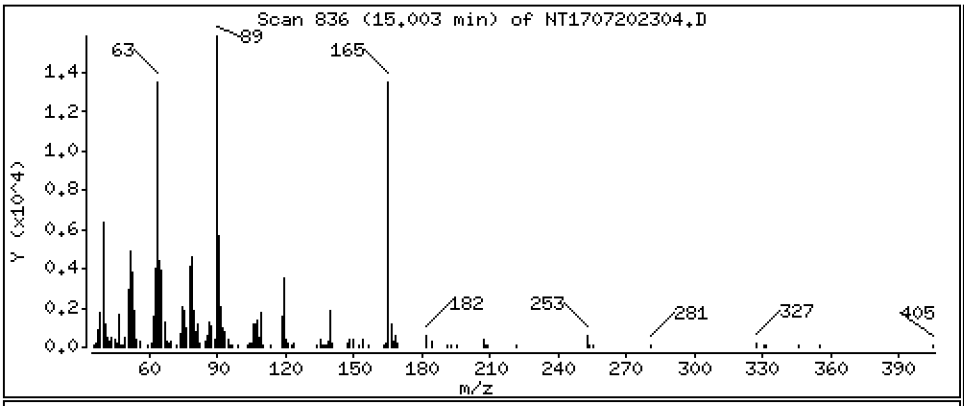
Operator: JGR

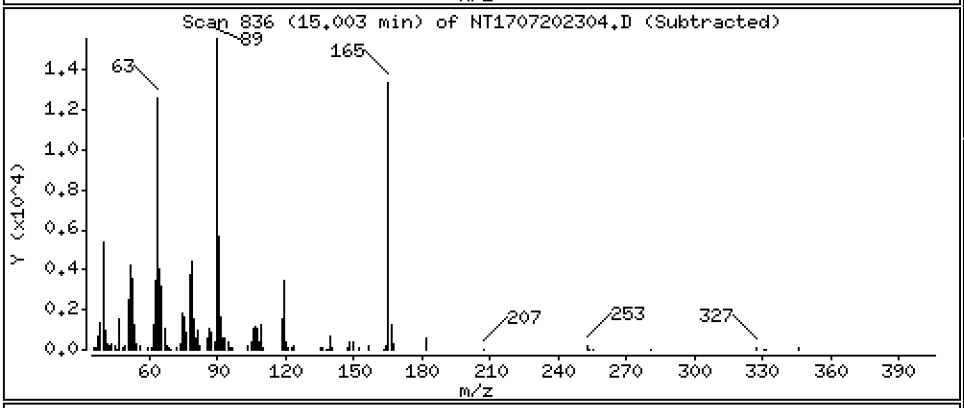
Column phase: ZB-5msi

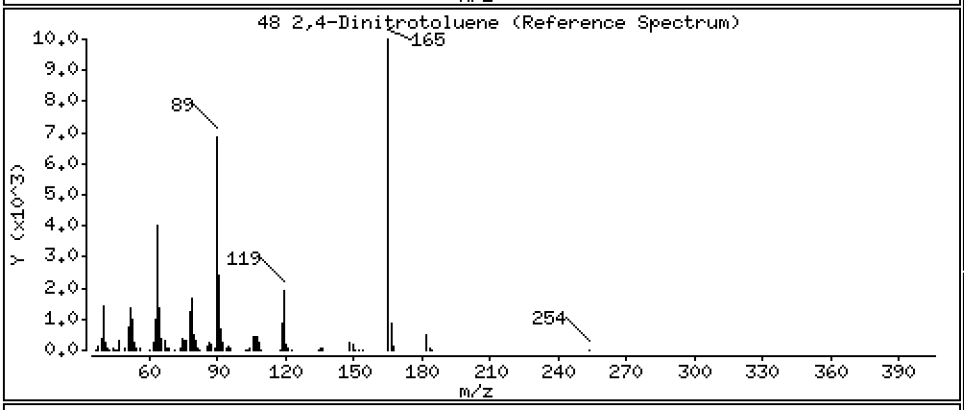
Column diameter: 0.25

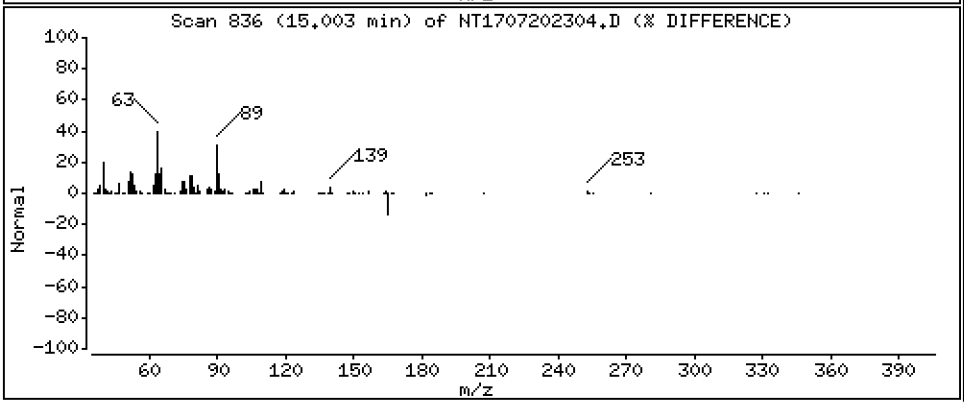
48 2,4-Dinitrotoluene

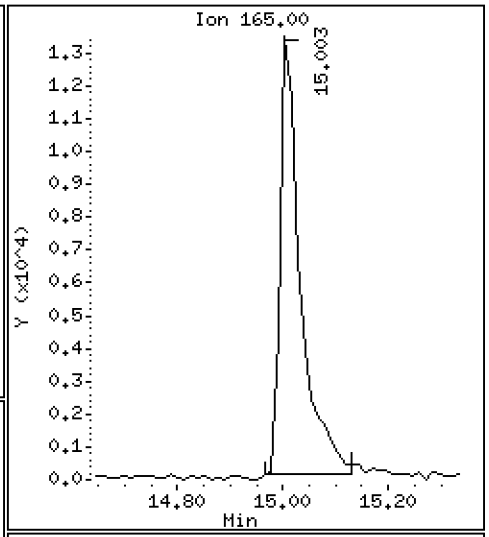
Concentration: 0.8305 ug/mL

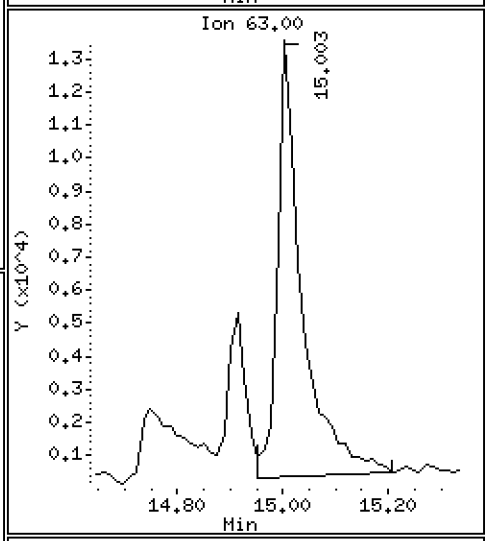


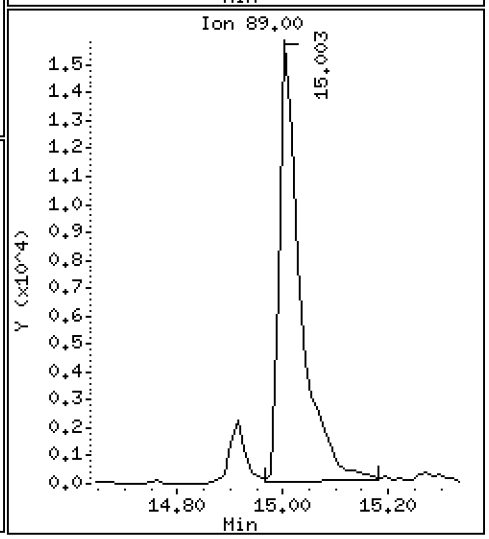












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

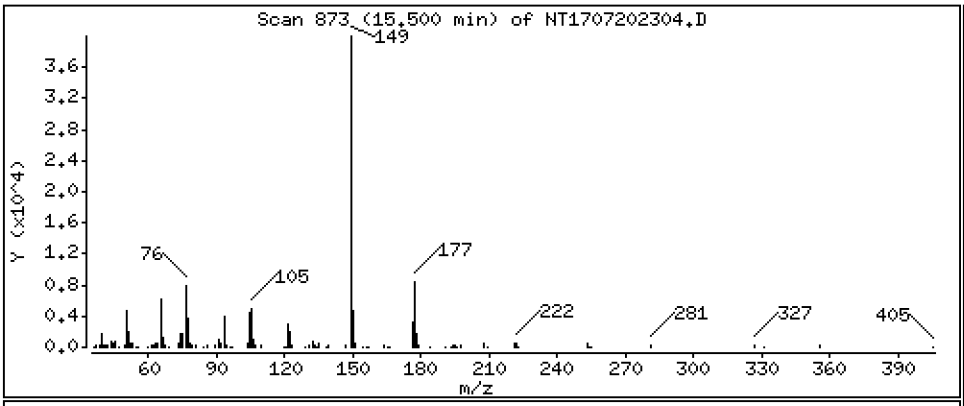
Operator: JGR

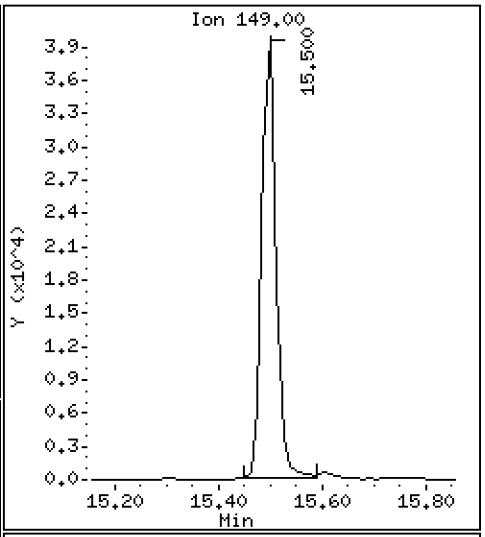
Column phase: ZB-5msi

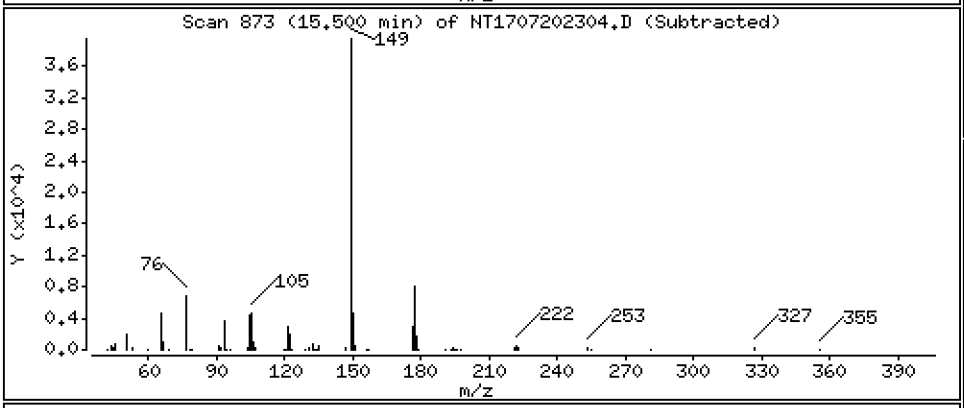
Column diameter: 0.25

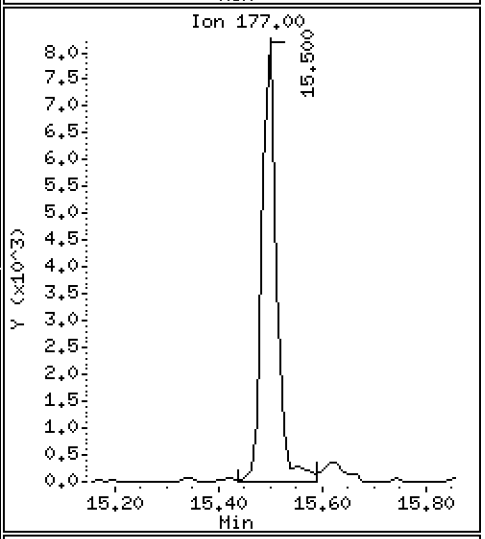
50 Diethylphthalate

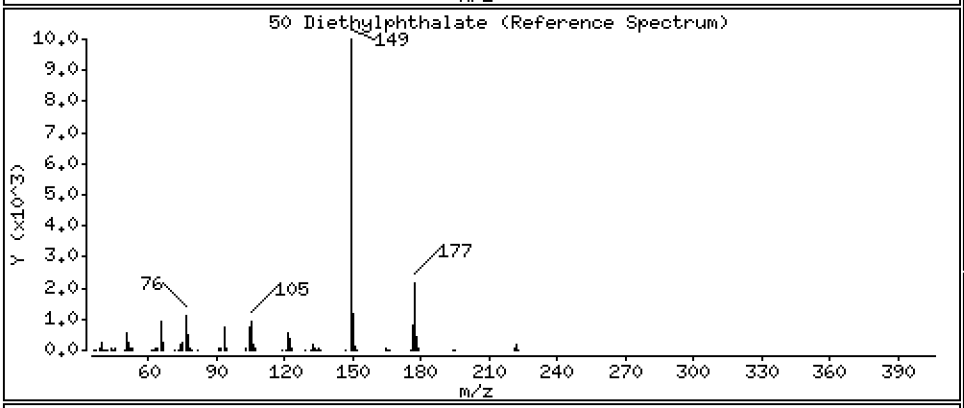
Concentration: 0.5637 ug/mL

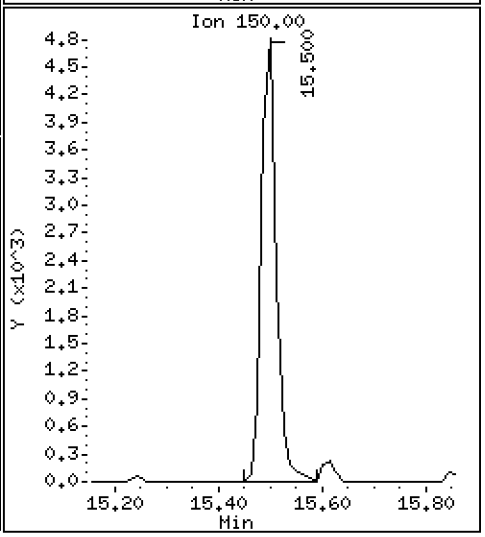


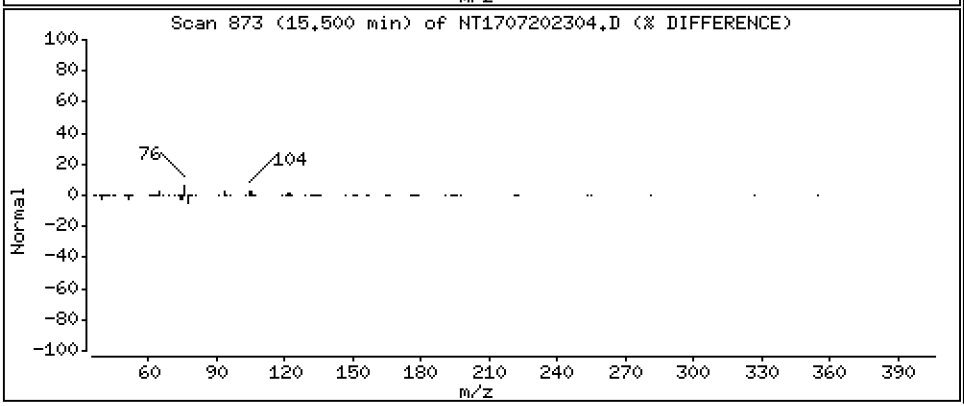












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

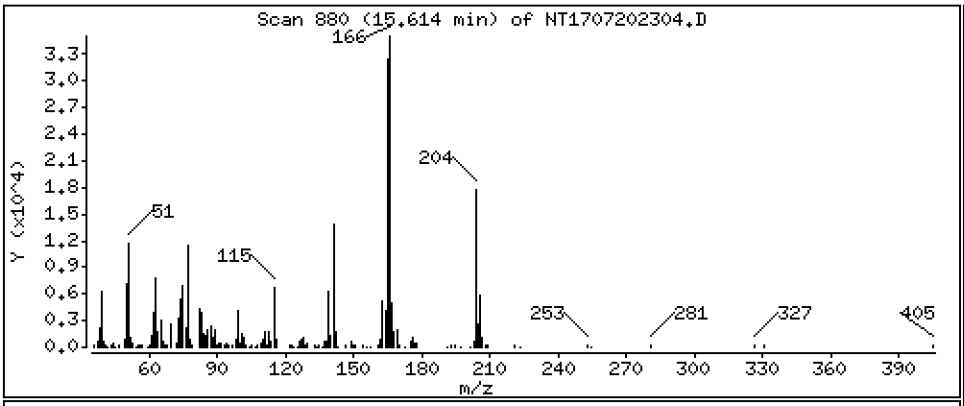
Operator: JGR

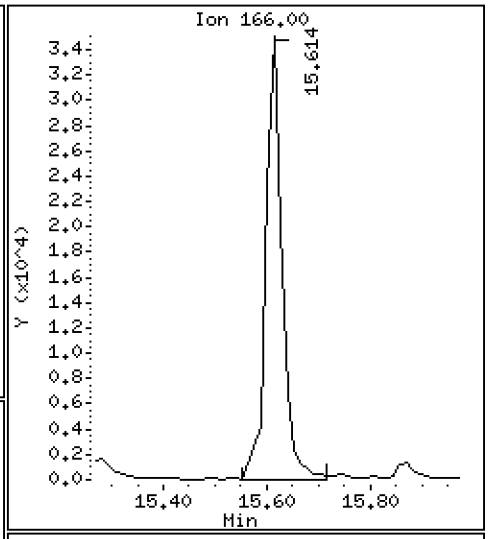
Column phase: ZB-5msi

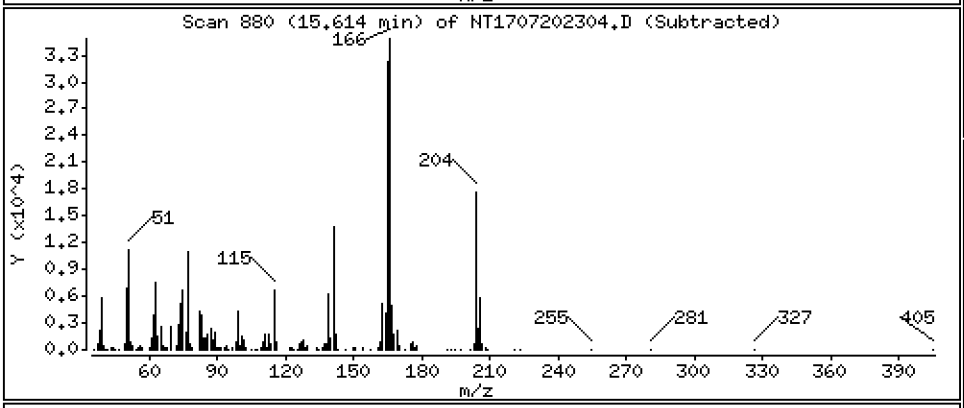
Column diameter: 0.25

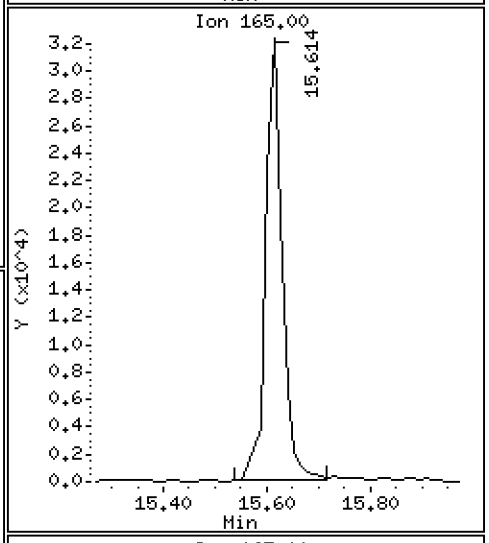
49 Fluorene

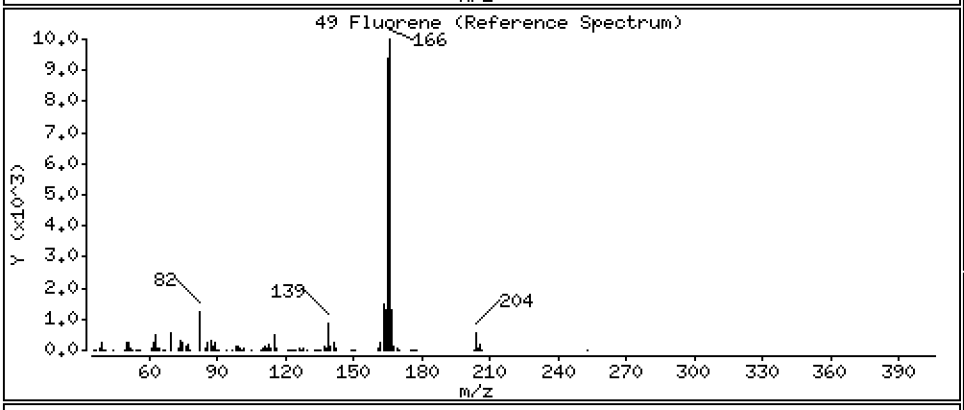
Concentration: 0.5251 ug/mL

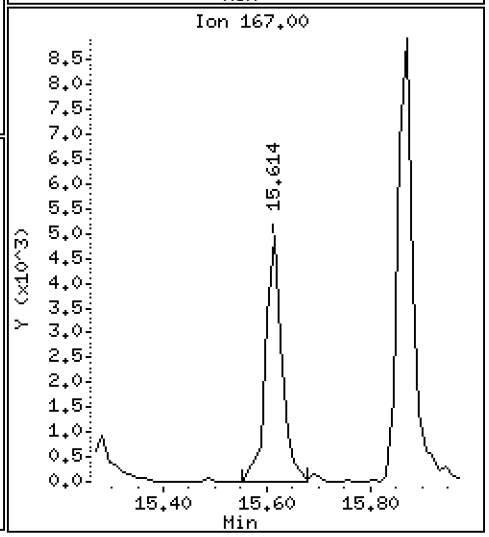


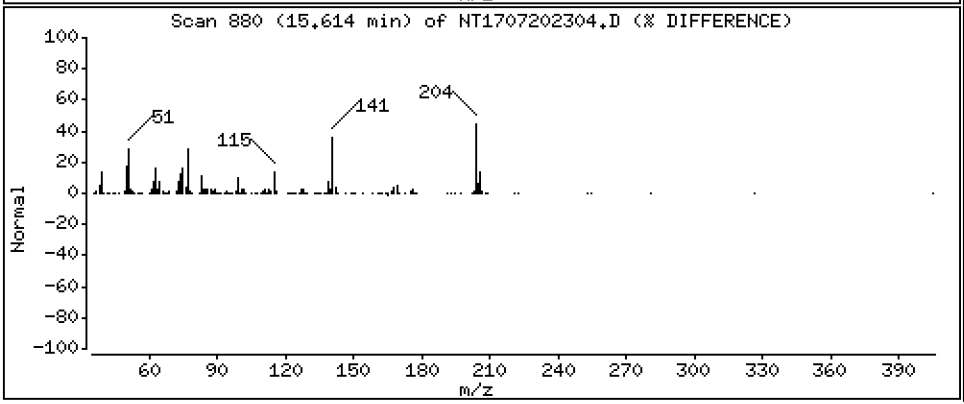












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D

Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

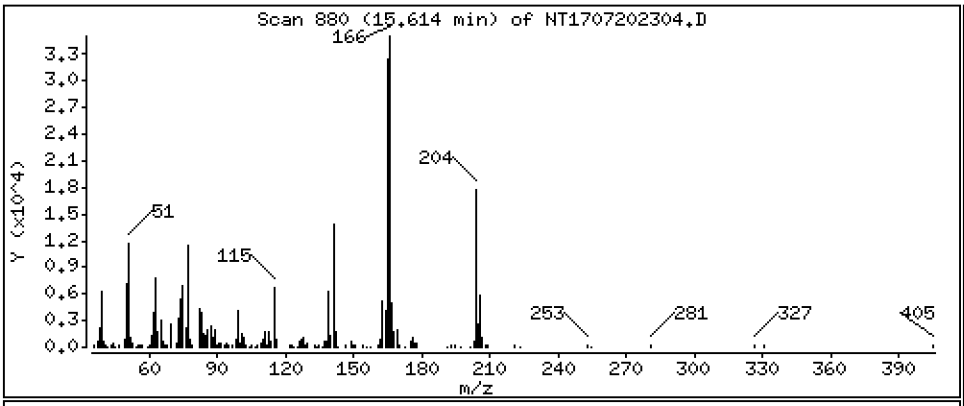
Operator: JGR

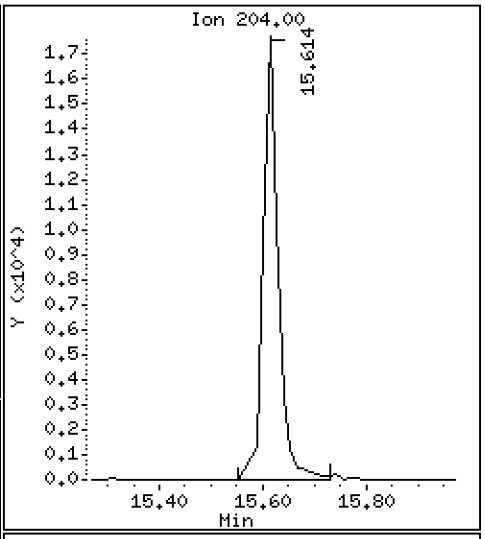
Column phase: ZB-5msi

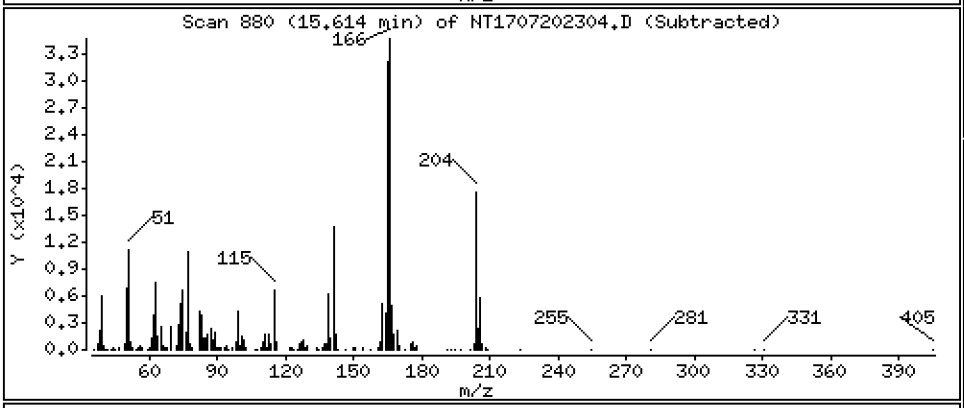
Column diameter: 0.25

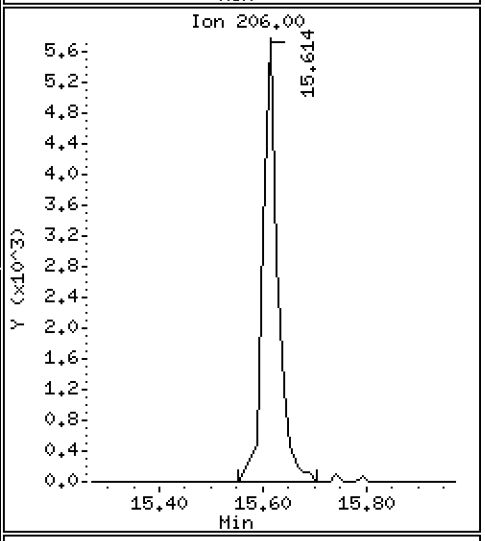
51 4-Chlorophenyl-phenylether

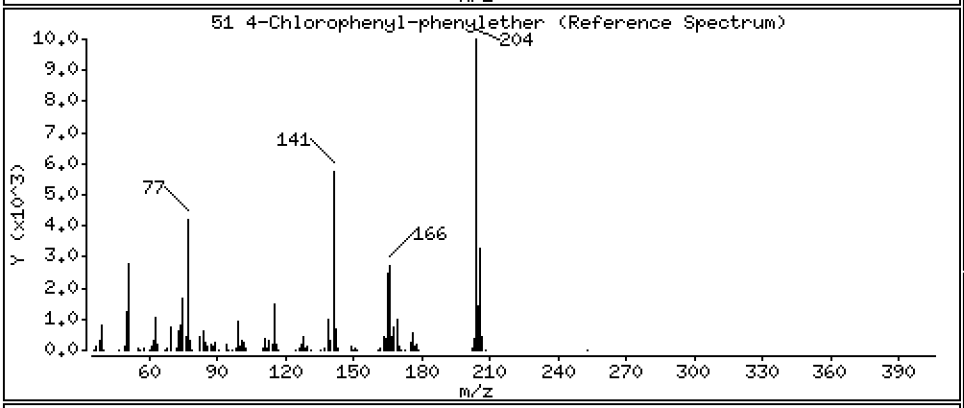
Concentration: 0.5194 ug/mL

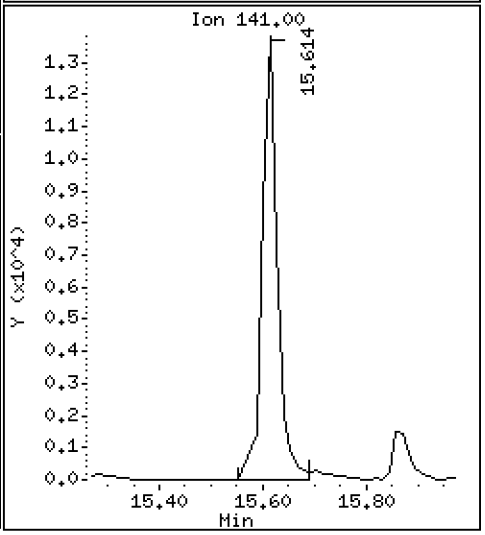


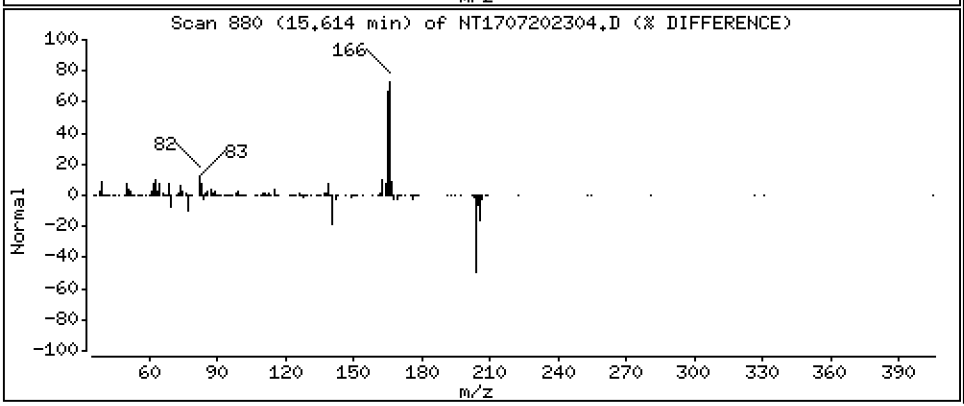












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

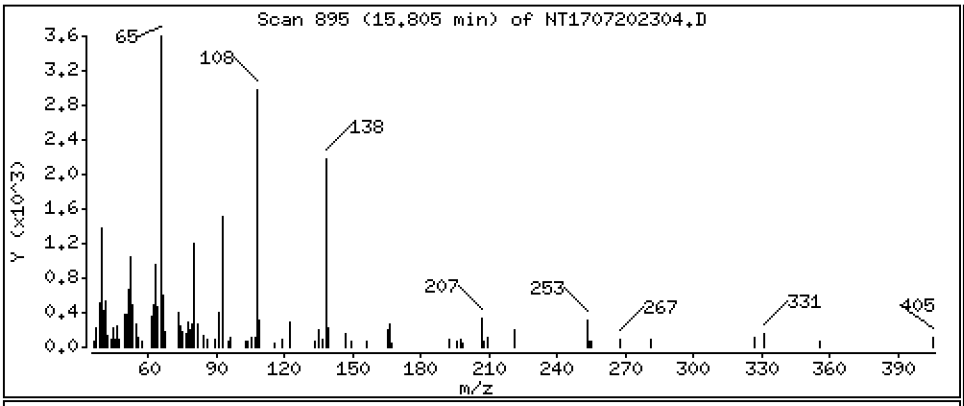
Operator: JGR

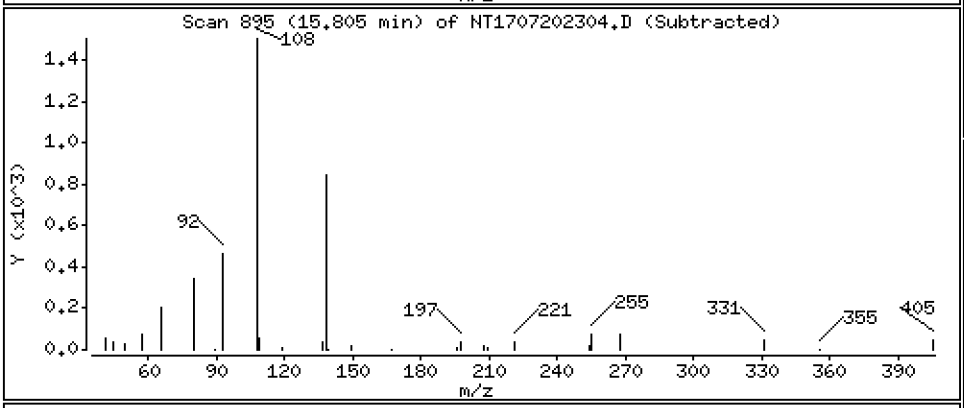
Column phase: ZB-5msi

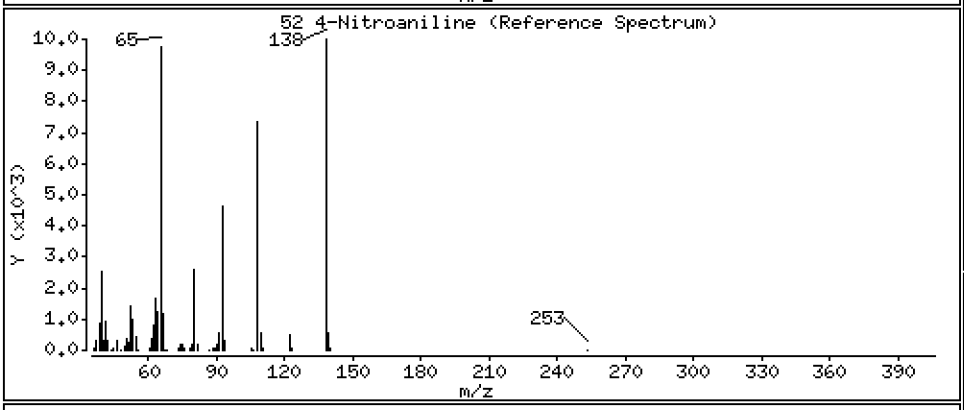
Column diameter: 0.25

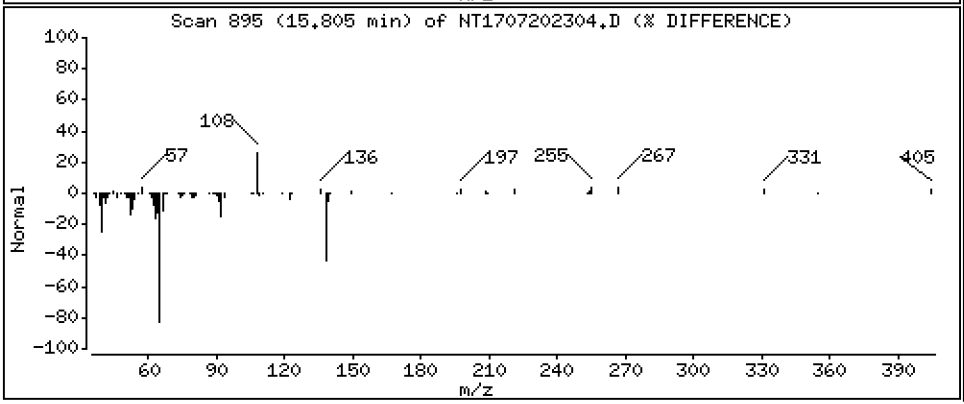
52 4-Nitroaniline

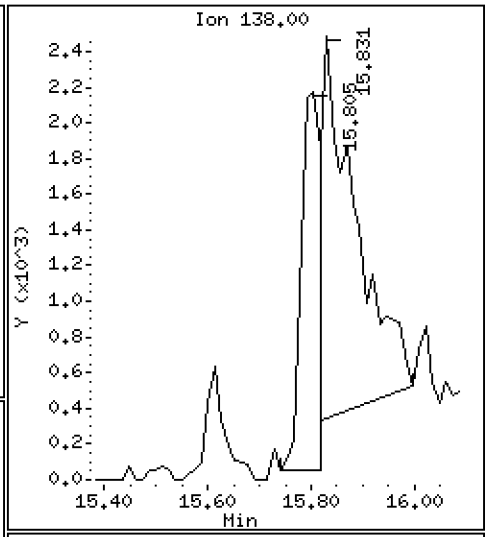
Concentration: 0.1775 ug/mL

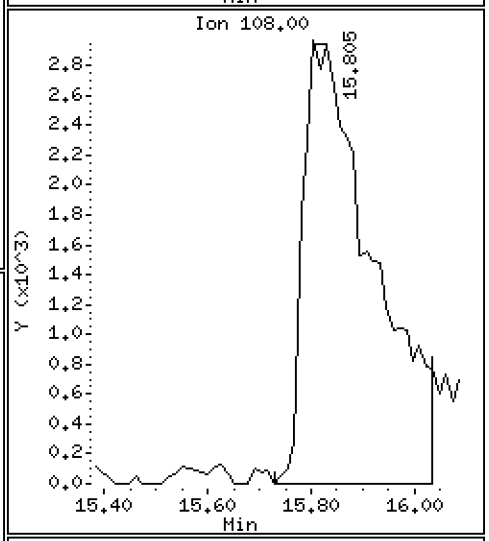


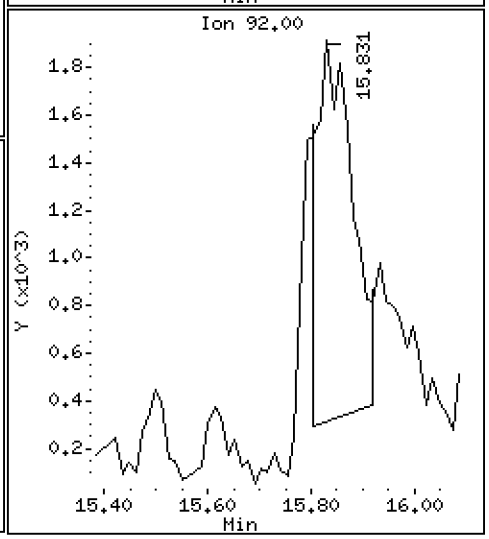












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

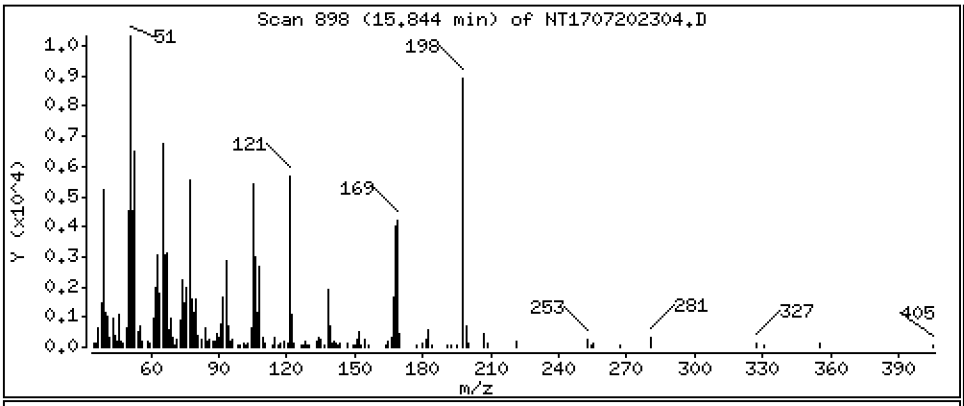
Operator: JGR

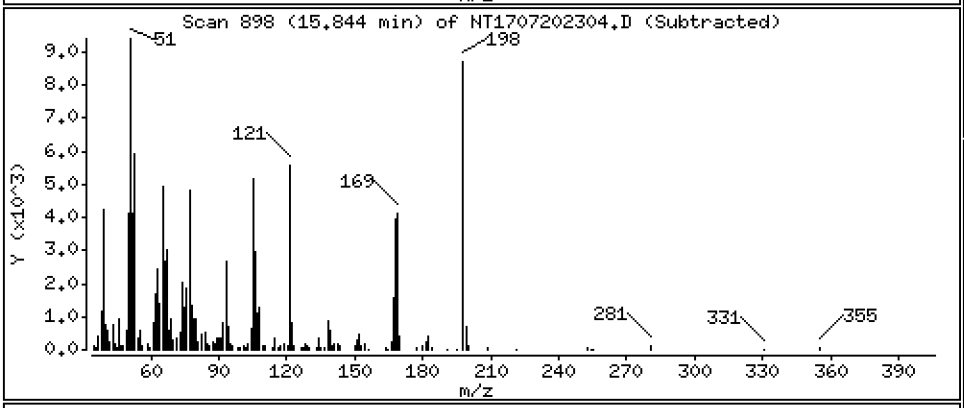
Column phase: ZB-5msi

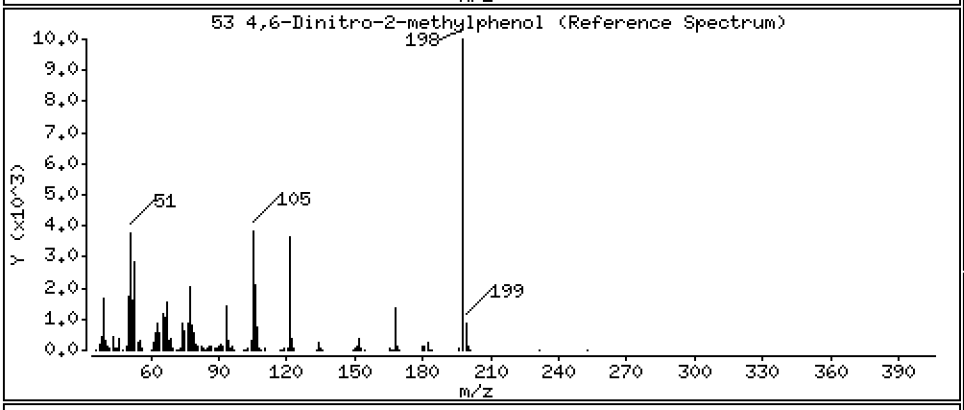
Column diameter: 0.25

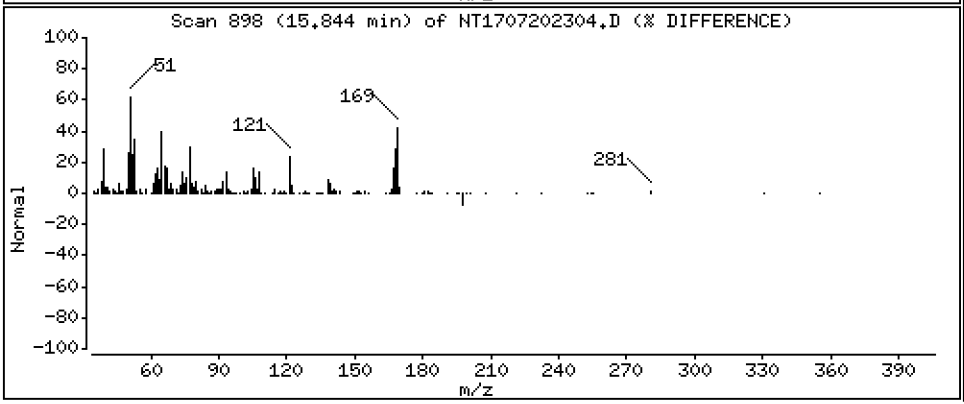
53 4,6-Dinitro-2-methylphenol

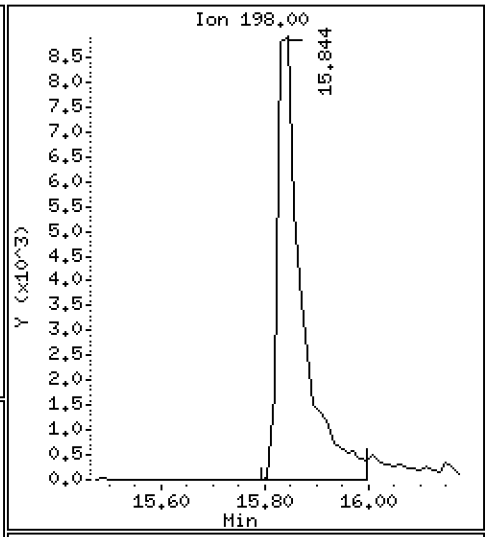
Concentration: 1.028 ug/mL

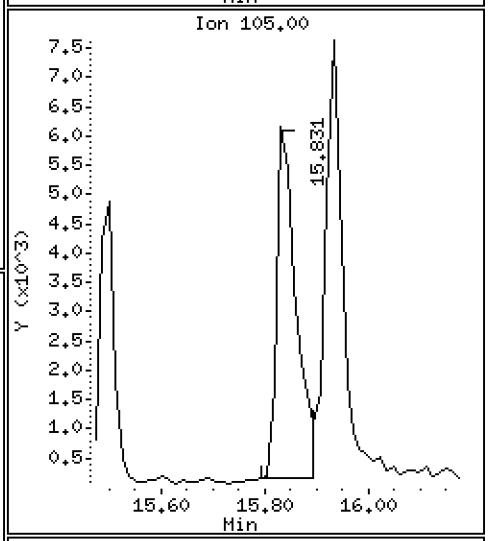


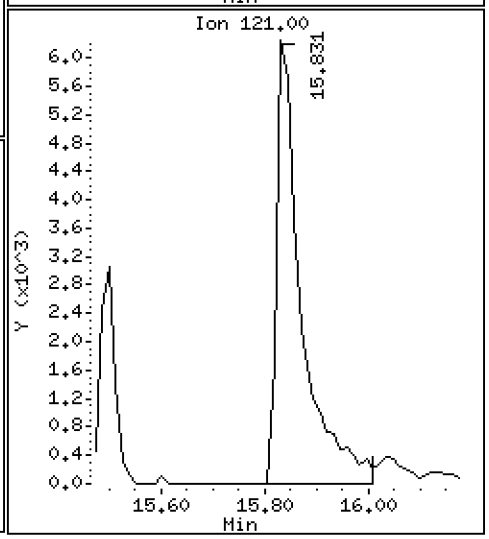












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

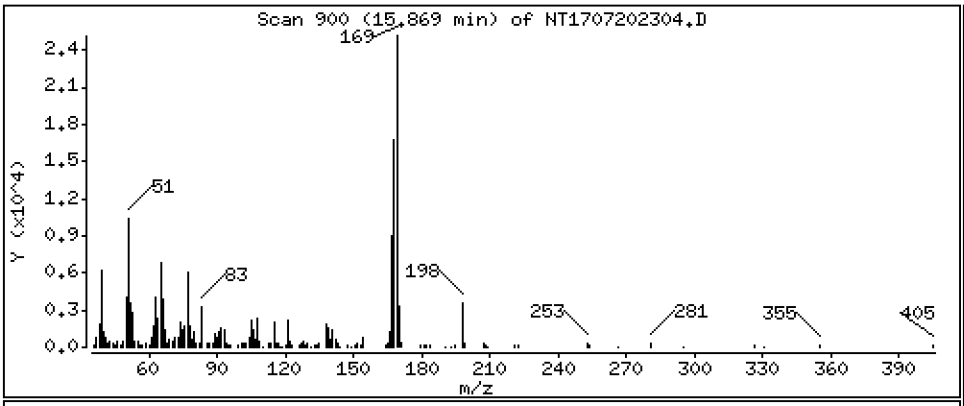
Operator: JGR

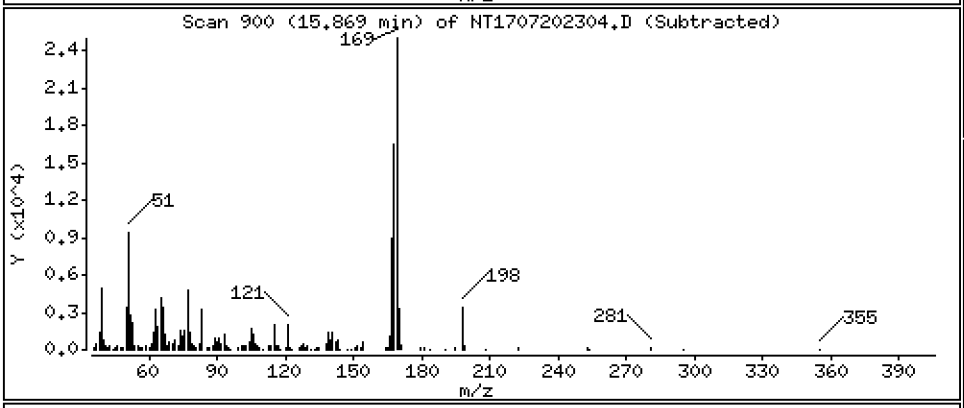
Column phase: ZB-5msi

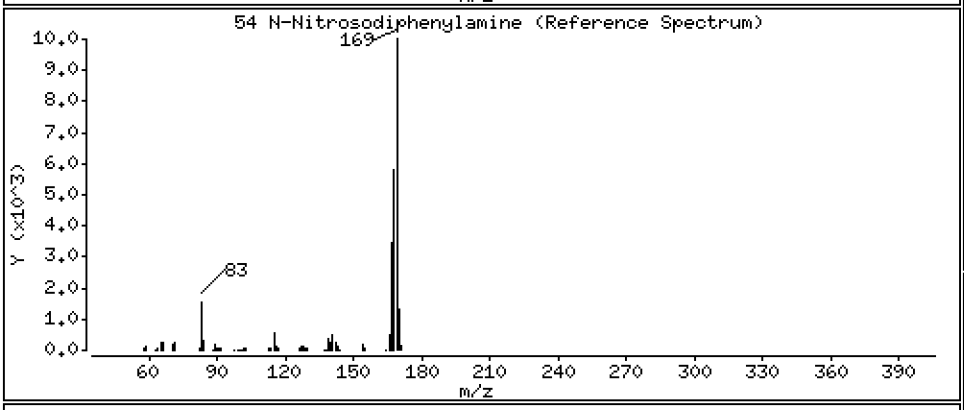
Column diameter: 0.25

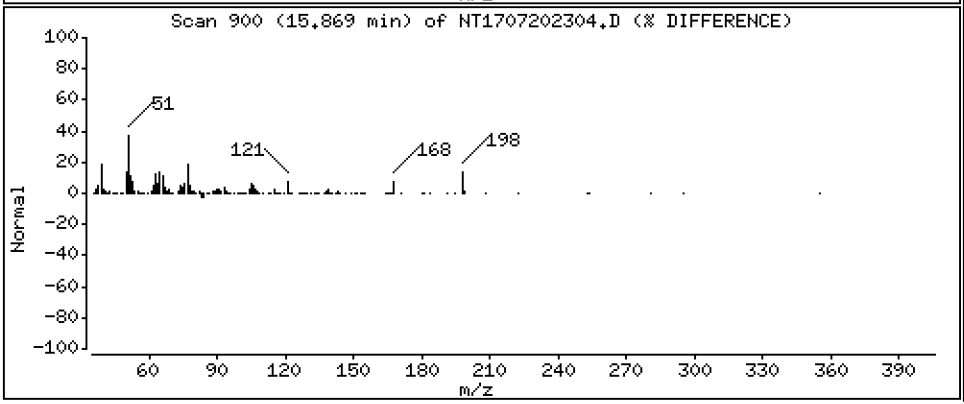
54 N-Nitrosodiphenylamine

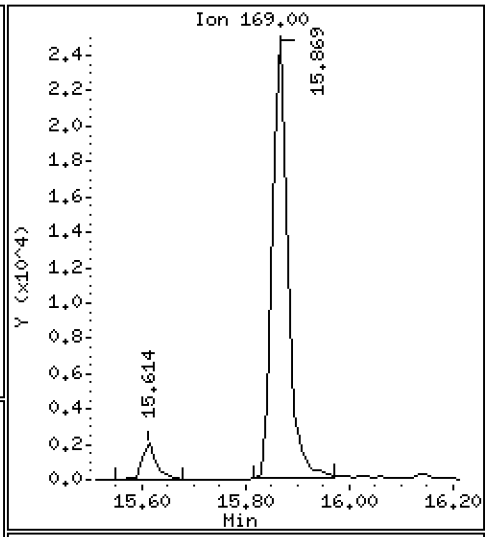
Concentration: 0.4417 ug/mL

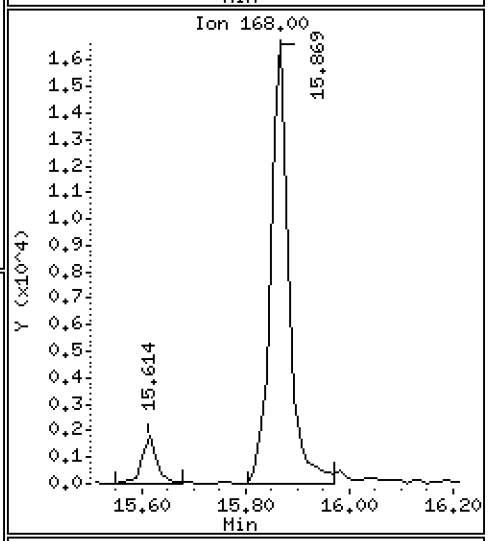


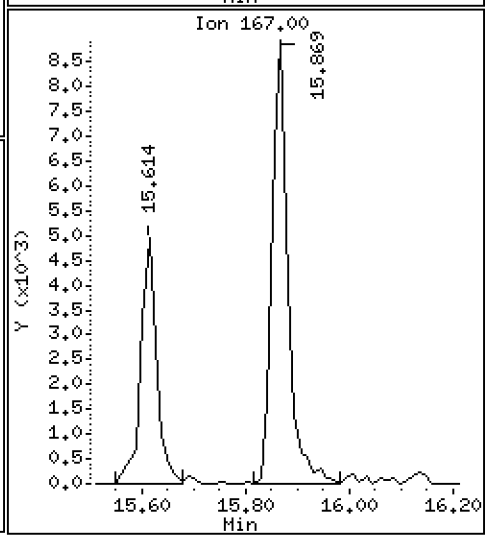












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

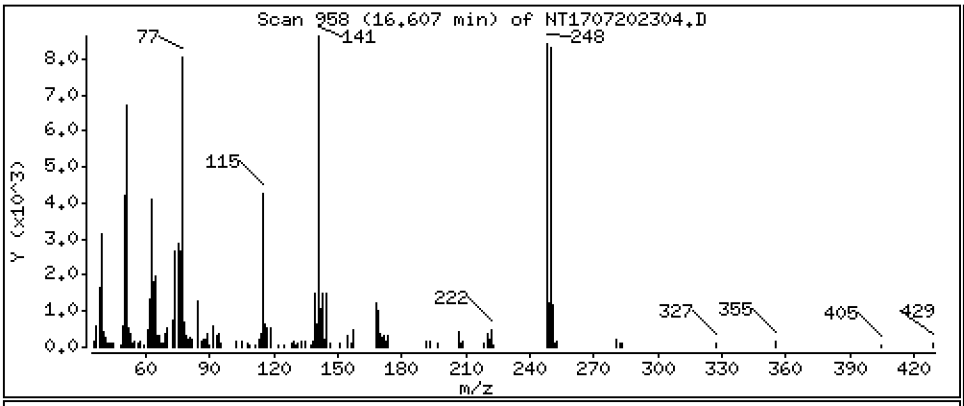
Operator: JGR

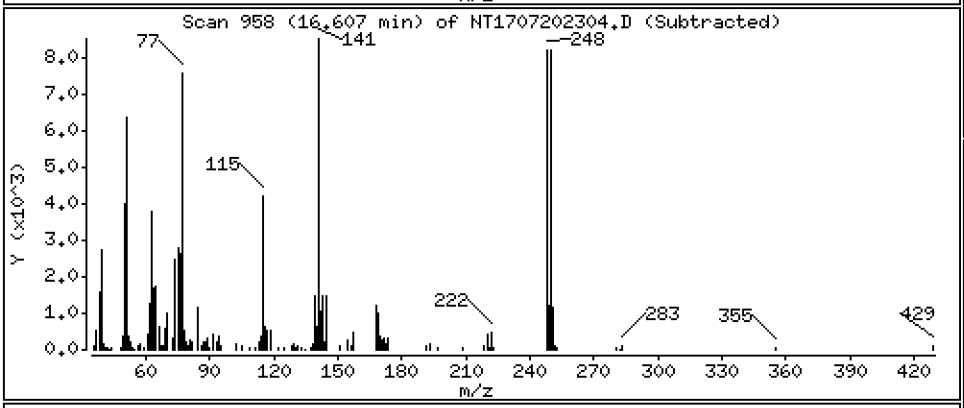
Column phase: ZB-5msi

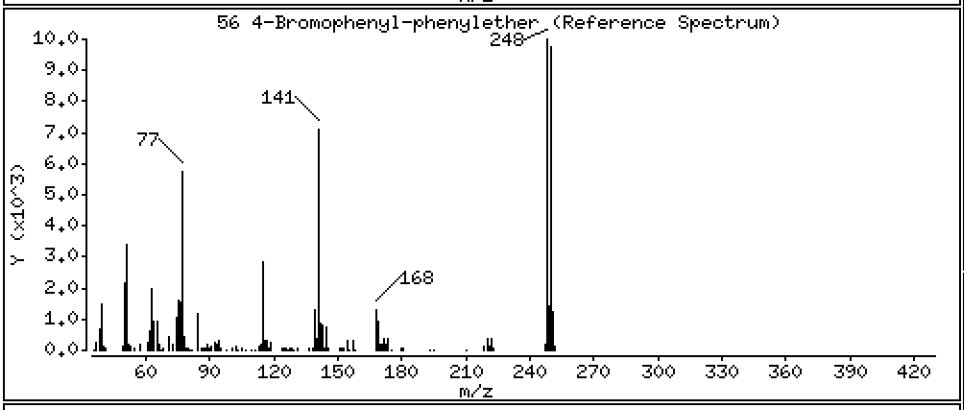
Column diameter: 0.25

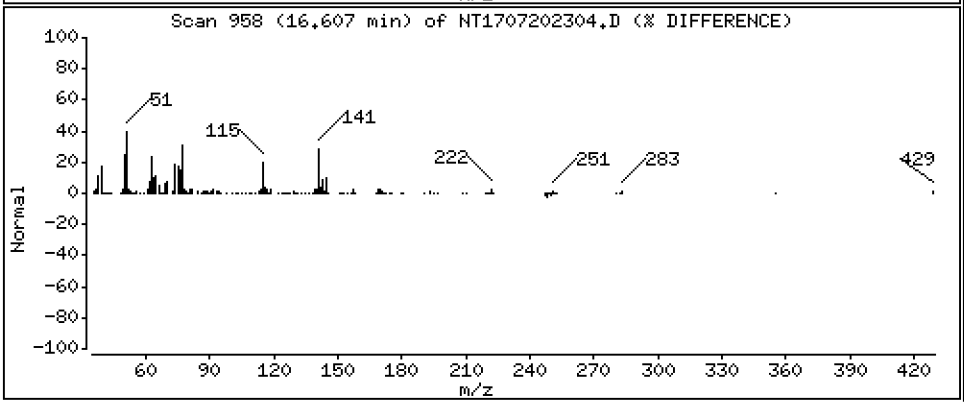
56 4-Bromophenyl-phenylether

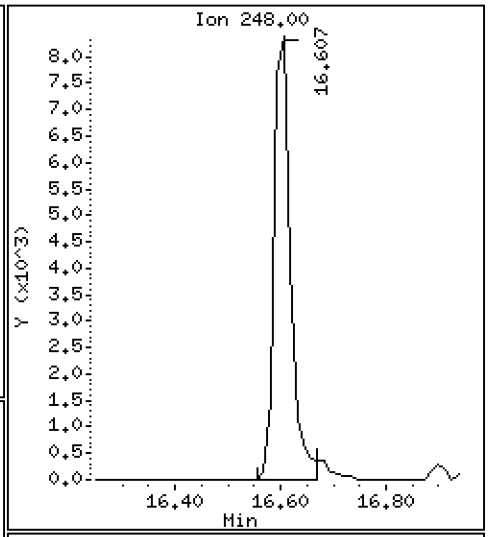
Concentration: 0.4146 ug/mL

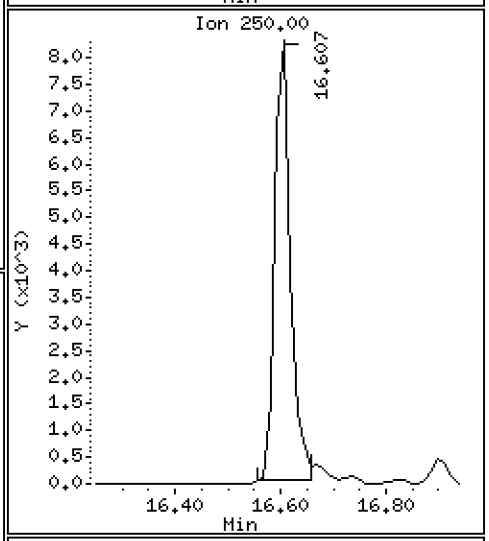


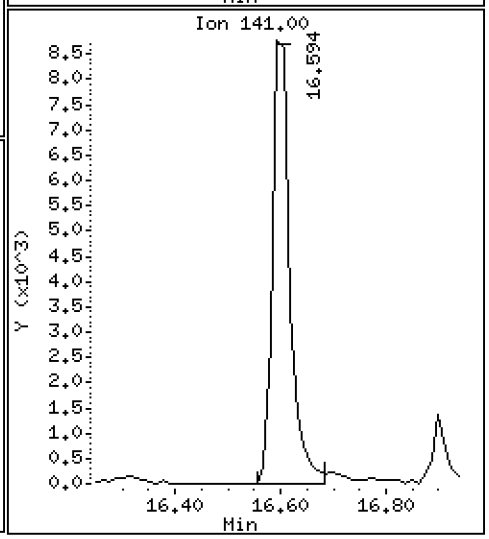












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

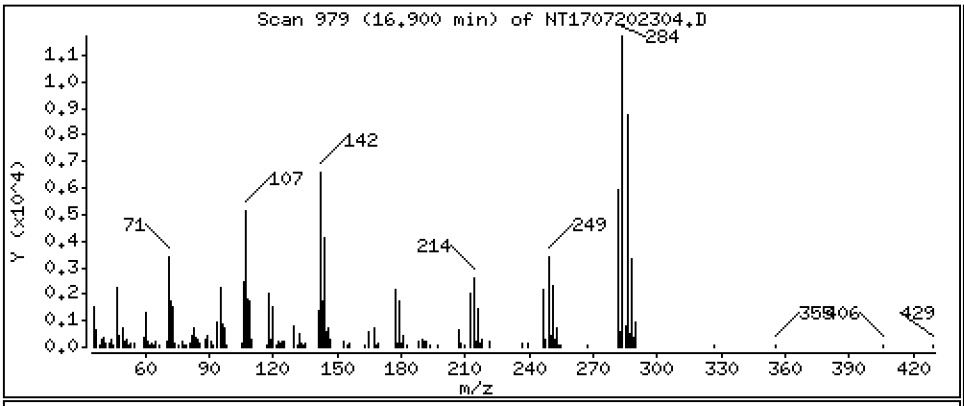
Operator: JGR

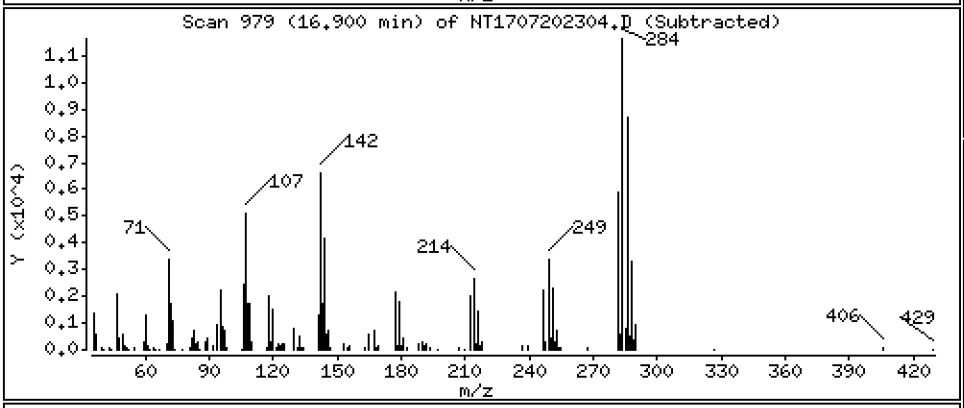
Column phase: ZB-5msi

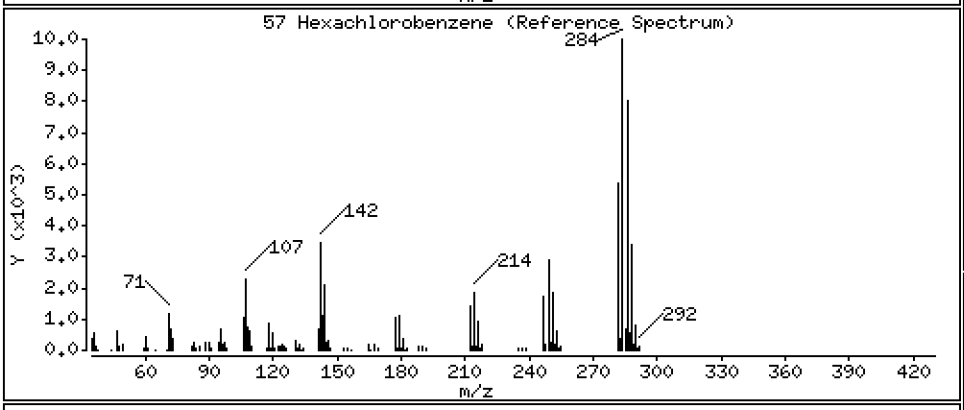
Column diameter: 0.25

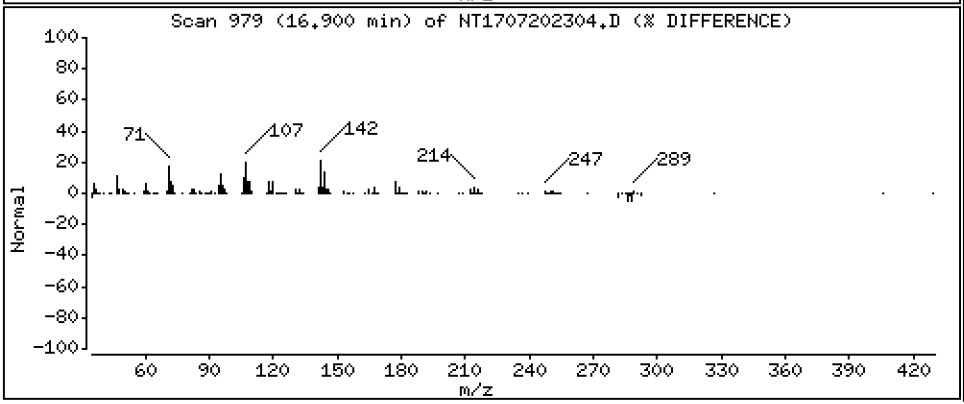
57 Hexachlorobenzene

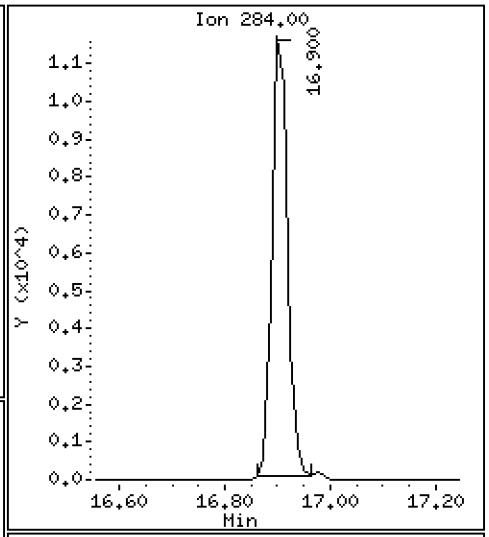
Concentration: 0.4555 ug/mL

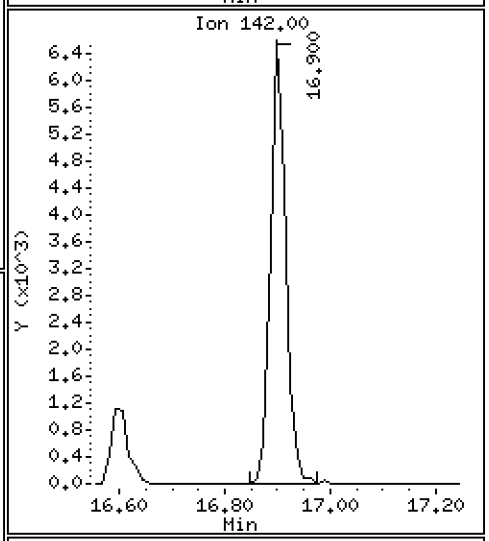


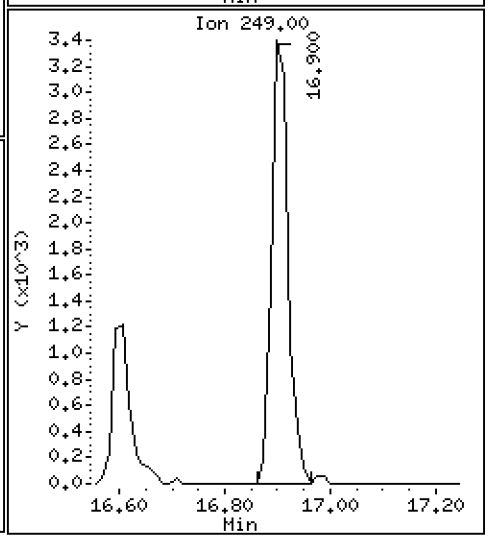












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D

Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

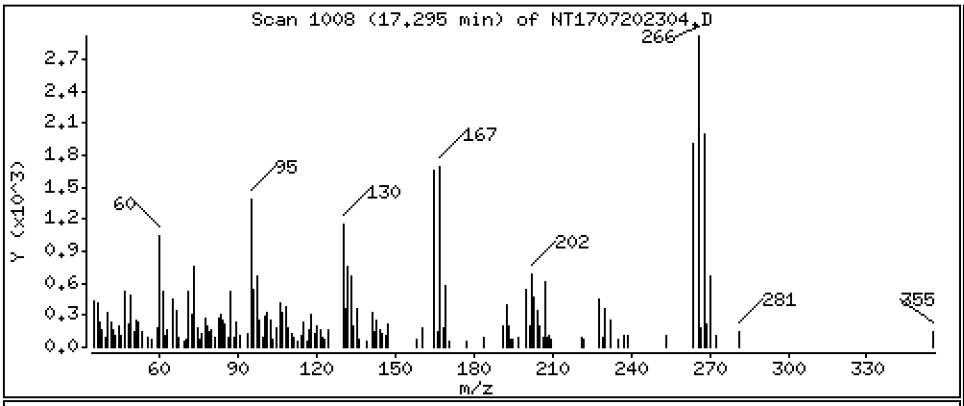
Operator: JGR

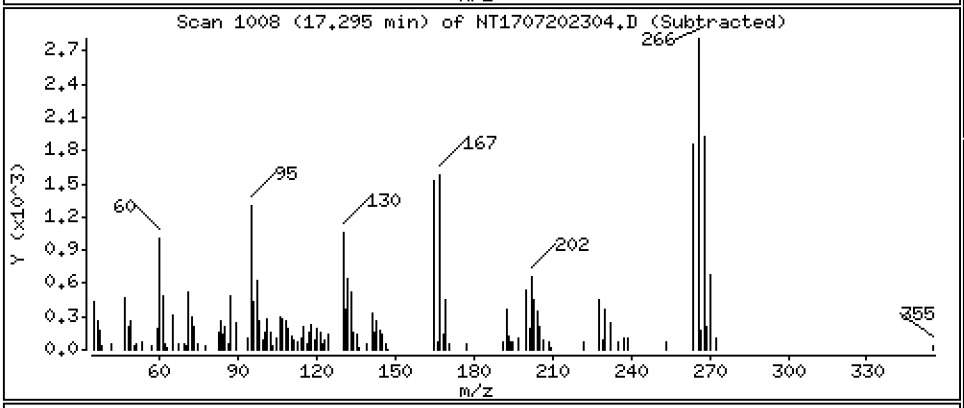
Column phase: ZB-5msi

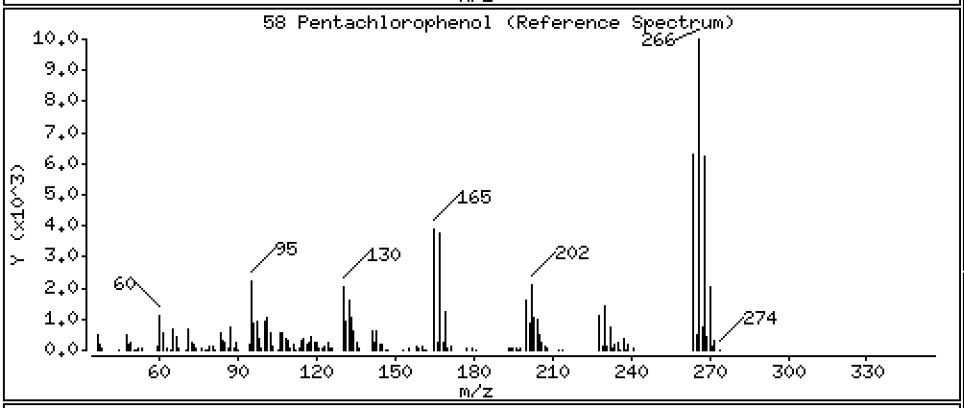
Column diameter: 0.25

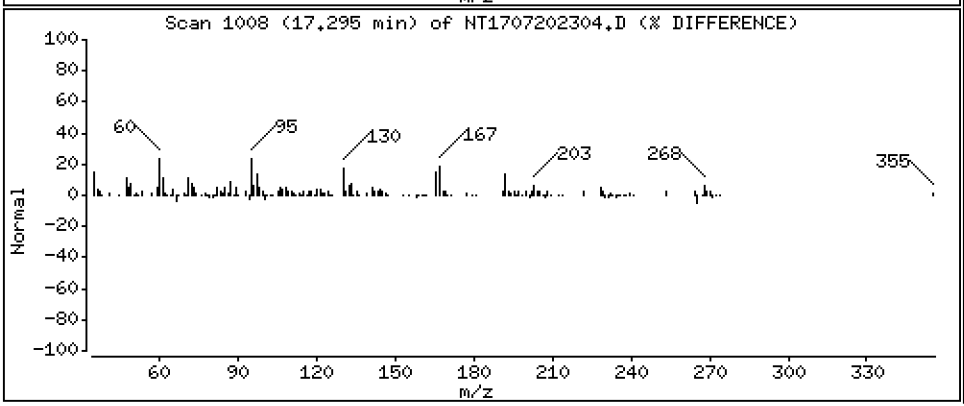
58 Pentachlorophenol

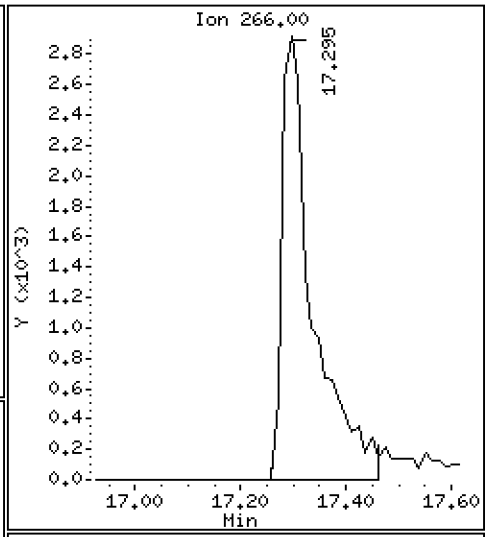
Concentration: 0.4021 ug/mL

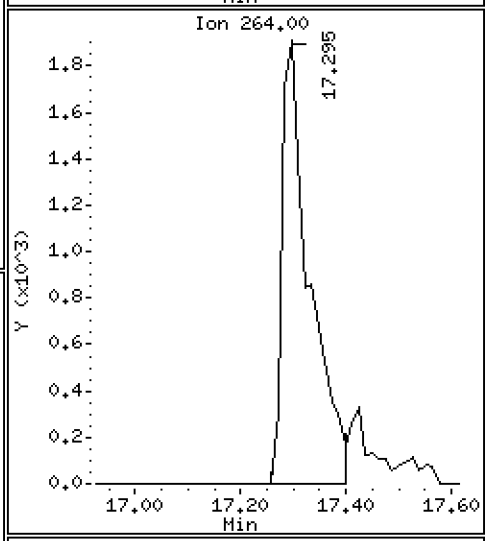


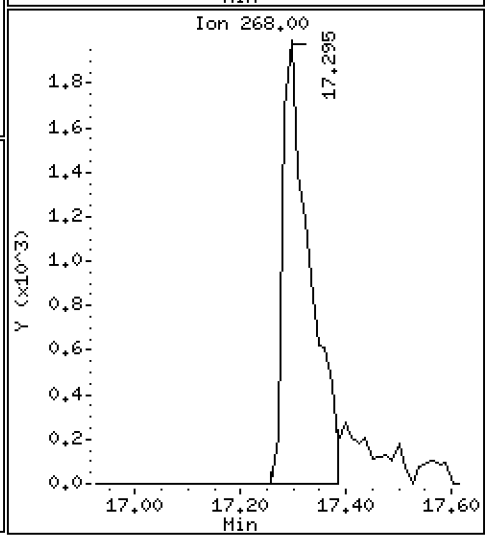












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

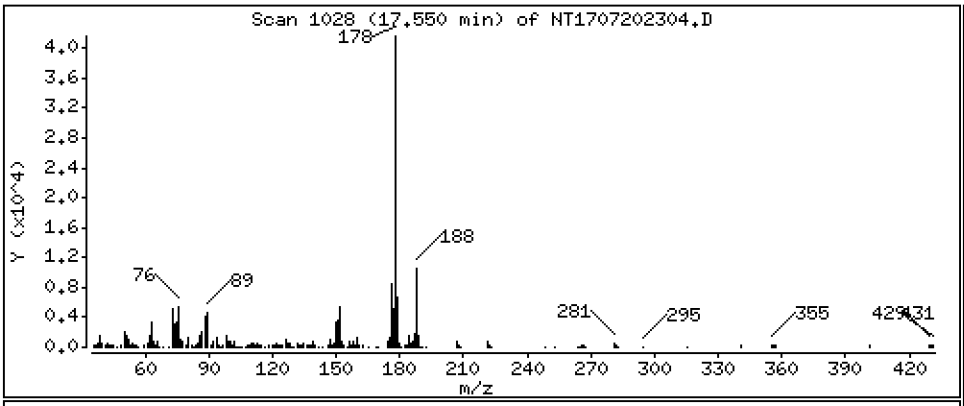
Operator: JGR

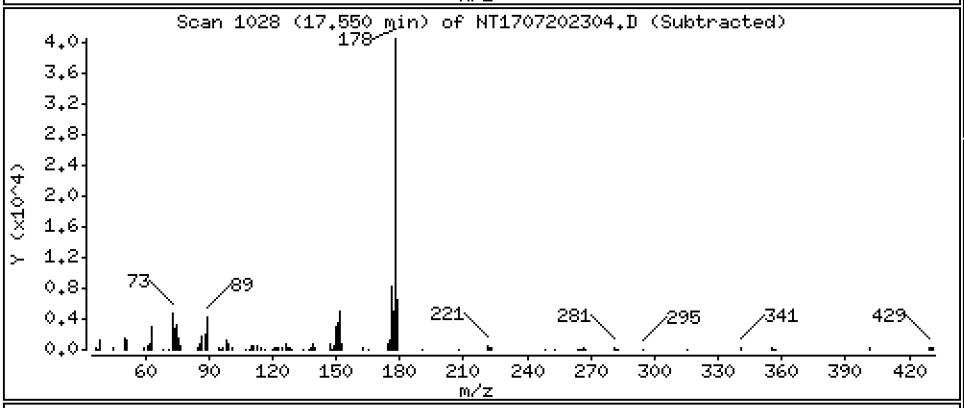
Column phase: ZB-5msi

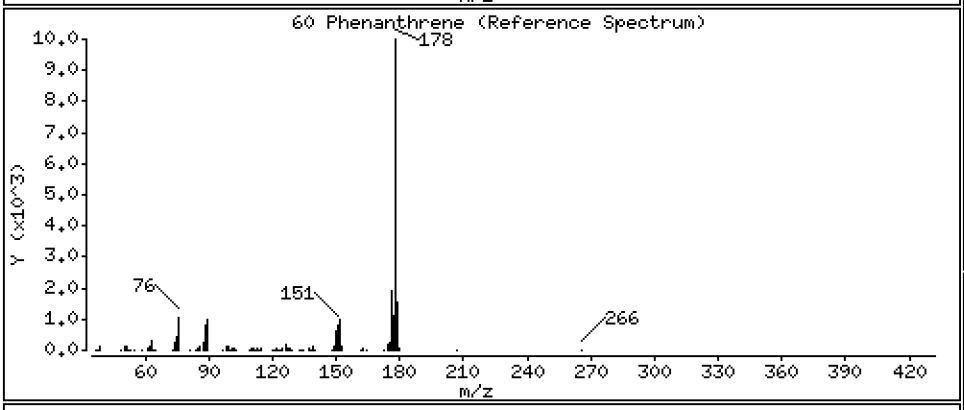
Column diameter: 0.25

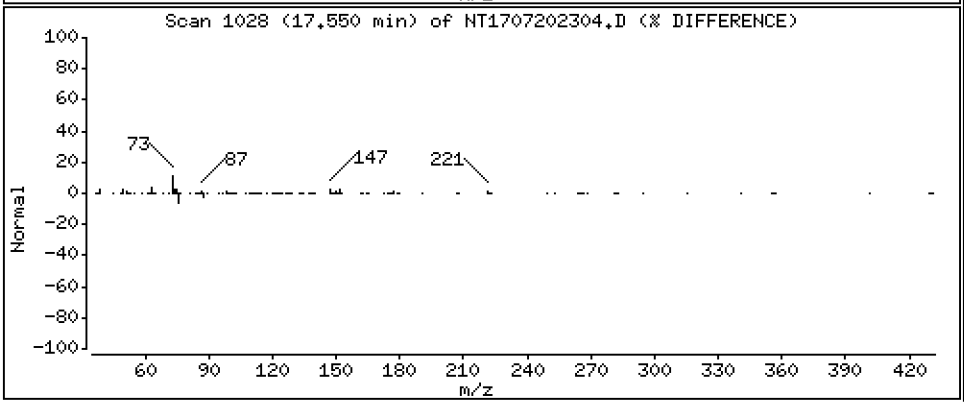
60 Phenanthrene

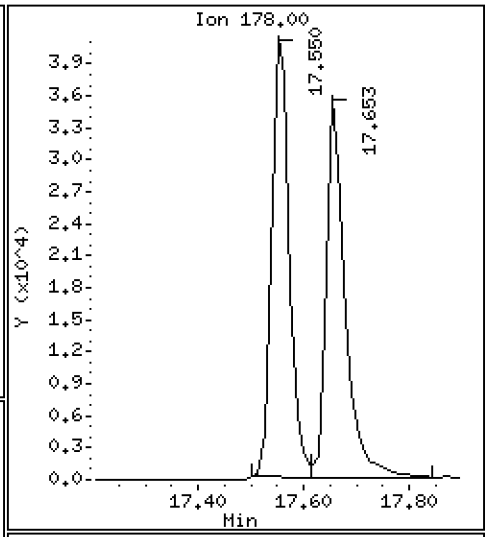
Concentration: 0.4455 ug/mL

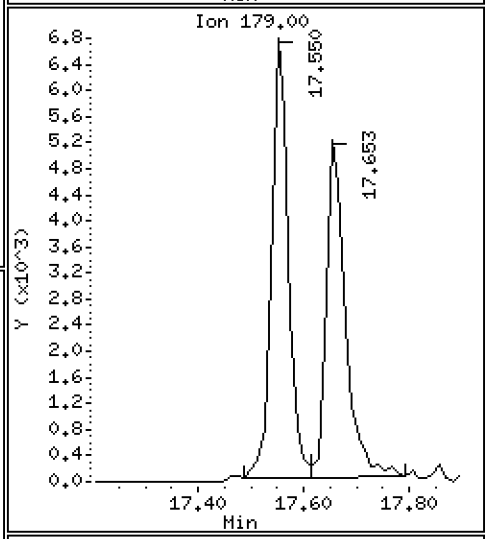


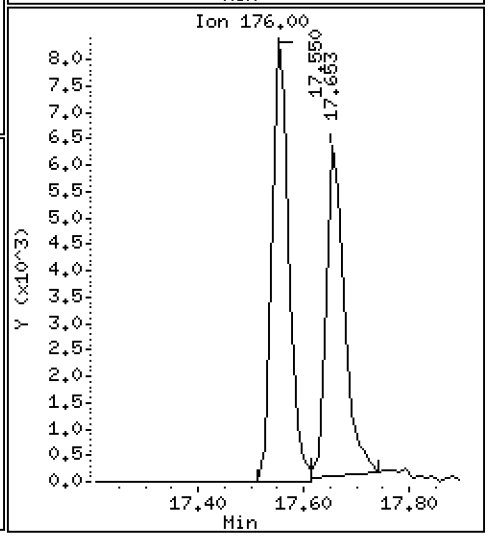












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

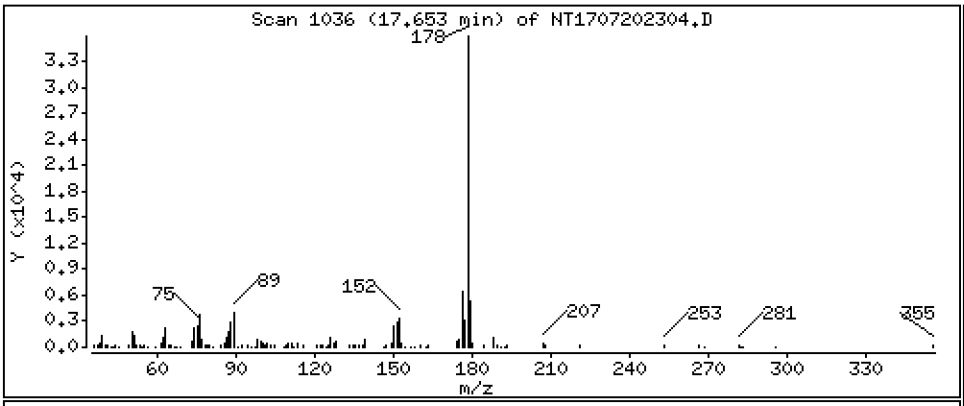
Operator: JGR

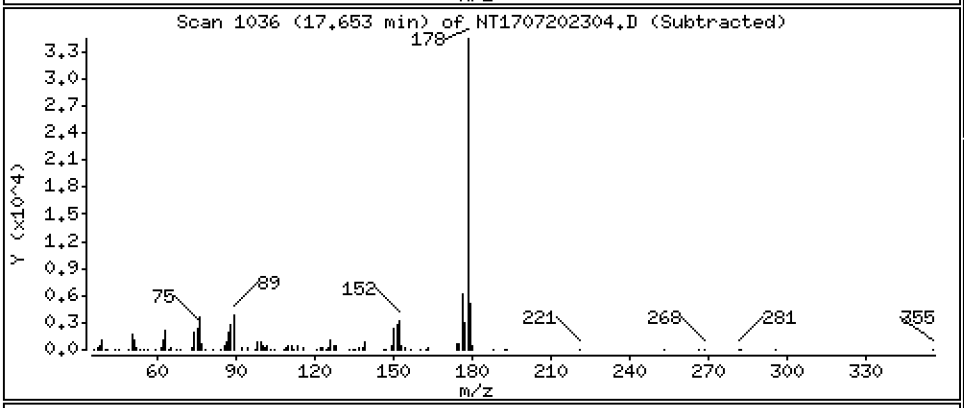
Column phase: ZB-5msi

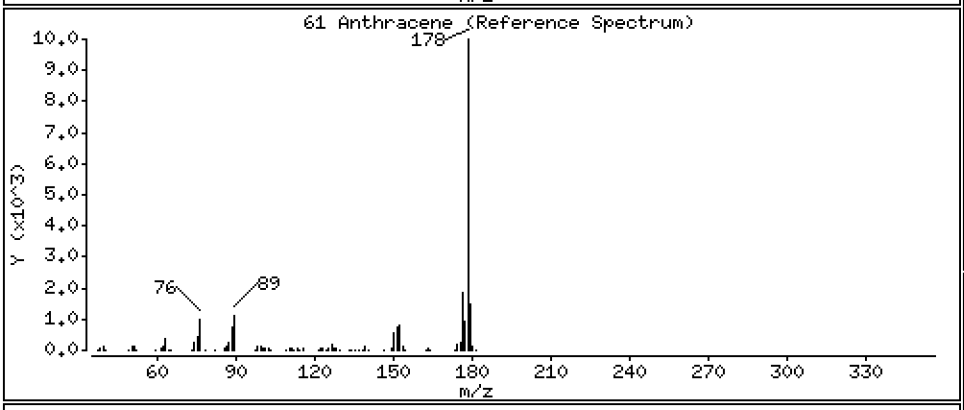
Column diameter: 0.25

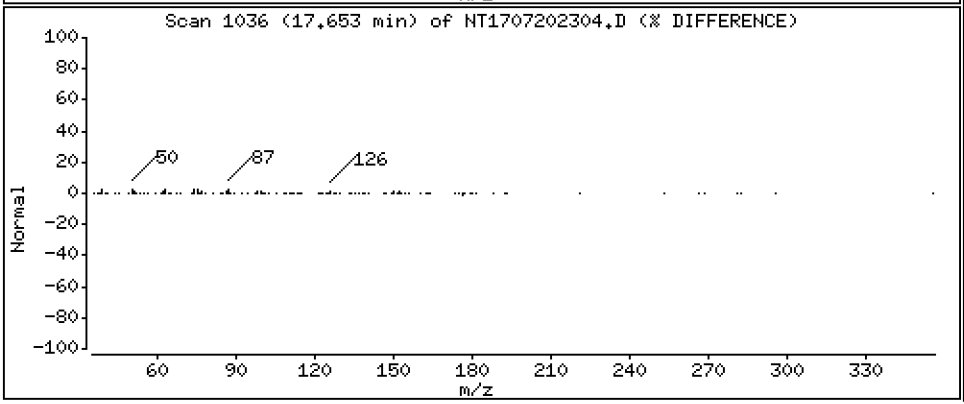
61 Anthracene

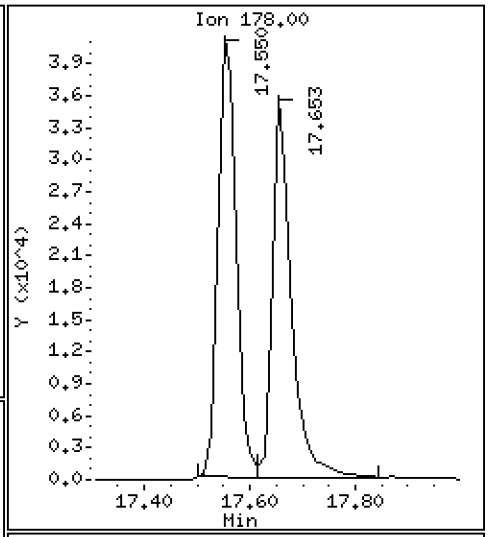
Concentration: 0.4271 ug/mL

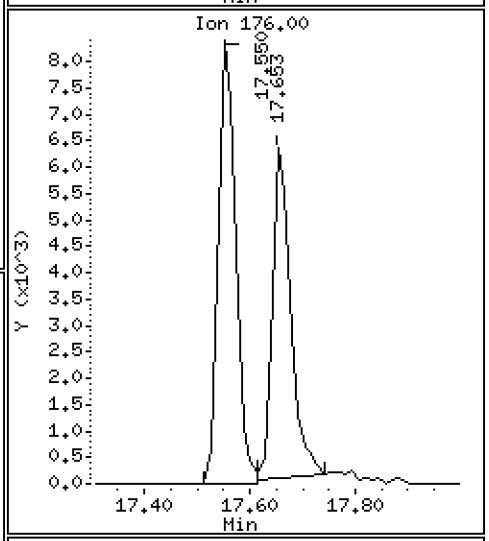


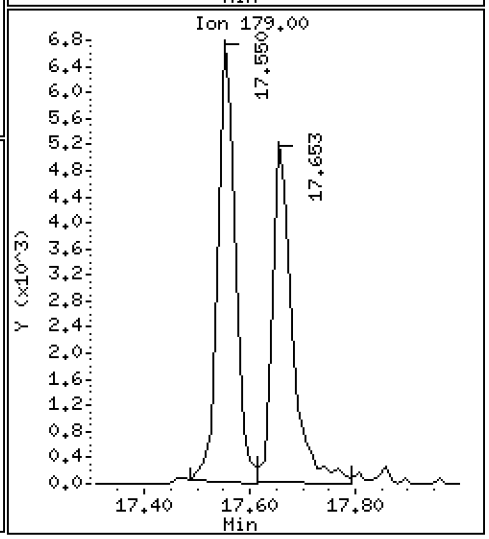












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

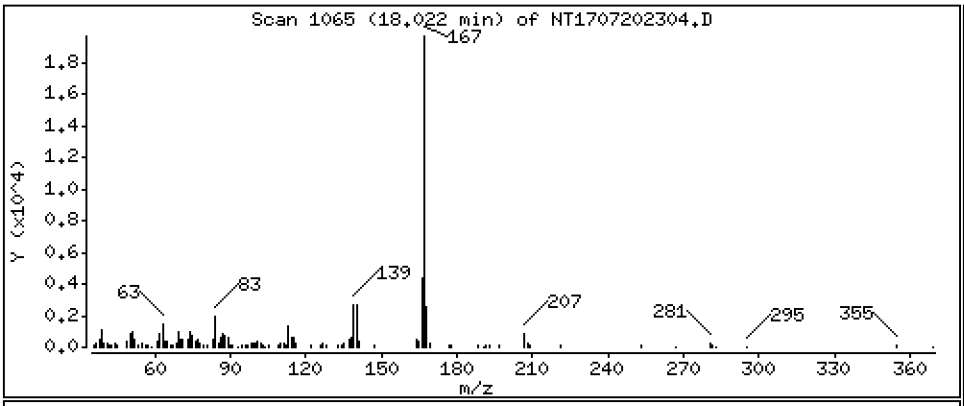
Operator: JGR

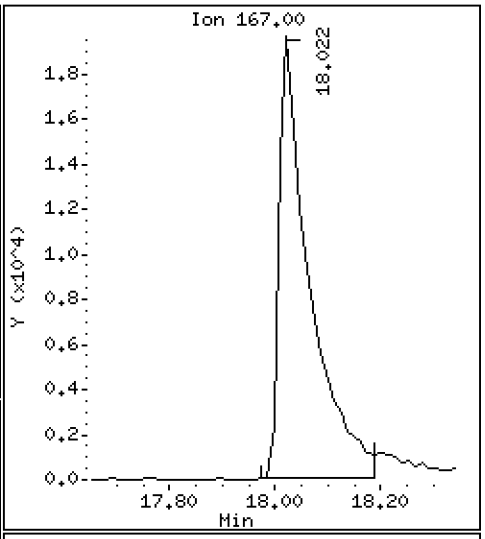
Column phase: ZB-5msi

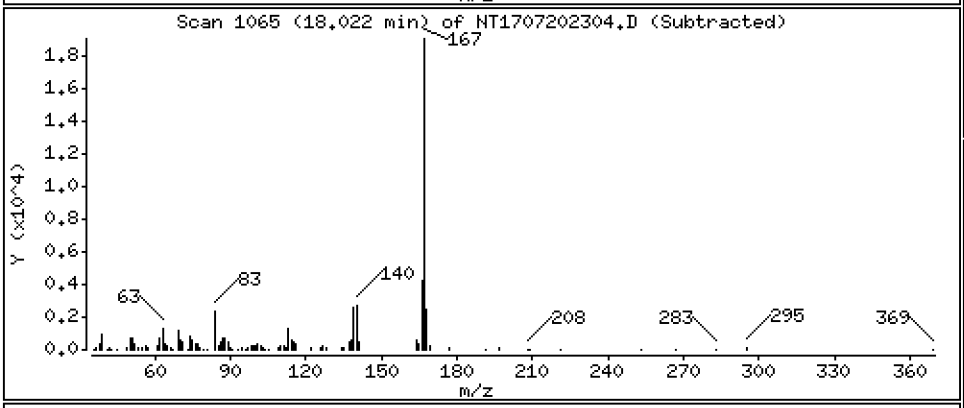
Column diameter: 0.25

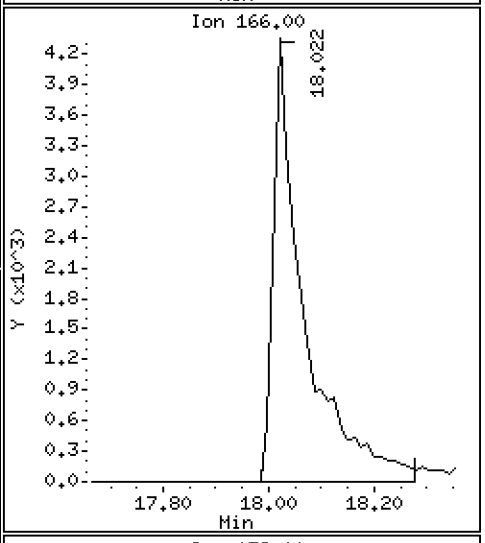
62 Carbazole

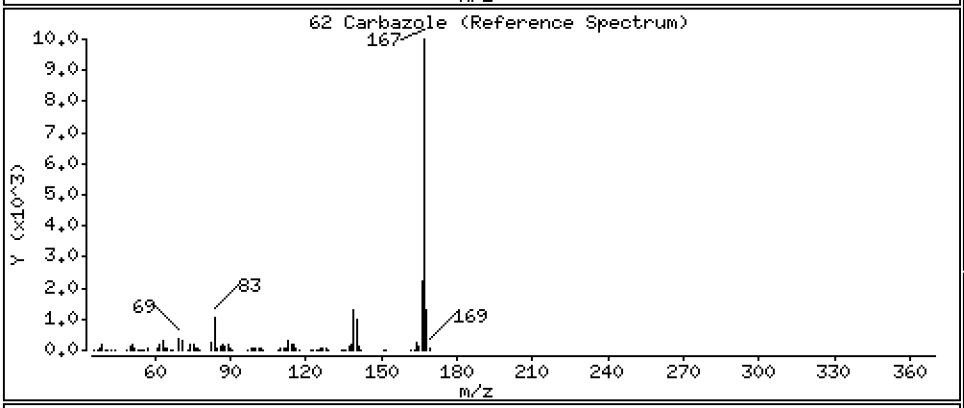
Concentration: 0.4565 ug/mL

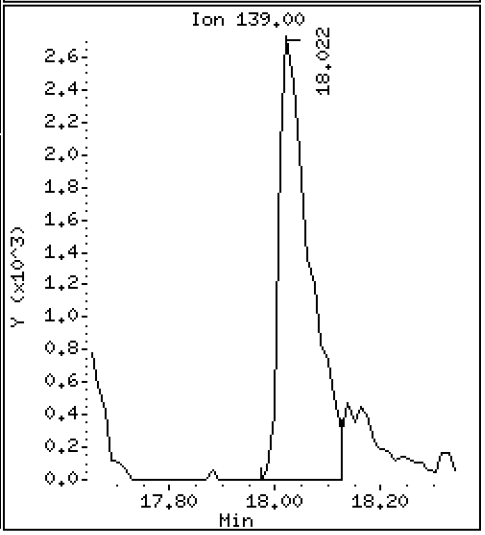


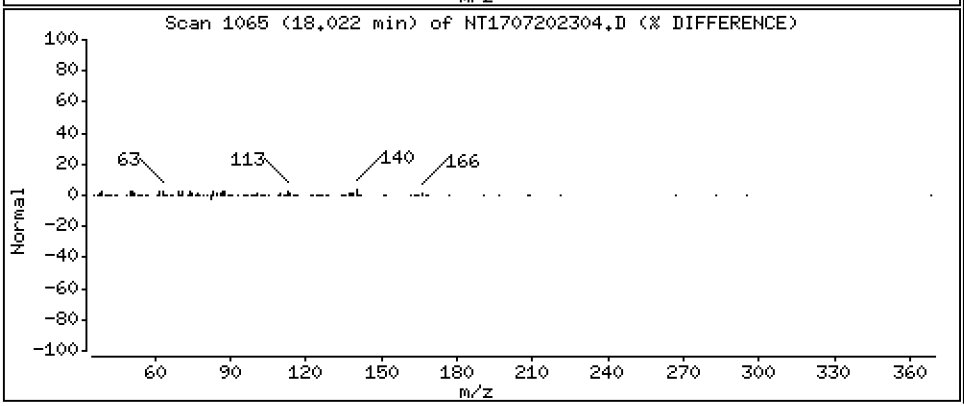












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

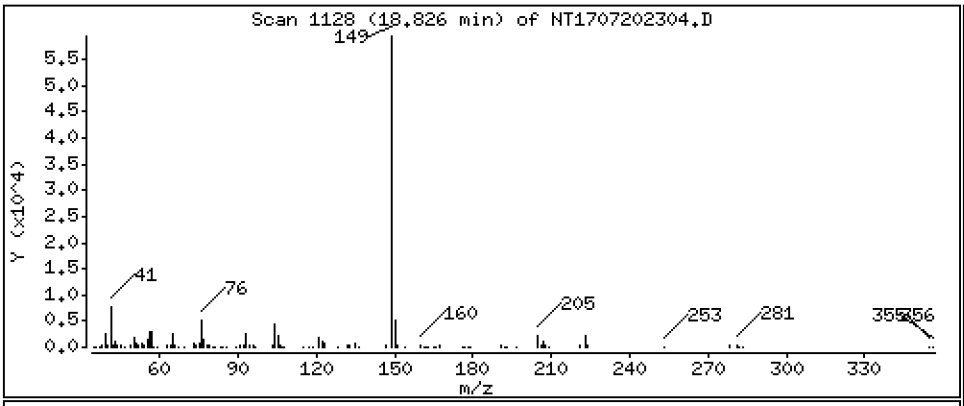
Operator: JGR

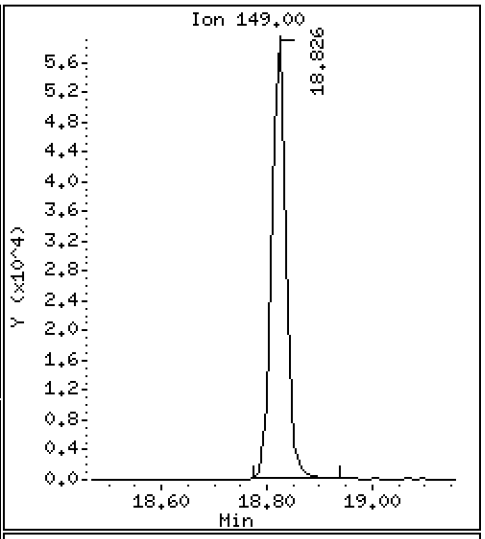
Column phase: ZB-5msi

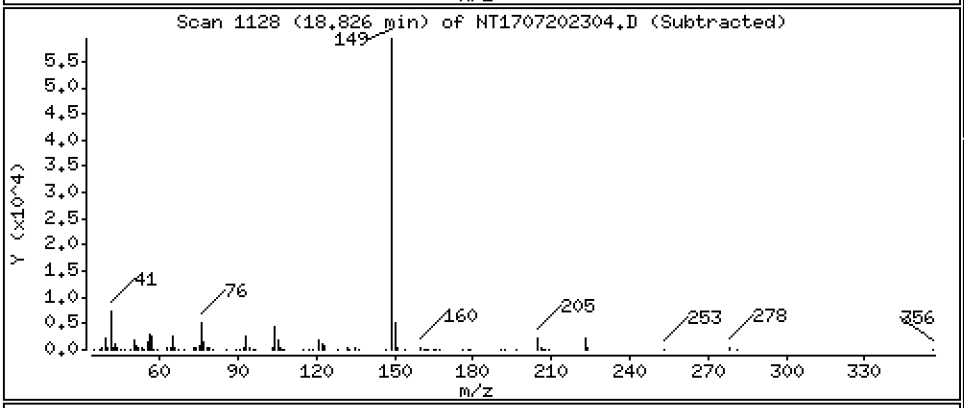
Column diameter: 0.25

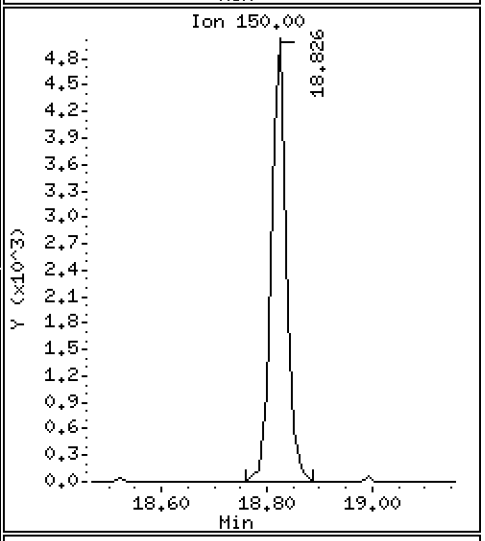
63 Di-n-butylphthalate

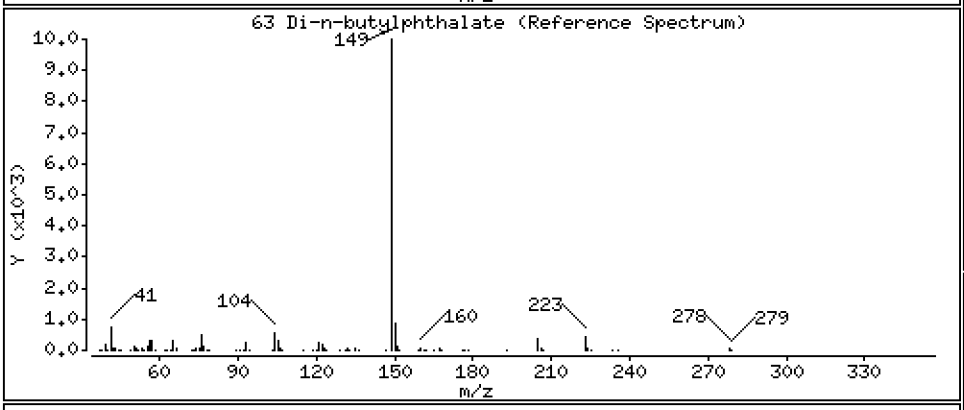
Concentration: 0.3961 ug/mL

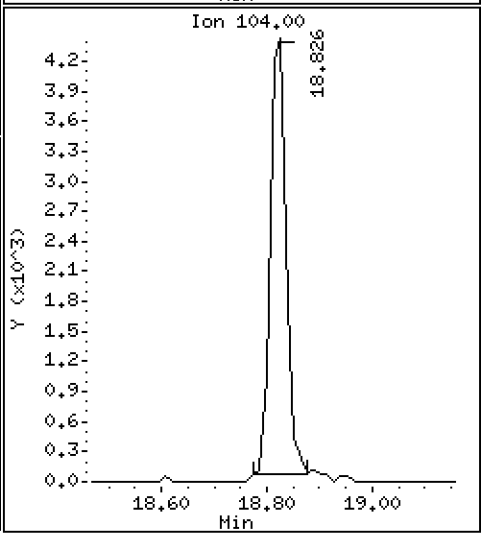


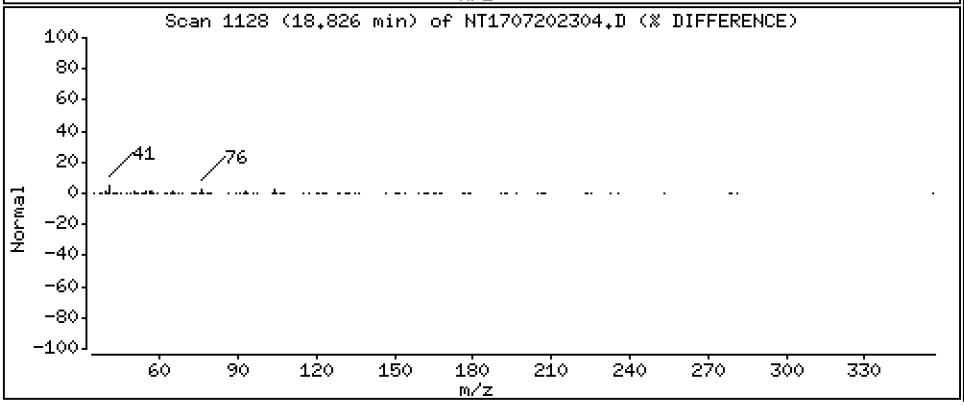












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

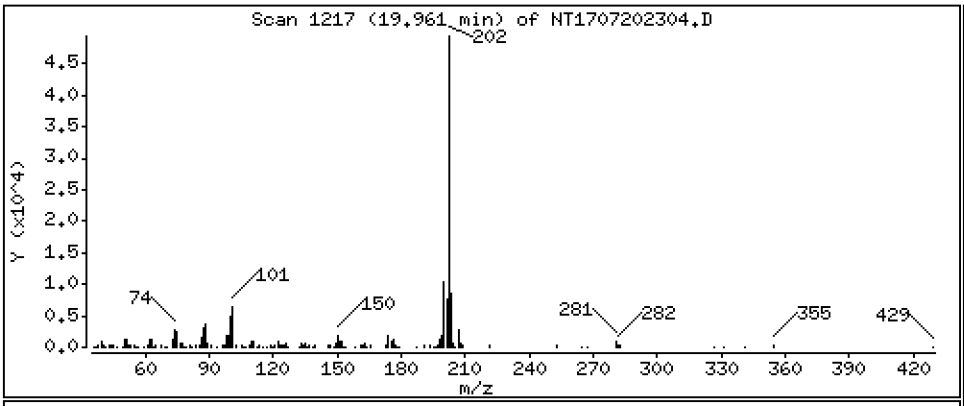
Operator: JGR

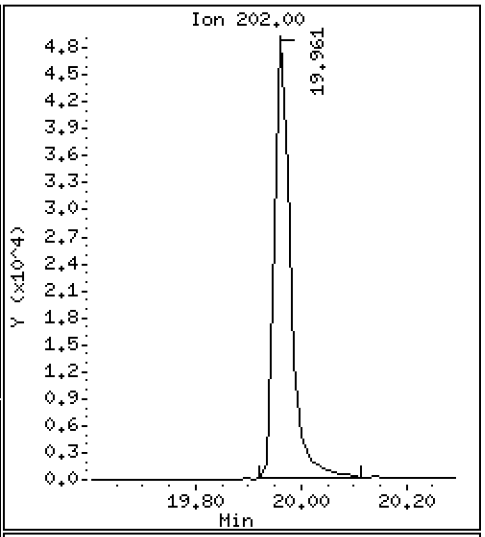
Column phase: ZB-5msi

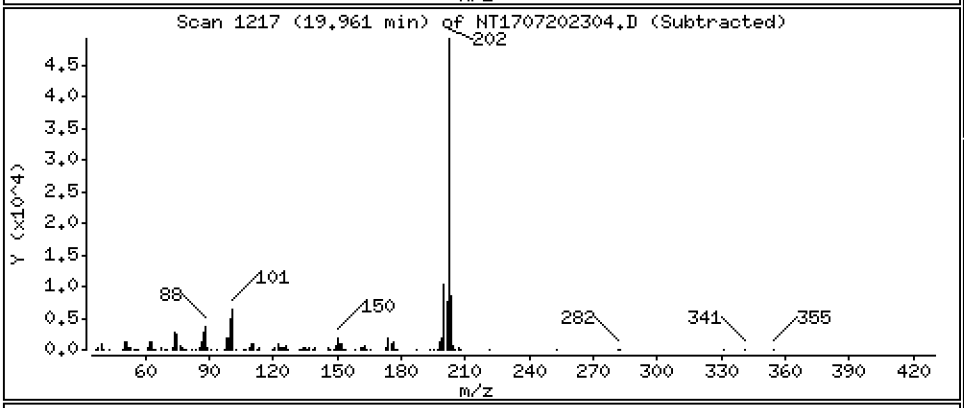
Column diameter: 0.25

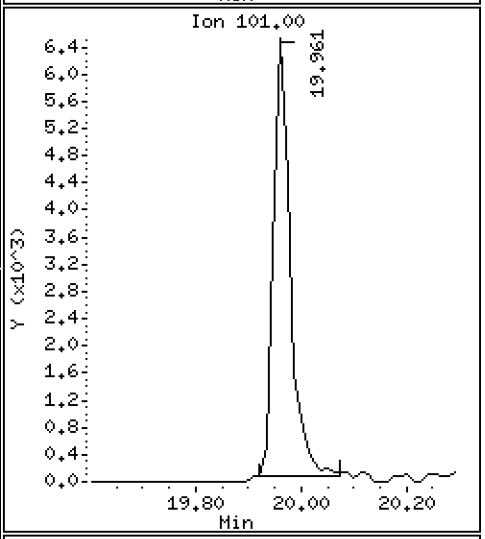
64 Fluoranthene

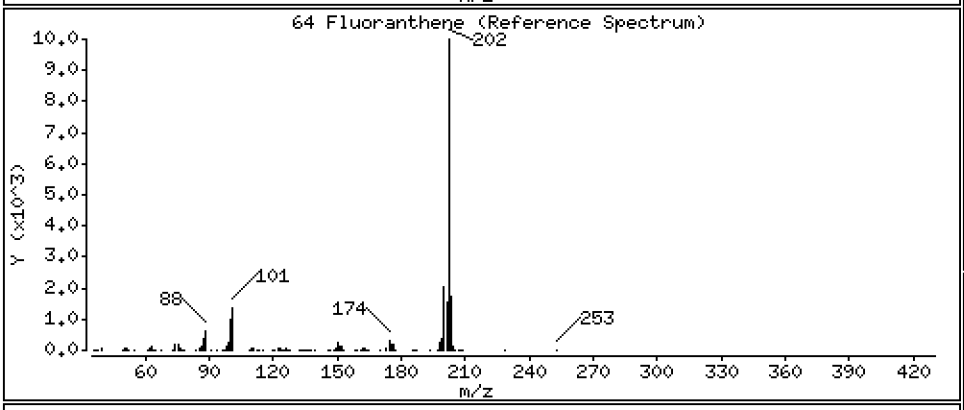
Concentration: 0.4632 ug/mL

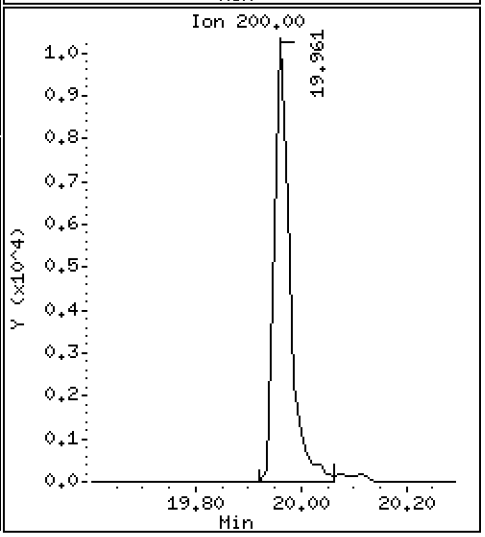


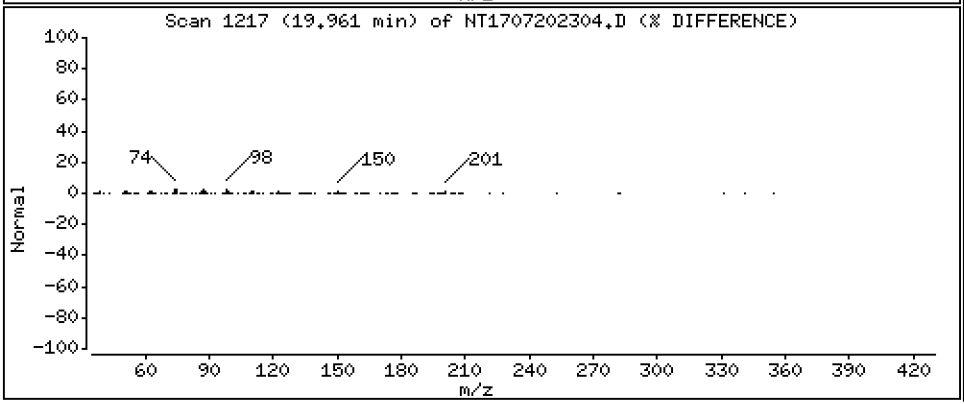












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

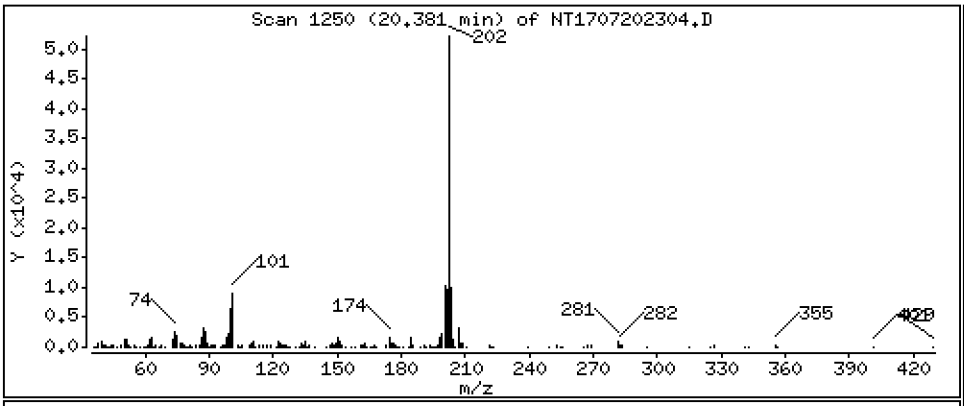
Operator: JGR

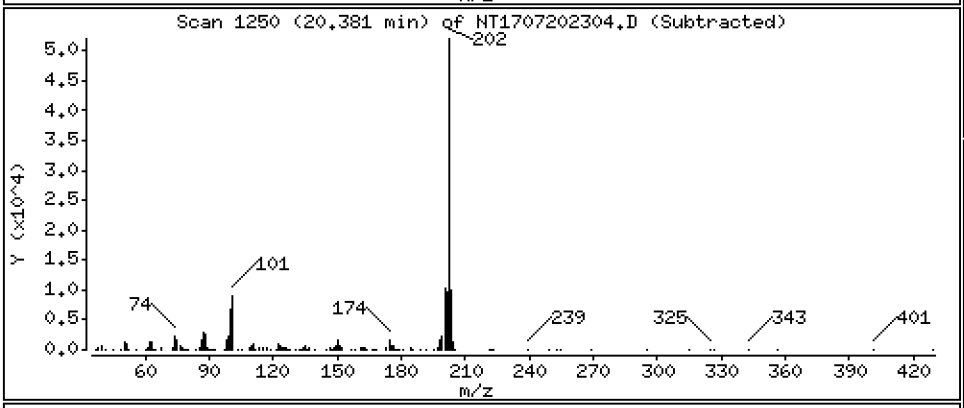
Column phase: ZB-5msi

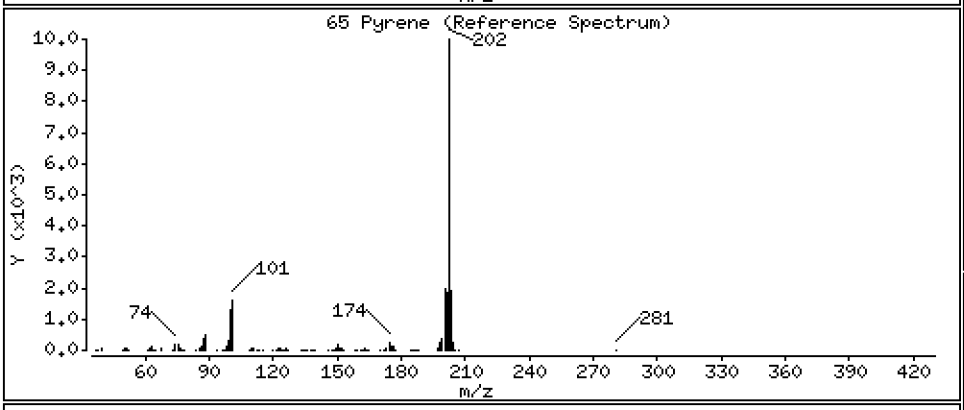
Column diameter: 0.25

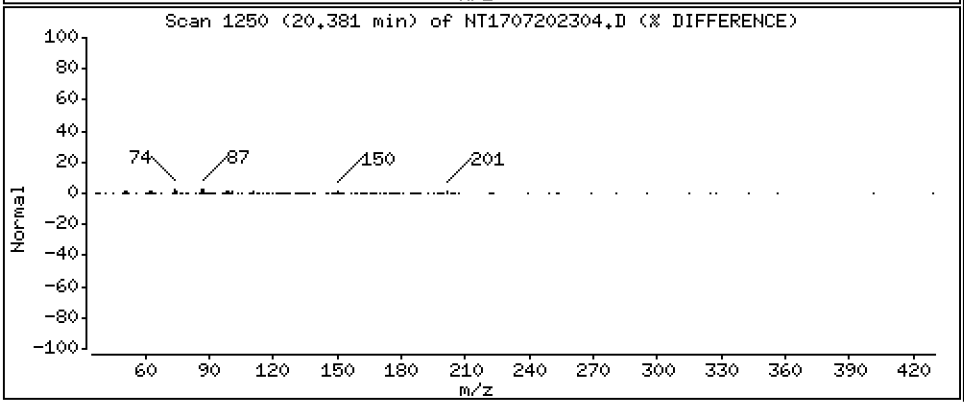
65 Pyrene

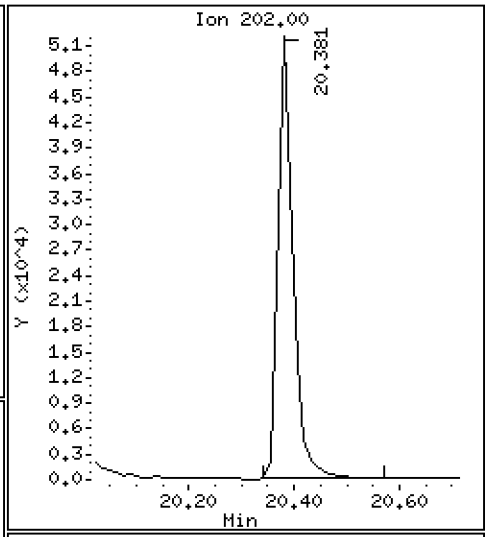
Concentration: 0.4731 ug/mL

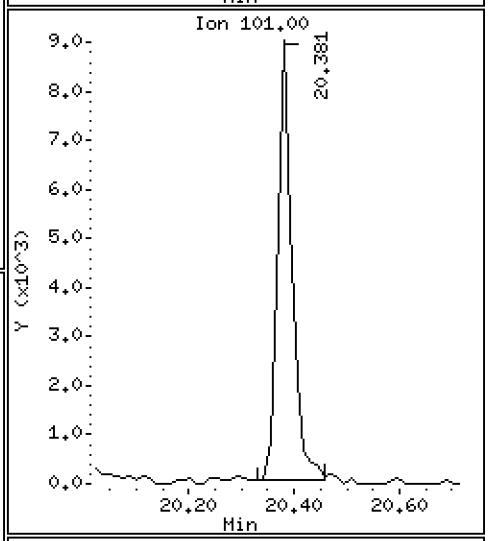


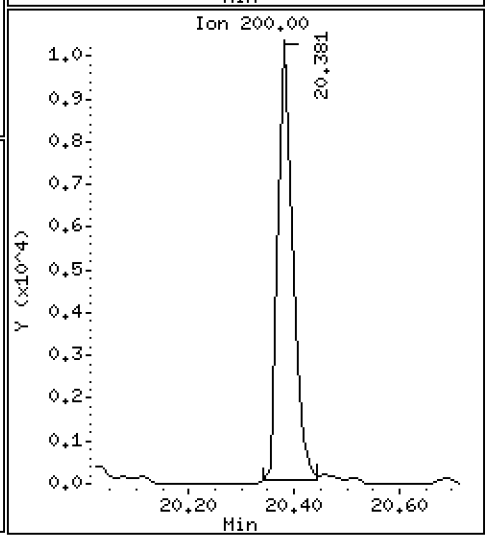












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

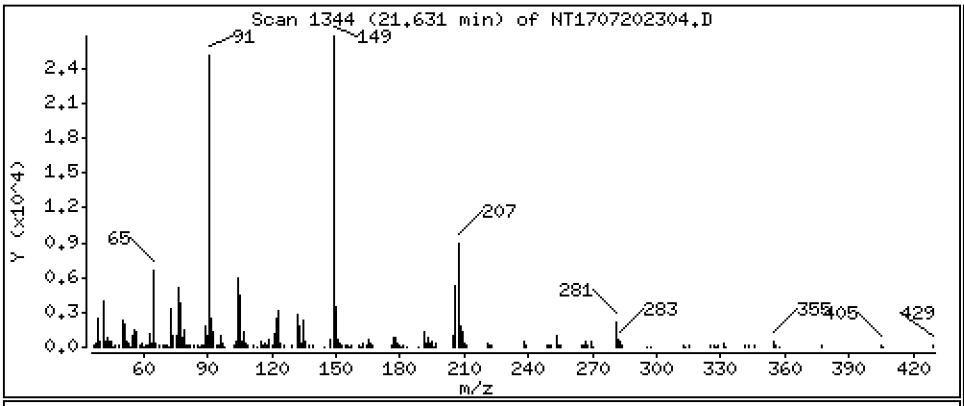
Operator: JGR

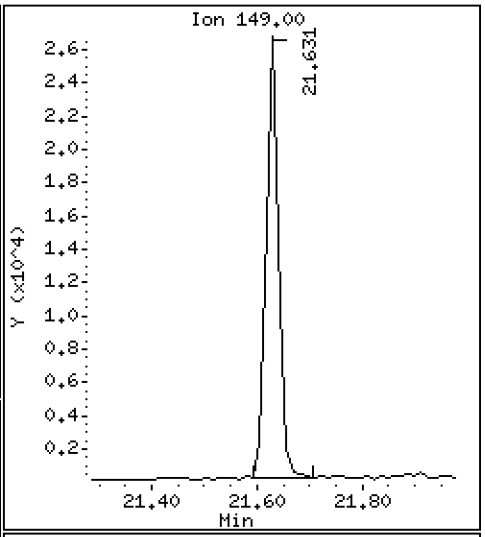
Column phase: ZB-5msi

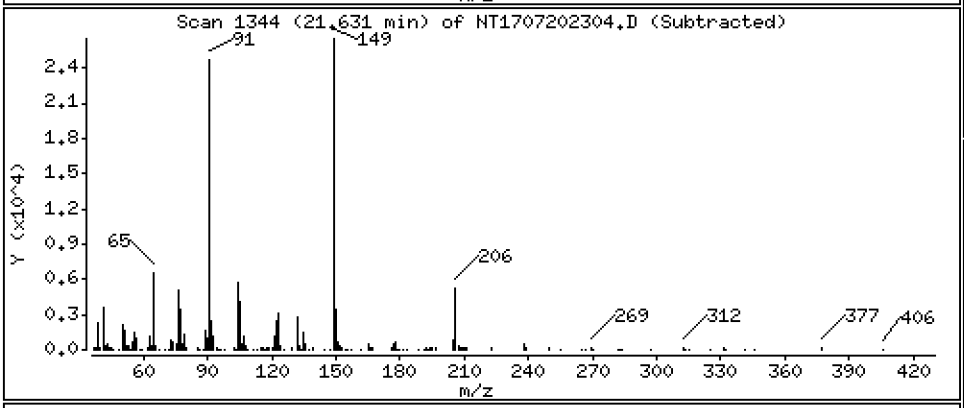
Column diameter: 0.25

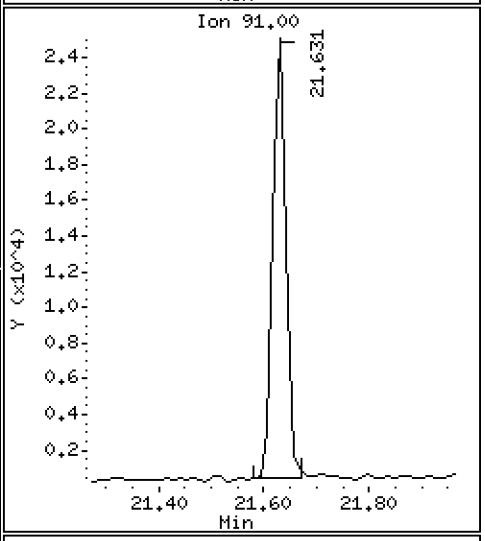
67 Butylbenzylphthalate

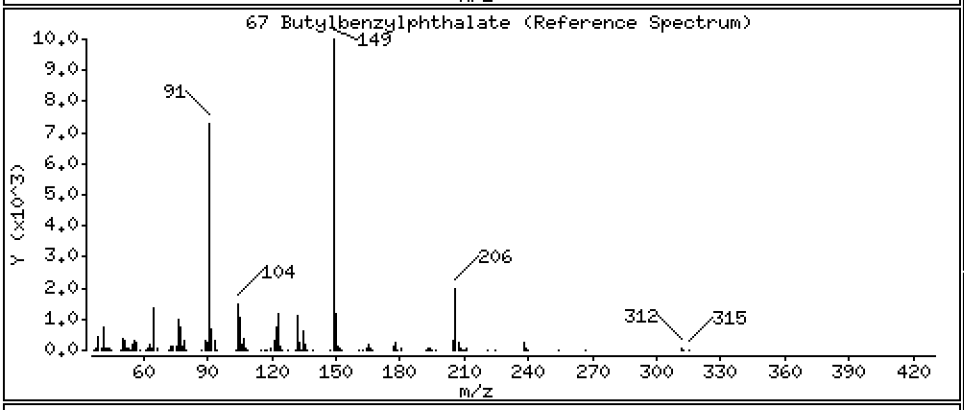
Concentration: 0.4110 ug/mL

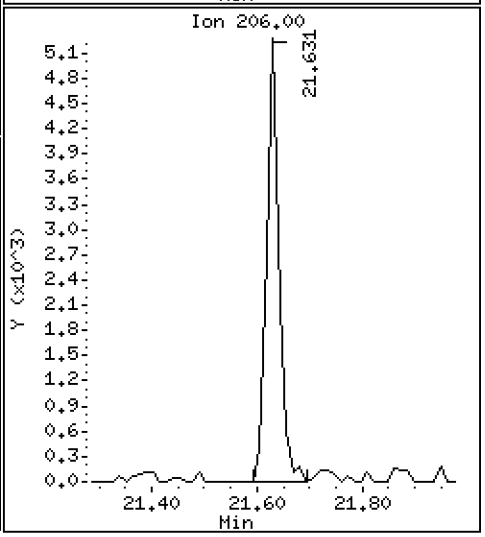


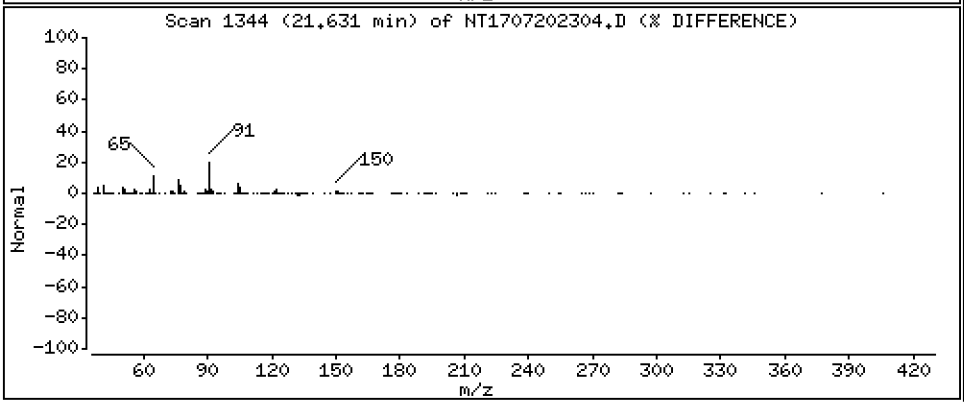












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

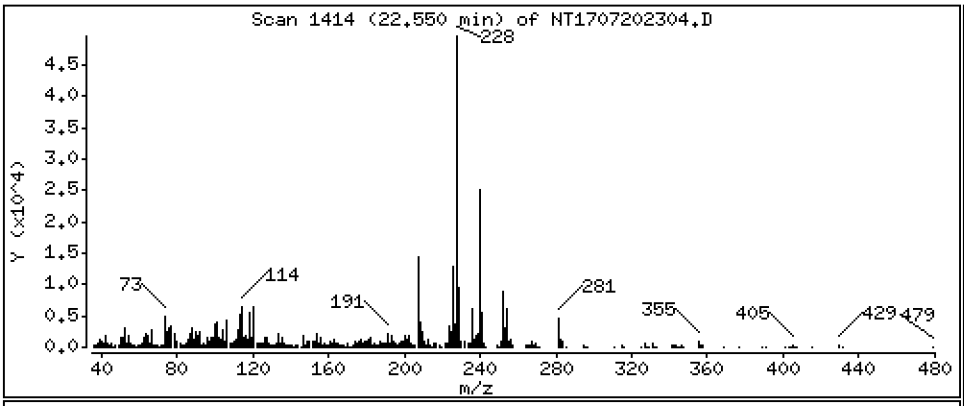
Operator: JGR

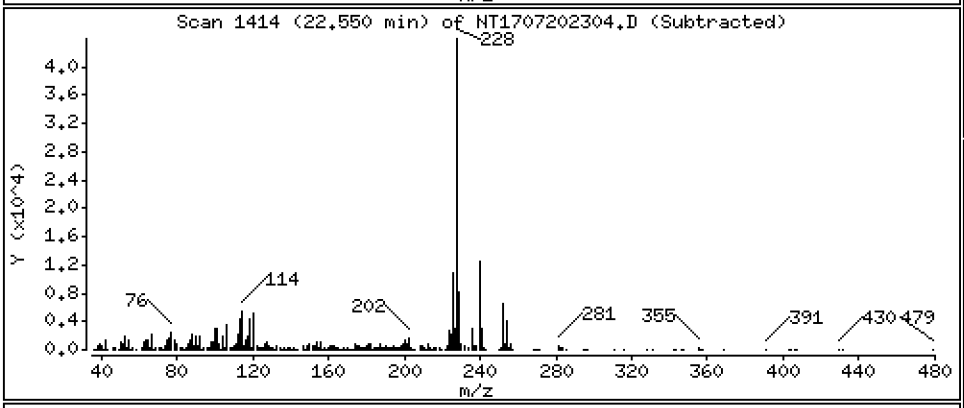
Column phase: ZB-5msi

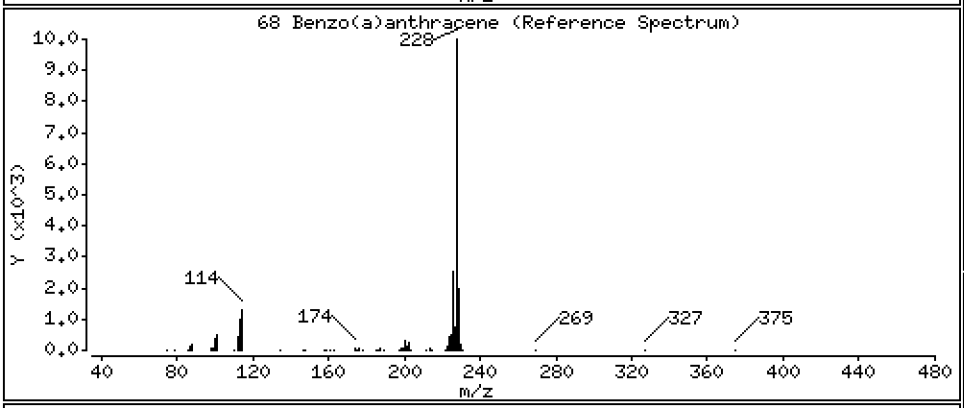
Column diameter: 0.25

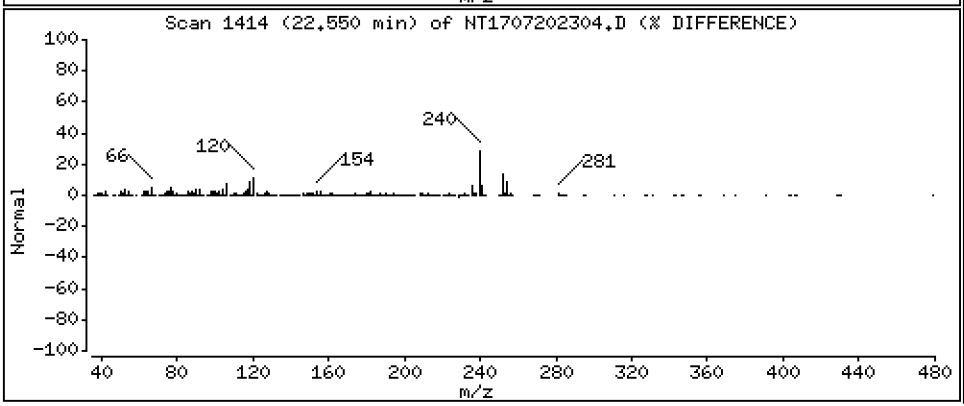
68 Benzo(a)anthracene

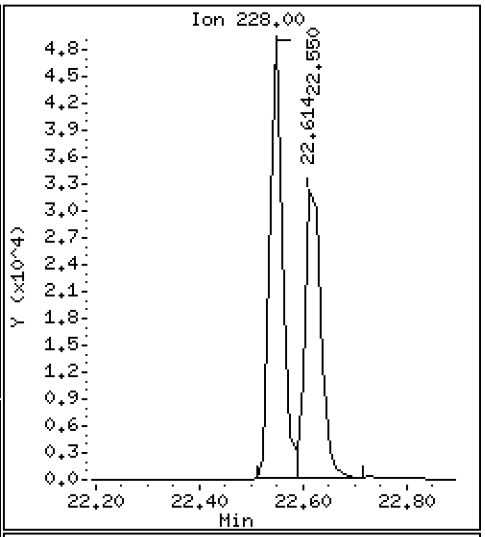
Concentration: 0.4801 ug/mL

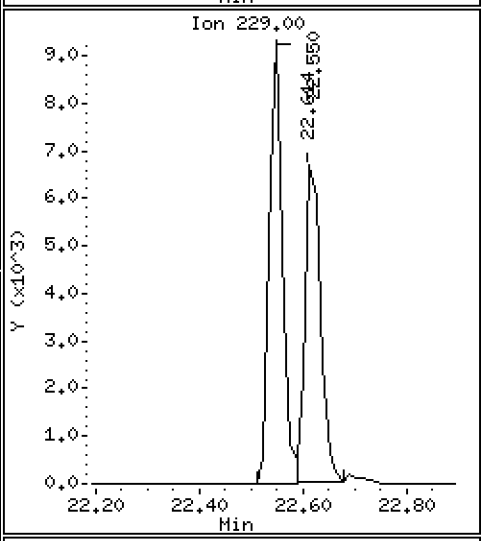


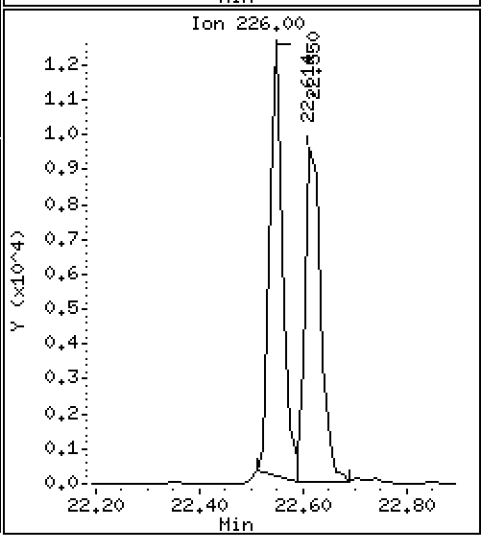












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

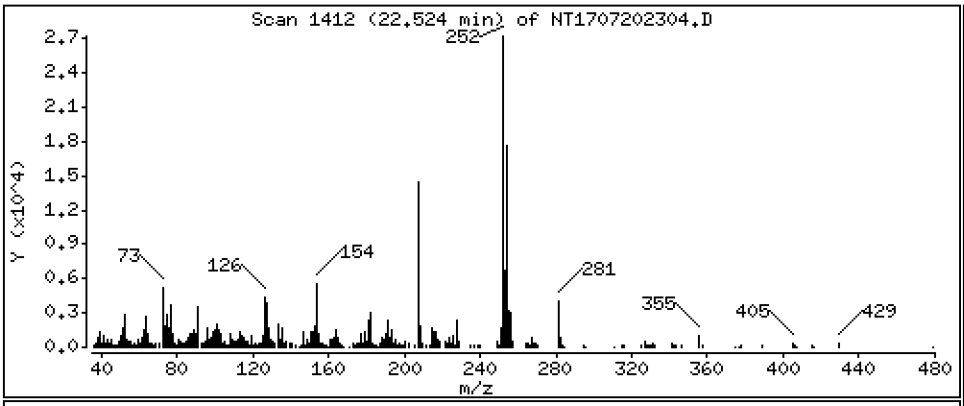
Operator: JGR

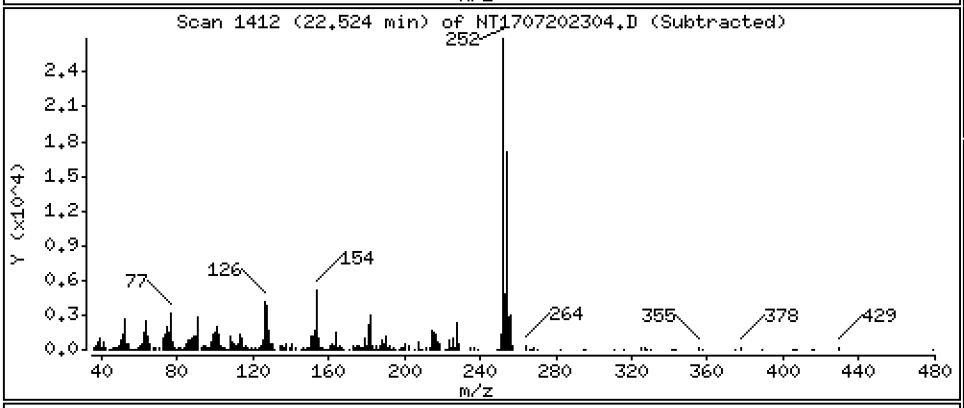
Column phase: ZB-5msi

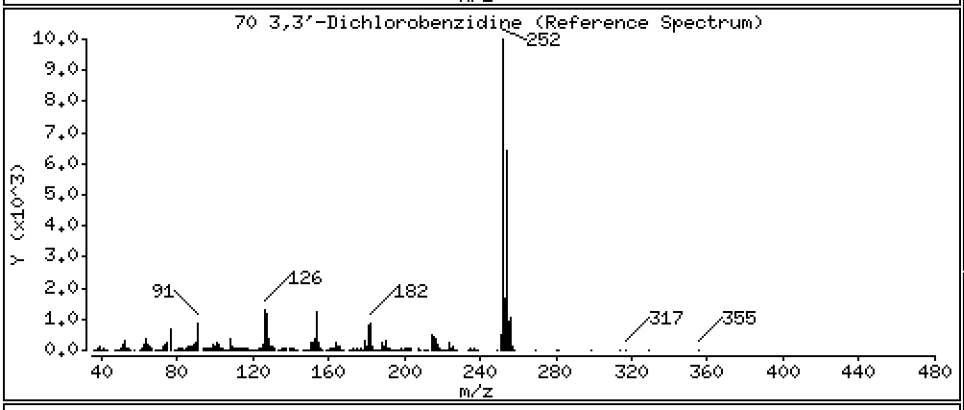
Column diameter: 0.25

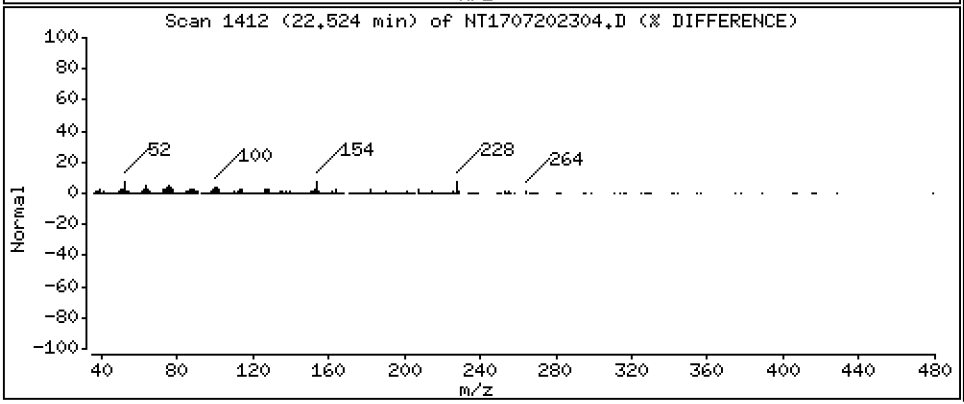
70 3,3'-Dichlorobenzidine

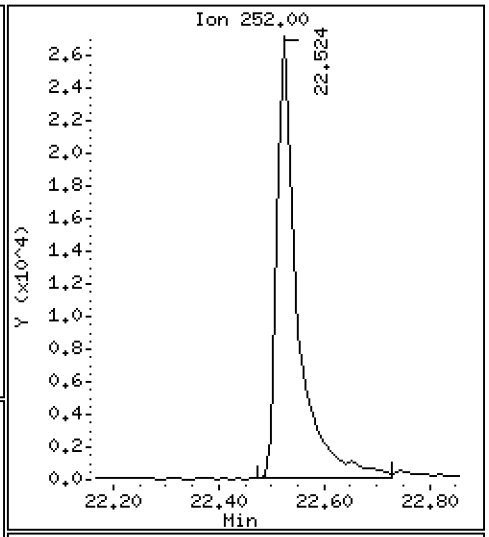
Concentration: 1.628 ug/mL

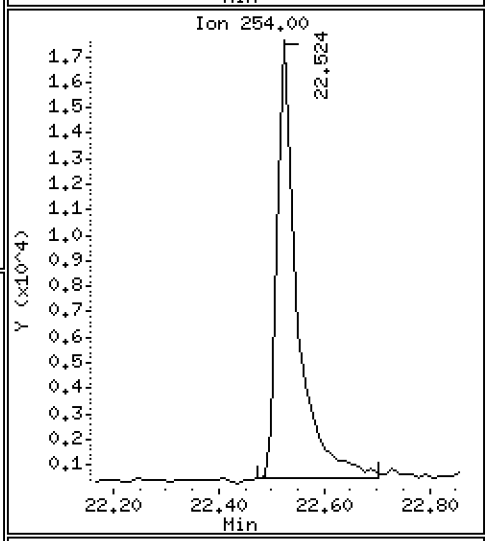


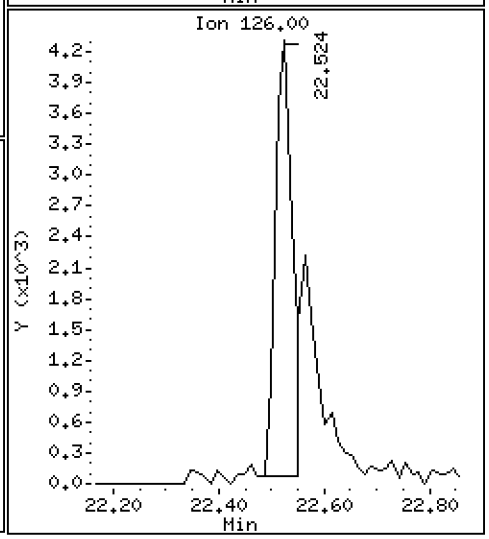












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

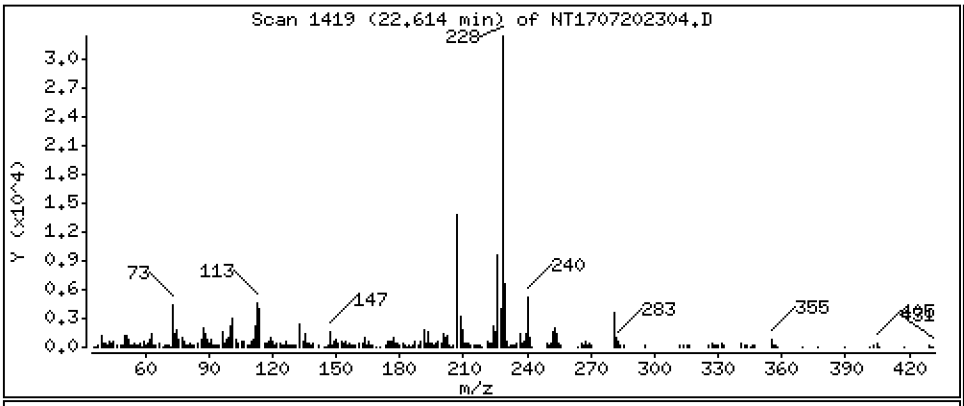
Operator: JGR

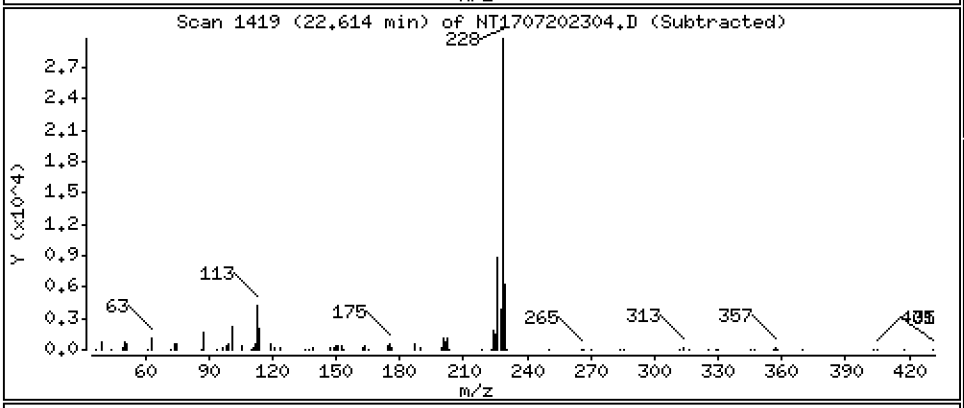
Column phase: ZB-5msi

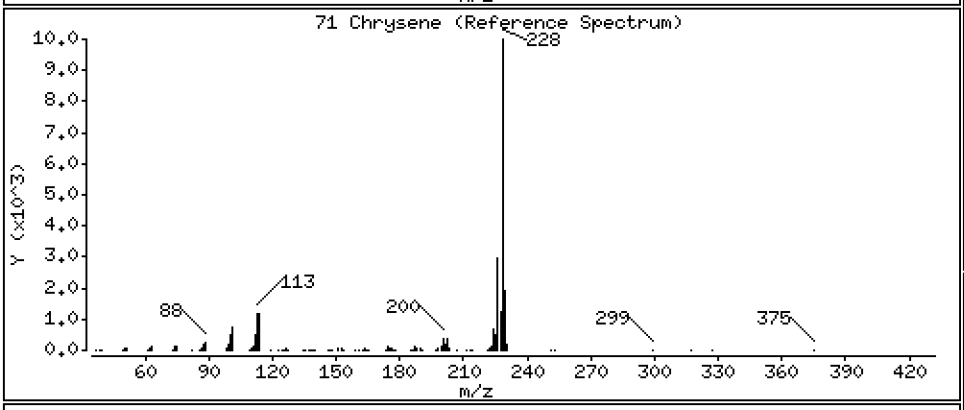
Column diameter: 0.25

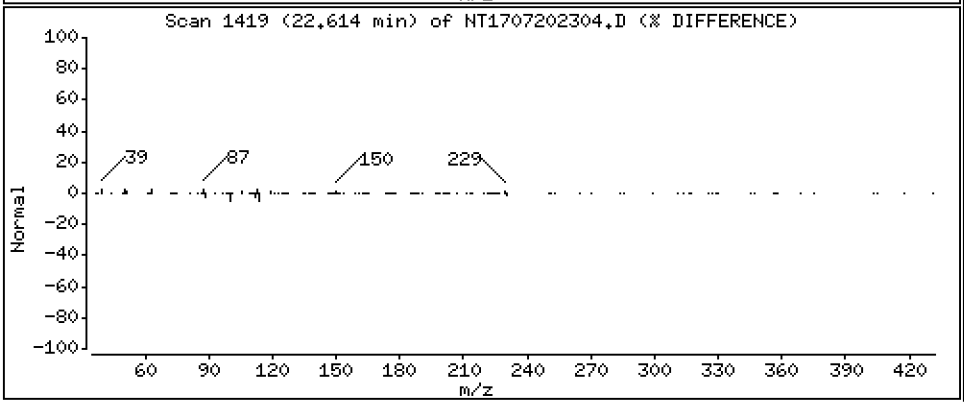
71 Chrysene

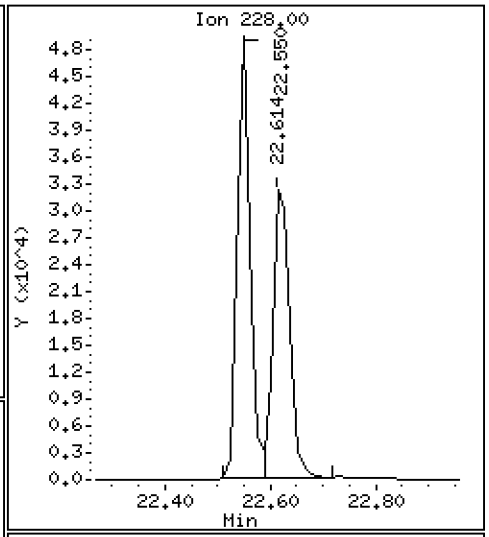
Concentration: 0.4397 ug/mL

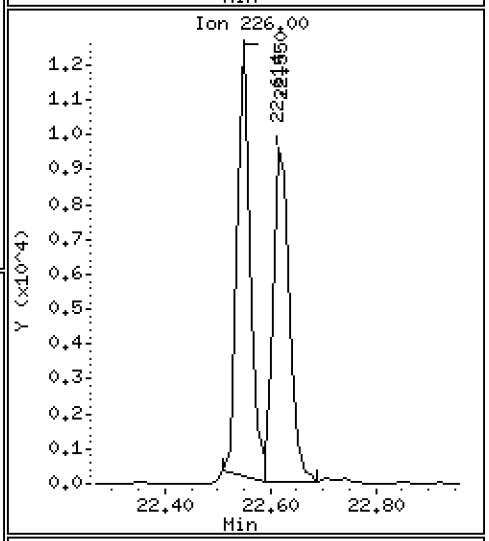


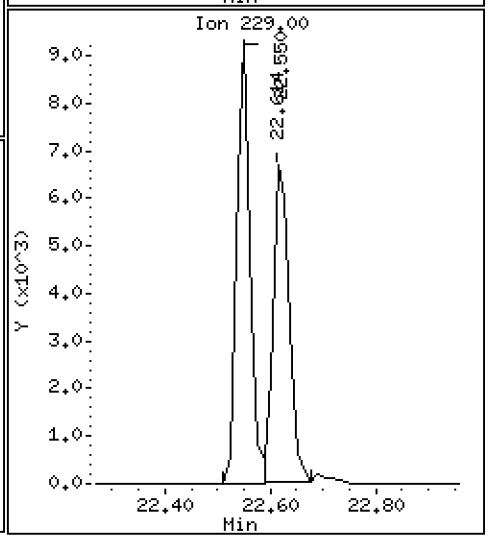












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

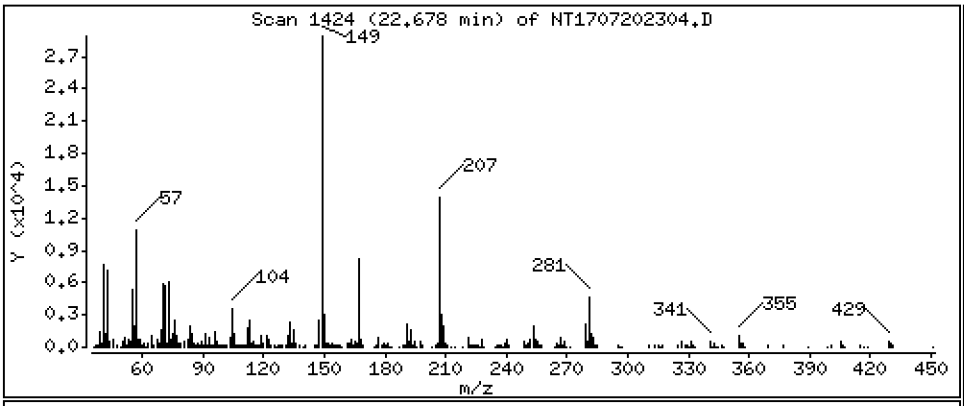
Operator: JGR

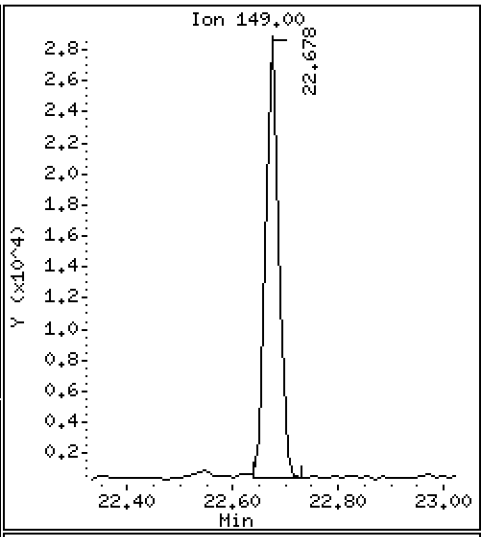
Column phase: ZB-5msi

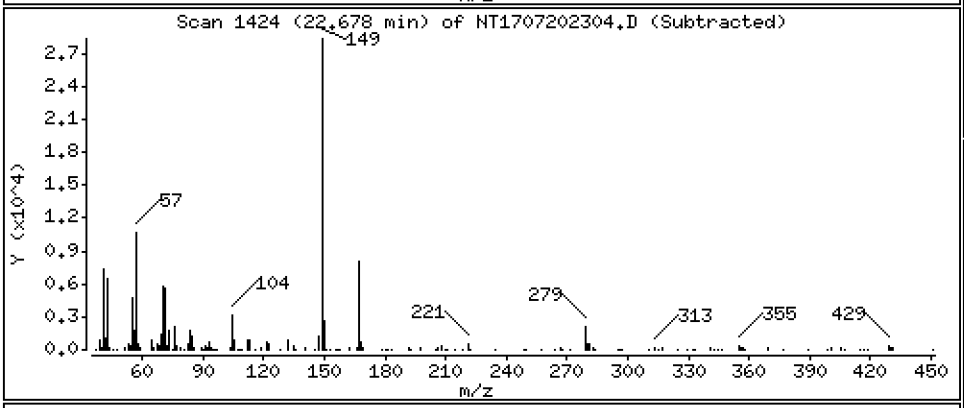
Column diameter: 0.25

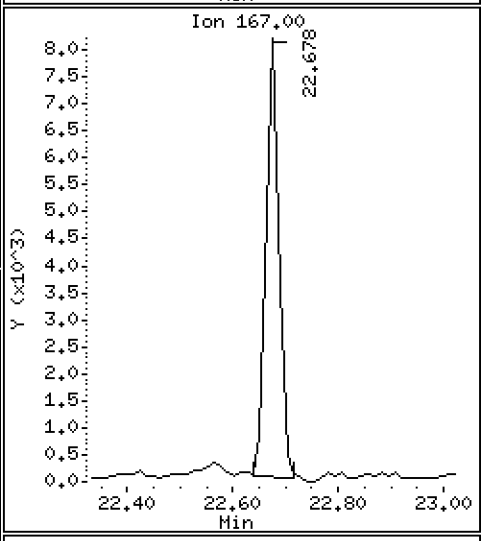
72 bis(2-Ethylhexyl)phthalate

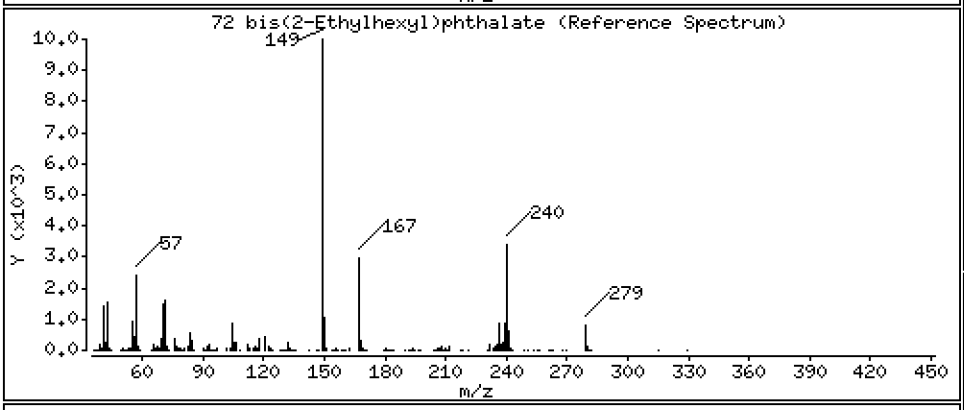
Concentration: 0.4850 ug/mL

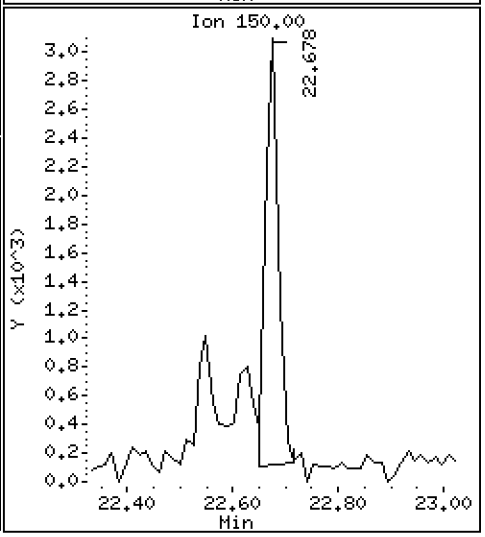


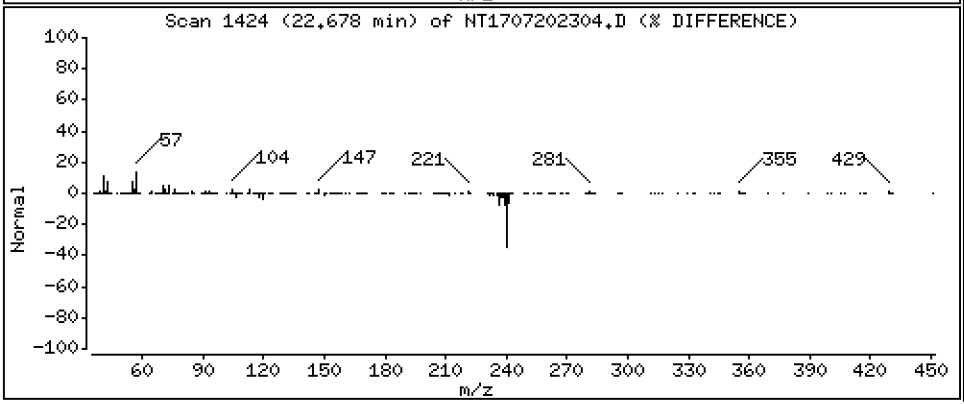












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

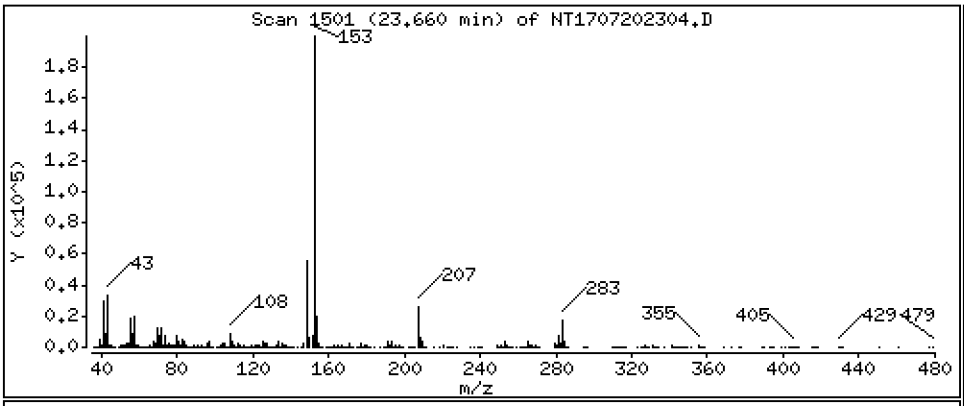
Operator: JGR

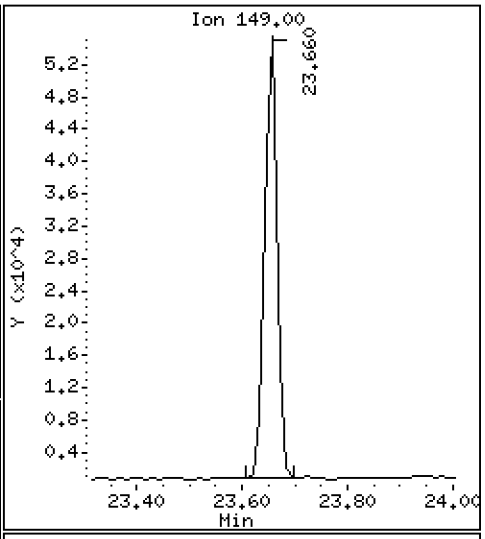
Column phase: ZB-5msi

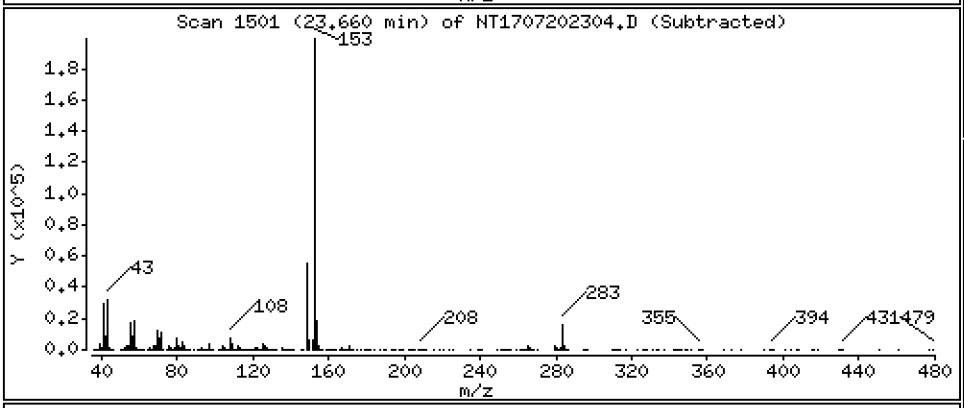
Column diameter: 0.25

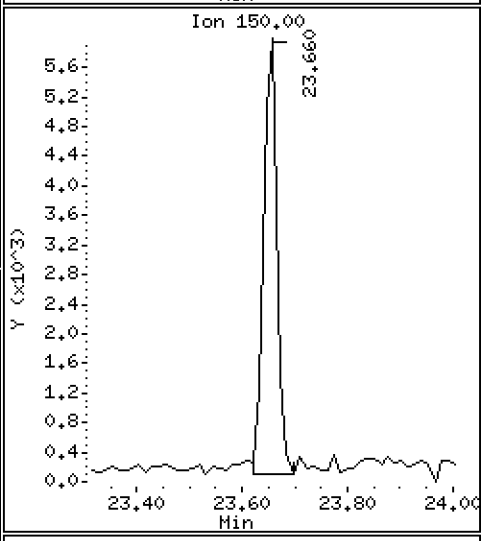
73 Di-n-octylphthalate

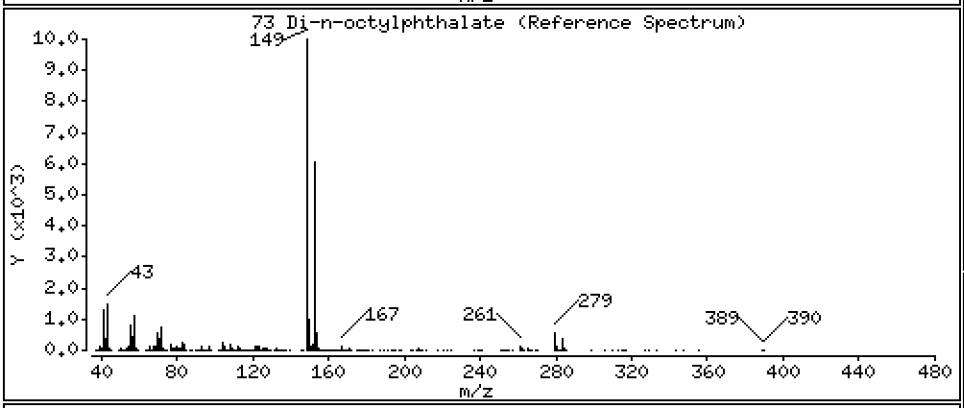
Concentration: 0.4659 ug/mL

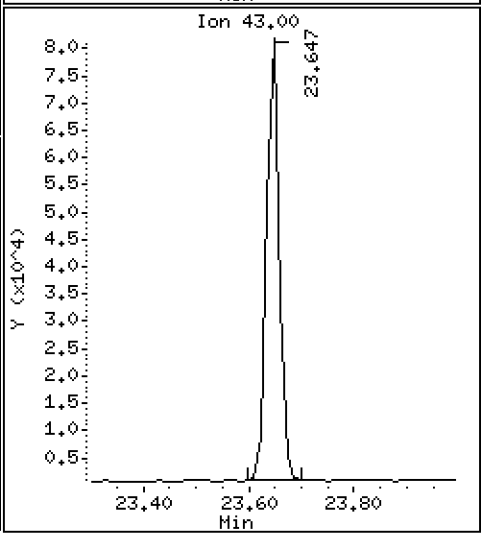


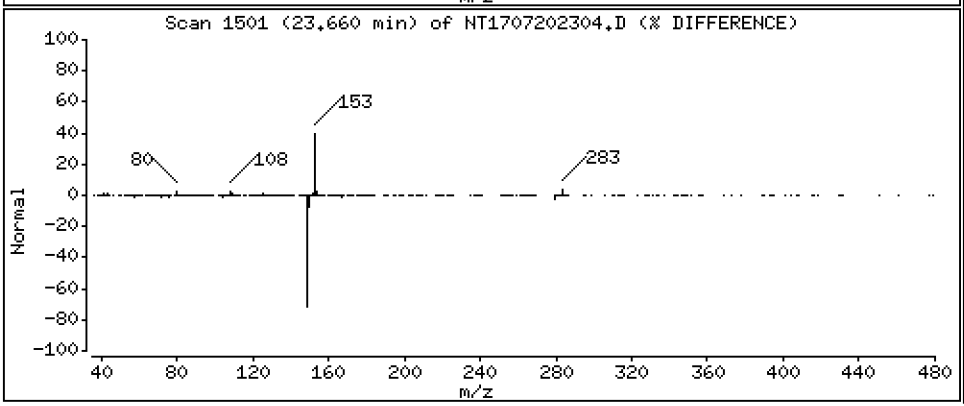












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

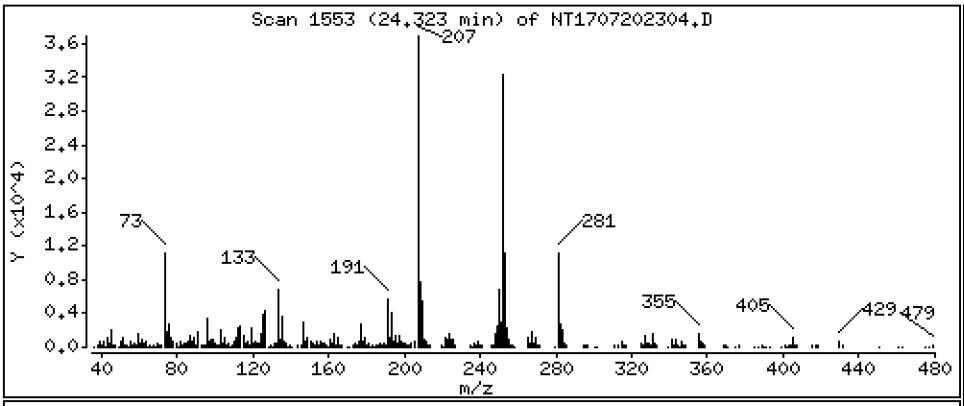
Operator: JGR

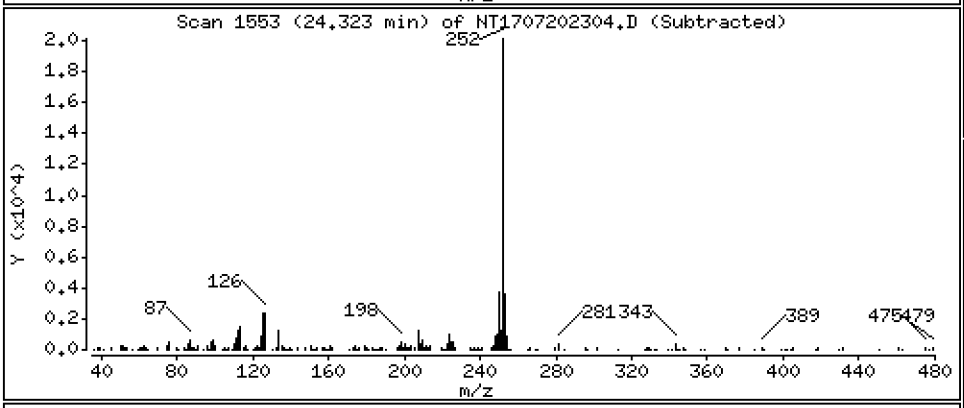
Column phase: ZB-5msi

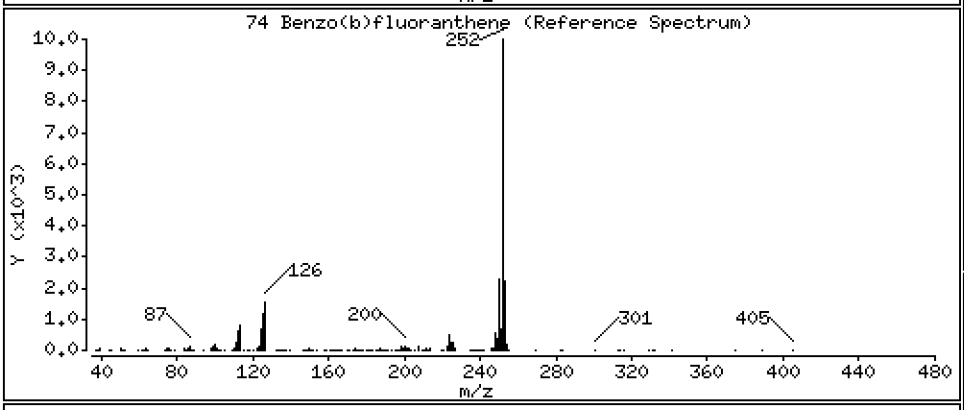
Column diameter: 0.25

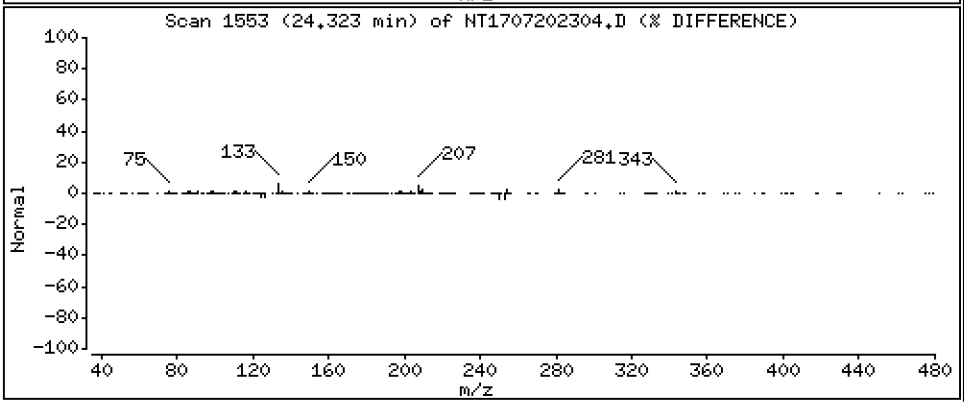
74 Benzo(b)fluoranthene

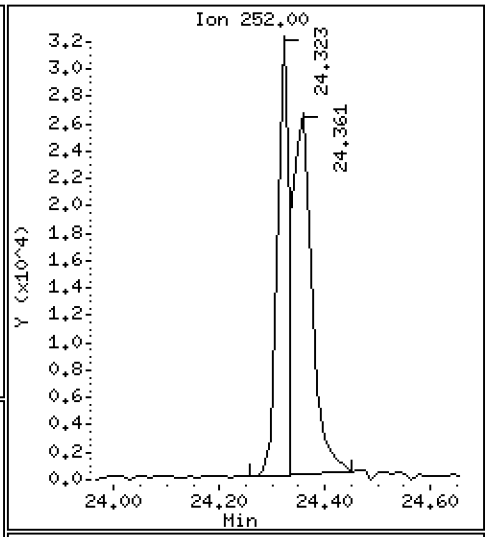
Concentration: 0.4156 ug/mL

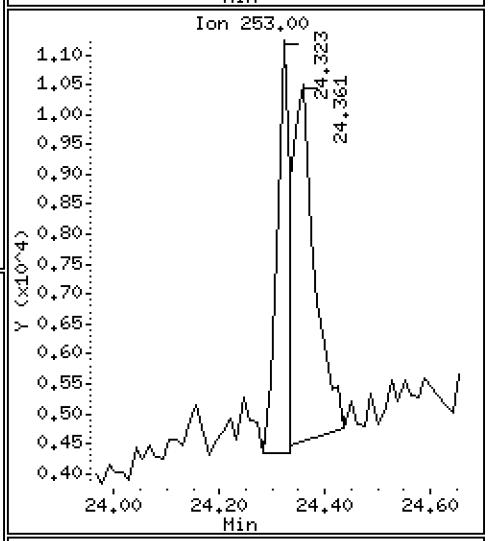


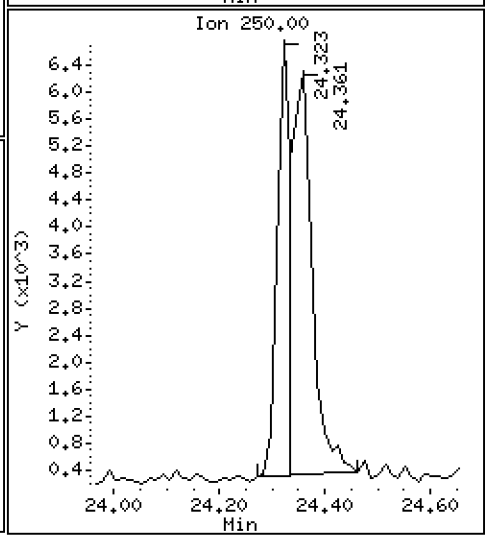












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

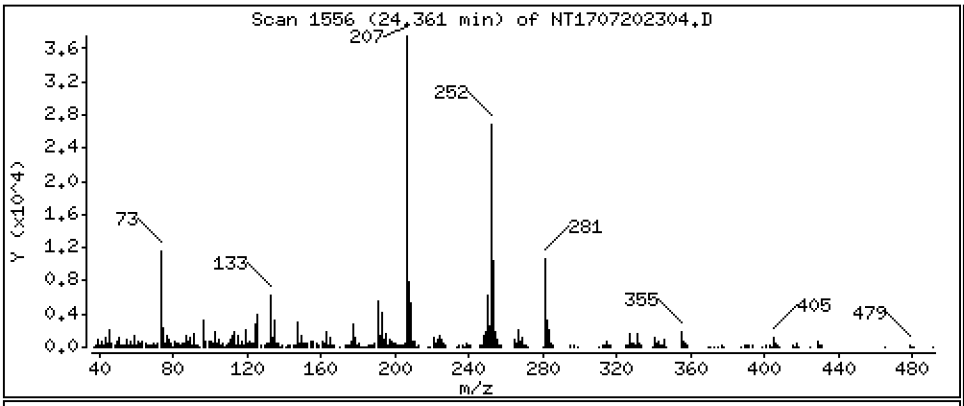
Operator: JGR

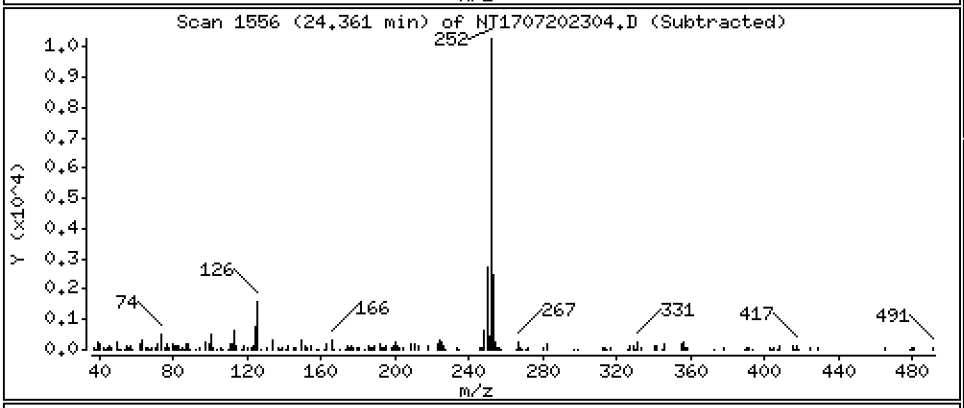
Column phase: ZB-5msi

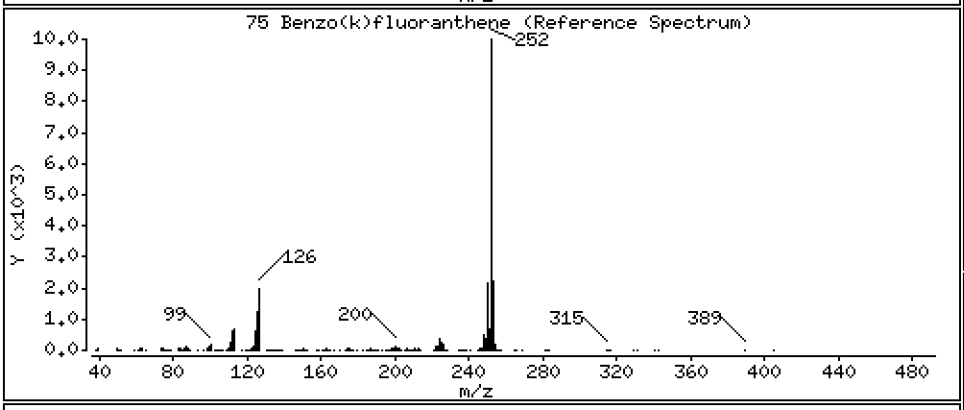
Column diameter: 0.25

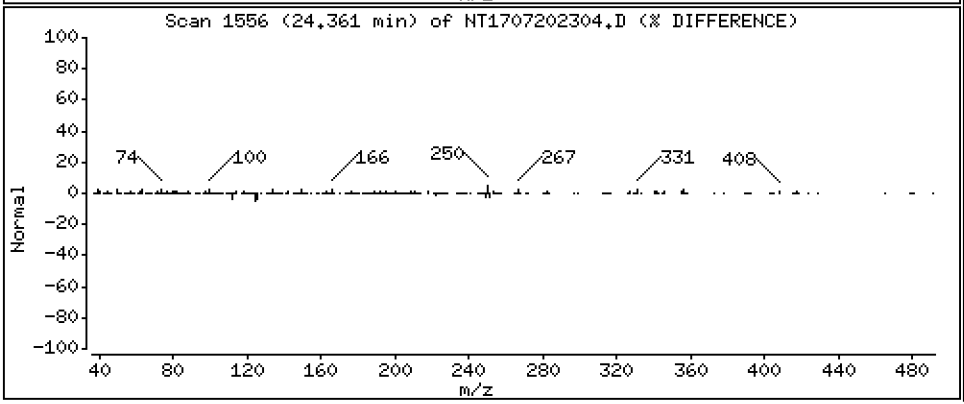
75 Benzo(k)fluoranthene

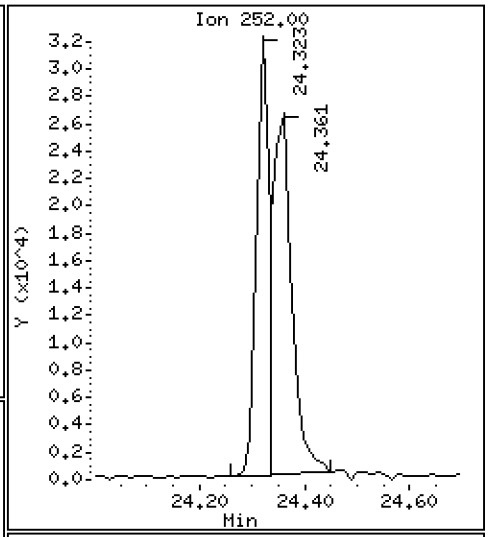
Concentration: 0.5261 ug/mL

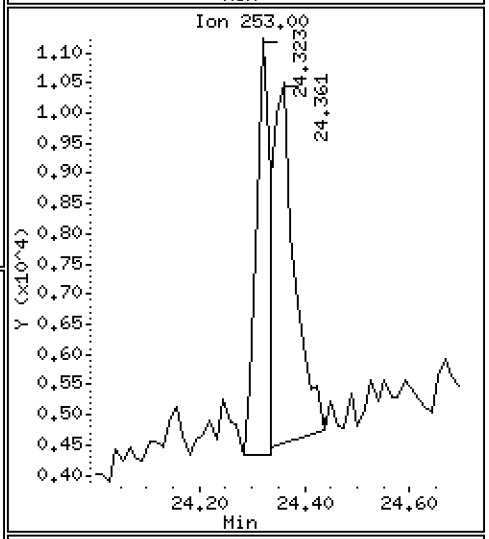


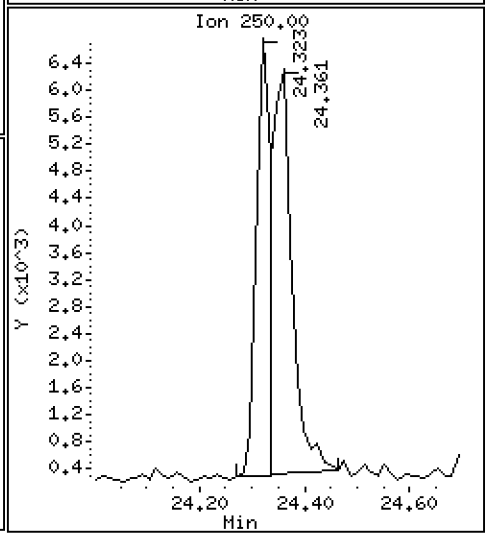












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

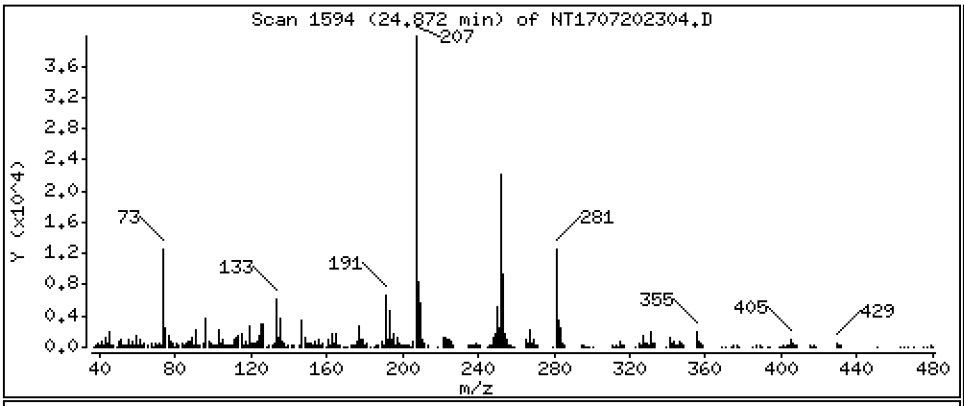
Operator: JGR

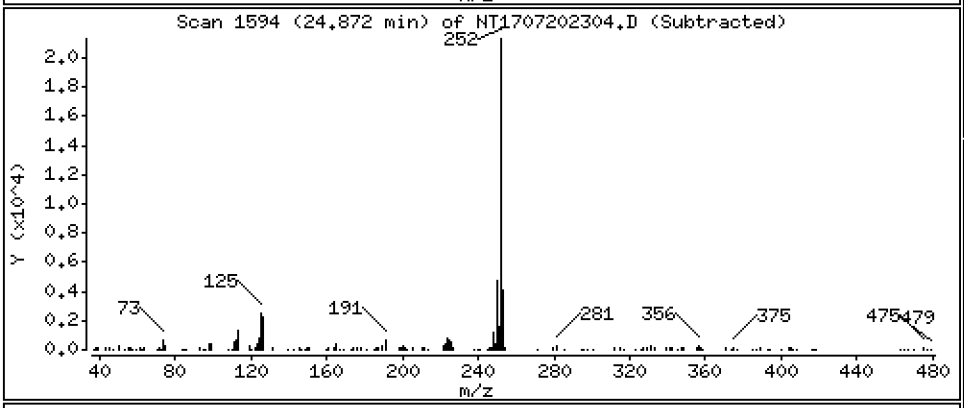
Column phase: ZB-5msi

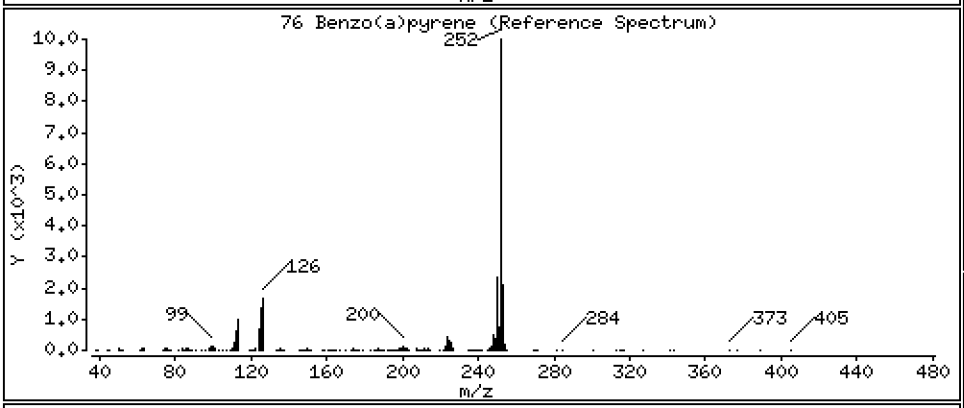
Column diameter: 0.25

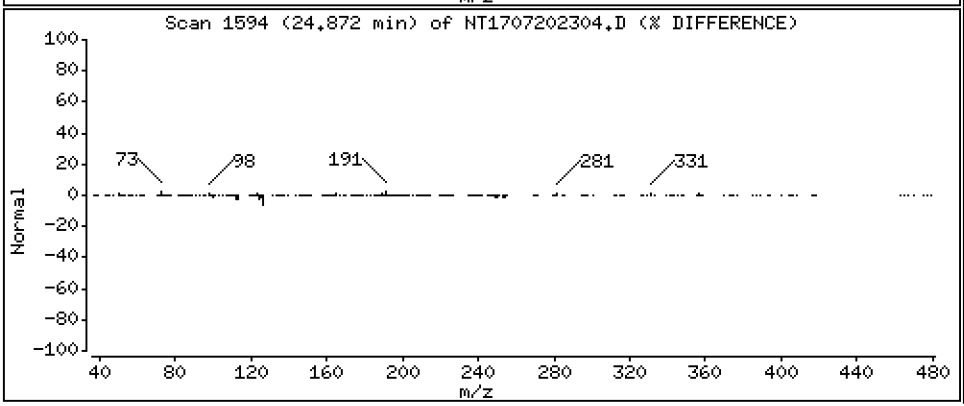
76 Benzo(a)pyrene

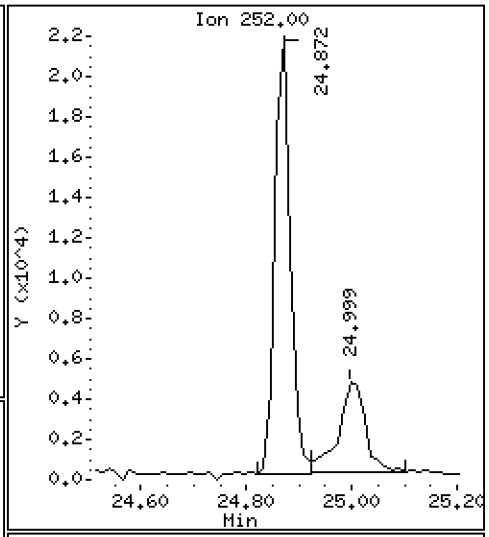
Concentration: 0.4491 ug/mL

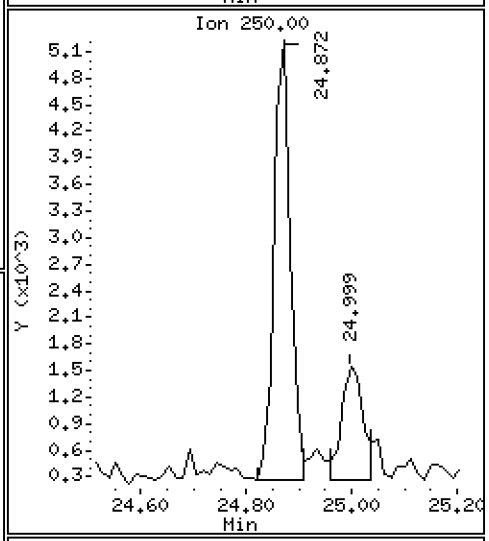


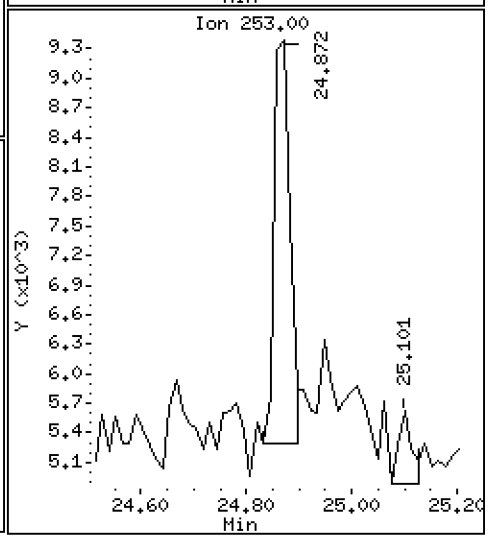












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

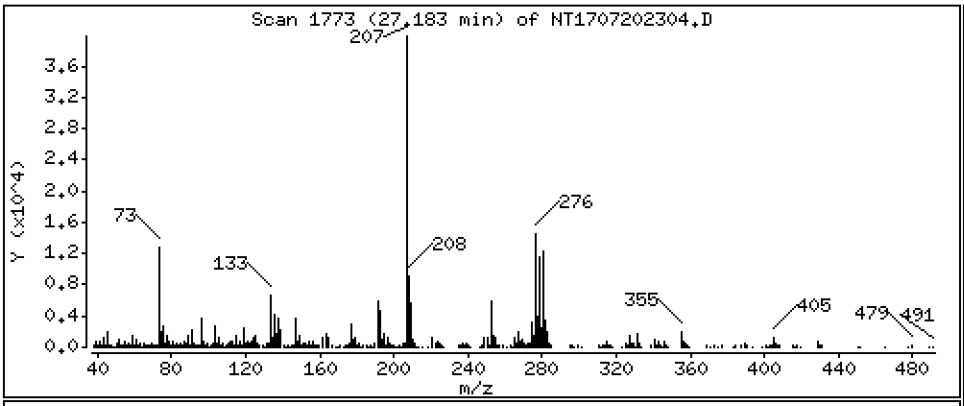
Operator: JGR

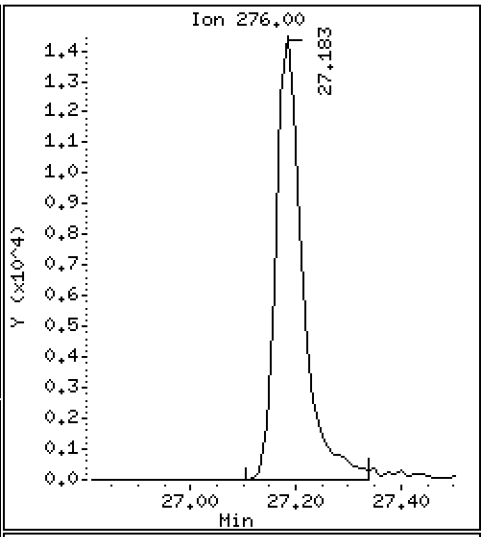
Column phase: ZB-5msi

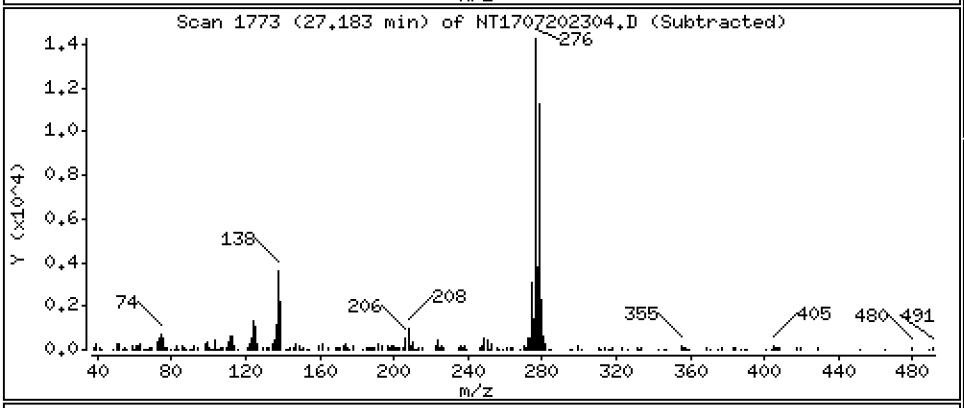
Column diameter: 0.25

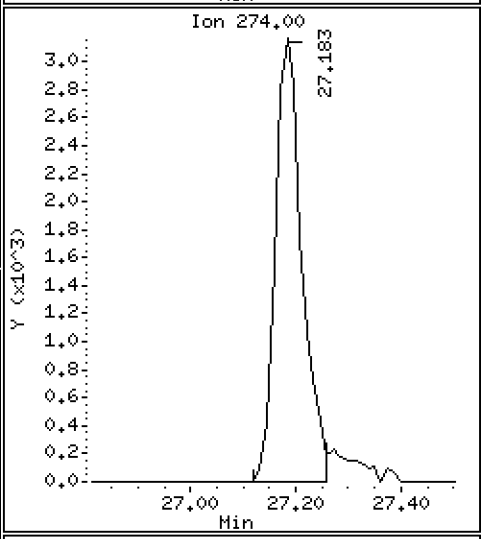
78 Indeno(1,2,3-cd)pyrene

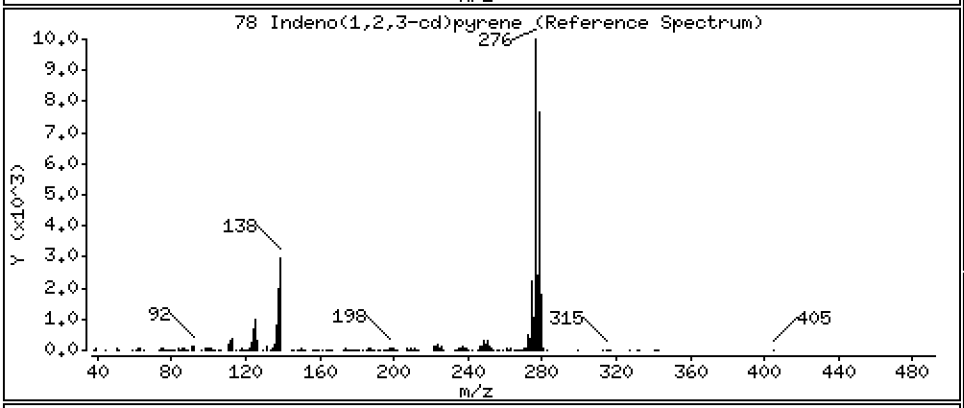
Concentration: 0.3941 ug/mL

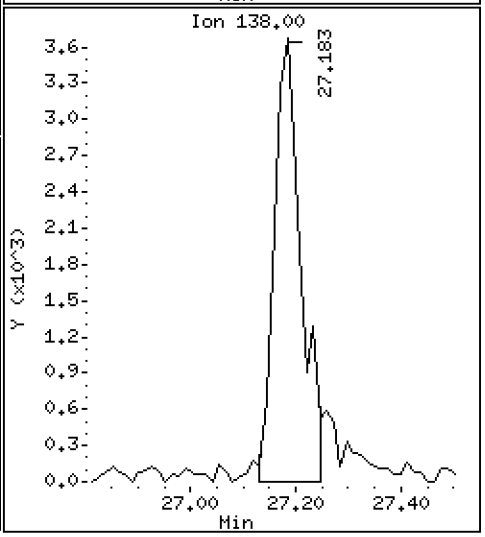


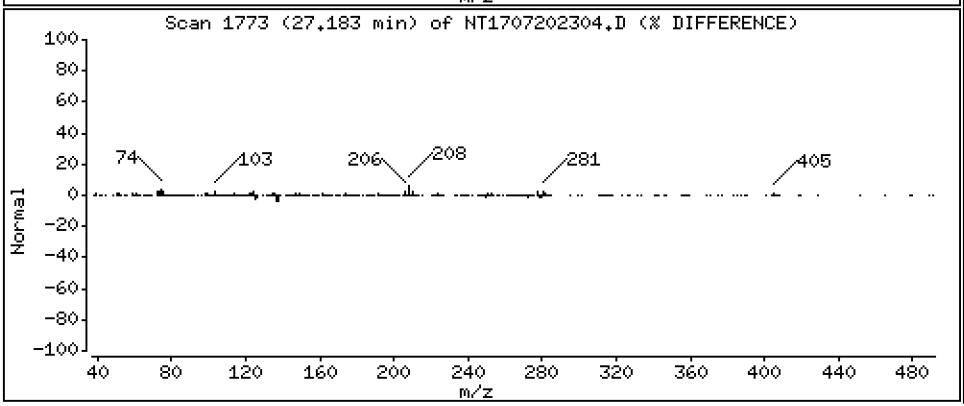












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

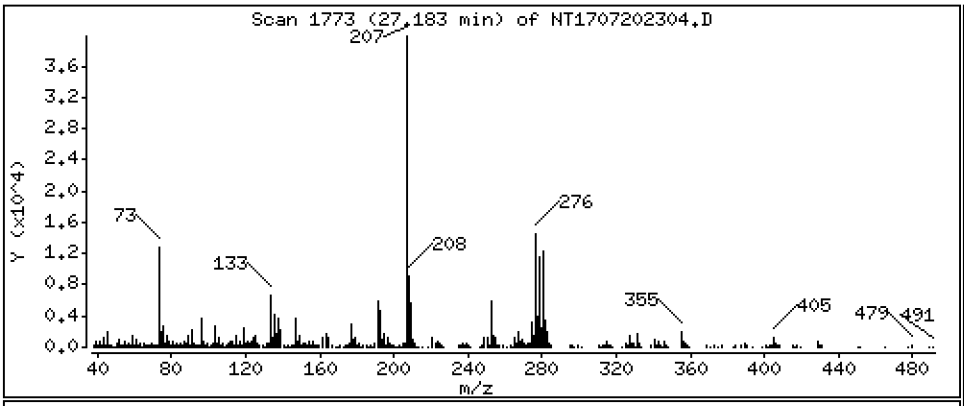
Operator: JGR

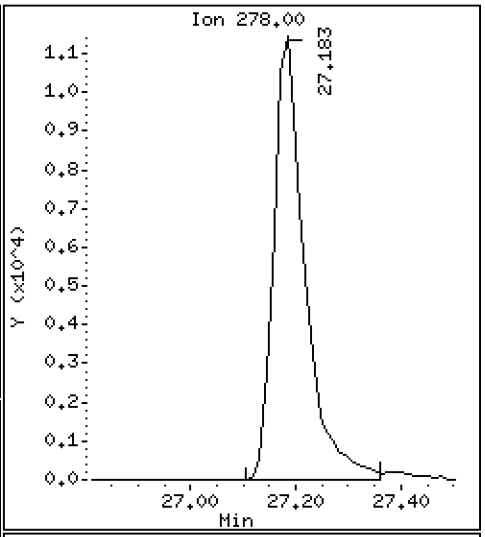
Column phase: ZB-5msi

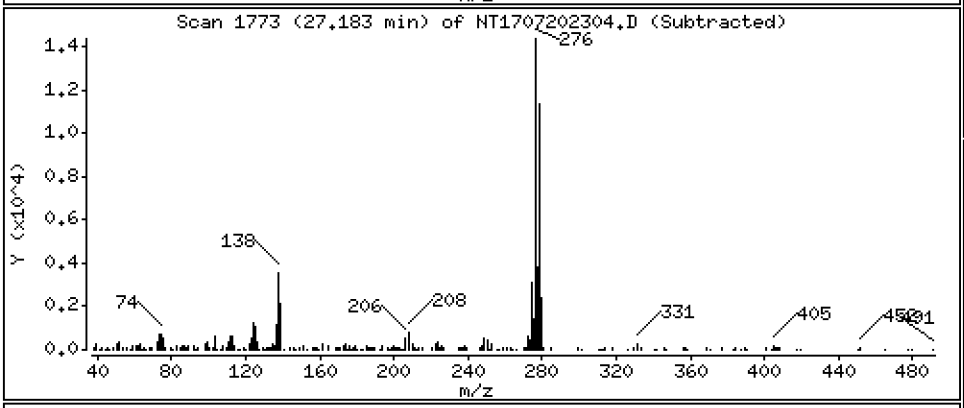
Column diameter: 0.25

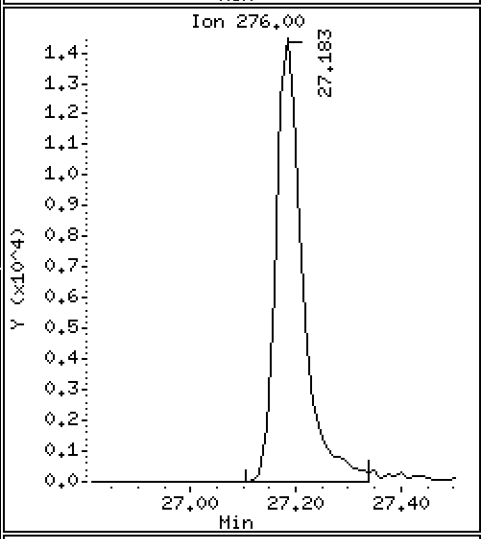
79 Dibenzo(a,h)anthracene

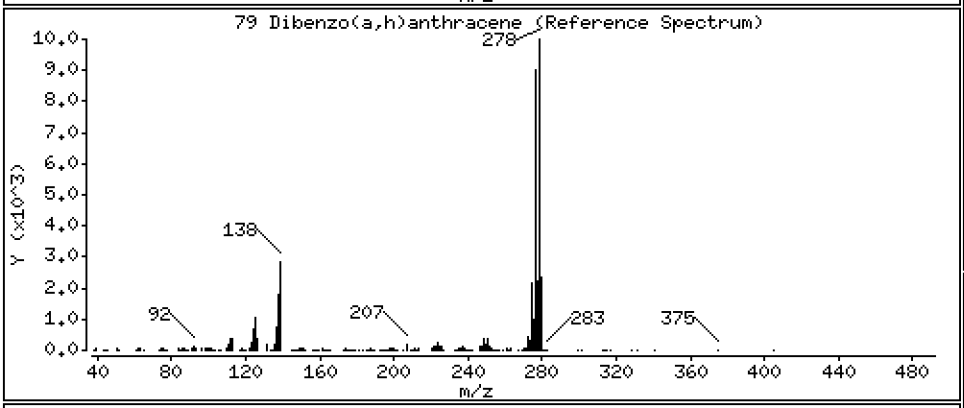
Concentration: 0.4043 ug/mL

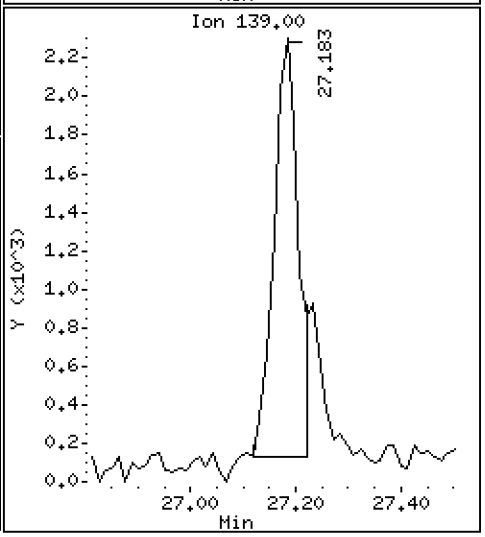


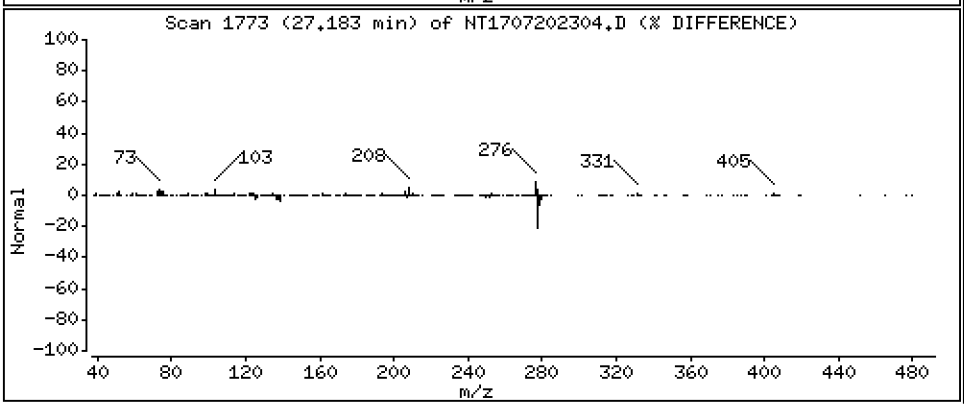












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

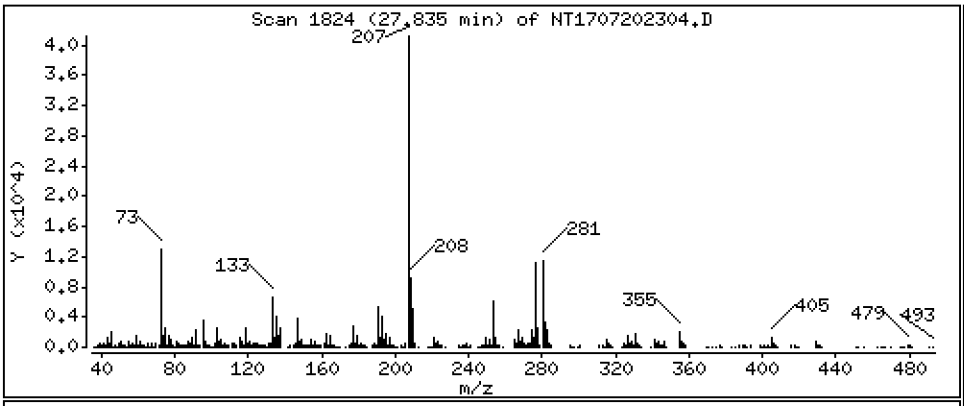
Operator: JGR

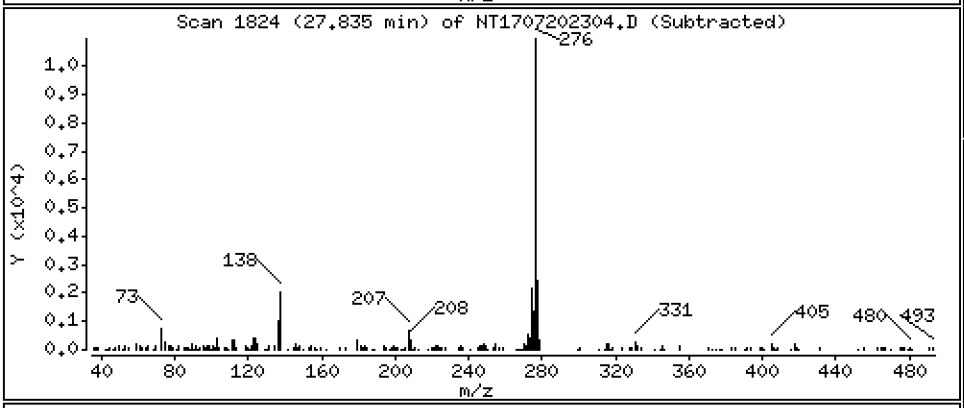
Column phase: ZB-5msi

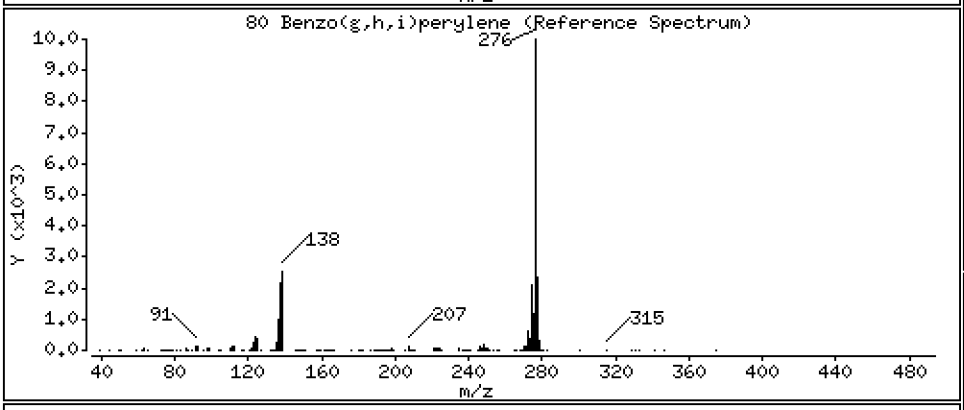
Column diameter: 0.25

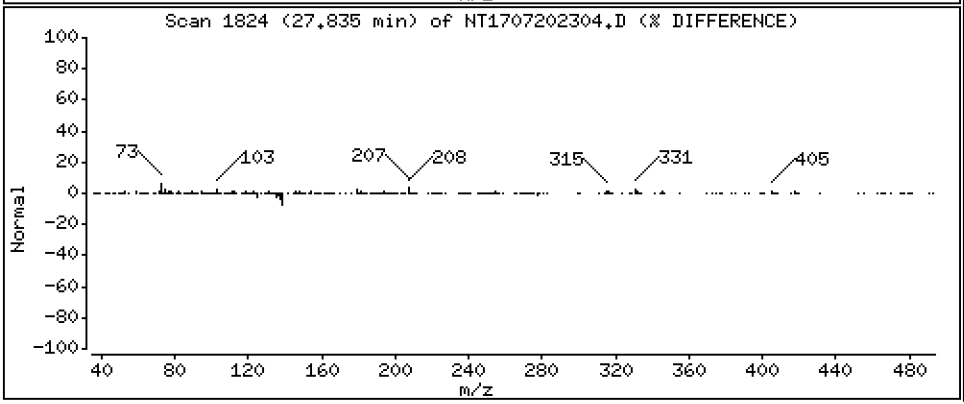
80 Benzo(g,h,i)perylene

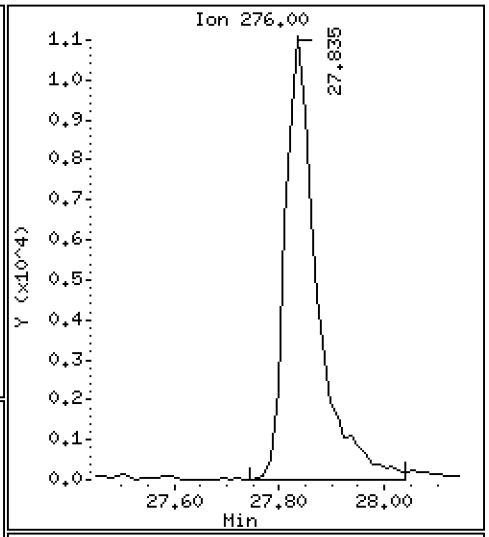
Concentration: 0.3868 ug/mL

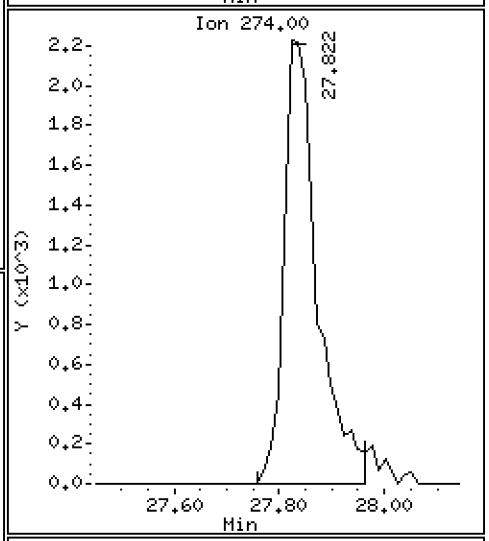


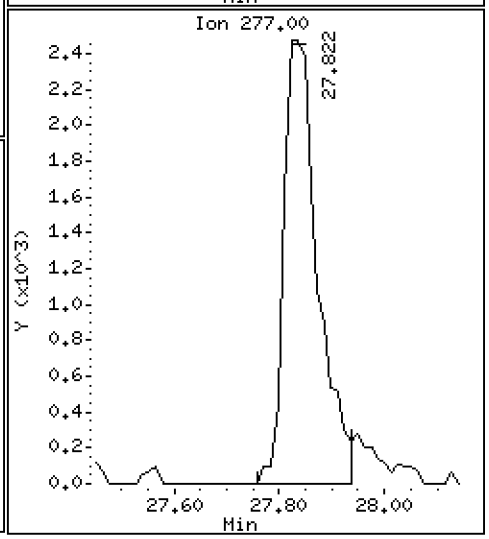












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

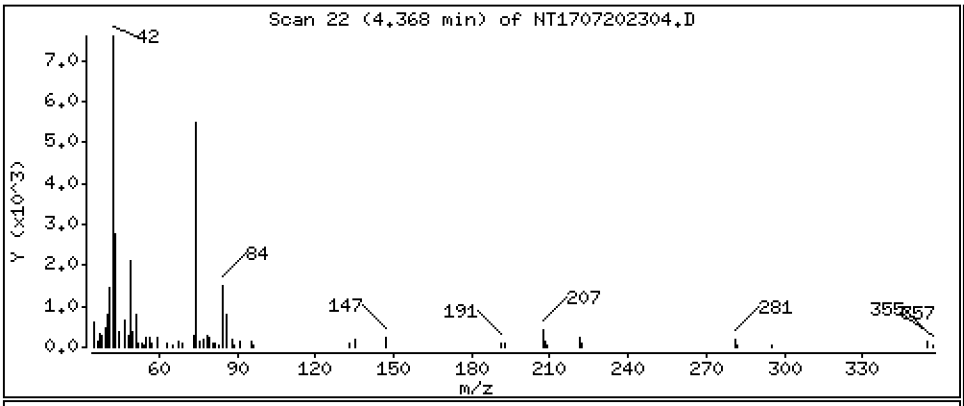
Operator: JGR

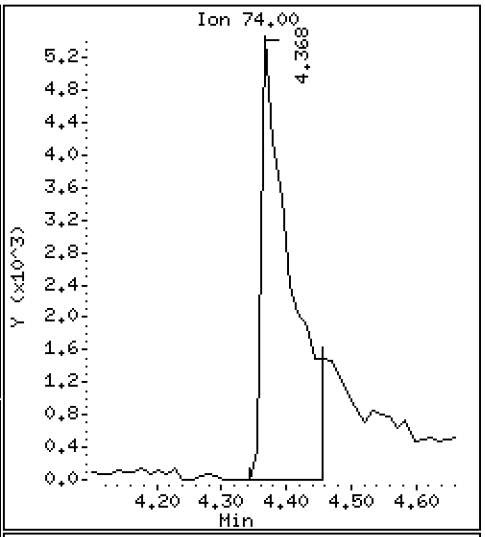
Column phase: ZB-5msi

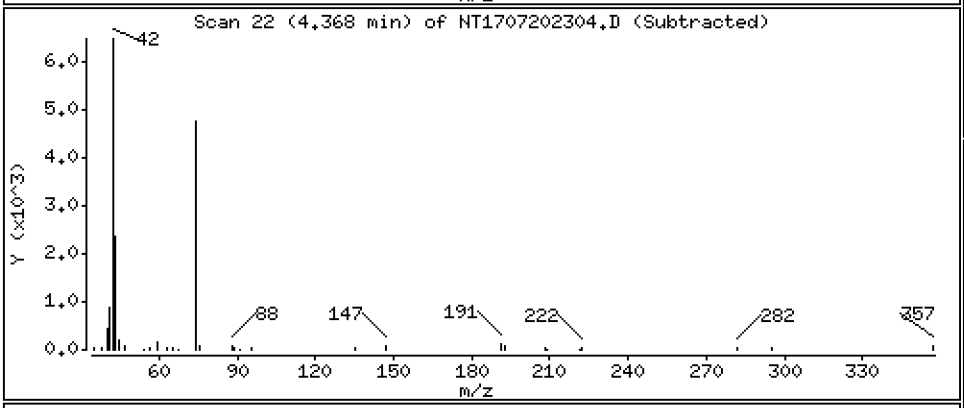
Column diameter: 0.25

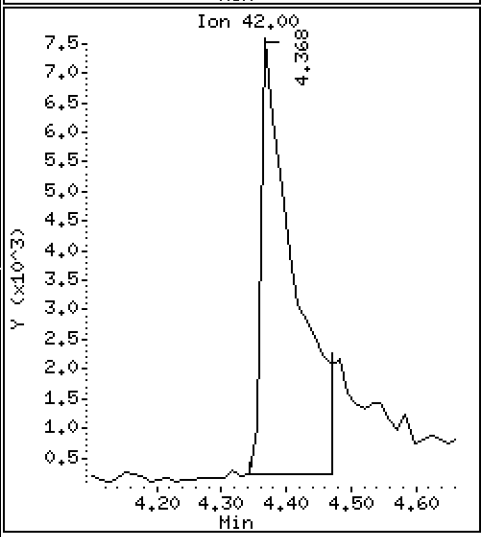
90 N-Nitrosodimethylamine

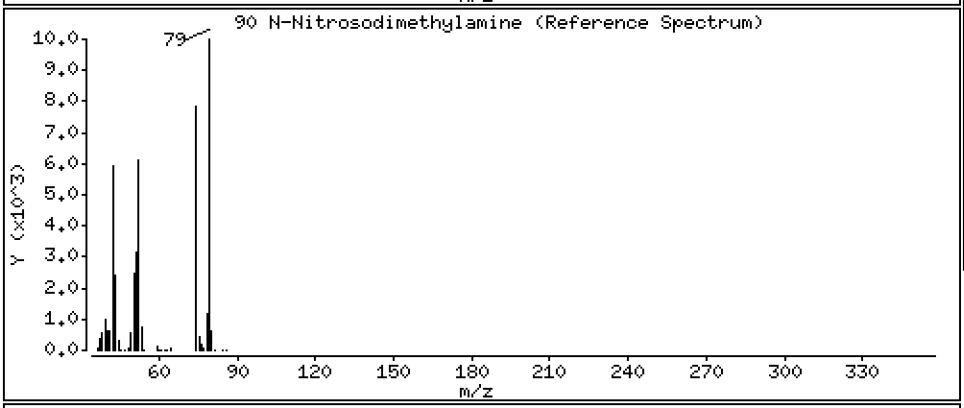
Concentration: 0.3307 ug/mL

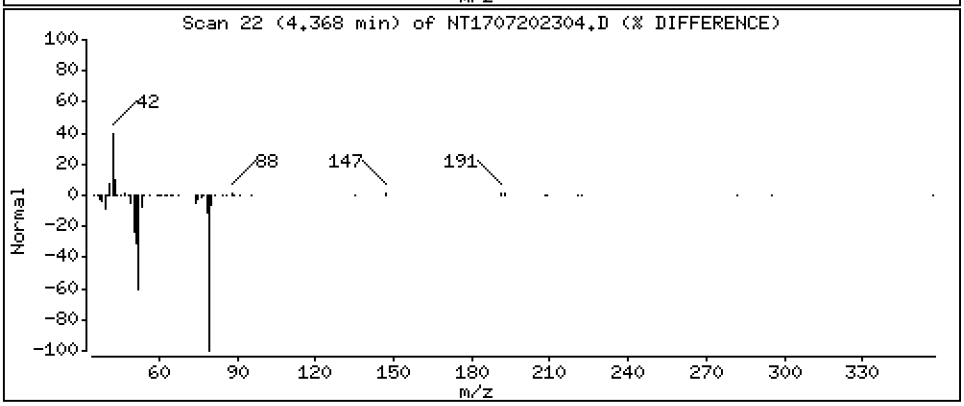












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D

Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

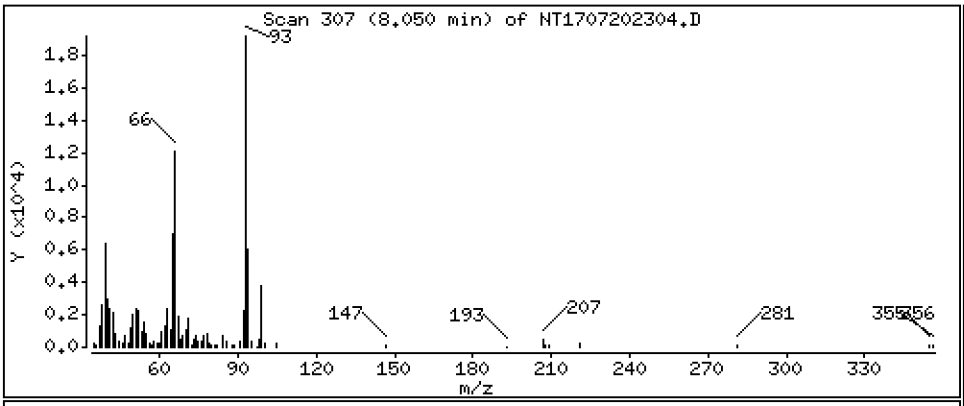
Operator: JGR

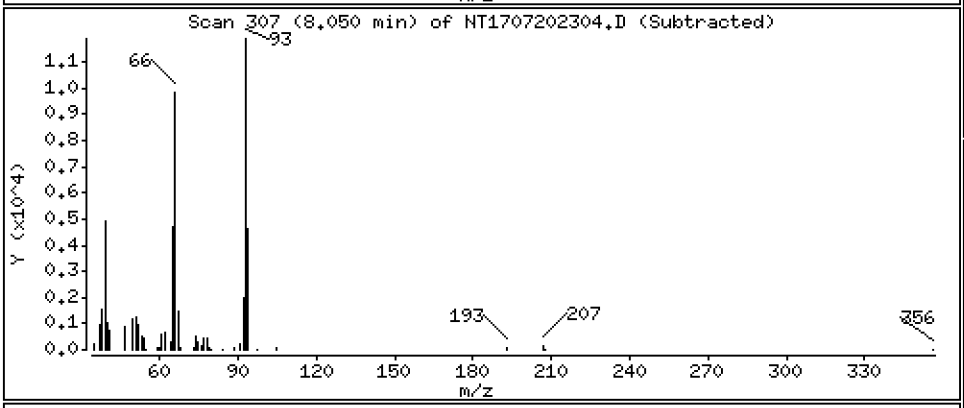
Column phase: ZB-5msi

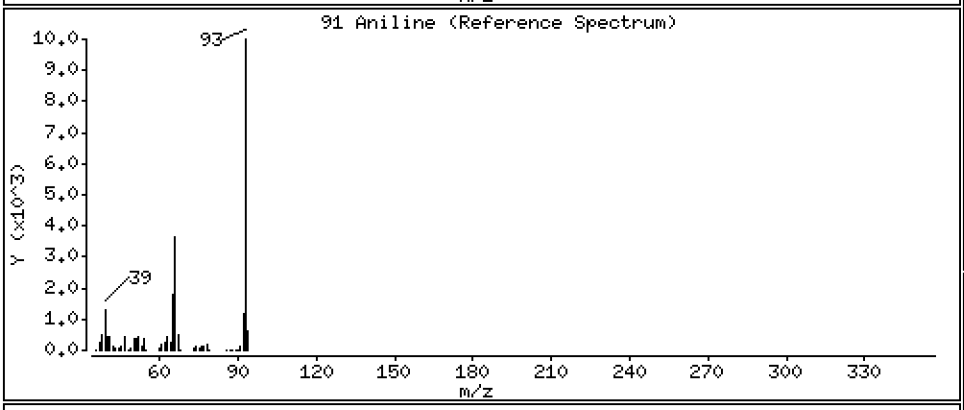
Column diameter: 0.25

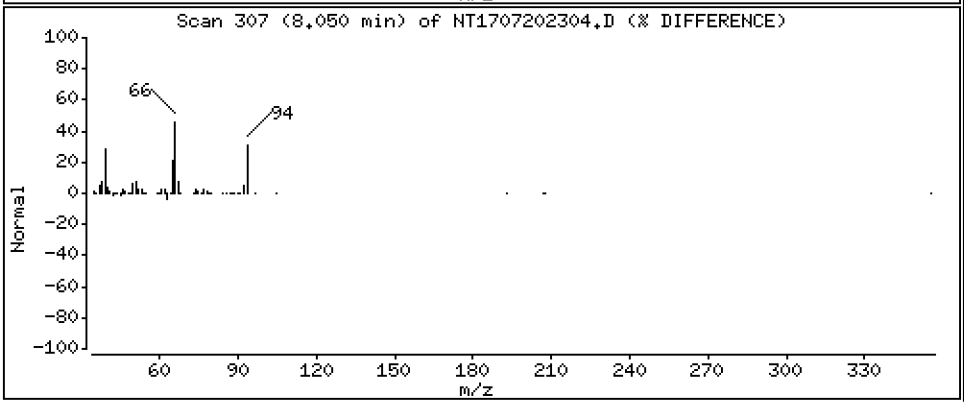
91 Aniline

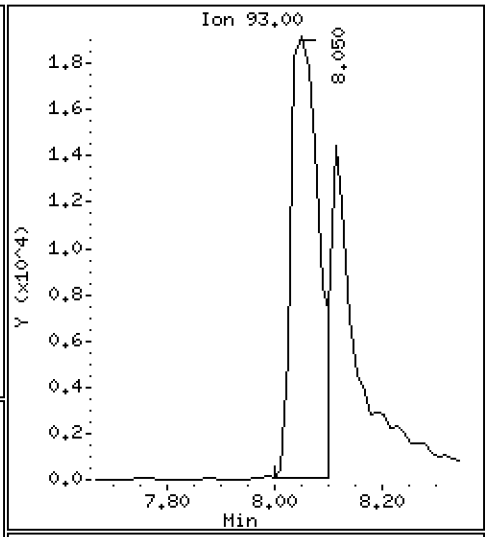
Concentration: 0.6811 ug/mL

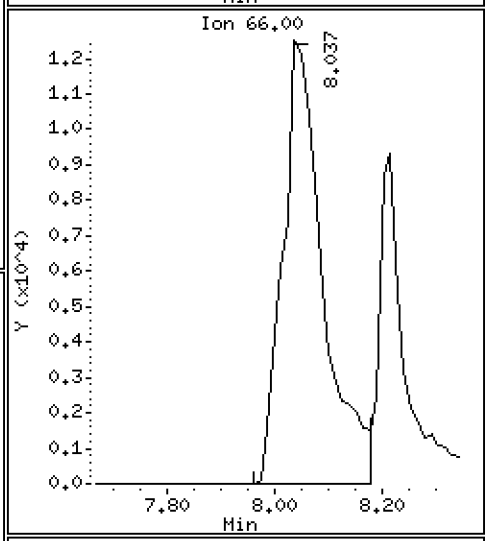


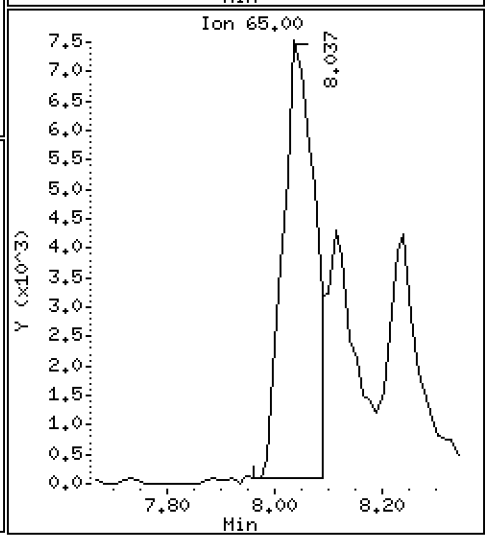












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

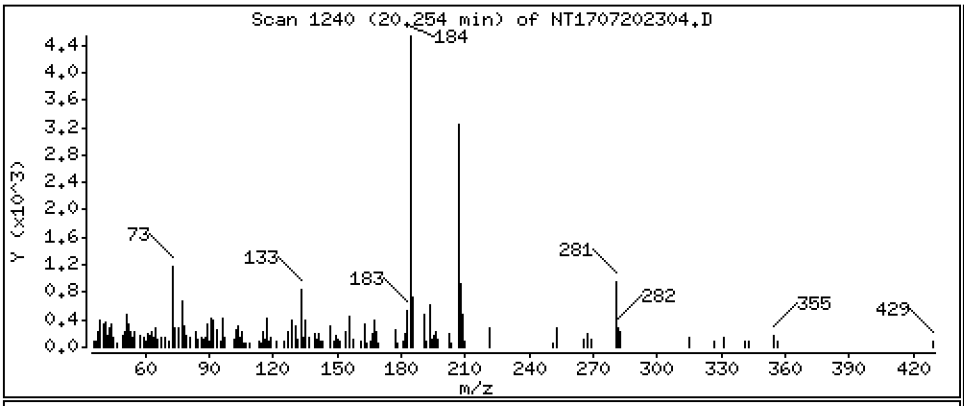
Operator: JGR

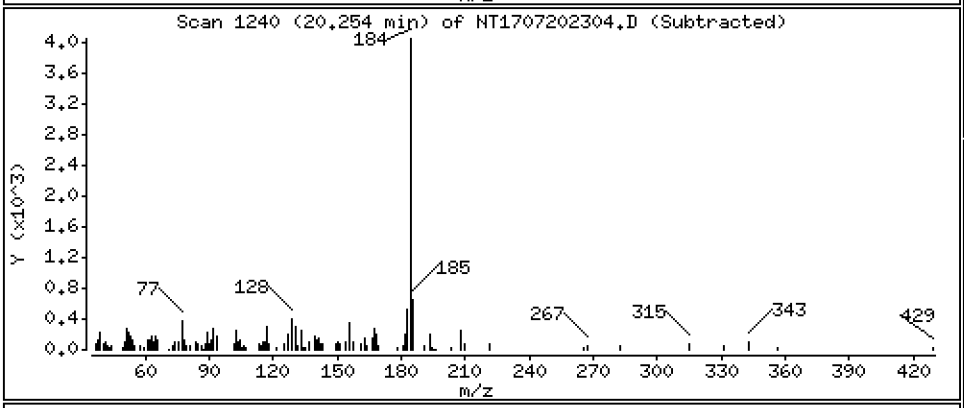
Column phase: ZB-5msi

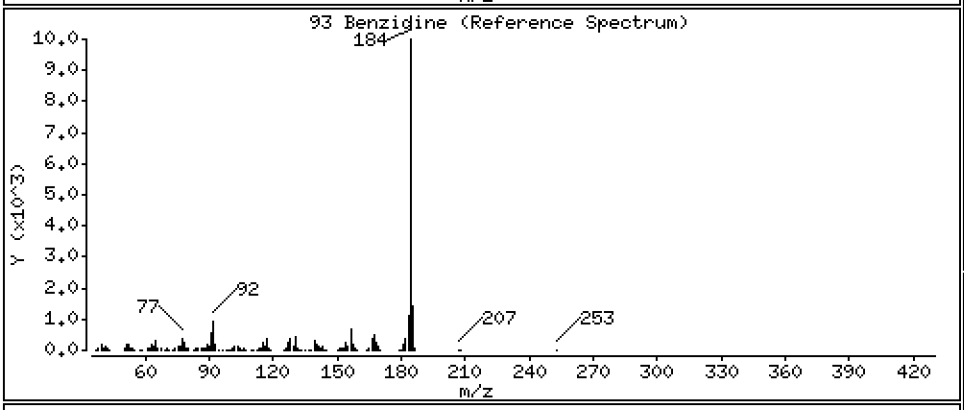
Column diameter: 0.25

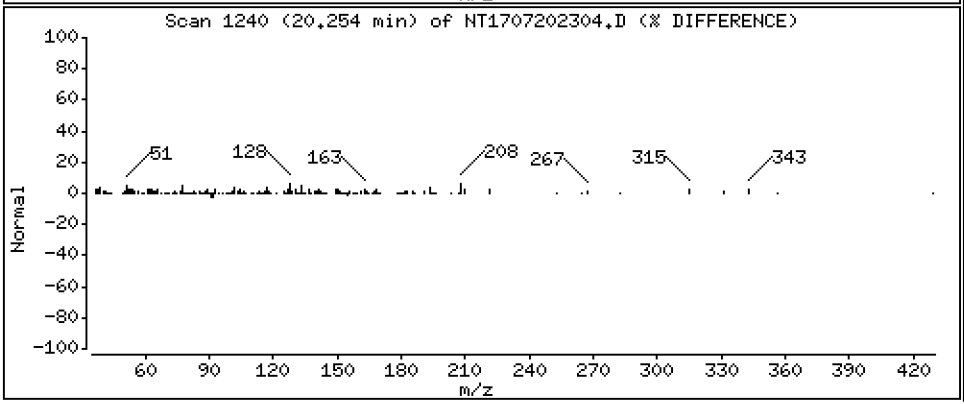
93 Benzidine

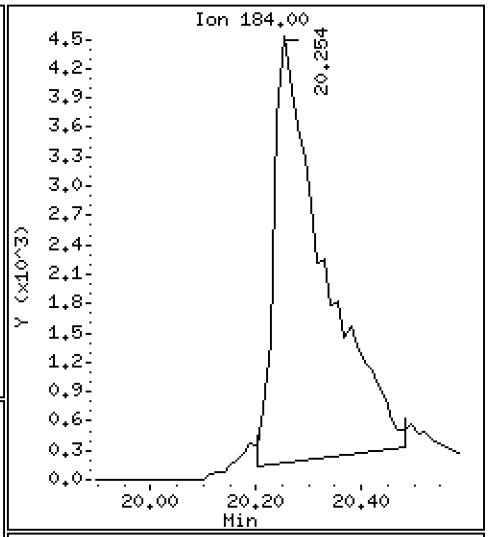
Concentration: 1.055 ug/mL

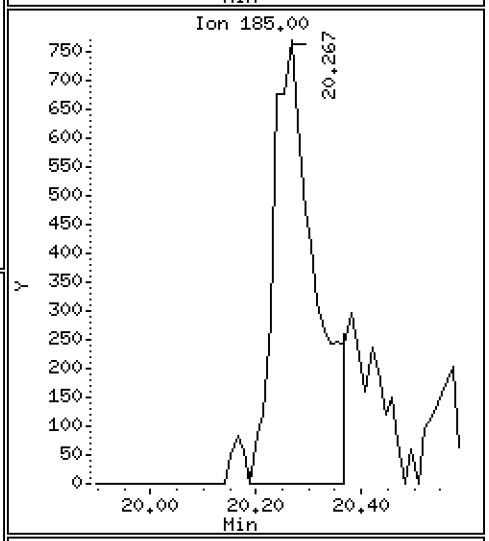


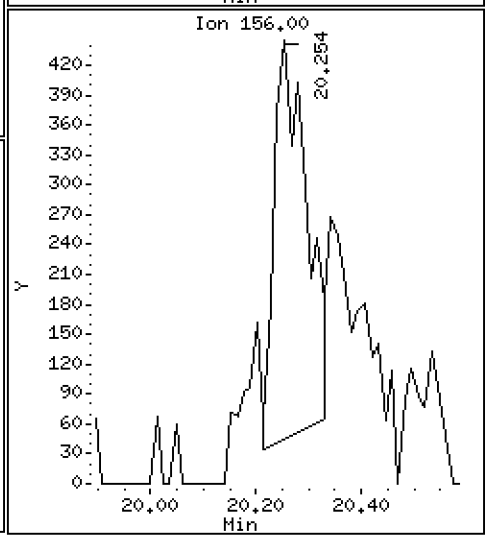












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

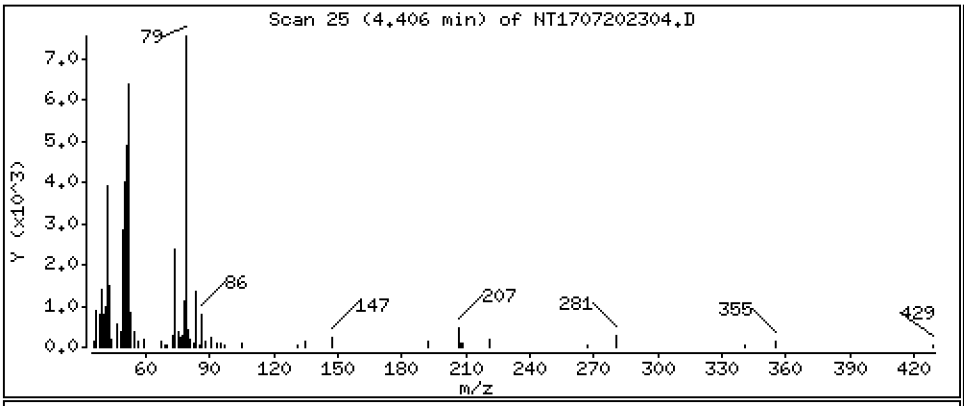
Operator: JGR

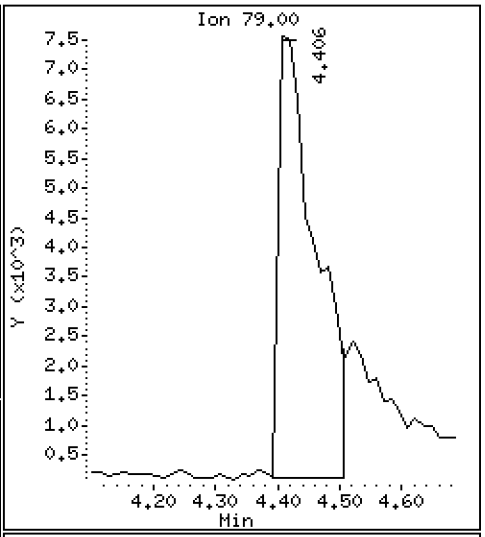
Column phase: ZB-5msi

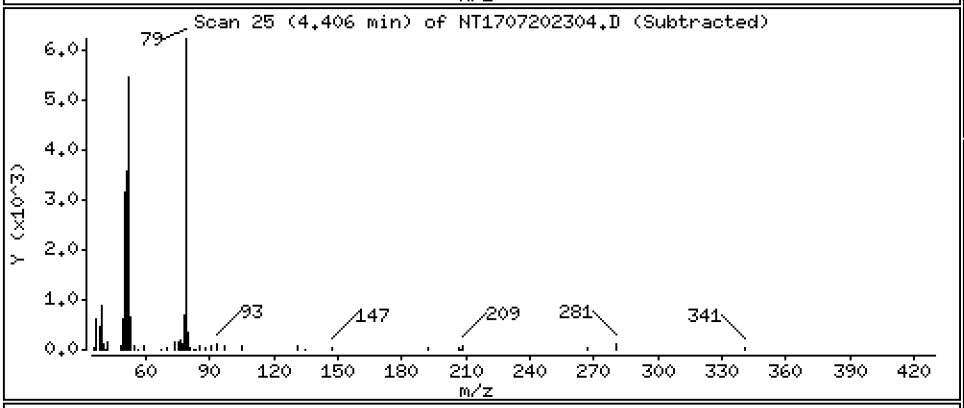
Column diameter: 0.25

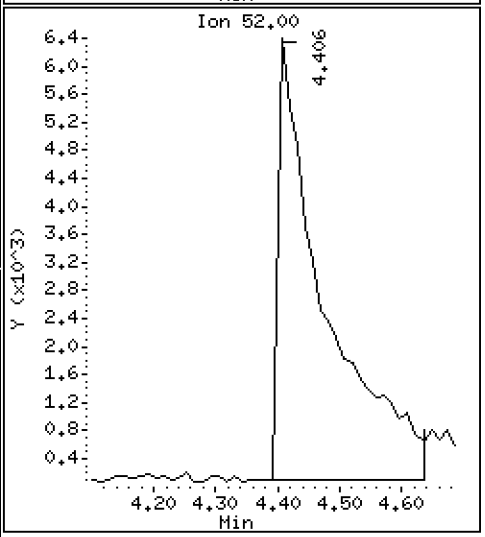
103 Pyridine

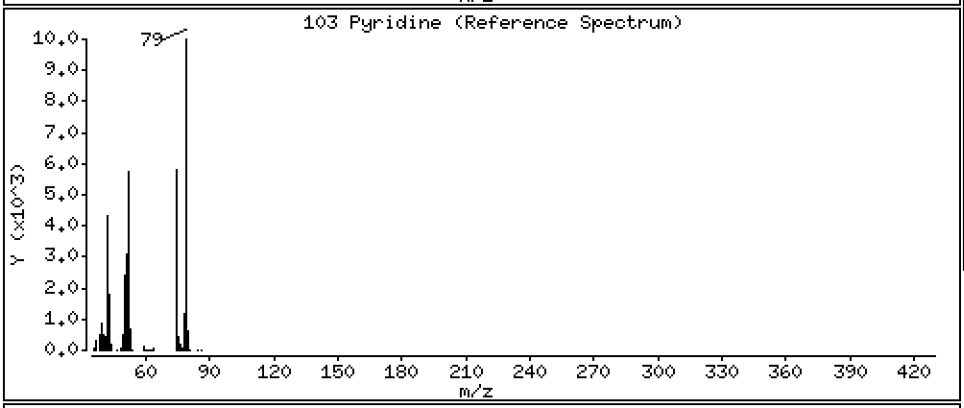
Concentration: 0.3824 ug/mL

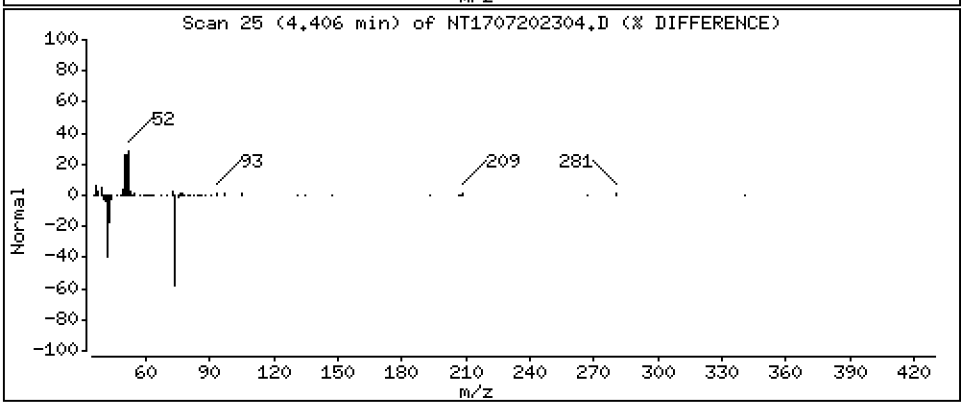












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D

Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

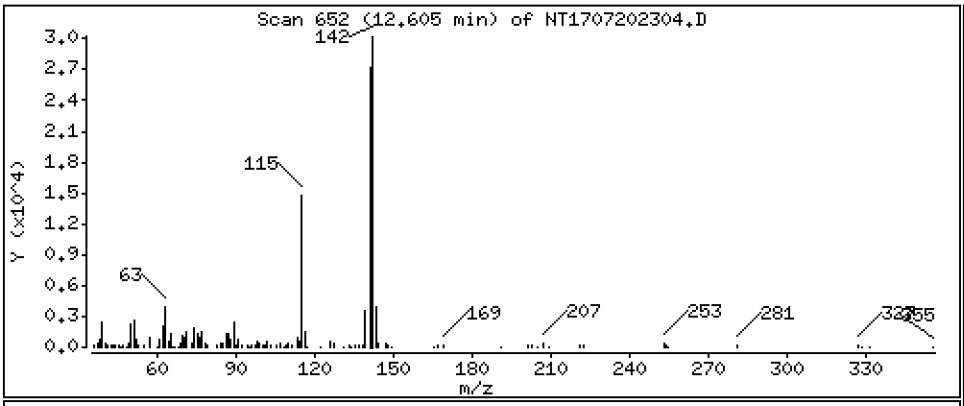
Operator: JGR

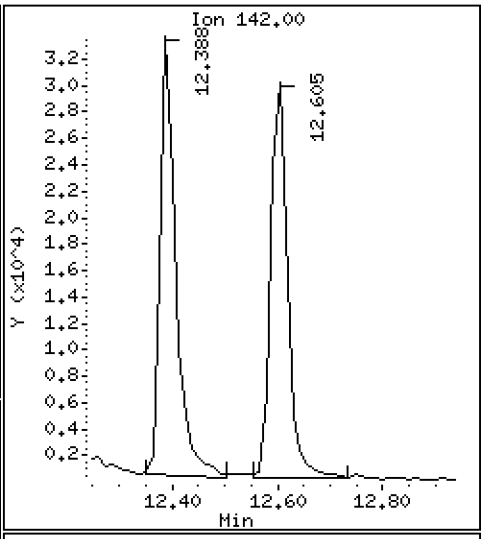
Column phase: ZB-5msi

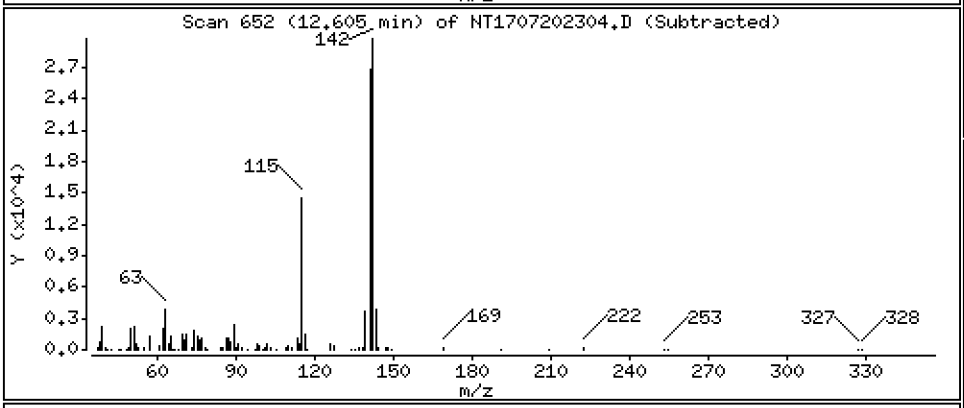
Column diameter: 0.25

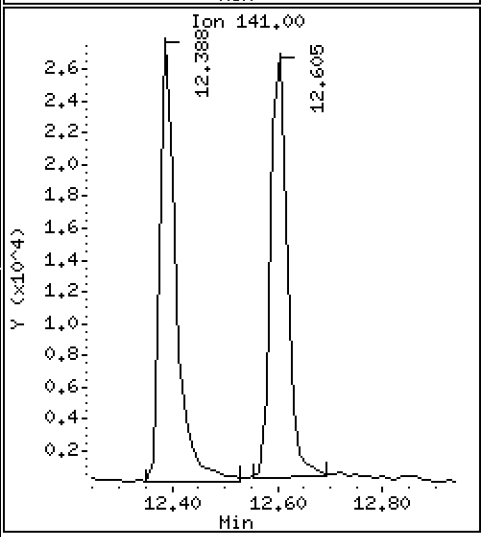
105 1-methylnaphthalene

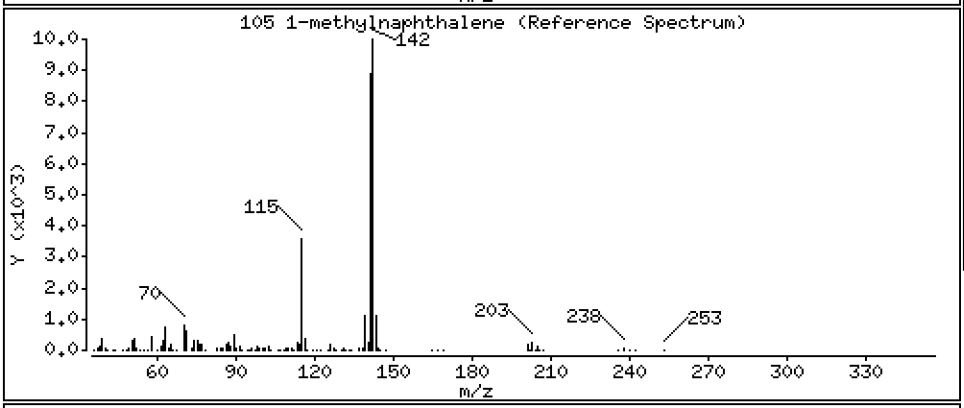
Concentration: 0.4680 ug/mL

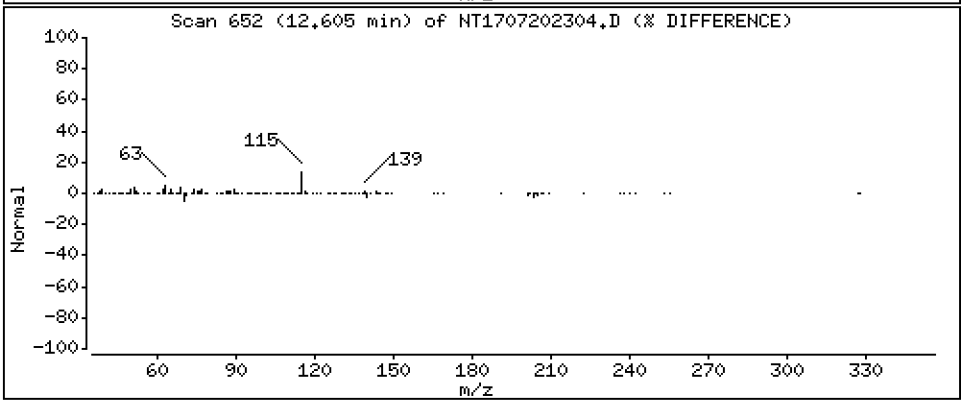












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Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

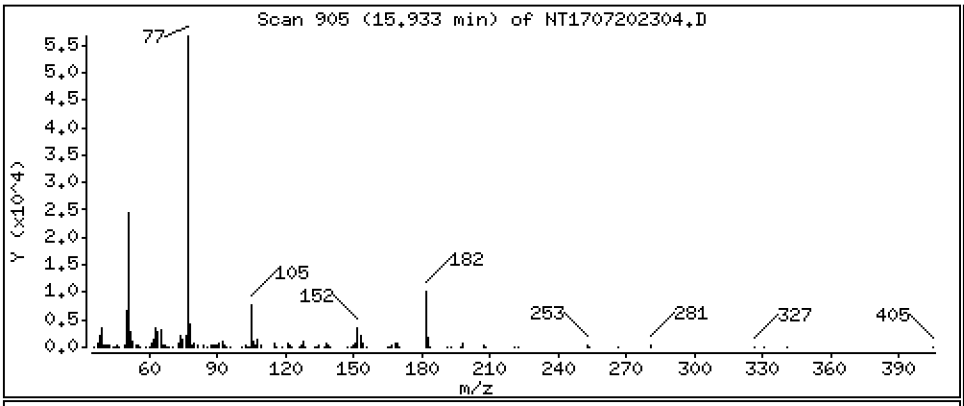
Operator: JGR

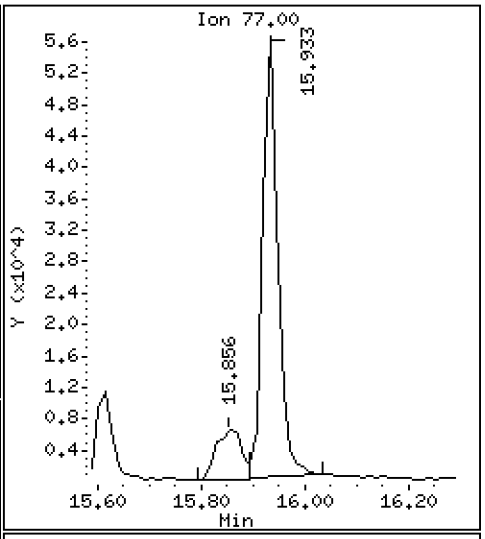
Column phase: ZB-5msi

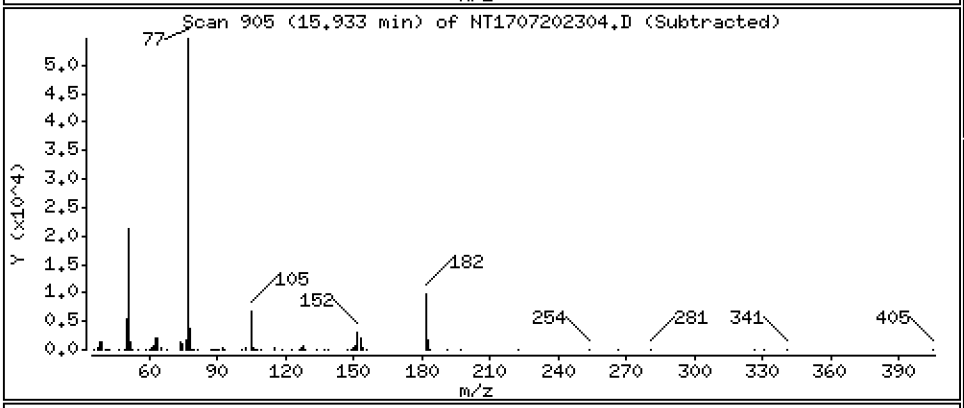
Column diameter: 0.25

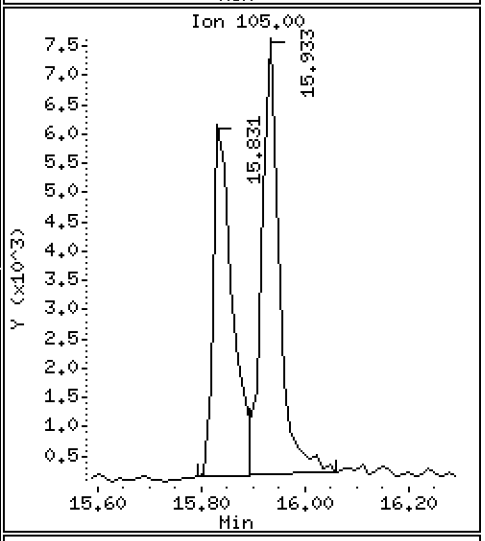
111 Azobenzene (1,2-DP-Hydrazine)

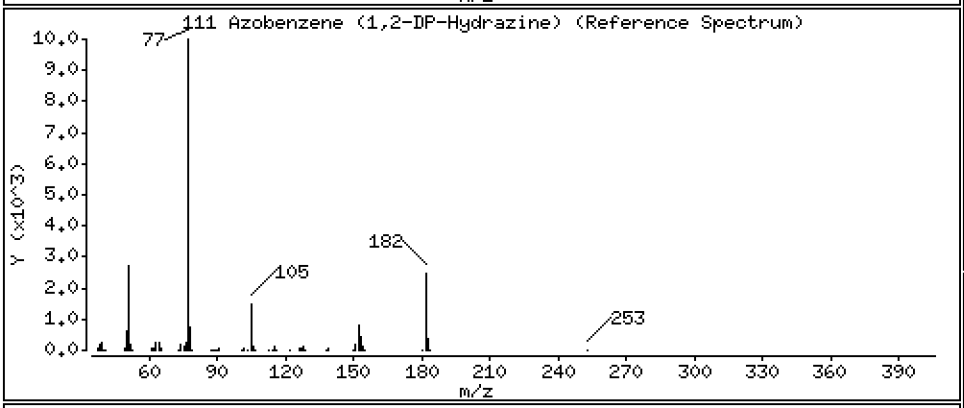
Concentration: 0.5595 ug/mL

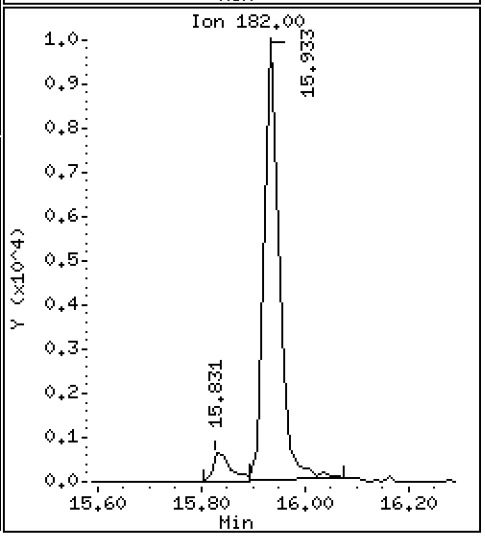


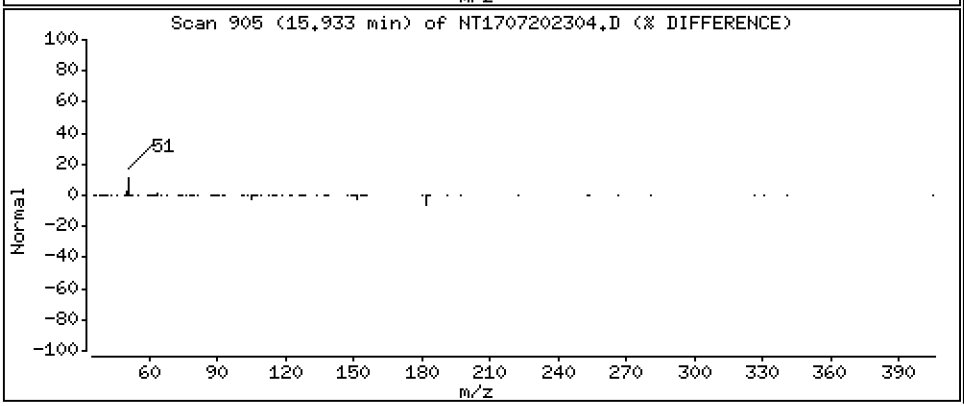












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D

Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

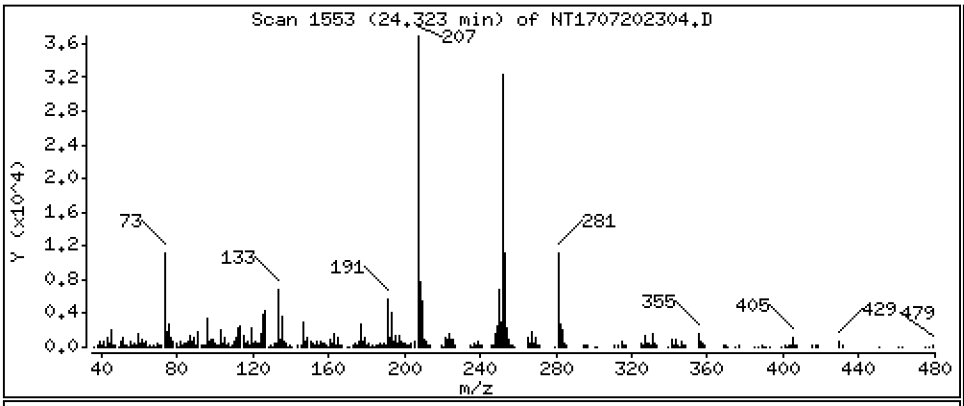
Operator: JGR

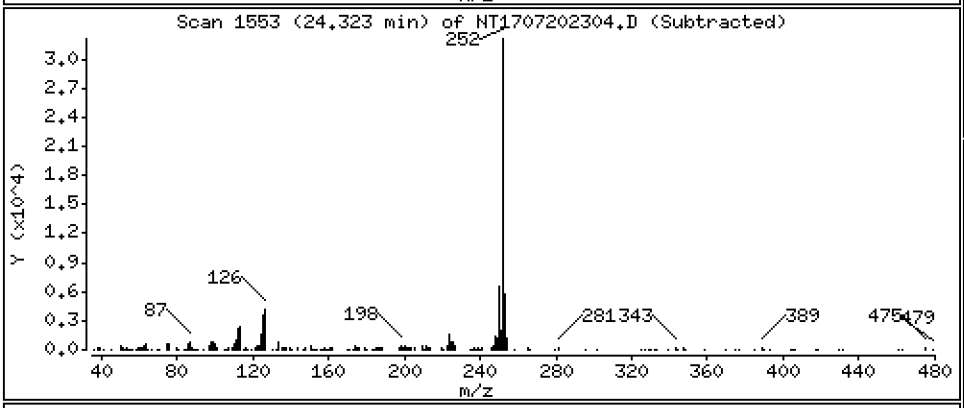
Column phase: ZB-5msi

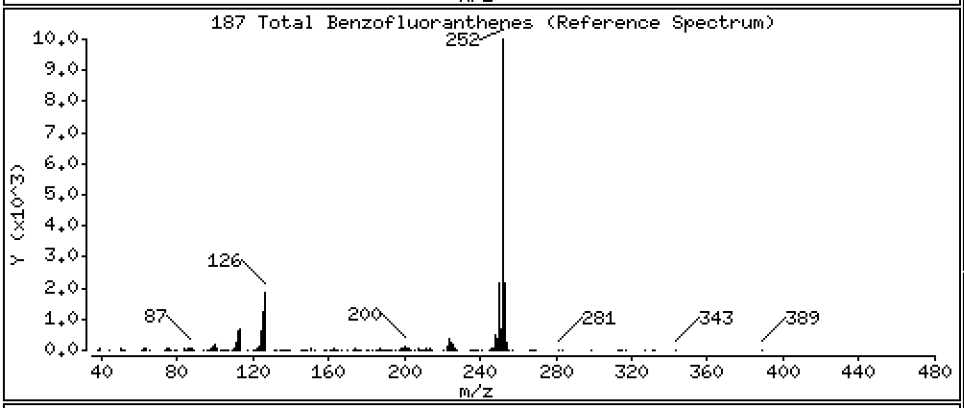
Column diameter: 0.25

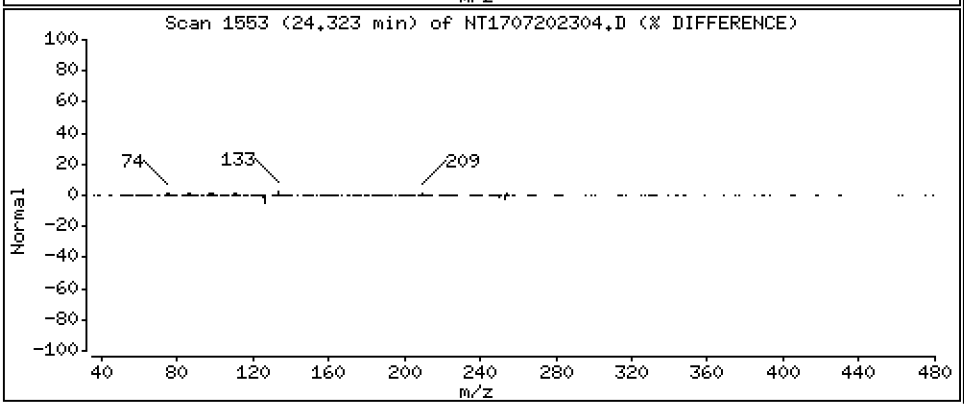
187 Total Benzofluoranthenes

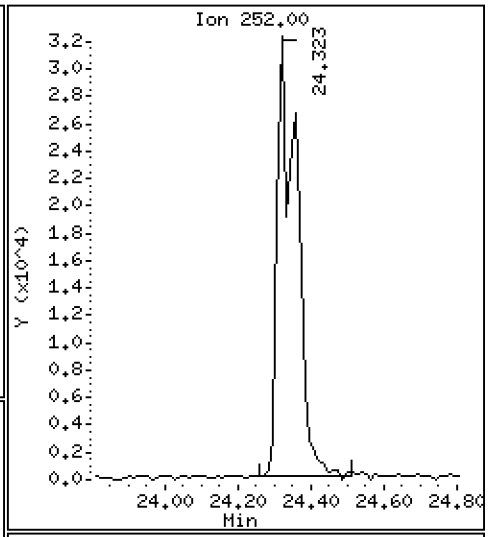
Concentration: 0.9635 ug/mL

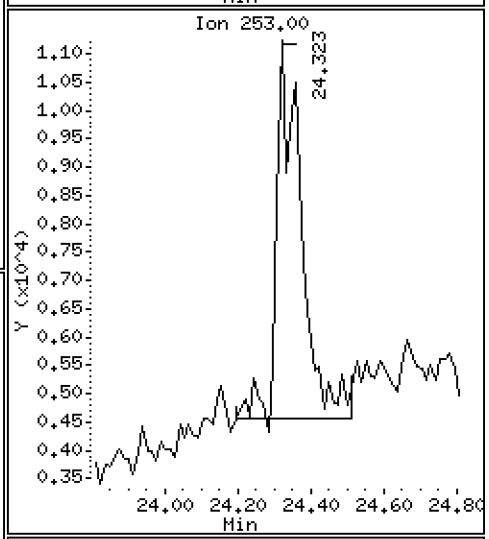


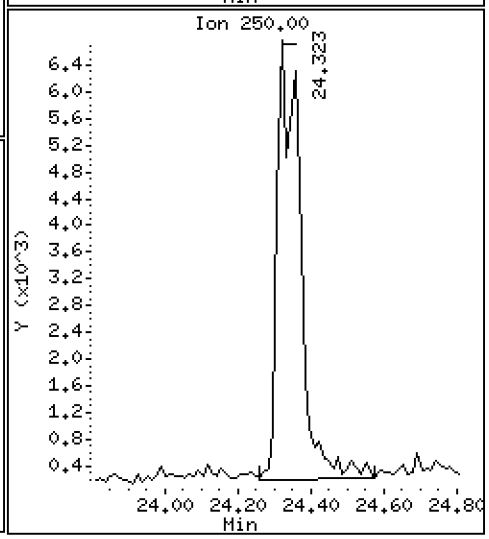












Data File: \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D

Date : 21-JUL-2023 02:35

Client ID:

Instrument: nt17.i

Sample Info: SLG0263-LCV1

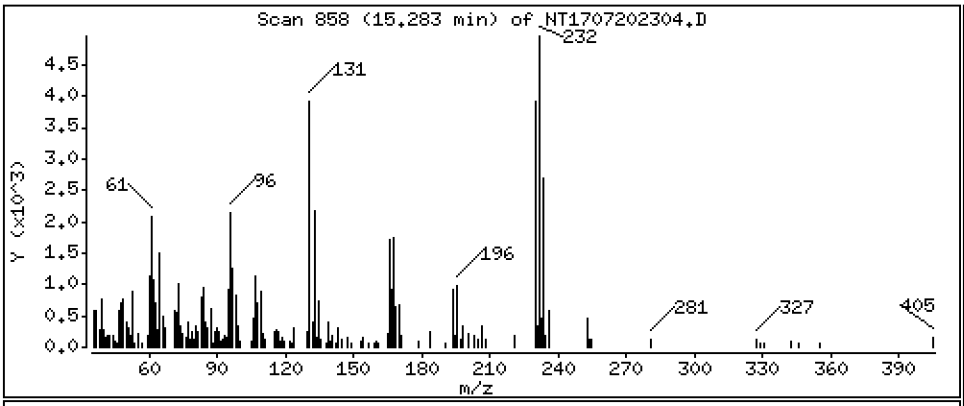
Operator: JGR

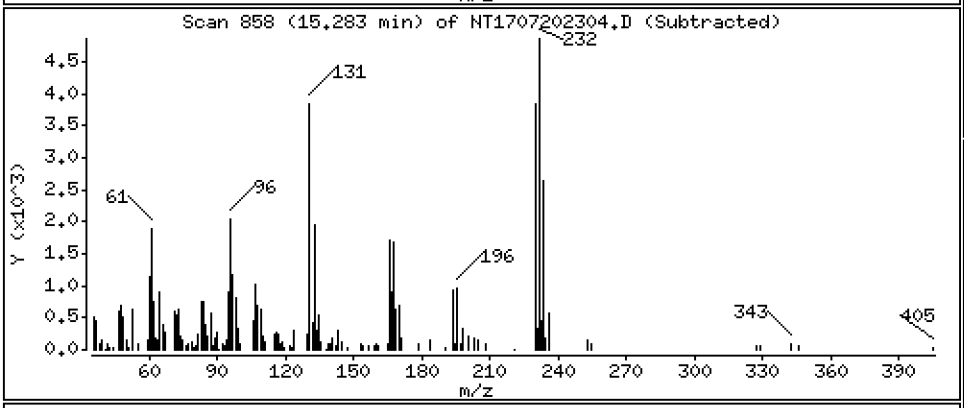
Column phase: ZB-5msi

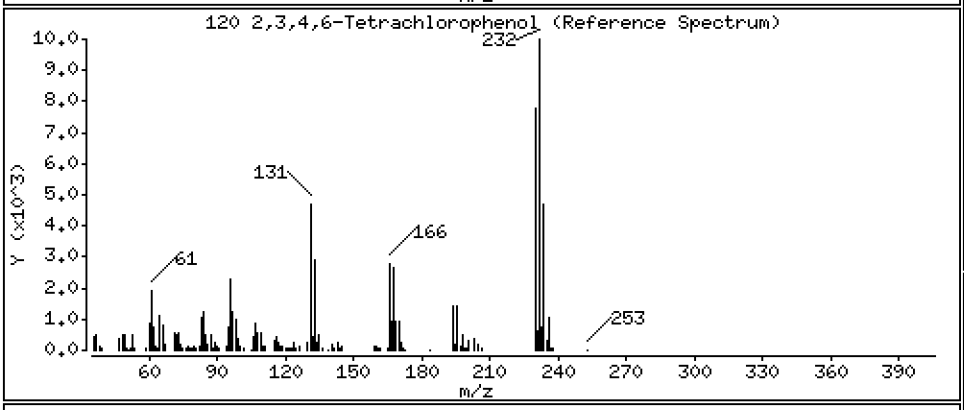
Column diameter: 0.25

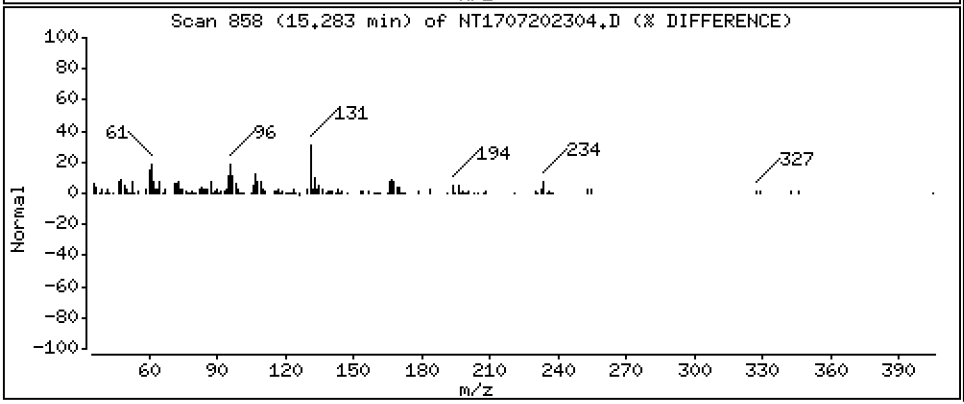
120 2,3,4,6-Tetrachlorophenol

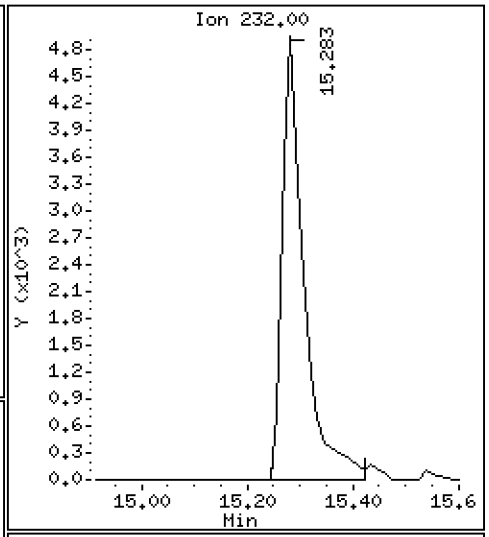
Concentration: 0.4486 ug/mL

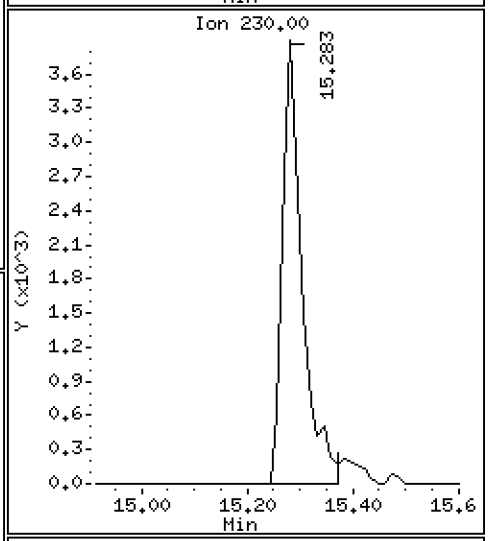


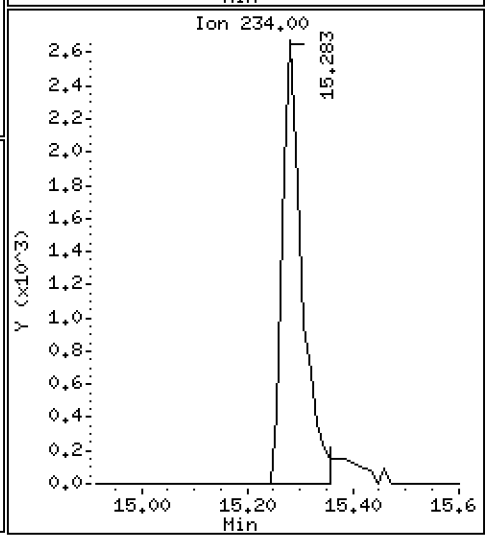












ARI Labs, Inc.

Semivolatile Report SW846 Method 8270D

Data file : \\target\share\chem3\nt17.i\20230720.b\NT1707202304.D
Lab Smp Id: SLG0263-LCV1
Inj Date : 21-JUL-2023 02:35
Operator : JGR Inst ID: nt17.i
Smp Info : SLG0263-LCV1
Misc Info :
Comment : 1ul Injection
Method : \\target\share\chem3\nt17.i\20230720.b\ABN.m
Meth Date : 21-Jul-2023 14:01 yev Quant Type: ISTD
Cal Date : 10-JUL-2023 16:44 Cal File: NT1707102308.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ICAL.sub
Target Version: 4.14
Processing Host: ORGDATA102

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/mL)
$	1 2-Fluorophenol	112	6.482	6.406	(0.760)	21648	0.30788	0.3079
$	2 Phenol-d5	99	7.998	7.960	(0.937)	47320	0.48537	0.4854
	3 Phenol	94	8.011	7.986	(0.939)	49930	0.38408	0.3841
$	5 2-Chlorophenol-d4	132	8.215	8.189	(0.963)	53125	0.66981	0.6698
	4 Bis(2-Chloroethyl)ether	93	8.113	8.100	(0.951)	27694	0.36745	0.3675
	6 2-Chlorophenol	128	8.240	8.215	(0.966)	40046	0.43233	0.4323
	7 1,3-Dichlorobenzene	146	8.482	8.470	(0.994)	38869	0.46143	0.4614
*	8 1,4-Dichlorobenzene-d4	152	8.534	8.534	(1.000)	199631	4.00000	
	9 1,4-Dichlorobenzene	146	8.559	8.559	(1.003)	40280	0.44343	0.4434
$	10 1,2-Dichlorobenzene-d4	152	8.891	8.879	(1.042)	24413	0.49925	0.4992
	12 1,2-Dichlorobenzene	146	8.917	8.904	(1.045)	38682	0.48557	0.4856
	11 Benzyl alcohol	108	8.917	8.827	(1.045)	16979	0.34688	0.3469
	14 2,2'-oxybis(1-Chloropropane)	121	9.121	9.109	(1.069)	10594	0.40645	0.4064
	13 2-Methylphenol	108	9.096	9.070	(1.066)	32807	0.42171	0.4217
	17 Hexachloroethane	117	9.479	9.479	(1.111)	19635	0.54699	0.5470
	16 N-Nitroso-di-n-propylamine	70	9.377	9.364	(1.099)	29869	0.49833	0.4983
	15 4-Methylphenol	108	9.390	9.339	(1.100)	24135	0.31771	0.3177
$	18 Nitrobenzene-d5	82	9.632	9.607	(0.879)	43009	0.48190	0.4819
	19 Nitrobenzene	77	9.671	9.632	(0.882)	40827	0.44605	0.4460
	20 Isophorone	82	10.105	10.092	(0.922)	58301	0.42305	0.4231
	21 2-Nitrophenol	139	10.297	10.258	(0.939)	11241	0.29481	0.2948
	22 2,4-Dimethylphenol	107	10.360	10.348	(0.945)	70721	0.83277	0.8328
	23 Bis(2-Chloroethoxy)methane	93	10.539	10.514	(0.962)	32326	0.41231	0.4123
	24 Benzoic acid	105	10.603	10.654	(0.967)	41660	0.65905	0.6590(M)
	25 2,4-Dichlorophenol	162	10.769	10.718	(0.983)	52111	0.81922	0.8192
	26 1,2,4-Trichlorobenzene	180	10.884	10.884	(0.993)	35864	0.52285	0.5229
*	27 Naphthalene-d8	136	10.960	10.960	(1.000)	778397	4.00000	
	28 Naphthalene	128	10.998	10.998	(1.003)	100696	0.46472	0.4647
	29 4-Chloroaniline	127	11.189	11.151	(1.021)	59556	0.60964	0.6096
	30 Hexachlorobutadiene	225	11.380	11.368	(1.038)	21260	0.62042	0.6204
	31 4-Chloro-3-methylphenol	107	12.158	12.133	(1.109)	64195	0.89783	0.8978
	32 2-Methylnaphthalene	142	12.388	12.375	(1.130)	70681	0.46926	0.4693
	33 Hexachlorocyclopentadiene	237	12.847	12.847	(0.885)	2767	0.15165	0.1517

			QUANT SIG					CONCENTRATIONS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/mL)
	34	2,4,6-Trichlorophenol	196	13.026	13.013	(0.897)	32195	0.78007	0.7801
	35	2,4,5-Trichlorophenol	196	13.128	13.090	(0.904)	29428	0.68673	0.6867
$	36	2-Fluorobiphenyl	172	13.166	13.153	(0.907)	72978	0.45817	0.4582
	37	2-Chloronaphthalene	162	13.357	13.357	(0.920)	65281	0.46813	0.4681
	38	2-Nitroaniline	65	13.651	13.625	(0.940)	43117	0.76715	0.7672
	39	Dimethylphthalate	163	14.059	14.059	(0.968)	72866	0.50470	0.5047
	40	Acenaphthylene	152	14.212	14.199	(0.979)	100758	0.47014	0.4701
	41	2,6-Dinitrotoluene	165	14.186	14.186	(0.977)	31060	0.92413	0.9241
*	42	Acenaphthene-d10	164	14.518	14.518	(1.000)	413692	4.00000	
	43	3-Nitroaniline	138	14.518	14.467	(1.000)	22380	0.60947	0.6095
	44	Acenaphthene	153	14.582	14.582	(1.004)	60718	0.45342	0.4534
	45	2,4-Dinitrophenol	184	14.773	14.684	(1.018)	6116	0.39555	0.3955
	46	Dibenzofuran	168	14.913	14.913	(1.027)	87367	0.46846	0.4685
	47	4-Nitrophenol	109	14.977	14.862	(1.032)	10490	0.48605	0.4860
	48	2,4-Dinitrotoluene	165	15.002	14.990	(1.033)	36127	0.83052	0.8305
	50	Diethylphthalate	149	15.499	15.499	(1.068)	92313	0.56369	0.5637
	49	Fluorene	166	15.614	15.614	(1.075)	85299	0.52511	0.5251
	51	4-Chlorophenyl-phenylether	204	15.614	15.614	(1.075)	40049	0.51940	0.5194
	52	4-Nitroaniline	138	15.805	15.729	(1.089)	5759	0.17752	0.1775
	53	4,6-Dinitro-2-methylphenol	198	15.843	15.818	(0.905)	29318	1.02834	1.028
	54	N-Nitrosodiphenylamine	169	15.868	15.856	(0.906)	51347	0.44170	0.4417
$	55	2,4,6-Tribromophenol	330	16.148	16.136	(1.112)	14459	0.75545	0.7554
	56	4-Bromophenyl-phenylether	248	16.607	16.594	(0.948)	18632	0.41463	0.4146
	57	Hexachlorobenzene	284	16.899	16.900	(0.965)	23889	0.45553	0.4555
	58	Pentachlorophenol	266	17.295	17.270	(0.988)	11924	0.40214	0.4021
*	59	Phenanthrene-d10	188	17.512	17.512	(1.000)	776079	4.00000	
	60	Phenanthrene	178	17.550	17.550	(1.002)	100098	0.44552	0.4455
	61	Anthracene	178	17.652	17.652	(1.008)	88974	0.42709	0.4271
	62	Carbazole	167	18.022	17.996	(1.029)	79580	0.45650	0.4565
	63	Di-n-butylphthalate	149	18.825	18.813	(1.075)	111578	0.39612	0.3961
	64	Fluoranthene	202	19.960	19.947	(0.884)	101138	0.46316	0.4632
	65	Pyrene	202	20.381	20.368	(0.903)	116706	0.47315	0.4731
$	66	Terphenyl-d14	244	20.687	20.687	(0.916)	83045	0.48455	0.4846
	67	Butylbenzylphthalate	149	21.631	21.631	(0.958)	43438	0.41100	0.4110
	68	Benzo(a)anthracene	228	22.549	22.550	(0.999)	83790	0.48014	0.4801
*	69	Chrysene-d12	240	22.575	22.575	(1.000)	493050	4.00000	
	70	3,3'-Dichlorobenzidine	252	22.524	22.511	(0.998)	73773	1.62798	1.628
	71	Chrysene	228	22.613	22.613	(1.002)	71921	0.43974	0.4397
	72	bis(2-Ethylhexyl)phthalate	149	22.677	22.677	(0.959)	48019	0.48495	0.4850
*	134	Di-n-octylphthalate-d4	153	23.647	23.647	(1.000)	698947	4.00000	
	73	Di-n-octylphthalate	149	23.659	23.659	(1.001)	90514	0.46593	0.4659
	74	Benzo(b)fluoranthene	252	24.323	24.310	(0.975)	56819	0.41561	0.4156
	75	Benzo(k)fluoranthene	252	24.361	24.348	(0.976)	73006	0.52608	0.5261
	76	Benzo(a)pyrene	252	24.871	24.859	(0.997)	44668	0.44911	0.4491
*	77	Perylene-d12	264	24.948	24.948	(1.000)	369077	4.00000	
	78	Indeno(1,2,3-cd)pyrene	276	27.183	27.157	(1.090)	52819	0.39414	0.3941
	79	Dibenzo(a,h)anthracene	278	27.183	27.157	(1.090)	48205	0.40428	0.4043
	80	Benzo(g,h,i)perylene	276	27.835	27.796	(1.116)	47559	0.38677	0.3868
	90	N-Nitrosodimethylamine	74	4.367	4.317	(0.512)	17410	0.33069	0.3307
	91	Aniline	93	8.049	8.011	(0.943)	68851	0.68108	0.6811
	93	Benzidine	184	20.253	20.241	(0.897)	28425	1.05525	1.055
	103	Pyridine	79	4.406	4.342	(0.516)	31657	0.38242	0.3824
	105	1-methylnaphthalene	142	12.605	12.592	(1.150)	65232	0.46798	0.4680
	111	Azobenzene (1,2-DP-Hydrazine)	77	15.932	15.932	(1.097)	113915	0.55949	0.5595

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/mL)
187 Total Benzofluoranthenes	252	24.323	24.310	(0.975)	118280	0.96348	0.9635
120 2,3,4,6-Tetrachlorophenol	232	15.283	15.257	(1.053)	16214	0.44859	0.4486

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt17.i
Lab File ID: NT1707202304.D
Lab Smp Id: SLG0263-LCV1
Analysis Type: SV
Quant Type: ISTD
Operator: JGR
Method File: \\target\share\chem3\nt17.i\20230720.b\ABN.m
Misc Info:

Calibration Date: 21-JUL-2023
Calibration Time: 01:21
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	169554	84777	339108	199631	17.74
27 Naphthalene-d8	681387	340694	1362774	778397	14.24
42 Acenaphthene-d10	390289	195145	780578	413692	6.00
59 Phenanthrene-d10	698326	349163	1396652	776079	11.13
69 Chrysene-d12	446763	223382	893526	493050	10.36
134 Di-n-octylphthala	703373	351687	1406746	698947	-0.63
77 Perylene-d12	323620	161810	647240	369077	14.05

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	8.53	8.03	9.03	8.53	-0.00
27 Naphthalene-d8	10.96	10.46	11.46	10.96	-0.00
42 Acenaphthene-d10	14.52	14.02	15.02	14.52	-0.00
59 Phenanthrene-d10	17.51	17.01	18.01	17.51	-0.00
69 Chrysene-d12	22.58	22.08	23.08	22.58	-0.00
134 Di-n-octylphthala	23.65	23.15	24.15	23.65	-0.00
77 Perylene-d12	24.95	24.45	25.45	24.95	-0.00

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

REVIEW SUMMARY FOR FILE - NT1707202304.D

Lab ID: SLG0263-LCV1
nt17.i, ABN.m, 21-JUL-2023 02:35

RT	CO-ELUTION COMPOUNDS
8.917	1,2-Dichlorobenzene and Benzyl alcohol
14.518	Acenaphthene-d10 and 3-Nitroaniline
27.183	Indeno(1,2,3-cd)pyrene and Dibenzo(a,h)anthracene
27.183	Dibenzo(a,h)anthracene and Indeno(1,2,3-cd)pyrene

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
1.045	1.034	0.0105	Benzyl alcohol
1.100	1.094	0.0060	4-Methylphenol
1.018	1.011	0.0061	2,4-Dinitrophenol
1.032	1.024	0.0079	4-Nitrophenol
1.089	1.083	0.0052	4-Nitroaniline
0.512	0.506	0.0060	N-Nitrosodimethylamine
0.516	0.509	0.0074	Pyridine
0.760	0.751	0.0090	2-Fluorophenol

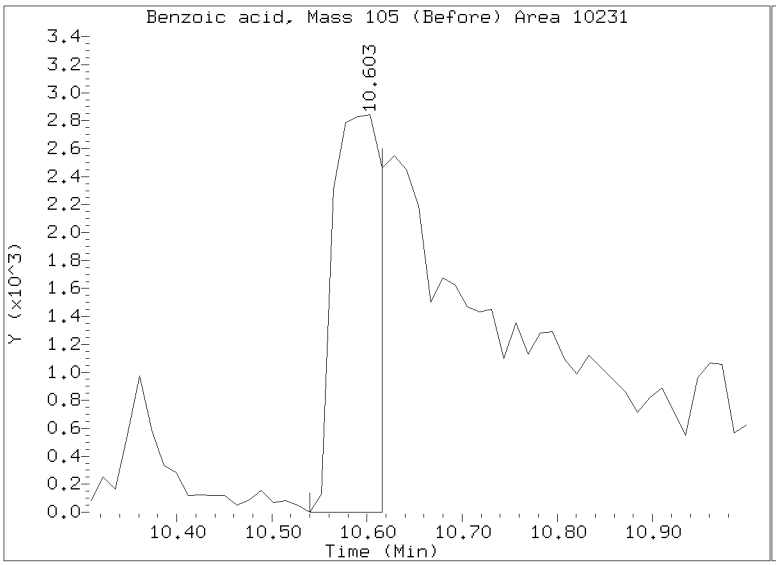
RRT check based on Ccal File: NT1707202302.D

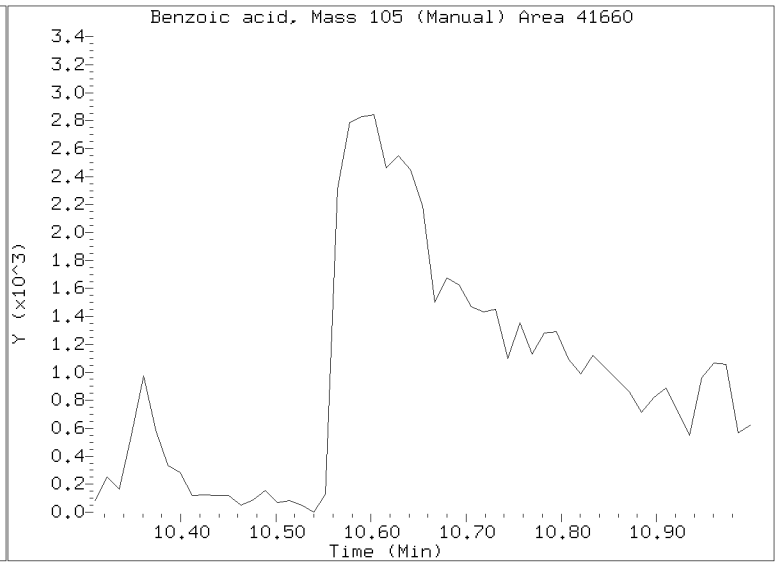
On Column LOD for nt17.i, ABN.m, ICAL.sub = 0.0000

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

Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt17.i/20230720.b/NT1707202304.D
Injection Date: 21-JUL-2023 02:35
Lab ID:SLG0263-LCV1 Client ID:
Report Date: 07/21/2023 14:01





Analytical Resources, LLC
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLF0467	Instrument:	NT14
		Calibration:	GF00097

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
MS Tune	SLF0467-TUN1	NT1406282301.D	NA	06/28/23 17:48
ABN 20	SLF0467-CAL7	NT1406282302.D	NA	06/28/23 18:04
ABN 10	SLF0467-CAL6	NT1406282303.D	NA	06/28/23 18:41
ABN 5	SLF0467-CAL5	NT1406282304.D	NA	06/28/23 19:18
ABN 2.5	SLF0467-CAL4	NT1406282305.D	NA	06/28/23 19:56
ABN 1.0	SLF0467-CAL3	NT1406282306.D	NA	06/28/23 20:33
ABN 0.5	SLF0467-CAL2	NT1406282307.D	NA	06/28/23 21:10
ABN 0.2	SLF0467-CAL1	NT1406282308.D	NA	06/28/23 21:47
SCV 5.0	SLF0467-SCV1	NT1406282311.D	NA	06/28/23 23:38
Initial Cal Blank	SLF0467-ICB1	NT1406282312.D	NA	06/29/23 00:15

ANALYSIS SEQUENCE

SLF0467

Instrument: NT14
Calibration ID: GF00097

Printed: 7/3/2023 2:57:59PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLF0467-TUN1	QC		1		L005516			
SLF0467-CAL1	QC		2		L007253	L006982		
SLF0467-CAL2	QC		3		L007252	L006982		
SLF0467-CAL3	QC		4		L007251	L006982		
SLF0467-CAL4	QC		5		L007250	L006982		
SLF0467-CAL5	QC		6		L007249	L006982		
SLF0467-CAL6	QC		7		L007248	L006982		
SLF0467-CAL7	QC		8		L007247	L006982		
SLF0467-SCV1	QC		9		L006700	L006982		
SLF0467-ICB1	QC		10		L006701	L006982		

Samples Loaded By Date

Data Processed By Date

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230628.b

	Time	Filename	LabID	ClientId	DF																			
1	1748	NT1406282301.D	SLF0468-TUN1		1	|NO ISTDS FOUND||																		
2	1804	NT1406282302.D	SLF0467-CAL7		1	| 9.01	109273||11.51	440116||15.14	216113||18.18	358132||23.24	261975||25.85	215997||24.26	483887|											
3	1841	NT1406282303.D	SLF0467-CAL6		1	| 9.01	114276||11.51	457454||15.13	223861||18.18	373330||23.23	265594||25.84	224460||24.26	473007|											
4	1918	NT1406282304.D	SLF0467-CAL5		1	| 9.01	125577||11.51	506794||15.13	245145||18.17	414056||23.23	285887||25.84	242117||24.25	487823|											
5	1956	NT1406282305.D	SLF0467-CAL4		1	| 9.01	125595||11.50	505003||15.13	244264||18.17	409304||23.22	277608||25.83	233794||24.25	451406|											
6	2033	NT1406282306.D	SLF0467-CAL3		1	| 9.01	131333||11.50	519443||15.13	249595||18.17	422984||23.22	281346||25.83	237544||24.25	423037|											
7	2110	NT1406282307.D	SLF0467-CAL2		1	| 9.01	135836||11.50	538742||15.13	255972||18.17	432170||23.22	286989||25.83	245333||24.25	420698|											
8	2147	NT1406282308.D	SLF0467-CAL1		1	| 9.01	140650||11.50	556802||15.13	261262||18.17	450492||23.22	290595||25.83	242827||24.25	405584|											
9	2224	NT1406282309.D	SEQ-SIM2		1	| 9.01	139285||11.50	548275||15.13	257705||18.17	439798||23.22	281829||25.83	235295||24.25	382555|											
10	2301	NT1406282310.D	SEQ-SIM1		1	| 9.01	139755||11.50	540122||15.13	255588||18.17	436064||23.22	284378||25.83	237577||24.25	373893|											
11	2338	NT1406282311.D	SLF0467-SCV1		1	| 9.00	128354||11.50	519660||15.13	249651||18.17	419362||23.22	287830||25.83	243501||24.25	491823|											
12	0015	NT1406282312.D	SLF0467-ICB1		1	| 9.00	132893||11.50	531076||15.13	248410||18.17	420605||23.22	260535||25.83	224674||24.25	368725|											

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230628.b

ARI Job No.: SLF0 Method: DFTPP8270E.m Instrument: nt14.i Date: 28-JUN-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1748	NT1406282301.D	SLF0468-TUN1		1	NO MANUAL INTEGRATION
1804	NT1406282302.D	SLF0467-CAL7		1	2,2'-oxybis(1-Chloropropane), Isophorone, Benzoic acid,
1841	NT1406282303.D	SLF0467-CAL6		1	2,2'-oxybis(1-Chloropropane),
1918	NT1406282304.D	SLF0467-CAL5		1	2,2'-oxybis(1-Chloropropane),
1956	NT1406282305.D	SLF0467-CAL4		1	2,2'-oxybis(1-Chloropropane),
2033	NT1406282306.D	SLF0467-CAL3		1	2,2'-oxybis(1-Chloropropane),
2110	NT1406282307.D	SLF0467-CAL2		1	2,2'-oxybis(1-Chloropropane),
2147	NT1406282308.D	SLF0467-CAL1		1	2,2'-oxybis(1-Chloropropane),
2224	NT1406282309.D	SEQ-SIM2		1	NO MANUAL INTEGRATION
2301	NT1406282310.D	SEQ-SIM1		1	NO MANUAL INTEGRATION
2338	NT1406282311.D	SLF0467-SCV1		1	NO MANUAL INTEGRATION
0015	NT1406282312.D	SLF0467-ICB1		1	NO MANUAL INTEGRATION

Security Status Report

Date: 03-Jul-2023 14:48

NT1406282301.D	Data Locked	yev, 03-
NT1406282302.D	Data Locked	yev, 03-
NT1406282303.D	Data Locked	yev, 03-
NT1406282304.D	Data Locked	yev, 03-
NT1406282305.D	Data Locked	yev, 03-
NT1406282306.D	Data Locked	yev, 03-
NT1406282307.D	Data Locked	yev, 03-
NT1406282308.D	Data Locked	yev, 03-
NT1406282309.D	Data Locked	yev, 03-
NT1406282310.D	Data Locked	yev, 03-
NT1406282311.D	Data Locked	yev, 03-
NT1406282312.D	Data Locked	yev, 03-

Analytical Resources, LLC
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0081	Instrument:	NT14
		Calibration:	GF00097

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
MS Tune	SLG0081-TUN1	NT1407062301D.D	NA	07/06/23 12:49
Initial Cal Check	SLG0081-ICV1	NT1407062344ICV.D	NA	07/07/23 16:23
ABN 0.2	SLG0081-LCV2	NT1407062346.D	NA	07/07/23 17:38
LCS	BLF0718-BS1	NT1407062349.D	Solid	07/07/23 19:29
Blank	BLF0718-BLK1	NT1407062350.D	Solid	07/07/23 20:07
LCS Dup	BLF0718-BSD1	NT1407062351.D	Solid	07/07/23 20:44
Reference	BLF0718-SRM1	NT1407062352.D	Solid	07/07/23 21:21
LDW20-SC148A	BLF0718-MS1	NT1407062353.D	Solid	07/07/23 21:58
LDW20-SC148A	BLF0718-MSD1	NT1407062354.D	Solid	07/07/23 22:35
LDW20-SC148A	23F0536-01	NT1407062355.D	Solid	07/07/23 23:11
ZZZZZ	23F0541-01	NT1407062356.D	Solid	07/07/23 23:48
ZZZZZ	23F0541-02	NT1407062357.D	Solid	07/08/23 00:25
ZZZZZ	23F0541-03	NT1407062358.D	Solid	07/08/23 01:02
ZZZZZ	23F0541-04	NT1407062359.D	Solid	07/08/23 01:39
ZZZZZ	23F0541-05	NT1407062360.D	Solid	07/08/23 02:16
ZZZZZ	23F0541-06	NT1407062361.D	Solid	07/08/23 02:53
Calibration Check	SLG0081-CCV1	NT1407062362.D	NA	07/08/23 03:30

ANALYSIS SEQUENCE

SLG0081

Instrument ID: NT14
Calibration ID: GF00097
MS EM Level: 2023 EV

GCMS Description: Agilent 7890A/5975C XL
GCMS Column ID: L006765

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Analyzed	File ID	Analyst	Comments
SLG0081-TUN1	MS Tune	QC		1	L005516		07/06/2023 12:49	NT1407062301D.D	DSD	
SLG0081-ICV1	Initial Cal Check	QC		2	L007249	L006982	07/07/2023 16:23	NT1407062344ICV.D	JGR	
SLG0081-LCV2	ABN 0.2	QC		3	L007253	L006982				
BLF0718-BS1	LCS	QC		4		L006982	07/07/2023 19:29	NT1407062349.D	JGR	
BLF0718-BLK1	Blank	QC		5		L006982	07/07/2023 20:07	NT1407062350.D	JGR	
BLF0718-BSD1	LCS Dup	QC		6		L006982	07/07/2023 20:44	NT1407062351.D	JGR	
BLF0718-SRM1	Reference	QC		7		L006982	07/07/2023 21:21	NT1407062352.D	JGR	
BLF0718-MS1	Matrix Spike	QC		8		L006982	07/07/2023 21:58	NT1407062353.D	JGR	
BLF0718-MSD1	Matrix Spike Dup	QC		9		L006982	07/07/2023 22:35	NT1407062354.D	JGR	
23F0536-01	LDW20-SC148A	(20ug/kg solid or 0.2ug/L l	A 02	10		L006982	07/07/2023 23:11	NT1407062355.D	JGR	
23F0541-01	WEST 1	(20ug/kg solid or 0.2ug/L l	E 03	11		L006982	07/07/2023 23:48	NT1407062356.D	JGR	
23F0541-02	WEST 2	(20ug/kg solid or 0.2ug/L l	E 03	12		L006982	07/08/2023 00:25	NT1407062357.D	JGR	
23F0541-03	EAST 1	(20ug/kg solid or 0.2ug/L l	E 03	13		L006982	07/08/2023 01:02	NT1407062358.D	JGR	
23F0541-04	EAST2	(20ug/kg solid or 0.2ug/L l	E 03	14		L006982	07/08/2023 01:39	NT1407062359.D	JGR	
23F0541-05	MID 1	(20ug/kg solid or 0.2ug/L l	E 03	15		L006982	07/08/2023 02:16	NT1407062360.D	JGR	
23F0541-06	MID 2	(20ug/kg solid or 0.2ug/L l	E 03	16		L006982	07/08/2023 02:53	NT1407062361.D	JGR	
SLG0081-CCV1	Calibration Check	QC		17	L007249	L006982	07/08/2023 03:30	NT1407062362.D	JGR	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230706C.b

	Time	Filename	LabID	ClientId	DF																				
1	1249	NT1407062301D.D	SLG0081-TUN1		1	|NO ISTDS FOUND||																		
2	1623	NT1407062344ICV.D	SLG0081-ICV1		1	| 9.02	132670	||11.51	538082	||15.13	270232	||18.18	462568	||23.23	289075	||25.85	173349	||24.26	772331						
3	1700	NT1407062345.D	SLG0027-LCV7		1	| 9.02	132379	||11.51	524992	||15.13	261962	||18.18	453789	||23.23	267951	||25.85	156264	||24.25	695526						
4	1738	NT1407062346.D	SLG0081-LCV1		1	| 9.02	132771	||11.51	531300	||15.13	255269	||18.18	452490	||23.23	270873	||25.85	152641	||24.26	690231						
5	1815	NT1407062347.D	SIM-ICV1		1	| 9.02	134760	||11.51	534133	||15.13	264314	||18.18	459199	||23.23	278058	||25.85	153681	||24.25	697705						
6	1852	NT1407062348.D	SIM-LCV1		1	| 9.02	133699	||11.51	526210	||15.13	252020	||18.18	450162	||23.23	264906	||25.86	146295	||24.25	660292						
7	1929	NT1407062349.D	BLF0718-BS1		1	| 9.02	125480	||11.51	517040	||15.13	257075	||18.18	442300	||23.23	271916	||25.85	148740	||24.25	697972						
8	2007	NT1407062350.D	BLF0718-BLK1		1	| 9.02	135149	||11.51	541064	||15.13	260252	||18.18	460382	||23.23	260677	||25.85	132744	||24.25	677882						
9	2044	NT1407062351.D	BLF0718-BSD1		1	| 9.02	129351	||11.51	518517	||15.13	264024	||18.18	446947	||23.23	275220	||25.85	148466	||24.25	717845						
10	2121	NT1407062352.D	BLF0718-SRM1		1	| 9.01	131339	||11.51	520806	||15.13	261068	||18.18	460625	||23.23	270219	||25.85	150966	||24.25	692394						
11	2158	NT1407062353.D	BLF0718-MS1		1	| 9.02	126823	||11.51	513083	||15.13	258222	||18.18	463166	||23.25	281125	||25.86	156278	||24.26	699902						
12	2235	NT1407062354.D	BLF0718-MSD1		1	| 9.02	119407	||11.51	485249	||15.13	241194	||18.18	435108	||23.25	257852	||25.87	142401	||24.26	668324						
13	2311	NT1407062355.D	23F0536-01		1	| 9.01	121139	||11.51	488933	||15.13	243409	||18.19	435833	||23.25	263067	||25.86	138919	||24.26	650848						
14	2348	NT1407062356.D	23F0541-01		1	| 9.01	114810	||11.51	467345	||15.13	228641	||18.18	400756	||23.23	222810	||25.86	120759	||24.26	635916						
15	0025	NT1407062357.D	23F0541-02		1	| 9.01	115936	||11.51	467937	||15.13	229885	||18.18	395260	||23.23	225172	||25.86	119401	||24.27	653508						
16	0102	NT1407062358.D	23F0541-03		1	| 9.01	119417	||11.51	485405	||15.13	237977	||18.18	407344	||23.23	236888	||25.86	136792	||24.26	664871						
17	0139	NT1407062359.D	23F0541-04		1	| 9.01	118585	||11.51	475567	||15.13	233056	||18.17	401856	||23.23	226507	||25.86	124679	||24.26	658332						
18	0216	NT1407062360.D	23F0541-05		1	| 9.01	123743	||11.51	499750	||15.13	247391	||18.18	424497	||23.23	234951	||25.86	131096	||24.26	685907						
19	0253	NT1407062361.D	23F0541-06		1	| 9.01	122712	||11.51	489783	||15.13	243225	||18.18	418571	||23.23	237548	||25.86	129312	||24.26	695525						
20	0330	NT1407062362.D	SLG0081-CCV1		1	| 9.01	128317	||11.51	521608	||15.13	264368	||18.18	444520	||23.23	256248	||25.85	130885	||24.25	739220						

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt14.i\20230706C.b

Instrument: nt14.i Date: 06-JUL-2023

Time	Filename	LabID	DF	Manually Integrated Compounds
1249	NT1407062301D.D	SLG0081-TUN1	1	NO MANUAL INTEGRATION
1623	NT1407062344ICV.D	SLG0081-ICV1	1	NO MANUAL INTEGRATION
1700	NT1407062345.D	SLG0027-LCV7	1	2,4-Dinitrophenol, 4-Nitrophenol, Pentachlorophenol, Benzo(g,h,i)perylene,
1738	NT1407062346.D	SLG0081-LCV1	1	2,2'-oxybis(1-Chloropropane), Benzoic acid, 2,4,5-Trichlorophenol, 3-Nitroaniline, 4-Nitrophenol, Pentachlorop Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene,
1815	NT1407062347.D	SIM-ICV1	1	NO MANUAL INTEGRATION
1852	NT1407062348.D	SIM-LCV1	1	NO MANUAL INTEGRATION
1929	NT1407062349.D	BLF0718-BS1	1	NO MANUAL INTEGRATION
2007	NT1407062350.D	BLF0718-BLK1	1	NO MANUAL INTEGRATION
2044	NT1407062351.D	BLF0718-BSD1	1	NO MANUAL INTEGRATION
2121	NT1407062352.D	BLF0718-SRM1	1	NO MANUAL INTEGRATION
2158	NT1407062353.D	BLF0718-MS1	1	NO MANUAL INTEGRATION
2235	NT1407062354.D	BLF0718-MSD1	1	NO MANUAL INTEGRATION
2311	NT1407062355.D	23F0536-01	1	Anthracene, Dibenzo(a,h)anthracene,
2348	NT1407062356.D	23F0541-01	1	Benzoic acid, Benzo(b)fluoranthene, Benzo(k)fluoranthene,
0025	NT1407062357.D	23F0541-02	1	Benzo(k)fluoranthene, Total Benzofluoranthenes,
0102	NT1407062358.D	23F0541-03	1	Dibenzo(a,h)anthracene,
0139	NT1407062359.D	23F0541-04	1	Benzoic acid, Benzo(k)fluoranthene,

Instrument: nt14.i Date: 08-JUL-2023

Time	Filename	LabID	DF	Manually Integrated Compounds
0216	NT1407062360.D	23F0541-05	1	Carbazole, Benzo(k)fluoranthene, Indeno(1,2,3-cd)pyrene, Benzo(g,h,i)perylene,
0253	NT1407062361.D	23F0541-06	1	NO MANUAL INTEGRATION
0330	NT1407062362.D	SLG0081-CCV1	1	NO MANUAL INTEGRATION

Security Status Report

Date: 08-Jul-2023 11:34

NT1407062301D.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062344ICV.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062345.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062346.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062347.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062348.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062349.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062350.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062351.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062352.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062353.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062354.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062355.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062356.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062357.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062358.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062359.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062360.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062361.D	Data Locked	van, 08-Jul-2023 11:34
NT1407062362.D	Data Locked	van, 08-Jul-2023 11:34

Analytical Resources, LLC
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0194	Instrument:	NT17
		Calibration:	GG00040

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
MS Tune	SLG0194-TUN1	NT1707102301.D	NA	07/10/23 12:42
ABN 20	SLG0194-CAL7	NT1707102302.D	NA	07/10/23 12:59
ABN 10	SLG0194-CAL6	NT1707102303.D	NA	07/10/23 13:37
ABN 5	SLG0194-CAL5	NT1707102304.D	NA	07/10/23 14:14
ABN 2.5	SLG0194-CAL4	NT1707102305.D	NA	07/10/23 14:52
ABN 1.0	SLG0194-CAL3	NT1707102306.D	NA	07/10/23 15:29
ABN 0.5	SLG0194-CAL2	NT1707102307.D	NA	07/10/23 16:07
ABN 0.2	SLG0194-CAL1	NT1707102308.D	NA	07/10/23 16:44
Initial Cal Blank	SLG0194-ICB1	NT1707102311.D	NA	07/10/23 18:37
SCV 5.0	SLG0194-SCV1	NT1707102312.D	NA	07/10/23 19:15

ANALYSIS SEQUENCE

SLG0194

Instrument ID: NT17
Calibration ID: GG00040
MS EM Level: EV

GCMS Description: Agilent 7890B/5977B
GCMS Column ID: ZB-5MS

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Analyzed	File ID	Analyst	Comments
SLG0194-TUN1	MS Tune	QC		1	L005045	L006982	07/10/2023 12:42	NT1707102301.D	JGR	
SLG0194-CAL7	ABN 20	QC		2	L007247	L006982	07/10/2023 12:59	NT1707102302.D	JGR	
SLG0194-CAL6	ABN 10	QC		3	L007248	L006982	07/10/2023 13:37	NT1707102303.D	JGR	
SLG0194-CAL5	ABN 5	QC		4	L007249	L006982	07/10/2023 14:14	NT1707102304.D	JGR	
SLG0194-CAL4	ABN 2.5	QC		5	L007250	L006982	07/10/2023 14:52	NT1707102305.D	JGR	
SLG0194-CAL3	ABN 1.0	QC		6	L007251	L006982	07/10/2023 15:29	NT1707102306.D	JGR	
SLG0194-CAL2	ABN 0.5	QC		7	L007252	L006982	07/10/2023 16:07	NT1707102307.D	JGR	
SLG0194-CAL1	ABN 0.2	QC		8	L007253	L006982	07/10/2023 16:44	NT1707102308.D	JGR	
SLG0194-ICB1	Initial Cal Blank	QC		9	L006701	L006982	07/10/2023 18:37	NT1707102311.D	JGR	
SLG0194-SCV1	SCV 5.0	QC		10	L006700	L006982	07/10/2023 19:15	NT1707102312.D	JGR	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem3\nt17.i\20230710.b

	Time	Filename	LabID	ClientId	DF													
1	1242	NT1707102301.D	SEQ-TUN1		1	|NO ISTDS FOUND||												
2	1259	NT1707102302.D	SEQ-CAL7		1	| 8.61	280842||	11.05	1044672||	14.61	516529||	17.60	808054||	22.65	498295||	25.04	493387||	23.71	1020642|
3	1337	NT1707102303.D	SEQ-CAL6		1	| 8.61	291539||	11.05	1108429||	14.59	562528||	17.59	863738||	22.65	536389||	25.04	510402||	23.71	1052606|
4	1414	NT1707102304.D	SEQ-CAL5		1	| 8.61	288953||	11.04	1098716||	14.60	552014||	17.59	884794||	22.64	564549||	25.04	526075||	23.71	1047332|
5	1452	NT1707102305.D	SEQ-CAL4		1	| 8.61	311675||	11.04	1177840||	14.59	587752||	17.59	925305||	22.64	592213||	25.04	555496||	23.71	1044124|
6	1529	NT1707102306.D	SEQ-CAL3		1	| 8.61	318121||	11.04	1202782||	14.59	591035||	17.59	969314||	22.64	602183||	25.04	565972||	23.71	974988|
7	1607	NT1707102307.D	SEQ-CAL2		1	| 8.61	354338||	11.04	1188942||	14.60	595679||	17.59	962353||	22.64	623665||	25.04	567281||	23.71	929701|
8	1644	NT1707102308.D	SEQ-CAL1		1	| 8.61	326889||	11.04	1222249||	14.60	584532||	17.59	957323||	22.64	628595||	25.04	587080||	23.71	903250|
9	1722	NT1707102309.D	SEQ-SIM2		1	| 8.61	346758||	11.04	1159049||	14.59	545614||	17.59	873619||	22.64	552057||	25.04	541713||	23.71	756270|
10	1800	NT1707102310.D	SEQ-SIM1		1	| 8.61	337642||	11.04	1221231||	14.60	521748||	17.59	822486||	22.64	529772||	25.04	521005||	23.71	724790|
11	1837	NT1707102311.D	SEQ-ICB1		1	| 8.61	357755||	11.04	1320796||	14.60	564896||	17.59	906550||	22.64	593878||	25.04	596393||	23.71	850240|
12	1915	NT1707102312.D	SEQ-SCV1		1	| 8.61	273909||	11.04	1035709||	14.59	521998||	17.59	856143||	22.64	580475||	25.04	571758||	23.71	1040512|

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt17.i\20230710.b

ARI Job No.: SEQ- Method: DFTPP8270E.m Instrument: nt17.i Date: 10-JUL-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1242	NT1707102301.D	SEQ-TUN1		1	NO MANUAL INTEGRATION
1259	NT1707102302.D	SEQ-CAL7		1	Benzoic acid, Benzo(g,h,i)perylene,
1337	NT1707102303.D	SEQ-CAL6		1	NO MANUAL INTEGRATION
1414	NT1707102304.D	SEQ-CAL5		1	Benzoic acid,
1452	NT1707102305.D	SEQ-CAL4		1	Benzoic acid,
1529	NT1707102306.D	SEQ-CAL3		1	Bis(2-Chloroethyl)ether, Benzoic acid, 3-Nitroaniline, 4-Nitrophenol, Benzo(k)fluoranthene, Benzidine, 2-Fluorophenol,
1607	NT1707102307.D	SEQ-CAL2		1	Phenol, Benzyl alcohol, Benzoic acid, 2,4-Dinitrophenol, 4-Nitrophenol, Benzidine, 2-Fluorophenol,
1644	NT1707102308.D	SEQ-CAL1		1	Phenol, Bis(2-Chloroethyl)ether, 2-Nitrophenol, 2,4-Dichlorophenol, 2,4,5-Trichlorophenol, 2,4-Dinitrophenol, 4-Nitroaniline, Benzo(k)fluoranthene, N-Nitrosodimethylamine, Benzidine, Pyridine, Total Benzofluoranthenes, 2-Fluorophenol, Phenol-d5,
1722	NT1707102309.D	SEQ-SIM2		1	NO MANUAL INTEGRATION
1800	NT1707102310.D	SEQ-SIM1		1	NO MANUAL INTEGRATION
1837	NT1707102311.D	SEQ-ICB1		1	NO MANUAL INTEGRATION
1915	NT1707102312.D	SEQ-SCV1		1	NO MANUAL INTEGRATION

Security Status Report

Date: 21-Jul-2023 07:03

NT1707102301.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102302.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102303.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102304.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102305.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102306.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102307.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102308.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102309.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102310.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102311.D	Data Locked	jrains, 21-Jul-2023 06:58
NT1707102312.D	Data Locked	jrains, 21-Jul-2023 06:58

Analytical Resources, LLC
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0263	Instrument:	NT17
		Calibration:	GG00040

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
MS Tune	SLG0263-TUN1	NT1707202301.D	NA	07/21/23 01:04
Initial Cal Check	SLG0263-ICV1	NT1707202302.D	NA	07/21/23 01:21
ABN 0.5	SLG0263-LCV1	NT1707202304.D	NA	07/21/23 02:35
Instrument Blank	SLG0263-IBL1	NT1707202305.D	NA	07/21/23 03:12
LDW20-SC148A	23F0536-01RE1	NT1707202306.D	Solid	07/21/23 03:49
Calibration Check	SLG0263-CCV1	NT1707202307.D	NA	07/21/23 04:26

Analytical Resources, LLC
Analytical Chemists and Consultants

ANALYSIS SEQUENCE

SLG0263

Instrument: NT17
Calibration ID: GG00040

Printed: 7/21/2023 1:56:58PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLG0263-TUN1	QC		1		L005516	L006982		
SLG0263-ICV1	QC		2		L005516	K010834		
SLG0263-LCV1	QC		3		L007252	L006982		
SLG0263-IBL1	QC		4		L006701	L006982		
23F0536-01RE1	(20ug/kg solid or 0.2ug/L lo	A 02	5				Anchor QEA, LLC	Added 7/8/2023 by VTS
SLG0263-CCV1	QC		6		L005516	K010834		

Samples Loaded By Date

Data Processed By Date

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem3\nt17.i\20230720.b

	Time	Filename	LabID	ClientId	DF							
1	0104	NT1707202301.D	SLG0263-TUN1		1	NO ISTDS FOUND						
2	0121	NT1707202302.D	SLG0263-ICV1		1	8.53 169554	10.96 681387	14.52 390289	17.51 698326	22.58 446763	24.95 323620	23.65 703373
3	0158	NT1707202303.D			1	8.53 210146	10.96 721558	14.52 335657	17.51 662160	22.58 397364	24.95 321258	23.65 553849
4	0235	NT1707202304.D	SLG0263-LCV1		1	8.53 199631	10.96 778397	14.52 413692	17.51 776079	22.58 493050	24.95 369077	23.65 698947
5	0312	NT1707202305.D	SLG0263-IBL1		1	8.53 176426	10.96 741283	14.52 393866	17.51 705030	22.58 441116	24.95 318658	23.65 642498
6	0349	NT1707202306.D	23F0536-01RE1		10	8.53 177780	10.96 642061	14.52 317525	17.51 636920	22.58 293987	24.95 250752	23.65 508545
7	0426	NT1707202307.D	SLG0263-CCV1		1	8.53 159870	10.96 643466	14.52 359008	17.51 640861	22.58 400801	24.95 297837	23.65 656611

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt17.i\20230720.b

ARI Job No.: SLG0 Method: DFTPP8270E.m Instrument: nt17.i Date: 21-JUL-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0104	NT1707202301.D	SLG0263-TUN1		1	NO MANUAL INTEGRATION
0121	NT1707202302.D	SLG0263-ICV1		1	2,4-Dimethylphenol, Benzoic acid, Benzo(g,h,i)perylene,
0158	NT1707202303.D			1	2-Fluorophenol,
0235	NT1707202304.D	SLG0263-LCV1		1	Benzoic acid,
0312	NT1707202305.D	SLG0263-IBL1		1	NO MANUAL INTEGRATION
0349	NT1707202306.D	23F0536-01RE1		10	Anthracene, 2-Fluorophenol,
0426	NT1707202307.D	SLG0263-CCV1		1	NO MANUAL INTEGRATION

Security Status Report

Date: 21-Jul-2023 14:10

NT1707202301.D	Data Locked	yev, 21-
NT1707202302.D	Data Locked	yev, 21-
NT1707202303.D	Data Locked	yev, 21-
NT1707202304.D	Data Locked	yev, 21-
NT1707202305.D	Data Locked	yev, 21-
NT1707202306.D	Data Locked	yev, 21-
NT1707202307.D	Data Locked	yev, 21-

SURROGATE RECOVERY AND RT SUMMARY
EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG/WO:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLF0467	Instrument:	NT14
Calibration:	GF00097	Calibration Date:	06/28/2023

Surrogate Compound	Spike Level ug/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SLF0467-SCV1 (Solid)			Lab File ID: NT1406282311.D			Analyzed: 06/28/23 23:38		
1,2-Dichlorobenzene-d4	5.0000		80 - 120		9.367286	-9.3673	N/A	
Nitrobenzene-d5	5.0000		80 - 120		10.10586	-10.1059	N/A	
2-Fluorobiphenyl	5.0000		80 - 120		13.73029	-13.7303	N/A	
p-Terphenyl-d14	5.0000	0.283	80 - 120	21.319	21.32129	-0.0023	N/A	
SLF0467-ICB1 (Solid)			Lab File ID: NT1406282312.D			Analyzed: 06/29/23 00:15		
1,2-Dichlorobenzene-d4	5.0000	102	32 - 120	9.365	9.367286	-0.0023	N/A	
Nitrobenzene-d5	5.0000	105	30 - 120	10.102	10.10586	-0.0039	N/A	
2-Fluorobiphenyl	5.0000	102	35 - 120	13.726	13.73029	-0.0043	N/A	
p-Terphenyl-d14	5.0000	112	37 - 120	21.319	21.32129	-0.0023	N/A	

SURROGATE RECOVERY AND RT SUMMARY
EPA 8270E

Laboratory: Analytical Resources, LLC
SDG/WO: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLG0081
Instrument: NT14
Calibration: GF00097
Calibration Date: 06/28/2023

Surrogate Compound	Spike Level ug/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SLG0081-ICV1 (Solid)			Lab File ID: NT1407062344ICV.D				Analyzed: 07/07/23 16:23	
1,2-Dichlorobenzene-d4	5.0000	103	80 - 120	9.373	9.367286	0.0057	N/A	
Nitrobenzene-d5	5.0000	104	80 - 120	10.11	10.10586	0.0041	N/A	
2-Fluorobiphenyl	5.0000	104	80 - 120	13.733	13.73029	0.0027	N/A	
p-Terphenyl-d14	5.0000	116	80 - 120	21.327	21.32129	0.0057	N/A	
SLG0081-LCV2 (Solid)			Lab File ID: NT1407062346.D				Analyzed: 07/07/23 17:38	
1,2-Dichlorobenzene-d4	0.20000	102	50 - 150	9.373	9.367286	0.0057	N/A	
Nitrobenzene-d5	0.20000	96.6	50 - 150	10.118	10.10586	0.0121	N/A	
2-Fluorobiphenyl	0.20000	106	50 - 150	13.733	13.73029	0.0027	N/A	
p-Terphenyl-d14	0.20000	121	50 - 150	21.335	21.32129	0.0137	N/A	
BLF0718-BS1 (Solid)			Lab File ID: NT1407062349.D				Analyzed: 07/07/23 19:29	
1,2-Dichlorobenzene-d4	500.00	73.9	32 - 120	9.373	9.367286	0.0057	N/A	
Nitrobenzene-d5	500.00	78.3	30 - 120	10.11	10.10586	0.0041	N/A	
2-Fluorobiphenyl	500.00	83.7	35 - 120	13.733	13.73029	0.0027	N/A	
p-Terphenyl-d14	500.00	108	37 - 120	21.327	21.32129	0.0057	N/A	
BLF0718-BLK1 (Solid)			Lab File ID: NT1407062350.D				Analyzed: 07/07/23 20:07	
1,2-Dichlorobenzene-d4	500.00	56.8	32 - 120	9.373	9.367286	0.0057	N/A	
Nitrobenzene-d5	500.00	60.0	30 - 120	10.11	10.10586	0.0041	N/A	
2-Fluorobiphenyl	500.00	61.2	35 - 120	13.733	13.73029	0.0027	N/A	
p-Terphenyl-d14	500.00	98.9	37 - 120	21.327	21.32129	0.0057	N/A	
BLF0718-BSD1 (Solid)			Lab File ID: NT1407062351.D				Analyzed: 07/07/23 20:44	
1,2-Dichlorobenzene-d4	500.00	69.7	32 - 120	9.373	9.367286	0.0057	N/A	
Nitrobenzene-d5	500.00	75.8	30 - 120	10.11	10.10586	0.0041	N/A	
2-Fluorobiphenyl	500.00	78.8	35 - 120	13.733	13.73029	0.0027	N/A	
p-Terphenyl-d14	500.00	103	37 - 120	21.327	21.32129	0.0057	N/A	
BLF0718-SRM1 (Solid)			Lab File ID: NT1407062352.D				Analyzed: 07/07/23 21:21	
1,2-Dichlorobenzene-d4	5000.0	71.0	32 - 120	9.373	9.367286	0.0057	N/A	
Nitrobenzene-d5	5000.0	77.9	30 - 120	10.103	10.10586	-0.0029	N/A	
2-Fluorobiphenyl	5000.0	80.9	35 - 120	13.734	13.73029	0.0037	N/A	
p-Terphenyl-d14	5000.0	105	37 - 120	21.327	21.32129	0.0057	N/A	

SURROGATE RECOVERY AND RT SUMMARY
EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG/WO:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0081	Instrument:	NT14
Calibration:	GF00097	Calibration Date:	06/28/2023

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
BLF0718-MS1 (Solid)			Lab File ID: NT1407062353.D				Analyzed: 07/07/23 21:58	
1,2-Dichlorobenzene-d4	500.02	69.0	32 - 120	9.373	9.367286	0.0057	N/A	
Nitrobenzene-d5	500.02	77.3	30 - 120	10.11	10.10586	0.0041	N/A	
2-Fluorobiphenyl	500.02	82.7	35 - 120	13.733	13.73029	0.0027	N/A	
p-Terphenyl-d14	500.02	96.3	37 - 120	21.342	21.32129	0.0207	N/A	
BLF0718-MSD1 (Solid)			Lab File ID: NT1407062354.D				Analyzed: 07/07/23 22:35	
1,2-Dichlorobenzene-d4	500.02	67.9	32 - 120	9.373	9.367286	0.0057	N/A	
Nitrobenzene-d5	500.02	78.2	30 - 120	10.102	10.10586	-0.0039	N/A	
2-Fluorobiphenyl	500.02	84.8	35 - 120	13.733	13.73029	0.0027	N/A	
p-Terphenyl-d14	500.02	99.2	37 - 120	21.342	21.32129	0.0207	N/A	
23F0536-01 (Solid)			Lab File ID: NT1407062355.D				Analyzed: 07/07/23 23:11	
1,2-Dichlorobenzene-d4	498.47	66.5	32 - 120	9.373	9.367286	0.0057	N/A	
Nitrobenzene-d5	498.47	79.8	30 - 120	10.102	10.10586	-0.0039	N/A	
2-Fluorobiphenyl	498.47	81.0	35 - 120	13.733	13.73029	0.0027	N/A	
p-Terphenyl-d14	498.47	93.7	37 - 120	21.343	21.32129	0.0217	N/A	
SLG0081-CCV1 (Solid)			Lab File ID: NT1407062362.D				Analyzed: 07/08/23 03:30	
1,2-Dichlorobenzene-d4	5.0000	103	50 - 150	9.373	9.367286	0.0057	N/A	
Nitrobenzene-d5	5.0000	106	50 - 150	10.11	10.10586	0.0041	N/A	
2-Fluorobiphenyl	5.0000	104	50 - 150	13.734	13.73029	0.0037	N/A	
p-Terphenyl-d14	5.0000	126	50 - 150	21.327	21.32129	0.0057	N/A	

SURROGATE RECOVERY AND RT SUMMARY
EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG/WO:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0194	Instrument:	NT17
Calibration:	GG00040	Calibration Date:	07/10/2023

Surrogate Compound	Spike Level ug/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SLG0194-ICB1 (Solid)			Lab File ID: NT1707102311.D			Analyzed: 07/10/23 18:37		
1,2-Dichlorobenzene-d4	5.0000		32 - 120		8.964286	-8.9643	N/A	
Nitrobenzene-d5	5.0000		30 - 120		9.692286	-9.6923	N/A	
2-Fluorobiphenyl	5.0000		35 - 120		13.24286	-13.2429	N/A	
p-Terphenyl-d14	5.0000		37 - 120		20.76386	-20.7639	N/A	
SLG0194-SCV1 (Solid)			Lab File ID: NT1707102312.D			Analyzed: 07/10/23 19:15		
1,2-Dichlorobenzene-d4	5.0000	99.5	80 - 120	8.955	8.964286	-0.0093	N/A	
Nitrobenzene-d5	5.0000	102	80 - 120	9.683	9.692286	-0.0093	N/A	
2-Fluorobiphenyl	5.0000	95.2	80 - 120	13.23	13.24286	-0.0129	N/A	
p-Terphenyl-d14	5.0000	92.6	80 - 120	20.751	20.76386	-0.0129	N/A	

SURROGATE RECOVERY AND RT SUMMARY
EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG/WO:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0263	Instrument:	NT17
Calibration:	GG00040	Calibration Date:	07/10/2023

Surrogate Compound	Spike Level ug/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SLG0263-ICV1 (Solid)			Lab File ID: NT1707202302.D			Analyzed: 07/21/23 01:21		
1,2-Dichlorobenzene-d4	5.0000	98.8	80 - 120	8.879	8.964286	-0.0853	N/A	
Nitrobenzene-d5	5.0000	109	80 - 120	9.607	9.692286	-0.0853	N/A	
2-Fluorobiphenyl	5.0000	93.1	80 - 120	13.153	13.24286	-0.0899	N/A	
p-Terphenyl-d14	5.0000	101	80 - 120	20.687	20.76386	-0.0769	N/A	
SLG0263-LCV1 (Solid)			Lab File ID: NT1707202304.D			Analyzed: 07/21/23 02:35		
1,2-Dichlorobenzene-d4	0.50000	99.9	50 - 150	8.891	8.964286	-0.0733	N/A	
Nitrobenzene-d5	0.50000	96.4	50 - 150	9.632	9.692286	-0.0603	N/A	
2-Fluorobiphenyl	0.50000	91.6	50 - 150	13.166	13.24286	-0.0769	N/A	
p-Terphenyl-d14	0.50000	96.9	50 - 150	20.687	20.76386	-0.0769	N/A	
SLG0263-IBL1 (Solid)			Lab File ID: NT1707202305.D			Analyzed: 07/21/23 03:12		
1,2-Dichlorobenzene-d4	5.0000	56.7	32 - 120	8.879	8.964286	-0.0853	N/A	
Nitrobenzene-d5	5.0000	66.7	30 - 120	9.607	9.692286	-0.0853	N/A	
2-Fluorobiphenyl	5.0000	58.7	35 - 120	13.153	13.24286	-0.0899	N/A	
p-Terphenyl-d14	5.0000	87.2	37 - 120	20.687	20.76386	-0.0769	N/A	
23F0536-01RE1 (Solid)			Lab File ID: NT1707202306.D			Analyzed: 07/21/23 03:49		
1,2-Dichlorobenzene-d4	498.47	64.7	32 - 120	8.891	8.964286	-0.0733	N/A	
Nitrobenzene-d5	498.47	62.1	30 - 120	9.645	9.692286	-0.0473	N/A	
2-Fluorobiphenyl	498.47	94.6	35 - 120	13.166	13.24286	-0.0769	N/A	
p-Terphenyl-d14	498.47	118	37 - 120	20.687	20.76386	-0.0769	N/A	
SLG0263-CCV1 (Solid)			Lab File ID: NT1707202307.D			Analyzed: 07/21/23 04:26		
1,2-Dichlorobenzene-d4	5.0000	99.4	50 - 150	8.878	8.964286	-0.0863	N/A	
Nitrobenzene-d5	5.0000	111	50 - 150	9.607	9.692286	-0.0853	N/A	
2-Fluorobiphenyl	5.0000	94.7	50 - 150	13.153	13.24286	-0.0899	N/A	
p-Terphenyl-d14	5.0000	105	50 - 150	20.687	20.76386	-0.0769	N/A	

Analytical Resources, LLC
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLF0467	Instrument:	NT14
		Calibration:	GF00097

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Secondary Cal Check (SLF0467-SCV1)		(Solid)		Lab File ID: NT1406282311.D				Analyzed: 06/28/23 23:38	
1,4-Dichlorobenzene-d4	128354	9	125577	9.008	102	50 - 200	-0.008	+/-0.50	
Naphthalene-d8	519660	11.498	506794	11.505	103	50 - 200	-0.007	+/-0.50	
Acenaphthene-d10	249651	15.126	245145	15.134	102	50 - 200	-0.008	+/-0.50	
Phenanthrene-d10	419362	18.17	414056	18.171	101	50 - 200	-0.001	+/-0.50	
Chrysene-d12	287830	23.224	285887	23.232	101	50 - 200	-0.008	+/-0.50	
Di-n-Octylphthalate-d4	491823	24.254	487823	24.254	101	50 - 200	0.000	+/-0.50	
Perylene-d12	243501	25.833	242117	25.841	101	50 - 200	-0.008	+/-0.50	
Initial Cal Blank (SLF0467-ICB1)		(Solid)		Lab File ID: NT1406282312.D				Analyzed: 06/29/23 00:15	
1,4-Dichlorobenzene-d4	132893	9	125577	9.008	106	50 - 200	-0.008	+/-0.50	
Naphthalene-d8	531076	11.498	506794	11.505	105	50 - 200	-0.007	+/-0.50	
Acenaphthene-d10	248410	15.126	245145	15.134	101	50 - 200	-0.008	+/-0.50	
Phenanthrene-d10	420605	18.17	414056	18.171	102	50 - 200	-0.001	+/-0.50	
Chrysene-d12	260535	23.224	285887	23.232	91	50 - 200	-0.008	+/-0.50	
Di-n-Octylphthalate-d4	368725	24.254	487823	24.254	76	50 - 200	0.000	+/-0.50	
Perylene-d12	224674	25.833	242117	25.841	93	50 - 200	-0.008	+/-0.50	

Analytical Resources, LLC
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0081	Instrument:	NT14
		Calibration:	GF00097

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Check (SLG0081-ICV1)		(Solid)	Lab File ID: NT1407062344ICV.D				Analyzed: 07/07/23 16:23		
1,4-Dichlorobenzene-d4	132670	9.016	132670	9.016	100	50 - 200	0.000	+/-0.50	
Naphthalene-d8	538082	11.505	538082	11.505	100	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	270232	15.134	270232	15.134	100	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	462568	18.178	462568	18.178	100	50 - 200	0.000	+/-0.50	
Chrysene-d12	289075	23.232	289075	23.232	100	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	772331	24.262	772331	24.262	100	50 - 200	0.000	+/-0.50	
Perylene-d12	173349	25.849	173349	25.849	100	50 - 200	0.000	+/-0.50	
Low Cal Check (SLG0081-LCV2)		(Solid)	Lab File ID: NT1407062346.D				Analyzed: 07/07/23 17:38		
1,4-Dichlorobenzene-d4	132771	9.016	132670	9.016	100	50 - 200	0.000	+/-0.50	
Naphthalene-d8	531300	11.505	538082	11.505	99	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	255269	15.134	270232	15.134	94	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	452490	18.178	462568	18.178	98	50 - 200	0.000	+/-0.50	
Chrysene-d12	270873	23.232	289075	23.232	94	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	690231	24.261	772331	24.262	89	50 - 200	-0.001	+/-0.50	
Perylene-d12	152641	25.849	173349	25.849	88	50 - 200	0.000	+/-0.50	
LCS (BLF0718-BS1)		(Solid)	Lab File ID: NT1407062349.D				Analyzed: 07/07/23 19:29		
1,4-Dichlorobenzene-d4	125480	9.016	132670	9.016	95	50 - 200	0.000	+/-0.50	
Naphthalene-d8	517040	11.505	538082	11.505	96	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	257075	15.134	270232	15.134	95	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	442300	18.178	462568	18.178	96	50 - 200	0.000	+/-0.50	
Chrysene-d12	271916	23.232	289075	23.232	94	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	697972	24.254	772331	24.262	90	50 - 200	-0.008	+/-0.50	
Perylene-d12	148740	25.849	173349	25.849	86	50 - 200	0.000	+/-0.50	
Blank (BLF0718-BLK1)		(Solid)	Lab File ID: NT1407062350.D				Analyzed: 07/07/23 20:07		
1,4-Dichlorobenzene-d4	135149	9.016	132670	9.016	102	50 - 200	0.000	+/-0.50	
Naphthalene-d8	541064	11.505	538082	11.505	101	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	260252	15.134	270232	15.134	96	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	460382	18.178	462568	18.178	100	50 - 200	0.000	+/-0.50	
Chrysene-d12	260677	23.232	289075	23.232	90	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	677882	24.254	772331	24.262	88	50 - 200	-0.008	+/-0.50	
Perylene-d12	132744	25.848	173349	25.849	77	50 - 200	-0.001	+/-0.50	

Analytical Resources, LLC
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0081	Instrument:	NT14
		Calibration:	GF00097

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (BLF0718-BSD1)		(Solid)	Lab File ID: NT1407062351.D				Analyzed: 07/07/23 20:44		
1,4-Dichlorobenzene-d4	129351	9.016	132670	9.016	97	50 - 200	0.000	+/-0.50	
Naphthalene-d8	518517	11.505	538082	11.505	96	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	264024	15.134	270232	15.134	98	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	446947	18.178	462568	18.178	97	50 - 200	0.000	+/-0.50	
Chrysene-d12	275220	23.232	289075	23.232	95	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	717845	24.254	772331	24.262	93	50 - 200	-0.008	+/-0.50	
Perylene-d12	148466	25.849	173349	25.849	86	50 - 200	0.000	+/-0.50	
Reference (BLF0718-SRM1)		(Solid)	Lab File ID: NT1407062352.D				Analyzed: 07/07/23 21:21		
1,4-Dichlorobenzene-d4	131339	9.008	132670	9.016	99	50 - 200	-0.008	+/-0.50	
Naphthalene-d8	520806	11.505	538082	11.505	97	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	261068	15.127	270232	15.134	97	50 - 200	-0.007	+/-0.50	
Phenanthrene-d10	460625	18.178	462568	18.178	100	50 - 200	0.000	+/-0.50	
Chrysene-d12	270219	23.232	289075	23.232	93	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	692394	24.254	772331	24.262	90	50 - 200	-0.008	+/-0.50	
Perylene-d12	150966	25.849	173349	25.849	87	50 - 200	0.000	+/-0.50	
Matrix Spike (BLF0718-MS1)		(Solid)	Lab File ID: NT1407062353.D				Analyzed: 07/07/23 21:58		
1,4-Dichlorobenzene-d4	126823	9.016	132670	9.016	96	50 - 200	0.000	+/-0.50	
Naphthalene-d8	513083	11.505	538082	11.505	95	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	258222	15.134	270232	15.134	96	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	463166	18.178	462568	18.178	100	50 - 200	0.000	+/-0.50	
Chrysene-d12	281125	23.247	289075	23.232	97	50 - 200	0.015	+/-0.50	
Di-n-Octylphthalate-d4	699902	24.261	772331	24.262	91	50 - 200	-0.001	+/-0.50	
Perylene-d12	156278	25.864	173349	25.849	90	50 - 200	0.015	+/-0.50	
Matrix Spike Dup (BLF0718-MSD1)		(Solid)	Lab File ID: NT1407062354.D				Analyzed: 07/07/23 22:35		
1,4-Dichlorobenzene-d4	119407	9.016	132670	9.016	90	50 - 200	0.000	+/-0.50	
Naphthalene-d8	485249	11.505	538082	11.505	90	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	241194	15.134	270232	15.134	89	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	435108	18.178	462568	18.178	94	50 - 200	0.000	+/-0.50	
Chrysene-d12	257852	23.247	289075	23.232	89	50 - 200	0.015	+/-0.50	
Di-n-Octylphthalate-d4	668324	24.261	772331	24.262	87	50 - 200	-0.001	+/-0.50	
Perylene-d12	142401	25.872	173349	25.849	82	50 - 200	0.023	+/-0.50	

Analytical Resources, LLC
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0081	Instrument:	NT14
		Calibration:	GF00097

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LDW20-SC148A (23F0536-01)		(Solid)		Lab File ID: NT1407062355.D				Analyzed: 07/07/23 23:11	
1,4-Dichlorobenzene-d4	121139	9.008	132670	9.016	91	50 - 200	-0.008	+/-0.50	
Naphthalene-d8	488933	11.505	538082	11.505	91	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	243409	15.134	270232	15.134	90	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	435833	18.186	462568	18.178	94	50 - 200	0.008	+/-0.50	
Chrysene-d12	263067	23.247	289075	23.232	91	50 - 200	0.015	+/-0.50	
Di-n-Octylphthalate-d4	650848	24.261	772331	24.262	84	50 - 200	-0.001	+/-0.50	
Perylene-d12	138919	25.864	173349	25.849	80	50 - 200	0.015	+/-0.50	
Calibration Check (SLG0081-CCV1)		(Solid)		Lab File ID: NT1407062362.D				Analyzed: 07/08/23 03:30	
1,4-Dichlorobenzene-d4	128317	9.008	132670	9.016	97	50 - 200	-0.008	+/-0.50	
Acenaphthene-d10	264368	15.134	270232	15.134	98	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	444520	18.178	462568	18.178	96	50 - 200	0.000	+/-0.50	
Chrysene-d12	256248	23.232	289075	23.232	89	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	739220	24.254	772331	24.262	96	50 - 200	-0.008	+/-0.50	
Perylene-d12	130885	25.849	173349	25.849	76	50 - 200	0.000	+/-0.50	

Analytical Resources, LLC
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0194	Instrument:	NT17
		Calibration:	GG00040

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Blank (SLG0194-ICB1)		(Solid)		Lab File ID: NT1707102311.D				Analyzed: 07/10/23 18:37	
1,4-Dichlorobenzene-d4	357755	8.61	288953	8.61	124	50 - 200	0.000	+/-0.50	
Naphthalene-d8	1320796	11.037	1098716	11.037	120	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	564896	14.595	552014	14.595	102	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	906550	17.589	884794	17.588	102	50 - 200	0.001	+/-0.50	
Chrysene-d12	593878	22.639	564549	22.639	105	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	850240	23.711	1047332	23.711	81	50 - 200	0.000	+/-0.50	
Perylene-d12	596393	25.037	526075	25.037	113	50 - 200	0.000	+/-0.50	
Secondary Cal Check (SLG0194-SCV1)		(Solid)		Lab File ID: NT1707102312.D				Analyzed: 07/10/23 19:15	
1,4-Dichlorobenzene-d4	273909	8.61	288953	8.61	95	50 - 200	0.000	+/-0.50	
Naphthalene-d8	1035709	11.037	1098716	11.037	94	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	521998	14.594	552014	14.595	95	50 - 200	-0.001	+/-0.50	
Phenanthrene-d10	856143	17.588	884794	17.588	97	50 - 200	0.000	+/-0.50	
Chrysene-d12	580475	22.639	564549	22.639	103	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	1040512	23.71	1047332	23.711	99	50 - 200	-0.001	+/-0.50	
Perylene-d12	571758	25.037	526075	25.037	109	50 - 200	0.000	+/-0.50	

Analytical Resources, LLC
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0263	Instrument:	NT17
		Calibration:	GG00040

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Check (SLG0263-ICV1)		(Solid)		Lab File ID: NT1707202302.D				Analyzed: 07/21/23 01:21	
1,4-Dichlorobenzene-d4	169554	8.534	169554	8.534	100	50 - 200	0.000	+/-0.50	
Naphthalene-d8	681387	10.96	681387	10.96	100	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	390289	14.518	390289	14.518	100	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	698326	17.512	698326	17.512	100	50 - 200	0.000	+/-0.50	
Chrysene-d12	446763	22.575	446763	22.575	100	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	703373	23.647	703373	23.647	100	50 - 200	0.000	+/-0.50	
Perylene-d12	323620	24.948	323620	24.948	100	50 - 200	0.000	+/-0.50	
Low Cal Check (SLG0263-LCV1)		(Solid)		Lab File ID: NT1707202304.D				Analyzed: 07/21/23 02:35	
1,4-Dichlorobenzene-d4	199631	8.534	169554	8.534	118	50 - 200	0.000	+/-0.50	
Naphthalene-d8	778397	10.96	681387	10.96	114	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	413692	14.518	390289	14.518	106	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	776079	17.512	698326	17.512	111	50 - 200	0.000	+/-0.50	
Chrysene-d12	493050	22.575	446763	22.575	110	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	698947	23.647	703373	23.647	99	50 - 200	0.000	+/-0.50	
Perylene-d12	369077	24.948	323620	24.948	114	50 - 200	0.000	+/-0.50	
Instrument Blank (SLG0263-IBL1)		(Solid)		Lab File ID: NT1707202305.D				Analyzed: 07/21/23 03:12	
1,4-Dichlorobenzene-d4	176426	8.534	169554	8.534	104	50 - 200	0.000	+/-0.50	
Naphthalene-d8	741283	10.96	681387	10.96	109	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	393866	14.518	390289	14.518	101	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	705030	17.512	698326	17.512	101	50 - 200	0.000	+/-0.50	
Chrysene-d12	441116	22.575	446763	22.575	99	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	642498	23.647	703373	23.647	91	50 - 200	0.000	+/-0.50	
Perylene-d12	318658	24.948	323620	24.948	98	50 - 200	0.000	+/-0.50	
LDW20-SC148A (23F0536-01RE1)		(Solid)		Lab File ID: NT1707202306.D				Analyzed: 07/21/23 03:49	
1,4-Dichlorobenzene-d4	177780	8.534	169554	8.534	105	50 - 200	0.000	+/-0.50	
Naphthalene-d8	642061	10.96	681387	10.96	94	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	317525	14.518	390289	14.518	81	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	636920	17.512	698326	17.512	91	50 - 200	0.000	+/-0.50	
Chrysene-d12	293987	22.575	446763	22.575	66	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	508545	23.647	703373	23.647	72	50 - 200	0.000	+/-0.50	
Perylene-d12	250752	24.948	323620	24.948	77	50 - 200	0.000	+/-0.50	

Analytical Resources, LLC
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8270E

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0263	Instrument:	NT17
		Calibration:	GG00040

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (SLG0263-CCV1)		(Solid)		Lab File ID: NT1707202307.D				Analyzed: 07/21/23 04:26	
1,4-Dichlorobenzene-d4	159870	8.534	169554	8.534	94	50 - 200	0.000	+/-0.50	
Naphthalene-d8	643466	10.96	681387	10.96	94	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	359008	14.518	390289	14.518	92	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	640861	17.512	698326	17.512	92	50 - 200	0.000	+/-0.50	
Chrysene-d12	400801	22.575	446763	22.575	90	50 - 200	0.000	+/-0.50	
Di-n-Octylphthalate-d4	656611	23.647	703373	23.647	93	50 - 200	0.000	+/-0.50	
Perylene-d12	297837	24.948	323620	24.948	92	50 - 200	0.000	+/-0.50	

HOLDING TIME SUMMARY

Analysis: EPA 8270E

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW20-SC148A 23F0536-01	06/08/20 08:41	06/22/23 14:10	06/28/23 15:16	1,115	14	07/07/23 23:11	9	40	*
LDW20-SC148A 23F0536-01RE1	06/08/20 08:41	06/22/23 14:10	06/28/23 15:16	1,115	14	07/21/23 03:49	23	40	*
Matrix Spike BLF0718-MS1	06/08/20 08:41	06/22/23 14:10	06/28/23 15:16	1,115	14	07/07/23 21:58	9	40	*
Matrix Spike Dup BLF0718-MSD1	06/08/20 08:41	06/22/23 14:10	06/28/23 15:16	1,115	14	07/07/23 22:35	9	40	*

* Indicates hold time exceedance.

METHOD DETECTION AND REPORTING LIMITS

EPA 8270E

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Instrument: NT14

Analyte	MDL	RL	Units
Naphthalene	4.2	20.0	ug/kg
2-Methylnaphthalene	4.5	20.0	ug/kg
Acenaphthylene	6.2	20.0	ug/kg
Acenaphthene	5.2	20.0	ug/kg
Fluorene	14.6	20.0	ug/kg
Phenanthrene	8.7	20.0	ug/kg
Anthracene	7.2	20.0	ug/kg
Fluoranthene	6.1	20.0	ug/kg
Pyrene	5.7	20.0	ug/kg
Benzo(a)anthracene	6.0	20.0	ug/kg
Chrysene	6.1	20.0	ug/kg
Benzofluoranthenes, Total	21.0	40.0	ug/kg
Benzo(a)pyrene	4.2	20.0	ug/kg
Indeno(1,2,3-cd)pyrene	14.7	20.0	ug/kg
Dibenzo(a,h)anthracene	17.2	20.0	ug/kg
Benzo(g,h,i)perylene	13.6	20.0	ug/kg

METHOD DETECTION AND REPORTING LIMITS

EPA 8270E

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Instrument: NT17

Analyte	MDL	RL	Units
Naphthalene	4.2	20.0	ug/kg
2-Methylnaphthalene	4.5	20.0	ug/kg
Acenaphthylene	6.2	20.0	ug/kg
Acenaphthene	5.2	20.0	ug/kg
Fluorene	14.6	20.0	ug/kg
Phenanthrene	8.7	20.0	ug/kg
Anthracene	7.2	20.0	ug/kg
Fluoranthene	6.1	20.0	ug/kg
Pyrene	5.7	20.0	ug/kg
Benzo(a)anthracene	6.0	20.0	ug/kg
Chrysene	6.1	20.0	ug/kg
Benzofluoranthenes, Total	21.0	40.0	ug/kg
Benzo(a)pyrene	4.2	20.0	ug/kg
Indeno(1,2,3-cd)pyrene	14.7	20.0	ug/kg
Dibenzo(a,h)anthracene	17.2	20.0	ug/kg
Benzo(g,h,i)perylene	13.6	20.0	ug/kg

Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

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

Date Requested from Manufacturer: NA

Chemical: Tributyl Phosphate

Manufacturer: Chemservice

Product #: O-916

Lot #: 59-57A

Purity: 99%

Analyst: VB

Element: B000954

Analytical Resources, Incorporated

Analytical Standard Record
Analytical Resources, Inc.
Standard ID: B001873

Printed: 9/23/2013 11:47:03AM

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

Comments

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

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

Reviewed By Date

Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

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

Date Requested from Manufacturer:_____

Chemical: 4,4' DDT

Manufacturer: Chem Service

Product #: _____

Lot #: 198-128A

Purity: 99.2%

Analyst: AB

Analytical Resources, Incorporated

Analytical Standard Record
Analytical Resources, Inc.
Standard ID: B001875

Printed: 9/23/2013 12:13:55PM

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

Comments

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

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

Reviewed By Date

Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

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

Date Requested from Manufacturer:_____

Chemical: alpha-Terpineol

Manufacturer: Acros Organics

Product #: _____

Lot #: A0648170 1

Purity: 98%

Analyst: [signature]

Analytical Resources, Incorporated

Analytical Standard Record
Analytical Resources, Inc.
Standard ID: B001885

Printed: 9/23/2013 3:45:57PM

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

Comments

Neat, Purity @ 98.9%.

Analyte	CAS Number	Concentration	Units
Dibutyl Phenyl Phosphate	2528-36-1	1000000	ug/mL

Reviewed By Date

Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

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

Date Requested from Manufacturer:_____

Chemical: Dibutyl Phenyl Phosphate

Manufacturer: Monsanto

Product #: N/A

Lot #: N/A

Purity: 98.9%

Analyst: [signature]

Analytical Resources, Incorporated

Analytical Standard Record
Analytical Resources, Inc.
Standard ID: B001886

Printed: 9/23/2013 3:59:35PM

Description:	SVOC Triphenyl Phosphate	Expires:	31-Dec-29
Standard Type:	Calibration Stan	Prepared:	31-Dec-12
Solvent:	NA	Prepared By:	Jianqing Zhou
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	23-Sep-13 15:59 by JZ
Vendor:	Aldrich	Lot #:	04902CM
Vendor Catalog #:			

Comments

Neat, Purity @ 99%.

Analyte	CAS Number	Concentration	Units
Triphenyl Phosphate	115-86-6	1000000	ug/mL

Reviewed By Date

Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

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

Date Requested from Manufacturer: _____

Chemical: Triphenyl Phosphate

Manufacturer: Aldrich

Product #: _____

Lot #: 04907CM

Purity: 99%

Analyst: [signature]

Analytical Resources, Incorporated

Analytical Standard Record
Analytical Resources, Inc.
Standard ID: B001887

Printed: 9/23/2013 4:18:55PM

Description:	SVOC Butylated Hydroxytoluene	Expires:	31-Dec-29
Standard Type:	Calibration Stan	Prepared:	31-Dec-12
Solvent:	NA	Prepared By:	Jianqing Zhou
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	23-Sep-13 16:18 by JZ
Vendor:	SIGMA	Lot #:	39F-0197
Vendor Catalog #:			

Comments

neat,Purity @ 99.9%.

Analyte	CAS Number	Concentration	Units
Butylated Hydroxytoluene	128-37-0	1000000	ug/mL

Reviewed By Date

Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

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

Date Requested from Manufacturer: _____

Chemical: Butylated Hydroxytoluene

Manufacturer: Sigma

Product #: _____

Lot #: 39F-0197

Purity: 99.8%

Analyst: AR

Analytical Resources, Incorporated

Analytical Standard Record
Analytical Resources, Inc.
Standard ID: B001890

Printed: 9/23/2013 5:02:53PM

Description:	SVOC Butyl Diphenyl Phosphate	Expires:	31-Dec-29
Standard Type:	Calibration Stan	Prepared:	31-Dec-12
Solvent:	NA	Prepared By:	Jianqing Zhou
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	23-Sep-13 17:02 by JZ
Vendor:	Monsanto	Lot #:	N/A
Vendor Catalog #:			

Comments

Neat, Purity @ 98%.

Analyte	CAS Number	Concentration	Units
Butyl Diphenyl Phosphate	2752-95-6	1000000	ug/mL

Reviewed By Date

Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

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

Date Requested from Manufacturer: _____

Chemical: Butyl Diphenyl Phosphate

Manufacturer: Monsanto

Product #: NA

Lot #: NA

Purity: 98%

Analyst: [signature]

Analytical Resources, Incorporated

Analytical Standard Record
Analytical Resources, Inc.
Standard ID: B001941

Printed: 9/25/2013 1:45:31PM

Description:	SVOC 2,4-Dinitrophenol	Expires:	31-Dec-29
Standard Type:	Calibration Stan	Prepared:	25-Sep-13
Solvent:	NA	Prepared By:	Jianqing Zhou
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	25-Sep-13 13:45 by JZ
Vendor:	SIGMA	Lot #:	65H5021
Vendor Catalog #:			

Comments

Neat, Purity @ 90-95%. (ARI#: 0466)

Analyte	CAS Number	Concentration	Units
2,4-Dinitrophenol	51-28-5	1000000	ug/mL

B001941
SVOA 2,4-Dinitrophenol
Expires 12/31/2029
Prepared By Jianqing Zhou 9/25/2013

Reviewed By Date

Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

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

Date Requested from Manufacturer:_____

Chemical: 2,4-Dinitrophenol

Manufacturer: Sigma

Product #: _____

Lot #: bFH 502 1

Purity: 90 ~ 94%

Analyst: _____

Analytical Resources, Incorporated

Analytical Standard Record
Analytical Resources, Inc.
Standard ID: B001945

Printed: 9/25/2013 3:23:22PM

Description:	SVOC Benzoic Acid	Expires:	31-Dec-29
Standard Type:	Calibration Stan	Prepared:	31-Dec-12
Solvent:	NA	Prepared By:	Jianqing Zhou
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	25-Sep-13 15:23 by JZ
Vendor:	ACROS Organics	Lot #:	A0224339
Vendor Catalog #:			

Comments

Neat, Purity @ 98%.

Analyte	CAS Number	Concentration	Units
Benzoic acid	65-85-0	1000000	ug/mL

B001945
SVOC Benzoic Acid
Expires 12/31/2029
Prepared By Jianqing Zhou 12/31/2012

Reviewed By Date

Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

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

Date Requested from Manufacturer:_____

Chemical: Benzoic Acid

Manufacturer: Acros Organics

Product #: _____

Lot #: A0214339

Purity: 98%

Analyst: _____

Analytical Resources, Incorporated

Analytical Standard Record
Analytical Resources, Inc.
Standard ID: B001948

Printed: 9/25/2013 3:37:51PM

Description:	SVOC 4,6-Dinitro-2-Methylphenol	Expires:	31-Dec-29
Standard Type:	Calibration Stan	Prepared:	25-Sep-13
Solvent:	NA	Prepared By:	Jianqing Zhou
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	25-Sep-13 15:37 by JZ
Vendor:	Chem Service	Lot #:	179-31A
Vendor Catalog #:			

Comments

Neat, Purity @ 99%. (ARI#: 009A)

Analyte	CAS Number	Concentration	Units
4,6-Dinitro-2-methylphenol	534-52-1	1000000	ug/mL

B001948
SVOA 4,6-Dinitro-2-Methylphenol
Expires 12/31/2029
Prepared By Jianqing Zhou 9/25/2013

Reviewed By Date

Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

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

Date Requested from Manufacturer: _____

Chemical: 4,6-Dinitro-2-Methylphenol

Manufacturer: Chem Service

Product #: _____

Lot #: 179-31A

Purity: 99%

Analyst: KB

Analytical Resources, Incorporated

Analytical Standard Record
Analytical Resources, Inc.
Standard ID: B002054

Printed: 10/4/2013 6:32:21PM

Description:	SVOA 1-Methylnaphthalene	Expires:	02-Apr-14
Standard Type:	Analyte Spike	Prepared:	13-Dec-12
Solvent:	NA	Prepared By:	Jianqing Zhou
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	04-Oct-13 18:32 by JZ
Vendor:	Chem Service	Lot #:	62-5B
Vendor Catalog #:			

Comments

Neat, Purity @ 99%

Analyte	CAS Number	Concentration	Units
1-Methylnaphthalene	90-12-0	1000000	ug/mL

B002054
SVOA 1-Methylnaphthalene
Solvent / Lot: NA
Prep: 12/13/2012 by JZ
Exp: 12/31/2029
Location:

Reviewed By Date

Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

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

Date Requested from Manufacturer:_____

Chemical: 1-Methyl naphthalene

Manufacturer: Chem Service

Product #: 0787

Lot #: 67-53

Purity: 99%

Analyst: AZ

Analytical Resources, Incorporated

Analytical Standard Record
Analytical Resources, Inc.
Standard ID: B002135

Printed: 10/15/2013 12:07:39PM

Description:	SVOA Benzidine	Expires:	31-Dec-29
Standard Type:	Analyte Spike	Prepared:	15-Oct-13
Solvent:	N/A	Prepared By:	Jianqing Zhou
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	15-Oct-13 12:07 by JZ
Vendor:	SIGMA	Lot #:	18C0024
Vendor Catalog #:			

Comments

Purity @ 95%. ARI#: 0467.

Analyte	CAS Number	Concentration	Units
Benzidine	92-87-5	1000000	ug/mL

Reviewed By Date

Appendix 20.1

ALTERNATE CERTIFICATE OF ANALYSIS

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

Date Requested from Manufacturer:_____

Chemical: Benzidine

Manufacturer: Sigma

Product #: B-3503

Lot #: 18C0024

Purity: 98%

Analyst: [signature]

H000691

Data File: \\target\share\chem2\fid4a.i\20230317.b\423C1703.D

Page 1

Date : 17-MAR-2023 10:46

Client ID:

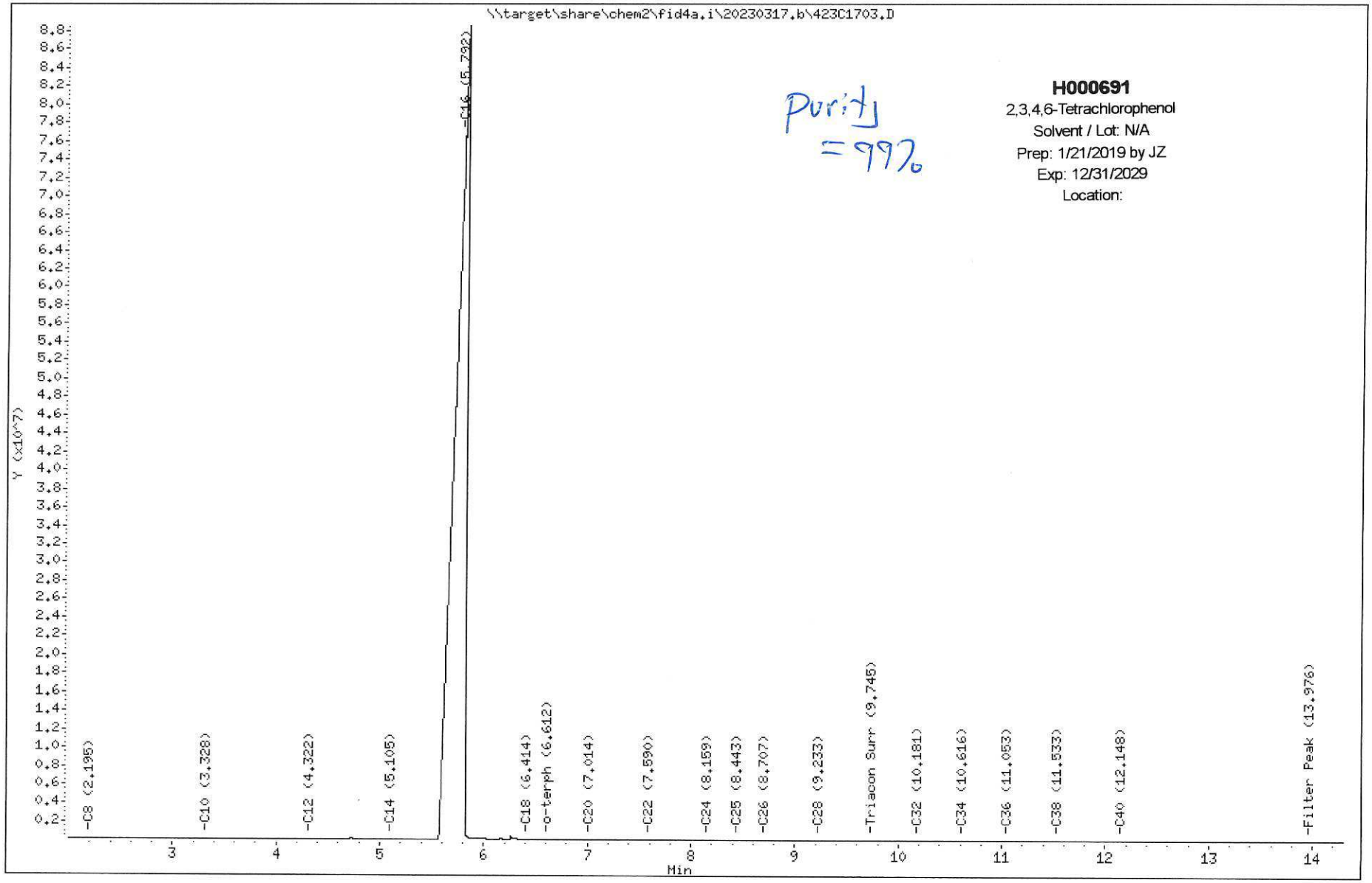
Instrument: fid4a.i

Sample Info: K007226

Operator: AA

Column phase: RTX-1

Column diameter: 0.25



Purity = 99%

H000691
2,3,4,6-Tetrachlorophenol
Solvent / Lot: N/A
Prep: 1/21/2019 by JZ
Exp: 12/31/2029
Location:

ARI Labs, Inc.

Data file : \\target\share\chem2\fid4a.i\20230317.b\423C1703.D
Lab Smp Id: K007226
Inj Date : 17-MAR-2023 10:46
Operator : AA   Inst ID: fid4a.i
Smp Info : K007226
Misc Info :
Comment   :
Method   : \\target\share\chem2\fid4a.i\20230317.b\FID4TPH.m
Meth Date : 17-Mar-2023 16:58 alfonso   Quant Type: AREA%
Cal Date : 18-AUG-2022 11:51   Cal File: 422H1803.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: Falcon+   Compound Sublist: tph.sub
Target Version: 4.14
Processing Host: ALFONSO-201901

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable   Local Compound Variable

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
2.043	81395	55677	0.684	0.012	1 Toluene
2.074	68503	39991	0.584	0.010	
2.104	85451	37158	0.435	0.012	
2.146	59381	25207	0.424	0.008	
2.181	11414	22862	2.003	0.001	
2.195	34939	23199	0.664	0.005	2 C8
2.218	8679	21808	2.513	0.001	
2.224	21070	21832	1.036	0.003	
2.243	45086	20191	0.448	0.006	
2.286	3130	15677	5.009	0.000	
2.291	12615	15880	1.259	0.001	
2.313	20979	15888	0.757	0.003	
2.333	7621	15373	2.017	0.001	
2.348	31874	17112	0.537	0.004	
2.373	4619	13267	2.872	0.000	
2.380	12003	13446	1.120	0.001	
2.393	10327	13347	1.292	0.001	
2.408	9963	12697	1.274	0.001	
2.446	24366	11882	0.488	0.003	
2.498	24898	10214	0.410	0.003	
2.557	1592	6395	4.017	0.000	
2.570	4427	6384	1.442	0.000	
2.583	4275	6215	1.454	0.000	
2.595	1208	6068	5.024	0.000	
2.602	3076	6230	2.025	0.000	
2.607	1560	6270	4.019	0.000	
2.631	17195	8933	0.520	0.002	
2.654	17386	7637	0.439	0.002	
2.703	4531	5468	1.207	0.000	
2.717	9156	5741	0.627	0.001	
2.740	3955	5045	1.275	0.000	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
2.768	1029	4134	4.017	0.000	
2.771	830	4189	5.050	0.000	
2.778	1924	4438	2.307	0.000	
2.784	5498	4564	0.830	0.000	
2.846	25970	8400	0.323	0.003	
2.880	939	3165	3.370	0.000	
2.884	1885	3183	1.688	0.000	
2.901	4805	3504	0.729	0.000	
2.938	581	1990	3.423	0.000	
2.944	1450	2016	1.390	0.000	
2.955	449	1816	4.043	0.000	
2.967	1234	2009	1.629	0.000	
2.982	712	2087	2.931	0.000	
2.988	1000	2338	2.337	0.000	
3.001	3475	3541	1.019	0.000	
3.018	3528	3705	1.050	0.000	
3.033	983	2521	2.564	0.000	
3.038	1297	2686	2.070	0.000	
3.044	2547	2541	0.997	0.000	
3.069	389	1330	3.418	0.000	
3.078	728	1545	2.123	0.000	
3.085	1244	1637	1.316	0.000	
3.098	1115	1624	1.457	0.000	
3.108	926	1475	1.593	0.000	
3.119	239	1202	5.036	0.000	
3.125	540	1251	2.315	0.000	
3.133	409	1219	2.978	0.000	
3.144	2600	1886	0.725	0.000	
3.165	620	1604	2.588	0.000	
3.173	554	1647	2.972	0.000	
3.192	2423	2273	0.938	0.000	
3.197	582	2418	4.158	0.000	
3.204	1161	2723	2.346	0.000	
3.208	825	2777	3.364	0.000	
3.228	4472	3391	0.758	0.000	
3.246	1586	2676	1.688	0.000	
3.279	1194	2070	1.734	0.000	
3.293	854	1951	2.285	0.000	
3.298	595	2029	3.408	0.000	
3.315	2640	2597	0.984	0.000	
3.320	1015	2542	2.504	0.000	
3.328	1549	2593	1.674	0.000	3 C10
3.338	1314	2533	1.928	0.000	
3.350	523	2159	4.130	0.000	
3.358	1776	2105	1.185	0.000	
3.371	356	1797	5.043	0.000	
3.378	914	1880	2.057	0.000	
3.383	380	1927	5.068	0.000	
3.387	595	2023	3.399	0.000	
3.395	1390	2270	1.633	0.000	
3.405	1490	1994	1.338	0.000	
3.423	690	1601	2.321	0.000	
3.435	821	1554	1.894	0.000	
3.441	387	1583	4.087	0.000	
3.444	401	1625	4.051	0.000	
3.448	403	1636	4.060	0.000	
3.455	1216	1700	1.398	0.000	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
3.478	235	1185	5.047	0.000	
3.482	412	1229	2.986	0.000	
3.488	695	1177	1.694	0.000	
3.501	239	969	4.063	0.000	
3.509	914	1149	1.258	0.000	
3.520	1078	1069	0.992	0.000	
3.540	301	927	3.079	0.000	
3.556	406	849	2.089	0.000	
3.567	370	873	2.359	0.000	
3.572	178	939	5.270	0.000	
3.578	591	1171	1.981	0.000	
3.591	869	1353	1.556	0.000	
3.596	741	1352	1.826	0.000	
3.606	471	1401	2.976	0.000	
3.613	548	1411	2.577	0.000	
3.618	433	1521	3.511	0.000	
3.625	710	1635	2.303	0.000	
3.630	910	1667	1.832	0.000	
3.652	661	1562	2.362	0.000	
3.670	462	1214	2.627	0.000	
3.686	1036	1453	1.403	0.000	
3.690	829	1374	1.658	0.000	
3.702	531	1191	2.241	0.000	
3.712	452	1355	3.001	0.000	
3.716	820	1423	1.736	0.000	
3.736	2685	2093	0.780	0.000	
3.752	689	2030	2.946	0.000	
3.760	4109	2349	0.572	0.000	
3.805	3183	2036	0.640	0.000	
3.823	496	1686	3.401	0.000	
3.835	1641	2314	1.410	0.000	
3.859	9243	4616	0.499	0.001	
3.897	851	1745	2.051	0.000	
3.904	503	1721	3.419	0.000	
3.927	3866	3293	0.852	0.000	
3.941	5520	3558	0.645	0.000	
3.980	573	1715	2.991	0.000	
3.992	1027	1794	1.748	0.000	
3.995	1494	1860	1.245	0.000	
4.010	887	1639	1.847	0.000	
4.021	663	1724	2.602	0.000	
4.026	1380	1776	1.287	0.000	
4.045	306	1546	5.059	0.000	
4.053	1001	1758	1.757	0.000	
4.061	1137	1804	1.586	0.000	
4.072	779	1773	2.275	0.000	
4.080	989	1896	1.917	0.000	
4.087	561	1905	3.396	0.000	
4.098	1956	2156	1.103	0.000	
4.106	1168	2044	1.750	0.000	
4.127	1049	1627	1.551	0.000	
4.142	587	1545	2.633	0.000	
4.148	1155	1572	1.361	0.000	
4.173	3682	2398	0.651	0.000	
4.189	1023	1738	1.700	0.000	
4.204	549	1627	2.961	0.000	
4.213	628	1658	2.641	0.000	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
4.221	1039	1830	1.761	0.000	
4.227	447	1814	4.058	0.000	
4.248	2703	2638	0.976	0.000	
4.256	1387	2945	2.123	0.000	
4.260	743	2988	4.022	0.000	
4.265	912	3081	3.378	0.000	
4.268	779	3140	4.031	0.000	
4.275	1736	3217	1.853	0.000	
4.289	2688	3495	1.300	0.000	
4.295	3466	3448	0.995	0.000	
4.322	1054	2680	2.543	0.000	4 C12
4.330	1686	2627	1.558	0.000	
4.358	1066	1974	1.852	0.000	
4.378	434	1758	4.054	0.000	
4.384	1324	1879	1.419	0.000	
4.403	860	1608	1.869	0.000	
4.414	457	1567	3.431	0.000	
4.421	1117	1675	1.499	0.000	
4.433	910	1538	1.690	0.000	
4.439	865	1534	1.774	0.000	
4.449	764	1302	1.705	0.000	
4.471	433	1123	2.593	0.000	
4.476	734	1135	1.546	0.000	
4.490	385	1005	2.610	0.000	
4.498	555	1186	2.137	0.000	
4.502	695	1166	1.677	0.000	
4.518	587	949	1.618	0.000	
4.526	316	925	2.924	0.000	
4.533	560	989	1.765	0.000	
4.543	469	1001	2.135	0.000	
4.548	222	916	4.130	0.000	
4.553	188	980	5.207	0.000	
4.558	255	1038	4.076	0.000	
4.568	652	1157	1.775	0.000	
4.573	338	1151	3.409	0.000	
4.580	487	1283	2.636	0.000	
4.596	3801	1950	0.513	0.000	
4.631	531	1429	2.692	0.000	
4.663	4548	3737	0.822	0.000	
4.667	2815	3822	1.358	0.000	
4.679	2199	3760	1.710	0.000	
4.688	1068	3585	3.356	0.000	
4.694	2166	3742	1.727	0.000	
4.723	372603	172476	0.463	0.055	
4.894	47034	21828	0.464	0.006	
4.956	80510	28154	0.350	0.011	
4.999	54273	16950	0.312	0.008	
5.068	1137	5713	5.027	0.000	
5.072	8415	5792	0.688	0.001	
5.105	4203	4316	1.027	0.000	5 C14
5.146	660	2685	4.070	0.000	
5.153	2524	2649	1.050	0.000	
5.170	1076	2437	2.265	0.000	
5.174	2371	2438	1.028	0.000	
5.201	1013	2011	1.986	0.000	
5.210	2064	2332	1.130	0.000	
5.224	1083	2304	2.127	0.000	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
5.228	2027	2354	1.162	0.000	
5.276	4673	2682	0.574	0.000	
5.322	195	844	4.328	0.000	
5.331	977	1203	1.231	0.000	
5.356	490	993	2.027	0.000	
5.361	814	1044	1.283	0.000	
5.382	115	387	3.351	0.000	
5.399	619	960	1.551	0.000	
5.406	402	1035	2.576	0.000	
5.410	378	1122	2.968	0.000	
5.423	1663	1555	0.935	0.000	
5.452	5951	5020	0.844	0.000	
5.501	290	797	2.753	0.000	
5.523	2317	2472	1.067	0.000	
5.538	5946	6823	1.147	0.000	
5.792	501855376	76456669	0.152	74.449	6 C16
5.807	79757019	82319946	1.032	11.775	
5.823	77929961	88539160	1.136	11.505	
5.962	75333	84828	1.126	0.011	
5.986	474748	124326	0.262	0.070	
6.070	17103	57180	3.343	0.002	
6.074	120761	57565	0.477	0.017	
6.113	90233	47140	0.522	0.013	
6.165	407438	218439	0.536	0.060	
6.263	944101	374166	0.396	0.139	
6.414	114839	39498	0.344	0.016	7 C18
6.464	53190	31177	0.586	0.007	
6.523	31509	25870	0.821	0.004	
6.551	4785	23963	5.008	0.000	
6.559	51194	25409	0.496	0.007	
6.590	21354	21666	1.015	0.003	
6.612	35061	21127	0.603	0.005	$ 8 o-terph
6.638	17712	19934	1.125	0.002	
6.672	22159	19651	0.887	0.003	
6.683	26846	19268	0.718	0.003	
6.708	5413	18142	3.351	0.000	
6.713	24941	18247	0.732	0.003	
6.747	50657	18478	0.365	0.007	
6.795	23973	17444	0.728	0.003	
6.814	28457	17895	0.629	0.004	
6.837	10746	15445	1.437	0.001	
6.871	29974	21406	0.714	0.004	
6.874	4287	21471	5.009	0.000	
6.882	20520	21675	1.056	0.003	
6.944	32864	17445	0.531	0.004	
6.978	9138	15347	1.679	0.001	
7.014	4130	13830	3.348	0.000	9 C20
7.025	12567	14083	1.121	0.001	
7.038	4952	14274	2.882	0.000	
7.044	6508	14578	2.240	0.000	
7.050	25344	14736	0.581	0.003	
7.099	5531	12365	2.236	0.000	
7.108	16440	12371	0.752	0.002	
7.129	9415	11275	1.198	0.001	
7.175	3589	10327	2.878	0.000	
7.182	7285	10474	1.438	0.001	
7.212	11252	10002	0.889	0.001	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
7.227	5193	9506	1.830	0.000	
7.237	5172	9476	1.832	0.000	
7.247	4652	9357	2.011	0.000	
7.254	3258	9369	2.875	0.000	
7.259	7003	9455	1.350	0.001	
7.272	5540	9252	1.670	0.000	
7.283	4511	9087	2.014	0.000	
7.296	5828	9031	1.550	0.000	
7.308	4850	8866	1.828	0.000	
7.318	3111	9014	2.897	0.000	
7.324	3191	9168	2.873	0.000	
7.328	2775	9325	3.360	0.000	
7.339	6190	9713	1.569	0.000	
7.344	2920	9761	3.343	0.000	
7.350	17091	9874	0.578	0.002	
7.379	7217	8616	1.194	0.001	
7.395	5430	8408	1.548	0.000	
7.404	2492	8342	3.348	0.000	
7.409	1666	8354	5.014	0.000	
7.415	2955	8500	2.877	0.000	
7.423	3887	8782	2.259	0.000	
7.465	28160	14253	0.506	0.004	
7.471	6466	14499	2.242	0.000	
7.480	6649	15111	2.273	0.000	
7.484	26595	15197	0.571	0.003	
7.514	13964	13621	0.975	0.002	
7.539	8118	12614	1.554	0.001	
7.553	10540	12495	1.185	0.001	
7.584	2820	11307	4.010	0.000	
7.590	4522	11429	2.527	0.000	10 C22
7.620	16634	10435	0.627	0.002	
7.653	6793	9783	1.440	0.001	
7.663	8606	9666	1.123	0.001	
7.675	2827	9464	3.347	0.000	
7.683	9373	9620	1.026	0.001	
7.699	3657	9205	2.517	0.000	
7.708	5071	9290	1.832	0.000	
7.713	10483	9274	0.885	0.001	
7.735	10686	9257	0.866	0.001	
7.752	4732	8664	1.831	0.000	
7.765	5624	8765	1.558	0.000	
7.773	5614	8686	1.547	0.000	
7.784	3375	8506	2.520	0.000	
7.793	2118	8517	4.021	0.000	
7.799	10086	8544	0.847	0.001	
7.817	7761	8325	1.073	0.001	
7.833	2415	8088	3.350	0.000	
7.838	2838	8160	2.875	0.000	
7.844	3649	8173	2.240	0.000	
7.858	2009	8069	4.017	0.000	
7.864	4482	8197	1.829	0.000	
7.871	3688	8223	2.230	0.000	
7.879	4875	8269	1.696	0.000	
7.889	2009	8061	4.013	0.000	
7.897	4080	8308	2.036	0.000	
7.916	17828	10103	0.567	0.002	
7.935	4052	9086	2.242	0.000	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
7.940	2229	8948	4.015	0.000	
7.945	5765	8973	1.556	0.000	
7.954	6458	8765	1.357	0.000	
7.976	2099	8428	4.016	0.000	
7.984	10213	8807	0.862	0.001	
7.999	4897	8282	1.691	0.000	
8.013	8782	8112	0.924	0.001	
8.028	5860	7858	1.341	0.000	
8.040	3929	7871	2.003	0.000	
8.054	9161	8146	0.889	0.001	
8.067	2701	7766	2.876	0.000	
8.074	3069	7702	2.510	0.000	
8.081	2694	7742	2.874	0.000	
8.088	2705	7793	2.881	0.000	
8.095	5842	7832	1.341	0.000	
8.104	5419	7841	1.447	0.000	
8.119	5740	7735	1.348	0.000	
8.134	4986	7768	1.558	0.000	
8.141	5893	8009	1.359	0.000	
8.159	9098	8027	0.882	0.001	11 C24
8.174	3156	7971	2.526	0.000	
8.185	2376	7967	3.353	0.000	
8.190	4739	7937	1.675	0.000	
8.202	5181	8028	1.549	0.000	
8.212	1994	8027	4.025	0.000	
8.223	6137	8270	1.348	0.000	
8.236	6864	8171	1.190	0.001	
8.248	2383	7986	3.351	0.000	
8.253	2405	8059	3.351	0.000	
8.259	5294	8207	1.550	0.000	
8.268	2866	8235	2.874	0.000	
8.280	6583	8312	1.263	0.000	
8.289	4538	8296	1.828	0.000	
8.295	2060	8300	4.029	0.000	
8.300	2063	8291	4.020	0.000	
8.313	7062	8400	1.189	0.001	
8.318	1667	8375	5.023	0.000	
8.332	11362	9100	0.801	0.001	
8.343	4357	8741	2.006	0.000	
8.358	1267	8458	6.676	0.000	
8.363	2991	8621	2.882	0.000	
8.371	3980	8983	2.257	0.000	
8.379	6330	9083	1.435	0.000	
8.385	3111	8963	2.881	0.000	
8.393	6706	9050	1.349	0.000	
8.404	4903	8943	1.824	0.000	
8.417	8437	8972	1.063	0.001	
8.438	7166	9103	1.270	0.001	
8.443	3211	9227	2.873	0.000	12 C25
8.450	3688	9295	2.521	0.000	
8.455	2313	9276	4.010	0.000	
8.475	30054	13714	0.456	0.004	
8.504	5760	9733	1.690	0.000	
8.519	2799	9376	3.350	0.000	
8.529	4766	9710	2.037	0.000	
8.537	4875	9815	2.013	0.000	
8.543	8411	9973	1.186	0.001	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
8.555	2969	9916	3.340	0.000	
8.560	3974	9987	2.513	0.000	
8.568	2483	9997	4.026	0.000	
8.572	5007	10043	2.006	0.000	
8.591	14074	10725	0.762	0.002	
8.602	2648	10665	4.028	0.000	
8.606	2159	10862	5.032	0.000	
8.609	2183	10952	5.017	0.000	
8.633	7361	10561	1.435	0.001	
8.647	6774	10495	1.549	0.001	
8.658	2596	10420	4.014	0.000	
8.663	4723	10573	2.239	0.000	
8.669	3156	10589	3.355	0.000	
8.687	15405	11334	0.736	0.002	
8.699	6103	11158	1.828	0.000	
8.707	2223	11136	5.009	0.000	13 C26
8.730	28697	12536	0.437	0.004	
8.754	8658	11553	1.334	0.001	
8.763	2896	11612	4.010	0.000	
8.780	15029	12352	0.822	0.002	
8.788	1833	12243	6.680	0.000	
8.798	11854	12679	1.070	0.001	
8.806	1873	12509	6.677	0.000	
8.809	3133	12565	4.011	0.000	
8.813	2506	12550	5.008	0.000	
8.819	7588	12757	1.681	0.001	
8.829	4418	12679	2.870	0.000	
8.835	6988	12762	1.826	0.001	
8.848	13711	13258	0.967	0.002	
8.872	26625	13656	0.513	0.003	
8.894	4575	13127	2.869	0.000	
8.898	2631	13188	5.013	0.000	
8.902	5918	13262	2.241	0.000	
8.914	8577	13313	1.552	0.001	
8.922	4011	13433	3.349	0.000	
8.926	4724	13546	2.867	0.000	
8.933	6787	13651	2.011	0.001	
8.946	9614	13923	1.448	0.001	
8.951	6274	14004	2.232	0.000	
8.960	5592	14036	2.510	0.000	
8.966	3513	14090	4.011	0.000	
8.969	2829	14171	5.009	0.000	
8.973	4976	14233	2.860	0.000	
8.980	4289	14365	3.350	0.000	
8.996	27708	16441	0.593	0.004	
9.013	8129	14847	1.827	0.001	
9.025	8129	14840	1.826	0.001	
9.036	7503	15229	2.030	0.001	
9.040	4559	15225	3.340	0.000	
9.057	14920	16251	1.089	0.002	
9.067	9915	16831	1.698	0.001	
9.076	8535	17331	2.031	0.001	
9.081	5250	17596	3.352	0.000	
9.084	10558	17675	1.674	0.001	
9.095	4386	17601	4.013	0.000	
9.111	30564	19262	0.630	0.004	
9.128	8346	18722	2.243	0.001	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
9.139	15095	18986	1.258	0.002	
9.149	6655	19050	2.862	0.000	
9.158	23240	19719	0.848	0.003	
9.171	1903	19042	10.005	0.000	
9.175	4773	19156	4.013	0.000	
9.187	23630	19927	0.843	0.003	
9.199	4925	19763	4.013	0.000	
9.208	14115	20394	1.445	0.002	
9.219	12303	20691	1.682	0.001	
9.226	7266	20831	2.867	0.001	
9.233	15622	21000	1.344	0.002	14 C28
9.247	9280	20714	2.232	0.001	
9.262	45057	27849	0.618	0.006	
9.281	22651	23200	1.024	0.003	
9.304	13489	22820	1.692	0.001	
9.307	18038	22862	1.267	0.002	
9.328	8656	21778	2.516	0.001	
9.334	8635	21650	2.507	0.001	
9.343	16240	21738	1.339	0.002	
9.354	5409	21709	4.013	0.000	
9.367	16481	22234	1.349	0.002	
9.370	6683	22346	3.344	0.000	
9.382	14775	23166	1.568	0.002	
9.390	11679	23531	2.015	0.001	
9.394	12888	23584	1.830	0.001	
9.408	18752	23645	1.261	0.002	
9.416	4675	23396	5.004	0.000	
9.428	25138	24392	0.970	0.003	
9.438	20233	24095	1.191	0.002	
9.468	67429	26696	0.396	0.009	
9.496	8413	24122	2.867	0.001	
9.507	12049	24259	2.013	0.001	
9.527	36362	25771	0.709	0.005	
9.538	12891	25911	2.010	0.001	
9.543	6452	25853	4.007	0.000	
9.551	10420	26202	2.515	0.001	
9.557	29750	26593	0.894	0.004	
9.574	6252	25071	4.010	0.000	
9.593	29143	27655	0.949	0.004	
9.599	40783	27905	0.684	0.006	
9.620	13159	26364	2.004	0.001	
9.632	17259	26799	1.553	0.002	
9.640	13210	26592	2.013	0.001	
9.664	35362	28170	0.797	0.005	
9.672	27890	28134	1.009	0.004	
9.696	26737	28634	1.071	0.003	
9.711	53475	30848	0.577	0.007	
9.745	33266	29504	0.887	0.004	$ 15 Triacon Surr
9.752	7348	29501	4.015	0.001	
9.756	20542	29565	1.439	0.003	
9.768	7255	29059	4.005	0.001	
9.773	7275	29173	4.010	0.001	
9.785	31543	30611	0.970	0.004	
9.803	46804	32832	0.701	0.006	
9.821	10456	30060	2.875	0.001	
9.833	30772	31156	1.012	0.004	
9.860	77784	33514	0.431	0.011	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
9.881	12779	32069	2.510	0.001	
9.892	14531	32668	2.248	0.002	
9.896	8201	32902	4.012	0.001	
9.908	23357	33882	1.451	0.003	
9.912	27050	34095	1.260	0.003	
9.939	14585	32570	2.233	0.002	
9.951	23032	33095	1.437	0.003	
9.956	11596	33292	2.871	0.001	
9.966	16544	33271	2.011	0.002	
9.971	11660	33391	2.864	0.001	
9.975	10051	33617	3.345	0.001	
9.983	15209	33983	2.234	0.002	
9.988	15177	33830	2.229	0.002	
9.996	10128	33907	3.348	0.001	
10.018	43348	35629	0.822	0.006	
10.021	7133	35693	5.004	0.001	
10.025	8960	35988	4.016	0.001	
10.034	42064	36944	0.878	0.006	
10.063	65447	38699	0.591	0.009	
10.077	7375	36906	5.004	0.001	
10.083	16743	37428	2.235	0.002	
10.095	34467	38665	1.122	0.005	
10.118	90921	40621	0.447	0.013	
10.151	37738	38047	1.008	0.005	
10.158	11383	38037	3.342	0.001	
10.168	36074	38274	1.061	0.005	
10.181	15072	37809	2.509	0.002	16 C32
10.185	5655	37746	6.675	0.000	
10.198	43905	38471	0.876	0.006	
10.208	24771	38177	1.541	0.003	
10.218	19031	38113	2.003	0.002	
10.228	13353	38279	2.867	0.001	
10.237	21225	38826	1.829	0.003	
10.243	30946	38929	1.258	0.004	
10.266	43064	39733	0.923	0.006	
10.275	11912	39784	3.340	0.001	
10.278	19932	39886	2.001	0.002	
10.293	46366	40725	0.878	0.006	
10.318	46465	41024	0.883	0.006	
10.328	24720	41353	1.673	0.003	
10.334	10308	41278	4.005	0.001	
10.343	29100	41866	1.439	0.004	
10.354	22822	41695	1.827	0.003	
10.360	16568	41490	2.504	0.002	
10.376	31388	42321	1.348	0.004	
10.384	36478	43119	1.182	0.005	
10.393	21427	43144	2.014	0.003	
10.416	82339	44731	0.543	0.012	
10.434	23173	42257	1.824	0.003	
10.455	42801	43684	1.021	0.006	
10.459	19648	44004	2.240	0.002	
10.469	19632	43883	2.235	0.002	
10.492	56113	45807	0.816	0.008	
10.497	20626	45915	2.226	0.003	
10.503	27439	45837	1.671	0.004	
10.513	31833	45842	1.440	0.004	
10.523	6773	45190	6.672	0.001	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
10.529	22697	45513	2.005	0.003	
10.543	39087	46432	1.188	0.005	
10.552	16284	46719	2.869	0.002	
10.558	18796	47158	2.509	0.002	
10.576	69878	48769	0.698	0.010	
10.586	12085	48384	4.004	0.001	
10.592	21757	48469	2.228	0.003	
10.609	46960	50482	1.075	0.006	
10.616	40486	50812	1.255	0.005	17 C34
10.628	52392	50284	0.960	0.007	
10.665	99744	52644	0.528	0.014	
10.680	20832	52264	2.509	0.003	
10.699	126137	55939	0.443	0.018	
10.723	18258	52316	2.865	0.002	
10.733	65550	52928	0.807	0.009	
10.751	49102	51903	1.057	0.007	
10.765	10288	51490	5.005	0.001	
10.777	73220	52877	0.722	0.010	
10.791	15621	52150	3.338	0.002	
10.799	46819	52190	1.115	0.006	
10.817	52000	52328	1.006	0.007	
10.828	13014	52167	4.008	0.001	
10.833	18275	52280	2.861	0.002	
10.838	67284	52271	0.777	0.009	
10.860	15395	51401	3.339	0.002	
10.867	15366	51252	3.335	0.002	
10.874	25712	51608	2.007	0.003	
10.885	59363	52064	0.877	0.008	
10.901	33199	51247	1.544	0.004	
10.911	35859	51446	1.435	0.005	
10.925	15150	50526	3.335	0.002	
10.936	27761	50508	1.819	0.004	
10.954	40634	51235	1.261	0.005	
10.958	17973	51428	2.861	0.002	
10.982	101216	54997	0.543	0.014	
10.999	80380	54264	0.675	0.011	
11.022	15822	52869	3.342	0.002	
11.029	23878	53171	2.227	0.003	
11.032	23908	53219	2.226	0.003	
11.044	39793	53228	1.338	0.005	
11.053	13218	52959	4.007	0.001	19 C36
11.057	26491	53088	2.004	0.003	
11.069	47933	53454	1.115	0.007	
11.079	78088	52997	0.679	0.011	
11.132	4853	48537	10.002	0.000	
11.138	21933	48845	2.227	0.003	
11.148	46678	49317	1.057	0.006	
11.158	12248	49060	4.006	0.001	
11.164	14711	49102	3.338	0.002	
11.179	64473	49939	0.775	0.009	
11.192	19751	49439	2.503	0.002	
11.197	14848	49541	3.337	0.002	
11.202	17336	49566	2.859	0.002	
11.206	12400	49639	4.003	0.001	
11.212	56808	49881	0.878	0.008	
11.230	26830	48794	1.819	0.003	
11.263	19014	47590	2.503	0.002	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
11.267	11927	47790	4.007	0.001	
11.285	66432	50042	0.753	0.009	
11.308	17214	49235	2.860	0.002	
11.312	19684	49285	2.504	0.002	
11.322	19740	49570	2.511	0.002	
11.331	27467	50208	1.828	0.004	
11.334	12565	50301	4.003	0.001	
11.338	17617	50367	2.859	0.002	
11.356	50450	50688	1.005	0.007	
11.383	31641	48774	1.541	0.004	
11.392	14562	48589	3.337	0.002	
11.398	14566	48593	3.336	0.002	
11.405	21947	48858	2.226	0.003	
11.418	36961	49602	1.342	0.005	
11.428	52174	49838	0.955	0.007	
11.438	46900	49605	1.058	0.006	
11.456	66003	49218	0.746	0.009	
11.481	84312	48818	0.579	0.012	
11.518	39837	46996	1.180	0.005	
11.533	55836	46822	0.839	0.008	20 C38
11.560	30101	46465	1.544	0.004	
11.568	20916	46512	2.224	0.003	
11.573	11637	46596	4.004	0.001	
11.579	23274	46598	2.002	0.003	
11.586	13953	46531	3.335	0.002	
11.591	9318	46631	5.004	0.001	
11.623	97892	48831	0.499	0.014	
11.631	17107	48984	2.863	0.002	
11.638	22090	49260	2.230	0.003	
11.642	32050	49351	1.540	0.004	
11.669	95446	50981	0.534	0.014	
11.685	95822	49865	0.520	0.014	
11.788	8918	44609	5.002	0.001	
11.791	35704	44768	1.254	0.005	
11.804	11082	44350	4.002	0.001	
11.813	22172	44403	2.003	0.003	
11.823	19993	44543	2.228	0.002	
11.829	13395	44754	3.341	0.001	
11.837	20184	44981	2.228	0.002	
11.852	26933	44942	1.669	0.003	
11.866	36041	45224	1.255	0.005	
11.877	15835	45355	2.864	0.002	
11.883	18222	45726	2.509	0.002	
11.889	15985	45741	2.861	0.002	
11.896	20679	46117	2.230	0.003	
11.905	23259	46896	2.016	0.003	
11.929	70146	49826	0.710	0.010	
11.936	52288	50085	0.958	0.007	
11.951	14787	49369	3.339	0.002	
11.957	17313	49595	2.865	0.002	
11.961	32199	49647	1.542	0.004	
11.971	19578	49063	2.506	0.002	
11.980	34244	49065	1.433	0.005	
12.019	96987	51133	0.527	0.014	
12.025	48685	51499	1.058	0.007	
12.053	38386	51386	1.339	0.005	
12.062	38575	51549	1.336	0.005	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
12.070	17923	51300	2.862	0.002	
12.078	45780	51141	1.117	0.006	
12.105	31495	48817	1.550	0.004	
12.118	85510	48295	0.565	0.012	
12.148	55474	46657	0.841	0.008	21 C40
12.172	34299	45899	1.338	0.005	
12.181	18286	45754	2.502	0.002	
12.188	20565	45727	2.223	0.003	
12.198	29701	45787	1.542	0.004	
12.212	11377	45530	4.002	0.001	
12.218	29576	45566	1.541	0.004	
12.237	41054	45750	1.114	0.006	
12.243	13695	45701	3.337	0.002	
12.253	27528	46122	1.675	0.004	
12.260	16149	46201	2.861	0.002	
12.272	32473	46571	1.434	0.004	
12.347	231342	54259	0.235	0.034	
12.355	96470	54322	0.563	0.014	
12.383	13155	52687	4.005	0.001	
12.389	52817	52930	1.002	0.007	
12.434	117936	55204	0.468	0.017	
12.440	19323	55283	2.861	0.002	
12.448	22049	55156	2.502	0.003	
12.460	127044	56114	0.442	0.018	
12.500	63536	55700	0.877	0.009	
12.519	44746	56237	1.257	0.006	
12.523	16928	56556	3.341	0.002	
12.528	14154	56666	4.003	0.002	
12.532	14154	56644	4.002	0.002	
12.538	25607	57089	2.229	0.003	
12.543	31284	57010	1.822	0.004	
12.560	76588	57084	0.745	0.011	
12.574	22463	56167	2.500	0.003	
12.583	192414	56305	0.293	0.028	
12.668	201456	54098	0.269	0.029	
12.722	63529	49368	0.777	0.009	
12.744	14574	48683	3.340	0.002	
12.757	68233	49046	0.719	0.010	
12.777	29106	48653	1.672	0.004	
12.802	69072	49884	0.722	0.010	
12.805	19947	49915	2.502	0.002	
12.813	12457	49907	4.006	0.001	
12.826	42860	50672	1.182	0.006	
12.830	15192	50711	3.338	0.002	
12.835	63121	50727	0.804	0.009	
12.856	30109	50299	1.671	0.004	
12.871	12459	49875	4.003	0.001	
12.876	24950	49913	2.001	0.003	
12.883	12458	49860	4.002	0.001	
12.892	24999	50091	2.004	0.003	
12.904	37682	50442	1.339	0.005	
12.918	60965	51059	0.838	0.009	
12.929	15268	50972	3.338	0.002	
12.950	101236	52476	0.518	0.014	
12.991	32619	50285	1.542	0.004	
13.030	23826	47690	2.002	0.003	
13.047	49429	47410	0.959	0.007	

RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
13.072	11668	46709	4.003	0.001	
13.077	14056	46964	3.341	0.002	
13.083	21201	47214	2.227	0.003	
13.092	45034	47490	1.055	0.006	
13.103	33139	47401	1.430	0.004	
13.119	58622	47300	0.807	0.008	
13.136	61979	46406	0.749	0.009	
13.163	36232	45399	1.253	0.005	
13.172	13552	45219	3.337	0.002	
13.178	13550	45211	3.337	0.002	
13.183	13581	45318	3.337	0.002	
13.188	15867	45365	2.859	0.002	
13.193	11350	45433	4.003	0.001	
13.206	54879	45909	0.837	0.008	
13.233	74220	46899	0.632	0.010	
13.246	18724	46923	2.506	0.002	
13.250	14089	47028	3.338	0.002	
13.254	9392	46999	5.004	0.001	
13.261	35241	47103	1.337	0.005	
13.270	21093	46884	2.223	0.003	
13.278	16404	46889	2.858	0.002	
13.284	28108	46937	1.670	0.004	
13.309	27777	46575	1.677	0.004	
13.313	11643	46617	4.004	0.001	
13.323	30391	46938	1.544	0.004	
13.337	49696	47554	0.957	0.007	
13.345	11906	47686	4.005	0.001	
13.352	21499	47921	2.229	0.003	
13.358	14416	48133	3.339	0.002	
13.366	24163	48487	2.007	0.003	
13.391	108474	49842	0.459	0.016	
13.411	39818	49922	1.254	0.005	
13.421	140245	49882	0.356	0.020	
13.468	75433	46221	0.613	0.011	
13.519	59701	44435	0.744	0.008	
13.538	26345	44021	1.671	0.003	
13.553	17475	43727	2.502	0.002	
13.559	19699	43828	2.225	0.002	
13.566	15324	43832	2.860	0.002	
13.574	28519	43956	1.541	0.004	
13.585	21950	43943	2.002	0.003	
13.595	26497	44341	1.673	0.003	
13.603	22230	44574	2.005	0.003	
13.608	11135	44585	4.004	0.001	
13.633	100703	46371	0.460	0.014	
13.650	25255	45974	1.820	0.003	
13.663	20511	45675	2.227	0.003	
13.670	15945	45584	2.859	0.002	
13.677	40973	45642	1.114	0.006	
13.688	4544	45448	10.002	0.000	
13.693	29520	45508	1.542	0.004	
13.718	24720	44995	1.820	0.003	
13.727	11216	44890	4.002	0.001	
13.735	29185	45025	1.543	0.004	
13.752	17874	44782	2.505	0.002	
13.767	35874	45020	1.255	0.005	
13.775	36036	45104	1.252	0.005	

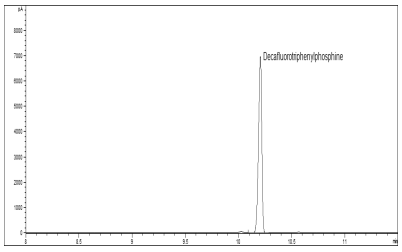
RT	AREA	HEIGHT	HT/AREA	% AREA	COMPOUNDS
13.785	11226	44939	4.003	0.001	
13.790	47016	44953	0.956	0.006	
13.813	11118	44516	4.004	0.001	
13.818	37641	44507	1.182	0.005	
13.832	15424	44192	2.865	0.002	
13.838	17564	43967	2.503	0.002	
13.844	26339	43892	1.666	0.003	
13.855	30567	43821	1.434	0.004	
13.865	23854	43526	1.825	0.003	
13.882	28266	43639	1.544	0.004	
13.886	30418	43629	1.434	0.004	
13.901	34702	43472	1.253	0.005	
13.920	48162	44005	0.914	0.007	
13.928	17577	43956	2.501	0.002	
13.941	15410	44084	2.861	0.002	
13.946	11045	44251	4.006	0.001	
13.949	24369	44341	1.820	0.003	
13.959	22103	44264	2.003	0.003	
13.967	22088	44195	2.001	0.003	
13.976	33207	44336	1.335	0.004	18 Filter Peak
13.998	24195	44018	1.819	0.003	
14.007	15335	43888	2.862	0.002	
14.014	17519	43863	2.504	0.002	
14.019	54335	43870	0.807	0.008	
14.046	10722	42915	4.003	0.001	
14.052	19305	42955	2.225	0.002	
14.058	8568	42864	5.003	0.001	
14.067	38739	43159	1.114	0.005	
14.077	15012	42931	2.860	0.002	
14.083	25753	42977	1.669	0.003	
14.102	25682	42913	1.671	0.003	
14.108	19267	42865	2.225	0.002	
14.116	12834	42815	3.336	0.001	
14.126	25874	43369	1.676	0.003	
14.133	56339	43595	0.774	0.008	
14.161	32503	43582	1.341	0.004	
14.165	10909	43696	4.006	0.001	
14.170	15313	43822	2.862	0.002	
14.175	10960	43911	4.007	0.001	
14.178	13176	43945	3.335	0.001	
14.183	19785	43976	2.223	0.002	
14.191	8796	44018	5.005	0.001	
14.197	17636	44177	2.505	0.002	
14.208	28815	44459	1.543	0.004	
14.219	8873	44379	5.002	0.001	
14.223	13318	44445	3.337	0.001	
14.229	28860	44456	1.540	0.004	
14.247	15436	44194	2.863	0.002	
14.260	37147	43758	1.178	0.005	
14.274	45685	43705	0.957	0.006	
	677340272	268782821		100.000	

Total unknown % area = 25.478

Certificate of Analysis - Certified Reference Material

Decafluorotriphenylphosphine solution

Product no.: 48724-U
Lot no.: LRAD0628
Expiry Date: October 2024
Manufacturing Date: September 2021
Storage: ROOM TEMPERATURE
Solvent/Matrix: DICHLOROMETHANE
Certificate version: LRAD0628.01 (*Note: Certificates may be updated due to the availability of new data. Check our website at: www.sigma-aldrich.com for the most current version.)*

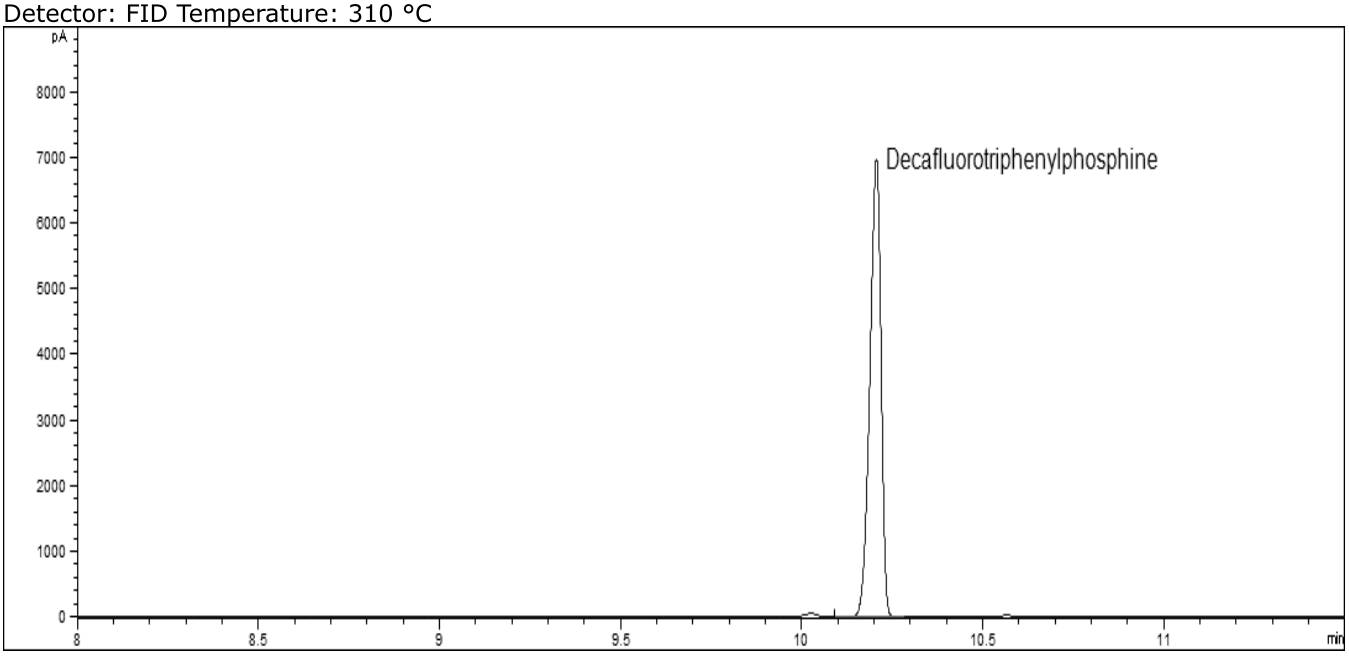


Certified Values:

Analyte	*Certified Value*	*Units*	*Raw Material Purity,%*	*Raw Material Lot*
DFTPP CAS# 5074-71-5	25.2 ± 2.6	mg/mL	97.0	10220909

ASSAY Method

METHOD: GC (BELLEFONTE)
Column: SPB-5, 30 m × 0.53 mm I.D., 1.5 µm film thickness
Carrier Gas: H_2 Flow Rate: 4.3 mL/min
Inlet Temperature: 250 °C Injection Volume: 1 µL
Injection Mode: 25:1
Temperature Program: 120 °C (Hold 0 min) @ 12 °C/min to 260 °C (Hold 0 min)
Detector: FID Temperature: 310 °C



Sigma-Aldrich RTC, 2931 Soldier Springs Rd. Laramie, WY 82070, USA;
Tel. 1 307-742-5452; Fax 1 855-831-9211; www.sigmaaldrich.com
Sigma-Aldrich RTC is a subsidiary of Merck KGaA, Darmstadt, Germany.

Elution details:

EO	RT(MIN)	ANALYTE
1	10.206	Decafluorotriphenylphosphine

Metrological traceability: Traceable to the SI and higher order standards from NIST through an unbroken chain of comparisons. The balance used to weigh raw materials is accurate to +/-0.0001 g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

Measurement method: Where applicable, the assigned value is based on a purity determination by mass balance and gravimetrically prepared value.

Intended use: Intended for R&D and Analytical Use only. Not for drug, household or other uses.

Minimum sample size: 1 µL

Packaging: 1 mL in amber ampule

Instructions for handling and correct use: Use on the as is basis. The internal pressure of the container may be slightly different from the atmospheric pressure at the user`s location. Open slowly and carefully to avoid dispersion of the material.

Health and safety information: All chemical reference materials should be considered potentially hazardous and should be used only by qualified laboratory personnel. Please refer to the Safety Data Sheet for detailed information about the nature of any hazard and appropriate precautions to be taken.

Accreditation: Sigma-Aldrich RTC is accredited by the US accreditation authority ANAB as a registered reference material producer AR-1470 in accordance with ISO 17034.

Certificate issue date: 30-Sep-2021

Andy Ommen - QC Manager

Scott Stetler - QA Manager

Details on metrological traceability: This standard has been gravimetrically prepared using balances that have been fully qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error. Fill volume to predetermined specifications is gravimetrically verified throughout the dispensing process using qualified and calibrated balances. Further traceability to a corresponding Primary Standard may be achieved through a direct comparison assay. Where a Primary Standard is available, the assay value will be included in the specified section of the COA.

Associated uncertainty: Ucrm - Uncertainty values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a *t*-distribution and degrees of freedom. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies. The mathematical representation of the Ucrm calculation is as follows:

$$u_{CRM} = \sqrt{u_{char}^2 + u_{\text{hom } ogeneity}^2 + u_{stability}^2}$$

Homogeneity assessment: Homogeneity was assessed in accordance with ISO Guide 35. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared by Single Factor Analysis of Variance (ANOVA). The uncertainty due to homogeneity was derived from the ANOVA. Heterogeneity was not detected under the conditions of the ANOVA.

Stability assessment: Significance of the stability assessment will be demonstrated if the analytical result of the study and the range of values represented by the Expanded Uncertainty do not overlap the result of the original assay and the range of its values represented by the Expanded Uncertainty. The method employed will usually be the same method used to characterize the assay value in the initial

Certificate of analysis revision history:

Certificate version	Date	Reason for version
LRAD0628.01	30-Sep-2021	Original Release Date

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Certificate of Analysis

Produced by Phenova
6390 Joyce Drive STE 100, Golden, CO 80403 USA ▪ Tel: 303-940-0033 ▪ Fax: 303-940-0043 ▪ info@phenova.com
Access your Safety Data Sheets and digital Certificates at **www.phenova.com/documents.**

Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.: AL0-101244
Description: Benzidines Standard
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Methylene Chloride

Lot Number: CL17662
Certification Date: December 2, 2021
Expiration Date: November 30, 2031

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Benzidine	92-87-5	2000	± 0.211%
3,3'-Dichlorobenzidine	91-94-1	2000	± 1.305%

K3236

Certificate of Analysis

Produced by Phenova
6390 Joyce Drive STE 100, Golden, CO 80403 USA ▪ Tel: 303-940-0033 ▪ Fax: 303-940-0043 ▪ info@phenova.com
Access your Safety Data Sheets and digital Certificates at www.phenova.com/documents.

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
[3] ISO 17034 – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

Certificate of Analysis

BNAs - Sandy Loam 1

Certified Reference Material

Description

Product ID CRM143-50G
Lot **LRAC8918**
Expiration Date January 2024
Manufacturing Date January 2021
Storage Conditions Refrigerate
Solvent/Matrix SOIL

Certified Values

Analyte	*Units*	*Certified Value* [1,4]
1,2,4-Trichlorobenzene	µg/Kg	1477 ± 181
1,3-Dichlorobenzene (m-Dichlorobenzene)	µg/Kg	1625 ± 292
1-Chloronaphthalene	µg/Kg	2809 ± 84
2,3-Dimethylphenol	µg/Kg	4552 ± 137
2,4,5-Trichlorophenol	µg/Kg	3438 ± 245
2,4,6-Trichlorophenol	µg/Kg	2194 ± 251
2,4-Dichlorophenol	µg/Kg	6991 ± 394
2,4-Dimethylphenol	µg/Kg	6357 ± 879
2,4-Dinitrophenol	µg/Kg	2922 ± 523
2,4-Dinitrotoluene (2,4-DNT)	µg/Kg	3318 ± 442
2,6-Dichlorophenol	µg/Kg	4578 ± 874
2,6-Dimethylphenol	µg/Kg	7582 ± 228
2-Chloronaphthalene	µg/Kg	2223 ± 168
2-Chlorophenol	µg/Kg	1678 ± 202
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	µg/Kg	5148 ± 685
2-Methylphenol (o-Cresol)	µg/Kg	6004 ± 573
2-Nitrophenol	µg/Kg	6456 ± 383
3,4-Dimethylphenol	µg/Kg	7185 ± 216
3+4-Methylphenol (m+p-Cresol)	µg/Kg	8033 ± 1613
4-Bromophenyl phenyl ether (BDE-3)	µg/Kg	7169 ± 310
4-Chloro-3-methylphenol	µg/Kg	2071 ± 110
4-Chlorophenyl phenylether	µg/Kg	2052 ± 113
4-Methylphenol (p-Cresol)	µg/Kg	6617 ± 1371
4-Nitrophenol	µg/Kg	6812 ± 595
Acenaphthene	µg/Kg	5489 ± 380

Description

Lot **LRAC8918**
Expiration Date January 2024
Manufacturing Date January 2021
Storage Conditions Refrigerate
Solvent/Matrix SOIL

Acenaphthylene	µg/Kg	1948 ± 240
Anthracene	µg/Kg	2866 ± 237
Benzo(a)anthracene	µg/Kg	5751 ± 552
Benzo(a)pyrene	µg/Kg	5902 ± 612
Benzo(b)fluoranthene	µg/Kg	3010 ± 409
Benzo(b+k)fluoranthene	µg/Kg	6534 ± 196
Benzo(g,h,i)perylene	µg/Kg	1380 ± 136
Benzo(k)fluoranthene	µg/Kg	2215 ± 237
Butyl benzyl phthalate	µg/Kg	3511 ± 384
Carbazole	µg/Kg	5412 ± 407
Chrysene	µg/Kg	1477 ± 72
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	µg/Kg	2905 ± 321
Dibenzo(a,h)anthracene	µg/Kg	3420 ± 302
Dibenzofuran	µg/Kg	6130 ± 253
Dimethyl phthalate	µg/Kg	4537 ± 250
Di-n-butyl phthalate	µg/Kg	1721 ± 154
Di-n-octyl phthalate	µg/Kg	2744 ± 288
Fluoranthene	µg/Kg	2497 ± 222
Fluorene	µg/Kg	3724 ± 222
Hexachlorobutadiene	µg/Kg	1877 ± 245
Indeno(1,2,3-cd) pyrene	µg/Kg	3914 ± 409
Isophorone	µg/Kg	1615 ± 170
Naphthalene	µg/Kg	4458 ± 480
Nitrobenzene	µg/Kg	3539 ± 266
n-Nitrosodimethylamine	µg/Kg	1580 ± 402
n-Nitrosodiphenylamine	µg/Kg	2854 ± 379
Pentachlorophenol	µg/Kg	3411 ± 358
Phenanthrene	µg/Kg	5052 ± 385
Phenol	µg/Kg	2660 ± 184
Pyrene	µg/Kg	2964 ± 256
Pyridine	µg/Kg	1008 ± 30

Informational Values

Certificate of Analysis

BNAs - Sandy Loam 1

Certified Reference Material

Description

Product ID CRM143-50G
Lot **LRAC8918**
Expiration Date January 2024
Manufacturing Date January 2021
Storage Conditions Refrigerate
Solvent/Matrix SOIL

Analyte	*Units*	*Suggested Acceptance Windows*	*Standard Deviation*
1,2,4-Trichlorobenzene	µg/Kg	148 to 2853	459
1,3-Dichlorobenzene (m-Dichlorobenzene)	µg/Kg	163 to 3440	605
1-Chloronaphthalene	µg/Kg	1123 to 4494	562
2,3-Dimethylphenol	µg/Kg	1821 to 7284	910
2,4,5-Trichlorophenol	µg/Kg	1003 to 5872	811
2,4,6-Trichlorophenol	µg/Kg	640 to 3748	518
2,4-Dichlorophenol	µg/Kg	2391 to 11591	1533
2,4-Dimethylphenol	µg/Kg	0.00 to 13959	2534
2,4-Dinitrophenol	µg/Kg	1169 to 4675	584
2,4-Dinitrotoluene (2,4-DNT)	µg/Kg	1248 to 5388	690
2,6-Dichlorophenol	µg/Kg	1831 to 7324	916
2,6-Dimethylphenol	µg/Kg	3033 to 12132	1516
2-Chloronaphthalene	µg/Kg	748 to 3699	492
2-Chlorophenol	µg/Kg	415 to 2942	421
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	µg/Kg	0.00 to 10347	1733
2-Methylphenol (o-Cresol)	µg/Kg	1306 to 10702	1566
2-Nitrophenol	µg/Kg	1534 to 11379	1641
3,4-Dimethylphenol	µg/Kg	2874 to 11495	1437
3+4-Methylphenol (m+p-Cresol)	µg/Kg	4054 to 16218	2027
4-Bromophenyl phenyl ether (BDE-3)	µg/Kg	2901 to 11437	1423
4-Chloro-3-methylphenol	µg/Kg	677 to 3464	464
4-Chlorophenyl phenylether	µg/Kg	756 to 3348	432
4-Methylphenol (p-Cresol)	µg/Kg	2647 to 10587	1323
4-Nitrophenol	µg/Kg	681 to 14762	2650
Acenaphthene	µg/Kg	2243 to 8736	1082
Acenaphthylene	µg/Kg	712 to 3183	412
Anthracene	µg/Kg	1218 to 4515	550
Benzo(a)anthracene	µg/Kg	2806 to 8696	982
Benzo(a)pyrene	µg/Kg	2512 to 9292	1130
Benzo(b)fluoranthene	µg/Kg	1197 to 4822	604
Benzo(b+k)fluoranthene	µg/Kg	2614 to 10454	1307

Description

Lot **LRAC8918**
Expiration Date January 2024
Manufacturing Date January 2021
Storage Conditions Refrigerate
Solvent/Matrix SOIL

Benzo(g,h,i)perylene	µg/Kg	489 to 2271	297
Benzo(k)fluoranthene	µg/Kg	892 to 3537	441
Butyl benzyl phthalate	µg/Kg	1255 to 5766	752
Carbazole	µg/Kg	2032 to 8792	1127
Chrysene	µg/Kg	669 to 2284	269
Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	µg/Kg	765 to 5045	713
Dibenzo(a,h)anthracene	µg/Kg	1257 to 5583	721
Dibenzofuran	µg/Kg	2766 to 9493	1121
Dimethyl phthalate	µg/Kg	1842 to 7231	898
Di-n-butyl phthalate	µg/Kg	495 to 2947	409
Di-n-octyl phthalate	µg/Kg	690 to 4798	685
Fluoranthene	µg/Kg	984 to 4009	504
Fluorene	µg/Kg	1638 to 5810	695
Hexachlorobutadiene	µg/Kg	425 to 3329	484
Indeno(1,2,3-cd) pyrene	µg/Kg	870 to 6957	1015
Isophorone	µg/Kg	437 to 2792	392
Naphthalene	µg/Kg	1131 to 7784	1109
Nitrobenzene	µg/Kg	1024 to 6054	838
n-Nitrosodimethylamine	µg/Kg	632 to 2528	316
n-Nitrosodiphenylamine	µg/Kg	1142 to 4567	571
Pentachlorophenol	µg/Kg	341 to 7037	1209
Phenanthrene	µg/Kg	2307 to 7798	915
Phenol	µg/Kg	681 to 4639	660
Pyrene	µg/Kg	1118 to 4810	615
Pyridine	µg/Kg	403 to 1613	202

Additional Information:

DESCRIPTION

The organic sample is a soil containing extractable BNAs for analysis by 8100, 8270, 8310 or equivalent methods.

This product consist of a 5 vials each containing 10g of soil for analysis of PAHs. Each vial is identical and has been tested how homogeneity. Only one vial is need for test the remaining vials are to be used for multiple methods or routine testing.

The soil has been sterilized to minimize degradation of the sample.

The sample has been sized to 100 mesh.

Required storage condition is 4ºC.

The sample has been intentionally prepared with an apparent headspace.

STORAGE

The sample should be stored at 4ºC. It has been determined to be stable for the duration of the expiration date.

After sub-sampling replace cap securely and store remaining sample at 4ºC.

The shelf life of the product was determined by historic stability of similar CRM's. The expiration date may be extended based on stock and popularity upon successful stability testing by a 17025 accredited laboratory.

Certificate of Analysis

BNAs - Sandy Loam 1

Certified Reference Material

Description

Product ID	CRM143-50G
Lot	**LRAC8918**
Expiration Date	January 2024
Manufacturing Date	January 2021
Storage Conditions	Refrigerate
Solvent/Matrix	SOIL

Stability and shelf life after opening must be determined by the user, taking into account sampling frequency/volume and all local conditions.

SAMPLE PREPARATION

Extract the complete contents of a single vial. Transfer entire contents of one vial to extraction vessel. Rinse vial and cap with extraction solvent.

Assume a 10g sample size for all calculations.

Note: Sample extracts and calibration solutions should be in the same solvent.

Report all results on a wet weight basis, do not correct for moisture.

NOTE: For method 8100 and using a packed column gas chromatographic method or cannot adequately resolve the following may coelute in four pairs of compounds: anthracene and phenanthrene; chrysene and benzo(a)anthracene; benzo(b)fluoranthene and benzo(k)fluoranthene; and dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene.

SCOPE AND APPLICATION

The BNAs in Soil Certified Reference Material (CRM) consists of 5 10mL VOA vials, with a Teflon lined closures containing approximately 10 grams of soil, fortified with BNAs. Being a natural matrix waste sample the analyst is challenged by the same preparation problems, analytical interferences, etc. as is typical for similar matrices received by the laboratory for analysis.

Description

Lot **LRAC8918**
Expiration Date January 2024
Manufacturing Date January 2021
Storage Conditions Refrigerate
Solvent/Matrix SOIL

1 **Metrological traceability:** Traceable to the SI and higher order standards from NIST through an unbroken chain of comparisons. The balance used to weigh raw materials is accurate to +/-0.0001 g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.
4 Ucrm - Uncertainty values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a *t*-distribution and degrees of freedom. K=2 unless specified. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies. The mathematical representation of the Ucrm calculation is as follows:

$$u_{CRM} = \sqrt{u_{char}^2 + u_{\text{hom } ogeneity}^2 + u_{stability}^2}$$

***k*:** Coverage factor derived from a t-distribution table, based on the degrees of freedom of the data set. Assume 2.0 for a **Confidence interval = 95%**

6 Analytical Value- For QC verification of the certified value only- not to be used in calculations. Represents the analytical data obtained by comparison to a standard as analyzed by the method described in the CoA or another acceptable method. The result may differ from the certified value and UCRM based on method uncertainty as well as the uncertainty associated with the standard used for comparison.

Traceability: The standard was manufactured under an ISO/IEC 17025:2017 certified quality system. The balance used to weigh raw materials is accurate to +/- 0.0001g and calibrated regularly using mass standards traceable to NIST. All dilutions were preformed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

Homogeneity: Homogeneity was assessed in accordance with ISO 17034:2016. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared using a one-way analysis of variance approach as described by TNI EL-V3-2009 Appendix A.2. See Instructions for minimum sub-sample size.

Expiration is at end of month given on certificate and label.

MSDS reports for components comprising greater than 1.0% of the solution or 0.1% for components known to be carcinogens are available upon request.

THIS PRODUCT WAS DESIGNED, PRODUCED AND VERIFIED FOR ACCURACY AND STABILITY IN ACCORDANCE WITH **ISO/IEC 17025:2017 (ANAB Cert AT-1467)** and **ISO 17034:2016 (ANAB Cert AR-1470).**

Andy Ommen - QC Manager

Mark Pooler - QA Supervisor

Certification Date January 05, 2021
Version 0-152021

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

Agilent

Certificate of Analysis

Product Name: Toxic Substances Standard

Product Number: US-103N-1 **Lot Issue Date:** 25-May-2021

Lot Number: 0006609664 **Expiration Date:** 30-Jun-2024

Description:
This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
benzoic acid	000065-85-0	RM01884	2005 ± 10 µg/mL
o-cresol	000095-48-7	RM12877	2005 ± 10 µg/mL
p-cresol	000106-44-5	RM01988	2005 ± 10 µg/mL
2,4,5-trichlorophenol	000095-95-4	NT00344	2004 ± 10 µg/mL

Matrix: methylene chloride (dichloromethane)

Storage Conditions: Store at Room Temperature (15° to 30°C).

Traceability:
The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:
This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

Hazards:
Refer to the Safety Data Sheet on www.agilent.com for information regarding this RM.

5/11/22

K004539
toxic sub mix#1
Solvent / Lot: methylene chloride
Prep: 5/11/2022 by JZ
Exp: 6/30/2024
Location:

ANAB ACCREDITED ISO17034 REFERENCE MATERIAL PRODUCER
ISO 17034 Cert No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

www.agilent.com/quality/
CSD-QA-015.1

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO 17025 Cert No. AT-1937

ISO 17034

Agilent
Trusted Answers

Reference Material Certificate

Product Name: Phenols Standard
Product Number: US-107N-1
Storage Conditions: Store at Room Temperature (15° to 30°C).

Lot Number: 0006648297
Lot Issue Date: 17-Nov-2021
Expiration Date: 31-Dec-2024

Component Name	CERTIFIED VALUES Concentration	Expanded Uncertainty	CAS#	Analyte Lot
4-chloro-3-methylphenol	2006 ±	10 µg/mL	000059-50-7	RM01885
2-chlorophenol	2007 ±	10 µg/mL	000095-57-8	RM01871
2,4-dichlorophenol	2005 ±	10 µg/mL	000120-83-2	RM13878
2,4-dimethylphenol	2006 ±	10 µg/mL	000105-67-9	RM13009
2,4-dinitrophenol	2006 ±	10 µg/mL	000051-28-5	RM02112
2-methyl-4,6-dinitrophenol	2005 ±	10 µg/mL	000534-52-1	RM02292
2-nitrophenol	2007 ±	10 µg/mL	000088-75-5	RM13445
4-nitrophenol	2006 ±	10 µg/mL	000100-02-7	RM03752
pentachlorophenol	2006 ±	10 µg/mL	000087-86-5	RM02474
phenol	2006 ±	10 µg/mL	000108-95-2	RM11471
2,4,6-trichlorophenol	2006 ±	10 µg/mL	000088-06-2	RM18096

Matrix: methylene chloride (dichloromethane)

Description:
This document is prepared in accordance with ISO 17034 and Guide 31. This analytical reference material standard was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed above.

Traceability:
The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:
This analytical reference standard was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

Safety:
Refer to the Safety Data Sheet on www.agilent.com for information regarding this analytical reference material.

5/11/22

CSD-QA-015.1

K004540
phenols mix
Solvent / Lot: methylene chloride
Prep: 5/11/2022 by JZ
Exp: 12/31/2024
Location:

ISO 17034

Agilent
Trusted Answers

Reference Material Certificate

Product Name: PAH Standard
Product Number: US-106N-1
Storage Conditions: Store at Room Temperature (15° to 30°C).

Lot Number: 0006627349
Lot Issue Date: 17-Sep-2021
Expiration Date: 31-Oct-2024

Component Name	CERTIFIED VALUES Concentration	Expanded Uncertainty	CAS#	Analyte Lot
acenaphthene	2007 ±	10 µg/mL	000083-32-9	RM10879
acenaphthylene	2004 ±	10 µg/mL	000208-96-8	RM10891
anthracene	2006 ±	10 µg/mL	000120-12-7	RM14212
benz[a]anthracene	2006 ±	10 µg/mL	000056-55-3	RM16072
benzo[b]fluoranthene	2006 ±	10 µg/mL	000205-99-2	RM14571
benzo[k]fluoranthene	2006 ±	10 µg/mL	000207-08-9	RM18376
benzo[ghi]perylene	2006 ±	10 µg/mL	000191-24-2	RM15761
benzo[a]pyrene	2006 ±	10 µg/mL	000050-32-8	RM17573
chrysene	2007 ±	10 µg/mL	000218-01-9	RM13771
dibenz[a,h]anthracene	2006 ±	10 µg/mL	000053-70-3	RM06786
fluoranthene	2006 ±	10 µg/mL	000206-44-0	RM12277
fluorene	2006 ±	10 µg/mL	000086-73-7	RM09441
indeno[1,2,3-cd]pyrene	2006 ±	10 µg/mL	000193-39-5	RM14192
naphthalene	2007 ±	10 µg/mL	000091-20-3	RM10445
phenanthrene	2005 ±	10 µg/mL	000085-01-8	RM10495
pyrene	2005 ±	10 µg/mL	000129-00-0	RM16126

Matrix: methylene chloride/benzene (1:1)

Description:
This document is prepared in accordance with ISO 17034 and Guide 31. This analytical reference material standard was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed above.

Traceability:
The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:
This analytical reference standard was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

K004541
SVOA PAH STD 2000ug/ml
Solvent / Lot: DCM/BENZENE
Prep: 5/11/2022 by JZ
Exp: 10/31/2024
Location: Fridge 19

CSD-QA-015.1

11/22

Reference Materials Producer
Cert #2495.01

Certificate of Analysis

Chemical Testing
Cert #2495.02

Catalog Number: ECS-A-030 **Lot No.** AA210126005

Description: Base/Neutrals Mix 1

Matrix: Methylene Chloride

Manufactured Date: 1-26-2021

Expiration Date: 1-26-2024

This **SPEXOrganics**® Certified Reference Material, CRM, is intended primarily for use as a calibration standard or quality control standard for organic chromatography instrumentation such as GC, GC-MS, LC, and LC-MS. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

Certified Compounds:

Compound	CAS #	Labeled	Purity	Certified†	Uncertainty
1,2,4-Trichlorobenzene	120-82-1	2000 µg/mL	99%	2010 µg/mL	± 50 µg/mL
1,2-Dichlorobenzene	95-50-1	2000 µg/mL	99%	2002 µg/mL	± 50 µg/mL
1,3-Dichlorobenzene	541-73-1	2000 µg/mL	98%	2021 µg/mL	± 51 µg/mL
1,4-Dichlorobenzene	106-46-7	2000 µg/mL	99%	2012 µg/mL	± 50 µg/mL
2,4-Dinitrotoluene	121-14-2	2000 µg/mL	97%	2006 µg/mL	± 50 µg/mL
2,6-Dinitrotoluene	606-20-2	2000 µg/mL	99.6%	2012 µg/mL	± 50 µg/mL
2-Chloronaphthalene	91-58-7	2000 µg/mL	98%	2004 µg/mL	± 50 µg/mL
4-Bromodiphenyl ether	101-55-3	2000 µg/mL	99%	2022 µg/mL	± 51 µg/mL
4-Chlorophenyl-phenyl ether	7005-72-3	2000 µg/mL	98%	2001 µg/mL	± 50 µg/mL
Azobenzene	103-33-3	2000 µg/mL	98%	2001 µg/mL	± 50 µg/mL
Bis(2-chloro-1-methylethyl) ether	108-60-1	2000 µg/mL	98.9%	2010 µg/mL	± 50 µg/mL
bis(2-Chloroethoxy)methane	111-91-1	2000 µg/mL	97%	2001 µg/mL	± 50 µg/mL
bis(2-Chloroethyl)ether	111-44-4	2000 µg/mL	99%	2002 µg/mL	± 50 µg/mL
Bis(2-Ethylhexyl)phthalate	117-81-7	2000 µg/mL	99%	2003 µg/mL	± 50 µg/mL
Butylbenzyl phthalate	85-68-7	2000 µg/mL	98%	2000 µg/mL	± 50 µg/mL
Carbazole	86-74-8	2000 µg/mL	95%	2009 µg/mL	± 50 µg/mL
Di-n-butyl phthalate	84-74-2	2000 µg/mL	99%	2020 µg/mL	± 50 µg/mL
Di-n-octyl phthalate	117-84-0	2000 µg/mL	98%	2000 µg/mL	± 50 µg/mL
Diethyl phthalate	84-66-2	2000 µg/mL	99.5%	2002 µg/mL	± 50 µg/mL
Dimethyl phthalate	131-11-3	2000 µg/mL	99%	2006 µg/mL	± 50 µg/mL
Hexachlorobenzene	118-74-1	2000 µg/mL	99%	2003 µg/mL	± 50 µg/mL
Hexachlorobutadiene	87-68-3	2000 µg/mL	97%	2003 µg/mL	± 50 µg/mL
Hexachlorocyclopentadiene	77-47-4	2000 µg/mL	99%	2003 µg/mL	± 50 µg/mL
Hexachloroethane	67-72-1	2000 µg/mL	98%	2003 µg/mL	± 50 µg/mL
Isophorone	78-59-1	2000 µg/mL	97%	2003 µg/mL	± 50 µg/mL
N-Nitrosodi-n-propylamine	621-64-7	2000 µg/mL	98%	2000 µg/mL	± 50 µg/mL
N-Nitrosodiphenylamine	86-30-6	2000 µg/mL	97%	2001 µg/mL	± 50 µg/mL
Nitrobenzene	98-95-3	2000 µg/mL	99%	2001 µg/mL	± 50 µg/mL
Pyridine	110-86-1	2000 µg/mL	99%	2004 µg/mL	± 50 µg/mL
N-Nitrosodimethylamine	62-75-9	2000 µg/mL	97%	2000 µg/mL	± 50 µg/mL

Certificate of Reference Material

Catalog Number: ECS-A-030 **Lot No.** AA210126005

Description: Base/Neutrals Mix 1

Matrix: Methylene Chloride

Manufactured Date: 1-26-2021

Expiration Date: 1-26-2024

Final Solution Verification:

Final solution integrity verified by Gas Chromatography/Mass Spectrometry. The mass spectrum of each compound was confirmed against the NIST mass spectral database.

† Certified concentration based on gravimetric weights and corrected for the purity of the compound(s) used to prepare the standard. Analytical balance calibration is verified daily with C1 weight set #23-190006 which is registered with Atlantic Scale, and traceable to NIST and NJ Division of Weights and Measures.

This CRM is guaranteed stable and accurate to within the uncertainty listed for the certified value. This includes uncertainty components due to preparation, homogeneity, short term and long term stability. During the stated period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution. For further information, contact the Sales Support Department at crmsales@spexcsp.com.

Date of Certification: 1-26-2021 Certifying Officer: Shannon Mora

Report of Certification

Catalog Number: ECS-A-030 **Lot No.** AA210126005

Description: Base/Neutrals Mix 1

Matrix: Methylene Chloride

Manufactured Date: 1-26-2021

Expiration Date: 1-26-2024

This Certified Reference Material (CRM) has been prepared and certified under an ISO 9001:2008, ISO 17025:2005, and ISO Guide 34:2009 Quality System consistent with the following standards:

- ISO 9001:2008: Quality management systems - Requirements - Certified by UL-DQS
- ISO 17025:2005: General Requirements for the Competence of Testing and Calibration Laboratories - Accredited by A2LA
- ISO Guide 34:2009: General Requirements for the Competence of Reference Material Producers - Accredited by A2LA
- ISO Guide 31:2000: Reference Materials - Contents of Certificates and Labels
- ISO Guide 35:2006: Reference Materials - General and statistical principals for certification
- Guide to the Expression of Uncertainty in Measurement 1997
- EURACHEM/CITAC Guide: Qualifying Uncertainty in Analytical Measurements - Second Edition
- ASTM Guide D6362-98
- NIST Technical Note 1297
- ILAC-G12-2000: Guidelines for the requirements for the competence of reference material producers
- ISO/REMCO N280

Storage Requirements:

To ensure the stability of the product once it arrives in your laboratory , please store this product in a refrigerator (2°C to 8°C). Note: Shipping conditions may differ from storage conditions. The EXPIRATION DATE is calculated from the MANUFACTURED DATE using our stability data and is applicable only if the product is unopened and stored under the prescribed conditions.

Instructions for Use:

Let material come to room temperature before use. Check for precipitate and if necessary sonicate for one minute. If compounds do not dissolve after one minute then sonicate further until the product is dissolved. A clear appearance is acceptable. The minimum recommended amount that should be removed from this vial is 5 µL with a 25µL gas tight syringe. All solutions should be thoroughly mixed, by shaking, prior to use. All surfaces that come in contact with the solution must be thoroughly cleaned prior to use. Dilutions should be performed only with Class A volumetric glassware.

Material Source:

All analytes and matrix materials are obtained and verified by SPEX CertiPrep from pre-qualified vendors as per ISO guidelines. Vendor identifications are proprietary, however sources of all materials used in the preparation and testing of SPEX CertiPrep CRMs are tracked and documented. For assistance, please contact sales support at crmsales@spexcsp.com.

Method of Preparation:

Clean laboratory procedures and techniques have been used throughout the preparation. All materials, equipment, and analytical instrumentation have been qualified prior to use. The highest purity solvents and Class A / calibrated volumetrics have been been used in all preparations.

Homogeneity:

The homogeneity of this CRM has been confirmed by procedures consistent with ISO 17025:2005, ISO Guide 34:2009, and ASTM D6362-98 Appendix X2. Random, replicate samples of the final, packaged material have been analyzed to prove homogeneity in accordance with our internal procedure 4300-HOMOGEN-1A. This is consistent with the intended use of this CRM. The Degree of Homogeneity, as expressed as maximum between-bottle variation, is 1.2%

Statistical Estimator and Confidence Limits:

The Certified value 'X' as listed on the reverse of this document is at the 95% level of confidence and can be expressed as:

- $X = x \pm U$ where X=certified value, U=expanded uncertainty, x=property value
- $U = ku_c$ where k=2 is the coverage factor at the 95% confidence level
- u_c = combined standard uncertainty obtained by combining the individual compound standard uncertainty components u_i, where $u_c = \sqrt{\sum u_i^2}$

Legal Notice:

SPEX CertiPrep Certified Reference Materials are not for any cosmetic, drug, or household application and are to be used only by qualified individuals who are trained in appropriate procedures. No claims against SPEX CertiPrep of any kind whatsoever, whether based on breech of warranty, alleged negligence, or otherwise, with respect to this Reference Material shall be greater than the purchase price. In no event shall SPEX CertiPrep be liable for any loss of profits or any incidental, special, or consequential damages.

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Accredited to 17025 & Guide 34 ISO Certified to 9001

ACCREDITED
Reference Materials Producer
Cert #2495.01

ECS

Certificate of Analysis

ilac-MRA ACCREDITED
Chemical Testing
Cert #2495.02

Catalog Number: ECS-A-030 **Lot No.** AA210126005

Description: Base/Neutrals Mix 1

Matrix: Methylene Chloride

Manufactured Date: 1-26-2021

Expiration Date: 1-26-2024

This **SPEXOrganics®** Certified Reference Material, CRM, is intended primarily for use as a calibration standard or quality control standard for organic chromatography instrumentation such as GC, GC-MS, LC, and LC-MS. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

Certified Compounds:

Compound	CAS #	Labeled	Purity	Certified†	Uncertainty
1,2,4-Trichlorobenzene	120-82-1	2000 µg/mL	99%	2010 µg/mL	± 50 µg/mL
1,2-Dichlorobenzene	95-50-1	2000 µg/mL	99%	2002 µg/mL	± 50 µg/mL
1,3-Dichlorobenzene	541-73-1	2000 µg/mL	98%	2021 µg/mL	± 51 µg/mL
1,4-Dichlorobenzene	106-46-7	2000 µg/mL	99%	2012 µg/mL	± 50 µg/mL
2,4-Dinitrotoluene	121-14-2	2000 µg/mL	97%	2006 µg/mL	± 50 µg/mL
2,6-Dinitrotoluene	606-20-2	2000 µg/mL	99.6%	2012 µg/mL	± 50 µg/mL
2-Chloronaphthalene	91-58-7	2000 µg/mL	98%	2004 µg/mL	± 50 µg/mL
4-Bromodiphenyl ether	101-55-3	2000 µg/mL	99%	2022 µg/mL	± 51 µg/mL
4-Chlorophenyl-phenyl ether	7005-72-3	2000 µg/mL	98%	2001 µg/mL	± 50 µg/mL
Azobenzene	103-33-3	2000 µg/mL	98%	2001 µg/mL	± 50 µg/mL
Bis(2-chloro-1-methylethyl) ether	108-60-1	2000 µg/mL	98.9%	2010 µg/mL	± 50 µg/mL
bis(2-Chloroethoxy)methane	111-91-1	2000 µg/mL	97%	2001 µg/mL	± 50 µg/mL
bis(2-Chloroethyl)ether	111-44-4	2000 µg/mL	99%	2002 µg/mL	± 50 µg/mL
Bis(2-Ethylhexyl)phthalate	117-81-7	2000 µg/mL	99%	2003 µg/mL	± 50 µg/mL
Butylbenzyl phthalate	85-68-7	2000 µg/mL	98%	2000 µg/mL	± 50 µg/mL
Carbazole	86-74-8	2000 µg/mL	95%	2009 µg/mL	± 50 µg/mL
Di-n-butyl phthalate	84-74-2	2000 µg/mL	99%	2020 µg/mL	± 50 µg/mL
Di-n-octyl phthalate	117-84-0	2000 µg/mL	98%	2000 µg/mL	± 50 µg/mL
Diethyl phthalate	84-66-2	2000 µg/mL	99.5%	2002 µg/mL	± 50 µg/mL
Dimethyl phthalate	131-11-3	2000 µg/mL	99%	2006 µg/mL	± 50 µg/mL
Hexachlorobenzene	118-74-1	2000 µg/mL	99%	2003 µg/mL	± 50 µg/mL
Hexachlorobutadiene	87-68-3	2000 µg/mL	97%	2003 µg/mL	± 50 µg/mL
Hexachlorocyclopentadiene	77-47-4	2000 µg/mL	99%	2003 µg/mL	± 50 µg/mL
Hexachloroethane	67-72-1	2000 µg/mL	98%	2003 µg/mL	± 50 µg/mL
Isophorone	78-59-1	2000 µg/mL	97%	2003 µg/mL	± 50 µg/mL
N-Nitrosodi-n-propylamine	621-64-7	2000 µg/mL	98%	2000 µg/mL	± 50 µg/mL
N-Nitrosodiphenylamine	86-30-6	2000 µg/mL	97%	2001 µg/mL	± 50 µg/mL
Nitrobenzene	98-95-3	2000 µg/mL	99%	2001 µg/mL	± 50 µg/mL
Pyridine	110-86-1	2000 µg/mL	99%	2004 µg/mL	± 50 µg/mL
N-Nitrosodimethylamine	62-75-9	2000 µg/mL	97%	2000 µg/mL	± 50 µg/mL

K004542

Certificate of Reference Material

Catalog Number: ECS-A-030

Description: Base/Neutrals Mix 1

Matrix: Methylene Chloride

Lot No. AA210126005

Manufactured Date: 1-26-2021

Expiration Date: 1-26-2024

Final Solution Verification:

Final solution integrity verified by Gas Chromatography/Mass Spectrometry. The mass spectrum of each compound was confirmed against the NIST mass spectral database.

† Certified concentration based on gravimetric weights and corrected for the purity of the compound(s) used to prepare the standard. Analytical balance calibration is verified daily with C1 weight set #23-190006 which is registered with Atlantic Scale, and traceable to NIST and NJ Division of Weights and Measures.

This CRM is guaranteed stable and accurate to within the uncertainty listed for the certified value. This includes uncertainty components due to preparation, homogeneity, short term and long term stability. During the stated period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution. For further information, contact the Sales Support Department at crmsales@spexcsp.com.

Date of Certification: 1-26-2021

Certifying Officer: Shannon Nave

Report of Certification

Catalog Number: ECS-A-030 **Lot No.** AA210126005

Description: Base/Neutrals Mix 1

Matrix: Methylene Chloride

Manufactured Date: 1-26-2021

Expiration Date: 1-26-2024

This Certified Reference Material (CRM) has been prepared and certified under an ISO 9001:2008, ISO 17025:2005, and ISO Guide 34:2009 Quality System consistent with the following standards:

- ISO 9001:2008: Quality management systems - Requirements - Certified by UL-DQS
- ISO 17025:2005: General Requirements for the Competence of Testing and Calibration Laboratories - Accredited by A2LA
- ISO Guide 34:2009: General Requirements for the Competence of Reference Material Producers - Accredited by A2LA
- ISO Guide 31:2000: Reference Materials - Contents of Certificates and Labels
- ISO Guide 35:2006: Reference Materials - General and statistical principals for certification
- Guide to the Expression of Uncertainty in Measurement 1997
- EURACHEM/CITAC Guide: Qualifying Uncertainty in Analytical Measurements - Second Edition
- ASTM Guide D6362-98
- NIST Technical Note 1297
- ILAC-G12-2000: Guidelines for the requirements for the competence of reference material producers
- ISO/REMCO N280

Storage Requirements:

To ensure the stability of the product once it arrives in your laboratory, please store this product in a refrigerator (2°C to 8°C). Note: Shipping conditions may differ from storage conditions. The EXPIRATION DATE is calculated from the MANUFACTURED DATE using our stability data and is applicable only if the product is unopened and stored under the prescribed conditions.

Instructions for Use:

Let material come to room temperature before use. Check for precipitate and if necessary sonicate for one minute. If compounds do not dissolve after one minute then sonicate further until the product is dissolved. A clear appearance is acceptable. The minimum recommended amount that should be removed from this vial is 5µL with a 25µL gas tight syringe. All solutions should be thoroughly mixed, by shaking, prior to use. All surfaces that come in contact with the solution must be thoroughly cleaned prior to use. Dilutions should be performed only with Class A volumetric glassware.

Material Source:

All analytes and matrix materials are obtained and verified by SPEX CertiPrep from pre-qualified vendors as per ISO guidelines. Vendor identifications are proprietary, however sources of all materials used in the preparation and testing of SPEX CertiPrep CRMs are tracked and documented. For assistance, please contact sales support at crmsales@spexcsp.com.

Method of Preparation:

Clean laboratory procedures and techniques have been used throughout the preparation. All materials, equipment, and analytical instrumentation have been qualified prior to use. The highest purity solvents and Class A / calibrated volumetrics have been been used in all preparations.

Homogeneity:

The homogeneity of this CRM has been confirmed by procedures consistent with ISO 17025:2005, ISO Guide 34:2009, and ASTM D6362-98 Appendix X2. Random, replicate samples of the final, packaged material have been analyzed to prove homogeneity in accordance with our internal procedure 4300-HOMOGEN-1A. This is consistent with the intended use of this CRM. The Degree of Homogeneity, as expressed as maximum between-bottle variation, is 1.2%

Statistical Estimator and Confidence Limits:

The Certified value 'X' as listed on the reverse of this document is at the 95% level of confidence and can be expressed as:

- $X = x \pm U$ where X=certified value, U=expanded uncertainty, x=property value
- $U = ku_c$ where k=2 is the coverage factor at the 95% confidence level
- u_c = combined standard uncertainty obtained by combining the individual compound standard uncertainty components u_i where $u_c = \sqrt{\sum u_i^2}$

Legal Notice:

SPEX CertiPrep Certified Reference Materials are not for any cosmetic, drug, or household application and are to be used only by qualified individuals who are trained in appropriate procedures. No claims against SPEX CertiPrep of any kind whatsoever, whether based on breech of warranty, alleged negligence, or otherwise, with respect to this Reference Material shall be greater than the purchase price. In no event shall SPEX CertiPrep be liable for any loss of profits or any incidental, special, or consequential damages.

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Certificate of Analysis

Product Name: 1-Methylnaphthalene Standard

Product Number: EPA-1225-1 **Lot Issue Date:** 19-Jul-2021

Lot Number: 0006624769 **Expiration Date:** 31-Jul-2023

Description:
This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
1-methylnaphthalene	000090-12-0	RM07712	999.3 ± 5.0 µg/mL

Matrix: methanol (methyl alcohol)

Storage Conditions: Store at Room Temperature (15° to 30°C).

Traceability:
The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:
This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

Hazards:
Refer to the Safety Data Sheet on www.agilent.com for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

Maintenance of Certification:
If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

K004543
1-Methylnaphthalene
Solvent / Lot: MEOH
Prep: 5/11/2022 by JZ
Exp: 7/31/2023
Location:

5/11/22

Sample lot approver:
Monica Bourgeois
QMS Representative

ANAB ACCREDITED ISO17034 REFERENCE MATERIAL PRODUCER
ISO 17034 Cert
No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026
Page: 1 of 1
www.agilent.com/quality/
CSD-QA-015.1

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO 17025 Cert
No. AT-1937

Agilent

Certificate of Analysis

Product Name: Toxic Substances Standard

Product Number: US-104N-1 **Lot Issue Date:** 02-Jul-2021

Lot Number: 0006620643 **Expiration Date:** 31-Jul-2023

Description:
This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
aniline	000062-53-3	RM12853	2005 ± 10 µg/mL
benzyl alcohol	000100-51-6	RM10547	2004 ± 10 µg/mL
4-chloroaniline	000106-47-8	RM01886	2002 ± 10 µg/mL
dibenzofuran	000132-64-9	RM02077	2002 ± 10 µg/mL
2-methylnaphthalene	000091-57-6	RM01258	2006 ± 10 µg/mL
2-nitroaniline	000088-74-4	RM02402	2003 ± 10 µg/mL
3-nitroaniline	000099-09-2	RM02424	2003 ± 10 µg/mL
4-nitroaniline	000100-01-6	RM02425	2003 ± 10 µg/mL

Matrix: methylene chloride (dichloromethane)

Storage Conditions: Store at Room Temperature (15° to 30°C).

Traceability:
The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:
This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

K004544
toxic sub mix#2
Solvent / Lot: methylene chloride
Prep: 5/11/2022 by JZ
Exp: 7/31/2023
Location:

05/11/22

ANAB ACCREDITED ISO17034 REFERENCE MATERIAL PRODUCER
ISO 17034 Cert No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

www.agilent.com/quality/
CSD-QA-015.1

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO 17025 Cert No. AT-1937

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31493 **Lot No.:** A0181243

Description : CLP 04.1 BNA Surrogate Mix

CLP 04.1 BNA Surrogate Mix 1000-1500 µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : October 31, 2025 **Storage:** 10°C or colder

Handling: Sonicate prior to use. **Ship:** Ambient

05/11/22

K004545
CLP 04.1 BNA SURR MIX
Solvent / Lot: AO175316
Prep: 5/11/2022 by JZ
Exp: 10/20/2025
Location:

Elution Order	Compound	Gr (weig					
1	2-Fluorophenol **CAS #** 367-12-4 (Lot STBJ2508) **Purity** 99%	1,50				µg/mL	Stressed
				+/-	53.3632	µg/mL	Stressed
2	Phenol-d6 **CAS #** 13127-88-3 (Lot PR-31262) **Purity** 99%	1,506.0	µg/mL	+/-	8.9452	µg/mL	Gravimetric
				+/-	43.9882	µg/mL	Unstressed
				+/-	53.3632	µg/mL	Stressed
3	2-Chlorophenol-d4 **CAS #** 93951-73-6 (Lot PR-30568) **Purity** 99%	1,510.0	µg/mL	+/-	8.9689	µg/mL	Gravimetric
				+/-	44.1050	µg/mL	Unstressed
				+/-	53.5049	µg/mL	Stressed
4	1,2-Dichlorobenzene-d4 **CAS #** 2199-69-1 (Lot PR-32542/022621DB1 **Purity** 99%	1,004.0	µg/mL	+/-	5.9635	µg/mL	Gravimetric
				+/-	29.3255	µg/mL	Unstressed
				+/-	35.5754	µg/mL	Stressed
5	Nitrobenzene-d5 **CAS #** 4165-60-0 (Lot PR-29940A) **Purity** 99%	1,008.0	µg/mL	+/-	5.9872	µg/mL	Gravimetric
				+/-	29.4423	µg/mL	Unstressed
				+/-	35.7172	µg/mL	Stressed
6	2-Fluorobiphenyl **CAS #** 321-60-8 (Lot 19169) **Purity** 99%	1,006.0	µg/mL	+/-	5.9753	µg/mL	Gravimetric
				+/-	29.3839	µg/mL	Unstressed
				+/-	35.6463	µg/mL	Stressed
7	2,4,6-Tribromophenol **CAS #** 118-79-6 (Lot MKCJ7664) **Purity** 99%	1,506.0	µg/mL	+/-	8.9452	µg/mL	Gravimetric
				+/-	43.9882	µg/mL	Unstressed
				+/-	53.3632	µg/mL	Stressed

Certificate of Analysis

phenova Certified Reference Materials | A Phenomenex Company

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Access your Safety Data Sheets and digital Certificates at **www.phenova.com/documents.**

Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.:	AL0-101246	**Lot Number:**	CL17953
Description:	Benzoic Acid	**Certification Date:**	January 31, 2022
Storage:	4 °C	**Expiration Date:**	January 31, 2032
Provided As:	1 mL in 2 mL Ampoule in Methylene Chloride		

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Benzoic acid	65-85-0	2000	± 2.714%

K004603
Benzoic Acid @2000ug/ml
Solvent / Lot: N/A
Prep: 5/13/2022 by JZ
Exp: 1/31/2032
Location: GC

5/13/22

ACCREDITED
Reference Material Producer
Certicate No. 2427.02

phenova Certified Reference Materials | A Phenomenex Company

Phenova is an accredited ISO/IEC 17034 Reference Material Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ACCREDITED
Chemical Testing Laboratory
Certicate No. 2427.03

IL64691018 us

Certificate of Analysis

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Access your Safety Data Sheets and digital Certificates at **www.phenova.com/documents.**

Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.: AL0-101244
Description: Benzidines Standard
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Methylene Chloride

Lot Number: CL17662
Certification Date: December 2, 2021
Expiration Date: November 30, 2031

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Benzidine	92-87-5	2000	± 0.211%
3,3'-Dichlorobenzidine	91-94-1	2000	± 1.305%

K004604
Benzidines std @2000ug/ml
Solvent / Lot: MeCl2
Prep: 5/13/2022 by JZ
Exp: 11/30/2031
Location: GC

5/13/22

Supelco®

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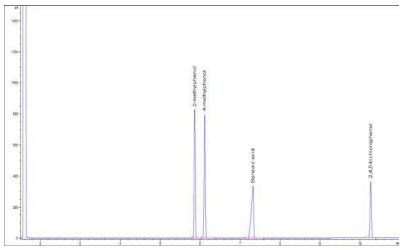
Certificate of Analysis - Certified Reference Material

EPA TCL Hazardous Substances Mix 1

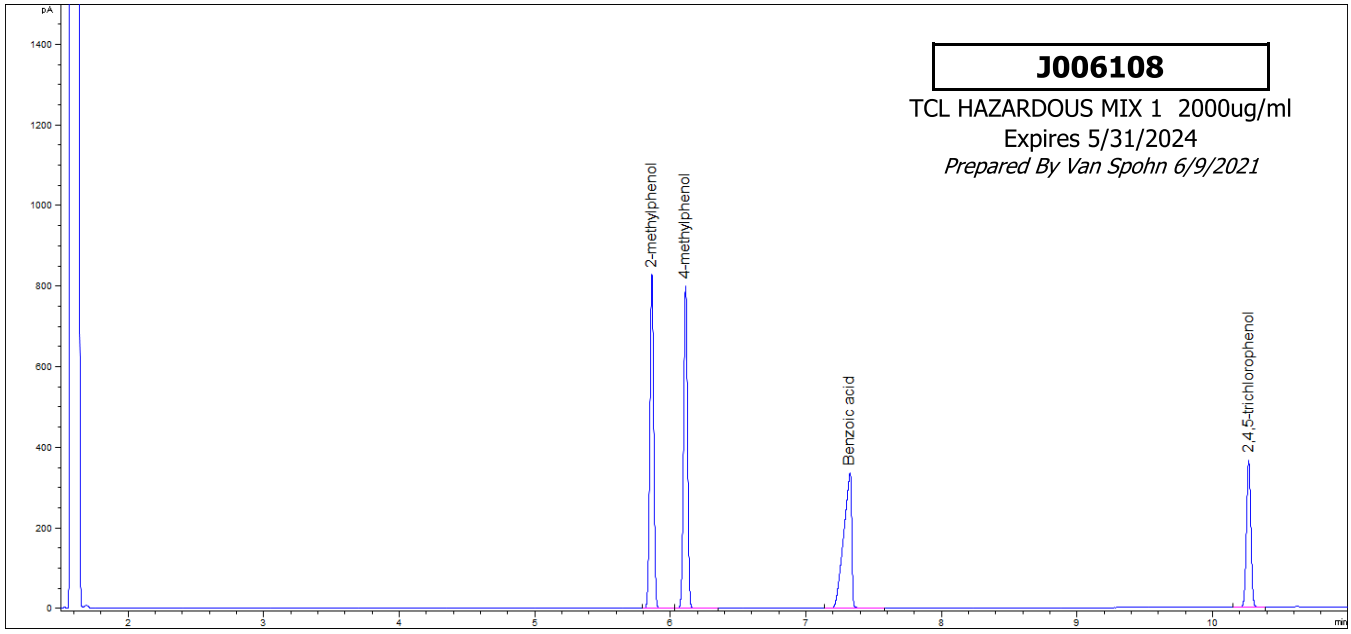
Product no.: 48907
Lot no.: LRAC9610
Expiry Date: May 2024
Manufacturing Date: May 2021
Storage: Refrigerate
Solvent/Matrix: DICHLOROMETHANE
Certificate version: LRAC9610.01 *(Note: Certificates may be updated due to the availability of new data. Check our website at: www.sigma-aldrich.com for the most current version.)*



Certified Values:

Analyte	*Certified Value*	*Units*	*Raw Material Purity,%*	*Elution order*	*Raw Material Lot*
2-METHYLPHENOL CAS# 95-48-7	2004 ± 9	µg/mL	99.0	1	G1735A
4-METHYLPHENOL CAS# 106-44-5	2004 ± 13	µg/mL	98.9	2	06921MG
BENZOIC ACID CAS# 65-85-0	2012 ± 6	µg/mL	99.9	3	LC16514
2,4,5-TRICHLOROPHENOL CAS# 95-95-4	2003 ± 6	µg/mL	99.9	4	JS00008

Informational Values:



Additional Information:
Analytical Method Parameters:
Column: Equity-5, 30 m × 0.53 mm I.D., 1.5 µm film thickness (Column #98)
Carrier Gas: H2, Flow: 4.5 mL/min
Inlet Temperature: 170 °C, Injection Volume: 1 µL
Injection Mode: Split, Split Ratio: 20:1

Sigma-Aldrich RTC, 2931 Soldier Springs Rd. Laramie, WY 82070, USA;
Tel. 1 307-742-5452; Fax 1 855-831-9211; www.sigmaaldrich.com
Sigma-Aldrich RTC is a subsidiary of Merck KGaA, Darmstadt, Germany.

Temperature Program: 80 °C @ 10 °C/min to 190 °C (Hold 5 min)
Detector: FID
Detector Temperature: 310 °C

Metrological traceability: Traceable to the SI and higher order standards from NIST through an unbroken chain of comparisons. The balance used to weigh raw materials is accurate to +/-0.0001 g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

Measurement method: Where applicable, the assigned value is based on a purity determination by mass balance and gravimetrically prepared value.

Intended use: Intended for R&D and Analytical Use only. Not for drug, household or other uses.

Packaging: 1 mL in amber ampule

Instructions for handling and correct use: Use on the as is basis. The internal pressure of the container may be slightly different from the atmospheric pressure at the user`s location. Open slowly and carefully to avoid dispersion of the material.

Health and safety information: All chemical reference materials should be considered potentially hazardous and should be used only by qualified laboratory personnel. Please refer to the Safety Data Sheet for detailed information about the nature of any hazard and appropriate precautions to be taken.

Accreditation: Sigma-Aldrich RTC is accredited by the US accreditation authority ANAB as a registered reference material producer AR-1470 in accordance with ISO 17034.

Certificate issue date: 20-May-2021

Andy Ommen - QC Manager

Mark Pooler - QA Supervisor

Details on metrological traceability: This standard has been gravimetrically prepared using balances that have been fully qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error. Fill volume to predetermined specifications is gravimetrically verified throughout the dispensing process using qualified and calibrated balances. Further traceability to a corresponding Primary Standard may be achieved through a direct comparison assay. Where a Primary Standard is available, the assay value will be included in the specified section of the COA.

Associated uncertainty: Ucrm - Uncertainty values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a *t*-distribution and degrees of freedom. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies. The mathematical representation of the Ucrm calculation is as follows:

$$u_{CRM} = \sqrt{u_{char}^2 + u_{\text{hom}\ ogeneity}^2 + u_{stability}^2}$$

Homogeneity assessment: Homogeneity was assessed in accordance with ISO Guide 35. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared by Single Factor Analysis of Variance (ANOVA). The uncertainty due to homogeneity was derived from the ANOVA. Heterogeneity was not detected under the conditions of the ANOVA.

Stability assessment: Significance of the stability assessment will be demonstrated if the analytical result of the study and the range of values represented by the Expanded Uncertainty do not overlap the result of the original assay and the range of its values represented by the Expanded Uncertainty. The method employed will usually be the same method used to characterize the assay value in the initial

Certificate of analysis revision history:

Certificate version	Date	Reason for version
LRAC9610.01	20-May-2021	Original Release Date

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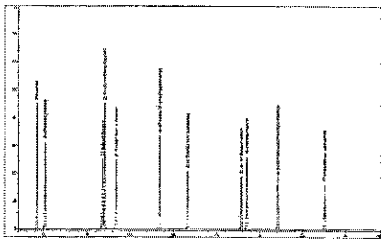
Supelco®

www.sigmaaldrich.com

Certificate of Analysis - Certified Reference Material

EPA TCL Phenols Mix

Product no.: 48904
Lot no.: LRAD0139
Expiry Date: July 2024
Manufacturing Date: July 2021
Storage: REFRIGERATE
Solvent/Matrix: DICHLOROMETHANE
Certificate version: LRAD0139.01 *(Note: Certificates may be updated due to the availability of new data. Check our website at: www.sigma-aldrich.com for the most current version.)*



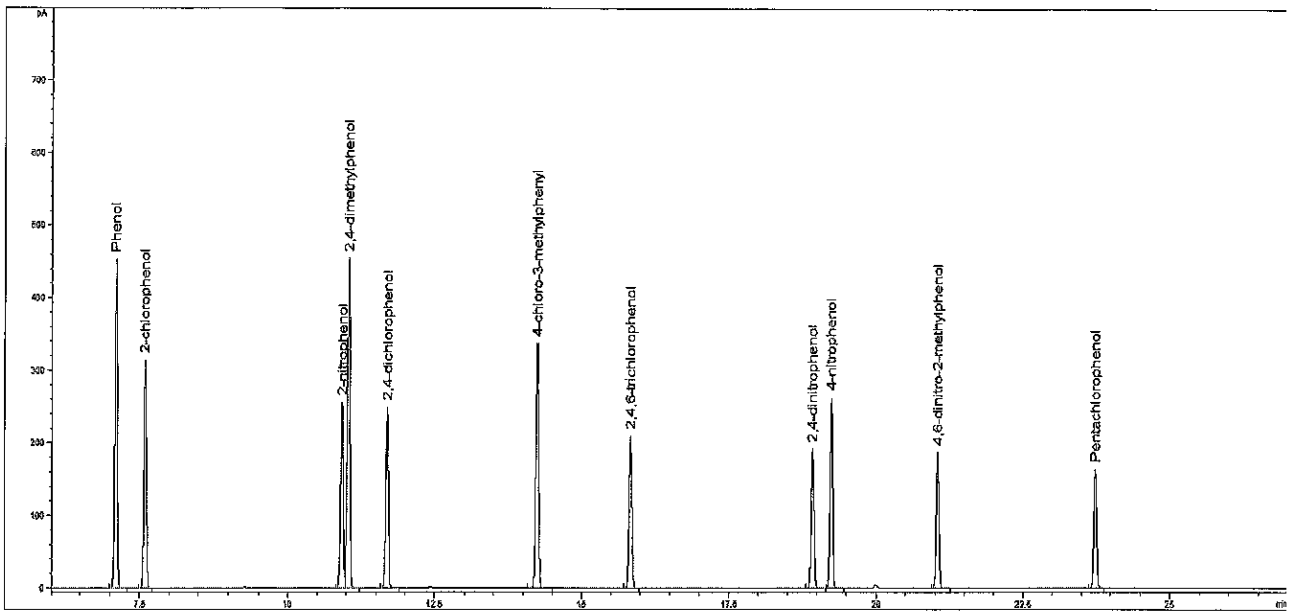
Certified Values:

Analyte	*Certified Value*	*Units*	*Raw Material Purity,%*	*Raw Material Lot*
2-CHLOROPHENOL CAS# 95-57-8	2001 ± 25	µg/mL	99.9	STBG3033V
2-NITROPHENOL CAS# 88-75-5	1999 ± 18	µg/mL	99.3	15905BB
2,4-DIMETHYLPHENOL CAS# 105-67-9	2000 ± 14	µg/mL	99.2	05421CO
2,4-DICHLOROPHENOL CAS# 120-83-2	2000 ± 17	µg/mL	99.5	03221TN
4-CHLORO-3-METHYLPHENOL CAS# 59-50-7	2000 ± 5	µg/mL	99.9	JS00013
2,4,6-TRICHLOROPHENOL CAS# 88-06-2	2002 ± 5	µg/mL	99.5	04212PS
2,4-DINITROPHENOL CAS# 51-28-5	2000 ± 28	µg/mL	66.9	STBJ5751
4-NITROPHENOL CAS# 100-02-7	2000 ± 33	µg/mL	99.0	04628LT
2-METHYL-4,6-DINITROPHENOL CAS# 534-52-1	2000 ± 27	µg/mL	99.7	LC18338
PENTACHLOROPHENOL CAS# 87-86-5	1999 ± 25	µg/mL	97.9	MKCD2150

ASSAY Method

J013597
TCL Phenols Mix 2000ug/ml
Solvent / Lot: LRAD0139
Prep: 12/30/2021 by VS
Exp: 7/31/2024
Location:

Sigma-Aldrich RTC, 2931 Soldier Springs Rd. Laramie, WY 82070, USA;
Tel. 1 307-742-5452; Fax 1 855-831-9211; www.sigmaaldrich.com
Sigma-Aldrich RTC is a subsidiary of Merck KGaA, Darmstadt, Germany.



METHOD: GC (Bellefonte Method)

Column: SPB-5, 30 m × 0.53 mm I.D., 1.5 µm film thickness
Carrier Gas: H_2 Flow Rate: 4.5 mL/min
Inlet Temperature: 200 °C Injection Volume: 1.0 µL
Injection Mode: 25:1
Temperature Program: 80 °C (Hold 2 min) @ 6 °C/min to 260 °C (Hold 5 min)
Detector: FID Temperature: 310 °C

Elution details:

EO	RT(MIN)	ANALYTE
1	7.095	Phenol
2	7.585	2-chlorophenol
3	10.925	2-nitrophenol
4	11.037	2,4-dimethylphenol
5	11.696	2,4-dichlorphenol
6	14.242	4-chloro-3-m3thylphenol
7	15.842	2,4,6-trichlorophenol
8	18.93	2,4-dinitrophenol
9	19.25	4-nitrophenol
10	21.05	4,6-dinitro-2-methylphenol
11	23.752	Pentachlorophenol

Metrological traceability: Traceable to the SI and higher order standards from NIST through an unbroken chain of comparisons. The balance used to weigh raw materials is accurate to +/-0.0001 g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

Measurement method: Where applicable, the assigned value is based on a purity determination by mass balance and gravimetrically prepared value.

Intended use: Intended for R&D and Analytical Use only. Not for drug, household or other uses.

Packaging: 1 mL in amber ampule

Instructions for handling and correct use: Use on the as is basis. The internal pressure of the container may be slightly different from the atmospheric pressure at the user`s location. Open slowly and carefully to avoid dispersion of the material.

Health and safety information: All chemical reference materials should be considered potentially hazardous and should be used only by qualified laboratory personnel. Please refer to the Safety Data Sheet for detailed information about the nature of any hazard and appropriate precautions to be taken.

Accreditation: Sigma-Aldrich RTC is accredited by the US accreditation authority ANAB as a registered reference material producer AR-1470 in accordance with ISO 17034.

Certificate issue date: 12-Jul-2021

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

Andy Ommen - QC Manager

Mark Pooler - QA Supervisor

Details on metrological traceability: This standard has been gravimetrically prepared using balances that have been fully qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error. Fill volume to predetermined specifications is gravimetrically verified throughout the dispensing process using qualified and calibrated balances. Further traceability to a corresponding Primary Standard may be achieved through a direct comparison assay. Where a Primary Standard is available, the assay value will be included in the specified section of the COA.

Associated uncertainty: Ucrm - Uncertainty values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a *t*-distribution and degrees of freedom. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies. The mathematical representation of the Ucrm calculation is as follows:

$$u_{CRM} = \sqrt{u_{char}^2 + u_{hom\ ogeneity}^2 + u_{stability}^2}$$

Homogeneity assessment: Homogeneity was assessed in accordance with ISO Guide 35. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared by Single Factor Analysis of Variance (ANOVA). The uncertainty due to homogeneity was derived from the ANOVA. Heterogeneity was not detected under the conditions of the ANOVA.

Stability assessment: Significance of the stability assessment will be demonstrated if the analytical result of the study and the range of values represented by the Expanded Uncertainty do not overlap the result of the original assay and the range of its values represented by the Expanded Uncertainty. The method employed will usually be the same method used to characterize the assay value in the initial

Certificate of analysis revision history:

Certificate version	Date	Reason for version
LRAD0139.01	12-Jul-2021	Original Release Date

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Disclaimer: The purchaser is required to determine the suitability of this product for any particular application. Sigma-Aldrich RTC makes no warranty of any kind, express or implied, other than its products meet all quality control standards set by Sigma-Aldrich RTC. We do not guarantee that the product can be used for any particular application.

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada.

RESTEK® C

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

K007194
CLP 04.1 BNA SURR MIX
Solvent / Lot: AO187400
Prep: 8/5/2022 by VS
Exp: 4/30/2026
Location:

Certificate of Analysis

IAL

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31493 **Lot No.:** A0187400

Description : CLP 04.1 BNA Surrogate Mix

CLP 04.1 BNA Surrogate Mix 1000-1500 µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2026 **Storage:** 10°C or colder

Handling: Sonicate prior to use. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	2-Fluorophenol **CAS #** 367-12-4 (Lot STBJ3299) **Purity** 99%	1,508.0 µg/mL	+/- 8.9571 µg/mL +/- 44.0466 µg/mL +/- 53.4340 µg/mL	Gravimetric Unstressed Stressed
2	Phenol-d6 **CAS #** 13127-88-3 (Lot SL210831) **Purity** 99%	1,510.0 µg/mL	+/- 8.9689 µg/mL +/- 44.1050 µg/mL +/- 53.5049 µg/mL	Gravimetric Unstressed Stressed
3	2-Chlorophenol-d4 **CAS #** 93951-73-6 (Lot PR-30568) **Purity** 99%	1,512.0 µg/mL	+/- 8.9808 µg/mL +/- 44.1635 µg/mL +/- 53.5758 µg/mL	Gravimetric Unstressed Stressed
4	1,2-Dichlorobenzene-d4 **CAS #** 2199-69-1 (Lot PR-32597) **Purity** 99%	1,004.0 µg/mL	+/- 5.9635 µg/mL +/- 29.3255 µg/mL +/- 35.5754 µg/mL	Gravimetric Unstressed Stressed
5	Nitrobenzene-d5 **CAS #** 4165-60-0 (Lot PR-29940A) **Purity** 99%	1,004.0 µg/mL	+/- 5.9635 µg/mL +/- 29.3255 µg/mL +/- 35.5754 µg/mL	Gravimetric Unstressed Stressed
6	2-Fluorobiphenyl **CAS #** 321-60-8 (Lot 00021384) **Purity** 99%	1,004.0 µg/mL	+/- 5.9635 µg/mL +/- 29.3255 µg/mL +/- 35.5754 µg/mL	Gravimetric Unstressed Stressed
7	2,4,6-Tribromophenol **CAS #** 118-79-6 (Lot MKCJ7664) **Purity** 99%	1,502.0 µg/mL	+/- 8.9214 µg/mL +/- 43.8714 µg/mL +/- 53.2214 µg/mL	Gravimetric Unstressed Stressed

8	p-Terphenyl-d14		1,002.0	µg/mL	+/-	5.9516	µg/mL	Gravimetric
	CAS # 1718-51-0	(Lot PR-30504)			+/-	29.2671	µg/mL	Unstressed
	Purity 99%				+/-	35.5046	µg/mL	Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Tech Tips:
Due to the limited solubility of p-terphenyl-d14 in methanol, we do not recommend that this mixture be diluted in methanol.

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

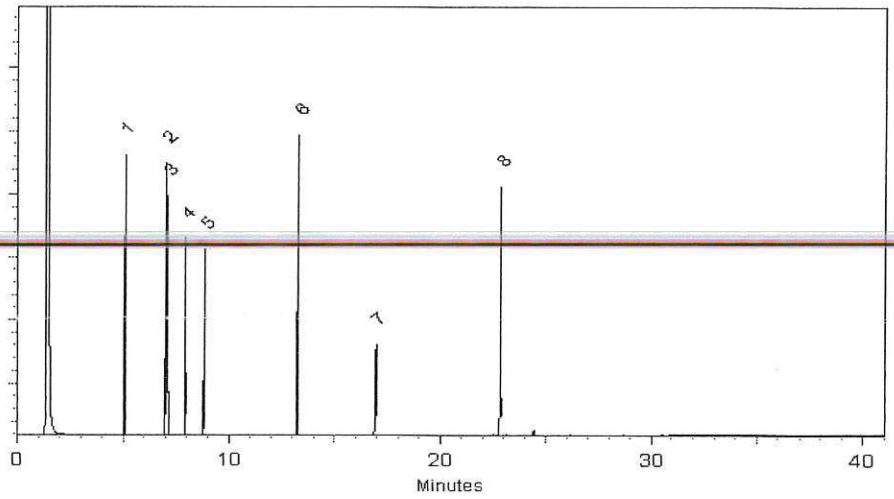
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Bryan Snyder - Operations Tech I

Date Mixed: 17-Jul-2022 **Balance:** 1128353505

Christie Mills - Operations Tech II - ARM QC

Date Passed: 21-Jul-2022

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Certificate of Analysis

Produced by Phenova
6390 Joyce Drive STE 100, Golden, CO 80403 USA ■ Tel: 303-940-0033 ■ Fax: 303-940-0043 ■ info@phenova.com
Access your Safety Data Sheets and digital Certificates at **www.phenova.com/documents.**

Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.: AL0-101444
Description: 8270 Calibration Standard
Storage: -18 °C
Provided As: 1 mL in 2 mL Ampoule in MeCl2/Methanol (97:3)

Lot Number: CL18355
Certification Date: July 25, 2022
Expiration Date: August 31, 2023

K007995
SVOA-8270 LCS MIX 1000ug/ml
Solvent / Lot: N/A
Prep: 8/29/2022 by JZ
Exp: 8/31/2023
Location: FREEZER 44

Aaron Dukes, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Acenaphthene	83-32-9	1000	± 0.300%
Acenaphthylene	208-96-8	1000	± 0.225%
Anthracene	120-12-7	1000	± 6.858%
Azobenzene	103-33-3	1000	± 0.224%
Benzo(a)anthracene	56-55-3	1000	± 0.247%
Benzo(a)pyrene	50-32-8	1000	± 0.270%
Benzo(b)fluoranthene	205-99-2	1000	± 0.635%
Benzo(k)fluoranthene	207-08-9	1000	± 0.682%
Benzo(g,h,i)perylene	191-24-2	1000	± 0.272%
Benzyl alcohol	100-51-6	1000	± 0.231%
Benzyl butyl phthalate	85-68-7	1000	± 0.480%
bis(2-Chloroethoxy)methane	111-91-1	1000	± 0.479%
bis(2-Chloroethyl) ether	111-44-4	1000	± 0.479%
bis(2-Chloroisopropyl) ether	108-60-1	1000	± 0.550%
bis(2-Ethylhexyl) adipate	103-23-1	1000	± 0.479%
bis(2-Ethylhexyl) phthalate	117-81-7	1000	± 0.479%
4-Bromophenyl phenyl ether	101-55-3	1000	± 0.479%
Carbazole	86-74-8	1000	± 0.146%

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Catalog No.: AL0-101444
Lot Number: CL18355
Description: 8270 Calibration Standard
Certification Date: July 25, 2022
Storage: -18 °C
Expiration Date: August 31, 2023
Provided As: 1 mL in 2 mL Ampoule in MeCl2/Methanol (97:3)

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
4-Chloroaniline	106-47-8	1000	± 0.300%
4-Chloro-3-methylphenol	59-50-7	1000	± 0.545%
2-Chloronaphthalene	91-58-7	1000	± 0.224%
2-Chlorophenol	95-57-8	1000	± 0.507%
4-Chlorophenyl phenyl ether	7005-72-3	1000	± 0.479%
Chrysene	218-01-9	1000	± 0.145%
Dibenz(a,h)anthracene	53-70-3	1000	± 1.058%
Dibenzofuran	132-64-9	1000	± 0.302%
Di-n-butyl phthalate	84-74-2	1000	± 0.518%
1,2-Dichlorobenzene	95-50-1	1000	± 0.247%
1,3-Dichlorobenzene	541-73-1	1000	± 0.225%
1,4-Dichlorobenzene	106-46-7	1000	± 0.224%
2,4-Dichlorophenol	120-83-2	1000	± 0.545%
Diethyl phthalate	84-66-2	1000	± 0.518%
2,4-Dimethylphenol	105-67-9	1000	± 0.507%
Dimethyl phthalate	131-11-3	1000	± 0.518%
1,2-Dinitrobenzene	528-29-0	1000	± 0.361%
1,3-Dinitrobenzene	99-65-0	1000	± 0.300%
1,4-Dinitrobenzene	100-25-4	1000	± 0.242%
2,4-Dinitrophenol	51-28-5	1000	± 0.545%
2,4-Dinitrotoluene	121-14-2	1000	± 1.128%

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Certified Reference Material

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Catalog No.: AL0-101444
Lot Number: CL18355
Description: 8270 Calibration Standard
Certification Date: July 25, 2022
Storage: -18 °C
Expiration Date: August 31, 2023
Provided As: 1 mL in 2 mL Ampoule in MeCl2/Methanol (97:3)

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
2,6-Dinitrotoluene	606-20-2	1000	± 0.224%
Di-n-octyl phthalate	117-84-0	1000	± 0.486%
Fluoranthene	206-44-0	1000	± 0.224%
Fluorene	86-73-7	1000	± 0.224%
Hexachlorobenzene	118-74-1	1000	± 0.152%
Hexachlorobutadiene	87-68-3	1000	± 0.746%
Hexachlorocyclopentadiene	77-47-4	1000	± 0.153%
Hexachloroethane	67-72-1	1000	± 0.300%
Indeno(1,2,3-cd)pyrene	193-39-5	1000	± 0.883%
Isophorone	78-59-1	1000	± 0.145%
2-Methyl-4,6-dinitrophenol	534-52-1	1000	± 0.508%
1-Methylnaphthalene	90-12-0	1000	± 0.479%
2-Methylnaphthalene	91-57-6	1000	± 0.487%
2-Methylphenol	95-48-7	1000	± 0.545%
3-Methylphenol	108-39-4	500	± 0.279%
4-Methylphenol	106-44-5	500	± 0.399%
Naphthalene	91-20-3	1000	± 0.226%
2-Nitroaniline	88-74-4	1000	± 0.224%
3-Nitroaniline	99-09-2	1000	± 0.235%
4-Nitroaniline	100-01-6	1000	± 0.300%
Nitrobenzene	98-95-3	1000	± 0.300%

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Catalog No.: AL0-101444
Lot Number: CL18355
Description: 8270 Calibration Standard
Certification Date: July 25, 2022
Storage: -18 °C
Expiration Date: August 31, 2023
Provided As: 1 mL in 2 mL Ampoule in MeCl2/Methanol (97:3)

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
2-Nitrophenol	88-75-5	1000	± 0.514%
4-Nitrophenol	100-02-7	1000	± 0.519%
N-Nitrosodimethylamine	62-75-9	1000	± 0.503%
N-Nitrosodiphenylamine	86-30-6	1000	± 0.476%
N-Nitrosodi-n-propylamine	621-64-7	1000	± 0.461%
Pentachlorophenol	87-86-5	1000	± 0.202%
Phenanthrene	85-01-8	1000	± 0.145%
Phenol	108-95-2	1000	± 0.545%
Pyrene	129-00-0	1000	± 0.147%
Pyridine	110-86-1	1000	± 0.503%
2,3,4,6-Tetrachlorophenol	58-90-2	1000	± 0.247%
2,3,5,6-Tetrachlorophenol	935-95-5	1000	± 0.247%
1,2,4-Trichlorobenzene	120-82-1	1000	± 0.224%
2,4,5-Trichlorophenol	95-95-4	1000	± 0.507%
2,4,6-Trichlorophenol	88-06-2	1000	± 0.509%

Notes: The proper chemical name for Bis(2-Chloroiospropyl) ether is 2,2'-oxybis(1-chloropropane). The analytical uncertainty contribution to the expanded uncertainty for 3 and 4-Methylphenol is measured as the total of the two analytes. N-Nitrosodiphenylamine presents as Diphenylamine at 854 µg/mL.

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1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

   Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
[3] ISO 17034 – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

Supelco®

www.sigmaaldrich.com

Certificate of Composition - Analytical Standard

BASE STOCK

Product no.: 22523051
Lot no.: LRAD2751
Expiry Date: June 2024
Manufacturing Date: June 2022
Storage: REFRIGERATE
Solvent/Matrix: DICHLOROMETHANE
Certificate version: LRAD2751.01 (*Note: Certificates may be updated due to the availability of new data. Check our website at:* www.sigma-aldrich.com *for the most current version.)*

Analyte	*Assigned Value*	*Units*	*Raw Material Purity,%*	*Raw Material Lot*
3,3'-DICHLOROBENZIDINE, 100MG, NEAT CAS# 91-94-1	799	µg/mL	99.8	LRAD2376
2,4-DINITROTOLUENE CAS# 121-14-2	801	µg/mL	97.8	LB46632
2,6-DINITROTOLUENE CAS# 606-20-2	800	µg/mL	99.2	11231AN
HEXACHLOROCYCLOPENTADIENE CAS# 77-47-4	800	µg/mL	96.0	LB95525
N-NITROSODIMETHYLAMINE CAS# 62-75-9	800	µg/mL	95.0	2019-030598 5
PERYLENE CAS# 198-55-0	200	µg/mL	99.6	04101PG
ANILINE CAS# 62-53-3	800	µg/mL	99.9	LA41596
4-CHLOROANILINE CAS# 106-47-8	800	µg/mL	100.0	MKBZ6909V
2-NITROANILINE CAS# 88-74-4	799	µg/mL	99.9	07411KN
3-NITROANILINE CAS# 99-09-2	800	µg/mL	99.9	LC09264
4-NITROANILINE CAS# 100-01-6	800	µg/mL	99.9	15609AA
PYRIDINE (LOW WATER) CAS# 110-86-1	800	µg/mL	100.0	SHBJ9218

Measurement method: Where applicable, the assigned value is based on a purity determination by mass balance and gravimetrically prepared value.

Intended use: Intended for R&D and Analytical Use only. Not for drug, household or other uses.

Packaging: 1 mL in amber ampule

Instructions for handling and correct use: Use on the as is basis. The internal pressure of the container may be slightly different from the atmospheric pressure at the user`s location. Open slowly and carefully to avoid dispersion of the material.

Sigma-Aldrich RTC, 2931 Soldier Springs Rd. Laramie, WY 82070, USA;
Tel. 1 307-742-5452; Fax 1 855-831-9211; www.sigmaaldrich.com
Sigma-Aldrich RTC is a subsidiary of Merck KGaA, Darmstadt, Germany.

Health and safety information: All chemical reference materials should be considered potentially hazardous and should be used only by qualified laboratory personnel. Please refer to the Safety Data Sheet for detailed information about the nature of any hazard and appropriate precautions to be taken.

Certificate issue date: 03 JUN 2022

Andy Ommen - QC Manager

Scott Stetler - QA Manager

Certificate of analysis revision history:

Certificate version	Date	Reason for version
LRAD2751.01	03 JUN 2022	Original Release Date

Disclaimer: The purchaser is required to determine the suitability of this product for any particular application. Sigma-Aldrich RTC makes no warranty of any kind, express or implied, other than its products meet all quality control standards set by Sigma-Aldrich RTC. We do not guarantee that the product can be used for any particular application.

Certificate of Composition - Analytical Standard

ACID STOCK

Product no.: 22523046
Lot no.: LRAD2750
Expiry Date: June 2024
Manufacturing Date: June 2022
Storage: REFRIGERATE
Solvent/Matrix: DICHLOROMETHANE
Certificate version: LRAD2750.01 (*Note: Certificates may be updated due to the availability of new data. Check our website at: www.sigma-aldrich.com for the most current version.)*

Analyte	*Assigned Value*	*Units*	*Raw Material Purity,%*	*Raw Material Lot*
2,4-DIMETHYLPHENOL CAS# 105-67-9	800	µg/mL	99.9	LB88935
2,4-DICHLOROPHENOL CAS# 120-83-2	800	µg/mL	100.0	BCBZ6787
2,4,5-TRICHLOROPHENOL CAS# 95-95-4	801	µg/mL	99.9	JS00008
2,4-DINITROPHENOL CAS# 51-28-5	1799	µg/mL	66.9	STBJ5751
2,4,6-TRICHLOROPHENOL CAS# 88-06-2	800	µg/mL	98.7	LB82983
4-CHLORO-3-METHYLPHENOL CAS# 59-50-7	800	µg/mL	100.0	BCCD4461
4-NITROPHENOL CAS# 100-02-7	800	µg/mL	100.0	MKCN1089
2-METHYL-4,6-DINITROPHENOL CAS# 534-52-1	1800	µg/mL	100.0	BCBX5762
PENTACHLOROPHENOL CAS# 87-86-5	800	µg/mL	99.0	23614-01
BENZOIC ACID CAS# 65-85-0	1800	µg/mL	99.9	LC16514

Measurement method: Where applicable, the assigned value is based on a purity determination by mass balance and gravimetrically prepared value.

Intended use: Intended for R&D and Analytical Use only. Not for drug, household or other uses.

Packaging: 1 mL in amber ampule

Instructions for handling and correct use: Use on the as is basis. The internal pressure of the container may be slightly different from the atmospheric pressure at the user`s location. Open slowly and carefully to avoid dispersion of the material.

Health and safety information: All chemical reference materials should be considered potentially hazardous and should be used only by qualified laboratory personnel. Please refer to the Safety Data Sheet for detailed information about the nature of any hazard and appropriate precautions to be taken.

Sigma-Aldrich RTC, 2931 Soldier Springs Rd. Laramie, WY 82070, USA;
Tel. 1 307-742-5452; Fax 1 855-831-9211; www.sigmaaldrich.com
Sigma-Aldrich RTC is a subsidiary of Merck KGaA, Darmstadt, Germany.

Certificate issue date: 03 JUN 2022

Andy Ommen - QC Manager

Scott Stetler - QA Manager

Certificate of analysis revision history:

Certificate version	Date	Reason for version
LRAD2750.01	03 JUN 2022	Original Release Date

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Certificate of Analysis

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Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.: AL0-101244
Description: Benzidines Standard
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Methylene Chloride

Lot Number: CL18939
Certification Date: September 7, 2022
Expiration Date: August 31, 2032

Aaron Dukes, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Benzidine	92-87-5	2000	± 3.812%
3,3'-Dichlorobenzidine	91-94-1	2000	± 1.419%

L001288
Benzidines std @2000ug/ml
Solvent / Lot: CL18939
Prep: 2/7/2023 by VS
Exp: 8/31/2032
Location: GC

ACCREDITED
Reference Material Producer
Certicate No. 2427.02

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Phenova is an accredited ISO/IEC 17034 Reference Material Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ACCREDITED
Chemical Testing Laboratory
Certicate No. 2427.03

IL64631018 us

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Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.: AL0-101443
Lot Number: CL18741
Description: Aniline
Certification Date: July 21, 2022
Storage: 4 °C
Expiration Date: July 31, 2030
Provided As: 1 mL in 2 mL Ampoule in Methylene Chloride

Aaron Dukes, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aniline	62-53-3	1000	± 1.719%

L001290
Anline-1000ug/mL
Solvent / Lot: CL18741
Prep: 2/7/2023 by VS
Exp: 7/31/2030
Location: GC

ACCREDITED
Reference Material Producer
Certicate No. 2427.02

Phenova is an accredited ISO/IEC 17034 Reference Material Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ACCREDITED
Chemical Testing Laboratory
Certicate No. 2427.03

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Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.: AL0-101444
Description: 8270 Calibration Standard
Storage: -18 °C
Provided As: 1 mL in 2 mL Ampoule in MeCl2/Methanol (97:3)

Lot Number: CL18811
Certification Date: August 9, 2022
Expiration Date: November 30, 2023

Aaron Dukes, Certified Reference Materials Manager

L001291
SVOA-8270 LCS MIX 1000ug/ml
Solvent / Lot: CL18811
Prep: 2/7/2023 by VS
Exp: 11/30/2023
Location: FREEZER 44

Component	CAS #	µg/mL	Expanded Uncertainty
Acenaphthene	83-32-9	1000	± 1.643%
Acenaphthylene	208-96-8	1000	± 1.317%
Anthracene	120-12-7	1000	± 2.136%
Azobenzene	103-33-3	1000	± 1.630%
Benzo(a)anthracene	56-55-3	1000	± 2.372%
Benzo(a)pyrene	50-32-8	1000	± 3.028%
Benzo(b)fluoranthene	205-99-2	1000	± 2.377%
Benzo(k)fluoranthene	207-08-9	1000	± 2.286%
Benzo(g,h,i)perylene	191-24-2	1000	± 2.561%
Benzyl alcohol	100-51-6	1000	± 1.803%
Benzyl butyl phthalate	85-68-7	1000	± 1.855%
bis(2-Chloroethoxy)methane	111-91-1	1000	± 1.626%
bis(2-Chloroethyl) ether	111-44-4	1000	± 1.776%
bis(2-Chloroisopropyl) ether	108-60-1	1000	± 2.406%
bis(2-Ethylhexyl) adipate	103-23-1	1000	± 2.415%
bis(2-Ethylhexyl) phthalate	117-81-7	1000	± 2.350%
4-Bromophenyl phenyl ether	101-55-3	1000	± 1.708%
Carbazole	86-74-8	1000	± 1.844%

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Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.: AL0-101444
Description: 8270 Calibration Standard
Storage: -18 °C
Provided As: 1 mL in 2 mL Ampoule in MeCl2/Methanol (97:3)

Lot Number: CL18811
Certification Date: August 9, 2022
Expiration Date: November 30, 2023

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
4-Chloroaniline	106-47-8	1000	± 2.831%
4-Chloro-3-methylphenol	59-50-7	1000	± 1.571%
2-Chloronaphthalene	91-58-7	1000	± 2.022%
2-Chlorophenol	95-57-8	1000	± 2.001%
4-Chlorophenyl phenyl ether	7005-72-3	1000	± 1.634%
Chrysene	218-01-9	1000	± 2.358%
Dibenz(a,h)anthracene	53-70-3	1000	± 2.452%
Dibenzofuran	132-64-9	1000	± 0.310%
Di-n-butyl phthalate	84-74-2	1000	± 2.347%
1,2-Dichlorobenzene	95-50-1	1000	± 1.803%
1,3-Dichlorobenzene	541-73-1	1000	± 1.808%
1,4-Dichlorobenzene	106-46-7	1000	± 1.503%
2,4-Dichlorophenol	120-83-2	1000	± 1.393%
Diethyl phthalate	84-66-2	1000	± 1.870%
2,4-Dimethylphenol	105-67-9	1000	± 2.495%
Dimethyl phthalate	131-11-3	1000	± 2.113%
1,2-Dinitrobenzene	528-29-0	1000	± 0.240%
1,3-Dinitrobenzene	99-65-0	1000	± 1.221%
1,4-Dinitrobenzene	100-25-4	1000	± 0.246%
2,4-Dinitrophenol	51-28-5	1000	± 0.519%
2,4-Dinitrotoluene	121-14-2	1000	± 2.242%

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Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.: AL0-101444
Lot Number: CL18811
Description: 8270 Calibration Standard
Certification Date: August 9, 2022
Storage: -18 °C
Expiration Date: November 30, 2023
Provided As: 1 mL in 2 mL Ampoule in MeCl2/Methanol (97:3)

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
2,6-Dinitrotoluene	606-20-2	1000	± 2.154%
Di-n-octyl phthalate	117-84-0	1000	± 2.670%
Fluoranthene	206-44-0	1000	± 2.103%
Fluorene	86-73-7	1000	± 0.890%
Hexachlorobenzene	118-74-1	1000	± 1.210%
Hexachlorobutadiene	87-68-3	1000	± 1.304%
Hexachlorocyclopentadiene	77-47-4	1000	± 1.510%
Hexachloroethane	67-72-1	1000	± 3.281%
Indeno(1,2,3-cd)pyrene	193-39-5	1000	± 1.921%
Isophorone	78-59-1	1000	± 2.022%
2-Methyl-4,6-dinitrophenol	534-52-1	1000	± 1.661%
1-Methylnaphthalene	90-12-0	1000	± 1.929%
2-Methylnaphthalene	91-57-6	1000	± 2.220%
2-Methylphenol	95-48-7	1000	± 2.168%
3-Methylphenol	108-39-4	500	± 1.025%
4-Methylphenol	106-44-5	500	± 1.064%
Naphthalene	91-20-3	1000	± 1.199%
2-Nitroaniline	88-74-4	1000	± 1.874%
3-Nitroaniline	99-09-2	1000	± 2.146%
4-Nitroaniline	100-01-6	1000	± 0.300%
Nitrobenzene	98-95-3	1000	± 1.704%

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Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.: AL0-101444
Description: 8270 Calibration Standard
Storage: -18 °C
Provided As: 1 mL in 2 mL Ampoule in MeCl2/Methanol (97:3)

Lot Number: CL18811
Certification Date: August 9, 2022
Expiration Date: November 30, 2023

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
2-Nitrophenol	88-75-5	1000	± 2.051%
4-Nitrophenol	100-02-7	1000	± 1.413%
N-Nitrosodimethylamine	62-75-9	1000	± 0.545%
N-Nitrosodiphenylamine	86-30-6	1000	± 1.669%
N-Nitrosodi-n-propylamine	621-64-7	1000	± 0.712%
Pentachlorophenol	87-86-5	1000	± 2.454%
Phenanthrene	85-01-8	1000	± 2.072%
Phenol	108-95-2	1000	± 2.140%
Pyrene	129-00-0	1000	± 1.869%
Pyridine	110-86-1	1000	± 0.545%
2,3,4,6-Tetrachlorophenol	58-90-2	1000	± 2.552%
2,3,5,6-Tetrachlorophenol	935-95-5	1000	± 2.220%
1,2,4-Trichlorobenzene	120-82-1	1000	± 1.632%
2,4,5-Trichlorophenol	95-95-4	1000	± 1.596%
2,4,6-Trichlorophenol	88-06-2	1000	± 0.481%

Notes: The proper chemical name for Bis(2-Chloroiospropyl) ether is 2,2'-oxybis(1-chloropropane). The analytical uncertainty contribution to the expanded uncertainty for 3 and 4-Methylphenol is measured as the total of the two analytes. N-Nitrosodiphenylamine presents as Diphenylamine at 854 µg/mL.

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1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
[3] ISO 17034 – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

Certificate of Analysis

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Certified Reference Material

This product is included in Phenova's ISO/IEC 17025 and ISO Guide 34 Scopes of Accreditation

Catalog No.:	AL0-101291	**Lot Number:**	CL11000
Description:	GC/MS Tuning Mix	**Certification Date:**	May 9, 2014
Storage:	4 °C	**Expiration Date:**	December 31, 2023
Provided As:	1 mL in 2 mL Ampoule in Methylene chloride	**Revision Date:**	August 5, 2015

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty (%)
Benzidine	92-87-5	1000	± 0.208%
Decafluorotriphenylphosphine (DFTPP)	5074-71-5	1000	± 0.057%
4,4'-DDT	50-29-3	1000	± 0.056%
Pentachlorophenol	87-86-5	1000	± 0.061%

LOT 1648

ACCREDITED
Reference Material Producer
Certificate No. 2427.02

phenova® Certified Reference Materials

Manufactured by Phenova, Inc.

Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ilac-MRA ACCREDITED
Chemical Testing Laboratory
Certificate No. 2427.03

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Certificate of Analysis

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Certified Reference Material

This product is included in Phenova's ISO/IEC 17025 and ISO Guide 34 Scopes of Accreditation

Catalog No.: AL0-101291
Description: GC/MS Tuning Mix
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Methylene chloride

Lot Number: CL11000
Certification Date: May 9, 2014
Expiration Date: December 31, 2023
Revision Date: August 5, 2015

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty (%)
Benzidine	92-87-5	1000	± 0.208%
Decafluorotriphenylphosphine (DFTPP)	5074-71-5	1000	± 0.057%
4,4'-DDT	50-29-3	1000	± 0.056%
Pentachlorophenol	87-86-5	1000	± 0.061%

LOO1648

ACCREDITED
Reference Material Producer
Certificate No. 2427.02

phenova® Certified Reference Materials

Manufactured by Phenova, Inc.

Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.

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Chemical Testing Laboratory
Certificate No. 2427.03

IL11110613_us

Certificate of Analysis

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411 Madrid Ave., Torrance, CA 90501 USA ▪ Tel: 310-212-0555 ▪ Fax: 310-328-7768 ▪ info@phenomenex.com
Access your MSDS and digital C of A at www.phenomenex.com/mysupport. Re-order at www.phenomenex.com/standards

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO Guide 34[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in the calibration and calibration verification of chromatographic instrumentation performed in routine laboratory analysis.

4. Instruction: Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all certified analytes in the mixture.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Material Safety Data Sheet (MSDS) is available at www.phenomenex.com/mysupport.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC Guide 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO Guide 34. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC Guide 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC Guide 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO Guide 34.

12. Period of Validity: The Certified Values and their uncertainties are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31:2000(E) – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35:2006(E) – Reference Material – General and Statistical Principles for Certification.
[3] ISO Guide 34:2009(E) – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC Guide 17025:2005(E) – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

ACCREDITED
Reference Material Producer
Certificate No. 2427.02

phenova® Certified Reference Materials

Manufactured by Phenova, Inc.
Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ilac-MRA ACCREDITED
Chemical Testing Laboratory
Certificate No. 2427.03

IL_111106.13_us

ISO 17034

Agilent
Trusted Answers

Reference Material Certificate

Product Name: PAH Standard

Product Number: US-106N-1

Storage Conditions: Store at Room Temperature (15° to 30°C).

Lot Number: 0006666382

Lot Issue Date: 22-Apr-2022

Expiration Date: 31-May-2025

L007064

Component Name	CERTIFIED VALUES Concentration	Expanded Uncertainty	CAS#	Analyte Lot
acenaphthene	2002 ±	10 µg/mL	000083-32-9	RM10879
acenaphthylene	2003 ±	10 µg/mL	000208-96-8	RM10891
anthracene	2002 ±	10 µg/mL	000120-12-7	RM14212
benz[a]anthracene	2003 ±	10 µg/mL	000056-55-3	RM19299
benzo[b]fluoranthene	2004 ±	10 µg/mL	000205-99-2	RM19754
benzo[k]fluoranthene	2010 ±	10 µg/mL	000207-08-9	RM19818
benzo[ghi]perylene	2004 ±	10 µg/mL	000191-24-2	RM19159
benzo[a]pyrene	1993 ±	10 µg/mL	000050-32-8	RM17573
chrysene	2000 ±	10 µg/mL	000218-01-9	RM18695
dibenz[a,h]anthracene	2008 ±	10 µg/mL	000053-70-3	RM06786
fluoranthene	2007 ±	10 µg/mL	000206-44-0	RM12277
fluorene	2003 ±	10 µg/mL	000086-73-7	RM13733
indeno[1,2,3-cd]pyrene	2001 ±	10 µg/mL	000193-39-5	RM19421
naphthalene	2002 ±	10 µg/mL	000091-20-3	RM10445
phenanthrene	2008 ±	10 µg/mL	000085-01-8	RM10495
pyrene	2001 ±	10 µg/mL	000129-00-0	RM16126

Matrix: methylene chloride/benzene (1:1)

Description:
This document is prepared in accordance with ISO 17034 and Guide 31. This analytical reference material standard was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed above.

Traceability:
The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:
This analytical reference standard was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

Safety:
Refer to the Safety Data Sheet on www.agilent.com for information regarding this analytical reference material.

Intended Use:
This analytical reference standard is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

Expiration of Certification:
The certification of this analytical reference standard is valid until the expiration date specified above, provided the material is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the material is damaged, contaminated, or otherwise modified.

Maintenance of Certification:
If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

Sample lot approver:

Monica Bourgeois
QMS Representative

Agilent

Trusted Answers

ISO 17034

Reference Material Certificate

Product Information Sheet

Product Name: Toxic Substances Standard

Product Number: US-104N-1

Storage Conditions: Store at Room Temperature (15° to 30°C).

Lot Number: 0006698499

Lot Issue Date: 10-Aug-2022

Expiration Date: 30-Sep-2025

Component Name	CERTIFIED VALUES Concentration	Expanded Uncertainty	CAS#	Analyte Lot
aniline	2006 ±	10 µg/mL	000062-53-3	RM16773
benzyl alcohol	2004 ±	10 µg/mL	000100-51-6	RM16537
4-chloroaniline	2005 ±	10 µg/mL	000106-47-8	RM01886
dibenzofuran	2008 ±	10 µg/mL	000132-64-9	RM02077
2-methylnaphthalene	2009 ±	10 µg/mL	000091-57-6	RM01258
2-nitroaniline	2007 ±	10 µg/mL	000088-74-4	RM02402
3-nitroaniline	2008 ±	10 µg/mL	000099-09-2	RM00427
4-nitroaniline	2004 ±	10 µg/mL	000100-01-6	RM02425

L007065

Matrix: methylene chloride (dichloromethane)

Description:

This document is prepared in accordance with ISO 17034 and Guide 31. This analytical reference material standard was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed above.

Traceability:

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:

This analytical reference standard was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Instructions for Use:

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

Safety:

Refer to the Safety Data Sheet on www.agilent.com for information regarding this analytical reference material.

Agilent

Trusted Answers

Intended Use:
This analytical reference standard is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

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The certification of this analytical reference standard is valid until the expiration date specified above, provided the material is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the material is damaged, contaminated, or otherwise modified.

Maintenance of Certification:
If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

Sample lot approver:

Monica Bourgeois
QMS Representative

ANAB
ANSI National Accreditation Board
ACCREDITED
ISO 17034
REFERENCE MATERIAL PRODUCER

ISO 17034 Cert
No. AR-1936

RM was produced in accordance with the TUV/SUD registered ISO 9001:2015 Quality Management System. Cert# 951215321

www.agilent.com/quality/
CSD-QA-015.1

ISO 17025

Analytical Resources, LLC
Analytical Chemists and Consultants

Dual Column

LDW20-SC148A

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, LLC			SDG:	23F0536
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Solid	Laboratory ID:	23F0536-01 A	File ID:	07072316ECD7.D
Sampled:	06/08/20 08:41	Prepared:	06/29/23 11:08	Analyzed:	07/07/23 16:01
% Solids:	62.38	Preparation:	EPA 3546 (Microwave)	Initial/Final:	20.04 g Wet / 2.5 mL
Batch:	BLF0716	Sequence:	SLG0066	Calibration:	GE00022
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
12674-11-2	Aroclor 1016	1	1	4.0	1.6	4.0	H, U
11104-28-2	Aroclor 1221	1	1	4.0	1.6	4.0	H, U
11141-16-5	Aroclor 1232	1	1	4.0	1.6	4.0	H, U
53469-21-9	Aroclor 1242	1	1	4.0	1.6	4.0	H, U
12672-29-6	Aroclor 1248	1	1	17.5	1.6	4.0	H
11097-69-1	Aroclor 1254	2	1	29.3	1.6	4.0	H
11096-82-5	Aroclor 1260	2	1	35.2	0.6	4.0	H

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*7.9994*	*6.58*	*82.3*	*40 - 126*	
Tetrachlorometaxylene	*1*	*7.9994*	*4.99*	*62.4*	*44 - 120*	
Decachlorobiphenyl	*2*	*7.9994*	*6.81*	*85.1*	*40 - 126*	
Tetrachlorometaxylene	*2*	*7.9994*	*5.86*	*73.3*	*44 - 120*	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072316ECD7.D
Data file 2: /230707.b/230707.b/07072316ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 23F0536-01
Client ID:
Injection Date: 07-JUL-2023 16:01
Report Date: 07/08/2023 20:45
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.715	-0.003	230181	5.600	-0.007	136190	24.9	29.3	16.1	Tetrachloro-m-xylene
13.808	-0.011	179559	14.035	-0.011	189964	32.9	34.0	3.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	612720	1.9
Hexabromobiphenyl	876625	546163	-37.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	337584	-3.4
Hexabromobiphenyl	652984	393062	-39.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	8.367	-0.011	12013	76.8	1	8.225	-0.020	16340	101.7
Aroclor-1248	2	8.485	-0.020	18636	45.9	2	8.632	-0.020	14927	88.0
Aroclor-1248	3	8.906	-0.019	57090	73.0	3	9.140	0.024	19457	97.8
Aroclor-1248	4	9.207	-0.013	61503	154.4	4	9.540	-0.002	3212	13.5
	Total Col1Ave (4 peaks):				87.5	Total Col2Ave (4 peaks):				75.3 RPD = 15
	Corrected Ave (3 peaks):				65.2	Corrected Ave (3 peaks):				66.4 RPD = 2
Aroclor-1254	1	9.207	-0.022	61503	97.7	1	9.364	-0.020	37281	145.4
Aroclor-1254	2	9.285	-0.018	24432	86.3	2	9.456	-0.024	35229	231.2
Aroclor-1254	3	9.580	-0.015	47863	117.7	3	9.881	-0.023	19093	91.8
Aroclor-1254	4	9.707	-0.026	89245	112.1	4	10.030	-0.029	69270	152.7
Aroclor-1254	5	10.038	-0.057	111012	230.8	5	10.279	-0.031	88189	195.9
	Total Col1Ave (5 peaks):				128.9	Total Col2Ave (5 peaks):				163.4 RPD = 24
	Corrected Ave (4 peaks):				103.5	Corrected Ave (4 peaks):				146.4 RPD = 34
Aroclor-1260	1	10.954	-0.018	39044	135.2	1	11.567	-0.018	40003	191.6
Aroclor-1260	2	11.271	-0.019	33730	118.3	2	11.829	-0.024	80782	148.0
Aroclor-1260	3	11.640	-0.025	91717	128.5	3	12.347	-0.021	28775	212.7
Aroclor-1260	4	12.041	-0.028	50455	144.3	4	12.412	-0.025	55058	151.0
Aroclor-1260	5	12.156	-0.016	22770	149.4	NS	---			----
	Total Col1Ave (5 peaks):				135.1	Total Col2Ave (4 peaks):				175.8 RPD = 26
	Corrected Ave (4 peaks):				131.6	Corrected Ave (3 peaks):				163.5 RPD = 22
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (5.818 - 13.719) = 1796951 Col1 Total PCB = 0.3 ppm*

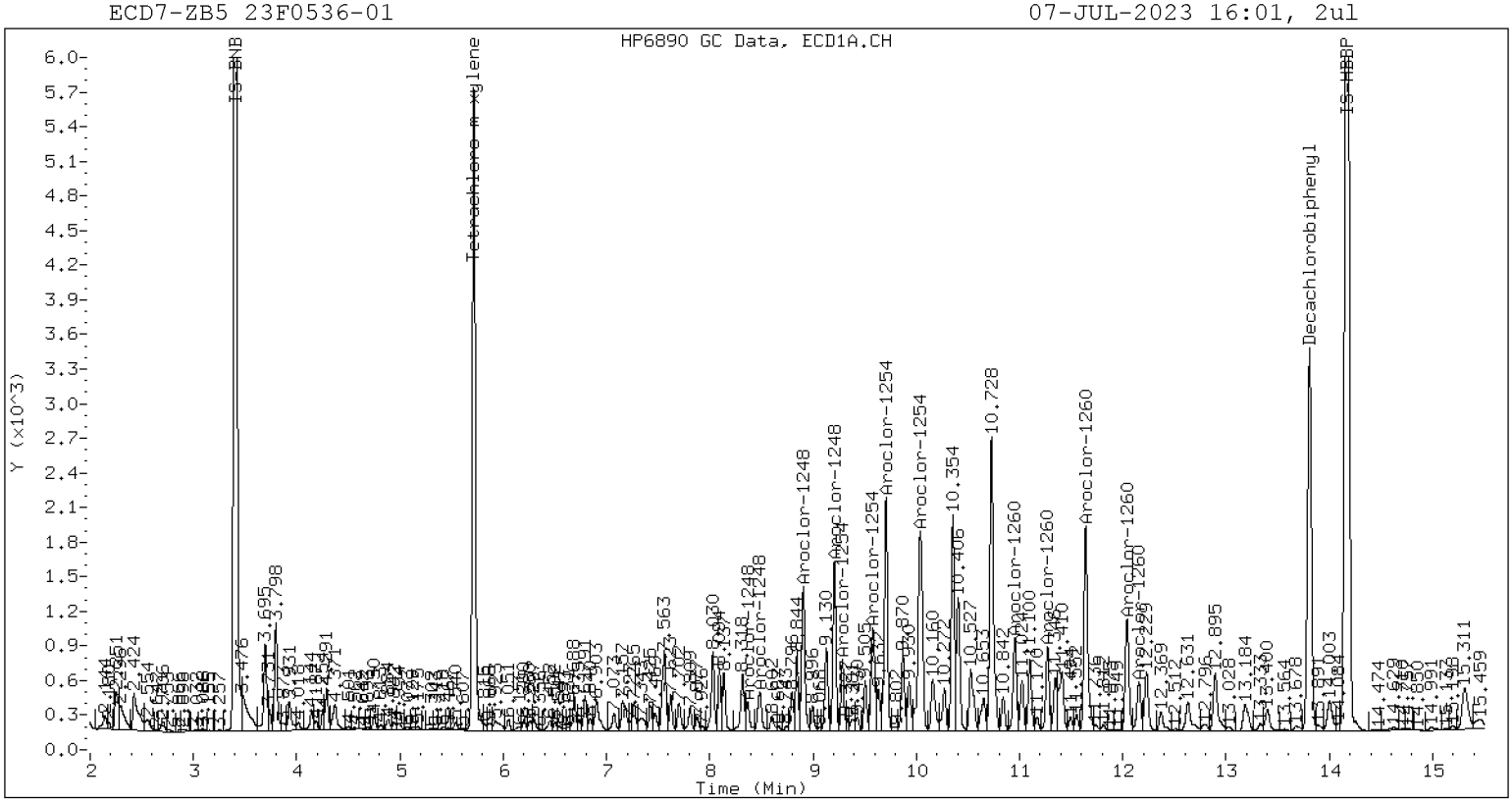
Total PCB Area Col2 (5.707 - 13.947) = 1361514 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

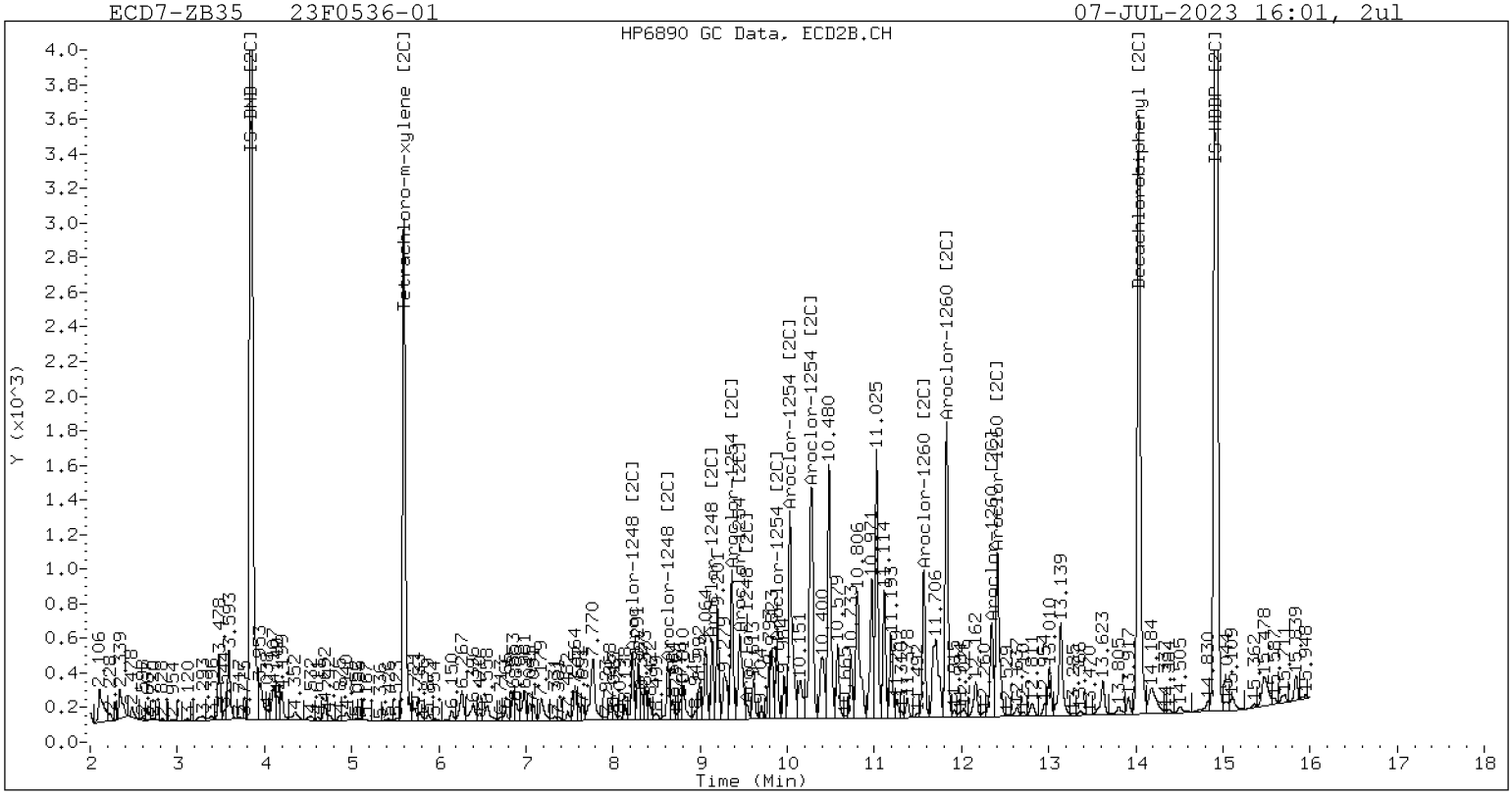
PCB Dual Column Chromatograms

ECD7-ZB5 23F0536-01 07-JUL-2023 16:01, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 23F0536-01 07-JUL-2023 16:01, 2ul



ZB-35 Manual Integration: NO

PREPARATION BATCH SUMMARY

EPA 8082A

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Batch: BLF0716 Batch Matrix: Solid
Preparation: EPA 3546 (Microwave)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW20-SC148A	23F0536-01	07072316ECD7.D	06/29/23 11:08	
Blank	BLF0716-BLK1	07072313ECD7.D	06/29/23 11:08	
LCS	BLF0716-BS1	07072311ECD7.D	06/29/23 11:08	
LCS Dup	BLF0716-BSD1	07072312ECD7.D	06/29/23 11:08	
LDW20-SC148A	BLF0716-MS1	07072317ECD7.D	06/29/23 11:08	
LDW20-SC148A	BLF0716-MSD1	07072318ECD7.D	06/29/23 11:08	
Reference	BLF0716-SRM1	07072310ECD7.D	06/29/23 11:08	

Analytical Resources, LLC
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BLF0716

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid (Version:7 Aroclors)

8082A PCB Solid 4 in Solid

Matrix: Solid **Date Prepared:** 06/29/23 **Balance ID:** B14646614 **Set Up By:** GO 6/26/23

WO Comments

23F0536: <G> Re-logged from frozen archive. Project batch as mcuh as possible </G> <C> SRM, MS, Rep </C> <M> SRM, PS, MS/MSD </M> <E>8270E RM H002055, SIM RM H010158, Pest RM H010158, PCB RM H009325, MS/MSD </E>
<H> RM H009325, Dup </H>
23F0541:

The following standards may be missing from this batch!

Designator	Description
QLS 5	QLS Spike

Analysis: 8082A PCB Solid 4

Lab Number & Container	% Solids	Initial (g) Target Dry: 12.5 (Wet) Actual	(REQ) Acid C/U (5mL)	(REQ) Sulfur C/U (5mL) 1 2 3	(REQ) Silica Gel C/U (2:5)	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
23F0536-01 A	62.4	(20.04) 20.04	5mL	5mL	2mL	2.5 ____	1.0 ____	
23F0541-01 E	68.5	(18.26) ~~20.04~~ 18.26	5mL	5mL	2mL	2.5 ____	1.0 ____	
23F0541-02 E	61.6	(20.29) 20.31	5mL	5mL	2mL	2.5 ____	1.0 ____	
23F0541-03 E	26.2	~~(47.76)~~ (20.00) 20.04	5mL	5mL	2mL	2.5 ____	1.0 ____	
23F0541-04 E	35.5	~~(35.22)~~ (20.00) 20.07	5mL	5mL	2mL	2.5 ____	1.0 ____	
23F0541-05 E	24.5	~~(81.18)~~ (20.00) 20.04	5mL	5mL	2mL	2.5 ____	1.0 ____	
23F0541-06 E	30.3	~~(41.24)~~ (20.00) 20.03	5mL	5mL	2mL	2.5 ____	1.0 ____	

Batch QC

Lab Number	% Solids	Initial (g) Target Dry: 12.5 (Wet) Actual	(REQ) Acid C/U (5mL)	(REQ) Sulfur C/U (5mL) 1 2 3	(REQ) Silica Gel C/U (2:5)	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
BLF0716-BLK1	100.0	(12.50) 12.50	5mL	5mL	2mL	2.5 ____	1.0 ____	(10g Actual Wt.)
BLF0716-BS1	100.0	(12.50) 12.50	5mL	5mL	2mL	2.5 ____	1.0 ____	(10g Actual Wt.)
BLF0716-BSD1	100.0	(12.50) 12.50	5mL	5mL	2mL	2.5 ____	1.0 ____	(10g Actual Wt.)
BLF0716-MS1	62.4	(20.04) 20.04	5mL	5mL	2mL	2.5 ____	1.0 ____	Use 23F0536-01
BLF0716-MSD1	62.4	(20.04) 20.04	5mL	5mL	2mL	2.5 ____	1.0 ____	Use 23F0536-01
BLF0716-SRM1	100.0	~~(12.50)~~ (2.50) 2.50 +1g DI WATER	5mL	5mL	2mL	2.5 ____	1.0 ____	Use K010817

Client ID verified By — 06/29/23 Date — Preparation Reviewed By — 7/6/23 Date — 06/29/23 11:08 Extraction Date and Time

Printed: 6/26/2023 10:53:24AM

Analytical Resources, LLC
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BLF0716

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid (Version:7 Aroclors)
8082A PCB Solid 4 in Solid

WO Comments

23F0536: <G> Re-logged from frozen archive. Project batch as mcuh as possible </G> <C> SRM, MS, Rep </C> <M> SRM, PS, MS/MSD </M> <E>8270E RM H002055, SIM RM H010158, Pest RM H010158, PCB RM H009325, MS/MSD </E>
<H> RM H009325, Dup </H>
23F0541:

Prep Steps

Microwave
1 (2) 3
RT 6/29/23
Analyst/Date

KD
100°C
Hexane Exchange
(2 X 20 mL)
1 2 3 4 (5) (6)
CR 6/30/23
Analyst/Date

TurboVap
Pre Cleanups
1 2 3 (4) 5
MKS 7/5/23
Analyst/Date

TurboVap
Post Cleanups
1 2 (3) 4 5
7/6/23 MKS
Analyst/Date

Vialing
7/6/23 MKS
Analyst/Date

Reagents Used

Station/Reagent	Standard ID
Microwave Analyst: RT Date: 6/29/23	
Neutral Glass Wool	L005904
1:1 Hexane/Acetone	~~L006787~~ X 6/29/23
Hexane	L006866
Anhydrous Sodium Sulfate	L006787
KD Analyst: CR Date: 6/30/23	
~~Anhydrous Sodium Sulfate~~	
Hexane	L006866
Vialing Analyst: MKS Date: 7/6/23	
Hexane	L006566
Concentrated Sulfuric Acid	L005397
Silica Gel (SPE) Darts	L006974
Sodium Sulfite	L002437
Tetrabutylammonium hydrogensulfate (TBAS)	L006729

Surrogates & Spike Standards Used

Type	Vial ID / Standard ID	Vol uL	Analyst	Witness
Surrogate 2µg/mL	N L003667 Exp Date: 7/25/2023	50µL	RT	
Spike L006957 20µg/mL	1 L006776 Exp Date: 12/16/2023	63µL	RT	

MANUALLY ENTER EXPIRATION DATES!

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

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

Analytical Resources, LLC
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BLF0716

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid (Version:7 Aroclors)
8082A PCB Solid 4 in Solid

WO Comments

23F0536: <G> Re-logged from frozen archive. Project batch as much as possible </G> <C> SRM, MS, Rep </C> <M> SRM, PS, MS/MSD </M> <E>8270E RM H002055, SIM RM H010158, Pest RM H010158, PCB RM H009325, MS/MSD </E>
<H> RM H009325, Dup </H>
23F0541:

Prep Instructions	
SPECIAL INSTRUCTIONS: 1. Weigh soil/sed into beakers-lightly dry with sodium sulfate. 2. Transfer to microwave vessel(s). Note: (do not fill vessels more than 2/3rd full. Some samples may require two vessels). 3. Add 1:1 Hexane/Acetone until the solvent layer is 3 inches above the soil layer after homogenization. 4. Add surr/spike. 5. Microwave on appropriate power setting determined by # of samples. 6. After microwave-Re-homogenize while hot then cool vessels in R-05 15 minutes. Re-homogenize while cool. 7. Decant 1:1 Hex/Ace into Erlenmeyer flask with sodium sulfate in bottom and funnel with neutral glasswool plug. 8. Re-homogenize and rinse with 1:1 Hexane/Acetone. 9. Let cool and decant solvent then empty the soil into the funnel and rinse with Hexane. 10. KD on 100° bath. 11. Exchange (2 X with 20mL) Hexane. 12. TurboVap. 13. Clean-ups. 14. TurboVap. 15. Vial with Hexane. A. Need Total Solids Y / N B. Archive/Freeze Y / N	

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Organic Extractions Laboratory
Analyst Notes

Extraction Parameter: PCB Extraction Batch: BLF0716

Total Solids Batch: BLF0688 Work Order(s): 23F0519, 520, 536

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
[X] No Anomalies (standard soil/wet sediment/sand/gravel)= 23F0519 =Φ2, 536 =Φ1	J 06/24/23
[X] Standing Water Decanted (Not shared)= 536 =Φ1	J 06/24/23
[ ] Standing Water Homogenized (Shared samples)=	
[ ] Clay/Clumps (Difficult to homogenize)=	
[ ] Rocks (%+size)?	
[X] Organics (Leaves/sticks/grass)= 20% 520 =Φ1	N 06/24/23
[ ] Oily, obvious fuel/sulfur odors=	
[ ] Received in 32oz jar(s)=Homogenized in Pyrex dish=	
[ ] Previously Frozen =	
[ ] Other (Details)=	
Aqueous:	
[ ] No Anomalies	
[ ] Turbid/Color=	
[ ] Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
[ ] Emulsions (%)=	
[ ] Oily, obvious fuel/sulfur odors=	
[ ] Other (Details)=	
[ ] Received in 1.0L Bottle(s)=No Bottle Rinse=	
[ ] Other Notes/Comments= (Note problems, concerns, corrective actions).	
[X] Share Samples Y / N 23F0520 =Φ1.	N 06/24/23
[X] Multiple Jars Y / N	J 06/24/23
[ ] Sample Pre-Screens indicate analyte activity=	
[ ] Sample weights/volumes reduced based on Pre-Screen=	

3066F

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Organic Extractions Laboratory
Analyst Notes

Extraction Parameter: PCB Extraction Batch: BLF0716

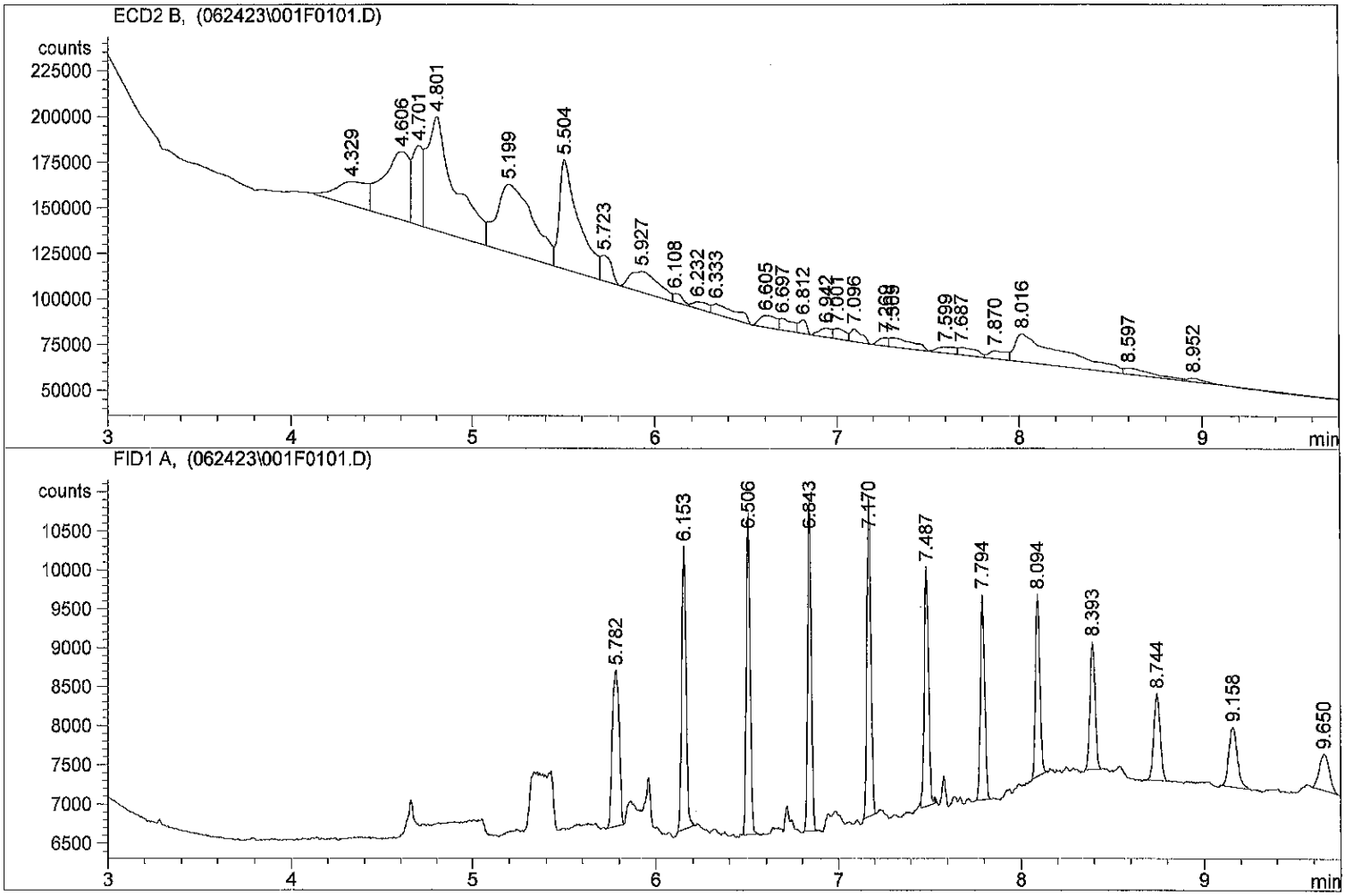
Total Solids Batch: ~~N/A~~ BLF0687 Work Order(s): 23F0541

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☒ No Anomalies (standard soil/wet sediment/sand/gravel)= φ1, φ3–φ6.	[illegible] 06/24/23
☒ Standing Water Decanted (Not shared)= φ1 – φ6.	[illegible] φ6 06/24/23
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☒ Organics (Leaves/sticks/grass)= 30% φ2.	[illegible] 06/24/23
☐ Oily, obvious fuel/sulfur odors=	
☐ Received in 32oz jar(s)=Homogenized in Pyrex dish=	
☐ Previously Frozen =	
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☐ Received in 1.0L Bottle(s)=No Bottle Rinse=	
☐ Other Notes/Comments= (Note problems, concerns, corrective actions).	
☒ Share Samples Y / N	[illegible] φ6 06/24/23
☒ Multiple Jars Y / N φ1 – φ5 X2.	[illegible] 06/24/23
☐ Sample Pre-Screens indicate analyte activity=	
☐ Sample weights/volumes reduced based on Pre-Screen=	

3056F

Data File C:\HPCHEM\1\DATA\062423\001F0101.D Sample Name: DCM RINSE

Injection Date	: 6/24/2023 12:07:22 PM	Seq. Line :	1
Sample Name	: DCM RINSE	Location :	Vial 1
Acq. Operator	: YL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\062423.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



*** End of Report ***

```
Injection Date  : 6/24/2023 12:21:17 PM        Seq. Line :   2
Sample Name     : PNA STD 10PPM.                Location : Vial 2
Acq. Operator   : YL                               Inj :   1
                                              Inj Volume : 1 µl

Sequence File   : C:\HPCHEM\1\SEQUENCE\062423.S
Method          : C:\HPCHEM\1\METHODS\SCREEN.M
Last changed    : 7/9/2021 3:37:33 AM by TW
SCREEN METHOD
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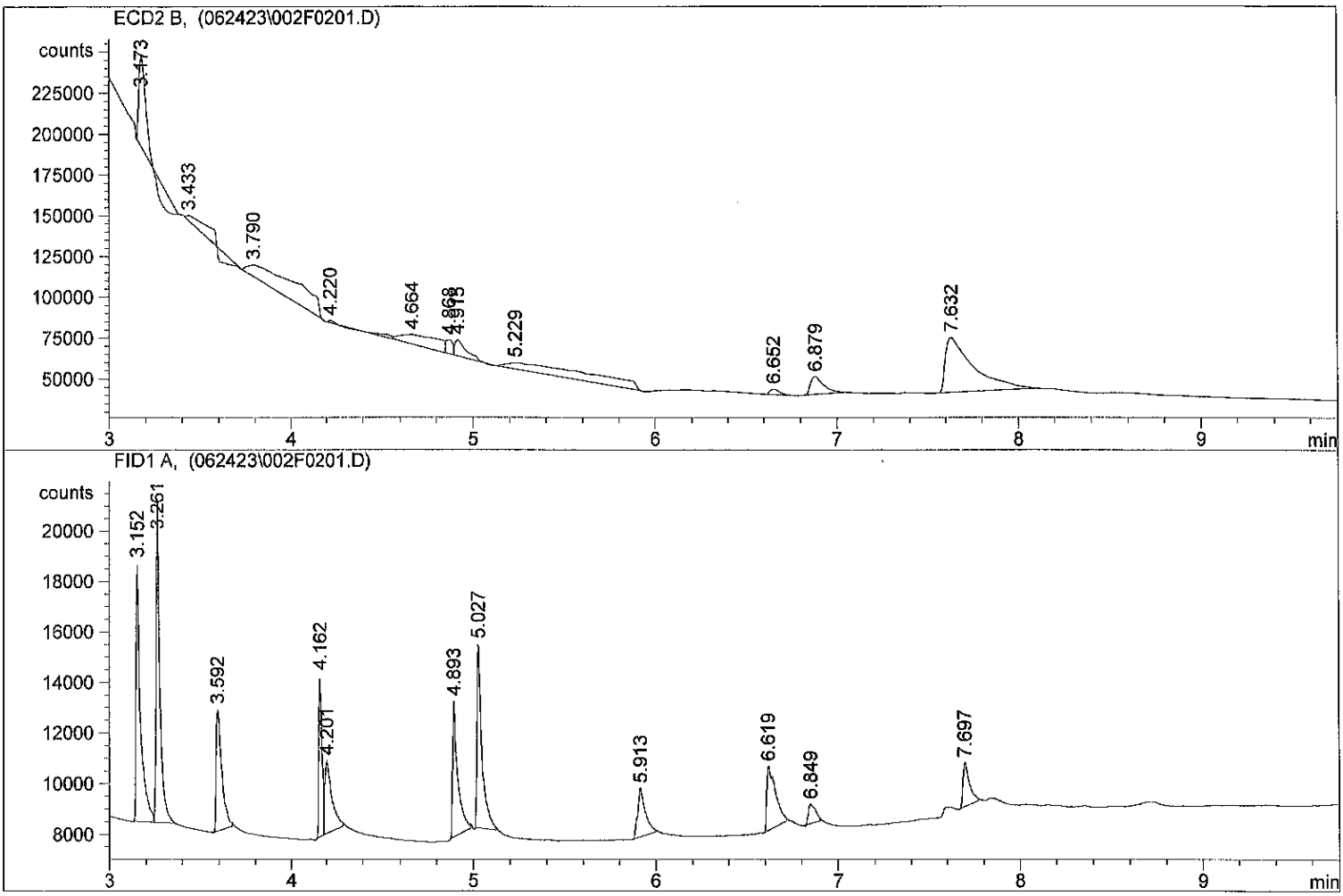
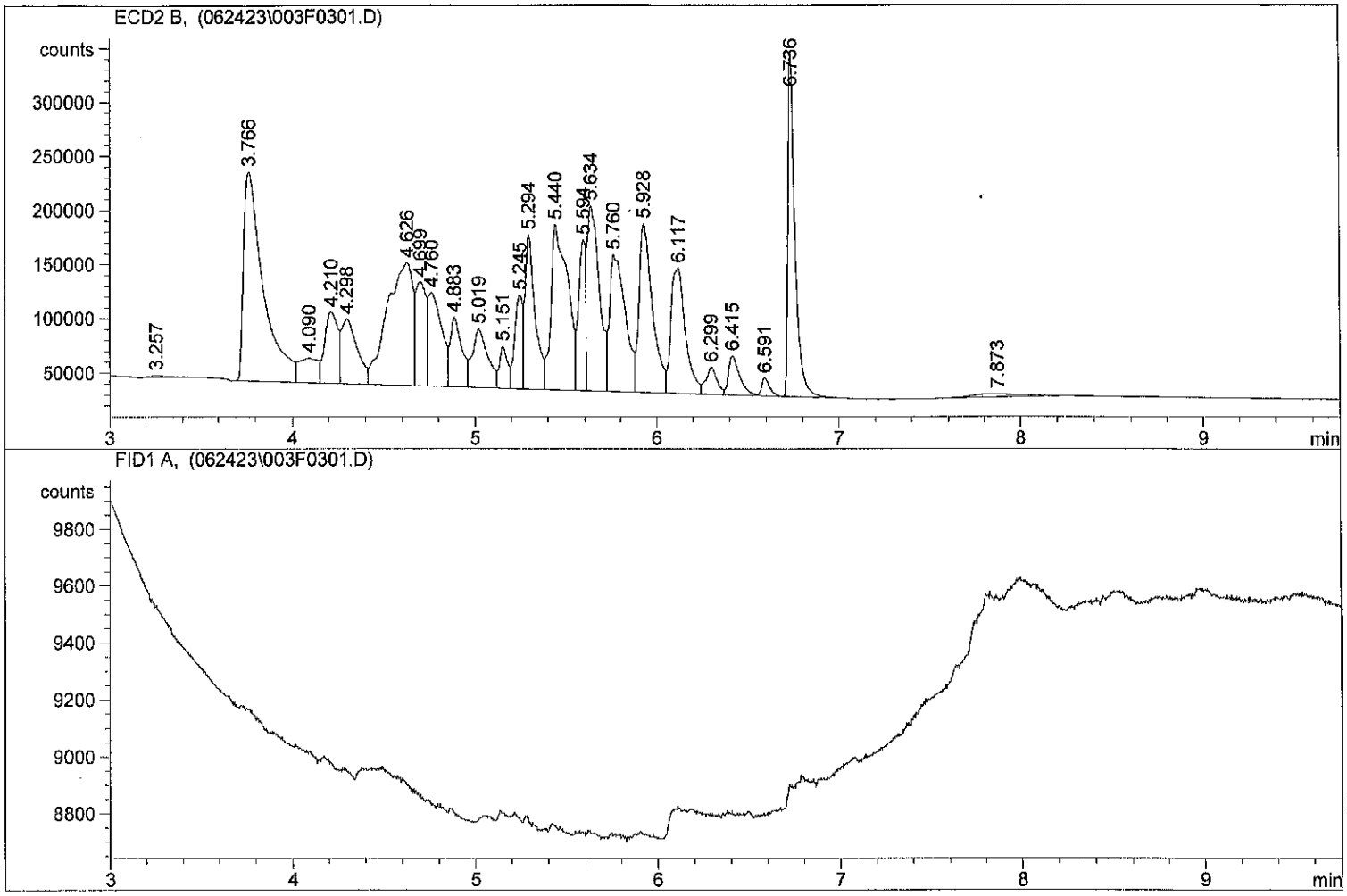


*** End of Report ***

Data File C:\HPCHEM\1\DATA\062423\003F0301.D Sample Name: AR1660 1PPM

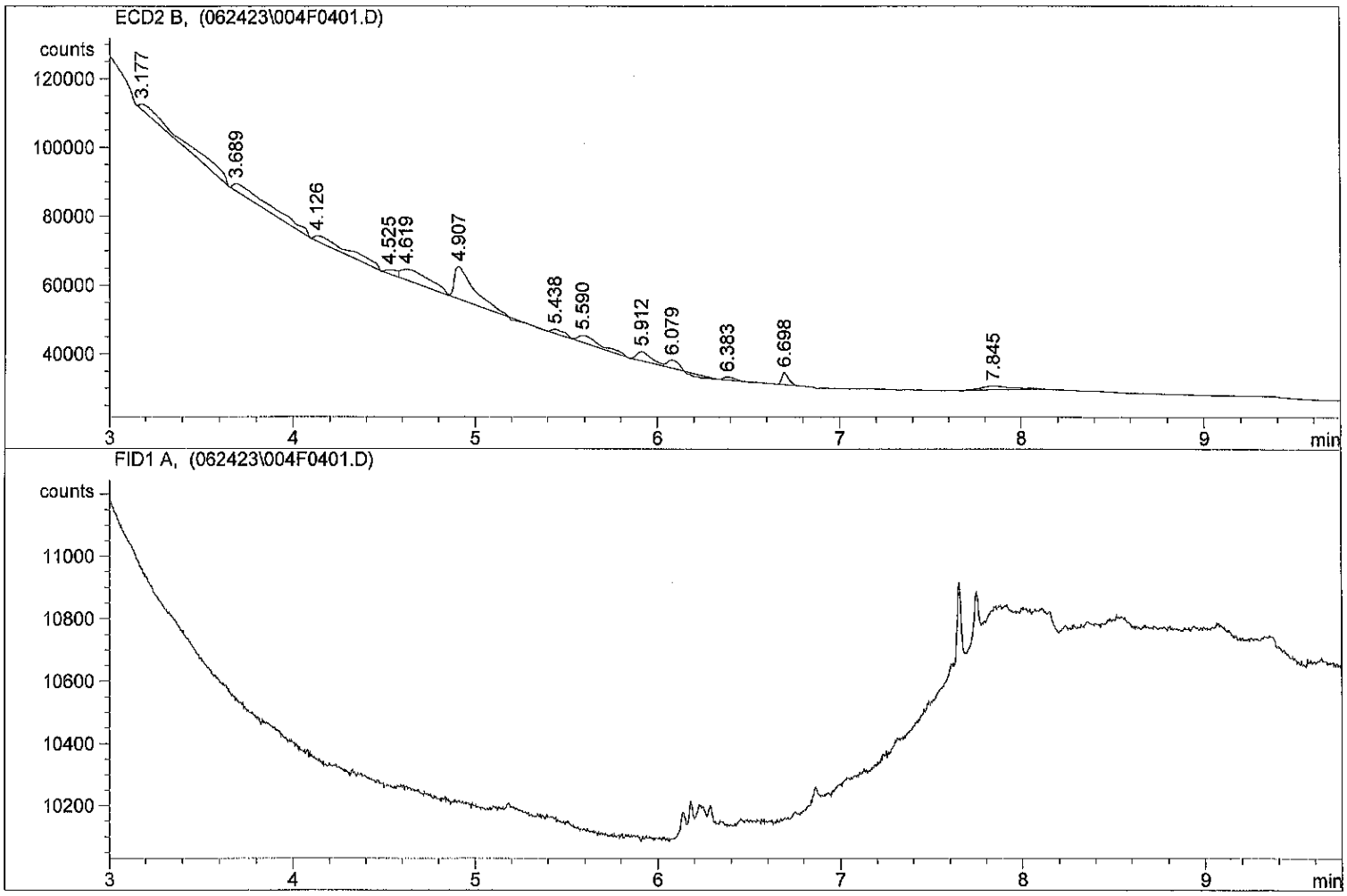
Injection Date	: 6/24/2023 12:35:30 PM	Seq. Line :	3
Sample Name	: AR1660 1PPM	Location :	Vial 3
Acq. Operator	: YL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\062423.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



*** End of Report ***

Data File C:\HPCHEM\1\DATA\062423\004F0401.D Sample Name: 23F0541 01

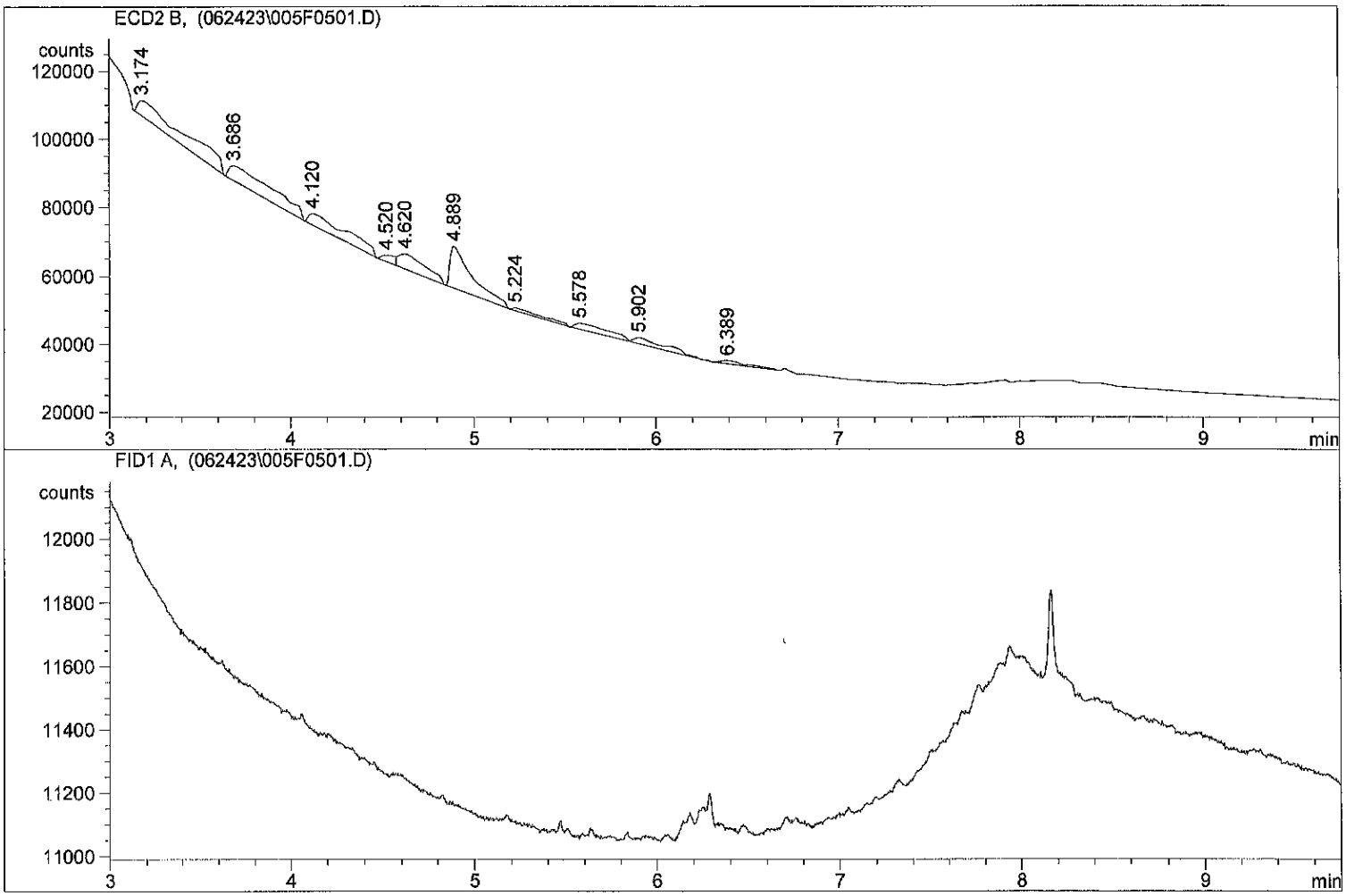
Injection Date	: 6/24/2023 12:49:28 PM	Seq. Line	: 4
Sample Name	: 23F0541 01	Location	: Vial 4
Acq. Operator	: YL	Inj	: 1
		Inj Volume	: 1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\062423.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



*** End of Report ***

Data File C:\HPCHEM\1\DATA\062423\005F0501.D Sample Name: 23F0541 02

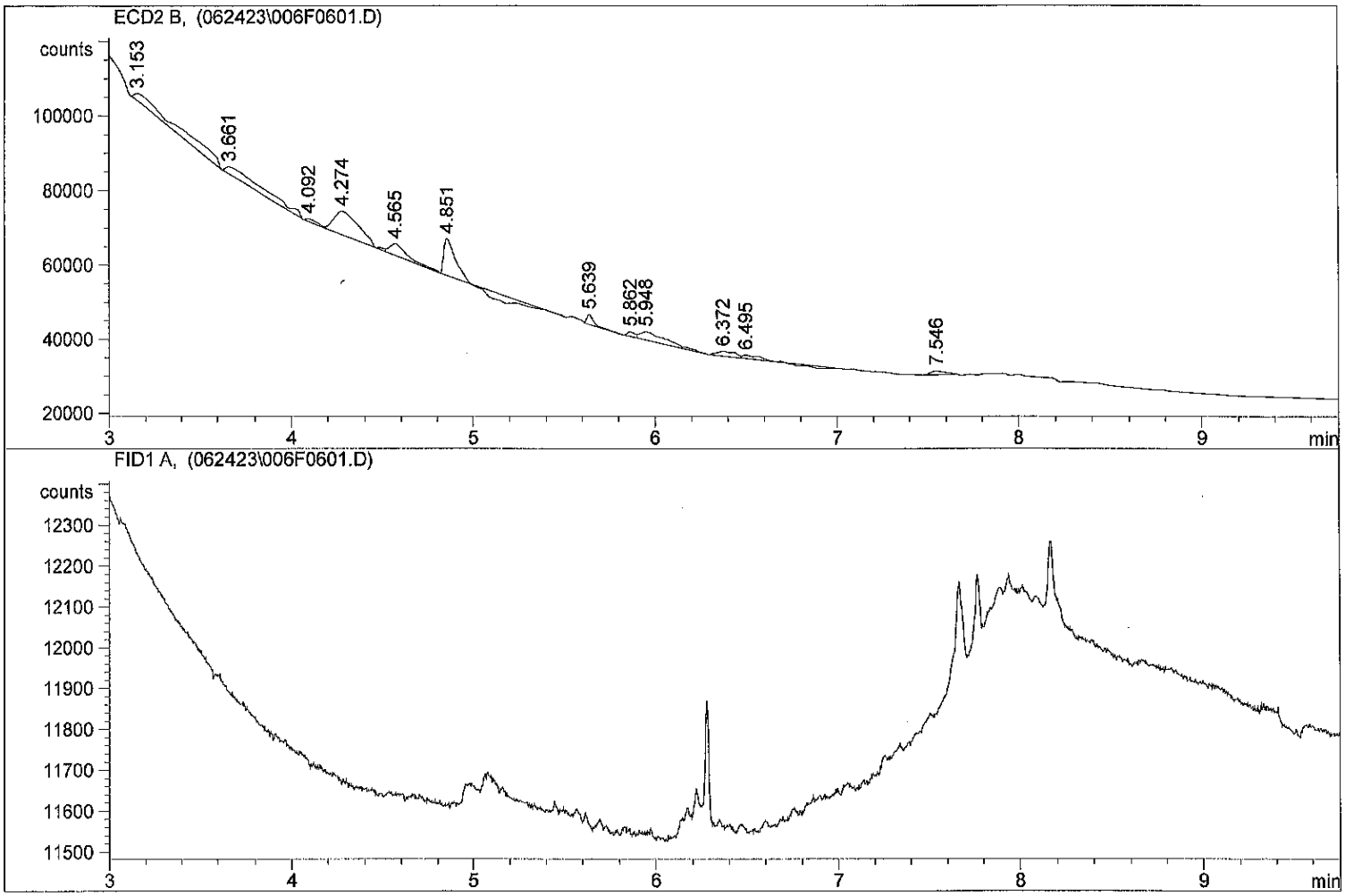
Injection Date	: 6/24/2023 1:03:51 PM	Seq. Line	: 5
Sample Name	: 23F0541 02	Location	: Vial 5
Acq. Operator	: YL	Inj	: 1
		Inj Volume	: 1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\062423.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



*** End of Report ***

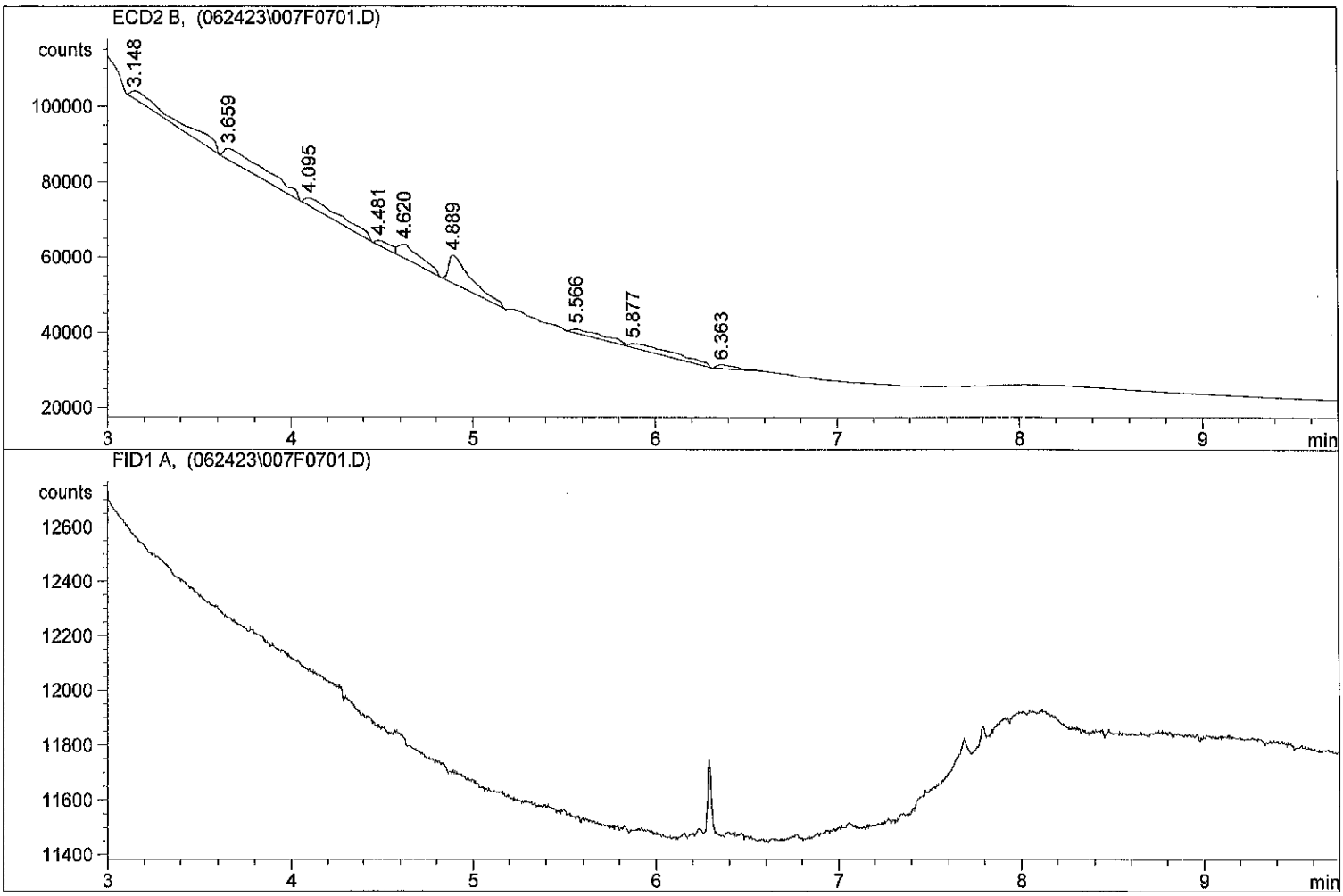
Data File C:\HPCHEM\1\DATA\062423\006F0601.D Sample Name: 23F0541 03

Injection Date	: 6/24/2023 1:17:50 PM	Seq. Line :	6
Sample Name	: 23F0541 03	Location :	Vial 6
Acq. Operator	: YL	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\062423.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



*** End of Report ***

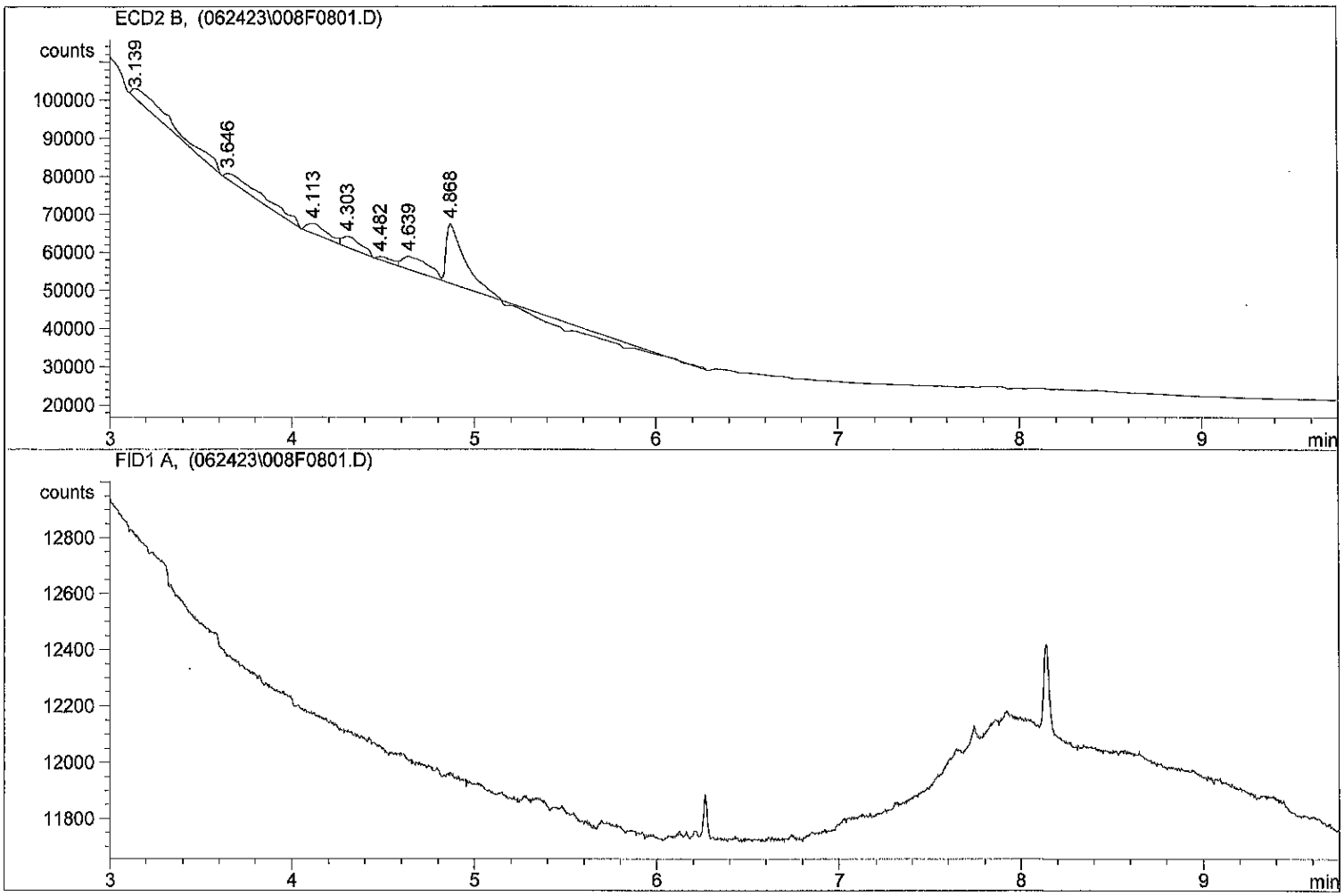
Injection Date	: 6/24/2023 1:32:14 PM	Seq. Line	: 7
Sample Name	: 23F0541 04	Location	: Vial 7
Acq. Operator	: YL	Inj	: 1
		Inj Volume	: 1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\062423.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



*** End of Report ***

Injection Date : 6/24/2023 1:46:10 PM Seq. Line : 8
Sample Name : 23F0541 05 Location : Vial 8
Acq. Operator : YL Inj : 1
Inj Volume : 1 µl

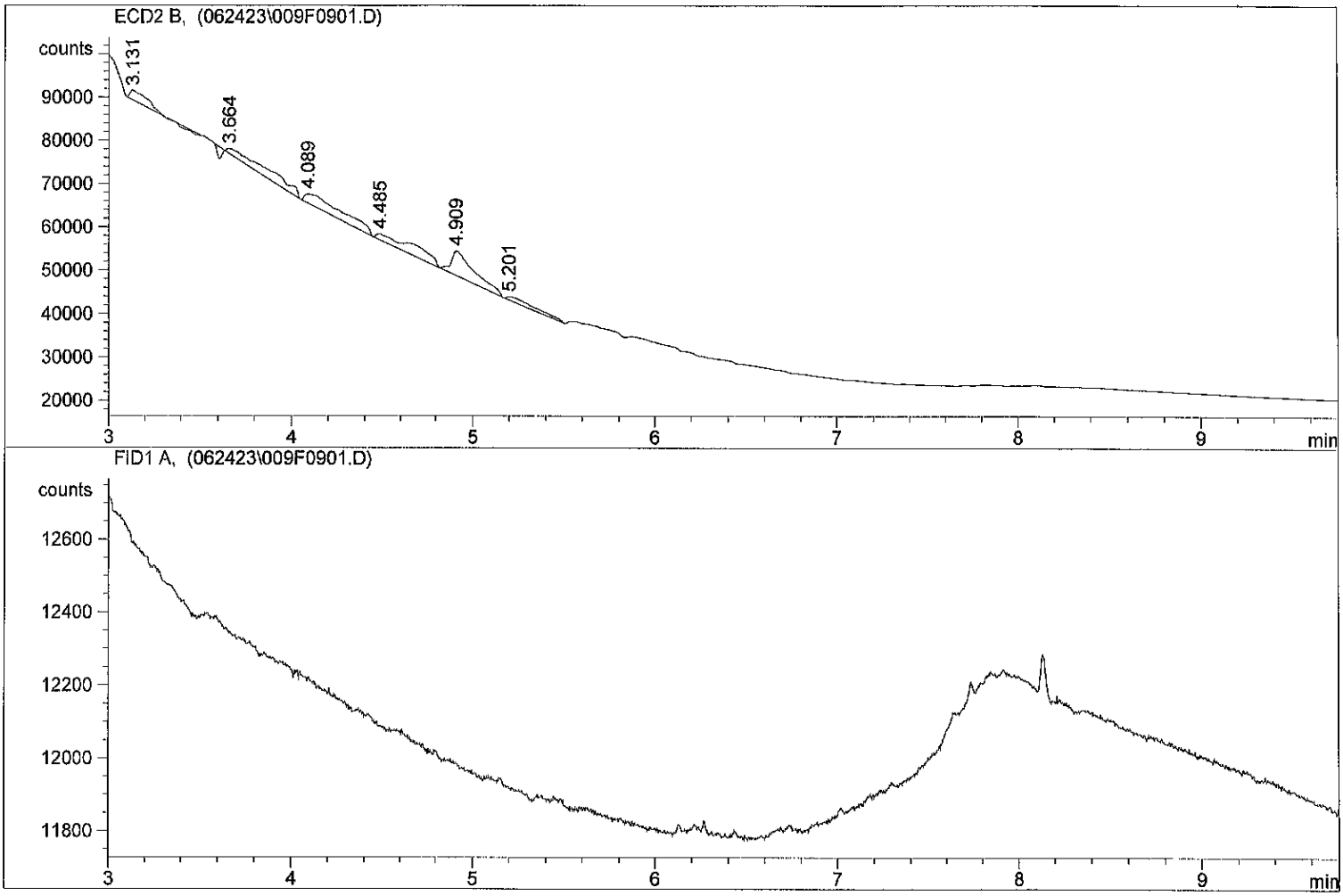
Sequence File : C:\HPCHEM\1\SEQUENCE\062423.S
Method : C:\HPCHEM\1\METHODS\SCREEN.M
Last changed : 7/9/2021 3:37:33 AM by TW
SCREEN METHOD



*** End of Report ***

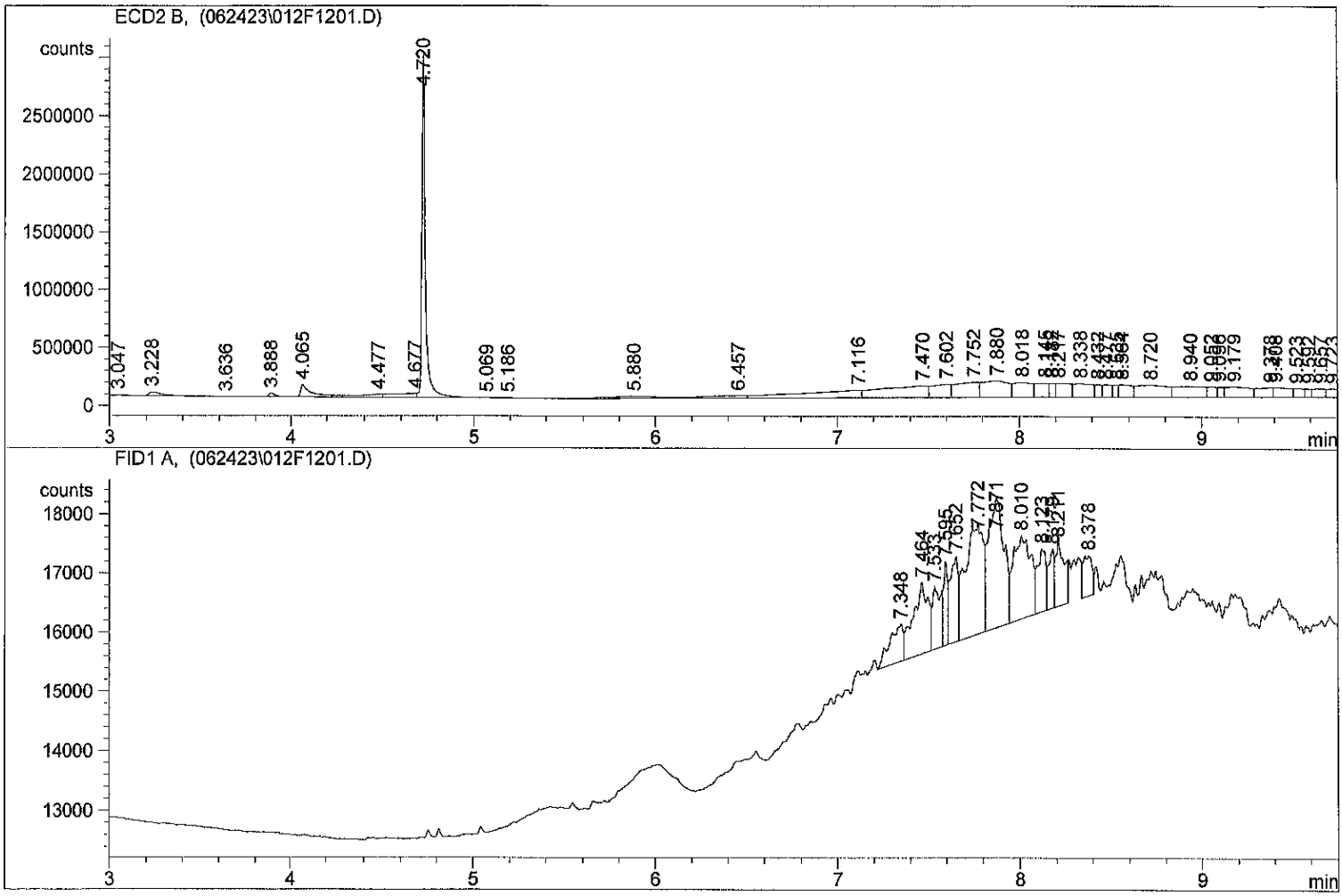
Injection Date : 6/24/2023 2:00:39 PM Seq. Line : 9
Sample Name : 23F0541 06 Location : Vial 9
Acq. Operator : YL Inj : 1
Inj Volume : 1 µl

Sequence File : C:\HPCHEM\1\SEQUENCE\062423.S
Method : C:\HPCHEM\1\METHODS\SCREEN.M
Last changed : 7/9/2021 3:37:33 AM by TW
SCREEN METHOD



*** End of Report ***

Injection Date	: 6/24/2023 2:43:00 PM	Seq. Line	: 12
Sample Name	: 23F0536 01	Location	: Vial 12
Acq. Operator	: YL	Inj	: 1
		Inj Volume	: 1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\062423.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



*** End of Report ***

CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CLG0017	Cleanup Type:	Sulfuric Acid
Cleanup Method:	EPA 3665 Sulfuric Acid Cleanup - uL	Analysis:	EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW20-SC148A	23F0536-01	07072316ECD7.D	07/06/2023	
Reference	BLF0716-SRM1	07072310ECD7.D	07/06/2023	
Matrix Spike Dup	BLF0716-MSD1	07072318ECD7.D	07/06/2023	
Matrix Spike	BLF0716-MS1	07072317ECD7.D	07/06/2023	
LCS Dup	BLF0716-BSD1	07072312ECD7.D	07/06/2023	
LCS	BLF0716-BS1	07072311ECD7.D	07/06/2023	
Blank	BLF0716-BLK1	07072313ECD7.D	07/06/2023	

Analytical Resources, LLC
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CLG0017

Matrix: Solid **Cleanup using: Organics - EPA 3665 Sulfuric Acid Cleanup - uL** **Printed: 7/6/2023 12:08:51PM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23F0536-01	A	LDW20-SC148A	A 01	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
23F0541-01	E	WEST 1	E 02	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
23F0541-02	E	WEST 2	E 02	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
23F0541-03	E	EAST 1	E 02	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
23F0541-04	E	EAST2	E 02	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
23F0541-05	E	MID 1	E 02	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
23F0541-06	E	MID 2	E 02	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
BLF0716-BLK1	-	Blank	-	2.5	2.5	-	7/6/2023	NRB	
BLF0716-BS1	-	LCS	-	2.5	2.5	-	7/6/2023	NRB	
BLF0716-BSD1	-	LCS Dup	-	2.5	2.5	-	7/6/2023	NRB	
BLF0716-MS1	-	Matrix Spike	-	2.5	2.5	-	7/6/2023	NRB	
BLF0716-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	7/6/2023	NRB	
BLF0716-SRM1	-	Reference	-	2.5	2.5	-	7/6/2023	NRB	

CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CLG0018	Cleanup Type:	Sulfur
Cleanup Method:	EPA 3660B Sulfur Cleanup - uL	Analysis:	EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LCS Dup	BLF0716-BSD1	07072312ECD7.D	07/06/2023	
Reference	BLF0716-SRM1	07072310ECD7.D	07/06/2023	
Matrix Spike	BLF0716-MS1	07072317ECD7.D	07/06/2023	
LCS	BLF0716-BS1	07072311ECD7.D	07/06/2023	
Blank	BLF0716-BLK1	07072313ECD7.D	07/06/2023	
LDW20-SC148A	23F0536-01	07072316ECD7.D	07/06/2023	
Matrix Spike Dup	BLF0716-MSD1	07072318ECD7.D	07/06/2023	

Analytical Resources, LLC
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CLG0018

Matrix: Solid **Cleanup using: Organics - EPA 3660B Sulfur Cleanup - uL** **Printed: 7/6/2023 12:09:27PM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23F0536-01	A	LDW20-SC148A	A 01	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
23F0541-01	E	WEST 1	E 02	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
23F0541-02	E	WEST 2	E 02	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
23F0541-03	E	EAST 1	E 02	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
23F0541-04	E	EAST2	E 02	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
23F0541-05	E	MID 1	E 02	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
23F0541-06	E	MID 2	E 02	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
BLF0716-BLK1	-	Blank	-	2.5	2.5	-	7/6/2023	NRB	
BLF0716-BS1	-	LCS	-	2.5	2.5	-	7/6/2023	NRB	
BLF0716-BSD1	-	LCS Dup	-	2.5	2.5	-	7/6/2023	NRB	
BLF0716-MS1	-	Matrix Spike	-	2.5	2.5	-	7/6/2023	NRB	
BLF0716-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	7/6/2023	NRB	
BLF0716-SRM1	-	Reference	-	2.5	2.5	-	7/6/2023	NRB	

CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CLG0019	Cleanup Type:	Silica Gel
Cleanup Method:	EPA 3630C Silica Gel Cleanup - uL	Analysis:	EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW20-SC148A	23F0536-01	07072316ECD7.D	07/06/2023	
Matrix Spike Dup	BLF0716-MSD1	07072318ECD7.D	07/06/2023	
Matrix Spike	BLF0716-MS1	07072317ECD7.D	07/06/2023	
LCS Dup	BLF0716-BSD1	07072312ECD7.D	07/06/2023	
LCS	BLF0716-BS1	07072311ECD7.D	07/06/2023	
Blank	BLF0716-BLK1	07072313ECD7.D	07/06/2023	
Reference	BLF0716-SRM1	07072310ECD7.D	07/06/2023	

Analytical Resources, LLC
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CLG0019

Matrix: Solid **Cleanup using: Organics - EPA 3630C Silica Gel Cleanup - uL** **Printed: 7/6/2023 12:09:55PM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23F0536-01	A	LDW20-SC148A	A 01	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
23F0541-01	E	WEST 1	E 02	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
23F0541-02	E	WEST 2	E 02	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
23F0541-03	E	EAST 1	E 02	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
23F0541-04	E	EAST2	E 02	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
23F0541-05	E	MID 1	E 02	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
23F0541-06	E	MID 2	E 02	2.5	2.5	8082A PCB Solid 4	7/6/2023	NRB	
BLF0716-BLK1	-	Blank	-	2.5	2.5	-	7/6/2023	NRB	
BLF0716-BS1	-	LCS	-	2.5	2.5	-	7/6/2023	NRB	
BLF0716-BSD1	-	LCS Dup	-	2.5	2.5	-	7/6/2023	NRB	
BLF0716-MS1	-	Matrix Spike	-	2.5	2.5	-	7/6/2023	NRB	
BLF0716-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	7/6/2023	NRB	
BLF0716-SRM1	-	Reference	-	2.5	2.5	-	7/6/2023	NRB	

Analytical Resources, LLC
Analytical Chemists and Consultants

Form I

METHOD BLANK DATA SHEET

EPA 8082A

Blank

Laboratory:	Analytical Resources, LLC			SDG:	23F0536
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Solid	Laboratory ID:	BLF0716-BLK1	File ID:	07072313ECD7.D
Sampled:	N/A	Prepared:	06/29/23 11:08	Analyzed:	07/07/23 14:59
Solids:		Preparation:	EPA 3546 (Microwave)	Initial/Final:	12.5 g / 2.5 mL
Batch:	BLF0716	Sequence:	SLG0066	Calibration:	GE00022
Instrument:	ECD7	Column:	ZB5	Cleanups:	Silica Gel, Sulfur, Sulfuric Acid

CAS NO.	COMPOUND	DILUTION	CONC: (ug/kg wet)	Q	DL	RL
12674-11-2	Aroclor 1016	1	4.0	U	1.6	4.0
11104-28-2	Aroclor 1221	1	4.0	U	1.6	4.0
11141-16-5	Aroclor 1232	1	4.0	U	1.6	4.0
53469-21-9	Aroclor 1242	1	4.0	U	1.6	4.0
12672-29-6	Aroclor 1248	1	4.0	U	1.6	4.0
11097-69-1	Aroclor 1254	1	4.0	U	1.6	4.0
11096-82-5	Aroclor 1260	1	4.0	U	0.6	4.0

SURROGATES	ADDED: (ug/kg wet)	FOUND: (ug/kg wet)	% REC	QC LIMITS	Q
Decachlorobiphenyl	8.0000	5.88	73.5	40 - 126	
Tetrachlorometaxylene	8.0000	4.99	62.4	44 - 120	
Decachlorobiphenyl [2C]	8.0000	6.34	79.3	40 - 126	
Tetrachlorometaxylene [2C]	8.0000	4.98	62.3	44 - 120	

[2C] indicates second-column analyte, present if quantification on any batch samples used second column data.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072313ECD7.D
Data file 2: /230707.b/230707.b/07072313ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BLF0716-BLK1
Client ID:
Injection Date: 07-JUL-2023 14:59
Report Date: 07/07/2023 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.718	-0.001	247291	5.607	0.000	127309	25.0	24.9	0.2	Tetrachloro-m-xylene
13.817	-0.001	432026	14.044	-0.002	300550	29.4	31.7	7.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	657780	9.4
Hexabromobiphenyl	876625	1471456	67.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	371559	6.4
Hexabromobiphenyl	652984	667388	2.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			

Total PCB Area Col1 (5.818 - 13.719) = 76003 Col1 Total PCB = 0.0 ppm*

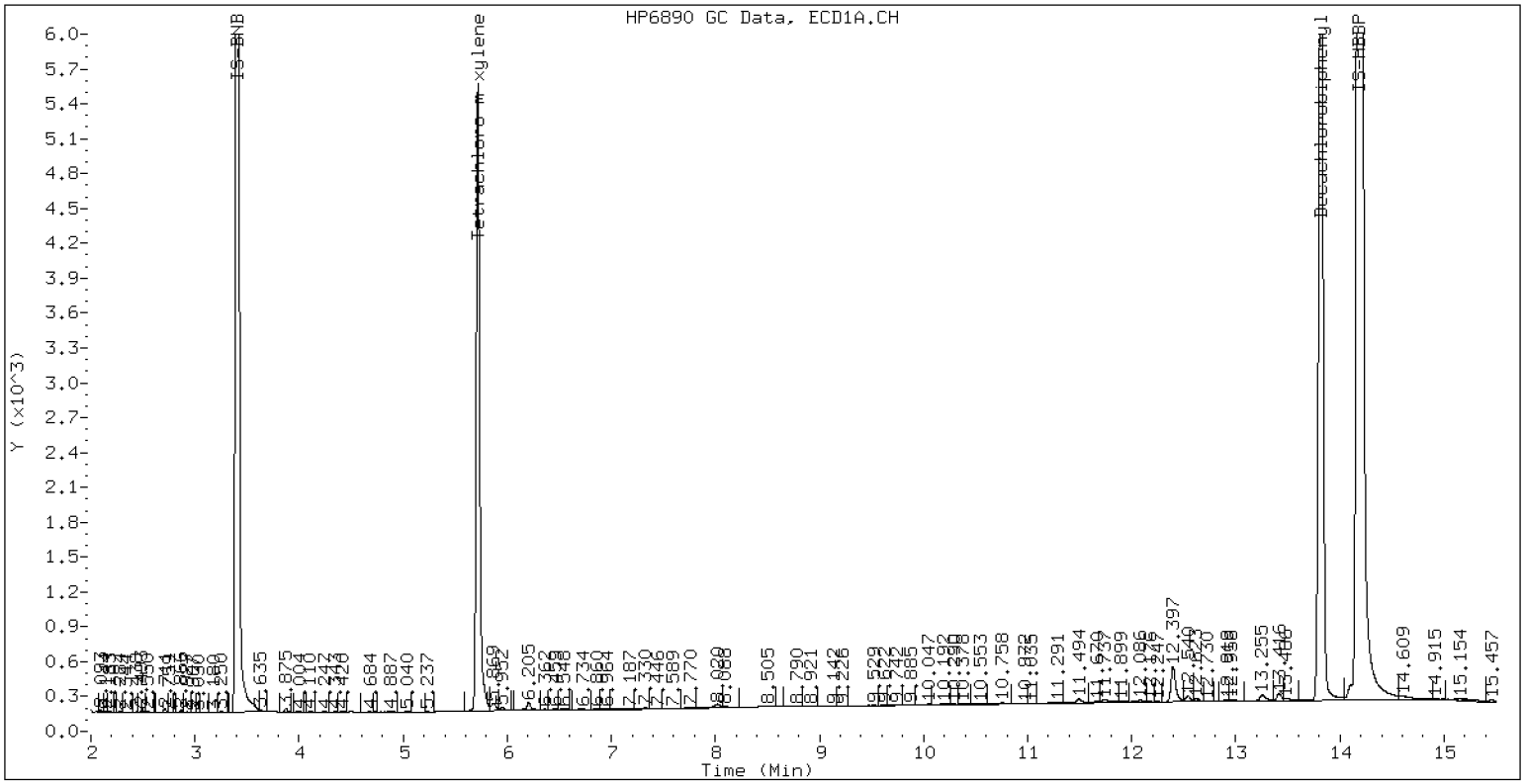
Total PCB Area Col2 (5.707 - 13.947) = 17966 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

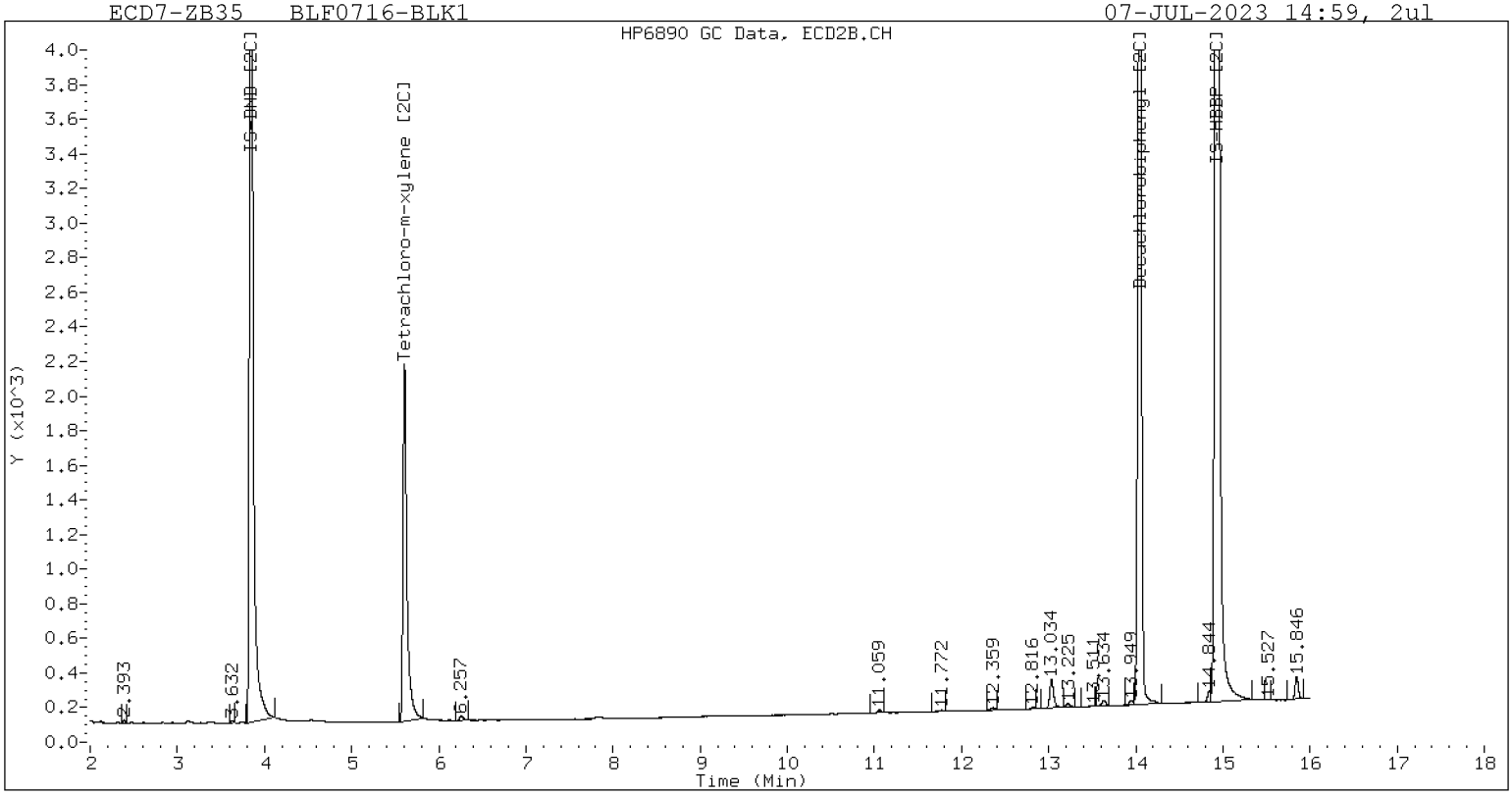
PCB Dual Column Chromatograms

ECD7-ZB5 BLF0716-BLK1 07-JUL-2023 14:59, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BLF0716-BLK1 07-JUL-2023 14:59, 2ul



ZB-35 Manual Integration: NO

LCS / LCS DUPLICATE RECOVERY

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	07/07/23 14:17
Batch:	BLF0716	Laboratory ID:	BLF0716-BS1
Preparation:	EPA 3546 (Microwave)	Sequence Name:	LCS
Initial/Final:	12.5 g / 2.5 mL		

COMPOUND	SPIKE ADDED (ug/kg wet)	LCS CONCENTRATION (ug/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Aroclor 1016	101	69.0		68.4	56 - 120
Aroclor 1260 [2C]	101	84.1		83.5	58 - 120

* Indicates values outside of QC limits

COMPOUND	SPIKE ADDED (ug/kg wet)	LCSD CONCENTRATION (ug/kg wet)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Aroclor 1016	101	73.1		72.6	5.84	30	56 - 120
Aroclor 1260 [2C]	101	88.1		87.4	4.55	30	58 - 120

* Indicates values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072311ECD7.D
Data file 2: /230707.b/230707.b/07072311ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BLF0716-BS1
Client ID:
Injection Date: 07-JUL-2023 14:17
Report Date: 07/07/2023 14:47
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.718	-0.000	282544	5.608	0.001	149045	28.2	28.0	0.9	Tetrachloro-m-xylene
13.817	-0.002	444361	14.045	-0.002	330384	33.8	36.6	7.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	664474	10.5
Hexabromobiphenyl	876625	1314687	50.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	387065	10.8
Hexabromobiphenyl	652984	635371	-2.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.190	-0.001	85707	333.1	1	7.182	-0.003	67947	310.1
Aroclor-1016	2	7.573	-0.002	292229	363.2	2	7.792	-0.010	157962	338.3
Aroclor-1016	3	7.711	-0.003	123612	332.3	3	7.989	-0.014	67104	325.8
Aroclor-1016	4	8.375	-0.003	53868	351.1	4	8.239	-0.004	51924	317.4
Total Col1Ave (4 peaks):		344.9				Total Col2Ave (4 peaks):			322.9	RPD = 7
Corrected Ave (3 peaks):		338.8				Corrected Ave (3 peaks):			317.8	RPD = 6
Aroclor-1221	1	4.639	-0.025	519	11.1	1	4.864	-0.031	251	8.8
Aroclor-1221	2	6.044	-0.025	10293	109.8	2	6.224	-0.021	6693	113.1
Aroclor-1221	3	6.298	-0.023	53748	241.4	3	6.551	-0.020	29193	313.7
Total Col1Ave (3 peaks):		120.7				Total Col2Ave (3 peaks):			145.2	RPD = 18
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.639	-0.025	519	16.7	1	4.864	-0.030	251	16.7
Aroclor-1232	2	6.044	-0.025	10293	158.9	2	7.182	-0.023	67947	790.6
Aroclor-1232	3	7.573	-0.022	292229	947.0	3	7.792	-0.023	157962	915.0
Aroclor-1232	4	8.499	-0.027	117459	889.3	4	8.645	-0.024	49967	999.4
Total Col1Ave (4 peaks):		503.0				Total Col2Ave (4 peaks):			680.4	RPD = 30
Corrected Ave (3 peaks):		355.0				Corrected Ave (3 peaks):			574.1	RPD = 47*
Aroclor-1242	1	7.190	0.001	85707	409.3	1	7.182	-0.001	67947	392.8
Aroclor-1242	2	7.573	0.001	292229	440.4	2	7.792	-0.012	157962	429.2
Aroclor-1242	3	8.375	-0.001	53868	419.8	3	9.099	-0.021	11127	94.3
Aroclor-1242	4	8.499	-0.006	117459	395.5	4	9.525	-0.025	4053	28.5
Total Col1Ave (4 peaks):		416.3				Total Col2Ave (4 peaks):			236.2	RPD = 55*
Corrected Ave (3 peaks):		408.2				Corrected Ave (3 peaks):			171.9	RPD = 81*
Aroclor-1248	1	8.375	-0.002	53868	317.6	1	8.239	-0.005	51924	282.0
Aroclor-1248	2	8.499	-0.006	117459	266.5	2	8.645	-0.007	49967	256.9
Aroclor-1248	3	8.916	-0.006	119651	141.2	3	9.099	-0.017	11127	48.8
Aroclor-1248	4	9.222	0.003	102300	236.8	4	9.525	-0.017	4053	14.8
Total Col1Ave (4 peaks):		240.5				Total Col2Ave (4 peaks):			150.6	RPD = 46*
Corrected Ave (3 peaks):		214.8				Corrected Ave (3 peaks):			106.8	RPD = 67*
Aroclor-1254	1	9.222	-0.007	102300	149.8	1	9.381	-0.002	48861	166.1
Aroclor-1254	2	---			0.0	2	9.525	0.045	4053	23.2
Aroclor-1254	3	9.589	-0.006	20010	45.4	3	9.902	-0.003	10727	45.0
Aroclor-1254	4	9.726	-0.007	58613	67.9	4	10.076	0.016	103522	199.0
Aroclor-1254	5	10.042	-0.054	276740	530.6	5	10.300	-0.010	135512	262.6
Total Col1Ave (4 peaks):		198.4				Total Col2Ave (5 peaks):			139.2	RPD = 35
Corrected Ave (3 peaks):		87.7				Corrected Ave (4 peaks):			108.3	RPD = 21
Aroclor-1260	1	10.966	-0.006	226788	326.2	1	11.581	-0.004	140032	415.0
Aroclor-1260	2	11.284	-0.006	234435	341.7	2	11.848	-0.006	366410	415.1
Aroclor-1260	3	11.658	-0.007	596119	346.9	3	12.364	-0.004	95126	434.9
Aroclor-1260	4	12.061	-0.008	306525	364.2	4	12.432	-0.005	246314	417.8
Aroclor-1260	5	12.167	-0.005	123758	337.2	NS	---			----
Total Col1Ave (5 peaks):		343.3				Total Col2Ave (4 peaks):			420.7	RPD = 20
Corrected Ave (4 peaks):		338.0				Corrected Ave (3 peaks):			416.0	RPD = 21
Aroclor-1262	1	10.748	-0.030	449000	754.9	1	11.128	-0.025	135134	262.5
Aroclor-1262	2	12.167	-0.027	123758	148.0	2	11.581	-0.023	140032	322.5
Aroclor-1262	3	12.242	-0.027	149472	166.2	3	12.364	-0.022	95126	200.5
Aroclor-1262	4	12.910	-0.028	136794	186.7	4	12.432	-0.024	246314	318.5
Total Col1Ave (4 peaks):		314.0				Total Col2Ave (4 peaks):			276.0	RPD = 13
Corrected Ave (3 peaks):		167.0				Corrected Ave (3 peaks):			260.5	RPD = 44*
Aroclor-1268	1	12.167	-0.028	123758	59.0	1	12.364	-0.021	95126	79.1
Aroclor-1268	2	12.242	-0.026	149472	71.8	2	12.432	-0.020	246314	190.5
Aroclor-1268	3	12.646	-0.003	66966	40.0	3	12.817	-0.026	7022	6.3
Aroclor-1268	4	13.412	-0.025	43410	9.1	4	13.636	-0.028	28507	8.0
Total Col1Ave (4 peaks):		45.0				Total Col2Ave (4 peaks):			71.0	RPD = 45*

Corrected Ave (3 peaks): 36.0 Corrected Ave (3 peaks): 31.2 RPD = 14

Total PCB Area Col1 (5.818 - 13.719) = 6043446 Col1 Total PCB = 0.8 ppm*

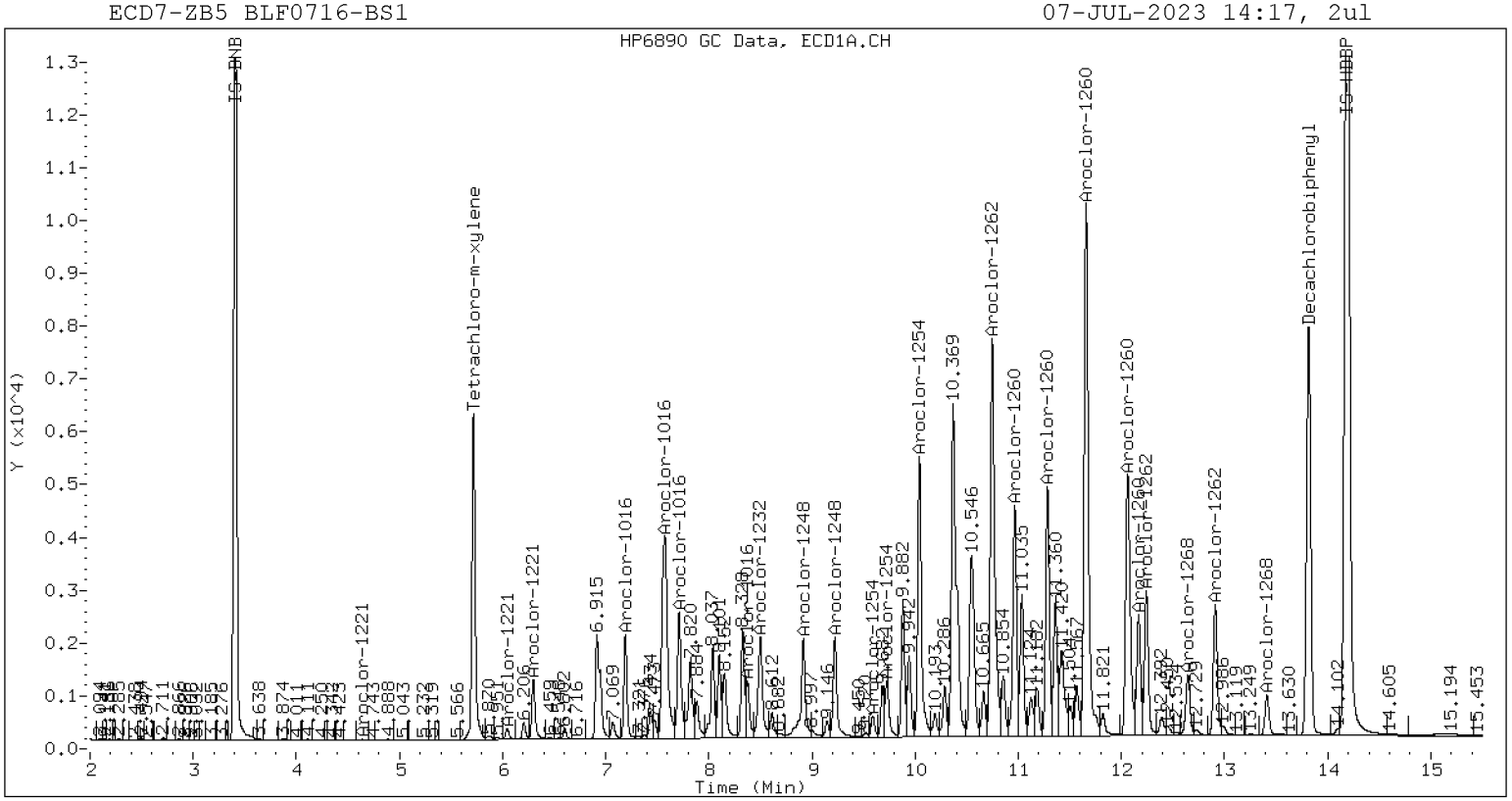
Total PCB Area Col2 (5.707 - 13.947) = 3285771 Col2 Total PCB = 0.7 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

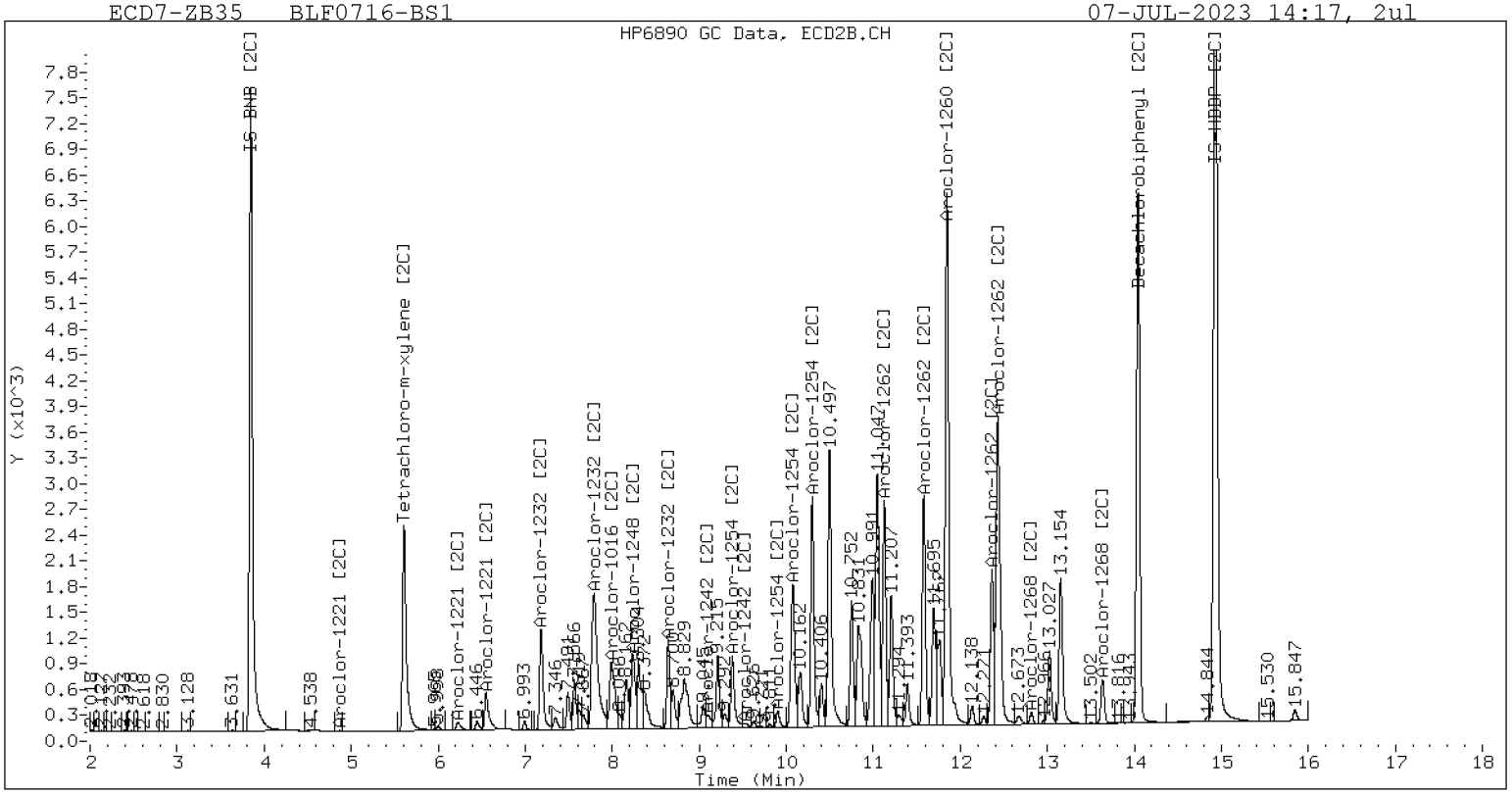
PCB Dual Column Chromatograms

ECD7-ZB5 BLF0716-BS1 07-JUL-2023 14:17, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BLF0716-BS1 07-JUL-2023 14:17, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072312ECD7.D
Data file 2: /230707.b/230707.b/07072312ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BLF0716-BSD1
Client ID:
Injection Date: 07-JUL-2023 14:38
Report Date: 07/07/2023 14:59
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.718	-0.000	286118	5.608	0.001	148755	28.9	28.6	0.9	Tetrachloro-m-xylene
13.818	-0.001	476842	14.044	-0.002	346225	34.5	37.6	8.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	658057	9.4
Hexabromobiphenyl	876625	1382159	57.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	378029	8.2
Hexabromobiphenyl	652984	648179	-0.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.190	-0.001	90039	353.4	1	7.183	-0.002	70830	331.0
Aroclor-1016	2	7.572	-0.003	308236	386.9	2	7.793	-0.009	164258	360.2
Aroclor-1016	3	7.711	-0.003	130448	354.1	3	7.988	-0.015	70233	349.2
Aroclor-1016	4	8.374	-0.003	55987	368.4	4	8.239	-0.004	54156	338.9
Total Col1Ave (4 peaks):		365.7				Total Col2Ave (4 peaks):		344.8	RPD = 6	
Corrected Ave (3 peaks):		358.6				Corrected Ave (3 peaks):		339.7	RPD = 5	
Aroclor-1221	1	4.637	-0.026	476	10.3	1	4.871	-0.023	221	7.9
Aroclor-1221	2	6.044	-0.025	10324	111.2	2	6.224	-0.021	6953	120.3
Aroclor-1221	3	6.297	-0.023	55332	250.9	3	6.551	-0.021	30224	332.5
Total Col1Ave (3 peaks):		124.1				Total Col2Ave (3 peaks):		153.6	RPD = 21	
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.637	-0.026	476	15.4	1	4.871	-0.023	221	15.1
Aroclor-1232	2	6.044	-0.025	10324	160.9	2	7.183	-0.022	70830	843.9
Aroclor-1232	3	7.572	-0.022	308236	1008.6	3	7.793	-0.022	164258	974.2
Aroclor-1232	4	8.499	-0.028	124344	950.6	4	8.645	-0.025	52467	1074.5
Total Col1Ave (4 peaks):		533.9				Total Col2Ave (4 peaks):		726.9	RPD = 31	
Corrected Ave (3 peaks):		375.7				Corrected Ave (3 peaks):		611.1	RPD = 48*	
Aroclor-1242	1	7.190	0.001	90039	434.2	1	7.183	-0.001	70830	419.3
Aroclor-1242	2	7.572	0.001	308236	469.1	2	7.793	-0.011	164258	457.0
Aroclor-1242	3	8.374	-0.001	55987	440.5	3	9.099	-0.021	11254	97.7
Aroclor-1242	4	8.499	-0.006	124344	422.8	4	9.520	-0.030	3953	28.5
Total Col1Ave (4 peaks):		441.7				Total Col2Ave (4 peaks):		250.6	RPD = 55*	
Corrected Ave (3 peaks):		432.5				Corrected Ave (3 peaks):		181.8	RPD = 82*	
Aroclor-1248	1	8.374	-0.003	55987	333.3	1	8.239	-0.006	54156	301.1
Aroclor-1248	2	8.499	-0.006	124344	284.9	2	8.645	-0.007	52467	276.2
Aroclor-1248	3	8.916	-0.006	127282	151.6	3	9.099	-0.017	11254	50.5
Aroclor-1248	4	9.221	0.002	109375	255.6	4	9.520	-0.022	3953	14.8
Total Col1Ave (4 peaks):		256.4				Total Col2Ave (4 peaks):		160.7	RPD = 46*	
Corrected Ave (3 peaks):		230.7				Corrected Ave (3 peaks):		113.8	RPD = 68*	
Aroclor-1254	1	9.221	-0.008	109375	161.7	1	9.382	-0.002	51015	177.6
Aroclor-1254	2	---			0.0	2	9.520	0.040	3953	23.2
Aroclor-1254	3	9.588	-0.007	21592	49.5	3	9.901	-0.003	11099	47.7
Aroclor-1254	4	9.725	-0.008	63100	73.8	4	10.075	0.015	108657	213.9
Aroclor-1254	5	10.041	-0.054	295283	571.7	5	10.300	-0.010	141936	281.6
Total Col1Ave (4 peaks):		214.2				Total Col2Ave (5 peaks):		148.8	RPD = 36	
Corrected Ave (3 peaks):		95.0				Corrected Ave (4 peaks):		115.6	RPD = 20	
Aroclor-1260	1	10.967	-0.005	244776	334.9	1	11.581	-0.004	148849	432.4
Aroclor-1260	2	11.285	-0.005	255184	353.8	2	11.847	-0.007	389885	433.0
Aroclor-1260	3	11.658	-0.007	652916	361.4	3	12.364	-0.003	101937	456.9
Aroclor-1260	4	12.061	-0.007	339806	384.1	4	12.431	-0.006	264036	439.0
Aroclor-1260	5	12.168	-0.004	137607	356.7	NS	---			----
Total Col1Ave (5 peaks):		358.2				Total Col2Ave (4 peaks):		440.3	RPD = 21	
Corrected Ave (4 peaks):		351.7				Corrected Ave (3 peaks):		434.8	RPD = 21	
Aroclor-1262	1	10.747	-0.031	482573	771.8	1	11.127	-0.026	142357	271.0
Aroclor-1262	2	12.168	-0.026	137607	156.5	2	11.581	-0.023	148849	336.0
Aroclor-1262	3	12.243	-0.026	166973	176.6	3	12.364	-0.022	101937	210.6
Aroclor-1262	4	12.912	-0.027	153741	199.6	4	12.431	-0.025	264036	334.7
Total Col1Ave (4 peaks):		326.1				Total Col2Ave (4 peaks):		288.1	RPD = 12	
Corrected Ave (3 peaks):		177.6				Corrected Ave (3 peaks):		272.1	RPD = 42*	
Aroclor-1268	1	12.168	-0.027	137607	62.4	1	12.364	-0.021	101937	83.1
Aroclor-1268	2	12.243	-0.025	166973	76.3	2	12.431	-0.022	264036	200.2
Aroclor-1268	3	12.647	-0.001	75035	42.6	3	12.818	-0.025	7534	6.7
Aroclor-1268	4	13.413	-0.024	51306	10.2	4	13.637	-0.027	30780	8.5
Total Col1Ave (4 peaks):		47.9				Total Col2Ave (4 peaks):		74.6	RPD = 44*	

Corrected Ave (3 peaks): 38.4 Corrected Ave (3 peaks): 32.8 RPD = 16

Total PCB Area Col1 (5.818 - 13.719) = 6527314 Col1 Total PCB = 0.9 ppm*

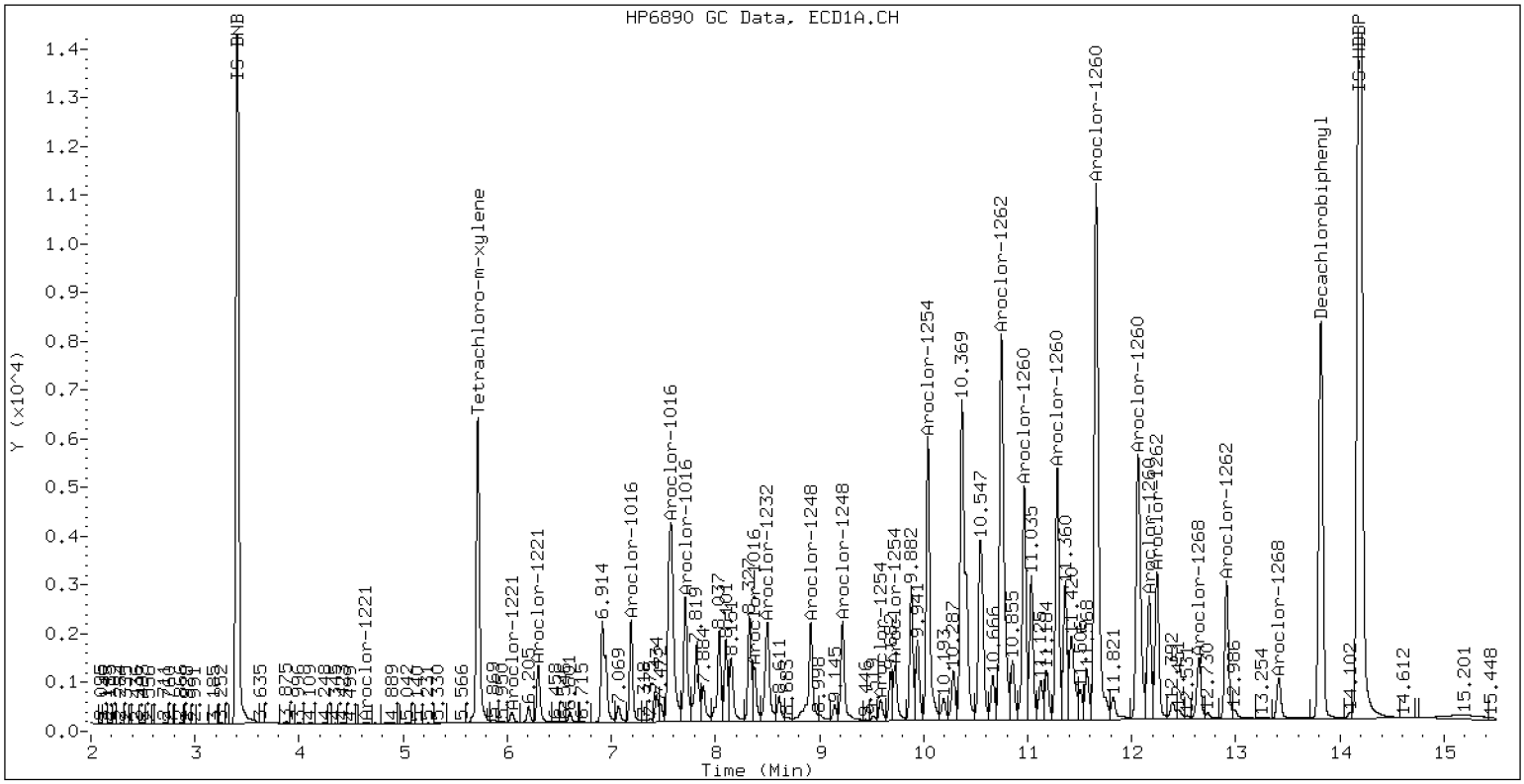
Total PCB Area Col2 (5.707 - 13.947) = 3466010 Col2 Total PCB = 0.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

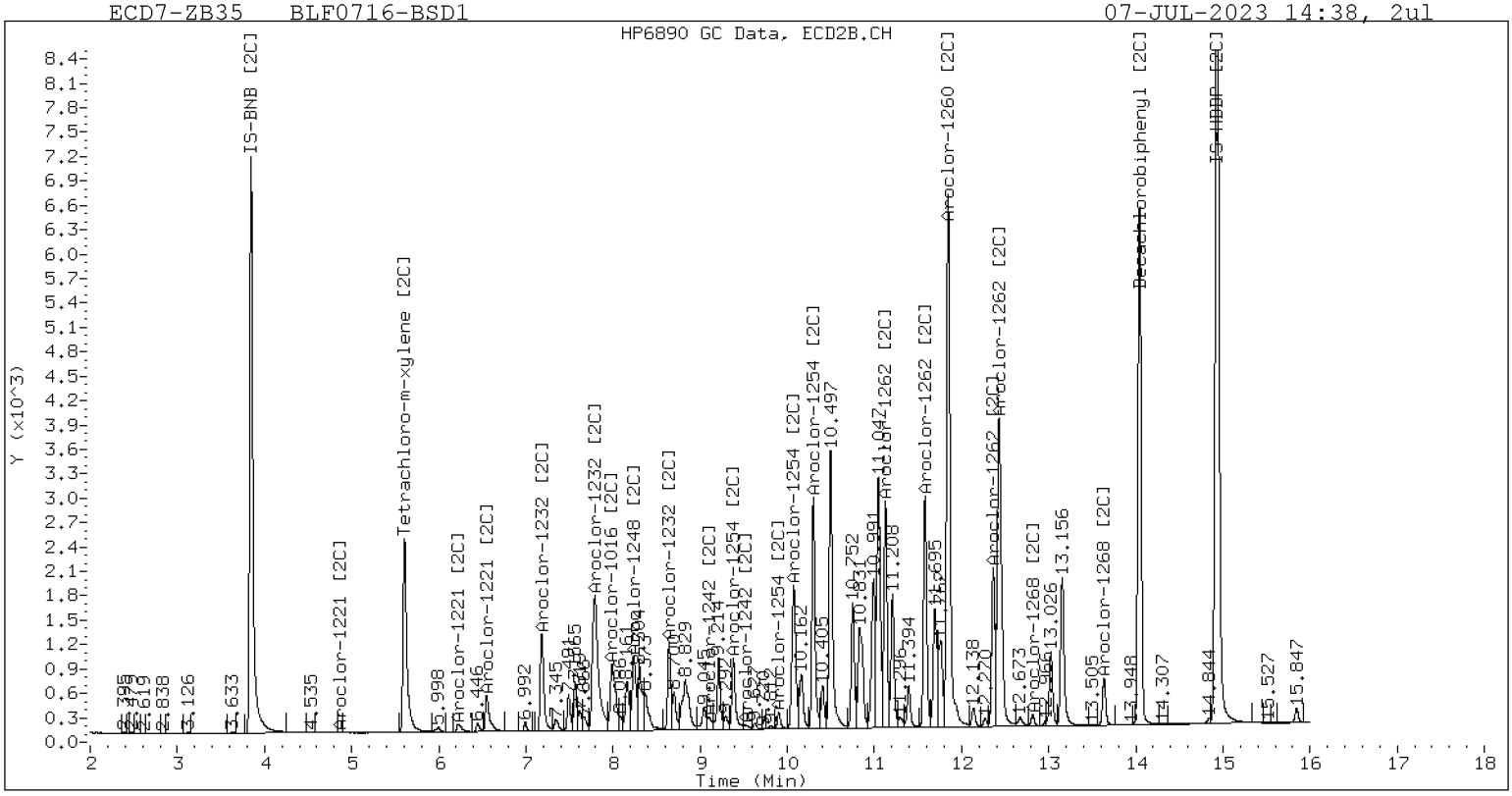
PCB Dual Column Chromatograms

ECD7-ZB5 BLF0716-BSD1 07-JUL-2023 14:38, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BLF0716-BSD1 07-JUL-2023 14:38, 2ul



ZB-35 Manual Integration: NO

MS / MS DUPLICATE RECOVERY
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	07/07/23 16:22
Batch:	BLF0716	Laboratory ID:	BLF0716-MS1
Preparation:	EPA 3546 (Microwave)	Sequence Name:	Matrix Spike
Initial/Final:	20.04 g / 2.5 mL	Source Sample:	LDW20-SC148A

COMPOUND	SPIKE ADDED (ug/kg dry)	SAMPLE CONCENTRATION (ug/kg dry)	Q	MS CONCENTRATION (ug/kg dry)	Q	MS % REC. #		QC LIMITS REC.
Aroclor 1016	101	ND	H, U	56.3	*	55.8	*	56 - 120
Aroclor 1260 [2C]	101	35.2	H	106		70.1		58 - 120

* Values outside of QC limits

[2C] indicates second-column analyte, present if quantification on any batch samples used second column data.

MS / MS DUPLICATE RECOVERY
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	07/07/23 16:43
Batch:	BLF0716	Laboratory ID:	BLF0716-MSD1
Preparation:	EPA 3546 (Microwave)	Sequence Name:	Matrix Spike Dup
Initial/Final:	20.04 g / 2.5 mL	Source Sample:	LDW20-SC148A

COMPOUND	SPIKE ADDED (ug/kg dry)	MSD CONCENTRATION (ug/kg dry)	Q	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor 1016	101	56.5		56.1	0.449	30	56 - 120
Aroclor 1260 [2C]	101	107		71.1	1.34	30	58 - 120

* Values outside of QC limits

[2C] indicates second-column analyte, present if quantification on any batch samples used second column data.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072317ECD7.D
Data file 2: /230707.b/230707.b/07072317ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BLF0716-MS1
Client ID:
Injection Date: 07-JUL-2023 16:22
Report Date: 07/08/2023 20:45
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.715	-0.003	216072	5.600	-0.007	130692	23.6	27.3	14.8	Tetrachloro-m-xylene
13.808	-0.011	165472	14.036	-0.011	177769	31.1	32.2	3.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	609020	1.3
Hexabromobiphenyl	876625	532877	-39.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	347685	-0.5
Hexabromobiphenyl	652984	388813	-40.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.185	-0.006	73727	312.6	1	7.175	-0.010	60956	309.7
Aroclor-1016	2	7.561	-0.014	216882	294.1	2	7.769	-0.033	136969	326.6
Aroclor-1016	3	7.701	-0.013	79149	232.2	3	7.968	-0.035	51911	280.6
Aroclor-1016	4	8.367	-0.010	40304	286.6	4	8.225	-0.018	44336	301.7
Total Col1Ave (4 peaks):					281.4	Total Col2Ave (4 peaks):				304.6 RPD = 8
Corrected Ave (3 peaks):					271.0	Corrected Ave (3 peaks):				297.3 RPD = 9
Aroclor-1260	1	10.955	-0.017	114995	408.1	1	11.568	-0.018	108539	525.6
Aroclor-1260	2	11.271	-0.019	114582	412.0	2	11.829	-0.024	263769	488.4
Aroclor-1260	3	11.641	-0.024	293550	421.5	3	12.348	-0.020	83686	625.2
Aroclor-1260	4	12.041	-0.028	158098	463.5	4	12.412	-0.025	173737	481.6
Aroclor-1260	5	12.156	-0.016	63849	429.3	NS	---			----
Total Col1Ave (5 peaks):					426.9	Total Col2Ave (4 peaks):				530.2 RPD = 22
Corrected Ave (4 peaks):					417.7	Corrected Ave (3 peaks):				498.5 RPD = 18

Total PCB Area Col1 (5.818 - 13.719) = 4177174 Col1 Total PCB = 0.6 ppm*

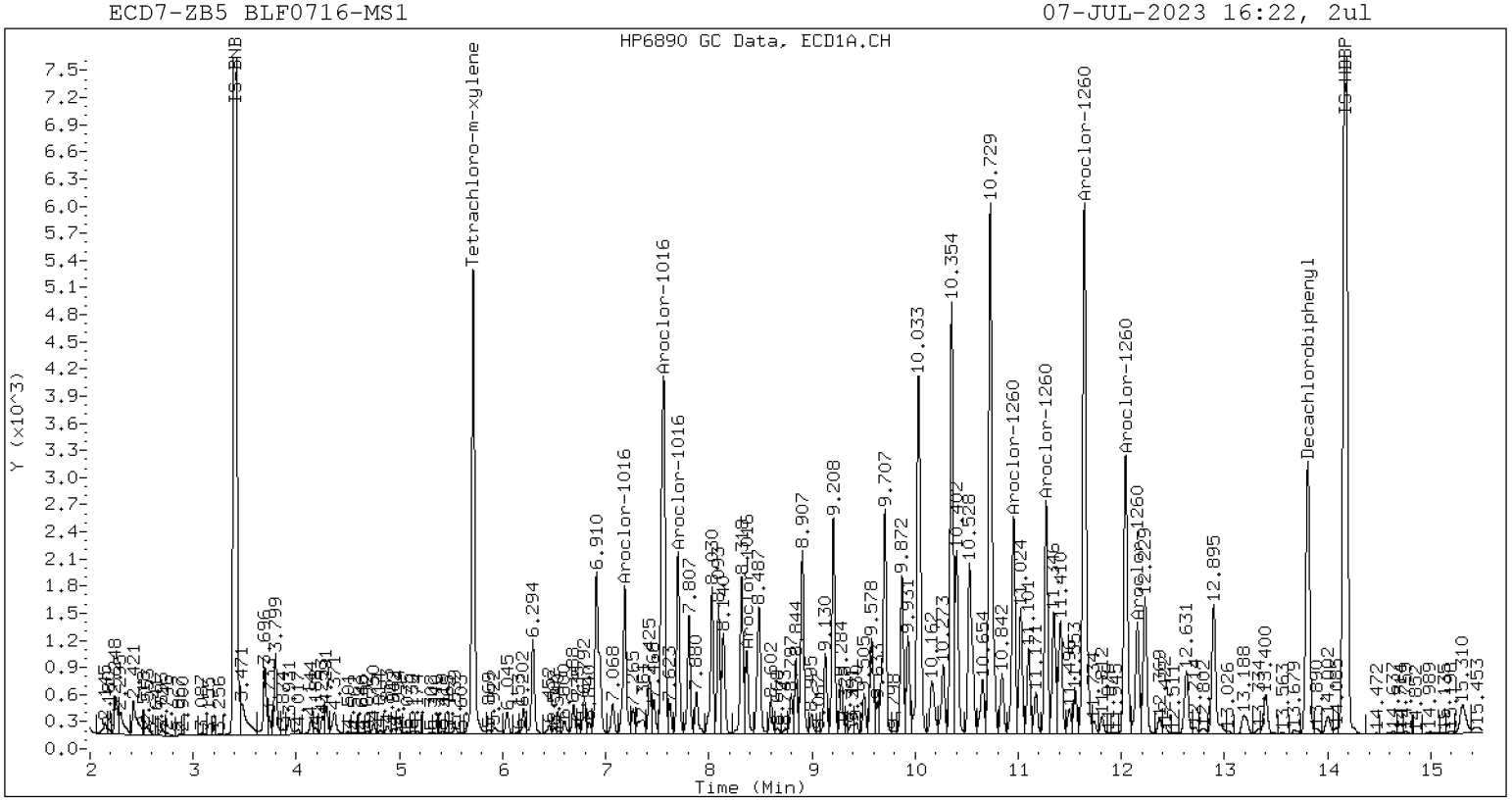
Total PCB Area Col2 (5.707 - 13.947) = 3107422 Col2 Total PCB = 0.7 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

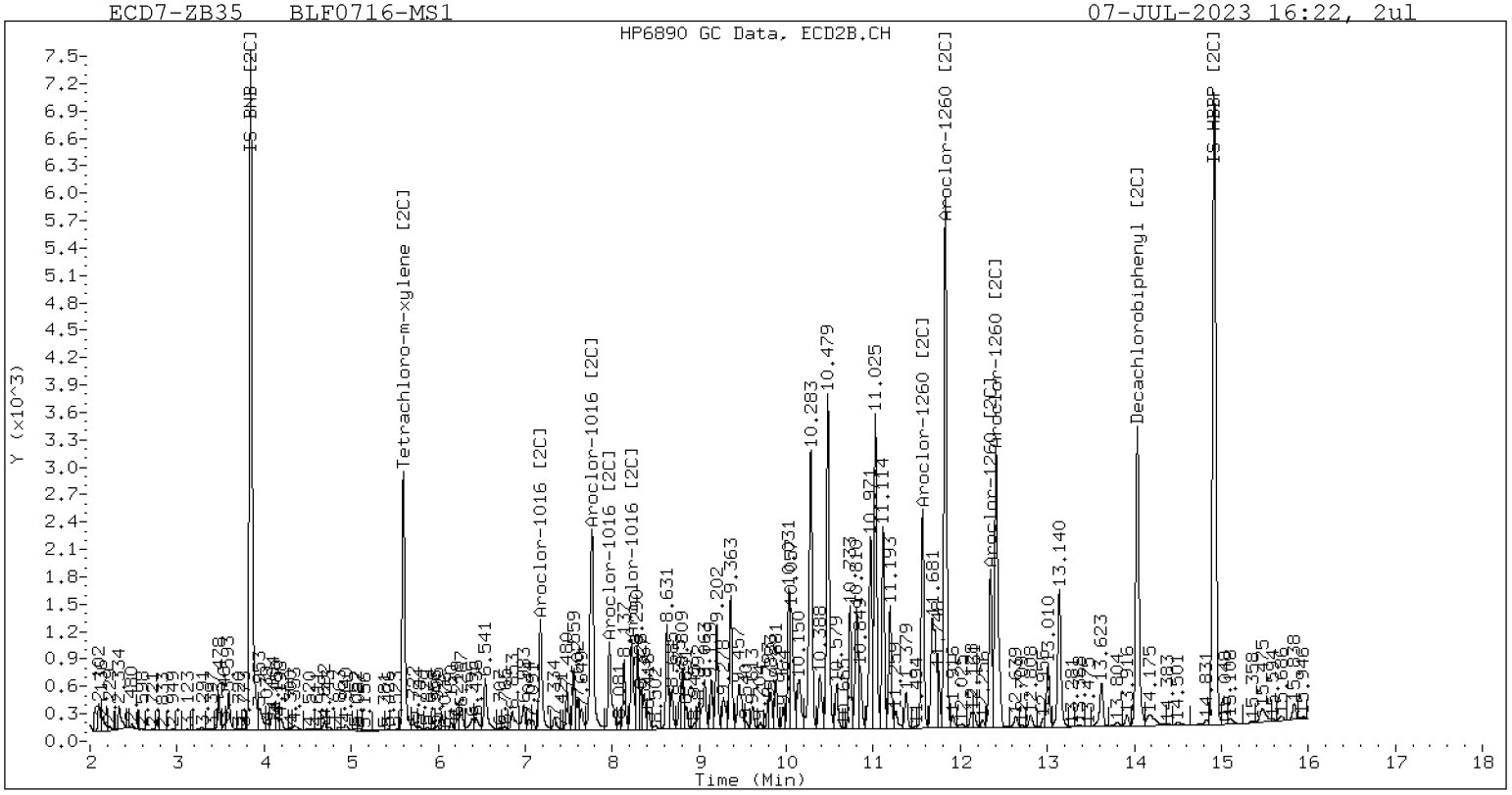
PCB Dual Column Chromatograms

ECD7-ZB5 BLF0716-MS1 07-JUL-2023 16:22, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BLF0716-MS1 07-JUL-2023 16:22, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072318ECD7.D
Data file 2: /230707.b/230707.b/07072318ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BLF0716-MSD1
Client ID:
Injection Date: 07-JUL-2023 16:43
Report Date: 07/08/2023 20:45
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.715	-0.003	192648	5.599	-0.008	133192	21.1	28.4	29.6	Tetrachloro-m-xylene
13.807	-0.012	170614	14.035	-0.012	185088	32.1	33.3	3.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	606831	0.9
Hexabromobiphenyl	876625	532507	-39.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	340737	-2.4
Hexabromobiphenyl	652984	391292	-40.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	7.185	-0.006	71599	304.7	1	7.174	-0.011	61013	316.3
Aroclor-1016	2	7.561	-0.014	219115	298.2	2	7.767	-0.034	140157	341.0
Aroclor-1016	3	7.700	-0.014	79111	232.9	3	7.967	-0.036	52394	289.0
Aroclor-1016	4	8.367	-0.011	41304	294.7	4	8.225	-0.018	44637	309.9
	Total Col1Ave (4 peaks):				282.6	Total Col2Ave (4 peaks):				314.1 RPD = 11
	Corrected Ave (3 peaks):				275.3	Corrected Ave (3 peaks):				305.1 RPD = 10
Aroclor-1260	1	10.955	-0.017	116716	414.5	1	11.567	-0.018	109966	529.2
Aroclor-1260	2	11.271	-0.019	115114	414.2	2	11.829	-0.024	270904	498.4
Aroclor-1260	3	11.641	-0.024	299781	430.7	3	12.347	-0.020	85822	637.1
Aroclor-1260	4	12.041	-0.028	160434	470.7	4	12.412	-0.025	176019	484.8
Aroclor-1260	5	12.157	-0.015	63010	423.9	NS	---			----
	Total Col1Ave (5 peaks):				430.8	Total Col2Ave (4 peaks):				537.4 RPD = 22
	Corrected Ave (4 peaks):				420.8	Corrected Ave (3 peaks):				504.1 RPD = 18

Total PCB Area Col1 (5.818 - 13.719) = 4206149 Col1 Total PCB = 0.6 ppm*

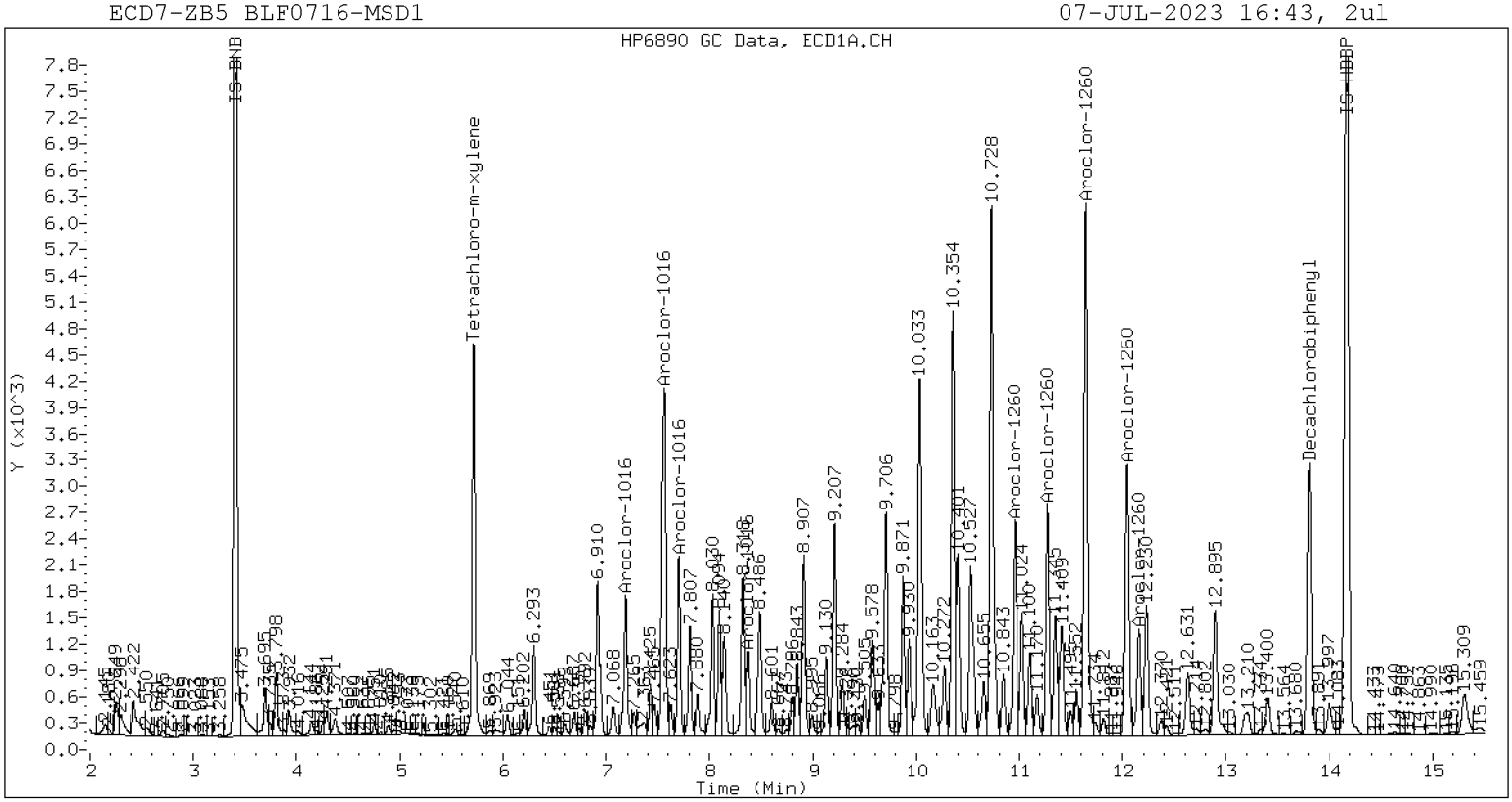
Total PCB Area Col2 (5.707 - 13.947) = 3144248 Col2 Total PCB = 0.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

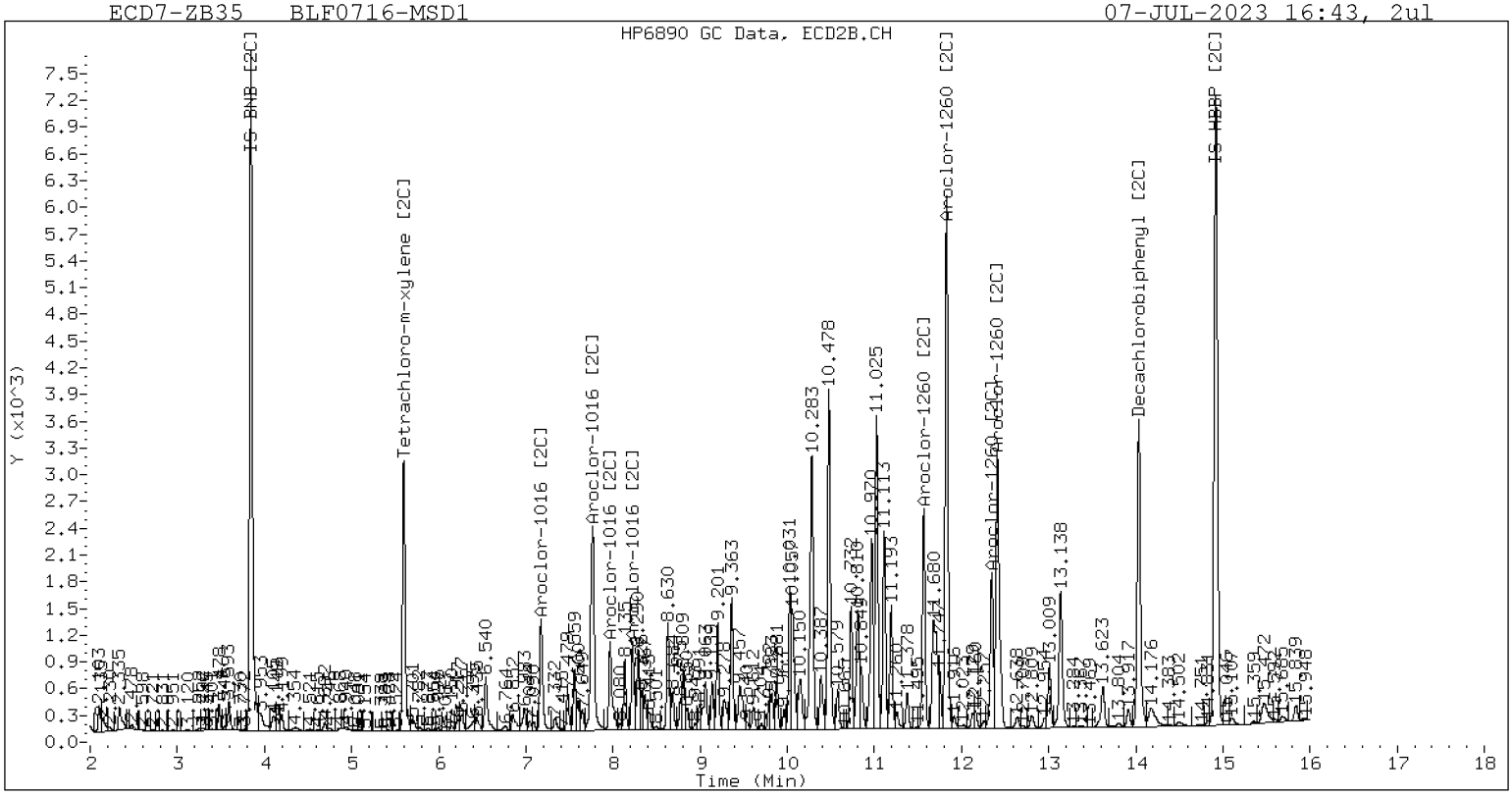
PCB Dual Column Chromatograms

ECD7-ZB5 BLF0716-MSD1 07-JUL-2023 16:43, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BLF0716-MSD1 07-JUL-2023 16:43, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

STANDARD REFERENCE MATERIAL RECOVERY

EPA 8082A

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BLF0716-SRM1
Batch: BLF0716
Initial/Final: 2.5 g / 2.5 mL
Preparation: EPA 3546 (Microwave)
Analyzed: 07/07/2023 13:56
Standard ID: K010817
Expires: 05/17/2023
Standard Lot#: PSRM0166
Description: Puget Sound reference-SRM

ANALYTE	TRUE (ug/kg wet)	FOUND (ug/kg wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
Aroclor 1260	108.00	93.8	2.9	20.0		86.9	38 - 167
Aroclor 1260 [2C]	108.00	116	2.9	20.0		107	38 - 167

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072310ECD7.D
Data file 2: /230707.b/230707.b/07072310ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BLF0716-SRM1
Client ID:
Injection Date: 07-JUL-2023 13:56
Report Date: 07/07/2023 14:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.717	-0.001	265503	5.605	-0.002	149041	28.1	30.6	8.8	Tetrachloro-m-xylene
13.811	-0.008	291302	14.040	-0.007	247011	33.3	33.3	0.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	628075	4.4
Hexabromobiphenyl	876625	875375	-0.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	353580	1.2
Hexabromobiphenyl	652984	523075	-19.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.159	-0.032	16028	65.9	1	7.192	0.008	6732	33.6
Aroclor-1016	2	7.569	-0.006	9933	13.1	2	7.785	-0.017	11008	25.8
Aroclor-1016	3	7.718	0.004	6329	18.0	3	7.981	-0.022	1930	10.3
Aroclor-1016	4	8.372	-0.006	5256	36.2	4	8.233	-0.010	6835	45.7
Total Col1Ave (4 peaks):					33.3	Total Col2Ave (4 peaks):				28.9 RPD = 14
Corrected Ave (3 peaks):					22.4	Corrected Ave (3 peaks):				23.2 RPD = 4
Aroclor-1221	1	4.689	0.025	260	5.9	1	4.857	-0.038	328	12.6
Aroclor-1221	2	6.072	0.003	473	5.3	2	6.272	0.027	10706	198.1
Aroclor-1221	3	6.308	-0.012	2254	10.7	3	6.566	-0.005	3281	38.6
Total Col1Ave (3 peaks):					7.3	Total Col2Ave (3 peaks):				83.1 RPD = 168*
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.689	0.025	260	8.8	1	4.857	-0.037	328	23.9
Aroclor-1232	2	6.072	0.003	473	7.7	2	7.192	-0.012	6732	85.8
Aroclor-1232	3	7.569	-0.026	9933	34.1	3	7.785	-0.030	11008	69.8
Aroclor-1232	4	8.492	-0.035	8842	70.8	4	8.693	0.024	2411	52.8
Total Col1Ave (4 peaks):					30.4	Total Col2Ave (4 peaks):				58.1 RPD = 63*
Corrected Ave (3 peaks):					16.9	Corrected Ave (3 peaks):				48.8 RPD = 97*
Aroclor-1242	1	7.159	-0.031	16028	81.0	1	7.192	0.009	6732	42.6
Aroclor-1242	2	7.569	-0.003	9933	15.8	2	7.785	-0.019	11008	32.7
Aroclor-1242	3	8.372	-0.004	5256	43.3	3	9.158	0.038	4484	41.6
Aroclor-1242	4	8.492	-0.013	8842	31.5	4	9.499	-0.051	6052	46.6
Total Col1Ave (4 peaks):					42.9	Total Col2Ave (4 peaks):				40.9 RPD = 5
Corrected Ave (3 peaks):					30.2	Corrected Ave (3 peaks):				39.0 RPD = 25
Aroclor-1248	1	8.372	-0.005	5256	32.8	1	8.233	-0.012	6835	40.6
Aroclor-1248	2	8.492	-0.013	8842	21.2	2	8.639	-0.013	5446	30.7
Aroclor-1248	3	8.912	-0.010	25955	32.4	3	9.079	-0.036	6696	32.1
Aroclor-1248	4	9.214	-0.005	36213	88.7	4	9.499	-0.043	6052	24.2
Total Col1Ave (4 peaks):					43.8	Total Col2Ave (4 peaks):				31.9 RPD = 31
Corrected Ave (3 peaks):					28.8	Corrected Ave (3 peaks):				29.0 RPD = 1
Aroclor-1254	1	9.214	-0.016	36213	56.1	1	9.372	-0.012	19226	71.6
Aroclor-1254	2	9.289	-0.017	14522	50.1	2	9.466	-0.014	6164	38.6
Aroclor-1254	3	9.584	-0.013	22800	54.7	3	9.890	-0.015	9389	43.1
Aroclor-1254	4	9.713	-0.023	50623	62.0	4	10.045	-0.015	36843	77.5
Aroclor-1254	5	10.036	-0.065	78582	159.4	5	10.290	-0.019	46836	99.3
Total Col1Ave (5 peaks):					76.5	Total Col2Ave (5 peaks):				66.0 RPD = 15
Corrected Ave (4 peaks):					55.7	Corrected Ave (4 peaks):				57.7 RPD = 4
Aroclor-1260	1	10.960	-0.013	45150	97.5	1	11.573	-0.012	33777	121.6
Aroclor-1260	2	11.272	-0.018	36499	79.9	2	11.836	-0.017	75717	104.2
Aroclor-1260	3	11.646	-0.019	111617	97.6	3	12.354	-0.014	24633	136.8
Aroclor-1260	4	12.046	-0.022	58109	103.7	4	12.419	-0.018	49282	101.5
Aroclor-1260	5	12.160	-0.012	22113	90.5	NS	---			----
Total Col1Ave (5 peaks):					93.8	Total Col2Ave (4 peaks):				116.0 RPD = 21
Corrected Ave (4 peaks):					91.4	Corrected Ave (3 peaks):				109.1 RPD = 18
Aroclor-1262	1	10.735	-0.044	104474	263.8	1	11.120	-0.034	31256	73.7
Aroclor-1262	2	12.160	-0.035	22113	39.7	2	11.573	-0.032	33777	94.5
Aroclor-1262	3	12.233	-0.036	26942	45.0	3	12.354	-0.032	24633	63.1
Aroclor-1262	4	12.899	-0.040	27720	56.8	4	12.419	-0.037	49282	77.4
Total Col1Ave (4 peaks):					101.3	Total Col2Ave (4 peaks):				77.2 RPD = 27
Corrected Ave (3 peaks):					47.2	Corrected Ave (3 peaks):				71.4 RPD = 41*
Aroclor-1268	1	12.160	-0.036	22113	15.8	1	12.354	-0.031	24633	24.9
Aroclor-1268	2	12.233	-0.035	26942	19.4	2	12.419	-0.034	49282	46.3
Aroclor-1268	3	12.636	-0.012	13426	12.0	3	12.813	-0.030	1996	2.2
Aroclor-1268	4	13.404	-0.033	7429	2.3	4	13.628	-0.036	8045	2.8
Total Col1Ave (4 peaks):					12.4	Total Col2Ave (4 peaks):				19.0 RPD = 42*

Corrected Ave (3 peaks): 10.1 Corrected Ave (3 peaks): 9.9 RPD = 1

Total PCB Area Col1 (5.818 - 13.719) = 1388437 Col1 Total PCB = 0.2 ppm*

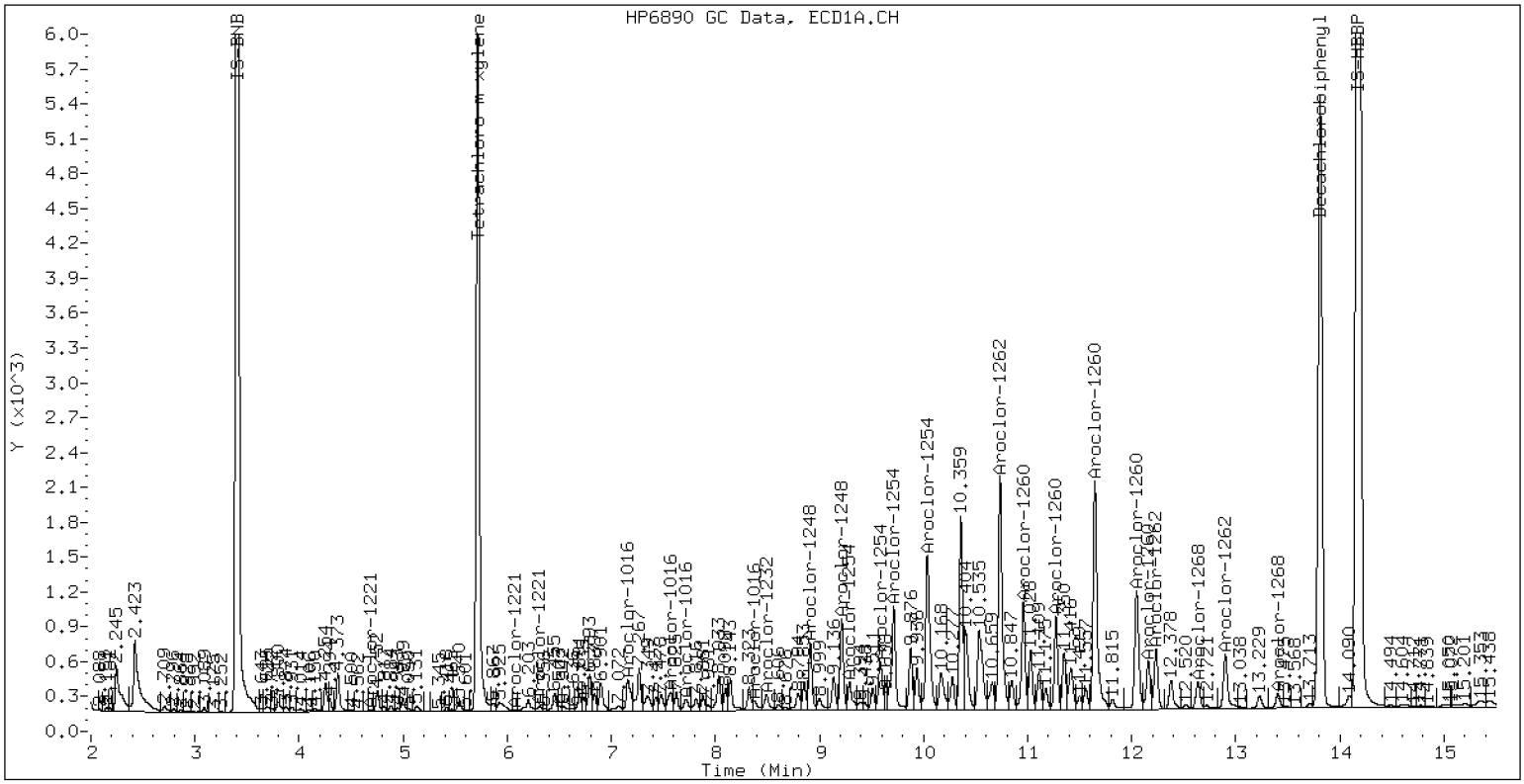
Total PCB Area Col2 (5.707 - 13.947) = 871150 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

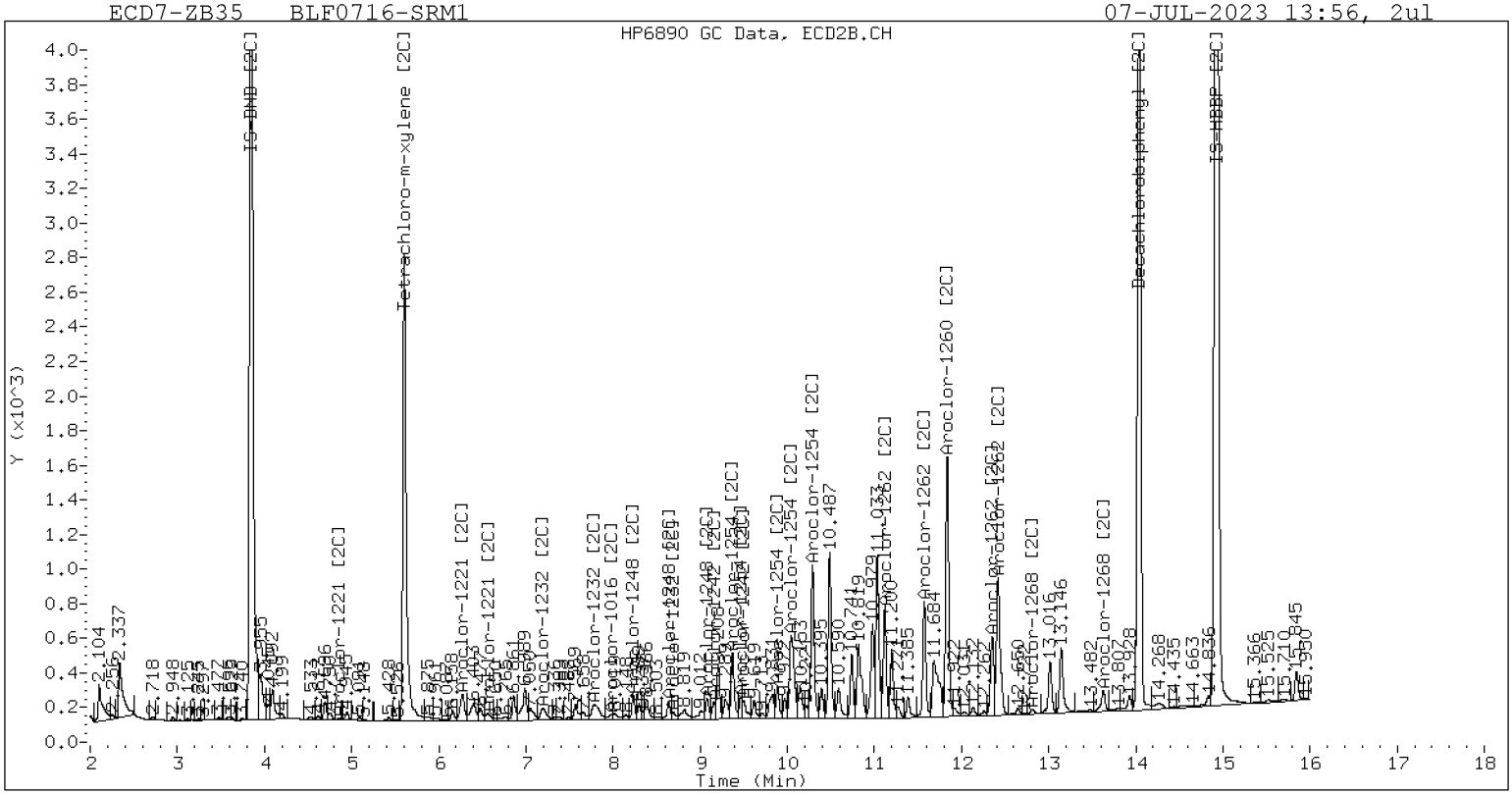
PCB Dual Column Chromatograms

ECD7-ZB5 BLF0716-SRM1 07-JUL-2023 13:56, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BLF0716-SRM1 07-JUL-2023 13:56, 2ul



ZB-35 Manual Integration: NO

INITIAL CALIBRATION DATA

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GE00022	Instrument:	ECD7
Calibration Date:	05/05/2023	Column (1):	ZB5

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Aroclor 1016	250	0.0494162	20	4.532998E-02	50	4.853547E-02	1000	0.0432727	100	5.300612E-02	500	4.707631E-02
Aroclor-1016 (1)	250	3.137838E-02	20	3.258869E-02	50	3.226345E-02	1000	2.592113E-02	100	3.461726E-02	500	2.908922E-02
Aroclor-1016 (2)	250	0.1020916	20	8.781887E-02	50	0.0941758	1000	0.0925401	100	0.1052028	500	9.933727E-02
Aroclor-1016 (3)	250	4.518712E-02	20	0.0437516	50	4.849089E-02	1000	3.826082E-02	100	5.093761E-02	500	4.204761E-02
Aroclor-1016 (4)	250	0.0190077	20	1.716078E-02	50	1.921174E-02	1000	1.636875E-02	100	2.126675E-02	500	1.783115E-02
Aroclor 1260	250	5.260043E-02	20	5.628385E-02	50	5.196241E-02	1000	4.766185E-02	100	5.558896E-02	500	0.0504862
Aroclor-1260 (1)	250	4.229749E-02	20	4.580229E-02	50	0.0418668	1000	0.0383433	100	4.489466E-02	500	4.061411E-02
Aroclor-1260 (2)	250	4.189449E-02	20	4.433945E-02	50	4.114713E-02	1000	3.831045E-02	100	4.437556E-02	500	4.042893E-02
Aroclor-1260 (3)	250	0.1051013	20	0.1116982	50	0.1043382	1000	9.463532E-02	100	0.1111587	500	0.1004267
Aroclor-1260 (4)	250	0.0516917	20	5.459749E-02	50	4.999767E-02	1000	0.0472006	100	5.381565E-02	500	0.0499592
Aroclor-1260 (5)	250	2.201717E-02	20	2.498183E-02	50	2.246226E-02	1000	1.981958E-02	100	2.370029E-02	500	2.100203E-02
Decachlorobiphenyl	40	0.7794462	3.2	0.8975218	8	0.8371499	160	0.7050808	16	0.8485148	80	0.7271303
Tetrachlorometaxylene	40	1.226686	3.2	1.21049	8	1.182524	160	1.140526	16	1.29993	80	1.168782

INITIAL CALIBRATION DATA

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GE00022	Instrument:	ECD7
Calibration Date:	05/05/2023	Column (1):	ZB5

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Aroclor 1221							250	1.457516E-02				
Aroclor-1221 (1)							250	5.626378E-03				
Aroclor-1221 (2)							250	1.128806E-02				
Aroclor-1221 (3)							250	2.681103E-02				
Aroclor 1232									250	1.614998E-02		
Aroclor-1232 (1)									250	3.747872E-03		
Aroclor-1232 (2)									250	7.798392E-03		
Aroclor-1232 (3)									250	3.715176E-02		
Aroclor-1232 (4)									250	1.590191E-02		
Aroclor 1242	250	3.907373E-02										
Aroclor-1242 (1)	250	2.520807E-02										
Aroclor-1242 (2)	250	7.988013E-02										
Aroclor-1242 (3)	250	1.545019E-02										
Aroclor-1242 (4)	250	3.575655E-02										
Aroclor 1248			250	5.688792E-02								
Aroclor-1248 (1)			250	2.041932E-02								
Aroclor-1248 (2)			250	5.306328E-02								
Aroclor-1248 (3)			250	0.1020488								
Aroclor-1248 (4)			250	5.202029E-02								
Aroclor 1254					250	6.780072E-02						
Aroclor-1254 (1)					250	8.222188E-02						
Aroclor-1254 (2)					250	3.694251E-02						
Aroclor-1254 (3)					250	5.307929E-02						
Aroclor-1254 (4)					250	0.1039691						
Aroclor-1254 (5)					250	6.279077E-02						
Aroclor 1262							250	4.659643E-02				
Aroclor-1262 (1)							250	3.619126E-02				
Aroclor-1262 (2)							250	5.089701E-02				

INITIAL CALIBRATION DATA

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GE00022	Instrument:	ECD7
Calibration Date:	05/05/2023	Column (1):	ZB5

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Aroclor-1262 (3)							250	5.471234E-02				
Aroclor-1262 (4)							250	4.458506E-02				
Aroclor 1268									250	0.161799		
Aroclor-1268 (1)									250	0.1275909		
Aroclor-1268 (2)									250	0.1267143		
Aroclor-1268 (3)									250	0.1019109		
Aroclor-1268 (4)									250	0.2909801		

INITIAL CALIBRATION DATA

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GE00022	Instrument:	ECD7
Calibration Date:	05/05/2023	Column (1):	ZB5

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor 1016	0.0477728	7.1			RSD (20)	
Aroclor-1016 (1)	3.097636E-02	9.9			RSD (20)	
Aroclor-1016 (2)	9.686107E-02	6.7			RSD (20)	
Aroclor-1016 (3)	4.477928E-02	10.1			RSD (20)	
Aroclor-1016 (4)	1.847448E-02	9.4			RSD (20)	
Aroclor 1221		0.0			RSD (20)	
Aroclor-1221 (1)		0.0			RSD (20)	
Aroclor-1221 (2)		0.0			RSD (20)	
Aroclor-1221 (3)		0.0			RSD (20)	
Aroclor 1232		0.0			RSD (20)	
Aroclor-1232 (1)		0.0			RSD (20)	
Aroclor-1232 (2)		0.0			RSD (20)	
Aroclor-1232 (3)		0.0			RSD (20)	
Aroclor-1232 (4)		0.0			RSD (20)	
Aroclor 1242		0.0			RSD (20)	
Aroclor-1242 (1)		0.0			RSD (20)	
Aroclor-1242 (2)		0.0			RSD (20)	
Aroclor-1242 (3)		0.0			RSD (20)	
Aroclor-1242 (4)		0.0			RSD (20)	
Aroclor 1248		0.0			RSD (20)	
Aroclor-1248 (1)		0.0			RSD (20)	
Aroclor-1248 (2)		0.0			RSD (20)	
Aroclor-1248 (3)		0.0			RSD (20)	
Aroclor-1248 (4)		0.0			RSD (20)	
Aroclor 1254		0.0			RSD (20)	
Aroclor-1254 (1)		0.0			RSD (20)	
Aroclor-1254 (2)		0.0			RSD (20)	
Aroclor-1254 (3)		0.0			RSD (20)	
Aroclor-1254 (4)		0.0			RSD (20)	
Aroclor-1254 (5)		0.0			RSD (20)	
Aroclor 1260	5.243062E-02	6.1			RSD (20)	

INITIAL CALIBRATION DATA

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GE00022	Instrument:	ECD7
Calibration Date:	05/05/2023	Column (1):	ZB5

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor-1260 (1)	4.230311E-02	6.5			RSD (20)	
Aroclor-1260 (2)	4.174934E-02	5.6			RSD (20)	
Aroclor-1260 (3)	0.1045597	6.2			RSD (20)	
Aroclor-1260 (4)	5.121039E-02	5.4			RSD (20)	
Aroclor-1260 (5)	2.233053E-02	8.3			RSD (20)	
Aroclor 1262		0.0			RSD (20)	
Aroclor-1262 (1)		0.0			RSD (20)	
Aroclor-1262 (2)		0.0			RSD (20)	
Aroclor-1262 (3)		0.0			RSD (20)	
Aroclor-1262 (4)		0.0			RSD (20)	
Aroclor 1268		0.0			RSD (20)	
Aroclor-1268 (1)		0.0			RSD (20)	
Aroclor-1268 (2)		0.0			RSD (20)	
Aroclor-1268 (3)		0.0			RSD (20)	
Aroclor-1268 (4)		0.0			RSD (20)	
Decachlorobiphenyl	0.7991406	9.4			RSD (20)	
Tetrachlorometaxylene	1.204823	4.6			RSD (20)	

INITIAL CALIBRATION DATA

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GE00022	Instrument:	ECD7
Calibration Date:	05/05/2023	Column (2):	ZB35

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Aroclor 1016 [2C]	250	5.431445E-02	20	5.755321E-02	50	5.623255E-02	1000	4.860069E-02	100	5.851589E-02	500	5.204411E-02
Aroclor-1016 (1) [2C]	250	4.442671E-02	20	5.158091E-02	50	4.743051E-02	1000	3.802133E-02	100	4.866225E-02	500	4.159498E-02
Aroclor-1016 (2) [2C]	250	9.745237E-02	20	9.849733E-02	50	9.560411E-02	1000	9.038411E-02	100	0.1018298	500	9.528017E-02
Aroclor-1016 (3) [2C]	250	4.229758E-02	20	4.378709E-02	50	4.462224E-02	1000	3.801497E-02	100	4.621674E-02	500	0.0404581
Aroclor-1016 (4) [2C]	250	3.308114E-02	20	3.634753E-02	50	3.727334E-02	1000	2.798232E-02	100	3.735476E-02	500	3.084311E-02
Aroclor 1260 [2C]	250	6.505764E-02	20	6.569768E-02	50	6.337683E-02	1000	5.893668E-02	100	6.768726E-02	500	6.232632E-02
Aroclor-1260 (1) [2C]	250	4.278892E-02	20	4.543978E-02	50	4.273243E-02	1000	3.816214E-02	100	4.503751E-02	500	4.075974E-02
Aroclor-1260 (2) [2C]	250	0.1137836	20	0.1128173	50	0.1108523	1000	0.1019853	100	0.1191905	500	0.1081464
Aroclor-1260 (3) [2C]	250	2.779854E-02	20	2.783171E-02	50	2.651547E-02	1000	2.742971E-02	100	2.791113E-02	500	2.774857E-02
Aroclor-1260 (4) [2C]	250	0.0758595	20	7.670195E-02	50	7.340713E-02	1000	6.816956E-02	100	7.860987E-02	500	7.265057E-02
Decachlorobiphenyl [2C]	40	1.183432	3.2	1.044344	8	1.074026	160	1.130044	16	1.220049	80	1.164189
Tetrachlorometaxylene [2C]	40	1.130537	3.2	1.090766	8	1.076407	160	1.045589	16	1.181288	80	1.078696

INITIAL CALIBRATION DATA

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GE00022	Instrument:	ECD7
Calibration Date:	05/05/2023	Column (2):	ZB35

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Aroclor 1221 [2C]							250	1.245566E-02				
Aroclor-1221 (1) [2C]							250	5.90099E-03				
Aroclor-1221 (2) [2C]							250	1.222989E-02				
Aroclor-1221 (3) [2C]							250	1.923608E-02				
Aroclor 1232 [2C]									250	1.671987E-02		
Aroclor-1232 (1) [2C]									250	3.102529E-03		
Aroclor-1232 (2) [2C]									250	0.0177626		
Aroclor-1232 (3) [2C]									250	3.568085E-02		
Aroclor-1232 (4) [2C]									250	1.033351E-02		
Aroclor 1242 [2C]	250	4.139652E-02										
Aroclor-1242 (1) [2C]	250	0.0357524										
Aroclor-1242 (2) [2C]	250	0.0760619										
Aroclor-1242 (3) [2C]	250	2.438456E-02										
Aroclor-1242 (4) [2C]	250	2.938723E-02										
Aroclor 1248 [2C]			250	4.547256E-02								
Aroclor-1248 (1) [2C]			250	3.805793E-02								
Aroclor-1248 (2) [2C]			250	4.020106E-02								
Aroclor-1248 (3) [2C]			250	4.712363E-02								
Aroclor-1248 (4) [2C]			250	5.650761E-02								
Aroclor 1254 [2C]					250	0.0720677						
Aroclor-1254 (1) [2C]					250	6.078104E-02						
Aroclor-1254 (2) [2C]					250	3.610738E-02						
Aroclor-1254 (3) [2C]					250	4.926631E-02						
Aroclor-1254 (4) [2C]					250	0.1075138						
Aroclor-1254 (5) [2C]					250	0.1066699						
Aroclor 1262 [2C]							250	6.915026E-02				
Aroclor-1262 (1) [2C]							250	0.0648231				
Aroclor-1262 (2) [2C]							250	5.467008E-02				

INITIAL CALIBRATION DATA

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GE00022	Instrument:	ECD7
Calibration Date:	05/05/2023	Column (2):	ZB35

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Aroclor-1262 (3) [2C]							250	5.974148E-02				
Aroclor-1262 (4) [2C]							250	9.736639E-02				
Aroclor 1268 [2C]									250	0.2250713		
Aroclor-1268 (1) [2C]									250	0.1513931		
Aroclor-1268 (2) [2C]									250	0.1627614		
Aroclor-1268 (3) [2C]									250	0.1393777		
Aroclor-1268 (4) [2C]									250	0.4467531		

INITIAL CALIBRATION DATA

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GE00022	Instrument:	ECD7
Calibration Date:	05/05/2023	Column (2):	ZB35

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor 1016 [2C]	5.454348E-02	6.8			RSD (20)	
Aroclor-1016 (1) [2C]	4.528611E-02	10.9			RSD (20)	
Aroclor-1016 (2) [2C]	9.650798E-02	4.0			RSD (20)	
Aroclor-1016 (3) [2C]	4.256612E-02	7.0			RSD (20)	
Aroclor-1016 (4) [2C]	0.0338137	11.4			RSD (20)	
Aroclor 1221 [2C]		0.0			RSD (20)	
Aroclor-1221 (1) [2C]		0.0			RSD (20)	
Aroclor-1221 (2) [2C]		0.0			RSD (20)	
Aroclor-1221 (3) [2C]		0.0			RSD (20)	
Aroclor 1232 [2C]		0.0			RSD (20)	
Aroclor-1232 (1) [2C]		0.0			RSD (20)	
Aroclor-1232 (2) [2C]		0.0			RSD (20)	
Aroclor-1232 (3) [2C]		0.0			RSD (20)	
Aroclor-1232 (4) [2C]		0.0			RSD (20)	
Aroclor 1242 [2C]		0.0			RSD (20)	
Aroclor-1242 (1) [2C]		0.0			RSD (20)	
Aroclor-1242 (2) [2C]		0.0			RSD (20)	
Aroclor-1242 (3) [2C]		0.0			RSD (20)	
Aroclor-1242 (4) [2C]		0.0			RSD (20)	
Aroclor 1248 [2C]		0.0			RSD (20)	
Aroclor-1248 (1) [2C]		0.0			RSD (20)	
Aroclor-1248 (2) [2C]		0.0			RSD (20)	
Aroclor-1248 (3) [2C]		0.0			RSD (20)	
Aroclor-1248 (4) [2C]		0.0			RSD (20)	
Aroclor 1254 [2C]		0.0			RSD (20)	
Aroclor-1254 (1) [2C]		0.0			RSD (20)	
Aroclor-1254 (2) [2C]		0.0			RSD (20)	
Aroclor-1254 (3) [2C]		0.0			RSD (20)	
Aroclor-1254 (4) [2C]		0.0			RSD (20)	
Aroclor-1254 (5) [2C]		0.0			RSD (20)	
Aroclor 1260 [2C]	6.384707E-02	4.8			RSD (20)	

INITIAL CALIBRATION DATA

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GE00022	Instrument:	ECD7
Calibration Date:	05/05/2023	Column (2):	ZB35

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor-1260 (1) [2C]	4.248675E-02	6.4			RSD (20)	
Aroclor-1260 (2) [2C]	0.1111292	5.2			RSD (20)	
Aroclor-1260 (3) [2C]	2.753919E-02	1.9			RSD (20)	
Aroclor-1260 (4) [2C]	7.423309E-02	5.0			RSD (20)	
Aroclor 1262 [2C]		0.0			RSD (20)	
Aroclor-1262 (1) [2C]		0.0			RSD (20)	
Aroclor-1262 (2) [2C]		0.0			RSD (20)	
Aroclor-1262 (3) [2C]		0.0			RSD (20)	
Aroclor-1262 (4) [2C]		0.0			RSD (20)	
Aroclor 1268 [2C]		0.0			RSD (20)	
Aroclor-1268 (1) [2C]		0.0			RSD (20)	
Aroclor-1268 (2) [2C]		0.0			RSD (20)	
Aroclor-1268 (3) [2C]		0.0			RSD (20)	
Aroclor-1268 (4) [2C]		0.0			RSD (20)	
Decachlorobiphenyl [2C]	1.136014	5.9			RSD (20)	
Tetrachlorometaxylene [2C]	1.100547	4.4			RSD (20)	

Analytical Resources, LLC
Analytical Chemists and Consultants

ANALYSIS SEQUENCE

SLE0079

Instrument: ECD7
Calibration ID: GE00022

Printed: 5/6/2023 11:44:56AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLE0079-CAL1	QC		1		L000856	L000844		
SLE0079-CAL2	QC		2		L000859	L000844		
SLE0079-CAL3	QC		3		L000858	L000844		
SLE0079-CAL4	QC		4		L000731	L000844		
SLE0079-CAL5	QC		5		L000857	L000844		
SLE0079-CAL6	QC		6		L000855	L000844		
SLE0079-CAL7	QC		7		L000860	L000844		
SLE0079-CAL8	QC		8		L000861	L000844		
SLE0079-CAL9	QC		9		L000862	L000844		
SLE0079-CALA	QC		10		L004996	L000844		
SLE0079-CALB	QC		11		L004997	L000844		
SLE0079-SCV1	QC		12		L002065	L000844		
SLE0079-SCV2	QC		13		L003970	L000844		
SLE0079-SCV3	QC		14		L002066	L000844		
SLE0079-SCV4	QC		15		L002067	L000844		
SLE0079-SCV5	QC		16		L002068	L000844		
SLE0079-SCV6	QC		17		L002069	L000844		

Samples Loaded By Date

Data Processed By Date

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230505.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	05-MAY-2023 23:06	05052320ECD7.D	1	IB	
2	05-MAY-2023 23:26	05052321ECD7.D	1	0.25PPMAR1660	
3	05-MAY-2023 23:47	05052322ECD7.D	1	0.02PPMAR1660	
4	06-MAY-2023 00:08	05052323ECD7.D	1	0.05PPMAR1660	
5	06-MAY-2023 00:29	05052324ECD7.D	1	1.0PPMAR1660	
6	06-MAY-2023 00:50	05052325ECD7.D	1	0.1PPMAR1660	
7	06-MAY-2023 01:11	05052326ECD7.D	1	0.5PPMAR1660	
8	06-MAY-2023 01:31	05052327ECD7.D	1	0.25PPMAR1242	
9	06-MAY-2023 01:52	05052328ECD7.D	1	0.25PPMAR1248	
10	06-MAY-2023 02:13	05052329ECD7.D	1	0.25PPMAR1254	
11	06-MAY-2023 02:34	05052330ECD7.D	1	0.25PPMAR2162	
12	06-MAY-2023 02:55	05052331ECD7.D	1	0.25PPMAR3268	
13	06-MAY-2023 03:16	05052332ECD7.D	1	AR1660SCV	
14	06-MAY-2023 03:36	05052333ECD7.D	1	AR1242SCV	
15	06-MAY-2023 03:57	05052334ECD7.D	1	AR1248SCV	
16	06-MAY-2023 04:18	05052335ECD7.D	1	AR1254SCV	
17	06-MAY-2023 04:39	05052336ECD7.D	1	AR2162SCV	
18	06-MAY-2023 05:00	05052337ECD7.D	1	AR3268SCV	
19	06-MAY-2023 05:21	05052338ECD7.D	1	DDTS	
20	06-MAY-2023 05:41	05052339ECD7.D	1	DDT BD	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230505.b

ARI Job No.: Method: PCB.m Instrument: ecd7.i Date: 05-MAY-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1548	05052301ECD7.D			1	NO MANUAL INTEGRATION
1609	05052302ECD7.D			1	NO MANUAL INTEGRATION
1711	05052303ECD7.D			1	NO MANUAL INTEGRATION
1732	05052304ECD7.D			1	NO MANUAL INTEGRATION
1753	05052305ECD7.D			1	NO MANUAL INTEGRATION
1814	05052306ECD7.D			1	NO MANUAL INTEGRATION
1835	05052307ECD7.D			1	NO MANUAL INTEGRATION
1856	05052308ECD7.D			1	NO MANUAL INTEGRATION
1916	05052309ECD7.D			1	NO MANUAL INTEGRATION
1937	05052310ECD7.D			1	NO MANUAL INTEGRATION
1958	05052311ECD7.D			1	NO MANUAL INTEGRATION
2019	05052312ECD7.D			1	NO MANUAL INTEGRATION
2040	05052313ECD7.D			1	NO MANUAL INTEGRATION
2101	05052314ECD7.D			1	NO MANUAL INTEGRATION
2121	05052315ECD7.D			1	NO MANUAL INTEGRATION
2142	05052316ECD7.D			1	NO MANUAL INTEGRATION
2203	05052317ECD7.D			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230505.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2224	05052318ECD7.D			1	NO MANUAL INTEGRATION
2245	05052319ECD7.D			1	NO MANUAL INTEGRATION
2306	05052320ECD7.D	IB		1	NO MANUAL INTEGRATION
2326	05052321ECD7.D	0.25PPMAR1660		1	NO MANUAL INTEGRATION
2347	05052322ECD7.D	0.02PPMAR1660		1	NO MANUAL INTEGRATION
0008	05052323ECD7.D	0.05PPMAR1660		1	NO MANUAL INTEGRATION
0029	05052324ECD7.D	1.0PPMAR1660		1	NO MANUAL INTEGRATION
0050	05052325ECD7.D	0.1PPMAR1660		1	NO MANUAL INTEGRATION
0111	05052326ECD7.D	0.5PPMAR1660		1	NO MANUAL INTEGRATION
0131	05052327ECD7.D	0.25PPMAR1242		1	NO MANUAL INTEGRATION
0152	05052328ECD7.D	0.25PPMAR1248		1	NO MANUAL INTEGRATION
0213	05052329ECD7.D	0.25PPMAR1254		1	NO MANUAL INTEGRATION
0234	05052330ECD7.D	0.25PPMAR2162		1	NO MANUAL INTEGRATION
0255	05052331ECD7.D	0.25PPMAR3268		1	NO MANUAL INTEGRATION
0316	05052332ECD7.D	AR1660SCV		1	NO MANUAL INTEGRATION
0336	05052333ECD7.D	AR1242SCV		1	NO MANUAL INTEGRATION
0357	05052334ECD7.D	AR1248SCV		1	NO MANUAL INTEGRATION
0418	05052335ECD7.D	AR1254SCV		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230505.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0439	05052336ECD7.D	AR2162SCV		1	NO MANUAL INTEGRATION
0500	05052337ECD7.D	AR3268SCV		1	NO MANUAL INTEGRATION
0521	05052338ECD7.D	DDTS		1	NO MANUAL INTEGRATION
0541	05052339ECD7.D	DDT BD		1	NO MANUAL INTEGRATION
1548	05052301ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1609	05052302ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1711	05052303ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
1732	05052304ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
1753	05052305ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
1814	05052306ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
1835	05052307ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
1856	05052308ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
1916	05052309ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1937	05052310ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1958	05052311ECD7.D	RINSE		1	NO MANUAL INTEGRATION
2019	05052312ECD7.D	RINSE		1	NO MANUAL INTEGRATION
2040	05052313ECD7.D	RINSE		1	NO MANUAL INTEGRATION
2101	05052314ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230505.b\230505.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2121	05052315ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
2142	05052316ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
2203	05052317ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
2224	05052318ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
2245	05052319ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
2306	05052320ECD7.D	IB		1	NO MANUAL INTEGRATION
2326	05052321ECD7.D	0.25PPMAR1660		1	NO MANUAL INTEGRATION
2347	05052322ECD7.D	0.02PPMAR1660		1	Aroclor-1016 [2C],
0008	05052323ECD7.D	0.05PPMAR1660		1	Aroclor-1016 [2C],
0029	05052324ECD7.D	1.0PPMAR1660		1	NO MANUAL INTEGRATION
0050	05052325ECD7.D	0.1PPMAR1660		1	Aroclor-1016 [2C],
0111	05052326ECD7.D	0.5PPMAR1660		1	NO MANUAL INTEGRATION
0132	05052327ECD7.D	0.25PPMAR1242		1	Aroclor-1242 [2C],
0152	05052328ECD7.D	0.25PPMAR1248		1	NO MANUAL INTEGRATION
0213	05052329ECD7.D	0.25PPMAR1254		1	NO MANUAL INTEGRATION
0234	05052330ECD7.D	0.25PPMAR2162		1	NO MANUAL INTEGRATION
0255	05052331ECD7.D	0.25PPMAR3268		1	NO MANUAL INTEGRATION
0316	05052332ECD7.D	AR1660SCV		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230505.b\230505.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0336	05052333ECD7.D	AR1242SCV		1	Aroclor-1242 [2C],
0357	05052334ECD7.D	AR1248SCV		1	NO MANUAL INTEGRATION
0418	05052335ECD7.D	AR1254SCV		1	NO MANUAL INTEGRATION
0439	05052336ECD7.D	AR2162SCV		1	NO MANUAL INTEGRATION
0500	05052337ECD7.D	AR3268SCV		1	NO MANUAL INTEGRATION
0521	05052338ECD7.D	DDTS		1	NO MANUAL INTEGRATION
0541	05052339ECD7.D	DDT BD		1	NO MANUAL INTEGRATION

Security Status Report

Date: 06-May-2023 09:12

05052320ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052321ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052322ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052323ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052324ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052325ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052326ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052327ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052328ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052329ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052330ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052331ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052332ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052333ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052334ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052335ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052336ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052337ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052338ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052339ECD7.D	Data Locked	richardl, 06-May-2023 09:12

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 05-MAY-2023 23:26
End Cal Date : 06-MAY-2023 05:21
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m
Last Edit : 06-May-2023 09:04 ecd7.i
Curve Type : Average

Calibration File Names:
Level 1: \\target\share\chem4\ecd7.i\230505.b\05052322ECD7.D
Level 2: \\target\share\chem4\ecd7.i\230505.b\05052323ECD7.D
Level 3: \\target\share\chem4\ecd7.i\230505.b\05052325ECD7.D
Level 4: \\target\share\chem4\ecd7.i\230505.b\05052321ECD7.D
Level 5: \\target\share\chem4\ecd7.i\230505.b\05052326ECD7.D
Level 6: \\target\share\chem4\ecd7.i\230505.b\05052324ECD7.D
Level 7: \\target\share\chem4\ecd7.i\230505.b\05052331ECD7.D
Level 8: \\target\share\chem4\ecd7.i\230505.b\05052338ECD7.D

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
2 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00563	+++++	0.00563	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01129	+++++	0.01129	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.02681	+++++	0.02681	0.000
3 Aroclor-1242(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.02521	+++++	0.02521	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.07988	+++++	0.07988	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.01545	+++++	0.01545	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.03576	+++++	0.03576	0.000
4 Aroclor-1232(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00375	+++++	0.00375	0.000

ARI Labs, Inc.

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Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m
Last Edit : 06-May-2023 09:04 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	___ RRF	% RSD
(2)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.00780	+++++							0.00780	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.03715	+++++							0.03715	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.01590	+++++							0.01590	0.000
7 Aroclor-1016(1)	0.03259	0.03226	0.03462	0.03138	0.02909	0.02592				
	+++++	+++++							0.03098	9.876
(2)	0.08782	0.09418	0.10520	0.10209	0.09934	0.09254				
	+++++	+++++							0.09686	6.702
(3)	0.04375	0.04849	0.05094	0.04519	0.04205	0.03826				
	+++++	+++++							0.04478	10.130
(4)	0.01716	0.01921	0.02127	0.01901	0.01783	0.01637				
	+++++	+++++							0.01847	9.437
6 Aroclor-1248(1)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.02042	+++++							0.02042	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.05306	+++++							0.05306	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.10205	+++++							0.10205	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.05202	+++++							0.05202	0.000

ARI Labs, Inc.

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Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m
Last Edit : 06-May-2023 09:04 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	___ RRF	% RSD
8 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.08222	+++++	0.08222	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.03694	+++++	0.03694	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.05308	+++++	0.05308	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.10397	+++++	0.10397	0.000
(5)	+++++	+++++	+++++	+++++	+++++	+++++	0.06279	+++++	0.06279	0.000
9 Aroclor-1260(1)	0.04580	0.04187	0.04489	0.04230	0.04061	0.03834	+++++	+++++	0.04230	6.490
(2)	0.04434	0.04115	0.04438	0.04189	0.04043	0.03831	+++++	+++++	0.04175	5.623
(3)	0.11170	0.10434	0.11116	0.10510	0.10043	0.09464	+++++	+++++	0.10456	6.204
(4)	0.05460	0.05000	0.05382	0.05169	0.04996	0.04720	+++++	+++++	0.05121	5.355
(5)	0.02498	0.02246	0.02370	0.02202	0.02100	0.01982	+++++	+++++	0.02233	8.279
10 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.03619	+++++	0.03619	0.000

ARI Labs, Inc.

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Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m
Last Edit : 06-May-2023 09:04 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	___ RRF	% RSD
(2)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.05090	+++++							0.05090	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.05471	+++++							0.05471	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.04459	+++++							0.04459	0.000
11 Aroclor-1268(1)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.12759	+++++							0.12759	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.12671	+++++							0.12671	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.10191	+++++							0.10191	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.29098	+++++							0.29098	0.000
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++				
	+++++	636							636	0.000
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++				
	+++++	1208							1208	0.000
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++				
	+++++	+++++							+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++				
	+++++	1492							1492	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 05-MAY-2023 23:26
End Cal Date : 06-MAY-2023 05:21
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m
Last Edit : 06-May-2023 09:04 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	___ RRF	% RSD
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	+++++	708	708	0.000
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	+++++	630	630	0.000
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 1 Tetrachloro-m-xylene	1.21049	1.18252	1.29993	1.22669	1.16878	1.14053	+++++	+++++	1.20482	4.619
$ 13 Decachlorobiphenyl	0.89752	0.83715	0.84851	0.77945	0.72713	0.70508	+++++	+++++	0.79914	9.361

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 05-MAY-2023 23:26
End Cal Date : 06-MAY-2023 02:55
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m\PCB2.m
Last Edit : 06-May-2023 11:14 ecd7.i
Curve Type : Average

Calibration File Names:
Level 1: \\target\share\chem4\ecd7.i\230505.b\230505.b\05052322ECD7.D
Level 2: \\target\share\chem4\ecd7.i\230505.b\230505.b\05052323ECD7.D
Level 3: \\target\share\chem4\ecd7.i\230505.b\230505.b\05052325ECD7.D
Level 4: \\target\share\chem4\ecd7.i\230505.b\230505.b\05052321ECD7.D
Level 5: \\target\share\chem4\ecd7.i\230505.b\230505.b\05052326ECD7.D
Level 6: \\target\share\chem4\ecd7.i\230505.b\230505.b\05052324ECD7.D
Level 7: \\target\share\chem4\ecd7.i\230505.b\230505.b\05052331ECD7.D

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	RRF	% RSD
1 Aroclor-1221 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00590	0.00590	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01223	0.01223	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.01924	0.01924	0.000
4 Aroclor-1232 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00310	0.00310	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01776	0.01776	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.03568	0.03568	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.01033	0.01033	0.000
3 Aroclor-1242 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++	0.03575	0.03575	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 05-MAY-2023 23:26
End Cal Date : 06-MAY-2023 02:55
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m\PCB2.m
Last Edit : 06-May-2023 11:14 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	RRF	% RSD
(2)	*****	*****	*****	*****	*****	*****	0.07606	0.07606	0.000
(3)	*****	*****	*****	*****	*****	*****	0.02438	0.02438	0.000
(4)	*****	*****	*****	*****	*****	*****	0.02939	0.02939	0.000
6 Aroclor-1248 [2C](1)	*****	*****	*****	*****	*****	*****	0.03806	0.03806	0.000
(2)	*****	*****	*****	*****	*****	*****	0.04020	0.04020	0.000
(3)	*****	*****	*****	*****	*****	*****	0.04712	0.04712	0.000
(4)	*****	*****	*****	*****	*****	*****	0.05651	0.05651	0.000
7 Aroclor-1016 [2C](1)	0.05158	0.04743	0.04866	0.04443	0.04159	0.03802	*****	0.04529	10.942
(2)	0.09850	0.09560	0.10183	0.09745	0.09528	0.09038	*****	0.09651	3.959
(3)	0.04379	0.04462	0.04622	0.04230	0.04046	0.03801	*****	0.04257	6.991
(4)	0.03635	0.03727	0.03735	0.03308	0.03084	0.02798	*****	0.03381	11.400

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 05-MAY-2023 23:26
End Cal Date : 06-MAY-2023 02:55
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m\PCB2.m
Last Edit : 06-May-2023 11:14 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	RRF	% RSD
8 Aroclor-1254 [2C](1)	*****	*****	*****	*****	*****	*****	0.06078	0.06078	0.000
(2)	*****	*****	*****	*****	*****	*****	0.03611	0.03611	0.000
(3)	*****	*****	*****	*****	*****	*****	0.04927	0.04927	0.000
(4)	*****	*****	*****	*****	*****	*****	0.10751	0.10751	0.000
(5)	*****	*****	*****	*****	*****	*****	0.10667	0.10667	0.000
10 Aroclor-1262 [2C](1)	*****	*****	*****	*****	*****	*****	0.06482	0.06482	0.000
(2)	*****	*****	*****	*****	*****	*****	0.05467	0.05467	0.000
(3)	*****	*****	*****	*****	*****	*****	0.05974	0.05974	0.000
(4)	*****	*****	*****	*****	*****	*****	0.09737	0.09737	0.000
9 Aroclor-1260 [2C](1)	0.04544	0.04273	0.04504	0.04279	0.04076	0.03816	*****	0.04249	6.408
(2)	0.11282	0.11085	0.11919	0.11378	0.10815	0.10199	*****	0.11113	5.208

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 05-MAY-2023 23:26
End Cal Date : 06-MAY-2023 02:55
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m\PCB2.m
Last Edit : 06-May-2023 11:14 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	RRF	% RSD
(3)	0.02783	0.02652	0.02791	0.02780	0.02775	0.02743	#####	0.02754	1.918
(4)	0.07670	0.07341	0.07861	0.07586	0.07265	0.06817	#####	0.07423	4.962
11 Aroclor-1268 [2C](1)	#####	#####	#####	#####	#####	#####	0.15139	0.15139	0.000
(2)	#####	#####	#####	#####	#####	#####	0.16276	0.16276	0.000
(3)	#####	#####	#####	#####	#####	#####	0.13938	0.13938	0.000
(4)	#####	#####	#####	#####	#####	#####	0.44675	0.44675	0.000
41 2,4-DDE [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####
42 2,4-DDD [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####
44 4,4-DDE [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####
45 4,4-DDD/2,4-DDT [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####
46 4,4-DDT [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 05-MAY-2023 23:26
End Cal Date : 06-MAY-2023 02:55
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m\PCB2.m
Last Edit : 06-May-2023 11:14 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 2 Tetrachloro-m-xylene [2C]	1.09077	1.07641	1.18129	1.13054	1.07870	1.04559	+++++	1.10055	4.376
$ 13 Decachlorobiphenyl [2C]	1.04434	1.07403	1.22005	1.18343	1.16419	1.13004	+++++	1.13601	5.890

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\230505.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	05052321ECD7	05052322ECD7	05052323ECD7	05052324ECD7	05052325ECD7	05052326ECD7
INJ.DATE:	05-MAY-2023	05-MAY-2023	06-MAY-2023	06-MAY-2023	06-MAY-2023	06-MAY-2023
INJ.TIME:	23:26	23:47	00:08	00:29	00:50	01:11

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	3.429	3.429	3.428	3.429	3.428	3.428	3.428	3.328-3.528	3.429	0.000
$ 1 Tetrachloro-m-xylene	5.743	5.742	5.741	5.746	5.741	5.743	5.742	5.642-5.842	5.743	0.002
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	4.663	4.563-4.763	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	7.212	7.112-7.312	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	4.664	4.564-4.764	+++++	+++++
7 Aroclor-1016	7.213	7.213	7.214	7.213	7.212	7.212	7.212	7.112-7.312	7.213	0.001
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	8.399	8.299-8.499	+++++	+++++
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	9.246	9.146-9.346	+++++	+++++
9 Aroclor-1260	10.995	10.998	10.998	10.992	10.995	10.993	10.993	10.893-11.093	10.995	0.003
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	10.779	10.679-10.879	+++++	+++++
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	12.196	12.096-12.296	+++++	+++++
$ 13 Decachlorobiphenyl	13.841	13.843	13.843	13.842	13.841	13.842	13.840	13.740-13.940	13.842	0.001
* 12 IS-HBBP	14.215	14.216	14.217	14.215	14.214	14.215	14.214	14.114-14.314	14.215	0.001
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.206	9.156-9.256	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.753	9.703-9.803	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.293	10.243-10.343	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.635	9.535-9.735	+++++	+++++

Reviewer 1 _____ Date:_____
Reviewer 2 _____ Date:_____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\230505.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	10.243	10.143-10.343	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.706	10.606-10.806	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230505.b\PCB.m\PCB2.m
Batch File: \\target\share\chem4\ecd7.i\230505.b\230505.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07
FILENAME:	05052320ECD7	05052321ECD7	05052322ECD7	05052323ECD7	05052324ECD7	05052325ECD7	05052326ECD7
INJ.DATE:	05-MAY-2023	05-MAY-2023	05-MAY-2023	06-MAY-2023	06-MAY-2023	06-MAY-2023	06-MAY-2023
INJ.TIME:	23:06	23:26	23:47	00:08	00:29	00:50	01:11

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 40 IS-BNB [2C]	3.869	3.869	3.869	3.869	3.869	3.869	3.869	3.868	3.768-3.968	3.869	0.000
$ 2 Tetrachloro-m-xylene [	5.629	5.629	5.630	5.630	5.627	5.629	5.629	5.628	5.528-5.728	5.629	0.001
1 Aroclor-1221 [2C]	0.000	+++++	+++++	+++++	+++++	+++++	+++++	4.894	4.794-4.994	0.000	0.000
4 Aroclor-1232 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.894	4.794-4.994	+++++	+++++
3 Aroclor-1242 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.203	7.103-7.303	+++++	+++++
6 Aroclor-1248 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.260	8.160-8.360	+++++	+++++
7 Aroclor-1016 [2C]	+++++	7.204	7.206	7.205	7.203	7.204	7.204	7.204	7.104-7.304	7.204	0.001
8 Aroclor-1254 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.404	9.304-9.504	+++++	+++++
10 Aroclor-1262 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.153	11.053-11.253	+++++	+++++
9 Aroclor-1260 [2C]	+++++	11.605	11.610	11.609	11.604	11.608	11.606	11.606	11.506-11.706	11.607	0.002
11 Aroclor-1268 [2C]	0.000	+++++	+++++	+++++	+++++	+++++	+++++	12.385	12.285-12.485	0.000	0.000
$ 13 Decachlorobiphenyl [2C	14.070	14.070	14.071	14.070	14.071	14.069	14.070	14.068	13.968-14.168	14.070	0.000
* 12 IS-HBBP [2C]	14.958	14.957	14.959	14.959	14.956	14.957	14.958	14.957	14.857-15.057	14.958	0.001
41 2,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.867	9.817-9.917	+++++	+++++
42 2,4-DDD [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.492	9.442-9.542	+++++	+++++
44 4,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	10.165	10.065-10.265	+++++	+++++
45 4,4-DDD/2,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	10.625	10.525-10.725	+++++	+++++

Reviewer 1 _____ Date:_____
Reviewer 2 _____ Date:_____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230505.b\PCB.m\PCB2.m
Batch File: \\target\share\chem4\ecd7.i\230505.b\230505.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
46 4,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.046	10.946-11.146	+++++	+++++
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.703	1.603-1.803	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.178	7.078-7.278	+++++	+++++

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052320ECD7.D
Data file 2: /230505.b/230505.b/05052320ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: IB
Client ID:
Injection Date: 05-MAY-2023 23:06
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	0.000	296285	5.629	0.001	163258	35.5	37.4	5.3	Tetrachloro-m-xylene
13.841	0.001	288612	14.070	0.002	318424	35.7	37.3	4.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	554412	-7.8
Hexabromobiphenyl	876625	809662	-7.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	317324	-9.2
Hexabromobiphenyl	652984	600612	-8.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.272	0.027	1585	32.7
Aroclor-1221	3	---			0.0	3	6.588	0.017	408	5.3
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	10.995	0.002	1624	3.8	1	---			0.0
Aroclor-1260	2	11.305	-0.005	1450	3.4	2	---			0.0
Aroclor-1260	3	11.770	0.084	3781	3.6	3	---			0.0
Aroclor-1260	4	12.138	0.048	1272	2.5	4	---			0.0
Aroclor-1260	5	12.271	0.078	413	1.8	NS	---			----
	Total Col1Ave (5 peaks):				3.0	Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	10.800	0.021	2445	6.7	1	---			0.0
Aroclor-1262	2	12.271	0.077	413	0.8	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	12.989	0.050	944	2.1	4	---			0.0
	Total Col1Ave (3 peaks):				3.2	Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	12.271	0.076	413	0.3	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	12.649	0.001	2092	2.0	3	12.847	0.004	632	0.6
Aroclor-1268	4	13.443	0.006	5651	1.9	4	13.663	-0.001	2018	0.6
	Total Col1Ave (3 peaks):				1.4	Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (5.842 - 13.740) = 65805 Col1 Total PCB = 0.0 ppm*

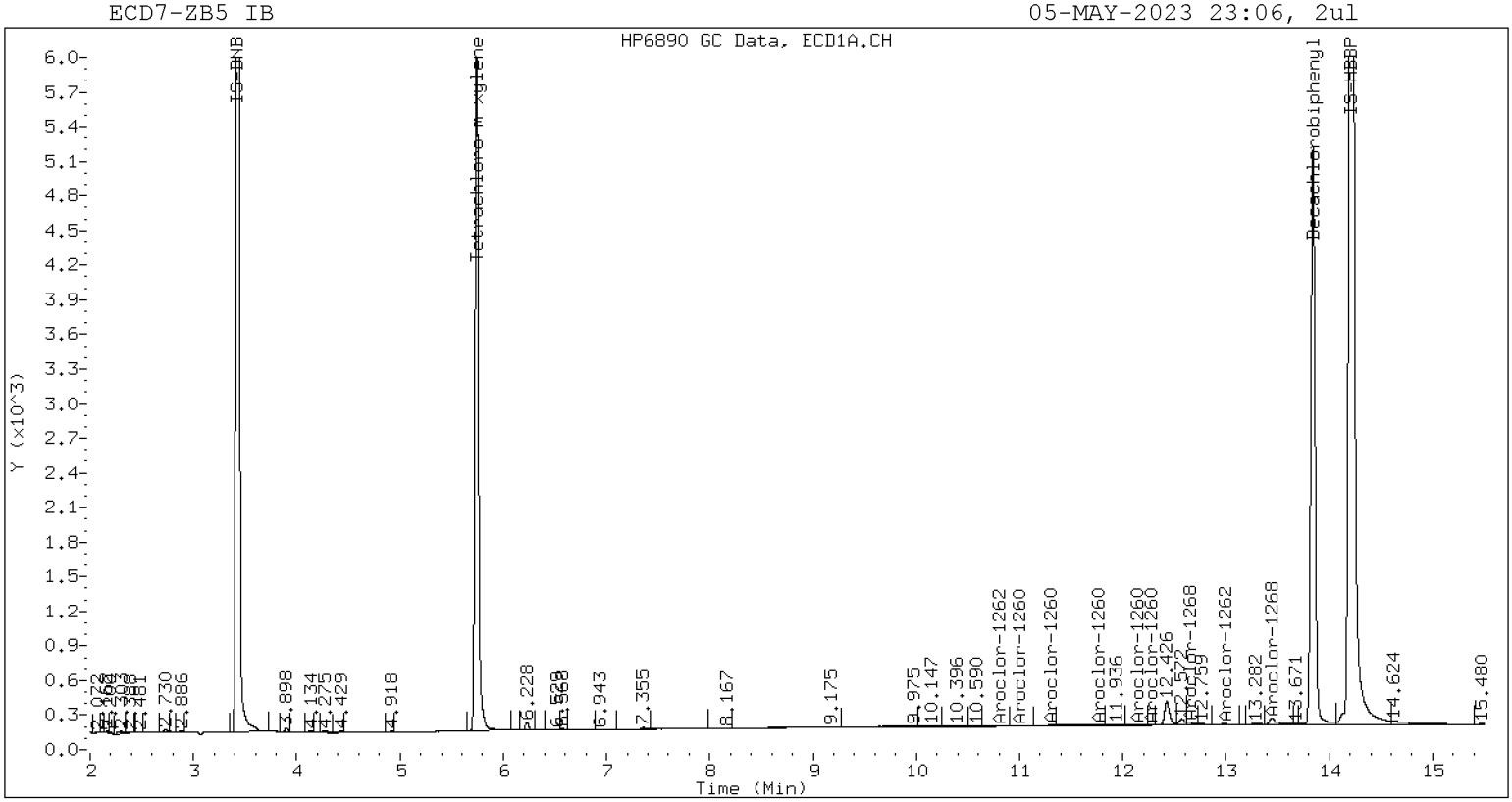
Total PCB Area Col2 (5.728 - 13.968) = 16664 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

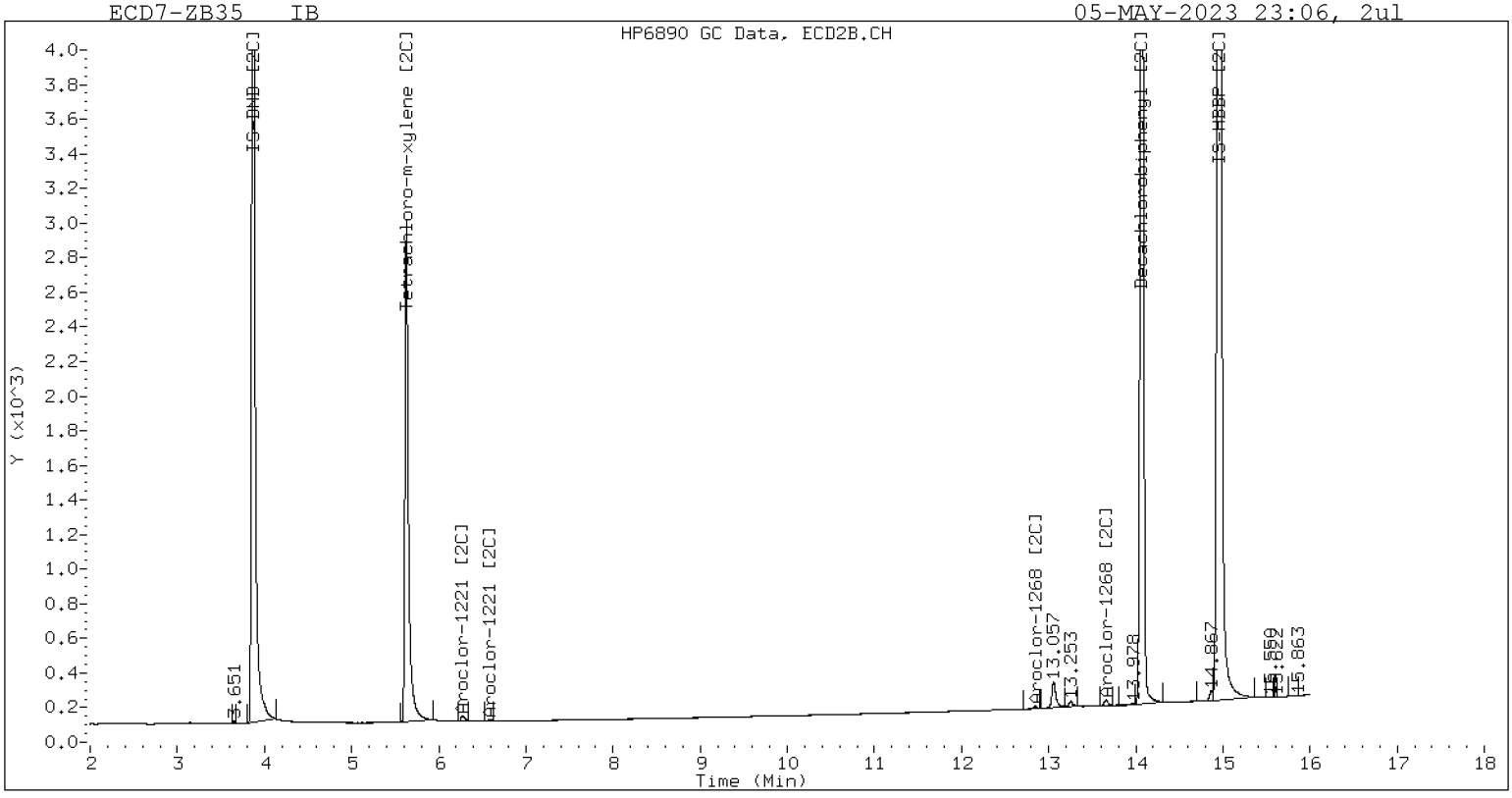
PCB Dual Column Chromatograms

ECD7-ZB5 IB 05-MAY-2023 23:06, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 IB 05-MAY-2023 23:06, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052321ECD7.D
Data file 2: /230505.b/230505.b/05052321ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1660
Client ID:
Injection Date: 05-MAY-2023 23:26
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.743	0.001	368910	5.629	0.000	197442	40.7	41.1	0.9	Tetrachloro-m-xylene
13.841	0.001	341641	14.070	0.002	386381	39.0	41.7	6.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	601474	0.0
Hexabromobiphenyl	876625	876625	0.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	349289	0.0
Hexabromobiphenyl	652984	652984	0.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.213	0.001	58979	253.2	1	7.204	-0.000	48493	245.3
Aroclor-1016	2	7.595	0.001	191892	263.5	2	7.811	0.003	106372	252.4
Aroclor-1016	3	7.735	0.002	84934	252.3	3	8.010	0.004	46169	248.4
Aroclor-1016	4	8.399	0.001	35727	257.2	4	8.260	0.001	36109	244.6
Total Col1Ave (4 peaks):					256.6	Total Col2Ave (4 peaks):				247.7 RPD = 4
Corrected Ave (3 peaks):					254.2	Corrected Ave (3 peaks):				246.1 RPD = 3
CalAmt %D:					2.6	CalAmt %D:				-0.9
Aroclor-1260	1	10.995	0.002	115872	250.0	1	11.605	-0.000	87314	251.8
Aroclor-1260	2	11.312	0.002	114768	250.9	2	11.872	-0.000	232184	256.0
Aroclor-1260	3	11.687	0.001	287920	251.3	3	12.389	0.001	56725	252.4
Aroclor-1260	4	12.091	0.002	141607	252.3	4	12.456	0.000	154797	255.5
Aroclor-1260	5	12.195	0.002	60315	246.5	NS	---			----
Total Col1Ave (5 peaks):					250.2	Total Col2Ave (4 peaks):				253.9 RPD = 1
Corrected Ave (4 peaks):					249.7	Corrected Ave (3 peaks):				253.2 RPD = 1
CalAmt %D:					0.1	CalAmt %D:				1.6

Total PCB Area Col1 (5.842 - 13.740) = 3355836 Col1 Total PCB = 0.5 ppm*

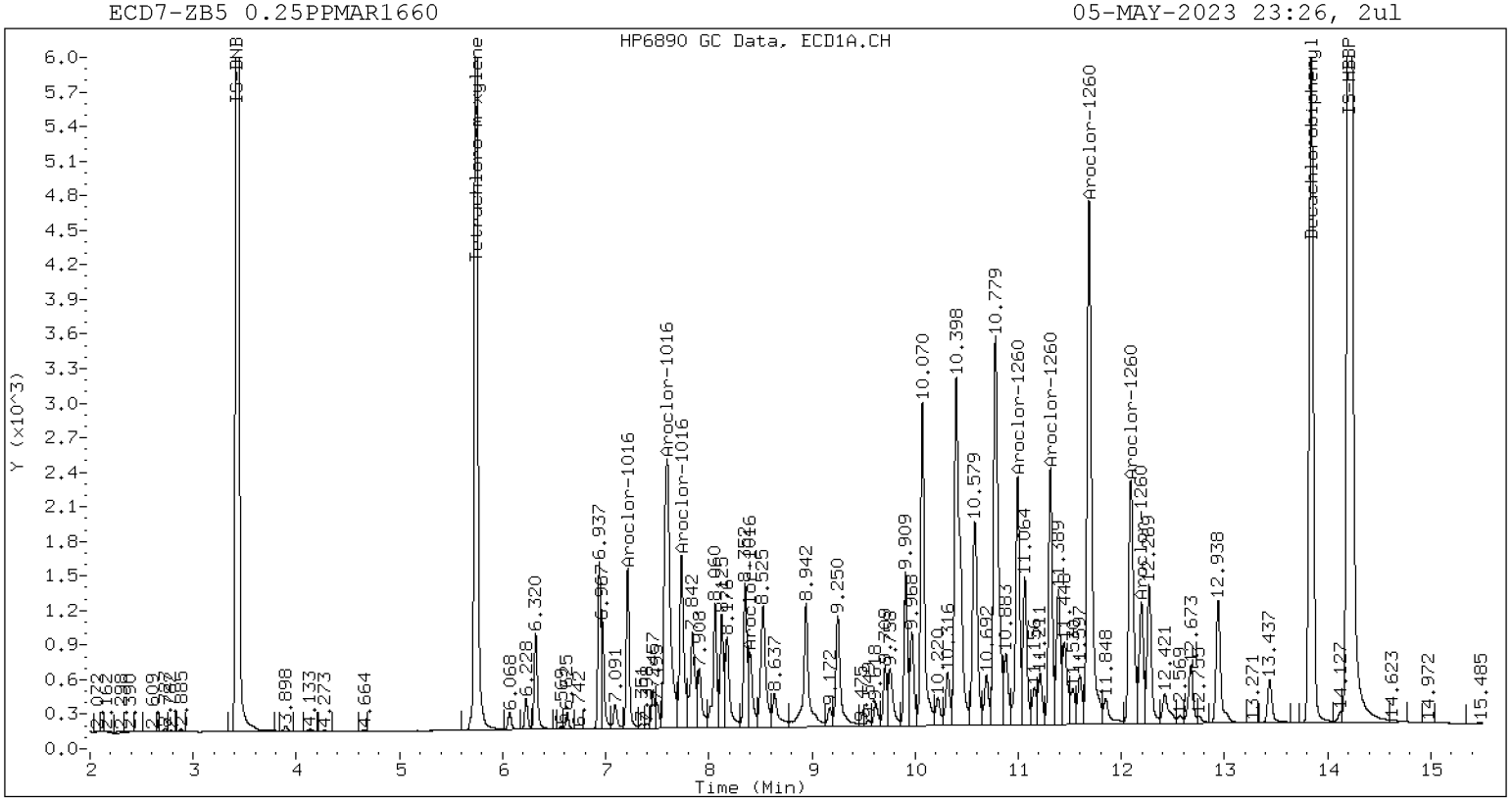
Total PCB Area Col2 (5.728 - 13.968) = 2087295 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

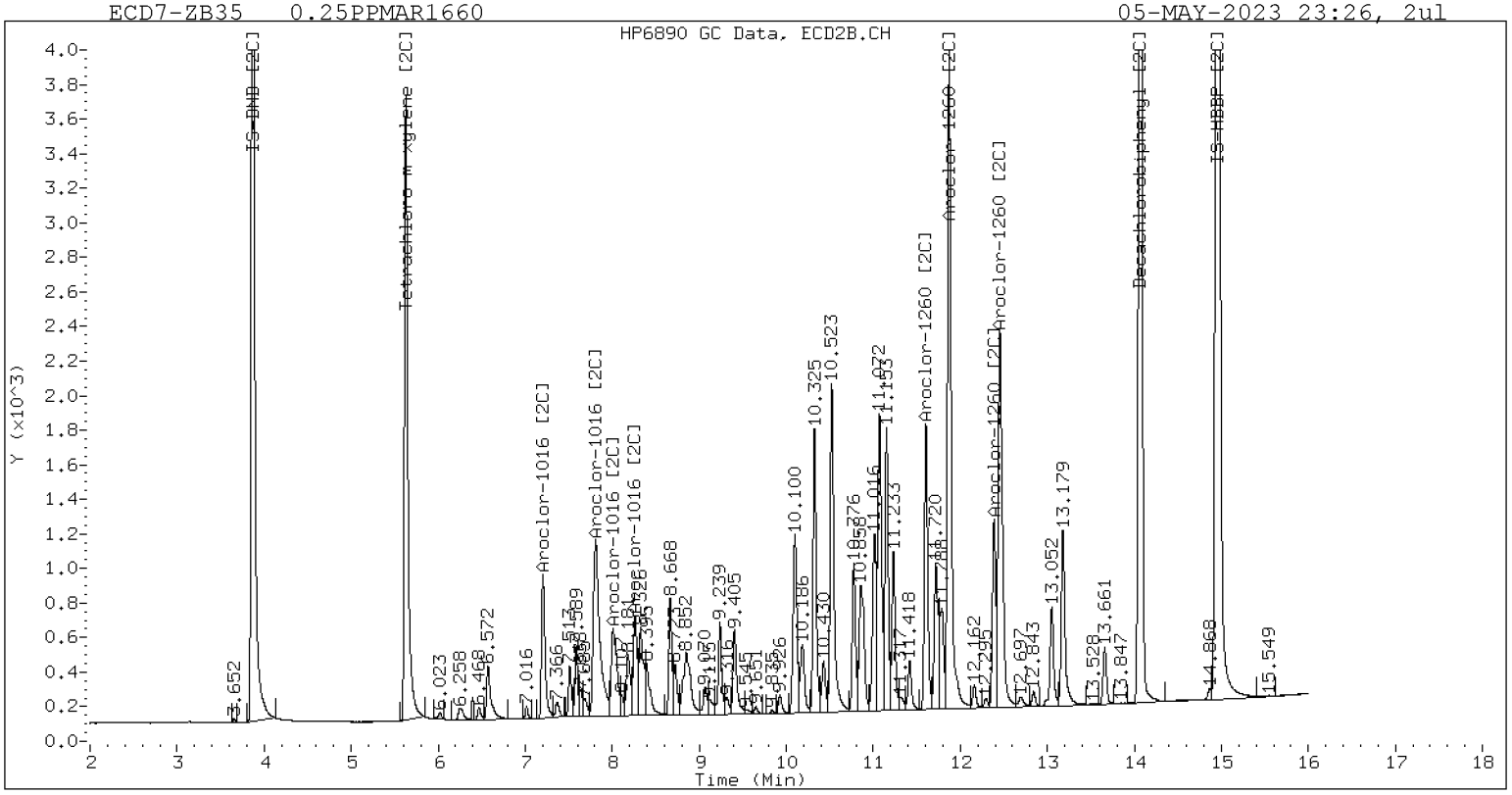
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1660 05-MAY-2023 23:26, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1660 05-MAY-2023 23:26, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052322ECD7.D
Data file 2: /230505.b/230505.b/05052322ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.02PPMAR1660
Client ID:
Injection Date: 05-MAY-2023 23:47
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	-0.000	28836	5.630	0.002	14779	3.2	3.2	1.4	Tetrachloro-m-xylene
13.843	0.002	31610	14.071	0.002	27131	3.6	2.9	20.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	595544	-1.0
Hexabromobiphenyl	876625	880480	0.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	338730	-3.0
Hexabromobiphenyl	652984	649475	-0.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.213	0.001	4852	21.0	1	7.206	0.002	4368	22.8
Aroclor-1016	2	7.595	0.001	13075	18.1	2	7.819	0.012	8341	20.4
Aroclor-1016	3	7.737	0.004	6514	19.5	3	8.043	0.038	3708	20.6
Aroclor-1016	4	8.400	0.002	2555	18.6	4	8.261	0.002	3078	21.5
Total Col1Ave (4 peaks):					19.3	Total Col2Ave (4 peaks):				21.3 RPD = 10
Corrected Ave (3 peaks):					18.8	Corrected Ave (3 peaks):				20.8 RPD = 10
CalAmt %D:					-3.4	CalAmt %D:				6.6
Aroclor-1260	1	10.998	0.005	10082	21.7	1	11.610	0.004	7378	21.4
Aroclor-1260	2	11.316	0.006	9760	21.2	2	11.878	0.006	18318	20.3
Aroclor-1260	3	11.694	0.008	24587	21.4	3	12.392	0.004	4519	20.2
Aroclor-1260	4	12.098	0.008	12018	21.3	4	12.461	0.006	12454	20.7
Aroclor-1260	5	12.198	0.005	5499	22.4	NS	---			----
Total Col1Ave (5 peaks):					21.6	Total Col2Ave (4 peaks):				20.6 RPD = 4
Corrected Ave (4 peaks):					21.4	Corrected Ave (3 peaks):				20.4 RPD = 5
CalAmt %D:					8.0	CalAmt %D:				3.2

Total PCB Area Col1 (5.842 - 13.740) = 294199 Col1 Total PCB = 0.0 ppm*

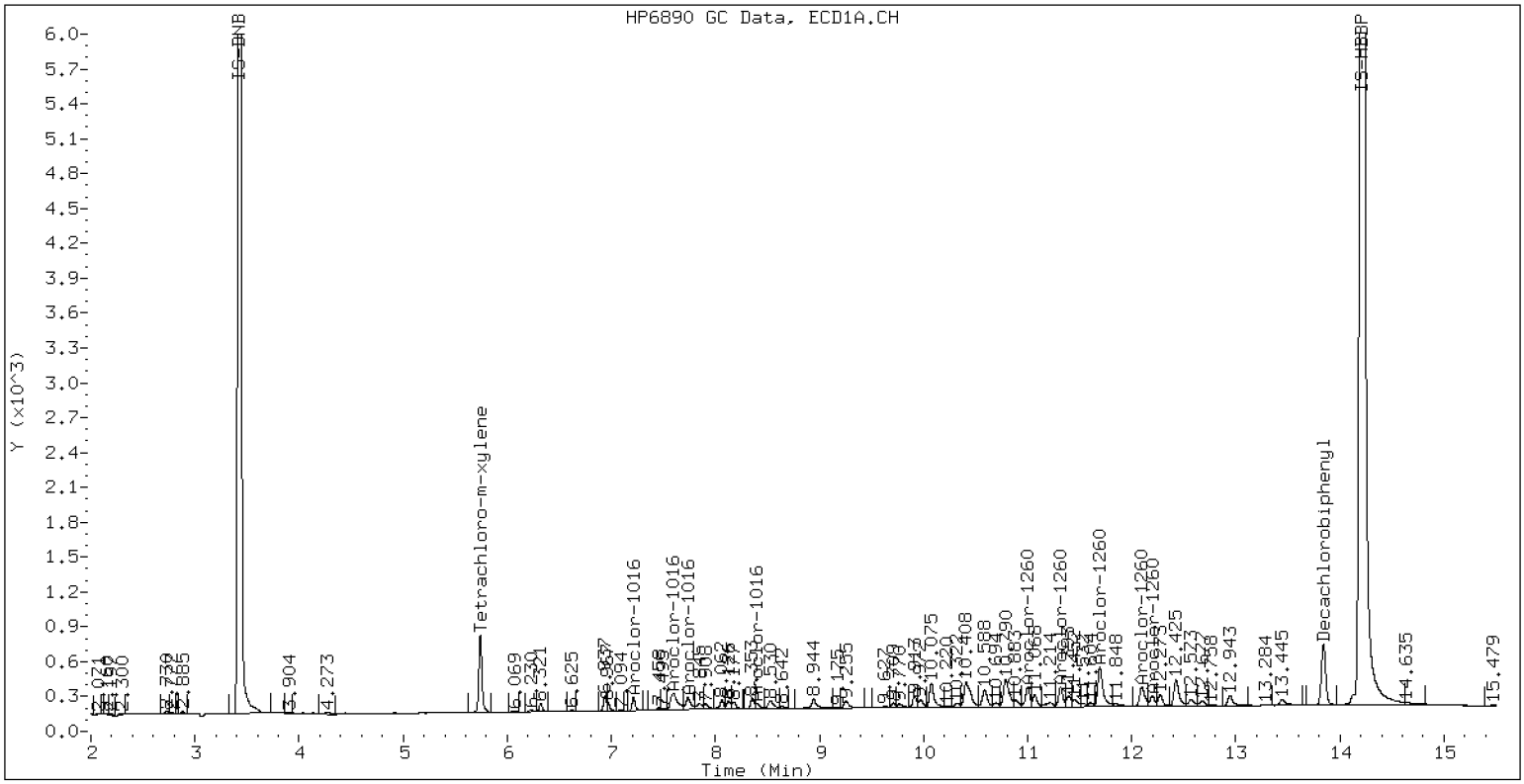
Total PCB Area Col2 (5.728 - 13.968) = 173796 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

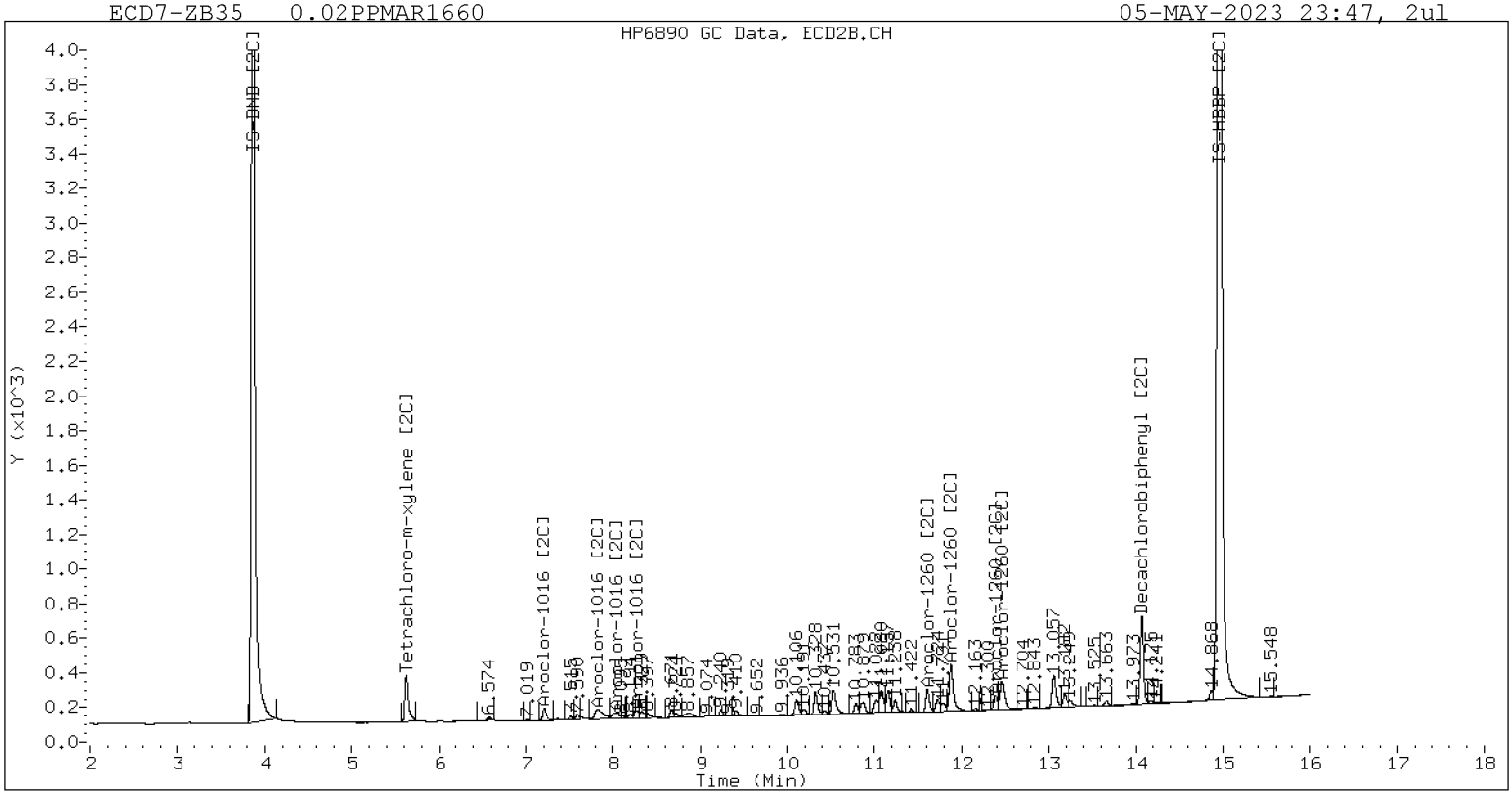
PCB Dual Column Chromatograms

ECD7-ZB5 0.02PPMAR1660 05-MAY-2023 23:47, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.02PPMAR1660 05-MAY-2023 23:47, 2ul

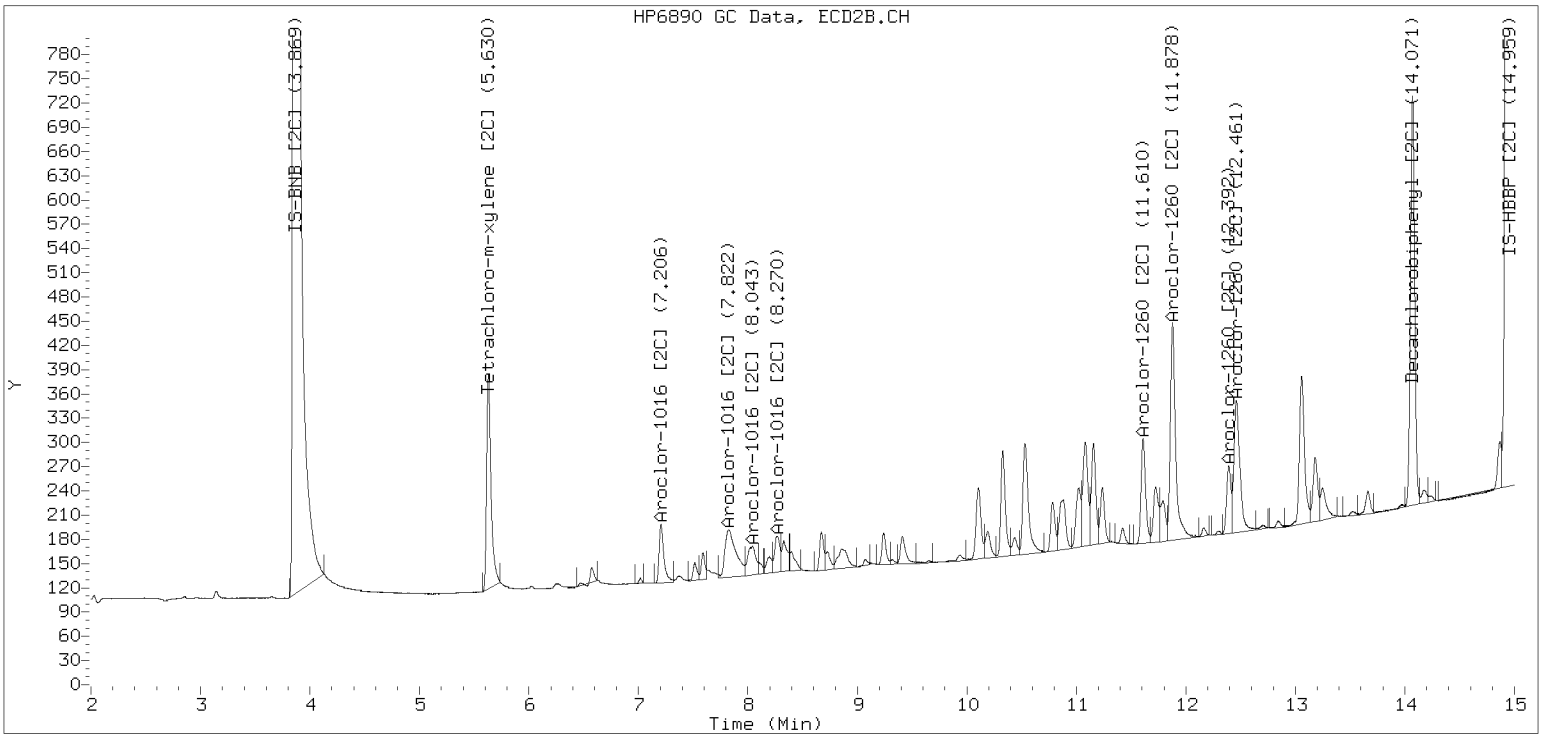


ZB-35 Manual Integration: YES

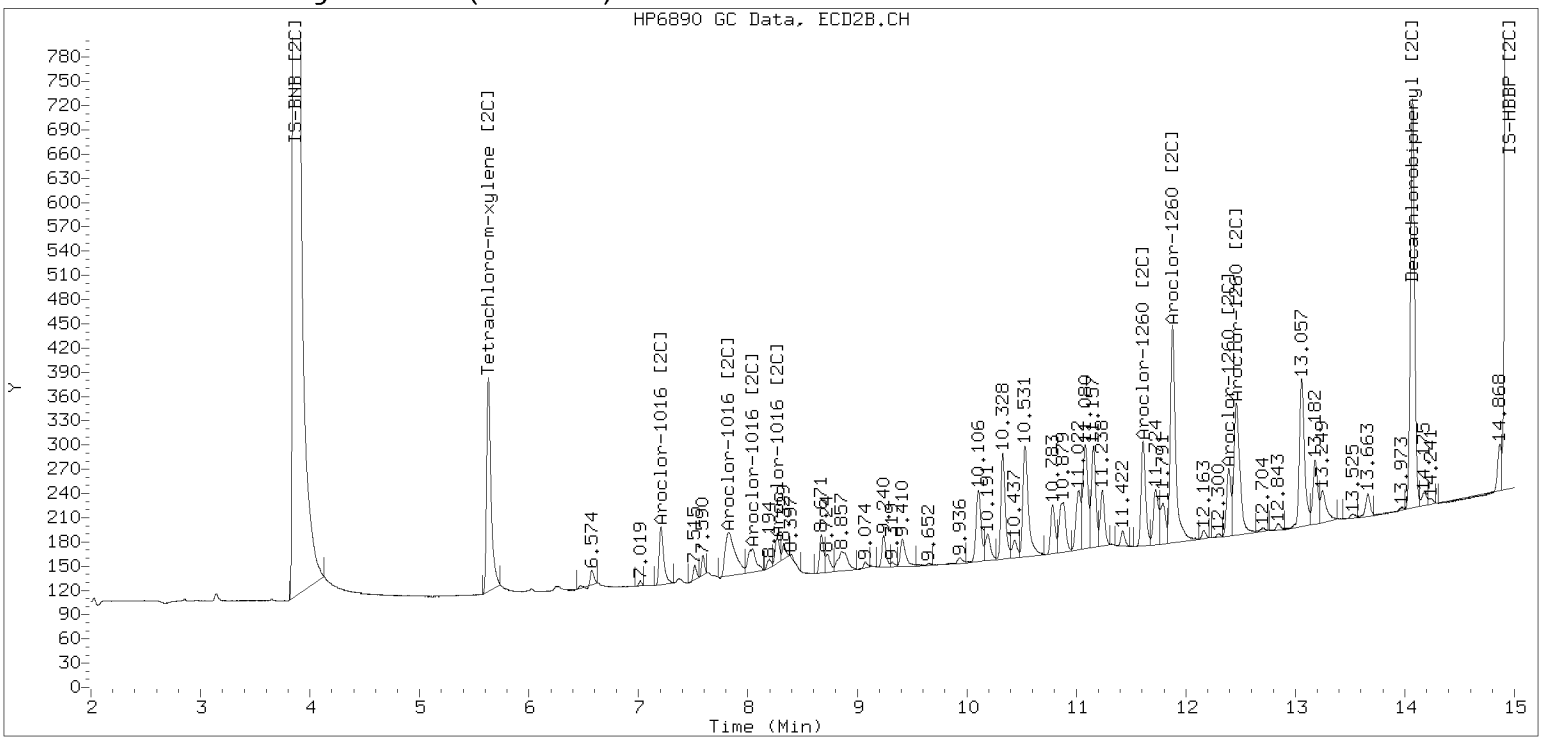
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230505.b/230505.b/05052322ECD7.D Injection Date: 05-MAY-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052323ECD7.D
Data file 2: /230505.b/230505.b/05052323ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.05PPMAR1660
Client ID:
Injection Date: 06-MAY-2023 00:08
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.741	-0.001	72149	5.630	0.001	37778	7.9	7.8	0.3	Tetrachloro-m-xylene
13.843	0.002	75564	14.070	0.002	71601	8.4	7.6	10.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	610127	1.4
Hexabromobiphenyl	876625	902634	3.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	350964	0.5
Hexabromobiphenyl	652984	666660	2.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.214	0.001	12303	52.1	1	7.205	0.001	10404	52.4
Aroclor-1016	2	7.595	0.000	35912	48.6	2	7.821	0.013	20971	49.5
Aroclor-1016	3	7.736	0.003	18491	54.1	3	8.016	0.010	9788	52.4
Aroclor-1016	4	8.400	0.002	7326	52.0	4	8.264	0.005	8176	55.1
Total Col1Ave (4 peaks):					51.7	Total Col2Ave (4 peaks):				52.4 RPD = 1
Corrected Ave (3 peaks):					50.9	Corrected Ave (3 peaks):				51.4 RPD = 1
CalAmt %D:					3.4	CalAmt %D:				4.7
Aroclor-1260	1	10.998	0.005	23619	49.5	1	11.609	0.003	17805	50.3
Aroclor-1260	2	11.316	0.006	23213	49.3	2	11.876	0.004	46188	49.9
Aroclor-1260	3	11.693	0.007	58862	49.9	3	12.391	0.003	11048	48.1
Aroclor-1260	4	12.096	0.006	28206	48.8	4	12.460	0.004	30586	49.4
Aroclor-1260	5	12.197	0.004	12672	50.3	NS	---			----
Total Col1Ave (5 peaks):					49.6	Total Col2Ave (4 peaks):				49.4 RPD = 0
Corrected Ave (4 peaks):					49.4	Corrected Ave (3 peaks):				49.2 RPD = 0
CalAmt %D:					-0.9	CalAmt %D:				-1.1

Total PCB Area Col1 (5.842 - 13.740) = 697433 Col1 Total PCB = 0.1 ppm*

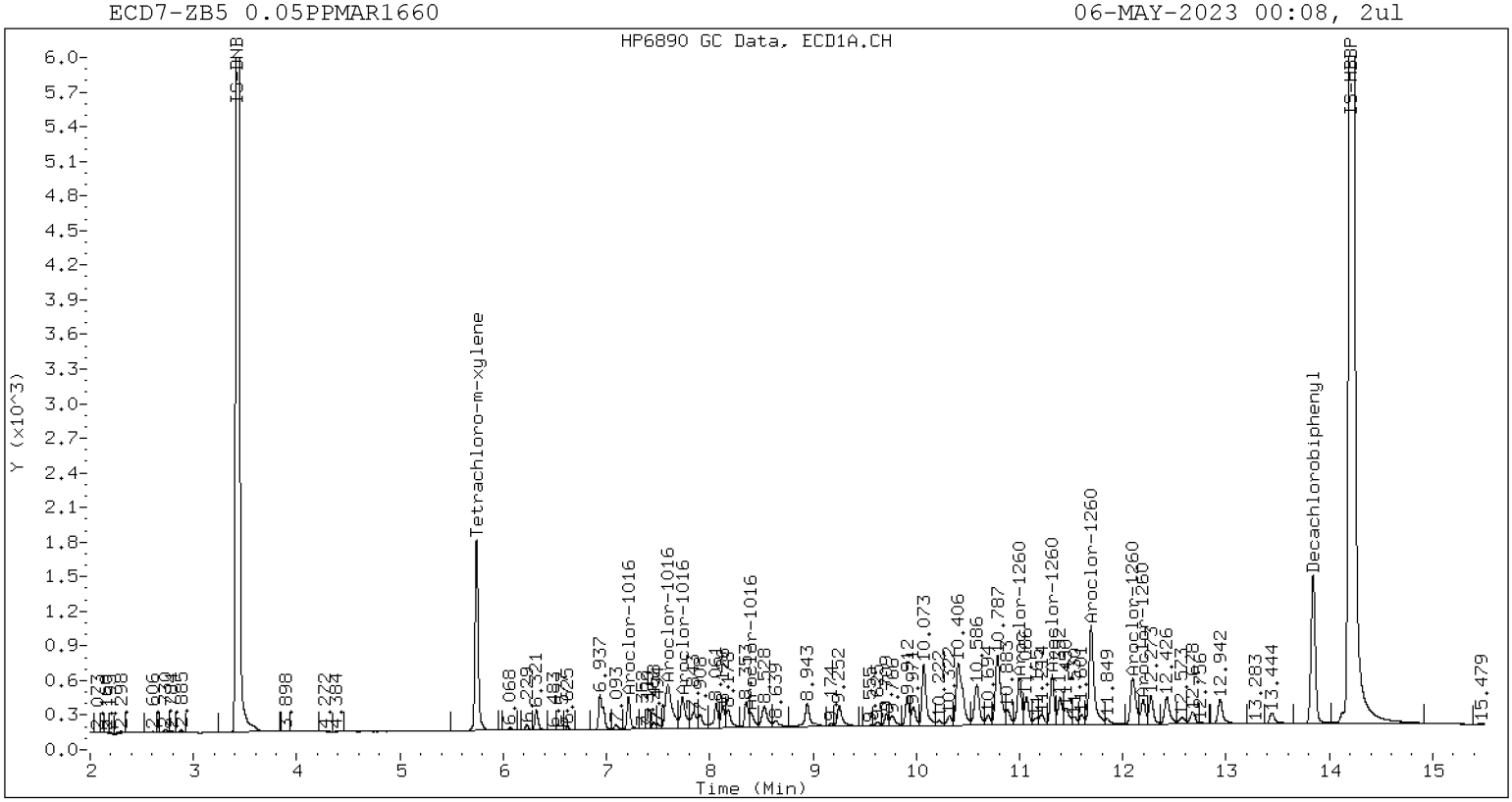
Total PCB Area Col2 (5.728 - 13.968) = 429325 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

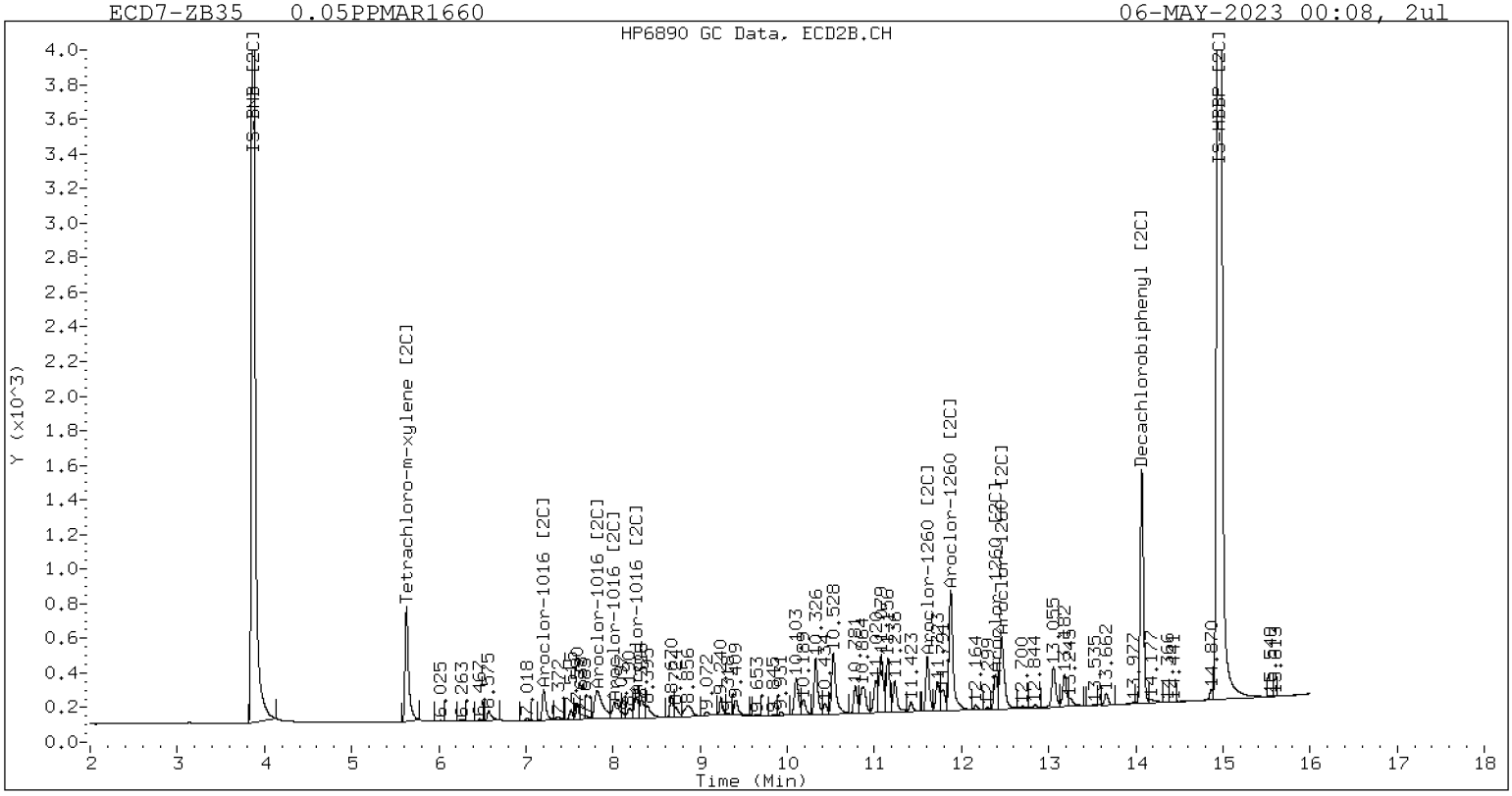
PCB Dual Column Chromatograms

ECD7-ZB5 0.05PPMAR1660 06-MAY-2023 00:08, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.05PPMAR1660 06-MAY-2023 00:08, 2ul

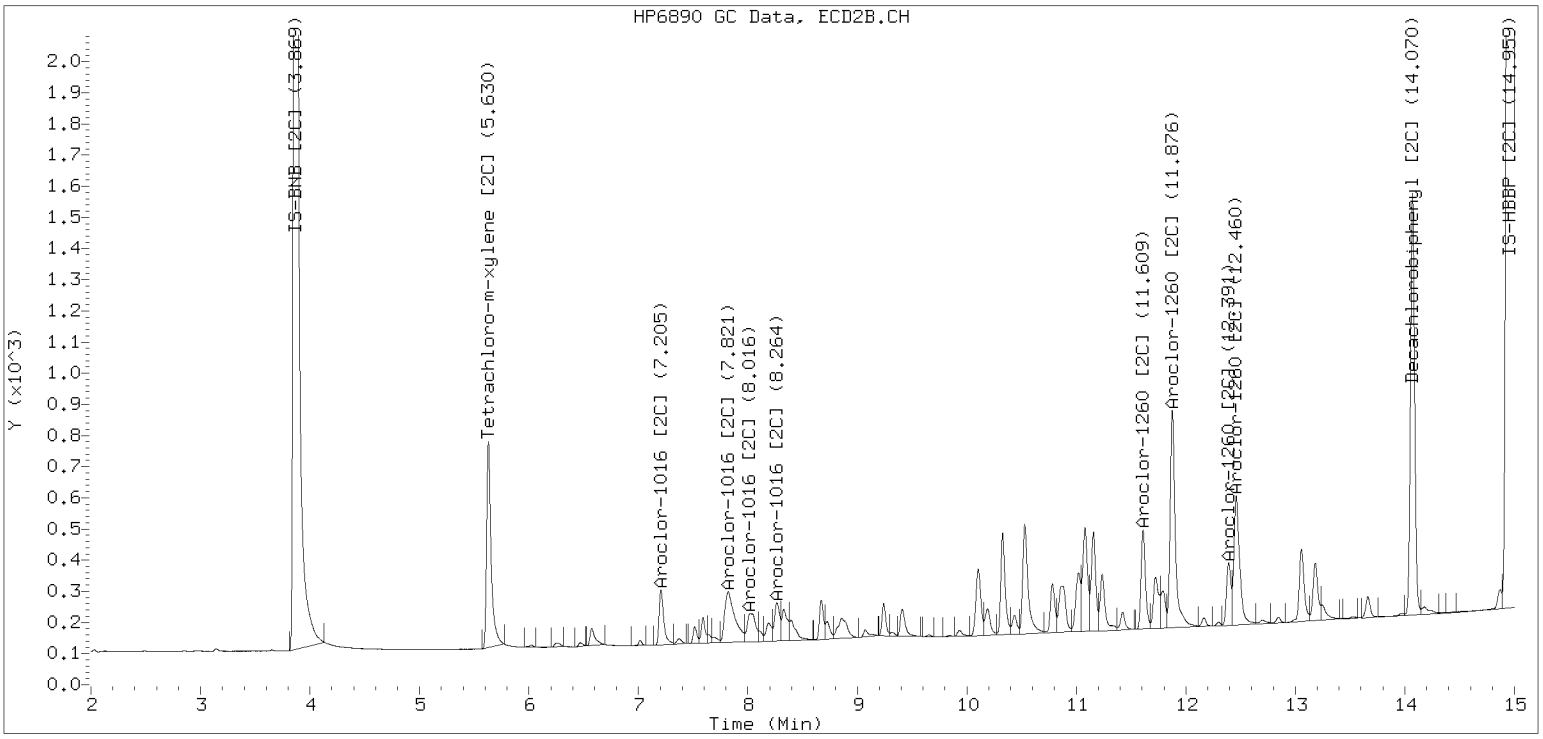


ZB-35 Manual Integration: YES

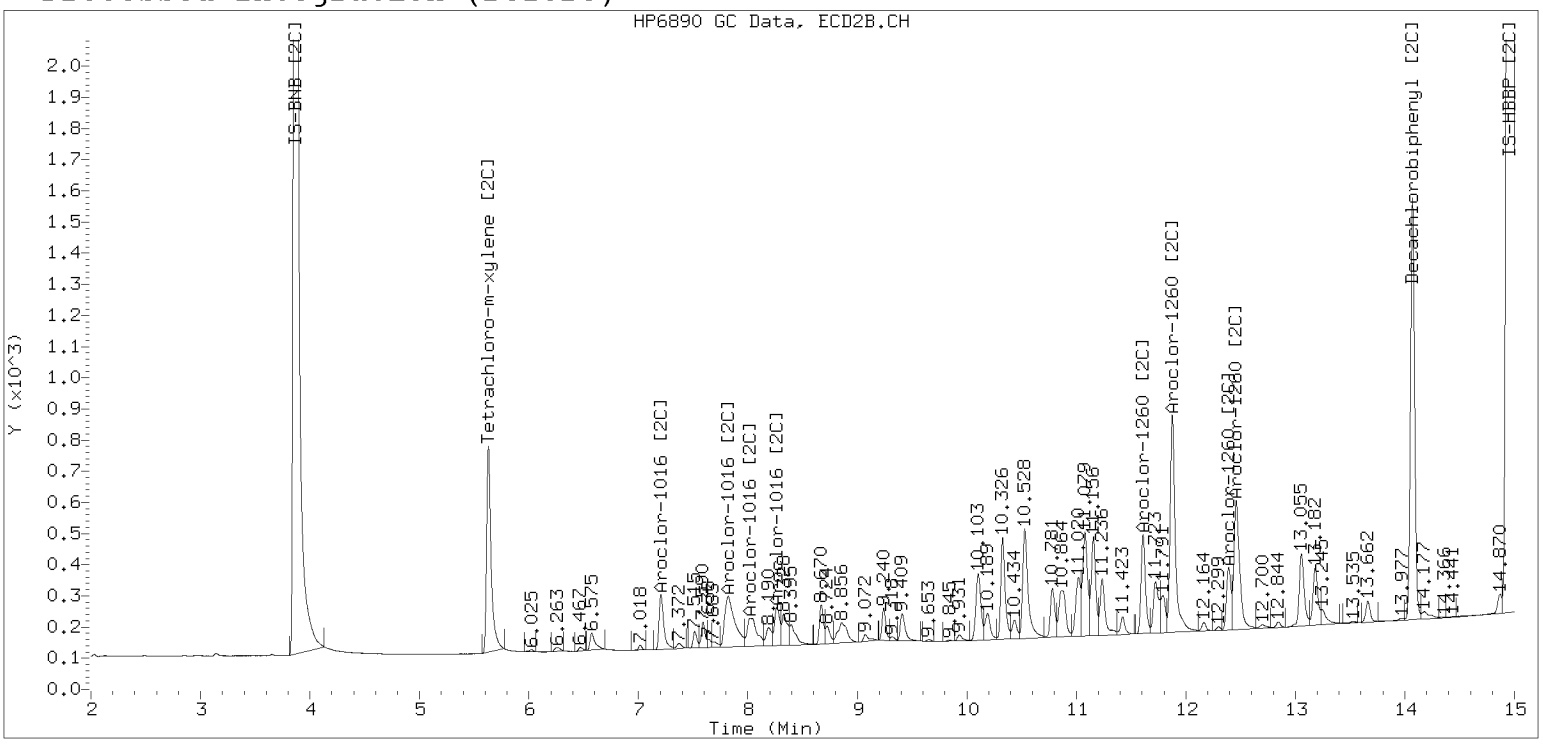
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230505.b/230505.b/05052323ECD7.D Injection Date: 06-MAY-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052324ECD7.D
Data file 2: /230505.b/230505.b/05052324ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 1.0PPMAR1660
Client ID:
Injection Date: 06-MAY-2023 00:29
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.746	0.004	1354956	5.627	-0.001	709704	151.5	152.0	0.4	Tetrachloro-m-xylene
13.842	0.002	1208957	14.071	0.002	1442827	141.2	159.2	12.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	594005	-1.2
Hexabromobiphenyl	876625	857318	-2.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	339380	-2.8
Hexabromobiphenyl	652984	638394	-2.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.213	0.000	192466	836.8	1	7.203	-0.001	161296	839.6
Aroclor-1016	2	7.595	0.000	687116	955.4	2	7.804	-0.003	383432	936.5
Aroclor-1016	3	7.732	-0.000	284089	854.4	3	8.002	-0.003	161269	893.1
Aroclor-1016	4	8.397	-0.001	121539	886.0	4	8.257	-0.002	118708	827.5
Total Col1Ave (4 peaks):					883.2	Total Col2Ave (4 peaks):				874.2 RPD = 1
Corrected Ave (3 peaks):					859.1	Corrected Ave (3 peaks):				853.4 RPD = 1
CalAmt %D:					-11.7	CalAmt %D:				-12.6
Aroclor-1260	1	10.992	-0.001	410905	906.4	1	11.604	-0.002	304531	898.2
Aroclor-1260	2	11.309	-0.001	410553	917.6	2	11.869	-0.003	813835	917.7
Aroclor-1260	3	11.683	-0.003	1014157	905.1	3	12.387	-0.001	218887	996.0
Aroclor-1260	4	12.087	-0.003	505824	921.7	4	12.453	-0.003	543988	918.3
Aroclor-1260	5	12.193	-0.001	212396	887.6	NS	---			----
Total Col1Ave (5 peaks):					907.7	Total Col2Ave (4 peaks):				932.6 RPD = 3
Corrected Ave (4 peaks):					904.2	Corrected Ave (3 peaks):				911.4 RPD = 1
CalAmt %D:					-9.2	CalAmt %D:				-6.7

Total PCB Area Col1 (5.842 - 13.740) = 11665793 Col1 Total PCB = 1.8 ppm*

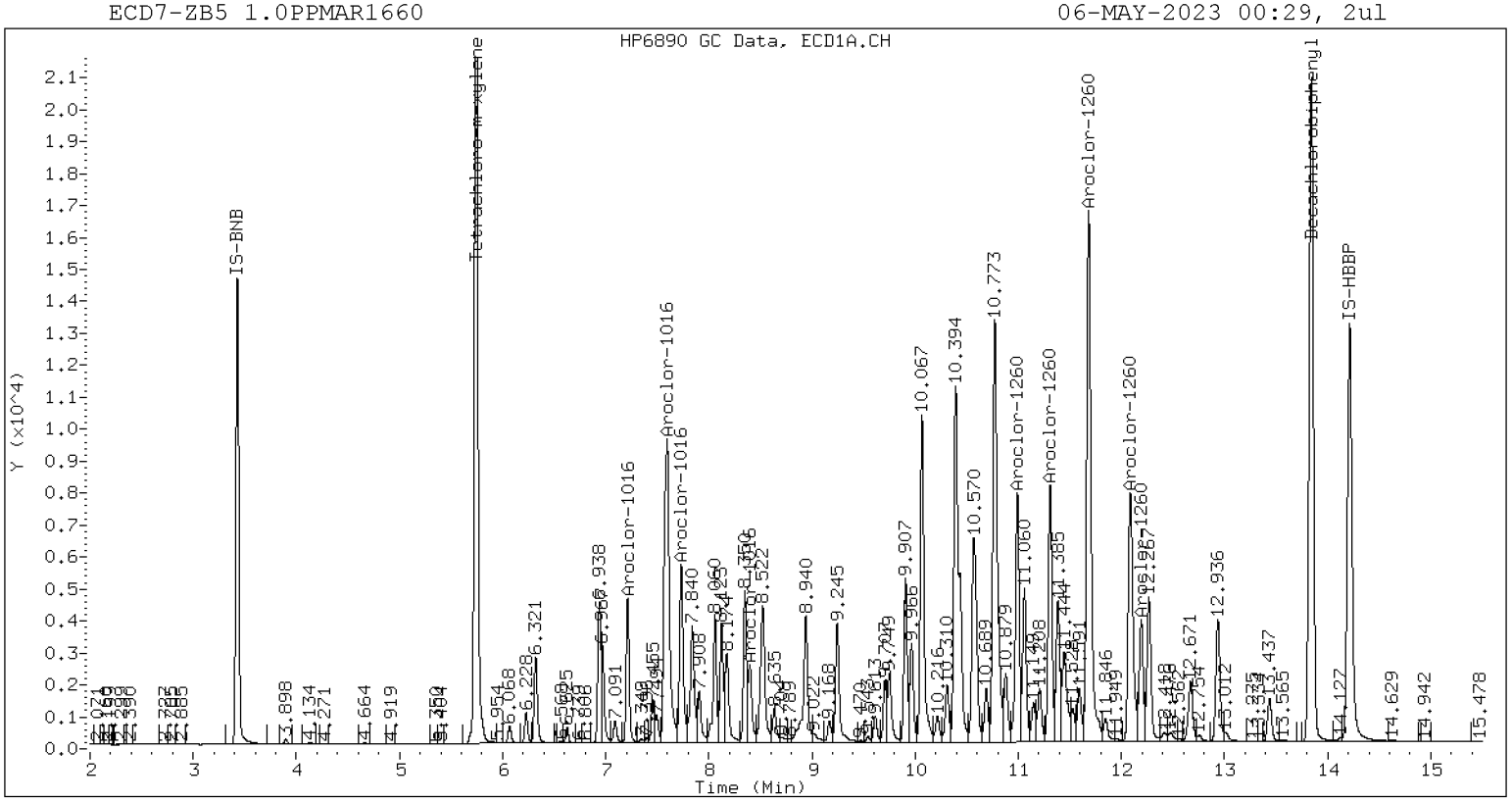
Total PCB Area Col2 (5.728 - 13.968) = 7382788 Col2 Total PCB = 1.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

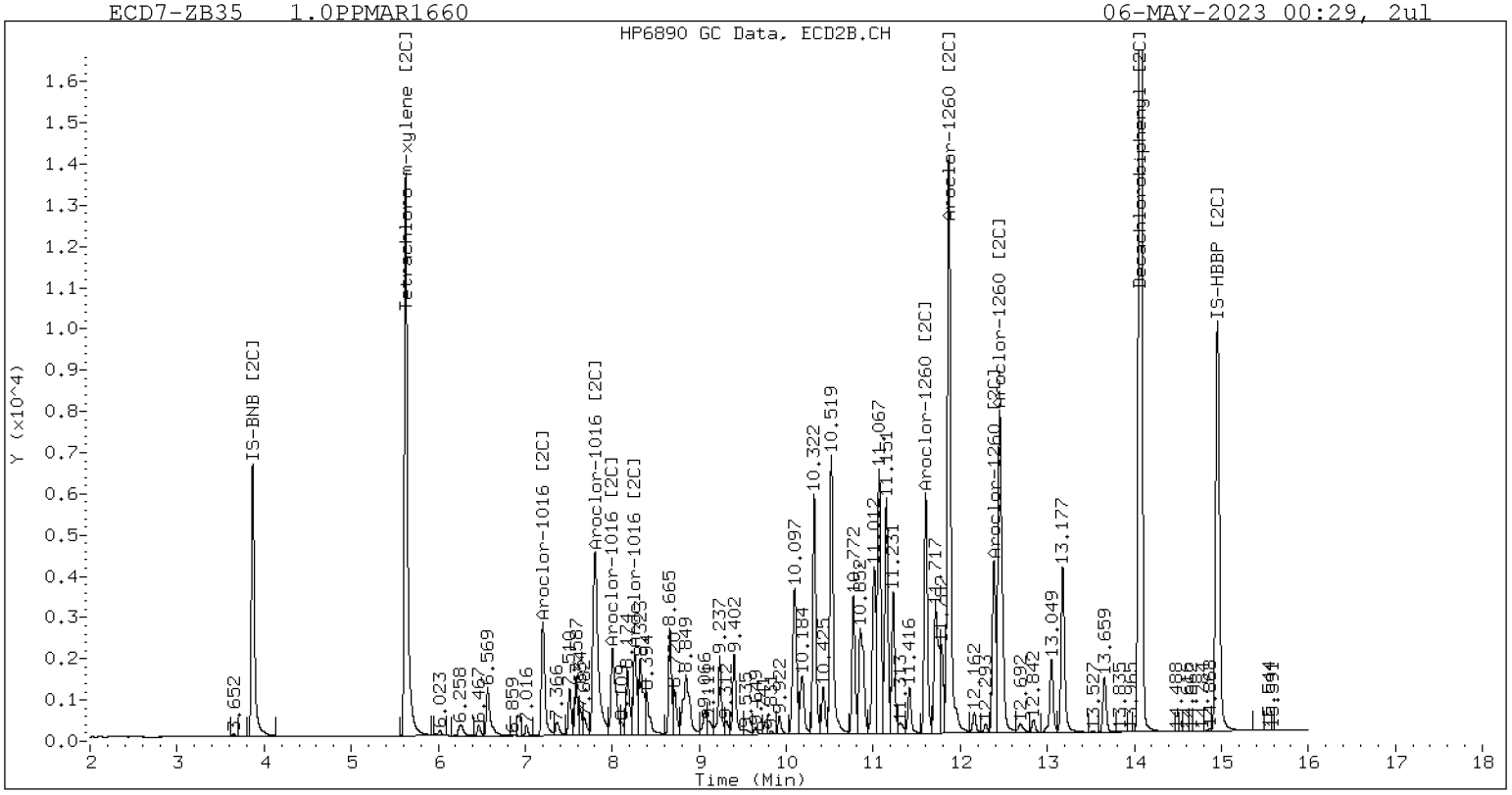
PCB Dual Column Chromatograms

ECD7-ZB5 1.0PPMAR1660 06-MAY-2023 00:29, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 1.0PPMAR1660 06-MAY-2023 00:29, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052325ECD7.D
Data file 2: /230505.b/230505.b/05052325ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.1PPMAR1660
Client ID:
Injection Date: 06-MAY-2023 00:50
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.741	-0.001	166260	5.629	0.000	87721	17.3	17.2	0.5	Tetrachloro-m-xylene
13.841	0.000	162151	14.069	0.001	170994	17.0	17.2	1.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	639496	6.3
Hexabromobiphenyl	876625	955499	9.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	371294	6.3
Hexabromobiphenyl	652984	700767	7.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.212	-0.000	27672	111.8	1	7.204	0.000	22585	107.5
Aroclor-1016	2	7.595	0.000	84096	108.6	2	7.815	0.008	47261	105.5
Aroclor-1016	3	7.735	0.002	40718	113.8	3	8.012	0.007	21450	108.6
Aroclor-1016	4	8.399	0.001	17000	115.1	4	8.262	0.003	17337	110.5
Total Col1Ave (4 peaks):					112.3	Total Col2Ave (4 peaks):				108.0 RPD = 4
Corrected Ave (3 peaks):					111.4	Corrected Ave (3 peaks):				107.2 RPD = 4
CalAmt %D:					12.3	CalAmt %D:				8.0
Aroclor-1260	1	10.995	0.002	53621	106.1	1	11.608	0.002	39451	106.0
Aroclor-1260	2	11.313	0.003	53001	106.3	2	11.874	0.002	104406	107.3
Aroclor-1260	3	11.690	0.004	132765	106.3	3	12.391	0.003	24449	101.4
Aroclor-1260	4	12.093	0.003	64276	105.1	4	12.457	0.002	68859	105.9
Aroclor-1260	5	12.196	0.003	28307	106.1	NS	---			----
Total Col1Ave (5 peaks):					106.0	Total Col2Ave (4 peaks):				105.1 RPD = 1
Corrected Ave (4 peaks):					105.9	Corrected Ave (3 peaks):				104.4 RPD = 1
CalAmt %D:					6.0	CalAmt %D:				5.1

Total PCB Area Col1 (5.842 - 13.740) = 1580756 Col1 Total PCB = 0.2 ppm*

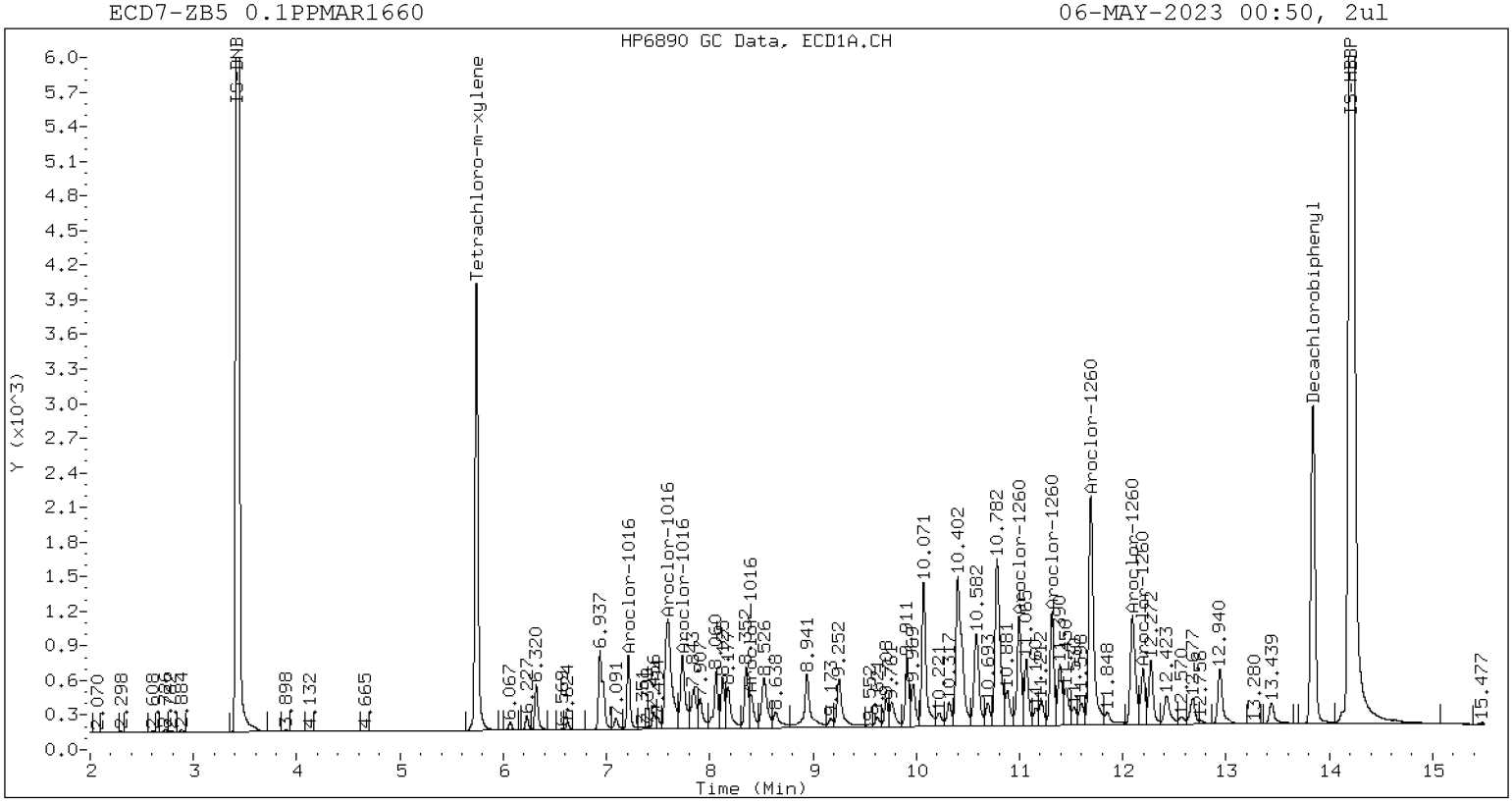
Total PCB Area Col2 (5.728 - 13.968) = 950746 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

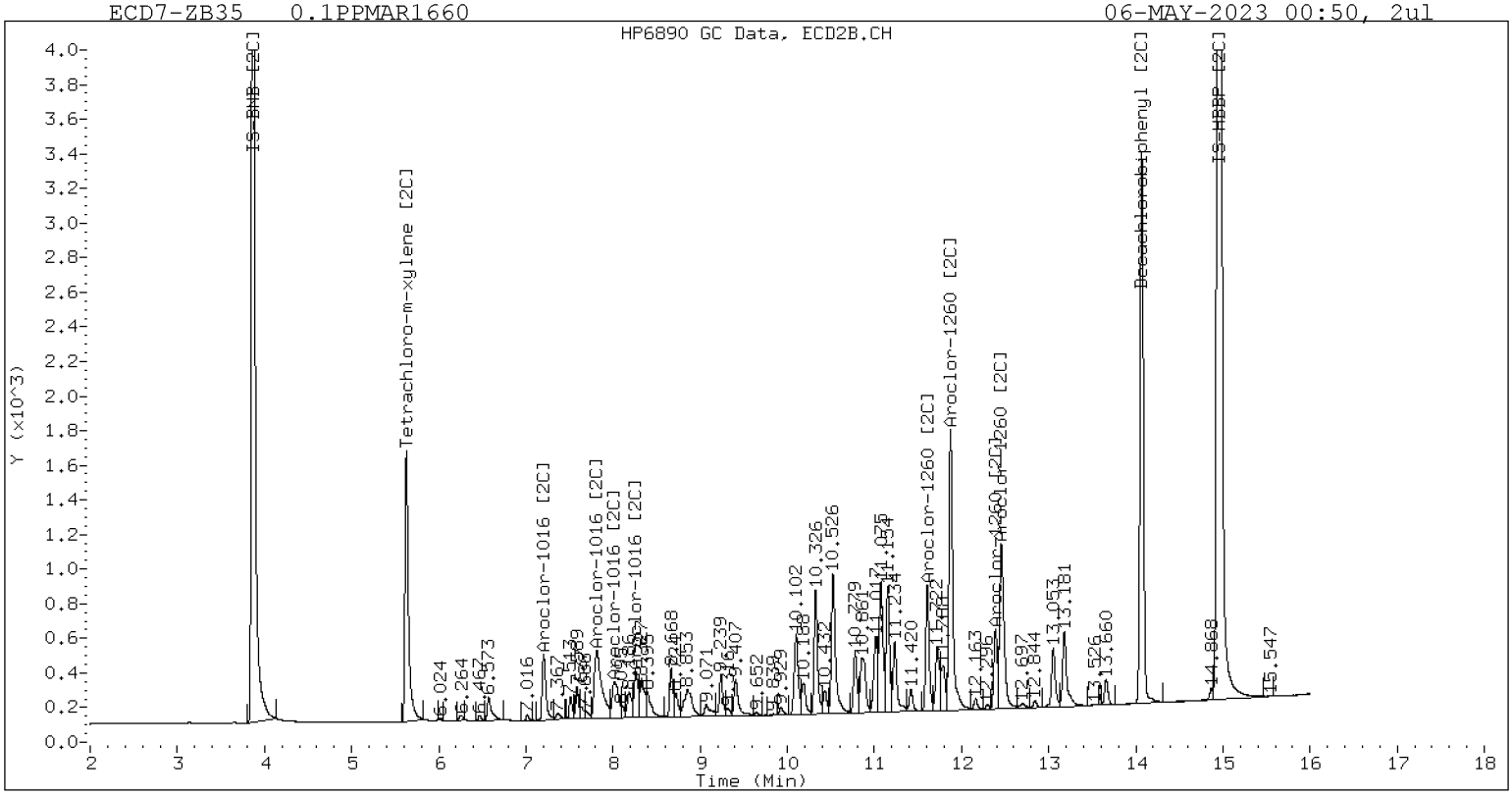
PCB Dual Column Chromatograms

ECD7-ZB5 0.1PPMAR1660 06-MAY-2023 00:50, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.1PPMAR1660 06-MAY-2023 00:50, 2ul

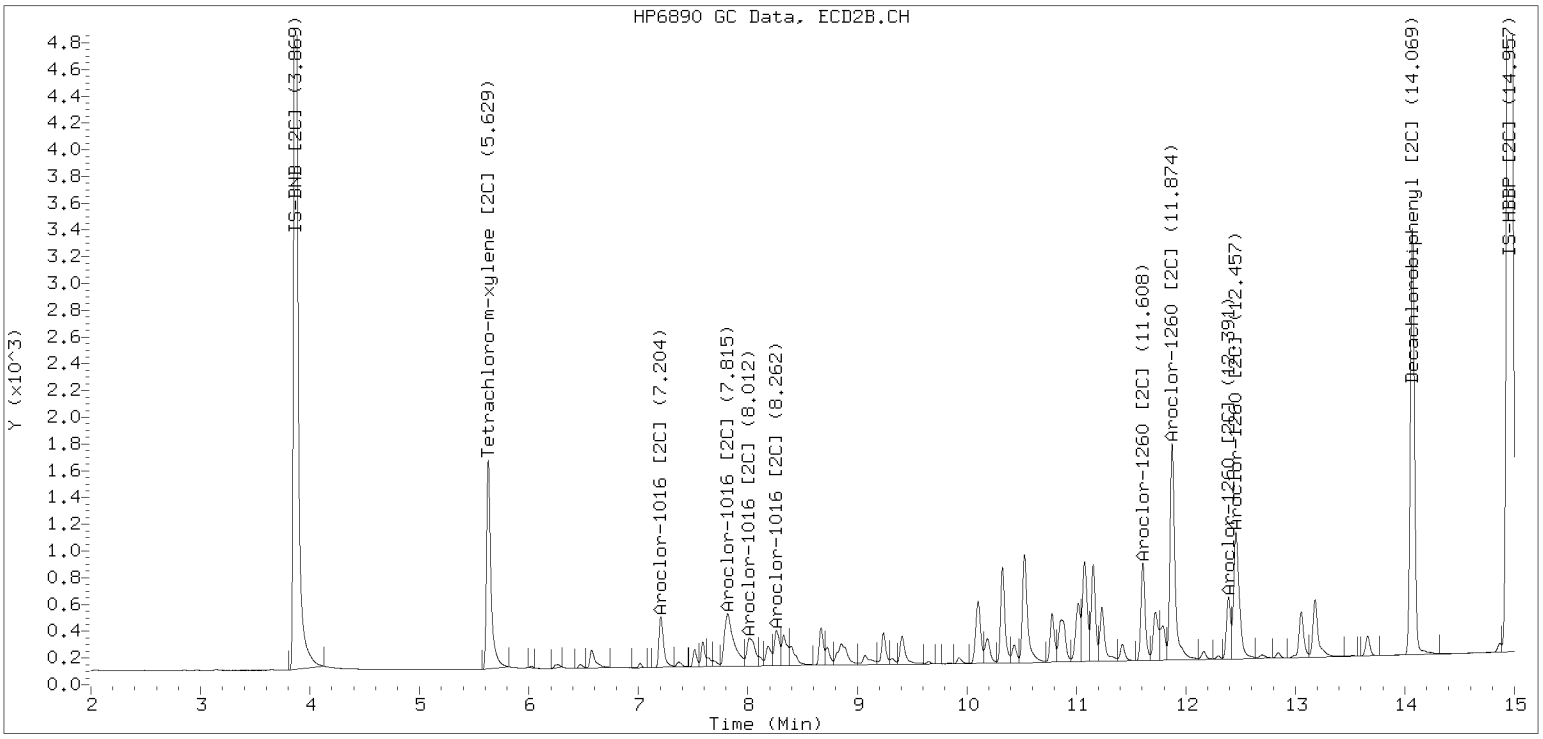


ZB-35 Manual Integration: YES

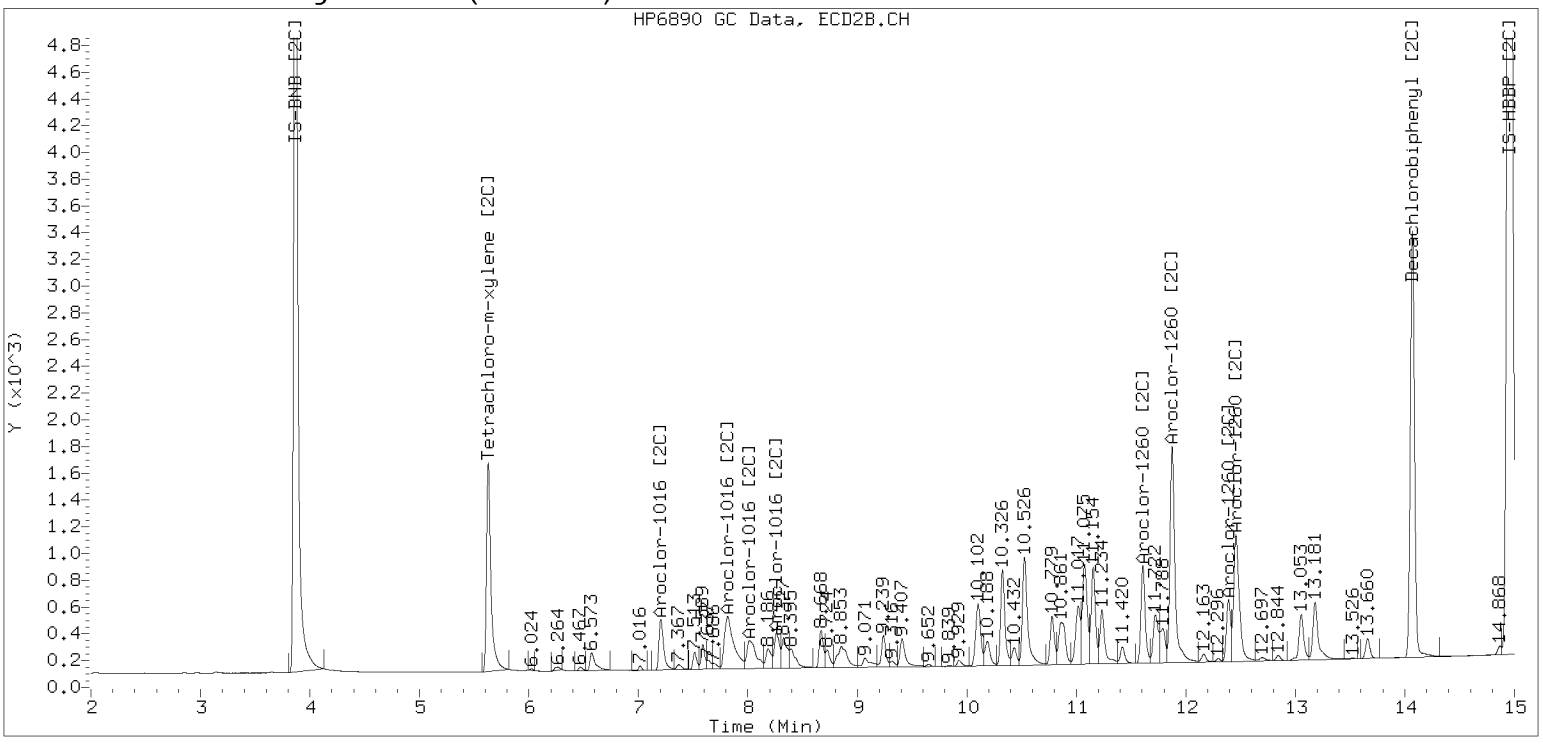
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230505.b/230505.b/05052325ECD7.D Injection Date: 06-MAY-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052326ECD7.D
Data file 2: /230505.b/230505.b/05052326ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.5PPMAR1660
Client ID:
Injection Date: 06-MAY-2023 01:11
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.743	0.001	726106	5.629	0.000	386361	77.6	78.4	1.0	Tetrachloro-m-xylene
13.842	0.002	662159	14.070	0.002	782852	72.8	82.0	11.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	621250	3.3
Hexabromobiphenyl	876625	910647	3.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	358174	2.5
Hexabromobiphenyl	652984	672444	3.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.212	0.000	112948	469.5	1	7.204	0.000	93114	459.2
Aroclor-1016	2	7.594	0.000	385708	512.8	2	7.808	0.000	213293	493.6
Aroclor-1016	3	7.733	0.000	163263	469.5	3	8.006	0.000	90569	475.2
Aroclor-1016	4	8.398	0.000	69235	482.6	4	8.259	0.000	69045	456.1
Total Col1Ave (4 peaks):					483.6	Total Col2Ave (4 peaks):				471.0 RPD = 3
Corrected Ave (3 peaks):					473.9	Corrected Ave (3 peaks):				463.5 RPD = 2
CalAmt %D:					-3.3	CalAmt %D:				-5.8
Aroclor-1260	1	10.993	0.000	231157	480.0	1	11.606	0.000	171304	479.7
Aroclor-1260	2	11.310	0.000	230103	484.2	2	11.872	0.000	454515	486.6
Aroclor-1260	3	11.686	0.000	571583	480.2	3	12.388	0.000	116621	503.8
Aroclor-1260	4	12.090	0.000	284345	487.8	4	12.455	0.000	305334	489.3
Aroclor-1260	5	12.193	0.000	119534	470.3	NS	---			----
Total Col1Ave (5 peaks):					480.5	Total Col2Ave (4 peaks):				489.8 RPD = 2
Corrected Ave (4 peaks):					478.7	Corrected Ave (3 peaks):				485.2 RPD = 1
CalAmt %D:					-3.9	CalAmt %D:				-2.0

Total PCB Area Col1 (5.842 - 13.740) = 6615607 Col1 Total PCB = 1.0 ppm*

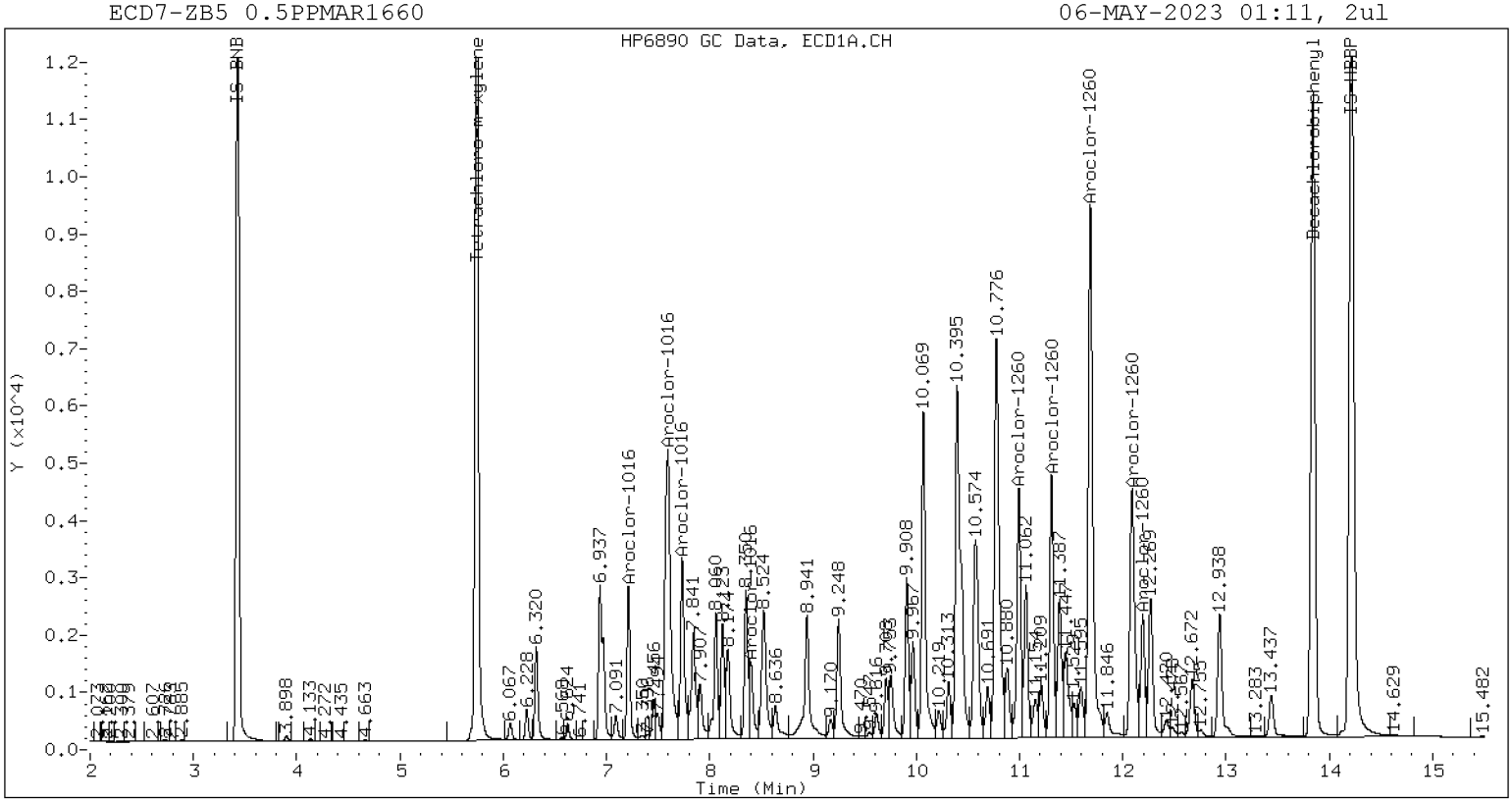
Total PCB Area Col2 (5.728 - 13.968) = 4121423 Col2 Total PCB = 1.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

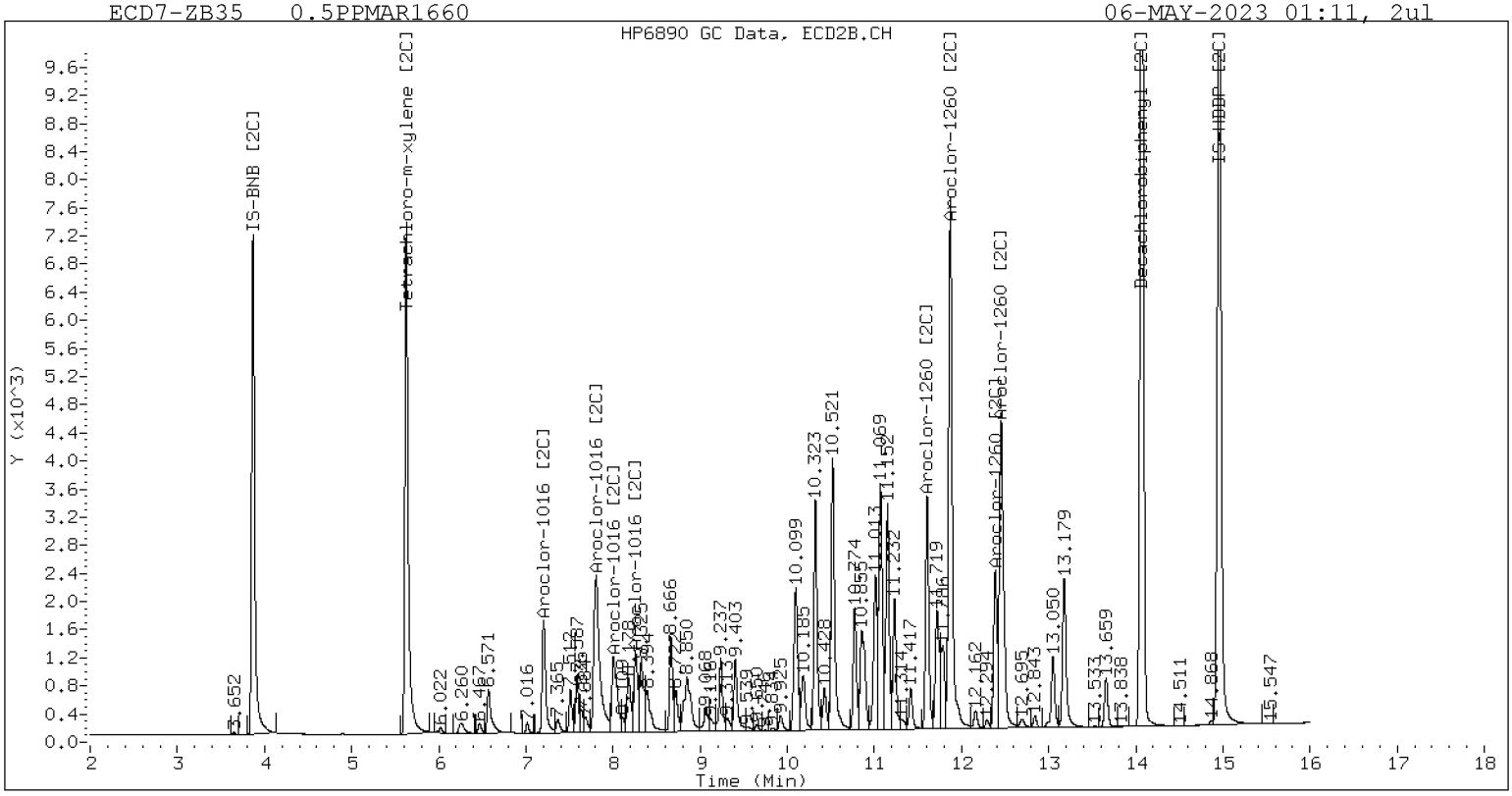
PCB Dual Column Chromatograms

ECD7-ZB5 0.5PPMAR1660 06-MAY-2023 01:11, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.5PPMAR1660 06-MAY-2023 01:11, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052327ECD7.D
Data file 2: /230505.b/230505.b/05052327ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1242
Client ID:
Injection Date: 06-MAY-2023 01:31
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	-0.000	447397	5.627	-0.001	235808	47.5	47.6	0.3	Tetrachloro-m-xylene
13.842	0.001	336070	14.068	0.000	375985	36.4	38.8	6.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	625349	4.0
Hexabromobiphenyl	876625	923197	5.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	359808	3.0
Hexabromobiphenyl	652984	683116	4.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1242	1	7.212	0.000	49262	250.0	1	7.203	0.000	40200	250.0
Aroclor-1242	2	7.595	0.000	156103	250.0	2	7.812	0.000	85524	250.0
Aroclor-1242	3	8.398	0.000	30193	250.0	3	9.123	0.000	27418	250.0
Aroclor-1242	4	8.525	0.000	69876	250.0	4	9.550	0.000	33043	250.0

Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0

Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

Total PCB Area Col1 (5.842 - 13.740) = 1203666 Col1 Total PCB = 0.2 ppm*

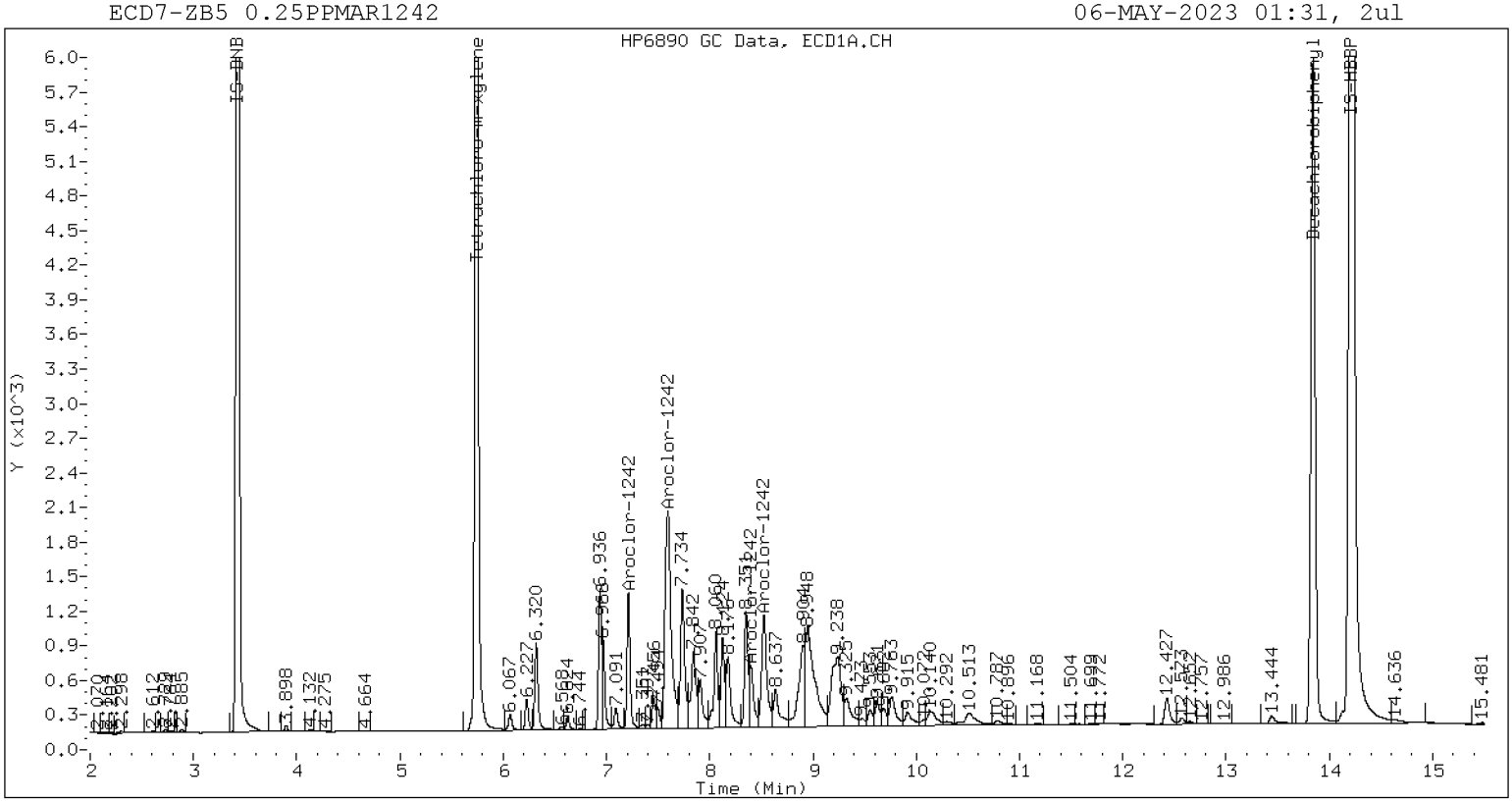
Total PCB Area Col2 (5.728 - 13.968) = 643088 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

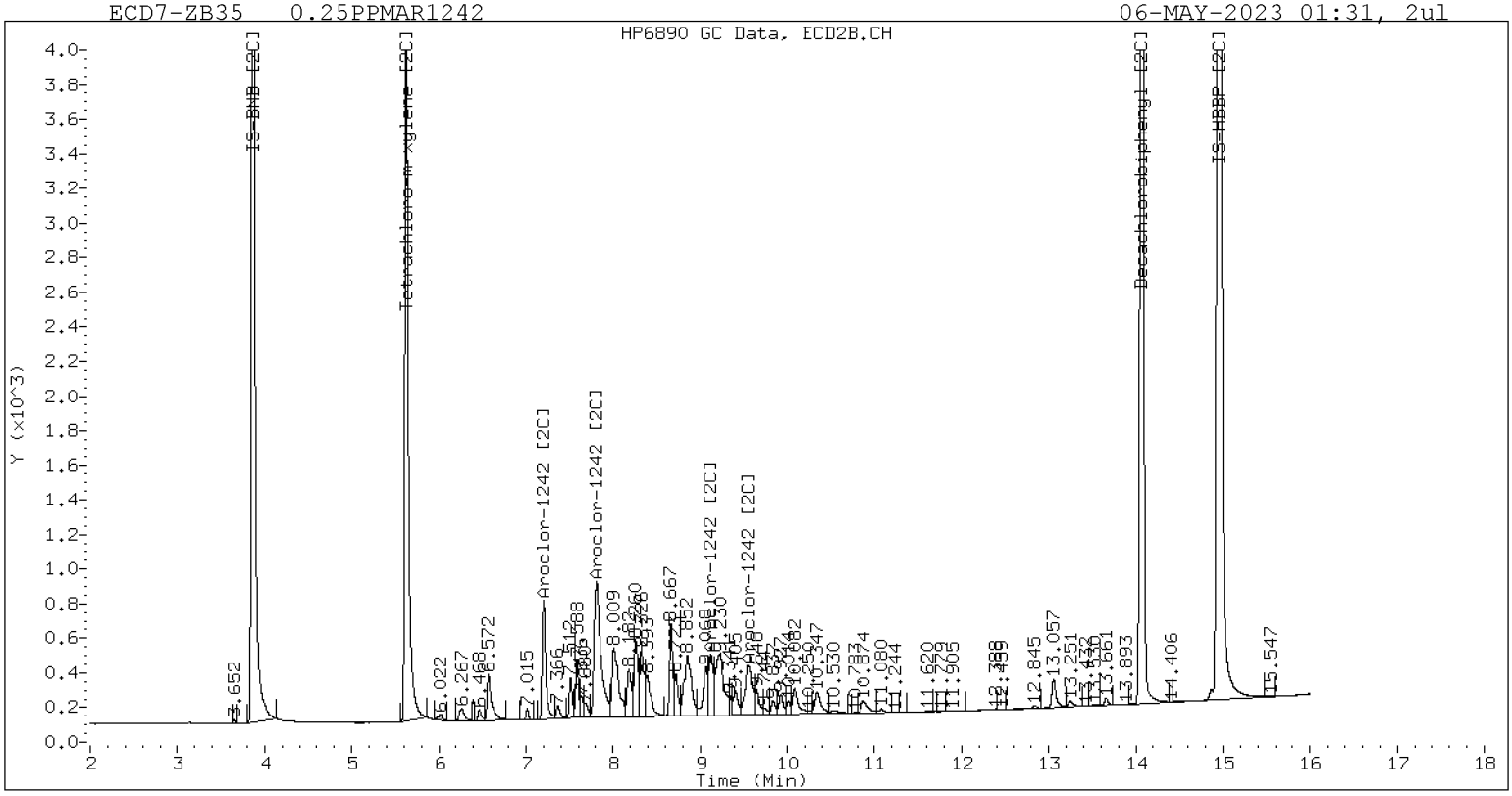
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1242 06-MAY-2023 01:31, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1242 06-MAY-2023 01:31, 2ul

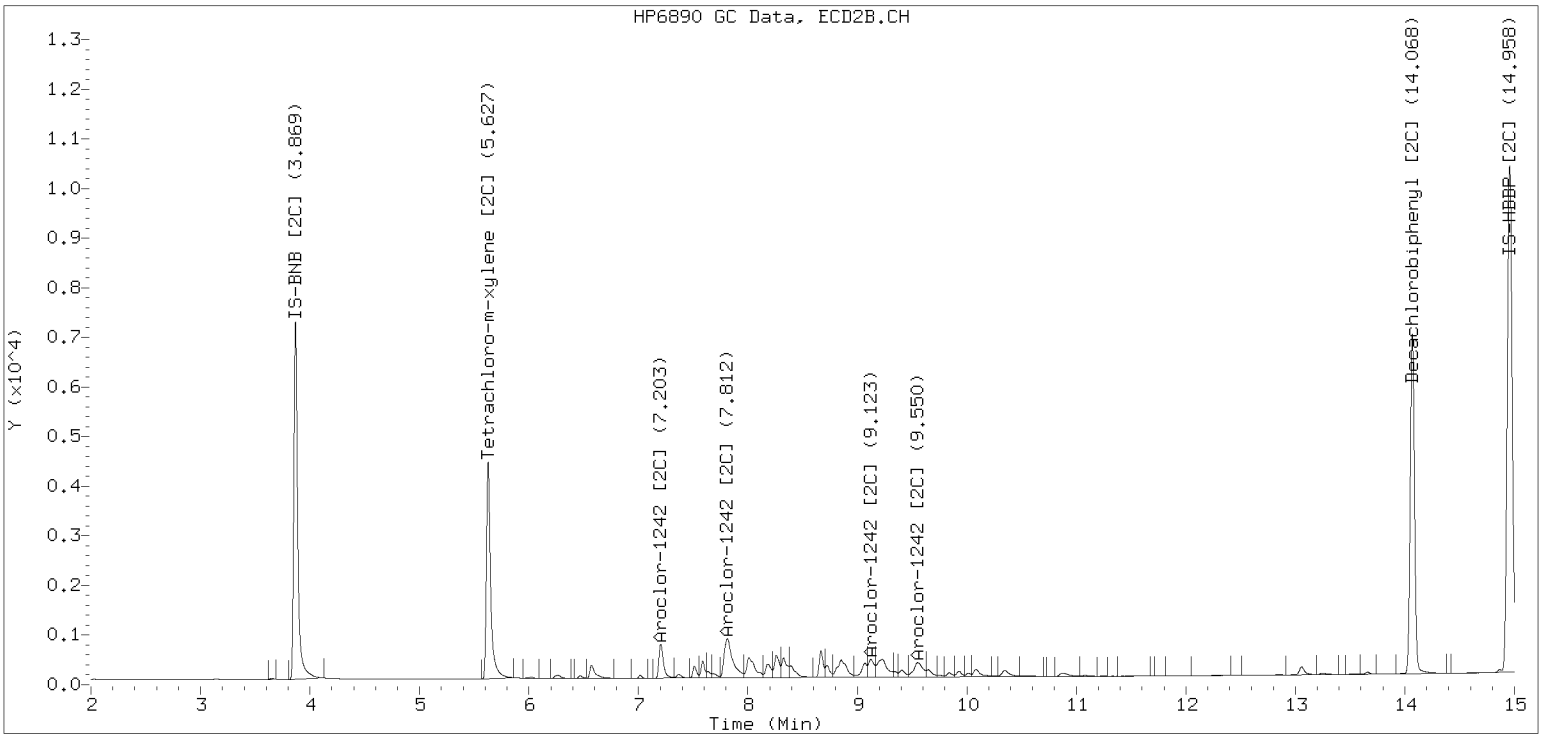


ZB-35 Manual Integration: YES

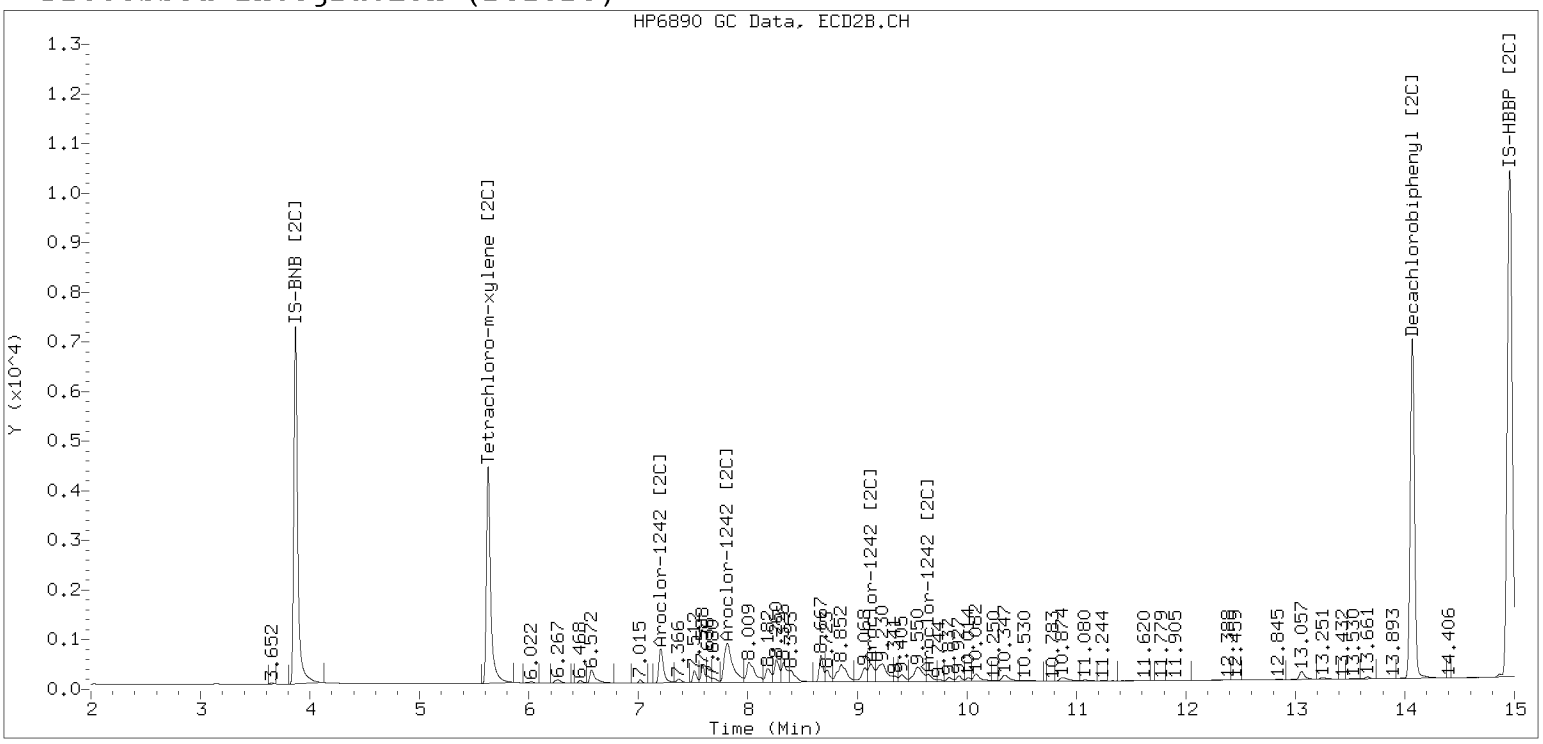
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230505.b/230505.b/05052327ECD7.D Injection Date: 06-MAY-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052328ECD7.D
Data file 2: /230505.b/230505.b/05052328ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1248
Client ID:
Injection Date: 06-MAY-2023 01:52
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.741	-0.001	363354	5.628	-0.000	193087	38.8	39.5	1.9	Tetrachloro-m-xylene
13.843	0.003	347513	14.070	0.002	386262	38.0	40.3	5.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	621905	3.4
Hexabromobiphenyl	876625	915805	4.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	354920	1.6
Hexabromobiphenyl	652984	674778	3.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1248	1	8.399	0.000	39684	250.0	1	8.260	0.000	42211	250.0
Aroclor-1248	2	8.524	0.000	103126	250.0	2	8.667	0.000	44588	250.0
Aroclor-1248	3	8.944	0.000	198327	250.0	3	9.120	0.000	52266	250.0
Aroclor-1248	4	9.243	0.000	101099	250.0	4	9.546	0.000	62674	250.0

Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0

Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

Total PCB Area Col1 (5.842 - 13.740) = 1607435 Col1 Total PCB = 0.2 ppm*

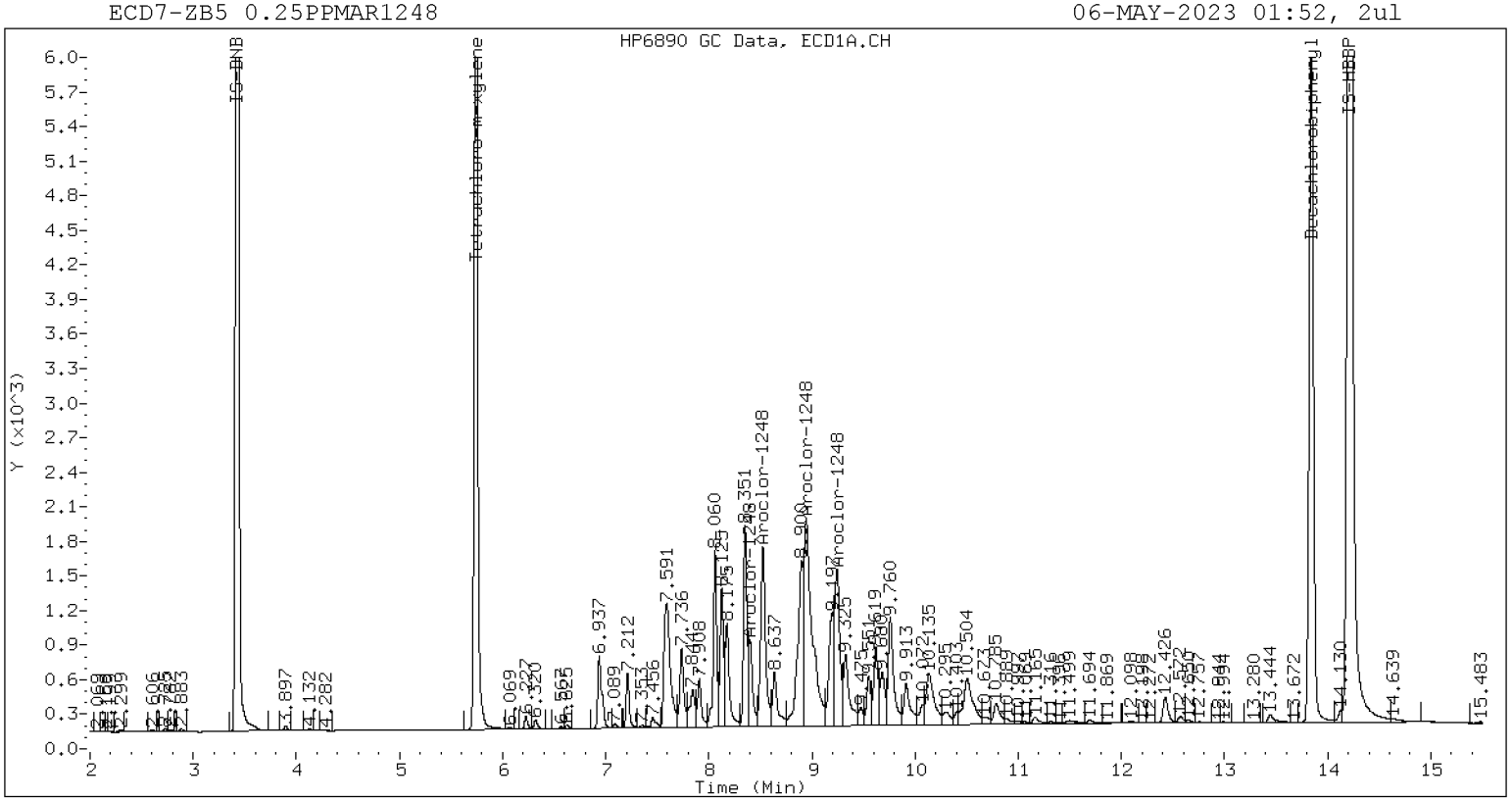
Total PCB Area Col2 (5.728 - 13.968) = 866525 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

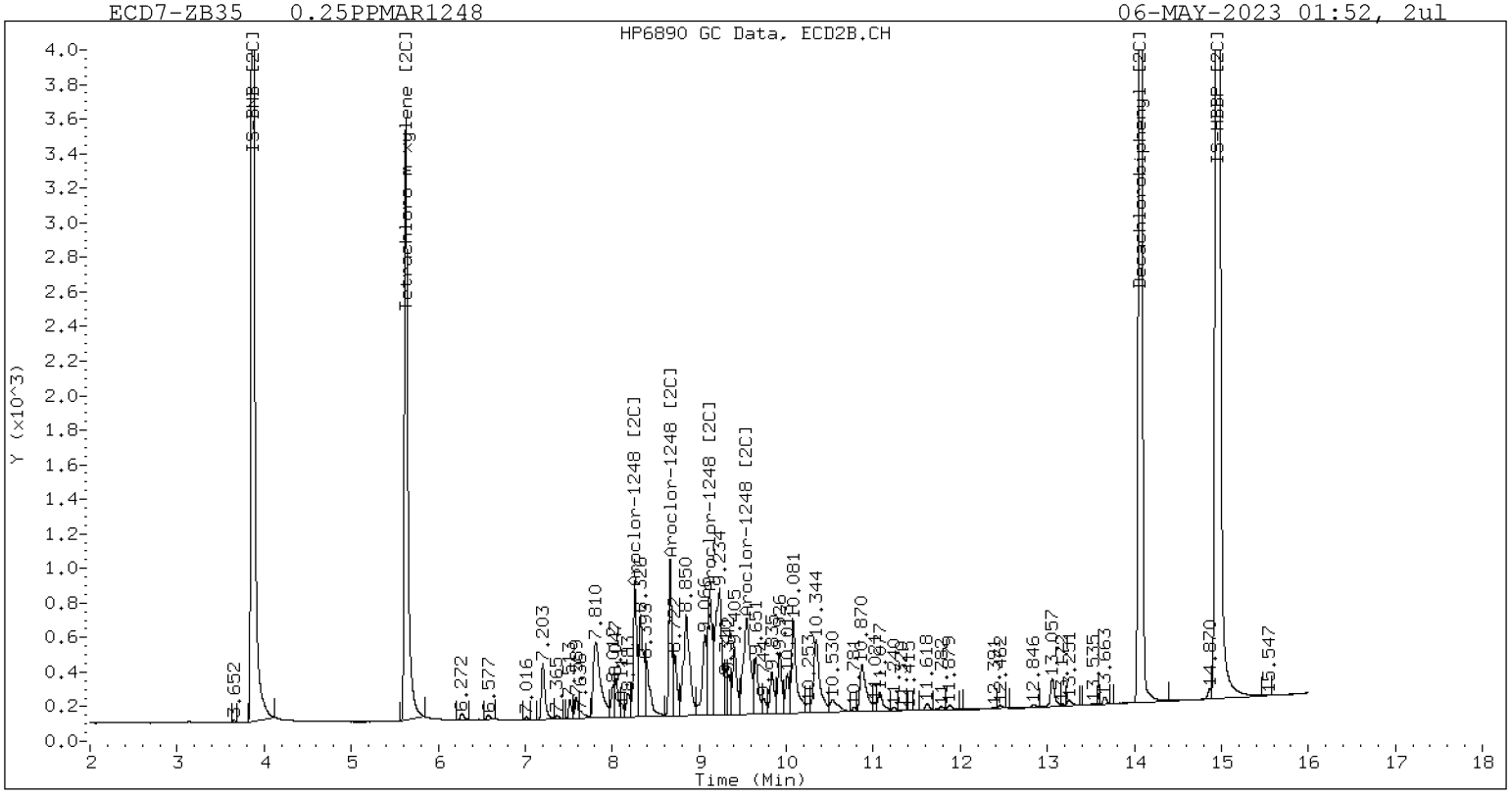
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1248 06-MAY-2023 01:52, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1248 06-MAY-2023 01:52, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052329ECD7.D
Data file 2: /230505.b/230505.b/05052329ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1254
Client ID:
Injection Date: 06-MAY-2023 02:13
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	0.000	357984	5.629	0.001	190255	37.8	38.5	1.8	Tetrachloro-m-xylene
13.842	0.002	347079	14.071	0.002	385540	37.4	39.8	6.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	628765	4.5
Hexabromobiphenyl	876625	929076	6.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	359470	2.9
Hexabromobiphenyl	652984	682882	4.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col					ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1254	1	9.246	0.000	161557	250.0	1	9.404	0.000	68278	250.0
Aroclor-1254	2	9.325	0.000	72588	250.0	2	9.499	0.000	40561	250.0
Aroclor-1254	3	9.618	0.000	104295	250.0	3	9.924	0.000	55343	250.0
Aroclor-1254	4	9.756	0.000	204288	250.0	4	10.078	0.000	120775	250.0
Aroclor-1254	5	10.126	0.000	123377	250.0	5	10.328	0.000	119827	250.0

Total Col1Ave (5 peaks): 250.0 Total Col2Ave (5 peaks): 250.0 RPD = 0

Corrected Ave (4 peaks): 250.0 Corrected Ave (4 peaks): 250.0 RPD = 0

Total PCB Area Col1 (5.842 - 13.740) = 2115446 Col1 Total PCB = 0.3 ppm*

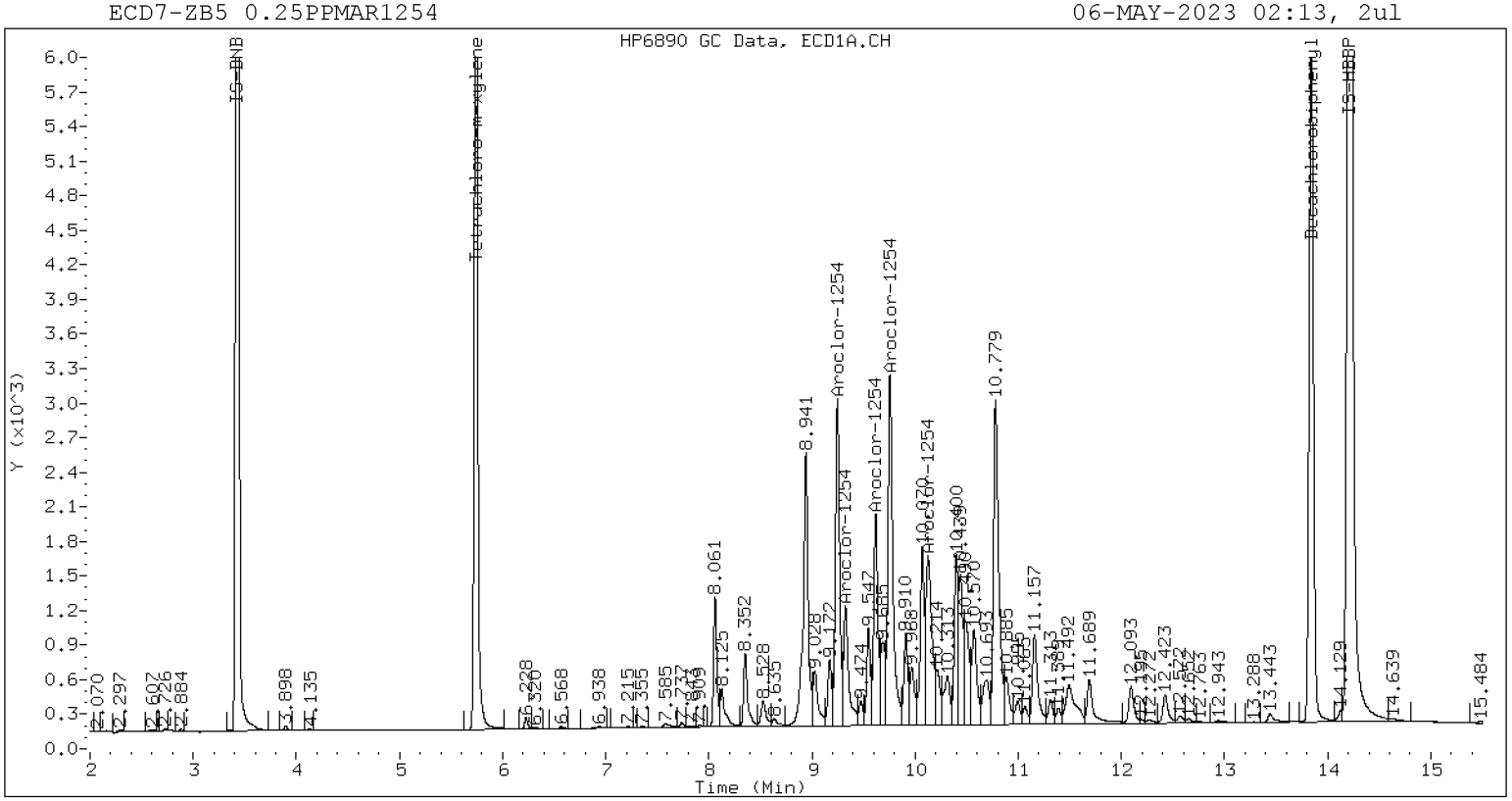
Total PCB Area Col2 (5.728 - 13.968) = 1173654 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

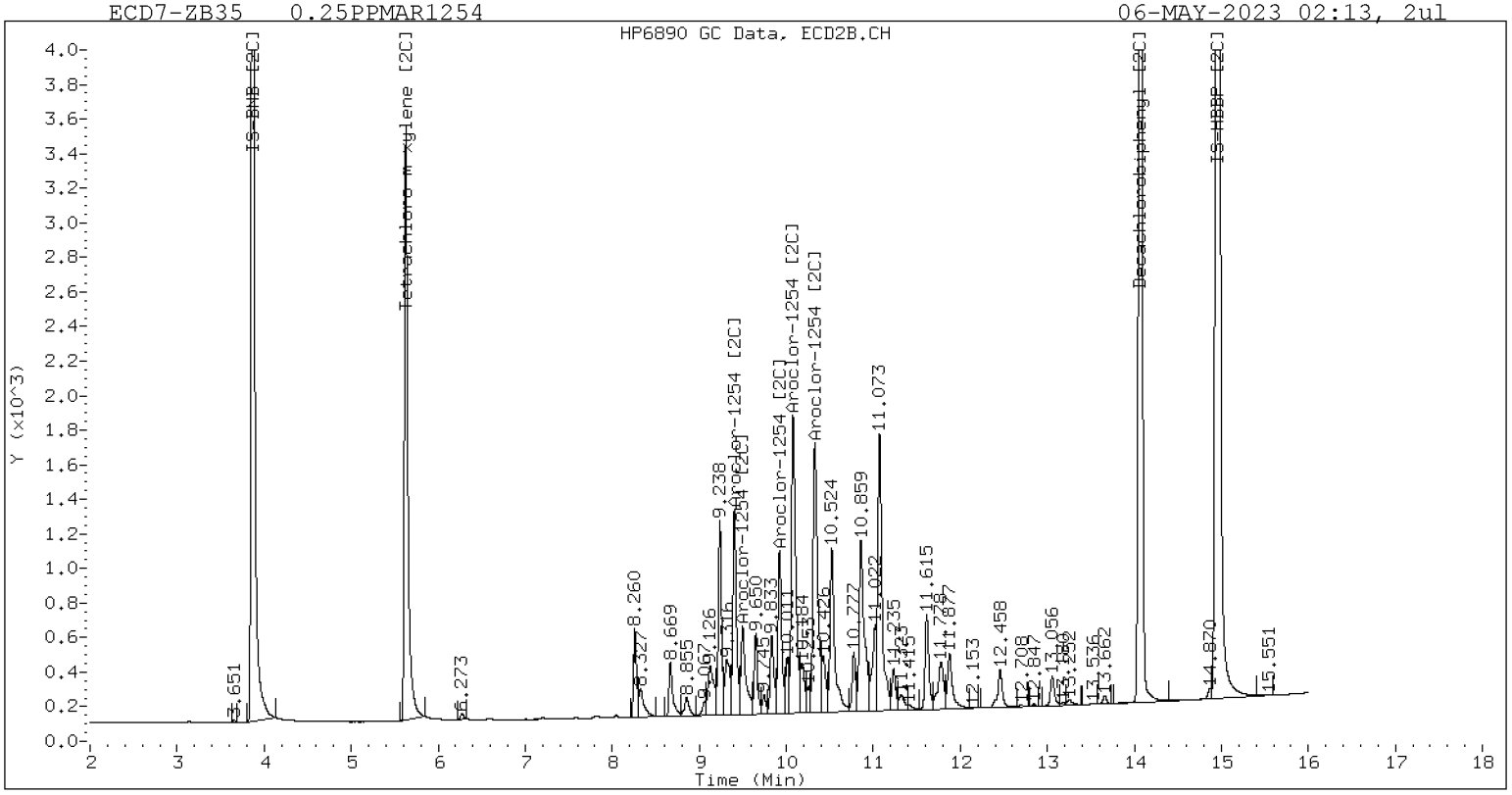
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1254 06-MAY-2023 02:13, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1254 06-MAY-2023 02:13, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052330ECD7.D
Data file 2: /230505.b/230505.b/05052330ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR2162.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR2162
Client ID:
Injection Date: 06-MAY-2023 02:34
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	-0.000	379099	5.628	0.000	200082	39.7	40.8	2.7	Tetrachloro-m-xylene
13.842	0.001	358012	14.071	0.003	396142	38.1	40.5	6.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	634497	5.5
Hexabromobiphenyl	876625	940541	7.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	356713	2.1
Hexabromobiphenyl	652984	688599	5.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1221	1	4.663	0.000	11156	250.0	1	4.894	0.000	6578	250.0
Aroclor-1221	2	6.069	0.000	22382	250.0	2	6.245	0.000	13633	250.0
Aroclor-1221	3	6.321	0.000	53161	250.0	3	6.572	0.000	21443	250.0
Total Col1Ave (3 peaks):					250.0	Total Col2Ave (3 peaks):				250.0 RPD = 0
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.779	0.000	106373	250.0	1	11.153	0.000	139491	250.0
Aroclor-1262	2	12.195	0.000	149596	250.0	2	11.605	0.000	117643	250.0
Aroclor-1262	3	12.269	0.000	160810	250.0	3	12.386	0.000	128556	250.0
Aroclor-1262	4	12.939	0.000	131044	250.0	4	12.456	0.000	209520	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0

Total PCB Area Col1 (5.842 - 13.740) = 2742242 Col1 Total PCB = 0.4 ppm*

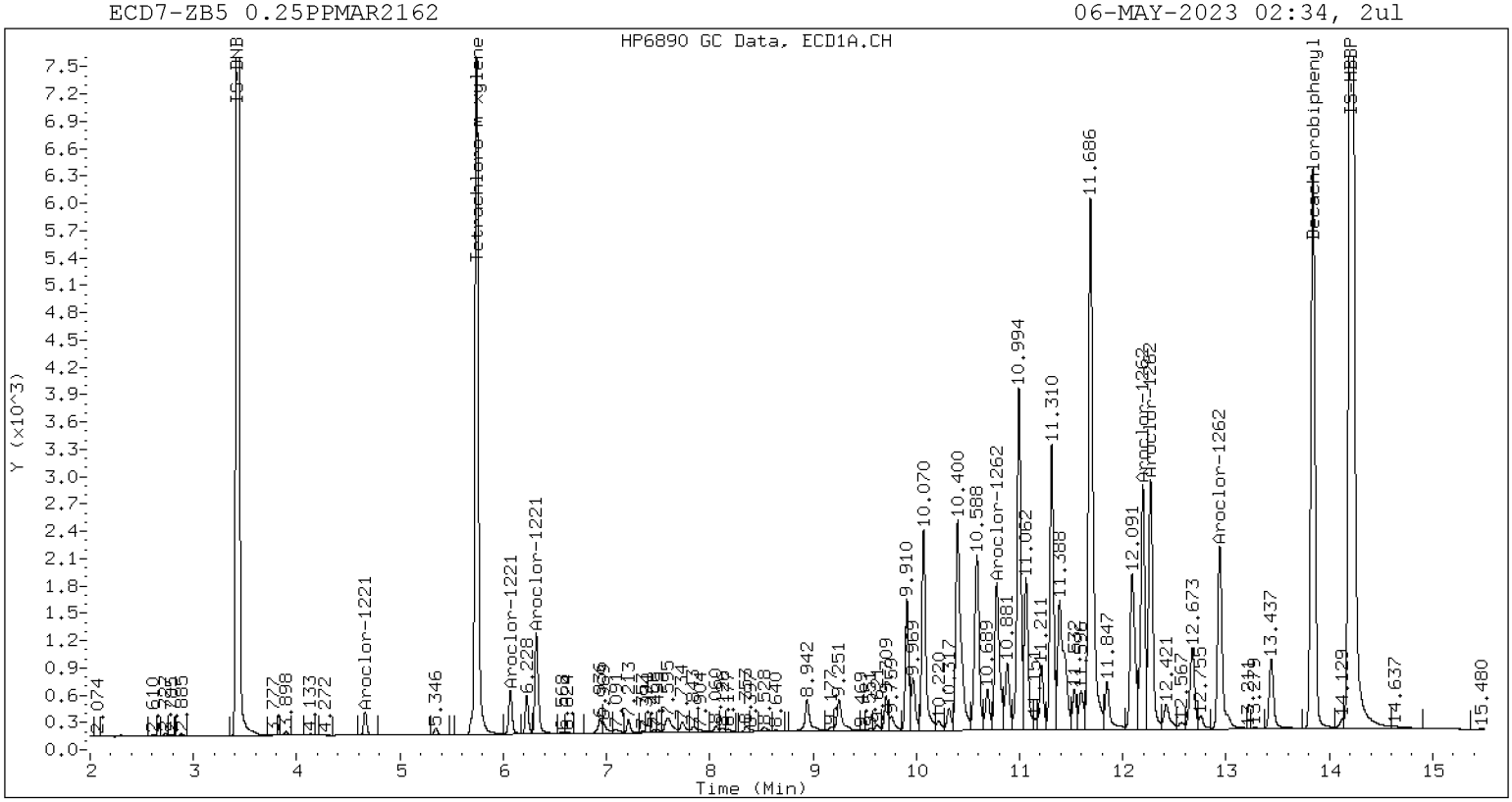
Total PCB Area Col2 (5.728 - 13.968) = 1852573 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

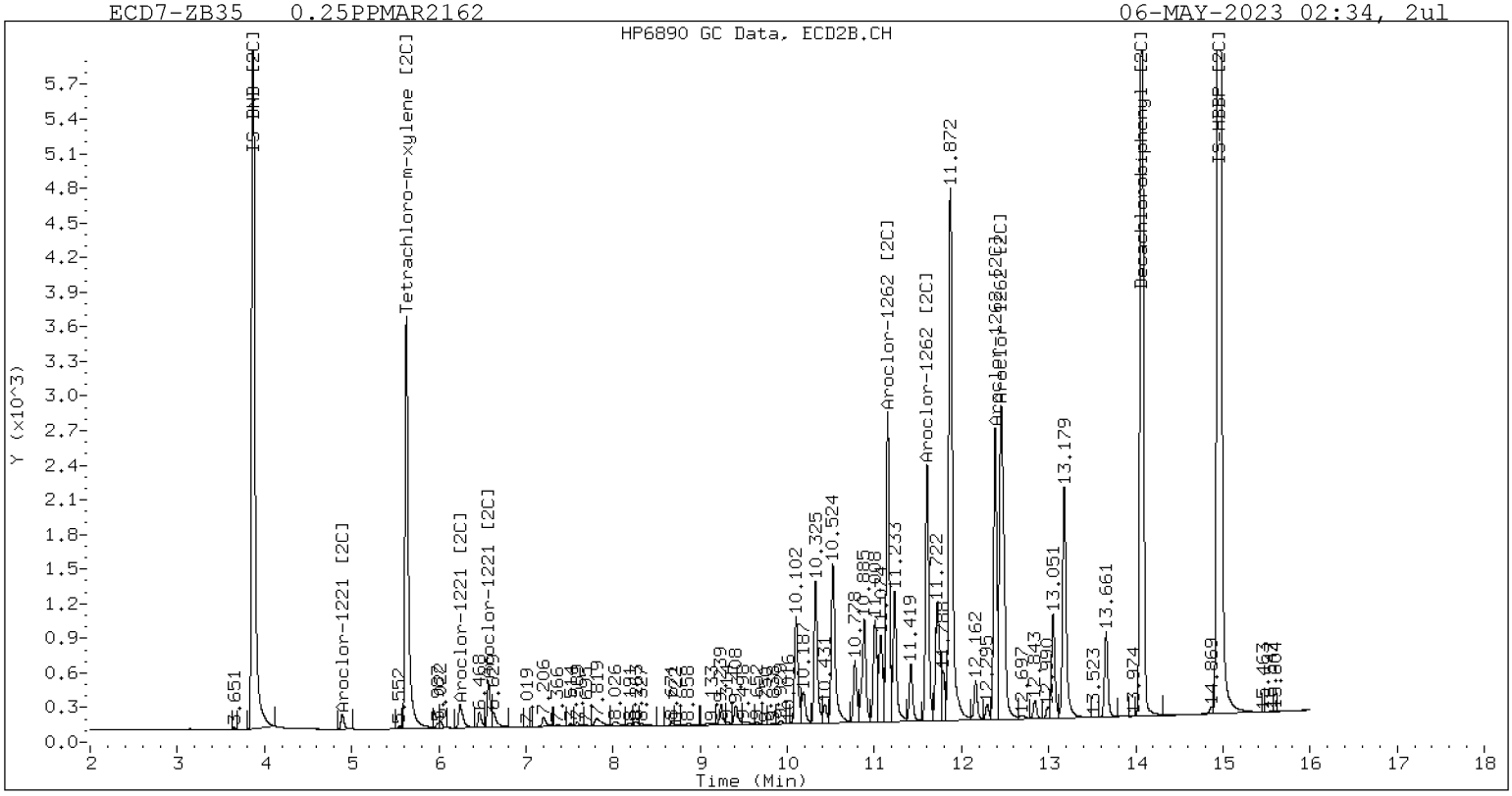
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR2162 06-MAY-2023 02:34, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR2162 06-MAY-2023 02:34, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052331ECD7.D
Data file 2: /230505.b/230505.b/05052331ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR3268.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR3268
Client ID:
Injection Date: 06-MAY-2023 02:55
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	0.000	378314	5.628	0.000	200538	38.9	40.3	3.4	Tetrachloro-m-xylene
13.840	0.000	502472	14.068	0.000	573501	52.2	57.3	9.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	644974	7.2
Hexabromobiphenyl	876625	963091	9.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	361821	3.6
Hexabromobiphenyl	652984	704753	7.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1232	1	4.664	0.000	7554	250.0	1	4.894	0.000	3508	250.0
Aroclor-1232	2	6.069	0.000	15718	250.0	2	7.205	0.000	20084	250.0
Aroclor-1232	3	7.595	0.000	74881	250.0	3	7.815	0.000	40344	250.0
Aroclor-1232	4	8.527	0.000	32051	250.0	4	8.669	0.000	11684	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0
Aroclor-1268	1	12.196	0.000	384005	250.0	1	12.385	0.000	333421	250.0
Aroclor-1268	2	12.268	0.000	381367	250.0	2	12.452	0.000	358458	250.0
Aroclor-1268	3	12.648	0.000	306717	250.0	3	12.843	0.000	306959	250.0
Aroclor-1268	4	13.437	0.000	875751	250.0	4	13.663	0.000	983908	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0

Total PCB Area Col1 (5.842 - 13.740) = 3124318 Col1 Total PCB = 0.4 ppm*

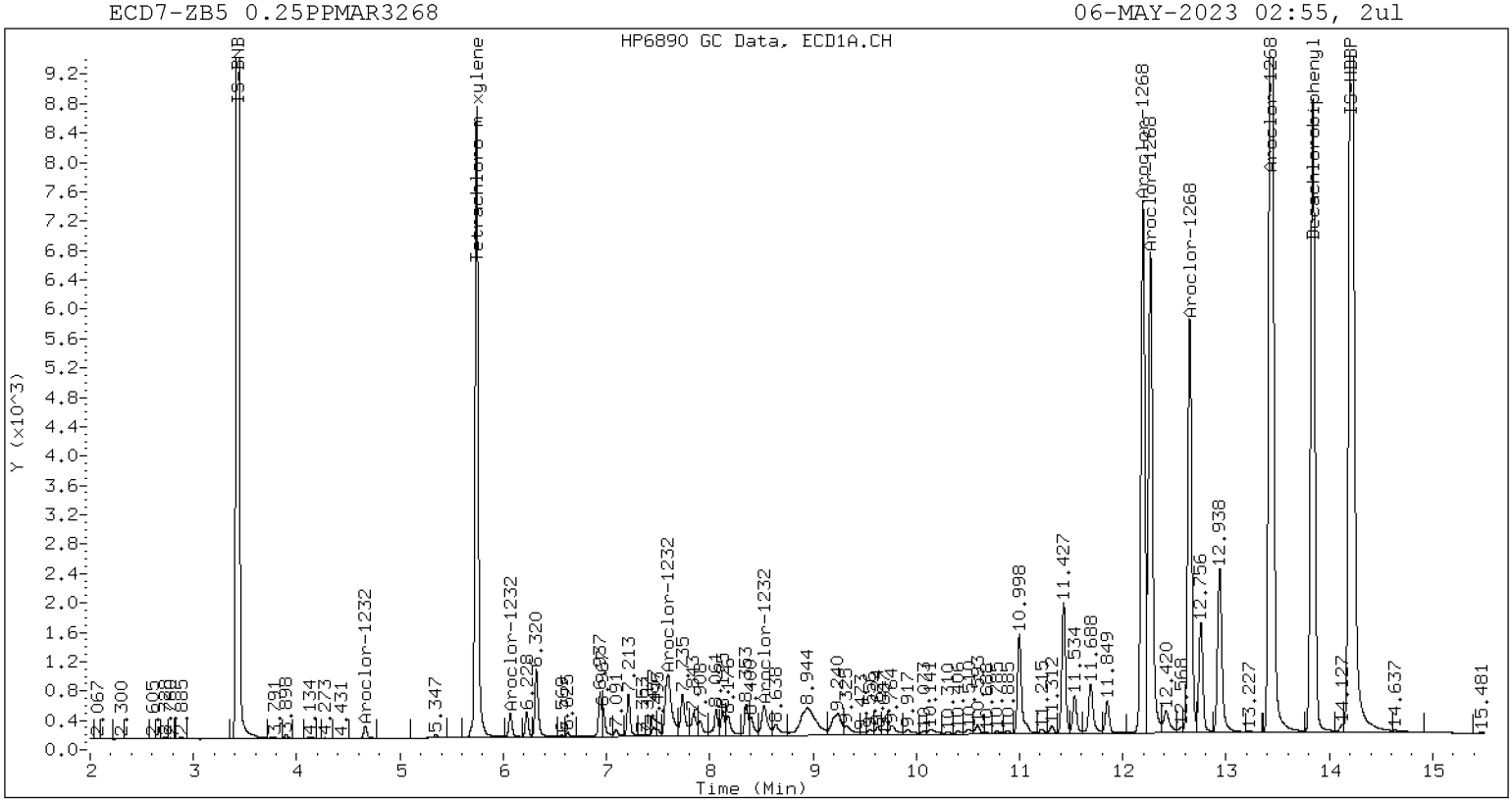
Total PCB Area Col2 (5.728 - 13.968) = 2731202 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

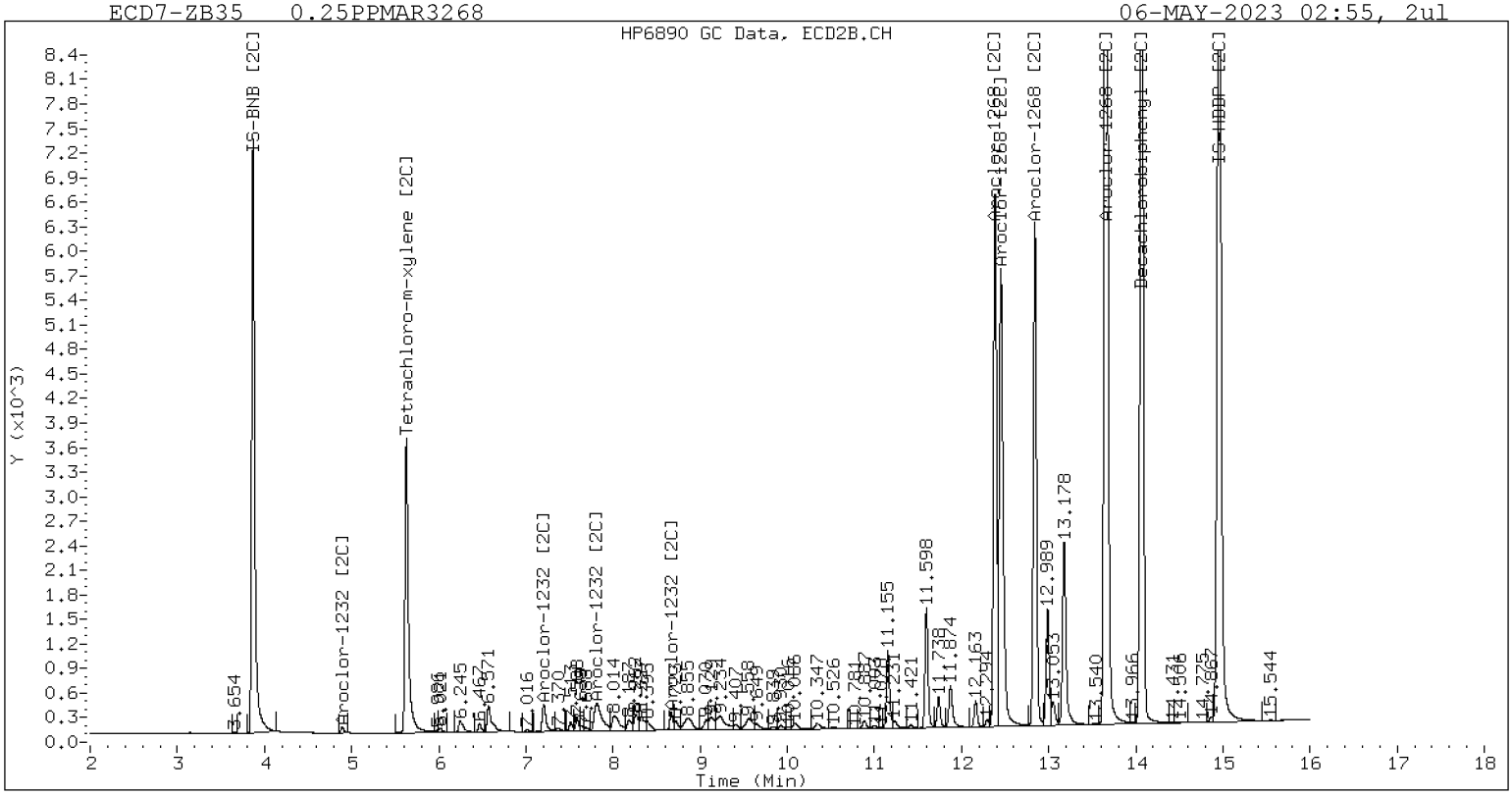
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR3268 06-MAY-2023 02:55, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR3268 06-MAY-2023 02:55, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052332ECD7.D
Data file 2: /230505.b/230505.b/05052332ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660SCV
Client ID:
Injection Date: 06-MAY-2023 03:16
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	-0.000	356595	9.840	-0.028	300	36.9	0.0	----	Tetrachloro-m-xylene
13.842	0.002	347188	9.537	0.045	1824	36.9	0.0	----	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	642284	6.8
Hexabromobiphenyl	876625	941356	7.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	361711	3.6
Hexabromobiphenyl	652984	690563	5.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.213	0.000	61654	247.9	1	7.205	0.001	50106	244.7
Aroclor-1016	2	7.594	-0.001	199228	256.2	2	7.811	0.003	109839	251.7
Aroclor-1016	3	7.734	0.001	89643	249.3	3	8.009	0.004	48594	252.5
Aroclor-1016	4	8.399	0.001	38714	261.0	4	8.260	0.001	36878	241.2
Total Col1Ave (4 peaks):					253.6	Total Col2Ave (4 peaks):				247.5 RPD = 2
Corrected Ave (3 peaks):					251.1	Corrected Ave (3 peaks):				245.9 RPD = 2
Aroclor-1221	1	4.663	-0.000	436	9.7	1	---			0.0
Aroclor-1221	2	6.068	-0.001	8521	94.0	2	6.251	0.005	5766	104.3
Aroclor-1221	3	6.320	-0.001	41973	195.0	3	6.572	0.000	23212	266.9
Total Col1Ave (3 peaks):					99.6	Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.663	-0.000	436	14.5	1	---			0.0
Aroclor-1232	2	6.068	-0.002	8521	136.1	2	7.205	0.000	50106	623.9
Aroclor-1232	3	7.594	-0.001	199228	667.9	3	7.811	-0.004	109839	680.8
Aroclor-1232	4	8.526	-0.001	85985	673.5	4	8.667	-0.003	34670	742.1
Total Col1Ave (4 peaks):					373.0	Total Col2Ave (3 peaks):				682.3 RPD = 59*
Corrected Ave (3 peaks):					272.8	Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.213	0.001	61654	304.6	1	7.205	0.001	50106	310.0
Aroclor-1242	2	7.594	-0.001	199228	310.7	2	7.811	-0.002	109839	319.4
Aroclor-1242	3	8.399	0.000	38714	312.1	3	9.069	-0.054	21513	195.1
Aroclor-1242	4	8.526	0.001	85985	299.5	4	9.650	0.100	1501	11.3
Total Col1Ave (4 peaks):					306.7	Total Col2Ave (4 peaks):				208.9 RPD = 38
Corrected Ave (3 peaks):					304.9	Corrected Ave (3 peaks):				172.1 RPD = 56*
Aroclor-1248	1	8.399	-0.000	38714	236.2	1	8.260	0.000	36878	214.3
Aroclor-1248	2	8.526	0.001	85985	201.8	2	8.667	-0.001	34670	190.7
Aroclor-1248	3	8.941	-0.003	81615	99.6	3	9.069	-0.051	21513	101.0
Aroclor-1248	4	9.249	0.006	52526	125.8	4	9.537	-0.008	1824	7.1
Total Col1Ave (4 peaks):					165.8	Total Col2Ave (4 peaks):				128.3 RPD = 26
Corrected Ave (3 peaks):					142.4	Corrected Ave (3 peaks):				99.6 RPD = 35
Aroclor-1254	1	9.249	0.003	52526	79.6	1	9.405	0.001	24726	90.0
Aroclor-1254	2	---			0.0	2	9.537	0.038	1824	11.2
Aroclor-1254	3	9.619	0.001	7081	16.6	3	9.926	0.002	3128	14.0
Aroclor-1254	4	9.756	0.001	21856	26.2	4	10.101	0.023	62581	128.7
Aroclor-1254	5	10.069	-0.057	159796	317.0	5	10.324	-0.004	85433	177.1
Total Col1Ave (4 peaks):					109.8	Total Col2Ave (5 peaks):				84.2 RPD = 26
Corrected Ave (3 peaks):					40.8	Corrected Ave (4 peaks):				61.0 RPD = 40
Aroclor-1260	1	10.995	0.001	145767	292.8	1	11.605	-0.000	99761	272.0
Aroclor-1260	2	11.311	0.001	142028	289.1	2	11.872	0.000	273505	285.1
Aroclor-1260	3	11.686	0.000	354468	288.1	3	12.389	0.001	70545	296.8
Aroclor-1260	4	12.092	0.002	161281	267.6	4	12.455	-0.000	180783	282.1
Aroclor-1260	5	12.194	0.001	76105	289.6	NS	---			----
Total Col1Ave (5 peaks):					285.5	Total Col2Ave (4 peaks):				284.0 RPD = 1
Corrected Ave (4 peaks):					283.6	Corrected Ave (3 peaks):				279.8 RPD = 1
Aroclor-1262	1	10.777	-0.001	215850	506.9	1	11.153	-0.001	104059	186.0
Aroclor-1262	2	12.194	-0.000	76105	127.1	2	11.605	0.001	99761	211.4
Aroclor-1262	3	12.271	0.001	94628	147.0	3	12.389	0.003	70545	136.8
Aroclor-1262	4	12.939	-0.000	78852	150.3	4	12.455	-0.001	180783	215.1
Total Col1Ave (4 peaks):					232.8	Total Col2Ave (4 peaks):				187.3 RPD = 22
Corrected Ave (3 peaks):					141.5	Corrected Ave (3 peaks):				178.1 RPD = 23
Aroclor-1268	1	12.194	-0.001	76105	50.7	1	12.389	0.004	70545	54.0
Aroclor-1268	2	12.271	0.003	94628	63.5	2	12.455	0.003	180783	128.7
Aroclor-1268	3	12.675	0.026	38830	32.4	3	12.844	0.001	3082	2.6
Aroclor-1268	4	13.440	0.003	19986	5.8	4	13.661	-0.002	14882	3.9
Total Col1Ave (4 peaks):					38.1	Total Col2Ave (4 peaks):				47.3 RPD = 21
Corrected Ave (3 peaks):					29.6	Corrected Ave (3 peaks):				20.1 RPD = 38

Total PCB Area Col1 (5.842 - 13.740) = 3657118 Col1 Total PCB = 0.5 ppm*

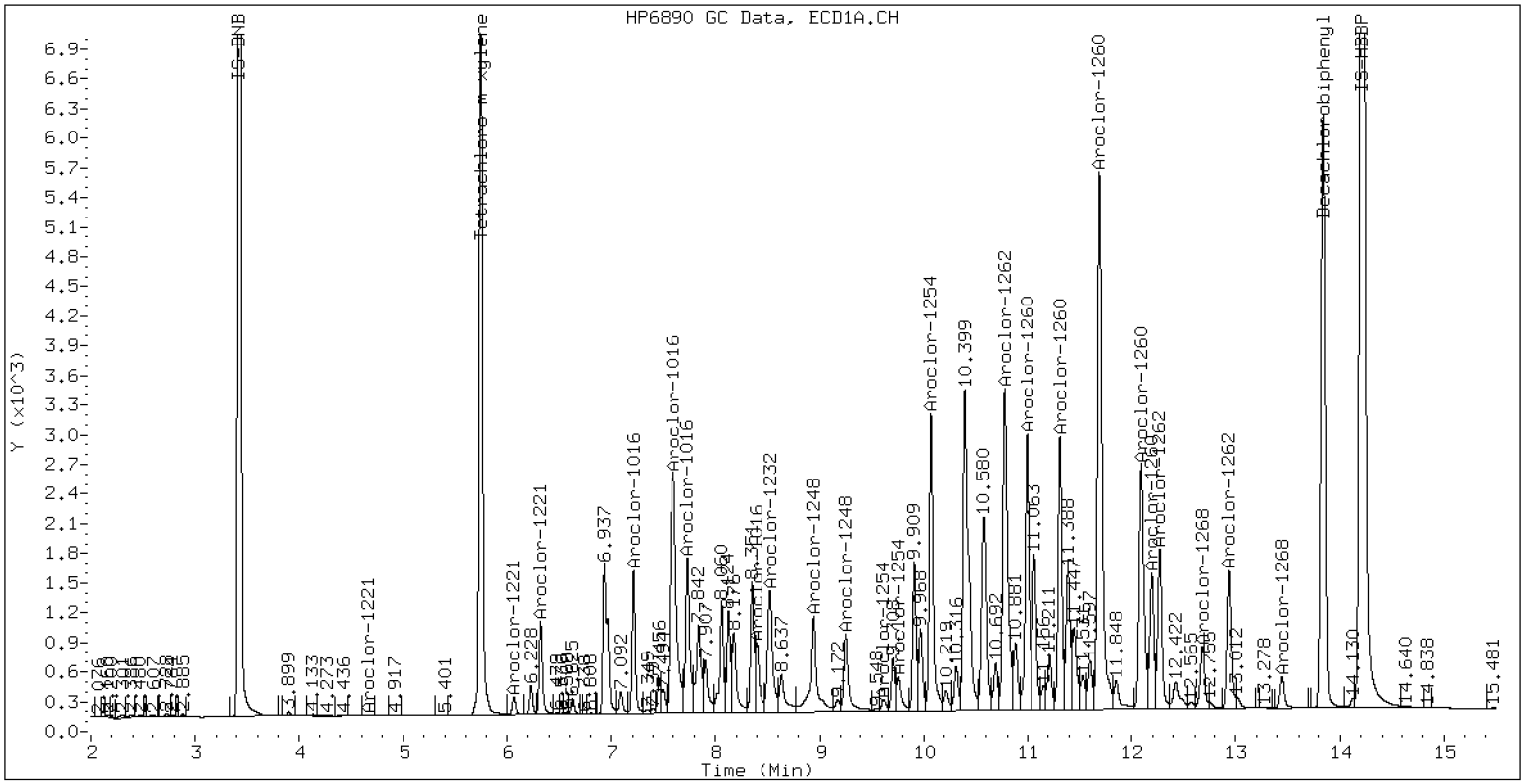
Total PCB Area Col2 (5.842 - 13.740) = 2240312 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

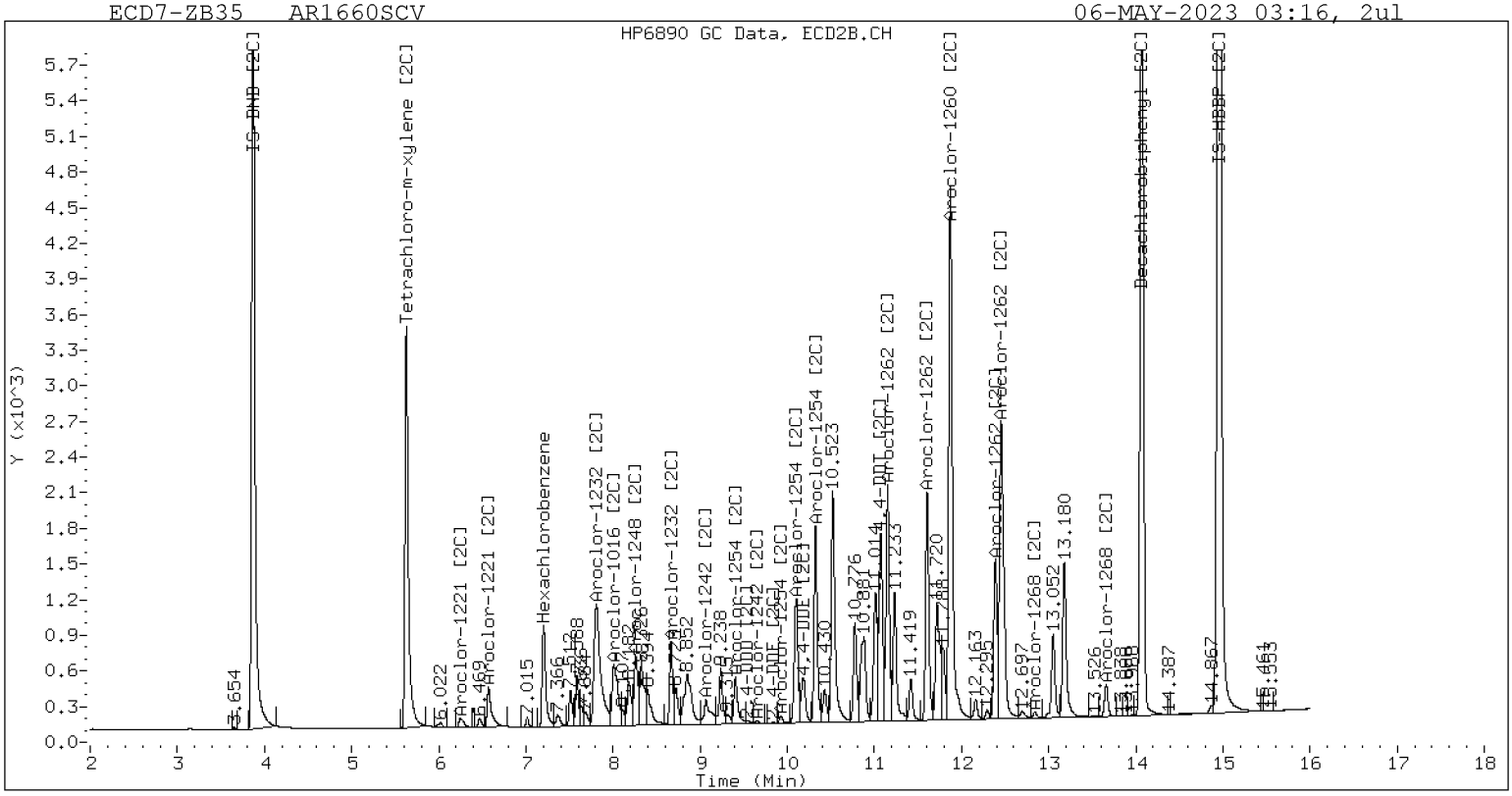
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660SCV 06-MAY-2023 03:16, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660SCV 06-MAY-2023 03:16, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052333ECD7.D
Data file 2: /230505.b/230505.b/05052333ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242SCV
Client ID:
Injection Date: 06-MAY-2023 03:36
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.744	0.002	319899	9.837	-0.030	6399	32.8	0.0	----	Tetrachloro-m-xylene
13.842	0.002	398699	----			40.9	0.0	----	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	648004	7.7
Hexabromobiphenyl	876625	976327	11.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	365379	4.6
Hexabromobiphenyl	652984	695394	6.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col					ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.213	0.001	47446	189.1	1	7.205	0.001	36469	176.3
Aroclor-1016	2	7.594	-0.000	147684	188.2	2	7.814	0.007	77885	176.7
Aroclor-1016	3	7.735	0.002	67175	185.2	3	8.012	0.006	38400	197.5
Aroclor-1016	4	8.398	0.000	30565	204.3	4	8.261	0.002	27551	178.4
Total Col1Ave (4 peaks): 191.7						Total Col2Ave (4 peaks): 182.2			RPD = 5	
Corrected Ave (3 peaks): 187.5						Corrected Ave (3 peaks): 177.1			RPD = 6	
Aroclor-1221	1	4.666	0.002	870	19.1	1	---			0.0
Aroclor-1221	2	6.069	0.000	7118	77.8	2	6.257	0.011	4359	78.0
Aroclor-1221	3	6.322	0.001	32969	151.8	3	6.573	0.001	16609	189.0
Total Col1Ave (3 peaks): 82.9						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.666	0.002	870	28.7	1	---			0.0
Aroclor-1232	2	6.069	0.000	7118	112.7	2	7.205	-0.000	36469	449.5
Aroclor-1232	3	7.594	-0.001	147684	490.8	3	7.814	-0.001	77885	477.9
Aroclor-1232	4	8.526	-0.000	70601	548.1	4	8.668	-0.001	25417	538.5
Total Col1Ave (4 peaks): 295.1						Total Col2Ave (3 peaks): 488.7			RPD = 49*	
Corrected Ave (3 peaks): 210.7						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.213	0.001	47446	232.4	1	7.205	0.001	36469	223.3
Aroclor-1242	2	7.594	-0.000	147684	228.2	2	7.814	0.002	77885	224.2
Aroclor-1242	3	8.398	0.000	30565	244.2	3	9.124	0.001	25864	232.2
Aroclor-1242	4	8.526	0.002	70601	243.8	4	9.552	0.001	32437	241.7
Total Col1Ave (4 peaks): 237.2						Total Col2Ave (4 peaks): 230.4			RPD = 3	
Corrected Ave (3 peaks): 234.8						Corrected Ave (3 peaks): 226.6			RPD = 4	
Aroclor-1248	1	8.398	-0.001	30565	184.8	1	8.261	0.001	27551	158.5
Aroclor-1248	2	8.526	0.002	70601	164.3	2	8.668	0.001	25417	138.4
Aroclor-1248	3	8.946	0.002	172847	209.1	3	9.124	0.004	25864	120.2
Aroclor-1248	4	9.243	-0.001	87363	207.3	4	9.552	0.006	32437	125.7
Total Col1Ave (4 peaks): 191.4						Total Col2Ave (4 peaks): 135.7			RPD = 34	
Corrected Ave (3 peaks): 185.5						Corrected Ave (3 peaks): 128.1			RPD = 37	
Aroclor-1254	1	9.243	-0.004	87363	131.2	1	9.406	0.002	13247	47.7
Aroclor-1254	2	9.326	0.001	28949	96.7	2	9.552	0.053	32437	196.7
Aroclor-1254	3	9.622	0.004	20780	48.3	3	9.927	0.003	10002	44.5
Aroclor-1254	4	9.762	0.006	35470	42.1	4	10.082	0.005	19933	40.6
Aroclor-1254	5	10.140	0.015	28075	55.2	5	10.341	0.013	19432	39.9
Total Col1Ave (5 peaks): 74.7						Total Col2Ave (5 peaks): 73.9			RPD = 1	
Corrected Ave (4 peaks): 60.6						Corrected Ave (4 peaks): 43.2			RPD = 34	
Aroclor-1260	1	10.998	0.005	3609	7.0	1	11.618	0.012	2137	5.8
Aroclor-1260	2	11.317	0.007	3837	7.5	2	11.879	0.007	1437	1.5
Aroclor-1260	3	11.765	0.080	33905	26.6	3	12.382	-0.006	12460	52.1
Aroclor-1260	4	12.097	0.007	9099	14.6	4	---			0.0
Aroclor-1260	5	12.272	0.079	2060	7.6	NS	---			----
Total Col1Ave (5 peaks): 12.6						Total Col2Ave (3 peaks): 19.8			RPD = 44*	
Corrected Ave (4 peaks): 9.2						Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.787	0.009	24040	54.4	1	11.078	-0.075	7864	14.0
Aroclor-1262	2	12.272	0.077	2060	3.3	2	11.618	0.013	2137	4.5
Aroclor-1262	3	---			0.0	3	12.382	-0.004	12460	24.0
Aroclor-1262	4	12.937	-0.002	16041	29.5	4	---			0.0
Total Col1Ave (3 peaks): 29.1						Total Col2Ave (3 peaks): 14.1			RPD = 69*	
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1268	1	12.272	0.076	2060	1.3	1	12.382	-0.003	12460	9.5
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	12.649	0.001	4324	3.5	3	12.845	0.002	951	0.8
Aroclor-1268	4	13.442	0.005	15801	4.4	4	13.628	-0.035	6512	1.7
Total Col1Ave (3 peaks): 3.1						Total Col2Ave (3 peaks): 4.0			RPD = 25	
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				

Total PCB Area Col1 (5.842 - 13.740) = 1489022 Col1 Total PCB = 0.2 ppm*

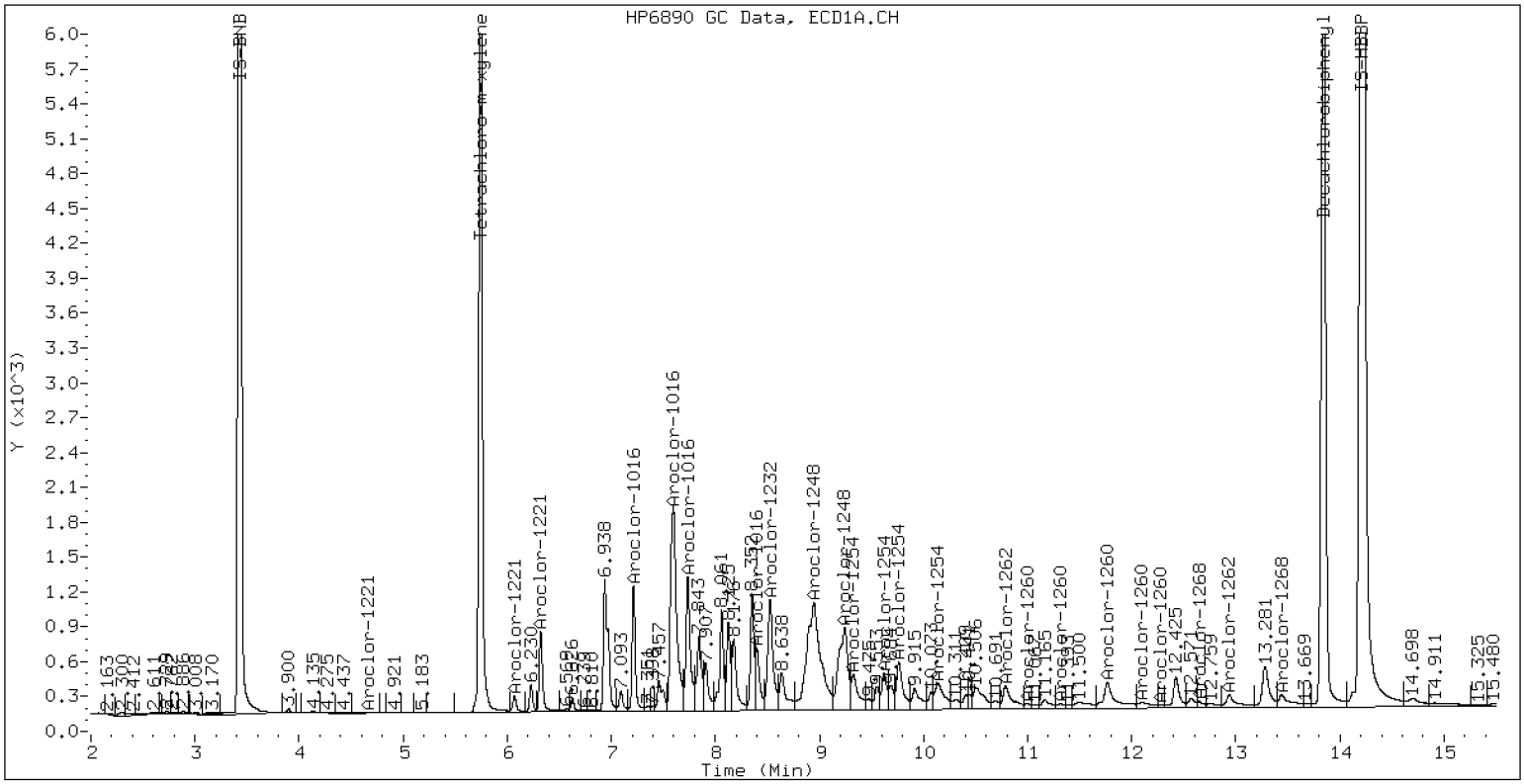
Total PCB Area Col2 (5.842 - 13.740) = 667658 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

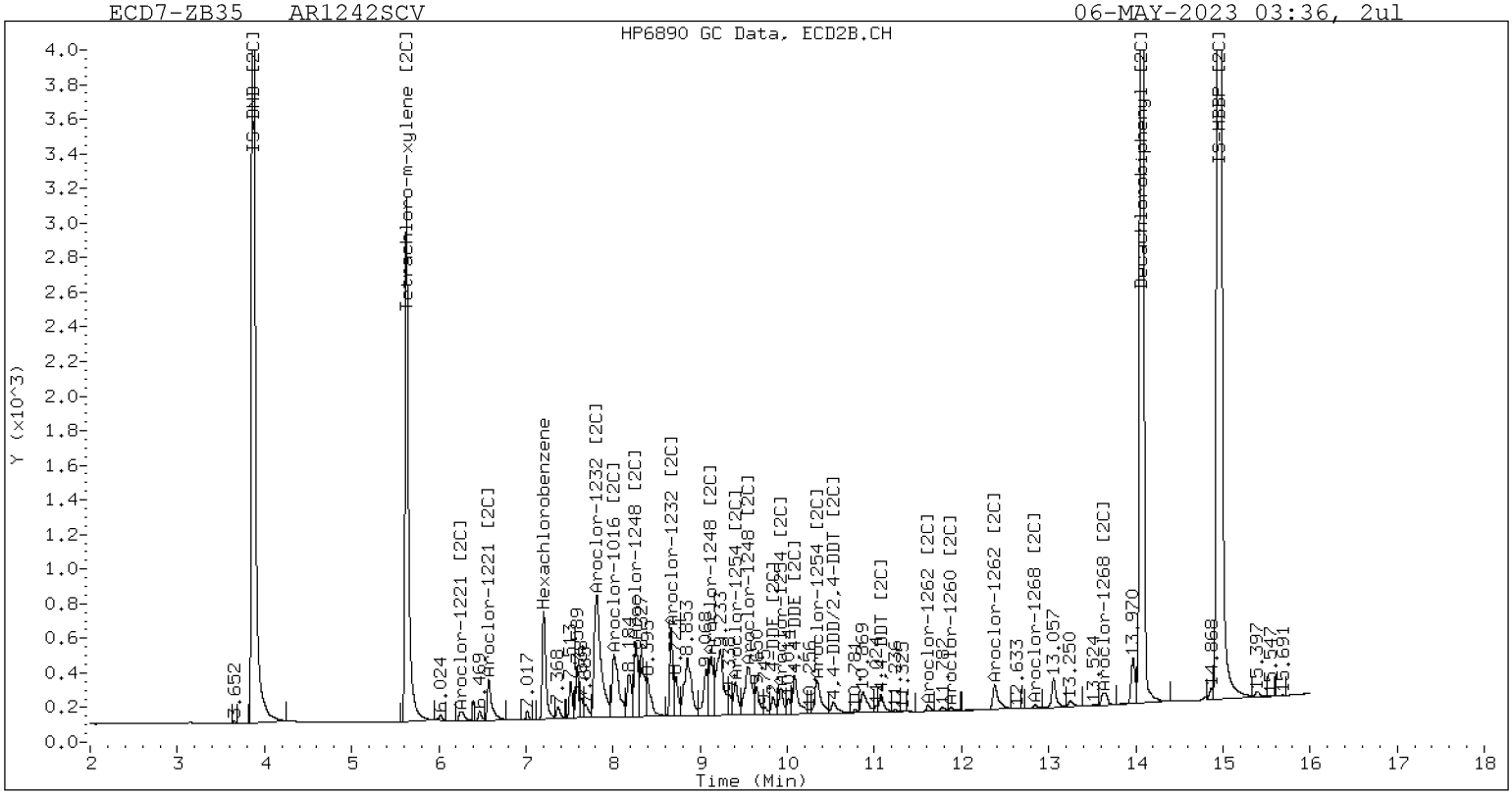
PCB Dual Column Chromatograms

ECD7-ZB5 AR1242SCV 06-MAY-2023 03:36, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242SCV 06-MAY-2023 03:36, 2ul

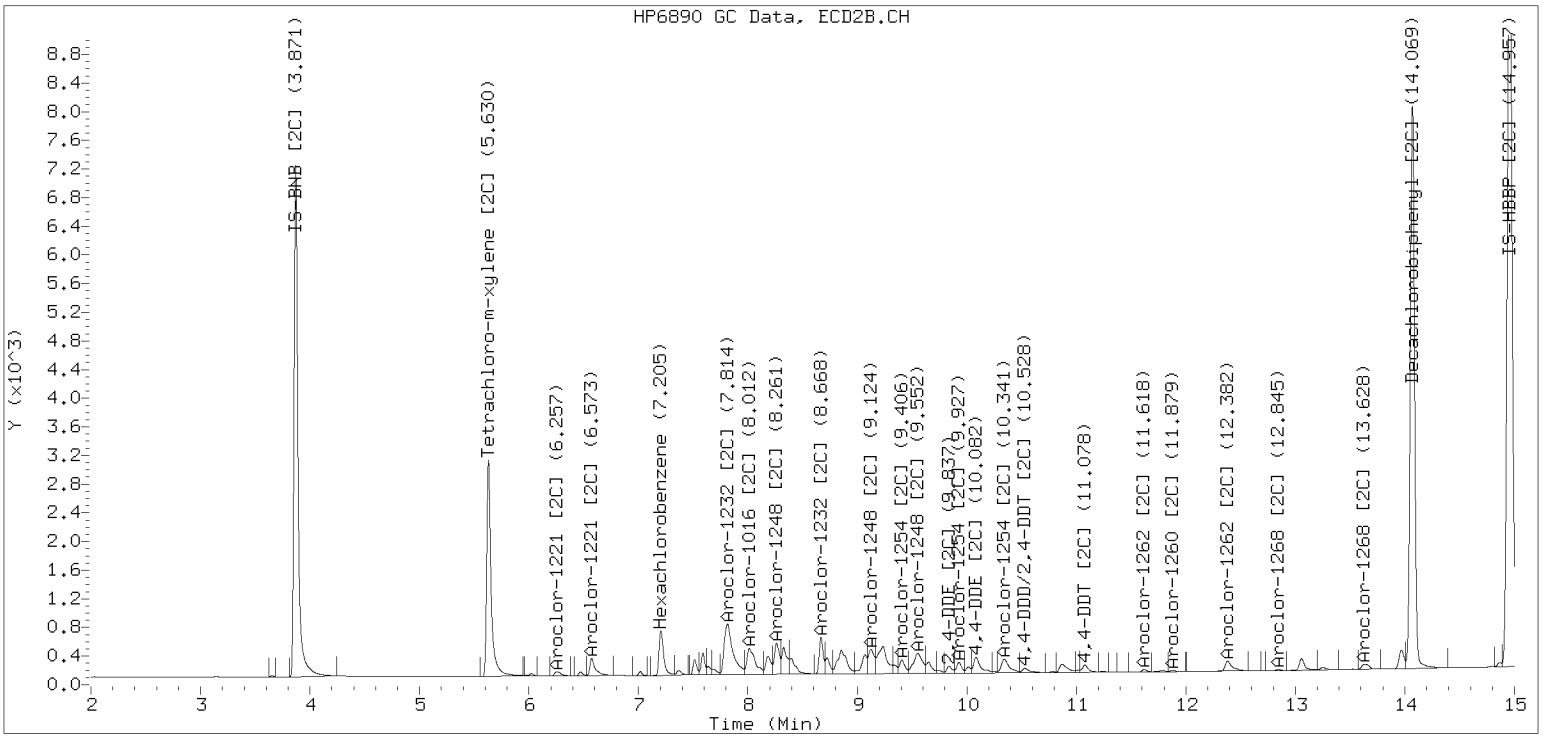


ZB-35 Manual Integration: YES

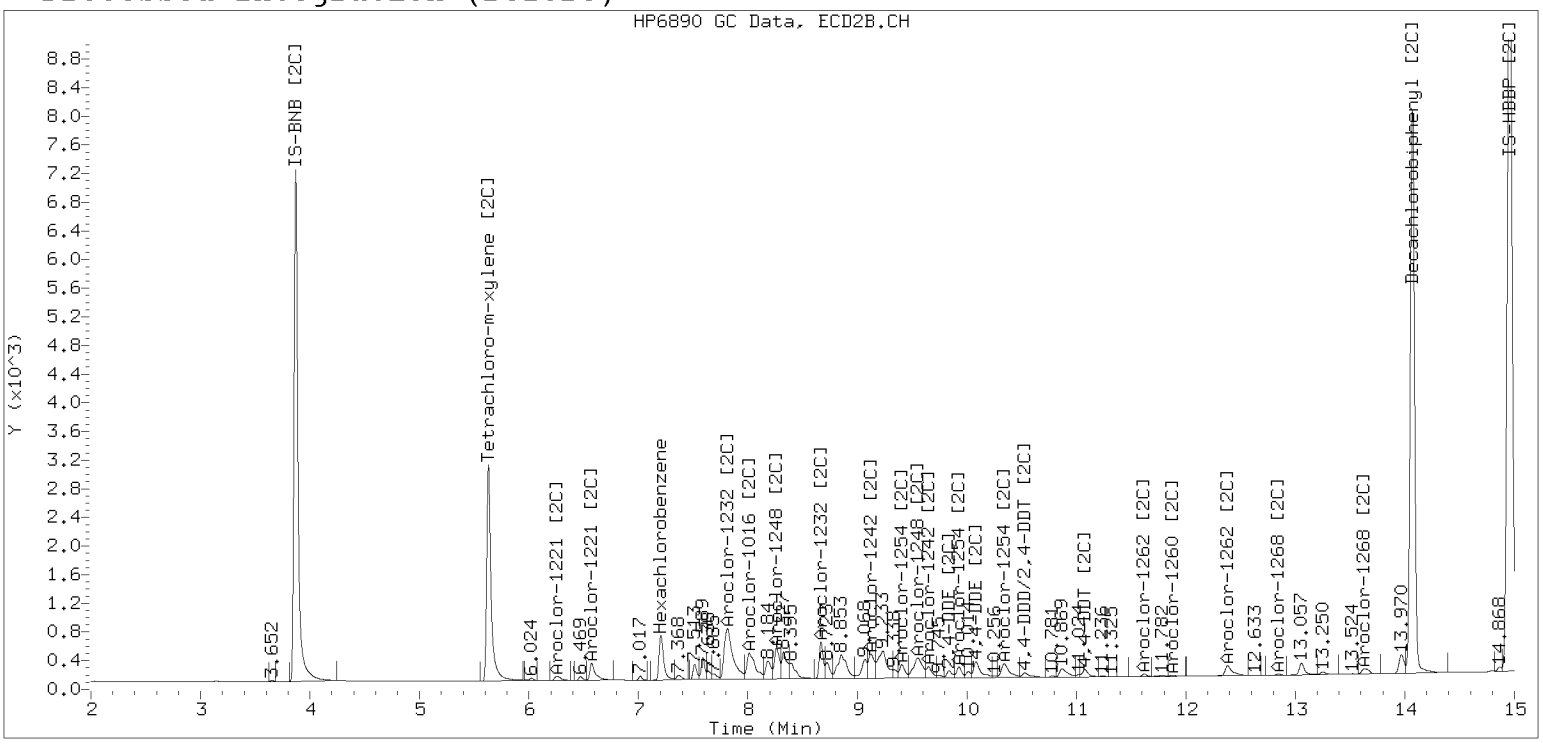
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230505.b/230505.b/05052333ECD7.D Injection Date: 06-MAY-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052334ECD7.D
Data file 2: /230505.b/230505.b/05052334ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248SCV
Client ID:
Injection Date: 06-MAY-2023 03:57
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.741	-0.001	356328	9.834	-0.033	15805	36.8	0.0	----	Tetrachloro-m-xylene
13.842	0.001	339452	----			35.7	0.0	----	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	643038	6.9
Hexabromobiphenyl	876625	952051	8.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	359604	3.0
Hexabromobiphenyl	652984	692982	6.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.212	0.000	19871	79.8	1	7.203	-0.001	18843	92.6
Aroclor-1016	2	7.589	-0.006	95111	122.2	2	7.812	0.005	52352	120.7
Aroclor-1016	3	7.736	0.003	37565	104.4	3	8.012	0.006	8263	43.2
Aroclor-1016	4	8.399	0.002	41542	279.7	4	8.260	0.001	42833	281.8
Total Col1Ave (4 peaks):					146.5	Total Col2Ave (4 peaks):				134.6 RPD = 9
Corrected Ave (3 peaks):					102.1	Corrected Ave (3 peaks):				85.5 RPD = 18
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.066	-0.003	351	3.9	2	6.275	0.029	1573	28.6
Aroclor-1221	3	6.320	-0.001	3509	16.3	3	6.576	0.004	967	11.2
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.066	-0.003	351	5.6	2	7.203	-0.001	18843	236.0
Aroclor-1232	3	7.589	-0.006	95111	318.5	3	7.812	-0.002	52352	326.4
Aroclor-1232	4	8.524	-0.002	105782	827.6	4	8.667	-0.002	44962	968.0
Total Col1Ave (3 peaks):					383.9	Total Col2Ave (3 peaks):				510.1 RPD = 28
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.212	0.000	19871	98.1	1	7.203	-0.000	18843	117.2
Aroclor-1242	2	7.589	-0.006	95111	148.1	2	7.812	-0.000	52352	153.1
Aroclor-1242	3	8.399	0.001	41542	334.5	3	9.120	-0.003	52681	480.6
Aroclor-1242	4	8.524	-0.000	105782	368.1	4	9.650	0.100	23342	176.7
Total Col1Ave (4 peaks):					237.2	Total Col2Ave (4 peaks):				231.9 RPD = 2
Corrected Ave (3 peaks):					193.6	Corrected Ave (3 peaks):				149.0 RPD = 26
Aroclor-1248	1	8.399	0.001	41542	253.1	1	8.260	-0.001	42833	250.4
Aroclor-1248	2	8.524	-0.000	105782	248.0	2	8.667	0.000	44962	248.8
Aroclor-1248	3	8.944	-0.000	206928	252.3	3	9.120	-0.000	52681	248.7
Aroclor-1248	4	9.242	-0.001	105227	251.7	4	9.548	0.002	63343	249.4
Total Col1Ave (4 peaks):					251.3	Total Col2Ave (4 peaks):				249.3 RPD = 1
Corrected Ave (3 peaks):					250.6	Corrected Ave (3 peaks):				249.0 RPD = 1
Aroclor-1254	1	9.242	-0.004	105227	159.2	1	9.404	0.000	25835	94.6
Aroclor-1254	2	9.324	-0.001	51326	172.8	2	9.548	0.049	63343	390.3
Aroclor-1254	3	9.619	0.001	41394	97.0	3	9.925	0.001	22609	102.1
Aroclor-1254	4	9.759	0.003	72223	86.4	4	10.079	0.001	43816	90.7
Aroclor-1254	5	10.135	0.010	49936	98.9	5	10.345	0.016	42513	88.7
Total Col1Ave (5 peaks):					122.9	Total Col2Ave (5 peaks):				153.3 RPD = 22
Corrected Ave (4 peaks):					110.4	Corrected Ave (4 peaks):				94.0 RPD = 16
Aroclor-1260	1	10.998	0.005	1863	3.7	1	11.617	0.011	2599	7.1
Aroclor-1260	2	11.314	0.004	1152	2.3	2	11.877	0.005	1951	2.0
Aroclor-1260	3	11.695	0.009	1829	1.5	3	12.389	0.001	857	3.6
Aroclor-1260	4	12.097	0.007	1266	2.1	4	12.458	0.003	1302	2.0
Aroclor-1260	5	12.195	0.002	464	1.7	NS	---			----
Total Col1Ave (5 peaks):					2.3	Total Col2Ave (4 peaks):				3.7 RPD = 48*
Corrected Ave (4 peaks):					1.9	Corrected Ave (3 peaks):				2.5 RPD = 29
Aroclor-1262	1	10.784	0.005	15405	35.8	1	11.077	-0.077	9003	16.0
Aroclor-1262	2	12.195	0.000	464	0.8	2	11.617	0.012	2599	5.5
Aroclor-1262	3	12.271	0.002	489	0.8	3	12.389	0.003	857	1.7
Aroclor-1262	4	12.940	0.001	1638	3.1	4	12.458	0.002	1302	1.5
Total Col1Ave (4 peaks):					10.1	Total Col2Ave (4 peaks):				6.2 RPD = 48*
Corrected Ave (3 peaks):					1.5	Corrected Ave (3 peaks):				2.9 RPD = 61*
Aroclor-1268	1	12.195	-0.001	464	0.3	1	12.389	0.004	857	0.7
Aroclor-1268	2	12.271	0.003	489	0.3	2	12.458	0.006	1302	0.9
Aroclor-1268	3	12.649	0.001	1831	1.5	3	12.845	0.002	676	0.6
Aroclor-1268	4	13.443	0.006	5387	1.6	4	13.661	-0.003	2707	0.7
Total Col1Ave (4 peaks):					0.9	Total Col2Ave (4 peaks):				0.7 RPD = 26
Corrected Ave (3 peaks):					0.7	Corrected Ave (3 peaks):				0.6 RPD = 11

Total PCB Area Col1 (5.842 - 13.740) = 1634238 Col1 Total PCB = 0.2 ppm*

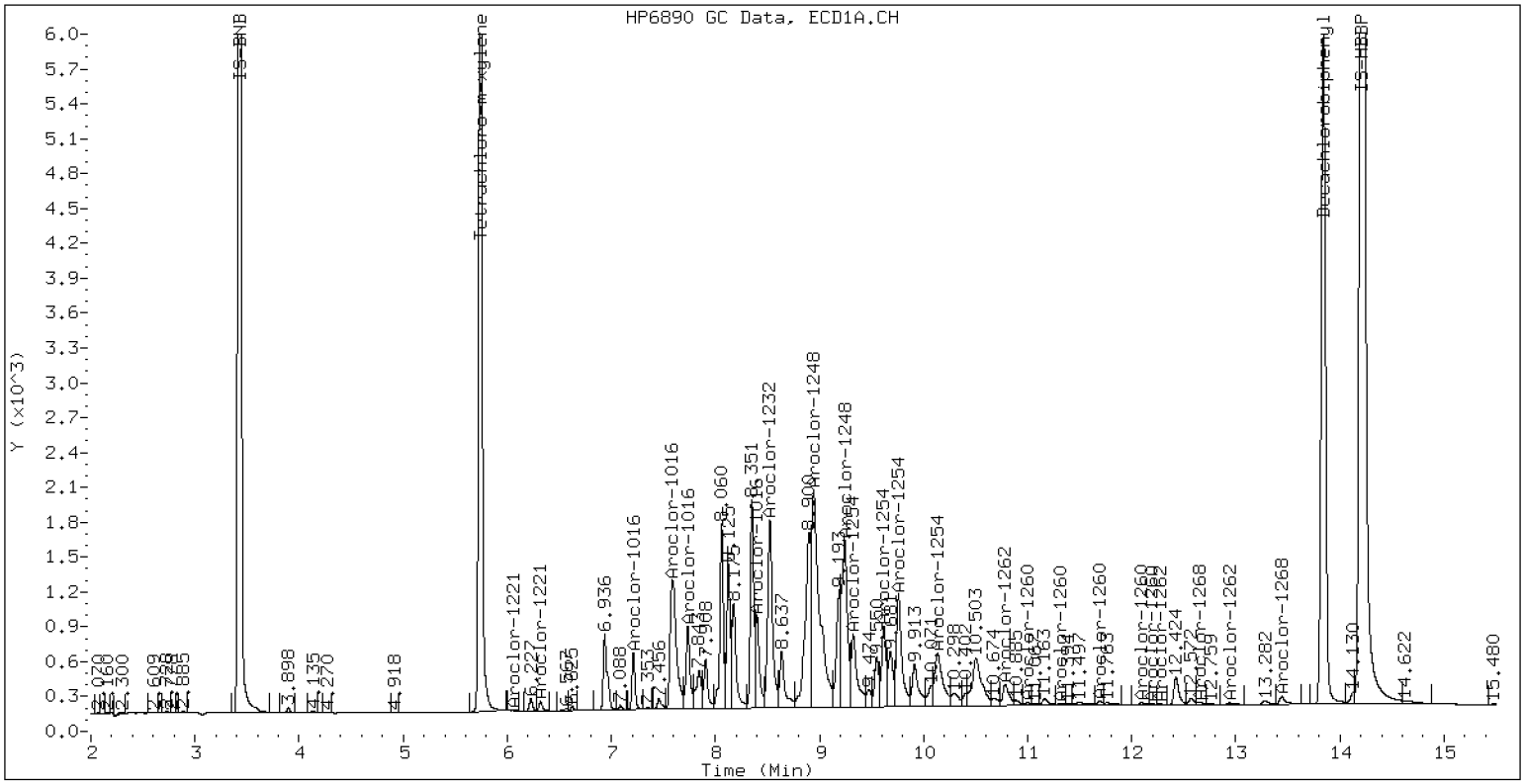
Total PCB Area Col2 (5.842 - 13.740) = 874053 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

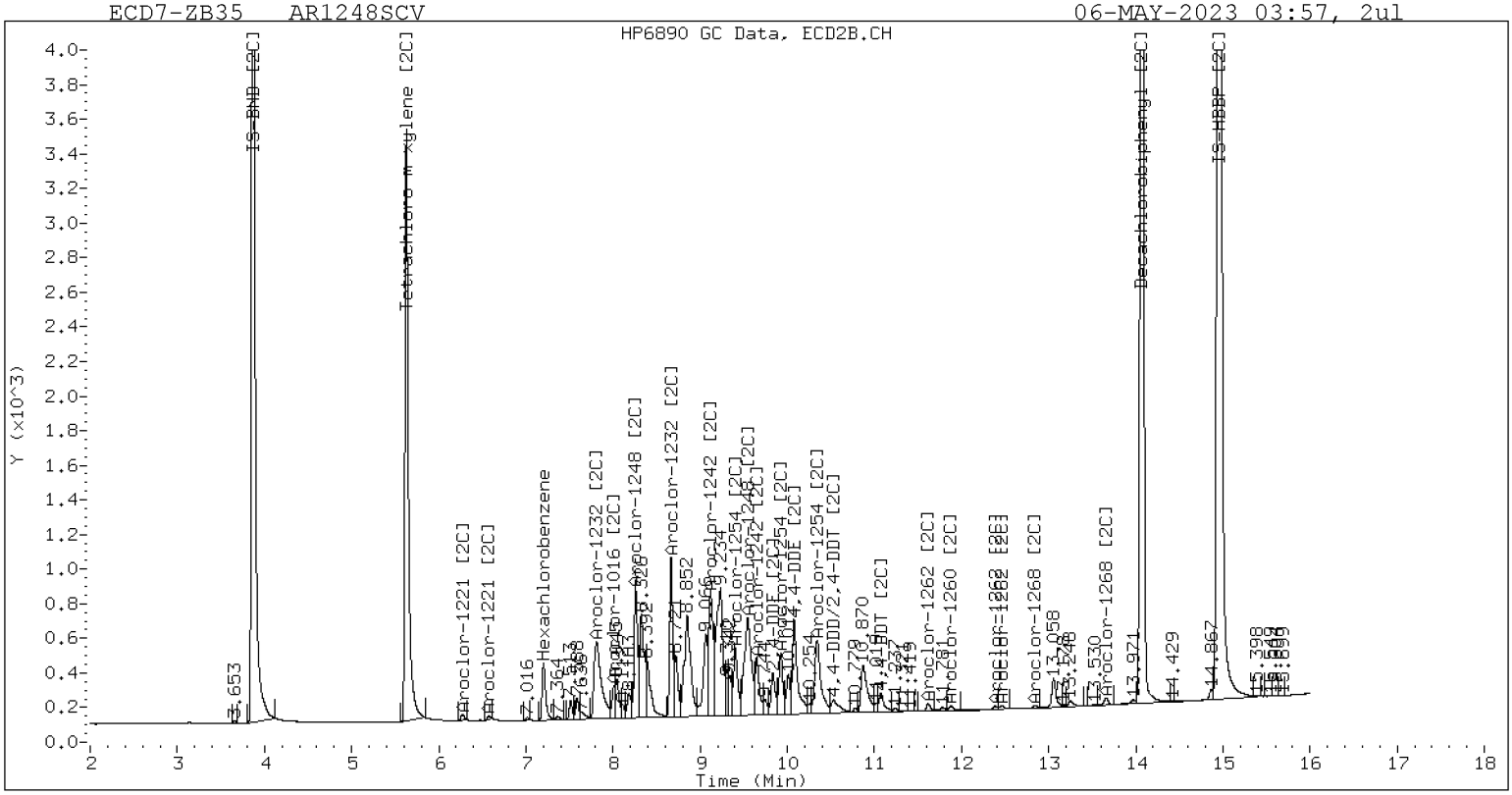
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248SCV 06-MAY-2023 03:57, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248SCV 06-MAY-2023 03:57, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052335ECD7.D
Data file 2: /230505.b/230505.b/05052335ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254SCV
Client ID:
Injection Date: 06-MAY-2023 04:18
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.743	0.001	368022	5.631	0.002	192033	37.6	38.3	2.0	Tetrachloro-m-xylene
13.843	0.002	352066	14.070	0.002	385384	36.0	38.5	6.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	650234	8.1
Hexabromobiphenyl	876625	980276	11.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	364142	4.3
Hexabromobiphenyl	652984	705291	8.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.214	0.002	635	2.5	1	---			0.0
Aroclor-1016	2	7.590	-0.004	2512	3.2	2	---			0.0
Aroclor-1016	3	7.738	0.005	1594	4.4	3	---			0.0
Aroclor-1016	4	8.351	-0.047	31774	211.6	4	---			0.0
Total Col1Ave (4 peaks):					55.4	Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.052	-0.018	242	2.6	2	---			0.0
Aroclor-1221	3	6.322	0.001	427	2.0	3	---			0.0
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.052	-0.018	242	3.8	2	---			0.0
Aroclor-1232	3	7.590	-0.005	2512	8.3	3	---			0.0
Aroclor-1232	4	8.528	0.001	13950	107.9	4	---			0.0
Total Col1Ave (3 peaks):					40.0	Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	7.214	0.002	635	3.1	1	---			0.0
Aroclor-1242	2	7.590	-0.005	2512	3.9	2	---			0.0
Aroclor-1242	3	8.351	-0.047	31774	253.0	3	9.125	0.002	23963	215.9
Aroclor-1242	4	8.528	0.004	13950	48.0	4	9.649	0.099	23982	179.3
Total Col1Ave (4 peaks):					77.0	Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	8.351	-0.048	31774	191.4	1	8.260	-0.000	23490	135.6
Aroclor-1248	2	8.528	0.004	13950	32.3	2	8.669	0.002	16693	91.2
Aroclor-1248	3	8.941	-0.003	154338	186.1	3	9.125	0.005	23963	111.7
Aroclor-1248	4	9.246	0.003	158369	374.6	4	9.499	-0.047	38716	150.5
Total Col1Ave (4 peaks):					196.1	Total Col2Ave (4 peaks):			122.3	RPD = 46*
Corrected Ave (3 peaks):					136.6	Corrected Ave (3 peaks):			112.8	RPD = 19
Aroclor-1254	1	9.246	-0.001	158369	237.0	1	9.404	0.000	67493	244.0
Aroclor-1254	2	9.325	-0.000	72386	241.1	2	9.499	-0.000	38716	235.6
Aroclor-1254	3	9.617	-0.001	103602	240.1	3	9.925	0.001	53972	240.7
Aroclor-1254	4	9.756	0.000	201259	238.2	4	10.079	0.001	116950	239.0
Aroclor-1254	5	10.127	0.001	122207	239.5	5	10.327	-0.001	118439	243.9
Total Col1Ave (5 peaks):					239.2	Total Col2Ave (5 peaks):			240.6	RPD = 1
Corrected Ave (4 peaks):					238.7	Corrected Ave (4 peaks):			239.8	RPD = 0
Aroclor-1260	1	10.994	0.001	13538	26.1	1	11.615	0.009	33465	89.3
Aroclor-1260	2	11.313	0.003	13900	27.2	2	11.876	0.004	25534	26.1
Aroclor-1260	3	11.689	0.004	32548	25.4	3	12.404	0.016	1811	7.5
Aroclor-1260	4	12.093	0.003	25285	40.3	4	12.458	0.002	14842	22.7
Aroclor-1260	5	12.273	0.079	2534	9.3	NS	---			----
Total Col1Ave (5 peaks):					25.6	Total Col2Ave (4 peaks):			36.4	RPD = 35
Corrected Ave (4 peaks):					22.0	Corrected Ave (3 peaks):			18.7	RPD = 16
Aroclor-1262	1	10.779	0.000	210018	473.6	1	11.073	-0.081	114323	200.0
Aroclor-1262	2	12.273	0.078	2534	4.1	2	11.615	0.010	33465	69.4
Aroclor-1262	3	---			0.0	3	12.404	0.018	1811	3.4
Aroclor-1262	4	12.939	0.001	1830	3.3	4	12.458	0.002	14842	17.3
Total Col1Ave (3 peaks):					160.3	Total Col2Ave (4 peaks):			72.6	RPD = 75*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			30.1	
Aroclor-1268	1	12.273	0.077	2534	1.6	1	12.404	0.019	1811	1.4
Aroclor-1268	2	---			0.0	2	12.458	0.005	14842	10.3
Aroclor-1268	3	12.654	0.006	2669	2.1	3	12.847	0.004	835	0.7
Aroclor-1268	4	13.442	0.004	6266	1.8	4	13.662	-0.001	2350	0.6
Total Col1Ave (3 peaks):					1.8	Total Col2Ave (4 peaks):			3.2	RPD = 55*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			0.9	

Total PCB Area Col1 (5.842 - 13.740) = 2123119 Col1 Total PCB = 0.3 ppm*

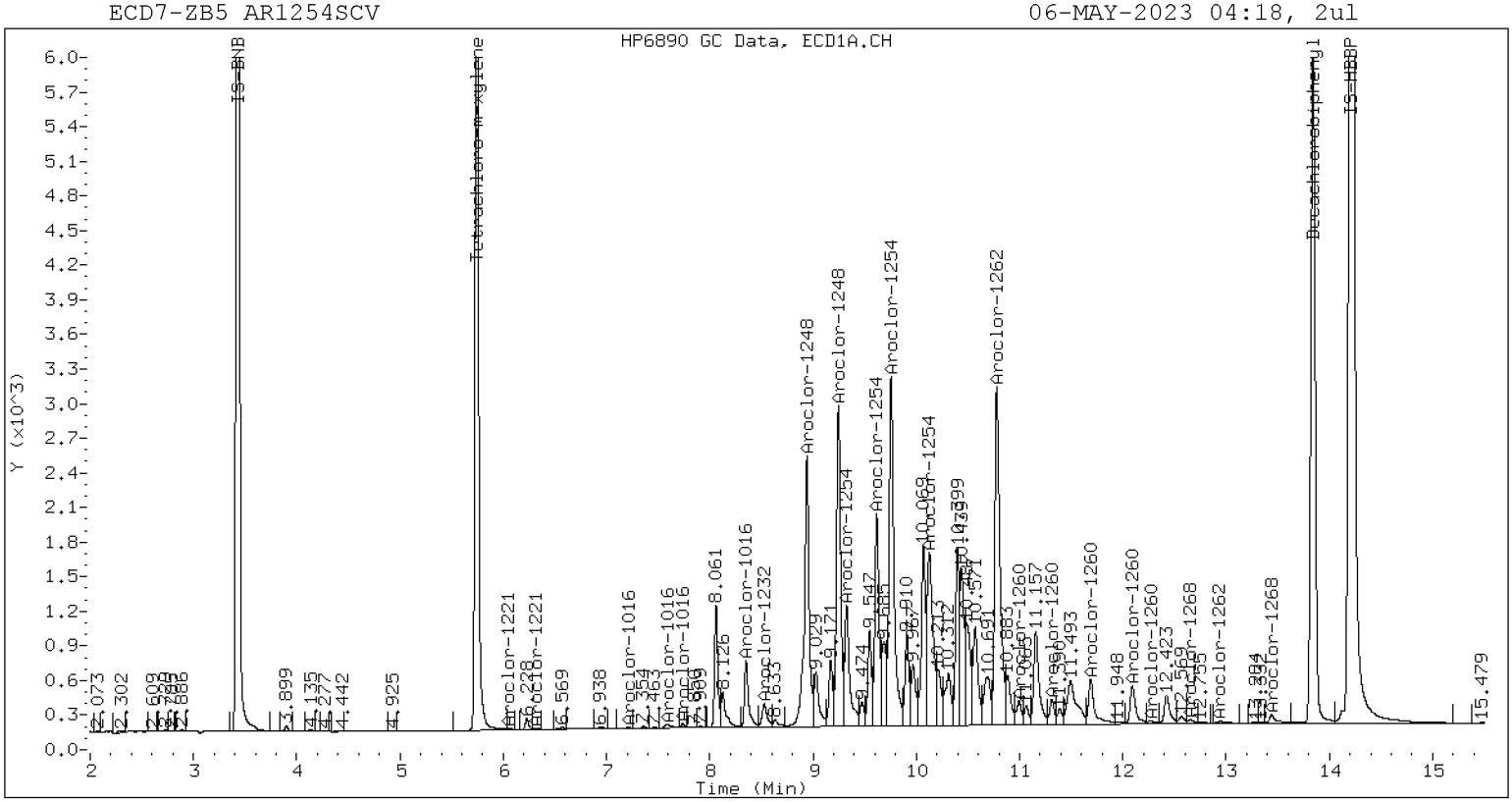
Total PCB Area Col2 (5.728 - 13.968) = 1146487 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

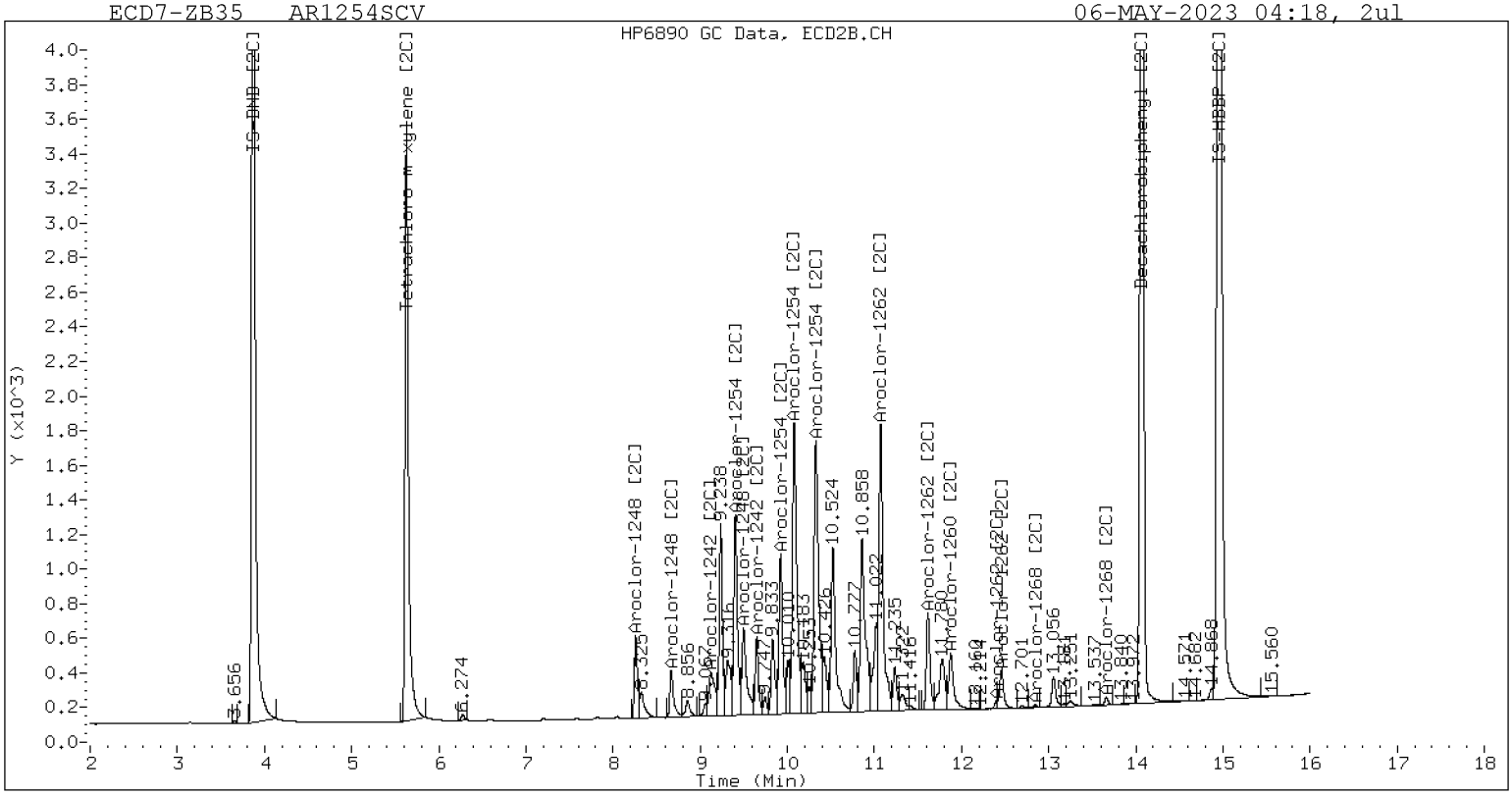
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254SCV 06-MAY-2023 04:18, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254SCV 06-MAY-2023 04:18, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052336ECD7.D
Data file 2: /230505.b/230505.b/05052336ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162SCV
Client ID:
Injection Date: 06-MAY-2023 04:39
Report Date: 05/06/2023 11:31
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	0.000	358254	5.628	-0.000	183759	37.8	39.1	3.3	Tetrachloro-m-xylene
13.842	0.002	344347	14.070	0.002	373300	37.1	38.8	4.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	629547	4.7
Hexabromobiphenyl	876625	929713	6.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	341980	-2.1
Hexabromobiphenyl	652984	678097	3.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.213	0.000	6601	27.1	1	7.207	0.003	3935	20.3
Aroclor-1016	2	7.595	0.000	13419	17.6	2	7.821	0.013	6146	14.9
Aroclor-1016	3	7.735	0.003	7114	20.2	3	8.027	0.021	3201	17.6
Aroclor-1016	4	8.353	-0.045	3916	26.9	4	8.262	0.003	2131	14.7
Total Col1Ave (4 peaks):					23.0	Total Col2Ave (4 peaks):				16.9 RPD = 30
Corrected Ave (3 peaks):					21.6	Corrected Ave (3 peaks):				15.7 RPD = 31
Aroclor-1221	1	4.663	-0.001	13184	297.8	1	4.893	-0.001	7253	287.5
Aroclor-1221	2	6.070	0.000	25527	287.4	2	6.244	-0.001	14853	284.1
Aroclor-1221	3	6.321	0.000	59985	284.3	3	6.571	-0.001	24083	292.9
Total Col1Ave (3 peaks):					289.8	Total Col2Ave (3 peaks):				288.2 RPD = 1
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.663	-0.001	13184	447.0	1	4.893	-0.001	7253	546.9
Aroclor-1232	2	6.070	0.000	25527	416.0	2	7.207	0.002	3935	51.8
Aroclor-1232	3	7.595	-0.000	13419	45.9	3	7.821	0.006	6146	40.3
Aroclor-1232	4	8.528	0.001	2679	21.4	4	8.671	0.002	1120	25.4
Total Col1Ave (4 peaks):					232.6	Total Col2Ave (4 peaks):				166.1 RPD = 33
Corrected Ave (3 peaks):					161.1	Corrected Ave (3 peaks):				39.2 RPD = 122*
Aroclor-1242	1	7.213	0.001	6601	33.3	1	7.207	0.004	3935	25.7
Aroclor-1242	2	7.595	-0.000	13419	21.3	2	7.821	0.008	6146	18.9
Aroclor-1242	3	8.353	-0.045	3916	32.2	3	9.133	0.010	881	8.5
Aroclor-1242	4	8.528	0.003	2679	9.5	4	9.651	0.101	516	4.1
Total Col1Ave (4 peaks):					24.1	Total Col2Ave (4 peaks):				14.3 RPD = 51*
Corrected Ave (3 peaks):					21.0	Corrected Ave (3 peaks):				10.5 RPD = 67*
Aroclor-1248	1	8.353	-0.046	3916	24.4	1	8.262	0.002	2131	13.1
Aroclor-1248	2	8.528	0.003	2679	6.4	2	8.671	0.004	1120	6.5
Aroclor-1248	3	8.942	-0.002	25144	31.3	3	9.133	0.013	881	4.4
Aroclor-1248	4	9.251	0.008	25583	62.5	4	9.500	-0.045	335	1.4
Total Col1Ave (4 peaks):					31.1	Total Col2Ave (4 peaks):				6.3 RPD = 132*
Corrected Ave (3 peaks):					20.7	Corrected Ave (3 peaks):				4.1 RPD = 134*
Aroclor-1254	1	9.251	0.005	25583	39.5	1	9.408	0.004	9719	37.4
Aroclor-1254	2	---			0.0	2	9.500	0.001	335	2.2
Aroclor-1254	3	9.620	0.002	4245	10.2	3	9.928	0.004	2055	9.8
Aroclor-1254	4	9.758	0.003	11050	13.5	4	10.100	0.022	55162	120.0
Aroclor-1254	5	10.071	-0.055	129151	261.4	5	10.325	-0.004	68421	150.1
Total Col1Ave (4 peaks):					81.1	Total Col2Ave (5 peaks):				63.9 RPD = 24
Corrected Ave (3 peaks):					21.1	Corrected Ave (4 peaks):				42.3 RPD = 67*
Aroclor-1260	1	10.995	0.002	206643	420.3	1	11.605	-0.001	119902	332.9
Aroclor-1260	2	11.311	0.001	167443	345.1	2	11.872	0.000	293746	311.8
Aroclor-1260	3	11.687	0.001	390491	321.4	3	12.386	-0.002	131462	563.2
Aroclor-1260	4	12.091	0.001	120118	201.8	4	12.456	0.000	212898	338.4
Aroclor-1260	5	12.195	0.002	155588	599.5	NS	---			----
Total Col1Ave (5 peaks):					377.6	Total Col2Ave (4 peaks):				386.6 RPD = 2
Corrected Ave (4 peaks):					322.2	Corrected Ave (3 peaks):				327.7 RPD = 2
Aroclor-1262	1	10.777	-0.001	114050	271.2	1	11.153	0.000	141861	258.2
Aroclor-1262	2	12.195	0.001	155588	263.0	2	11.605	0.000	119902	258.7
Aroclor-1262	3	12.269	0.000	167998	264.2	3	12.386	-0.000	131462	259.6
Aroclor-1262	4	12.938	-0.001	136019	262.5	4	12.456	0.000	212898	258.0
Total Col1Ave (4 peaks):					265.2	Total Col2Ave (4 peaks):				258.6 RPD = 3
Corrected Ave (3 peaks):					263.3	Corrected Ave (3 peaks):				258.3 RPD = 2
Aroclor-1268	1	12.195	-0.000	155588	104.9	1	12.386	0.001	131462	102.4
Aroclor-1268	2	12.269	0.001	167998	114.1	2	12.456	0.003	212898	154.3
Aroclor-1268	3	12.675	0.027	60611	51.2	3	12.843	-0.000	8393	7.1
Aroclor-1268	4	13.439	0.001	49821	14.7	4	13.661	-0.002	39480	10.4
Total Col1Ave (4 peaks):					71.2	Total Col2Ave (4 peaks):				68.6 RPD = 4

Corrected Ave (3 peaks): 56.9 Corrected Ave (3 peaks): 40.0 RPD = 35

Total PCB Area Col1 (5.842 - 13.740) = 2870829 Col1 Total PCB = 0.4 ppm*

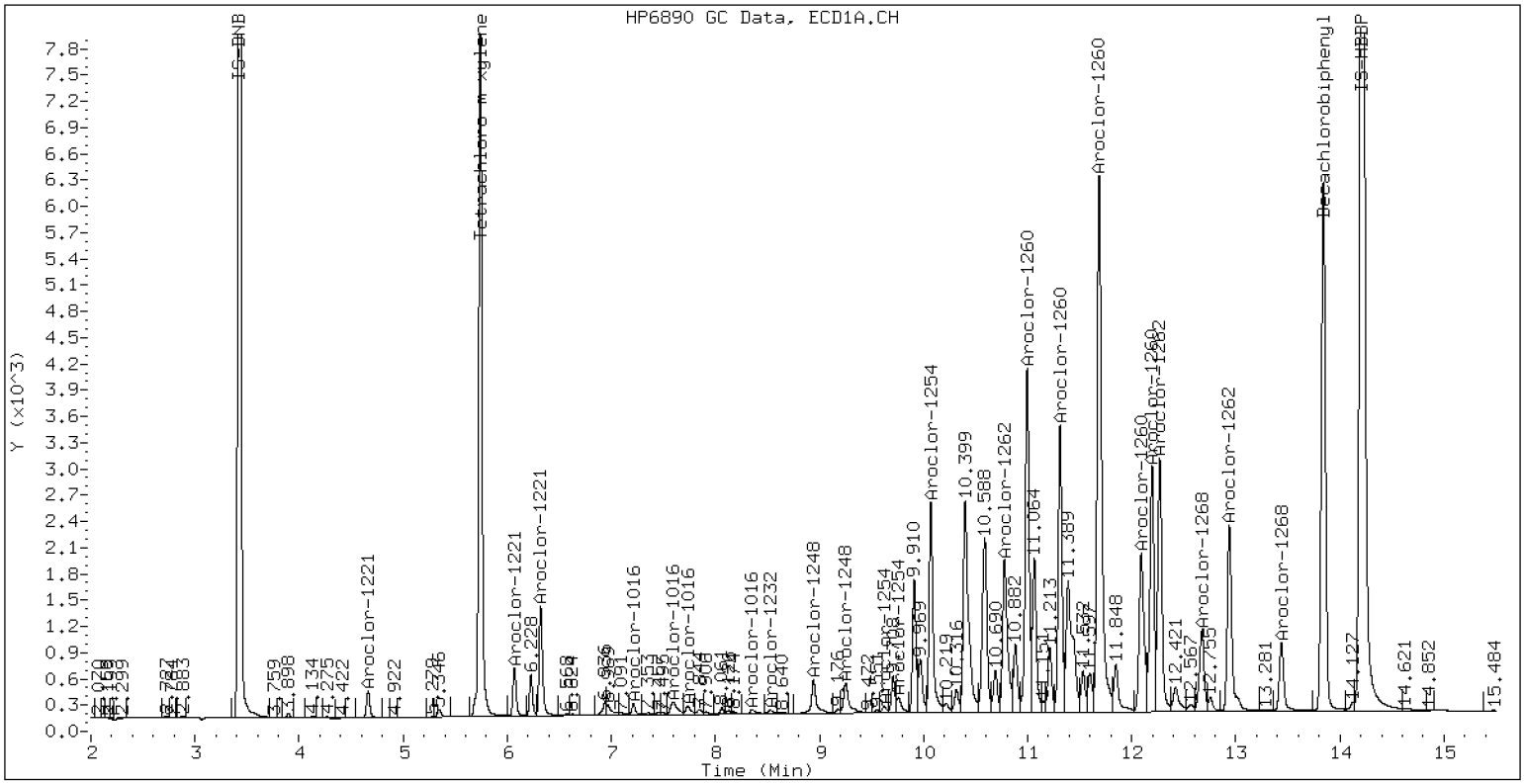
Total PCB Area Col2 (5.728 - 13.968) = 1885829 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

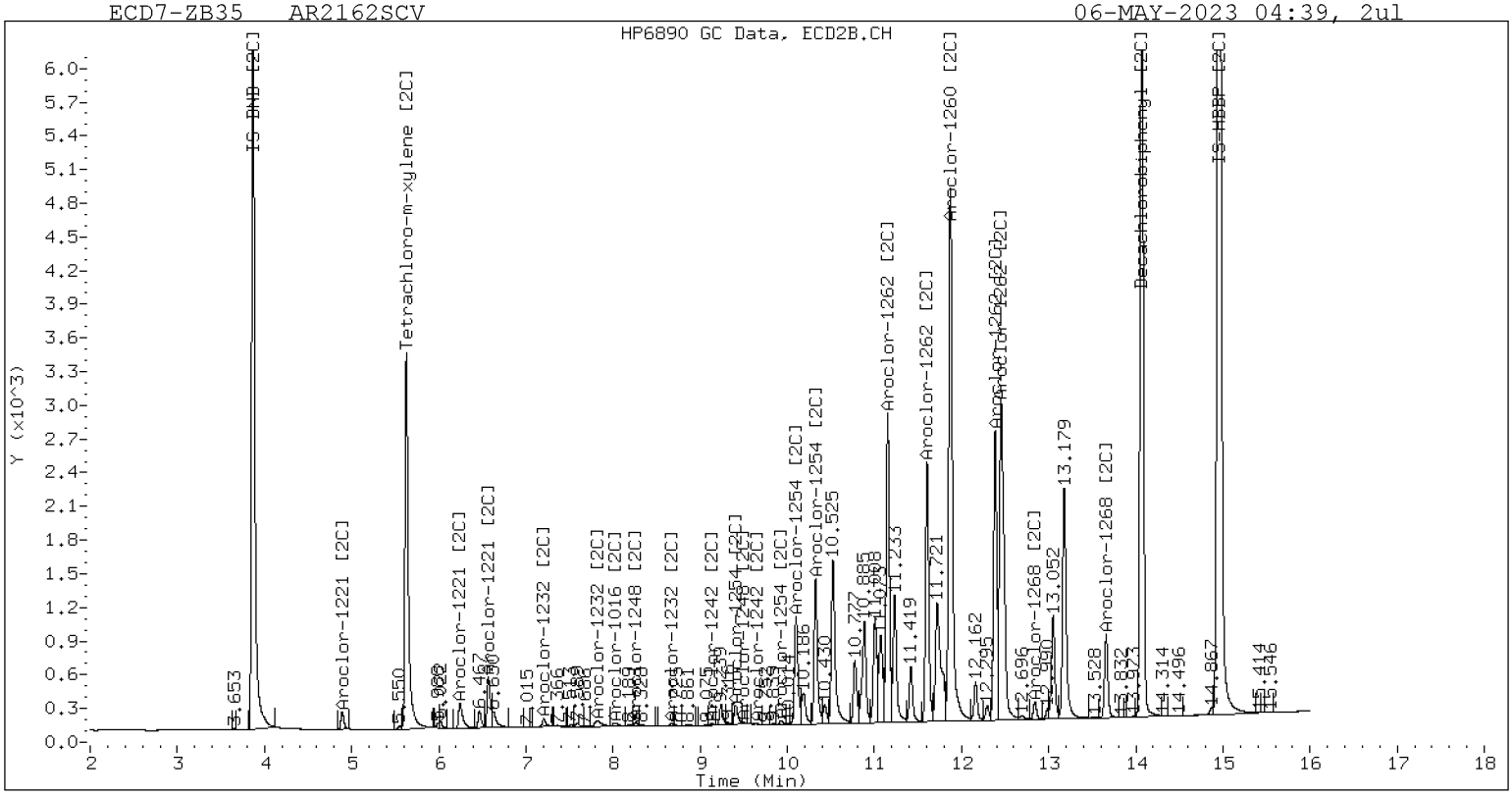
PCB Dual Column Chromatograms

ECD7-ZB5 AR2162SCV 06-MAY-2023 04:39, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR2162SCV 06-MAY-2023 04:39, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052337ECD7.D
Data file 2: /230505.b/230505.b/05052337ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268SCV
Client ID:
Injection Date: 06-MAY-2023 05:00
Report Date: 05/06/2023 11:31
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.743	0.001	373749	5.629	0.001	196946	38.4	40.4	5.2	Tetrachloro-m-xylene
13.842	0.002	525409	14.069	0.001	586548	55.1	59.3	7.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	646456	7.5
Hexabromobiphenyl	876625	954969	8.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	354120	1.4
Hexabromobiphenyl	652984	696139	6.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.214	0.001	28623	114.3	1	7.205	0.002	23124	115.4
Aroclor-1016	2	7.597	0.002	85721	109.5	2	7.815	0.007	47496	111.2
Aroclor-1016	3	7.735	0.002	41343	114.3	3	8.014	0.008	24029	127.5
Aroclor-1016	4	8.400	0.002	16653	111.6	4	8.262	0.003	15421	103.0
Total Col1Ave (4 peaks):					112.4	Total Col2Ave (4 peaks):				114.3 RPD = 2
Corrected Ave (3 peaks):					111.8	Corrected Ave (3 peaks):				109.9 RPD = 2
Aroclor-1221	1	4.664	0.001	7272	159.9	1	4.895	0.000	4045	154.9
Aroclor-1221	2	6.070	0.001	13478	147.8	2	6.246	0.000	9235	170.6
Aroclor-1221	3	6.321	0.001	43831	202.3	3	6.572	0.000	24300	285.4
Total Col1Ave (3 peaks):					170.0	Total Col2Ave (3 peaks):				203.6 RPD = 18
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.664	0.001	7272	240.1	1	4.895	0.001	4045	294.5
Aroclor-1232	2	6.070	0.001	13478	213.9	2	7.205	0.001	23124	294.1
Aroclor-1232	3	7.597	0.002	85721	285.5	3	7.815	0.000	47496	300.7
Aroclor-1232	4	8.527	0.000	36809	286.5	4	8.669	-0.000	14324	313.2
Total Col1Ave (4 peaks):					256.5	Total Col2Ave (4 peaks):				300.6 RPD = 16
Corrected Ave (3 peaks):					246.5	Corrected Ave (3 peaks):				296.5 RPD = 18
Aroclor-1242	1	7.214	0.002	28623	140.5	1	7.205	0.002	23124	146.1
Aroclor-1242	2	7.597	0.002	85721	132.8	2	7.815	0.002	47496	141.1
Aroclor-1242	3	8.400	0.002	16653	133.4	3	9.128	0.005	14403	133.4
Aroclor-1242	4	8.527	0.003	36809	127.4	4	9.648	0.098	5512	42.4
Total Col1Ave (4 peaks):					133.5	Total Col2Ave (4 peaks):				115.7 RPD = 14
Corrected Ave (3 peaks):					131.2	Corrected Ave (3 peaks):				105.6 RPD = 22
Aroclor-1248	1	8.400	0.001	16653	100.9	1	8.262	0.002	15421	91.5
Aroclor-1248	2	8.527	0.003	36809	85.8	2	8.669	0.002	14324	80.5
Aroclor-1248	3	8.944	0.000	89377	108.4	3	9.128	0.008	14403	69.0
Aroclor-1248	4	9.238	-0.005	41570	98.9	4	9.560	0.015	17331	69.3
Total Col1Ave (4 peaks):					98.5	Total Col2Ave (4 peaks):				77.6 RPD = 24
Corrected Ave (3 peaks):					95.2	Corrected Ave (3 peaks):				72.9 RPD = 26
Aroclor-1254	1	9.238	-0.008	41570	62.6	1	9.407	0.003	5487	20.4
Aroclor-1254	2	9.326	0.001	12640	42.3	2	9.560	0.061	17331	108.4
Aroclor-1254	3	9.624	0.006	7232	16.9	3	9.929	0.005	3481	16.0
Aroclor-1254	4	9.764	0.008	11671	13.9	4	10.086	0.009	7259	15.3
Aroclor-1254	5	10.139	0.014	7544	14.9	5	10.345	0.017	6610	14.0
Total Col1Ave (5 peaks):					30.1	Total Col2Ave (5 peaks):				34.8 RPD = 14
Corrected Ave (4 peaks):					22.0	Corrected Ave (4 peaks):				16.4 RPD = 29
Aroclor-1260	1	10.998	0.005	85093	168.5	1	11.598	-0.008	75237	203.5
Aroclor-1260	2	11.313	0.003	6363	12.8	2	11.873	0.001	33655	34.8
Aroclor-1260	3	11.688	0.002	47857	38.3	3	12.384	-0.004	346138	1444.4
Aroclor-1260	4	12.094	0.004	1291	2.1	4	12.453	-0.002	373218	577.8
Aroclor-1260	5	12.195	0.001	406211	1523.9	NS	---			----
Total Col1Ave (5 peaks):					349.1	Total Col2Ave (4 peaks):				565.1 RPD = 47*
Corrected Ave (4 peaks):					55.4	Corrected Ave (3 peaks):				272.0 RPD = 132*
Aroclor-1262	1	10.785	0.006	4006	9.3	1	11.156	0.002	52531	93.1
Aroclor-1262	2	12.195	0.000	406211	668.6	2	11.598	-0.007	75237	158.2
Aroclor-1262	3	12.268	-0.002	403730	618.2	3	12.384	-0.002	346138	665.8
Aroclor-1262	4	12.937	-0.002	145536	273.5	4	12.453	-0.002	373218	440.5
Total Col1Ave (4 peaks):					392.4	Total Col2Ave (4 peaks):				339.4 RPD = 14
Corrected Ave (3 peaks):					300.3	Corrected Ave (3 peaks):				230.6 RPD = 26
Aroclor-1268	1	12.195	-0.001	406211	266.7	1	12.384	-0.001	346138	262.7
Aroclor-1268	2	12.268	-0.000	403730	266.9	2	12.453	0.001	373218	263.5
Aroclor-1268	3	12.648	-0.000	323568	266.0	3	12.844	0.001	316122	260.6
Aroclor-1268	4	13.439	0.002	920777	265.1	4	13.663	0.000	1029335	264.8
Total Col1Ave (4 peaks):					266.2	Total Col2Ave (4 peaks):				262.9 RPD = 1

Corrected Ave (3 peaks): 265.9 Corrected Ave (3 peaks): 262.3 RPD = 1

Total PCB Area Col1 (5.842 - 13.740) = 3325332 Col1 Total PCB = 0.5 ppm*

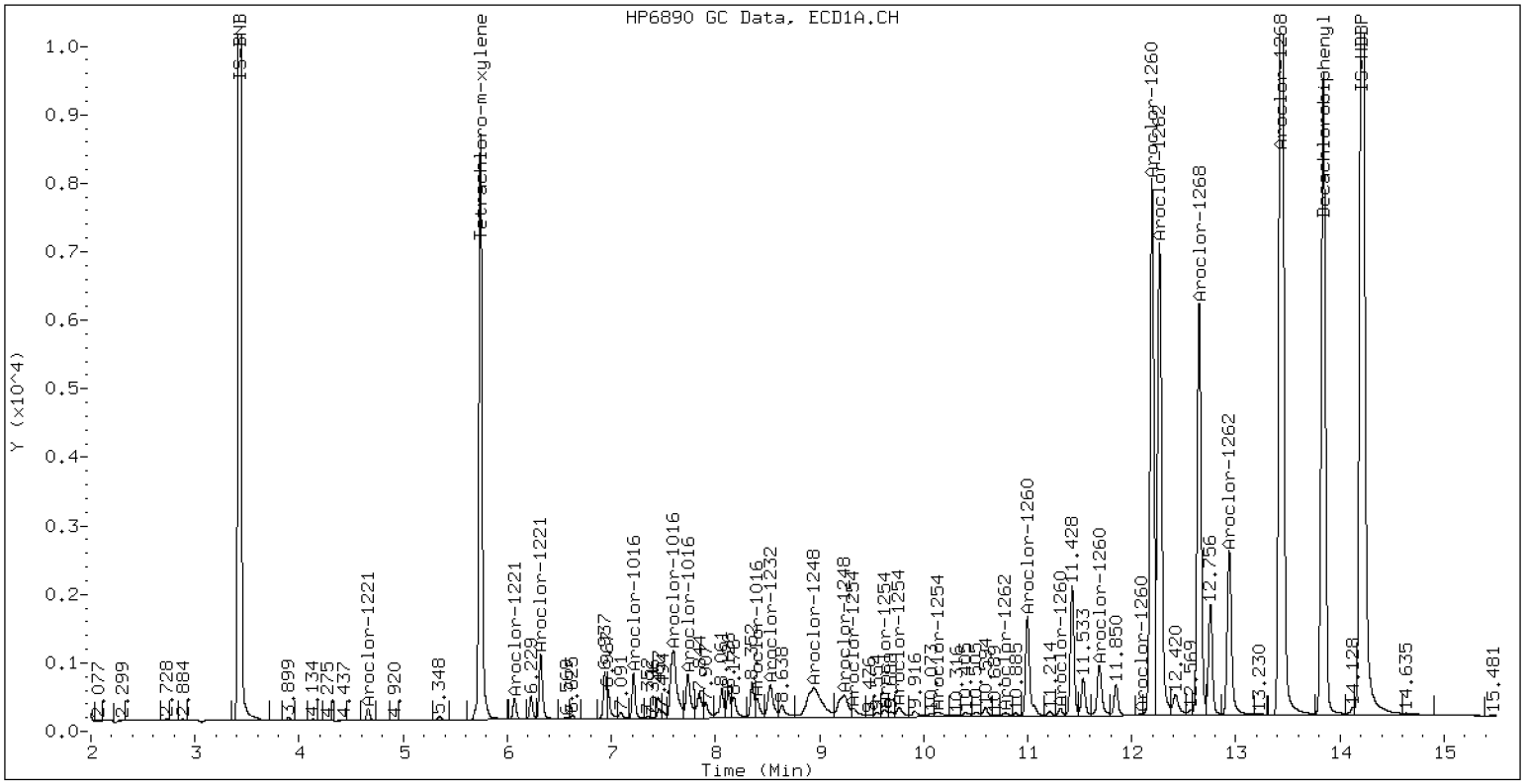
Total PCB Area Col2 (5.728 - 13.968) = 2876097 Col2 Total PCB = 0.7 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

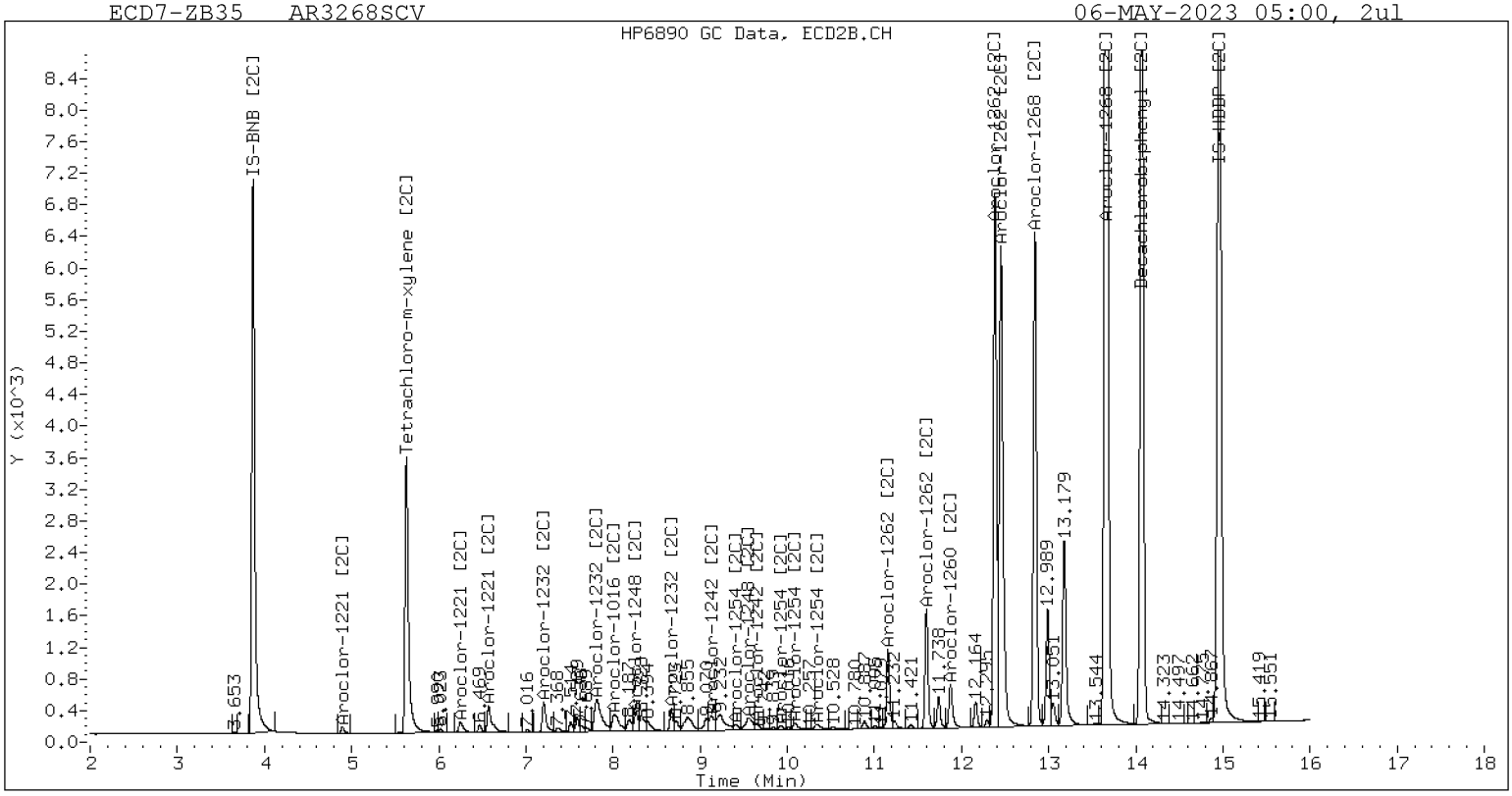
PCB Dual Column Chromatograms

ECD7-ZB5 AR3268SCV 06-MAY-2023 05:00, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR3268SCV 06-MAY-2023 05:00, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: /230505.b/05052338ECD7.D ARI ID: DDTS

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
9.206	0.000	428189	9.867	0.000	428008	0.100	0.000	----	2,4-DDE
0.000	-10.293	0	10.625	0.000	621468	0.000	0.000#	----	2,4-DDT
9.635	0.000	1004111	10.165	0.000	369270	0.100	0.000	----	4,4-DDE
10.243	0.000	476377	10.625	0.000	621468	0.100	0.000#	----	4,4-DDD

# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: /230505.b/05052339ECD7.D ARI ID: DDT BD

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
9.158	-0.049	12021	9.884	0.017	17091	0.002	0.000	----	2,4-DDE
0.000	-10.293	0	10.633	0.008	326807	0.000	0.000#	----	2,4-DDT
9.644	0.009	16770	10.190	0.025	488	0.001	0.000	----	4,4-DDE
10.216	-0.028	403865	10.633	0.008	326807	0.068	0.000#	----	4,4-DDD

# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

Analytical Resources, LLC
Analytical Chemists and Consultants

ANALYSIS SEQUENCE

SLE0079

Instrument: ECD7
Calibration ID: GE00022

Printed: 5/6/2023 11:44:56AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLE0079-CAL1	QC		1		L000856	L000844		
SLE0079-CAL2	QC		2		L000859	L000844		
SLE0079-CAL3	QC		3		L000858	L000844		
SLE0079-CAL4	QC		4		L000731	L000844		
SLE0079-CAL5	QC		5		L000857	L000844		
SLE0079-CAL6	QC		6		L000855	L000844		
SLE0079-CAL7	QC		7		L000860	L000844		
SLE0079-CAL8	QC		8		L000861	L000844		
SLE0079-CAL9	QC		9		L000862	L000844		
SLE0079-CALA	QC		10		L004996	L000844		
SLE0079-CALB	QC		11		L004997	L000844		
SLE0079-SCV1	QC		12		L002065	L000844		
SLE0079-SCV2	QC		13		L003970	L000844		
SLE0079-SCV3	QC		14		L002066	L000844		
SLE0079-SCV4	QC		15		L002067	L000844		
SLE0079-SCV5	QC		16		L002068	L000844		
SLE0079-SCV6	QC		17		L002069	L000844		

Samples Loaded By Date

Data Processed By Date

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230505.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	05-MAY-2023 23:06	05052320ECD7.D	1	IB	
2	05-MAY-2023 23:26	05052321ECD7.D	1	0.25PPMAR1660	
3	05-MAY-2023 23:47	05052322ECD7.D	1	0.02PPMAR1660	
4	06-MAY-2023 00:08	05052323ECD7.D	1	0.05PPMAR1660	
5	06-MAY-2023 00:29	05052324ECD7.D	1	1.0PPMAR1660	
6	06-MAY-2023 00:50	05052325ECD7.D	1	0.1PPMAR1660	
7	06-MAY-2023 01:11	05052326ECD7.D	1	0.5PPMAR1660	
8	06-MAY-2023 01:31	05052327ECD7.D	1	0.25PPMAR1242	
9	06-MAY-2023 01:52	05052328ECD7.D	1	0.25PPMAR1248	
10	06-MAY-2023 02:13	05052329ECD7.D	1	0.25PPMAR1254	
11	06-MAY-2023 02:34	05052330ECD7.D	1	0.25PPMAR2162	
12	06-MAY-2023 02:55	05052331ECD7.D	1	0.25PPMAR3268	
13	06-MAY-2023 03:16	05052332ECD7.D	1	AR1660SCV	
14	06-MAY-2023 03:36	05052333ECD7.D	1	AR1242SCV	
15	06-MAY-2023 03:57	05052334ECD7.D	1	AR1248SCV	
16	06-MAY-2023 04:18	05052335ECD7.D	1	AR1254SCV	
17	06-MAY-2023 04:39	05052336ECD7.D	1	AR2162SCV	
18	06-MAY-2023 05:00	05052337ECD7.D	1	AR3268SCV	
19	06-MAY-2023 05:21	05052338ECD7.D	1	DDTS	
20	06-MAY-2023 05:41	05052339ECD7.D	1	DDT BD	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230505.b

ARI Job No.: Method: PCB.m Instrument: ecd7.i Date: 05-MAY-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1548	05052301ECD7.D			1	NO MANUAL INTEGRATION
1609	05052302ECD7.D			1	NO MANUAL INTEGRATION
1711	05052303ECD7.D			1	NO MANUAL INTEGRATION
1732	05052304ECD7.D			1	NO MANUAL INTEGRATION
1753	05052305ECD7.D			1	NO MANUAL INTEGRATION
1814	05052306ECD7.D			1	NO MANUAL INTEGRATION
1835	05052307ECD7.D			1	NO MANUAL INTEGRATION
1856	05052308ECD7.D			1	NO MANUAL INTEGRATION
1916	05052309ECD7.D			1	NO MANUAL INTEGRATION
1937	05052310ECD7.D			1	NO MANUAL INTEGRATION
1958	05052311ECD7.D			1	NO MANUAL INTEGRATION
2019	05052312ECD7.D			1	NO MANUAL INTEGRATION
2040	05052313ECD7.D			1	NO MANUAL INTEGRATION
2101	05052314ECD7.D			1	NO MANUAL INTEGRATION
2121	05052315ECD7.D			1	NO MANUAL INTEGRATION
2142	05052316ECD7.D			1	NO MANUAL INTEGRATION
2203	05052317ECD7.D			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230505.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2224	05052318ECD7.D			1	NO MANUAL INTEGRATION
2245	05052319ECD7.D			1	NO MANUAL INTEGRATION
2306	05052320ECD7.D	IB		1	NO MANUAL INTEGRATION
2326	05052321ECD7.D	0.25PPMAR1660		1	NO MANUAL INTEGRATION
2347	05052322ECD7.D	0.02PPMAR1660		1	NO MANUAL INTEGRATION
0008	05052323ECD7.D	0.05PPMAR1660		1	NO MANUAL INTEGRATION
0029	05052324ECD7.D	1.0PPMAR1660		1	NO MANUAL INTEGRATION
0050	05052325ECD7.D	0.1PPMAR1660		1	NO MANUAL INTEGRATION
0111	05052326ECD7.D	0.5PPMAR1660		1	NO MANUAL INTEGRATION
0131	05052327ECD7.D	0.25PPMAR1242		1	NO MANUAL INTEGRATION
0152	05052328ECD7.D	0.25PPMAR1248		1	NO MANUAL INTEGRATION
0213	05052329ECD7.D	0.25PPMAR1254		1	NO MANUAL INTEGRATION
0234	05052330ECD7.D	0.25PPMAR2162		1	NO MANUAL INTEGRATION
0255	05052331ECD7.D	0.25PPMAR3268		1	NO MANUAL INTEGRATION
0316	05052332ECD7.D	AR1660SCV		1	NO MANUAL INTEGRATION
0336	05052333ECD7.D	AR1242SCV		1	NO MANUAL INTEGRATION
0357	05052334ECD7.D	AR1248SCV		1	NO MANUAL INTEGRATION
0418	05052335ECD7.D	AR1254SCV		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230505.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0439	05052336ECD7.D	AR2162SCV		1	NO MANUAL INTEGRATION
0500	05052337ECD7.D	AR3268SCV		1	NO MANUAL INTEGRATION
0521	05052338ECD7.D	DDTS		1	NO MANUAL INTEGRATION
0541	05052339ECD7.D	DDT BD		1	NO MANUAL INTEGRATION
1548	05052301ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1609	05052302ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1711	05052303ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
1732	05052304ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
1753	05052305ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
1814	05052306ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
1835	05052307ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
1856	05052308ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
1916	05052309ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1937	05052310ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1958	05052311ECD7.D	RINSE		1	NO MANUAL INTEGRATION
2019	05052312ECD7.D	RINSE		1	NO MANUAL INTEGRATION
2040	05052313ECD7.D	RINSE		1	NO MANUAL INTEGRATION
2101	05052314ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230505.b\230505.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2121	05052315ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
2142	05052316ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
2203	05052317ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
2224	05052318ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
2245	05052319ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
2306	05052320ECD7.D	IB		1	NO MANUAL INTEGRATION
2326	05052321ECD7.D	0.25PPMAR1660		1	NO MANUAL INTEGRATION
2347	05052322ECD7.D	0.02PPMAR1660		1	Aroclor-1016 [2C],
0008	05052323ECD7.D	0.05PPMAR1660		1	Aroclor-1016 [2C],
0029	05052324ECD7.D	1.0PPMAR1660		1	NO MANUAL INTEGRATION
0050	05052325ECD7.D	0.1PPMAR1660		1	Aroclor-1016 [2C],
0111	05052326ECD7.D	0.5PPMAR1660		1	NO MANUAL INTEGRATION
0132	05052327ECD7.D	0.25PPMAR1242		1	Aroclor-1242 [2C],
0152	05052328ECD7.D	0.25PPMAR1248		1	NO MANUAL INTEGRATION
0213	05052329ECD7.D	0.25PPMAR1254		1	NO MANUAL INTEGRATION
0234	05052330ECD7.D	0.25PPMAR2162		1	NO MANUAL INTEGRATION
0255	05052331ECD7.D	0.25PPMAR3268		1	NO MANUAL INTEGRATION
0316	05052332ECD7.D	AR1660SCV		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230505.b\230505.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0336	05052333ECD7.D	AR1242SCV		1	Aroclor-1242 [2C],
0357	05052334ECD7.D	AR1248SCV		1	NO MANUAL INTEGRATION
0418	05052335ECD7.D	AR1254SCV		1	NO MANUAL INTEGRATION
0439	05052336ECD7.D	AR2162SCV		1	NO MANUAL INTEGRATION
0500	05052337ECD7.D	AR3268SCV		1	NO MANUAL INTEGRATION
0521	05052338ECD7.D	DDTS		1	NO MANUAL INTEGRATION
0541	05052339ECD7.D	DDT BD		1	NO MANUAL INTEGRATION

Security Status Report

Date: 06-May-2023 09:12

05052320ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052321ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052322ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052323ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052324ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052325ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052326ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052327ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052328ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052329ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052330ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052331ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052332ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052333ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052334ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052335ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052336ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052337ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052338ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052339ECD7.D	Data Locked	richardl, 06-May-2023 09:12

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 05-MAY-2023 23:26
End Cal Date : 06-MAY-2023 05:21
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m
Last Edit : 06-May-2023 09:04 ecd7.i
Curve Type : Average

Calibration File Names:
Level 1: \\target\share\chem4\ecd7.i\230505.b\05052322ECD7.D
Level 2: \\target\share\chem4\ecd7.i\230505.b\05052323ECD7.D
Level 3: \\target\share\chem4\ecd7.i\230505.b\05052325ECD7.D
Level 4: \\target\share\chem4\ecd7.i\230505.b\05052321ECD7.D
Level 5: \\target\share\chem4\ecd7.i\230505.b\05052326ECD7.D
Level 6: \\target\share\chem4\ecd7.i\230505.b\05052324ECD7.D
Level 7: \\target\share\chem4\ecd7.i\230505.b\05052331ECD7.D
Level 8: \\target\share\chem4\ecd7.i\230505.b\05052338ECD7.D

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
2 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00563	+++++	0.00563	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01129	+++++	0.01129	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.02681	+++++	0.02681	0.000
3 Aroclor-1242(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.02521	+++++	0.02521	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.07988	+++++	0.07988	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.01545	+++++	0.01545	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.03576	+++++	0.03576	0.000
4 Aroclor-1232(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00375	+++++	0.00375	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 05-MAY-2023 23:26
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Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m
Last Edit : 06-May-2023 09:04 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	___ RRF	% RSD
(2)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.00780	+++++							0.00780	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.03715	+++++							0.03715	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.01590	+++++							0.01590	0.000
7 Aroclor-1016(1)	0.03259	0.03226	0.03462	0.03138	0.02909	0.02592				
	+++++	+++++							0.03098	9.876
(2)	0.08782	0.09418	0.10520	0.10209	0.09934	0.09254				
	+++++	+++++							0.09686	6.702
(3)	0.04375	0.04849	0.05094	0.04519	0.04205	0.03826				
	+++++	+++++							0.04478	10.130
(4)	0.01716	0.01921	0.02127	0.01901	0.01783	0.01637				
	+++++	+++++							0.01847	9.437
6 Aroclor-1248(1)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.02042	+++++							0.02042	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.05306	+++++							0.05306	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.10205	+++++							0.10205	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.05202	+++++							0.05202	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 05-MAY-2023 23:26
End Cal Date : 06-MAY-2023 05:21
Quant Method : ISTD
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Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m
Last Edit : 06-May-2023 09:04 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	___ RRF	% RSD
8 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.08222	+++++	0.08222	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.03694	+++++	0.03694	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.05308	+++++	0.05308	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.10397	+++++	0.10397	0.000
(5)	+++++	+++++	+++++	+++++	+++++	+++++	0.06279	+++++	0.06279	0.000
9 Aroclor-1260(1)	0.04580	0.04187	0.04489	0.04230	0.04061	0.03834	+++++	+++++	0.04230	6.490
(2)	0.04434	0.04115	0.04438	0.04189	0.04043	0.03831	+++++	+++++	0.04175	5.623
(3)	0.11170	0.10434	0.11116	0.10510	0.10043	0.09464	+++++	+++++	0.10456	6.204
(4)	0.05460	0.05000	0.05382	0.05169	0.04996	0.04720	+++++	+++++	0.05121	5.355
(5)	0.02498	0.02246	0.02370	0.02202	0.02100	0.01982	+++++	+++++	0.02233	8.279
10 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.03619	+++++	0.03619	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 05-MAY-2023 23:26
End Cal Date : 06-MAY-2023 05:21
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m
Last Edit : 06-May-2023 09:04 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	___ RRF	% RSD
(2)	*****	*****	*****	*****	*****	*****	*****	*****		
	0.05090	*****					*****	*****	0.05090	0.000
(3)	*****	*****	*****	*****	*****	*****	*****	*****		
	0.05471	*****					*****	*****	0.05471	0.000
(4)	*****	*****	*****	*****	*****	*****	*****	*****		
	0.04459	*****					*****	*****	0.04459	0.000
11 Aroclor-1268(1)	*****	*****	*****	*****	*****	*****	*****	*****		
	0.12759	*****					*****	*****	0.12759	0.000
(2)	*****	*****	*****	*****	*****	*****	*****	*****		
	0.12671	*****					*****	*****	0.12671	0.000
(3)	*****	*****	*****	*****	*****	*****	*****	*****		
	0.10191	*****					*****	*****	0.10191	0.000
(4)	*****	*****	*****	*****	*****	*****	*****	*****		
	0.29098	*****					*****	*****	0.29098	0.000
42 2,4-DDE	*****	*****	*****	*****	*****	*****	*****	*****		
	*****	636					*****	*****	636	0.000
43 2,4-DDD	*****	*****	*****	*****	*****	*****	*****	*****		
	*****	1208					*****	*****	1208	0.000
44 2,4-DDT	*****	*****	*****	*****	*****	*****	*****	*****		
	*****	*****					*****	*****	*****	*****
46 4,4-DDE	*****	*****	*****	*****	*****	*****	*****	*****		
	*****	1492					*****	*****	1492	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 05-MAY-2023 23:26
End Cal Date : 06-MAY-2023 05:21
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m
Last Edit : 06-May-2023 09:04 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	___ RRF	% RSD
47 4,4-DDD	*****	*****	*****	*****	*****	*****	*****	708	708	0.000
48 4,4-DDT	*****	*****	*****	*****	*****	*****	*****	630	630	0.000
49 Hexachlorobutadiene	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
50 Hexachlorobenzene	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
$ 1 Tetrachloro-m-xylene	1.21049	1.18252	1.29993	1.22669	1.16878	1.14053	*****	*****	1.20482	4.619
$ 13 Decachlorobiphenyl	0.89752	0.83715	0.84851	0.77945	0.72713	0.70508	*****	*****	0.79914	9.361

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 05-MAY-2023 23:26
End Cal Date : 06-MAY-2023 02:55
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m\PCB2.m
Last Edit : 06-May-2023 11:14 ecd7.i
Curve Type : Average

Calibration File Names:
Level 1: \\target\share\chem4\ecd7.i\230505.b\230505.b\05052322ECD7.D
Level 2: \\target\share\chem4\ecd7.i\230505.b\230505.b\05052323ECD7.D
Level 3: \\target\share\chem4\ecd7.i\230505.b\230505.b\05052325ECD7.D
Level 4: \\target\share\chem4\ecd7.i\230505.b\230505.b\05052321ECD7.D
Level 5: \\target\share\chem4\ecd7.i\230505.b\230505.b\05052326ECD7.D
Level 6: \\target\share\chem4\ecd7.i\230505.b\230505.b\05052324ECD7.D
Level 7: \\target\share\chem4\ecd7.i\230505.b\230505.b\05052331ECD7.D

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
1 Aroclor-1221 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00590	0.00590	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01223	0.01223	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.01924	0.01924	0.000
4 Aroclor-1232 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00310	0.00310	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01776	0.01776	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.03568	0.03568	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.01033	0.01033	0.000
3 Aroclor-1242 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++	0.03575	0.03575	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 05-MAY-2023 23:26
End Cal Date : 06-MAY-2023 02:55
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m\PCB2.m
Last Edit : 06-May-2023 11:14 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	RRF	% RSD
(2)	*****	*****	*****	*****	*****	*****	0.07606	0.07606	0.000
(3)	*****	*****	*****	*****	*****	*****	0.02438	0.02438	0.000
(4)	*****	*****	*****	*****	*****	*****	0.02939	0.02939	0.000
6 Aroclor-1248 [2C](1)	*****	*****	*****	*****	*****	*****	0.03806	0.03806	0.000
(2)	*****	*****	*****	*****	*****	*****	0.04020	0.04020	0.000
(3)	*****	*****	*****	*****	*****	*****	0.04712	0.04712	0.000
(4)	*****	*****	*****	*****	*****	*****	0.05651	0.05651	0.000
7 Aroclor-1016 [2C](1)	0.05158	0.04743	0.04866	0.04443	0.04159	0.03802	*****	0.04529	10.942
(2)	0.09850	0.09560	0.10183	0.09745	0.09528	0.09038	*****	0.09651	3.959
(3)	0.04379	0.04462	0.04622	0.04230	0.04046	0.03801	*****	0.04257	6.991
(4)	0.03635	0.03727	0.03735	0.03308	0.03084	0.02798	*****	0.03381	11.400

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 05-MAY-2023 23:26
End Cal Date : 06-MAY-2023 02:55
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m\PCB2.m
Last Edit : 06-May-2023 11:14 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	RRF	% RSD
8 Aroclor-1254 [2C](1)	*****	*****	*****	*****	*****	*****	0.06078	0.06078	0.000
(2)	*****	*****	*****	*****	*****	*****	0.03611	0.03611	0.000
(3)	*****	*****	*****	*****	*****	*****	0.04927	0.04927	0.000
(4)	*****	*****	*****	*****	*****	*****	0.10751	0.10751	0.000
(5)	*****	*****	*****	*****	*****	*****	0.10667	0.10667	0.000
10 Aroclor-1262 [2C](1)	*****	*****	*****	*****	*****	*****	0.06482	0.06482	0.000
(2)	*****	*****	*****	*****	*****	*****	0.05467	0.05467	0.000
(3)	*****	*****	*****	*****	*****	*****	0.05974	0.05974	0.000
(4)	*****	*****	*****	*****	*****	*****	0.09737	0.09737	0.000
9 Aroclor-1260 [2C](1)	0.04544	0.04273	0.04504	0.04279	0.04076	0.03816	*****	0.04249	6.408
(2)	0.11282	0.11085	0.11919	0.11378	0.10815	0.10199	*****	0.11113	5.208

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 05-MAY-2023 23:26
End Cal Date : 06-MAY-2023 02:55
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m\PCB2.m
Last Edit : 06-May-2023 11:14 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
(3)	0.02783	0.02652	0.02791	0.02780	0.02775	0.02743	#####	0.02754	1.918
(4)	0.07670	0.07341	0.07861	0.07586	0.07265	0.06817	#####	0.07423	4.962
11 Aroclor-1268 [2C](1)	#####	#####	#####	#####	#####	#####	0.15139	0.15139	0.000
(2)	#####	#####	#####	#####	#####	#####	0.16276	0.16276	0.000
(3)	#####	#####	#####	#####	#####	#####	0.13938	0.13938	0.000
(4)	#####	#####	#####	#####	#####	#####	0.44675	0.44675	0.000
41 2,4-DDE [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####
42 2,4-DDD [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####
44 4,4-DDE [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####
45 4,4-DDD/2,4-DDT [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####
46 4,4-DDT [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 05-MAY-2023 23:26
End Cal Date : 06-MAY-2023 02:55
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230505.b\PCB.m\PCB2.m
Last Edit : 06-May-2023 11:14 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 2 Tetrachloro-m-xylene [2C]	1.09077	1.07641	1.18129	1.13054	1.07870	1.04559	+++++	1.10055	4.376
$ 13 Decachlorobiphenyl [2C]	1.04434	1.07403	1.22005	1.18343	1.16419	1.13004	+++++	1.13601	5.890

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\230505.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	05052321ECD7	05052322ECD7	05052323ECD7	05052324ECD7	05052325ECD7	05052326ECD7
INJ.DATE:	05-MAY-2023	05-MAY-2023	06-MAY-2023	06-MAY-2023	06-MAY-2023	06-MAY-2023
INJ.TIME:	23:26	23:47	00:08	00:29	00:50	01:11

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	3.429	3.429	3.428	3.429	3.428	3.428	3.428	3.328-3.528	3.429	0.000
$ 1 Tetrachloro-m-xylene	5.743	5.742	5.741	5.746	5.741	5.743	5.742	5.642-5.842	5.743	0.002
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	4.663	4.563-4.763	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	7.212	7.112-7.312	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	4.664	4.564-4.764	+++++	+++++
7 Aroclor-1016	7.213	7.213	7.214	7.213	7.212	7.212	7.212	7.112-7.312	7.213	0.001
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	8.399	8.299-8.499	+++++	+++++
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	9.246	9.146-9.346	+++++	+++++
9 Aroclor-1260	10.995	10.998	10.998	10.992	10.995	10.993	10.993	10.893-11.093	10.995	0.003
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	10.779	10.679-10.879	+++++	+++++
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	12.196	12.096-12.296	+++++	+++++
$ 13 Decachlorobiphenyl	13.841	13.843	13.843	13.842	13.841	13.842	13.840	13.740-13.940	13.842	0.001
* 12 IS-HBBP	14.215	14.216	14.217	14.215	14.214	14.215	14.214	14.114-14.314	14.215	0.001
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.206	9.156-9.256	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.753	9.703-9.803	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.293	10.243-10.343	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.635	9.535-9.735	+++++	+++++

Reviewer 1 _____ Date:_____
Reviewer 2 _____ Date:_____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\230505.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	10.243	10.143-10.343	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.706	10.606-10.806	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230505.b\PCB.m\PCB2.m
Batch File: \\target\share\chem4\ecd7.i\230505.b\230505.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07
FILENAME:	05052320ECD7	05052321ECD7	05052322ECD7	05052323ECD7	05052324ECD7	05052325ECD7	05052326ECD7
INJ.DATE:	05-MAY-2023	05-MAY-2023	05-MAY-2023	06-MAY-2023	06-MAY-2023	06-MAY-2023	06-MAY-2023
INJ.TIME:	23:06	23:26	23:47	00:08	00:29	00:50	01:11

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 40 IS-BNB [2C]	3.869	3.869	3.869	3.869	3.869	3.869	3.869	3.868	3.768-3.968	3.869	0.000
$ 2 Tetrachloro-m-xylene [	5.629	5.629	5.630	5.630	5.627	5.629	5.629	5.628	5.528-5.728	5.629	0.001
1 Aroclor-1221 [2C]	0.000	+++++	+++++	+++++	+++++	+++++	+++++	4.894	4.794-4.994	0.000	0.000
4 Aroclor-1232 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.894	4.794-4.994	+++++	+++++
3 Aroclor-1242 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.203	7.103-7.303	+++++	+++++
6 Aroclor-1248 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.260	8.160-8.360	+++++	+++++
7 Aroclor-1016 [2C]	+++++	7.204	7.206	7.205	7.203	7.204	7.204	7.204	7.104-7.304	7.204	0.001
8 Aroclor-1254 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.404	9.304-9.504	+++++	+++++
10 Aroclor-1262 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.153	11.053-11.253	+++++	+++++
9 Aroclor-1260 [2C]	+++++	11.605	11.610	11.609	11.604	11.608	11.606	11.606	11.506-11.706	11.607	0.002
11 Aroclor-1268 [2C]	0.000	+++++	+++++	+++++	+++++	+++++	+++++	12.385	12.285-12.485	0.000	0.000
$ 13 Decachlorobiphenyl [2C	14.070	14.070	14.071	14.070	14.071	14.069	14.070	14.068	13.968-14.168	14.070	0.000
* 12 IS-HBBP [2C]	14.958	14.957	14.959	14.959	14.956	14.957	14.958	14.957	14.857-15.057	14.958	0.001
41 2,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.867	9.817-9.917	+++++	+++++
42 2,4-DDD [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.492	9.442-9.542	+++++	+++++
44 4,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	10.165	10.065-10.265	+++++	+++++
45 4,4-DDD/2,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	10.625	10.525-10.725	+++++	+++++

Reviewer 1 _____ Date:_____
Reviewer 2 _____ Date:_____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230505.b\PCB.m\PCB2.m
Batch File: \\target\share\chem4\ecd7.i\230505.b\230505.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
46 4,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.046	10.946-11.146	+++++	+++++
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.703	1.603-1.803	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.178	7.078-7.278	+++++	+++++

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052320ECD7.D
Data file 2: /230505.b/230505.b/05052320ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: IB
Client ID:
Injection Date: 05-MAY-2023 23:06
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	0.000	296285	5.629	0.001	163258	35.5	37.4	5.3	Tetrachloro-m-xylene
13.841	0.001	288612	14.070	0.002	318424	35.7	37.3	4.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	554412	-7.8
Hexabromobiphenyl	876625	809662	-7.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	317324	-9.2
Hexabromobiphenyl	652984	600612	-8.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.272	0.027	1585	32.7
Aroclor-1221	3	---			0.0	3	6.588	0.017	408	5.3
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	10.995	0.002	1624	3.8	1	---			0.0
Aroclor-1260	2	11.305	-0.005	1450	3.4	2	---			0.0
Aroclor-1260	3	11.770	0.084	3781	3.6	3	---			0.0
Aroclor-1260	4	12.138	0.048	1272	2.5	4	---			0.0
Aroclor-1260	5	12.271	0.078	413	1.8	NS	---			----
	Total Col1Ave (5 peaks):				3.0	Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	10.800	0.021	2445	6.7	1	---			0.0
Aroclor-1262	2	12.271	0.077	413	0.8	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	12.989	0.050	944	2.1	4	---			0.0
	Total Col1Ave (3 peaks):				3.2	Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	12.271	0.076	413	0.3	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	12.649	0.001	2092	2.0	3	12.847	0.004	632	0.6
Aroclor-1268	4	13.443	0.006	5651	1.9	4	13.663	-0.001	2018	0.6
	Total Col1Ave (3 peaks):				1.4	Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (5.842 - 13.740) = 65805 Col1 Total PCB = 0.0 ppm*

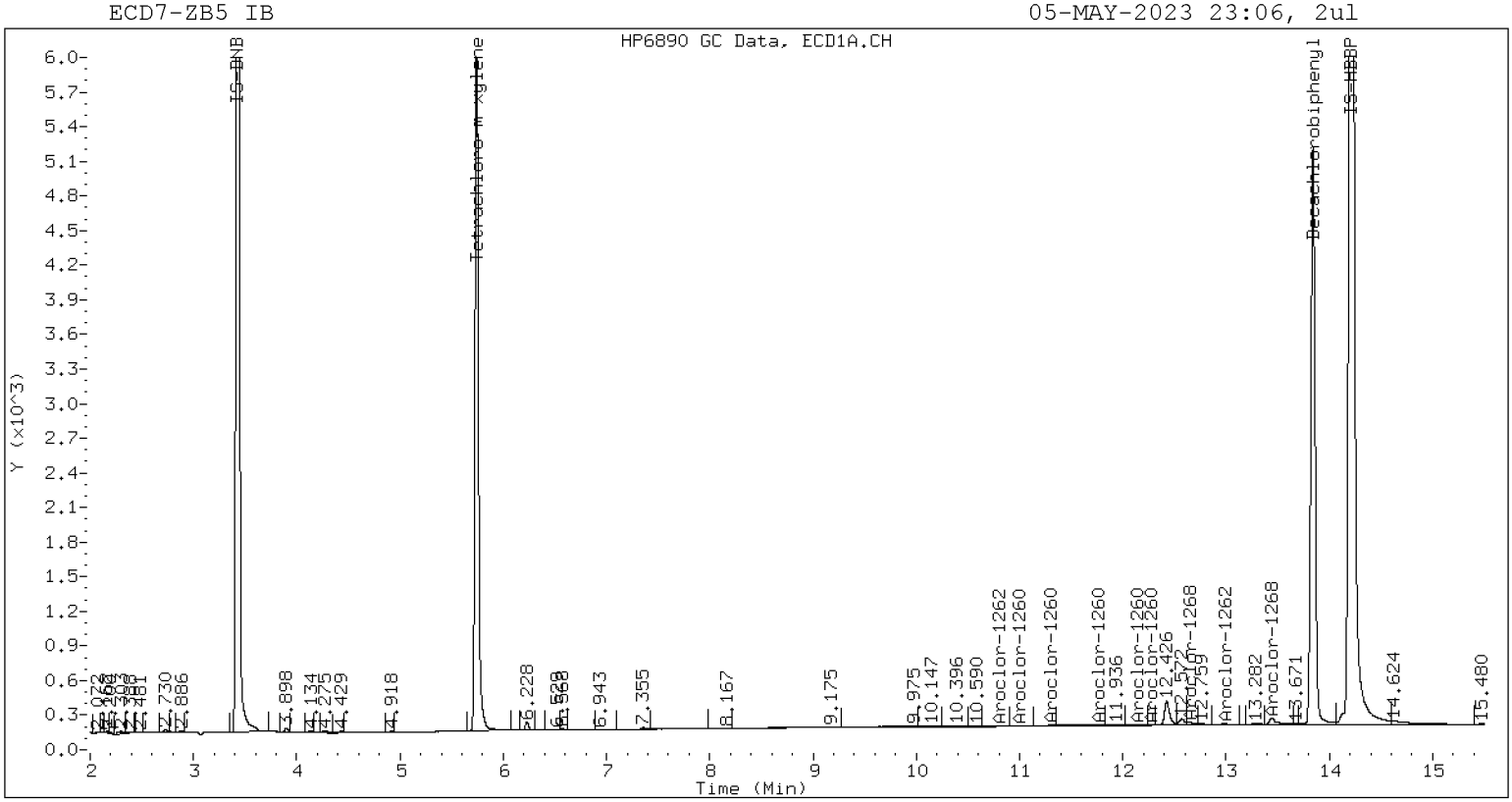
Total PCB Area Col2 (5.728 - 13.968) = 16664 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

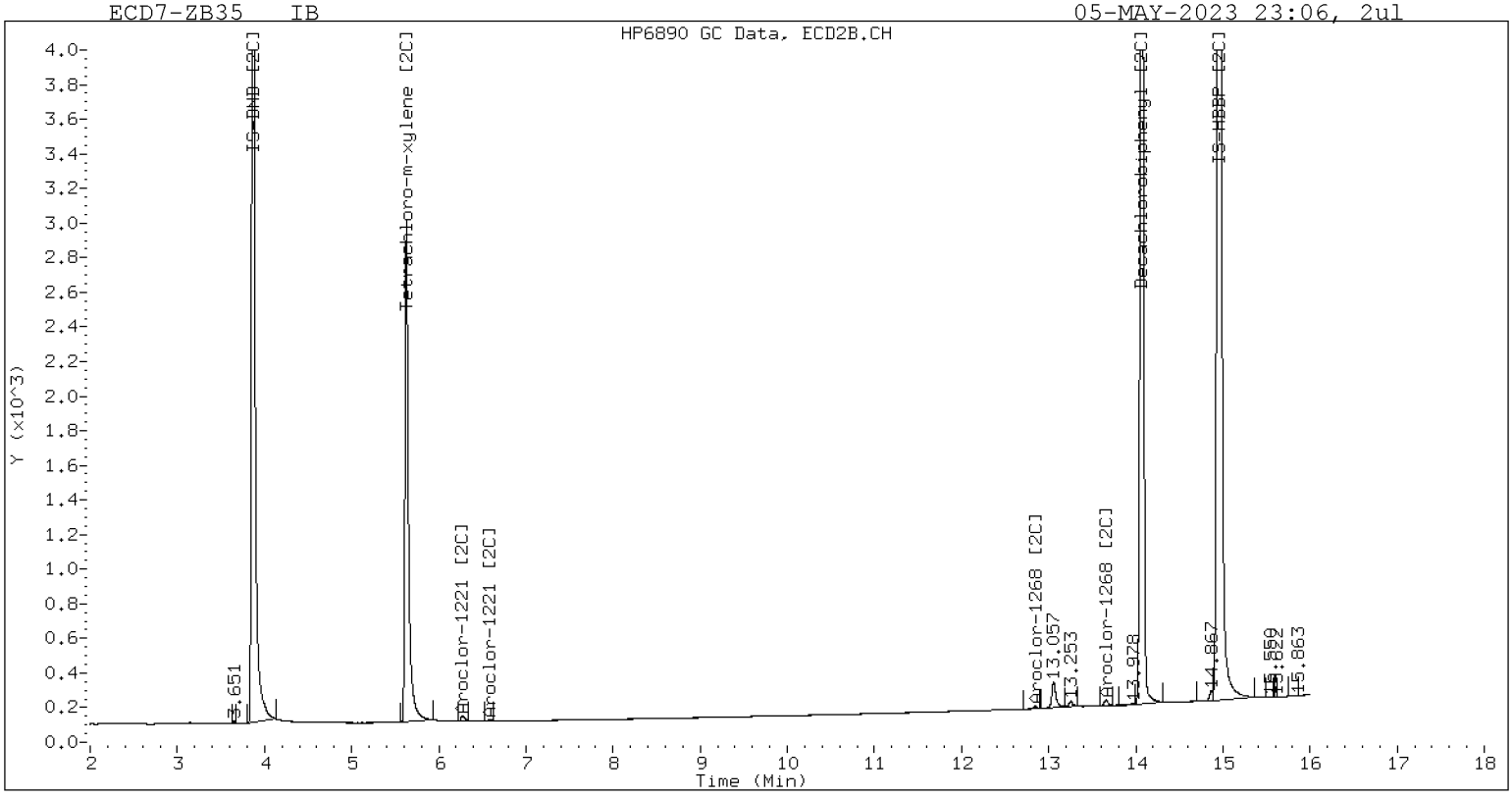
PCB Dual Column Chromatograms

ECD7-ZB5 IB 05-MAY-2023 23:06, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 IB 05-MAY-2023 23:06, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052321ECD7.D
Data file 2: /230505.b/230505.b/05052321ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1660
Client ID:
Injection Date: 05-MAY-2023 23:26
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.743	0.001	368910	5.629	0.000	197442	40.7	41.1	0.9	Tetrachloro-m-xylene
13.841	0.001	341641	14.070	0.002	386381	39.0	41.7	6.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	601474	0.0
Hexabromobiphenyl	876625	876625	0.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	349289	0.0
Hexabromobiphenyl	652984	652984	0.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	7.213	0.001	58979	253.2	1	7.204	-0.000	48493	245.3
Aroclor-1016	2	7.595	0.001	191892	263.5	2	7.811	0.003	106372	252.4
Aroclor-1016	3	7.735	0.002	84934	252.3	3	8.010	0.004	46169	248.4
Aroclor-1016	4	8.399	0.001	35727	257.2	4	8.260	0.001	36109	244.6
	Total Col1Ave (4 peaks):				256.6	Total Col2Ave (4 peaks):				247.7 RPD = 4
	Corrected Ave (3 peaks):				254.2	Corrected Ave (3 peaks):				246.1 RPD = 3
			CalAmt %D:		2.6			CalAmt %D:		-0.9
Aroclor-1260	1	10.995	0.002	115872	250.0	1	11.605	-0.000	87314	251.8
Aroclor-1260	2	11.312	0.002	114768	250.9	2	11.872	-0.000	232184	256.0
Aroclor-1260	3	11.687	0.001	287920	251.3	3	12.389	0.001	56725	252.4
Aroclor-1260	4	12.091	0.002	141607	252.3	4	12.456	0.000	154797	255.5
Aroclor-1260	5	12.195	0.002	60315	246.5	NS	---			----
	Total Col1Ave (5 peaks):				250.2	Total Col2Ave (4 peaks):				253.9 RPD = 1
	Corrected Ave (4 peaks):				249.7	Corrected Ave (3 peaks):				253.2 RPD = 1
			CalAmt %D:		0.1			CalAmt %D:		1.6

Total PCB Area Col1 (5.842 - 13.740) = 3355836 Col1 Total PCB = 0.5 ppm*

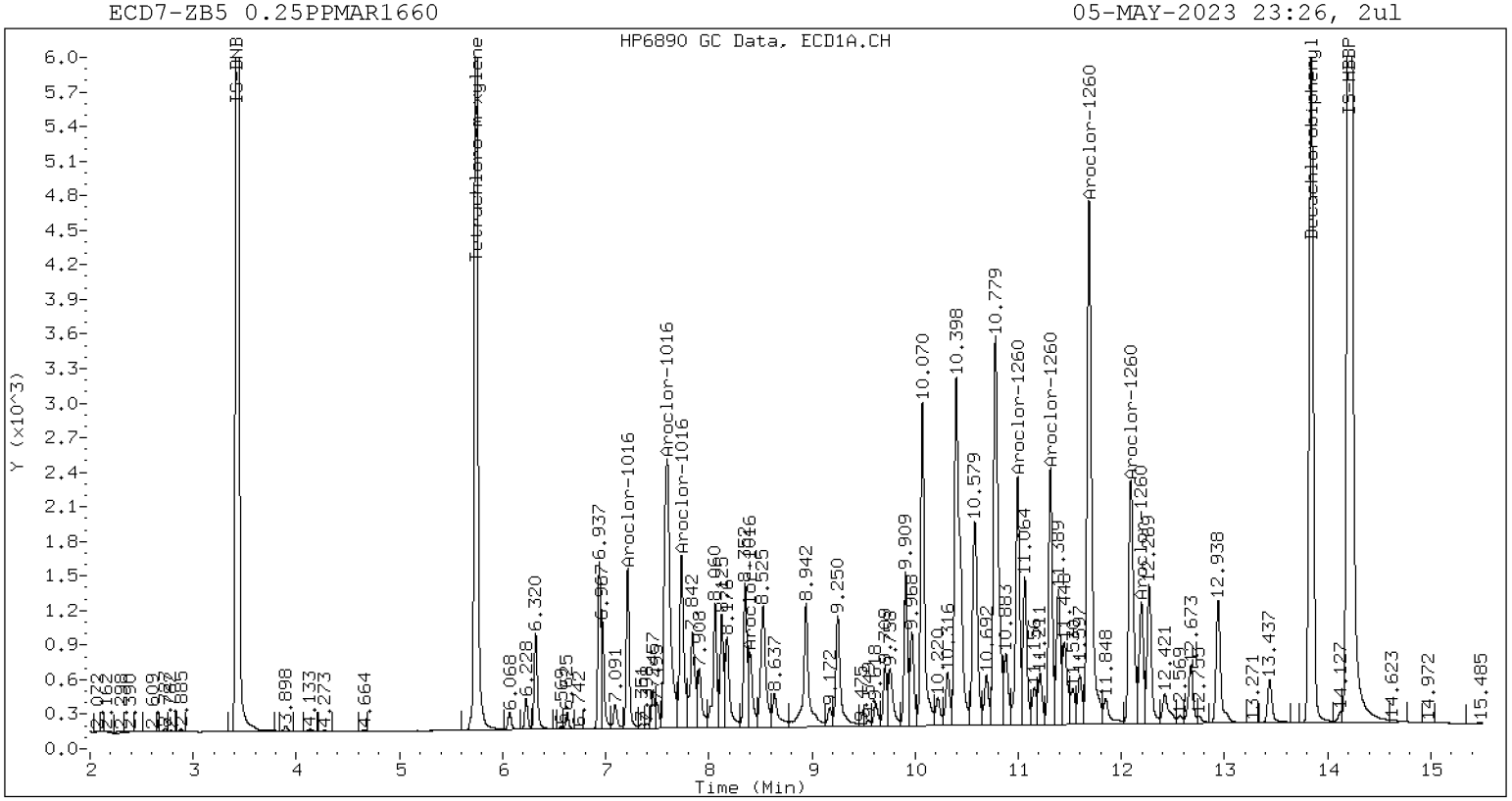
Total PCB Area Col2 (5.728 - 13.968) = 2087295 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

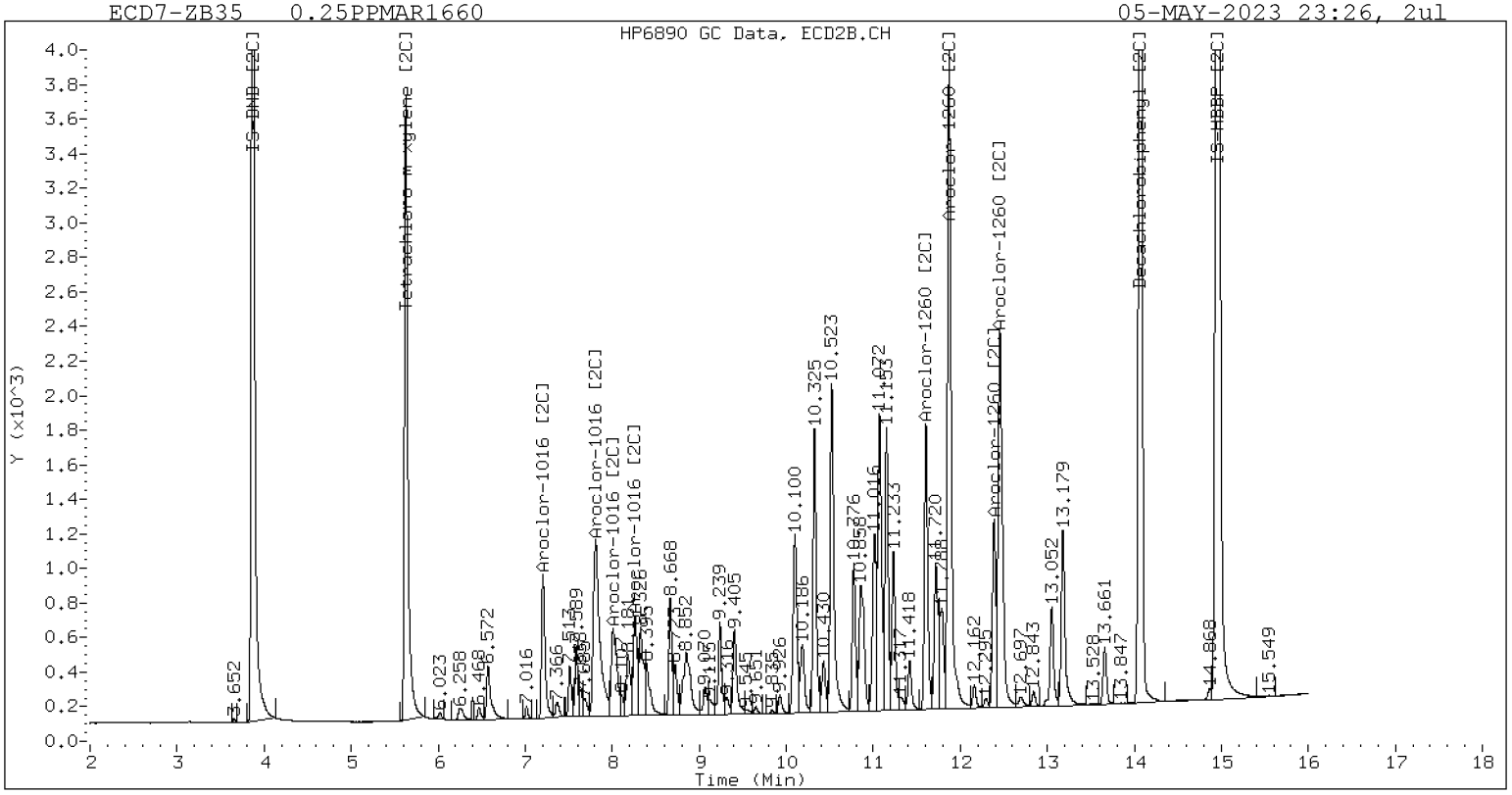
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1660 05-MAY-2023 23:26, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1660 05-MAY-2023 23:26, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052322ECD7.D
Data file 2: /230505.b/230505.b/05052322ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.02PPMAR1660
Client ID:
Injection Date: 05-MAY-2023 23:47
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	-0.000	28836	5.630	0.002	14779	3.2	3.2	1.4	Tetrachloro-m-xylene
13.843	0.002	31610	14.071	0.002	27131	3.6	2.9	20.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	595544	-1.0
Hexabromobiphenyl	876625	880480	0.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	338730	-3.0
Hexabromobiphenyl	652984	649475	-0.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.213	0.001	4852	21.0	1	7.206	0.002	4368	22.8
Aroclor-1016	2	7.595	0.001	13075	18.1	2	7.819	0.012	8341	20.4
Aroclor-1016	3	7.737	0.004	6514	19.5	3	8.043	0.038	3708	20.6
Aroclor-1016	4	8.400	0.002	2555	18.6	4	8.261	0.002	3078	21.5
Total Col1Ave (4 peaks):					19.3	Total Col2Ave (4 peaks):				21.3 RPD = 10
Corrected Ave (3 peaks):					18.8	Corrected Ave (3 peaks):				20.8 RPD = 10
CalAmt %D:					-3.4	CalAmt %D:				6.6
Aroclor-1260	1	10.998	0.005	10082	21.7	1	11.610	0.004	7378	21.4
Aroclor-1260	2	11.316	0.006	9760	21.2	2	11.878	0.006	18318	20.3
Aroclor-1260	3	11.694	0.008	24587	21.4	3	12.392	0.004	4519	20.2
Aroclor-1260	4	12.098	0.008	12018	21.3	4	12.461	0.006	12454	20.7
Aroclor-1260	5	12.198	0.005	5499	22.4	NS	---			----
Total Col1Ave (5 peaks):					21.6	Total Col2Ave (4 peaks):				20.6 RPD = 4
Corrected Ave (4 peaks):					21.4	Corrected Ave (3 peaks):				20.4 RPD = 5
CalAmt %D:					8.0	CalAmt %D:				3.2

Total PCB Area Col1 (5.842 - 13.740) = 294199 Col1 Total PCB = 0.0 ppm*

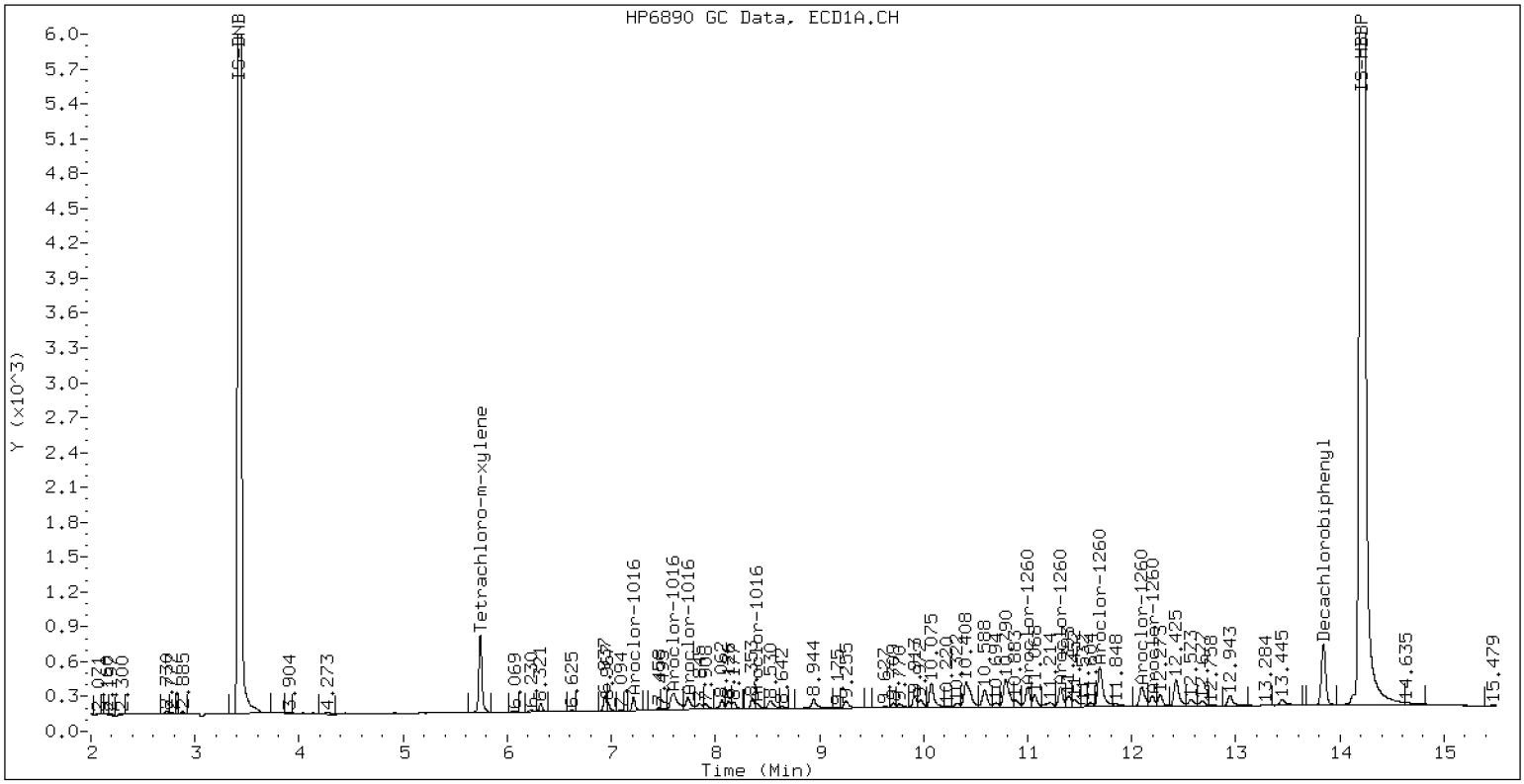
Total PCB Area Col2 (5.728 - 13.968) = 173796 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

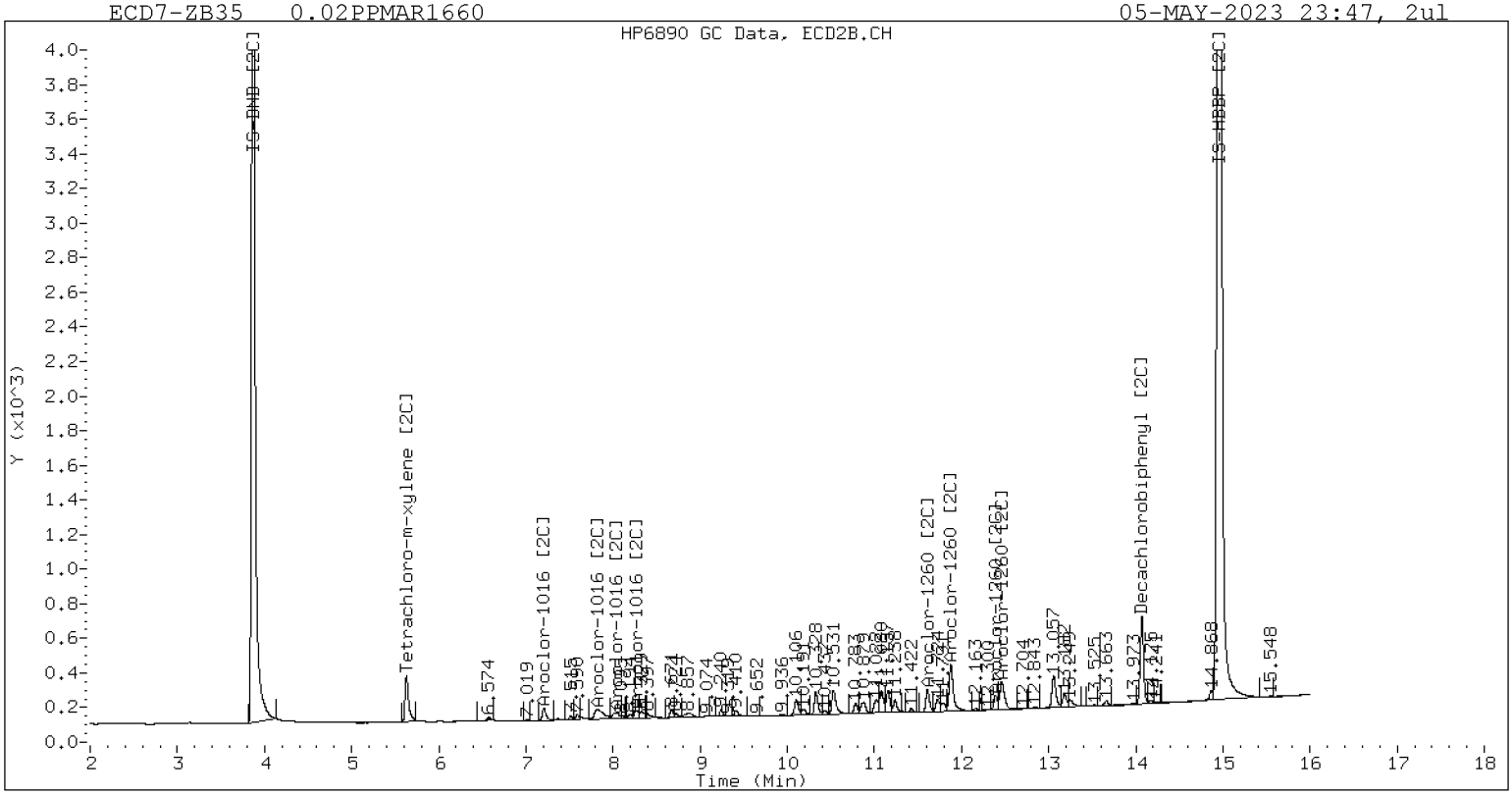
PCB Dual Column Chromatograms

ECD7-ZB5 0.02PPMAR1660 05-MAY-2023 23:47, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.02PPMAR1660 05-MAY-2023 23:47, 2ul

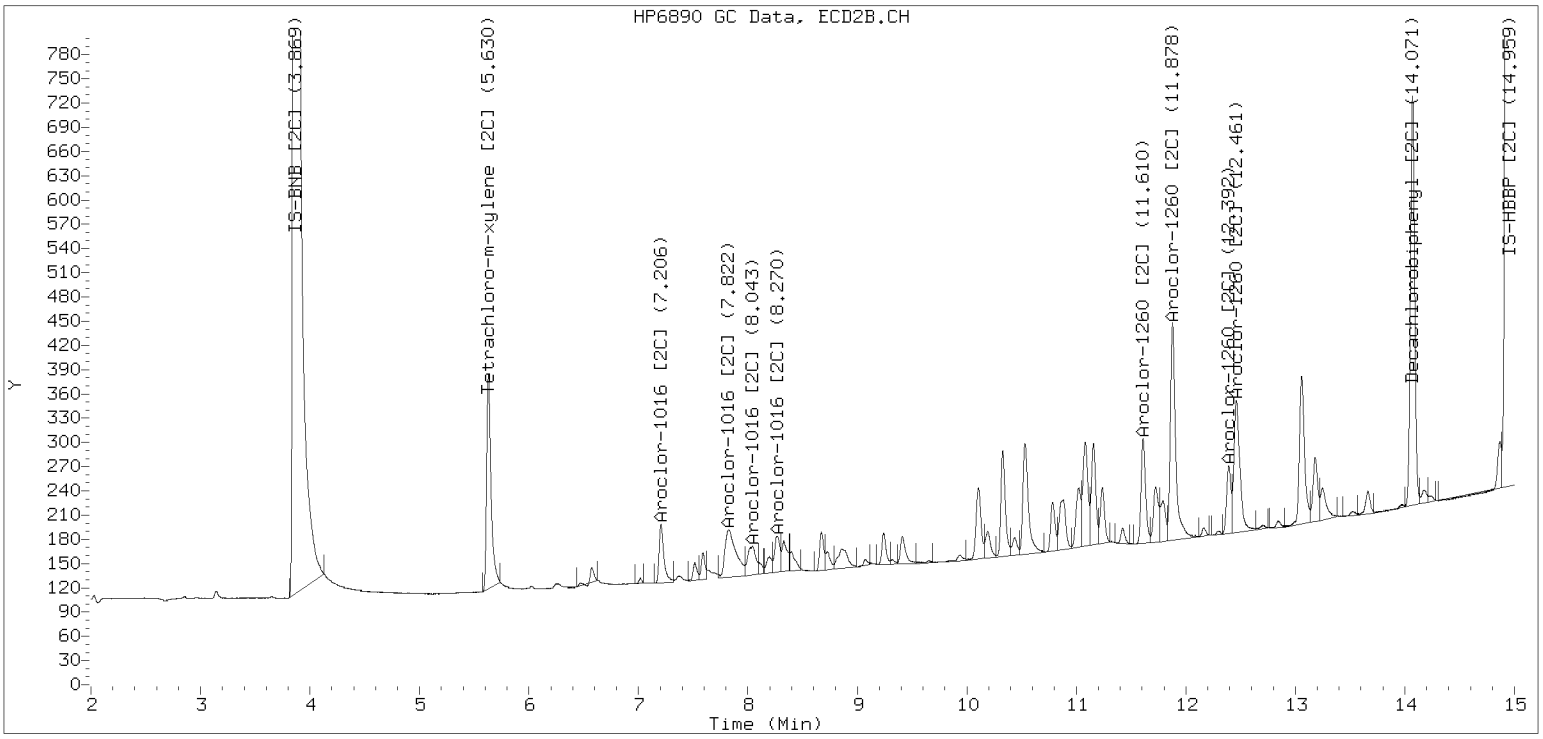


ZB-35 Manual Integration: YES

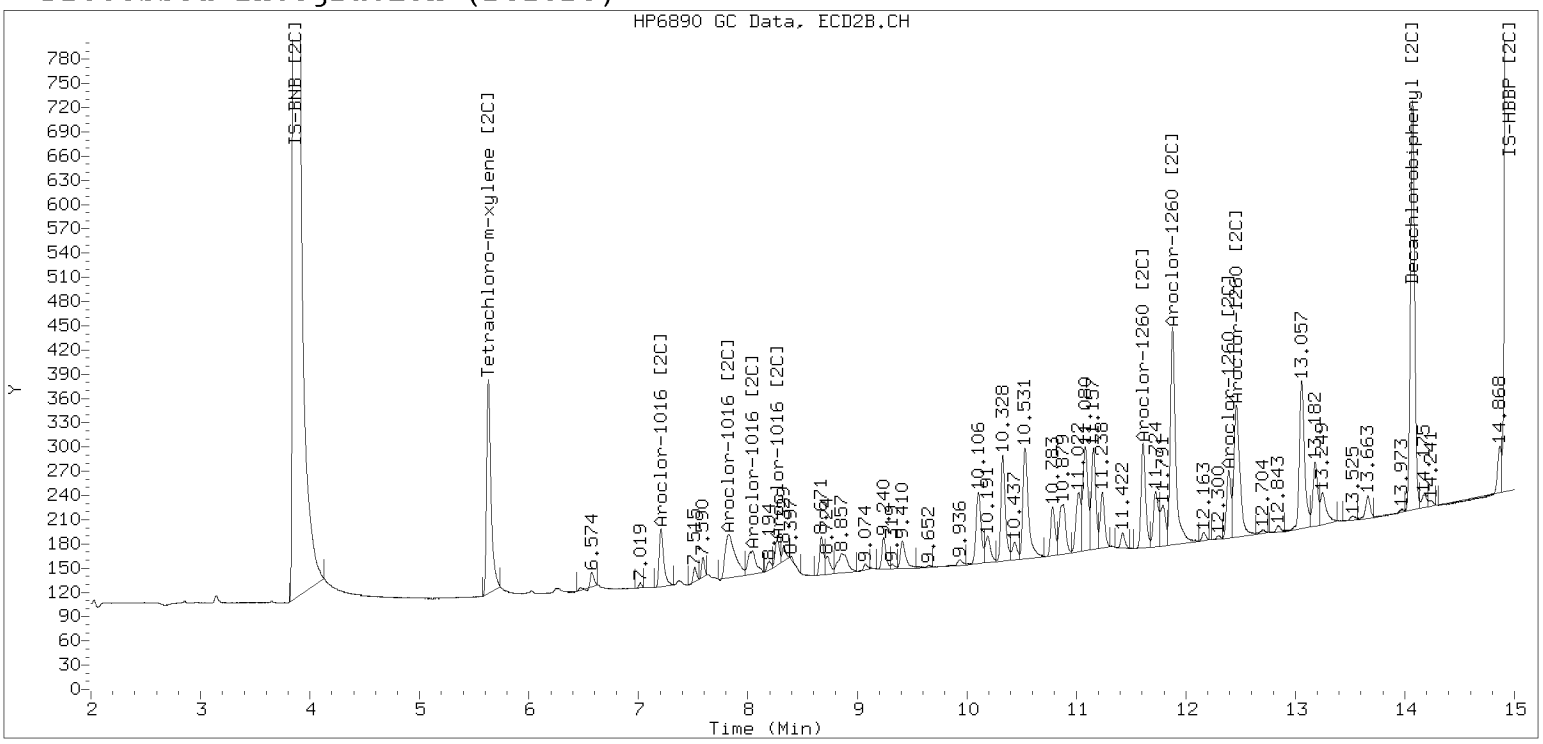
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230505.b/230505.b/05052322ECD7.D Injection Date: 05-MAY-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052323ECD7.D
Data file 2: /230505.b/230505.b/05052323ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.05PPMAR1660
Client ID:
Injection Date: 06-MAY-2023 00:08
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.741	-0.001	72149	5.630	0.001	37778	7.9	7.8	0.3	Tetrachloro-m-xylene
13.843	0.002	75564	14.070	0.002	71601	8.4	7.6	10.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	610127	1.4
Hexabromobiphenyl	876625	902634	3.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	350964	0.5
Hexabromobiphenyl	652984	666660	2.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.214	0.001	12303	52.1	1	7.205	0.001	10404	52.4
Aroclor-1016	2	7.595	0.000	35912	48.6	2	7.821	0.013	20971	49.5
Aroclor-1016	3	7.736	0.003	18491	54.1	3	8.016	0.010	9788	52.4
Aroclor-1016	4	8.400	0.002	7326	52.0	4	8.264	0.005	8176	55.1
Total Col1Ave (4 peaks):					51.7	Total Col2Ave (4 peaks):				52.4 RPD = 1
Corrected Ave (3 peaks):					50.9	Corrected Ave (3 peaks):				51.4 RPD = 1
CalAmt %D:					3.4	CalAmt %D:				4.7
Aroclor-1260	1	10.998	0.005	23619	49.5	1	11.609	0.003	17805	50.3
Aroclor-1260	2	11.316	0.006	23213	49.3	2	11.876	0.004	46188	49.9
Aroclor-1260	3	11.693	0.007	58862	49.9	3	12.391	0.003	11048	48.1
Aroclor-1260	4	12.096	0.006	28206	48.8	4	12.460	0.004	30586	49.4
Aroclor-1260	5	12.197	0.004	12672	50.3	NS	---			----
Total Col1Ave (5 peaks):					49.6	Total Col2Ave (4 peaks):				49.4 RPD = 0
Corrected Ave (4 peaks):					49.4	Corrected Ave (3 peaks):				49.2 RPD = 0
CalAmt %D:					-0.9	CalAmt %D:				-1.1

Total PCB Area Col1 (5.842 - 13.740) = 697433 Col1 Total PCB = 0.1 ppm*

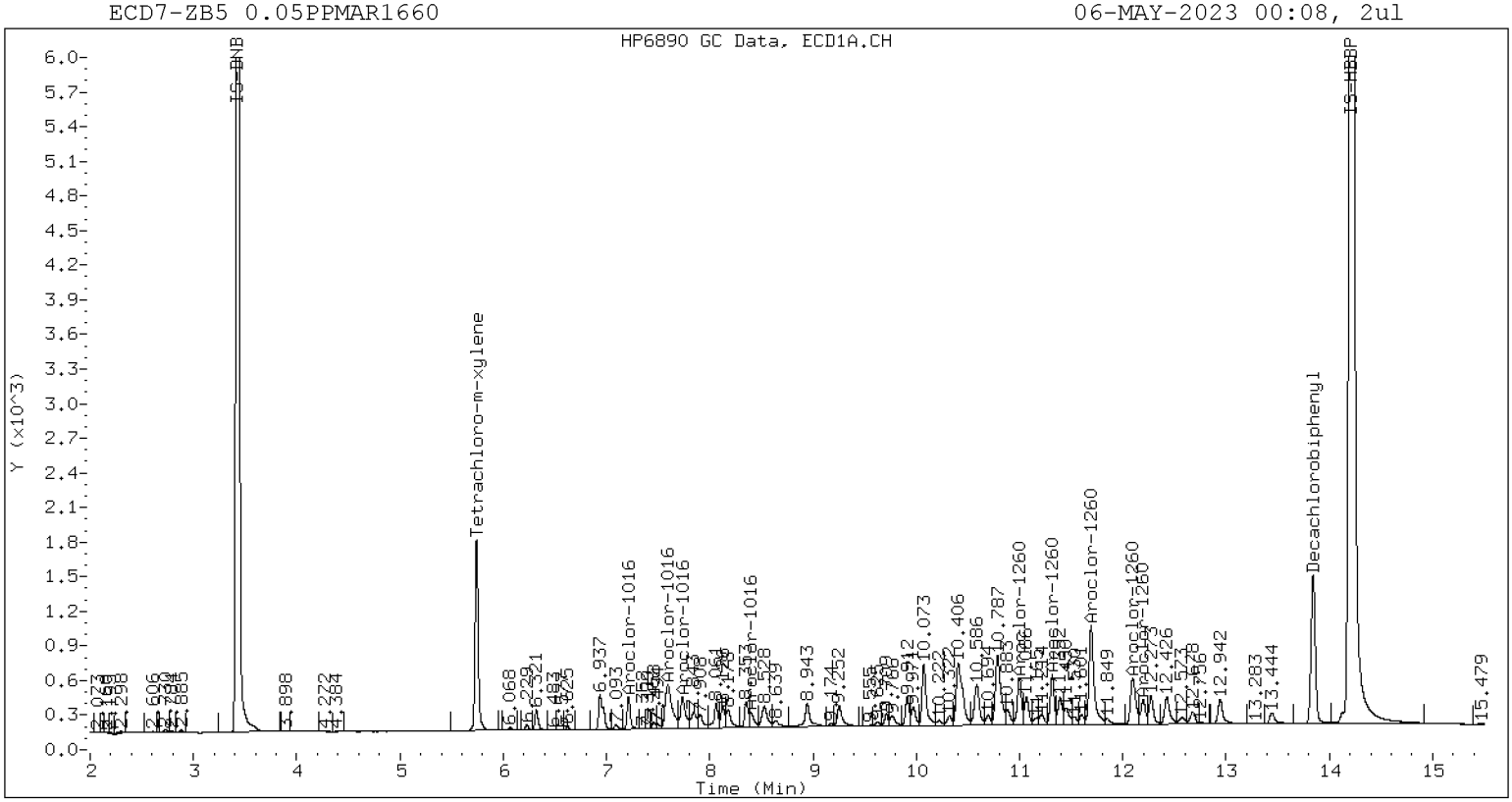
Total PCB Area Col2 (5.728 - 13.968) = 429325 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

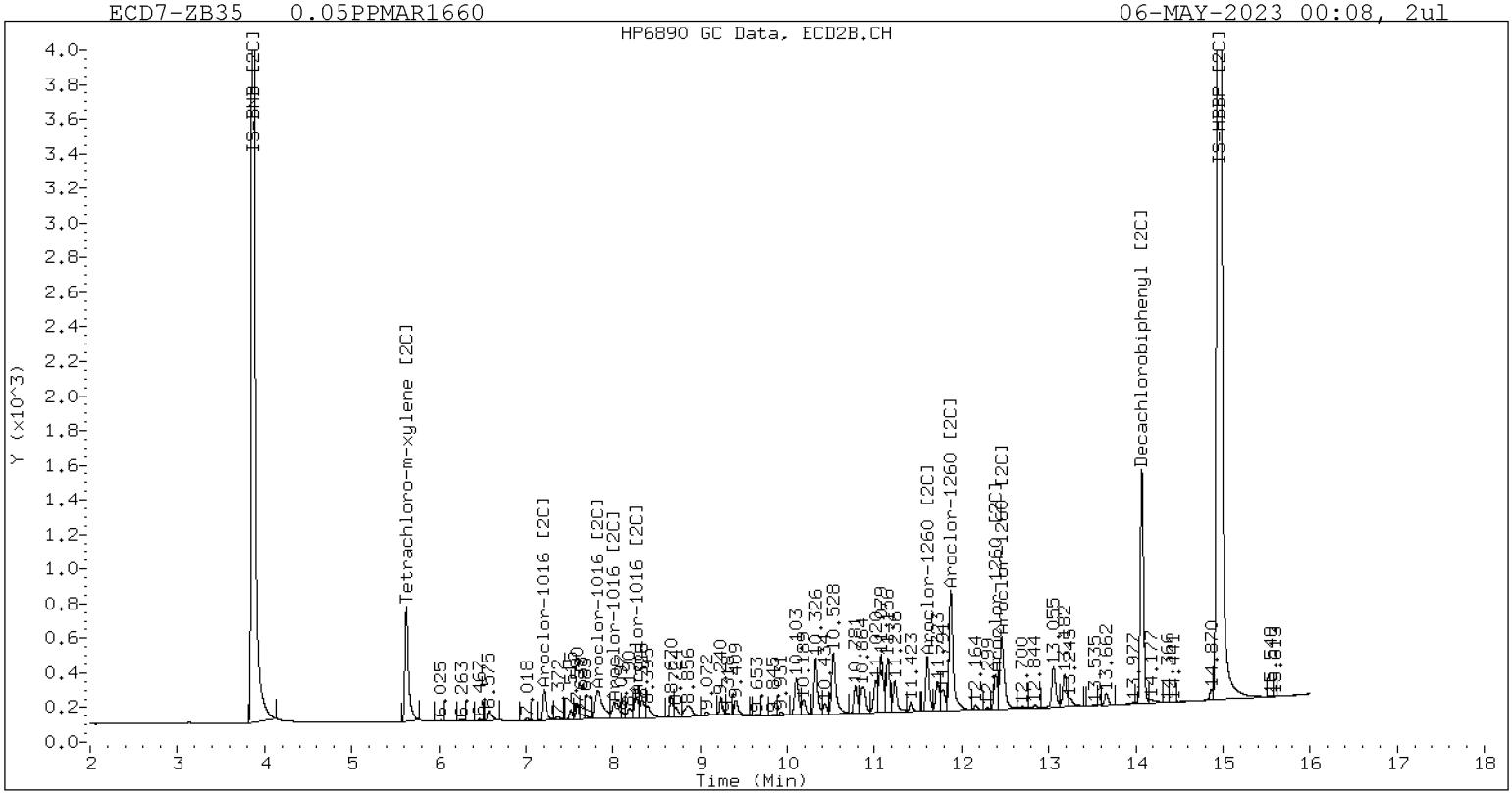
PCB Dual Column Chromatograms

ECD7-ZB5 0.05PPMAR1660 06-MAY-2023 00:08, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.05PPMAR1660 06-MAY-2023 00:08, 2ul

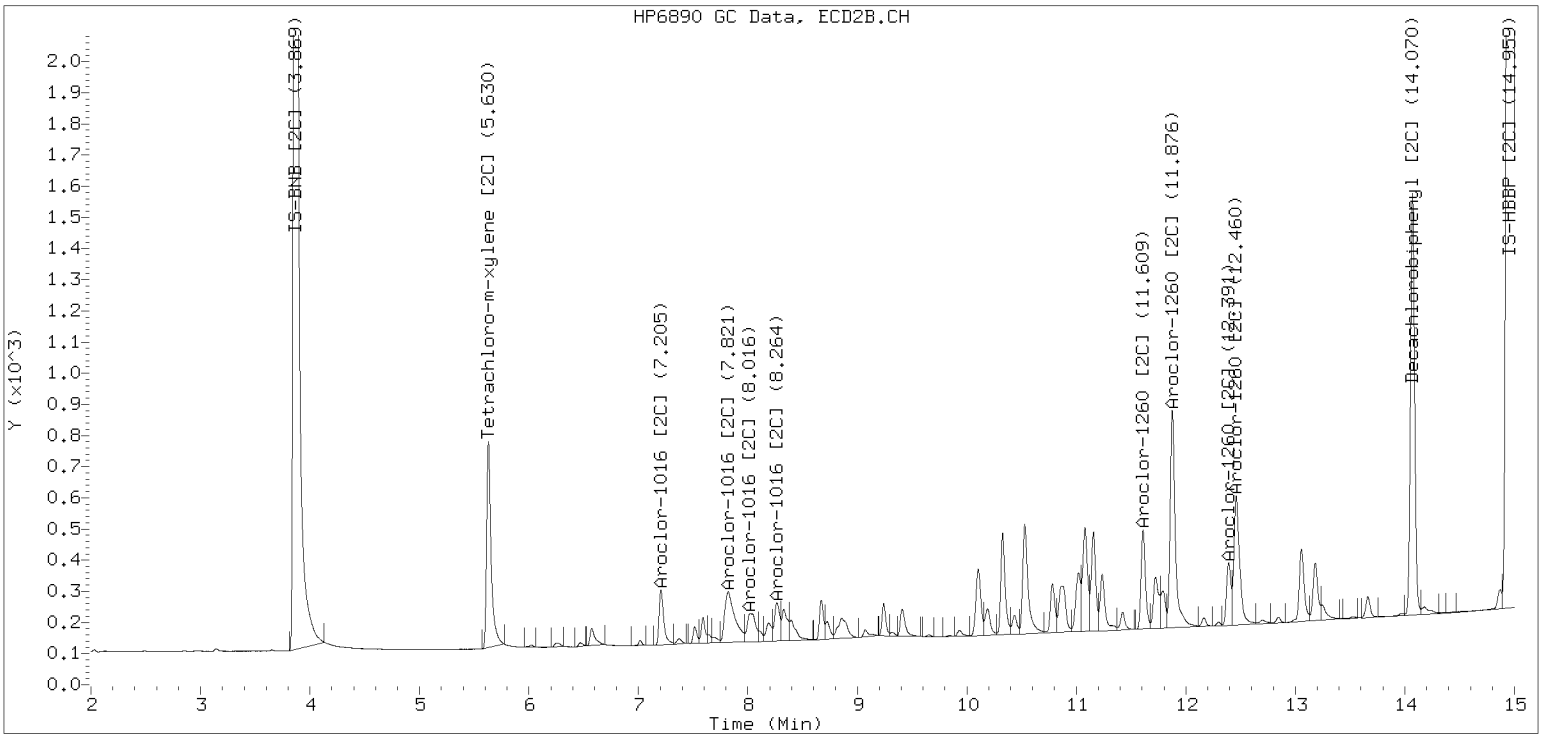


ZB-35 Manual Integration: YES

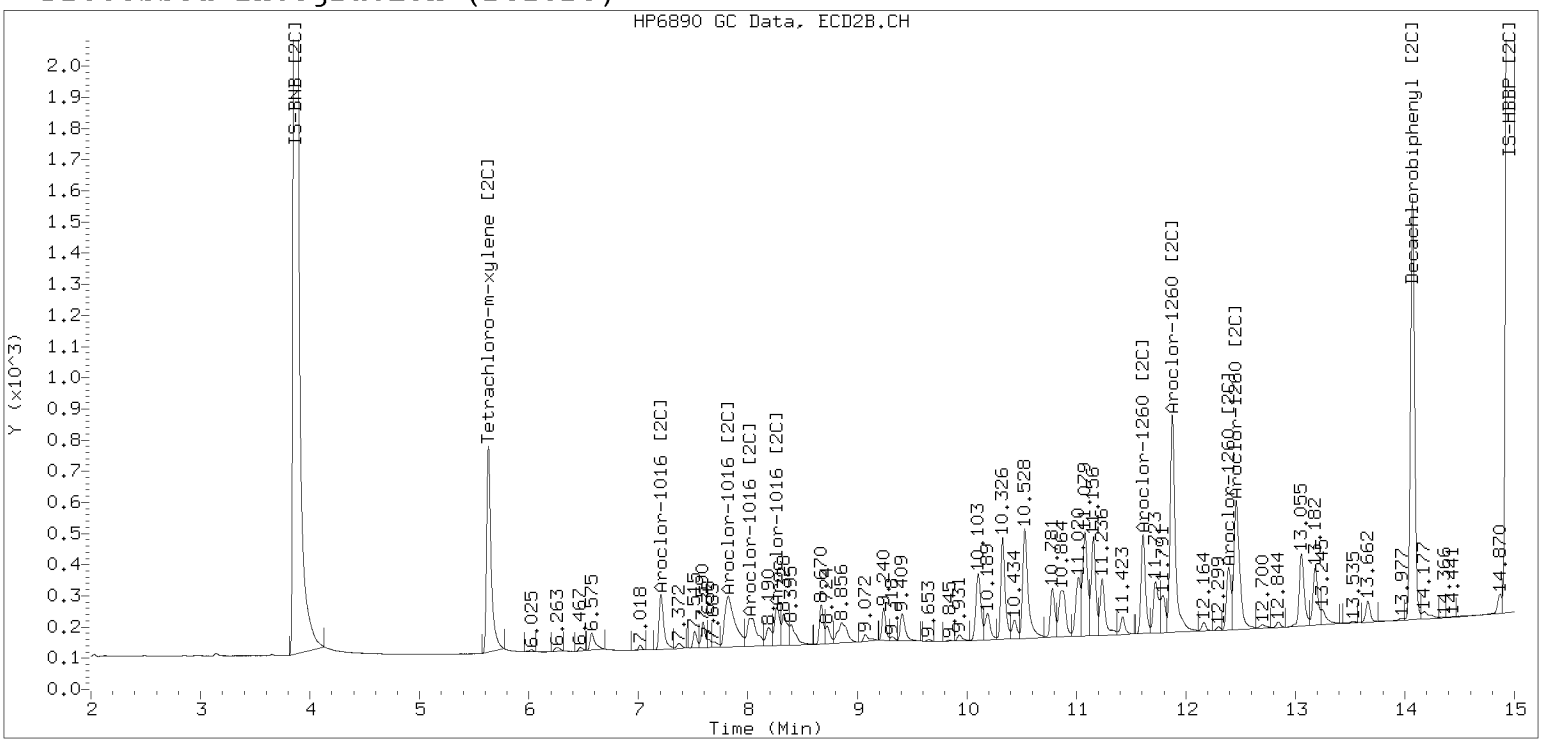
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230505.b/230505.b/05052323ECD7.D Injection Date: 06-MAY-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052324ECD7.D
Data file 2: /230505.b/230505.b/05052324ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 1.0PPMAR1660
Client ID:
Injection Date: 06-MAY-2023 00:29
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.746	0.004	1354956	5.627	-0.001	709704	151.5	152.0	0.4	Tetrachloro-m-xylene
13.842	0.002	1208957	14.071	0.002	1442827	141.2	159.2	12.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	594005	-1.2
Hexabromobiphenyl	876625	857318	-2.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	339380	-2.8
Hexabromobiphenyl	652984	638394	-2.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.213	0.000	192466	836.8	1	7.203	-0.001	161296	839.6
Aroclor-1016	2	7.595	0.000	687116	955.4	2	7.804	-0.003	383432	936.5
Aroclor-1016	3	7.732	-0.000	284089	854.4	3	8.002	-0.003	161269	893.1
Aroclor-1016	4	8.397	-0.001	121539	886.0	4	8.257	-0.002	118708	827.5
	Total Col1Ave (4 peaks):				883.2	Total Col2Ave (4 peaks):				874.2 RPD = 1
	Corrected Ave (3 peaks):				859.1	Corrected Ave (3 peaks):				853.4 RPD = 1
			CalAmt %D:		-11.7			CalAmt %D:		-12.6
Aroclor-1260	1	10.992	-0.001	410905	906.4	1	11.604	-0.002	304531	898.2
Aroclor-1260	2	11.309	-0.001	410553	917.6	2	11.869	-0.003	813835	917.7
Aroclor-1260	3	11.683	-0.003	1014157	905.1	3	12.387	-0.001	218887	996.0
Aroclor-1260	4	12.087	-0.003	505824	921.7	4	12.453	-0.003	543988	918.3
Aroclor-1260	5	12.193	-0.001	212396	887.6	NS	---			----
	Total Col1Ave (5 peaks):				907.7	Total Col2Ave (4 peaks):				932.6 RPD = 3
	Corrected Ave (4 peaks):				904.2	Corrected Ave (3 peaks):				911.4 RPD = 1
			CalAmt %D:		-9.2			CalAmt %D:		-6.7

Total PCB Area Col1 (5.842 - 13.740) = 11665793 Col1 Total PCB = 1.8 ppm*

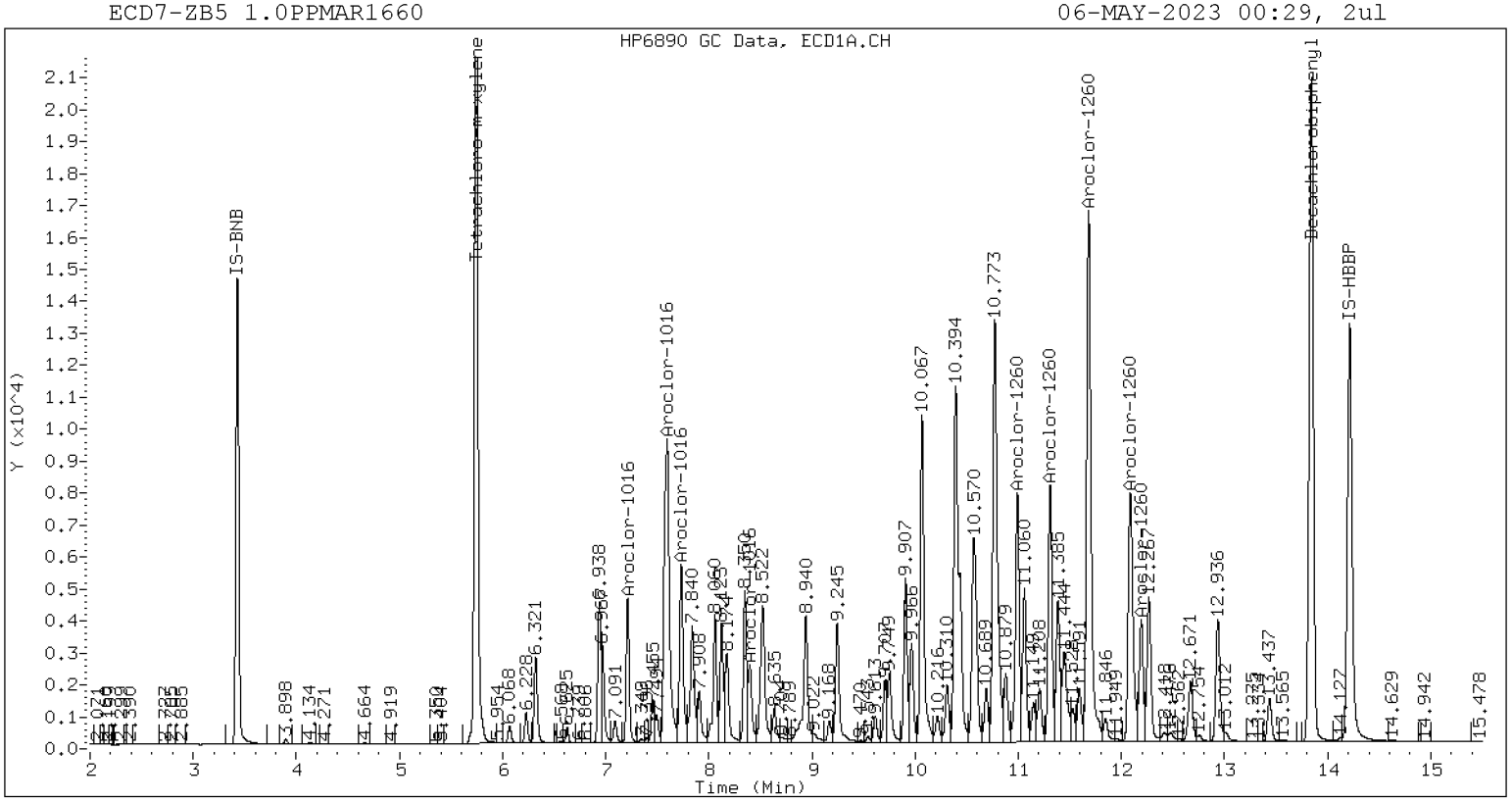
Total PCB Area Col2 (5.728 - 13.968) = 7382788 Col2 Total PCB = 1.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

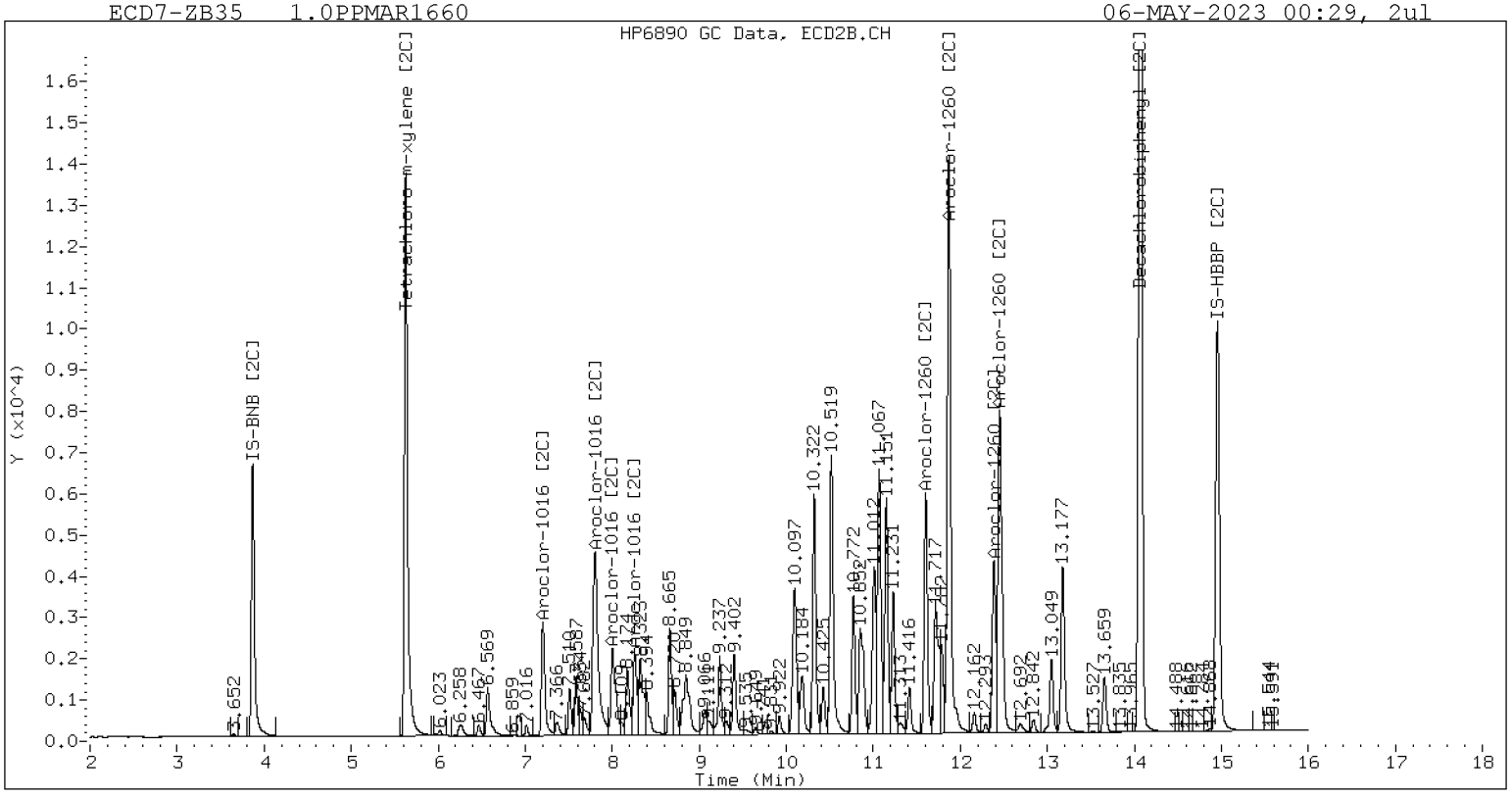
PCB Dual Column Chromatograms

ECD7-ZB5 1.0PPMAR1660 06-MAY-2023 00:29, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 1.0PPMAR1660 06-MAY-2023 00:29, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052325ECD7.D
Data file 2: /230505.b/230505.b/05052325ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.1PPMAR1660
Client ID:
Injection Date: 06-MAY-2023 00:50
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.741	-0.001	166260	5.629	0.000	87721	17.3	17.2	0.5	Tetrachloro-m-xylene
13.841	0.000	162151	14.069	0.001	170994	17.0	17.2	1.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	639496	6.3
Hexabromobiphenyl	876625	955499	9.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	371294	6.3
Hexabromobiphenyl	652984	700767	7.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.212	-0.000	27672	111.8	1	7.204	0.000	22585	107.5
Aroclor-1016	2	7.595	0.000	84096	108.6	2	7.815	0.008	47261	105.5
Aroclor-1016	3	7.735	0.002	40718	113.8	3	8.012	0.007	21450	108.6
Aroclor-1016	4	8.399	0.001	17000	115.1	4	8.262	0.003	17337	110.5
Total Col1Ave (4 peaks):					112.3	Total Col2Ave (4 peaks):				108.0 RPD = 4
Corrected Ave (3 peaks):					111.4	Corrected Ave (3 peaks):				107.2 RPD = 4
CalAmt %D:					12.3	CalAmt %D:				8.0
Aroclor-1260	1	10.995	0.002	53621	106.1	1	11.608	0.002	39451	106.0
Aroclor-1260	2	11.313	0.003	53001	106.3	2	11.874	0.002	104406	107.3
Aroclor-1260	3	11.690	0.004	132765	106.3	3	12.391	0.003	24449	101.4
Aroclor-1260	4	12.093	0.003	64276	105.1	4	12.457	0.002	68859	105.9
Aroclor-1260	5	12.196	0.003	28307	106.1	NS	---			----
Total Col1Ave (5 peaks):					106.0	Total Col2Ave (4 peaks):				105.1 RPD = 1
Corrected Ave (4 peaks):					105.9	Corrected Ave (3 peaks):				104.4 RPD = 1
CalAmt %D:					6.0	CalAmt %D:				5.1

Total PCB Area Col1 (5.842 - 13.740) = 1580756 Col1 Total PCB = 0.2 ppm*

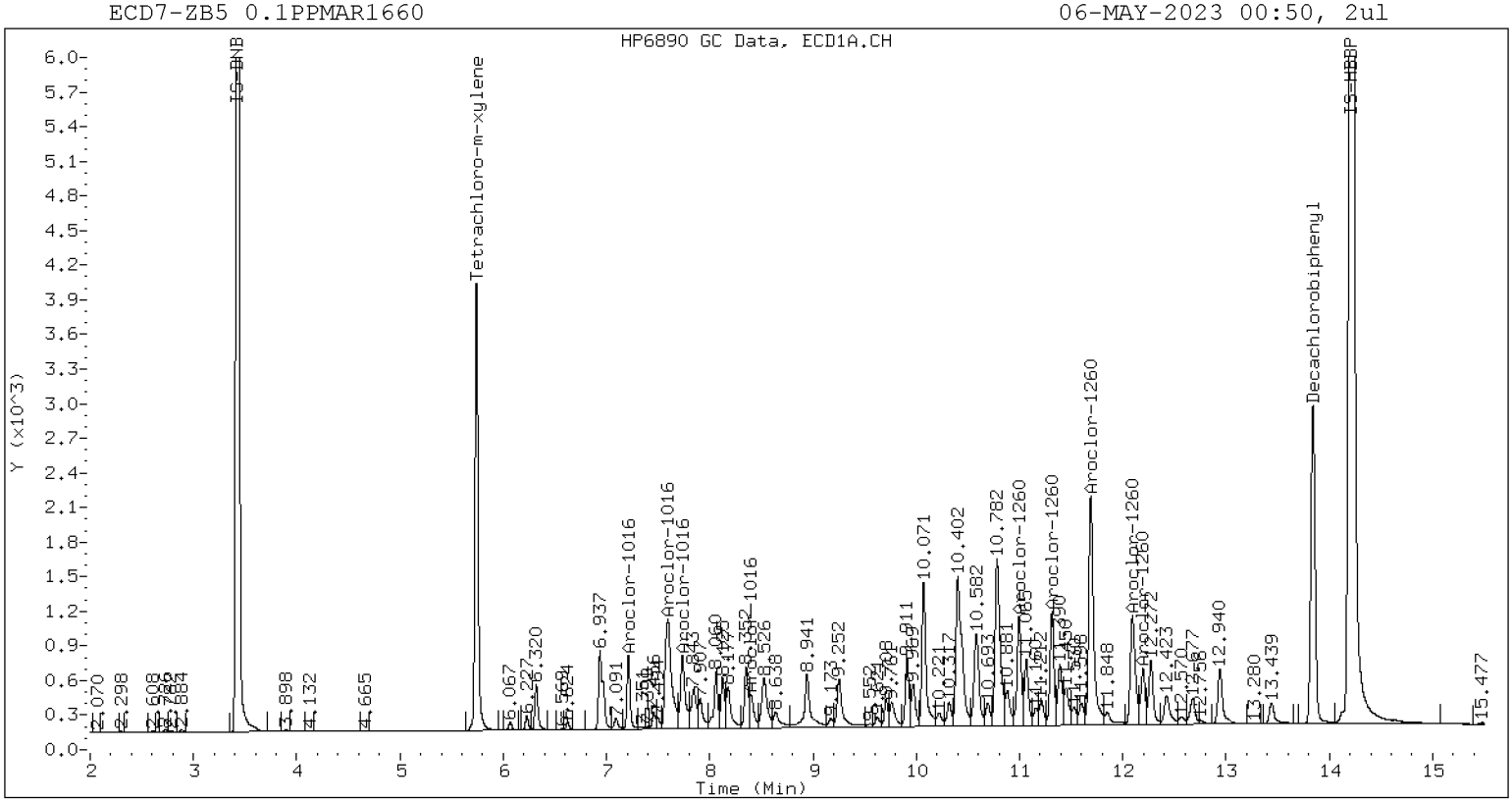
Total PCB Area Col2 (5.728 - 13.968) = 950746 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

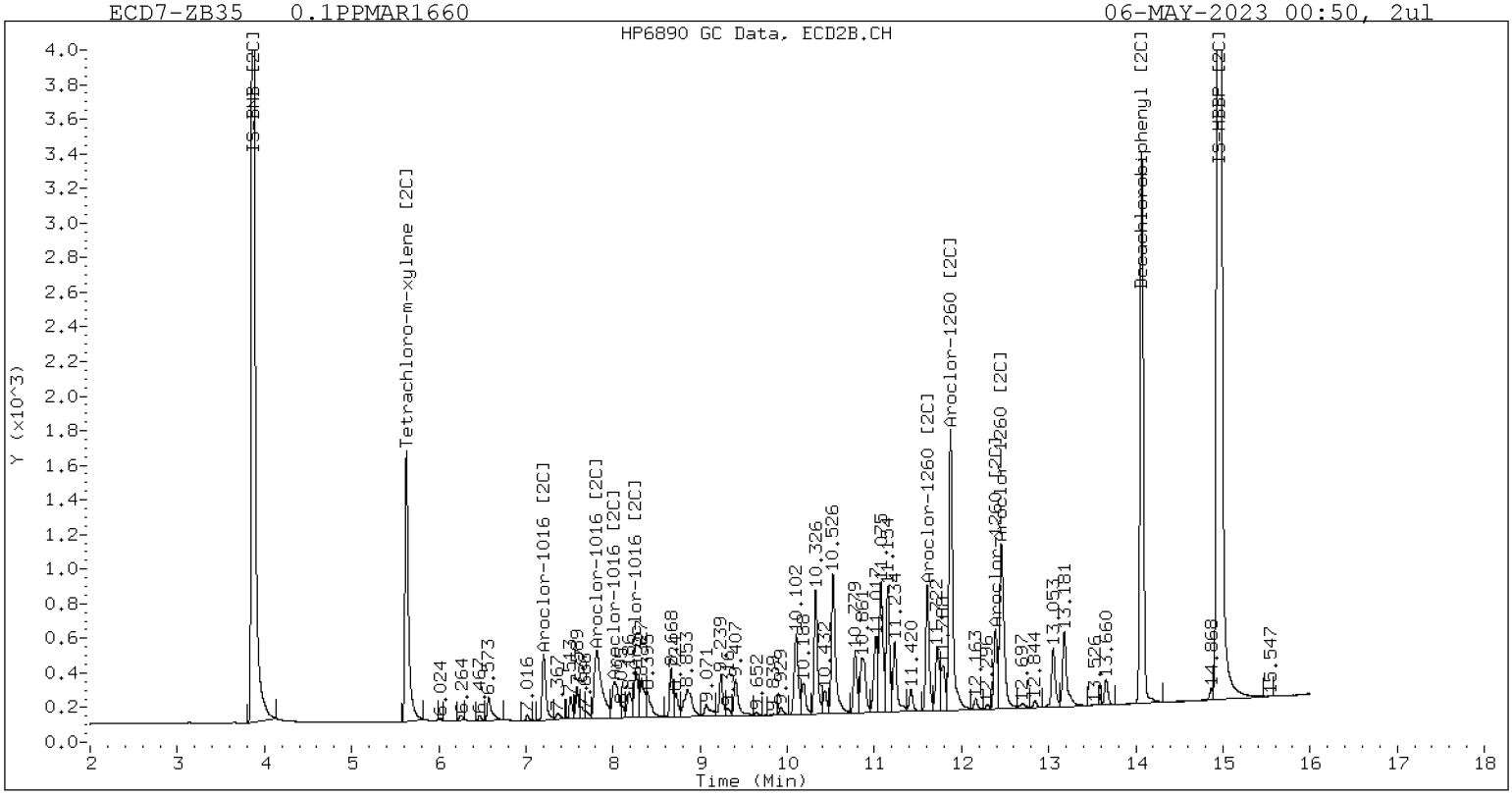
PCB Dual Column Chromatograms

ECD7-ZB5 0.1PPMAR1660 06-MAY-2023 00:50, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.1PPMAR1660 06-MAY-2023 00:50, 2ul

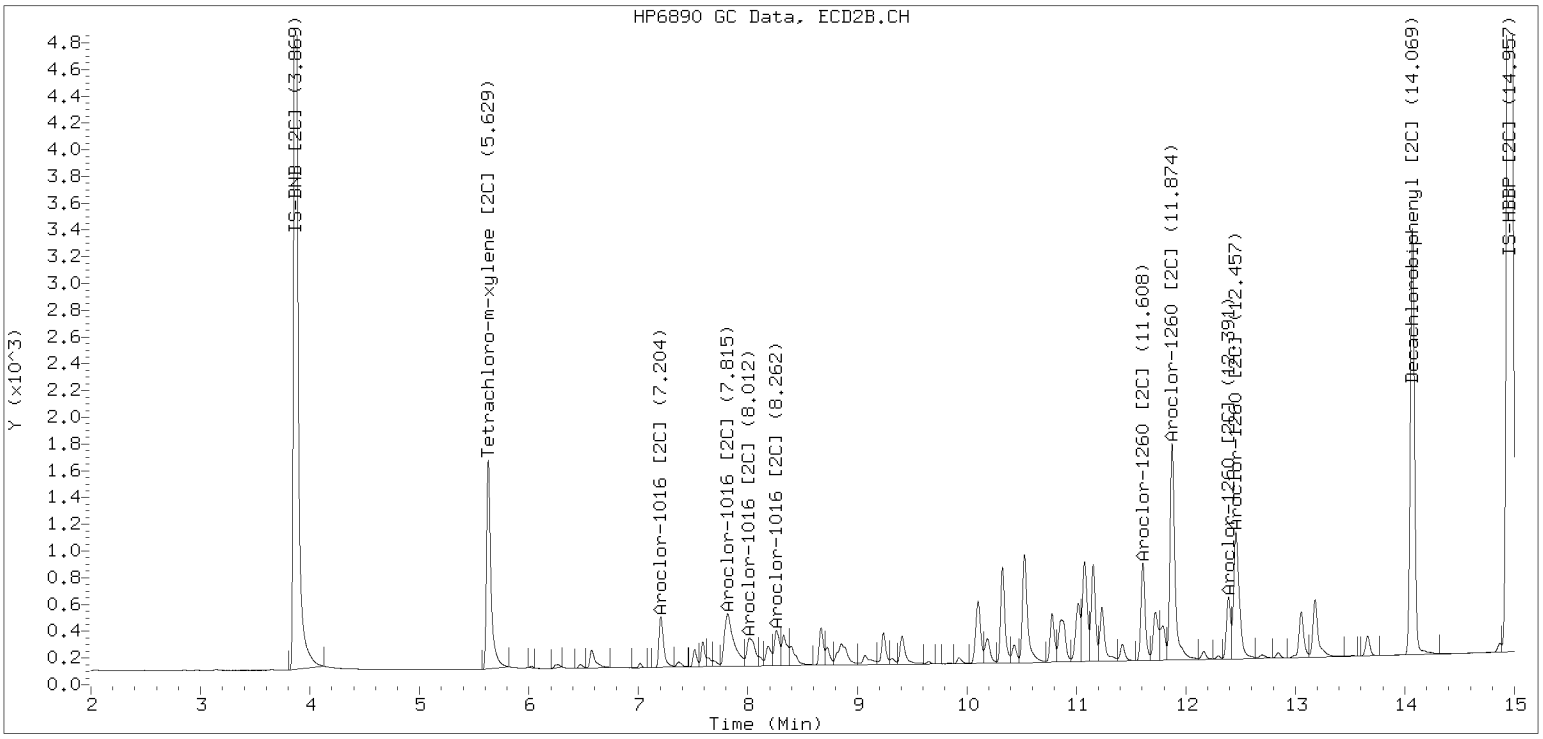


ZB-35 Manual Integration: YES

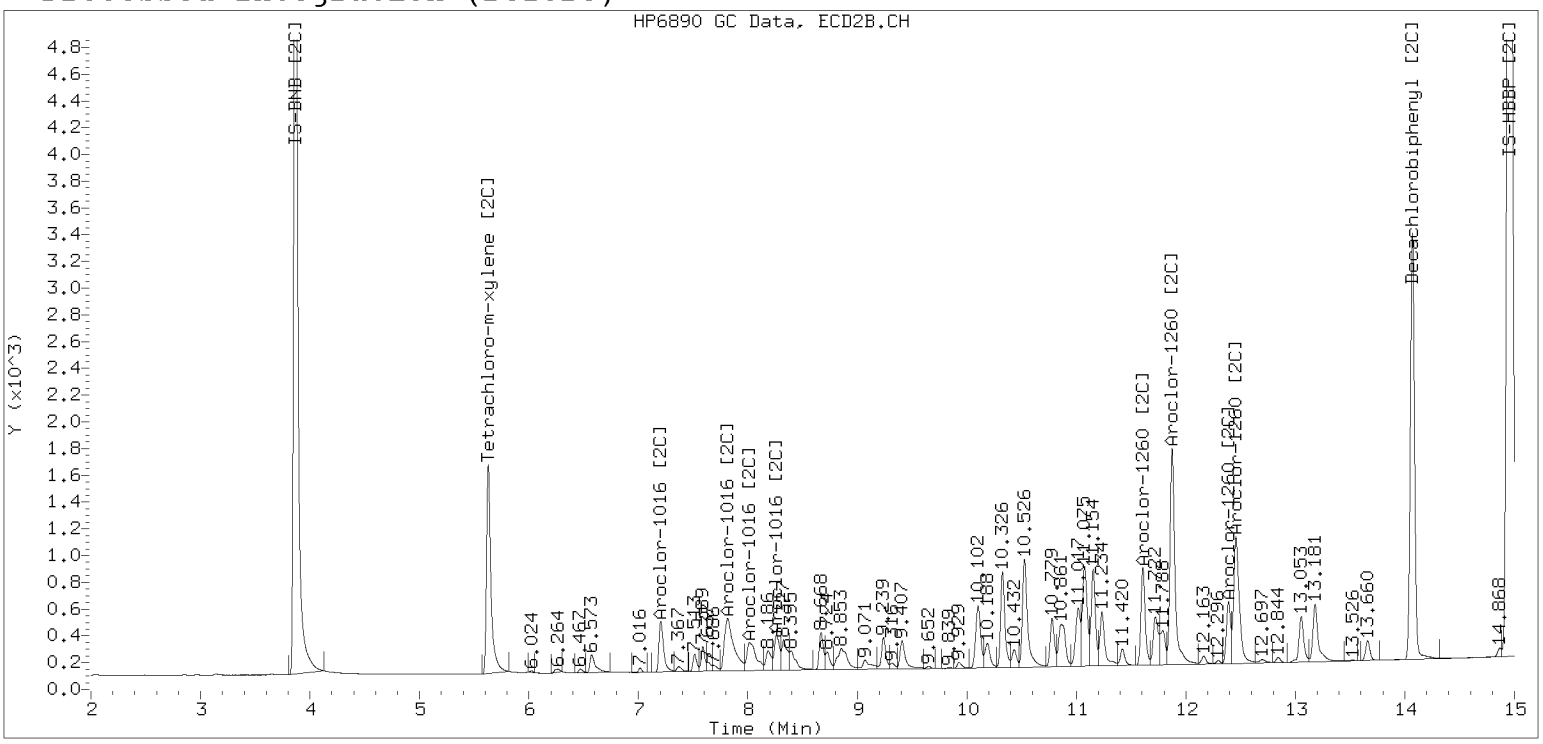
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230505.b/230505.b/05052325ECD7.D Injection Date: 06-MAY-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052326ECD7.D
Data file 2: /230505.b/230505.b/05052326ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.5PPMAR1660
Client ID:
Injection Date: 06-MAY-2023 01:11
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.743	0.001	726106	5.629	0.000	386361	77.6	78.4	1.0	Tetrachloro-m-xylene
13.842	0.002	662159	14.070	0.002	782852	72.8	82.0	11.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	621250	3.3
Hexabromobiphenyl	876625	910647	3.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	358174	2.5
Hexabromobiphenyl	652984	672444	3.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.212	0.000	112948	469.5	1	7.204	0.000	93114	459.2
Aroclor-1016	2	7.594	0.000	385708	512.8	2	7.808	0.000	213293	493.6
Aroclor-1016	3	7.733	0.000	163263	469.5	3	8.006	0.000	90569	475.2
Aroclor-1016	4	8.398	0.000	69235	482.6	4	8.259	0.000	69045	456.1
Total Col1Ave (4 peaks):					483.6	Total Col2Ave (4 peaks):				471.0 RPD = 3
Corrected Ave (3 peaks):					473.9	Corrected Ave (3 peaks):				463.5 RPD = 2
CalAmt %D:					-3.3	CalAmt %D:				-5.8
Aroclor-1260	1	10.993	0.000	231157	480.0	1	11.606	0.000	171304	479.7
Aroclor-1260	2	11.310	0.000	230103	484.2	2	11.872	0.000	454515	486.6
Aroclor-1260	3	11.686	0.000	571583	480.2	3	12.388	0.000	116621	503.8
Aroclor-1260	4	12.090	0.000	284345	487.8	4	12.455	0.000	305334	489.3
Aroclor-1260	5	12.193	0.000	119534	470.3	NS	---			----
Total Col1Ave (5 peaks):					480.5	Total Col2Ave (4 peaks):				489.8 RPD = 2
Corrected Ave (4 peaks):					478.7	Corrected Ave (3 peaks):				485.2 RPD = 1
CalAmt %D:					-3.9	CalAmt %D:				-2.0

Total PCB Area Col1 (5.842 - 13.740) = 6615607 Col1 Total PCB = 1.0 ppm*

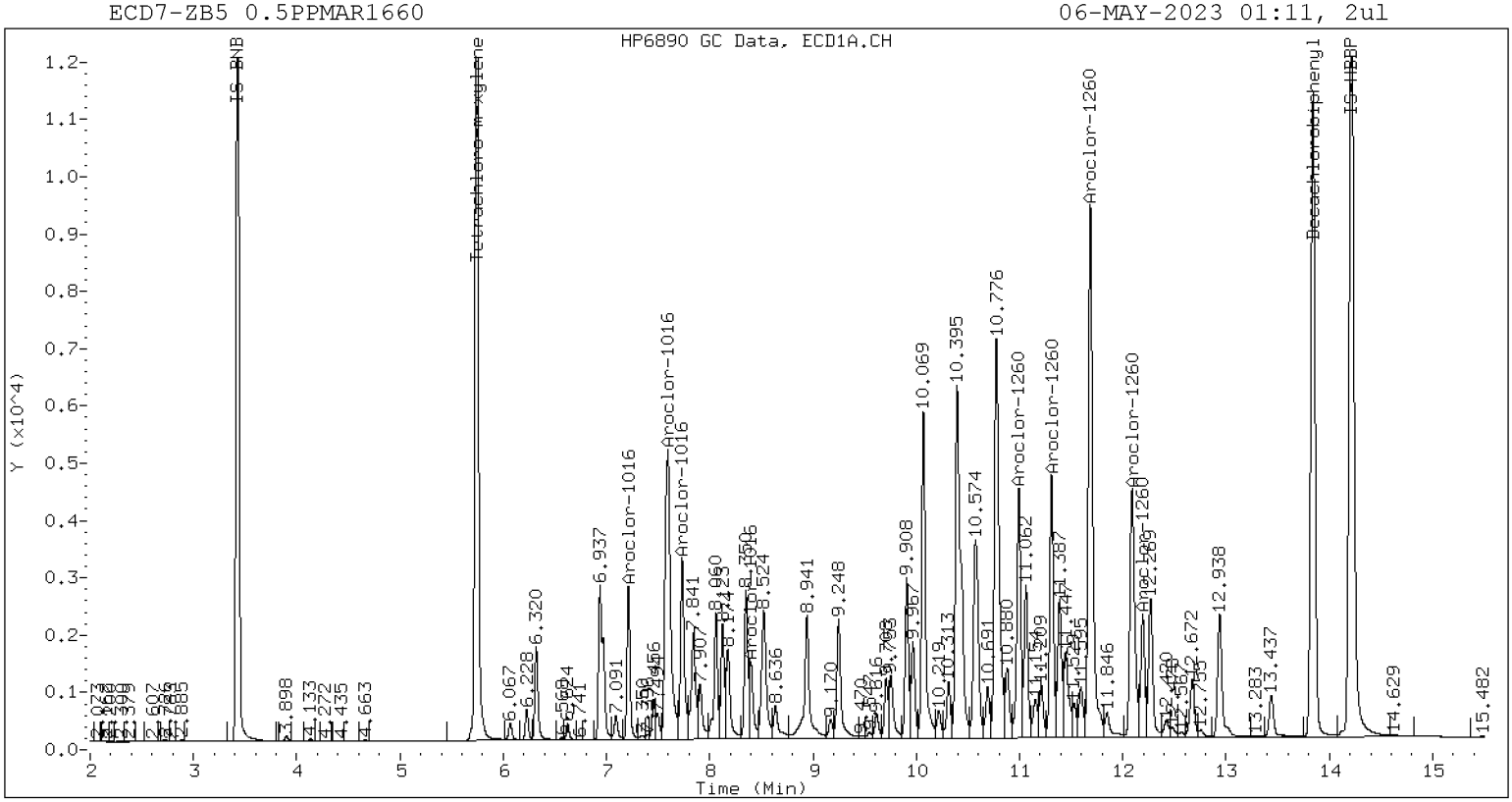
Total PCB Area Col2 (5.728 - 13.968) = 4121423 Col2 Total PCB = 1.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

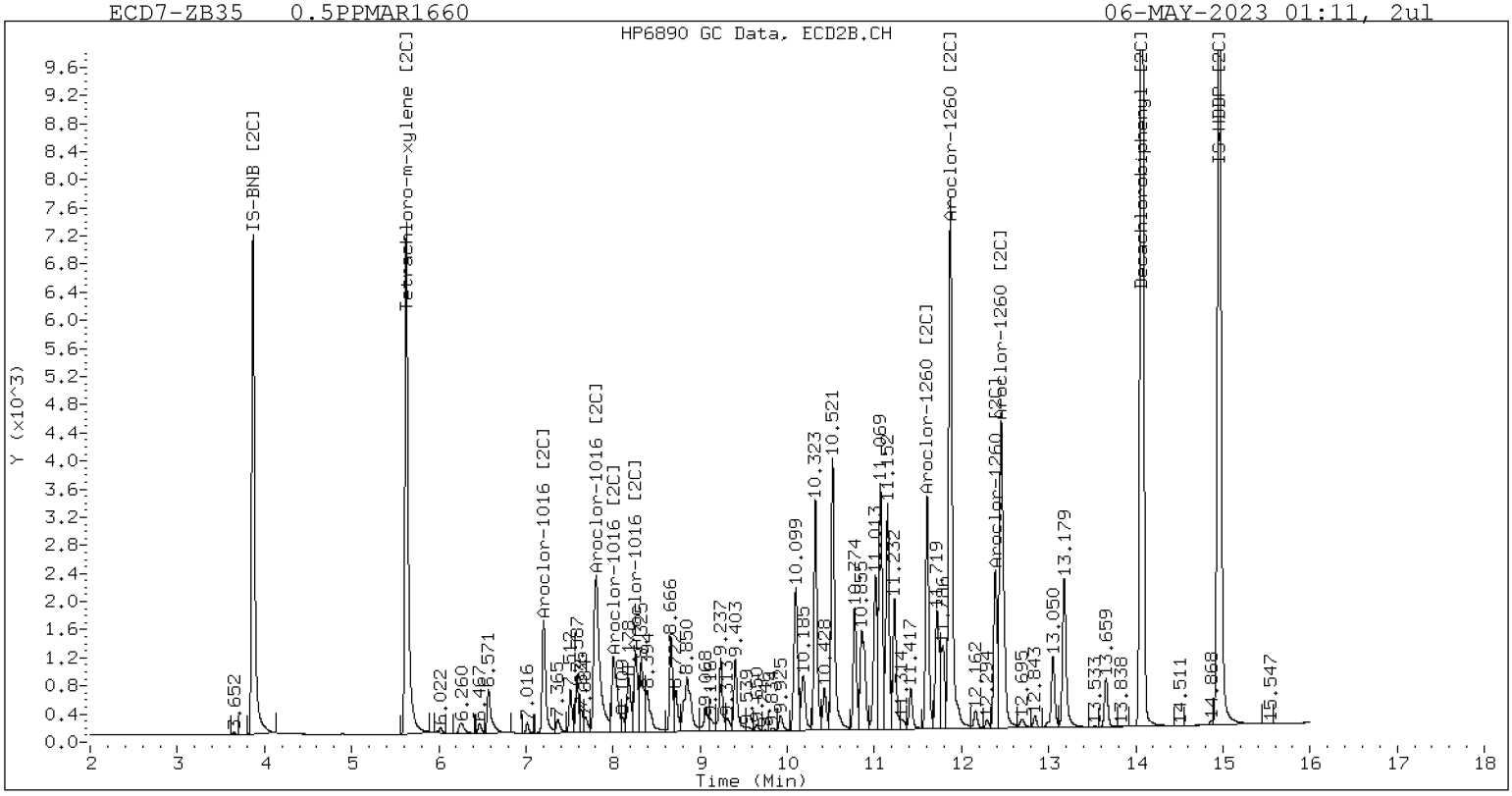
PCB Dual Column Chromatograms

ECD7-ZB5 0.5PPMAR1660 06-MAY-2023 01:11, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.5PPMAR1660 06-MAY-2023 01:11, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052327ECD7.D
Data file 2: /230505.b/230505.b/05052327ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1242
Client ID:
Injection Date: 06-MAY-2023 01:31
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	-0.000	447397	5.627	-0.001	235808	47.5	47.6	0.3	Tetrachloro-m-xylene
13.842	0.001	336070	14.068	0.000	375985	36.4	38.8	6.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	625349	4.0
Hexabromobiphenyl	876625	923197	5.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	359808	3.0
Hexabromobiphenyl	652984	683116	4.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1242	1	7.212	0.000	49262	250.0	1	7.203	0.000	40200	250.0
Aroclor-1242	2	7.595	0.000	156103	250.0	2	7.812	0.000	85524	250.0
Aroclor-1242	3	8.398	0.000	30193	250.0	3	9.123	0.000	27418	250.0
Aroclor-1242	4	8.525	0.000	69876	250.0	4	9.550	0.000	33043	250.0

Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0

Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

Total PCB Area Col1 (5.842 - 13.740) = 1203666 Col1 Total PCB = 0.2 ppm*

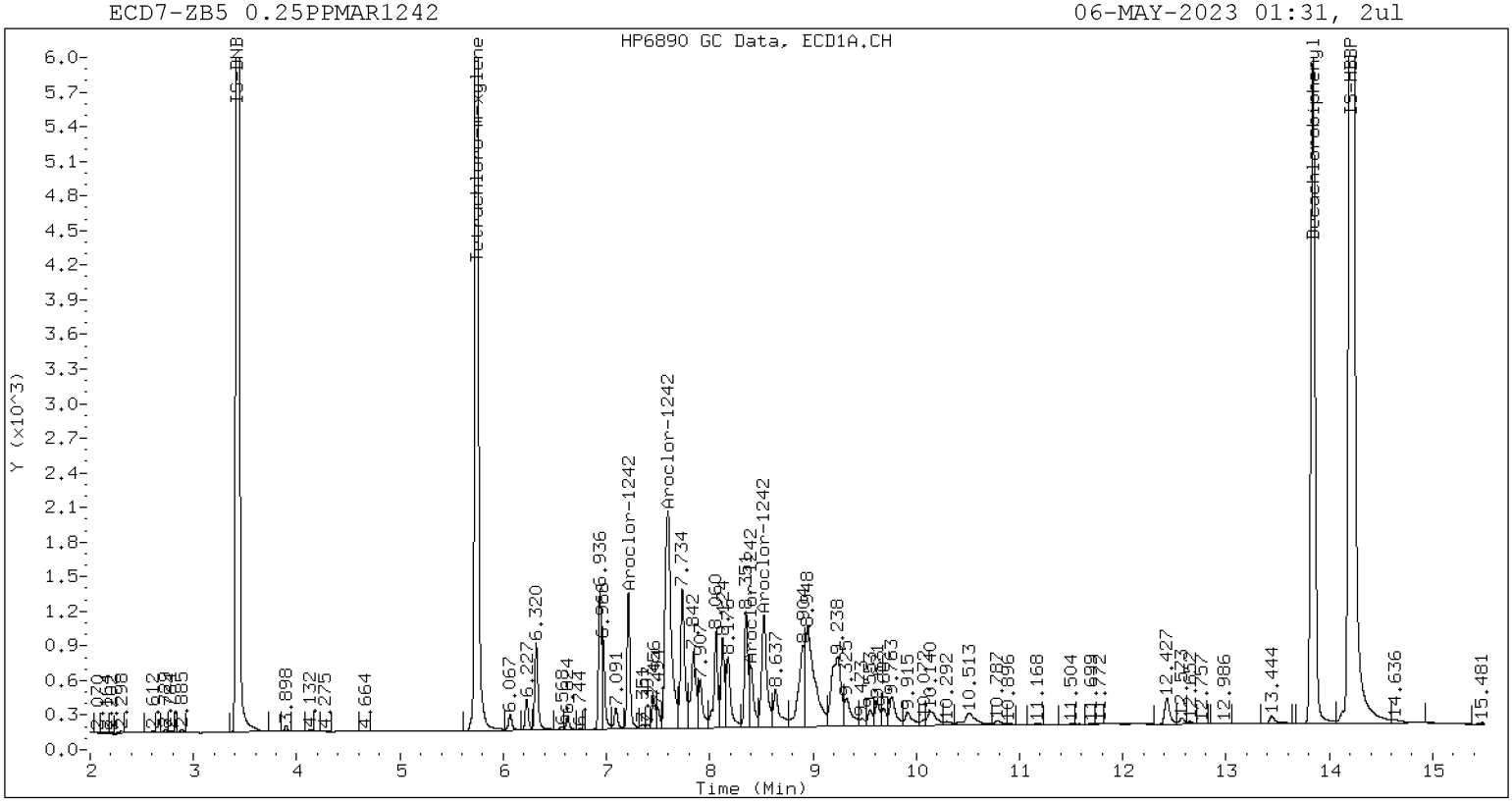
Total PCB Area Col2 (5.728 - 13.968) = 643088 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

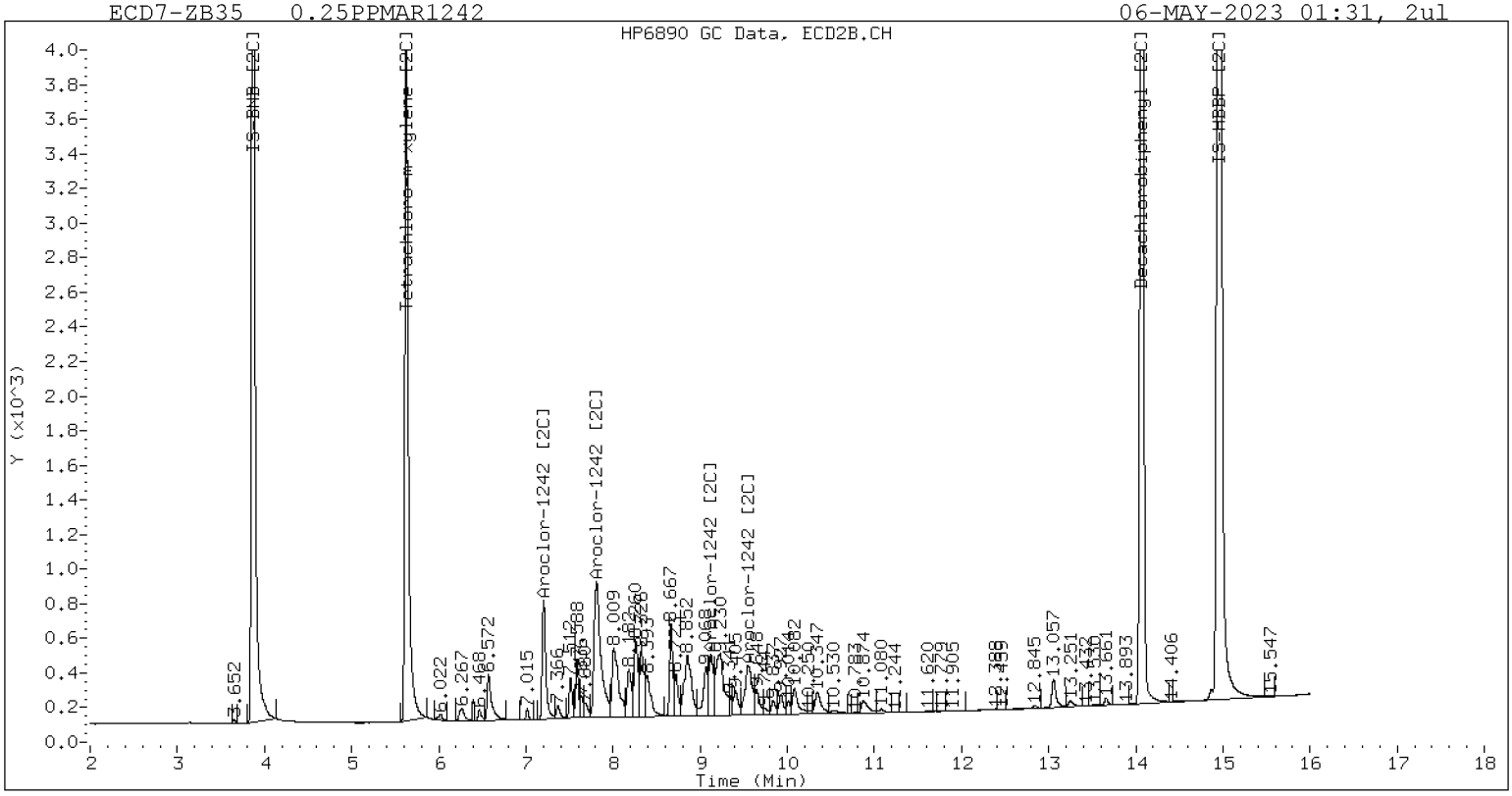
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1242 06-MAY-2023 01:31, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1242 06-MAY-2023 01:31, 2ul

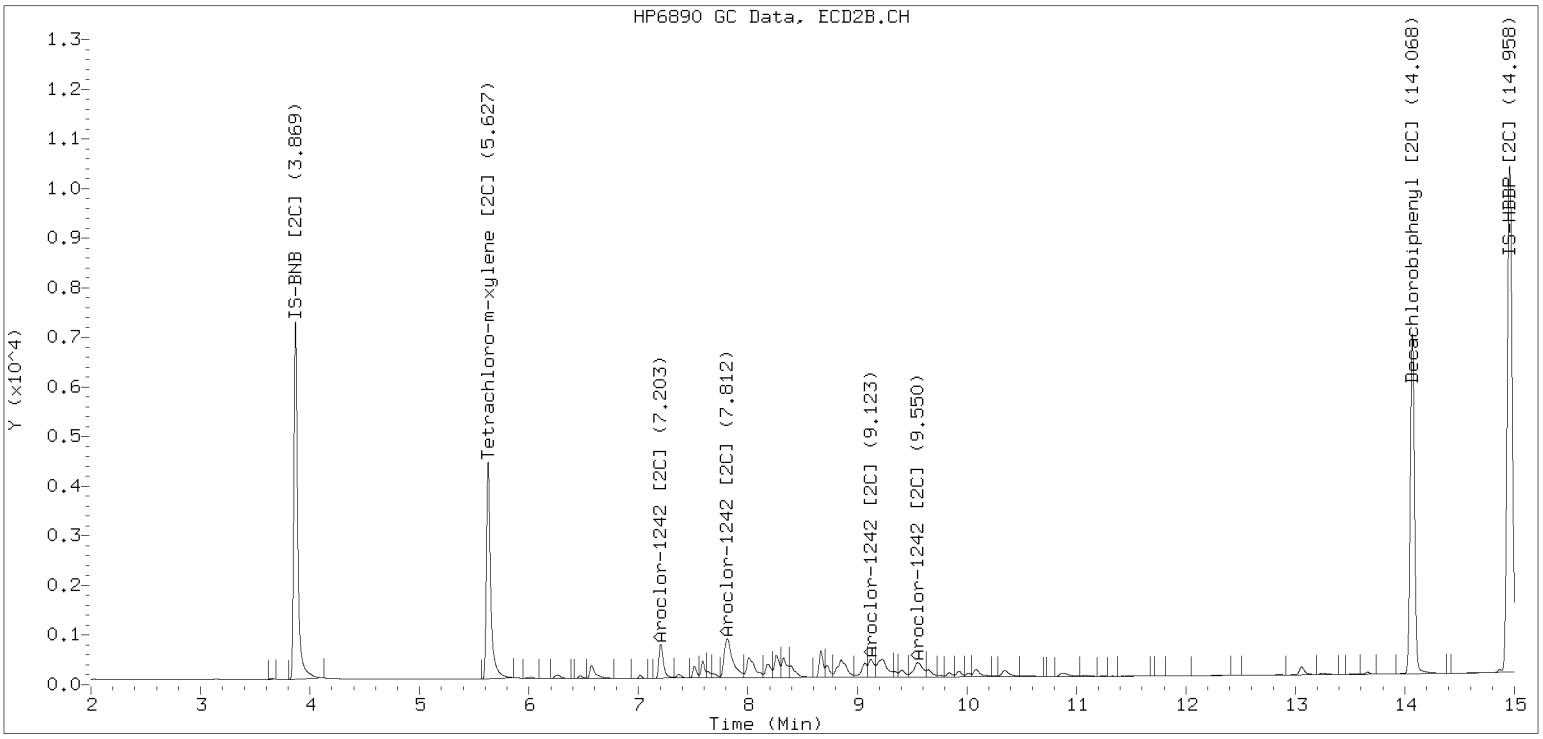


ZB-35 Manual Integration: YES

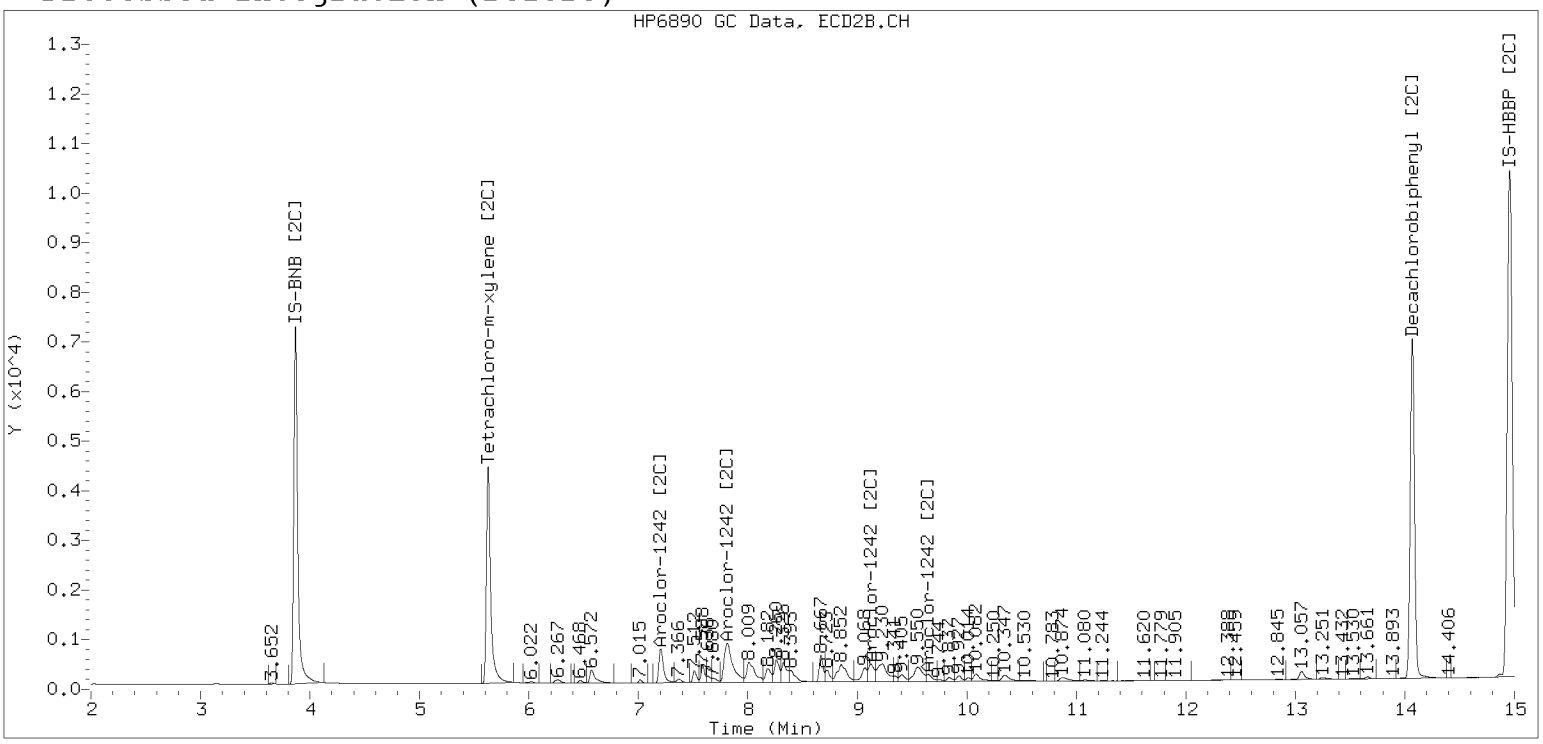
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230505.b/230505.b/05052327ECD7.D Injection Date: 06-MAY-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052328ECD7.D
Data file 2: /230505.b/230505.b/05052328ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1248
Client ID:
Injection Date: 06-MAY-2023 01:52
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.741	-0.001	363354	5.628	-0.000	193087	38.8	39.5	1.9	Tetrachloro-m-xylene
13.843	0.003	347513	14.070	0.002	386262	38.0	40.3	5.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	621905	3.4
Hexabromobiphenyl	876625	915805	4.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	354920	1.6
Hexabromobiphenyl	652984	674778	3.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1248	1	8.399	0.000	39684	250.0	1	8.260	0.000	42211	250.0
Aroclor-1248	2	8.524	0.000	103126	250.0	2	8.667	0.000	44588	250.0
Aroclor-1248	3	8.944	0.000	198327	250.0	3	9.120	0.000	52266	250.0
Aroclor-1248	4	9.243	0.000	101099	250.0	4	9.546	0.000	62674	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0

Total PCB Area Col1 (5.842 - 13.740) = 1607435 Col1 Total PCB = 0.2 ppm*

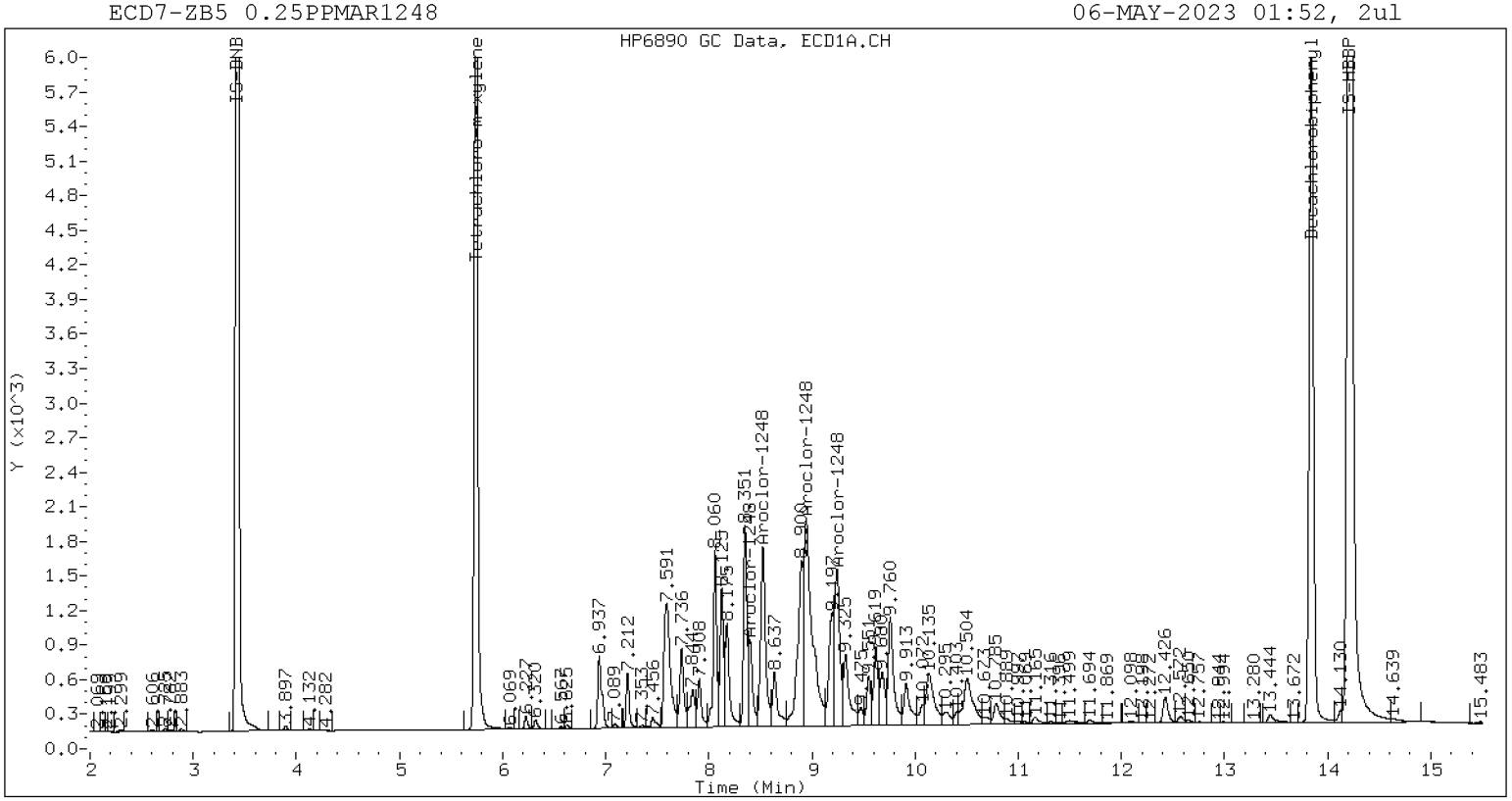
Total PCB Area Col2 (5.728 - 13.968) = 866525 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

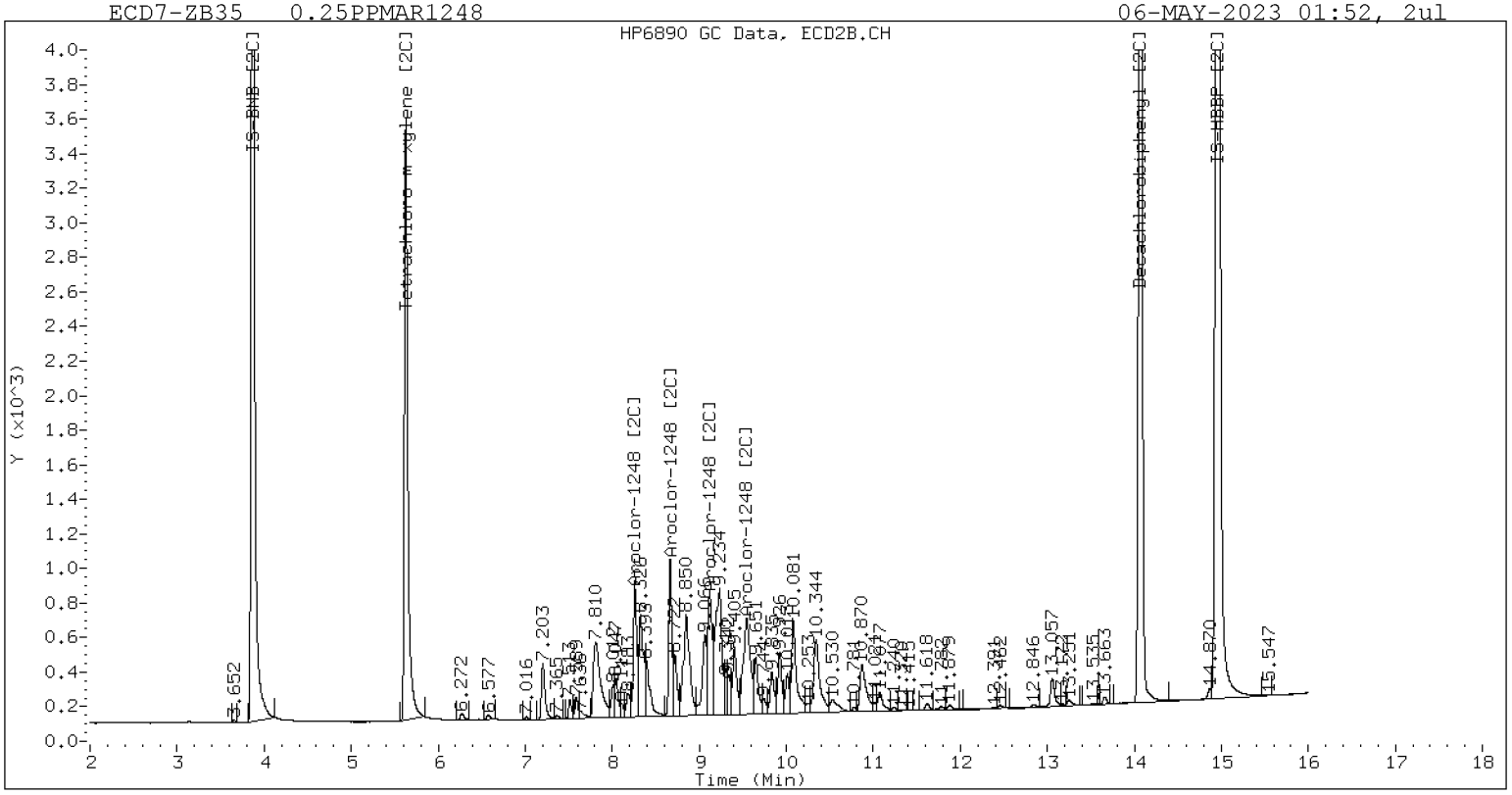
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1248 06-MAY-2023 01:52, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1248 06-MAY-2023 01:52, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052329ECD7.D
Data file 2: /230505.b/230505.b/05052329ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1254
Client ID:
Injection Date: 06-MAY-2023 02:13
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	0.000	357984	5.629	0.001	190255	37.8	38.5	1.8	Tetrachloro-m-xylene
13.842	0.002	347079	14.071	0.002	385540	37.4	39.8	6.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	628765	4.5
Hexabromobiphenyl	876625	929076	6.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	359470	2.9
Hexabromobiphenyl	652984	682882	4.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col					ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1254	1	9.246	0.000	161557	250.0	1	9.404	0.000	68278	250.0
Aroclor-1254	2	9.325	0.000	72588	250.0	2	9.499	0.000	40561	250.0
Aroclor-1254	3	9.618	0.000	104295	250.0	3	9.924	0.000	55343	250.0
Aroclor-1254	4	9.756	0.000	204288	250.0	4	10.078	0.000	120775	250.0
Aroclor-1254	5	10.126	0.000	123377	250.0	5	10.328	0.000	119827	250.0

Total Col1Ave (5 peaks): 250.0 Total Col2Ave (5 peaks): 250.0 RPD = 0

Corrected Ave (4 peaks): 250.0 Corrected Ave (4 peaks): 250.0 RPD = 0

Total PCB Area Col1 (5.842 - 13.740) = 2115446 Col1 Total PCB = 0.3 ppm*

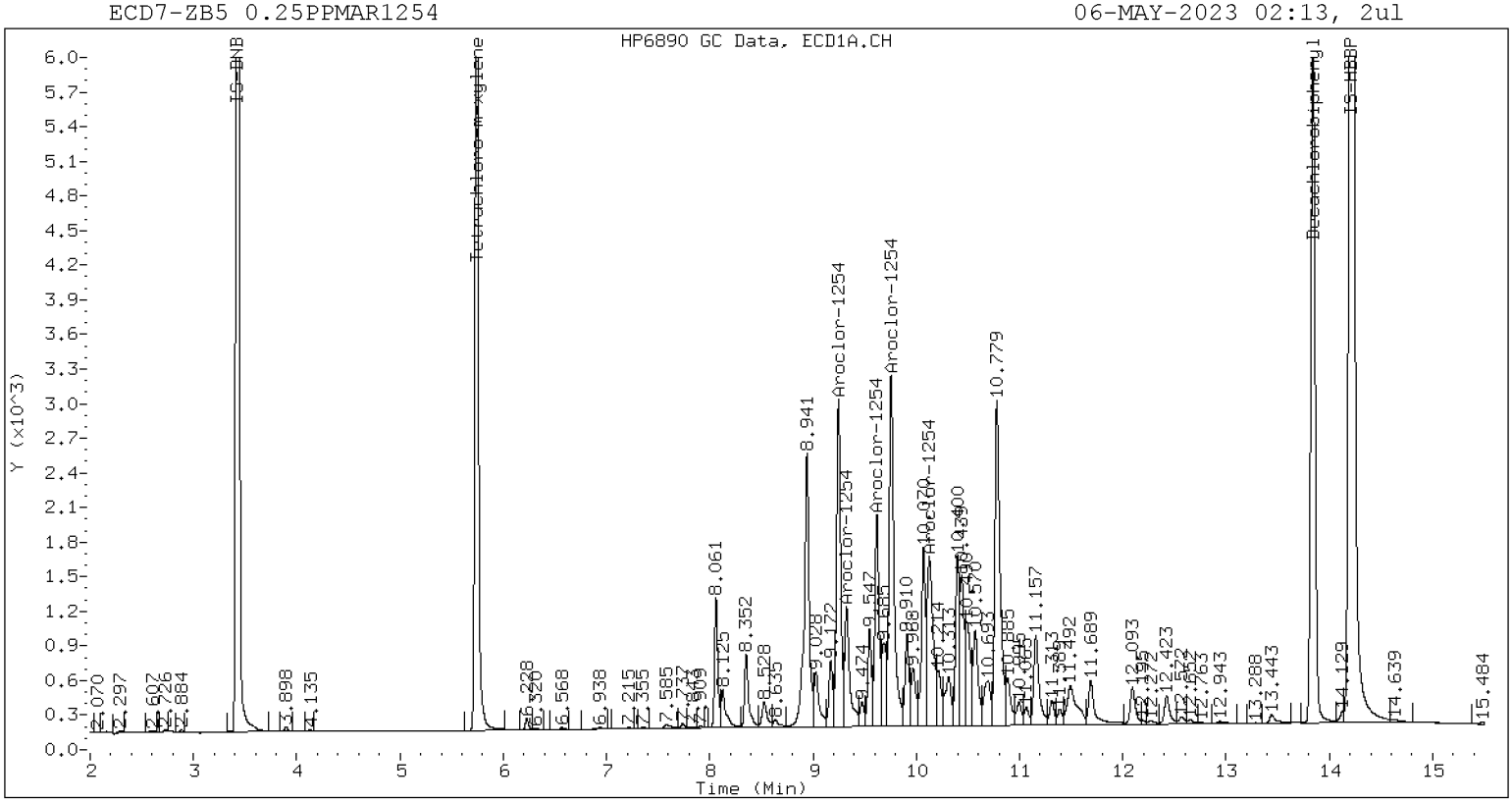
Total PCB Area Col2 (5.728 - 13.968) = 1173654 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

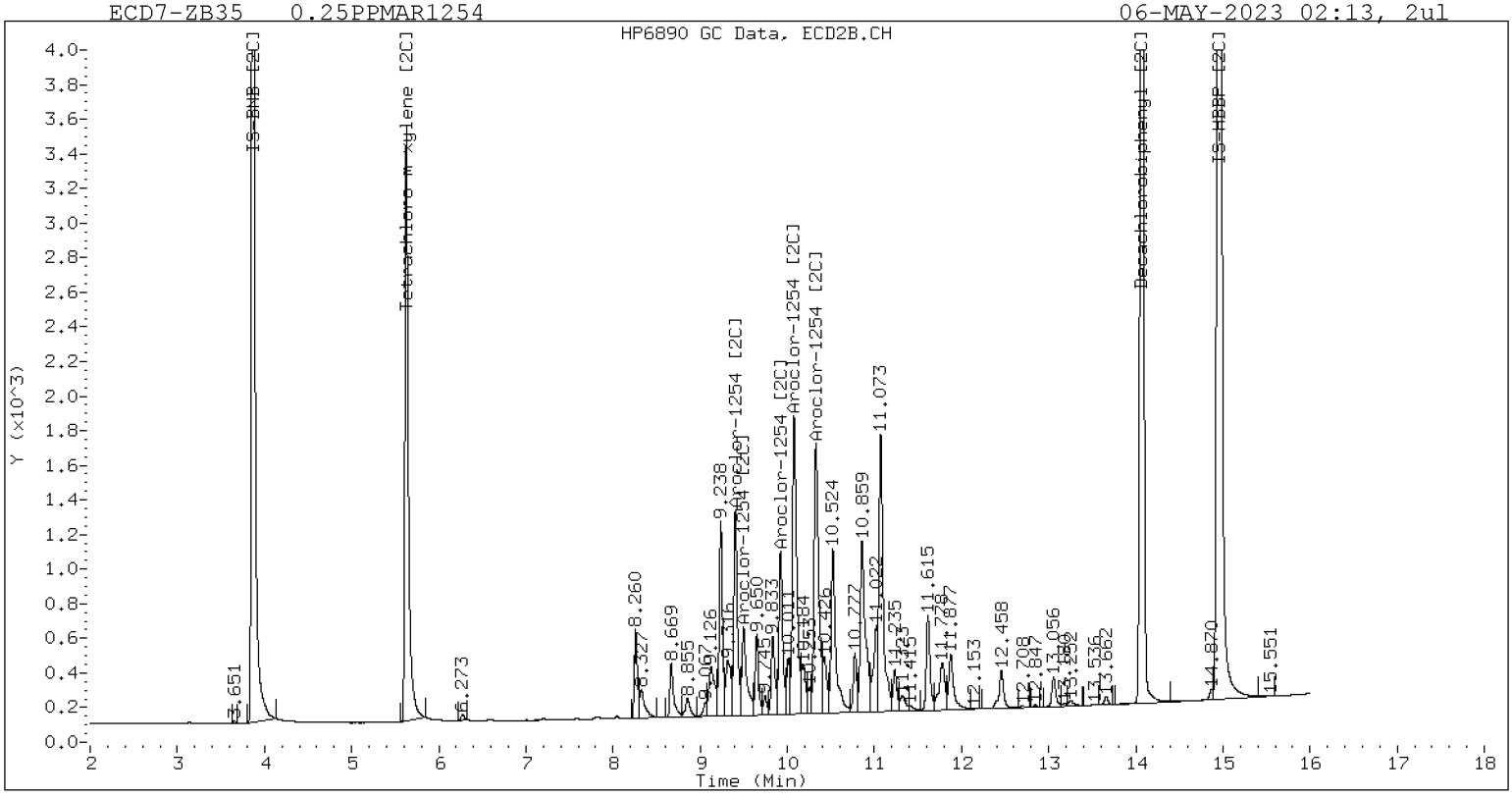
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1254 06-MAY-2023 02:13, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1254 06-MAY-2023 02:13, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052330ECD7.D
Data file 2: /230505.b/230505.b/05052330ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR2162.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR2162
Client ID:
Injection Date: 06-MAY-2023 02:34
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	-0.000	379099	5.628	0.000	200082	39.7	40.8	2.7	Tetrachloro-m-xylene
13.842	0.001	358012	14.071	0.003	396142	38.1	40.5	6.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	634497	5.5
Hexabromobiphenyl	876625	940541	7.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	356713	2.1
Hexabromobiphenyl	652984	688599	5.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col					ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1221	1	4.663	0.000	11156	250.0	1	4.894	0.000	6578	250.0
Aroclor-1221	2	6.069	0.000	22382	250.0	2	6.245	0.000	13633	250.0
Aroclor-1221	3	6.321	0.000	53161	250.0	3	6.572	0.000	21443	250.0
Total Col1Ave (3 peaks):					250.0	Total Col2Ave (3 peaks):				250.0 RPD = 0
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.779	0.000	106373	250.0	1	11.153	0.000	139491	250.0
Aroclor-1262	2	12.195	0.000	149596	250.0	2	11.605	0.000	117643	250.0
Aroclor-1262	3	12.269	0.000	160810	250.0	3	12.386	0.000	128556	250.0
Aroclor-1262	4	12.939	0.000	131044	250.0	4	12.456	0.000	209520	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0

Total PCB Area Col1 (5.842 - 13.740) = 2742242 Col1 Total PCB = 0.4 ppm*

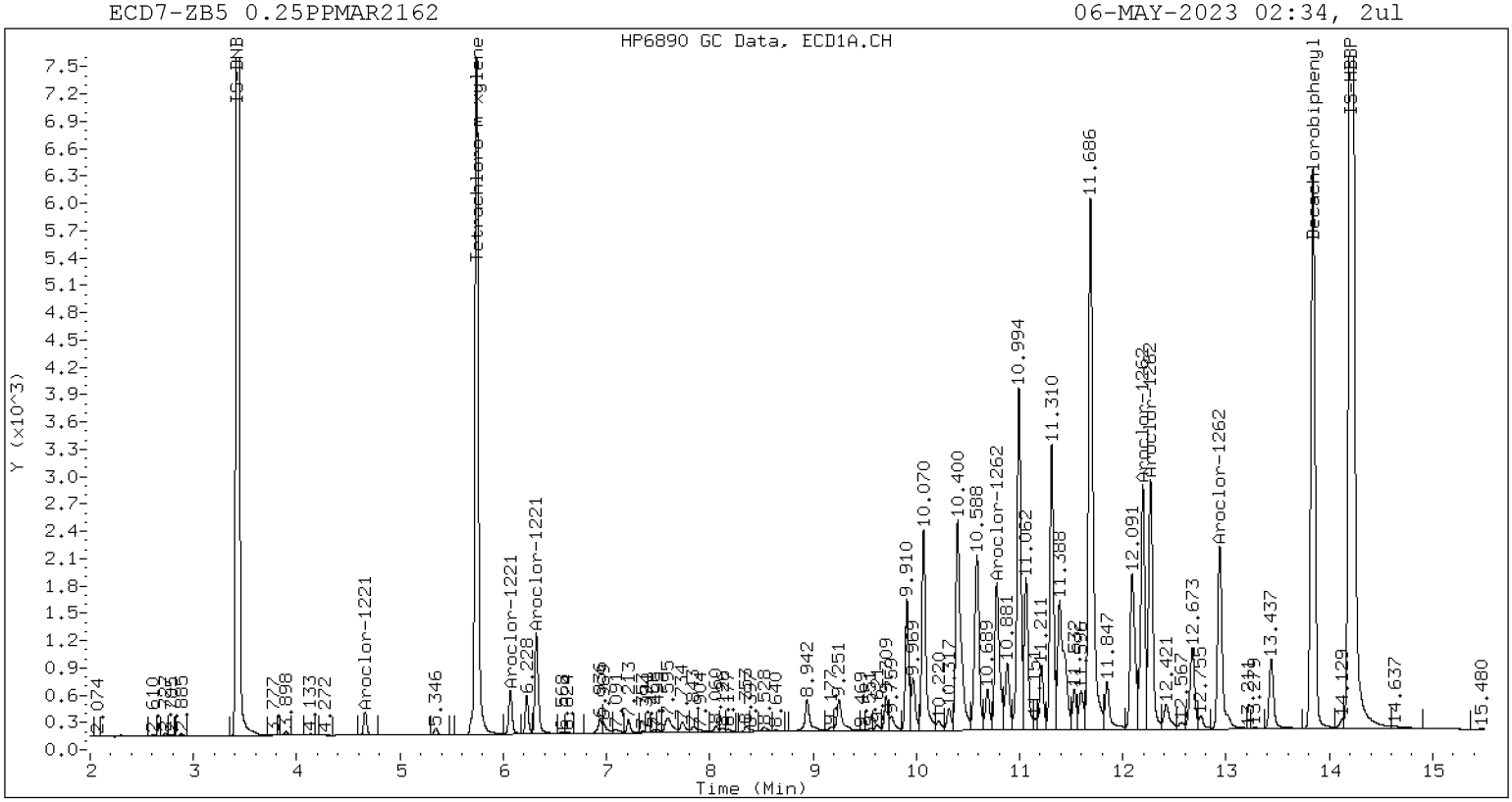
Total PCB Area Col2 (5.728 - 13.968) = 1852573 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

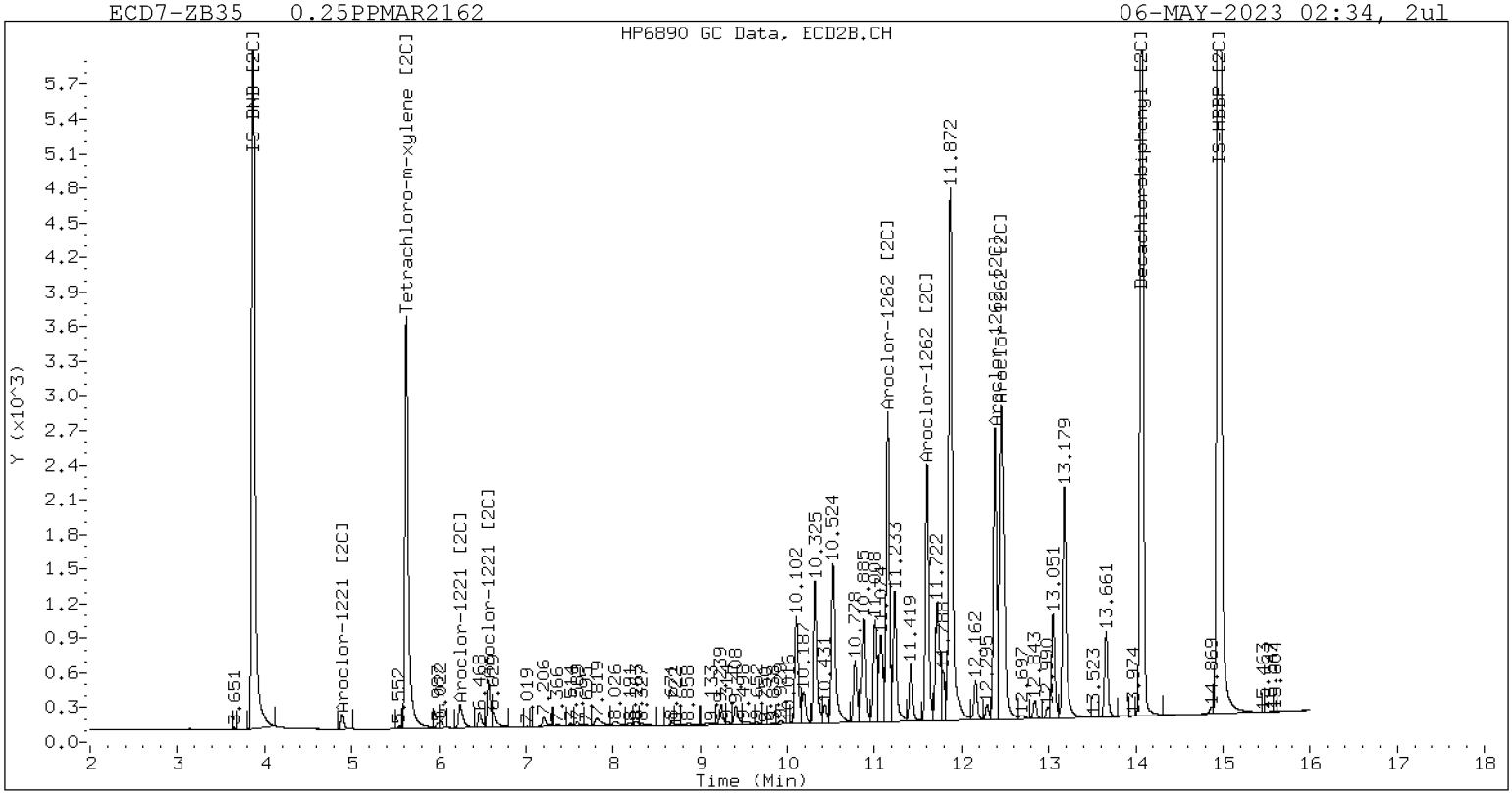
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR2162 06-MAY-2023 02:34, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR2162 06-MAY-2023 02:34, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052331ECD7.D
Data file 2: /230505.b/230505.b/05052331ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: AR3268.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR3268
Client ID:
Injection Date: 06-MAY-2023 02:55
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	0.000	378314	5.628	0.000	200538	38.9	40.3	3.4	Tetrachloro-m-xylene
13.840	0.000	502472	14.068	0.000	573501	52.2	57.3	9.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	644974	7.2
Hexabromobiphenyl	876625	963091	9.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	361821	3.6
Hexabromobiphenyl	652984	704753	7.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1232	1	4.664	0.000	7554	250.0	1	4.894	0.000	3508	250.0
Aroclor-1232	2	6.069	0.000	15718	250.0	2	7.205	0.000	20084	250.0
Aroclor-1232	3	7.595	0.000	74881	250.0	3	7.815	0.000	40344	250.0
Aroclor-1232	4	8.527	0.000	32051	250.0	4	8.669	0.000	11684	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0
Aroclor-1268	1	12.196	0.000	384005	250.0	1	12.385	0.000	333421	250.0
Aroclor-1268	2	12.268	0.000	381367	250.0	2	12.452	0.000	358458	250.0
Aroclor-1268	3	12.648	0.000	306717	250.0	3	12.843	0.000	306959	250.0
Aroclor-1268	4	13.437	0.000	875751	250.0	4	13.663	0.000	983908	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0

Total PCB Area Col1 (5.842 - 13.740) = 3124318 Col1 Total PCB = 0.4 ppm*

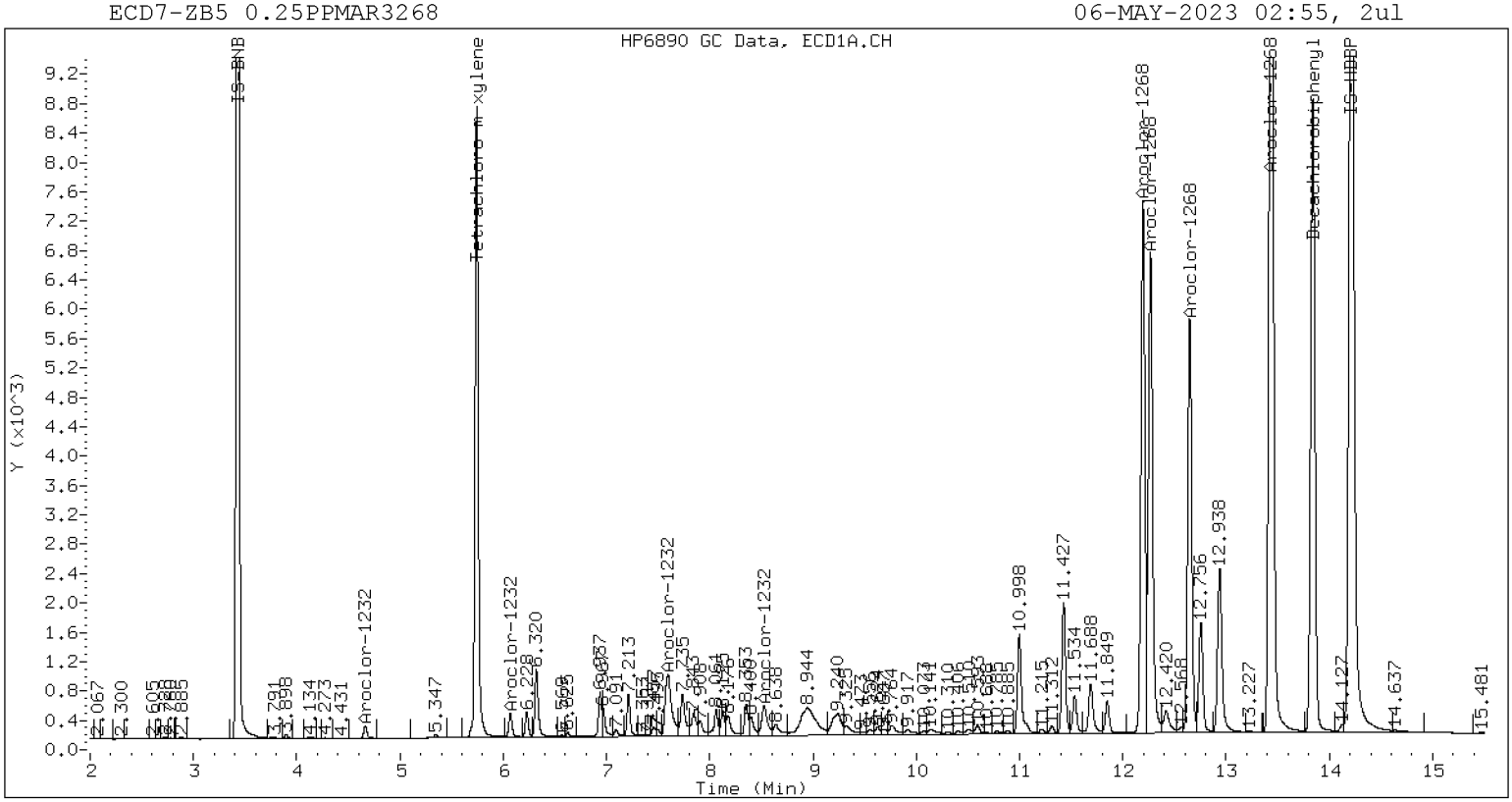
Total PCB Area Col2 (5.728 - 13.968) = 2731202 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

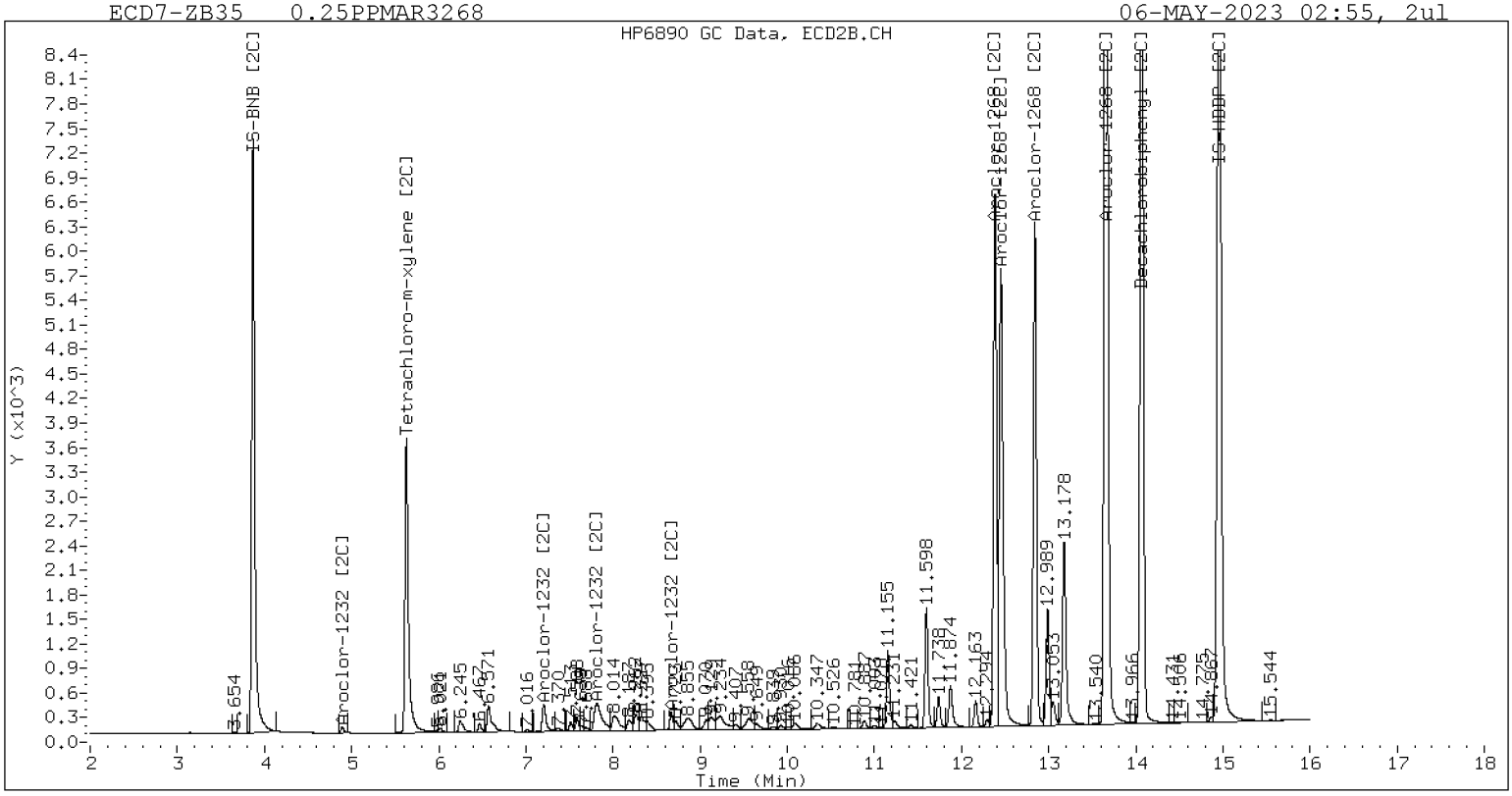
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR3268 06-MAY-2023 02:55, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR3268 06-MAY-2023 02:55, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052332ECD7.D
Data file 2: /230505.b/230505.b/05052332ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660SCV
Client ID:
Injection Date: 06-MAY-2023 03:16
Report Date: 05/06/2023 12:06
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	-0.000	356595	5.629	0.000	185340	36.9	37.2	1.0	Tetrachloro-m-xylene
13.842	0.002	347188	14.070	0.002	384711	36.9	39.2	6.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	642284	6.8
Hexabromobiphenyl	876625	941356	7.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	361711	3.6
Hexabromobiphenyl	652984	690563	5.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.213	0.000	61654	247.9	1	7.205	0.001	50106	244.7
Aroclor-1016	2	7.594	-0.001	199228	256.2	2	7.811	0.003	109839	251.7
Aroclor-1016	3	7.734	0.001	89643	249.3	3	8.009	0.004	48594	252.5
Aroclor-1016	4	8.399	0.001	38714	261.0	4	8.260	0.001	36878	241.2
Total Col1Ave (4 peaks):					253.6	Total Col2Ave (4 peaks):				247.5 RPD = 2
Corrected Ave (3 peaks):					251.1	Corrected Ave (3 peaks):				245.9 RPD = 2
Aroclor-1221	1	4.663	-0.000	436	9.7	1	---			0.0
Aroclor-1221	2	6.068	-0.001	8521	94.0	2	6.251	0.005	5766	104.3
Aroclor-1221	3	6.320	-0.001	41973	195.0	3	6.572	0.000	23212	266.9
Total Col1Ave (3 peaks):					99.6	Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.663	-0.000	436	14.5	1	---			0.0
Aroclor-1232	2	6.068	-0.002	8521	136.1	2	7.205	0.000	50106	623.9
Aroclor-1232	3	7.594	-0.001	199228	667.9	3	7.811	-0.004	109839	680.8
Aroclor-1232	4	8.526	-0.001	85985	673.5	4	8.667	-0.003	34670	742.1
Total Col1Ave (4 peaks):					373.0	Total Col2Ave (3 peaks):				682.3 RPD = 59*
Corrected Ave (3 peaks):					272.8	Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.213	0.001	61654	304.6	1	7.205	0.001	50106	310.0
Aroclor-1242	2	7.594	-0.001	199228	310.7	2	7.811	-0.002	109839	319.4
Aroclor-1242	3	8.399	0.000	38714	312.1	3	9.069	-0.054	21513	195.1
Aroclor-1242	4	8.526	0.001	85985	299.5	4	9.537	-0.013	1824	13.7
Total Col1Ave (4 peaks):					306.7	Total Col2Ave (4 peaks):				209.6 RPD = 38
Corrected Ave (3 peaks):					304.9	Corrected Ave (3 peaks):				172.9 RPD = 55*
Aroclor-1248	1	8.399	-0.000	38714	236.2	1	8.260	0.000	36878	214.3
Aroclor-1248	2	8.526	0.001	85985	201.8	2	8.667	-0.001	34670	190.7
Aroclor-1248	3	8.941	-0.003	81615	99.6	3	9.069	-0.051	21513	101.0
Aroclor-1248	4	9.249	0.006	52526	125.8	4	9.537	-0.008	1824	7.1
Total Col1Ave (4 peaks):					165.8	Total Col2Ave (4 peaks):				128.3 RPD = 26
Corrected Ave (3 peaks):					142.4	Corrected Ave (3 peaks):				99.6 RPD = 35
Aroclor-1254	1	9.249	0.003	52526	79.6	1	9.405	0.001	24726	90.0
Aroclor-1254	2	---			0.0	2	9.537	0.038	1824	11.2
Aroclor-1254	3	9.619	0.001	7081	16.6	3	9.926	0.002	3128	14.0
Aroclor-1254	4	9.756	0.001	21856	26.2	4	10.101	0.023	62581	128.7
Aroclor-1254	5	10.069	-0.057	159796	317.0	5	10.324	-0.004	85433	177.1
Total Col1Ave (4 peaks):					109.8	Total Col2Ave (5 peaks):				84.2 RPD = 26
Corrected Ave (3 peaks):					40.8	Corrected Ave (4 peaks):				61.0 RPD = 40
Aroclor-1260	1	10.995	0.001	145767	292.8	1	11.605	-0.000	99761	272.0
Aroclor-1260	2	11.311	0.001	142028	289.1	2	11.872	0.000	273505	285.1
Aroclor-1260	3	11.686	0.000	354468	288.1	3	12.389	0.001	70545	296.8
Aroclor-1260	4	12.092	0.002	161281	267.6	4	12.455	-0.000	180783	282.1
Aroclor-1260	5	12.194	0.001	76105	289.6	NS	---			----
Total Col1Ave (5 peaks):					285.5	Total Col2Ave (4 peaks):				284.0 RPD = 1
Corrected Ave (4 peaks):					283.6	Corrected Ave (3 peaks):				279.8 RPD = 1
Aroclor-1262	1	10.777	-0.001	215850	506.9	1	11.153	-0.001	104059	186.0
Aroclor-1262	2	12.194	-0.000	76105	127.1	2	11.605	0.001	99761	211.4
Aroclor-1262	3	12.271	0.001	94628	147.0	3	12.389	0.003	70545	136.8
Aroclor-1262	4	12.939	-0.000	78852	150.3	4	12.455	-0.001	180783	215.1
Total Col1Ave (4 peaks):					232.8	Total Col2Ave (4 peaks):				187.3 RPD = 22
Corrected Ave (3 peaks):					141.5	Corrected Ave (3 peaks):				178.1 RPD = 23
Aroclor-1268	1	12.194	-0.001	76105	50.7	1	12.389	0.004	70545	54.0
Aroclor-1268	2	12.271	0.003	94628	63.5	2	12.455	0.003	180783	128.7
Aroclor-1268	3	12.675	0.026	38830	32.4	3	12.844	0.001	3082	2.6
Aroclor-1268	4	13.440	0.003	19986	5.8	4	13.661	-0.002	14882	3.9
Total Col1Ave (4 peaks):					38.1	Total Col2Ave (4 peaks):				47.3 RPD = 21
Corrected Ave (3 peaks):					29.6	Corrected Ave (3 peaks):				20.1 RPD = 38

Total PCB Area Col1 (5.842 - 13.740) = 3657118 Col1 Total PCB = 0.5 ppm*

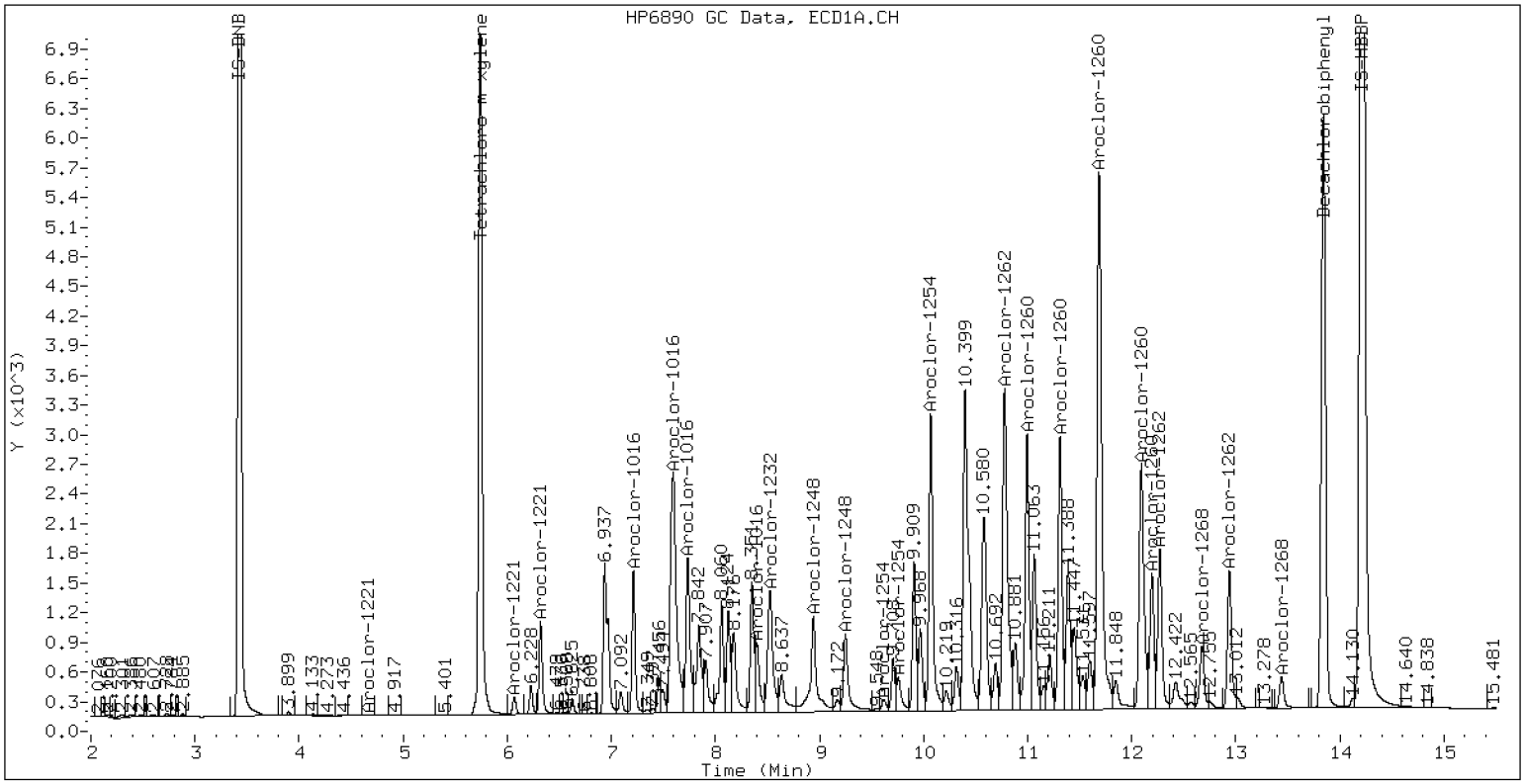
Total PCB Area Col2 (5.728 - 13.968) = 2255286 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

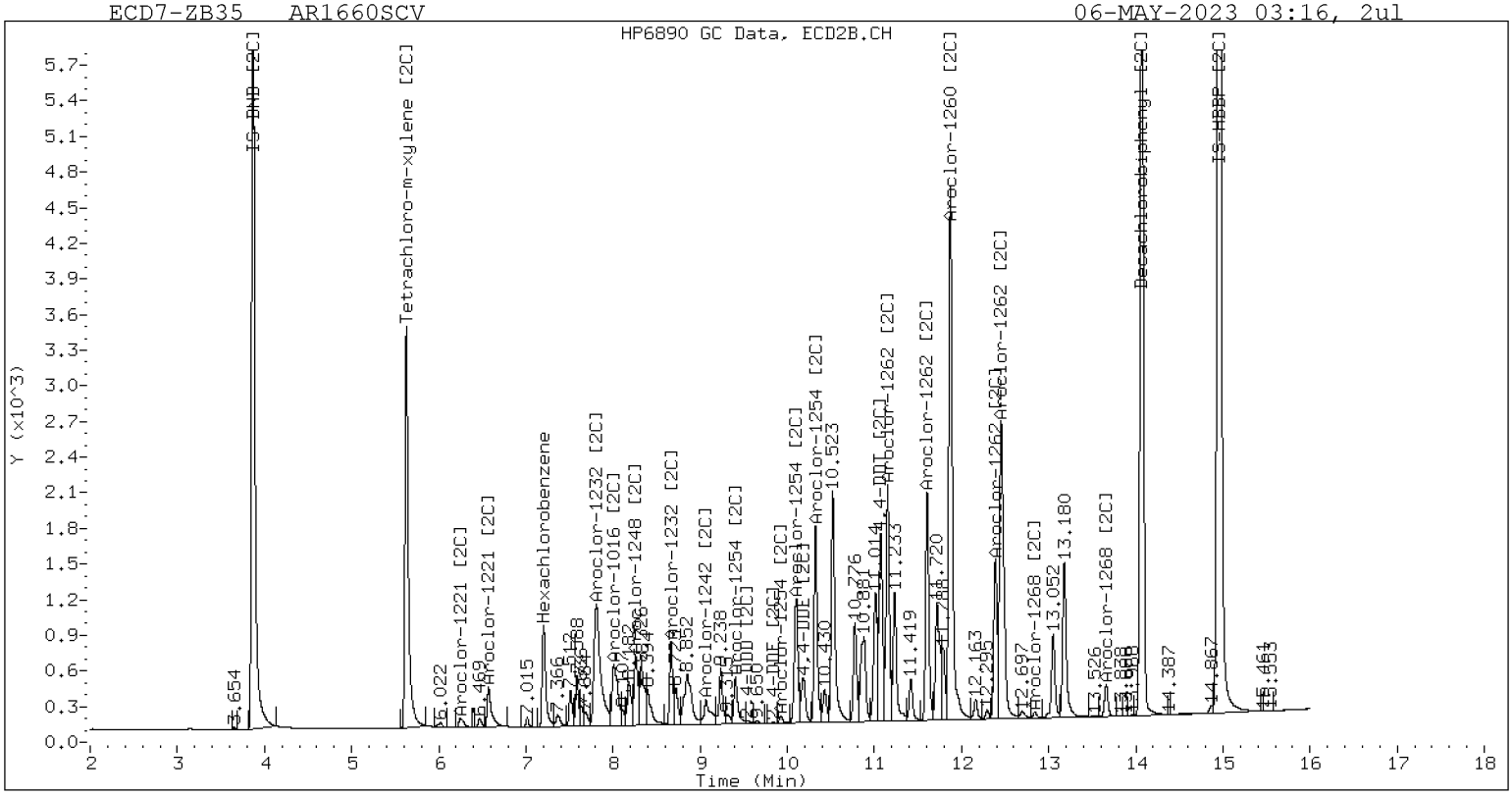
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660SCV 06-MAY-2023 03:16, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660SCV 06-MAY-2023 03:16, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052333ECD7.D
Data file 2: /230505.b/230505.b/05052333ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242SCV
Client ID:
Injection Date: 06-MAY-2023 03:36
Report Date: 05/06/2023 12:06
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.744	0.002	319899	5.630	0.002	167866	32.8	33.4	1.9	Tetrachloro-m-xylene
13.842	0.002	398699	14.069	0.001	434332	40.9	44.0	7.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	648004	7.7
Hexabromobiphenyl	876625	976327	11.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	365379	4.6
Hexabromobiphenyl	652984	695394	6.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.213	0.001	47446	189.1	1	7.205	0.001	36469	176.3
Aroclor-1016	2	7.594	-0.000	147684	188.2	2	7.814	0.007	77885	176.7
Aroclor-1016	3	7.735	0.002	67175	185.2	3	8.012	0.006	38400	197.5
Aroclor-1016	4	8.398	0.000	30565	204.3	4	8.261	0.002	27551	178.4
Total Col1Ave (4 peaks):		191.7				Total Col2Ave (4 peaks):		182.2	RPD = 5	
Corrected Ave (3 peaks):		187.5				Corrected Ave (3 peaks):		177.1	RPD = 6	
Aroclor-1221	1	4.666	0.002	870	19.1	1	---			0.0
Aroclor-1221	2	6.069	0.000	7118	77.8	2	6.257	0.011	4359	78.0
Aroclor-1221	3	6.322	0.001	32969	151.8	3	6.573	0.001	16609	189.0
Total Col1Ave (3 peaks):		82.9				Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.666	0.002	870	28.7	1	---			0.0
Aroclor-1232	2	6.069	0.000	7118	112.7	2	7.205	-0.000	36469	449.5
Aroclor-1232	3	7.594	-0.001	147684	490.8	3	7.814	-0.001	77885	477.9
Aroclor-1232	4	8.526	-0.000	70601	548.1	4	8.668	-0.001	25417	538.5
Total Col1Ave (4 peaks):		295.1				Total Col2Ave (3 peaks):		488.7	RPD = 49*	
Corrected Ave (3 peaks):		210.7				Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.213	0.001	47446	232.4	1	7.205	0.001	36469	223.3
Aroclor-1242	2	7.594	-0.000	147684	228.2	2	7.814	0.002	77885	224.2
Aroclor-1242	3	8.398	0.000	30565	244.2	3	9.124	0.001	25864	232.2
Aroclor-1242	4	8.526	0.002	70601	243.8	4	9.552	0.001	32437	241.7
Total Col1Ave (4 peaks):		237.2				Total Col2Ave (4 peaks):		230.4	RPD = 3	
Corrected Ave (3 peaks):		234.8				Corrected Ave (3 peaks):		226.6	RPD = 4	
Aroclor-1248	1	8.398	-0.001	30565	184.8	1	8.261	0.001	27551	158.5
Aroclor-1248	2	8.526	0.002	70601	164.3	2	8.668	0.001	25417	138.4
Aroclor-1248	3	8.946	0.002	172847	209.1	3	9.124	0.004	25864	120.2
Aroclor-1248	4	9.243	-0.001	87363	207.3	4	9.552	0.006	32437	125.7
Total Col1Ave (4 peaks):		191.4				Total Col2Ave (4 peaks):		135.7	RPD = 34	
Corrected Ave (3 peaks):		185.5				Corrected Ave (3 peaks):		128.1	RPD = 37	
Aroclor-1254	1	9.243	-0.004	87363	131.2	1	9.406	0.002	13247	47.7
Aroclor-1254	2	9.326	0.001	28949	96.7	2	9.552	0.053	32437	196.7
Aroclor-1254	3	9.622	0.004	20780	48.3	3	9.927	0.003	10002	44.5
Aroclor-1254	4	9.762	0.006	35470	42.1	4	10.082	0.005	19933	40.6
Aroclor-1254	5	10.140	0.015	28075	55.2	5	10.341	0.013	19432	39.9
Total Col1Ave (5 peaks):		74.7				Total Col2Ave (5 peaks):		73.9	RPD = 1	
Corrected Ave (4 peaks):		60.6				Corrected Ave (4 peaks):		43.2	RPD = 34	
Aroclor-1260	1	10.998	0.005	3609	7.0	1	11.618	0.012	2137	5.8
Aroclor-1260	2	11.317	0.007	3837	7.5	2	11.879	0.007	1437	1.5
Aroclor-1260	3	11.765	0.080	33905	26.6	3	12.382	-0.006	12460	52.1
Aroclor-1260	4	12.097	0.007	9099	14.6	4	---			0.0
Aroclor-1260	5	12.272	0.079	2060	7.6	NS	---			----
Total Col1Ave (5 peaks):		12.6				Total Col2Ave (3 peaks):		19.8	RPD = 44*	
Corrected Ave (4 peaks):		9.2				Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.787	0.009	24040	54.4	1	11.078	-0.075	7864	14.0
Aroclor-1262	2	12.272	0.077	2060	3.3	2	11.618	0.013	2137	4.5
Aroclor-1262	3	---			0.0	3	12.382	-0.004	12460	24.0
Aroclor-1262	4	12.937	-0.002	16041	29.5	4	---			0.0
Total Col1Ave (3 peaks):		29.1				Total Col2Ave (3 peaks):		14.1	RPD = 69*	
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1268	1	12.272	0.076	2060	1.3	1	12.382	-0.003	12460	9.5
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	12.649	0.001	4324	3.5	3	12.845	0.002	951	0.8
Aroclor-1268	4	13.442	0.005	15801	4.4	4	13.628	-0.035	6512	1.7
Total Col1Ave (3 peaks):		3.1				Total Col2Ave (3 peaks):		4.0	RPD = 25	
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				

Total PCB Area Col1 (5.842 - 13.740) = 1489022 Col1 Total PCB = 0.2 ppm*

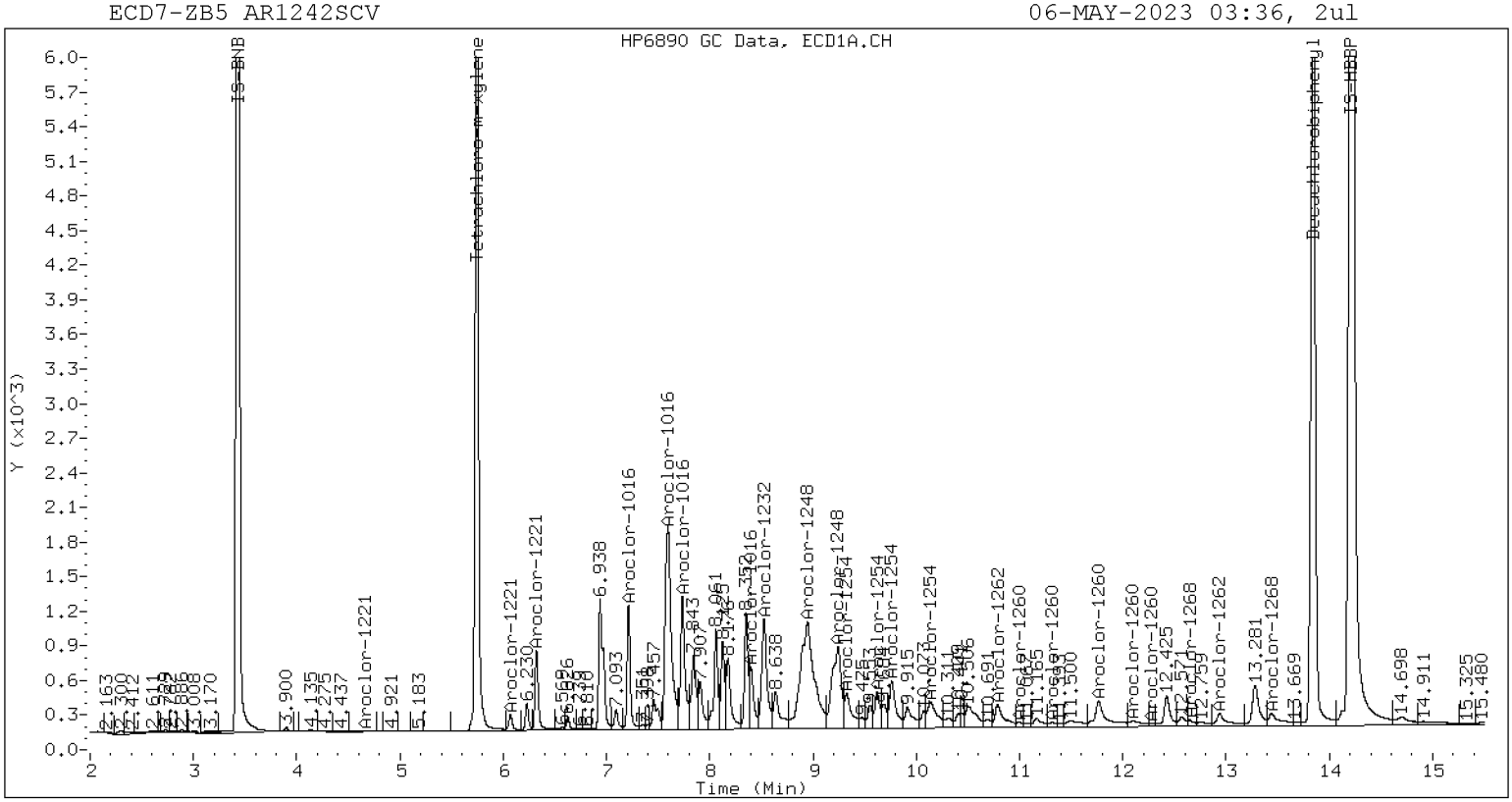
Total PCB Area Col2 (5.728 - 13.968) = 667658 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

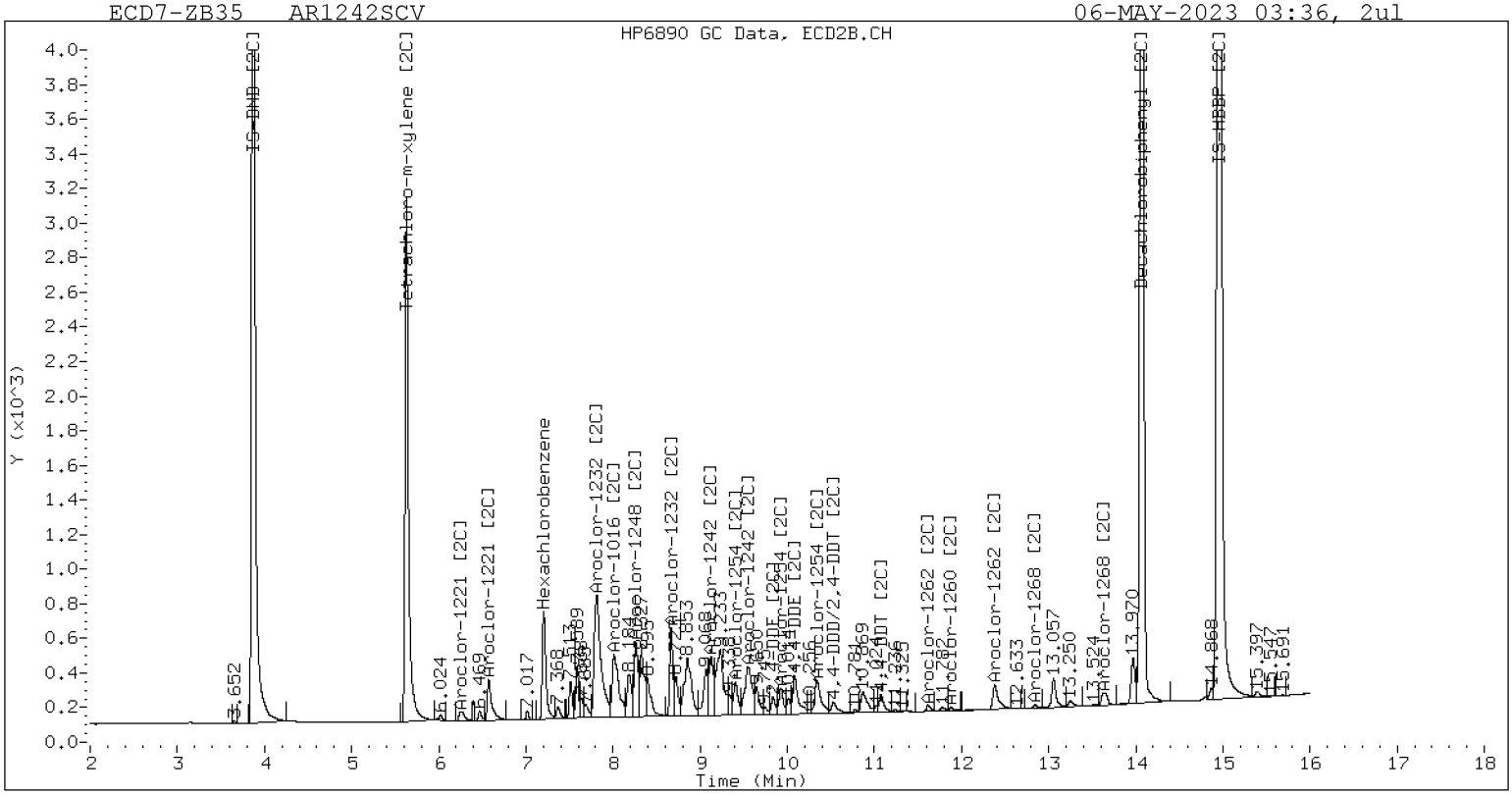
PCB Dual Column Chromatograms

ECD7-ZB5 AR1242SCV 06-MAY-2023 03:36, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242SCV 06-MAY-2023 03:36, 2ul

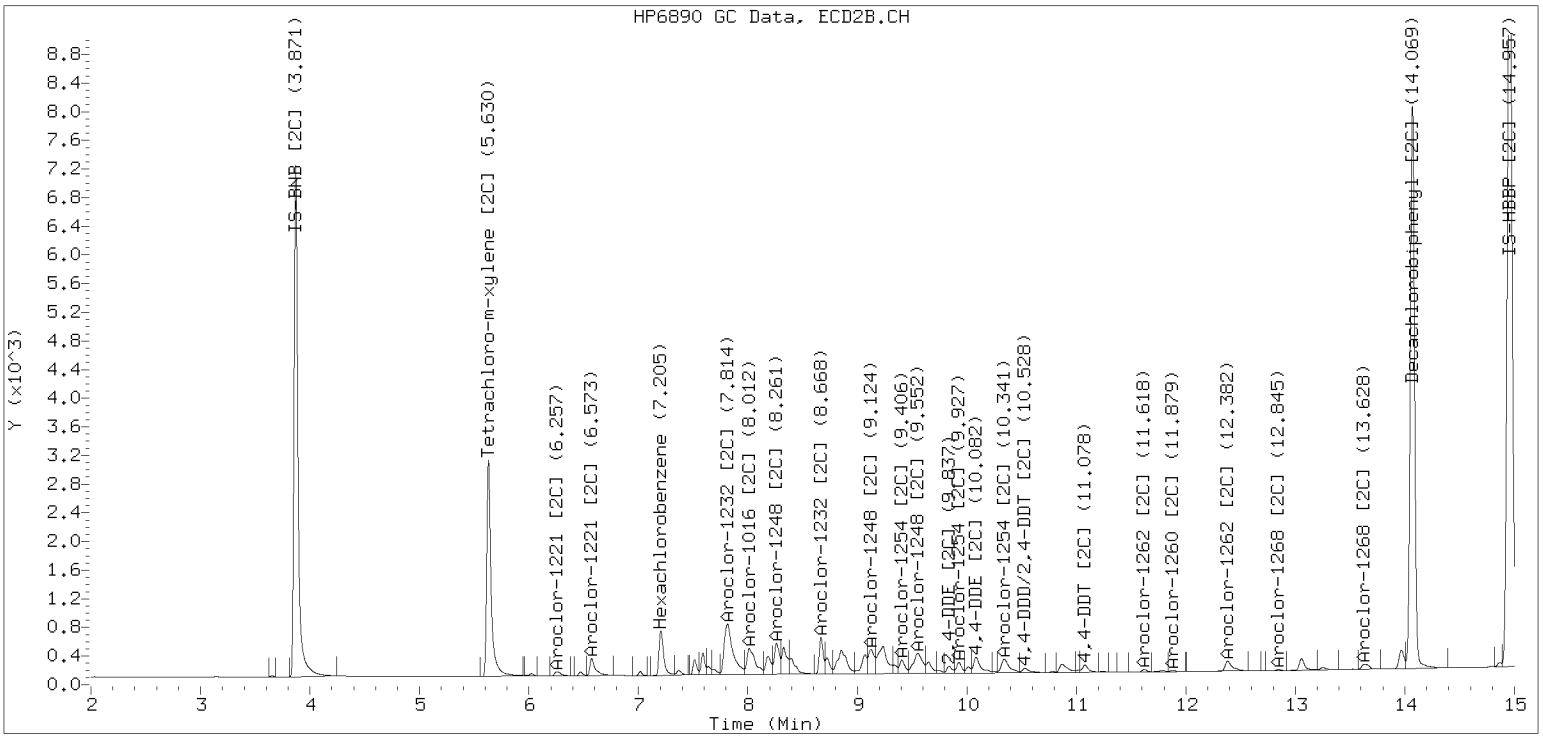


ZB-35 Manual Integration: NO

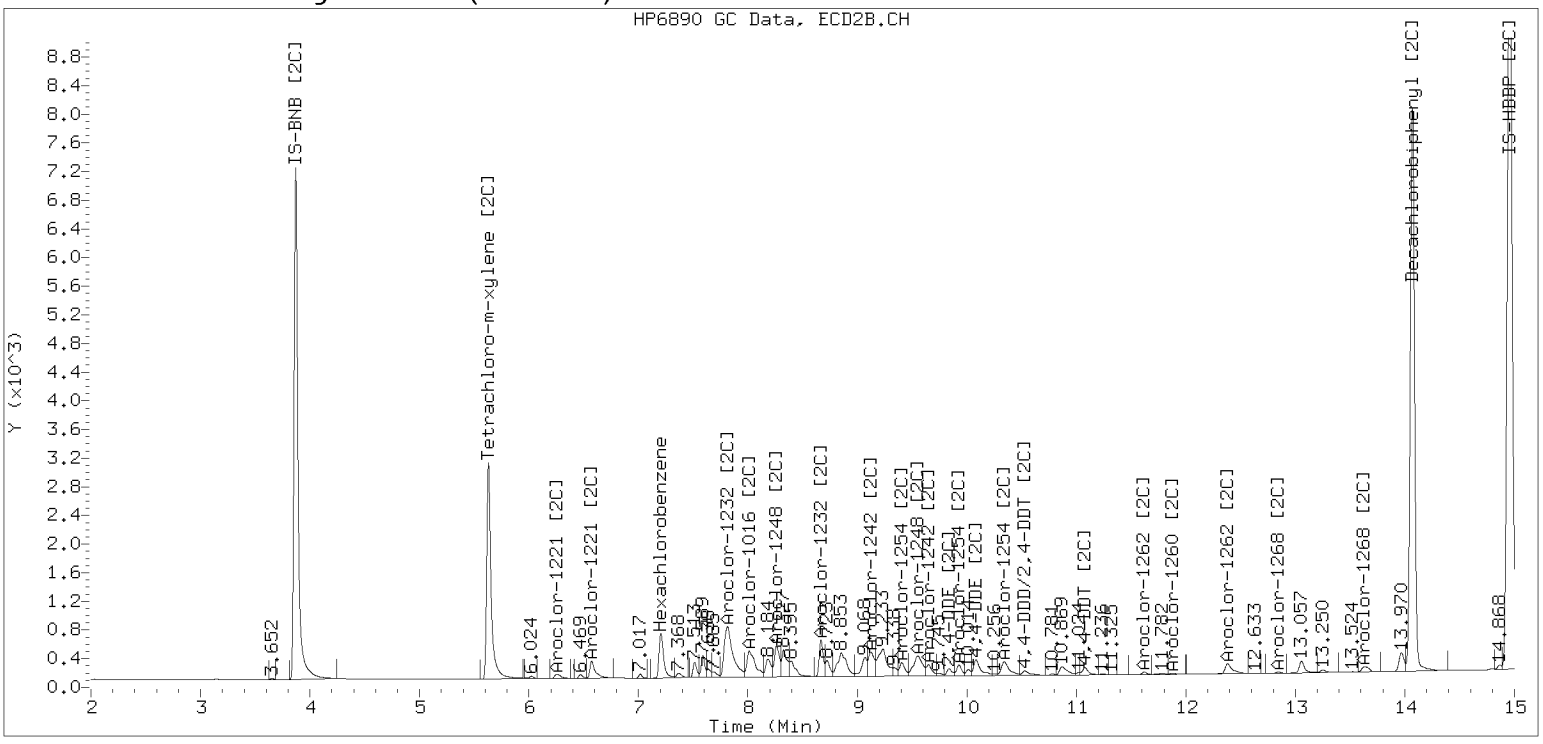
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230505.b/230505.b/05052333ECD7.D Injection Date: 06-MAY-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052334ECD7.D
Data file 2: /230505.b/230505.b/05052334ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248SCV
Client ID:
Injection Date: 06-MAY-2023 03:57
Report Date: 05/06/2023 12:07
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.741	-0.001	356328	5.629	0.000	186552	36.8	37.7	2.5	Tetrachloro-m-xylene
13.842	0.001	339452	14.070	0.002	373861	35.7	38.0	6.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	643038	6.9
Hexabromobiphenyl	876625	952051	8.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	359604	3.0
Hexabromobiphenyl	652984	692982	6.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.212	0.000	19871	79.8	1	7.203	-0.001	18843	92.6
Aroclor-1016	2	7.589	-0.006	95111	122.2	2	7.812	0.005	52352	120.7
Aroclor-1016	3	7.736	0.003	37565	104.4	3	8.012	0.006	8263	43.2
Aroclor-1016	4	8.399	0.002	41542	279.7	4	8.260	0.001	42833	281.8
Total Col1Ave (4 peaks):					146.5	Total Col2Ave (4 peaks):				134.6 RPD = 9
Corrected Ave (3 peaks):					102.1	Corrected Ave (3 peaks):				85.5 RPD = 18
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.066	-0.003	351	3.9	2	6.275	0.029	1573	28.6
Aroclor-1221	3	6.320	-0.001	3509	16.3	3	6.576	0.004	967	11.2
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.066	-0.003	351	5.6	2	7.203	-0.001	18843	236.0
Aroclor-1232	3	7.589	-0.006	95111	318.5	3	7.812	-0.002	52352	326.4
Aroclor-1232	4	8.524	-0.002	105782	827.6	4	8.667	-0.002	44962	968.0
Total Col1Ave (3 peaks):					383.9	Total Col2Ave (3 peaks):				510.1 RPD = 28
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.212	0.000	19871	98.1	1	7.203	-0.000	18843	117.2
Aroclor-1242	2	7.589	-0.006	95111	148.1	2	7.812	-0.000	52352	153.1
Aroclor-1242	3	8.399	0.001	41542	334.5	3	9.120	-0.003	52681	480.6
Aroclor-1242	4	8.524	-0.000	105782	368.1	4	9.548	-0.002	63343	479.5
Total Col1Ave (4 peaks):					237.2	Total Col2Ave (4 peaks):				307.6 RPD = 26
Corrected Ave (3 peaks):					193.6	Corrected Ave (3 peaks):				250.0 RPD = 25
Aroclor-1248	1	8.399	0.001	41542	253.1	1	8.260	-0.001	42833	250.4
Aroclor-1248	2	8.524	-0.000	105782	248.0	2	8.667	0.000	44962	248.8
Aroclor-1248	3	8.944	-0.000	206928	252.3	3	9.120	-0.000	52681	248.7
Aroclor-1248	4	9.242	-0.001	105227	251.7	4	9.548	0.002	63343	249.4
Total Col1Ave (4 peaks):					251.3	Total Col2Ave (4 peaks):				249.3 RPD = 1
Corrected Ave (3 peaks):					250.6	Corrected Ave (3 peaks):				249.0 RPD = 1
Aroclor-1254	1	9.242	-0.004	105227	159.2	1	9.404	0.000	25835	94.6
Aroclor-1254	2	9.324	-0.001	51326	172.8	2	9.548	0.049	63343	390.3
Aroclor-1254	3	9.619	0.001	41394	97.0	3	9.925	0.001	22609	102.1
Aroclor-1254	4	9.759	0.003	72223	86.4	4	10.079	0.001	43816	90.7
Aroclor-1254	5	10.135	0.010	49936	98.9	5	10.345	0.016	42513	88.7
Total Col1Ave (5 peaks):					122.9	Total Col2Ave (5 peaks):				153.3 RPD = 22
Corrected Ave (4 peaks):					110.4	Corrected Ave (4 peaks):				94.0 RPD = 16
Aroclor-1260	1	10.998	0.005	1863	3.7	1	11.617	0.011	2599	7.1
Aroclor-1260	2	11.314	0.004	1152	2.3	2	11.877	0.005	1951	2.0
Aroclor-1260	3	11.695	0.009	1829	1.5	3	12.389	0.001	857	3.6
Aroclor-1260	4	12.097	0.007	1266	2.1	4	12.458	0.003	1302	2.0
Aroclor-1260	5	12.195	0.002	464	1.7	NS	---			----
Total Col1Ave (5 peaks):					2.3	Total Col2Ave (4 peaks):				3.7 RPD = 48*
Corrected Ave (4 peaks):					1.9	Corrected Ave (3 peaks):				2.5 RPD = 29
Aroclor-1262	1	10.784	0.005	15405	35.8	1	11.077	-0.077	9003	16.0
Aroclor-1262	2	12.195	0.000	464	0.8	2	11.617	0.012	2599	5.5
Aroclor-1262	3	12.271	0.002	489	0.8	3	12.389	0.003	857	1.7
Aroclor-1262	4	12.940	0.001	1638	3.1	4	12.458	0.002	1302	1.5
Total Col1Ave (4 peaks):					10.1	Total Col2Ave (4 peaks):				6.2 RPD = 48*
Corrected Ave (3 peaks):					1.5	Corrected Ave (3 peaks):				2.9 RPD = 61*
Aroclor-1268	1	12.195	-0.001	464	0.3	1	12.389	0.004	857	0.7
Aroclor-1268	2	12.271	0.003	489	0.3	2	12.458	0.006	1302	0.9
Aroclor-1268	3	12.649	0.001	1831	1.5	3	12.845	0.002	676	0.6
Aroclor-1268	4	13.443	0.006	5387	1.6	4	13.661	-0.003	2707	0.7
Total Col1Ave (4 peaks):					0.9	Total Col2Ave (4 peaks):				0.7 RPD = 26
Corrected Ave (3 peaks):					0.7	Corrected Ave (3 peaks):				0.6 RPD = 11

Total PCB Area Col1 (5.842 - 13.740) = 1634238 Col1 Total PCB = 0.2 ppm*

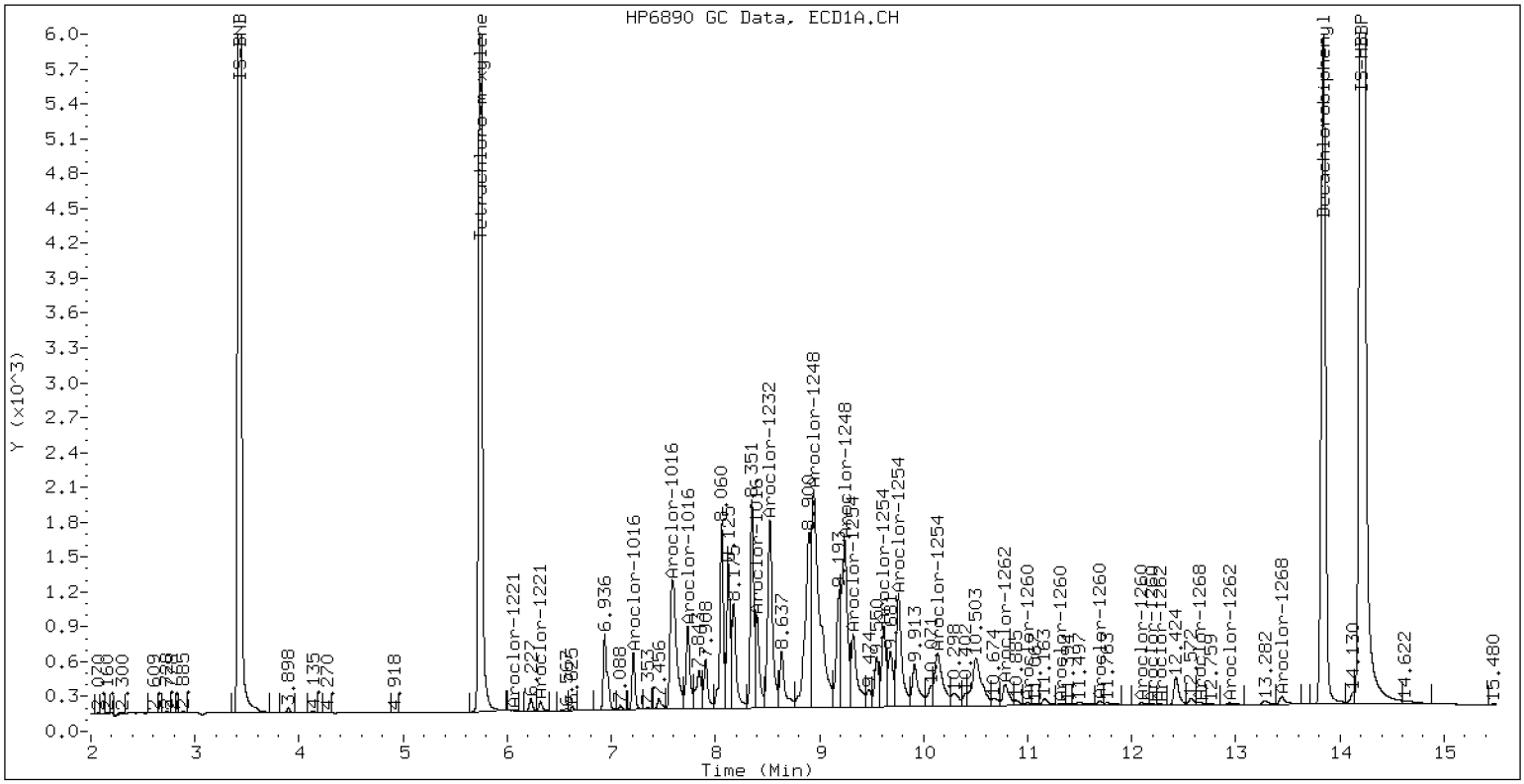
Total PCB Area Col2 (5.728 - 13.968) = 876760 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

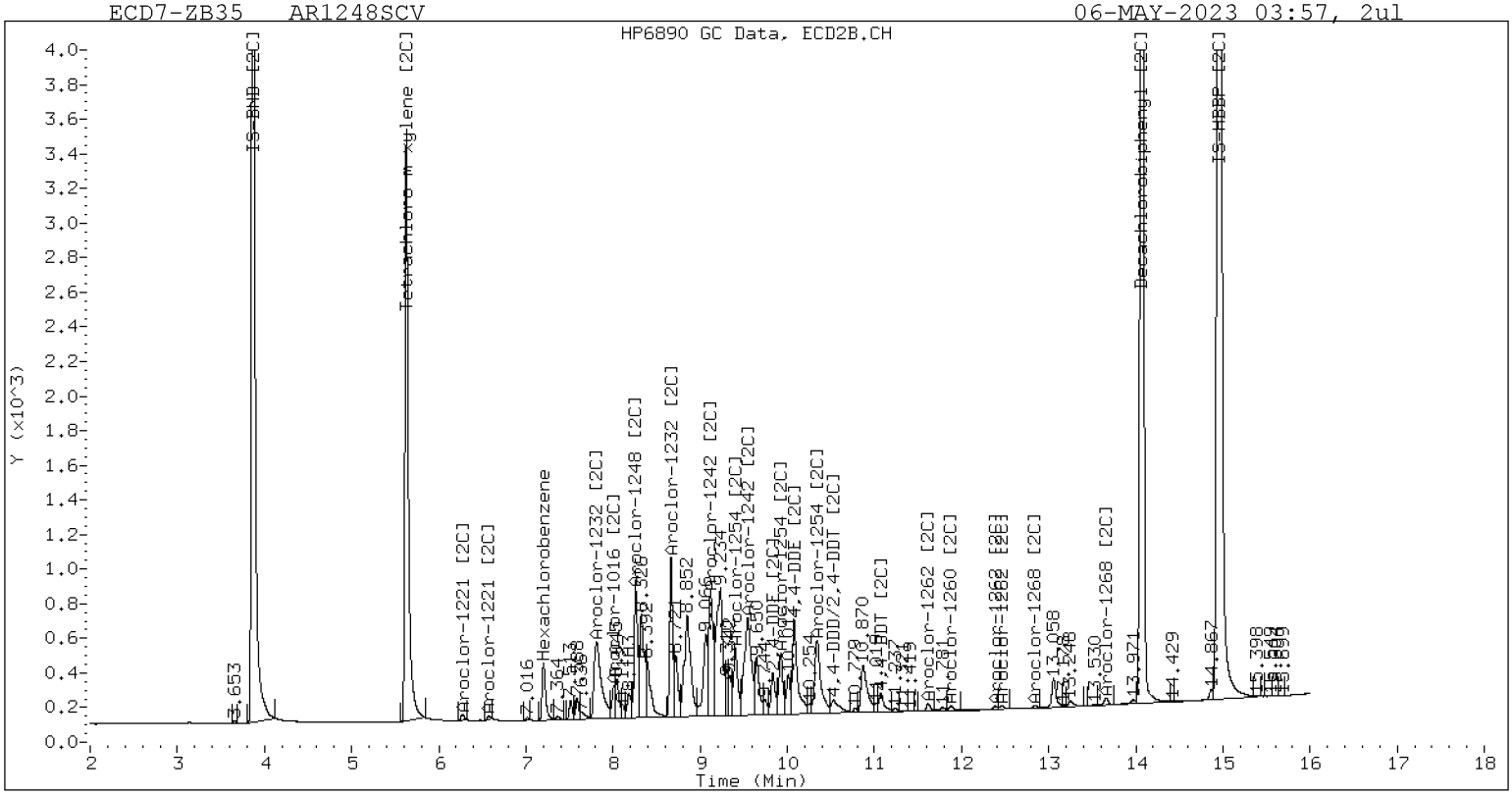
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248SCV 06-MAY-2023 03:57, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248SCV 06-MAY-2023 03:57, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052335ECD7.D
Data file 2: /230505.b/230505.b/05052335ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254SCV
Client ID:
Injection Date: 06-MAY-2023 04:18
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.743	0.001	368022	5.631	0.002	192033	37.6	38.3	2.0	Tetrachloro-m-xylene
13.843	0.002	352066	14.070	0.002	385384	36.0	38.5	6.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	650234	8.1
Hexabromobiphenyl	876625	980276	11.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	364142	4.3
Hexabromobiphenyl	652984	705291	8.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.214	0.002	635	2.5	1	---			0.0
Aroclor-1016	2	7.590	-0.004	2512	3.2	2	---			0.0
Aroclor-1016	3	7.738	0.005	1594	4.4	3	---			0.0
Aroclor-1016	4	8.351	-0.047	31774	211.6	4	---			0.0
Total Col1Ave (4 peaks):					55.4	Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.052	-0.018	242	2.6	2	---			0.0
Aroclor-1221	3	6.322	0.001	427	2.0	3	---			0.0
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.052	-0.018	242	3.8	2	---			0.0
Aroclor-1232	3	7.590	-0.005	2512	8.3	3	---			0.0
Aroclor-1232	4	8.528	0.001	13950	107.9	4	---			0.0
Total Col1Ave (3 peaks):					40.0	Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	7.214	0.002	635	3.1	1	---			0.0
Aroclor-1242	2	7.590	-0.005	2512	3.9	2	---			0.0
Aroclor-1242	3	8.351	-0.047	31774	253.0	3	9.125	0.002	23963	215.9
Aroclor-1242	4	8.528	0.004	13950	48.0	4	9.649	0.099	23982	179.3
Total Col1Ave (4 peaks):					77.0	Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	8.351	-0.048	31774	191.4	1	8.260	-0.000	23490	135.6
Aroclor-1248	2	8.528	0.004	13950	32.3	2	8.669	0.002	16693	91.2
Aroclor-1248	3	8.941	-0.003	154338	186.1	3	9.125	0.005	23963	111.7
Aroclor-1248	4	9.246	0.003	158369	374.6	4	9.499	-0.047	38716	150.5
Total Col1Ave (4 peaks):					196.1	Total Col2Ave (4 peaks):			122.3	RPD = 46*
Corrected Ave (3 peaks):					136.6	Corrected Ave (3 peaks):			112.8	RPD = 19
Aroclor-1254	1	9.246	-0.001	158369	237.0	1	9.404	0.000	67493	244.0
Aroclor-1254	2	9.325	-0.000	72386	241.1	2	9.499	-0.000	38716	235.6
Aroclor-1254	3	9.617	-0.001	103602	240.1	3	9.925	0.001	53972	240.7
Aroclor-1254	4	9.756	0.000	201259	238.2	4	10.079	0.001	116950	239.0
Aroclor-1254	5	10.127	0.001	122207	239.5	5	10.327	-0.001	118439	243.9
Total Col1Ave (5 peaks):					239.2	Total Col2Ave (5 peaks):			240.6	RPD = 1
Corrected Ave (4 peaks):					238.7	Corrected Ave (4 peaks):			239.8	RPD = 0
Aroclor-1260	1	10.994	0.001	13538	26.1	1	11.615	0.009	33465	89.3
Aroclor-1260	2	11.313	0.003	13900	27.2	2	11.876	0.004	25534	26.1
Aroclor-1260	3	11.689	0.004	32548	25.4	3	12.404	0.016	1811	7.5
Aroclor-1260	4	12.093	0.003	25285	40.3	4	12.458	0.002	14842	22.7
Aroclor-1260	5	12.273	0.079	2534	9.3	NS	---			----
Total Col1Ave (5 peaks):					25.6	Total Col2Ave (4 peaks):			36.4	RPD = 35
Corrected Ave (4 peaks):					22.0	Corrected Ave (3 peaks):			18.7	RPD = 16
Aroclor-1262	1	10.779	0.000	210018	473.6	1	11.073	-0.081	114323	200.0
Aroclor-1262	2	12.273	0.078	2534	4.1	2	11.615	0.010	33465	69.4
Aroclor-1262	3	---			0.0	3	12.404	0.018	1811	3.4
Aroclor-1262	4	12.939	0.001	1830	3.3	4	12.458	0.002	14842	17.3
Total Col1Ave (3 peaks):					160.3	Total Col2Ave (4 peaks):			72.6	RPD = 75*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			30.1	
Aroclor-1268	1	12.273	0.077	2534	1.6	1	12.404	0.019	1811	1.4
Aroclor-1268	2	---			0.0	2	12.458	0.005	14842	10.3
Aroclor-1268	3	12.654	0.006	2669	2.1	3	12.847	0.004	835	0.7
Aroclor-1268	4	13.442	0.004	6266	1.8	4	13.662	-0.001	2350	0.6
Total Col1Ave (3 peaks):					1.8	Total Col2Ave (4 peaks):			3.2	RPD = 55*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			0.9	

Total PCB Area Col1 (5.842 - 13.740) = 2123119 Col1 Total PCB = 0.3 ppm*

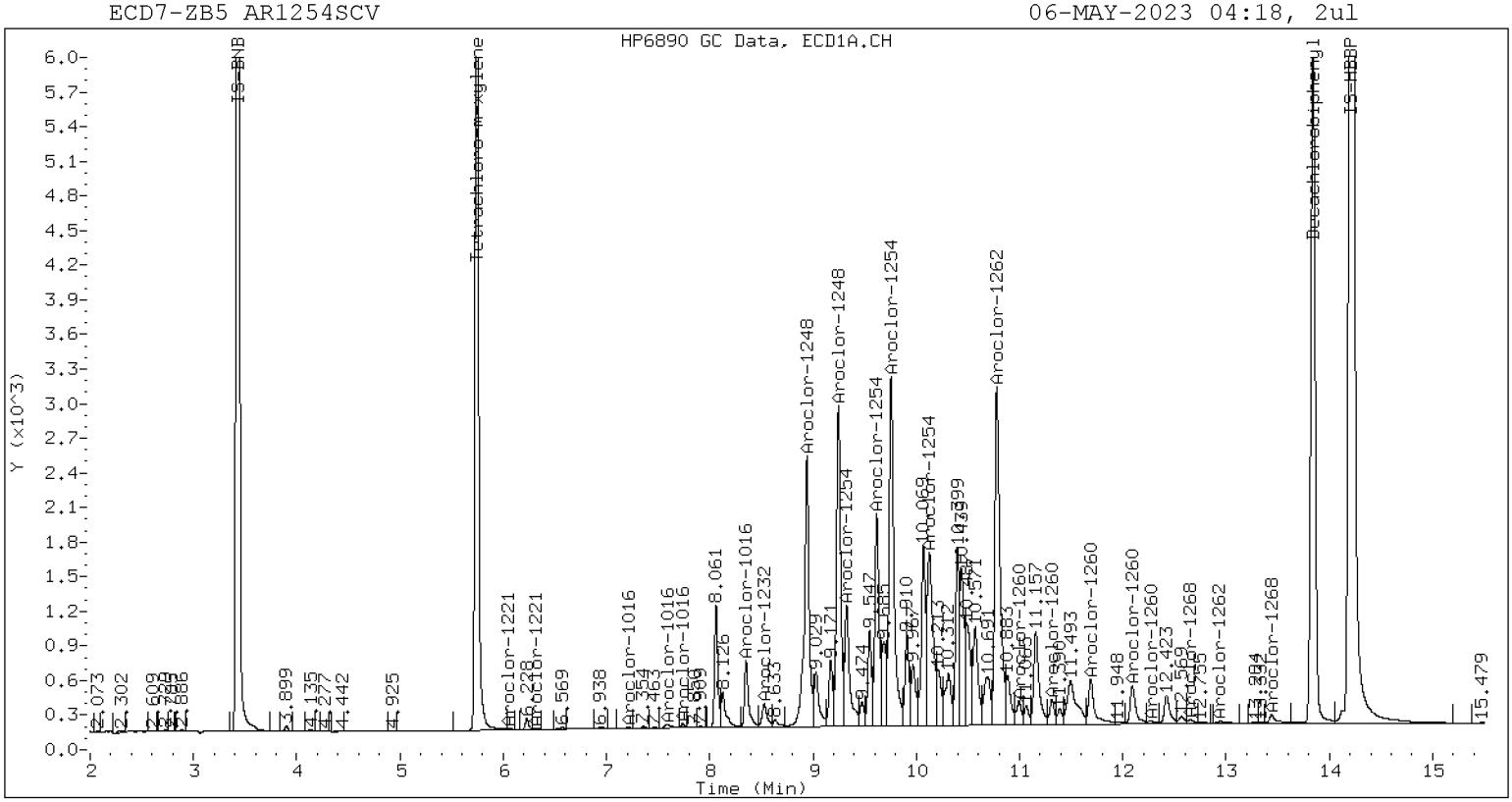
Total PCB Area Col2 (5.728 - 13.968) = 1146487 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

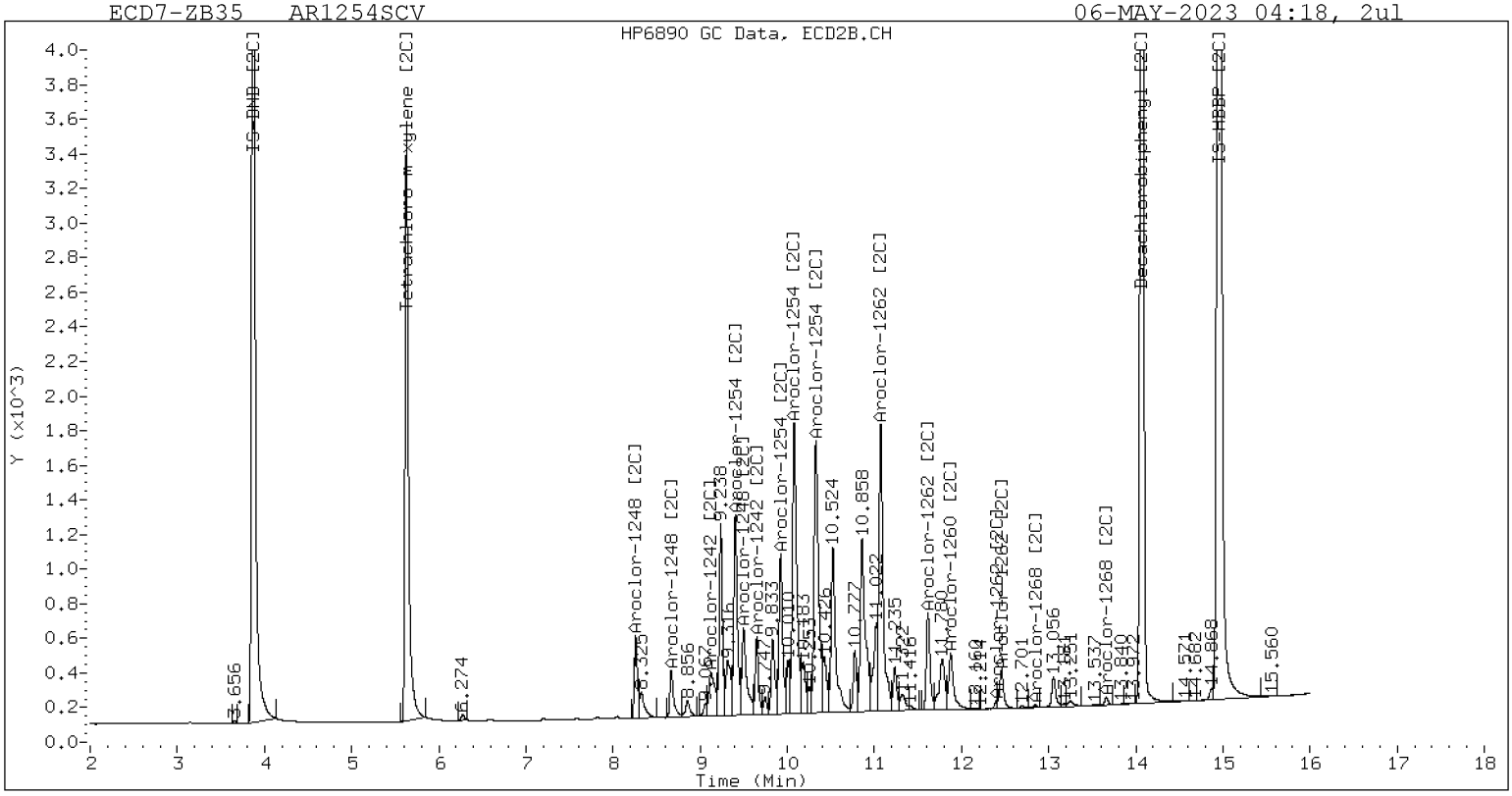
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254SCV 06-MAY-2023 04:18, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254SCV 06-MAY-2023 04:18, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052336ECD7.D
Data file 2: /230505.b/230505.b/05052336ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162SCV
Client ID:
Injection Date: 06-MAY-2023 04:39
Report Date: 05/06/2023 11:31
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	0.000	358254	5.628	-0.000	183759	37.8	39.1	3.3	Tetrachloro-m-xylene
13.842	0.002	344347	14.070	0.002	373300	37.1	38.8	4.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	629547	4.7
Hexabromobiphenyl	876625	929713	6.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	341980	-2.1
Hexabromobiphenyl	652984	678097	3.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.213	0.000	6601	27.1	1	7.207	0.003	3935	20.3
Aroclor-1016	2	7.595	0.000	13419	17.6	2	7.821	0.013	6146	14.9
Aroclor-1016	3	7.735	0.003	7114	20.2	3	8.027	0.021	3201	17.6
Aroclor-1016	4	8.353	-0.045	3916	26.9	4	8.262	0.003	2131	14.7
Total Col1Ave (4 peaks):					23.0	Total Col2Ave (4 peaks):				16.9 RPD = 30
Corrected Ave (3 peaks):					21.6	Corrected Ave (3 peaks):				15.7 RPD = 31
Aroclor-1221	1	4.663	-0.001	13184	297.8	1	4.893	-0.001	7253	287.5
Aroclor-1221	2	6.070	0.000	25527	287.4	2	6.244	-0.001	14853	284.1
Aroclor-1221	3	6.321	0.000	59985	284.3	3	6.571	-0.001	24083	292.9
Total Col1Ave (3 peaks):					289.8	Total Col2Ave (3 peaks):				288.2 RPD = 1
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.663	-0.001	13184	447.0	1	4.893	-0.001	7253	546.9
Aroclor-1232	2	6.070	0.000	25527	416.0	2	7.207	0.002	3935	51.8
Aroclor-1232	3	7.595	-0.000	13419	45.9	3	7.821	0.006	6146	40.3
Aroclor-1232	4	8.528	0.001	2679	21.4	4	8.671	0.002	1120	25.4
Total Col1Ave (4 peaks):					232.6	Total Col2Ave (4 peaks):				166.1 RPD = 33
Corrected Ave (3 peaks):					161.1	Corrected Ave (3 peaks):				39.2 RPD = 122*
Aroclor-1242	1	7.213	0.001	6601	33.3	1	7.207	0.004	3935	25.7
Aroclor-1242	2	7.595	-0.000	13419	21.3	2	7.821	0.008	6146	18.9
Aroclor-1242	3	8.353	-0.045	3916	32.2	3	9.133	0.010	881	8.5
Aroclor-1242	4	8.528	0.003	2679	9.5	4	9.651	0.101	516	4.1
Total Col1Ave (4 peaks):					24.1	Total Col2Ave (4 peaks):				14.3 RPD = 51*
Corrected Ave (3 peaks):					21.0	Corrected Ave (3 peaks):				10.5 RPD = 67*
Aroclor-1248	1	8.353	-0.046	3916	24.4	1	8.262	0.002	2131	13.1
Aroclor-1248	2	8.528	0.003	2679	6.4	2	8.671	0.004	1120	6.5
Aroclor-1248	3	8.942	-0.002	25144	31.3	3	9.133	0.013	881	4.4
Aroclor-1248	4	9.251	0.008	25583	62.5	4	9.500	-0.045	335	1.4
Total Col1Ave (4 peaks):					31.1	Total Col2Ave (4 peaks):				6.3 RPD = 132*
Corrected Ave (3 peaks):					20.7	Corrected Ave (3 peaks):				4.1 RPD = 134*
Aroclor-1254	1	9.251	0.005	25583	39.5	1	9.408	0.004	9719	37.4
Aroclor-1254	2	---			0.0	2	9.500	0.001	335	2.2
Aroclor-1254	3	9.620	0.002	4245	10.2	3	9.928	0.004	2055	9.8
Aroclor-1254	4	9.758	0.003	11050	13.5	4	10.100	0.022	55162	120.0
Aroclor-1254	5	10.071	-0.055	129151	261.4	5	10.325	-0.004	68421	150.1
Total Col1Ave (4 peaks):					81.1	Total Col2Ave (5 peaks):				63.9 RPD = 24
Corrected Ave (3 peaks):					21.1	Corrected Ave (4 peaks):				42.3 RPD = 67*
Aroclor-1260	1	10.995	0.002	206643	420.3	1	11.605	-0.001	119902	332.9
Aroclor-1260	2	11.311	0.001	167443	345.1	2	11.872	0.000	293746	311.8
Aroclor-1260	3	11.687	0.001	390491	321.4	3	12.386	-0.002	131462	563.2
Aroclor-1260	4	12.091	0.001	120118	201.8	4	12.456	0.000	212898	338.4
Aroclor-1260	5	12.195	0.002	155588	599.5	NS	---			----
Total Col1Ave (5 peaks):					377.6	Total Col2Ave (4 peaks):				386.6 RPD = 2
Corrected Ave (4 peaks):					322.2	Corrected Ave (3 peaks):				327.7 RPD = 2
Aroclor-1262	1	10.777	-0.001	114050	271.2	1	11.153	0.000	141861	258.2
Aroclor-1262	2	12.195	0.001	155588	263.0	2	11.605	0.000	119902	258.7
Aroclor-1262	3	12.269	0.000	167998	264.2	3	12.386	-0.000	131462	259.6
Aroclor-1262	4	12.938	-0.001	136019	262.5	4	12.456	0.000	212898	258.0
Total Col1Ave (4 peaks):					265.2	Total Col2Ave (4 peaks):				258.6 RPD = 3
Corrected Ave (3 peaks):					263.3	Corrected Ave (3 peaks):				258.3 RPD = 2
Aroclor-1268	1	12.195	-0.000	155588	104.9	1	12.386	0.001	131462	102.4
Aroclor-1268	2	12.269	0.001	167998	114.1	2	12.456	0.003	212898	154.3
Aroclor-1268	3	12.675	0.027	60611	51.2	3	12.843	-0.000	8393	7.1
Aroclor-1268	4	13.439	0.001	49821	14.7	4	13.661	-0.002	39480	10.4
Total Col1Ave (4 peaks):					71.2	Total Col2Ave (4 peaks):				68.6 RPD = 4

Corrected Ave (3 peaks): 56.9 Corrected Ave (3 peaks): 40.0 RPD = 35

Total PCB Area Col1 (5.842 - 13.740) = 2870829 Col1 Total PCB = 0.4 ppm*

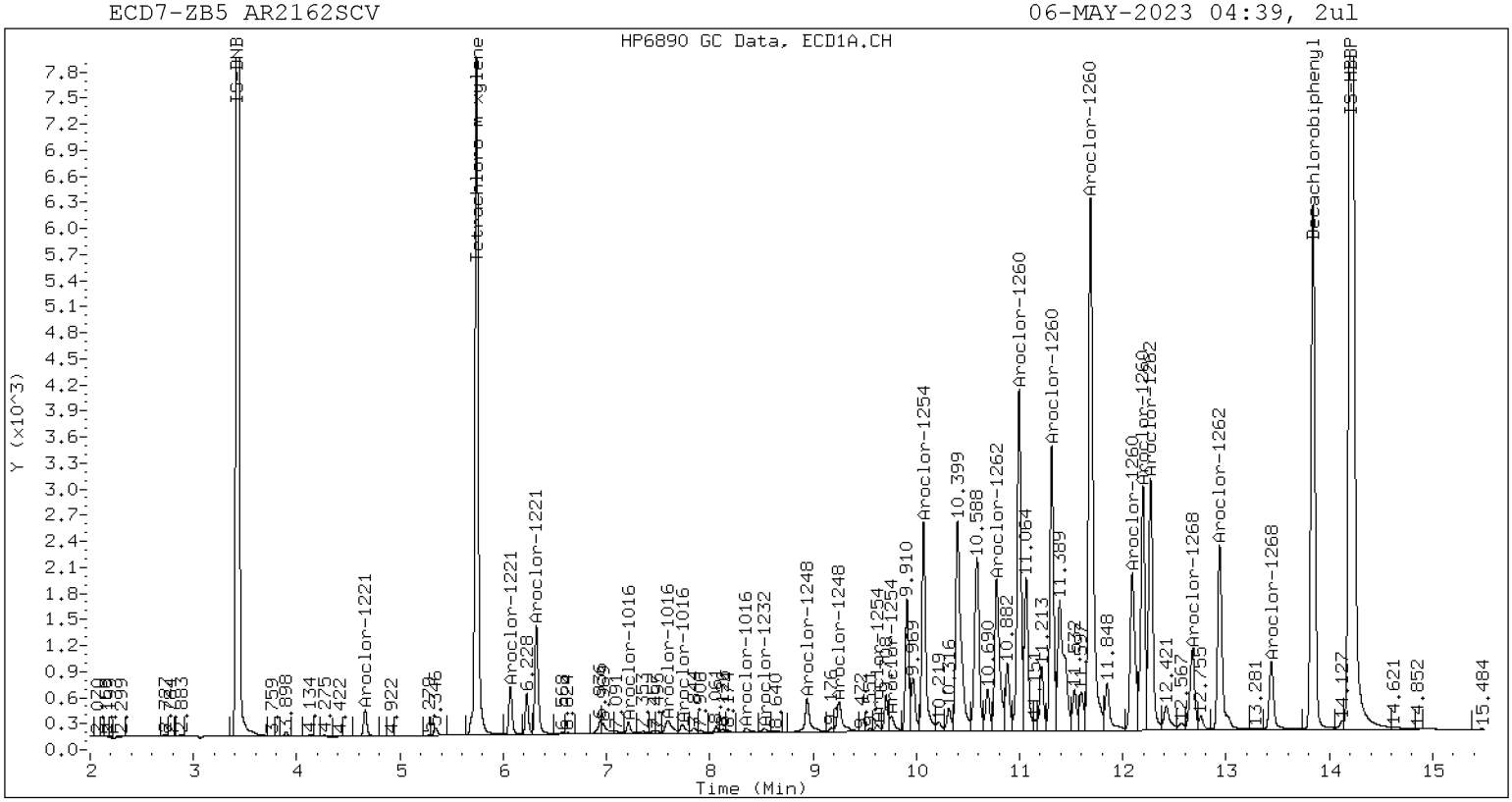
Total PCB Area Col2 (5.728 - 13.968) = 1885829 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

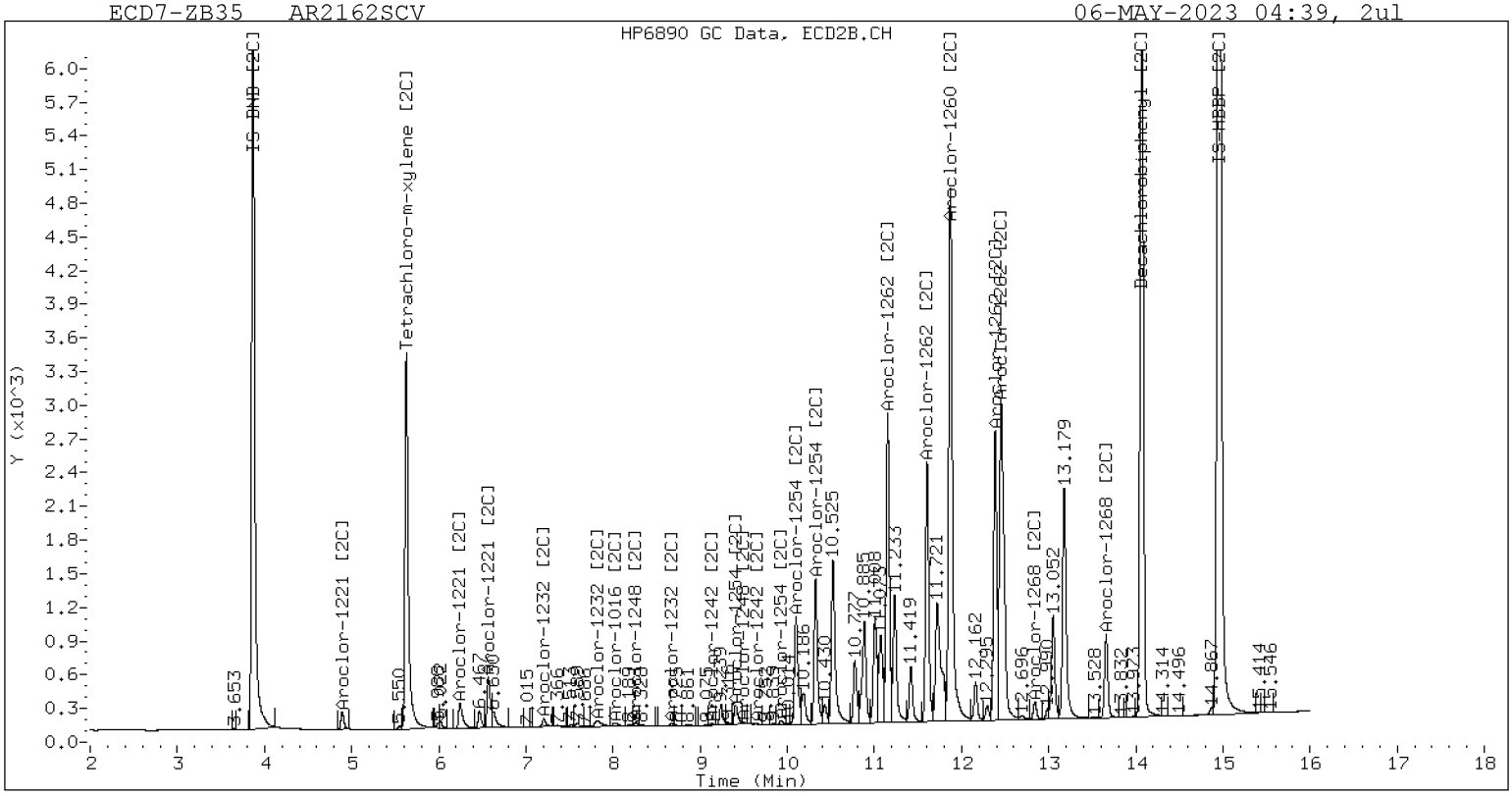
PCB Dual Column Chromatograms

ECD7-ZB5 AR2162SCV 06-MAY-2023 04:39, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR2162SCV 06-MAY-2023 04:39, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052337ECD7.D
Data file 2: /230505.b/230505.b/05052337ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268SCV
Client ID:
Injection Date: 06-MAY-2023 05:00
Report Date: 05/06/2023 11:31
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.743	0.001	373749	5.629	0.001	196946	38.4	40.4	5.2	Tetrachloro-m-xylene
13.842	0.002	525409	14.069	0.001	586548	55.1	59.3	7.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	646456	7.5
Hexabromobiphenyl	876625	954969	8.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	354120	1.4
Hexabromobiphenyl	652984	696139	6.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.214	0.001	28623	114.3	1	7.205	0.002	23124	115.4
Aroclor-1016	2	7.597	0.002	85721	109.5	2	7.815	0.007	47496	111.2
Aroclor-1016	3	7.735	0.002	41343	114.3	3	8.014	0.008	24029	127.5
Aroclor-1016	4	8.400	0.002	16653	111.6	4	8.262	0.003	15421	103.0
Total Col1Ave (4 peaks):					112.4	Total Col2Ave (4 peaks):				114.3 RPD = 2
Corrected Ave (3 peaks):					111.8	Corrected Ave (3 peaks):				109.9 RPD = 2
Aroclor-1221	1	4.664	0.001	7272	159.9	1	4.895	0.000	4045	154.9
Aroclor-1221	2	6.070	0.001	13478	147.8	2	6.246	0.000	9235	170.6
Aroclor-1221	3	6.321	0.001	43831	202.3	3	6.572	0.000	24300	285.4
Total Col1Ave (3 peaks):					170.0	Total Col2Ave (3 peaks):				203.6 RPD = 18
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.664	0.001	7272	240.1	1	4.895	0.001	4045	294.5
Aroclor-1232	2	6.070	0.001	13478	213.9	2	7.205	0.001	23124	294.1
Aroclor-1232	3	7.597	0.002	85721	285.5	3	7.815	0.000	47496	300.7
Aroclor-1232	4	8.527	0.000	36809	286.5	4	8.669	-0.000	14324	313.2
Total Col1Ave (4 peaks):					256.5	Total Col2Ave (4 peaks):				300.6 RPD = 16
Corrected Ave (3 peaks):					246.5	Corrected Ave (3 peaks):				296.5 RPD = 18
Aroclor-1242	1	7.214	0.002	28623	140.5	1	7.205	0.002	23124	146.1
Aroclor-1242	2	7.597	0.002	85721	132.8	2	7.815	0.002	47496	141.1
Aroclor-1242	3	8.400	0.002	16653	133.4	3	9.128	0.005	14403	133.4
Aroclor-1242	4	8.527	0.003	36809	127.4	4	9.648	0.098	5512	42.4
Total Col1Ave (4 peaks):					133.5	Total Col2Ave (4 peaks):				115.7 RPD = 14
Corrected Ave (3 peaks):					131.2	Corrected Ave (3 peaks):				105.6 RPD = 22
Aroclor-1248	1	8.400	0.001	16653	100.9	1	8.262	0.002	15421	91.5
Aroclor-1248	2	8.527	0.003	36809	85.8	2	8.669	0.002	14324	80.5
Aroclor-1248	3	8.944	0.000	89377	108.4	3	9.128	0.008	14403	69.0
Aroclor-1248	4	9.238	-0.005	41570	98.9	4	9.560	0.015	17331	69.3
Total Col1Ave (4 peaks):					98.5	Total Col2Ave (4 peaks):				77.6 RPD = 24
Corrected Ave (3 peaks):					95.2	Corrected Ave (3 peaks):				72.9 RPD = 26
Aroclor-1254	1	9.238	-0.008	41570	62.6	1	9.407	0.003	5487	20.4
Aroclor-1254	2	9.326	0.001	12640	42.3	2	9.560	0.061	17331	108.4
Aroclor-1254	3	9.624	0.006	7232	16.9	3	9.929	0.005	3481	16.0
Aroclor-1254	4	9.764	0.008	11671	13.9	4	10.086	0.009	7259	15.3
Aroclor-1254	5	10.139	0.014	7544	14.9	5	10.345	0.017	6610	14.0
Total Col1Ave (5 peaks):					30.1	Total Col2Ave (5 peaks):				34.8 RPD = 14
Corrected Ave (4 peaks):					22.0	Corrected Ave (4 peaks):				16.4 RPD = 29
Aroclor-1260	1	10.998	0.005	85093	168.5	1	11.598	-0.008	75237	203.5
Aroclor-1260	2	11.313	0.003	6363	12.8	2	11.873	0.001	33655	34.8
Aroclor-1260	3	11.688	0.002	47857	38.3	3	12.384	-0.004	346138	1444.4
Aroclor-1260	4	12.094	0.004	1291	2.1	4	12.453	-0.002	373218	577.8
Aroclor-1260	5	12.195	0.001	406211	1523.9	NS	---			----
Total Col1Ave (5 peaks):					349.1	Total Col2Ave (4 peaks):				565.1 RPD = 47*
Corrected Ave (4 peaks):					55.4	Corrected Ave (3 peaks):				272.0 RPD = 132*
Aroclor-1262	1	10.785	0.006	4006	9.3	1	11.156	0.002	52531	93.1
Aroclor-1262	2	12.195	0.000	406211	668.6	2	11.598	-0.007	75237	158.2
Aroclor-1262	3	12.268	-0.002	403730	618.2	3	12.384	-0.002	346138	665.8
Aroclor-1262	4	12.937	-0.002	145536	273.5	4	12.453	-0.002	373218	440.5
Total Col1Ave (4 peaks):					392.4	Total Col2Ave (4 peaks):				339.4 RPD = 14
Corrected Ave (3 peaks):					300.3	Corrected Ave (3 peaks):				230.6 RPD = 26
Aroclor-1268	1	12.195	-0.001	406211	266.7	1	12.384	-0.001	346138	262.7
Aroclor-1268	2	12.268	-0.000	403730	266.9	2	12.453	0.001	373218	263.5
Aroclor-1268	3	12.648	-0.000	323568	266.0	3	12.844	0.001	316122	260.6
Aroclor-1268	4	13.439	0.002	920777	265.1	4	13.663	0.000	1029335	264.8
Total Col1Ave (4 peaks):					266.2	Total Col2Ave (4 peaks):				262.9 RPD = 1

Corrected Ave (3 peaks): 265.9 Corrected Ave (3 peaks): 262.3 RPD = 1

Total PCB Area Col1 (5.842 - 13.740) = 3325332 Col1 Total PCB = 0.5 ppm*

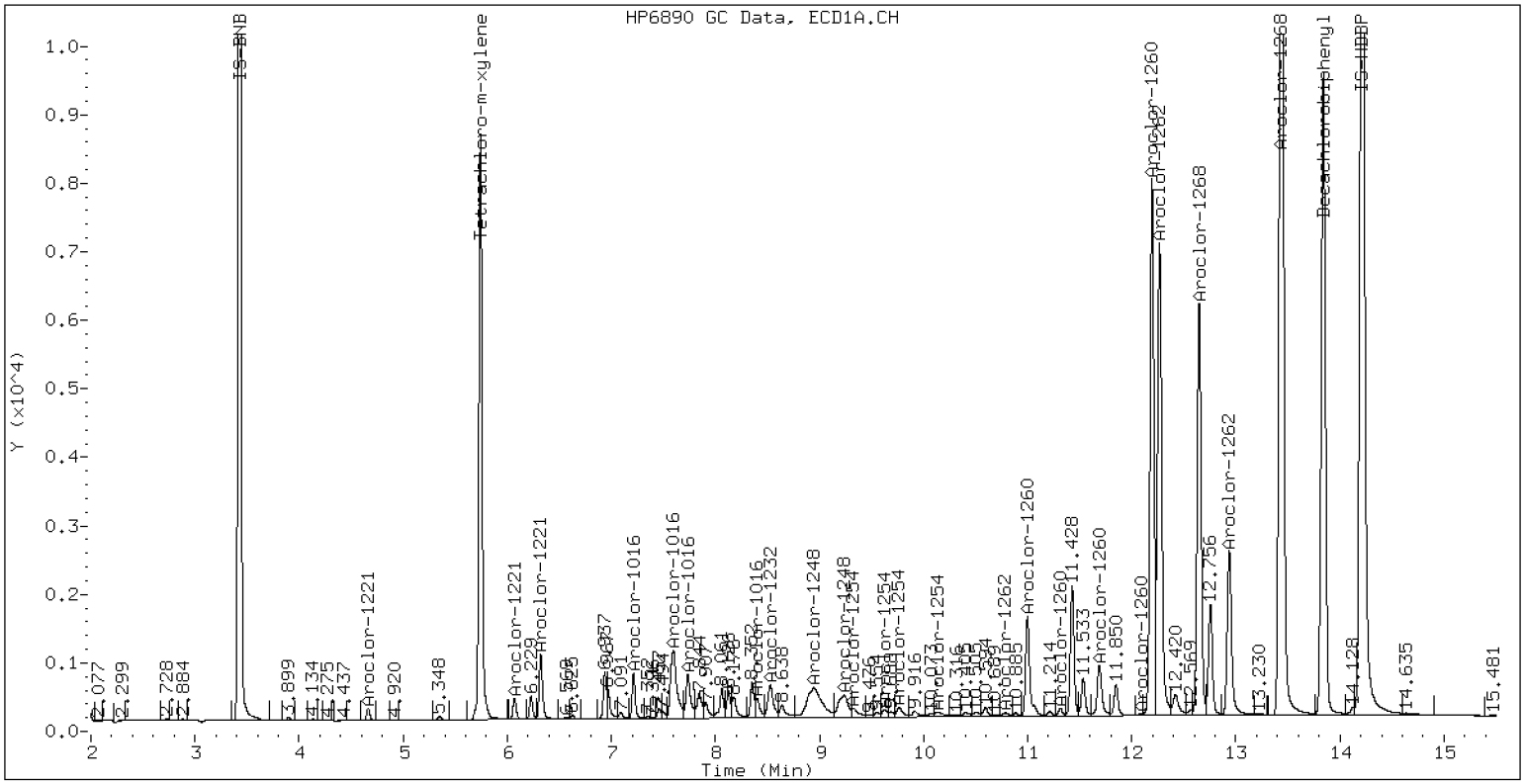
Total PCB Area Col2 (5.728 - 13.968) = 2876097 Col2 Total PCB = 0.7 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

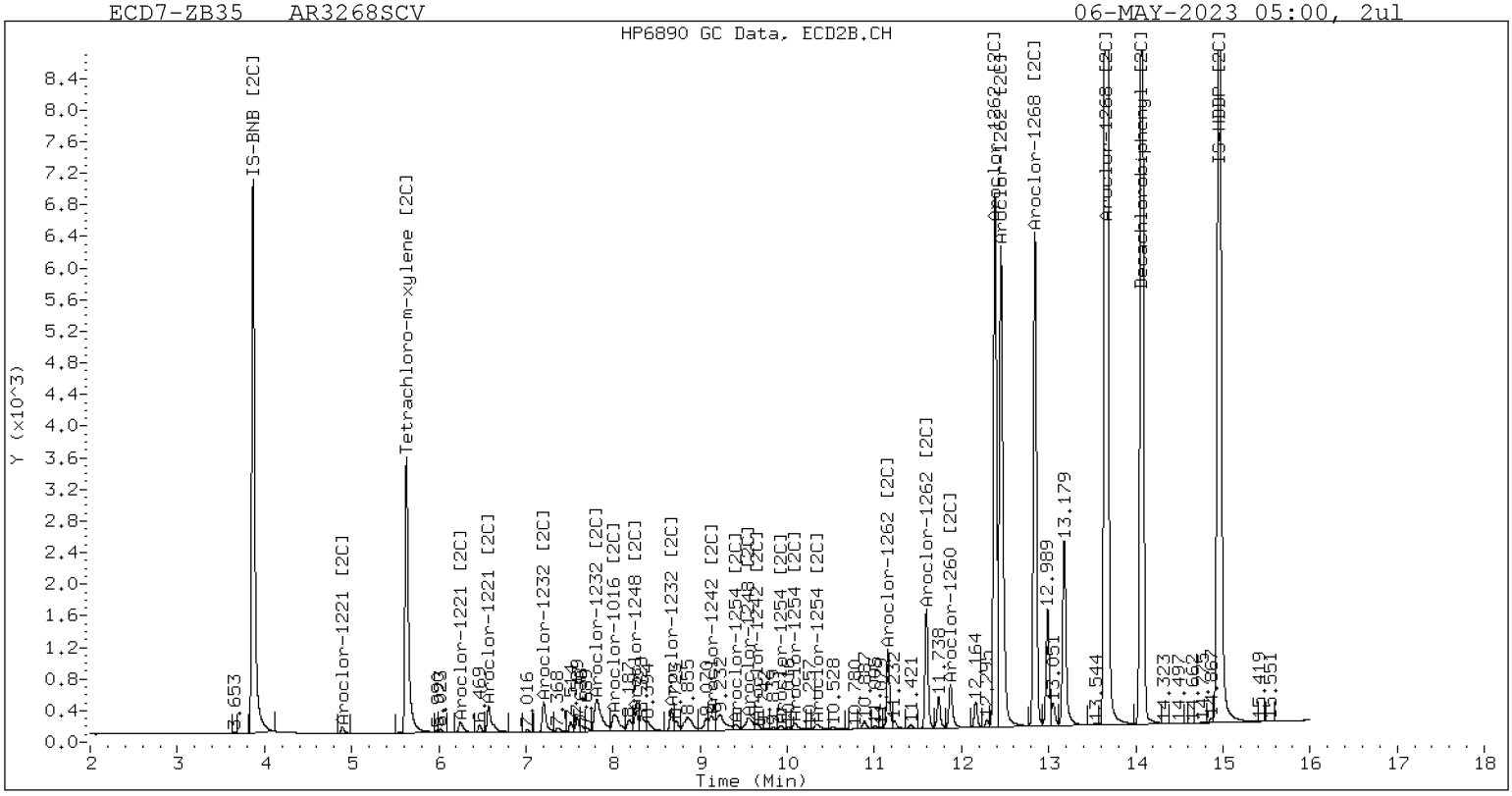
PCB Dual Column Chromatograms

ECD7-ZB5 AR3268SCV 06-MAY-2023 05:00, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR3268SCV 06-MAY-2023 05:00, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: /230505.b/05052338ECD7.D ARI ID: DDTS

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
9.206	0.000	428189	9.867	0.000	428008	0.100	0.000	----	2,4-DDE
0.000	-10.293	0	10.625	0.000	621468	0.000	0.000#	----	2,4-DDT
9.635	0.000	1004111	10.165	0.000	369270	0.100	0.000	----	4,4-DDE
10.243	0.000	476377	10.625	0.000	621468	0.100	0.000#	----	4,4-DDD

# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: /230505.b/05052339ECD7.D ARI ID: DDT BD

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
9.158	-0.049	12021	9.884	0.017	17091	0.002	0.000	----	2,4-DDE
0.000	-10.293	0	10.633	0.008	326807	0.000	0.000#	----	2,4-DDT
9.644	0.009	16770	10.190	0.025	488	0.001	0.000	----	4,4-DDE
10.216	-0.028	403865	10.633	0.008	326807	0.068	0.000#	----	4,4-DDD

\# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GE00022
Laboratory ID: SLE0079-SCV1
Sequence: SLE0079
Sequence Name: AR1660SCV1
Standard ID: L002065

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1016	250.00	254	1.4	20.00
Aroclor 1016 [2C]	250.00	248	-1.0	20.00
Aroclor 1260	250.00	285	14.2	20.00
Aroclor 1260 [2C]	250.00	284	13.6	20.00
Decachlorobiphenyl	40.000	36.9	-7.7	20.00
Tetrachlorometaxylene	40.000	36.9	-7.8	20.00
Decachlorobiphenyl [2C]	40.000	39.2	-1.9	20.00
Tetrachlorometaxylene [2C]	40.000	37.2	-6.9	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052332ECD7.D
Data file 2: /230505.b/230505.b/05052332ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660SCV
Client ID:
Injection Date: 06-MAY-2023 03:16
Report Date: 05/06/2023 12:06
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	-0.000	356595	5.629	0.000	185340	36.9	37.2	1.0	Tetrachloro-m-xylene
13.842	0.002	347188	14.070	0.002	384711	36.9	39.2	6.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	642284	6.8
Hexabromobiphenyl	876625	941356	7.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	361711	3.6
Hexabromobiphenyl	652984	690563	5.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.213	0.000	61654	247.9	1	7.205	0.001	50106	244.7
Aroclor-1016	2	7.594	-0.001	199228	256.2	2	7.811	0.003	109839	251.7
Aroclor-1016	3	7.734	0.001	89643	249.3	3	8.009	0.004	48594	252.5
Aroclor-1016	4	8.399	0.001	38714	261.0	4	8.260	0.001	36878	241.2
Total Col1Ave (4 peaks):					253.6	Total Col2Ave (4 peaks):				247.5 RPD = 2
Corrected Ave (3 peaks):					251.1	Corrected Ave (3 peaks):				245.9 RPD = 2
Aroclor-1221	1	4.663	-0.000	436	9.7	1	---			0.0
Aroclor-1221	2	6.068	-0.001	8521	94.0	2	6.251	0.005	5766	104.3
Aroclor-1221	3	6.320	-0.001	41973	195.0	3	6.572	0.000	23212	266.9
Total Col1Ave (3 peaks):					99.6	Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.663	-0.000	436	14.5	1	---			0.0
Aroclor-1232	2	6.068	-0.002	8521	136.1	2	7.205	0.000	50106	623.9
Aroclor-1232	3	7.594	-0.001	199228	667.9	3	7.811	-0.004	109839	680.8
Aroclor-1232	4	8.526	-0.001	85985	673.5	4	8.667	-0.003	34670	742.1
Total Col1Ave (4 peaks):					373.0	Total Col2Ave (3 peaks):				682.3 RPD = 59*
Corrected Ave (3 peaks):					272.8	Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.213	0.001	61654	304.6	1	7.205	0.001	50106	310.0
Aroclor-1242	2	7.594	-0.001	199228	310.7	2	7.811	-0.002	109839	319.4
Aroclor-1242	3	8.399	0.000	38714	312.1	3	9.069	-0.054	21513	195.1
Aroclor-1242	4	8.526	0.001	85985	299.5	4	9.537	-0.013	1824	13.7
Total Col1Ave (4 peaks):					306.7	Total Col2Ave (4 peaks):				209.6 RPD = 38
Corrected Ave (3 peaks):					304.9	Corrected Ave (3 peaks):				172.9 RPD = 55*
Aroclor-1248	1	8.399	-0.000	38714	236.2	1	8.260	0.000	36878	214.3
Aroclor-1248	2	8.526	0.001	85985	201.8	2	8.667	-0.001	34670	190.7
Aroclor-1248	3	8.941	-0.003	81615	99.6	3	9.069	-0.051	21513	101.0
Aroclor-1248	4	9.249	0.006	52526	125.8	4	9.537	-0.008	1824	7.1
Total Col1Ave (4 peaks):					165.8	Total Col2Ave (4 peaks):				128.3 RPD = 26
Corrected Ave (3 peaks):					142.4	Corrected Ave (3 peaks):				99.6 RPD = 35
Aroclor-1254	1	9.249	0.003	52526	79.6	1	9.405	0.001	24726	90.0
Aroclor-1254	2	---			0.0	2	9.537	0.038	1824	11.2
Aroclor-1254	3	9.619	0.001	7081	16.6	3	9.926	0.002	3128	14.0
Aroclor-1254	4	9.756	0.001	21856	26.2	4	10.101	0.023	62581	128.7
Aroclor-1254	5	10.069	-0.057	159796	317.0	5	10.324	-0.004	85433	177.1
Total Col1Ave (4 peaks):					109.8	Total Col2Ave (5 peaks):				84.2 RPD = 26
Corrected Ave (3 peaks):					40.8	Corrected Ave (4 peaks):				61.0 RPD = 40
Aroclor-1260	1	10.995	0.001	145767	292.8	1	11.605	-0.000	99761	272.0
Aroclor-1260	2	11.311	0.001	142028	289.1	2	11.872	0.000	273505	285.1
Aroclor-1260	3	11.686	0.000	354468	288.1	3	12.389	0.001	70545	296.8
Aroclor-1260	4	12.092	0.002	161281	267.6	4	12.455	-0.000	180783	282.1
Aroclor-1260	5	12.194	0.001	76105	289.6	NS	---			----
Total Col1Ave (5 peaks):					285.5	Total Col2Ave (4 peaks):				284.0 RPD = 1
Corrected Ave (4 peaks):					283.6	Corrected Ave (3 peaks):				279.8 RPD = 1
Aroclor-1262	1	10.777	-0.001	215850	506.9	1	11.153	-0.001	104059	186.0
Aroclor-1262	2	12.194	-0.000	76105	127.1	2	11.605	0.001	99761	211.4
Aroclor-1262	3	12.271	0.001	94628	147.0	3	12.389	0.003	70545	136.8
Aroclor-1262	4	12.939	-0.000	78852	150.3	4	12.455	-0.001	180783	215.1
Total Col1Ave (4 peaks):					232.8	Total Col2Ave (4 peaks):				187.3 RPD = 22
Corrected Ave (3 peaks):					141.5	Corrected Ave (3 peaks):				178.1 RPD = 23
Aroclor-1268	1	12.194	-0.001	76105	50.7	1	12.389	0.004	70545	54.0
Aroclor-1268	2	12.271	0.003	94628	63.5	2	12.455	0.003	180783	128.7
Aroclor-1268	3	12.675	0.026	38830	32.4	3	12.844	0.001	3082	2.6
Aroclor-1268	4	13.440	0.003	19986	5.8	4	13.661	-0.002	14882	3.9
Total Col1Ave (4 peaks):					38.1	Total Col2Ave (4 peaks):				47.3 RPD = 21
Corrected Ave (3 peaks):					29.6	Corrected Ave (3 peaks):				20.1 RPD = 38

Total PCB Area Col1 (5.842 - 13.740) = 3657118 Col1 Total PCB = 0.5 ppm*

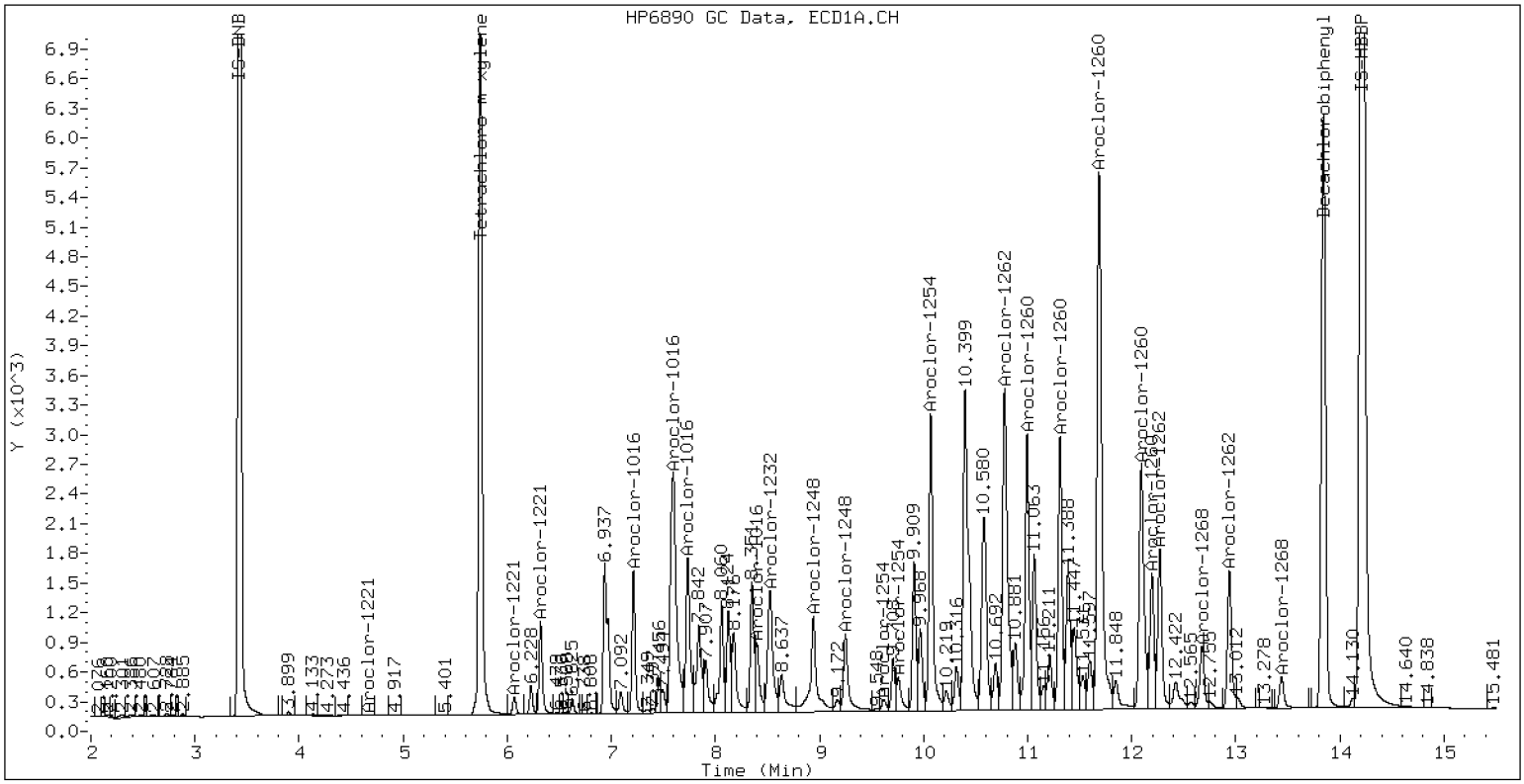
Total PCB Area Col2 (5.728 - 13.968) = 2255286 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

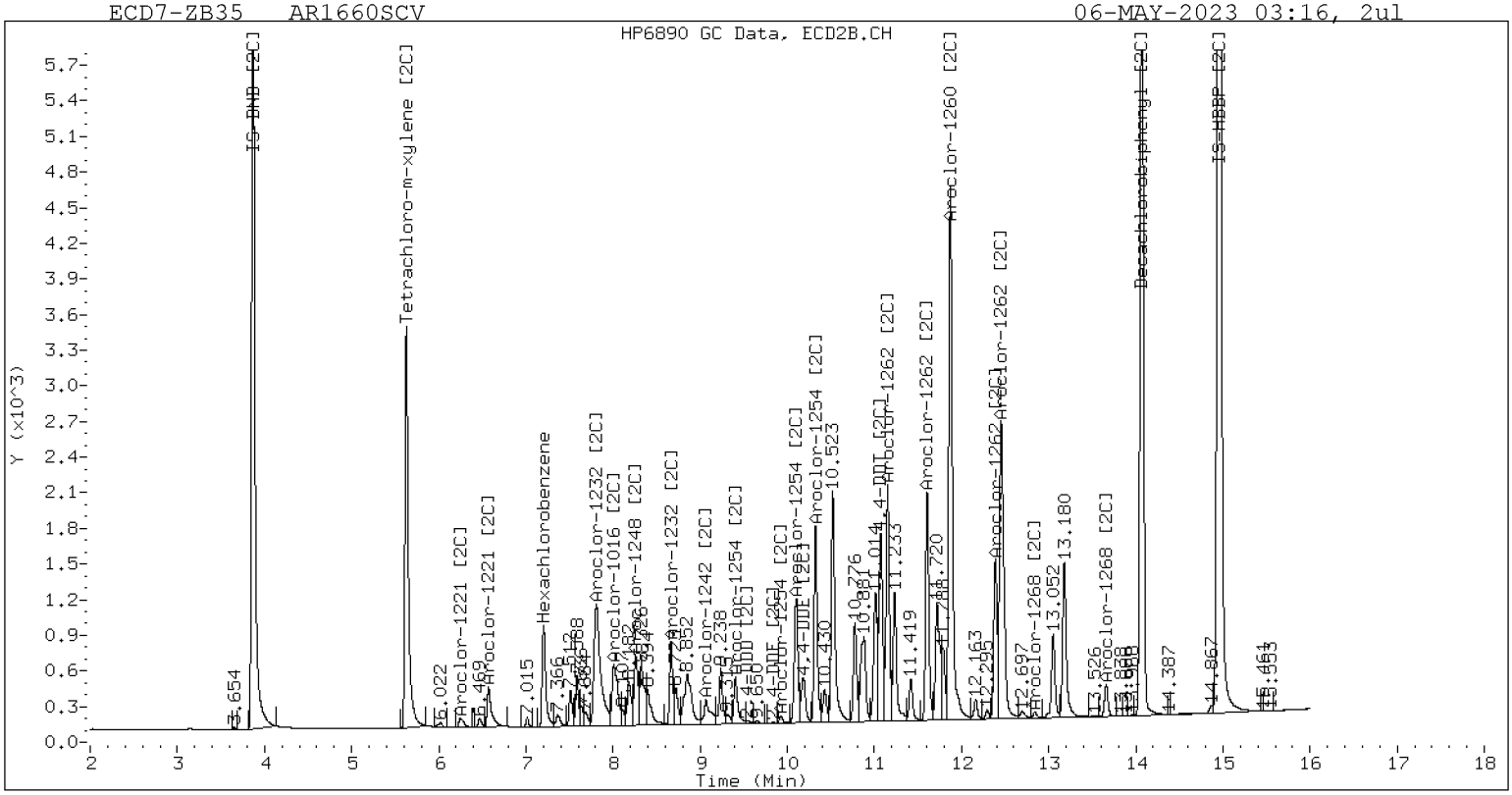
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660SCV 06-MAY-2023 03:16, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660SCV 06-MAY-2023 03:16, 2ul



ZB-35 Manual Integration: NO

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GE00022
Laboratory ID: SLE0079-SCV2
Sequence: SLE0079
Sequence Name: AR1242SCV2
Standard ID: L003970

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1242	250.00	237	-5.1	20.00
Aroclor 1242 [2C]	250.00	230	-7.9	20.00
Decachlorobiphenyl	40.000	40.9	2.2	20.00
Tetrachlorometaxylene	40.000	32.8	-18.1	20.00
Decachlorobiphenyl [2C]	40.000	44.0	10.0	20.00
Tetrachlorometaxylene [2C]	40.000	33.4	-16.5	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052333ECD7.D
Data file 2: /230505.b/230505.b/05052333ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242SCV
Client ID:
Injection Date: 06-MAY-2023 03:36
Report Date: 05/06/2023 12:06
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.744	0.002	319899	5.630	0.002	167866	32.8	33.4	1.9	Tetrachloro-m-xylene
13.842	0.002	398699	14.069	0.001	434332	40.9	44.0	7.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	648004	7.7
Hexabromobiphenyl	876625	976327	11.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	365379	4.6
Hexabromobiphenyl	652984	695394	6.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.213	0.001	47446	189.1	1	7.205	0.001	36469	176.3
Aroclor-1016	2	7.594	-0.000	147684	188.2	2	7.814	0.007	77885	176.7
Aroclor-1016	3	7.735	0.002	67175	185.2	3	8.012	0.006	38400	197.5
Aroclor-1016	4	8.398	0.000	30565	204.3	4	8.261	0.002	27551	178.4
Total Col1Ave (4 peaks): 191.7						Total Col2Ave (4 peaks): 182.2			RPD = 5	
Corrected Ave (3 peaks): 187.5						Corrected Ave (3 peaks): 177.1			RPD = 6	
Aroclor-1221	1	4.666	0.002	870	19.1	1	---			0.0
Aroclor-1221	2	6.069	0.000	7118	77.8	2	6.257	0.011	4359	78.0
Aroclor-1221	3	6.322	0.001	32969	151.8	3	6.573	0.001	16609	189.0
Total Col1Ave (3 peaks): 82.9						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.666	0.002	870	28.7	1	---			0.0
Aroclor-1232	2	6.069	0.000	7118	112.7	2	7.205	-0.000	36469	449.5
Aroclor-1232	3	7.594	-0.001	147684	490.8	3	7.814	-0.001	77885	477.9
Aroclor-1232	4	8.526	-0.000	70601	548.1	4	8.668	-0.001	25417	538.5
Total Col1Ave (4 peaks): 295.1						Total Col2Ave (3 peaks): 488.7			RPD = 49*	
Corrected Ave (3 peaks): 210.7						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.213	0.001	47446	232.4	1	7.205	0.001	36469	223.3
Aroclor-1242	2	7.594	-0.000	147684	228.2	2	7.814	0.002	77885	224.2
Aroclor-1242	3	8.398	0.000	30565	244.2	3	9.124	0.001	25864	232.2
Aroclor-1242	4	8.526	0.002	70601	243.8	4	9.552	0.001	32437	241.7
Total Col1Ave (4 peaks): 237.2						Total Col2Ave (4 peaks): 230.4			RPD = 3	
Corrected Ave (3 peaks): 234.8						Corrected Ave (3 peaks): 226.6			RPD = 4	
Aroclor-1248	1	8.398	-0.001	30565	184.8	1	8.261	0.001	27551	158.5
Aroclor-1248	2	8.526	0.002	70601	164.3	2	8.668	0.001	25417	138.4
Aroclor-1248	3	8.946	0.002	172847	209.1	3	9.124	0.004	25864	120.2
Aroclor-1248	4	9.243	-0.001	87363	207.3	4	9.552	0.006	32437	125.7
Total Col1Ave (4 peaks): 191.4						Total Col2Ave (4 peaks): 135.7			RPD = 34	
Corrected Ave (3 peaks): 185.5						Corrected Ave (3 peaks): 128.1			RPD = 37	
Aroclor-1254	1	9.243	-0.004	87363	131.2	1	9.406	0.002	13247	47.7
Aroclor-1254	2	9.326	0.001	28949	96.7	2	9.552	0.053	32437	196.7
Aroclor-1254	3	9.622	0.004	20780	48.3	3	9.927	0.003	10002	44.5
Aroclor-1254	4	9.762	0.006	35470	42.1	4	10.082	0.005	19933	40.6
Aroclor-1254	5	10.140	0.015	28075	55.2	5	10.341	0.013	19432	39.9
Total Col1Ave (5 peaks): 74.7						Total Col2Ave (5 peaks): 73.9			RPD = 1	
Corrected Ave (4 peaks): 60.6						Corrected Ave (4 peaks): 43.2			RPD = 34	
Aroclor-1260	1	10.998	0.005	3609	7.0	1	11.618	0.012	2137	5.8
Aroclor-1260	2	11.317	0.007	3837	7.5	2	11.879	0.007	1437	1.5
Aroclor-1260	3	11.765	0.080	33905	26.6	3	12.382	-0.006	12460	52.1
Aroclor-1260	4	12.097	0.007	9099	14.6	4	---			0.0
Aroclor-1260	5	12.272	0.079	2060	7.6	NS	---			----
Total Col1Ave (5 peaks): 12.6						Total Col2Ave (3 peaks): 19.8			RPD = 44*	
Corrected Ave (4 peaks): 9.2						Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.787	0.009	24040	54.4	1	11.078	-0.075	7864	14.0
Aroclor-1262	2	12.272	0.077	2060	3.3	2	11.618	0.013	2137	4.5
Aroclor-1262	3	---			0.0	3	12.382	-0.004	12460	24.0
Aroclor-1262	4	12.937	-0.002	16041	29.5	4	---			0.0
Total Col1Ave (3 peaks): 29.1						Total Col2Ave (3 peaks): 14.1			RPD = 69*	
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1268	1	12.272	0.076	2060	1.3	1	12.382	-0.003	12460	9.5
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	12.649	0.001	4324	3.5	3	12.845	0.002	951	0.8
Aroclor-1268	4	13.442	0.005	15801	4.4	4	13.628	-0.035	6512	1.7
Total Col1Ave (3 peaks): 3.1						Total Col2Ave (3 peaks): 4.0			RPD = 25	
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				

Total PCB Area Col1 (5.842 - 13.740) = 1489022 Col1 Total PCB = 0.2 ppm*

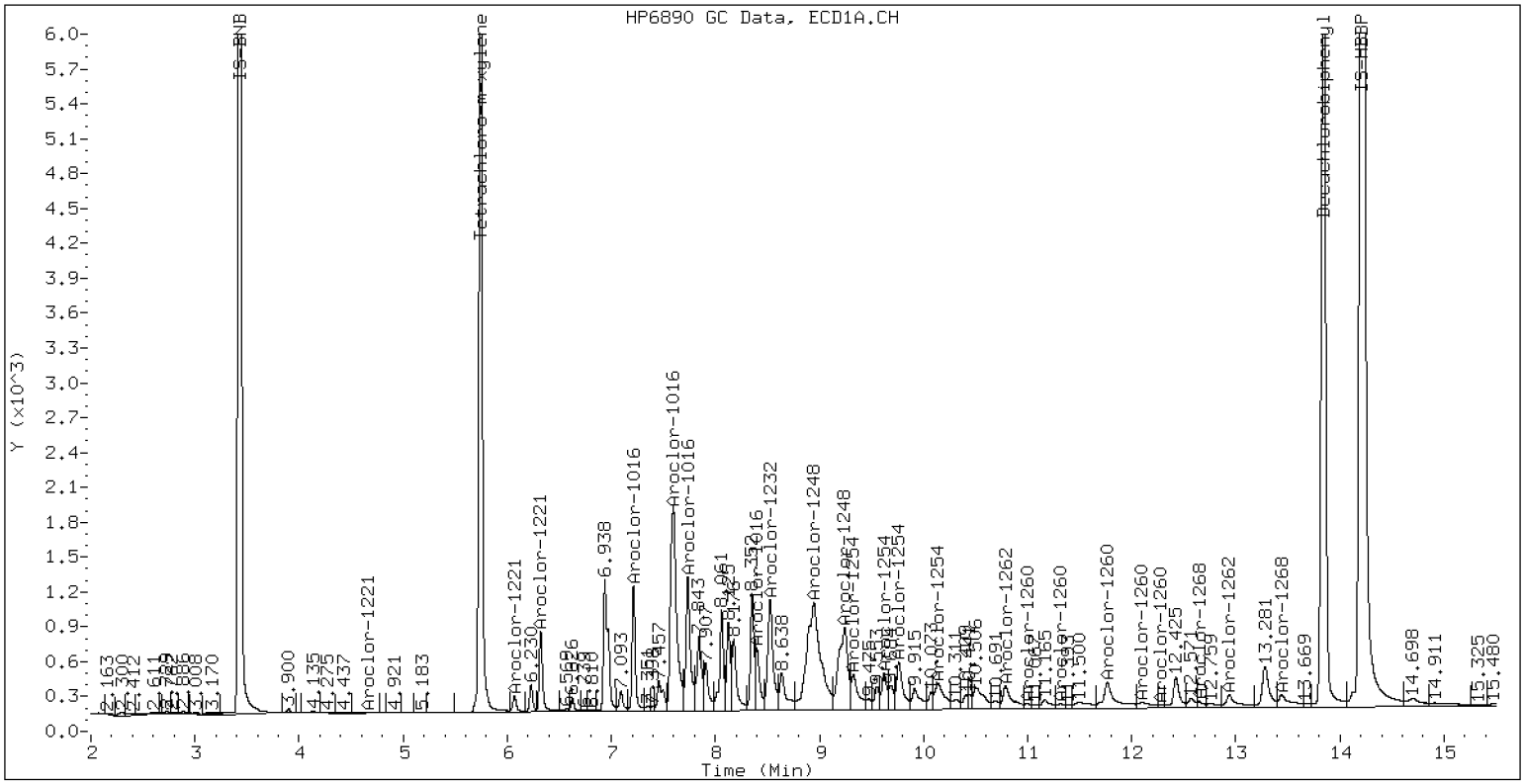
Total PCB Area Col2 (5.728 - 13.968) = 667658 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

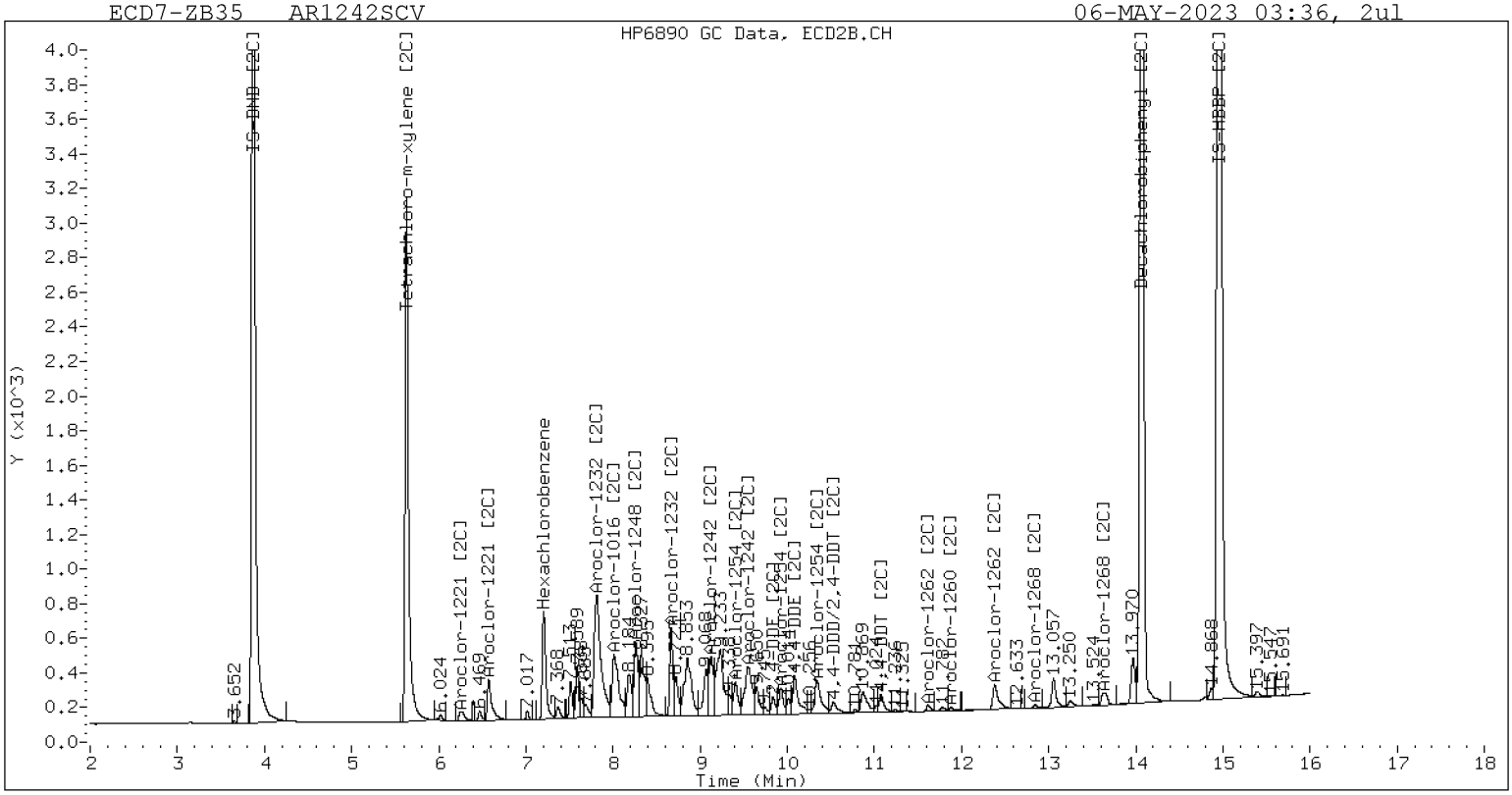
PCB Dual Column Chromatograms

ECD7-ZB5 AR1242SCV 06-MAY-2023 03:36, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242SCV 06-MAY-2023 03:36, 2ul

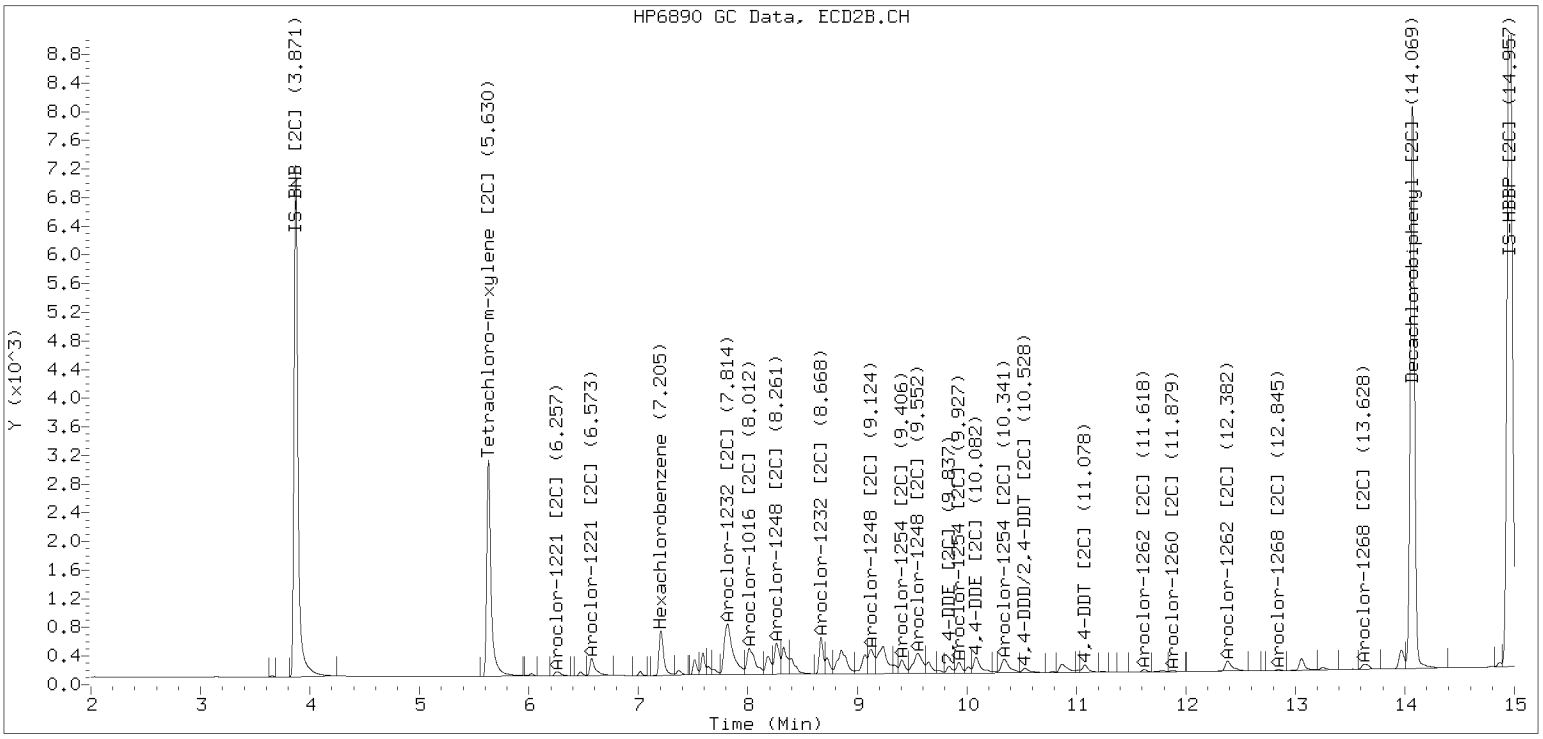


ZB-35 Manual Integration: NO

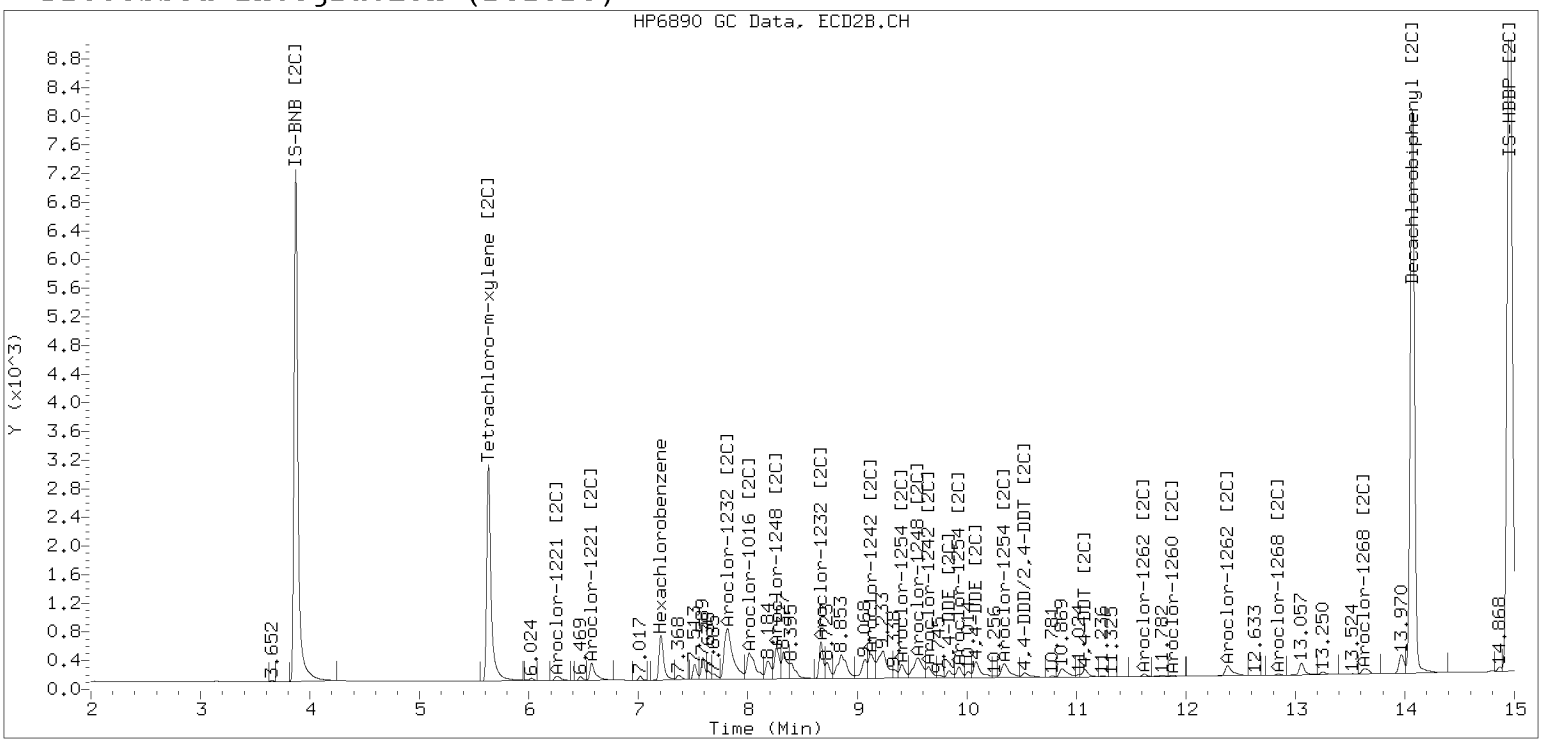
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230505.b/230505.b/05052333ECD7.D Injection Date: 06-MAY-2023

Manual Integration (After)



Processed Integration (Before)



SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GE00022
Laboratory ID: SLE0079-SCV3
Sequence: SLE0079
Sequence Name: AR1248SCV3
Standard ID: L002066

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1248	250.00	251	0.5	20.00
Aroclor 1248 [2C]	250.00	249	-0.3	20.00
Decachlorobiphenyl	40.000	35.7	-10.8	20.00
Tetrachlorometaxylene	40.000	36.8	-8.0	20.00
Decachlorobiphenyl [2C]	40.000	38.0	-5.0	20.00
Tetrachlorometaxylene [2C]	40.000	37.7	-5.7	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052334ECD7.D
Data file 2: /230505.b/230505.b/05052334ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248SCV
Client ID:
Injection Date: 06-MAY-2023 03:57
Report Date: 05/06/2023 12:07
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.741	-0.001	356328	5.629	0.000	186552	36.8	37.7	2.5	Tetrachloro-m-xylene
13.842	0.001	339452	14.070	0.002	373861	35.7	38.0	6.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	643038	6.9
Hexabromobiphenyl	876625	952051	8.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	359604	3.0
Hexabromobiphenyl	652984	692982	6.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.212	0.000	19871	79.8	1	7.203	-0.001	18843	92.6
Aroclor-1016	2	7.589	-0.006	95111	122.2	2	7.812	0.005	52352	120.7
Aroclor-1016	3	7.736	0.003	37565	104.4	3	8.012	0.006	8263	43.2
Aroclor-1016	4	8.399	0.002	41542	279.7	4	8.260	0.001	42833	281.8
Total Col1Ave (4 peaks):					146.5	Total Col2Ave (4 peaks):				134.6 RPD = 9
Corrected Ave (3 peaks):					102.1	Corrected Ave (3 peaks):				85.5 RPD = 18
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.066	-0.003	351	3.9	2	6.275	0.029	1573	28.6
Aroclor-1221	3	6.320	-0.001	3509	16.3	3	6.576	0.004	967	11.2
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.066	-0.003	351	5.6	2	7.203	-0.001	18843	236.0
Aroclor-1232	3	7.589	-0.006	95111	318.5	3	7.812	-0.002	52352	326.4
Aroclor-1232	4	8.524	-0.002	105782	827.6	4	8.667	-0.002	44962	968.0
Total Col1Ave (3 peaks):					383.9	Total Col2Ave (3 peaks):				510.1 RPD = 28
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.212	0.000	19871	98.1	1	7.203	-0.000	18843	117.2
Aroclor-1242	2	7.589	-0.006	95111	148.1	2	7.812	-0.000	52352	153.1
Aroclor-1242	3	8.399	0.001	41542	334.5	3	9.120	-0.003	52681	480.6
Aroclor-1242	4	8.524	-0.000	105782	368.1	4	9.548	-0.002	63343	479.5
Total Col1Ave (4 peaks):					237.2	Total Col2Ave (4 peaks):				307.6 RPD = 26
Corrected Ave (3 peaks):					193.6	Corrected Ave (3 peaks):				250.0 RPD = 25
Aroclor-1248	1	8.399	0.001	41542	253.1	1	8.260	-0.001	42833	250.4
Aroclor-1248	2	8.524	-0.000	105782	248.0	2	8.667	0.000	44962	248.8
Aroclor-1248	3	8.944	-0.000	206928	252.3	3	9.120	-0.000	52681	248.7
Aroclor-1248	4	9.242	-0.001	105227	251.7	4	9.548	0.002	63343	249.4
Total Col1Ave (4 peaks):					251.3	Total Col2Ave (4 peaks):				249.3 RPD = 1
Corrected Ave (3 peaks):					250.6	Corrected Ave (3 peaks):				249.0 RPD = 1
Aroclor-1254	1	9.242	-0.004	105227	159.2	1	9.404	0.000	25835	94.6
Aroclor-1254	2	9.324	-0.001	51326	172.8	2	9.548	0.049	63343	390.3
Aroclor-1254	3	9.619	0.001	41394	97.0	3	9.925	0.001	22609	102.1
Aroclor-1254	4	9.759	0.003	72223	86.4	4	10.079	0.001	43816	90.7
Aroclor-1254	5	10.135	0.010	49936	98.9	5	10.345	0.016	42513	88.7
Total Col1Ave (5 peaks):					122.9	Total Col2Ave (5 peaks):				153.3 RPD = 22
Corrected Ave (4 peaks):					110.4	Corrected Ave (4 peaks):				94.0 RPD = 16
Aroclor-1260	1	10.998	0.005	1863	3.7	1	11.617	0.011	2599	7.1
Aroclor-1260	2	11.314	0.004	1152	2.3	2	11.877	0.005	1951	2.0
Aroclor-1260	3	11.695	0.009	1829	1.5	3	12.389	0.001	857	3.6
Aroclor-1260	4	12.097	0.007	1266	2.1	4	12.458	0.003	1302	2.0
Aroclor-1260	5	12.195	0.002	464	1.7	NS	---			----
Total Col1Ave (5 peaks):					2.3	Total Col2Ave (4 peaks):				3.7 RPD = 48*
Corrected Ave (4 peaks):					1.9	Corrected Ave (3 peaks):				2.5 RPD = 29
Aroclor-1262	1	10.784	0.005	15405	35.8	1	11.077	-0.077	9003	16.0
Aroclor-1262	2	12.195	0.000	464	0.8	2	11.617	0.012	2599	5.5
Aroclor-1262	3	12.271	0.002	489	0.8	3	12.389	0.003	857	1.7
Aroclor-1262	4	12.940	0.001	1638	3.1	4	12.458	0.002	1302	1.5
Total Col1Ave (4 peaks):					10.1	Total Col2Ave (4 peaks):				6.2 RPD = 48*
Corrected Ave (3 peaks):					1.5	Corrected Ave (3 peaks):				2.9 RPD = 61*
Aroclor-1268	1	12.195	-0.001	464	0.3	1	12.389	0.004	857	0.7
Aroclor-1268	2	12.271	0.003	489	0.3	2	12.458	0.006	1302	0.9
Aroclor-1268	3	12.649	0.001	1831	1.5	3	12.845	0.002	676	0.6
Aroclor-1268	4	13.443	0.006	5387	1.6	4	13.661	-0.003	2707	0.7
Total Col1Ave (4 peaks):					0.9	Total Col2Ave (4 peaks):				0.7 RPD = 26
Corrected Ave (3 peaks):					0.7	Corrected Ave (3 peaks):				0.6 RPD = 11

Total PCB Area Col1 (5.842 - 13.740) = 1634238 Col1 Total PCB = 0.2 ppm*

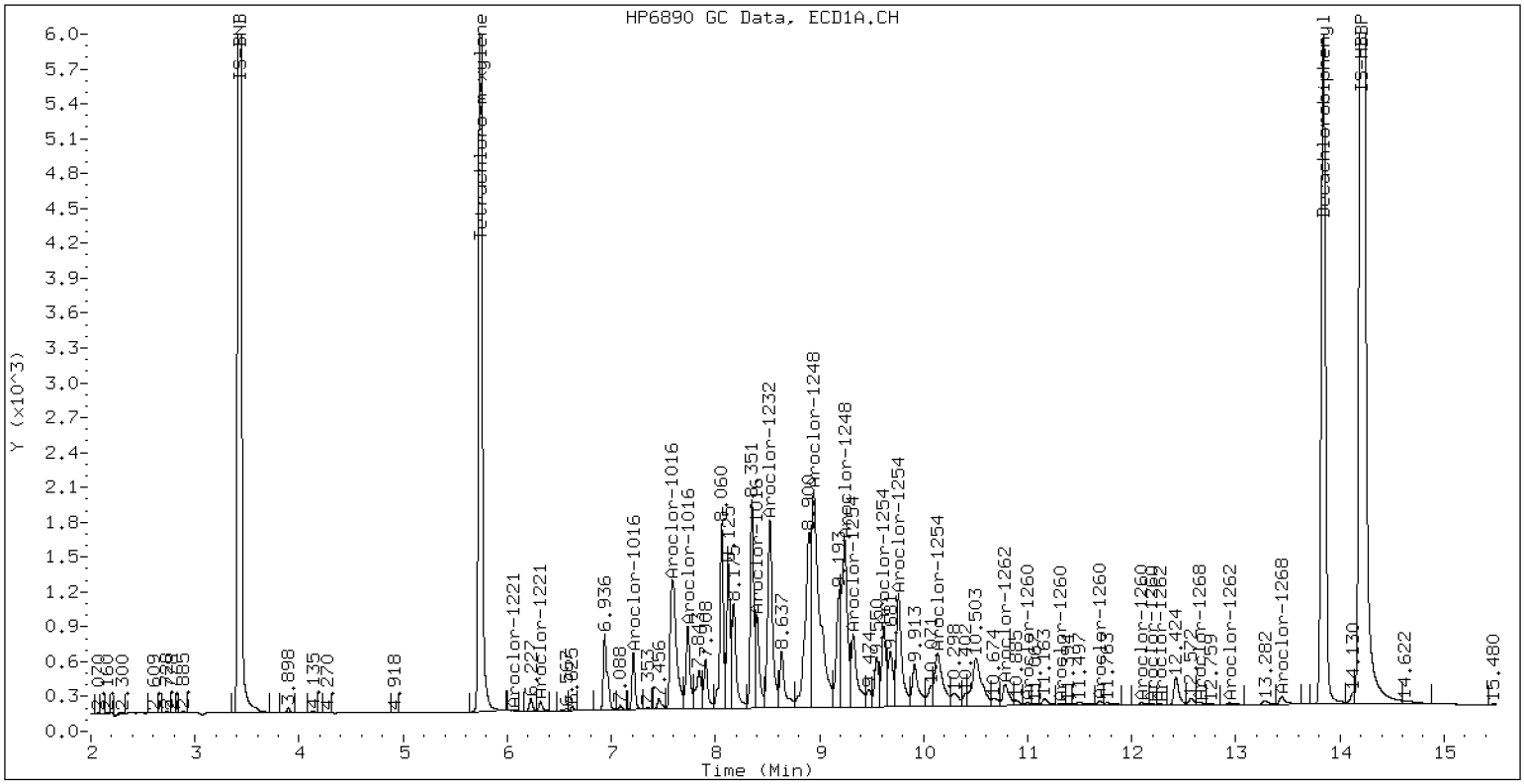
Total PCB Area Col2 (5.728 - 13.968) = 876760 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

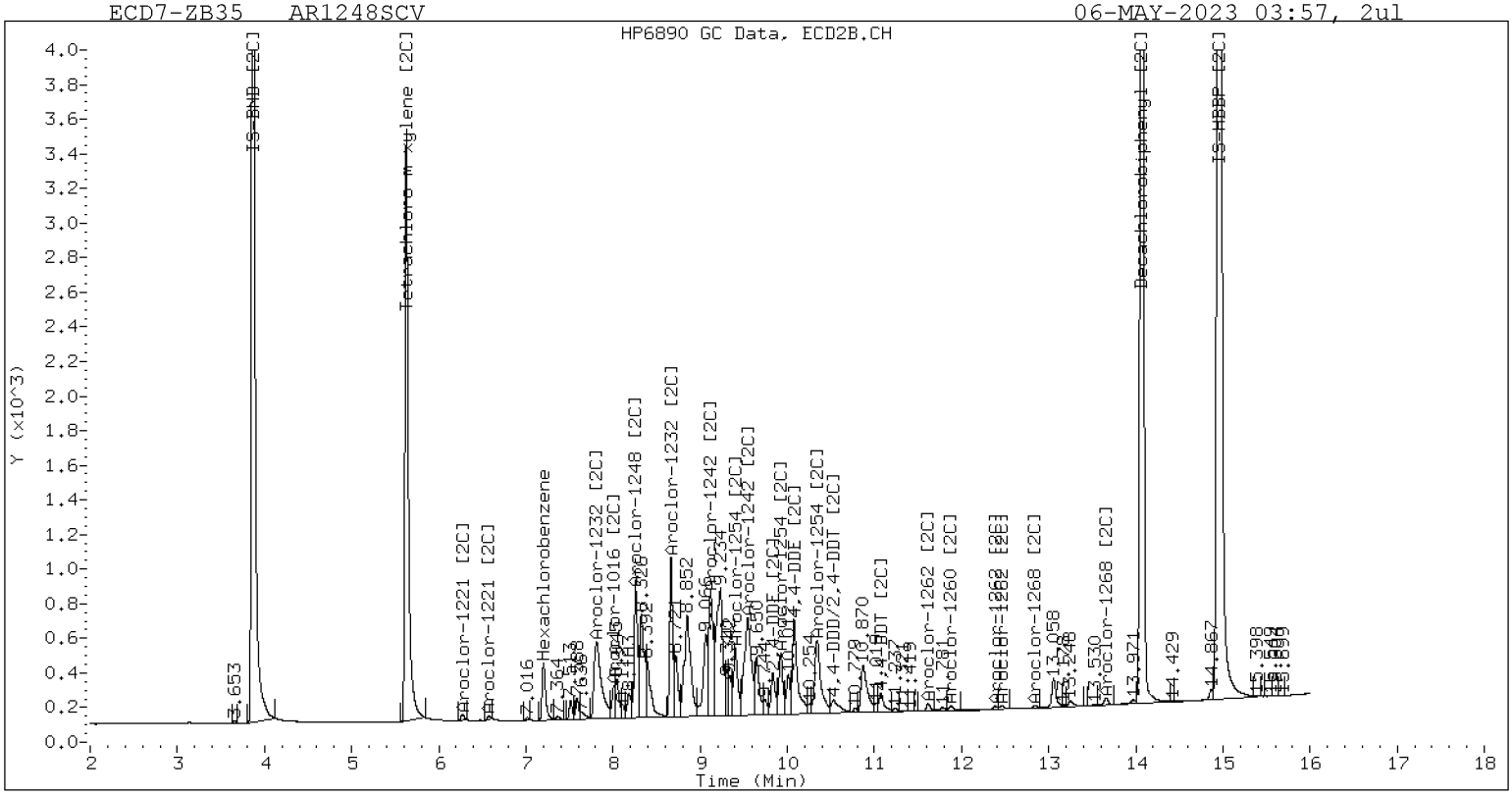
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248SCV 06-MAY-2023 03:57, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248SCV 06-MAY-2023 03:57, 2ul



ZB-35 Manual Integration: NO

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GE00022
Laboratory ID: SLE0079-SCV4
Sequence: SLE0079
Sequence Name: AR1254SCV4
Standard ID: L002067

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1254	250.00	239	-4.3	20.00
Aroclor 1254 [2C]	250.00	241	-3.8	20.00
Decachlorobiphenyl	40.000	36.0	-10.1	20.00
Tetrachlorometaxylene	40.000	37.6	-6.0	20.00
Decachlorobiphenyl [2C]	40.000	38.5	-3.8	20.00
Tetrachlorometaxylene [2C]	40.000	38.3	-4.2	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052335ECD7.D
Data file 2: /230505.b/230505.b/05052335ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254SCV
Client ID:
Injection Date: 06-MAY-2023 04:18
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.743	0.001	368022	5.631	0.002	192033	37.6	38.3	2.0	Tetrachloro-m-xylene
13.843	0.002	352066	14.070	0.002	385384	36.0	38.5	6.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	650234	8.1
Hexabromobiphenyl	876625	980276	11.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	364142	4.3
Hexabromobiphenyl	652984	705291	8.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.214	0.002	635	2.5	1	---			0.0
Aroclor-1016	2	7.590	-0.004	2512	3.2	2	---			0.0
Aroclor-1016	3	7.738	0.005	1594	4.4	3	---			0.0
Aroclor-1016	4	8.351	-0.047	31774	211.6	4	---			0.0
Total Col1Ave (4 peaks):					55.4	Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.052	-0.018	242	2.6	2	---			0.0
Aroclor-1221	3	6.322	0.001	427	2.0	3	---			0.0
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.052	-0.018	242	3.8	2	---			0.0
Aroclor-1232	3	7.590	-0.005	2512	8.3	3	---			0.0
Aroclor-1232	4	8.528	0.001	13950	107.9	4	---			0.0
Total Col1Ave (3 peaks):					40.0	Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	7.214	0.002	635	3.1	1	---			0.0
Aroclor-1242	2	7.590	-0.005	2512	3.9	2	---			0.0
Aroclor-1242	3	8.351	-0.047	31774	253.0	3	9.125	0.002	23963	215.9
Aroclor-1242	4	8.528	0.004	13950	48.0	4	9.649	0.099	23982	179.3
Total Col1Ave (4 peaks):					77.0	Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	8.351	-0.048	31774	191.4	1	8.260	-0.000	23490	135.6
Aroclor-1248	2	8.528	0.004	13950	32.3	2	8.669	0.002	16693	91.2
Aroclor-1248	3	8.941	-0.003	154338	186.1	3	9.125	0.005	23963	111.7
Aroclor-1248	4	9.246	0.003	158369	374.6	4	9.499	-0.047	38716	150.5
Total Col1Ave (4 peaks):					196.1	Total Col2Ave (4 peaks):			122.3	RPD = 46*
Corrected Ave (3 peaks):					136.6	Corrected Ave (3 peaks):			112.8	RPD = 19
Aroclor-1254	1	9.246	-0.001	158369	237.0	1	9.404	0.000	67493	244.0
Aroclor-1254	2	9.325	-0.000	72386	241.1	2	9.499	-0.000	38716	235.6
Aroclor-1254	3	9.617	-0.001	103602	240.1	3	9.925	0.001	53972	240.7
Aroclor-1254	4	9.756	0.000	201259	238.2	4	10.079	0.001	116950	239.0
Aroclor-1254	5	10.127	0.001	122207	239.5	5	10.327	-0.001	118439	243.9
Total Col1Ave (5 peaks):					239.2	Total Col2Ave (5 peaks):			240.6	RPD = 1
Corrected Ave (4 peaks):					238.7	Corrected Ave (4 peaks):			239.8	RPD = 0
Aroclor-1260	1	10.994	0.001	13538	26.1	1	11.615	0.009	33465	89.3
Aroclor-1260	2	11.313	0.003	13900	27.2	2	11.876	0.004	25534	26.1
Aroclor-1260	3	11.689	0.004	32548	25.4	3	12.404	0.016	1811	7.5
Aroclor-1260	4	12.093	0.003	25285	40.3	4	12.458	0.002	14842	22.7
Aroclor-1260	5	12.273	0.079	2534	9.3	NS	---			----
Total Col1Ave (5 peaks):					25.6	Total Col2Ave (4 peaks):			36.4	RPD = 35
Corrected Ave (4 peaks):					22.0	Corrected Ave (3 peaks):			18.7	RPD = 16
Aroclor-1262	1	10.779	0.000	210018	473.6	1	11.073	-0.081	114323	200.0
Aroclor-1262	2	12.273	0.078	2534	4.1	2	11.615	0.010	33465	69.4
Aroclor-1262	3	---			0.0	3	12.404	0.018	1811	3.4
Aroclor-1262	4	12.939	0.001	1830	3.3	4	12.458	0.002	14842	17.3
Total Col1Ave (3 peaks):					160.3	Total Col2Ave (4 peaks):			72.6	RPD = 75*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			30.1	
Aroclor-1268	1	12.273	0.077	2534	1.6	1	12.404	0.019	1811	1.4
Aroclor-1268	2	---			0.0	2	12.458	0.005	14842	10.3
Aroclor-1268	3	12.654	0.006	2669	2.1	3	12.847	0.004	835	0.7
Aroclor-1268	4	13.442	0.004	6266	1.8	4	13.662	-0.001	2350	0.6
Total Col1Ave (3 peaks):					1.8	Total Col2Ave (4 peaks):			3.2	RPD = 55*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			0.9	

Total PCB Area Col1 (5.842 - 13.740) = 2123119 Col1 Total PCB = 0.3 ppm*

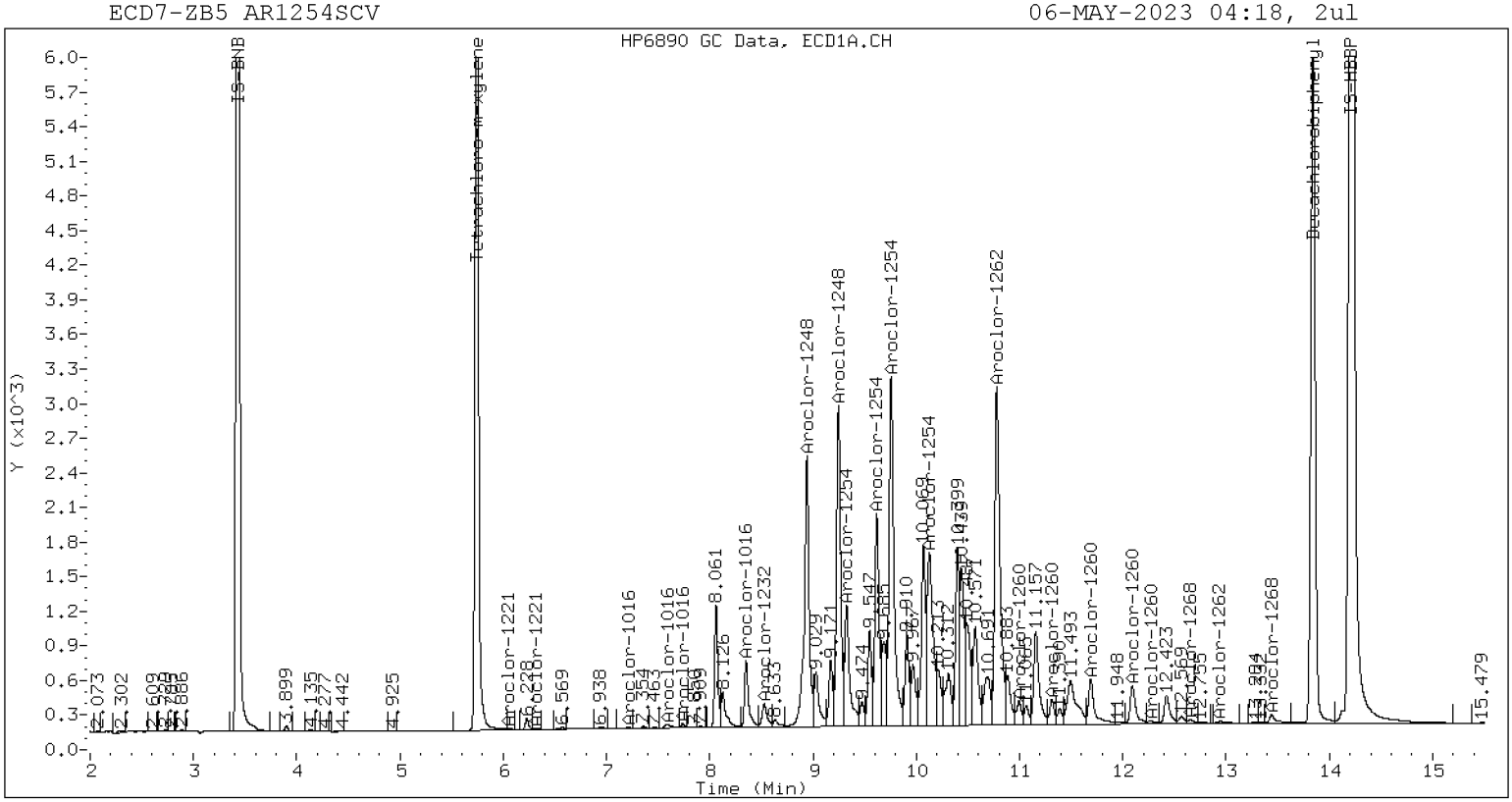
Total PCB Area Col2 (5.728 - 13.968) = 1146487 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

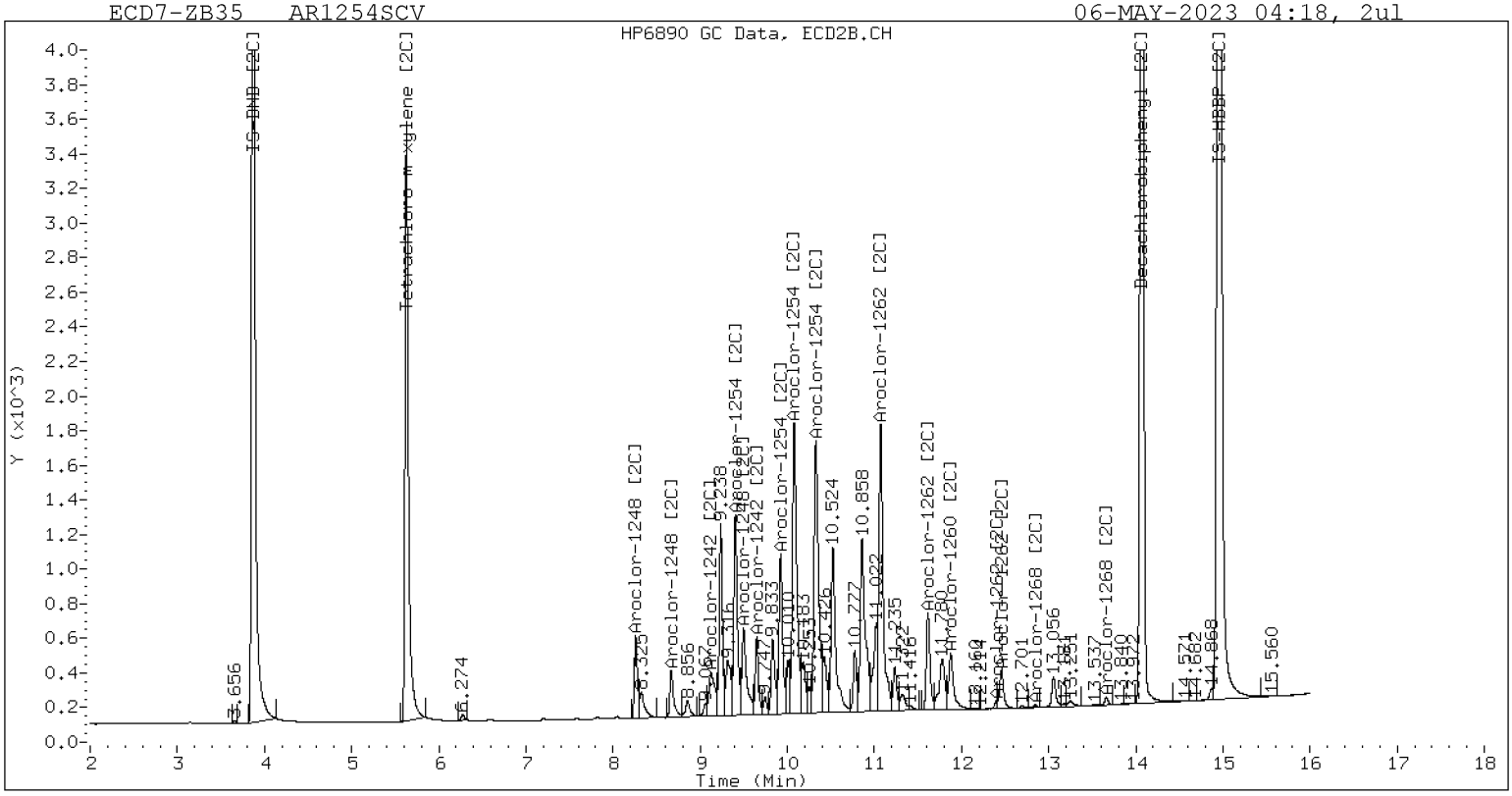
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254SCV 06-MAY-2023 04:18, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254SCV 06-MAY-2023 04:18, 2ul



ZB-35 Manual Integration: NO

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GE00022
Laboratory ID: SLE0079-SCV5
Sequence: SLE0079
Sequence Name: AR2162SCV5
Standard ID: L002068

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1221	250.00	290	15.9	20.00
Aroclor 1221 [2C]	250.00	288	15.3	20.00
Aroclor 1262	250.00	265	6.1	20.00
Aroclor 1262 [2C]	250.00	259	3.5	20.00
Decachlorobiphenyl	40.000	37.1	-7.3	20.00
Tetrachlorometaxylene	40.000	37.8	-5.5	20.00
Decachlorobiphenyl [2C]	40.000	38.8	-3.1	20.00
Tetrachlorometaxylene [2C]	40.000	39.1	-2.4	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052336ECD7.D
Data file 2: /230505.b/230505.b/05052336ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162SCV
Client ID:
Injection Date: 06-MAY-2023 04:39
Report Date: 05/06/2023 11:31
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	0.000	358254	5.628	-0.000	183759	37.8	39.1	3.3	Tetrachloro-m-xylene
13.842	0.002	344347	14.070	0.002	373300	37.1	38.8	4.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	629547	4.7
Hexabromobiphenyl	876625	929713	6.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	341980	-2.1
Hexabromobiphenyl	652984	678097	3.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.213	0.000	6601	27.1	1	7.207	0.003	3935	20.3
Aroclor-1016	2	7.595	0.000	13419	17.6	2	7.821	0.013	6146	14.9
Aroclor-1016	3	7.735	0.003	7114	20.2	3	8.027	0.021	3201	17.6
Aroclor-1016	4	8.353	-0.045	3916	26.9	4	8.262	0.003	2131	14.7
Total Col1Ave (4 peaks):					23.0	Total Col2Ave (4 peaks):				16.9 RPD = 30
Corrected Ave (3 peaks):					21.6	Corrected Ave (3 peaks):				15.7 RPD = 31
Aroclor-1221	1	4.663	-0.001	13184	297.8	1	4.893	-0.001	7253	287.5
Aroclor-1221	2	6.070	0.000	25527	287.4	2	6.244	-0.001	14853	284.1
Aroclor-1221	3	6.321	0.000	59985	284.3	3	6.571	-0.001	24083	292.9
Total Col1Ave (3 peaks):					289.8	Total Col2Ave (3 peaks):				288.2 RPD = 1
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.663	-0.001	13184	447.0	1	4.893	-0.001	7253	546.9
Aroclor-1232	2	6.070	0.000	25527	416.0	2	7.207	0.002	3935	51.8
Aroclor-1232	3	7.595	-0.000	13419	45.9	3	7.821	0.006	6146	40.3
Aroclor-1232	4	8.528	0.001	2679	21.4	4	8.671	0.002	1120	25.4
Total Col1Ave (4 peaks):					232.6	Total Col2Ave (4 peaks):				166.1 RPD = 33
Corrected Ave (3 peaks):					161.1	Corrected Ave (3 peaks):				39.2 RPD = 122*
Aroclor-1242	1	7.213	0.001	6601	33.3	1	7.207	0.004	3935	25.7
Aroclor-1242	2	7.595	-0.000	13419	21.3	2	7.821	0.008	6146	18.9
Aroclor-1242	3	8.353	-0.045	3916	32.2	3	9.133	0.010	881	8.5
Aroclor-1242	4	8.528	0.003	2679	9.5	4	9.651	0.101	516	4.1
Total Col1Ave (4 peaks):					24.1	Total Col2Ave (4 peaks):				14.3 RPD = 51*
Corrected Ave (3 peaks):					21.0	Corrected Ave (3 peaks):				10.5 RPD = 67*
Aroclor-1248	1	8.353	-0.046	3916	24.4	1	8.262	0.002	2131	13.1
Aroclor-1248	2	8.528	0.003	2679	6.4	2	8.671	0.004	1120	6.5
Aroclor-1248	3	8.942	-0.002	25144	31.3	3	9.133	0.013	881	4.4
Aroclor-1248	4	9.251	0.008	25583	62.5	4	9.500	-0.045	335	1.4
Total Col1Ave (4 peaks):					31.1	Total Col2Ave (4 peaks):				6.3 RPD = 132*
Corrected Ave (3 peaks):					20.7	Corrected Ave (3 peaks):				4.1 RPD = 134*
Aroclor-1254	1	9.251	0.005	25583	39.5	1	9.408	0.004	9719	37.4
Aroclor-1254	2	---			0.0	2	9.500	0.001	335	2.2
Aroclor-1254	3	9.620	0.002	4245	10.2	3	9.928	0.004	2055	9.8
Aroclor-1254	4	9.758	0.003	11050	13.5	4	10.100	0.022	55162	120.0
Aroclor-1254	5	10.071	-0.055	129151	261.4	5	10.325	-0.004	68421	150.1
Total Col1Ave (4 peaks):					81.1	Total Col2Ave (5 peaks):				63.9 RPD = 24
Corrected Ave (3 peaks):					21.1	Corrected Ave (4 peaks):				42.3 RPD = 67*
Aroclor-1260	1	10.995	0.002	206643	420.3	1	11.605	-0.001	119902	332.9
Aroclor-1260	2	11.311	0.001	167443	345.1	2	11.872	0.000	293746	311.8
Aroclor-1260	3	11.687	0.001	390491	321.4	3	12.386	-0.002	131462	563.2
Aroclor-1260	4	12.091	0.001	120118	201.8	4	12.456	0.000	212898	338.4
Aroclor-1260	5	12.195	0.002	155588	599.5	NS	---			----
Total Col1Ave (5 peaks):					377.6	Total Col2Ave (4 peaks):				386.6 RPD = 2
Corrected Ave (4 peaks):					322.2	Corrected Ave (3 peaks):				327.7 RPD = 2
Aroclor-1262	1	10.777	-0.001	114050	271.2	1	11.153	0.000	141861	258.2
Aroclor-1262	2	12.195	0.001	155588	263.0	2	11.605	0.000	119902	258.7
Aroclor-1262	3	12.269	0.000	167998	264.2	3	12.386	-0.000	131462	259.6
Aroclor-1262	4	12.938	-0.001	136019	262.5	4	12.456	0.000	212898	258.0
Total Col1Ave (4 peaks):					265.2	Total Col2Ave (4 peaks):				258.6 RPD = 3
Corrected Ave (3 peaks):					263.3	Corrected Ave (3 peaks):				258.3 RPD = 2
Aroclor-1268	1	12.195	-0.000	155588	104.9	1	12.386	0.001	131462	102.4
Aroclor-1268	2	12.269	0.001	167998	114.1	2	12.456	0.003	212898	154.3
Aroclor-1268	3	12.675	0.027	60611	51.2	3	12.843	-0.000	8393	7.1
Aroclor-1268	4	13.439	0.001	49821	14.7	4	13.661	-0.002	39480	10.4
Total Col1Ave (4 peaks):					71.2	Total Col2Ave (4 peaks):				68.6 RPD = 4

Corrected Ave (3 peaks): 56.9 Corrected Ave (3 peaks): 40.0 RPD = 35

Total PCB Area Col1 (5.842 - 13.740) = 2870829 Col1 Total PCB = 0.4 ppm*

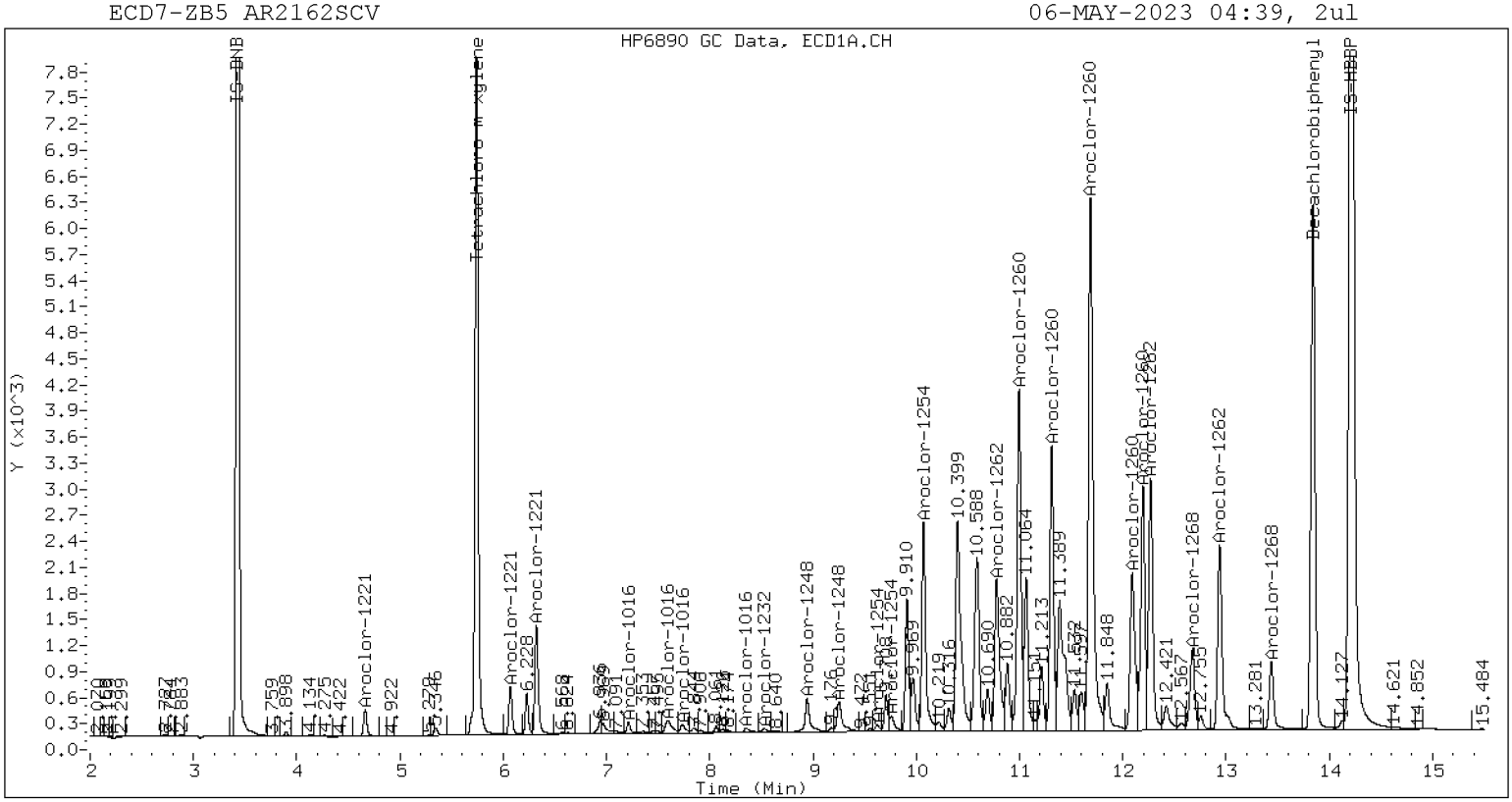
Total PCB Area Col2 (5.728 - 13.968) = 1885829 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

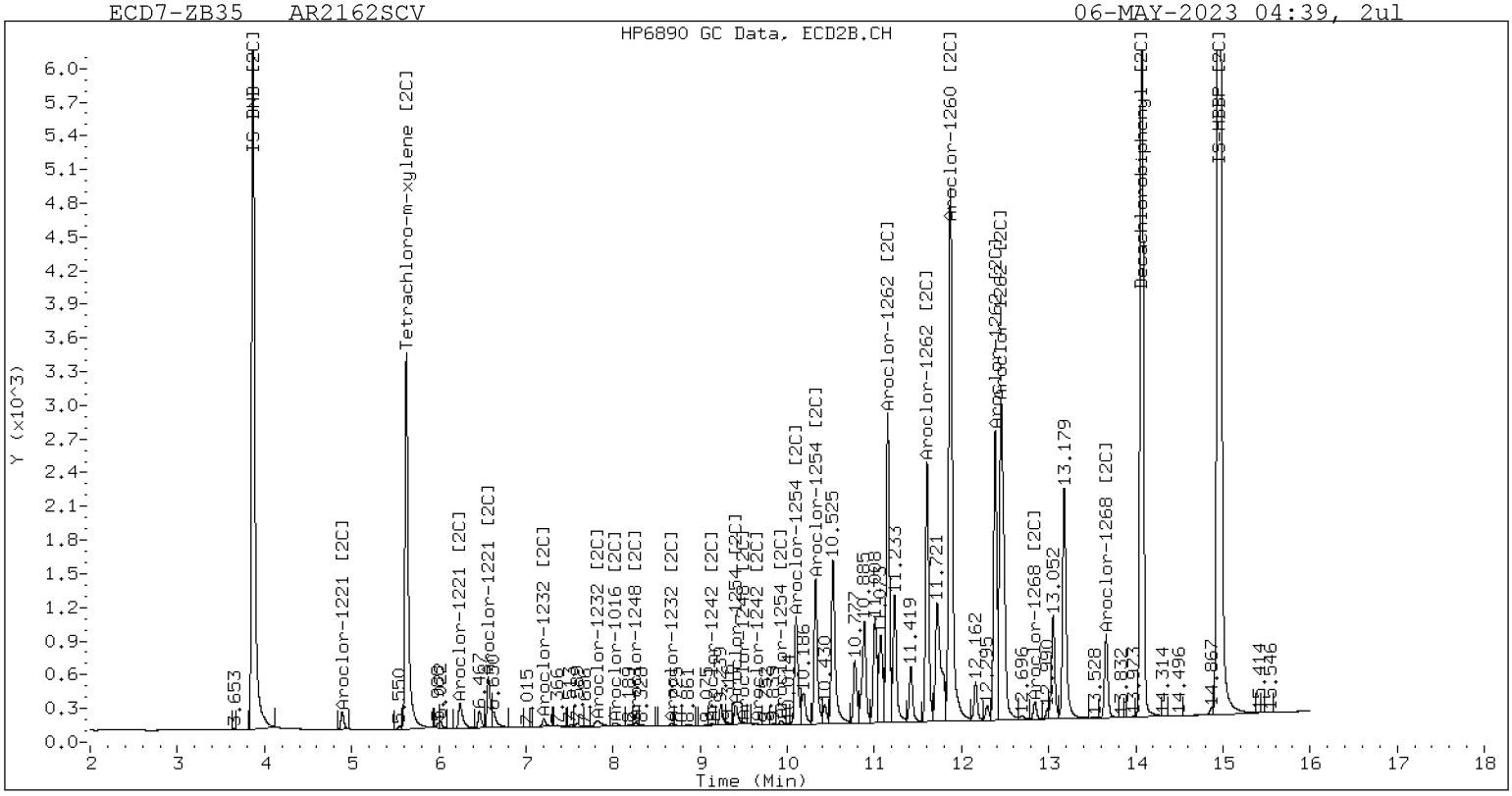
PCB Dual Column Chromatograms

ECD7-ZB5 AR2162SCV 06-MAY-2023 04:39, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR2162SCV 06-MAY-2023 04:39, 2ul



ZB-35 Manual Integration: NO

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GE00022
Laboratory ID: SLE0079-SCV6
Sequence: SLE0079
Sequence Name: AR3268SCV6
Standard ID: L002069

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1232	250.00	256	2.6	20.00
Aroclor 1232 [2C]	250.00	301	20.3	20.00
Aroclor 1268	250.00	266	6.5	20.00
Aroclor 1268 [2C]	250.00	263	5.2	20.00
Decachlorobiphenyl	40.000	55.1	37.7	20.00
Tetrachlorometaxylene	40.000	38.4	-4.0	20.00
Decachlorobiphenyl [2C]	40.000	59.3	48.3	20.00
Tetrachlorometaxylene [2C]	40.000	40.4	1.1	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052337ECD7.D
Data file 2: /230505.b/230505.b/05052337ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268SCV
Client ID:
Injection Date: 06-MAY-2023 05:00
Report Date: 05/06/2023 11:31
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.743	0.001	373749	5.629	0.001	196946	38.4	40.4	5.2	Tetrachloro-m-xylene
13.842	0.002	525409	14.069	0.001	586548	55.1	59.3	7.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	646456	7.5
Hexabromobiphenyl	876625	954969	8.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	354120	1.4
Hexabromobiphenyl	652984	696139	6.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	7.214	0.001	28623	114.3	1	7.205	0.002	23124	115.4
Aroclor-1016	2	7.597	0.002	85721	109.5	2	7.815	0.007	47496	111.2
Aroclor-1016	3	7.735	0.002	41343	114.3	3	8.014	0.008	24029	127.5
Aroclor-1016	4	8.400	0.002	16653	111.6	4	8.262	0.003	15421	103.0
Total Col1Ave (4 peaks):					112.4	Total Col2Ave (4 peaks):				114.3 RPD = 2
Corrected Ave (3 peaks):					111.8	Corrected Ave (3 peaks):				109.9 RPD = 2
Aroclor-1221	1	4.664	0.001	7272	159.9	1	4.895	0.000	4045	154.9
Aroclor-1221	2	6.070	0.001	13478	147.8	2	6.246	0.000	9235	170.6
Aroclor-1221	3	6.321	0.001	43831	202.3	3	6.572	0.000	24300	285.4
Total Col1Ave (3 peaks):					170.0	Total Col2Ave (3 peaks):				203.6 RPD = 18
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.664	0.001	7272	240.1	1	4.895	0.001	4045	294.5
Aroclor-1232	2	6.070	0.001	13478	213.9	2	7.205	0.001	23124	294.1
Aroclor-1232	3	7.597	0.002	85721	285.5	3	7.815	0.000	47496	300.7
Aroclor-1232	4	8.527	0.000	36809	286.5	4	8.669	-0.000	14324	313.2
Total Col1Ave (4 peaks):					256.5	Total Col2Ave (4 peaks):				300.6 RPD = 16
Corrected Ave (3 peaks):					246.5	Corrected Ave (3 peaks):				296.5 RPD = 18
Aroclor-1242	1	7.214	0.002	28623	140.5	1	7.205	0.002	23124	146.1
Aroclor-1242	2	7.597	0.002	85721	132.8	2	7.815	0.002	47496	141.1
Aroclor-1242	3	8.400	0.002	16653	133.4	3	9.128	0.005	14403	133.4
Aroclor-1242	4	8.527	0.003	36809	127.4	4	9.648	0.098	5512	42.4
Total Col1Ave (4 peaks):					133.5	Total Col2Ave (4 peaks):				115.7 RPD = 14
Corrected Ave (3 peaks):					131.2	Corrected Ave (3 peaks):				105.6 RPD = 22
Aroclor-1248	1	8.400	0.001	16653	100.9	1	8.262	0.002	15421	91.5
Aroclor-1248	2	8.527	0.003	36809	85.8	2	8.669	0.002	14324	80.5
Aroclor-1248	3	8.944	0.000	89377	108.4	3	9.128	0.008	14403	69.0
Aroclor-1248	4	9.238	-0.005	41570	98.9	4	9.560	0.015	17331	69.3
Total Col1Ave (4 peaks):					98.5	Total Col2Ave (4 peaks):				77.6 RPD = 24
Corrected Ave (3 peaks):					95.2	Corrected Ave (3 peaks):				72.9 RPD = 26
Aroclor-1254	1	9.238	-0.008	41570	62.6	1	9.407	0.003	5487	20.4
Aroclor-1254	2	9.326	0.001	12640	42.3	2	9.560	0.061	17331	108.4
Aroclor-1254	3	9.624	0.006	7232	16.9	3	9.929	0.005	3481	16.0
Aroclor-1254	4	9.764	0.008	11671	13.9	4	10.086	0.009	7259	15.3
Aroclor-1254	5	10.139	0.014	7544	14.9	5	10.345	0.017	6610	14.0
Total Col1Ave (5 peaks):					30.1	Total Col2Ave (5 peaks):				34.8 RPD = 14
Corrected Ave (4 peaks):					22.0	Corrected Ave (4 peaks):				16.4 RPD = 29
Aroclor-1260	1	10.998	0.005	85093	168.5	1	11.598	-0.008	75237	203.5
Aroclor-1260	2	11.313	0.003	6363	12.8	2	11.873	0.001	33655	34.8
Aroclor-1260	3	11.688	0.002	47857	38.3	3	12.384	-0.004	346138	1444.4
Aroclor-1260	4	12.094	0.004	1291	2.1	4	12.453	-0.002	373218	577.8
Aroclor-1260	5	12.195	0.001	406211	1523.9	NS	---			----
Total Col1Ave (5 peaks):					349.1	Total Col2Ave (4 peaks):				565.1 RPD = 47*
Corrected Ave (4 peaks):					55.4	Corrected Ave (3 peaks):				272.0 RPD = 132*
Aroclor-1262	1	10.785	0.006	4006	9.3	1	11.156	0.002	52531	93.1
Aroclor-1262	2	12.195	0.000	406211	668.6	2	11.598	-0.007	75237	158.2
Aroclor-1262	3	12.268	-0.002	403730	618.2	3	12.384	-0.002	346138	665.8
Aroclor-1262	4	12.937	-0.002	145536	273.5	4	12.453	-0.002	373218	440.5
Total Col1Ave (4 peaks):					392.4	Total Col2Ave (4 peaks):				339.4 RPD = 14
Corrected Ave (3 peaks):					300.3	Corrected Ave (3 peaks):				230.6 RPD = 26
Aroclor-1268	1	12.195	-0.001	406211	266.7	1	12.384	-0.001	346138	262.7
Aroclor-1268	2	12.268	-0.000	403730	266.9	2	12.453	0.001	373218	263.5
Aroclor-1268	3	12.648	-0.000	323568	266.0	3	12.844	0.001	316122	260.6
Aroclor-1268	4	13.439	0.002	920777	265.1	4	13.663	0.000	1029335	264.8
Total Col1Ave (4 peaks):					266.2	Total Col2Ave (4 peaks):				262.9 RPD = 1

Corrected Ave (3 peaks): 265.9 Corrected Ave (3 peaks): 262.3 RPD = 1

Total PCB Area Col1 (5.842 - 13.740) = 3325332 Col1 Total PCB = 0.5 ppm*

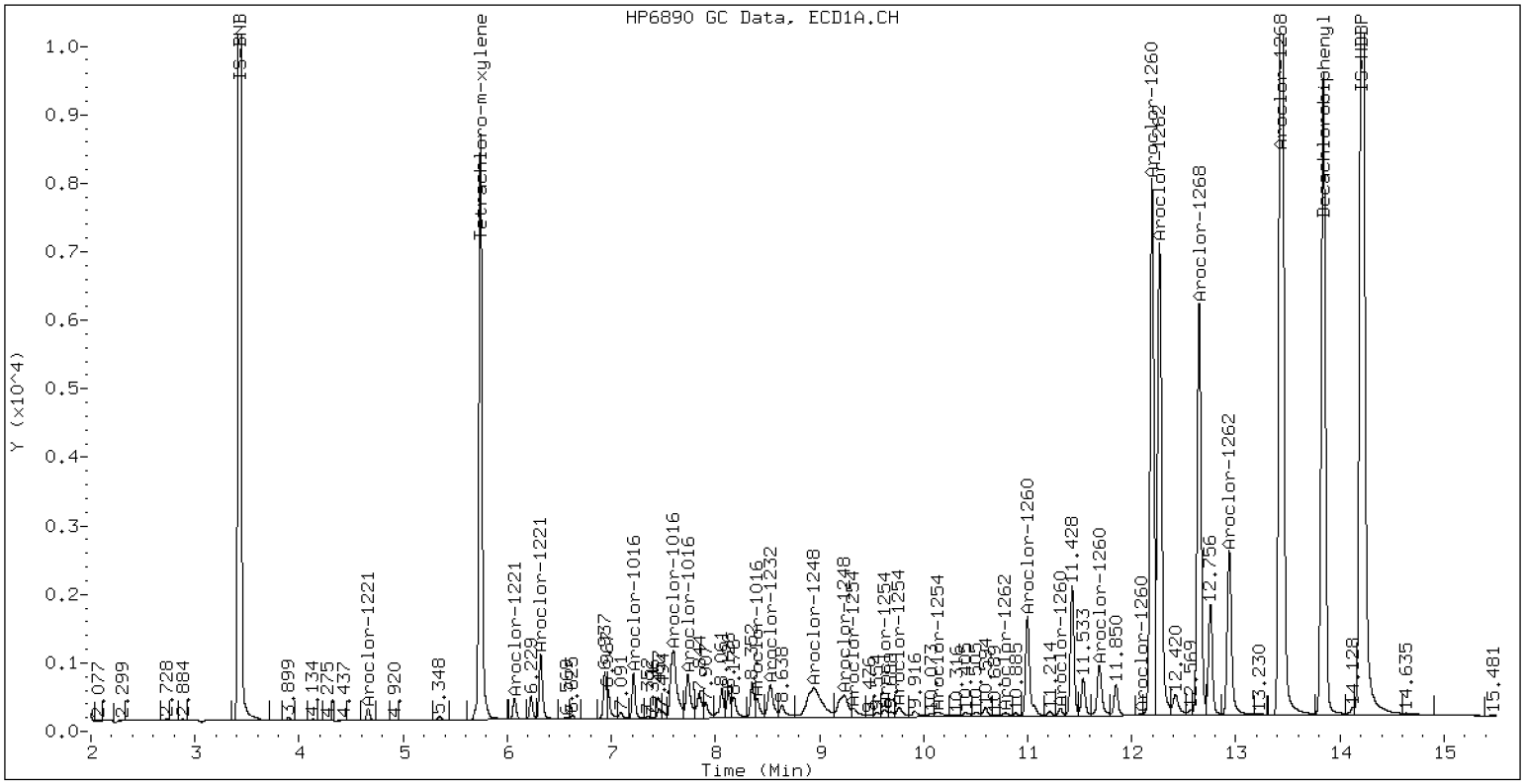
Total PCB Area Col2 (5.728 - 13.968) = 2876097 Col2 Total PCB = 0.7 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

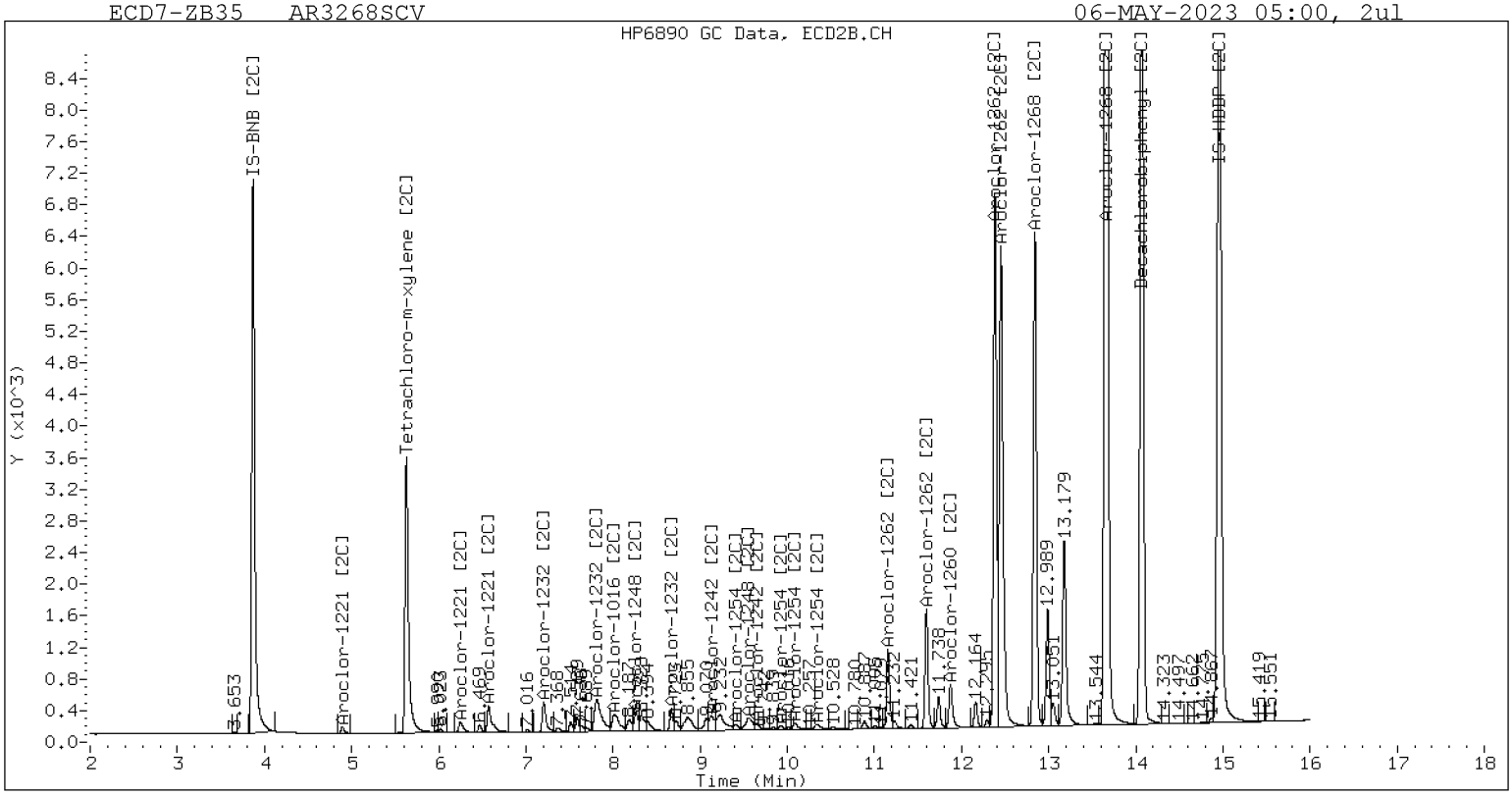
PCB Dual Column Chromatograms

ECD7-ZB5 AR3268SCV 06-MAY-2023 05:00, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR3268SCV 06-MAY-2023 05:00, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	07072302ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLG0066	Injection Date:	07/07/23
Lab Sample ID:	SLG0066-ICV1	Injection Time:	11:09
Sequence Name:	AR1254ICV1		

		CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1254	A	250.00	243	0.0678007	0.0651517		-2.6	+/-20
Aroclor-1254 (1)	A	250.00	165	0.0822219	0.0543558			
Aroclor-1254 (2)	A	250.00	282	0.0369425	0.0417081			
Aroclor-1254 (3)	A	250.00	278	0.0530793	0.0590879			
Aroclor-1254 (4)	A	250.00	285	0.1039691	0.1186025			
Aroclor-1254 (5)	A	250.00	207	0.0627908	0.0520041			
Aroclor 1254 [2C]	A	250.00	210	0.0720677	0.0594578		-15.8	+/-20
Aroclor-1254 (1) [2C]	A	250.00	190	0.0607810	0.0462261			
Aroclor-1254 (2) [2C]	A	250.00	202	0.0361074	0.0292552			
Aroclor-1254 (3) [2C]	A	250.00	264	0.0492663	0.0520846			
Aroclor-1254 (4) [2C]	A	250.00	188	0.1075138	0.0810468			
Aroclor-1254 (5) [2C]	A	250.00	208	0.1066699	0.0886761			
Decachlorobiphenyl	A	40.000	39.8	0.7991406	0.7944921		-0.5	+/-20
Tetrachlorometaxylene	A	40.000	36.5	1.2048230	1.0994660		-8.8	+/-20
Decachlorobiphenyl [2C]	A	40.000	39.2	1.1360140	1.1126950		-2.0	+/-20
Tetrachlorometaxylene [2C]	A	40.000	41.4	1.1005470	1.1394080		3.5	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072302ECD7.D
Data file 2: /230707.b/230707.b/07072302ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254ICV1
Client ID:
Injection Date: 07-JUL-2023 11:09
Report Date: 07/07/2023 14:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.719	0.001	347986	5.606	-0.001	177375	36.5	41.4	12.6	Tetrachloro-m-xylene
13.820	0.002	543027	14.045	-0.002	301768	39.8	39.2	1.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	633009	5.2
Hexabromobiphenyl	876625	1366979	55.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	311346	-10.9
Hexabromobiphenyl	652984	542409	-16.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1254	1	9.229	-0.001	107524	165.3	1	9.384	0.000	44976	190.1
Aroclor-1254	2	9.303	-0.003	82505	282.2	2	9.480	0.000	28464	202.6
Aroclor-1254	3	9.595	-0.002	116885	278.3	3	9.905	0.000	50676	264.3
Aroclor-1254	4	9.733	-0.003	234614	285.2	4	10.060	0.000	78855	188.5
Aroclor-1254	5	10.096	-0.006	102872	207.1	5	10.310	0.000	86278	207.8

Total Col1Ave (5 peaks): 243.6 Total Col2Ave (5 peaks): 210.7 RPD = 15

Corrected Ave (4 peaks): 233.2 Corrected Ave (4 peaks): 197.2 RPD = 17

CalAmt %D: -2.6 CalAmt %D: -15.7

Total PCB Area Col1 (5.818 - 13.719) = 2650632 Col1 Total PCB = 0.4 ppm*

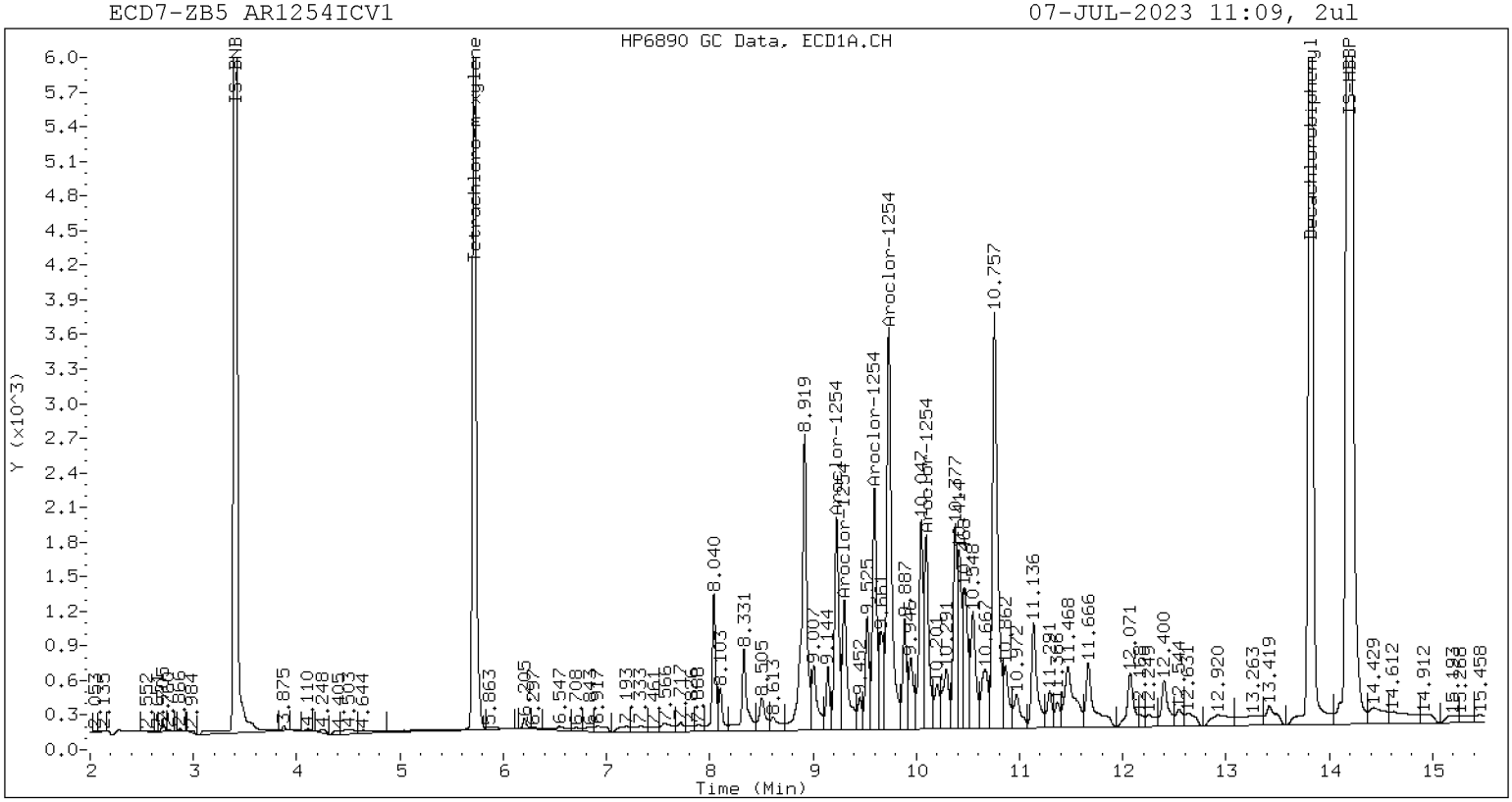
Total PCB Area Col2 (5.707 - 13.947) = 923065 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

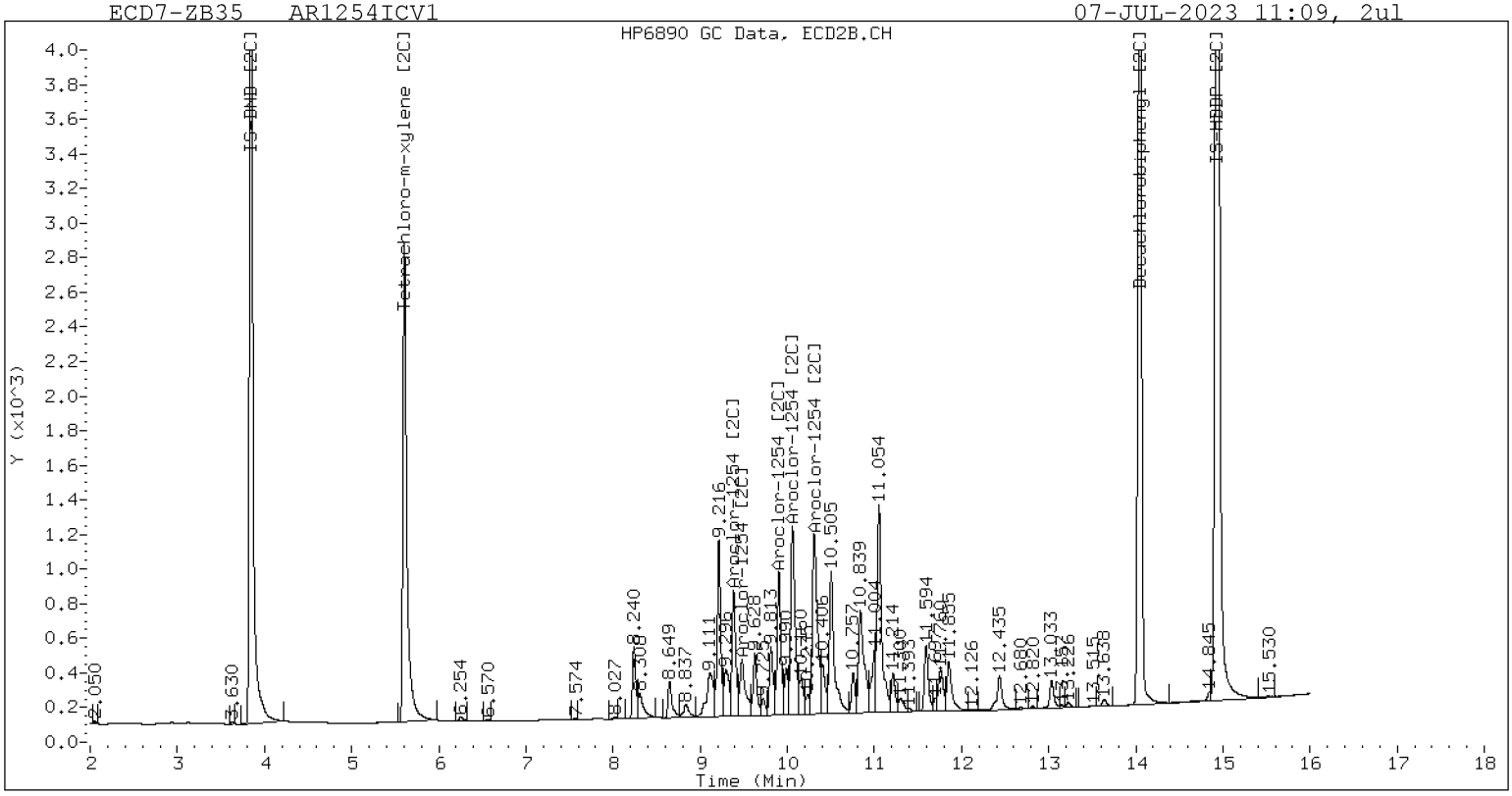
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254ICV1 07-JUL-2023 11:09, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254ICV1 07-JUL-2023 11:09, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	07072303ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLG0066	Injection Date:	07/07/23
Lab Sample ID:	SLG0066-ICV2	Injection Time:	11:30
Sequence Name:	AR1660ICV2		

		CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1016	A	250.00	245	0.0477728	0.0467011		-1.9	+/-20
Aroclor-1016 (1)	A	250.00	241	0.0309764	0.0298874		-3.6	
Aroclor-1016 (2)	A	250.00	245	0.0968611	0.0948987		-2.0	
Aroclor-1016 (3)	A	250.00	242	0.0447793	0.0433382		-3.2	
Aroclor-1016 (4)	A	250.00	253	0.0184745	0.0186799		1.2	
Aroclor 1016 [2C]	A	250.00	242	0.0545435	0.0524628		-3.3	+/-20
Aroclor-1016 (1) [2C]	A	250.00	219	0.0452861	0.0397352		-12.4	
Aroclor-1016 (2) [2C]	A	250.00	240	0.0965080	0.0924976		-4.0	
Aroclor-1016 (3) [2C]	A	250.00	258	0.0425661	0.0438465		3.2	
Aroclor-1016 (4) [2C]	A	250.00	250	0.0338137	0.0337718		0.0	
Aroclor 1260	A	250.00	238	0.0524306	0.0501181		-4.7	+/-20
Aroclor-1260 (1)	A	250.00	224	0.0423031	0.0379375		-10.4	
Aroclor-1260 (2)	A	250.00	230	0.0417493	0.0384274		-8.0	
Aroclor-1260 (3)	A	250.00	243	0.1045597	0.1014993		-2.8	
Aroclor-1260 (4)	A	250.00	247	0.0512104	0.0506949		-1.2	
Aroclor-1260 (5)	A	250.00	247	0.0223305	0.0220313		-1.2	
Aroclor 1260 [2C]	A	250.00	247	0.0638471	0.0640825		-1.4	+/-20
Aroclor-1260 (1) [2C]	A	250.00	232	0.0424868	0.0395048		-7.2	
Aroclor-1260 (2) [2C]	A	250.00	256	0.1111292	0.1138730		2.4	
Aroclor-1260 (3) [2C]	A	250.00	241	0.0275392	0.0265607		-3.6	
Aroclor-1260 (4) [2C]	A	250.00	257	0.0742331	0.0763912		2.8	
Decachlorobiphenyl	A	40.000	39.9	0.7991406	0.7971536		-0.3	+/-20
Tetrachlorometaxylene	A	40.000	36.5	1.2048230	1.0999230		-8.8	+/-20
Decachlorobiphenyl [2C]	A	40.000	41.0	1.1360140	1.1640830		2.5	+/-20
Tetrachlorometaxylene [2C]	A	40.000	40.3	1.1005470	1.1083830		0.8	+/-20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072303ECD7.D
Data file 2: /230707.b/230707.b/07072303ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660ICV2
Client ID:
Injection Date: 07-JUL-2023 11:30
Report Date: 07/07/2023 14:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.718	0.000	336319	5.607	0.000	178755	36.5	40.3	9.8	Tetrachloro-m-xylene
13.819	0.000	475933	14.047	0.000	334763	39.9	41.0	2.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	611532	1.7
Hexabromobiphenyl	876625	1194081	36.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	322551	-7.7
Hexabromobiphenyl	652984	575153	-11.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col					ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.191	0.000	57116	241.2	1	7.185	0.000	40052	219.4
Aroclor-1016	2	7.575	0.000	181355	244.9	2	7.802	0.000	93235	239.6
Aroclor-1016	3	7.714	0.000	82821	242.0	3	8.003	0.000	44196	257.5
Aroclor-1016	4	8.378	0.000	35698	252.8	4	8.243	0.000	34041	249.7
Total Col1Ave (4 peaks):					245.2	Total Col2Ave (4 peaks):				241.5 RPD = 2
Corrected Ave (3 peaks):					242.7	Corrected Ave (3 peaks):				236.2 RPD = 3
CalAmt %D:					-1.9	CalAmt %D:				-3.4
Aroclor-1260	1	10.972	0.000	141564	224.2	1	11.585	0.000	71004	232.5
Aroclor-1260	2	11.290	0.000	143392	230.1	2	11.853	0.000	204670	256.2
Aroclor-1260	3	11.665	0.000	378745	242.7	3	12.368	0.000	47739	241.1
Aroclor-1260	4	12.069	0.000	189168	247.5	4	12.437	0.000	137302	257.3
Aroclor-1260	5	12.172	0.000	82210	246.7	NS	---			----
Total Col1Ave (5 peaks):					238.2	Total Col2Ave (4 peaks):				246.8 RPD = 4
Corrected Ave (4 peaks):					235.9	Corrected Ave (3 peaks):				243.2 RPD = 3
CalAmt %D:					-4.7	CalAmt %D:				-1.3

Total PCB Area Col1 (5.818 - 13.719) = 3891044 Col1 Total PCB = 0.6 ppm*

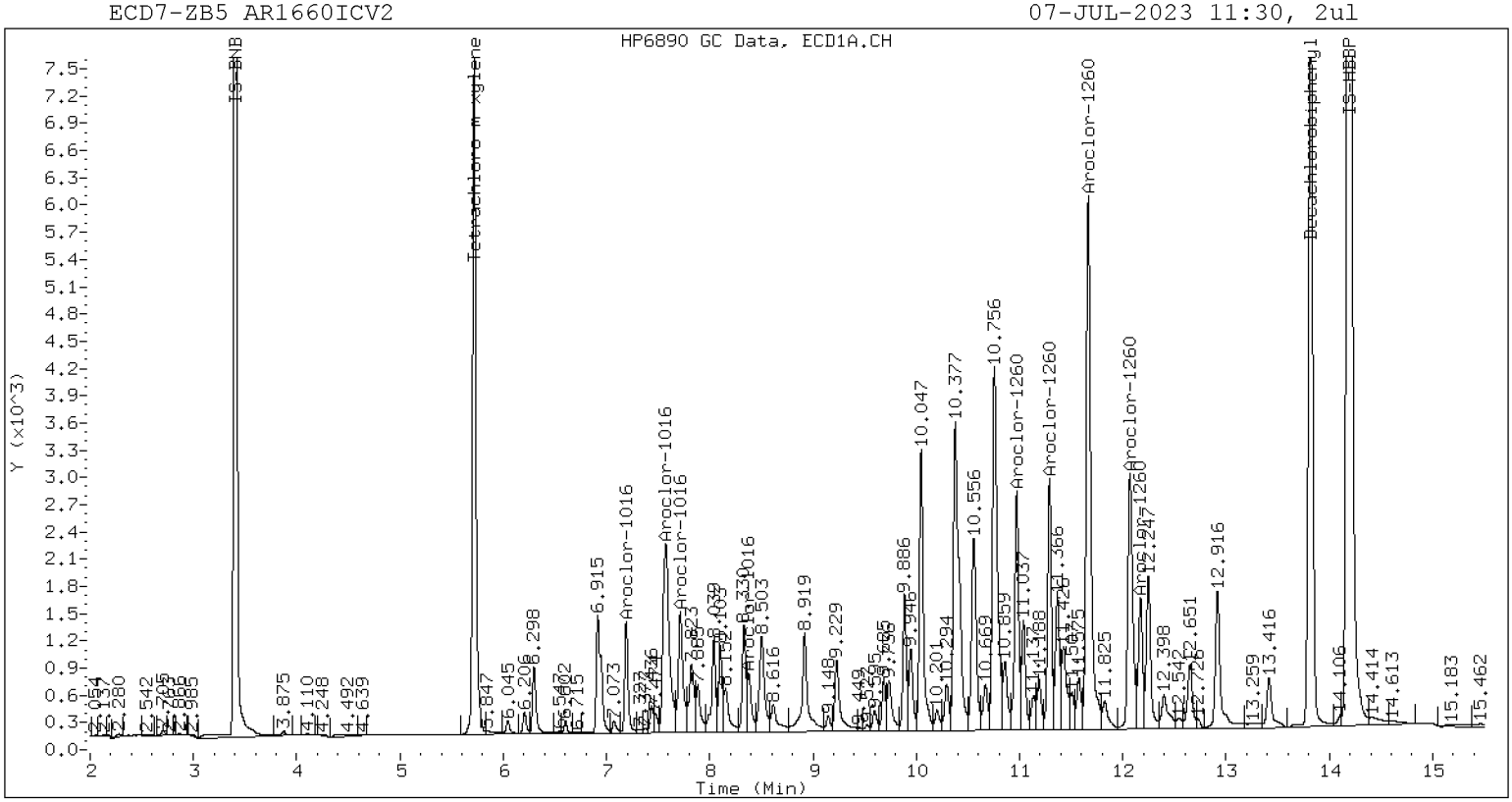
Total PCB Area Col2 (5.707 - 13.947) = 1818447 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

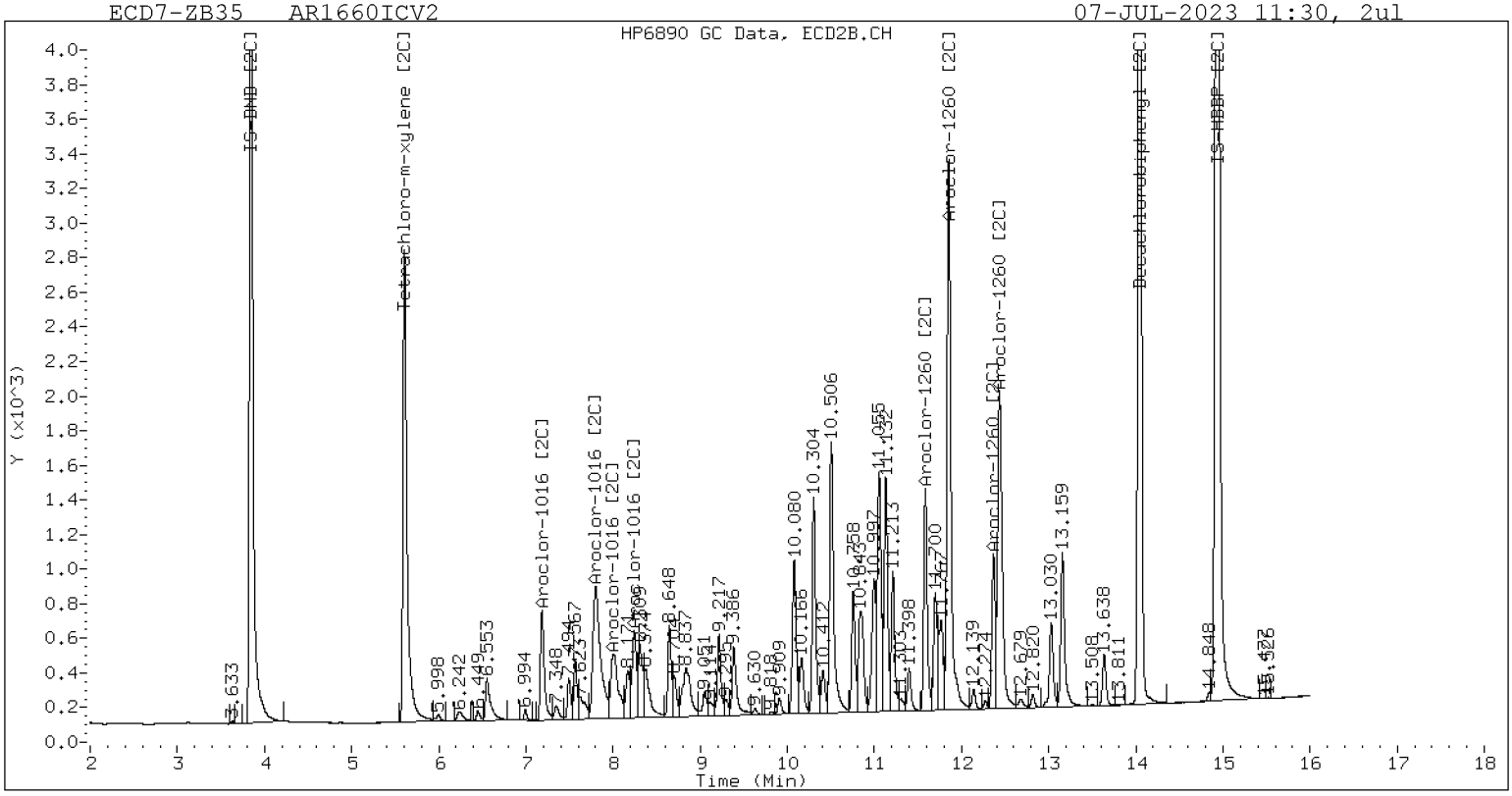
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660ICV2 07-JUL-2023 11:30, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 AR1660ICV2 07-JUL-2023 11:30, 2ul

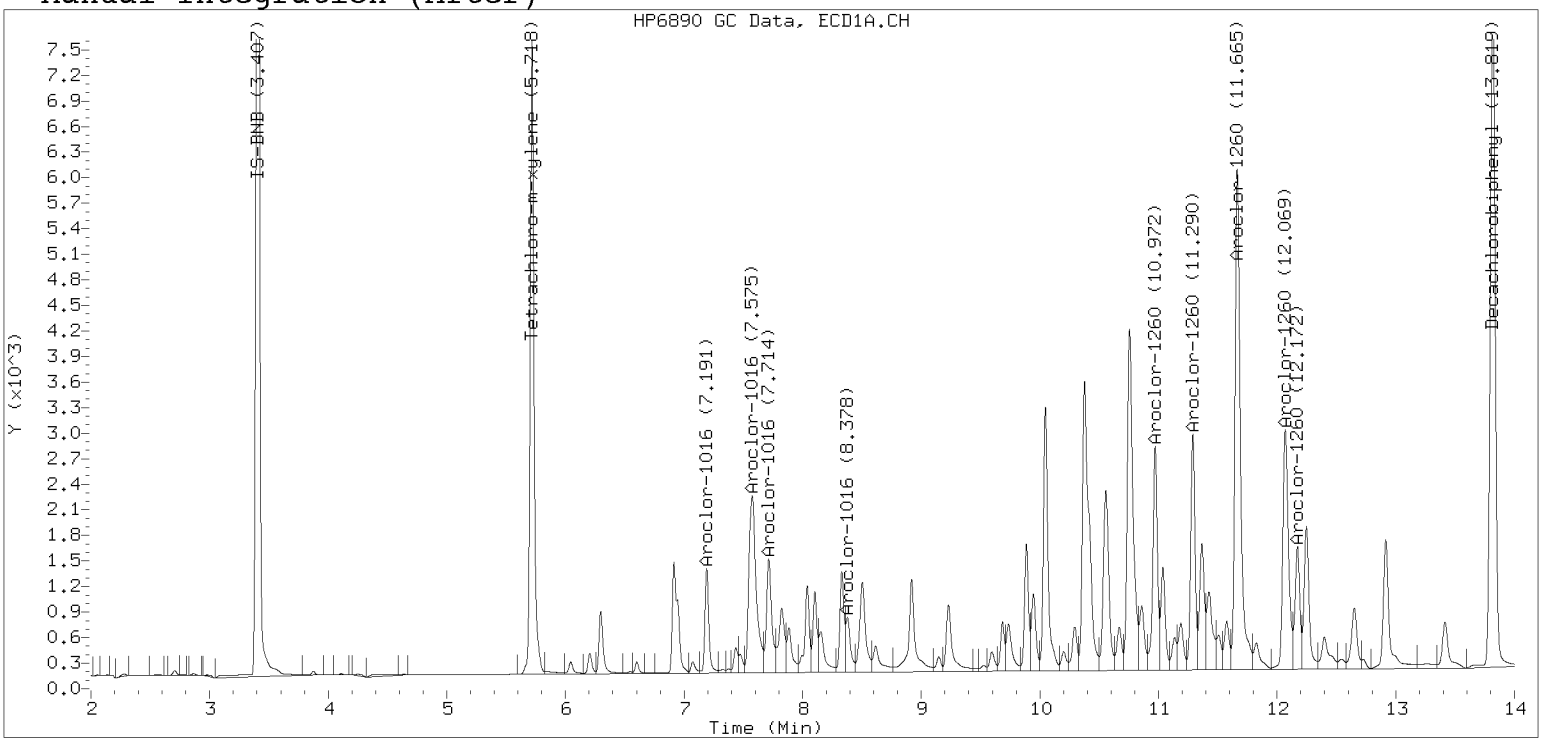


ZB-35 Manual Integration: NO

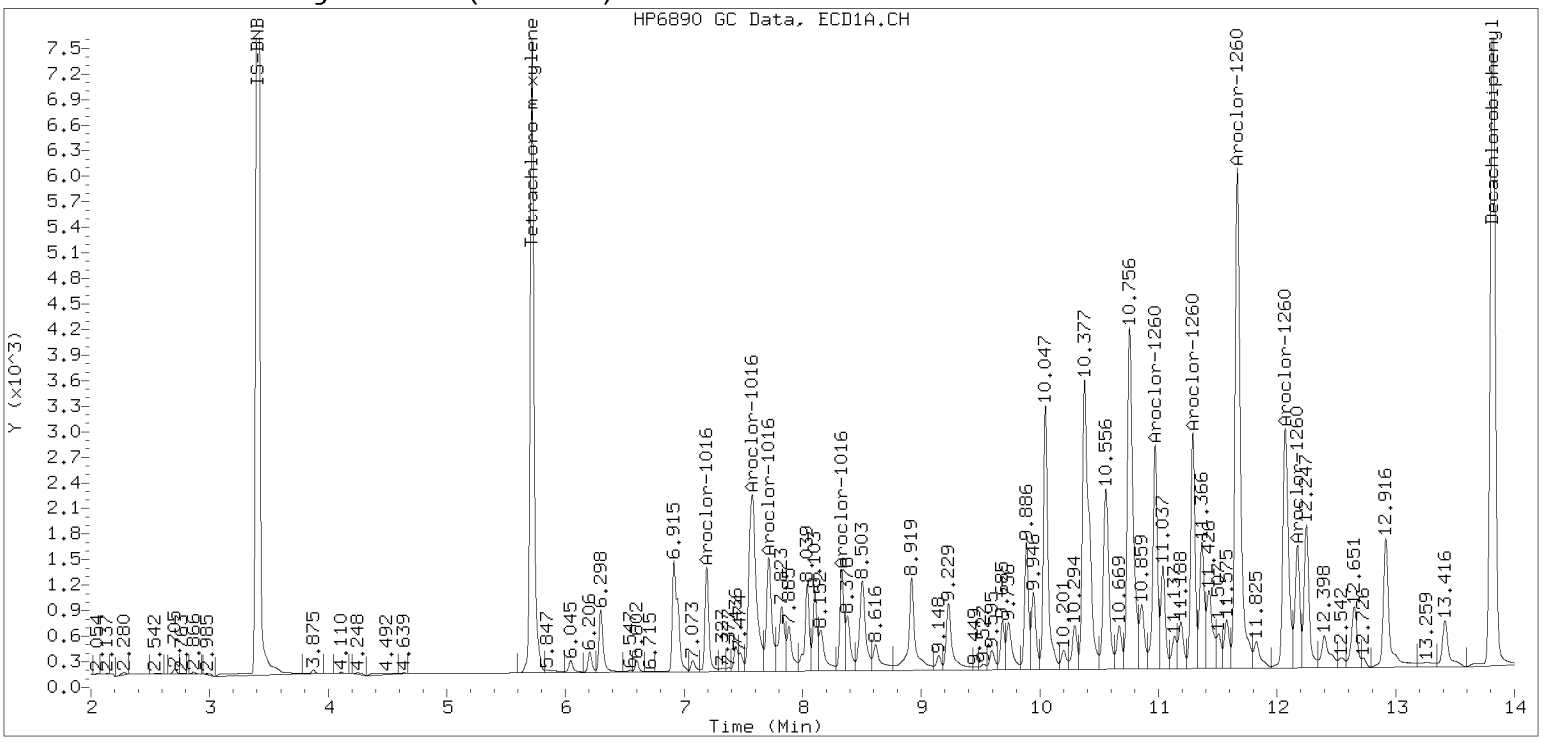
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/230707.b/07072303ECD7.D Injection Date: 07-JUL-2023 11:30

Manual Integration (After)



Processed Integration (Before)



Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	05052332ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLE0079	Injection Date:	05/06/23
Lab Sample ID:	SLE0079-SCV1	Injection Time:	03:16
Sequence Name:	AR1660SCV1		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	254	0.0477728	0.0484819		1.4	+/-20
Aroclor 1016 [2C]	A	250.00	248	0.0545435	0.0542791		-1.0	+/-20
Aroclor 1260	A	250.00	285	0.0524306	0.0598047		14.2	+/-20
Aroclor 1260 [2C]	A	250.00	284	0.0638471	0.0723577		13.6	+/-20
Decachlorobiphenyl	A	40.000	36.9	0.7991406	0.7376338		-7.7	+/-20
Tetrachlorometaxylene	A	40.000	36.9	1.2048230	1.1103970		-7.8	+/-20
Decachlorobiphenyl [2C]	A	40.000	39.2	1.1360140	1.1141950		-1.9	+/-20
Tetrachlorometaxylene [2C]	A	40.000	37.2	1.1005470	1.0247960		-6.9	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052332ECD7.D
Data file 2: /230505.b/230505.b/05052332ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660SCV
Client ID:
Injection Date: 06-MAY-2023 03:16
Report Date: 05/06/2023 12:06
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	-0.000	356595	5.629	0.000	185340	36.9	37.2	1.0	Tetrachloro-m-xylene
13.842	0.002	347188	14.070	0.002	384711	36.9	39.2	6.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	642284	6.8
Hexabromobiphenyl	876625	941356	7.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	361711	3.6
Hexabromobiphenyl	652984	690563	5.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.213	0.000	61654	247.9	1	7.205	0.001	50106	244.7
Aroclor-1016	2	7.594	-0.001	199228	256.2	2	7.811	0.003	109839	251.7
Aroclor-1016	3	7.734	0.001	89643	249.3	3	8.009	0.004	48594	252.5
Aroclor-1016	4	8.399	0.001	38714	261.0	4	8.260	0.001	36878	241.2
Total Col1Ave (4 peaks):					253.6	Total Col2Ave (4 peaks):				247.5 RPD = 2
Corrected Ave (3 peaks):					251.1	Corrected Ave (3 peaks):				245.9 RPD = 2
Aroclor-1221	1	4.663	-0.000	436	9.7	1	---			0.0
Aroclor-1221	2	6.068	-0.001	8521	94.0	2	6.251	0.005	5766	104.3
Aroclor-1221	3	6.320	-0.001	41973	195.0	3	6.572	0.000	23212	266.9
Total Col1Ave (3 peaks):					99.6	Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.663	-0.000	436	14.5	1	---			0.0
Aroclor-1232	2	6.068	-0.002	8521	136.1	2	7.205	0.000	50106	623.9
Aroclor-1232	3	7.594	-0.001	199228	667.9	3	7.811	-0.004	109839	680.8
Aroclor-1232	4	8.526	-0.001	85985	673.5	4	8.667	-0.003	34670	742.1
Total Col1Ave (4 peaks):					373.0	Total Col2Ave (3 peaks):				682.3 RPD = 59*
Corrected Ave (3 peaks):					272.8	Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.213	0.001	61654	304.6	1	7.205	0.001	50106	310.0
Aroclor-1242	2	7.594	-0.001	199228	310.7	2	7.811	-0.002	109839	319.4
Aroclor-1242	3	8.399	0.000	38714	312.1	3	9.069	-0.054	21513	195.1
Aroclor-1242	4	8.526	0.001	85985	299.5	4	9.537	-0.013	1824	13.7
Total Col1Ave (4 peaks):					306.7	Total Col2Ave (4 peaks):				209.6 RPD = 38
Corrected Ave (3 peaks):					304.9	Corrected Ave (3 peaks):				172.9 RPD = 55*
Aroclor-1248	1	8.399	-0.000	38714	236.2	1	8.260	0.000	36878	214.3
Aroclor-1248	2	8.526	0.001	85985	201.8	2	8.667	-0.001	34670	190.7
Aroclor-1248	3	8.941	-0.003	81615	99.6	3	9.069	-0.051	21513	101.0
Aroclor-1248	4	9.249	0.006	52526	125.8	4	9.537	-0.008	1824	7.1
Total Col1Ave (4 peaks):					165.8	Total Col2Ave (4 peaks):				128.3 RPD = 26
Corrected Ave (3 peaks):					142.4	Corrected Ave (3 peaks):				99.6 RPD = 35
Aroclor-1254	1	9.249	0.003	52526	79.6	1	9.405	0.001	24726	90.0
Aroclor-1254	2	---			0.0	2	9.537	0.038	1824	11.2
Aroclor-1254	3	9.619	0.001	7081	16.6	3	9.926	0.002	3128	14.0
Aroclor-1254	4	9.756	0.001	21856	26.2	4	10.101	0.023	62581	128.7
Aroclor-1254	5	10.069	-0.057	159796	317.0	5	10.324	-0.004	85433	177.1
Total Col1Ave (4 peaks):					109.8	Total Col2Ave (5 peaks):				84.2 RPD = 26
Corrected Ave (3 peaks):					40.8	Corrected Ave (4 peaks):				61.0 RPD = 40
Aroclor-1260	1	10.995	0.001	145767	292.8	1	11.605	-0.000	99761	272.0
Aroclor-1260	2	11.311	0.001	142028	289.1	2	11.872	0.000	273505	285.1
Aroclor-1260	3	11.686	0.000	354468	288.1	3	12.389	0.001	70545	296.8
Aroclor-1260	4	12.092	0.002	161281	267.6	4	12.455	-0.000	180783	282.1
Aroclor-1260	5	12.194	0.001	76105	289.6	NS	---			----
Total Col1Ave (5 peaks):					285.5	Total Col2Ave (4 peaks):				284.0 RPD = 1
Corrected Ave (4 peaks):					283.6	Corrected Ave (3 peaks):				279.8 RPD = 1
Aroclor-1262	1	10.777	-0.001	215850	506.9	1	11.153	-0.001	104059	186.0
Aroclor-1262	2	12.194	-0.000	76105	127.1	2	11.605	0.001	99761	211.4
Aroclor-1262	3	12.271	0.001	94628	147.0	3	12.389	0.003	70545	136.8
Aroclor-1262	4	12.939	-0.000	78852	150.3	4	12.455	-0.001	180783	215.1
Total Col1Ave (4 peaks):					232.8	Total Col2Ave (4 peaks):				187.3 RPD = 22
Corrected Ave (3 peaks):					141.5	Corrected Ave (3 peaks):				178.1 RPD = 23
Aroclor-1268	1	12.194	-0.001	76105	50.7	1	12.389	0.004	70545	54.0
Aroclor-1268	2	12.271	0.003	94628	63.5	2	12.455	0.003	180783	128.7
Aroclor-1268	3	12.675	0.026	38830	32.4	3	12.844	0.001	3082	2.6
Aroclor-1268	4	13.440	0.003	19986	5.8	4	13.661	-0.002	14882	3.9
Total Col1Ave (4 peaks):					38.1	Total Col2Ave (4 peaks):				47.3 RPD = 21
Corrected Ave (3 peaks):					29.6	Corrected Ave (3 peaks):				20.1 RPD = 38

Total PCB Area Col1 (5.842 - 13.740) = 3657118 Col1 Total PCB = 0.5 ppm*

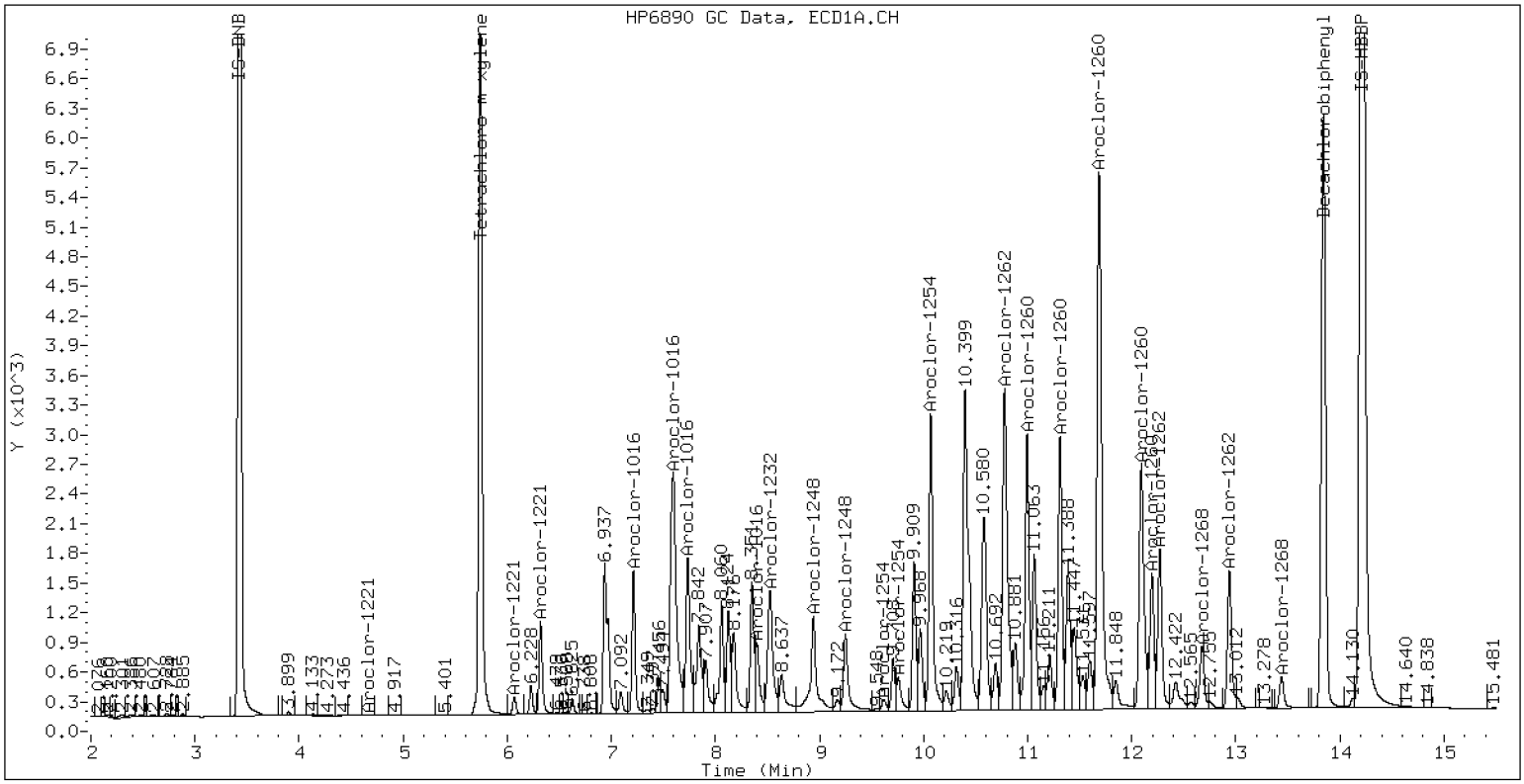
Total PCB Area Col2 (5.728 - 13.968) = 2255286 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

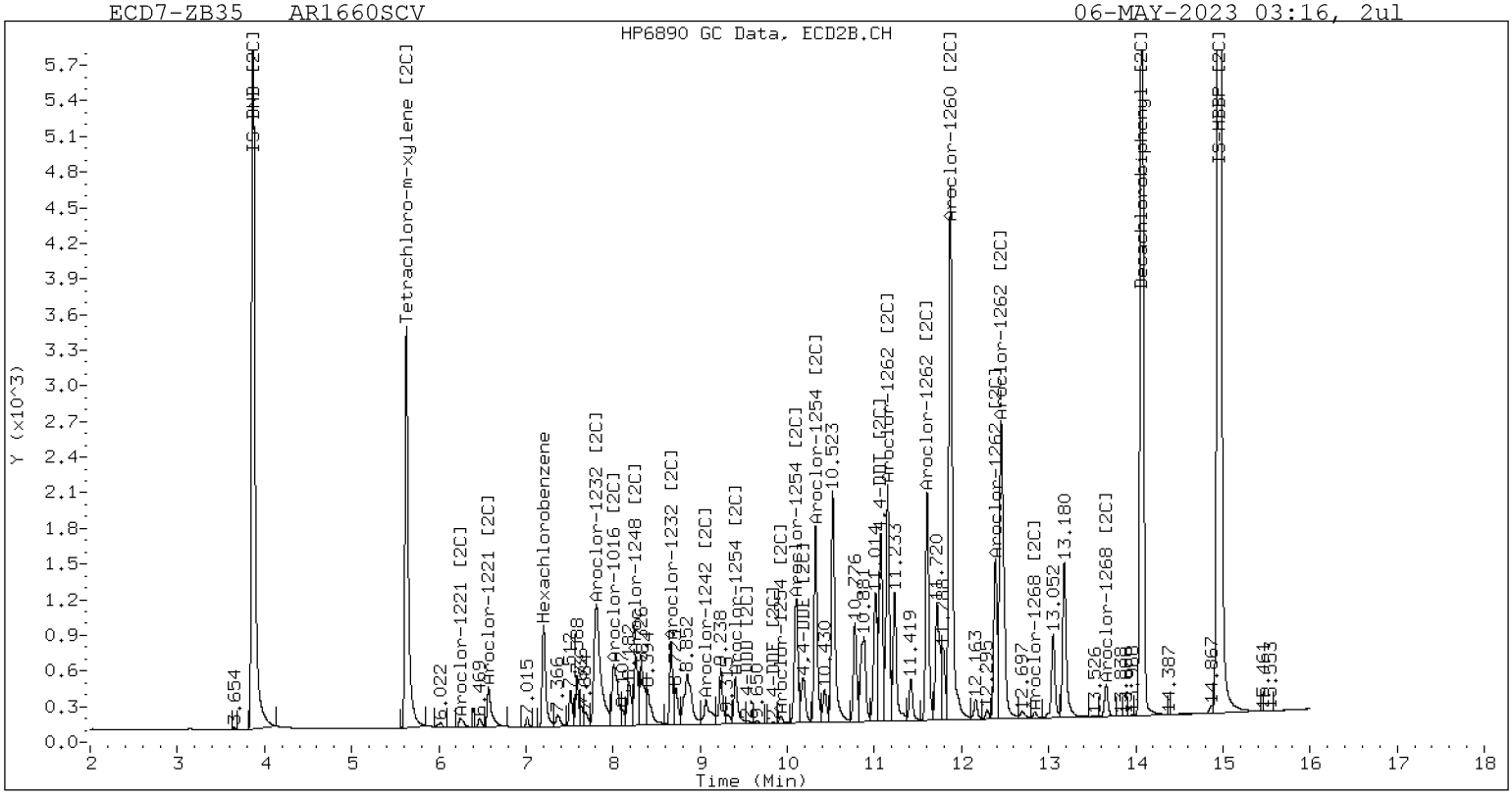
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660SCV 06-MAY-2023 03:16, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660SCV 06-MAY-2023 03:16, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	05052333ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLE0079	Injection Date:	05/06/23
Lab Sample ID:	SLE0079-SCV2	Injection Time:	03:36
Sequence Name:	AR1242SCV2		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1242	A	250.00	237	0.0390737	0.0365795		-5.1	+/-20
Aroclor 1242 [2C]	A	250.00	230	0.0413965	0.0378029		-7.9	+/-20
Decachlorobiphenyl	A	40.000	40.9	0.7991406	0.8167325		2.2	+/-20
Tetrachlorometaxylene	A	40.000	32.8	1.2048230	0.9873365		-18.1	+/-20
Decachlorobiphenyl [2C]	A	40.000	44.0	1.1360140	1.2491680		10.0	+/-20
Tetrachlorometaxylene [2C]	A	40.000	33.4	1.1005470	0.9188596		-16.5	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052333ECD7.D
Data file 2: /230505.b/230505.b/05052333ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242SCV
Client ID:
Injection Date: 06-MAY-2023 03:36
Report Date: 05/06/2023 12:06
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.744	0.002	319899	5.630	0.002	167866	32.8	33.4	1.9	Tetrachloro-m-xylene
13.842	0.002	398699	14.069	0.001	434332	40.9	44.0	7.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	648004	7.7
Hexabromobiphenyl	876625	976327	11.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	365379	4.6
Hexabromobiphenyl	652984	695394	6.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.213	0.001	47446	189.1	1	7.205	0.001	36469	176.3
Aroclor-1016	2	7.594	-0.000	147684	188.2	2	7.814	0.007	77885	176.7
Aroclor-1016	3	7.735	0.002	67175	185.2	3	8.012	0.006	38400	197.5
Aroclor-1016	4	8.398	0.000	30565	204.3	4	8.261	0.002	27551	178.4
Total Col1Ave (4 peaks):		191.7				Total Col2Ave (4 peaks):		182.2	RPD = 5	
Corrected Ave (3 peaks):		187.5				Corrected Ave (3 peaks):		177.1	RPD = 6	
Aroclor-1221	1	4.666	0.002	870	19.1	1	---			0.0
Aroclor-1221	2	6.069	0.000	7118	77.8	2	6.257	0.011	4359	78.0
Aroclor-1221	3	6.322	0.001	32969	151.8	3	6.573	0.001	16609	189.0
Total Col1Ave (3 peaks):		82.9				Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.666	0.002	870	28.7	1	---			0.0
Aroclor-1232	2	6.069	0.000	7118	112.7	2	7.205	-0.000	36469	449.5
Aroclor-1232	3	7.594	-0.001	147684	490.8	3	7.814	-0.001	77885	477.9
Aroclor-1232	4	8.526	-0.000	70601	548.1	4	8.668	-0.001	25417	538.5
Total Col1Ave (4 peaks):		295.1				Total Col2Ave (3 peaks):		488.7	RPD = 49*	
Corrected Ave (3 peaks):		210.7				Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.213	0.001	47446	232.4	1	7.205	0.001	36469	223.3
Aroclor-1242	2	7.594	-0.000	147684	228.2	2	7.814	0.002	77885	224.2
Aroclor-1242	3	8.398	0.000	30565	244.2	3	9.124	0.001	25864	232.2
Aroclor-1242	4	8.526	0.002	70601	243.8	4	9.552	0.001	32437	241.7
Total Col1Ave (4 peaks):		237.2				Total Col2Ave (4 peaks):		230.4	RPD = 3	
Corrected Ave (3 peaks):		234.8				Corrected Ave (3 peaks):		226.6	RPD = 4	
Aroclor-1248	1	8.398	-0.001	30565	184.8	1	8.261	0.001	27551	158.5
Aroclor-1248	2	8.526	0.002	70601	164.3	2	8.668	0.001	25417	138.4
Aroclor-1248	3	8.946	0.002	172847	209.1	3	9.124	0.004	25864	120.2
Aroclor-1248	4	9.243	-0.001	87363	207.3	4	9.552	0.006	32437	125.7
Total Col1Ave (4 peaks):		191.4				Total Col2Ave (4 peaks):		135.7	RPD = 34	
Corrected Ave (3 peaks):		185.5				Corrected Ave (3 peaks):		128.1	RPD = 37	
Aroclor-1254	1	9.243	-0.004	87363	131.2	1	9.406	0.002	13247	47.7
Aroclor-1254	2	9.326	0.001	28949	96.7	2	9.552	0.053	32437	196.7
Aroclor-1254	3	9.622	0.004	20780	48.3	3	9.927	0.003	10002	44.5
Aroclor-1254	4	9.762	0.006	35470	42.1	4	10.082	0.005	19933	40.6
Aroclor-1254	5	10.140	0.015	28075	55.2	5	10.341	0.013	19432	39.9
Total Col1Ave (5 peaks):		74.7				Total Col2Ave (5 peaks):		73.9	RPD = 1	
Corrected Ave (4 peaks):		60.6				Corrected Ave (4 peaks):		43.2	RPD = 34	
Aroclor-1260	1	10.998	0.005	3609	7.0	1	11.618	0.012	2137	5.8
Aroclor-1260	2	11.317	0.007	3837	7.5	2	11.879	0.007	1437	1.5
Aroclor-1260	3	11.765	0.080	33905	26.6	3	12.382	-0.006	12460	52.1
Aroclor-1260	4	12.097	0.007	9099	14.6	4	---			0.0
Aroclor-1260	5	12.272	0.079	2060	7.6	NS	---			----
Total Col1Ave (5 peaks):		12.6				Total Col2Ave (3 peaks):		19.8	RPD = 44*	
Corrected Ave (4 peaks):		9.2				Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.787	0.009	24040	54.4	1	11.078	-0.075	7864	14.0
Aroclor-1262	2	12.272	0.077	2060	3.3	2	11.618	0.013	2137	4.5
Aroclor-1262	3	---			0.0	3	12.382	-0.004	12460	24.0
Aroclor-1262	4	12.937	-0.002	16041	29.5	4	---			0.0
Total Col1Ave (3 peaks):		29.1				Total Col2Ave (3 peaks):		14.1	RPD = 69*	
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1268	1	12.272	0.076	2060	1.3	1	12.382	-0.003	12460	9.5
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	12.649	0.001	4324	3.5	3	12.845	0.002	951	0.8
Aroclor-1268	4	13.442	0.005	15801	4.4	4	13.628	-0.035	6512	1.7
Total Col1Ave (3 peaks):		3.1				Total Col2Ave (3 peaks):		4.0	RPD = 25	
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				

Total PCB Area Col1 (5.842 - 13.740) = 1489022 Col1 Total PCB = 0.2 ppm*

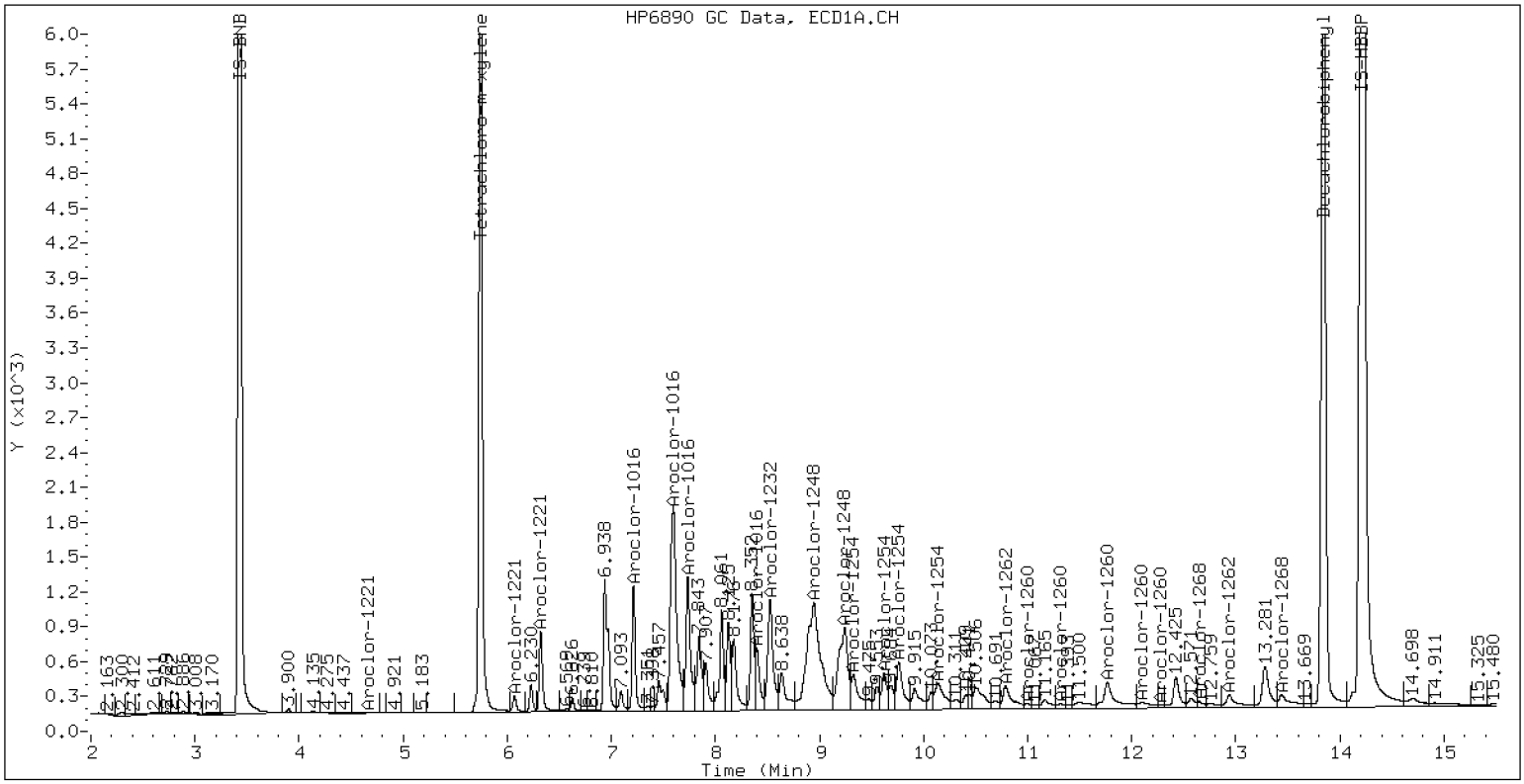
Total PCB Area Col2 (5.728 - 13.968) = 667658 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

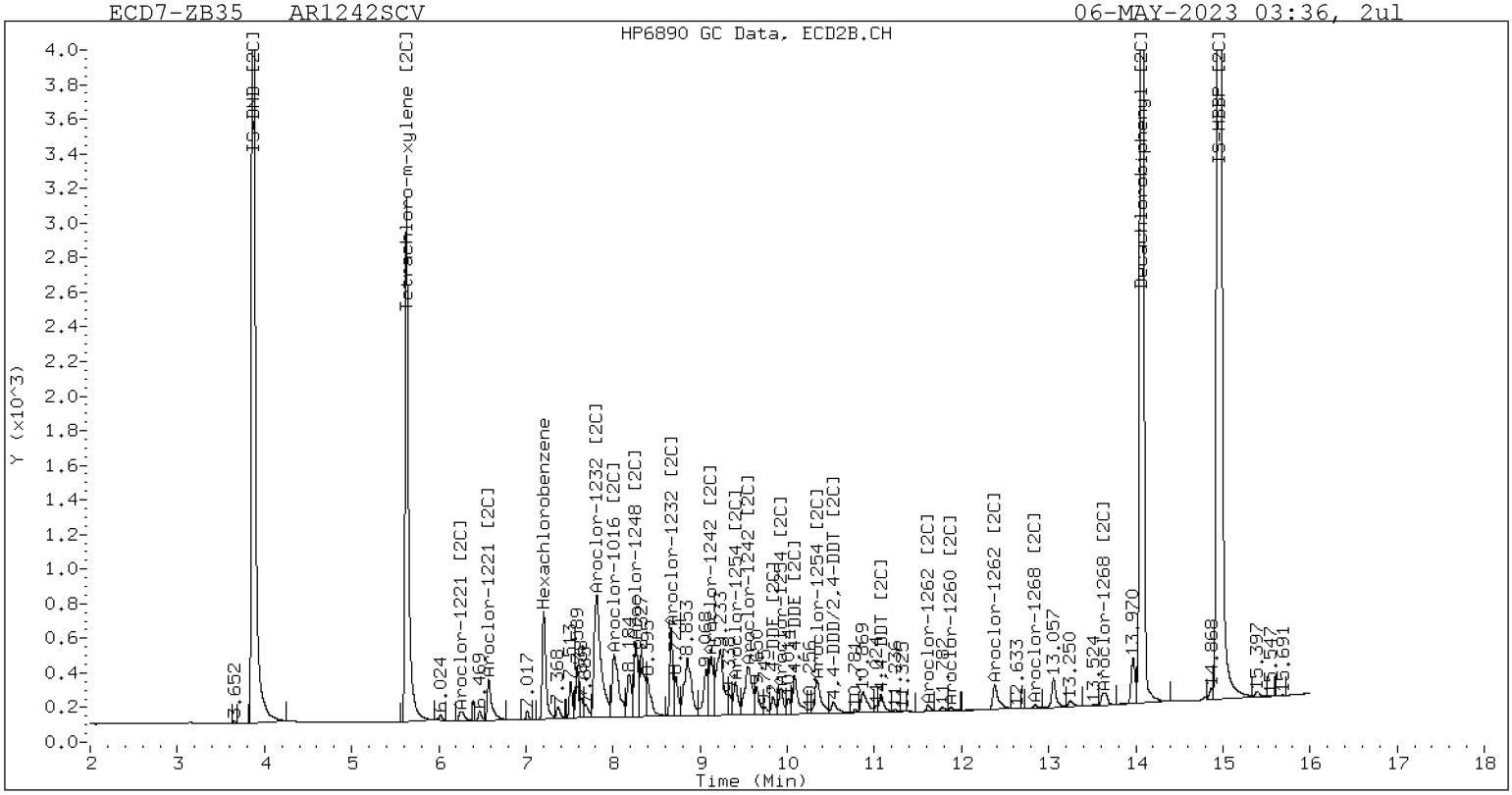
PCB Dual Column Chromatograms

ECD7-ZB5 AR1242SCV 06-MAY-2023 03:36, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242SCV 06-MAY-2023 03:36, 2ul

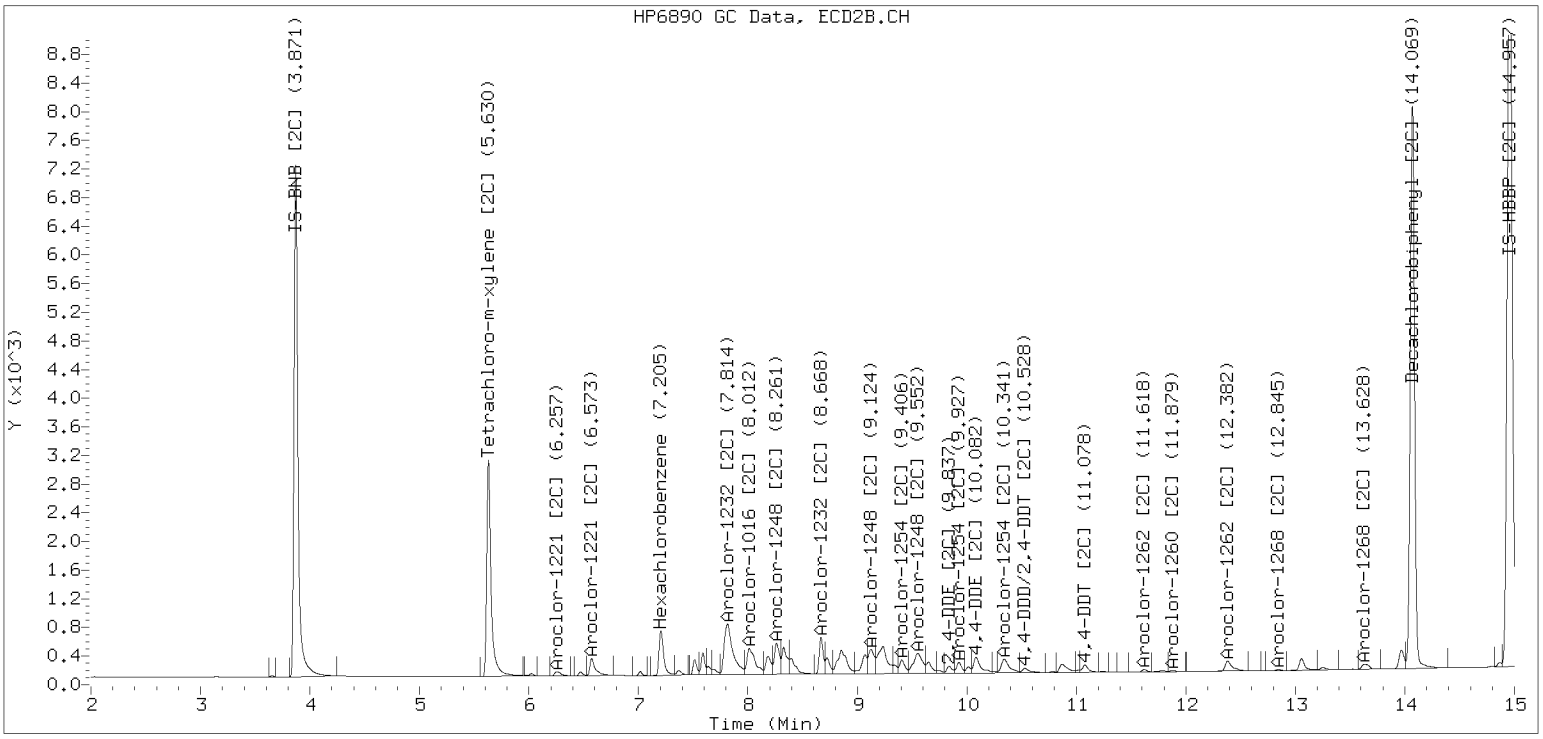


ZB-35 Manual Integration: NO

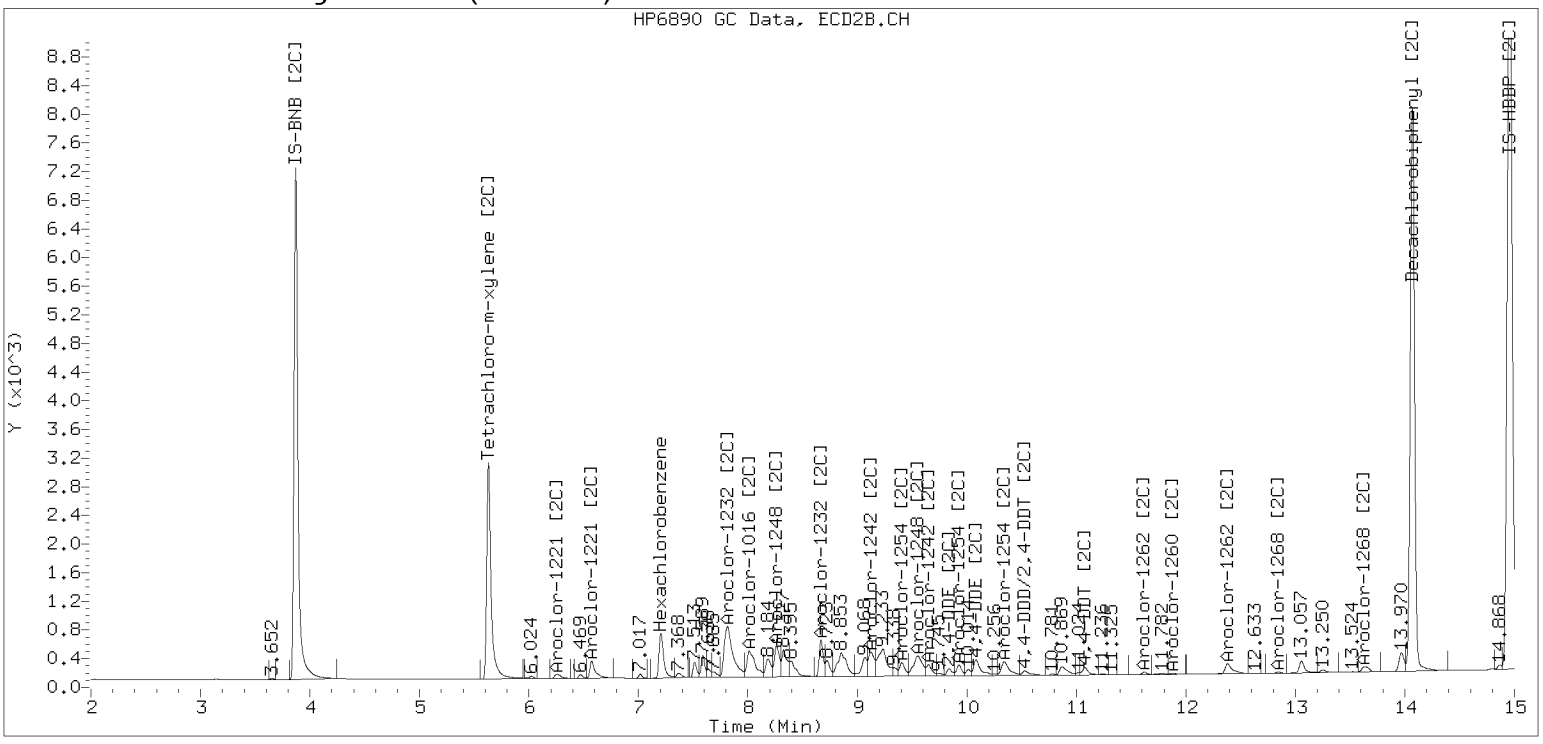
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230505.b/230505.b/05052333ECD7.D Injection Date: 06-MAY-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	05052334ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLE0079	Injection Date:	05/06/23
Lab Sample ID:	SLE0079-SCV3	Injection Time:	03:57
Sequence Name:	AR1248SCV3		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1248	A	250.00	251	0.0568879	0.0571636		0.5	+/-20
Aroclor 1248 [2C]	A	250.00	249	0.0454726	0.0453430		-0.3	+/-20
Decachlorobiphenyl	A	40.000	35.7	0.7991406	0.7130963		-10.8	+/-20
Tetrachlorometaxylene	A	40.000	36.8	1.2048230	1.1082640		-8.0	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.0	1.1360140	1.0789920		-5.0	+/-20
Tetrachlorometaxylene [2C]	A	40.000	37.7	1.1005470	1.0375410		-5.7	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052334ECD7.D
Data file 2: /230505.b/230505.b/05052334ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248SCV
Client ID:
Injection Date: 06-MAY-2023 03:57
Report Date: 05/06/2023 12:07
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.741	-0.001	356328	5.629	0.000	186552	36.8	37.7	2.5	Tetrachloro-m-xylene
13.842	0.001	339452	14.070	0.002	373861	35.7	38.0	6.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	643038	6.9
Hexabromobiphenyl	876625	952051	8.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	359604	3.0
Hexabromobiphenyl	652984	692982	6.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.212	0.000	19871	79.8	1	7.203	-0.001	18843	92.6
Aroclor-1016	2	7.589	-0.006	95111	122.2	2	7.812	0.005	52352	120.7
Aroclor-1016	3	7.736	0.003	37565	104.4	3	8.012	0.006	8263	43.2
Aroclor-1016	4	8.399	0.002	41542	279.7	4	8.260	0.001	42833	281.8
Total Col1Ave (4 peaks):					146.5	Total Col2Ave (4 peaks):				134.6 RPD = 9
Corrected Ave (3 peaks):					102.1	Corrected Ave (3 peaks):				85.5 RPD = 18
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.066	-0.003	351	3.9	2	6.275	0.029	1573	28.6
Aroclor-1221	3	6.320	-0.001	3509	16.3	3	6.576	0.004	967	11.2
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.066	-0.003	351	5.6	2	7.203	-0.001	18843	236.0
Aroclor-1232	3	7.589	-0.006	95111	318.5	3	7.812	-0.002	52352	326.4
Aroclor-1232	4	8.524	-0.002	105782	827.6	4	8.667	-0.002	44962	968.0
Total Col1Ave (3 peaks):					383.9	Total Col2Ave (3 peaks):				510.1 RPD = 28
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.212	0.000	19871	98.1	1	7.203	-0.000	18843	117.2
Aroclor-1242	2	7.589	-0.006	95111	148.1	2	7.812	-0.000	52352	153.1
Aroclor-1242	3	8.399	0.001	41542	334.5	3	9.120	-0.003	52681	480.6
Aroclor-1242	4	8.524	-0.000	105782	368.1	4	9.548	-0.002	63343	479.5
Total Col1Ave (4 peaks):					237.2	Total Col2Ave (4 peaks):				307.6 RPD = 26
Corrected Ave (3 peaks):					193.6	Corrected Ave (3 peaks):				250.0 RPD = 25
Aroclor-1248	1	8.399	0.001	41542	253.1	1	8.260	-0.001	42833	250.4
Aroclor-1248	2	8.524	-0.000	105782	248.0	2	8.667	0.000	44962	248.8
Aroclor-1248	3	8.944	-0.000	206928	252.3	3	9.120	-0.000	52681	248.7
Aroclor-1248	4	9.242	-0.001	105227	251.7	4	9.548	0.002	63343	249.4
Total Col1Ave (4 peaks):					251.3	Total Col2Ave (4 peaks):				249.3 RPD = 1
Corrected Ave (3 peaks):					250.6	Corrected Ave (3 peaks):				249.0 RPD = 1
Aroclor-1254	1	9.242	-0.004	105227	159.2	1	9.404	0.000	25835	94.6
Aroclor-1254	2	9.324	-0.001	51326	172.8	2	9.548	0.049	63343	390.3
Aroclor-1254	3	9.619	0.001	41394	97.0	3	9.925	0.001	22609	102.1
Aroclor-1254	4	9.759	0.003	72223	86.4	4	10.079	0.001	43816	90.7
Aroclor-1254	5	10.135	0.010	49936	98.9	5	10.345	0.016	42513	88.7
Total Col1Ave (5 peaks):					122.9	Total Col2Ave (5 peaks):				153.3 RPD = 22
Corrected Ave (4 peaks):					110.4	Corrected Ave (4 peaks):				94.0 RPD = 16
Aroclor-1260	1	10.998	0.005	1863	3.7	1	11.617	0.011	2599	7.1
Aroclor-1260	2	11.314	0.004	1152	2.3	2	11.877	0.005	1951	2.0
Aroclor-1260	3	11.695	0.009	1829	1.5	3	12.389	0.001	857	3.6
Aroclor-1260	4	12.097	0.007	1266	2.1	4	12.458	0.003	1302	2.0
Aroclor-1260	5	12.195	0.002	464	1.7	NS	---			----
Total Col1Ave (5 peaks):					2.3	Total Col2Ave (4 peaks):				3.7 RPD = 48*
Corrected Ave (4 peaks):					1.9	Corrected Ave (3 peaks):				2.5 RPD = 29
Aroclor-1262	1	10.784	0.005	15405	35.8	1	11.077	-0.077	9003	16.0
Aroclor-1262	2	12.195	0.000	464	0.8	2	11.617	0.012	2599	5.5
Aroclor-1262	3	12.271	0.002	489	0.8	3	12.389	0.003	857	1.7
Aroclor-1262	4	12.940	0.001	1638	3.1	4	12.458	0.002	1302	1.5
Total Col1Ave (4 peaks):					10.1	Total Col2Ave (4 peaks):				6.2 RPD = 48*
Corrected Ave (3 peaks):					1.5	Corrected Ave (3 peaks):				2.9 RPD = 61*
Aroclor-1268	1	12.195	-0.001	464	0.3	1	12.389	0.004	857	0.7
Aroclor-1268	2	12.271	0.003	489	0.3	2	12.458	0.006	1302	0.9
Aroclor-1268	3	12.649	0.001	1831	1.5	3	12.845	0.002	676	0.6
Aroclor-1268	4	13.443	0.006	5387	1.6	4	13.661	-0.003	2707	0.7
Total Col1Ave (4 peaks):					0.9	Total Col2Ave (4 peaks):				0.7 RPD = 26
Corrected Ave (3 peaks):					0.7	Corrected Ave (3 peaks):				0.6 RPD = 11

Total PCB Area Col1 (5.842 - 13.740) = 1634238 Col1 Total PCB = 0.2 ppm*

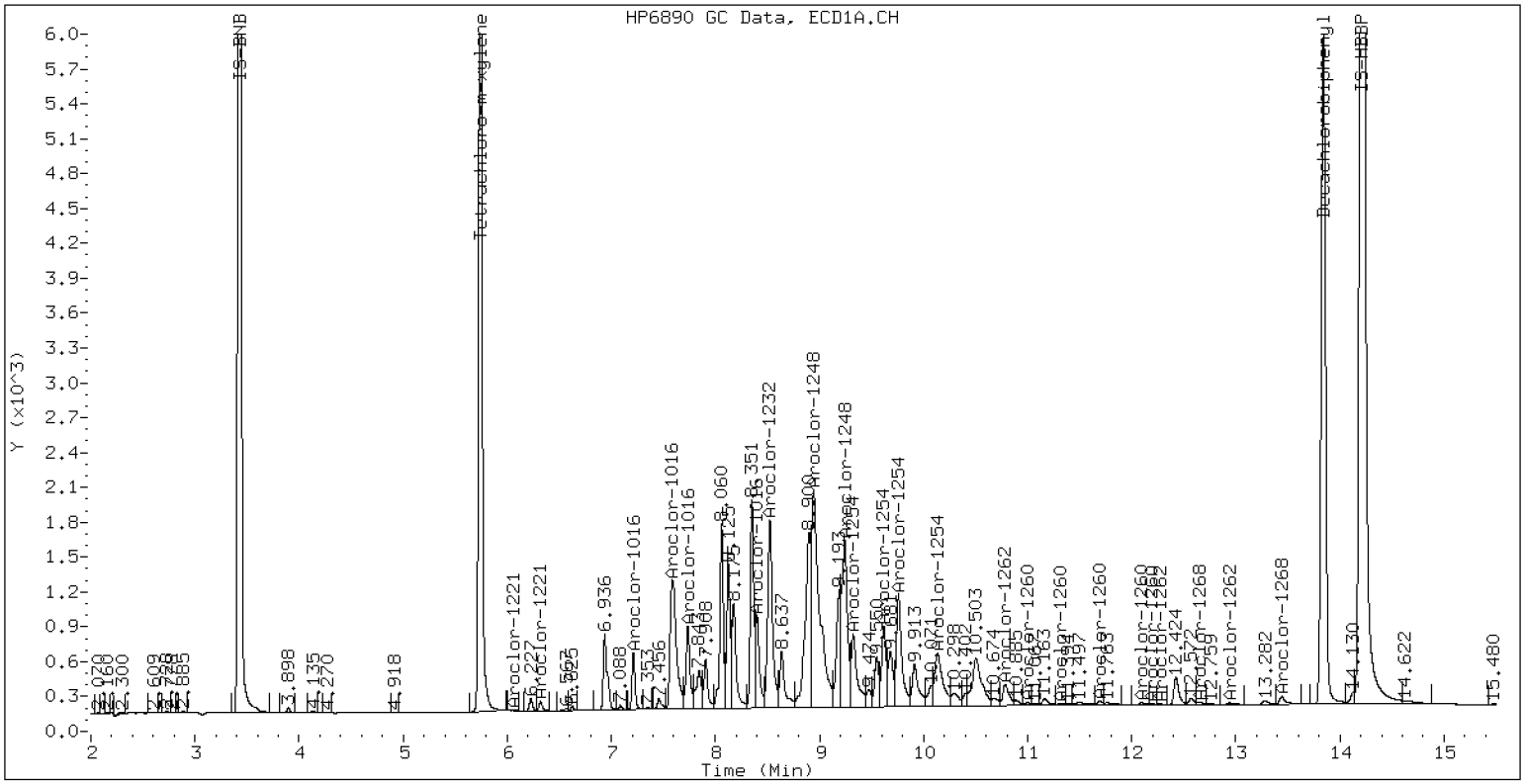
Total PCB Area Col2 (5.728 - 13.968) = 876760 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

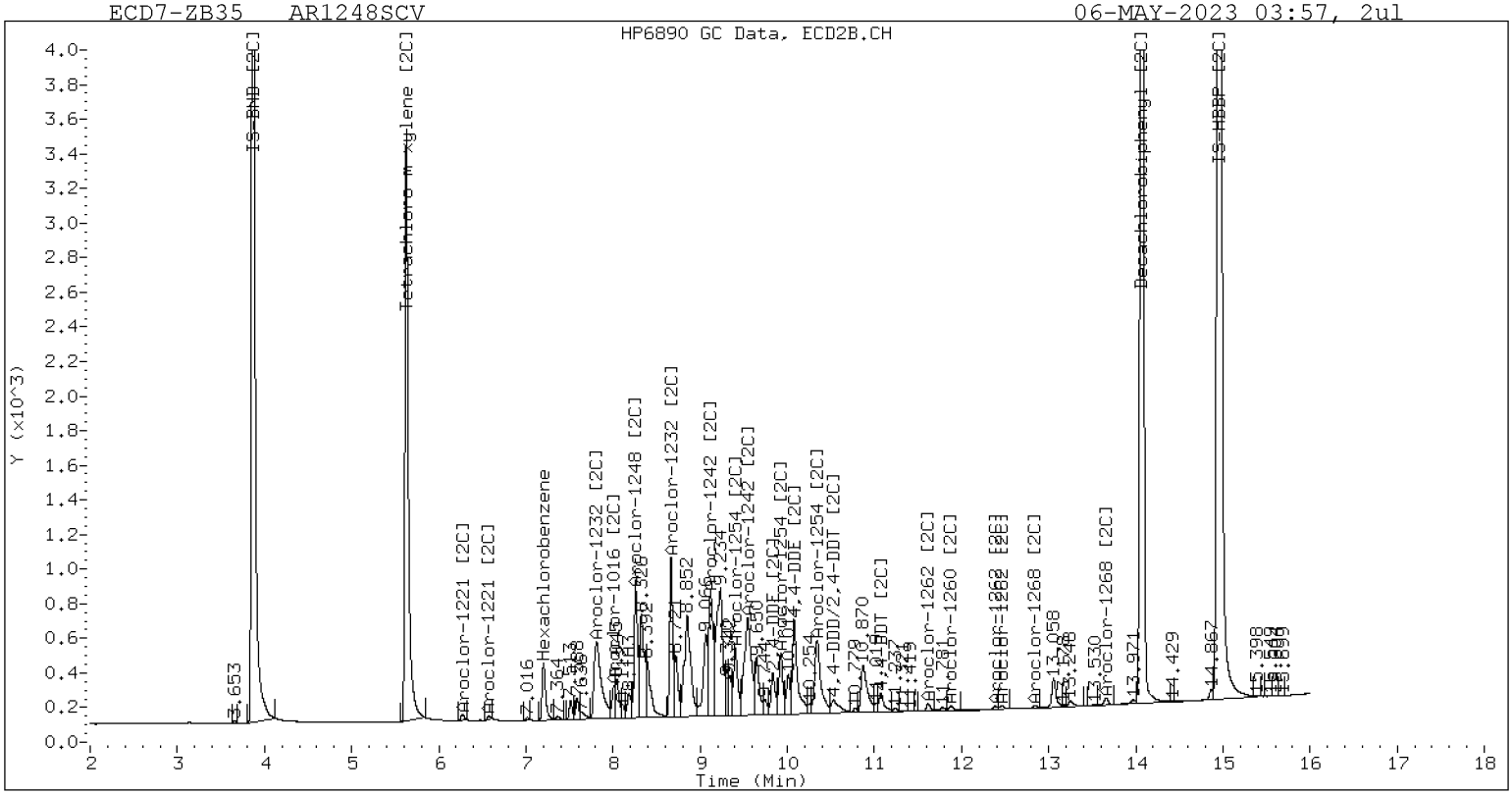
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248SCV 06-MAY-2023 03:57, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248SCV 06-MAY-2023 03:57, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	05052335ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLE0079	Injection Date:	05/06/23
Lab Sample ID:	SLE0079-SCV4	Injection Time:	04:18
Sequence Name:	AR1254SCV4		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1254	A	250.00	239	0.0678007	0.0647470		-4.3	+/-20
Aroclor 1254 [2C]	A	250.00	241	0.0720677	0.0695237		-3.8	+/-20
Decachlorobiphenyl	A	40.000	36.0	0.7991406	0.7182997		-10.1	+/-20
Tetrachlorometaxylene	A	40.000	37.6	1.2048230	1.1319680		-6.0	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.5	1.1360140	1.0928370		-3.8	+/-20
Tetrachlorometaxylene [2C]	A	40.000	38.3	1.1005470	1.0547150		-4.2	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052335ECD7.D
Data file 2: /230505.b/230505.b/05052335ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254SCV
Client ID:
Injection Date: 06-MAY-2023 04:18
Report Date: 05/06/2023 11:30
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.743	0.001	368022	5.631	0.002	192033	37.6	38.3	2.0	Tetrachloro-m-xylene
13.843	0.002	352066	14.070	0.002	385384	36.0	38.5	6.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	650234	8.1
Hexabromobiphenyl	876625	980276	11.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	364142	4.3
Hexabromobiphenyl	652984	705291	8.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.214	0.002	635	2.5	1	---			0.0
Aroclor-1016	2	7.590	-0.004	2512	3.2	2	---			0.0
Aroclor-1016	3	7.738	0.005	1594	4.4	3	---			0.0
Aroclor-1016	4	8.351	-0.047	31774	211.6	4	---			0.0
Total Col1Ave (4 peaks):					55.4	Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.052	-0.018	242	2.6	2	---			0.0
Aroclor-1221	3	6.322	0.001	427	2.0	3	---			0.0
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.052	-0.018	242	3.8	2	---			0.0
Aroclor-1232	3	7.590	-0.005	2512	8.3	3	---			0.0
Aroclor-1232	4	8.528	0.001	13950	107.9	4	---			0.0
Total Col1Ave (3 peaks):					40.0	Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	7.214	0.002	635	3.1	1	---			0.0
Aroclor-1242	2	7.590	-0.005	2512	3.9	2	---			0.0
Aroclor-1242	3	8.351	-0.047	31774	253.0	3	9.125	0.002	23963	215.9
Aroclor-1242	4	8.528	0.004	13950	48.0	4	9.649	0.099	23982	179.3
Total Col1Ave (4 peaks):					77.0	Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	8.351	-0.048	31774	191.4	1	8.260	-0.000	23490	135.6
Aroclor-1248	2	8.528	0.004	13950	32.3	2	8.669	0.002	16693	91.2
Aroclor-1248	3	8.941	-0.003	154338	186.1	3	9.125	0.005	23963	111.7
Aroclor-1248	4	9.246	0.003	158369	374.6	4	9.499	-0.047	38716	150.5
Total Col1Ave (4 peaks):					196.1	Total Col2Ave (4 peaks):			122.3	RPD = 46*
Corrected Ave (3 peaks):					136.6	Corrected Ave (3 peaks):			112.8	RPD = 19
Aroclor-1254	1	9.246	-0.001	158369	237.0	1	9.404	0.000	67493	244.0
Aroclor-1254	2	9.325	-0.000	72386	241.1	2	9.499	-0.000	38716	235.6
Aroclor-1254	3	9.617	-0.001	103602	240.1	3	9.925	0.001	53972	240.7
Aroclor-1254	4	9.756	0.000	201259	238.2	4	10.079	0.001	116950	239.0
Aroclor-1254	5	10.127	0.001	122207	239.5	5	10.327	-0.001	118439	243.9
Total Col1Ave (5 peaks):					239.2	Total Col2Ave (5 peaks):			240.6	RPD = 1
Corrected Ave (4 peaks):					238.7	Corrected Ave (4 peaks):			239.8	RPD = 0
Aroclor-1260	1	10.994	0.001	13538	26.1	1	11.615	0.009	33465	89.3
Aroclor-1260	2	11.313	0.003	13900	27.2	2	11.876	0.004	25534	26.1
Aroclor-1260	3	11.689	0.004	32548	25.4	3	12.404	0.016	1811	7.5
Aroclor-1260	4	12.093	0.003	25285	40.3	4	12.458	0.002	14842	22.7
Aroclor-1260	5	12.273	0.079	2534	9.3	NS	---			----
Total Col1Ave (5 peaks):					25.6	Total Col2Ave (4 peaks):			36.4	RPD = 35
Corrected Ave (4 peaks):					22.0	Corrected Ave (3 peaks):			18.7	RPD = 16
Aroclor-1262	1	10.779	0.000	210018	473.6	1	11.073	-0.081	114323	200.0
Aroclor-1262	2	12.273	0.078	2534	4.1	2	11.615	0.010	33465	69.4
Aroclor-1262	3	---			0.0	3	12.404	0.018	1811	3.4
Aroclor-1262	4	12.939	0.001	1830	3.3	4	12.458	0.002	14842	17.3
Total Col1Ave (3 peaks):					160.3	Total Col2Ave (4 peaks):			72.6	RPD = 75*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			30.1	
Aroclor-1268	1	12.273	0.077	2534	1.6	1	12.404	0.019	1811	1.4
Aroclor-1268	2	---			0.0	2	12.458	0.005	14842	10.3
Aroclor-1268	3	12.654	0.006	2669	2.1	3	12.847	0.004	835	0.7
Aroclor-1268	4	13.442	0.004	6266	1.8	4	13.662	-0.001	2350	0.6
Total Col1Ave (3 peaks):					1.8	Total Col2Ave (4 peaks):			3.2	RPD = 55*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			0.9	

Total PCB Area Col1 (5.842 - 13.740) = 2123119 Col1 Total PCB = 0.3 ppm*

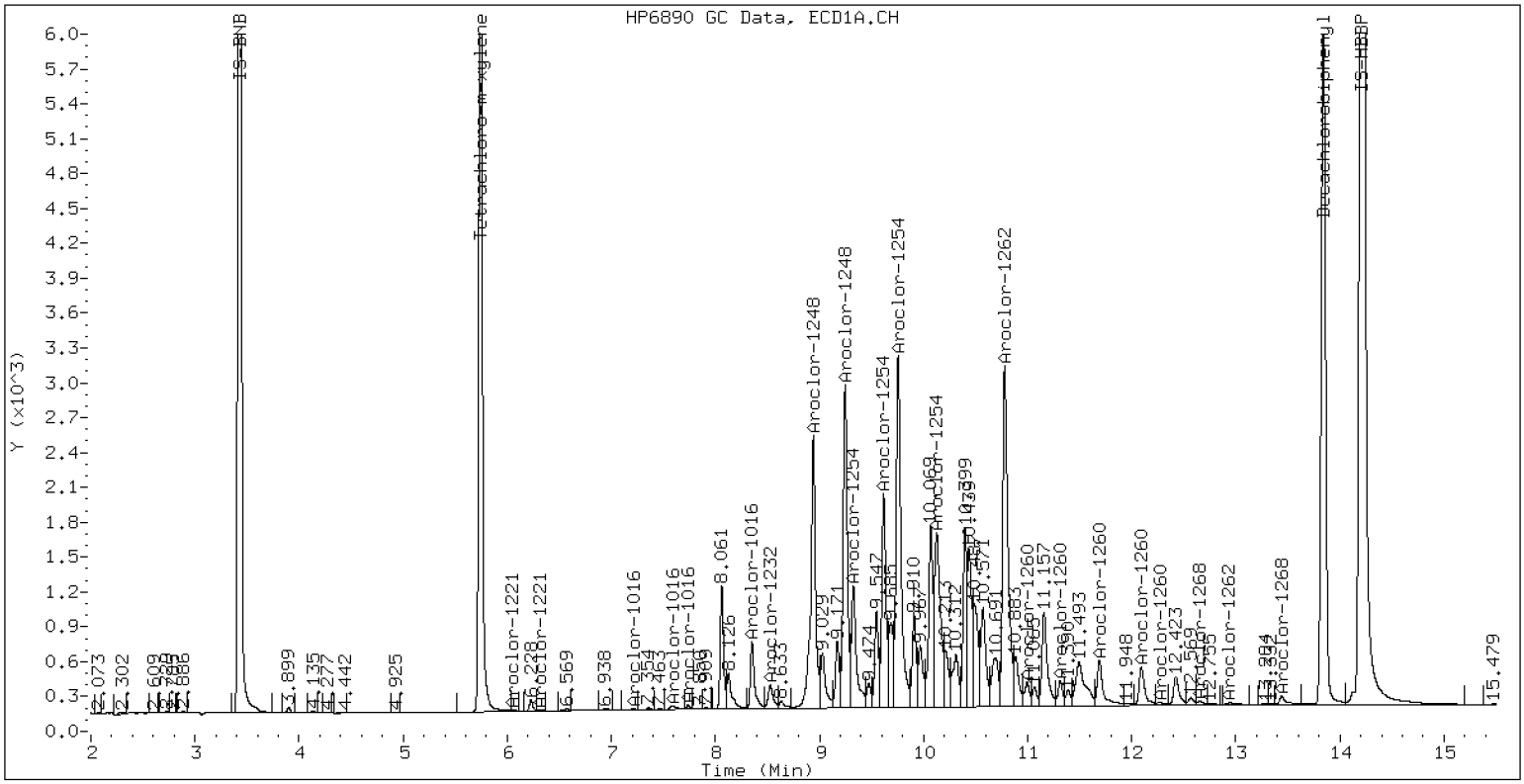
Total PCB Area Col2 (5.728 - 13.968) = 1146487 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

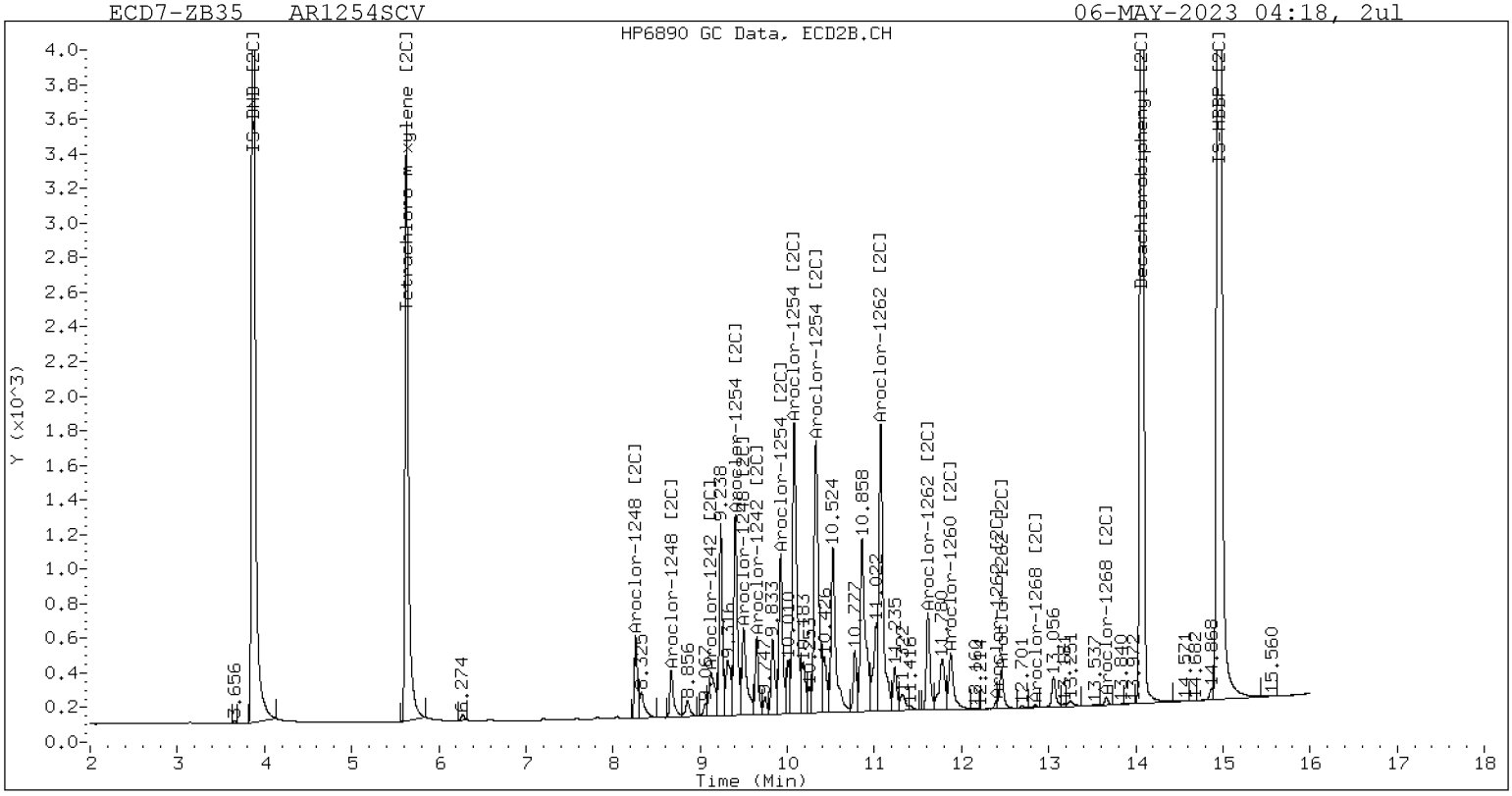
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254SCV 06-MAY-2023 04:18, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254SCV 06-MAY-2023 04:18, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	05052336ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLE0079	Injection Date:	05/06/23
Lab Sample ID:	SLE0079-SCV5	Injection Time:	04:39
Sequence Name:	AR2162SCV5		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1221	A	250.00	290	0.0145752	0.0167225		15.9	+/-20
Aroclor 1221 [2C]	A	250.00	288	0.0124557	0.0144068		15.3	+/-20
Aroclor 1262	A	250.00	265	0.0465964	0.0493619		6.1	+/-20
Aroclor 1262 [2C]	A	250.00	259	0.0691503	0.0715087		3.5	+/-20
Decachlorobiphenyl	A	40.000	37.1	0.7991406	0.7407598		-7.3	+/-20
Tetrachlorometaxylene	A	40.000	37.8	1.2048230	1.1381330		-5.5	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.8	1.1360140	1.1010220		-3.1	+/-20
Tetrachlorometaxylene [2C]	A	40.000	39.1	1.1005470	1.0746770		-2.4	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052336ECD7.D
Data file 2: /230505.b/230505.b/05052336ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162SCV
Client ID:
Injection Date: 06-MAY-2023 04:39
Report Date: 05/06/2023 11:31
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.742	0.000	358254	5.628	-0.000	183759	37.8	39.1	3.3	Tetrachloro-m-xylene
13.842	0.002	344347	14.070	0.002	373300	37.1	38.8	4.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	629547	4.7
Hexabromobiphenyl	876625	929713	6.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	341980	-2.1
Hexabromobiphenyl	652984	678097	3.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.213	0.000	6601	27.1	1	7.207	0.003	3935	20.3
Aroclor-1016	2	7.595	0.000	13419	17.6	2	7.821	0.013	6146	14.9
Aroclor-1016	3	7.735	0.003	7114	20.2	3	8.027	0.021	3201	17.6
Aroclor-1016	4	8.353	-0.045	3916	26.9	4	8.262	0.003	2131	14.7
Total Col1Ave (4 peaks):					23.0	Total Col2Ave (4 peaks):				16.9 RPD = 30
Corrected Ave (3 peaks):					21.6	Corrected Ave (3 peaks):				15.7 RPD = 31
Aroclor-1221	1	4.663	-0.001	13184	297.8	1	4.893	-0.001	7253	287.5
Aroclor-1221	2	6.070	0.000	25527	287.4	2	6.244	-0.001	14853	284.1
Aroclor-1221	3	6.321	0.000	59985	284.3	3	6.571	-0.001	24083	292.9
Total Col1Ave (3 peaks):					289.8	Total Col2Ave (3 peaks):				288.2 RPD = 1
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.663	-0.001	13184	447.0	1	4.893	-0.001	7253	546.9
Aroclor-1232	2	6.070	0.000	25527	416.0	2	7.207	0.002	3935	51.8
Aroclor-1232	3	7.595	-0.000	13419	45.9	3	7.821	0.006	6146	40.3
Aroclor-1232	4	8.528	0.001	2679	21.4	4	8.671	0.002	1120	25.4
Total Col1Ave (4 peaks):					232.6	Total Col2Ave (4 peaks):				166.1 RPD = 33
Corrected Ave (3 peaks):					161.1	Corrected Ave (3 peaks):				39.2 RPD = 122*
Aroclor-1242	1	7.213	0.001	6601	33.3	1	7.207	0.004	3935	25.7
Aroclor-1242	2	7.595	-0.000	13419	21.3	2	7.821	0.008	6146	18.9
Aroclor-1242	3	8.353	-0.045	3916	32.2	3	9.133	0.010	881	8.5
Aroclor-1242	4	8.528	0.003	2679	9.5	4	9.651	0.101	516	4.1
Total Col1Ave (4 peaks):					24.1	Total Col2Ave (4 peaks):				14.3 RPD = 51*
Corrected Ave (3 peaks):					21.0	Corrected Ave (3 peaks):				10.5 RPD = 67*
Aroclor-1248	1	8.353	-0.046	3916	24.4	1	8.262	0.002	2131	13.1
Aroclor-1248	2	8.528	0.003	2679	6.4	2	8.671	0.004	1120	6.5
Aroclor-1248	3	8.942	-0.002	25144	31.3	3	9.133	0.013	881	4.4
Aroclor-1248	4	9.251	0.008	25583	62.5	4	9.500	-0.045	335	1.4
Total Col1Ave (4 peaks):					31.1	Total Col2Ave (4 peaks):				6.3 RPD = 132*
Corrected Ave (3 peaks):					20.7	Corrected Ave (3 peaks):				4.1 RPD = 134*
Aroclor-1254	1	9.251	0.005	25583	39.5	1	9.408	0.004	9719	37.4
Aroclor-1254	2	---			0.0	2	9.500	0.001	335	2.2
Aroclor-1254	3	9.620	0.002	4245	10.2	3	9.928	0.004	2055	9.8
Aroclor-1254	4	9.758	0.003	11050	13.5	4	10.100	0.022	55162	120.0
Aroclor-1254	5	10.071	-0.055	129151	261.4	5	10.325	-0.004	68421	150.1
Total Col1Ave (4 peaks):					81.1	Total Col2Ave (5 peaks):				63.9 RPD = 24
Corrected Ave (3 peaks):					21.1	Corrected Ave (4 peaks):				42.3 RPD = 67*
Aroclor-1260	1	10.995	0.002	206643	420.3	1	11.605	-0.001	119902	332.9
Aroclor-1260	2	11.311	0.001	167443	345.1	2	11.872	0.000	293746	311.8
Aroclor-1260	3	11.687	0.001	390491	321.4	3	12.386	-0.002	131462	563.2
Aroclor-1260	4	12.091	0.001	120118	201.8	4	12.456	0.000	212898	338.4
Aroclor-1260	5	12.195	0.002	155588	599.5	NS	---			----
Total Col1Ave (5 peaks):					377.6	Total Col2Ave (4 peaks):				386.6 RPD = 2
Corrected Ave (4 peaks):					322.2	Corrected Ave (3 peaks):				327.7 RPD = 2
Aroclor-1262	1	10.777	-0.001	114050	271.2	1	11.153	0.000	141861	258.2
Aroclor-1262	2	12.195	0.001	155588	263.0	2	11.605	0.000	119902	258.7
Aroclor-1262	3	12.269	0.000	167998	264.2	3	12.386	-0.000	131462	259.6
Aroclor-1262	4	12.938	-0.001	136019	262.5	4	12.456	0.000	212898	258.0
Total Col1Ave (4 peaks):					265.2	Total Col2Ave (4 peaks):				258.6 RPD = 3
Corrected Ave (3 peaks):					263.3	Corrected Ave (3 peaks):				258.3 RPD = 2
Aroclor-1268	1	12.195	-0.000	155588	104.9	1	12.386	0.001	131462	102.4
Aroclor-1268	2	12.269	0.001	167998	114.1	2	12.456	0.003	212898	154.3
Aroclor-1268	3	12.675	0.027	60611	51.2	3	12.843	-0.000	8393	7.1
Aroclor-1268	4	13.439	0.001	49821	14.7	4	13.661	-0.002	39480	10.4
Total Col1Ave (4 peaks):					71.2	Total Col2Ave (4 peaks):				68.6 RPD = 4

Corrected Ave (3 peaks): 56.9 Corrected Ave (3 peaks): 40.0 RPD = 35

Total PCB Area Col1 (5.842 - 13.740) = 2870829 Col1 Total PCB = 0.4 ppm*

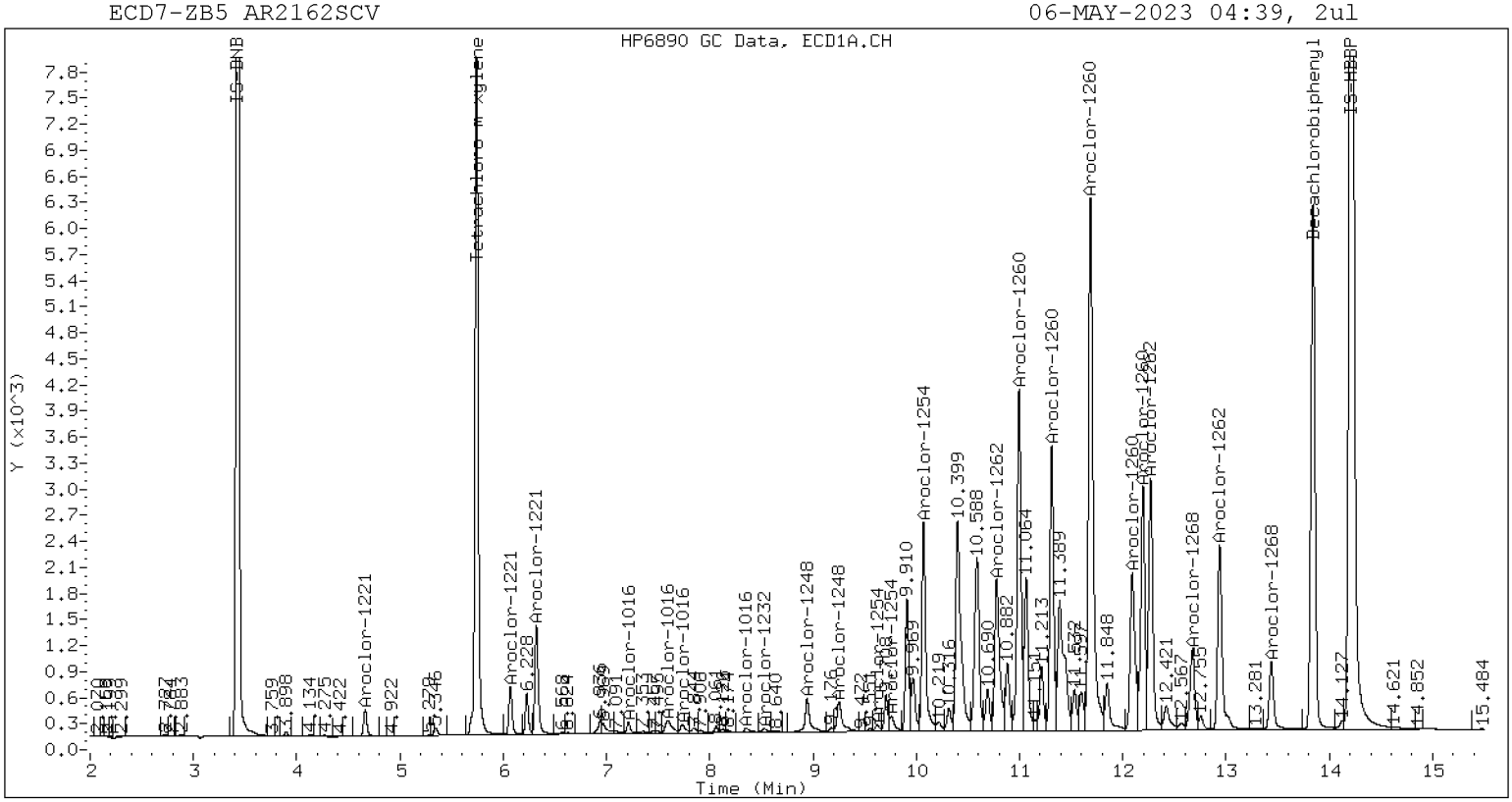
Total PCB Area Col2 (5.728 - 13.968) = 1885829 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

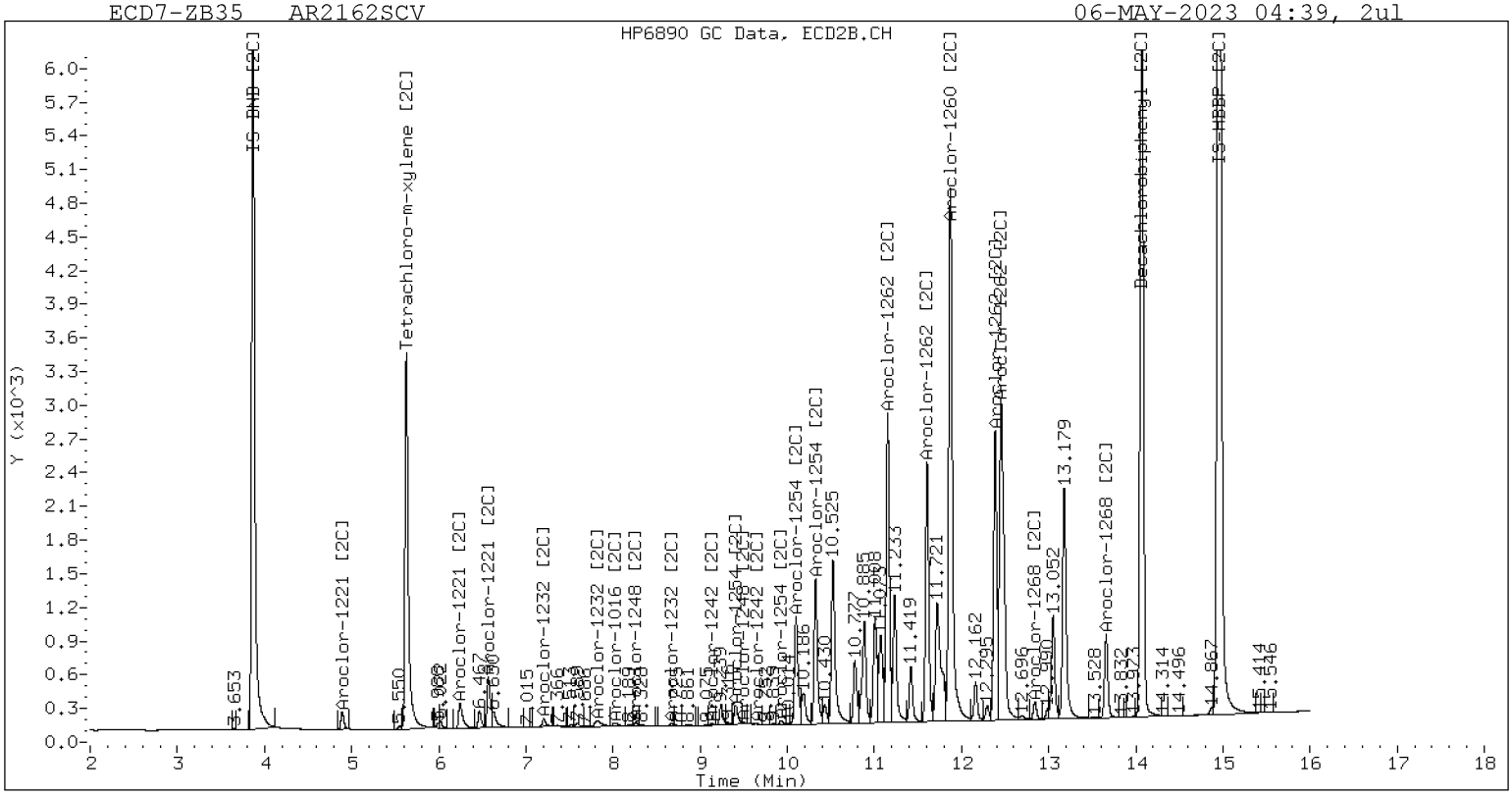
PCB Dual Column Chromatograms

ECD7-ZB5 AR2162SCV 06-MAY-2023 04:39, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR2162SCV 06-MAY-2023 04:39, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	05052337ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLE0079	Injection Date:	05/06/23
Lab Sample ID:	SLE0079-SCV6	Injection Time:	05:00
Sequence Name:	AR3268SCV6		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1232	A	250.00	256	0.0161500	0.0177311		2.6	+/-20
Aroclor 1232 [2C]	A	250.00	301	0.0167199	0.0201037		20.3	+/-20
Aroclor 1268	A	250.00	266	0.1617990	0.1720924		6.5	+/-20
Aroclor 1268 [2C]	A	250.00	263	0.2250713	0.2372875		5.2	+/-20
Decachlorobiphenyl	A	40.000	55.1	0.7991406	1.1003690		37.7	+/-20
Tetrachlorometaxylene	A	40.000	38.4	1.2048230	1.1563010		-4.0	+/-20
Decachlorobiphenyl [2C]	A	40.000	59.3	1.1360140	1.6851460		48.3	+/-20
Tetrachlorometaxylene [2C]	A	40.000	40.4	1.1005470	1.1123120		1.1	+/-20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230505.b/05052337ECD7.D
Data file 2: /230505.b/230505.b/05052337ECD7.D
Method: \\target\share\chem4\ecd7.i\230505.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268SCV
Client ID:
Injection Date: 06-MAY-2023 05:00
Report Date: 05/06/2023 11:31
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.743	0.001	373749	5.629	0.001	196946	38.4	40.4	5.2	Tetrachloro-m-xylene
13.842	0.002	525409	14.069	0.001	586548	55.1	59.3	7.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	646456	7.5
Hexabromobiphenyl	876625	954969	8.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	354120	1.4
Hexabromobiphenyl	652984	696139	6.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	7.214	0.001	28623	114.3	1	7.205	0.002	23124	115.4
Aroclor-1016	2	7.597	0.002	85721	109.5	2	7.815	0.007	47496	111.2
Aroclor-1016	3	7.735	0.002	41343	114.3	3	8.014	0.008	24029	127.5
Aroclor-1016	4	8.400	0.002	16653	111.6	4	8.262	0.003	15421	103.0
	Total Col1Ave (4 peaks):				112.4		Total Col2Ave (4 peaks):			114.3 RPD = 2
	Corrected Ave (3 peaks):				111.8		Corrected Ave (3 peaks):			109.9 RPD = 2
Aroclor-1221	1	4.664	0.001	7272	159.9	1	4.895	0.000	4045	154.9
Aroclor-1221	2	6.070	0.001	13478	147.8	2	6.246	0.000	9235	170.6
Aroclor-1221	3	6.321	0.001	43831	202.3	3	6.572	0.000	24300	285.4
	Total Col1Ave (3 peaks):				170.0		Total Col2Ave (3 peaks):			203.6 RPD = 18
	Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks			
Aroclor-1232	1	4.664	0.001	7272	240.1	1	4.895	0.001	4045	294.5
Aroclor-1232	2	6.070	0.001	13478	213.9	2	7.205	0.001	23124	294.1
Aroclor-1232	3	7.597	0.002	85721	285.5	3	7.815	0.000	47496	300.7
Aroclor-1232	4	8.527	0.000	36809	286.5	4	8.669	-0.000	14324	313.2
	Total Col1Ave (4 peaks):				256.5		Total Col2Ave (4 peaks):			300.6 RPD = 16
	Corrected Ave (3 peaks):				246.5		Corrected Ave (3 peaks):			296.5 RPD = 18
Aroclor-1242	1	7.214	0.002	28623	140.5	1	7.205	0.002	23124	146.1
Aroclor-1242	2	7.597	0.002	85721	132.8	2	7.815	0.002	47496	141.1
Aroclor-1242	3	8.400	0.002	16653	133.4	3	9.128	0.005	14403	133.4
Aroclor-1242	4	8.527	0.003	36809	127.4	4	9.648	0.098	5512	42.4
	Total Col1Ave (4 peaks):				133.5		Total Col2Ave (4 peaks):			115.7 RPD = 14
	Corrected Ave (3 peaks):				131.2		Corrected Ave (3 peaks):			105.6 RPD = 22
Aroclor-1248	1	8.400	0.001	16653	100.9	1	8.262	0.002	15421	91.5
Aroclor-1248	2	8.527	0.003	36809	85.8	2	8.669	0.002	14324	80.5
Aroclor-1248	3	8.944	0.000	89377	108.4	3	9.128	0.008	14403	69.0
Aroclor-1248	4	9.238	-0.005	41570	98.9	4	9.560	0.015	17331	69.3
	Total Col1Ave (4 peaks):				98.5		Total Col2Ave (4 peaks):			77.6 RPD = 24
	Corrected Ave (3 peaks):				95.2		Corrected Ave (3 peaks):			72.9 RPD = 26
Aroclor-1254	1	9.238	-0.008	41570	62.6	1	9.407	0.003	5487	20.4
Aroclor-1254	2	9.326	0.001	12640	42.3	2	9.560	0.061	17331	108.4
Aroclor-1254	3	9.624	0.006	7232	16.9	3	9.929	0.005	3481	16.0
Aroclor-1254	4	9.764	0.008	11671	13.9	4	10.086	0.009	7259	15.3
Aroclor-1254	5	10.139	0.014	7544	14.9	5	10.345	0.017	6610	14.0
	Total Col1Ave (5 peaks):				30.1		Total Col2Ave (5 peaks):			34.8 RPD = 14
	Corrected Ave (4 peaks):				22.0		Corrected Ave (4 peaks):			16.4 RPD = 29
Aroclor-1260	1	10.998	0.005	85093	168.5	1	11.598	-0.008	75237	203.5
Aroclor-1260	2	11.313	0.003	6363	12.8	2	11.873	0.001	33655	34.8
Aroclor-1260	3	11.688	0.002	47857	38.3	3	12.384	-0.004	346138	1444.4
Aroclor-1260	4	12.094	0.004	1291	2.1	4	12.453	-0.002	373218	577.8
Aroclor-1260	5	12.195	0.001	406211	1523.9	NS	---			----
	Total Col1Ave (5 peaks):				349.1		Total Col2Ave (4 peaks):			565.1 RPD = 47*
	Corrected Ave (4 peaks):				55.4		Corrected Ave (3 peaks):			272.0 RPD = 132*
Aroclor-1262	1	10.785	0.006	4006	9.3	1	11.156	0.002	52531	93.1
Aroclor-1262	2	12.195	0.000	406211	668.6	2	11.598	-0.007	75237	158.2
Aroclor-1262	3	12.268	-0.002	403730	618.2	3	12.384	-0.002	346138	665.8
Aroclor-1262	4	12.937	-0.002	145536	273.5	4	12.453	-0.002	373218	440.5
	Total Col1Ave (4 peaks):				392.4		Total Col2Ave (4 peaks):			339.4 RPD = 14
	Corrected Ave (3 peaks):				300.3		Corrected Ave (3 peaks):			230.6 RPD = 26
Aroclor-1268	1	12.195	-0.001	406211	266.7	1	12.384	-0.001	346138	262.7
Aroclor-1268	2	12.268	-0.000	403730	266.9	2	12.453	0.001	373218	263.5
Aroclor-1268	3	12.648	-0.000	323568	266.0	3	12.844	0.001	316122	260.6
Aroclor-1268	4	13.439	0.002	920777	265.1	4	13.663	0.000	1029335	264.8
	Total Col1Ave (4 peaks):				266.2		Total Col2Ave (4 peaks):			262.9 RPD = 1

Corrected Ave (3 peaks): 265.9 Corrected Ave (3 peaks): 262.3 RPD = 1

Total PCB Area Col1 (5.842 - 13.740) = 3325332 Col1 Total PCB = 0.5 ppm*

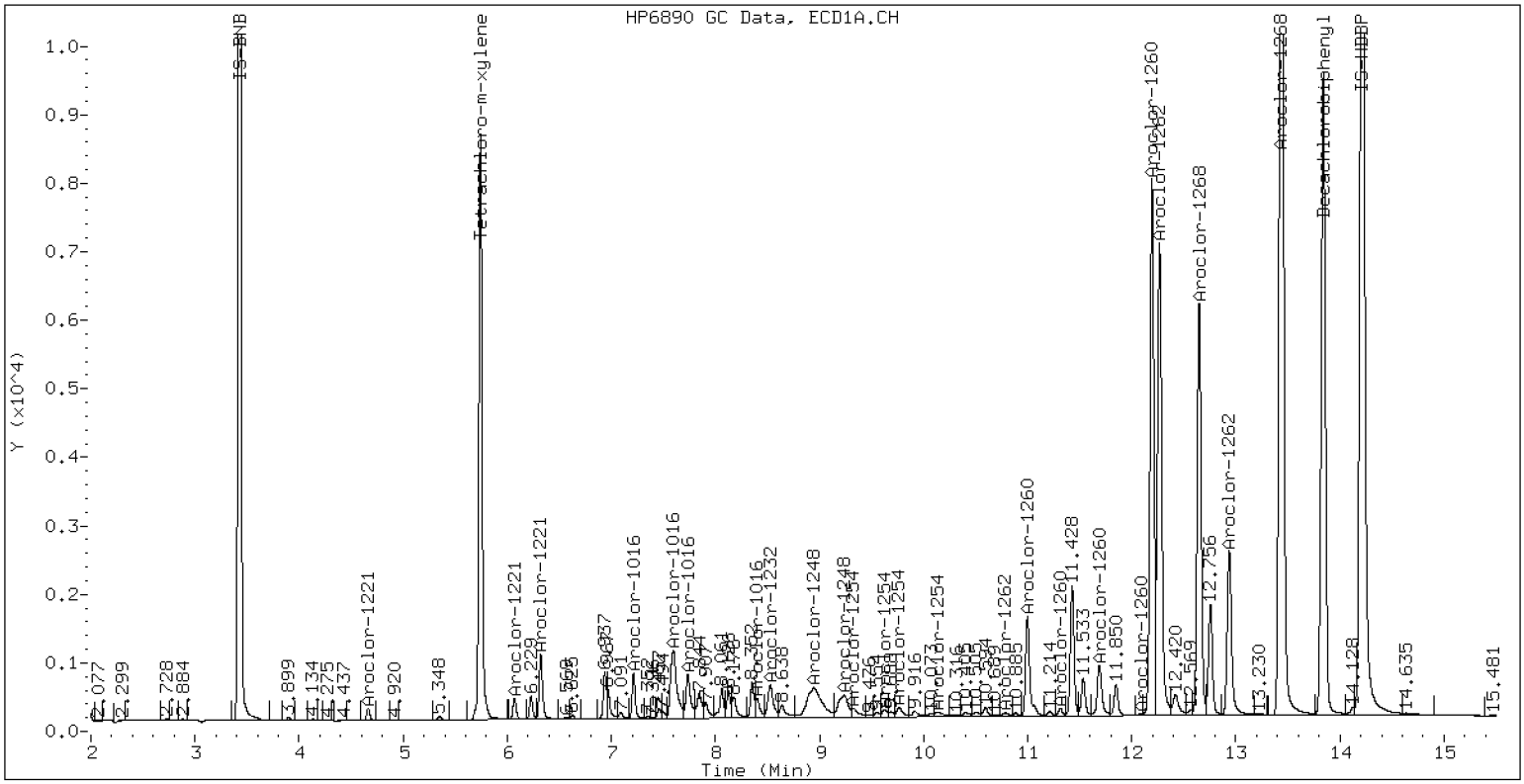
Total PCB Area Col2 (5.728 - 13.968) = 2876097 Col2 Total PCB = 0.7 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

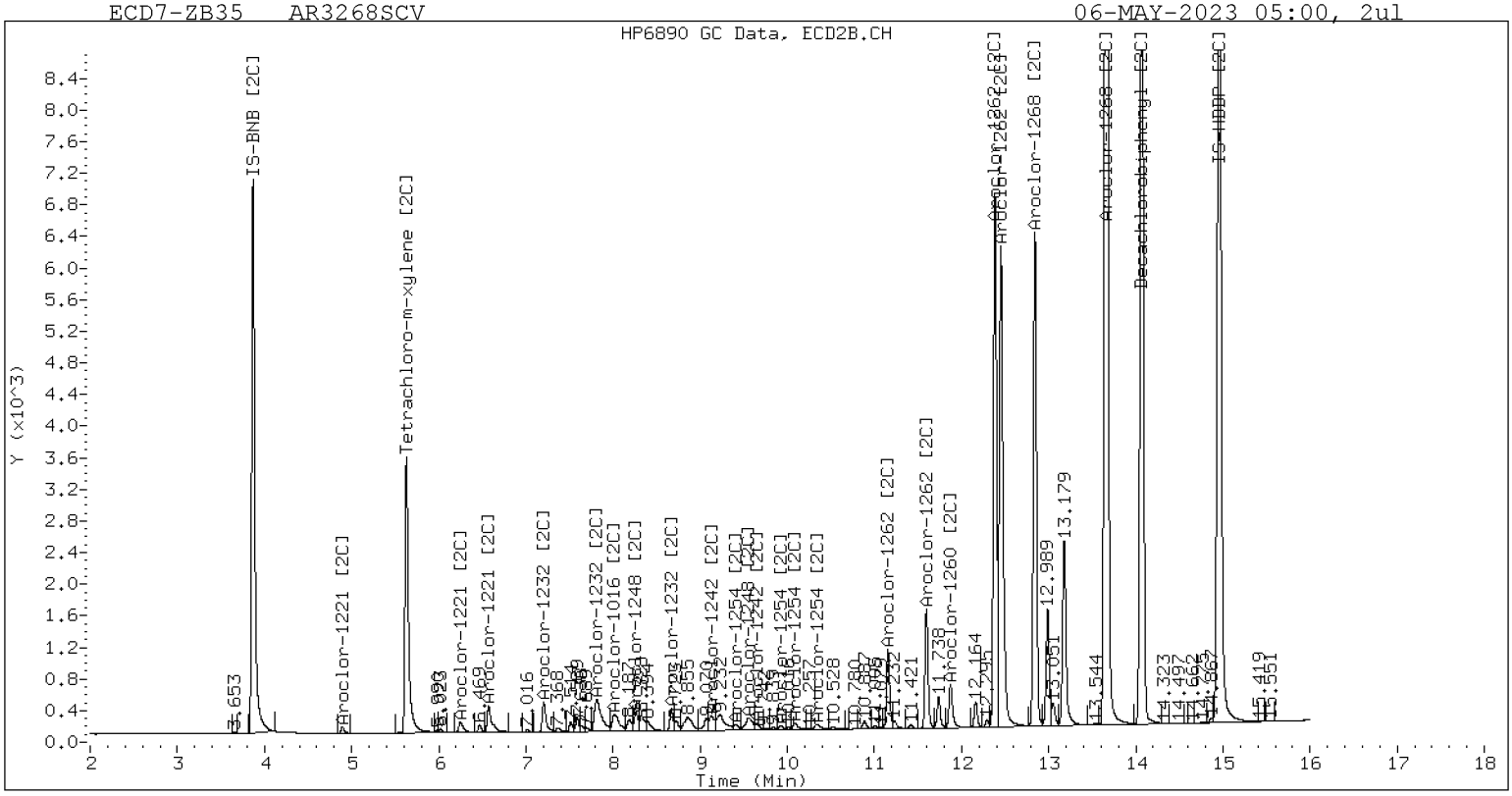
PCB Dual Column Chromatograms

ECD7-ZB5 AR3268SCV 06-MAY-2023 05:00, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR3268SCV 06-MAY-2023 05:00, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	07072314ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLG0066	Injection Date:	07/07/23
Lab Sample ID:	SLG0066-CCV1	Injection Time:	15:19
Sequence Name:	AR1248CCV1		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1248	A	250.00	254	0.0568879	0.0582085		1.4	+/-20
Aroclor-1248 (1)	A	250.00	257		0.0209670			
Aroclor-1248 (2)	A	250.00	256		0.0542836			
Aroclor-1248 (3)	A	250.00	266		0.1086102			
Aroclor-1248 (4)	A	250.00	235		0.0489732			
Aroclor 1248 [2C]	A	250.00	237	0.0454726	0.0430877		-5.3	+/-20
Aroclor-1248 (1) [2C]	A	250.00	235		0.0357859			
Aroclor-1248 (2) [2C]	A	250.00	231		0.0371627			
Aroclor-1248 (3) [2C]	A	250.00	247		0.0465012			
Aroclor-1248 (4) [2C]	A	250.00	234		0.0529008			
Decachlorobiphenyl	A	40.000	37.2	0.7991406	0.7442564		-7.0	+/-20
Tetrachlorometaxylene	A	40.000	36.7	1.2048230	1.1052820		-8.3	+/-20
Decachlorobiphenyl [2C]	A	40.000	41.1	1.1360140	1.1666390		2.8	+/-20
Tetrachlorometaxylene [2C]	A	40.000	38.1	1.1005470	1.0491810		-4.8	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072314ECD7.D
Data file 2: /230707.b/230707.b/07072314ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248CCV1
Client ID:
Injection Date: 07-JUL-2023 15:19
Report Date: 07/07/2023 15:54
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.718	0.000	324262	5.609	0.002	173991	36.7	38.1	3.8	Tetrachloro-m-xylene
13.819	0.000	506836	14.048	0.001	353733	37.3	41.1	9.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	586750	-2.4
Hexabromobiphenyl	876625	1361993	55.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	331670	-5.0
Hexabromobiphenyl	652984	606414	-7.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col					ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1248	1	8.378	0.000	38445	256.7	1	8.244	0.000	37091	235.1
Aroclor-1248	2	8.505	0.000	99534	255.7	2	8.651	-0.001	38518	231.1
Aroclor-1248	3	8.925	0.000	199147	266.1	3	9.116	0.000	48197	246.7
Aroclor-1248	4	9.220	0.000	89797	235.4	4	9.542	0.000	54830	234.0
Total Col1Ave (4 peaks):					253.5	Total Col2Ave (4 peaks):				236.7 RPD = 7
Corrected Ave (3 peaks):					249.3	Corrected Ave (3 peaks):				233.4 RPD = 7
CalAmt %D:					1.4	CalAmt %D:				-5.3

Total PCB Area Col1 (5.818 - 13.719) = 1589095 Col1 Total PCB = 0.2 ppm*

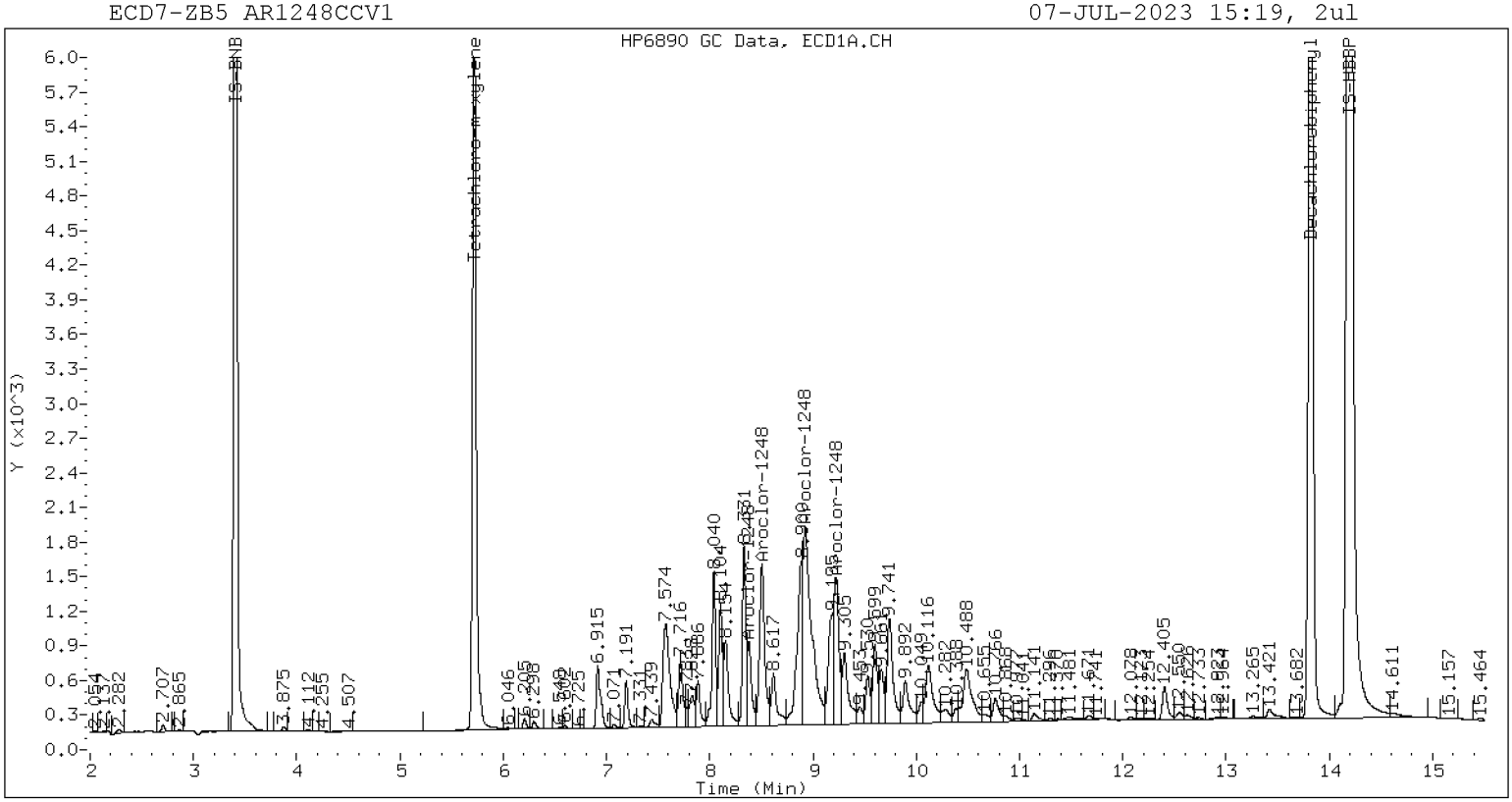
Total PCB Area Col2 (5.707 - 13.947) = 777719 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

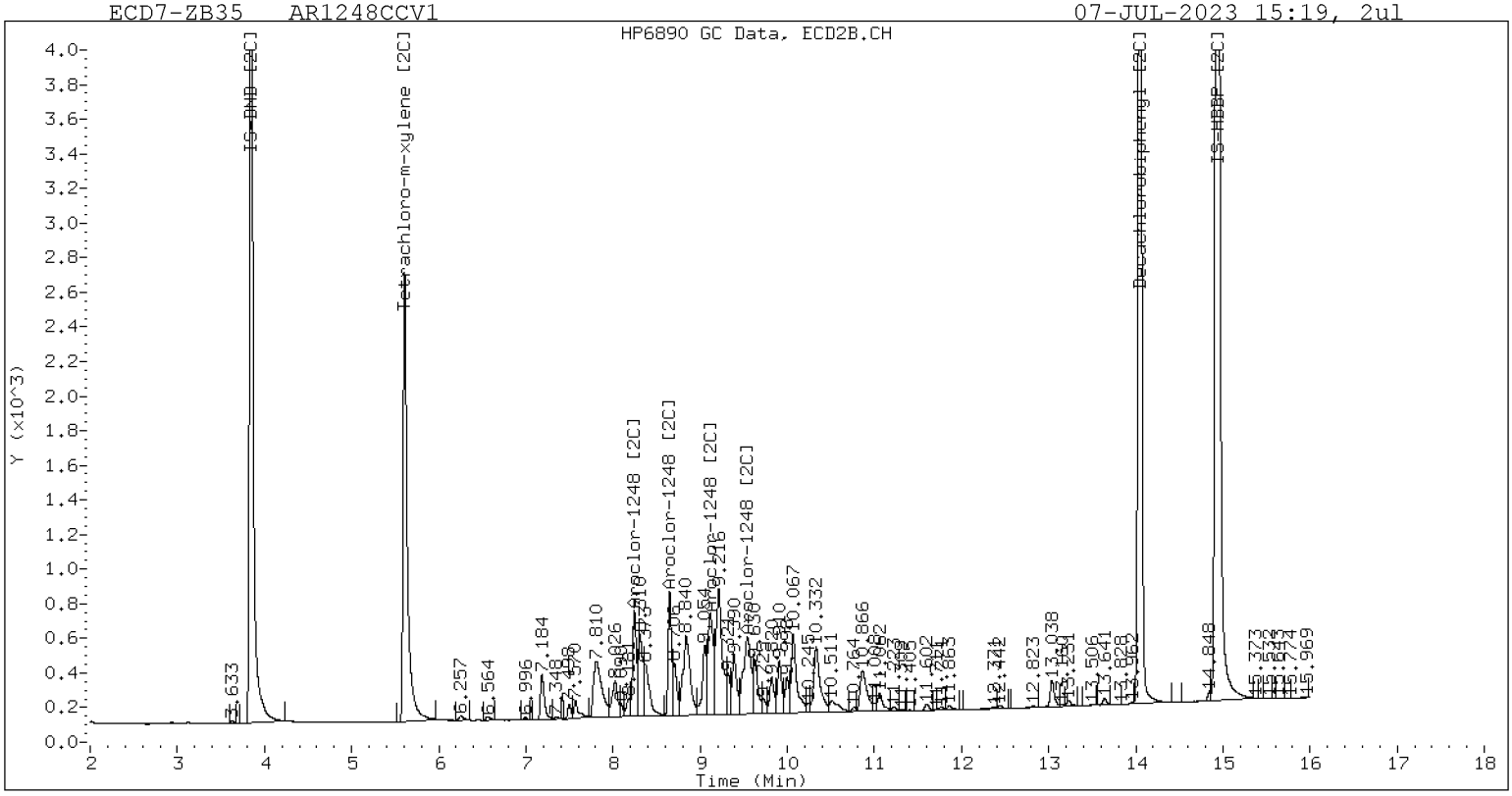
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248CCV1 07-JUL-2023 15:19, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 AR1248CCV1 07-JUL-2023 15:19, 2ul

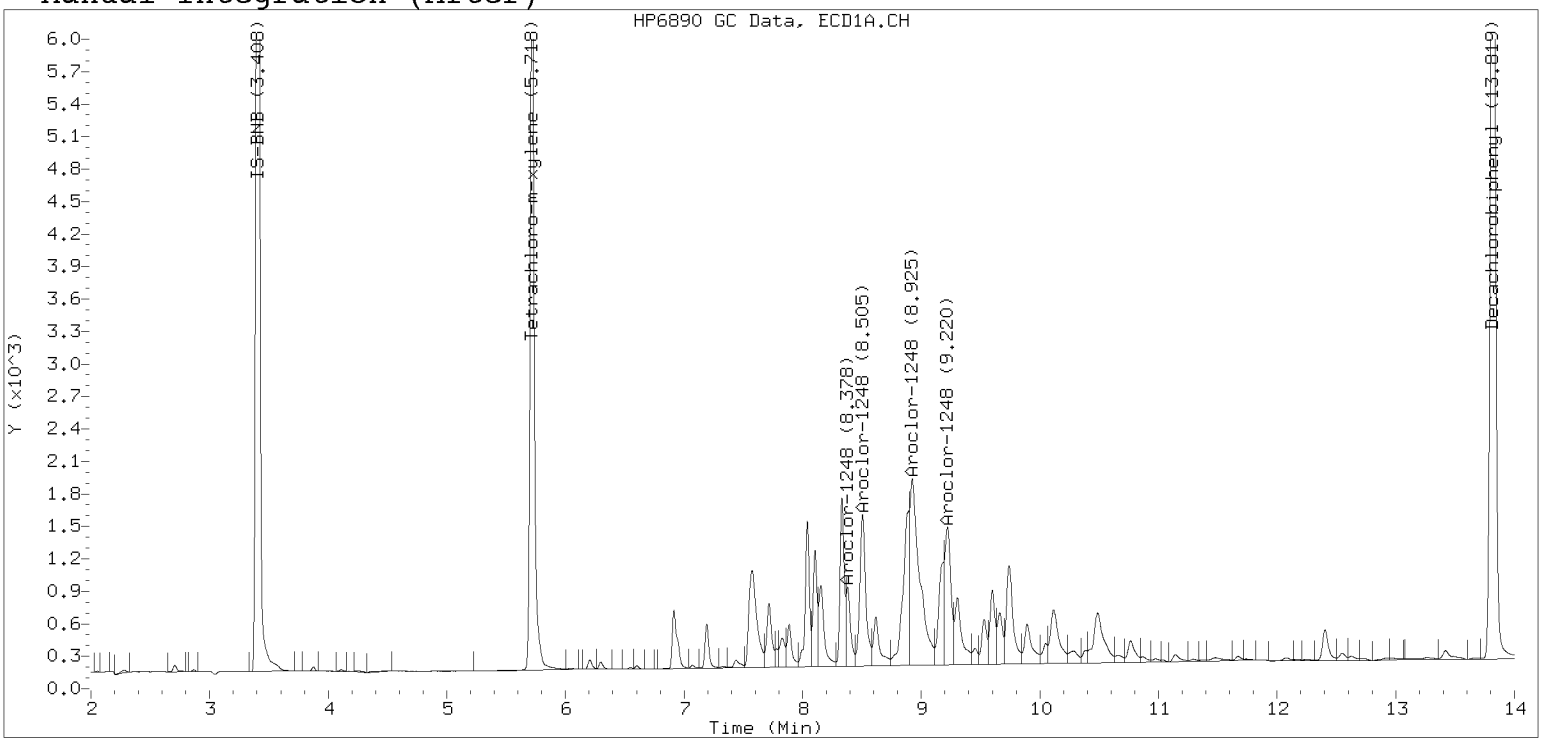


ZB-35 Manual Integration: NO

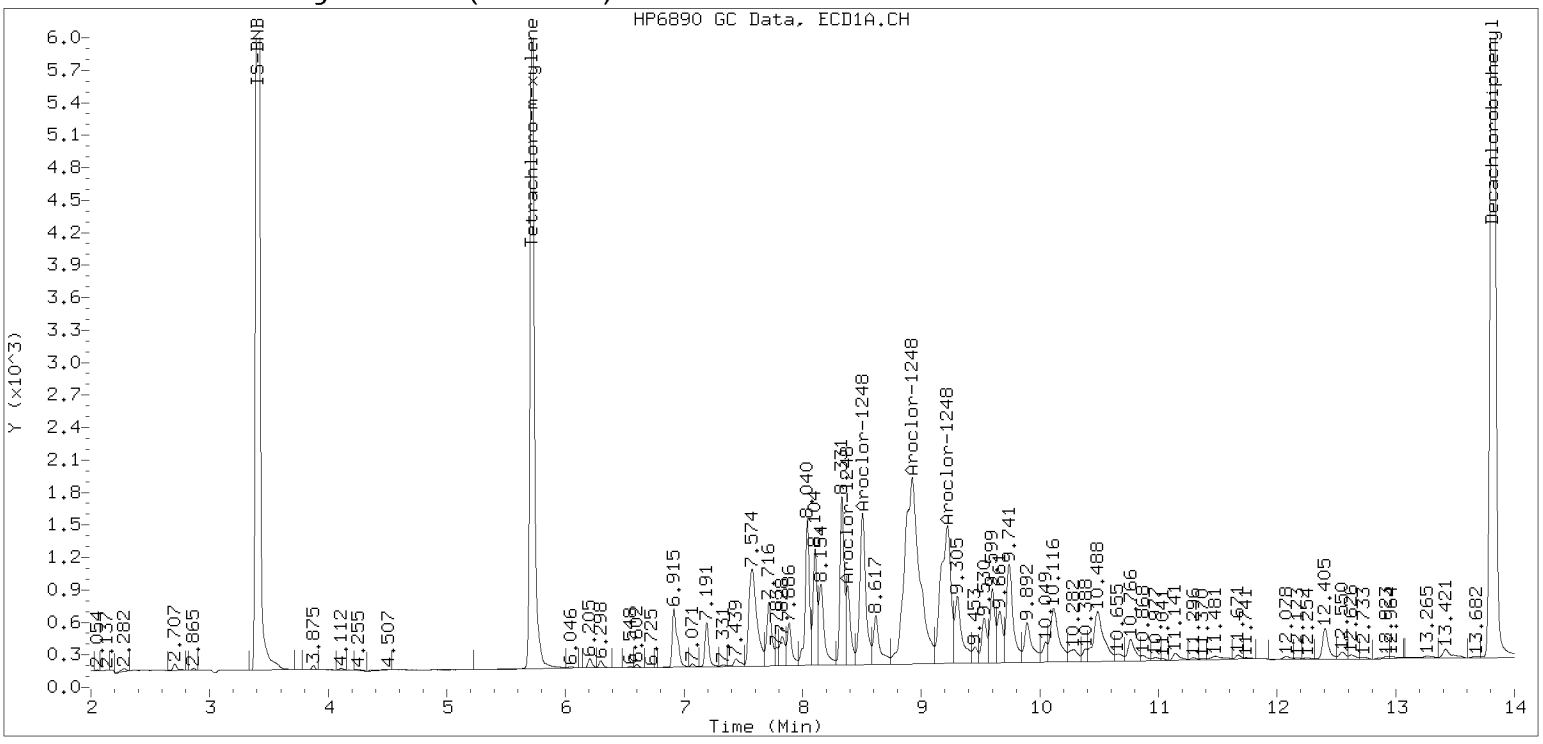
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/230707.b/07072314ECD7.D Injection Date: 07-JUL-2023 15:19

Manual Integration (After)



Processed Integration (Before)



Analytical Resources, LLC
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	07072315ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLG0066	Injection Date:	07/07/23
Lab Sample ID:	SLG0066-CCV2	Injection Time:	15:40
Sequence Name:	AR1660CCV2		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	246	0.0477728	0.0466420		-1.7	+/-20
Aroclor-1016 (1)	A	250.00	236	0.0309764	0.0292584		-5.6	
Aroclor-1016 (2)	A	250.00	240	0.0968611	0.0931987		-4.0	
Aroclor-1016 (3)	A	250.00	253	0.0447793	0.0453582		1.2	
Aroclor-1016 (4)	A	250.00	254	0.0184745	0.0187526		1.6	
Aroclor 1016 [2C]	A	250.00	246	0.0545435	0.0533677		-1.7	+/-20
Aroclor-1016 (1) [2C]	A	250.00	224	0.0452861	0.0406232		-10.4	
Aroclor-1016 (2) [2C]	A	250.00	242	0.0965080	0.0935677		-3.2	
Aroclor-1016 (3) [2C]	A	250.00	266	0.0425661	0.0452754		6.4	
Aroclor-1016 (4) [2C]	A	250.00	251	0.0338137	0.0340044		0.4	
Aroclor 1260	A	250.00	208	0.0524306	0.0437176		-16.9	+/-20
Aroclor-1260 (1)	A	250.00	194	0.0423031	0.0327793		-22.4	
Aroclor-1260 (2)	A	250.00	200	0.0417493	0.0334699		-20.0	
Aroclor-1260 (3)	A	250.00	212	0.1045597	0.0886965		-15.2	
Aroclor-1260 (4)	A	250.00	217	0.0512104	0.0443721		-13.2	
Aroclor-1260 (5)	A	250.00	216	0.0223305	0.0192700		-13.6	
Aroclor 1260 [2C]	A	250.00	241	0.0638471	0.0625143		-3.7	+/-20
Aroclor-1260 (1) [2C]	A	250.00	229	0.0424868	0.0389040		-8.4	
Aroclor-1260 (2) [2C]	A	250.00	249	0.1111292	0.1108911		-0.4	
Aroclor-1260 (3) [2C]	A	250.00	234	0.0275392	0.0258406		-6.4	
Aroclor-1260 (4) [2C]	A	250.00	251	0.0742331	0.0744214		0.4	
Decachlorobiphenyl	A	40.000	39.1	0.7991406	0.7805467		-2.3	+/-20
Tetrachlorometaxylene	A	40.000	36.2	1.2048230	1.0893570		-9.5	+/-20
Decachlorobiphenyl [2C]	A	40.000	41.1	1.1360140	1.1682980		2.8	+/-20
Tetrachlorometaxylene [2C]	A	40.000	39.3	1.1005470	1.0821630		-1.8	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072315ECD7.D
Data file 2: /230707.b/230707.b/07072315ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV2
Client ID:
Injection Date: 07-JUL-2023 15:40
Report Date: 07/07/2023 15:56
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.719	0.000	323135	5.610	0.003	169305	36.2	39.3	8.4	Tetrachloro-m-xylene
13.819	-0.000	517787	14.046	-0.001	342105	39.1	41.1	5.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	593258	-1.4
Hexabromobiphenyl	876625	1326729	51.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	312901	-10.4
Hexabromobiphenyl	652984	585647	-10.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col					ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.192	0.001	54243	236.1	1	7.186	0.001	39722	224.3
Aroclor-1016	2	7.577	0.002	172784	240.5	2	7.805	0.004	91492	242.4
Aroclor-1016	3	7.715	0.001	84091	253.2	3	8.013	0.010	44271	265.9
Aroclor-1016	4	8.378	-0.000	34766	253.8	4	8.246	0.003	33250	251.4
Total Col1Ave (4 peaks):					245.9	Total Col2Ave (4 peaks):				246.0 RPD = 0
Corrected Ave (3 peaks):					243.3	Corrected Ave (3 peaks):				239.4 RPD = 2
CalAmt %D:					-1.6	CalAmt %D:				-1.6
Aroclor-1260	1	10.973	0.001	135904	193.7	1	11.587	0.001	71200	228.9
Aroclor-1260	2	11.289	-0.001	138767	200.4	2	11.854	0.001	202947	249.5
Aroclor-1260	3	11.666	0.001	367738	212.1	3	12.370	0.002	47292	234.6
Aroclor-1260	4	12.070	0.001	183968	216.6	4	12.438	0.000	136202	250.6
Aroclor-1260	5	12.172	0.000	79894	215.7	NS	---			----
Total Col1Ave (5 peaks):					207.7	Total Col2Ave (4 peaks):				240.9 RPD = 15
Corrected Ave (4 peaks):					205.5	Corrected Ave (3 peaks):				237.7 RPD = 15
CalAmt %D:					-16.9	CalAmt %D:				-3.6

Total PCB Area Col1 (5.818 - 13.719) = 3755021 Col1 Total PCB = 0.6 ppm*

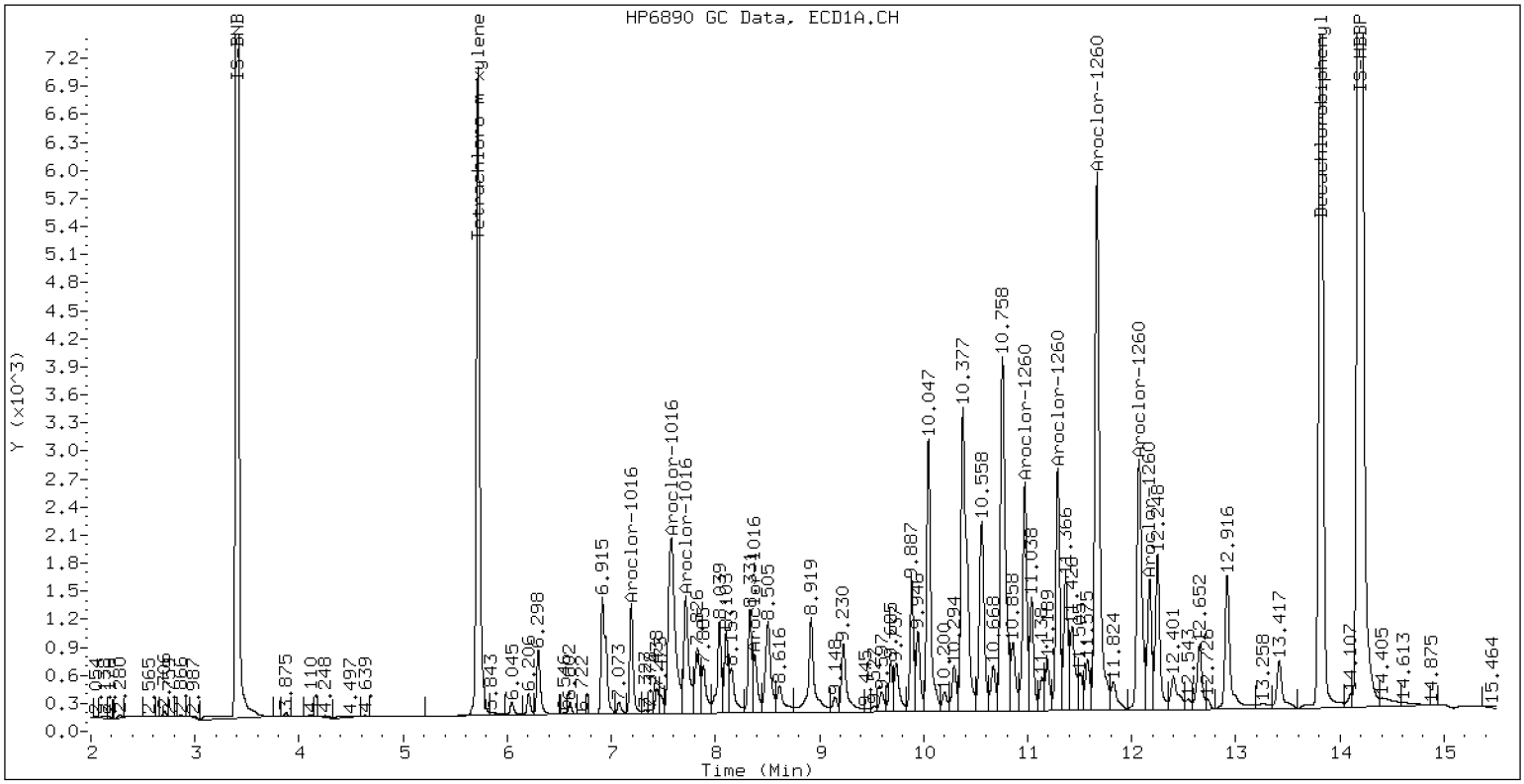
Total PCB Area Col2 (5.707 - 13.947) = 1802139 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

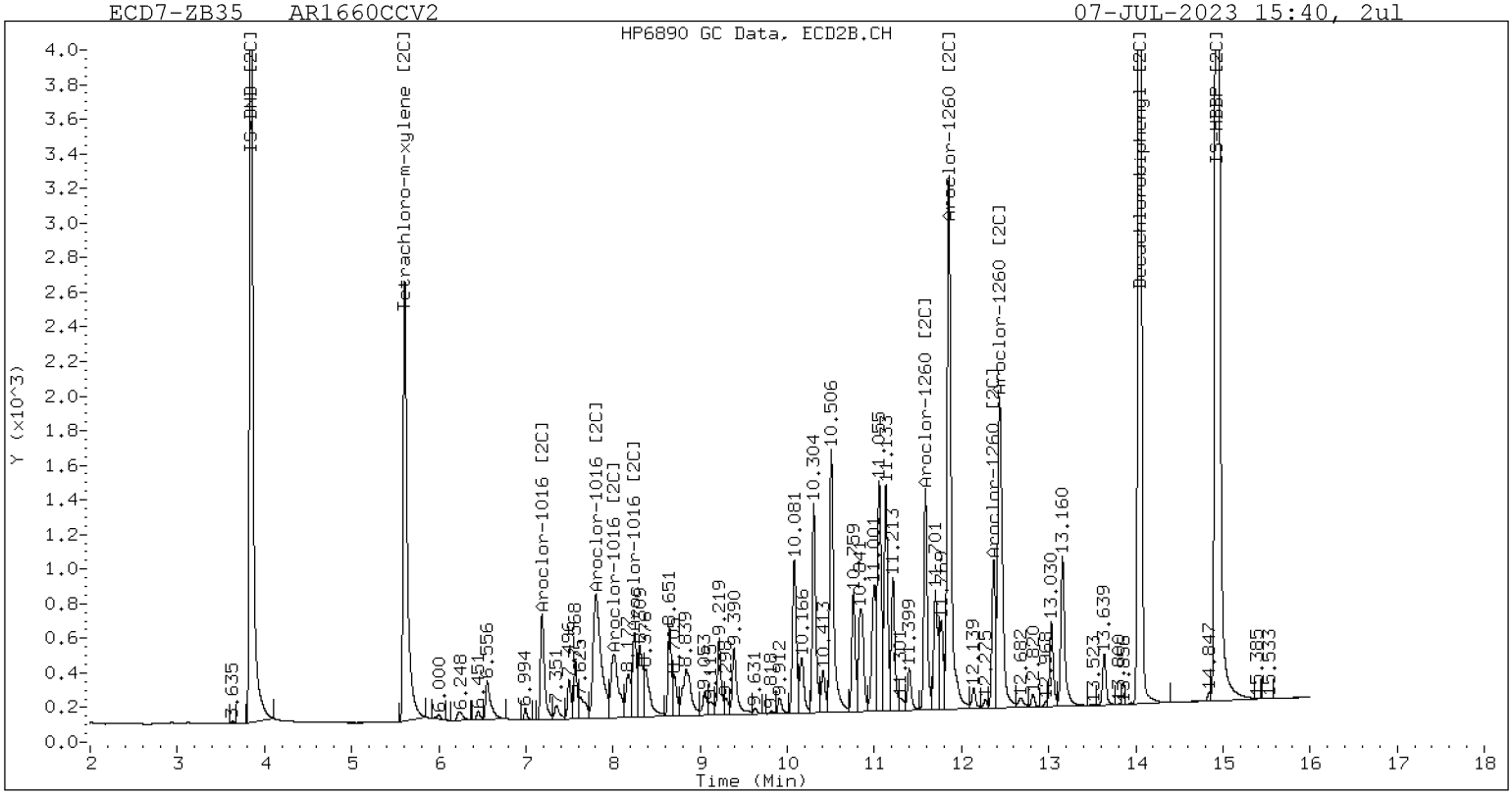
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV2 07-JUL-2023 15:40, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV2 07-JUL-2023 15:40, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	07072324ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLG0066	Injection Date:	07/07/23
Lab Sample ID:	SLG0066-CCV3	Injection Time:	18:48
Sequence Name:	AR1242CCV3		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1242	A	250.00	243	0.0390737	0.0375425		-2.9	+/-20
Aroclor-1242 (1)	A	250.00	238		0.0240128			
Aroclor-1242 (2)	A	250.00	235		0.0750146			
Aroclor-1242 (3)	A	250.00	248		0.0153028			
Aroclor-1242 (4)	A	250.00	251		0.0358397			
Aroclor 1242 [2C]	A	250.00	239	0.0413965	0.0395513		-4.2	+/-20
Aroclor-1242 (1) [2C]	A	250.00	236		0.0337905			
Aroclor-1242 (2) [2C]	A	250.00	240		0.0728742			
Aroclor-1242 (3) [2C]	A	250.00	255		0.0248929			
Aroclor-1242 (4) [2C]	A	250.00	227		0.0266474			
Decachlorobiphenyl	A	40.000	36.4	0.7991406	0.7277252		-8.9	+/-20
Tetrachlorometaxylene	A	40.000	44.0	1.2048230	1.3256350		10.0	+/-20
Decachlorobiphenyl [2C]	A	40.000	39.2	1.1360140	1.1129120		-2.0	+/-20
Tetrachlorometaxylene [2C]	A	40.000	45.3	1.1005470	1.2463150		13.2	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072324ECD7.D
Data file 2: /230707.b/230707.b/07072324ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242CCV3
Client ID:
Injection Date: 07-JUL-2023 18:48
Report Date: 07/08/2023 20:45
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.720	0.002	399315	5.610	0.003	206973	44.0	45.3	2.9	Tetrachloro-m-xylene
13.820	0.001	505149	14.047	0.001	339559	36.4	39.2	7.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	602451	0.2
Hexabromobiphenyl	876625	1388296	58.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	332136	-4.9
Hexabromobiphenyl	652984	610217	-6.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1242	1	7.191	0.002	45208	238.1	1	7.185	0.002	35072	236.3
Aroclor-1242	2	7.578	0.006	141227	234.8	2	7.808	0.005	75638	239.5
Aroclor-1242	3	8.379	0.003	28810	247.6	3	9.123	0.003	25837	255.2
Aroclor-1242	4	8.507	0.001	67474	250.6	4	9.551	0.000	27658	226.7
Total Col1Ave (4 peaks):					242.8	Total Col2Ave (4 peaks):				239.4 RPD = 1
Corrected Ave (3 peaks):					240.2	Corrected Ave (3 peaks):				234.2 RPD = 3

Total PCB Area Col1 (5.818 - 13.719) = 1186578 Col1 Total PCB = 0.2 ppm*

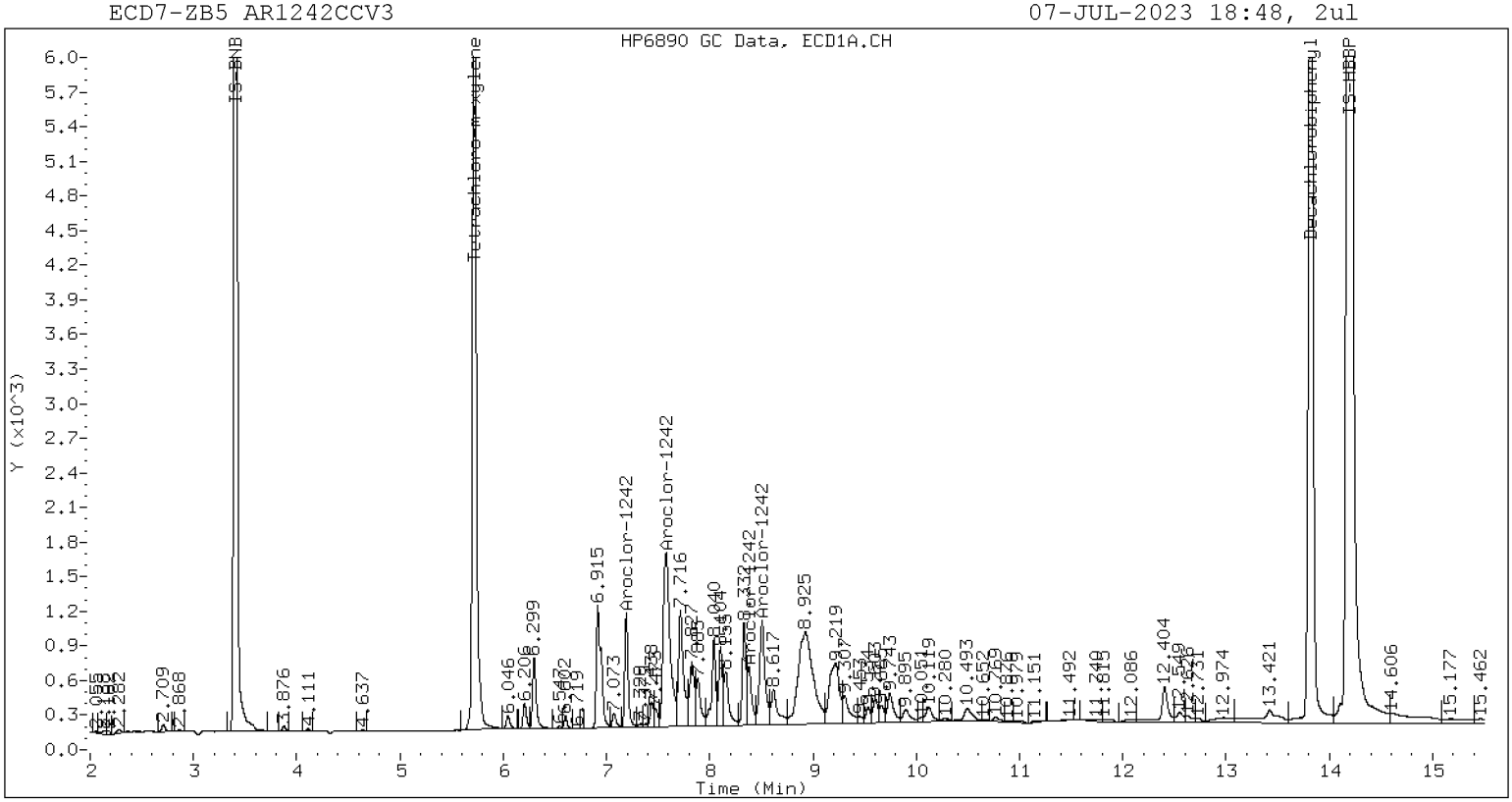
Total PCB Area Col2 (5.707 - 13.947) = 578341 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

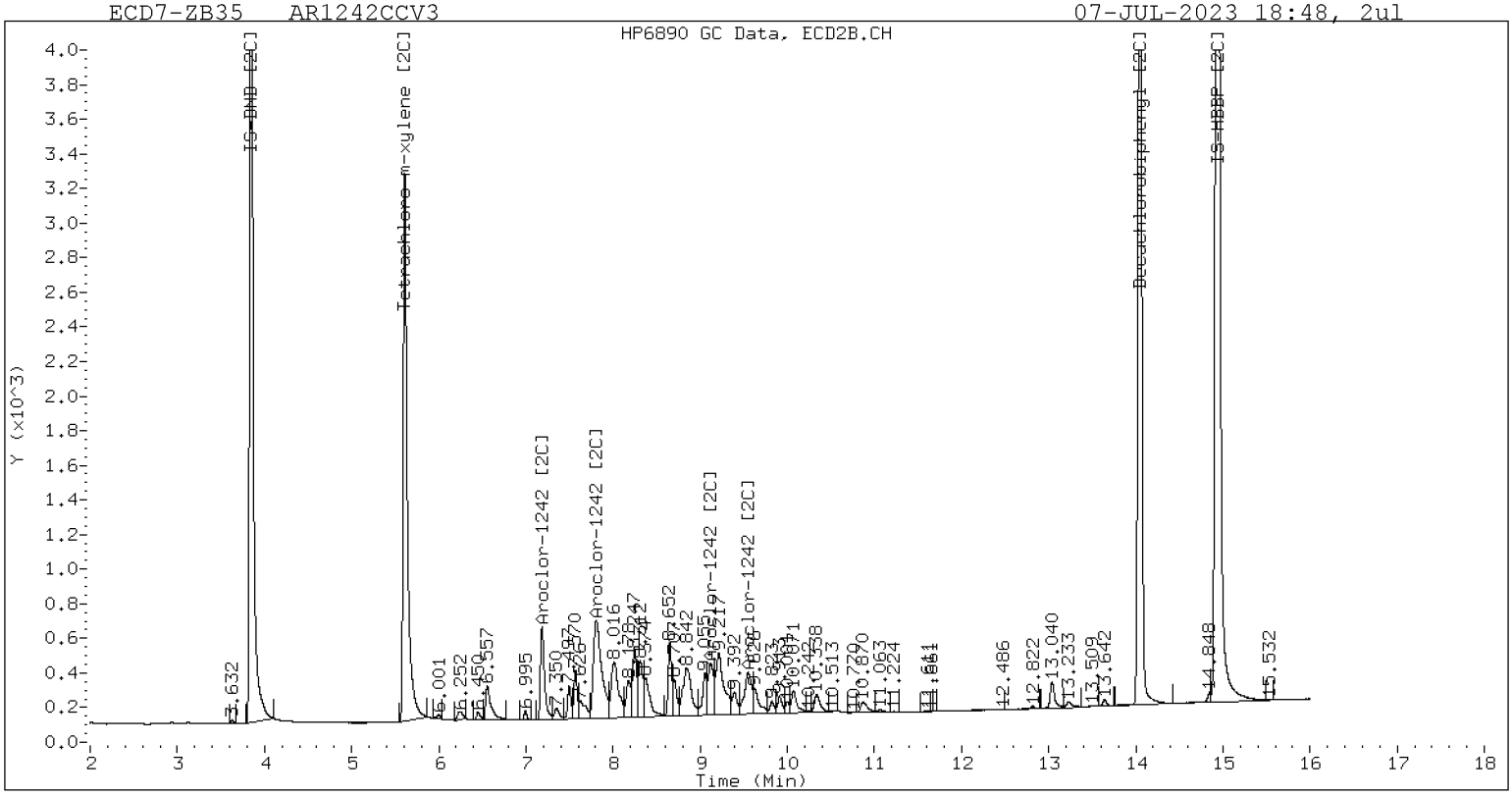
PCB Dual Column Chromatograms

ECD7-ZB5 AR1242CCV3 07-JUL-2023 18:48, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242CCV3 07-JUL-2023 18:48, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	07072325ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLG0066	Injection Date:	07/07/23
Lab Sample ID:	SLG0066-CCV4	Injection Time:	19:09
Sequence Name:	AR1660CCV4		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	243	0.0477728	0.0459563		-3.0	+/-20
Aroclor-1016 (1)	A	250.00	235	0.0309764	0.0290902		-6.1	
Aroclor-1016 (2)	A	250.00	237	0.0968611	0.0919338		-5.1	
Aroclor-1016 (3)	A	250.00	247	0.0447793	0.0442489		-1.2	
Aroclor-1016 (4)	A	250.00	251	0.0184745	0.0185522		0.4	
Aroclor 1016 [2C]	A	250.00	243	0.0545435	0.0528790		-2.7	+/-20
Aroclor-1016 (1) [2C]	A	250.00	222	0.0452861	0.0402900		-11.0	
Aroclor-1016 (2) [2C]	A	250.00	241	0.0965080	0.0929579		-3.7	
Aroclor-1016 (3) [2C]	A	250.00	265	0.0425661	0.0450667		5.9	
Aroclor-1016 (4) [2C]	A	250.00	245	0.0338137	0.0332015		-1.8	
Aroclor 1260	A	250.00	213	0.0524306	0.0448042		-14.7	+/-20
Aroclor-1260 (1)	A	250.00	198	0.0423031	0.0335272		-20.7	
Aroclor-1260 (2)	A	250.00	205	0.0417493	0.0341699		-18.2	
Aroclor-1260 (3)	A	250.00	217	0.1045597	0.0906566		-13.3	
Aroclor-1260 (4)	A	250.00	223	0.0512104	0.0456944		-10.8	
Aroclor-1260 (5)	A	250.00	224	0.0223305	0.0199727		-10.6	
Aroclor 1260 [2C]	A	250.00	240	0.0638471	0.0623540		-3.9	+/-20
Aroclor-1260 (1) [2C]	A	250.00	230	0.0424868	0.0390243		-8.1	
Aroclor-1260 (2) [2C]	A	250.00	248	0.1111292	0.1104176		-0.6	
Aroclor-1260 (3) [2C]	A	250.00	233	0.0275392	0.0256342		-6.9	
Aroclor-1260 (4) [2C]	A	250.00	250	0.0742331	0.0743397		0.1	
Decachlorobiphenyl	A	40.000	39.4	0.7991406	0.7875382		-1.5	+/-20
Tetrachlorometaxylene	A	40.000	35.9	1.2048230	1.0810060		-10.3	+/-20
Decachlorobiphenyl [2C]	A	40.000	41.0	1.1360140	1.1634080		2.4	+/-20
Tetrachlorometaxylene [2C]	A	40.000	39.1	1.1005470	1.0756580		-2.3	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072325ECD7.D
Data file 2: /230707.b/230707.b/07072325ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV4
Client ID:
Injection Date: 07-JUL-2023 19:09
Report Date: 07/08/2023 20:45
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.718	-0.001	329771	5.609	0.002	172870	35.9	39.1	8.6	Tetrachloro-m-xylene
13.819	-0.000	521092	14.047	0.000	346959	39.4	41.0	3.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	610119	1.4
Hexabromobiphenyl	876625	1323344	51.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	321422	-8.0
Hexabromobiphenyl	652984	596453	-8.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.191	-0.000	55464	234.8	1	7.185	0.001	40469	222.4
Aroclor-1016	2	7.576	0.001	175283	237.3	2	7.805	0.003	93371	240.8
Aroclor-1016	3	7.715	0.001	84366	247.0	3	8.013	0.010	45267	264.7
Aroclor-1016	4	8.378	0.001	35372	251.1	4	8.245	0.002	33349	245.5
Total Col1Ave (4 peaks):					242.5	Total Col2Ave (4 peaks):				243.3 RPD = 0
Corrected Ave (3 peaks):					239.7	Corrected Ave (3 peaks):				236.2 RPD = 1
Aroclor-1260	1	10.972	-0.000	138650	198.1	1	11.585	-0.000	72738	229.6
Aroclor-1260	2	11.289	-0.001	141308	204.6	2	11.854	0.001	205809	248.4
Aroclor-1260	3	11.665	0.000	374906	216.8	3	12.368	0.001	47780	232.7
Aroclor-1260	4	12.070	0.001	188967	223.1	4	12.436	-0.001	138563	250.4
Aroclor-1260	5	12.172	0.000	82596	223.6	NS	---			----
Total Col1Ave (5 peaks):					213.2	Total Col2Ave (4 peaks):				240.3 RPD = 12
Corrected Ave (4 peaks):					210.6	Corrected Ave (3 peaks):				236.9 RPD = 12

Total PCB Area Col1 (5.818 - 13.719) = 3839399 Col1 Total PCB = 0.6 ppm*

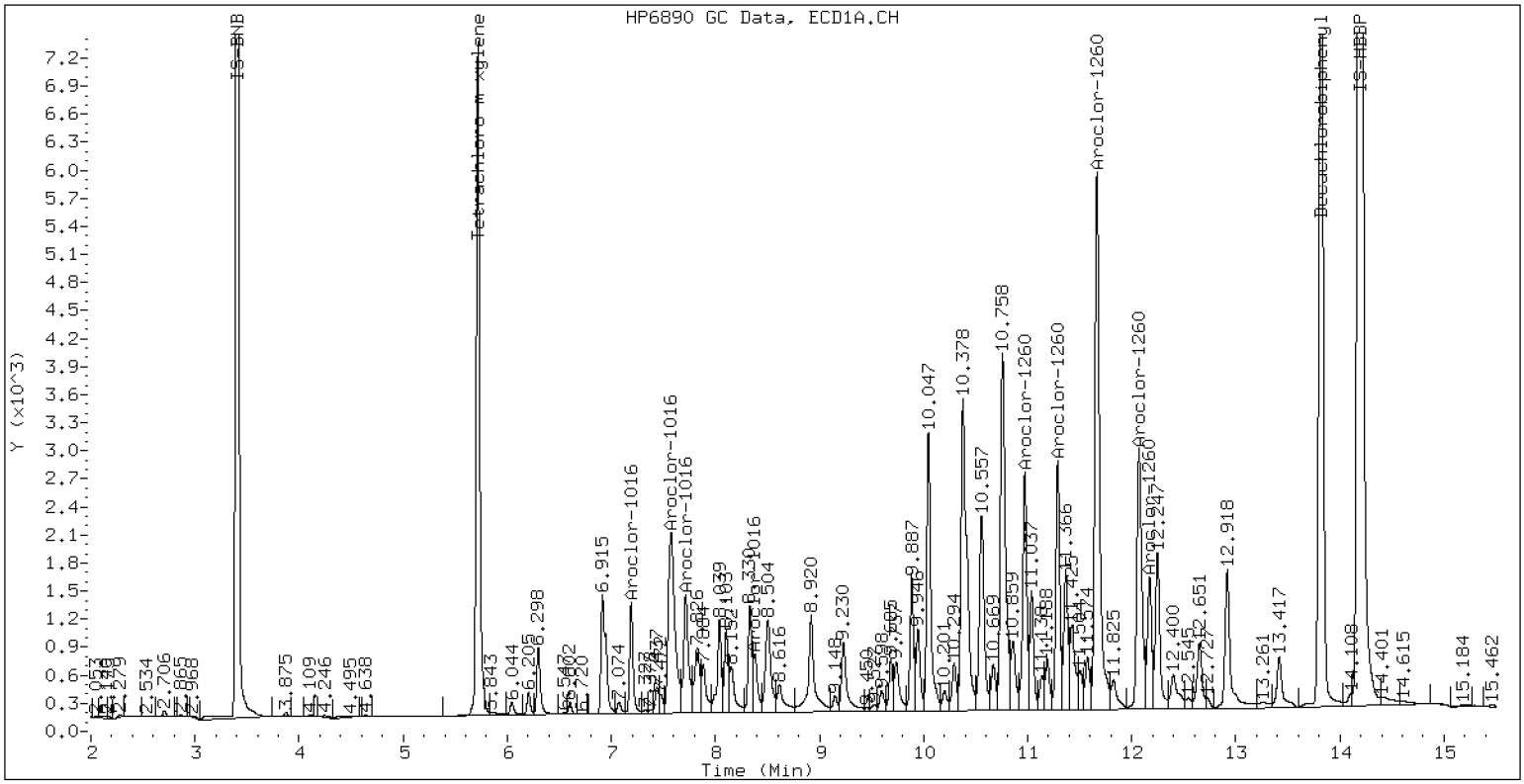
Total PCB Area Col2 (5.707 - 13.947) = 1838418 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

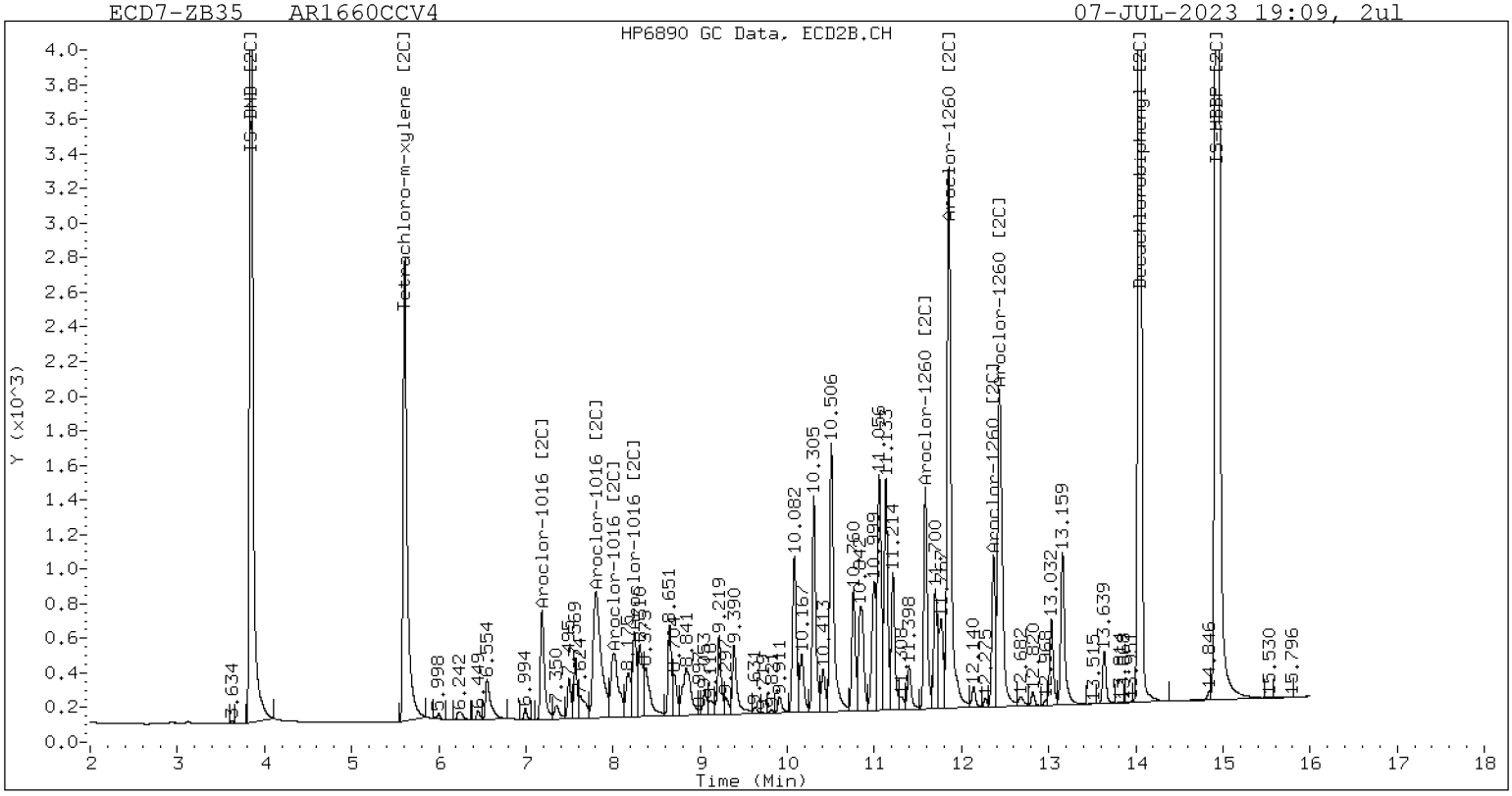
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV4 07-JUL-2023 19:09, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV4 07-JUL-2023 19:09, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	07072339ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLG0066	Injection Date:	07/07/23
Lab Sample ID:	SLG0066-CCV5	Injection Time:	00:01
Sequence Name:	AR1254CCV5		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1254	A	250.00	239	0.0678007	0.0640898		-4.4	+/-20
Aroclor-1254 (1)	A	250.00	155		0.0509817			
Aroclor-1254 (2)	A	250.00	271		0.0400156			
Aroclor-1254 (3)	A	250.00	280		0.0594783			
Aroclor-1254 (4)	A	250.00	285		0.1186926			
Aroclor-1254 (5)	A	250.00	204		0.0512809			
Aroclor 1254 [2C]	A	250.00	216	0.0720677	0.0612279		-13.5	+/-20
Aroclor-1254 (1) [2C]	A	250.00	206		0.0500936			
Aroclor-1254 (2) [2C]	A	250.00	203		0.0293302			
Aroclor-1254 (3) [2C]	A	250.00	266		0.0523604			
Aroclor-1254 (4) [2C]	A	250.00	207		0.0888973			
Aroclor-1254 (5) [2C]	A	250.00	200		0.0854579			
Decachlorobiphenyl	A	40.000	38.3	0.7991406	0.7644022		-4.3	+/-20
Tetrachlorometaxylene	A	40.000	36.5	1.2048230	1.0986960		-8.8	+/-20
Decachlorobiphenyl [2C]	A	40.000	37.1	1.1360140	1.0527110		-7.3	+/-20
Tetrachlorometaxylene [2C]	A	40.000	42.3	1.1005470	1.1647700		5.8	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072339ECD7.D
Data file 2: /230707.b/230707.b/07072339ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254CCV5
Client ID:
Injection Date: 07-JUL-2023 00:01
Report Date: 07/08/2023 20:45
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.717	-0.001	348392	5.609	0.002	185803	36.5	42.3	14.9	Tetrachloro-m-xylene
13.819	0.000	605843	14.046	-0.000	325316	38.3	37.1	3.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	634192	5.4
Hexabromobiphenyl	876625	1585142	80.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	319038	-8.7
Hexabromobiphenyl	652984	618054	-5.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col					ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1254	1	9.230	0.001	101038	155.0	1	9.389	0.005	49943	206.0
Aroclor-1254	2	9.305	0.002	79305	270.8	2	9.484	0.004	29242	203.1
Aroclor-1254	3	9.596	0.001	117877	280.1	3	9.909	0.004	52203	265.7
Aroclor-1254	4	9.736	0.003	235231	285.4	4	10.065	0.005	88630	206.7
Aroclor-1254	5	10.098	0.003	101631	204.2	5	10.314	0.005	85201	200.3

Total Col1Ave (5 peaks): 239.1 Total Col2Ave (5 peaks): 216.4 RPD = 10

Corrected Ave (4 peaks): 227.5 Corrected Ave (4 peaks): 204.0 RPD = 11

Total PCB Area Col1 (5.818 - 13.719) = 2538588 Col1 Total PCB = 0.4 ppm*

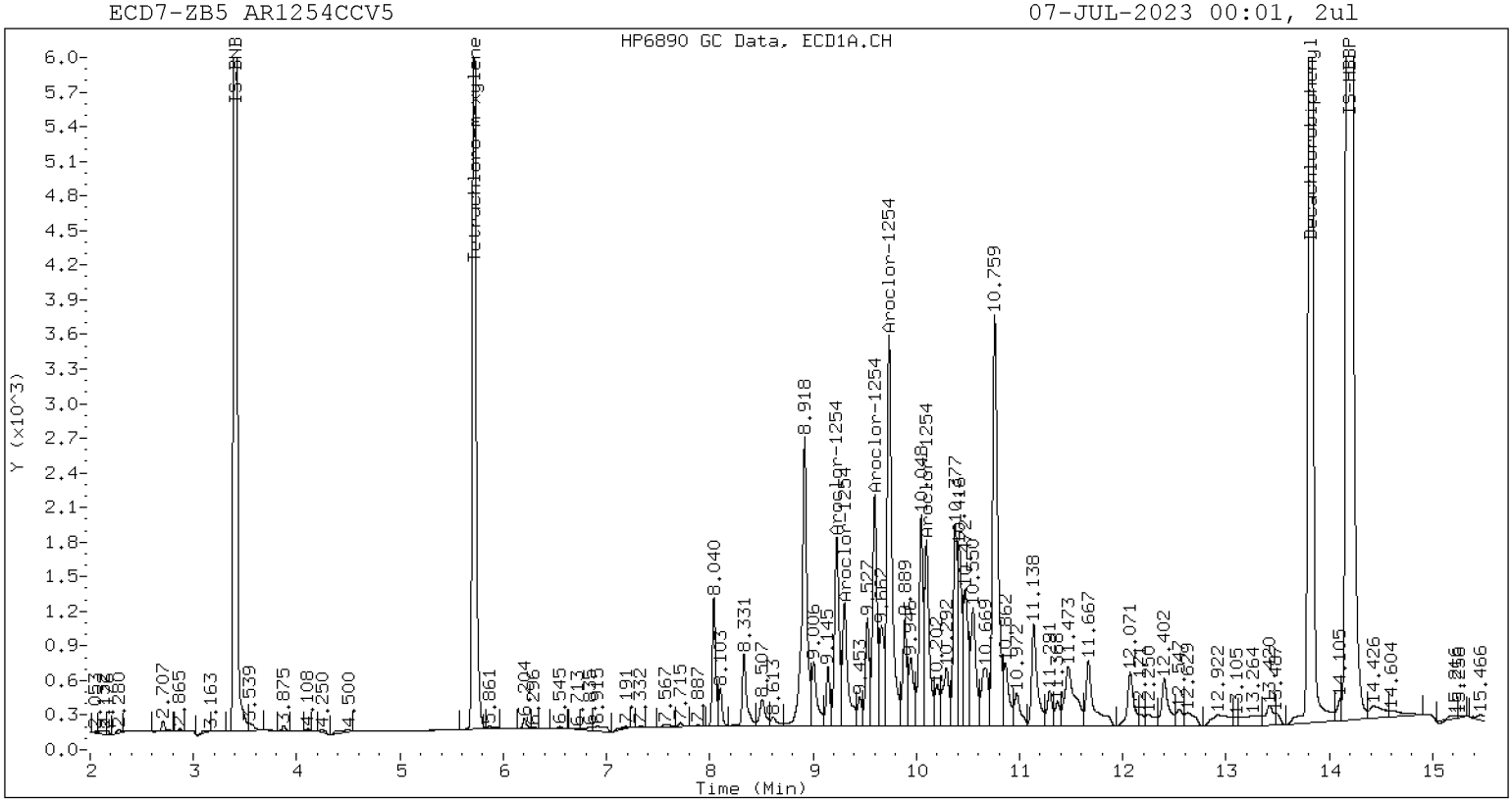
Total PCB Area Col2 (5.707 - 13.947) = 962076 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

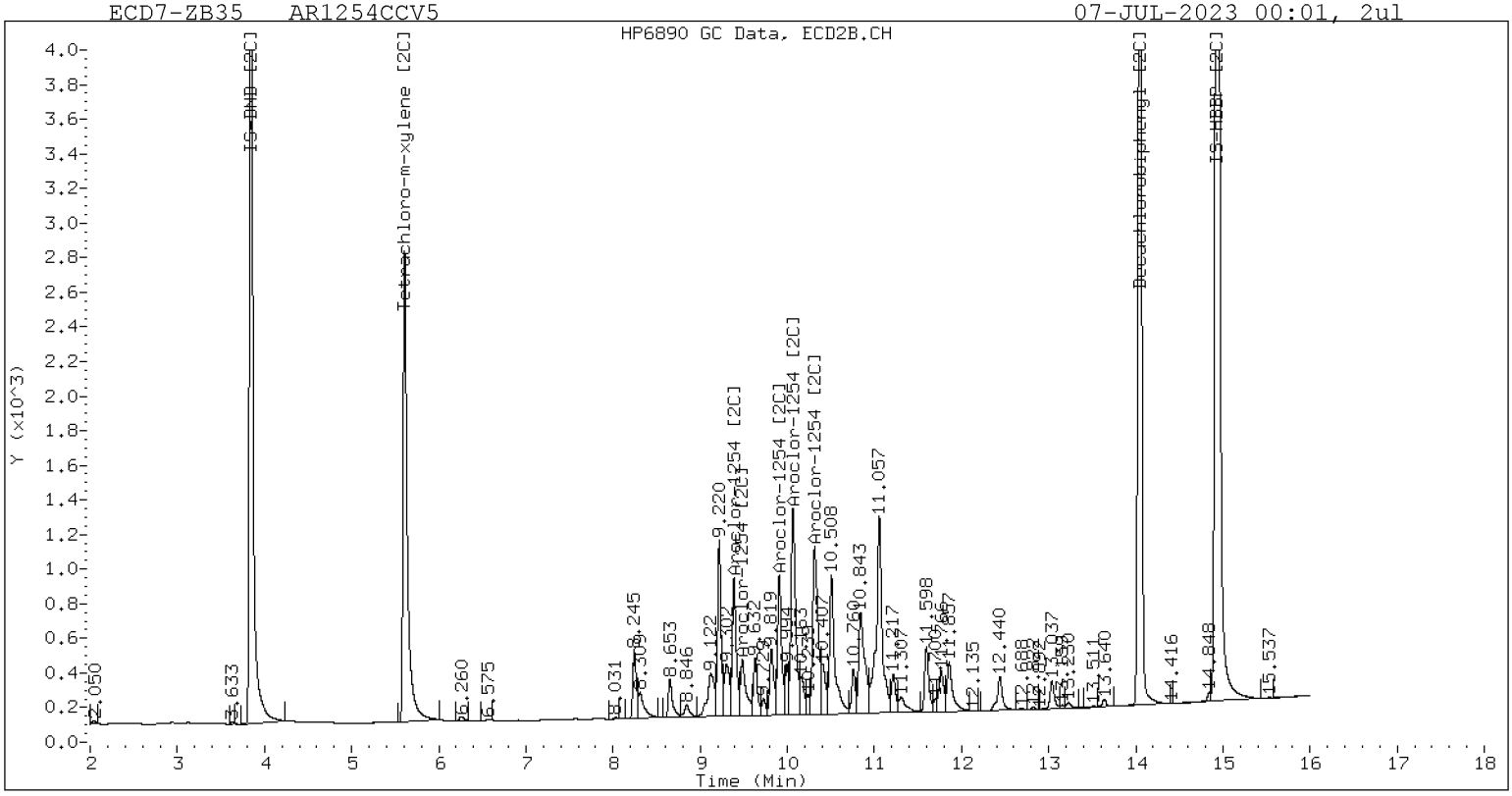
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254CCV5 07-JUL-2023 00:01, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254CCV5 07-JUL-2023 00:01, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	07072340ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLG0066	Injection Date:	07/08/23
Lab Sample ID:	SLG0066-CCV6	Injection Time:	00:22
Sequence Name:	AR1660CCV6		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	246	0.0477728	0.0467274		-1.7	+/-20
Aroclor-1016 (1)	A	250.00	237	0.0309764	0.0293334		-5.3	
Aroclor-1016 (2)	A	250.00	242	0.0968611	0.0936268		-3.3	
Aroclor-1016 (3)	A	250.00	254	0.0447793	0.0454261		1.4	
Aroclor-1016 (4)	A	250.00	251	0.0184745	0.0185231		0.3	
Aroclor 1016 [2C]	A	250.00	247	0.0545435	0.0535180		-1.3	+/-20
Aroclor-1016 (1) [2C]	A	250.00	223	0.0452861	0.0404349		-10.7	
Aroclor-1016 (2) [2C]	A	250.00	244	0.0965080	0.0940192		-2.6	
Aroclor-1016 (3) [2C]	A	250.00	266	0.0425661	0.0452683		6.3	
Aroclor-1016 (4) [2C]	A	250.00	254	0.0338137	0.0343495		1.6	
Aroclor 1260	A	250.00	227	0.0524306	0.0478547		-9.0	+/-20
Aroclor-1260 (1)	A	250.00	212	0.0423031	0.0358648		-15.2	
Aroclor-1260 (2)	A	250.00	219	0.0417493	0.0365625		-12.4	
Aroclor-1260 (3)	A	250.00	233	0.1045597	0.0973223		-6.9	
Aroclor-1260 (4)	A	250.00	236	0.0512104	0.0482679		-5.7	
Aroclor-1260 (5)	A	250.00	238	0.0223305	0.0212562		-4.8	
Aroclor 1260 [2C]	A	250.00	228	0.0638471	0.0593432		-8.7	+/-20
Aroclor-1260 (1) [2C]	A	250.00	217	0.0424868	0.0368198		-13.3	
Aroclor-1260 (2) [2C]	A	250.00	236	0.1111292	0.1051163		-5.4	
Aroclor-1260 (3) [2C]	A	250.00	220	0.0275392	0.0242660		-11.9	
Aroclor-1260 (4) [2C]	A	250.00	240	0.0742331	0.0711707		-4.1	
Decachlorobiphenyl	A	40.000	39.1	0.7991406	0.7805164		-2.3	+/-20
Tetrachlorometaxylene	A	40.000	36.6	1.2048230	1.1034420		-8.4	+/-20
Decachlorobiphenyl [2C]	A	40.000	39.6	1.1360140	1.1249850		-1.0	+/-20
Tetrachlorometaxylene [2C]	A	40.000	40.0	1.1005470	1.1005150		-0.003	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072340ECD7.D
Data file 2: /230707.b/230707.b/07072340ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV6
Client ID:
Injection Date: 08-JUL-2023 00:22
Report Date: 07/08/2023 20:46
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.718	-0.001	359657	5.609	0.002	183682	36.6	40.0	8.8	Tetrachloro-m-xylene
13.818	-0.001	531415	14.047	-0.000	369549	39.1	39.6	1.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	651882	8.4
Hexabromobiphenyl	876625	1361701	55.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	333811	-4.4
Hexabromobiphenyl	652984	656985	0.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.192	0.001	59756	236.7	1	7.186	0.001	42180	223.2
Aroclor-1016	2	7.576	0.001	190730	241.7	2	7.805	0.004	98077	243.6
Aroclor-1016	3	7.716	0.001	92539	253.6	3	8.012	0.009	47222	265.9
Aroclor-1016	4	8.379	0.001	37734	250.7	4	8.246	0.003	35832	254.0
Total Col1Ave (4 peaks):					245.7	Total Col2Ave (4 peaks):				246.7 RPD = 0
Corrected Ave (3 peaks):					243.0	Corrected Ave (3 peaks):				240.2 RPD = 1
Aroclor-1260	1	10.973	0.001	152616	212.0	1	11.587	0.002	75594	216.7
Aroclor-1260	2	11.291	0.001	155585	218.9	2	11.855	0.002	215812	236.5
Aroclor-1260	3	11.667	0.002	414137	232.7	3	12.369	0.001	49820	220.3
Aroclor-1260	4	12.071	0.002	205395	235.6	4	12.437	0.000	146119	239.7
Aroclor-1260	5	12.173	0.001	90452	238.0	NS	---			----
Total Col1Ave (5 peaks):					227.4	Total Col2Ave (4 peaks):				228.3 RPD = 0
Corrected Ave (4 peaks):					224.8	Corrected Ave (3 peaks):				224.5 RPD = 0

Total PCB Area Col1 (5.818 - 13.719) = 4171041 Col1 Total PCB = 0.6 ppm*

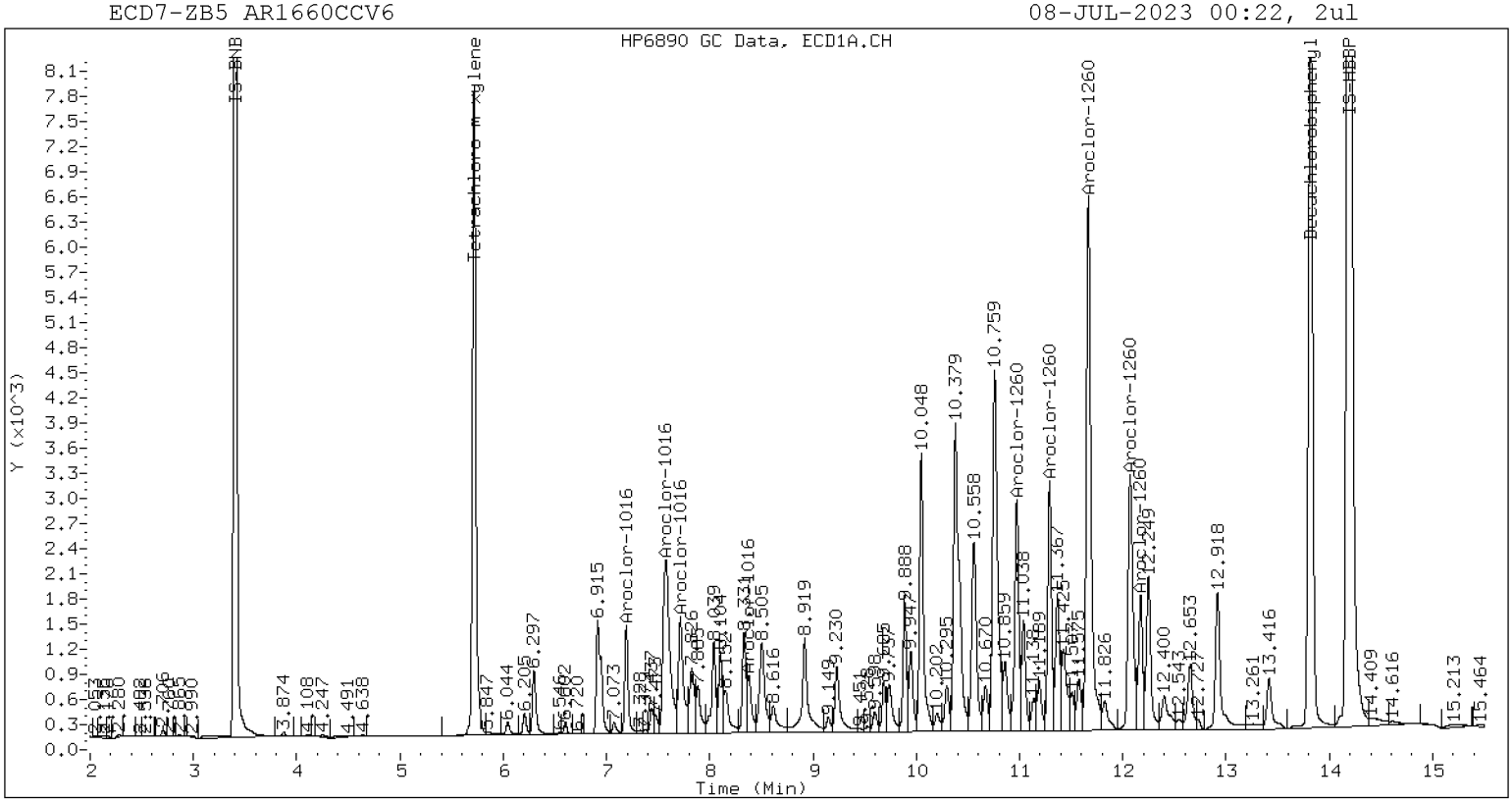
Total PCB Area Col2 (5.707 - 13.947) = 1923589 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

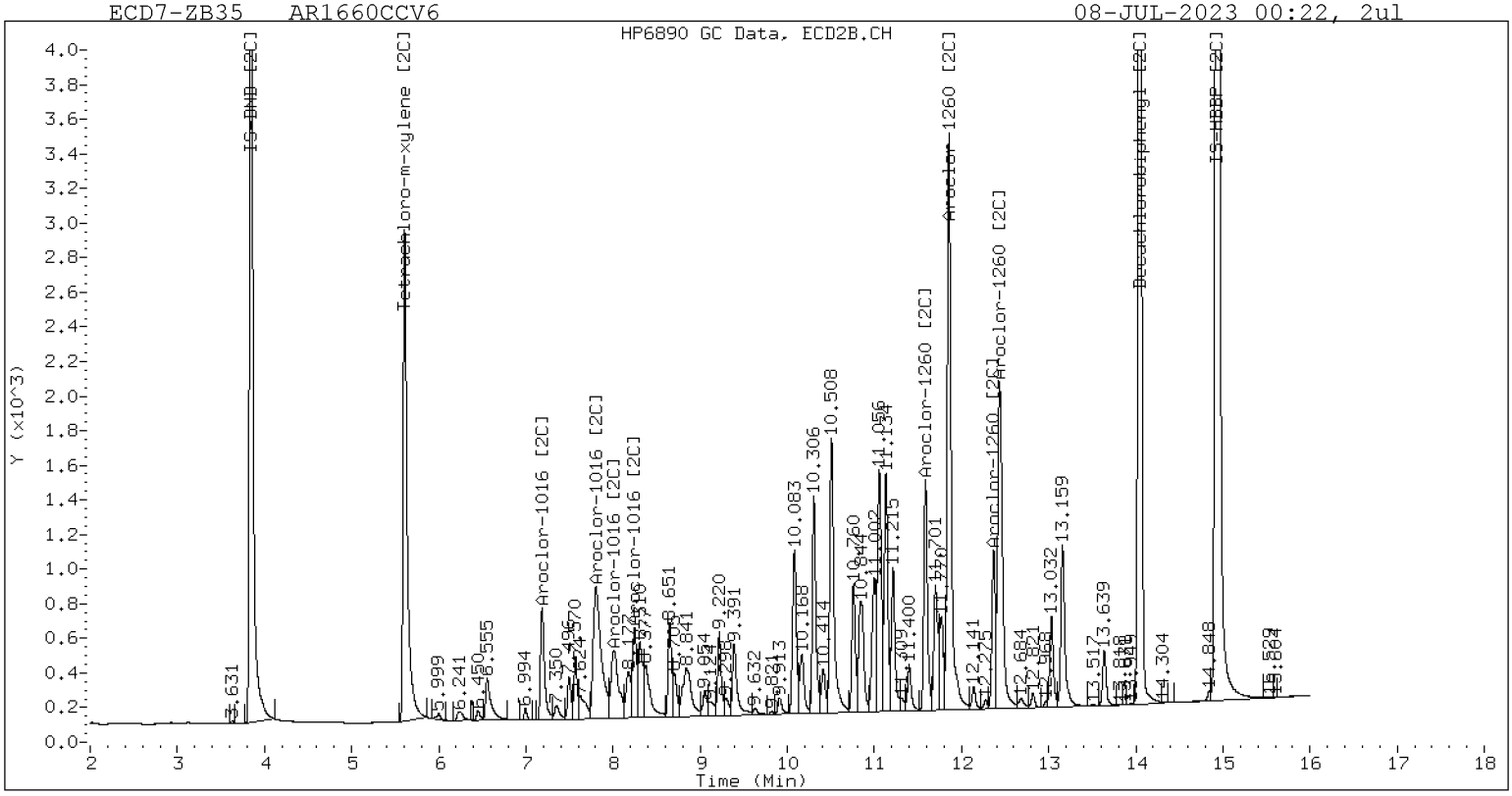
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV6 08-JUL-2023 00:22, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV6 08-JUL-2023 00:22, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	07072351ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLG0066	Injection Date:	07/08/23
Lab Sample ID:	SLG0066-CCV7	Injection Time:	04:11
Sequence Name:	AR1248CCV7		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1248	A	250.00	259	0.0568879	0.0573132		3.5	+/-20
Aroclor-1248 (1)	A	250.00	265		0.0216154			
Aroclor-1248 (2)	A	250.00	259		0.0549300			
Aroclor-1248 (3)	A	250.00	231		0.0942298			
Aroclor-1248 (4)	A	250.00	281		0.0584774			
Aroclor 1248 [2C]	A	250.00	245	0.0454726	0.0444461		-2.1	+/-20
Aroclor-1248 (1) [2C]	A	250.00	247		0.0375501			
Aroclor-1248 (2) [2C]	A	250.00	241		0.0387506			
Aroclor-1248 (3) [2C]	A	250.00	256		0.0482443			
Aroclor-1248 (4) [2C]	A	250.00	236		0.0532392			
Decachlorobiphenyl	A	40.000	37.6	0.7991406	0.7517825		-5.9	+/-20
Tetrachlorometaxylene	A	40.000	37.6	1.2048230	1.1325630		-6.0	+/-20
Decachlorobiphenyl [2C]	A	40.000	39.9	1.1360140	1.1331090		-0.3	+/-20
Tetrachlorometaxylene [2C]	A	40.000	38.2	1.1005470	1.0517690		-4.4	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072351ECD7.D
Data file 2: /230707.b/230707.b/07072351ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248CCV7
Client ID:
Injection Date: 08-JUL-2023 04:11
Report Date: 07/08/2023 20:46
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.718	-0.000	353896	5.609	0.002	179437	37.6	38.2	1.7	Tetrachloro-m-xylene
13.819	0.000	604865	14.047	0.001	393140	37.6	39.9	5.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	624947	3.9
Hexabromobiphenyl	876625	1609149	83.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	341210	-2.3
Hexabromobiphenyl	652984	693914	6.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1248	1	8.379	0.000	42214	264.6	1	8.246	0.002	40039	246.7
Aroclor-1248	2	8.506	0.001	107276	258.8	2	8.652	0.000	41319	241.0
Aroclor-1248	3	8.921	-0.004	184027	230.8	3	9.120	0.005	51442	255.9
Aroclor-1248	4	9.222	0.002	114204	281.0	4	9.546	0.003	56768	235.5
Total Col1Ave (4 peaks): 258.8						Total Col2Ave (4 peaks): 244.8			RPD = 6	
Corrected Ave (3 peaks): 251.4						Corrected Ave (3 peaks): 241.1			RPD = 4	

Total PCB Area Col1 (5.818 - 13.719) = 1737080 Col1 Total PCB = 0.2 ppm*

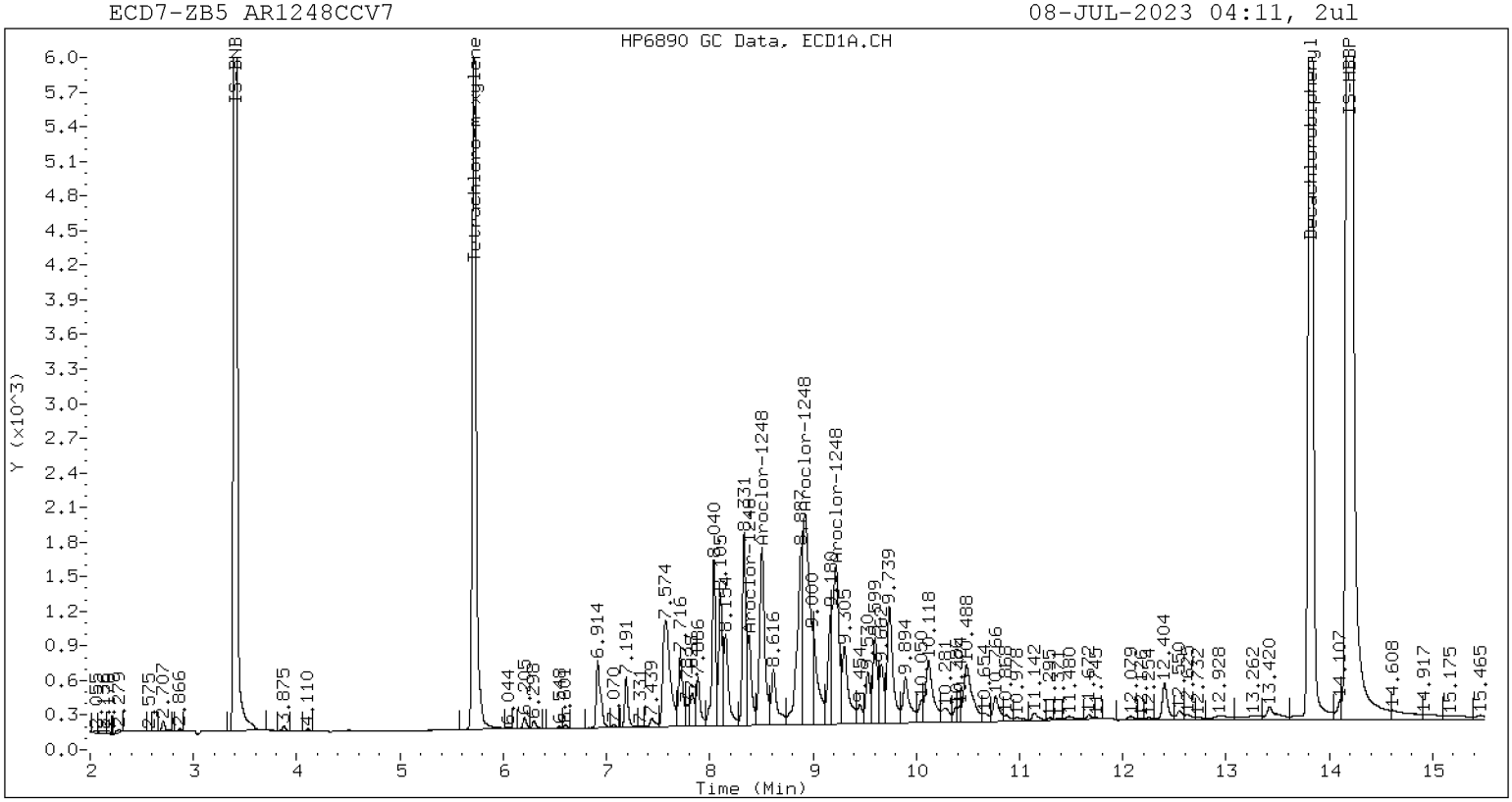
Total PCB Area Col2 (5.707 - 13.947) = 832521 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

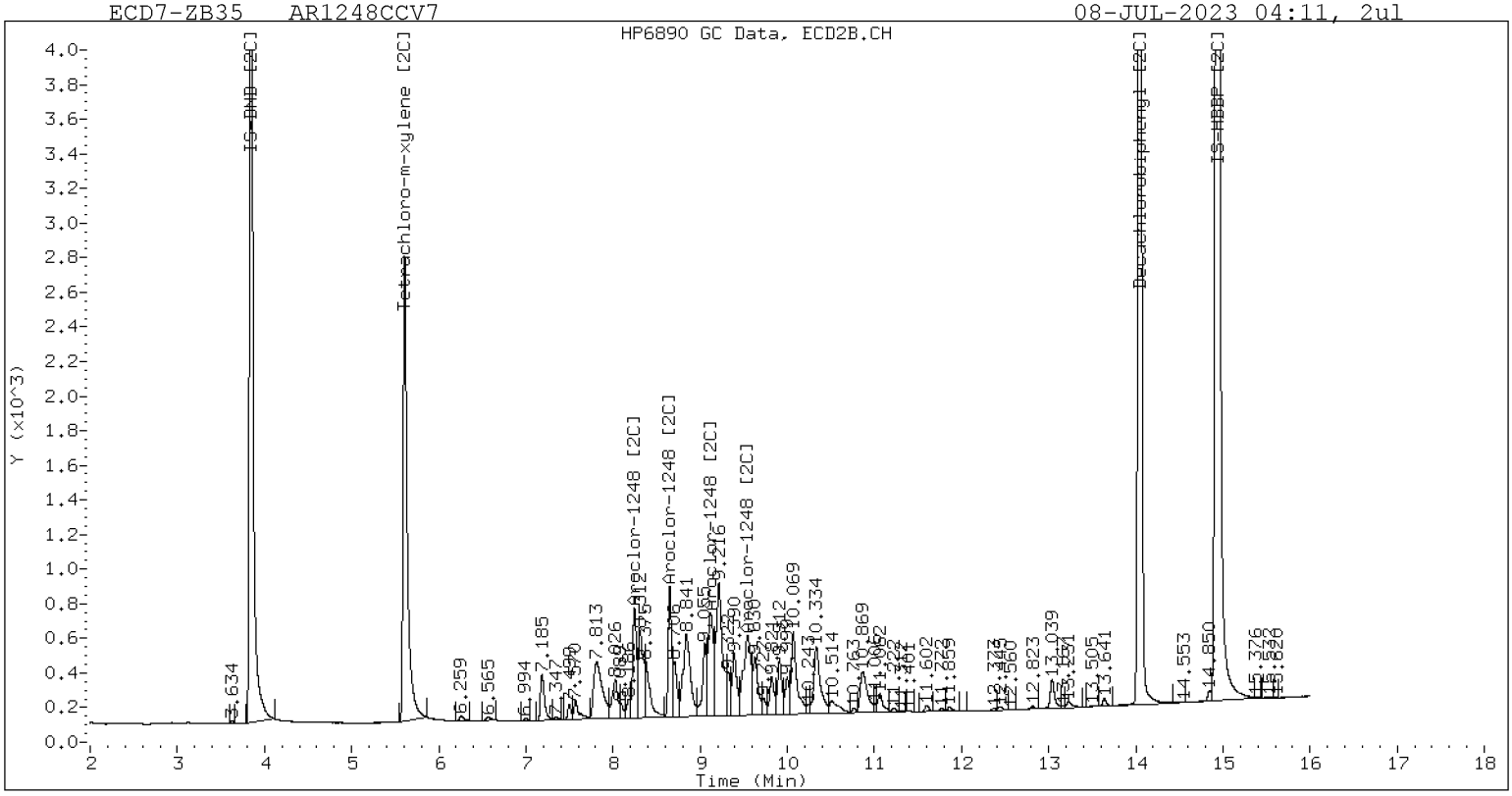
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248CCV7 08-JUL-2023 04:11, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 AR1248CCV7 08-JUL-2023 04:11, 2ul

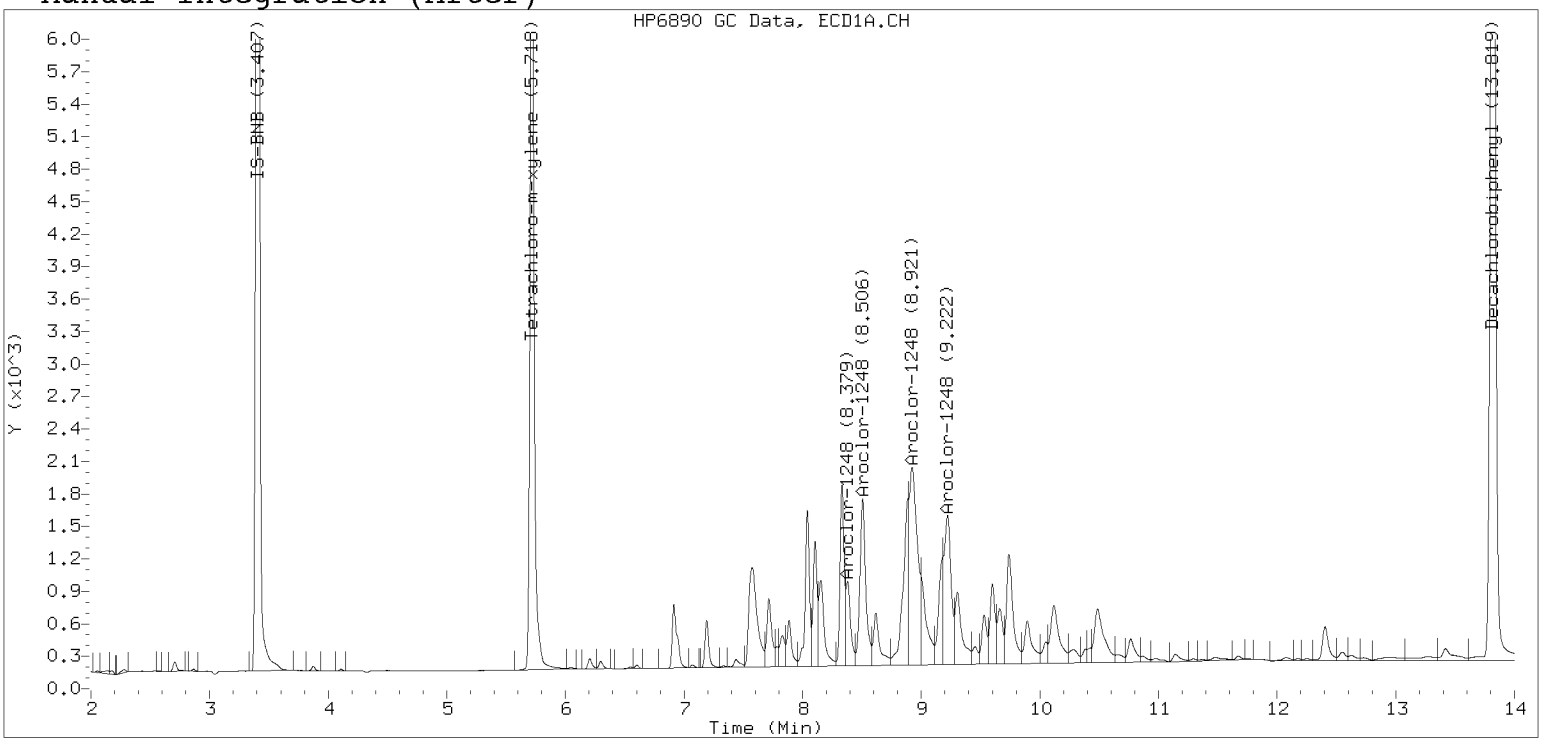


ZB-35 Manual Integration: NO

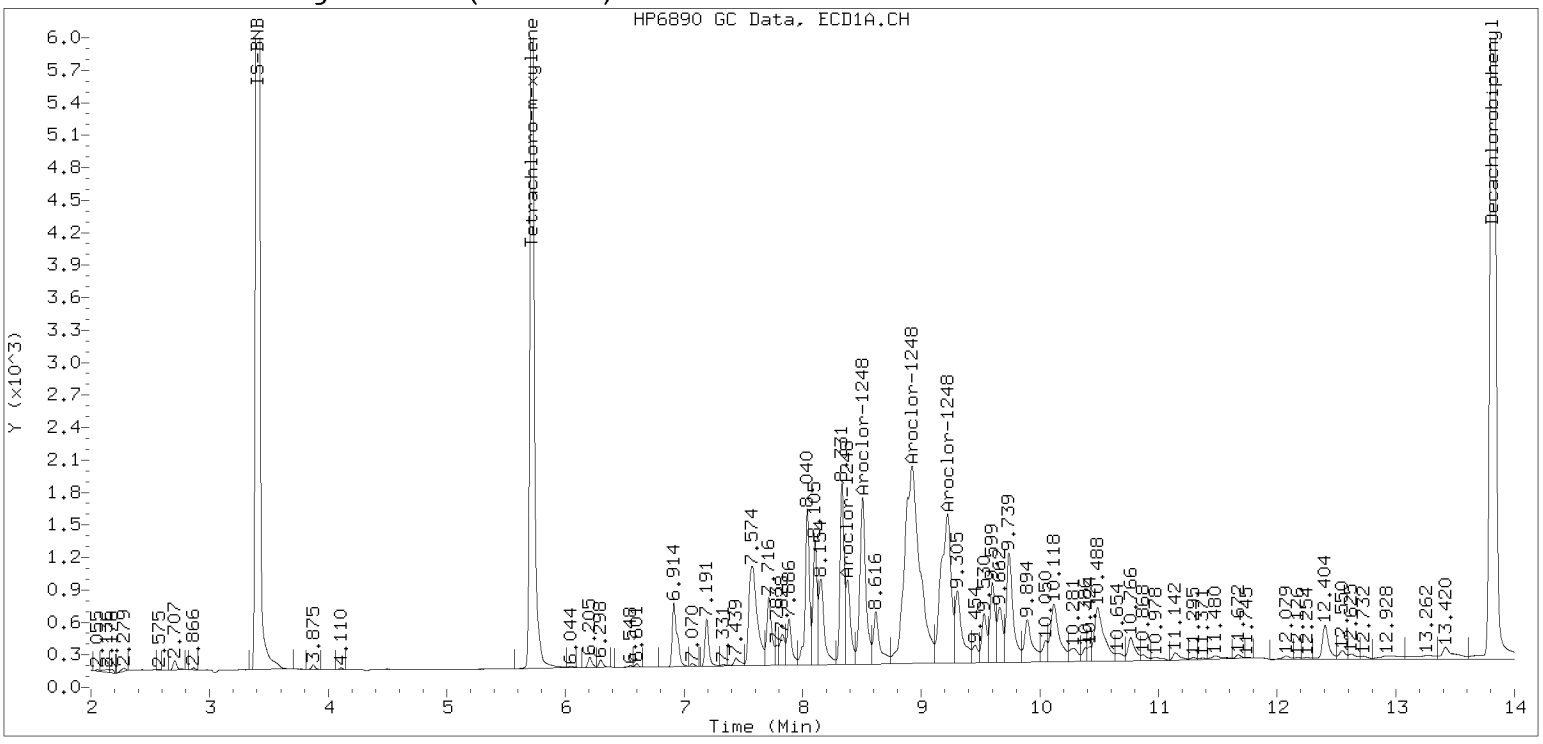
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/230707.b/07072351ECD7.D Injection Date: 08-JUL-2023 04:11

Manual Integration (After)



Processed Integration (Before)



Analytical Resources, LLC
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	07072352ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLG0066	Injection Date:	07/08/23
Lab Sample ID:	SLG0066-CCV8	Injection Time:	04:32
Sequence Name:	AR1660CCV8		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	249	0.0477728	0.0472471		-0.3	+/-20
Aroclor-1016 (1)	A	250.00	238	0.0309764	0.0294851		-4.8	
Aroclor-1016 (2)	A	250.00	244	0.0968611	0.0944055		-2.5	
Aroclor-1016 (3)	A	250.00	257	0.0447793	0.0459779		2.7	
Aroclor-1016 (4)	A	250.00	259	0.0184745	0.0191197		3.5	
Aroclor 1016 [2C]	A	250.00	244	0.0545435	0.0532130		-2.2	+/-20
Aroclor-1016 (1) [2C]	A	250.00	221	0.0452861	0.0399559		-11.8	
Aroclor-1016 (2) [2C]	A	250.00	244	0.0965080	0.0943673		-2.2	
Aroclor-1016 (3) [2C]	A	250.00	262	0.0425661	0.0445656		4.7	
Aroclor-1016 (4) [2C]	A	250.00	251	0.0338137	0.0339632		0.4	
Aroclor 1260	A	250.00	205	0.0524306	0.0430809		-18.1	+/-20
Aroclor-1260 (1)	A	250.00	192	0.0423031	0.0324099		-23.4	
Aroclor-1260 (2)	A	250.00	197	0.0417493	0.0328814		-21.2	
Aroclor-1260 (3)	A	250.00	210	0.1045597	0.0876282		-16.2	
Aroclor-1260 (4)	A	250.00	212	0.0512104	0.0433426		-15.4	
Aroclor-1260 (5)	A	250.00	214	0.0223305	0.0191426		-14.3	
Aroclor 1260 [2C]	A	250.00	221	0.0638471	0.0574768		-11.8	+/-20
Aroclor-1260 (1) [2C]	A	250.00	206	0.0424868	0.0350250		-17.6	
Aroclor-1260 (2) [2C]	A	250.00	230	0.1111292	0.1022784		-8.0	
Aroclor-1260 (3) [2C]	A	250.00	213	0.0275392	0.0235061		-14.6	
Aroclor-1260 (4) [2C]	A	250.00	233	0.0742331	0.0690975		-6.9	
Decachlorobiphenyl	A	40.000	39.0	0.7991406	0.7799562		-2.4	+/-20
Tetrachlorometaxylene	A	40.000	36.9	1.2048230	1.1118040		-7.7	+/-20
Decachlorobiphenyl [2C]	A	40.000	39.1	1.1360140	1.1090940		-2.4	+/-20
Tetrachlorometaxylene [2C]	A	40.000	40.5	1.1005470	1.1155220		1.4	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072352ECD7.D
Data file 2: /230707.b/230707.b/07072352ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV8
Client ID:
Injection Date: 08-JUL-2023 04:32
Report Date: 07/08/2023 20:46
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.718	-0.001	378419	5.610	0.003	192046	36.9	40.5	9.4	Tetrachloro-m-xylene
13.819	0.000	623582	14.047	0.000	385785	39.0	39.1	0.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	680730	13.2
Hexabromobiphenyl	876625	1599018	82.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	344316	-1.4
Hexabromobiphenyl	652984	695676	6.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.191	0.000	62723	238.0	1	7.185	0.000	42992	220.6
Aroclor-1016	2	7.575	0.000	200827	243.7	2	7.808	0.006	101538	244.5
Aroclor-1016	3	7.715	0.001	97808	256.7	3	8.010	0.007	47952	261.7
Aroclor-1016	4	8.378	0.000	40673	258.7	4	8.246	0.004	36544	251.1
Total Col1Ave (4 peaks):					249.3	Total Col2Ave (4 peaks):				244.5 RPD = 2
Corrected Ave (3 peaks):					246.1	Corrected Ave (3 peaks):				238.7 RPD = 3
Aroclor-1260	1	10.973	0.001	161950	191.5	1	11.588	0.002	76144	206.1
Aroclor-1260	2	11.290	0.000	164306	196.9	2	11.856	0.002	222352	230.1
Aroclor-1260	3	11.666	0.001	437872	209.5	3	12.369	0.001	51102	213.4
Aroclor-1260	4	12.070	0.001	216580	211.6	4	12.438	0.001	150217	232.7
Aroclor-1260	5	12.172	0.000	95654	214.3	NS	---			----
Total Col1Ave (5 peaks):					204.8	Total Col2Ave (4 peaks):				220.6 RPD = 7
Corrected Ave (4 peaks):					202.4	Corrected Ave (3 peaks):				216.5 RPD = 7

Total PCB Area Col1 (5.818 - 13.719) = 4403440 Col1 Total PCB = 0.6 ppm*

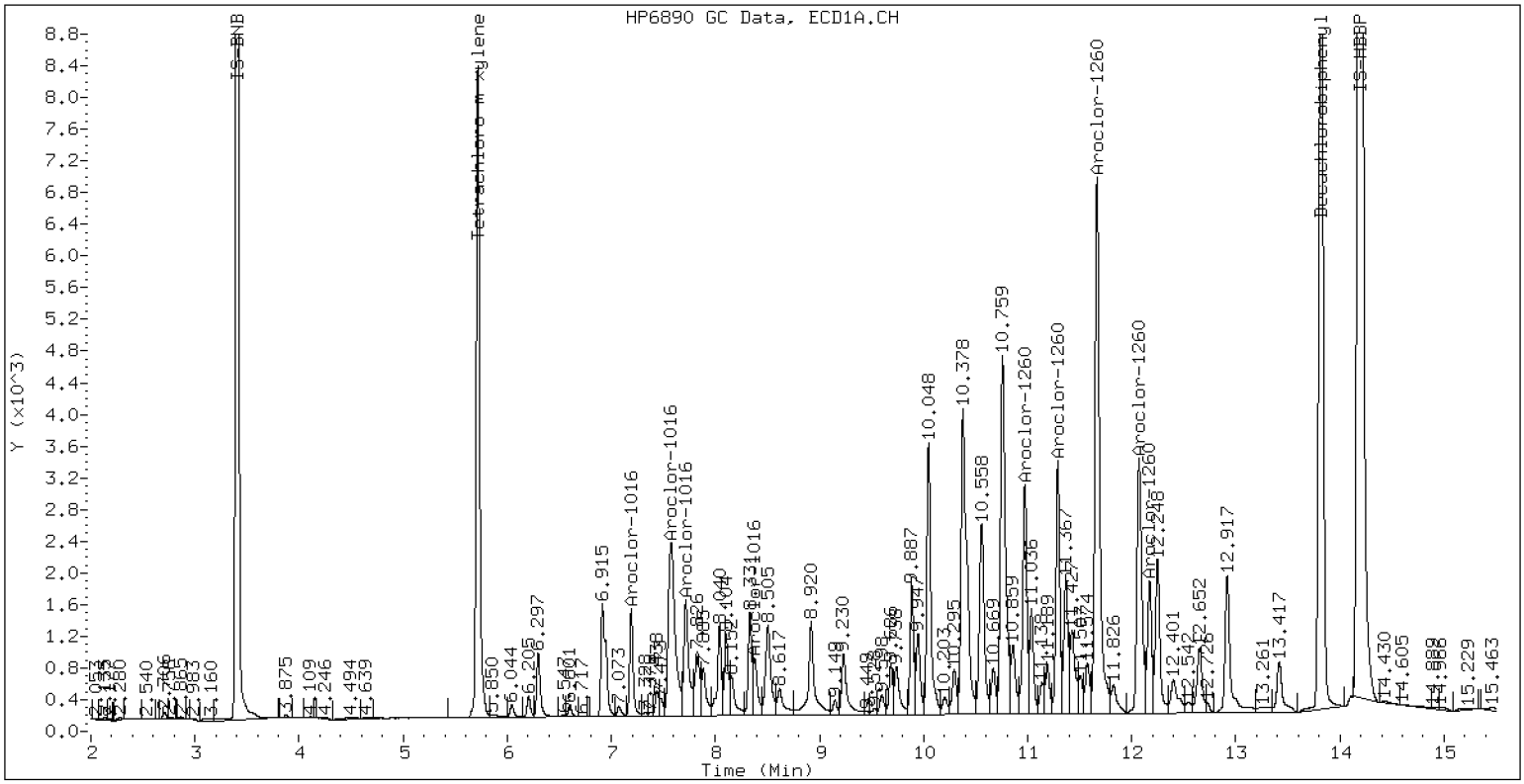
Total PCB Area Col2 (5.707 - 13.947) = 1970149 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

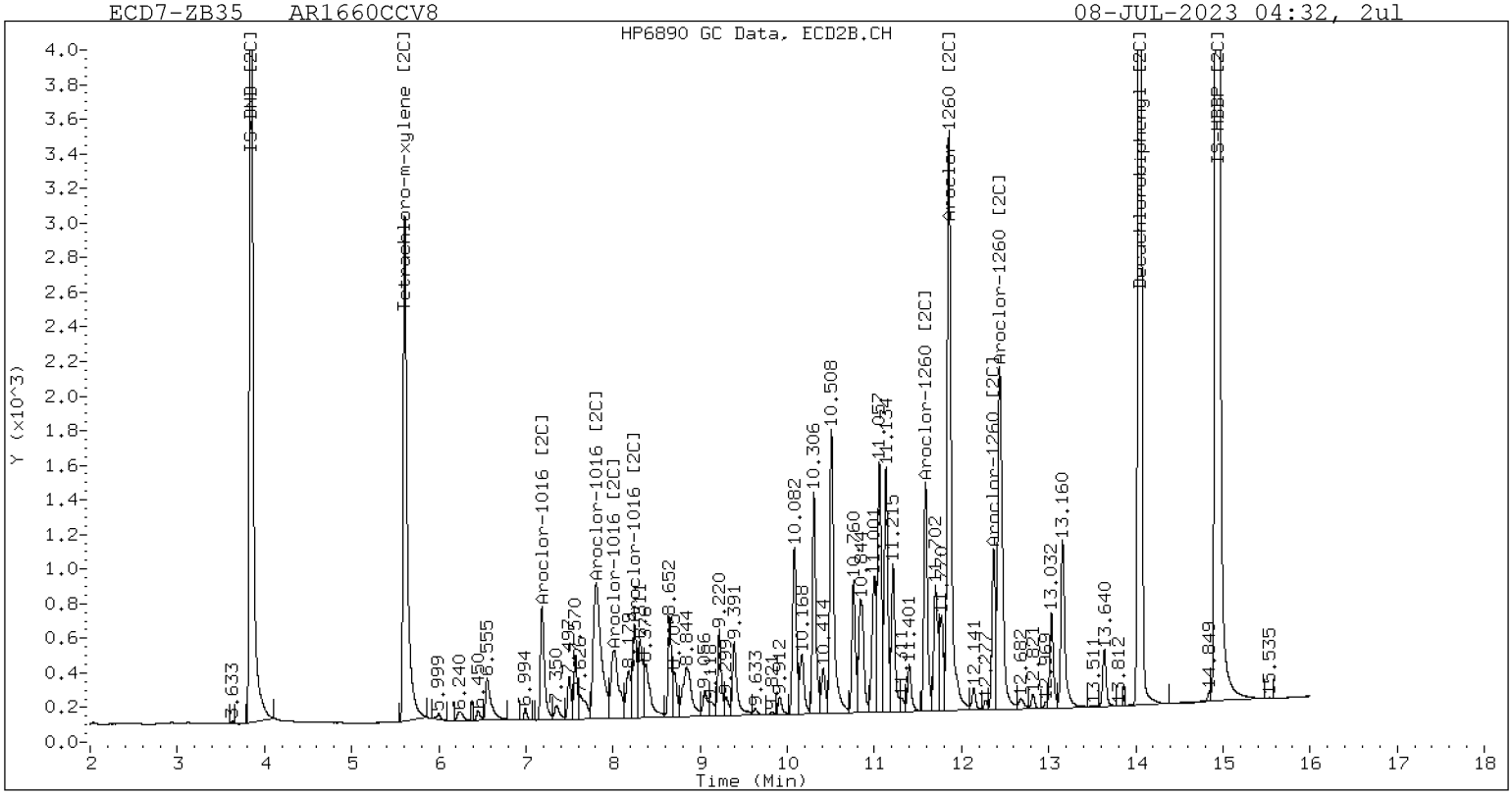
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV8 08-JUL-2023 04:32, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV8 08-JUL-2023 04:32, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	07072368ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLG0066	Injection Date:	07/08/23
Lab Sample ID:	SLG0066-CCV9	Injection Time:	10:06
Sequence Name:	AR1242CCV9		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1242	A	250.00	247	0.0390737	0.0381688		-1.0	+/-20
Aroclor-1242 (1)	A	250.00	241		0.0242989			
Aroclor-1242 (2)	A	250.00	238		0.0761196			
Aroclor-1242 (3)	A	250.00	255		0.0157892			
Aroclor-1242 (4)	A	250.00	255		0.0364676			
Aroclor 1242 [2C]	A	250.00	233	0.0413965	0.0389811		-6.7	+/-20
Aroclor-1242 (1) [2C]	A	250.00	223		0.0318842			
Aroclor-1242 (2) [2C]	A	250.00	245		0.0746184			
Aroclor-1242 (3) [2C]	A	250.00	260		0.0253293			
Aroclor-1242 (4) [2C]	A	250.00	205		0.0240923			
Decachlorobiphenyl	A	40.000	37.1	0.7991406	0.7417206		-7.2	+/-20
Tetrachlorometaxylene	A	40.000	43.7	1.2048230	1.3172430		9.3	+/-20
Decachlorobiphenyl [2C]	A	40.000	37.6	1.1360140	1.0686750		-5.9	+/-20
Tetrachlorometaxylene [2C]	A	40.000	47.1	1.1005470	1.2960690		17.8	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072368ECD7.D
Data file 2: /230707.b/230707.b/07072368ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242CCV9
Client ID:
Injection Date: 08-JUL-2023 10:06
Report Date: 07/08/2023 20:46
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.719	0.000	434486	5.608	0.001	225470	43.7	47.1	7.4	Tetrachloro-m-xylene
13.820	0.000	520409	14.047	0.001	325676	37.1	37.6	1.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	659690	9.7
Hexabromobiphenyl	876625	1403248	60.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	347929	-0.4
Hexabromobiphenyl	652984	609495	-6.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1242	1	7.191	0.002	50093	241.0	1	7.185	0.002	34667	223.0
Aroclor-1242	2	7.576	0.004	156923	238.2	2	7.808	0.005	81131	245.3
Aroclor-1242	3	8.378	0.002	32550	255.5	3	9.126	0.007	27540	259.7
Aroclor-1242	4	8.506	0.001	75179	255.0	4	9.551	0.000	26195	205.0
Total Col1Ave (4 peaks): 247.4						Total Col2Ave (4 peaks): 233.2			RPD = 6	
Corrected Ave (3 peaks): 244.7						Corrected Ave (3 peaks): 224.4			RPD = 9	

Total PCB Area Col1 (5.818 - 13.719) = 1285866 Col1 Total PCB = 0.2 ppm*

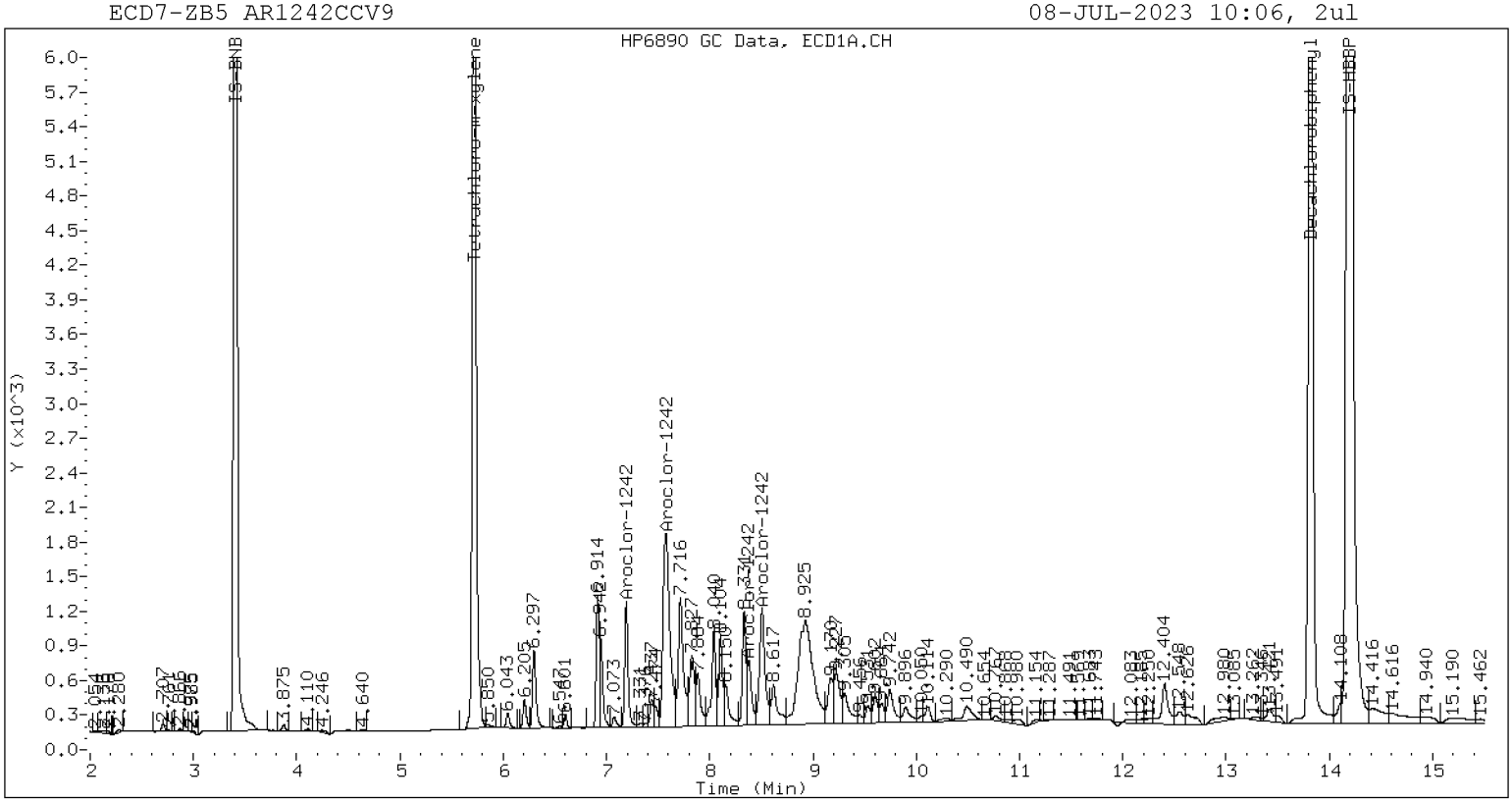
Total PCB Area Col2 (5.707 - 13.947) = 593077 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

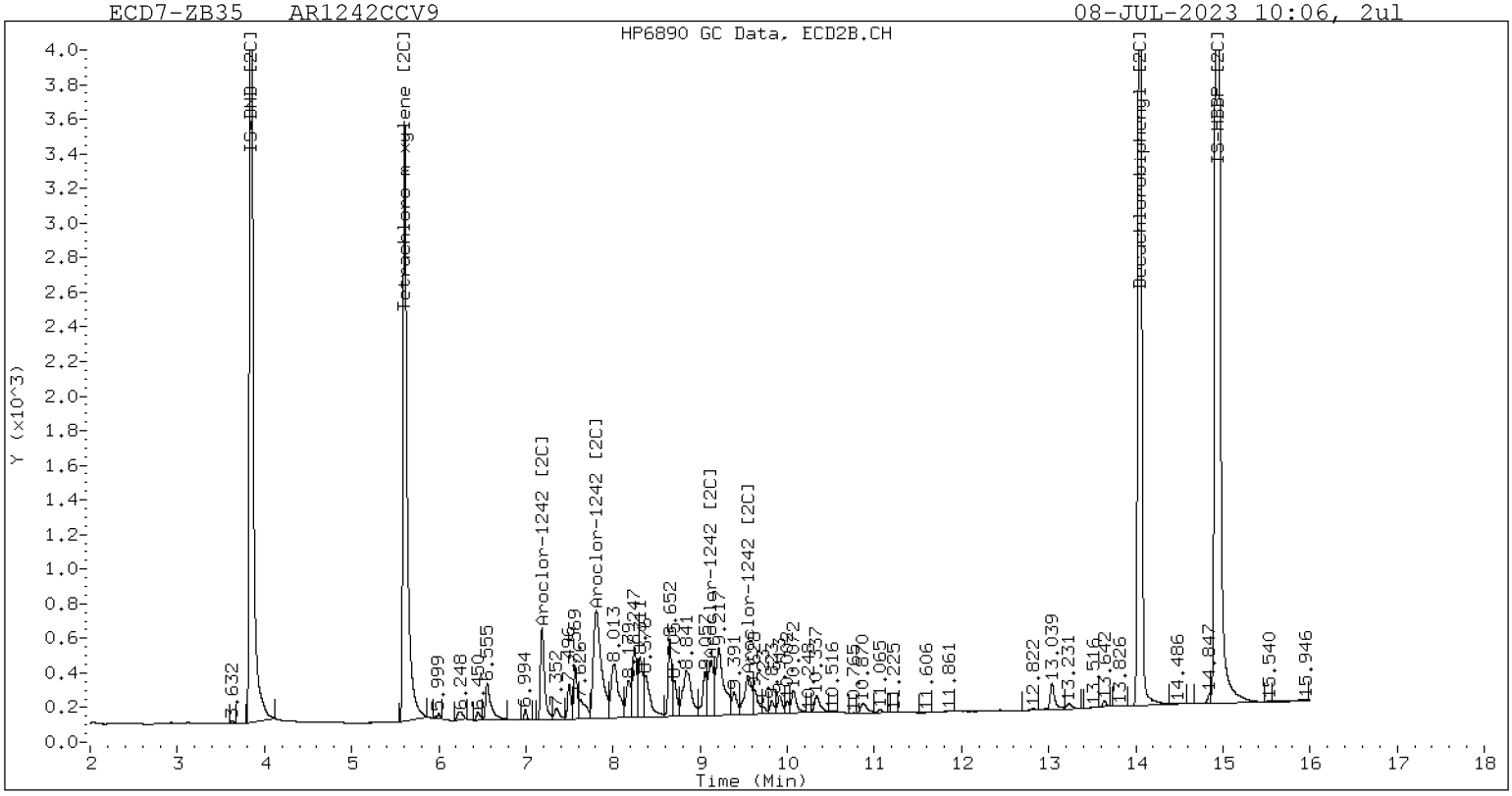
PCB Dual Column Chromatograms

ECD7-ZB5 AR1242CCV9 08-JUL-2023 10:06, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242CCV9 08-JUL-2023 10:06, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	07072369ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLG0066	Injection Date:	07/08/23
Lab Sample ID:	SLG0066-CCVA	Injection Time:	10:26
Sequence Name:	AR1660CCVA		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	252	0.0477728	0.0475204		0.8	+/-20
Aroclor-1016 (1)	A	250.00	243	0.0309764	0.0301435		-2.7	
Aroclor-1016 (2)	A	250.00	244	0.0968611	0.0946579		-2.3	
Aroclor-1016 (3)	A	250.00	255	0.0447793	0.0456634		2.0	
Aroclor-1016 (4)	A	250.00	265	0.0184745	0.0196166		6.2	
Aroclor 1016 [2C]	A	250.00	243	0.0545435	0.0530364		-2.8	+/-20
Aroclor-1016 (1) [2C]	A	250.00	218	0.0452861	0.0395704		-12.6	
Aroclor-1016 (2) [2C]	A	250.00	246	0.0965080	0.0948485		-1.7	
Aroclor-1016 (3) [2C]	A	250.00	260	0.0425661	0.0442003		3.8	
Aroclor-1016 (4) [2C]	A	250.00	248	0.0338137	0.0335265		-0.8	
Aroclor 1260	A	250.00	231	0.0524306	0.0486256		-7.4	+/-20
Aroclor-1260 (1)	A	250.00	219	0.0423031	0.0370349		-12.5	
Aroclor-1260 (2)	A	250.00	222	0.0417493	0.0371327		-11.1	
Aroclor-1260 (3)	A	250.00	235	0.1045597	0.0984122		-5.9	
Aroclor-1260 (4)	A	250.00	239	0.0512104	0.0489855		-4.3	
Aroclor-1260 (5)	A	250.00	241	0.0223305	0.0215627		-3.4	
Aroclor 1260 [2C]	A	250.00	243	0.0638471	0.0632812		-2.8	+/-20
Aroclor-1260 (1) [2C]	A	250.00	229	0.0424868	0.0389097		-8.4	
Aroclor-1260 (2) [2C]	A	250.00	254	0.1111292	0.1128408		1.5	
Aroclor-1260 (3) [2C]	A	250.00	236	0.0275392	0.0259658		-5.7	
Aroclor-1260 (4) [2C]	A	250.00	254	0.0742331	0.0754086		1.6	
Decachlorobiphenyl	A	40.000	40.4	0.7991406	0.8075174		1.0	+/-20
Tetrachlorometaxylene	A	40.000	36.5	1.2048230	1.1007100		-8.6	+/-20
Decachlorobiphenyl [2C]	A	40.000	40.8	1.1360140	1.1573410		1.9	+/-20
Tetrachlorometaxylene [2C]	A	40.000	40.2	1.1005470	1.1068600		0.6	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072369ECD7.D
Data file 2: /230707.b/230707.b/07072369ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCVA
Client ID:
Injection Date: 08-JUL-2023 10:26
Report Date: 07/08/2023 20:46
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.718	-0.001	377058	5.608	0.001	194622	36.5	40.2	9.6	Tetrachloro-m-xylene
13.819	-0.001	548444	14.046	-0.001	362842	40.4	40.8	0.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	685118	13.9
Hexabromobiphenyl	876625	1358346	55.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	351665	0.7
Hexabromobiphenyl	652984	627027	-4.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.191	-0.000	64537	243.3	1	7.185	0.001	43486	218.4
Aroclor-1016	2	7.576	0.001	202662	244.3	2	7.806	0.005	104234	245.7
Aroclor-1016	3	7.715	0.001	97765	254.9	3	8.017	0.015	48574	259.6
Aroclor-1016	4	8.379	0.001	41999	265.5	4	8.246	0.004	36844	247.9
Total Col1Ave (4 peaks):					252.0	Total Col2Ave (4 peaks):				242.9 RPD = 4
Corrected Ave (3 peaks):					247.5	Corrected Ave (3 peaks):				237.3 RPD = 4
Aroclor-1260	1	10.973	0.001	157207	218.9	1	11.587	0.001	76242	229.0
Aroclor-1260	2	11.290	-0.000	157622	222.4	2	11.854	0.001	221107	253.9
Aroclor-1260	3	11.665	-0.000	417743	235.3	3	12.370	0.002	50879	235.7
Aroclor-1260	4	12.070	0.001	207935	239.1	4	12.437	0.000	147760	254.0
Aroclor-1260	5	12.170	-0.002	91530	241.4	NS	---			----
Total Col1Ave (5 peaks):					231.4	Total Col2Ave (4 peaks):				243.1 RPD = 5
Corrected Ave (4 peaks):					228.9	Corrected Ave (3 peaks):				239.5 RPD = 5

Total PCB Area Col1 (5.818 - 13.719) = 4353899 Col1 Total PCB = 0.6 ppm*

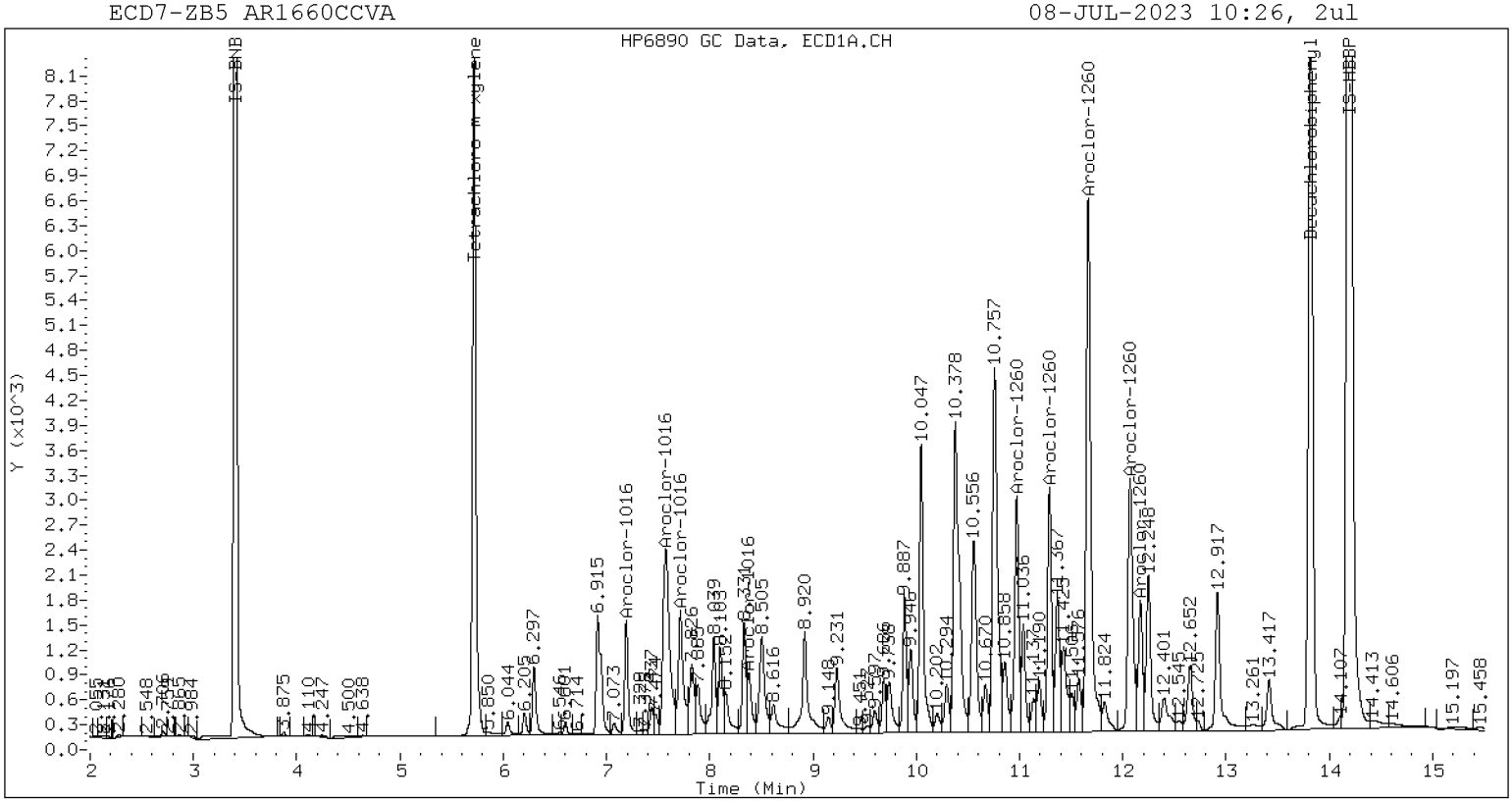
Total PCB Area Col2 (5.707 - 13.947) = 1985544 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

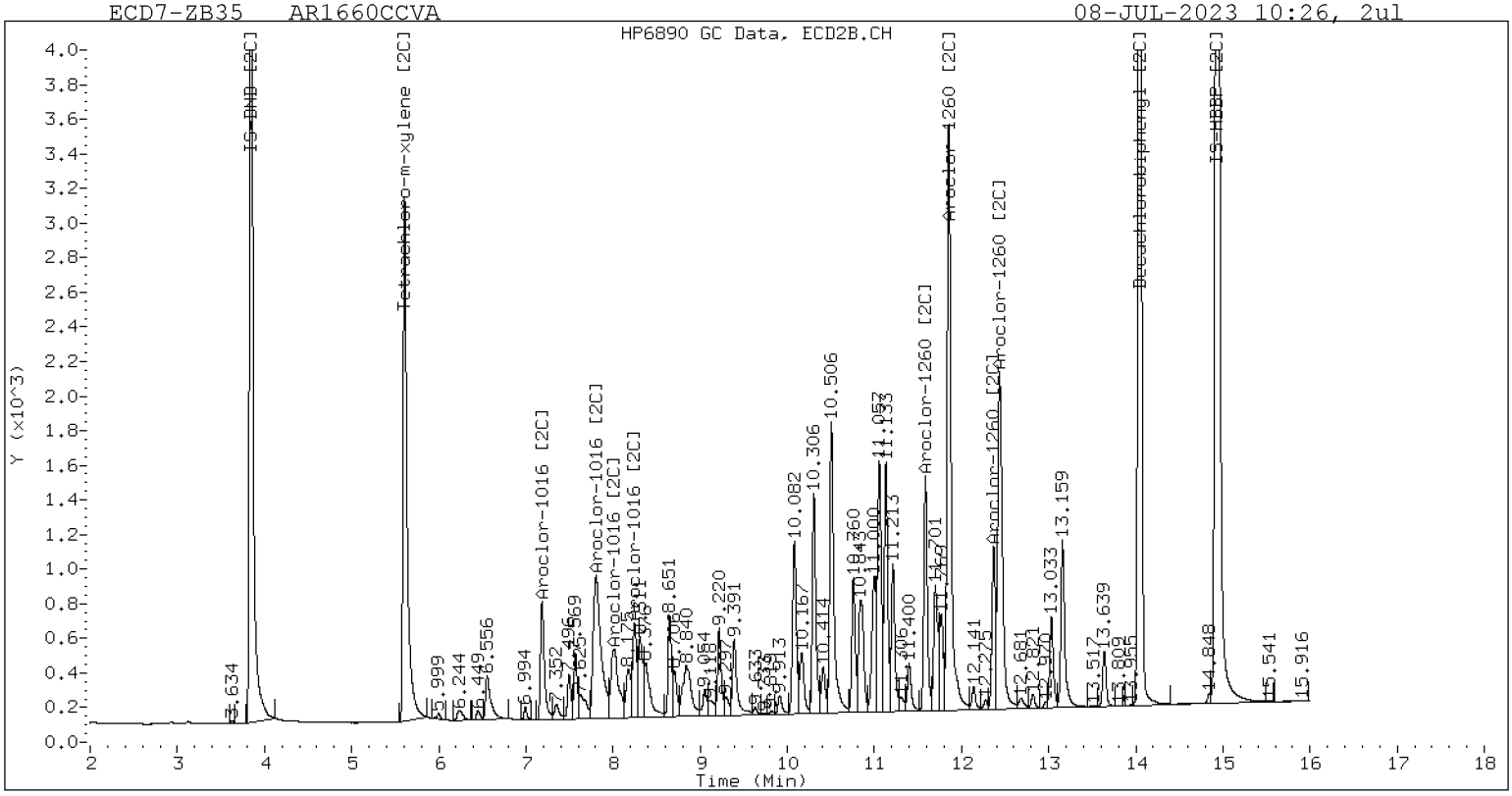
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCVA 08-JUL-2023 10:26, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCVA 08-JUL-2023 10:26, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	07072379ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLG0066	Injection Date:	07/08/23
Lab Sample ID:	SLG0066-CCVB	Injection Time:	13:55
Sequence Name:	AR1254CCVB		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1254	A	250.00	229	0.0678007	0.0607290		-8.6	+/-20
Aroclor-1254 (1)	A	250.00	151		0.0495739			
Aroclor-1254 (2)	A	250.00	271		0.0400089			
Aroclor-1254 (3)	A	250.00	265		0.0563078			
Aroclor-1254 (4)	A	250.00	263		0.1091706			
Aroclor-1254 (5)	A	250.00	193		0.0485836			
Aroclor 1254 [2C]	A	250.00	207	0.0720677	0.0585152		-17.1	+/-20
Aroclor-1254 (1) [2C]	A	250.00	195		0.0474198			
Aroclor-1254 (2) [2C]	A	250.00	195		0.0281553			
Aroclor-1254 (3) [2C]	A	250.00	260		0.0511921			
Aroclor-1254 (4) [2C]	A	250.00	194		0.0832177			
Aroclor-1254 (5) [2C]	A	250.00	194		0.0825909			
Decachlorobiphenyl	A	40.000	41.8	0.7991406	0.8356022		4.6	+/-20
Tetrachlorometaxylene	A	40.000	37.5	1.2048230	1.1281520		-6.4	+/-20
Decachlorobiphenyl [2C]	A	40.000	44.5	1.1360140	1.2636290		11.2	+/-20
Tetrachlorometaxylene [2C]	A	40.000	42.4	1.1005470	1.1674920		6.1	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072379ECD7.D
Data file 2: /230707.b/230707.b/07072379ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254CCVB
Client ID:
Injection Date: 08-JUL-2023 13:55
Report Date: 07/08/2023 20:47
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.718	-0.000	395163	5.607	0.000	207729	37.5	42.4	12.5	Tetrachloro-m-xylene
13.818	-0.001	353527	14.045	-0.001	276870	41.8	44.5	6.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	700549	16.5
Hexabromobiphenyl	876625	846161	-3.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	355855	1.9
Hexabromobiphenyl	652984	438214	-32.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col					ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1254	1	9.228	-0.001	108528	150.7	1	9.386	0.002	52733	195.0
Aroclor-1254	2	9.303	0.001	87588	270.8	2	9.482	0.002	31310	194.9
Aroclor-1254	3	9.595	-0.000	123270	265.2	3	9.906	0.001	56928	259.8
Aroclor-1254	4	9.734	0.001	238998	262.5	4	10.061	0.001	92542	193.5
Aroclor-1254	5	10.096	-0.000	106360	193.4	5	10.311	0.001	91845	193.6

Total Col1Ave (5 peaks): 228.5 Total Col2Ave (5 peaks): 207.4 RPD = 10

Corrected Ave (4 peaks): 218.0 Corrected Ave (4 peaks): 194.3 RPD = 12

Total PCB Area Col1 (5.818 - 13.719) = 2577379 Col1 Total PCB = 0.3 ppm*

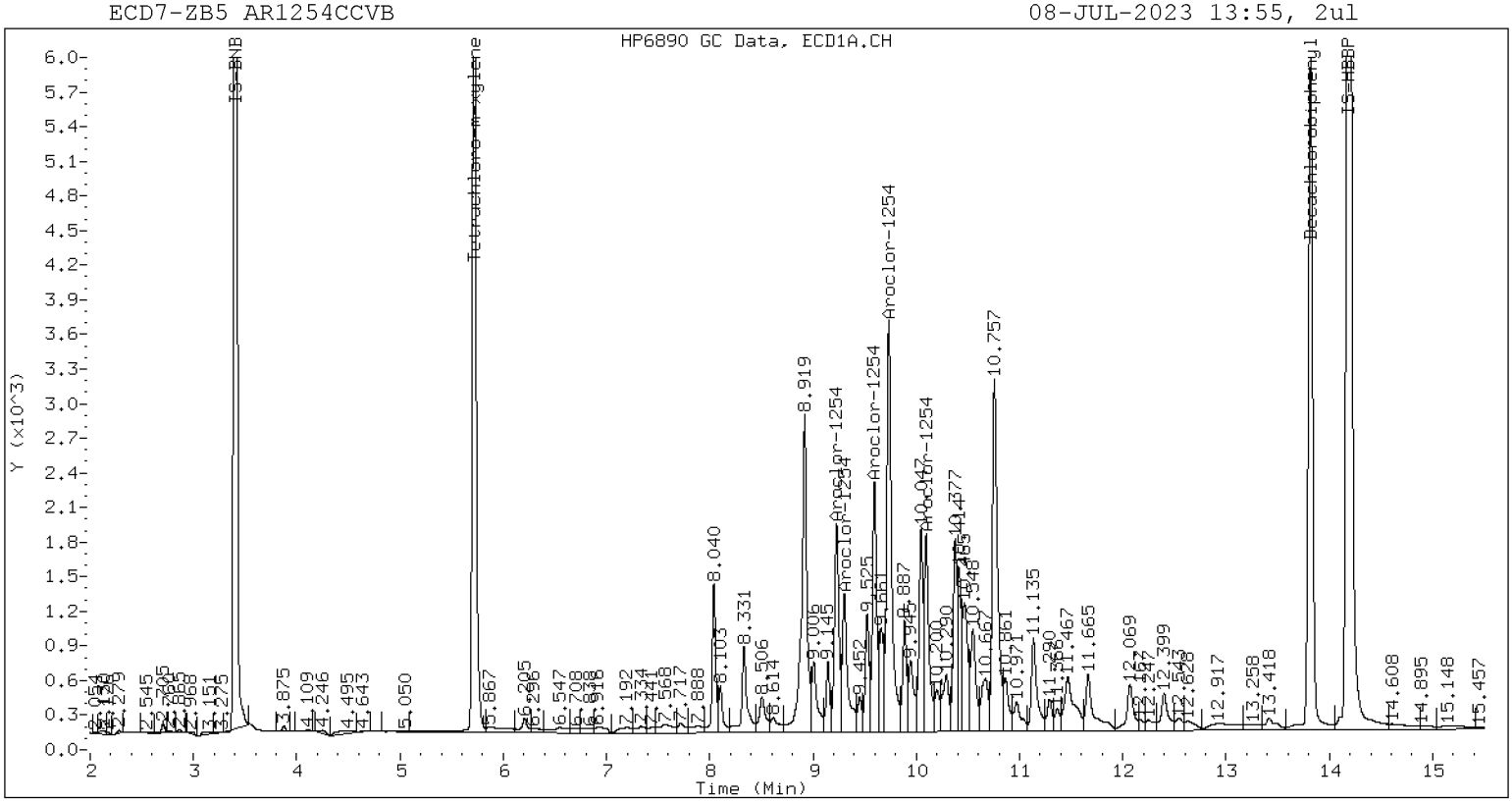
Total PCB Area Col2 (5.707 - 13.947) = 1011805 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

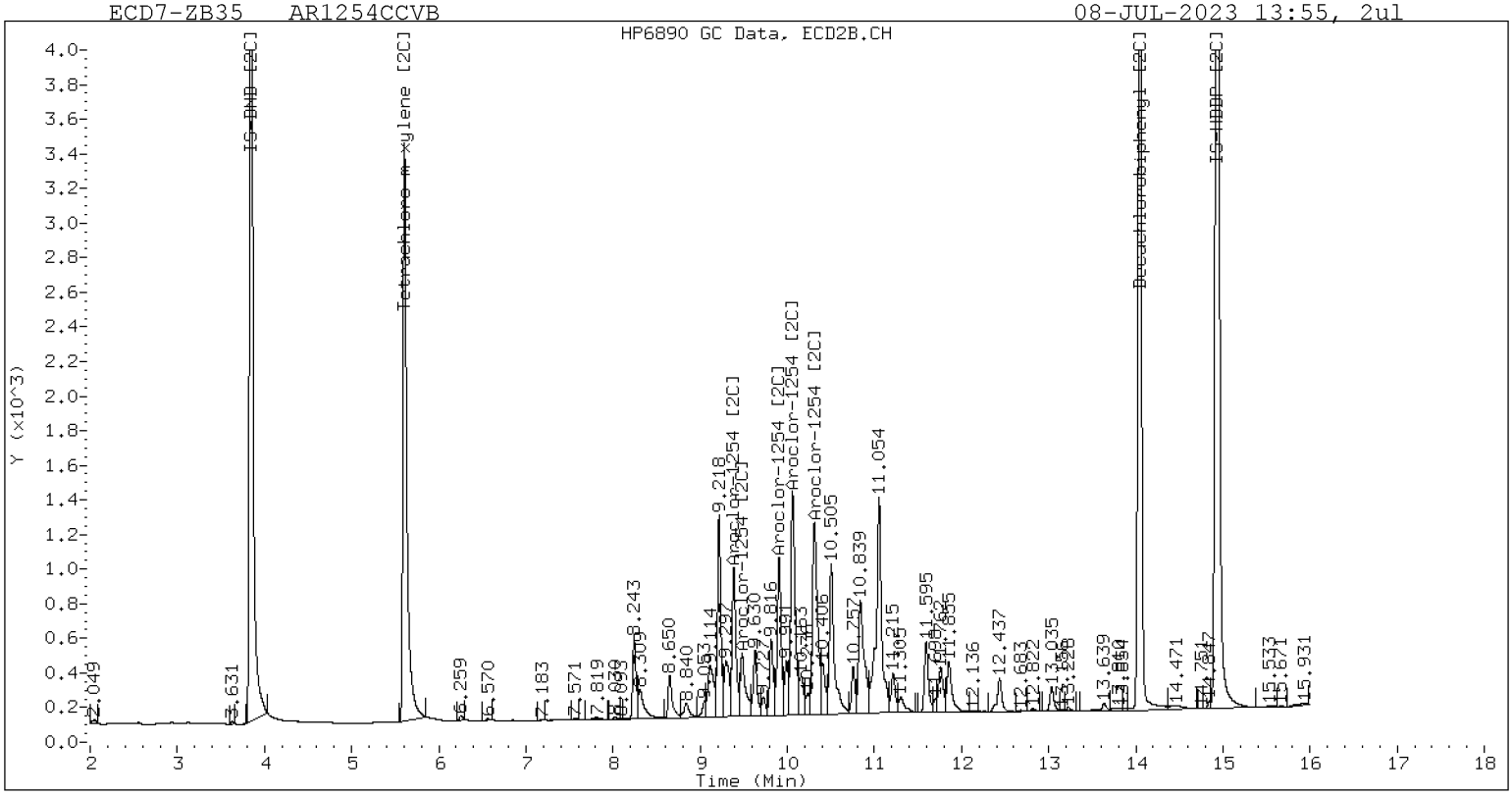
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254CCVB 08-JUL-2023 13:55, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254CCVB 08-JUL-2023 13:55, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	GE00022
Lab File ID:	07072380ECD7.D	Calibration Date:	05/05/2023
Sequence:	SLG0066	Injection Date:	07/08/23
Lab Sample ID:	SLG0066-CCVC	Injection Time:	14:16
Sequence Name:	AR1660CCVC		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	243	0.0477728	0.0468620		-2.9	+/-20
Aroclor-1016 (1)	A	250.00	237	0.0309764	0.0293828		-5.1	
Aroclor-1016 (2)	A	250.00	247	0.0968611	0.0958698		-1.0	
Aroclor-1016 (3)	A	250.00	249	0.0447793	0.0446676		-0.2	
Aroclor-1016 (4)	A	250.00	237	0.0184745	0.0175279		-5.1	
Aroclor 1016 [2C]	A	250.00	238	0.0545435	0.0521881		-4.7	+/-20
Aroclor-1016 (1) [2C]	A	250.00	213	0.0452861	0.0385160		-14.9	
Aroclor-1016 (2) [2C]	A	250.00	245	0.0965080	0.0945113		-2.1	
Aroclor-1016 (3) [2C]	A	250.00	250	0.0425661	0.0425326		-0.08	
Aroclor-1016 (4) [2C]	A	250.00	245	0.0338137	0.0331927		-1.8	
Aroclor 1260	A	250.00	284	0.0524306	0.0591814		13.5	+/-20
Aroclor-1260 (1)	A	250.00	270	0.0423031	0.0457672		8.2	
Aroclor-1260 (2)	A	250.00	267	0.0417493	0.0446272		6.9	
Aroclor-1260 (3)	A	250.00	278	0.1045597	0.1164422		11.4	
Aroclor-1260 (4)	A	250.00	305	0.0512104	0.0625656		22.2	
Aroclor-1260 (5)	A	250.00	297	0.0223305	0.0265046		18.7	
Aroclor 1260 [2C]	A	250.00	297	0.0638471	0.0767055		18.7	+/-20
Aroclor-1260 (1) [2C]	A	250.00	292	0.0424868	0.0496597		16.9	
Aroclor-1260 (2) [2C]	A	250.00	307	0.1111292	0.1364590		22.8	
Aroclor-1260 (3) [2C]	A	250.00	287	0.0275392	0.0316696		15.0	
Aroclor-1260 (4) [2C]	A	250.00	300	0.0742331	0.0890338		19.9	
Decachlorobiphenyl	A	40.000	41.6	0.7991406	0.8314526		4.0	+/-20
Tetrachlorometaxylene	A	40.000	37.7	1.2048230	1.1344180		-5.8	+/-20
Decachlorobiphenyl [2C]	A	40.000	45.0	1.1360140	1.2779310		12.5	+/-20
Tetrachlorometaxylene [2C]	A	40.000	40.3	1.1005470	1.1096650		0.8	+/-20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230707.b/07072380ECD7.D
Data file 2: /230707.b/230707.b/07072380ECD7.D
Method: \\target\share\chem4\ecd7.i\230707.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCVC
Client ID:
Injection Date: 08-JUL-2023 14:16
Report Date: 07/08/2023 20:47
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.718	-0.000	391722	5.607	0.000	207620	37.7	40.3	6.8	Tetrachloro-m-xylene
13.818	-0.001	349504	14.046	-0.001	287790	41.6	45.0	7.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	601474	690613	14.8
Hexabromobiphenyl	876625	840707	-4.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	349289	374203	7.1
Hexabromobiphenyl	652984	450400	-31.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 05-MAY-2023
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.191	0.000	63413	237.1	1	7.185	0.000	45040	212.6
Aroclor-1016	2	7.576	0.001	206903	247.4	2	7.801	-0.000	110520	244.8
Aroclor-1016	3	7.715	0.001	96400	249.4	3	8.001	-0.002	49737	249.8
Aroclor-1016	4	8.377	-0.000	37828	237.2	4	8.244	0.001	38815	245.4
Total Col1Ave (4 peaks):					242.8	Total Col2Ave (4 peaks):				238.2 RPD = 2
Corrected Ave (3 peaks):					240.6	Corrected Ave (3 peaks):				234.3 RPD = 3
Aroclor-1260	1	10.972	-0.000	120240	270.5	1	11.586	0.000	69896	292.2
Aroclor-1260	2	11.289	-0.001	117245	267.2	2	11.853	0.000	192066	307.0
Aroclor-1260	3	11.665	0.000	305918	278.4	3	12.368	0.000	44575	287.5
Aroclor-1260	4	12.069	0.000	164373	305.4	4	12.436	-0.002	125315	299.8
Aroclor-1260	5	12.172	0.000	69633	296.7	NS	---			----
Total Col1Ave (5 peaks):					283.7	Total Col2Ave (4 peaks):				296.6 RPD = 4
Corrected Ave (4 peaks):					278.2	Corrected Ave (3 peaks):				293.2 RPD = 5

Total PCB Area Col1 (5.818 - 13.719) = 3503317 Col1 Total PCB = 0.5 ppm*

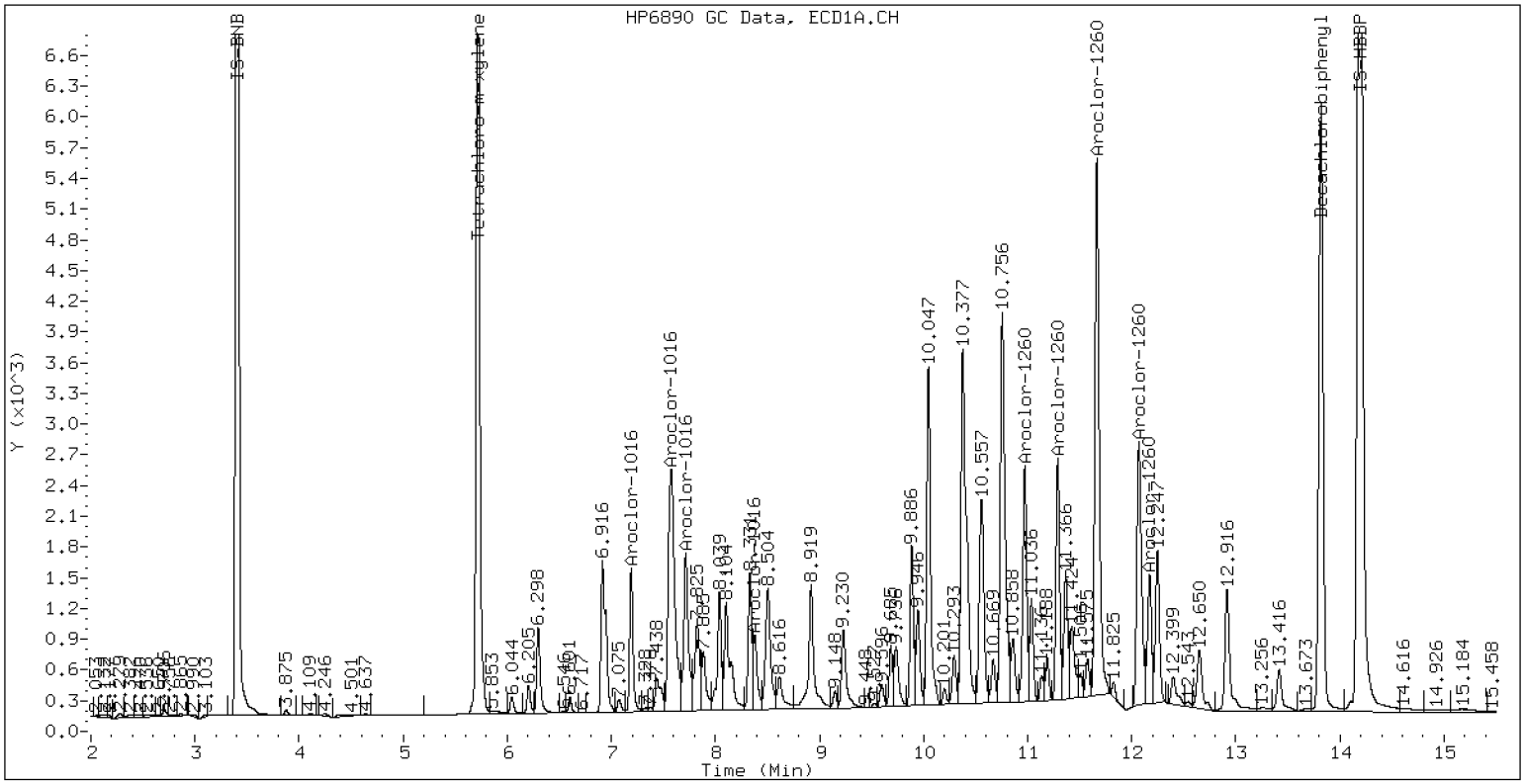
Total PCB Area Col2 (5.707 - 13.947) = 1911326 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

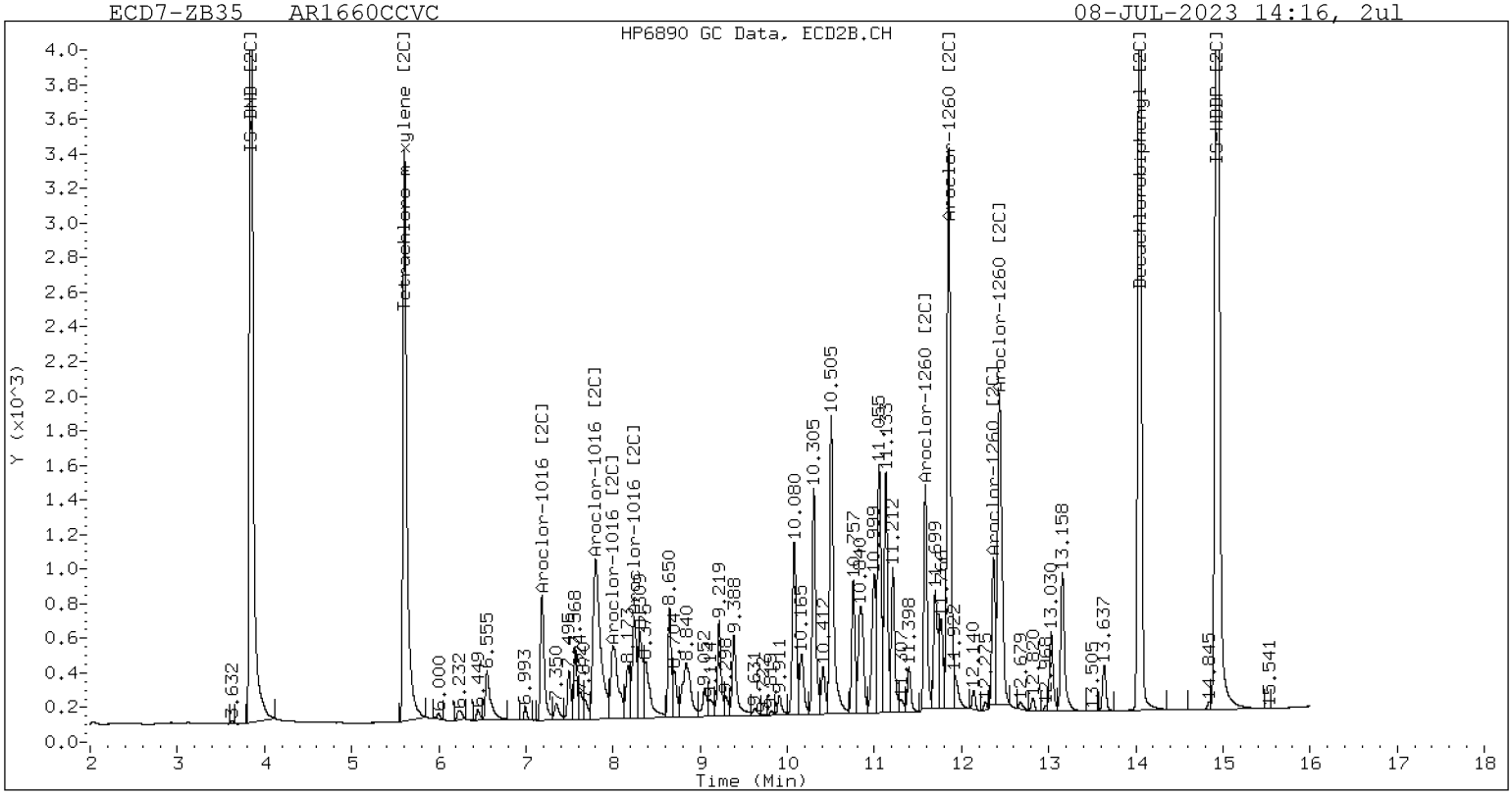
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCVC 08-JUL-2023 14:16, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCVC 08-JUL-2023 14:16, 2ul

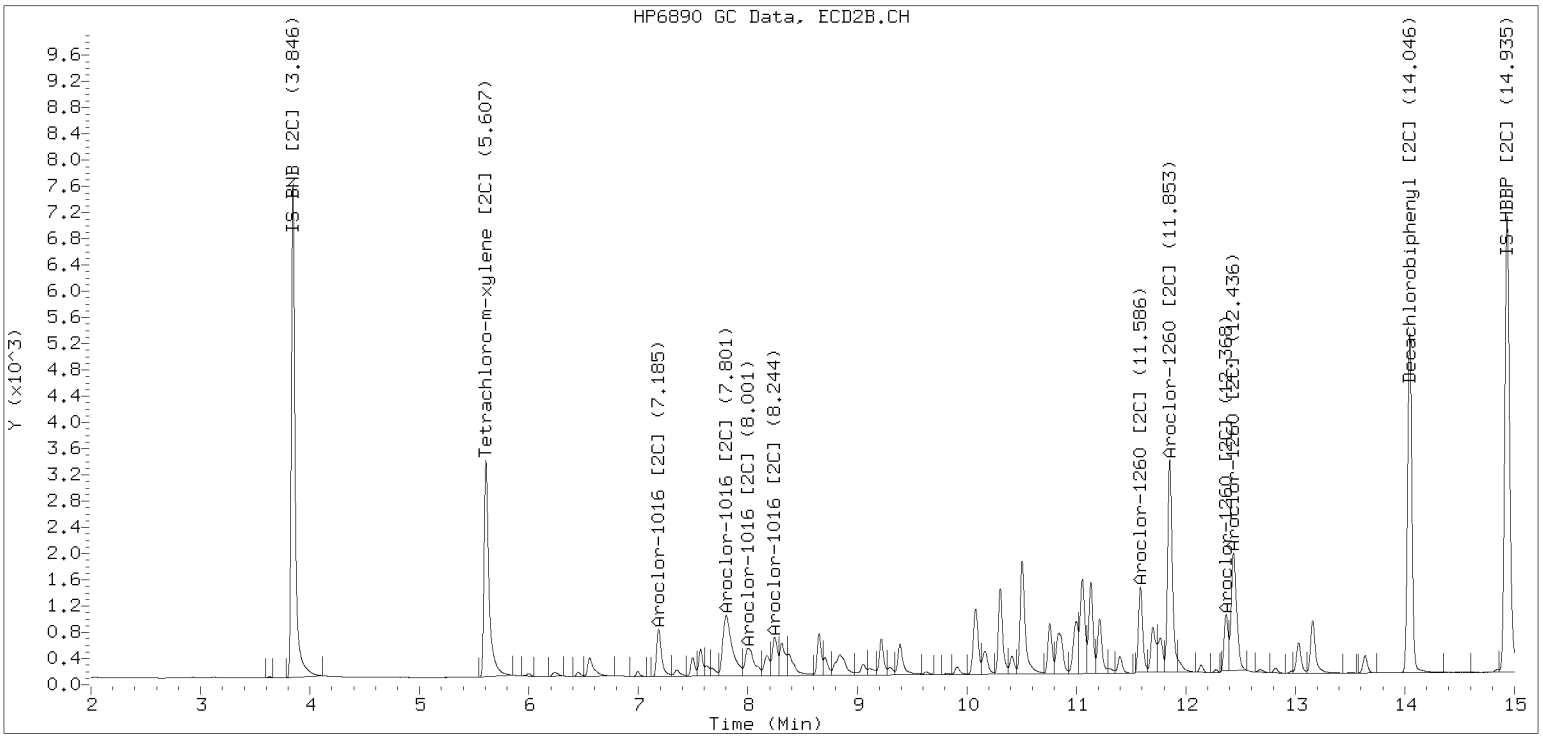


ZB-35 Manual Integration: YES

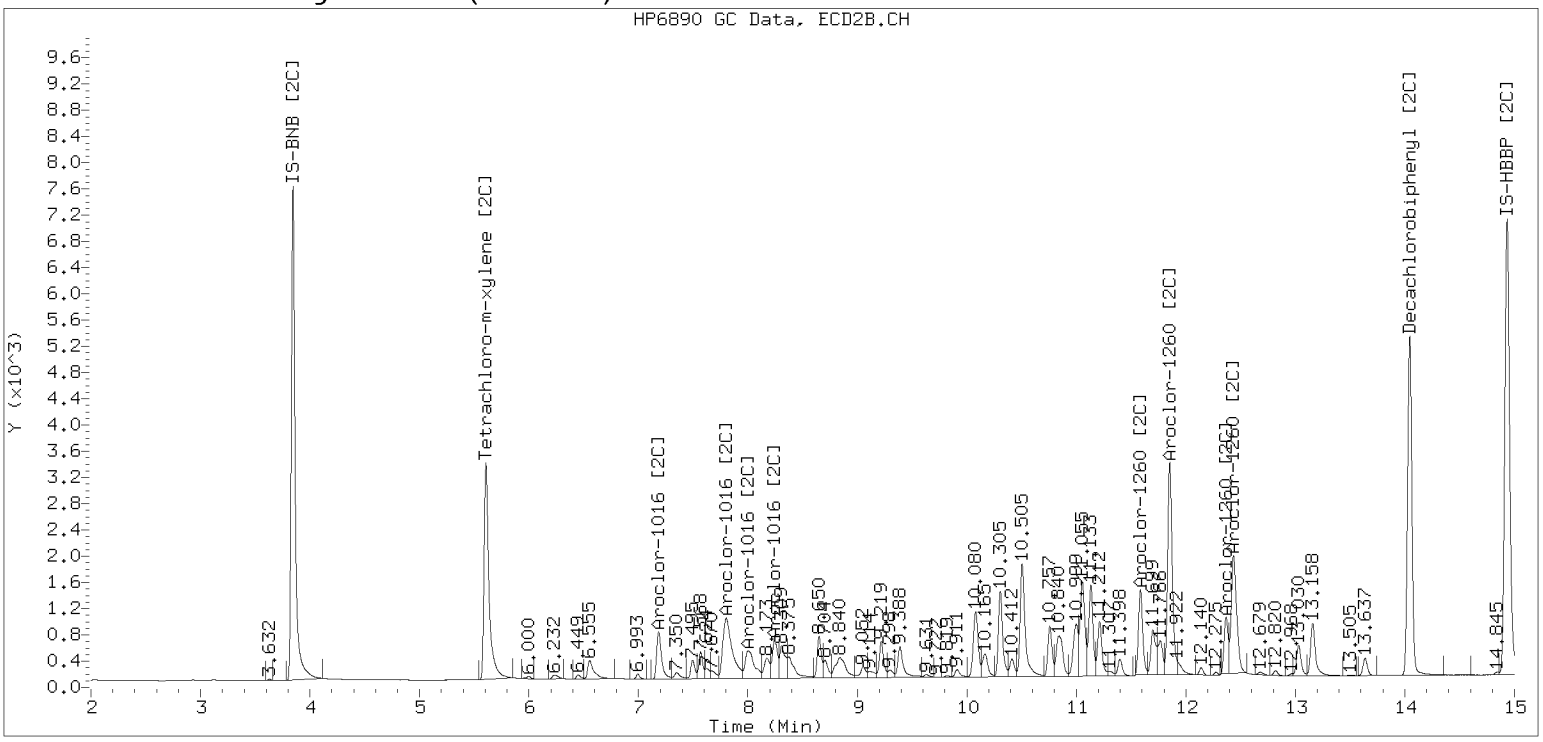
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230707.b/230707.b/07072380ECD7.D Injection Date: 08-JUL-2023

Manual Integration (After)



Processed Integration (Before)



Dual Column

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8082A

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLE0079
Instrument: ECD7
Calibration: GE00022

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Cal Standard	SLE0079-CAL1	05052321ECD7.D	05052321ECD7.D	NA	05/05/23 23:26
Cal Standard	SLE0079-CAL2	05052322ECD7.D	05052322ECD7.D	NA	05/05/23 23:47
Cal Standard	SLE0079-CAL3	05052323ECD7.D	05052323ECD7.D	NA	05/06/23 00:08
Cal Standard	SLE0079-CAL4	05052324ECD7.D	05052324ECD7.D	NA	05/06/23 00:29
Cal Standard	SLE0079-CAL5	05052325ECD7.D	05052325ECD7.D	NA	05/06/23 00:50
Cal Standard	SLE0079-CAL6	05052326ECD7.D	05052326ECD7.D	NA	05/06/23 01:11
Cal Standard	SLE0079-CAL7	05052327ECD7.D	05052327ECD7.D	NA	05/06/23 01:31
Cal Standard	SLE0079-CAL8	05052328ECD7.D	05052328ECD7.D	NA	05/06/23 01:52
Cal Standard	SLE0079-CAL9	05052329ECD7.D	05052329ECD7.D	NA	05/06/23 02:13
Cal Standard	SLE0079-CALA	05052330ECD7.D	05052330ECD7.D	NA	05/06/23 02:34
Cal Standard	SLE0079-CALB	05052331ECD7.D	05052331ECD7.D	NA	05/06/23 02:55
Secondary Cal Check	SLE0079-SCV1	05052332ECD7.D	05052332ECD7.D	NA	05/06/23 03:16
Secondary Cal Check	SLE0079-SCV2	05052333ECD7.D	05052333ECD7.D	NA	05/06/23 03:36
Secondary Cal Check	SLE0079-SCV3	05052334ECD7.D	05052334ECD7.D	NA	05/06/23 03:57
Secondary Cal Check	SLE0079-SCV4	05052335ECD7.D	05052335ECD7.D	NA	05/06/23 04:18
Secondary Cal Check	SLE0079-SCV5	05052336ECD7.D	05052336ECD7.D	NA	05/06/23 04:39
Secondary Cal Check	SLE0079-SCV6	05052337ECD7.D	05052337ECD7.D	NA	05/06/23 05:00

Analytical Resources, LLC
Analytical Chemists and Consultants

ANALYSIS SEQUENCE

SLE0079

Instrument: ECD7
Calibration ID: GE00022

Printed: 5/6/2023 11:44:56AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLE0079-CAL1	QC		1		L000856	L000844		
SLE0079-CAL2	QC		2		L000859	L000844		
SLE0079-CAL3	QC		3		L000858	L000844		
SLE0079-CAL4	QC		4		L000731	L000844		
SLE0079-CAL5	QC		5		L000857	L000844		
SLE0079-CAL6	QC		6		L000855	L000844		
SLE0079-CAL7	QC		7		L000860	L000844		
SLE0079-CAL8	QC		8		L000861	L000844		
SLE0079-CAL9	QC		9		L000862	L000844		
SLE0079-CALA	QC		10		L004996	L000844		
SLE0079-CALB	QC		11		L004997	L000844		
SLE0079-SCV1	QC		12		L002065	L000844		
SLE0079-SCV2	QC		13		L003970	L000844		
SLE0079-SCV3	QC		14		L002066	L000844		
SLE0079-SCV4	QC		15		L002067	L000844		
SLE0079-SCV5	QC		16		L002068	L000844		
SLE0079-SCV6	QC		17		L002069	L000844		

Samples Loaded By Date

Data Processed By Date

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230505.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	05-MAY-2023 23:06	05052320ECD7.D	1	IB	
2	05-MAY-2023 23:26	05052321ECD7.D	1	0.25PPMAR1660	
3	05-MAY-2023 23:47	05052322ECD7.D	1	0.02PPMAR1660	
4	06-MAY-2023 00:08	05052323ECD7.D	1	0.05PPMAR1660	
5	06-MAY-2023 00:29	05052324ECD7.D	1	1.0PPMAR1660	
6	06-MAY-2023 00:50	05052325ECD7.D	1	0.1PPMAR1660	
7	06-MAY-2023 01:11	05052326ECD7.D	1	0.5PPMAR1660	
8	06-MAY-2023 01:31	05052327ECD7.D	1	0.25PPMAR1242	
9	06-MAY-2023 01:52	05052328ECD7.D	1	0.25PPMAR1248	
10	06-MAY-2023 02:13	05052329ECD7.D	1	0.25PPMAR1254	
11	06-MAY-2023 02:34	05052330ECD7.D	1	0.25PPMAR2162	
12	06-MAY-2023 02:55	05052331ECD7.D	1	0.25PPMAR3268	
13	06-MAY-2023 03:16	05052332ECD7.D	1	AR1660SCV	
14	06-MAY-2023 03:36	05052333ECD7.D	1	AR1242SCV	
15	06-MAY-2023 03:57	05052334ECD7.D	1	AR1248SCV	
16	06-MAY-2023 04:18	05052335ECD7.D	1	AR1254SCV	
17	06-MAY-2023 04:39	05052336ECD7.D	1	AR2162SCV	
18	06-MAY-2023 05:00	05052337ECD7.D	1	AR3268SCV	
19	06-MAY-2023 05:21	05052338ECD7.D	1	DDTS	
20	06-MAY-2023 05:41	05052339ECD7.D	1	DDT BD	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230505.b

ARI Job No.: Method: PCB.m Instrument: ecd7.i Date: 05-MAY-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1548	05052301ECD7.D			1	NO MANUAL INTEGRATION
1609	05052302ECD7.D			1	NO MANUAL INTEGRATION
1711	05052303ECD7.D			1	NO MANUAL INTEGRATION
1732	05052304ECD7.D			1	NO MANUAL INTEGRATION
1753	05052305ECD7.D			1	NO MANUAL INTEGRATION
1814	05052306ECD7.D			1	NO MANUAL INTEGRATION
1835	05052307ECD7.D			1	NO MANUAL INTEGRATION
1856	05052308ECD7.D			1	NO MANUAL INTEGRATION
1916	05052309ECD7.D			1	NO MANUAL INTEGRATION
1937	05052310ECD7.D			1	NO MANUAL INTEGRATION
1958	05052311ECD7.D			1	NO MANUAL INTEGRATION
2019	05052312ECD7.D			1	NO MANUAL INTEGRATION
2040	05052313ECD7.D			1	NO MANUAL INTEGRATION
2101	05052314ECD7.D			1	NO MANUAL INTEGRATION
2121	05052315ECD7.D			1	NO MANUAL INTEGRATION
2142	05052316ECD7.D			1	NO MANUAL INTEGRATION
2203	05052317ECD7.D			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230505.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2224	05052318ECD7.D			1	NO MANUAL INTEGRATION
2245	05052319ECD7.D			1	NO MANUAL INTEGRATION
2306	05052320ECD7.D	IB		1	NO MANUAL INTEGRATION
2326	05052321ECD7.D	0.25PPMAR1660		1	NO MANUAL INTEGRATION
2347	05052322ECD7.D	0.02PPMAR1660		1	NO MANUAL INTEGRATION
0008	05052323ECD7.D	0.05PPMAR1660		1	NO MANUAL INTEGRATION
0029	05052324ECD7.D	1.0PPMAR1660		1	NO MANUAL INTEGRATION
0050	05052325ECD7.D	0.1PPMAR1660		1	NO MANUAL INTEGRATION
0111	05052326ECD7.D	0.5PPMAR1660		1	NO MANUAL INTEGRATION
0131	05052327ECD7.D	0.25PPMAR1242		1	NO MANUAL INTEGRATION
0152	05052328ECD7.D	0.25PPMAR1248		1	NO MANUAL INTEGRATION
0213	05052329ECD7.D	0.25PPMAR1254		1	NO MANUAL INTEGRATION
0234	05052330ECD7.D	0.25PPMAR2162		1	NO MANUAL INTEGRATION
0255	05052331ECD7.D	0.25PPMAR3268		1	NO MANUAL INTEGRATION
0316	05052332ECD7.D	AR1660SCV		1	NO MANUAL INTEGRATION
0336	05052333ECD7.D	AR1242SCV		1	NO MANUAL INTEGRATION
0357	05052334ECD7.D	AR1248SCV		1	NO MANUAL INTEGRATION
0418	05052335ECD7.D	AR1254SCV		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230505.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0439	05052336ECD7.D	AR2162SCV		1	NO MANUAL INTEGRATION
0500	05052337ECD7.D	AR3268SCV		1	NO MANUAL INTEGRATION
0521	05052338ECD7.D	DDTS		1	NO MANUAL INTEGRATION
0541	05052339ECD7.D	DDT BD		1	NO MANUAL INTEGRATION
1548	05052301ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1609	05052302ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1711	05052303ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
1732	05052304ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
1753	05052305ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
1814	05052306ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
1835	05052307ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
1856	05052308ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
1916	05052309ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1937	05052310ECD7.D	RINSE		1	NO MANUAL INTEGRATION
1958	05052311ECD7.D	RINSE		1	NO MANUAL INTEGRATION
2019	05052312ECD7.D	RINSE		1	NO MANUAL INTEGRATION
2040	05052313ECD7.D	RINSE		1	NO MANUAL INTEGRATION
2101	05052314ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230505.b\230505.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2121	05052315ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
2142	05052316ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
2203	05052317ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
2224	05052318ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
2245	05052319ECD7.D	HEX RINSE		1	NO MANUAL INTEGRATION
2306	05052320ECD7.D	IB		1	NO MANUAL INTEGRATION
2326	05052321ECD7.D	0.25PPMAR1660		1	NO MANUAL INTEGRATION
2347	05052322ECD7.D	0.02PPMAR1660		1	Aroclor-1016 [2C],
0008	05052323ECD7.D	0.05PPMAR1660		1	Aroclor-1016 [2C],
0029	05052324ECD7.D	1.0PPMAR1660		1	NO MANUAL INTEGRATION
0050	05052325ECD7.D	0.1PPMAR1660		1	Aroclor-1016 [2C],
0111	05052326ECD7.D	0.5PPMAR1660		1	NO MANUAL INTEGRATION
0132	05052327ECD7.D	0.25PPMAR1242		1	Aroclor-1242 [2C],
0152	05052328ECD7.D	0.25PPMAR1248		1	NO MANUAL INTEGRATION
0213	05052329ECD7.D	0.25PPMAR1254		1	NO MANUAL INTEGRATION
0234	05052330ECD7.D	0.25PPMAR2162		1	NO MANUAL INTEGRATION
0255	05052331ECD7.D	0.25PPMAR3268		1	NO MANUAL INTEGRATION
0316	05052332ECD7.D	AR1660SCV		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230505.b\230505.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0336	05052333ECD7.D	AR1242SCV		1	Aroclor-1242 [2C],
0357	05052334ECD7.D	AR1248SCV		1	NO MANUAL INTEGRATION
0418	05052335ECD7.D	AR1254SCV		1	NO MANUAL INTEGRATION
0439	05052336ECD7.D	AR2162SCV		1	NO MANUAL INTEGRATION
0500	05052337ECD7.D	AR3268SCV		1	NO MANUAL INTEGRATION
0521	05052338ECD7.D	DDTS		1	NO MANUAL INTEGRATION
0541	05052339ECD7.D	DDT BD		1	NO MANUAL INTEGRATION

Security Status Report

Date: 06-May-2023 09:12

05052320ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052321ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052322ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052323ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052324ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052325ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052326ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052327ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052328ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052329ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052330ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052331ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052332ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052333ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052334ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052335ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052336ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052337ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052338ECD7.D	Data Locked	richardl, 06-May-2023 09:12
05052339ECD7.D	Data Locked	richardl, 06-May-2023 09:12

Analytical Resources, LLC
Analytical Chemists and Consultants

Dual Column

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8082A

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLG0066
Instrument: ECD7
Calibration: GE00022

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Calibration Check	SLG0066-CCV5	07072339ECD7.D	07072339ECD7.D	NA	07/07/23 00:01
Initial Cal Check	SLG0066-ICV1	07072302ECD7.D	07072302ECD7.D	NA	07/07/23 11:09
Initial Cal Check	SLG0066-ICV2	07072303ECD7.D	07072303ECD7.D	NA	07/07/23 11:30
Reference	BLF0716-SRM1	07072310ECD7.D	07072310ECD7.D	Solid	07/07/23 13:56
LCS	BLF0716-BS1	07072311ECD7.D	07072311ECD7.D	Solid	07/07/23 14:17
LCS Dup	BLF0716-BSD1	07072312ECD7.D	07072312ECD7.D	Solid	07/07/23 14:38
Blank	BLF0716-BLK1	07072313ECD7.D	07072313ECD7.D	Solid	07/07/23 14:59
Calibration Check	SLG0066-CCV1	07072314ECD7.D	07072314ECD7.D	NA	07/07/23 15:19
Calibration Check	SLG0066-CCV2	07072315ECD7.D	07072315ECD7.D	NA	07/07/23 15:40
LDW20-SC148A	23F0536-01	07072316ECD7.D	07072316ECD7.D	Solid	07/07/23 16:01
LDW20-SC148A	BLF0716-MS1	07072317ECD7.D	07072317ECD7.D	Solid	07/07/23 16:22
LDW20-SC148A	BLF0716-MSD1	07072318ECD7.D	07072318ECD7.D	Solid	07/07/23 16:43
Calibration Check	SLG0066-CCV3	07072324ECD7.D	07072324ECD7.D	NA	07/07/23 18:48
Calibration Check	SLG0066-CCV4	07072325ECD7.D	07072325ECD7.D	NA	07/07/23 19:09
Calibration Check	SLG0066-CCV6	07072340ECD7.D	07072340ECD7.D	NA	07/08/23 00:22
Calibration Check	SLG0066-CCV7	07072351ECD7.D	07072351ECD7.D	NA	07/08/23 04:11
Calibration Check	SLG0066-CCV8	07072352ECD7.D	07072352ECD7.D	NA	07/08/23 04:32
Calibration Check	SLG0066-CCV9	07072368ECD7.D	07072368ECD7.D	NA	07/08/23 10:06
Calibration Check	SLG0066-CCVA	07072369ECD7.D	07072369ECD7.D	NA	07/08/23 10:26
Calibration Check	SLG0066-CCVB	07072379ECD7.D	07072379ECD7.D	NA	07/08/23 13:55
Calibration Check	SLG0066-CCVC	07072380ECD7.D	07072380ECD7.D	NA	07/08/23 14:16

Analytical Resources, LLC
Analytical Chemists and Consultants

ANALYSIS SEQUENCE

SLG0066

Instrument: ECD7
Calibration ID: GE00022

Printed: 7/8/2023 8:55:19PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLG0066-ICV1	QC		1		L000862	L000844		
SLG0066-ICV2	QC		2		L000856	L000844		
23F0541-01	8082A PCB Solid 4	E 02	3			L000844	Enviro-Science (of Delaware), Inc.	
23F0541-02	8082A PCB Solid 4	E 02	4			L000844	Enviro-Science (of Delaware), Inc.	
23F0541-03	8082A PCB Solid 4	E 02	5			L000844	Enviro-Science (of Delaware), Inc.	
23F0541-04	8082A PCB Solid 4	E 02	6			L000844	Enviro-Science (of Delaware), Inc.	
23F0541-05	8082A PCB Solid 4	E 02	7			L000844	Enviro-Science (of Delaware), Inc.	
23F0541-06	8082A PCB Solid 4	E 02	8			L000844	Enviro-Science (of Delaware), Inc.	
BLF0716-SRM1	QC		9			L000844		
BLF0716-BS1	QC		10			L000844		
BLF0716-BSD1	QC		11			L000844		
BLF0716-BLK1	QC		12			L000844		
SLG0066-CCV1	QC		13		L000861	L000844		
SLG0066-CCV2	QC		14		L000856	L000844		
23F0536-01	8082A PCB Solid 4	A 01	15			L000844	Anchor QEA, LLC	
BLF0716-MS1	QC		16			L000844		
BLF0716-MSD1	QC		17			L000844		
BLG0068-BLK1	QC		18			L000844		
BLG0068-BS1	QC		19			L000844		
BLG0068-BSD1	QC		20			L000844		
23G0044-01	8082A PCB	B 01	21			L000844	The Boeing Company [Everett]	

Samples Loaded By Date

Data Processed By Date

ANALYSIS SEQUENCE

SLG0066

Instrument: ECD7
Calibration ID: GE00022

Printed: 7/8/2023 8:55:19PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLG0066-CCV3	QC		22		L000860	L000844		
SLG0066-CCV4	QC		23		L000856	L000844		
BLF0106-BLK1	QC		24			L000844		
BLF0106-BS1	QC		25			L000844		
BLF0106-BSD1	QC		26			L000844		
23F0046-01	PCB (20 ug/kg) or (MTCA 0.	A 01	27			L000844	Washington State University - Puyallup	
23F0046-02	PCB (20 ug/kg) or (MTCA 0.	A 01	28			L000844	Washington State University - Puyallup	
23F0046-03	PCB (20 ug/kg) or (MTCA 0.	A 01	29			L000844	Washington State University - Puyallup	
23F0046-04	PCB (20 ug/kg) or (MTCA 0.	A 01	30			L000844	Washington State University - Puyallup	
23F0046-05	PCB (20 ug/kg) or (MTCA 0.	A 01	31			L000844	Washington State University - Puyallup	
23F0046-06	PCB (20 ug/kg) or (MTCA 0.	A 01	32			L000844	Washington State University - Puyallup	
23F0046-07	PCB (20 ug/kg) or (MTCA 0.	A 01	33			L000844	Washington State University - Puyallup	
23F0046-08	PCB (20 ug/kg) or (MTCA 0.	A 01	34			L000844	Washington State University - Puyallup	
23F0046-09	PCB (20 ug/kg) or (MTCA 0.	A 01	35			L000844	Washington State University - Puyallup	
23F0046-10	PCB (20 ug/kg) or (MTCA 0.	A 01	36			L000844	Washington State University - Puyallup	
SLG0066-CCV5	QC		37		L000862	L000844		
SLG0066-CCV6	QC		38		L000856	L000844		
23F0046-11	PCB (20 ug/kg) or (MTCA 0.	A 01	39			L000844	Washington State University - Puyallup	
23F0046-12	PCB (20 ug/kg) or (MTCA 0.	A 01	40			L000844	Washington State University - Puyallup	
23F0046-13	PCB (20 ug/kg) or (MTCA 0.	A 01	41			L000844	Washington State University - Puyallup	
23F0046-14	PCB (20 ug/kg) or (MTCA 0.	A 01	42			L000844	Washington State University - Puyallup	

Samples Loaded By Date

Data Processed By Date

ANALYSIS SEQUENCE

SLG0066

Instrument: ECD7
Calibration ID: GE00022

Printed: 7/8/2023 8:55:19PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
23F0046-15	PCB (20 ug/kg) or (MTCA 0.	A 01	43			L000844	Washington State University - Puyallup	
23F0046-16	PCB (20 ug/kg) or (MTCA 0.	A 01	44			L000844	Washington State University - Puyallup	
23F0046-17	PCB (20 ug/kg) or (MTCA 0.	A 01	45			L000844	Washington State University - Puyallup	
23F0046-18	PCB (20 ug/kg) or (MTCA 0.	A 01	46			L000844	Washington State University - Puyallup	
23F0046-19	PCB (20 ug/kg) or (MTCA 0.	A 01	47			L000844	Washington State University - Puyallup	
23F0046-20	PCB (20 ug/kg) or (MTCA 0.	A 01	48			L000844	Washington State University - Puyallup	
SLG0066-CCV7	QC		49		L000861	L000844		
SLG0066-CCV8	QC		50		L000856	L000844		
BLF0398-BLK1	QC		51			L000844		
BLF0398-BS1	QC		52			L000844		
BLF0398-BSD1	QC		53			L000844		
BLF0398-SRM1	QC		54			L000844		
23F0230-01	8082A PCB Solid 4	A 01	55			L000844	HydroGeoLogic, Inc.	
23F0230-02	8082A PCB Solid 4	A 01	56			L000844	HydroGeoLogic, Inc.	
23F0230-03	8082A PCB Solid 4	A 01	57			L000844	HydroGeoLogic, Inc.	
23F0230-05	8082A PCB Solid 4	A 01	58			L000844	HydroGeoLogic, Inc.	
23F0230-06	8082A PCB Solid 4	A 01	59			L000844	HydroGeoLogic, Inc.	
23F0230-07	8082A PCB Solid 4	A 01	60			L000844	HydroGeoLogic, Inc.	
23F0230-08	8082A PCB Solid 4	A 01	61			L000844	HydroGeoLogic, Inc.	
23F0230-09	8082A PCB Solid 4	A 01	62			L000844	HydroGeoLogic, Inc.	
23F0230-10	8082A PCB Solid 4	A 01	63			L000844	HydroGeoLogic, Inc.	

Samples Loaded By Date

Data Processed By Date

ANALYSIS SEQUENCE

SLG0066

Instrument: ECD7
Calibration ID: GE00022

Printed: 7/8/2023 8:55:19PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
BLF0398-MS1	QC		64			L000844		
BLF0398-MSD1	QC		65			L000844		
SLG0066-CCV9	QC		66		L000860	L000844		
SLG0066-CCVA	QC		67		L000856	L000844		
23F0230-11	8082A PCB Solid 4	A 01	68			L000844	HydroGeoLogic, Inc.	
23F0230-12	8082A PCB Solid 4	A 01	69			L000844	HydroGeoLogic, Inc.	
23F0230-13	8082A PCB Solid 4	A 01	70			L000844	HydroGeoLogic, Inc.	
23F0230-14	8082A PCB Solid 4	A 01	71			L000844	HydroGeoLogic, Inc.	
23F0230-15	8082A PCB Solid 4	A 01	72			L000844	HydroGeoLogic, Inc.	
23F0230-16	8082A PCB Solid 4	A 01	73			L000844	HydroGeoLogic, Inc.	
23F0230-17	8082A PCB Solid 4	A 01	74			L000844	HydroGeoLogic, Inc.	
23F0230-18	8082A PCB Solid 4	A 01	75			L000844	HydroGeoLogic, Inc.	
23F0230-19	8082A PCB Solid 4	A 01	76			L000844	HydroGeoLogic, Inc.	
SLG0066-CCVB	QC		77		L000862	L000844		
SLG0066-CCVC	QC		78		L000856	L000844		

Samples Loaded By Date

Data Processed By Date

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230707.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	07-JUL-2023 10:48	07072301ECD7.D	1	DDTS	
2	07-JUL-2023 11:09	07072302ECD7.D	1	AR1254ICV1	
3	07-JUL-2023 11:30	07072303ECD7.D	1	AR1660ICV2	
4	07-JUL-2023 11:51	07072304ECD7.D	1	23F0541-01	
5	07-JUL-2023 12:12	07072305ECD7.D	1	23F0541-02	
6	07-JUL-2023 12:32	07072306ECD7.D	1	23F0541-03	
7	07-JUL-2023 12:53	07072307ECD7.D	1	23F0541-04	
8	07-JUL-2023 13:14	07072308ECD7.D	1	23F0541-05	
9	07-JUL-2023 13:35	07072309ECD7.D	1	23F0541-06	
10	07-JUL-2023 13:56	07072310ECD7.D	1	BLF0716-SRM1	
11	07-JUL-2023 14:17	07072311ECD7.D	1	BLF0716-BS1	
12	07-JUL-2023 14:38	07072312ECD7.D	1	BLF0716-BSD1	
13	07-JUL-2023 14:59	07072313ECD7.D	1	BLF0716-BLK1	
14	07-JUL-2023 15:19	07072314ECD7.D	1	AR1248CCV1	
15	07-JUL-2023 15:40	07072315ECD7.D	1	AR1660CCV2	
16	07-JUL-2023 16:01	07072316ECD7.D	1	23F0536-01	
17	07-JUL-2023 16:22	07072317ECD7.D	1	BLF0716-MS1	
18	07-JUL-2023 16:43	07072318ECD7.D	1	BLF0716-MSD1	
19	07-JUL-2023 17:04	07072319ECD7.D	1	BLG0068-BLK1	
20	07-JUL-2023 17:25	07072320ECD7.D	1	BLG0068-BS1	
21	07-JUL-2023 17:46	07072321ECD7.D	1	BLG0068-BSD1	
22	07-JUL-2023 18:06	07072322ECD7.D	1	23G0044-01	
23	07-JUL-2023 18:27	07072323ECD7.D	1	L007473	
24	07-JUL-2023 18:48	07072324ECD7.D	1	AR1242CCV3	
25	07-JUL-2023 19:09	07072325ECD7.D	1	AR1660CCV4	
26	07-JUL-2023 19:30	07072326ECD7.D	1	BLF0106-BLK1	
27	07-JUL-2023 19:51	07072327ECD7.D	1	BLF0106-BS1	
28	07-JUL-2023 20:12	07072328ECD7.D	1	BLF0106-BSD1	
29	07-JUL-2023 20:33	07072329ECD7.D	1	23F0046-01	
30	07-JUL-2023 20:53	07072330ECD7.D	1	23F0046-02	
31	07-JUL-2023 21:14	07072331ECD7.D	1	23F0046-03	
32	07-JUL-2023 21:35	07072332ECD7.D	1	23F0046-04	
33	07-JUL-2023 21:56	07072333ECD7.D	1	23F0046-05	
34	07-JUL-2023 22:17	07072334ECD7.D	1	23F0046-06	
35	07-JUL-2023 22:38	07072335ECD7.D	1	23F0046-07	
36	07-JUL-2023 22:59	07072336ECD7.D	1	23F0046-08	
37	07-JUL-2023 23:19	07072337ECD7.D	1	23F0046-09	
38	07-JUL-2023 23:40	07072338ECD7.D	1	23F0046-10	
39	07-JUL-2023 00:01	07072339ECD7.D	1	AR1254CCV5	
40	08-JUL-2023 00:22	07072340ECD7.D	1	AR1660CCV6	
41	08-JUL-2023 00:43	07072341ECD7.D	1	23F0046-11	
42	08-JUL-2023 01:04	07072342ECD7.D	1	23F0046-12	
43	08-JUL-2023 01:25	07072343ECD7.D	1	23F0046-13	
44	08-JUL-2023 01:45	07072344ECD7.D	1	23F0046-14	
45	08-JUL-2023 02:06	07072345ECD7.D	1	23F0046-15	
46	08-JUL-2023 02:27	07072346ECD7.D	1	23F0046-16	
47	08-JUL-2023 02:48	07072347ECD7.D	1	23F0046-17	
48	08-JUL-2023 03:09	07072348ECD7.D	1	23F0046-18	
49	08-JUL-2023 03:30	07072349ECD7.D	1	23F0046-19	
50	08-JUL-2023 03:50	07072350ECD7.D	1	23F0046-20	

	Inject Date/Time	Filename	DF	LabID	ClientID
51	08-JUL-2023 04:11	07072351ECD7.D	1	AR1248CCV7	
52	08-JUL-2023 04:32	07072352ECD7.D	1	AR1660CCV8	
53	08-JUL-2023 04:53	07072353ECD7.D	1	BLF0398-BLK1	
54	08-JUL-2023 05:14	07072354ECD7.D	1	BLF0398-BS1	
55	08-JUL-2023 05:35	07072355ECD7.D	1	BLF0398-BSD1	
56	08-JUL-2023 05:56	07072356ECD7.D	1	BLF0398-SRM1	
57	08-JUL-2023 06:16	07072357ECD7.D	1	23F0230-01	
58	08-JUL-2023 06:37	07072358ECD7.D	1	23F0230-02	
59	08-JUL-2023 06:58	07072359ECD7.D	1	23F0230-03	
60	08-JUL-2023 07:19	07072360ECD7.D	1	23F0230-05	
61	08-JUL-2023 07:40	07072361ECD7.D	1	23F0230-06	
62	08-JUL-2023 08:01	07072362ECD7.D	1	23F0230-07	
63	08-JUL-2023 08:21	07072363ECD7.D	1	23F0230-08	
64	08-JUL-2023 08:42	07072364ECD7.D	1	23F0230-09	
65	08-JUL-2023 09:03	07072365ECD7.D	1	23F0230-10	
66	08-JUL-2023 09:24	07072366ECD7.D	1	BLF0398-MS1	
67	08-JUL-2023 09:45	07072367ECD7.D	1	BLF0398-MSD1	
68	08-JUL-2023 10:06	07072368ECD7.D	1	AR1242CCV9	
69	08-JUL-2023 10:26	07072369ECD7.D	1	AR1660CCVA	
70	08-JUL-2023 10:47	07072370ECD7.D	1	23F0230-11	
71	08-JUL-2023 11:08	07072371ECD7.D	1	23F0230-12	
72	08-JUL-2023 11:29	07072372ECD7.D	1	23F0230-13	
73	08-JUL-2023 11:50	07072373ECD7.D	1	23F0230-14	
74	08-JUL-2023 12:11	07072374ECD7.D	1	23F0230-15	
75	08-JUL-2023 12:32	07072375ECD7.D	1	23F0230-16	
76	08-JUL-2023 12:52	07072376ECD7.D	1	23F0230-17	
77	08-JUL-2023 13:13	07072377ECD7.D	1	23F0230-18	
78	08-JUL-2023 13:34	07072378ECD7.D	1	23F0230-19	
79	08-JUL-2023 13:55	07072379ECD7.D	1	AR1254CCVB	
80	08-JUL-2023 14:16	07072380ECD7.D	1	AR1660CCVC	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230707.b

ARI Job No.: DDTS Method: PCB.m Instrument: ecd7.i Date: 07-JUL-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1048	07072301ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1109	07072302ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION
1130	07072303ECD7.D	AR1660ICV2		1	Aroclor-1016,
1151	07072304ECD7.D	23F0541-01		1	Aroclor-1248, Aroclor-1254, Aroclor-1260, Tetrachloro-m-xylene,
1212	07072305ECD7.D	23F0541-02		1	Aroclor-1248, Aroclor-1254, Aroclor-1260, Tetrachloro-m-xylene,
1232	07072306ECD7.D	23F0541-03		1	Aroclor-1254,
1253	07072307ECD7.D	23F0541-04		1	Aroclor-1254,
1314	07072308ECD7.D	23F0541-05		1	Aroclor-1254,
1335	07072309ECD7.D	23F0541-06		1	Aroclor-1254,
1356	07072310ECD7.D	BLF0716-SRM1		1	NO MANUAL INTEGRATION
1417	07072311ECD7.D	BLF0716-BS1		1	NO MANUAL INTEGRATION
1438	07072312ECD7.D	BLF0716-BSD1		1	NO MANUAL INTEGRATION
1459	07072313ECD7.D	BLF0716-BLK1		1	NO MANUAL INTEGRATION
1519	07072314ECD7.D	AR1248CCV1		1	Aroclor-1248,
1540	07072315ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION
1601	07072316ECD7.D	23F0536-01		1	NO MANUAL INTEGRATION
1622	07072317ECD7.D	BLF0716-MS1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230707.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1643	07072318ECD7.D	BLF0716-MSD1		1	NO MANUAL INTEGRATION
1704	07072319ECD7.D	BLG0068-BLK1		1	NO MANUAL INTEGRATION
1725	07072320ECD7.D	BLG0068-BS1		1	NO MANUAL INTEGRATION
1746	07072321ECD7.D	BLG0068-BSD1		1	NO MANUAL INTEGRATION
1806	07072322ECD7.D	23G0044-01		1	NO MANUAL INTEGRATION
1827	07072323ECD7.D	L007473		1	NO MANUAL INTEGRATION
1848	07072324ECD7.D	AR1242CCV3		1	NO MANUAL INTEGRATION
1909	07072325ECD7.D	AR1660CCV4		1	NO MANUAL INTEGRATION
1930	07072326ECD7.D	BLF0106-BLK1		1	NO MANUAL INTEGRATION
1951	07072327ECD7.D	BLF0106-BS1		1	NO MANUAL INTEGRATION
2012	07072328ECD7.D	BLF0106-BSD1		1	NO MANUAL INTEGRATION
2033	07072329ECD7.D	23F0046-01		1	NO MANUAL INTEGRATION
2053	07072330ECD7.D	23F0046-02		1	NO MANUAL INTEGRATION
2114	07072331ECD7.D	23F0046-03		1	NO MANUAL INTEGRATION
2135	07072332ECD7.D	23F0046-04		1	NO MANUAL INTEGRATION
2156	07072333ECD7.D	23F0046-05		1	NO MANUAL INTEGRATION
2217	07072334ECD7.D	23F0046-06		1	NO MANUAL INTEGRATION
2238	07072335ECD7.D	23F0046-07		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230707.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2259	07072336ECD7.D	23F0046-08		1	NO MANUAL INTEGRATION
2319	07072337ECD7.D	23F0046-09		1	NO MANUAL INTEGRATION
2340	07072338ECD7.D	23F0046-10		1	NO MANUAL INTEGRATION
0001	07072339ECD7.D	AR1254CCV5		1	NO MANUAL INTEGRATION
0022	07072340ECD7.D	AR1660CCV6		1	NO MANUAL INTEGRATION
0043	07072341ECD7.D	23F0046-11		1	NO MANUAL INTEGRATION
0104	07072342ECD7.D	23F0046-12		1	NO MANUAL INTEGRATION
0125	07072343ECD7.D	23F0046-13		1	NO MANUAL INTEGRATION
0145	07072344ECD7.D	23F0046-14		1	NO MANUAL INTEGRATION
0206	07072345ECD7.D	23F0046-15		1	NO MANUAL INTEGRATION
0227	07072346ECD7.D	23F0046-16		1	NO MANUAL INTEGRATION
0248	07072347ECD7.D	23F0046-17		1	NO MANUAL INTEGRATION
0309	07072348ECD7.D	23F0046-18		1	NO MANUAL INTEGRATION
0330	07072349ECD7.D	23F0046-19		1	NO MANUAL INTEGRATION
0350	07072350ECD7.D	23F0046-20		1	NO MANUAL INTEGRATION
0411	07072351ECD7.D	AR1248CCV7		1	Aroclor-1248,
0432	07072352ECD7.D	AR1660CCV8		1	NO MANUAL INTEGRATION
0453	07072353ECD7.D	BLF0398-BLK1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230707.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0514	07072354ECD7.D	BLF0398-BS1		1	NO MANUAL INTEGRATION
0535	07072355ECD7.D	BLF0398-BSD1		1	NO MANUAL INTEGRATION
0556	07072356ECD7.D	BLF0398-SRM1		1	NO MANUAL INTEGRATION
0616	07072357ECD7.D	23F0230-01		1	Aroclor-1254, Aroclor-1260, Decachlorobiphenyl,
0637	07072358ECD7.D	23F0230-02		1	NO MANUAL INTEGRATION
0658	07072359ECD7.D	23F0230-03		1	NO MANUAL INTEGRATION
0719	07072360ECD7.D	23F0230-05		1	NO MANUAL INTEGRATION
0740	07072361ECD7.D	23F0230-06		1	NO MANUAL INTEGRATION
0801	07072362ECD7.D	23F0230-07		1	NO MANUAL INTEGRATION
0821	07072363ECD7.D	23F0230-08		1	NO MANUAL INTEGRATION
0842	07072364ECD7.D	23F0230-09		1	NO MANUAL INTEGRATION
0903	07072365ECD7.D	23F0230-10		1	NO MANUAL INTEGRATION
0924	07072366ECD7.D	BLF0398-MS1		1	NO MANUAL INTEGRATION
0945	07072367ECD7.D	BLF0398-MSD1		1	NO MANUAL INTEGRATION
1006	07072368ECD7.D	AR1242CCV9		1	NO MANUAL INTEGRATION
1026	07072369ECD7.D	AR1660CCVA		1	NO MANUAL INTEGRATION
1047	07072370ECD7.D	23F0230-11		1	NO MANUAL INTEGRATION
1108	07072371ECD7.D	23F0230-12		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230707.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1129	07072372ECD7.D	23F0230-13		1	NO MANUAL INTEGRATION
1150	07072373ECD7.D	23F0230-14		1	NO MANUAL INTEGRATION
1211	07072374ECD7.D	23F0230-15		1	NO MANUAL INTEGRATION
1232	07072375ECD7.D	23F0230-16		1	NO MANUAL INTEGRATION
1252	07072376ECD7.D	23F0230-17		1	NO MANUAL INTEGRATION
1313	07072377ECD7.D	23F0230-18		1	NO MANUAL INTEGRATION
1334	07072378ECD7.D	23F0230-19		1	NO MANUAL INTEGRATION
1355	07072379ECD7.D	AR1254CCVB		1	NO MANUAL INTEGRATION
1416	07072380ECD7.D	AR1660CCVC		1	NO MANUAL INTEGRATION

Security Status Report

Date: 08-Jul-2023 20:49

07072301ECD7.D	Data Locked	yev, 08-
07072302ECD7.D	Data Locked	yev, 08-
07072303ECD7.D	Data Locked	yev, 08-
07072304ECD7.D	Data Locked	yev, 08-
07072305ECD7.D	Data Locked	yev, 08-
07072306ECD7.D	Data Locked	yev, 08-
07072307ECD7.D	Data Locked	yev, 08-
07072308ECD7.D	Data Locked	yev, 08-
07072309ECD7.D	Data Locked	yev, 08-
07072310ECD7.D	Data Locked	yev, 08-
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07072378ECD7.D	Data Locked	yev, 08-
07072379ECD7.D	Data Locked	yev, 08-
07072380ECD7.D	Data Locked	yev, 08-

SURROGATE RECOVERY AND RT SUMMARY
EPA 8082A

Laboratory: Analytical Resources, LLC
SDG/WO: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLE0079
Instrument: ECD7
Calibration: GE00022
Calibration Date: 05/06/2023

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SLE0079-SCV1 (Water)			Lab File ID: 05052332ECD7.D			Analyzed: 05/06/23 03:16		
Decachlorobiphenyl	40.000	92.3	80 - 120	13.842	13.8415	0.0005	N/A	
Tetrachlorometaxylene	40.000	92.2	80 - 120	5.741	5.742	-0.0010	N/A	
Decachlorobiphenyl [2C]	40.000	98.1	80 - 120	14.069	14.06967	-0.0007	N/A	
Tetrachlorometaxylene [2C]	40.000	93.1	80 - 120	5.628	5.628167	-0.0002	N/A	
SLE0079-SCV2 (Water)			Lab File ID: 05052333ECD7.D			Analyzed: 05/06/23 03:36		
Decachlorobiphenyl	40.000	102	80 - 120	13.842	13.8415	0.0005	N/A	
Tetrachlorometaxylene	40.000	81.9	80 - 120	5.743	5.742	0.0010	N/A	
Decachlorobiphenyl [2C]	40.000	110	80 - 120	14.069	14.06967	-0.0007	N/A	
Tetrachlorometaxylene [2C]	40.000	83.5	80 - 120	5.63	5.628167	0.0018	N/A	
SLE0079-SCV3 (Water)			Lab File ID: 05052334ECD7.D			Analyzed: 05/06/23 03:57		
Decachlorobiphenyl	40.000	89.2	80 - 120	13.841	13.8415	-0.0005	N/A	
Tetrachlorometaxylene	40.000	92.0	80 - 120	5.741	5.742	-0.0010	N/A	
Decachlorobiphenyl [2C]	40.000	95.0	80 - 120	14.07	14.06967	0.0003	N/A	
Tetrachlorometaxylene [2C]	40.000	94.3	80 - 120	5.628	5.628167	-0.0002	N/A	
SLE0079-SCV4 (Water)			Lab File ID: 05052335ECD7.D			Analyzed: 05/06/23 04:18		
Decachlorobiphenyl	40.000	89.9	80 - 120	13.842	13.8415	0.0005	N/A	
Tetrachlorometaxylene	40.000	94.0	80 - 120	5.743	5.742	0.0010	N/A	
Decachlorobiphenyl [2C]	40.000	96.2	80 - 120	14.07	14.06967	0.0003	N/A	
Tetrachlorometaxylene [2C]	40.000	95.8	80 - 120	5.63	5.628167	0.0018	N/A	
SLE0079-SCV5 (Water)			Lab File ID: 05052336ECD7.D			Analyzed: 05/06/23 04:39		
Decachlorobiphenyl	40.000	92.7	80 - 120	13.841	13.8415	-0.0005	N/A	
Tetrachlorometaxylene	40.000	94.5	80 - 120	5.742	5.742	0.0000	N/A	
Decachlorobiphenyl [2C]	40.000	96.9	80 - 120	14.069	14.06967	-0.0007	N/A	
Tetrachlorometaxylene [2C]	40.000	97.6	80 - 120	5.628	5.628167	-0.0002	N/A	
SLE0079-SCV6 (Water)			Lab File ID: 05052337ECD7.D			Analyzed: 05/06/23 05:00		
Decachlorobiphenyl	40.000	138	80 - 120	13.841	13.8415	-0.0005	N/A	
Tetrachlorometaxylene	40.000	96.0	80 - 120	5.742	5.742	0.0000	N/A	
Decachlorobiphenyl [2C]	40.000	148	80 - 120	14.068	14.06967	-0.0017	N/A	
Tetrachlorometaxylene [2C]	40.000	101	80 - 120	5.629	5.628167	0.0008	N/A	

SURROGATE RECOVERY AND RT SUMMARY
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG/WO:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0066	Instrument:	ECD7
Calibration:	GE00022	Calibration Date:	05/06/2023

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SLG0066-CCV5 (Solid)				Lab File ID: 07072339ECD7.D			Analyzed: 07/07/23 00:01	
Decachlorobiphenyl	40.000	95.7	80 - 120	13.819	13.8415	-0.0225	N/A	
Tetrachlorometaxylene	40.000	91.2	80 - 120	5.717	5.742	-0.0250	N/A	
Decachlorobiphenyl [2C]	40.000	92.7	80 - 120	14.046	14.06967	-0.0237	N/A	
Tetrachlorometaxylene [2C]	40.000	106	80 - 120	5.608	5.628167	-0.0202	N/A	
SLG0066-ICV1 (Solid)				Lab File ID: 07072302ECD7.D			Analyzed: 07/07/23 11:09	
Decachlorobiphenyl	40.000	99.5	80 - 120	13.82	13.8415	-0.0215	N/A	
Tetrachlorometaxylene	40.000	91.3	80 - 120	5.718	5.742	-0.0240	N/A	
Decachlorobiphenyl [2C]	40.000	98.0	80 - 120	14.044	14.06967	-0.0257	N/A	
Tetrachlorometaxylene [2C]	40.000	104	80 - 120	5.606	5.628167	-0.0222	N/A	
SLG0066-ICV2 (Solid)				Lab File ID: 07072303ECD7.D			Analyzed: 07/07/23 11:30	
Decachlorobiphenyl	40.000	99.8	80 - 120	13.818	13.8415	-0.0235	N/A	
Tetrachlorometaxylene	40.000	91.3	80 - 120	5.718	5.742	-0.0240	N/A	
Decachlorobiphenyl [2C]	40.000	103	80 - 120	14.046	14.06967	-0.0237	N/A	
Tetrachlorometaxylene [2C]	40.000	101	80 - 120	5.607	5.628167	-0.0212	N/A	
BLF0716-SRM1 (Solid)				Lab File ID: 07072310ECD7.D			Analyzed: 07/07/23 13:56	
Decachlorobiphenyl	40.000	83.3	40 - 126	13.81	13.8415	-0.0315	N/A	
Tetrachlorometaxylene	40.000	70.2	44 - 120	5.717	5.742	-0.0250	N/A	
Decachlorobiphenyl [2C]	40.000	83.1	40 - 126	14.039	14.06967	-0.0307	N/A	
Tetrachlorometaxylene [2C]	40.000	76.6	44 - 120	5.604	5.628167	-0.0242	N/A	
BLF0716-BS1 (Solid)				Lab File ID: 07072311ECD7.D			Analyzed: 07/07/23 14:17	
Decachlorobiphenyl	8.0000	84.6	40 - 126	13.816	13.8415	-0.0255	N/A	
Tetrachlorometaxylene	8.0000	70.6	44 - 120	5.717	5.742	-0.0250	N/A	
Decachlorobiphenyl [2C]	8.0000	91.5	40 - 126	14.044	14.06967	-0.0257	N/A	
Tetrachlorometaxylene [2C]	8.0000	70.0	44 - 120	5.607	5.628167	-0.0212	N/A	
BLF0716-BSD1 (Solid)				Lab File ID: 07072312ECD7.D			Analyzed: 07/07/23 14:38	
Decachlorobiphenyl	8.0000	86.3	40 - 126	13.817	13.8415	-0.0245	N/A	
Tetrachlorometaxylene	8.0000	72.2	44 - 120	5.717	5.742	-0.0250	N/A	
Decachlorobiphenyl [2C]	8.0000	94.0	40 - 126	14.044	14.06967	-0.0257	N/A	
Tetrachlorometaxylene [2C]	8.0000	71.5	44 - 120	5.607	5.628167	-0.0212	N/A	

SURROGATE RECOVERY AND RT SUMMARY
EPA 8082A

Laboratory: Analytical Resources, LLC
SDG/WO: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLG0066
Instrument: ECD7
Calibration: GE00022
Calibration Date: 05/06/2023

Surrogate Compound	Spike Level ug/kg wet	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
BLF0716-BLK1 (Solid)			Lab File ID: 07072313ECD7.D			Analyzed: 07/07/23 14:59		
Decachlorobiphenyl	8.0000	73.5	40 - 126	13.817	13.8415	-0.0245	N/A	
Tetrachlorometaxylene	8.0000	62.4	44 - 120	5.717	5.742	-0.0250	N/A	
Decachlorobiphenyl [2C]	8.0000	79.3	40 - 126	14.044	14.06967	-0.0257	N/A	
Tetrachlorometaxylene [2C]	8.0000	62.3	44 - 120	5.607	5.628167	-0.0212	N/A	
SLG0066-CCV1 (Solid)			Lab File ID: 07072314ECD7.D			Analyzed: 07/07/23 15:19		
Decachlorobiphenyl	40.000	93.0	80 - 120	13.819	13.8415	-0.0225	N/A	
Tetrachlorometaxylene	40.000	91.8	80 - 120	5.718	5.742	-0.0240	N/A	
Decachlorobiphenyl [2C]	40.000	103	80 - 120	14.047	14.06967	-0.0227	N/A	
Tetrachlorometaxylene [2C]	40.000	95.3	80 - 120	5.609	5.628167	-0.0192	N/A	
SLG0066-CCV2 (Solid)			Lab File ID: 07072315ECD7.D			Analyzed: 07/07/23 15:40		
Decachlorobiphenyl	40.000	97.8	80 - 120	13.818	13.8415	-0.0235	N/A	
Tetrachlorometaxylene	40.000	90.5	80 - 120	5.718	5.742	-0.0240	N/A	
Decachlorobiphenyl [2C]	40.000	103	80 - 120	14.045	14.06967	-0.0247	N/A	
Tetrachlorometaxylene [2C]	40.000	98.3	80 - 120	5.609	5.628167	-0.0192	N/A	
23F0536-01 (Solid)			Lab File ID: 07072316ECD7.D			Analyzed: 07/07/23 16:01		
Decachlorobiphenyl	7.9994	82.3	40 - 126	13.808	13.8415	-0.0335	N/A	
Tetrachlorometaxylene	7.9994	62.4	44 - 120	5.715	5.742	-0.0270	N/A	
Decachlorobiphenyl [2C]	7.9994	85.1	40 - 126	14.035	14.06967	-0.0347	N/A	
Tetrachlorometaxylene [2C]	7.9994	73.3	44 - 120	5.599	5.628167	-0.0292	N/A	
BLF0716-MS1 (Solid)			Lab File ID: 07072317ECD7.D			Analyzed: 07/07/23 16:22		
Decachlorobiphenyl	7.9994	77.7	40 - 126	13.807	13.8415	-0.0345	N/A	
Tetrachlorometaxylene	7.9994	58.9	44 - 120	5.715	5.742	-0.0270	N/A	
Decachlorobiphenyl [2C]	7.9994	80.5	40 - 126	14.036	14.06967	-0.0337	N/A	
Tetrachlorometaxylene [2C]	7.9994	68.3	44 - 120	5.599	5.628167	-0.0292	N/A	
BLF0716-MSD1 (Solid)			Lab File ID: 07072318ECD7.D			Analyzed: 07/07/23 16:43		
Decachlorobiphenyl	7.9994	80.2	40 - 126	13.807	13.8415	-0.0345	N/A	
Tetrachlorometaxylene	7.9994	52.7	44 - 120	5.715	5.742	-0.0270	N/A	
Decachlorobiphenyl [2C]	7.9994	83.3	40 - 126	14.035	14.06967	-0.0347	N/A	
Tetrachlorometaxylene [2C]	7.9994	71.0	44 - 120	5.598	5.628167	-0.0302	N/A	

SURROGATE RECOVERY AND RT SUMMARY
EPA 8082A

Laboratory: Analytical Resources, LLC
SDG/WO: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLG0066
Instrument: ECD7
Calibration: GE00022
Calibration Date: 05/06/2023

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SLG0066-CCV3 (Solid)			Lab File ID: 07072324ECD7.D				Analyzed: 07/07/23 18:48	
Decachlorobiphenyl	40.000	91.1	80 - 120	13.819	13.8415	-0.0225	N/A	
Tetrachlorometaxylene	40.000	110	80 - 120	5.719	5.742	-0.0230	N/A	
Decachlorobiphenyl [2C]	40.000	98.0	80 - 120	14.047	14.06967	-0.0227	N/A	
Tetrachlorometaxylene [2C]	40.000	113	80 - 120	5.609	5.628167	-0.0192	N/A	
SLG0066-CCV4 (Solid)			Lab File ID: 07072325ECD7.D				Analyzed: 07/07/23 19:09	
Decachlorobiphenyl	40.000	98.5	80 - 120	13.818	13.8415	-0.0235	N/A	
Tetrachlorometaxylene	40.000	89.7	80 - 120	5.717	5.742	-0.0250	N/A	
Decachlorobiphenyl [2C]	40.000	102	80 - 120	14.046	14.06967	-0.0237	N/A	
Tetrachlorometaxylene [2C]	40.000	97.7	80 - 120	5.608	5.628167	-0.0202	N/A	
SLG0066-CCV6 (Solid)			Lab File ID: 07072340ECD7.D				Analyzed: 07/08/23 00:22	
Decachlorobiphenyl	40.000	97.7	80 - 120	13.818	13.8415	-0.0235	N/A	
Tetrachlorometaxylene	40.000	91.6	80 - 120	5.717	5.742	-0.0250	N/A	
Decachlorobiphenyl [2C]	40.000	99.0	80 - 120	14.046	14.06967	-0.0237	N/A	
Tetrachlorometaxylene [2C]	40.000	100	80 - 120	5.609	5.628167	-0.0192	N/A	
SLG0066-CCV7 (Solid)			Lab File ID: 07072351ECD7.D				Analyzed: 07/08/23 04:11	
Decachlorobiphenyl	40.000	94.1	80 - 120	13.819	13.8415	-0.0225	N/A	
Tetrachlorometaxylene	40.000	94.0	80 - 120	5.718	5.742	-0.0240	N/A	
Decachlorobiphenyl [2C]	40.000	99.7	80 - 120	14.047	14.06967	-0.0227	N/A	
Tetrachlorometaxylene [2C]	40.000	95.6	80 - 120	5.608	5.628167	-0.0202	N/A	
SLG0066-CCV8 (Solid)			Lab File ID: 07072352ECD7.D				Analyzed: 07/08/23 04:32	
Decachlorobiphenyl	40.000	97.6	80 - 120	13.819	13.8415	-0.0225	N/A	
Tetrachlorometaxylene	40.000	92.3	80 - 120	5.717	5.742	-0.0250	N/A	
Decachlorobiphenyl [2C]	40.000	97.6	80 - 120	14.046	14.06967	-0.0237	N/A	
Tetrachlorometaxylene [2C]	40.000	101	80 - 120	5.609	5.628167	-0.0192	N/A	
SLG0066-CCV9 (Solid)			Lab File ID: 07072368ECD7.D				Analyzed: 07/08/23 10:06	
Decachlorobiphenyl	40.000	92.8	80 - 120	13.819	13.8415	-0.0225	N/A	
Tetrachlorometaxylene	40.000	109	80 - 120	5.718	5.742	-0.0240	N/A	
Decachlorobiphenyl [2C]	40.000	94.1	80 - 120	14.047	14.06967	-0.0227	N/A	
Tetrachlorometaxylene [2C]	40.000	118	80 - 120	5.608	5.628167	-0.0202	N/A	

SURROGATE RECOVERY AND RT SUMMARY
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG/WO:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0066	Instrument:	ECD7
Calibration:	GE00022	Calibration Date:	05/06/2023

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SLG0066-CCVA (Solid)			Lab File ID: 07072369ECD7.D			Analyzed: 07/08/23 10:26		
Decachlorobiphenyl	40.000	101	80 - 120	13.818	13.8415	-0.0235	N/A	
Tetrachlorometaxylene	40.000	91.4	80 - 120	5.717	5.742	-0.0250	N/A	
Decachlorobiphenyl [2C]	40.000	102	80 - 120	14.045	14.06967	-0.0247	N/A	
Tetrachlorometaxylene [2C]	40.000	101	80 - 120	5.608	5.628167	-0.0202	N/A	
SLG0066-CCVB (Solid)			Lab File ID: 07072379ECD7.D			Analyzed: 07/08/23 13:55		
Decachlorobiphenyl	40.000	105	80 - 120	13.818	13.8415	-0.0235	N/A	
Tetrachlorometaxylene	40.000	93.6	80 - 120	5.717	5.742	-0.0250	N/A	
Decachlorobiphenyl [2C]	40.000	111	80 - 120	14.045	14.06967	-0.0247	N/A	
Tetrachlorometaxylene [2C]	40.000	106	80 - 120	5.607	5.628167	-0.0212	N/A	
SLG0066-CCVC (Solid)			Lab File ID: 07072380ECD7.D			Analyzed: 07/08/23 14:16		
Decachlorobiphenyl	40.000	104	80 - 120	13.818	13.8415	-0.0235	N/A	
Tetrachlorometaxylene	40.000	94.2	80 - 120	5.717	5.742	-0.0250	N/A	
Decachlorobiphenyl [2C]	40.000	112	80 - 120	14.045	14.06967	-0.0247	N/A	
Tetrachlorometaxylene [2C]	40.000	101	80 - 120	5.607	5.628167	-0.0212	N/A	

Analytical Resources, LLC
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLE0079	Instrument:	ECD7
		Calibration:	GE00022

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Secondary Cal Check (SLE0079-SCV1)		(Water)	Lab File ID: 05052332ECD7.D				Analyzed: 05/06/23 03:16		
1-Bromo-2-Nitrobenzene	642284	3.428	601474	3.428	107	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	941356	14.215	876625	14.215	107	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	361711	3.868	349289	3.869	104	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl [2C]	690563	14.957	652984	14.956	106	50 - 200	0.001	+/-0.50	
Secondary Cal Check (SLE0079-SCV2)		(Water)	Lab File ID: 05052333ECD7.D				Analyzed: 05/06/23 03:36		
1-Bromo-2-Nitrobenzene	648004	3.43	601474	3.428	108	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl	976327	14.214	876625	14.215	111	50 - 200	-0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	365379	3.87	349289	3.869	105	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	695394	14.957	652984	14.956	106	50 - 200	0.001	+/-0.50	
Secondary Cal Check (SLE0079-SCV3)		(Water)	Lab File ID: 05052334ECD7.D				Analyzed: 05/06/23 03:57		
1-Bromo-2-Nitrobenzene	643038	3.428	601474	3.428	107	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	952051	14.215	876625	14.215	109	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	359604	3.868	349289	3.869	103	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl [2C]	692982	14.957	652984	14.956	106	50 - 200	0.001	+/-0.50	
Secondary Cal Check (SLE0079-SCV4)		(Water)	Lab File ID: 05052335ECD7.D				Analyzed: 05/06/23 04:18		
1-Bromo-2-Nitrobenzene	650234	3.43	601474	3.428	108	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl	980276	14.214	876625	14.215	112	50 - 200	-0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	364142	3.87	349289	3.869	104	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	705291	14.957	652984	14.956	108	50 - 200	0.001	+/-0.50	
Secondary Cal Check (SLE0079-SCV5)		(Water)	Lab File ID: 05052336ECD7.D				Analyzed: 05/06/23 04:39		
1-Bromo-2-Nitrobenzene	629547	3.428	601474	3.428	105	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	929713	14.214	876625	14.215	106	50 - 200	-0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	341980	3.868	349289	3.869	98	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl [2C]	678097	14.957	652984	14.956	104	50 - 200	0.001	+/-0.50	
Secondary Cal Check (SLE0079-SCV6)		(Water)	Lab File ID: 05052337ECD7.D				Analyzed: 05/06/23 05:00		
1-Bromo-2-Nitrobenzene	646456	3.429	601474	3.428	107	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl	954969	14.213	876625	14.215	109	50 - 200	-0.002	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	354120	3.869	349289	3.869	101	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	696139	14.957	652984	14.956	107	50 - 200	0.001	+/-0.50	

Analytical Resources, LLC
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0066	Instrument:	ECD7
		Calibration:	GE00022

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Check (SLG0066-ICV1)		(Solid)	Lab File ID: 07072302ECD7.D				Analyzed: 07/07/23 11:09		
1-Bromo-2-Nitrobenzene	633009	3.407	633009	3.407	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	1366979	14.193	1366979	14.193	100	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	311346	3.844	311346	3.844	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	542409	14.935	542409	14.935	100	50 - 200	0.000	+/-0.50	
Initial Cal Check (SLG0066-ICV2)		(Solid)	Lab File ID: 07072303ECD7.D				Analyzed: 07/07/23 11:30		
1-Bromo-2-Nitrobenzene	611532	3.407	611532	3.407	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	1194081	14.196	1194081	14.196	100	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	322551	3.845	322551	3.845	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	575153	14.936	575153	14.936	100	50 - 200	0.000	+/-0.50	
Reference (BLF0716-SRM1)		(Solid)	Lab File ID: 07072310ECD7.D				Analyzed: 07/07/23 13:56		
1-Bromo-2-Nitrobenzene	628075	3.407	611532	3.407	103	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	875375	14.177	1194081	14.196	73	50 - 200	-0.019	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	353580	3.846	322551	3.845	110	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	523075	14.925	575153	14.936	91	50 - 200	-0.011	+/-0.50	
LCS (BLF0716-BS1)		(Solid)	Lab File ID: 07072311ECD7.D				Analyzed: 07/07/23 14:17		
1-Bromo-2-Nitrobenzene	664474	3.408	611532	3.407	109	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl	1314687	14.188	1194081	14.196	110	50 - 200	-0.008	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	387065	3.847	322551	3.845	120	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl [2C]	635371	14.933	575153	14.936	110	50 - 200	-0.003	+/-0.50	
LCS Dup (BLF0716-BSD1)		(Solid)	Lab File ID: 07072312ECD7.D				Analyzed: 07/07/23 14:38		
1-Bromo-2-Nitrobenzene	658057	3.408	611532	3.407	108	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl	1382159	14.189	1194081	14.196	116	50 - 200	-0.007	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	378029	3.847	322551	3.845	117	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl [2C]	648179	14.933	575153	14.936	113	50 - 200	-0.003	+/-0.50	
Blank (BLF0716-BLK1)		(Solid)	Lab File ID: 07072313ECD7.D				Analyzed: 07/07/23 14:59		
1-Bromo-2-Nitrobenzene	657780	3.407	611532	3.407	108	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	1471456	14.19	1194081	14.196	123	50 - 200	-0.006	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	371559	3.846	322551	3.845	115	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	667388	14.932	575153	14.936	116	50 - 200	-0.004	+/-0.50	

Analytical Resources, LLC
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0066	Instrument:	ECD7
		Calibration:	GE00022

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LDW20-SC148A (23F0536-01)		(Solid)		Lab File ID: 07072316ECD7.D				Analyzed: 07/07/23 16:01	
1-Bromo-2-Nitrobenzene	612720	3.406	611532	3.407	100	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl	546163	14.171	1194081	14.196	46	50 - 200	-0.025	+/-0.50	*
1-Bromo-2-Nitrobenzene [2C]	337584	3.844	322551	3.845	105	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl [2C]	393062	14.92	575153	14.936	68	50 - 200	-0.016	+/-0.50	
Matrix Spike (BLF0716-MS1)		(Solid)		Lab File ID: 07072317ECD7.D				Analyzed: 07/07/23 16:22	
1-Bromo-2-Nitrobenzene	609020	3.407	611532	3.407	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	532877	14.171	1194081	14.196	45	50 - 200	-0.025	+/-0.50	*
1-Bromo-2-Nitrobenzene [2C]	347685	3.845	322551	3.845	108	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	388813	14.919	575153	14.936	68	50 - 200	-0.017	+/-0.50	
Matrix Spike Dup (BLF0716-MSD1)		(Solid)		Lab File ID: 07072318ECD7.D				Analyzed: 07/07/23 16:43	
1-Bromo-2-Nitrobenzene	606831	3.406	611532	3.407	99	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl	532507	14.171	1194081	14.196	45	50 - 200	-0.025	+/-0.50	*
1-Bromo-2-Nitrobenzene [2C]	340737	3.844	322551	3.845	106	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl [2C]	391292	14.919	575153	14.936	68	50 - 200	-0.017	+/-0.50	

DUAL COLUMN CONFIRMATION SUMMARY

Laboratory:	Analytical Resources, LLC			SDG:	23F0536
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	23F0536-01	File ID:	07072316ECD7.D
Sampled:	06/08/20 08:41	Prepared:	06/29/23 11:08	Analyzed:	07/07/23 16:01
Solids:	62.38	Preparation:	EPA 3546 (Microwave)	Instrument:	ECD7
Batch:	BLF0716	Sequence:	SLG0066		
GC Column(1):	ZB5			GC Column(2):	ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1248	* 1	8.367	8.398	0.031	37310.5	17.5	14.7
	2	8.224	8.26	0.036	13484	15.1	
Aroclor 1254	1	9.207	9.246	0.039	66811	20.7	34.4
	* 2	9.363	9.403	0.04	49812.4	29.3	
Aroclor 1260	1	10.954	10.99483	0.0408	47543.2	27.0	26.4
	* 2	11.567	11.60617	0.0392	51154.5	35.2	

* Column used for quantitation

HOLDING TIME SUMMARY

Analysis: EPA 8082A

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW20-SC148A 23F0536-01	06/08/20 08:41	06/22/23 14:10	06/29/23 11:08	1,116	365	07/07/23 16:01	8	40	*
Matrix Spike BLF0716-MS1	06/08/20 08:41	06/22/23 14:10	06/29/23 11:08	1,116	365	07/07/23 16:22	8	40	*
Matrix Spike Dup BLF0716-MSD1	06/08/20 08:41	06/22/23 14:10	06/29/23 11:08	1,116	365	07/07/23 16:43	8	40	*

* Indicates hold time exceedance.

METHOD DETECTION AND REPORTING LIMITS

EPA 8082A

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Instrument: ECD7

Analyte	MDL	RL	Units
Aroclor 1016	1.6	4.0	ug/kg
Aroclor 1016 [2C]	1.6	4.0	ug/kg
Aroclor 1221	1.6	4.0	ug/kg
Aroclor 1221 [2C]	1.6	4.0	ug/kg
Aroclor 1232	1.6	4.0	ug/kg
Aroclor 1232 [2C]	1.6	4.0	ug/kg
Aroclor 1242	1.6	4.0	ug/kg
Aroclor 1242 [2C]	1.6	4.0	ug/kg
Aroclor 1248	1.6	4.0	ug/kg
Aroclor 1248 [2C]	1.6	4.0	ug/kg
Aroclor 1254	1.6	4.0	ug/kg
Aroclor 1254 [2C]	1.6	4.0	ug/kg
Aroclor 1260	0.6	4.0	ug/kg
Aroclor 1260 [2C]	0.6	4.0	ug/kg

125 Market Street
New Haven, CT 06513
USA

AccuStandard® Inc.

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

Catalog No: S-279N
Description: Tetrachloro-m-xylene
Lot: 0052481B-1
Solvent: N/A
Hazards: *Refer to SDS for complete safety information*

Signal Word: Warning

Date Certified: Jul 28, 2005
Expiration: Jul 28, 2015
Sample Size: 100 mg
Components: 1
Storage Condition: Ambient (>5 °C)

Certified Reference Material

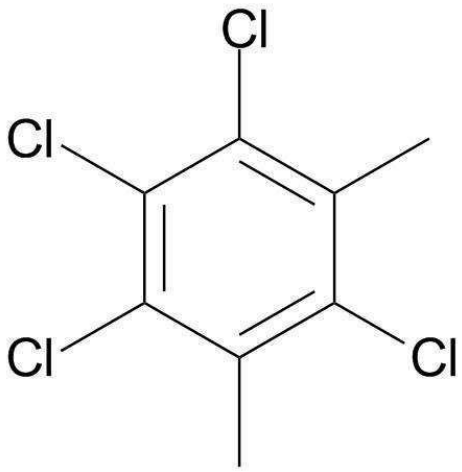
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER AR-1463

ilac-MRA

Component	CAS #	Purity % (GC/FID)	Prepared Concentration	Certified Analyte Concentration[1]
Tetrachloro-meta-xylene	877-09-8	96.0	N/A	N/A

Identification:

Molecular formula: C8H6Cl4
Molecular weight: 243.94



C000147
tetrachlormetaxylene
Expires 1/15/2020
Prepared By Joshua Rains 1/15/2014

This Certified Reference Material was verified in accordance with ISO/IEC 17025

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

[1] The Uncertainty calculated for this product is ±2.4%. These values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

Metrological traceability is established through in-house validated methods.

Purity, if stated, is equal to 100% minus found impurity components. Impurity components have not been identified.

Hazard Information: Please refer to the SDS for information regarding the hazards associated with using this material.

This product was prepared according to in-house procedures and is guaranteed to be homogeneous.

Certified By: Larry Decker, Organic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO 17034, ISO/IEC 17025 and certified to ISO 9001:2015

QR-ORG/INO-001
Rev. 5/18

AccuStandard
125 Market Street
New Haven, CT 06513
(203) 786-5290

CERTIFICATE OF PRODUCT DATA

PRODUCT: C-209N
DESCRIPTION: 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl
LOT #: 990521LB-AC
SOLVENT: N/A

EXPIRATION: Jul 28, 2015

This product is guaranteed accurate to ±0.5% of the Certified Analyte concentration through the Expiration Date on the Label.

Component	CAS #	Purity % (GC/MS)	Prepared Concentration[1]	Certified Analyte Concentration[2]
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	2051-24-3	100	N/A	N/A

2,

C000148
decachlorbiphenyl
Expires 1/15/2020
Prepared By Joshua Rains 1/15/2014

* I1768A

Certified by: R. Cooper

1. All weights are traceable through National Institute of Standards & Technology, Test No. 822/254480
2. Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty calculated for this product is ±4% which is the Combined Uncertainty uc(y). It represents an estimated standard deviation equal to the positive square root of the total variance of the uncertainty of components. The Expanded Uncertainty is U which is Uc(y) *K where K is the coverage factor at the 95% confidence level (K=2).
3. A product with a suffix (-1A, -2B, etc.) on its lot# has had its expiration date extended and is identical to the same lot# without the suffix.

Please note: AccuStandard follows the U.S. conventions in reporting numerical values, on both certificates and labels.

A comma (,) is used to separate units of one-thousand or greater.
A period (.) is used as a decimal place marker.

This product was manufactured in accordance to quality system requirements of ISO 9001:2000 and ISO 17025

* Recertified 2 4-6-09 JS

Analytical Standard Record

Standard ID: C000148 **Printed: 4/23/2015 11:54:44AM**

Description:	decachlorbiphenyl	Expires:	15-Jan-2020
Standard Type:	Other	Prepared:	15-Jan-2014
Solvent:	na/a	Prepared By:	Joshua Rains
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	27-Feb-2015 13:03 by JGR
Vendor:	Accustandard	Lot #:	990521lb-ac
Vendor Catalog #:			

Comments

see i1768a
SOM calibrations added 06/12/14 sdrd

Analyte	CAS Number	Concentration	Units
Decachlorobiphenyl [2C]	2051-24-3	1000000	ug/mL
Decachlorobiphenyl	2051-24-3	1000000	ug/mL
DCB 1660 [2C]	2051-24-3	1000000	ug/mL
DCB 1660	2051-24-3	1000000	ug/mL
DCB [2C]	2051-24-3	1000000	ug/mL
DCB (A) [2C]	2051-24-3	1000000	ug/mL
DCB (A)	2051-24-3	1000000	ug/mL
DCB	2051-24-3	1000000	ug/mL

Reviewed By Date

Certificate of Analysis

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411 Madrid Ave., Torrance, CA 90501 USA ▪ Tel: 310-212-0555 ▪ Fax: 310-328-7768 ▪ info@phenomenex.com
Access your MSDS and digital C of A at **www.phenomenex.com/mysupport. Re-order at www.phenomenex.com/standards**

Certified Reference Material

This product is included in Phenova's ISO/IEC 17025 and ISO Guide 34 Scopes of Accreditation

Catalog No.: AL0-101461
Description: Aroclor 1254
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Hexane

Lot Number: CL13053
Certification Date: November 29, 2018
Expiration Date: November 30, 2026

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1254	11097-69-1	1000	± 0.246%

I09808
Recd. JP
02/24/20

ACCREDITED
Reference Material Producer
Certificate No. 2427.02

phenova Certified Reference Materials
Manufactured by Phenova, Inc.
Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ilac-MRA ACCREDITED
Chemical Testing Laboratory
Certificate No. 2427.03

IL11110613_us

Certificate of Analysis

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Certified Reference Materials

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6390 Joyce Drive STE 100, Golden, CO 80403 USA ▪ Tel: 303-940-0033 ▪ Fax: 303-940-0043 ▪ info@phenova.com
Access your Safety Data Sheets and digital Certificates at **www.phenova.com/documents.**

Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.: AL0-101468
Description: Aroclor 1221
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Isooctane

Lot Number: CL14017
Certification Date: August 20, 2019
Expiration Date: August 31, 2027

Andrea L Gill
Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1221	11104-28-2	1000	± 0.553%

J004466
Rec'd
06/18/21

ACCREDITED
Reference Material Producer
Certicate No. 2427.02

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Certified Reference Materials

Phenova is an accredited ISO/IEC 17034 Reference Material Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ACCREDITED
Chemical Testing Laboratory
Certicate No. 2427.03

IL64691018_us

Certificate of Analysis

Produced by Phenova
6390 Joyce Drive STE 100, Golden, CO 80403 USA ▪ Tel: 303-940-0033 ▪ Fax: 303-940-0043 ▪ info@phenova.com
Access your Safety Data Sheets and digital Certificates at www.phenova.com/documents.

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
[3] ISO 17034 – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

Certificate of Analysis

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6390 Joyce Drive STE 100, Golden, CO 80403 USA ▪ Tel: 303-940-0033 ▪ Fax: 303-940-0043 ▪ info@phenova.com
Access your Safety Data Sheets and digital Certificates at **www.phenova.com/documents.**

Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.: AL0-101469
Description: Aroclor 1232
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Isooctane

Lot Number: CL14914
Certification Date: January 31, 2020
Expiration Date: January 31, 2028

Andrea L Gill
Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1232	11141-16-5	1000	± 0.738%

J006467 JR
read
06/18/21

ACCREDITED
Reference Material Producer
Certicate No. 2427.02

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Phenova is an accredited ISO/IEC 17034 Reference Material Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ACCREDITED
Chemical Testing Laboratory
Certicate No. 2427.03

IL64691018_US

Certificate of Analysis

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1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
[3] ISO 17034 – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

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Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.:	AL0-101470	**Lot Number:**	CL14018
Description:	Aroclor 1242	**Certification Date:**	August 20, 2019
Storage:	4 °C	**Expiration Date:**	August 31, 2027
Provided As:	1 mL in 2 mL Ampoule in Isooctane		

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1242	53469-21-9	1000	± 0.553%

J006468
Read JR
06/18/21

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Reference Material Producer
Certicate No. 2427.02

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Phenova is an accredited ISO/IEC 17034 Reference Material Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.

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Chemical Testing Laboratory
Certicate No. 2427.03

IL64691018_us

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1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
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[4] ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

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Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.:	AL0-101471	**Lot Number:**	CL15384
Description:	Aroclor 1248	**Certification Date:**	June 19, 2020
Storage:	4 °C	**Expiration Date:**	June 30, 2028
Provided As:	1 mL in 2 mL Ampoule in Isooctane		

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1248	12672-29-6	1000	± 0.520%

JJ06469
Reed, JR
06/18/21

ACCREDITED
Reference Material Producer
Certicate No. 2427.02

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Phenova is an accredited ISO/IEC 17034 Reference Material Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ACCREDITED
Chemical Testing Laboratory
Certicate No. 2427.03

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1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
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[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

Certificate of Analysis

Agilent

Aroclor 1016 Solution

Product Number: PP-282 **Page:** 1 of 1

Lot Number: CR-0761 **Lot Issue Date:** 28-Feb-2017 **Expiration Date:** 31-Mar-2025

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1016	012674-11-2	NT01016	100.2 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

K1254 JR
Read
02/05/22

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

John Russo
President

Monica Bourgeois
Director of QA/RA

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 9001
Registered
TUV USA, Inc.

Agilent

Certificate of Analysis

Product Name: Aroclor 1260 Standard

Product Number: PP-362-1 **Lot Issue Date:** 20-Jan-2021

Lot Number: 0006582048 **Expiration Date:** 28-Feb-2025

Description:
This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
Aroclor 1260	011096-82-5	NT01023	100.4 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage Conditions: Store at Room Temperature (15° to 30°C).

K 1255

Traceability:
The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:
This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

Hazards:
Refer to the Safety Data Sheet on www.agilent.com for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

Maintenance of Certification:
If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

Sample lot approver:

MJBourgeois

Monica Bourgeois
QMS Representative

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

ISO 17034 Cert
No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

www.agilent.com/quality/
CSD-QA-015.1

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 17025 Cert
No. AT-1937

ISO 17034

Agilent
Trusted Answers

Reference Material Certificate

Product Name:	Aroclor 1248 Standard	**Lot Number:**	0006626997
Product Number:	PP-342-1	**Lot Issue Date:**	17-Aug-2021
Storage Conditions:	Store at Room Temperature (15° to 30°C).	**Expiration Date:**	30-Sep-2025

	CERTIFIED VALUES				
Component Name	Concentration		Expanded Uncertainty	CAS#	Analyte Lot
Aroclor 1248	100.3	±	0.5 µg/mL	012672-29-6	NT01582

Matrix: isooctane (2,2,4-trimethylpentane)

K1257

Description:
This document is prepared in accordance with ISO 17034 and Guide 31. This analytical reference material standard was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed above.

Traceability:
The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:
This analytical reference standard was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

Safety:
Refer to the Safety Data Sheet on www.agilent.com for information regarding this analytical reference material.

Intended Use:
This analytical reference standard is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

Expiration of Certification:
The certification of this analytical reference standard is valid until the expiration date specified above, provided the material is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the material is damaged, contaminated, or otherwise modified.

Certificate of Analysis

Agilent

Aroclor 1254 Solution

Product Number: PP-352 **Page:** 1 of 1

Lot Number: CS-2321 **Lot Issue Date:** 04-May-2018 **Expiration Date:** 31-May-2026

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1254	011097-69-1	RM00922	100.4 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

K1258

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

John Russo
President

Monica Bourgeois
Director of QA/RA

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 9001
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TUV USA, Inc.

Agilent

Certificate of Analysis

Product Name: Aroclor 1221 Standard

Product Number: PP-292-1 **Lot Issue Date:** 28-Apr-2020

Lot Number: 0006535333 **Expiration Date:** 31-May-2024

Description:

This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system, and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
Aroclor 1221	011104-28-2	RM04278	100.2 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage Conditions: Store at Room Temperature (15° to 30°C).

K1259

Traceability:

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:

This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:

This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

Instructions for Use:

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

Hazards:

Refer to the Safety Data Sheet on www.agilent.com for information regarding this RM.

Expiration of Certification:

The certification of this RM is valid until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

Maintenance of Certification:

If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

Sample lot approver:

MBourgeois

Monica Bourgeois
QMS Representative

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

ISO 17034 Cert No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

www.agilent.com/quality/
CSD-QA-015.1

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 17025 Cert No. AT-1937

250 Smith Street North Kingstown, Rhode Island 02852 www.agilent.com/quality

Agilent

Certificate of Analysis
ISO 17034

Aroclor 1262 Standard

Product Number: PP-372-1 **Page:** 1 of 1

Lot Number: 0006499800 **Lot Issue Date:** 04-Nov-2019 **Expiration Date:** 30-Nov-2023

This ISO 17034 Reference Material (RM) was manufactured and verified in accordance with Agilent Technologies ISO 9001 registered quality system. A review of the gravimetric preparation data by our ISO 17025 accredited laboratory serves to verify the concentration of each analyte. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1262	037324-23-5	RM14263	100.0 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

K1260

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

Monica Bourgeois
QMS Representative

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER
ISO 17034 Cert No. AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026 registered ISO 9001 Quality Management System

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO 17025 Cert No. AT-1937

Agilent

Certificate of Analysis
ISO 17034

Aroclor 1232 Standard

Product Number: PP-302-1 **Page:** 1 of 1

Lot Number: CF-2197A **Lot Issue Date:** 05-Jul-2016 **Expiration Date:** 31-Aug-2023

This ISO 17034 Reference Material (RM) was manufactured and verified in accordance with Agilent's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1232	011141-16-5	NT01717	100.4 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

K1261

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

M Bourgeois

Monica Bourgeois
QMS Representative

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER
ISO 17034 Cert No. AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026 registered ISO 9001 Quality Management System

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO17025 Cert No. AT-1937

Agilent

Certificate of Analysis

Product Name: Aroclor 1268 Standard

Product Number: PP-382-1 **Lot Issue Date:** 09-Feb-2021

Lot Number: 0006587800 **Expiration Date:** 31-Mar-2029

Description:
This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
Aroclor 1268	011100-14-4	RM00937	100.0 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage Conditions: Store at Room Temperature (15° to 30°C).

K1262

Traceability:
The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:
This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

Hazards:
Refer to the Safety Data Sheet on www.agilent.com for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

Maintenance of Certification:
If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

Sample lot approver:

Monica Bourgeois
QMS Representative

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER
ISO 17034 Cert No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026
Page: 1 of 1
www.agilent.com/quality/
CSD-QA-015.1

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO 17025 Cert No. AT-1937

Certificate of Analysis

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Access your MSDS and digital C of A at **www.phenomenex.com/mysupport. Re-order at www.phenomenex.com/standards**

Certified Reference Material

This product is included in Phenova's ISO/IEC 17025 and ISO Guide 34 Scopes of Accreditation

Catalog No.: AL0-101467
Description: Aroclor 1016
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Isooctane

Lot Number: CL12975
Certification Date: November 19, 2018
Expiration Date: October 31, 2026

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1016	12674-11-2	1000	± 0.553%

K5829

ACCREDITED
Reference Material Producer
Certificate No. 2427.02

phenova® Certified Reference Materials

Manufactured by Phenova, Inc.
Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ilac-MRA ACCREDITED
Chemical Testing Laboratory
Certificate No. 2427.03

IL11110613_us

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1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO Guide 34[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in the calibration and calibration verification of chromatographic instrumentation performed in routine laboratory analysis.

4. Instruction: Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all certified analytes in the mixture.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Material Safety Data Sheet (MSDS) is available at www.phenomenex.com/mysupport.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

   $$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

   Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO Guide 34. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO Guide 34.

12. Period of Validity: The Certified Values and their uncertainties are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31:2000(E) – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35:2006(E) – Reference Material – General and Statistical Principles for Certification.
[3] ISO Guide 34:2009(E) – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025:2005(E) – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

ACCREDITED
Reference Material Producer
Certificate No. 2427.02

phenova® Certified Reference Materials

Manufactured by Phenova, Inc.
Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ilac-MRA ACCREDITED
Chemical Testing Laboratory
Certificate No. 2427.03

ILT1116613_US

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Access your Safety Data Sheets and digital Certificates at **www.phenova.com/documents.**

Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.: AL0-101462
Description: Aroclor 1260
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Hexane

Lot Number: CL18021
Certification Date: February 14, 2022
Expiration Date: February 28, 2030

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1260	11096-82-5	1000	± 0.553%

K005830

Certificate of Analysis

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1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
[3] ISO 17034 – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Standard Record

Standard ID: K010817 **Printed: 6/29/2023 11:28:53AM**

Description:	Puget Sound reference-SRM	Expires:	17-May-2023
Standard Type:	Reference Materia	Prepared:	18-Nov-2022
Solvent:	CB014404	Prepared By:	Truett Smith
Final Volume (mls):	30	Department:	QC
Vials:	1	Last Edit:	18-Nov-2022 11:01 by TCS
Vendor:	QATS Lab	Lot #:	PSRM0166
Vendor Catalog #:			

Comments

PSRM0166 Lockeed West Seattle Superfund site for Kelly

Analyte	CAS Number	Concentration	Units	SRM Control Limits
1,2,3,7,8-PeCDF	57117-41-6	0.00000123	mg/Kg	50-150
1,2,3,4,6,7,8-HpCDF	67562-39-4	0.0000187	mg/Kg	50-150
1,2,3,4,7,8,9-HpCDF	55673-89-7	0.00000163	mg/Kg	50-150
1,2,3,4,7,8-HxCDD	39227-28-6	0.00000159	mg/Kg	50-150
1,2,3,4,7,8-HxCDF	70648-26-9	0.00000302	mg/Kg	50-150
1,2,3,6,7,8-HxCDD	57653-85-7	0.00000388	mg/Kg	50-150
1,2,3,6,7,8-HxCDF	57117-44-9	0.00000109	mg/Kg	50-150
1,2,3,7,8,9-HxCDD	19408-74-3	0.00000304	mg/Kg	50-150
1,2,3,4,6,7,8-HpCDD	35822-46-9	0.0000906	mg/Kg	50-150
1,2,3,7,8-PeCDD	40321-76-4	0.00000108	mg/Kg	50-150
OCDF	39001-02-0	0.0000584	mg/Kg	50-150
2,3,4,6,7,8-HxCDF	60851-34-5	0.00000183	mg/Kg	50-150
2,3,4,7,8-PeCDF	57117-31-4	0.00000107	mg/Kg	50-150
2,3,7,8-TCDD	1746-01-6	0.00000105	mg/Kg	50-150
2,3,7,8-TCDF	51207-31-9	0.00000111	mg/Kg	50-150
Aroclor 1260	11096-82-5	0.108	mg/Kg	38-167
Aroclor 1260 [2C]	11096-82-5	0.108	mg/Kg	38-167
OCDD	3268-87-9	0.000811	mg/Kg	50-150
1,2,3,7,8,9-HxCDF	72918-21-9	0.000000511	mg/Kg	50-150

Certificate of Analysis
ISO Guide 34

Aroclor 1242 Solution

Product Number: PP-312 **Page:** 1 of 1

Lot Number: CS-6293 **Lot Issue Date:** 04-Jan-2019 **Expiration Date:** 31-Jan-2023

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with Agilent's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1242	053469-21-9	NT01020	100.4 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

Monica Bourgeois
QMS Representative

ISO Guide 34 Cert No.
AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026
registered ISO 9001 Quality Management System

ISO17025 Cert No.
AT-1937

Certificate of Analysis

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Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.: AL0-101283
Description: Aroclor 1268 Standard
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Hexane

Lot Number: CL18942
Certification Date: September 7, 2022
Expiration Date: August 31, 2030

Aaron Dukes, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1268	11100-14-4	100	± 0.561%

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1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

   Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
[3] ISO 17034 – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

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Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.: AL0-101282
Description: Aroclor 1262 Standard
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Hexane

Lot Number: CL19082
Certification Date: October 18, 2022
Expiration Date: September 30, 2030

Aaron Dukes, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1262	37324-23-5	100	± 0.665%

Produced by Phenova
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1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

   Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

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References:

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[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

Analytical Resources, LLC
Analytical Chemists and Consultants

Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7471B

Total Metals

LDW20-SC148A

Laboratory:	Analytical Resources, LLC				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	23F0536-01 B	SDG:	23F0536
Sampled:	06/08/20 08:41	Prepared:	06/23/23 11:50	File ID:	SMM 06-23-23-077
% Solids:	61.76	Preparation:	SMM EPA 7471B	Analyzed:	06/23/23 15:43
Batch:	BLF0651	Sequence:	SLF0376	Initial/Final:	0.222 g Wet / 50 mL
Instrument:	HYDRA			Calibration:	GF00077

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	0.106	1	0.00766	0.0365	H

PREPARATION BATCH SUMMARY

EPA 7471B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Batch: BLF0651 Batch Matrix: Solid
Preparation: SMM EPA 7471B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW20-SC148A	23F0536-01	SMM 06-23-23-077	06/23/23 11:50	Store frozen; FROZEN VOLUME USED
Blank	BLF0651-BLK1	SMM 06-23-23-075	06/23/23 11:50	
LCS	BLF0651-BS1	SMM 06-23-23-076	06/23/23 11:50	
LDW20-SC148A	BLF0651-DUP1	SMM 06-23-23-080	06/23/23 11:50	
LDW20-SC148A	BLF0651-MS1	SMM 06-23-23-081	06/23/23 11:50	
LDW20-SC148A	BLF0651-MSD1	SMM 06-23-23-082	06/23/23 11:50	
Reference	BLF0651-SRM1	SMM 06-23-23-083	06/23/23 11:50	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Mercury Digestion Log

Prep Code: SMM | Balance ID: BAL10 | Matrix: Solid
Analyst: AS | Block ID: 9 | Date: 6/23/23
Bath Temp: 99C | Start Time: 1050 | End Time: 1150

ARI Sample ID	Sample Bottle #	pH<2	Initial Weight (g) Volume (mL)	Final Volume (mL)	# $KMnO_4$ Aliquots	CLP	Comments
23F0520-01	E		0.209	50	1		
23F0527-01	A		0.232	↓	↓		
23F0530-01	↓		0.244				
-02			0.289				
↓ -03	↓		0.290				
23F0536-01	B		0.222				
23F0545-01	A		0.245				
↓ -02	↓		0.276				
BLF0651-BLK	—		—				
-BS	—		—				
-DUP	—		0.220				23F0536-01
-MS	—		0.221				↓
-MSD	—		0.221				
-SRM	—		0.204	↓	↓		

6/23/23 AS

Chemical/Reagent ID:

HNO_3: L5605 | H_2SO_4: L923 | HCl: —
5% $K_2S_2O_8$: L6465 | 5% $KMnO_4$: LH187 | Digest Tube Lot: 2206050

Form I

METHOD BLANK DATA SHEET

EPA 7471B

Total Metals

Blank

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Batch: BLF0651
Laboratory ID: BLF0651-BLK1
Prepared: 06/23/23 11:50
Matrix: Solid
Preparation: SMM EPA 7471B
Analyzed: 06/23/23 15:38
Sequence: SLF0376
Calibration: GF00077
Instrument: HYDRA

CAS NO.	Analyte	Concentration (mg/kg wet)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	ND	1	0.00525	0.0250	U

LCS / LCS DUPLICATE RECOVERY

EPA 7471B

Total Metals

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	06/23/23 15:41
Batch:	BLF0651	Laboratory ID:	BLF0651-BS1
Preparation:	SMM EPA 7471B	Sequence Name:	LCS
Initial/Final:	0.2 g / 50 mL		

COMPOUND	SPIKE ADDED (mg/kg wet)	LCS CONCENTRATION (mg/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Mercury	0.500	0.503		101	80 - 120

* Indicates values outside of QC limits

DUPLICATES

EPA 7471B

Total Metals

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BLF0651-DUP1
Batch: BLF0651
Lab Source ID: 23F0536-01
Preparation: SMM EPA 7471B
Initial/Final: 0.22 g / 50 mL
Source Sample Name: LDW20-SC148A
% Solids: 61.76

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION	DUPLICATE CONCENTRATION	RPD %	Q
Mercury	20	0.106	0.0906	15.8	

*: Values outside of QC limits
L: Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to Dup = +/- RL instead of 20% RPD

MS / MS DUPLICATE RECOVERY
EPA 7471B

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	06/23/23 15:52
Batch:	BLF0651	Laboratory ID:	BLF0651-MS1
Preparation:	SMM EPA 7471B	Sequence Name:	Matrix Spike
Initial/Final:	0.221 g / 50 mL	Source Sample:	LDW20-SC148A

COMPOUND	SPIKE ADDED (mg/kg dry)	SAMPLE CONCENTRATION (mg/kg dry)	Q	MS CONCENTRATION (mg/kg dry)	Q	MS % REC. #	QC LIMITS REC.
Mercury	0.366	0.106	H	0.499		107	75 - 125

* Values outside of QC limits

MS / MS DUPLICATE RECOVERY
EPA 7471B

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	06/23/23 15:55
Batch:	BLF0651	Laboratory ID:	BLF0651-MSD1
Preparation:	SMM EPA 7471B	Sequence Name:	Matrix Spike Dup
Initial/Final:	0.221 g / 50 mL	Source Sample:	LDW20-SC148A

COMPOUND	SPIKE ADDED (mg/kg dry)	MSD CONCENTRATION (mg/kg dry)	Q	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Mercury	0.366	0.493		106	1.33	20	75 - 125

* Values outside of QC limits

Analytical Resources, LLC
Analytical Chemists and Consultants

STANDARD REFERENCE MATERIAL RECOVERY

EPA 7471B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BLF0651-SRM1
Batch: BLF0651
Initial/Final: 0.204 g / 50 mL
Preparation: SMM EPA 7471B
Analyzed: 06/23/2023 15:57
Standard ID: L000950
Expires: 04/01/2026
Standard Lot#: D120-540
Description: Metals In Soil

ANALYTE	TRUE (mg/kg wet)	FOUND (mg/kg wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
Mercury	14.900	16.4	0.103	0.490	D	110	74.5 - 128.86

* Values outside of QC limits

INITIAL CALIBRATION DATA

EPA 7471B

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GF00077	Instrument:	HYDRA
Calibration Date:	06/23/2023 16:56		

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF
Mercury	0	0	0.0001	7010000	0.0005	6266000	0.001	6073000	0.002	6095500	0.005	6088000

INITIAL CALIBRATION DATA

EPA 7471B

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GF00077	Instrument:	HYDRA
Calibration Date:	06/23/2023 16:56		

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Mercury	5255417	49.5	1.0000		0.99	

SMM 06-23-23

SLF0376 GF00077

Method: ARI 5 ppb (NO 0.05) Operator: Admin Date of Analysis: 23 Jun 2023 10:44:10

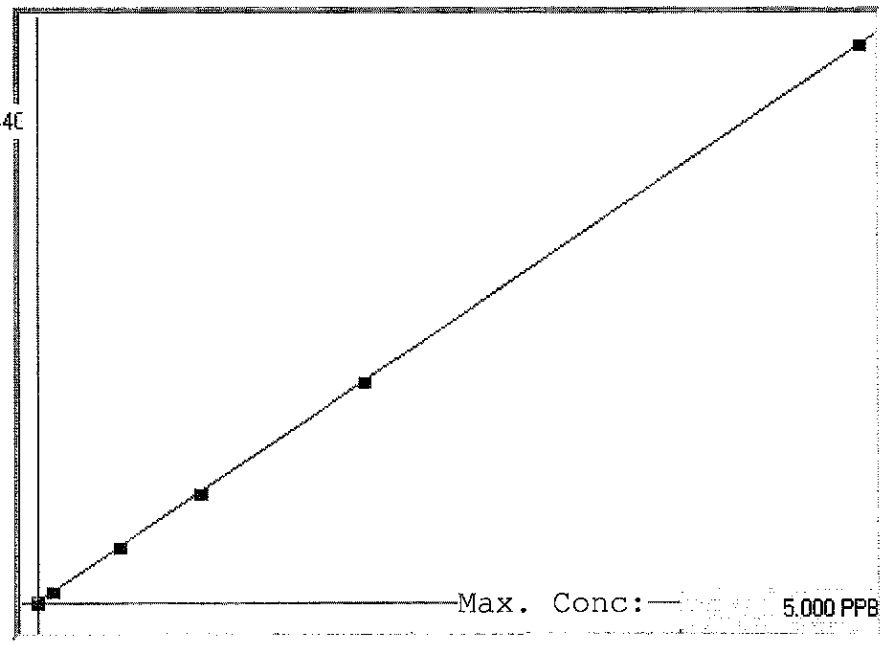
Sample ID	Mean	Units		Date	Method
SEQ-CAL1	44	PPB		23 Jun 2023 10:44:30	ARI 5 ppb (NO 0.05)
SEQ-CAL2	701	PPB		23 Jun 2023 10:46:51	ARI 5 ppb (NO 0.05)
SEQ-CAL3	3133	PPB		23 Jun 2023 10:49:12	ARI 5 ppb (NO 0.05)
SEQ-CAL4	6073	PPB		23 Jun 2023 10:51:33	ARI 5 ppb (NO 0.05)
SEQ-CAL5	12191	PPB		23 Jun 2023 10:53:54	ARI 5 ppb (NO 0.05)
SEQ-CAL6	30440	PPB		23 Jun 2023 10:56:14	ARI 5 ppb (NO 0.05)
SEQ-ICV	98.3% 3.9314	PPB	✓	23 Jun 2023 11:11:09	ARI 5 ppb (NO 0.05)
SEQ-ICB	-0.0046	PPB	✓	23 Jun 2023 11:13:28	ARI 5 ppb (NO 0.05)
SEQ-CRL	105.7% 0.1057	PPB	✓	23 Jun 2023 11:15:49	ARI 5 ppb (NO 0.05)
SEQ-CCV	97.2% 3.8868	PPB	✓	23 Jun 2023 11:18:10	ARI 5 ppb (NO 0.05)
SEQ-CCB	-0.0083	PPB	✓	23 Jun 2023 11:20:28	ARI 5 ppb (NO 0.05)
BLF0466-BLK1	0.0028	PPB		23 Jun 2023 11:22:49	ARI 5 ppb (NO 0.05)
BLF0466-BS1	1.9693	PPB	✓	23 Jun 2023 11:25:08	ARI 5 ppb (NO 0.05)
BLF0532-BLK1	-0.0043	PPB		23 Jun 2023 11:27:27	ARI 5 ppb (NO 0.05)
BLF0532-BS1	1.9957	PPB	✓	23 Jun 2023 11:29:46	ARI 5 ppb (NO 0.05)
SEQ-CCV	96.0% 3.8395	PPB	✓	23 Jun 2023 11:32:05	ARI 5 ppb (NO 0.05)
SEQ-CCB	-0.0112	PPB	✓	23 Jun 2023 11:34:23	ARI 5 ppb (NO 0.05)
SEQ-CCV	96.1% 3.8457	PPB	✓	23 Jun 2023 13:25:56	ARI 5 ppb (NO 0.05)
SEQ-CCB	-0.0015	PPB	✓	23 Jun 2023 13:28:15	ARI 5 ppb (NO 0.05)
23F0170-02	0.1342	PPB		23 Jun 2023 13:30:36	ARI 5 ppb (NO 0.05)
BLF0466-DUP1	0.2554	PPB		23 Jun 2023 13:32:54	ARI 5 ppb (NO 0.05)
BLF0466-MS1	0.5986	PPB	✓	23 Jun 2023 13:35:13	ARI 5 ppb (NO 0.05)
BLF0466-MSD1	1.3069	PPB	✓	23 Jun 2023 13:37:32	ARI 5 ppb (NO 0.05)
BLF0466-SRM1	3.0915	PPB	✓	23 Jun 2023 13:39:51	ARI 5 ppb (NO 0.05)
23F0170-03	0.1238	PPB		23 Jun 2023 13:42:11	ARI 5 ppb (NO 0.05)
23F0170-04	0.9244	PPB		23 Jun 2023 13:44:29	ARI 5 ppb (NO 0.05)
23F0170-05	0.7195	PPB		23 Jun 2023 13:46:49	ARI 5 ppb (NO 0.05)
23F0170-06	0.5028	PPB		23 Jun 2023 13:49:09	ARI 5 ppb (NO 0.05)
23F0170-07	0.5840	PPB		23 Jun 2023 13:51:29	ARI 5 ppb (NO 0.05)
SEQ-CCV	98.0% 3.9217	PPB	✓	23 Jun 2023 13:53:49	ARI 5 ppb (NO 0.05)
SEQ-CCB	-0.0013	PPB	✓	23 Jun 2023 13:56:08	ARI 5 ppb (NO 0.05)
23F0170-08	0.3082	PPB		23 Jun 2023 13:58:29	ARI 5 ppb (NO 0.05)
23F0170-09	0.2087	PPB		23 Jun 2023 14:00:50	ARI 5 ppb (NO 0.05)
23F0170-10	0.2492	PPB		23 Jun 2023 14:03:11	ARI 5 ppb (NO 0.05)
23F0170-11	0.2388	PPB		23 Jun 2023 14:05:30	ARI 5 ppb (NO 0.05)
23F0170-12	0.1866	PPB		23 Jun 2023 14:07:49	ARI 5 ppb (NO 0.05)
23F0170-13	0.1685	PPB		23 Jun 2023 14:10:08	ARI 5 ppb (NO 0.05)
23F0170-14	0.0487	PPB		23 Jun 2023 14:12:27	ARI 5 ppb (NO 0.05)
23F0170-15	0.1356	PPB		23 Jun 2023 14:14:46	ARI 5 ppb (NO 0.05)
23F0170-16	0.1597	PPB		23 Jun 2023 14:17:05	ARI 5 ppb (NO 0.05)
23F0170-17	0.1069	PPB		23 Jun 2023 14:19:25	ARI 5 ppb (NO 0.05)
SEQ-CCV	97.8% 3.9114	PPB	✓	23 Jun 2023 14:21:45	ARI 5 ppb (NO 0.05)
SEQ-CCB	0.0001	PPB	✓	23 Jun 2023 14:24:03	ARI 5 ppb (NO 0.05)
23F0170-18	0.0819	PPB		23 Jun 2023 14:26:24	ARI 5 ppb (NO 0.05)
23F0170-19	0.2532	PPB		23 Jun 2023 14:28:44	ARI 5 ppb (NO 0.05)
23F0170-20	0.1201	PPB		23 Jun 2023 14:31:05	ARI 5 ppb (NO 0.05)
23F0170-21	0.1429	PPB		23 Jun 2023 14:33:26	ARI 5 ppb (NO 0.05)
BLF0466-PS1	1.0624	PPB	✓	23 Jun 2023 14:35:46	ARI 5 ppb (NO 0.05)
23F0152-01	0.8080	PPB		23 Jun 2023 14:38:06	ARI 5 ppb (NO 0.05)
BLF0532-DUP1	0.8389	PPB		23 Jun 2023 14:40:25	ARI 5 ppb (NO 0.05)
BLF0532-MS1	1.6861	PPB	✓	23 Jun 2023 14:42:44	ARI 5 ppb (NO 0.05)
BLF0532-MSD1	1.8684	PPB	✓	23 Jun 2023 14:45:04	ARI 5 ppb (NO 0.05)
BLF0532-SRM1	3.0501	PPB	✓	23 Jun 2023 14:47:24	ARI 5 ppb (NO 0.05)
SEQ-CCV	98.7% 3.9482	PPB	✓	23 Jun 2023 14:49:43	ARI 5 ppb (NO 0.05)
SEQ-CCB	-0.0014	PPB	✓	23 Jun 2023 14:52:01	ARI 5 ppb (NO 0.05)
23F0152-03	0.8614	PPB		23 Jun 2023 14:54:22	ARI 5 ppb (NO 0.05)
23F0152-04	0.9221	PPB		23 Jun 2023 14:56:42	ARI 5 ppb (NO 0.05)
23F0152-05	0.1062	PPB		23 Jun 2023 14:59:01	ARI 5 ppb (NO 0.05)
23F0152-06	0.1884	PPB		23 Jun 2023 15:01:21	ARI 5 ppb (NO 0.05)
23F0227-01	0.2008	PPB		23 Jun 2023 15:03:42	ARI 5 ppb (NO 0.05)

SMM 06-23-23

Method: ARI 5 ppb (NO 0.05) Operator: Admin Date of Analysis: 23 Jun 2023 10:44:10

Sample ID	Mean	Units		Date	Method
23F0227-02	0.1410	PPB		23 Jun 2023 15:06:02	ARI 5 ppb (NO 0.05)
23F0227-03	0.2615	PPB		23 Jun 2023 15:08:23	ARI 5 ppb (NO 0.05)
23F0227-05	0.1803	PPB		23 Jun 2023 15:10:42	ARI 5 ppb (NO 0.05)
23F0227-06	0.1816	PPB		23 Jun 2023 15:13:02	ARI 5 ppb (NO 0.05)
23F0227-07	0.2171	PPB		23 Jun 2023 15:15:22	ARI 5 ppb (NO 0.05)
SEQ-CCV	99.6% 3.9852	PPB	✓	23 Jun 2023 15:17:41	ARI 5 ppb (NO 0.05)
SEQ-CCB	0.0001	PPB	✓	23 Jun 2023 15:20:00	ARI 5 ppb (NO 0.05)
23F0227-08	0.1924	PPB		23 Jun 2023 15:22:21	ARI 5 ppb (NO 0.05)
23F0227-09	0.1685	PPB		23 Jun 2023 15:24:40	ARI 5 ppb (NO 0.05)
23F0227-10	0.1925	PPB		23 Jun 2023 15:27:00	ARI 5 ppb (NO 0.05)
23F0227-11	0.0924	PPB		23 Jun 2023 15:29:20	ARI 5 ppb (NO 0.05)
23F0227-12	0.1737	PPB		23 Jun 2023 15:31:40	ARI 5 ppb (NO 0.05)
23F0227-13	0.1667	PPB		23 Jun 2023 15:34:00	ARI 5 ppb (NO 0.05)
23F0227-14	0.1293	PPB		23 Jun 2023 15:36:21	ARI 5 ppb (NO 0.05)
BLF0651-BLK1	0.0017	PPB		23 Jun 2023 15:38:41	ARI 5 ppb (NO 0.05)
BLF0651-BS1	2.0100	PPB	✓	23 Jun 2023 15:41:02	ARI 5 ppb (NO 0.05)
23F0536-01	0.2912	PPB		23 Jun 2023 15:43:21	ARI 5 ppb (NO 0.05)
SEQ-CCV	98.8% 3.9523	PPB	✓	23 Jun 2023 15:45:41	ARI 5 ppb (NO 0.05)
SEQ-CCB	-0.0018	PPB	✓	23 Jun 2023 15:48:00	ARI 5 ppb (NO 0.05)
BLF0651-DUP1	0.2462	PPB		23 Jun 2023 15:50:21	ARI 5 ppb (NO 0.05)
BLF0651-MS1	1.3633	PPB	✓	23 Jun 2023 15:52:41	ARI 5 ppb (NO 0.05)
BLF0651-MSD1	1.3453	PPB	✓	23 Jun 2023 15:55:01	ARI 5 ppb (NO 0.05)
BLF0651-SRM1	3.3535	PPB	✓	23 Jun 2023 15:57:20	ARI 5 ppb (NO 0.05)
23F0520-01	0.2222	PPB		23 Jun 2023 15:59:40	ARI 5 ppb (NO 0.05)
23F0527-01	0.3144	PPB		23 Jun 2023 16:02:00	ARI 5 ppb (NO 0.05)
23F0530-01	0.1753	PPB		23 Jun 2023 16:04:20	ARI 5 ppb (NO 0.05)
23F0530-02	0.5826	PPB		23 Jun 2023 16:06:40	ARI 5 ppb (NO 0.05)
23F0530-03	0.4794	PPB		23 Jun 2023 16:09:01	ARI 5 ppb (NO 0.05)
23F0545-01	0.1066	PPB		23 Jun 2023 16:11:22	ARI 5 ppb (NO 0.05)
SEQ-CCV	98.3% 3.9326	PPB	✓	23 Jun 2023 16:13:43	ARI 5 ppb (NO 0.05)
SEQ-CCB	0.0062	PPB	✓	23 Jun 2023 16:16:01	ARI 5 ppb (NO 0.05)
23F0545-02	0.0514	PPB		23 Jun 2023 16:18:24	ARI 5 ppb (NO 0.05)
SEQ-CCV	98.1% 3.9234	PPB	✓	23 Jun 2023 16:20:45	ARI 5 ppb (NO 0.05)
SEQ-CCB	-0.0024	PPB	✓	23 Jun 2023 16:23:03	ARI 5 ppb (NO 0.05)

ARI 5 ppb (NO 0.05)



A= 0.0000e+000

B= 1.6464e-004

C= -9.5252e-003

Rho= 0.9999949

Accept=Accepted

Accepted Date=

06/23/23 10:59

Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
SEQ-CAL1 - Blank	0.000	-0.002	-0.002	44	0.816	44	45	43		
SEQ-CAL2 - 0.1 PPB	0.100	0.106	0.006	701	1.4 %	691	698	715		
SEQ-CAL3 - 0.5 PPB	0.500	0.506	0.006	3133	0.7 %	3145	3153	3101		
SEQ-CAL4 - 1.0 PPB	1.000	0.990	-0.010	6072	0.3 %	6059	6098	6061		
SEQ-CAL5 - 2.0 PPB	2.000	1.998	-0.002	12191	0.7 %	12117	12150	12307		
SEQ-CAL6 - 5.0 PPB	5.000	5.002	0.002	30439	1.2 %	29920	30583	30816		

Mercury Analysis Log

Analyst: ML
Instrument: HYDRA

Date: 06/23/23
Page: 1 of 4

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
SEQ -CAL1	5mm	1x		
-CAL2				
-CAL3				
-CAL4				
-CAL5				
-CAL6				
-ICV			✓ 3.93	
-ICB			✓ -0.004	
-CRL			✓ 0.105	
-CCV			✓ 3.88	
-CCB			✓ -0.008	
BLF0466 -BLK1				
-BS1			✓ 1.969	98.4 %R
BLF0532 -BLK1				
-BS1			✓ 1.995	99.7 %R
SEQ -CCV			✓ 3.89	
-CCB			✓ -0.011	
-CCV			✓ 3.84	
-CCB			✓ -0.0015	
23F0170 -02				
BLF0466 -DUP1				RPD = 62.2
-MS1			X 0.598	46 %R
-MSD1		✓	✓ 1.306	117.2 %R
-SRM1		20x	✓ 3.09	
23F0170 -03		1X		
-04				
-05				
-06				
-07				
SEQ -CCV				

Chemical/Reagent ID:
10% $SnCl_2$: L6923

14% $NH_2OH/NaCl$: L6474

Standard ID:
Standard: L7005-L7009+L7012

ICV/CCV: L7011

Mercury Analysis Log

Analyst: —
Instrument: —
Date: —
Page: 2 of 4

ARI Sample ID		Prep Code	Dilution	QC Data (ppb)	Comments
↓	-CCB				
23F0170	-08				
	-09				
	-10				
	-11				
	-12				
	-13				
	-14				
	-15				
	-16				
↓	-17				
SEQ	-CCV			√3.91	
↓	-CCB			√0.0001	
23F0170	-18				
	-19				
	-20				
↓	-21				
BLF0466	-PS1			√1.062	92.8 %R
23F0152	-01				
BLF0532	-DUP1				RPD = 3.75
	-MS1			√1.686	87.8 %R
	-MSD1		↓	√1.868	106.04 %R
↓	-ICVI		20X	√3.05	
SEQ	-CCV		1X	√3.948	
↓	-CCB			√-0.0014	
23F0152	-03				
	-04				
	-05				
↓	-06				
23F0227	-01				

Chemical/Reagent ID:
10% $SnCl_2$: —
14% NH_2OH/NaCl: —
Standard ID:
Standard: —
ICV/CCV: —

Mercury Analysis Log

Analyst: —

Instrument: —

Date: —

Page: 3 of 4

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
-02				
-03				
-05				
-06				
-07				
SEQ -CCV			√ 3.98	
-CCB			√ 0.00001	
23F0227 -08				
-09				
-10				
-11				
-12				
-13				
-14				
BLF06S1 -BIK1				
-BS1			√ 2.01	100.5.1.R
23F0536 -01				
SEQ -CCV			√ 3.95	
-CCB			√ -0.001	
BLF0651 -DUP1				NO RPD
-MS1			√ 1.363	107.2.1.R
-MSD1			√ 1.345	105.4.1.R
-SRM1			√ 3.35	
23F0520 -01				
23F0527 -01				
23F0530 -01				
-02				
-03				
23F0545 -01				
SEQ -CCV			√ 3.93	

Chemical/Reagent ID:

10% $SnCl_2$: —

14% NH_2OH/NaCl: —

Standard ID:

Standard: —

ICV/CCV: —

Mercury Analysis Log

Analyst: ________ Date: ________

Instrument: ________ Page: 4 of 4

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
↓ -CCB			√0.006	
23F0545 -02				
SEQ -CCV			√3.92	
↓ -CCB	↓	↓	√-0.002	

WM 6/23/23

Chemical/Reagent ID:

10% $SnCl_2$: ________ 14% $NH_2OH/NaCl$: ________

Standard ID:

Standard: ________ ICV/CCV: ________

5026F

Revision 4
1/26/01

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 7471B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: HYDRA
Calibration: GF00077
Control Limt: +/- 20.00%
Sequence: SLF0376

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLF0376-ICV1	Mercury	0.0040000	0.00393	98.3	mg/L	EPA 7471B
SLF0376-CCV1	Mercury	0.0040000	0.00389	97.2	mg/L	EPA 7471B
SLF0376-CCV2	Mercury	0.0040000	0.00384	96.0	mg/L	EPA 7471B
SLF0376-CCV3	Mercury	0.0040000	0.00385	96.1	mg/L	EPA 7471B
SLF0376-CCV4	Mercury	0.0040000	0.00392	98.0	mg/L	EPA 7471B
SLF0376-CCV5	Mercury	0.0040000	0.00391	97.8	mg/L	EPA 7471B
SLF0376-CCV6	Mercury	0.0040000	0.00395	98.7	mg/L	EPA 7471B
SLF0376-CCV7	Mercury	0.0040000	0.00399	99.6	mg/L	EPA 7471B
SLF0376-CCV8	Mercury	0.0040000	0.00395	98.8	mg/L	EPA 7471B
SLF0376-CCV9	Mercury	0.0040000	0.00393	98.3	mg/L	EPA 7471B
SLF0376-CCVA	Mercury	0.0040000	0.00392	98.1	mg/L	EPA 7471B

* Values outside of QC limits

Analytical Resources, LLC
Analytical Chemists and Consultants

INSTRUMENT BLANKS
EPA 7471B

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: HYDRA
Sequence: SLF0376

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GF00077
Date Analyzed: 06/23/23 11:13

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLF0376-ICB1	Mercury	-0.000005	0.000021	0.000100	mg/L	
SLF0376-CCB1	Mercury	-0.000008	0.000021	0.000100	mg/L	
SLF0376-CCB2	Mercury	-0.000011	0.000021	0.000100	mg/L	
SLF0376-CCB3	Mercury	-0.000002	0.000021	0.000100	mg/L	
SLF0376-CCB4	Mercury	-0.000001	0.000021	0.000100	mg/L	
SLF0376-CCB5	Mercury	0.0000001	0.000021	0.000100	mg/L	
SLF0376-CCB6	Mercury	-0.000001	0.000021	0.000100	mg/L	
SLF0376-CCB7	Mercury	0.0000001	0.000021	0.000100	mg/L	
SLF0376-CCB8	Mercury	-0.000002	0.000021	0.000100	mg/L	
SLF0376-CCB9	Mercury	0.000006	0.000021	0.000100	mg/L	
SLF0376-CCBA	Mercury	-0.000002	0.000021	0.000100	mg/L	

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 7471B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLF0376
Instrument: HYDRA
Calibration: GF00077

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Cal Standard	SLF0376-CAL1	SMM 06-23-23-001	NA	06/23/23 10:44
Cal Standard	SLF0376-CAL2	SMM 06-23-23-002	NA	06/23/23 10:46
Cal Standard	SLF0376-CAL3	SMM 06-23-23-003	NA	06/23/23 10:49
Cal Standard	SLF0376-CAL4	SMM 06-23-23-004	NA	06/23/23 10:51
Cal Standard	SLF0376-CAL5	SMM 06-23-23-005	NA	06/23/23 10:53
Cal Standard	SLF0376-CAL6	SMM 06-23-23-006	NA	06/23/23 10:56
Initial Cal Check	SLF0376-ICV1	SMM 06-23-23-007	NA	06/23/23 11:11
Initial Cal Blank	SLF0376-ICB1	SMM 06-23-23-008	NA	06/23/23 11:13
Instrument RL Check	SLF0376-CRL1	SMM 06-23-23-009	NA	06/23/23 11:15
Calibration Check	SLF0376-CCV1	SMM 06-23-23-010	NA	06/23/23 11:18
Calibration Blank	SLF0376-CCB1	SMM 06-23-23-011	NA	06/23/23 11:20
Calibration Check	SLF0376-CCV2	SMM 06-23-23-016	NA	06/23/23 11:32
Calibration Blank	SLF0376-CCB2	SMM 06-23-23-017	NA	06/23/23 11:34
Calibration Check	SLF0376-CCV3	SMM 06-23-23-018	NA	06/23/23 13:25
Calibration Blank	SLF0376-CCB3	SMM 06-23-23-019	NA	06/23/23 13:28
Calibration Check	SLF0376-CCV4	SMM 06-23-23-030	NA	06/23/23 13:53
Calibration Blank	SLF0376-CCB4	SMM 06-23-23-031	NA	06/23/23 13:56
Calibration Check	SLF0376-CCV5	SMM 06-23-23-042	NA	06/23/23 14:21
Calibration Blank	SLF0376-CCB5	SMM 06-23-23-043	NA	06/23/23 14:24
Calibration Check	SLF0376-CCV6	SMM 06-23-23-054	NA	06/23/23 14:49
Calibration Blank	SLF0376-CCB6	SMM 06-23-23-055	NA	06/23/23 14:52
Calibration Check	SLF0376-CCV7	SMM 06-23-23-066	NA	06/23/23 15:17
Calibration Blank	SLF0376-CCB7	SMM 06-23-23-067	NA	06/23/23 15:20
Blank	BLF0651-BLK1	SMM 06-23-23-075	Solid	06/23/23 15:38
LCS	BLF0651-BS1	SMM 06-23-23-076	Solid	06/23/23 15:41
LDW20-SC148A	23F0536-01	SMM 06-23-23-077	Solid	06/23/23 15:43
Calibration Check	SLF0376-CCV8	SMM 06-23-23-078	NA	06/23/23 15:45
Calibration Blank	SLF0376-CCB8	SMM 06-23-23-079	NA	06/23/23 15:48
LDW20-SC148A	BLF0651-DUP1	SMM 06-23-23-080	Solid	06/23/23 15:50

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 7471B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLF0376
Instrument: HYDRA
Calibration: GF00077

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
LDW20-SC148A	BLF0651-MS1	SMM 06-23-23-081	Solid	06/23/23 15:52
LDW20-SC148A	BLF0651-MSD1	SMM 06-23-23-082	Solid	06/23/23 15:55
Reference	BLF0651-SRM1	SMM 06-23-23-083	Solid	06/23/23 15:57
Calibration Check	SLF0376-CCV9	SMM 06-23-23-090	NA	06/23/23 16:13
Calibration Blank	SLF0376-CCB9	SMM 06-23-23-091	NA	06/23/23 16:16
Calibration Check	SLF0376-CCVA	SMM 06-23-23-093	NA	06/23/23 16:20
Calibration Blank	SLF0376-CCBA	SMM 06-23-23-094	NA	06/23/23 16:23

DETECTION LEVEL STANDARD
EPA 7471B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: HYDRA
Calibration: GF00077
Sequence: SLF0376
Lab Sample ID: SLF0376-CRL1

Analyte	True	Found	%R	Units	QC Limts
Mercury	0.000100	0.000106	106	mg/L	70 - 130

* Values outside of QC limits

HOLDING TIME SUMMARY

Analysis: EPA 7471B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW20-SC148A 23F0536-01	06/08/20 08:41	06/22/23 14:10	06/23/23 11:50	1,110	28	06/23/23 15:43	1,110	28	*
Duplicate BLF0651-DUP1	06/08/20 08:41	06/22/23 14:10	06/23/23 11:50	1,110	28	06/23/23 15:50	1,110	28	*
Matrix Spike BLF0651-MS1	06/08/20 08:41	06/22/23 14:10	06/23/23 11:50	1,110	28	06/23/23 15:52	1,110	28	*
Matrix Spike Dup BLF0651-MSD1	06/08/20 08:41	06/22/23 14:10	06/23/23 11:50	1,110	28	06/23/23 15:55	1,110	28	*

* Indicates hold time exceedance.

METHOD DETECTION AND REPORTING LIMITS

EPA 7471B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Instrument: HYDRA

Analyte	MDL	RL	Units
Mercury	0.00525	0.0250	mg/kg

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Certificate of Analysis

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F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGHG1
Lot Number:	S2-HG711246
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Mercury
Starting Material:	Hg Metal
Starting Material Lot#:	1959
Starting Material Purity:	99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1000 ± 3 µg/mL

Density: 1.026 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **1004 ± 6 µg/mL**
ICP Assay NIST SRM 3133 Lot Number: 160921

Assay Method #2 **998 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **1001 ± 3 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000210	M	Eu	<	0.000210	O	Na		0.000626	M	Se	<	0.008100	M	Zn	<	0.000810
M	Al		0.000161	O	Fe	<	0.001600	M	Nb	<	0.000410	O	Si		0.000626	M	Zr	<	0.000410
M	As	<	0.002500	M	Ga	<	0.000210	M	Nd	<	0.000210	M	Sm	<	0.000210				
O	Au	<	0.001700	M	Gd	<	0.000210	O	Ni	<	0.001400	M	Sn	<	0.000410				
M	B	<	0.008500	M	Ge	<	0.000410	M	Os	<	0.003900	O	Sr	<	0.000110				
M	Ba	<	0.000210	M	Hf	<	0.000210	O	P	<	0.029000	M	Ta	<	0.000210				
O	Be	<	0.000110	s	Hg	<		M	Pb	<	0.000210	M	Tb	<	0.000210				
M	Bi	<	0.001100	M	Ho	<	0.000210	M	Pd	<	0.003500	M	Te	<	0.005700				
O	Ca		0.004754	M	In	<	0.000210	M	Pr	<	0.000210	M	Th	<	0.000210				
M	Cd	<	0.000210	M	Ir	<	0.000210	M	Pt	<	0.000210	O	Ti	<	0.000430				
M	Ce	<	0.000210	O	K		0.000731	M	Rb	<	0.000210	O	Tl	<	0.005400				
M	Co	<	0.000210	M	La	<	0.000210	M	Re	<	0.000210	M	Tm	<	0.000210				
O	Cr	<	0.003300	O	Li	<	0.000110	M	Rh	<	0.001100	M	U	<	0.000410				
M	Cs	<	0.000410	M	Lu	<	0.000210	M	Ru	<	0.000810	M	V	<	0.000210				
M	Cu	<	0.000810	O	Mg		0.000104	O	S	<	0.022000	M	W	<	0.001100				
M	Dy	<	0.000210	O	Mn	<	0.000430	M	Sb	<	0.000210	M	Y	<	0.000210				
M	Er	<	0.000210	M	Mo	<	0.000210	M	Sc	<	0.000210	M	Yb	<	0.000210				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 200.59 +2 4 Hg(OH)(aq) 1+
Chemical Compatibility - Stable in HNO3. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water.
Stability - 2-100 ppb levels not stable in 1% HNO3 / LDPE container, stable in 10% HNO3 packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO3 packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO3 / LDPE container.
Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO3); Oxide (Soluble in HNO3); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 202 amu	9 ppt	n/a	186W16O
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	Ta, Co, Th ,Rh , Fe, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 18, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **November 18, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Supervisor, Product Documentation

Certificate Approved By:

Michael Booth
Director, Technical

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
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CERTIFICATE OF ANALYSIS

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fax: 540.585.3012
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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	QCP-QCS-4
Lot Number:	R2-MEB695951
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	5 µg/mL ea: Mercury

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Mercury, Hg	**5.011 ± 0.023 µg/mL**		

Density: 1.035 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Hg	ICP Assay	3133	061204
Hg	EDTA	928	928
Hg	Calculated		See Sec. 4.2

The follow ing equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 20, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **August 20, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

ERA
A Waters Company

Certified Reference Material

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No. D120-540
Certificate Issue Date: December 16, 2022
Expiration Date: April 01, 2026
Revision Number: Original

L000950

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 111122.

CERTIFICATION

Parameter	Certified Value[1]	Reference Value	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	9420	5640	2.77	1720 - 9560	2550 - 10400
Antimony	225	97.9	31.4	D.L. - 211	22.5 - 251
Arsenic	66.6	73.9	3.11	63.4 - 84.5	51.8 - 96.1
Barium	354	311	3.79	253 - 370	234 - 389
Beryllium	108	92.9	3.20	75.8 - 110	69.7 - 119
Boron	102	56.1	6.31	33.7 - 78.4	33.6 - 112
Cadmium	91.8	75.4	17.5	61.0 - 89.8	56.6 - 101
Calcium	2640	2580	2.84	2140 - 3030	1760 - 3410
Chromium	137	116	4.95	93.1 - 139	81.3 - 151
Cobalt	137	118	7.94	96.3 - 139	88.2 - 151
Copper	139	114	12.1	92.9 - 136	85.8 - 153
Iron	7100	6160	2.51	3500 - 8810	710 - 12700
Lead	247	212	4.43	170 - 253	156 - 272
Lithium	8.14	5.11	5.23	2.35 - 7.87	0.814 - 10.8
Magnesium	1560	1350	3.92	1010 - 1690	668 - 2030
Manganese	286	255	3.26	205 - 304	187 - 322
Mercury	14.9	15.1	7.72	11.1 - 19.1	9.09 - 21.2
Molybdenum	47.5	49.1	36.3	40.7 - 57.5	33.3 - 64.9
Nickel	295	252	69.7	204 - 299	176 - 327
Potassium	1800	1620	3.33	1170 - 2080	898 - 2340
Selenium	93.6	75.1	24.9	57.3 - 93.0	47.2 - 103
Silver	80.6	65.7	38.8	50.4 - 81.0	46.4 - 88.7
Sodium	232	244	3.54	189 - 299	122 - 365
Strontium	133	94.9	3.96	70.8 - 119	68.1 - 146

16341 Table Mountain Pkwy ▪ Golden, CO 80403 ▪ T: 800.372.0122 ▪ 303.431.8454 ▪ www.eraqc.com

▪ Certificate of Analysis ▪

Parameter	Certified Value[1]	Reference Value	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Thallium	158	129	21.1	101 - 157	89.5 - 174
Tin	113	89.6	23.1	67.4 - 112	49.9 - 129
Titanium	145	126	8.56	39.3 - 213	0.00 - 268
Uranium	48.2	40.8	3.84	29.4 - 52.3	28.4 - 53.2
Vanadium	116	96.1	6.62	73.6 - 119	64.2 - 128
Zinc	184	156	3.83	123 - 189	109 - 203

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ANALYTICAL VERIFICATION

Parameter	Certified Value[1]	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery[5]	n	SRM Number[6]	Recovery
	mg/kg	mg/kg	%			%
Aluminum	9420	5640	59.9	101	-	-
Antimony	225	97.9	43.5	106	-	-
Arsenic	66.6	73.9	111	141	-	-
Barium	354	311	88.0	127	-	-
Beryllium	108	92.9	86.0	119	-	-
Boron	102	56.1	55.0	80	-	-
Cadmium	91.8	75.4	82.1	160	-	-
Calcium	2640	2580	97.9	102	-	-
Chromium	137	116	84.8	141	-	-
Cobalt	137	118	85.8	112	-	-
Copper	139	114	82.3	151	-	-
Iron	7100	6160	86.7	105	-	-
Lead	247	212	85.7	170	-	-
Lithium	8.14	5.11	62.8	14	-	-
Magnesium	1560	1350	86.4	102	-	-
Manganese	286	255	89.0	123	-	-
Mercury	14.9	15.1	102	108	-	-
Molybdenum	47.5	49.1	103	117	-	-
Nickel	295	252	85.3	149	-	-
Potassium	1800	1620	90.1	104	-	-
Selenium	93.6	75.1	80.3	122	-	-
Silver	80.6	65.7	81.5	117	-	-
Sodium	232	244	105	99	-	-
Strontium	133	94.9	71.4	76	-	-
Thallium	158	129	81.7	109	-	-
Tin	113	89.6	79.3	78	-	-
Titanium	145	126	87.1	70	-	-
Uranium	48.2	40.8	84.7	30	-	-
Vanadium	116	96.1	82.8	112	-	-
Zinc	184	156	84.7	153	-	-

16341 Table Mountain Pkwy ▪ Golden, CO 80403 ▪ T: 800.372.0122 ▪ 303.431.8454 ▪ www.eraqc.com

▪ Certificate of Analysis ▪

1. The **Certified Values** are the actual gravimetric/volumetric "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

2. The **Uncertainty** represents an expanded uncertainty and approximates a 95% confidence interval. The uncertainty is based on the characterization, homogeneity and stability characteristics of the product, multiplied by a coverage factor (k=2). The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product. The formula used to calculate the expanded uncertainty is:
$U_{expanded} = k * SQRT((U_{char}^2) + (U_{homogen}^2) + (U_{LTS}^2) + (U_{STS}^2) + (U_{RSS}^2))$

Where:

Uexpanded = Expanded uncertainty.
k = Coverage factor.
Uchar = Combined standard uncertainty of the manufacturing and/or analytical verification assessment.
Uhomogen = Standard uncertainty of the homogeneity assessment.
ULTS = Standard uncertainty associated with long-term stability.
USTS = Standard uncertainty associated with short-term (transport) stability.
URSS = Standard uncertainty associated with repeated sampling of the product (where permitted by product use instructions).

3. The **QC Performance Acceptance Limits (QC PALs™)** are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.

4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this certified reference material alongside USEPA and NELAC compliant PT study materials. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and therefore, the acceptance limits of this certified reference material and any PT study material may differ relative to their difference in concentrations.

5. The **PT Performance Data** include the mean value, percent recovery and number of data points reported by laboratories in our Proficiency Testing study compared to the Certified Values. In the event this lot was not used in a proficiency testing scheme, the data displayed was generated internally by ERA.

6. Where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. **Analytical Traceability Recovery (%)** = [(% recovery ERA certified reference material)/(% recovery NIST SRM)]*100
The traceability data shown were compiled by analyzing this ERA certified reference material and/or it's associated stock solution(s) against the applicable NIST SRMs.

7. **Metrological Traceability.** This certified reference material is metrologically traceable to NIST mass reference materials through an unbroken chain of comparisons.

8. For additional information on this product such as intended use, storage information, instructions for use, minimum sample size, and safety information, please refer to the Product Use Instructions provided.

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller

Brian Miller

Senior Technical Manager

Craig Huff

Analytical Resources, LLC
Analytical Chemists and Consultants

Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

LDW20-SC148A

Laboratory:	Analytical Resources, LLC				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	23F0536-01 C	SDG:	23F0536
Sampled:	06/08/20 08:41	Prepared:	06/26/23 14:09	File ID:	
% Solids:	61.22	Preparation:	No Prep Wet Chem	Analyzed:	06/26/23 14:25
Batch:	BLF0743	Sequence:		Initial/Final:	5 g Wet / 5 g
Instrument:	BAL2			Calibration:	

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	61.22	1	0.04	0.04	H

PREPARATION BATCH SUMMARY

SM 2540 G-97

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Batch: BLF0743 Batch Matrix: Solid
Preparation: No Prep Wet Chem

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW20-SC148A	23F0536-01		06/26/23 14:09	
Blank	BLF0743-BLK1		06/26/23 14:09	

TOTAL SOLIDS/VOLATILE SOLIDS (TS / TVS) BENCHSHEET for Solid samples

Method: PSEP 1986, SM2540, EPA 160.1

(dry at 104 (12-24 hr) then combust at 550 (30 min))

Batch:	BLF0743
Date:	6/26/2023 14:25
Analyst:	UW

Instrumentation

Drying Ovens:	12	**Analytical Balance:**	BAL2
Muffle Furnace:	2		

Batch drying time			**Oven Temps, °C**	
record times as	mm/dd/yy hh:mm	TS (%) calculated as:	Start Temp	104
date/time in oven:	6/26/2023 15:05	Final dry wt (g) = (Dry Wt - Tare Wt)	Dry Cycle 1	104
date/time out:	6/27/2023 9:20	TS = (Final Dry Wt)/ (grams Sample-Tare)	Dry Cycle 2	
elapsed hrs =	18.3 OK		Dry Cycle 3	

TVS (mg/kg dry wt) calculated as:
Final ash wt (g) = (min ash wt - tare wt)
TVS (mg/kg) = [(Dry wt-Ash wt)/ (dry weight)] *1,000,000
if ash wt > dry wt, "Chk for Err"
if dry wt-ash wt < 0.001 g, "< (1/dry wt)*1,000,000

Balance Calibration Check

Record weights to 4 places												
	Cal Weight ID:	CV-02	CV-02	CV-02	CV-02	CV-02		CV-02	CV-02	CV-02		
	Date & Time:	6/26/23 14:26	6/26/23 14:40	6/27/23 0:00				6/27/23 13:40	6/27/23 16:40			
Cal Wt (g):	10.0000	10.0000	10.0000	10.0000				10.0000	10.0000			
		Cal OK!	Cal OK!	Cal OK!				Cal OK!	Cal OK!			

Sample ID	Dish #	Tare Wt. (g)	Dish & Sample (g)	Dry Wt 104C (grams) 1	2	3	dry Wt (g)	TS (%)	Notes	ASH WT 550C (grams) 1	2	3	Ash Wt (g)	TVS (mg/kg)	TVS (%)	Notes	Fixed (%)
BLF0743-BLK1	16	0.8454	0.0000	0.8453			-0.0001	0.01%		0.8451	0.8452	STOP	-0.0003	(2,000,000)	-200.00%		300.00
23F0467-01	17	0.8091	5.4255	2.2766			1.4675	31.79%									
23F0530-01	18	0.8193	1.8476	1.8453			1.0260	99.78%									
23F0530-02	19	0.8022	1.8224	1.8229			1.0207	100.05%									
23F0530-03	20	0.8057	1.8172	1.8171			1.0114	99.99%									
23F0536-01	21	0.8083	5.6964	3.8009			2.9926	61.22%									
23F0541-01	22	0.8122	6.9043	5.0302			4.2180	69.24%									
23F0541-02	23	0.8365	6.4990	5.0356			4.1991	74.16%									
23F0541-03	24	0.7957	6.1824	2.1856			1.3899	25.80%									
23F0541-04	25	0.7897	6.8693	3.0742			2.2845	37.58%									
23F0541-05	26	0.8089	6.3009	2.2552			1.4463	26.33%									
23F0541-06	27	0.8042	6.5861	2.6055			1.8013	31.15%									
23F0548-02	28	0.7709	7.9378	4.2029			3.4320	47.89%									
23F0548-03	29	0.8154	8.6630	4.8439			4.0285	51.33%									
23F0587-01	30	0.8171	7.3297	5.4862			4.6691	71.69%		5.3765	5.3743	STOP	4.5572	23,966	2.40%		97.60
BLF0743-DUP1	31	0.7978	8.7085	6.6753			5.8775	74.30%	RPD=3.6	6.5487	6.5457	STOP	5.7479	22,050	2.21%	RPD=8.3	97.79
BLF0743-DUP2	32	0.8187	8.5204	6.4402			5.6215	72.99%	RSD=1.8	6.3119	6.3069	STOP	5.4882	23,713	2.37%	RSD=4.5	97.63
23F0587-02	33	0.8024	7.3983	4.4787			3.6763	55.74%		4.2465	4.2427	STOP	3.4403	64,195	6.42%		93.58
23F0587-03	34	0.8199	8.1544	4.8601			4.0402	55.08%		4.6071	4.6033	STOP	3.7834	63,561	6.36%		93.64
23F0587-04	35	0.8085	7.7381	4.9111			4.1026	59.20%		4.6999	4.6968	STOP	3.8883	52,235	5.22%		94.78
23F0587-05	36	0.8110	7.4488	5.2072			4.3962	66.23%		5.0223	5.0214	STOP	4.2104	42,264	4.23%		95.77
23F0587-06	37	0.8338	7.0341	4.8222			3.9884	64.33%		4.6468	4.6469	STOP	3.8130	43,978	4.40%		95.60
23F0587-07	38	0.8277	7.4190	5.1937			4.3660	66.24%		5.0080	5.0076	STOP	4.1799	42,625	4.26%		95.74

NOTE: Do not enter data in blue shaded cells as they are calculated fields. Green shaded cells MAY be altered if a rewigh is called for.

TOTAL SOLIDS (TS) BENCHSHEET for Solid samples

Method: Total Solids, Metals Correction

dry at 104°C (12-24 hr)

Batch: BLF0655

Date: 6/22/2023 16:00

Analyst: AS

Instrumentation

Drying Oven: 7

Analytical Balance: 10

Batch drying time

record times as mm/dd/yy hh:mm

date/time in oven: 6/22/2023 16:10

date/time out: 6/23/2023 14:10

elapsed hrs = 22.0 OK

Temp in: 110 °C

Temp out: 104 °C

TS (%) calculated as:
Final dry wt (g) = (Dry Wt - Tare Wt)
TS = (Final Dry Wt)/ (grams Sample-Tare)

Sample ID	Tare Weight (g)	Tare + Sample Weight (g)	Tare + Sample Dry Weight @ 104°C (g) 1	2	3	dry Wt (g)	TS (%)	Notes
23F0230-01	1.0270	10.0090	9.1520			8.1250	90.46%	
23F0230-02	1.0270	10.0740	9.6410			8.6140	95.21%	
23F0230-03	1.0290	10.0750	9.6290			8.6000	95.07%	
23F0230-04	1.0340	10.0780	6.7790			5.7450	63.52%	
23F0230-05	1.0190	10.0440	9.7180			8.6990	96.39%	
23F0230-15	1.0290	10.0200	9.5320			8.5030	94.57%	
23F0230-16	1.0230	10.0130	9.4540			8.4310	93.78%	
23F0230-17	1.0190	10.0630	9.5520			8.5330	94.35%	
23F0230-18	1.0090	10.0180	9.3970			8.3880	93.11%	
23F0230-19	0.9910	10.0600	9.5990			8.6080	94.92%	
23F0233-03	1.0140	10.0020	9.3730			8.3590	93.00%	
23F0233-04	1.0180	10.0530	9.4690			8.4510	93.54%	
23F0233-06	1.0250	10.0320	6.5100			5.4850	60.90%	
23F0233-08	1.0300	10.0670	9.3420			8.3120	91.98%	
23F0233-09	1.0430	10.0270	9.4400			8.3970	93.47%	
23F0233-10	1.0100	10.0540	6.6510			5.6410	62.37%	
23F0233-13	1.0040	10.0510	9.5120			8.5080	94.04%	
23F0233-14	0.9960	10.0700	7.7390			6.7430	74.31%	
23F0233-15	1.0010	10.0310	9.6330			8.6320	95.59%	
23F0233-16	1.0260	10.0590	9.4190			8.3930	92.91%	
23F0363-01	1.0110	10.0920	7.5610			6.5500	72.13%	
23F0363-02	1.0190	10.0320	7.6540			6.6350	73.62%	
23F0363-04	1.0080	10.0880	5.6250			4.6170	50.85%	
23F0428-01	1.0520	10.0630	9.6180			8.5660	95.06%	
23F0428-02	1.0450	10.0680	9.5020			8.4570	93.73%	
23F0428-03	1.0480	10.0550	9.3860			8.3380	92.57%	
23F0428-04	1.0530	10.0500	9.4710			8.4180	93.56%	
23F0428-05	0.9920	10.0110	9.3990			8.4070	93.21%	
23F0527-01	0.9930	10.0670	4.3880			3.3950	37.41%	
23F0536-01	0.9920	10.0670	6.5970			5.6050	61.76%	

Form I

METHOD BLANK DATA SHEET

SM 2540 G-97

TotalAnalytes

Blank

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Batch: BLF0743
Laboratory ID: BLF0743-BLK1
Prepared: 06/26/23 14:09
Matrix: Solid
Preparation: No Prep Wet Chem
Analyzed: 06/26/23 14:25
Sequence:
Calibration:
Instrument: BAL2

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	ND	1	0.04	0.04	U

HOLDING TIME SUMMARY

Analysis: SM 2540 G-97

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW20-SC148A 23F0536-01	06/08/20 08:41	06/22/23 14:10	06/26/23 14:09	1,113	365	06/26/23 14:25	1,113	365	*

* Indicates hold time exceedance.

METHOD DETECTION AND REPORTING LIMITS

SM 2540 G-97

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Instrument:

Analyte	MDL	RL	Units
Total Solids	0.04	0.04	%

Analytical Resources, LLC
Analytical Chemists and Consultants

Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6020B

Total Metals

LDW20-SC148A

Laboratory:	Analytical Resources, LLC				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	23F0536-01 B	SDG:	23F0536
Sampled:	06/08/20 08:41	Prepared:	06/22/23 15:57	File ID:	XDT_m1230626-100
% Solids:	61.76	Preparation:	SWN EPA 3050B	Analyzed:	06/26/23 22:45
Batch:	BLF0652	Sequence:	SLF0398	Initial/Final:	1.078 g Wet / 50 mL
Instrument:	ICPMS1			Calibration:	GF00087

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-47-3	Chromium	18.3	20	0.39	0.75	H
7439-92-1	Lead	18.6	20	0.08	0.15	H
7440-22-4	Silver	0.17	20	0.03	0.30	H, J

PREPARATION BATCH SUMMARY

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Batch: BLF0652 Batch Matrix: Solid
Preparation: SWN EPA 3050B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW20-SC148A	23F0536-01	XDT_m1230626-100	06/22/23 15:57	
Blank	BLF0652-BLK1	XDT_m1230626-031	06/22/23 15:57	
LCS	BLF0652-BS1	XDT_m1230626-032	06/22/23 15:57	
LDW20-SC148A	BLF0652-DUP1	XDT_m1230626-101	06/22/23 15:57	
LDW20-SC148A	BLF0652-MS1	XDT_m1230626-102	06/22/23 15:57	
LDW20-SC148A	BLF0652-MSD1	XDT_m1230626-103	06/22/23 15:57	
Reference	BLF0652-SRM1	XDT_m1230626-105	06/22/23 15:57	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Digestion Log

Analyst: AB Date: 6/23/23 Time: 11:14 - 16:50 Balance ID: BAL10

Matrix: solid Block ID: 3 Block Temp: 95C Thermometer: 5729

ARI Sample ID	Btl #	pH<2	Prep Code: SWN Initial Wt (g) Vol (mL)	Prep Code: SWN Final Vol (mL)	Prep Code: Initial Wt (g) Vol (mL)	Prep Code: Final Vol (mL)	Comments
23F0527-01			1.060	50			
23F0530-01			1.072				
-02			1.056				
-03			1.020				
23F0536-01			1.078				
BLF0652-BLK	—		—				
-BS	—		—				
-DUP	—		1.081				23F0536-01
-MS	—		1.080				↓
-MSD	—		1.078				
-SRM	—		1.008				

6/23/23 AB

Chemical/Reagent ID:

HNO_3: 166505 1:1 HNO_3: L6981 HCl: — H_2O_2: K11056

Tube Lot#: 2206050 Boiling Chip Lot#: — (DoD Only)

5061F
Version 007

Form I

METHOD BLANK DATA SHEET

EPA 6020B

Total Metals

Blank

Laboratory: Analytical Resources, LLC | SDG: 23F0536

Client: Anchor QEA, LLC | Project: Lower Duwamish AOC4

Batch: BLF0652 | Laboratory ID: BLF0652-BLK1 | Prepared: 06/22/23 15:57

Matrix: Solid | Preparation: SWN EPA 3050B | Analyzed: 06/26/23 16:54

Sequence: SLF0398 | Calibration: GF00087 | Instrument: ICPMS1

CAS NO.	Analyte	Concentration (mg/kg wet)	Dilution Factor	MDL	MRL	Q
7440-47-3	Chromium-52	ND	20	0.26	0.50	U
7439-92-1	Lead-208	ND	20	0.05	0.10	U
7440-22-4	Silver-107	ND	20	0.02	0.20	U

LCS / LCS DUPLICATE RECOVERY

EPA 6020B

Total Metals

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	06/26/23 16:59
Batch:	BLF0652	Laboratory ID:	BLF0652-BS1
Preparation:	SWN EPA 3050B	Sequence Name:	LCS
Initial/Final:	1 g / 50 mL		

COMPOUND	SPIKE ADDED (mg/kg wet)	LCS CONCENTRATION (mg/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Chromium-52	25.0	25.2		101	80 - 120
Lead-208	25.0	27.5		110	80 - 120
Silver-107	25.0	26.5		106	80 - 120

* Indicates values outside of QC limits

LDW20-SC148A

DUPLICATES

EPA 6020B

Total Metals

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BLF0652-DUP1
Batch: BLF0652
Lab Source ID: 23F0536-01
Preparation: SWN EPA 3050B
Initial/Final: 1.081 g / 50 mL
Source Sample Name: LDW20-SC148A
% Solids: 61.76

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION	DUPLICATE CONCENTRATION	RPD %	Q
Chromium-52	20	18.3	15.7	15.6	
Lead-208	20	18.6	15.2	20.1	*
Silver-107	-0.16 - 0.43	0.17	0.13	20.3	L

*: Values outside of QC limits
L: Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to Dup = +/- RL instead of 20% RPD

MS / MS DUPLICATE RECOVERY

EPA 6020B

Total Metals

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	06/26/23 22:54
Batch:	BLF0652	Laboratory ID:	BLF0652-MS1
Preparation:	SWN EPA 3050B	Sequence Name:	Matrix Spike
Initial/Final:	1.08 g / 50 mL	Source Sample:	LDW20-SC148A

COMPOUND	SPIKE ADDED (mg/kg dry)	SAMPLE CONCENTRATION (mg/kg dry)	Q	MS CONCENTRATION (mg/kg dry)	Q	MS % REC. #	QC LIMITS REC.
Chromium-52	37.5	18.3	H	47.0	H	76.7	75 - 125
Lead-208	37.5	18.6	H	72.3	*, H	143 *	75 - 125
Silver-107	37.5	0.17	H, J	13.2	*, H	34.8 *	75 - 125

* Values outside of QC limits

MS / MS DUPLICATE RECOVERY

EPA 6020B

Total Metals

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	06/26/23 22:58
Batch:	BLF0652	Laboratory ID:	BLF0652-MSD1
Preparation:	SWN EPA 3050B	Sequence Name:	Matrix Spike Dup
Initial/Final:	1.078 g / 50 mL	Source Sample:	LDW20-SC148A

COMPOUND	SPIKE ADDED (mg/kg dry)	MSD CONCENTRATION (mg/kg dry)	Q	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Chromium-52	37.6	47.9	H	78.8	1.77	20	75 - 125
Lead-208	37.6	47.6	*, H	77.4	41.1 *	20	75 - 125
Silver-107	37.6	13.7	*, H	36.1 *	3.86	20	75 - 125

* Values outside of QC limits

POST DIGEST SPIKE SAMPLE RECOVERY

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BLF0652-PS1
Batch: BLF0652
Lab Source ID: 23F0536-01
Preparation: SWN EPA 3050B
Initial/Final: 1.078 g / 50 mL
Source Sample Name: LDW20-SC148A
% Solids: 61.76

Analyte	Control Limit %R	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R
Lead-208	80 - 120	705	18.6	500.00	91.6
Silver-107	80 - 120	519	0.17	500.00	103

* Values outside of QC limits

Analytical Resources, LLC
Analytical Chemists and Consultants

STANDARD REFERENCE MATERIAL RECOVERY

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BLF0652-SRM1
Batch: BLF0652
Initial/Final: 1.008 g / 50 mL
Preparation: SWN EPA 3050B
Analyzed: 06/26/2023 23:07
Standard ID: L000950
Expires: 04/01/2026
Standard Lot#: D120-540
Description: Metals In Soil

ANALYTE	TRUE (mg/kg wet)	FOUND (mg/kg wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
Chromium-52	137.00	118	0.64	1.24	D	86.0	68 - 101.5
Lead-208	247.00	176	0.13	0.25	D	71.3	68.8 - 102.4
Silver-107	80.600	60.0	0.05	0.50	D	74.4	62.5 - 100.5

* Values outside of QC limits

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: GF00087
Control Limt: +/- 10.00%
Sequence: SLF0398

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLF0398-ICV1	Chromium-52	50.000	49.4	98.8	ug/L	EPA 6020B
	Chromium-53	50.000	49.0	98.0	ug/L	EPA 6020B
	Lead-208	50.000	52.4	105	ug/L	EPA 6020B
	Silver-107	50.000	51.5	103	ug/L	EPA 6020B
SLF0398-CCV1	Chromium-52	50.000	50.1	100	ug/L	EPA 6020B
	Chromium-53	50.000	49.6	99.3	ug/L	EPA 6020B
	Lead-208	50.000	52.1	104	ug/L	EPA 6020B
	Silver-107	50.000	51.2	102	ug/L	EPA 6020B
SLF0398-CCV2	Chromium-52	50.000	49.3	98.6	ug/L	EPA 6020B
	Chromium-53	50.000	49.6	99.3	ug/L	EPA 6020B
	Lead-208	50.000	51.6	103	ug/L	EPA 6020B
	Silver-107	50.000	50.9	102	ug/L	EPA 6020B
SLF0398-CCV3	Chromium-52	50.000	49.8	99.7	ug/L	EPA 6020B
	Chromium-53	50.000	49.5	99.1	ug/L	EPA 6020B
	Lead-208	50.000	50.9	102	ug/L	EPA 6020B
	Silver-107	50.000	51.1	102	ug/L	EPA 6020B
SLF0398-CCV4	Chromium-52	50.000	49.3	98.6	ug/L	EPA 6020B
	Chromium-53	50.000	49.1	98.1	ug/L	EPA 6020B
	Lead-208	50.000	51.6	103	ug/L	EPA 6020B
	Silver-107	50.000	51.0	102	ug/L	EPA 6020B
SLF0398-CCV5	Chromium-52	50.000	49.6	99.1	ug/L	EPA 6020B
	Chromium-53	50.000	48.9	97.8	ug/L	EPA 6020B
	Lead-208	50.000	51.7	103	ug/L	EPA 6020B
	Silver-107	50.000	51.4	103	ug/L	EPA 6020B
SLF0398-CCV6	Chromium-52	50.000	48.5	96.9	ug/L	EPA 6020B
	Chromium-53	50.000	48.2	96.4	ug/L	EPA 6020B
	Lead-208	50.000	50.6	101	ug/L	EPA 6020B
	Silver-107	50.000	50.5	101	ug/L	EPA 6020B
SLF0398-CCV7	Chromium-52	50.000	47.7	95.4	ug/L	EPA 6020B
	Chromium-53	50.000	47.8	95.7	ug/L	EPA 6020B
	Lead-208	50.000	49.2	98.4	ug/L	EPA 6020B
	Silver-107	50.000	50.3	101	ug/L	EPA 6020B
SLF0398-CCV8	Chromium-52	50.000	49.9	99.9	ug/L	EPA 6020B
	Chromium-53	50.000	49.7	99.5	ug/L	EPA 6020B

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: GF00087
Control Limt: +/- 10.00%
Sequence: SLF0398

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLF0398-CCV8	Lead-208	50.000	49.4	98.8	ug/L	EPA 6020B
	Silver-107	50.000	52.1	104	ug/L	EPA 6020B
SLF0398-CCV9	Chromium-52	50.000	48.7	97.5	ug/L	EPA 6020B
	Chromium-53	50.000	48.7	97.3	ug/L	EPA 6020B
	Lead-208	50.000	50.1	100	ug/L	EPA 6020B
	Silver-107	50.000	52.4	105	ug/L	EPA 6020B
SLF0398-CCVA	Chromium-52	50.000	49.0	98.0	ug/L	EPA 6020B
	Chromium-53	50.000	49.6	99.1	ug/L	EPA 6020B
	Lead-208	50.000	49.8	99.6	ug/L	EPA 6020B
	Silver-107	50.000	52.3	105	ug/L	EPA 6020B
SLF0398-CCVB	Chromium-52	50.000	49.7	99.4	ug/L	EPA 6020B
	Chromium-53	50.000	49.2	98.5	ug/L	EPA 6020B
	Lead-208	50.000	50.3	101	ug/L	EPA 6020B
	Silver-107	50.000	52.4	105	ug/L	EPA 6020B
SLF0398-CCVC	Chromium-52	50.000	50.3	101	ug/L	EPA 6020B
	Chromium-53	50.000	49.3	98.7	ug/L	EPA 6020B
	Lead-208	50.000	50.5	101	ug/L	EPA 6020B
	Silver-107	50.000	52.4	105	ug/L	EPA 6020B
SLF0398-CCVD	Chromium-52	50.000	50.3	101	ug/L	EPA 6020B
	Chromium-53	50.000	50.3	101	ug/L	EPA 6020B
	Lead-208	50.000	51.5	103	ug/L	EPA 6020B
	Silver-107	50.000	50.9	102	ug/L	EPA 6020B
SLF0398-CCVE	Chromium-52	50.000	49.7	99.3	ug/L	EPA 6020B
	Chromium-53	50.000	50.7	101	ug/L	EPA 6020B
	Lead-208	50.000	51.6	103	ug/L	EPA 6020B
	Silver-107	50.000	51.0	102	ug/L	EPA 6020B
SLF0398-CCVF	Chromium-52	50.000	48.5	96.9	ug/L	EPA 6020B
	Chromium-53	50.000	48.7	97.3	ug/L	EPA 6020B
	Lead-208	50.000	52.3	105	ug/L	EPA 6020B
	Silver-107	50.000	50.6	101	ug/L	EPA 6020B
SLF0398-CCVG	Chromium-52	50.000	49.3	98.6	ug/L	EPA 6020B
	Chromium-53	50.000	48.8	97.5	ug/L	EPA 6020B
	Lead-208	50.000	51.7	103	ug/L	EPA 6020B
	Silver-107	50.000	50.2	100	ug/L	EPA 6020B

Analytical Resources, LLC
Analytical Chemists and Consultants

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: GF00087
Control Limt: +/- 10.00%
Sequence: SLF0398

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLF0398-CCVH	Chromium-52	50.000	48.1	96.2	ug/L	EPA 6020B
	Chromium-53	50.000	48.6	97.2	ug/L	EPA 6020B
	Lead-208	50.000	50.6	101	ug/L	EPA 6020B
	Silver-107	50.000	49.4	98.8	ug/L	EPA 6020B

* Values outside of QC limits

Analytical Resources, LLC
Analytical Chemists and Consultants

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS2
Calibration: GG00009
Control Limt: +/- 10.00%
Sequence: SLG0051

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLG0051-ICV1	Lead-208	50.000	49.5	99.0	ug/L	EPA 6020B
	Silver-107	50.000	51.3	103	ug/L	EPA 6020B
SLG0051-CCV1	Lead-208	50.000	47.5	95.0	ug/L	EPA 6020B
	Silver-107	50.000	48.4	96.9	ug/L	EPA 6020B
SLG0051-CCV2	Lead-208	50.000	48.8	97.5	ug/L	EPA 6020B
	Silver-107	50.000	48.8	97.6	ug/L	EPA 6020B
SLG0051-CCV3	Lead-208	50.000	48.9	97.9	ug/L	EPA 6020B
	Silver-107	50.000	49.2	98.4	ug/L	EPA 6020B
SLG0051-CCV4	Lead-208	50.000	48.5	97.0	ug/L	EPA 6020B
	Silver-107	50.000	49.9	99.7	ug/L	EPA 6020B
SLG0051-CCV5	Lead-208	50.000	49.5	98.9	ug/L	EPA 6020B
	Silver-107	50.000	51.2	102	ug/L	EPA 6020B
SLG0051-CCV6	Lead-208	50.000	49.3	98.6	ug/L	EPA 6020B
	Silver-107	50.000	50.6	101	ug/L	EPA 6020B
SLG0051-CCV7	Lead-208	50.000	49.3	98.6	ug/L	EPA 6020B
	Silver-107	50.000	49.5	99.0	ug/L	EPA 6020B
SLG0051-CCV8	Lead-208	50.000	50.1	100	ug/L	EPA 6020B
	Silver-107	50.000	49.6	99.2	ug/L	EPA 6020B
SLG0051-CCV9	Lead-208	50.000	51.1	102	ug/L	EPA 6020B
	Silver-107	50.000	50.0	99.9	ug/L	EPA 6020B
SLG0051-CCVA	Lead-208	50.000	51.0	102	ug/L	EPA 6020B
	Silver-107	50.000	49.0	98.1	ug/L	EPA 6020B
SLG0051-CCVB	Lead-208	50.000	50.9	102	ug/L	EPA 6020B
	Silver-107	50.000	50.7	101	ug/L	EPA 6020B
SLG0051-CCVC	Lead-208	50.000	50.2	100	ug/L	EPA 6020B
	Silver-107	50.000	49.4	98.9	ug/L	EPA 6020B
SLG0051-CCVD	Lead-208	50.000	50.6	101	ug/L	EPA 6020B
	Silver-107	50.000	50.6	101	ug/L	EPA 6020B
SLG0051-CCVE	Lead-208	50.000	51.6	103	ug/L	EPA 6020B
	Silver-107	50.000	51.5	103	ug/L	EPA 6020B

* Values outside of QC limits

INSTRUMENT BLANKS
EPA 6020B

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: ICPMS1
Sequence: SLF0398

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GF00087
Date Analyzed: 06/26/23 14:59

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLF0398-IBL1	Chromium-52	0.0270	0.26	0.500	ug/L	
SLF0398-IBL1	Chromium-53	-0.00800	0.239	0.500	ug/L	
SLF0398-IBL1	Lead-208	0.00400	0.0513	0.100	ug/L	
SLF0398-IBL1	Silver-107	0.0110	0.022	0.200	ug/L	
SLF0398-ICB1	Chromium-52	0.0210	0.26	0.500	ug/L	
SLF0398-ICB1	Chromium-53	0.00400	0.239	0.500	ug/L	
SLF0398-ICB1	Lead-208	0.0110	0.0513	0.100	ug/L	
SLF0398-ICB1	Silver-107	0.0200	0.022	0.200	ug/L	
SLF0398-CCB1	Chromium-52	0.0100	0.26	0.500	ug/L	
SLF0398-CCB1	Chromium-53	-0.0110	0.239	0.500	ug/L	
SLF0398-CCB1	Lead-208	0.00400	0.0513	0.100	ug/L	
SLF0398-CCB1	Silver-107	0.0120	0.022	0.200	ug/L	
SLF0398-IBL2	Chromium-52	0.0600	0.26	0.500	ug/L	
SLF0398-IBL2	Chromium-53	0.120	0.239	0.500	ug/L	
SLF0398-IBL2	Lead-208	0.0120	0.0513	0.100	ug/L	
SLF0398-IBL2	Silver-107	-0.00200	0.022	0.200	ug/L	
SLF0398-IBL3	Chromium-52	0.162	0.26	0.500	ug/L	
SLF0398-IBL3	Chromium-53	0.228	0.239	0.500	ug/L	
SLF0398-IBL3	Lead-208	0.146	0.0513	0.100	ug/L	
SLF0398-IBL3	Silver-107	0.123	0.022	0.200	ug/L	
SLF0398-IBL4	Chromium-52	0.0220	0.26	0.500	ug/L	
SLF0398-IBL4	Chromium-53	0.0660	0.239	0.500	ug/L	
SLF0398-IBL4	Lead-208	0.00100	0.0513	0.100	ug/L	
SLF0398-IBL4	Silver-107	-0.00600	0.022	0.200	ug/L	
SLF0398-CCB2	Chromium-52	0.0190	0.26	0.500	ug/L	
SLF0398-CCB2	Chromium-53	0.0450	0.239	0.500	ug/L	
SLF0398-CCB2	Lead-208	0.00500	0.0513	0.100	ug/L	
SLF0398-CCB2	Silver-107	0.0110	0.022	0.200	ug/L	
SLF0398-CCB3	Chromium-52	0.0210	0.26	0.500	ug/L	
SLF0398-CCB3	Chromium-53	-0.0180	0.239	0.500	ug/L	
SLF0398-CCB3	Lead-208	0.00100	0.0513	0.100	ug/L	
SLF0398-CCB3	Silver-107	0.00200	0.022	0.200	ug/L	
SLF0398-IBL5	Chromium-52	-0.00900	0.26	0.500	ug/L	
SLF0398-IBL5	Chromium-53	0.0860	0.239	0.500	ug/L	
SLF0398-IBL5	Lead-208	0.00100	0.0513	0.100	ug/L	

INSTRUMENT BLANKS
EPA 6020B

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: ICPMS1
Sequence: SLF0398

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GF00087
Date Analyzed: 06/26/23 17:29

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLF0398-IBL5	Silver-107	-0.00700	0.022	0.200	ug/L	
SLF0398-IBL6	Chromium-52	0.0920	0.26	0.500	ug/L	
SLF0398-IBL6	Chromium-53	0.0330	0.239	0.500	ug/L	
SLF0398-IBL6	Lead-208	0.00100	0.0513	0.100	ug/L	
SLF0398-IBL6	Silver-107	-0.00800	0.022	0.200	ug/L	
SLF0398-CCB4	Chromium-52	0.0100	0.26	0.500	ug/L	
SLF0398-CCB4	Chromium-53	-0.00700	0.239	0.500	ug/L	
SLF0398-CCB4	Lead-208	0.00100	0.0513	0.100	ug/L	
SLF0398-CCB4	Silver-107	0.00300	0.022	0.200	ug/L	
SLF0398-CCB5	Chromium-52	0.00400	0.26	0.500	ug/L	
SLF0398-CCB5	Chromium-53	-0.0140	0.239	0.500	ug/L	
SLF0398-CCB5	Lead-208	0.00	0.0513	0.100	ug/L	
SLF0398-CCB5	Silver-107	0.00700	0.022	0.200	ug/L	
SLF0398-IBL7	Chromium-52	0.133	0.26	0.500	ug/L	
SLF0398-IBL7	Chromium-53	-0.0210	0.239	0.500	ug/L	
SLF0398-IBL7	Lead-208	-0.00100	0.0513	0.100	ug/L	
SLF0398-IBL7	Silver-107	-0.00700	0.022	0.200	ug/L	
SLF0398-CCB6	Chromium-52	0.00600	0.26	0.500	ug/L	
SLF0398-CCB6	Chromium-53	-0.0290	0.239	0.500	ug/L	
SLF0398-CCB6	Lead-208	0.00100	0.0513	0.100	ug/L	
SLF0398-CCB6	Silver-107	0.00500	0.022	0.200	ug/L	
SLF0398-IBL8	Chromium-52	-0.0500	0.26	0.500	ug/L	
SLF0398-IBL8	Chromium-53	-0.0480	0.239	0.500	ug/L	
SLF0398-IBL8	Lead-208	0.0180	0.0513	0.100	ug/L	
SLF0398-IBL8	Silver-107	-0.00300	0.022	0.200	ug/L	
SLF0398-CCB7	Chromium-52	-0.0210	0.26	0.500	ug/L	
SLF0398-CCB7	Chromium-53	-0.0430	0.239	0.500	ug/L	
SLF0398-CCB7	Lead-208	0.00	0.0513	0.100	ug/L	
SLF0398-CCB7	Silver-107	0.0190	0.022	0.200	ug/L	
SLF0398-IBL9	Chromium-52	-0.0110	0.26	0.500	ug/L	
SLF0398-IBL9	Chromium-53	-0.0430	0.239	0.500	ug/L	
SLF0398-IBL9	Lead-208	0.0170	0.0513	0.100	ug/L	
SLF0398-IBL9	Silver-107	-0.00600	0.022	0.200	ug/L	
SLF0398-CCB8	Chromium-52	-0.00800	0.26	0.500	ug/L	
SLF0398-CCB8	Chromium-53	-0.0440	0.239	0.500	ug/L	
SLF0398-CCB8	Lead-208	-0.00100	0.0513	0.100	ug/L	

INSTRUMENT BLANKS
EPA 6020B

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: ICPMS1
Sequence: SLF0398

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GF00087
Date Analyzed: 06/26/23 21:12

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLF0398-CCB8	Silver-107	0.0150	0.022	0.200	ug/L	
SLF0398-CCB9	Chromium-52	0.0440	0.26	0.500	ug/L	
SLF0398-CCB9	Chromium-53	0.00100	0.239	0.500	ug/L	
SLF0398-CCB9	Lead-208	0.00200	0.0513	0.100	ug/L	
SLF0398-CCB9	Silver-107	0.00200	0.022	0.200	ug/L	
SLF0398-CCBA	Chromium-52	0.0310	0.26	0.500	ug/L	
SLF0398-CCBA	Chromium-53	-0.0100	0.239	0.500	ug/L	
SLF0398-CCBA	Lead-208	0.00	0.0513	0.100	ug/L	
SLF0398-CCBA	Silver-107	0.00300	0.022	0.200	ug/L	
SLF0398-IBLA	Chromium-52	0.0470	0.26	0.500	ug/L	
SLF0398-IBLA	Chromium-53	-0.0110	0.239	0.500	ug/L	
SLF0398-IBLA	Lead-208	0.0190	0.0513	0.100	ug/L	
SLF0398-IBLA	Silver-107	-0.0160	0.022	0.200	ug/L	
SLF0398-CCBB	Chromium-52	0.0580	0.26	0.500	ug/L	
SLF0398-CCBB	Chromium-53	-0.00100	0.239	0.500	ug/L	
SLF0398-CCBB	Lead-208	0.00500	0.0513	0.100	ug/L	
SLF0398-CCBB	Silver-107	0.00800	0.022	0.200	ug/L	
SLF0398-IBLB	Chromium-52	0.0730	0.26	0.500	ug/L	
SLF0398-IBLB	Chromium-53	0.0460	0.239	0.500	ug/L	
SLF0398-IBLB	Lead-208	0.0170	0.0513	0.100	ug/L	
SLF0398-IBLB	Silver-107	-0.0170	0.022	0.200	ug/L	
SLF0398-CCBC	Chromium-52	0.0860	0.26	0.500	ug/L	
SLF0398-CCBC	Chromium-53	0.0340	0.239	0.500	ug/L	
SLF0398-CCBC	Lead-208	0.00	0.0513	0.100	ug/L	
SLF0398-CCBC	Silver-107	0.00400	0.022	0.200	ug/L	
SLF0398-IBLC	Chromium-52	0.129	0.26	0.500	ug/L	
SLF0398-IBLC	Chromium-53	0.359	0.239	0.500	ug/L	
SLF0398-IBLC	Lead-208	0.0170	0.0513	0.100	ug/L	
SLF0398-IBLC	Silver-107	-0.0200	0.022	0.200	ug/L	
SLF0398-CCBD	Chromium-52	0.101	0.26	0.500	ug/L	
SLF0398-CCBD	Chromium-53	0.107	0.239	0.500	ug/L	
SLF0398-CCBD	Lead-208	0.0100	0.0513	0.100	ug/L	
SLF0398-CCBD	Silver-107	-0.00800	0.022	0.200	ug/L	
SLF0398-CCBE	Chromium-52	0.00900	0.26	0.500	ug/L	
SLF0398-CCBE	Chromium-53	-0.0400	0.239	0.500	ug/L	
SLF0398-CCBE	Lead-208	-0.00100	0.0513	0.100	ug/L	

INSTRUMENT BLANKS
EPA 6020B

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: ICPMS1
Sequence: SLF0398

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GF00087
Date Analyzed: 06/27/23 01:31

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLF0398-CCBE	Silver-107	-0.0160	0.022	0.200	ug/L	
SLF0398-IBLD	Chromium-52	0.0200	0.26	0.500	ug/L	
SLF0398-IBLD	Chromium-53	-0.00300	0.239	0.500	ug/L	
SLF0398-IBLD	Lead-208	0.0170	0.0513	0.100	ug/L	
SLF0398-IBLD	Silver-107	-0.0190	0.022	0.200	ug/L	
SLF0398-CCBF	Chromium-52	-0.0250	0.26	0.500	ug/L	
SLF0398-CCBF	Chromium-53	-0.0600	0.239	0.500	ug/L	
SLF0398-CCBF	Lead-208	-0.00100	0.0513	0.100	ug/L	
SLF0398-CCBF	Silver-107	-0.0160	0.022	0.200	ug/L	
SLF0398-IBLE	Chromium-52	-0.0220	0.26	0.500	ug/L	
SLF0398-IBLE	Chromium-53	-0.0250	0.239	0.500	ug/L	
SLF0398-IBLE	Lead-208	0.0170	0.0513	0.100	ug/L	
SLF0398-IBLE	Silver-107	-0.0190	0.022	0.200	ug/L	
SLF0398-IBLF	Chromium-52	0.00200	0.26	0.500	ug/L	
SLF0398-IBLF	Chromium-53	0.0350	0.239	0.500	ug/L	
SLF0398-IBLF	Lead-208	0.0190	0.0513	0.100	ug/L	
SLF0398-IBLF	Silver-107	-0.0160	0.022	0.200	ug/L	
SLF0398-CCBG	Chromium-52	-0.0300	0.26	0.500	ug/L	
SLF0398-CCBG	Chromium-53	-0.0280	0.239	0.500	ug/L	
SLF0398-CCBG	Lead-208	-0.00100	0.0513	0.100	ug/L	
SLF0398-CCBG	Silver-107	-0.0160	0.022	0.200	ug/L	
SLF0398-IBLG	Chromium-52	-0.00600	0.26	0.500	ug/L	
SLF0398-IBLG	Chromium-53	-0.00500	0.239	0.500	ug/L	
SLF0398-IBLG	Lead-208	0.0170	0.0513	0.100	ug/L	
SLF0398-IBLG	Silver-107	-0.0170	0.022	0.200	ug/L	
SLF0398-CCBH	Chromium-52	-0.0310	0.26	0.500	ug/L	
SLF0398-CCBH	Chromium-53	-0.0370	0.239	0.500	ug/L	
SLF0398-CCBH	Lead-208	-0.00100	0.0513	0.100	ug/L	
SLF0398-CCBH	Silver-107	-0.0170	0.022	0.200	ug/L	

INSTRUMENT BLANKS
EPA 6020B

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: ICPMS2
Sequence: SLG0051

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GG00009
Date Analyzed: 07/05/23 17:06

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLG0051-IBL1	Lead-208	0.00600	0.0513	0.100	ug/L	
SLG0051-IBL1	Silver-107	0.0240	0.022	0.200	ug/L	
SLG0051-ICB1	Lead-208	0.00200	0.0513	0.100	ug/L	
SLG0051-ICB1	Silver-107	0.0140	0.022	0.200	ug/L	
SLG0051-CCB1	Lead-208	0.00100	0.0513	0.100	ug/L	
SLG0051-CCB1	Silver-107	0.0130	0.022	0.200	ug/L	
SLG0051-IBL2	Lead-208	0.0150	0.0513	0.100	ug/L	
SLG0051-IBL2	Silver-107	0.0430	0.022	0.200	ug/L	
SLG0051-IBL3	Lead-208	0.0120	0.0513	0.100	ug/L	
SLG0051-IBL3	Silver-107	0.0190	0.022	0.200	ug/L	
SLG0051-CCB2	Lead-208	0.00300	0.0513	0.100	ug/L	
SLG0051-CCB2	Silver-107	0.0150	0.022	0.200	ug/L	
SLG0051-CCB3	Lead-208	0.00100	0.0513	0.100	ug/L	
SLG0051-CCB3	Silver-107	0.00300	0.022	0.200	ug/L	
SLG0051-IBL4	Lead-208	0.00200	0.0513	0.100	ug/L	
SLG0051-IBL4	Silver-107	-0.00800	0.022	0.200	ug/L	
SLG0051-IBL5	Lead-208	0.00200	0.0513	0.100	ug/L	
SLG0051-IBL5	Silver-107	-0.00700	0.022	0.200	ug/L	
SLG0051-CCB4	Lead-208	0.00400	0.0513	0.100	ug/L	
SLG0051-CCB4	Silver-107	0.00300	0.022	0.200	ug/L	
SLG0051-IBL6	Lead-208	0.00	0.0513	0.100	ug/L	
SLG0051-IBL6	Silver-107	-0.0100	0.022	0.200	ug/L	
SLG0051-CCB5	Lead-208	0.00200	0.0513	0.100	ug/L	
SLG0051-CCB5	Silver-107	-0.00100	0.022	0.200	ug/L	
SLG0051-CCB6	Lead-208	0.00200	0.0513	0.100	ug/L	
SLG0051-CCB6	Silver-107	0.00600	0.022	0.200	ug/L	
SLG0051-IBL7	Lead-208	0.00400	0.0513	0.100	ug/L	
SLG0051-IBL7	Silver-107	-0.00100	0.022	0.200	ug/L	
SLG0051-CCB7	Lead-208	0.00100	0.0513	0.100	ug/L	
SLG0051-CCB7	Silver-107	0.00500	0.022	0.200	ug/L	
SLG0051-IBL8	Lead-208	0.00	0.0513	0.100	ug/L	
SLG0051-IBL8	Silver-107	-0.00300	0.022	0.200	ug/L	
SLG0051-CCB8	Lead-208	0.00100	0.0513	0.100	ug/L	
SLG0051-CCB8	Silver-107	0.00500	0.022	0.200	ug/L	
SLG0051-IBL9	Lead-208	0.00100	0.0513	0.100	ug/L	

INSTRUMENT BLANKS
EPA 6020B

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: ICPMS2
Sequence: SLG0051

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GG00009
Date Analyzed: 07/06/23 00:17

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLG0051-IBL9	Silver-107	-0.00400	0.022	0.200	ug/L	
SLG0051-IBLA	Lead-208	0.00	0.0513	0.100	ug/L	
SLG0051-IBLA	Silver-107	-0.00500	0.022	0.200	ug/L	
SLG0051-CCB9	Lead-208	0.00100	0.0513	0.100	ug/L	
SLG0051-CCB9	Silver-107	0.00300	0.022	0.200	ug/L	
SLG0051-IBLB	Lead-208	0.00100	0.0513	0.100	ug/L	
SLG0051-IBLB	Silver-107	-0.00600	0.022	0.200	ug/L	
SLG0051-CCBA	Lead-208	-0.00100	0.0513	0.100	ug/L	
SLG0051-CCBA	Silver-107	0.00400	0.022	0.200	ug/L	
SLG0051-CCBB	Lead-208	-0.00100	0.0513	0.100	ug/L	
SLG0051-CCBB	Silver-107	0.00400	0.022	0.200	ug/L	
SLG0051-IBLC	Lead-208	-0.00200	0.0513	0.100	ug/L	
SLG0051-IBLC	Silver-107	-0.00400	0.022	0.200	ug/L	
SLG0051-IBLD	Lead-208	-0.00100	0.0513	0.100	ug/L	
SLG0051-IBLD	Silver-107	-0.00400	0.022	0.200	ug/L	
SLG0051-CCBC	Lead-208	-0.00100	0.0513	0.100	ug/L	
SLG0051-CCBC	Silver-107	0.00400	0.022	0.200	ug/L	
SLG0051-IBLE	Lead-208	-0.00300	0.0513	0.100	ug/L	
SLG0051-IBLE	Silver-107	-0.00400	0.022	0.200	ug/L	
SLG0051-IBLF	Lead-208	0.00100	0.0513	0.100	ug/L	
SLG0051-IBLF	Silver-107	0.00400	0.022	0.200	ug/L	
SLG0051-CCBD	Lead-208	-0.00100	0.0513	0.100	ug/L	
SLG0051-CCBD	Silver-107	0.00600	0.022	0.200	ug/L	
SLG0051-IBLG	Lead-208	0.00	0.0513	0.100	ug/L	
SLG0051-IBLG	Silver-107	-0.00300	0.022	0.200	ug/L	
SLG0051-IBLH	Lead-208	0.00	0.0513	0.100	ug/L	
SLG0051-IBLH	Silver-107	-0.00500	0.022	0.200	ug/L	
SLG0051-CCBE	Lead-208	-0.00100	0.0513	0.100	ug/L	
SLG0051-CCBE	Silver-107	0.00500	0.022	0.200	ug/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLF0398	Instrument:	ICPMS1
		Calibration:	GF00087

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
CAL 0	SLF0398-CAL1	XDT_m1230626-006	NA	06/26/23 14:25
CAL 1 - LOW CHECK	SLF0398-CAL2	XDT_m1230626-007	NA	06/26/23 14:30
CAL 2	SLF0398-CAL3	XDT_m1230626-008	NA	06/26/23 14:35
CAL 3	SLF0398-CAL4	XDT_m1230626-009	NA	06/26/23 14:40
CAL 4	SLF0398-CAL5	XDT_m1230626-010	NA	06/26/23 14:45
CAL 5	SLF0398-CAL6	XDT_m1230626-011	NA	06/26/23 14:52
RINSE	SLF0398-IBL1	XDT_m1230626-012	NA	06/26/23 14:59
Initial Cal Check	SLF0398-ICV1	XDT_m1230626-014	NA	06/26/23 15:05
Initial Cal Blank	SLF0398-ICB1	XDT_m1230626-015	NA	06/26/23 15:13
Calibration Check	SLF0398-CCV1	XDT_m1230626-016	NA	06/26/23 15:19
Calibration Blank	SLF0398-CCB1	XDT_m1230626-017	NA	06/26/23 15:26
Instrument RL Check	SLF0398-CRL1	XDT_m1230626-018	NA	06/26/23 15:32
Interference Check A	SLF0398-IFA1	XDT_m1230626-019	NA	06/26/23 15:38
Interference Check B	SLF0398-IFB1	XDT_m1230626-020	NA	06/26/23 15:43
LR200	SLF0398-HCV1	XDT_m1230626-021	NA	06/26/23 15:47
LR300	SLF0398-HCV2	XDT_m1230626-022	NA	06/26/23 15:52
Instrument Blank	SLF0398-IBL2	XDT_m1230626-023	NA	06/26/23 16:00
Instrument Blank	SLF0398-IBL3	XDT_m1230626-024	NA	06/26/23 16:06
Instrument Blank	SLF0398-IBL4	XDT_m1230626-025	NA	06/26/23 16:13
Calibration Check	SLF0398-CCV2	XDT_m1230626-026	NA	06/26/23 16:18
Calibration Blank	SLF0398-CCB2	XDT_m1230626-027	NA	06/26/23 16:27
Calibration Check	SLF0398-CCV3	XDT_m1230626-029	NA	06/26/23 16:39
Calibration Blank	SLF0398-CCB3	XDT_m1230626-030	NA	06/26/23 16:47
Blank	BLF0652-BLK1	XDT_m1230626-031	Solid	06/26/23 16:54
LCS	BLF0652-BS1	XDT_m1230626-032	Solid	06/26/23 16:59
ZZZZZ	23F0361-06	XDT_m1230626-035	Water	06/26/23 17:18
ZZZZZ	23F0527-01	XDT_m1230626-036	Solid	06/26/23 17:24
ZZZZZ	23F0527-01	XDT_m1230626-036	Solid	06/26/23 17:24
ZZZZZ	23F0527-01	XDT_m1230626-036	Solid	06/26/23 17:24

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLF0398
Instrument: ICPMS1
Calibration: GF00087

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23F0527-01	XDT_m1230626-036	Solid	06/26/23 17:24
Instrument Blank	SLF0398-IBL5	XDT_m1230626-037	NA	06/26/23 17:29
ZZZZZ	23F0527-01RE1	XDT_m1230626-038	Solid	06/26/23 17:34
Instrument Blank	SLF0398-IBL6	XDT_m1230626-040	NA	06/26/23 17:44
Calibration Check	SLF0398-CCV4	XDT_m1230626-041	NA	06/26/23 17:49
Calibration Blank	SLF0398-CCB4	XDT_m1230626-042	NA	06/26/23 17:57
Calibration Check	SLF0398-CCV5	XDT_m1230626-044	NA	06/26/23 18:09
Calibration Blank	SLF0398-CCB5	XDT_m1230626-045	NA	06/26/23 18:17
Instrument Blank	SLF0398-IBL7	XDT_m1230626-055	NA	06/26/23 19:04
Calibration Check	SLF0398-CCV6	XDT_m1230626-056	NA	06/26/23 19:08
Calibration Blank	SLF0398-CCB6	XDT_m1230626-057	NA	06/26/23 19:16
ZZZZZ	BLF0645-BLK1	XDT_m1230626-058	Solid	06/26/23 19:21
ZZZZZ	BLF0645-BS1	XDT_m1230626-059	Solid	06/26/23 19:25
ZZZZZ	BLF0645-SRM1	XDT_m1230626-066	Solid	06/26/23 20:01
Instrument Blank	SLF0398-IBL8	XDT_m1230626-067	NA	06/26/23 20:05
Calibration Check	SLF0398-CCV7	XDT_m1230626-068	NA	06/26/23 20:10
Calibration Blank	SLF0398-CCB7	XDT_m1230626-069	NA	06/26/23 20:17
ZZZZZ	23F0230-03	XDT_m1230626-071	Solid	06/26/23 20:26
ZZZZZ	23F0230-04	XDT_m1230626-072	Solid	06/26/23 20:30
ZZZZZ	23F0230-05	XDT_m1230626-073	Solid	06/26/23 20:35
ZZZZZ	23F0230-17	XDT_m1230626-076	Solid	06/26/23 20:48
ZZZZZ	23F0230-18	XDT_m1230626-077	Solid	06/26/23 20:52
ZZZZZ	23F0230-19	XDT_m1230626-078	Solid	06/26/23 20:57
Instrument Blank	SLF0398-IBL9	XDT_m1230626-079	NA	06/26/23 21:01
Calibration Check	SLF0398-CCV8	XDT_m1230626-080	NA	06/26/23 21:05
Calibration Blank	SLF0398-CCB8	XDT_m1230626-081	NA	06/26/23 21:12
Calibration Check	SLF0398-CCV9	XDT_m1230626-083	NA	06/26/23 21:21
Calibration Blank	SLF0398-CCB9	XDT_m1230626-084	NA	06/26/23 21:28
ZZZZZ	23F0233-08	XDT_m1230626-088	Solid	06/26/23 21:46

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLF0398	Instrument:	ICPMS1
		Calibration:	GF00087

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23F0233-14	XDT_m1230626-092	Solid	06/26/23 22:04
ZZZZZ	23F0233-15	XDT_m1230626-093	Solid	06/26/23 22:08
ZZZZZ	23F0233-16	XDT_m1230626-094	Solid	06/26/23 22:12
Calibration Check	SLF0398-CCVA	XDT_m1230626-095	NA	06/26/23 22:20
Calibration Blank	SLF0398-CCBA	XDT_m1230626-096	NA	06/26/23 22:27
LDW20-SC148A	23F0536-01	XDT_m1230626-100	Solid	06/26/23 22:45
LDW20-SC148A	23F0536-01	XDT_m1230626-100	Solid	06/26/23 22:45
LDW20-SC148A	23F0536-01	XDT_m1230626-100	Solid	06/26/23 22:45
LDW20-SC148A	BLF0652-DUP1	XDT_m1230626-101	Solid	06/26/23 22:50
LDW20-SC148A	BLF0652-DUP1	XDT_m1230626-101	Solid	06/26/23 22:50
LDW20-SC148A	BLF0652-DUP1	XDT_m1230626-101	Solid	06/26/23 22:50
LDW20-SC148A	BLF0652-DUP1	XDT_m1230626-101	Solid	06/26/23 22:50
LDW20-SC148A	BLF0652-DUP1	XDT_m1230626-101	Solid	06/26/23 22:50
LDW20-SC148A	BLF0652-DUP1	XDT_m1230626-101	Solid	06/26/23 22:50
LDW20-SC148A	BLF0652-DUP1	XDT_m1230626-101	Solid	06/26/23 22:50
LDW20-SC148A	BLF0652-MS1	XDT_m1230626-102	Solid	06/26/23 22:54
LDW20-SC148A	BLF0652-MS1	XDT_m1230626-102	Solid	06/26/23 22:54
LDW20-SC148A	BLF0652-MS1	XDT_m1230626-102	Solid	06/26/23 22:54
LDW20-SC148A	BLF0652-MS1	XDT_m1230626-102	Solid	06/26/23 22:54
LDW20-SC148A	BLF0652-MS1	XDT_m1230626-102	Solid	06/26/23 22:54
LDW20-SC148A	BLF0652-MS1	XDT_m1230626-102	Solid	06/26/23 22:54
LDW20-SC148A	BLF0652-MS1	XDT_m1230626-102	Solid	06/26/23 22:54
LDW20-SC148A	BLF0652-MSD1	XDT_m1230626-103	Solid	06/26/23 22:58
LDW20-SC148A	BLF0652-MSD1	XDT_m1230626-103	Solid	06/26/23 22:58
LDW20-SC148A	BLF0652-MSD1	XDT_m1230626-103	Solid	06/26/23 22:58
LDW20-SC148A	BLF0652-MSD1	XDT_m1230626-103	Solid	06/26/23 22:58
LDW20-SC148A	BLF0652-MSD1	XDT_m1230626-103	Solid	06/26/23 22:58
LDW20-SC148A	BLF0652-MSD1	XDT_m1230626-103	Solid	06/26/23 22:58
LDW20-SC148A	BLF0652-MSD1	XDT_m1230626-103	Solid	06/26/23 22:58

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLF0398	Instrument:	ICPMS1
		Calibration:	GF00087

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
LDW20-SC148A	BLF0652-PS1	XDT_m1230626-104	Solid	06/26/23 23:03
LDW20-SC148A	BLF0652-PS1	XDT_m1230626-104	Solid	06/26/23 23:03
LDW20-SC148A	BLF0652-PS1	XDT_m1230626-104	Solid	06/26/23 23:03
LDW20-SC148A	BLF0652-PS1	XDT_m1230626-104	Solid	06/26/23 23:03
LDW20-SC148A	BLF0652-PS1	XDT_m1230626-104	Solid	06/26/23 23:03
LDW20-SC148A	BLF0652-PS1	XDT_m1230626-104	Solid	06/26/23 23:03
LDW20-SC148A	BLF0652-PS1	XDT_m1230626-104	Solid	06/26/23 23:03
Reference	BLF0652-SRM1	XDT_m1230626-105	Solid	06/26/23 23:07
Instrument Blank	SLF0398-IBLA	XDT_m1230626-106	NA	06/26/23 23:12
Calibration Check	SLF0398-CCVB	XDT_m1230626-107	NA	06/26/23 23:16
Calibration Blank	SLF0398-CCBB	XDT_m1230626-108	NA	06/26/23 23:23
Instrument Blank	SLF0398-IBLB	XDT_m1230626-118	NA	06/27/23 00:08
Calibration Check	SLF0398-CCVC	XDT_m1230626-119	NA	06/27/23 00:12
Calibration Blank	SLF0398-CCBC	XDT_m1230626-120	NA	06/27/23 00:19
Instrument Blank	SLF0398-IBLC	XDT_m1230626-130	NA	06/27/23 01:04
Calibration Check	SLF0398-CCVD	XDT_m1230626-131	NA	06/27/23 01:08
Calibration Blank	SLF0398-CCBD	XDT_m1230626-132	NA	06/27/23 01:15
Calibration Check	SLF0398-CCVE	XDT_m1230626-134	NA	06/27/23 01:24
Calibration Blank	SLF0398-CCBE	XDT_m1230626-135	NA	06/27/23 01:31
Instrument Blank	SLF0398-IBLD	XDT_m1230626-145	NA	06/27/23 02:16
Calibration Check	SLF0398-CCVF	XDT_m1230626-146	NA	06/27/23 02:20
Calibration Blank	SLF0398-CCBF	XDT_m1230626-147	NA	06/27/23 02:27
Instrument Blank	SLF0398-IBLE	XDT_m1230626-152	NA	06/27/23 02:49
Instrument Blank	SLF0398-IBLF	XDT_m1230626-157	NA	06/27/23 03:12
Calibration Check	SLF0398-CCVG	XDT_m1230626-158	NA	06/27/23 03:17
Calibration Blank	SLF0398-CCBG	XDT_m1230626-159	NA	06/27/23 03:24
Instrument Blank	SLF0398-IBLG	XDT_m1230626-163	NA	06/27/23 03:42
Calibration Check	SLF0398-CCVH	XDT_m1230626-164	NA	06/27/23 03:46
Calibration Blank	SLF0398-CCBH	XDT_m1230626-165	NA	06/27/23 03:53

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLG0051
Instrument: ICPMS2
Calibration: GG00009

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
CAL 0	SLG0051-CAL1	XDT_m2230705-006	NA	07/05/23 16:31
CAL 1 - LOW CHECK	SLG0051-CAL2	XDT_m2230705-007	NA	07/05/23 16:36
CAL 2	SLG0051-CAL3	XDT_m2230705-008	NA	07/05/23 16:41
CAL 3	SLG0051-CAL4	XDT_m2230705-009	NA	07/05/23 16:46
CAL 4	SLG0051-CAL5	XDT_m2230705-010	NA	07/05/23 16:52
CAL 5	SLG0051-CAL6	XDT_m2230705-013	NA	07/05/23 16:59
CAL 5	SLG0051-CAL6	XDT_m2230705-011	NA	07/05/23 16:59
RINSE	SLG0051-IBL1	XDT_m2230705-012	NA	07/05/23 17:06
Initial Cal Check	SLG0051-ICV1	XDT_m2230705-014	NA	07/05/23 17:14
Initial Cal Blank	SLG0051-ICB1	XDT_m2230705-015	NA	07/05/23 17:22
Calibration Check	SLG0051-CCV1	XDT_m2230705-016	NA	07/05/23 17:28
Calibration Blank	SLG0051-CCB1	XDT_m2230705-017	NA	07/05/23 17:35
Instrument RL Check	SLG0051-CRL1	XDT_m2230705-018	NA	07/05/23 17:48
Interference Check A	SLG0051-IFA1	XDT_m2230705-019	NA	07/05/23 17:54
Interference Check B	SLG0051-IFB1	XDT_m2230705-020	NA	07/05/23 17:59
LR200	SLG0051-HCV1	XDT_m2230705-021	NA	07/05/23 18:05
LR300	SLG0051-HCV2	XDT_m2230705-022	NA	07/05/23 18:10
Instrument Blank	SLG0051-IBL2	XDT_m2230705-023	NA	07/05/23 18:17
Instrument Blank	SLG0051-IBL3	XDT_m2230705-024	NA	07/05/23 18:24
Calibration Check	SLG0051-CCV2	XDT_m2230705-025	NA	07/05/23 18:30
Calibration Blank	SLG0051-CCB2	XDT_m2230705-026	NA	07/05/23 18:38
Calibration Check	SLG0051-CCV3	XDT_m2230705-028	NA	07/05/23 18:48
Calibration Blank	SLG0051-CCB3	XDT_m2230705-029	NA	07/05/23 18:56
Instrument Blank	SLG0051-IBL4	XDT_m2230705-035	NA	07/05/23 19:31
Instrument Blank	SLG0051-IBL5	XDT_m2230705-039	NA	07/05/23 19:51
Calibration Check	SLG0051-CCV4	XDT_m2230705-040	NA	07/05/23 19:56
Calibration Blank	SLG0051-CCB4	XDT_m2230705-041	NA	07/05/23 20:03
Instrument Blank	SLG0051-IBL6	XDT_m2230705-051	NA	07/05/23 20:55
Calibration Check	SLG0051-CCV5	XDT_m2230705-052	NA	07/05/23 21:00

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLG0051
Instrument: ICPMS2
Calibration: GG00009

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Calibration Blank	SLG0051-CCB5	XDT_m2230705-053	NA	07/05/23 21:07
Calibration Check	SLG0051-CCV6	XDT_m2230705-055	NA	07/05/23 21:17
Calibration Blank	SLG0051-CCB6	XDT_m2230705-056	NA	07/05/23 21:25
ZZZZZ	BLF0840-BLK1	XDT_m2230705-057	Water	07/05/23 21:30
ZZZZZ	BLF0840-BS1	XDT_m2230705-058	Water	07/05/23 21:35
ZZZZZ	23F0227-02	XDT_m2230705-061	Solid	07/05/23 21:49
Instrument Blank	SLG0051-IBL7	XDT_m2230705-066	NA	07/05/23 22:14
Calibration Check	SLG0051-CCV7	XDT_m2230705-067	NA	07/05/23 22:19
Calibration Blank	SLG0051-CCB7	XDT_m2230705-068	NA	07/05/23 22:26
ZZZZZ	23F0365-17	XDT_m2230705-069	Water	07/05/23 22:31
ZZZZZ	23F0365-17	XDT_m2230705-069	Water	07/05/23 22:31
ZZZZZ	23F0365-17	XDT_m2230705-069	Water	07/05/23 22:31
ZZZZZ	23F0365-19	XDT_m2230705-070	Water	07/05/23 22:36
ZZZZZ	23F0365-19	XDT_m2230705-070	Water	07/05/23 22:36
ZZZZZ	23F0365-19	XDT_m2230705-070	Water	07/05/23 22:36
Instrument Blank	SLG0051-IBL8	XDT_m2230705-071	NA	07/05/23 22:41
ZZZZZ	23F0152-04	XDT_m2230705-072	Solid	07/05/23 22:46
ZZZZZ	BLF0536-SRL2	XDT_m2230705-073	Solid	07/05/23 22:51
ZZZZZ	23F0152-01	XDT_m2230705-074	Solid	07/05/23 22:56
ZZZZZ	BLF0536-DUP2	XDT_m2230705-075	Solid	07/05/23 23:01
ZZZZZ	BLF0536-MS2	XDT_m2230705-076	Solid	07/05/23 23:05
ZZZZZ	BLF0536-MSD2	XDT_m2230705-077	Solid	07/05/23 23:10
Calibration Check	SLG0051-CCV8	XDT_m2230705-079	NA	07/05/23 23:22
Calibration Blank	SLG0051-CCB8	XDT_m2230705-080	NA	07/05/23 23:29
ZZZZZ	23F0390-08	XDT_m2230705-081	Water	07/05/23 23:34
ZZZZZ	23F0390-08	XDT_m2230705-081	Water	07/05/23 23:34
ZZZZZ	23F0390-08	XDT_m2230705-081	Water	07/05/23 23:34
ZZZZZ	23F0487-06	XDT_m2230705-082	Water	07/05/23 23:39
ZZZZZ	23F0487-06	XDT_m2230705-082	Water	07/05/23 23:39

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLG0051
Instrument: ICPMS2
Calibration: GG00009

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23F0487-06	XDT_m2230705-082	Water	07/05/23 23:39
ZZZZZ	23F0487-06	XDT_m2230705-082	Water	07/05/23 23:39
ZZZZZ	23F0487-05	XDT_m2230705-083	Water	07/05/23 23:44
ZZZZZ	23F0487-05	XDT_m2230705-083	Water	07/05/23 23:44
ZZZZZ	23F0487-05	XDT_m2230705-083	Water	07/05/23 23:44
ZZZZZ	23F0487-05	XDT_m2230705-083	Water	07/05/23 23:44
ZZZZZ	23F0477-01	XDT_m2230705-084	Water	07/05/23 23:49
ZZZZZ	23F0477-01	XDT_m2230705-084	Water	07/05/23 23:49
ZZZZZ	23F0477-02	XDT_m2230705-085	Water	07/05/23 23:54
ZZZZZ	23F0477-02	XDT_m2230705-085	Water	07/05/23 23:54
ZZZZZ	23F0477-03	XDT_m2230705-086	Water	07/06/23 00:00
ZZZZZ	23F0477-04	XDT_m2230705-087	Water	07/06/23 00:05
ZZZZZ	23F0477-04	XDT_m2230705-087	Water	07/06/23 00:05
ZZZZZ	23F0477-05	XDT_m2230705-088	Water	07/06/23 00:11
ZZZZZ	23F0477-05	XDT_m2230705-088	Water	07/06/23 00:11
Instrument Blank	SLG0051-IBL9	XDT_m2230705-089	NA	07/06/23 00:17
Instrument Blank	SLG0051-IBLA	XDT_m2230705-090	NA	07/06/23 00:21
Calibration Check	SLG0051-CCV9	XDT_m2230705-091	NA	07/06/23 00:26
Calibration Blank	SLG0051-CCB9	XDT_m2230705-092	NA	07/06/23 00:34
Instrument Blank	SLG0051-IBLB	XDT_m2230705-102	NA	07/06/23 01:23
Calibration Check	SLG0051-CCVA	XDT_m2230705-103	NA	07/06/23 01:28
Calibration Blank	SLG0051-CCBA	XDT_m2230705-104	NA	07/06/23 01:35
Calibration Check	SLG0051-CCVB	XDT_m2230705-106	NA	07/06/23 01:45
Calibration Blank	SLG0051-CCBB	XDT_m2230705-107	NA	07/06/23 01:53
ZZZZZ	23F0390-02	XDT_m2230705-112	Water	07/06/23 02:17
ZZZZZ	23F0390-02	XDT_m2230705-112	Water	07/06/23 02:17
ZZZZZ	23F0390-02	XDT_m2230705-112	Water	07/06/23 02:17
ZZZZZ	23F0390-06	XDT_m2230705-113	Water	07/06/23 02:22
ZZZZZ	23F0390-06	XDT_m2230705-113	Water	07/06/23 02:22

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLG0051
Instrument: ICPMS2
Calibration: GG00009

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23F0390-06	XDT_m2230705-113	Water	07/06/23 02:22
Instrument Blank	SLG0051-IBLC	XDT_m2230705-114	NA	07/06/23 02:27
Instrument Blank	SLG0051-IBLD	XDT_m2230705-117	NA	07/06/23 02:42
Calibration Check	SLG0051-CCVC	XDT_m2230705-118	NA	07/06/23 02:47
Calibration Blank	SLG0051-CCBC	XDT_m2230705-119	NA	07/06/23 02:55
ZZZZZ	23F0487-02	XDT_m2230705-120	Water	07/06/23 03:00
ZZZZZ	23F0487-02	XDT_m2230705-120	Water	07/06/23 03:00
ZZZZZ	23F0487-02	XDT_m2230705-120	Water	07/06/23 03:00
ZZZZZ	23F0487-02	XDT_m2230705-120	Water	07/06/23 03:00
ZZZZZ	23F0487-04	XDT_m2230705-121	Water	07/06/23 03:05
ZZZZZ	23F0487-04	XDT_m2230705-121	Water	07/06/23 03:05
ZZZZZ	23F0487-04	XDT_m2230705-121	Water	07/06/23 03:05
ZZZZZ	23F0487-04	XDT_m2230705-121	Water	07/06/23 03:05
ZZZZZ	23F0487-08	XDT_m2230705-122	Water	07/06/23 03:10
ZZZZZ	23F0487-08	XDT_m2230705-122	Water	07/06/23 03:10
ZZZZZ	23F0487-08	XDT_m2230705-122	Water	07/06/23 03:10
ZZZZZ	23F0487-08	XDT_m2230705-122	Water	07/06/23 03:10
ZZZZZ	23F0487-03	XDT_m2230705-123	Water	07/06/23 03:16
ZZZZZ	23F0487-03	XDT_m2230705-123	Water	07/06/23 03:16
ZZZZZ	23F0487-03	XDT_m2230705-123	Water	07/06/23 03:16
ZZZZZ	23F0487-03	XDT_m2230705-123	Water	07/06/23 03:16
Instrument Blank	SLG0051-IBLE	XDT_m2230705-124	NA	07/06/23 03:21
ZZZZZ	23F0487-01	XDT_m2230705-125	Water	07/06/23 03:26
ZZZZZ	23F0487-01	XDT_m2230705-125	Water	07/06/23 03:26
ZZZZZ	23F0487-01	XDT_m2230705-125	Water	07/06/23 03:26
ZZZZZ	23F0487-01	XDT_m2230705-125	Water	07/06/23 03:26
ZZZZZ	23F0487-01	XDT_m2230705-125	Water	07/06/23 03:26
ZZZZZ	BLF0840-DUP1	XDT_m2230705-126	Water	07/06/23 03:31
ZZZZZ	BLF0840-MS1	XDT_m2230705-127	Water	07/06/23 03:36

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLG0051
Instrument: ICPMS2
Calibration: GG00009

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	BLF0840-MSD1	XDT_m2230705-128	Water	07/06/23 03:42
Instrument Blank	SLG0051-IBLF	XDT_m2230705-129	NA	07/06/23 03:47
Calibration Check	SLG0051-CCVD	XDT_m2230705-130	NA	07/06/23 03:52
Calibration Blank	SLG0051-CCBD	XDT_m2230705-131	NA	07/06/23 04:00
ZZZZZ	23F0390-04	XDT_m2230705-132	Water	07/06/23 04:05
ZZZZZ	23F0390-04	XDT_m2230705-132	Water	07/06/23 04:05
ZZZZZ	23F0390-04	XDT_m2230705-132	Water	07/06/23 04:05
ZZZZZ	23F0390-04	XDT_m2230705-132	Water	07/06/23 04:05
ZZZZZ	23F0390-04	XDT_m2230705-132	Water	07/06/23 04:05
Instrument Blank	SLG0051-IBLG	XDT_m2230705-136	NA	07/06/23 04:26
ZZZZZ	23F0390-03	XDT_m2230705-137	Water	07/06/23 04:31
Instrument Blank	SLG0051-IBLH	XDT_m2230705-141	NA	07/06/23 04:52
Calibration Check	SLG0051-CCVE	XDT_m2230705-142	NA	07/06/23 04:57
Calibration Blank	SLG0051-CCBE	XDT_m2230705-143	NA	07/06/23 05:05

ICP INTERFERENCE CHECK SAMPLE

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: GF00087
Sequence: SLF0398
Standard ID: L006575

Lab Sample ID	Analyte	True	Found	%R	Units
SLF0398-IFA1	Chromium-52	0	0.8300		ug/L
	Chromium-53	0	11.1270		ug/L
	Lead-208	0	0.0220		ug/L
	Silver-107	0	-0.0020		ug/L

* Indicates %R outside of QC limits

NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.

Analytical Resources, LLC
Analytical Chemists and Consultants

ICP INTERFERENCE CHECK SAMPLE

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: GF00087
Sequence: SLF0398
Standard ID: L006575

Lab Sample ID	Analyte	True	Found	%R	Units
SLF0398-IFB1	Chromium-52	20.000	20.559	103	ug/L
	Chromium-53	20.000	29.694	148	ug/L
	Lead-208	0	0.0290		ug/L
	Silver-107	20.000	19.114	95.6	ug/L

* Indicates %R outside of QC limits

NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.

Analytical Resources, LLC
Analytical Chemists and Consultants

ICP INTERFERENCE CHECK SAMPLE

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS2
Calibration: GG00009
Sequence: SLG0051
Standard ID: L007219

Lab Sample ID	Analyte	True	Found	%R	Units
SLG0051-IFA1	Lead-208	0	0.0290		ug/L
	Silver-107	0	0.0200		ug/L

* Indicates %R outside of QC limits
NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.

Analytical Resources, LLC
Analytical Chemists and Consultants

ICP INTERFERENCE CHECK SAMPLE

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS2
Calibration: GG00009
Sequence: SLG0051
Standard ID: L007219

Lab Sample ID	Analyte	True	Found	%R	Units
SLG0051-IFB1	Lead-208	0	0.0300		ug/L
	Silver-107	20.000	18.243	91.2	ug/L

* Indicates %R outside of QC limits
NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.

DETECTION LEVEL STANDARD
EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: GF00087
Sequence: SLF0398
Lab Sample ID: SLF0398-CRL1

Analyte	True	Found	%R	Units	QC Limts
Chromium-52	0.50000	0.505	101	ug/L	50 - 150
Chromium-53	0.50000	0.477	95.4	ug/L	50 - 150
Lead-208	0.10000	0.105	105	ug/L	50 - 150
Silver-107	0.20000	0.191	95.5	ug/L	50 - 150

* Values outside of QC limits

DETECTION LEVEL STANDARD
EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS2
Calibration: GG00009
Sequence: SLG0051
Lab Sample ID: SLG0051-CRL1

Analyte	True	Found	%R	Units	QC Limts
Lead-208	0.10000	0.101	101	ug/L	50 - 150
Silver-107	0.20000	0.203	102	ug/L	50 - 150

* Values outside of QC limits

HIGH-CONCENTRATION CALIBRATION VERIFICATION

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GF00087
Laboratory ID: SLF0398-HCV1
Sequence: SLF0398
Standard ID: L006960

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Chromium-52	200.00	178	-11.0	10.00
Chromium-53	200.00	198	-0.8	10.00
Lead-208	200.00	191	-4.5	10.00
Silver-107	200.00	183	-8.5	10.00

* Values outside of QC limits

HIGH-CONCENTRATION CALIBRATION VERIFICATION

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GF00087
Laboratory ID: SLF0398-HCV2
Sequence: SLF0398
Standard ID: L006577

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Chromium-52	300.00	267	-10.9	10.00
Chromium-53	300.00	301	0.4	10.00
Lead-208	300.00	293	-2.2	10.00
Silver-107	300.00	276	-8.1	10.00

* Values outside of QC limits

HIGH-CONCENTRATION CALIBRATION VERIFICATION

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GG00009
Laboratory ID: SLG0051-HCV1
Sequence: SLG0051
Standard ID: L006960

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Lead-208	200.00	190	-4.8	10.00
Silver-107	200.00	205	2.5	10.00

* Values outside of QC limits

Analytical Resources, LLC
Analytical Chemists and Consultants

HIGH-CONCENTRATION CALIBRATION VERIFICATION

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GG00009
Laboratory ID: SLG0051-HCV2
Sequence: SLG0051
Standard ID: L007306

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Lead-208	300.00	294	-2.1	10.00
Silver-107	300.00	298	-0.5	10.00

* Values outside of QC limits

HOLDING TIME SUMMARY

Analysis: EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW20-SC148A 23F0536-01	06/08/20 08:41	06/22/23 14:10	06/22/23 15:57	1,109	730	06/26/23 22:45	1,114	730	*
Duplicate BLF0652-DUP1	06/08/20 08:41	06/22/23 14:10	06/22/23 15:57	1,109	730	06/26/23 22:50	1,114	730	*
Matrix Spike BLF0652-MS1	06/08/20 08:41	06/22/23 14:10	06/22/23 15:57	1,109	730	06/26/23 22:54	1,114	730	*
Matrix Spike Dup BLF0652-MSD1	06/08/20 08:41	06/22/23 14:10	06/22/23 15:57	1,109	730	06/26/23 22:58	1,114	730	*
Post Spike BLF0652-PS1	06/08/20 08:41	06/22/23 14:10	06/22/23 15:57	1,109	730	06/26/23 23:03	1,114	730	*

* Indicates hold time exceedance.

METHOD DETECTION AND REPORTING LIMITS

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Instrument: ICPMS1

Analyte	MDL	RL	Units
Chromium-52	0.26	0.50	mg/kg
Chromium-53	0.24	0.50	mg/kg
Lead-208	0.05	0.10	mg/kg
Silver-107	0.02	0.20	mg/kg

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCU10
Lot Number:	P2-CU682108
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Copper
Starting Material:	Cu Metal
Starting Material Lot#:	2095
Starting Material Purity:	99.9996%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10013 ± 30 µg/mL

Density: 1.032 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9977 ± 50 µg/mL**
ICP Assay NIST SRM 3114 Lot Number: 121207

Assay Method #2 **10024 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10007 ± 46 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.007542	M	Eu	<	0.000942	O	Na		0.001434	M	Se	<	0.016971	M	Zn	<	0.005657
O	Al	<	0.000609	O	Fe		0.008700	M	Nb	<	0.000942	O	Si		0.003052	M	Zr	<	0.000942
M	As	<	0.010371	M	Ga	<	0.000942	M	Nd	<	0.000942	M	Sm	<	0.000942				
M	Au	<	0.001885	M	Gd	<	0.000942	M	Ni		0.003781	M	Sn	<	0.005657				
O	B		0.003663	M	Ge	<	0.005657	M	Os	<	0.000942	M	Sr	<	0.000942				
M	Ba		0.004253	M	Hf	<	0.000942	O	P	<	0.031668	M	Ta	<	0.000942				
M	Be	<	0.000942	O	Hg	<	0.007064	M	Pb		0.005789	M	Tb	<	0.000942				
M	Bi	<	0.000942	M	Ho	<	0.000942	M	Pd	<	0.000942	M	Te	<	0.004714				
O	Ca		0.002304	M	In	<	0.000942	M	Pr	<	0.000942	M	Th	<	0.000942				
M	Cd	<	0.000942	M	Ir	<	0.000942	M	Pt	<	0.000942	O	Ti	<	0.002801				
M	Ce	<	0.000942	O	K		0.000763	M	Rb	<	0.000942	M	Tl	<	0.000942				
M	Co		0.001890	M	La	<	0.000942	M	Re	<	0.000942	M	Tm	<	0.000942				
M	Cr	<	0.005657	O	Li	<	0.000243	i	Rh	<		M	U	<	0.000942				
M	Cs	<	0.000942	M	Lu	<	0.000942	M	Ru	<	0.039588	M	V	<	0.003771				
s	Cu	<		O	Mg		0.000320	O	S		0.007174	M	W	<	0.005657				
M	Dy	<	0.000942	O	Mn		0.000793	M	Sb	<	0.001885	M	Y	<	0.000942				
M	Er	<	0.000942	M	Mo	<	0.005657	M	Sc	<	0.000942	M	Yb	<	0.000942				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 63.55 +2 6 $Cu(H_2O)_6^{2+}$

Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4, HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Cu Containing Samples (Preparation and Solution) -Metal (soluble in HNO_3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO_3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 63 amu	10 ppt	n/a	40Ar23Na 47Ti16O, 14N12C37Cl, 16O12C35Cl, 23Na40Ca
ICP-OES 219.958 nm	0.01/.002 µg/mL	1	Th, Ta, Nb, U, Hf
ICP-OES 224.700 nm	0.01/.001 µg/mL	1	Pb, Ir, Ni, W
ICP-OES 324.754 nm	0.06/.001 µg/mL		Nb, U, Th, Mo, Hf

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 24, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **August 24, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

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Certificate of Analysis

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGPB10
Lot Number:	S2-PB713228
Matrix:	0.5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Lead
Starting Material:	Lead Nitrate
Starting Material Lot#:	2343
Starting Material Purity:	99.9995%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10042 ± 31 µg/mL

Density: 1.015 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10024 ± 41 µg/mL**
ICP Assay NIST SRM 3128 Lot Number: 101026

Assay Method #2 **10054 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000310	M	Eu	<	0.000310	M	Na		0.001470	M	Se	<	0.009100	O	Zn	0.006155
O	Al		0.017098	O	Fe		0.002496	M	Nb	<	0.000310	O	Si		0.003761	O	Zr	< 0.001700
M	As	<	0.003100	M	Ga	<	0.000310	M	Nd	<	0.000310	M	Sm	<	0.000310			
M	Au	<	0.000910	M	Gd	<	0.000310	O	Ni		0.001709	M	Sn	<	0.001300			
O	B	<	0.005600	M	Ge	<	0.002200	M	Os	<	0.000310	O	Sr		0.000444			
O	Ba		0.007865	M	Hf	<	0.000310	O	P	<	0.038000	M	Ta	<	0.000310			
O	Be	<	0.000320	M	Hg	<	0.002200	s	Pb	<		M	Tb	<	0.000610			
M	Bi	<	0.028000	M	Ho	<	0.000310	M	Pd	<	0.000610	M	Te	<	0.000310			
O	Ca		0.019834	M	In	<	0.000310	M	Pr	<	0.000310	M	Th	<	0.000310			
O	Cd	<	0.000630	M	Ir	<	0.000310	M	Pt	<	0.000910	O	Ti		0.005129			
M	Ce		0.004787	O	K		0.008207	M	Rb	<	0.006700	M	Tl	<	0.016000			
M	Co	<	0.000610	M	La	<	0.001900	M	Re	<	0.000310	M	Tm	<	0.000310			
O	Cr	<	0.001500	O	Li	<	0.000110	O	Rh	<	0.007700	M	U	<	0.000310			
M	Cs	<	0.006100	M	Lu	<	0.000310	M	Ru	<	0.001300	M	V	<	0.001600			
M	Cu	<	0.001600	O	Mg		0.003317	O	S	<	0.052000	M	W	<	0.000910			
M	Dy	<	0.000310	O	Mn	<	0.001600	O	Sb	<	0.015000	M	Y	<	0.000310			
M	Er	<	0.000310	M	Mo	<	0.000610	O	Sc	<	0.000630	M	Yb	<	0.000310			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 207.20 +2 6 $Pb(H_2O)_6^{+2}$

Chemical Compatibility - Soluble in HCl, HF and HNO_3. Avoid H_2SO_4. Stable with most metals and inorganic anions forming insoluble carbonate, borate, sulfate, sulfite, sulfide, phosphate, oxalate, chromate, tannate, iodate, and cyanide in neutral aqueous media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO_3 / LDPE container.

Pb Containing Samples (Preparation and Solution) -Metal (Best dissolved in 1:1 H_2O / HNO_3); Oxides (The many different Pb oxides are soluble in HNO_3 with the exception of PbO_2 which is soluble in HCl or HF); Ores and Alloys (Best attacked using 1:1 H_2O / HNO_3); Organic Matrices (Dry ash and dissolve in dilute HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 208 amu	5 ppt	n/a	192Pt16O, 192Os16O
ICP-OES 168.215 nm	0.03 / 0.003 µg/mL	1	Co
ICP-OES 217.000 nm	0.09 / 0.03 µg/mL	1	W, Ir, Hf, Sb, Th
ICP-OES 220.353 nm	0.04 / 0.006 µg/mL	1	Bi, Nb

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 10, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **January 10, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

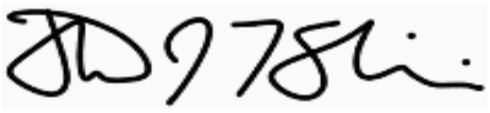
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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1.0 ACCREDITATION / REGISTRATION

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGZN10
Lot Number:	S2-ZN711249
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Zinc
Starting Material:	Zinc Metal
Starting Material Lot#:	2349
Starting Material Purity:	99.9988%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9992 ± 30 µg/mL

Density: 1.029 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9981 ± 56 µg/mL**
ICP Assay NIST SRM 3168a Lot Number: 120629

Assay Method #2 **9987 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10002 ± 32 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.002000	M	Eu	<	0.000500	O	Na		0.008713	M	Se	<	0.048000	s	Zn	<	
O	Al	<	0.011000	O	Fe		0.015467	M	Nb	<	0.000500	O	Si		0.007842	M	Zr	<	0.000500
O	As	<	0.012000	M	Ga	<	0.004900	M	Nd	<	0.000500	M	Sm	<	0.000500				
M	Au	<	0.006500	M	Gd	<	0.000500	O	Ni		0.003049	M	Sn		0.002614				
O	B	<	0.019000	M	Ge	<	0.009100	M	Os	<	0.000500	M	Sr	<	0.000500				
M	Ba	<	0.000500	M	Hf	<	0.000500	O	P	<	0.059000	M	Ta	<	0.000500				
O	Be	<	0.000230	O	Hg	<	0.003800	M	Pb		0.016774	M	Tb	<	0.000500				
M	Bi	<	0.002400	M	Ho	<	0.000500	M	Pd	<	0.001000	M	Te	<	0.017000				
O	Ca		0.052283	M	In	<	0.003500	M	Pr	<	0.000500	M	Th	<	0.000500				
O	Cd		0.000588	M	Ir	<	0.001000	M	Pt	<	0.000500	M	Ti	<	0.002000				
M	Ce	<	0.000500	O	K		0.017209	M	Rb	<	0.002500	M	Tl	<	0.000500				
M	Co		0.000653	M	La	<	0.000500	M	Re	<	0.000500	M	Tm	<	0.000500				
O	Cr		0.001089	O	Li	<	0.000230	M	Rh	<	0.000500	M	U	<	0.000500				
M	Cs	<	0.000500	M	Lu	<	0.000500	M	Ru	<	0.005000	M	V	<	0.000500				
O	Cu		0.001938	O	Mg		0.000871	O	S	<	0.048000	M	W	<	0.001000				
M	Dy	<	0.000500	O	Mn		0.000172	M	Sb	<	0.004300	M	Y	<	0.000500				
M	Er	<	0.000500	M	Mo	<	0.001500	O	Sc	<	0.000900	M	Yb	<	0.000500				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 65.39 +2 4 Zn(OH)(aq)1+
Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media forming insoluble carbonate and hydroxide. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Zn Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3); Organic based (dry ash at 4500C and dissolve ash in HCl) (sulfuric/peroxide acid digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 66 amu	7 ppt	N/A	50Ti16O,50Cr16O, 50V16O, 34S16O2, 32S16O18O, 32S17O2, 33S16O17O, 32S34S, 33S2
ICP-OES 202.548 nm	0.004/0.0002 µg/mL	1	Nb, Cu, Co, Hf
ICP-OES 206.200 nm	0.006/0.0006 µg/mL	1	Sb, Ta, Bi, Os
ICP-OES 213.856 nm	0.002/0.0004 µg/mL	1	Ni, Cu, V

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 22, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **November 22, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

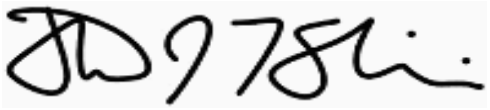
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSE10
Lot Number:	S2-SE711004
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Selenium
Starting Material:	Se Metal
Starting Material Lot#:	1962
Starting Material Purity:	99.9991%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9955 ± 61 µg/mL

Density: 1.035 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9955 ± 50 µg/mL**
ICP Assay NIST SRM 3149 Lot Number: 100901

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.002242	M	Eu	<	0.000373	O	Na		0.013654	s	Se	<		O	Zn		0.002374
M	Al		0.004450	M	Fe		0.008478	O	Nb	<	0.002975	O	Si		0.006249	M	Zr	<	0.001868
O	As	<	0.022040	M	Ga	<	0.000373	M	Nd	<	0.000373	M	Sm	<	0.000373				
M	Au	<	0.000373	M	Gd	<	0.000373	O	Ni		0.001843	M	Sn		0.000847				
O	B	<	0.007714	M	Ge	<	0.002616	M	Os	<	0.000373	M	Sr	<	0.001121				
M	Ba	<	0.001495	M	Hf	<	0.000373	O	P	<	0.022040	M	Ta	<	0.000373				
M	Be	<	0.001495	M	Hg	<	0.002240	M	Pb		0.006358	M	Tb	<	0.006353				
M	Bi	<	0.000373	M	Ho	<	0.000373	M	Pd	<	0.000373	M	Te	<	0.012707				
O	Ca		0.006530	M	In	<	0.000373	M	Pr	<	0.001495	M	Th	<	0.002990				
M	Cd		0.001165	M	Ir	<	0.000373	M	Pt	<	0.000373	M	Ti	<	0.003363				
M	Ce	<	0.000373	O	K		0.001999	M	Rb	<	0.001868	M	Tl		0.008584				
M	Co	<	0.000373	M	La	<	0.001121	M	Re	<	0.000373	M	Tm	<	0.000373				
M	Cr		0.002861	O	Li		0.000062	M	Rh	<	0.000373	M	U	<	0.000373				
M	Cs	<	0.001121	M	Lu	<	0.000373	M	Ru	<	0.001493	M	V	<	0.000747				
M	Cu	<	0.000747	O	Mg		0.001156	O	S		0.024591	M	W	<	0.002242				
M	Dy	<	0.000373	M	Mn	<	0.000373	M	Sb	<	0.002242	M	Y	<	0.000373				
M	Er	<	0.000373	O	Mo	<	0.003195	M	Sc	<	0.001121	M	Yb	<	0.000373				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 78.96 +4 6 H_2SeO_3

Chemical Compatibility -Soluble in HCl, HNO_3,H_3PO_4, H_2SO_4 and HF aqueous matrices and water. It is stable with most inorganic anions but many cationic metals form the insoluble selenites under pH neutral conditions. When fluorinated and/or under acidic conditions precipitation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Se Containing Samples (Preparation and Solution) -Metal (soluble in HNO_3); Oxides (readily soluble in water); Minerals and alloys (acid digestion with HNO_3or HNO_3 / HF); Organic Matrices (acid digestion with hot concentrated H_2SO_4 accompanied by the careful dropwise addition of H_2O_2 until clear).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 82 amu	200 ppt	N/A	12C35Cl2
ICP-OES 196.026 nm	0.08/0.006 µg/mL	1	Fe
ICP-OES 203.985 nm	0.2/0.05 µg/mL	1	Sb, Ir, Cr, Ta
ICP-OES 206.279 nm	0.3/0.16 µg/mL	1	Cr, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 17, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **November 17, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Supervisor, Product Documentation

Certificate Approved By:

Michael Booth
Director, Technical

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

INORGANIC VENTURES™
Refine your results. Redefine your industry.

Certificate of Analysis

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMO10
Lot Number:	S2-MO706255
Matrix:	H2O tr. NH4OH
Value / Analyte(s):	10 000 µg/mL ea: Molybdenum
Starting Material:	Ammonium Molybdate
Starting Material Lot#:	2361
Starting Material Purity:	99.9893%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10026 ± 47 µg/mL

Density: 1.011 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10032 ± 68 µg/mL**
ICP Assay NIST SRM 3134 Lot Number: 130418

Assay Method #2 **10020 ± 65 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000590	M	Eu	<	0.000300	M	Na		0.008739	M	Se	<	0.008000	M	Zn		0.005942
M	Al		0.005592	M	Fe	<	0.006500	M	Nb	<	0.029000	i	Si	<		M	Zr	<	0.001800
M	As	<	0.002100	M	Ga	<	0.000300	i	Nd	<		M	Sm	<	0.000300				
M	Au	<	0.000300	M	Gd	<	0.000300	M	Ni	<	0.008000	M	Sn	<	0.008900				
M	B	<	0.003300	M	Ge	<	0.000300	M	Os	<	0.000590	M	Sr		0.001747				
M	Ba		0.016778	M	Hf	<	0.001800	i	P	<		M	Ta	<	0.004200				
M	Be	<	0.000890	M	Hg	<	0.003300	M	Pb	<	0.000300	M	Tb	<	0.000300				
M	Bi	<	0.000890	M	Ho	<	0.000300	M	Pd	<	0.001800	M	Te	<	0.021000				
O	Ca		0.062920	M	In	<	0.032000	M	Pr	<	0.013000	M	Th	<	0.000300				
O	Cd	<	0.026000	M	Ir	<	0.000300	M	Pt	<	0.000300	O	Ti	<	0.032000				
M	Ce	<	0.008300	M	K		1.293372	M	Rb		0.045442	M	Tl		0.012584				
M	Co		0.005942	M	La	<	0.000300	M	Re	<	0.000300	M	Tm	<	0.000300				
M	Cr		0.005243	O	Li		0.000594	M	Rh	<	0.000300	M	U	<	0.005300				
M	Cs		0.005243	M	Lu	<	0.000300	M	Ru	<	0.079000	M	V	<	0.000890				
M	Cu		0.022371	M	Mg		0.005592	i	S	<		M	W		0.873900				
M	Dy	<	0.000300	M	Mn	<	0.005900	M	Sb		0.015031	M	Y	<	0.000300				
M	Er	<	0.000300	s	Mo	<		M	Sc	<	0.001200	M	Yb	<	0.000300				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 95.94 +6 6,7,8,9 [MoO4]-2(chemical form as received)

Chemical Compatibility -Mo is received in a NH4OH matrix giving the operator the option of using HCl or HF to stabilize acidic solutions. The [MoO4]-2 is soluble in concentrated HCl [MoOCl5]-2, dilute HF / HNO3 [MoOF5]-2 and basic media [MoO4]-2. Stable at ppm levels with some metals provided it is fluorinated. Do not mix with Alkaline or Rare Earths when HF is present. Stable with most inorganic anions provided it is in the [MoO4]-2 chemical form.

Stability - 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the [MoOF5]-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the [MoO4]-2 chemically stable for years in 1% NH4OH in a LDPE container.

Mo Containing Samples (Preparation and Solution) -Metal (Soluble in HF / HNO3 or hot dilute HCl); Oxide (soluble in HF or NH4OH) ; Organic Matrices (Dry ash at 450EC in Pt0 and dissolve oxide with HF or HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 95 amu	3 ppt	n/a	40Ar39K16O,79Br16O,190Os2+,190Pt2+
ICP-OES 202.030 nm	0.008 / 0.0002 µg/mL	1	Os, Hf
ICP-OES 203.844 nm	0.012 / 0.002 µg/mL	1	
ICP-OES 204.598 nm	0.012 / 0.001 µg/mL	1	Ir, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 04, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **July 04, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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F: 540-585-3012
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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGTL10
Lot Number:	T2-TL714687
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Thallium
Starting Material:	TlNO3
Starting Material Lot#:	2118
Starting Material Purity:	99.9998%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10030 ± 42 µg/mL

Density: 1.036 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10040 ± 43 µg/mL**
ICP Assay NIST SRM 3158 Lot Number: 151215

Assay Method #2 **10010 ± 65 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL(

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000200	M	Eu	<	0.000200	O	Na		0.002489	M	Se	<	0.011019	O	Zn		0.002298
O	Al	<	0.004184	O	Fe	<	0.002824	M	Nb	<	0.000200	O	Si		0.003760	M	Zr	<	0.000200
M	As	<	0.002003	M	Ga	<	0.000200	M	Nd	<	0.000200	M	Sm	<	0.000200				
O	Au	<	0.002824	M	Gd	<	0.000200	M	Ni		0.001724	M	Sn	<	0.000601				
O	B	<	0.004184	M	Ge	<	0.000801	M	Os	<	0.000198	O	Sr	<	0.000313				
M	Ba	<	0.000400	M	Hf	<	0.000200	O	P	<	0.010460	M	Ta	<	0.000200				
O	Be	<	0.000104	M	Hg	<	0.000794	M	Pb		0.000811	M	Tb	<	0.000200				
M	Bi	<	0.005209	M	Ho	<	0.000200	M	Pd	<	0.000400	M	Te	<	0.005008				
O	Ca		0.002436	M	In	<	0.000200	M	Pr	<	0.000200	M	Th	<	0.000200				
M	Cd		0.001318	M	Ir	<	0.000198	M	Pt	<	0.000801	O	Ti	<	0.001255				
M	Ce	<	0.000200	O	K		0.006175	M	Rb	<	0.000200	s	Tl	<					
M	Co	<	0.000601	M	La	<	0.000200	M	Re	<	0.000200	M	Tm	<	0.000200				
M	Cr	<	0.000801	O	Li	<	0.000177	M	Rh	<	0.000200	M	U	<	0.000200				
M	Cs	<	0.003606	M	Lu	<	0.000200	M	Ru	<	0.000397	M	V	<	0.002203				
M	Cu	<	0.001001	O	Mg		0.000529	O	S	<	0.015690	M	W	<	0.000601				
M	Dy	<	0.000200	M	Mn	<	0.000801	M	Sb	<	0.000400	M	Y	<	0.000200				
M	Er	<	0.000200	M	Mo	<	0.001202	O	Sc	<	0.000711	M	Yb	<	0.000200				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 204.38 +1 6 Tl(H2O)61+
Chemical Compatibility - Soluble in HCl, HNO3, and H2SO4. Stable with most metals and inorganic anions. The sulfite, thiocyanate and oxalate are moderately soluble; the phosphate and arsenite are slightly soluble and the sulfide is insoluble.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.
Tl Containing Samples)Preparation and Solution) -Metal (Best dissolved in HNO3 which forms chiefly the Tl1+ ion.); Oxide (The thallous oxide is readily soluble in water. The thallic oxide requires high levels of acid); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 205 amu	2 ppt	N/A	189Os16O
ICP-OES 190.864 nm	0.04 / 0.004 µg/mL	1	V, Ti
ICP-OES 276.787 nm	0.1 / 0.01 µg/mL	1	Ta, V, Fe, Cr
ICP-OES 351.924 nm	0.2 / 0.02 µg/mL	1	Th, Ce, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 08, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **February 08, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

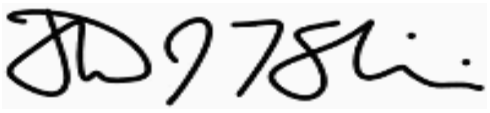
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCD10
Lot Number:	S2-CD710508
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Cadmium
Starting Material:	Cd Metal
Starting Material Lot#:	1953
Starting Material Purity:	99.9995%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10008 ± 30 µg/mL

Density: 1.029 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10010 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **10011 ± 30 µg/mL**
ICP Assay NIST SRM 3108 Lot Number: 130116

Assay Method #3 **10003 ± 30 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Ag	<	0.003200	O	Eu	<	0.002500	O	Na		0.005499	M	Se	<	0.005700	O	Zn	<	0.001100
O	Al		0.008903	O	Fe		0.000602	M	Nb	<	0.000400	O	Si		0.016758	O	Zr	<	0.002600
M	As	<	0.003600	M	Ga	<	0.001200	M	Nd	<	0.000800	M	Sm	<	0.000400				
M	Au	<	0.000810	M	Gd	<	0.000400	M	Ni	<	0.003600	M	Sn	<	0.003200				
O	B		0.004189	O	Ge	<	0.012000	M	Os	<	0.000810	O	Sr	<	0.000330				
M	Ba	<	0.002400	M	Hf	<	0.000400	O	P	<	0.022000	M	Ta	<	0.000800				
M	Be	<	0.000400	M	Hg	<	0.001700	M	Pb	<	0.002400	M	Tb	<	0.000400				
M	Bi	<	0.000400	M	Ho	<	0.000400	M	Pd	<	0.001200	M	Te	<	0.008000				
O	Ca		0.011259	O	In	<	0.013000	M	Pr	<	0.000400	M	Th	<	0.000400				
s	Cd	<		M	Ir	<	0.000410	M	Pt	<	0.000400	O	Ti		0.000602				
M	Ce	<	0.000400	O	K		0.005237	M	Rb	<	0.004400	M	Tl		0.000523				
M	Co	<	0.000400	M	La	<	0.000400	M	Re	<	0.000400	M	Tm	<	0.000400				
O	Cr	<	0.005100	O	Li	<	0.000054	M	Rh	<	0.000400	M	U	<	0.000400				
M	Cs	<	0.002400	M	Lu	<	0.000400	M	Ru	<	0.002500	M	V	<	0.002000				
O	Cu	<	0.004800	O	Mg		0.000288	O	S	<	0.022000	M	W	<	0.000400				
M	Dy	<	0.000400	O	Mn	<	0.000860	O	Sb	<	0.018000	M	Y	<	0.000400				
M	Er	<	0.000400	M	Mo	<	0.001600	O	Sc	<	0.000430	M	Yb	<	0.000400				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 112.41 +2 4 Cd2(OH) (aq)3+ and Cd(OH)(aq)

Chemical Compatibility -Stable in HCl, HNO3, H2SO4 , and HF. Avoid basic media forming insoluble carbonate and hydroxide.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO3 / LDPE container.

Cd Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (soluble in HCl or HNO3); Ores (dissolve in HCl /HNO3 then take to fumes with H2SO4. The silica and lead sulfate are filtered off after the addition of water); Organic based (dry ash at 450°C and dissolve ash in HCl), (sulfuric / peroxide acid digestion).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 111 amu	11 ppt	n/a	95Mo16O
ICP-OES 214.438 nm	0.003 / 0.0003 µg/mL	1	Pt, Ir
ICP-OES 226.502 nm	0.003 / 0.0003 µg/mL	1	Ir
ICP-OES 228.802 nm	0.003 / 0.0003 µg/mL	1	Co, Ir, As, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 01, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **November 01, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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Refine your results. Redefine your industry.

Certificate of Analysis

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F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMN10
Lot Number:	S2-MN704240
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Manganese
Starting Material:	Mn Metal
Starting Material Lot#:	2275
Starting Material Purity:	99.9909%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10011 ± 30 µg/mL

Density: 1.035 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9989 ± 69 µg/mL**
ICP Assay NIST SRM 3132 Lot Number: 050429

Assay Method #2 **10011 ± 25 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10024 ± 47 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001500	M	Eu	<	0.000730	O	Na		0.176097	M	Se	<	0.006600	M	Zn		0.009925
O	Al		0.004322	M	Fe	<	0.650000	M	Nb	<	0.000730	O	Si		0.097654	M	Zr	<	0.000730
M	As	<	0.008000	M	Ga		0.004322	M	Nd	<	0.001500	M	Sm	<	0.000730				
M	Au	<	0.000730	M	Gd	<	0.000730	M	Ni		0.024013	M	Sn	<	0.002200				
M	B		0.068838	M	Ge	<	0.004400	M	Os	<	0.000730	O	Sr		0.000928				
M	Ba	<	0.001500	M	Hf	<	0.000730	i	P	<		M	Ta	<	0.000730				
M	Be	<	0.000730	M	Hg	<	0.002200	M	Pb		0.007364	M	Tb	<	0.000730				
M	Bi	<	0.003000	M	Ho	<	0.000730	M	Pd	<	0.000730	M	Te	<	0.019000				
O	Ca		0.062434	M	In	<	0.003000	M	Pr	<	0.000730	M	Th	<	0.000730				
M	Cd	<	0.001500	M	Ir	<	0.000730	M	Pt	<	0.000730	O	Ti	<	0.006500				
M	Ce	<	0.007300	O	K		0.006403	M	Rb	<	0.006600	M	Tl	<	0.000730				
O	Co		0.014728	M	La	<	0.003000	M	Re	<	0.000730	M	Tm	<	0.000730				
O	Cr		0.272151	O	Li		0.000416	M	Rh	<	0.003000	M	U	<	0.001500				
M	Cs	<	0.000730	M	Lu	<	0.000730	M	Ru	<	0.004400	M	V	<	0.000730				
O	Cu		0.007684	O	Mg		0.320177	i	S	<		M	W	<	0.004400				
M	Dy	<	0.001500	s	Mn	<		M	Sb	<	0.021000	O	Y		0.001360				
M	Er	<	0.001500	M	Mo		0.010245	O	Sc	<	0.004100	M	Yb	<	0.000730				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 54.94 +2 6 $Mn(H_2O)_6^{2+}$

Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO_3/LDPE container.

Mn Containing Samples (Preparation and Solution) -Metal (Soluble in dilute acids); Oxides (Soluble in dilute acids); Ores (Dissolve with HCl. If silica is present add HF and then fume off silica by adding H_2SO_4 and heat to SO_3 fumes - dense white fumes).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 55 amu	10 ppt	n/a	40Ar14N1H,39K16O,37Cl18O,40Ar15N,38Ar17O,36Ar18O1H ,38Ar16O1H,37Cl17O1H,23Na32S
ICP-OES 257.610 nm	0.0014 / 0.00002 µg/mL	1	Ce, W, Re
ICP-OES 259.373 nm	0.0016 / 0.00002 µg/mL	1	U, Ta, Mo, Fe, Nb
ICP-OES 260.569 nm	0.0021 / 0.00002 µg/mL	1	Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 17, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 17, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
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CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSB10
Lot Number:	R2-SB688559
Matrix:	3% (v/v) HNO3 3% (w/v) tartaric acid
Value / Analyte(s):	10 000 µg/mL ea: Antimony
Starting Material:	Antimony Metal
Starting Material Lot#:	1857
Starting Material Purity:	99.9894%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10003 ± 47 µg/mL

Density: 1.061 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10003 ± 41 µg/mL**
ICP Assay NIST SRM 3102a Lot Number: 140911

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000200	M	Eu	<	0.000300	O	Na		0.140000	M	Se	<	0.007300	O	Zn		0.005000
M	Al		0.003200	O	Fe		0.060000	M	Nb	<	0.000100	O	Si		0.150000	O	Zr	<	0.006300
M	As	<	0.004400	M	Ga	<	0.000400	M	Nd	<	0.000100	M	Sm	<	0.000100				
M	Au	<	0.000210	M	Gd	<	0.000100	O	Ni		0.004800	M	Sn	<	0.001800				
M	B	<	0.011000	M	Ge	<	0.000600	M	Os	<	0.000110	O	Sr		0.000750				
O	Ba	<	0.004900	M	Hf	<	0.000100	O	P		0.540000	M	Ta		0.003300				
M	Be	<	0.000400	M	Hg	<	0.000110	M	Pb	<	0.000400	M	Tb	<	0.000100				
M	Bi	<	0.000200	M	Ho	<	0.000100	M	Pd	<	0.000210	M	Te	<	0.000600				
O	Ca		0.110000	M	In	<	0.000100	M	Pr	<	0.001600	M	Th	<	0.000100				
M	Cd	<	0.000200	M	Ir	<	0.000110	M	Pt	<	0.000600	M	Ti	<	0.002800				
M	Ce		0.006500	O	K		0.020000	M	Rb	<	0.001000	M	Tl	<	0.000100				
M	Co	<	0.000200	O	La	<	0.016000	M	Re	<	0.000100	M	Tm	<	0.000100				
M	Cr		0.006900	O	Li	<	0.000430	M	Rh	<	0.000300	M	U	<	0.000100				
M	Cs	<	0.000200	M	Lu	<	0.000100	M	Ru	<	0.000310	M	V	<	0.000800				
M	Cu	<	0.000600	O	Mg		0.021000	n	S	<		M	W	<	0.000200				
M	Dy	<	0.000100	O	Mn		0.001900	s	Sb	<		M	Y	<	0.000100				
M	Er	<	0.000100	M	Mo	<	0.000500	O	Sc	<	0.002300	M	Yb	<	0.000100				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 121.75 +3 6 Sb(O)C4H4O6-1

Chemical Compatibility -Stable in conc. HCl, dilute or conc. HF. Stable in dilute HNO3 as the fluoride or tartrate complex. Avoid basic media. Stable with most metals and inorganic anions in acidic media as the tartrate provided the acidity is not too high or the acid is oxidizing causing loss of the stabilizing tartrate ion. The fluoride complex of antimony is stable in strong acid but you should only mix with other metals that are fluorinated.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-2% HNO3 / LDPE container.

Sb Containing Samples (Preparation and Solution) -Metal and alloys (Soluble in H2O / HF / HNO3 mixture); Oxides (Soluble in HCl and tartaric acid or H2O / HF / HNO3 mixtures); Ores (fusion with Na2CO3 in Pt0 followed by dissolving the fuseate in a H2O / HF / HNO3 mixture); Organic based (sulfuric acid / hydrogen peroxide digestion)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 121 amu	5 ppt	N/A	105Pd16O, 89Y16O2
ICP-OES 206.833 nm	0.03/0.003 µg/mL	1	Ta, Cr, Ge, Hf
ICP-OES 217.581 nm	0.05/0.005 µg/mL	1	Nb, W, Re, Fe
ICP-OES 231.147 nm	0.06/0.006 µg/mL	1	Ni, Co, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 30, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 30, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES™
Refine your results. Redefine your industry.

Certificate of Analysis

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAS10
Lot Number:	T2-AS718260
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Arsenic
Starting Material:	As Metal
Starting Material Lot#:	2208
Starting Material Purity:	99.9971%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10060 ± 40 µg/mL

Density: 1.037 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10062 ± 46 µg/mL**
ICP Assay NIST SRM 3103a Lot Number: 100818

Assay Method #2 **10055 ± 76 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	< 0.003200	M	Eu	< 0.000530	O	Na	0.032544	M	Se	< 0.006300	O	Zn	0.001952			
M	Al	0.007593	O	Fe	0.001475	O	Nb	< 0.012000	O	Si	0.238658	O	Zr	< 0.004100			
s	As	<	M	Ga	< 0.000530	M	Nd	< 0.000530	M	Sm	< 0.000530						
M	Au	< 0.003100	M	Gd	< 0.000530	M	Ni	< 0.002100	M	Sn	< 0.000530						
M	B	0.026035	M	Ge	< 0.001600	M	Os	< 0.000520	M	Sr	< 0.000530						
M	Ba	< 0.000530	M	Hf	< 0.000530	O	P	< 0.043000	M	Ta	< 0.000530						
O	Be	< 0.000360	M	Hg	< 0.001600	M	Pb	< 0.002100	M	Tb	< 0.000530						
M	Bi	< 0.000530	M	Ho	< 0.000530	M	Pd	< 0.001100	M	Te	< 0.004700						
O	Ca	0.004339	M	In	< 0.023000	M	Pr	< 0.005300	M	Th	< 0.000530						
M	Cd	< 0.001100	M	Ir	< 0.000520	M	Pt	< 0.000530	O	Ti	< 0.002300						
M	Ce	< 0.000530	O	K	0.002061	M	Rb	< 0.000530	M	Tl	< 0.000530						
M	Co	< 0.000530	M	La	< 0.001100	M	Re	< 0.000530	M	Tm	< 0.000530						
O	Cr	< 0.001800	O	Li	< 0.000120	M	Rh	< 0.000530	M	U	< 0.000530						
M	Cs	< 0.005300	M	Lu	< 0.000530	M	Ru	< 0.000520	M	V	< 0.002700						
M	Cu	< 0.001600	O	Mg	0.000154	O	S	0.028205	M	W	< 0.012000						
M	Dy	< 0.000530	O	Mn	0.000154	M	Sb	< 0.000530	M	Y	< 0.000530						
M	Er	< 0.000530	M	Mo	< 0.000530	O	Sc	< 0.001700	M	Yb	< 0.000530						

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 74.92 ; mix of +3 and +5 ; 6 ; H3AsO4 and HAsO2

Chemical Compatibility - Arsenic has no cationic chemistry. It is soluble in HCl, HNO3,H3PO4, H2SO4 and HF aqueous matrices water and NH4OH . It is stable with most inorganic anions (forms arsenate when boiled with chromate) but many cationic metals form the insoluble arsenates under pH neutral conditions. When fluorinated and / or under acidic conditions arsenate formation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO3 / LDPE container.

As Containing Samples (Preparation and Solution) - Metal (soluble in 1:1 H2O / HNO3); Oxides (the oxide exists in crystalline and amorphous forms where the amorphic form is more water soluble. The oxides typically dissolve in dilute acidic solutions when boiled); Minerals (one gram of powered sample is fused in a Ni crucible with 10 grams of a 1:1 mix of K2CO3 and KNO3 and the melt extracted with hot water); Organic Matrices (0.2 to 0.5 grams of sample are fused with 15 grams of a 1:1 Na2CO3 / Na2O2 mix in a Ni crucible. The fuseate is extracted with water and acidified with HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 75 amu	20 ppt	N/A	40Ar35Cl, 59Co16O, 36Ar38Ar1H,8Ar37Cl,Ar39K, 150Nd2+,150Sm2+
ICP-OES 189.042 nm	0.05/0.005 µg/mL	1	Cr
ICP-OES 193.696 nm	0.1/0.01 µg/mL	1	V, Ge
ICP-OES 228.812 nm	0.1/0.01 µg/mL	1	Cd, Pt, Ir, Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 10, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **May 10, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Supervisor, Product Documentation

Certificate Approved By:

Michael Booth
Director, Technical

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGBA10
Lot Number:	R2-BA692576
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Barium
Starting Material:	Barium Nitrate
Starting Material Lot#:	1969
Starting Material Purity:	99.9982%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10022 ± 30 µg/mL

Density: 1.025 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1	**10018 ± 50 µg/mL** ICP Assay NIST SRM 3104a Lot Number: 140909
Assay Method #2	**10023 ± 31 µg/mL** Gravimetric NIST SRM Lot Number: See Sec. 4.2
Assay Method #3	**10023 ± 30 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000410	O	Eu	<	0.005200	O	Na		0.004610	M	Se	<	0.003700	O	Zn		0.000658
M	Al	<	0.003100	O	Fe		0.015707	M	Nb	<	0.000210	O	Si		0.005573	M	Zr	<	0.001300
M	As	<	0.001300	M	Ga	<	0.000210	M	Nd	<	0.000210	O	Sm	<	0.021000				
M	Au	<	0.001300	M	Gd	<	0.000210	M	Ni	<	0.000810	M	Sn	<	0.000410				
O	B	<	0.005200	M	Ge	<	0.002500	M	Os	<	0.000410	O	Sr		0.003850				
s	Ba	<		M	Hf	<	0.000810	O	P	<	0.026000	M	Ta	<	0.000410				
O	Be	<	0.000320	M	Hg	<	0.000210	M	Pb	<	0.002300	M	Tb	<	0.000210				
M	Bi	<	0.000210	M	Ho	<	0.000210	M	Pd	<	0.000210	M	Te	<	0.001900				
O	Ca		0.007093	M	In	<	0.000210	M	Pr	<	0.000210	M	Th	<	0.000210				
M	Cd	<	0.000210	M	Ir	<	0.000210	M	Pt	<	0.000210	M	Ti	<	0.002100				
M	Ce	<	0.001300	O	K		0.035467	M	Rb	<	0.002100	M	Tl	<	0.000210				
M	Co	<	0.000410	O	La	<	0.005200	M	Re	<	0.000210	M	Tm	<	0.000410				
M	Cr	<	0.001700	O	Li	<	0.000630	M	Rh	<	0.000210	M	U	<	0.000210				
M	Cs	<	0.003300	M	Lu	<	0.001700	M	Ru	<	0.000210	O	V	<	0.005200				
M	Cu	<	0.001300	O	Mg		0.000861	O	S		0.268539	M	W	<	0.000410				
M	Dy	<	0.000210	M	Mn	<	0.000410	M	Sb	<	0.001300	O	Y	<	0.005200				
M	Er	<	0.001300	M	Mo	<	0.000410	M	Sc	<	0.000410	M	Yb	<	0.001300				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 137.33 +2 6 $Ba(H_2O)_6^{+2}$
Chemical Compatibility - Soluble in HCl, and HNO_3. Avoid H_2SO_4, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, iodate, molybdate, sulfite and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1 -10,000 ppm solutions chemically stable for years in 1-3.5% HNO_3 / LDPE container.
Ba Containing Samples (Preparation and Solution) -Metal(is best dissolved in diluted HNO_3); Ores(Carbonate fusion in Pt0 followed by HCl dissolution. If sulfate is present dissolve the fuseate using HCl / tartaric acid to prevent $BaSO_4$ precipitate); Organic Matrices (dry ash and dissolve in dilute HCl.)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 138 amu	1 ppt	N/A	122Sn16O, 122Te16O
ICP-OES 230.424 nm	0.004/0.0005 µg/mL	1	Mo, Ir, Co
ICP-OES 233.527 nm	0.004/0.0003 µg/mL	1	
ICP-OES 455.403 nm	0.002/0.0001 µg/mL	1	Zr, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 11, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **May 11, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGBE10
Lot Number:	R2-BE692992
Matrix:	6% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Beryllium
Starting Material:	Beryllium Acetate
Starting Material Lot#:	2281
Starting Material Purity:	99.9998%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10032 ± 41 µg/mL

Density: 1.128 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10042 ± 67 µg/mL**
ICP Assay NIST SRM 3105a Lot Number: 090514

Assay Method #2 **10025 ± 51 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001100	M	Eu	<	0.000270	O	Na		0.040962	M	Se	<	0.005000	M	Zn		0.013054
O	Al		0.016205	O	Fe		0.015754	M	Nb	<	0.000270	O	Si		0.024307	O	Zr	<	0.001900
M	As	<	0.002900	M	Ga	<	0.000270	M	Nd	<	0.000270	M	Sm	<	0.000270				
M	Au	<	0.000520	M	Gd	<	0.000270	M	Ni	<	0.003700	M	Sn	<	0.000790				
M	B	<	0.091000	M	Ge	<	0.000270	M	Os	<	0.000260	M	Sr		0.000630				
M	Ba		0.002700	M	Hf	<	0.000270	O	P	<	0.066000	M	Ta	<	0.000270				
s	Be	<		M	Hg	<	0.000520	M	Pb	<	0.000270	M	Tb	<	0.000270				
M	Bi	<	0.000530	M	Ho	<	0.000270	M	Pd	<	0.000520	M	Te	<	0.003700				
O	Ca		0.072022	M	In	<	0.000790	M	Pr	<	0.000270	M	Th	<	0.000270				
M	Cd	<	0.000790	M	Ir	<	0.000260	M	Pt	<	0.000270	O	Ti	<	0.000400				
M	Ce	<	0.000270	O	K		0.045014	M	Rb	<	0.000270	M	Tl	<	0.000790				
O	Co	<	0.003200	M	La	<	0.000270	M	Re	<	0.000270	M	Tm	<	0.000270				
O	Cr	<	0.001800	O	Li	<	0.000660	M	Rh	<	0.001100	M	U	<	0.000270				
M	Cs		0.001440	M	Lu	<	0.000270	M	Ru	<	0.000260	M	V	<	0.000790				
M	Cu	<	0.002100	O	Mg		0.016205	i	S	<		M	W	<	0.000530				
M	Dy	<	0.000270	M	Mn		0.001215	M	Sb	<	0.000270	M	Y	<	0.000270				
M	Er	<	0.000270	M	Mo	<	0.000530	O	Sc	<	0.000930	M	Yb	<	0.000270				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 9.01 +2 4 $Be(H_2O)_4^{+2}$

Chemical Compatibility -Soluble in HCl, HNO_3, H_2SO_4 and HF aqueous matrices. Stable with all metals and inorganic anions.

Stability - 2-100 ppb levels stable for months in 1 % HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 5-10 % HNO_3 / LDPE container.

Be Containing Samples (Preparation and Solution) - Meta l(is best dissolved in diluted H_2SO_4); BeO (boiling nitric, hydrochloric, or sulfuric acids or KHSO4 fusion); Ores (H_2SO_4/HF digestion or carbonate fusion in Pt0); Organic Matrices (sulfuric/peroxide digestion or nitric/sulfuric/perchloric acid decomposition, or dry ash and dissolution according to the BeO procedure above).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 9 amu	4 ppt	N/A	
ICP-OES 234.861 nm	0.0003/0.00016 µg/mL	1	Fe, Ta, Mo
ICP-OES 313.042 nm	0.0003/0.00009 µg/mL	1	V, Ce, U
ICP-OES 313.107 nm	0.0007/0.0005 µg/mL	1	Ce, Th, Tm

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION, PERIOD OF VALIDITY AND REVISION HISTORY

11.1 Certification Issue Date

May 13, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **May 13, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

11.4 Revision Status

- Revision 1 - Revised on Thursday, Jan 14, 2021 by utruong. Revision was made for the following reason: Modified Section 7 Chemical Form in Solution.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

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fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCO10
Lot Number:	R2-CO695285
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Cobalt
Starting Material:	Co Metal
Starting Material Lot#:	2326
Starting Material Purity:	99.9934%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10012 ± 31 µg/mL

Density: 1.056 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10031 ± 67 µg/mL**
ICP Assay NIST SRM 3113 Lot Number: 190630

Assay Method #2 **10019 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10000 ± 35 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	0.014660	M	Eu	<	0.000590	O	Na	0.007534	M	Se	<	0.019000	M	Zn	0.003461	
M	Al	< 0.024000	M	Fe	0.050905	M	Nb	<	0.000590	O	Si	0.075340	M	Zr	<	0.001200	
i	As	<	M	Ga	<	0.000590	M	Nd	<	0.000590	M	Sm	<	0.000590			
M	Au	< 0.004100	M	Gd	<	0.000590	O	Ni	0.427608	M	Sn	<	0.001200				
M	B	< 0.031000	M	Ge	<	0.003000	M	Os	<	0.000590	O	Sr	<	0.000260			
M	Ba	< 0.000590	M	Hf	<	0.000590	n	P	<		M	Ta	<	0.001200			
O	Be	< 0.001300	M	Hg	<	0.001800	M	Pb	0.003257	M	Tb	<	0.000590				
M	Bi	< 0.003000	M	Ho	<	0.000590	M	Pd	<	0.000590	M	Te	<	0.005300			
O	Ca	0.010588	M	In	<	0.001200	M	Pr	<	0.000590	M	Th	<	0.000590			
M	Cd	< 0.004700	M	Ir	<	0.001200	M	Pt	<	0.002400	M	Ti	<	0.014000			
M	Ce	< 0.000590	O	K	0.008144	M	Rb	<	0.000590	M	Tl	0.002647					
s	Co	<	M	La	<	0.000590	M	Re	<	0.000590	M	Tm	<	0.000590			
M	Cr	< 0.021000	O	Li	<	0.000130	M	Rh	<	0.000590	M	U	<	0.000590			
M	Cs	< 0.002400	M	Lu	<	0.000590	M	Ru	<	0.007100	O	V	<	0.000880			
M	Cu	0.189369	O	Mg	0.001893	n	S	<		M	W	<	0.000590				
M	Dy	< 0.000590	M	Mn	<	0.001800	M	Sb	<	0.003600	M	Y	<	0.000590			
M	Er	< 0.000590	M	Mo	<	0.002400	O	Sc	<	0.001600	M	Yb	<	0.000590			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.93 +2 6 $Co(H_2O)_6^{2+}$

Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Co Containing Samples (Preparation and Solution) - Metal (soluble in HNO_3); Oxides (Soluble in HCl); Ores (dissolve in HCl / HNO_3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 59 amu	2 ppt	n/a	42Ca16O1H , 40Ar18O1H , 36Ar23Na, 43Ca16O, 24Mg35Cl
ICP-OES 228.616 nm	0.01/0.001 µg/mL	1	
ICP-OES 237.862 nm	0.01/0.002 µg/mL	1	W, Re, Al, Ta
ICP-OES 238.892 nm	0.01/0.002 µg/mL	1	Fe, W, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 04, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **August 04, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

INORGANIC VENTURES™
Refine your results. Redefine your industry.

Certificate of Analysis

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAG10
Lot Number:	S2-AG712977
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Silver
Starting Material:	Ag Shot
Starting Material Lot#:	2289
Starting Material Purity:	99.9951%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10051 ± 30 µg/mL

Density: 1.056 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1	**10051 ± 52 µg/mL** ICP Assay NIST SRM 3151 Lot Number: 160729
Assay Method #2	**10051 ± 19 µg/mL** Volhard NIST SRM 999c Lot Number: 999c
Assay Method #3	**10049 ± 31 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

s	Ag	<		M	Eu	<	0.000260	O	Na		0.003811	M	Se	<	0.003900	O	Zn		0.048146
M	Al		0.002688	O	Fe		0.006419	M	Nb	<	0.000260	O	Si		0.005215	M	Zr	<	0.000260
M	As	<	0.001100	M	Ga	<	0.000260	M	Nd	<	0.000260	M	Sm	<	0.000260				
M	Au	<	0.000260	M	Gd	<	0.000260	O	Ni		0.001765	M	Sn		0.020060				
O	B	<	0.004300	M	Ge	<	0.002300	M	Os	<	0.001100	O	Sr	<	0.000110				
M	Ba	<	0.000520	M	Hf	<	0.000260	O	P	<	0.017000	M	Ta	<	0.000260				
O	Be	<	0.001100	M	Hg	<	0.000770	M	Pb	<	0.003600	M	Tb	<	0.000260				
M	Bi		0.004814	M	Ho	<	0.000260	M	Pd		0.044134	M	Te	<	0.009000				
O	Ca		0.005215	M	In		0.003691	M	Pr	<	0.000260	M	Th	<	0.000260				
M	Cd	<	0.000260	M	Ir	<	0.000520	M	Pt	<	0.001100	O	Ti	<	0.000440				
M	Ce	<	0.002100	O	K	<	0.008700	M	Rb	<	0.001100	M	Tl	<	0.004100				
O	Co	<	0.000330	M	La	<	0.000260	M	Re	<	0.000260	M	Tm	<	0.000260				
O	Cr	<	0.002500	O	Li	<	0.000110	M	Rh	<	0.000520	M	U	<	0.000260				
M	Cs	<	0.002600	M	Lu	<	0.000260	M	Ru	<	0.000260	M	V	<	0.000260				
O	Cu		0.357085	O	Mg		0.001203	O	S	<	0.017000	M	W	<	0.000260				
M	Dy	<	0.000260	O	Mn	<	0.000220	M	Sb	<	0.014000	M	Y	<	0.000260				
M	Er	<	0.000260	M	Mo	<	0.000260	O	Sc	<	0.000220	M	Yb	<	0.000260				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 107.87 +1 6 $Ag(H_2O)_6^+$

Chemical Compatibility -Stable in HNO_3, and HF. Avoid basic media. Ag forms more insoluble salts than any other metal. It also is subject to photochemical reduction to the metal in HCl media although 10 µg/mL solutions in 10% HCl [$AgCl_{x1-x}$] are commonly used in the analytical laboratory. The most common solubility problems exist with arsenate, arsenite , bromide, chloride, iodide, carbonate , chromate, cyanide, iodate, oxalate, oxide, sulfate, sulfide, tartrate, and thiocyanate in aqueous media. The addition of nitric acid renders many of these salts soluble.

Stability - 2-100 ppb levels stable for 75+ days when mixed with equivalent levels of all other elements including the precious metals (where chloride is present) when in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Ag Containing Samples (Preparation and Solution) -Metal (Soluble in HNO_3); Oxides (Soluble in HNO_3); Ores (Digestion with conc. HNO_3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 107 amu	1 ppt	N/A	91Zr16O
ICP-OES 243.779 nm	0.12/0.01 µg/mL	1	Mn, Th, Ni, Rh
ICP-OES 328.068 nm	0.007/0.0007 µg/mL	1	Ce, Rh, V
ICP-OES 338.289 nm	0.013/0.001 µg/mL	1	Ce, Cr, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 28, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 28, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Supervisor, Product Documentation

Certificate Approved By:

Michael Booth
Director, Technical

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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Certificate of Analysis

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F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCR(3)10
Lot Number:	S2-CR709784
Matrix:	10% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Chromium
Starting Material:	Cr Metal
Starting Material Lot#:	2328
Starting Material Purity:	99.9951%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10027 ± 41 µg/mL

Density: 1.072 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10027 ± 40 µg/mL**
ICP Assay NIST SRM 3112a Lot Number: 170630

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001700	M	Eu	<	0.003400	O	Na		0.090372	M	Se	<	0.012000	O	Zn	<	0.006100
M	Al		0.034916	O	Fe		0.246471	M	Nb	<	0.017000	n	Si	<		M	Zr	<	0.007800
M	As	<	0.028000	O	Ga	<	0.013000	M	Nd	<	0.013000	M	Sm	<	0.006900				
M	Au	<	0.001700	M	Gd	<	0.000560	M	Ni		0.016020	M	Sn		0.006983				
O	B	<	0.025000	O	Ge	<	0.014000	M	Os	<	0.000560	M	Sr		0.006367				
M	Ba	<	0.008900	M	Hf	<	0.000560	i	P	<		M	Ta	<	0.000560				
M	Be	<	0.013000	M	Hg	<	0.001700	M	Pb		0.010064	M	Tb	<	0.000560				
M	Bi	<	0.002300	M	Ho	<	0.000560	M	Pd	<	0.021000	M	Te	<	0.010000				
O	Ca		0.075995	M	In	<	0.000560	M	Pr	<	0.001700	M	Th	<	0.000560				
M	Cd	<	0.000560	M	Ir	<	0.000560	M	Pt	<	0.001200	O	Ti		0.013555				
M	Ce	<	0.001200	O	K		0.043132	i	Rb	<		M	Tl	<	0.000560				
M	Co	<	0.002600	M	La	<	0.001200	M	Re	<	0.001200	O	Tm	<	0.013000				
s	Cr	<		O	Li		0.000390	M	Rh	<	0.095000	M	U	<	0.000560				
M	Cs	<	0.007800	M	Lu	<	0.000560	M	Ru	<	0.087000	O	V		0.014993				
O	Cu		0.007599	O	Mg		0.000883	i	S	<		M	W	<	0.049000				
M	Dy	<	0.000560	M	Mn		0.008626	M	Sb	<	0.003400	M	Y	<	0.001700				
M	Er	<	0.019000	M	Mo	<	0.032000	M	Sc		0.003080	M	Yb	<	0.000560				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 52.00 +3 6 $Cr(H_2O)_6^{3+}$

Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4, HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Cr3 Containing Samples (Preparation and Solution) -Metal (soluble in HCl); Oxides/Ores (Chrome ore/oxides are very difficult to dissolve. The following procedures [A-D] are commonly used: A. Fusion with $KHSO_4$ and extraction with hot KCl. The residue fused with Na_2CO_3 and $KClO_3$, 3:1. B. Fusion with $NaKSO_4$ and NaF 2:1, C. Fusion with magnesia or lime and sodium or potassium carbonates, 4:1. D. Fusion with Na_2O_2 or NaOH and KNO_3 or NaOH and Na_2O_2. Nickel, iron, copper, or silver crucibles should be used for D. Platinum may be used for A, <, C); Organic Matrices (ash at 4500C followed by one of the fusion methods above or sulfuric/hydrogen peroxide acid digestions may be applicable to non oxide containing samples).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 52 amu	40 ppt	N/A	36S16O, 36Ar16O - The 50Cr, 53Cr, 54Cr lines suffer from many more potential interferences from sulfur, chlorine and argon compounds of oxygen, nitrogen and carbon.
ICP-OES 205.552 nm	0.006/0.0008 µg/mL	1	Os
ICP-OES 276.654 nm	0.01/0.001 µg/mL	1	Cu, Ta, V
ICP-OES 284.325 nm	0.008/0.0007 µg/mL	1	

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 26, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **October 26, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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300 Technology Drive
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CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGNI10
Lot Number:	P2-NI686384
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Nickel
Starting Material:	Ni Metal
Starting Material Lot#:	2277 and 2282
Starting Material Purity:	99.9992%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9979 ± 30 µg/mL

Density: 1.038 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9971 ± 54 µg/mL**
ICP Assay NIST SRM 3136 Lot Number: 120619

Assay Method #2 **9970 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **9993 ± 33 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag		0.002606	M	Eu	<	0.001100	O	Na		0.004965	O	Se	<	0.067000	M	Zn		0.006578
M	Al	<	0.013000	O	Fe		0.018618	M	Nb	<	0.001100	O	Si		0.010923	M	Zr	<	0.001100
O	As	<	0.067000	M	Ga	<	0.001100	M	Nd	<	0.001100	M	Sm	<	0.001100				
M	Au	<	0.002100	M	Gd	<	0.001100	s	Ni	<		M	Sn	<	0.016000				
M	B	<	0.017000	M	Ge	<	0.004200	M	Os		0.002110	O	Sr	<	0.000940				
M	Ba	<	0.001100	M	Hf	<	0.001100	i	P	<		M	Ta	<	0.001100				
O	Be	<	0.000410	M	Hg		0.014895	M	Pb		0.006578	M	Tb	<	0.001100				
M	Bi	<	0.004200	M	Ho	<	0.001100	M	Pd	<	0.001100	M	Te	<	0.015000				
O	Ca		0.003351	M	In	<	0.001100	M	Pr	<	0.001100	M	Th	<	0.001100				
M	Cd		0.001365	M	Ir		0.004716	M	Pt	<	0.001100	M	Ti	<	0.004200				
M	Ce	<	0.001100	O	K		0.004716	M	Rb	<	0.001100	M	Tl	<	0.001100				
O	Co		0.017377	M	La	<	0.001100	M	Re		0.001737	M	Tm	<	0.001100				
O	Cr	<	0.006700	O	Li	<	0.000140	M	Rh	<	0.006300	M	U	<	0.001100				
M	Cs	<	0.007300	M	Lu	<	0.001100	M	Ru	<	0.019000	M	V	<	0.002100				
M	Cu		0.004096	O	Mg		0.000372	i	S	<		M	W	<	0.006300				
M	Dy	<	0.001100	O	Mn	<	0.001900	M	Sb		0.005833	O	Y	<	0.000540				
M	Er	<	0.001100	M	Mo	<	0.008400	M	Sc	<	0.002100	M	Yb	<	0.001100				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.69 +2 6 Ni(H2O)62+

Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Ni Containing Samples (Preparation and Solution) -Metal (Soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 60 amu	100 ppt	n/a	43Ca16O1H , 44Ca16O, 23Na37Cl
ICP-OES 221.647 nm	0.01 / 0.0009 µg/mL	1	Si
ICP-OES 231.604 nm	0.02 / 0.002 µg/mL	1	Sb, Ta, Co
ICP-OES 232.003 nm	0.02 / 0.006 µg/mL	1	Cr, Re, Os, Nb, Ag, Pt, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 02, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 02, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES™
Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
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F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGV10
Lot Number:	S2-V711005
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Vanadium
Starting Material:	Vanadium Pentoxide
Starting Material Lot#:	1782
Starting Material Purity:	99.9877%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10014 ± 30 µg/mL

Density: 1.104 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10017 ± 42 µg/mL**
ICP Assay NIST SRM 3165 Lot Number: 160906

Assay Method #2 **10013 ± 30 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	< 0.000110	M	Eu	< 0.000110	O	Na	0.120000	M	Se	< 0.009400	M	Zn	0.009400			
O	Al	0.120000	O	Fe	0.460000	M	Nb	< 0.001300	O	Si	0.270000	M	Zr	< 0.002900			
M	As	< 0.000210	M	Ga	< 0.009300	M	Nd	< 0.000610	M	Sm	< 0.000110						
M	Au	< 0.004700	M	Gd	< 0.000110	M	Ni	0.012000	M	Sn	0.003900						
M	B	0.051000	M	Ge	< 0.000410	M	Os	< 0.000110	O	Sr	0.007100						
M	Ba	0.003600	M	Hf	< 0.000110	O	P	< 0.034000	M	Ta	< 0.000110						
O	Be	< 0.000560	M	Hg	< 0.000410	M	Pb	0.001400	M	Tb	< 0.000110						
M	Bi	< 0.000210	M	Ho	< 0.000110	M	Pd	< 0.000410	M	Te	< 0.000110						
O	Ca	0.730000	M	In	< 0.000110	M	Pr	< 0.000110	M	Th	< 0.000210						
M	Cd	< 0.000610	M	Ir	< 0.000110	M	Pt	< 0.000110	M	Ti	0.017000						
M	Ce	< 0.000610	M	K	0.052000	M	Rb	< 0.000310	M	Tl	< 0.000110						
M	Co	< 0.001300	M	La	< 0.000410	M	Re	0.001700	M	Tm	< 0.000110						
O	Cr	0.170000	M	Li	< 0.000810	M	Rh	< 0.000110	M	U	< 0.000410						
M	Cs	0.005600	M	Lu	< 0.000110	M	Ru	< 0.000110	s	V	<						
M	Cu	< 0.001300	M	Mg	0.053000	i	S	<	M	W	0.002000						
M	Dy	< 0.000110	M	Mn	0.007900	M	Sb	0.078000	M	Y	< 0.000110						
M	Er	< 0.000110	M	Mo	0.094000	M	Sc	< 0.000410	M	Yb	< 0.000110						

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 50.94 +5 6 H2V10O284-

Chemical Compatibility -Soluble in HCl, HNO3, H2SO4, HF, H3PO4 and strong basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

V Containing Samples (Preparation and Solution) -Metal (Fusion with NaOH or KOH in Ni0 or Na2CO3 / KNO3); Oxides (V2O3 - use HCl, V2O4 - use HCl or HNO3, V2O5 - use concentrated acids); Ores (Na2CO3 / KNO3 in Pt0 caution - nitrates attack Pto followed by water extraction of fuseate); Organic Matrices (Ash at 450 EC followed by dissolving according to V2O5 above) .

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 51 amu	4 ppt	N/A	34S16O1H, 35Cl16O, 38Ar13C, 36Ar15N, 36Ar14N1H, 37Cl14N,36S15N, 33S18O, 34S17O, 102Ru+2,02Pd+2
ICP-OES 290.882 nm	0.008 / 0.0008 µg/mL	1	Hf, Nb
ICP-OES 292.402 nm	0.006 / 0.001 µg/mL	1	Th
ICP-OES 309.311 nm	0.005 / 0.001 µg/mL	1	Mg, U, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 28, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 28, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

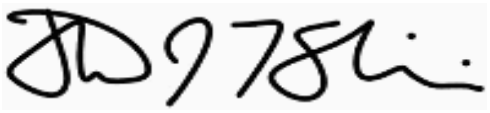
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAL10
Lot Number:	T2-AL716102
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Aluminum
Starting Material:	Aluminum Nitrate Nonahydrate
Starting Material Lot#:	2460
Starting Material Purity:	99.9938%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10049 ± 31 µg/mL

Density: 1.087 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10059 ± 40 µg/mL**
ICP Assay NIST SRM 3101a Lot Number: 140903

Assay Method #2 **10044 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10049 ± 35 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.002100	M	Eu	<	0.002100	O	Na		0.352819	M	Se	<	0.005200	M	Zn	0.006018
s	Al	<		O	Fe		0.074714	M	Nb	<	0.000520	O	Si		0.017848	O	Zr	0.004358
M	As		0.008716	O	Ga		0.112072	M	Nd	<	0.000520	M	Sm	<	0.000520			
M	Au	<	0.008400	M	Gd	<	0.001100	O	Ni	<	0.006000	M	Sn		0.000747			
O	B	<	0.014000	M	Ge	<	0.005200	M	Os	<	0.000650	O	Sr		0.000518			
O	Ba		0.012867	M	Hf	<	0.004100	n	P	<		M	Ta	<	0.000520			
O	Be	<	0.000270	M	Hg	<	0.002000	M	Pb		0.002282	M	Tb	<	0.000520			
M	Bi		0.001930	M	Ho	<	0.000520	M	Pd	<	0.000520	M	Te	<	0.001100			
O	Ca		0.076790	M	In	<	0.002100	M	Pr	<	0.000520	M	Th	<	0.000520			
M	Cd	<	0.000520	M	Ir	<	0.000650	M	Pt	<	0.000520	O	Ti		0.001930			
M	Ce	<	0.001100	O	K		0.043583	M	Rb	<	0.000520	M	Tl	<	0.000520			
O	Co	<	0.005400	M	La	<	0.002100	M	Re	<	0.000520	M	Tm	<	0.000520			
O	Cr		0.006018	O	Li		0.000112	M	Rh	<	0.000520	M	U	<	0.000520			
M	Cs		0.000643	M	Lu	<	0.000520	M	Ru	<	0.002000	M	V		0.001286			
O	Cu	<	0.008300	O	Mg		0.068488	i	S	<		M	W	<	0.009800			
M	Dy	<	0.002100	O	Mn		0.000913	M	Sb	<	0.003100	M	Y	<	0.001100			
M	Er	<	0.000520	M	Mo		0.005396	O	Sc	<	0.000950	M	Yb	<	0.000520			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 26.98 +3 6 Al(H2O)6+3
Chemical Compatibility -Soluble in HCl, HNO3, v F and v 2SO4. Avoid neutral media. Soluble in strongly basic NaOH forming the Al(OH)4(H2O)21- species. Stable with most metals and inorganic anions. The phosphate is insoluble in water and only slightly soluble in acid.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.
Al Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO3); a- Al2O3 (Na2CO3 fusion in Pt0);
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 27 amu	30 ppt	N/A	12C15N, 13C14N, 1H12C14N, 11B16O, 54Cr2+, 54Fe2+
ICP-OES 167.078 nm	0.1/0.009 µg/mL	1	Fe
ICP-OES 394.401 nm	0.05/0.006 µg/mL	1	U, Ce
ICP-OES 396.152 nm	0.03/0.006 µg/mL	1	Mo, Zr, Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 22, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 22, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

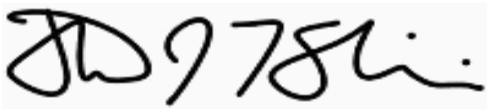
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGK10
Lot Number:	S2-K711973
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Potassium
Starting Material:	KNO3
Starting Material Lot#:	2313
Starting Material Purity:	99.9971%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9992 ± 30 µg/mL

Density: 1.024 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9987 ± 24 µg/mL**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

Assay Method #2 **10004 ± 84 µg/mL**
ICP Assay NIST SRM 3141a Lot Number: 140813

Assay Method #3 **10007 ± 45 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001400	M	Eu	<	0.000660	O	Na		0.246220	M	Se	<	0.007900	O	Zn		0.018056
O	Al		0.001592	O	Fe		0.005909	M	Nb	<	0.000660	O	Si		0.011490	O	Zr	<	0.001600
M	As	<	0.005300	M	Ga	<	0.000660	M	Nd	<	0.000660	M	Sm	<	0.000660				
M	Au	<	0.002000	M	Gd	<	0.000660	O	Ni	<	0.004900	M	Sn	<	0.000660				
O	B	<	0.005600	M	Ge	<	0.002000	M	Os	<	0.003300	O	Sr		0.000055				
O	Ba	<	0.000860	M	Hf	<	0.000660	O	P	<	0.032000	M	Ta	<	0.000660				
O	Be	<	0.000082	M	Hg	<	0.002000	M	Pb	<	0.002300	M	Tb	<	0.000660				
M	Bi	<	0.006600	M	Ho	<	0.000660	M	Pd	<	0.000660	M	Te	<	0.017000				
O	Ca		0.031187	M	In	<	0.000660	M	Pr	<	0.000660	M	Th	<	0.000660				
O	Cd	<	0.000450	M	Ir	<	0.000660	M	Pt	<	0.002700	M	Ti	<	0.000660				
M	Ce	<	0.000660	s	K	<		M	Rb		0.476026	M	Tl	<	0.000660				
O	Co	<	0.000780	M	La	<	0.000660	M	Re	<	0.000660	M	Tm	<	0.000660				
O	Cr		0.000541	O	Li	<	0.000084	M	Rh	<	0.000660	M	U	<	0.000660				
M	Cs	<	0.000660	M	Lu	<	0.000660	M	Ru	<	0.000660	O	V	<	0.001100				
M	Cu	<	0.002700	O	Mg		0.006237	O	S		0.027905	M	W	<	0.000660				
M	Dy	<	0.000660	O	Mn		0.000476	M	Sb	<	0.000660	M	Y	<	0.000660				
M	Er	<	0.000660	M	Mo	<	0.000660	O	Sc	<	0.000340	O	Yb	<	0.000270				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 39.10 +1 (6) K+(aq)
Chemical Compatibility -Soluble in HCl, HNO3, H2SO4 and HF aqueous matrices. Avoid use of HClO4 due to insolubility of the perchlorate. Stable with all metals and inorganic anions except ClO4-.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
K Containing Samples (Preparation and Solution) - Metal (Dissolves very rapidly in water); Ores (Sodium carbonate fusion in Pt0 followed by HCl dissolution-blank levels of K in sodium carbonate critical); Organic Matrices (Sulfuric/peroxide digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 39 amu	10 ppt	n/a	38ArH, 23Na16O, 78Se
ICP-OES 404.721 nm	1.1 / 0.05 µg/mL	1	U, Ce
ICP-OES 766.490 nm	0.4 / 0.001 µg/mL	1	2nd order radiation from R.E.s on some optical designs
ICP-OES 771.531 nm	1.0 / 0.03 µg/mL	1	2nd order radiation from R.E.s on some optical designs

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 10, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 10, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

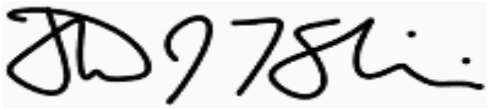
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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Certificate of Analysis

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inorganicventures.com

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F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMG10
Lot Number:	S2-MG704239
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Magnesium
Starting Material:	Magnesium Metal
Starting Material Lot#:	2168
Starting Material Purity:	99.9984%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10053 ± 30 µg/mL

Density: 1.053 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10022 ± 62 µg/mL**
ICP Assay NIST SRM 3131a Lot Number: 140110

Assay Method #2 **10078 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10033 ± 26 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Ag		0.002106	M	Eu	<	0.000910	O	Na		0.071075	O	Se	<	0.048000	O	Zn		0.003299
M	Al		0.003553	M	Fe		0.002538	M	Nb	<	0.000460	O	Si	<	0.032000	O	Zr	<	0.002700
M	As	<	0.001400	M	Ga	<	0.000460	M	Nd	<	0.000910	M	Sm	<	0.000460				
M	Au	<	0.001400	M	Gd	<	0.000460	O	Ni	<	0.001600	M	Sn	<	0.002300				
O	B		0.006853	M	Ge	<	0.001400	M	Os	<	0.000460	O	Sr		0.000279				
O	Ba		0.000964	M	Hf	<	0.000460	O	P		0.015230	M	Ta	<	0.000460				
O	Be	<	0.000120	M	Hg	<	0.000460	M	Pb	<	0.000460	M	Tb	<	0.000460				
M	Bi	<	0.000460	M	Ho	<	0.000460	M	Pd	<	0.003200	M	Te	<	0.007300				
O	Ca		0.053306	M	In	<	0.000460	M	Pr	<	0.000460	M	Th	<	0.000460				
O	Cd	<	0.000360	M	Ir	<	0.000460	M	Pt	<	0.001900	O	Ti	<	0.001700				
M	Ce	<	0.002300	M	K		0.048229	M	Rb		0.002411	M	Tl		0.003046				
M	Co	<	0.000910	M	La	<	0.002800	M	Re	<	0.000460	M	Tm	<	0.000460				
M	Cr	<	0.002300	O	Li		0.027922	M	Rh	<	0.000460	M	U	<	0.000460				
M	Cs		0.001040	M	Lu	<	0.000460	M	Ru	<	0.000460	M	V	<	0.000460				
O	Cu	<	0.003000	s	Mg	<		O	S	<	0.190000	M	W	<	0.000460				
M	Dy	<	0.000460	O	Mn		0.015230	M	Sb		0.020814	O	Y	<	0.000720				
M	Er	<	0.000460	M	Mo	<	0.000910	O	Sc	<	0.000480	M	Yb	<	0.000460				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 24.31 +2 6 $Mg(H_2O)_6^{+2}$

Chemical Compatibility -Soluble in HCl, HNO_3, and H_2SO_4 avoid HF, H_3PO_4 and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicates, carbonates, hydroxides, oxides, and tungstates in neutral and slightly acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO_3 / LDPE container.

Mg Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO_3); Oxide (Readily soluble in above compatible aqueous acidic solutions); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric / peroxide digestion or nitric / sulfuric / perchloric acid decomposition, or dry ash and dissolution in dilute HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 24 amu	42 ppt	n/a	7Li17O, 48Ti+2 , 48Ca+2
ICP-OES 279.553 nm	0.0002 / 0.00003 µg/mL	1	Th
ICP-OES 280.270 nm	0.0003 / 0.00005 µg/mL	1	U, V
ICP-OES 285.213 nm	0.002 / 0.00003 µg/mL	1	U, Hf, Cr, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 23, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 23, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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Certificate of Analysis

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F: 540-585-3012
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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCA10
Lot Number:	T2-CA716103
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Calcium
Starting Material:	CaCO3
Starting Material Lot#:	2472
Starting Material Purity:	99.9950%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10005 ± 30 µg/mL

Density: 1.039 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10005 ± 45 µg/mL**
ICP Assay NIST SRM 3109a Lot Number: 130213

Assay Method #2 **10005 ± 25 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10005 ± 31 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001200	M	Eu	<	0.001200	O	Na		0.006112	M	Se	<	0.024000	M	Zn		0.005362
M	Al		0.065419	O	Fe		0.009115	M	Nb	<	0.001200	O	Si		0.139417	O	Zr	<	0.006700
O	As	<	0.013000	M	Ga	<	0.015000	M	Nd	<	0.020000	M	Sm	<	0.001200				
M	Au	<	0.017000	M	Gd	<	0.004800	O	Ni		0.000793	M	Sn	<	0.003600				
O	B		0.001179	M	Ge	<	0.003600	M	Os	<	0.001200	M	Sr		0.081505				
O	Ba		0.002788	M	Hf	<	0.001200	O	P	<	0.041000	M	Ta	<	0.001200				
O	Be	<	0.000410	M	Hg	<	0.004800	M	Pb		0.001608	M	Tb	<	0.001200				
M	Bi		0.001608	M	Ho	<	0.001200	M	Pd	<	0.001200	M	Te	<	0.003600				
s	Ca	<		M	In	<	0.001200	M	Pr		0.000257	M	Th	<	0.001200				
O	Cd	<	0.001300	M	Ir	<	0.001200	M	Pt	<	0.003600	O	Ti	<	0.001900				
M	Ce		0.001029	O	K		0.009759	M	Rb	<	0.001200	M	Tl	<	0.001200				
O	Co		0.000418	M	La		0.001823	M	Re	<	0.001200	M	Tm	<	0.001200				
O	Cr		0.003324	O	Li	<	0.007300	M	Rh	<	0.001200	M	U		0.002144				
M	Cs		0.007399	M	Lu		0.000128	M	Ru	<	0.001200	M	V		0.001286				
O	Cu	<	0.011000	M	Mg		1.286934	O	S		0.055767	O	W	<	0.024000				
M	Dy	<	0.002400	O	Mn		0.004611	M	Sb	<	0.009600	O	Y		0.000536				
M	Er	<	0.002400	M	Mo		0.003539	O	Sc	<	0.001400	M	Yb	<	0.001200				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 40.08 +2 6 Ca(H2O)6+2
Chemical Compatibility - Soluble in HCl and HNO3. Avoid H2SO4, vF, v3PO4 and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO3 / LDPE container.
Ca Containing Samples)Preparation and Solution) -Metal (best dissolved in diluted HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (dry ash and dissolution in dilute HCl. Do not heat when dissolving to avoid precipitation of SiO2). The oxide, hydroxide, carbonate, phosphate, and fluoride of calcium are soluble in % levels of HCl or HNO3. The sulfates (gypsum, anhydrite, etc.), certain silicates, and complex compounds require fusion with Na2CO3 followed by HCl / water dissolution. Note that contamination is a very real problem when analyzing for trace levels.
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 44 amu	1200 ppt	n/a	16O212C, 28Si16O, 88Sr
ICP-OES 393.366 nm	0.0002 / 0.00004 µg/mL	1	U, Ce
ICP-OES 396.847 nm	0.0005 / 0.00006 µg/mL	1	Th
ICP-OES 422.673 nm	0.01 / 0.001 µg/mL	1	Ge

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 14, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 14, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

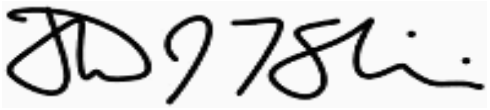
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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Certificate of Analysis

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F: 540-585-3012
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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGNA10
Lot Number:	T2-NA717221
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Sodium
Starting Material:	Na2CO3
Starting Material Lot#:	2358 and 2453
Starting Material Purity:	99.9977%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9977 ± 30 µg/mL

Density: 1.033 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9974 ± 18 µg/mL**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

Assay Method #2 **9977 ± 34 µg/mL**
ICP Assay NIST SRM 3152a Lot Number: 200413

Assay Method #3 **9987 ± 31 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000930	M	Eu	<	0.000930	s	Na	<		M	Se	<	0.003800	O	Zn		0.000138
M	Al		0.004409	O	Fe		0.002393	M	Nb	<	0.000930	O	Si		0.056696	O	Zr	<	0.003200
O	As	<	0.023000	M	Ga	<	0.000930	M	Nd	<	0.000930	M	Sm	<	0.000930				
O	Au	<	0.004100	M	Gd	<	0.000930	O	Ni	<	0.003000	M	Sn	<	0.002800				
O	B		0.001385	M	Ge	<	0.004700	M	Os	<	0.000930	O	Sr		0.000251				
M	Ba		0.004031	M	Hf	<	0.000930	O	P		0.010205	M	Ta	<	0.000930				
O	Be	<	0.000130	M	Hg	<	0.000930	M	Pb	<	0.000930	M	Tb	<	0.000930				
M	Bi	<	0.000930	M	Ho	<	0.000930	M	Pd	<	0.000930	M	Te	<	0.001900				
O	Ca		0.176388	M	In	<	0.000930	M	Pr	<	0.000930	M	Th		0.000352				
O	Cd	<	0.000860	M	Ir	<	0.000930	M	Pt	<	0.000930	O	Ti		0.000592				
M	Ce	<	0.001900	O	K		0.302380	M	Rb	<	0.000930	M	Tl	<	0.000930				
O	Co	<	0.001800	O	La	<	0.002100	M	Re	<	0.000930	M	Tm	<	0.000930				
M	Cr	<	0.002800	O	Li		0.000031	M	Rh	<	0.000930	M	U	<	0.000930				
M	Cs	<	0.000930	M	Lu	<	0.000930	M	Ru	<	0.001900	O	V	<	0.001600				
O	Cu	<	0.003900	O	Mg		0.026458	O	S		0.040317	O	W	<	0.028000				
M	Dy	<	0.000930	O	Mn	<	0.000740	M	Sb	<	0.000930	O	Y	<	0.000860				
M	Er	<	0.000930	O	Mo	<	0.003600	O	Sc	<	0.000610	O	Yb	<	0.000250				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 22.99 +1 (6) Na+(aq) largely ionic in nature

Chemical Compatibility -Soluble in HCl, HNO3, H2SO4 and HF aqueous matrices. Stable with all metals and inorganic anions.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Na Containing Samples (Preparation and Solution) - Metal (Dissolves very rapidly in water); Ores (Lithium carbonate fusion in graphite crucible followed by HCl dissolution - blank levels of Na in lithium carbonate critical); Organic Matrices (Sulfuric / peroxide digestion or nitric/sulfuric/perchloric acid decomposition).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 23 amu	310 ppt	n/a	46Ti+2 , 46Ca+2
ICP-OES 330.237 nm	2.0 / 0.09 µg/mL	1	Pd, Zn
ICP-OES 588.995 nm	0.03 / 0.006 µg/mL	1	2nd order radiation from R.E.s on some optical designs
ICP-OES 589.595 nm	0.07 / 0.00009 µg/mL	1	2nd order radiation from R.E.s on some optical designs

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 20, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 20, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

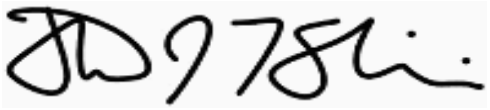
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGU1
Lot Number:	S2-U707914
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Uranium
Starting Material:	Uranyl Nitrate Hexahydrate
Starting Material Lot#:	P2-2322
Starting Material Purity:	99.9997%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 5 µg/mL

Density: 1.010 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **998 ± 5 µg/mL**
ICP Assay NIST SRM 3164 Lot Number: 080521

Assay Method #2 **1001 ± 6 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.19 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000270	M	Eu	<	0.000270	M	Na	<	0.011000	M	Se	<	0.009300	M	Zn	0.002358
M	Al	<	0.011000	M	Fe		0.003222	M	Nb	<	0.000270	M	Si	<	0.160000	M	Zr	< 0.001100
M	As	<	0.002400	M	Ga	<	0.000270	M	Nd	<	0.000270	M	Sm	<	0.000270			
M	Au	<	0.000270	M	Gd	<	0.000270	M	Ni	<	0.020000	M	Sn	<	0.011000			
M	B	<	0.000270	M	Ge	<	0.000800	M	Os	<	0.001900	M	Sr	<	0.000270			
M	Ba	<	0.003800	M	Hf	<	0.000270	i	P	<		M	Ta	<	0.000270			
M	Be	<	0.000270	M	Hg	<	0.000540	M	Pb	<	0.002200	M	Tb	<	0.000270			
M	Bi	<	0.000270	M	Ho	<	0.000270	M	Pd	<	0.000540	M	Te	<	0.003800			
M	Ca	<	0.140000	M	In	<	0.000270	M	Pr	<	0.000270	M	Th		0.000129			
M	Cd	<	0.000270	M	Ir	<	0.000270	M	Pt	<	0.000270	M	Ti	<	0.002700			
M	Ce	<	0.000540	O	K	<	0.250000	M	Rb	<	0.000800	M	Tl	<	0.000270			
M	Co	<	0.000800	M	La		0.000117	M	Re	<	0.064000	M	Tm	<	0.000270			
M	Cr		0.000943	M	Li	<	0.003000	M	Rh	<	0.000270	s	U	<				
M	Cs		0.000106	M	Lu	<	0.000270	M	Ru	<	0.000540	M	V	<	0.000540			
M	Cu	<	0.001100	M	Mg	<	0.003000	i	S	<		M	W	<	0.000540			
M	Dy	<	0.000270	M	Mn	<	0.006900	M	Sb	<	0.000270	M	Y	<	0.000270			
M	Er	<	0.000270	M	Mo	<	0.006400	M	Sc	<	0.000540	M	Yb	<	0.000270			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 238.03 +6 8 UO22+(uranyl)
Chemical Compatibility - Soluble in HCl and HNO3. Avoid H3PO4. H2SO4 and HF matrices should not be a problem depending upon [U]. Although the UO22+ ion is distinctly basic, any U+4 will precipitate in basic media. UO22+salts are generally soluble in water and UO22+ is stable with most metals and inorganic anions. The uranyl phosphate is insoluble in water. UF4 and UF6 are water soluble.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.
U Containing Samples (Preparation and Solution) -Metal (Dissolves rapidly in HCl and HNO3); Oxide (Soluble in HNO3); Ores (Digest for 1-2 hours with 1 gram of ore to 30 mL 1:1 HNO3. Silica insolubles are removed by filtration after bringing the sample to fumes with conc. H2SO4.)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 238 amu	2 ppt	N/A	206Pb16O2
ICP-OES 263.553 nm	0.3 / 0.01 µg/mL	1	Ce, Ir, Th, Rh, W, Zr, Ta, Ti, V, Hf, Fe, Re, Ru
ICP-OES 367.007 nm	0.3 / 0.02 µg/mL	1	Th, Ce
ICP-OES 385.958 nm	0.3 / 0.01 µg/mL	1	Th, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 28, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **August 28, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Certificate of Analysis

INORGANIC VENTURES
Refine your results. Redefine your industry.

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	AR-ICVMS-2
Lot Number:	T2-MEB719895
Matrix:	3% (v/v) HNO3 tr. HF
Value / Analyte(s):	2.5 µg/mL ea: Molybdenum, Antimony

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	**2.499 ± 0.015 µg/mL**	**Molybdenum, Mo**	**2.500 ± 0.017 µg/mL**

Density: 1.014 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Mo	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
Sb	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 06, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 06, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

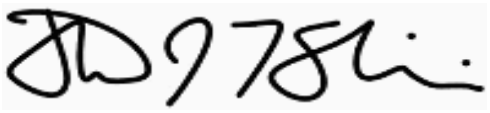
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Certificate of Analysis

300 Technology Drive
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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	AR-ICVMS-3
Lot Number:	T2-MEB719896
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	250 µg/mL ea:

Aluminum, Calcium,
Iron, Potassium,
Magnesium, Sodium,

4 µg/mL ea:
Selenium,

2.5 µg/mL ea:

Thorium,	Thallium,
Uranium,	Vanadium,
Zinc,	Manganese,
Cadmium,	Cobalt,
Chromium,	Copper,
Arsenic,	Barium,
Beryllium,	Nickel,
Lead,	Silver

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	250.0 ± 0.9 µg/mL	Arsenic, As	2.500 ± 0.018 µg/mL
Barium, Ba	2.501 ± 0.013 µg/mL	Beryllium, Be	2.501 ± 0.015 µg/mL
Cadmium, Cd	2.501 ± 0.013 µg/mL	Calcium, Ca	250.0 ± 1.3 µg/mL
Chromium, Cr	2.500 ± 0.015 µg/mL	Cobalt, Co	2.500 ± 0.014 µg/mL
Copper, Cu	2.500 ± 0.014 µg/mL	Iron, Fe	250.0 ± 1.0 µg/mL
Lead, Pb	2.500 ± 0.013 µg/mL	Magnesium, Mg	250.0 ± 1.3 µg/mL
Manganese, Mn	2.500 ± 0.014 µg/mL	Nickel, Ni	2.500 ± 0.014 µg/mL
Potassium, K	250.0 ± 1.2 µg/mL	Selenium, Se	4.002 ± 0.024 µg/mL
Silver, Ag	2.501 ± 0.017 µg/mL	Sodium, Na	250.0 ± 1.2 µg/mL
Thallium, Tl	2.500 ± 0.017 µg/mL	Thorium, Th	2.499 ± 0.013 µg/mL
Uranium, U	2.501 ± 0.015 µg/mL	Vanadium, V	2.500 ± 0.014 µg/mL
Zinc, Zn	2.500 ± 0.014 µg/mL		

Density: 1.042 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Ag	Calculated		See Sec. 4.2
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
Ba	ICP Assay	3104a	140909
Ba	Calculated		See Sec. 4.2
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Cd	Calculated		See Sec. 4.2
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Co	Calculated		See Sec. 4.2
Cr	ICP Assay	3112a	170630
Cr	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Cu	Calculated		See Sec. 4.2
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Mn	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
Ni	Calculated		See Sec. 4.2
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Pb	Calculated		See Sec. 4.2
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Th	EDTA	928	928
Th	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
Tl	Calculated		See Sec. 4.2
U	ICP Assay	3164	080521
U	Calculated		See Sec. 4.2

V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928
Zn	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.19 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Note: This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information.

https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 06, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 06, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

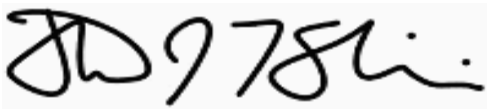
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

ERA
A Waters Company

Certified Reference Material

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No. D120-540
Certificate Issue Date: December 16, 2022
Expiration Date: April 01, 2026
Revision Number: Original

L000950

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 111122.

CERTIFICATION

Parameter	Certified Value[1]	Reference Value	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	9420	5640	2.77	1720 - 9560	2550 - 10400
Antimony	225	97.9	31.4	D.L. - 211	22.5 - 251
Arsenic	66.6	73.9	3.11	63.4 - 84.5	51.8 - 96.1
Barium	354	311	3.79	253 - 370	234 - 389
Beryllium	108	92.9	3.20	75.8 - 110	69.7 - 119
Boron	102	56.1	6.31	33.7 - 78.4	33.6 - 112
Cadmium	91.8	75.4	17.5	61.0 - 89.8	56.6 - 101
Calcium	2640	2580	2.84	2140 - 3030	1760 - 3410
Chromium	137	116	4.95	93.1 - 139	81.3 - 151
Cobalt	137	118	7.94	96.3 - 139	88.2 - 151
Copper	139	114	12.1	92.9 - 136	85.8 - 153
Iron	7100	6160	2.51	3500 - 8810	710 - 12700
Lead	247	212	4.43	170 - 253	156 - 272
Lithium	8.14	5.11	5.23	2.35 - 7.87	0.814 - 10.8
Magnesium	1560	1350	3.92	1010 - 1690	668 - 2030
Manganese	286	255	3.26	205 - 304	187 - 322
Mercury	14.9	15.1	7.72	11.1 - 19.1	9.09 - 21.2
Molybdenum	47.5	49.1	36.3	40.7 - 57.5	33.3 - 64.9
Nickel	295	252	69.7	204 - 299	176 - 327
Potassium	1800	1620	3.33	1170 - 2080	898 - 2340
Selenium	93.6	75.1	24.9	57.3 - 93.0	47.2 - 103
Silver	80.6	65.7	38.8	50.4 - 81.0	46.4 - 88.7
Sodium	232	244	3.54	189 - 299	122 - 365
Strontium	133	94.9	3.96	70.8 - 119	68.1 - 146

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▪ Certificate of Analysis ▪

Parameter	Certified Value[1]	Reference Value	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Thallium	158	129	21.1	101 - 157	89.5 - 174
Tin	113	89.6	23.1	67.4 - 112	49.9 - 129
Titanium	145	126	8.56	39.3 - 213	0.00 - 268
Uranium	48.2	40.8	3.84	29.4 - 52.3	28.4 - 53.2
Vanadium	116	96.1	6.62	73.6 - 119	64.2 - 128
Zinc	184	156	3.83	123 - 189	109 - 203

16341 Table Mountain Pkwy ▪ Golden, CO 80403 ▪ T: 800.372.0122 ▪ 303.431.8454 ▪ www.eraqc.com

ANALYTICAL VERIFICATION

Parameter	Certified Value[1]	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery[5]	n	SRM Number[6]	Recovery
	mg/kg	mg/kg	%			%
Aluminum	9420	5640	59.9	101	-	-
Antimony	225	97.9	43.5	106	-	-
Arsenic	66.6	73.9	111	141	-	-
Barium	354	311	88.0	127	-	-
Beryllium	108	92.9	86.0	119	-	-
Boron	102	56.1	55.0	80	-	-
Cadmium	91.8	75.4	82.1	160	-	-
Calcium	2640	2580	97.9	102	-	-
Chromium	137	116	84.8	141	-	-
Cobalt	137	118	85.8	112	-	-
Copper	139	114	82.3	151	-	-
Iron	7100	6160	86.7	105	-	-
Lead	247	212	85.7	170	-	-
Lithium	8.14	5.11	62.8	14	-	-
Magnesium	1560	1350	86.4	102	-	-
Manganese	286	255	89.0	123	-	-
Mercury	14.9	15.1	102	108	-	-
Molybdenum	47.5	49.1	103	117	-	-
Nickel	295	252	85.3	149	-	-
Potassium	1800	1620	90.1	104	-	-
Selenium	93.6	75.1	80.3	122	-	-
Silver	80.6	65.7	81.5	117	-	-
Sodium	232	244	105	99	-	-
Strontium	133	94.9	71.4	76	-	-
Thallium	158	129	81.7	109	-	-
Tin	113	89.6	79.3	78	-	-
Titanium	145	126	87.1	70	-	-
Uranium	48.2	40.8	84.7	30	-	-
Vanadium	116	96.1	82.8	112	-	-
Zinc	184	156	84.7	153	-	-

16341 Table Mountain Pkwy ▪ Golden, CO 80403 ▪ T: 800.372.0122 ▪ 303.431.8454 ▪ www.eraqc.com

▪ Certificate of Analysis ▪

1. The **Certified Values** are the actual gravimetric/volumetric "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

2. The **Uncertainty** represents an expanded uncertainty and approximates a 95% confidence interval. The uncertainty is based on the characterization, homogeneity and stability characteristics of the product, multiplied by a coverage factor (k=2). The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product. The formula used to calculate the expanded uncertainty is:
$U_{expanded} = k * SQRT((U_{char}^2) + (U_{homogen}^2) + (U_{LTS}^2) + (U_{STS}^2) + (U_{RSS}^2))$

Where:

Uexpanded = Expanded uncertainty.
k = Coverage factor.
Uchar = Combined standard uncertainty of the manufacturing and/or analytical verification assessment.
Uhomogen = Standard uncertainty of the homogeneity assessment.
ULTS = Standard uncertainty associated with long-term stability.
USTS = Standard uncertainty associated with short-term (transport) stability.
URSS = Standard uncertainty associated with repeated sampling of the product (where permitted by product use instructions).

3. The **QC Performance Acceptance Limits (QC PALs™)** are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.

4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this certified reference material alongside USEPA and NELAC compliant PT study materials. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and therefore, the acceptance limits of this certified reference material and any PT study material may differ relative to their difference in concentrations.

5. The **PT Performance Data** include the mean value, percent recovery and number of data points reported by laboratories in our Proficiency Testing study compared to the Certified Values. In the event this lot was not used in a proficiency testing scheme, the data displayed was generated internally by ERA.

6. Where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. **Analytical Traceability Recovery (%)** = [(% recovery ERA certified reference material)/(% recovery NIST SRM)]*100
The traceability data shown were compiled by analyzing this ERA certified reference material and/or it's associated stock solution(s) against the applicable NIST SRMs.

7. **Metrological Traceability.** This certified reference material is metrologically traceable to NIST mass reference materials through an unbroken chain of comparisons.

8. For additional information on this product such as intended use, storage information, instructions for use, minimum sample size, and safety information, please refer to the Product Use Instructions provided.

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller

Brian Miller

Senior Technical Manager

Craig Huff

INORGANIC VENTURES™
Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	AR-6020ICS-0A10
Lot Number:	T2-MEB719898
Matrix:	1.4% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Chloride,
	200 µg/mL ea: Carbon,
	100 µg/mL ea: Calcium, Aluminum, Iron, Potassium, Magnesium, Sodium, Phosphorus, Sulfur,
	2 µg/mL ea: Titanium, Molybdenum

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	**100.0 ± 0.4 µg/mL**	**Calcium, Ca**	**100.0 ± 0.5 µg/mL**
Carbon, C	**200.1 ± 0.5 µg/mL**	**Chloride, Cl**	**1 000 ± 5 µg/mL**
Iron, Fe	**100.0 ± 0.5 µg/mL**	**Magnesium, Mg**	**100.0 ± 0.5 µg/mL**
Molybdenum, Mo	**2.001 ± 0.014 µg/mL**	**Phosphorus, P**	**100.0 ± 0.6 µg/mL**
Potassium, K	**100.0 ± 0.5 µg/mL**	**Sodium, Na**	**100.0 ± 0.5 µg/mL**
Sulfur, S	**100.0 ± 0.5 µg/mL**	**Titanium, Ti**	**2.001 ± 0.015 µg/mL**

Density: 1.009 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
C	Acidimetric	84L	84L
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cl	Acidimetric	84L	84L
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mo	ICP Assay	3134	130418
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	P2-S680745
Ti	ICP Assay	3162a	130925

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 07, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 07, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

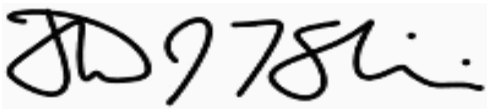
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Analytical Resources, LLC
Analytical Chemists and Consultants

Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6020B UCT-KED

Total Metals

LDW20-SC148A

Laboratory:	Analytical Resources, LLC				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	23F0536-01 B	SDG:	23F0536
Sampled:	06/08/20 08:41	Prepared:	06/22/23 15:57	File ID:	XDT_m1230626-100
% Solids:	61.76	Preparation:	SWN EPA 3050B	Analyzed:	06/26/23 22:45
Batch:	BLF0652	Sequence:	SLF0398	Initial/Final:	1.078 g Wet / 50 mL
Instrument:	ICPMS1			Calibration:	GF00087

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	8.38	20	0.06	0.30	H
7440-43-9	Cadmium	0.27	20	0.05	0.15	H
7440-50-8	Copper	36.4	20	0.26	0.75	H
7440-66-6	Zinc	81.1	20	4.4	9.0	H

PREPARATION BATCH SUMMARY

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Batch: BLF0652 Batch Matrix: Solid
Preparation: SWN EPA 3050B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW20-SC148A	23F0536-01	XDT_m1230626-100	06/22/23 15:57	
Blank	BLF0652-BLK1	XDT_m1230626-031	06/22/23 15:57	
LCS	BLF0652-BS1	XDT_m1230626-032	06/22/23 15:57	
LDW20-SC148A	BLF0652-DUP1	XDT_m1230626-101	06/22/23 15:57	
LDW20-SC148A	BLF0652-MS1	XDT_m1230626-102	06/22/23 15:57	
LDW20-SC148A	BLF0652-MSD1	XDT_m1230626-103	06/22/23 15:57	
Reference	BLF0652-SRM1	XDT_m1230626-105	06/22/23 15:57	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Digestion Log

Analyst: AB Date: 6/23/23 Time: 11:14 - 16:50 Balance ID: BAL10

Matrix: solid Block ID: 3 Block Temp: 95C Thermometer: 5729

ARI Sample ID	Btl #	pH<2	Prep Code: SWN Initial Wt (g) Vol (mL)	Prep Code: SWN Final Vol (mL)	Prep Code: Initial Wt (g) Vol (mL)	Prep Code: Final Vol (mL)	Comments
23F0527-01			1.060	50			
23F0530-01			1.072				
-02			1.056				
-03			1.020				
23F0536-01			1.078				
BLF0652-BLK	—		—				
-BS	—		—				
-DUP	—		1.081				23F0536-01
-MS	—		1.080				↓
-MSD	—		1.078				
-SRM	—		1.008				

6/23/23 AB

Chemical/Reagent ID:

HNO_3: 166505 1:1 HNO_3: L6981 HCl: — H_2O_2: K11056

Tube Lot#: 2206050 Boiling Chip Lot#: — (DoD Only)

5061F
Version 007

11/8/22

Form I

METHOD BLANK DATA SHEET

EPA 6020B UCT-KED

Total Metals

Blank

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Batch: BLF0652
Laboratory ID: BLF0652-BLK1
Prepared: 06/22/23 15:57
Matrix: Solid
Preparation: SWN EPA 3050B
Analyzed: 06/26/23 16:54
Sequence: SLF0398
Calibration: GF00087
Instrument: ICPMS1

CAS NO.	Analyte	Concentration (mg/kg wet)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic-75a	ND	20	0.04	0.20	U
7440-43-9	Cadmium-111	ND	20	0.03	0.10	U
7440-50-8	Copper-63	ND	20	0.17	0.50	U
7440-66-6	Zinc-66	ND	20	2.9	6.0	U

LCS / LCS DUPLICATE RECOVERY

EPA 6020B UCT-KED

Total Metals

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	06/26/23 16:59
Batch:	BLF0652	Laboratory ID:	BLF0652-BS1
Preparation:	SWN EPA 3050B	Sequence Name:	LCS
Initial/Final:	1 g / 50 mL		

COMPOUND	SPIKE ADDED (mg/kg wet)	LCS CONCENTRATION (mg/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Arsenic-75a	25.0	25.7		103	80 - 120
Cadmium-111	25.0	25.0		99.9	80 - 120
Copper-63	25.0	26.8		107	80 - 120
Zinc-66	80.0	80.5		101	80 - 120

* Indicates values outside of QC limits

DUPLICATES

EPA 6020B UCT-KED

Total Metals

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BLF0652-DUP1
Batch: BLF0652
Lab Source ID: 23F0536-01
Preparation: SWN EPA 3050B
Initial/Final: 1.081 g / 50 mL
Source Sample Name: LDW20-SC148A
% Solids: 61.76

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION	DUPLICATE CONCENTRATION	RPD %	Q
Arsenic-75a	20	8.38	6.46	25.8	*
Cadmium-111	20	0.27	0.23	16.7	
Copper-63	20	36.4	32.0	12.9	
Zinc-66	20	81.1	75.9	6.73	

*: Values outside of QC limits
L: Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to Dup = +/- RL instead of 20% RPD

MS / MS DUPLICATE RECOVERY

EPA 6020B UCT-KED

Total Metals

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	06/26/23 22:54
Batch:	BLF0652	Laboratory ID:	BLF0652-MS1
Preparation:	SWN EPA 3050B	Sequence Name:	Matrix Spike
Initial/Final:	1.08 g / 50 mL	Source Sample:	LDW20-SC148A

COMPOUND	SPIKE ADDED (mg/kg dry)	SAMPLE CONCENTRATION (mg/kg dry)	Q	MS CONCENTRATION (mg/kg dry)	Q	MS % REC. #	QC LIMITS REC.
Arsenic-75a	37.5	8.38	H	42.9	H	92.0	75 - 125
Cadmium-111	37.5	0.27	H	32.5	H	86.0	75 - 125
Copper-63	37.5	36.4	H	65.7	H	78.4	75 - 125
Zinc-66	120	81.1	H	174	H	77.6	75 - 125

* Values outside of QC limits

MS / MS DUPLICATE RECOVERY

EPA 6020B UCT-KED

Total Metals

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	06/26/23 22:58
Batch:	BLF0652	Laboratory ID:	BLF0652-MSD1
Preparation:	SWN EPA 3050B	Sequence Name:	Matrix Spike Dup
Initial/Final:	1.078 g / 50 mL	Source Sample:	LDW20-SC148A

COMPOUND	SPIKE ADDED (mg/kg dry)	MSD CONCENTRATION (mg/kg dry)	Q	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Arsenic-75a	37.6	44.9	H	97.4	4.77	20	75 - 125
Cadmium-111	37.6	36.2	H	95.7	10.8	20	75 - 125
Copper-63	37.6	69.2	H	87.5	5.17	20	75 - 125
Zinc-66	120	188	H	89.0	7.61	20	75 - 125

* Values outside of QC limits

POST DIGEST SPIKE SAMPLE RECOVERY

EPA 6020B

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BLF0652-PS1
Batch: BLF0652
Lab Source ID: 23F0536-01
Preparation: SWN EPA 3050B
Initial/Final: 1.078 g / 50 mL
Source Sample Name: LDW20-SC148A
% Solids: 61.76

Analyte	Control Limit %R	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R
Lead-208	80 - 120	705	18.6	500.00	91.6
Silver-107	80 - 120	519	0.17	500.00	103

* Values outside of QC limits

Analytical Resources, LLC
Analytical Chemists and Consultants

STANDARD REFERENCE MATERIAL RECOVERY

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BLF0652-SRM1
Batch: BLF0652
Initial/Final: 1.008 g / 50 mL
Preparation: SWN EPA 3050B
Analyzed: 06/26/2023 23:07
Standard ID: L000950
Expires: 04/01/2026
Standard Lot#: D120-540
Description: Metals In Soil

ANALYTE	TRUE (mg/kg wet)	FOUND (mg/kg wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
Arsenic-75a	66.600	80.3	0.09	0.50	D	121	95.2 - 126.9
Cadmium-111	91.800	77.0	0.07	0.25	D	83.8	66.4 - 97.8
Copper-63	139.00	119	0.43	1.24	D	86.0	66.8 - 97.8
Zinc-66	184.00	161	7.2	14.9	D	87.4	66.8 - 102.7

* Values outside of QC limits

INITIAL CALIBRATION DATA

EPA 6020B

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GF00087	Instrument:	ICPMS1
Calibration Date:	06/26/2023 14:25		

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF
Silver-107	0	0	0.2	14540	10	15003.3	20	15216.4	50	14367.66	100	14283.7
Chromium-52	0	0	0.5	53428	10	19398.3	20	19033.4	50	17806.38	100	17603.98
Chromium-53	0	0	0.5	2266	10	2072.4	20	2163.6	50	2032.52	100	2049.22
Lead-208	0	0	0.1	79970	10	73086.4	20	75319	50	70964.98	100	67089.52

INITIAL CALIBRATION DATA

EPA 6020B

Laboratory: Analytical Resources, LLC
Instrument: ICPMS1
Calibration: GF00087
Calibration Date: 6/26/2023

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Silver-107	12235.18	49.1	0.9998		0.998	
Chromium-52	21211.68	82.2	0.9999		0.998	
Chromium-53	1763.957	49.2	0.9998		0.998	
Lead-208	61071.65	49.5	0.9989		0.998	

INITIAL CALIBRATION DATA

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GF00087
Instrument: ICPMS1
Calibration Date: 06/26/2023 14:25

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF
Arsenic-75a	0	0	0.2	155	10	171.9	20	172.15	50	164.82	100	170.19
Cadmium-111	0	0	0.1	160	10	161.4	20	166.9	50	161.96	100	164.3
Cadmium-114	0	0	0.1	460	10	423.1	20	432.6	50	412.42	100	423.39
Copper-63	0	0	0.5	2736	10	2726	20	2736.55	50	2613.6	100	2653.36
Copper-65	0	0	0.5	1370	10	1370.3	20	1396.25	50	1342.7	100	1337.46
Zinc-66	0	0	6	382.6667	10	387.4	20	387.2	50	370.48	100	370.48
Zinc-67	0	0	6	58.5	10	60.1	20	64.5	50	60.92	100	60.1

INITIAL CALIBRATION DATA

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
Instrument: ICPMS1
Calibration: GF00087
Calibration Date: 6/26/2023

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Arsenic-75a	139.01	49.2	0.9997		0.998	
Cadmium-111	135.76	49.0	0.9999		0.998	
Cadmium-114	358.585	49.2	0.9998		0.998	
Copper-63	2244.252	49.0	0.9999		0.998	
Copper-65	1136.118	49.0	0.9999		0.998	
Zinc-66	316.3711	49.0	0.9999		0.998	
Zinc-67	50.68667	49.1	0.9997		0.998	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS - 01 SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 85DN5032601

Analysis Date: 6/26/23 **Analyst:** MS **Sequence:** SLFΦ398 **Cal:** GFΦΦΦ87

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		SEQ-CAL1	L7165		
		-CAL2	L66Φ4		
		-CAL3	L66Φ5		
		-CAL4	L66Φ6		
		-CAL5	L6959		
		-CAL6	L66Φ7		
		-IBL1	—		
		-ICV1	L6624		
		-ICB1	L7165		
		-CCV1	L6959		
		-CCB1	L7165		
		-CRL1	L66Φ4		
		-IFA1	L6575		Cr^{53}↑
		-IFB1	L6973		↓
		-HCV1	L696Φ		Cr^{52}↓ - Cr<100
		-HCV2	L6577		Cr^{52}, Ba^{137}↓ - Ba<200
		-IBL2	—		(Sb, Cd↑/Cd noisy)
		-IBL3	—		(Sb, Pb↑/std made noisy)
		-IBL4	—		
		-CCV2			
		-CCB2			
	✓	-CAL1			
		-CCV3			
		-CCB3			

Analytical Resources, Incorporated
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ICP/MS - 01 SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 85DN5032601

Analysis Date: 6/26/23 **Analyst:** MB **Sequence:** _____ **Cal:** _____

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		BLFΦ652-BLK1	SWN	20	
		↓ -BS1	↓	↓	
		BLFΦ678-BLK1	REN		
		↓ -BS1			
		23FΦ361-Φ6	↓	5	Sb, Se only
		23FΦ527-Φ1	SWN	20	Cu, Zn, Ba ↑ Ba, Cu, Zn NR
		SEQ-IBL5			
		23FΦ527-Φ1REI	SWN	100	Ba, Cu, Zn only
		23FΦ271-Φ1	REN	50	
		SEQ-IBL6			
		-CCV4			
		-CCB4			
	✓	-CAL1			Ba, Sb, Se Removed / changed sample loop
		-CCV5			
		↓ -CCB5			
		BLFΦ692-BLK1	REN		
		↓ -BS1			
		BLFΦ744-BLK1			
		↓ -BS1			
		23FΦ526-Φ1		2	
		23FΦ458-Φ1			In-1 sl. no. 3y - %R > Analytes OK
		-Φ2			
		-Φ3			
		↓ -Φ4	↓	↓	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS - 01 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 85DN5032601

Analysis Date: 6/26/23 **Analyst:** MB **Sequence:** _____ **Cal:** _____

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		SEQ-IBL7			
		-CCV6			
		-CCB6			
		BLFΦ645-BLK1	SWN	20	
		-BS1		↓	
		-SRL1		100	↑
		23FΦ23Φ-Φ1		20	Sc,Tb↑ No Pb
		BLFΦ645-DUP1			As RPD↑
		-MS1			
		-MSD1			
		-PS1		↓	60 mL K7409
		-SRM1	↓	50	
		SEQ-IBL8			
		-CCV7			
		-CCB7			
		23FΦ23Φ-Φ2	SWN	20	Sc,Tb↑ No Pb
		-Φ3			Sc↑ - Not Needed
		-Φ4			↓ ↓
		-Φ5			
		-15			Sc,Tb↑ No Pb
		-16			↓ ↓
		-17			Sc↑ - Not Needed
		-18			↓ ↓
		-19	↓	↓	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS - 01 SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 85DN5032601

Analysis Date: 6/26/23 **Analyst:** MB **Sequence:** _____ **Cal:** _____

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		SEQ-IBL9			
		-CCV8			
		-CCB8			
	✓	-CAL1			
		-CCV9			
		-CCB9			
		23F0233-03	SWN	20	Sc,Tb↑ No Pb
		-04			↓ ↓
		-06			↓ ↓
		-08			Sc↑ - Not Needed
		-09			Sc,Tb↑ No Pb
		-10			↓ ↓
		-13			↓ ↓
		-14			
		-15			Sc↑ - Not Needed
		-16	↓	↓	↓ ↓
		SEQ-CCVA			
		↓ -CCBA			
		23F0530-01	SWN	20	
		-02	↓	↓	
		↓ -03	↓	↓	
		23F0536-01	↓	↓	No Ba, Se
		BLF0652-DUP1	↓	↓	Ag, Pb RPD↑ ↓
		↓ -MS1	↓	↓	Ag %R↓ / Pb %R↑ ↓

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ICP/MS - 01 SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 85DN5032601

Analysis Date: 6/26/23 **Analyst:** MB **Sequence:** — **Cal:** —

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		BLFΦ652-MSD1	SWN	20	Ag°/oRL/PB RPD↑ No BaSe
		↓ -PS1	↓	↓	60mL K7409 ↓
		↓ -SRM1	↓	50	↓
		SEQ-IBLA			
		↓ -CCVB			
		↓ -CCBB			
		23FΦ461-Φ1	REN		
		↓ -Φ2	↓		
		↓ -Φ3	↓		
		23FΦ261-Φ2	↓		
		↓ -Φ3	↓		
	✓	↓ -Φ4	↓		Zn°° ↑
		↓ -Φ1	↓		Zn↑ No Zn
		BLFΦ678-DUP1	↓		↓ ↓
		↓ -MS1	↓		↓ ↓
		SEQ-IBLB			
		↓ -CCVC			
		↓ -CCBC			
	✓	23FΦ261-Φ5	REN		Zn↑
		↓ -Φ6	↓		
		↓ -Φ7	↓		
	✓	↓ -Φ8	↓		Ge noisy
		↓ -Φ9	↓		
		↓ -1Φ	↓		

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ICP/MS - 01 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 85DN5032601

Analysis Date: 6/26/23 **Analyst:** MB **Sequence:** ~ **Cal:** ~

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		23FΦ261-11	REN		
		23FΦ273-Φ1	↓	2	
		23FΦ275-Φ1	↓	↓	
		SEQ-IBLC			
		-CCV1			
		-CCB1			
	✓	-CAL1			
		-CCVE			
		↓ -CCBE			
		23FΦ276-Φ4	REN		
		23FΦ277-Φ1	↓		
		↓ -Φ2		5	
	✓	23FΦ279-Φ1			Zn↑
		↓ -Φ2			
		23FΦ356-Φ1		2	
		23FΦ294-Φ1		↓	
		23FΦ29Φ-Φ1		5	
		23FΦ293-Φ1	↓	10	Cr↑ No Cr
		SEQ-IBL1			
		-CCVF			
		↓ -CCBF			
		23FΦ3Φ1-Φ1	REN		
		23FΦ3Φ2-Φ1	↓		
		23FΦ31Φ-Φ1	↓		

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ICP/MS - 01 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 85DN5032601

Analysis Date: 6/26/23 **Analyst:** MB **Sequence:** _____ **Cal:** _____

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		23F0355-01	REN		
		SEQ-IBLE			
		23F0341-01	REN		Sc↑ As only
		BLF0744-DUP1	↓		↓ ↓
		↓ -MS1	↓		↓ ↓
		↓ -MSD1	↓		↓ ↓
		SEQ-IBLF			
		↓ -CCVG			
		↓ -CCBG			
		23F0288-21	REN		
		BLF0692-DUP1	↓		
		↓ -MS1	↓		Cr %R↓
		SEQ-IBLG			
		↓ -CCVH			
		↓ -CCBH			
		Rinse/DI			
		MS 6/26/23			

Performance Check Report

Sample ID: STD Performance Check
Sample Date/Time: Monday, June 26, 2023 13:27:50
Sample Description:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\STD Performance Check.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\Default\STD Performance Check.365
MassCal File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Conditions File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 35
Current Dead Time (ns): 35
Torch Z position (mm): 0.00

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Be	9.0	6379.1	6379.091	122.027	1.9	Standard
	In	114.9	62657.3	62657.322	2307.440	3.7	Standard
	U	238.1	75158.3	75158.284	2870.864	3.8	Standard
⌈	CeO	155.9	1769.6	0.020	0.000	1.7	Standard
| >	Ce	139.9	87551.3	87551.286	2833.741	3.2	Standard
⌊	Ce++	70.0	747.6	0.009	0.000	2.0	Standard
	Bkgd	220.0	0.7	0.667	0.408	61.2	Standard

Current Conditions File Data

Current Value	Description
0.92	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
17.50	Plasma Gas Flow
-10.75	Deflector Voltage
1600.00	ICP RF Power
-1562.00	Analog Stage Voltage
1050.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-10.00	Cell Rod Offset STD [CRO]
14.00	Discriminator Threshold
-5.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.92	DRC Mode NEB
-7.50	DRC Mode QRO
-2.00	DRC Mode CRO
-5.00	DRC Mode Cell Entrance/Exit Voltage
0.60	Cell Gas A
0.00	Cell Gas B
200.00	Axial Field Voltage
-11.00	KED Mode CRO
-12.00	KED Mode QRO
-11.00	KED Mode Cell Entrance Voltage
-33.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
3.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
125.00	KED Mode Axial Field Voltage

SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Start Time: 6/26/2023 1:27:49 PM
End Time: 6/26/2023 1:40:57 PM

STD Performance Check - [Passed] Optimum value(s): N/A
Obtained Intensity (Be 9): 6379.09
Obtained Intensity (In 115): 62657.32
Obtained Intensity (U 238): 75158.28
Obtained Intensity (Bkgd 220): 0.67
Obtained Formula (Ce++ 70 / Ce 140): 0.009 (=747.55 / 87551.29)
Obtained Formula (CeO 156 / Ce 140): 0.020 (=1769.58 / 87551.29)
Obtained RSD (Be 9): 0.0191
Obtained RSD (In 115): 0.0368
Obtained RSD (U 238): 0.0382

Torch Alignment - [Passed]

Vertical	Horizontal	Intensity
0.42 mm	0.58 mm	71784.91

Nebulizer Gas Flow STD/KED [NEB] - [Passed] Optimum value(s): 0.93
Obtained Intensity (In 115): 81008.03
Obtained Formula (CeO 156 / Ce 140): 0.0236 (=2443.21 / 103635.55)

Mass Calibration and Resolution - [Passed] Optimum value(s): N/A
Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.699)
Target/Obtained mass (23.985/24.025), Target/Obtained resolution (0.7/0.714)
Target/Obtained mass (114.904/114.925), Target/Obtained resolution (0.7/0.698)
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.712)

QID STD/DRC - Optimum value(s): Correlation Coefficient = 0.989; Intercept = -15.06

KED Mode QID - Optimum value(s): Correlation Coefficient = 0.973; Intercept = -14.93

SmartTune Wizard - Details

Optimization Details

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Optimization Status

Start Time: 6/26/2023 1:27:49 PM

STD Performance Check
	Optimization Settings:
		Method: STD Performance Check.mth.
		Intensity Criterion: Be 9 > 2000
		Intensity Criterion: In 115 > 40000
		Intensity Criterion: U 238 > 30000
		Intensity Criterion: Bkgd 220 <= 5
		Formula Criterion: Ce++ 70 / Ce 140 <= 0.03
		Formula Criterion: CeO 156 / Ce 140 <= 0.025
		RSD Criterion: Be 9.0122 < 0.05
		RSD Criterion: In 114.904 < 0.05
		RSD Criterion: U 238.05 < 0.05

	Optimization Results:
	Initial Try
		Obtained Intensity (Be 9): 6379.09
		Obtained Intensity (In 115): 62657.32
		Obtained Intensity (U 238): 75158.28
		Obtained Intensity (Bkgd 220): 0.67
		Obtained Formula (Ce++ 70 / Ce 140): 0.009 (=747.55 / 87551.29)
		Obtained Formula (CeO 156 / Ce 140): 0.020 (=1769.58 / 87551.29)
		Obtained RSD (Be 9): 0.0191
		Obtained RSD (In 115): 0.0368
		Obtained RSD (U 238): 0.0382

[Passed] Optimum value(s): N/A

Torch Alignment
	Optimization Settings:
		Method: Torch Alignment.mth.
		Intensity Criterion: In 115 Maximum

	Optimization Results:
		Vertical	Horizontal	Intensity
[Passed]	0.42 mm	0.58 mm	71784.91

Nebulizer Gas Flow STD/KED [NEB]
	Optimization Settings:
		Method: Optimize.mth.
			Initial Try - Start/End/Step: 0.85/0.95/0.01.
		Intensity Criterion: In 115 Maximum
		Formula Criterion: CeO 156 / Ce 140 <= 0.025

	Optimization Results:
	Initial Try

		Obtained Intensity (In 115): 81008.03
		Obtained Formula (CeO 156 / Ce 140): 0.0236 (=2443.21 / 103635.55)
[Passed] Optimum value(s): 0.93

Mass Calibration and Resolution
Optimization Settings:
Method: Tuning.mth.
MassCal File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Iterations: 6
Target accuracy (+/- amu): 0.05 for Mass Cal. and 0.03 for Resolution
Peak height (%) for Res. Opt.: 10

Optimization Results:
Initial Try
Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.699)
Target/Obtained mass (23.985/24.025), Target/Obtained resolution (0.7/0.714)
Target/Obtained mass (114.904/114.925), Target/Obtained resolution (0.7/0.698)
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.712)
[Passed] Optimum value(s): N/A

QID STD/DRC
Optimization Settings:
Method: QID Calibration.mth.
Initial Try - Start/End/Step: -20/0/0.5.

Optimization Results:
Initial Try

Optimum value(s): Correlation Coefficient = 0.989; Intercept = -15.06

Analyte	Mass	Points	DAC	MaxIntensity
Li	7	41	-15	42904.3
Mg	24	41	-15	46571.8
In	115	41	-12.5	88432.9
Ce	140	41	-12.5	111852
Pb	208	41	-11.5	57001.5
U	238	41	-11.5	93432.5

KED Mode QID
Optimization Settings:
Method: QID Calibration.mth.
Initial Try - Start/End/Step: -20/0/0.5.

Optimization Results:
Initial Try

Optimum value(s): Correlation Coefficient = 0.973; Intercept = -14.93

Analyte	Mass	Points	DAC	MaxIntensity
Li	7	41	-15	25094
Mg	24	41	-14.5	51063.1
In	115	41	-12.5	110711
Ce	140	41	-11	105694
Pb	208	41	-11	49927.1
U	238	41	-11	109002

End Time: 6/26/2023 1:40:57 PM

SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Start Time: 6/26/2023 1:43:08 PM
End Time: 6/26/2023 1:44:14 PM

QID STD/DRC - Optimum value(s): Correlation Coefficient = 0.996; Intercept = -14.85

SmartTune Wizard - Details

Optimization Details

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Optimization Status

Start Time: 6/26/2023 1:43:08 PM

QID STD/DRC
Optimization Settings:
Method: QID Calibration.mth.
Initial Try - Start/End/Step: -20/0/0.5.

Optimization Results:
Initial Try

Optimum value(s): Correlation Coefficient = 0.996; Intercept = -14.85

Analyte	Mass	Points	DAC	MaxIntensity
Li	7	41	-15	41464.1
Mg	24	41	-15	44196.3
In	115	41	-13	85398.5
Ce	140	41	-12	107116
Pb	208	41	-11.5	55567.9
U	238	41	-12	92961.5

End Time: 6/26/2023 1:44:14 PM

SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Start Time: 6/26/2023 1:45:53 PM
End Time: 6/26/2023 1:47:08 PM

KED Mode QID - Optimum value(s): Correlation Coefficient = 0.993; Intercept = -15.08

SmartTune Wizard - Details

Optimization Details

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Optimization Status

Start Time: 6/26/2023 1:45:53 PM

KED Mode QID

Optimization Settings:

Method: QID Calibration.mth.

Initial Try - Start/End/Step: -20/0/0.5.

Optimization Results:

Initial Try

Optimum value(s): Correlation Coefficient = 0.993; Intercept = -15.08

Analyte	Mass	Points	DAC	MaxIntensity
Li	7	41	-15	27859.1
Mg	24	41	-14.5	54580.1
In	115	41	-12.5	110731
Ce	140	41	-11.5	109345
Pb	208	41	-11	50380.7
U	238	41	-11	109192

End Time: 6/26/2023 1:47:08 PM

Performance Check Report

Sample ID: STD Performance Check
Sample Date/Time: Monday, June 26, 2023 13:47:26
Sample Description:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\STD Performance Check.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\Default\STD Performance Check.374
MassCal File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Conditions File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 35
Current Dead Time (ns): 35
Torch Z position (mm): 0.00

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Be	9.0	8053.9	8053.870	169.705	2.1	Standard
	In	114.9	78477.9	78477.868	1119.919	1.4	Standard
	U	238.1	86993.7	86993.672	2191.688	2.5	Standard
⌈	CeO	155.9	2650.0	0.025	0.000	1.4	Standard
| >	Ce	139.9	105410.2	105410.219	1762.301	1.7	Standard
⌊	Ce++	70.0	1230.1	0.012	0.000	2.2	Standard
	Bkgd	220.0	0.6	0.567	0.253	44.6	Standard

Current Conditions File Data

Current Value	Description
0.93	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
17.50	Plasma Gas Flow
-10.75	Deflector Voltage
1600.00	ICP RF Power
-1562.00	Analog Stage Voltage
1050.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-10.00	Cell Rod Offset STD [CRO]
14.00	Discriminator Threshold
-5.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.93	DRC Mode NEB
-7.50	DRC Mode QRO
-2.00	DRC Mode CRO
-5.00	DRC Mode Cell Entrance/Exit Voltage
0.60	Cell Gas A
0.00	Cell Gas B
200.00	Axial Field Voltage
-11.00	KED Mode CRO
-12.00	KED Mode QRO
-11.00	KED Mode Cell Entrance Voltage
-33.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
3.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
125.00	KED Mode Axial Field Voltage

SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Start Time: 6/26/2023 1:47:26 PM
End Time: 6/26/2023 1:49:31 PM

STD Performance Check - [Failed]
Obtained Intensity (Be 9): 8053.87
Obtained Intensity (In 115): 78477.87
Obtained Intensity (U 238): 86993.67
Obtained Intensity (Bkgd 220): 0.57
Obtained Formula (Ce++ 70 / Ce 140): 0.012 (=1230.12 / 105410.22)
Obtained Formula (CeO 156 / Ce 140): 0.025 (=2650.05 / 105410.22) - <Target not achieved>
Obtained RSD (Be 9): 0.0211
Obtained RSD (In 115): 0.0143
Obtained RSD (U 238): 0.0252

SmartTune Wizard - Details

Optimization Details

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Optimization Status

Start Time: 6/26/2023 1:47:26 PM

STD Performance Check
	Optimization Settings:
		Method: STD Performance Check.mth.
		Intensity Criterion: Be 9 > 2000
		Intensity Criterion: In 115 > 40000
		Intensity Criterion: U 238 > 30000
		Intensity Criterion: Bkgd 220 <= 5
		Formula Criterion: Ce++ 70 / Ce 140 <= 0.03
		Formula Criterion: CeO 156 / Ce 140 <= 0.025
		RSD Criterion: Be 9.0122 < 0.05
		RSD Criterion: In 114.904 < 0.05
		RSD Criterion: U 238.05 < 0.05

	Optimization Results:
	Initial Try
		Obtained Intensity (Be 9): 8053.87
		Obtained Intensity (In 115): 78477.87
		Obtained Intensity (U 238): 86993.67
		Obtained Intensity (Bkgd 220): 0.57
		Obtained Formula (Ce++ 70 / Ce 140): 0.012 (=1230.12 / 105410.22)
		Obtained Formula (CeO 156 / Ce 140): 0.025 (=2650.05 / 105410.22) - <Target not achieved>
		Obtained RSD (Be 9): 0.0211
		Obtained RSD (In 115): 0.0143
		Obtained RSD (U 238): 0.0252

		[Failed]
[Failed]

End Time: 6/26/2023 1:49:31 PM

Performance Check Report

Sample ID: STD Performance Check
Sample Date/Time: Monday, June 26, 2023 13:50:02
Sample Description:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\STD Performance Check.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\Default\STD Performance Check.375
MassCal File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Conditions File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 35
Current Dead Time (ns): 35
Torch Z position (mm): 0.00

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Be	9.0	7870.2	7870.167	70.085	0.9	Standard
	In	114.9	76164.3	76164.308	687.198	0.9	Standard
	U	238.1	86305.3	86305.274	938.466	1.1	Standard
⌈	CeO	155.9	2481.6	0.024	0.000	1.2	Standard
| >	Ce	139.9	104278.9	104278.902	964.184	0.9	Standard
⌊	Ce++	70.0	1127.8	0.011	0.000	2.5	Standard
	Bkgd	220.0	0.3	0.333	0.289	86.6	Standard

Current Conditions File Data

Current Value	Description
0.93	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
17.50	Plasma Gas Flow
-10.75	Deflector Voltage
1600.00	ICP RF Power
-1562.00	Analog Stage Voltage
1050.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-10.00	Cell Rod Offset STD [CRO]
14.00	Discriminator Threshold
-5.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.93	DRC Mode NEB
-7.50	DRC Mode QRO
-2.00	DRC Mode CRO
-5.00	DRC Mode Cell Entrance/Exit Voltage
0.60	Cell Gas A
0.00	Cell Gas B
200.00	Axial Field Voltage
-11.00	KED Mode CRO
-12.00	KED Mode QRO
-11.00	KED Mode Cell Entrance Voltage
-33.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
3.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
125.00	KED Mode Axial Field Voltage

SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Start Time: 6/26/2023 1:50:01 PM
End Time: 6/26/2023 1:52:06 PM

STD Performance Check - [Passed] Optimum value(s): N/A
Obtained Intensity (Be 9): 7870.17
Obtained Intensity (In 115): 76164.31
Obtained Intensity (U 238): 86305.27
Obtained Intensity (Bkgd 220): 0.33
Obtained Formula (Ce++ 70 / Ce 140): 0.011 (=1127.84 / 104278.90)
Obtained Formula (CeO 156 / Ce 140): 0.024 (=2481.62 / 104278.90)
Obtained RSD (Be 9): 0.0089
Obtained RSD (In 115): 0.0090
Obtained RSD (U 238): 0.0109

SmartTune Wizard - Details

Optimization Details

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Optimization Status

Start Time: 6/26/2023 1:50:01 PM

STD Performance Check
	Optimization Settings:
		Method: STD Performance Check.mth.
		Intensity Criterion: Be 9 > 2000
		Intensity Criterion: In 115 > 40000
		Intensity Criterion: U 238 > 30000
		Intensity Criterion: Bkgd 220 <= 5
		Formula Criterion: Ce++ 70 / Ce 140 <= 0.03
		Formula Criterion: CeO 156 / Ce 140 <= 0.025
		RSD Criterion: Be 9.0122 < 0.05
		RSD Criterion: In 114.904 < 0.05
		RSD Criterion: U 238.05 < 0.05

	Optimization Results:
	Initial Try
		Obtained Intensity (Be 9): 7870.17
		Obtained Intensity (In 115): 76164.31
		Obtained Intensity (U 238): 86305.27
		Obtained Intensity (Bkgd 220): 0.33
		Obtained Formula (Ce++ 70 / Ce 140): 0.011 (=1127.84 / 104278.90)
		Obtained Formula (CeO 156 / Ce 140): 0.024 (=2481.62 / 104278.90)
		Obtained RSD (Be 9): 0.0089
		Obtained RSD (In 115): 0.0090
		Obtained RSD (U 238): 0.0109

[Passed] Optimum value(s): N/A

End Time: 6/26/2023 1:52:06 PM

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 14:25:47
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L				25934	0	Standard
⌈>	**Sc**	**45**		ug/L				503621	3	Standard
|	**Cr**	**52**		ug/L				17887	0	Standard
⌊	**Cr**	**53**		ug/L				162	16	Standard
⌈>	**Ge**	**72**		ug/L				24344	1	KED
|	**Ni**	**60**		ug/L				8	86	KED
|	**Ni**	**62**		ug/L				1	100	KED
|	**Cu**	**63**		ug/L				68	22	KED
|	**Cu**	**65**		ug/L				31	13	KED
|	**Zn**	**66**		ug/L				60	19	KED
|	**Zn**	**67**		ug/L				10	39	KED
|	**As**	**75**		ug/L				1	31	KED
⌊	**Se**	**78**		ug/L				5	65	KED
	Kr	**83**		ug/L				54	26	Standard
⌈>	**In-1**	**115**		ug/L				4994	2	KED
|	**Cd**	**111**		ug/L				0	173	KED
⌊	**Cd**	**114**		ug/L				2	86	KED
⌈>	**In**	**115**		ug/L				438274	4	Standard
|	**Ag**	**107**		ug/L				126	9	Standard
|	**Sb**	**121**		ug/L				43	15	Standard
|	**Sb**	**123**		ug/L				37	36	Standard
|	**Ba**	**135**		ug/L				80	8	Standard
⌊	**Ba**	**137**		ug/L				128	1	Standard
⌈>	**Tb**	**159**		ug/L				174434	1	Standard
⌊	**Pb**	**208**		ug/L				307	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL2
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 14:30:32
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25934	32047	1	Standard
⌈>	**Sc**	**45**		ug/L			503621	499964	2	Standard
|	**Cr**	**52**	**0.500**	ug/L	0.016	3	17887	26714	1	Standard
⌊	**Cr**	**53**	**0.500**	ug/L	0.015	2	162	1133	0	Standard
⌈>	**Ge**	**72**		ug/L			24344	23583	0	KED
|	**Ni**	**60**	**0.500**	ug/L	0.056	11	8	488	10	KED
|	**Ni**	**62**	**0.500**	ug/L	0.096	19	1	97	19	KED
|	**Cu**	**63**	**0.500**	ug/L	0.008	1	68	1368	0	KED
|	**Cu**	**65**	**0.500**	ug/L	0.038	7	31	685	6	KED
|	**Zn**	**66**	**6.000**	ug/L	0.338	5	60	2296	5	KED
|	**Zn**	**67**	**6.000**	ug/L	0.396	6	10	351	6	KED
|	**As**	**75**	**0.200**	ug/L	0.012	6	1	31	6	KED
⌊	**Se**	**78**	**0.500**	ug/L	0.154	30	5	10	15	KED
	Kr	**83**		ug/L			54	57	1	Standard
⌈>	**In-1**	**115**		ug/L			4994	4997	2	KED
|	**Cd**	**111**	**0.100**	ug/L	0.028	27	0	16	25	KED
⌊	**Cd**	**114**	**0.100**	ug/L	0.008	8	2	46	6	KED
⌈>	**In**	**115**		ug/L			438274	445012	3	Standard
|	**Ag**	**107**	**0.200**	ug/L	0.015	7	126	2908	4	Standard
|	**Sb**	**121**	**0.200**	ug/L	0.006	3	43	2479	1	Standard
|	**Sb**	**123**	**0.200**	ug/L	0.010	4	37	1881	3	Standard
|	**Ba**	**135**	**0.500**	ug/L	0.003	0	80	2517	3	Standard
⌊	**Ba**	**137**	**0.500**	ug/L	0.024	4	128	4610	1	Standard
⌈>	**Tb**	**159**		ug/L			174434	173097	0	Standard
⌊	**Pb**	**208**	**0.100**	ug/L	0.002	2	307	7997	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL3
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 14:35:17
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25934	48475	1	Standard
⌈>	**Sc**	**45**		ug/L			503621	505184	4	Standard
|	**Cr**	**52**	**9.999**	ug/L	0.283	2	17887	193983	1	Standard
⌊	**Cr**	**53**	**10.001**	ug/L	0.299	2	162	20724	1	Standard
⌈>	**Ge**	**72**		ug/L			24344	23888	0	KED
|	**Ni**	**60**	**9.999**	ug/L	0.110	1	8	9247	0	KED
|	**Ni**	**62**	**9.993**	ug/L	0.366	3	1	1504	3	KED
|	**Cu**	**63**	**10.001**	ug/L	0.066	0	68	27260	0	KED
|	**Cu**	**65**	**10.001**	ug/L	0.094	0	31	13703	0	KED
|	**Zn**	**66**	**10.026**	ug/L	0.396	3	60	3874	3	KED
|	**Zn**	**67**	**10.066**	ug/L	0.464	4	10	601	4	KED
|	**As**	**75**	**10.000**	ug/L	0.187	1	1	1719	2	KED
⌊	**Se**	**78**	**10.008**	ug/L	0.359	3	5	174	3	KED
	Kr	**83**		ug/L			54	60	16	Standard
⌈>	**In-1**	**115**		ug/L			4994	4904	4	KED
|	**Cd**	**111**	**10.000**	ug/L	0.436	4	0	1614	2	KED
⌊	**Cd**	**114**	**10.000**	ug/L	0.232	2	2	4231	3	KED
⌈>	**In**	**115**		ug/L			438274	441022	1	Standard
|	**Ag**	**107**	**10.000**	ug/L	0.126	1	126	150033	2	Standard
|	**Sb**	**121**	**10.000**	ug/L	0.235	2	43	126876	2	Standard
|	**Sb**	**123**	**10.000**	ug/L	0.049	0	37	100115	1	Standard
|	**Ba**	**135**	**10.001**	ug/L	0.147	1	80	51089	2	Standard
⌊	**Ba**	**137**	**10.002**	ug/L	0.077	0	128	94799	1	Standard
⌈>	**Tb**	**159**		ug/L			174434	176138	0	Standard
⌊	**Pb**	**208**	**10.000**	ug/L	0.085	0	307	730864	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL4
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 14:40:16
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25934	47841	2	Standard
⌈>	**Sc**	**45**		ug/L			503621	503778	2	Standard
|	**Cr**	**52**	**20.128**	ug/L	0.585	2	17887	380668	1	Standard
⌊	**Cr**	**53**	**20.196**	ug/L	0.447	2	162	43272	1	Standard
⌈>	**Ge**	**72**		ug/L			24344	23920	1	KED
|	**Ni**	**60**	**20.028**	ug/L	0.507	2	8	18642	1	KED
|	**Ni**	**62**	**20.004**	ug/L	0.798	3	1	3016	4	KED
|	**Cu**	**63**	**20.016**	ug/L	0.555	2	68	54731	2	KED
|	**Cu**	**65**	**20.074**	ug/L	0.297	1	31	27925	1	KED
|	**Zn**	**66**	**20.042**	ug/L	0.378	1	60	7744	1	KED
|	**Zn**	**67**	**20.414**	ug/L	1.878	9	10	1290	10	KED
|	**As**	**75**	**20.002**	ug/L	0.279	1	1	3443	2	KED
⌊	**Se**	**78**	**20.294**	ug/L	0.414	2	5	371	2	KED
	Kr	**83**		ug/L			54	53	30	Standard
⌈>	**In-1**	**115**		ug/L			4994	4887	1	KED
|	**Cd**	**111**	**20.142**	ug/L	0.552	2	0	3338	3	KED
⌊	**Cd**	**114**	**20.101**	ug/L	0.338	1	2	8652	2	KED
⌈>	**In**	**115**		ug/L			438274	439468	0	Standard
|	**Ag**	**107**	**20.072**	ug/L	0.056	0	126	304328	0	Standard
|	**Sb**	**121**	**20.181**	ug/L	0.095	0	43	264682	0	Standard
|	**Sb**	**123**	**20.047**	ug/L	0.440	2	37	201838	1	Standard
|	**Ba**	**135**	**20.171**	ug/L	0.298	1	80	106211	1	Standard
⌊	**Ba**	**137**	**20.149**	ug/L	0.073	0	128	195982	0	Standard
⌈>	**Tb**	**159**		ug/L			174434	175746	0	Standard
⌊	**Pb**	**208**	**20.129**	ug/L	0.046	0	307	1506380	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL5
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 14:45:24
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25934	31507	2	Standard
>	**Sc**	**45**		ug/L			503621	486757	1	Standard
	Cr	**52**	**50.020**	ug/L	0.643	1	17887	890319	0	Standard
	Cr	**53**	**49.862**	ug/L	0.457	0	162	101626	2	Standard
>	**Ge**	**72**		ug/L			24344	23630	0	KED
	Ni	**60**	**49.707**	ug/L	0.675	1	8	44395	0	KED
	Ni	**62**	**49.713**	ug/L	0.968	1	1	7195	1	KED
	Cu	**63**	**49.727**	ug/L	0.208	0	68	130680	1	KED
	Cu	**65**	**49.811**	ug/L	0.696	1	31	67135	0	KED
	Zn	**66**	**49.773**	ug/L	1.722	3	60	18524	3	KED
	Zn	**67**	**49.826**	ug/L	1.099	2	10	3046	2	KED
	As	**75**	**49.740**	ug/L	0.694	1	1	8241	0	KED
	Se	**78**	**49.450**	ug/L	1.840	3	5	841	3	KED
	Kr	**83**		ug/L			54	50	24	Standard
>	**In-1**	**115**		ug/L			4994	4892	3	KED
	Cd	**111**	**49.805**	ug/L	1.968	3	0	8098	0	KED
	Cd	**114**	**49.635**	ug/L	1.206	2	2	20621	1	KED
>	**In**	**115**		ug/L			438274	433865	2	Standard
	Ag	**107**	**49.655**	ug/L	0.454	0	126	718383	3	Standard
	Sb	**121**	**49.546**	ug/L	0.828	1	43	613484	1	Standard
	Sb	**123**	**49.722**	ug/L	1.233	2	37	480733	2	Standard
	Ba	**135**	**49.827**	ug/L	0.758	1	80	254444	1	Standard
	Ba	**137**	**49.645**	ug/L	1.030	2	128	460055	0	Standard
>	**Tb**	**159**		ug/L			174434	174590	1	Standard
	Pb	**208**	**49.608**	ug/L	0.523	1	307	3548249	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL6
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 14:52:13
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25934	41816	0	Standard
⌈>	**Sc**	**45**		ug/L			503621	484429	1	Standard
|	**Cr**	**52**	**100.080**	ug/L	1.959	1	17887	1760398	1	Standard
⌊	**Cr**	**53**	**100.252**	ug/L	1.772	1	162	204922	2	Standard
⌈>	**Ge**	**72**		ug/L			24344	23659	0	KED
|	**Ni**	**60**	**100.520**	ug/L	1.247	1	8	91476	1	KED
|	**Ni**	**62**	**100.749**	ug/L	1.655	1	1	14972	1	KED
|	**Cu**	**63**	**100.201**	ug/L	0.669	0	68	265336	0	KED
|	**Cu**	**65**	**99.798**	ug/L	0.889	0	31	133746	0	KED
|	**Zn**	**66**	**99.905**	ug/L	1.332	1	60	37048	0	KED
|	**Zn**	**67**	**99.611**	ug/L	3.040	3	10	6010	2	KED
|	**As**	**75**	**100.590**	ug/L	1.758	1	1	17019	1	KED
⌊	**Se**	**78**	**100.695**	ug/L	3.744	3	5	1750	3	KED
	Kr	**83**		ug/L			54	48	29	Standard
⌈>	**In-1**	**115**		ug/L			4994	4989	1	KED
|	**Cd**	**111**	**99.772**	ug/L	1.463	1	0	16430	0	KED
⌊	**Cd**	**114**	**99.976**	ug/L	0.449	0	2	42339	1	KED
⌈>	**In**	**115**		ug/L			438274	420550	0	Standard
|	**Ag**	**107**	**100.427**	ug/L	2.489	2	126	1428370	2	Standard
|	**Sb**	**121**	**100.658**	ug/L	1.236	1	43	1235404	0	Standard
|	**Sb**	**123**	**100.736**	ug/L	2.200	2	37	968044	2	Standard
|	**Ba**	**135**	**100.235**	ug/L	2.161	2	80	500125	2	Standard
⌊	**Ba**	**137**	**100.474**	ug/L	1.708	1	128	917216	1	Standard
⌈>	**Tb**	**159**		ug/L			174434	170868	1	Standard
⌊	**Pb**	**208**	**99.008**	ug/L	1.120	1	307	6708952	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 14:59:42
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25934	25875	1	Standard
⌈>	**Sc**	**45**		ug/L			503621	470287	1	Standard
|	**Cr**	**52**	**0.027**	ug/L	0.012	44	17887	17165	0	Standard
⌊	**Cr**	**53**	**-0.008**	ug/L	0.006	82	162	135	8	Standard
⌈>	**Ge**	**72**		ug/L			24344	23474	1	KED
|	**Ni**	**60**	**0.004**	ug/L	0.006	156	8	12	45	KED
|	**Ni**	**62**	**0.022**	ug/L	0.019	88	1	5	57	KED
|	**Cu**	**63**	**0.009**	ug/L	0.004	48	68	90	12	KED
|	**Cu**	**65**	**0.011**	ug/L	0.001	13	31	45	4	KED
|	**Zn**	**66**	**0.068**	ug/L	0.060	88	60	83	27	KED
|	**Zn**	**67**	**0.187**	ug/L	0.095	50	10	20	27	KED
|	**As**	**75**	**0.009**	ug/L	0.007	82	1	3	37	KED
⌊	**Se**	**78**	**0.038**	ug/L	0.036	94	5	5	9	KED
	Kr	**83**		ug/L			54	46	19	Standard
⌈>	**In-1**	**115**		ug/L			4994	5078	0	KED
|	**Cd**	**111**	**0.008**	ug/L	0.009	115	0	1	91	KED
⌊	**Cd**	**114**	**-0.005**	ug/L	0.003	55	2	0	206	KED
⌈>	**In**	**115**		ug/L			438274	402307	3	Standard
|	**Ag**	**107**	**0.011**	ug/L	0.002	16	126	271	11	Standard
|	**Sb**	**121**	**0.053**	ug/L	0.001	2	43	662	3	Standard
|	**Sb**	**123**	**0.053**	ug/L	0.003	6	37	522	4	Standard
|	**Ba**	**135**	**0.007**	ug/L	0.001	18	80	104	5	Standard
⌊	**Ba**	**137**	**0.006**	ug/L	0.001	12	128	173	0	Standard
⌈>	**Tb**	**159**		ug/L			174434	162088	1	Standard
⌊	**Pb**	**208**	**0.004**	ug/L	0.001	21	307	549	11	Standard

Sample Information

Sample Date/Time: Monday, June 26, 2023 14:52:13
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.m
Mass Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Conditions File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

Calibration

Analyte	Mass	**r Corr Coef**	Slope	Std 1 Conc	Std 2 Conc	Std 3 Conc	Std 4 Conc	Std 5 Conc
C	13							
Sc	45							
Cr	52	**1.0000**	0.036	0.50	10	20	50	100
Cr	53	**1.0000**	0.004	0.50	10	20	50	100
Ge	72							
Ni	60	**0.9999**	0.038	0.50	10	20	50	100
Ni	62	**0.9999**	0.006	0.50	10	20	50	100
Cu	63	**1.0000**	0.112	0.50	10	20	50	100
Cu	65	**1.0000**	0.057	0.50	10	20	50	100
Zn	66	**1.0000**	0.016	6.00	10	20	50	100
Zn	67	**0.9999**	0.003	6.00	10	20	50	100
As	75	**0.9999**	0.007	0.20	10	20	50	100
Se	78	**0.9998**	0.001	0.50	10	20	50	100
Kr	83							
In-1	115							
Cd	111	**1.0000**	0.033	0.10	10	20	50	100
Cd	114	**1.0000**	0.085	0.10	10	20	50	100
In	115							
Ag	107	**0.9999**	0.034	0.20	10	20	50	100
Sb	121	**0.9999**	0.029	0.20	10	20	50	100
Sb	123	**0.9999**	0.023	0.20	10	20	50	100
Ba	135	**1.0000**	0.012	0.50	10	20	50	100
Ba	137	**0.9999**	0.022	0.50	10	20	50	100
Tb	159							
Pb	208	**0.9998**	0.397	0.10	10	20	50	100

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-ICV1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 15:05:51
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25934	31187	1	Standard
⌈>	**Sc**	**45**		ug/L			503621	492945	3	Standard
|	**Cr**	**52**	**49.417**	ug/L	0.636	1	17887	893289	2	Standard
⌊	**Cr**	**53**	**49.006**	ug/L	0.856	1	162	101971	2	Standard
⌈>	**Ge**	**72**		ug/L			24344	24231	1	KED
|	**Ni**	**60**	**49.322**	ug/L	0.612	1	8	45976	2	KED
|	**Ni**	**62**	**50.274**	ug/L	1.428	2	1	7654	4	KED
|	**Cu**	**63**	**50.510**	ug/L	0.646	1	68	137043	2	KED
|	**Cu**	**65**	**50.561**	ug/L	0.544	1	31	69424	2	KED
|	**Zn**	**66**	**49.347**	ug/L	0.940	1	60	18772	2	KED
|	**Zn**	**67**	**50.579**	ug/L	0.981	1	10	3131	3	KED
|	**As**	**75**	**47.130**	ug/L	0.447	0	1	8169	2	KED
⌊	**Se**	**78**	**78.249**	ug/L	1.073	1	5	1394	2	KED
	Kr	**83**		ug/L			54	53	15	Standard
⌈>	**In-1**	**115**		ug/L			4994	4937	1	KED
|	**Cd**	**111**	**50.953**	ug/L	1.212	2	0	8303	0	KED
⌊	**Cd**	**114**	**50.289**	ug/L	1.215	2	2	21072	1	KED
⌈>	**In**	**115**		ug/L			438274	422871	0	Standard
|	**Ag**	**107**	**51.485**	ug/L	0.723	1	126	736359	1	Standard
|	**Sb**	**121**	**49.584**	ug/L	0.917	1	43	611976	2	Standard
|	**Sb**	**123**	**48.906**	ug/L	1.181	2	37	472497	1	Standard
|	**Ba**	**135**	**50.449**	ug/L	1.055	2	80	253109	1	Standard
⌊	**Ba**	**137**	**51.547**	ug/L	1.195	2	128	473195	2	Standard
⌈>	**Tb**	**159**		ug/L			174434	174042	2	Standard
⌊	**Pb**	**208**	**52.369**	ug/L	0.949	1	307	3613641	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-ICB1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 15:13:19
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25934	25382	1	Standard
⌈>	**Sc**	**45**		ug/L			503621	474566	1	Standard
|	**Cr**	**52**	**0.021**	ug/L	0.016	77	17887	17216	2	Standard
⌊	**Cr**	**53**	**0.004**	ug/L	0.012	326	162	160	14	Standard
⌈>	**Ge**	**72**		ug/L			24344	24161	0	KED
|	**Ni**	**60**	**0.005**	ug/L	0.007	152	8	13	51	KED
|	**Ni**	**62**	**0.021**	ug/L	0.015	69	1	5	43	KED
|	**Cu**	**63**	**0.003**	ug/L	0.006	238	68	74	21	KED
|	**Cu**	**65**	**0.013**	ug/L	0.002	17	31	48	5	KED
|	**Zn**	**66**	**0.105**	ug/L	0.060	56	60	99	22	KED
|	**Zn**	**67**	**0.053**	ug/L	0.061	116	10	13	28	KED
|	**As**	**75**	**0.007**	ug/L	0.008	113	1	3	48	KED
⌊	**Se**	**78**	**0.056**	ug/L	0.072	128	5	6	21	KED
	Kr	**83**		ug/L			54	41	27	Standard
⌈>	**In-1**	**115**		ug/L			4994	5134	1	KED
|	**Cd**	**111**	**0.006**	ug/L	0.003	60	0	1	43	KED
⌊	**Cd**	**114**	**0.001**	ug/L	0.003	282	2	3	39	KED
⌈>	**In**	**115**		ug/L			438274	422146	2	Standard
|	**Ag**	**107**	**0.020**	ug/L	0.013	62	126	408	42	Standard
|	**Sb**	**121**	**0.049**	ug/L	0.012	23	43	649	22	Standard
|	**Sb**	**123**	**0.044**	ug/L	0.013	30	37	457	26	Standard
|	**Ba**	**135**	**0.014**	ug/L	0.012	91	80	145	42	Standard
⌊	**Ba**	**137**	**0.014**	ug/L	0.007	50	128	252	25	Standard
⌈>	**Tb**	**159**		ug/L			174434	166952	1	Standard
⌊	**Pb**	**208**	**0.011**	ug/L	0.009	82	307	1015	56	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 15:19:02
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25934	30788	0	Standard
⌈>	**Sc**	**45**		ug/L			503621	483778	2	Standard
|	**Cr**	**52**	**50.071**	ug/L	1.347	2	17887	887840	0	Standard
⌊	**Cr**	**53**	**49.648**	ug/L	1.537	3	162	101370	0	Standard
⌈>	**Ge**	**72**		ug/L			24344	24675	3	KED
|	**Ni**	**60**	**49.664**	ug/L	1.673	3	8	47104	0	KED
|	**Ni**	**62**	**48.804**	ug/L	1.097	2	1	7562	1	KED
|	**Cu**	**63**	**49.948**	ug/L	1.254	2	68	137910	0	KED
|	**Cu**	**65**	**49.958**	ug/L	1.405	2	31	69815	2	KED
|	**Zn**	**66**	**50.242**	ug/L	1.684	3	60	19450	1	KED
|	**Zn**	**67**	**51.691**	ug/L	1.800	3	10	3260	5	KED
|	**As**	**75**	**49.478**	ug/L	1.533	3	1	8727	0	KED
⌊	**Se**	**78**	**51.170**	ug/L	2.277	4	5	929	2	KED
	Kr	**83**		ug/L			54	59	8	Standard
⌈>	**In-1**	**115**		ug/L			4994	5223	1	KED
|	**Cd**	**111**	**50.261**	ug/L	0.958	1	0	8665	0	KED
⌊	**Cd**	**114**	**49.883**	ug/L	0.550	1	2	22119	1	KED
⌈>	**In**	**115**		ug/L			438274	414505	2	Standard
|	**Ag**	**107**	**51.190**	ug/L	1.246	2	126	717401	0	Standard
|	**Sb**	**121**	**50.458**	ug/L	1.577	3	43	610160	1	Standard
|	**Sb**	**123**	**49.287**	ug/L	0.832	1	37	466716	0	Standard
|	**Ba**	**135**	**50.979**	ug/L	1.551	3	80	250642	1	Standard
⌊	**Ba**	**137**	**51.637**	ug/L	0.940	1	128	464546	0	Standard
⌈>	**Tb**	**159**		ug/L			174434	171157	0	Standard
⌊	**Pb**	**208**	**52.118**	ug/L	0.799	1	307	3537706	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 15:26:31
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25934	26791	0	Standard
⌈>	**Sc**	**45**		ug/L			503621	484047	1	Standard
|	**Cr**	**52**	**0.010**	ug/L	0.017	176	17887	17358	1	Standard
⌊	**Cr**	**53**	**-0.011**	ug/L	0.008	73	162	132	14	Standard
⌈>	**Ge**	**72**		ug/L			24344	24721	2	KED
|	**Ni**	**60**	**0.012**	ug/L	0.002	18	8	20	10	KED
|	**Ni**	**62**	**0.004**	ug/L	0.007	179	1	2	43	KED
|	**Cu**	**63**	**0.008**	ug/L	0.006	80	68	90	17	KED
|	**Cu**	**65**	**0.009**	ug/L	0.003	36	31	44	10	KED
|	**Zn**	**66**	**0.117**	ug/L	0.013	10	60	106	6	KED
|	**Zn**	**67**	**0.058**	ug/L	0.044	75	10	13	20	KED
|	**As**	**75**	**0.010**	ug/L	0.005	47	1	3	20	KED
⌊	**Se**	**78**	**0.030**	ug/L	0.058	193	5	5	18	KED
	Kr	**83**		ug/L			54	46	19	Standard
⌈>	**In-1**	**115**		ug/L			4994	5303	2	KED
|	**Cd**	**111**	**0.011**	ug/L	0.006	58	0	2	49	KED
⌊	**Cd**	**114**	**-0.003**	ug/L	0.005	155	2	1	176	KED
⌈>	**In**	**115**		ug/L			438274	427041	2	Standard
|	**Ag**	**107**	**0.012**	ug/L	0.000	2	126	293	3	Standard
|	**Sb**	**121**	**0.063**	ug/L	0.004	6	43	827	7	Standard
|	**Sb**	**123**	**0.061**	ug/L	0.002	3	37	631	3	Standard
|	**Ba**	**135**	**0.001**	ug/L	0.002	201	80	82	12	Standard
⌊	**Ba**	**137**	**0.010**	ug/L	0.001	13	128	213	3	Standard
⌈>	**Tb**	**159**		ug/L			174434	167799	1	Standard
⌊	**Pb**	**208**	**0.004**	ug/L	0.000	3	307	586	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CRL1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 15:32:34
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25934	32271	1	Standard
⌈>	**Sc**	**45**		ug/L			503621	486289	2	Standard
|	**Cr**	**52**	**0.505**	ug/L	0.060	11	17887	26090	1	Standard
⌊	**Cr**	**53**	**0.477**	ug/L	0.015	3	162	1133	3	Standard
⌈>	**Ge**	**72**		ug/L			24344	25599	1	KED
|	**Ni**	**60**	**0.474**	ug/L	0.037	7	8	476	8	KED
|	**Ni**	**62**	**0.461**	ug/L	0.049	10	1	76	11	KED
|	**Cu**	**63**	**0.480**	ug/L	0.025	5	68	1445	4	KED
|	**Cu**	**65**	**0.507**	ug/L	0.010	1	31	768	3	KED
|	**Zn**	**66**	**5.817**	ug/L	0.181	3	60	2393	1	KED
|	**Zn**	**67**	**5.311**	ug/L	0.144	2	10	356	1	KED
|	**As**	**75**	**0.207**	ug/L	0.024	11	1	39	12	KED
⌊	**Se**	**78**	**0.542**	ug/L	0.151	27	5	15	18	KED
	Kr	**83**		ug/L			54	48	12	Standard
⌈>	**In-1**	**115**		ug/L			4994	5516	0	KED
|	**Cd**	**111**	**0.120**	ug/L	0.027	22	0	22	21	KED
⌊	**Cd**	**114**	**0.113**	ug/L	0.028	25	2	55	23	KED
⌈>	**In**	**115**		ug/L			438274	424959	1	Standard
|	**Ag**	**107**	**0.191**	ug/L	0.009	4	126	2861	3	Standard
|	**Sb**	**121**	**0.214**	ug/L	0.003	1	43	2692	1	Standard
|	**Sb**	**123**	**0.212**	ug/L	0.008	3	37	2099	4	Standard
|	**Ba**	**135**	**0.464**	ug/L	0.013	2	80	2417	2	Standard
⌊	**Ba**	**137**	**0.491**	ug/L	0.012	2	128	4655	1	Standard
⌈>	**Tb**	**159**		ug/L			174434	168382	1	Standard
⌊	**Pb**	**208**	**0.105**	ug/L	0.002	1	307	7292	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IFA1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 15:38:23
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25934	129724	1	Standard
>	Sc	45		ug/L			503621	479359	1	Standard
	Cr	52	0.830	ug/L	0.024	2	17887	31327	0	Standard
	Cr	53	11.127	ug/L	0.102	0	162	22639	0	Standard
>	Ge	72		ug/L			24344	25050	1	KED
	Ni	60	0.087	ug/L	0.024	27	8	92	24	KED
	Ni	62	0.165	ug/L	0.027	16	1	27	14	KED
	Cu	63	0.023	ug/L	0.008	34	68	133	15	KED
	Cu	65	0.017	ug/L	0.015	87	31	57	36	KED
	Zn	66	0.247	ug/L	0.036	14	60	158	9	KED
	Zn	67	0.274	ug/L	0.181	65	10	27	41	KED
	As	75	0.017	ug/L	0.012	70	1	4	43	KED
	Se	78	0.110	ug/L	0.087	79	5	7	20	KED
	Kr	83		ug/L			54	68	12	Standard
>	In-1	115		ug/L			4994	5301	1	KED
	Cd	111	0.073	ug/L	0.036	49	0	13	47	KED
	Cd	114	0.075	ug/L	0.024	31	2	36	28	KED
>	In	115		ug/L			438274	416951	2	Standard
	Ag	107	-0.002	ug/L	0.001	53	126	93	12	Standard
	Sb	121	0.043	ug/L	0.004	10	43	559	7	Standard
	Sb	123	0.042	ug/L	0.004	9	37	436	7	Standard
	Ba	135	0.095	ug/L	0.002	2	80	547	5	Standard
	Ba	137	0.098	ug/L	0.003	3	128	1010	0	Standard
>	Tb	159		ug/L			174434	165760	1	Standard
	Pb	208	0.022	ug/L	0.001	4	307	1747	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IFB1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 15:43:07
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25934	129614	1	Standard
>	Sc	45		ug/L			503621	472877	3	Standard
	Cr	52	20.559	ug/L	0.840	4	17887	365992	0	Standard
	Cr	53	29.694	ug/L	0.675	2	162	59320	2	Standard
>	Ge	72		ug/L			24344	24846	0	KED
	Ni	60	19.768	ug/L	0.228	1	8	18898	1	KED
	Ni	62	19.838	ug/L	0.668	3	1	3097	2	KED
	Cu	63	19.541	ug/L	0.350	1	68	54402	1	KED
	Cu	65	19.808	ug/L	0.510	2	31	27906	3	KED
	Zn	66	18.743	ug/L	0.285	1	60	7350	1	KED
	Zn	67	16.450	ug/L	1.044	6	10	1051	6	KED
	As	75	19.590	ug/L	0.427	2	1	3482	1	KED
	Se	78	0.184	ug/L	0.100	54	5	8	21	KED
	Kr	83		ug/L			54	71	13	Standard
>	In-1	115		ug/L			4994	5024	4	KED
	Cd	111	19.496	ug/L	0.307	1	0	3232	3	KED
	Cd	114	19.647	ug/L	0.743	3	2	8374	3	KED
>	In	115		ug/L			438274	416787	4	Standard
	Ag	107	19.114	ug/L	0.755	3	126	269201	0	Standard
	Sb	121	0.038	ug/L	0.005	12	43	506	8	Standard
	Sb	123	0.037	ug/L	0.004	11	37	388	6	Standard
	Ba	135	0.107	ug/L	0.004	3	80	606	5	Standard
	Ba	137	0.099	ug/L	0.004	4	128	1020	4	Standard
>	Tb	159		ug/L			174434	165762	1	Standard
	Pb	208	0.029	ug/L	0.000	1	307	2174	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-HCV1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 15:47:52
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25934	30834	0	Standard
>	Sc	45		ug/L			503621	457712	2	Standard
	Cr	52	178.068	ug/L	2.644	1	17887	2946086	1	Standard
	Cr	53	198.431	ug/L	3.248	1	162	382950	1	Standard
>	Ge	72		ug/L			24344	24125	1	KED
	Ni	60	198.516	ug/L	1.729	0	8	184184	0	KED
	Ni	62	198.450	ug/L	2.964	1	1	30069	1	KED
	Cu	63	197.252	ug/L	1.418	0	68	532538	0	KED
	Cu	65	198.267	ug/L	2.676	1	31	270904	1	KED
	Zn	66	195.555	ug/L	1.956	1	60	73890	0	KED
	Zn	67	196.261	ug/L	4.862	2	10	12066	1	KED
	As	75	202.539	ug/L	2.123	1	1	34943	0	KED
	Se	78	198.488	ug/L	2.462	1	5	3513	1	KED
	Kr	83		ug/L			54	62	8	Standard
>	In-1	115		ug/L			4994	5270	2	KED
	Cd	111	192.496	ug/L	3.972	2	0	33479	0	KED
	Cd	114	192.294	ug/L	3.349	1	2	85998	0	KED
>	In	115		ug/L			438274	404558	1	Standard
	Ag	107	183.074	ug/L	3.492	1	126	2504463	1	Standard
	Sb	121	185.392	ug/L	2.745	1	43	2189029	2	Standard
	Sb	123	195.617	ug/L	3.492	1	37	1808331	2	Standard
	Ba	135	193.210	ug/L	2.640	1	80	927322	2	Standard
	Ba	137	193.346	ug/L	3.233	1	128	1697845	2	Standard
>	Tb	159		ug/L			174434	160110	2	Standard
	Pb	208	191.085	ug/L	3.242	1	307	12129824	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-HCV2
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 15:52:37
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25934	35022	1	Standard
>	**Sc**	**45**		ug/L			503621	441530	2	Standard
	Cr	**52**	**267.248**	ug/L	4.713	1	17887	4257151	1	Standard
	Cr	**53**	**301.107**	ug/L	1.880	0	162	560584	2	Standard
>	**Ge**	**72**		ug/L			24344	23798	0	KED
	Ni	**60**	**292.107**	ug/L	0.397	0	8	267361	0	KED
	Ni	**62**	**290.846**	ug/L	1.041	0	1	43476	0	KED
	Cu	**63**	**288.346**	ug/L	2.761	0	68	767963	1	KED
	Cu	**65**	**290.716**	ug/L	2.965	1	31	391858	1	KED
	Zn	**66**	**279.970**	ug/L	1.258	0	60	104335	0	KED
	Zn	**67**	**281.679**	ug/L	2.218	0	10	17081	0	KED
	As	**75**	**304.912**	ug/L	0.331	0	1	51895	0	KED
	Se	**78**	**292.551**	ug/L	4.272	1	5	5105	1	KED
	Kr	**83**		ug/L			54	92	6	Standard
>	**In-1**	**115**		ug/L			4994	5049	1	KED
	Cd	**111**	**293.901**	ug/L	7.261	2	0	48978	0	KED
	Cd	**114**	**292.441**	ug/L	8.136	2	2	125306	0	KED
>	**In**	**115**		ug/L			438274	377264	2	Standard
	Ag	**107**	**275.802**	ug/L	6.036	2	126	3518243	2	Standard
	Sb	**121**	**274.929**	ug/L	6.105	2	43	3025986	0	Standard
	Sb	**123**	**272.729**	ug/L	2.492	0	37	2350623	1	Standard
	Ba	**135**	**287.365**	ug/L	3.035	1	80	1285975	2	Standard
	Ba	**137**	**267.400**	ug/L	3.512	1	128	2189607	2	Standard
>	**Tb**	**159**		ug/L			174434	148589	2	Standard
	Pb	**208**	**293.356**	ug/L	2.661	0	307	17284539	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL2
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 16:00:05
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25934	31536	1	Standard
>	**Sc**	**45**		ug/L			503621	472068	2	Standard
	Cr	**52**	**0.060**	ug/L	0.026	43	17887	17786	1	Standard
	Cr	**53**	**0.120**	ug/L	0.004	3	162	391	0	Standard
>	**Ge**	**72**		ug/L			24344	26340	1	KED
	Ni	**60**	**0.022**	ug/L	0.010	45	8	32	32	KED
	Ni	**62**	**0.014**	ug/L	0.029	202	1	4	107	KED
	Cu	**63**	**0.014**	ug/L	0.008	54	68	114	17	KED
	Cu	**65**	**0.018**	ug/L	0.009	49	31	61	20	KED
	Zn	**66**	**0.184**	ug/L	0.007	3	60	140	1	KED
	Zn	**67**	**0.367**	ug/L	0.068	18	10	35	11	KED
	As	**75**	**0.028**	ug/L	0.008	29	1	7	23	KED
	Se	**78**	**0.216**	ug/L	0.112	51	5	9	22	KED
	Kr	**83**		ug/L			54	49	25	Standard
>	**In-1**	**115**		ug/L			4994	5732	3	KED
	Cd	**111**	**0.153**	ug/L	0.251	163	0	30	162	KED
	Cd	**114**	**0.130**	ug/L	0.208	160	2	67	154	KED
>	**In**	**115**		ug/L			438274	419717	2	Standard
	Ag	**107**	**-0.002**	ug/L	0.001	26	126	90	7	Standard
	Sb	**121**	**0.256**	ug/L	0.011	4	43	3176	4	Standard
	Sb	**123**	**0.257**	ug/L	0.010	3	37	2497	1	Standard
	Ba	**135**	**0.110**	ug/L	0.003	2	80	622	0	Standard
	Ba	**137**	**0.119**	ug/L	0.009	7	128	1206	4	Standard
>	**Tb**	**159**		ug/L			174434	167151	0	Standard
	Pb	**208**	**0.012**	ug/L	0.001	6	307	1092	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL3
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 16:06:45
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25934	31541	1	Standard
>	**Sc**	**45**		ug/L			503621	476913	2	Standard
	Cr	**52**	**0.162**	ug/L	0.213	131	17887	19749	19	Standard
	Cr	**53**	**0.228**	ug/L	0.235	102	162	616	78	Standard
>	**Ge**	**72**		ug/L			24344	26786	0	KED
	Ni	**60**	**0.008**	ug/L	0.003	33	8	18	15	KED
	Ni	**62**	**0.006**	ug/L	0.007	102	1	3	34	KED
	Cu	**63**	**0.005**	ug/L	0.002	49	68	89	7	KED
	Cu	**65**	**0.010**	ug/L	0.005	50	31	50	15	KED
	Zn	**66**	**0.143**	ug/L	0.033	23	60	126	11	KED
	Zn	**67**	**0.143**	ug/L	0.073	51	10	20	24	KED
	As	**75**	**0.007**	ug/L	0.002	33	1	3	14	KED
	Se	**78**	**0.184**	ug/L	0.143	77	5	9	30	KED
	Kr	**83**		ug/L			54	50	15	Standard
>	**In-1**	**115**		ug/L			4994	5691	2	KED
	Cd	**111**	**0.010**	ug/L	0.008	80	0	2	65	KED
	Cd	**114**	**-0.004**	ug/L	0.002	63	2	1	98	KED
>	**In**	**115**		ug/L			438274	429679	1	Standard
	Ag	**107**	**0.123**	ug/L	0.224	181	126	1959	169	Standard
	Sb	**121**	**0.214**	ug/L	0.212	99	43	2756	99	Standard
	Sb	**123**	**0.215**	ug/L	0.204	94	37	2175	94	Standard
	Ba	**135**	**0.261**	ug/L	0.245	93	80	1425	90	Standard
	Ba	**137**	**0.241**	ug/L	0.230	95	128	2404	92	Standard
>	**Tb**	**159**		ug/L			174434	169026	0	Standard
	Pb	**208**	**0.146**	ug/L	0.234	160	307	10096	156	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL4
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 16:13:31
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25934	31647	1	Standard
⌈>	**Sc**	**45**		ug/L			503621	465596	2	Standard
|	**Cr**	**52**	**0.022**	ug/L	0.019	85	17887	16896	0	Standard
⌊	**Cr**	**53**	**0.066**	ug/L	0.010	14	162	280	9	Standard
⌈>	**Ge**	**72**		ug/L			24344	27618	2	KED
|	**Ni**	**60**	**-0.001**	ug/L	0.008	646	8	8	101	KED
|	**Ni**	**62**	**-0.009**	ug/L	0.006	74	1	0	173	KED
|	**Cu**	**63**	**-0.014**	ug/L	0.001	9	68	34	14	KED
|	**Cu**	**65**	**-0.014**	ug/L	0.005	38	31	14	60	KED
|	**Zn**	**66**	**-0.069**	ug/L	0.007	10	60	38	5	KED
|	**Zn**	**67**	**-0.083**	ug/L	0.027	32	10	5	33	KED
|	**As**	**75**	**-0.000**	ug/L	0.003	768	1	1	25	KED
⌊	**Se**	**78**	**0.118**	ug/L	0.144	122	5	8	33	KED
	Kr	**83**		ug/L			54	46	9	Standard
⌈>	**In-1**	**115**		ug/L			4994	5939	0	KED
|	**Cd**	**111**	**0.003**	ug/L	0.005	165	0	0	100	KED
⌊	**Cd**	**114**	**-0.005**	ug/L	0.002	43	2	0	241	KED
⌈>	**In**	**115**		ug/L			438274	413516	0	Standard
|	**Ag**	**107**	**-0.006**	ug/L	0.000	6	126	29	20	Standard
|	**Sb**	**121**	**0.053**	ug/L	0.003	5	43	685	4	Standard
|	**Sb**	**123**	**0.051**	ug/L	0.003	5	37	519	4	Standard
|	**Ba**	**135**	**-0.007**	ug/L	0.001	13	80	40	12	Standard
⌊	**Ba**	**137**	**-0.005**	ug/L	0.001	19	128	75	11	Standard
⌈>	**Tb**	**159**		ug/L			174434	164858	0	Standard
⌊	**Pb**	**208**	**0.001**	ug/L	0.000	49	307	326	6	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV2
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 16:18:16
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25934	29773	2	Standard
⎡>	**Sc**	**45**		ug/L			503621	477910	0	Standard
⎢	**Cr**	**52**	**49.317**	ug/L	0.679	1	17887	864405	0	Standard
⎣	**Cr**	**53**	**49.636**	ug/L	0.653	1	162	100164	1	Standard
⎡>	**Ge**	**72**		ug/L			24344	27092	0	KED
⎢	**Ni**	**60**	**49.853**	ug/L	0.601	1	8	51955	1	KED
⎢	**Ni**	**62**	**49.416**	ug/L	1.394	2	1	8411	3	KED
⎢	**Cu**	**63**	**50.045**	ug/L	0.262	0	68	151797	0	KED
⎢	**Cu**	**65**	**49.954**	ug/L	0.069	0	31	76681	0	KED
⎢	**Zn**	**66**	**49.905**	ug/L	0.418	0	60	21227	1	KED
⎢	**Zn**	**67**	**52.950**	ug/L	1.473	2	10	3664	2	KED
⎢	**As**	**75**	**50.852**	ug/L	0.378	0	1	9854	0	KED
⎣	**Se**	**78**	**50.547**	ug/L	1.093	2	5	1009	2	KED
	Kr	**83**		ug/L			54	53	12	Standard
⎡>	**In-1**	**115**		ug/L			4994	5869	3	KED
⎢	**Cd**	**111**	**49.462**	ug/L	1.621	3	0	9577	1	KED
⎣	**Cd**	**114**	**49.930**	ug/L	1.342	2	2	24863	0	KED
⎡>	**In**	**115**		ug/L			438274	423897	3	Standard
⎢	**Ag**	**107**	**50.924**	ug/L	2.107	4	126	729428	1	Standard
⎢	**Sb**	**121**	**49.888**	ug/L	1.186	2	43	616923	1	Standard
⎢	**Sb**	**123**	**49.533**	ug/L	1.622	3	37	479440	0	Standard
⎢	**Ba**	**135**	**50.623**	ug/L	1.147	2	80	254547	2	Standard
⎣	**Ba**	**137**	**50.132**	ug/L	1.683	3	128	461026	1	Standard
⎡>	**Tb**	**159**		ug/L			174434	171477	1	Standard
⎣	**Pb**	**208**	**51.632**	ug/L	0.513	0	307	3510959	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB2
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 16:27:09
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25934	25551	0	Standard
⌈>	**Sc**	**45**		ug/L			503621	467261	0	Standard
|	**Cr**	**52**	**0.019**	ug/L	0.027	145	17887	16909	2	Standard
⌊	**Cr**	**53**	**0.045**	ug/L	0.005	10	162	238	4	Standard
⌈>	**Ge**	**72**		ug/L			24344	27822	0	KED
|	**Ni**	**60**	**0.011**	ug/L	0.005	50	8	21	26	KED
|	**Ni**	**62**	**0.017**	ug/L	0.022	135	1	5	78	KED
|	**Cu**	**63**	**0.012**	ug/L	0.003	23	68	114	7	KED
|	**Cu**	**65**	**0.014**	ug/L	0.009	67	31	57	24	KED
|	**Zn**	**66**	**0.069**	ug/L	0.026	37	60	99	11	KED
|	**Zn**	**67**	**0.149**	ug/L	0.107	71	10	22	34	KED
|	**As**	**75**	**0.005**	ug/L	0.005	97	1	3	32	KED
⌊	**Se**	**78**	**0.104**	ug/L	0.111	107	5	7	27	KED
	Kr	**83**		ug/L			54	51	11	Standard
⌈>	**In-1**	**115**		ug/L			4994	6236	1	KED
|	**Cd**	**111**	**0.007**	ug/L	0.008	110	0	1	86	KED
⌊	**Cd**	**114**	**-0.003**	ug/L	0.003	130	2	1	99	KED
⌈>	**In**	**115**		ug/L			438274	418198	1	Standard
|	**Ag**	**107**	**0.011**	ug/L	0.003	22	126	281	11	Standard
|	**Sb**	**121**	**0.087**	ug/L	0.004	4	43	1098	4	Standard
|	**Sb**	**123**	**0.087**	ug/L	0.007	8	37	867	7	Standard
|	**Ba**	**135**	**0.008**	ug/L	0.004	47	80	116	15	Standard
⌊	**Ba**	**137**	**0.009**	ug/L	0.002	21	128	201	6	Standard
⌈>	**Tb**	**159**		ug/L			174434	165513	2	Standard
⌊	**Pb**	**208**	**0.005**	ug/L	0.002	35	307	590	17	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 16:34:50
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L				24889	2	Standard
⌈>	**Sc**	**45**		ug/L				473428	3	Standard
|	**Cr**	**52**		ug/L				16279	1	Standard
⌊	**Cr**	**53**		ug/L				226	3	Standard
⌈>	**Ge**	**72**		ug/L				27738	0	KED
|	**Ni**	**60**		ug/L				12	18	KED
|	**Ni**	**62**		ug/L				4	65	KED
|	**Cu**	**63**		ug/L				53	25	KED
|	**Cu**	**65**		ug/L				27	25	KED
|	**Zn**	**66**		ug/L				64	13	KED
|	**Zn**	**67**		ug/L				12	17	KED
|	**As**	**75**		ug/L				2	13	KED
⌊	**Se**	**78**		ug/L				5	17	KED
	Kr	**83**		ug/L				50	9	Standard
⌈>	**In-1**	**115**		ug/L				6180	2	KED
|	**Cd**	**111**		ug/L				1	50	KED
⌊	**Cd**	**114**		ug/L				1	86	KED
⌈>	**In**	**115**		ug/L				424873	3	Standard
|	**Ag**	**107**		ug/L				134	10	Standard
|	**Sb**	**121**		ug/L				453	4	Standard
|	**Sb**	**123**		ug/L				354	0	Standard
|	**Ba**	**135**		ug/L				57	21	Standard
⌊	**Ba**	**137**		ug/L				93	12	Standard
⌈>	**Tb**	**159**		ug/L				167282	2	Standard
⌊	**Pb**	**208**		ug/L				302	8	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV3
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 16:39:35
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24889	29228	1	Standard
⌈>	**Sc**	**45**		ug/L			473428	471216	2	Standard
|	**Cr**	**52**	**49.827**	ug/L	0.623	1	16279	860483	2	Standard
⌊	**Cr**	**53**	**49.538**	ug/L	0.169	0	226	98635	2	Standard
⌈>	**Ge**	**72**		ug/L			27738	27837	1	KED
|	**Ni**	**60**	**49.228**	ug/L	1.048	2	12	52702	0	KED
|	**Ni**	**62**	**49.109**	ug/L	0.851	1	4	8590	2	KED
|	**Cu**	**63**	**49.822**	ug/L	0.646	1	53	155253	2	KED
|	**Cu**	**65**	**50.579**	ug/L	0.924	1	27	79768	2	KED
|	**Zn**	**66**	**49.782**	ug/L	1.301	2	64	21746	1	KED
|	**Zn**	**67**	**50.407**	ug/L	1.049	2	12	3586	3	KED
|	**As**	**75**	**50.670**	ug/L	0.997	1	2	10087	1	KED
⌊	**Se**	**78**	**51.492**	ug/L	0.895	1	5	1055	2	KED
	Kr	**83**		ug/L			50	60	1	Standard
⌈>	**In-1**	**115**		ug/L			6180	6194	2	KED
|	**Cd**	**111**	**48.785**	ug/L	1.000	2	1	9973	0	KED
⌊	**Cd**	**114**	**48.901**	ug/L	1.926	3	1	25694	1	KED
⌈>	**In**	**115**		ug/L			424873	421667	1	Standard
|	**Ag**	**107**	**51.105**	ug/L	0.849	1	134	728727	0	Standard
|	**Sb**	**121**	**49.496**	ug/L	0.816	1	453	609481	1	Standard
|	**Sb**	**123**	**49.434**	ug/L	0.659	1	354	476569	1	Standard
|	**Ba**	**135**	**50.189**	ug/L	0.105	0	57	251101	2	Standard
⌊	**Ba**	**137**	**50.163**	ug/L	0.520	1	93	459134	1	Standard
⌈>	**Tb**	**159**		ug/L			167282	173240	0	Standard
⌊	**Pb**	**208**	**50.924**	ug/L	0.361	0	302	3498939	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB3
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 16:47:04
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24889	24500	1	Standard
⌈>	**Sc**	**45**		ug/L			473428	472590	2	Standard
|	**Cr**	**52**	**0.021**	ug/L	0.016	73	16279	16609	0	Standard
⌊	**Cr**	**53**	**-0.018**	ug/L	0.006	34	226	191	8	Standard
⌈>	**Ge**	**72**		ug/L			27738	28982	0	KED
|	**Ni**	**60**	**0.001**	ug/L	0.007	561	12	13	55	KED
|	**Ni**	**62**	**-0.001**	ug/L	0.006	530	4	4	24	KED
|	**Cu**	**63**	**0.005**	ug/L	0.001	19	53	71	4	KED
|	**Cu**	**65**	**0.009**	ug/L	0.003	33	27	44	10	KED
|	**Zn**	**66**	**0.034**	ug/L	0.022	64	64	83	12	KED
|	**Zn**	**67**	**0.078**	ug/L	0.136	174	12	19	52	KED
|	**As**	**75**	**0.006**	ug/L	0.008	140	2	3	49	KED
⌊	**Se**	**78**	**0.181**	ug/L	0.108	59	5	9	22	KED
	Kr	**83**		ug/L			50	43	19	Standard
⌈>	**In-1**	**115**		ug/L			6180	6083	0	KED
|	**Cd**	**111**	**0.000**	ug/L	0.000	12	1	1		KED
⌊	**Cd**	**114**	**0.003**	ug/L	0.006	221	1	2	116	KED
⌈>	**In**	**115**		ug/L			424873	427104	2	Standard
|	**Ag**	**107**	**0.002**	ug/L	0.001	32	134	169	6	Standard
|	**Sb**	**121**	**0.040**	ug/L	0.004	10	453	953	7	Standard
|	**Sb**	**123**	**0.038**	ug/L	0.002	6	354	731	1	Standard
|	**Ba**	**135**	**0.002**	ug/L	0.005	283	57	66	33	Standard
⌊	**Ba**	**137**	**0.001**	ug/L	0.002	223	93	102	21	Standard
⌈>	**Tb**	**159**		ug/L			167282	166552	2	Standard
⌊	**Pb**	**208**	**0.001**	ug/L	0.000	48	302	339	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0652-BLK1
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 16:54:23
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24889	36148	1	Standard
⌈>	Sc	45		ug/L			473428	484448	1	Standard
|	Cr	52	0.037	ug/L	0.018	49	16279	17295	2	Standard
⌊	Cr	53	-0.012	ug/L	0.007	54	226	207	7	Standard
⌈>	Ge	72		ug/L			27738	28595	2	KED
|	Ni	60	0.009	ug/L	0.010	114	12	22	50	KED
|	Ni	62	0.006	ug/L	0.011	166	4	5	33	KED
|	Cu	63	0.019	ug/L	0.015	78	53	114	41	KED
|	Cu	65	0.015	ug/L	0.019	126	27	53	59	KED
|	Zn	66	0.262	ug/L	0.077	29	64	184	19	KED
|	Zn	67	0.161	ug/L	0.052	32	12	24	13	KED
|	As	75	0.021	ug/L	0.013	64	2	6	43	KED
⌊	Se	78	0.016	ug/L	0.154	943	5	6	49	KED
	Kr	83		ug/L			50	43	33	Standard
⌈>	In-1	115		ug/L			6180	6520	1	KED
|	Cd	111	0.001	ug/L	0.002	245	1	2	24	KED
⌊	Cd	114	0.002	ug/L	0.004	192	1	2	92	KED
⌈>	In	115		ug/L			424873	436016	1	Standard
|	Ag	107	-0.007	ug/L	0.001	8	134	28	30	Standard
|	Sb	121	0.008	ug/L	0.001	11	453	565	0	Standard
|	Sb	123	0.008	ug/L	0.004	49	354	448	8	Standard
|	Ba	135	0.026	ug/L	0.004	14	57	192	11	Standard
⌊	Ba	137	0.028	ug/L	0.004	13	93	360	8	Standard
⌈>	Tb	159		ug/L			167282	171304	0	Standard
⌊	Pb	208	0.003	ug/L	0.000	11	302	493	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0652-BS1
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 16:59:08
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24889	34578	1	Standard
> Sc	45		ug/L			473428	478350	3	Standard
Cr	52	25.227	ug/L	0.463	1	16279	450226	2	Standard
Cr	53	25.181	ug/L	0.460	1	226	51001	2	Standard
> Ge	72		ug/L			27738	28317	2	KED
Ni	60	26.048	ug/L	0.544	2	12	28371	0	KED
Ni	62	26.215	ug/L	0.249	0	4	4666	1	KED
Cu	63	26.849	ug/L	0.193	0	53	85129	1	KED
Cu	65	27.102	ug/L	0.221	0	27	43489	1	KED
Zn	66	80.544	ug/L	0.298	0	64	35759	1	KED
Zn	67	78.237	ug/L	1.564	1	12	5655	2	KED
As	75	25.677	ug/L	0.450	1	2	5200	1	KED
Se	78	81.400	ug/L	0.665	0	5	1694	1	KED
Kr	83		ug/L			50	48	8	Standard
> In-1	115		ug/L			6180	6332	1	KED
Cd	111	24.971	ug/L	0.473	1	1	5220	0	KED
Cd	114	24.798	ug/L	0.358	1	1	13328	1	KED
> In	115		ug/L			424873	419678	3	Standard
Ag	107	26.512	ug/L	0.860	3	134	376129	0	Standard
Sb	121	-0.014	ug/L	0.002	13	453	273	10	Standard
Sb	123	-0.013	ug/L	0.001	9	354	221	6	Standard
Ba	135	26.208	ug/L	0.640	2	57	130490	2	Standard
Ba	137	25.973	ug/L	0.863	3	93	236501	1	Standard
> Tb	159		ug/L			167282	167922	1	Standard
Pb	208	27.458	ug/L	0.225	0	302	1828710	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0678-BLK1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 17:08:49
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24889	45991	1	Standard
>	Sc	45		ug/L			473428	467138	5	Standard
	Cr	52	0.105	ug/L	0.044	41	16279	17805	0	Standard
	Cr	53	0.043	ug/L	0.015	33	226	307	4	Standard
>	Ge	72		ug/L			27738	28777	2	KED
	Ni	60	0.023	ug/L	0.010	45	12	37	28	KED
	Ni	62	-0.004	ug/L	0.001	14	4	3	0	KED
	Cu	63	0.026	ug/L	0.005	17	53	140	9	KED
	Cu	65	0.038	ug/L	0.014	36	27	90	22	KED
	Zn	66	0.374	ug/L	0.039	10	64	235	8	KED
	Zn	67	0.339	ug/L	0.040	11	12	38	10	KED
	As	75	0.000	ug/L	0.004	834	2	2	32	KED
	Se	78	0.063	ug/L	0.061	96	5	7	20	KED
	Kr	83		ug/L			50	34	19	Standard
>	In-1	115		ug/L			6180	6760	1	KED
	Cd	111	0.002	ug/L	0.003	126	1	2	21	KED
	Cd	114	0.002	ug/L	0.005	262	1	2	125	KED
>	In	115		ug/L			424873	423112	3	Standard
	Ag	107	-0.006	ug/L	0.001	9	134	42	18	Standard
	Sb	121	-0.010	ug/L	0.002	18	453	323	5	Standard
	Sb	123	-0.012	ug/L	0.002	16	354	236	10	Standard
	Ba	135	0.050	ug/L	0.005	10	57	306	9	Standard
	Ba	137	0.050	ug/L	0.005	10	93	551	8	Standard
>	Tb	159		ug/L			167282	166164	3	Standard
	Pb	208	0.022	ug/L	0.001	3	302	1779	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0678-BS1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 17:13:34
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24889	44526	1	Standard
>	Sc	45		ug/L			473428	476021	2	Standard
	Cr	52	23.089	ug/L	0.403	1	16279	411462	0	Standard
	Cr	53	23.098	ug/L	0.539	2	226	46568	0	Standard
>	Ge	72		ug/L			27738	28547	0	KED
	Ni	60	23.854	ug/L	0.322	1	12	26200	0	KED
	Ni	62	23.762	ug/L	0.437	1	4	4264	0	KED
	Cu	63	24.627	ug/L	0.410	1	53	78723	1	KED
	Cu	65	24.595	ug/L	0.012	0	27	39792	0	KED
	Zn	66	78.503	ug/L	0.862	1	64	35137	0	KED
	Zn	67	77.398	ug/L	0.500	0	12	5639	0	KED
	As	75	24.833	ug/L	0.321	1	2	5071	1	KED
	Se	78	79.288	ug/L	1.162	1	5	1664	1	KED
	Kr	83		ug/L			50	46	27	Standard
>	In-1	115		ug/L			6180	6308	2	KED
	Cd	111	23.657	ug/L	0.298	1	1	4928	1	KED
	Cd	114	23.677	ug/L	0.330	1	1	12677	0	KED
>	In	115		ug/L			424873	419969	1	Standard
	Ag	107	24.606	ug/L	0.494	2	134	349531	0	Standard
	Sb	121	-0.016	ug/L	0.001	3	453	247	3	Standard
	Sb	123	-0.017	ug/L	0.004	21	354	188	17	Standard
	Ba	135	24.105	ug/L	0.490	2	57	120120	0	Standard
	Ba	137	24.044	ug/L	0.347	1	93	219226	0	Standard
>	Tb	159		ug/L			167282	167857	0	Standard
	Pb	208	25.202	ug/L	0.029	0	302	1677908	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0361-06
Sample Dil Factor: 5
Comments:
Sample Date/Time: Monday, June 26, 2023 17:18:38
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24889	55630	1	Standard
>	**Sc**	**45**		ug/L			473428	473625	3	Standard
	Cr	**52**	**3.091**	ug/L	0.074	2	16279	68901	1	Standard
	Cr	**53**	**9.955**	ug/L	0.118	1	226	20100	2	Standard
>	**Ge**	**72**		ug/L			27738	25379	1	KED
	Ni	**60**	**0.522**	ug/L	0.036	6	12	520	5	KED
	Ni	**62**	**0.633**	ug/L	0.139	21	4	104	19	KED
	Cu	**63**	**0.336**	ug/L	0.020	6	53	1001	4	KED
	Cu	**65**	**0.350**	ug/L	0.011	3	27	528	2	KED
	Zn	**66**	**0.178**	ug/L	0.026	14	64	130	9	KED
	Zn	**67**	**0.803**	ug/L	0.077	9	12	63	6	KED
	As	**75**	**14.046**	ug/L	0.257	1	2	2550	1	KED
	Se	**78**	**9.282**	ug/L	0.584	6	5	177	5	KED
	Kr	**83**		ug/L			50	57	20	Standard
>	**In-1**	**115**		ug/L			6180	5632	0	KED
	Cd	**111**	**0.009**	ug/L	0.016	174	1	3	87	KED
	Cd	**114**	**0.009**	ug/L	0.007	74	1	5	59	KED
>	**In**	**115**		ug/L			424873	397792	0	Standard
	Ag	**107**	**0.000**	ug/L	0.008	6922	134	127	89	Standard
	Sb	**121**	**0.098**	ug/L	0.004	4	453	1557	3	Standard
	Sb	**123**	**0.097**	ug/L	0.008	8	354	1214	5	Standard
	Ba	**135**	**9.546**	ug/L	0.101	1	57	45098	1	Standard
	Ba	**137**	**9.429**	ug/L	0.179	1	93	81489	1	Standard
>	**Tb**	**159**		ug/L			167282	164943	1	Standard
	Pb	**208**	**0.007**	ug/L	0.006	88	302	749	52	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0527-01
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 17:24:01
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24889	68628	2	Standard
>	Sc	45		ug/L			473428	510537	2	Standard
	Cr	52	34.895	ug/L	0.625	1	16279	657928	1	Standard
	Cr	53	35.450	ug/L	0.352	0	226	76533	1	Standard
>	Ge	72		ug/L			27738	28747	0	KED
	Ni	60	23.758	ug/L	0.108	0	12	26278	0	KED
	Ni	62	24.656	ug/L	0.621	2	4	4455	1	KED
	Cu	63	516.037	ug/L	5.093	0	53	1660011	0	KED
	Cu	65	520.308	ug/L	5.077	0	27	847086	0	KED
	Zn	66	531.051	ug/L	5.124	0	64	238981	0	KED
	Zn	67	533.206	ug/L	4.841	0	12	39048	0	KED
	As	75	3.213	ug/L	0.021	0	2	662	0	KED
	Se	78	0.324	ug/L	0.093	28	5	12	15	KED
	Kr	83		ug/L			50	64	14	Standard
>	In-1	115		ug/L			6180	6360	3	KED
	Cd	111	0.366	ug/L	0.064	17	1	79	19	KED
	Cd	114	0.294	ug/L	0.032	10	1	160	13	KED
>	In	115		ug/L			424873	438839	1	Standard
	Ag	107	0.330	ug/L	0.014	4	134	5038	3	Standard
	Sb	121	8.849	ug/L	0.128	1	453	113820	3	Standard
	Sb	123	8.610	ug/L	0.020	0	354	86695	1	Standard
	Ba	135	492.695	ug/L	1.238	0	57	2564816	1	Standard
	Ba	137	490.429	ug/L	7.054	1	93	4671031	2	Standard
>	Tb	159		ug/L			167282	179718	0	Standard
	Pb	208	23.537	ug/L	0.119	0	302	1677819	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL5
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 17:29:59
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24889	30538	2	Standard
⌈>	**Sc**	**45**		ug/L			473428	453631	3	Standard
|	**Cr**	**52**	**-0.009**	ug/L	0.025	261	16279	15435	1	Standard
⌊	**Cr**	**53**	**0.086**	ug/L	0.018	20	226	381	5	Standard
⌈>	**Ge**	**72**		ug/L			27738	28591	0	KED
|	**Ni**	**60**	**-0.001**	ug/L	0.007	482	12	10	73	KED
|	**Ni**	**62**	**-0.011**	ug/L	0.012	106	4	2	86	KED
|	**Cu**	**63**	**0.001**	ug/L	0.002	164	53	59	11	KED
|	**Cu**	**65**	**0.003**	ug/L	0.007	216	27	34	34	KED
|	**Zn**	**66**	**-0.032**	ug/L	0.028	88	64	52	24	KED
|	**Zn**	**67**	**-0.040**	ug/L	0.065	161	12	10	47	KED
|	**As**	**75**	**-0.002**	ug/L	0.004	192	2	1	41	KED
⌊	**Se**	**78**	**0.104**	ug/L	0.070	67	5	7	17	KED
	Kr	**83**		ug/L			50	48	9	Standard
⌈>	**In-1**	**115**		ug/L			6180	6281	4	KED
|	**Cd**	**111**	**-0.003**	ug/L	0.007	243	1	1	114	KED
⌊	**Cd**	**114**	**0.002**	ug/L	0.005	282	1	2	127	KED
⌈>	**In**	**115**		ug/L			424873	418955	3	Standard
|	**Ag**	**107**	**-0.007**	ug/L	0.001	9	134	28	37	Standard
|	**Sb**	**121**	**-0.028**	ug/L	0.000	1	453	103	3	Standard
|	**Sb**	**123**	**-0.029**	ug/L	0.002	7	354	75	22	Standard
|	**Ba**	**135**	**0.003**	ug/L	0.000	7	57	71	3	Standard
⌊	**Ba**	**137**	**0.003**	ug/L	0.001	48	93	119	13	Standard
⌈>	**Tb**	**159**		ug/L			167282	165087	1	Standard
⌊	**Pb**	**208**	**0.001**	ug/L	0.000	16	302	367	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0527-01RE1
Sample Dil Factor: 100
Comments:
Sample Date/Time: Monday, June 26, 2023 17:34:59
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24889	35391	3	Standard
>	Sc	45		ug/L			473428	483173	5	Standard
	Cr	52	7.267	ug/L	0.256	3	16279	142755	4	Standard
	Cr	53	7.305	ug/L	0.286	3	226	15088	2	Standard
>	Ge	72		ug/L			27738	29478	0	KED
	Ni	60	4.737	ug/L	0.132	2	12	5383	3	KED
	Ni	62	4.728	ug/L	0.242	5	4	880	4	KED
	Cu	63	102.753	ug/L	1.442	1	53	338997	1	KED
	Cu	65	104.833	ug/L	0.873	0	27	175031	0	KED
	Zn	66	109.435	ug/L	1.275	1	64	50555	1	KED
	Zn	67	109.095	ug/L	0.853	0	12	8203	1	KED
	As	75	0.591	ug/L	0.013	2	2	126	1	KED
	Se	78	0.079	ug/L	0.157	198	5	7	43	KED
	Kr	83		ug/L			50	45	8	Standard
>	In-1	115		ug/L			6180	6335	0	KED
	Cd	111	0.067	ug/L	0.007	10	1	15	9	KED
	Cd	114	0.065	ug/L	0.008	12	1	36	12	KED
>	In	115		ug/L			424873	437584	3	Standard
	Ag	107	0.056	ug/L	0.001	2	134	963	1	Standard
	Sb	121	1.739	ug/L	0.035	1	453	22662	2	Standard
	Sb	123	1.751	ug/L	0.033	1	354	17875	4	Standard
	Ba	135	111.158	ug/L	2.667	2	57	576689	1	Standard
	Ba	137	109.735	ug/L	1.821	1	93	1041807	2	Standard
>	Tb	159		ug/L			167282	171557	1	Standard
	Pb	208	4.926	ug/L	0.095	1	302	335419	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0271-01
Sample Dil Factor: 50
Comments:
Sample Date/Time: Monday, June 26, 2023 17:39:43
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24889	57826	2	Standard
>	Sc	45		ug/L			473428	476037	2	Standard
	Cr	52	2.199	ug/L	0.094	4	16279	53985	0	Standard
	Cr	53	2.151	ug/L	0.032	1	226	4544	2	Standard
>	Ge	72		ug/L			27738	29340	1	KED
	Ni	60	0.284	ug/L	0.016	5	12	333	7	KED
	Ni	62	0.285	ug/L	0.020	6	4	57	5	KED
	Cu	63	0.901	ug/L	0.021	2	53	3016	3	KED
	Cu	65	0.939	ug/L	0.013	1	27	1589	3	KED
	Zn	66	99.646	ug/L	1.624	1	64	45815	0	KED
	Zn	67	93.260	ug/L	1.949	2	12	6980	0	KED
	As	75	0.009	ug/L	0.008	83	2	4	40	KED
	Se	78	0.042	ug/L	0.057	134	5	6	17	KED
	Kr	83		ug/L			50	47	24	Standard
>	In-1	115		ug/L			6180	6464	2	KED
	Cd	111	0.336	ug/L	0.023	6	1	73	5	KED
	Cd	114	0.318	ug/L	0.041	12	1	175	12	KED
>	In	115		ug/L			424873	432239	0	Standard
	Ag	107	-0.007	ug/L	0.001	12	134	29	46	Standard
	Sb	121	0.002	ug/L	0.003	186	453	482	8	Standard
	Sb	123	0.000	ug/L	0.004	1425	354	363	10	Standard
	Ba	135	1.896	ug/L	0.133	6	57	9777	6	Standard
	Ba	137	1.896	ug/L	0.123	6	93	17874	5	Standard
>	Tb	159		ug/L			167282	171037	1	Standard
	Pb	208	0.042	ug/L	0.007	17	302	3147	13	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL6
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 17:44:51
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24889	29917	2	Standard
⌈>	**Sc**	**45**		ug/L			473428	454112	2	Standard
|	**Cr**	**52**	**0.092**	ug/L	0.031	33	16279	17100	0	Standard
⌊	**Cr**	**53**	**0.033**	ug/L	0.004	13	226	280	4	Standard
⌈>	**Ge**	**72**		ug/L			27738	28542	0	KED
|	**Ni**	**60**	**-0.004**	ug/L	0.001	26	12	8	13	KED
|	**Ni**	**62**	**-0.015**	ug/L	0.011	71	4	1	100	KED
|	**Cu**	**63**	**-0.005**	ug/L	0.003	51	53	39	20	KED
|	**Cu**	**65**	**-0.009**	ug/L	0.001	15	27	14	15	KED
|	**Zn**	**66**	**-0.047**	ug/L	0.007	15	64	45	7	KED
|	**Zn**	**67**	**-0.057**	ug/L	0.055	96	12	8	44	KED
|	**As**	**75**	**0.001**	ug/L	0.002	183	2	2	20	KED
⌊	**Se**	**78**	**0.090**	ug/L	0.101	111	5	7	27	KED
	Kr	**83**		ug/L			50	43	28	Standard
⌈>	**In-1**	**115**		ug/L			6180	6314	1	KED
|	**Cd**	**111**	**0.010**	ug/L	0.009	89	1	4	48	KED
⌊	**Cd**	**114**	**-0.002**	ug/L	0.002	131	1	0	304	KED
⌈>	**In**	**115**		ug/L			424873	413928	5	Standard
|	**Ag**	**107**	**-0.008**	ug/L	0.000	0	134	17	6	Standard
|	**Sb**	**121**	**-0.031**	ug/L	0.001	2	453	72	16	Standard
|	**Sb**	**123**	**-0.030**	ug/L	0.001	2	354	64	5	Standard
|	**Ba**	**135**	**-0.003**	ug/L	0.002	64	57	40	24	Standard
⌊	**Ba**	**137**	**0.001**	ug/L	0.001	60	93	102	4	Standard
⌈>	**Tb**	**159**		ug/L			167282	160770	1	Standard
⌊	**Pb**	**208**	**0.001**	ug/L	0.000	16	302	369	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV4
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 17:49:36
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24889	28087	3	Standard
⎡>	**Sc**	**45**		ug/L			473428	459000	4	Standard
⎢	**Cr**	**52**	**49.288**	ug/L	2.409	4	16279	828228	1	Standard
⎣	**Cr**	**53**	**49.072**	ug/L	1.125	2	226	95119	1	Standard
⎡>	**Ge**	**72**		ug/L			27738	29247	1	KED
⎢	**Ni**	**60**	**49.901**	ug/L	0.798	1	12	56134	0	KED
⎢	**Ni**	**62**	**50.002**	ug/L	0.760	1	4	9190	2	KED
⎢	**Cu**	**63**	**50.277**	ug/L	1.327	2	53	164579	2	KED
⎢	**Cu**	**65**	**49.923**	ug/L	0.421	0	27	82715	0	KED
⎢	**Zn**	**66**	**50.039**	ug/L	0.720	1	64	22969	0	KED
⎢	**Zn**	**67**	**51.060**	ug/L	1.248	2	12	3815	1	KED
⎢	**As**	**75**	**52.215**	ug/L	1.238	2	2	10921	1	KED
⎣	**Se**	**78**	**50.275**	ug/L	0.060	0	5	1083	1	KED
	Kr	**83**		ug/L			50	41	5	Standard
⎡>	**In-1**	**115**		ug/L			6180	6579	0	KED
⎢	**Cd**	**111**	**49.280**	ug/L	0.380	0	1	10704	0	KED
⎣	**Cd**	**114**	**48.889**	ug/L	0.539	1	1	27303	1	KED
⎡>	**In**	**115**		ug/L			424873	415376	1	Standard
⎢	**Ag**	**107**	**50.966**	ug/L	0.828	1	134	715930	0	Standard
⎢	**Sb**	**121**	**50.151**	ug/L	1.871	3	453	608209	2	Standard
⎢	**Sb**	**123**	**49.481**	ug/L	0.877	1	354	469892	0	Standard
⎢	**Ba**	**135**	**50.433**	ug/L	0.550	1	57	248529	0	Standard
⎣	**Ba**	**137**	**50.655**	ug/L	1.209	2	93	456658	1	Standard
⎡>	**Tb**	**159**		ug/L			167282	169907	0	Standard
⎣	**Pb**	**208**	**51.589**	ug/L	0.510	0	302	3476217	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB4
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 17:57:05
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24889	24265	1	Standard
⌈>	**Sc**	**45**		ug/L			473428	463096	4	Standard
|	**Cr**	**52**	**0.010**	ug/L	0.023	221	16279	16085	1	Standard
⌊	**Cr**	**53**	**-0.007**	ug/L	0.004	47	226	206	1	Standard
⌈>	**Ge**	**72**		ug/L			27738	29354	1	KED
|	**Ni**	**60**	**0.003**	ug/L	0.006	202	12	15	38	KED
|	**Ni**	**62**	**-0.015**	ug/L	0.000	1	4	1		KED
|	**Cu**	**63**	**0.003**	ug/L	0.004	137	53	64	16	KED
|	**Cu**	**65**	**0.009**	ug/L	0.006	74	27	43	24	KED
|	**Zn**	**66**	**0.000**	ug/L	0.015	6854	64	68	8	KED
|	**Zn**	**67**	**-0.026**	ug/L	0.069	259	12	11	44	KED
|	**As**	**75**	**0.003**	ug/L	0.007	210	2	2	50	KED
⌊	**Se**	**78**	**0.145**	ug/L	0.051	35	5	9	11	KED
	Kr	**83**		ug/L			50	42	22	Standard
⌈>	**In-1**	**115**		ug/L			6180	6726	1	KED
|	**Cd**	**111**	**0.003**	ug/L	0.004	117	1	2	33	KED
⌊	**Cd**	**114**	**0.010**	ug/L	0.007	72	1	6	58	KED
⌈>	**In**	**115**		ug/L			424873	421073	2	Standard
|	**Ag**	**107**	**0.003**	ug/L	0.002	51	134	177	10	Standard
|	**Sb**	**121**	**0.027**	ug/L	0.000	0	453	787	2	Standard
|	**Sb**	**123**	**0.023**	ug/L	0.001	5	354	575	4	Standard
|	**Ba**	**135**	**0.001**	ug/L	0.000	7	57	62	3	Standard
⌊	**Ba**	**137**	**0.001**	ug/L	0.002	131	93	104	17	Standard
⌈>	**Tb**	**159**		ug/L			167282	164696	2	Standard
⌊	**Pb**	**208**	**0.001**	ug/L	0.000	42	302	359	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 18:05:27
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L				24789	2	Standard
⎡>	**Sc**	**45**		ug/L				461272	3	Standard
⎢	**Cr**	**52**		ug/L				16075	0	Standard
⎣	**Cr**	**53**		ug/L				207	2	Standard
⎡>	**Ge**	**72**		ug/L				29467	2	KED
⎢	**Ni**	**60**		ug/L				14	15	KED
⎢	**Ni**	**62**		ug/L				4	65	KED
⎢	**Cu**	**63**		ug/L				52	11	KED
⎢	**Cu**	**65**		ug/L				37	15	KED
⎢	**Zn**	**66**		ug/L				59	13	KED
⎢	**Zn**	**67**		ug/L				7	43	KED
⎣	**As**	**75**		ug/L				3	37	KED
	Kr	**83**		ug/L				50	13	Standard
⎡>	**In-1**	**115**		ug/L				6706	1	KED
⎢	**Cd**	**111**		ug/L				3	41	KED
⎣	**Cd**	**114**		ug/L				1	94	KED
⎡>	**In**	**115**		ug/L				415986	0	Standard
⎣	**Ag**	**107**		ug/L				110	17	Standard
⎡>	**Tb**	**159**		ug/L				167003	0	Standard
⎣	**Pb**	**208**		ug/L				263	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV5
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 18:09:51
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24789	27520	1	Standard
⌈>	**Sc**	**45**		ug/L			461272	448665	1	Standard
|	**Cr**	**52**	**49.551**	ug/L	0.509	1	16075	814958	0	Standard
⌊	**Cr**	**53**	**48.901**	ug/L	0.511	1	207	92693	0	Standard
⌈>	**Ge**	**72**		ug/L			29467	29166	1	KED
|	**Ni**	**60**	**49.453**	ug/L	0.624	1	14	55480	0	KED
|	**Ni**	**62**	**49.911**	ug/L	1.775	3	4	9144	2	KED
|	**Cu**	**63**	**49.882**	ug/L	0.515	1	52	162841	1	KED
|	**Cu**	**65**	**51.018**	ug/L	1.110	2	37	84290	0	KED
|	**Zn**	**66**	**50.660**	ug/L	0.823	1	59	23180	0	KED
|	**Zn**	**67**	**49.537**	ug/L	0.558	1	7	3686	1	KED
⌊	**As**	**75**	**52.555**	ug/L	0.463	0	3	10965	0	KED
	Kr	**83**		ug/L			50	45	16	Standard
⌈>	**In-1**	**115**		ug/L			6706	6599	1	KED
|	**Cd**	**111**	**50.392**	ug/L	1.024	2	3	10979	0	KED
⌊	**Cd**	**114**	**50.371**	ug/L	1.237	2	1	28212	1	KED
⌈>	**In**	**115**		ug/L			415986	406767	1	Standard
⌊	**Ag**	**107**	**51.422**	ug/L	1.750	3	110	707195	1	Standard
⌈>	**Tb**	**159**		ug/L			167003	167126	0	Standard
⌊	**Pb**	**208**	**51.704**	ug/L	0.696	1	263	3426749	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB5
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 18:17:00
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24789	23880	0	Standard
⌈>	**Sc**	**45**		ug/L			461272	449530	1	Standard
|	**Cr**	**52**	**0.004**	ug/L	0.010	243	16075	15734	1	Standard
⌊	**Cr**	**53**	**-0.014**	ug/L	0.004	31	207	175	4	Standard
⌈>	**Ge**	**72**		ug/L			29467	29963	0	KED
|	**Ni**	**60**	**-0.000**	ug/L	0.005	2474	14	14	37	KED
|	**Ni**	**62**	**-0.007**	ug/L	0.012	161	4	3	69	KED
|	**Cu**	**63**	**-0.001**	ug/L	0.002	135	52	48	11	KED
|	**Cu**	**65**	**-0.001**	ug/L	0.005	618	37	36	21	KED
|	**Zn**	**66**	**0.005**	ug/L	0.034	749	59	62	25	KED
|	**Zn**	**67**	**0.007**	ug/L	0.028	433	7	8	26	KED
⌊	**As**	**75**	**-0.008**	ug/L	0.007	88	3	2	65	KED
	Kr	**83**		ug/L			50	55	3	Standard
⌈>	**In-1**	**115**		ug/L			6706	6961	1	KED
|	**Cd**	**111**	**-0.000**	ug/L	0.010	1986	3	3	62	KED
⌊	**Cd**	**114**	**0.001**	ug/L	0.003	326	1	1	109	KED
⌈>	**In**	**115**		ug/L			415986	397986	3	Standard
⌊	**Ag**	**107**	**0.007**	ug/L	0.001	14	110	194	10	Standard
⌈>	**Tb**	**159**		ug/L			167003	161951	3	Standard
⌊	**Pb**	**208**	**0.000**	ug/L	0.000	24	263	282	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0692-BLK1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 18:21:44
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24789	40204	1	Standard
⌈>	Sc	45		ug/L			461272	457751	3	Standard
|	Cr	52	0.074	ug/L	0.019	25	16075	17156	2	Standard
⌊	Cr	53	0.049	ug/L	0.009	18	207	300	8	Standard
⌈>	Ge	72		ug/L			29467	30060	0	KED
|	Ni	60	0.009	ug/L	0.005	56	14	25	22	KED
|	Ni	62	-0.004	ug/L	0.010	266	4	3	50	KED
|	Cu	63	0.011	ug/L	0.003	32	52	88	12	KED
|	Cu	65	0.012	ug/L	0.007	57	37	59	20	KED
|	Zn	66	0.570	ug/L	0.057	10	59	328	7	KED
|	Zn	67	0.586	ug/L	0.159	27	7	52	23	KED
⌊	As	75	-0.006	ug/L	0.002	45	3	2	20	KED
	Kr	83		ug/L			50	35	38	Standard
⌈>	In-1	115		ug/L			6706	6853	1	KED
|	Cd	111	-0.006	ug/L	0.006	107	3	2	65	KED
⌊	Cd	114	0.000	ug/L	0.004	2632	1	1	163	KED
⌈>	In	115		ug/L			415986	413721	2	Standard
⌊	Ag	107	-0.005	ug/L	0.001	10	110	43	18	Standard
⌈>	Tb	159		ug/L			167003	163963	1	Standard
⌊	Pb	208	0.005	ug/L	0.000	3	263	558	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0692-BS1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 18:26:08
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24789	41044	1	Standard
>	Sc	45		ug/L			461272	453478	1	Standard
	Cr	52	24.987	ug/L	0.727	2	16075	423100	1	Standard
	Cr	53	25.145	ug/L	0.670	2	207	48262	0	Standard
>	Ge	72		ug/L			29467	29911	1	KED
	Ni	60	25.888	ug/L	0.201	0	14	29794	1	KED
	Ni	62	25.075	ug/L	0.449	1	4	4715	2	KED
	Cu	63	25.765	ug/L	0.471	1	52	86276	0	KED
	Cu	65	25.846	ug/L	0.309	1	37	43818	1	KED
	Zn	66	80.127	ug/L	0.573	0	59	37571	2	KED
	Zn	67	78.233	ug/L	2.676	3	7	5965	1	KED
	As	75	26.206	ug/L	0.125	0	3	5609	1	KED
	Kr	83		ug/L			50	48	22	Standard
>	In-1	115		ug/L			6706	6476	1	KED
	Cd	111	25.525	ug/L	0.830	3	3	5459	3	KED
	Cd	114	25.110	ug/L	0.370	1	1	13803	1	KED
>	In	115		ug/L			415986	406386	2	Standard
	Ag	107	25.909	ug/L	0.665	2	110	356011	0	Standard
>	Tb	159		ug/L			167003	166257	1	Standard
	Pb	208	26.603	ug/L	0.193	0	263	1754174	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0744-BLK1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 18:30:57
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24789	41843	2	Standard
⌈>	**Sc**	**45**		ug/L			461272	459842	1	Standard
|	**Cr**	**52**	**0.098**	ug/L	0.020	20	16075	17648	3	Standard
⌊	**Cr**	**53**	**0.040**	ug/L	0.014	35	207	284	10	Standard
⌈>	**Ge**	**72**		ug/L			29467	30139	0	KED
|	**Ni**	**60**	**0.036**	ug/L	0.030	84	14	56	62	KED
|	**Ni**	**62**	**0.013**	ug/L	0.015	119	4	6	41	KED
|	**Cu**	**63**	**0.047**	ug/L	0.022	46	52	212	35	KED
|	**Cu**	**65**	**0.041**	ug/L	0.036	86	37	109	56	KED
|	**Zn**	**66**	**1.592**	ug/L	0.075	4	59	812	4	KED
|	**Zn**	**67**	**1.685**	ug/L	0.164	9	7	137	9	KED
⌊	**As**	**75**	**0.005**	ug/L	0.020	366	3	5	85	KED
	Kr	**83**		ug/L			50	48	16	Standard
⌈>	**In-1**	**115**		ug/L			6706	6551	1	KED
|	**Cd**	**111**	**-0.007**	ug/L	0.009	124	3	1	100	KED
⌊	**Cd**	**114**	**0.001**	ug/L	0.001	103	1	1	41	KED
⌈>	**In**	**115**		ug/L			415986	405949	2	Standard
⌊	**Ag**	**107**	**0.010**	ug/L	0.022	219	110	248	124	Standard
⌈>	**Tb**	**159**		ug/L			167003	164176	1	Standard
⌊	**Pb**	**208**	**0.041**	ug/L	0.022	54	263	2918	49	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0744-BS1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 18:35:21
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24789	45580	3	Standard
⌈>	**Sc**	**45**		ug/L			461272	449091	1	Standard
|	**Cr**	**52**	**24.888**	ug/L	0.154	0	16075	417514	1	Standard
⌊	**Cr**	**53**	**24.654**	ug/L	0.365	1	207	46881	2	Standard
⌈>	**Ge**	**72**		ug/L			29467	29784	1	KED
|	**Ni**	**60**	**25.158**	ug/L	0.521	2	14	28832	2	KED
|	**Ni**	**62**	**25.616**	ug/L	0.383	1	4	4795	0	KED
|	**Cu**	**63**	**25.496**	ug/L	0.475	1	52	85019	1	KED
|	**Cu**	**65**	**25.654**	ug/L	0.235	0	37	43309	1	KED
|	**Zn**	**66**	**78.960**	ug/L	0.367	0	59	36864	1	KED
|	**Zn**	**67**	**76.224**	ug/L	1.576	2	7	5788	1	KED
⌊	**As**	**75**	**25.758**	ug/L	0.276	1	3	5489	0	KED
	Kr	**83**		ug/L			50	40	33	Standard
⌈>	**In-1**	**115**		ug/L			6706	6611	1	KED
|	**Cd**	**111**	**25.387**	ug/L	0.734	2	3	5542	1	KED
⌊	**Cd**	**114**	**24.750**	ug/L	0.146	0	1	13890	1	KED
⌈>	**In**	**115**		ug/L			415986	402798	1	Standard
⌊	**Ag**	**107**	**25.608**	ug/L	0.373	1	110	348891	1	Standard
⌈>	**Tb**	**159**		ug/L			167003	165989	0	Standard
⌊	**Pb**	**208**	**25.929**	ug/L	0.196	0	263	1707047	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0526-01
Sample Dil Factor: 2
Comments:
Sample Date/Time: Monday, June 26, 2023 18:40:26
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24789	172763	1	Standard
⌈>	**Sc**	**45**		ug/L			461272	453238	4	Standard
|	**Cr**	**52**	**6.982**	ug/L	0.110	1	16075	129562	4	Standard
⌊	**Cr**	**53**	**6.843**	ug/L	0.070	1	207	13275	3	Standard
⌈>	**Ge**	**72**		ug/L			29467	28256	0	KED
|	**Ni**	**60**	**4.153**	ug/L	0.091	2	14	4527	1	KED
|	**Ni**	**62**	**3.930**	ug/L	0.192	4	4	701	4	KED
|	**Cu**	**63**	**0.640**	ug/L	0.020	3	52	2073	3	KED
|	**Cu**	**65**	**0.671**	ug/L	0.026	3	37	1110	4	KED
|	**Zn**	**66**	**10.653**	ug/L	0.082	0	59	4768	1	KED
|	**Zn**	**67**	**10.240**	ug/L	0.188	1	7	744	1	KED
⌊	**As**	**75**	**0.203**	ug/L	0.026	12	3	44	12	KED
	Kr	**83**		ug/L			50	49	10	Standard
⌈>	**In-1**	**115**		ug/L			6706	6291	2	KED
|	**Cd**	**111**	**0.056**	ug/L	0.014	25	3	14	22	KED
⌊	**Cd**	**114**	**0.069**	ug/L	0.018	25	1	38	26	KED
⌈>	**In**	**115**		ug/L			415986	406366	4	Standard
⌊	**Ag**	**107**	**0.004**	ug/L	0.001	17	110	165	5	Standard
⌈>	**Tb**	**159**		ug/L			167003	168202	3	Standard
⌊	**Pb**	**208**	**0.039**	ug/L	0.002	5	263	2867	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0458-01
Sample Dil Factor: 2
Comments:
Sample Date/Time: Monday, June 26, 2023 18:44:56
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24789	59573	1	Standard
⌈>	Sc	45		ug/L			461272	438581	2	Standard
|	Cr	52	3.084	ug/L	0.050	1	16075	63934	3	Standard
⌊	Cr	53	3.211	ug/L	0.027	0	207	6136	3	Standard
⌈>	Ge	72		ug/L			29467	27791	2	KED
|	Ni	60	3.948	ug/L	0.397	10	14	4226	7	KED
|	Ni	62	4.068	ug/L	0.232	5	4	713	3	KED
|	Cu	63	6.237	ug/L	0.272	4	52	19429	1	KED
|	Cu	65	6.208	ug/L	0.422	6	37	9794	4	KED
|	Zn	66	4.014	ug/L	0.244	6	59	1800	4	KED
|	Zn	67	3.788	ug/L	0.425	11	7	274	9	KED
⌊	As	75	0.038	ug/L	0.000	0	3	11	2	KED
	Kr	83		ug/L			50	45	28	Standard
⌈>	In-1	115		ug/L			6706	6112	6	KED
|	Cd	111	0.000	ug/L	0.007	10189	3	3	45	KED
⌊	Cd	114	0.008	ug/L	0.006	80	1	5	64	KED
⌈>	In	115		ug/L			415986	393722	3	Standard
⌊	Ag	107	-0.005	ug/L	0.001	15	110	38	30	Standard
⌈>	Tb	159		ug/L			167003	162503	1	Standard
⌊	Pb	208	0.011	ug/L	0.001	7	263	991	6	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0458-02
Sample Dil Factor: 2
Comments:
Sample Date/Time: Monday, June 26, 2023 18:49:38
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24789	41923	2	Standard
⌈>	Sc	45		ug/L			461272	452364	0	Standard
|	Cr	52	6.786	ug/L	0.069	1	16075	126144	1	Standard
⌊	Cr	53	6.872	ug/L	0.070	1	207	13311	1	Standard
⌈>	Ge	72		ug/L			29467	27381	1	KED
|	Ni	60	3.696	ug/L	0.146	3	14	3906	5	KED
|	Ni	62	3.805	ug/L	0.030	0	4	658	1	KED
|	Cu	63	5.408	ug/L	0.090	1	52	16621	3	KED
|	Cu	65	5.517	ug/L	0.056	1	37	8589	2	KED
|	Zn	66	4.840	ug/L	0.064	1	59	2129	3	KED
|	Zn	67	4.826	ug/L	0.297	6	7	343	5	KED
⌊	As	75	0.048	ug/L	0.015	31	3	13	24	KED
	Kr	83		ug/L			50	38	15	Standard
⌈>	In-1	115		ug/L			6706	6046	4	KED
|	Cd	111	0.000	ug/L	0.016	5746	3	3	96	KED
⌊	Cd	114	0.007	ug/L	0.006	91	1	4	69	KED
⌈>	In	115		ug/L			415986	408578	1	Standard
⌊	Ag	107	-0.005	ug/L	0.001	14	110	34	30	Standard
⌈>	Tb	159		ug/L			167003	165774	1	Standard
⌊	Pb	208	0.010	ug/L	0.000	4	263	915	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0458-03
Sample Dil Factor: 2
Comments:
Sample Date/Time: Monday, June 26, 2023 18:54:40
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24789	38407	0	Standard
>	Sc	45		ug/L			461272	476776	2	Standard
	Cr	52	15.123	ug/L	0.126	0	16075	275837	1	Standard
	Cr	53	15.423	ug/L	0.154	1	207	31210	1	Standard
>	Ge	72		ug/L			29467	27932	1	KED
	Ni	60	4.059	ug/L	0.106	2	14	4372	1	KED
	Ni	62	3.910	ug/L	0.140	3	4	690	4	KED
	Cu	63	6.892	ug/L	0.148	2	52	21586	1	KED
	Cu	65	6.869	ug/L	0.122	1	37	10898	0	KED
	Zn	66	6.321	ug/L	0.474	7	59	2817	5	KED
	Zn	67	6.202	ug/L	0.178	2	7	448	2	KED
	As	75	0.050	ug/L	0.006	11	3	13	7	KED
	Kr	83		ug/L			50	52	16	Standard
>	In-1	115		ug/L			6706	6340	1	KED
	Cd	111	0.007	ug/L	0.009	133	3	4	40	KED
	Cd	114	0.008	ug/L	0.010	114	1	5	92	KED
>	In	115		ug/L			415986	423484	3	Standard
	Ag	107	-0.004	ug/L	0.001	22	110	48	30	Standard
>	Tb	159		ug/L			167003	170177	0	Standard
	Pb	208	0.022	ug/L	0.001	3	263	1785	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0458-04
Sample Dil Factor: 2
Comments:
Sample Date/Time: Monday, June 26, 2023 18:59:51
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24789	36056	3	Standard
⌈>	Sc	45		ug/L			461272	474380	2	Standard
|	Cr	52	9.038	ug/L	0.242	2	16075	170644	1	Standard
⌊	Cr	53	9.233	ug/L	0.023	0	207	18678	2	Standard
⌈>	Ge	72		ug/L			29467	28762	1	KED
|	Ni	60	3.997	ug/L	0.062	1	14	4435	1	KED
|	Ni	62	4.084	ug/L	0.237	5	4	741	4	KED
|	Cu	63	6.336	ug/L	0.084	1	52	20442	1	KED
|	Cu	65	6.559	ug/L	0.146	2	37	10718	2	KED
|	Zn	66	9.429	ug/L	0.067	0	59	4302	1	KED
|	Zn	67	9.082	ug/L	0.559	6	7	673	7	KED
⌊	As	75	0.043	ug/L	0.006	13	3	12	7	KED
	Kr	83		ug/L			50	45	19	Standard
⌈>	In-1	115		ug/L			6706	6402	1	KED
|	Cd	111	-0.004	ug/L	0.007	185	3	2	57	KED
⌊	Cd	114	0.011	ug/L	0.003	32	1	6	27	KED
⌈>	In	115		ug/L			415986	423960	1	Standard
⌊	Ag	107	-0.005	ug/L	0.001	17	110	45	28	Standard
⌈>	Tb	159		ug/L			167003	169974	0	Standard
⌊	Pb	208	0.016	ug/L	0.001	4	263	1359	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL7
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 19:04:32
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24789	29837	1	Standard
⌈>	**Sc**	**45**		ug/L			461272	455289	4	Standard
|	**Cr**	**52**	**0.133**	ug/L	0.038	28	16075	18020	1	Standard
⌊	**Cr**	**53**	**-0.021**	ug/L	0.002	8	207	165	4	Standard
⌈>	**Ge**	**72**		ug/L			29467	30330	1	KED
|	**Ni**	**60**	**-0.003**	ug/L	0.007	223	14	11	72	KED
|	**Ni**	**62**	**0.003**	ug/L	0.012	434	4	5	43	KED
|	**Cu**	**63**	**-0.008**	ug/L	0.001	8	52	26	7	KED
|	**Cu**	**65**	**-0.015**	ug/L	0.002	14	37	12	32	KED
|	**Zn**	**66**	**-0.057**	ug/L	0.025	44	59	34	33	KED
|	**Zn**	**67**	**-0.044**	ug/L	0.037	83	7	4	65	KED
⌊	**As**	**75**	**-0.007**	ug/L	0.007	96	3	2	60	KED
	Kr	**83**		ug/L			50	46	18	Standard
⌈>	**In-1**	**115**		ug/L			6706	6809	5	KED
|	**Cd**	**111**	**-0.007**	ug/L	0.007	104	3	1	86	KED
⌊	**Cd**	**114**	**0.005**	ug/L	0.002	30	1	4	23	KED
⌈>	**In**	**115**		ug/L			415986	428988	3	Standard
⌊	**Ag**	**107**	**-0.007**	ug/L	0.000	0	110	18	5	Standard
⌈>	**Tb**	**159**		ug/L			167003	166139	1	Standard
⌊	**Pb**	**208**	**-0.001**	ug/L	0.000	15	263	168	9	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV6
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 19:08:56
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24789	26874	1	Standard
⌈>	**Sc**	**45**		ug/L			461272	452574	2	Standard
|	**Cr**	**52**	**48.473**	ug/L	0.486	1	16075	804481	1	Standard
⌊	**Cr**	**53**	**48.189**	ug/L	0.840	1	207	92129	1	Standard
⌈>	**Ge**	**72**		ug/L			29467	30097	2	KED
|	**Ni**	**60**	**49.480**	ug/L	1.103	2	14	57269	0	KED
|	**Ni**	**62**	**48.472**	ug/L	1.432	2	4	9163	0	KED
|	**Cu**	**63**	**49.122**	ug/L	0.697	1	52	165456	0	KED
|	**Cu**	**65**	**49.913**	ug/L	1.254	2	37	85083	0	KED
|	**Zn**	**66**	**50.070**	ug/L	1.028	2	59	23638	0	KED
|	**Zn**	**67**	**51.426**	ug/L	2.150	4	7	3947	2	KED
⌊	**As**	**75**	**51.685**	ug/L	0.746	1	3	11126	0	KED
	Kr	**83**		ug/L			50	45	14	Standard
⌈>	**In-1**	**115**		ug/L			6706	6613	0	KED
|	**Cd**	**111**	**50.036**	ug/L	0.283	0	3	10927	0	KED
⌊	**Cd**	**114**	**49.707**	ug/L	0.516	1	1	27903	0	KED
⌈>	**In**	**115**		ug/L			415986	422960	1	Standard
⌊	**Ag**	**107**	**50.504**	ug/L	0.490	0	110	722465	1	Standard
⌈>	**Tb**	**159**		ug/L			167003	173273	0	Standard
⌊	**Pb**	**208**	**50.623**	ug/L	0.482	0	263	3478590	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB6
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 19:16:04
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24789	24096	1	Standard
⌈>	**Sc**	**45**		ug/L			461272	449187	2	Standard
|	**Cr**	**52**	**0.006**	ug/L	0.015	267	16075	15741	0	Standard
⌊	**Cr**	**53**	**-0.029**	ug/L	0.002	6	207	147	2	Standard
⌈>	**Ge**	**72**		ug/L			29467	30249	1	KED
|	**Ni**	**60**	**-0.004**	ug/L	0.004	103	14	10	40	KED
|	**Ni**	**62**	**-0.004**	ug/L	0.000	5	4	3	0	KED
|	**Cu**	**63**	**-0.003**	ug/L	0.001	40	52	43	10	KED
|	**Cu**	**65**	**-0.005**	ug/L	0.004	95	37	30	25	KED
|	**Zn**	**66**	**0.009**	ug/L	0.017	193	59	65	13	KED
|	**Zn**	**67**	**0.014**	ug/L	0.038	272	7	8	32	KED
⌊	**As**	**75**	**0.001**	ug/L	0.008	792	3	4	40	KED
	Kr	**83**		ug/L			50	50	12	Standard
⌈>	**In-1**	**115**		ug/L			6706	7012	5	KED
|	**Cd**	**111**	**-0.005**	ug/L	0.003	55	3	2	21	KED
⌊	**Cd**	**114**	**0.004**	ug/L	0.003	76	1	3	51	KED
⌈>	**In**	**115**		ug/L			415986	415859	3	Standard
⌊	**Ag**	**107**	**0.005**	ug/L	0.003	64	110	180	21	Standard
⌈>	**Tb**	**159**		ug/L			167003	165832	1	Standard
⌊	**Pb**	**208**	**0.001**	ug/L	0.001	89	263	358	22	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0645-BLK1
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 19:21:25
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24789	37488	2	Standard
⌈>	Sc	45		ug/L			461272	452150	1	Standard
|	Cr	52	0.056	ug/L	0.013	23	16075	16673	1	Standard
⌊	Cr	53	-0.026	ug/L	0.011	39	207	153	12	Standard
⌈>	Ge	72		ug/L			29467	30999	1	KED
|	Ni	60	-0.003	ug/L	0.003	83	14	11	28	KED
|	Ni	62	-0.008	ug/L	0.006	71	4	3	34	KED
|	Cu	63	-0.005	ug/L	0.002	37	52	37	16	KED
|	Cu	65	-0.011	ug/L	0.001	10	37	20	9	KED
|	Zn	66	0.079	ug/L	0.038	48	59	100	17	KED
|	Zn	67	0.196	ug/L	0.083	42	7	23	28	KED
⌊	As	75	-0.012	ug/L	0.002	18	3	1	33	KED
	Kr	83		ug/L			50	40	8	Standard
⌈>	In-1	115		ug/L			6706	7055	3	KED
|	Cd	111	-0.005	ug/L	0.005	94	3	2	43	KED
⌊	Cd	114	0.003	ug/L	0.002	60	1	3	35	KED
⌈>	In	115		ug/L			415986	412080	3	Standard
⌊	Ag	107	-0.005	ug/L	0.001	9	110	37	16	Standard
⌈>	Tb	159		ug/L			167003	164139	1	Standard
⌊	Pb	208	0.001	ug/L	0.000	51	263	310	9	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0645-BS1
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 19:25:48
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24789	35389	4	Standard
⌈>	Sc	45		ug/L			461272	452215	1	Standard
|	Cr	52	24.785	ug/L	0.456	1	16075	418703	0	Standard
⌊	Cr	53	25.121	ug/L	0.248	0	207	48102	2	Standard
⌈>	Ge	72		ug/L			29467	30985	1	KED
|	Ni	60	25.124	ug/L	0.501	1	14	29952	1	KED
|	Ni	62	25.515	ug/L	0.130	0	4	4970	1	KED
|	Cu	63	26.158	ug/L	0.508	1	52	90743	1	KED
|	Cu	65	25.843	ug/L	0.198	0	37	45385	0	KED
|	Zn	66	77.988	ug/L	1.098	1	59	37878	0	KED
|	Zn	67	73.867	ug/L	1.358	1	7	5836	0	KED
⌊	As	75	25.675	ug/L	0.289	1	3	5692	0	KED
	Kr	83		ug/L			50	47	32	Standard
⌈>	In-1	115		ug/L			6706	7040	0	KED
|	Cd	111	24.442	ug/L	0.297	1	3	5683	0	KED
⌊	Cd	114	23.834	ug/L	0.547	2	1	14242	1	KED
⌈>	In	115		ug/L			415986	422699	2	Standard
⌊	Ag	107	25.538	ug/L	0.468	1	110	365066	0	Standard
⌈>	Tb	159		ug/L			167003	168833	0	Standard
⌊	Pb	208	26.183	ug/L	0.322	1	263	1753290	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0645-SRL1
Sample Dil Factor: 100
Comments:
Sample Date/Time: Monday, June 26, 2023 19:30:12
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24789	34123	1	Standard
⌈>	Sc	45		ug/L			461272	503854	3	Standard
|	Cr	52	3.779	ug/L	0.115	3	16075	85984	1	Standard
⌊	Cr	53	3.744	ug/L	0.057	1	207	8179	2	Standard
⌈>	Ge	72		ug/L			29467	31680	1	KED
|	Ni	60	3.588	ug/L	0.100	2	14	4386	2	KED
|	Ni	62	3.494	ug/L	0.192	5	4	699	4	KED
|	Cu	63	4.113	ug/L	0.003	0	52	14636	1	KED
|	Cu	65	4.054	ug/L	0.050	1	37	7313	2	KED
|	Zn	66	16.469	ug/L	0.090	0	59	8229	1	KED
|	Zn	67	17.377	ug/L	0.765	4	7	1409	3	KED
⌊	As	75	0.937	ug/L	0.049	5	3	216	3	KED
	Kr	83		ug/L			50	50	9	Standard
⌈>	In-1	115		ug/L			6706	6887	1	KED
|	Cd	111	0.011	ug/L	0.014	126	3	6	50	KED
⌊	Cd	114	0.033	ug/L	0.008	25	1	20	24	KED
⌈>	In	115		ug/L			415986	432711	2	Standard
⌊	Ag	107	0.022	ug/L	0.002	7	110	435	7	Standard
⌈>	Tb	159		ug/L			167003	182742	1	Standard
⌊	Pb	208	3.429	ug/L	0.038	1	263	248775	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0230-01
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 19:35:04
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24789	40038	2	Standard
> Sc	45		ug/L			461272	673562	4	Standard
Cr	52	14.018	ug/L	0.487	3	16075	362650	1	Standard
Cr	53	14.499	ug/L	0.485	3	207	41439	1	Standard
> Ge	72		ug/L			29467	31147	0	KED
Ni	60	18.413	ug/L	0.249	1	14	22071	0	KED
Ni	62	18.160	ug/L	0.060	0	4	3557	0	KED
Cu	63	20.319	ug/L	0.344	1	52	70866	0	KED
Cu	65	20.706	ug/L	0.432	2	37	36561	1	KED
Zn	66	80.913	ug/L	0.958	1	59	39505	1	KED
Zn	67	85.011	ug/L	1.560	1	7	6750	1	KED
As	75	4.568	ug/L	0.059	1	3	1021	1	KED
Kr	83		ug/L			50	99	7	Standard
> In-1	115		ug/L			6706	7061	0	KED
Cd	111	0.101	ug/L	0.028	27	3	27	24	KED
Cd	114	0.127	ug/L	0.024	18	1	77	18	KED
> In	115		ug/L			415986	406412	1	Standard
Ag	107	0.146	ug/L	0.023	15	110	2122	16	Standard
> Tb	159		ug/L			167003	217556	1	Standard
Pb	208	14.142	ug/L	0.136	0	263	1220269	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0645-DUP1
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 19:43:56
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24789	43470	2	Standard
> Sc	45		ug/L			461272	719629	3	Standard
Cr	52	13.051	ug/L	0.427	3	16075	362505	1	Standard
Cr	53	13.313	ug/L	0.295	2	207	40693	2	Standard
> Ge	72		ug/L			29467	32499	1	KED
Ni	60	16.944	ug/L	0.180	1	14	21194	2	KED
Ni	62	17.126	ug/L	0.534	3	4	3500	2	KED
Cu	63	20.596	ug/L	0.266	1	52	74949	0	KED
Cu	65	20.600	ug/L	0.277	1	37	37953	1	KED
Zn	66	91.523	ug/L	0.790	0	59	46614	0	KED
Zn	67	95.128	ug/L	1.223	1	7	7880	0	KED
As	75	5.819	ug/L	0.077	1	3	1356	0	KED
Kr	83		ug/L			50	86	18	Standard
> In-1	115		ug/L			6706	7511	3	KED
Cd	111	0.144	ug/L	0.022	15	3	39	14	KED
Cd	114	0.155	ug/L	0.031	19	1	99	17	KED
> In	115		ug/L			415986	410789	3	Standard
Ag	107	0.152	ug/L	0.011	7	110	2223	5	Standard
> Tb	159		ug/L			167003	218854	1	Standard
Pb	208	12.649	ug/L	0.073	0	263	1098198	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0645-MS1
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 19:48:20
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24789	42720	2	Standard
> Sc	45		ug/L			461272	705156	2	Standard
Cr	52	29.211	ug/L	0.473	1	16075	765061	1	Standard
Cr	53	29.190	ug/L	0.155	0	207	87090	2	Standard
> Ge	72		ug/L			29467	31801	0	KED
Ni	60	41.524	ug/L	0.471	1	14	50803	1	KED
Ni	62	41.340	ug/L	1.036	2	4	8262	3	KED
Cu	63	44.866	ug/L	0.508	1	52	159706	0	KED
Cu	65	45.461	ug/L	0.174	0	37	81912	0	KED
Zn	66	171.962	ug/L	2.333	1	59	85645	0	KED
Zn	67	170.271	ug/L	3.531	2	7	13797	1	KED
As	75	28.613	ug/L	0.211	0	3	6511	0	KED
Kr	83		ug/L			50	99	6	Standard
> In-1	115		ug/L			6706	7136	1	KED
Cd	111	23.983	ug/L	0.849	3	3	5651	1	KED
Cd	114	23.687	ug/L	0.407	1	1	14349	2	KED
> In	115		ug/L			415986	406311	1	Standard
Ag	107	24.024	ug/L	0.508	2	110	330186	2	Standard
> Tb	159		ug/L			167003	215787	1	Standard
Pb	208	34.288	ug/L	0.450	1	263	2934133	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0645-MSD1
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 19:52:44
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24789	47767	2	Standard
> Sc	45		ug/L			461272	697545	3	Standard
Cr	52	29.316	ug/L	0.726	2	16075	759188	1	Standard
Cr	53	29.858	ug/L	0.639	2	207	88078	1	Standard
> Ge	72		ug/L			29467	32413	0	KED
Ni	60	41.554	ug/L	0.463	1	14	51818	1	KED
Ni	62	41.316	ug/L	0.993	2	4	8415	1	KED
Cu	63	45.126	ug/L	0.401	0	52	163728	1	KED
Cu	65	45.770	ug/L	0.061	0	37	84058	0	KED
Zn	66	171.625	ug/L	4.232	2	59	87135	3	KED
Zn	67	169.566	ug/L	4.302	2	7	14006	3	KED
As	75	28.564	ug/L	0.121	0	3	6625	1	KED
Kr	83		ug/L			50	104	9	Standard
> In-1	115		ug/L			6706	6974	1	KED
Cd	111	24.350	ug/L	0.797	3	3	5608	1	KED
Cd	114	24.203	ug/L	0.180	0	1	14327	0	KED
> In	115		ug/L			415986	397548	1	Standard
Ag	107	23.867	ug/L	0.692	2	110	320858	1	Standard
> Tb	159		ug/L			167003	214748	1	Standard
Pb	208	35.111	ug/L	0.373	1	263	2990076	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0645-PS1
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 19:57:07
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24789	41491	1	Standard
>	Sc	45		ug/L			461272	669605	2	Standard
	Cr	52	31.566	ug/L	0.206	0	16075	783319	2	Standard
	Cr	53	31.580	ug/L	0.970	3	207	89402	0	Standard
>	Ge	72		ug/L			29467	31755	1	KED
	Ni	60	43.856	ug/L	1.155	2	14	53563	1	KED
	Ni	62	43.596	ug/L	1.311	3	4	8699	2	KED
	Cu	63	45.624	ug/L	0.190	0	52	162182	1	KED
	Cu	65	46.733	ug/L	0.283	0	37	84079	0	KED
	Zn	66	159.328	ug/L	1.467	0	59	79241	0	KED
	Zn	67	159.774	ug/L	3.086	1	7	12927	0	KED
	As	75	31.521	ug/L	0.311	0	3	7161	1	KED
	Kr	83		ug/L			50	92	14	Standard
>	In-1	115		ug/L			6706	6974	0	KED
	Cd	111	25.827	ug/L	0.157	0	3	5949	0	KED
	Cd	114	25.614	ug/L	0.566	2	1	15163	1	KED
>	In	115		ug/L			415986	411562	2	Standard
	Ag	107	26.099	ug/L	0.434	1	110	363267	0	Standard
>	Tb	159		ug/L			167003	213442	2	Standard
	Pb	208	35.015	ug/L	0.373	1	263	2963705	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0645-SRM1
Sample Dil Factor: 50
Comments:
Sample Date/Time: Monday, June 26, 2023 20:01:31
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24789	38281	2	Standard
⌈>	Sc	45		ug/L			461272	476235	1	Standard
|	Cr	52	47.060	ug/L	1.225	2	16075	822265	1	Standard
⌊	Cr	53	47.569	ug/L	0.897	1	207	95706	0	Standard
⌈>	Ge	72		ug/L			29467	32579	0	KED
|	Ni	60	106.943	ug/L	0.627	0	14	134010	0	KED
|	Ni	62	106.612	ug/L	1.004	0	4	21820	0	KED
|	Cu	63	49.329	ug/L	0.425	0	52	179895	0	KED
|	Cu	65	48.844	ug/L	0.671	1	37	90161	1	KED
|	Zn	66	65.823	ug/L	0.621	0	59	33628	0	KED
|	Zn	67	70.286	ug/L	1.507	2	7	5839	2	KED
⌊	As	75	31.601	ug/L	0.329	1	3	7366	1	KED
	Kr	83		ug/L			50	61	6	Standard
⌈>	In-1	115		ug/L			6706	7167	3	KED
|	Cd	111	31.495	ug/L	1.370	4	3	7447	0	KED
⌊	Cd	114	31.419	ug/L	1.745	5	1	19087	1	KED
⌈>	In	115		ug/L			415986	422819	0	Standard
⌊	Ag	107	28.439	ug/L	0.299	1	110	406734	1	Standard
⌈>	Tb	159		ug/L			167003	206779	1	Standard
⌊	Pb	208	72.536	ug/L	0.872	1	263	5947607	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL8
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 20:05:56
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24789	30023	3	Standard
⌈>	**Sc**	**45**		ug/L			461272	459421	1	Standard
|	**Cr**	**52**	**-0.050**	ug/L	0.007	14	16075	15187	1	Standard
⌊	**Cr**	**53**	**-0.048**	ug/L	0.004	7	207	113	6	Standard
⌈>	**Ge**	**72**		ug/L			29467	31733	2	KED
|	**Ni**	**60**	**0.012**	ug/L	0.003	23	14	29	9	KED
|	**Ni**	**62**	**0.015**	ug/L	0.026	177	4	7	66	KED
|	**Cu**	**63**	**0.006**	ug/L	0.001	20	52	75	3	KED
|	**Cu**	**65**	**0.003**	ug/L	0.000	10	37	46	2	KED
|	**Zn**	**66**	**0.123**	ug/L	0.035	28	59	125	12	KED
|	**Zn**	**67**	**0.135**	ug/L	0.114	83	7	19	45	KED
⌊	**As**	**75**	**-0.004**	ug/L	0.008	200	3	3	62	KED
	Kr	**83**		ug/L			50	46	2	Standard
⌈>	**In-1**	**115**		ug/L			6706	7089	2	KED
|	**Cd**	**111**	**-0.002**	ug/L	0.005	232	3	3	34	KED
⌊	**Cd**	**114**	**0.002**	ug/L	0.002	100	1	2	48	KED
⌈>	**In**	**115**		ug/L			415986	408554	1	Standard
⌊	**Ag**	**107**	**-0.003**	ug/L	0.001	42	110	67	27	Standard
⌈>	**Tb**	**159**		ug/L			167003	163983	1	Standard
⌊	**Pb**	**208**	**0.018**	ug/L	0.002	9	263	1416	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV7
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 20:10:19
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24789	28472	4	Standard
⌈>	**Sc**	**45**		ug/L			461272	464972	2	Standard
|	**Cr**	**52**	**47.677**	ug/L	2.706	5	16075	812830	4	Standard
⌊	**Cr**	**53**	**47.845**	ug/L	2.210	4	207	93958	3	Standard
⌈>	**Ge**	**72**		ug/L			29467	32039	2	KED
|	**Ni**	**60**	**48.327**	ug/L	1.875	3	14	59528	1	KED
|	**Ni**	**62**	**48.366**	ug/L	2.210	4	4	9730	2	KED
|	**Cu**	**63**	**48.865**	ug/L	1.292	2	52	175182	1	KED
|	**Cu**	**65**	**49.227**	ug/L	2.148	4	37	89301	2	KED
|	**Zn**	**66**	**48.683**	ug/L	2.162	4	59	24459	2	KED
|	**Zn**	**67**	**49.904**	ug/L	2.243	4	7	4077	2	KED
⌊	**As**	**75**	**51.489**	ug/L	2.736	5	3	11791	3	KED
	Kr	**83**		ug/L			50	64	15	Standard
⌈>	**In-1**	**115**		ug/L			6706	6955	1	KED
|	**Cd**	**111**	**49.823**	ug/L	0.601	1	3	11441	0	KED
⌊	**Cd**	**114**	**50.050**	ug/L	0.135	0	1	29548	1	KED
⌈>	**In**	**115**		ug/L			415986	406665	3	Standard
⌊	**Ag**	**107**	**50.333**	ug/L	3.575	7	110	691018	3	Standard
⌈>	**Tb**	**159**		ug/L			167003	170939	1	Standard
⌊	**Pb**	**208**	**49.199**	ug/L	1.498	3	263	3334751	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB7
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 20:17:28
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24789	24998	2	Standard
⌈>	**Sc**	**45**		ug/L			461272	450907	2	Standard
|	**Cr**	**52**	**-0.021**	ug/L	0.030	142	16075	15359	0	Standard
⌊	**Cr**	**53**	**-0.043**	ug/L	0.000	1	207	120	2	Standard
⌈>	**Ge**	**72**		ug/L			29467	31650	0	KED
|	**Ni**	**60**	**-0.003**	ug/L	0.006	202	14	12	59	KED
|	**Ni**	**62**	**-0.002**	ug/L	0.015	862	4	4	65	KED
|	**Cu**	**63**	**-0.002**	ug/L	0.006	290	52	48	44	KED
|	**Cu**	**65**	**-0.006**	ug/L	0.009	136	37	28	54	KED
|	**Zn**	**66**	**-0.013**	ug/L	0.020	155	59	57	16	KED
|	**Zn**	**67**	**0.009**	ug/L	0.027	307	7	8	24	KED
⌊	**As**	**75**	**0.001**	ug/L	0.009	955	3	4	44	KED
	Kr	**83**		ug/L			50	40	25	Standard
⌈>	**In-1**	**115**		ug/L			6706	7293	1	KED
|	**Cd**	**111**	**-0.008**	ug/L	0.007	88	3	1	86	KED
⌊	**Cd**	**114**	**0.001**	ug/L	0.000	29	1	1	8	KED
⌈>	**In**	**115**		ug/L			415986	404638	4	Standard
⌊	**Ag**	**107**	**0.019**	ug/L	0.003	13	110	367	5	Standard
⌈>	**Tb**	**159**		ug/L			167003	159975	3	Standard
⌊	**Pb**	**208**	**-0.000**	ug/L	0.000	245	263	242	6	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0230-02
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 20:21:52
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24789	40492	1	Standard
> Sc	45		ug/L			461272	605252	0	Standard
Cr	52	12.975	ug/L	0.243	1	16075	303477	1	Standard
Cr	53	13.084	ug/L	0.174	1	207	33659	1	Standard
> Ge	72		ug/L			29467	32449	1	KED
Ni	60	20.264	ug/L	0.145	0	14	25302	0	KED
Ni	62	19.479	ug/L	0.264	1	4	3975	2	KED
Cu	63	21.152	ug/L	0.461	2	52	76844	1	KED
Cu	65	21.545	ug/L	0.581	2	37	39622	1	KED
Zn	66	56.070	ug/L	1.178	2	59	28534	0	KED
Zn	67	59.240	ug/L	1.904	3	7	4902	1	KED
As	75	2.851	ug/L	0.056	1	3	665	0	KED
Kr	83		ug/L			50	86	4	Standard
> In-1	115		ug/L			6706	7384	0	KED
Cd	111	0.064	ug/L	0.013	20	3	19	15	KED
Cd	114	0.068	ug/L	0.016	22	1	43	22	KED
> In	115		ug/L			415986	418036	0	Standard
Ag	107	0.117	ug/L	0.006	5	110	1764	5	Standard
> Tb	159		ug/L			167003	209359	0	Standard
Pb	208	6.576	ug/L	0.213	3	263	546176	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0230-03
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 20:26:16
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24789	38286	1	Standard
>	Sc	45		ug/L			461272	598083	1	Standard
	Cr	52	12.251	ug/L	0.252	2	16075	284346	3	Standard
	Cr	53	12.428	ug/L	0.195	1	207	31606	2	Standard
>	Ge	72		ug/L			29467	32650	0	KED
	Ni	60	19.018	ug/L	0.641	3	14	23894	2	KED
	Ni	62	19.200	ug/L	0.829	4	4	3941	3	KED
	Cu	63	19.234	ug/L	0.695	3	52	70320	2	KED
	Cu	65	19.059	ug/L	0.429	2	37	35279	1	KED
	Zn	66	52.104	ug/L	2.063	3	59	26685	3	KED
	Zn	67	54.884	ug/L	1.447	2	7	4571	2	KED
	As	75	2.653	ug/L	0.070	2	3	623	1	KED
	Kr	83		ug/L			50	78	12	Standard
>	In-1	115		ug/L			6706	7018	2	KED
	Cd	111	0.069	ug/L	0.010	14	3	19	10	KED
	Cd	114	0.068	ug/L	0.029	42	1	41	39	KED
>	In	115		ug/L			415986	407459	3	Standard
	Ag	107	0.102	ug/L	0.009	8	110	1516	11	Standard
>	Tb	159		ug/L			167003	204844	1	Standard
	Pb	208	6.126	ug/L	0.148	2	263	497896	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0230-04
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 20:30:39
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24789	36085	2	Standard
> Sc	45		ug/L			461272	652771	1	Standard
Cr	52	15.406	ug/L	0.152	0	16075	384390	2	Standard
Cr	53	15.550	ug/L	0.034	0	207	43087	1	Standard
> Ge	72		ug/L			29467	33012	0	KED
Ni	60	18.983	ug/L	0.424	2	14	24116	2	KED
Ni	62	18.619	ug/L	0.658	3	4	3865	3	KED
Cu	63	21.236	ug/L	0.208	0	52	78502	0	KED
Cu	65	21.342	ug/L	0.268	1	37	39940	1	KED
Zn	66	40.541	ug/L	0.220	0	59	21012	0	KED
Zn	67	45.376	ug/L	0.729	1	7	3823	1	KED
As	75	2.367	ug/L	0.058	2	3	563	2	KED
Kr	83		ug/L			50	81	8	Standard
> In-1	115		ug/L			6706	7173	1	KED
Cd	111	0.072	ug/L	0.029	40	3	20	34	KED
Cd	114	0.069	ug/L	0.026	37	1	43	37	KED
> In	115		ug/L			415986	404172	1	Standard
Ag	107	0.100	ug/L	0.007	6	110	1478	8	Standard
> Tb	159		ug/L			167003	207623	1	Standard
Pb	208	3.248	ug/L	0.015	0	263	267774	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0230-05
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 20:35:03
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24789	39694	2	Standard
>	Sc	45		ug/L			461272	559528	1	Standard
	Cr	52	10.778	ug/L	0.208	1	16075	236303	1	Standard
	Cr	53	10.971	ug/L	0.207	1	207	26130	2	Standard
>	Ge	72		ug/L			29467	32730	1	KED
	Ni	60	14.499	ug/L	0.372	2	14	18267	2	KED
	Ni	62	14.177	ug/L	0.267	1	4	2919	1	KED
	Cu	63	23.704	ug/L	0.191	0	52	86874	1	KED
	Cu	65	23.825	ug/L	0.209	0	37	44200	0	KED
	Zn	66	60.748	ug/L	0.659	1	59	31181	1	KED
	Zn	67	63.983	ug/L	0.796	1	7	5341	2	KED
	As	75	2.048	ug/L	0.026	1	3	483	0	KED
	Kr	83		ug/L			50	80	19	Standard
>	In-1	115		ug/L			6706	7146	1	KED
	Cd	111	0.106	ug/L	0.029	26	3	28	24	KED
	Cd	114	0.112	ug/L	0.009	8	1	68	8	KED
>	In	115		ug/L			415986	409389	2	Standard
	Ag	107	0.120	ug/L	0.008	6	110	1771	5	Standard
>	Tb	159		ug/L			167003	208185	1	Standard
	Pb	208	6.290	ug/L	0.130	2	263	519537	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0230-15
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 20:39:27
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24789	40087	2	Standard
> Sc	45		ug/L			461272	633677	6	Standard
Cr	52	15.480	ug/L	0.589	3	16075	374304	3	Standard
Cr	53	15.703	ug/L	0.599	3	207	42172	2	Standard
> Ge	72		ug/L			29467	31930	0	KED
Ni	60	21.526	ug/L	0.475	2	14	26449	2	KED
Ni	62	21.821	ug/L	0.660	3	4	4380	3	KED
Cu	63	36.383	ug/L	0.710	1	52	130055	2	KED
Cu	65	36.182	ug/L	0.542	1	37	65467	1	KED
Zn	66	81.264	ug/L	0.318	0	59	40674	0	KED
Zn	67	84.867	ug/L	1.661	1	7	6909	2	KED
As	75	3.693	ug/L	0.120	3	3	847	3	KED
Kr	83		ug/L			50	102	13	Standard
> In-1	115		ug/L			6706	7194	2	KED
Cd	111	0.149	ug/L	0.062	41	3	39	38	KED
Cd	114	0.128	ug/L	0.010	7	1	79	5	KED
> In	115		ug/L			415986	409801	1	Standard
Ag	107	0.175	ug/L	0.006	3	110	2536	3	Standard
> Tb	159		ug/L			167003	210829	2	Standard
Pb	208	14.669	ug/L	0.134	0	263	1226710	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0230-16
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 20:43:51
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24789	48528	2	Standard
> Sc	45		ug/L			461272	651689	3	Standard
Cr	52	18.168	ug/L	0.356	1	16075	448253	2	Standard
Cr	53	18.202	ug/L	0.438	2	207	50290	3	Standard
> Ge	72		ug/L			29467	32678	1	KED
Ni	60	24.147	ug/L	0.403	1	14	30357	0	KED
Ni	62	23.756	ug/L	0.847	3	4	4878	2	KED
Cu	63	42.086	ug/L	0.992	2	52	153907	0	KED
Cu	65	41.845	ug/L	0.627	1	37	77471	1	KED
Zn	66	83.395	ug/L	2.374	2	59	42701	1	KED
Zn	67	87.665	ug/L	1.169	1	7	7302	0	KED
As	75	3.602	ug/L	0.028	0	3	845	1	KED
Kr	83		ug/L			50	98	7	Standard
> In-1	115		ug/L			6706	7245	0	KED
Cd	111	0.143	ug/L	0.016	11	3	38	10	KED
Cd	114	0.142	ug/L	0.010	6	1	88	7	KED
> In	115		ug/L			415986	399594	2	Standard
Ag	107	0.214	ug/L	0.010	4	110	2990	2	Standard
> Tb	159		ug/L			167003	210177	1	Standard
Pb	208	18.993	ug/L	0.318	1	263	1583211	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0230-17
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 20:48:14
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24789	48991	1	Standard
> Sc	45		ug/L			461272	597603	2	Standard
Cr	52	16.343	ug/L	0.283	1	16075	371940	1	Standard
Cr	53	16.546	ug/L	0.196	1	207	41951	1	Standard
> Ge	72		ug/L			29467	33057	2	KED
Ni	60	19.866	ug/L	0.404	2	14	25267	1	KED
Ni	62	20.173	ug/L	0.823	4	4	4191	2	KED
Cu	63	32.086	ug/L	1.034	3	52	118692	1	KED
Cu	65	32.216	ug/L	0.581	1	37	60337	0	KED
Zn	66	82.763	ug/L	2.491	3	59	42866	0	KED
Zn	67	87.018	ug/L	2.423	2	7	7332	2	KED
As	75	2.900	ug/L	0.110	3	3	689	2	KED
Kr	83		ug/L			50	86	12	Standard
> In-1	115		ug/L			6706	7278	1	KED
Cd	111	0.163	ug/L	0.024	14	3	42	12	KED
Cd	114	0.161	ug/L	0.008	5	1	100	5	KED
> In	115		ug/L			415986	395642	1	Standard
Ag	107	0.156	ug/L	0.005	3	110	2194	2	Standard
> Tb	159		ug/L			167003	206671	1	Standard
Pb	208	14.363	ug/L	0.217	1	263	1177283	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0230-18
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 20:52:38
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24789	48123	2	Standard
Sc	45		ug/L			461272	593502	2	Standard
Cr	52	19.332	ug/L	0.188	0	16075	433174	2	Standard
Cr	53	19.599	ug/L	0.274	1	207	49295	1	Standard
Ge	72		ug/L			29467	32401	1	KED
Ni	60	21.336	ug/L	0.234	1	14	26602	1	KED
Ni	62	21.107	ug/L	0.388	1	4	4299	0	KED
Cu	63	58.511	ug/L	0.223	0	52	212194	0	KED
Cu	65	59.355	ug/L	0.526	0	37	108951	0	KED
Zn	66	164.418	ug/L	2.898	1	59	83430	0	KED
Zn	67	162.226	ug/L	1.012	0	7	13394	1	KED
As	75	3.634	ug/L	0.083	2	3	846	1	KED
Kr	83		ug/L			50	85	13	Standard
In-1	115		ug/L			6706	7401	1	KED
Cd	111	0.429	ug/L	0.047	10	3	108	8	KED
Cd	114	0.412	ug/L	0.049	11	1	259	10	KED
In	115		ug/L			415986	402749	1	Standard
Ag	107	0.242	ug/L	0.007	2	110	3406	3	Standard
Tb	159		ug/L			167003	205558	0	Standard
Pb	208	30.563	ug/L	0.866	2	263	2491293	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0230-19
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 20:57:02
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24789	46943	1	Standard
>	Sc	45		ug/L			461272	563041	1	Standard
	Cr	52	15.115	ug/L	0.221	1	16075	325573	1	Standard
	Cr	53	14.981	ug/L	0.094	0	207	35815	2	Standard
>	Ge	72		ug/L			29467	32984	1	KED
	Ni	60	16.005	ug/L	0.364	2	14	20316	1	KED
	Ni	62	16.498	ug/L	0.504	3	4	3423	3	KED
	Cu	63	33.225	ug/L	0.733	2	52	122663	1	KED
	Cu	65	33.067	ug/L	0.638	1	37	61798	0	KED
	Zn	66	95.665	ug/L	1.737	1	59	49440	0	KED
	Zn	67	94.200	ug/L	0.531	0	7	7921	1	KED
	As	75	16.454	ug/L	0.445	2	3	3884	1	KED
	Kr	83		ug/L			50	73	13	Standard
>	In-1	115		ug/L			6706	7355	1	KED
	Cd	111	0.170	ug/L	0.029	16	3	45	15	KED
	Cd	114	0.202	ug/L	0.011	5	1	127	5	KED
>	In	115		ug/L			415986	409319	1	Standard
	Ag	107	0.134	ug/L	0.005	4	110	1963	3	Standard
>	Tb	159		ug/L			167003	202088	0	Standard
	Pb	208	16.998	ug/L	0.116	0	263	1362521	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL9
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 21:01:26
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24789	29667	0	Standard
⌈>	**Sc**	**45**		ug/L			461272	443566	2	Standard
|	**Cr**	**52**	**-0.011**	ug/L	0.014	131	16075	15283	1	Standard
⌊	**Cr**	**53**	**-0.043**	ug/L	0.012	26	207	119	18	Standard
⌈>	**Ge**	**72**		ug/L			29467	32080	0	KED
|	**Ni**	**60**	**-0.000**	ug/L	0.006	100602	14	15	48	KED
|	**Ni**	**62**	**-0.008**	ug/L	0.020	241	4	3	124	KED
|	**Cu**	**63**	**0.008**	ug/L	0.004	47	52	86	15	KED
|	**Cu**	**65**	**-0.001**	ug/L	0.004	338	37	38	18	KED
|	**Zn**	**66**	**0.135**	ug/L	0.027	19	59	132	10	KED
|	**Zn**	**67**	**0.201**	ug/L	0.045	22	7	24	15	KED
⌊	**As**	**75**	**-0.012**	ug/L	0.004	34	3	1	66	KED
	Kr	**83**		ug/L			50	36	9	Standard
⌈>	**In-1**	**115**		ug/L			6706	7117	0	KED
|	**Cd**	**111**	**0.002**	ug/L	0.014	783	3	4	81	KED
⌊	**Cd**	**114**	**0.006**	ug/L	0.005	77	1	4	57	KED
⌈>	**In**	**115**		ug/L			415986	391598	2	Standard
⌊	**Ag**	**107**	**-0.006**	ug/L	0.001	12	110	20	45	Standard
⌈>	**Tb**	**159**		ug/L			167003	160024	1	Standard
⌊	**Pb**	**208**	**0.017**	ug/L	0.001	4	263	1349	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV8
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 21:05:50
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24789	27992	0	Standard
⌈>	**Sc**	**45**		ug/L			461272	454311	1	Standard
|	**Cr**	**52**	**49.925**	ug/L	0.145	0	16075	831420	1	Standard
⌊	**Cr**	**53**	**49.728**	ug/L	0.283	0	207	95452	1	Standard
⌈>	**Ge**	**72**		ug/L			29467	32834	1	KED
|	**Ni**	**60**	**47.860**	ug/L	1.589	3	14	60432	2	KED
|	**Ni**	**62**	**47.385**	ug/L	1.889	3	4	9772	2	KED
|	**Cu**	**63**	**48.222**	ug/L	2.025	4	52	177154	2	KED
|	**Cu**	**65**	**47.586**	ug/L	1.112	2	37	88514	1	KED
|	**Zn**	**66**	**47.364**	ug/L	1.296	2	59	24398	1	KED
|	**Zn**	**67**	**49.015**	ug/L	2.338	4	7	4105	3	KED
⌊	**As**	**75**	**50.808**	ug/L	2.106	4	3	11930	3	KED
	Kr	**83**		ug/L			50	40	9	Standard
⌈>	**In-1**	**115**		ug/L			6706	7297	1	KED
|	**Cd**	**111**	**48.741**	ug/L	1.295	2	3	11740	0	KED
⌊	**Cd**	**114**	**48.234**	ug/L	0.874	1	1	29869	0	KED
⌈>	**In**	**115**		ug/L			415986	397329	1	Standard
⌊	**Ag**	**107**	**52.133**	ug/L	0.961	1	110	700441	0	Standard
⌈>	**Tb**	**159**		ug/L			167003	168762	1	Standard
⌊	**Pb**	**208**	**49.420**	ug/L	0.703	1	263	3307400	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB8
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 21:12:59
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24789	24754	1	Standard
⌈>	**Sc**	**45**		ug/L			461272	453800	2	Standard
|	**Cr**	**52**	**-0.008**	ug/L	0.009	112	16075	15684	2	Standard
⌊	**Cr**	**53**	**-0.044**	ug/L	0.005	10	207	121	10	Standard
⌈>	**Ge**	**72**		ug/L			29467	32611	1	KED
|	**Ni**	**60**	**-0.004**	ug/L	0.002	56	14	10	26	KED
|	**Ni**	**62**	**-0.018**	ug/L	0.011	61	4	1	173	KED
|	**Cu**	**63**	**-0.003**	ug/L	0.003	92	52	46	21	KED
|	**Cu**	**65**	**-0.010**	ug/L	0.002	21	37	23	16	KED
|	**Zn**	**66**	**-0.024**	ug/L	0.004	15	59	53	4	KED
|	**Zn**	**67**	**0.044**	ug/L	0.036	82	7	12	24	KED
⌊	**As**	**75**	**-0.002**	ug/L	0.001	43	3	3	7	KED
	Kr	**83**		ug/L			50	38	18	Standard
⌈>	**In-1**	**115**		ug/L			6706	7311	1	KED
|	**Cd**	**111**	**0.004**	ug/L	0.021	512	3	4	103	KED
⌊	**Cd**	**114**	**0.018**	ug/L	0.011	60	1	12	53	KED
⌈>	**In**	**115**		ug/L			415986	398108	4	Standard
⌊	**Ag**	**107**	**0.015**	ug/L	0.003	22	110	306	18	Standard
⌈>	**Tb**	**159**		ug/L			167003	162407	1	Standard
⌊	**Pb**	**208**	**-0.001**	ug/L	0.000	14	263	213	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 21:17:23
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L				24638	0	Standard
⌈>	**Sc**	**45**		ug/L				455969	2	Standard
|	**Cr**	**52**		ug/L				15147	0	Standard
⌊	**Cr**	**53**		ug/L				118	7	Standard
⌈>	**Ge**	**72**		ug/L				32288	0	KED
|	**Ni**	**60**		ug/L				8	70	KED
|	**Ni**	**62**		ug/L				3	124	KED
|	**Cu**	**63**		ug/L				53	10	KED
|	**Cu**	**65**		ug/L				15	24	KED
|	**Zn**	**66**		ug/L				52	2	KED
|	**Zn**	**67**		ug/L				12	24	KED
⌊	**As**	**75**		ug/L				3	52	KED
	Kr	**83**		ug/L				41	24	Standard
⌈>	**In-1**	**115**		ug/L				7352	1	KED
|	**Cd**	**111**		ug/L				2	57	KED
⌊	**Cd**	**114**		ug/L				3	174	KED
⌈>	**In**	**115**		ug/L				400481	0	Standard
⌊	**Ag**	**107**		ug/L				288	4	Standard
⌈>	**Tb**	**159**		ug/L				162685	0	Standard
⌊	**Pb**	**208**		ug/L				222	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV9
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 21:21:47
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	27202	2	Standard
⌈>	**Sc**	**45**		ug/L			455969	455623	2	Standard
|	**Cr**	**52**	**48.727**	ug/L	0.861	1	15147	813232	0	Standard
⌊	**Cr**	**53**	**48.663**	ug/L	1.883	3	118	93544	1	Standard
⌈>	**Ge**	**72**		ug/L			32288	32302	1	KED
|	**Ni**	**60**	**49.023**	ug/L	0.995	2	8	60893	0	KED
|	**Ni**	**62**	**49.594**	ug/L	0.989	1	3	10062	0	KED
|	**Cu**	**63**	**49.894**	ug/L	1.132	2	53	180351	0	KED
|	**Cu**	**65**	**50.444**	ug/L	0.757	1	15	92279	0	KED
|	**Zn**	**66**	**49.297**	ug/L	1.900	3	52	24962	2	KED
|	**Zn**	**67**	**51.119**	ug/L	1.388	2	12	4215	0	KED
⌊	**As**	**75**	**52.411**	ug/L	0.783	1	3	12108	0	KED
	Kr	**83**		ug/L			41	38	22	Standard
⌈>	**In-1**	**115**		ug/L			7352	7285	1	KED
|	**Cd**	**111**	**48.675**	ug/L	0.367	0	2	11708	1	KED
⌊	**Cd**	**114**	**47.903**	ug/L	0.914	1	3	29620	0	KED
⌈>	**In**	**115**		ug/L			400481	393943	1	Standard
⌊	**Ag**	**107**	**52.356**	ug/L	1.293	2	288	697568	1	Standard
⌈>	**Tb**	**159**		ug/L			162685	166066	0	Standard
⌊	**Pb**	**208**	**50.056**	ug/L	0.408	0	222	3296690	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB9
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 21:28:55
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	24369	3	Standard
⌈>	**Sc**	**45**		ug/L			455969	446388	2	Standard
|	**Cr**	**52**	**0.044**	ug/L	0.010	22	15147	15539	2	Standard
⌊	**Cr**	**53**	**0.001**	ug/L	0.000	47	118	117	2	Standard
⌈>	**Ge**	**72**		ug/L			32288	32548	1	KED
|	**Ni**	**60**	**0.030**	ug/L	0.040	132	8	45	108	KED
|	**Ni**	**62**	**0.028**	ug/L	0.047	167	3	8	107	KED
|	**Cu**	**63**	**0.032**	ug/L	0.045	139	53	170	95	KED
|	**Cu**	**65**	**0.036**	ug/L	0.044	122	15	81	99	KED
|	**Zn**	**66**	**0.072**	ug/L	0.128	178	52	88	73	KED
|	**Zn**	**67**	**0.014**	ug/L	0.100	715	12	13	62	KED
⌊	**As**	**75**	**0.017**	ug/L	0.030	177	3	7	98	KED
	Kr	**83**		ug/L			41	50	28	Standard
⌈>	**In-1**	**115**		ug/L			7352	7309	2	KED
|	**Cd**	**111**	**-0.001**	ug/L	0.002	155	2	2	24	KED
⌊	**Cd**	**114**	**0.002**	ug/L	0.004	222	3	4	66	KED
⌈>	**In**	**115**		ug/L			400481	391698	1	Standard
⌊	**Ag**	**107**	**0.002**	ug/L	0.002	89	288	314	9	Standard
⌈>	**Tb**	**159**		ug/L			162685	161929	0	Standard
⌊	**Pb**	**208**	**0.002**	ug/L	0.004	171	222	353	64	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0233-03
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 21:33:20
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24638	49323	0	Standard
> Sc	45		ug/L			455969	605715	2	Standard
Cr	52	13.185	ug/L	0.346	2	15147	307180	1	Standard
Cr	53	13.522	ug/L	0.454	3	118	34669	0	Standard
> Ge	72		ug/L			32288	32340	1	KED
Ni	60	18.085	ug/L	0.444	2	8	22494	0	KED
Ni	62	18.350	ug/L	0.184	1	3	3730	2	KED
Cu	63	50.898	ug/L	1.163	2	53	184195	0	KED
Cu	65	51.481	ug/L	0.360	0	15	94299	1	KED
Zn	66	142.376	ug/L	4.386	3	52	72099	2	KED
Zn	67	141.062	ug/L	5.051	3	12	11625	2	KED
As	75	3.340	ug/L	0.173	5	3	775	3	KED
Kr	83		ug/L			41	85	3	Standard
> In-1	115		ug/L			7352	7253	3	KED
Cd	111	0.382	ug/L	0.011	2	2	93	2	KED
Cd	114	0.339	ug/L	0.041	12	3	211	10	KED
> In	115		ug/L			400481	395572	2	Standard
Ag	107	0.174	ug/L	0.009	4	288	2614	1	Standard
> Tb	159		ug/L			162685	205489	0	Standard
Pb	208	31.581	ug/L	0.497	1	222	2573753	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0233-04
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 21:37:44
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24638	46086	2	Standard
> Sc	45		ug/L			455969	602735	2	Standard
Cr	52	16.488	ug/L	0.422	2	15147	377253	0	Standard
Cr	53	16.988	ug/L	0.477	2	118	43309	0	Standard
> Ge	72		ug/L			32288	32639	0	KED
Ni	60	23.952	ug/L	0.364	1	8	30074	1	KED
Ni	62	24.541	ug/L	0.517	2	3	5033	1	KED
Cu	63	89.381	ug/L	0.702	0	53	326486	0	KED
Cu	65	89.275	ug/L	0.202	0	15	165033	0	KED
Zn	66	157.198	ug/L	0.876	0	52	80348	0	KED
Zn	67	156.238	ug/L	4.664	2	12	12997	2	KED
As	75	4.809	ug/L	0.104	2	3	1125	1	KED
Kr	83		ug/L			41	74	19	Standard
> In-1	115		ug/L			7352	7300	2	KED
Cd	111	0.312	ug/L	0.056	17	2	77	17	KED
Cd	114	0.341	ug/L	0.017	4	3	214	3	KED
> In	115		ug/L			400481	398341	1	Standard
Ag	107	0.157	ug/L	0.009	5	288	2399	5	Standard
> Tb	159		ug/L			162685	204668	1	Standard
Pb	208	77.361	ug/L	2.044	2	222	6277956	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0233-06
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 21:42:07
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24638	36323	0	Standard
> Sc	45		ug/L			455969	689656	3	Standard
Cr	52	14.855	ug/L	0.471	3	15147	391094	1	Standard
Cr	53	15.223	ug/L	0.283	1	118	44422	1	Standard
> Ge	72		ug/L			32288	33139	1	KED
Ni	60	17.217	ug/L	0.150	0	8	21950	0	KED
Ni	62	17.640	ug/L	0.900	5	3	3673	3	KED
Cu	63	22.751	ug/L	0.239	1	53	84415	0	KED
Cu	65	22.945	ug/L	0.521	2	15	43073	1	KED
Zn	66	39.107	ug/L	0.999	2	52	20332	1	KED
Zn	67	45.078	ug/L	0.610	1	12	3816	0	KED
As	75	2.168	ug/L	0.053	2	3	517	2	KED
Kr	83		ug/L			41	78	28	Standard
> In-1	115		ug/L			7352	7477	0	KED
Cd	111	0.046	ug/L	0.009	20	2	13	17	KED
Cd	114	0.040	ug/L	0.012	30	3	28	27	KED
> In	115		ug/L			400481	401683	0	Standard
Ag	107	0.098	ug/L	0.002	2	288	1619	2	Standard
> Tb	159		ug/L			162685	205760	0	Standard
Pb	208	3.315	ug/L	0.049	1	222	270734	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0233-08
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 21:46:31
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24638	40852	2	Standard
> Sc	45		ug/L			455969	578954	0	Standard
Cr	52	15.058	ug/L	0.057	0	15147	332700	0	Standard
Cr	53	14.903	ug/L	0.124	0	118	36523	0	Standard
> Ge	72		ug/L			32288	32711	0	KED
Ni	60	20.221	ug/L	0.056	0	8	25447	0	KED
Ni	62	20.647	ug/L	0.423	2	3	4245	1	KED
Cu	63	27.301	ug/L	0.399	1	53	99984	1	KED
Cu	65	27.077	ug/L	0.438	1	15	50174	1	KED
Zn	66	74.823	ug/L	0.693	0	52	38358	1	KED
Zn	67	79.243	ug/L	1.296	1	12	6613	1	KED
As	75	2.634	ug/L	0.136	5	3	619	4	KED
Kr	83		ug/L			41	54	14	Standard
> In-1	115		ug/L			7352	7248	1	KED
Cd	111	0.186	ug/L	0.001	0	2	46	1	KED
Cd	114	0.163	ug/L	0.020	12	3	103	10	KED
> In	115		ug/L			400481	390015	0	Standard
Ag	107	0.145	ug/L	0.011	7	288	2190	6	Standard
> Tb	159		ug/L			162685	195156	0	Standard
Pb	208	21.985	ug/L	0.029	0	222	1701745	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0233-09
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 21:50:55
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24638	46486	1	Standard
> Sc	45		ug/L			455969	605349	2	Standard
Cr	52	16.536	ug/L	0.218	1	15147	380036	2	Standard
Cr	53	16.885	ug/L	0.306	1	118	43241	1	Standard
> Ge	72		ug/L			32288	33064	1	KED
Ni	60	24.539	ug/L	0.555	2	8	31207	1	KED
Ni	62	24.327	ug/L	0.167	0	3	5055	1	KED
Cu	63	26.775	ug/L	0.153	0	53	99122	1	KED
Cu	65	27.501	ug/L	0.488	1	15	51504	0	KED
Zn	66	68.561	ug/L	0.926	1	52	35527	0	KED
Zn	67	72.680	ug/L	1.332	1	12	6132	2	KED
As	75	2.718	ug/L	0.041	1	3	646	2	KED
Kr	83		ug/L			41	88	17	Standard
> In-1	115		ug/L			7352	7246	0	KED
Cd	111	0.118	ug/L	0.037	31	2	30	28	KED
Cd	114	0.130	ug/L	0.020	15	3	82	15	KED
> In	115		ug/L			400481	393446	1	Standard
Ag	107	0.174	ug/L	0.004	2	288	2603	2	Standard
> Tb	159		ug/L			162685	205276	0	Standard
Pb	208	14.058	ug/L	0.037	0	222	1144669	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0233-10
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 21:55:19
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24638	39312	2	Standard
> Sc	45		ug/L			455969	679614	1	Standard
Cr	52	15.055	ug/L	0.098	0	15147	390484	1	Standard
Cr	53	15.253	ug/L	0.107	0	118	43879	1	Standard
> Ge	72		ug/L			32288	32621	0	KED
Ni	60	18.944	ug/L	0.184	0	8	23773	0	KED
Ni	62	19.203	ug/L	0.410	2	3	3937	1	KED
Cu	63	23.451	ug/L	0.223	0	53	85657	1	KED
Cu	65	23.919	ug/L	0.449	1	15	44199	1	KED
Zn	66	45.727	ug/L	0.716	1	52	23398	2	KED
Zn	67	52.713	ug/L	2.403	4	12	4390	4	KED
As	75	2.324	ug/L	0.037	1	3	545	1	KED
Kr	83		ug/L			41	93	30	Standard
> In-1	115		ug/L			7352	7430	0	KED
Cd	111	0.114	ug/L	0.015	13	2	30	12	KED
Cd	114	0.100	ug/L	0.011	11	3	66	10	KED
> In	115		ug/L			400481	396355	2	Standard
Ag	107	0.088	ug/L	0.003	3	288	1469	3	Standard
> Tb	159		ug/L			162685	207395	0	Standard
Pb	208	3.287	ug/L	0.036	1	222	270614	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0233-13
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 21:59:42
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24638	43641	2	Standard
> Sc	45		ug/L			455969	612558	1	Standard
Cr	52	16.142	ug/L	0.041	0	15147	375874	0	Standard
Cr	53	16.174	ug/L	0.188	1	118	41929	1	Standard
> Ge	72		ug/L			32288	33096	0	KED
Ni	60	20.175	ug/L	0.169	0	8	25687	0	KED
Ni	62	20.113	ug/L	0.344	1	3	4184	1	KED
Cu	63	25.064	ug/L	0.318	1	53	92869	0	KED
Cu	65	25.510	ug/L	0.391	1	15	47826	1	KED
Zn	66	81.954	ug/L	1.632	1	52	42499	1	KED
Zn	67	85.259	ug/L	0.516	0	12	7198	1	KED
As	75	3.445	ug/L	0.057	1	3	818	0	KED
Kr	83		ug/L			41	97	5	Standard
> In-1	115		ug/L			7352	7496	3	KED
Cd	111	0.104	ug/L	0.020	19	2	28	16	KED
Cd	114	0.093	ug/L	0.010	10	3	62	9	KED
> In	115		ug/L			400481	390249	2	Standard
Ag	107	0.105	ug/L	0.004	4	288	1671	3	Standard
> Tb	159		ug/L			162685	220857	1	Standard
Pb	208	12.922	ug/L	0.229	1	222	1131761	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0233-14
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 22:04:06
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24638	38731	1	Standard
>	Sc	45		ug/L			455969	565123	2	Standard
	Cr	52	9.689	ug/L	0.184	1	15147	215603	1	Standard
	Cr	53	9.876	ug/L	0.049	0	118	23674	2	Standard
>	Ge	72		ug/L			32288	32543	1	KED
	Ni	60	13.816	ug/L	0.366	2	8	17296	1	KED
	Ni	62	13.785	ug/L	0.207	1	3	2820	1	KED
	Cu	63	13.034	ug/L	0.175	1	53	47515	1	KED
	Cu	65	13.367	ug/L	0.287	2	15	24647	0	KED
	Zn	66	41.061	ug/L	0.970	2	52	20963	2	KED
	Zn	67	44.472	ug/L	2.161	4	12	3697	4	KED
	As	75	4.292	ug/L	0.109	2	3	1001	1	KED
	Kr	83		ug/L			41	62	18	Standard
>	In-1	115		ug/L			7352	7447	1	KED
	Cd	111	0.037	ug/L	0.015	40	2	11	30	KED
	Cd	114	0.041	ug/L	0.011	26	3	28	22	KED
>	In	115		ug/L			400481	380268	2	Standard
	Ag	107	0.066	ug/L	0.004	5	288	1119	2	Standard
>	Tb	159		ug/L			162685	195455	0	Standard
	Pb	208	3.161	ug/L	0.023	0	222	245297	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0233-15
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 22:08:30
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			24638	39873	1	Standard
> Sc	45		ug/L			455969	581720	0	Standard
Cr	52	13.048	ug/L	0.534	4	15147	292260	4	Standard
Cr	53	13.004	ug/L	0.543	4	118	32041	4	Standard
> Ge	72		ug/L			32288	32788	0	KED
Ni	60	20.738	ug/L	0.180	0	8	26159	1	KED
Ni	62	21.449	ug/L	0.118	0	3	4420	0	KED
Cu	63	19.783	ug/L	0.279	1	53	72635	1	KED
Cu	65	19.613	ug/L	0.372	1	15	36432	1	KED
Zn	66	71.385	ug/L	0.240	0	52	36684	0	KED
Zn	67	75.640	ug/L	0.629	0	12	6328	1	KED
As	75	2.600	ug/L	0.093	3	3	613	4	KED
Kr	83		ug/L			41	85	11	Standard
> In-1	115		ug/L			7352	7116	0	KED
Cd	111	0.102	ug/L	0.022	22	2	26	19	KED
Cd	114	0.100	ug/L	0.008	8	3	63	7	KED
> In	115		ug/L			400481	390282	1	Standard
Ag	107	0.085	ug/L	0.009	10	288	1400	6	Standard
> Tb	159		ug/L			162685	199783	1	Standard
Pb	208	7.552	ug/L	0.196	2	222	598615	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0233-16
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 22:12:47
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24638	41095	1	Standard
>	Sc	45		ug/L			455969	630602	2	Standard
	Cr	52	18.995	ug/L	0.274	1	15147	451593	1	Standard
	Cr	53	19.172	ug/L	0.174	0	118	51127	1	Standard
>	Ge	72		ug/L			32288	32369	0	KED
	Ni	60	18.545	ug/L	0.184	0	8	23093	0	KED
	Ni	62	18.658	ug/L	0.488	2	3	3796	2	KED
	Cu	63	31.006	ug/L	0.579	1	53	112355	1	KED
	Cu	65	31.480	ug/L	0.548	1	15	57725	2	KED
	Zn	66	80.341	ug/L	1.128	1	52	40750	0	KED
	Zn	67	85.606	ug/L	2.079	2	12	7068	1	KED
	As	75	3.052	ug/L	0.167	5	3	709	5	KED
	Kr	83		ug/L			41	77	6	Standard
>	In-1	115		ug/L			7352	7296	1	KED
	Cd	111	0.177	ug/L	0.009	5	2	45	3	KED
	Cd	114	0.182	ug/L	0.026	14	3	115	12	KED
>	In	115		ug/L			400481	378831	1	Standard
	Ag	107	0.166	ug/L	0.009	5	288	2398	4	Standard
>	Tb	159		ug/L			162685	196975	0	Standard
	Pb	208	16.390	ug/L	0.124	0	222	1280511	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVA
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 22:20:36
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	27661	1	Standard
⌈>	**Sc**	**45**		ug/L			455969	447906	2	Standard
|	**Cr**	**52**	**48.990**	ug/L	0.639	1	15147	803766	1	Standard
⌊	**Cr**	**53**	**49.562**	ug/L	0.794	1	118	93684	1	Standard
⌈>	**Ge**	**72**		ug/L			32288	32569	0	KED
|	**Ni**	**60**	**49.173**	ug/L	0.269	0	8	61597	0	KED
|	**Ni**	**62**	**49.708**	ug/L	0.895	1	3	10171	1	KED
|	**Cu**	**63**	**49.995**	ug/L	0.095	0	53	182258	0	KED
|	**Cu**	**65**	**50.049**	ug/L	0.517	1	15	92326	0	KED
|	**Zn**	**66**	**49.546**	ug/L	0.690	1	52	25306	1	KED
|	**Zn**	**67**	**51.953**	ug/L	0.540	1	12	4321	1	KED
⌊	**As**	**75**	**52.959**	ug/L	0.829	1	3	12337	1	KED
	Kr	**83**		ug/L			41	46	6	Standard
⌈>	**In-1**	**115**		ug/L			7352	7453	2	KED
|	**Cd**	**111**	**48.413**	ug/L	0.985	2	2	11911	1	KED
⌊	**Cd**	**114**	**47.996**	ug/L	0.836	1	3	30363	1	KED
⌈>	**In**	**115**		ug/L			400481	381363	3	Standard
⌊	**Ag**	**107**	**52.294**	ug/L	1.805	3	288	674270	1	Standard
⌈>	**Tb**	**159**		ug/L			162685	163797	0	Standard
⌊	**Pb**	**208**	**49.781**	ug/L	0.287	0	222	3233764	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBA
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 22:27:44
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	25155	2	Standard
⌈>	**Sc**	**45**		ug/L			455969	441990	0	Standard
|	**Cr**	**52**	**0.031**	ug/L	0.027	87	15147	15181	3	Standard
⌊	**Cr**	**53**	**-0.010**	ug/L	0.010	99	118	95	19	Standard
⌈>	**Ge**	**72**		ug/L			32288	32639	1	KED
|	**Ni**	**60**	**0.002**	ug/L	0.004	159	8	11	44	KED
|	**Ni**	**62**	**-0.006**	ug/L	0.009	141	3	1	100	KED
|	**Cu**	**63**	**-0.001**	ug/L	0.004	329	53	49	31	KED
|	**Cu**	**65**	**0.004**	ug/L	0.006	173	15	22	50	KED
|	**Zn**	**66**	**-0.001**	ug/L	0.005	428	52	52	4	KED
|	**Zn**	**67**	**0.006**	ug/L	0.024	416	12	12	17	KED
⌊	**As**	**75**	**0.001**	ug/L	0.004	351	3	3	28	KED
	Kr	**83**		ug/L			41	38	40	Standard
⌈>	**In-1**	**115**		ug/L			7352	7293	4	KED
|	**Cd**	**111**	**-0.007**	ug/L	0.000	2	2	0		KED
⌊	**Cd**	**114**	**-0.001**	ug/L	0.002	209	3	2	46	KED
⌈>	**In**	**115**		ug/L			400481	381488	0	Standard
⌊	**Ag**	**107**	**0.003**	ug/L	0.004	130	288	316	17	Standard
⌈>	**Tb**	**159**		ug/L			162685	162290	2	Standard
⌊	**Pb**	**208**	**0.000**	ug/L	0.000	17	222	233	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0530-01
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 22:32:09
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24638	48558	1	Standard
>	Sc	45		ug/L			455969	508126	0	Standard
	Cr	52	55.596	ug/L	0.105	0	15147	1032669	0	Standard
	Cr	53	55.379	ug/L	0.253	0	118	118767	1	Standard
>	Ge	72		ug/L			32288	32417	1	KED
	Ni	60	28.293	ug/L	0.213	0	8	35279	1	KED
	Ni	62	28.897	ug/L	0.244	0	3	5886	1	KED
	Cu	63	95.489	ug/L	2.102	2	53	346350	0	KED
	Cu	65	95.354	ug/L	1.127	1	15	175055	1	KED
	Zn	66	254.481	ug/L	2.839	1	52	129151	1	KED
	Zn	67	244.350	ug/L	2.723	1	12	20182	0	KED
	As	75	4.494	ug/L	0.115	2	3	1044	3	KED
	Kr	83		ug/L			41	71	19	Standard
>	In-1	115		ug/L			7352	7324	0	KED
	Cd	111	0.253	ug/L	0.035	13	2	63	13	KED
	Cd	114	0.250	ug/L	0.044	17	3	158	17	KED
>	In	115		ug/L			400481	386506	2	Standard
	Ag	107	0.123	ug/L	0.005	3	288	1880	2	Standard
>	Tb	159		ug/L			162685	179682	0	Standard
	Pb	208	52.089	ug/L	0.654	1	222	3711559	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0530-02
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 22:36:32
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24638	52431	2	Standard
>	Sc	45		ug/L			455969	516727	2	Standard
	Cr	52	38.411	ug/L	0.312	0	15147	730881	2	Standard
	Cr	53	38.818	ug/L	0.677	1	118	84683	1	Standard
>	Ge	72		ug/L			32288	32322	0	KED
	Ni	60	32.169	ug/L	0.513	1	8	39996	1	KED
	Ni	62	32.339	ug/L	0.898	2	3	6568	2	KED
	Cu	63	60.645	ug/L	0.856	1	53	219393	1	KED
	Cu	65	61.208	ug/L	0.412	0	15	112054	0	KED
	Zn	66	181.586	ug/L	1.705	0	52	91905	0	KED
	Zn	67	176.011	ug/L	1.388	0	12	14500	0	KED
	As	75	7.972	ug/L	0.314	3	3	1845	4	KED
	Kr	83		ug/L			41	71	19	Standard
>	In-1	115		ug/L			7352	7160	1	KED
	Cd	111	0.355	ug/L	0.039	11	2	86	12	KED
	Cd	114	0.343	ug/L	0.028	8	3	211	7	KED
>	In	115		ug/L			400481	380722	0	Standard
	Ag	107	0.160	ug/L	0.010	6	288	2329	4	Standard
>	Tb	159		ug/L			162685	178139	1	Standard
	Pb	208	44.446	ug/L	0.270	0	222	3140170	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0530-03
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 22:40:56
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24638	50930	1	Standard
>	Sc	45		ug/L			455969	514673	1	Standard
	Cr	52	35.486	ug/L	0.457	1	15147	673718	0	Standard
	Cr	53	35.368	ug/L	0.936	2	118	76854	1	Standard
>	Ge	72		ug/L			32288	32180	0	KED
	Ni	60	30.939	ug/L	0.245	0	8	38296	0	KED
	Ni	62	30.471	ug/L	1.159	3	3	6161	3	KED
	Cu	63	51.474	ug/L	0.400	0	53	185403	0	KED
	Cu	65	51.862	ug/L	0.505	0	15	94527	0	KED
	Zn	66	166.360	ug/L	2.837	1	52	83832	1	KED
	Zn	67	162.076	ug/L	1.988	1	12	13294	1	KED
	As	75	8.379	ug/L	0.311	3	3	1931	2	KED
	Kr	83		ug/L			41	53	12	Standard
>	In-1	115		ug/L			7352	7322	1	KED
	Cd	111	0.346	ug/L	0.059	17	2	86	18	KED
	Cd	114	0.327	ug/L	0.061	18	3	206	19	KED
>	In	115		ug/L			400481	388098	2	Standard
	Ag	107	0.142	ug/L	0.010	7	288	2139	5	Standard
>	Tb	159		ug/L			162685	180534	1	Standard
	Pb	208	43.562	ug/L	1.116	2	222	3118082	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0536-01
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 22:45:44
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24638	38685	2	Standard
⌈>	Sc	45		ug/L			455969	515188	1	Standard
|	Cr	52	12.185	ug/L	0.076	0	15147	242825	1	Standard
⌊	Cr	53	12.321	ug/L	0.150	1	118	26891	0	Standard
⌈>	Ge	72		ug/L			32288	31209	1	KED
|	Ni	60	12.202	ug/L	0.343	2	8	14651	2	KED
|	Ni	62	12.137	ug/L	0.457	3	3	2382	4	KED
|	Cu	63	24.216	ug/L	0.079	0	53	84620	1	KED
|	Cu	65	23.936	ug/L	0.286	1	15	42318	1	KED
|	Zn	66	54.017	ug/L	0.609	1	52	26432	1	KED
|	Zn	67	52.305	ug/L	1.159	2	12	4168	1	KED
⌊	As	75	5.579	ug/L	0.078	1	3	1248	0	KED
	Kr	83		ug/L			41	63	8	Standard
⌈>	In-1	115		ug/L			7352	7157	1	KED
|	Cd	111	0.178	ug/L	0.014	7	2	44	6	KED
⌊	Cd	114	0.164	ug/L	0.006	3	3	102	2	KED
⌈>	In	115		ug/L			400481	378594	1	Standard
⌊	Ag	107	0.110	ug/L	0.002	1	288	1687	2	Standard
⌈>	Tb	159		ug/L			162685	181422	0	Standard
⌊	Pb	208	12.363	ug/L	0.170	1	222	889659	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0652-DUP1
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 22:50:08
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24638	36756	1	Standard
>	Sc	45		ug/L			455969	515784	1	Standard
	Cr	52	10.452	ug/L	0.102	0	15147	210965	0	Standard
	Cr	53	10.587	ug/L	0.208	1	118	23153	2	Standard
>	Ge	72		ug/L			32288	31422	0	KED
	Ni	60	11.350	ug/L	0.087	0	8	13723	0	KED
	Ni	62	11.328	ug/L	0.405	3	3	2238	2	KED
	Cu	63	21.349	ug/L	0.324	1	53	75115	1	KED
	Cu	65	21.548	ug/L	0.251	1	15	38360	0	KED
	Zn	66	50.641	ug/L	0.581	1	52	24954	1	KED
	Zn	67	48.000	ug/L	2.078	4	12	3851	3	KED
	As	75	4.315	ug/L	0.010	0	3	972	0	KED
	Kr	83		ug/L			41	68	5	Standard
>	In-1	115		ug/L			7352	7104	2	KED
	Cd	111	0.151	ug/L	0.010	6	2	37	7	KED
	Cd	114	0.152	ug/L	0.030	19	3	94	17	KED
>	In	115		ug/L			400481	393468	2	Standard
	Ag	107	0.090	ug/L	0.005	5	288	1480	6	Standard
>	Tb	159		ug/L			162685	182072	0	Standard
	Pb	208	10.134	ug/L	0.155	1	222	731955	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0652-MS1
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 22:54:31
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24638	36772	2	Standard
>	Sc	45		ug/L			455969	513791	3	Standard
	Cr	52	31.372	ug/L	0.894	2	15147	596283	1	Standard
	Cr	53	31.564	ug/L	0.253	0	118	68492	2	Standard
>	Ge	72		ug/L			32288	31155	0	KED
	Ni	60	33.899	ug/L	0.121	0	8	40625	0	KED
	Ni	62	33.969	ug/L	1.551	4	3	6648	3	KED
	Cu	63	43.852	ug/L	0.564	1	53	152929	1	KED
	Cu	65	44.256	ug/L	0.352	0	15	78099	0	KED
	Zn	66	116.229	ug/L	1.514	1	52	56721	1	KED
	Zn	67	113.660	ug/L	1.097	0	12	9030	1	KED
	As	75	28.584	ug/L	0.414	1	3	6371	0	KED
	Kr	83		ug/L			41	69	15	Standard
>	In-1	115		ug/L			7352	6927	2	KED
	Cd	111	21.682	ug/L	0.484	2	2	4959	2	KED
	Cd	114	21.713	ug/L	0.467	2	3	12766	0	KED
>	In	115		ug/L			400481	392923	2	Standard
	Ag	107	8.817	ug/L	0.214	2	288	117404	1	Standard
>	Tb	159		ug/L			162685	180125	0	Standard
	Pb	208	48.202	ug/L	0.088	0	222	3443334	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0652-MSD1
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 22:58:55
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24638	36109	0	Standard
>	Sc	45		ug/L			455969	521957	1	Standard
	Cr	52	31.874	ug/L	0.517	1	15147	615606	2	Standard
	Cr	53	31.831	ug/L	0.694	2	118	70169	1	Standard
>	Ge	72		ug/L			32288	31777	0	KED
	Ni	60	37.863	ug/L	0.155	0	8	46279	0	KED
	Ni	62	38.109	ug/L	0.647	1	3	7609	2	KED
	Cu	63	46.096	ug/L	0.726	1	53	163950	0	KED
	Cu	65	47.278	ug/L	1.211	2	15	85090	2	KED
	Zn	66	125.196	ug/L	0.891	0	52	62316	1	KED
	Zn	67	119.557	ug/L	1.586	1	12	9686	0	KED
	As	75	29.924	ug/L	0.374	1	3	6803	0	KED
	Kr	83		ug/L			41	59	27	Standard
>	In-1	115		ug/L			7352	7064	1	KED
	Cd	111	24.115	ug/L	0.558	2	2	5625	0	KED
	Cd	114	23.954	ug/L	0.364	1	3	14365	0	KED
>	In	115		ug/L			400481	386143	1	Standard
	Ag	107	9.147	ug/L	0.090	0	288	119709	1	Standard
>	Tb	159		ug/L			162685	180149	0	Standard
	Pb	208	31.708	ug/L	0.206	0	222	2265357	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0652-PS1
Sample Dil Factor: 20
Comments:
Sample Date/Time: Monday, June 26, 2023 23:03:19
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	38851	3	Standard
⌈>	**Sc**	**45**		ug/L			455969	515002	3	Standard
|	**Cr**	**52**	**33.629**	ug/L	0.790	2	15147	639560	1	Standard
⌊	**Cr**	**53**	**33.701**	ug/L	1.267	3	118	73245	1	Standard
⌈>	**Ge**	**72**		ug/L			32288	31242	1	KED
|	**Ni**	**60**	**37.849**	ug/L	0.572	1	8	45479	1	KED
|	**Ni**	**62**	**38.775**	ug/L	0.999	2	3	7609	1	KED
|	**Cu**	**63**	**50.147**	ug/L	0.852	1	53	175330	0	KED
|	**Cu**	**65**	**49.556**	ug/L	1.176	2	15	87673	0	KED
|	**Zn**	**66**	**130.302**	ug/L	2.796	2	52	63745	0	KED
|	**Zn**	**67**	**128.013**	ug/L	3.876	3	12	10193	1	KED
⌊	**As**	**75**	**32.425**	ug/L	0.614	1	3	7246	0	KED
	Kr	**83**		ug/L			41	67	27	Standard
⌈>	**In-1**	**115**		ug/L			7352	7099	3	KED
|	**Cd**	**111**	**24.338**	ug/L	1.090	4	2	5699	0	KED
⌊	**Cd**	**114**	**24.587**	ug/L	1.577	6	3	14797	3	KED
⌈>	**In**	**115**		ug/L			400481	395505	0	Standard
⌊	**Ag**	**107**	**25.967**	ug/L	0.342	1	288	347611	2	Standard
⌈>	**Tb**	**159**		ug/L			162685	183963	1	Standard
⌊	**Pb**	**208**	**35.267**	ug/L	0.274	0	222	2572954	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0652-SRM1
Sample Dil Factor: 50
Comments:
Sample Date/Time: Monday, June 26, 2023 23:07:43
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24638	33112	2	Standard
>	Sc	45		ug/L			455969	458404	1	Standard
	Cr	52	47.494	ug/L	0.916	1	15147	797887	0	Standard
	Cr	53	47.835	ug/L	0.044	0	118	92566	1	Standard
>	Ge	72		ug/L			32288	32964	1	KED
	Ni	60	105.334	ug/L	0.730	0	8	133551	2	KED
	Ni	62	105.504	ug/L	1.130	1	3	21848	2	KED
	Cu	63	48.177	ug/L	0.615	1	53	177743	0	KED
	Cu	65	49.125	ug/L	0.809	1	15	91711	0	KED
	Zn	66	64.852	ug/L	0.776	1	52	33505	0	KED
	Zn	67	70.815	ug/L	0.806	1	12	5957	2	KED
	As	75	32.372	ug/L	0.343	1	3	7634	1	KED
	Kr	83		ug/L			41	66	14	Standard
>	In-1	115		ug/L			7352	7434	1	KED
	Cd	111	31.035	ug/L	0.435	1	2	7618	0	KED
	Cd	114	31.047	ug/L	0.558	1	3	19591	0	KED
>	In	115		ug/L			400481	389774	2	Standard
	Ag	107	24.172	ug/L	0.598	2	288	318766	0	Standard
>	Tb	159		ug/L			162685	202535	1	Standard
	Pb	208	71.028	ug/L	1.125	1	222	5704060	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLA
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 23:12:07
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	28156	1	Standard
⌈>	**Sc**	**45**		ug/L			455969	433133	1	Standard
|	**Cr**	**52**	**0.047**	ug/L	0.017	35	15147	15121	0	Standard
⌊	**Cr**	**53**	**-0.011**	ug/L	0.007	62	118	92	13	Standard
⌈>	**Ge**	**72**		ug/L			32288	31742	0	KED
|	**Ni**	**60**	**0.020**	ug/L	0.003	15	8	33	12	KED
|	**Ni**	**62**	**0.019**	ug/L	0.015	76	3	6	41	KED
|	**Cu**	**63**	**0.009**	ug/L	0.000	4	53	85	1	KED
|	**Cu**	**65**	**0.019**	ug/L	0.006	35	15	48	23	KED
|	**Zn**	**66**	**0.176**	ug/L	0.029	16	52	138	9	KED
|	**Zn**	**67**	**0.088**	ug/L	0.106	120	12	19	45	KED
⌊	**As**	**75**	**-0.005**	ug/L	0.002	38	3	1	25	KED
	Kr	**83**		ug/L			41	43	19	Standard
⌈>	**In-1**	**115**		ug/L			7352	7049	0	KED
|	**Cd**	**111**	**0.006**	ug/L	0.004	70	2	3	25	KED
⌊	**Cd**	**114**	**0.000**	ug/L	0.004	4947	3	3	75	KED
⌈>	**In**	**115**		ug/L			400481	383968	0	Standard
⌊	**Ag**	**107**	**-0.016**	ug/L	0.001	6	288	67	21	Standard
⌈>	**Tb**	**159**		ug/L			162685	160198	1	Standard
⌊	**Pb**	**208**	**0.019**	ug/L	0.000	2	222	1413	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVB
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 23:16:32
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	26109	2	Standard
⌈>	**Sc**	**45**		ug/L			455969	436467	2	Standard
|	**Cr**	**52**	**49.705**	ug/L	0.252	0	15147	794520	1	Standard
⌊	**Cr**	**53**	**49.233**	ug/L	1.042	2	118	90690	1	Standard
⌈>	**Ge**	**72**		ug/L			32288	31981	0	KED
|	**Ni**	**60**	**50.158**	ug/L	0.653	1	8	61697	1	KED
|	**Ni**	**62**	**49.043**	ug/L	1.156	2	3	9853	1	KED
|	**Cu**	**63**	**50.164**	ug/L	0.418	0	53	179571	0	KED
|	**Cu**	**65**	**49.838**	ug/L	0.664	1	15	90281	1	KED
|	**Zn**	**66**	**49.033**	ug/L	0.573	1	52	24592	1	KED
|	**Zn**	**67**	**49.246**	ug/L	0.642	1	12	4022	1	KED
⌊	**As**	**75**	**52.809**	ug/L	0.296	0	3	12081	0	KED
	Kr	**83**		ug/L			41	34	31	Standard
⌈>	**In-1**	**115**		ug/L			7352	7154	2	KED
|	**Cd**	**111**	**48.643**	ug/L	0.904	1	2	11488	1	KED
⌊	**Cd**	**114**	**48.265**	ug/L	1.537	3	3	29298	0	KED
⌈>	**In**	**115**		ug/L			400481	375753	1	Standard
⌊	**Ag**	**107**	**52.441**	ug/L	0.609	1	288	666517	0	Standard
⌈>	**Tb**	**159**		ug/L			162685	160438	0	Standard
⌊	**Pb**	**208**	**50.321**	ug/L	0.321	0	222	3201858	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBB
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 23:23:40
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	23980	0	Standard
⎡>	**Sc**	**45**		ug/L			455969	435025	0	Standard
⎢	**Cr**	**52**	**0.058**	ug/L	0.010	17	15147	15357	1	Standard
⎣	**Cr**	**53**	**-0.001**	ug/L	0.004	305	118	110	7	Standard
⎡>	**Ge**	**72**		ug/L			32288	31977	0	KED
⎢	**Ni**	**60**	**0.004**	ug/L	0.002	38	8	13	14	KED
⎢	**Ni**	**62**	**0.010**	ug/L	0.024	247	3	5	94	KED
⎢	**Cu**	**63**	**-0.002**	ug/L	0.002	113	53	45	19	KED
⎢	**Cu**	**65**	**0.001**	ug/L	0.001	86	15	18	11	KED
⎢	**Zn**	**66**	**0.011**	ug/L	0.026	229	52	57	21	KED
⎢	**Zn**	**67**	**-0.045**	ug/L	0.055	122	12	8	53	KED
⎣	**As**	**75**	**-0.001**	ug/L	0.006	1132	3	3	48	KED
	Kr	**83**		ug/L			41	48	15	Standard
⎡>	**In-1**	**115**		ug/L			7352	7201	2	KED
⎢	**Cd**	**111**	**-0.001**	ug/L	0.006	535	2	2	65	KED
⎣	**Cd**	**114**	**0.002**	ug/L	0.004	161	3	4	50	KED
⎡>	**In**	**115**		ug/L			400481	380010	1	Standard
⎣	**Ag**	**107**	**0.008**	ug/L	0.005	57	288	374	15	Standard
⎡>	**Tb**	**159**		ug/L			162685	158340	0	Standard
⎣	**Pb**	**208**	**0.005**	ug/L	0.004	80	222	536	47	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0461-01
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 23:28:04
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	50148	2	Standard
⌈>	**Sc**	**45**		ug/L			455969	447970	2	Standard
|	**Cr**	**52**	**0.878**	ug/L	0.053	6	15147	29005	0	Standard
⌊	**Cr**	**53**	**0.836**	ug/L	0.050	5	118	1693	2	Standard
⌈>	**Ge**	**72**		ug/L			32288	32230	1	KED
|	**Ni**	**60**	**0.420**	ug/L	0.013	3	8	528	1	KED
|	**Ni**	**62**	**0.398**	ug/L	0.060	15	3	83	15	KED
|	**Cu**	**63**	**4.226**	ug/L	0.073	1	53	15293	1	KED
|	**Cu**	**65**	**4.189**	ug/L	0.030	0	15	7662	1	KED
|	**Zn**	**66**	**95.347**	ug/L	0.644	0	52	48143	0	KED
|	**Zn**	**67**	**91.628**	ug/L	0.444	0	12	7532	1	KED
⌊	**As**	**75**	**1.444**	ug/L	0.046	3	3	335	1	KED
	Kr	**83**		ug/L			41	40	39	Standard
⌈>	**In-1**	**115**		ug/L			7352	7336	2	KED
|	**Cd**	**111**	**0.060**	ug/L	0.016	26	2	17	24	KED
⌊	**Cd**	**114**	**0.068**	ug/L	0.007	10	3	45	10	KED
⌈>	**In**	**115**		ug/L			400481	393758	0	Standard
⌊	**Ag**	**107**	**-0.015**	ug/L	0.000	2	288	84	4	Standard
⌈>	**Tb**	**159**		ug/L			162685	162246	4	Standard
⌊	**Pb**	**208**	**0.493**	ug/L	0.025	5	222	31920	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0461-02
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 23:32:22
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	46832	1	Standard
⌈>	**Sc**	**45**		ug/L			455969	447735	1	Standard
|	**Cr**	**52**	**0.767**	ug/L	0.020	2	15147	27213	0	Standard
⌊	**Cr**	**53**	**0.936**	ug/L	0.015	1	118	1882	2	Standard
⌈>	**Ge**	**72**		ug/L			32288	32254	0	KED
|	**Ni**	**60**	**0.472**	ug/L	0.022	4	8	594	5	KED
|	**Ni**	**62**	**0.455**	ug/L	0.036	7	3	95	7	KED
|	**Cu**	**63**	**2.844**	ug/L	0.052	1	53	10318	1	KED
|	**Cu**	**65**	**2.833**	ug/L	0.077	2	15	5190	2	KED
|	**Zn**	**66**	**44.192**	ug/L	0.543	1	52	22360	1	KED
|	**Zn**	**67**	**41.400**	ug/L	1.808	4	12	3412	4	KED
⌊	**As**	**75**	**0.860**	ug/L	0.035	4	3	201	3	KED
	Kr	**83**		ug/L			41	35	32	Standard
⌈>	**In-1**	**115**		ug/L			7352	7196	4	KED
|	**Cd**	**111**	**0.049**	ug/L	0.014	29	2	13	20	KED
⌊	**Cd**	**114**	**0.033**	ug/L	0.009	28	3	23	20	KED
⌈>	**In**	**115**		ug/L			400481	390333	1	Standard
⌊	**Ag**	**107**	**0.005**	ug/L	0.002	42	288	342	8	Standard
⌈>	**Tb**	**159**		ug/L			162685	161909	1	Standard
⌊	**Pb**	**208**	**0.385**	ug/L	0.002	0	222	24913	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0461-03
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 23:36:40
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	55558	3	Standard
⌈>	**Sc**	**45**		ug/L			455969	446264	2	Standard
|	**Cr**	**52**	**1.051**	ug/L	0.017	1	15147	31677	2	Standard
⌊	**Cr**	**53**	**9.417**	ug/L	0.186	1	118	17830	2	Standard
⌈>	**Ge**	**72**		ug/L			32288	30598	1	KED
|	**Ni**	**60**	**0.591**	ug/L	0.031	5	8	702	3	KED
|	**Ni**	**62**	**0.648**	ug/L	0.053	8	3	127	9	KED
|	**Cu**	**63**	**5.246**	ug/L	0.200	3	53	18006	2	KED
|	**Cu**	**65**	**5.209**	ug/L	0.127	2	15	9038	0	KED
|	**Zn**	**66**	**29.563**	ug/L	0.953	3	52	14201	1	KED
|	**Zn**	**67**	**29.115**	ug/L	0.758	2	12	2279	1	KED
⌊	**As**	**75**	**0.669**	ug/L	0.058	8	3	149	6	KED
	Kr	**83**		ug/L			41	73	30	Standard
⌈>	**In-1**	**115**		ug/L			7352	6942	2	KED
|	**Cd**	**111**	**0.027**	ug/L	0.005	17	2	8	11	KED
⌊	**Cd**	**114**	**0.021**	ug/L	0.010	47	3	15	39	KED
⌈>	**In**	**115**		ug/L			400481	363768	2	Standard
⌊	**Ag**	**107**	**-0.006**	ug/L	0.002	29	288	194	12	Standard
⌈>	**Tb**	**159**		ug/L			162685	160833	0	Standard
⌊	**Pb**	**208**	**1.194**	ug/L	0.009	0	222	76359	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0261-02
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 23:41:28
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	48248	2	Standard
⌈>	**Sc**	**45**		ug/L			455969	447745	1	Standard
|	**Cr**	**52**	**0.774**	ug/L	0.032	4	15147	27325	1	Standard
⌊	**Cr**	**53**	**1.490**	ug/L	0.014	0	118	2928	1	Standard
⌈>	**Ge**	**72**		ug/L			32288	32296	1	KED
|	**Ni**	**60**	**0.480**	ug/L	0.028	5	8	604	5	KED
|	**Ni**	**62**	**0.497**	ug/L	0.090	18	3	104	18	KED
|	**Cu**	**63**	**3.229**	ug/L	0.109	3	53	11720	2	KED
|	**Cu**	**65**	**3.238**	ug/L	0.102	3	15	5937	1	KED
|	**Zn**	**66**	**51.382**	ug/L	0.594	1	52	26020	0	KED
|	**Zn**	**67**	**49.130**	ug/L	2.024	4	12	4052	3	KED
⌊	**As**	**75**	**1.032**	ug/L	0.031	2	3	241	3	KED
	Kr	**83**		ug/L			41	42	18	Standard
⌈>	**In-1**	**115**		ug/L			7352	7118	1	KED
|	**Cd**	**111**	**0.031**	ug/L	0.020	62	2	9	47	KED
⌊	**Cd**	**114**	**0.028**	ug/L	0.010	36	3	19	31	KED
⌈>	**In**	**115**		ug/L			400481	388524	0	Standard
⌊	**Ag**	**107**	**0.008**	ug/L	0.002	31	288	380	8	Standard
⌈>	**Tb**	**159**		ug/L			162685	162606	0	Standard
⌊	**Pb**	**208**	**0.440**	ug/L	0.003	0	222	28590	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0261-03
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 23:45:52
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	49514	1	Standard
⌈>	**Sc**	**45**		ug/L			455969	439121	3	Standard
|	**Cr**	**52**	**3.271**	ug/L	0.097	2	15147	66204	2	Standard
⌊	**Cr**	**53**	**3.355**	ug/L	0.120	3	118	6318	0	Standard
⌈>	**Ge**	**72**		ug/L			32288	31972	2	KED
|	**Ni**	**60**	**0.257**	ug/L	0.027	10	8	323	8	KED
|	**Ni**	**62**	**0.230**	ug/L	0.056	24	3	49	24	KED
|	**Cu**	**63**	**3.792**	ug/L	0.114	3	53	13614	1	KED
|	**Cu**	**65**	**3.816**	ug/L	0.148	3	15	6921	2	KED
|	**Zn**	**66**	**212.212**	ug/L	3.421	1	52	106219	1	KED
|	**Zn**	**67**	**196.966**	ug/L	4.168	2	12	16047	2	KED
⌊	**As**	**75**	**0.462**	ug/L	0.038	8	3	108	6	KED
	Kr	**83**		ug/L			41	36	19	Standard
⌈>	**In-1**	**115**		ug/L			7352	7264	0	KED
|	**Cd**	**111**	**0.054**	ug/L	0.003	5	2	15	3	KED
⌊	**Cd**	**114**	**0.062**	ug/L	0.016	25	3	41	22	KED
⌈>	**In**	**115**		ug/L			400481	385505	2	Standard
⌊	**Ag**	**107**	**-0.016**	ug/L	0.000	1	288	65	6	Standard
⌈>	**Tb**	**159**		ug/L			162685	160885	0	Standard
⌊	**Pb**	**208**	**0.799**	ug/L	0.005	0	222	51186	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0261-04
Sample Dil Factor:
Comments:

DEL

Sample Date/Time: Monday, June 26, 2023 23:50:16
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	49316	1	Standard
⌈>	**Sc**	**45**		ug/L			455969	446131	3	Standard
|	**Cr**	**52**	**2.828**	ug/L	0.119	4	15147	60165	3	Standard
⌊	**Cr**	**53**	**2.883**	ug/L	0.111	3	118	5534	2	Standard
⌈>	**Ge**	**72**		ug/L			32288	31582	1	KED
|	**Ni**	**60**	**0.258**	ug/L	0.014	5	8	321	6	KED
|	**Ni**	**62**	**0.208**	ug/L	0.027	13	3	44	13	KED
|	**Cu**	**63**	**3.887**	ug/L	0.007	0	53	13788	1	KED
|	**Cu**	**65**	**3.919**	ug/L	0.060	1	15	7024	2	KED
|	**Zn**	**66**	**275.385**	ug/L	2.812	1	52	136160	1	KED
|	**Zn**	**67**	**259.138**	ug/L	4.899	1	12	20853	2	KED
⌊	**As**	**75**	**0.428**	ug/L	0.030	6	3	99	5	KED
	Kr	**83**		ug/L			41	41	27	Standard
⌈>	**In-1**	**115**		ug/L			7352	7221	0	KED
|	**Cd**	**111**	**0.065**	ug/L	0.014	21	2	18	18	KED
⌊	**Cd**	**114**	**0.048**	ug/L	0.021	43	3	32	38	KED
⌈>	**In**	**115**		ug/L			400481	389891	1	Standard
⌊	**Ag**	**107**	**-0.016**	ug/L	0.001	6	288	64	21	Standard
⌈>	**Tb**	**159**		ug/L			162685	161665	1	Standard
⌊	**Pb**	**208**	**1.133**	ug/L	0.021	1	222	72828	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0261-01
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 23:54:40
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24638	49439	0	Standard
>	Sc	45		ug/L			455969	439743	1	Standard
	Cr	52	4.726	ug/L	0.015	0	15147	89343	2	Standard
	Cr	53	4.643	ug/L	0.105	2	118	8720	1	Standard
>	Ge	72		ug/L			32288	31691	1	KED
	Ni	60	0.380	ug/L	0.008	2	8	471	3	KED
	Ni	62	0.357	ug/L	0.035	9	3	74	10	KED
	Cu	63	4.749	ug/L	0.069	1	53	16891	0	KED
	Cu	65	4.869	ug/L	0.085	1	15	8752	0	KED
	Zn	66	353.214	ug/L	3.587	1	52	175223	0	KED
	Zn	67	339.239	ug/L	3.358	0	12	27390	1	KED
	As	75	0.403	ug/L	0.012	2	3	94	2	KED
	Kr	83		ug/L			41	33	26	Standard
>	In-1	115		ug/L			7352	7114	1	KED
	Cd	111	0.108	ug/L	0.014	12	2	27	11	KED
	Cd	114	0.111	ug/L	0.024	21	3	70	20	KED
>	In	115		ug/L			400481	386466	2	Standard
	Ag	107	-0.016	ug/L	0.000	0	288	74	4	Standard
>	Tb	159		ug/L			162685	162681	0	Standard
	Pb	208	0.827	ug/L	0.002	0	222	53548	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0678-DUP1
Sample Dil Factor:
Comments:
Sample Date/Time: Monday, June 26, 2023 23:58:58
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24638	47781	1	Standard
>	Sc	45		ug/L			455969	443078	2	Standard
	Cr	52	4.713	ug/L	0.128	2	15147	89781	0	Standard
	Cr	53	4.753	ug/L	0.088	1	118	8989	0	Standard
>	Ge	72		ug/L			32288	31798	0	KED
	Ni	60	0.371	ug/L	0.025	6	8	462	6	KED
	Ni	62	0.375	ug/L	0.051	13	3	78	12	KED
	Cu	63	4.992	ug/L	0.084	1	53	17815	1	KED
	Cu	65	5.024	ug/L	0.039	0	15	9061	0	KED
	Zn	66	353.057	ug/L	3.475	0	52	175752	1	KED
	Zn	67	333.673	ug/L	4.268	1	12	27033	1	KED
	As	75	0.421	ug/L	0.019	4	3	98	4	KED
	Kr	83		ug/L			41	43	28	Standard
>	In-1	115		ug/L			7352	7036	3	KED
	Cd	111	0.101	ug/L	0.028	27	2	26	28	KED
	Cd	114	0.126	ug/L	0.049	38	3	77	35	KED
>	In	115		ug/L			400481	382517	2	Standard
	Ag	107	-0.014	ug/L	0.001	10	288	90	18	Standard
>	Tb	159		ug/L			162685	161175	0	Standard
	Pb	208	0.842	ug/L	0.002	0	222	54015	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0678-MS1
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 00:03:44
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24638	46946	1	Standard
>	Sc	45		ug/L			455969	439080	1	Standard
	Cr	52	28.837	ug/L	0.482	1	15147	469796	0	Standard
	Cr	53	28.926	ug/L	0.292	1	118	53655	1	Standard
>	Ge	72		ug/L			32288	31153	1	KED
	Ni	60	25.344	ug/L	0.406	1	8	30368	0	KED
	Ni	62	25.496	ug/L	0.332	1	3	4991	0	KED
	Cu	63	30.491	ug/L	0.407	1	53	106333	0	KED
	Cu	65	30.546	ug/L	0.769	2	15	53898	1	KED
	Zn	66	441.241	ug/L	7.669	1	52	215149	0	KED
	Zn	67	413.502	ug/L	3.265	0	12	32817	1	KED
	As	75	26.524	ug/L	0.416	1	3	5911	0	KED
	Kr	83		ug/L			41	41	19	Standard
>	In-1	115		ug/L			7352	7055	1	KED
	Cd	111	24.488	ug/L	0.633	2	2	5703	1	KED
	Cd	114	24.582	ug/L	0.328	1	3	14723	2	KED
>	In	115		ug/L			400481	379751	0	Standard
	Ag	107	25.945	ug/L	0.455	1	288	333448	1	Standard
>	Tb	159		ug/L			162685	160594	0	Standard
	Pb	208	26.394	ug/L	0.304	1	222	1681095	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLB
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 00:08:09
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	28014	2	Standard
⌈>	**Sc**	**45**		ug/L			455969	420778	0	Standard
|	**Cr**	**52**	**0.073**	ug/L	0.032	44	15147	15075	2	Standard
⌊	**Cr**	**53**	**0.046**	ug/L	0.010	20	118	191	8	Standard
⌈>	**Ge**	**72**		ug/L			32288	30522	1	KED
|	**Ni**	**60**	**0.009**	ug/L	0.006	64	8	18	36	KED
|	**Ni**	**62**	**0.004**	ug/L	0.010	236	3	3	50	KED
|	**Cu**	**63**	**0.009**	ug/L	0.002	27	53	81	9	KED
|	**Cu**	**65**	**0.010**	ug/L	0.000	3	15	33	3	KED
|	**Zn**	**66**	**0.206**	ug/L	0.038	18	52	147	13	KED
|	**Zn**	**67**	**0.164**	ug/L	0.056	34	12	24	16	KED
⌊	**As**	**75**	**0.000**	ug/L	0.002	4808	3	3	18	KED
	Kr	**83**		ug/L			41	46	51	Standard
⌈>	**In-1**	**115**		ug/L			7352	6910	3	KED
|	**Cd**	**111**	**0.003**	ug/L	0.003	72	2	3	17	KED
⌊	**Cd**	**114**	**-0.002**	ug/L	0.003	160	3	1	105	KED
⌈>	**In**	**115**		ug/L			400481	378791	0	Standard
⌊	**Ag**	**107**	**-0.017**	ug/L	0.000	0	288	53	4	Standard
⌈>	**Tb**	**159**		ug/L			162685	156896	1	Standard
⌊	**Pb**	**208**	**0.017**	ug/L	0.000	2	222	1271	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVC
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 00:12:33
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	25896	2	Standard
⌈>	**Sc**	**45**		ug/L			455969	426542	1	Standard
|	**Cr**	**52**	**50.292**	ug/L	0.851	1	15147	785411	1	Standard
⌊	**Cr**	**53**	**49.331**	ug/L	0.941	1	118	88816	2	Standard
⌈>	**Ge**	**72**		ug/L			32288	31209	1	KED
|	**Ni**	**60**	**49.605**	ug/L	0.629	1	8	59539	0	KED
|	**Ni**	**62**	**50.082**	ug/L	0.597	1	3	9819	1	KED
|	**Cu**	**63**	**50.182**	ug/L	0.770	1	53	175275	0	KED
|	**Cu**	**65**	**49.623**	ug/L	0.320	0	15	87720	1	KED
|	**Zn**	**66**	**49.622**	ug/L	0.962	1	52	24284	1	KED
|	**Zn**	**67**	**52.003**	ug/L	1.703	3	12	4144	3	KED
⌊	**As**	**75**	**53.360**	ug/L	0.639	1	3	11911	0	KED
	Kr	**83**		ug/L			41	40	40	Standard
⌈>	**In-1**	**115**		ug/L			7352	7201	2	KED
|	**Cd**	**111**	**48.239**	ug/L	0.565	1	2	11468	1	KED
⌊	**Cd**	**114**	**47.883**	ug/L	0.752	1	3	29267	1	KED
⌈>	**In**	**115**		ug/L			400481	372157	0	Standard
⌊	**Ag**	**107**	**52.357**	ug/L	1.431	2	288	659119	2	Standard
⌈>	**Tb**	**159**		ug/L			162685	161069	0	Standard
⌊	**Pb**	**208**	**50.539**	ug/L	0.860	1	222	3228086	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBC
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 00:19:42
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	24090	0	Standard
⌈>	**Sc**	**45**		ug/L			455969	418090	5	Standard
|	**Cr**	**52**	**0.086**	ug/L	0.047	54	15147	15158	1	Standard
⌊	**Cr**	**53**	**0.034**	ug/L	0.004	12	118	167	9	Standard
⌈>	**Ge**	**72**		ug/L			32288	30739	2	KED
|	**Ni**	**60**	**0.034**	ug/L	0.062	182	8	48	152	KED
|	**Ni**	**62**	**0.030**	ug/L	0.063	210	3	8	137	KED
|	**Cu**	**63**	**0.038**	ug/L	0.064	167	53	182	120	KED
|	**Cu**	**65**	**0.045**	ug/L	0.072	158	15	93	132	KED
|	**Zn**	**66**	**0.200**	ug/L	0.328	163	52	146	108	KED
|	**Zn**	**67**	**0.138**	ug/L	0.262	190	12	22	92	KED
⌊	**As**	**75**	**0.034**	ug/L	0.054	160	3	10	114	KED
	Kr	**83**		ug/L			41	33	27	Standard
⌈>	**In-1**	**115**		ug/L			7352	7128	1	KED
|	**Cd**	**111**	**0.003**	ug/L	0.005	156	2	3	34	KED
⌊	**Cd**	**114**	**-0.004**	ug/L	0.002	42	3	0	198	KED
⌈>	**In**	**115**		ug/L			400481	374281	2	Standard
⌊	**Ag**	**107**	**0.004**	ug/L	0.003	84	288	321	10	Standard
⌈>	**Tb**	**159**		ug/L			162685	153982	1	Standard
⌊	**Pb**	**208**	**0.000**	ug/L	0.000	43	222	238	6	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0261-05
Sample Dil Factor:
Comments:

DEL

Sample Date/Time: Tuesday, June 27, 2023 00:24:07
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	47281	1	Standard
⌈>	**Sc**	**45**		ug/L			455969	439653	1	Standard
|	**Cr**	**52**	**2.708**	ug/L	0.069	2	15147	57413	1	Standard
⌊	**Cr**	**53**	**2.711**	ug/L	0.068	2	118	5138	1	Standard
⌈>	**Ge**	**72**		ug/L			32288	31699	1	KED
|	**Ni**	**60**	**0.297**	ug/L	0.030	9	8	370	10	KED
|	**Ni**	**62**	**0.271**	ug/L	0.048	17	3	57	17	KED
|	**Cu**	**63**	**3.499**	ug/L	0.121	3	53	12460	2	KED
|	**Cu**	**65**	**3.487**	ug/L	0.032	0	15	6275	1	KED
|	**Zn**	**66**	**326.713**	ug/L	5.637	1	52	162117	1	KED
|	**Zn**	**67**	**314.299**	ug/L	6.823	2	12	25381	1	KED
⌊	**As**	**75**	**0.369**	ug/L	0.014	3	3	86	3	KED
	Kr	**83**		ug/L			41	46	19	Standard
⌈>	**In-1**	**115**		ug/L			7352	7326	1	KED
|	**Cd**	**111**	**0.075**	ug/L	0.026	34	2	20	30	KED
⌊	**Cd**	**114**	**0.106**	ug/L	0.009	8	3	68	6	KED
⌈>	**In**	**115**		ug/L			400481	388517	1	Standard
⌊	**Ag**	**107**	**-0.014**	ug/L	0.000	2	288	92	4	Standard
⌈>	**Tb**	**159**		ug/L			162685	161969	0	Standard
⌊	**Pb**	**208**	**1.508**	ug/L	0.012	0	222	97057	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0261-06
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 00:28:30
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	46306	0	Standard
⌈>	**Sc**	**45**		ug/L			455969	440436	0	Standard
|	**Cr**	**52**	**2.012**	ug/L	0.064	3	15147	46489	2	Standard
⌊	**Cr**	**53**	**1.999**	ug/L	0.059	2	118	3824	2	Standard
⌈>	**Ge**	**72**		ug/L			32288	31657	1	KED
|	**Ni**	**60**	**0.291**	ug/L	0.019	6	8	362	6	KED
|	**Ni**	**62**	**0.282**	ug/L	0.042	14	3	59	12	KED
|	**Cu**	**63**	**1.923**	ug/L	0.035	1	53	6861	0	KED
|	**Cu**	**65**	**1.952**	ug/L	0.055	2	15	3514	1	KED
|	**Zn**	**66**	**65.279**	ug/L	0.870	1	52	32389	0	KED
|	**Zn**	**67**	**61.452**	ug/L	1.131	1	12	4965	0	KED
⌊	**As**	**75**	**0.292**	ug/L	0.044	15	3	69	13	KED
	Kr	**83**		ug/L			41	43	15	Standard
⌈>	**In-1**	**115**		ug/L			7352	7046	0	KED
|	**Cd**	**111**	**0.014**	ug/L	0.019	132	2	5	76	KED
⌊	**Cd**	**114**	**0.017**	ug/L	0.010	57	3	12	44	KED
⌈>	**In**	**115**		ug/L			400481	394092	2	Standard
⌊	**Ag**	**107**	**-0.016**	ug/L	0.002	9	288	67	30	Standard
⌈>	**Tb**	**159**		ug/L			162685	161392	2	Standard
⌊	**Pb**	**208**	**0.504**	ug/L	0.015	2	222	32476	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0261-07
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 00:32:54
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	54757	2	Standard
⌈>	**Sc**	**45**		ug/L			455969	436591	2	Standard
|	**Cr**	**52**	**2.461**	ug/L	0.140	5	15147	53088	1	Standard
⌊	**Cr**	**53**	**2.459**	ug/L	0.056	2	118	4639	2	Standard
⌈>	**Ge**	**72**		ug/L			32288	31594	0	KED
|	**Ni**	**60**	**0.661**	ug/L	0.053	7	8	811	7	KED
|	**Ni**	**62**	**0.669**	ug/L	0.050	7	3	135	7	KED
|	**Cu**	**63**	**5.882**	ug/L	0.023	0	53	20846	1	KED
|	**Cu**	**65**	**5.996**	ug/L	0.076	1	15	10744	2	KED
|	**Zn**	**66**	**159.374**	ug/L	0.534	0	52	78853	0	KED
|	**Zn**	**67**	**153.011**	ug/L	2.588	1	12	12322	1	KED
⌊	**As**	**75**	**0.405**	ug/L	0.060	14	3	94	13	KED
	Kr	**83**		ug/L			41	47	4	Standard
⌈>	**In-1**	**115**		ug/L			7352	7163	0	KED
|	**Cd**	**111**	**0.124**	ug/L	0.020	16	2	31	15	KED
⌊	**Cd**	**114**	**0.099**	ug/L	0.025	25	3	63	24	KED
⌈>	**In**	**115**		ug/L			400481	382969	1	Standard
⌊	**Ag**	**107**	**-0.008**	ug/L	0.001	15	288	172	11	Standard
⌈>	**Tb**	**159**		ug/L			162685	161837	1	Standard
⌊	**Pb**	**208**	**0.582**	ug/L	0.001	0	222	37593	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0261-08
Sample Dil Factor:
Comments:

DEL

Sample Date/Time: Tuesday, June 27, 2023 00:37:18
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	52517	4	Standard
⌈>	**Sc**	**45**		ug/L			455969	447076	1	Standard
|	**Cr**	**52**	**1.217**	ug/L	0.024	1	15147	34408	0	Standard
⌊	**Cr**	**53**	**1.242**	ug/L	0.043	3	118	2456	3	Standard
⌈>	**Ge**	**72**		ug/L			32288	27310	22	KED
|	**Ni**	**60**	**0.550**	ug/L	0.126	22	8	565	5	KED
|	**Ni**	**62**	**0.616**	ug/L	0.195	31	3	103	12	KED
|	**Cu**	**63**	**9.377**	ug/L	2.746	29	53	27440	3	KED
|	**Cu**	**65**	**9.386**	ug/L	2.629	28	15	13918	2	KED
|	**Zn**	**66**	**62.347**	ug/L	15.108	24	52	25720	1	KED
|	**Zn**	**67**	**58.521**	ug/L	13.459	22	12	3939	3	KED
⌊	**As**	**75**	**0.332**	ug/L	0.083	24	3	65	5	KED
	Kr	**83**		ug/L			41	38	5	Standard
⌈>	**In-1**	**115**		ug/L			7352	7105	2	KED
|	**Cd**	**111**	**0.063**	ug/L	0.010	15	2	17	11	KED
⌊	**Cd**	**114**	**0.044**	ug/L	0.016	35	3	29	32	KED
⌈>	**In**	**115**		ug/L			400481	388624	0	Standard
⌊	**Ag**	**107**	**-0.003**	ug/L	0.002	71	288	238	12	Standard
⌈>	**Tb**	**159**		ug/L			162685	161428	0	Standard
⌊	**Pb**	**208**	**0.211**	ug/L	0.006	2	222	13753	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0261-09
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 00:41:41
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	61992	2	Standard
⌈>	**Sc**	**45**		ug/L			455969	448980	2	Standard
|	**Cr**	**52**	**1.877**	ug/L	0.023	1	15147	45219	2	Standard
⌊	**Cr**	**53**	**1.901**	ug/L	0.081	4	118	3711	1	Standard
⌈>	**Ge**	**72**		ug/L			32288	31885	2	KED
|	**Ni**	**60**	**1.450**	ug/L	0.071	4	8	1784	2	KED
|	**Ni**	**62**	**1.519**	ug/L	0.102	6	3	307	6	KED
|	**Cu**	**63**	**10.822**	ug/L	0.279	2	53	38647	0	KED
|	**Cu**	**65**	**10.717**	ug/L	0.368	3	15	19355	0	KED
|	**Zn**	**66**	**141.932**	ug/L	3.904	2	52	70844	0	KED
|	**Zn**	**67**	**131.446**	ug/L	5.618	4	12	10678	2	KED
⌊	**As**	**75**	**0.646**	ug/L	0.029	4	3	150	6	KED
	Kr	**83**		ug/L			41	34	3	Standard
⌈>	**In-1**	**115**		ug/L			7352	7000	3	KED
|	**Cd**	**111**	**0.112**	ug/L	0.021	18	2	28	15	KED
⌊	**Cd**	**114**	**0.133**	ug/L	0.024	18	3	81	18	KED
⌈>	**In**	**115**		ug/L			400481	390525	1	Standard
⌊	**Ag**	**107**	**-0.008**	ug/L	0.001	9	288	179	6	Standard
⌈>	**Tb**	**159**		ug/L			162685	163323	0	Standard
⌊	**Pb**	**208**	**0.876**	ug/L	0.008	0	222	56934	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0261-10
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 00:46:05
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	51981	0	Standard
⌈>	**Sc**	**45**		ug/L			455969	453407	1	Standard
|	**Cr**	**52**	**0.619**	ug/L	0.012	1	15147	25161	1	Standard
⌊	**Cr**	**53**	**0.999**	ug/L	0.012	1	118	2027	0	Standard
⌈>	**Ge**	**72**		ug/L			32288	30628	0	KED
|	**Ni**	**60**	**0.950**	ug/L	0.013	1	8	1126	1	KED
|	**Ni**	**62**	**1.050**	ug/L	0.111	10	3	205	10	KED
|	**Cu**	**63**	**7.212**	ug/L	0.106	1	53	24768	1	KED
|	**Cu**	**65**	**7.244**	ug/L	0.209	2	15	12580	3	KED
|	**Zn**	**66**	**11.442**	ug/L	0.361	3	52	5534	3	KED
|	**Zn**	**67**	**10.811**	ug/L	0.452	4	12	854	3	KED
⌊	**As**	**75**	**1.160**	ug/L	0.034	2	3	256	2	KED
	Kr	**83**		ug/L			41	41	24	Standard
⌈>	**In-1**	**115**		ug/L			7352	6956	2	KED
|	**Cd**	**111**	**0.057**	ug/L	0.028	48	2	15	39	KED
⌊	**Cd**	**114**	**0.048**	ug/L	0.003	6	3	31	8	KED
⌈>	**In**	**115**		ug/L			400481	379809	0	Standard
⌊	**Ag**	**107**	**-0.004**	ug/L	0.000	3	288	223	0	Standard
⌈>	**Tb**	**159**		ug/L			162685	160522	1	Standard
⌊	**Pb**	**208**	**0.821**	ug/L	0.006	0	222	52458	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0261-11
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 00:50:23
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	56181	1	Standard
⌈>	**Sc**	**45**		ug/L			455969	437356	4	Standard
|	**Cr**	**52**	**2.512**	ug/L	0.072	2	15147	54012	4	Standard
⌊	**Cr**	**53**	**4.625**	ug/L	0.117	2	118	8634	2	Standard
⌈>	**Ge**	**72**		ug/L			32288	29808	1	KED
|	**Ni**	**60**	**0.778**	ug/L	0.051	6	8	898	4	KED
|	**Ni**	**62**	**0.819**	ug/L	0.038	4	3	156	3	KED
|	**Cu**	**63**	**5.480**	ug/L	0.172	3	53	18320	1	KED
|	**Cu**	**65**	**5.410**	ug/L	0.183	3	15	9144	2	KED
|	**Zn**	**66**	**117.673**	ug/L	3.214	2	52	54927	1	KED
|	**Zn**	**67**	**110.517**	ug/L	2.315	2	12	8398	0	KED
⌊	**As**	**75**	**0.793**	ug/L	0.056	7	3	172	7	KED
	Kr	**83**		ug/L			41	41	31	Standard
⌈>	**In-1**	**115**		ug/L			7352	6953	1	KED
|	**Cd**	**111**	**0.107**	ug/L	0.028	26	2	26	24	KED
⌊	**Cd**	**114**	**0.131**	ug/L	0.007	5	3	80	4	KED
⌈>	**In**	**115**		ug/L			400481	371442	4	Standard
⌊	**Ag**	**107**	**-0.011**	ug/L	0.000	4	288	130	8	Standard
⌈>	**Tb**	**159**		ug/L			162685	159242	2	Standard
⌊	**Pb**	**208**	**0.463**	ug/L	0.004	0	222	29484	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0273-01
Sample Dil Factor: 2
Comments:
Sample Date/Time: Tuesday, June 27, 2023 00:55:11
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	37191	3	Standard
⌈>	**Sc**	**45**		ug/L			455969	456185	1	Standard
|	**Cr**	**52**	**0.798**	ug/L	0.019	2	15147	28245	0	Standard
⌊	**Cr**	**53**	**1.144**	ug/L	0.014	1	118	2317	0	Standard
⌈>	**Ge**	**72**		ug/L			32288	30818	0	KED
|	**Ni**	**60**	**0.246**	ug/L	0.012	4	8	299	5	KED
|	**Ni**	**62**	**0.279**	ug/L	0.133	47	3	57	45	KED
|	**Cu**	**63**	**4.966**	ug/L	0.074	1	53	17176	1	KED
|	**Cu**	**65**	**5.016**	ug/L	0.088	1	15	8769	1	KED
|	**Zn**	**66**	**5.727**	ug/L	0.309	5	52	2811	4	KED
|	**Zn**	**67**	**5.599**	ug/L	0.424	7	12	450	6	KED
⌊	**As**	**75**	**0.344**	ug/L	0.023	6	3	78	5	KED
	Kr	**83**		ug/L			41	41	12	Standard
⌈>	**In-1**	**115**		ug/L			7352	7009	2	KED
|	**Cd**	**111**	**0.002**	ug/L	0.008	452	2	2	66	KED
⌊	**Cd**	**114**	**0.004**	ug/L	0.009	203	3	5	92	KED
⌈>	**In**	**115**		ug/L			400481	384607	1	Standard
⌊	**Ag**	**107**	**-0.019**	ug/L	0.000	2	288	35	16	Standard
⌈>	**Tb**	**159**		ug/L			162685	161825	2	Standard
⌊	**Pb**	**208**	**0.074**	ug/L	0.004	5	222	4944	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0275-01
Sample Dil Factor: 2
Comments:
Sample Date/Time: Tuesday, June 27, 2023 00:59:59
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			24638	52242	1	Standard
⌈>	Sc	45		ug/L			455969	454495	3	Standard
|	Cr	52	1.111	ug/L	0.033	2	15147	33248	1	Standard
⌊	Cr	53	7.436	ug/L	0.096	1	118	14362	2	Standard
⌈>	Ge	72		ug/L			32288	30993	0	KED
|	Ni	60	2.585	ug/L	0.031	1	8	3089	1	KED
|	Ni	62	2.704	ug/L	0.141	5	3	529	5	KED
|	Cu	63	107.058	ug/L	1.429	1	53	371338	1	KED
|	Cu	65	107.170	ug/L	0.619	0	15	188122	0	KED
|	Zn	66	244.466	ug/L	3.441	1	52	118627	1	KED
|	Zn	67	233.920	ug/L	3.974	1	12	18474	1	KED
⌊	As	75	0.695	ug/L	0.020	2	3	156	2	KED
	Kr	83		ug/L			41	40	8	Standard
⌈>	In-1	115		ug/L			7352	6937	0	KED
|	Cd	111	0.409	ug/L	0.030	7	2	96	7	KED
⌊	Cd	114	0.380	ug/L	0.041	10	3	226	11	KED
⌈>	In	115		ug/L			400481	378114	1	Standard
⌊	Ag	107	-0.007	ug/L	0.001	18	288	187	7	Standard
⌈>	Tb	159		ug/L			162685	163414	0	Standard
⌊	Pb	208	1.302	ug/L	0.009	0	222	84577	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLC
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 01:04:17
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	27195	2	Standard
⌈>	**Sc**	**45**		ug/L			455969	409369	3	Standard
|	**Cr**	**52**	**0.129**	ug/L	0.032	25	15147	15484	1	Standard
⌊	**Cr**	**53**	**0.359**	ug/L	0.025	6	118	725	3	Standard
⌈>	**Ge**	**72**		ug/L			32288	29997	1	KED
|	**Ni**	**60**	**0.006**	ug/L	0.006	97	8	14	45	KED
|	**Ni**	**62**	**0.005**	ug/L	0.010	219	3	3	50	KED
|	**Cu**	**63**	**0.010**	ug/L	0.002	21	53	81	8	KED
|	**Cu**	**65**	**0.021**	ug/L	0.010	48	15	50	34	KED
|	**Zn**	**66**	**0.187**	ug/L	0.036	19	52	135	11	KED
|	**Zn**	**67**	**0.078**	ug/L	0.113	146	12	17	50	KED
⌊	**As**	**75**	**-0.007**	ug/L	0.000	0	3	1	0	KED
	Kr	**83**		ug/L			41	43	34	Standard
⌈>	**In-1**	**115**		ug/L			7352	6887	3	KED
|	**Cd**	**111**	**0.005**	ug/L	0.003	55	2	3	15	KED
⌊	**Cd**	**114**	**0.001**	ug/L	0.009	721	3	3	140	KED
⌈>	**In**	**115**		ug/L			400481	365415	2	Standard
⌊	**Ag**	**107**	**-0.020**	ug/L	0.000	2	288	13	41	Standard
⌈>	**Tb**	**159**		ug/L			162685	154339	1	Standard
⌊	**Pb**	**208**	**0.017**	ug/L	0.001	4	222	1252	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVD
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 01:08:41
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	25557	2	Standard
⌈>	**Sc**	**45**		ug/L			455969	414936	0	Standard
|	**Cr**	**52**	**50.324**	ug/L	1.146	2	15147	764675	2	Standard
⌊	**Cr**	**53**	**50.306**	ug/L	0.391	0	118	88113	1	Standard
⌈>	**Ge**	**72**		ug/L			32288	30851	0	KED
|	**Ni**	**60**	**49.978**	ug/L	1.581	3	8	59296	2	KED
|	**Ni**	**62**	**49.462**	ug/L	0.616	1	3	9587	1	KED
|	**Cu**	**63**	**49.523**	ug/L	0.399	0	53	171018	1	KED
|	**Cu**	**65**	**49.527**	ug/L	0.562	1	15	86544	1	KED
|	**Zn**	**66**	**49.474**	ug/L	1.536	3	52	23933	2	KED
|	**Zn**	**67**	**51.013**	ug/L	1.659	3	12	4018	2	KED
⌊	**As**	**75**	**53.192**	ug/L	0.006	0	3	11738	0	KED
	Kr	**83**		ug/L			41	40	28	Standard
⌈>	**In-1**	**115**		ug/L			7352	6809	3	KED
|	**Cd**	**111**	**50.226**	ug/L	1.267	2	2	11284	1	KED
⌊	**Cd**	**114**	**50.316**	ug/L	0.851	1	3	29070	2	KED
⌈>	**In**	**115**		ug/L			400481	375585	0	Standard
⌊	**Ag**	**107**	**50.938**	ug/L	1.183	2	288	647279	2	Standard
⌈>	**Tb**	**159**		ug/L			162685	157047	0	Standard
⌊	**Pb**	**208**	**51.482**	ug/L	0.267	0	222	3206397	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBD
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 01:15:49
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			24638	23578	2	Standard
⌈>	**Sc**	**45**		ug/L			455969	411198	1	Standard
|	**Cr**	**52**	**0.101**	ug/L	0.017	17	15147	15152	1	Standard
⌊	**Cr**	**53**	**0.107**	ug/L	0.020	18	118	292	12	Standard
⌈>	**Ge**	**72**		ug/L			32288	30112	1	KED
|	**Ni**	**60**	**0.000**	ug/L	0.002	521	8	8	35	KED
|	**Ni**	**62**	**-0.002**	ug/L	0.006	263	3	2	43	KED
|	**Cu**	**63**	**-0.004**	ug/L	0.003	65	53	35	26	KED
|	**Cu**	**65**	**-0.001**	ug/L	0.001	95	15	12	17	KED
|	**Zn**	**66**	**-0.041**	ug/L	0.020	48	52	29	32	KED
|	**Zn**	**67**	**-0.097**	ug/L	0.025	25	12	3	50	KED
⌊	**As**	**75**	**0.000**	ug/L	0.010	2913	3	3	71	KED
	Kr	**83**		ug/L			41	47	12	Standard
⌈>	**In-1**	**115**		ug/L			7352	7023	1	KED
|	**Cd**	**111**	**0.003**	ug/L	0.012	393	2	3	91	KED
⌊	**Cd**	**114**	**-0.001**	ug/L	0.005	626	3	2	116	KED
⌈>	**In**	**115**		ug/L			400481	374499	1	Standard
⌊	**Ag**	**107**	**-0.008**	ug/L	0.014	181	288	168	106	Standard
⌈>	**Tb**	**159**		ug/L			162685	155620	1	Standard
⌊	**Pb**	**208**	**0.010**	ug/L	0.017	177	222	813	131	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 01:20:14
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L				23616	1	Standard
⎡>	**Sc**	**45**		ug/L				406838	1	Standard
⎢	**Cr**	**52**		ug/L				14882	2	Standard
⎣	**Cr**	**53**		ug/L				242	6	Standard
⎡>	**Ge**	**72**		ug/L				30221	0	KED
⎢	**Ni**	**60**		ug/L				9	20	KED
⎢	**Ni**	**62**		ug/L				1	86	KED
⎢	**Cu**	**63**		ug/L				43	6	KED
⎢	**Cu**	**65**		ug/L				22	26	KED
⎢	**Zn**	**66**		ug/L				58	6	KED
⎢	**Zn**	**67**		ug/L				6	41	KED
⎣	**As**	**75**		ug/L				2	60	KED
	Kr	**83**		ug/L				31	23	Standard
⎡>	**In-1**	**115**		ug/L				6919	1	KED
⎢	**Cd**	**111**		ug/L				1	91	KED
⎣	**Cd**	**114**		ug/L				1	103	KED
⎡>	**In**	**115**		ug/L				377198	1	Standard
⎣	**Ag**	**107**		ug/L				256	9	Standard
⎡>	**Tb**	**159**		ug/L				155303	1	Standard
⎣	**Pb**	**208**		ug/L				194	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVE
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 01:24:38
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	25242	2	Standard
⌈>	**Sc**	**45**		ug/L			406838	405728	0	Standard
|	**Cr**	**52**	**49.653**	ug/L	1.323	2	14882	739204	2	Standard
⌊	**Cr**	**53**	**50.678**	ug/L	1.277	2	242	86926	2	Standard
⌈>	**Ge**	**72**		ug/L			30221	30482	2	KED
|	**Ni**	**60**	**50.236**	ug/L	1.598	3	9	58872	0	KED
|	**Ni**	**62**	**49.931**	ug/L	0.496	0	1	9559	1	KED
|	**Cu**	**63**	**50.183**	ug/L	0.753	1	43	171188	1	KED
|	**Cu**	**65**	**50.395**	ug/L	0.574	1	22	87006	1	KED
|	**Zn**	**66**	**50.594**	ug/L	0.560	1	58	24191	1	KED
|	**Zn**	**67**	**51.667**	ug/L	1.290	2	6	4017	2	KED
⌊	**As**	**75**	**53.541**	ug/L	0.596	1	2	11672	1	KED
	Kr	**83**		ug/L			31	64	11	Standard
⌈>	**In-1**	**115**		ug/L			6919	6907	1	KED
|	**Cd**	**111**	**50.313**	ug/L	0.551	1	1	11473	0	KED
⌊	**Cd**	**114**	**49.566**	ug/L	0.449	0	1	29064	1	KED
⌈>	**In**	**115**		ug/L			377198	361134	1	Standard
⌊	**Ag**	**107**	**51.043**	ug/L	0.570	1	256	623564	1	Standard
⌈>	**Tb**	**159**		ug/L			155303	152039	0	Standard
⌊	**Pb**	**208**	**51.588**	ug/L	1.057	2	194	3110517	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBE
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 01:31:46
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	23600	2	Standard
⌈>	**Sc**	**45**		ug/L			406838	407122	2	Standard
|	**Cr**	**52**	**0.009**	ug/L	0.012	132	14882	15020	1	Standard
⌊	**Cr**	**53**	**-0.040**	ug/L	0.001	3	242	174	1	Standard
⌈>	**Ge**	**72**		ug/L			30221	30497	0	KED
|	**Ni**	**60**	**0.000**	ug/L	0.002	402	9	10	21	KED
|	**Ni**	**62**	**-0.007**	ug/L	0.000	0	1	0		KED
|	**Cu**	**63**	**-0.005**	ug/L	0.001	26	43	25	18	KED
|	**Cu**	**65**	**-0.003**	ug/L	0.004	145	22	17	37	KED
|	**Zn**	**66**	**-0.061**	ug/L	0.022	35	58	29	35	KED
|	**Zn**	**67**	**-0.050**	ug/L	0.028	56	6	3	69	KED
⌊	**As**	**75**	**0.004**	ug/L	0.001	30	2	3	7	KED
	Kr	**83**		ug/L			31	41	24	Standard
⌈>	**In-1**	**115**		ug/L			6919	7059	3	KED
|	**Cd**	**111**	**0.010**	ug/L	0.009	89	1	3	50	KED
⌊	**Cd**	**114**	**0.005**	ug/L	0.008	155	1	4	97	KED
⌈>	**In**	**115**		ug/L			377198	371704	2	Standard
⌊	**Ag**	**107**	**-0.016**	ug/L	0.001	5	256	47	20	Standard
⌈>	**Tb**	**159**		ug/L			155303	153013	1	Standard
⌊	**Pb**	**208**	**-0.001**	ug/L	0.000	41	194	157	10	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0276-04
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 01:36:11
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	43163	2	Standard
⌈>	**Sc**	**45**		ug/L			406838	452648	0	Standard
|	**Cr**	**52**	**0.219**	ug/L	0.017	7	14882	20118	1	Standard
⌊	**Cr**	**53**	**0.735**	ug/L	0.040	5	242	1671	4	Standard
⌈>	**Ge**	**72**		ug/L			30221	30206	1	KED
|	**Ni**	**60**	**0.853**	ug/L	0.023	2	9	1000	2	KED
|	**Ni**	**62**	**0.840**	ug/L	0.080	9	1	160	9	KED
|	**Cu**	**63**	**0.380**	ug/L	0.021	5	43	1329	6	KED
|	**Cu**	**65**	**0.398**	ug/L	0.018	4	22	702	4	KED
|	**Zn**	**66**	**213.251**	ug/L	2.526	1	58	100857	0	KED
|	**Zn**	**67**	**204.154**	ug/L	3.059	1	6	15711	2	KED
⌊	**As**	**75**	**0.148**	ug/L	0.022	14	2	34	12	KED
	Kr	**83**		ug/L			31	42	13	Standard
⌈>	**In-1**	**115**		ug/L			6919	6881	3	KED
|	**Cd**	**111**	**0.138**	ug/L	0.025	17	1	33	17	KED
⌊	**Cd**	**114**	**0.157**	ug/L	0.012	7	1	93	4	KED
⌈>	**In**	**115**		ug/L			377198	370984	2	Standard
⌊	**Ag**	**107**	**-0.016**	ug/L	0.001	6	256	46	26	Standard
⌈>	**Tb**	**159**		ug/L			155303	160532	0	Standard
⌊	**Pb**	**208**	**0.022**	ug/L	0.001	5	194	1622	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0277-01
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 01:40:29
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	59061	2	Standard
⌈>	**Sc**	**45**		ug/L			406838	421939	4	Standard
|	**Cr**	**52**	**0.523**	ug/L	0.049	9	14882	23357	1	Standard
⌊	**Cr**	**53**	**0.679**	ug/L	0.075	11	242	1455	5	Standard
⌈>	**Ge**	**72**		ug/L			30221	29813	2	KED
|	**Ni**	**60**	**1.716**	ug/L	0.027	1	9	1976	1	KED
|	**Ni**	**62**	**1.676**	ug/L	0.060	3	1	314	2	KED
|	**Cu**	**63**	**8.732**	ug/L	0.078	0	43	29173	2	KED
|	**Cu**	**65**	**8.955**	ug/L	0.250	2	22	15134	0	KED
|	**Zn**	**66**	**98.460**	ug/L	2.085	2	58	45983	0	KED
|	**Zn**	**67**	**92.036**	ug/L	2.262	2	6	6992	1	KED
⌊	**As**	**75**	**0.641**	ug/L	0.046	7	2	139	8	KED
	Kr	**83**		ug/L			31	48	23	Standard
⌈>	**In-1**	**115**		ug/L			6919	6799	0	KED
|	**Cd**	**111**	**0.076**	ug/L	0.010	13	1	18	12	KED
⌊	**Cd**	**114**	**0.093**	ug/L	0.026	27	1	55	25	KED
⌈>	**In**	**115**		ug/L			377198	389325	3	Standard
⌊	**Ag**	**107**	**-0.012**	ug/L	0.001	4	256	101	4	Standard
⌈>	**Tb**	**159**		ug/L			155303	159935	2	Standard
⌊	**Pb**	**208**	**0.460**	ug/L	0.024	5	194	29357	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0277-02
Sample Dil Factor: 5
Comments:
Sample Date/Time: Tuesday, June 27, 2023 01:44:52
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	42295	3	Standard
⌈>	**Sc**	**45**		ug/L			406838	417763	0	Standard
|	**Cr**	**52**	**0.979**	ug/L	0.020	2	14882	29989	1	Standard
⌊	**Cr**	**53**	**1.191**	ug/L	0.021	1	242	2346	0	Standard
⌈>	**Ge**	**72**		ug/L			30221	29941	2	KED
|	**Ni**	**60**	**2.074**	ug/L	0.138	6	9	2395	4	KED
|	**Ni**	**62**	**2.071**	ug/L	0.109	5	1	390	3	KED
|	**Cu**	**63**	**11.385**	ug/L	0.147	1	43	38182	1	KED
|	**Cu**	**65**	**11.417**	ug/L	0.371	3	22	19376	2	KED
|	**Zn**	**66**	**89.615**	ug/L	0.635	0	58	42050	2	KED
|	**Zn**	**67**	**86.427**	ug/L	2.930	3	6	6597	4	KED
⌊	**As**	**75**	**0.675**	ug/L	0.069	10	2	147	10	KED
	Kr	**83**		ug/L			31	37	20	Standard
⌈>	**In-1**	**115**		ug/L			6919	6798	2	KED
|	**Cd**	**111**	**0.072**	ug/L	0.023	31	1	17	27	KED
⌊	**Cd**	**114**	**0.068**	ug/L	0.012	17	1	41	18	KED
⌈>	**In**	**115**		ug/L			377198	374587	0	Standard
⌊	**Ag**	**107**	**-0.008**	ug/L	0.002	23	256	150	16	Standard
⌈>	**Tb**	**159**		ug/L			155303	158931	1	Standard
⌊	**Pb**	**208**	**1.087**	ug/L	0.025	2	194	68709	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0279-01
Sample Dil Factor:
Comments:

DEL

Sample Date/Time: Tuesday, June 27, 2023 01:49:10
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	155237	1	Standard
>	**Sc**	**45**		ug/L			406838	420680	3	Standard
	Cr	**52**	**1.803**	ug/L	0.118	6	14882	42628	1	Standard
	Cr	**53**	**1.697**	ug/L	0.091	5	242	3258	3	Standard
>	**Ge**	**72**		ug/L			30221	29722	2	KED
	Ni	**60**	**12.579**	ug/L	0.394	3	9	14384	2	KED
	Ni	**62**	**12.670**	ug/L	0.456	3	1	2365	3	KED
	Cu	**63**	**68.510**	ug/L	1.574	2	43	227824	0	KED
	Cu	**65**	**69.488**	ug/L	1.122	1	22	116964	1	KED
	Zn	**66**	**726.807**	ug/L	10.800	1	58	338063	0	KED
	Zn	**67**	**692.651**	ug/L	7.417	1	6	52427	1	KED
	As	**75**	**2.644**	ug/L	0.076	2	2	564	3	KED
	Kr	**83**		ug/L			31	41	31	Standard
>	**In-1**	**115**		ug/L			6919	6898	1	KED
	Cd	**111**	**0.940**	ug/L	0.092	9	1	215	8	KED
	Cd	**114**	**0.920**	ug/L	0.107	11	1	540	10	KED
>	**In**	**115**		ug/L			377198	379686	2	Standard
	Ag	**107**	**0.015**	ug/L	0.001	5	256	448	2	Standard
>	**Tb**	**159**		ug/L			155303	159533	3	Standard
	Pb	**208**	**0.768**	ug/L	0.039	5	194	48711	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0279-02
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 01:53:34
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	123149	2	Standard
⌈>	**Sc**	**45**		ug/L			406838	424054	3	Standard
|	**Cr**	**52**	**2.978**	ug/L	0.140	4	14882	60876	1	Standard
⌊	**Cr**	**53**	**2.774**	ug/L	0.068	2	242	5210	1	Standard
⌈>	**Ge**	**72**		ug/L			30221	29899	0	KED
|	**Ni**	**60**	**6.136**	ug/L	0.079	1	9	7064	0	KED
|	**Ni**	**62**	**6.800**	ug/L	0.147	2	1	1278	1	KED
|	**Cu**	**63**	**69.284**	ug/L	0.359	0	43	231846	0	KED
|	**Cu**	**65**	**70.338**	ug/L	0.950	1	22	119116	0	KED
|	**Zn**	**66**	**203.193**	ug/L	2.207	1	58	95136	1	KED
|	**Zn**	**67**	**198.055**	ug/L	0.621	0	6	15087	0	KED
⌊	**As**	**75**	**2.164**	ug/L	0.106	4	2	465	5	KED
	Kr	**83**		ug/L			31	46	6	Standard
⌈>	**In-1**	**115**		ug/L			6919	6793	2	KED
|	**Cd**	**111**	**0.237**	ug/L	0.041	17	1	54	19	KED
⌊	**Cd**	**114**	**0.203**	ug/L	0.036	17	1	118	16	KED
⌈>	**In**	**115**		ug/L			377198	381154	0	Standard
⌊	**Ag**	**107**	**0.006**	ug/L	0.001	11	256	342	2	Standard
⌈>	**Tb**	**159**		ug/L			155303	162659	1	Standard
⌊	**Pb**	**208**	**3.114**	ug/L	0.087	2	194	201029	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0356-01
Sample Dil Factor: 2
Comments:
Sample Date/Time: Tuesday, June 27, 2023 01:57:52
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	36433	3	Standard
⌈>	**Sc**	**45**		ug/L			406838	456500	2	Standard
|	**Cr**	**52**	**-0.010**	ug/L	0.016	155	14882	16530	1	Standard
⌊	**Cr**	**53**	**1.036**	ug/L	0.036	3	242	2268	5	Standard
⌈>	**Ge**	**72**		ug/L			30221	29877	0	KED
|	**Ni**	**60**	**1.369**	ug/L	0.027	1	9	1582	2	KED
|	**Ni**	**62**	**1.330**	ug/L	0.120	8	1	250	8	KED
|	**Cu**	**63**	**0.500**	ug/L	0.019	3	43	1712	3	KED
|	**Cu**	**65**	**0.457**	ug/L	0.035	7	22	794	7	KED
|	**Zn**	**66**	**6.276**	ug/L	0.146	2	58	2992	1	KED
|	**Zn**	**67**	**6.586**	ug/L	0.454	6	6	507	6	KED
⌊	**As**	**75**	**0.278**	ug/L	0.032	11	2	61	12	KED
	Kr	**83**		ug/L			31	37	28	Standard
⌈>	**In-1**	**115**		ug/L			6919	6859	0	KED
|	**Cd**	**111**	**0.014**	ug/L	0.004	28	1	4	20	KED
⌊	**Cd**	**114**	**0.015**	ug/L	0.007	45	1	10	37	KED
⌈>	**In**	**115**		ug/L			377198	385655	1	Standard
⌊	**Ag**	**107**	**-0.019**	ug/L	0.000	2	256	17	29	Standard
⌈>	**Tb**	**159**		ug/L			155303	160819	1	Standard
⌊	**Pb**	**208**	**0.012**	ug/L	0.001	7	194	951	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0294-01
Sample Dil Factor: 2
Comments:
Sample Date/Time: Tuesday, June 27, 2023 02:02:10
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	208029	2	Standard
⌈>	**Sc**	**45**		ug/L			406838	373928	3	Standard
|	**Cr**	**52**	**4.729**	ug/L	0.210	4	14882	77205	2	Standard
⌊	**Cr**	**53**	**4.229**	ug/L	0.179	4	242	6883	1	Standard
⌈>	**Ge**	**72**		ug/L			30221	24099	1	KED
|	**Ni**	**60**	**4.843**	ug/L	0.110	2	9	4495	1	KED
|	**Ni**	**62**	**4.573**	ug/L	0.122	2	1	693	3	KED
|	**Cu**	**63**	**0.762**	ug/L	0.049	6	43	2089	5	KED
|	**Cu**	**65**	**0.769**	ug/L	0.025	3	22	1066	2	KED
|	**Zn**	**66**	**6.426**	ug/L	0.334	5	58	2469	4	KED
|	**Zn**	**67**	**6.977**	ug/L	0.305	4	6	433	3	KED
⌊	**As**	**75**	**0.263**	ug/L	0.013	4	2	47	4	KED
	Kr	**83**		ug/L			31	67	28	Standard
⌈>	**In-1**	**115**		ug/L			6919	5688	1	KED
|	**Cd**	**111**	**0.071**	ug/L	0.025	34	1	14	30	KED
⌊	**Cd**	**114**	**0.038**	ug/L	0.014	37	1	19	33	KED
⌈>	**In**	**115**		ug/L			377198	343139	0	Standard
⌊	**Ag**	**107**	**-0.017**	ug/L	0.001	5	256	41	23	Standard
⌈>	**Tb**	**159**		ug/L			155303	151341	1	Standard
⌊	**Pb**	**208**	**0.018**	ug/L	0.001	3	194	1248	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0290-01
Sample Dil Factor: 5
Comments:
Sample Date/Time: Tuesday, June 27, 2023 02:06:57
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	91524	2	Standard
⌈>	**Sc**	**45**		ug/L			406838	417253	3	Standard
|	**Cr**	**52**	**0.827**	ug/L	0.039	4	14882	27655	2	Standard
⌊	**Cr**	**53**	**0.704**	ug/L	0.038	5	242	1486	2	Standard
⌈>	**Ge**	**72**		ug/L			30221	28553	1	KED
|	**Ni**	**60**	**0.992**	ug/L	0.014	1	9	1098	2	KED
|	**Ni**	**62**	**1.109**	ug/L	0.111	10	1	200	9	KED
|	**Cu**	**63**	**0.389**	ug/L	0.022	5	43	1284	5	KED
|	**Cu**	**65**	**0.404**	ug/L	0.007	1	22	674	2	KED
|	**Zn**	**66**	**0.950**	ug/L	0.127	13	58	479	10	KED
|	**Zn**	**67**	**1.586**	ug/L	0.121	7	6	121	6	KED
⌊	**As**	**75**	**0.067**	ug/L	0.009	12	2	16	12	KED
	Kr	**83**		ug/L			31	48	32	Standard
⌈>	**In-1**	**115**		ug/L			6919	6721	2	KED
|	**Cd**	**111**	**0.005**	ug/L	0.007	148	1	2	57	KED
⌊	**Cd**	**114**	**0.004**	ug/L	0.004	92	1	4	52	KED
⌈>	**In**	**115**		ug/L			377198	391688	1	Standard
⌊	**Ag**	**107**	**-0.018**	ug/L	0.001	2	256	29	24	Standard
⌈>	**Tb**	**159**		ug/L			155303	164436	1	Standard
⌊	**Pb**	**208**	**0.006**	ug/L	0.001	11	194	615	8	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0293-01
Sample Dil Factor: 10
Comments:
Sample Date/Time: Tuesday, June 27, 2023 02:11:45
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23616	49574	2	Standard
>	Sc	45		ug/L			406838	452969	1	Standard
	Cr	52	118.624	ug/L	0.235	0	14882	1948678	1	Standard
	Cr	53	129.398	ug/L	2.418	1	242	247391	2	Standard
>	Ge	72		ug/L			30221	30925	1	KED
	Ni	60	1.357	ug/L	0.032	2	9	1623	2	KED
	Ni	62	1.354	ug/L	0.081	5	1	264	4	KED
	Cu	63	2.553	ug/L	0.069	2	43	8878	2	KED
	Cu	65	2.516	ug/L	0.037	1	22	4428	1	KED
	Zn	66	51.878	ug/L	1.050	2	58	25165	1	KED
	Zn	67	49.855	ug/L	1.553	3	6	3934	4	KED
	As	75	0.234	ug/L	0.003	1	2	54	2	KED
	Kr	83		ug/L			31	41	21	Standard
>	In-1	115		ug/L			6919	7226	3	KED
	Cd	111	0.672	ug/L	0.047	6	1	162	10	KED
	Cd	114	0.580	ug/L	0.045	7	1	357	8	KED
>	In	115		ug/L			377198	422933	1	Standard
	Ag	107	0.084	ug/L	0.003	3	256	1495	1	Standard
>	Tb	159		ug/L			155303	170415	2	Standard
	Pb	208	0.383	ug/L	0.004	1	194	26062	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLD
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 02:16:03
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	26508	3	Standard
⌈>	**Sc**	**45**		ug/L			406838	435203	1	Standard
|	**Cr**	**52**	**0.020**	ug/L	0.066	328	14882	16223	4	Standard
⌊	**Cr**	**53**	**-0.003**	ug/L	0.085	2998	242	253	59	Standard
⌈>	**Ge**	**72**		ug/L			30221	30929	0	KED
|	**Ni**	**60**	**0.005**	ug/L	0.004	92	9	15	33	KED
|	**Ni**	**62**	**0.010**	ug/L	0.021	210	1	3	124	KED
|	**Cu**	**63**	**0.011**	ug/L	0.003	23	43	81	10	KED
|	**Cu**	**65**	**0.006**	ug/L	0.004	62	22	33	18	KED
|	**Zn**	**66**	**0.144**	ug/L	0.021	14	58	129	8	KED
|	**Zn**	**67**	**0.208**	ug/L	0.030	14	6	23	9	KED
⌊	**As**	**75**	**-0.004**	ug/L	0.005	138	2	1	68	KED
	Kr	**83**		ug/L			31	34	22	Standard
⌈>	**In-1**	**115**		ug/L			6919	7095	3	KED
|	**Cd**	**111**	**0.003**	ug/L	0.002	94	1	2	24	KED
⌊	**Cd**	**114**	**0.003**	ug/L	0.007	203	1	3	102	KED
⌈>	**In**	**115**		ug/L			377198	417612	1	Standard
⌊	**Ag**	**107**	**-0.019**	ug/L	0.000	0	256	17	6	Standard
⌈>	**Tb**	**159**		ug/L			155303	166772	1	Standard
⌊	**Pb**	**208**	**0.017**	ug/L	0.000	1	194	1344	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVF
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 02:20:28
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	24955	2	Standard
⎡>	**Sc**	**45**		ug/L			406838	456191	1	Standard
⎢	**Cr**	**52**	**48.467**	ug/L	1.020	2	14882	811615	1	Standard
⎣	**Cr**	**53**	**48.658**	ug/L	0.640	1	242	93862	2	Standard
⎡>	**Ge**	**72**		ug/L			30221	31659	0	KED
⎢	**Ni**	**60**	**50.049**	ug/L	0.426	0	9	60948	0	KED
⎢	**Ni**	**62**	**49.560**	ug/L	1.017	2	1	9856	2	KED
⎢	**Cu**	**63**	**50.404**	ug/L	0.510	1	43	178610	1	KED
⎢	**Cu**	**65**	**50.682**	ug/L	0.444	0	22	90894	0	KED
⎢	**Zn**	**66**	**52.875**	ug/L	0.486	0	58	26259	0	KED
⎢	**Zn**	**67**	**53.877**	ug/L	1.615	2	6	4351	2	KED
⎣	**As**	**75**	**53.048**	ug/L	0.241	0	2	12013	0	KED
	Kr	**83**		ug/L			31	41	16	Standard
⎡>	**In-1**	**115**		ug/L			6919	7267	0	KED
⎢	**Cd**	**111**	**48.903**	ug/L	0.908	1	1	11734	2	KED
⎣	**Cd**	**114**	**49.059**	ug/L	0.576	1	1	30264	0	KED
⎡>	**In**	**115**		ug/L			377198	418927	0	Standard
⎣	**Ag**	**107**	**50.572**	ug/L	1.444	2	256	716608	2	Standard
⎡>	**Tb**	**159**		ug/L			155303	171419	1	Standard
⎣	**Pb**	**208**	**52.331**	ug/L	0.381	0	194	3557343	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBF
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 02:27:35
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	23878	0	Standard
⌈>	**Sc**	**45**		ug/L			406838	439714	3	Standard
|	**Cr**	**52**	**-0.025**	ug/L	0.043	172	14882	15673	0	Standard
⌊	**Cr**	**53**	**-0.060**	ug/L	0.008	13	242	150	7	Standard
⌈>	**Ge**	**72**		ug/L			30221	32319	0	KED
|	**Ni**	**60**	**-0.003**	ug/L	0.005	162	9	6	96	KED
|	**Ni**	**62**	**-0.007**	ug/L	0.000	0	1	0		KED
|	**Cu**	**63**	**-0.007**	ug/L	0.002	30	43	22	32	KED
|	**Cu**	**65**	**-0.005**	ug/L	0.001	23	22	15	12	KED
|	**Zn**	**66**	**-0.073**	ug/L	0.008	10	58	25	15	KED
|	**Zn**	**67**	**-0.021**	ug/L	0.046	215	6	5	66	KED
⌊	**As**	**75**	**0.004**	ug/L	0.008	191	2	3	49	KED
	Kr	**83**		ug/L			31	43	7	Standard
⌈>	**In-1**	**115**		ug/L			6919	7229	1	KED
|	**Cd**	**111**	**0.005**	ug/L	0.007	137	1	2	57	KED
⌊	**Cd**	**114**	**0.002**	ug/L	0.002	95	1	3	36	KED
⌈>	**In**	**115**		ug/L			377198	417441	2	Standard
⌊	**Ag**	**107**	**-0.016**	ug/L	0.001	4	256	55	20	Standard
⌈>	**Tb**	**159**		ug/L			155303	167354	1	Standard
⌊	**Pb**	**208**	**-0.001**	ug/L	0.000	31	194	155	12	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0301-01
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 02:32:00
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	58414	2	Standard
⌈>	**Sc**	**45**		ug/L			406838	478136	2	Standard
|	**Cr**	**52**	**0.480**	ug/L	0.010	2	14882	25744	2	Standard
⌊	**Cr**	**53**	**0.621**	ug/L	0.014	2	242	1537	2	Standard
⌈>	**Ge**	**72**		ug/L			30221	32752	1	KED
|	**Ni**	**60**	**0.800**	ug/L	0.017	2	9	1017	2	KED
|	**Ni**	**62**	**0.873**	ug/L	0.038	4	1	180	3	KED
|	**Cu**	**63**	**7.484**	ug/L	0.188	2	43	27471	1	KED
|	**Cu**	**65**	**7.374**	ug/L	0.169	2	22	13700	2	KED
|	**Zn**	**66**	**60.674**	ug/L	0.373	0	58	31164	1	KED
|	**Zn**	**67**	**60.202**	ug/L	0.212	0	6	5028	0	KED
⌊	**As**	**75**	**0.627**	ug/L	0.021	3	2	149	3	KED
	Kr	**83**		ug/L			31	34	22	Standard
⌈>	**In-1**	**115**		ug/L			6919	7581	0	KED
|	**Cd**	**111**	**0.044**	ug/L	0.004	9	1	12	8	KED
⌊	**Cd**	**114**	**0.041**	ug/L	0.003	6	1	28	7	KED
⌈>	**In**	**115**		ug/L			377198	442613	1	Standard
⌊	**Ag**	**107**	**-0.010**	ug/L	0.001	8	256	149	7	Standard
⌈>	**Tb**	**159**		ug/L			155303	177422	1	Standard
⌊	**Pb**	**208**	**0.233**	ug/L	0.004	1	194	16592	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0302-01
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 02:36:17
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	71026	1	Standard
⌈>	**Sc**	**45**		ug/L			406838	478017	2	Standard
|	**Cr**	**52**	**1.730**	ug/L	0.034	1	14882	47208	1	Standard
⌊	**Cr**	**53**	**6.815**	ug/L	0.070	1	242	14020	2	Standard
⌈>	**Ge**	**72**		ug/L			30221	31762	0	KED
|	**Ni**	**60**	**2.658**	ug/L	0.025	0	9	3256	0	KED
|	**Ni**	**62**	**2.730**	ug/L	0.120	4	1	546	4	KED
|	**Cu**	**63**	**15.778**	ug/L	0.230	1	43	56117	0	KED
|	**Cu**	**65**	**15.920**	ug/L	0.285	1	22	28656	0	KED
|	**Zn**	**66**	**103.851**	ug/L	2.554	2	58	51676	1	KED
|	**Zn**	**67**	**102.822**	ug/L	0.797	0	6	8324	1	KED
⌊	**As**	**75**	**0.851**	ug/L	0.026	3	2	196	2	KED
	Kr	**83**		ug/L			31	50	15	Standard
⌈>	**In-1**	**115**		ug/L			6919	7272	2	KED
|	**Cd**	**111**	**0.065**	ug/L	0.026	40	1	17	33	KED
⌊	**Cd**	**114**	**0.059**	ug/L	0.008	13	1	38	10	KED
⌈>	**In**	**115**		ug/L			377198	401235	0	Standard
⌊	**Ag**	**107**	**-0.006**	ug/L	0.001	12	256	186	5	Standard
⌈>	**Tb**	**159**		ug/L			155303	172143	1	Standard
⌊	**Pb**	**208**	**1.577**	ug/L	0.021	1	194	107833	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0310-01
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 02:40:35
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	52611	1	Standard
⌈>	**Sc**	**45**		ug/L			406838	457597	1	Standard
|	**Cr**	**52**	**0.500**	ug/L	0.027	5	14882	24968	1	Standard
⌊	**Cr**	**53**	**0.699**	ug/L	0.016	2	242	1621	2	Standard
⌈>	**Ge**	**72**		ug/L			30221	32604	0	KED
|	**Ni**	**60**	**1.101**	ug/L	0.078	7	9	1391	7	KED
|	**Ni**	**62**	**1.156**	ug/L	0.055	4	1	238	4	KED
|	**Cu**	**63**	**7.231**	ug/L	0.063	0	43	26426	0	KED
|	**Cu**	**65**	**7.332**	ug/L	0.147	2	22	13560	1	KED
|	**Zn**	**66**	**89.906**	ug/L	0.270	0	58	45939	1	KED
|	**Zn**	**67**	**84.808**	ug/L	0.285	0	6	7049	0	KED
⌊	**As**	**75**	**0.647**	ug/L	0.035	5	2	153	5	KED
	Kr	**83**		ug/L			31	35	25	Standard
⌈>	**In-1**	**115**		ug/L			6919	7280	0	KED
|	**Cd**	**111**	**0.031**	ug/L	0.016	52	1	9	43	KED
⌊	**Cd**	**114**	**0.033**	ug/L	0.011	33	1	22	30	KED
⌈>	**In**	**115**		ug/L			377198	426748	1	Standard
⌊	**Ag**	**107**	**-0.002**	ug/L	0.002	132	256	266	11	Standard
⌈>	**Tb**	**159**		ug/L			155303	174865	1	Standard
⌊	**Pb**	**208**	**0.862**	ug/L	0.023	2	194	59974	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0355-01
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 02:44:53
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	55103	4	Standard
⌈>	**Sc**	**45**		ug/L			406838	476911	3	Standard
|	**Cr**	**52**	**1.042**	ug/L	0.026	2	14882	35318	3	Standard
⌊	**Cr**	**53**	**1.367**	ug/L	0.012	0	242	3034	3	Standard
⌈>	**Ge**	**72**		ug/L			30221	33017	1	KED
|	**Ni**	**60**	**2.328**	ug/L	0.120	5	9	2965	3	KED
|	**Ni**	**62**	**2.501**	ug/L	0.076	3	1	520	2	KED
|	**Cu**	**63**	**6.950**	ug/L	0.196	2	43	25717	1	KED
|	**Cu**	**65**	**7.000**	ug/L	0.186	2	22	13113	3	KED
|	**Zn**	**66**	**40.404**	ug/L	0.966	2	58	20936	0	KED
|	**Zn**	**67**	**39.462**	ug/L	2.230	5	6	3324	4	KED
⌊	**As**	**75**	**0.806**	ug/L	0.054	6	2	193	5	KED
	Kr	**83**		ug/L			31	36	20	Standard
⌈>	**In-1**	**115**		ug/L			6919	7691	2	KED
|	**Cd**	**111**	**0.019**	ug/L	0.017	87	1	6	65	KED
⌊	**Cd**	**114**	**0.017**	ug/L	0.009	49	1	13	40	KED
⌈>	**In**	**115**		ug/L			377198	431698	1	Standard
⌊	**Ag**	**107**	**-0.012**	ug/L	0.001	7	256	123	10	Standard
⌈>	**Tb**	**159**		ug/L			155303	176734	1	Standard
⌊	**Pb**	**208**	**0.787**	ug/L	0.014	1	194	55393	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLE
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 02:49:17
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	26677	1	Standard
⌈>	**Sc**	**45**		ug/L			406838	437581	2	Standard
|	**Cr**	**52**	**-0.022**	ug/L	0.007	33	14882	15662	2	Standard
⌊	**Cr**	**53**	**-0.025**	ug/L	0.002	8	242	214	0	Standard
⌈>	**Ge**	**72**		ug/L			30221	32063	0	KED
|	**Ni**	**60**	**0.009**	ug/L	0.003	37	9	21	20	KED
|	**Ni**	**62**	**0.006**	ug/L	0.005	91	1	2	43	KED
|	**Cu**	**63**	**0.009**	ug/L	0.005	52	43	76	21	KED
|	**Cu**	**65**	**0.005**	ug/L	0.004	74	22	32	20	KED
|	**Zn**	**66**	**0.137**	ug/L	0.023	16	58	130	8	KED
|	**Zn**	**67**	**0.228**	ug/L	0.073	32	6	26	23	KED
⌊	**As**	**75**	**-0.008**	ug/L	0.002	27	2	0	50	KED
	Kr	**83**		ug/L			31	42	16	Standard
⌈>	**In-1**	**115**		ug/L			6919	7442	3	KED
|	**Cd**	**111**	**0.002**	ug/L	0.006	276	1	2	65	KED
⌊	**Cd**	**114**	**0.001**	ug/L	0.001	202	1	2	39	KED
⌈>	**In**	**115**		ug/L			377198	407947	1	Standard
⌊	**Ag**	**107**	**-0.019**	ug/L	0.000	2	256	19	31	Standard
⌈>	**Tb**	**159**		ug/L			155303	164505	1	Standard
⌊	**Pb**	**208**	**0.017**	ug/L	0.000	2	194	1335	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0341-01
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 02:53:42
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	45254	2	Standard
>	**Sc**	**45**		ug/L			406838	621095	1	Standard
	Cr	**52**	**-0.017**	ug/L	0.013	75	14882	22334	1	Standard
	Cr	**53**	**0.816**	ug/L	0.043	5	242	2505	3	Standard
>	**Ge**	**72**		ug/L			30221	30968	0	KED
	Ni	**60**	**0.700**	ug/L	0.043	6	9	843	6	KED
	Ni	**62**	**0.679**	ug/L	0.095	13	1	133	13	KED
	Cu	**63**	**0.099**	ug/L	0.001	0	43	386	0	KED
	Cu	**65**	**0.084**	ug/L	0.015	17	22	170	15	KED
	Zn	**66**	**0.994**	ug/L	0.077	7	58	541	6	KED
	Zn	**67**	**1.237**	ug/L	0.140	11	6	104	11	KED
	As	**75**	**0.179**	ug/L	0.014	7	2	42	6	KED
	Kr	**83**		ug/L			31	50	5	Standard
>	**In-1**	**115**		ug/L			6919	7209	0	KED
	Cd	**111**	**0.016**	ug/L	0.013	81	1	5	56	KED
	Cd	**114**	**0.007**	ug/L	0.005	74	1	5	50	KED
>	**In**	**115**		ug/L			377198	401549	0	Standard
	Ag	**107**	**-0.018**	ug/L	0.001	4	256	26	40	Standard
>	**Tb**	**159**		ug/L			155303	168487	1	Standard
	Pb	**208**	**0.017**	ug/L	0.000	1	194	1322	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0744-DUP1
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 02:58:00
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23616	48146	4	Standard
>	Sc	45		ug/L			406838	655327	1	Standard
	Cr	52	-0.018	ug/L	0.014	76	14882	23554	1	Standard
	Cr	53	0.848	ug/L	0.021	2	242	2734	3	Standard
>	Ge	72		ug/L			30221	31194	0	KED
	Ni	60	0.868	ug/L	0.094	10	9	1050	9	KED
	Ni	62	0.865	ug/L	0.092	10	1	170	11	KED
	Cu	63	0.109	ug/L	0.007	6	43	423	6	KED
	Cu	65	0.101	ug/L	0.010	9	22	200	9	KED
	Zn	66	0.542	ug/L	0.019	3	58	325	3	KED
	Zn	67	0.860	ug/L	0.087	10	6	75	9	KED
	As	75	0.207	ug/L	0.023	11	2	48	11	KED
	Kr	83		ug/L			31	43	11	Standard
>	In-1	115		ug/L			6919	7042	2	KED
	Cd	111	0.021	ug/L	0.014	66	1	6	48	KED
	Cd	114	0.005	ug/L	0.005	103	1	4	60	KED
>	In	115		ug/L			377198	419276	2	Standard
	Ag	107	-0.017	ug/L	0.000	0	256	38	5	Standard
>	Tb	159		ug/L			155303	172563	2	Standard
	Pb	208	0.017	ug/L	0.001	6	194	1377	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0744-MS1
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 03:02:47
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	48015	1	Standard
⌈>	**Sc**	**45**		ug/L			406838	638686	2	Standard
|	**Cr**	**52**	**16.299**	ug/L	0.309	1	14882	397584	1	Standard
⌊	**Cr**	**53**	**17.333**	ug/L	0.297	1	242	47042	0	Standard
⌈>	**Ge**	**72**		ug/L			30221	29296	1	KED
|	**Ni**	**60**	**26.046**	ug/L	0.336	1	9	29353	1	KED
|	**Ni**	**62**	**25.451**	ug/L	0.262	1	1	4683	0	KED
|	**Cu**	**63**	**25.179**	ug/L	0.611	2	43	82584	2	KED
|	**Cu**	**65**	**24.887**	ug/L	0.740	2	22	41302	1	KED
|	**Zn**	**66**	**74.008**	ug/L	1.060	1	58	33985	1	KED
|	**Zn**	**67**	**71.832**	ug/L	0.560	0	6	5366	1	KED
⌊	**As**	**75**	**26.274**	ug/L	0.584	2	2	5506	2	KED
	Kr	**83**		ug/L			31	50	18	Standard
⌈>	**In-1**	**115**		ug/L			6919	6876	2	KED
|	**Cd**	**111**	**23.198**	ug/L	0.730	3	1	5265	1	KED
⌊	**Cd**	**114**	**23.236**	ug/L	0.409	1	1	13560	1	KED
⌈>	**In**	**115**		ug/L			377198	388907	3	Standard
⌊	**Ag**	**107**	**24.736**	ug/L	0.704	2	256	325385	0	Standard
⌈>	**Tb**	**159**		ug/L			155303	162180	1	Standard
⌊	**Pb**	**208**	**25.857**	ug/L	0.323	1	194	1663017	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0744-MSD1
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 03:08:35
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23616	45575	2	Standard
⌈>	Sc	45		ug/L			406838	608216	1	Standard
|	Cr	52	16.185	ug/L	0.364	2	14882	376124	1	Standard
⌊	Cr	53	17.259	ug/L	0.043	0	242	44618	1	Standard
⌈>	Ge	72		ug/L			30221	29320	0	KED
|	Ni	60	25.145	ug/L	0.109	0	9	28363	0	KED
|	Ni	62	24.844	ug/L	0.288	1	1	4576	1	KED
|	Cu	63	24.025	ug/L	0.166	0	43	78864	0	KED
|	Cu	65	24.099	ug/L	0.207	0	22	40037	0	KED
|	Zn	66	71.319	ug/L	0.316	0	58	32782	0	KED
|	Zn	67	69.055	ug/L	1.071	1	6	5162	1	KED
⌊	As	75	25.566	ug/L	0.210	0	2	5363	1	KED
	Kr	83		ug/L			31	46	15	Standard
⌈>	In-1	115		ug/L			6919	6890	0	KED
|	Cd	111	22.846	ug/L	0.204	0	1	5198	0	KED
⌊	Cd	114	22.884	ug/L	0.123	0	1	13386	0	KED
⌈>	In	115		ug/L			377198	373556	2	Standard
⌊	Ag	107	24.345	ug/L	0.741	3	256	307656	1	Standard
⌈>	Tb	159		ug/L			155303	161159	1	Standard
⌊	Pb	208	24.994	ug/L	0.093	0	194	1597509	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLF
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 03:12:53
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	26659	2	Standard
⌈>	**Sc**	**45**		ug/L			406838	413272	2	Standard
|	**Cr**	**52**	**0.002**	ug/L	0.017	888	14882	15141	1	Standard
⌊	**Cr**	**53**	**0.035**	ug/L	0.007	19	242	306	1	Standard
⌈>	**Ge**	**72**		ug/L			30221	30431	1	KED
|	**Ni**	**60**	**0.009**	ug/L	0.006	66	9	19	33	KED
|	**Ni**	**62**	**0.007**	ug/L	0.006	84	1	2	43	KED
|	**Cu**	**63**	**0.009**	ug/L	0.003	34	43	73	14	KED
|	**Cu**	**65**	**0.006**	ug/L	0.005	91	22	32	26	KED
|	**Zn**	**66**	**0.161**	ug/L	0.060	37	58	135	22	KED
|	**Zn**	**67**	**0.164**	ug/L	0.087	53	6	19	33	KED
⌊	**As**	**75**	**-0.001**	ug/L	0.002	281	2	2	20	KED
	Kr	**83**		ug/L			31	32	15	Standard
⌈>	**In-1**	**115**		ug/L			6919	7031	0	KED
|	**Cd**	**111**	**0.011**	ug/L	0.009	78	1	4	48	KED
⌊	**Cd**	**114**	**-0.000**	ug/L	0.000	67	1	1	8	KED
⌈>	**In**	**115**		ug/L			377198	395007	2	Standard
⌊	**Ag**	**107**	**-0.016**	ug/L	0.001	9	256	50	41	Standard
⌈>	**Tb**	**159**		ug/L			155303	159105	0	Standard
⌊	**Pb**	**208**	**0.019**	ug/L	0.001	5	194	1369	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVG
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 03:17:17
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	24893	3	Standard
⌈>	**Sc**	**45**		ug/L			406838	421905	2	Standard
|	**Cr**	**52**	**49.281**	ug/L	1.093	2	14882	762809	0	Standard
⌊	**Cr**	**53**	**48.762**	ug/L	0.861	1	242	86962	0	Standard
⌈>	**Ge**	**72**		ug/L			30221	30679	0	KED
|	**Ni**	**60**	**49.658**	ug/L	0.424	0	9	58599	1	KED
|	**Ni**	**62**	**49.085**	ug/L	0.622	1	1	9459	0	KED
|	**Cu**	**63**	**50.286**	ug/L	0.178	0	43	172671	0	KED
|	**Cu**	**65**	**50.809**	ug/L	0.901	1	22	88294	1	KED
|	**Zn**	**66**	**52.714**	ug/L	0.898	1	58	25369	2	KED
|	**Zn**	**67**	**54.051**	ug/L	1.108	2	6	4230	2	KED
⌊	**As**	**75**	**53.287**	ug/L	0.132	0	2	11693	0	KED
	Kr	**83**		ug/L			31	45	12	Standard
⌈>	**In-1**	**115**		ug/L			6919	7002	3	KED
|	**Cd**	**111**	**49.101**	ug/L	1.005	2	1	11347	1	KED
⌊	**Cd**	**114**	**49.064**	ug/L	0.841	1	1	29155	1	KED
⌈>	**In**	**115**		ug/L			377198	392011	3	Standard
⌊	**Ag**	**107**	**50.237**	ug/L	1.505	2	256	665743	0	Standard
⌈>	**Tb**	**159**		ug/L			155303	163717	1	Standard
⌊	**Pb**	**208**	**51.667**	ug/L	0.925	1	194	3354089	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBG
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 03:24:25
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	23400	2	Standard
⌈>	**Sc**	**45**		ug/L			406838	413716	3	Standard
|	**Cr**	**52**	**-0.030**	ug/L	0.021	67	14882	14673	1	Standard
⌊	**Cr**	**53**	**-0.028**	ug/L	0.015	54	242	196	10	Standard
⌈>	**Ge**	**72**		ug/L			30221	29838	1	KED
|	**Ni**	**60**	**-0.002**	ug/L	0.005	222	9	6	78	KED
|	**Ni**	**62**	**0.024**	ug/L	0.027	112	1	5	88	KED
|	**Cu**	**63**	**-0.005**	ug/L	0.001	25	43	26	14	KED
|	**Cu**	**65**	**-0.002**	ug/L	0.002	120	22	18	21	KED
|	**Zn**	**66**	**-0.056**	ug/L	0.016	29	58	31	24	KED
|	**Zn**	**67**	**0.001**	ug/L	0.052	4828	6	6	56	KED
⌊	**As**	**75**	**0.003**	ug/L	0.008	251	2	3	52	KED
	Kr	**83**		ug/L			31	45	22	Standard
⌈>	**In-1**	**115**		ug/L			6919	7072	2	KED
|	**Cd**	**111**	**0.038**	ug/L	0.061	158	1	10	133	KED
⌊	**Cd**	**114**	**0.017**	ug/L	0.024	142	1	11	119	KED
⌈>	**In**	**115**		ug/L			377198	384388	2	Standard
⌊	**Ag**	**107**	**-0.016**	ug/L	0.000	1	256	47	6	Standard
⌈>	**Tb**	**159**		ug/L			155303	157357	0	Standard
⌊	**Pb**	**208**	**-0.001**	ug/L	0.000	10	194	138	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0288-21
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 03:28:50
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23616	52281	1	Standard
⌈>	Sc	45		ug/L			406838	472888	1	Standard
|	Cr	52	1.089	ug/L	0.043	3	14882	35820	2	Standard
⌊	Cr	53	1.790	ug/L	0.033	1	242	3850	0	Standard
⌈>	Ge	72		ug/L			30221	29290	1	KED
|	Ni	60	2.351	ug/L	0.050	2	9	2656	1	KED
|	Ni	62	2.305	ug/L	0.212	9	1	425	9	KED
|	Cu	63	5.065	ug/L	0.132	2	43	16641	1	KED
|	Cu	65	5.040	ug/L	0.101	1	22	8382	2	KED
|	Zn	66	8.103	ug/L	0.277	3	58	3770	2	KED
|	Zn	67	8.301	ug/L	0.446	5	6	626	5	KED
⌊	As	75	3.276	ug/L	0.029	0	2	688	1	KED
	Kr	83		ug/L			31	40	17	Standard
⌈>	In-1	115		ug/L			6919	6994	0	KED
|	Cd	111	0.077	ug/L	0.005	6	1	19	5	KED
⌊	Cd	114	0.090	ug/L	0.024	26	1	55	26	KED
⌈>	In	115		ug/L			377198	389215	3	Standard
⌊	Ag	107	0.002	ug/L	0.001	55	256	297	4	Standard
⌈>	Tb	159		ug/L			155303	165173	0	Standard
⌊	Pb	208	0.920	ug/L	0.017	1	194	60479	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0692-DUP1
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 03:33:08
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23616	52529	2	Standard
>	Sc	45		ug/L			406838	466003	1	Standard
	Cr	52	1.150	ug/L	0.042	3	14882	36304	1	Standard
	Cr	53	1.707	ug/L	0.050	2	242	3630	0	Standard
>	Ge	72		ug/L			30221	29703	0	KED
	Ni	60	2.431	ug/L	0.106	4	9	2786	4	KED
	Ni	62	2.433	ug/L	0.059	2	1	455	2	KED
	Cu	63	5.337	ug/L	0.013	0	43	17782	0	KED
	Cu	65	5.416	ug/L	0.028	0	22	9133	0	KED
	Zn	66	8.469	ug/L	0.204	2	58	3994	2	KED
	Zn	67	8.463	ug/L	0.673	7	6	646	7	KED
	As	75	3.326	ug/L	0.133	4	2	709	4	KED
	Kr	83		ug/L			31	45	23	Standard
>	In-1	115		ug/L			6919	6770	4	KED
	Cd	111	0.093	ug/L	0.051	54	1	22	47	KED
	Cd	114	0.078	ug/L	0.026	33	1	46	29	KED
>	In	115		ug/L			377198	384001	1	Standard
	Ag	107	0.003	ug/L	0.003	75	256	306	11	Standard
>	Tb	159		ug/L			155303	163511	1	Standard
	Pb	208	0.976	ug/L	0.010	1	194	63486	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0692-MS1
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 03:37:56
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23616	42591	0	Standard
⌈>	Sc	45		ug/L			406838	465291	4	Standard
|	Cr	52	19.459	ug/L	1.552	7	14882	341866	3	Standard
⌊	Cr	53	19.607	ug/L	1.546	7	242	38658	4	Standard
⌈>	Ge	72		ug/L			30221	29726	1	KED
|	Ni	60	23.419	ug/L	0.129	0	9	26781	1	KED
|	Ni	62	22.901	ug/L	0.456	1	1	4276	0	KED
|	Cu	63	25.877	ug/L	0.322	1	43	86107	0	KED
|	Cu	65	26.006	ug/L	0.143	0	22	43801	1	KED
|	Zn	66	71.367	ug/L	1.710	2	58	33251	1	KED
|	Zn	67	68.627	ug/L	0.959	1	6	5202	2	KED
⌊	As	75	25.770	ug/L	0.458	1	2	5479	0	KED
	Kr	83		ug/L			31	54	40	Standard
⌈>	In-1	115		ug/L			6919	6909	1	KED
|	Cd	111	20.399	ug/L	0.337	1	1	4653	0	KED
⌊	Cd	114	20.067	ug/L	0.542	2	1	11767	1	KED
⌈>	In	115		ug/L			377198	381928	6	Standard
⌊	Ag	107	20.553	ug/L	1.790	8	256	264752	2	Standard
⌈>	Tb	159		ug/L			155303	166458	5	Standard
⌊	Pb	208	21.437	ug/L	2.119	9	194	1410216	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLG
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 03:42:14
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	25759	1	Standard
⌈>	**Sc**	**45**		ug/L			406838	408724	1	Standard
|	**Cr**	**52**	**-0.006**	ug/L	0.015	272	14882	14867	0	Standard
⌊	**Cr**	**53**	**-0.005**	ug/L	0.008	151	242	234	5	Standard
⌈>	**Ge**	**72**		ug/L			30221	31676	1	KED
|	**Ni**	**60**	**0.004**	ug/L	0.005	130	9	14	41	KED
|	**Ni**	**62**	**0.009**	ug/L	0.011	119	1	3	69	KED
|	**Cu**	**63**	**0.005**	ug/L	0.001	25	43	64	8	KED
|	**Cu**	**65**	**0.007**	ug/L	0.002	28	22	36	10	KED
|	**Zn**	**66**	**0.120**	ug/L	0.026	21	58	120	10	KED
|	**Zn**	**67**	**0.201**	ug/L	0.138	69	6	23	47	KED
⌊	**As**	**75**	**0.004**	ug/L	0.001	24	2	3	7	KED
	Kr	**83**		ug/L			31	33	26	Standard
⌈>	**In-1**	**115**		ug/L			6919	7545	4	KED
|	**Cd**	**111**	**0.002**	ug/L	0.002	94	1	2	24	KED
⌊	**Cd**	**114**	**0.002**	ug/L	0.002	102	1	2	31	KED
⌈>	**In**	**115**		ug/L			377198	389677	2	Standard
⌊	**Ag**	**107**	**-0.017**	ug/L	0.001	2	256	34	20	Standard
⌈>	**Tb**	**159**		ug/L			155303	157672	2	Standard
⌊	**Pb**	**208**	**0.017**	ug/L	0.001	3	194	1274	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVH
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 03:46:38
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	24988	2	Standard
⌈>	**Sc**	**45**		ug/L			406838	426321	2	Standard
|	**Cr**	**52**	**48.124**	ug/L	0.512	1	14882	753418	3	Standard
⌊	**Cr**	**53**	**48.602**	ug/L	0.258	0	242	87606	2	Standard
⌈>	**Ge**	**72**		ug/L			30221	31355	0	KED
|	**Ni**	**60**	**49.834**	ug/L	0.617	1	9	60100	0	KED
|	**Ni**	**62**	**50.070**	ug/L	0.582	1	1	9862	1	KED
|	**Cu**	**63**	**49.204**	ug/L	0.591	1	43	172680	1	KED
|	**Cu**	**65**	**50.184**	ug/L	0.284	0	22	89134	0	KED
|	**Zn**	**66**	**52.420**	ug/L	0.223	0	58	25783	0	KED
|	**Zn**	**67**	**52.985**	ug/L	1.109	2	6	4238	1	KED
⌊	**As**	**75**	**53.461**	ug/L	0.358	0	2	11990	0	KED
	Kr	**83**		ug/L			31	54	4	Standard
⌈>	**In-1**	**115**		ug/L			6919	7371	2	KED
|	**Cd**	**111**	**48.512**	ug/L	0.932	1	1	11804	0	KED
⌊	**Cd**	**114**	**48.953**	ug/L	1.576	3	1	30619	1	KED
⌈>	**In**	**115**		ug/L			377198	388876	4	Standard
⌊	**Ag**	**107**	**49.403**	ug/L	1.641	3	256	649525	3	Standard
⌈>	**Tb**	**159**		ug/L			155303	164230	0	Standard
⌊	**Pb**	**208**	**50.601**	ug/L	1.721	3	194	3295643	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBH
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 03:53:46
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	23152	3	Standard
⌈>	**Sc**	**45**		ug/L			406838	420953	2	Standard
|	**Cr**	**52**	**-0.031**	ug/L	0.022	70	14882	14922	0	Standard
⌊	**Cr**	**53**	**-0.037**	ug/L	0.002	5	242	185	3	Standard
⌈>	**Ge**	**72**		ug/L			30221	29785	2	KED
|	**Ni**	**60**	**0.021**	ug/L	0.044	213	9	33	153	KED
|	**Ni**	**62**	**0.037**	ug/L	0.040	108	1	8	93	KED
|	**Cu**	**63**	**0.014**	ug/L	0.034	240	43	91	128	KED
|	**Cu**	**65**	**0.019**	ug/L	0.036	187	22	55	113	KED
|	**Zn**	**66**	**-0.006**	ug/L	0.047	861	58	55	41	KED
|	**Zn**	**67**	**-0.032**	ug/L	0.038	117	6	4	65	KED
⌊	**As**	**75**	**0.032**	ug/L	0.058	182	2	9	133	KED
	Kr	**83**		ug/L			31	43	38	Standard
⌈>	**In-1**	**115**		ug/L			6919	7036	3	KED
|	**Cd**	**111**	**0.001**	ug/L	0.010	986	1	1	132	KED
⌊	**Cd**	**114**	**-0.000**	ug/L	0.003	4532	1	1	106	KED
⌈>	**In**	**115**		ug/L			377198	386872	1	Standard
⌊	**Ag**	**107**	**-0.017**	ug/L	0.001	5	256	45	24	Standard
⌈>	**Tb**	**159**		ug/L			155303	158949	1	Standard
⌊	**Pb**	**208**	**-0.001**	ug/L	0.000	15	194	132	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: RINSE
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 03:58:10
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	32807	2	Standard
⌈>	**Sc**	**45**		ug/L			406838	483762	4	Standard
|	**Cr**	**52**	**-0.026**	ug/L	0.021	80	14882	17229	3	Standard
⌊	**Cr**	**53**	**-0.047**	ug/L	0.010	22	242	192	6	Standard
⌈>	**Ge**	**72**		ug/L			30221	31828	1	KED
|	**Ni**	**60**	**0.084**	ug/L	0.004	5	9	113	3	KED
|	**Ni**	**62**	**0.063**	ug/L	0.019	30	1	13	28	KED
|	**Cu**	**63**	**0.027**	ug/L	0.002	9	43	142	6	KED
|	**Cu**	**65**	**0.025**	ug/L	0.003	10	22	67	8	KED
|	**Zn**	**66**	**0.343**	ug/L	0.048	14	58	232	9	KED
|	**Zn**	**67**	**0.317**	ug/L	0.032	10	6	33	6	KED
⌊	**As**	**75**	**0.004**	ug/L	0.004	124	2	3	28	KED
	Kr	**83**		ug/L			31	38	44	Standard
⌈>	**In-1**	**115**		ug/L			6919	7576	2	KED
|	**Cd**	**111**	**0.008**	ug/L	0.007	80	1	3	43	KED
⌊	**Cd**	**114**	**-0.001**	ug/L	0.000	59	1	1	9	KED
⌈>	**In**	**115**		ug/L			377198	450974	2	Standard
⌊	**Ag**	**107**	**-0.017**	ug/L	0.000	2	256	50	11	Standard
⌈>	**Tb**	**159**		ug/L			155303	178105	1	Standard
⌊	**Pb**	**208**	**0.014**	ug/L	0.001	4	194	1179	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: RINSE
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 04:02:34
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	32723	1	Standard
⌈>	**Sc**	**45**		ug/L			406838	476211	2	Standard
|	**Cr**	**52**	**-0.004**	ug/L	0.036	949	14882	17347	1	Standard
⌊	**Cr**	**53**	**-0.047**	ug/L	0.007	15	242	189	8	Standard
⌈>	**Ge**	**72**		ug/L			30221	31509	1	KED
|	**Ni**	**60**	**0.097**	ug/L	0.010	10	9	127	10	KED
|	**Ni**	**62**	**0.103**	ug/L	0.032	31	1	21	28	KED
|	**Cu**	**63**	**0.028**	ug/L	0.003	9	43	142	8	KED
|	**Cu**	**65**	**0.032**	ug/L	0.008	24	22	79	16	KED
|	**Zn**	**66**	**0.366**	ug/L	0.006	1	58	241	1	KED
|	**Zn**	**67**	**0.399**	ug/L	0.095	23	6	39	20	KED
⌊	**As**	**75**	**0.002**	ug/L	0.001	61	2	3	9	KED
	Kr	**83**		ug/L			31	45	23	Standard
⌈>	**In-1**	**115**		ug/L			6919	7710	2	KED
|	**Cd**	**111**	**0.012**	ug/L	0.007	59	1	4	34	KED
⌊	**Cd**	**114**	**0.002**	ug/L	0.003	142	1	3	57	KED
⌈>	**In**	**115**		ug/L			377198	438500	1	Standard
⌊	**Ag**	**107**	**-0.016**	ug/L	0.002	12	256	60	45	Standard
⌈>	**Tb**	**159**		ug/L			155303	174781	0	Standard
⌊	**Pb**	**208**	**0.016**	ug/L	0.002	12	194	1309	10	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: RINSE
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 04:06:58
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	32902	1	Standard
⌈>	**Sc**	**45**		ug/L			406838	474443	2	Standard
|	**Cr**	**52**	**0.001**	ug/L	0.028	3519	14882	17362	1	Standard
⌊	**Cr**	**53**	**-0.048**	ug/L	0.005	10	242	187	3	Standard
⌈>	**Ge**	**72**		ug/L			30221	31577	1	KED
|	**Ni**	**60**	**0.104**	ug/L	0.012	11	9	136	11	KED
|	**Ni**	**62**	**0.089**	ug/L	0.028	30	1	19	30	KED
|	**Cu**	**63**	**0.029**	ug/L	0.002	7	43	149	6	KED
|	**Cu**	**65**	**0.023**	ug/L	0.006	26	22	64	15	KED
|	**Zn**	**66**	**0.353**	ug/L	0.016	4	58	235	2	KED
|	**Zn**	**67**	**0.327**	ug/L	0.079	24	6	33	19	KED
⌊	**As**	**75**	**-0.003**	ug/L	0.002	60	2	1	25	KED
	Kr	**83**		ug/L			31	36	19	Standard
⌈>	**In-1**	**115**		ug/L			6919	7599	1	KED
|	**Cd**	**111**	**0.002**	ug/L	0.009	455	1	2	98	KED
⌊	**Cd**	**114**	**0.001**	ug/L	0.005	333	1	2	101	KED
⌈>	**In**	**115**		ug/L			377198	440122	1	Standard
⌊	**Ag**	**107**	**-0.017**	ug/L	0.001	6	256	43	38	Standard
⌈>	**Tb**	**159**		ug/L			155303	173610	1	Standard
⌊	**Pb**	**208**	**0.013**	ug/L	0.001	7	194	1122	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: DI
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 04:11:22
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	24093	0	Standard
⌈>	**Sc**	**45**		ug/L			406838	388994	2	Standard
|	**Cr**	**52**	**-0.000**	ug/L	0.019	9801	14882	14222	1	Standard
⌊	**Cr**	**53**	**-0.062**	ug/L	0.005	7	242	130	4	Standard
⌈>	**Ge**	**72**		ug/L			30221	29535	2	KED
|	**Ni**	**60**	**-0.000**	ug/L	0.002	591	9	8	24	KED
|	**Ni**	**62**	**0.000**	ug/L	0.012	5658	1	1	173	KED
|	**Cu**	**63**	**-0.004**	ug/L	0.003	73	43	28	33	KED
|	**Cu**	**65**	**-0.007**	ug/L	0.002	33	22	10	39	KED
|	**Zn**	**66**	**-0.037**	ug/L	0.012	33	58	40	12	KED
|	**Zn**	**67**	**-0.006**	ug/L	0.082	1347	6	6	96	KED
⌊	**As**	**75**	**0.001**	ug/L	0.005	518	2	2	40	KED
	Kr	**83**		ug/L			31	39	15	Standard
⌈>	**In-1**	**115**		ug/L			6919	6791	1	KED
|	**Cd**	**111**	**0.006**	ug/L	0.004	70	1	2	33	KED
⌊	**Cd**	**114**	**0.007**	ug/L	0.006	86	1	5	59	KED
⌈>	**In**	**115**		ug/L			377198	363611	1	Standard
⌊	**Ag**	**107**	**-0.019**	ug/L	0.000	1	256	12	22	Standard
⌈>	**Tb**	**159**		ug/L			155303	149099	1	Standard
⌊	**Pb**	**208**	**-0.002**	ug/L	0.000	13	194	80	17	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: DI
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 04:15:46
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	23935	1	Standard
⌈>	**Sc**	**45**		ug/L			406838	381457	0	Standard
|	**Cr**	**52**	**0.036**	ug/L	0.019	52	14882	14446	1	Standard
⌊	**Cr**	**53**	**-0.064**	ug/L	0.006	8	242	125	7	Standard
⌈>	**Ge**	**72**		ug/L			30221	28805	2	KED
|	**Ni**	**60**	**-0.003**	ug/L	0.003	113	9	5	66	KED
|	**Ni**	**62**	**0.008**	ug/L	0.012	163	1	2	86	KED
|	**Cu**	**63**	**-0.005**	ug/L	0.002	34	43	24	25	KED
|	**Cu**	**65**	**-0.007**	ug/L	0.005	75	22	10	84	KED
|	**Zn**	**66**	**-0.049**	ug/L	0.004	8	58	33	3	KED
|	**Zn**	**67**	**-0.005**	ug/L	0.089	1641	6	6	105	KED
⌊	**As**	**75**	**-0.002**	ug/L	0.002	100	2	1	25	KED
	Kr	**83**		ug/L			31	26	25	Standard
⌈>	**In-1**	**115**		ug/L			6919	6714	1	KED
|	**Cd**	**111**	**0.003**	ug/L	0.006	212	1	2	65	KED
⌊	**Cd**	**114**	**0.000**	ug/L	0.000	160	1	1	3	KED
⌈>	**In**	**115**		ug/L			377198	352795	2	Standard
⌊	**Ag**	**107**	**-0.019**	ug/L	0.000	1	256	8	35	Standard
⌈>	**Tb**	**159**		ug/L			155303	146907	1	Standard
⌊	**Pb**	**208**	**-0.002**	ug/L	0.000	16	194	92	16	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: DI
Sample Dil Factor:
Comments:
Sample Date/Time: Tuesday, June 27, 2023 04:20:10
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\062623_A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23616	24118	2	Standard
⌈>	**Sc**	**45**		ug/L			406838	378529	7	Standard
|	**Cr**	**52**	**0.052**	ug/L	0.072	139	14882	14503	1	Standard
⌊	**Cr**	**53**	**-0.062**	ug/L	0.002	3	242	127	4	Standard
⌈>	**Ge**	**72**		ug/L			30221	29953	5	KED
|	**Ni**	**60**	**-0.004**	ug/L	0.001	16	9	4	24	KED
|	**Ni**	**62**	**-0.000**	ug/L	0.011	3129	1	1	173	KED
|	**Cu**	**63**	**-0.006**	ug/L	0.002	30	43	24	29	KED
|	**Cu**	**65**	**-0.007**	ug/L	0.001	13	22	10	20	KED
|	**Zn**	**66**	**-0.054**	ug/L	0.035	64	58	32	50	KED
|	**Zn**	**67**	**-0.009**	ug/L	0.073	814	6	6	91	KED
⌊	**As**	**75**	**0.002**	ug/L	0.004	189	2	3	32	KED
	Kr	**83**		ug/L			31	33	49	Standard
⌈>	**In-1**	**115**		ug/L			6919	6455	1	KED
|	**Cd**	**111**	**0.011**	ug/L	0.000	1	1	3	0	KED
⌊	**Cd**	**114**	**0.005**	ug/L	0.008	168	1	4	102	KED
⌈>	**In**	**115**		ug/L			377198	349584	3	Standard
⌊	**Ag**	**107**	**-0.019**	ug/L	0.001	2	256	12	55	Standard
⌈>	**Tb**	**159**		ug/L			155303	146325	6	Standard
⌊	**Pb**	**208**	**-0.002**	ug/L	0.000	10	194	91	16	Standard

INITIAL CALIBRATION DATA

EPA 6020B

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GG00009	Instrument:	ICPMS2
Calibration Date:	07/05/2023 16:31		

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF
Silver-107	0	0	0.2	16505	10	16974	20	16290.65	50	15851.86	100	15112.09
Lead-208	0	0	0.1	40660	10	40176.5	20	39750.7	50	38252.94	100	39043.5

INITIAL CALIBRATION DATA

EPA 6020B

Laboratory: Analytical Resources, LLC
Instrument: ICPMS2
Calibration: GG00009
Calibration Date: 7/5/2023

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Silver-107	13455.6	49.2	0.9993		0.998	
Lead-208	32980.61	49.1	0.9999		0.998	

INITIAL CALIBRATION DATA

EPA 6020B UCT-KED

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GG00009	Instrument:	ICPMS2
Calibration Date:	07/05/2023 16:31		

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF
Arsenic-75a	0	0	0.2	275	10	222.6	20	221.25	50	212.6	100	207.09
Cadmium-111	0	0	0.1	280	10	263.3	20	251.05	50	244.98	100	236.47
Cadmium-114	0	0	0.1	720	10	615.7	20	608.35	50	578.3	100	567.18
Copper-63	0	0	0.5	4602	10	3832.1	20	3668.05	50	3468.16	100	3363
Copper-65	0	0	0.5	2294	10	1880.1	20	1825.25	50	1692.76	100	1637.67
Zinc-66	0	0	6	511.6667	10	512.2	20	487	50	457.9	100	437.09
Zinc-67	0	0	6	74.33334	10	83.9	20	75.35	50	71.3	100	70.27

INITIAL CALIBRATION DATA

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
Instrument: ICPMS2
Calibration: GG00009
Calibration Date: 7/5/2023

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Arsenic-75a	189.7567	50.6	0.9997		0.998	
Cadmium-111	212.6333	49.5	0.9996		0.998	
Cadmium-114	514.9217	50.1	0.9997		0.998	
Copper-63	3155.552	50.9	0.9996		0.998	
Copper-65	1554.963	51.2	0.9994		0.998	
Zinc-66	400.9761	49.5	0.9993		0.998	
Zinc-67	62.52556	49.6	0.9996		0.998	

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ICP/MS 02 SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 81DN1050201

Analysis Date: 7/5/23 **Analyst:** MS **Sequence:** SLGØØ51 **Cal:** GGØØØØ9

All corrections made by analyst unless otherwise noted. MS 7/5/23

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		SEQ-CAL1	L7454		
		-CAL2	L7214		
		-CAL3	L7215		
		-CAL4	L7216		
		-CAL5	L73Ø5		
		-CAL6	L7218		
		-IBL1	—		Cr^{52}, Mn R-Value poor
		-ICV1	L6624		
		-ICB1	L7454		
		-CCV1	L73Ø5		Cr^{52}, Mn ↓ - No Cr, Mn all run
		-CCB1	L7454		
		-CRL1	L7214		
		-IFA1	L7219		Cr^{52} ↑
		-IFB1	L6973		↓
		-HCV1	L696Ø		
		-HCV2	L73Ø6		Al Satd - Al < 20,000
		-IBL2+3	—		
		-CCV2			
		-CCB2			
	✓	-CAL1			
		-CCV3			
		-CCB3			
		BLGØØ39-BLK1	REN		No Al, Cr, Mn ~~only~~
		↓ -BS1	↓		↓

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ICP/MS 02 SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 81DN1050201

Analysis Date: 7/5/23 **Analyst:** MS **Sequence:** ——— **Cal:** ———

All corrections made by analyst unless otherwise noted. MS 7/5/23

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		23GΦΦ16-Φ1	REN	5	No Cr, Mn
		23GΦΦ2Φ-Φ1	↓	2	No Cr
		23GΦΦ42-Φ1	↓	↓	↓
		SEQ-IBL4			
695→694		23FΦ695[1]-Φ6	REN	5	No Al, Cr, Mn
		BLGΦΦ39-DUP1	↓	↓	↓
		↓ -MS1	↓	↓	↓
		SEQ-IBL5			
		↓ -CCV4			Al, Cr52↓
		↓ -CCB4			
		BLFΦ838-BLK2	REN		Ag, Fe, Se only
		↓ -BS2	↓		↓
		23FΦ571-Φ2	↓	2	Ag only
		23FΦ68Φ-Φ1	↓	↓	No Cr
		23FΦ689-Φ1	↓	↓	↓
		23FΦ693-Φ1	↓	↓	↓
		23FΦ698-Φ1	↓	↓	↓
		↓ -Φ2	↓	↓	↓
		↓ -Φ3	↓	↓	↓
		SEQ-IBL6			
		↓ -CCV5			
		↓ -CCB5			
	✓	↓ -CAL1			
		↓ -CCV6			Cr52↓

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ICP/MS 02 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 81DN1050201

Analysis Date: 7/5/23 **Analyst:** MB **Sequence:** ——— **Cal:** ———

All corrections made by analyst unless otherwise noted. MB 7/5/23

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		SEQ-CCB6			
		BLF0840-BLK1	REN		No Cr, Mn
		↓ -BS1	↓		↓
		BLF0865-BLK1	↓		~~Al 2½ RL~~ Al, Se, Pb - All samples ~~Samples ND~~ ≥½ RL >10x or ND
		↓ -BS1	↓		↓
		23F0277-02	SWN	100	Pb only
		23F0536-01	↓	20	Ba, Se only
		BLF0652-DUP2	↓	↓	↓
		↓ -MS2	↓	↓	↓
		↓ -MSD2	↓	↓	Ba %R↓
		SEQ-IBL7			
		↓ -CCV7			
		↓ -CCB7			
		23F0365-17	REN		Cu, Zn↑ No Cu, Zn, Mn
IBL8 7		↓ -19	↓		Mn↑ No Mn
		23F0152-04	SWN	100	Pb only
		BLF0536-~~DUP2~~ SRL2	↓	500	↓
		~~-MS2~~		~~100~~	
		23F0152-01	SWN	100	Pb only
		BLF0536-DUP2	↓	↓	↓
		↓ -MS2	↓	↓	↓
		↓ -MSD2	↓	↓	↓
		↓ -PS2	↓	↓	60 mL K7409 ↓
		SEQ-CCV8			

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ICP/MS 02 SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 81DN1050201

Analysis Date: 7/5/23 **Analyst:** MS **Sequence:** — **Cal:** —

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		SEQ-CCB8			
		23FΦ390-Φ8	REN		
		23FΦ487-Φ6	↓		No Cr, Mn
		↓ -Φ5	↓		↓
		23FΦ477-Φ1	↓	2	Ge↓ Al, Ba only
		-Φ2	↓	↓	Cu↑ ↓
		-Φ3	↓	↓	Ge, In[1], In↓ Al only
		-Φ4	↓	↓	Ge↓ Al, Ba only
		-Φ5	↓	↓	↓ ↓
		SEQ-IBL9			
		-IBLA			
		-CCV9			Cr[52]↓
		-CCB9			
		23FΦ409-Φ1	REN		Cu↑ No Cu
		23FΦ445-Φ1	↓		
		↓ -Φ2	↓		
		23FΦ449-Φ1	↓		
		23FΦ456-Φ2	↓		
		23FΦ462-Φ1	↓		
		↓ -Φ2	↓		
		23FΦ466-Φ1	↓		
		23FΦ411-Φ1	↓	2	No Cr
		SEQ-IBLB			
		↓ -CCVA			

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ICP/MS 02 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 81DN1050201

Analysis Date: 7/5/23 **Analyst:** MB **Sequence:** — **Cal:** —

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		SEQ-CCBA			
	√	-CAL1			
		-CCVB			Cr^{52} ↓
		-CCBB			
		23FΦ469-Φ1	REN		
		23FΦ491-Φ1			
		-Φ2			
		-Φ3			
		23FΦ390-Φ2		10	Sesl. noisy — No Cr, Se
		-Φ6			No Cr
		SEQ-IBLC			
		23FΦ388-Φ2	REN		ScT - Not Needed
		-Φ5			
		SEQ-IBLD			(Cr^{53} T)
		-CCVC			
		-CCBC			
		23FΦ487-Φ2	REN		No Cr, Mn
		-Φ4			
		-Φ8			
		-Φ3			
		SEQ-IBLE			
		23FΦ487-Φ1	REN		No Cr, Mn
		BLFΦ840-DUP1			
		-MS1			A%R ↓

Analytical Resources, Incorporated
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ICP/MS 02 SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 81DN1050201

Analysis Date: 7/5/23 **Analyst:** MB **Sequence:** _____ **Cal:** _____

All corrections made by analyst unless otherwise noted. MB 7/5/23

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		BLFØ84Ø-MSD1	REN		Al%RL No Cr,Mn
		SEQ-IBLF			
		↓ -CCVD			Mn↓
		↓ -CCBD			
		23FØ39Ø-Ø4	REN	10	No Cr,Mn
		BLFØ865-DUP1	↓	↓	↓
		↓ -MS1			
		↓ -MSD1	↓	↓	↓
		SEQ-IBLG			
		23FØ39Ø-Ø3	REN	20	Assl. noisy-Value Matches DUP No Cr
		BLFØ838-DUP1	↓	↓	↓
		↓ -MS1			Cd,Se noisy - %R OK / Zn %R ↑↑
		↓ -MSD1	↓	↓	↓
		SEQ-IBLH			
		↓ -CCVE			Cr52↓
		↓ -CCBE			
		Rinse/DI			
			MB 7/5/23		

Performance Check Report

Sample ID: STD Performance Check
Sample Date/Time: Wednesday, July 05, 2023 15:30:26
Sample Description:
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\STD Performance Check.mth
Dataset File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\DataSet\Default\STD Performance Check.6186
MassCal File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Conditions File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 35
Current Dead Time (ns): 35
Torch Z position (mm): 0.00

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Be	9.0	11160.3	11160.293	238.149	2.1	Standard
	In	114.9	62483.2	62483.178	1048.574	1.7	Standard
	U	238.1	54112.0	54111.969	674.628	1.2	Standard
⌈	CeO	155.9	1252.7	0.020	0.000	2.1	Standard
| >	Ce	139.9	63693.6	63693.557	751.771	1.2	Standard
⌊	Ce++	70.0	1332.1	0.021	0.000	1.8	Standard
	Bkgd	220.0	0.1	0.133	0.139	104.6	Standard

Current Conditions File Data

Current Value	Description
1.01	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
18.00	Plasma Gas Flow
-11.25	Deflector Voltage
1600.00	ICP RF Power
-1675.00	Analog Stage Voltage
1100.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-8.00	Cell Rod Offset STD [CRO]
12.00	Discriminator Threshold
-4.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.25	RPq
1.01	DRC Mode NEB
-10.00	DRC Mode QRO
-3.00	DRC Mode CRO
-7.00	DRC Mode Cell Entrance/Exit Voltage
0.60	Cell Gas A
0.00	Cell Gas B
250.00	Axial Field Voltage
-16.50	KED Mode CRO
-12.00	KED Mode QRO
-4.00	KED Mode Cell Entrance Voltage
-39.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
5.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
475.00	KED Mode Axial Field Voltage

SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Wizard\SmartTune\ARIdaily_UCT.swz

Start Time: 7/5/2023 3:30:12 PM
End Time: 7/5/2023 3:47:00 PM

STD Performance Check - [Passed] Optimum value(s): N/A
Obtained Intensity (Be 9): 11160.29
Obtained Intensity (In 115): 62483.18
Obtained Intensity (U 238): 54111.97
Obtained Intensity (Bkgd 220): 0.13
Obtained Formula (Ce++ 70 / Ce 140): 0.021 (=1332.13 / 63693.56)
Obtained Formula (CeO 156 / Ce 140): 0.020 (=1252.72 / 63693.56)
Obtained RSD (Be 9): 0.0213
Obtained RSD (In 115): 0.0168
Obtained RSD (U 238): 0.0125

Torch Alignment - [Passed]

Vertical	Horizontal	Intensity
0.53 mm	0.91 mm	72393.97

Nebulizer Gas Flow STD/KED [NEB] - [Passed] Optimum value(s): 1.01
Obtained Intensity (In 115): 70581.93
Obtained Formula (CeO 156 / Ce 140): 0.0242 (=1636.09 / 67592.53)

Mass Calibration and Resolution - [Passed] Optimum value(s): N/A
Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.705)
Target/Obtained mass (23.985/24.025), Target/Obtained resolution (0.7/0.685)
Target/Obtained mass (114.904/114.925), Target/Obtained resolution (0.7/0.700)
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.702)

QID STD/DRC - Optimum value(s): Correlation Coefficient = 0.975; Intercept = -12.67

KED Mode QID - Optimum value(s): Correlation Coefficient = 0.999; Intercept = -13.83

SmartTune Wizard - Details

Optimization Details

SmartTune file: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Wizard\SmartTune\ARIdaily_UCT.swz

Optimization Status

Start Time: 7/5/2023 3:30:12 PM

STD Performance Check
	Optimization Settings:
		Method: STD Performance Check.mth.
		Intensity Criterion: Be 9 > 2000
		Intensity Criterion: In 115 > 40000
		Intensity Criterion: U 238 > 30000
		Intensity Criterion: Bkgd 220 <= 5
		Formula Criterion: Ce++ 70 / Ce 140 <= 0.03
		Formula Criterion: CeO 156 / Ce 140 <= 0.025
		RSD Criterion: Be 9.0122 < 0.05
		RSD Criterion: In 114.904 < 0.05
		RSD Criterion: U 238.05 < 0.05

	Optimization Results:
	Initial Try
		Obtained Intensity (Be 9): 11160.29
		Obtained Intensity (In 115): 62483.18
		Obtained Intensity (U 238): 54111.97
		Obtained Intensity (Bkgd 220): 0.13
		Obtained Formula (Ce++ 70 / Ce 140): 0.021 (=1332.13 / 63693.56)
		Obtained Formula (CeO 156 / Ce 140): 0.020 (=1252.72 / 63693.56)
		Obtained RSD (Be 9): 0.0213
		Obtained RSD (In 115): 0.0168
		Obtained RSD (U 238): 0.0125

[Passed] Optimum value(s): N/A

Torch Alignment
	Optimization Settings:
		Method: Torch Alignment.mth.
		Intensity Criterion: In 115 Maximum

	Optimization Results:
		Vertical	Horizontal	Intensity
[Passed]	0.53 mm	0.91 mm	72393.97

Nebulizer Gas Flow STD/KED [NEB]
	Optimization Settings:
		Method: Optimize.mth.
			Initial Try - Start/End/Step: 0.98/1.04/0.01.
		Intensity Criterion: In 115 Maximum
		Formula Criterion: CeO 156 / Ce 140 <= 0.025

	Optimization Results:
	Initial Try

		Obtained Intensity (In 115): 70581.93
		Obtained Formula (CeO 156 / Ce 140): 0.0242 (=1636.09 / 67592.53)
[Passed] Optimum value(s): 1.01

Mass Calibration and Resolution
Optimization Settings:
Method: Tuning.mth.
MassCal File: Default.tun
Iterations: 6
Target accuracy (+/- amu): 0.05 for Mass Cal. and 0.03 for Resolution
Peak height (%) for Res. Opt.: 10

Optimization Results:
Initial Try
Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.705)
Target/Obtained mass (23.985/24.025), Target/Obtained resolution (0.7/0.685)
Target/Obtained mass (114.904/114.925), Target/Obtained resolution (0.7/0.700)
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.702)
[Passed] Optimum value(s): N/A

QID STD/DRC
Optimization Settings:
Method: QID Calibration.mth.
Initial Try - Start/End/Step: -20/0/0.5.

Optimization Results:
Initial Try

Optimum value(s): Correlation Coefficient = 0.975; Intercept = -12.67

Analyte	Mass	Points	DAC	MaxIntensity
Li	7	41	-13	61785.3
Mg	24	41	-13	57636
In	115	41	-12	77714.8
Ce	140	41	-10	70385
Pb	208	41	-8.5	31125.9
U	238	41	-8	60789.1

KED Mode QID
Optimization Settings:
Method: QID Calibration.mth.
Initial Try - Start/End/Step: -20/0/0.5.

Optimization Results:
Initial Try

Optimum value(s): Correlation Coefficient = 0.999; Intercept = -13.83

Analyte	Mass	Points	DAC	MaxIntensity
Li	7	41	-13.5	46082.2
Mg	24	41	-13	31254.2
In	115	41	-11	52143
Ce	140	41	-10.5	60684.6
Pb	208	41	-8	23783.8
U	238	41	-7.5	38195

End Time: 7/5/2023 3:47:00 PM

SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Wizard\SmartTune\ARIdaily_UCT.swz

Start Time: 7/5/2023 4:01:09 PM
End Time: 7/5/2023 4:02:15 PM

QID STD/DRC - Optimum value(s): Correlation Coefficient = 0.989; Intercept = -12.42

SmartTune Wizard - Details

Optimization Details

SmartTune file: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Wizard\SmartTune\ARIdaily_UCT.swz

Optimization Status

Start Time: 7/5/2023 4:01:09 PM

QID STD/DRC
Optimization Settings:
Method: QID Calibration.mth.
Initial Try - Start/End/Step: -20/0/0.5.

Optimization Results:
Initial Try

Optimum value(s): Correlation Coefficient = 0.989; Intercept = -12.42

Analyte	Mass	Points	DAC	MaxIntensity
Li	7	41	-13	59122.1
Mg	24	41	-13.5	55732.5
In	115	41	-11.5	75088.8
Ce	140	41	-9.5	69215.3
Pb	208	41	-8	29706.9
U	238	41	-8	58198.3

End Time: 7/5/2023 4:02:15 PM

Performance Check Report

Sample ID: STD Performance Check
Sample Date/Time: Wednesday, July 05, 2023 16:02:35
Sample Description:
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\STD Performance Check.mth
Dataset File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\DataSet\Default\STD Performance Check.6198
MassCal File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Conditions File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 35
Current Dead Time (ns): 35
Torch Z position (mm): 0.00

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Be	9.0	12669.4	12669.416	183.372	1.4	Standard
	In	114.9	71100.5	71100.509	701.433	1.0	Standard
	U	238.1	59233.4	59233.415	256.063	0.4	Standard
⌈	CeO	155.9	1460.7	0.021	0.001	3.1	Standard
| >	Ce	139.9	69430.6	69430.649	315.209	0.5	Standard
⌊	Ce++	70.0	1730.5	0.025	0.000	1.9	Standard
	Bkgd	220.0	0.1	0.100	0.149	149.1	Standard

Current Conditions File Data

Current Value	Description
1.01	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
18.00	Plasma Gas Flow
-11.25	Deflector Voltage
1600.00	ICP RF Power
-1675.00	Analog Stage Voltage
1100.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-8.00	Cell Rod Offset STD [CRO]
12.00	Discriminator Threshold
-4.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.25	RPq
1.01	DRC Mode NEB
-10.00	DRC Mode QRO
-3.00	DRC Mode CRO
-7.00	DRC Mode Cell Entrance/Exit Voltage
0.60	Cell Gas A
0.00	Cell Gas B
250.00	Axial Field Voltage
-16.50	KED Mode CRO
-12.00	KED Mode QRO
-4.00	KED Mode Cell Entrance Voltage
-39.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
5.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
475.00	KED Mode Axial Field Voltage

SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Wizard\SmartTune\ARIdaily_UCT.swz

Start Time: 7/5/2023 4:02:34 PM
End Time: 7/5/2023 4:04:39 PM

STD Performance Check - [Passed] Optimum value(s): N/A
Obtained Intensity (Be 9): 12669.42
Obtained Intensity (In 115): 71100.51
Obtained Intensity (U 238): 59233.42
Obtained Intensity (Bkgd 220): 0.10
Obtained Formula (Ce++ 70 / Ce 140): 0.025 (=1730.50 / 69430.65)
Obtained Formula (CeO 156 / Ce 140): 0.021 (=1460.67 / 69430.65)
Obtained RSD (Be 9): 0.0145
Obtained RSD (In 115): 0.0099
Obtained RSD (U 238): 0.0043

SmartTune Wizard - Details

Optimization Details

SmartTune file: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Wizard\SmartTune\ARIdaily_UCT.swz

Optimization Status

Start Time: 7/5/2023 4:02:34 PM

STD Performance Check

Optimization Settings:

Method: STD Performance Check.mth.
Intensity Criterion: Be 9 > 2000
Intensity Criterion: In 115 > 40000
Intensity Criterion: U 238 > 30000
Intensity Criterion: Bkgd 220 <= 5
Formula Criterion: Ce++ 70 / Ce 140 <= 0.03
Formula Criterion: CeO 156 / Ce 140 <= 0.025
RSD Criterion: Be 9.0122 < 0.05
RSD Criterion: In 114.904 < 0.05
RSD Criterion: U 238.05 < 0.05

Optimization Results:

Initial Try

Obtained Intensity (Be 9): 12669.42
Obtained Intensity (In 115): 71100.51
Obtained Intensity (U 238): 59233.42
Obtained Intensity (Bkgd 220): 0.10
Obtained Formula (Ce++ 70 / Ce 140): 0.025 (=1730.50 / 69430.65)
Obtained Formula (CeO 156 / Ce 140): 0.021 (=1460.67 / 69430.65)
Obtained RSD (Be 9): 0.0145
Obtained RSD (In 115): 0.0099
Obtained RSD (U 238): 0.0043

[Passed] Optimum value(s): N/A

End Time: 7/5/2023 4:04:39 PM

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 16:31:49
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L				27612	1	Standard
⌈>	**Sc**	**45**		ug/L				758633	1	Standard
|	**Al**	**27**		ug/L				17731	3	Standard
|	**Cr**	**52**		ug/L				17652	1	Standard
|	**Cr**	**53**		ug/L				354	1	Standard
|	**Fe**	**54**		ug/L				81423	2	Standard
|	**Fe**	**57**		ug/L				16670	2	Standard
⌊	**Mn**	**55**		ug/L				1787	1	Standard
⌈>	**Ge**	**72**		ug/L				32154	1	KED
|	**Co**	**59**		ug/L				27	14	KED
|	**Ni**	**60**		ug/L				27	8	KED
|	**Ni**	**62**		ug/L				9	40	KED
|	**Cu**	**63**		ug/L				450	5	KED
|	**Cu**	**65**		ug/L				220	7	KED
|	**Zn**	**66**		ug/L				63	21	KED
|	**Zn**	**67**		ug/L				8	12	KED
|	**As**	**75**		ug/L				9	7	KED
⌊	**Se**	**78**		ug/L				14	4	KED
	Kr	**83**		ug/L				57	3	Standard
⌈>	**In-1**	**115**		ug/L				8090	2	KED
|	**Mo**	**98**		ug/L				12	28	KED
|	**Cd**	**111**		ug/L				7	12	KED
⌊	**Cd**	**114**		ug/L				8	97	KED
⌈>	**In**	**115**		ug/L				454489	0	Standard
|	**Ag**	**107**		ug/L				81	11	Standard
|	**Ba**	**135**		ug/L				83	12	Standard
⌊	**Ba**	**137**		ug/L				133	5	Standard
⌈>	**Tb**	**159**		ug/L				108807	1	Standard
⌊	**Pb**	**208**		ug/L				112	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL2
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 16:36:44
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27612	33370	1	Standard
⌈>	**Sc**	**45**		ug/L			758633	729503	1	Standard
|	**Al**	**27**	**20.000**	ug/L	0.464	2	17731	881429	0	Standard
|	**Cr**	**52**	**0.500**	ug/L	0.027	5	17652	31074	0	Standard
|	**Cr**	**53**	**0.500**	ug/L	0.031	6	354	1826	3	Standard
|	**Fe**	**54**	**36.000**	ug/L	2.500	6	81423	146281	1	Standard
|	**Fe**	**57**	**36.000**	ug/L	1.686	4	16670	43074	1	Standard
⌊	**Mn**	**55**	**0.500**	ug/L	0.009	1	1787	19747	2	Standard
⌈>	**Ge**	**72**		ug/L			32154	32364	1	KED
|	**Co**	**59**	**0.200**	ug/L	0.009	4	27	998	2	KED
|	**Ni**	**60**	**0.500**	ug/L	0.016	3	27	681	2	KED
|	**Ni**	**62**	**0.500**	ug/L	0.139	27	9	125	24	KED
|	**Cu**	**63**	**0.500**	ug/L	0.019	3	450	2301	4	KED
|	**Cu**	**65**	**0.500**	ug/L	0.022	4	220	1147	4	KED
|	**Zn**	**66**	**6.000**	ug/L	0.194	3	63	3070	1	KED
|	**Zn**	**67**	**6.000**	ug/L	0.254	4	8	446	4	KED
|	**As**	**75**	**0.200**	ug/L	0.034	16	9	55	12	KED
⌊	**Se**	**78**	**0.500**	ug/L	0.135	26	14	28	11	KED
	Kr	**83**		ug/L			57	66	4	Standard
⌈>	**In-1**	**115**		ug/L			8090	8221	1	KED
|	**Mo**	**98**	**0.200**	ug/L	0.002	1	12	198	0	KED
|	**Cd**	**111**	**0.100**	ug/L	0.033	32	7	28	22	KED
⌊	**Cd**	**114**	**0.100**	ug/L	0.019	19	8	72	16	KED
⌈>	**In**	**115**		ug/L			454489	456618	2	Standard
|	**Ag**	**107**	**0.200**	ug/L	0.005	2	81	3301	4	Standard
|	**Ba**	**135**	**0.500**	ug/L	0.024	4	83	2133	4	Standard
⌊	**Ba**	**137**	**0.500**	ug/L	0.015	2	133	3658	4	Standard
⌈>	**Tb**	**159**		ug/L			108807	107006	1	Standard
⌊	**Pb**	**208**	**0.100**	ug/L	0.004	4	112	4066	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL3
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 16:41:38
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27612	40151	3	Standard
⌈>	**Sc**	**45**		ug/L			758633	717188	1	Standard
|	**Al**	**27**	**1000.028**	ug/L	16.982	1	17731	45731398	0	Standard
|	**Cr**	**52**	**9.999**	ug/L	0.154	1	17652	284958	2	Standard
|	**Cr**	**53**	**10.001**	ug/L	0.254	2	354	31294	1	Standard
|	**Fe**	**54**	**1000.116**	ug/L	14.067	1	81423	2117532	0	Standard
|	**Fe**	**57**	**1000.056**	ug/L	21.830	2	16670	788506	3	Standard
⌊	**Mn**	**55**	**10.001**	ug/L	0.093	0	1787	374650	1	Standard
⌈>	**Ge**	**72**		ug/L			32154	31348	1	KED
|	**Co**	**59**	**10.000**	ug/L	0.249	2	27	46528	1	KED
|	**Ni**	**60**	**10.001**	ug/L	0.314	3	27	13345	1	KED
|	**Ni**	**62**	**10.000**	ug/L	0.237	2	9	2257	1	KED
|	**Cu**	**63**	**10.001**	ug/L	0.213	2	450	38321	0	KED
|	**Cu**	**65**	**10.001**	ug/L	0.245	2	220	18801	0	KED
|	**Zn**	**66**	**10.110**	ug/L	0.443	4	63	5122	2	KED
|	**Zn**	**67**	**10.411**	ug/L	1.062	10	8	839	9	KED
|	**As**	**75**	**10.000**	ug/L	0.200	2	9	2226	0	KED
⌊	**Se**	**78**	**9.998**	ug/L	0.332	3	14	261	2	KED
	Kr	**83**		ug/L			57	52	37	Standard
⌈>	**In-1**	**115**		ug/L			8090	7953	2	KED
|	**Mo**	**98**	**10.001**	ug/L	0.341	3	12	10599	1	KED
|	**Cd**	**111**	**10.000**	ug/L	0.176	1	7	2633	1	KED
⌊	**Cd**	**114**	**10.000**	ug/L	0.270	2	8	6157	0	KED
⌈>	**In**	**115**		ug/L			454489	446818	1	Standard
|	**Ag**	**107**	**10.000**	ug/L	0.212	2	81	169740	1	Standard
|	**Ba**	**135**	**10.001**	ug/L	0.071	0	83	41010	1	Standard
⌊	**Ba**	**137**	**10.001**	ug/L	0.002	0	133	71279	1	Standard
⌈>	**Tb**	**159**		ug/L			108807	107276	0	Standard
⌊	**Pb**	**208**	**10.000**	ug/L	0.033	0	112	401765	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL4
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 16:46:46
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27612	38941	2	Standard
⌈>	**Sc**	**45**		ug/L			758633	701056	1	Standard
|	**Al**	**27**	**2006.634**	ug/L	49.964	2	17731	90878488	1	Standard
|	**Cr**	**52**	**20.006**	ug/L	0.557	2	17652	541542	2	Standard
|	**Cr**	**53**	**19.952**	ug/L	0.535	2	354	60126	0	Standard
|	**Fe**	**54**	**2002.297**	ug/L	28.143	1	81423	4087567	2	Standard
|	**Fe**	**57**	**1998.164**	ug/L	56.515	2	16670	1518822	3	Standard
⌊	**Mn**	**55**	**19.991**	ug/L	0.830	4	1787	728876	3	Standard
⌈>	**Ge**	**72**		ug/L			32154	30928	0	KED
|	**Co**	**59**	**19.959**	ug/L	0.275	1	27	90865	0	KED
|	**Ni**	**60**	**19.990**	ug/L	0.242	1	27	26243	0	KED
|	**Ni**	**62**	**19.866**	ug/L	0.567	2	9	4302	3	KED
|	**Cu**	**63**	**19.900**	ug/L	0.197	0	450	73361	0	KED
|	**Cu**	**65**	**19.957**	ug/L	0.044	0	220	36505	0	KED
|	**Zn**	**66**	**19.895**	ug/L	0.286	1	63	9740	0	KED
|	**Zn**	**67**	**19.744**	ug/L	0.734	3	8	1507	4	KED
|	**As**	**75**	**20.038**	ug/L	0.254	1	9	4425	0	KED
⌊	**Se**	**78**	**19.993**	ug/L	1.208	6	14	500	5	KED
	Kr	**83**		ug/L			57	58	13	Standard
⌈>	**In-1**	**115**		ug/L			8090	7817	2	KED
|	**Mo**	**98**	**20.031**	ug/L	0.467	2	12	20992	1	KED
|	**Cd**	**111**	**19.884**	ug/L	0.608	3	7	5021	1	KED
⌊	**Cd**	**114**	**20.025**	ug/L	0.951	4	8	12167	2	KED
⌈>	**In**	**115**		ug/L			454489	443536	2	Standard
|	**Ag**	**107**	**19.868**	ug/L	1.050	5	81	325813	3	Standard
|	**Ba**	**135**	**20.013**	ug/L	0.453	2	83	81577	1	Standard
⌊	**Ba**	**137**	**20.002**	ug/L	0.508	2	133	141403	2	Standard
⌈>	**Tb**	**159**		ug/L			108807	107221	1	Standard
⌊	**Pb**	**208**	**19.960**	ug/L	0.328	1	112	795014	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL5
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 16:52:04
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27612	29554	1	Standard
⌈>	**Sc**	**45**		ug/L			758633	693650	1	Standard
|	**Al**	**27**	**4967.601**	ug/L	87.136	1	17731	215621943	0	Standard
|	**Cr**	**52**	**49.532**	ug/L	1.023	2	17652	1245194	1	Standard
|	**Cr**	**53**	**49.797**	ug/L	0.516	1	354	145090	0	Standard
|	**Fe**	**54**	**4975.289**	ug/L	106.494	2	81423	9699373	0	Standard
|	**Fe**	**57**	**5030.342**	ug/L	130.882	2	16670	3876467	1	Standard
⌊	**Mn**	**55**	**49.800**	ug/L	1.843	3	1787	1759034	2	Standard
⌈>	**Ge**	**72**		ug/L			32154	30177	2	KED
|	**Co**	**59**	**49.805**	ug/L	1.445	2	27	216896	0	KED
|	**Ni**	**60**	**49.765**	ug/L	1.001	2	27	62236	0	KED
|	**Ni**	**62**	**49.870**	ug/L	0.792	1	9	10388	1	KED
|	**Cu**	**63**	**49.723**	ug/L	0.829	1	450	173408	1	KED
|	**Cu**	**65**	**49.584**	ug/L	1.741	3	220	84638	1	KED
|	**Zn**	**66**	**49.658**	ug/L	1.764	3	63	22895	1	KED
|	**Zn**	**67**	**49.642**	ug/L	1.739	3	8	3565	3	KED
|	**As**	**75**	**49.901**	ug/L	1.207	2	9	10630	0	KED
⌊	**Se**	**78**	**49.702**	ug/L	1.553	3	14	1159	1	KED
	Kr	**83**		ug/L			57	62	19	Standard
⌈>	**In-1**	**115**		ug/L			8090	7481	3	KED
|	**Mo**	**98**	**50.043**	ug/L	1.406	2	12	50370	0	KED
|	**Cd**	**111**	**50.123**	ug/L	1.861	3	7	12249	0	KED
⌊	**Cd**	**114**	**49.957**	ug/L	1.825	3	8	28915	1	KED
⌈>	**In**	**115**		ug/L			454489	428510	1	Standard
|	**Ag**	**107**	**50.001**	ug/L	1.735	3	81	792593	2	Standard
|	**Ba**	**135**	**50.011**	ug/L	0.342	0	83	197107	0	Standard
⌊	**Ba**	**137**	**50.009**	ug/L	0.830	1	133	341728	0	Standard
⌈>	**Tb**	**159**		ug/L			108807	105690	1	Standard
⌊	**Pb**	**208**	**49.781**	ug/L	0.457	0	112	1912647	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL6
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 16:59:02
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27612	36140	2	Standard
⌈>	**Sc**	**45**		ug/L			758633	659885	0	Standard
|	**Al**	**27**	**10044.490**	ug/L	297.500	2	17731	421009735	2	Standard
|	**Cr**	**52**	**102.486**	ug/L	1.492	1	17652	2653367	0	Standard
|	**Cr**	**53**	**100.482**	ug/L	2.737	2	354	282716	1	Standard
|	**Fe**	**54**	**10004.649**	ug/L	361.733	3	81423	18511506	2	Standard
|	**Fe**	**57**	**10041.917**	ug/L	267.345	2	16670	7451756	1	Standard
⌊	**Mn**	**55**	**101.867**	ug/L	1.176	1	1787	3649519	2	Standard
⌈>	**Ge**	**72**		ug/L			32154	29132	2	KED
|	**Co**	**59**	**100.631**	ug/L	2.443	2	27	432161	0	KED
|	**Ni**	**60**	**100.083**	ug/L	3.122	3	27	121137	2	KED
|	**Ni**	**62**	**99.524**	ug/L	1.230	1	9	19693	1	KED
|	**Cu**	**63**	**100.003**	ug/L	2.005	2	450	336300	1	KED
|	**Cu**	**65**	**99.884**	ug/L	3.077	3	220	163767	1	KED
|	**Zn**	**66**	**99.606**	ug/L	3.461	3	63	43709	1	KED
|	**Zn**	**67**	**100.337**	ug/L	1.497	1	8	7027	1	KED
|	**As**	**75**	**100.169**	ug/L	2.153	2	9	20709	0	KED
⌊	**Se**	**78**	**100.643**	ug/L	1.966	1	14	2302	0	KED
	Kr	**83**		ug/L			57	88	13	Standard
⌈>	**In-1**	**115**		ug/L			8090	7338	0	KED
|	**Mo**	**98**	**100.521**	ug/L	0.670	0	12	101049	0	KED
|	**Cd**	**111**	**99.672**	ug/L	1.560	1	7	23647	1	KED
⌊	**Cd**	**114**	**99.966**	ug/L	2.217	2	8	56718	1	KED
⌈>	**In**	**115**		ug/L			454489	424380	2	Standard
|	**Ag**	**107**	**99.104**	ug/L	0.584	0	81	1511209	2	Standard
|	**Ba**	**135**	**100.103**	ug/L	2.485	2	83	391920	2	Standard
⌊	**Ba**	**137**	**100.149**	ug/L	2.026	2	133	680999	2	Standard
⌈>	**Tb**	**159**		ug/L			108807	106834	0	Standard
⌊	**Pb**	**208**	**100.128**	ug/L	5.795	5	112	3904350	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL1
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 17:06:40
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27612	33408	4	Standard
⌈>	**Sc**	**45**		ug/L			758633	692030	1	Standard
|	**Al**	**27**	**0.080**	ug/L	0.005	6	17731	19682	2	Standard
|	**Cr**	**52**	**0.040**	ug/L	0.013	31	17652	17185	0	Standard
|	**Cr**	**53**	**-0.004**	ug/L	0.004	88	354	311	3	Standard
|	**Fe**	**54**	**2.361**	ug/L	1.230	52	81423	78833	2	Standard
|	**Fe**	**57**	**1.993**	ug/L	0.943	47	16670	16752	3	Standard
⌊	**Mn**	**55**	**-0.007**	ug/L	0.001	11	1787	1359	1	Standard
⌈>	**Ge**	**72**		ug/L			32154	30964	1	KED
|	**Co**	**59**	**0.004**	ug/L	0.001	38	27	43	15	KED
|	**Ni**	**60**	**0.007**	ug/L	0.004	56	27	34	12	KED
|	**Ni**	**62**	**0.029**	ug/L	0.033	113	9	15	45	KED
|	**Cu**	**63**	**-0.055**	ug/L	0.007	12	450	237	10	KED
|	**Cu**	**65**	**-0.063**	ug/L	0.011	18	220	103	20	KED
|	**Zn**	**66**	**0.068**	ug/L	0.041	60	63	92	21	KED
|	**Zn**	**67**	**0.072**	ug/L	0.101	141	8	13	55	KED
|	**As**	**75**	**0.041**	ug/L	0.016	39	9	18	19	KED
⌊	**Se**	**78**	**0.370**	ug/L	0.108	29	14	23	12	KED
	Kr	**83**		ug/L			57	47	24	Standard
⌈>	**In-1**	**115**		ug/L			8090	7900	1	KED
|	**Mo**	**98**	**0.081**	ug/L	0.014	17	12	99	16	KED
|	**Cd**	**111**	**0.007**	ug/L	0.014	206	7	9	39	KED
⌊	**Cd**	**114**	**0.003**	ug/L	0.005	139	8	9	29	KED
⌈>	**In**	**115**		ug/L			454489	451067	1	Standard
|	**Ag**	**107**	**0.024**	ug/L	0.002	8	81	466	7	Standard
|	**Ba**	**135**	**0.006**	ug/L	0.001	16	83	109	5	Standard
⌊	**Ba**	**137**	**0.006**	ug/L	0.000	8	133	174	3	Standard
⌈>	**Tb**	**159**		ug/L			108807	107734	1	Standard
⌊	**Pb**	**208**	**0.006**	ug/L	0.000	7	112	357	4	Standard

Sample Information

Sample Date/Time: Wednesday, July 05, 2023 16:59:02
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED
Mass Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Conditions File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

Calibration

Analyte	Mass	r Corr Coef	Slope	Std 1 Conc	Std 2 Conc	Std 3 Conc	Std 4 Conc	Std 5 Conc
C	13							
Sc	45							
Al	27	**0.9999**	0.064	20.00	1000	2000	5000	10000
Cr	52	**0.9989**	0.039	0.50	10	20	50	100
Cr	53	**1.0000**	0.004	0.50	10	20	50	100
Fe	54	**1.0000**	0.003	36.00	1000	2000	5000	10000
Fe	57	**1.0000**	0.001	36.00	1000	2000	5000	10000
Mn	55	**0.9994**	0.054	0.50	10	20	50	100
Ge	72							
Co	59	**0.9999**	0.147	0.20	10	20	50	100
Ni	60	**1.0000**	0.042	0.50	10	20	50	100
Ni	62	**1.0000**	0.007	0.50	10	20	50	100
Cu	63	**1.0000**	0.115	0.50	10	20	50	100
Cu	65	**1.0000**	0.056	0.50	10	20	50	100
Zn	66	**0.9999**	0.015	6.00	10	20	50	100
Zn	67	**0.9999**	0.002	6.00	10	20	50	100
As	75	**1.0000**	0.007	0.20	10	20	50	100
Se	78	**0.9999**	0.001	0.50	10	20	50	100
Kr	83							
In-1	115							
Mo	98	**1.0000**	0.137	0.20	10	20	50	100
Cd	111	**1.0000**	0.032	0.10	10	20	50	100
Cd	114	**1.0000**	0.077	0.10	10	20	50	100
In	115							
Ag	107	**0.9999**	0.036	0.20	10	20	50	100
Ba	135	**1.0000**	0.009	0.50	10	20	50	100
Ba	137	**1.0000**	0.016	0.50	10	20	50	100
Tb	159							
Pb	208	**1.0000**	0.365	0.10	10	20	50	100

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-ICV1
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 17:14:18
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27612	31879	2	Standard
⌈>	**Sc**	**45**		ug/L			758633	676598	1	Standard
|	**Al**	**27**	**4997.031**	ug/L	31.341	0	17731	214770704	1	Standard
|	**Cr**	**52**	**48.173**	ug/L	0.833	1	17652	1287117	1	Standard
|	**Cr**	**53**	**50.467**	ug/L	0.702	1	354	145760	1	Standard
|	**Fe**	**54**	**5008.196**	ug/L	36.134	0	81423	9538823	1	Standard
|	**Fe**	**57**	**5086.668**	ug/L	43.690	0	16670	3877859	1	Standard
⌊	**Mn**	**55**	**48.026**	ug/L	0.676	1	1787	1765011	2	Standard
⌈>	**Ge**	**72**		ug/L			32154	30317	0	KED
|	**Co**	**59**	**49.183**	ug/L	0.467	0	27	219878	0	KED
|	**Ni**	**60**	**50.406**	ug/L	0.225	0	27	63526	1	KED
|	**Ni**	**62**	**49.845**	ug/L	1.140	2	9	10269	1	KED
|	**Cu**	**63**	**50.276**	ug/L	1.196	2	450	176171	1	KED
|	**Cu**	**65**	**51.232**	ug/L	1.235	2	220	87562	3	KED
|	**Zn**	**66**	**48.500**	ug/L	0.200	0	63	22190	1	KED
|	**Zn**	**67**	**49.265**	ug/L	1.692	3	8	3594	2	KED
|	**As**	**75**	**46.732**	ug/L	0.289	0	9	10062	0	KED
⌊	**Se**	**78**	**75.826**	ug/L	0.601	0	14	1809	0	KED
	Kr	**83**		ug/L			57	66	26	Standard
⌈>	**In-1**	**115**		ug/L			8090	7604	3	KED
|	**Mo**	**98**	**48.420**	ug/L	1.211	2	12	50420	1	KED
|	**Cd**	**111**	**49.360**	ug/L	2.149	4	7	12127	0	KED
⌊	**Cd**	**114**	**50.101**	ug/L	1.136	2	8	29451	1	KED
⌈>	**In**	**115**		ug/L			454489	437087	3	Standard
|	**Ag**	**107**	**51.255**	ug/L	1.000	1	81	804660	2	Standard
|	**Ba**	**135**	**49.714**	ug/L	0.905	1	83	200488	1	Standard
⌊	**Ba**	**137**	**49.308**	ug/L	1.466	2	133	345226	0	Standard
⌈>	**Tb**	**159**		ug/L			108807	108183	1	Standard
⌊	**Pb**	**208**	**49.488**	ug/L	1.193	2	112	1954139	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-ICB1
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 17:22:04
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27612	26168	2	Standard
>	**Sc**	**45**		ug/L			758633	725228	1	Standard
	Al	**27**	**-0.113**	ug/L	0.006	5	17731	11725	1	Standard
	Cr	**52**	**-0.027**	ug/L	0.009	33	17652	16118	2	Standard
	Cr	**53**	**-0.007**	ug/L	0.003	38	354	318	2	Standard
	Fe	**54**	**-0.945**	ug/L	0.423	44	81423	75920	1	Standard
	Fe	**57**	**2.202**	ug/L	0.640	29	16670	17727	2	Standard
	Mn	**55**	**-0.007**	ug/L	0.001	13	1787	1426	1	Standard
>	**Ge**	**72**		ug/L			32154	31074	0	KED
	Co	**59**	**0.003**	ug/L	0.002	78	27	40	26	KED
	Ni	**60**	**0.002**	ug/L	0.004	231	27	28	17	KED
	Ni	**62**	**0.016**	ug/L	0.029	174	9	12	48	KED
	Cu	**63**	**-0.082**	ug/L	0.001	0	450	139	1	KED
	Cu	**65**	**-0.084**	ug/L	0.010	11	220	66	24	KED
	Zn	**66**	**0.010**	ug/L	0.032	314	63	66	22	KED
	Zn	**67**	**-0.013**	ug/L	0.025	193	8	7	25	KED
	As	**75**	**0.038**	ug/L	0.011	28	9	17	13	KED
	Se	**78**	**0.217**	ug/L	0.148	68	14	19	18	KED
	Kr	**83**		ug/L			57	43	15	Standard
>	**In-1**	**115**		ug/L			8090	7778	2	KED
	Mo	**98**	**0.038**	ug/L	0.010	25	12	53	21	KED
	Cd	**111**	**-0.008**	ug/L	0.008	110	7	5	36	KED
	Cd	**114**	**0.004**	ug/L	0.002	46	8	9	10	KED
>	**In**	**115**		ug/L			454489	447383	2	Standard
	Ag	**107**	**0.014**	ug/L	0.001	7	81	300	4	Standard
	Ba	**135**	**-0.010**	ug/L	0.002	14	83	40	17	Standard
	Ba	**137**	**-0.009**	ug/L	0.001	6	133	63	6	Standard
>	**Tb**	**159**		ug/L			108807	106490	1	Standard
	Pb	**208**	**0.002**	ug/L	0.001	52	112	172	19	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV1
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 17:28:40
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			27612	28574	1	Standard
>	Sc	45		ug/L			758633	695006	1	Standard
	Al	27	4655.543	ug/L	147.640	3	17731	205566564	3	Standard
	Cr	52	44.205	ug/L	1.050	2	17652	1214446	1	Standard
	Cr	53	47.011	ug/L	0.310	0	354	139513	1	Standard
	Fe	54	4726.002	ug/L	106.779	2	81423	9249504	1	Standard
	Fe	57	4753.777	ug/L	105.869	2	16670	3723405	1	Standard
	Mn	55	44.779	ug/L	1.117	2	1787	1690330	2	Standard
>	Ge	72		ug/L			32154	30503	3	KED
	Co	59	47.180	ug/L	1.831	3	27	212073	1	KED
	Ni	60	47.757	ug/L	2.592	5	27	60489	2	KED
	Ni	62	48.590	ug/L	1.550	3	9	10066	0	KED
	Cu	63	48.570	ug/L	1.653	3	450	171153	0	KED
	Cu	65	49.141	ug/L	1.059	2	220	84464	1	KED
	Zn	66	48.027	ug/L	1.769	3	63	22093	1	KED
	Zn	67	51.426	ug/L	0.859	1	8	3774	1	KED
	As	75	48.100	ug/L	1.660	3	9	10413	1	KED
	Se	78	48.854	ug/L	2.622	5	14	1176	3	KED
	Kr	83		ug/L			57	71	14	Standard
>	In-1	115		ug/L			8090	7565	2	KED
	Mo	98	47.590	ug/L	1.324	2	12	49306	1	KED
	Cd	111	48.584	ug/L	1.521	3	7	11880	0	KED
	Cd	114	49.086	ug/L	2.009	4	8	28700	2	KED
>	In	115		ug/L			454489	437221	2	Standard
	Ag	107	48.428	ug/L	0.720	1	81	760762	2	Standard
	Ba	135	47.956	ug/L	1.164	2	83	193465	1	Standard
	Ba	137	47.664	ug/L	0.775	1	133	333955	0	Standard
>	Tb	159		ug/L			108807	107908	1	Standard
	Pb	208	47.511	ug/L	0.788	1	112	1871541	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB1
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 17:35:58
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27612	26096	0	Standard
>	**Sc**	**45**		ug/L			758633	721668	0	Standard
	Al	**27**	**-0.150**	ug/L	0.008	5	17731	9995	3	Standard
	Cr	**52**	**-0.026**	ug/L	0.019	72	17652	16055	3	Standard
	Cr	**53**	**-0.015**	ug/L	0.004	24	354	290	3	Standard
	Fe	**54**	**-0.862**	ug/L	0.369	42	81423	75716	0	Standard
	Fe	**57**	**2.535**	ug/L	0.525	20	16670	17912	2	Standard
	Mn	**55**	**-0.009**	ug/L	0.001	13	1787	1367	2	Standard
>	**Ge**	**72**		ug/L			32154	30885	0	KED
	Co	**59**	**0.002**	ug/L	0.002	104	27	36	29	KED
	Ni	**60**	**0.003**	ug/L	0.011	387	27	29	47	KED
	Ni	**62**	**-0.007**	ug/L	0.024	326	9	7	66	KED
	Cu	**63**	**-0.092**	ug/L	0.001	1	450	104	4	KED
	Cu	**65**	**-0.091**	ug/L	0.006	6	220	53	18	KED
	Zn	**66**	**-0.001**	ug/L	0.010	696	63	60	7	KED
	Zn	**67**	**0.073**	ug/L	0.054	73	8	13	28	KED
	As	**75**	**0.034**	ug/L	0.019	55	9	16	25	KED
	Se	**78**	**0.426**	ug/L	0.013	3	14	24	1	KED
	Kr	**83**		ug/L			57	45	38	Standard
>	**In-1**	**115**		ug/L			8090	7729	1	KED
	Mo	**98**	**0.041**	ug/L	0.009	22	12	55	19	KED
	Cd	**111**	**-0.004**	ug/L	0.008	228	7	6	31	KED
	Cd	**114**	**-0.002**	ug/L	0.002	128	8	6	16	KED
>	**In**	**115**		ug/L			454489	451533	0	Standard
	Ag	**107**	**0.013**	ug/L	0.003	20	81	294	15	Standard
	Ba	**135**	**-0.006**	ug/L	0.002	29	83	59	11	Standard
	Ba	**137**	**-0.008**	ug/L	0.002	19	133	71	17	Standard
>	**Tb**	**159**		ug/L			108807	106711	1	Standard
	Pb	**208**	**0.001**	ug/L	0.001	45	112	166	16	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CRL1
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 17:48:21
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27612	30535	3	Standard
>	**Sc**	**45**		ug/L			758633	686126	0	Standard
	Al	**27**	**18.461**	ug/L	0.401	2	17731	820547	1	Standard
	Cr	**52**	**0.481**	ug/L	0.014	2	17652	28842	0	Standard
	Cr	**53**	**0.476**	ug/L	0.018	3	354	1711	2	Standard
	Fe	**54**	**34.432**	ug/L	1.720	4	81423	139625	1	Standard
	Fe	**57**	**36.446**	ug/L	0.741	2	16670	43145	0	Standard
	Mn	**55**	**0.455**	ug/L	0.017	3	1787	18568	2	Standard
>	**Ge**	**72**		ug/L			32154	30762	1	KED
	Co	**59**	**0.216**	ug/L	0.011	5	27	1005	3	KED
	Ni	**60**	**0.481**	ug/L	0.030	6	27	641	4	KED
	Ni	**62**	**0.482**	ug/L	0.039	8	9	109	7	KED
	Cu	**63**	**0.401**	ug/L	0.022	5	450	1852	2	KED
	Cu	**65**	**0.420**	ug/L	0.026	6	220	936	4	KED
	Zn	**66**	**6.202**	ug/L	0.197	3	63	2931	2	KED
	Zn	**67**	**5.687**	ug/L	0.185	3	8	428	2	KED
	As	**75**	**0.232**	ug/L	0.030	12	9	59	9	KED
	Se	**78**	**0.577**	ug/L	0.245	42	14	27	19	KED
	Kr	**83**		ug/L			57	52	29	Standard
>	**In-1**	**115**		ug/L			8090	7640	2	KED
	Mo	**98**	**0.218**	ug/L	0.006	2	12	240	4	KED
	Cd	**111**	**0.118**	ug/L	0.043	36	7	36	27	KED
	Cd	**114**	**0.103**	ug/L	0.031	29	8	68	25	KED
>	**In**	**115**		ug/L			454489	454484	2	Standard
	Ag	**107**	**0.203**	ug/L	0.003	1	81	3397	1	Standard
	Ba	**135**	**0.451**	ug/L	0.007	1	83	1975	3	Standard
	Ba	**137**	**0.469**	ug/L	0.024	5	133	3543	3	Standard
>	**Tb**	**159**		ug/L			108807	108075	2	Standard
	Pb	**208**	**0.101**	ug/L	0.001	0	112	4110	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IFA1
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 17:54:26
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			27612	197603	0	Standard
>	Sc	45		ug/L			758633	806894	1	Standard
	Al	27	18287.920	ug/L	795.802	4	17731	936996633	3	Standard
	Cr	52	0.830	ug/L	0.016	1	17652	44909	2	Standard
	Cr	53	7.473	ug/L	0.106	1	354	26065	2	Standard
	Fe	54	18593.470	ug/L	219.231	1	81423	41997619	0	Standard
	Fe	57	18351.155	ug/L	782.696	4	16670	16633018	2	Standard
	Mn	55	0.128	ug/L	0.004	3	1787	7505	1	Standard
>	Ge	72		ug/L			32154	27626	0	KED
	Co	59	0.024	ug/L	0.002	8	27	123	7	KED
	Ni	60	0.096	ug/L	0.013	13	27	133	11	KED
	Ni	62	0.271	ug/L	0.017	6	9	59	5	KED
	Cu	63	-0.013	ug/L	0.009	70	450	345	7	KED
	Cu	65	-0.011	ug/L	0.005	50	220	172	4	KED
	Zn	66	0.315	ug/L	0.026	8	63	185	6	KED
	Zn	67	0.354	ug/L	0.086	24	8	31	18	KED
	As	75	0.067	ug/L	0.031	46	9	21	28	KED
	Se	78	0.294	ug/L	0.241	82	14	19	26	KED
	Kr	83		ug/L			57	174	4	Standard
>	In-1	115		ug/L			8090	7180	1	KED
	Mo	98	366.984	ug/L	6.175	1	12	360906	0	KED
	Cd	111	0.083	ug/L	0.028	33	7	26	24	KED
	Cd	114	0.070	ug/L	0.022	31	8	46	27	KED
>	In	115		ug/L			454489	447248	2	Standard
	Ag	107	0.020	ug/L	0.001	6	81	401	3	Standard
	Ba	135	0.105	ug/L	0.012	11	83	518	11	Standard
	Ba	137	0.096	ug/L	0.005	5	133	818	2	Standard
>	Tb	159		ug/L			108807	112006	1	Standard
	Pb	208	0.029	ug/L	0.001	2	112	1281	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IFB1
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 17:59:55
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			27612	200914	0	Standard
>	Sc	45		ug/L			758633	819299	3	Standard
	Al	27	17982.254	ug/L	918.727	5	17731	934891785	2	Standard
	Cr	52	18.394	ug/L	0.360	1	17652	606768	2	Standard
	Cr	53	25.757	ug/L	0.975	3	354	90212	1	Standard
	Fe	54	18334.692	ug/L	602.274	3	81423	42025570	0	Standard
	Fe	57	18525.651	ug/L	532.656	2	16670	17047143	1	Standard
	Mn	55	17.762	ug/L	0.536	3	1787	791151	1	Standard
>	Ge	72		ug/L			32154	26411	1	KED
	Co	59	19.815	ug/L	0.486	2	27	77165	0	KED
	Ni	60	19.600	ug/L	0.114	0	27	21531	1	KED
	Ni	62	20.028	ug/L	0.514	2	9	3598	0	KED
	Cu	63	19.045	ug/L	0.345	1	450	58361	0	KED
	Cu	65	19.423	ug/L	0.225	1	220	29025	1	KED
	Zn	66	18.057	ug/L	0.328	1	63	7229	1	KED
	Zn	67	17.381	ug/L	1.163	6	8	1109	5	KED
	As	75	18.862	ug/L	0.292	1	9	3542	0	KED
	Se	78	0.343	ug/L	0.153	44	14	19	14	KED
	Kr	83		ug/L			57	153	22	Standard
>	In-1	115		ug/L			8090	6906	0	KED
	Mo	98	374.101	ug/L	1.067	0	12	353935	0	KED
	Cd	111	18.610	ug/L	0.326	1	7	4160	1	KED
	Cd	114	18.830	ug/L	0.290	1	8	10062	1	KED
>	In	115		ug/L			454489	441931	0	Standard
	Ag	107	18.243	ug/L	0.825	4	81	289702	4	Standard
	Ba	135	0.100	ug/L	0.005	5	83	489	4	Standard
	Ba	137	0.095	ug/L	0.011	11	133	799	9	Standard
>	Tb	159		ug/L			108807	113501	0	Standard
	Pb	208	0.030	ug/L	0.002	5	112	1371	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-HCV1
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 18:05:23
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27612	35731	3	Standard
>	**Sc**	**45**		ug/L			758633	713923	0	Standard
	Al	**27**	**18084.362**	ug/L	399.310	2	17731	820099456	1	Standard
	Cr	**52**	**191.899**	ug/L	3.424	1	17652	5361137	1	Standard
	Cr	**53**	**190.125**	ug/L	0.505	0	354	578546	0	Standard
	Fe	**54**	**18765.497**	ug/L	109.595	0	81423	37505233	0	Standard
	Fe	**57**	**19166.313**	ug/L	376.069	1	16670	15375003	1	Standard
	Mn	**55**	**189.519**	ug/L	3.952	2	1787	7343618	1	Standard
>	**Ge**	**72**		ug/L			32154	26000	0	KED
	Co	**59**	**192.990**	ug/L	3.779	1	27	739876	1	KED
	Ni	**60**	**191.379**	ug/L	1.671	0	27	206790	1	KED
	Ni	**62**	**193.629**	ug/L	4.862	2	9	34188	1	KED
	Cu	**63**	**189.447**	ug/L	3.170	1	450	568383	1	KED
	Cu	**65**	**192.359**	ug/L	1.674	0	220	281413	0	KED
	Zn	**66**	**193.179**	ug/L	1.270	0	63	75644	1	KED
	Zn	**67**	**193.270**	ug/L	0.169	0	8	12074	0	KED
	As	**75**	**190.766**	ug/L	1.287	0	9	35201	0	KED
	Se	**78**	**186.581**	ug/L	3.915	2	14	3799	1	KED
	Kr	**83**		ug/L			57	139	10	Standard
>	**In-1**	**115**		ug/L			8090	6569	3	KED
	Mo	**98**	**197.163**	ug/L	9.003	4	12	177230	1	KED
	Cd	**111**	**191.491**	ug/L	8.124	4	7	40623	0	KED
	Cd	**114**	**195.134**	ug/L	8.206	4	8	99011	0	KED
>	**In**	**115**		ug/L			454489	413689	0	Standard
	Ag	**107**	**205.023**	ug/L	5.159	2	81	3047437	2	Standard
	Ba	**135**	**191.405**	ug/L	3.201	1	83	730657	2	Standard
	Ba	**137**	**190.634**	ug/L	2.571	1	133	1263688	0	Standard
>	**Tb**	**159**		ug/L			108807	105366	1	Standard
	Pb	**208**	**190.460**	ug/L	4.240	2	112	7324947	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-HCV2
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 18:10:17
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27612	34707	0	Standard
>	**Sc**	**45**		ug/L			758633	654987	0	Standard
	Al	**27**	**S**	ug/L	S	S	17731	S	S	Standard
	Cr	**52**	**286.849**	ug/L	3.229	1	17652	7344337	0	Standard
	Cr	**53**	**280.936**	ug/L	2.712	0	354	784140	0	Standard
	Fe	**54**	**27700.251**	ug/L	257.941	0	81423	50761089	1	Standard
	Fe	**57**	**28306.904**	ug/L	441.208	1	16670	20826300	1	Standard
	Mn	**55**	**284.405**	ug/L	2.250	0	1787	10110100	0	Standard
>	**Ge**	**72**		ug/L			32154	25160	0	KED
	Co	**59**	**289.953**	ug/L	4.997	1	27	1075715	1	KED
	Ni	**60**	**284.689**	ug/L	5.961	2	27	297642	1	KED
	Ni	**62**	**295.765**	ug/L	2.175	0	9	50537	0	KED
	Cu	**63**	**279.312**	ug/L	1.343	0	450	810780	0	KED
	Cu	**65**	**285.497**	ug/L	3.882	1	220	404108	1	KED
	Zn	**66**	**274.142**	ug/L	2.988	1	63	103858	0	KED
	Zn	**67**	**274.868**	ug/L	1.312	0	8	16615	0	KED
	As	**75**	**288.494**	ug/L	1.407	0	9	51513	0	KED
	Se	**78**	**277.763**	ug/L	0.929	0	14	5469	0	KED
	Kr	**83**		ug/L			57	209	9	Standard
>	**In-1**	**115**		ug/L			8090	6513	2	KED
	Mo	**98**	**294.031**	ug/L	6.922	2	12	262240	0	KED
	Cd	**111**	**277.089**	ug/L	6.109	2	7	58322	1	KED
	Cd	**114**	**278.804**	ug/L	5.153	1	8	140369	0	KED
>	**In**	**115**		ug/L			454489	381651	1	Standard
	Ag	**107**	**298.355**	ug/L	3.291	1	81	4090527	0	Standard
	Ba	**135**	**293.883**	ug/L	4.833	1	83	1034744	0	Standard
	Ba	**137**	**296.646**	ug/L	5.868	1	133	1813782	0	Standard
>	**Tb**	**159**		ug/L			108807	101779	2	Standard
	Pb	**208**	**293.824**	ug/L	5.117	1	112	10915367	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL2
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 18:17:55
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27612	30791	1	Standard
⌈>	**Sc**	**45**		ug/L			758633	705500	0	Standard
|	**Al**	**27**	**1.514**	ug/L	0.017	1	17731	84333	0	Standard
|	**Cr**	**52**	**0.006**	ug/L	0.013	209	17652	16584	2	Standard
|	**Cr**	**53**	**0.055**	ug/L	0.007	13	354	495	4	Standard
|	**Fe**	**54**	**0.499**	ug/L	0.779	156	81423	76704	2	Standard
|	**Fe**	**57**	**-0.422**	ug/L	0.257	60	16670	15168	1	Standard
⌊	**Mn**	**55**	**0.008**	ug/L	0.001	15	1787	1961	2	Standard
⌈>	**Ge**	**72**		ug/L			32154	29540	0	KED
|	**Co**	**59**	**0.006**	ug/L	0.004	63	27	52	33	KED
|	**Ni**	**60**	**0.014**	ug/L	0.005	36	27	42	14	KED
|	**Ni**	**62**	**0.035**	ug/L	0.005	14	9	15	6	KED
|	**Cu**	**63**	**-0.067**	ug/L	0.009	13	450	186	16	KED
|	**Cu**	**65**	**-0.060**	ug/L	0.005	8	220	102	7	KED
|	**Zn**	**66**	**0.521**	ug/L	0.050	9	63	290	7	KED
|	**Zn**	**67**	**0.646**	ug/L	0.122	18	8	53	15	KED
|	**As**	**75**	**0.067**	ug/L	0.004	5	9	23	3	KED
⌊	**Se**	**78**	**0.317**	ug/L	0.059	18	14	20	7	KED
	Kr	**83**		ug/L			57	50	14	Standard
⌈>	**In-1**	**115**		ug/L			8090	7281	2	KED
|	**Mo**	**98**	**0.192**	ug/L	0.018	9	12	202	9	KED
|	**Cd**	**111**	**0.013**	ug/L	0.015	118	7	9	36	KED
⌊	**Cd**	**114**	**0.007**	ug/L	0.006	88	8	11	28	KED
⌈>	**In**	**115**		ug/L			454489	435772	3	Standard
|	**Ag**	**107**	**0.043**	ug/L	0.004	9	81	751	6	Standard
|	**Ba**	**135**	**0.022**	ug/L	0.008	35	83	166	14	Standard
⌊	**Ba**	**137**	**0.019**	ug/L	0.003	17	133	259	5	Standard
⌈>	**Tb**	**159**		ug/L			108807	104423	0	Standard
⌊	**Pb**	**208**	**0.015**	ug/L	0.000	2	112	671	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL3
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 18:24:44
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27612	31386	1	Standard
⌈>	**Sc**	**45**		ug/L			758633	698555	1	Standard
|	**Al**	**27**	**1.432**	ug/L	0.049	3	17731	79865	3	Standard
|	**Cr**	**52**	**0.011**	ug/L	0.007	64	17652	16549	0	Standard
|	**Cr**	**53**	**0.037**	ug/L	0.001	2	354	436	2	Standard
|	**Fe**	**54**	**0.463**	ug/L	0.542	117	81423	75869	1	Standard
|	**Fe**	**57**	**0.522**	ug/L	0.535	102	16670	15759	3	Standard
⌊	**Mn**	**55**	**0.006**	ug/L	0.001	14	1787	1878	1	Standard
⌈>	**Ge**	**72**		ug/L			32154	29106	0	KED
|	**Co**	**59**	**0.007**	ug/L	0.002	27	27	55	16	KED
|	**Ni**	**60**	**0.022**	ug/L	0.009	42	27	50	22	KED
|	**Ni**	**62**	**0.021**	ug/L	0.012	55	9	12	17	KED
|	**Cu**	**63**	**-0.065**	ug/L	0.004	5	450	189	6	KED
|	**Cu**	**65**	**-0.065**	ug/L	0.007	11	220	92	12	KED
|	**Zn**	**66**	**0.575**	ug/L	0.047	8	63	309	6	KED
|	**Zn**	**67**	**0.602**	ug/L	0.273	45	8	50	38	KED
|	**As**	**75**	**0.031**	ug/L	0.021	67	9	15	28	KED
⌊	**Se**	**78**	**0.222**	ug/L	0.134	60	14	18	17	KED
	Kr	**83**		ug/L			57	58	24	Standard
⌈>	**In-1**	**115**		ug/L			8090	7319	0	KED
|	**Mo**	**98**	**0.054**	ug/L	0.002	3	12	65	2	KED
|	**Cd**	**111**	**0.000**	ug/L	0.016	4985	7	6	55	KED
⌊	**Cd**	**114**	**-0.004**	ug/L	0.009	204	8	4	98	KED
⌈>	**In**	**115**		ug/L			454489	434505	2	Standard
|	**Ag**	**107**	**0.019**	ug/L	0.002	12	81	378	12	Standard
|	**Ba**	**135**	**0.014**	ug/L	0.004	25	83	135	9	Standard
⌊	**Ba**	**137**	**0.017**	ug/L	0.002	9	133	246	5	Standard
⌈>	**Tb**	**159**		ug/L			108807	103991	1	Standard
⌊	**Pb**	**208**	**0.012**	ug/L	0.000	3	112	567	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV2
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 18:30:23
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			27612	28266	2	Standard
>	Sc	45		ug/L			758633	683971	0	Standard
	Al	27	4739.175	ug/L	52.998	1	17731	205912465	0	Standard
	Cr	52	45.407	ug/L	1.172	2	17652	1227488	2	Standard
	Cr	53	48.087	ug/L	0.052	0	354	140427	0	Standard
	Fe	54	4788.342	ug/L	62.160	1	81423	9223064	0	Standard
	Fe	57	4875.157	ug/L	47.012	0	16670	3758104	1	Standard
	Mn	55	45.277	ug/L	0.920	2	1787	1682026	1	Standard
>	Ge	72		ug/L			32154	28134	0	KED
	Co	59	48.701	ug/L	0.600	1	27	202056	0	KED
	Ni	60	48.539	ug/L	0.974	2	27	56771	2	KED
	Ni	62	50.721	ug/L	0.526	1	9	9697	0	KED
	Cu	63	49.606	ug/L	0.262	0	450	161336	0	KED
	Cu	65	49.335	ug/L	1.097	2	220	78243	2	KED
	Zn	66	49.019	ug/L	0.800	1	63	20811	1	KED
	Zn	67	49.321	ug/L	1.649	3	8	3340	3	KED
	As	75	48.582	ug/L	0.441	0	9	9706	0	KED
	Se	78	48.376	ug/L	0.821	1	14	1075	1	KED
	Kr	83		ug/L			57	62	18	Standard
>	In-1	115		ug/L			8090	6993	3	KED
	Mo	98	47.527	ug/L	2.309	4	12	45488	1	KED
	Cd	111	48.473	ug/L	1.756	3	7	10954	0	KED
	Cd	114	49.507	ug/L	2.181	4	8	26749	0	KED
>	In	115		ug/L			454489	417384	0	Standard
	Ag	107	48.790	ug/L	0.744	1	81	731697	1	Standard
	Ba	135	48.687	ug/L	0.846	1	83	187565	1	Standard
	Ba	137	48.604	ug/L	0.711	1	133	325173	1	Standard
>	Tb	159		ug/L			108807	104137	1	Standard
	Pb	208	48.762	ug/L	1.251	2	112	1853337	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB2
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 18:38:02
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			27612	26045	2	Standard
>	**Sc**	**45**		ug/L			758633	718201	2	Standard
	Al	**27**	**-0.125**	ug/L	0.004	3	17731	11087	4	Standard
	Cr	**52**	**-0.048**	ug/L	0.018	37	17652	15371	1	Standard
	Cr	**53**	**0.006**	ug/L	0.005	79	354	354	2	Standard
	Fe	**54**	**-1.496**	ug/L	0.704	47	81423	74090	3	Standard
	Fe	**57**	**2.352**	ug/L	0.346	14	16670	17673	1	Standard
	Mn	**55**	**0.003**	ug/L	0.001	36	1787	1811	1	Standard
>	**Ge**	**72**		ug/L			32154	29135	1	KED
	Co	**59**	**0.003**	ug/L	0.000	11	27	38	5	KED
	Ni	**60**	**0.002**	ug/L	0.004	267	27	26	18	KED
	Ni	**62**	**0.004**	ug/L	0.038	888	9	9	80	KED
	Cu	**63**	**-0.099**	ug/L	0.001	1	450	76	6	KED
	Cu	**65**	**-0.098**	ug/L	0.004	3	220	38	15	KED
	Zn	**66**	**0.043**	ug/L	0.012	28	63	76	6	KED
	Zn	**67**	**0.039**	ug/L	0.030	76	8	10	20	KED
	As	**75**	**0.037**	ug/L	0.004	11	9	16	4	KED
	Se	**78**	**0.252**	ug/L	0.119	47	14	19	14	KED
	Kr	**83**		ug/L			57	59	19	Standard
>	**In-1**	**115**		ug/L			8090	7461	0	KED
	Mo	**98**	**0.066**	ug/L	0.032	47	12	79	41	KED
	Cd	**111**	**0.006**	ug/L	0.017	269	7	8	48	KED
	Cd	**114**	**-0.001**	ug/L	0.007	561	8	6	59	KED
>	**In**	**115**		ug/L			454489	436795	2	Standard
	Ag	**107**	**0.015**	ug/L	0.003	18	81	311	15	Standard
	Ba	**135**	**-0.010**	ug/L	0.002	16	83	41	16	Standard
	Ba	**137**	**-0.008**	ug/L	0.003	30	133	69	24	Standard
>	**Tb**	**159**		ug/L			108807	103378	1	Standard
	Pb	**208**	**0.003**	ug/L	0.000	11	112	227	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 18:44:02
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L				26144	2	Standard
>	**Sc**	**45**		ug/L				729297	0	Standard
	Al	**27**		ug/L				9970	1	Standard
	Cr	**52**		ug/L				15699	0	Standard
	Cr	**53**		ug/L				357	6	Standard
	Fe	**54**		ug/L				72886	2	Standard
	Fe	**57**		ug/L				17616	2	Standard
	Mn	**55**		ug/L				1730	0	Standard
>	**Ge**	**72**		ug/L				29470	1	KED
	Co	**59**		ug/L				38	2	KED
	Ni	**60**		ug/L				22	13	KED
	Ni	**62**		ug/L				8	32	KED
	Cu	**63**		ug/L				59	44	KED
	Cu	**65**		ug/L				46	20	KED
	Zn	**66**		ug/L				46	28	KED
	Zn	**67**		ug/L				11	60	KED
	As	**75**		ug/L				12	13	KED
	Se	**78**		ug/L				18	19	KED
	Kr	**83**		ug/L				45	19	Standard
>	**In-1**	**115**		ug/L				7192	1	KED
	Mo	**98**		ug/L				38	18	KED
	Cd	**111**		ug/L				7	12	KED
	Cd	**114**		ug/L				6	15	KED
>	**In**	**115**		ug/L				431763	2	Standard
	Ag	**107**		ug/L				238	6	Standard
	Ba	**135**		ug/L				38	17	Standard
	Ba	**137**		ug/L				76	16	Standard
>	**Tb**	**159**		ug/L				102557	1	Standard
	Pb	**208**		ug/L				168	11	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV3
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 18:48:56
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26144	27919	3	Standard
⌈>	**Sc**	**45**		ug/L			729297	686230	2	Standard
|	**Al**	**27**	**4643.107**	ug/L	151.203	3	9970	202306130	1	Standard
|	**Cr**	**52**	**45.082**	ug/L	1.418	3	15699	1221096	1	Standard
|	**Cr**	**53**	**47.343**	ug/L	1.231	2	357	138698	2	Standard
|	**Fe**	**54**	**4760.729**	ug/L	163.277	3	72886	9191325	1	Standard
|	**Fe**	**57**	**4804.589**	ug/L	161.629	3	17616	3716021	1	Standard
⌊	**Mn**	**55**	**45.804**	ug/L	1.311	2	1730	1706531	0	Standard
⌈>	**Ge**	**72**		ug/L			29470	28325	2	KED
|	**Co**	**59**	**48.081**	ug/L	1.687	3	38	200792	2	KED
|	**Ni**	**60**	**48.855**	ug/L	1.306	2	22	57507	1	KED
|	**Ni**	**62**	**49.070**	ug/L	1.251	2	8	9444	1	KED
|	**Cu**	**63**	**49.220**	ug/L	0.381	0	59	160819	1	KED
|	**Cu**	**65**	**49.863**	ug/L	0.271	0	46	79470	1	KED
|	**Zn**	**66**	**49.843**	ug/L	0.955	1	46	21288	0	KED
|	**Zn**	**67**	**49.828**	ug/L	0.923	1	11	3399	0	KED
|	**As**	**75**	**47.944**	ug/L	0.648	1	12	9647	0	KED
⌊	**Se**	**78**	**47.138**	ug/L	1.637	3	18	1060	3	KED
	Kr	**83**		ug/L			45	66	29	Standard
⌈>	**In-1**	**115**		ug/L			7192	7193	0	KED
|	**Mo**	**98**	**47.075**	ug/L	1.102	2	38	46418	1	KED
|	**Cd**	**111**	**47.751**	ug/L	0.818	1	7	11109	0	KED
⌊	**Cd**	**114**	**48.013**	ug/L	0.903	1	6	26707	1	KED
⌈>	**In**	**115**		ug/L			431763	423958	1	Standard
|	**Ag**	**107**	**49.203**	ug/L	1.808	3	238	749449	2	Standard
|	**Ba**	**135**	**47.491**	ug/L	0.550	1	38	185788	1	Standard
⌊	**Ba**	**137**	**47.564**	ug/L	0.658	1	76	323163	1	Standard
⌈>	**Tb**	**159**		ug/L			102557	103296	1	Standard
⌊	**Pb**	**208**	**48.934**	ug/L	1.328	2	168	1844870	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB3
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 18:56:34
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26144	25766	0	Standard
⌈>	**Sc**	**45**		ug/L			729297	726235	2	Standard
|	**Al**	**27**	**0.004**	ug/L	0.004	122	9970	10096	3	Standard
|	**Cr**	**52**	**-0.003**	ug/L	0.014	497	15699	15547	0	Standard
|	**Cr**	**53**	**-0.011**	ug/L	0.005	46	357	320	3	Standard
|	**Fe**	**54**	**1.200**	ug/L	1.236	102	72886	74990	2	Standard
|	**Fe**	**57**	**0.133**	ug/L	0.117	87	17616	17649	1	Standard
⌊	**Mn**	**55**	**-0.003**	ug/L	0.000	12	1730	1591	2	Standard
⌈>	**Ge**	**72**		ug/L			29470	28717	0	KED
|	**Co**	**59**	**0.001**	ug/L	0.001	123	38	41	10	KED
|	**Ni**	**60**	**0.002**	ug/L	0.001	69	22	23	4	KED
|	**Ni**	**62**	**0.004**	ug/L	0.010	224	8	9	20	KED
|	**Cu**	**63**	**0.004**	ug/L	0.002	40	59	72	7	KED
|	**Cu**	**65**	**-0.009**	ug/L	0.004	45	46	31	21	KED
|	**Zn**	**66**	**0.006**	ug/L	0.015	259	46	47	13	KED
|	**Zn**	**67**	**0.042**	ug/L	0.106	253	11	13	51	KED
|	**As**	**75**	**0.031**	ug/L	0.010	32	12	18	10	KED
⌊	**Se**	**78**	**-0.065**	ug/L	0.007	10	18	16	0	KED
	Kr	**83**		ug/L			45	48	9	Standard
⌈>	**In-1**	**115**		ug/L			7192	7427	0	KED
|	**Mo**	**98**	**0.034**	ug/L	0.010	29	38	74	13	KED
|	**Cd**	**111**	**0.000**	ug/L	0.013	4061	7	7	38	KED
⌊	**Cd**	**114**	**0.005**	ug/L	0.002	36	6	9	11	KED
⌈>	**In**	**115**		ug/L			431763	433710	2	Standard
|	**Ag**	**107**	**0.003**	ug/L	0.002	57	238	292	12	Standard
|	**Ba**	**135**	**-0.002**	ug/L	0.002	64	38	29	20	Standard
⌊	**Ba**	**137**	**-0.002**	ug/L	0.001	43	76	64	9	Standard
⌈>	**Tb**	**159**		ug/L			102557	103443	1	Standard
⌊	**Pb**	**208**	**0.001**	ug/L	0.000	18	168	199	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLG0039-BLK1
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 19:04:06
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26144	44631	0	Standard
>	Sc	45		ug/L			729297	746322	0	Standard
	Al	27	1.484	ug/L	0.025	1	9970	80557	0	Standard
	Cr	52	0.067	ug/L	0.023	33	15699	18001	3	Standard
	Cr	53	0.045	ug/L	0.002	5	357	510	1	Standard
	Fe	54	0.515	ug/L	1.104	214	72886	75650	2	Standard
	Fe	57	0.909	ug/L	0.353	38	17616	18788	0	Standard
	Mn	55	0.022	ug/L	0.001	5	1730	2645	1	Standard
>	Ge	72		ug/L			29470	28948	0	KED
	Co	59	-0.001	ug/L	0.001	146	38	33	18	KED
	Ni	60	0.010	ug/L	0.007	67	22	33	23	KED
	Ni	62	0.053	ug/L	0.010	19	8	19	10	KED
	Cu	63	0.104	ug/L	0.005	4	59	403	3	KED
	Cu	65	0.091	ug/L	0.016	17	46	193	12	KED
	Zn	66	0.508	ug/L	0.028	5	46	266	3	KED
	Zn	67	0.432	ug/L	0.095	21	11	41	16	KED
	As	75	0.019	ug/L	0.009	45	12	16	10	KED
	Se	78	-0.093	ug/L	0.057	61	18	16	7	KED
	Kr	83		ug/L			45	46	23	Standard
>	In-1	115		ug/L			7192	7350	2	KED
	Mo	98	0.053	ug/L	0.015	27	38	93	17	KED
	Cd	111	-0.005	ug/L	0.011	243	7	6	37	KED
	Cd	114	0.003	ug/L	0.005	167	6	8	34	KED
>	In	115		ug/L			431763	430995	1	Standard
	Ag	107	-0.001	ug/L	0.003	495	238	229	20	Standard
	Ba	135	0.009	ug/L	0.004	37	38	76	18	Standard
	Ba	137	0.008	ug/L	0.002	28	76	130	11	Standard
>	Tb	159		ug/L			102557	102364	2	Standard
	Pb	208	0.006	ug/L	0.000	5	168	379	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLG0039-BS1
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 19:09:00
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26144	56492	1	Standard
>	Sc	45		ug/L			729297	772913	0	Standard
	Al	27	4101.599	ug/L	28.571	0	9970	201393921	1	Standard
	Cr	52	20.227	ug/L	0.664	3	15699	626418	2	Standard
	Cr	53	21.554	ug/L	0.430	1	357	71343	1	Standard
	Fe	54	4279.276	ug/L	73.688	1	72886	9317009	0	Standard
	Fe	57	4274.408	ug/L	87.278	2	17616	3726862	1	Standard
	Mn	55	20.496	ug/L	0.201	0	1730	861434	0	Standard
>	Ge	72		ug/L			29470	27669	0	KED
	Co	59	23.866	ug/L	0.444	1	38	97405	1	KED
	Ni	60	24.344	ug/L	0.541	2	22	28009	2	KED
	Ni	62	24.761	ug/L	0.582	2	8	4660	2	KED
	Cu	63	24.935	ug/L	0.607	2	59	79615	2	KED
	Cu	65	25.210	ug/L	0.255	1	46	39271	1	KED
	Zn	66	78.944	ug/L	0.556	0	46	32919	1	KED
	Zn	67	75.928	ug/L	3.238	4	11	5056	4	KED
	As	75	24.528	ug/L	0.597	2	12	4827	2	KED
	Se	78	77.728	ug/L	2.580	3	18	1697	2	KED
	Kr	83		ug/L			45	62	9	Standard
>	In-1	115		ug/L			7192	7162	0	KED
	Mo	98	22.554	ug/L	0.193	0	38	22164	0	KED
	Cd	111	23.761	ug/L	0.345	1	7	5508	1	KED
	Cd	114	23.697	ug/L	0.664	2	6	13128	2	KED
>	In	115		ug/L			431763	417722	3	Standard
	Ag	107	24.851	ug/L	0.290	1	238	373139	3	Standard
	Ba	135	24.192	ug/L	0.602	2	38	93215	1	Standard
	Ba	137	24.138	ug/L	0.862	3	76	161485	0	Standard
>	Tb	159		ug/L			102557	102694	1	Standard
	Pb	208	24.395	ug/L	0.354	1	168	914690	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23G0016-01
Sample Dil Factor: 5
Comments:
Sample Date/Time: Wednesday, July 05, 2023 19:15:58
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26144	233014	3	Standard
>	Sc	45		ug/L			729297	763166	0	Standard
	Al	27	5.587	ug/L	0.069	1	9970	281252	1	Standard
	Cr	52	1.415	ug/L	0.037	2	15699	58542	1	Standard
	Cr	53	1.059	ug/L	0.021	2	357	3815	1	Standard
	Fe	54	201.153	ug/L	7.712	3	72886	505079	2	Standard
	Fe	57	382.048	ug/L	8.153	2	17616	345693	1	Standard
	Mn	55	4.812	ug/L	0.169	3	1730	201045	2	Standard
>	Ge	72		ug/L			29470	25851	1	KED
	Co	59	0.165	ug/L	0.003	1	38	662	1	KED
	Ni	60	0.752	ug/L	0.056	7	22	827	6	KED
	Ni	62	0.762	ug/L	0.016	2	8	141	0	KED
	Cu	63	0.174	ug/L	0.010	5	59	571	6	KED
	Cu	65	0.154	ug/L	0.012	7	46	264	7	KED
	Zn	66	2.329	ug/L	0.137	5	46	947	6	KED
	Zn	67	2.857	ug/L	0.265	9	11	187	7	KED
	As	75	0.133	ug/L	0.017	13	12	35	8	KED
	Se	78	-0.056	ug/L	0.092	164	18	15	13	KED
	Kr	83		ug/L			45	52	7	Standard
>	In-1	115		ug/L			7192	6772	2	KED
	Mo	98	1.093	ug/L	0.046	4	38	1049	2	KED
	Cd	111	0.002	ug/L	0.007	366	7	7	21	KED
	Cd	114	0.012	ug/L	0.011	90	6	12	43	KED
>	In	115		ug/L			431763	417849	2	Standard
	Ag	107	-0.001	ug/L	0.002	159	238	210	13	Standard
	Ba	135	4.782	ug/L	0.128	2	38	18463	0	Standard
	Ba	137	4.780	ug/L	0.098	2	76	32067	0	Standard
>	Tb	159		ug/L			102557	100263	2	Standard
	Pb	208	0.010	ug/L	0.001	7	168	512	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23G0020-01
Sample Dil Factor: 2
Comments:
Sample Date/Time: Wednesday, July 05, 2023 19:21:16
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26144	51322	4	Standard
>	Sc	45		ug/L			729297	763069	3	Standard
	Al	27	183.414	ug/L	8.348	4	9970	8891286	1	Standard
	Cr	52	29.976	ug/L	1.368	4	15699	907727	0	Standard
	Cr	53	38.113	ug/L	1.883	4	357	124134	2	Standard
	Fe	54	61.406	ug/L	2.564	4	72886	207040	1	Standard
	Fe	57	65.249	ug/L	4.845	7	17616	74247	3	Standard
	Mn	55	1.933	ug/L	0.107	5	1730	81736	1	Standard
>	Ge	72		ug/L			29470	25680	0	KED
	Co	59	1.585	ug/L	0.024	1	38	6035	1	KED
	Ni	60	8.453	ug/L	0.018	0	22	9039	0	KED
	Ni	62	8.318	ug/L	0.403	4	8	1457	4	KED
	Cu	63	17.454	ug/L	0.022	0	59	51740	0	KED
	Cu	65	17.547	ug/L	0.611	3	46	25385	4	KED
	Zn	66	38.982	ug/L	0.374	0	46	15106	0	KED
	Zn	67	35.924	ug/L	0.610	1	11	2225	2	KED
	As	75	0.184	ug/L	0.023	12	12	44	9	KED
	Se	78	-0.027	ug/L	0.056	204	18	15	7	KED
	Kr	83		ug/L			45	56	18	Standard
>	In-1	115		ug/L			7192	6720	1	KED
	Mo	98	0.385	ug/L	0.010	2	38	390	2	KED
	Cd	111	0.361	ug/L	0.054	14	7	85	12	KED
	Cd	114	0.342	ug/L	0.025	7	6	183	5	KED
>	In	115		ug/L			431763	404088	1	Standard
	Ag	107	0.011	ug/L	0.001	13	238	382	4	Standard
	Ba	135	1.566	ug/L	0.010	0	38	5873	1	Standard
	Ba	137	1.543	ug/L	0.026	1	76	10059	1	Standard
>	Tb	159		ug/L			102557	99332	1	Standard
	Pb	208	0.217	ug/L	0.005	2	168	8033	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23G0042-01
Sample Dil Factor: 2
Comments:
Sample Date/Time: Wednesday, July 05, 2023 19:26:34
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26144	658346	1	Standard
>	Sc	45		ug/L			729297	779775	0	Standard
	Al	27	6.946	ug/L	0.115	1	9970	354712	0	Standard
	Cr	52	1.789	ug/L	0.035	1	15699	71210	1	Standard
	Cr	53	0.832	ug/L	0.027	3	357	3145	2	Standard
	Fe	54	1043.448	ug/L	21.330	2	72886	2350942	1	Standard
	Fe	57	1772.823	ug/L	18.495	1	17616	1570575	0	Standard
	Mn	55	165.731	ug/L	3.534	2	1730	7014107	1	Standard
>	Ge	72		ug/L			29470	21751	0	KED
	Co	59	0.478	ug/L	0.003	0	38	1561	1	KED
	Ni	60	13.703	ug/L	0.098	0	22	12400	1	KED
	Ni	62	14.123	ug/L	0.560	3	8	2092	3	KED
	Cu	63	38.962	ug/L	0.382	0	59	97770	0	KED
	Cu	65	39.349	ug/L	0.081	0	46	48164	0	KED
	Zn	66	13.824	ug/L	0.099	0	46	4559	0	KED
	Zn	67	13.732	ug/L	0.244	1	11	725	1	KED
	As	75	0.143	ug/L	0.019	13	12	31	8	KED
	Se	78	0.178	ug/L	0.091	51	18	16	9	KED
	Kr	83		ug/L			45	86	30	Standard
>	In-1	115		ug/L			7192	5985	2	KED
	Mo	98	0.400	ug/L	0.030	7	38	359	7	KED
	Cd	111	0.029	ug/L	0.009	29	7	12	16	KED
	Cd	114	0.024	ug/L	0.011	47	6	16	31	KED
>	In	115		ug/L			431763	380404	1	Standard
	Ag	107	-0.005	ug/L	0.001	25	238	148	9	Standard
	Ba	135	20.229	ug/L	0.321	1	38	71019	1	Standard
	Ba	137	19.989	ug/L	0.473	2	76	121878	1	Standard
>	Tb	159		ug/L			102557	96248	0	Standard
	Pb	208	0.703	ug/L	0.006	0	168	24875	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL4
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 19:31:29
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26144	41453	3	Standard
⌈>	**Sc**	**45**		ug/L			729297	730792	2	Standard
|	**Al**	**27**	**0.161**	ug/L	0.018	11	9970	17470	3	Standard
|	**Cr**	**52**	**0.091**	ug/L	0.009	9	15699	18311	0	Standard
|	**Cr**	**53**	**0.034**	ug/L	0.002	6	357	463	2	Standard
|	**Fe**	**54**	**3.358**	ug/L	1.082	32	72886	79858	0	Standard
|	**Fe**	**57**	**-1.165**	ug/L	0.289	24	17616	16694	1	Standard
⌊	**Mn**	**55**	**-0.000**	ug/L	0.001	648	1730	1725	0	Standard
⌈>	**Ge**	**72**		ug/L			29470	26498	0	KED
|	**Co**	**59**	**-0.003**	ug/L	0.001	49	38	23	23	KED
|	**Ni**	**60**	**0.003**	ug/L	0.005	176	22	22	22	KED
|	**Ni**	**62**	**0.002**	ug/L	0.033	2135	8	8	70	KED
|	**Cu**	**63**	**0.027**	ug/L	0.009	33	59	135	19	KED
|	**Cu**	**65**	**0.016**	ug/L	0.010	60	46	66	22	KED
|	**Zn**	**66**	**0.098**	ug/L	0.019	19	46	80	9	KED
|	**Zn**	**67**	**0.138**	ug/L	0.089	64	11	19	30	KED
|	**As**	**75**	**-0.007**	ug/L	0.020	290	12	10	37	KED
⌊	**Se**	**78**	**-0.138**	ug/L	0.181	131	18	14	26	KED
	Kr	**83**		ug/L			45	45	15	Standard
⌈>	**In-1**	**115**		ug/L			7192	6827	1	KED
|	**Mo**	**98**	**-0.021**	ug/L	0.005	24	38	17	29	KED
|	**Cd**	**111**	**0.003**	ug/L	0.013	432	7	7	38	KED
⌊	**Cd**	**114**	**-0.003**	ug/L	0.010	343	6	4	116	KED
⌈>	**In**	**115**		ug/L			431763	437965	0	Standard
|	**Ag**	**107**	**-0.008**	ug/L	0.001	7	238	121	7	Standard
|	**Ba**	**135**	**0.021**	ug/L	0.002	10	38	125	7	Standard
⌊	**Ba**	**137**	**0.018**	ug/L	0.004	22	76	205	13	Standard
⌈>	**Tb**	**159**		ug/L			102557	98970	2	Standard
⌊	**Pb**	**208**	**0.002**	ug/L	0.001	46	168	222	13	Standard

23F0694

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ~~23F0695~~-06

Sample Dil Factor: 5

Comments:

Sample Date/Time: Wednesday, July 05, 2023 19:36:23

MB 7/5/23

Number of Replicates: 3

Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth

Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun

Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac

Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26144	66811	4	Standard
>	Sc	45		ug/L			729297	781185	0	Standard
	Al	27	65.800	ug/L	1.413	2	9970	3275892	2	Standard
	Cr	52	1.840	ug/L	0.051	2	15699	72905	2	Standard
	Cr	53	1.903	ug/L	0.011	0	357	6716	0	Standard
	Fe	54	5.746	ug/L	0.486	8	72886	90614	1	Standard
	Fe	57	19.397	ug/L	1.410	7	17616	35882	3	Standard
	Mn	55	5.302	ug/L	0.056	1	1730	226592	1	Standard
>	Ge	72		ug/L			29470	25242	3	KED
	Co	59	0.023	ug/L	0.001	4	38	118	5	KED
	Ni	60	0.486	ug/L	0.012	2	22	529	5	KED
	Ni	62	0.586	ug/L	0.070	11	8	107	9	KED
	Cu	63	2.583	ug/L	0.061	2	59	7566	2	KED
	Cu	65	2.583	ug/L	0.114	4	46	3703	3	KED
	Zn	66	1.289	ug/L	0.106	8	46	528	5	KED
	Zn	67	1.155	ug/L	0.356	30	11	79	24	KED
	As	75	0.036	ug/L	0.018	50	12	17	20	KED
	Se	78	0.013	ug/L	0.082	651	18	16	9	KED
	Kr	83		ug/L			45	48	36	Standard
>	In-1	115		ug/L			7192	6574	1	KED
	Mo	98	0.843	ug/L	0.018	2	38	794	2	KED
	Cd	111	-0.004	ug/L	0.005	122	7	6	18	KED
	Cd	114	-0.000	ug/L	0.013	106366	6	6	108	KED
>	In	115		ug/L			431763	417153	0	Standard
	Ag	107	-0.008	ug/L	0.001	9	238	118	8	Standard
	Ba	135	0.247	ug/L	0.002	1	38	989	1	Standard
	Ba	137	0.247	ug/L	0.002	0	76	1728	0	Standard
>	Tb	159		ug/L			102557	99109	1	Standard
	Pb	208	0.005	ug/L	0.000	5	168	351	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLG0039-DUP1
Sample Dil Factor: 5
Comments:
Sample Date/Time: Wednesday, July 05, 2023 19:41:17
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26144	63137	3	Standard
>	Sc	45		ug/L			729297	778475	1	Standard
	Al	27	68.752	ug/L	1.342	1	9970	3409610	0	Standard
	Cr	52	1.878	ug/L	0.025	1	15699	73771	0	Standard
	Cr	53	1.895	ug/L	0.015	0	357	6667	2	Standard
	Fe	54	6.496	ug/L	0.296	4	72886	91930	2	Standard
	Fe	57	20.910	ug/L	1.038	4	17616	37066	0	Standard
	Mn	55	5.325	ug/L	0.176	3	1730	226722	1	Standard
>	Ge	72		ug/L			29470	25657	2	KED
	Co	59	0.020	ug/L	0.002	10	38	110	7	KED
	Ni	60	0.445	ug/L	0.032	7	22	493	9	KED
	Ni	62	0.590	ug/L	0.074	12	8	110	10	KED
	Cu	63	2.546	ug/L	0.014	0	59	7584	1	KED
	Cu	65	2.521	ug/L	0.132	5	46	3676	3	KED
	Zn	66	1.290	ug/L	0.125	9	46	537	7	KED
	Zn	67	1.024	ug/L	0.171	16	11	73	14	KED
	As	75	0.032	ug/L	0.014	44	12	16	15	KED
	Se	78	0.177	ug/L	0.157	88	18	19	13	KED
	Kr	83		ug/L			45	55	18	Standard
>	In-1	115		ug/L			7192	6691	2	KED
	Mo	98	0.910	ug/L	0.051	5	38	868	3	KED
	Cd	111	0.004	ug/L	0.009	225	7	7	24	KED
	Cd	114	0.002	ug/L	0.000	14	6	7	0	KED
>	In	115		ug/L			431763	418174	1	Standard
	Ag	107	-0.008	ug/L	0.001	18	238	111	21	Standard
	Ba	135	0.260	ug/L	0.005	1	38	1038	1	Standard
	Ba	137	0.244	ug/L	0.010	4	76	1708	4	Standard
>	Tb	159		ug/L			102557	99652	1	Standard
	Pb	208	0.006	ug/L	0.001	22	168	380	12	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLG0039-MS1
Sample Dil Factor: 5
Comments:
Sample Date/Time: Wednesday, July 05, 2023 19:46:35
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26144	43502	3	Standard
>	Sc	45		ug/L			729297	780517	1	Standard
	Al	27	910.698	ug/L	23.366	2	9970	45169915	3	Standard
	Cr	52	6.218	ug/L	0.209	3	15699	206059	1	Standard
	Cr	53	6.439	ug/L	0.201	3	357	21786	2	Standard
	Fe	54	885.844	ug/L	37.673	4	72886	2010094	5	Standard
	Fe	57	870.235	ug/L	4.034	0	17616	781329	1	Standard
	Mn	55	9.697	ug/L	0.065	0	1730	412582	1	Standard
>	Ge	72		ug/L			29470	25430	1	KED
	Co	59	4.967	ug/L	0.127	2	38	18654	1	KED
	Ni	60	5.472	ug/L	0.058	1	22	5801	1	KED
	Ni	62	5.609	ug/L	0.231	4	8	975	2	KED
	Cu	63	7.639	ug/L	0.103	1	59	22451	0	KED
	Cu	65	7.588	ug/L	0.111	1	46	10891	1	KED
	Zn	66	17.296	ug/L	0.226	1	46	6659	0	KED
	Zn	67	16.793	ug/L	0.960	5	11	1034	4	KED
	As	75	5.011	ug/L	0.194	3	12	914	3	KED
	Se	78	16.138	ug/L	0.522	3	18	336	3	KED
	Kr	83		ug/L			45	58	15	Standard
>	In-1	115		ug/L			7192	6549	0	KED
	Mo	98	5.874	ug/L	0.157	2	38	5303	2	KED
	Cd	111	4.948	ug/L	0.046	0	7	1054	0	KED
	Cd	114	5.114	ug/L	0.105	2	6	2595	1	KED
>	In	115		ug/L			431763	415630	2	Standard
	Ag	107	5.133	ug/L	0.167	3	238	76853	2	Standard
	Ba	135	5.048	ug/L	0.186	3	38	19383	1	Standard
	Ba	137	4.953	ug/L	0.064	1	76	33050	0	Standard
>	Tb	159		ug/L			102557	99582	1	Standard
	Pb	208	4.956	ug/L	0.124	2	168	180270	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL5
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 19:51:24
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26144	33143	4	Standard
⌈>	**Sc**	**45**		ug/L			729297	726562	2	Standard
|	**Al**	**27**	**0.171**	ug/L	0.007	4	9970	17808	0	Standard
|	**Cr**	**52**	**0.082**	ug/L	0.017	21	15699	17968	1	Standard
|	**Cr**	**53**	**0.008**	ug/L	0.002	23	357	380	1	Standard
|	**Fe**	**54**	**4.491**	ug/L	1.697	37	72886	81672	2	Standard
|	**Fe**	**57**	**0.612**	ug/L	0.714	116	17616	18039	0	Standard
⌊	**Mn**	**55**	**-0.007**	ug/L	0.002	21	1730	1437	2	Standard
⌈>	**Ge**	**72**		ug/L			29470	27409	2	KED
|	**Co**	**59**	**0.000**	ug/L	0.001	385	38	37	16	KED
|	**Ni**	**60**	**0.003**	ug/L	0.005	184	22	23	20	KED
|	**Ni**	**62**	**0.034**	ug/L	0.038	109	8	14	45	KED
|	**Cu**	**63**	**0.028**	ug/L	0.004	14	59	142	6	KED
|	**Cu**	**65**	**0.017**	ug/L	0.003	16	46	69	6	KED
|	**Zn**	**66**	**0.106**	ug/L	0.026	24	46	86	12	KED
|	**Zn**	**67**	**0.088**	ug/L	0.066	75	11	16	29	KED
|	**As**	**75**	**-0.013**	ug/L	0.003	24	12	9	7	KED
⌊	**Se**	**78**	**-0.214**	ug/L	0.081	37	18	12	16	KED
	Kr	**83**		ug/L			45	66	17	Standard
⌈>	**In-1**	**115**		ug/L			7192	7176	2	KED
|	**Mo**	**98**	**-0.009**	ug/L	0.015	174	38	29	48	KED
|	**Cd**	**111**	**-0.016**	ug/L	0.019	115	7	3	114	KED
⌊	**Cd**	**114**	**0.003**	ug/L	0.008	240	6	8	55	KED
⌈>	**In**	**115**		ug/L			431763	438823	1	Standard
|	**Ag**	**107**	**-0.007**	ug/L	0.001	14	238	136	9	Standard
|	**Ba**	**135**	**0.028**	ug/L	0.004	14	38	153	12	Standard
⌊	**Ba**	**137**	**0.020**	ug/L	0.003	13	76	216	8	Standard
⌈>	**Tb**	**159**		ug/L			102557	100726	1	Standard
⌊	**Pb**	**208**	**0.002**	ug/L	0.001	36	168	224	10	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV4
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 19:56:18
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26144	28751	1	Standard
>	**Sc**	**45**		ug/L			729297	728690	1	Standard
	Al	**27**	**4441.300**	ug/L	116.187	2	9970	205563979	2	Standard
	Cr	**52**	**44.097**	ug/L	0.126	0	15699	1269164	1	Standard
	Cr	**53**	**47.026**	ug/L	0.607	1	357	146314	0	Standard
	Fe	**54**	**4732.625**	ug/L	103.540	2	72886	9705805	0	Standard
	Fe	**57**	**4806.856**	ug/L	160.174	3	17616	3948470	2	Standard
	Mn	**55**	**45.245**	ug/L	0.569	1	1730	1790812	1	Standard
>	**Ge**	**72**		ug/L			29470	26886	1	KED
	Co	**59**	**48.655**	ug/L	0.493	1	38	192932	1	KED
	Ni	**60**	**48.343**	ug/L	0.546	1	22	54023	0	KED
	Ni	**62**	**50.089**	ug/L	1.349	2	8	9152	2	KED
	Cu	**63**	**49.884**	ug/L	0.582	1	59	154708	0	KED
	Cu	**65**	**49.506**	ug/L	1.253	2	46	74882	1	KED
	Zn	**66**	**50.190**	ug/L	1.425	2	46	20349	2	KED
	Zn	**67**	**50.203**	ug/L	1.392	2	11	3251	1	KED
	As	**75**	**47.701**	ug/L	0.706	1	12	9110	0	KED
	Se	**78**	**48.240**	ug/L	0.737	1	18	1029	1	KED
	Kr	**83**		ug/L			45	59	16	Standard
>	**In-1**	**115**		ug/L			7192	6910	2	KED
	Mo	**98**	**47.083**	ug/L	0.406	0	38	44600	1	KED
	Cd	**111**	**48.761**	ug/L	0.789	1	7	10896	0	KED
	Cd	**114**	**49.281**	ug/L	1.770	3	6	26325	1	KED
>	**In**	**115**		ug/L			431763	426766	0	Standard
	Ag	**107**	**49.865**	ug/L	1.667	3	238	764686	2	Standard
	Ba	**135**	**46.621**	ug/L	0.560	1	38	183599	0	Standard
	Ba	**137**	**46.757**	ug/L	0.984	2	76	319790	2	Standard
>	**Tb**	**159**		ug/L			102557	102580	1	Standard
	Pb	**208**	**48.513**	ug/L	0.921	1	168	1816586	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB4
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 20:03:57
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26144	25724	3	Standard
⌈>	**Sc**	**45**		ug/L			729297	753740	1	Standard
|	**Al**	**27**	**0.216**	ug/L	0.304	140	9970	20561	69	Standard
|	**Cr**	**52**	**-0.002**	ug/L	0.012	509	15699	16156	2	Standard
|	**Cr**	**53**	**-0.006**	ug/L	0.007	119	357	350	7	Standard
|	**Fe**	**54**	**0.667**	ug/L	1.253	188	72886	76699	1	Standard
|	**Fe**	**57**	**-1.629**	ug/L	0.367	22	17616	16826	1	Standard
⌊	**Mn**	**55**	**-0.002**	ug/L	0.002	110	1730	1695	4	Standard
⌈>	**Ge**	**72**		ug/L			29470	28017	1	KED
|	**Co**	**59**	**-0.000**	ug/L	0.002	1323	38	36	21	KED
|	**Ni**	**60**	**0.002**	ug/L	0.007	334	22	23	33	KED
|	**Ni**	**62**	**0.002**	ug/L	0.035	1585	8	8	75	KED
|	**Cu**	**63**	**0.007**	ug/L	0.005	79	59	77	20	KED
|	**Cu**	**65**	**-0.006**	ug/L	0.004	65	46	34	19	KED
|	**Zn**	**66**	**0.156**	ug/L	0.026	16	46	109	8	KED
|	**Zn**	**67**	**0.111**	ug/L	0.082	73	11	18	31	KED
|	**As**	**75**	**0.019**	ug/L	0.003	16	12	15	5	KED
⌊	**Se**	**78**	**0.026**	ug/L	0.151	573	18	18	17	KED
	Kr	**83**		ug/L			45	41	28	Standard
⌈>	**In-1**	**115**		ug/L			7192	7123	3	KED
|	**Mo**	**98**	**0.021**	ug/L	0.008	35	38	58	10	KED
|	**Cd**	**111**	**-0.010**	ug/L	0.013	128	7	5	57	KED
⌊	**Cd**	**114**	**0.003**	ug/L	0.008	242	6	8	55	KED
⌈>	**In**	**115**		ug/L			431763	429532	1	Standard
|	**Ag**	**107**	**0.003**	ug/L	0.003	115	238	278	15	Standard
|	**Ba**	**135**	**0.031**	ug/L	0.004	12	38	163	7	Standard
⌊	**Ba**	**137**	**0.026**	ug/L	0.006	21	76	256	13	Standard
⌈>	**Tb**	**159**		ug/L			102557	102516	2	Standard
⌊	**Pb**	**208**	**0.004**	ug/L	0.004	91	168	334	44	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0838-BLK2
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 20:08:52
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26144	47997	1	Standard
>	Sc	45		ug/L			729297	724393	1	Standard
	Al	27	1.487	ug/L	0.020	1	9970	78339	0	Standard
	Cr	52	0.114	ug/L	0.016	14	15699	18809	1	Standard
	Cr	53	0.072	ug/L	0.011	15	357	578	5	Standard
	Fe	54	5.494	ug/L	0.907	16	72886	83498	0	Standard
	Fe	57	-0.795	ug/L	0.340	42	17616	16849	0	Standard
	Mn	55	0.118	ug/L	0.004	3	1730	6342	1	Standard
>	Ge	72		ug/L			29470	28432	1	KED
	Co	59	0.004	ug/L	0.001	20	38	55	7	KED
	Ni	60	0.028	ug/L	0.008	27	22	54	15	KED
	Ni	62	0.025	ug/L	0.019	77	8	13	28	KED
	Cu	63	0.087	ug/L	0.006	7	59	341	5	KED
	Cu	65	0.063	ug/L	0.006	9	46	146	6	KED
	Zn	66	2.457	ug/L	0.075	3	46	1095	1	KED
	Zn	67	2.387	ug/L	0.105	4	11	173	3	KED
	As	75	0.010	ug/L	0.007	74	12	14	10	KED
	Se	78	-0.104	ug/L	0.099	94	18	15	12	KED
	Kr	83		ug/L			45	50	39	Standard
>	In-1	115		ug/L			7192	7162	3	KED
	Mo	98	0.025	ug/L	0.014	56	38	62	20	KED
	Cd	111	-0.004	ug/L	0.010	243	7	6	37	KED
	Cd	114	0.001	ug/L	0.003	482	6	7	28	KED
>	In	115		ug/L			431763	432768	0	Standard
	Ag	107	-0.005	ug/L	0.000	6	238	165	3	Standard
	Ba	135	0.044	ug/L	0.006	14	38	213	11	Standard
	Ba	137	0.040	ug/L	0.002	4	76	355	3	Standard
>	Tb	159		ug/L			102557	103083	1	Standard
	Pb	208	0.008	ug/L	0.001	14	168	455	8	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0838-BS2
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 20:13:46
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26144	51771	2	Standard
>	Sc	45		ug/L			729297	716065	1	Standard
	Al	27	4539.677	ug/L	21.284	0	9970	206499645	1	Standard
	Cr	52	21.876	ug/L	0.300	1	15699	626477	1	Standard
	Cr	53	22.935	ug/L	0.086	0	357	70312	1	Standard
	Fe	54	4763.327	ug/L	101.101	2	72886	9599656	1	Standard
	Fe	57	4876.427	ug/L	83.863	1	17616	3936900	1	Standard
	Mn	55	22.425	ug/L	0.337	1	1730	873018	1	Standard
>	Ge	72		ug/L			29470	27492	0	KED
	Co	59	24.376	ug/L	0.401	1	38	98849	1	KED
	Ni	60	23.927	ug/L	0.455	1	22	27351	1	KED
	Ni	62	24.450	ug/L	0.643	2	8	4572	2	KED
	Cu	63	24.830	ug/L	0.130	0	59	78774	0	KED
	Cu	65	24.569	ug/L	0.344	1	46	38025	0	KED
	Zn	66	75.798	ug/L	0.982	1	46	31404	0	KED
	Zn	67	73.287	ug/L	0.956	1	11	4849	0	KED
	As	75	23.140	ug/L	0.204	0	12	4525	0	KED
	Se	78	72.299	ug/L	2.053	2	18	1569	2	KED
	Kr	83		ug/L			45	70	7	Standard
>	In-1	115		ug/L			7192	7026	0	KED
	Mo	98	23.525	ug/L	0.230	0	38	22678	0	KED
	Cd	111	24.281	ug/L	0.276	1	7	5521	0	KED
	Cd	114	23.842	ug/L	0.356	1	6	12958	1	KED
>	In	115		ug/L			431763	426094	2	Standard
	Ag	107	23.882	ug/L	0.225	0	238	365893	3	Standard
	Ba	135	23.646	ug/L	0.619	2	38	92952	0	Standard
	Ba	137	23.336	ug/L	0.597	2	76	159321	0	Standard
>	Tb	159		ug/L			102557	103166	1	Standard
	Pb	208	24.227	ug/L	0.550	2	168	912399	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0571-02
Sample Dil Factor: 2
Comments:
Sample Date/Time: Wednesday, July 05, 2023 20:18:40
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26144	52883	1	Standard
>	Sc	45		ug/L			729297	741282	1	Standard
	Al	27	157.075	ug/L	2.131	1	9970	7405851	0	Standard
	Cr	52	0.513	ug/L	0.008	1	15699	30792	1	Standard
	Cr	53	0.622	ug/L	0.011	1	357	2326	0	Standard
	Fe	54	367.566	ug/L	5.252	1	72886	835285	1	Standard
	Fe	57	387.598	ug/L	4.210	1	17616	340426	1	Standard
	Mn	55	43.072	ug/L	0.297	0	1730	1734422	1	Standard
>	Ge	72		ug/L			29470	26899	1	KED
	Co	59	0.292	ug/L	0.018	6	38	1194	6	KED
	Ni	60	1.228	ug/L	0.023	1	22	1393	0	KED
	Ni	62	1.324	ug/L	0.123	9	8	250	10	KED
	Cu	63	6.524	ug/L	0.082	1	59	20289	1	KED
	Cu	65	6.548	ug/L	0.146	2	46	9945	1	KED
	Zn	66	18.279	ug/L	0.276	1	46	7441	1	KED
	Zn	67	17.316	ug/L	0.367	2	11	1128	1	KED
	As	75	0.988	ug/L	0.033	3	12	200	2	KED
	Se	78	0.103	ug/L	0.031	29	18	19	4	KED
	Kr	83		ug/L			45	50	17	Standard
>	In-1	115		ug/L			7192	6842	2	KED
	Mo	98	2.460	ug/L	0.109	4	38	2340	2	KED
	Cd	111	0.062	ug/L	0.013	20	7	20	13	KED
	Cd	114	0.045	ug/L	0.011	25	6	30	21	KED
>	In	115		ug/L			431763	408759	1	Standard
	Ag	107	0.005	ug/L	0.002	39	238	292	7	Standard
	Ba	135	7.833	ug/L	0.165	2	38	29568	0	Standard
	Ba	137	7.537	ug/L	0.073	0	76	49443	2	Standard
>	Tb	159		ug/L			102557	99421	2	Standard
	Pb	208	0.460	ug/L	0.015	3	168	16861	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0680-01
Sample Dil Factor: 2
Comments:
Sample Date/Time: Wednesday, July 05, 2023 20:23:28
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26144	834643	2	Standard
>	Sc	45		ug/L			729297	750411	3	Standard
	Al	27	71.230	ug/L	1.277	1	9970	3404306	1	Standard
	Cr	52	2.157	ug/L	0.043	1	15699	79275	2	Standard
	Cr	53	0.756	ug/L	0.012	1	357	2784	2	Standard
	Fe	54	214.058	ug/L	6.689	3	72886	523472	0	Standard
	Fe	57	1144.973	ug/L	42.705	3	17616	981992	2	Standard
	Mn	55	77.438	ug/L	2.232	2	1730	3153495	1	Standard
>	Ge	72		ug/L			29470	20913	0	KED
	Co	59	0.395	ug/L	0.008	2	38	1245	1	KED
	Ni	60	10.592	ug/L	0.293	2	22	9218	2	KED
	Ni	62	10.735	ug/L	0.891	8	8	1530	7	KED
	Cu	63	0.231	ug/L	0.017	7	59	600	7	KED
	Cu	65	0.224	ug/L	0.010	4	46	297	3	KED
	Zn	66	1.987	ug/L	0.158	7	46	658	7	KED
	Zn	67	2.392	ug/L	0.141	5	11	128	6	KED
	As	75	0.149	ug/L	0.013	8	12	30	6	KED
	Se	78	0.322	ug/L	0.048	15	18	18	3	KED
	Kr	83		ug/L			45	56	16	Standard
>	In-1	115		ug/L			7192	5699	3	KED
	Mo	98	0.160	ug/L	0.021	13	38	155	7	KED
	Cd	111	0.026	ug/L	0.010	39	7	10	20	KED
	Cd	114	0.004	ug/L	0.005	122	6	6	29	KED
>	In	115		ug/L			431763	371601	1	Standard
	Ag	107	-0.007	ug/L	0.002	30	238	116	24	Standard
	Ba	135	13.044	ug/L	0.175	1	38	44749	0	Standard
	Ba	137	12.839	ug/L	0.133	1	76	76510	1	Standard
>	Tb	159		ug/L			102557	93535	1	Standard
	Pb	208	0.048	ug/L	0.002	3	168	1780	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0689-01
Sample Dil Factor: 2
Comments:
Sample Date/Time: Wednesday, July 05, 2023 20:28:46
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26144	584384	2	Standard
>	Sc	45		ug/L			729297	770453	1	Standard
	Al	27	6.521	ug/L	0.085	1	9970	329697	2	Standard
	Cr	52	5.384	ug/L	0.052	0	15699	178393	1	Standard
	Cr	53	4.834	ug/L	0.061	1	357	16241	1	Standard
	Fe	54	2761.179	ug/L	21.405	0	72886	6020155	0	Standard
	Fe	57	3463.955	ug/L	101.345	2	17616	3013894	1	Standard
	Mn	55	262.426	ug/L	6.676	2	1730	10971746	1	Standard
>	Ge	72		ug/L			29470	22617	0	KED
	Co	59	0.762	ug/L	0.023	2	38	2571	3	KED
	Ni	60	4.217	ug/L	0.177	4	22	3980	3	KED
	Ni	62	4.524	ug/L	0.125	2	8	701	3	KED
	Cu	63	0.390	ug/L	0.005	1	59	1062	1	KED
	Cu	65	0.423	ug/L	0.007	1	46	573	2	KED
	Zn	66	9.829	ug/L	0.223	2	46	3381	1	KED
	Zn	67	9.939	ug/L	0.194	1	11	548	1	KED
	As	75	0.268	ug/L	0.019	6	12	52	5	KED
	Se	78	0.070	ug/L	0.086	122	18	15	8	KED
	Kr	83		ug/L			45	66	4	Standard
>	In-1	115		ug/L			7192	6171	1	KED
	Mo	98	1.148	ug/L	0.046	4	38	1003	5	KED
	Cd	111	0.092	ug/L	0.031	33	7	24	23	KED
	Cd	114	0.091	ug/L	0.007	8	6	49	8	KED
>	In	115		ug/L			431763	385448	1	Standard
	Ag	107	-0.005	ug/L	0.000	9	238	148	5	Standard
	Ba	135	25.880	ug/L	0.367	1	38	92053	0	Standard
	Ba	137	25.985	ug/L	0.203	0	76	160534	1	Standard
>	Tb	159		ug/L			102557	95747	1	Standard
	Pb	208	0.023	ug/L	0.001	4	168	948	6	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0693-01
Sample Dil Factor: 2
Comments:
Sample Date/Time: Wednesday, July 05, 2023 20:34:03
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26144	93302	3	Standard
>	Sc	45		ug/L			729297	771005	0	Standard
	Al	27	163.008	ug/L	2.009	1	9970	7993352	0	Standard
	Cr	52	4.047	ug/L	0.015	0	15699	138315	0	Standard
	Cr	53	4.319	ug/L	0.142	3	357	14562	3	Standard
	Fe	54	13.561	ug/L	0.810	5	72886	106270	2	Standard
	Fe	57	34.674	ug/L	0.538	1	17616	48634	1	Standard
	Mn	55	12.980	ug/L	0.141	1	1730	544897	1	Standard
>	Ge	72		ug/L			29470	23823	1	KED
	Co	59	0.058	ug/L	0.003	4	38	236	4	KED
	Ni	60	1.279	ug/L	0.066	5	22	1284	5	KED
	Ni	62	1.296	ug/L	0.187	14	8	216	12	KED
	Cu	63	6.467	ug/L	0.261	4	59	17808	2	KED
	Cu	65	6.557	ug/L	0.212	3	46	8820	2	KED
	Zn	66	2.738	ug/L	0.089	3	46	1019	2	KED
	Zn	67	2.503	ug/L	0.112	4	11	152	3	KED
	As	75	0.059	ug/L	0.008	13	12	20	7	KED
	Se	78	0.175	ug/L	0.077	43	18	18	8	KED
	Kr	83		ug/L			45	57	25	Standard
>	In-1	115		ug/L			7192	6293	3	KED
	Mo	98	2.343	ug/L	0.150	6	38	2050	3	KED
	Cd	111	0.009	ug/L	0.008	80	7	8	19	KED
	Cd	114	0.009	ug/L	0.009	91	6	10	38	KED
>	In	115		ug/L			431763	390507	1	Standard
	Ag	107	-0.006	ug/L	0.002	30	238	132	18	Standard
	Ba	135	0.662	ug/L	0.006	0	38	2421	0	Standard
	Ba	137	0.640	ug/L	0.005	0	76	4074	1	Standard
>	Tb	159		ug/L			102557	95333	1	Standard
	Pb	208	0.012	ug/L	0.000	1	168	581	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0698-01
Sample Dil Factor: 2
Comments:
Sample Date/Time: Wednesday, July 05, 2023 20:39:21
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26144	64271	1	Standard
>	Sc	45		ug/L			729297	789518	1	Standard
	Al	27	161.835	ug/L	5.714	3	9970	8124922	2	Standard
	Cr	52	4.293	ug/L	0.222	5	15699	149175	3	Standard
	Cr	53	4.582	ug/L	0.109	2	357	15795	1	Standard
	Fe	54	14.304	ug/L	1.769	12	72886	110437	2	Standard
	Fe	57	37.320	ug/L	2.171	5	17616	52132	2	Standard
	Mn	55	21.132	ug/L	0.395	1	1730	907129	1	Standard
>	Ge	72		ug/L			29470	23927	0	KED
	Co	59	0.114	ug/L	0.014	12	38	431	10	KED
	Ni	60	1.752	ug/L	0.035	2	22	1760	1	KED
	Ni	62	1.854	ug/L	0.137	7	8	308	7	KED
	Cu	63	6.263	ug/L	0.056	0	59	17330	1	KED
	Cu	65	6.221	ug/L	0.061	0	46	8408	0	KED
	Zn	66	4.159	ug/L	0.117	2	46	1535	3	KED
	Zn	67	3.817	ug/L	0.441	11	11	228	10	KED
	As	75	0.044	ug/L	0.025	57	12	17	23	KED
	Se	78	0.028	ug/L	0.258	936	18	15	30	KED
	Kr	83		ug/L			45	53	22	Standard
>	In-1	115		ug/L			7192	6107	0	KED
	Mo	98	1.776	ug/L	0.030	1	38	1518	1	KED
	Cd	111	-0.002	ug/L	0.007	329	7	6	24	KED
	Cd	114	0.004	ug/L	0.005	105	6	7	28	KED
>	In	115		ug/L			431763	387514	1	Standard
	Ag	107	-0.008	ug/L	0.002	18	238	102	19	Standard
	Ba	135	0.834	ug/L	0.016	1	38	3018	2	Standard
	Ba	137	0.824	ug/L	0.028	3	76	5184	2	Standard
>	Tb	159		ug/L			102557	94494	1	Standard
	Pb	208	0.011	ug/L	0.001	8	168	535	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0698-02
Sample Dil Factor: 2
Comments:
Sample Date/Time: Wednesday, July 05, 2023 20:44:09
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26144	99060	5	Standard
>	Sc	45		ug/L			729297	784767	1	Standard
	Al	27	163.940	ug/L	0.371	0	9970	8183001	1	Standard
	Cr	52	5.067	ug/L	0.118	2	15699	171989	1	Standard
	Cr	53	5.311	ug/L	0.087	1	357	18135	0	Standard
	Fe	54	13.521	ug/L	0.702	5	72886	108059	0	Standard
	Fe	57	37.245	ug/L	1.303	3	17616	51778	3	Standard
	Mn	55	14.062	ug/L	0.315	2	1730	600675	2	Standard
>	Ge	72		ug/L			29470	23863	0	KED
	Co	59	0.069	ug/L	0.004	6	38	272	5	KED
	Ni	60	1.290	ug/L	0.114	8	22	1297	9	KED
	Ni	62	1.276	ug/L	0.260	20	8	213	19	KED
	Cu	63	6.444	ug/L	0.083	1	59	17783	1	KED
	Cu	65	6.541	ug/L	0.047	0	46	8815	0	KED
	Zn	66	2.344	ug/L	0.213	9	46	879	8	KED
	Zn	67	2.364	ug/L	0.021	0	11	144	1	KED
	As	75	0.069	ug/L	0.012	16	12	21	9	KED
	Se	78	0.192	ug/L	0.055	28	18	18	5	KED
	Kr	83		ug/L			45	63	12	Standard
>	In-1	115		ug/L			7192	6115	2	KED
	Mo	98	2.323	ug/L	0.077	3	38	1977	1	KED
	Cd	111	0.003	ug/L	0.006	237	7	6	15	KED
	Cd	114	0.004	ug/L	0.016	355	6	7	98	KED
>	In	115		ug/L			431763	392642	2	Standard
	Ag	107	-0.007	ug/L	0.001	13	238	113	10	Standard
	Ba	135	0.692	ug/L	0.020	2	38	2541	3	Standard
	Ba	137	0.672	ug/L	0.023	3	76	4294	2	Standard
>	Tb	159		ug/L			102557	96169	1	Standard
	Pb	208	0.010	ug/L	0.001	11	168	497	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0698-03
Sample Dil Factor: 2
Comments:
Sample Date/Time: Wednesday, July 05, 2023 20:50:27
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26144	75996	0	Standard
>	Sc	45		ug/L			729297	763972	1	Standard
	Al	27	165.545	ug/L	1.134	0	9970	8043878	1	Standard
	Cr	52	4.156	ug/L	0.036	0	15699	140298	2	Standard
	Cr	53	4.489	ug/L	0.146	3	357	14979	1	Standard
	Fe	54	13.627	ug/L	0.933	6	72886	105413	0	Standard
	Fe	57	35.642	ug/L	0.862	2	17616	49016	1	Standard
	Mn	55	12.291	ug/L	0.320	2	1730	511193	1	Standard
>	Ge	72		ug/L			29470	23457	0	KED
	Co	59	0.045	ug/L	0.004	8	38	186	7	KED
	Ni	60	1.221	ug/L	0.072	5	22	1207	5	KED
	Ni	62	1.339	ug/L	0.063	4	8	220	4	KED
	Cu	63	6.749	ug/L	0.014	0	59	18304	0	KED
	Cu	65	6.719	ug/L	0.246	3	46	8900	3	KED
	Zn	66	3.075	ug/L	0.164	5	46	1122	5	KED
	Zn	67	2.859	ug/L	0.197	6	11	170	6	KED
	As	75	0.082	ug/L	0.024	29	12	23	17	KED
	Se	78	0.199	ug/L	0.193	96	18	18	18	KED
	Kr	83		ug/L			45	70	7	Standard
>	In-1	115		ug/L			7192	6250	0	KED
	Mo	98	2.532	ug/L	0.083	3	38	2201	2	KED
	Cd	111	-0.001	ug/L	0.012	866	7	6	37	KED
	Cd	114	-0.001	ug/L	0.011	1080	6	5	98	KED
>	In	115		ug/L			431763	385769	1	Standard
	Ag	107	-0.009	ug/L	0.001	14	238	90	18	Standard
	Ba	135	0.627	ug/L	0.008	1	38	2265	2	Standard
	Ba	137	0.616	ug/L	0.016	2	76	3872	1	Standard
>	Tb	159		ug/L			102557	96417	0	Standard
	Pb	208	0.012	ug/L	0.001	7	168	573	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL6
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 20:55:16
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26144	33327	1	Standard
⌈>	**Sc**	**45**		ug/L			729297	726634	1	Standard
|	**Al**	**27**	**0.146**	ug/L	0.015	10	9970	16671	4	Standard
|	**Cr**	**52**	**0.127**	ug/L	0.001	0	15699	19251	1	Standard
|	**Cr**	**53**	**-0.005**	ug/L	0.003	52	357	339	3	Standard
|	**Fe**	**54**	**4.973**	ug/L	0.714	14	72886	82716	2	Standard
|	**Fe**	**57**	**6.176**	ug/L	0.093	1	17616	22589	0	Standard
⌊	**Mn**	**55**	**-0.008**	ug/L	0.001	12	1730	1411	3	Standard
⌈>	**Ge**	**72**		ug/L			29470	27549	1	KED
|	**Co**	**59**	**-0.003**	ug/L	0.001	26	38	24	12	KED
|	**Ni**	**60**	**-0.000**	ug/L	0.002	489	22	20	10	KED
|	**Ni**	**62**	**0.013**	ug/L	0.030	223	8	10	50	KED
|	**Cu**	**63**	**0.026**	ug/L	0.012	44	59	138	26	KED
|	**Cu**	**65**	**0.022**	ug/L	0.009	39	46	78	15	KED
|	**Zn**	**66**	**0.077**	ug/L	0.031	39	46	75	17	KED
|	**Zn**	**67**	**0.097**	ug/L	0.057	58	11	17	22	KED
|	**As**	**75**	**-0.007**	ug/L	0.022	301	12	10	42	KED
⌊	**Se**	**78**	**-0.222**	ug/L	0.091	41	18	12	15	KED
	Kr	**83**		ug/L			45	50	12	Standard
⌈>	**In-1**	**115**		ug/L			7192	7068	1	KED
|	**Mo**	**98**	**-0.028**	ug/L	0.002	6	38	10	17	KED
|	**Cd**	**111**	**-0.019**	ug/L	0.013	67	7	3	91	KED
⌊	**Cd**	**114**	**-0.002**	ug/L	0.003	181	6	5	33	KED
⌈>	**In**	**115**		ug/L			431763	435107	3	Standard
|	**Ag**	**107**	**-0.010**	ug/L	0.002	15	238	86	26	Standard
|	**Ba**	**135**	**0.024**	ug/L	0.003	11	38	133	5	Standard
⌊	**Ba**	**137**	**0.021**	ug/L	0.001	3	76	226	5	Standard
⌈>	**Tb**	**159**		ug/L			102557	99572	0	Standard
⌊	**Pb**	**208**	**0.000**	ug/L	0.001	105	168	180	10	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV5
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 21:00:10
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26144	28402	3	Standard
⌈>	**Sc**	**45**		ug/L			729297	707904	1	Standard
|	**Al**	**27**	**4661.282**	ug/L	160.747	3	9970	209567386	2	Standard
|	**Cr**	**52**	**45.909**	ug/L	0.711	1	15699	1282991	2	Standard
|	**Cr**	**53**	**48.304**	ug/L	1.111	2	357	145972	0	Standard
|	**Fe**	**54**	**4864.367**	ug/L	142.475	2	72886	9687983	1	Standard
|	**Fe**	**57**	**4953.667**	ug/L	135.118	2	17616	3952262	0	Standard
⌊	**Mn**	**55**	**46.288**	ug/L	0.565	1	1730	1779681	1	Standard
⌈>	**Ge**	**72**		ug/L			29470	26666	1	KED
|	**Co**	**59**	**49.583**	ug/L	0.599	1	38	194983	0	KED
|	**Ni**	**60**	**49.991**	ug/L	0.789	1	22	55406	0	KED
|	**Ni**	**62**	**49.706**	ug/L	0.263	0	8	9008	1	KED
|	**Cu**	**63**	**50.308**	ug/L	0.622	1	59	154746	0	KED
|	**Cu**	**65**	**51.360**	ug/L	1.186	2	46	77049	1	KED
|	**Zn**	**66**	**50.008**	ug/L	0.987	1	46	20109	0	KED
|	**Zn**	**67**	**50.905**	ug/L	1.043	2	11	3270	3	KED
|	**As**	**75**	**48.959**	ug/L	0.945	1	12	9274	1	KED
⌊	**Se**	**78**	**48.903**	ug/L	1.265	2	18	1035	1	KED
	Kr	**83**		ug/L			45	59	8	Standard
⌈>	**In-1**	**115**		ug/L			7192	6803	4	KED
|	**Mo**	**98**	**48.062**	ug/L	2.646	5	38	44754	1	KED
|	**Cd**	**111**	**50.134**	ug/L	2.973	5	7	11013	2	KED
⌊	**Cd**	**114**	**50.045**	ug/L	2.443	4	6	26293	0	KED
⌈>	**In**	**115**		ug/L			431763	416223	2	Standard
|	**Ag**	**107**	**51.238**	ug/L	0.895	1	238	766345	2	Standard
|	**Ba**	**135**	**48.107**	ug/L	1.140	2	38	184710	0	Standard
⌊	**Ba**	**137**	**47.605**	ug/L	0.556	1	76	317501	1	Standard
⌈>	**Tb**	**159**		ug/L			102557	101136	2	Standard
⌊	**Pb**	**208**	**49.463**	ug/L	1.279	2	168	1825873	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB5
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 21:07:49
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26144	25689	1	Standard
>	**Sc**	**45**		ug/L			729297	748041	0	Standard
	Al	**27**	**0.029**	ug/L	0.004	12	9970	11615	1	Standard
	Cr	**52**	**0.001**	ug/L	0.009	931	15699	16132	1	Standard
	Cr	**53**	**-0.022**	ug/L	0.003	14	357	295	3	Standard
	Fe	**54**	**0.506**	ug/L	0.951	187	72886	75813	2	Standard
	Fe	**57**	**-0.550**	ug/L	0.433	78	17616	17607	2	Standard
	Mn	**55**	**-0.011**	ug/L	0.001	7	1730	1314	2	Standard
>	**Ge**	**72**		ug/L			29470	28122	1	KED
	Co	**59**	**0.005**	ug/L	0.013	251	38	57	90	KED
	Ni	**60**	**-0.002**	ug/L	0.012	624	22	19	72	KED
	Ni	**62**	**0.019**	ug/L	0.029	154	8	12	45	KED
	Cu	**63**	**0.011**	ug/L	0.010	91	59	92	35	KED
	Cu	**65**	**0.005**	ug/L	0.010	207	46	52	31	KED
	Zn	**66**	**0.082**	ug/L	0.019	23	46	78	10	KED
	Zn	**67**	**0.102**	ug/L	0.073	71	11	17	26	KED
	As	**75**	**0.012**	ug/L	0.015	118	12	14	21	KED
	Se	**78**	**0.139**	ug/L	0.155	111	18	21	16	KED
	Kr	**83**		ug/L			45	34	11	Standard
>	**In-1**	**115**		ug/L			7192	6899	2	KED
	Mo	**98**	**0.017**	ug/L	0.023	135	38	52	38	KED
	Cd	**111**	**-0.000**	ug/L	0.009	12350	7	7	27	KED
	Cd	**114**	**0.004**	ug/L	0.008	184	6	8	45	KED
>	**In**	**115**		ug/L			431763	428240	2	Standard
	Ag	**107**	**-0.001**	ug/L	0.001	84	238	224	7	Standard
	Ba	**135**	**0.026**	ug/L	0.004	14	38	139	9	Standard
	Ba	**137**	**0.025**	ug/L	0.006	25	76	247	15	Standard
>	**Tb**	**159**		ug/L			102557	98958	0	Standard
	Pb	**208**	**0.002**	ug/L	0.001	32	168	221	9	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 21:12:43
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L				25168	2	Standard
>	**Sc**	**45**		ug/L				725414	2	Standard
	Al	**27**		ug/L				11201	3	Standard
	Cr	**52**		ug/L				15679	1	Standard
	Cr	**53**		ug/L				290	3	Standard
	Fe	**54**		ug/L				77570	3	Standard
	Fe	**57**		ug/L				16431	4	Standard
	Mn	**55**		ug/L				1318	0	Standard
>	**Ge**	**72**		ug/L				28294	0	KED
	Co	**59**		ug/L				27	17	KED
	Ni	**60**		ug/L				22	32	KED
	Ni	**62**		ug/L				10	21	KED
	Cu	**63**		ug/L				76	27	KED
	Cu	**65**		ug/L				36	32	KED
	Zn	**66**		ug/L				90	7	KED
	Zn	**67**		ug/L				13	62	KED
	As	**75**		ug/L				12	23	KED
	Se	**78**		ug/L				14	17	KED
	Kr	**83**		ug/L				47	8	Standard
>	**In-1**	**115**		ug/L				7244	0	KED
	Mo	**98**		ug/L				27	46	KED
	Cd	**111**		ug/L				7	37	KED
	Cd	**114**		ug/L				13	33	KED
>	**In**	**115**		ug/L				428735	1	Standard
	Ag	**107**		ug/L				152	10	Standard
	Ba	**135**		ug/L				145	4	Standard
	Ba	**137**		ug/L				251	14	Standard
>	**Tb**	**159**		ug/L				100399	1	Standard
	Pb	**208**		ug/L				195	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV6
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 21:17:38
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	27275	1	Standard
>	Sc	45		ug/L			725414	691229	2	Standard
	Al	27	4613.818	ug/L	95.724	2	11201	202524914	0	Standard
	Cr	52	44.203	ug/L	0.942	2	15679	1206453	0	Standard
	Cr	53	47.430	ug/L	1.262	2	290	139897	2	Standard
	Fe	54	4759.509	ug/L	175.173	3	77570	9259507	1	Standard
	Fe	57	4823.408	ug/L	115.430	2	16431	3756793	0	Standard
	Mn	55	44.976	ug/L	1.465	3	1318	1687384	1	Standard
>	Ge	72		ug/L			28294	26756	1	KED
	Co	59	48.976	ug/L	0.592	1	27	193236	0	KED
	Ni	60	49.250	ug/L	1.306	2	22	54766	1	KED
	Ni	62	52.144	ug/L	1.010	1	10	9482	1	KED
	Cu	63	50.746	ug/L	0.694	1	76	156645	1	KED
	Cu	65	50.831	ug/L	1.023	2	36	76507	1	KED
	Zn	66	50.833	ug/L	0.255	0	90	20555	0	KED
	Zn	67	51.628	ug/L	2.793	5	13	3329	4	KED
	As	75	49.276	ug/L	0.388	0	12	9367	0	KED
	Se	78	48.571	ug/L	1.582	3	14	1027	2	KED
	Kr	83		ug/L			47	65	6	Standard
>	In-1	115		ug/L			7244	6794	2	KED
	Mo	98	48.476	ug/L	1.422	2	27	45117	0	KED
	Cd	111	48.725	ug/L	1.215	2	7	10703	0	KED
	Cd	114	50.362	ug/L	1.014	2	13	26459	0	KED
>	In	115		ug/L			428735	410780	1	Standard
	Ag	107	50.635	ug/L	1.200	2	152	747241	1	Standard
	Ba	135	47.929	ug/L	1.231	2	145	181732	1	Standard
	Ba	137	47.764	ug/L	0.544	1	251	314591	1	Standard
>	Tb	159		ug/L			100399	100473	0	Standard
	Pb	208	49.275	ug/L	0.712	1	195	1807586	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB6
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 21:25:16
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25168	24527	2	Standard
⌈>	**Sc**	**45**		ug/L			725414	701984	0	Standard
|	**Al**	**27**	**0.025**	ug/L	0.009	35	11201	11967	2	Standard
|	**Cr**	**52**	**0.007**	ug/L	0.005	71	15679	15364	1	Standard
|	**Cr**	**53**	**-0.001**	ug/L	0.008	692	290	278	8	Standard
|	**Fe**	**54**	**-0.070**	ug/L	0.231	330	77570	74926	0	Standard
|	**Fe**	**57**	**1.783**	ug/L	0.382	21	16431	17305	1	Standard
⌊	**Mn**	**55**	**0.000**	ug/L	0.001	150	1318	1293	1	Standard
⌈>	**Ge**	**72**		ug/L			28294	28059	1	KED
|	**Co**	**59**	**0.002**	ug/L	0.004	190	27	35	41	KED
|	**Ni**	**60**	**0.005**	ug/L	0.007	147	22	27	28	KED
|	**Ni**	**62**	**0.004**	ug/L	0.012	317	10	10	20	KED
|	**Cu**	**63**	**0.001**	ug/L	0.000	81	76	78	2	KED
|	**Cu**	**65**	**0.002**	ug/L	0.004	228	36	38	15	KED
|	**Zn**	**66**	**0.002**	ug/L	0.052	2388	90	90	23	KED
|	**Zn**	**67**	**0.087**	ug/L	0.078	89	13	19	26	KED
|	**As**	**75**	**0.024**	ug/L	0.011	46	12	17	13	KED
⌊	**Se**	**78**	**0.199**	ug/L	0.162	81	14	18	18	KED
	Kr	**83**		ug/L			47	39	16	Standard
⌈>	**In-1**	**115**		ug/L			7244	6978	2	KED
|	**Mo**	**98**	**0.024**	ug/L	0.013	54	27	49	25	KED
|	**Cd**	**111**	**-0.002**	ug/L	0.013	737	7	6	43	KED
⌊	**Cd**	**114**	**-0.011**	ug/L	0.010	96	13	7	76	KED
⌈>	**In**	**115**		ug/L			428735	429398	2	Standard
|	**Ag**	**107**	**0.006**	ug/L	0.002	33	152	240	10	Standard
|	**Ba**	**135**	**-0.000**	ug/L	0.001	433	145	144	4	Standard
⌊	**Ba**	**137**	**-0.000**	ug/L	0.004	2333	251	250	12	Standard
⌈>	**Tb**	**159**		ug/L			100399	99841	1	Standard
⌊	**Pb**	**208**	**0.002**	ug/L	0.001	57	195	252	12	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0840-BLK1
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 21:30:11
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			25168	44077	2	Standard
> Sc	45		ug/L			725414	682254	2	Standard
Al	27	1.520	ug/L	0.018	1	11201	76399	2	Standard
Cr	52	0.101	ug/L	0.011	10	15679	17422	2	Standard
Cr	53	0.056	ug/L	0.004	7	290	437	0	Standard
Fe	54	7.276	ug/L	1.988	27	77570	86761	2	Standard
Fe	57	2.049	ug/L	0.561	27	16431	17015	0	Standard
Mn	55	0.066	ug/L	0.004	5	1318	3669	1	Standard
> Ge	72		ug/L			28294	28226	0	KED
Co	59	-0.001	ug/L	0.000	31	27	24	4	KED
Ni	60	0.002	ug/L	0.006	343	22	24	27	KED
Ni	62	-0.016	ug/L	0.006	35	10	6	15	KED
Cu	63	0.018	ug/L	0.004	22	76	135	9	KED
Cu	65	0.028	ug/L	0.007	25	36	81	13	KED
Zn	66	0.213	ug/L	0.053	25	90	180	12	KED
Zn	67	0.169	ug/L	0.114	67	13	24	30	KED
As	75	0.001	ug/L	0.007	733	12	12	10	KED
Se	78	0.119	ug/L	0.015	12	14	16	1	KED
Kr	83		ug/L			47	37	20	Standard
> In-1	115		ug/L			7244	7125	0	KED
Mo	98	0.064	ug/L	0.021	32	27	90	23	KED
Cd	111	-0.002	ug/L	0.015	682	7	6	47	KED
Cd	114	-0.007	ug/L	0.011	164	13	9	63	KED
> In	115		ug/L			428735	428011	0	Standard
Ag	107	-0.001	ug/L	0.000	58	152	140	4	Standard
Ba	135	0.001	ug/L	0.003	224	145	150	7	Standard
Ba	137	0.002	ug/L	0.001	22	251	267	0	Standard
> Tb	159		ug/L			100399	99625	2	Standard
Pb	208	0.004	ug/L	0.001	27	195	328	10	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0840-BS1
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 21:35:05
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	47136	1	Standard
>	Sc	45		ug/L			725414	667194	1	Standard
	Al	27	4634.954	ug/L	115.419	2	11201	196410258	1	Standard
	Cr	52	22.956	ug/L	0.234	1	15679	611923	1	Standard
	Cr	53	24.511	ug/L	0.577	2	290	69932	2	Standard
	Fe	54	4825.523	ug/L	182.694	3	77570	9063282	2	Standard
	Fe	57	4899.662	ug/L	116.001	2	16431	3683970	1	Standard
	Mn	55	23.124	ug/L	0.405	1	1318	838316	0	Standard
>	Ge	72		ug/L			28294	27258	0	KED
	Co	59	24.017	ug/L	0.048	0	27	96562	0	KED
	Ni	60	24.513	ug/L	0.611	2	22	27785	2	KED
	Ni	62	24.535	ug/L	0.656	2	10	4551	2	KED
	Cu	63	25.101	ug/L	0.401	1	76	78978	1	KED
	Cu	65	25.154	ug/L	0.669	2	36	38593	2	KED
	Zn	66	76.294	ug/L	0.922	1	90	31387	1	KED
	Zn	67	74.731	ug/L	2.359	3	13	4904	3	KED
	As	75	23.374	ug/L	0.227	0	12	4533	0	KED
	Se	78	75.355	ug/L	1.294	1	14	1617	1	KED
	Kr	83		ug/L			47	56	5	Standard
>	In-1	115		ug/L			7244	6915	1	KED
	Mo	98	22.060	ug/L	0.096	0	27	20921	1	KED
	Cd	111	23.825	ug/L	0.166	0	7	5332	0	KED
	Cd	114	23.726	ug/L	0.288	1	13	12698	1	KED
>	In	115		ug/L			428735	404378	0	Standard
	Ag	107	25.587	ug/L	0.196	0	152	371869	0	Standard
	Ba	135	24.338	ug/L	0.227	0	145	90937	0	Standard
	Ba	137	23.898	ug/L	0.141	0	251	155075	0	Standard
>	Tb	159		ug/L			100399	101157	2	Standard
	Pb	208	24.408	ug/L	0.502	2	195	901347	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0865-BLK1
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 21:39:59
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			25168	45531	3	Standard
> Sc	45		ug/L			725414	675950	1	Standard
Al	27	15.964	ug/L	0.830	5	11201	695483	3	Standard
Cr	52	0.110	ug/L	0.018	16	15679	17511	2	Standard
Cr	53	0.050	ug/L	0.004	8	290	414	1	Standard
Fe	54	12.772	ug/L	2.115	16	77570	96363	2	Standard
Fe	57	5.936	ug/L	0.724	12	16431	19808	1	Standard
Mn	55	0.183	ug/L	0.010	5	1318	7951	3	Standard
> Ge	72		ug/L			28294	28689	0	KED
Co	59	-0.002	ug/L	0.001	77	27	20	30	KED
Ni	60	0.039	ug/L	0.007	17	22	69	11	KED
Ni	62	0.006	ug/L	0.010	171	10	11	16	KED
Cu	63	0.041	ug/L	0.005	13	76	213	7	KED
Cu	65	0.045	ug/L	0.016	35	36	109	23	KED
Zn	66	0.384	ug/L	0.013	3	90	257	1	KED
Zn	67	0.403	ug/L	0.183	45	13	41	30	KED
As	75	0.016	ug/L	0.018	110	12	15	22	KED
Se	78	0.258	ug/L	0.113	43	14	20	12	KED
Kr	83		ug/L			47	46	44	Standard
> In-1	115		ug/L			7244	7198	0	KED
Mo	98	0.051	ug/L	0.003	6	27	78	4	KED
Cd	111	0.003	ug/L	0.011	353	7	8	29	KED
Cd	114	-0.010	ug/L	0.002	20	13	8	13	KED
> In	115		ug/L			428735	426558	3	Standard
Ag	107	0.009	ug/L	0.006	65	152	290	27	Standard
Ba	135	0.102	ug/L	0.014	13	145	544	5	Standard
Ba	137	0.096	ug/L	0.009	8	251	905	2	Standard
> Tb	159		ug/L			100399	98690	0	Standard
Pb	208	0.061	ug/L	0.006	9	195	2402	8	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0865-BS1
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 21:44:53
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			25168	44975	2	Standard
> Sc	45		ug/L			725414	681774	1	Standard
Al	27	4482.826	ug/L	27.401	0	11201	194153461	2	Standard
Cr	52	22.493	ug/L	0.577	2	15679	612850	2	Standard
Cr	53	23.539	ug/L	0.384	1	290	68621	0	Standard
Fe	54	4702.612	ug/L	159.003	3	77570	9028757	3	Standard
Fe	57	4710.066	ug/L	45.290	0	16431	3619756	1	Standard
Mn	55	22.076	ug/L	0.393	1	1318	817819	1	Standard
> Ge	72		ug/L			28294	27264	1	KED
Co	59	24.136	ug/L	0.584	2	27	97053	2	KED
Ni	60	24.169	ug/L	0.913	3	22	27391	2	KED
Ni	62	24.788	ug/L	0.554	2	10	4598	1	KED
Cu	63	24.640	ug/L	0.586	2	76	77525	0	KED
Cu	65	24.695	ug/L	0.518	2	36	37888	0	KED
Zn	66	75.291	ug/L	1.438	1	90	30980	2	KED
Zn	67	73.059	ug/L	1.067	1	13	4796	1	KED
As	75	23.227	ug/L	0.442	1	12	4504	1	KED
Se	78	75.967	ug/L	1.318	1	14	1631	2	KED
Kr	83		ug/L			47	58	36	Standard
> In-1	115		ug/L			7244	6930	1	KED
Mo	98	23.127	ug/L	0.607	2	27	21975	0	KED
Cd	111	23.607	ug/L	0.583	2	7	5294	1	KED
Cd	114	23.973	ug/L	0.167	0	13	12858	1	KED
> In	115		ug/L			428735	409280	2	Standard
Ag	107	24.672	ug/L	0.718	2	152	362743	1	Standard
Ba	135	24.099	ug/L	0.736	3	145	91089	1	Standard
Ba	137	23.736	ug/L	0.666	2	251	155812	0	Standard
> Tb	159		ug/L			100399	100883	0	Standard
Pb	208	24.077	ug/L	0.371	1	195	886891	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0227-02
Sample Dil Factor: 100
Comments:
Sample Date/Time: Wednesday, July 05, 2023 21:49:47
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25168	31173	3	Standard
⌈>	**Sc**	**45**		ug/L			725414	698968	0	Standard
|	**Al**	**27**	**2017.439**	ug/L	59.539	2	11201	89570805	2	Standard
|	**Cr**	**52**	**2.143**	ug/L	0.047	2	15679	73538	1	Standard
|	**Cr**	**53**	**2.285**	ug/L	0.042	1	290	7084	1	Standard
|	**Fe**	**54**	**4820.454**	ug/L	95.327	1	77570	9487026	1	Standard
|	**Fe**	**57**	**4868.985**	ug/L	47.126	0	16431	3835943	0	Standard
⌊	**Mn**	**55**	**86.762**	ug/L	2.034	2	1318	3291655	1	Standard
⌈>	**Ge**	**72**		ug/L			28294	27775	1	KED
|	**Co**	**59**	**2.786**	ug/L	0.002	0	27	11438	1	KED
|	**Ni**	**60**	**2.765**	ug/L	0.130	4	22	3211	3	KED
|	**Ni**	**62**	**2.949**	ug/L	0.249	8	10	565	7	KED
|	**Cu**	**63**	**12.025**	ug/L	0.352	2	76	38582	1	KED
|	**Cu**	**65**	**12.013**	ug/L	0.157	1	36	18799	1	KED
|	**Zn**	**66**	**15.650**	ug/L	0.171	1	90	6631	1	KED
|	**Zn**	**67**	**16.000**	ug/L	1.048	6	13	1080	5	KED
|	**As**	**75**	**0.586**	ug/L	0.043	7	12	127	7	KED
⌊	**Se**	**78**	**0.431**	ug/L	0.225	52	14	23	22	KED
	Kr	**83**		ug/L			47	56	15	Standard
⌈>	**In-1**	**115**		ug/L			7244	6968	1	KED
|	**Mo**	**98**	**0.079**	ug/L	0.015	18	27	102	13	KED
|	**Cd**	**111**	**0.011**	ug/L	0.014	130	7	9	33	KED
⌊	**Cd**	**114**	**0.008**	ug/L	0.013	165	13	17	39	KED
⌈>	**In**	**115**		ug/L			428735	407753	0	Standard
|	**Ag**	**107**	**0.032**	ug/L	0.002	6	152	612	5	Standard
|	**Ba**	**135**	**16.416**	ug/L	0.034	0	145	61893	0	Standard
⌊	**Ba**	**137**	**16.275**	ug/L	0.333	2	251	106564	1	Standard
⌈>	**Tb**	**159**		ug/L			100399	106080	2	Standard
⌊	**Pb**	**208**	**5.588**	ug/L	0.203	3	195	216485	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0536-01
Sample Dil Factor: 20
Comments:
Sample Date/Time: Wednesday, July 05, 2023 21:54:35
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	57904	1	Standard
>	Sc	45		ug/L			725414	760280	3	Standard
	Al	27	8979.709	ug/L	165.342	1	11201	433494962	1	Standard
	Cr	52	11.795	ug/L	0.335	2	15679	366029	0	Standard
	Cr	53	12.474	ug/L	0.635	5	290	40670	3	Standard
	Fe	54	13647.675	ug/L	643.923	4	77570	29050039	3	Standard
	Fe	57	13658.066	ug/L	368.586	2	16431	11666388	0	Standard
	Mn	55	145.248	ug/L	6.479	4	1318	5988906	2	Standard
>	Ge	72		ug/L			28294	25426	0	KED
	Co	59	4.859	ug/L	0.141	2	27	18244	3	KED
	Ni	60	12.577	ug/L	0.294	2	22	13307	1	KED
	Ni	62	12.834	ug/L	0.274	2	10	2224	2	KED
	Cu	63	25.318	ug/L	0.145	0	76	74305	0	KED
	Cu	65	25.940	ug/L	0.015	0	36	37122	0	KED
	Zn	66	58.001	ug/L	0.464	0	90	22277	1	KED
	Zn	67	56.534	ug/L	1.282	2	13	3463	2	KED
	As	75	5.341	ug/L	0.070	1	12	974	0	KED
	Se	78	1.022	ug/L	0.209	20	14	32	12	KED
	Kr	83		ug/L			47	120	32	Standard
>	In-1	115		ug/L			7244	6547	2	KED
	Mo	98	0.596	ug/L	0.027	4	27	560	6	KED
	Cd	111	0.193	ug/L	0.057	29	7	47	26	KED
	Cd	114	0.198	ug/L	0.028	14	13	112	13	KED
>	In	115		ug/L			428735	395666	1	Standard
	Ag	107	0.143	ug/L	0.002	1	152	2178	2	Standard
	Ba	135	31.756	ug/L	0.830	2	145	116026	0	Standard
	Ba	137	31.544	ug/L	0.302	0	251	200189	0	Standard
>	Tb	159		ug/L			100399	112462	1	Standard
	Pb	208	12.234	ug/L	0.119	0	195	502494	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0652-DUP2
Sample Dil Factor: 20
Comments:
Sample Date/Time: Wednesday, July 05, 2023 21:59:29
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	56645	1	Standard
>	Sc	45		ug/L			725414	769799	3	Standard
	Al	27	8387.811	ug/L	284.490	3	11201	409877655	1	Standard
	Cr	52	10.685	ug/L	0.180	1	15679	337413	2	Standard
	Cr	53	11.434	ug/L	0.307	2	290	37780	0	Standard
	Fe	54	12689.576	ug/L	487.576	3	77570	27350869	0	Standard
	Fe	57	13060.053	ug/L	622.883	4	16431	11291772	1	Standard
	Mn	55	138.582	ug/L	5.137	3	1318	5785697	0	Standard
>	Ge	72		ug/L			28294	26309	1	KED
	Co	59	4.545	ug/L	0.098	2	27	17654	1	KED
	Ni	60	12.433	ug/L	0.171	1	22	13614	2	KED
	Ni	62	12.847	ug/L	0.322	2	10	2304	2	KED
	Cu	63	23.367	ug/L	0.285	1	76	70959	0	KED
	Cu	65	23.383	ug/L	0.381	1	36	34624	1	KED
	Zn	66	55.282	ug/L	1.229	2	90	21971	1	KED
	Zn	67	53.924	ug/L	0.523	0	13	3419	1	KED
	As	75	4.369	ug/L	0.073	1	12	827	2	KED
	Se	78	0.901	ug/L	0.211	23	14	31	13	KED
	Kr	83		ug/L			47	97	17	Standard
>	In-1	115		ug/L			7244	6682	1	KED
	Mo	98	0.431	ug/L	0.069	16	27	419	14	KED
	Cd	111	0.104	ug/L	0.020	19	7	29	14	KED
	Cd	114	0.138	ug/L	0.025	17	13	83	14	KED
>	In	115		ug/L			428735	394095	2	Standard
	Ag	107	0.134	ug/L	0.004	3	152	2033	0	Standard
	Ba	135	28.572	ug/L	0.502	1	145	103993	0	Standard
	Ba	137	28.382	ug/L	0.256	0	251	179449	2	Standard
>	Tb	159		ug/L			100399	112328	0	Standard
	Pb	208	10.539	ug/L	0.207	1	195	432398	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0652-MS2
Sample Dil Factor: 20
Comments:
Sample Date/Time: Wednesday, July 05, 2023 22:04:23
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	57333	3	Standard
>	Sc	45		ug/L			725414	766027	1	Standard
	Al	27	8437.957	ug/L	80.170	0	11201	410546905	1	Standard
	Cr	52	30.742	ug/L	0.356	1	15679	935110	1	Standard
	Cr	53	32.437	ug/L	1.702	5	290	106088	3	Standard
	Fe	54	12340.936	ug/L	311.915	2	77570	26485795	1	Standard
	Fe	57	12899.521	ug/L	131.789	1	16431	11109060	1	Standard
	Mn	55	159.237	ug/L	2.282	1	1318	6619576	1	Standard
>	Ge	72		ug/L			28294	25621	2	KED
	Co	59	28.154	ug/L	0.651	2	27	106356	1	KED
	Ni	60	36.631	ug/L	1.085	2	22	38997	0	KED
	Ni	62	37.197	ug/L	1.398	3	10	6476	1	KED
	Cu	63	46.943	ug/L	1.252	2	76	138705	0	KED
	Cu	65	47.512	ug/L	1.199	2	36	68462	1	KED
	Zn	66	127.085	ug/L	4.607	3	90	49058	1	KED
	Zn	67	120.717	ug/L	2.221	1	13	7437	1	KED
	As	75	27.791	ug/L	0.391	1	12	5062	1	KED
	Se	78	71.466	ug/L	1.613	2	14	1442	1	KED
	Kr	83		ug/L			47	108	10	Standard
>	In-1	115		ug/L			7244	6464	2	KED
	Mo	98	0.522	ug/L	0.049	9	27	487	10	KED
	Cd	111	23.037	ug/L	0.538	2	7	4819	1	KED
	Cd	114	23.181	ug/L	0.961	4	13	11592	2	KED
>	In	115		ug/L			428735	387905	2	Standard
	Ag	107	7.770	ug/L	0.209	2	152	108377	1	Standard
	Ba	135	53.881	ug/L	1.257	2	145	192883	1	Standard
	Ba	137	53.038	ug/L	1.722	3	251	329671	0	Standard
>	Tb	159		ug/L			100399	110521	1	Standard
	Pb	208	48.603	ug/L	0.645	1	195	1961230	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0652-MSD2
Sample Dil Factor: 20
Comments:
Sample Date/Time: Wednesday, July 05, 2023 22:09:17
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	56258	0	Standard
>	Sc	45		ug/L			725414	782210	2	Standard
	Al	27	8405.171	ug/L	241.450	2	11201	417487599	1	Standard
	Cr	52	30.130	ug/L	0.531	1	15679	936102	1	Standard
	Cr	53	31.416	ug/L	0.903	2	290	104963	2	Standard
	Fe	54	12844.184	ug/L	370.639	2	77570	28144035	2	Standard
	Fe	57	13185.915	ug/L	324.848	2	16431	11592082	1	Standard
	Mn	55	157.561	ug/L	4.540	2	1318	6686689	1	Standard
>	Ge	72		ug/L			28294	25738	0	KED
	Co	59	29.741	ug/L	0.618	2	27	112897	2	KED
	Ni	60	38.713	ug/L	0.683	1	22	41426	2	KED
	Ni	62	40.684	ug/L	0.364	0	10	7119	1	KED
	Cu	63	48.435	ug/L	0.649	1	76	143823	0	KED
	Cu	65	48.467	ug/L	0.633	1	36	70180	0	KED
	Zn	66	129.374	ug/L	1.900	1	90	50197	1	KED
	Zn	67	126.016	ug/L	2.996	2	13	7800	1	KED
	As	75	28.459	ug/L	0.463	1	12	5208	1	KED
	Se	78	76.530	ug/L	1.683	2	14	1550	1	KED
	Kr	83		ug/L			47	109	16	Standard
>	In-1	115		ug/L			7244	6666	0	KED
	Mo	98	0.530	ug/L	0.005	1	27	509	1	KED
	Cd	111	23.844	ug/L	0.398	1	7	5145	1	KED
	Cd	114	23.517	ug/L	0.205	0	13	12134	1	KED
>	In	115		ug/L			428735	408141	2	Standard
	Ag	107	7.939	ug/L	0.288	3	152	116498	2	Standard
	Ba	135	49.893	ug/L	1.621	3	145	187928	1	Standard
	Ba	137	49.908	ug/L	1.683	3	251	326436	0	Standard
>	Tb	159		ug/L			100399	112743	2	Standard
	Pb	208	30.477	ug/L	1.161	3	195	1253817	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL7
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 22:14:12
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25168	28391	3	Standard
⌈>	**Sc**	**45**		ug/L			725414	637336	2	Standard
|	**Al**	**27**	**0.417**	ug/L	0.019	4	11201	26749	5	Standard
|	**Cr**	**52**	**0.068**	ug/L	0.026	38	15679	15445	2	Standard
|	**Cr**	**53**	**-0.011**	ug/L	0.006	57	290	225	5	Standard
|	**Fe**	**54**	**3.304**	ug/L	1.351	40	77570	74013	2	Standard
|	**Fe**	**57**	**1.086**	ug/L	0.405	37	16431	15209	1	Standard
⌊	**Mn**	**55**	**0.002**	ug/L	0.001	49	1318	1228	0	Standard
⌈>	**Ge**	**72**		ug/L			28294	27657	0	KED
|	**Co**	**59**	**0.002**	ug/L	0.001	39	27	35	8	KED
|	**Ni**	**60**	**0.004**	ug/L	0.004	103	22	26	18	KED
|	**Ni**	**62**	**0.015**	ug/L	0.006	43	10	12	8	KED
|	**Cu**	**63**	**0.020**	ug/L	0.010	49	76	137	23	KED
|	**Cu**	**65**	**0.018**	ug/L	0.009	46	36	64	21	KED
|	**Zn**	**66**	**-0.009**	ug/L	0.012	141	90	85	5	KED
|	**Zn**	**67**	**0.004**	ug/L	0.099	2301	13	13	49	KED
|	**As**	**75**	**-0.004**	ug/L	0.010	245	12	11	17	KED
⌊	**Se**	**78**	**0.159**	ug/L	0.178	112	14	17	21	KED
	Kr	**83**		ug/L			47	39	34	Standard
⌈>	**In-1**	**115**		ug/L			7244	6922	1	KED
|	**Mo**	**98**	**-0.014**	ug/L	0.003	24	27	13	25	KED
|	**Cd**	**111**	**0.017**	ug/L	0.034	199	7	11	68	KED
⌊	**Cd**	**114**	**-0.008**	ug/L	0.009	109	13	8	57	KED
⌈>	**In**	**115**		ug/L			428735	415506	1	Standard
|	**Ag**	**107**	**-0.001**	ug/L	0.001	66	152	126	12	Standard
|	**Ba**	**135**	**0.003**	ug/L	0.002	63	145	154	5	Standard
⌊	**Ba**	**137**	**0.001**	ug/L	0.000	33	251	252	1	Standard
⌈>	**Tb**	**159**		ug/L			100399	98846	0	Standard
⌊	**Pb**	**208**	**0.004**	ug/L	0.001	27	195	349	12	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV7
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 22:19:06
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25168	25602	1	Standard
⌈>	**Sc**	**45**		ug/L			725414	644150	2	Standard
|	**Al**	**27**	**4620.099**	ug/L	201.152	4	11201	188930615	2	Standard
|	**Cr**	**52**	**45.432**	ug/L	1.242	2	15679	1155034	1	Standard
|	**Cr**	**53**	**47.171**	ug/L	1.548	3	290	129621	1	Standard
|	**Fe**	**54**	**4770.977**	ug/L	160.512	3	77570	8650099	1	Standard
|	**Fe**	**57**	**4937.223**	ug/L	146.008	2	16431	3583962	3	Standard
⌊	**Mn**	**55**	**45.802**	ug/L	0.843	1	1318	1601734	1	Standard
⌈>	**Ge**	**72**		ug/L			28294	26913	2	KED
|	**Co**	**59**	**48.359**	ug/L	0.983	2	27	191902	1	KED
|	**Ni**	**60**	**48.302**	ug/L	0.591	1	22	54029	1	KED
|	**Ni**	**62**	**48.945**	ug/L	1.606	3	10	8950	1	KED
|	**Cu**	**63**	**49.427**	ug/L	0.910	1	76	153447	1	KED
|	**Cu**	**65**	**49.253**	ug/L	0.808	1	36	74562	1	KED
|	**Zn**	**66**	**49.526**	ug/L	1.103	2	90	20141	0	KED
|	**Zn**	**67**	**48.931**	ug/L	0.388	0	13	3174	1	KED
|	**As**	**75**	**48.120**	ug/L	1.068	2	12	9198	1	KED
⌊	**Se**	**78**	**47.253**	ug/L	1.343	2	14	1006	0	KED
	Kr	**83**		ug/L			47	59	17	Standard
⌈>	**In-1**	**115**		ug/L			7244	6694	2	KED
|	**Mo**	**98**	**47.660**	ug/L	0.261	0	27	43727	1	KED
|	**Cd**	**111**	**49.208**	ug/L	0.609	1	7	10654	1	KED
⌊	**Cd**	**114**	**49.409**	ug/L	1.199	2	13	25580	1	KED
⌈>	**In**	**115**		ug/L			428735	397997	1	Standard
|	**Ag**	**107**	**49.481**	ug/L	0.411	0	152	707641	1	Standard
|	**Ba**	**135**	**48.668**	ug/L	1.574	3	145	178786	1	Standard
⌊	**Ba**	**137**	**48.615**	ug/L	1.023	2	251	310188	0	Standard
⌈>	**Tb**	**159**		ug/L			100399	97904	0	Standard
⌊	**Pb**	**208**	**49.281**	ug/L	0.494	1	195	1761574	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB7
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 22:26:45
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25168	23210	0	Standard
>	**Sc**	**45**		ug/L			725414	643068	1	Standard
	Al	**27**	**0.070**	ug/L	0.002	3	11201	12776	0	Standard
	Cr	**52**	**0.009**	ug/L	0.003	31	15679	14112	0	Standard
	Cr	**53**	**-0.013**	ug/L	0.005	35	290	220	5	Standard
	Fe	**54**	**-0.005**	ug/L	1.066	20127	77570	68743	1	Standard
	Fe	**57**	**2.293**	ug/L	0.500	21	16431	16219	1	Standard
	Mn	**55**	**0.001**	ug/L	0.001	126	1318	1189	1	Standard
>	**Ge**	**72**		ug/L			28294	27680	1	KED
	Co	**59**	**0.001**	ug/L	0.003	451	27	29	38	KED
	Ni	**60**	**0.004**	ug/L	0.003	93	22	26	16	KED
	Ni	**62**	**-0.006**	ug/L	0.021	360	10	8	44	KED
	Cu	**63**	**0.000**	ug/L	0.007	5782	76	75	30	KED
	Cu	**65**	**0.012**	ug/L	0.004	32	36	53	10	KED
	Zn	**66**	**0.034**	ug/L	0.021	62	90	102	6	KED
	Zn	**67**	**0.178**	ug/L	0.160	89	13	24	40	KED
	As	**75**	**0.010**	ug/L	0.007	69	12	14	8	KED
	Se	**78**	**0.232**	ug/L	0.048	20	14	18	5	KED
	Kr	**83**		ug/L			47	43	19	Standard
>	**In-1**	**115**		ug/L			7244	6793	1	KED
	Mo	**98**	**0.029**	ug/L	0.015	50	27	53	24	KED
	Cd	**111**	**0.001**	ug/L	0.002	318	7	7	7	KED
	Cd	**114**	**-0.013**	ug/L	0.009	71	13	6	78	KED
>	**In**	**115**		ug/L			428735	410095	1	Standard
	Ag	**107**	**0.005**	ug/L	0.001	22	152	220	7	Standard
	Ba	**135**	**-0.000**	ug/L	0.008	2208	145	137	21	Standard
	Ba	**137**	**0.002**	ug/L	0.002	134	251	252	7	Standard
>	**Tb**	**159**		ug/L			100399	97023	1	Standard
	Pb	**208**	**0.001**	ug/L	0.001	68	195	229	11	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0365-17
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 22:31:39
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			25168	50777	2	Standard
> Sc	45		ug/L			725414	742049	1	Standard
Al	27	234.311	ug/L	4.925	2	11201	11055071	2	Standard
Cr	52	0.187	ug/L	0.002	0	15679	21464	1	Standard
Cr	53	0.167	ug/L	0.004	2	290	825	0	Standard
Fe	54	8.307	ug/L	1.463	17	77570	96538	1	Standard
Fe	57	22.200	ug/L	0.685	3	16431	35294	0	Standard
Mn	~~55~~	29.188	ug/L	0.563	1	1318	1176460	1	Standard
> Ge	72		ug/L			28294	26821	1	KED
Co	59	1.991	ug/L	0.039	1	27	7899	0	KED
Ni	60	5.170	ug/L	0.235	4	22	5781	3	KED
Ni	62	9.517	ug/L	0.085	0	10	1742	2	KED
Cu	63	1332.902	ug/L	19.669	1	76	4122236	0	KED
Cu	65	1248.261	ug/L	7.617	0	36	1882680	0	KED
Zn	66	1116.941	ug/L	39.725	3	90	450823	2	KED
Zn	67	1046.413	ug/L	17.963	1	13	67404	0	KED
As	75	0.019	ug/L	0.007	34	12	15	7	KED
Se	78	0.250	ug/L	0.183	73	14	18	21	KED
Kr	83		ug/L			47	52	4	Standard
> In-1	115		ug/L			7244	6859	0	KED
Mo	98	0.049	ug/L	0.011	22	27	72	13	KED
Cd	111	8.348	ug/L	0.119	1	7	1857	1	KED
Cd	114	8.411	ug/L	0.205	2	13	4474	3	KED
> In	115		ug/L			428735	408861	1	Standard
Ag	107	0.012	ug/L	0.001	9	152	317	6	Standard
Ba	135	28.888	ug/L	0.609	2	145	109096	1	Standard
Ba	137	28.618	ug/L	0.320	1	251	187709	0	Standard
> Tb	159		ug/L			100399	98445	2	Standard
Pb	208	0.014	ug/L	0.002	13	195	699	8	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0365-19
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 22:36:34
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	51623	0	Standard
>	Sc	45		ug/L			725414	841280	0	Standard
	Al	27	1870.744	ug/L	78.938	4	11201	99974857	3	Standard
	Cr	52	0.152	ug/L	0.010	6	15679	23184	1	Standard
	Cr	53	0.185	ug/L	0.002	1	290	1000	0	Standard
	Fe	54	9319.218	ug/L	71.725	0	77570	21993351	0	Standard
	Fe	57	9447.405	ug/L	295.321	3	16431	8941141	3	Standard
	Mn	55	1913.621	ug/L	32.658	1	1318	87359165	1	Standard
>	Ge	72		ug/L			28294	24027	0	KED
	Co	59	27.371	ug/L	0.160	0	27	96999	1	KED
	Ni	60	11.676	ug/L	0.365	3	22	11675	2	KED
	Ni	62	12.237	ug/L	0.221	1	10	2005	2	KED
	Cu	63	18.313	ug/L	0.195	1	76	50808	1	KED
	Cu	65	18.417	ug/L	0.186	1	36	24916	1	KED
	Zn	66	164.804	ug/L	0.428	0	90	59674	0	KED
	Zn	67	150.845	ug/L	1.984	1	13	8715	0	KED
	As	75	0.159	ug/L	0.016	9	12	37	6	KED
	Se	78	0.352	ug/L	0.183	52	14	18	18	KED
	Kr	83		ug/L			47	57	8	Standard
>	In-1	115		ug/L			7244	6466	4	KED
	Mo	98	0.274	ug/L	0.016	5	27	267	3	KED
	Cd	111	0.937	ug/L	0.085	9	7	202	5	KED
	Cd	114	0.965	ug/L	0.064	6	13	493	2	KED
>	In	115		ug/L			428735	399427	2	Standard
	Ag	107	0.003	ug/L	0.002	73	152	186	15	Standard
	Ba	135	18.827	ug/L	0.389	2	145	69496	1	Standard
	Ba	137	18.567	ug/L	0.502	2	251	119013	1	Standard
>	Tb	159		ug/L			100399	100528	0	Standard
	Pb	208	0.232	ug/L	0.004	1	195	8700	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL8
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 22:41:28
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25168	29683	1	Standard
⎡>	**Sc**	**45**		ug/L			725414	685417	1	Standard
⎢	**Al**	**27**	**0.185**	ug/L	0.013	7	11201	18622	4	Standard
⎢	**Cr**	**52**	**0.042**	ug/L	0.006	15	15679	15930	1	Standard
⎢	**Cr**	**53**	**-0.018**	ug/L	0.003	18	290	223	3	Standard
⎢	**Fe**	**54**	**1.653**	ug/L	1.090	65	77570	76469	3	Standard
⎢	**Fe**	**57**	**-4.991**	ug/L	0.086	1	16431	11685	0	Standard
⎣	**Mn**	**55**	**0.060**	ug/L	0.003	4	1318	3486	3	Standard
⎡>	**Ge**	**72**		ug/L			28294	26502	1	KED
⎢	**Co**	**59**	**0.002**	ug/L	0.003	115	27	34	27	KED
⎢	**Ni**	**60**	**0.000**	ug/L	0.002	1327	22	20	9	KED
⎢	**Ni**	**62**	**-0.003**	ug/L	0.025	768	10	8	49	KED
⎢	**Cu**	**63**	**0.031**	ug/L	0.004	12	76	166	5	KED
⎢	**Cu**	**65**	**0.047**	ug/L	0.008	18	36	103	12	KED
⎢	**Zn**	**66**	**0.039**	ug/L	0.024	62	90	100	7	KED
⎢	**Zn**	**67**	**0.153**	ug/L	0.041	27	13	22	9	KED
⎢	**As**	**75**	**-0.008**	ug/L	0.006	82	12	10	13	KED
⎣	**Se**	**78**	**0.129**	ug/L	0.136	105	14	15	18	KED
	Kr	**83**		ug/L			47	45	8	Standard
⎡>	**In-1**	**115**		ug/L			7244	6918	1	KED
⎢	**Mo**	**98**	**-0.014**	ug/L	0.007	51	27	12	53	KED
⎢	**Cd**	**111**	**-0.001**	ug/L	0.022	1734	7	6	68	KED
⎣	**Cd**	**114**	**-0.012**	ug/L	0.006	48	13	6	44	KED
⎡>	**In**	**115**		ug/L			428735	420412	1	Standard
⎢	**Ag**	**107**	**-0.003**	ug/L	0.001	24	152	96	12	Standard
⎢	**Ba**	**135**	**0.008**	ug/L	0.002	20	145	174	3	Standard
⎣	**Ba**	**137**	**0.001**	ug/L	0.003	199	251	255	7	Standard
⎡>	**Tb**	**159**		ug/L			100399	98441	2	Standard
⎣	**Pb**	**208**	**0.000**	ug/L	0.000	285	195	197	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0152-04
Sample Dil Factor: 100
Comments:
Sample Date/Time: Wednesday, July 05, 2023 22:46:23
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25168	31337	3	Standard
⌈>	**Sc**	**45**		ug/L			725414	759891	2	Standard
|	**Al**	**27**	**3913.666**	ug/L	129.972	3	11201	188813048	1	Standard
|	**Cr**	**52**	**4.008**	ug/L	0.100	2	15679	135204	1	Standard
|	**Cr**	**53**	**4.226**	ug/L	0.151	3	290	13979	2	Standard
|	**Fe**	**54**	**4640.266**	ug/L	92.150	1	77570	9930312	2	Standard
|	**Fe**	**57**	**4714.045**	ug/L	157.262	3	16431	4035851	0	Standard
⌊	**Mn**	**55**	**73.684**	ug/L	2.599	3	1318	3037782	0	Standard
⌈>	**Ge**	**72**		ug/L			28294	26788	0	KED
|	**Co**	**59**	**2.076**	ug/L	0.084	4	27	8225	3	KED
|	**Ni**	**60**	**3.858**	ug/L	0.116	2	22	4314	2	KED
|	**Ni**	**62**	**3.996**	ug/L	0.240	6	10	736	6	KED
|	**Cu**	**63**	**8.443**	ug/L	0.191	2	76	26153	1	KED
|	**Cu**	**65**	**8.592**	ug/L	0.237	2	36	12974	1	KED
|	**Zn**	**66**	**28.116**	ug/L	0.592	2	90	11420	1	KED
|	**Zn**	**67**	**29.297**	ug/L	0.992	3	13	1897	3	KED
|	**As**	**75**	**0.685**	ug/L	0.029	4	12	141	3	KED
⌊	**Se**	**78**	**0.337**	ug/L	0.220	65	14	20	23	KED
	Kr	**83**		ug/L			47	71	8	Standard
⌈>	**In-1**	**115**		ug/L			7244	6682	1	KED
|	**Mo**	**98**	**0.007**	ug/L	0.005	73	27	32	14	KED
|	**Cd**	**111**	**0.042**	ug/L	0.027	64	7	16	36	KED
⌊	**Cd**	**114**	**0.043**	ug/L	0.021	49	13	34	31	KED
⌈>	**In**	**115**		ug/L			428735	415534	1	Standard
|	**Ag**	**107**	**0.066**	ug/L	0.003	4	152	1134	3	Standard
|	**Ba**	**135**	**22.430**	ug/L	0.152	0	145	86129	1	Standard
⌊	**Ba**	**137**	**22.151**	ug/L	0.482	2	251	147709	2	Standard
⌈>	**Tb**	**159**		ug/L			100399	105559	2	Standard
⌊	**Pb**	**208**	**5.081**	ug/L	0.156	3	195	195969	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0536-SRL2
Sample Dil Factor: 500
Comments:
Sample Date/Time: Wednesday, July 05, 2023 22:51:12
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25168	28937	2	Standard
>	**Sc**	**45**		ug/L			725414	682633	3	Standard
	Al	**27**	**785.903**	ug/L	36.910	4	11201	34055635	1	Standard
	Cr	**52**	**0.896**	ug/L	0.044	4	15679	38583	1	Standard
	Cr	**53**	**0.904**	ug/L	0.024	2	290	2901	2	Standard
	Fe	**54**	**997.985**	ug/L	34.323	3	77570	1975149	1	Standard
	Fe	**57**	**978.865**	ug/L	14.988	1	16431	765331	1	Standard
	Mn	**55**	**23.148**	ug/L	0.675	2	1318	858217	0	Standard
>	**Ge**	**72**		ug/L			28294	26827	0	KED
	Co	**59**	**0.431**	ug/L	0.006	1	27	1732	0	KED
	Ni	**60**	**0.835**	ug/L	0.048	5	22	952	5	KED
	Ni	**62**	**0.889**	ug/L	0.099	11	10	171	9	KED
	Cu	**63**	**1.845**	ug/L	0.078	4	76	5782	5	KED
	Cu	**65**	**1.841**	ug/L	0.078	4	36	2811	3	KED
	Zn	**66**	**6.788**	ug/L	0.215	3	90	2826	3	KED
	Zn	**67**	**6.514**	ug/L	0.354	5	13	432	5	KED
	As	**75**	**0.179**	ug/L	0.015	8	12	45	7	KED
	Se	**78**	**0.161**	ug/L	0.169	104	14	16	20	KED
	Kr	**83**		ug/L			47	40	7	Standard
>	**In-1**	**115**		ug/L			7244	6811	1	KED
	Mo	**98**	**-0.015**	ug/L	0.012	78	27	12	88	KED
	Cd	**111**	**0.011**	ug/L	0.008	74	7	9	17	KED
	Cd	**114**	**-0.002**	ug/L	0.008	366	13	11	33	KED
>	**In**	**115**		ug/L			428735	413671	1	Standard
	Ag	**107**	**0.012**	ug/L	0.003	22	152	325	13	Standard
	Ba	**135**	**3.923**	ug/L	0.104	2	145	15109	1	Standard
	Ba	**137**	**3.828**	ug/L	0.053	1	251	25612	1	Standard
>	**Tb**	**159**		ug/L			100399	99112	0	Standard
	Pb	**208**	**0.845**	ug/L	0.017	2	195	30776	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0152-01
Sample Dil Factor: 100
Comments:
Sample Date/Time: Wednesday, July 05, 2023 22:56:06
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	30785	2	Standard
>	Sc	45		ug/L			725414	733124	0	Standard
	Al	27	3651.198	ug/L	31.863	0	11201	170048827	1	Standard
	Cr	52	4.032	ug/L	0.048	1	15679	131159	0	Standard
	Cr	53	4.222	ug/L	0.126	2	290	13478	2	Standard
	Fe	54	4667.203	ug/L	40.128	0	77570	9637541	0	Standard
	Fe	57	4704.215	ug/L	32.890	0	16431	3888107	1	Standard
	Mn	55	113.695	ug/L	2.193	1	1318	4524212	1	Standard
>	Ge	72		ug/L			28294	26257	1	KED
	Co	59	2.169	ug/L	0.031	1	27	8422	0	KED
	Ni	60	3.819	ug/L	0.037	0	22	4187	0	KED
	Ni	62	4.192	ug/L	0.406	9	10	756	8	KED
	Cu	63	8.595	ug/L	0.153	1	76	26093	0	KED
	Cu	65	8.718	ug/L	0.148	1	36	12904	1	KED
	Zn	66	29.051	ug/L	0.571	1	90	11562	0	KED
	Zn	67	27.488	ug/L	1.546	5	13	1744	4	KED
	As	75	0.879	ug/L	0.034	3	12	175	2	KED
	Se	78	0.532	ug/L	0.194	36	14	23	16	KED
	Kr	83		ug/L			47	73	7	Standard
>	In-1	115		ug/L			7244	6631	1	KED
	Mo	98	0.016	ug/L	0.008	48	27	39	16	KED
	Cd	111	0.071	ug/L	0.011	16	7	22	10	KED
	Cd	114	0.060	ug/L	0.012	20	13	43	15	KED
>	In	115		ug/L			428735	413398	2	Standard
	Ag	107	0.075	ug/L	0.004	5	152	1254	2	Standard
	Ba	135	19.348	ug/L	0.201	1	145	73920	1	Standard
	Ba	137	18.941	ug/L	0.502	2	251	125649	0	Standard
>	Tb	159		ug/L			100399	104733	0	Standard
	Pb	208	3.879	ug/L	0.059	1	195	148524	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0536-DUP2
Sample Dil Factor: 100
Comments:
Sample Date/Time: Wednesday, July 05, 2023 23:01:00
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	31587	2	Standard
⌈>	Sc	45		ug/L			725414	727494	0	Standard
|	Al	27	3441.169	ug/L	85.751	2	11201	159035185	2	Standard
|	Cr	52	3.808	ug/L	0.073	1	15679	123794	1	Standard
|	Cr	53	4.014	ug/L	0.049	1	290	12730	1	Standard
|	Fe	54	4546.333	ug/L	81.446	1	77570	9318284	1	Standard
|	Fe	57	4688.618	ug/L	162.187	3	16431	3845565	3	Standard
⌊	Mn	55	118.318	ug/L	1.827	1	1318	4672287	1	Standard
⌈>	Ge	72		ug/L			28294	26946	1	KED
|	Co	59	2.112	ug/L	0.029	1	27	8418	2	KED
|	Ni	60	3.676	ug/L	0.055	1	22	4137	2	KED
|	Ni	62	3.407	ug/L	0.333	9	10	633	9	KED
|	Cu	63	8.170	ug/L	0.201	2	76	25458	2	KED
|	Cu	65	8.128	ug/L	0.232	2	36	12347	1	KED
|	Zn	66	27.090	ug/L	0.925	3	90	11069	1	KED
|	Zn	67	27.423	ug/L	1.115	4	13	1788	5	KED
|	As	75	0.859	ug/L	0.022	2	12	176	3	KED
⌊	Se	78	0.297	ug/L	0.244	82	14	19	25	KED
	Kr	83		ug/L			47	72	21	Standard
⌈>	In-1	115		ug/L			7244	7005	1	KED
|	Mo	98	0.012	ug/L	0.008	61	27	38	20	KED
|	Cd	111	0.049	ug/L	0.013	26	7	18	14	KED
⌊	Cd	114	0.048	ug/L	0.017	36	13	38	24	KED
⌈>	In	115		ug/L			428735	410594	0	Standard
|	Ag	107	0.067	ug/L	0.008	11	152	1131	9	Standard
|	Ba	135	18.721	ug/L	0.634	3	145	71051	2	Standard
⌊	Ba	137	18.512	ug/L	0.384	2	251	122015	1	Standard
⌈>	Tb	159		ug/L			100399	105107	1	Standard
⌊	Pb	208	3.587	ug/L	0.040	1	195	137837	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0536-MS2
Sample Dil Factor: 100
Comments:
Sample Date/Time: Wednesday, July 05, 2023 23:05:54
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	30928	1	Standard
>	Sc	45		ug/L			725414	716434	2	Standard
	Al	27	3589.062	ug/L	89.981	2	11201	163309036	2	Standard
	Cr	52	7.998	ug/L	0.189	2	15679	238951	0	Standard
	Cr	53	8.481	ug/L	0.223	2	290	26161	0	Standard
	Fe	54	4624.092	ug/L	56.788	1	77570	9330520	0	Standard
	Fe	57	4752.083	ug/L	172.673	3	16431	3836018	1	Standard
	Mn	55	119.911	ug/L	4.070	3	1318	4660945	1	Standard
>	Ge	72		ug/L			28294	26766	1	KED
	Co	59	6.923	ug/L	0.057	0	27	27346	0	KED
	Ni	60	8.514	ug/L	0.060	0	22	9489	0	KED
	Ni	62	8.694	ug/L	0.393	4	10	1589	3	KED
	Cu	63	12.985	ug/L	0.199	1	76	40152	2	KED
	Cu	65	13.202	ug/L	0.255	1	36	19902	1	KED
	Zn	66	44.021	ug/L	0.680	1	90	17817	0	KED
	Zn	67	42.305	ug/L	1.223	2	13	2731	2	KED
	As	75	5.345	ug/L	0.098	1	12	1026	1	KED
	Se	78	15.066	ug/L	0.932	6	14	328	5	KED
	Kr	83		ug/L			47	73	9	Standard
>	In-1	115		ug/L			7244	6765	1	KED
	Mo	98	0.024	ug/L	0.004	15	27	48	6	KED
	Cd	111	4.994	ug/L	0.253	5	7	1098	3	KED
	Cd	114	5.016	ug/L	0.264	5	13	2635	3	KED
>	In	115		ug/L			428735	408530	1	Standard
	Ag	107	4.567	ug/L	0.168	3	152	67156	2	Standard
	Ba	135	23.733	ug/L	0.139	0	145	89590	1	Standard
	Ba	137	23.652	ug/L	0.422	1	251	155037	0	Standard
>	Tb	159		ug/L			100399	106335	0	Standard
	Pb	208	8.191	ug/L	0.133	1	195	318170	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0536-MSD2
Sample Dil Factor: 100
Comments:
Sample Date/Time: Wednesday, July 05, 2023 23:10:48
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	31275	2	Standard
>	Sc	45		ug/L			725414	712527	3	Standard
	Al	27	3469.041	ug/L	107.920	3	11201	156935248	1	Standard
	Cr	52	8.032	ug/L	0.205	2	15679	238542	1	Standard
	Cr	53	8.405	ug/L	0.132	1	290	25793	2	Standard
	Fe	54	4707.073	ug/L	139.872	2	77570	9440542	0	Standard
	Fe	57	4784.846	ug/L	90.620	1	16431	3842442	2	Standard
	Mn	55	124.563	ug/L	4.998	4	1318	4813612	1	Standard
>	Ge	72		ug/L			28294	26963	0	KED
	Co	59	6.740	ug/L	0.127	1	27	26824	1	KED
	Ni	60	8.294	ug/L	0.180	2	22	9312	1	KED
	Ni	62	8.652	ug/L	0.099	1	10	1593	1	KED
	Cu	63	13.187	ug/L	0.062	0	76	41077	1	KED
	Cu	65	13.175	ug/L	0.202	1	36	20010	0	KED
	Zn	66	43.331	ug/L	1.507	3	90	17668	2	KED
	Zn	67	42.442	ug/L	0.652	1	13	2760	1	KED
	As	75	5.212	ug/L	0.089	1	12	1009	1	KED
	Se	78	14.730	ug/L	0.298	2	14	323	2	KED
	Kr	83		ug/L			47	71	7	Standard
>	In-1	115		ug/L			7244	6746	1	KED
	Mo	98	0.019	ug/L	0.001	6	27	43	1	KED
	Cd	111	5.003	ug/L	0.078	1	7	1098	2	KED
	Cd	114	5.045	ug/L	0.086	1	13	2643	1	KED
>	In	115		ug/L			428735	408801	2	Standard
	Ag	107	4.457	ug/L	0.057	1	152	65608	2	Standard
	Ba	135	23.496	ug/L	0.623	2	145	88720	0	Standard
	Ba	137	23.511	ug/L	0.279	1	251	154223	1	Standard
>	Tb	159		ug/L			100399	104939	1	Standard
	Pb	208	8.373	ug/L	0.184	2	195	320929	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0536-PS2
Sample Dil Factor: 100
Comments:
Sample Date/Time: Wednesday, July 05, 2023 23:15:42
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25168	32762	1	Standard
⌈>	**Sc**	**45**		ug/L			725414	728182	1	Standard
|	**Al**	**27**	**3600.575**	ug/L	13.351	0	11201	166556032	1	Standard
|	**Cr**	**52**	**24.612**	ug/L	0.330	1	15679	714923	2	Standard
|	**Cr**	**53**	**25.790**	ug/L	0.306	1	290	80283	0	Standard
|	**Fe**	**54**	**4579.582**	ug/L	27.789	0	77570	9394848	1	Standard
|	**Fe**	**57**	**4608.838**	ug/L	144.570	3	16431	3783061	2	Standard
⌊	**Mn**	**55**	**131.488**	ug/L	1.822	1	1318	5196801	1	Standard
⌈>	**Ge**	**72**		ug/L			28294	26507	2	KED
|	**Co**	**59**	**26.572**	ug/L	0.293	1	27	103868	0	KED
|	**Ni**	**60**	**28.806**	ug/L	0.691	2	22	31738	0	KED
|	**Ni**	**62**	**29.843**	ug/L	0.936	3	10	5378	1	KED
|	**Cu**	**63**	**34.370**	ug/L	0.458	1	76	105116	0	KED
|	**Cu**	**65**	**34.914**	ug/L	0.854	2	36	52061	0	KED
|	**Zn**	**66**	**109.342**	ug/L	3.161	2	90	43690	1	KED
|	**Zn**	**67**	**105.342**	ug/L	3.670	3	13	6715	1	KED
|	**As**	**75**	**24.987**	ug/L	0.361	1	12	4710	0	KED
⌊	**Se**	**78**	**77.017**	ug/L	1.512	1	14	1607	2	KED
	Kr	**83**		ug/L			47	77	17	Standard
⌈>	**In-1**	**115**		ug/L			7244	6542	2	KED
|	**Mo**	**98**	**0.008**	ug/L	0.008	94	27	32	22	KED
|	**Cd**	**111**	**25.197**	ug/L	0.949	3	7	5333	2	KED
⌊	**Cd**	**114**	**25.566**	ug/L	0.824	3	13	12939	1	KED
⌈>	**In**	**115**		ug/L			428735	407188	2	Standard
|	**Ag**	**107**	**25.020**	ug/L	0.352	1	152	366200	2	Standard
|	**Ba**	**135**	**43.202**	ug/L	0.705	1	145	162404	0	Standard
⌊	**Ba**	**137**	**42.958**	ug/L	0.727	1	251	280446	0	Standard
⌈>	**Tb**	**159**		ug/L			100399	106542	1	Standard
⌊	**Pb**	**208**	**27.517**	ug/L	0.680	2	195	1070311	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV8
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 23:22:01
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25168	25358	1	Standard
⌈>	**Sc**	**45**		ug/L			725414	629906	1	Standard
|	**Al**	**27**	**4747.557**	ug/L	26.809	0	11201	189964943	0	Standard
|	**Cr**	**52**	**45.979**	ug/L	1.327	2	15679	1143187	1	Standard
|	**Cr**	**53**	**48.669**	ug/L	1.258	2	290	130820	1	Standard
|	**Fe**	**54**	**4845.611**	ug/L	89.457	1	77570	8594288	1	Standard
|	**Fe**	**57**	**4961.417**	ug/L	48.832	0	16431	3522186	0	Standard
⌊	**Mn**	**55**	**46.148**	ug/L	0.547	1	1318	1578437	0	Standard
⌈>	**Ge**	**72**		ug/L			28294	26304	0	KED
|	**Co**	**59**	**48.837**	ug/L	0.862	1	27	189452	1	KED
|	**Ni**	**60**	**48.376**	ug/L	0.679	1	22	52895	1	KED
|	**Ni**	**62**	**49.793**	ug/L	0.200	0	10	8903	0	KED
|	**Cu**	**63**	**49.579**	ug/L	0.212	0	76	150462	0	KED
|	**Cu**	**65**	**49.093**	ug/L	0.126	0	36	72652	0	KED
|	**Zn**	**66**	**49.299**	ug/L	0.907	1	90	19602	2	KED
|	**Zn**	**67**	**49.378**	ug/L	1.804	3	13	3131	3	KED
|	**As**	**75**	**48.719**	ug/L	0.265	0	12	9104	0	KED
⌊	**Se**	**78**	**47.708**	ug/L	2.265	4	14	993	4	KED
	Kr	**83**		ug/L			47	59	19	Standard
⌈>	**In-1**	**115**		ug/L			7244	6492	3	KED
|	**Mo**	**98**	**48.797**	ug/L	2.022	4	27	43385	1	KED
|	**Cd**	**111**	**49.696**	ug/L	2.218	4	7	10426	1	KED
⌊	**Cd**	**114**	**49.820**	ug/L	1.206	2	13	25008	0	KED
⌈>	**In**	**115**		ug/L			428735	396500	0	Standard
|	**Ag**	**107**	**49.580**	ug/L	0.587	1	152	706404	1	Standard
|	**Ba**	**135**	**48.213**	ug/L	0.161	0	145	176505	0	Standard
⌊	**Ba**	**137**	**48.201**	ug/L	0.237	0	251	306456	0	Standard
⌈>	**Tb**	**159**		ug/L			100399	95738	0	Standard
⌊	**Pb**	**208**	**50.092**	ug/L	1.367	2	195	1750727	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB8
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 23:29:40
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25168	23726	3	Standard
>	**Sc**	**45**		ug/L			725414	665698	2	Standard
	Al	**27**	**0.032**	ug/L	0.009	29	11201	11626	4	Standard
	Cr	**52**	**-0.013**	ug/L	0.005	39	15679	14047	1	Standard
	Cr	**53**	**-0.017**	ug/L	0.003	20	290	219	2	Standard
	Fe	**54**	**-0.495**	ug/L	1.596	322	77570	70221	2	Standard
	Fe	**57**	**2.722**	ug/L	0.288	10	16431	17110	1	Standard
	Mn	**55**	**0.001**	ug/L	0.000	42	1318	1251	1	Standard
>	**Ge**	**72**		ug/L			28294	26982	0	KED
	Co	**59**	**0.001**	ug/L	0.001	78	27	31	12	KED
	Ni	**60**	**0.004**	ug/L	0.006	155	22	25	26	KED
	Ni	**62**	**-0.008**	ug/L	0.022	273	10	8	48	KED
	Cu	**63**	**0.004**	ug/L	0.003	74	76	84	10	KED
	Cu	**65**	**0.007**	ug/L	0.006	89	36	45	21	KED
	Zn	**66**	**0.131**	ug/L	0.055	42	90	139	15	KED
	Zn	**67**	**0.166**	ug/L	0.148	88	13	23	40	KED
	As	**75**	**0.014**	ug/L	0.009	63	12	14	11	KED
	Se	**78**	**0.235**	ug/L	0.141	60	14	18	15	KED
	Kr	**83**		ug/L			47	47	34	Standard
>	**In-1**	**115**		ug/L			7244	6654	0	KED
	Mo	**98**	**0.017**	ug/L	0.012	71	27	41	27	KED
	Cd	**111**	**-0.010**	ug/L	0.008	74	7	4	34	KED
	Cd	**114**	**-0.005**	ug/L	0.006	113	13	9	30	KED
>	**In**	**115**		ug/L			428735	405108	1	Standard
	Ag	**107**	**0.005**	ug/L	0.002	45	152	221	15	Standard
	Ba	**135**	**0.002**	ug/L	0.004	236	145	144	10	Standard
	Ba	**137**	**0.001**	ug/L	0.003	442	251	241	5	Standard
>	**Tb**	**159**		ug/L			100399	94962	2	Standard
	Pb	**208**	**0.001**	ug/L	0.001	57	195	216	9	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0390-08
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 23:34:35
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	44394	3	Standard
>	Sc	45		ug/L			725414	652746	3	Standard
	Al	27	1.809	ug/L	0.034	1	11201	85073	2	Standard
	Cr	52	0.246	ug/L	0.037	15	15679	20360	1	Standard
	Cr	53	0.198	ug/L	0.007	3	290	812	2	Standard
	Fe	54	14.477	ug/L	1.478	10	77570	96194	4	Standard
	Fe	57	3.668	ug/L	0.712	19	16431	17461	1	Standard
	Mn	55	0.266	ug/L	0.010	3	1318	10617	0	Standard
>	Ge	72		ug/L			28294	27218	0	KED
	Co	59	-0.001	ug/L	0.001	58	27	22	13	KED
	Ni	60	0.061	ug/L	0.015	24	22	90	19	KED
	Ni	62	0.033	ug/L	0.006	17	10	15	6	KED
	Cu	63	0.039	ug/L	0.003	8	76	196	4	KED
	Cu	65	0.031	ug/L	0.006	20	36	81	12	KED
	Zn	66	0.843	ug/L	0.117	13	90	432	10	KED
	Zn	67	0.989	ug/L	0.215	21	13	77	18	KED
	As	75	-0.006	ug/L	0.007	115	12	10	11	KED
	Se	78	0.031	ug/L	0.139	455	14	14	20	KED
	Kr	83		ug/L			47	42	29	Standard
>	In-1	115		ug/L			7244	6665	0	KED
	Mo	98	0.046	ug/L	0.008	16	27	67	9	KED
	Cd	111	0.003	ug/L	0.020	716	7	7	57	KED
	Cd	114	-0.005	ug/L	0.006	109	13	9	30	KED
>	In	115		ug/L			428735	412234	1	Standard
	Ag	107	0.001	ug/L	0.003	314	152	158	23	Standard
	Ba	135	0.012	ug/L	0.007	63	145	184	13	Standard
	Ba	137	0.012	ug/L	0.003	25	251	321	5	Standard
>	Tb	159		ug/L			100399	97150	1	Standard
	Pb	208	0.011	ug/L	0.000	2	195	571	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0487-06
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 23:39:23
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	48822	2	Standard
>	Sc	45		ug/L			725414	649080	2	Standard
	Al	27	4.302	ug/L	0.098	2	11201	187375	2	Standard
	Cr	52	0.296	ug/L	0.016	5	15679	21530	2	Standard
	Cr	53	0.268	ug/L	0.030	11	290	1000	5	Standard
	Fe	54	13.266	ug/L	1.772	13	77570	93417	1	Standard
	Fe	57	2.711	ug/L	0.858	31	16431	16668	1	Standard
	Mn	55	0.178	ug/L	0.009	5	1318	7444	2	Standard
>	Ge	72		ug/L			28294	27141	0	KED
	Co	59	0.082	ug/L	0.002	1	27	355	1	KED
	Ni	60	0.439	ug/L	0.030	6	22	516	6	KED
	Ni	62	0.447	ug/L	0.040	9	10	92	8	KED
	Cu	63	0.273	ug/L	0.015	5	76	929	5	KED
	Cu	65	0.298	ug/L	0.025	8	36	490	7	KED
	Zn	66	0.334	ug/L	0.075	22	90	223	13	KED
	Zn	67	0.525	ug/L	0.123	23	13	46	16	KED
	As	75	0.009	ug/L	0.016	175	12	13	23	KED
	Se	78	0.167	ug/L	0.189	112	14	17	23	KED
	Kr	83		ug/L			47	45	15	Standard
>	In-1	115		ug/L			7244	6734	2	KED
	Mo	98	0.002	ug/L	0.011	588	27	27	38	KED
	Cd	111	-0.012	ug/L	0.018	145	7	4	86	KED
	Cd	114	-0.007	ug/L	0.006	89	13	9	35	KED
>	In	115		ug/L			428735	412202	1	Standard
	Ag	107	-0.001	ug/L	0.002	236	152	137	18	Standard
	Ba	135	1.961	ug/L	0.022	1	145	7598	1	Standard
	Ba	137	1.957	ug/L	0.043	2	251	13172	3	Standard
>	Tb	159		ug/L			100399	96557	1	Standard
	Pb	208	0.005	ug/L	0.001	22	195	354	10	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0487-05
Sample Dil Factor:
Comments:
Sample Date/Time: Wednesday, July 05, 2023 23:44:17
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	50205	1	Standard
⌈>	Sc	45		ug/L			725414	634931	1	Standard
|	Al	27	4.946	ug/L	0.093	1	11201	209285	2	Standard
|	Cr	52	0.378	ug/L	0.027	7	15679	23069	2	Standard
|	Cr	53	0.296	ug/L	0.014	4	290	1054	2	Standard
|	Fe	54	15.995	ug/L	0.734	4	77570	96255	1	Standard
|	Fe	57	3.568	ug/L	0.620	17	16431	16920	1	Standard
⌊	Mn	55	0.090	ug/L	0.001	1	1318	4258	2	Standard
⌈>	Ge	72		ug/L			28294	26959	3	KED
|	Co	59	0.009	ug/L	0.002	21	27	62	15	KED
|	Ni	60	0.090	ug/L	0.011	11	22	122	10	KED
|	Ni	62	0.125	ug/L	0.063	50	10	32	32	KED
|	Cu	63	0.198	ug/L	0.013	6	76	688	4	KED
|	Cu	65	0.218	ug/L	0.032	14	36	364	10	KED
|	Zn	66	0.268	ug/L	0.019	6	90	195	6	KED
|	Zn	67	0.411	ug/L	0.096	23	13	39	16	KED
|	As	75	-0.001	ug/L	0.005	524	12	11	6	KED
⌊	Se	78	0.131	ug/L	0.135	102	14	16	15	KED
	Kr	83		ug/L			47	38	23	Standard
⌈>	In-1	115		ug/L			7244	6972	0	KED
|	Mo	98	-0.003	ug/L	0.004	140	27	23	14	KED
|	Cd	111	0.013	ug/L	0.014	110	7	10	30	KED
⌊	Cd	114	-0.014	ug/L	0.009	65	13	5	81	KED
⌈>	In	115		ug/L			428735	409099	1	Standard
|	Ag	107	-0.002	ug/L	0.001	66	152	119	12	Standard
|	Ba	135	0.303	ug/L	0.016	5	145	1281	3	Standard
⌊	Ba	137	0.296	ug/L	0.006	1	251	2183	1	Standard
⌈>	Tb	159		ug/L			100399	95869	0	Standard
⌊	Pb	208	0.003	ug/L	0.000	7	195	295	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0477-01
Sample Dil Factor: 2
Comments:
Sample Date/Time: Wednesday, July 05, 2023 23:49:36
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			25168	1643561	2	Standard
> Sc	45		ug/L			725414	626266	1	Standard
Al	27	2.124	ug/L	0.099	4	11201	94140	3	Standard
Cr	52	4.317	ug/L	0.057	1	15679	119010	2	Standard
Cr	53	1.225	ug/L	0.063	5	290	3518	5	Standard
Fe	54	10.086	ug/L	0.633	6	77570	84622	2	Standard
Fe	57	25.100	ug/L	0.665	2	16431	31829	1	Standard
Mn	55	0.286	ug/L	0.002	0	1318	10862	1	Standard
> Ge	72		ug/L			28294	19364	1	KED
Co	59	0.027	ug/L	0.004	15	27	95	11	KED
Ni	60	0.506	ug/L	0.045	8	22	422	8	KED
Ni	62	1.213	ug/L	0.086	7	10	166	5	KED
Cu	63	141.211	ug/L	2.078	1	76	315359	1	KED
Cu	65	142.092	ug/L	2.085	1	36	154732	0	KED
Zn	66	415.252	ug/L	8.580	2	90	121060	0	KED
Zn	67	383.590	ug/L	4.148	1	13	17846	0	KED
As	75	1.661	ug/L	0.060	3	12	236	3	KED
Se	78	0.644	ug/L	0.140	21	14	19	11	KED
Kr	83		ug/L			47	57	20	Standard
> In-1	115		ug/L			7244	5110	2	KED
Mo	98	0.257	ug/L	0.023	8	27	199	9	KED
Cd	111	0.004	ug/L	0.022	603	7	6	63	KED
Cd	114	-0.018	ug/L	0.003	17	13	2	51	KED
> In	115		ug/L			428735	320655	2	Standard
Ag	107	0.000	ug/L	0.002	657	152	116	16	Standard
Ba	135	1.485	ug/L	0.023	1	145	4502	3	Standard
Ba	137	1.457	ug/L	0.043	2	251	7670	0	Standard
> Tb	159		ug/L			100399	81462	2	Standard
Pb	208	0.443	ug/L	0.009	2	195	13334	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0477-02
Sample Dil Factor: 2
Comments:
Sample Date/Time: Wednesday, July 05, 2023 23:54:53
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	6370983	2	Standard
>	Sc	45		ug/L			725414	829023	1	Standard
	Al	27	35.738	ug/L	0.202	0	11201	1894709	1	Standard
	Cr	52	11.937	ug/L	0.276	2	15679	403922	1	Standard
	Cr	53	3.778	ug/L	0.067	1	290	13671	0	Standard
	Fe	54	10.256	ug/L	1.432	13	77570	112397	3	Standard
	Fe	57	26.187	ug/L	1.749	6	16431	43144	3	Standard
	Mn	55	2.624	ug/L	0.078	2	1318	119533	1	Standard
>	Ge	72		ug/L			28294	19978	1	KED
	Co	59	0.095	ug/L	0.007	7	27	300	7	KED
	Ni	60	4.489	ug/L	0.211	4	22	3741	3	KED
	Ni	62	6.026	ug/L	0.496	8	10	824	7	KED
	Cu	63	440.219	ug/L	5.940	1	76	1014190	0	KED
	Cu	65	440.375	ug/L	9.419	2	36	494697	1	KED
	Zn	66	63.754	ug/L	0.899	1	90	19231	0	KED
	Zn	67	59.355	ug/L	0.645	1	13	2857	2	KED
	As	75	0.309	ug/L	0.034	10	12	52	8	KED
	Se	78	0.497	ug/L	0.197	39	14	17	16	KED
	Kr	83		ug/L			47	110	14	Standard
>	In-1	115		ug/L			7244	5463	1	KED
	Mo	98	0.422	ug/L	0.021	4	27	336	4	KED
	Cd	111	0.009	ug/L	0.017	188	7	7	39	KED
	Cd	114	-0.005	ug/L	0.004	74	13	7	22	KED
>	In	115		ug/L			428735	364914	1	Standard
	Ag	107	0.025	ug/L	0.001	4	152	458	2	Standard
	Ba	135	1.451	ug/L	0.038	2	145	5007	3	Standard
	Ba	137	1.444	ug/L	0.032	2	251	8653	0	Standard
>	Tb	159		ug/L			100399	89872	1	Standard
	Pb	208	0.288	ug/L	0.010	3	195	9610	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0477-03
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, July 06, 2023 00:00:11
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			25168	512932	1	Standard
> Sc	45		ug/L			725414	602010	2	Standard
Al	27	2.950	ug/L	0.089	3	11201	122049	2	Standard
Cr	52	1.694	ug/L	0.030	1	15679	52779	1	Standard
Cr	53	0.886	ug/L	0.027	2	290	2511	0	Standard
Fe	54	7.947	ug/L	1.751	22	77570	77690	1	Standard
Fe	57	25.590	ug/L	1.233	4	16431	30914	1	Standard
Mn	55	0.180	ug/L	0.004	2	1318	6977	1	Standard
> Ge	72		ug/L			28294	17503	0	KED
Co	59	0.011	ug/L	0.006	53	27	46	33	KED
Ni	60	0.173	ug/L	0.065	37	22	139	33	KED
Ni	62	0.620	ug/L	0.083	13	10	80	12	KED
Cu	63	85.846	ug/L	0.913	1	76	173323	0	KED
Cu	65	86.385	ug/L	0.619	0	36	85051	0	KED
Zn	66	322.620	ug/L	3.842	1	90	85044	1	KED
Zn	67	296.695	ug/L	1.257	0	13	12479	0	KED
As	75	0.198	ug/L	0.051	26	12	32	20	KED
Se	78	0.910	ug/L	0.191	21	14	21	12	KED
Kr	83		ug/L			47	60	19	Standard
> In-1	115		ug/L			7244	4626	3	KED
Mo	98	0.184	ug/L	0.027	14	27	133	10	KED
Cd	111	0.014	ug/L	0.014	98	7	6	28	KED
Cd	114	-0.010	ug/L	0.005	49	13	5	39	KED
> In	115		ug/L			428735	296839	1	Standard
Ag	107	-0.002	ug/L	0.001	56	152	84	14	Standard
Ba	135	1.755	ug/L	0.102	5	145	4904	4	Standard
Ba	137	1.733	ug/L	0.046	2	251	8416	2	Standard
> Tb	159		ug/L			100399	77674	1	Standard
Pb	208	0.195	ug/L	0.003	1	195	5688	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0477-04
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, July 06, 2023 00:05:29
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			25168	13170475	3	Standard
> Sc	45		ug/L			725414	830149	0	Standard
Al	27	2.326	ug/L	0.038	1	11201	135462	1	Standard
Cr	52	20.702	ug/L	0.207	1	15679	688332	0	Standard
Cr	53	2.621	ug/L	0.075	2	290	9601	2	Standard
Fe	54	7.241	ug/L	0.406	5	77570	105566	1	Standard
Fe	57	28.338	ug/L	0.122	0	16431	45211	0	Standard
Mn	55	1.232	ug/L	0.022	1	1318	57001	1	Standard
> Ge	72		ug/L			28294	17536	0	KED
Co	59	0.072	ug/L	0.005	6	27	202	6	KED
Ni	60	0.549	ug/L	0.036	6	22	413	5	KED
Ni	62	1.206	ug/L	0.122	10	10	149	9	KED
Cu	63	109.006	ug/L	1.228	1	76	220486	1	KED
Cu	65	109.906	ug/L	1.739	1	36	108400	1	KED
Zn	66	410.384	ug/L	3.653	0	90	108366	0	KED
Zn	67	383.291	ug/L	2.285	0	13	16150	0	KED
As	75	0.252	ug/L	0.015	5	12	39	4	KED
Se	78	0.799	ug/L	0.182	22	14	19	13	KED
Kr	83		ug/L			47	284	8	Standard
> In-1	115		ug/L			7244	5105	3	KED
Mo	98	0.416	ug/L	0.020	4	27	309	3	KED
Cd	111	0.013	ug/L	0.025	191	7	7	57	KED
Cd	114	0.012	ug/L	0.010	79	13	14	26	KED
> In	115		ug/L			428735	347529	1	Standard
Ag	107	-0.001	ug/L	0.001	80	152	110	10	Standard
Ba	135	4.354	ug/L	0.057	1	145	14078	1	Standard
Ba	137	4.257	ug/L	0.033	0	251	23907	1	Standard
> Tb	159		ug/L			100399	85147	1	Standard
Pb	208	0.318	ug/L	0.006	2	195	10055	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0477-05
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, July 06, 2023 00:11:48
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			25168	371819	0	Standard
> Sc	45		ug/L			725414	644359	0	Standard
Al	27	13.343	ug/L	0.129	0	11201	556099	1	Standard
Cr	52	4.551	ug/L	0.092	2	15679	128330	1	Standard
Cr	53	4.389	ug/L	0.079	1	290	12306	1	Standard
Fe	54	10.457	ug/L	1.154	11	77570	87733	2	Standard
Fe	57	26.608	ug/L	1.367	5	16431	33843	3	Standard
Mn	55	0.434	ug/L	0.004	0	1318	16340	1	Standard
> Ge	72		ug/L			28294	18849	2	KED
Co	59	0.015	ug/L	0.008	50	27	59	32	KED
Ni	60	0.364	ug/L	0.018	5	22	299	3	KED
Ni	62	0.653	ug/L	0.116	17	10	90	14	KED
Cu	63	10.721	ug/L	0.103	0	76	23351	1	KED
Cu	65	10.740	ug/L	0.022	0	36	11408	2	KED
Zn	66	140.492	ug/L	1.973	1	90	39908	1	KED
Zn	67	131.966	ug/L	5.385	4	13	5979	1	KED
As	75	0.183	ug/L	0.025	13	12	32	8	KED
Se	78	0.463	ug/L	0.223	48	14	16	22	KED
Kr	83		ug/L			47	78	19	Standard
> In-1	115		ug/L			7244	5118	0	KED
Mo	98	0.226	ug/L	0.017	7	27	177	6	KED
Cd	111	0.017	ug/L	0.006	36	7	8	13	KED
Cd	114	-0.011	ug/L	0.010	92	13	5	72	KED
> In	115		ug/L			428735	323819	1	Standard
Ag	107	0.001	ug/L	0.001	56	152	131	8	Standard
Ba	135	1.102	ug/L	0.030	2	145	3400	2	Standard
Ba	137	1.089	ug/L	0.015	1	251	5839	0	Standard
> Tb	159		ug/L			100399	82149	1	Standard
Pb	208	0.425	ug/L	0.007	1	195	12889	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL9
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 00:17:07
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25168	31219	2	Standard
⌈>	**Sc**	**45**		ug/L			725414	677154	2	Standard
|	**Al**	**27**	**0.118**	ug/L	0.017	14	11201	15510	1	Standard
|	**Cr**	**52**	**0.098**	ug/L	0.024	23	15679	17223	1	Standard
|	**Cr**	**53**	**-0.011**	ug/L	0.002	18	290	238	2	Standard
|	**Fe**	**54**	**2.775**	ug/L	1.692	60	77570	77608	2	Standard
|	**Fe**	**57**	**5.227**	ug/L	1.214	23	16431	19295	2	Standard
⌊	**Mn**	**55**	**0.023**	ug/L	0.002	10	1318	2069	2	Standard
⌈>	**Ge**	**72**		ug/L			28294	26093	1	KED
|	**Co**	**59**	**-0.002**	ug/L	0.001	29	27	16	17	KED
|	**Ni**	**60**	**-0.003**	ug/L	0.001	48	22	17	11	KED
|	**Ni**	**62**	**0.072**	ug/L	0.071	98	10	22	57	KED
|	**Cu**	**63**	**0.020**	ug/L	0.003	17	76	130	7	KED
|	**Cu**	**65**	**0.024**	ug/L	0.001	3	36	68	0	KED
|	**Zn**	**66**	**0.034**	ug/L	0.039	112	90	97	15	KED
|	**Zn**	**67**	**0.088**	ug/L	0.117	132	13	17	40	KED
|	**As**	**75**	**-0.008**	ug/L	0.009	102	12	9	15	KED
⌊	**Se**	**78**	**0.127**	ug/L	0.201	158	14	15	24	KED
	Kr	**83**		ug/L			47	60	19	Standard
⌈>	**In-1**	**115**		ug/L			7244	6645	2	KED
|	**Mo**	**98**	**-0.017**	ug/L	0.004	26	27	9	39	KED
|	**Cd**	**111**	**-0.004**	ug/L	0.011	245	7	6	36	KED
⌊	**Cd**	**114**	**-0.011**	ug/L	0.002	22	13	6	16	KED
⌈>	**In**	**115**		ug/L			428735	417158	1	Standard
|	**Ag**	**107**	**-0.004**	ug/L	0.001	14	152	82	13	Standard
|	**Ba**	**135**	**-0.005**	ug/L	0.002	46	145	121	8	Standard
⌊	**Ba**	**137**	**-0.002**	ug/L	0.002	96	251	231	4	Standard
⌈>	**Tb**	**159**		ug/L			100399	96328	2	Standard
⌊	**Pb**	**208**	**0.001**	ug/L	0.001	115	195	206	8	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLA
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 00:21:55
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25168	30068	2	Standard
⌈>	**Sc**	**45**		ug/L			725414	686504	0	Standard
|	**Al**	**27**	**0.114**	ug/L	0.003	2	11201	15571	1	Standard
|	**Cr**	**52**	**0.086**	ug/L	0.006	6	15679	17150	1	Standard
|	**Cr**	**53**	**-0.018**	ug/L	0.005	25	290	221	5	Standard
|	**Fe**	**54**	**2.747**	ug/L	0.124	4	77570	78678	0	Standard
|	**Fe**	**57**	**4.035**	ug/L	0.390	9	16431	18659	1	Standard
⌊	**Mn**	**55**	**0.014**	ug/L	0.001	5	1318	1760	1	Standard
⌈>	**Ge**	**72**		ug/L			28294	26119	2	KED
|	**Co**	**59**	**-0.001**	ug/L	0.001	81	27	22	13	KED
|	**Ni**	**60**	**0.000**	ug/L	0.006	1171	22	20	27	KED
|	**Ni**	**62**	**0.030**	ug/L	0.018	60	10	14	19	KED
|	**Cu**	**63**	**0.017**	ug/L	0.009	54	76	120	22	KED
|	**Cu**	**65**	**0.027**	ug/L	0.010	37	36	72	18	KED
|	**Zn**	**66**	**-0.028**	ug/L	0.013	45	90	73	7	KED
|	**Zn**	**67**	**0.137**	ug/L	0.054	39	13	20	18	KED
|	**As**	**75**	**-0.016**	ug/L	0.016	99	12	8	33	KED
⌊	**Se**	**78**	**0.076**	ug/L	0.177	232	14	14	25	KED
	Kr	**83**		ug/L			47	40	29	Standard
⌈>	**In-1**	**115**		ug/L			7244	6569	1	KED
|	**Mo**	**98**	**-0.017**	ug/L	0.004	22	27	10	32	KED
|	**Cd**	**111**	**-0.009**	ug/L	0.007	76	7	5	28	KED
⌊	**Cd**	**114**	**-0.012**	ug/L	0.002	14	13	6	16	KED
⌈>	**In**	**115**		ug/L			428735	411465	1	Standard
|	**Ag**	**107**	**-0.005**	ug/L	0.001	13	152	73	14	Standard
|	**Ba**	**135**	**0.007**	ug/L	0.005	64	145	167	11	Standard
⌊	**Ba**	**137**	**-0.000**	ug/L	0.003	1036	251	239	10	Standard
⌈>	**Tb**	**159**		ug/L			100399	95422	1	Standard
⌊	**Pb**	**208**	**0.000**	ug/L	0.000	163	195	194	6	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV9
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 00:26:50
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	26300	1	Standard
>	Sc	45		ug/L			725414	688381	0	Standard
	Al	27	4600.672	ug/L	18.815	0	11201	201182724	0	Standard
	Cr	52	44.856	ug/L	1.156	2	15679	1219361	2	Standard
	Cr	53	47.727	ug/L	1.392	2	290	140208	2	Standard
	Fe	54	4817.362	ug/L	35.209	0	77570	9338780	1	Standard
	Fe	57	4916.327	ug/L	86.495	1	16431	3814297	1	Standard
	Mn	55	45.772	ug/L	1.216	2	1318	1711218	3	Standard
>	Ge	72		ug/L			28294	24701	1	KED
	Co	59	49.928	ug/L	0.970	1	27	181856	0	KED
	Ni	60	49.929	ug/L	0.401	0	22	51268	1	KED
	Ni	62	50.250	ug/L	1.727	3	10	8436	2	KED
	Cu	63	50.966	ug/L	0.287	0	76	145245	0	KED
	Cu	65	52.494	ug/L	0.349	0	36	72948	0	KED
	Zn	66	50.275	ug/L	1.054	2	90	18768	1	KED
	Zn	67	50.222	ug/L	2.167	4	13	2990	3	KED
	As	75	48.509	ug/L	0.625	1	12	8512	0	KED
	Se	78	48.938	ug/L	1.096	2	14	956	3	KED
	Kr	83		ug/L			47	59	22	Standard
>	In-1	115		ug/L			7244	6417	1	KED
	Mo	98	47.296	ug/L	0.496	1	27	41604	2	KED
	Cd	111	48.792	ug/L	0.534	1	7	10127	1	KED
	Cd	114	49.078	ug/L	1.301	2	13	24369	3	KED
>	In	115		ug/L			428735	402657	1	Standard
	Ag	107	49.963	ug/L	2.253	4	152	722514	2	Standard
	Ba	135	47.214	ug/L	0.688	1	145	175506	0	Standard
	Ba	137	47.034	ug/L	0.880	1	251	303615	0	Standard
>	Tb	159		ug/L			100399	95809	2	Standard
	Pb	208	51.075	ug/L	1.829	3	195	1785589	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB9
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 00:34:28
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25168	25029	2	Standard
⌈>	**Sc**	**45**		ug/L			725414	725180	1	Standard
|	**Al**	**27**	**0.030**	ug/L	0.000	0	11201	12589	1	Standard
|	**Cr**	**52**	**-0.011**	ug/L	0.006	57	15679	15356	2	Standard
|	**Cr**	**53**	**-0.024**	ug/L	0.008	33	290	217	10	Standard
|	**Fe**	**54**	**-0.977**	ug/L	1.384	141	77570	75537	2	Standard
|	**Fe**	**57**	**0.090**	ug/L	0.168	186	16431	16498	1	Standard
⌊	**Mn**	**55**	**0.004**	ug/L	0.000	3	1318	1468	1	Standard
⌈>	**Ge**	**72**		ug/L			28294	26815	1	KED
|	**Co**	**59**	**0.001**	ug/L	0.003	331	27	30	43	KED
|	**Ni**	**60**	**0.002**	ug/L	0.003	126	22	23	12	KED
|	**Ni**	**62**	**0.041**	ug/L	0.022	52	10	17	22	KED
|	**Cu**	**63**	**0.001**	ug/L	0.003	334	76	75	11	KED
|	**Cu**	**65**	**0.006**	ug/L	0.009	170	36	42	32	KED
|	**Zn**	**66**	**0.045**	ug/L	0.050	111	90	104	20	KED
|	**Zn**	**67**	**0.129**	ug/L	0.128	99	13	20	39	KED
|	**As**	**75**	**0.009**	ug/L	0.001	6	12	13	2	KED
⌊	**Se**	**78**	**-0.026**	ug/L	0.063	245	14	12	10	KED
	Kr	**83**		ug/L			47	43	19	Standard
⌈>	**In-1**	**115**		ug/L			7244	6686	0	KED
|	**Mo**	**98**	**0.002**	ug/L	0.012	661	27	27	40	KED
|	**Cd**	**111**	**0.003**	ug/L	0.009	319	7	7	25	KED
⌊	**Cd**	**114**	**-0.012**	ug/L	0.009	79	13	6	72	KED
⌈>	**In**	**115**		ug/L			428735	420118	1	Standard
|	**Ag**	**107**	**0.003**	ug/L	0.001	38	152	193	9	Standard
|	**Ba**	**135**	**0.001**	ug/L	0.004	678	145	144	10	Standard
⌊	**Ba**	**137**	**-0.001**	ug/L	0.004	377	251	240	10	Standard
⌈>	**Tb**	**159**		ug/L			100399	97268	1	Standard
⌊	**Pb**	**208**	**0.001**	ug/L	0.000	29	195	236	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0409-01
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 00:39:23
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	55960	1	Standard
>	Sc	45		ug/L			725414	883565	1	Standard
	Al	27	3093.517	ug/L	74.658	2	11201	173674186	3	Standard
	Cr	52	0.636	ug/L	0.013	2	15679	41020	0	Standard
	Cr	53	3.783	ug/L	0.064	1	290	14590	0	Standard
	Fe	54	56.036	ug/L	2.617	4	77570	232746	1	Standard
	Fe	57	81.673	ug/L	2.004	2	16431	101001	0	Standard
	Mn	55	65.999	ug/L	1.264	1	1318	3165618	1	Standard
>	Ge	72		ug/L			28294	24763	1	KED
	Co	59	0.147	ug/L	0.004	2	27	559	2	KED
	Ni	60	2.415	ug/L	0.045	1	22	2503	1	KED
	Ni	62	3.475	ug/L	0.161	4	10	593	3	KED
	Cu	63	303.872	ug/L	1.258	0	76	867780	1	KED
	Cu	65	302.666	ug/L	3.383	1	36	421461	1	KED
	Zn	66	116.967	ug/L	1.364	1	90	43667	0	KED
	Zn	67	110.077	ug/L	3.387	3	13	6555	1	KED
	As	75	0.207	ug/L	0.039	18	12	47	14	KED
	Se	78	0.246	ug/L	0.039	15	14	17	5	KED
	Kr	83		ug/L			47	59	20	Standard
>	In-1	115		ug/L			7244	6556	1	KED
	Mo	98	0.561	ug/L	0.013	2	27	529	3	KED
	Cd	111	0.588	ug/L	0.081	13	7	131	14	KED
	Cd	114	0.605	ug/L	0.032	5	13	319	5	KED
>	In	115		ug/L			428735	411966	2	Standard
	Ag	107	0.018	ug/L	0.001	4	152	407	4	Standard
	Ba	135	26.165	ug/L	0.850	3	145	99538	1	Standard
	Ba	137	26.045	ug/L	0.852	3	251	172068	0	Standard
>	Tb	159		ug/L			100399	98113	1	Standard
	Pb	208	8.881	ug/L	0.232	2	195	318192	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0445-01
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 00:44:11
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	65432	2	Standard
>	Sc	45		ug/L			725414	745688	0	Standard
	Al	27	211.643	ug/L	1.672	0	11201	10036382	0	Standard
	Cr	52	1.398	ug/L	0.014	0	15679	56777	0	Standard
	Cr	53	1.852	ug/L	0.048	2	290	6182	2	Standard
	Fe	54	482.201	ug/L	6.206	1	77570	1084342	1	Standard
	Fe	57	473.137	ug/L	17.680	3	16431	412959	3	Standard
	Mn	55	65.638	ug/L	1.176	1	1318	2657447	2	Standard
>	Ge	72		ug/L			28294	26250	1	KED
	Co	59	0.303	ug/L	0.005	1	27	1198	0	KED
	Ni	60	3.066	ug/L	0.124	4	22	3364	3	KED
	Ni	62	3.107	ug/L	0.068	2	10	563	1	KED
	Cu	63	8.471	ug/L	0.160	1	76	25711	1	KED
	Cu	65	8.347	ug/L	0.219	2	36	12353	1	KED
	Zn	66	114.170	ug/L	2.561	2	90	45184	1	KED
	Zn	67	107.665	ug/L	0.817	0	13	6799	1	KED
	As	75	0.965	ug/L	0.084	8	12	191	8	KED
	Se	78	0.109	ug/L	0.108	99	14	15	13	KED
	Kr	83		ug/L			47	52	23	Standard
>	In-1	115		ug/L			7244	6796	1	KED
	Mo	98	3.374	ug/L	0.031	0	27	3166	2	KED
	Cd	111	0.495	ug/L	0.032	6	7	115	7	KED
	Cd	114	0.471	ug/L	0.059	12	13	260	12	KED
>	In	115		ug/L			428735	419580	0	Standard
	Ag	107	0.006	ug/L	0.002	25	152	243	10	Standard
	Ba	135	16.895	ug/L	0.046	0	145	65544	0	Standard
	Ba	137	16.809	ug/L	0.299	1	251	113244	1	Standard
>	Tb	159		ug/L			100399	99525	1	Standard
	Pb	208	0.779	ug/L	0.013	1	195	28494	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0445-02
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 00:49:06
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	65234	1	Standard
>	Sc	45		ug/L			725414	767860	0	Standard
	Al	27	92.711	ug/L	1.955	2	11201	4534188	2	Standard
	Cr	52	1.086	ug/L	0.028	2	15679	49115	1	Standard
	Cr	53	1.492	ug/L	0.016	1	290	5187	0	Standard
	Fe	54	405.570	ug/L	5.123	1	77570	952137	0	Standard
	Fe	57	403.580	ug/L	8.179	2	16431	365281	2	Standard
	Mn	55	34.100	ug/L	0.402	1	1318	1422299	1	Standard
>	Ge	72		ug/L			28294	25832	2	KED
	Co	59	0.131	ug/L	0.015	11	27	525	8	KED
	Ni	60	2.218	ug/L	0.090	4	22	2399	1	KED
	Ni	62	2.278	ug/L	0.056	2	10	408	3	KED
	Cu	63	6.408	ug/L	0.125	1	76	19156	1	KED
	Cu	65	6.621	ug/L	0.295	4	36	9645	2	KED
	Zn	66	66.622	ug/L	2.172	3	90	25974	1	KED
	Zn	67	62.478	ug/L	0.701	1	13	3887	0	KED
	As	75	1.324	ug/L	0.029	2	12	253	2	KED
	Se	78	0.198	ug/L	0.024	12	14	16	2	KED
	Kr	83		ug/L			47	46	4	Standard
>	In-1	115		ug/L			7244	6558	3	KED
	Mo	98	1.391	ug/L	0.076	5	27	1273	3	KED
	Cd	111	0.420	ug/L	0.035	8	7	95	8	KED
	Cd	114	0.410	ug/L	0.069	16	13	219	12	KED
>	In	115		ug/L			428735	429526	2	Standard
	Ag	107	0.002	ug/L	0.001	64	152	178	8	Standard
	Ba	135	12.152	ug/L	0.404	3	145	48273	1	Standard
	Ba	137	12.168	ug/L	0.282	2	251	83958	1	Standard
>	Tb	159		ug/L			100399	98094	0	Standard
	Pb	208	0.417	ug/L	0.008	1	195	15135	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0449-01
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 00:53:54
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	63070	3	Standard
>	Sc	45		ug/L			725414	711756	1	Standard
	Al	27	66.946	ug/L	3.029	4	11201	3037044	3	Standard
	Cr	52	1.323	ug/L	0.012	0	15679	52130	1	Standard
	Cr	53	1.484	ug/L	0.066	4	290	4783	3	Standard
	Fe	54	234.249	ug/L	12.258	5	77570	541741	3	Standard
	Fe	57	226.051	ug/L	6.071	2	16431	196696	1	Standard
	Mn	55	11.267	ug/L	0.419	3	1318	436365	2	Standard
>	Ge	72		ug/L			28294	26290	1	KED
	Co	59	0.140	ug/L	0.015	10	27	568	11	KED
	Ni	60	1.005	ug/L	0.026	2	22	1118	2	KED
	Ni	62	1.102	ug/L	0.168	15	10	206	15	KED
	Cu	63	8.468	ug/L	0.191	2	76	25738	1	KED
	Cu	65	8.497	ug/L	0.135	1	36	12594	0	KED
	Zn	66	214.415	ug/L	5.095	2	90	84911	1	KED
	Zn	67	201.325	ug/L	7.774	3	13	12719	2	KED
	As	75	1.904	ug/L	0.098	5	12	366	4	KED
	Se	78	0.018	ug/L	0.143	789	14	13	20	KED
	Kr	83		ug/L			47	61	26	Standard
>	In-1	115		ug/L			7244	6644	2	KED
	Mo	98	0.291	ug/L	0.015	5	27	289	3	KED
	Cd	111	0.027	ug/L	0.018	68	7	12	31	KED
	Cd	114	0.025	ug/L	0.011	43	13	25	20	KED
>	In	115		ug/L			428735	425680	2	Standard
	Ag	107	0.002	ug/L	0.001	41	152	180	7	Standard
	Ba	135	8.294	ug/L	0.121	1	145	32714	2	Standard
	Ba	137	8.306	ug/L	0.234	2	251	56879	1	Standard
>	Tb	159		ug/L			100399	97951	2	Standard
	Pb	208	0.451	ug/L	0.009	1	195	16307	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0456-02
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 00:58:42
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	57995	2	Standard
>	Sc	45		ug/L			725414	800188	2	Standard
	Al	27	25.758	ug/L	0.193	0	11201	1321729	3	Standard
	Cr	52	0.407	ug/L	0.040	9	15679	29988	1	Standard
	Cr	53	8.714	ug/L	0.233	2	290	30011	0	Standard
	Fe	54	748.912	ug/L	21.067	2	77570	1759050	0	Standard
	Fe	57	737.041	ug/L	9.644	1	16431	680043	1	Standard
	Mn	55	63.781	ug/L	2.327	3	1318	2769303	1	Standard
>	Ge	72		ug/L			28294	24348	2	KED
	Co	59	0.104	ug/L	0.011	10	27	397	7	KED
	Ni	60	0.241	ug/L	0.024	9	22	262	6	KED
	Ni	62	0.328	ug/L	0.095	28	10	62	23	KED
	Cu	63	0.713	ug/L	0.030	4	76	2066	1	KED
	Cu	65	0.752	ug/L	0.031	4	36	1061	6	KED
	Zn	66	1.899	ug/L	0.026	1	90	773	2	KED
	Zn	67	2.383	ug/L	0.340	14	13	150	10	KED
	As	75	0.751	ug/L	0.049	6	12	140	4	KED
	Se	78	0.301	ug/L	0.117	38	14	17	9	KED
	Kr	83		ug/L			47	51	6	Standard
>	In-1	115		ug/L			7244	6292	2	KED
	Mo	98	0.208	ug/L	0.008	3	27	203	3	KED
	Cd	111	0.002	ug/L	0.012	638	7	6	34	KED
	Cd	114	-0.009	ug/L	0.011	131	13	7	70	KED
>	In	115		ug/L			428735	393275	2	Standard
	Ag	107	-0.002	ug/L	0.001	59	152	108	16	Standard
	Ba	135	3.813	ug/L	0.166	4	145	13960	2	Standard
	Ba	137	3.787	ug/L	0.033	0	251	24091	1	Standard
>	Tb	159		ug/L			100399	96945	2	Standard
	Pb	208	0.160	ug/L	0.007	4	195	5843	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0462-01
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 01:03:30
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	77666	3	Standard
>	Sc	45		ug/L			725414	739586	1	Standard
	Al	27	76.711	ug/L	1.731	2	11201	3615454	2	Standard
	Cr	52	1.105	ug/L	0.026	2	15679	47865	1	Standard
	Cr	53	1.395	ug/L	0.034	2	290	4692	1	Standard
	Fe	54	260.056	ug/L	1.110	0	77570	616434	1	Standard
	Fe	57	277.249	ug/L	2.783	1	16431	246947	2	Standard
	Mn	55	12.640	ug/L	0.185	1	1318	508639	2	Standard
>	Ge	72		ug/L			28294	25005	0	KED
	Co	59	0.109	ug/L	0.013	12	27	426	11	KED
	Ni	60	1.299	ug/L	0.037	2	22	1368	2	KED
	Ni	62	1.402	ug/L	0.083	5	10	246	5	KED
	Cu	63	4.378	ug/L	0.041	0	76	12691	1	KED
	Cu	65	4.389	ug/L	0.238	5	36	6204	5	KED
	Zn	66	11.119	ug/L	0.301	2	90	4265	3	KED
	Zn	67	10.993	ug/L	0.581	5	13	671	4	KED
	As	75	10.259	ug/L	0.215	2	12	1831	1	KED
	Se	78	0.365	ug/L	0.162	44	14	19	16	KED
	Kr	83		ug/L			47	54	19	Standard
>	In-1	115		ug/L			7244	6536	4	KED
	Mo	98	1.844	ug/L	0.141	7	27	1672	3	KED
	Cd	111	0.006	ug/L	0.005	85	7	8	17	KED
	Cd	114	-0.003	ug/L	0.016	482	13	10	79	KED
>	In	115		ug/L			428735	411964	1	Standard
	Ag	107	0.001	ug/L	0.001	59	152	161	4	Standard
	Ba	135	4.952	ug/L	0.059	1	145	18959	0	Standard
	Ba	137	5.006	ug/L	0.073	1	251	33285	2	Standard
>	Tb	159		ug/L			100399	96382	1	Standard
	Pb	208	0.275	ug/L	0.010	3	195	9859	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0462-02
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 01:08:24
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	72967	4	Standard
>	Sc	45		ug/L			725414	736124	1	Standard
	Al	27	71.467	ug/L	1.899	2	11201	3353297	3	Standard
	Cr	52	1.748	ug/L	0.031	1	15679	66102	0	Standard
	Cr	53	2.053	ug/L	0.046	2	290	6732	2	Standard
	Fe	54	241.831	ug/L	5.786	2	77570	576002	1	Standard
	Fe	57	259.118	ug/L	4.750	1	16431	230761	0	Standard
	Mn	55	11.783	ug/L	0.257	2	1318	471937	0	Standard
>	Ge	72		ug/L			28294	25250	1	KED
	Co	59	0.101	ug/L	0.002	2	27	402	2	KED
	Ni	60	1.188	ug/L	0.069	5	22	1266	6	KED
	Ni	62	1.199	ug/L	0.099	8	10	214	8	KED
	Cu	63	3.853	ug/L	0.116	3	76	11285	1	KED
	Cu	65	3.871	ug/L	0.070	1	36	5529	2	KED
	Zn	66	10.254	ug/L	0.086	0	90	3977	1	KED
	Zn	67	10.031	ug/L	0.943	9	13	620	9	KED
	As	75	9.311	ug/L	0.259	2	12	1678	1	KED
	Se	78	0.178	ug/L	0.100	55	14	16	13	KED
	Kr	83		ug/L			47	42	22	Standard
>	In-1	115		ug/L			7244	6466	0	KED
	Mo	98	1.754	ug/L	0.056	3	27	1578	2	KED
	Cd	111	0.005	ug/L	0.010	174	7	7	24	KED
	Cd	114	-0.001	ug/L	0.002	189	13	11	8	KED
>	In	115		ug/L			428735	407393	2	Standard
	Ag	107	-0.000	ug/L	0.001	223	152	138	11	Standard
	Ba	135	5.285	ug/L	0.082	1	145	19999	0	Standard
	Ba	137	5.305	ug/L	0.060	1	251	34863	1	Standard
>	Tb	159		ug/L			100399	96476	0	Standard
	Pb	208	4.693	ug/L	0.020	0	195	165499	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0466-01
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 01:13:12
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	78149	1	Standard
>	Sc	45		ug/L			725414	736363	0	Standard
	Al	27	66.172	ug/L	1.699	2	11201	3106220	2	Standard
	Cr	52	0.556	ug/L	0.016	2	15679	31880	1	Standard
	Cr	53	0.750	ug/L	0.016	2	290	2646	2	Standard
	Fe	54	173.589	ug/L	5.832	3	77570	435830	2	Standard
	Fe	57	176.869	ug/L	8.198	4	16431	162837	3	Standard
	Mn	55	40.193	ug/L	0.418	1	1318	1607397	1	Standard
>	Ge	72		ug/L			28294	25921	0	KED
	Co	59	0.359	ug/L	0.012	3	27	1398	2	KED
	Ni	60	1.647	ug/L	0.062	3	22	1794	3	KED
	Ni	62	1.855	ug/L	0.059	3	10	335	3	KED
	Cu	63	7.097	ug/L	0.158	2	76	21283	1	KED
	Cu	65	7.085	ug/L	0.039	0	36	10361	0	KED
	Zn	66	107.242	ug/L	1.141	1	90	41923	1	KED
	Zn	67	98.983	ug/L	3.660	3	13	6173	3	KED
	As	75	0.760	ug/L	0.041	5	12	151	4	KED
	Se	78	0.078	ug/L	0.160	205	14	14	22	KED
	Kr	83		ug/L			47	50	9	Standard
>	In-1	115		ug/L			7244	6712	3	KED
	Mo	98	1.013	ug/L	0.044	4	27	956	0	KED
	Cd	111	0.029	ug/L	0.009	31	7	13	14	KED
	Cd	114	0.017	ug/L	0.007	41	13	21	15	KED
>	In	115		ug/L			428735	418248	2	Standard
	Ag	107	-0.004	ug/L	0.002	55	152	94	28	Standard
	Ba	135	5.984	ug/L	0.143	2	145	23225	1	Standard
	Ba	137	5.964	ug/L	0.115	1	251	40198	1	Standard
>	Tb	159		ug/L			100399	97318	0	Standard
	Pb	208	0.374	ug/L	0.006	1	195	13488	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0411-01
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, July 06, 2023 01:18:31
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25168	202783	2	Standard
>	Sc	45		ug/L			725414	724928	1	Standard
	Al	27	7.800	ug/L	0.016	0	11201	370385	1	Standard
	Cr	52	3.592	ug/L	0.048	1	15679	117242	0	Standard
	Cr	53	3.604	ug/L	0.073	2	290	11419	1	Standard
	Fe	54	1366.180	ug/L	57.891	4	77570	2843641	3	Standard
	Fe	57	1660.748	ug/L	21.260	1	16431	1367856	1	Standard
	Mn	55	127.445	ug/L	0.412	0	1318	5014659	0	Standard
>	Ge	72		ug/L			28294	21682	3	KED
	Co	59	0.435	ug/L	0.018	4	27	1412	5	KED
	Ni	60	3.828	ug/L	0.101	2	22	3464	2	KED
	Ni	62	4.177	ug/L	1.077	25	10	619	21	KED
	Cu	63	0.546	ug/L	0.041	7	76	1421	4	KED
	Cu	65	0.606	ug/L	0.145	24	36	761	19	KED
	Zn	66	5.466	ug/L	0.562	10	90	1849	6	KED
	Zn	67	7.401	ug/L	2.663	35	13	392	31	KED
	As	75	0.668	ug/L	0.776	116	12	109	103	KED
	Se	78	4.386	ug/L	7.127	162	14	82	140	KED
	Kr	83		ug/L			47	73	27	Standard
>	In-1	115		ug/L			7244	5858	1	KED
	Mo	98	0.166	ug/L	0.011	6	27	155	6	KED
	Cd	111	0.028	ug/L	0.019	66	7	11	30	KED
	Cd	114	0.009	ug/L	0.002	22	13	15	7	KED
>	In	115		ug/L			428735	379404	3	Standard
	Ag	107	-0.002	ug/L	0.001	48	152	106	11	Standard
	Ba	135	13.217	ug/L	0.356	2	145	46369	1	Standard
	Ba	137	13.137	ug/L	0.423	3	251	80030	0	Standard
>	Tb	159		ug/L			100399	92386	2	Standard
	Pb	208	0.027	ug/L	0.003	11	195	1105	8	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLB
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 01:23:20
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25168	30952	1	Standard
>	**Sc**	**45**		ug/L			725414	695206	0	Standard
	Al	**27**	**0.120**	ug/L	0.002	1	11201	16044	1	Standard
	Cr	**52**	**0.069**	ug/L	0.007	10	15679	16902	2	Standard
	Cr	**53**	**0.011**	ug/L	0.003	29	290	309	3	Standard
	Fe	**54**	**2.819**	ug/L	1.369	48	77570	79802	2	Standard
	Fe	**57**	**-0.992**	ug/L	0.586	59	16431	14971	2	Standard
	Mn	**55**	**0.002**	ug/L	0.001	43	1318	1333	1	Standard
>	**Ge**	**72**		ug/L			28294	26062	1	KED
	Co	**59**	**-0.001**	ug/L	0.000	59	27	22	8	KED
	Ni	**60**	**0.002**	ug/L	0.009	509	22	22	40	KED
	Ni	**62**	**-0.006**	ug/L	0.017	272	10	8	35	KED
	Cu	**63**	**0.019**	ug/L	0.004	20	76	126	8	KED
	Cu	**65**	**0.018**	ug/L	0.010	56	36	59	23	KED
	Zn	**66**	**0.004**	ug/L	0.036	919	90	85	15	KED
	Zn	**67**	**0.068**	ug/L	0.020	30	13	16	6	KED
	As	**75**	**-0.010**	ug/L	0.009	85	12	9	18	KED
	Se	**78**	**-0.063**	ug/L	0.074	118	14	11	12	KED
	Kr	**83**		ug/L			47	48	17	Standard
>	**In-1**	**115**		ug/L			7244	6639	1	KED
	Mo	**98**	**-0.024**	ug/L	0.002	7	27	3	52	KED
	Cd	**111**	**-0.003**	ug/L	0.003	87	7	6	8	KED
	Cd	**114**	**-0.009**	ug/L	0.008	88	13	8	50	KED
>	**In**	**115**		ug/L			428735	419219	3	Standard
	Ag	**107**	**-0.006**	ug/L	0.000	7	152	59	8	Standard
	Ba	**135**	**0.007**	ug/L	0.003	51	145	167	10	Standard
	Ba	**137**	**-0.001**	ug/L	0.003	254	251	238	4	Standard
>	**Tb**	**159**		ug/L			100399	94814	1	Standard
	Pb	**208**	**0.001**	ug/L	0.000	21	195	215	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVA
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 01:28:15
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25168	27028	2	Standard
⌈>	**Sc**	**45**		ug/L			725414	693174	1	Standard
|	**Al**	**27**	**4620.397**	ug/L	48.390	1	11201	203456909	2	Standard
|	**Cr**	**52**	**45.336**	ug/L	0.210	0	15679	1240855	1	Standard
|	**Cr**	**53**	**47.808**	ug/L	0.073	0	290	141443	1	Standard
|	**Fe**	**54**	**4980.651**	ug/L	60.980	1	77570	9719051	1	Standard
|	**Fe**	**57**	**4978.282**	ug/L	96.145	1	16431	3888587	0	Standard
⌊	**Mn**	**55**	**45.985**	ug/L	0.478	1	1318	1730826	1	Standard
⌈>	**Ge**	**72**		ug/L			28294	25207	0	KED
|	**Co**	**59**	**49.132**	ug/L	0.725	1	27	182634	0	KED
|	**Ni**	**60**	**49.270**	ug/L	0.308	0	22	51627	1	KED
|	**Ni**	**62**	**50.720**	ug/L	0.701	1	10	8690	1	KED
|	**Cu**	**63**	**49.464**	ug/L	0.516	1	76	143848	0	KED
|	**Cu**	**65**	**51.072**	ug/L	1.023	2	36	72426	2	KED
|	**Zn**	**66**	**50.865**	ug/L	1.140	2	90	19378	2	KED
|	**Zn**	**67**	**49.149**	ug/L	1.154	2	13	2987	3	KED
|	**As**	**75**	**48.701**	ug/L	0.547	1	12	8721	0	KED
⌊	**Se**	**78**	**48.475**	ug/L	1.396	2	14	966	2	KED
	Kr	**83**		ug/L			47	57	10	Standard
⌈>	**In-1**	**115**		ug/L			7244	6423	1	KED
|	**Mo**	**98**	**48.677**	ug/L	0.964	1	27	42845	0	KED
|	**Cd**	**111**	**49.993**	ug/L	0.194	0	7	10386	1	KED
⌊	**Cd**	**114**	**50.439**	ug/L	1.399	2	13	25056	1	KED
⌈>	**In**	**115**		ug/L			428735	412942	0	Standard
|	**Ag**	**107**	**49.031**	ug/L	0.334	0	152	727582	1	Standard
|	**Ba**	**135**	**46.474**	ug/L	0.807	1	145	177193	1	Standard
⌊	**Ba**	**137**	**45.725**	ug/L	0.785	1	251	302755	0	Standard
⌈>	**Tb**	**159**		ug/L			100399	96238	0	Standard
⌊	**Pb**	**208**	**51.043**	ug/L	0.625	1	195	1793502	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBA
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 01:35:53
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25168	24455	3	Standard
⌈>	**Sc**	**45**		ug/L			725414	729186	1	Standard
|	**Al**	**27**	**0.353**	ug/L	0.023	6	11201	27593	3	Standard
|	**Cr**	**52**	**0.015**	ug/L	0.010	69	15679	16185	3	Standard
|	**Cr**	**53**	**-0.009**	ug/L	0.004	49	290	265	4	Standard
|	**Fe**	**54**	**-1.530**	ug/L	0.309	20	77570	74852	0	Standard
|	**Fe**	**57**	**-3.350**	ug/L	0.327	9	16431	13773	1	Standard
⌊	**Mn**	**55**	**-0.004**	ug/L	0.001	27	1318	1162	2	Standard
⌈>	**Ge**	**72**		ug/L			28294	26386	2	KED
|	**Co**	**59**	**0.001**	ug/L	0.003	401	27	28	35	KED
|	**Ni**	**60**	**-0.006**	ug/L	0.001	21	22	13	7	KED
|	**Ni**	**62**	**0.015**	ug/L	0.013	88	10	12	18	KED
|	**Cu**	**63**	**0.001**	ug/L	0.005	677	76	73	18	KED
|	**Cu**	**65**	**0.002**	ug/L	0.004	194	36	36	14	KED
|	**Zn**	**66**	**0.620**	ug/L	0.065	10	90	331	10	KED
|	**Zn**	**67**	**0.575**	ug/L	0.134	23	13	48	17	KED
|	**As**	**75**	**-0.004**	ug/L	0.022	560	12	10	37	KED
⌊	**Se**	**78**	**0.126**	ug/L	0.200	158	14	15	24	KED
	Kr	**83**		ug/L			47	42	14	Standard
⌈>	**In-1**	**115**		ug/L			7244	6760	0	KED
|	**Mo**	**98**	**0.006**	ug/L	0.006	97	27	31	17	KED
|	**Cd**	**111**	**0.002**	ug/L	0.007	322	7	7	21	KED
⌊	**Cd**	**114**	**-0.006**	ug/L	0.009	145	13	9	52	KED
⌈>	**In**	**115**		ug/L			428735	422613	2	Standard
|	**Ag**	**107**	**0.004**	ug/L	0.001	36	152	211	12	Standard
|	**Ba**	**135**	**-0.024**	ug/L	0.004	17	145	47	32	Standard
⌊	**Ba**	**137**	**-0.024**	ug/L	0.002	7	251	83	13	Standard
⌈>	**Tb**	**159**		ug/L			100399	96454	1	Standard
⌊	**Pb**	**208**	**-0.001**	ug/L	0.001	109	195	161	19	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 01:40:48
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L				25174	2	Standard
>	**Sc**	**45**		ug/L				736218	2	Standard
	Al	**27**		ug/L				10930	2	Standard
	Cr	**52**		ug/L				15902	2	Standard
	Cr	**53**		ug/L				242	4	Standard
	Fe	**54**		ug/L				75937	1	Standard
	Fe	**57**		ug/L				13759	4	Standard
	Mn	**55**		ug/L				1220	4	Standard
>	**Ge**	**72**		ug/L				26851	0	KED
	Co	**59**		ug/L				20	18	KED
	Ni	**60**		ug/L				17	32	KED
	Ni	**62**		ug/L				12	24	KED
	Cu	**63**		ug/L				74	11	KED
	Cu	**65**		ug/L				41	29	KED
	Zn	**66**		ug/L				108	15	KED
	Zn	**67**		ug/L				19	48	KED
	As	**75**		ug/L				10	11	KED
	Se	**78**		ug/L				13	35	KED
	Kr	**83**		ug/L				47	18	Standard
>	**In-1**	**115**		ug/L				6909	2	KED
	Mo	**98**		ug/L				14	80	KED
	Cd	**111**		ug/L				4	44	KED
	Cd	**114**		ug/L				3	72	KED
>	**In**	**115**		ug/L				415673	2	Standard
	Ag	**107**		ug/L				137	7	Standard
	Ba	**135**		ug/L				130	8	Standard
	Ba	**137**		ug/L				224	6	Standard
>	**Tb**	**159**		ug/L				96237	1	Standard
	Pb	**208**		ug/L				200	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVB
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 01:45:42
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	26243	3	Standard
>	Sc	45		ug/L			736218	695693	1	Standard
	Al	27	4564.451	ug/L	46.026	1	10930	201704233	0	Standard
	Cr	52	44.459	ug/L	0.524	1	15902	1221498	0	Standard
	Cr	53	47.286	ug/L	1.183	2	242	140382	3	Standard
	Fe	54	4875.876	ug/L	55.554	1	75937	9547938	0	Standard
	Fe	57	4846.474	ug/L	171.247	3	13759	3796724	2	Standard
	Mn	55	45.192	ug/L	1.216	2	1220	1706845	1	Standard
>	Ge	72		ug/L			26851	25703	1	KED
	Co	59	49.117	ug/L	1.161	2	20	186149	1	KED
	Ni	60	49.656	ug/L	0.392	0	17	53053	1	KED
	Ni	62	50.170	ug/L	1.358	2	12	8765	1	KED
	Cu	63	50.693	ug/L	0.976	1	74	150307	1	KED
	Cu	65	51.092	ug/L	0.229	0	41	73887	0	KED
	Zn	66	51.234	ug/L	0.406	0	108	19923	1	KED
	Zn	67	52.072	ug/L	2.135	4	19	3232	2	KED
	As	75	48.330	ug/L	0.261	0	10	8824	0	KED
	Se	78	49.030	ug/L	0.950	1	13	997	2	KED
	Kr	83		ug/L			47	66	15	Standard
>	In-1	115		ug/L			6909	6584	1	KED
	Mo	98	47.866	ug/L	0.892	1	14	43180	1	KED
	Cd	111	49.488	ug/L	1.168	2	4	10534	0	KED
	Cd	114	49.000	ug/L	0.135	0	3	24949	1	KED
>	In	115		ug/L			415673	406086	1	Standard
	Ag	107	50.704	ug/L	1.203	2	137	739734	1	Standard
	Ba	135	46.921	ug/L	0.586	1	130	175899	0	Standard
	Ba	137	46.292	ug/L	0.754	1	224	301382	0	Standard
>	Tb	159		ug/L			96237	96220	0	Standard
	Pb	208	50.903	ug/L	0.559	1	200	1788302	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBB
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 01:53:21
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25174	24692	1	Standard
⌈>	**Sc**	**45**		ug/L			736218	714945	1	Standard
|	**Al**	**27**	**0.454**	ug/L	0.025	5	10930	31239	2	Standard
|	**Cr**	**52**	**0.013**	ug/L	0.011	86	15902	15798	0	Standard
|	**Cr**	**53**	**0.006**	ug/L	0.005	73	242	254	5	Standard
|	**Fe**	**54**	**1.236**	ug/L	1.312	106	75937	76183	1	Standard
|	**Fe**	**57**	**1.330**	ug/L	0.412	30	13759	14426	1	Standard
⌊	**Mn**	**55**	**-0.001**	ug/L	0.001	66	1220	1131	2	Standard
⌈>	**Ge**	**72**		ug/L			26851	26614	0	KED
|	**Co**	**59**	**0.001**	ug/L	0.002	138	20	26	27	KED
|	**Ni**	**60**	**-0.004**	ug/L	0.005	133	17	13	42	KED
|	**Ni**	**62**	**-0.017**	ug/L	0.006	35	12	8	12	KED
|	**Cu**	**63**	**0.003**	ug/L	0.004	139	74	81	13	KED
|	**Cu**	**65**	**-0.001**	ug/L	0.004	656	41	40	13	KED
|	**Zn**	**66**	**0.556**	ug/L	0.024	4	108	330	2	KED
|	**Zn**	**67**	**0.529**	ug/L	0.055	10	19	53	7	KED
|	**As**	**75**	**0.002**	ug/L	0.003	115	10	11	4	KED
⌊	**Se**	**78**	**0.214**	ug/L	0.262	122	13	17	30	KED
	Kr	**83**		ug/L			47	47	13	Standard
⌈>	**In-1**	**115**		ug/L			6909	6757	0	KED
|	**Mo**	**98**	**0.029**	ug/L	0.001	4	14	40	2	KED
|	**Cd**	**111**	**0.002**	ug/L	0.000	9	4	4	0	KED
⌊	**Cd**	**114**	**0.017**	ug/L	0.008	48	3	11	36	KED
⌈>	**In**	**115**		ug/L			415673	418725	1	Standard
|	**Ag**	**107**	**0.004**	ug/L	0.001	32	137	203	9	Standard
|	**Ba**	**135**	**-0.018**	ug/L	0.002	13	130	60	16	Standard
⌊	**Ba**	**137**	**-0.019**	ug/L	0.001	3	224	100	4	Standard
⌈>	**Tb**	**159**		ug/L			96237	95858	1	Standard
⌊	**Pb**	**208**	**-0.001**	ug/L	0.000	24	200	151	6	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0469-01
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 01:58:16
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	60808	3	Standard
>	Sc	45		ug/L			736218	714554	2	Standard
	Al	27	56.461	ug/L	0.823	1	10930	2572878	1	Standard
	Cr	52	0.670	ug/L	0.021	3	15902	34107	2	Standard
	Cr	53	0.803	ug/L	0.043	5	242	2676	2	Standard
	Fe	54	102.344	ug/L	2.107	2	75937	277970	2	Standard
	Fe	57	94.069	ug/L	3.058	3	13759	88768	0	Standard
	Mn	55	5.994	ug/L	0.219	3	1220	233460	1	Standard
>	Ge	72		ug/L			26851	26460	0	KED
	Co	59	0.107	ug/L	0.019	17	20	438	16	KED
	Ni	60	1.877	ug/L	0.019	1	17	2081	0	KED
	Ni	62	1.845	ug/L	0.062	3	12	343	3	KED
	Cu	63	6.258	ug/L	0.189	3	74	19168	2	KED
	Cu	65	6.357	ug/L	0.076	1	41	9500	1	KED
	Zn	66	47.642	ug/L	0.880	1	108	19078	1	KED
	Zn	67	44.843	ug/L	0.338	0	19	2868	0	KED
	As	75	0.398	ug/L	0.023	5	10	85	5	KED
	Se	78	0.025	ug/L	0.252	1008	13	13	38	KED
	Kr	83		ug/L			47	53	24	Standard
>	In-1	115		ug/L			6909	6816	0	KED
	Mo	98	2.181	ug/L	0.077	3	14	2050	3	KED
	Cd	111	0.079	ug/L	0.022	27	4	21	23	KED
	Cd	114	0.085	ug/L	0.020	23	3	47	21	KED
>	In	115		ug/L			415673	430810	0	Standard
	Ag	107	0.004	ug/L	0.001	32	137	198	9	Standard
	Ba	135	6.083	ug/L	0.080	1	130	24315	1	Standard
	Ba	137	6.039	ug/L	0.112	1	224	41917	1	Standard
>	Tb	159		ug/L			96237	97022	0	Standard
	Pb	208	0.278	ug/L	0.010	3	200	10065	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0491-01
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 02:03:04
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	57287	0	Standard
>	Sc	45		ug/L			736218	815088	2	Standard
	Al	27	109.037	ug/L	1.454	1	10930	5656627	1	Standard
	Cr	52	6.486	ug/L	0.193	2	15902	223800	2	Standard
	Cr	53	7.314	ug/L	0.270	3	242	25651	1	Standard
	Fe	54	251.094	ug/L	7.474	2	75937	655587	0	Standard
	Fe	57	290.945	ug/L	12.216	4	13759	281255	1	Standard
	Mn	55	99.139	ug/L	3.508	3	1220	4383821	1	Standard
>	Ge	72		ug/L			26851	24965	0	KED
	Co	59	0.261	ug/L	0.011	4	20	981	3	KED
	Ni	60	2.787	ug/L	0.080	2	17	2907	2	KED
	Ni	62	2.799	ug/L	0.157	5	12	485	5	KED
	Cu	63	5.056	ug/L	0.112	2	74	14624	2	KED
	Cu	65	5.138	ug/L	0.053	1	41	7252	1	KED
	Zn	66	68.334	ug/L	0.809	1	108	25776	1	KED
	Zn	67	63.999	ug/L	2.163	3	19	3855	3	KED
	As	75	1.466	ug/L	0.059	4	10	269	3	KED
	Se	78	0.230	ug/L	0.082	35	13	16	9	KED
	Kr	83		ug/L			47	47	16	Standard
>	In-1	115		ug/L			6909	6541	1	KED
	Mo	98	1.040	ug/L	0.038	3	14	945	3	KED
	Cd	111	0.036	ug/L	0.022	63	4	11	40	KED
	Cd	114	0.045	ug/L	0.013	29	3	25	25	KED
>	In	115		ug/L			415673	412031	2	Standard
	Ag	107	0.042	ug/L	0.001	2	137	753	3	Standard
	Ba	135	12.385	ug/L	0.279	2	130	47197	0	Standard
	Ba	137	12.084	ug/L	0.237	1	224	79982	0	Standard
>	Tb	159		ug/L			96237	96385	1	Standard
	Pb	208	0.468	ug/L	0.010	2	200	16673	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0491-02
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 02:07:58
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	57805	1	Standard
>	Sc	45		ug/L			736218	827660	2	Standard
	Al	27	133.269	ug/L	2.402	1	10930	7016864	0	Standard
	Cr	52	7.398	ug/L	0.239	3	15902	256654	2	Standard
	Cr	53	8.171	ug/L	0.222	2	242	29067	0	Standard
	Fe	54	315.834	ug/L	15.288	4	75937	815101	1	Standard
	Fe	57	361.733	ug/L	10.923	3	13759	351395	1	Standard
	Mn	55	105.554	ug/L	4.094	3	1220	4739047	1	Standard
>	Ge	72		ug/L			26851	24673	0	KED
	Co	59	0.303	ug/L	0.017	5	20	1123	5	KED
	Ni	60	3.058	ug/L	0.094	3	17	3152	3	KED
	Ni	62	3.212	ug/L	0.122	3	12	549	3	KED
	Cu	63	5.659	ug/L	0.143	2	74	16169	1	KED
	Cu	65	5.772	ug/L	0.044	0	41	8046	1	KED
	Zn	66	74.036	ug/L	1.898	2	108	27591	2	KED
	Zn	67	68.684	ug/L	1.134	1	19	4088	2	KED
	As	75	1.561	ug/L	0.037	2	10	283	2	KED
	Se	78	0.277	ug/L	0.071	25	13	17	8	KED
	Kr	83		ug/L			47	46	10	Standard
>	In-1	115		ug/L			6909	6323	1	KED
	Mo	98	1.063	ug/L	0.009	0	14	933	0	KED
	Cd	111	0.056	ug/L	0.028	49	4	15	35	KED
	Cd	114	0.054	ug/L	0.011	19	3	29	17	KED
>	In	115		ug/L			415673	411720	0	Standard
	Ag	107	0.017	ug/L	0.002	9	137	382	7	Standard
	Ba	135	12.755	ug/L	0.141	1	130	48581	1	Standard
	Ba	137	12.795	ug/L	0.222	1	224	84634	2	Standard
>	Tb	159		ug/L			96237	96220	0	Standard
	Pb	208	0.709	ug/L	0.010	1	200	25116	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0491-03
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 02:12:52
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	61634	2	Standard
>	Sc	45		ug/L			736218	741805	1	Standard
	Al	27	418.361	ug/L	12.614	3	10930	19719147	1	Standard
	Cr	52	2.030	ug/L	0.071	3	15902	74744	1	Standard
	Cr	53	2.220	ug/L	0.019	0	242	7258	1	Standard
	Fe	54	530.749	ug/L	12.364	2	75937	1176208	0	Standard
	Fe	57	561.340	ug/L	8.843	1	13759	481221	0	Standard
	Mn	55	44.310	ug/L	0.448	1	1220	1784820	1	Standard
>	Ge	72		ug/L			26851	24776	0	KED
	Co	59	0.368	ug/L	0.006	1	20	1362	1	KED
	Ni	60	1.564	ug/L	0.028	1	17	1626	2	KED
	Ni	62	1.697	ug/L	0.086	5	12	296	4	KED
	Cu	63	7.470	ug/L	0.093	1	74	21410	1	KED
	Cu	65	7.648	ug/L	0.133	1	41	10694	1	KED
	Zn	66	64.134	ug/L	1.334	2	108	24013	1	KED
	Zn	67	60.684	ug/L	1.363	2	19	3629	2	KED
	As	75	4.367	ug/L	0.137	3	10	777	2	KED
	Se	78	0.344	ug/L	0.175	50	13	19	17	KED
	Kr	83		ug/L			47	40	4	Standard
>	In-1	115		ug/L			6909	6457	1	KED
	Mo	98	2.691	ug/L	0.039	1	14	2393	1	KED
	Cd	111	0.050	ug/L	0.007	14	4	14	9	KED
	Cd	114	0.044	ug/L	0.010	23	3	24	20	KED
>	In	115		ug/L			415673	409971	1	Standard
	Ag	107	0.015	ug/L	0.001	9	137	350	7	Standard
	Ba	135	18.032	ug/L	0.299	1	130	68321	0	Standard
	Ba	137	17.842	ug/L	0.314	1	224	117404	1	Standard
>	Tb	159		ug/L			96237	95168	1	Standard
	Pb	208	1.634	ug/L	0.028	1	200	56960	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0390-02
Sample Dil Factor: 10
Comments:
Sample Date/Time: Thursday, July 06, 2023 02:17:41
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	32228	3	Standard
>	Sc	45		ug/L			736218	716175	1	Standard
	Al	27	1.212	ug/L	0.011	0	10930	65756	0	Standard
	Cr	52	3.551	ug/L	0.046	1	15902	114656	0	Standard
	Cr	53	6.215	ug/L	0.062	0	242	19198	1	Standard
	Fe	54	4.278	ug/L	0.211	4	75937	82426	0	Standard
	Fe	57	7.841	ug/L	0.479	6	13759	19686	1	Standard
	Mn	55	0.415	ug/L	0.007	1	1220	17310	1	Standard
>	Ge	72		ug/L			26851	22579	1	KED
	Co	59	0.057	ug/L	0.004	7	20	206	7	KED
	Ni	60	0.226	ug/L	0.048	21	17	226	19	KED
	Ni	62	0.166	ug/L	0.034	20	12	35	15	KED
	Cu	63	0.157	ug/L	0.016	10	74	471	7	KED
	Cu	65	0.175	ug/L	0.030	17	41	257	16	KED
	Zn	66	0.576	ug/L	0.035	6	108	286	4	KED
	Zn	67	0.654	ug/L	0.072	11	19	52	9	KED
	As	75	15.049	ug/L	0.296	1	10	2419	1	KED
	Se	78	7.055	ug/L	0.821	11	13	135	8	KED
	Kr	83		ug/L			47	51	24	Standard
>	In-1	115		ug/L			6909	5889	0	KED
	Mo	98	11.359	ug/L	0.280	2	14	9176	2	KED
	Cd	111	0.020	ug/L	0.010	50	4	7	25	KED
	Cd	114	0.011	ug/L	0.004	41	3	7	27	KED
>	In	115		ug/L			415673	377740	0	Standard
	Ag	107	-0.002	ug/L	0.001	38	137	100	9	Standard
	Ba	135	1.109	ug/L	0.027	2	130	3984	2	Standard
	Ba	137	1.124	ug/L	0.026	2	224	7009	1	Standard
>	Tb	159		ug/L			96237	88629	2	Standard
	Pb	208	0.005	ug/L	0.001	17	200	347	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0390-06
Sample Dil Factor: 10
Comments:
Sample Date/Time: Thursday, July 06, 2023 02:22:59
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	32330	2	Standard
>	Sc	45		ug/L			736218	728649	1	Standard
	Al	27	0.617	ug/L	0.005	0	10930	39365	1	Standard
	Cr	52	12.730	ug/L	0.083	0	15902	377595	1	Standard
	Cr	53	15.657	ug/L	0.154	0	242	48835	0	Standard
	Fe	54	3.194	ug/L	0.999	31	75937	81643	1	Standard
	Fe	57	5.630	ug/L	0.495	8	13759	18221	1	Standard
	Mn	55	0.057	ug/L	0.003	4	1220	3467	2	Standard
>	Ge	72		ug/L			26851	23136	1	KED
	Co	59	0.221	ug/L	0.008	3	20	773	2	KED
	Ni	60	0.669	ug/L	0.022	3	17	658	4	KED
	Ni	62	0.673	ug/L	0.071	10	12	116	10	KED
	Cu	63	0.110	ug/L	0.008	7	74	358	4	KED
	Cu	65	0.113	ug/L	0.014	12	41	182	8	KED
	Zn	66	0.442	ug/L	0.068	15	108	247	10	KED
	Zn	67	0.585	ug/L	0.296	50	19	49	34	KED
	As	75	5.978	ug/L	0.124	2	10	990	3	KED
	Se	78	3.328	ug/L	0.124	3	13	71	4	KED
	Kr	83		ug/L			47	53	22	Standard
>	In-1	115		ug/L			6909	5838	0	KED
	Mo	98	5.422	ug/L	0.028	0	14	4348	1	KED
	Cd	111	0.022	ug/L	0.012	53	4	7	27	KED
	Cd	114	0.018	ug/L	0.010	54	3	10	40	KED
>	In	115		ug/L			415673	389915	1	Standard
	Ag	107	-0.004	ug/L	0.001	15	137	73	13	Standard
	Ba	135	1.199	ug/L	0.024	2	130	4436	2	Standard
	Ba	137	1.220	ug/L	0.011	0	224	7834	0	Standard
>	Tb	159		ug/L			96237	89248	1	Standard
	Pb	208	0.000	ug/L	0.001	186	200	198	11	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLC
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 02:27:48
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25174	29296	3	Standard
>	**Sc**	**45**		ug/L			736218	686581	2	Standard
	Al	**27**	**0.071**	ug/L	0.003	3	10930	13298	2	Standard
	Cr	**52**	**0.119**	ug/L	0.023	19	15902	17999	2	Standard
	Cr	**53**	**0.111**	ug/L	0.009	8	242	550	2	Standard
	Fe	**54**	**4.517**	ug/L	1.424	31	75937	79441	2	Standard
	Fe	**57**	**1.970**	ug/L	0.352	17	13759	14349	3	Standard
	Mn	**55**	**0.001**	ug/L	0.002	190	1220	1183	5	Standard
>	**Ge**	**72**		ug/L			26851	25946	2	KED
	Co	**59**	**0.001**	ug/L	0.001	108	20	24	16	KED
	Ni	**60**	**-0.003**	ug/L	0.005	179	17	13	41	KED
	Ni	**62**	**-0.001**	ug/L	0.033	2752	12	11	50	KED
	Cu	**63**	**-0.004**	ug/L	0.004	104	74	60	21	KED
	Cu	**65**	**-0.009**	ug/L	0.011	128	41	27	56	KED
	Zn	**66**	**-0.113**	ug/L	0.033	29	108	60	21	KED
	Zn	**67**	**-0.153**	ug/L	0.028	18	19	9	20	KED
	As	**75**	**0.000**	ug/L	0.016	3813	10	10	26	KED
	Se	**78**	**0.084**	ug/L	0.154	183	13	14	23	KED
	Kr	**83**		ug/L			47	43	18	Standard
>	**In-1**	**115**		ug/L			6909	6591	1	KED
	Mo	**98**	**-0.011**	ug/L	0.001	13	14	3	36	KED
	Cd	**111**	**0.011**	ug/L	0.004	35	4	6	14	KED
	Cd	**114**	**0.012**	ug/L	0.008	66	3	8	45	KED
>	**In**	**115**		ug/L			415673	419344	1	Standard
	Ag	**107**	**-0.004**	ug/L	0.001	13	137	71	13	Standard
	Ba	**135**	**-0.026**	ug/L	0.001	4	130	29	16	Standard
	Ba	**137**	**-0.021**	ug/L	0.001	4	224	86	6	Standard
>	**Tb**	**159**		ug/L			96237	93622	1	Standard
	Pb	**208**	**-0.002**	ug/L	0.000	18	200	113	12	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0388-02
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 02:32:43
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			25174	58137	2	Standard
> Sc	45		ug/L			736218	1127217	2	Standard
Al	27	1.210	ug/L	0.030	2	10930	103328	1	Standard
Cr	52	0.002	ug/L	0.005	258	15902	24435	1	Standard
Cr	53	0.369	ug/L	0.014	3	242	2140	1	Standard
Fe	54	36.884	ug/L	0.453	1	75937	232405	1	Standard
Fe	57	298.537	ug/L	3.782	1	13759	398882	3	Standard
Mn	55	18.761	ug/L	0.453	2	1220	1149107	1	Standard
> Ge	72		ug/L			26851	19982	0	KED
Co	59	0.327	ug/L	0.002	0	20	980	0	KED
Ni	60	8.955	ug/L	0.230	2	17	7448	2	KED
Ni	62	9.246	ug/L	0.267	2	12	1263	2	KED
Cu	63	0.889	ug/L	0.048	5	74	2104	5	KED
Cu	65	0.913	ug/L	0.083	9	41	1057	8	KED
Zn	66	44.851	ug/L	0.203	0	108	13569	0	KED
Zn	67	44.131	ug/L	2.562	5	19	2132	5	KED
As	75	0.395	ug/L	0.056	14	10	64	12	KED
Se	78	10.875	ug/L	0.389	3	13	179	3	KED
Kr	83		ug/L			47	59	12	Standard
> In-1	115		ug/L			6909	5506	1	KED
Mo	98	10.121	ug/L	0.280	2	14	7643	1	KED
Cd	111	3.013	ug/L	0.092	3	4	539	3	KED
Cd	114	2.900	ug/L	0.190	6	3	1236	5	KED
> In	115		ug/L			415673	355434	1	Standard
Ag	107	-0.001	ug/L	0.001	80	137	106	7	Standard
Ba	135	65.411	ug/L	0.727	1	130	214600	1	Standard
Ba	137	64.460	ug/L	0.682	1	224	367256	0	Standard
> Tb	159		ug/L			96237	87371	1	Standard
Pb	208	0.052	ug/L	0.002	3	200	1853	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0388-05
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 02:38:01
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			25174	66041	1	Standard
> Sc	45		ug/L			736218	1196411	0	Standard
Al	27	1.057	ug/L	0.023	2	10930	98119	1	Standard
Cr	52	0.321	ug/L	0.014	4	15902	40817	1	Standard
Cr	53	10.299	ug/L	0.179	1	242	52883	1	Standard
Fe	54	-5.678	ug/L	0.915	16	75937	104417	2	Standard
Fe	57	209.990	ug/L	8.472	4	13759	304368	3	Standard
Mn	55	0.738	ug/L	0.016	2	1220	49894	2	Standard
> Ge	72		ug/L			26851	19877	0	KED
Co	59	0.140	ug/L	0.008	5	20	424	6	KED
Ni	60	5.133	ug/L	0.053	1	17	4252	0	KED
Ni	62	5.096	ug/L	0.512	10	12	696	9	KED
Cu	63	0.743	ug/L	0.029	3	74	1758	3	KED
Cu	65	0.751	ug/L	0.066	8	41	870	8	KED
Zn	66	0.330	ug/L	0.042	12	108	179	7	KED
Zn	67	4.002	ug/L	0.314	7	19	205	8	KED
As	75	1.608	ug/L	0.047	2	10	234	2	KED
Se	78	73.251	ug/L	1.498	2	13	1147	2	KED
Kr	83		ug/L			47	99	4	Standard
> In-1	115		ug/L			6909	5562	2	KED
Mo	98	8.160	ug/L	0.310	3	14	6224	1	KED
Cd	111	0.031	ug/L	0.003	8	4	9	5	KED
Cd	114	0.020	ug/L	0.012	58	3	10	44	KED
> In	115		ug/L			415673	353320	1	Standard
Ag	107	-0.002	ug/L	0.001	74	137	93	16	Standard
Ba	135	95.060	ug/L	2.329	2	130	309915	1	Standard
Ba	137	92.759	ug/L	1.928	2	224	525222	0	Standard
> Tb	159		ug/L			96237	91145	1	Standard
Pb	208	0.009	ug/L	0.001	10	200	487	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLD
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 02:42:50
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	28628	2	Standard
>	Sc	45		ug/L			736218	674072	2	Standard
	Al	27	0.066	ug/L	0.012	18	10930	12816	1	Standard
	Cr	52	0.126	ug/L	0.018	14	15902	17853	0	Standard
	Cr	53	0.639	ug/L	0.046	7	242	2057	6	Standard
	Fe	54	4.302	ug/L	1.726	40	75937	77576	2	Standard
	Fe	57	2.157	ug/L	1.013	46	13759	14215	2	Standard
	Mn	55	-0.000	ug/L	0.001	218	1220	1107	4	Standard
>	Ge	72		ug/L			26851	26194	1	KED
	Co	59	-0.001	ug/L	0.001	77	20	16	17	KED
	Ni	60	-0.002	ug/L	0.003	167	17	15	25	KED
	Ni	62	0.009	ug/L	0.010	115	12	13	14	KED
	Cu	63	-0.001	ug/L	0.002	255	74	69	8	KED
	Cu	65	0.003	ug/L	0.006	190	41	45	20	KED
	Zn	66	-0.092	ug/L	0.056	60	108	69	32	KED
	Zn	67	-0.103	ug/L	0.015	14	19	12	8	KED
	As	75	-0.008	ug/L	0.019	230	10	9	39	KED
	Se	78	0.065	ug/L	0.057	87	13	14	6	KED
	Kr	83		ug/L			47	46	2	Standard
>	In-1	115		ug/L			6909	6828	2	KED
	Mo	98	-0.005	ug/L	0.004	73	14	9	35	KED
	Cd	111	0.009	ug/L	0.006	71	4	6	22	KED
	Cd	114	0.010	ug/L	0.007	78	3	8	50	KED
>	In	115		ug/L			415673	420425	1	Standard
	Ag	107	-0.004	ug/L	0.001	15	137	79	9	Standard
	Ba	135	-0.023	ug/L	0.002	9	130	44	17	Standard
	Ba	137	-0.020	ug/L	0.002	12	224	90	19	Standard
>	Tb	159		ug/L			96237	96020	1	Standard
	Pb	208	-0.001	ug/L	0.001	41	200	150	15	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVC
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 02:47:45
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25174	26082	2	Standard
⌈>	**Sc**	**45**		ug/L			736218	679593	2	Standard
|	**Al**	**27**	**4747.343**	ug/L	76.613	1	10930	204891086	1	Standard
|	**Cr**	**52**	**45.339**	ug/L	1.425	3	15902	1216245	2	Standard
|	**Cr**	**53**	**48.210**	ug/L	1.837	3	242	139722	2	Standard
|	**Fe**	**54**	**4932.895**	ug/L	45.457	0	75937	9434520	1	Standard
|	**Fe**	**57**	**5049.007**	ug/L	190.156	3	13759	3862443	2	Standard
⌊	**Mn**	**55**	**45.647**	ug/L	0.156	0	1220	1684400	2	Standard
⌈>	**Ge**	**72**		ug/L			26851	25244	0	KED
|	**Co**	**59**	**49.321**	ug/L	0.836	1	20	183599	1	KED
|	**Ni**	**60**	**49.213**	ug/L	0.598	1	17	51637	1	KED
|	**Ni**	**62**	**50.559**	ug/L	1.774	3	12	8677	3	KED
|	**Cu**	**63**	**49.601**	ug/L	0.428	0	74	144461	0	KED
|	**Cu**	**65**	**51.689**	ug/L	0.705	1	41	73416	1	KED
|	**Zn**	**66**	**51.546**	ug/L	0.460	0	108	19685	0	KED
|	**Zn**	**67**	**51.495**	ug/L	0.905	1	19	3140	2	KED
|	**As**	**75**	**48.936**	ug/L	0.756	1	10	8775	0	KED
⌊	**Se**	**78**	**49.208**	ug/L	0.703	1	13	982	1	KED
	Kr	**83**		ug/L			47	62	21	Standard
⌈>	**In-1**	**115**		ug/L			6909	6389	3	KED
|	**Mo**	**98**	**48.829**	ug/L	2.025	4	14	42714	1	KED
|	**Cd**	**111**	**50.297**	ug/L	1.561	3	4	10385	0	KED
⌊	**Cd**	**114**	**50.831**	ug/L	1.731	3	3	25098	1	KED
⌈>	**In**	**115**		ug/L			415673	411417	0	Standard
|	**Ag**	**107**	**49.427**	ug/L	1.575	3	137	730621	2	Standard
|	**Ba**	**135**	**46.436**	ug/L	1.128	2	130	176408	3	Standard
⌊	**Ba**	**137**	**46.023**	ug/L	0.920	1	224	303581	1	Standard
⌈>	**Tb**	**159**		ug/L			96237	97512	1	Standard
⌊	**Pb**	**208**	**50.191**	ug/L	1.895	3	200	1786223	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBC
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 02:55:23
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25174	24598	0	Standard
⌈>	**Sc**	**45**		ug/L			736218	712898	1	Standard
|	**Al**	**27**	**0.422**	ug/L	0.009	2	10930	29713	1	Standard
|	**Cr**	**52**	**0.015**	ug/L	0.007	44	15902	15825	1	Standard
|	**Cr**	**53**	**0.171**	ug/L	0.004	2	242	754	3	Standard
|	**Fe**	**54**	**0.859**	ug/L	0.883	102	75937	75250	3	Standard
|	**Fe**	**57**	**0.581**	ug/L	0.183	31	13759	13786	0	Standard
⌊	**Mn**	**55**	**-0.002**	ug/L	0.001	37	1220	1102	2	Standard
⌈>	**Ge**	**72**		ug/L			26851	26984	2	KED
|	**Co**	**59**	**0.001**	ug/L	0.001	42	20	26	8	KED
|	**Ni**	**60**	**-0.004**	ug/L	0.002	40	17	13	14	KED
|	**Ni**	**62**	**-0.042**	ug/L	0.012	28	12	4	49	KED
|	**Cu**	**63**	**0.004**	ug/L	0.003	69	74	88	11	KED
|	**Cu**	**65**	**-0.001**	ug/L	0.005	566	41	40	18	KED
|	**Zn**	**66**	**0.567**	ug/L	0.101	17	108	339	11	KED
|	**Zn**	**67**	**0.361**	ug/L	0.100	27	19	43	15	KED
|	**As**	**75**	**0.013**	ug/L	0.009	73	10	13	14	KED
⌊	**Se**	**78**	**0.033**	ug/L	0.210	629	13	14	31	KED
	Kr	**83**		ug/L			47	52	9	Standard
⌈>	**In-1**	**115**		ug/L			6909	6669	3	KED
|	**Mo**	**98**	**0.031**	ug/L	0.013	41	14	42	29	KED
|	**Cd**	**111**	**0.004**	ug/L	0.004	124	4	5	21	KED
⌊	**Cd**	**114**	**0.006**	ug/L	0.004	61	3	6	34	KED
⌈>	**In**	**115**		ug/L			415673	416810	0	Standard
|	**Ag**	**107**	**0.004**	ug/L	0.001	34	137	201	10	Standard
|	**Ba**	**135**	**-0.021**	ug/L	0.001	6	130	49	11	Standard
⌊	**Ba**	**137**	**-0.019**	ug/L	0.001	4	224	97	5	Standard
⌈>	**Tb**	**159**		ug/L			96237	94523	2	Standard
⌊	**Pb**	**208**	**-0.001**	ug/L	0.000	13	200	144	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0487-02
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 03:00:18
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	47825	2	Standard
>	Sc	45		ug/L			736218	822714	1	Standard
	Al	27	2.624	ug/L	0.042	1	10930	149323	0	Standard
	Cr	52	0.260	ug/L	0.005	2	15902	26106	1	Standard
	Cr	53	0.776	ug/L	0.014	1	242	2991	1	Standard
	Fe	54	8.134	ug/L	0.698	8	75937	103553	1	Standard
	Fe	57	51.342	ug/L	1.902	3	13759	62778	1	Standard
	Mn	55	0.385	ug/L	0.013	3	1220	18554	1	Standard
>	Ge	72		ug/L			26851	24887	0	KED
	Co	59	0.105	ug/L	0.010	9	20	406	9	KED
	Ni	60	0.083	ug/L	0.017	20	17	102	17	KED
	Ni	62	0.050	ug/L	0.043	84	12	19	36	KED
	Cu	63	0.099	ug/L	0.012	12	74	353	10	KED
	Cu	65	0.112	ug/L	0.005	4	41	196	3	KED
	Zn	66	0.642	ug/L	0.015	2	108	340	2	KED
	Zn	67	0.640	ug/L	0.117	18	19	56	12	KED
	As	75	0.481	ug/L	0.051	10	10	95	9	KED
	Se	78	0.154	ug/L	0.169	109	13	15	21	KED
	Kr	83		ug/L			47	44	10	Standard
>	In-1	115		ug/L			6909	6457	2	KED
	Mo	98	0.135	ug/L	0.024	18	14	132	16	KED
	Cd	111	0.018	ug/L	0.029	156	4	7	73	KED
	Cd	114	0.013	ug/L	0.007	54	3	9	36	KED
>	In	115		ug/L			415673	412605	0	Standard
	Ag	107	0.001	ug/L	0.001	65	137	151	6	Standard
	Ba	135	1.899	ug/L	0.024	1	130	7360	1	Standard
	Ba	137	1.829	ug/L	0.061	3	224	12315	3	Standard
>	Tb	159		ug/L			96237	93780	0	Standard
	Pb	208	0.018	ug/L	0.000	0	200	815	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0487-04
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 03:05:07
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	50845	2	Standard
>	Sc	45		ug/L			736218	821028	1	Standard
	Al	27	2.475	ug/L	0.024	0	10930	141236	1	Standard
	Cr	52	0.293	ug/L	0.004	1	15902	27109	1	Standard
	Cr	53	0.789	ug/L	0.017	2	242	3028	1	Standard
	Fe	54	10.890	ug/L	0.081	0	75937	109663	1	Standard
	Fe	57	50.071	ug/L	1.456	2	13759	61490	2	Standard
	Mn	55	0.351	ug/L	0.006	1	1220	17016	0	Standard
>	Ge	72		ug/L			26851	24957	0	KED
	Co	59	0.018	ug/L	0.001	6	20	86	4	KED
	Ni	60	0.107	ug/L	0.017	15	17	126	12	KED
	Ni	62	0.084	ug/L	0.035	42	12	25	24	KED
	Cu	63	0.120	ug/L	0.010	8	74	415	7	KED
	Cu	65	0.128	ug/L	0.004	3	41	218	3	KED
	Zn	66	0.326	ug/L	0.022	6	108	223	3	KED
	Zn	67	0.436	ug/L	0.324	74	19	44	43	KED
	As	75	0.490	ug/L	0.080	16	10	96	15	KED
	Se	78	0.237	ug/L	0.108	45	13	17	12	KED
	Kr	83		ug/L			47	34	5	Standard
>	In-1	115		ug/L			6909	6490	3	KED
	Mo	98	0.103	ug/L	0.016	15	14	105	14	KED
	Cd	111	0.006	ug/L	0.015	251	4	5	56	KED
	Cd	114	-0.002	ug/L	0.006	364	3	2	144	KED
>	In	115		ug/L			415673	409196	2	Standard
	Ag	107	-0.001	ug/L	0.001	70	137	114	11	Standard
	Ba	135	1.886	ug/L	0.043	2	130	7245	0	Standard
	Ba	137	1.841	ug/L	0.051	2	224	12286	1	Standard
>	Tb	159		ug/L			96237	94530	0	Standard
	Pb	208	0.008	ug/L	0.001	6	200	473	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0487-08
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 03:10:25
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	47473	1	Standard
>	Sc	45		ug/L			736218	782518	1	Standard
	Al	27	1.952	ug/L	0.038	1	10930	108613	0	Standard
	Cr	52	0.130	ug/L	0.004	3	15902	20885	2	Standard
	Cr	53	0.688	ug/L	0.041	5	242	2548	3	Standard
	Fe	54	20.836	ug/L	2.216	10	75937	126206	2	Standard
	Fe	57	49.285	ug/L	1.133	2	13759	57905	0	Standard
	Mn	55	1.911	ug/L	0.038	2	1220	82415	0	Standard
>	Ge	72		ug/L			26851	24942	1	KED
	Co	59	0.118	ug/L	0.007	6	20	452	5	KED
	Ni	60	0.087	ug/L	0.013	14	17	106	11	KED
	Ni	62	0.080	ug/L	0.029	35	12	24	20	KED
	Cu	63	0.157	ug/L	0.011	6	74	520	6	KED
	Cu	65	0.156	ug/L	0.022	13	41	258	12	KED
	Zn	66	0.709	ug/L	0.122	17	108	366	12	KED
	Zn	67	0.713	ug/L	0.150	21	19	60	14	KED
	As	75	0.182	ug/L	0.015	8	10	42	6	KED
	Se	78	0.122	ug/L	0.156	127	13	14	20	KED
	Kr	83		ug/L			47	48	14	Standard
>	In-1	115		ug/L			6909	6417	2	KED
	Mo	98	0.054	ug/L	0.002	3	14	60	4	KED
	Cd	111	0.023	ug/L	0.027	119	4	8	65	KED
	Cd	114	0.012	ug/L	0.010	82	3	8	56	KED
>	In	115		ug/L			415673	407495	1	Standard
	Ag	107	-0.003	ug/L	0.001	49	137	98	20	Standard
	Ba	135	1.528	ug/L	0.022	1	130	5872	0	Standard
	Ba	137	1.547	ug/L	0.029	1	224	10320	1	Standard
>	Tb	159		ug/L			96237	94271	2	Standard
	Pb	208	0.010	ug/L	0.001	11	200	538	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0487-03
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 03:16:43
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	49808	1	Standard
>	Sc	45		ug/L			736218	811072	1	Standard
	Al	27	6.892	ug/L	0.030	0	10930	367132	1	Standard
	Cr	52	0.338	ug/L	0.016	4	15902	28195	0	Standard
	Cr	53	0.760	ug/L	0.020	2	242	2892	1	Standard
	Fe	54	22.458	ug/L	1.095	4	75937	134574	3	Standard
	Fe	57	64.265	ug/L	1.999	3	13759	73668	2	Standard
	Mn	55	1.159	ug/L	0.031	2	1220	52391	4	Standard
>	Ge	72		ug/L			26851	24921	0	KED
	Co	59	0.014	ug/L	0.004	29	20	72	21	KED
	Ni	60	0.079	ug/L	0.002	3	17	98	2	KED
	Ni	62	0.061	ug/L	0.017	27	12	21	13	KED
	Cu	63	0.113	ug/L	0.005	4	74	392	4	KED
	Cu	65	0.111	ug/L	0.017	15	41	194	12	KED
	Zn	66	0.197	ug/L	0.040	20	108	174	8	KED
	Zn	67	0.406	ug/L	0.205	50	19	42	28	KED
	As	75	0.473	ug/L	0.067	14	10	93	12	KED
	Se	78	0.187	ug/L	0.076	40	13	16	9	KED
	Kr	83		ug/L			47	36	15	Standard
>	In-1	115		ug/L			6909	6554	1	KED
	Mo	98	0.089	ug/L	0.010	10	14	93	8	KED
	Cd	111	0.024	ug/L	0.010	42	4	9	23	KED
	Cd	114	0.009	ug/L	0.004	41	3	7	26	KED
>	In	115		ug/L			415673	406318	0	Standard
	Ag	107	-0.003	ug/L	0.000	12	137	86	7	Standard
	Ba	135	1.921	ug/L	0.035	1	130	7329	2	Standard
	Ba	137	1.867	ug/L	0.029	1	224	12373	1	Standard
>	Tb	159		ug/L			96237	93387	1	Standard
	Pb	208	0.010	ug/L	0.001	6	200	547	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLE
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 03:21:32
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25174	27655	2	Standard
>	**Sc**	**45**		ug/L			736218	654747	1	Standard
	Al	**27**	**0.068**	ug/L	0.005	8	10930	12535	0	Standard
	Cr	**52**	**0.080**	ug/L	0.003	3	15902	16192	1	Standard
	Cr	**53**	**0.080**	ug/L	0.014	17	242	439	10	Standard
	Fe	**54**	**4.708**	ug/L	0.555	11	75937	76139	1	Standard
	Fe	**57**	**-1.668**	ug/L	0.232	13	13759	11009	1	Standard
	Mn	**55**	**-0.003**	ug/L	0.001	25	1220	974	1	Standard
>	**Ge**	**72**		ug/L			26851	25755	2	KED
	Co	**59**	**-0.000**	ug/L	0.001	915	20	19	14	KED
	Ni	**60**	**-0.002**	ug/L	0.008	363	17	14	58	KED
	Ni	**62**	**-0.015**	ug/L	0.017	113	12	8	32	KED
	Cu	**63**	**-0.004**	ug/L	0.001	22	74	59	3	KED
	Cu	**65**	**-0.001**	ug/L	0.008	551	41	38	26	KED
	Zn	**66**	**-0.098**	ug/L	0.011	11	108	66	6	KED
	Zn	**67**	**-0.090**	ug/L	0.060	66	19	13	28	KED
	As	**75**	**0.009**	ug/L	0.026	273	10	12	38	KED
	Se	**78**	**0.005**	ug/L	0.034	617	13	12	5	KED
	Kr	**83**		ug/L			47	41	20	Standard
>	**In-1**	**115**		ug/L			6909	6678	0	KED
	Mo	**98**	**-0.012**	ug/L	0.004	36	14	3	123	KED
	Cd	**111**	**0.015**	ug/L	0.009	57	4	7	25	KED
	Cd	**114**	**0.011**	ug/L	0.002	19	3	8	12	KED
>	**In**	**115**		ug/L			415673	403695	3	Standard
	Ag	**107**	**-0.004**	ug/L	0.001	24	137	76	21	Standard
	Ba	**135**	**-0.023**	ug/L	0.002	7	130	42	14	Standard
	Ba	**137**	**-0.025**	ug/L	0.002	6	224	59	15	Standard
>	**Tb**	**159**		ug/L			96237	93593	1	Standard
	Pb	**208**	**-0.003**	ug/L	0.000	5	200	106	6	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0487-01
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 03:26:26
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
C	13		ug/L			25174	45265	3	Standard
> Sc	45		ug/L			736218	816664	2	Standard
Al	27	6.143	ug/L	0.139	2	10930	330705	1	Standard
Cr	52	0.156	ug/L	0.013	8	15902	22600	1	Standard
Cr	53	0.557	ug/L	0.020	3	242	2207	1	Standard
Fe	54	15.551	ug/L	2.671	17	75937	119616	2	Standard
Fe	57	61.767	ug/L	1.866	3	13759	71864	1	Standard
Mn	55	1.034	ug/L	0.036	3	1220	47154	1	Standard
> Ge	72		ug/L			26851	24661	1	KED
Co	59	0.008	ug/L	0.004	50	20	46	29	KED
Ni	60	0.063	ug/L	0.007	10	17	81	7	KED
Ni	62	0.040	ug/L	0.023	57	12	17	22	KED
Cu	63	0.087	ug/L	0.008	8	74	314	5	KED
Cu	65	0.086	ug/L	0.012	13	41	157	10	KED
Zn	66	0.886	ug/L	0.057	6	108	428	4	KED
Zn	67	1.109	ug/L	0.237	21	19	83	17	KED
As	75	0.487	ug/L	0.030	6	10	95	6	KED
Se	78	0.287	ug/L	0.138	47	13	17	13	KED
Kr	83		ug/L			47	38	28	Standard
> In-1	115		ug/L			6909	6354	1	KED
Mo	98	0.103	ug/L	0.012	11	14	102	10	KED
Cd	111	0.002	ug/L	0.003	161	4	4	12	KED
Cd	114	0.008	ug/L	0.004	54	3	6	32	KED
> In	115		ug/L			415673	399386	2	Standard
Ag	107	-0.004	ug/L	0.001	13	137	77	11	Standard
Ba	135	2.008	ug/L	0.045	2	130	7523	0	Standard
Ba	137	1.996	ug/L	0.044	2	224	12991	3	Standard
> Tb	159		ug/L			96237	92646	2	Standard
Pb	208	0.010	ug/L	0.001	8	200	525	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0840-DUP1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 03:31:15
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	45512	2	Standard
>	Sc	45		ug/L			736218	800075	1	Standard
	Al	27	6.703	ug/L	0.093	1	10930	352578	2	Standard
	Cr	52	0.163	ug/L	0.020	12	15902	22378	1	Standard
	Cr	53	0.545	ug/L	0.002	0	242	2120	1	Standard
	Fe	54	16.076	ug/L	2.123	13	75937	118453	4	Standard
	Fe	57	60.727	ug/L	0.074	0	13759	69492	1	Standard
	Mn	55	1.114	ug/L	0.021	1	1220	49694	1	Standard
>	Ge	72		ug/L			26851	24686	1	KED
	Co	59	0.013	ug/L	0.001	10	20	66	6	KED
	Ni	60	0.077	ug/L	0.014	18	17	95	16	KED
	Ni	62	0.044	ug/L	0.007	16	12	18	5	KED
	Cu	63	0.097	ug/L	0.007	6	74	343	6	KED
	Cu	65	0.094	ug/L	0.006	6	41	168	5	KED
	Zn	66	0.294	ug/L	0.039	13	108	208	5	KED
	Zn	67	0.540	ug/L	0.090	16	19	50	11	KED
	As	75	0.473	ug/L	0.064	13	10	92	10	KED
	Se	78	0.149	ug/L	0.197	131	13	15	23	KED
	Kr	83		ug/L			47	52	24	Standard
>	In-1	115		ug/L			6909	6435	1	KED
	Mo	98	0.089	ug/L	0.019	20	14	91	15	KED
	Cd	111	0.006	ug/L	0.011	176	4	5	40	KED
	Cd	114	0.013	ug/L	0.011	88	3	9	62	KED
>	In	115		ug/L			415673	389811	1	Standard
	Ag	107	-0.003	ug/L	0.001	17	137	83	8	Standard
	Ba	135	1.998	ug/L	0.029	1	130	7305	0	Standard
	Ba	137	1.928	ug/L	0.033	1	224	12252	1	Standard
>	Tb	159		ug/L			96237	92656	2	Standard
	Pb	208	0.014	ug/L	0.001	5	200	653	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0840-MS1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 03:36:33
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	49401	3	Standard
>	Sc	45		ug/L			736218	832559	2	Standard
	Al	27	3673.401	ug/L	71.957	1	10930	194355120	4	Standard
	Cr	52	18.224	ug/L	0.662	3	15902	609477	0	Standard
	Cr	53	20.037	ug/L	0.673	3	242	71295	1	Standard
	Fe	54	3941.210	ug/L	163.976	4	75937	9245925	1	Standard
	Fe	57	4027.401	ug/L	87.170	2	13759	3778336	1	Standard
	Mn	55	19.255	ug/L	0.719	3	1220	870689	1	Standard
>	Ge	72		ug/L			26851	24446	1	KED
	Co	59	24.774	ug/L	0.616	2	20	89299	1	KED
	Ni	60	24.130	ug/L	0.796	3	17	24518	1	KED
	Ni	62	25.085	ug/L	0.559	2	12	4173	0	KED
	Cu	63	24.475	ug/L	0.513	2	74	69049	0	KED
	Cu	65	24.491	ug/L	0.376	1	41	33700	0	KED
	Zn	66	74.084	ug/L	1.366	1	108	27350	0	KED
	Zn	67	73.044	ug/L	2.801	3	19	4305	3	KED
	As	75	23.603	ug/L	0.502	2	10	4103	0	KED
	Se	78	74.351	ug/L	2.095	2	13	1431	1	KED
	Kr	83		ug/L			47	69	8	Standard
>	In-1	115		ug/L			6909	6303	1	KED
	Mo	98	24.060	ug/L	0.433	1	14	20783	0	KED
	Cd	111	23.580	ug/L	0.161	0	4	4808	1	KED
	Cd	114	23.937	ug/L	0.702	2	3	11666	2	KED
>	In	115		ug/L			415673	399606	1	Standard
	Ag	107	24.830	ug/L	0.541	2	137	356572	1	Standard
	Ba	135	25.095	ug/L	0.231	0	130	92648	1	Standard
	Ba	137	24.704	ug/L	0.293	1	224	158380	0	Standard
>	Tb	159		ug/L			96237	94973	1	Standard
	Pb	208	24.673	ug/L	0.557	2	200	855490	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0840-MSD1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 03:42:51
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	49514	2	Standard
>	Sc	45		ug/L			736218	838243	0	Standard
	Al	27	3746.685	ug/L	41.260	1	10930	199509221	1	Standard
	Cr	52	18.477	ug/L	0.169	0	15902	622282	0	Standard
	Cr	53	20.081	ug/L	0.140	0	242	71979	0	Standard
	Fe	54	3915.500	ug/L	57.574	1	75937	9256682	2	Standard
	Fe	57	3955.173	ug/L	34.334	0	13759	3737337	1	Standard
	Mn	55	19.571	ug/L	0.296	1	1220	891608	1	Standard
>	Ge	72		ug/L			26851	24213	1	KED
	Co	59	24.372	ug/L	0.452	1	20	87017	0	KED
	Ni	60	24.445	ug/L	0.099	0	17	24609	1	KED
	Ni	62	24.670	ug/L	0.291	1	12	4066	0	KED
	Cu	63	24.851	ug/L	0.695	2	74	69438	1	KED
	Cu	65	24.943	ug/L	0.932	3	41	33989	2	KED
	Zn	66	73.787	ug/L	1.392	1	108	26986	2	KED
	Zn	67	73.152	ug/L	1.994	2	19	4270	1	KED
	As	75	23.725	ug/L	0.671	2	10	4085	1	KED
	Se	78	71.912	ug/L	1.160	1	13	1371	1	KED
	Kr	83		ug/L			47	65	29	Standard
>	In-1	115		ug/L			6909	6346	3	KED
	Mo	98	23.887	ug/L	0.355	1	14	20772	1	KED
	Cd	111	22.989	ug/L	0.693	3	4	4716	0	KED
	Cd	114	23.169	ug/L	0.894	3	3	11362	0	KED
>	In	115		ug/L			415673	400077	1	Standard
	Ag	107	24.256	ug/L	0.951	3	137	348615	2	Standard
	Ba	135	25.037	ug/L	0.217	0	130	92534	1	Standard
	Ba	137	24.871	ug/L	0.319	1	224	159624	0	Standard
>	Tb	159		ug/L			96237	96022	1	Standard
	Pb	208	24.551	ug/L	0.471	1	200	860670	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLF
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 03:47:40
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25174	29011	2	Standard
>	**Sc**	**45**		ug/L			736218	667240	0	Standard
	Al	**27**	**0.187**	ug/L	0.016	8	10930	17814	2	Standard
	Cr	**52**	**0.085**	ug/L	0.018	21	15902	16624	2	Standard
	Cr	**53**	**0.047**	ug/L	0.004	7	242	352	3	Standard
	Fe	**54**	**4.418**	ug/L	1.378	31	75937	77053	3	Standard
	Fe	**57**	**0.176**	ug/L	0.296	168	13759	12602	2	Standard
	Mn	**55**	**-0.003**	ug/L	0.001	31	1220	980	3	Standard
>	**Ge**	**72**		ug/L			26851	26070	1	KED
	Co	**59**	**0.002**	ug/L	0.001	69	20	27	17	KED
	Ni	**60**	**0.002**	ug/L	0.007	298	17	19	36	KED
	Ni	**62**	**-0.002**	ug/L	0.047	2540	12	11	72	KED
	Cu	**63**	**0.000**	ug/L	0.004	6414	74	72	16	KED
	Cu	**65**	**-0.004**	ug/L	0.003	75	41	34	11	KED
	Zn	**66**	**-0.024**	ug/L	0.038	154	108	95	16	KED
	Zn	**67**	**-0.103**	ug/L	0.045	43	19	12	22	KED
	As	**75**	**0.003**	ug/L	0.012	493	10	11	21	KED
	Se	**78**	**0.088**	ug/L	0.018	20	13	14	3	KED
	Kr	**83**		ug/L			47	46	16	Standard
>	**In-1**	**115**		ug/L			6909	6662	3	KED
	Mo	**98**	**0.013**	ug/L	0.003	22	14	25	7	KED
	Cd	**111**	**0.017**	ug/L	0.005	32	4	7	18	KED
	Cd	**114**	**0.010**	ug/L	0.009	89	3	8	54	KED
>	**In**	**115**		ug/L			415673	411687	1	Standard
	Ag	**107**	**0.004**	ug/L	0.001	34	137	189	7	Standard
	Ba	**135**	**-0.017**	ug/L	0.001	5	130	64	4	Standard
	Ba	**137**	**-0.018**	ug/L	0.002	12	224	102	12	Standard
>	**Tb**	**159**		ug/L			96237	93831	3	Standard
	Pb	**208**	**0.001**	ug/L	0.001	67	200	230	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVD
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 03:52:35
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	26176	3	Standard
>	Sc	45		ug/L			736218	660794	1	Standard
	Al	27	4729.673	ug/L	62.464	1	10930	198512770	0	Standard
	Cr	52	45.344	ug/L	0.999	2	15902	1182955	1	Standard
	Cr	53	47.504	ug/L	1.650	3	242	133901	2	Standard
	Fe	54	4884.613	ug/L	73.189	1	75937	9084801	0	Standard
	Fe	57	5061.879	ug/L	119.509	2	13759	3766502	1	Standard
	Mn	55	44.920	ug/L	1.627	3	1220	1611328	2	Standard
>	Ge	72		ug/L			26851	24925	0	KED
	Co	59	50.231	ug/L	0.327	0	20	184635	0	KED
	Ni	60	49.735	ug/L	0.620	1	17	51526	0	KED
	Ni	62	50.884	ug/L	1.504	2	12	8623	2	KED
	Cu	63	51.069	ug/L	0.776	1	74	146868	1	KED
	Cu	65	51.447	ug/L	0.453	0	41	72152	1	KED
	Zn	66	50.365	ug/L	0.454	0	108	18995	1	KED
	Zn	67	50.624	ug/L	0.704	1	19	3048	1	KED
	As	75	49.081	ug/L	0.494	1	10	8691	1	KED
	Se	78	48.784	ug/L	0.610	1	13	962	1	KED
	Kr	83		ug/L			47	69	8	Standard
>	In-1	115		ug/L			6909	6299	1	KED
	Mo	98	48.538	ug/L	1.765	3	14	41876	1	KED
	Cd	111	50.404	ug/L	0.644	1	4	10265	0	KED
	Cd	114	50.249	ug/L	1.014	2	3	24471	0	KED
>	In	115		ug/L			415673	399945	1	Standard
	Ag	107	50.612	ug/L	2.295	4	137	727194	3	Standard
	Ba	135	46.972	ug/L	0.598	1	130	173443	1	Standard
	Ba	137	46.281	ug/L	0.229	0	224	296786	0	Standard
>	Tb	159		ug/L			96237	94692	1	Standard
	Pb	208	50.573	ug/L	0.734	1	200	1748458	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBD
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 04:00:13
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25174	24414	2	Standard
⎡>	**Sc**	**45**		ug/L			736218	686662	2	Standard
⎢	**Al**	**27**	**0.440**	ug/L	0.022	4	10930	29368	2	Standard
⎢	**Cr**	**52**	**0.012**	ug/L	0.020	164	15902	15151	1	Standard
⎢	**Cr**	**53**	**0.018**	ug/L	0.003	14	242	279	3	Standard
⎢	**Fe**	**54**	**0.590**	ug/L	1.023	173	75937	71934	1	Standard
⎢	**Fe**	**57**	**2.241**	ug/L	0.310	13	13759	14556	0	Standard
⎣	**Mn**	**55**	**-0.005**	ug/L	0.001	28	1220	945	3	Standard
⎡>	**Ge**	**72**		ug/L			26851	25883	0	KED
⎢	**Co**	**59**	**-0.000**	ug/L	0.002	1831	20	19	45	KED
⎢	**Ni**	**60**	**-0.007**	ug/L	0.005	65	17	9	52	KED
⎢	**Ni**	**62**	**-0.008**	ug/L	0.035	409	12	10	60	KED
⎢	**Cu**	**63**	**0.004**	ug/L	0.006	134	74	83	19	KED
⎢	**Cu**	**65**	**0.001**	ug/L	0.009	591	41	42	29	KED
⎢	**Zn**	**66**	**0.551**	ug/L	0.072	13	108	319	8	KED
⎢	**Zn**	**67**	**0.399**	ug/L	0.103	25	19	43	15	KED
⎢	**As**	**75**	**0.021**	ug/L	0.017	81	10	14	21	KED
⎣	**Se**	**78**	**0.142**	ug/L	0.043	30	13	15	5	KED
	Kr	**83**		ug/L			47	54	7	Standard
⎡>	**In-1**	**115**		ug/L			6909	6543	0	KED
⎢	**Mo**	**98**	**0.026**	ug/L	0.002	6	14	36	3	KED
⎢	**Cd**	**111**	**0.019**	ug/L	0.018	95	4	8	46	KED
⎣	**Cd**	**114**	**0.004**	ug/L	0.004	113	3	4	46	KED
⎡>	**In**	**115**		ug/L			415673	408868	1	Standard
⎢	**Ag**	**107**	**0.006**	ug/L	0.001	20	137	216	5	Standard
⎢	**Ba**	**135**	**-0.017**	ug/L	0.002	11	130	64	12	Standard
⎣	**Ba**	**137**	**-0.020**	ug/L	0.002	8	224	87	11	Standard
⎡>	**Tb**	**159**		ug/L			96237	93682	1	Standard
⎣	**Pb**	**208**	**-0.001**	ug/L	0.000	49	200	165	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0390-04
Sample Dil Factor: 10
Comments:
Sample Date/Time: Thursday, July 06, 2023 04:05:08
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	31725	1	Standard
>	Sc	45		ug/L			736218	710781	1	Standard
	Al	27	0.651	ug/L	0.014	2	10930	39954	1	Standard
	Cr	52	12.895	ug/L	0.142	1	15902	372884	0	Standard
	Cr	53	15.569	ug/L	0.356	2	242	47366	1	Standard
	Fe	54	3.430	ug/L	1.433	41	75937	80102	2	Standard
	Fe	57	4.807	ug/L	0.466	9	13759	17116	1	Standard
	Mn	55	0.051	ug/L	0.001	1	1220	3139	1	Standard
>	Ge	72		ug/L			26851	23618	1	KED
	Co	59	0.222	ug/L	0.005	2	20	790	1	KED
	Ni	60	0.604	ug/L	0.023	3	17	608	5	KED
	Ni	62	0.572	ug/L	0.077	13	12	102	11	KED
	Cu	63	0.140	ug/L	0.011	7	74	446	5	KED
	Cu	65	0.141	ug/L	0.021	14	41	224	12	KED
	Zn	66	0.553	ug/L	0.010	1	108	292	2	KED
	Zn	67	0.770	ug/L	0.074	9	19	60	5	KED
	As	75	6.067	ug/L	0.106	1	10	1026	0	KED
	Se	78	3.199	ug/L	0.237	7	13	70	5	KED
	Kr	83		ug/L			47	47	18	Standard
>	In-1	115		ug/L			6909	5915	1	KED
	Mo	98	5.553	ug/L	0.198	3	14	4509	1	KED
	Cd	111	0.008	ug/L	0.008	96	4	5	26	KED
	Cd	114	-0.000	ug/L	0.005	1096	3	2	98	KED
>	In	115		ug/L			415673	384573	2	Standard
	Ag	107	0.000	ug/L	0.001	402	137	131	10	Standard
	Ba	135	1.266	ug/L	0.018	1	130	4613	0	Standard
	Ba	137	1.225	ug/L	0.031	2	224	7757	2	Standard
>	Tb	159		ug/L			96237	89613	1	Standard
	Pb	208	0.002	ug/L	0.001	55	200	254	14	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0865-DUP1
Sample Dil Factor: 10
Comments:
Sample Date/Time: Thursday, July 06, 2023 04:09:56
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	31463	3	Standard
>	Sc	45		ug/L			736218	714389	1	Standard
	Al	27	0.667	ug/L	0.023	3	10930	40852	1	Standard
	Cr	52	12.901	ug/L	0.304	2	15902	374868	1	Standard
	Cr	53	15.348	ug/L	0.405	2	242	46928	1	Standard
	Fe	54	3.863	ug/L	1.636	42	75937	81363	2	Standard
	Fe	57	6.043	ug/L	0.914	15	13759	18188	2	Standard
	Mn	55	0.054	ug/L	0.006	10	1220	3271	4	Standard
>	Ge	72		ug/L			26851	23322	1	KED
	Co	59	0.193	ug/L	0.004	2	20	680	3	KED
	Ni	60	0.633	ug/L	0.010	1	17	629	0	KED
	Ni	62	0.648	ug/L	0.092	14	12	113	11	KED
	Cu	63	0.144	ug/L	0.003	1	74	452	2	KED
	Cu	65	0.147	ug/L	0.009	5	41	228	3	KED
	Zn	66	0.488	ug/L	0.043	8	108	265	4	KED
	Zn	67	0.579	ug/L	0.122	21	19	49	13	KED
	As	75	5.873	ug/L	0.086	1	10	981	2	KED
	Se	78	3.340	ug/L	0.474	14	13	72	10	KED
	Kr	83		ug/L			47	52	15	Standard
>	In-1	115		ug/L			6909	5984	2	KED
	Mo	98	5.302	ug/L	0.110	2	14	4357	2	KED
	Cd	111	-0.002	ug/L	0.017	1071	4	3	95	KED
	Cd	114	0.010	ug/L	0.015	142	3	7	92	KED
>	In	115		ug/L			415673	374420	1	Standard
	Ag	107	-0.001	ug/L	0.000	27	137	107	6	Standard
	Ba	135	1.240	ug/L	0.041	3	130	4398	1	Standard
	Ba	137	1.249	ug/L	0.038	3	224	7692	1	Standard
>	Tb	159		ug/L			96237	89407	1	Standard
	Pb	208	0.002	ug/L	0.000	19	200	259	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0865-MS1
Sample Dil Factor: 10
Comments:
Sample Date/Time: Thursday, July 06, 2023 04:15:14
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	32909	1	Standard
>	Sc	45		ug/L			736218	705616	3	Standard
	Al	27	448.016	ug/L	17.470	3	10930	20074901	1	Standard
	Cr	52	15.225	ug/L	0.432	2	15902	434136	2	Standard
	Cr	53	17.904	ug/L	0.570	3	242	54017	2	Standard
	Fe	54	438.452	ug/L	18.252	4	75937	936261	0	Standard
	Fe	57	431.051	ug/L	19.065	4	13759	354246	0	Standard
	Mn	55	2.217	ug/L	0.088	3	1220	85977	0	Standard
>	Ge	72		ug/L			26851	22359	1	KED
	Co	59	2.710	ug/L	0.065	2	20	8953	3	KED
	Ni	60	3.146	ug/L	0.081	2	17	2936	2	KED
	Ni	62	3.198	ug/L	0.195	6	12	495	4	KED
	Cu	63	2.598	ug/L	0.069	2	74	6760	2	KED
	Cu	65	2.638	ug/L	0.025	0	41	3350	0	KED
	Zn	66	8.516	ug/L	0.287	3	108	2955	3	KED
	Zn	67	7.625	ug/L	0.807	10	19	425	8	KED
	As	75	8.393	ug/L	0.209	2	10	1340	1	KED
	Se	78	11.422	ug/L	0.866	7	13	210	5	KED
	Kr	83		ug/L			47	58	29	Standard
>	In-1	115		ug/L			6909	5743	2	KED
	Mo	98	7.959	ug/L	0.408	5	14	6271	4	KED
	Cd	111	2.374	ug/L	0.035	1	4	444	3	KED
	Cd	114	2.457	ug/L	0.201	8	3	1092	6	KED
>	In	115		ug/L			415673	379880	2	Standard
	Ag	107	2.464	ug/L	0.038	1	137	33745	0	Standard
	Ba	135	3.498	ug/L	0.040	1	130	12378	2	Standard
	Ba	137	3.486	ug/L	0.105	3	224	21414	0	Standard
>	Tb	159		ug/L			96237	89602	0	Standard
	Pb	208	2.458	ug/L	0.042	1	200	80576	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0865-MSD1
Sample Dil Factor: 10
Comments:
Sample Date/Time: Thursday, July 06, 2023 04:21:33
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	33184	1	Standard
>	Sc	45		ug/L			736218	728429	1	Standard
	Al	27	431.931	ug/L	10.886	2	10930	19990491	0	Standard
	Cr	52	15.001	ug/L	0.247	1	15902	441997	2	Standard
	Cr	53	17.790	ug/L	0.462	2	242	55425	0	Standard
	Fe	54	430.823	ug/L	12.347	2	75937	951590	0	Standard
	Fe	57	423.445	ug/L	5.586	1	13759	359808	0	Standard
	Mn	55	2.181	ug/L	0.034	1	1220	87415	0	Standard
>	Ge	72		ug/L			26851	22210	0	KED
	Co	59	2.753	ug/L	0.082	2	20	9033	3	KED
	Ni	60	3.039	ug/L	0.069	2	17	2819	2	KED
	Ni	62	3.108	ug/L	0.102	3	12	478	2	KED
	Cu	63	2.614	ug/L	0.046	1	74	6755	1	KED
	Cu	65	2.635	ug/L	0.053	2	41	3325	2	KED
	Zn	66	8.332	ug/L	0.067	0	108	2875	1	KED
	Zn	67	7.720	ug/L	0.605	7	19	427	7	KED
	As	75	8.723	ug/L	0.005	0	10	1383	0	KED
	Se	78	11.856	ug/L	0.319	2	13	216	2	KED
	Kr	83		ug/L			47	62	5	Standard
>	In-1	115		ug/L			6909	5904	1	KED
	Mo	98	7.781	ug/L	0.235	3	14	6306	3	KED
	Cd	111	2.307	ug/L	0.087	3	4	444	4	KED
	Cd	114	2.345	ug/L	0.124	5	3	1073	5	KED
>	In	115		ug/L			415673	381800	1	Standard
	Ag	107	2.414	ug/L	0.024	0	137	33237	1	Standard
	Ba	135	3.583	ug/L	0.112	3	130	12746	4	Standard
	Ba	137	3.508	ug/L	0.029	0	224	21666	2	Standard
>	Tb	159		ug/L			96237	88355	1	Standard
	Pb	208	2.519	ug/L	0.031	1	200	81444	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLG
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 04:26:21
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25174	28604	4	Standard
⌈>	**Sc**	**45**		ug/L			736218	690156	1	Standard
|	**Al**	**27**	**0.079**	ug/L	0.004	5	10930	13725	1	Standard
|	**Cr**	**52**	**0.080**	ug/L	0.008	10	15902	17048	1	Standard
|	**Cr**	**53**	**0.129**	ug/L	0.002	1	242	606	1	Standard
|	**Fe**	**54**	**4.448**	ug/L	1.092	24	75937	79749	1	Standard
|	**Fe**	**57**	**2.638**	ug/L	0.048	1	13759	14942	1	Standard
⌊	**Mn**	**55**	**0.000**	ug/L	0.001	1701	1220	1145	2	Standard
⌈>	**Ge**	**72**		ug/L			26851	25034	1	KED
|	**Co**	**59**	**0.002**	ug/L	0.002	87	20	27	24	KED
|	**Ni**	**60**	**0.005**	ug/L	0.001	23	17	22	4	KED
|	**Ni**	**62**	**-0.021**	ug/L	0.019	87	12	7	43	KED
|	**Cu**	**63**	**-0.004**	ug/L	0.002	45	74	57	8	KED
|	**Cu**	**65**	**-0.002**	ug/L	0.006	402	41	36	23	KED
|	**Zn**	**66**	**-0.095**	ug/L	0.026	27	108	65	14	KED
|	**Zn**	**67**	**-0.137**	ug/L	0.046	34	19	10	28	KED
|	**As**	**75**	**-0.006**	ug/L	0.011	194	10	9	20	KED
⌊	**Se**	**78**	**-0.043**	ug/L	0.088	202	13	11	14	KED
	Kr	**83**		ug/L			47	38	26	Standard
⌈>	**In-1**	**115**		ug/L			6909	6439	2	KED
|	**Mo**	**98**	**0.007**	ug/L	0.008	114	14	19	33	KED
|	**Cd**	**111**	**-0.000**	ug/L	0.005	11009	4	4	26	KED
⌊	**Cd**	**114**	**0.010**	ug/L	0.005	51	3	8	36	KED
⌈>	**In**	**115**		ug/L			415673	410866	3	Standard
|	**Ag**	**107**	**-0.003**	ug/L	0.001	24	137	97	11	Standard
|	**Ba**	**135**	**-0.018**	ug/L	0.003	13	130	60	18	Standard
⌊	**Ba**	**137**	**-0.020**	ug/L	0.002	9	224	92	13	Standard
⌈>	**Tb**	**159**		ug/L			96237	91974	0	Standard
⌊	**Pb**	**208**	**0.000**	ug/L	0.001	394	200	196	11	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 23F0390-03
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, July 06, 2023 04:31:16
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	31660	3	Standard
>	Sc	45		ug/L			736218	713889	2	Standard
	Al	27	1.127	ug/L	0.027	2	10930	61694	0	Standard
	Cr	52	6.551	ug/L	0.190	2	15902	197780	1	Standard
	Cr	53	8.197	ug/L	0.249	3	242	25152	1	Standard
	Fe	54	2.758	ug/L	0.407	14	75937	79146	3	Standard
	Fe	57	6.076	ug/L	0.208	3	13759	18208	1	Standard
	Mn	55	0.054	ug/L	0.002	4	1220	3273	2	Standard
>	Ge	72		ug/L			26851	23740	1	KED
	Co	59	0.114	ug/L	0.007	5	20	416	4	KED
	Ni	60	0.355	ug/L	0.019	5	17	366	6	KED
	Ni	62	0.399	ug/L	0.055	13	12	74	11	KED
	Cu	63	0.090	ug/L	0.001	1	74	311	2	KED
	Cu	65	0.101	ug/L	0.003	2	41	172	0	KED
	Zn	66	1.857	ug/L	0.112	6	108	759	4	KED
	Zn	67	1.756	ug/L	0.149	8	19	117	6	KED
	As	75	2.800	ug/L	0.148	5	10	481	6	KED
	Se	78	1.430	ug/L	0.137	9	13	38	5	KED
	Kr	83		ug/L			47	49	45	Standard
>	In-1	115		ug/L			6909	6124	1	KED
	Mo	98	2.526	ug/L	0.033	1	14	2132	2	KED
	Cd	111	0.009	ug/L	0.001	5	4	5	0	KED
	Cd	114	0.004	ug/L	0.005	115	3	4	48	KED
>	In	115		ug/L			415673	388103	2	Standard
	Ag	107	-0.003	ug/L	0.001	17	137	80	10	Standard
	Ba	135	0.631	ug/L	0.035	5	130	2379	3	Standard
	Ba	137	0.623	ug/L	0.012	1	224	4080	0	Standard
>	Tb	159		ug/L			96237	89826	0	Standard
	Pb	208	0.047	ug/L	0.001	2	200	1728	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0838-DUP1
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, July 06, 2023 04:36:04
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	32614	0	Standard
>	Sc	45		ug/L			736218	714409	3	Standard
	Al	27	0.776	ug/L	0.025	3	10930	45822	2	Standard
	Cr	52	6.564	ug/L	0.171	2	15902	198282	2	Standard
	Cr	53	8.071	ug/L	0.283	3	242	24780	0	Standard
	Fe	54	3.065	ug/L	1.226	40	75937	79759	1	Standard
	Fe	57	6.557	ug/L	0.647	9	13759	18600	1	Standard
	Mn	55	0.032	ug/L	0.004	11	1220	2407	2	Standard
>	Ge	72		ug/L			26851	23747	0	KED
	Co	59	0.105	ug/L	0.010	9	20	387	9	KED
	Ni	60	0.301	ug/L	0.011	3	17	312	3	KED
	Ni	62	0.324	ug/L	0.042	12	12	62	10	KED
	Cu	63	0.070	ug/L	0.008	11	74	257	7	KED
	Cu	65	0.098	ug/L	0.019	19	41	167	14	KED
	Zn	66	1.314	ug/L	0.080	6	108	565	4	KED
	Zn	67	1.087	ug/L	0.266	24	19	79	18	KED
	As	75	2.751	ug/L	0.136	4	10	473	4	KED
	Se	78	1.781	ug/L	0.199	11	13	44	8	KED
	Kr	83		ug/L			47	44	13	Standard
>	In-1	115		ug/L			6909	6188	3	KED
	Mo	98	2.561	ug/L	0.117	4	14	2182	3	KED
	Cd	111	0.002	ug/L	0.003	142	4	4	12	KED
	Cd	114	0.002	ug/L	0.004	241	3	3	58	KED
>	In	115		ug/L			415673	394875	1	Standard
	Ag	107	-0.005	ug/L	0.001	24	137	63	25	Standard
	Ba	135	0.620	ug/L	0.013	2	130	2383	2	Standard
	Ba	137	0.602	ug/L	0.015	2	224	4023	1	Standard
>	Tb	159		ug/L			96237	90024	1	Standard
	Pb	208	0.005	ug/L	0.001	17	200	362	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0838-MS1
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, July 06, 2023 04:41:22
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	32852	1	Standard
>	Sc	45		ug/L			736218	702857	0	Standard
	Al	27	226.256	ug/L	3.446	1	10930	10111979	1	Standard
	Cr	52	7.721	ug/L	0.221	2	15902	226878	2	Standard
	Cr	53	9.142	ug/L	0.019	0	242	27602	0	Standard
	Fe	54	231.852	ug/L	1.401	0	75937	527774	0	Standard
	Fe	57	225.304	ug/L	3.199	1	13759	190898	1	Standard
	Mn	55	1.160	ug/L	0.029	2	1220	45397	2	Standard
>	Ge	72		ug/L			26851	23347	1	KED
	Co	59	1.359	ug/L	0.052	3	20	4695	2	KED
	Ni	60	1.565	ug/L	0.027	1	17	1533	2	KED
	Ni	62	1.548	ug/L	0.019	1	12	255	1	KED
	Cu	63	1.347	ug/L	0.068	5	74	3690	3	KED
	Cu	65	1.372	ug/L	0.121	8	41	1836	7	KED
	Zn	66	5.388	ug/L	0.306	5	108	1986	3	KED
	Zn	67	5.663	ug/L	0.299	5	19	334	5	KED
	As	75	3.984	ug/L	0.109	2	10	669	1	KED
	Se	78	5.560	ug/L	0.760	13	13	112	11	KED
	Kr	83		ug/L			47	60	6	Standard
>	In-1	115		ug/L			6909	5992	2	KED
	Mo	98	3.796	ug/L	0.126	3	14	3127	1	KED
	Cd	111	1.291	ug/L	0.140	10	4	253	9	KED
	Cd	114	1.227	ug/L	0.081	6	3	570	4	KED
>	In	115		ug/L			415673	386189	1	Standard
	Ag	107	1.248	ug/L	0.029	2	137	17440	2	Standard
	Ba	135	1.805	ug/L	0.028	1	130	6551	2	Standard
	Ba	137	1.780	ug/L	0.042	2	224	11222	1	Standard
>	Tb	159		ug/L			96237	90770	1	Standard
	Pb	208	1.283	ug/L	0.015	1	200	42699	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BLF0838-MSD1
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, July 06, 2023 04:47:41
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	32245	1	Standard
>	Sc	45		ug/L			736218	700241	1	Standard
	Al	27	228.846	ug/L	4.410	1	10930	10190126	2	Standard
	Cr	52	7.670	ug/L	0.327	4	15902	224549	2	Standard
	Cr	53	9.147	ug/L	0.033	0	242	27516	1	Standard
	Fe	54	231.925	ug/L	7.061	3	75937	525839	1	Standard
	Fe	57	222.367	ug/L	5.815	2	13759	187833	1	Standard
	Mn	55	1.089	ug/L	0.037	3	1220	42518	2	Standard
>	Ge	72		ug/L			26851	23313	0	KED
	Co	59	1.258	ug/L	0.020	1	20	4341	1	KED
	Ni	60	1.523	ug/L	0.032	2	17	1490	1	KED
	Ni	62	1.478	ug/L	0.025	1	12	244	1	KED
	Cu	63	1.249	ug/L	0.009	0	74	3423	1	KED
	Cu	65	1.310	ug/L	0.031	2	41	1754	2	KED
	Zn	66	4.984	ug/L	0.168	3	108	1843	3	KED
	Zn	67	4.457	ug/L	0.172	3	19	266	3	KED
	As	75	3.925	ug/L	0.045	1	10	658	1	KED
	Se	78	5.155	ug/L	0.360	6	13	105	6	KED
	Kr	83		ug/L			47	43	15	Standard
>	In-1	115		ug/L			6909	6029	1	KED
	Mo	98	3.746	ug/L	0.214	5	14	3104	4	KED
	Cd	111	1.174	ug/L	0.043	3	4	232	2	KED
	Cd	114	1.125	ug/L	0.074	6	3	526	5	KED
>	In	115		ug/L			415673	386589	2	Standard
	Ag	107	1.172	ug/L	0.052	4	137	16397	2	Standard
	Ba	135	1.741	ug/L	0.086	4	130	6326	2	Standard
	Ba	137	1.681	ug/L	0.074	4	224	10612	1	Standard
>	Tb	159		ug/L			96237	89502	1	Standard
	Pb	208	1.223	ug/L	0.029	2	200	40152	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLH
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 04:52:30
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25174	27745	2	Standard
⌈>	**Sc**	**45**		ug/L			736218	684867	0	Standard
|	**Al**	**27**	**0.077**	ug/L	0.002	2	10930	13510	0	Standard
|	**Cr**	**52**	**0.097**	ug/L	0.015	15	15902	17391	1	Standard
|	**Cr**	**53**	**0.088**	ug/L	0.008	9	242	481	5	Standard
|	**Fe**	**54**	**3.320**	ug/L	0.344	10	75937	76992	0	Standard
|	**Fe**	**57**	**3.485**	ug/L	0.131	3	13759	15478	0	Standard
⌊	**Mn**	**55**	**-0.001**	ug/L	0.000	54	1220	1112	0	Standard
⌈>	**Ge**	**72**		ug/L			26851	24794	1	KED
|	**Co**	**59**	**0.001**	ug/L	0.002	129	20	24	24	KED
|	**Ni**	**60**	**0.000**	ug/L	0.006	26281	17	16	40	KED
|	**Ni**	**62**	**-0.032**	ug/L	0.035	108	12	5	100	KED
|	**Cu**	**63**	**-0.003**	ug/L	0.002	65	74	59	10	KED
|	**Cu**	**65**	**-0.000**	ug/L	0.004	24743	41	38	15	KED
|	**Zn**	**66**	**-0.098**	ug/L	0.020	20	108	63	11	KED
|	**Zn**	**67**	**-0.102**	ug/L	0.067	65	19	12	32	KED
|	**As**	**75**	**-0.022**	ug/L	0.005	21	10	6	15	KED
⌊	**Se**	**78**	**-0.007**	ug/L	0.041	569	13	12	7	KED
	Kr	**83**		ug/L			47	35	30	Standard
⌈>	**In-1**	**115**		ug/L			6909	6456	2	KED
|	**Mo**	**98**	**-0.002**	ug/L	0.005	265	14	11	37	KED
|	**Cd**	**111**	**0.003**	ug/L	0.009	315	4	4	40	KED
⌊	**Cd**	**114**	**0.007**	ug/L	0.004	62	3	6	34	KED
⌈>	**In**	**115**		ug/L			415673	412011	2	Standard
|	**Ag**	**107**	**-0.005**	ug/L	0.001	11	137	65	13	Standard
|	**Ba**	**135**	**-0.016**	ug/L	0.003	19	130	69	18	Standard
⌊	**Ba**	**137**	**-0.021**	ug/L	0.001	7	224	86	8	Standard
⌈>	**Tb**	**159**		ug/L			96237	90736	1	Standard
⌊	**Pb**	**208**	**-0.000**	ug/L	0.000	22	200	173	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVE
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 04:57:24
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25174	26418	2	Standard
>	Sc	45		ug/L			736218	699019	1	Standard
	Al	27	4573.664	ug/L	121.725	2	10930	203042684	1	Standard
	Cr	52	44.913	ug/L	0.291	0	15902	1239893	2	Standard
	Cr	53	46.880	ug/L	0.160	0	242	139824	1	Standard
	Fe	54	4904.245	ug/L	69.231	1	75937	9648454	0	Standard
	Fe	57	4906.149	ug/L	122.897	2	13759	3862281	2	Standard
	Mn	55	45.156	ug/L	1.074	2	1220	1713593	0	Standard
>	Ge	72		ug/L			26851	24275	1	KED
	Co	59	49.272	ug/L	0.718	1	20	176373	1	KED
	Ni	60	49.233	ug/L	0.959	1	17	49668	0	KED
	Ni	62	50.857	ug/L	1.642	3	12	8391	1	KED
	Cu	63	50.347	ug/L	0.952	1	74	140988	0	KED
	Cu	65	50.568	ug/L	0.707	1	41	69060	0	KED
	Zn	66	51.213	ug/L	0.282	0	108	18809	1	KED
	Zn	67	50.691	ug/L	1.168	2	19	2972	1	KED
	As	75	47.909	ug/L	1.067	2	10	8261	1	KED
	Se	78	47.055	ug/L	1.027	2	13	904	2	KED
	Kr	83		ug/L			47	47	6	Standard
>	In-1	115		ug/L			6909	6190	3	KED
	Mo	98	48.074	ug/L	2.227	4	14	40739	1	KED
	Cd	111	48.952	ug/L	2.128	4	4	9790	1	KED
	Cd	114	50.892	ug/L	2.453	4	3	24338	2	KED
>	In	115		ug/L			415673	398438	0	Standard
	Ag	107	51.451	ug/L	1.196	2	137	736629	2	Standard
	Ba	135	47.236	ug/L	0.703	1	130	173762	1	Standard
	Ba	137	46.033	ug/L	0.444	0	224	294087	0	Standard
>	Tb	159		ug/L			96237	93577	1	Standard
	Pb	208	51.621	ug/L	0.167	0	200	1763690	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBE
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 05:05:03
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25174	24691	0	Standard
⌈>	**Sc**	**45**		ug/L			736218	730732	0	Standard
|	**Al**	**27**	**0.444**	ug/L	0.024	5	10930	31470	2	Standard
|	**Cr**	**52**	**0.002**	ug/L	0.009	520	15902	15834	1	Standard
|	**Cr**	**53**	**0.037**	ug/L	0.003	7	242	354	2	Standard
|	**Fe**	**54**	**0.646**	ug/L	1.057	163	75937	76683	2	Standard
|	**Fe**	**57**	**2.131**	ug/L	0.627	29	13759	15403	3	Standard
⌊	**Mn**	**55**	**-0.000**	ug/L	0.002	505	1220	1193	6	Standard
⌈>	**Ge**	**72**		ug/L			26851	25339	1	KED
|	**Co**	**59**	**0.001**	ug/L	0.001	75	20	23	12	KED
|	**Ni**	**60**	**-0.007**	ug/L	0.005	62	17	8	53	KED
|	**Ni**	**62**	**-0.033**	ug/L	0.011	33	12	5	33	KED
|	**Cu**	**63**	**0.006**	ug/L	0.002	37	74	88	8	KED
|	**Cu**	**65**	**0.003**	ug/L	0.007	200	41	44	21	KED
|	**Zn**	**66**	**0.647**	ug/L	0.057	8	108	349	5	KED
|	**Zn**	**67**	**0.583**	ug/L	0.284	48	19	53	31	KED
|	**As**	**75**	**0.018**	ug/L	0.015	87	10	13	19	KED
⌊	**Se**	**78**	**-0.017**	ug/L	0.118	691	13	12	19	KED
	Kr	**83**		ug/L			47	46	14	Standard
⌈>	**In-1**	**115**		ug/L			6909	6346	0	KED
|	**Mo**	**98**	**0.020**	ug/L	0.006	29	14	30	17	KED
|	**Cd**	**111**	**0.017**	ug/L	0.005	26	4	7	12	KED
⌊	**Cd**	**114**	**0.007**	ug/L	0.009	128	3	6	71	KED
⌈>	**In**	**115**		ug/L			415673	412045	1	Standard
|	**Ag**	**107**	**0.005**	ug/L	0.001	18	137	207	6	Standard
|	**Ba**	**135**	**-0.018**	ug/L	0.003	15	130	60	18	Standard
⌊	**Ba**	**137**	**-0.015**	ug/L	0.003	17	224	120	14	Standard
⌈>	**Tb**	**159**		ug/L			96237	91556	1	Standard
⌊	**Pb**	**208**	**-0.001**	ug/L	0.000	44	200	166	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: RINSE
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 05:09:58
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25174	33968	1	Standard
>	**Sc**	**45**		ug/L			736218	788333	1	Standard
	Al	**27**	**-0.010**	ug/L	0.005	51	10930	11186	1	Standard
	Cr	**52**	**0.084**	ug/L	0.008	9	15902	19617	2	Standard
	Cr	**53**	**0.044**	ug/L	0.008	19	242	408	7	Standard
	Fe	**54**	**103.948**	ug/L	1.742	1	75937	310278	2	Standard
	Fe	**57**	**2.976**	ug/L	0.536	18	13759	17363	1	Standard
	Mn	**55**	**0.024**	ug/L	0.001	2	1220	2321	1	Standard
>	**Ge**	**72**		ug/L			26851	26439	0	KED
	Co	**59**	**0.001**	ug/L	0.002	390	20	22	38	KED
	Ni	**60**	**0.008**	ug/L	0.003	34	17	26	11	KED
	Ni	**62**	**-0.034**	ug/L	0.028	81	12	5	88	KED
	Cu	**63**	**-0.002**	ug/L	0.002	82	74	66	8	KED
	Cu	**65**	**-0.002**	ug/L	0.008	382	41	38	30	KED
	Zn	**66**	**-0.115**	ug/L	0.008	6	108	60	5	KED
	Zn	**67**	**-0.075**	ug/L	0.061	81	19	14	27	KED
	As	**75**	**-0.002**	ug/L	0.005	280	10	10	7	KED
	Se	**78**	**-0.040**	ug/L	0.149	373	13	12	24	KED
	Kr	**83**		ug/L			47	38	27	Standard
>	**In-1**	**115**		ug/L			6909	7388	1	KED
	Mo	**98**	**0.019**	ug/L	0.006	34	14	34	18	KED
	Cd	**111**	**0.003**	ug/L	0.002	84	4	5	10	KED
	Cd	**114**	**0.006**	ug/L	0.008	138	3	6	71	KED
>	**In**	**115**		ug/L			415673	461995	0	Standard
	Ag	**107**	**0.001**	ug/L	0.001	147	137	165	10	Standard
	Ba	**135**	**-0.019**	ug/L	0.001	4	130	62	5	Standard
	Ba	**137**	**-0.020**	ug/L	0.002	11	224	99	17	Standard
>	**Tb**	**159**		ug/L			96237	102618	0	Standard
	Pb	**208**	**0.001**	ug/L	0.000	29	200	264	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: RINSE
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 05:14:52
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25174	34851	1	Standard
>	**Sc**	**45**		ug/L			736218	782671	2	Standard
	Al	**27**	**-0.019**	ug/L	0.004	20	10930	10693	2	Standard
	Cr	**52**	**0.093**	ug/L	0.013	13	15902	19750	2	Standard
	Cr	**53**	**0.043**	ug/L	0.006	14	242	399	2	Standard
	Fe	**54**	**102.512**	ug/L	2.895	2	75937	304828	2	Standard
	Fe	**57**	**2.133**	ug/L	0.295	13	13759	16497	1	Standard
	Mn	**55**	**0.024**	ug/L	0.001	3	1220	2323	2	Standard
>	**Ge**	**72**		ug/L			26851	26356	0	KED
	Co	**59**	**0.002**	ug/L	0.000	2	20	26	0	KED
	Ni	**60**	**0.011**	ug/L	0.006	52	17	29	20	KED
	Ni	**62**	**-0.017**	ug/L	0.016	97	12	8	32	KED
	Cu	**63**	**-0.003**	ug/L	0.009	299	74	64	40	KED
	Cu	**65**	**-0.002**	ug/L	0.004	144	41	37	14	KED
	Zn	**66**	**-0.115**	ug/L	0.017	15	108	60	11	KED
	Zn	**67**	**-0.155**	ug/L	0.029	18	19	9	20	KED
	As	**75**	**-0.003**	ug/L	0.011	334	10	10	19	KED
	Se	**78**	**0.075**	ug/L	0.067	88	13	14	9	KED
	Kr	**83**		ug/L			47	42	34	Standard
>	**In-1**	**115**		ug/L			6909	6981	0	KED
	Mo	**98**	**0.002**	ug/L	0.013	545	14	16	72	KED
	Cd	**111**	**-0.007**	ug/L	0.008	114	4	2	66	KED
	Cd	**114**	**0.007**	ug/L	0.012	163	3	6	90	KED
>	**In**	**115**		ug/L			415673	458750	2	Standard
	Ag	**107**	**-0.003**	ug/L	0.000	7	137	102	5	Standard
	Ba	**135**	**-0.021**	ug/L	0.002	8	130	55	13	Standard
	Ba	**137**	**-0.021**	ug/L	0.000	0	224	92	2	Standard
>	**Tb**	**159**		ug/L			96237	102140	0	Standard
	Pb	**208**	**0.000**	ug/L	0.001	163	200	229	12	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: RINSE
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 05:19:47
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25174	34435	2	Standard
⎡>	**Sc**	**45**		ug/L			736218	769444	0	Standard
⎢	**Al**	**27**	**-0.011**	ug/L	0.004	31	10930	10882	2	Standard
⎢	**Cr**	**52**	**0.087**	ug/L	0.011	12	15902	19245	2	Standard
⎢	**Cr**	**53**	**0.034**	ug/L	0.003	7	242	366	1	Standard
⎢	**Fe**	**54**	**103.461**	ug/L	5.356	5	75937	301714	3	Standard
⎢	**Fe**	**57**	**2.469**	ug/L	0.439	17	13759	16511	2	Standard
⎣	**Mn**	**55**	**0.024**	ug/L	0.002	6	1220	2264	3	Standard
⎡>	**Ge**	**72**		ug/L			26851	26319	1	KED
⎢	**Co**	**59**	**-0.000**	ug/L	0.001	2737	20	20	21	KED
⎢	**Ni**	**60**	**0.011**	ug/L	0.011	100	17	29	39	KED
⎢	**Ni**	**62**	**-0.016**	ug/L	0.017	105	12	8	32	KED
⎢	**Cu**	**63**	**-0.001**	ug/L	0.004	637	74	71	18	KED
⎢	**Cu**	**65**	**-0.005**	ug/L	0.003	73	41	34	16	KED
⎢	**Zn**	**66**	**-0.087**	ug/L	0.078	90	108	71	41	KED
⎢	**Zn**	**67**	**-0.095**	ug/L	0.058	61	19	13	28	KED
⎢	**As**	**75**	**-0.005**	ug/L	0.017	376	10	9	31	KED
⎣	**Se**	**78**	**-0.062**	ug/L	0.100	160	13	11	18	KED
	Kr	**83**		ug/L			47	50	25	Standard
⎡>	**In-1**	**115**		ug/L			6909	7206	1	KED
⎢	**Mo**	**98**	**-0.002**	ug/L	0.006	419	14	13	46	KED
⎢	**Cd**	**111**	**0.007**	ug/L	0.007	88	4	6	22	KED
⎣	**Cd**	**114**	**0.009**	ug/L	0.005	60	3	7	35	KED
⎡>	**In**	**115**		ug/L			415673	459172	1	Standard
⎢	**Ag**	**107**	**-0.004**	ug/L	0.001	20	137	90	13	Standard
⎢	**Ba**	**135**	**-0.021**	ug/L	0.003	14	130	55	24	Standard
⎣	**Ba**	**137**	**-0.021**	ug/L	0.000	2	224	97	5	Standard
⎡>	**Tb**	**159**		ug/L			96237	100987	2	Standard
⎣	**Pb**	**208**	**-0.000**	ug/L	0.001	324	200	203	11	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: DI
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 05:24:41
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25174	26742	3	Standard
⌈>	**Sc**	**45**		ug/L			736218	606352	0	Standard
|	**Al**	**27**	**-0.104**	ug/L	0.005	4	10930	4984	3	Standard
|	**Cr**	**52**	**0.066**	ug/L	0.010	15	15902	14668	2	Standard
|	**Cr**	**53**	**0.034**	ug/L	0.007	20	242	286	5	Standard
|	**Fe**	**54**	**-22.105**	ug/L	0.395	1	75937	25090	1	Standard
|	**Fe**	**57**	**3.705**	ug/L	0.163	4	13759	13853	0	Standard
⌊	**Mn**	**55**	**0.010**	ug/L	0.001	13	1220	1334	2	Standard
⌈>	**Ge**	**72**		ug/L			26851	24781	1	KED
|	**Co**	**59**	**-0.000**	ug/L	0.001	277	20	18	15	KED
|	**Ni**	**60**	**-0.005**	ug/L	0.003	68	17	11	28	KED
|	**Ni**	**62**	**-0.047**	ug/L	0.006	13	12	3	34	KED
|	**Cu**	**63**	**-0.015**	ug/L	0.001	8	74	26	12	KED
|	**Cu**	**65**	**-0.009**	ug/L	0.005	49	41	25	24	KED
|	**Zn**	**66**	**-0.165**	ug/L	0.027	16	108	38	24	KED
|	**Zn**	**67**	**-0.188**	ug/L	0.036	18	19	6	31	KED
|	**As**	**75**	**-0.002**	ug/L	0.008	338	10	9	15	KED
⌊	**Se**	**78**	**0.096**	ug/L	0.165	171	13	14	21	KED
	Kr	**83**		ug/L			47	41	12	Standard
⌈>	**In-1**	**115**		ug/L			6909	6246	0	KED
|	**Mo**	**98**	**-0.005**	ug/L	0.004	96	14	8	42	KED
|	**Cd**	**111**	**0.010**	ug/L	0.012	119	4	6	39	KED
⌊	**Cd**	**114**	**0.011**	ug/L	0.009	81	3	8	53	KED
⌈>	**In**	**115**		ug/L			415673	376678	2	Standard
|	**Ag**	**107**	**-0.005**	ug/L	0.001	12	137	60	11	Standard
|	**Ba**	**135**	**-0.029**	ug/L	0.001	3	130	17	19	Standard
⌊	**Ba**	**137**	**-0.030**	ug/L	0.001	4	224	23	33	Standard
⌈>	**Tb**	**159**		ug/L			96237	87565	1	Standard
⌊	**Pb**	**208**	**-0.004**	ug/L	0.000	3	200	50	11	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: DI
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 05:29:36
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25174	26308	3	Standard
⌈>	**Sc**	**45**		ug/L			736218	612315	1	Standard
|	**Al**	**27**	**-0.109**	ug/L	0.001	0	10930	4861	2	Standard
|	**Cr**	**52**	**0.080**	ug/L	0.008	9	15902	15140	2	Standard
|	**Cr**	**53**	**0.029**	ug/L	0.002	5	242	277	1	Standard
|	**Fe**	**54**	**-22.233**	ug/L	0.405	1	75937	25124	3	Standard
|	**Fe**	**57**	**3.877**	ug/L	0.947	24	13759	14103	3	Standard
⌊	**Mn**	**55**	**0.003**	ug/L	0.002	59	1220	1103	3	Standard
⌈>	**Ge**	**72**		ug/L			26851	24729	1	KED
|	**Co**	**59**	**0.000**	ug/L	0.002	499	20	20	39	KED
|	**Ni**	**60**	**-0.004**	ug/L	0.006	173	17	12	52	KED
|	**Ni**	**62**	**-0.040**	ug/L	0.026	65	12	4	98	KED
|	**Cu**	**63**	**-0.014**	ug/L	0.002	15	74	27	20	KED
|	**Cu**	**65**	**-0.018**	ug/L	0.003	15	41	13	28	KED
|	**Zn**	**66**	**-0.171**	ug/L	0.026	15	108	36	26	KED
|	**Zn**	**67**	**-0.187**	ug/L	0.050	26	19	6	41	KED
|	**As**	**75**	**0.000**	ug/L	0.003	796	10	10	5	KED
⌊	**Se**	**78**	**0.014**	ug/L	0.086	632	13	12	13	KED
	Kr	**83**		ug/L			47	36	10	Standard
⌈>	**In-1**	**115**		ug/L			6909	6305	1	KED
|	**Mo**	**98**	**-0.002**	ug/L	0.006	321	14	11	44	KED
|	**Cd**	**111**	**0.003**	ug/L	0.024	743	4	4	105	KED
⌊	**Cd**	**114**	**0.007**	ug/L	0.004	61	3	6	33	KED
⌈>	**In**	**115**		ug/L			415673	388601	1	Standard
|	**Ag**	**107**	**-0.006**	ug/L	0.000	8	137	50	14	Standard
|	**Ba**	**135**	**-0.028**	ug/L	0.001	1	130	20	9	Standard
⌊	**Ba**	**137**	**-0.030**	ug/L	0.001	3	224	20	31	Standard
⌈>	**Tb**	**159**		ug/L			96237	88327	1	Standard
⌊	**Pb**	**208**	**-0.004**	ug/L	0.000	3	200	51	9	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: DI
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, July 06, 2023 05:34:30
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\070523.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25174	26259	2	Standard
⌈>	**Sc**	**45**		ug/L			736218	615320	0	Standard
|	**Al**	**27**	**-0.110**	ug/L	0.004	3	10930	4834	2	Standard
|	**Cr**	**52**	**0.070**	ug/L	0.014	19	15902	14982	2	Standard
|	**Cr**	**53**	**0.028**	ug/L	0.007	25	242	276	6	Standard
|	**Fe**	**54**	**-21.934**	ug/L	0.522	2	75937	25757	2	Standard
|	**Fe**	**57**	**3.733**	ug/L	0.325	8	13759	14079	2	Standard
⌊	**Mn**	**55**	**0.004**	ug/L	0.002	58	1220	1137	6	Standard
⌈>	**Ge**	**72**		ug/L			26851	24726	2	KED
|	**Co**	**59**	**-0.000**	ug/L	0.001	1725	20	19	30	KED
|	**Ni**	**60**	**-0.010**	ug/L	0.002	16	17	5	33	KED
|	**Ni**	**62**	**-0.005**	ug/L	0.019	345	12	10	28	KED
|	**Cu**	**63**	**-0.012**	ug/L	0.005	39	74	34	35	KED
|	**Cu**	**65**	**-0.016**	ug/L	0.003	17	41	16	24	KED
|	**Zn**	**66**	**-0.143**	ug/L	0.018	12	108	46	15	KED
|	**Zn**	**67**	**-0.209**	ug/L	0.032	15	19	5	33	KED
|	**As**	**75**	**0.002**	ug/L	0.013	565	10	10	20	KED
⌊	**Se**	**78**	**0.269**	ug/L	0.219	81	13	17	25	KED
	Kr	**83**		ug/L			47	43	13	Standard
⌈>	**In-1**	**115**		ug/L			6909	6167	3	KED
|	**Mo**	**98**	**-0.009**	ug/L	0.004	40	14	5	58	KED
|	**Cd**	**111**	**0.025**	ug/L	0.011	46	4	8	26	KED
⌊	**Cd**	**114**	**0.010**	ug/L	0.010	106	3	7	68	KED
⌈>	**In**	**115**		ug/L			415673	383998	0	Standard
|	**Ag**	**107**	**-0.005**	ug/L	0.001	19	137	62	19	Standard
|	**Ba**	**135**	**-0.030**	ug/L	0.001	1	130	13	14	Standard
⌊	**Ba**	**137**	**-0.031**	ug/L	0.001	2	224	19	30	Standard
⌈>	**Tb**	**159**		ug/L			96237	87175	1	Standard
⌊	**Pb**	**208**	**-0.004**	ug/L	0.000	3	200	47	10	Standard

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: GF00087
Control Limt: +/- 10.00%
Sequence: SLF0398

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLF0398-ICV1	Arsenic-75a	50.000	47.1	94.3	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	51.0	102	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.3	101	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.5	101	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	50.6	101	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	49.3	98.7	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	50.6	101	ug/L	PA 6020B UCT-KE
SLF0398-CCV1	Arsenic-75a	50.000	49.5	99.0	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	50.3	101	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	49.9	99.8	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.9	99.9	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	50.0	99.9	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	50.2	100	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	51.7	103	ug/L	PA 6020B UCT-KE
SLF0398-CCV2	Arsenic-75a	50.000	50.9	102	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	49.5	98.9	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	49.9	99.9	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.0	100	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	50.0	99.9	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	49.9	99.8	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	53.0	106	ug/L	PA 6020B UCT-KE
SLF0398-CCV3	Arsenic-75a	50.000	50.7	101	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	48.8	97.6	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	48.9	97.8	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.8	99.6	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	50.6	101	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	49.8	99.6	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	50.4	101	ug/L	PA 6020B UCT-KE
SLF0398-CCV4	Arsenic-75a	50.000	52.2	104	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	49.3	98.6	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	48.9	97.8	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.3	101	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.9	99.8	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	50.0	100	ug/L	PA 6020B UCT-KE

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: GF00087
Control Limt: +/- 10.00%
Sequence: SLF0398

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLF0398-CCV4	Zinc-67	50.000	51.1	102	ug/L	PA 6020B UCT-KE
SLF0398-CCV5	Arsenic-75a	50.000	52.6	105	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	50.4	101	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.4	101	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.9	99.8	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	51.0	102	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	50.7	101	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	49.5	99.1	ug/L	PA 6020B UCT-KE
SLF0398-CCV6	Arsenic-75a	50.000	51.7	103	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	50.0	100	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	49.7	99.4	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.1	98.2	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.9	99.8	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	50.1	100	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	51.4	103	ug/L	PA 6020B UCT-KE
SLF0398-CCV7	Arsenic-75a	50.000	51.5	103	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	49.8	99.6	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.1	100	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	48.9	97.7	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.2	98.5	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	48.7	97.4	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	49.9	99.8	ug/L	PA 6020B UCT-KE
SLF0398-CCV8	Arsenic-75a	50.000	50.8	102	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	48.7	97.5	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	48.2	96.5	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	48.2	96.4	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	47.6	95.2	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	47.4	94.7	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	49.0	98.0	ug/L	PA 6020B UCT-KE
SLF0398-CCV9	Arsenic-75a	50.000	52.4	105	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	48.7	97.4	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	47.9	95.8	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.9	99.8	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	50.4	101	ug/L	PA 6020B UCT-KE

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: GF00087
Control Limt: +/- 10.00%
Sequence: SLF0398

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLF0398-CCV9	Zinc-66	50.000	49.3	98.6	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	51.1	102	ug/L	PA 6020B UCT-KE
SLF0398-CCVA	Arsenic-75a	50.000	53.0	106	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	48.4	96.8	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	48.0	96.0	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.0	100	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	50.0	100	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	49.5	99.1	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	52.0	104	ug/L	PA 6020B UCT-KE
SLF0398-CCVB	Arsenic-75a	50.000	52.8	106	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	48.6	97.3	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	48.3	96.5	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.2	100	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.8	99.7	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	49.0	98.1	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	49.2	98.5	ug/L	PA 6020B UCT-KE
SLF0398-CCVC	Arsenic-75a	50.000	53.4	107	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	48.2	96.5	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	47.9	95.8	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.2	100	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.6	99.2	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	49.6	99.2	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	52.0	104	ug/L	PA 6020B UCT-KE
SLF0398-CCVD	Arsenic-75a	50.000	53.2	106	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	50.2	100	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.3	101	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.5	99.0	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.5	99.1	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	49.5	98.9	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	51.0	102	ug/L	PA 6020B UCT-KE
SLF0398-CCVE	Arsenic-75a	50.000	53.5	107	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	50.3	101	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	49.6	99.1	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.2	100	ug/L	PA 6020B UCT-KE

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: GF00087
Control Limt: +/- 10.00%
Sequence: SLF0398

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLF0398-CCVE	Copper-65	50.000	50.4	101	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	50.6	101	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	51.7	103	ug/L	PA 6020B UCT-KE
SLF0398-CCVF	Arsenic-75a	50.000	53.0	106	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	48.9	97.8	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	49.1	98.1	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.4	101	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	50.7	101	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	52.9	106	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	53.9	108	ug/L	PA 6020B UCT-KE
SLF0398-CCVG	Arsenic-75a	50.000	53.3	107	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	49.1	98.2	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	49.1	98.1	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.3	101	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	50.8	102	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	52.7	105	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	54.1	108	ug/L	PA 6020B UCT-KE
SLF0398-CCVH	Arsenic-75a	50.000	53.5	107	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	48.5	97.0	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	49.0	97.9	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.2	98.4	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	50.2	100	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	52.4	105	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	53.0	106	ug/L	PA 6020B UCT-KE

* Values outside of QC limits

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS2
Calibration: GG00009
Control Limt: +/- 10.00%
Sequence: SLG0051

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLG0051-ICV1	Arsenic-75a	50.000	46.7	93.5	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	49.4	98.7	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.1	100	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.3	101	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	51.2	102	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	48.5	97.0	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	49.3	98.5	ug/L	PA 6020B UCT-KE
SLG0051-CCV1	Arsenic-75a	50.000	48.1	96.2	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	48.6	97.2	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	49.1	98.2	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	48.6	97.1	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.1	98.3	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	48.0	96.1	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	51.4	103	ug/L	PA 6020B UCT-KE
SLG0051-CCV2	Arsenic-75a	50.000	48.6	97.2	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	48.5	96.9	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	49.5	99.0	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.6	99.2	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.3	98.7	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	49.0	98.0	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	49.3	98.6	ug/L	PA 6020B UCT-KE
SLG0051-CCV3	Arsenic-75a	50.000	47.9	95.9	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	47.8	95.5	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	48.0	96.0	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.2	98.4	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.9	99.7	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	49.8	99.7	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	49.8	99.7	ug/L	PA 6020B UCT-KE
SLG0051-CCV4	Arsenic-75a	50.000	47.7	95.4	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	48.8	97.5	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	49.3	98.6	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.9	99.8	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.5	99.0	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	50.2	100	ug/L	PA 6020B UCT-KE

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS2
Calibration: GG00009
Control Limt: +/- 10.00%
Sequence: SLG0051

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLG0051-CCV4	Zinc-67	50.000	50.2	100	ug/L	PA 6020B UCT-KE
SLG0051-CCV5	Arsenic-75a	50.000	49.0	97.9	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	50.1	100	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.0	100	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.3	101	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	51.4	103	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	50.0	100	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	50.9	102	ug/L	PA 6020B UCT-KE
SLG0051-CCV6	Arsenic-75a	50.000	49.3	98.6	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	48.7	97.5	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.4	101	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.7	101	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	50.8	102	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	50.8	102	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	51.6	103	ug/L	PA 6020B UCT-KE
SLG0051-CCV7	Arsenic-75a	50.000	48.1	96.2	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	49.2	98.4	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	49.4	98.8	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.4	98.9	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.3	98.5	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	49.5	99.1	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	48.9	97.9	ug/L	PA 6020B UCT-KE
SLG0051-CCV8	Arsenic-75a	50.000	48.7	97.4	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	49.7	99.4	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	49.8	99.6	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.6	99.2	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	49.1	98.2	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	49.3	98.6	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	49.4	98.8	ug/L	PA 6020B UCT-KE
SLG0051-CCV9	Arsenic-75a	50.000	48.5	97.0	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	48.8	97.6	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	49.1	98.2	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	51.0	102	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	52.5	105	ug/L	PA 6020B UCT-KE

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS2
Calibration: GG00009
Control Limt: +/- 10.00%
Sequence: SLG0051

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLG0051-CCV9	Zinc-66	50.000	50.3	101	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	50.2	100	ug/L	PA 6020B UCT-KE
SLG0051-CCVA	Arsenic-75a	50.000	48.7	97.4	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	50.0	100	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.4	101	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.5	98.9	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	51.1	102	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	50.9	102	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	49.1	98.3	ug/L	PA 6020B UCT-KE
SLG0051-CCVB	Arsenic-75a	50.000	48.3	96.7	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	49.5	99.0	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	49.0	98.0	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.7	101	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	51.1	102	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	51.2	102	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	52.1	104	ug/L	PA 6020B UCT-KE
SLG0051-CCVC	Arsenic-75a	50.000	48.9	97.9	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	50.3	101	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.8	102	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	49.6	99.2	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	51.7	103	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	51.5	103	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	51.5	103	ug/L	PA 6020B UCT-KE
SLG0051-CCVD	Arsenic-75a	50.000	49.1	98.2	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	50.4	101	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.2	100	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	51.1	102	ug/L	PA 6020B UCT-KE
	Copper-65	50.000	51.4	103	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	50.4	101	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	50.6	101	ug/L	PA 6020B UCT-KE
SLG0051-CCVE	Arsenic-75a	50.000	47.9	95.8	ug/L	PA 6020B UCT-KE
	Cadmium-111	50.000	49.0	97.9	ug/L	PA 6020B UCT-KE
	Cadmium-114	50.000	50.9	102	ug/L	PA 6020B UCT-KE
	Copper-63	50.000	50.3	101	ug/L	PA 6020B UCT-KE

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS2
Calibration: GG00009
Control Limt: +/- 10.00%
Sequence: SLG0051

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLG0051-CCVE	Copper-65	50.000	50.6	101	ug/L	PA 6020B UCT-KE
	Zinc-66	50.000	51.2	102	ug/L	PA 6020B UCT-KE
	Zinc-67	50.000	50.7	101	ug/L	PA 6020B UCT-KE

* Values outside of QC limits

INSTRUMENT BLANKS
EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: ICPMS1
Sequence: SLF0398

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GF00087
Date Analyzed: 06/26/23 14:59

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLF0398-IBL1	Arsenic-75a	0.00900	0.0373	0.200	ug/L	
SLF0398-IBL1	Cadmium-111	0.00800	0.03	0.100	ug/L	
SLF0398-IBL1	Cadmium-114	-0.00500	0.04	0.100	ug/L	
SLF0398-IBL1	Copper-63	0.00900	0.173	0.500	ug/L	
SLF0398-IBL1	Copper-65	0.0110	0.35	0.500	ug/L	
SLF0398-IBL1	Zinc-66	0.0680	2.92	6.00	ug/L	
SLF0398-IBL1	Zinc-67	0.187	0.94	6.00	ug/L	
SLF0398-ICB1	Arsenic-75a	0.00700	0.0373	0.200	ug/L	
SLF0398-ICB1	Cadmium-111	0.00600	0.03	0.100	ug/L	
SLF0398-ICB1	Cadmium-114	0.00100	0.04	0.100	ug/L	
SLF0398-ICB1	Copper-63	0.00300	0.173	0.500	ug/L	
SLF0398-ICB1	Copper-65	0.0130	0.35	0.500	ug/L	
SLF0398-ICB1	Zinc-66	0.105	2.92	6.00	ug/L	
SLF0398-ICB1	Zinc-67	0.0530	0.94	6.00	ug/L	
SLF0398-CCB1	Arsenic-75a	0.0100	0.0373	0.200	ug/L	
SLF0398-CCB1	Cadmium-111	0.0110	0.03	0.100	ug/L	
SLF0398-CCB1	Cadmium-114	-0.00300	0.04	0.100	ug/L	
SLF0398-CCB1	Copper-63	0.00800	0.173	0.500	ug/L	
SLF0398-CCB1	Copper-65	0.00900	0.35	0.500	ug/L	
SLF0398-CCB1	Zinc-66	0.117	2.92	6.00	ug/L	
SLF0398-CCB1	Zinc-67	0.0580	0.94	6.00	ug/L	
SLF0398-IBL2	Arsenic-75a	0.0280	0.0373	0.200	ug/L	
SLF0398-IBL2	Cadmium-111	0.153	0.03	0.100	ug/L	
SLF0398-IBL2	Cadmium-114	0.130	0.04	0.100	ug/L	
SLF0398-IBL2	Copper-63	0.0140	0.173	0.500	ug/L	
SLF0398-IBL2	Copper-65	0.0180	0.35	0.500	ug/L	
SLF0398-IBL2	Zinc-66	0.184	2.92	6.00	ug/L	
SLF0398-IBL2	Zinc-67	0.367	0.94	6.00	ug/L	
SLF0398-IBL3	Arsenic-75a	0.00700	0.0373	0.200	ug/L	
SLF0398-IBL3	Cadmium-111	0.0100	0.03	0.100	ug/L	
SLF0398-IBL3	Cadmium-114	-0.00400	0.04	0.100	ug/L	
SLF0398-IBL3	Copper-63	0.00500	0.173	0.500	ug/L	
SLF0398-IBL3	Copper-65	0.0100	0.35	0.500	ug/L	
SLF0398-IBL3	Zinc-66	0.143	2.92	6.00	ug/L	
SLF0398-IBL3	Zinc-67	0.143	0.94	6.00	ug/L	

INSTRUMENT BLANKS
EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: GF00087
Sequence: SLF0398
Date Analyzed: 06/26/23 16:13

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLF0398-IBL4	Arsenic-75a	0.00	0.0373	0.200	ug/L	
SLF0398-IBL4	Cadmium-111	0.00300	0.03	0.100	ug/L	
SLF0398-IBL4	Cadmium-114	-0.00500	0.04	0.100	ug/L	
SLF0398-IBL4	Copper-63	-0.0140	0.173	0.500	ug/L	
SLF0398-IBL4	Copper-65	-0.0140	0.35	0.500	ug/L	
SLF0398-IBL4	Zinc-66	-0.0690	2.92	6.00	ug/L	
SLF0398-IBL4	Zinc-67	-0.0830	0.94	6.00	ug/L	
SLF0398-CCB2	Arsenic-75a	0.00500	0.0373	0.200	ug/L	
SLF0398-CCB2	Cadmium-111	0.00700	0.03	0.100	ug/L	
SLF0398-CCB2	Cadmium-114	-0.00300	0.04	0.100	ug/L	
SLF0398-CCB2	Copper-63	0.0120	0.173	0.500	ug/L	
SLF0398-CCB2	Copper-65	0.0140	0.35	0.500	ug/L	
SLF0398-CCB2	Zinc-66	0.0690	2.92	6.00	ug/L	
SLF0398-CCB2	Zinc-67	0.149	0.94	6.00	ug/L	
SLF0398-CCB3	Arsenic-75a	0.00600	0.0373	0.200	ug/L	
SLF0398-CCB3	Cadmium-111	0.00	0.03	0.100	ug/L	
SLF0398-CCB3	Cadmium-114	0.00300	0.04	0.100	ug/L	
SLF0398-CCB3	Copper-63	0.00500	0.173	0.500	ug/L	
SLF0398-CCB3	Copper-65	0.00900	0.35	0.500	ug/L	
SLF0398-CCB3	Zinc-66	0.0340	2.92	6.00	ug/L	
SLF0398-CCB3	Zinc-67	0.0780	0.94	6.00	ug/L	
SLF0398-IBL5	Arsenic-75a	-0.00200	0.0373	0.200	ug/L	
SLF0398-IBL5	Cadmium-111	-0.00300	0.03	0.100	ug/L	
SLF0398-IBL5	Cadmium-114	0.00200	0.04	0.100	ug/L	
SLF0398-IBL5	Copper-63	0.00100	0.173	0.500	ug/L	
SLF0398-IBL5	Copper-65	0.00300	0.35	0.500	ug/L	
SLF0398-IBL5	Zinc-66	-0.0320	2.92	6.00	ug/L	
SLF0398-IBL5	Zinc-67	-0.0400	0.94	6.00	ug/L	
SLF0398-IBL6	Arsenic-75a	0.00100	0.0373	0.200	ug/L	
SLF0398-IBL6	Cadmium-111	0.0100	0.03	0.100	ug/L	
SLF0398-IBL6	Cadmium-114	-0.00200	0.04	0.100	ug/L	
SLF0398-IBL6	Copper-63	-0.00500	0.173	0.500	ug/L	
SLF0398-IBL6	Copper-65	-0.00900	0.35	0.500	ug/L	
SLF0398-IBL6	Zinc-66	-0.0470	2.92	6.00	ug/L	
SLF0398-IBL6	Zinc-67	-0.0570	0.94	6.00	ug/L	
SLF0398-CCB4	Arsenic-75a	0.00300	0.0373	0.200	ug/L	

INSTRUMENT BLANKS
EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: ICPMS1
Sequence: SLF0398

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GF00087
Date Analyzed: 06/26/23 17:57

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLF0398-CCB4	Cadmium-111	0.00300	0.03	0.100	ug/L	
SLF0398-CCB4	Cadmium-114	0.0100	0.04	0.100	ug/L	
SLF0398-CCB4	Copper-63	0.00300	0.173	0.500	ug/L	
SLF0398-CCB4	Copper-65	0.00900	0.35	0.500	ug/L	
SLF0398-CCB4	Zinc-66	0.00	2.92	6.00	ug/L	
SLF0398-CCB4	Zinc-67	-0.0260	0.94	6.00	ug/L	
SLF0398-CCB5	Arsenic-75a	-0.00800	0.0373	0.200	ug/L	
SLF0398-CCB5	Cadmium-111	0.00	0.03	0.100	ug/L	
SLF0398-CCB5	Cadmium-114	0.00100	0.04	0.100	ug/L	
SLF0398-CCB5	Copper-63	-0.00100	0.173	0.500	ug/L	
SLF0398-CCB5	Copper-65	-0.00100	0.35	0.500	ug/L	
SLF0398-CCB5	Zinc-66	0.0050	2.92	6.00	ug/L	
SLF0398-CCB5	Zinc-67	0.0070	0.94	6.00	ug/L	
SLF0398-IBL7	Arsenic-75a	-0.00700	0.0373	0.200	ug/L	
SLF0398-IBL7	Cadmium-111	-0.00700	0.03	0.100	ug/L	
SLF0398-IBL7	Cadmium-114	0.00500	0.04	0.100	ug/L	
SLF0398-IBL7	Copper-63	-0.00800	0.173	0.500	ug/L	
SLF0398-IBL7	Copper-65	-0.0150	0.35	0.500	ug/L	
SLF0398-IBL7	Zinc-66	-0.0570	2.92	6.00	ug/L	
SLF0398-IBL7	Zinc-67	-0.0440	0.94	6.00	ug/L	
SLF0398-CCB6	Arsenic-75a	0.00100	0.0373	0.200	ug/L	
SLF0398-CCB6	Cadmium-111	-0.00500	0.03	0.100	ug/L	
SLF0398-CCB6	Cadmium-114	0.00400	0.04	0.100	ug/L	
SLF0398-CCB6	Copper-63	-0.00300	0.173	0.500	ug/L	
SLF0398-CCB6	Copper-65	-0.00500	0.35	0.500	ug/L	
SLF0398-CCB6	Zinc-66	0.0090	2.92	6.00	ug/L	
SLF0398-CCB6	Zinc-67	0.0140	0.94	6.00	ug/L	
SLF0398-IBL8	Arsenic-75a	-0.00400	0.0373	0.200	ug/L	
SLF0398-IBL8	Cadmium-111	-0.00200	0.03	0.100	ug/L	
SLF0398-IBL8	Cadmium-114	0.00200	0.04	0.100	ug/L	
SLF0398-IBL8	Copper-63	0.00600	0.173	0.500	ug/L	
SLF0398-IBL8	Copper-65	0.00300	0.35	0.500	ug/L	
SLF0398-IBL8	Zinc-66	0.123	2.92	6.00	ug/L	
SLF0398-IBL8	Zinc-67	0.135	0.94	6.00	ug/L	
SLF0398-CCB7	Arsenic-75a	0.00100	0.0373	0.200	ug/L	
SLF0398-CCB7	Cadmium-111	-0.00800	0.03	0.100	ug/L	

INSTRUMENT BLANKS
EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: ICPMS1
Sequence: SLF0398

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GF00087
Date Analyzed: 06/26/23 20:17

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLF0398-CCB7	Cadmium-114	0.00100	0.04	0.100	ug/L	
SLF0398-CCB7	Copper-63	-0.00200	0.173	0.500	ug/L	
SLF0398-CCB7	Copper-65	-0.00600	0.35	0.500	ug/L	
SLF0398-CCB7	Zinc-66	-0.0130	2.92	6.00	ug/L	
SLF0398-CCB7	Zinc-67	0.0090	0.94	6.00	ug/L	
SLF0398-IBL9	Arsenic-75a	-0.0120	0.0373	0.200	ug/L	
SLF0398-IBL9	Cadmium-111	0.00200	0.03	0.100	ug/L	
SLF0398-IBL9	Cadmium-114	0.00600	0.04	0.100	ug/L	
SLF0398-IBL9	Copper-63	0.00800	0.173	0.500	ug/L	
SLF0398-IBL9	Copper-65	-0.00100	0.35	0.500	ug/L	
SLF0398-IBL9	Zinc-66	0.135	2.92	6.00	ug/L	
SLF0398-IBL9	Zinc-67	0.201	0.94	6.00	ug/L	
SLF0398-CCB8	Arsenic-75a	-0.00200	0.0373	0.200	ug/L	
SLF0398-CCB8	Cadmium-111	0.00400	0.03	0.100	ug/L	
SLF0398-CCB8	Cadmium-114	0.0180	0.04	0.100	ug/L	
SLF0398-CCB8	Copper-63	-0.00300	0.173	0.500	ug/L	
SLF0398-CCB8	Copper-65	-0.0100	0.35	0.500	ug/L	
SLF0398-CCB8	Zinc-66	-0.0240	2.92	6.00	ug/L	
SLF0398-CCB8	Zinc-67	0.0440	0.94	6.00	ug/L	
SLF0398-CCB9	Arsenic-75a	0.0170	0.0373	0.200	ug/L	
SLF0398-CCB9	Cadmium-111	-0.00100	0.03	0.100	ug/L	
SLF0398-CCB9	Cadmium-114	0.00200	0.04	0.100	ug/L	
SLF0398-CCB9	Copper-63	0.0320	0.173	0.500	ug/L	
SLF0398-CCB9	Copper-65	0.0360	0.35	0.500	ug/L	
SLF0398-CCB9	Zinc-66	0.0720	2.92	6.00	ug/L	
SLF0398-CCB9	Zinc-67	0.0140	0.94	6.00	ug/L	
SLF0398-CCBA	Arsenic-75a	0.00100	0.0373	0.200	ug/L	
SLF0398-CCBA	Cadmium-111	-0.00700	0.03	0.100	ug/L	
SLF0398-CCBA	Cadmium-114	-0.00100	0.04	0.100	ug/L	
SLF0398-CCBA	Copper-63	-0.00100	0.173	0.500	ug/L	
SLF0398-CCBA	Copper-65	0.00400	0.35	0.500	ug/L	
SLF0398-CCBA	Zinc-66	-0.0010	2.92	6.00	ug/L	
SLF0398-CCBA	Zinc-67	0.0060	0.94	6.00	ug/L	
SLF0398-IBLA	Arsenic-75a	-0.00500	0.0373	0.200	ug/L	
SLF0398-IBLA	Cadmium-111	0.00600	0.03	0.100	ug/L	
SLF0398-IBLA	Cadmium-114	0.00	0.04	0.100	ug/L	

INSTRUMENT BLANKS
EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: ICPMS1
Sequence: SLF0398

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GF00087
Date Analyzed: 06/26/23 23:12

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLF0398-IBLA	Copper-63	0.00900	0.173	0.500	ug/L	
SLF0398-IBLA	Copper-65	0.0190	0.35	0.500	ug/L	
SLF0398-IBLA	Zinc-66	0.176	2.92	6.00	ug/L	
SLF0398-IBLA	Zinc-67	0.0880	0.94	6.00	ug/L	
SLF0398-CCBB	Arsenic-75a	-0.00100	0.0373	0.200	ug/L	
SLF0398-CCBB	Cadmium-111	-0.00100	0.03	0.100	ug/L	
SLF0398-CCBB	Cadmium-114	0.00200	0.04	0.100	ug/L	
SLF0398-CCBB	Copper-63	-0.00200	0.173	0.500	ug/L	
SLF0398-CCBB	Copper-65	0.00100	0.35	0.500	ug/L	
SLF0398-CCBB	Zinc-66	0.0110	2.92	6.00	ug/L	
SLF0398-CCBB	Zinc-67	-0.0450	0.94	6.00	ug/L	
SLF0398-IBLB	Arsenic-75a	0.00	0.0373	0.200	ug/L	
SLF0398-IBLB	Cadmium-111	0.00300	0.03	0.100	ug/L	
SLF0398-IBLB	Cadmium-114	-0.00200	0.04	0.100	ug/L	
SLF0398-IBLB	Copper-63	0.00900	0.173	0.500	ug/L	
SLF0398-IBLB	Copper-65	0.0100	0.35	0.500	ug/L	
SLF0398-IBLB	Zinc-66	0.206	2.92	6.00	ug/L	
SLF0398-IBLB	Zinc-67	0.164	0.94	6.00	ug/L	
SLF0398-CCBC	Arsenic-75a	0.0340	0.0373	0.200	ug/L	
SLF0398-CCBC	Cadmium-111	0.00300	0.03	0.100	ug/L	
SLF0398-CCBC	Cadmium-114	-0.00400	0.04	0.100	ug/L	
SLF0398-CCBC	Copper-63	0.0380	0.173	0.500	ug/L	
SLF0398-CCBC	Copper-65	0.0450	0.35	0.500	ug/L	
SLF0398-CCBC	Zinc-66	0.200	2.92	6.00	ug/L	
SLF0398-CCBC	Zinc-67	0.138	0.94	6.00	ug/L	
SLF0398-IBLC	Arsenic-75a	-0.00700	0.0373	0.200	ug/L	
SLF0398-IBLC	Cadmium-111	0.00500	0.03	0.100	ug/L	
SLF0398-IBLC	Cadmium-114	0.00100	0.04	0.100	ug/L	
SLF0398-IBLC	Copper-63	0.0100	0.173	0.500	ug/L	
SLF0398-IBLC	Copper-65	0.0210	0.35	0.500	ug/L	
SLF0398-IBLC	Zinc-66	0.187	2.92	6.00	ug/L	
SLF0398-IBLC	Zinc-67	0.0780	0.94	6.00	ug/L	
SLF0398-CCBD	Arsenic-75a	0.00	0.0373	0.200	ug/L	
SLF0398-CCBD	Cadmium-111	0.00300	0.03	0.100	ug/L	
SLF0398-CCBD	Cadmium-114	-0.00100	0.04	0.100	ug/L	
SLF0398-CCBD	Copper-63	-0.00400	0.173	0.500	ug/L	

INSTRUMENT BLANKS
EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: ICPMS1
Sequence: SLF0398

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GF00087
Date Analyzed: 06/27/23 01:15

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLF0398-CCBD	Copper-65	-0.00100	0.35	0.500	ug/L	
SLF0398-CCBD	Zinc-66	-0.0410	2.92	6.00	ug/L	
SLF0398-CCBD	Zinc-67	-0.0970	0.94	6.00	ug/L	
SLF0398-CCBE	Arsenic-75a	0.00400	0.0373	0.200	ug/L	
SLF0398-CCBE	Cadmium-111	0.0100	0.03	0.100	ug/L	
SLF0398-CCBE	Cadmium-114	0.00500	0.04	0.100	ug/L	
SLF0398-CCBE	Copper-63	-0.00500	0.173	0.500	ug/L	
SLF0398-CCBE	Copper-65	-0.00300	0.35	0.500	ug/L	
SLF0398-CCBE	Zinc-66	-0.0610	2.92	6.00	ug/L	
SLF0398-CCBE	Zinc-67	-0.0500	0.94	6.00	ug/L	
SLF0398-IBLD	Arsenic-75a	-0.00400	0.0373	0.200	ug/L	
SLF0398-IBLD	Cadmium-111	0.00300	0.03	0.100	ug/L	
SLF0398-IBLD	Cadmium-114	0.00300	0.04	0.100	ug/L	
SLF0398-IBLD	Copper-63	0.0110	0.173	0.500	ug/L	
SLF0398-IBLD	Copper-65	0.00600	0.35	0.500	ug/L	
SLF0398-IBLD	Zinc-66	0.144	2.92	6.00	ug/L	
SLF0398-IBLD	Zinc-67	0.208	0.94	6.00	ug/L	
SLF0398-CCBF	Arsenic-75a	0.00400	0.0373	0.200	ug/L	
SLF0398-CCBF	Cadmium-111	0.00500	0.03	0.100	ug/L	
SLF0398-CCBF	Cadmium-114	0.00200	0.04	0.100	ug/L	
SLF0398-CCBF	Copper-63	-0.00700	0.173	0.500	ug/L	
SLF0398-CCBF	Copper-65	-0.00500	0.35	0.500	ug/L	
SLF0398-CCBF	Zinc-66	-0.0730	2.92	6.00	ug/L	
SLF0398-CCBF	Zinc-67	-0.0210	0.94	6.00	ug/L	
SLF0398-IBLE	Arsenic-75a	-0.00800	0.0373	0.200	ug/L	
SLF0398-IBLE	Cadmium-111	0.00200	0.03	0.100	ug/L	
SLF0398-IBLE	Cadmium-114	0.00100	0.04	0.100	ug/L	
SLF0398-IBLE	Copper-63	0.00900	0.173	0.500	ug/L	
SLF0398-IBLE	Copper-65	0.00500	0.35	0.500	ug/L	
SLF0398-IBLE	Zinc-66	0.137	2.92	6.00	ug/L	
SLF0398-IBLE	Zinc-67	0.228	0.94	6.00	ug/L	
SLF0398-IBLF	Arsenic-75a	-0.00100	0.0373	0.200	ug/L	
SLF0398-IBLF	Cadmium-111	0.0110	0.03	0.100	ug/L	
SLF0398-IBLF	Cadmium-114	0.00	0.04	0.100	ug/L	
SLF0398-IBLF	Copper-63	0.00900	0.173	0.500	ug/L	
SLF0398-IBLF	Copper-65	0.00600	0.35	0.500	ug/L	

INSTRUMENT BLANKS
EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: GF00087
Sequence: SLF0398
Date Analyzed: 06/27/23 03:12

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLF0398-IBLF	Zinc-66	0.161	2.92	6.00	ug/L	
SLF0398-IBLF	Zinc-67	0.164	0.94	6.00	ug/L	
SLF0398-CCBG	Arsenic-75a	0.00300	0.0373	0.200	ug/L	
SLF0398-CCBG	Cadmium-111	0.0380	0.03	0.100	ug/L	
SLF0398-CCBG	Cadmium-114	0.0170	0.04	0.100	ug/L	
SLF0398-CCBG	Copper-63	-0.00500	0.173	0.500	ug/L	
SLF0398-CCBG	Copper-65	-0.00200	0.35	0.500	ug/L	
SLF0398-CCBG	Zinc-66	-0.0560	2.92	6.00	ug/L	
SLF0398-CCBG	Zinc-67	0.0010	0.94	6.00	ug/L	
SLF0398-IBLG	Arsenic-75a	0.00400	0.0373	0.200	ug/L	
SLF0398-IBLG	Cadmium-111	0.00200	0.03	0.100	ug/L	
SLF0398-IBLG	Cadmium-114	0.00200	0.04	0.100	ug/L	
SLF0398-IBLG	Copper-63	0.00500	0.173	0.500	ug/L	
SLF0398-IBLG	Copper-65	0.00700	0.35	0.500	ug/L	
SLF0398-IBLG	Zinc-66	0.120	2.92	6.00	ug/L	
SLF0398-IBLG	Zinc-67	0.201	0.94	6.00	ug/L	
SLF0398-CCBH	Arsenic-75a	0.0320	0.0373	0.200	ug/L	
SLF0398-CCBH	Cadmium-111	0.00100	0.03	0.100	ug/L	
SLF0398-CCBH	Cadmium-114	0.00	0.04	0.100	ug/L	
SLF0398-CCBH	Copper-63	0.0140	0.173	0.500	ug/L	
SLF0398-CCBH	Copper-65	0.0190	0.35	0.500	ug/L	
SLF0398-CCBH	Zinc-66	-0.0060	2.92	6.00	ug/L	
SLF0398-CCBH	Zinc-67	-0.0320	0.94	6.00	ug/L	

INSTRUMENT BLANKS
EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: ICPMS2
Sequence: SLG0051

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GG00009
Date Analyzed: 07/05/23 17:06

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLG0051-IBL1	Arsenic-75a	0.0410	0.0373	0.200	ug/L	
SLG0051-IBL1	Cadmium-111	0.00700	0.03	0.100	ug/L	
SLG0051-IBL1	Cadmium-114	0.00300	0.04	0.100	ug/L	
SLG0051-IBL1	Copper-63	-0.0550	0.173	0.500	ug/L	
SLG0051-IBL1	Copper-65	-0.0630	0.35	0.500	ug/L	
SLG0051-IBL1	Zinc-66	0.0680	2.92	6.00	ug/L	
SLG0051-IBL1	Zinc-67	0.0720	0.94	6.00	ug/L	
SLG0051-ICB1	Arsenic-75a	0.0380	0.0373	0.200	ug/L	
SLG0051-ICB1	Cadmium-111	-0.00800	0.03	0.100	ug/L	
SLG0051-ICB1	Cadmium-114	0.00400	0.04	0.100	ug/L	
SLG0051-ICB1	Copper-63	-0.0820	0.173	0.500	ug/L	
SLG0051-ICB1	Copper-65	-0.0840	0.35	0.500	ug/L	
SLG0051-ICB1	Zinc-66	0.0100	2.92	6.00	ug/L	
SLG0051-ICB1	Zinc-67	-0.0130	0.94	6.00	ug/L	
SLG0051-CCB1	Arsenic-75a	0.0340	0.0373	0.200	ug/L	
SLG0051-CCB1	Cadmium-111	-0.00400	0.03	0.100	ug/L	
SLG0051-CCB1	Cadmium-114	-0.00200	0.04	0.100	ug/L	
SLG0051-CCB1	Copper-63	-0.0920	0.173	0.500	ug/L	
SLG0051-CCB1	Copper-65	-0.0910	0.35	0.500	ug/L	
SLG0051-CCB1	Zinc-66	-0.0010	2.92	6.00	ug/L	
SLG0051-CCB1	Zinc-67	0.0730	0.94	6.00	ug/L	
SLG0051-IBL2	Arsenic-75a	0.0670	0.0373	0.200	ug/L	
SLG0051-IBL2	Cadmium-111	0.0130	0.03	0.100	ug/L	
SLG0051-IBL2	Cadmium-114	0.00700	0.04	0.100	ug/L	
SLG0051-IBL2	Copper-63	-0.0670	0.173	0.500	ug/L	
SLG0051-IBL2	Copper-65	-0.0600	0.35	0.500	ug/L	
SLG0051-IBL2	Zinc-66	0.521	2.92	6.00	ug/L	
SLG0051-IBL2	Zinc-67	0.646	0.94	6.00	ug/L	
SLG0051-IBL3	Arsenic-75a	0.0310	0.0373	0.200	ug/L	
SLG0051-IBL3	Cadmium-111	0.00	0.03	0.100	ug/L	
SLG0051-IBL3	Cadmium-114	-0.00400	0.04	0.100	ug/L	
SLG0051-IBL3	Copper-63	-0.0650	0.173	0.500	ug/L	
SLG0051-IBL3	Copper-65	-0.0650	0.35	0.500	ug/L	
SLG0051-IBL3	Zinc-66	0.575	2.92	6.00	ug/L	
SLG0051-IBL3	Zinc-67	0.602	0.94	6.00	ug/L	

INSTRUMENT BLANKS
EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS2
Calibration: GG00009
Sequence: SLG0051
Date Analyzed: 07/05/23 18:38

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLG0051-CCB2	Arsenic-75a	0.0370	0.0373	0.200	ug/L	
SLG0051-CCB2	Cadmium-111	0.00600	0.03	0.100	ug/L	
SLG0051-CCB2	Cadmium-114	-0.00100	0.04	0.100	ug/L	
SLG0051-CCB2	Copper-63	-0.0990	0.173	0.500	ug/L	
SLG0051-CCB2	Copper-65	-0.0980	0.35	0.500	ug/L	
SLG0051-CCB2	Zinc-66	0.0430	2.92	6.00	ug/L	
SLG0051-CCB2	Zinc-67	0.0390	0.94	6.00	ug/L	
SLG0051-CCB3	Arsenic-75a	0.0310	0.0373	0.200	ug/L	
SLG0051-CCB3	Cadmium-111	0.00	0.03	0.100	ug/L	
SLG0051-CCB3	Cadmium-114	0.00500	0.04	0.100	ug/L	
SLG0051-CCB3	Copper-63	0.00400	0.173	0.500	ug/L	
SLG0051-CCB3	Copper-65	-0.00900	0.35	0.500	ug/L	
SLG0051-CCB3	Zinc-66	0.0060	2.92	6.00	ug/L	
SLG0051-CCB3	Zinc-67	0.0420	0.94	6.00	ug/L	
SLG0051-IBL4	Arsenic-75a	-0.00700	0.0373	0.200	ug/L	
SLG0051-IBL4	Cadmium-111	0.00300	0.03	0.100	ug/L	
SLG0051-IBL4	Cadmium-114	-0.00300	0.04	0.100	ug/L	
SLG0051-IBL4	Copper-63	0.0270	0.173	0.500	ug/L	
SLG0051-IBL4	Copper-65	0.0160	0.35	0.500	ug/L	
SLG0051-IBL4	Zinc-66	0.0980	2.92	6.00	ug/L	
SLG0051-IBL4	Zinc-67	0.138	0.94	6.00	ug/L	
SLG0051-IBL5	Arsenic-75a	-0.0130	0.0373	0.200	ug/L	
SLG0051-IBL5	Cadmium-111	-0.0160	0.03	0.100	ug/L	
SLG0051-IBL5	Cadmium-114	0.00300	0.04	0.100	ug/L	
SLG0051-IBL5	Copper-63	0.0280	0.173	0.500	ug/L	
SLG0051-IBL5	Copper-65	0.0170	0.35	0.500	ug/L	
SLG0051-IBL5	Zinc-66	0.106	2.92	6.00	ug/L	
SLG0051-IBL5	Zinc-67	0.0880	0.94	6.00	ug/L	
SLG0051-CCB4	Arsenic-75a	0.0190	0.0373	0.200	ug/L	
SLG0051-CCB4	Cadmium-111	-0.0100	0.03	0.100	ug/L	
SLG0051-CCB4	Cadmium-114	0.00300	0.04	0.100	ug/L	
SLG0051-CCB4	Copper-63	0.00700	0.173	0.500	ug/L	
SLG0051-CCB4	Copper-65	-0.00600	0.35	0.500	ug/L	
SLG0051-CCB4	Zinc-66	0.156	2.92	6.00	ug/L	
SLG0051-CCB4	Zinc-67	0.111	0.94	6.00	ug/L	
SLG0051-IBL6	Arsenic-75a	-0.00700	0.0373	0.200	ug/L	

INSTRUMENT BLANKS
EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: ICPMS2
Sequence: SLG0051

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GG00009
Date Analyzed: 07/05/23 20:55

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLG0051-IBL6	Cadmium-111	-0.0190	0.03	0.100	ug/L	
SLG0051-IBL6	Cadmium-114	-0.00200	0.04	0.100	ug/L	
SLG0051-IBL6	Copper-63	0.0260	0.173	0.500	ug/L	
SLG0051-IBL6	Copper-65	0.0220	0.35	0.500	ug/L	
SLG0051-IBL6	Zinc-66	0.0770	2.92	6.00	ug/L	
SLG0051-IBL6	Zinc-67	0.0970	0.94	6.00	ug/L	
SLG0051-CCB5	Arsenic-75a	0.0120	0.0373	0.200	ug/L	
SLG0051-CCB5	Cadmium-111	0.00	0.03	0.100	ug/L	
SLG0051-CCB5	Cadmium-114	0.00400	0.04	0.100	ug/L	
SLG0051-CCB5	Copper-63	0.0110	0.173	0.500	ug/L	
SLG0051-CCB5	Copper-65	0.00500	0.35	0.500	ug/L	
SLG0051-CCB5	Zinc-66	0.0820	2.92	6.00	ug/L	
SLG0051-CCB5	Zinc-67	0.102	0.94	6.00	ug/L	
SLG0051-CCB6	Arsenic-75a	0.0240	0.0373	0.200	ug/L	
SLG0051-CCB6	Cadmium-111	-0.00200	0.03	0.100	ug/L	
SLG0051-CCB6	Cadmium-114	-0.0110	0.04	0.100	ug/L	
SLG0051-CCB6	Copper-63	0.00100	0.173	0.500	ug/L	
SLG0051-CCB6	Copper-65	0.00200	0.35	0.500	ug/L	
SLG0051-CCB6	Zinc-66	0.0020	2.92	6.00	ug/L	
SLG0051-CCB6	Zinc-67	0.0870	0.94	6.00	ug/L	
SLG0051-IBL7	Arsenic-75a	-0.00400	0.0373	0.200	ug/L	
SLG0051-IBL7	Cadmium-111	0.0170	0.03	0.100	ug/L	
SLG0051-IBL7	Cadmium-114	-0.00800	0.04	0.100	ug/L	
SLG0051-IBL7	Copper-63	0.0200	0.173	0.500	ug/L	
SLG0051-IBL7	Copper-65	0.0180	0.35	0.500	ug/L	
SLG0051-IBL7	Zinc-66	-0.0090	2.92	6.00	ug/L	
SLG0051-IBL7	Zinc-67	0.0040	0.94	6.00	ug/L	
SLG0051-CCB7	Arsenic-75a	0.0100	0.0373	0.200	ug/L	
SLG0051-CCB7	Cadmium-111	0.00100	0.03	0.100	ug/L	
SLG0051-CCB7	Cadmium-114	-0.0130	0.04	0.100	ug/L	
SLG0051-CCB7	Copper-63	0.00	0.173	0.500	ug/L	
SLG0051-CCB7	Copper-65	0.0120	0.35	0.500	ug/L	
SLG0051-CCB7	Zinc-66	0.0340	2.92	6.00	ug/L	
SLG0051-CCB7	Zinc-67	0.178	0.94	6.00	ug/L	
SLG0051-IBL8	Arsenic-75a	-0.00800	0.0373	0.200	ug/L	
SLG0051-IBL8	Cadmium-111	-0.00100	0.03	0.100	ug/L	

INSTRUMENT BLANKS
EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: ICPMS2
Sequence: SLG0051

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GG00009
Date Analyzed: 07/05/23 22:41

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLG0051-IBL8	Cadmium-114	-0.0120	0.04	0.100	ug/L	
SLG0051-IBL8	Copper-63	0.0310	0.173	0.500	ug/L	
SLG0051-IBL8	Copper-65	0.0470	0.35	0.500	ug/L	
SLG0051-IBL8	Zinc-66	0.0390	2.92	6.00	ug/L	
SLG0051-IBL8	Zinc-67	0.153	0.94	6.00	ug/L	
SLG0051-CCB8	Arsenic-75a	0.0140	0.0373	0.200	ug/L	
SLG0051-CCB8	Cadmium-111	-0.0100	0.03	0.100	ug/L	
SLG0051-CCB8	Cadmium-114	-0.00500	0.04	0.100	ug/L	
SLG0051-CCB8	Copper-63	0.00400	0.173	0.500	ug/L	
SLG0051-CCB8	Copper-65	0.00700	0.35	0.500	ug/L	
SLG0051-CCB8	Zinc-66	0.131	2.92	6.00	ug/L	
SLG0051-CCB8	Zinc-67	0.166	0.94	6.00	ug/L	
SLG0051-IBL9	Arsenic-75a	-0.00800	0.0373	0.200	ug/L	
SLG0051-IBL9	Cadmium-111	-0.00400	0.03	0.100	ug/L	
SLG0051-IBL9	Cadmium-114	-0.0110	0.04	0.100	ug/L	
SLG0051-IBL9	Copper-63	0.0200	0.173	0.500	ug/L	
SLG0051-IBL9	Copper-65	0.0240	0.35	0.500	ug/L	
SLG0051-IBL9	Zinc-66	0.0340	2.92	6.00	ug/L	
SLG0051-IBL9	Zinc-67	0.0880	0.94	6.00	ug/L	
SLG0051-IBLA	Arsenic-75a	-0.0160	0.0373	0.200	ug/L	
SLG0051-IBLA	Cadmium-111	-0.00900	0.03	0.100	ug/L	
SLG0051-IBLA	Cadmium-114	-0.0120	0.04	0.100	ug/L	
SLG0051-IBLA	Copper-63	0.0170	0.173	0.500	ug/L	
SLG0051-IBLA	Copper-65	0.0270	0.35	0.500	ug/L	
SLG0051-IBLA	Zinc-66	-0.0280	2.92	6.00	ug/L	
SLG0051-IBLA	Zinc-67	0.137	0.94	6.00	ug/L	
SLG0051-CCB9	Arsenic-75a	0.00900	0.0373	0.200	ug/L	
SLG0051-CCB9	Cadmium-111	0.00300	0.03	0.100	ug/L	
SLG0051-CCB9	Cadmium-114	-0.0120	0.04	0.100	ug/L	
SLG0051-CCB9	Copper-63	0.00100	0.173	0.500	ug/L	
SLG0051-CCB9	Copper-65	0.00600	0.35	0.500	ug/L	
SLG0051-CCB9	Zinc-66	0.0450	2.92	6.00	ug/L	
SLG0051-CCB9	Zinc-67	0.129	0.94	6.00	ug/L	
SLG0051-IBLB	Arsenic-75a	-0.0100	0.0373	0.200	ug/L	
SLG0051-IBLB	Cadmium-111	-0.00300	0.03	0.100	ug/L	
SLG0051-IBLB	Cadmium-114	-0.00900	0.04	0.100	ug/L	

INSTRUMENT BLANKS
EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: ICPMS2
Sequence: SLG0051

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GG00009
Date Analyzed: 07/06/23 01:23

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLG0051-IBLB	Copper-63	0.0190	0.173	0.500	ug/L	
SLG0051-IBLB	Copper-65	0.0180	0.35	0.500	ug/L	
SLG0051-IBLB	Zinc-66	0.0040	2.92	6.00	ug/L	
SLG0051-IBLB	Zinc-67	0.0680	0.94	6.00	ug/L	
SLG0051-CCBA	Arsenic-75a	-0.00400	0.0373	0.200	ug/L	
SLG0051-CCBA	Cadmium-111	0.00200	0.03	0.100	ug/L	
SLG0051-CCBA	Cadmium-114	-0.00600	0.04	0.100	ug/L	
SLG0051-CCBA	Copper-63	0.00100	0.173	0.500	ug/L	
SLG0051-CCBA	Copper-65	0.00200	0.35	0.500	ug/L	
SLG0051-CCBA	Zinc-66	0.620	2.92	6.00	ug/L	
SLG0051-CCBA	Zinc-67	0.575	0.94	6.00	ug/L	
SLG0051-CCBB	Arsenic-75a	0.00200	0.0373	0.200	ug/L	
SLG0051-CCBB	Cadmium-111	0.00200	0.03	0.100	ug/L	
SLG0051-CCBB	Cadmium-114	0.0170	0.04	0.100	ug/L	
SLG0051-CCBB	Copper-63	0.00300	0.173	0.500	ug/L	
SLG0051-CCBB	Copper-65	-0.00100	0.35	0.500	ug/L	
SLG0051-CCBB	Zinc-66	0.556	2.92	6.00	ug/L	
SLG0051-CCBB	Zinc-67	0.529	0.94	6.00	ug/L	
SLG0051-IBLC	Arsenic-75a	0.00	0.0373	0.200	ug/L	
SLG0051-IBLC	Cadmium-111	0.0110	0.03	0.100	ug/L	
SLG0051-IBLC	Cadmium-114	0.0120	0.04	0.100	ug/L	
SLG0051-IBLC	Copper-63	-0.00400	0.173	0.500	ug/L	
SLG0051-IBLC	Copper-65	-0.00900	0.35	0.500	ug/L	
SLG0051-IBLC	Zinc-66	-0.113	2.92	6.00	ug/L	
SLG0051-IBLC	Zinc-67	-0.153	0.94	6.00	ug/L	
SLG0051-IBLD	Arsenic-75a	-0.00800	0.0373	0.200	ug/L	
SLG0051-IBLD	Cadmium-111	0.00900	0.03	0.100	ug/L	
SLG0051-IBLD	Cadmium-114	0.0100	0.04	0.100	ug/L	
SLG0051-IBLD	Copper-63	-0.00100	0.173	0.500	ug/L	
SLG0051-IBLD	Copper-65	0.00300	0.35	0.500	ug/L	
SLG0051-IBLD	Zinc-66	-0.0920	2.92	6.00	ug/L	
SLG0051-IBLD	Zinc-67	-0.103	0.94	6.00	ug/L	
SLG0051-CCBC	Arsenic-75a	0.0130	0.0373	0.200	ug/L	
SLG0051-CCBC	Cadmium-111	0.00400	0.03	0.100	ug/L	
SLG0051-CCBC	Cadmium-114	0.00600	0.04	0.100	ug/L	
SLG0051-CCBC	Copper-63	0.00400	0.173	0.500	ug/L	

INSTRUMENT BLANKS
EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: ICPMS2
Sequence: SLG0051

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GG00009
Date Analyzed: 07/06/23 02:55

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLG0051-CCBC	Copper-65	-0.00100	0.35	0.500	ug/L	
SLG0051-CCBC	Zinc-66	0.567	2.92	6.00	ug/L	
SLG0051-CCBC	Zinc-67	0.361	0.94	6.00	ug/L	
SLG0051-IBLE	Arsenic-75a	0.00900	0.0373	0.200	ug/L	
SLG0051-IBLE	Cadmium-111	0.0150	0.03	0.100	ug/L	
SLG0051-IBLE	Cadmium-114	0.0110	0.04	0.100	ug/L	
SLG0051-IBLE	Copper-63	-0.00400	0.173	0.500	ug/L	
SLG0051-IBLE	Copper-65	-0.00100	0.35	0.500	ug/L	
SLG0051-IBLE	Zinc-66	-0.0980	2.92	6.00	ug/L	
SLG0051-IBLE	Zinc-67	-0.0900	0.94	6.00	ug/L	
SLG0051-IBLF	Arsenic-75a	0.00300	0.0373	0.200	ug/L	
SLG0051-IBLF	Cadmium-111	0.0170	0.03	0.100	ug/L	
SLG0051-IBLF	Cadmium-114	0.0100	0.04	0.100	ug/L	
SLG0051-IBLF	Copper-63	0.00	0.173	0.500	ug/L	
SLG0051-IBLF	Copper-65	-0.00400	0.35	0.500	ug/L	
SLG0051-IBLF	Zinc-66	-0.0240	2.92	6.00	ug/L	
SLG0051-IBLF	Zinc-67	-0.103	0.94	6.00	ug/L	
SLG0051-CCBD	Arsenic-75a	0.0210	0.0373	0.200	ug/L	
SLG0051-CCBD	Cadmium-111	0.0190	0.03	0.100	ug/L	
SLG0051-CCBD	Cadmium-114	0.00400	0.04	0.100	ug/L	
SLG0051-CCBD	Copper-63	0.00400	0.173	0.500	ug/L	
SLG0051-CCBD	Copper-65	0.00100	0.35	0.500	ug/L	
SLG0051-CCBD	Zinc-66	0.551	2.92	6.00	ug/L	
SLG0051-CCBD	Zinc-67	0.399	0.94	6.00	ug/L	
SLG0051-IBLG	Arsenic-75a	-0.00600	0.0373	0.200	ug/L	
SLG0051-IBLG	Cadmium-111	0.00	0.03	0.100	ug/L	
SLG0051-IBLG	Cadmium-114	0.0100	0.04	0.100	ug/L	
SLG0051-IBLG	Copper-63	-0.00400	0.173	0.500	ug/L	
SLG0051-IBLG	Copper-65	-0.00200	0.35	0.500	ug/L	
SLG0051-IBLG	Zinc-66	-0.0950	2.92	6.00	ug/L	
SLG0051-IBLG	Zinc-67	-0.137	0.94	6.00	ug/L	
SLG0051-IBLH	Arsenic-75a	-0.0220	0.0373	0.200	ug/L	
SLG0051-IBLH	Cadmium-111	0.00300	0.03	0.100	ug/L	
SLG0051-IBLH	Cadmium-114	0.00700	0.04	0.100	ug/L	
SLG0051-IBLH	Copper-63	-0.00300	0.173	0.500	ug/L	
SLG0051-IBLH	Copper-65	0.00	0.35	0.500	ug/L	

INSTRUMENT BLANKS
EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: ICPMS2
Sequence: SLG0051

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GG00009
Date Analyzed: 07/06/23 04:52

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLG0051-IBLH	Zinc-66	-0.0980	2.92	6.00	ug/L	
SLG0051-IBLH	Zinc-67	-0.102	0.94	6.00	ug/L	
SLG0051-CCBE	Arsenic-75a	0.0180	0.0373	0.200	ug/L	
SLG0051-CCBE	Cadmium-111	0.0170	0.03	0.100	ug/L	
SLG0051-CCBE	Cadmium-114	0.00700	0.04	0.100	ug/L	
SLG0051-CCBE	Copper-63	0.00600	0.173	0.500	ug/L	
SLG0051-CCBE	Copper-65	0.00300	0.35	0.500	ug/L	
SLG0051-CCBE	Zinc-66	0.647	2.92	6.00	ug/L	
SLG0051-CCBE	Zinc-67	0.583	0.94	6.00	ug/L	

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLF0398	Instrument:	ICPMS1
		Calibration:	GF00087

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
CAL 0	SLF0398-CAL1	XDT_m1230626-006	NA	06/26/23 14:25
CAL 1 - LOW CHECK	SLF0398-CAL2	XDT_m1230626-007	NA	06/26/23 14:30
CAL 2	SLF0398-CAL3	XDT_m1230626-008	NA	06/26/23 14:35
CAL 3	SLF0398-CAL4	XDT_m1230626-009	NA	06/26/23 14:40
CAL 4	SLF0398-CAL5	XDT_m1230626-010	NA	06/26/23 14:45
CAL 5	SLF0398-CAL6	XDT_m1230626-011	NA	06/26/23 14:52
RINSE	SLF0398-IBL1	XDT_m1230626-012	NA	06/26/23 14:59
Initial Cal Check	SLF0398-ICV1	XDT_m1230626-014	NA	06/26/23 15:05
Initial Cal Blank	SLF0398-ICB1	XDT_m1230626-015	NA	06/26/23 15:13
Calibration Check	SLF0398-CCV1	XDT_m1230626-016	NA	06/26/23 15:19
Calibration Blank	SLF0398-CCB1	XDT_m1230626-017	NA	06/26/23 15:26
Instrument RL Check	SLF0398-CRL1	XDT_m1230626-018	NA	06/26/23 15:32
Interference Check A	SLF0398-IFA1	XDT_m1230626-019	NA	06/26/23 15:38
Interference Check B	SLF0398-IFB1	XDT_m1230626-020	NA	06/26/23 15:43
LR200	SLF0398-HCV1	XDT_m1230626-021	NA	06/26/23 15:47
LR300	SLF0398-HCV2	XDT_m1230626-022	NA	06/26/23 15:52
Instrument Blank	SLF0398-IBL2	XDT_m1230626-023	NA	06/26/23 16:00
Instrument Blank	SLF0398-IBL3	XDT_m1230626-024	NA	06/26/23 16:06
Instrument Blank	SLF0398-IBL4	XDT_m1230626-025	NA	06/26/23 16:13
Calibration Check	SLF0398-CCV2	XDT_m1230626-026	NA	06/26/23 16:18
Calibration Blank	SLF0398-CCB2	XDT_m1230626-027	NA	06/26/23 16:27
Calibration Check	SLF0398-CCV3	XDT_m1230626-029	NA	06/26/23 16:39
Calibration Blank	SLF0398-CCB3	XDT_m1230626-030	NA	06/26/23 16:47
Blank	BLF0652-BLK1	XDT_m1230626-031	Solid	06/26/23 16:54
LCS	BLF0652-BS1	XDT_m1230626-032	Solid	06/26/23 16:59
ZZZZZ	23F0361-06	XDT_m1230626-035	Water	06/26/23 17:18
ZZZZZ	23F0527-01	XDT_m1230626-036	Solid	06/26/23 17:24
ZZZZZ	23F0527-01	XDT_m1230626-036	Solid	06/26/23 17:24
ZZZZZ	23F0527-01	XDT_m1230626-036	Solid	06/26/23 17:24

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLF0398
Instrument: ICPMS1
Calibration: GF00087

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23F0527-01	XDT_m1230626-036	Solid	06/26/23 17:24
ZZZZZ	23F0527-01	XDT_m1230626-036	Solid	06/26/23 17:24
ZZZZZ	23F0527-01	XDT_m1230626-036	Solid	06/26/23 17:24
Instrument Blank	SLF0398-IBL5	XDT_m1230626-037	NA	06/26/23 17:29
ZZZZZ	23F0527-01RE1	XDT_m1230626-038	Solid	06/26/23 17:34
ZZZZZ	23F0527-01RE1	XDT_m1230626-038	Solid	06/26/23 17:34
Instrument Blank	SLF0398-IBL6	XDT_m1230626-040	NA	06/26/23 17:44
Calibration Check	SLF0398-CCV4	XDT_m1230626-041	NA	06/26/23 17:49
Calibration Blank	SLF0398-CCB4	XDT_m1230626-042	NA	06/26/23 17:57
Calibration Check	SLF0398-CCV5	XDT_m1230626-044	NA	06/26/23 18:09
Calibration Blank	SLF0398-CCB5	XDT_m1230626-045	NA	06/26/23 18:17
Instrument Blank	SLF0398-IBL7	XDT_m1230626-055	NA	06/26/23 19:04
Calibration Check	SLF0398-CCV6	XDT_m1230626-056	NA	06/26/23 19:08
Calibration Blank	SLF0398-CCB6	XDT_m1230626-057	NA	06/26/23 19:16
ZZZZZ	BLF0645-BLK1	XDT_m1230626-058	Solid	06/26/23 19:21
ZZZZZ	BLF0645-BS1	XDT_m1230626-059	Solid	06/26/23 19:25
ZZZZZ	BLF0645-SRL1	XDT_m1230626-060	Solid	06/26/23 19:30
ZZZZZ	23F0230-01	XDT_m1230626-061	Solid	06/26/23 19:35
ZZZZZ	23F0230-01	XDT_m1230626-061	Solid	06/26/23 19:35
ZZZZZ	23F0230-01	XDT_m1230626-061	Solid	06/26/23 19:35
ZZZZZ	23F0230-01	XDT_m1230626-061	Solid	06/26/23 19:35
ZZZZZ	BLF0645-DUP1	XDT_m1230626-062	Solid	06/26/23 19:43
ZZZZZ	BLF0645-MS1	XDT_m1230626-063	Solid	06/26/23 19:48
ZZZZZ	BLF0645-MSD1	XDT_m1230626-064	Solid	06/26/23 19:52
ZZZZZ	BLF0645-SRM1	XDT_m1230626-066	Solid	06/26/23 20:01
Instrument Blank	SLF0398-IBL8	XDT_m1230626-067	NA	06/26/23 20:05
Calibration Check	SLF0398-CCV7	XDT_m1230626-068	NA	06/26/23 20:10
Calibration Blank	SLF0398-CCB7	XDT_m1230626-069	NA	06/26/23 20:17
ZZZZZ	23F0230-02	XDT_m1230626-070	Solid	06/26/23 20:21

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLF0398
Instrument: ICPMS1
Calibration: GF00087

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23F0230-02	XDT_m1230626-070	Solid	06/26/23 20:21
ZZZZZ	23F0230-02	XDT_m1230626-070	Solid	06/26/23 20:21
ZZZZZ	23F0230-02	XDT_m1230626-070	Solid	06/26/23 20:21
ZZZZZ	23F0230-03	XDT_m1230626-071	Solid	06/26/23 20:26
ZZZZZ	23F0230-03	XDT_m1230626-071	Solid	06/26/23 20:26
ZZZZZ	23F0230-03	XDT_m1230626-071	Solid	06/26/23 20:26
ZZZZZ	23F0230-03	XDT_m1230626-071	Solid	06/26/23 20:26
ZZZZZ	23F0230-04	XDT_m1230626-072	Solid	06/26/23 20:30
ZZZZZ	23F0230-04	XDT_m1230626-072	Solid	06/26/23 20:30
ZZZZZ	23F0230-04	XDT_m1230626-072	Solid	06/26/23 20:30
ZZZZZ	23F0230-04	XDT_m1230626-072	Solid	06/26/23 20:30
ZZZZZ	23F0230-05	XDT_m1230626-073	Solid	06/26/23 20:35
ZZZZZ	23F0230-05	XDT_m1230626-073	Solid	06/26/23 20:35
ZZZZZ	23F0230-05	XDT_m1230626-073	Solid	06/26/23 20:35
ZZZZZ	23F0230-05	XDT_m1230626-073	Solid	06/26/23 20:35
ZZZZZ	23F0230-15	XDT_m1230626-074	Solid	06/26/23 20:39
ZZZZZ	23F0230-15	XDT_m1230626-074	Solid	06/26/23 20:39
ZZZZZ	23F0230-15	XDT_m1230626-074	Solid	06/26/23 20:39
ZZZZZ	23F0230-15	XDT_m1230626-074	Solid	06/26/23 20:39
ZZZZZ	23F0230-16	XDT_m1230626-075	Solid	06/26/23 20:43
ZZZZZ	23F0230-16	XDT_m1230626-075	Solid	06/26/23 20:43
ZZZZZ	23F0230-16	XDT_m1230626-075	Solid	06/26/23 20:43
ZZZZZ	23F0230-16	XDT_m1230626-075	Solid	06/26/23 20:43
ZZZZZ	23F0230-17	XDT_m1230626-076	Solid	06/26/23 20:48
ZZZZZ	23F0230-17	XDT_m1230626-076	Solid	06/26/23 20:48
ZZZZZ	23F0230-17	XDT_m1230626-076	Solid	06/26/23 20:48
ZZZZZ	23F0230-17	XDT_m1230626-076	Solid	06/26/23 20:48
ZZZZZ	23F0230-18	XDT_m1230626-077	Solid	06/26/23 20:52
ZZZZZ	23F0230-18	XDT_m1230626-077	Solid	06/26/23 20:52

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLF0398
Instrument: ICPMS1
Calibration: GF00087

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23F0230-18	XDT_m1230626-077	Solid	06/26/23 20:52
ZZZZZ	23F0230-18	XDT_m1230626-077	Solid	06/26/23 20:52
ZZZZZ	23F0230-19	XDT_m1230626-078	Solid	06/26/23 20:57
ZZZZZ	23F0230-19	XDT_m1230626-078	Solid	06/26/23 20:57
ZZZZZ	23F0230-19	XDT_m1230626-078	Solid	06/26/23 20:57
ZZZZZ	23F0230-19	XDT_m1230626-078	Solid	06/26/23 20:57
Instrument Blank	SLF0398-IBL9	XDT_m1230626-079	NA	06/26/23 21:01
Calibration Check	SLF0398-CCV8	XDT_m1230626-080	NA	06/26/23 21:05
Calibration Blank	SLF0398-CCB8	XDT_m1230626-081	NA	06/26/23 21:12
Calibration Check	SLF0398-CCV9	XDT_m1230626-083	NA	06/26/23 21:21
Calibration Blank	SLF0398-CCB9	XDT_m1230626-084	NA	06/26/23 21:28
ZZZZZ	23F0233-03	XDT_m1230626-085	Solid	06/26/23 21:33
ZZZZZ	23F0233-03	XDT_m1230626-085	Solid	06/26/23 21:33
ZZZZZ	23F0233-03	XDT_m1230626-085	Solid	06/26/23 21:33
ZZZZZ	23F0233-03	XDT_m1230626-085	Solid	06/26/23 21:33
ZZZZZ	23F0233-04	XDT_m1230626-086	Solid	06/26/23 21:37
ZZZZZ	23F0233-04	XDT_m1230626-086	Solid	06/26/23 21:37
ZZZZZ	23F0233-04	XDT_m1230626-086	Solid	06/26/23 21:37
ZZZZZ	23F0233-04	XDT_m1230626-086	Solid	06/26/23 21:37
ZZZZZ	23F0233-06	XDT_m1230626-087	Solid	06/26/23 21:42
ZZZZZ	23F0233-06	XDT_m1230626-087	Solid	06/26/23 21:42
ZZZZZ	23F0233-06	XDT_m1230626-087	Solid	06/26/23 21:42
ZZZZZ	23F0233-06	XDT_m1230626-087	Solid	06/26/23 21:42
ZZZZZ	23F0233-08	XDT_m1230626-088	Solid	06/26/23 21:46
ZZZZZ	23F0233-08	XDT_m1230626-088	Solid	06/26/23 21:46
ZZZZZ	23F0233-08	XDT_m1230626-088	Solid	06/26/23 21:46
ZZZZZ	23F0233-08	XDT_m1230626-088	Solid	06/26/23 21:46
ZZZZZ	23F0233-09	XDT_m1230626-089	Solid	06/26/23 21:50
ZZZZZ	23F0233-09	XDT_m1230626-089	Solid	06/26/23 21:50

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLF0398
Instrument: ICPMS1
Calibration: GF00087

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23F0233-09	XDT_m1230626-089	Solid	06/26/23 21:50
ZZZZZ	23F0233-09	XDT_m1230626-089	Solid	06/26/23 21:50
ZZZZZ	23F0233-10	XDT_m1230626-090	Solid	06/26/23 21:55
ZZZZZ	23F0233-10	XDT_m1230626-090	Solid	06/26/23 21:55
ZZZZZ	23F0233-10	XDT_m1230626-090	Solid	06/26/23 21:55
ZZZZZ	23F0233-10	XDT_m1230626-090	Solid	06/26/23 21:55
ZZZZZ	23F0233-13	XDT_m1230626-091	Solid	06/26/23 21:59
ZZZZZ	23F0233-13	XDT_m1230626-091	Solid	06/26/23 21:59
ZZZZZ	23F0233-13	XDT_m1230626-091	Solid	06/26/23 21:59
ZZZZZ	23F0233-13	XDT_m1230626-091	Solid	06/26/23 21:59
ZZZZZ	23F0233-14	XDT_m1230626-092	Solid	06/26/23 22:04
ZZZZZ	23F0233-14	XDT_m1230626-092	Solid	06/26/23 22:04
ZZZZZ	23F0233-14	XDT_m1230626-092	Solid	06/26/23 22:04
ZZZZZ	23F0233-14	XDT_m1230626-092	Solid	06/26/23 22:04
ZZZZZ	23F0233-15	XDT_m1230626-093	Solid	06/26/23 22:08
ZZZZZ	23F0233-15	XDT_m1230626-093	Solid	06/26/23 22:08
ZZZZZ	23F0233-15	XDT_m1230626-093	Solid	06/26/23 22:08
ZZZZZ	23F0233-15	XDT_m1230626-093	Solid	06/26/23 22:08
ZZZZZ	23F0233-16	XDT_m1230626-094	Solid	06/26/23 22:12
ZZZZZ	23F0233-16	XDT_m1230626-094	Solid	06/26/23 22:12
ZZZZZ	23F0233-16	XDT_m1230626-094	Solid	06/26/23 22:12
ZZZZZ	23F0233-16	XDT_m1230626-094	Solid	06/26/23 22:12
Calibration Check	SLF0398-CCVA	XDT_m1230626-095	NA	06/26/23 22:20
Calibration Blank	SLF0398-CCBA	XDT_m1230626-096	NA	06/26/23 22:27
LDW20-SC148A	23F0536-01	XDT_m1230626-100	Solid	06/26/23 22:45
LDW20-SC148A	23F0536-01	XDT_m1230626-100	Solid	06/26/23 22:45
LDW20-SC148A	23F0536-01	XDT_m1230626-100	Solid	06/26/23 22:45
LDW20-SC148A	23F0536-01	XDT_m1230626-100	Solid	06/26/23 22:45
LDW20-SC148A	BLF0652-DUP1	XDT_m1230626-101	Solid	06/26/23 22:50

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLF0398	Instrument:	ICPMS1
		Calibration:	GF00087

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
LDW20-SC148A	BLF0652-DUP1	XDT_m1230626-101	Solid	06/26/23 22:50
LDW20-SC148A	BLF0652-DUP1	XDT_m1230626-101	Solid	06/26/23 22:50
LDW20-SC148A	BLF0652-DUP1	XDT_m1230626-101	Solid	06/26/23 22:50
LDW20-SC148A	BLF0652-DUP1	XDT_m1230626-101	Solid	06/26/23 22:50
LDW20-SC148A	BLF0652-DUP1	XDT_m1230626-101	Solid	06/26/23 22:50
LDW20-SC148A	BLF0652-DUP1	XDT_m1230626-101	Solid	06/26/23 22:50
LDW20-SC148A	BLF0652-MS1	XDT_m1230626-102	Solid	06/26/23 22:54
LDW20-SC148A	BLF0652-MS1	XDT_m1230626-102	Solid	06/26/23 22:54
LDW20-SC148A	BLF0652-MS1	XDT_m1230626-102	Solid	06/26/23 22:54
LDW20-SC148A	BLF0652-MS1	XDT_m1230626-102	Solid	06/26/23 22:54
LDW20-SC148A	BLF0652-MS1	XDT_m1230626-102	Solid	06/26/23 22:54
LDW20-SC148A	BLF0652-MS1	XDT_m1230626-102	Solid	06/26/23 22:54
LDW20-SC148A	BLF0652-MS1	XDT_m1230626-102	Solid	06/26/23 22:54
LDW20-SC148A	BLF0652-MSD1	XDT_m1230626-103	Solid	06/26/23 22:58
LDW20-SC148A	BLF0652-MSD1	XDT_m1230626-103	Solid	06/26/23 22:58
LDW20-SC148A	BLF0652-MSD1	XDT_m1230626-103	Solid	06/26/23 22:58
LDW20-SC148A	BLF0652-MSD1	XDT_m1230626-103	Solid	06/26/23 22:58
LDW20-SC148A	BLF0652-MSD1	XDT_m1230626-103	Solid	06/26/23 22:58
LDW20-SC148A	BLF0652-MSD1	XDT_m1230626-103	Solid	06/26/23 22:58
LDW20-SC148A	BLF0652-MSD1	XDT_m1230626-103	Solid	06/26/23 22:58
Reference	BLF0652-SRM1	XDT_m1230626-105	Solid	06/26/23 23:07
Instrument Blank	SLF0398-IBLA	XDT_m1230626-106	NA	06/26/23 23:12
Calibration Check	SLF0398-CCVB	XDT_m1230626-107	NA	06/26/23 23:16
Calibration Blank	SLF0398-CCBB	XDT_m1230626-108	NA	06/26/23 23:23
Instrument Blank	SLF0398-IBLB	XDT_m1230626-118	NA	06/27/23 00:08
Calibration Check	SLF0398-CCVC	XDT_m1230626-119	NA	06/27/23 00:12
Calibration Blank	SLF0398-CCBC	XDT_m1230626-120	NA	06/27/23 00:19
Instrument Blank	SLF0398-IBLC	XDT_m1230626-130	NA	06/27/23 01:04
Calibration Check	SLF0398-CCVD	XDT_m1230626-131	NA	06/27/23 01:08

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLF0398	Instrument:	ICPMS1
		Calibration:	GF00087

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Calibration Blank	SLF0398-CCBD	XDT_m1230626-132	NA	06/27/23 01:15
Calibration Check	SLF0398-CCVE	XDT_m1230626-134	NA	06/27/23 01:24
Calibration Blank	SLF0398-CCBE	XDT_m1230626-135	NA	06/27/23 01:31
Instrument Blank	SLF0398-IBLD	XDT_m1230626-145	NA	06/27/23 02:16
Calibration Check	SLF0398-CCVF	XDT_m1230626-146	NA	06/27/23 02:20
Calibration Blank	SLF0398-CCBF	XDT_m1230626-147	NA	06/27/23 02:27
Instrument Blank	SLF0398-IBLE	XDT_m1230626-152	NA	06/27/23 02:49
Instrument Blank	SLF0398-IBLF	XDT_m1230626-157	NA	06/27/23 03:12
Calibration Check	SLF0398-CCVG	XDT_m1230626-158	NA	06/27/23 03:17
Calibration Blank	SLF0398-CCBG	XDT_m1230626-159	NA	06/27/23 03:24
Instrument Blank	SLF0398-IBLG	XDT_m1230626-163	NA	06/27/23 03:42
Calibration Check	SLF0398-CCVH	XDT_m1230626-164	NA	06/27/23 03:46
Calibration Blank	SLF0398-CCBH	XDT_m1230626-165	NA	06/27/23 03:53

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLG0051
Instrument: ICPMS2
Calibration: GG00009

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
CAL 0	SLG0051-CAL1	XDT_m2230705-006	NA	07/05/23 16:31
CAL 1 - LOW CHECK	SLG0051-CAL2	XDT_m2230705-007	NA	07/05/23 16:36
CAL 2	SLG0051-CAL3	XDT_m2230705-008	NA	07/05/23 16:41
CAL 3	SLG0051-CAL4	XDT_m2230705-009	NA	07/05/23 16:46
CAL 4	SLG0051-CAL5	XDT_m2230705-010	NA	07/05/23 16:52
CAL 5	SLG0051-CAL6	XDT_m2230705-011	NA	07/05/23 16:59
CAL 5	SLG0051-CAL6	XDT_m2230705-013	NA	07/05/23 16:59
RINSE	SLG0051-IBL1	XDT_m2230705-012	NA	07/05/23 17:06
Initial Cal Check	SLG0051-ICV1	XDT_m2230705-014	NA	07/05/23 17:14
Initial Cal Blank	SLG0051-ICB1	XDT_m2230705-015	NA	07/05/23 17:22
Calibration Check	SLG0051-CCV1	XDT_m2230705-016	NA	07/05/23 17:28
Calibration Blank	SLG0051-CCB1	XDT_m2230705-017	NA	07/05/23 17:35
Instrument RL Check	SLG0051-CRL1	XDT_m2230705-018	NA	07/05/23 17:48
Interference Check A	SLG0051-IFA1	XDT_m2230705-019	NA	07/05/23 17:54
Interference Check B	SLG0051-IFB1	XDT_m2230705-020	NA	07/05/23 17:59
LR200	SLG0051-HCV1	XDT_m2230705-021	NA	07/05/23 18:05
LR300	SLG0051-HCV2	XDT_m2230705-022	NA	07/05/23 18:10
Instrument Blank	SLG0051-IBL2	XDT_m2230705-023	NA	07/05/23 18:17
Instrument Blank	SLG0051-IBL3	XDT_m2230705-024	NA	07/05/23 18:24
Calibration Check	SLG0051-CCV2	XDT_m2230705-025	NA	07/05/23 18:30
Calibration Blank	SLG0051-CCB2	XDT_m2230705-026	NA	07/05/23 18:38
Calibration Check	SLG0051-CCV3	XDT_m2230705-028	NA	07/05/23 18:48
Calibration Blank	SLG0051-CCB3	XDT_m2230705-029	NA	07/05/23 18:56
Instrument Blank	SLG0051-IBL4	XDT_m2230705-035	NA	07/05/23 19:31
Instrument Blank	SLG0051-IBL5	XDT_m2230705-039	NA	07/05/23 19:51
Calibration Check	SLG0051-CCV4	XDT_m2230705-040	NA	07/05/23 19:56
Calibration Blank	SLG0051-CCB4	XDT_m2230705-041	NA	07/05/23 20:03
Instrument Blank	SLG0051-IBL6	XDT_m2230705-051	NA	07/05/23 20:55
Calibration Check	SLG0051-CCV5	XDT_m2230705-052	NA	07/05/23 21:00

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0051	Instrument:	ICPMS2
		Calibration:	GG00009

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Calibration Blank	SLG0051-CCB5	XDT_m2230705-053	NA	07/05/23 21:07
Calibration Check	SLG0051-CCV6	XDT_m2230705-055	NA	07/05/23 21:17
Calibration Blank	SLG0051-CCB6	XDT_m2230705-056	NA	07/05/23 21:25
ZZZZZ	BLF0840-BLK1	XDT_m2230705-057	Water	07/05/23 21:30
ZZZZZ	BLF0840-BS1	XDT_m2230705-058	Water	07/05/23 21:35
Instrument Blank	SLG0051-IBL7	XDT_m2230705-066	NA	07/05/23 22:14
Calibration Check	SLG0051-CCV7	XDT_m2230705-067	NA	07/05/23 22:19
Calibration Blank	SLG0051-CCB7	XDT_m2230705-068	NA	07/05/23 22:26
ZZZZZ	23F0365-17	XDT_m2230705-069	Water	07/05/23 22:31
ZZZZZ	23F0365-19	XDT_m2230705-070	Water	07/05/23 22:36
ZZZZZ	23F0365-19	XDT_m2230705-070	Water	07/05/23 22:36
ZZZZZ	23F0365-19	XDT_m2230705-070	Water	07/05/23 22:36
Instrument Blank	SLG0051-IBL8	XDT_m2230705-071	NA	07/05/23 22:41
Calibration Check	SLG0051-CCV8	XDT_m2230705-079	NA	07/05/23 23:22
Calibration Blank	SLG0051-CCB8	XDT_m2230705-080	NA	07/05/23 23:29
ZZZZZ	23F0390-08	XDT_m2230705-081	Water	07/05/23 23:34
ZZZZZ	23F0390-08	XDT_m2230705-081	Water	07/05/23 23:34
ZZZZZ	23F0390-08	XDT_m2230705-081	Water	07/05/23 23:34
ZZZZZ	23F0390-08	XDT_m2230705-081	Water	07/05/23 23:34
ZZZZZ	23F0390-08	XDT_m2230705-081	Water	07/05/23 23:34
ZZZZZ	23F0390-08	XDT_m2230705-081	Water	07/05/23 23:34
ZZZZZ	23F0390-08	XDT_m2230705-081	Water	07/05/23 23:34
ZZZZZ	23F0487-06	XDT_m2230705-082	Water	07/05/23 23:39
ZZZZZ	23F0487-06	XDT_m2230705-082	Water	07/05/23 23:39
ZZZZZ	23F0487-06	XDT_m2230705-082	Water	07/05/23 23:39
ZZZZZ	23F0487-06	XDT_m2230705-082	Water	07/05/23 23:39
ZZZZZ	23F0487-06	XDT_m2230705-082	Water	07/05/23 23:39
ZZZZZ	23F0487-06	XDT_m2230705-082	Water	07/05/23 23:39
ZZZZZ	23F0487-05	XDT_m2230705-083	Water	07/05/23 23:44

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0051	Instrument:	ICPMS2
		Calibration:	GG00009

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23F0487-05	XDT_m2230705-083	Water	07/05/23 23:44
ZZZZZ	23F0487-05	XDT_m2230705-083	Water	07/05/23 23:44
ZZZZZ	23F0487-05	XDT_m2230705-083	Water	07/05/23 23:44
ZZZZZ	23F0487-05	XDT_m2230705-083	Water	07/05/23 23:44
ZZZZZ	23F0487-05	XDT_m2230705-083	Water	07/05/23 23:44
Instrument Blank	SLG0051-IBL9	XDT_m2230705-089	NA	07/06/23 00:17
Instrument Blank	SLG0051-IBLA	XDT_m2230705-090	NA	07/06/23 00:21
Calibration Check	SLG0051-CCV9	XDT_m2230705-091	NA	07/06/23 00:26
Calibration Blank	SLG0051-CCB9	XDT_m2230705-092	NA	07/06/23 00:34
Instrument Blank	SLG0051-IBLB	XDT_m2230705-102	NA	07/06/23 01:23
Calibration Check	SLG0051-CCVA	XDT_m2230705-103	NA	07/06/23 01:28
Calibration Blank	SLG0051-CCBA	XDT_m2230705-104	NA	07/06/23 01:35
Calibration Check	SLG0051-CCVB	XDT_m2230705-106	NA	07/06/23 01:45
Calibration Blank	SLG0051-CCBB	XDT_m2230705-107	NA	07/06/23 01:53
ZZZZZ	23F0390-02	XDT_m2230705-112	Water	07/06/23 02:17
ZZZZZ	23F0390-02	XDT_m2230705-112	Water	07/06/23 02:17
ZZZZZ	23F0390-06	XDT_m2230705-113	Water	07/06/23 02:22
ZZZZZ	23F0390-06	XDT_m2230705-113	Water	07/06/23 02:22
ZZZZZ	23F0390-06	XDT_m2230705-113	Water	07/06/23 02:22
ZZZZZ	23F0390-06	XDT_m2230705-113	Water	07/06/23 02:22
ZZZZZ	23F0390-06	XDT_m2230705-113	Water	07/06/23 02:22
ZZZZZ	23F0390-06	XDT_m2230705-113	Water	07/06/23 02:22
ZZZZZ	23F0390-06	XDT_m2230705-113	Water	07/06/23 02:22
Instrument Blank	SLG0051-IBLC	XDT_m2230705-114	NA	07/06/23 02:27
ZZZZZ	23F0388-02	XDT_m2230705-115	Water	07/06/23 02:32
ZZZZZ	23F0388-02	XDT_m2230705-115	Water	07/06/23 02:32
ZZZZZ	23F0388-02	XDT_m2230705-115	Water	07/06/23 02:32
ZZZZZ	23F0388-05	XDT_m2230705-116	Water	07/06/23 02:38
ZZZZZ	23F0388-05	XDT_m2230705-116	Water	07/06/23 02:38

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLG0051
Instrument: ICPMS2
Calibration: GG00009

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23F0388-05	XDT_m2230705-116	Water	07/06/23 02:38
Instrument Blank	SLG0051-IBLD	XDT_m2230705-117	NA	07/06/23 02:42
Calibration Check	SLG0051-CCVC	XDT_m2230705-118	NA	07/06/23 02:47
Calibration Blank	SLG0051-CCBC	XDT_m2230705-119	NA	07/06/23 02:55
ZZZZZ	23F0487-02	XDT_m2230705-120	Water	07/06/23 03:00
ZZZZZ	23F0487-02	XDT_m2230705-120	Water	07/06/23 03:00
ZZZZZ	23F0487-02	XDT_m2230705-120	Water	07/06/23 03:00
ZZZZZ	23F0487-02	XDT_m2230705-120	Water	07/06/23 03:00
ZZZZZ	23F0487-02	XDT_m2230705-120	Water	07/06/23 03:00
ZZZZZ	23F0487-02	XDT_m2230705-120	Water	07/06/23 03:00
ZZZZZ	23F0487-04	XDT_m2230705-121	Water	07/06/23 03:05
ZZZZZ	23F0487-04	XDT_m2230705-121	Water	07/06/23 03:05
ZZZZZ	23F0487-04	XDT_m2230705-121	Water	07/06/23 03:05
ZZZZZ	23F0487-04	XDT_m2230705-121	Water	07/06/23 03:05
ZZZZZ	23F0487-04	XDT_m2230705-121	Water	07/06/23 03:05
ZZZZZ	23F0487-04	XDT_m2230705-121	Water	07/06/23 03:05
ZZZZZ	23F0487-08	XDT_m2230705-122	Water	07/06/23 03:10
ZZZZZ	23F0487-08	XDT_m2230705-122	Water	07/06/23 03:10
ZZZZZ	23F0487-08	XDT_m2230705-122	Water	07/06/23 03:10
ZZZZZ	23F0487-08	XDT_m2230705-122	Water	07/06/23 03:10
ZZZZZ	23F0487-08	XDT_m2230705-122	Water	07/06/23 03:10
ZZZZZ	23F0487-08	XDT_m2230705-122	Water	07/06/23 03:10
ZZZZZ	23F0487-03	XDT_m2230705-123	Water	07/06/23 03:16
ZZZZZ	23F0487-03	XDT_m2230705-123	Water	07/06/23 03:16
ZZZZZ	23F0487-03	XDT_m2230705-123	Water	07/06/23 03:16
ZZZZZ	23F0487-03	XDT_m2230705-123	Water	07/06/23 03:16
ZZZZZ	23F0487-03	XDT_m2230705-123	Water	07/06/23 03:16
ZZZZZ	23F0487-03	XDT_m2230705-123	Water	07/06/23 03:16
Instrument Blank	SLG0051-IBLE	XDT_m2230705-124	NA	07/06/23 03:21

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Sequence: SLG0051
SDG: 23F0536
Project: Lower Duwamish AOC4
Instrument: ICPMS2
Calibration: GG00009

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	23F0487-01	XDT_m2230705-125	Water	07/06/23 03:26
ZZZZZ	23F0487-01	XDT_m2230705-125	Water	07/06/23 03:26
ZZZZZ	23F0487-01	XDT_m2230705-125	Water	07/06/23 03:26
ZZZZZ	23F0487-01	XDT_m2230705-125	Water	07/06/23 03:26
ZZZZZ	23F0487-01	XDT_m2230705-125	Water	07/06/23 03:26
ZZZZZ	23F0487-01	XDT_m2230705-125	Water	07/06/23 03:26
ZZZZZ	BLF0840-DUP1	XDT_m2230705-126	Water	07/06/23 03:31
ZZZZZ	BLF0840-MS1	XDT_m2230705-127	Water	07/06/23 03:36
ZZZZZ	BLF0840-MSD1	XDT_m2230705-128	Water	07/06/23 03:42
Instrument Blank	SLG0051-IBLF	XDT_m2230705-129	NA	07/06/23 03:47
Calibration Check	SLG0051-CCVD	XDT_m2230705-130	NA	07/06/23 03:52
Calibration Blank	SLG0051-CCBD	XDT_m2230705-131	NA	07/06/23 04:00
ZZZZZ	23F0390-04	XDT_m2230705-132	Water	07/06/23 04:05
ZZZZZ	23F0390-04	XDT_m2230705-132	Water	07/06/23 04:05
ZZZZZ	23F0390-04	XDT_m2230705-132	Water	07/06/23 04:05
ZZZZZ	23F0390-04	XDT_m2230705-132	Water	07/06/23 04:05
ZZZZZ	23F0390-04	XDT_m2230705-132	Water	07/06/23 04:05
ZZZZZ	23F0390-04	XDT_m2230705-132	Water	07/06/23 04:05
ZZZZZ	23F0390-04	XDT_m2230705-132	Water	07/06/23 04:05
Instrument Blank	SLG0051-IBLG	XDT_m2230705-136	NA	07/06/23 04:26
ZZZZZ	23F0390-03	XDT_m2230705-137	Water	07/06/23 04:31
ZZZZZ	23F0390-03	XDT_m2230705-137	Water	07/06/23 04:31
ZZZZZ	23F0390-03	XDT_m2230705-137	Water	07/06/23 04:31
ZZZZZ	BLF0838-DUP1	XDT_m2230705-138	Water	07/06/23 04:36
ZZZZZ	BLF0838-MS1	XDT_m2230705-139	Water	07/06/23 04:41
ZZZZZ	BLF0838-MSD1	XDT_m2230705-140	Water	07/06/23 04:47
Instrument Blank	SLG0051-IBLH	XDT_m2230705-141	NA	07/06/23 04:52
Calibration Check	SLG0051-CCVE	XDT_m2230705-142	NA	07/06/23 04:57
Calibration Blank	SLG0051-CCBE	XDT_m2230705-143	NA	07/06/23 05:05

ICP INTERFERENCE CHECK SAMPLE

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: GF00087
Sequence: SLF0398
Standard ID: L006575

Lab Sample ID	Analyte	True	Found	%R	Units
SLF0398-IFA1	Arsenic-75a	0	0.0170		ug/L
	Cadmium-111	0	0.0730		ug/L
	Cadmium-114	0	0.0750		ug/L
	Copper-63	0	0.0230		ug/L
	Copper-65	0	0.0170		ug/L
	Zinc-66	0	0.2470		ug/L
	Zinc-67	0	0.2740		ug/L

* Indicates %R outside of QC limits

NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.

ICP INTERFERENCE CHECK SAMPLE

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: GF00087
Sequence: SLF0398
Standard ID: L006575

Lab Sample ID	Analyte	True	Found	%R	Units
SLF0398-IFB1	Arsenic-75a	20.000	19.590	98.0	ug/L
	Cadmium-111	20.000	19.496	97.5	ug/L
	Cadmium-114	20.000	19.647	98.2	ug/L
	Copper-63	20.000	19.541	97.7	ug/L
	Copper-65	20.000	19.808	99.0	ug/L
	Zinc-66	20.000	18.743	93.7	ug/L
	Zinc-67	20.000	16.450	82.3	ug/L

* Indicates %R outside of QC limits
NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.

ICP INTERFERENCE CHECK SAMPLE

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS2
Calibration: GG00009
Sequence: SLG0051
Standard ID: L007219

Lab Sample ID	Analyte	True	Found	%R	Units
SLG0051-IFA1	Arsenic-75a	0	0.0670		ug/L
	Cadmium-111	0	0.0830		ug/L
	Cadmium-114	0	0.0700		ug/L
	Copper-63	0	-0.0130		ug/L
	Copper-65	0	-0.0110		ug/L
	Zinc-66	0	0.3150		ug/L
	Zinc-67	0	0.3540		ug/L

* Indicates %R outside of QC limits

NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.

Analytical Resources, LLC
Analytical Chemists and Consultants

ICP INTERFERENCE CHECK SAMPLE

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS2
Calibration: GG00009
Sequence: SLG0051
Standard ID: L007219

Lab Sample ID	Analyte	True	Found	%R	Units
SLG0051-IFB1	Arsenic-75a	20.000	18.862	94.3	ug/L
	Cadmium-111	20.000	18.610	93.1	ug/L
	Cadmium-114	20.000	18.830	94.2	ug/L
	Copper-63	20.000	19.045	95.2	ug/L
	Copper-65	20.000	19.423	97.1	ug/L
	Zinc-66	20.000	18.057	90.3	ug/L
	Zinc-67	20.000	17.381	86.9	ug/L

* Indicates %R outside of QC limits
NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.

DETECTION LEVEL STANDARD
EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS1
Calibration: GF00087
Sequence: SLF0398
Lab Sample ID: SLF0398-CRL1

Analyte	True	Found	%R	Units	QC Limts
Arsenic-75a	0.20000	0.207	104	ug/L	50 - 150
Cadmium-111	0.10000	0.120	120	ug/L	50 - 150
Cadmium-114	0.10000	0.113	113	ug/L	50 - 150
Copper-63	0.50000	0.480	96.0	ug/L	50 - 150
Copper-65	0.50000	0.507	101	ug/L	50 - 150
Zinc-66	6.0000	5.82	97.0	ug/L	50 - 150
Zinc-67	6.0000	5.31	88.5	ug/L	50 - 150

* Values outside of QC limits

DETECTION LEVEL STANDARD
EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: ICPMS2
Calibration: GG00009
Sequence: SLG0051
Lab Sample ID: SLG0051-CRL1

Analyte	True	Found	%R	Units	QC Limts
Arsenic-75a	0.20000	0.232	116	ug/L	50 - 150
Cadmium-111	0.10000	0.118	118	ug/L	50 - 150
Cadmium-114	0.10000	0.103	103	ug/L	50 - 150
Copper-63	0.50000	0.401	80.2	ug/L	50 - 150
Copper-65	0.50000	0.420	84.0	ug/L	50 - 150
Zinc-66	6.0000	6.20	103	ug/L	50 - 150
Zinc-67	6.0000	5.69	94.8	ug/L	50 - 150

* Values outside of QC limits

HIGH-CONCENTRATION CALIBRATION VERIFICATION

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GF00087
Laboratory ID: SLF0398-HCV1
Sequence: SLF0398
Standard ID: L006960

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Arsenic-75a	200.00	203	1.3	10.00
Cadmium-111	200.00	192	-3.8	10.00
Cadmium-114	200.00	192	-3.9	10.00
Copper-63	200.00	197	-1.4	10.00
Copper-65	200.00	198	-0.9	10.00
Zinc-66	200.00	196	-2.2	10.00
Zinc-67	200.00	196	-1.9	10.00

* Values outside of QC limits

HIGH-CONCENTRATION CALIBRATION VERIFICATION

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GF00087
Laboratory ID: SLF0398-HCV2
Sequence: SLF0398
Standard ID: L006577

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Arsenic-75a	300.00	305	1.6	10.00
Cadmium-111	300.00	294	-2.0	10.00
Cadmium-114	300.00	292	-2.5	10.00
Copper-63	300.00	288	-3.9	10.00
Copper-65	300.00	291	-3.1	10.00
Zinc-66	300.00	280	-6.7	10.00
Zinc-67	300.00	282	-6.1	10.00

* Values outside of QC limits

HIGH-CONCENTRATION CALIBRATION VERIFICATION

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GG00009
Laboratory ID: SLG0051-HCV1
Sequence: SLG0051
Standard ID: L006960

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Arsenic-75a	200.00	191	-4.6	10.00
Cadmium-111	200.00	191	-4.3	10.00
Cadmium-114	200.00	195	-2.4	10.00
Copper-63	200.00	189	-5.3	10.00
Copper-65	200.00	192	-3.8	10.00
Zinc-66	200.00	193	-3.4	10.00
Zinc-67	200.00	193	-3.4	10.00

* Values outside of QC limits

HIGH-CONCENTRATION CALIBRATION VERIFICATION

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GG00009
Laboratory ID: SLG0051-HCV2
Sequence: SLG0051
Standard ID: L007306

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Arsenic-75a	300.00	288	-3.8	10.00
Cadmium-111	300.00	277	-7.6	10.00
Cadmium-114	300.00	279	-7.1	10.00
Copper-63	300.00	279	-6.9	10.00
Copper-65	300.00	285	-4.8	10.00
Zinc-66	300.00	274	-8.6	10.00
Zinc-67	300.00	275	-8.4	10.00

* Values outside of QC limits

HOLDING TIME SUMMARY

Analysis: EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW20-SC148A 23F0536-01	06/08/20 08:41	06/22/23 14:10	06/22/23 15:57	1,109	730	06/26/23 22:45	1,114	730	*
Duplicate BLF0652-DUP1	06/08/20 08:41	06/22/23 14:10	06/22/23 15:57	1,109	730	06/26/23 22:50	1,114	730	*
Matrix Spike BLF0652-MS1	06/08/20 08:41	06/22/23 14:10	06/22/23 15:57	1,109	730	06/26/23 22:54	1,114	730	*
Matrix Spike Dup BLF0652-MSD1	06/08/20 08:41	06/22/23 14:10	06/22/23 15:57	1,109	730	06/26/23 22:58	1,114	730	*

* Indicates hold time exceedance.

METHOD DETECTION AND REPORTING LIMITS

EPA 6020B UCT-KED

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Instrument: ICPMS1

Analyte	MDL	RL	Units
Arsenic-75a	0.04	0.20	mg/kg
Cadmium-111	0.03	0.10	mg/kg
Cadmium-114	0.04	0.10	mg/kg
Copper-63	0.17	0.50	mg/kg
Copper-65	0.35	0.50	mg/kg
Zinc-66	2.9	6.0	mg/kg
Zinc-67	0.9	6.0	mg/kg

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCU10
Lot Number:	P2-CU682108
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Copper
Starting Material:	Cu Metal
Starting Material Lot#:	2095
Starting Material Purity:	99.9996%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10013 ± 30 µg/mL

Density: 1.032 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9977 ± 50 µg/mL**
ICP Assay NIST SRM 3114 Lot Number: 121207

Assay Method #2 **10024 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10007 ± 46 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.007542	M	Eu	<	0.000942	O	Na		0.001434	M	Se	<	0.016971	M	Zn	<	0.005657
O	Al	<	0.000609	O	Fe		0.008700	M	Nb	<	0.000942	O	Si		0.003052	M	Zr	<	0.000942
M	As	<	0.010371	M	Ga	<	0.000942	M	Nd	<	0.000942	M	Sm	<	0.000942				
M	Au	<	0.001885	M	Gd	<	0.000942	M	Ni		0.003781	M	Sn	<	0.005657				
O	B		0.003663	M	Ge	<	0.005657	M	Os	<	0.000942	M	Sr	<	0.000942				
M	Ba		0.004253	M	Hf	<	0.000942	O	P	<	0.031668	M	Ta	<	0.000942				
M	Be	<	0.000942	O	Hg	<	0.007064	M	Pb		0.005789	M	Tb	<	0.000942				
M	Bi	<	0.000942	M	Ho	<	0.000942	M	Pd	<	0.000942	M	Te	<	0.004714				
O	Ca		0.002304	M	In	<	0.000942	M	Pr	<	0.000942	M	Th	<	0.000942				
M	Cd	<	0.000942	M	Ir	<	0.000942	M	Pt	<	0.000942	O	Ti	<	0.002801				
M	Ce	<	0.000942	O	K		0.000763	M	Rb	<	0.000942	M	Tl	<	0.000942				
M	Co		0.001890	M	La	<	0.000942	M	Re	<	0.000942	M	Tm	<	0.000942				
M	Cr	<	0.005657	O	Li	<	0.000243	i	Rh	<		M	U	<	0.000942				
M	Cs	<	0.000942	M	Lu	<	0.000942	M	Ru	<	0.039588	M	V	<	0.003771				
s	Cu	<		O	Mg		0.000320	O	S		0.007174	M	W	<	0.005657				
M	Dy	<	0.000942	O	Mn		0.000793	M	Sb	<	0.001885	M	Y	<	0.000942				
M	Er	<	0.000942	M	Mo	<	0.005657	M	Sc	<	0.000942	M	Yb	<	0.000942				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 63.55 +2 6 $Cu(H_2O)_6^{2+}$

Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4, HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Cu Containing Samples (Preparation and Solution) -Metal (soluble in HNO_3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO_3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 63 amu	10 ppt	n/a	40Ar23Na 47Ti16O, 14N12C37Cl, 16O12C35Cl, 23Na40Ca
ICP-OES 219.958 nm	0.01/.002 µg/mL	1	Th, Ta, Nb, U, Hf
ICP-OES 224.700 nm	0.01/.001 µg/mL	1	Pb, Ir, Ni, W
ICP-OES 324.754 nm	0.06/.001 µg/mL		Nb, U, Th, Mo, Hf

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 24, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **August 24, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

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Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGPB10
Lot Number:	S2-PB713228
Matrix:	0.5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Lead
Starting Material:	Lead Nitrate
Starting Material Lot#:	2343
Starting Material Purity:	99.9995%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10042 ± 31 µg/mL

Density: 1.015 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10024 ± 41 µg/mL**
ICP Assay NIST SRM 3128 Lot Number: 101026

Assay Method #2 **10054 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000310	M	Eu	<	0.000310	M	Na		0.001470	M	Se	<	0.009100	O	Zn	0.006155
O	Al		0.017098	O	Fe		0.002496	M	Nb	<	0.000310	O	Si		0.003761	O	Zr	< 0.001700
M	As	<	0.003100	M	Ga	<	0.000310	M	Nd	<	0.000310	M	Sm	<	0.000310			
M	Au	<	0.000910	M	Gd	<	0.000310	O	Ni		0.001709	M	Sn	<	0.001300			
O	B	<	0.005600	M	Ge	<	0.002200	M	Os	<	0.000310	O	Sr		0.000444			
O	Ba		0.007865	M	Hf	<	0.000310	O	P	<	0.038000	M	Ta	<	0.000310			
O	Be	<	0.000320	M	Hg	<	0.002200	s	Pb	<		M	Tb	<	0.000610			
M	Bi	<	0.028000	M	Ho	<	0.000310	M	Pd	<	0.000610	M	Te	<	0.000310			
O	Ca		0.019834	M	In	<	0.000310	M	Pr	<	0.000310	M	Th	<	0.000310			
O	Cd	<	0.000630	M	Ir	<	0.000310	M	Pt	<	0.000910	O	Ti		0.005129			
M	Ce		0.004787	O	K		0.008207	M	Rb	<	0.006700	M	Tl	<	0.016000			
M	Co	<	0.000610	M	La	<	0.001900	M	Re	<	0.000310	M	Tm	<	0.000310			
O	Cr	<	0.001500	O	Li	<	0.000110	O	Rh	<	0.007700	M	U	<	0.000310			
M	Cs	<	0.006100	M	Lu	<	0.000310	M	Ru	<	0.001300	M	V	<	0.001600			
M	Cu	<	0.001600	O	Mg		0.003317	O	S	<	0.052000	M	W	<	0.000910			
M	Dy	<	0.000310	O	Mn	<	0.001600	O	Sb	<	0.015000	M	Y	<	0.000310			
M	Er	<	0.000310	M	Mo	<	0.000610	O	Sc	<	0.000630	M	Yb	<	0.000310			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 207.20 +2 6 $Pb(H_2O)_6^{+2}$

Chemical Compatibility - Soluble in HCl, HF and HNO_3. Avoid H_2SO_4. Stable with most metals and inorganic anions forming insoluble carbonate, borate, sulfate, sulfite, sulfide, phosphate, oxalate, chromate, tannate, iodate, and cyanide in neutral aqueous media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO_3 / LDPE container.

Pb Containing Samples (Preparation and Solution) -Metal (Best dissolved in 1:1 H_2O / HNO_3); Oxides (The many different Pb oxides are soluble in HNO_3 with the exception of PbO_2 which is soluble in HCl or HF); Ores and Alloys (Best attacked using 1:1 H_2O / HNO_3); Organic Matrices (Dry ash and dissolve in dilute HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 208 amu	5 ppt	n/a	192Pt16O, 192Os16O
ICP-OES 168.215 nm	0.03 / 0.003 µg/mL	1	Co
ICP-OES 217.000 nm	0.09 / 0.03 µg/mL	1	W, Ir, Hf, Sb, Th
ICP-OES 220.353 nm	0.04 / 0.006 µg/mL	1	Bi, Nb

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 10, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **January 10, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

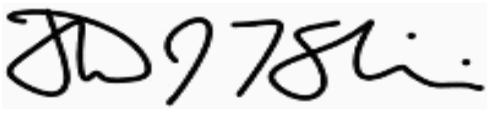
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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Certificate of Analysis

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F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGZN10
Lot Number:	S2-ZN711249
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Zinc
Starting Material:	Zinc Metal
Starting Material Lot#:	2349
Starting Material Purity:	99.9988%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9992 ± 30 µg/mL

Density: 1.029 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9981 ± 56 µg/mL**
ICP Assay NIST SRM 3168a Lot Number: 120629

Assay Method #2 **9987 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10002 ± 32 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.002000	M	Eu	<	0.000500	O	Na		0.008713	M	Se	<	0.048000	s	Zn	<	
O	Al	<	0.011000	O	Fe		0.015467	M	Nb	<	0.000500	O	Si		0.007842	M	Zr	<	0.000500
O	As	<	0.012000	M	Ga	<	0.004900	M	Nd	<	0.000500	M	Sm	<	0.000500				
M	Au	<	0.006500	M	Gd	<	0.000500	O	Ni		0.003049	M	Sn		0.002614				
O	B	<	0.019000	M	Ge	<	0.009100	M	Os	<	0.000500	M	Sr	<	0.000500				
M	Ba	<	0.000500	M	Hf	<	0.000500	O	P	<	0.059000	M	Ta	<	0.000500				
O	Be	<	0.000230	O	Hg	<	0.003800	M	Pb		0.016774	M	Tb	<	0.000500				
M	Bi	<	0.002400	M	Ho	<	0.000500	M	Pd	<	0.001000	M	Te	<	0.017000				
O	Ca		0.052283	M	In	<	0.003500	M	Pr	<	0.000500	M	Th	<	0.000500				
O	Cd		0.000588	M	Ir	<	0.001000	M	Pt	<	0.000500	M	Ti	<	0.002000				
M	Ce	<	0.000500	O	K		0.017209	M	Rb	<	0.002500	M	Tl	<	0.000500				
M	Co		0.000653	M	La	<	0.000500	M	Re	<	0.000500	M	Tm	<	0.000500				
O	Cr		0.001089	O	Li	<	0.000230	M	Rh	<	0.000500	M	U	<	0.000500				
M	Cs	<	0.000500	M	Lu	<	0.000500	M	Ru	<	0.005000	M	V	<	0.000500				
O	Cu		0.001938	O	Mg		0.000871	O	S	<	0.048000	M	W	<	0.001000				
M	Dy	<	0.000500	O	Mn		0.000172	M	Sb	<	0.004300	M	Y	<	0.000500				
M	Er	<	0.000500	M	Mo	<	0.001500	O	Sc	<	0.000900	M	Yb	<	0.000500				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 65.39 +2 4 Zn(OH)(aq)1+
Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media forming insoluble carbonate and hydroxide. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Zn Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3); Organic based (dry ash at 4500C and dissolve ash in HCl) (sulfuric/peroxide acid digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 66 amu	7 ppt	N/A	50Ti16O,50Cr16O, 50V16O, 34S16O2, 32S16O18O, 32S17O2, 33S16O17O, 32S34S, 33S2
ICP-OES 202.548 nm	0.004/0.0002 µg/mL	1	Nb, Cu, Co, Hf
ICP-OES 206.200 nm	0.006/0.0006 µg/mL	1	Sb, Ta, Bi, Os
ICP-OES 213.856 nm	0.002/0.0004 µg/mL	1	Ni, Cu, V

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 22, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **November 22, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

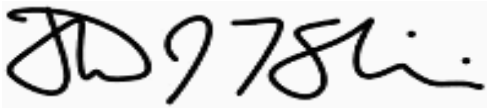
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSE10
Lot Number:	S2-SE711004
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Selenium
Starting Material:	Se Metal
Starting Material Lot#:	1962
Starting Material Purity:	99.9991%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9955 ± 61 µg/mL

Density: 1.035 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9955 ± 50 µg/mL**
ICP Assay NIST SRM 3149 Lot Number: 100901

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.002242	M	Eu	<	0.000373	O	Na		0.013654	s	Se	<		O	Zn		0.002374
M	Al		0.004450	M	Fe		0.008478	O	Nb	<	0.002975	O	Si		0.006249	M	Zr	<	0.001868
O	As	<	0.022040	M	Ga	<	0.000373	M	Nd	<	0.000373	M	Sm	<	0.000373				
M	Au	<	0.000373	M	Gd	<	0.000373	O	Ni		0.001843	M	Sn		0.000847				
O	B	<	0.007714	M	Ge	<	0.002616	M	Os	<	0.000373	M	Sr	<	0.001121				
M	Ba	<	0.001495	M	Hf	<	0.000373	O	P	<	0.022040	M	Ta	<	0.000373				
M	Be	<	0.001495	M	Hg	<	0.002240	M	Pb		0.006358	M	Tb	<	0.006353				
M	Bi	<	0.000373	M	Ho	<	0.000373	M	Pd	<	0.000373	M	Te	<	0.012707				
O	Ca		0.006530	M	In	<	0.000373	M	Pr	<	0.001495	M	Th	<	0.002990				
M	Cd		0.001165	M	Ir	<	0.000373	M	Pt	<	0.000373	M	Ti	<	0.003363				
M	Ce	<	0.000373	O	K		0.001999	M	Rb	<	0.001868	M	Tl		0.008584				
M	Co	<	0.000373	M	La	<	0.001121	M	Re	<	0.000373	M	Tm	<	0.000373				
M	Cr		0.002861	O	Li		0.000062	M	Rh	<	0.000373	M	U	<	0.000373				
M	Cs	<	0.001121	M	Lu	<	0.000373	M	Ru	<	0.001493	M	V	<	0.000747				
M	Cu	<	0.000747	O	Mg		0.001156	O	S		0.024591	M	W	<	0.002242				
M	Dy	<	0.000373	M	Mn	<	0.000373	M	Sb	<	0.002242	M	Y	<	0.000373				
M	Er	<	0.000373	O	Mo	<	0.003195	M	Sc	<	0.001121	M	Yb	<	0.000373				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 78.96 +4 6 H_2SeO_3

Chemical Compatibility -Soluble in HCl, HNO_3,H_3PO_4, H_2SO_4 and HF aqueous matrices and water. It is stable with most inorganic anions but many cationic metals form the insoluble selenites under pH neutral conditions. When fluorinated and/or under acidic conditions precipitation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Se Containing Samples (Preparation and Solution) -Metal (soluble in HNO_3); Oxides (readily soluble in water); Minerals and alloys (acid digestion with HNO_3or HNO_3 / HF); Organic Matrices (acid digestion with hot concentrated H_2SO_4 accompanied by the careful dropwise addition of H_2O_2 until clear).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 82 amu	200 ppt	N/A	12C35Cl2
ICP-OES 196.026 nm	0.08/0.006 µg/mL	1	Fe
ICP-OES 203.985 nm	0.2/0.05 µg/mL	1	Sb, Ir, Cr, Ta
ICP-OES 206.279 nm	0.3/0.16 µg/mL	1	Cr, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 17, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **November 17, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Supervisor, Product Documentation

Certificate Approved By:

Michael Booth
Director, Technical

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMO10
Lot Number:	S2-MO706255
Matrix:	H2O tr. NH4OH
Value / Analyte(s):	10 000 µg/mL ea: Molybdenum
Starting Material:	Ammonium Molybdate
Starting Material Lot#:	2361
Starting Material Purity:	99.9893%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10026 ± 47 µg/mL

Density: 1.011 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10032 ± 68 µg/mL**
ICP Assay NIST SRM 3134 Lot Number: 130418

Assay Method #2 **10020 ± 65 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000590	M	Eu	<	0.000300	M	Na		0.008739	M	Se	<	0.008000	M	Zn		0.005942
M	Al		0.005592	M	Fe	<	0.006500	M	Nb	<	0.029000	i	Si	<		M	Zr	<	0.001800
M	As	<	0.002100	M	Ga	<	0.000300	i	Nd	<		M	Sm	<	0.000300				
M	Au	<	0.000300	M	Gd	<	0.000300	M	Ni	<	0.008000	M	Sn	<	0.008900				
M	B	<	0.003300	M	Ge	<	0.000300	M	Os	<	0.000590	M	Sr		0.001747				
M	Ba		0.016778	M	Hf	<	0.001800	i	P	<		M	Ta	<	0.004200				
M	Be	<	0.000890	M	Hg	<	0.003300	M	Pb	<	0.000300	M	Tb	<	0.000300				
M	Bi	<	0.000890	M	Ho	<	0.000300	M	Pd	<	0.001800	M	Te	<	0.021000				
O	Ca		0.062920	M	In	<	0.032000	M	Pr	<	0.013000	M	Th	<	0.000300				
O	Cd	<	0.026000	M	Ir	<	0.000300	M	Pt	<	0.000300	O	Ti	<	0.032000				
M	Ce	<	0.008300	M	K		1.293372	M	Rb		0.045442	M	Tl		0.012584				
M	Co		0.005942	M	La	<	0.000300	M	Re	<	0.000300	M	Tm	<	0.000300				
M	Cr		0.005243	O	Li		0.000594	M	Rh	<	0.000300	M	U	<	0.005300				
M	Cs		0.005243	M	Lu	<	0.000300	M	Ru	<	0.079000	M	V	<	0.000890				
M	Cu		0.022371	M	Mg		0.005592	i	S	<		M	W		0.873900				
M	Dy	<	0.000300	M	Mn	<	0.005900	M	Sb		0.015031	M	Y	<	0.000300				
M	Er	<	0.000300	s	Mo	<		M	Sc	<	0.001200	M	Yb	<	0.000300				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 95.94 +6 6,7,8,9 [MoO4]-2(chemical form as received)

Chemical Compatibility -Mo is received in a NH4OH matrix giving the operator the option of using HCl or HF to stabilize acidic solutions. The [MoO4]-2 is soluble in concentrated HCl [MoOCl5]-2, dilute HF / HNO3 [MoOF5]-2 and basic media [MoO4]-2. Stable at ppm levels with some metals provided it is fluorinated. Do not mix with Alkaline or Rare Earths when HF is present. Stable with most inorganic anions provided it is in the [MoO4]-2 chemical form.

Stability - 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the [MoOF5]-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the [MoO4]-2 chemically stable for years in 1% NH4OH in a LDPE container.

Mo Containing Samples (Preparation and Solution) -Metal (Soluble in HF / HNO3 or hot dilute HCl); Oxide (soluble in HF or NH4OH) ; Organic Matrices (Dry ash at 450EC in Pt0 and dissolve oxide with HF or HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 95 amu	3 ppt	n/a	40Ar39K16O,79Br16O,190Os2+,190Pt2+
ICP-OES 202.030 nm	0.008 / 0.0002 µg/mL	1	Os, Hf
ICP-OES 203.844 nm	0.012 / 0.002 µg/mL	1	
ICP-OES 204.598 nm	0.012 / 0.001 µg/mL	1	Ir, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 04, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **July 04, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

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F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGTL10
Lot Number:	T2-TL714687
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Thallium
Starting Material:	TlNO3
Starting Material Lot#:	2118
Starting Material Purity:	99.9998%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10030 ± 42 µg/mL

Density: 1.036 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10040 ± 43 µg/mL**
ICP Assay NIST SRM 3158 Lot Number: 151215

Assay Method #2 **10010 ± 65 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL(

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000200	M	Eu	<	0.000200	O	Na		0.002489	M	Se	<	0.011019	O	Zn		0.002298
O	Al	<	0.004184	O	Fe	<	0.002824	M	Nb	<	0.000200	O	Si		0.003760	M	Zr	<	0.000200
M	As	<	0.002003	M	Ga	<	0.000200	M	Nd	<	0.000200	M	Sm	<	0.000200				
O	Au	<	0.002824	M	Gd	<	0.000200	M	Ni		0.001724	M	Sn	<	0.000601				
O	B	<	0.004184	M	Ge	<	0.000801	M	Os	<	0.000198	O	Sr	<	0.000313				
M	Ba	<	0.000400	M	Hf	<	0.000200	O	P	<	0.010460	M	Ta	<	0.000200				
O	Be	<	0.000104	M	Hg	<	0.000794	M	Pb		0.000811	M	Tb	<	0.000200				
M	Bi	<	0.005209	M	Ho	<	0.000200	M	Pd	<	0.000400	M	Te	<	0.005008				
O	Ca		0.002436	M	In	<	0.000200	M	Pr	<	0.000200	M	Th	<	0.000200				
M	Cd		0.001318	M	Ir	<	0.000198	M	Pt	<	0.000801	O	Ti	<	0.001255				
M	Ce	<	0.000200	O	K		0.006175	M	Rb	<	0.000200	s	Tl	<					
M	Co	<	0.000601	M	La	<	0.000200	M	Re	<	0.000200	M	Tm	<	0.000200				
M	Cr	<	0.000801	O	Li	<	0.000177	M	Rh	<	0.000200	M	U	<	0.000200				
M	Cs	<	0.003606	M	Lu	<	0.000200	M	Ru	<	0.000397	M	V	<	0.002203				
M	Cu	<	0.001001	O	Mg		0.000529	O	S	<	0.015690	M	W	<	0.000601				
M	Dy	<	0.000200	M	Mn	<	0.000801	M	Sb	<	0.000400	M	Y	<	0.000200				
M	Er	<	0.000200	M	Mo	<	0.001202	O	Sc	<	0.000711	M	Yb	<	0.000200				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 204.38 +1 6 Tl(H2O)61+
Chemical Compatibility - Soluble in HCl, HNO3, and H2SO4. Stable with most metals and inorganic anions. The sulfite, thiocyanate and oxalate are moderately soluble; the phosphate and arsenite are slightly soluble and the sulfide is insoluble.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.
Tl Containing Samples)Preparation and Solution) -Metal (Best dissolved in HNO3 which forms chiefly the Tl1+ ion.); Oxide (The thallous oxide is readily soluble in water. The thallic oxide requires high levels of acid); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 205 amu	2 ppt	N/A	189Os16O
ICP-OES 190.864 nm	0.04 / 0.004 µg/mL	1	V, Ti
ICP-OES 276.787 nm	0.1 / 0.01 µg/mL	1	Ta, V, Fe, Cr
ICP-OES 351.924 nm	0.2 / 0.02 µg/mL	1	Th, Ce, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 08, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **February 08, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

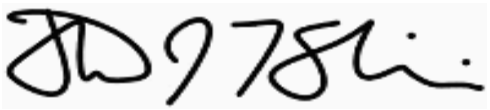
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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1.0 ACCREDITATION / REGISTRATION

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCD10
Lot Number:	S2-CD710508
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Cadmium
Starting Material:	Cd Metal
Starting Material Lot#:	1953
Starting Material Purity:	99.9995%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10008 ± 30 µg/mL

Density: 1.029 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10010 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **10011 ± 30 µg/mL**
ICP Assay NIST SRM 3108 Lot Number: 130116

Assay Method #3 **10003 ± 30 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Ag	<	0.003200	O	Eu	<	0.002500	O	Na		0.005499	M	Se	<	0.005700	O	Zn	<	0.001100
O	Al		0.008903	O	Fe		0.000602	M	Nb	<	0.000400	O	Si		0.016758	O	Zr	<	0.002600
M	As	<	0.003600	M	Ga	<	0.001200	M	Nd	<	0.000800	M	Sm	<	0.000400				
M	Au	<	0.000810	M	Gd	<	0.000400	M	Ni	<	0.003600	M	Sn	<	0.003200				
O	B		0.004189	O	Ge	<	0.012000	M	Os	<	0.000810	O	Sr	<	0.000330				
M	Ba	<	0.002400	M	Hf	<	0.000400	O	P	<	0.022000	M	Ta	<	0.000800				
M	Be	<	0.000400	M	Hg	<	0.001700	M	Pb	<	0.002400	M	Tb	<	0.000400				
M	Bi	<	0.000400	M	Ho	<	0.000400	M	Pd	<	0.001200	M	Te	<	0.008000				
O	Ca		0.011259	O	In	<	0.013000	M	Pr	<	0.000400	M	Th	<	0.000400				
s	Cd	<		M	Ir	<	0.000410	M	Pt	<	0.000400	O	Ti		0.000602				
M	Ce	<	0.000400	O	K		0.005237	M	Rb	<	0.004400	M	Tl		0.000523				
M	Co	<	0.000400	M	La	<	0.000400	M	Re	<	0.000400	M	Tm	<	0.000400				
O	Cr	<	0.005100	O	Li	<	0.000054	M	Rh	<	0.000400	M	U	<	0.000400				
M	Cs	<	0.002400	M	Lu	<	0.000400	M	Ru	<	0.002500	M	V	<	0.002000				
O	Cu	<	0.004800	O	Mg		0.000288	O	S	<	0.022000	M	W	<	0.000400				
M	Dy	<	0.000400	O	Mn	<	0.000860	O	Sb	<	0.018000	M	Y	<	0.000400				
M	Er	<	0.000400	M	Mo	<	0.001600	O	Sc	<	0.000430	M	Yb	<	0.000400				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 112.41 +2 4 Cd2(OH) (aq)3+ and Cd(OH)(aq)

Chemical Compatibility -Stable in HCl, HNO3, H2SO4 , and HF. Avoid basic media forming insoluble carbonate and hydroxide.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO3 / LDPE container.

Cd Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (soluble in HCl or HNO3); Ores (dissolve in HCl /HNO3 then take to fumes with H2SO4. The silica and lead sulfate are filtered off after the addition of water); Organic based (dry ash at 450°C and dissolve ash in HCl), (sulfuric / peroxide acid digestion).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 111 amu	11 ppt	n/a	95Mo16O
ICP-OES 214.438 nm	0.003 / 0.0003 µg/mL	1	Pt, Ir
ICP-OES 226.502 nm	0.003 / 0.0003 µg/mL	1	Ir
ICP-OES 228.802 nm	0.003 / 0.0003 µg/mL	1	Co, Ir, As, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 01, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **November 01, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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Certificate of Analysis

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1.0 ACCREDITATION / REGISTRATION

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMN10
Lot Number:	S2-MN704240
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Manganese
Starting Material:	Mn Metal
Starting Material Lot#:	2275
Starting Material Purity:	99.9909%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10011 ± 30 µg/mL

Density: 1.035 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9989 ± 69 µg/mL**
ICP Assay NIST SRM 3132 Lot Number: 050429

Assay Method #2 **10011 ± 25 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10024 ± 47 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001500	M	Eu	<	0.000730	O	Na		0.176097	M	Se	<	0.006600	M	Zn		0.009925
O	Al		0.004322	M	Fe	<	0.650000	M	Nb	<	0.000730	O	Si		0.097654	M	Zr	<	0.000730
M	As	<	0.008000	M	Ga		0.004322	M	Nd	<	0.001500	M	Sm	<	0.000730				
M	Au	<	0.000730	M	Gd	<	0.000730	M	Ni		0.024013	M	Sn	<	0.002200				
M	B		0.068838	M	Ge	<	0.004400	M	Os	<	0.000730	O	Sr		0.000928				
M	Ba	<	0.001500	M	Hf	<	0.000730	i	P	<		M	Ta	<	0.000730				
M	Be	<	0.000730	M	Hg	<	0.002200	M	Pb		0.007364	M	Tb	<	0.000730				
M	Bi	<	0.003000	M	Ho	<	0.000730	M	Pd	<	0.000730	M	Te	<	0.019000				
O	Ca		0.062434	M	In	<	0.003000	M	Pr	<	0.000730	M	Th	<	0.000730				
M	Cd	<	0.001500	M	Ir	<	0.000730	M	Pt	<	0.000730	O	Ti	<	0.006500				
M	Ce	<	0.007300	O	K		0.006403	M	Rb	<	0.006600	M	Tl	<	0.000730				
O	Co		0.014728	M	La	<	0.003000	M	Re	<	0.000730	M	Tm	<	0.000730				
O	Cr		0.272151	O	Li		0.000416	M	Rh	<	0.003000	M	U	<	0.001500				
M	Cs	<	0.000730	M	Lu	<	0.000730	M	Ru	<	0.004400	M	V	<	0.000730				
O	Cu		0.007684	O	Mg		0.320177	i	S	<		M	W	<	0.004400				
M	Dy	<	0.001500	s	Mn	<		M	Sb	<	0.021000	O	Y		0.001360				
M	Er	<	0.001500	M	Mo		0.010245	O	Sc	<	0.004100	M	Yb	<	0.000730				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 54.94 +2 6 $Mn(H_2O)_6^{2+}$

Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO_3/LDPE container.

Mn Containing Samples (Preparation and Solution) -Metal (Soluble in dilute acids); Oxides (Soluble in dilute acids); Ores (Dissolve with HCl. If silica is present add HF and then fume off silica by adding H_2SO_4 and heat to SO_3 fumes - dense white fumes).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 55 amu	10 ppt	n/a	40Ar14N1H,39K16O,37Cl18O,40Ar15N,38Ar17O,36Ar18O1H ,38Ar16O1H,37Cl17O1H,23Na32S
ICP-OES 257.610 nm	0.0014 / 0.00002 µg/mL	1	Ce, W, Re
ICP-OES 259.373 nm	0.0016 / 0.00002 µg/mL	1	U, Ta, Mo, Fe, Nb
ICP-OES 260.569 nm	0.0021 / 0.00002 µg/mL	1	Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 17, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 17, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSB10
Lot Number:	R2-SB688559
Matrix:	3% (v/v) HNO3 3% (w/v) tartaric acid
Value / Analyte(s):	10 000 µg/mL ea: Antimony
Starting Material:	Antimony Metal
Starting Material Lot#:	1857
Starting Material Purity:	99.9894%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10003 ± 47 µg/mL

Density: 1.061 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10003 ± 41 µg/mL**
ICP Assay NIST SRM 3102a Lot Number: 140911

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000200	M	Eu	<	0.000300	O	Na		0.140000	M	Se	<	0.007300	O	Zn		0.005000
M	Al		0.003200	O	Fe		0.060000	M	Nb	<	0.000100	O	Si		0.150000	O	Zr	<	0.006300
M	As	<	0.004400	M	Ga	<	0.000400	M	Nd	<	0.000100	M	Sm	<	0.000100				
M	Au	<	0.000210	M	Gd	<	0.000100	O	Ni		0.004800	M	Sn	<	0.001800				
M	B	<	0.011000	M	Ge	<	0.000600	M	Os	<	0.000110	O	Sr		0.000750				
O	Ba	<	0.004900	M	Hf	<	0.000100	O	P		0.540000	M	Ta		0.003300				
M	Be	<	0.000400	M	Hg	<	0.000110	M	Pb	<	0.000400	M	Tb	<	0.000100				
M	Bi	<	0.000200	M	Ho	<	0.000100	M	Pd	<	0.000210	M	Te	<	0.000600				
O	Ca		0.110000	M	In	<	0.000100	M	Pr	<	0.001600	M	Th	<	0.000100				
M	Cd	<	0.000200	M	Ir	<	0.000110	M	Pt	<	0.000600	M	Ti	<	0.002800				
M	Ce		0.006500	O	K		0.020000	M	Rb	<	0.001000	M	Tl	<	0.000100				
M	Co	<	0.000200	O	La	<	0.016000	M	Re	<	0.000100	M	Tm	<	0.000100				
M	Cr		0.006900	O	Li	<	0.000430	M	Rh	<	0.000300	M	U	<	0.000100				
M	Cs	<	0.000200	M	Lu	<	0.000100	M	Ru	<	0.000310	M	V	<	0.000800				
M	Cu	<	0.000600	O	Mg		0.021000	n	S	<		M	W	<	0.000200				
M	Dy	<	0.000100	O	Mn		0.001900	s	Sb	<		M	Y	<	0.000100				
M	Er	<	0.000100	M	Mo	<	0.000500	O	Sc	<	0.002300	M	Yb	<	0.000100				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 121.75 +3 6 Sb(O)C4H4O6-1

Chemical Compatibility -Stable in conc. HCl, dilute or conc. HF. Stable in dilute HNO3 as the fluoride or tartrate complex. Avoid basic media. Stable with most metals and inorganic anions in acidic media as the tartrate provided the acidity is not too high or the acid is oxidizing causing loss of the stabilizing tartrate ion. The fluoride complex of antimony is stable in strong acid but you should only mix with other metals that are fluorinated.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-2% HNO3 / LDPE container.

Sb Containing Samples (Preparation and Solution) -Metal and alloys (Soluble in H2O / HF / HNO3 mixture); Oxides (Soluble in HCl and tartaric acid or H2O / HF / HNO3 mixtures); Ores (fusion with Na2CO3 in Pt0 followed by dissolving the fuseate in a H2O / HF / HNO3 mixture); Organic based (sulfuric acid / hydrogen peroxide digestion)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 121 amu	5 ppt	N/A	105Pd16O, 89Y16O2
ICP-OES 206.833 nm	0.03/0.003 µg/mL	1	Ta, Cr, Ge, Hf
ICP-OES 217.581 nm	0.05/0.005 µg/mL	1	Nb, W, Re, Fe
ICP-OES 231.147 nm	0.06/0.006 µg/mL	1	Ni, Co, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 30, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 30, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAS10
Lot Number:	T2-AS718260
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Arsenic
Starting Material:	As Metal
Starting Material Lot#:	2208
Starting Material Purity:	99.9971%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10060 ± 40 µg/mL

Density: 1.037 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10062 ± 46 µg/mL**
ICP Assay NIST SRM 3103a Lot Number: 100818

Assay Method #2 **10055 ± 76 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	< 0.003200	M	Eu	< 0.000530	O	Na	0.032544	M	Se	< 0.006300	O	Zn	0.001952			
M	Al	0.007593	O	Fe	0.001475	O	Nb	< 0.012000	O	Si	0.238658	O	Zr	< 0.004100			
s	As	<	M	Ga	< 0.000530	M	Nd	< 0.000530	M	Sm	< 0.000530						
M	Au	< 0.003100	M	Gd	< 0.000530	M	Ni	< 0.002100	M	Sn	< 0.000530						
M	B	0.026035	M	Ge	< 0.001600	M	Os	< 0.000520	M	Sr	< 0.000530						
M	Ba	< 0.000530	M	Hf	< 0.000530	O	P	< 0.043000	M	Ta	< 0.000530						
O	Be	< 0.000360	M	Hg	< 0.001600	M	Pb	< 0.002100	M	Tb	< 0.000530						
M	Bi	< 0.000530	M	Ho	< 0.000530	M	Pd	< 0.001100	M	Te	< 0.004700						
O	Ca	0.004339	M	In	< 0.023000	M	Pr	< 0.005300	M	Th	< 0.000530						
M	Cd	< 0.001100	M	Ir	< 0.000520	M	Pt	< 0.000530	O	Ti	< 0.002300						
M	Ce	< 0.000530	O	K	0.002061	M	Rb	< 0.000530	M	Tl	< 0.000530						
M	Co	< 0.000530	M	La	< 0.001100	M	Re	< 0.000530	M	Tm	< 0.000530						
O	Cr	< 0.001800	O	Li	< 0.000120	M	Rh	< 0.000530	M	U	< 0.000530						
M	Cs	< 0.005300	M	Lu	< 0.000530	M	Ru	< 0.000520	M	V	< 0.002700						
M	Cu	< 0.001600	O	Mg	0.000154	O	S	0.028205	M	W	< 0.012000						
M	Dy	< 0.000530	O	Mn	0.000154	M	Sb	< 0.000530	M	Y	< 0.000530						
M	Er	< 0.000530	M	Mo	< 0.000530	O	Sc	< 0.001700	M	Yb	< 0.000530						

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 74.92 ; mix of +3 and +5 ; 6 ; H3AsO4 and HAsO2

Chemical Compatibility - Arsenic has no cationic chemistry. It is soluble in HCl, HNO3,H3PO4, H2SO4 and HF aqueous matrices water and NH4OH . It is stable with most inorganic anions (forms arsenate when boiled with chromate) but many cationic metals form the insoluble arsenates under pH neutral conditions. When fluorinated and / or under acidic conditions arsenate formation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO3 / LDPE container.

As Containing Samples (Preparation and Solution) - Metal (soluble in 1:1 H2O / HNO3); Oxides (the oxide exists in crystalline and amorphous forms where the amorphic form is more water soluble. The oxides typically dissolve in dilute acidic solutions when boiled); Minerals (one gram of powered sample is fused in a Ni crucible with 10 grams of a 1:1 mix of K2CO3 and KNO3 and the melt extracted with hot water); Organic Matrices (0.2 to 0.5 grams of sample are fused with 15 grams of a 1:1 Na2CO3 / Na2O2 mix in a Ni crucible. The fuseate is extracted with water and acidified with HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 75 amu	20 ppt	N/A	40Ar35Cl, 59Co16O, 36Ar38Ar1H,8Ar37Cl,Ar39K, 150Nd2+,150Sm2+
ICP-OES 189.042 nm	0.05/0.005 µg/mL	1	Cr
ICP-OES 193.696 nm	0.1/0.01 µg/mL	1	V, Ge
ICP-OES 228.812 nm	0.1/0.01 µg/mL	1	Cd, Pt, Ir, Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 10, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **May 10, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Supervisor, Product Documentation

Certificate Approved By:

Michael Booth
Director, Technical

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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300 Technology Drive
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CERTIFICATE OF ANALYSIS

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fax: 540.585.3012
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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGBA10
Lot Number:	R2-BA692576
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Barium
Starting Material:	Barium Nitrate
Starting Material Lot#:	1969
Starting Material Purity:	99.9982%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10022 ± 30 µg/mL

Density: 1.025 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1	**10018 ± 50 µg/mL** ICP Assay NIST SRM 3104a Lot Number: 140909
Assay Method #2	**10023 ± 31 µg/mL** Gravimetric NIST SRM Lot Number: See Sec. 4.2
Assay Method #3	**10023 ± 30 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000410	O	Eu	<	0.005200	O	Na		0.004610	M	Se	<	0.003700	O	Zn		0.000658
M	Al	<	0.003100	O	Fe		0.015707	M	Nb	<	0.000210	O	Si		0.005573	M	Zr	<	0.001300
M	As	<	0.001300	M	Ga	<	0.000210	M	Nd	<	0.000210	O	Sm	<	0.021000				
M	Au	<	0.001300	M	Gd	<	0.000210	M	Ni	<	0.000810	M	Sn	<	0.000410				
O	B	<	0.005200	M	Ge	<	0.002500	M	Os	<	0.000410	O	Sr		0.003850				
s	Ba	<		M	Hf	<	0.000810	O	P	<	0.026000	M	Ta	<	0.000410				
O	Be	<	0.000320	M	Hg	<	0.000210	M	Pb	<	0.002300	M	Tb	<	0.000210				
M	Bi	<	0.000210	M	Ho	<	0.000210	M	Pd	<	0.000210	M	Te	<	0.001900				
O	Ca		0.007093	M	In	<	0.000210	M	Pr	<	0.000210	M	Th	<	0.000210				
M	Cd	<	0.000210	M	Ir	<	0.000210	M	Pt	<	0.000210	M	Ti	<	0.002100				
M	Ce	<	0.001300	O	K		0.035467	M	Rb	<	0.002100	M	Tl	<	0.000210				
M	Co	<	0.000410	O	La	<	0.005200	M	Re	<	0.000210	M	Tm	<	0.000410				
M	Cr	<	0.001700	O	Li	<	0.000630	M	Rh	<	0.000210	M	U	<	0.000210				
M	Cs	<	0.003300	M	Lu	<	0.001700	M	Ru	<	0.000210	O	V	<	0.005200				
M	Cu	<	0.001300	O	Mg		0.000861	O	S		0.268539	M	W	<	0.000410				
M	Dy	<	0.000210	M	Mn	<	0.000410	M	Sb	<	0.001300	O	Y	<	0.005200				
M	Er	<	0.001300	M	Mo	<	0.000410	M	Sc	<	0.000410	M	Yb	<	0.001300				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 137.33 +2 6 $Ba(H_2O)_6^{+2}$
Chemical Compatibility - Soluble in HCl, and HNO_3. Avoid H_2SO_4, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, iodate, molybdate, sulfite and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1 -10,000 ppm solutions chemically stable for years in 1-3.5% HNO_3 / LDPE container.
Ba Containing Samples (Preparation and Solution) -Metal(is best dissolved in diluted HNO_3); Ores(Carbonate fusion in Pt0 followed by HCl dissolution. If sulfate is present dissolve the fuseate using HCl / tartaric acid to prevent $BaSO_4$ precipitate); Organic Matrices (dry ash and dissolve in dilute HCl.)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 138 amu	1 ppt	N/A	122Sn16O, 122Te16O
ICP-OES 230.424 nm	0.004/0.0005 µg/mL	1	Mo, Ir, Co
ICP-OES 233.527 nm	0.004/0.0003 µg/mL	1	
ICP-OES 455.403 nm	0.002/0.0001 µg/mL	1	Zr, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 11, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **May 11, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
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CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGBE10
Lot Number:	R2-BE692992
Matrix:	6% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Beryllium
Starting Material:	Beryllium Acetate
Starting Material Lot#:	2281
Starting Material Purity:	99.9998%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10032 ± 41 µg/mL

Density: 1.128 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10042 ± 67 µg/mL**
ICP Assay NIST SRM 3105a Lot Number: 090514

Assay Method #2 **10025 ± 51 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001100	M	Eu	<	0.000270	O	Na		0.040962	M	Se	<	0.005000	M	Zn		0.013054
O	Al		0.016205	O	Fe		0.015754	M	Nb	<	0.000270	O	Si		0.024307	O	Zr	<	0.001900
M	As	<	0.002900	M	Ga	<	0.000270	M	Nd	<	0.000270	M	Sm	<	0.000270				
M	Au	<	0.000520	M	Gd	<	0.000270	M	Ni	<	0.003700	M	Sn	<	0.000790				
M	B	<	0.091000	M	Ge	<	0.000270	M	Os	<	0.000260	M	Sr		0.000630				
M	Ba		0.002700	M	Hf	<	0.000270	O	P	<	0.066000	M	Ta	<	0.000270				
s	Be	<		M	Hg	<	0.000520	M	Pb	<	0.000270	M	Tb	<	0.000270				
M	Bi	<	0.000530	M	Ho	<	0.000270	M	Pd	<	0.000520	M	Te	<	0.003700				
O	Ca		0.072022	M	In	<	0.000790	M	Pr	<	0.000270	M	Th	<	0.000270				
M	Cd	<	0.000790	M	Ir	<	0.000260	M	Pt	<	0.000270	O	Ti	<	0.000400				
M	Ce	<	0.000270	O	K		0.045014	M	Rb	<	0.000270	M	Tl	<	0.000790				
O	Co	<	0.003200	M	La	<	0.000270	M	Re	<	0.000270	M	Tm	<	0.000270				
O	Cr	<	0.001800	O	Li	<	0.000660	M	Rh	<	0.001100	M	U	<	0.000270				
M	Cs		0.001440	M	Lu	<	0.000270	M	Ru	<	0.000260	M	V	<	0.000790				
M	Cu	<	0.002100	O	Mg		0.016205	i	S	<		M	W	<	0.000530				
M	Dy	<	0.000270	M	Mn		0.001215	M	Sb	<	0.000270	M	Y	<	0.000270				
M	Er	<	0.000270	M	Mo	<	0.000530	O	Sc	<	0.000930	M	Yb	<	0.000270				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 9.01 +2 4 $Be(H_2O)_4^{+2}$

Chemical Compatibility -Soluble in HCl, HNO_3, H_2SO_4 and HF aqueous matrices. Stable with all metals and inorganic anions.

Stability - 2-100 ppb levels stable for months in 1 % HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 5-10 % HNO_3 / LDPE container.

Be Containing Samples (Preparation and Solution) - Meta l(is best dissolved in diluted H_2SO_4); BeO (boiling nitric, hydrochloric, or sulfuric acids or KHSO4 fusion); Ores (H_2SO_4/HF digestion or carbonate fusion in Pt0); Organic Matrices (sulfuric/peroxide digestion or nitric/sulfuric/perchloric acid decomposition, or dry ash and dissolution according to the BeO procedure above).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 9 amu	4 ppt	N/A	
ICP-OES 234.861 nm	0.0003/0.00016 µg/mL	1	Fe, Ta, Mo
ICP-OES 313.042 nm	0.0003/0.00009 µg/mL	1	V, Ce, U
ICP-OES 313.107 nm	0.0007/0.0005 µg/mL	1	Ce, Th, Tm

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION, PERIOD OF VALIDITY AND REVISION HISTORY

11.1 Certification Issue Date

May 13, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **May 13, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

11.4 Revision Status

- Revision 1 - Revised on Thursday, Jan 14, 2021 by utruong. Revision was made for the following reason: Modified Section 7 Chemical Form in Solution.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCO10
Lot Number:	R2-CO695285
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Cobalt
Starting Material:	Co Metal
Starting Material Lot#:	2326
Starting Material Purity:	99.9934%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10012 ± 31 µg/mL

Density: 1.056 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10031 ± 67 µg/mL**
ICP Assay NIST SRM 3113 Lot Number: 190630

Assay Method #2 **10019 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10000 ± 35 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	0.014660	M	Eu	< 0.000590	O	Na	0.007534	M	Se	< 0.019000	M	Zn	0.003461			
M	Al	< 0.024000	M	Fe	0.050905	M	Nb	< 0.000590	O	Si	0.075340	M	Zr	< 0.001200			
i	As	<	M	Ga	< 0.000590	M	Nd	< 0.000590	M	Sm	< 0.000590						
M	Au	< 0.004100	M	Gd	< 0.000590	O	Ni	0.427608	M	Sn	< 0.001200						
M	B	< 0.031000	M	Ge	< 0.003000	M	Os	< 0.000590	O	Sr	< 0.000260						
M	Ba	< 0.000590	M	Hf	< 0.000590	n	P	<	M	Ta	< 0.001200						
O	Be	< 0.001300	M	Hg	< 0.001800	M	Pb	0.003257	M	Tb	< 0.000590						
M	Bi	< 0.003000	M	Ho	< 0.000590	M	Pd	< 0.000590	M	Te	< 0.005300						
O	Ca	0.010588	M	In	< 0.001200	M	Pr	< 0.000590	M	Th	< 0.000590						
M	Cd	< 0.004700	M	Ir	< 0.001200	M	Pt	< 0.002400	M	Ti	< 0.014000						
M	Ce	< 0.000590	O	K	0.008144	M	Rb	< 0.000590	M	Tl	0.002647						
s	Co	<	M	La	< 0.000590	M	Re	< 0.000590	M	Tm	< 0.000590						
M	Cr	< 0.021000	O	Li	< 0.000130	M	Rh	< 0.000590	M	U	< 0.000590						
M	Cs	< 0.002400	M	Lu	< 0.000590	M	Ru	< 0.007100	O	V	< 0.000880						
M	Cu	0.189369	O	Mg	0.001893	n	S	<	M	W	< 0.000590						
M	Dy	< 0.000590	M	Mn	< 0.001800	M	Sb	< 0.003600	M	Y	< 0.000590						
M	Er	< 0.000590	M	Mo	< 0.002400	O	Sc	< 0.001600	M	Yb	< 0.000590						

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.93 +2 6 $Co(H_2O)_6^{2+}$

Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Co Containing Samples (Preparation and Solution) - Metal (soluble in HNO_3); Oxides (Soluble in HCl); Ores (dissolve in HCl / HNO_3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 59 amu	2 ppt	n/a	42Ca16O1H , 40Ar18O1H , 36Ar23Na, 43Ca16O, 24Mg35Cl
ICP-OES 228.616 nm	0.01/0.001 µg/mL	1	
ICP-OES 237.862 nm	0.01/0.002 µg/mL	1	W, Re, Al, Ta
ICP-OES 238.892 nm	0.01/0.002 µg/mL	1	Fe, W, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 04, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **August 04, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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Certificate of Analysis

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAG10
Lot Number:	S2-AG712977
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Silver
Starting Material:	Ag Shot
Starting Material Lot#:	2289
Starting Material Purity:	99.9951%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10051 ± 30 µg/mL

Density: 1.056 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1	**10051 ± 52 µg/mL** ICP Assay NIST SRM 3151 Lot Number: 160729
Assay Method #2	**10051 ± 19 µg/mL** Volhard NIST SRM 999c Lot Number: 999c
Assay Method #3	**10049 ± 31 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

s	Ag	<		M	Eu	<	0.000260	O	Na		0.003811	M	Se	<	0.003900	O	Zn		0.048146
M	Al		0.002688	O	Fe		0.006419	M	Nb	<	0.000260	O	Si		0.005215	M	Zr	<	0.000260
M	As	<	0.001100	M	Ga	<	0.000260	M	Nd	<	0.000260	M	Sm	<	0.000260				
M	Au	<	0.000260	M	Gd	<	0.000260	O	Ni		0.001765	M	Sn		0.020060				
O	B	<	0.004300	M	Ge	<	0.002300	M	Os	<	0.001100	O	Sr	<	0.000110				
M	Ba	<	0.000520	M	Hf	<	0.000260	O	P	<	0.017000	M	Ta	<	0.000260				
O	Be	<	0.001100	M	Hg	<	0.000770	M	Pb	<	0.003600	M	Tb	<	0.000260				
M	Bi		0.004814	M	Ho	<	0.000260	M	Pd		0.044134	M	Te	<	0.009000				
O	Ca		0.005215	M	In		0.003691	M	Pr	<	0.000260	M	Th	<	0.000260				
M	Cd	<	0.000260	M	Ir	<	0.000520	M	Pt	<	0.001100	O	Ti	<	0.000440				
M	Ce	<	0.002100	O	K	<	0.008700	M	Rb	<	0.001100	M	Tl	<	0.004100				
O	Co	<	0.000330	M	La	<	0.000260	M	Re	<	0.000260	M	Tm	<	0.000260				
O	Cr	<	0.002500	O	Li	<	0.000110	M	Rh	<	0.000520	M	U	<	0.000260				
M	Cs	<	0.002600	M	Lu	<	0.000260	M	Ru	<	0.000260	M	V	<	0.000260				
O	Cu		0.357085	O	Mg		0.001203	O	S	<	0.017000	M	W	<	0.000260				
M	Dy	<	0.000260	O	Mn	<	0.000220	M	Sb	<	0.014000	M	Y	<	0.000260				
M	Er	<	0.000260	M	Mo	<	0.000260	O	Sc	<	0.000220	M	Yb	<	0.000260				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 107.87 +1 6 $Ag(H_2O)_6^+$

Chemical Compatibility -Stable in HNO_3, and HF. Avoid basic media. Ag forms more insoluble salts than any other metal. It also is subject to photochemical reduction to the metal in HCl media although 10 µg/mL solutions in 10% HCl [$AgCl_{x1-x}$] are commonly used in the analytical laboratory. The most common solubility problems exist with arsenate, arsenite , bromide, chloride, iodide, carbonate , chromate, cyanide, iodate, oxalate, oxide, sulfate, sulfide, tartrate, and thiocyanate in aqueous media. The addition of nitric acid renders many of these salts soluble.

Stability - 2-100 ppb levels stable for 75+ days when mixed with equivalent levels of all other elements including the precious metals (where chloride is present) when in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Ag Containing Samples (Preparation and Solution) -Metal (Soluble in HNO_3); Oxides (Soluble in HNO_3); Ores (Digestion with conc. HNO_3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 107 amu	1 ppt	N/A	91Zr16O
ICP-OES 243.779 nm	0.12/0.01 µg/mL	1	Mn, Th, Ni, Rh
ICP-OES 328.068 nm	0.007/0.0007 µg/mL	1	Ce, Rh, V
ICP-OES 338.289 nm	0.013/0.001 µg/mL	1	Ce, Cr, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 28, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 28, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Uyen Truong
Supervisor, Product Documentation

Certificate Approved By:

Michael Booth
Director, Technical

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCR(3)10
Lot Number:	S2-CR709784
Matrix:	10% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Chromium
Starting Material:	Cr Metal
Starting Material Lot#:	2328
Starting Material Purity:	99.9951%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10027 ± 41 µg/mL

Density: 1.072 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10027 ± 40 µg/mL**
ICP Assay NIST SRM 3112a Lot Number: 170630

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001700	M	Eu	<	0.003400	O	Na		0.090372	M	Se	<	0.012000	O	Zn	<	0.006100
M	Al		0.034916	O	Fe		0.246471	M	Nb	<	0.017000	n	Si	<		M	Zr	<	0.007800
M	As	<	0.028000	O	Ga	<	0.013000	M	Nd	<	0.013000	M	Sm	<	0.006900				
M	Au	<	0.001700	M	Gd	<	0.000560	M	Ni		0.016020	M	Sn		0.006983				
O	B	<	0.025000	O	Ge	<	0.014000	M	Os	<	0.000560	M	Sr		0.006367				
M	Ba	<	0.008900	M	Hf	<	0.000560	i	P	<		M	Ta	<	0.000560				
M	Be	<	0.013000	M	Hg	<	0.001700	M	Pb		0.010064	M	Tb	<	0.000560				
M	Bi	<	0.002300	M	Ho	<	0.000560	M	Pd	<	0.021000	M	Te	<	0.010000				
O	Ca		0.075995	M	In	<	0.000560	M	Pr	<	0.001700	M	Th	<	0.000560				
M	Cd	<	0.000560	M	Ir	<	0.000560	M	Pt	<	0.001200	O	Ti		0.013555				
M	Ce	<	0.001200	O	K		0.043132	i	Rb	<		M	Tl	<	0.000560				
M	Co	<	0.002600	M	La	<	0.001200	M	Re	<	0.001200	O	Tm	<	0.013000				
s	Cr	<		O	Li		0.000390	M	Rh	<	0.095000	M	U	<	0.000560				
M	Cs	<	0.007800	M	Lu	<	0.000560	M	Ru	<	0.087000	O	V		0.014993				
O	Cu		0.007599	O	Mg		0.000883	i	S	<		M	W	<	0.049000				
M	Dy	<	0.000560	M	Mn		0.008626	M	Sb	<	0.003400	M	Y	<	0.001700				
M	Er	<	0.019000	M	Mo	<	0.032000	M	Sc		0.003080	M	Yb	<	0.000560				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 52.00 +3 6 $Cr(H_2O)_6^{3+}$

Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4, HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Cr3 Containing Samples (Preparation and Solution) -Metal (soluble in HCl); Oxides/Ores (Chrome ore/oxides are very difficult to dissolve. The following procedures [A-D] are commonly used: A. Fusion with $KHSO_4$ and extraction with hot KCl. The residue fused with Na_2CO_3 and $KClO_3$, 3:1. B. Fusion with $NaKSO_4$ and NaF 2:1, C. Fusion with magnesia or lime and sodium or potassium carbonates, 4:1. D. Fusion with Na_2O_2 or NaOH and KNO_3 or NaOH and Na_2O_2. Nickel, iron, copper, or silver crucibles should be used for D. Platinum may be used for A, <, C); Organic Matrices (ash at 4500C followed by one of the fusion methods above or sulfuric/hydrogen peroxide acid digestions may be applicable to non oxide containing samples).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 52 amu	40 ppt	N/A	36S16O, 36Ar16O - The 50Cr, 53Cr, 54Cr lines suffer from many more potential interferences from sulfur, chlorine and argon compounds of oxygen, nitrogen and carbon.
ICP-OES 205.552 nm	0.006/0.0008 µg/mL	1	Os
ICP-OES 276.654 nm	0.01/0.001 µg/mL	1	Cu, Ta, V
ICP-OES 284.325 nm	0.008/0.0007 µg/mL	1	

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 26, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **October 26, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGNI10
Lot Number:	P2-NI686384
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Nickel
Starting Material:	Ni Metal
Starting Material Lot#:	2277 and 2282
Starting Material Purity:	99.9992%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9979 ± 30 µg/mL

Density: 1.038 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9971 ± 54 µg/mL**
ICP Assay NIST SRM 3136 Lot Number: 120619

Assay Method #2 **9970 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **9993 ± 33 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag		0.002606	M	Eu	<	0.001100	O	Na		0.004965	O	Se	<	0.067000	M	Zn		0.006578
M	Al	<	0.013000	O	Fe		0.018618	M	Nb	<	0.001100	O	Si		0.010923	M	Zr	<	0.001100
O	As	<	0.067000	M	Ga	<	0.001100	M	Nd	<	0.001100	M	Sm	<	0.001100				
M	Au	<	0.002100	M	Gd	<	0.001100	s	Ni	<		M	Sn	<	0.016000				
M	B	<	0.017000	M	Ge	<	0.004200	M	Os		0.002110	O	Sr	<	0.000940				
M	Ba	<	0.001100	M	Hf	<	0.001100	i	P	<		M	Ta	<	0.001100				
O	Be	<	0.000410	M	Hg		0.014895	M	Pb		0.006578	M	Tb	<	0.001100				
M	Bi	<	0.004200	M	Ho	<	0.001100	M	Pd	<	0.001100	M	Te	<	0.015000				
O	Ca		0.003351	M	In	<	0.001100	M	Pr	<	0.001100	M	Th	<	0.001100				
M	Cd		0.001365	M	Ir		0.004716	M	Pt	<	0.001100	M	Ti	<	0.004200				
M	Ce	<	0.001100	O	K		0.004716	M	Rb	<	0.001100	M	Tl	<	0.001100				
O	Co		0.017377	M	La	<	0.001100	M	Re		0.001737	M	Tm	<	0.001100				
O	Cr	<	0.006700	O	Li	<	0.000140	M	Rh	<	0.006300	M	U	<	0.001100				
M	Cs	<	0.007300	M	Lu	<	0.001100	M	Ru	<	0.019000	M	V	<	0.002100				
M	Cu		0.004096	O	Mg		0.000372	i	S	<		M	W	<	0.006300				
M	Dy	<	0.001100	O	Mn	<	0.001900	M	Sb		0.005833	O	Y	<	0.000540				
M	Er	<	0.001100	M	Mo	<	0.008400	M	Sc	<	0.002100	M	Yb	<	0.001100				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.69 +2 6 Ni(H2O)62+

Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Ni Containing Samples (Preparation and Solution) -Metal (Soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 60 amu	100 ppt	n/a	43Ca16O1H , 44Ca16O, 23Na37Cl
ICP-OES 221.647 nm	0.01 / 0.0009 µg/mL	1	Si
ICP-OES 231.604 nm	0.02 / 0.002 µg/mL	1	Sb, Ta, Co
ICP-OES 232.003 nm	0.02 / 0.006 µg/mL	1	Cr, Re, Os, Nb, Ag, Pt, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 02, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 02, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES™
Refine your results. Redefine your industry.

Certificate of Analysis

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGV10
Lot Number:	S2-V711005
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Vanadium
Starting Material:	Vanadium Pentoxide
Starting Material Lot#:	1782
Starting Material Purity:	99.9877%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10014 ± 30 µg/mL

Density: 1.104 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10017 ± 42 µg/mL**
ICP Assay NIST SRM 3165 Lot Number: 160906

Assay Method #2 **10013 ± 30 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000110	M	Eu	<	0.000110	O	Na		0.120000	M	Se	<	0.009400	M	Zn	0.009400
O	Al		0.120000	O	Fe		0.460000	M	Nb	<	0.001300	O	Si		0.270000	M	Zr	< 0.002900
M	As	<	0.000210	M	Ga	<	0.009300	M	Nd	<	0.000610	M	Sm	<	0.000110			
M	Au	<	0.004700	M	Gd	<	0.000110	M	Ni		0.012000	M	Sn		0.003900			
M	B		0.051000	M	Ge	<	0.000410	M	Os	<	0.000110	O	Sr		0.007100			
M	Ba		0.003600	M	Hf	<	0.000110	O	P	<	0.034000	M	Ta	<	0.000110			
O	Be	<	0.000560	M	Hg	<	0.000410	M	Pb		0.001400	M	Tb	<	0.000110			
M	Bi	<	0.000210	M	Ho	<	0.000110	M	Pd	<	0.000410	M	Te	<	0.000110			
O	Ca		0.730000	M	In	<	0.000110	M	Pr	<	0.000110	M	Th	<	0.000210			
M	Cd	<	0.000610	M	Ir	<	0.000110	M	Pt	<	0.000110	M	Ti		0.017000			
M	Ce	<	0.000610	M	K		0.052000	M	Rb	<	0.000310	M	Tl	<	0.000110			
M	Co	<	0.001300	M	La	<	0.000410	M	Re		0.001700	M	Tm	<	0.000110			
O	Cr		0.170000	M	Li	<	0.000810	M	Rh	<	0.000110	M	U	<	0.000410			
M	Cs		0.005600	M	Lu	<	0.000110	M	Ru	<	0.000110	s	V	<				
M	Cu	<	0.001300	M	Mg		0.053000	i	S	<		M	W		0.002000			
M	Dy	<	0.000110	M	Mn		0.007900	M	Sb		0.078000	M	Y	<	0.000110			
M	Er	<	0.000110	M	Mo		0.094000	M	Sc	<	0.000410	M	Yb	<	0.000110			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 50.94 +5 6 H2V10O284-

Chemical Compatibility -Soluble in HCl, HNO3, H2SO4, HF, H3PO4 and strong basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

V Containing Samples (Preparation and Solution) -Metal (Fusion with NaOH or KOH in Ni0 or Na2CO3 / KNO3); Oxides (V2O3 - use HCl, V2O4 - use HCl or HNO3, V2O5 - use concentrated acids); Ores (Na2CO3 / KNO3 in Pt0 caution - nitrates attack Pto followed by water extraction of fuseate); Organic Matrices (Ash at 450 EC followed by dissolving according to V2O5 above) .

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 51 amu	4 ppt	N/A	34S16O1H, 35Cl16O, 38Ar13C, 36Ar15N, 36Ar14N1H, 37Cl14N,36S15N, 33S18O, 34S17O, 102Ru+2,02Pd+2
ICP-OES 290.882 nm	0.008 / 0.0008 µg/mL	1	Hf, Nb
ICP-OES 292.402 nm	0.006 / 0.001 µg/mL	1	Th
ICP-OES 309.311 nm	0.005 / 0.001 µg/mL	1	Mg, U, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 28, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 28, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

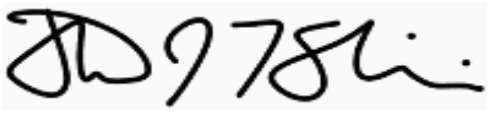
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAL10
Lot Number:	T2-AL716102
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Aluminum
Starting Material:	Aluminum Nitrate Nonahydrate
Starting Material Lot#:	2460
Starting Material Purity:	99.9938%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10049 ± 31 µg/mL

Density: 1.087 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10059 ± 40 µg/mL**
ICP Assay NIST SRM 3101a Lot Number: 140903

Assay Method #2 **10044 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10049 ± 35 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.002100	M	Eu	<	0.002100	O	Na		0.352819	M	Se	<	0.005200	M	Zn	0.006018
s	Al	<		O	Fe		0.074714	M	Nb	<	0.000520	O	Si		0.017848	O	Zr	0.004358
M	As		0.008716	O	Ga		0.112072	M	Nd	<	0.000520	M	Sm	<	0.000520			
M	Au	<	0.008400	M	Gd	<	0.001100	O	Ni	<	0.006000	M	Sn		0.000747			
O	B	<	0.014000	M	Ge	<	0.005200	M	Os	<	0.000650	O	Sr		0.000518			
O	Ba		0.012867	M	Hf	<	0.004100	n	P	<		M	Ta	<	0.000520			
O	Be	<	0.000270	M	Hg	<	0.002000	M	Pb		0.002282	M	Tb	<	0.000520			
M	Bi		0.001930	M	Ho	<	0.000520	M	Pd	<	0.000520	M	Te	<	0.001100			
O	Ca		0.076790	M	In	<	0.002100	M	Pr	<	0.000520	M	Th	<	0.000520			
M	Cd	<	0.000520	M	Ir	<	0.000650	M	Pt	<	0.000520	O	Ti		0.001930			
M	Ce	<	0.001100	O	K		0.043583	M	Rb	<	0.000520	M	Tl	<	0.000520			
O	Co	<	0.005400	M	La	<	0.002100	M	Re	<	0.000520	M	Tm	<	0.000520			
O	Cr		0.006018	O	Li		0.000112	M	Rh	<	0.000520	M	U	<	0.000520			
M	Cs		0.000643	M	Lu	<	0.000520	M	Ru	<	0.002000	M	V		0.001286			
O	Cu	<	0.008300	O	Mg		0.068488	i	S	<		M	W	<	0.009800			
M	Dy	<	0.002100	O	Mn		0.000913	M	Sb	<	0.003100	M	Y	<	0.001100			
M	Er	<	0.000520	M	Mo		0.005396	O	Sc	<	0.000950	M	Yb	<	0.000520			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 26.98 +3 6 Al(H2O)6+3
Chemical Compatibility -Soluble in HCl, HNO3, v F and v 2SO4. Avoid neutral media. Soluble in strongly basic NaOH forming the Al(OH)4(H2O)21- species. Stable with most metals and inorganic anions. The phosphate is insoluble in water and only slightly soluble in acid.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.
Al Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO3); a- Al2O3 (Na2CO3 fusion in Pt0);
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 27 amu	30 ppt	N/A	12C15N, 13C14N, 1H12C14N, 11B16O, 54Cr2+, 54Fe2+
ICP-OES 167.078 nm	0.1/0.009 µg/mL	1	Fe
ICP-OES 394.401 nm	0.05/0.006 µg/mL	1	U, Ce
ICP-OES 396.152 nm	0.03/0.006 µg/mL	1	Mo, Zr, Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 22, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 22, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

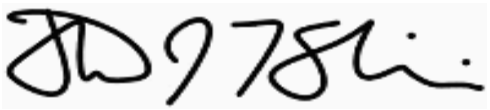
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGK10
Lot Number:	S2-K711973
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Potassium
Starting Material:	KNO3
Starting Material Lot#:	2313
Starting Material Purity:	99.9971%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9992 ± 30 µg/mL

Density: 1.024 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9987 ± 24 µg/mL**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

Assay Method #2 **10004 ± 84 µg/mL**
ICP Assay NIST SRM 3141a Lot Number: 140813

Assay Method #3 **10007 ± 45 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001400	M	Eu	<	0.000660	O	Na		0.246220	M	Se	<	0.007900	O	Zn	0.018056
O	Al		0.001592	O	Fe		0.005909	M	Nb	<	0.000660	O	Si		0.011490	O	Zr	< 0.001600
M	As	<	0.005300	M	Ga	<	0.000660	M	Nd	<	0.000660	M	Sm	<	0.000660			
M	Au	<	0.002000	M	Gd	<	0.000660	O	Ni	<	0.004900	M	Sn	<	0.000660			
O	B	<	0.005600	M	Ge	<	0.002000	M	Os	<	0.003300	O	Sr		0.000055			
O	Ba	<	0.000860	M	Hf	<	0.000660	O	P	<	0.032000	M	Ta	<	0.000660			
O	Be	<	0.000082	M	Hg	<	0.002000	M	Pb	<	0.002300	M	Tb	<	0.000660			
M	Bi	<	0.006600	M	Ho	<	0.000660	M	Pd	<	0.000660	M	Te	<	0.017000			
O	Ca		0.031187	M	In	<	0.000660	M	Pr	<	0.000660	M	Th	<	0.000660			
O	Cd	<	0.000450	M	Ir	<	0.000660	M	Pt	<	0.002700	M	Ti	<	0.000660			
M	Ce	<	0.000660	s	K	<		M	Rb		0.476026	M	Tl	<	0.000660			
O	Co	<	0.000780	M	La	<	0.000660	M	Re	<	0.000660	M	Tm	<	0.000660			
O	Cr		0.000541	O	Li	<	0.000084	M	Rh	<	0.000660	M	U	<	0.000660			
M	Cs	<	0.000660	M	Lu	<	0.000660	M	Ru	<	0.000660	O	V	<	0.001100			
M	Cu	<	0.002700	O	Mg		0.006237	O	S		0.027905	M	W	<	0.000660			
M	Dy	<	0.000660	O	Mn		0.000476	M	Sb	<	0.000660	M	Y	<	0.000660			
M	Er	<	0.000660	M	Mo	<	0.000660	O	Sc	<	0.000340	O	Yb	<	0.000270			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 39.10 +1 (6) K+(aq)
Chemical Compatibility -Soluble in HCl, HNO3, H2SO4 and HF aqueous matrices. Avoid use of HClO4 due to insolubility of the perchlorate. Stable with all metals and inorganic anions except ClO4-.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
K Containing Samples (Preparation and Solution) - Metal (Dissolves very rapidly in water); Ores (Sodium carbonate fusion in Pt0 followed by HCl dissolution-blank levels of K in sodium carbonate critical); Organic Matrices (Sulfuric/peroxide digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 39 amu	10 ppt	n/a	38ArH, 23Na16O, 78Se
ICP-OES 404.721 nm	1.1 / 0.05 µg/mL	1	U, Ce
ICP-OES 766.490 nm	0.4 / 0.001 µg/mL	1	2nd order radiation from R.E.s on some optical designs
ICP-OES 771.531 nm	1.0 / 0.03 µg/mL	1	2nd order radiation from R.E.s on some optical designs

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 10, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 10, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

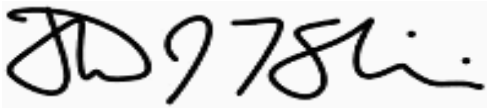
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMG10
Lot Number:	S2-MG704239
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Magnesium
Starting Material:	Magnesium Metal
Starting Material Lot#:	2168
Starting Material Purity:	99.9984%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10053 ± 30 µg/mL

Density: 1.053 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10022 ± 62 µg/mL**
ICP Assay NIST SRM 3131a Lot Number: 140110

Assay Method #2 **10078 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10033 ± 26 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Ag		0.002106	M	Eu	<	0.000910	O	Na		0.071075	O	Se	<	0.048000	O	Zn		0.003299
M	Al		0.003553	M	Fe		0.002538	M	Nb	<	0.000460	O	Si	<	0.032000	O	Zr	<	0.002700
M	As	<	0.001400	M	Ga	<	0.000460	M	Nd	<	0.000910	M	Sm	<	0.000460				
M	Au	<	0.001400	M	Gd	<	0.000460	O	Ni	<	0.001600	M	Sn	<	0.002300				
O	B		0.006853	M	Ge	<	0.001400	M	Os	<	0.000460	O	Sr		0.000279				
O	Ba		0.000964	M	Hf	<	0.000460	O	P		0.015230	M	Ta	<	0.000460				
O	Be	<	0.000120	M	Hg	<	0.000460	M	Pb	<	0.000460	M	Tb	<	0.000460				
M	Bi	<	0.000460	M	Ho	<	0.000460	M	Pd	<	0.003200	M	Te	<	0.007300				
O	Ca		0.053306	M	In	<	0.000460	M	Pr	<	0.000460	M	Th	<	0.000460				
O	Cd	<	0.000360	M	Ir	<	0.000460	M	Pt	<	0.001900	O	Ti	<	0.001700				
M	Ce	<	0.002300	M	K		0.048229	M	Rb		0.002411	M	Tl		0.003046				
M	Co	<	0.000910	M	La	<	0.002800	M	Re	<	0.000460	M	Tm	<	0.000460				
M	Cr	<	0.002300	O	Li		0.027922	M	Rh	<	0.000460	M	U	<	0.000460				
M	Cs		0.001040	M	Lu	<	0.000460	M	Ru	<	0.000460	M	V	<	0.000460				
O	Cu	<	0.003000	s	Mg	<		O	S	<	0.190000	M	W	<	0.000460				
M	Dy	<	0.000460	O	Mn		0.015230	M	Sb		0.020814	O	Y	<	0.000720				
M	Er	<	0.000460	M	Mo	<	0.000910	O	Sc	<	0.000480	M	Yb	<	0.000460				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 24.31 +2 6 Mg(H2O)6+2
Chemical Compatibility -Soluble in HCl, HNO3, and H2SO4 avoid HF, H3PO4 and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicates, carbonates, hydroxides, oxides, and tungstates in neutral and slightly acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO3 / LDPE container.
Mg Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO3); Oxide (Readily soluble in above compatible aqueous acidic solutions); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric / peroxide digestion or nitric / sulfuric / perchloric acid decomposition, or dry ash and dissolution in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 24 amu	42 ppt	n/a	7Li17O, 48Ti+2 , 48Ca+2
ICP-OES 279.553 nm	0.0002 / 0.00003 µg/mL	1	Th
ICP-OES 280.270 nm	0.0003 / 0.00005 µg/mL	1	U, V
ICP-OES 285.213 nm	0.002 / 0.00003 µg/mL	1	U, Hf, Cr, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 23, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 23, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCA10
Lot Number:	T2-CA716103
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Calcium
Starting Material:	CaCO3
Starting Material Lot#:	2472
Starting Material Purity:	99.9950%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10005 ± 30 µg/mL

Density: 1.039 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10005 ± 45 µg/mL**
ICP Assay NIST SRM 3109a Lot Number: 130213

Assay Method #2 **10005 ± 25 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10005 ± 31 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001200	M	Eu	<	0.001200	O	Na		0.006112	M	Se	<	0.024000	M	Zn		0.005362
M	Al		0.065419	O	Fe		0.009115	M	Nb	<	0.001200	O	Si		0.139417	O	Zr	<	0.006700
O	As	<	0.013000	M	Ga	<	0.015000	M	Nd	<	0.020000	M	Sm	<	0.001200				
M	Au	<	0.017000	M	Gd	<	0.004800	O	Ni		0.000793	M	Sn	<	0.003600				
O	B		0.001179	M	Ge	<	0.003600	M	Os	<	0.001200	M	Sr		0.081505				
O	Ba		0.002788	M	Hf	<	0.001200	O	P	<	0.041000	M	Ta	<	0.001200				
O	Be	<	0.000410	M	Hg	<	0.004800	M	Pb		0.001608	M	Tb	<	0.001200				
M	Bi		0.001608	M	Ho	<	0.001200	M	Pd	<	0.001200	M	Te	<	0.003600				
s	Ca	<		M	In	<	0.001200	M	Pr		0.000257	M	Th	<	0.001200				
O	Cd	<	0.001300	M	Ir	<	0.001200	M	Pt	<	0.003600	O	Ti	<	0.001900				
M	Ce		0.001029	O	K		0.009759	M	Rb	<	0.001200	M	Tl	<	0.001200				
O	Co		0.000418	M	La		0.001823	M	Re	<	0.001200	M	Tm	<	0.001200				
O	Cr		0.003324	O	Li	<	0.007300	M	Rh	<	0.001200	M	U		0.002144				
M	Cs		0.007399	M	Lu		0.000128	M	Ru	<	0.001200	M	V		0.001286				
O	Cu	<	0.011000	M	Mg		1.286934	O	S		0.055767	O	W	<	0.024000				
M	Dy	<	0.002400	O	Mn		0.004611	M	Sb	<	0.009600	O	Y		0.000536				
M	Er	<	0.002400	M	Mo		0.003539	O	Sc	<	0.001400	M	Yb	<	0.001200				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 40.08 +2 6 Ca(H2O)6+2
Chemical Compatibility - Soluble in HCl and HNO3. Avoid H2SO4, vF, v3PO4 and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO3 / LDPE container.
Ca Containing Samples)Preparation and Solution) -Metal (best dissolved in diluted HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (dry ash and dissolution in dilute HCl. Do not heat when dissolving to avoid precipitation of SiO2). The oxide, hydroxide, carbonate, phosphate, and fluoride of calcium are soluble in % levels of HCl or HNO3. The sulfates (gypsum, anhydrite, etc.), certain silicates, and complex compounds require fusion with Na2CO3 followed by HCl / water dissolution. Note that contamination is a very real problem when analyzing for trace levels.
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 44 amu	1200 ppt	n/a	16O212C, 28Si16O, 88Sr
ICP-OES 393.366 nm	0.0002 / 0.00004 µg/mL	1	U, Ce
ICP-OES 396.847 nm	0.0005 / 0.00006 µg/mL	1	Th
ICP-OES 422.673 nm	0.01 / 0.001 µg/mL	1	Ge

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 14, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 14, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

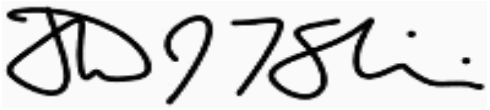
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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Certificate of Analysis

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGNA10
Lot Number:	T2-NA717221
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Sodium
Starting Material:	Na2CO3
Starting Material Lot#:	2358 and 2453
Starting Material Purity:	99.9977%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9977 ± 30 µg/mL

Density: 1.033 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9974 ± 18 µg/mL**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

Assay Method #2 **9977 ± 34 µg/mL**
ICP Assay NIST SRM 3152a Lot Number: 200413

Assay Method #3 **9987 ± 31 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000930	M	Eu	<	0.000930	s	Na	<		M	Se	<	0.003800	O	Zn		0.000138
M	Al		0.004409	O	Fe		0.002393	M	Nb	<	0.000930	O	Si		0.056696	O	Zr	<	0.003200
O	As	<	0.023000	M	Ga	<	0.000930	M	Nd	<	0.000930	M	Sm	<	0.000930				
O	Au	<	0.004100	M	Gd	<	0.000930	O	Ni	<	0.003000	M	Sn	<	0.002800				
O	B		0.001385	M	Ge	<	0.004700	M	Os	<	0.000930	O	Sr		0.000251				
M	Ba		0.004031	M	Hf	<	0.000930	O	P		0.010205	M	Ta	<	0.000930				
O	Be	<	0.000130	M	Hg	<	0.000930	M	Pb	<	0.000930	M	Tb	<	0.000930				
M	Bi	<	0.000930	M	Ho	<	0.000930	M	Pd	<	0.000930	M	Te	<	0.001900				
O	Ca		0.176388	M	In	<	0.000930	M	Pr	<	0.000930	M	Th		0.000352				
O	Cd	<	0.000860	M	Ir	<	0.000930	M	Pt	<	0.000930	O	Ti		0.000592				
M	Ce	<	0.001900	O	K		0.302380	M	Rb	<	0.000930	M	Tl	<	0.000930				
O	Co	<	0.001800	O	La	<	0.002100	M	Re	<	0.000930	M	Tm	<	0.000930				
M	Cr	<	0.002800	O	Li		0.000031	M	Rh	<	0.000930	M	U	<	0.000930				
M	Cs	<	0.000930	M	Lu	<	0.000930	M	Ru	<	0.001900	O	V	<	0.001600				
O	Cu	<	0.003900	O	Mg		0.026458	O	S		0.040317	O	W	<	0.028000				
M	Dy	<	0.000930	O	Mn	<	0.000740	M	Sb	<	0.000930	O	Y	<	0.000860				
M	Er	<	0.000930	O	Mo	<	0.003600	O	Sc	<	0.000610	O	Yb	<	0.000250				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 22.99 +1 (6) Na+(aq) largely ionic in nature

Chemical Compatibility -Soluble in HCl, HNO3, H2SO4 and HF aqueous matrices. Stable with all metals and inorganic anions.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Na Containing Samples (Preparation and Solution) - Metal (Dissolves very rapidly in water); Ores (Lithium carbonate fusion in graphite crucible followed by HCl dissolution - blank levels of Na in lithium carbonate critical); Organic Matrices (Sulfuric / peroxide digestion or nitric/sulfuric/perchloric acid decomposition).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 23 amu	310 ppt	n/a	46Ti+2 , 46Ca+2
ICP-OES 330.237 nm	2.0 / 0.09 µg/mL	1	Pd, Zn
ICP-OES 588.995 nm	0.03 / 0.006 µg/mL	1	2nd order radiation from R.E.s on some optical designs
ICP-OES 589.595 nm	0.07 / 0.00009 µg/mL	1	2nd order radiation from R.E.s on some optical designs

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 20, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 20, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

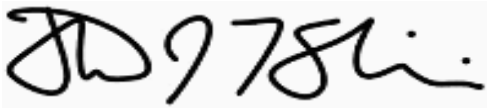
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGU1
Lot Number:	S2-U707914
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Uranium
Starting Material:	Uranyl Nitrate Hexahydrate
Starting Material Lot#:	P2-2322
Starting Material Purity:	99.9997%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 5 µg/mL

Density: 1.010 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **998 ± 5 µg/mL**
ICP Assay NIST SRM 3164 Lot Number: 080521

Assay Method #2 **1001 ± 6 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.19 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000270	M	Eu	<	0.000270	M	Na	<	0.011000	M	Se	<	0.009300	M	Zn	0.002358
M	Al	<	0.011000	M	Fe		0.003222	M	Nb	<	0.000270	M	Si	<	0.160000	M	Zr	< 0.001100
M	As	<	0.002400	M	Ga	<	0.000270	M	Nd	<	0.000270	M	Sm	<	0.000270			
M	Au	<	0.000270	M	Gd	<	0.000270	M	Ni	<	0.020000	M	Sn	<	0.011000			
M	B	<	0.000270	M	Ge	<	0.000800	M	Os	<	0.001900	M	Sr	<	0.000270			
M	Ba	<	0.003800	M	Hf	<	0.000270	i	P	<		M	Ta	<	0.000270			
M	Be	<	0.000270	M	Hg	<	0.000540	M	Pb	<	0.002200	M	Tb	<	0.000270			
M	Bi	<	0.000270	M	Ho	<	0.000270	M	Pd	<	0.000540	M	Te	<	0.003800			
M	Ca	<	0.140000	M	In	<	0.000270	M	Pr	<	0.000270	M	Th		0.000129			
M	Cd	<	0.000270	M	Ir	<	0.000270	M	Pt	<	0.000270	M	Ti	<	0.002700			
M	Ce	<	0.000540	O	K	<	0.250000	M	Rb	<	0.000800	M	Tl	<	0.000270			
M	Co	<	0.000800	M	La		0.000117	M	Re	<	0.064000	M	Tm	<	0.000270			
M	Cr		0.000943	M	Li	<	0.003000	M	Rh	<	0.000270	s	U	<				
M	Cs		0.000106	M	Lu	<	0.000270	M	Ru	<	0.000540	M	V	<	0.000540			
M	Cu	<	0.001100	M	Mg	<	0.003000	i	S	<		M	W	<	0.000540			
M	Dy	<	0.000270	M	Mn	<	0.006900	M	Sb	<	0.000270	M	Y	<	0.000270			
M	Er	<	0.000270	M	Mo	<	0.006400	M	Sc	<	0.000540	M	Yb	<	0.000270			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 238.03 +6 8 UO_2^{2+}(uranyl)

Chemical Compatibility - Soluble in HCl and HNO_3. Avoid H_3PO_4. H_2SO_4 and HF matrices should not be a problem depending upon [U]. Although the UO_2^{2+} ion is distinctly basic, any U^{+4} will precipitate in basic media. UO_2^{2+}salts are generally soluble in water and UO_2^{2+} is stable with most metals and inorganic anions. The uranyl phosphate is insoluble in water. UF_4 and UF_6 are water soluble.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO_3 / LDPE container.

U Containing Samples (Preparation and Solution) -Metal (Dissolves rapidly in HCl and HNO_3); Oxide (Soluble in HNO_3); Ores (Digest for 1-2 hours with 1 gram of ore to 30 mL 1:1 HNO_3. Silica insolubles are removed by filtration after bringing the sample to fumes with conc. H_2SO_4.)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 238 amu	2 ppt	N/A	206Pb16O2
ICP-OES 263.553 nm	0.3 / 0.01 µg/mL	1	Ce, Ir, Th, Rh, W, Zr, Ta, Ti, V, Hf, Fe, Re, Ru
ICP-OES 367.007 nm	0.3 / 0.02 µg/mL	1	Th, Ce
ICP-OES 385.958 nm	0.3 / 0.01 µg/mL	1	Th, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 28, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **August 28, 2026**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	AR-ICVMS-2
Lot Number:	T2-MEB719895
Matrix:	3% (v/v) HNO3 tr. HF
Value / Analyte(s):	2.5 µg/mL ea: Molybdenum, Antimony

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	**2.499 ± 0.015 µg/mL**	**Molybdenum, Mo**	**2.500 ± 0.017 µg/mL**

Density: 1.014 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Mo	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
Sb	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 06, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 06, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

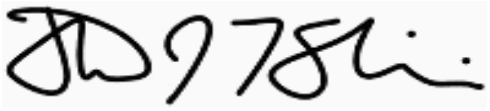
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	AR-ICVMS-3
Lot Number:	T2-MEB719896
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	250 µg/mL ea:

Aluminum, Calcium,
Iron, Potassium,
Magnesium, Sodium,

4 µg/mL ea:
Selenium,

2.5 µg/mL ea:

Thorium,	Thallium,
Uranium,	Vanadium,
Zinc,	Manganese,
Cadmium,	Cobalt,
Chromium,	Copper,
Arsenic,	Barium,
Beryllium,	Nickel,
Lead,	Silver

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	250.0 ± 0.9 µg/mL	Arsenic, As	2.500 ± 0.018 µg/mL
Barium, Ba	2.501 ± 0.013 µg/mL	Beryllium, Be	2.501 ± 0.015 µg/mL
Cadmium, Cd	2.501 ± 0.013 µg/mL	Calcium, Ca	250.0 ± 1.3 µg/mL
Chromium, Cr	2.500 ± 0.015 µg/mL	Cobalt, Co	2.500 ± 0.014 µg/mL
Copper, Cu	2.500 ± 0.014 µg/mL	Iron, Fe	250.0 ± 1.0 µg/mL
Lead, Pb	2.500 ± 0.013 µg/mL	Magnesium, Mg	250.0 ± 1.3 µg/mL
Manganese, Mn	2.500 ± 0.014 µg/mL	Nickel, Ni	2.500 ± 0.014 µg/mL
Potassium, K	250.0 ± 1.2 µg/mL	Selenium, Se	4.002 ± 0.024 µg/mL
Silver, Ag	2.501 ± 0.017 µg/mL	Sodium, Na	250.0 ± 1.2 µg/mL
Thallium, Tl	2.500 ± 0.017 µg/mL	Thorium, Th	2.499 ± 0.013 µg/mL
Uranium, U	2.501 ± 0.015 µg/mL	Vanadium, V	2.500 ± 0.014 µg/mL
Zinc, Zn	2.500 ± 0.014 µg/mL		

Density: 1.042 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Ag	Calculated		See Sec. 4.2
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
Ba	ICP Assay	3104a	140909
Ba	Calculated		See Sec. 4.2
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Cd	Calculated		See Sec. 4.2
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Co	Calculated		See Sec. 4.2
Cr	ICP Assay	3112a	170630
Cr	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Cu	Calculated		See Sec. 4.2
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Mn	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
Ni	Calculated		See Sec. 4.2
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Pb	Calculated		See Sec. 4.2
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Th	EDTA	928	928
Th	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
Tl	Calculated		See Sec. 4.2
U	ICP Assay	3164	080521
U	Calculated		See Sec. 4.2

V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928
Zn	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.19 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Note: This solution contains Silver (Ag), please refer to our Sample Preparation Guide for more information.

https://www.inorganicventures.com/sample-preparation-guide/samples-containing-silver

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 06, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 06, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

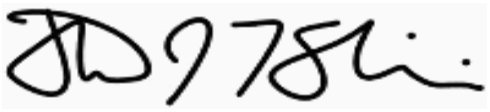
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

ERA
A Waters Company

Certified Reference Material

▪ Certificate of Analysis ▪

Product: Metals in Soil
Catalog Number: 540
Lot No. D120-540
Certificate Issue Date: December 16, 2022
Expiration Date: April 01, 2026
Revision Number: Original

L000950

Product use instructions are included as part of the certification packet and are paginated separately from this Certificate of Analysis. Please reference the product use instructions for catalog #540 revision 111122.

CERTIFICATION

Parameter	Certified Value[1]	Reference Value	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Aluminum	9420	5640	2.77	1720 - 9560	2550 - 10400
Antimony	225	97.9	31.4	D.L. - 211	22.5 - 251
Arsenic	66.6	73.9	3.11	63.4 - 84.5	51.8 - 96.1
Barium	354	311	3.79	253 - 370	234 - 389
Beryllium	108	92.9	3.20	75.8 - 110	69.7 - 119
Boron	102	56.1	6.31	33.7 - 78.4	33.6 - 112
Cadmium	91.8	75.4	17.5	61.0 - 89.8	56.6 - 101
Calcium	2640	2580	2.84	2140 - 3030	1760 - 3410
Chromium	137	116	4.95	93.1 - 139	81.3 - 151
Cobalt	137	118	7.94	96.3 - 139	88.2 - 151
Copper	139	114	12.1	92.9 - 136	85.8 - 153
Iron	7100	6160	2.51	3500 - 8810	710 - 12700
Lead	247	212	4.43	170 - 253	156 - 272
Lithium	8.14	5.11	5.23	2.35 - 7.87	0.814 - 10.8
Magnesium	1560	1350	3.92	1010 - 1690	668 - 2030
Manganese	286	255	3.26	205 - 304	187 - 322
Mercury	14.9	15.1	7.72	11.1 - 19.1	9.09 - 21.2
Molybdenum	47.5	49.1	36.3	40.7 - 57.5	33.3 - 64.9
Nickel	295	252	69.7	204 - 299	176 - 327
Potassium	1800	1620	3.33	1170 - 2080	898 - 2340
Selenium	93.6	75.1	24.9	57.3 - 93.0	47.2 - 103
Silver	80.6	65.7	38.8	50.4 - 81.0	46.4 - 88.7
Sodium	232	244	3.54	189 - 299	122 - 365
Strontium	133	94.9	3.96	70.8 - 119	68.1 - 146

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▪ Certificate of Analysis ▪

Parameter	Certified Value[1]	Reference Value	Uncertainty[2]	QC Performance Acceptance Limits[3]	PT Performance Acceptance Limits[4]
	mg/kg	mg/kg	%	mg/kg	mg/kg
Thallium	158	129	21.1	101 - 157	89.5 - 174
Tin	113	89.6	23.1	67.4 - 112	49.9 - 129
Titanium	145	126	8.56	39.3 - 213	0.00 - 268
Uranium	48.2	40.8	3.84	29.4 - 52.3	28.4 - 53.2
Vanadium	116	96.1	6.62	73.6 - 119	64.2 - 128
Zinc	184	156	3.83	123 - 189	109 - 203

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ANALYTICAL VERIFICATION

Parameter	Certified Value[1]	Proficiency Testing Study			NIST Traceability	
		Mean	Recovery[5]	n	SRM Number[6]	Recovery
	mg/kg	mg/kg	%			%
Aluminum	9420	5640	59.9	101	-	-
Antimony	225	97.9	43.5	106	-	-
Arsenic	66.6	73.9	111	141	-	-
Barium	354	311	88.0	127	-	-
Beryllium	108	92.9	86.0	119	-	-
Boron	102	56.1	55.0	80	-	-
Cadmium	91.8	75.4	82.1	160	-	-
Calcium	2640	2580	97.9	102	-	-
Chromium	137	116	84.8	141	-	-
Cobalt	137	118	85.8	112	-	-
Copper	139	114	82.3	151	-	-
Iron	7100	6160	86.7	105	-	-
Lead	247	212	85.7	170	-	-
Lithium	8.14	5.11	62.8	14	-	-
Magnesium	1560	1350	86.4	102	-	-
Manganese	286	255	89.0	123	-	-
Mercury	14.9	15.1	102	108	-	-
Molybdenum	47.5	49.1	103	117	-	-
Nickel	295	252	85.3	149	-	-
Potassium	1800	1620	90.1	104	-	-
Selenium	93.6	75.1	80.3	122	-	-
Silver	80.6	65.7	81.5	117	-	-
Sodium	232	244	105	99	-	-
Strontium	133	94.9	71.4	76	-	-
Thallium	158	129	81.7	109	-	-
Tin	113	89.6	79.3	78	-	-
Titanium	145	126	87.1	70	-	-
Uranium	48.2	40.8	84.7	30	-	-
Vanadium	116	96.1	82.8	112	-	-
Zinc	184	156	84.7	153	-	-

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▪ Certificate of Analysis ▪

1. The **Certified Values** are the actual gravimetric/volumetric "made-to" concentrations confirmed by ERA analytical verification. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

2. The **Uncertainty** represents an expanded uncertainty and approximates a 95% confidence interval. The uncertainty is based on the characterization, homogeneity and stability characteristics of the product, multiplied by a coverage factor (k=2). The uncertainty applies to the product as supplied and does not take into account any required or optional dilution and/or preparations the laboratory may perform while using this product. The formula used to calculate the expanded uncertainty is:
$U_{expanded} = k * SQRT((U_{char}^2) + (U_{homogen}^2) + (U_{LTS}^2) + (U_{STS}^2) + (U_{RSS}^2))$

Where:

Uexpanded = Expanded uncertainty.
k = Coverage factor.
Uchar = Combined standard uncertainty of the manufacturing and/or analytical verification assessment.
Uhomogen = Standard uncertainty of the homogeneity assessment.
ULTS = Standard uncertainty associated with long-term stability.
USTS = Standard uncertainty associated with short-term (transport) stability.
URSS = Standard uncertainty associated with repeated sampling of the product (where permitted by product use instructions).

3. The **QC Performance Acceptance Limits (QC PALs™)** are based on actual historical data collected in ERA's Proficiency Testing program. The QC PALs™ reflect any inherent biases in the methods used to establish the limits and closely approximate a 95% confidence interval of the performance that experienced laboratories should achieve using accepted environmental methods. Use the QC PALs™ to realistically evaluate your performance against your peers.

4. The **PT Performance Acceptance Limits (PT PALs™)** are calculated using the regression equations and fixed acceptance criteria specified in the NELAC proficiency testing requirements. Use the PT PALs™ when analyzing this certified reference material alongside USEPA and NELAC compliant PT study materials. Please note that many PT study acceptance limits are concentration dependent (some non-linearly) and therefore, the acceptance limits of this certified reference material and any PT study material may differ relative to their difference in concentrations.

5. The **PT Performance Data** include the mean value, percent recovery and number of data points reported by laboratories in our Proficiency Testing study compared to the Certified Values. In the event this lot was not used in a proficiency testing scheme, the data displayed was generated internally by ERA.

6. Where NIST Standard Reference Materials (SRMs) are available, each analyte has been analytically traced to the NIST SRM listed. **Analytical Traceability Recovery (%)** = [(% recovery ERA certified reference material)/(% recovery NIST SRM)]*100
The traceability data shown were compiled by analyzing this ERA certified reference material and/or it's associated stock solution(s) against the applicable NIST SRMs.

7. **Metrological Traceability.** This certified reference material is metrologically traceable to NIST mass reference materials through an unbroken chain of comparisons.

8. For additional information on this product such as intended use, storage information, instructions for use, minimum sample size, and safety information, please refer to the Product Use Instructions provided.

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or send an email to info@eraqc.com.

Certifying Officer

Brian Miller

Brian Miller

Senior Technical Manager

Craig Huff

INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	AR-6020ICS-0A10
Lot Number:	T2-MEB719898
Matrix:	1.4% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Chloride,
	200 µg/mL ea: Carbon,
	100 µg/mL ea: Calcium, Aluminum, Iron, Potassium, Magnesium, Sodium, Phosphorus, Sulfur,
	2 µg/mL ea: Titanium, Molybdenum

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	**100.0 ± 0.4 µg/mL**	**Calcium, Ca**	**100.0 ± 0.5 µg/mL**
Carbon, C	**200.1 ± 0.5 µg/mL**	**Chloride, Cl**	**1 000 ± 5 µg/mL**
Iron, Fe	**100.0 ± 0.5 µg/mL**	**Magnesium, Mg**	**100.0 ± 0.5 µg/mL**
Molybdenum, Mo	**2.001 ± 0.014 µg/mL**	**Phosphorus, P**	**100.0 ± 0.6 µg/mL**
Potassium, K	**100.0 ± 0.5 µg/mL**	**Sodium, Na**	**100.0 ± 0.5 µg/mL**
Sulfur, S	**100.0 ± 0.5 µg/mL**	**Titanium, Ti**	**2.001 ± 0.015 µg/mL**

Density: 1.009 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
C	Acidimetric	84L	84L
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cl	Acidimetric	84L	84L
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mo	ICP Assay	3134	130418
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	P2-S680745
Ti	ICP Assay	3162a	130925

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 07, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 07, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

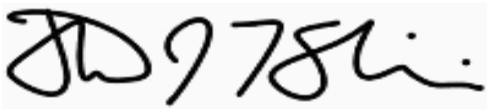
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Analytical Resources, LLC
Analytical Chemists and Consultants

Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

LDW20-SC148A

Laboratory:	Analytical Resources, LLC				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	23F0536-01 B	SDG:	23F0536
Sampled:	06/08/20 08:41	Prepared:	07/05/23 13:26	File ID:	CubeData_07102023@1422-124
% Solids:	61.22	Preparation:	PSEP 1986 (modified)	Analyzed:	07/07/23 23:37
Batch:	BLG0049	Sequence:	SLG0028	Initial/Final:	0.5824 g Wet / 0.5824 mL
Instrument:	TOC Cube			Calibration:	GE00052

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	1.25	1	0.02	0.02	H

PREPARATION BATCH SUMMARY

EPA 9060A m

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Batch: BLG0049 Batch Matrix: Solid
Preparation: PSEP 1986 (modified)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW20-SC148A	23F0536-01	eData_07102023@1422-	07/05/23 13:26	
Blank	BLG0049-BLK1	eData_07102023@1422-	07/05/23 13:26	
LCS	BLG0049-BS1	eData_07102023@1422-	07/05/23 13:26	
LDW20-SC148A	BLG0049-DUP2	eData_07102023@1422-	07/05/23 13:26	
MRL Check	BLG0049-MRL1	eData_07102023@1422-	07/05/23 13:26	
LDW20-SC148A	BLG0049-MS2	eData_07102023@1422-	07/05/23 13:26	
Reference	BLG0049-SRM1	eData_07102023@1648-	07/05/23 13:26	

Form I

METHOD BLANK DATA SHEET

EPA 9060A m

TotalAnalytes

Blank

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Batch: BLG0049
Laboratory ID: BLG0049-BLK1
Prepared: 07/05/23 13:26
Matrix: Solid
Preparation: PSEP 1986 (modified)
Analyzed: 07/07/23 09:26
Sequence: SLG0028
Calibration: GE00052
Instrument: TOC Cube

CAS NO.	Analyte	Concentration (% wet)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	ND	1	0.02	0.02	U

LCS / LCS DUPLICATE RECOVERY

EPA 9060A m

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	07/07/23 10:57
Batch:	BLG0049	Laboratory ID:	BLG0049-BS1
Preparation:	PSEP 1986 (modified)	Sequence Name:	LCS
Initial/Final:	0.021 g / 0.021 mL		

COMPOUND	SPIKE ADDED (% wet)	LCS CONCENTRATION (% wet)	Q	LCS % REC. #	QC LIMITS REC.
Total Organic Carbon	44.4	43.3		97.3	80 - 120

* Indicates values outside of QC limits

LDW20-SC148A

DUPLICATES

EPA 9060A m

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BLG0049-DUP2
Batch: BLG0049
Lab Source ID: 23F0536-01
Preparation: PSEP 1986 (modified)
Initial/Final: 0.525 g / 0.525 mL
Source Sample Name: LDW20-SC148A
% Solids: 61.22

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION	DUPLICATE CONCENTRATION	RPD %	Q
Total Organic Carbon	20	1.25	1.32	5.98	

*: Values outside of QC limits
L: Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to Dup = +/- RL instead of 20% RPD

MS / MS DUPLICATE RECOVERY
EPA 9060A m

Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	07/08/23 00:38
Batch:	BLG0049	Laboratory ID:	BLG0049-MS2
Preparation:	PSEP 1986 (modified)	Sequence Name:	Matrix Spike
Initial/Final:	0.5808 g / 0.5808 mL	Source Sample:	LDW20-SC148A

COMPOUND	SPIKE ADDED (% dry)	SAMPLE CONCENTRATION (% dry)	Q	MS CONCENTRATION (% dry)	Q	MS % REC. #	QC LIMITS REC.
Total Organic Carbon	0.925	1.25	H	2.23	H	106	75 - 125

* Values outside of QC limits

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 9060A m

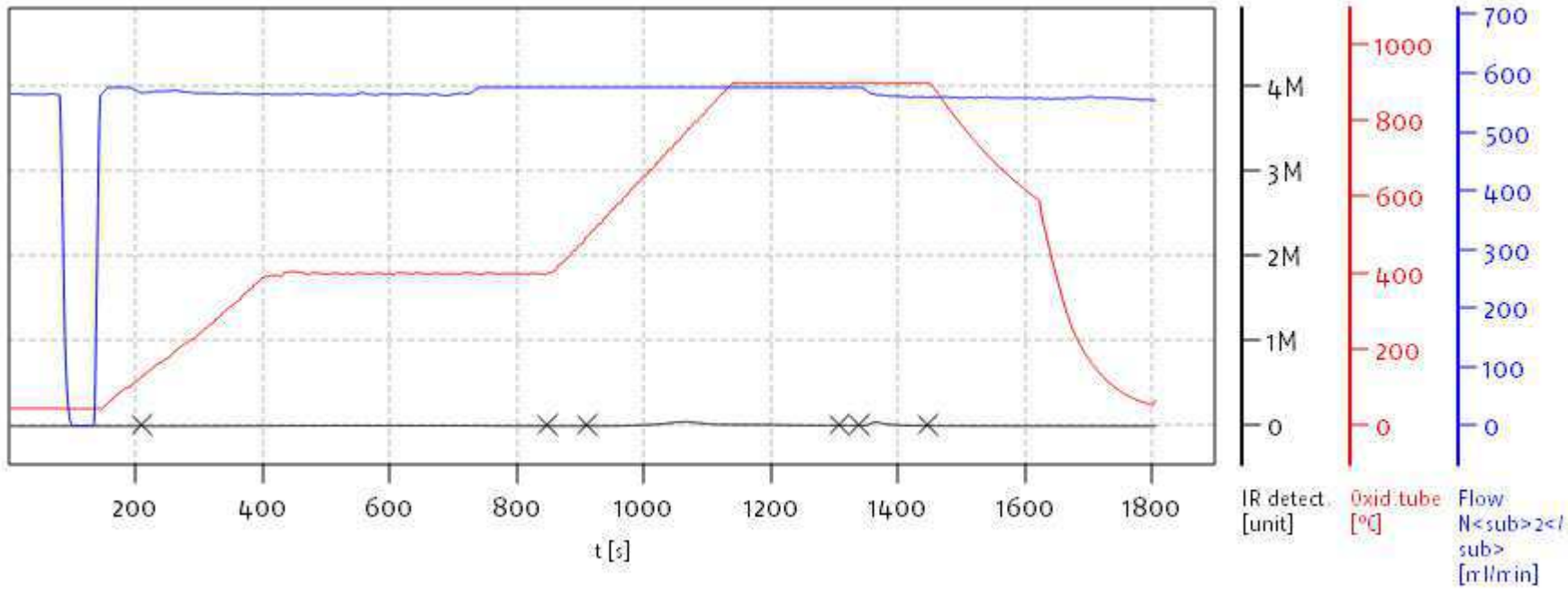
Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Sequence: SLE0270
Instrument: TOC Cube
Calibration: GE00052

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Cal Standard	SLE0270-CAL1	CubeData_05182023@1024b-101	NA	05/17/23 12:46
Cal Standard	SLE0270-CAL2	CubeData_05182023@1024b-102	NA	05/17/23 13:16
Cal Standard	SLE0270-CAL3	CubeData_05182023@1024b-103	NA	05/17/23 13:46
Cal Standard	SLE0270-CAL4	CubeData_05182023@1024b-104	NA	05/17/23 14:16
Cal Standard	SLE0270-CAL5	CubeData_05182023@1024b-105	NA	05/17/23 14:47
Cal Standard	SLE0270-CAL6	CubeData_05182023@1024b-106	NA	05/17/23 15:17
Cal Standard	SLE0270-CAL7	CubeData_05182023@1024b-107	NA	05/17/23 15:47
Cal Standard	SLE0270-CAL8	CubeData_05182023@1024b-108	NA	05/17/23 16:17
Cal Standard	SLE0270-CAL9	CubeData_05182023@1024b-109	NA	05/17/23 16:47
Cal Standard	SLE0270-CALA	CubeData_05182023@1024b-110	NA	05/17/23 17:17
Cal Standard	SLE0270-CALB	CubeData_05182023@1024b-111	NA	05/17/23 17:47
Cal Standard	SLE0270-CALC	CubeData_05182023@1024b-112	NA	05/17/23 18:18
Cal Standard	SLE0270-CALD	CubeData_05182023@1024b-113	NA	05/17/23 18:48
Cal Standard	SLE0270-CALE	CubeData_05182023@1024b-114	NA	05/17/23 19:18
Cal Standard	SLE0270-CALF	CubeData_05182023@1024b-115	NA	05/17/23 19:48
Cal Standard	SLE0270-CALG	CubeData_05182023@1024b-116	NA	05/17/23 20:18
Cal Standard	SLE0270-CALH	CubeData_05182023@1024b-117	NA	05/17/23 20:48
Cal Standard	SLE0270-CALI	CubeData_05182023@1024b-118	NA	05/17/23 21:19
Cal Standard	SLE0270-CALJ	CubeData_05182023@1024b-119	NA	05/17/23 21:49
Cal Standard	SLE0270-CALK	CubeData_05182023@1024b-120	NA	05/17/23 22:19
Initial Cal Check	SLE0270-ICV1	CubeData_05182023@1024b-128	NA	05/18/23 02:21
Initial Cal Blank	SLE0270-ICB1	CubeData_05182023@1024b-127	NA	05/18/23 02:51
Calibration Check	SLE0270-CCV1	CubeData_05182023@1024b-126	NA	05/18/23 04:21
Calibration Blank	SLE0270-CCB1	CubeData_05182023@1024b-125	NA	05/18/23 04:52
Cal Standard	SLE0270-CALL	CubeData_05182023@1024b-121	NA	05/18/23 09:47
Cal Standard	SLE0270-CALM	CubeData_05182023@1024b-122	NA	05/18/23 09:48
Cal Standard	SLE0270-CALN	CubeData_05182023@1024b-123	NA	05/18/23 09:49
Cal Standard	SLE0270-CALO	CubeData_05182023@1024b-124	NA	05/18/23 09:49

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
1	1	BLANK	1.00		CARBON	5/ 17/2023 11:46 AM	bl	0.000	83 718	0.000	0.000	65 731	251 400	0.000	0.000	1.0000	1.0000



Name:

Access: soliTOC superuser

Date: Thu May 18 09:43:39 2023

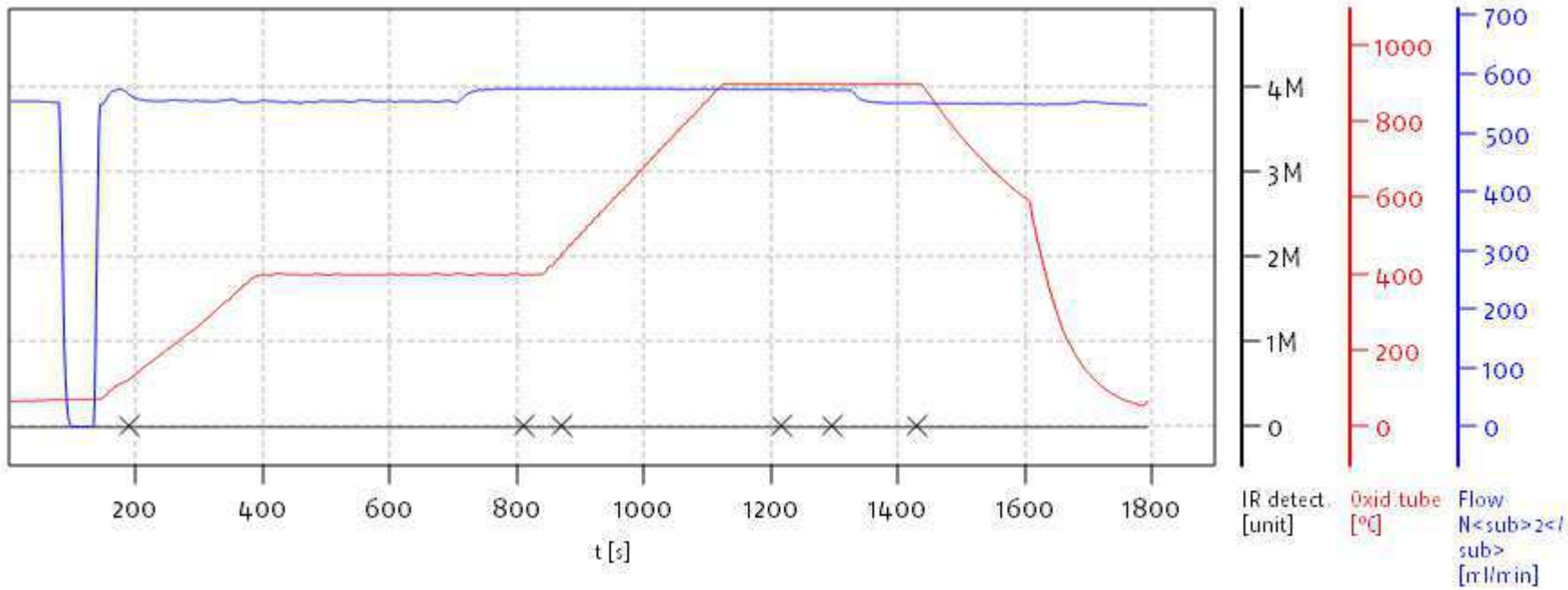
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
2	2	BLANK	1.00		CARBON	5/ 17/2023 12:16 PM	bl	0.000	3 043	0.000	0.000	273	1	0.000	0.000	1.0000	1.0000



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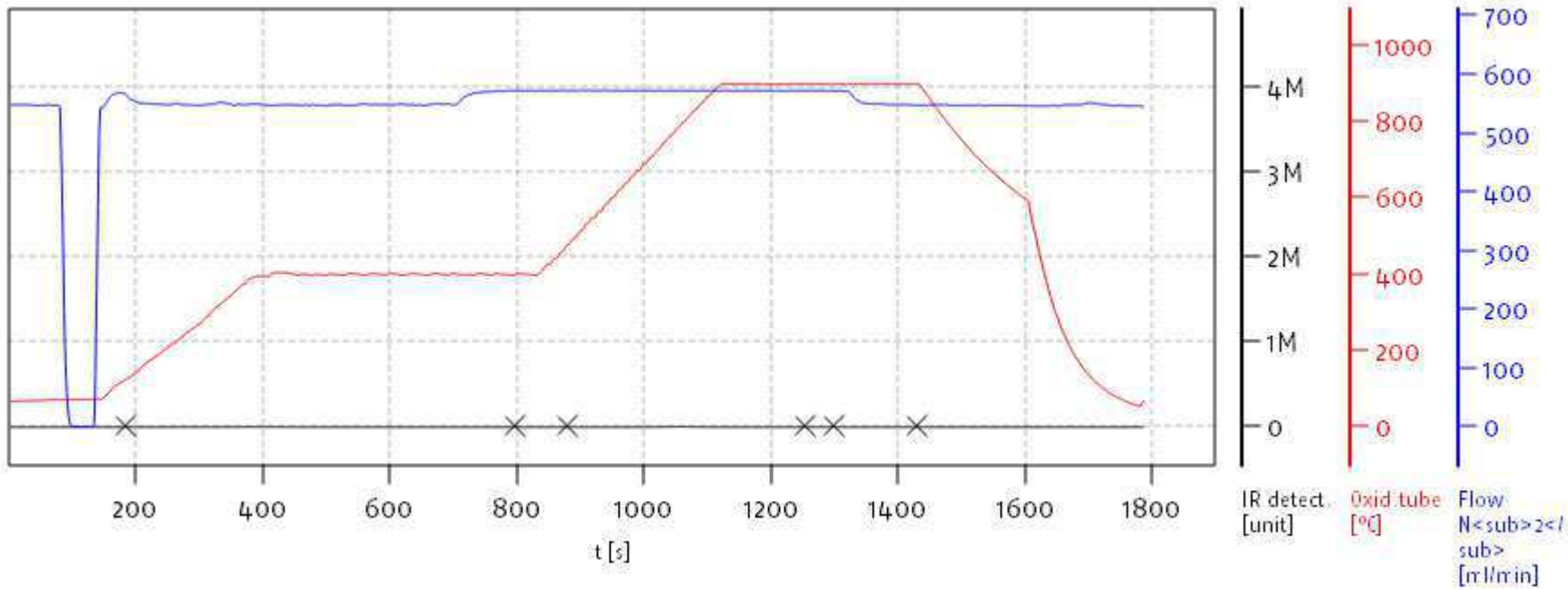
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
3	3	SLE0270-CAL1	200.00	0.0025	CARBON	5/17/2023 12:46 PM	bl,C2u	0.014	12 167	0.024	0.002	431	10 396	0.012	0.010	1.0000	1.0000



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Date: Thu May 18 09:43:39 2023

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EXCELLENCE IN ELEMENTS

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Serial No: 0300.181017
Mode CCC

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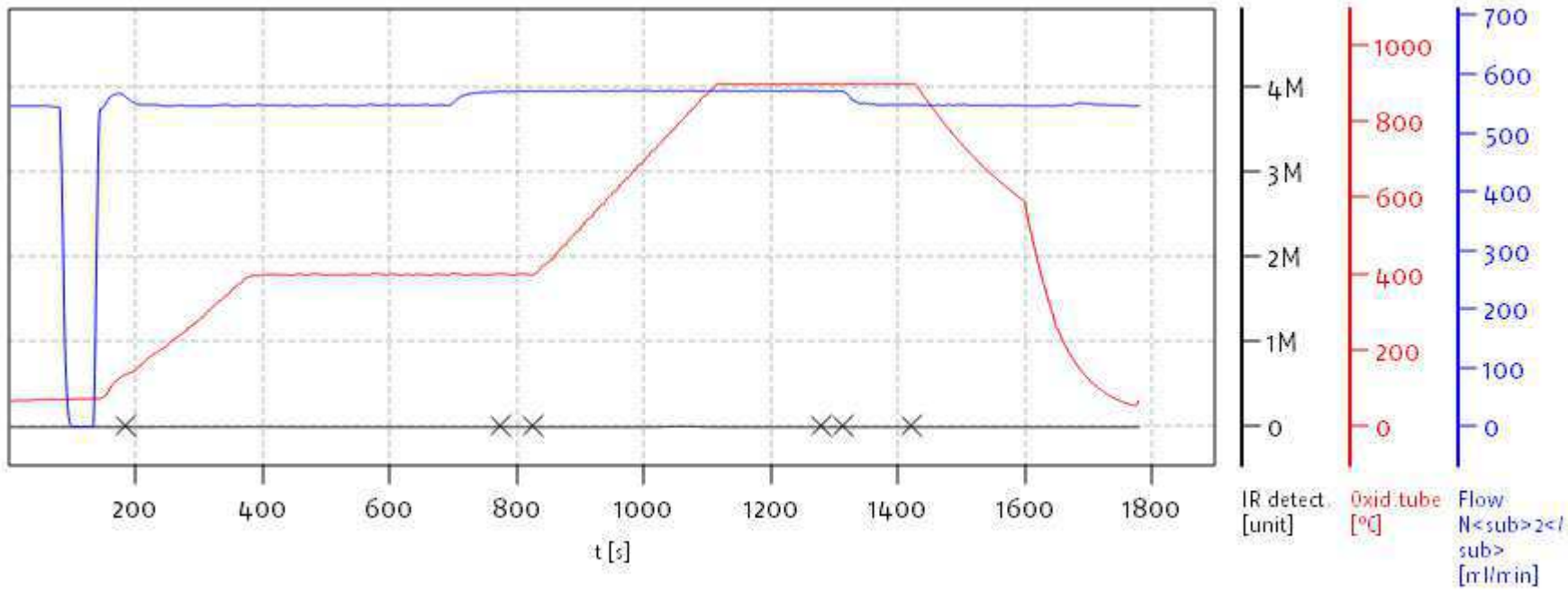
Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
4	4	SLE0270-CAL2	200.00	0.0050	CARBON	5/17/2023 1:16 PM	bl,C2u	0.013	10 893	0.029	0.002	141	18 320	0.011	0.017	1.0000	1.0000



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Access: soliTOC superuser

Date: Thu May 18 09:43:39 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

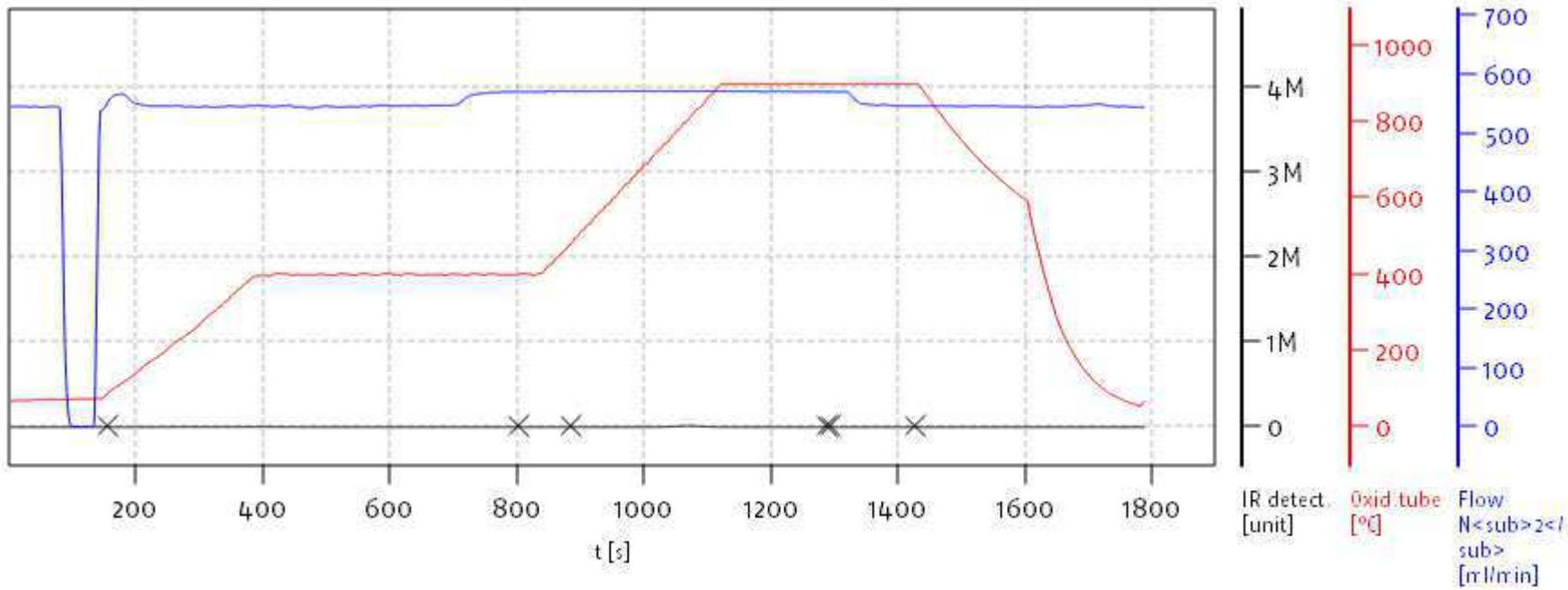
elementar
EXCELLENCE IN ELEMENTS

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
5	5	SLE0270-CAL3	200.00	0.0070	CARBON	5/17/2023 1:46 PM	bl,C2u	0.018	16 667	0.043	0.002	387	29 873	0.015	0.026	1.0000	1.0000



Name:

Access: soliTOC superuser

Date: Thu May 18 09:43:39 2023

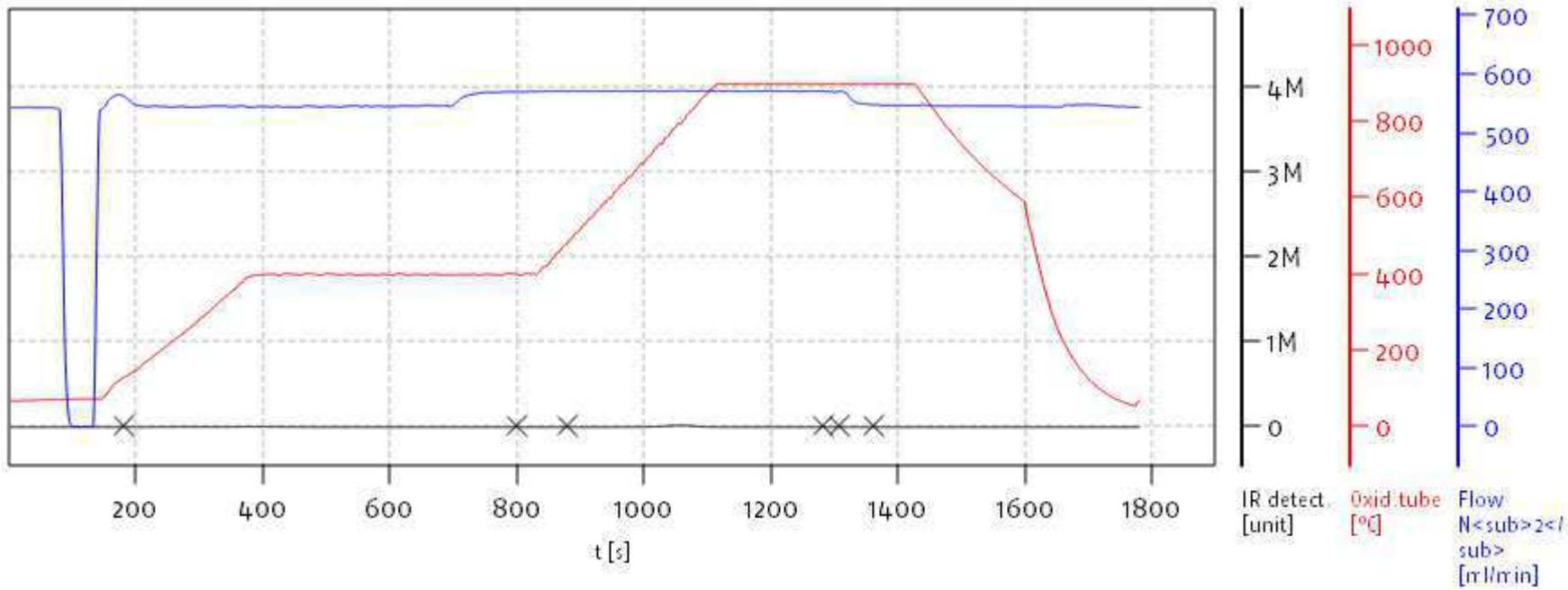
elementar
EXCELLENCE IN ELEMENTS

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
6	6	SLE0270-CAL4	200.00	0.0100	CARBON	5/17/2023 2:16 PM	bl,C2u	0.024	24 980	0.062	0.002	130	45 873	0.022	0.038	1.0000	1.0000



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Access: soliTOC superuser

Date: Thu May 18 09:43:39 2023

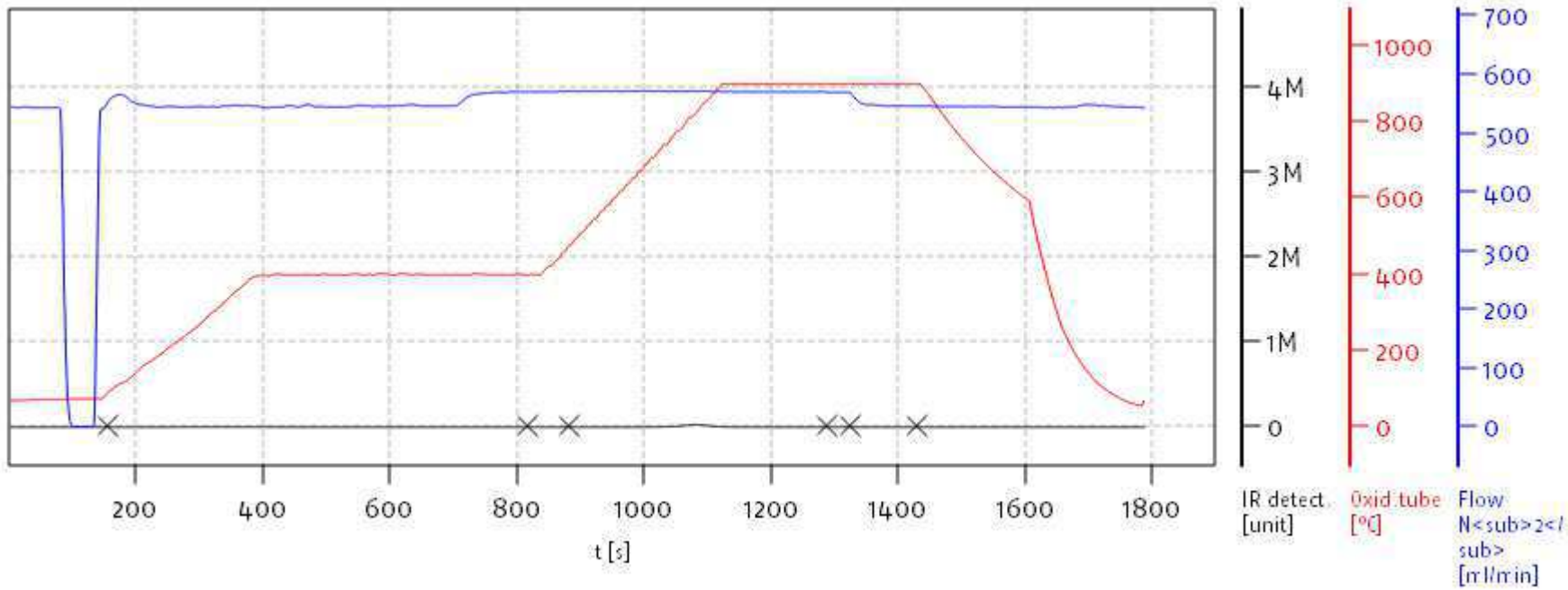
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
7	7	SLE0270-CAL5	200.00	0.0150	CARBON	5/17/2023 2:47 PM	bl,C2u	0.014	12 413	0.065	0.002	539	61 573	0.012	0.051	1.0000	1.0000



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soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
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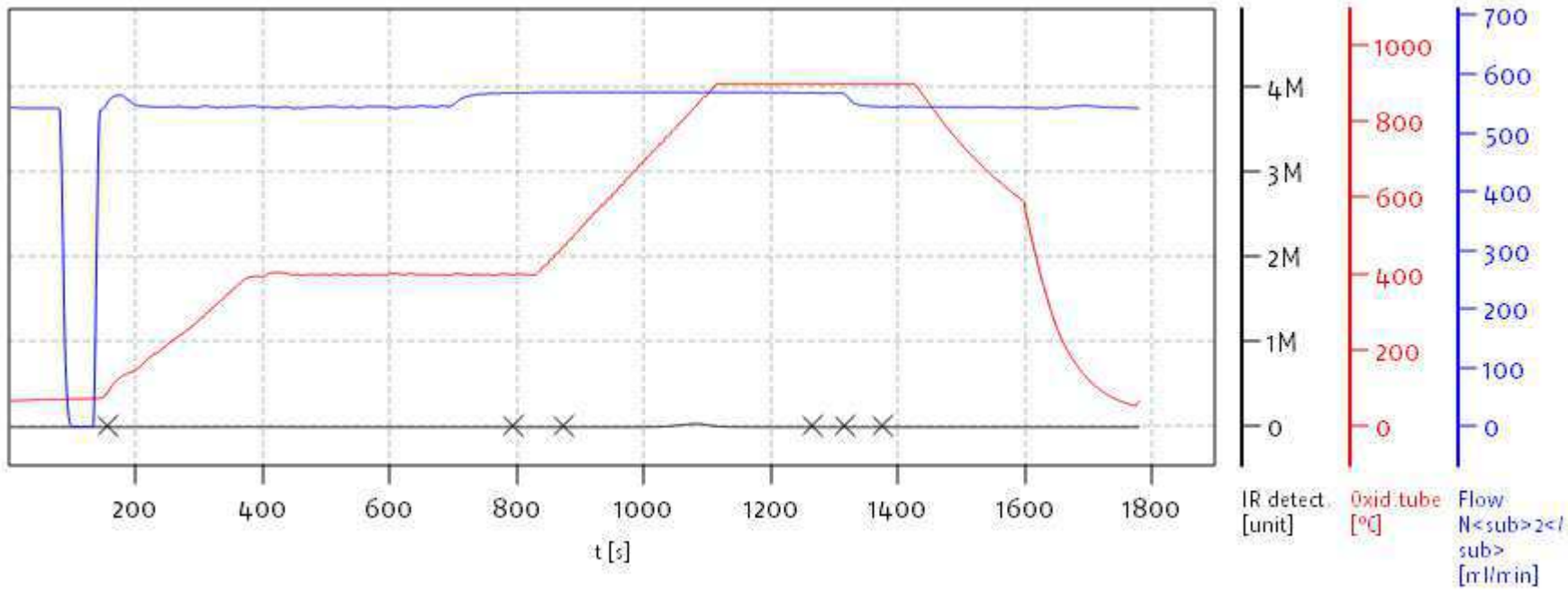
Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
8	8	SLE0270-CAL6	200.00	0.0200	CARBON	5/17/2023 3:17 PM	bl,C1u,C2u	0.011	7 999	0.079	0.002	170	84 086	0.008	0.068	1.0000	1.0000



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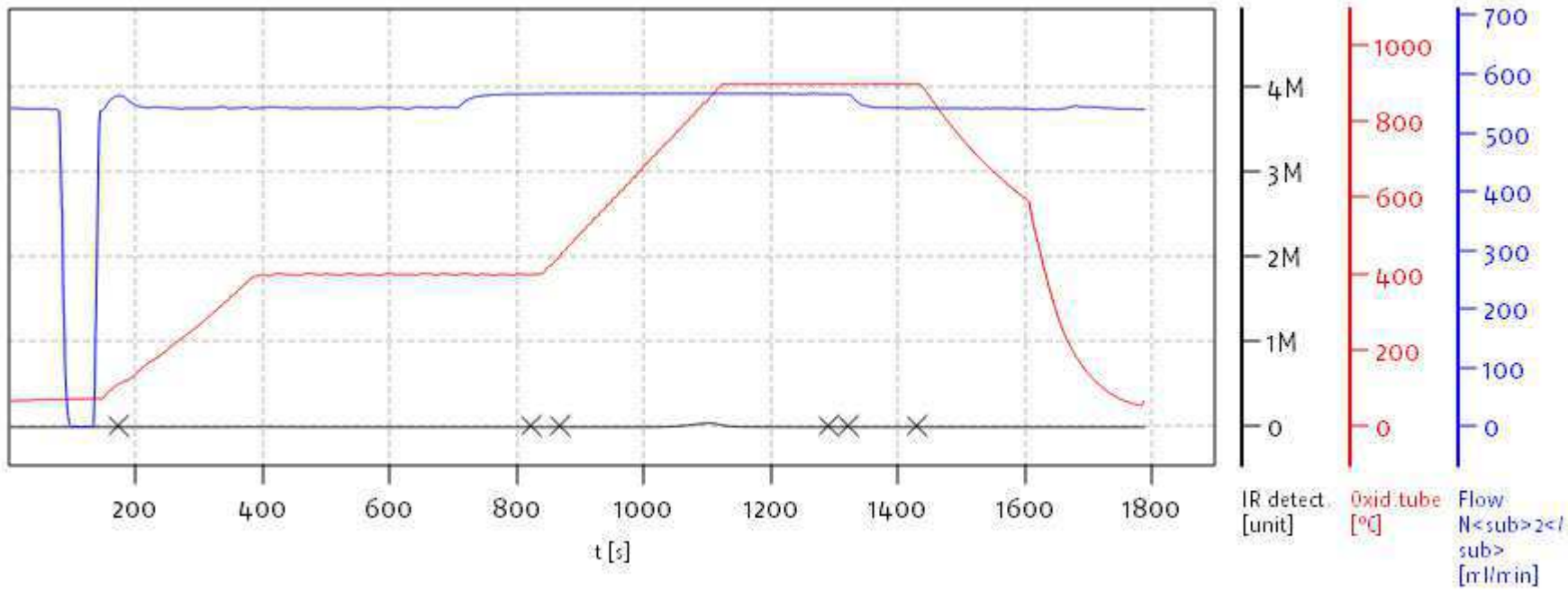
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
9	9	SLE0270-CAL7	200.00	0.0250	CARBON	5/17/2023 3:47 PM	bl,C1u,C2u	0.011	7 612	0.097	0.003	1 386	105 588	0.008	0.085	1.0000	1.0000



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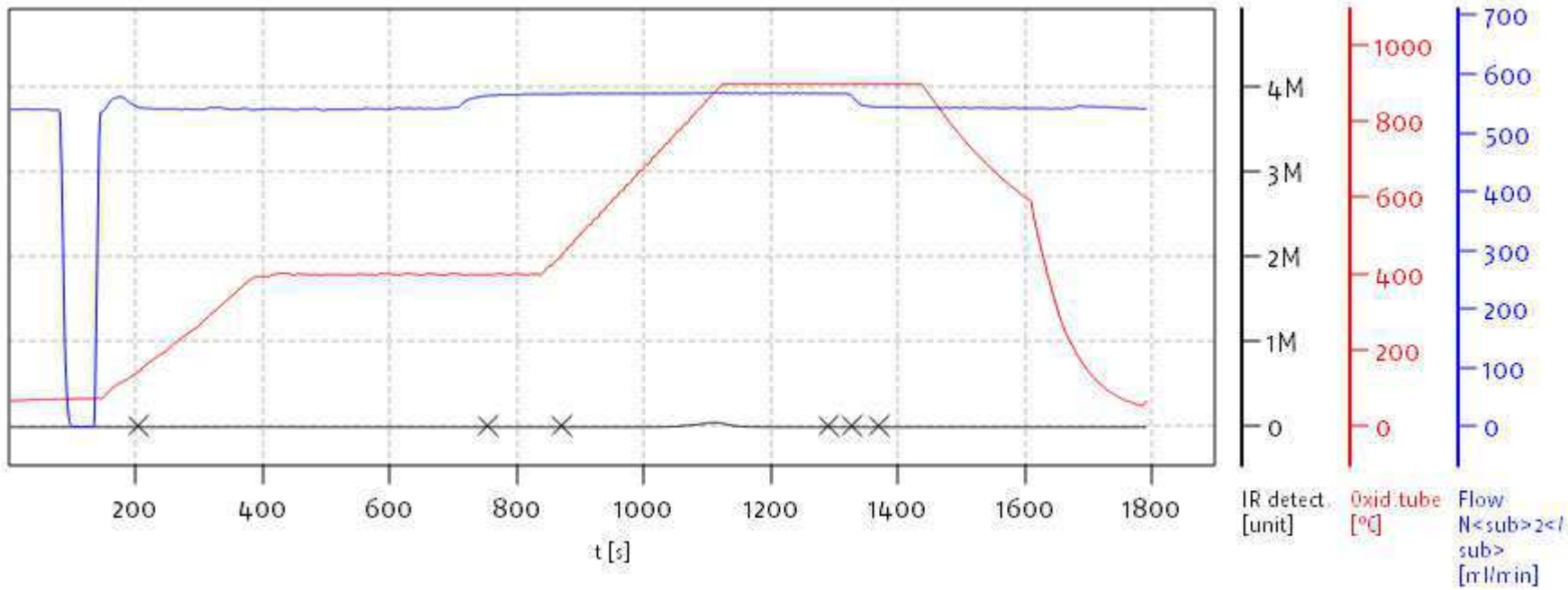
EXCELLENCE IN ELEMENTS

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
10	10	SLE0270-CAL8	200.00	0.0300	CARBON	5/17/2023 4:17 PM	bl,C1u,C2u	0.008	5 428	0.109	0.002	61	124 731	0.006	0.100	1.0000	1.0000



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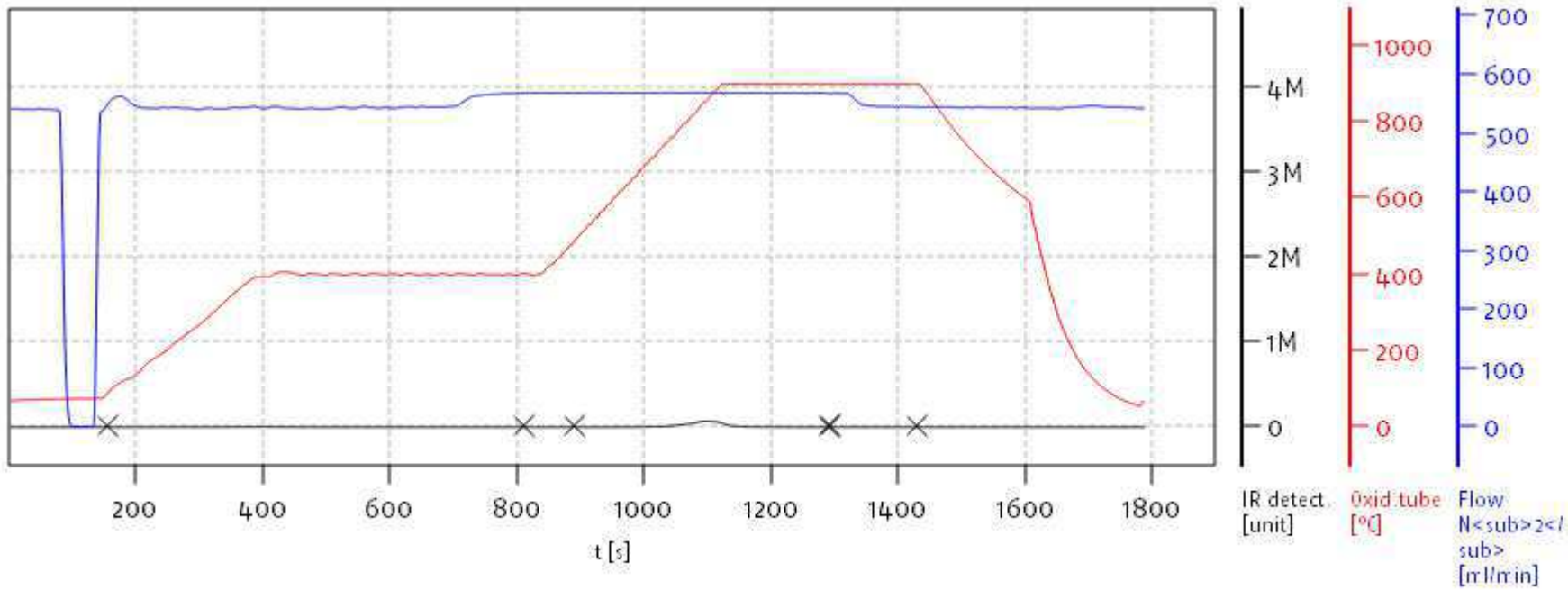
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
11	11	SLE0270-CAL9	200.00	0.0400	CARBON	5/17/2023 4:47 PM	bl,C2u	0.019	17 233	0.167	0.003	1 274	185 567	0.016	0.148	1.0000	1.0000



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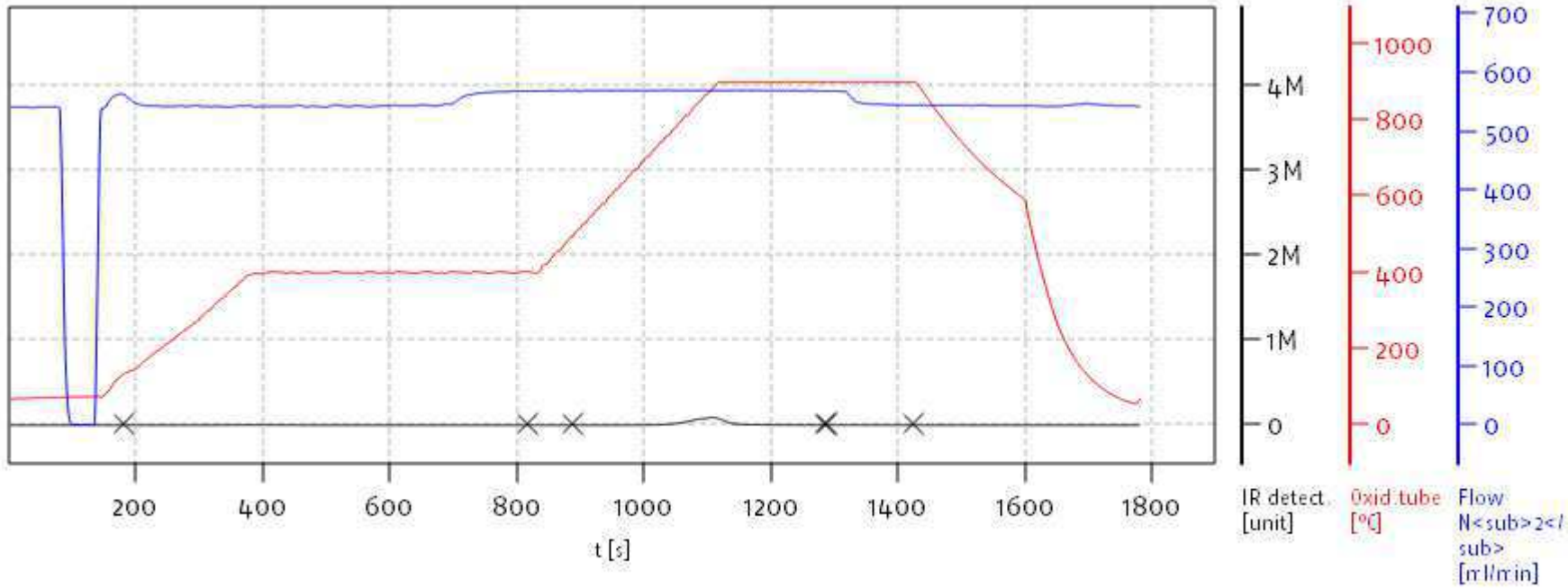
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
12	12	SLE0270-CALA	200.00	0.0500	CARBON	5/17/2023 5:17 PM	bl,C2u	0.018	11 766	0.202	0.007	6 123	230 855	0.011	0.184	1.0000	1.0000



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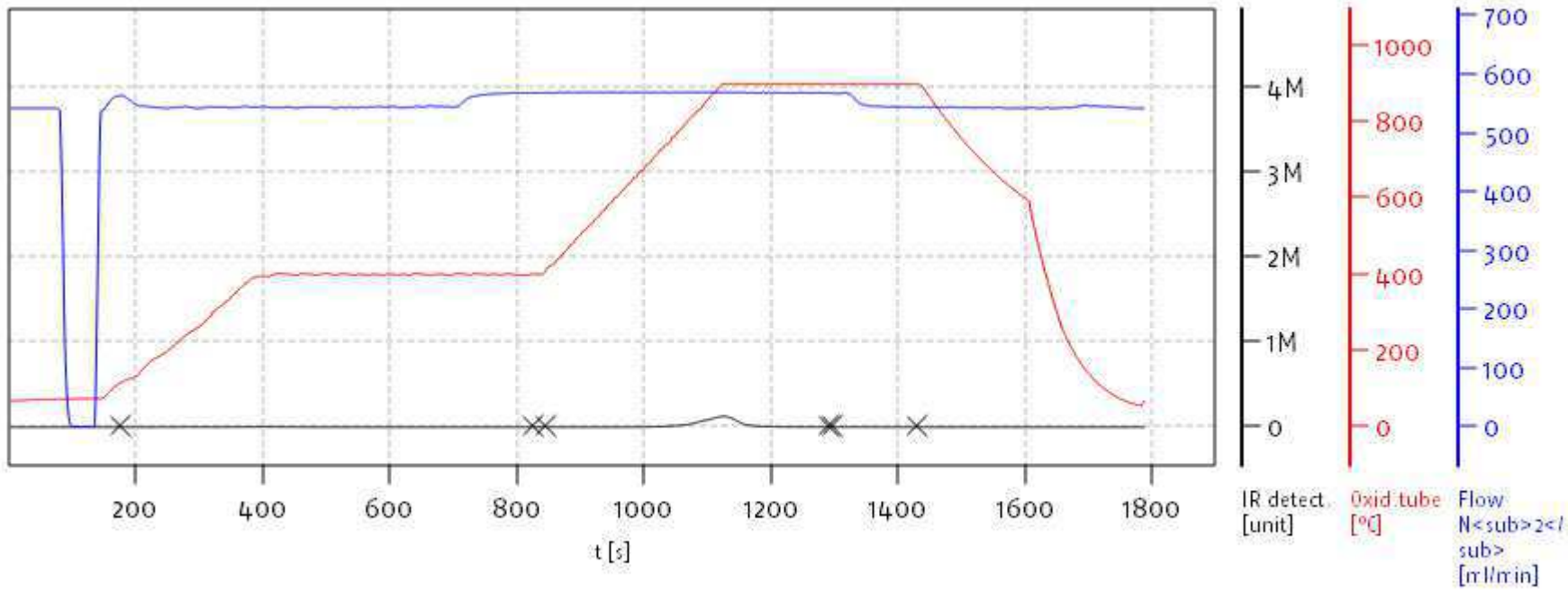
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
13	13	SLE0270-CALB	200.00	0.0040	CARBON	5/17/2023 5:47 PM	bl,C2u	0.022	18 635	0.291	0.005	3 969	339 170	0.017	0.269	1.0000	1.0000



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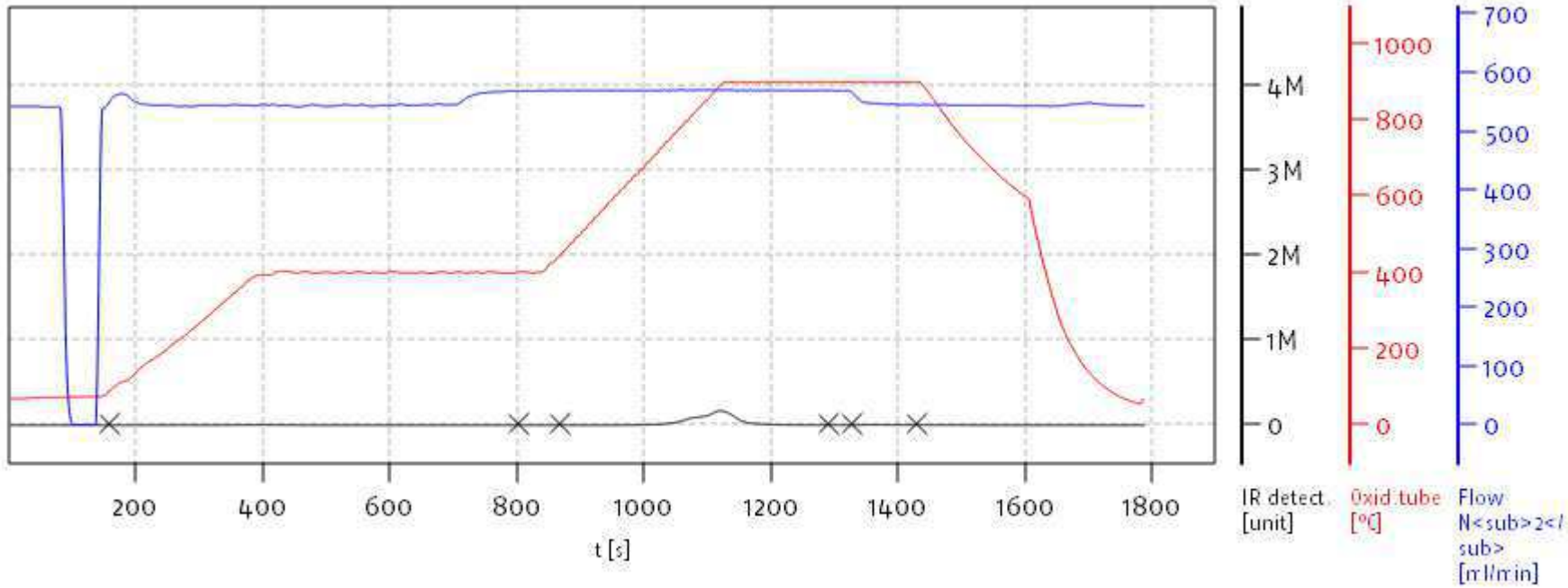
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
14	14	SLE0270-CALC	200.00	0.0050	CARBON	5/17/2023 6:18 PM	bl	0.026	14 893	0.405	0.012	12 639	478 044	0.014	0.379	1.0000	1.0000



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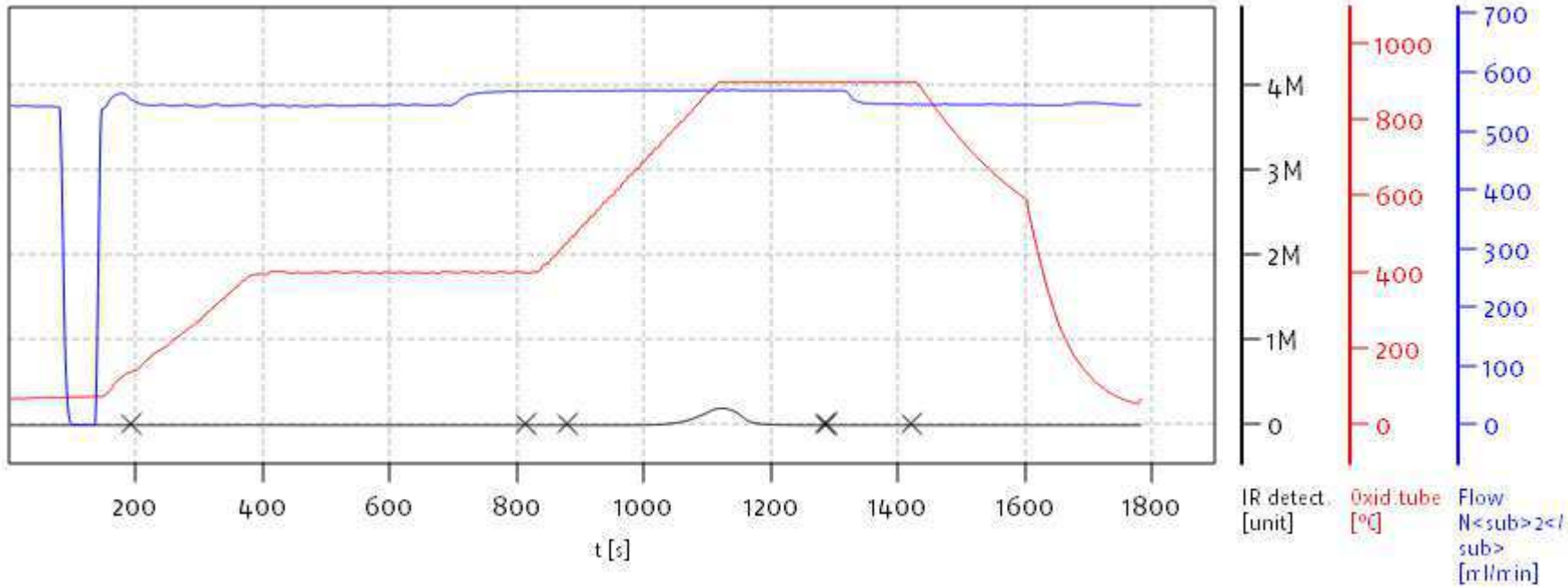
Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
15	15	SLE0270-CALD	200.00	0.0070	CARBON	5/17/2023 6:48 PM	bl,C1u,C2u	0.010	6 787	0.465	0.002	420	574 876	0.007	0.455	1.0000	1.0000



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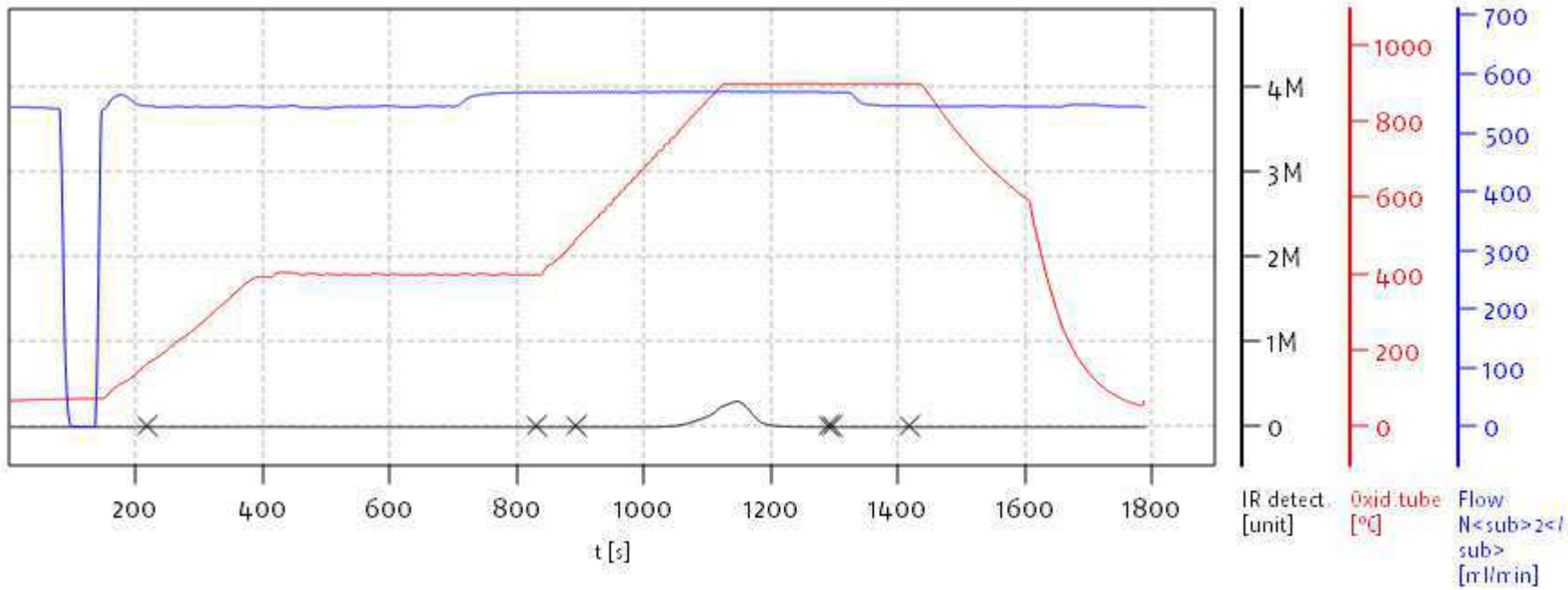
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
16	16	SLE0270-CALE	200.00	0.0100	CARBON	5/17/2023 7:18 PM	bl,C1u,C2u	0.008	4 408	0.667	0.003	771	832 670	0.006	0.658	1.0000	1.0000



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soliTOC V2.0.2 (31015f9) 2018-11-19
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EXCELLENCE IN ELEMENTS

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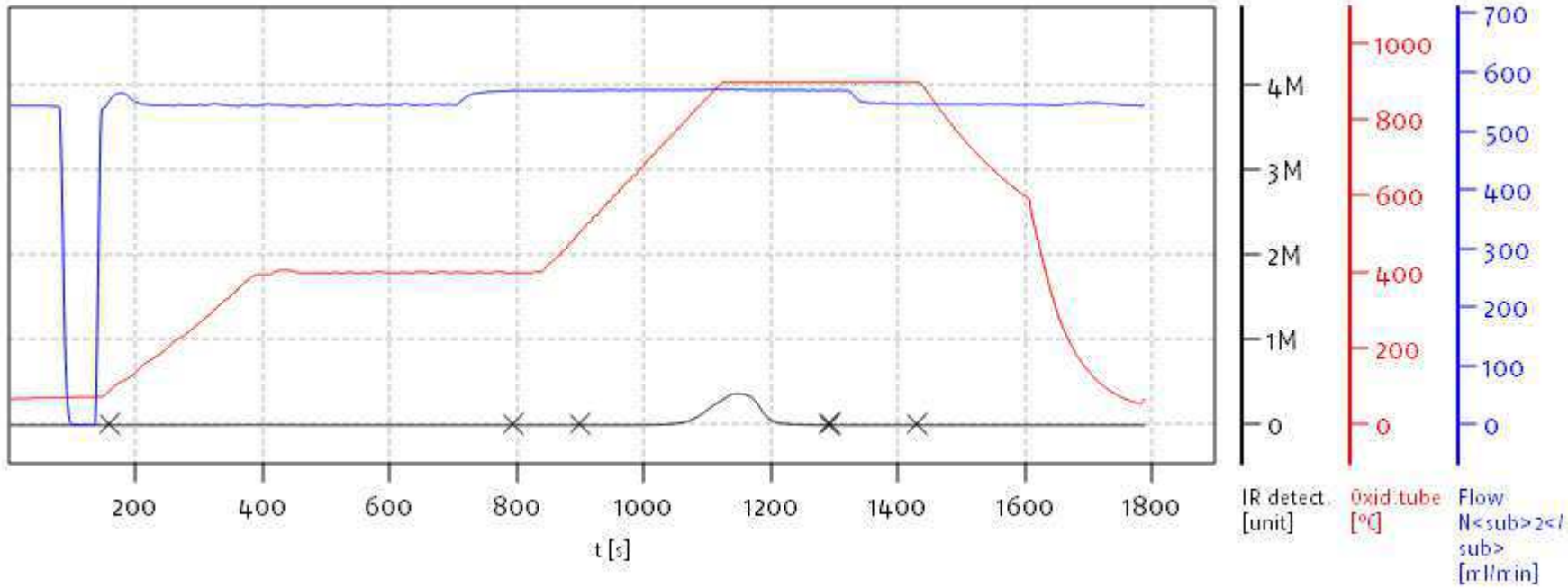
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
17	17	SLE0270-CALF	200.00	0.0150	CARBON	5/17/2023 7:48 PM	bl,C1u,C2u	0.012	8 494	0.984	0.003	1 464	1 230 304	0.009	0.972	1.0000	1.0000



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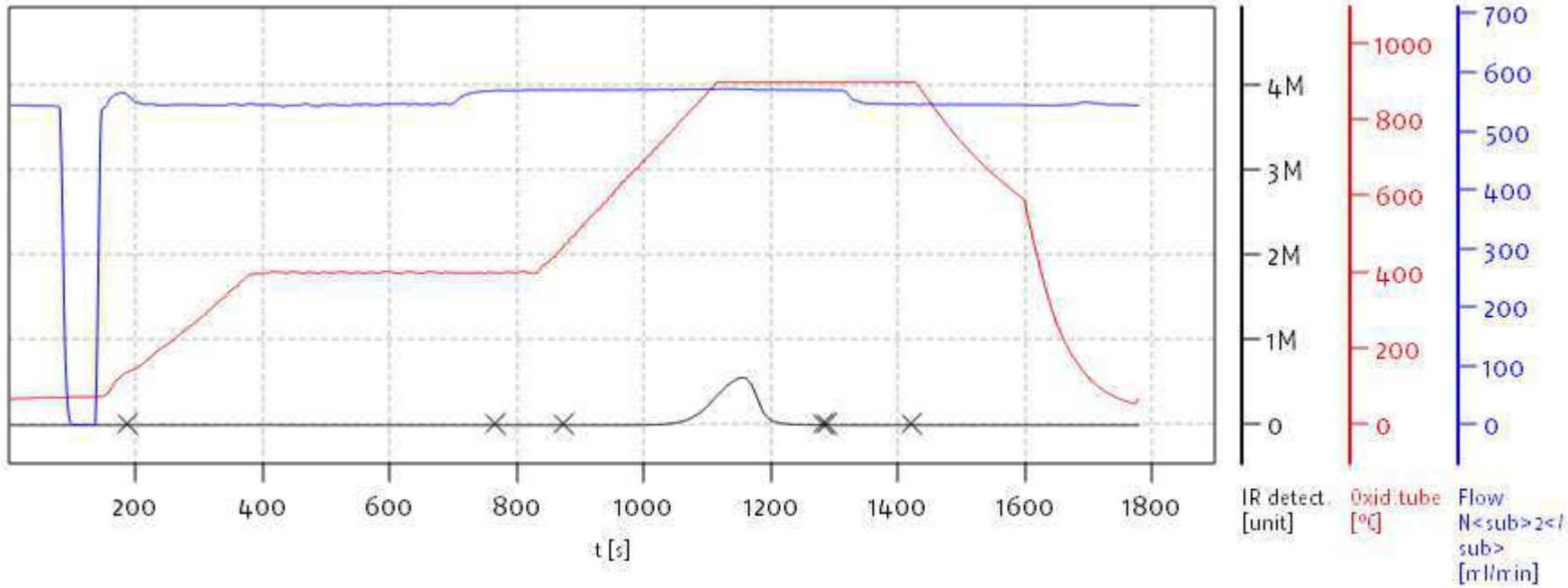
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
18	18	SLE0270-CALG	200.00	0.0200	CARBON	5/17/2023 8:18 PM	bl,C1u,C2u	0.010	5 359	1.331	0.004	1 864	1 673 425	0.006	1.321	1.0000	1.0000



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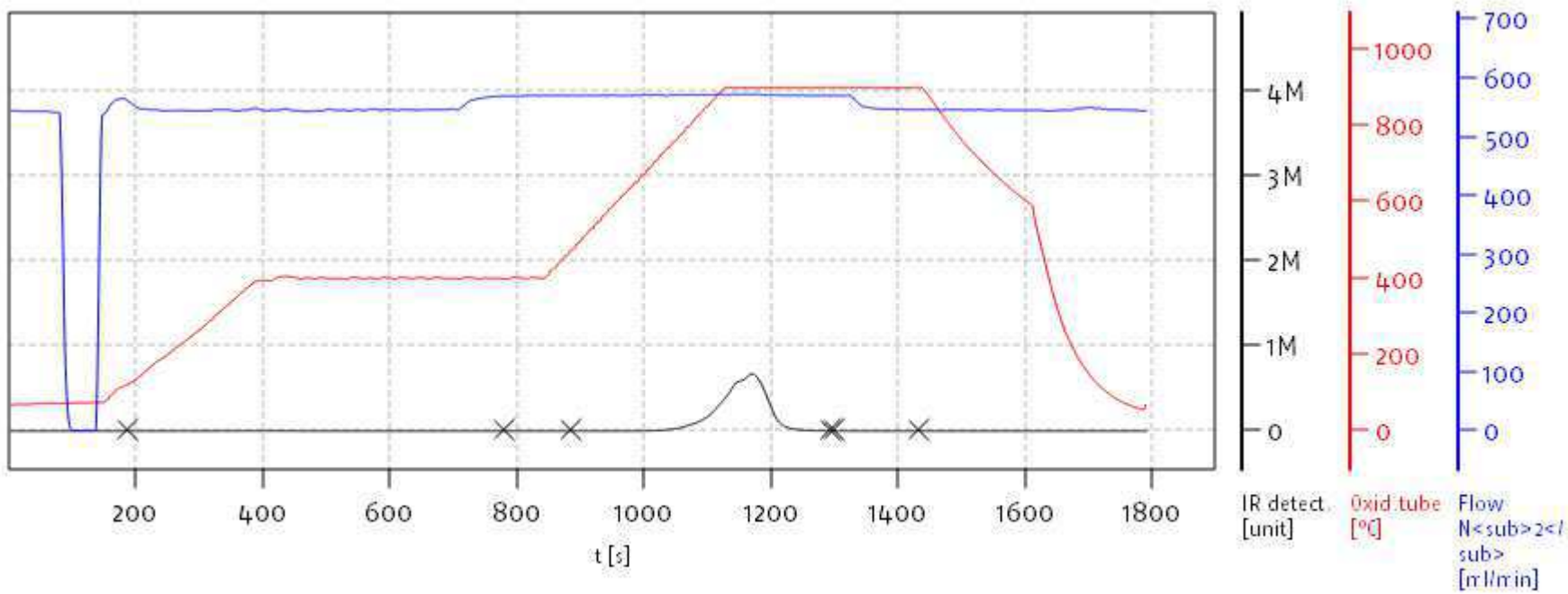
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
19	19	SLE0270-CALH	200.00	0.0250	CARBON	5/17/2023 8:48 PM	bl,C2u	0.015	11 407	1.659	0.004	2 280	2 083 004	0.011	1.644	1.0000	1.0000



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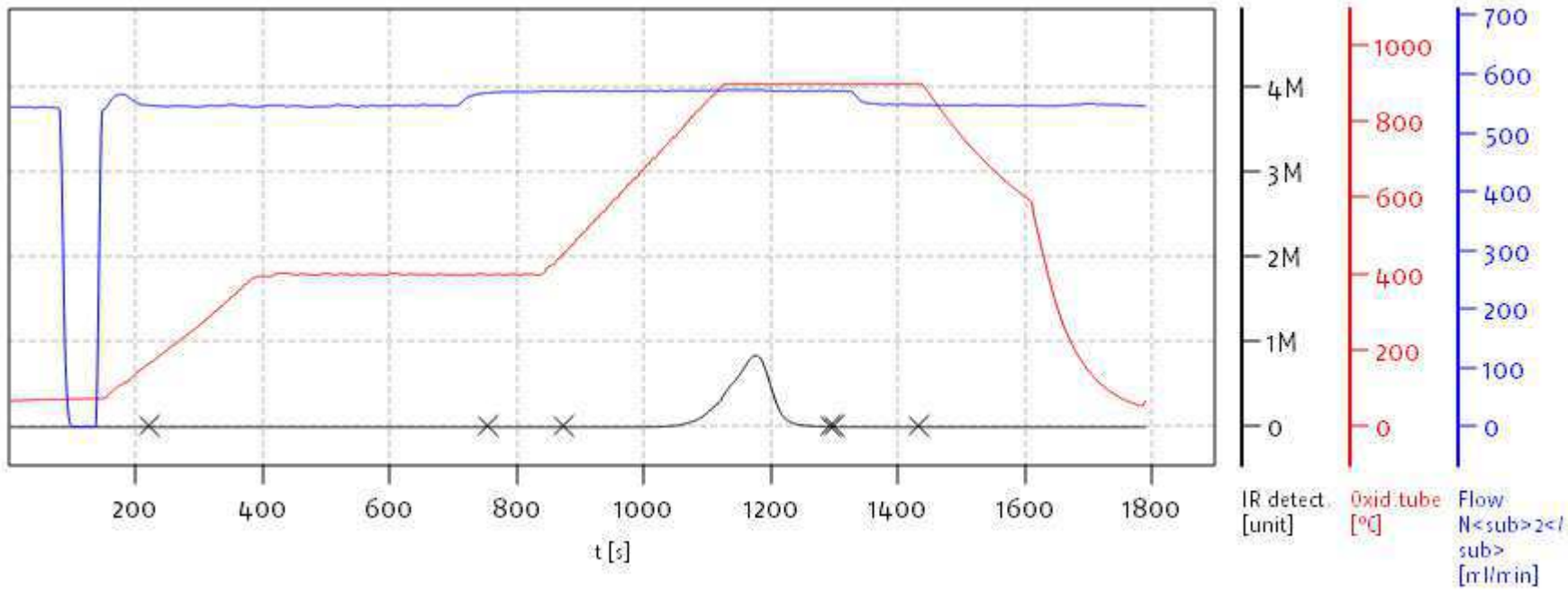
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
20	20	SLE0270-CALI	200.00	0.0300	CARBON	5/17/2023 9:19 PM	bl,C1u,C2u	0.009	2 781	1.981	0.005	3 895	2 498 427	0.004	1.971	1.0000	1.0000



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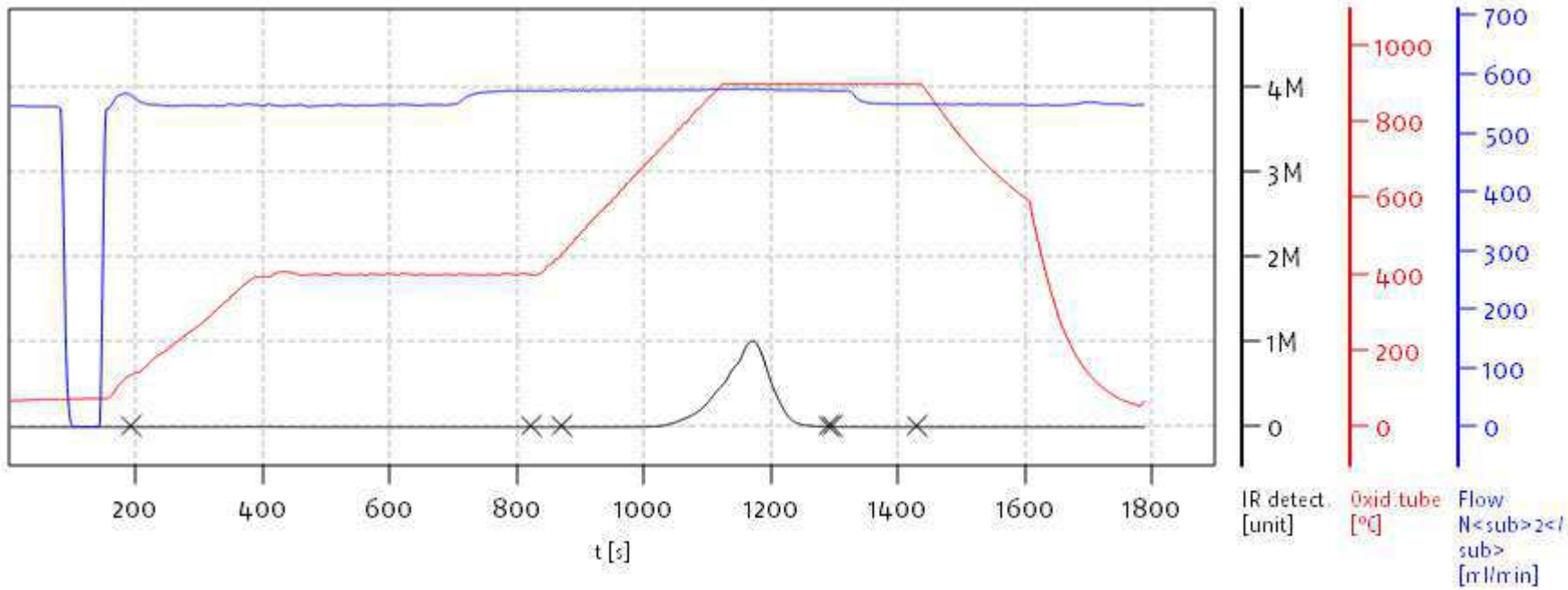
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
21	21	SLE0270-CALJ	200.00	0.0400	CARBON	5/17/2023 9:49 PM	bl,C2u	0.018	13 295	2.629	0.006	4 807	3 309 588	0.013	2.611	1.0000	1.0000



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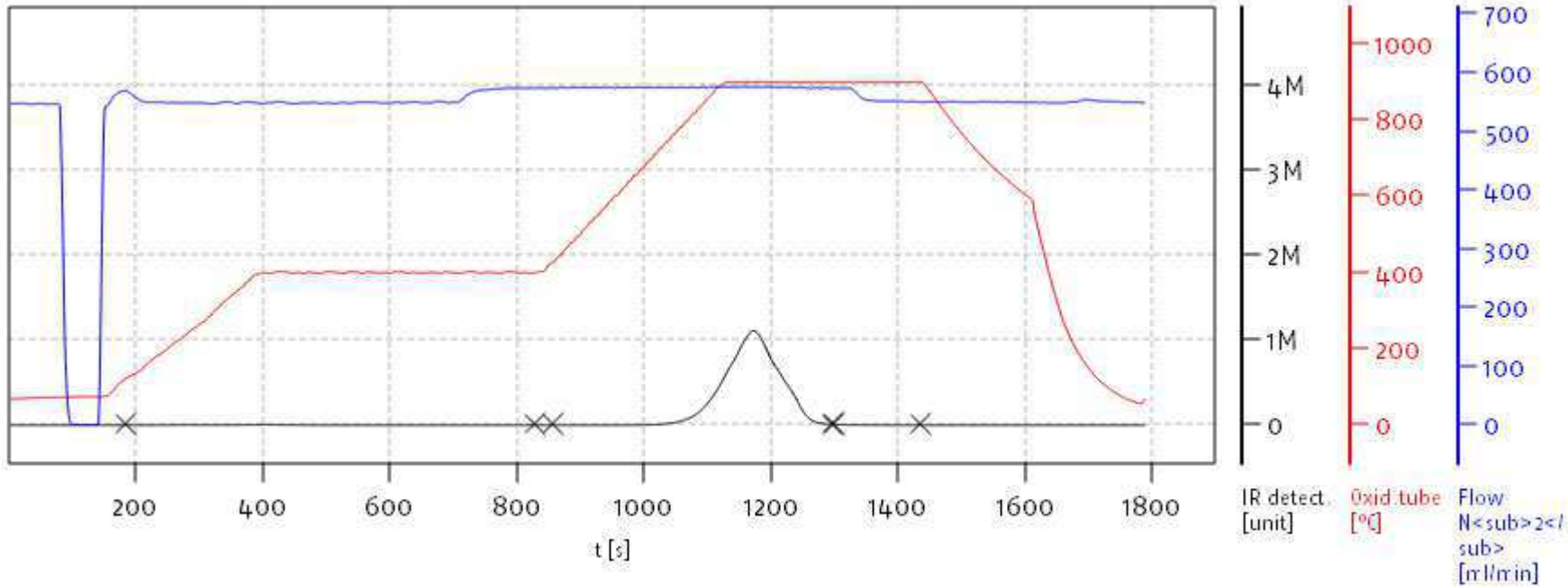
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
22	22	SLE0270-CALK	200.00	0.0500	CARBON	5/17/2023 10:19 PM	bl	0.031	25 022	3.285	0.009	9 148	4 126 050	0.022	3.254	1.0000	1.0000



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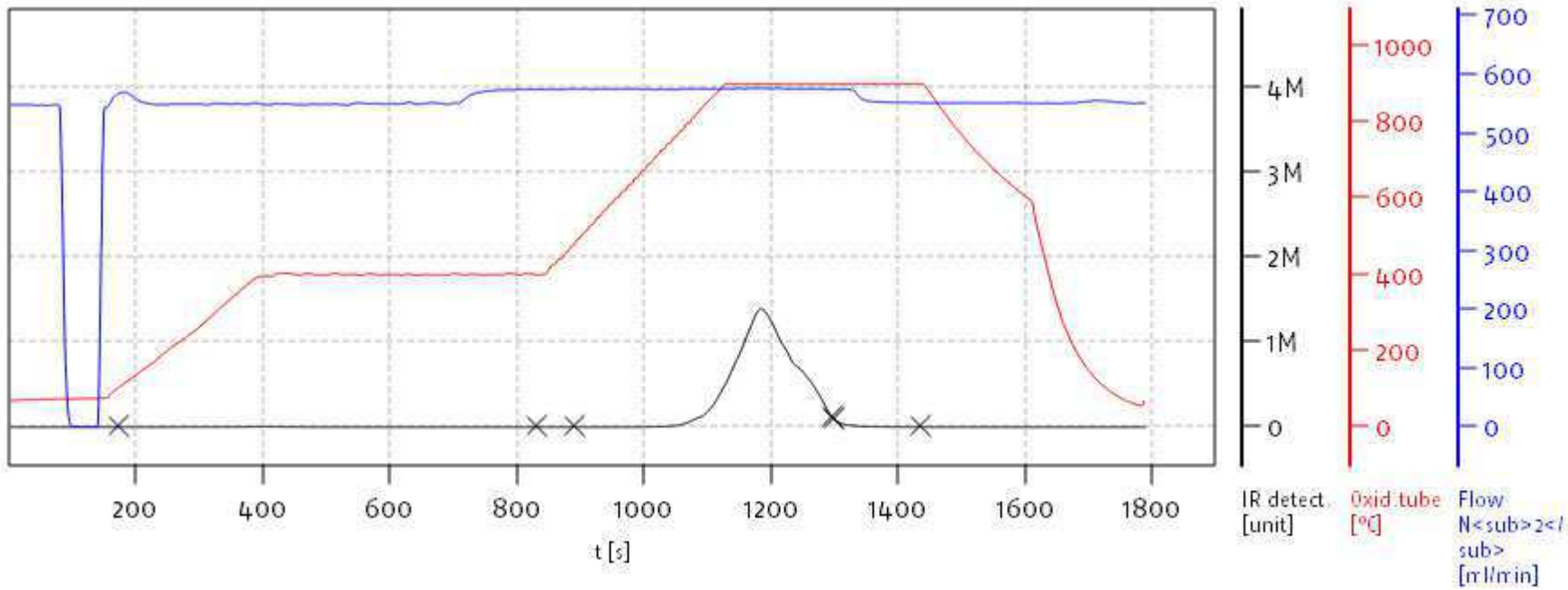
Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
23	23	SLE0270-CALL	200.00	0.0700	CARBON	5/17/2023 10:49 PM	bl	0.069	21 598	4.597	0.050	60 794	5 741 652	0.019	4.528	1.0000	1.0000



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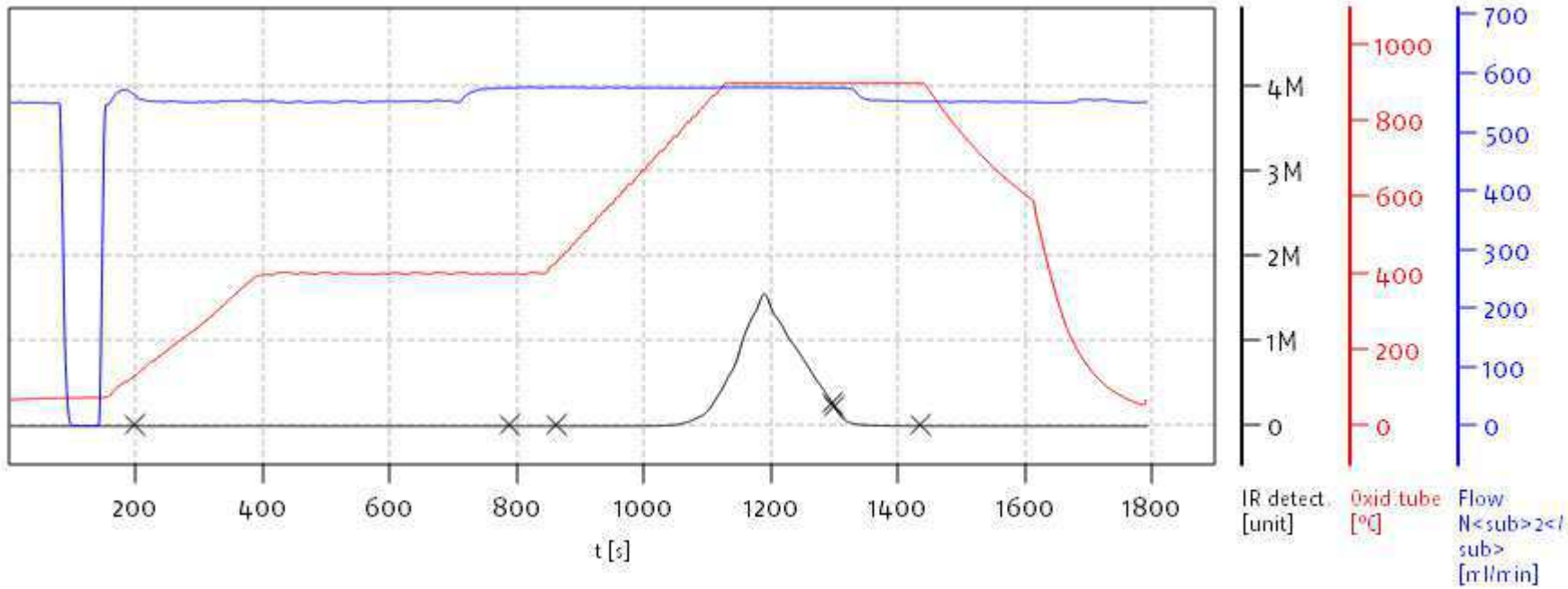
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
24	24	SLE0270-CALM	200.00	0.0800	CARBON	5/17/2023 11:19 PM	bl,C1u	0.112	5 408	5.212	0.106	131 494	6 467 914	0.006	5.100	1.0000	1.0000



Name:

Access: soliTOC superuser

Date: Thu May 18 09:43:39 2023

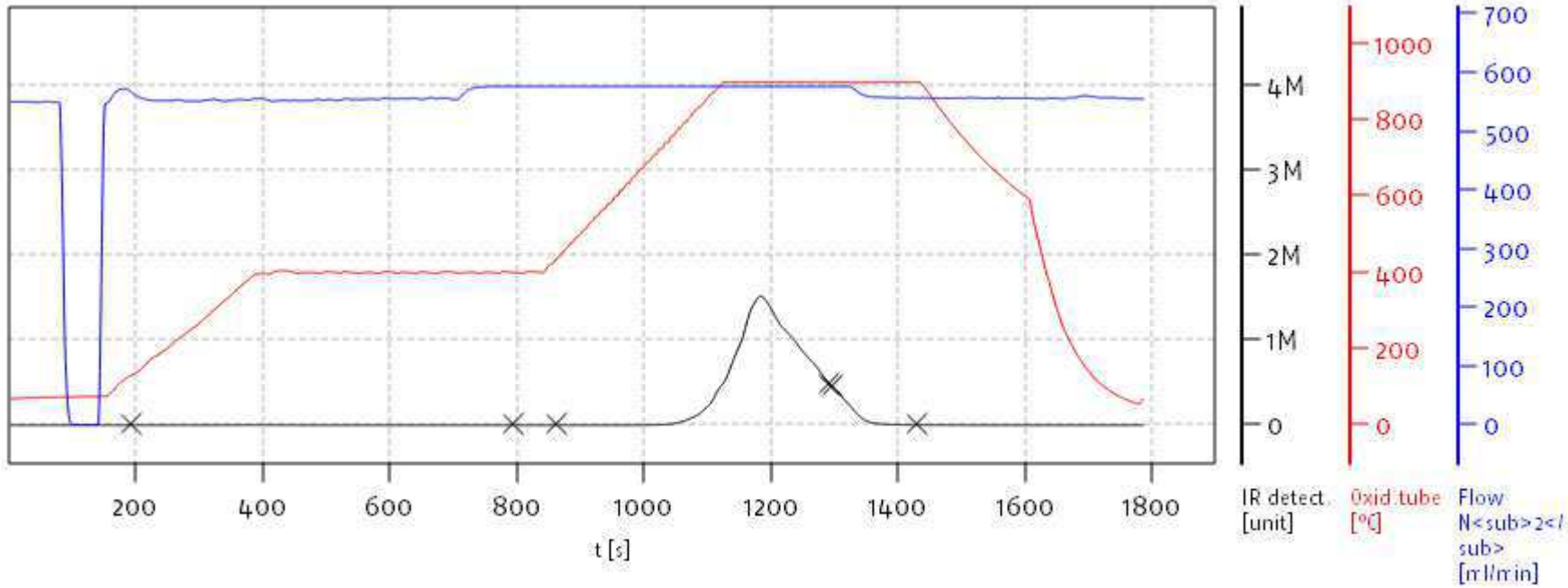
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
25	25	SLE0270-CALN	200.00	0.0900	CARBON	5/17/2023 11:50 PM	bl	0.408	8 745	5.832	0.399	503 842	6 879 212	0.009	5.424	1.0000	1.0000



Name:

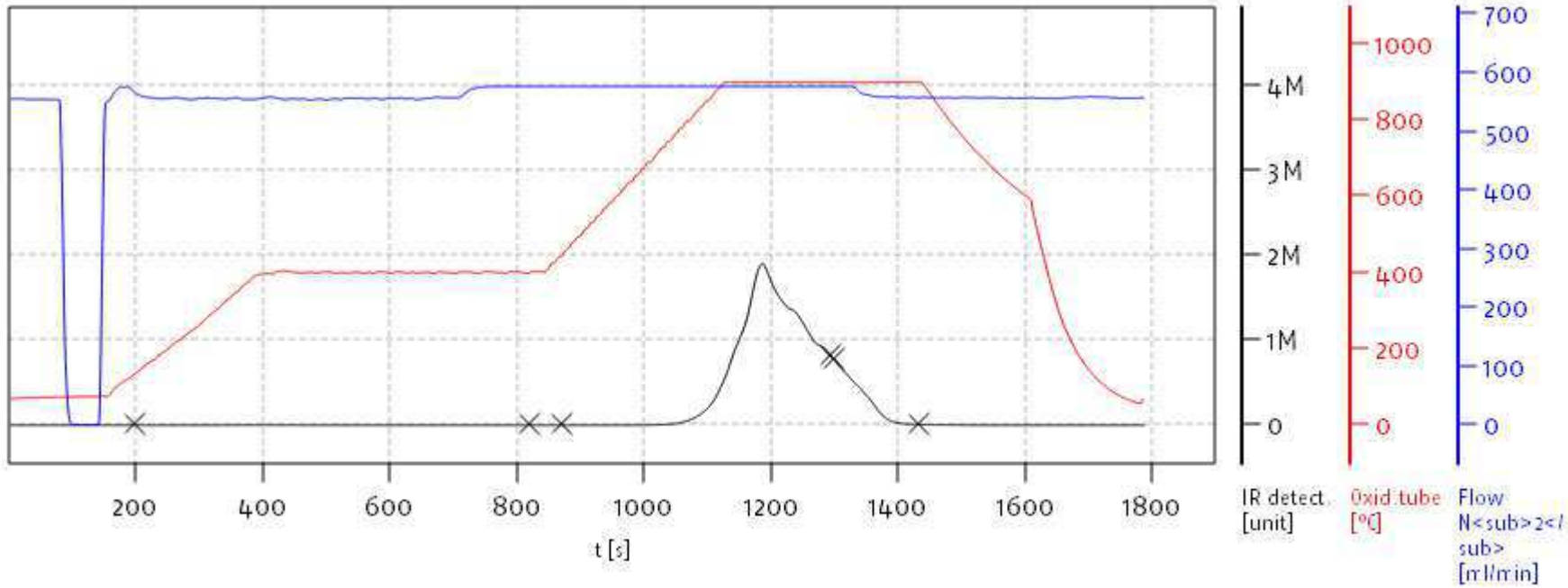
Access: soliTOC superuser

Date: Thu May 18 09:43:39 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
26	26	SLE0270-CALO	200.00	0.1200	CARBON	5/18/2023 12:20 AM	bl,C1u	1.074	6 993	7.759	1.066	1 350 231	8 478 912	0.008	6.685	1.0000	1.0000



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soliTOC V2.0.2 (31015f9) 2018-11-19
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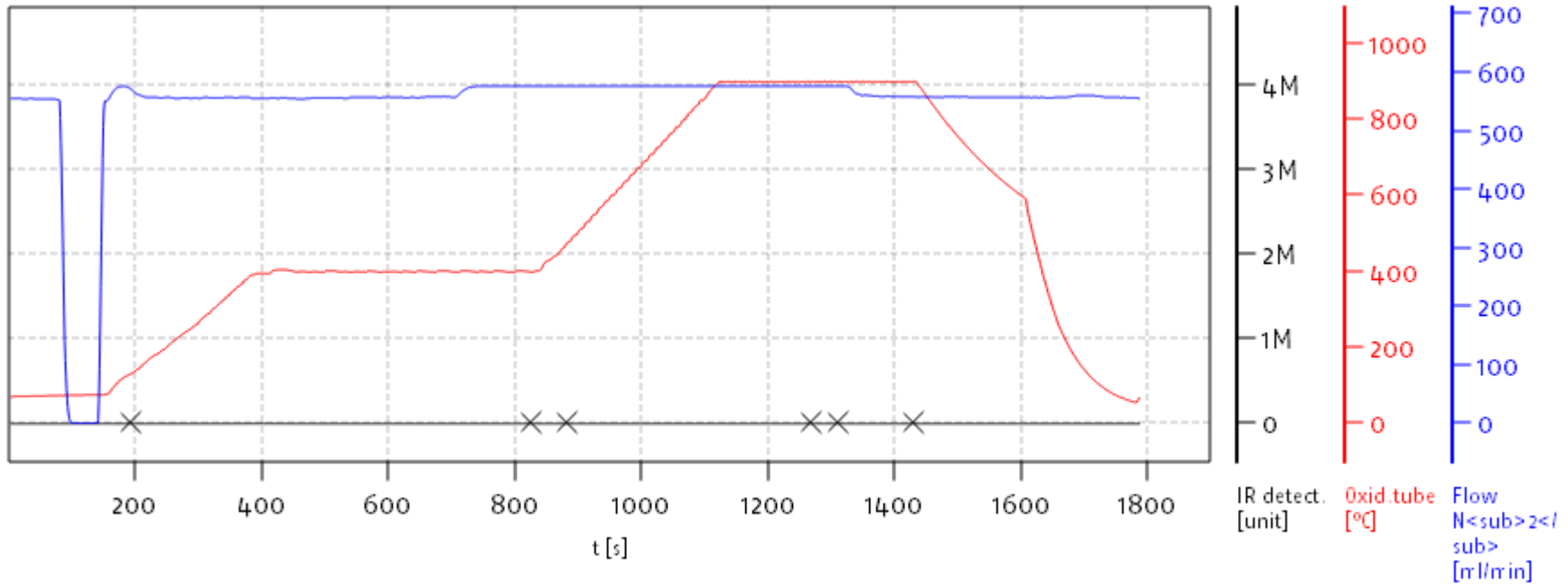
Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
27	27	BLANK	1.00		CARBON	5/ 18/2023 12:50 AM	bl	0.000	5 379	0.000	0.000	0	959	0.000	0.000	1.0000	1.0000



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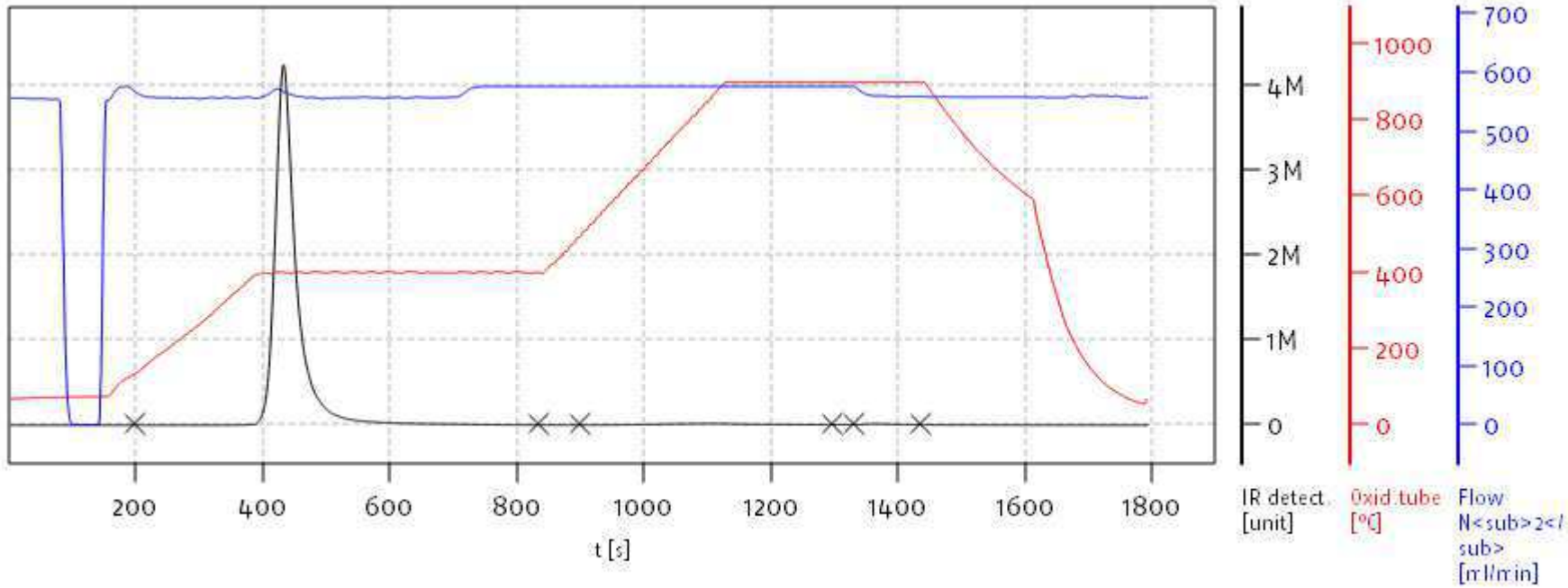
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
28	28	Dfactor	21.70		CARBON	5/18/2023 1:20 AM	bl	44.736	6 218 209	45.755	0.291	37 376	137 647	44.446	1.019	0.9835	1.0000



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Date: Thu May 18 09:43:39 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
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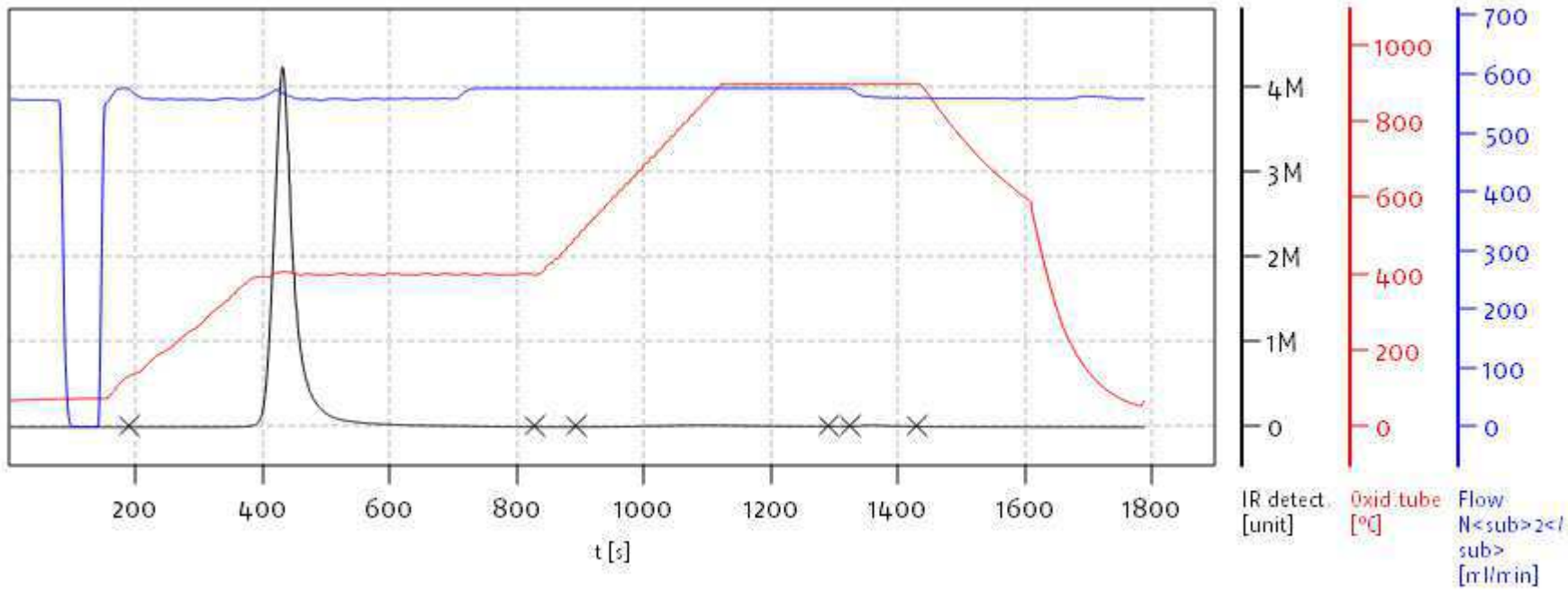
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
29	29	Dfactor	21.20		CARBON	5/18/2023 1:50 AM	bl	44.824	6 030 884	46.116	0.378	48 254	171 095	44.446	1.292	0.9907	1.0000



Name:

Access: soliTOC superuser

Date: Thu May 18 09:43:39 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
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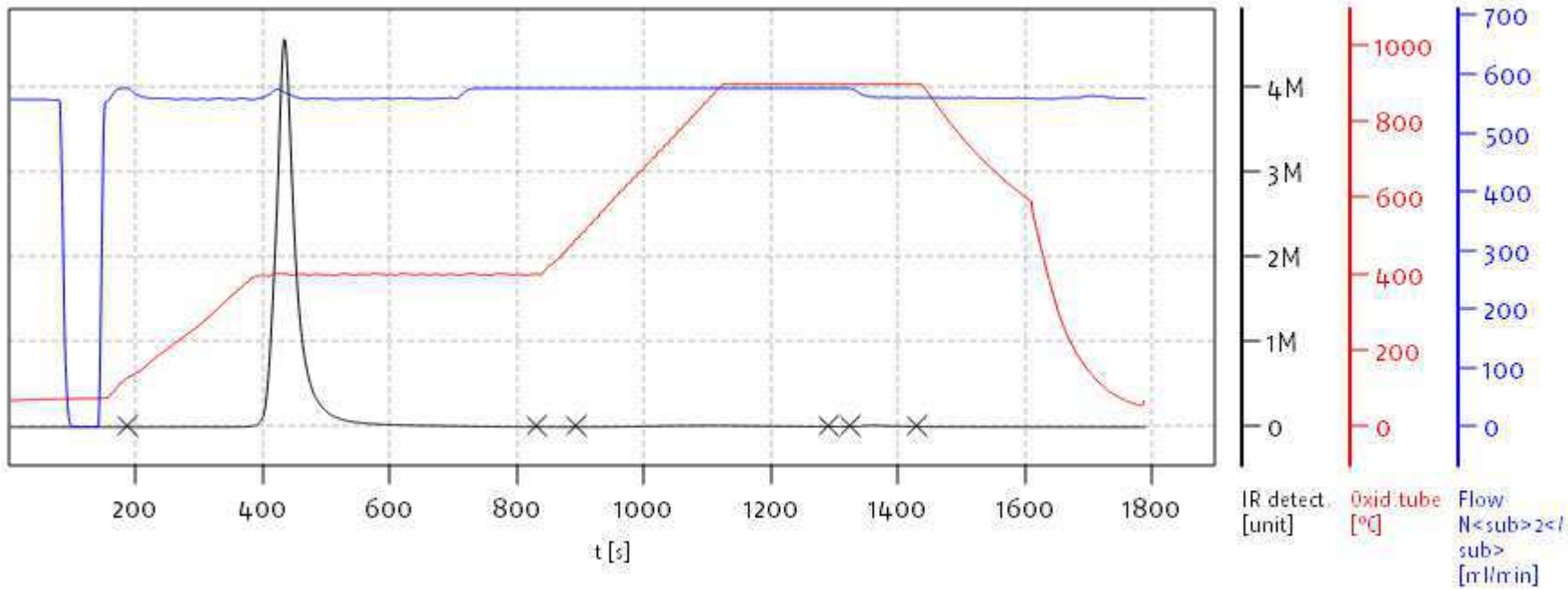
EXCELLENCE IN ELEMENTS

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
30	30	SLE0270-ICV1	22.30		CARBON	5/18/2023 2:21 AM	bl	44.949	6 392 325	46.022	0.327	43 597	149 127	44.622	1.073	0.9871	1.0000



Name:

Access: soliTOC superuser

Date: Thu May 18 09:43:39 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

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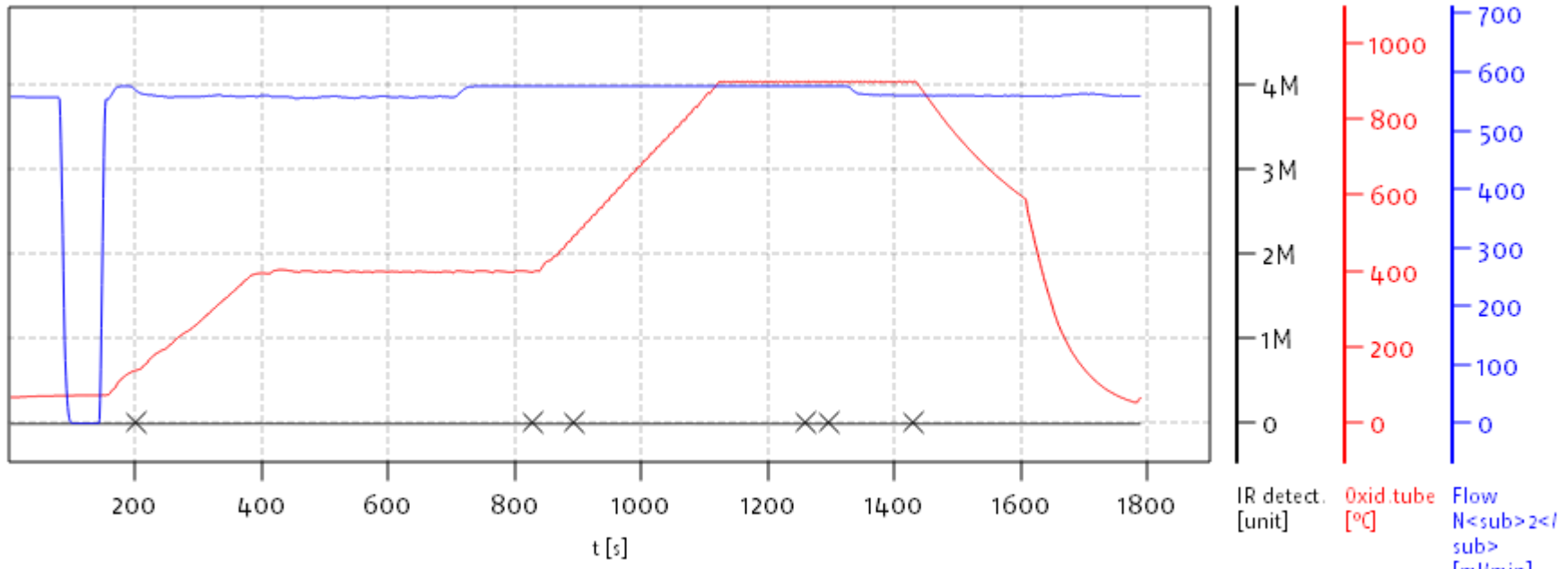
Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
31	31	SLE0270-ICB1	530.50		CARBON	5/18/2023 2:51 AM	bl,C1u,C3u,C2u	0.003	6 198	0.005	0.001	198	1 900	0.003	0.001	0.9871	1.0000



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Access: soliTOC superuser

Date: Thu May 18 09:43:39 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
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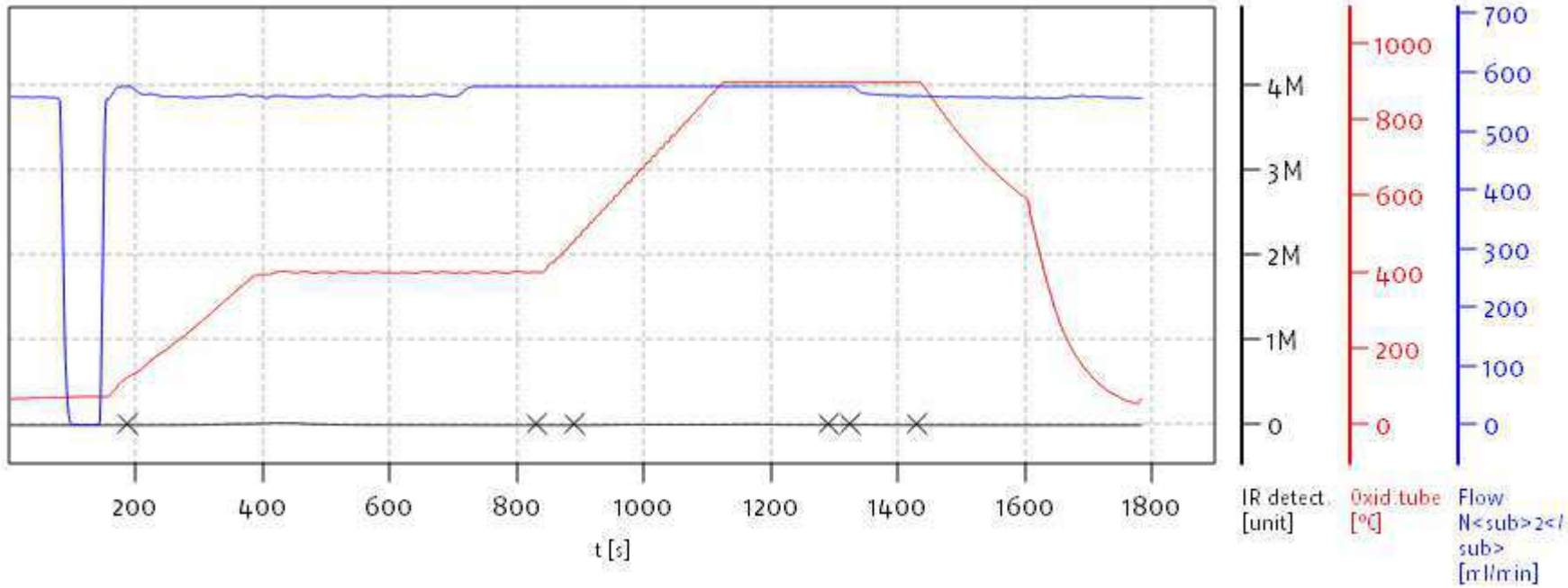
EXCELLENCE IN ELEMENTS

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
32	32	23D0491-10	42.50		CARBON	5/18/2023 3:21 AM	bl	0.560	138 129	0.841	0.044	9 353	73 148	0.515	0.281	0.9871	1.0000



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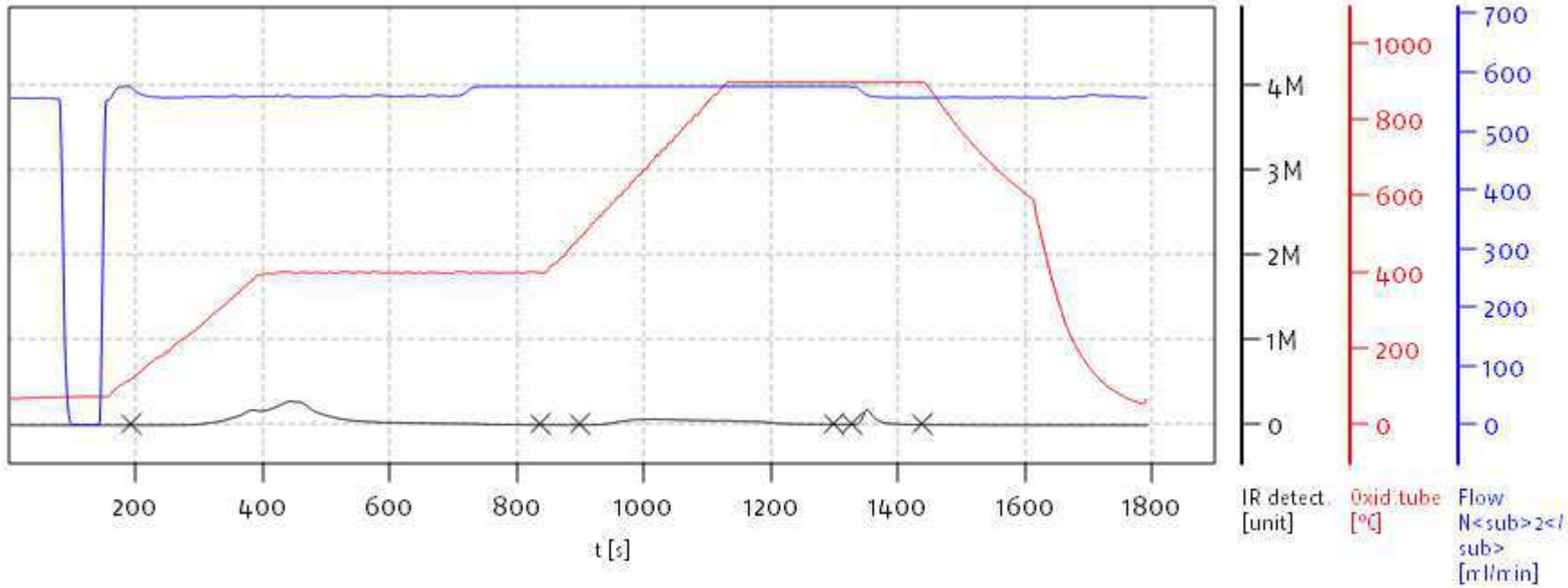
Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
33	33	23D0491-10RE1	505.50		CARBON	5/18/2023 3:51 AM	bl	0.513	1 489 627	0.692	0.054	169 645	569 728	0.459	0.178	0.9871	1.0000



Name:

Access: soliTOC superuser

Date: Thu May 18 09:43:39 2023

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EXCELLENCE IN ELEMENTS

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
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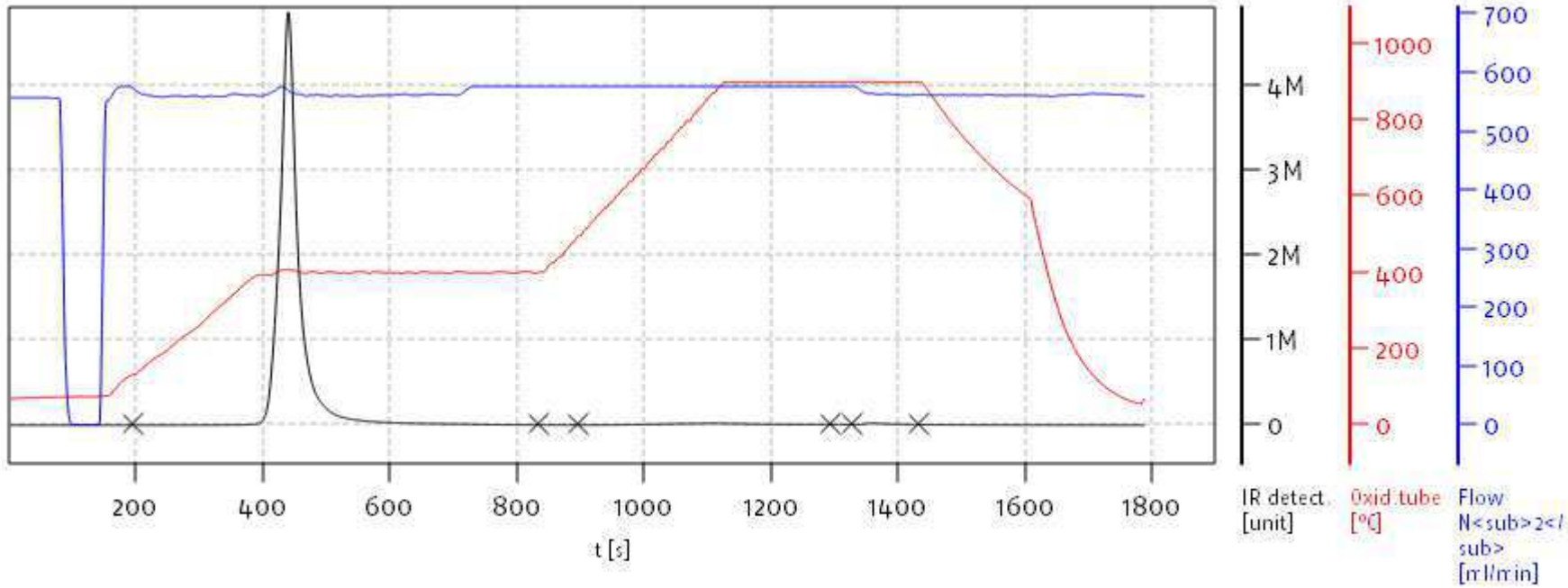
Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
34	34	SLE0270-CCV1	22.20		CARBON	5/18/2023 4:21 AM	bl	44.616	6 309 271	45.769	0.375	50 146	159 806	44.241	1.153	0.9871	1.0000



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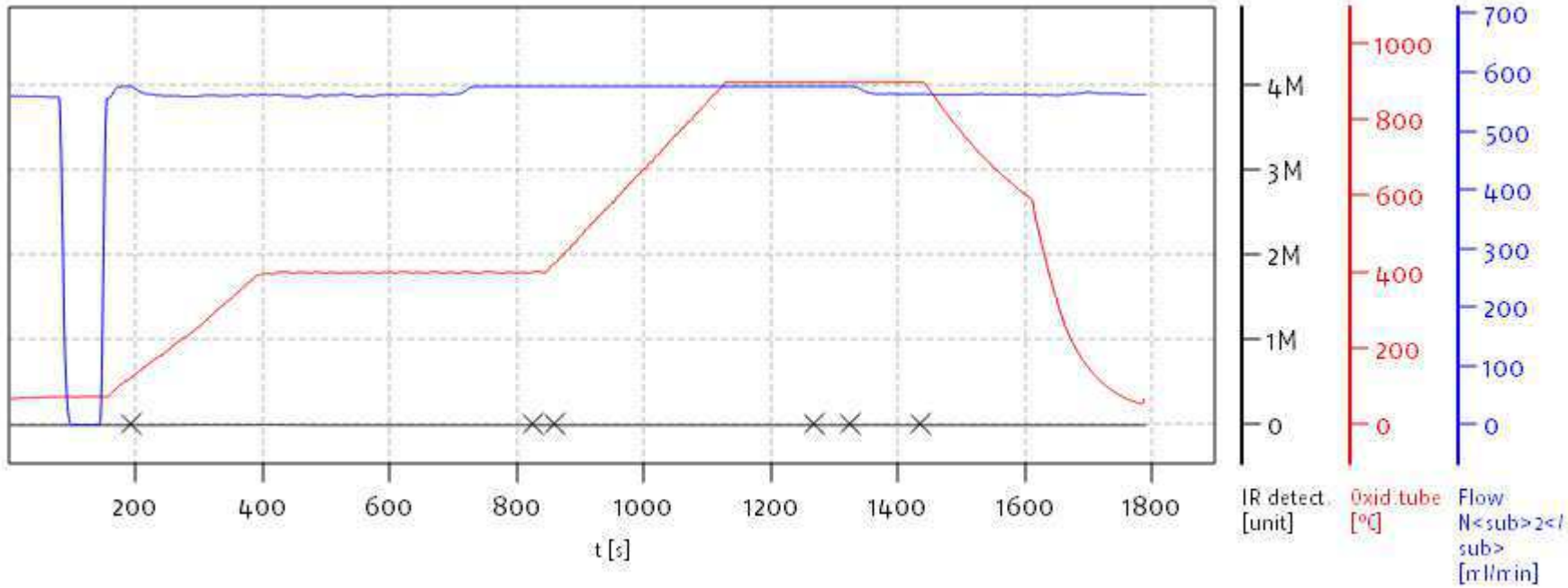
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
35	35	SLE0270-CCB1	523.30		CARBON	5/18/2023 4:52 AM	bl,C3u,C2u	0.009	22 128	0.010	0.001	2 335	2 184	0.007	0.001	0.9871	1.0000



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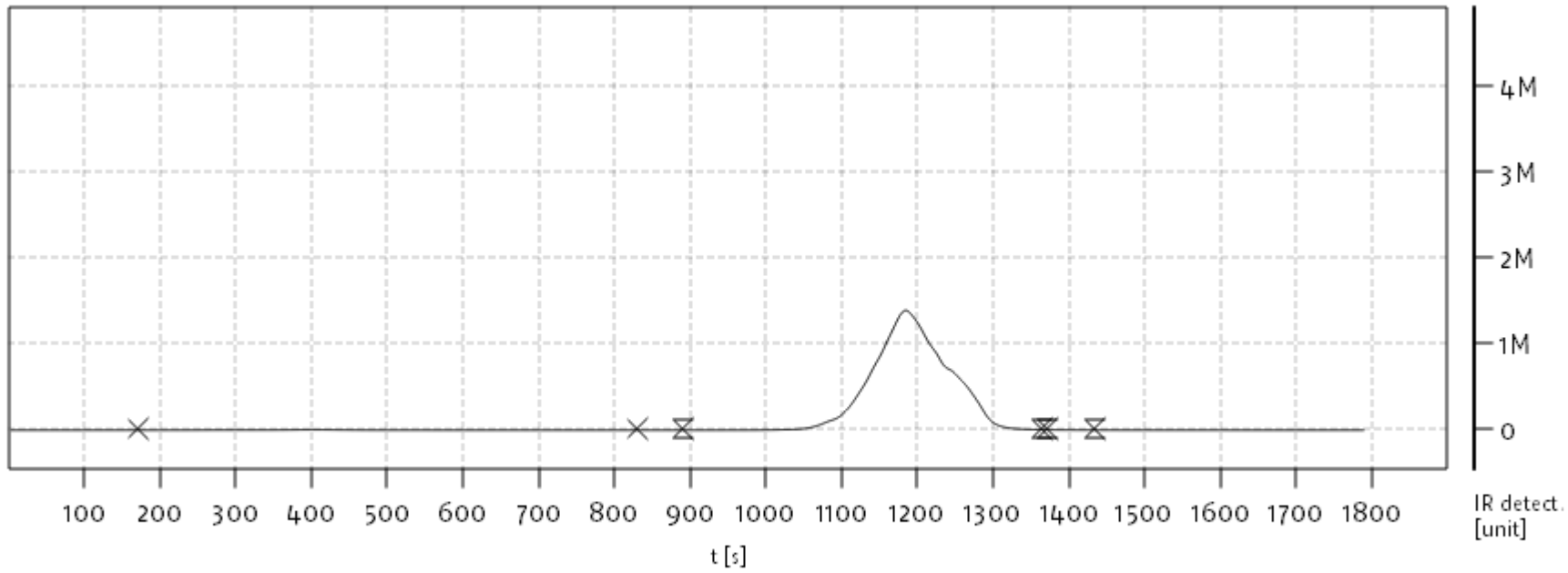
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
23	23	SLE0270-CALL	200.00	0.0700	CARBON	5/18/2023 9:47 AM	bl	0.019	21 598	4.386	0.000	**0**	**5 538 028**	0.019	4.367	1.0000	1.0000



Name:

Access: soliTOC superuser

Date: Thu May 18 09:50:12 2023

elementar
EXCELLENCE IN ELEMENTS

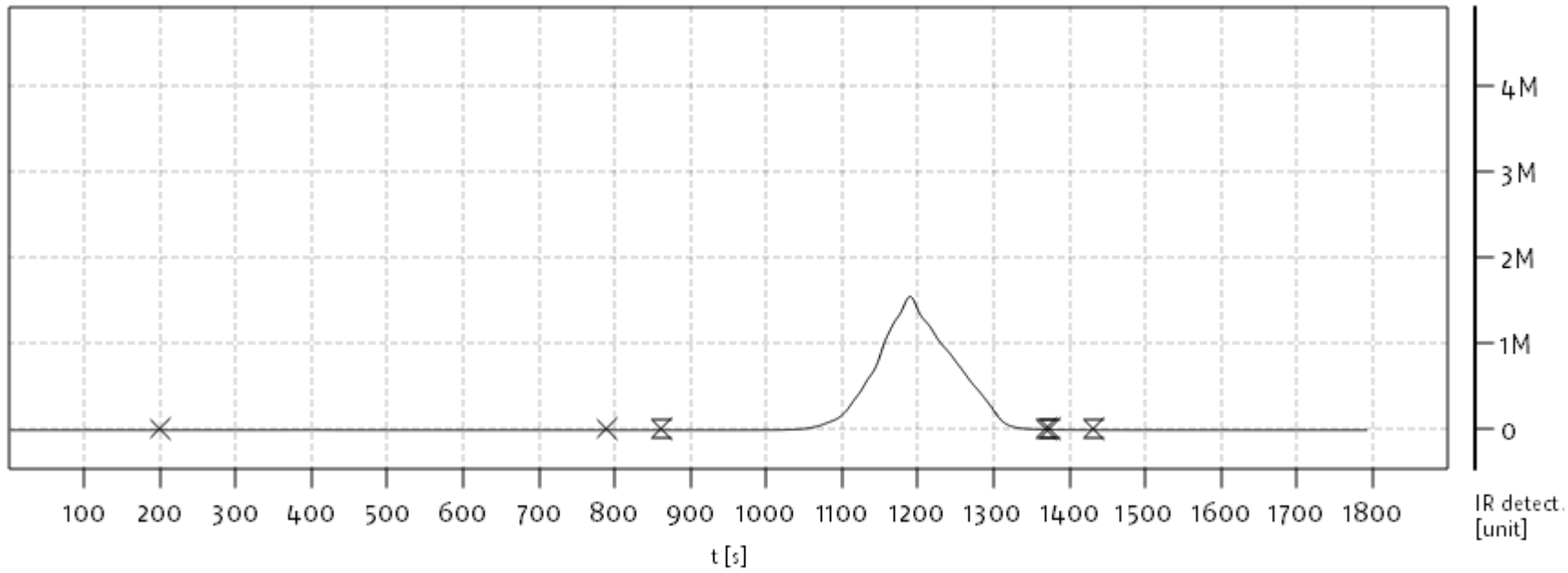
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
24	24	SLE0270-CALM	200.00	0.0800	CARBON	5/18/2023 9:48 AM	bl,C1u	0.006	5 408	4.784	0.000	**0**	**6 058 878**	0.006	4.778	1.0000	1.0000



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Date: Thu May 18 09:50:12 2023

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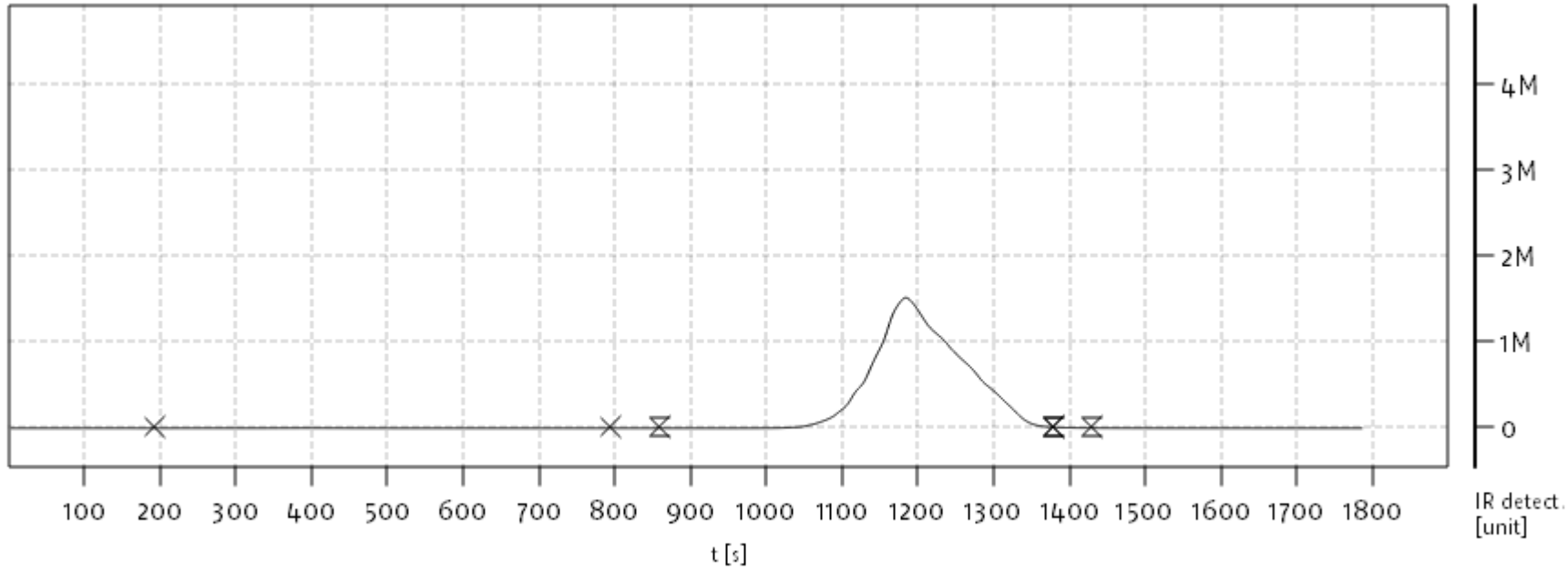
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
25	25	SLE0270-CALN	200.00	0.0900	CARBON	5/18/2023 9:49 AM	bl	0.009	8 745	5.379	0.000	**0**	**6 810 985**	0.009	5.370	1.0000	1.0000



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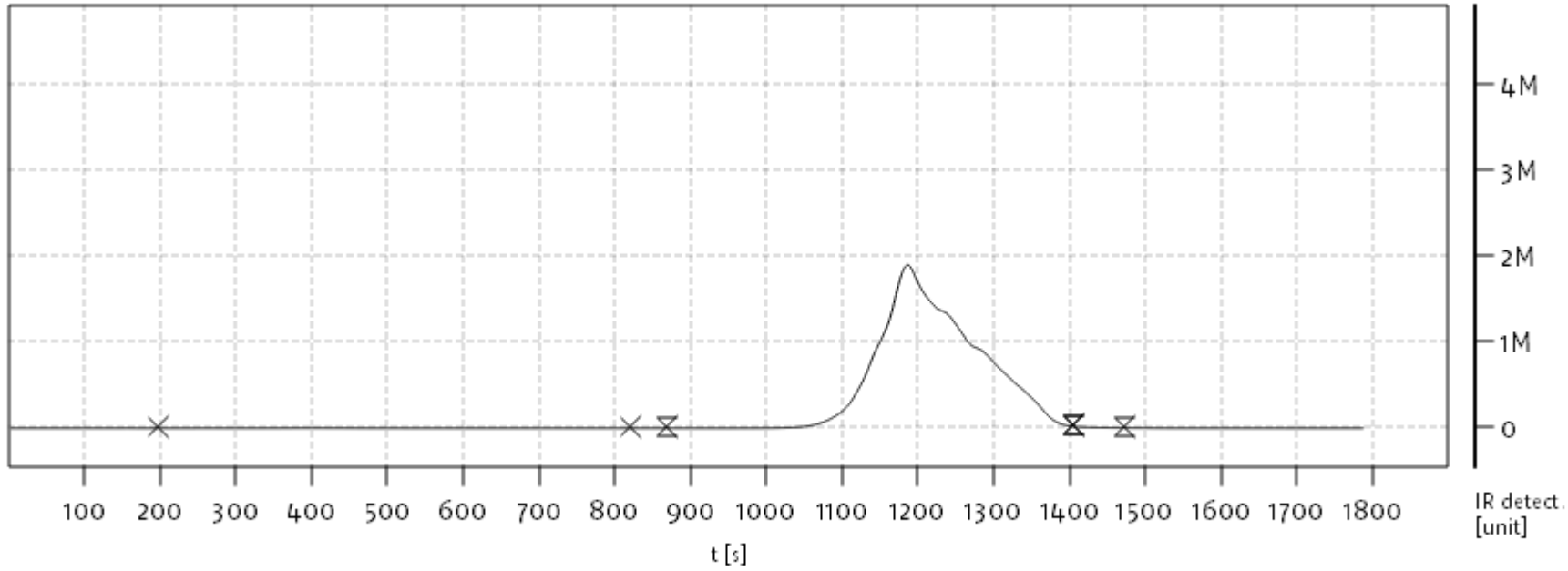
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
26	26	SLE0270-CALO	200.00	0.1200	CARBON	5/18/2023 9:49 AM	bl,C1u,C3o	0.008	6 993	7.291	0.000	0	9 238 066	0.008	7.283	1.0000	1.0000



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Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Analytical Resources, LLC
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 9060A m

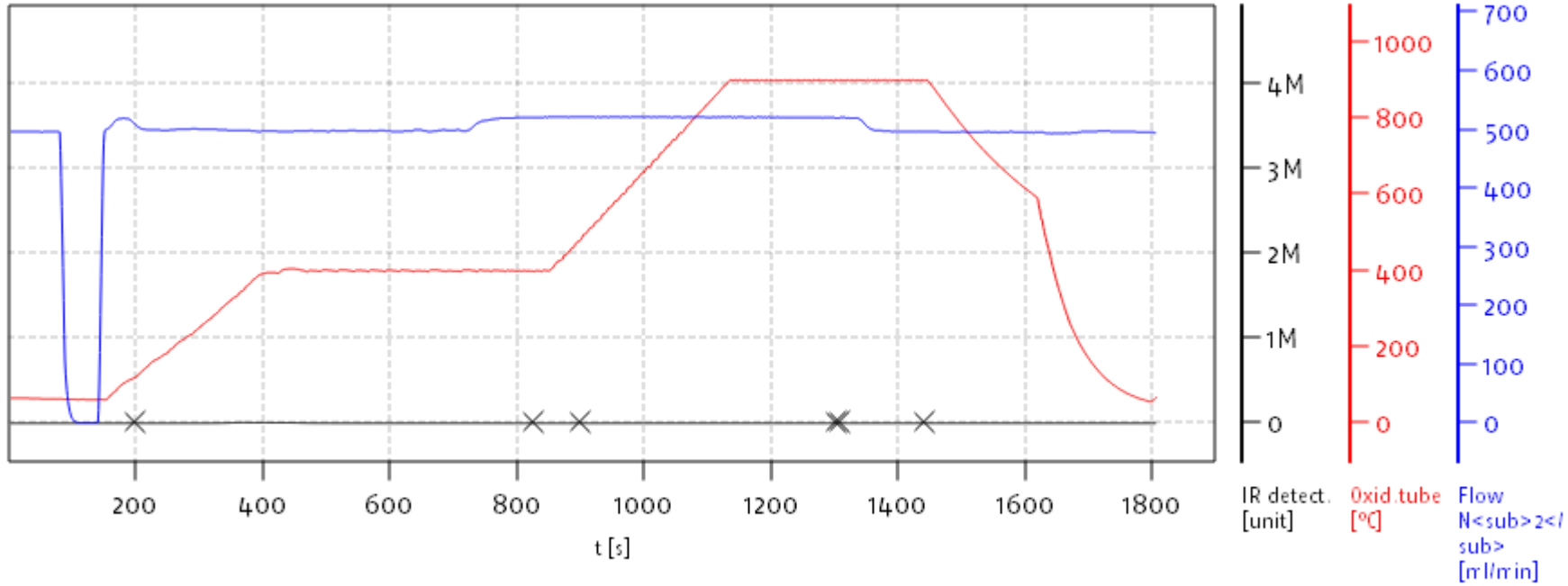
Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0028	Instrument:	TOC Cube
		Calibration:	GE00052

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Initial Cal Blank	SLG0028-ICB1	CubeData_07102023@1422-027	NA	07/06/23 16:13
Calibration Check	SLG0028-CCV1	CubeData_07102023@1422-074	NA	07/06/23 21:47
Calibration Blank	SLG0028-CCB1	CubeData_07102023@1422-075	NA	07/06/23 22:17
Calibration Check	SLG0028-CCV2	CubeData_07102023@1422-086	NA	07/07/23 03:51
Calibration Blank	SLG0028-CCB2	CubeData_07102023@1422-087	NA	07/07/23 04:22
MRL Check	BLG0049-MRL1	CubeData_07102023@1422-096	Solid	07/07/23 08:56
Blank	BLG0049-BLK1	CubeData_07102023@1422-097	Solid	07/07/23 09:26
Calibration Check	SLG0028-CCV3	CubeData_07102023@1422-098	NA	07/07/23 09:56
Calibration Blank	SLG0028-CCB3	CubeData_07102023@1422-099	NA	07/07/23 10:27
LCS	BLG0049-BS1	CubeData_07102023@1422-100	Solid	07/07/23 10:57
Reference	BLG0049-SRM1	CubeData_07102023@1648-086	Solid	07/07/23 11:27
Calibration Check	SLG0028-CCV4	CubeData_07102023@1422-109	NA	07/07/23 16:02
Calibration Blank	SLG0028-CCB4	CubeData_07102023@1422-110	NA	07/07/23 16:32
Calibration Check	SLG0028-CCV5	CubeData_07102023@1422-121	NA	07/07/23 22:06
Calibration Blank	SLG0028-CCB5	CubeData_07102023@1422-122	NA	07/07/23 22:36
LDW20-SC148A	23F0536-01	CubeData_07102023@1422-124	Solid	07/07/23 23:37
LDW20-SC148A	BLG0049-DUP2	CubeData_07102023@1422-125	Solid	07/08/23 00:07
LDW20-SC148A	BLG0049-MS2	CubeData_07102023@1422-126	Solid	07/08/23 00:38
Calibration Check	SLG0028-CCV6	CubeData_07102023@1422-133	NA	07/08/23 04:11
Calibration Blank	SLG0028-CCB6	CubeData_07102023@1422-134	NA	07/08/23 04:41
Calibration Blank	SLG0028-CCB7	CubeData_07102023@1626-578	NA	07/08/23 10:16
Calibration Check	SLG0028-CCV7	CubeData_07102023@1626-586	NA	07/08/23 10:46
Calibration Check	SLG0028-CCV8	CubeData_07102023@1648-043	NA	07/08/23 14:17
Calibration Blank	SLG0028-CCB8	CubeData_07102023@1648-051	NA	07/08/23 14:48

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
1	1	BLANK	1.00		CARBON	7/6/2023 2:11 PM	bl	0.000	38 492	0.000	0.000	2 797	5 396	0.000	0.000	1.0000	1.0000



Name:

Access: soliTOC superuser

Date: Mon Jul 10 11:28:09 2023

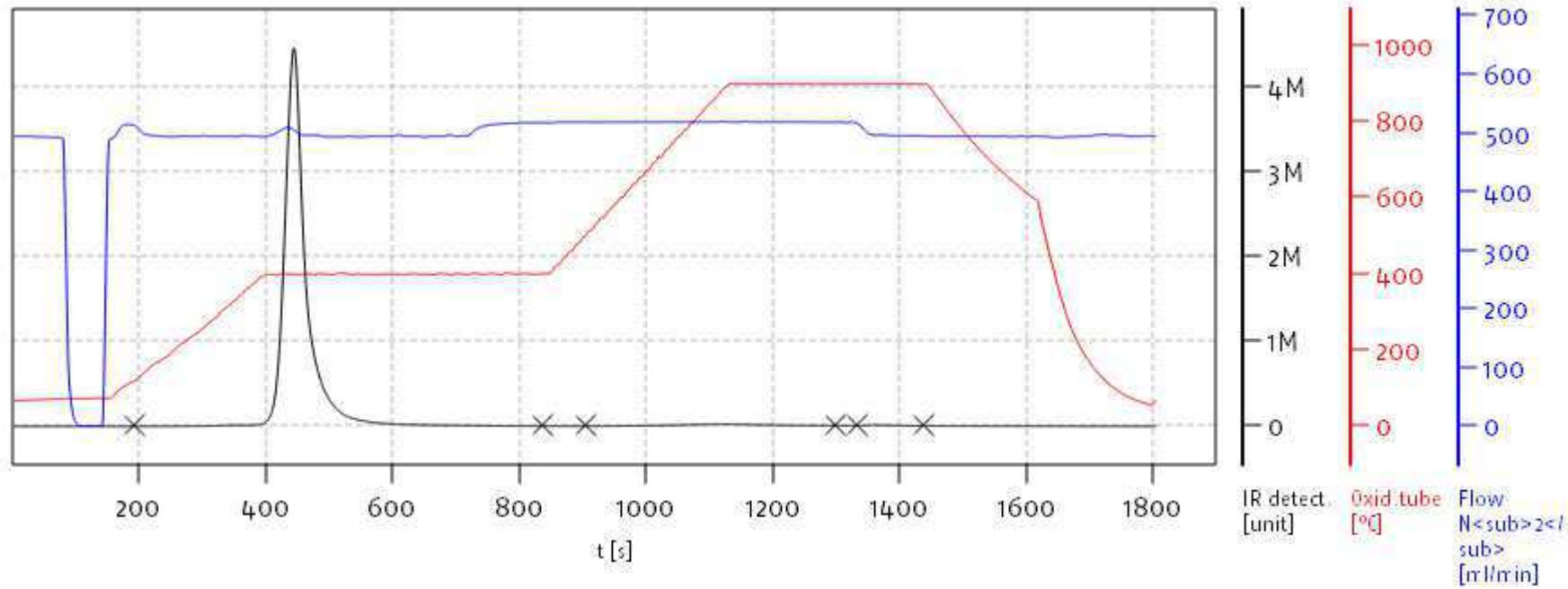
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Document: 070623b BF from: 7/10/2023 11:27 AM

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
2	2	Dfactor	21.20		CARBON	7/6/2023 2:42 PM	bl	44.507	6 533 118	45.755	0.062	37 088	195 626	44.446	1.248	0.9133	1.0000



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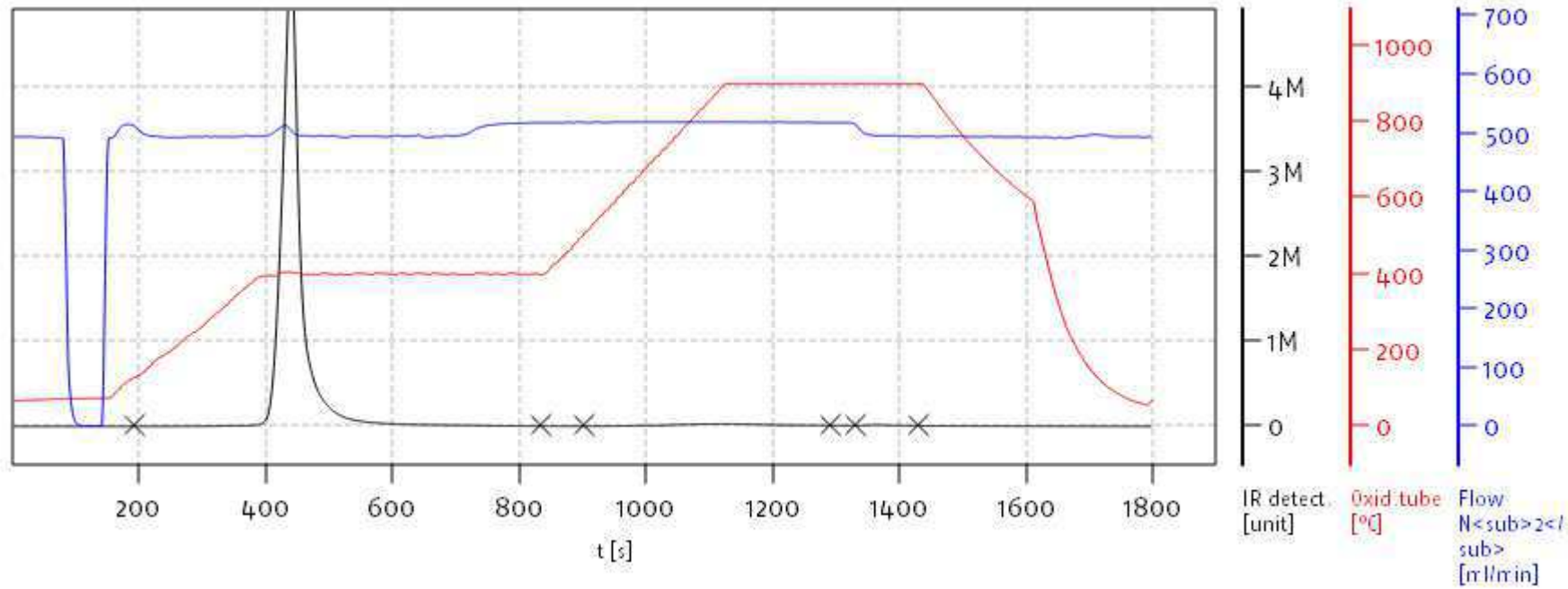
EXCELLENCE IN ELEMENTS

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
3	3	Dfactor	22.60		CARBON	7/6/2023 3:12 PM	bl	44.546	7 003 627	45.938	0.100	43 127	227 264	44.446	1.392	0.9080	1.0000



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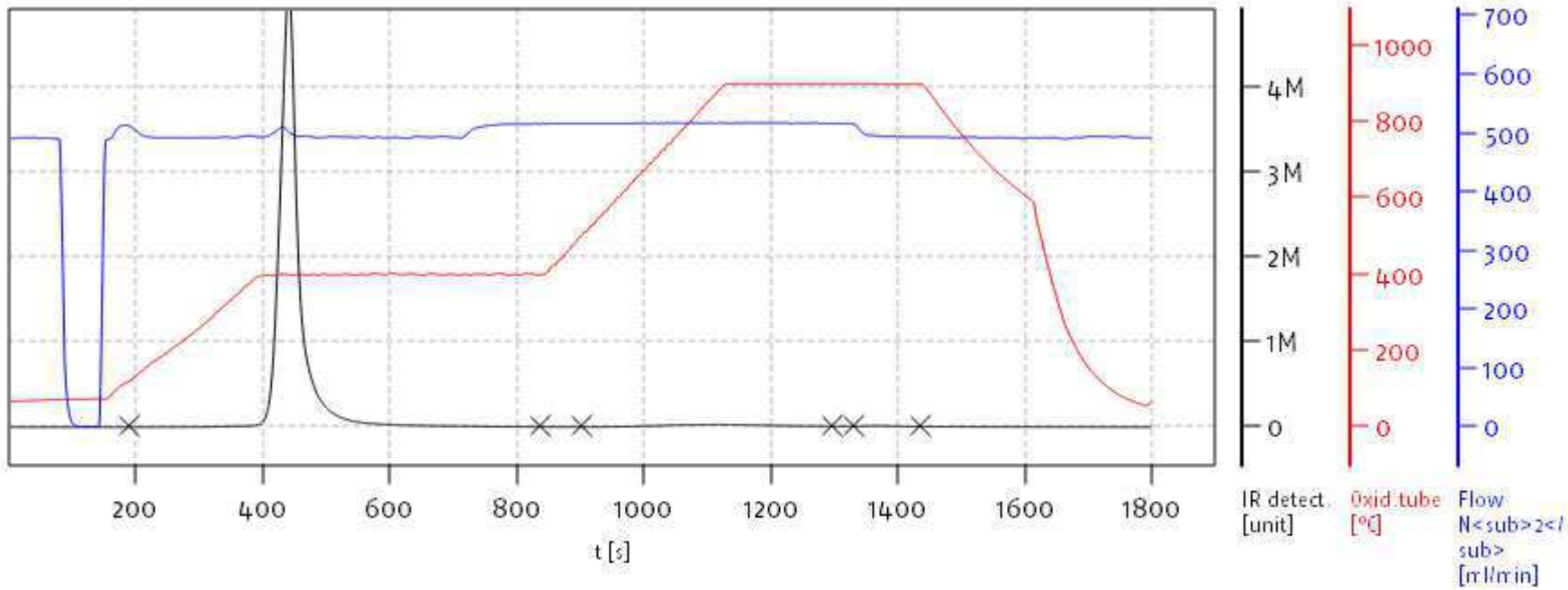
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
4	4	SLG0028-ICV1	21.70		CARBON	7/6/2023 3:42 PM	bl	44.587	6 715 127	46.135	0.082	40 034	240 602	44.505	1.548	0.9107	1.0000



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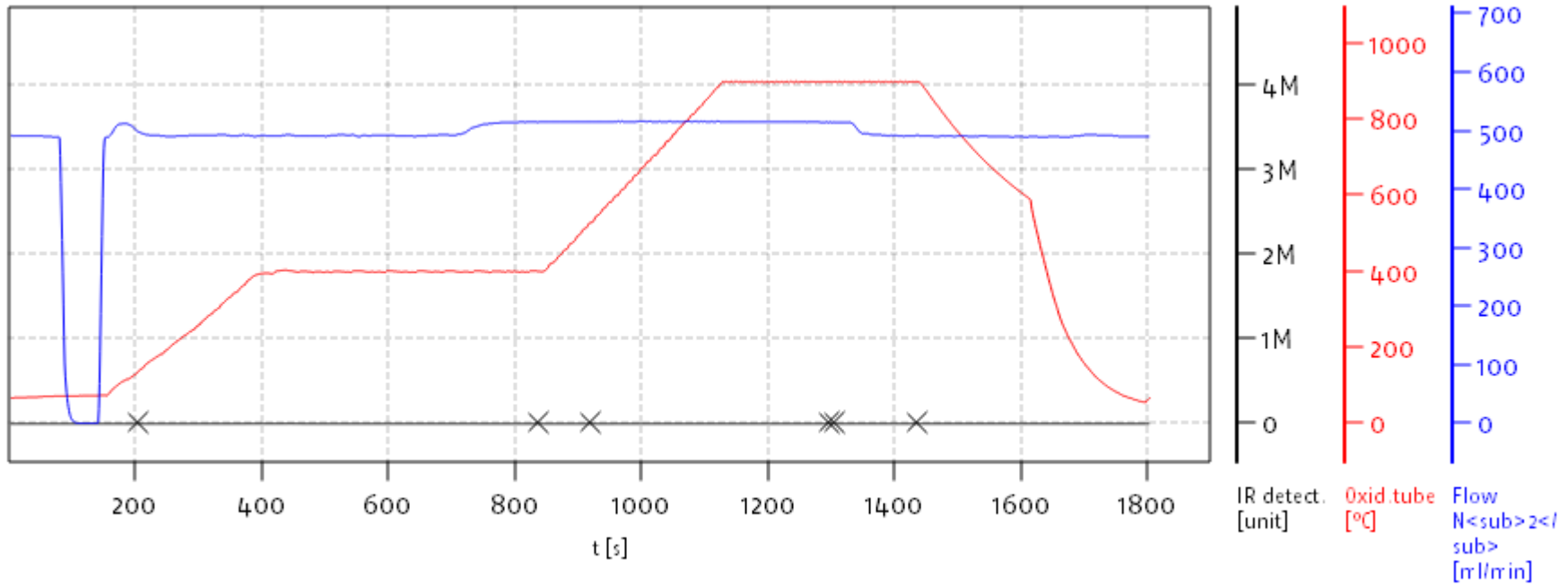
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
5	5	SLG0028-ICB1	574.30		CARBON	7/6/2023 4:13 PM	bl,C1u,C3u,C2u	0.000	5 047	0.000	0.000	1 181	360	0.000	0.000	0.9107	1.0000



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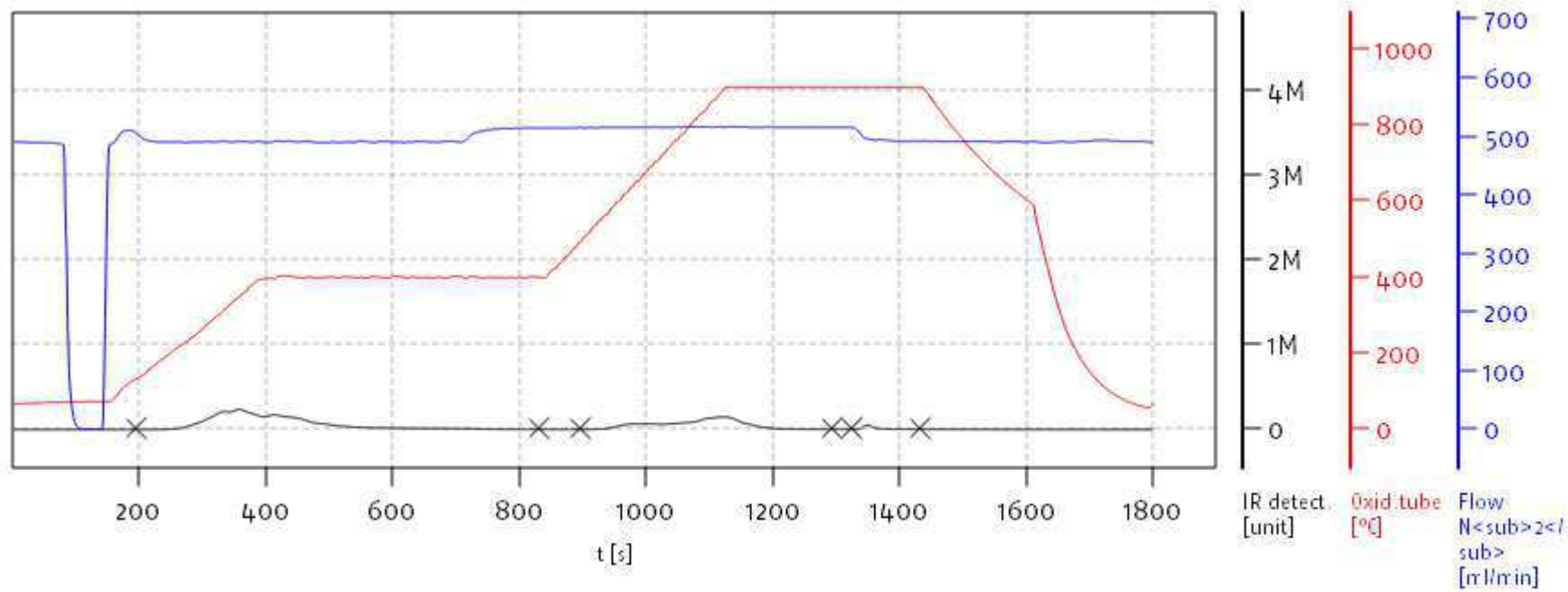
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
6	6	23F0177-10RE1	153.60		CARBON	7/6/2023 4:43 PM	bl	1.335	1 426 369	2.113	0.021	48 859	782 020	1.314	0.778	0.9107	1.0000



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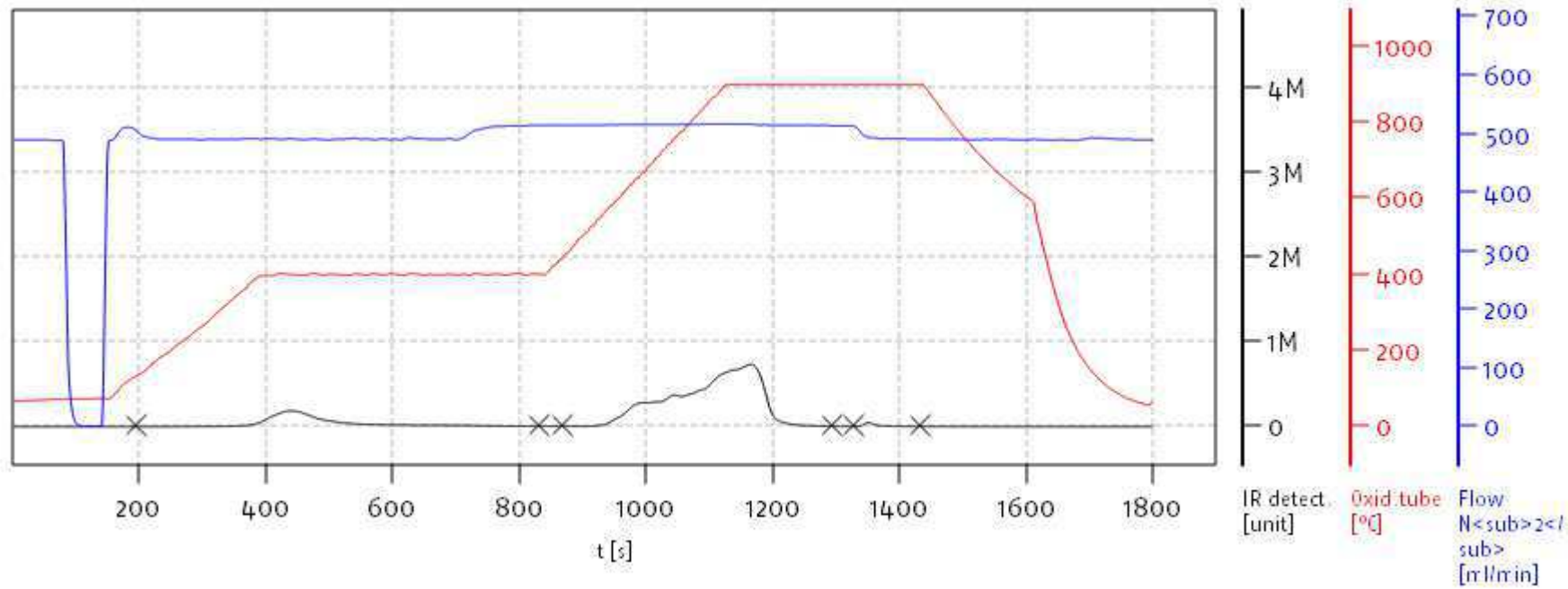
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
7	7	BLF0740-DUP2	539.70		CARBON	7/6/2023 5:14 PM	bl	0.213	806 812	1.410	0.005	44 428	4 103 505	0.208	1.197	0.9107	1.0000



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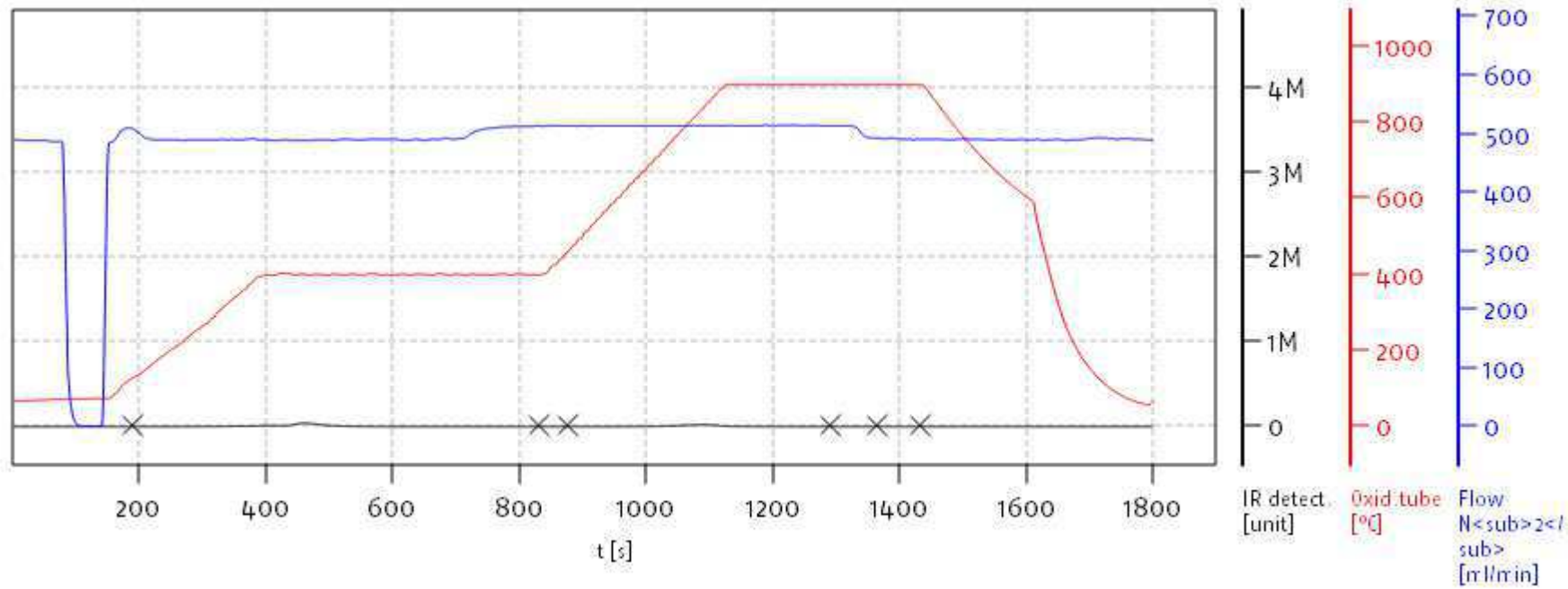
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
8	8	BLG0047-MRL1	651.40		CARBON	7/6/2023 5:44 PM	bl,C2u	0.020	120 881	0.029	0.000	780	65 567	0.020	0.009	0.9107	1.0000



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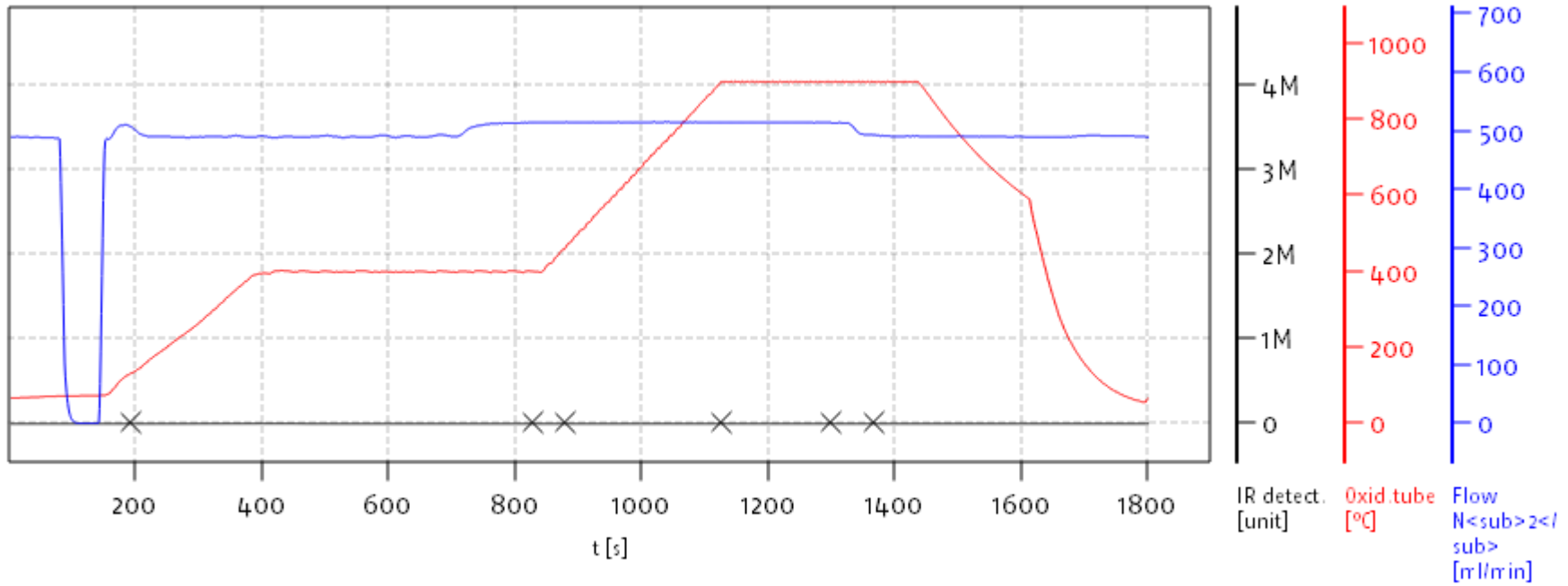
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
9	9	BLG0047-BLK1	556.50		CARBON	7/6/2023 6:14 PM	bl,C1u,C3u,C2u	0.000	12 311	0.000	0.000	714	1 696	0.000	0.000	0.9107	1.0000



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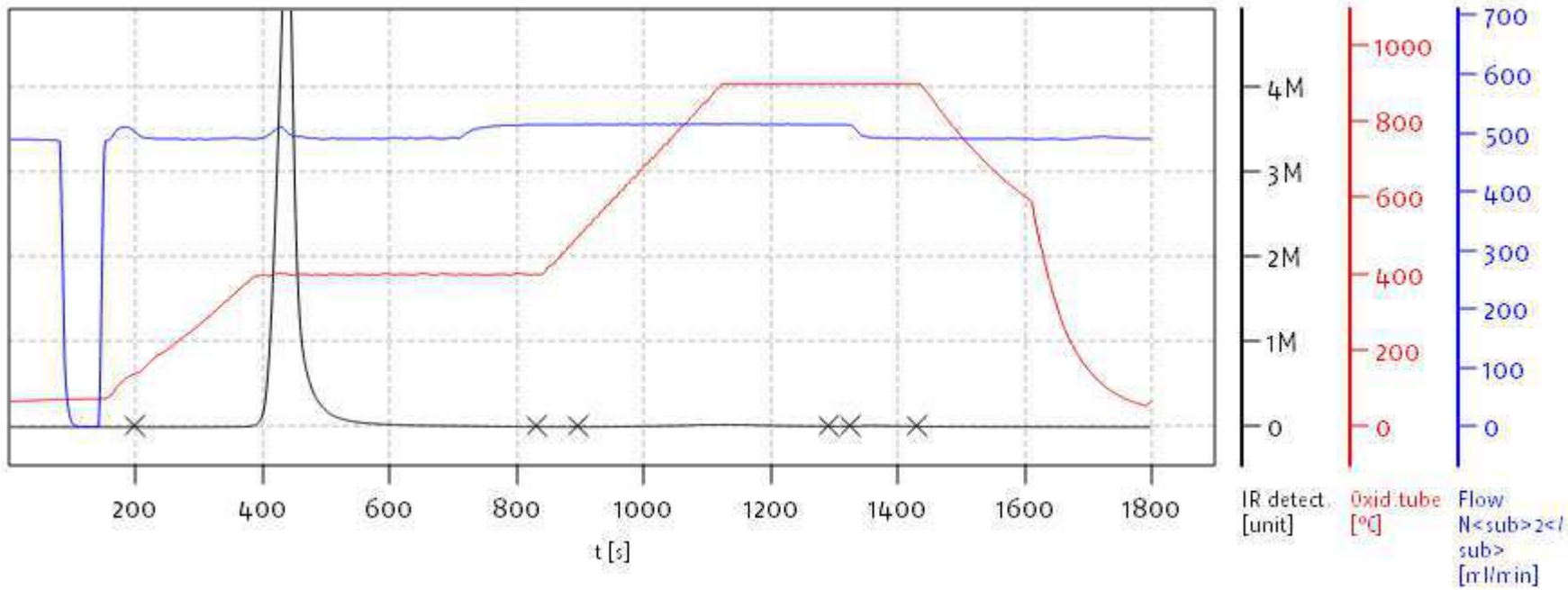
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
10	10	BLG0047-BS1	25.40		CARBON	7/6/2023 6:45 PM	bl	44.638	7 863 219	45.844	0.087	42 800	222 044	44.551	1.206	0.9107	1.0000



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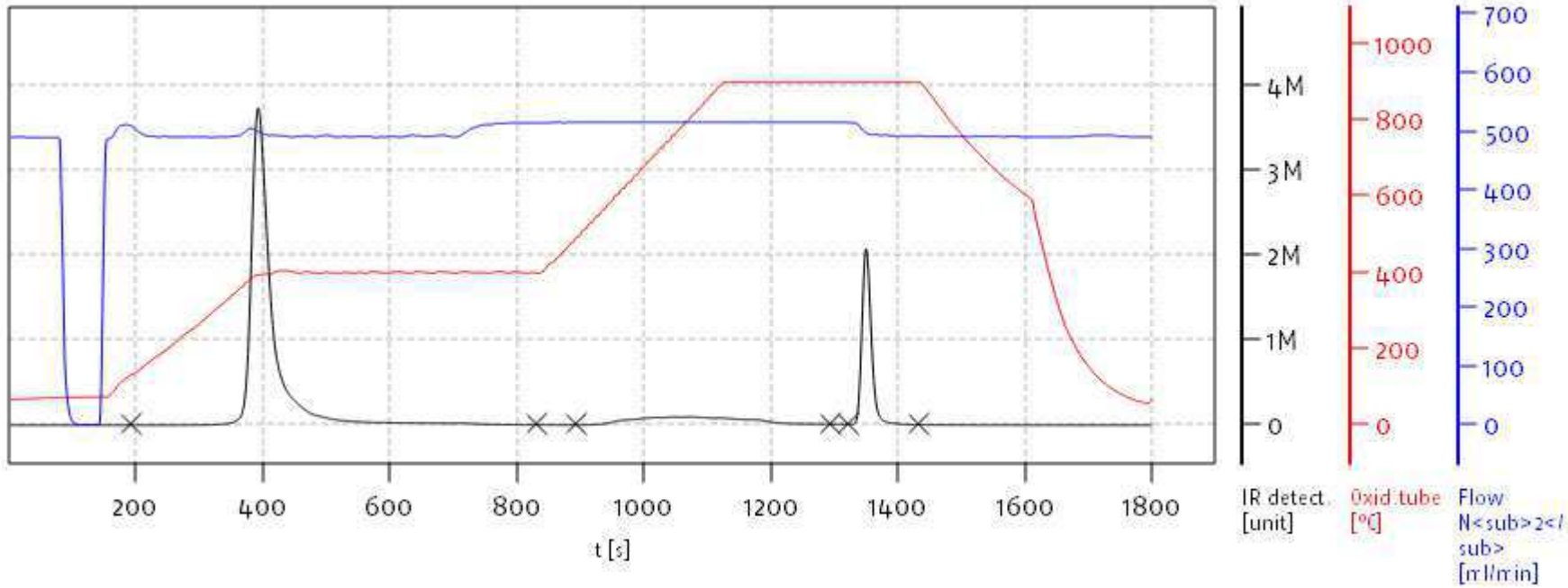
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
11	11	BLG0047-SRM1	311.10		CARBON	7/6/2023 7:15 PM	bl	3.091	5 225 885	3.489	0.678	1 357 998	809 543	2.413	0.398	0.9107	1.0000



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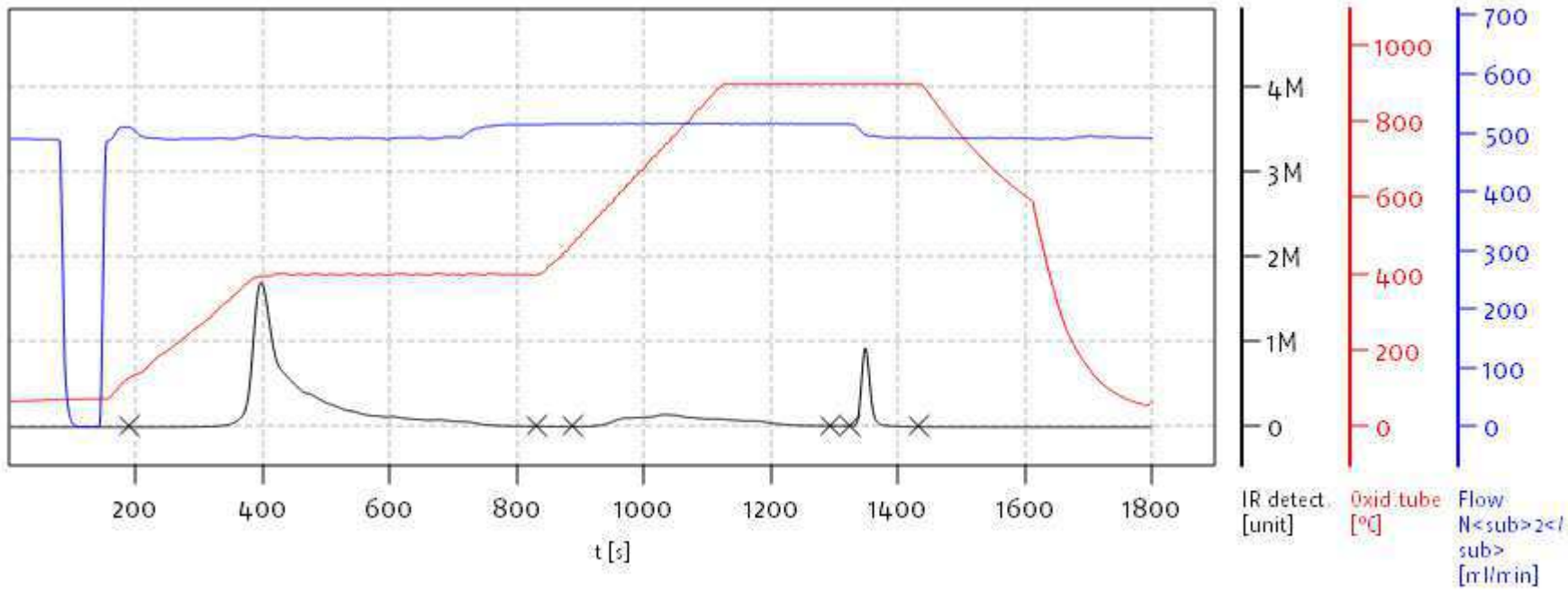
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
12	12	23F0143-01	620.50		CARBON	7/6/2023 7:45 PM	bl	1.233	4 726 302	1.501	0.140	575 722	1 075 015	1.093	0.267	0.9107	1.0000



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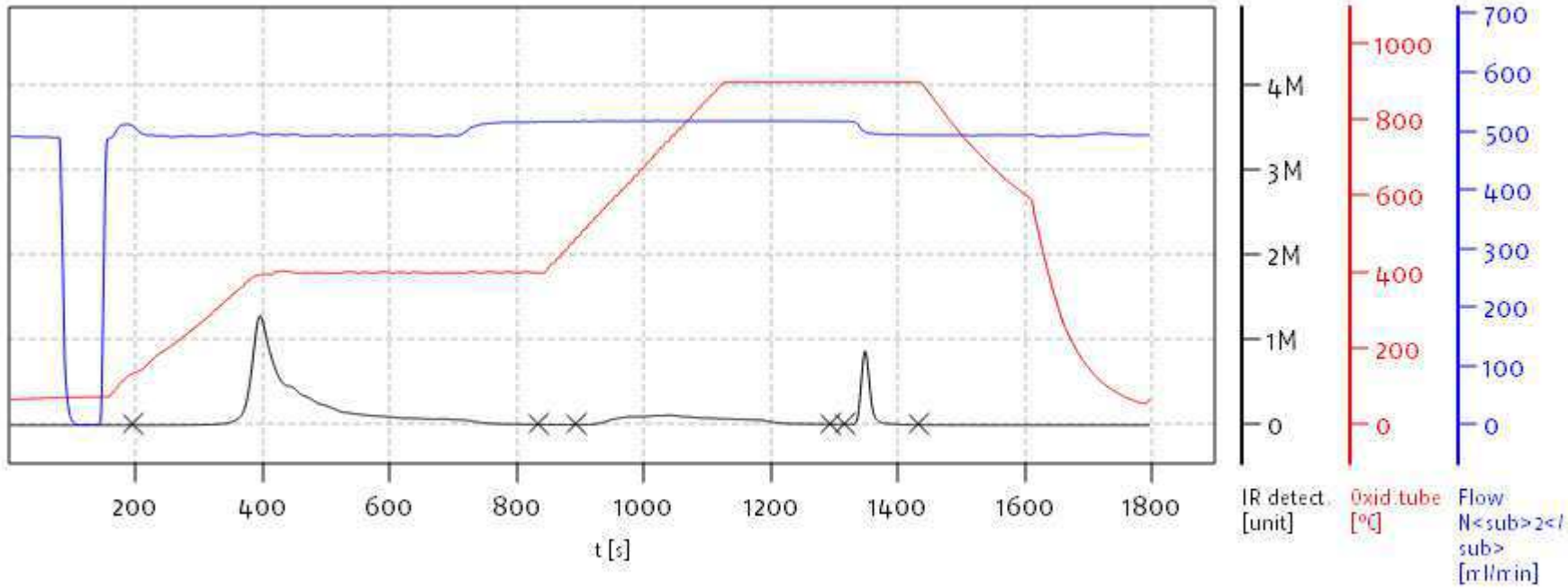
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
13	13	BLG0047-DUP1	519.90		CARBON	7/6/2023 8:16 PM	bl	1.195	3 761 982	1.468	0.158	547 569	922 371	1.037	0.273	0.9107	1.0000



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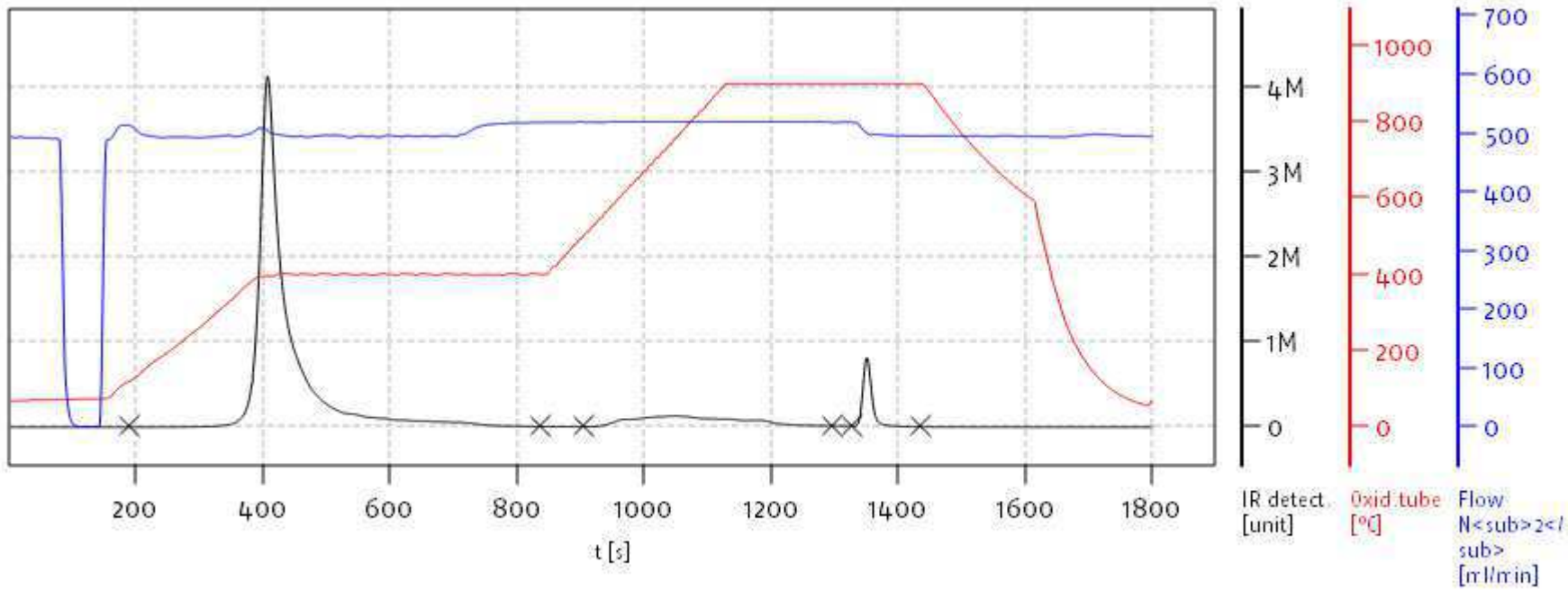
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
14	14	BLG0047-MS1	605.70		CARBON	7/6/2023 8:46 PM	bl	1.925	7 567 884	2.192	0.127	513 068	1 048 344	1.798	0.267	0.9107	1.0000



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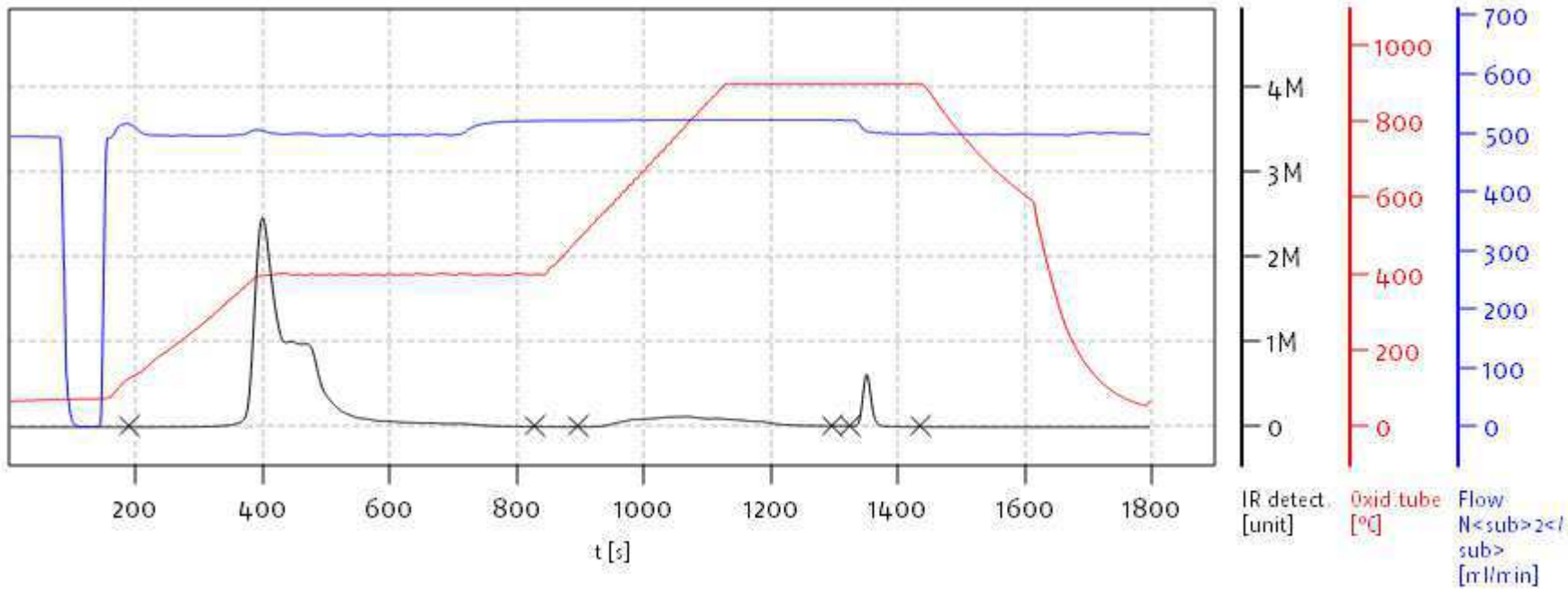
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
15	15	23F0143-02	625.30		CARBON	7/6/2023 9:17 PM	bl	1.564	6 418 895	1.800	0.088	375 735	959 987	1.476	0.236	0.9107	1.0000



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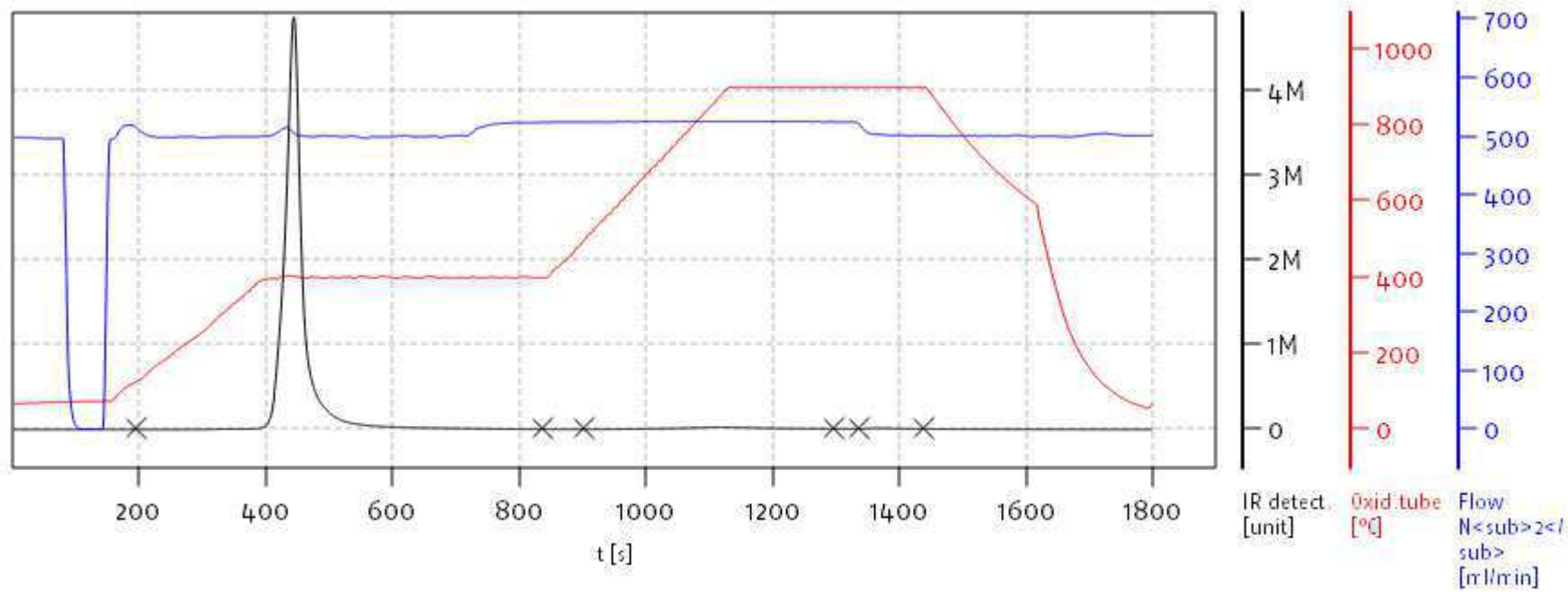
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
16	16	SLG0028-CCV1	20.00		CARBON	7/6/2023 9:47 PM	bl	42.721	5 931 421	44.040	0.092	40 519	195 193	42.628	1.319	0.9107	1.0000



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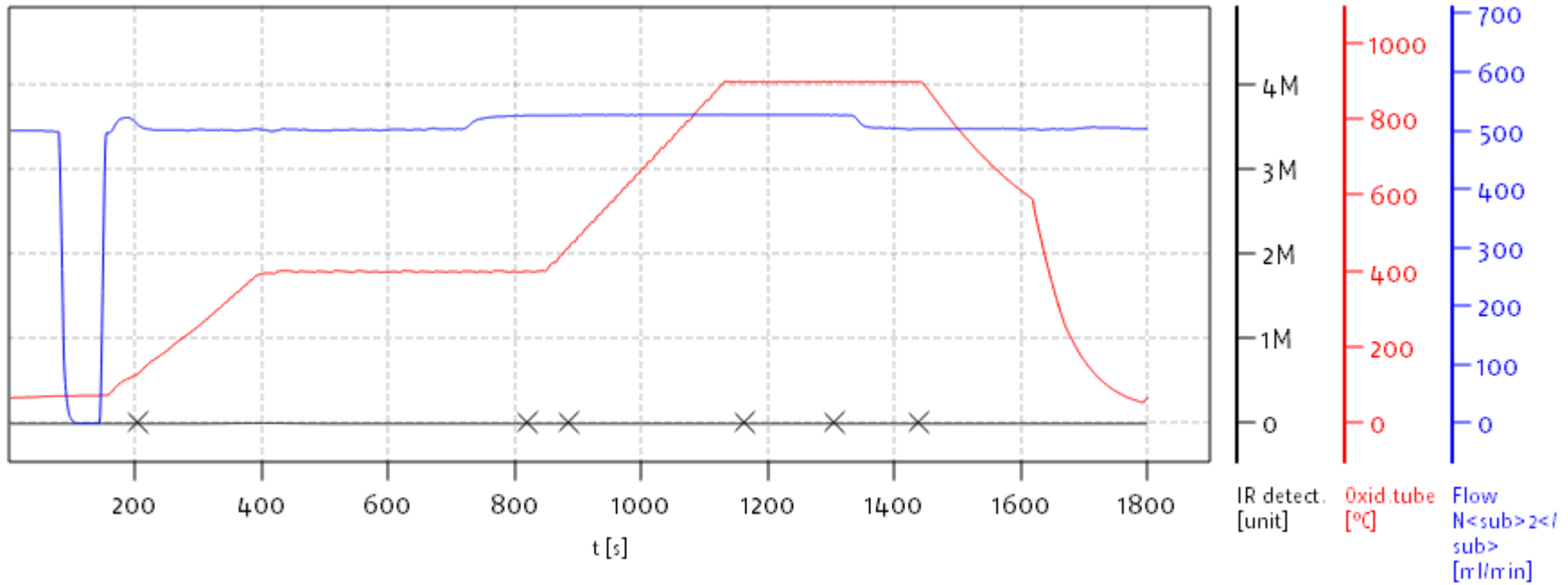
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
17	17	SLG0028-CCB1	568.60		CARBON	7/6/2023 10:17 PM	bl,C3u,C2u	0.000	23 936	0.000	0.000	684	749	0.000	0.000	0.9107	1.0000



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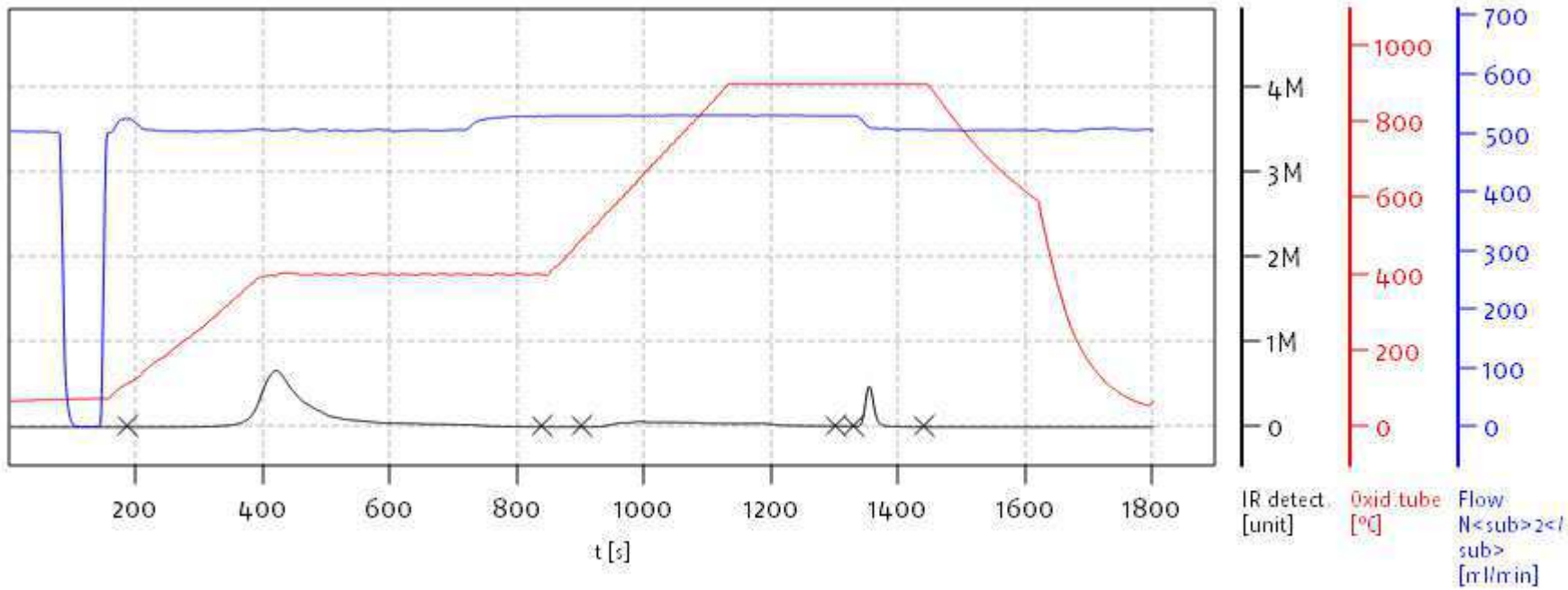
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
18	18	23F0143-03	571.40		CARBON	7/6/2023 10:48 PM	bl	0.654	2 319 791	0.794	0.075	298 295	531 798	0.579	0.140	0.9107	1.0000



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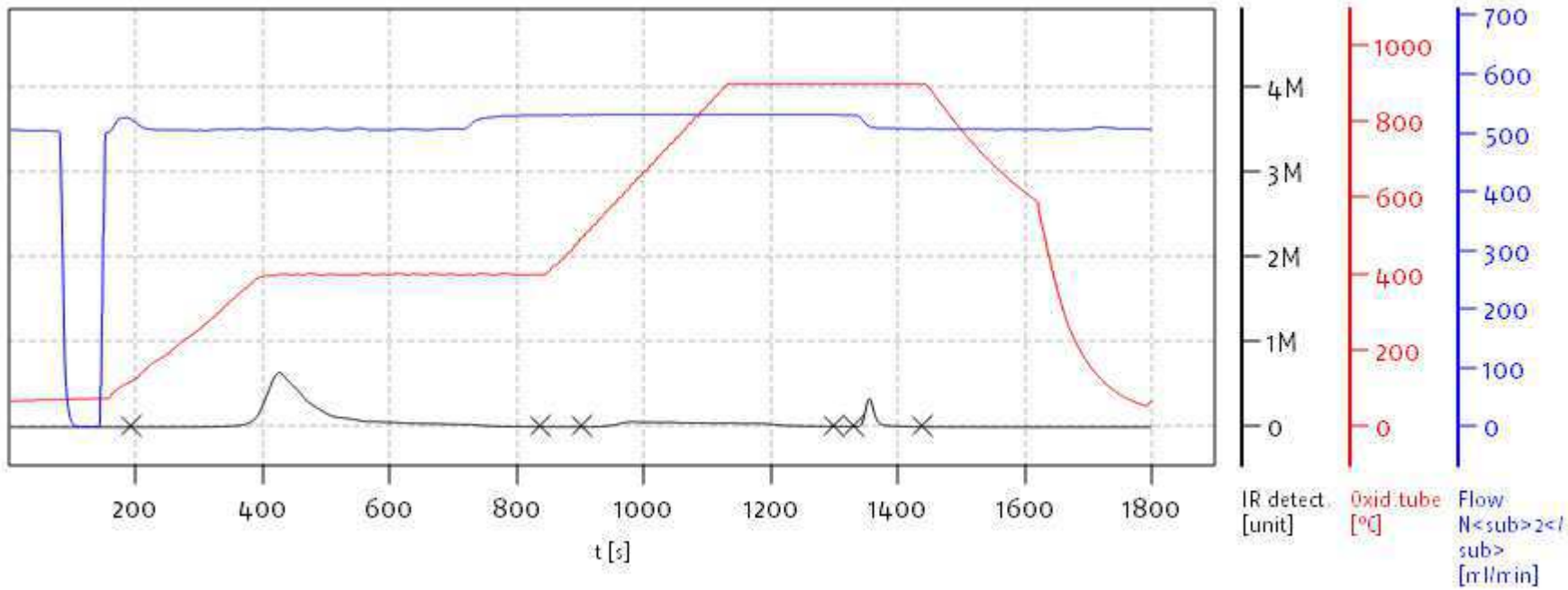
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
19	19	23F0143-04	613.20		CARBON	7/6/2023 11:18 PM	bl	0.570	2 233 273	0.697	0.051	225 874	517 627	0.519	0.126	0.9107	1.0000



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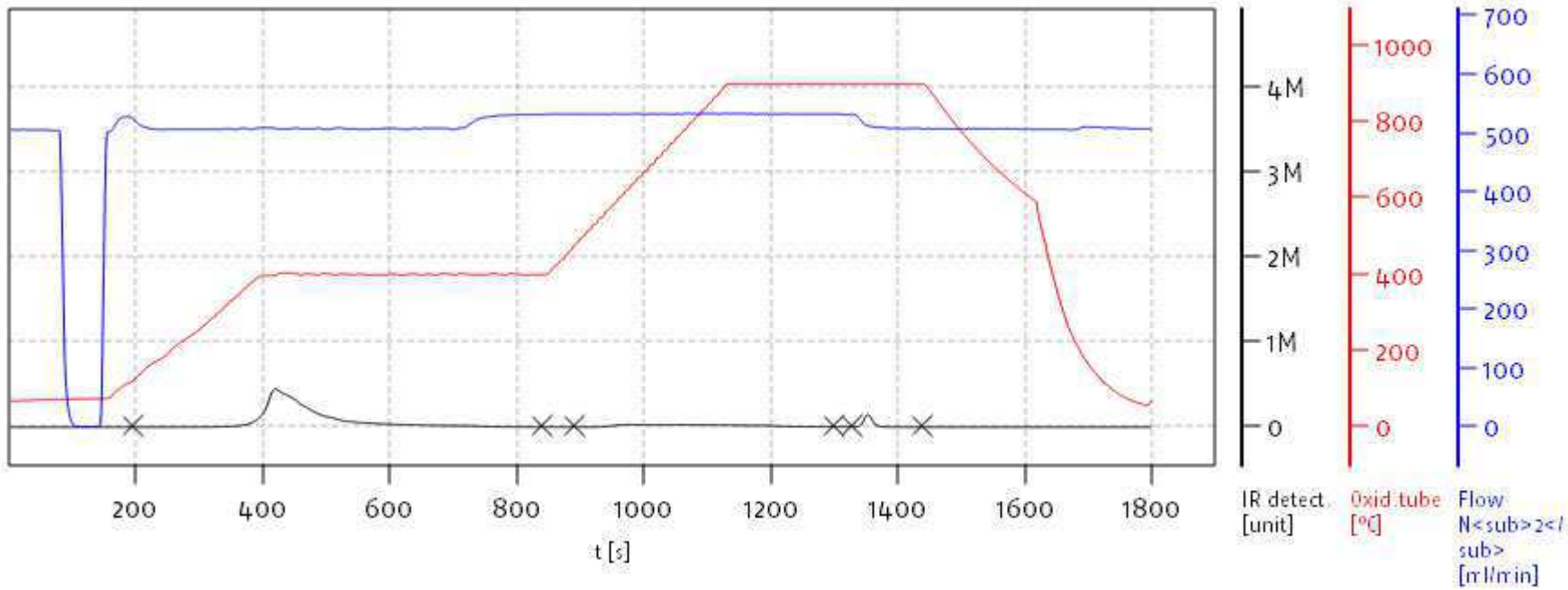
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
20	20	23F0143-05	581.30		CARBON	7/6/2023 11:48 PM	bl	0.391	1 532 748	0.453	0.017	91 654	256 536	0.374	0.062	0.9107	1.0000



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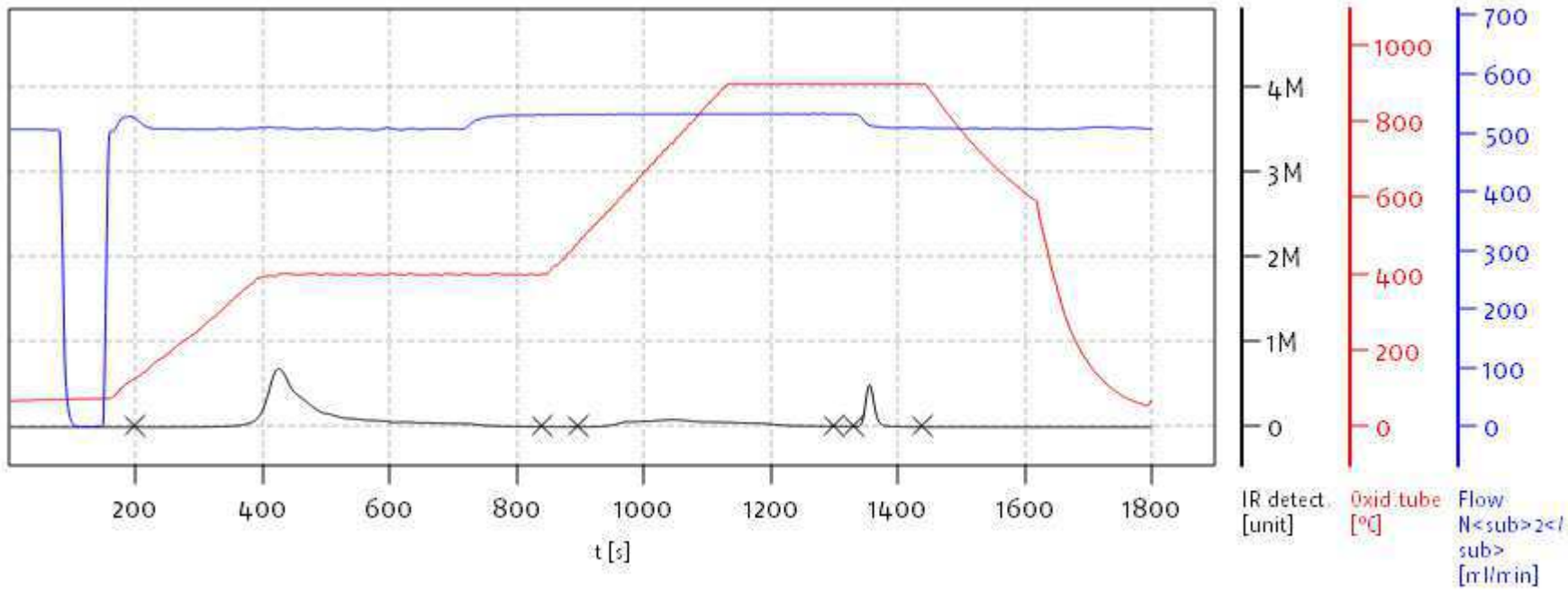
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
21	21	23F0143-06	525.10		CARBON	7/7/2023 12:19 AM	bl	0.697	2 251 444	0.883	0.085	311 354	645 357	0.611	0.186	0.9107	1.0000



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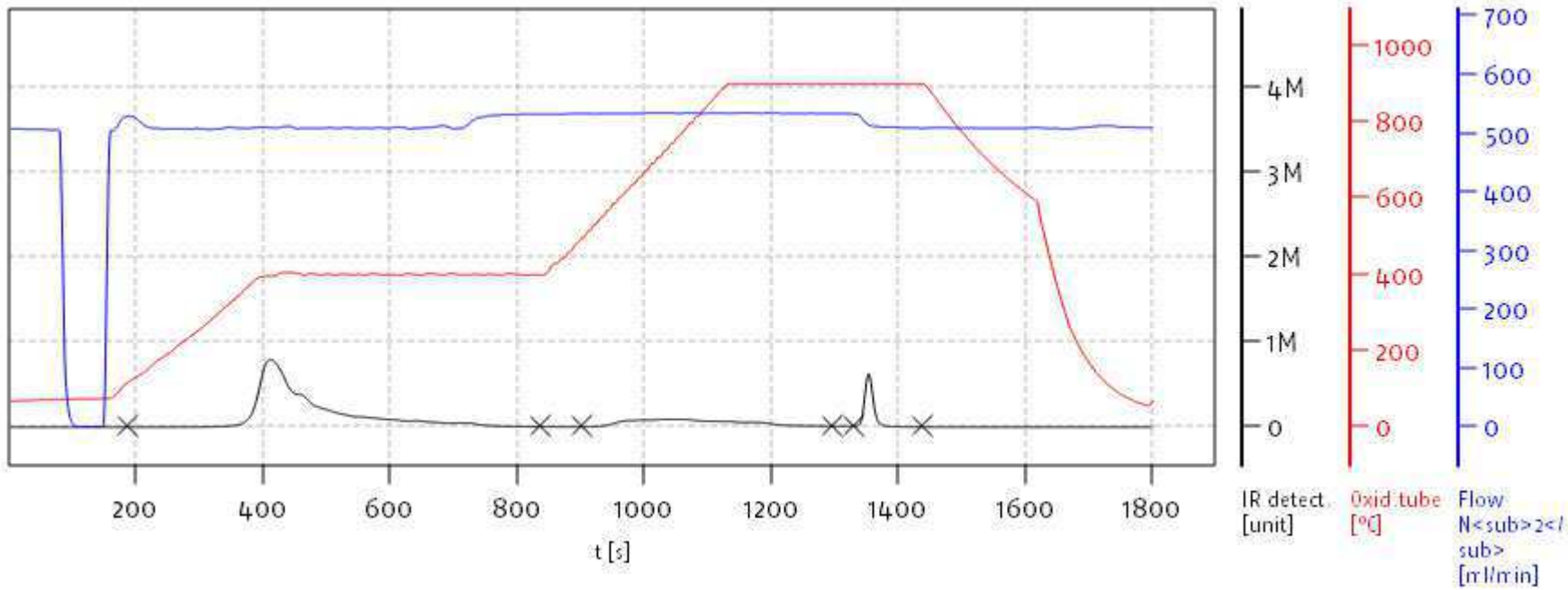
Date: Mon Jul 10 11:28:09 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
22	22	23F0143-07	544.90		CARBON	7/7/2023 12:49 AM	bl	0.872	2 934 128	1.086	0.102	379 873	762 476	0.770	0.214	0.9107	1.0000



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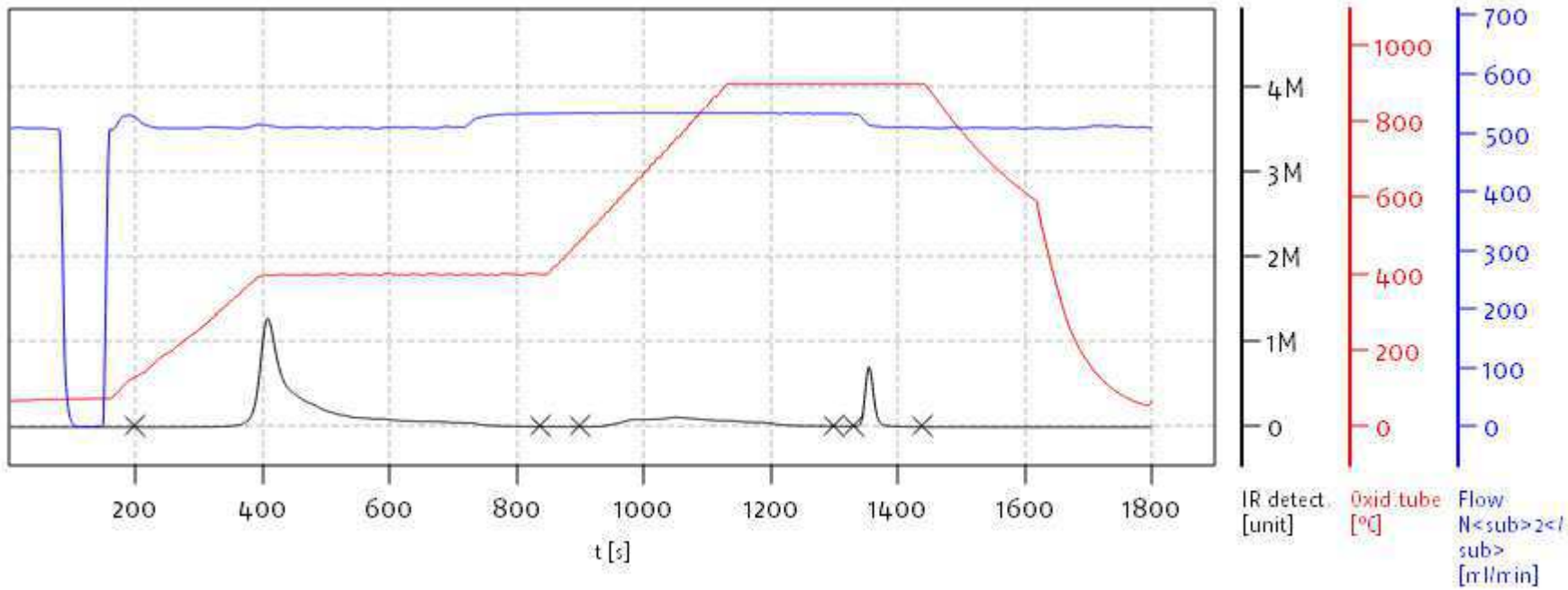
Date: Mon Jul 10 11:28:09 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
23	23	23F0143-08	513.60		CARBON	7/7/2023 1:19 AM	bl	1.026	3 225 347	1.277	0.127	439 209	841 927	0.899	0.251	0.9107	1.0000



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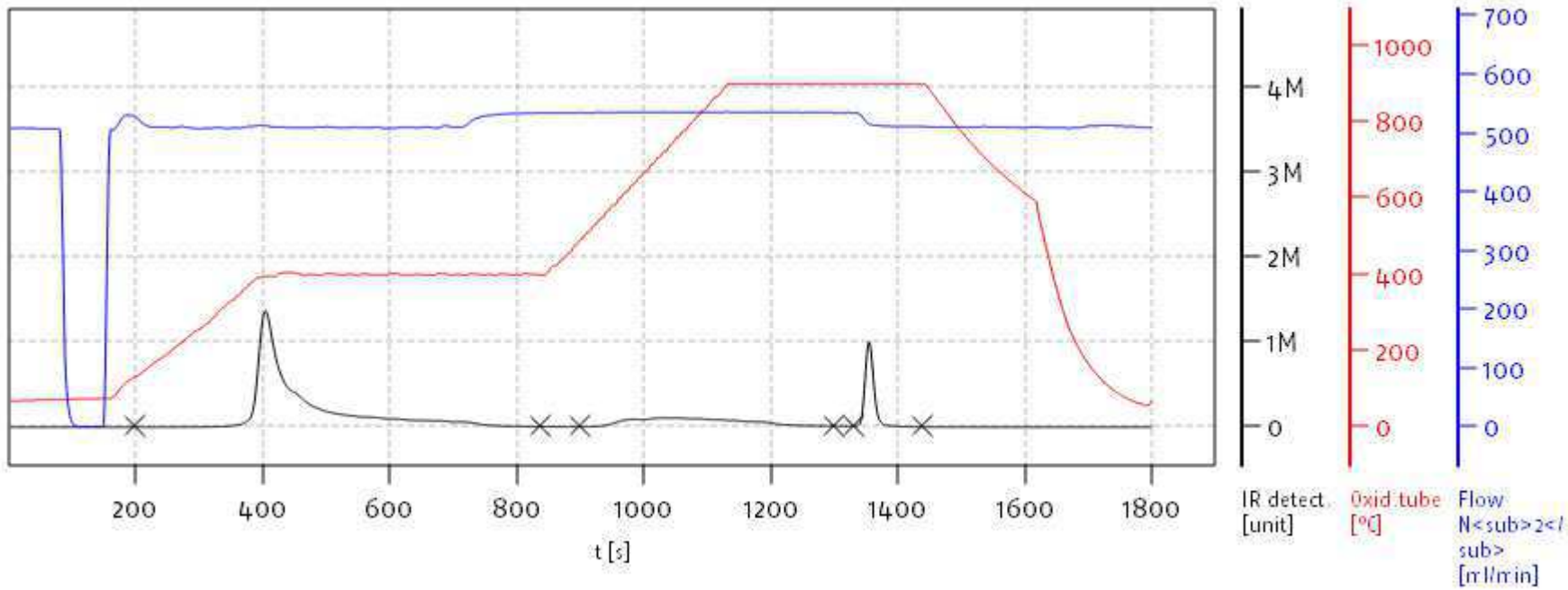
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
24	24	23F0143-09	539.30		CARBON	7/7/2023 1:50 AM	bl	1.086	3 436 760	1.344	0.173	617 430	906 564	0.913	0.258	0.9107	1.0000



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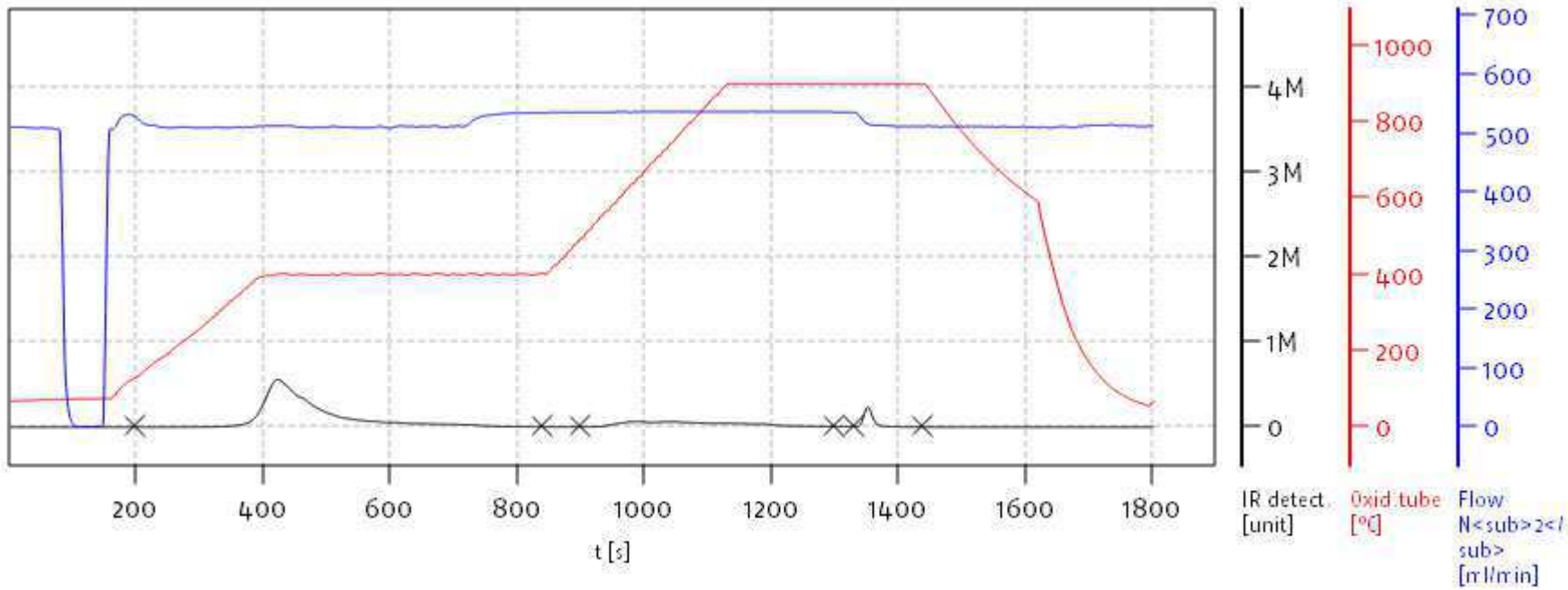
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
25	25	23F0143-10	670.20		CARBON	7/7/2023 2:20 AM	bl	0.481	2 123 533	0.599	0.030	154 795	524 520	0.451	0.117	0.9107	1.0000



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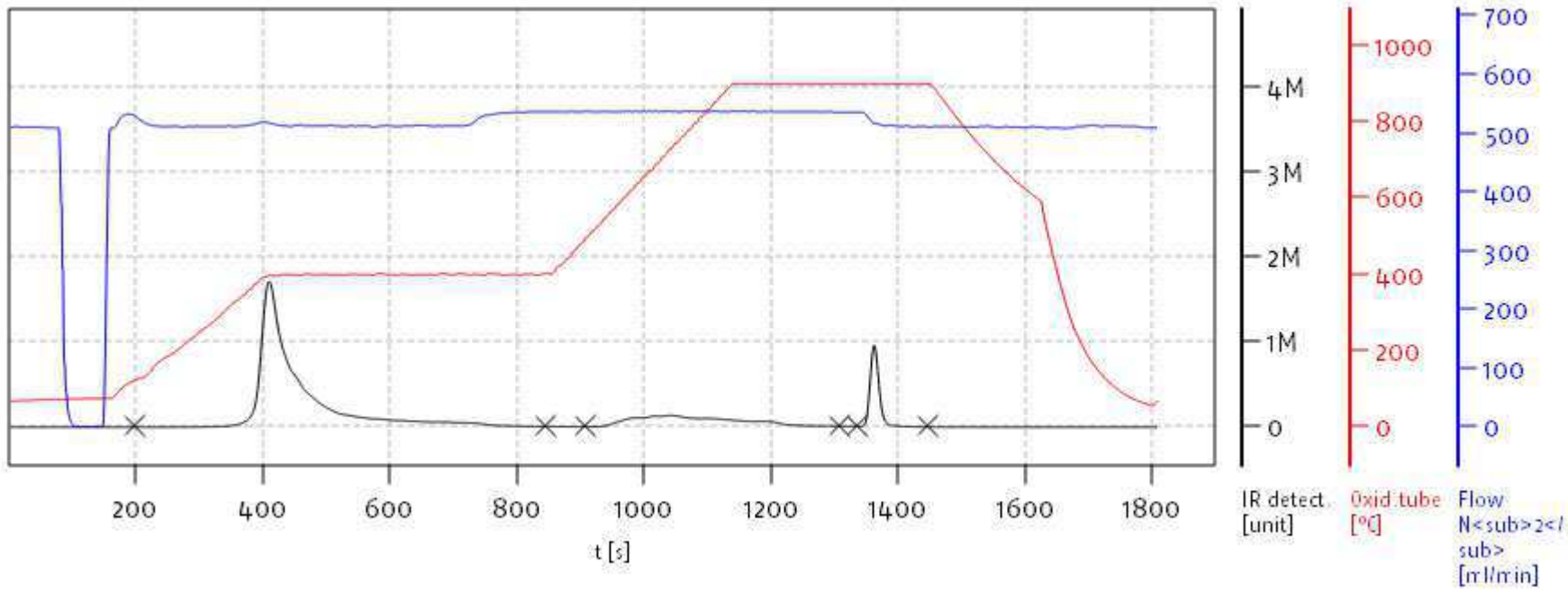
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
26	26	23F0143-11	589.50		CARBON	7/7/2023 2:51 AM	bl	1.169	4 175 179	1.436	0.153	599 351	1 019 913	1.016	0.267	0.9107	1.0000



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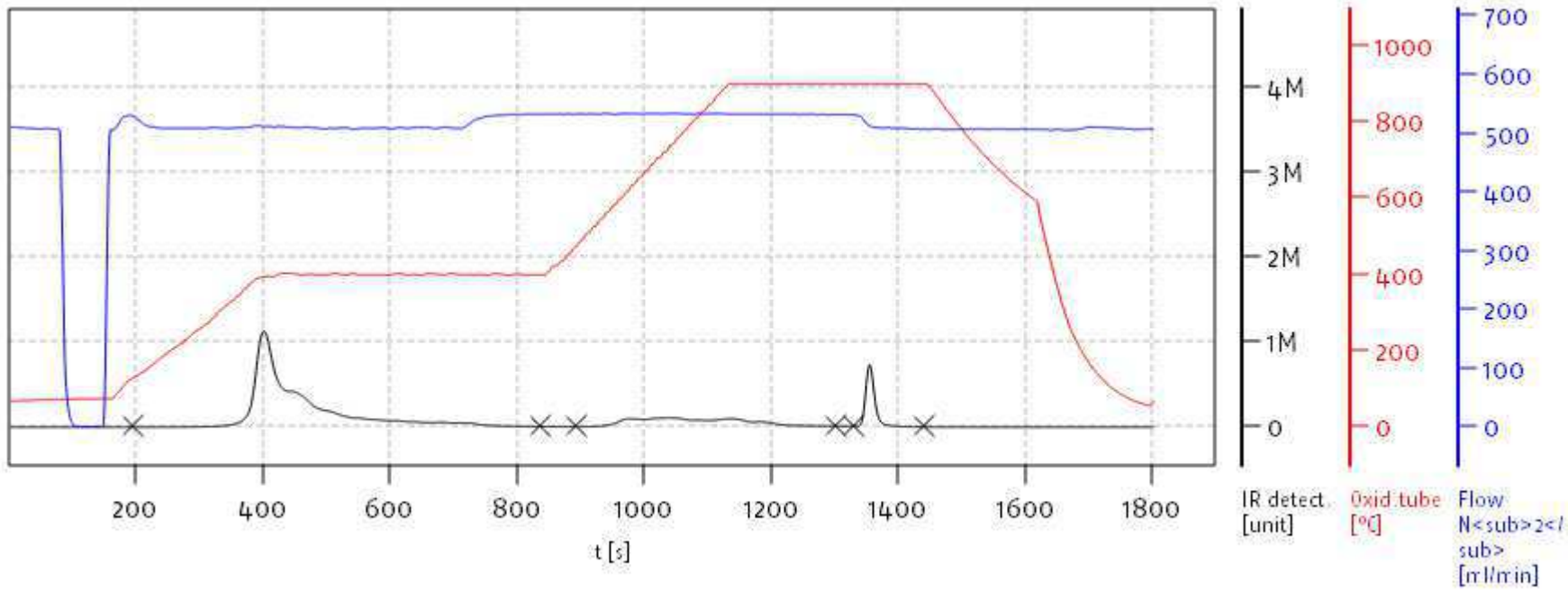
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
27	27	23F0143-12	506.90		CARBON	7/7/2023 3:21 AM	bl	1.031	3 168 460	1.303	0.136	463 405	899 619	0.895	0.272	0.9107	1.0000



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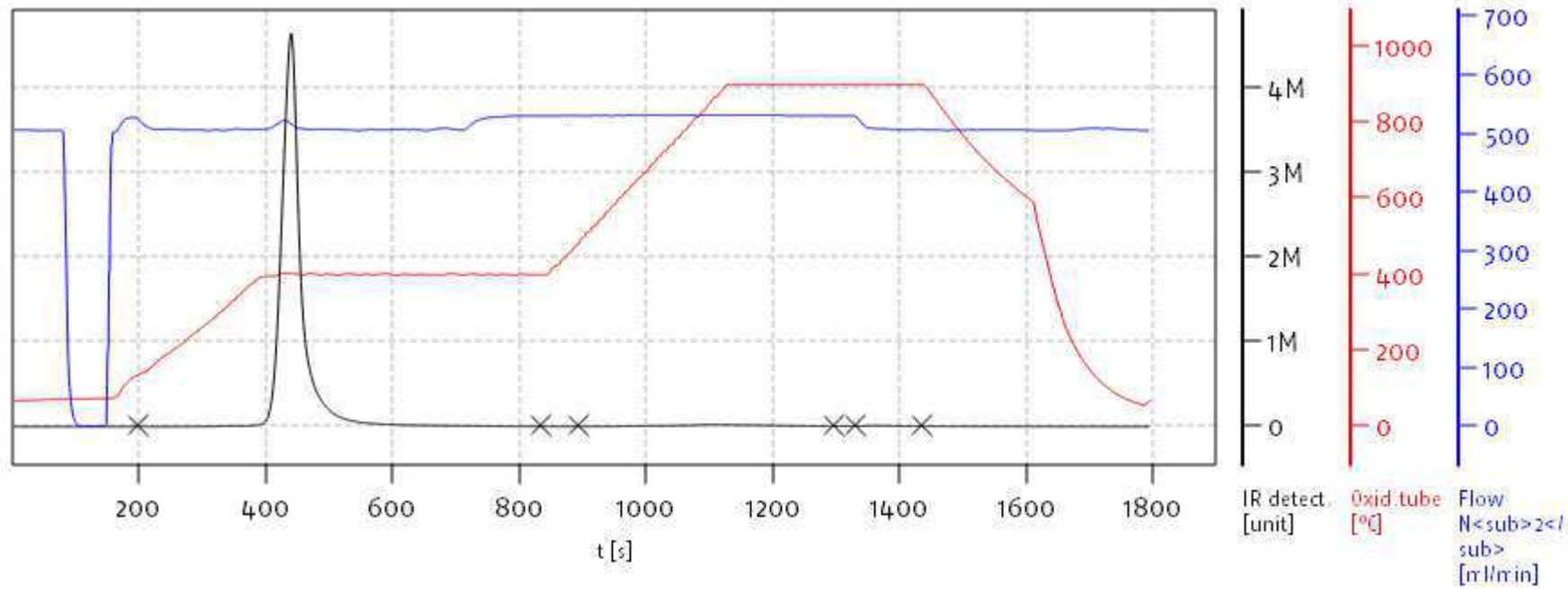
Serial No: 0300.181017
Mode CCC

Document: 070623b BF from: 7/10/2023 11:27 AM

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
28	28	SLG0028-CCV2	20.40		CARBON	7/7/2023 3:51 AM	bl	43.436	6 162 695	44.499	0.006	29 667	165 525	43.430	1.063	0.9107	1.0000



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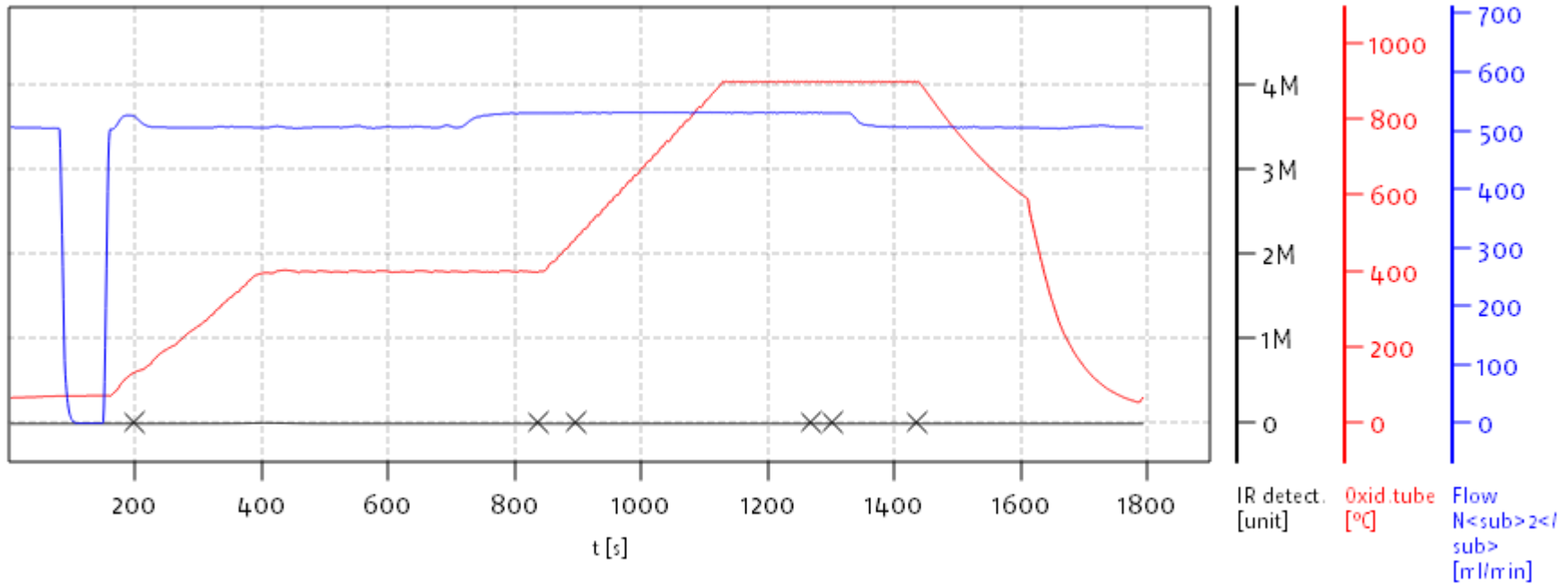
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Document: 070623b BF from: 7/10/2023 11:27 AM

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
29	29	SLG0028-CCB2	605.00		CARBON	7/7/2023 4:22 AM	bl,C3u,C2u	0.000	27 620	0.000	0.000	709	1 739	0.000	0.000	0.9107	1.0000



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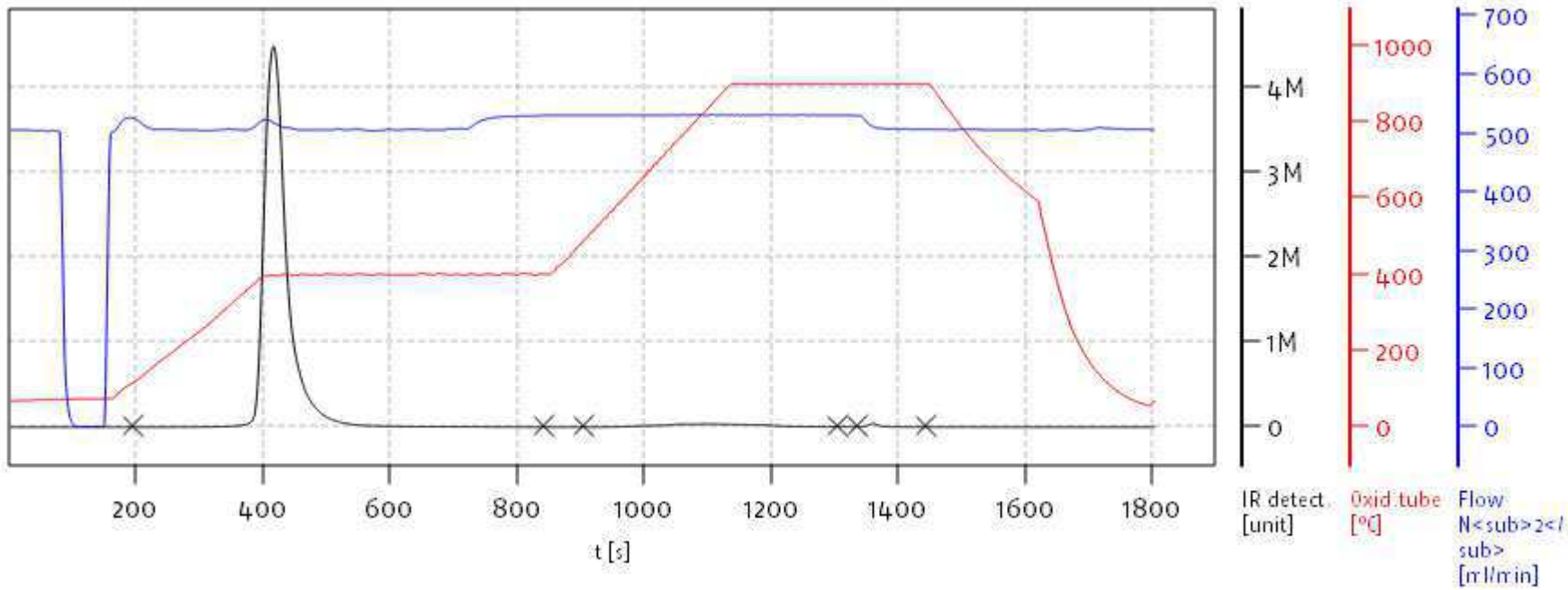
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
30	30	23F0143-13	510.20		CARBON	7/7/2023 4:52 AM	bl	1.971	6 986 278	2.042	0.001	33 213	256 734	1.970	0.071	0.9107	1.0000



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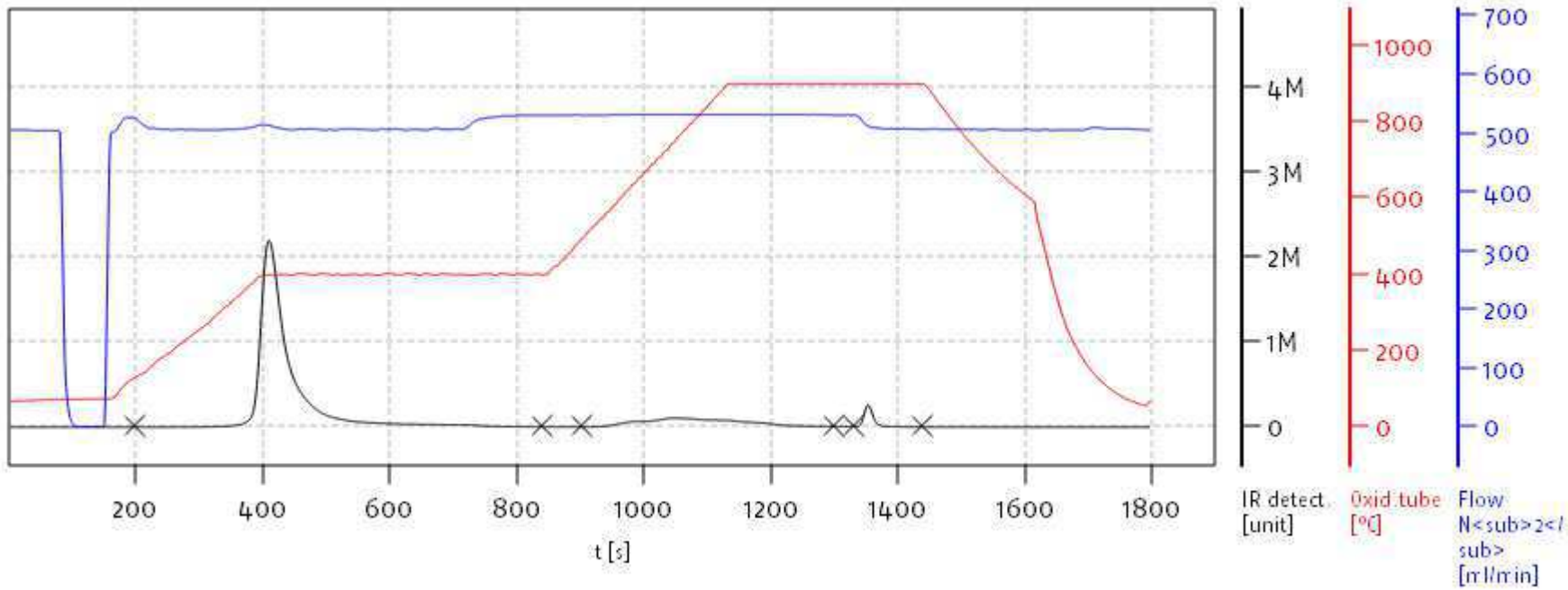
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
31	31	23F0143-14	503.20		CARBON	7/7/2023 5:23 AM	bl	1.238	4 186 180	1.468	0.045	170 360	758 634	1.193	0.230	0.9107	1.0000



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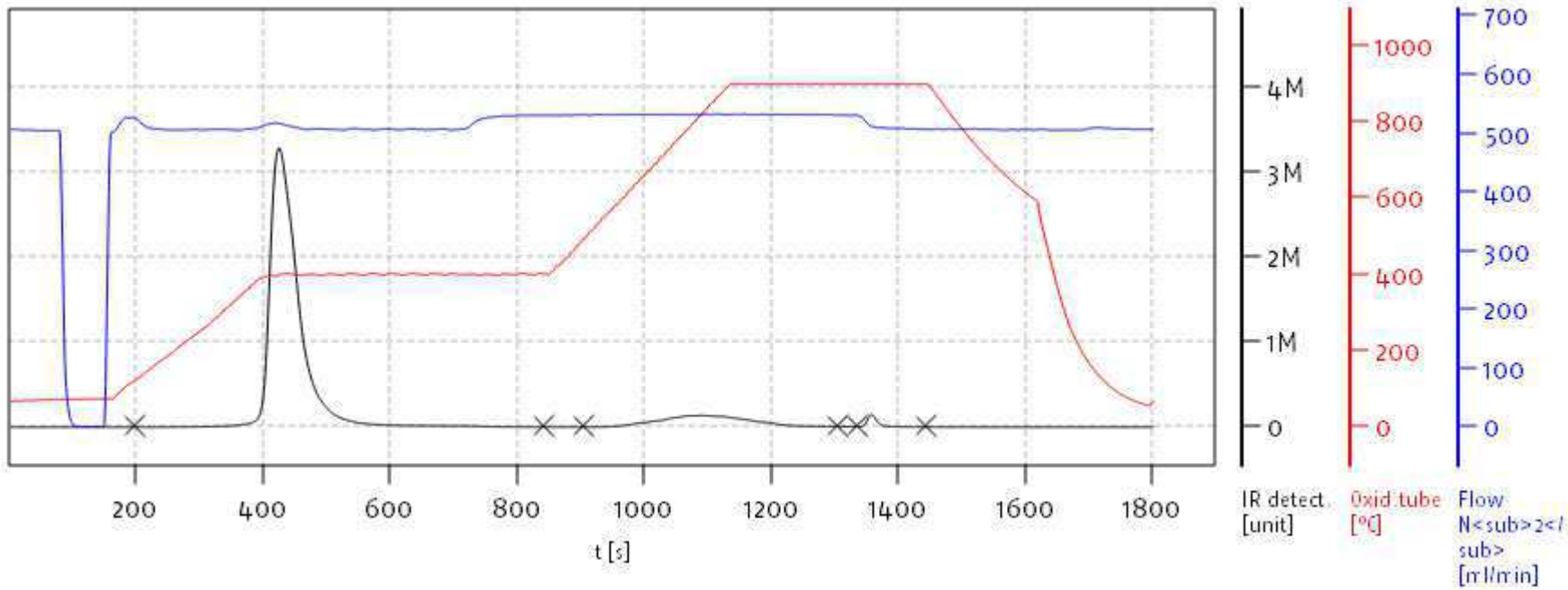
elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
32	32	23F0143-15	621.40		CARBON	7/7/2023 5:53 AM	bl	1.501	6 404 197	1.718	0.019	104 870	877 529	1.482	0.217	0.9107	1.0000



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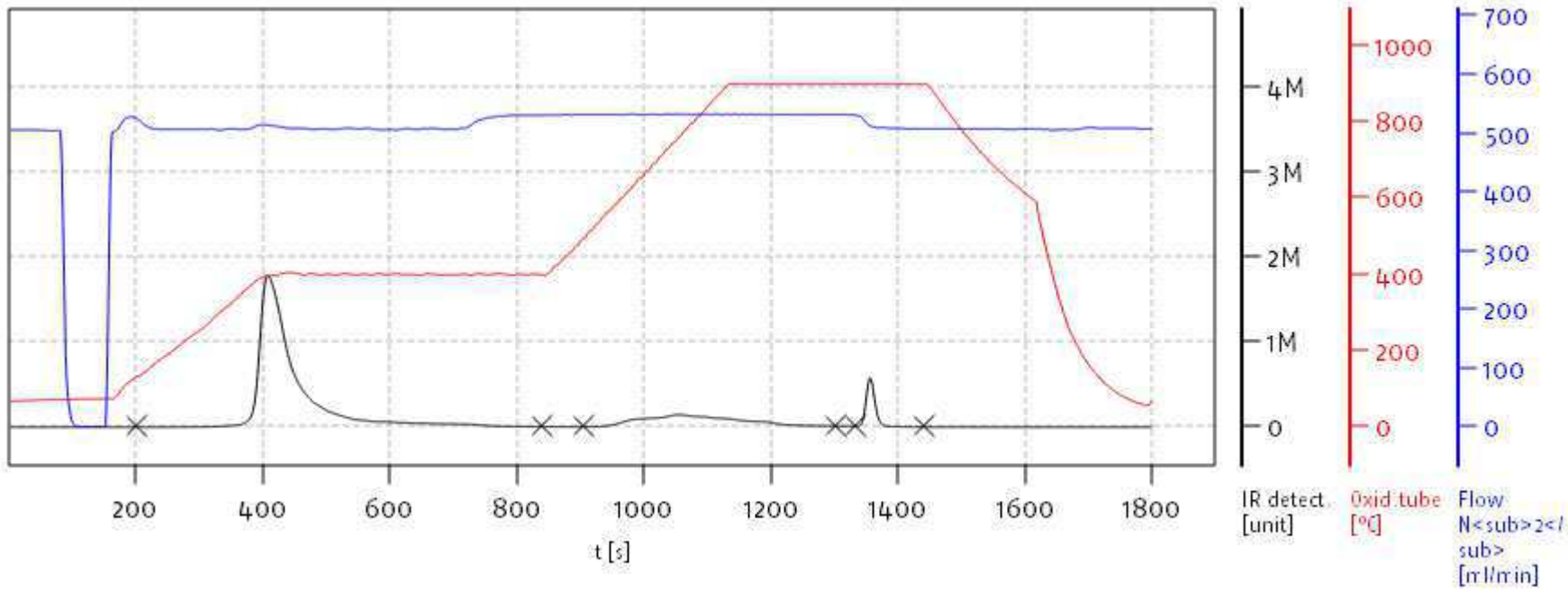
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
33	33	23F0143-16	536.50		CARBON	7/7/2023 6:23 AM	bl	1.233	4 241 359	1.523	0.099	364 231	1 008 970	1.134	0.290	0.9107	1.0000



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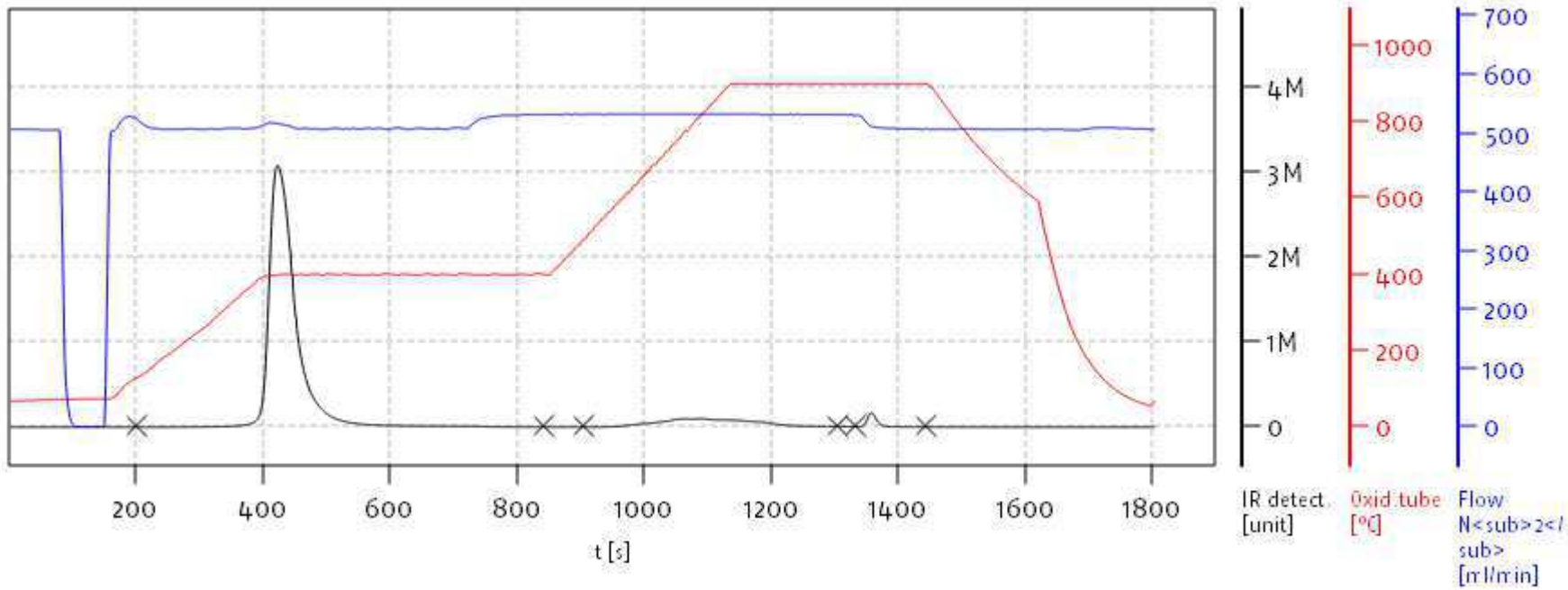
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
34	34	23F0143-17	530.50		CARBON	7/7/2023 6:54 AM	bl	1.518	5 509 847	1.712	0.026	114 744	676 909	1.492	0.194	0.9107	1.0000



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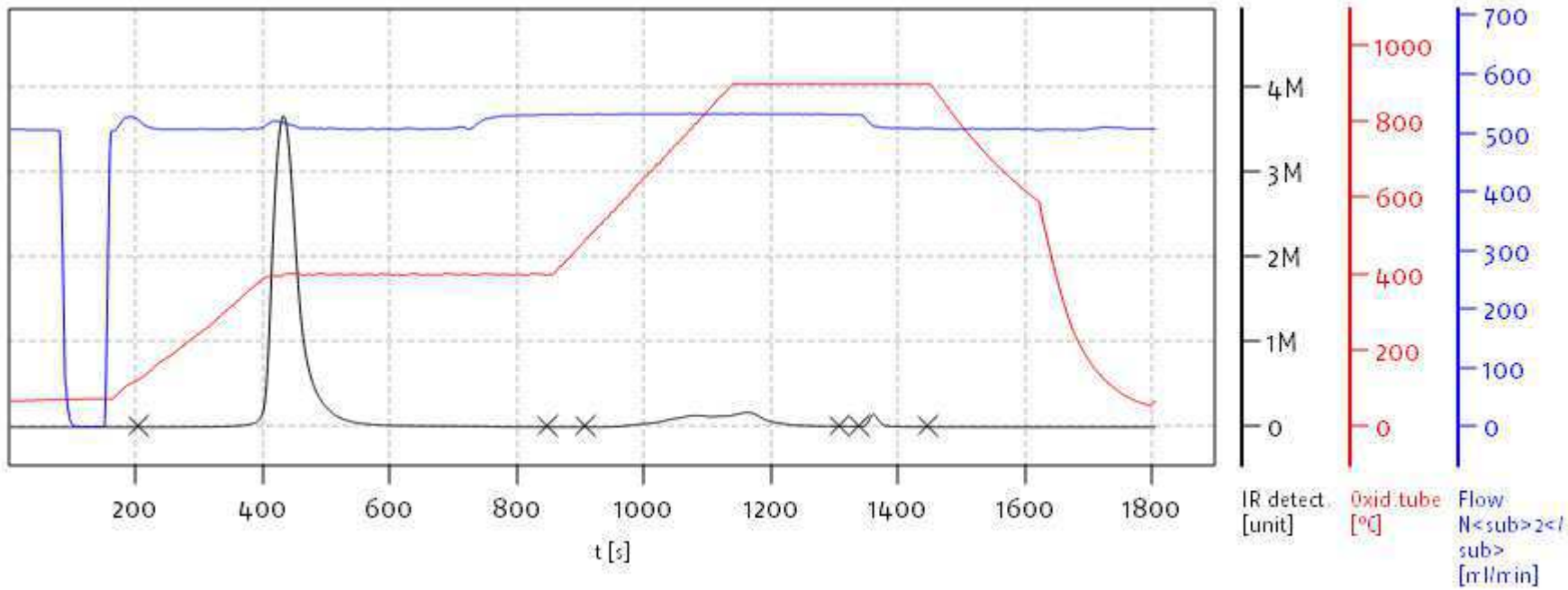
EXCELLENCE IN ELEMENTS

Document: 070623b BF from: 7/10/2023 11:27 AM

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
35	35	23F0143-18	629.70		CARBON	7/7/2023 7:24 AM	bl	1.525	6 589 025	1.767	0.020	109 470	990 556	1.505	0.242	0.9107	1.0000



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EXCELLENCE IN ELEMENTS

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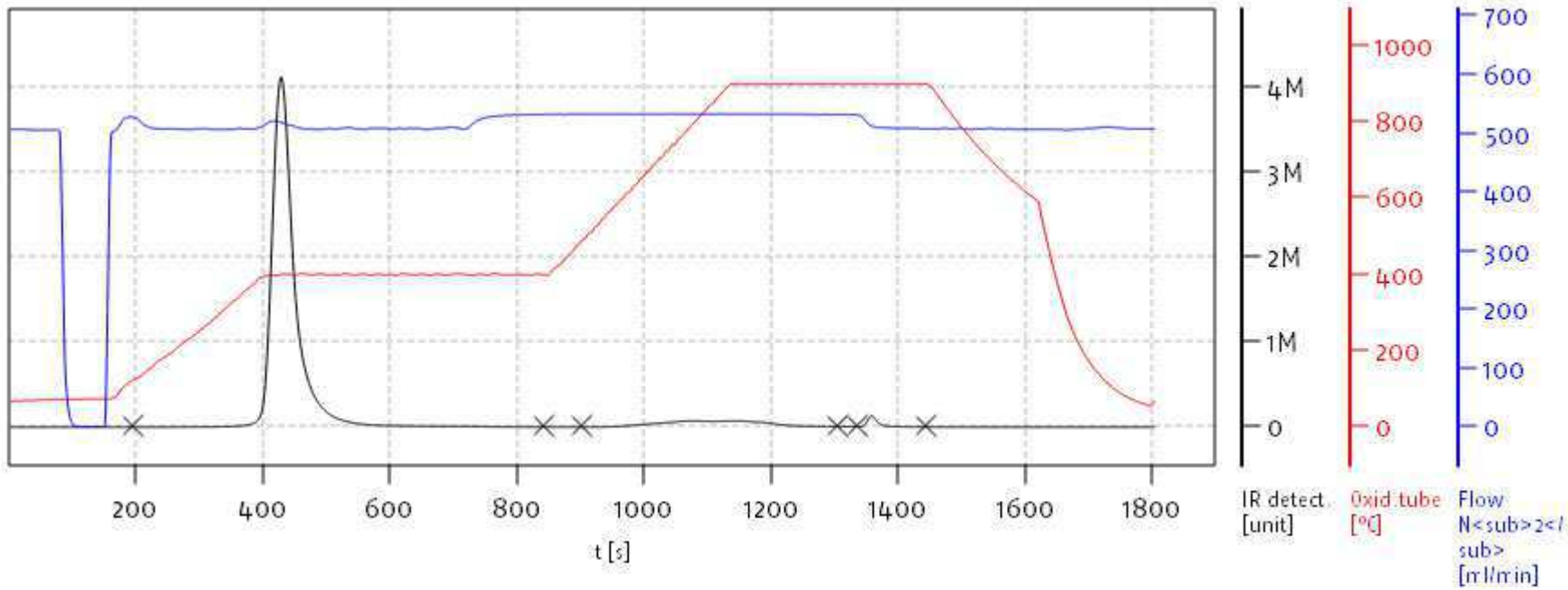
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
36	36	23F0143-19	578.80		CARBON	7/7/2023 7:55 AM	bl	1.602	6 369 410	1.747	0.020	100 971	558 861	1.582	0.145	0.9107	1.0000



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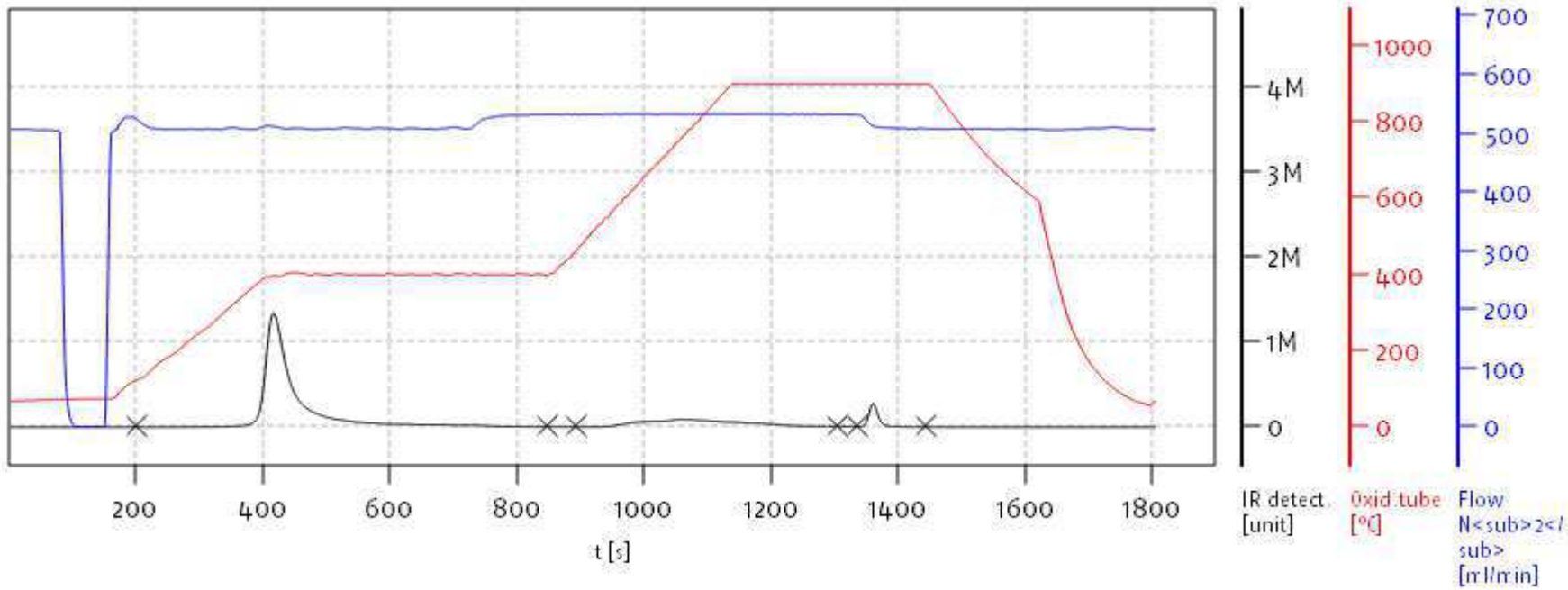
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
37	37	23F0143-20	355.90		CARBON	7/7/2023 8:25 AM	bl	1.118	2 616 708	1.392	0.068	181 037	644 077	1.050	0.274	0.9107	1.0000



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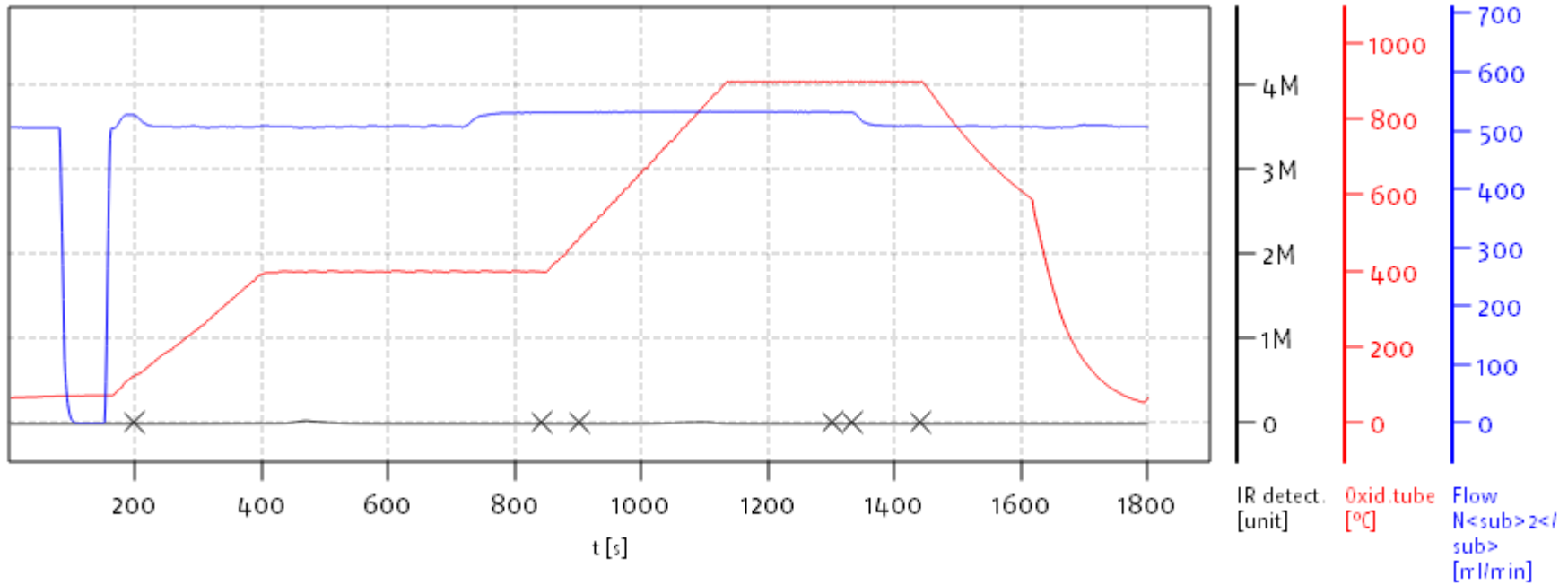
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
38	38	BLG0049-MRL1	510.90		CARBON	7/7/2023 8:56 AM	bl,C2u	0.014	76 745	0.019	0.000	308	45 479	0.014	0.005	0.9107	1.0000



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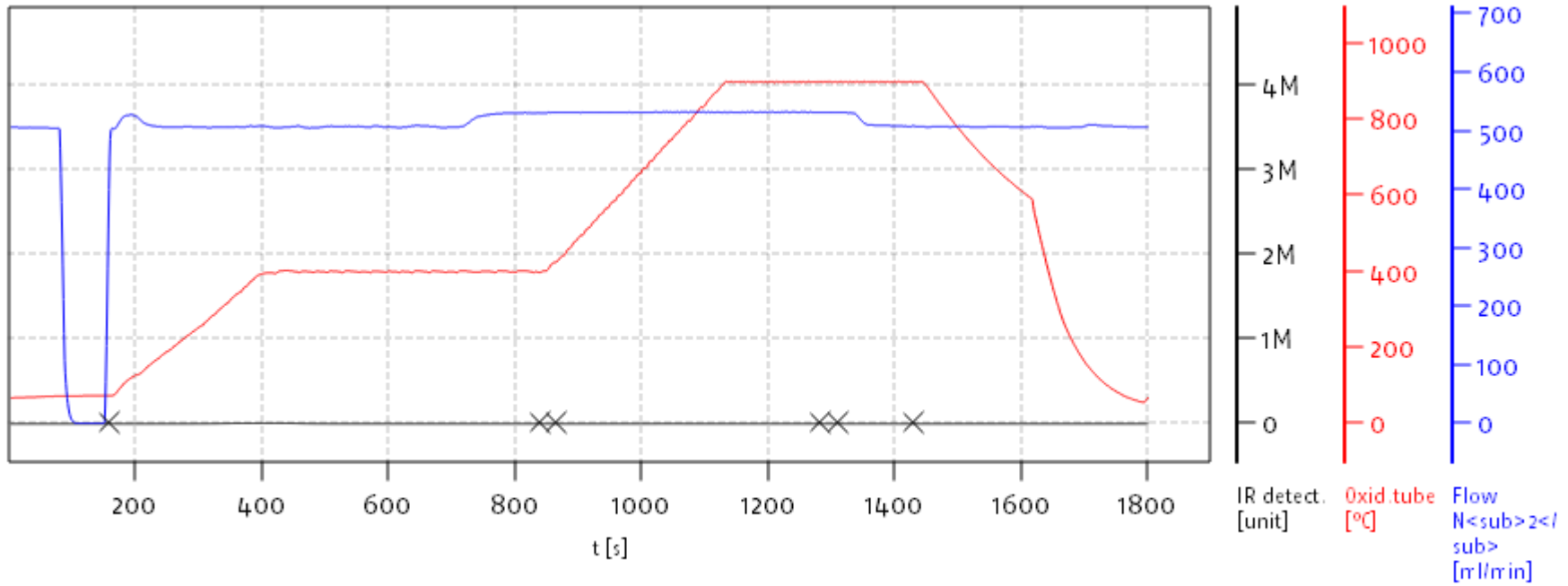
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
39	39	BLG0049-BLK1	532.30		CARBON	7/7/2023 9:26 AM	bl,C3u,C2u	0.002	35 846	0.002	0.000	834	5 774	0.002	0.000	0.9107	1.0000



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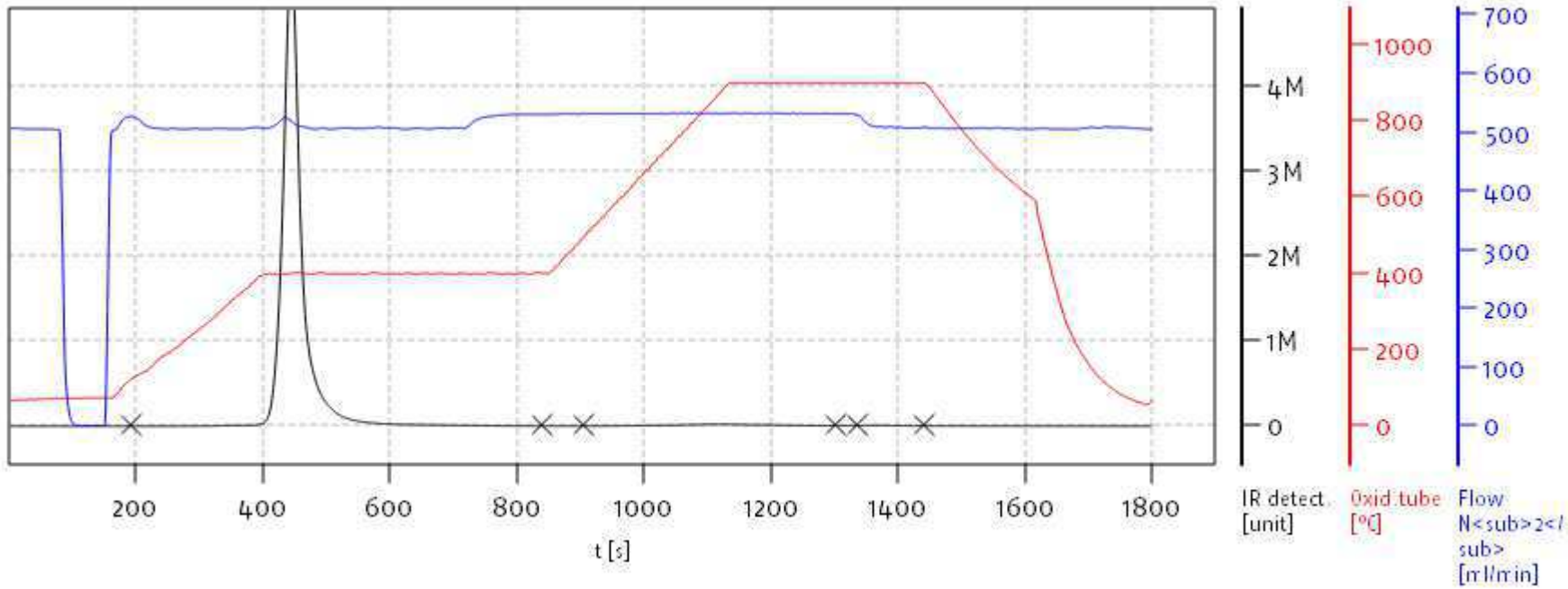
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
40	40	SLG0028-CCV3	22.70		CARBON	7/7/2023 9:56 AM	bl	44.275	6 986 994	45.170	0.000	23 797	156 980	44.275	0.895	0.9107	1.0000



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Access: soliTOC superuser

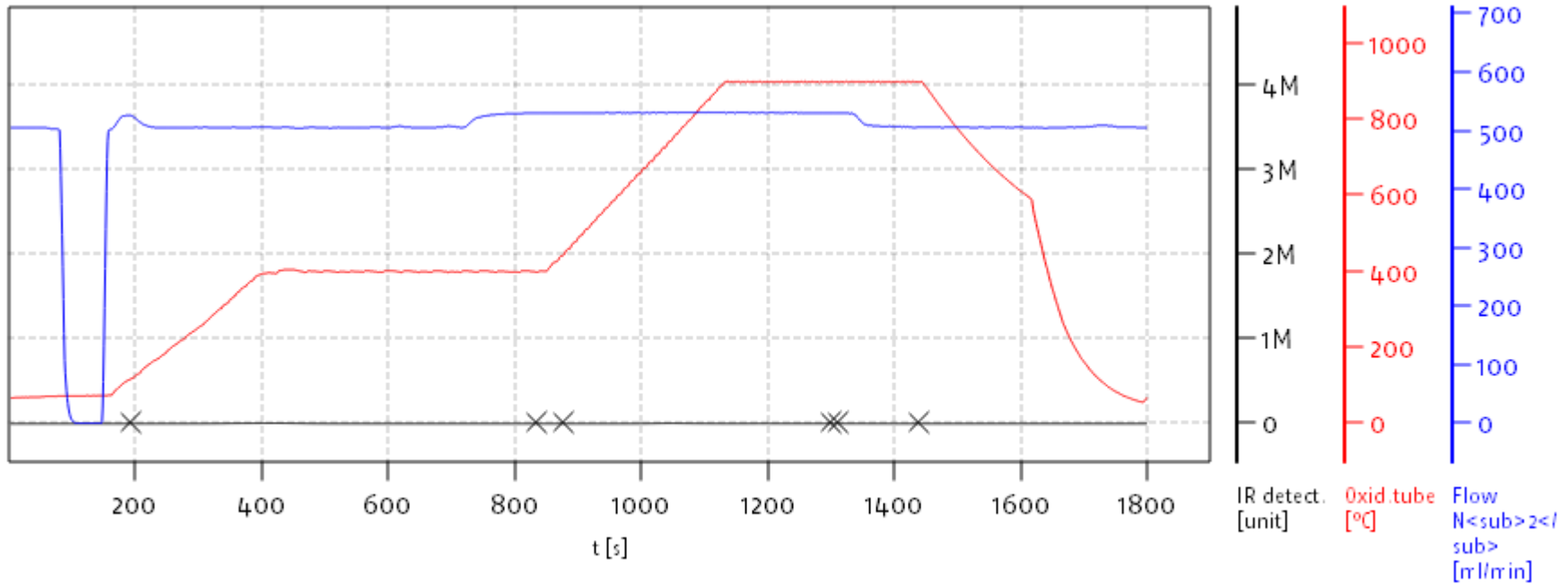
Date: Mon Jul 10 11:28:09 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
41	41	SLG0028-CCB3	588.20		CARBON	7/7/2023 10:27 AM	bl,C3u,C2u	0.000	26 089	0.000	0.000	2 603	19 647	0.000	0.000	0.9107	1.0000



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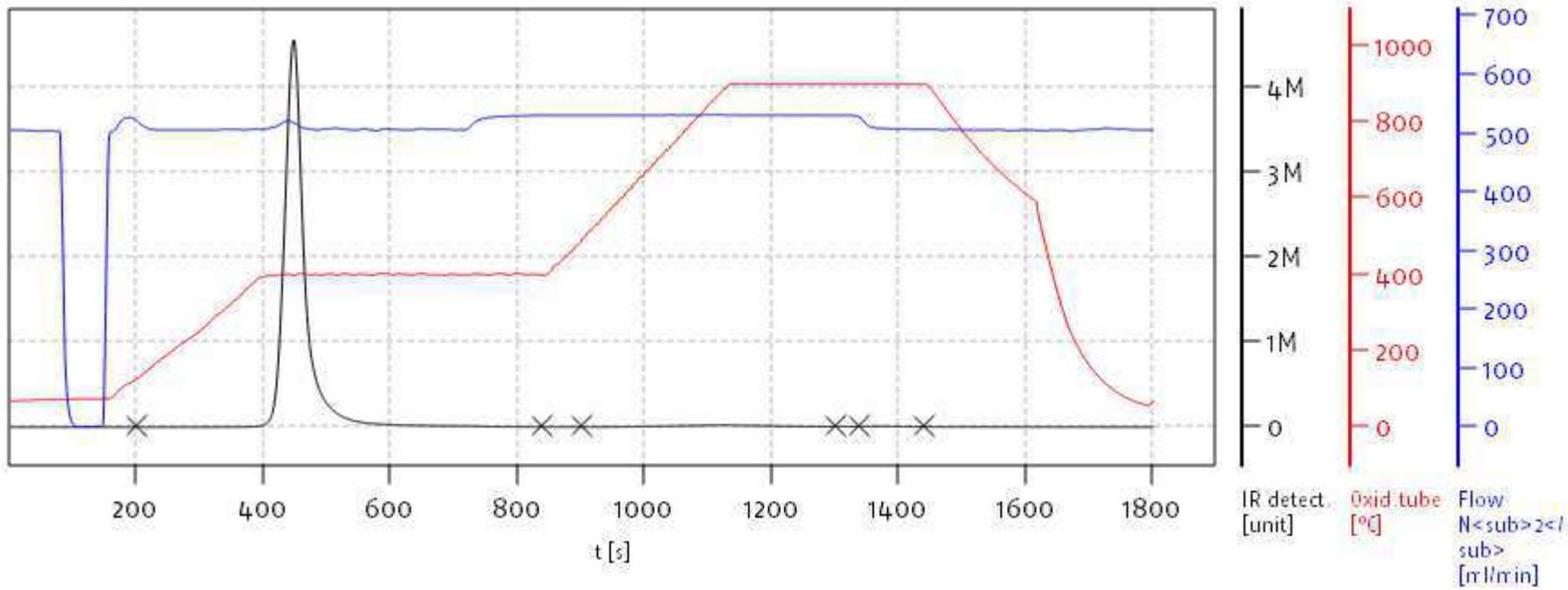
Date: Mon Jul 10 11:28:09 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
42	42	BLG0049-BS1	21.00		CARBON	7/7/2023 10:57 AM	bl	43.265	6 319 100	44.298	0.000	26 414	165 641	43.265	1.033	0.9107	1.0000



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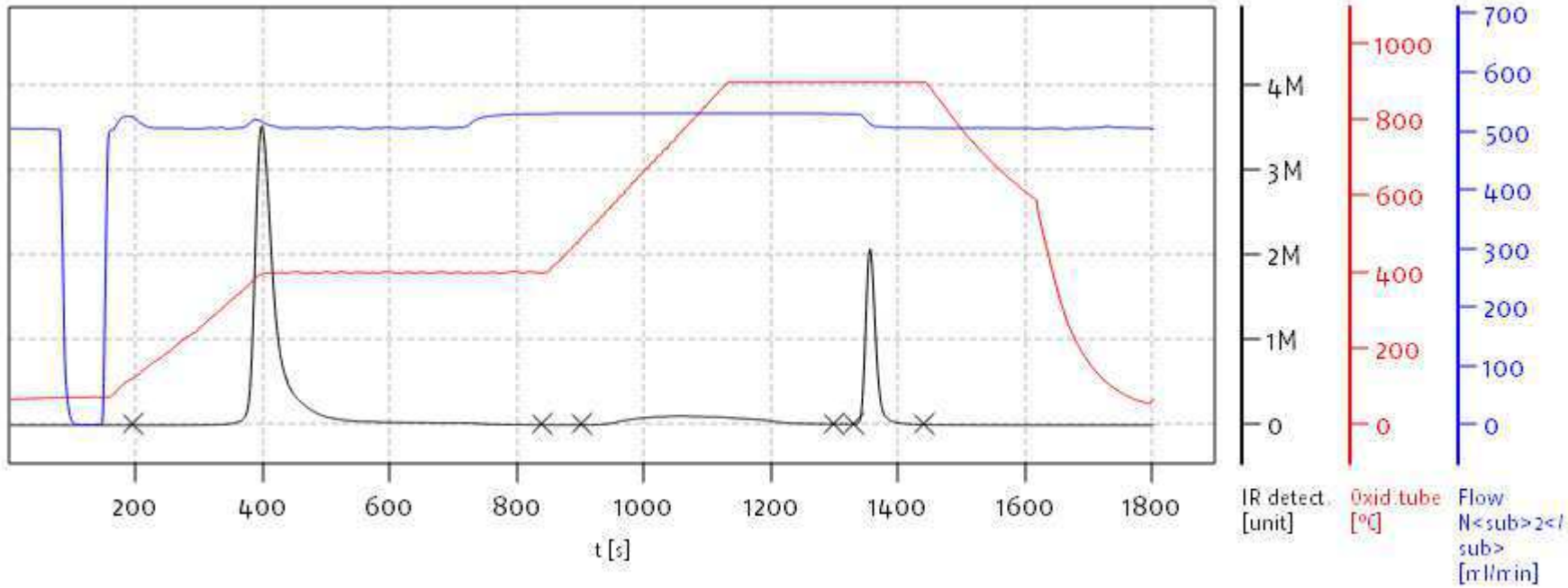
elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
43	43	BLG0049-SRM1	320.10		CARBON	7/7/2023 11:27 AM	bl	3.022	5 165 415	3.446	0.705	1 450 808	882 953	2.318	0.423	0.9107	1.0000



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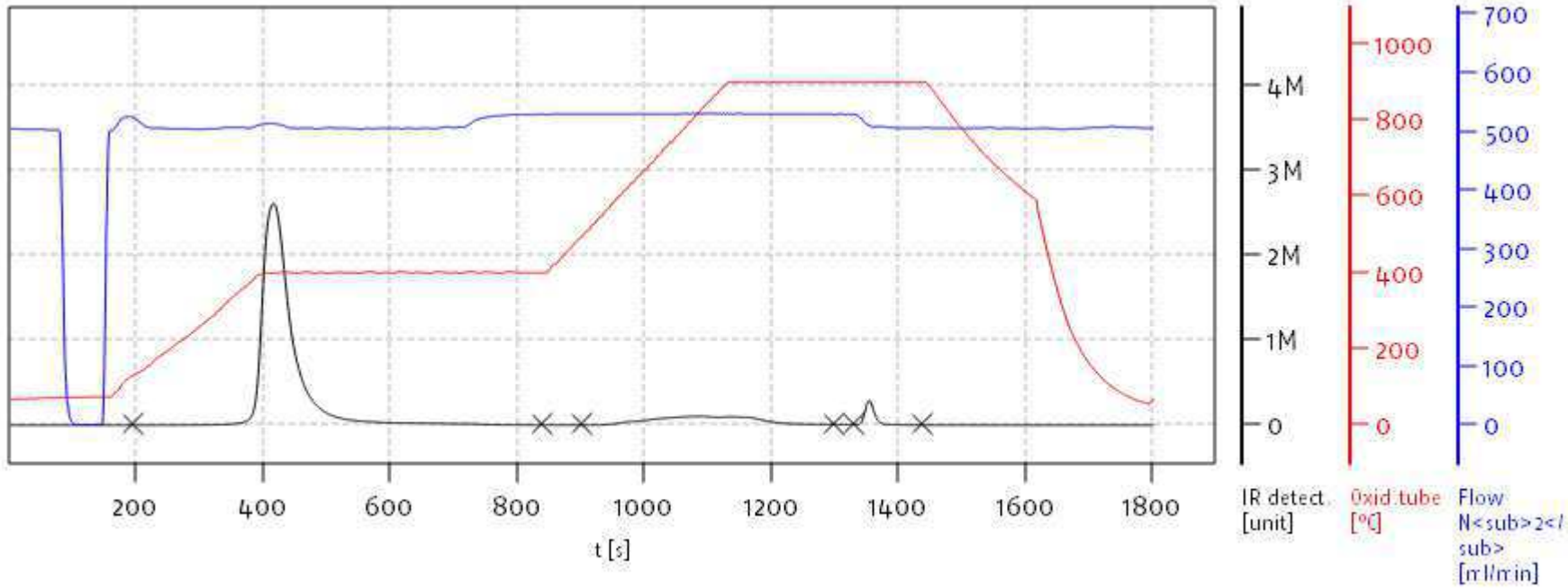
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
44	44	23F0143-21	507.80		CARBON	7/7/2023 11:58 AM	bl	1.536	5 248 243	1.772	0.051	192 703	786 411	1.485	0.237	0.9107	1.0000



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soliTOC V2.0.2 (31015f9) 2018-11-19
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Mode CCC

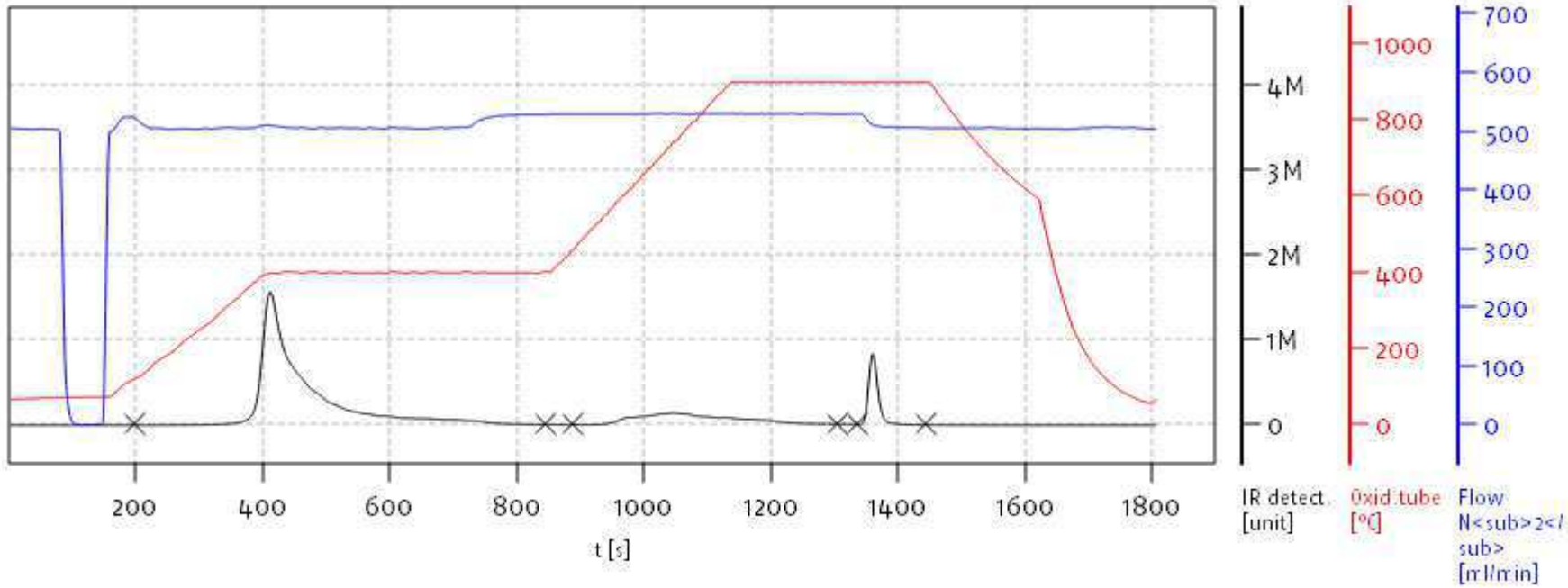
elementar
EXCELLENCE IN ELEMENTS

Document: 070623b BF from: 7/10/2023 11:27 AM

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
45	45	BLG0049-DUP1	537.60		CARBON	7/7/2023 12:28 PM	bl	1.306	4 310 357	1.596	0.156	556 403	1 013 044	1.150	0.290	0.9107	1.0000



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Date: Mon Jul 10 11:28:09 2023

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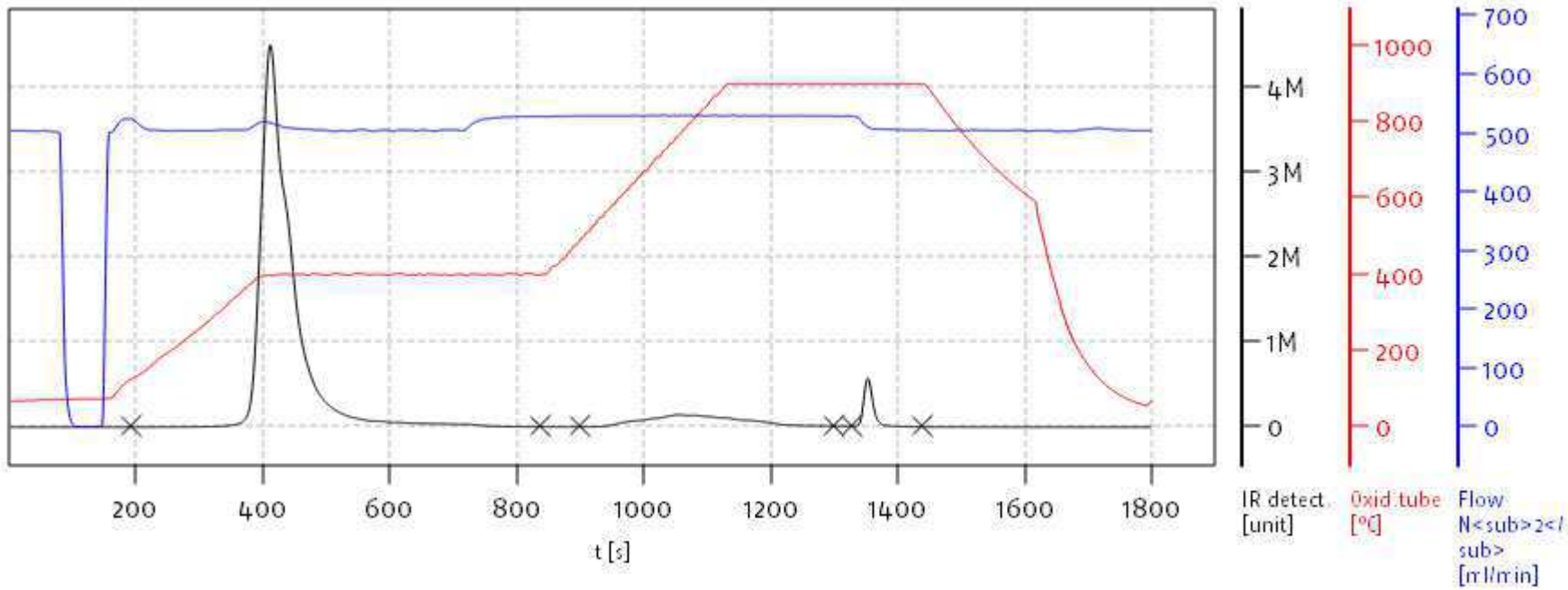
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
46	46	BLG0049-MS1	657.60		CARBON	7/7/2023 12:59 PM	bl,C1o	2.112	9 257 639	2.348	0.085	379 629	1 009 625	2.027	0.237	0.9107	1.0000



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Date: Mon Jul 10 11:28:09 2023

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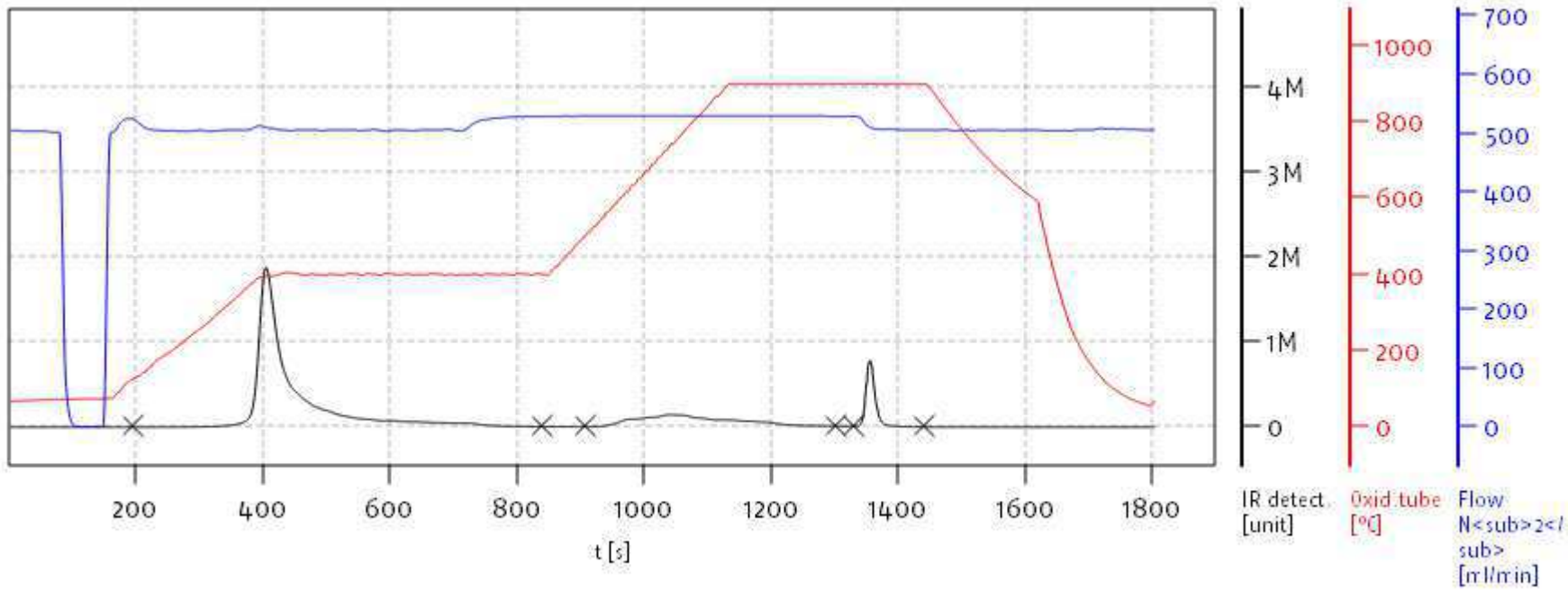
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
47	47	23F0143-22	527.30		CARBON	7/7/2023 1:29 PM	bl	1.207	3 919 440	1.500	0.141	499 212	1 000 964	1.066	0.292	0.9107	1.0000



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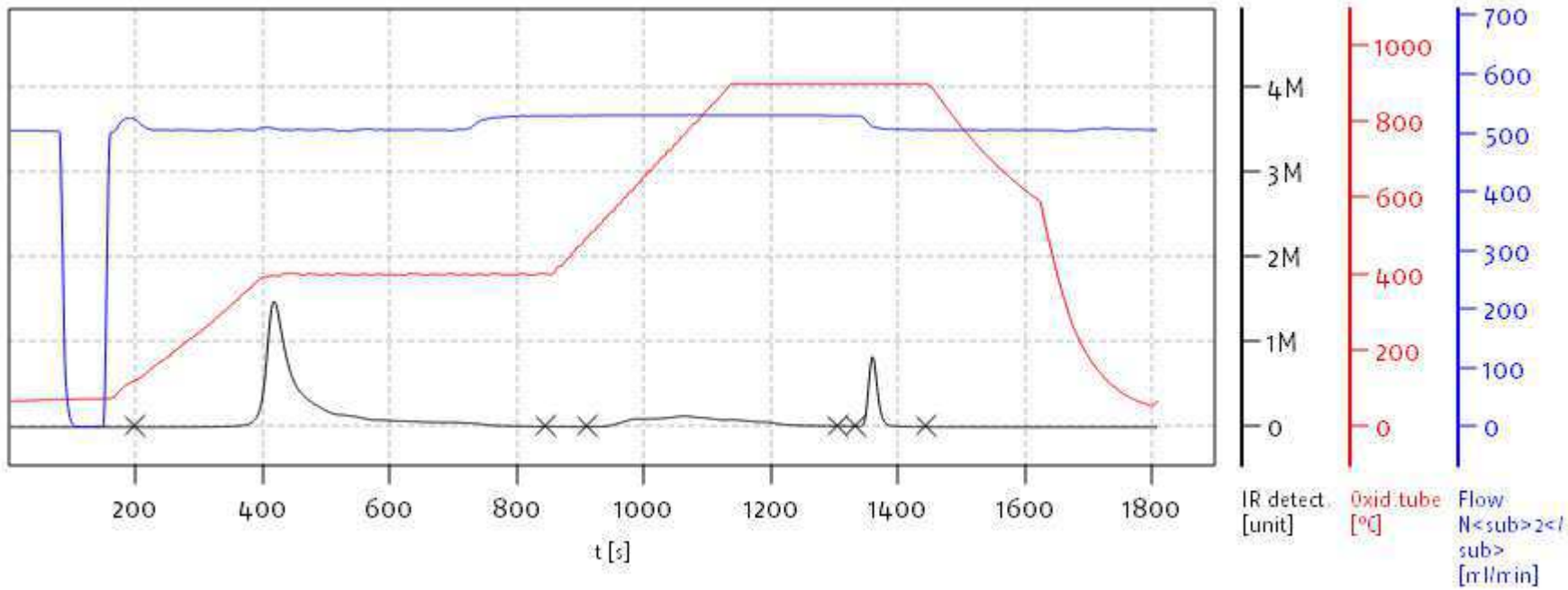
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
48	48	23F0143-23	526.00		CARBON	7/7/2023 2:00 PM	bl	1.077	3 399 277	1.354	0.152	531 858	946 858	0.926	0.277	0.9107	1.0000



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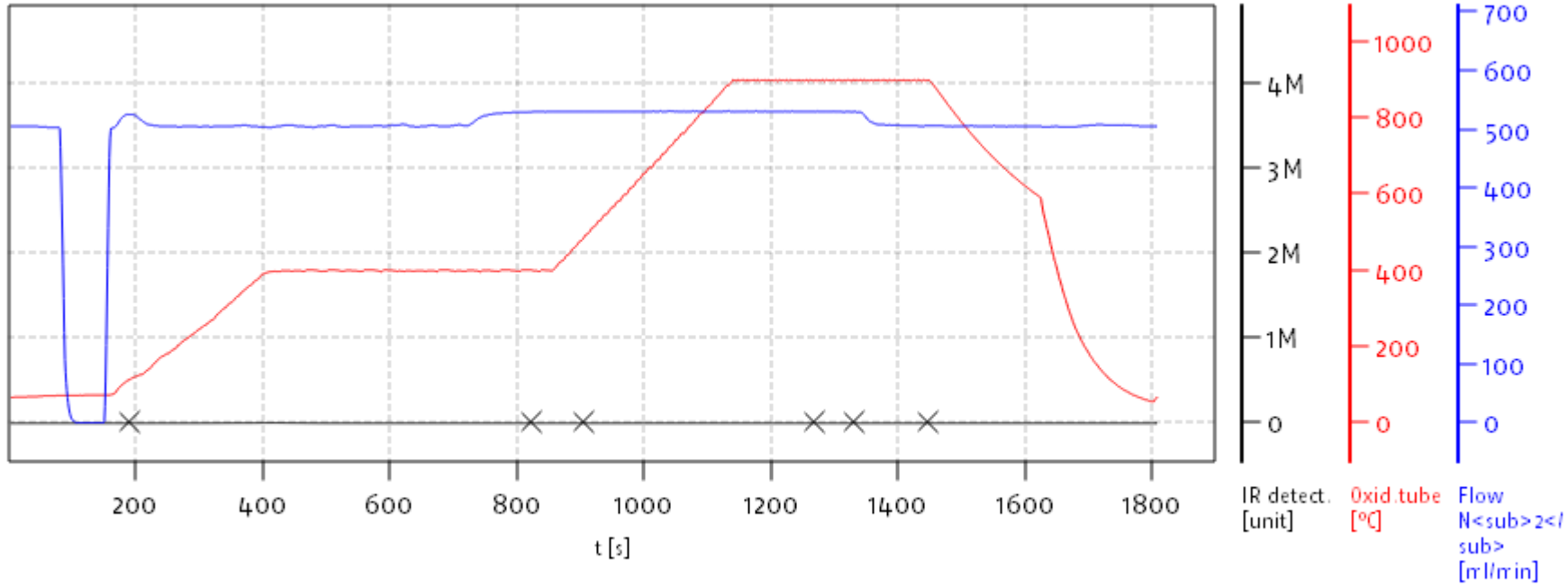
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
49	49	BLANK	1.00		CARBON	7/7/2023 2:30 PM	bl	0.000	18 981	0.000	0.000	363	1 592	0.000	0.000	0.9107	1.0000



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Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

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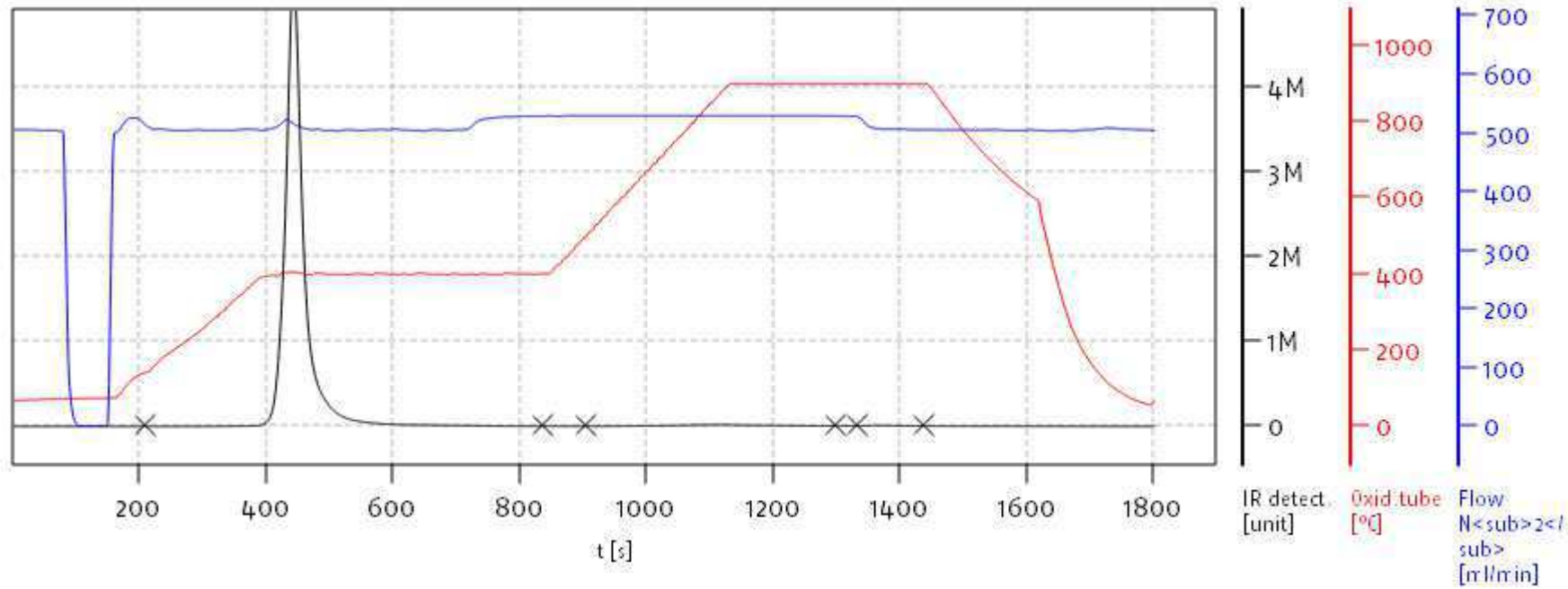
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
50	50	Dfactor	21.90		CARBON	7/7/2023 3:01 PM	bl	44.448	6 665 708	45.261	0.003	29 261	141 113	44.446	0.813	0.9246	1.0000



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Date: Mon Jul 10 11:28:09 2023

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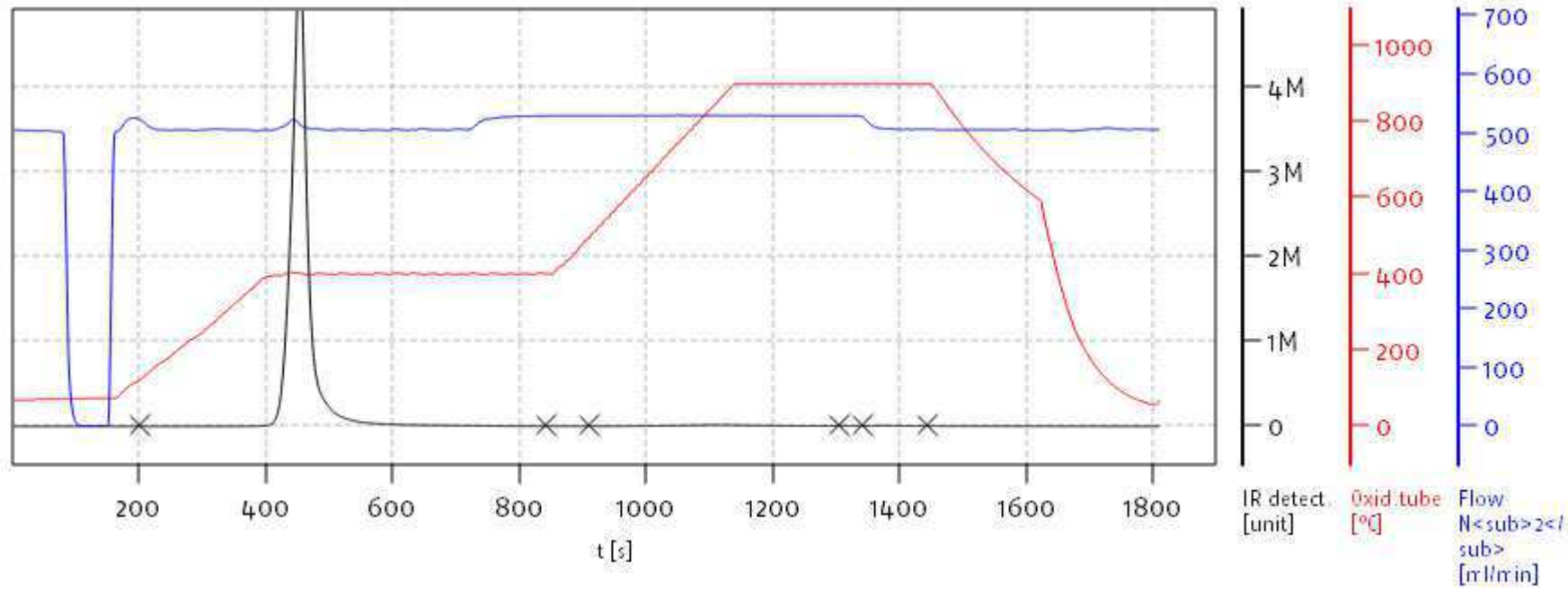
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
51	51	Dfactor	20.20		CARBON	7/7/2023 3:31 PM	bl	44.446	6 190 671	45.140	0.000	23 721	117 242	44.446	0.694	0.9186	1.0000



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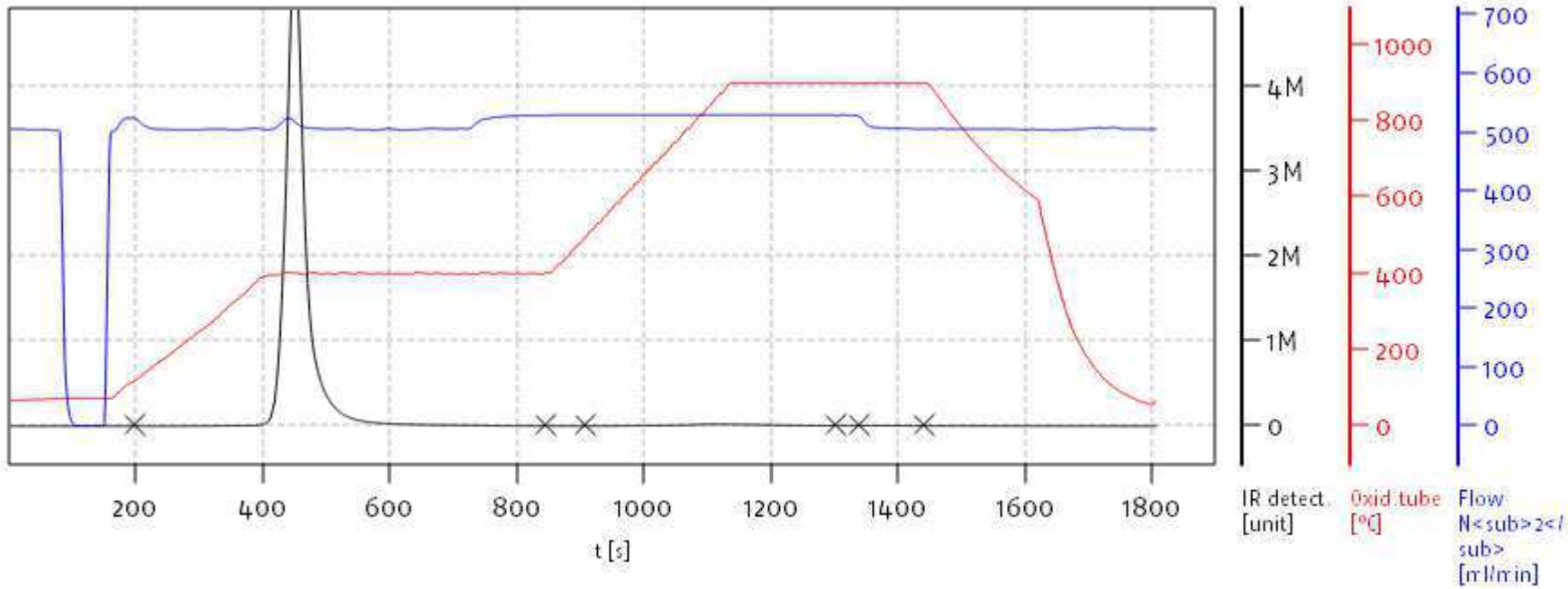
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
52	52	SLG0028-CCV4	24.00		CARBON	7/7/2023 4:02 PM	bl,C2u	45.715	7 534 233	46.520	0.000	19 934	150 762	45.715	0.806	0.9216	1.0000



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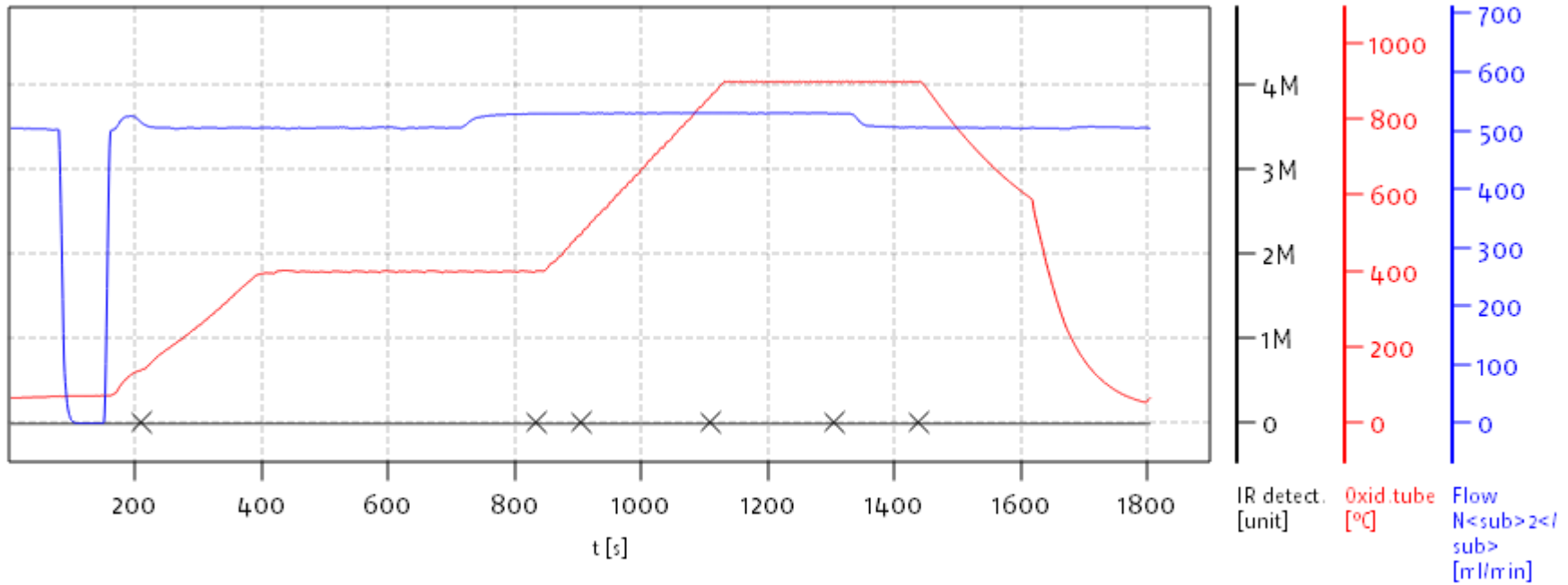
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
53	53	SLG0028-CCB4	570.30		CARBON	7/7/2023 4:32 PM	bl,C1u,C3u,C2u	0.000	4 894	0.000	0.000	957	474	0.000	0.000	0.9216	1.0000



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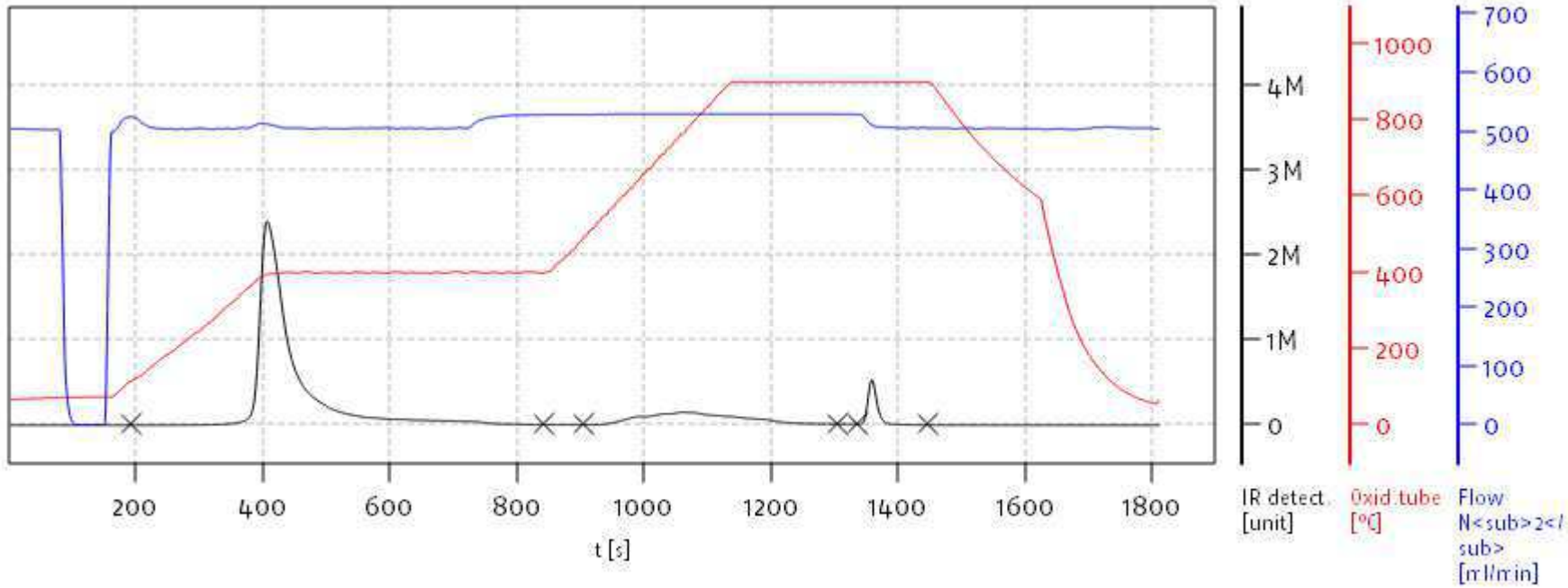
Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
54	54	23F0143-24	589.70		CARBON	7/7/2023 5:03 PM	bl	1.364	5 186 168	1.647	0.086	346 834	1 081 936	1.278	0.283	0.9216	1.0000



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Soli TOC Cube, Carbon
Balance: BAL3
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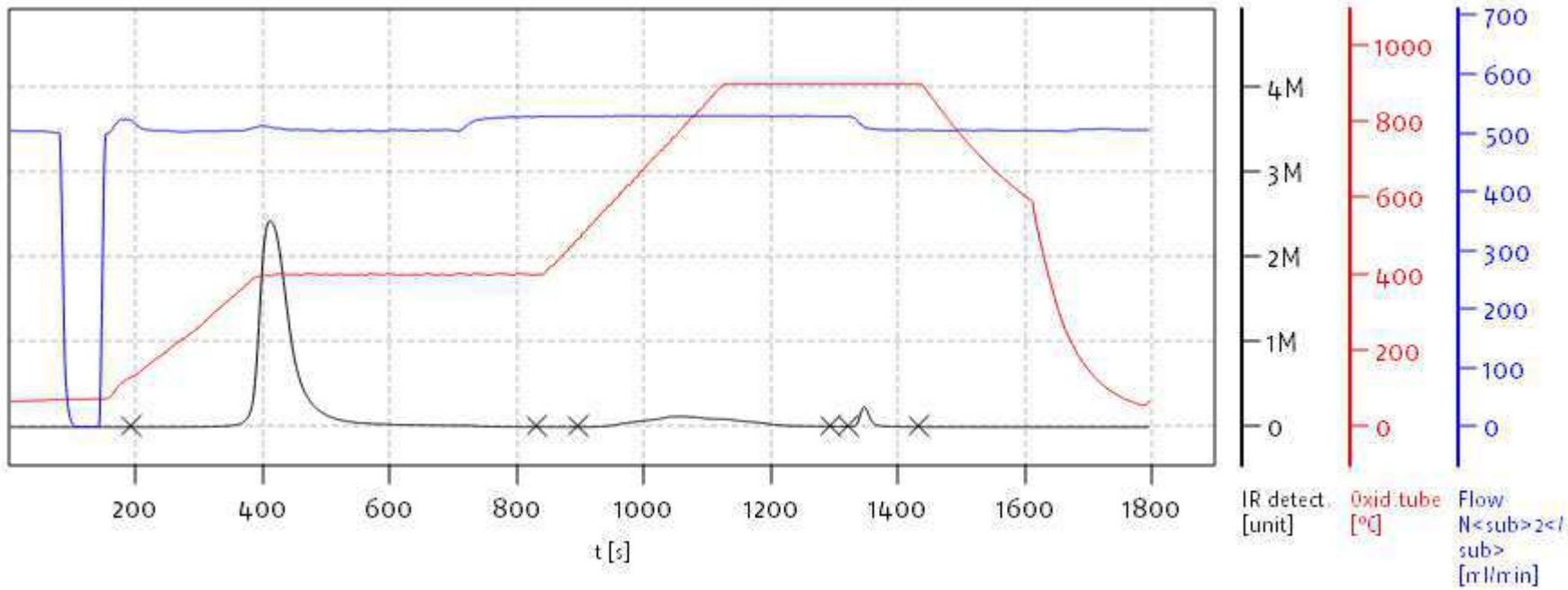
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
55	55	23F0143-25	561.80		CARBON	7/7/2023 5:33 PM	bl	1.406	5 281 617	1.634	0.039	167 835	838 056	1.367	0.228	0.9216	1.0000



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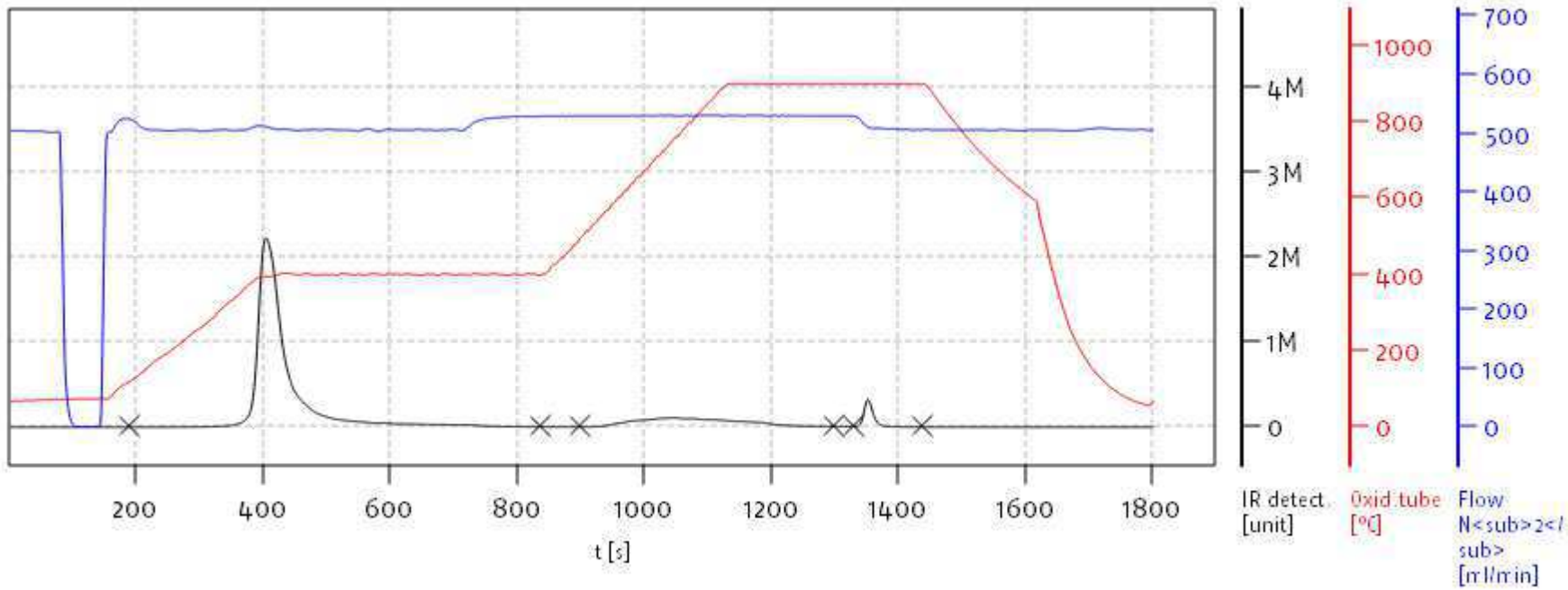
Document: 070623b BF from: 7/10/2023 11:27 AM

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
56	56	23F0143-26	505.50		CARBON	7/7/2023 6:03 PM	bl	1.272	4 228 971	1.519	0.058	213 195	813 161	1.215	0.246	0.9216	1.0000



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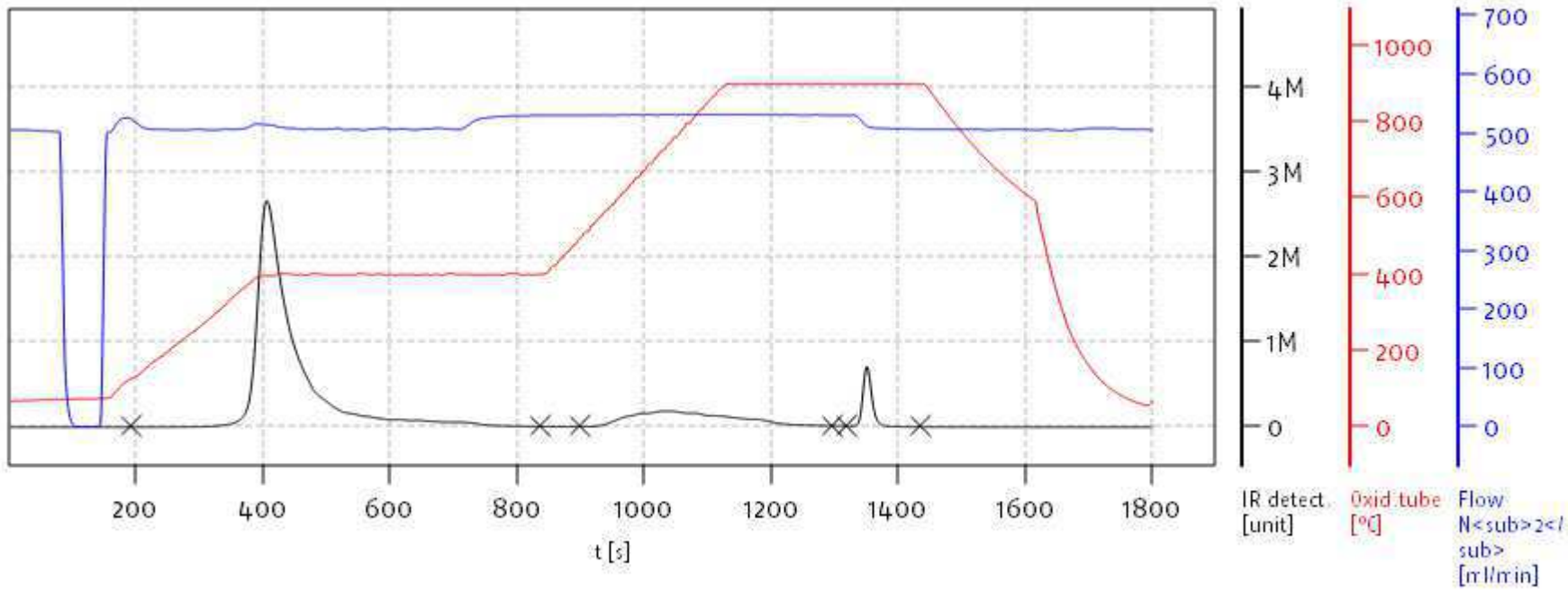
Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
57	57	23F0143-27	789.70		CARBON	7/7/2023 6:34 PM	bl	1.312	6 650 963	1.588	0.086	456 015	1 406 458	1.226	0.277	0.9216	1.0000



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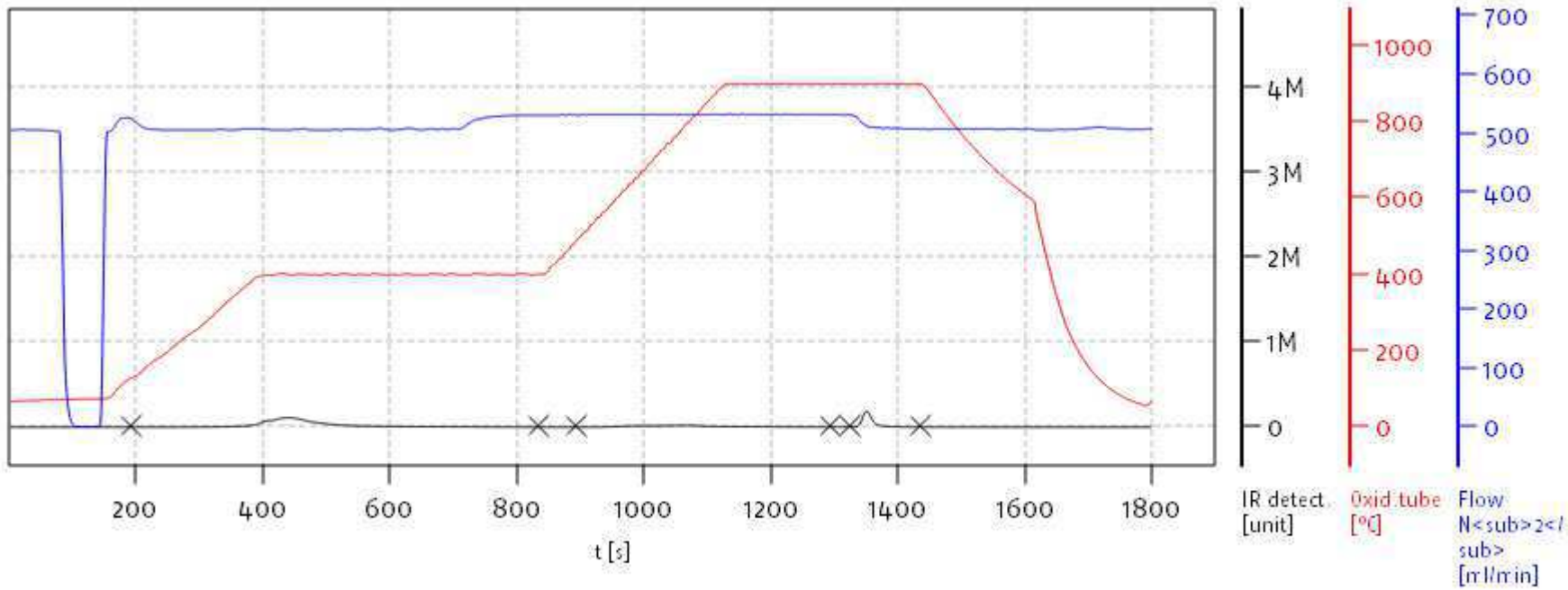
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
58	58	23F0143-28	517.80		CARBON	7/7/2023 7:04 PM	bl	0.149	444 987	0.175	0.031	131 114	114 470	0.117	0.026	0.9216	1.0000



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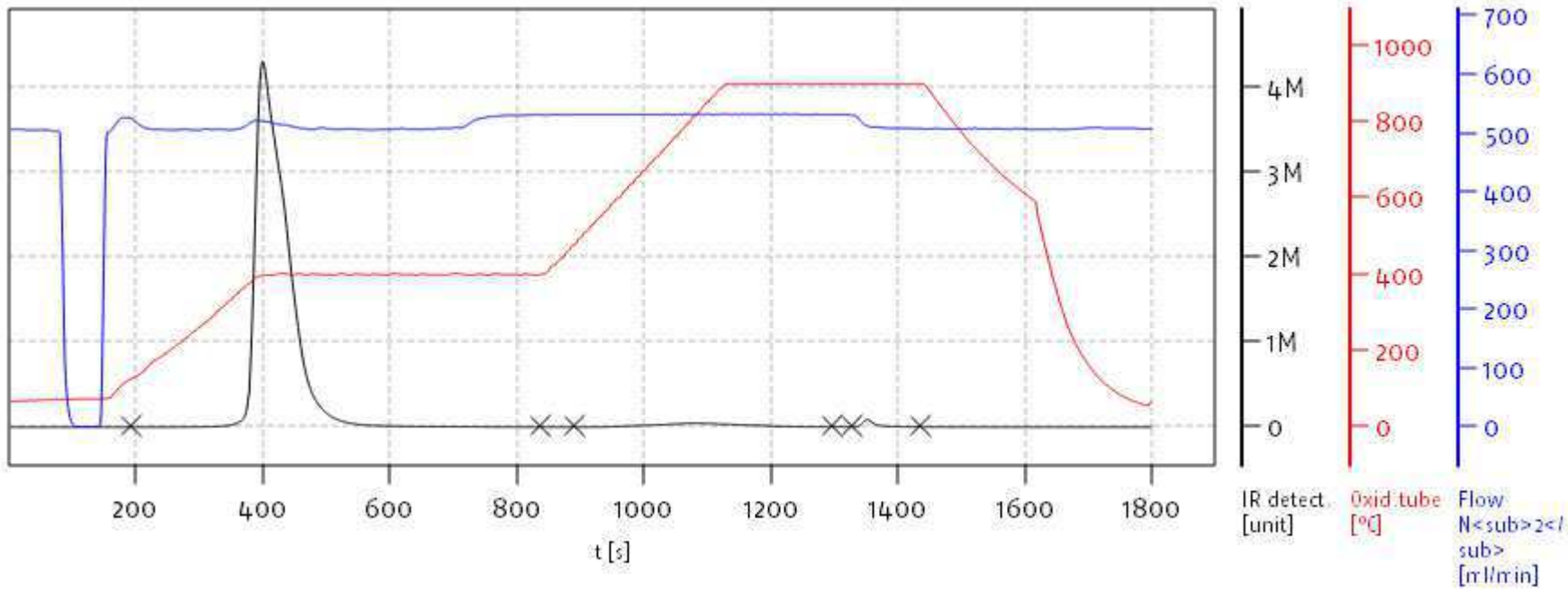
Document: 070623b BF from: 7/10/2023 11:27 AM

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
59	59	23F0143-29	533.00		CARBON	7/7/2023 7:34 PM	bl,C1o	2.537	9 222 333	2.612	0.015	79 965	280 763	2.521	0.075	0.9216	1.0000



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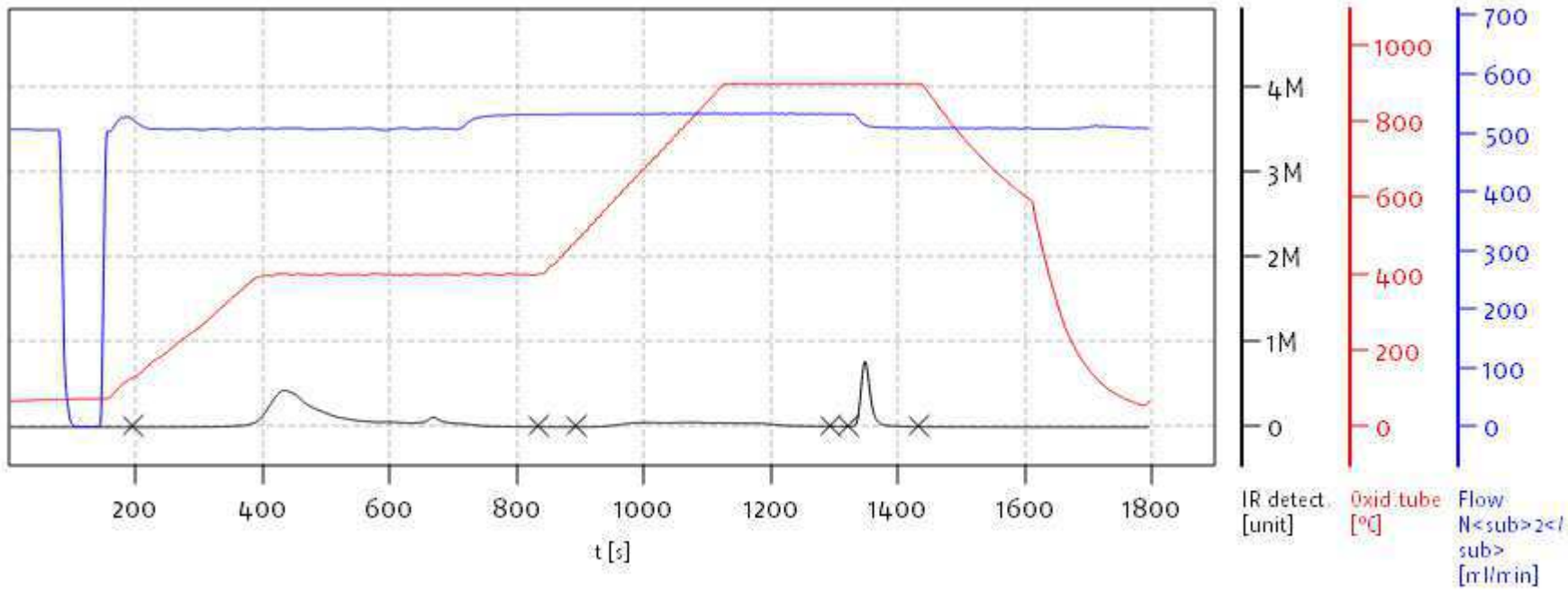
elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
60	60	23F0143-30	561.70		CARBON	7/7/2023 8:05 PM	bl	0.613	1 850 871	0.747	0.139	519 958	503 007	0.474	0.134	0.9216	1.0000



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Access: soliTOC superuser

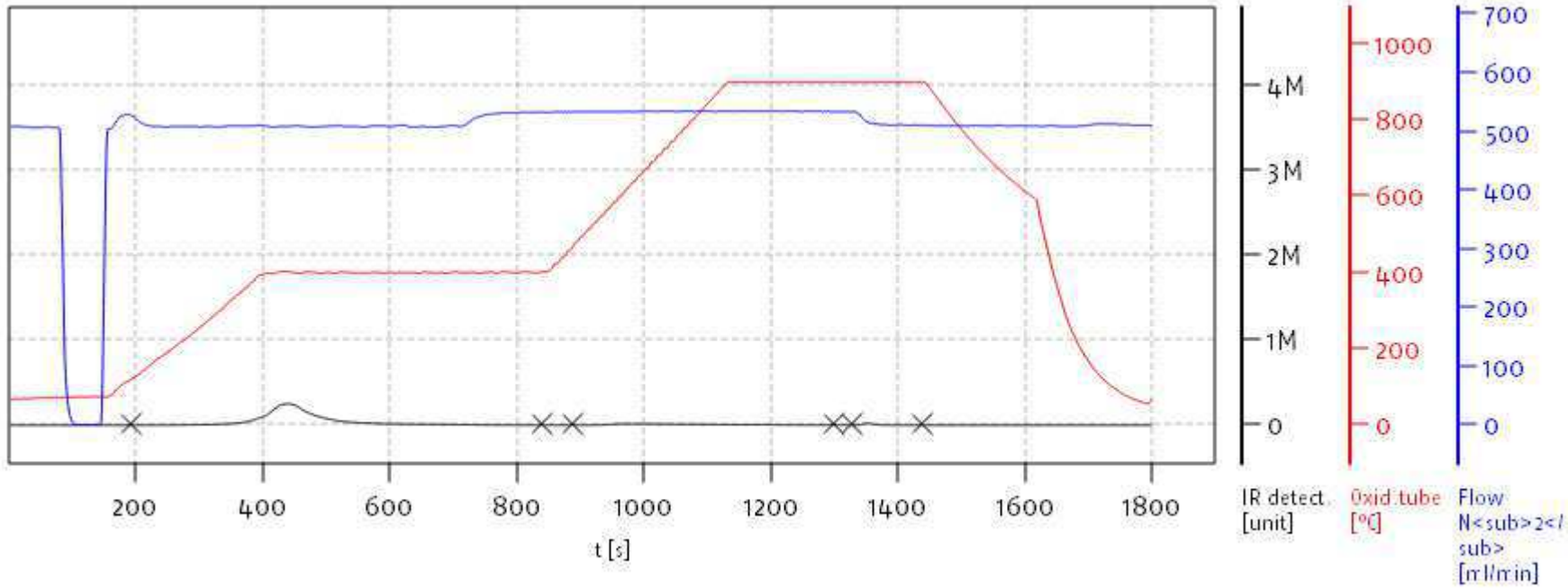
Date: Mon Jul 10 11:28:09 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
61	61	23F0363-01	715.10		CARBON	7/7/2023 8:35 PM	bl,C2u	0.188	947 048	0.206	0.000	17 320	110 033	0.188	0.018	0.9216	1.0000



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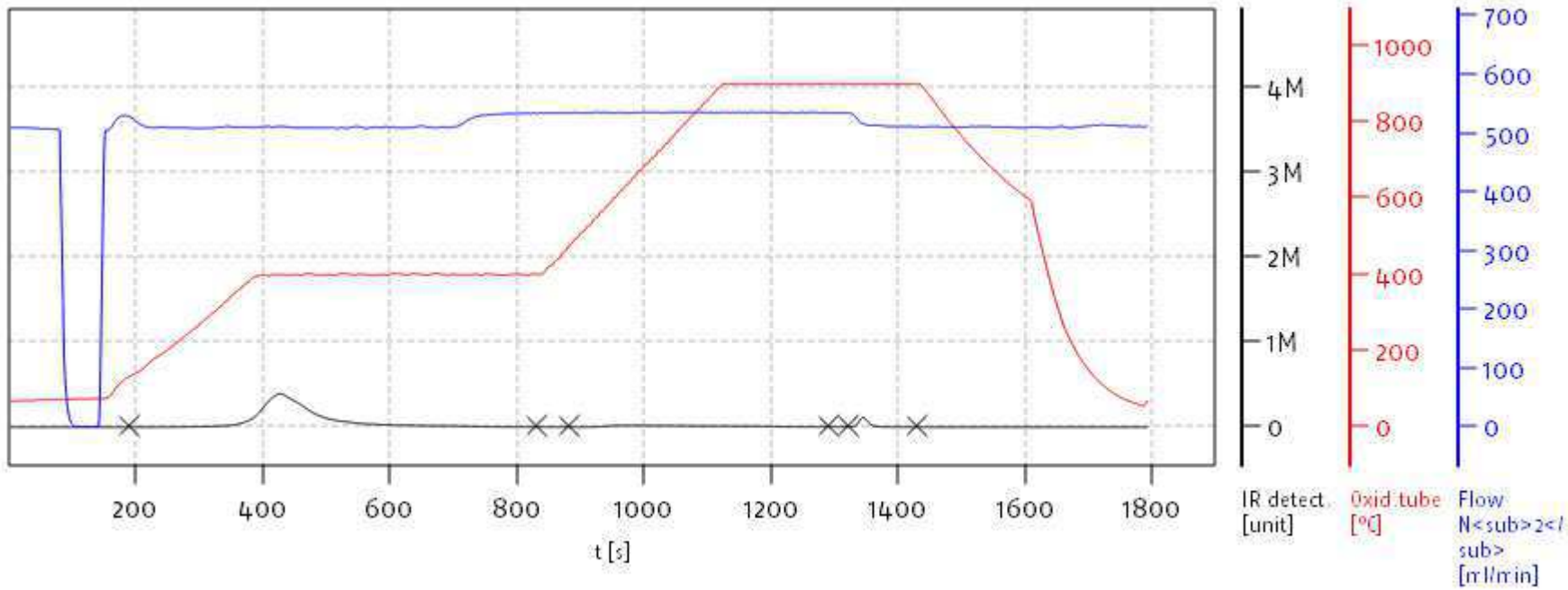
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Document: 070623b BF from: 7/10/2023 11:27 AM

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
62	62	23F0363-02	700.30		CARBON	7/7/2023 9:05 PM	bl	0.314	1 481 362	0.343	0.010	74 907	157 794	0.303	0.029	0.9216	1.0000



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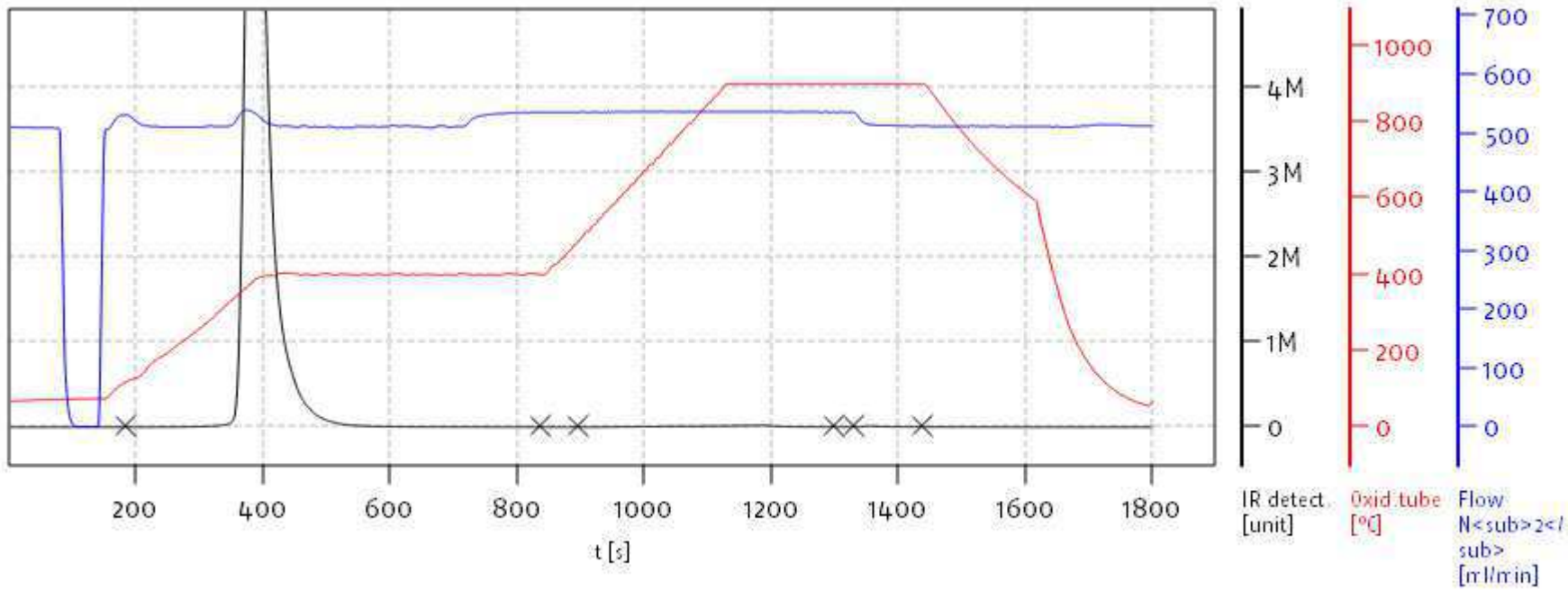
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
63	63	23F0363-03	508.80		CARBON	7/7/2023 9:36 PM	bl,C1o	3.780	13 185 854	3.809	0.000	21 578	122 423	3.780	0.029	0.9216	1.0000



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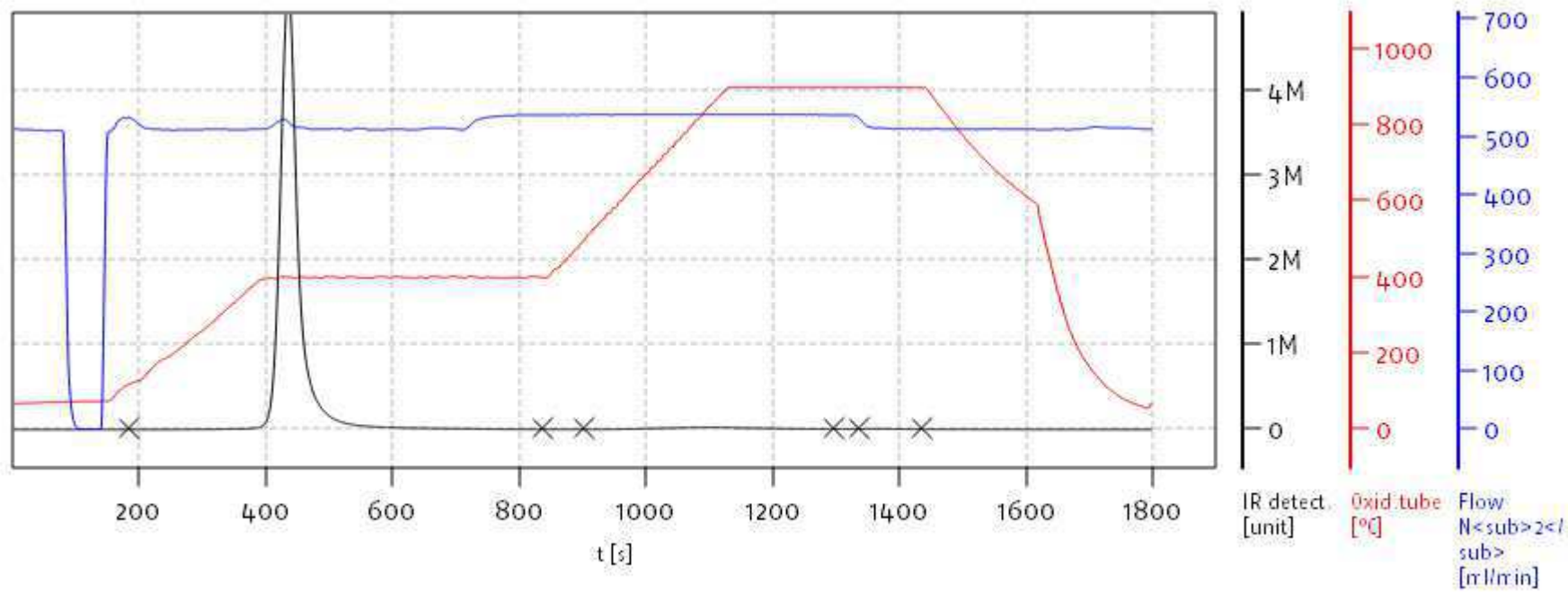
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
64	64	SLG0028-CCV5	21.30		CARBON	7/7/2023 10:06 PM	bl	44.775	6 553 011	45.982	0.000	22 702	190 855	44.775	1.206	0.9216	1.0000



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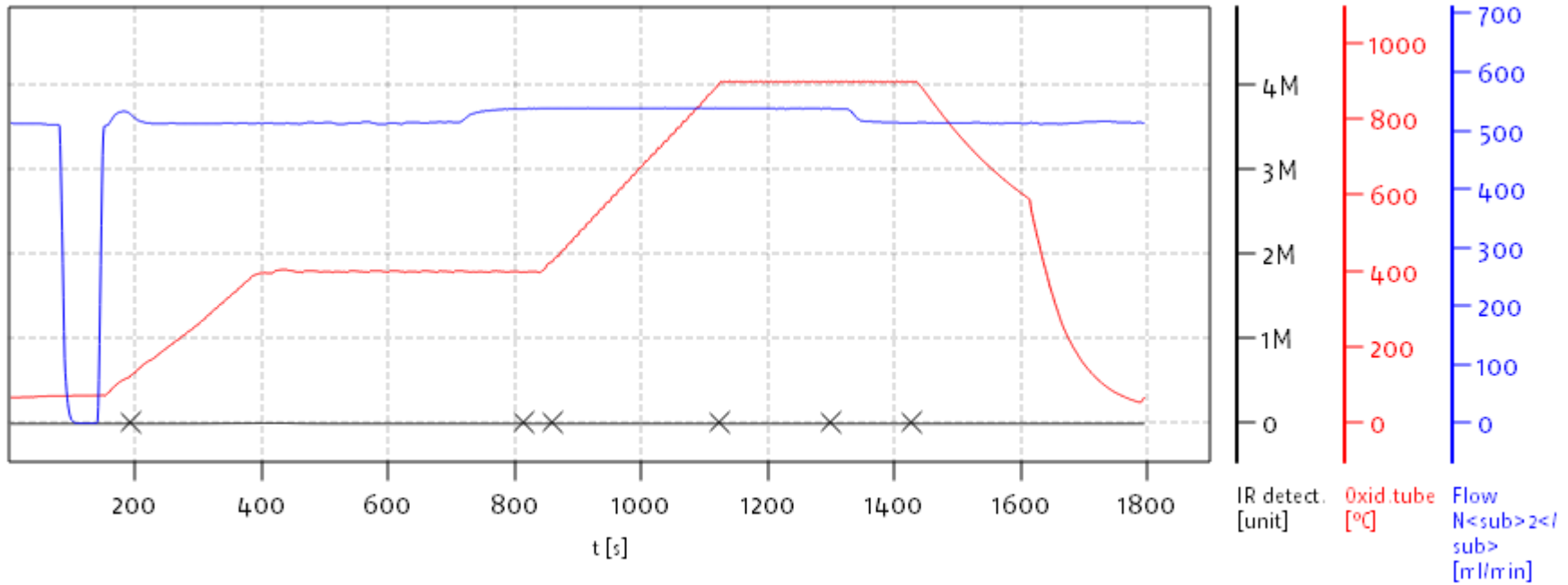
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
65	65	SLG0028-CCB5	592.20		CARBON	7/7/2023 10:36 PM	bl,C3u,C2u	0.000	28 749	0.000	0.000	657	1 203	0.000	0.000	0.9216	1.0000



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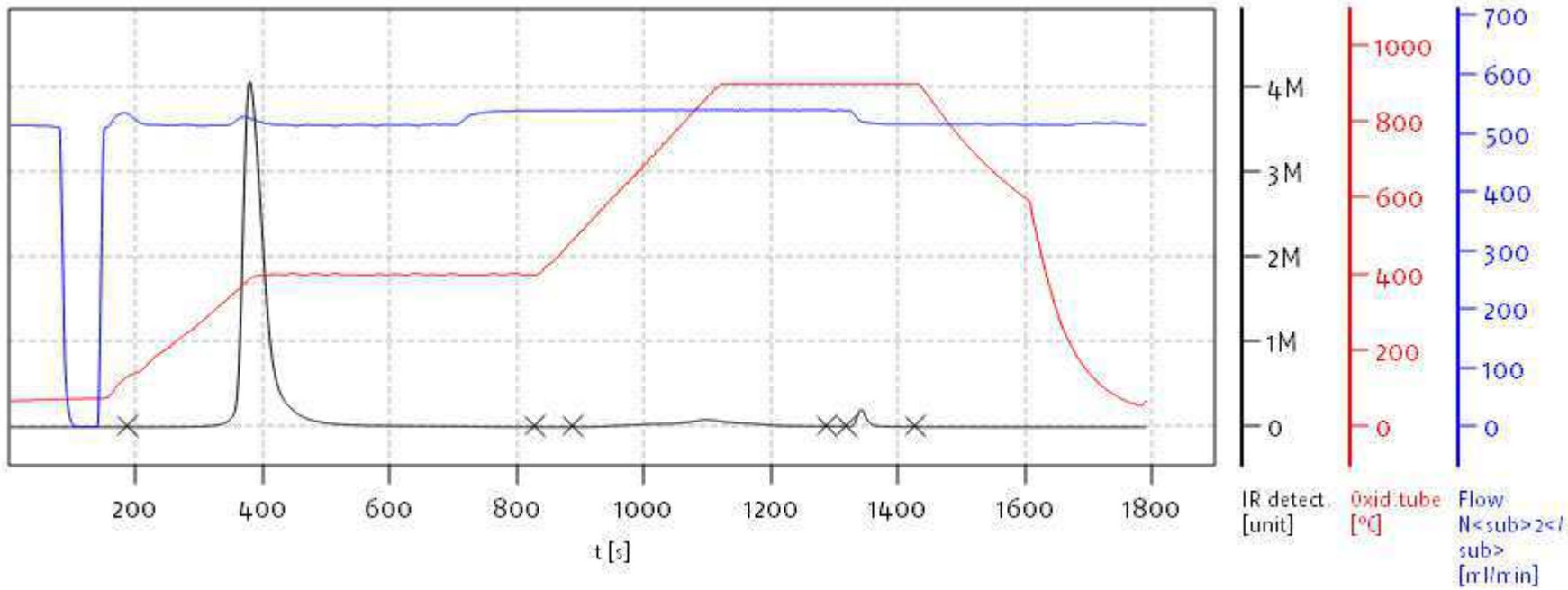
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
66	66	23F0363-04	357.80		CARBON	7/7/2023 11:07 PM	bl	2.519	6 064 869	2.718	0.053	147 449	478 405	2.466	0.199	0.9216	1.0000



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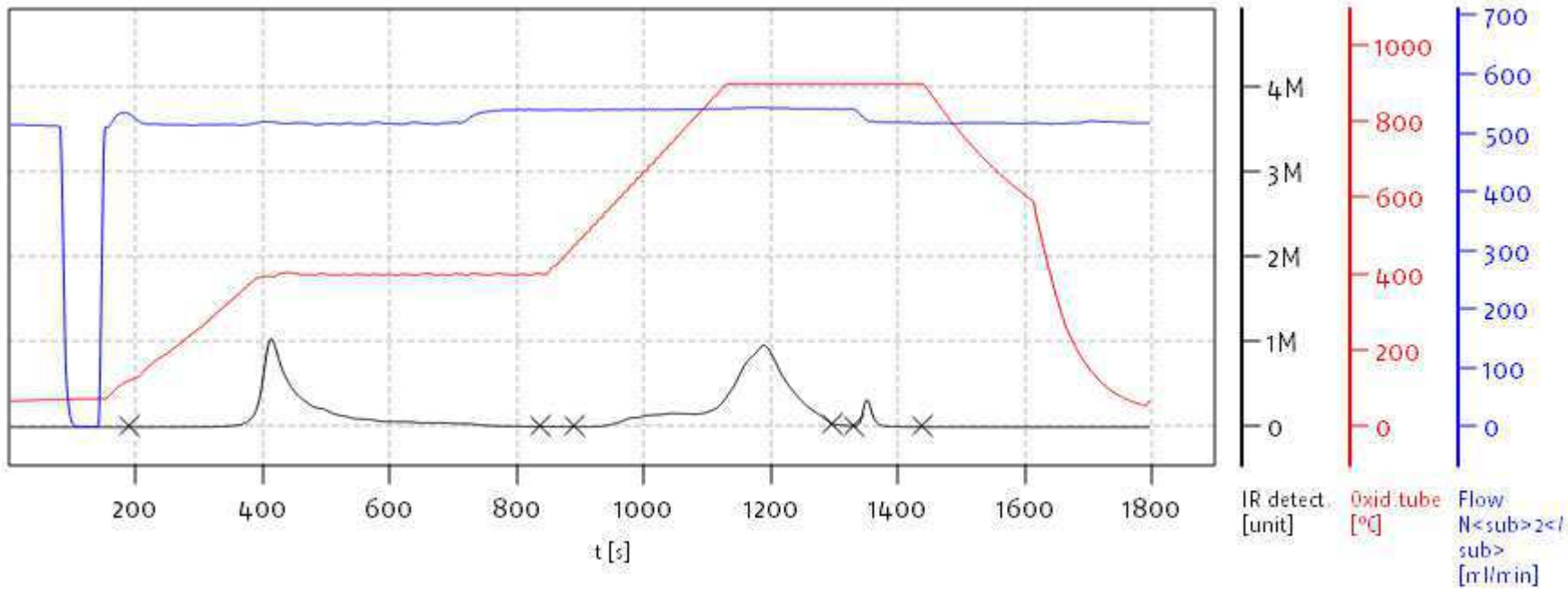
EXCELLENCE IN ELEMENTS

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
67	67	23F0536-01	582.40		CARBON	7/7/2023 11:37 PM	bl	0.763	2 863 517	1.918	0.052	219 303	4 270 252	0.711	1.155	0.9216	1.0000



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Balance: BAL3
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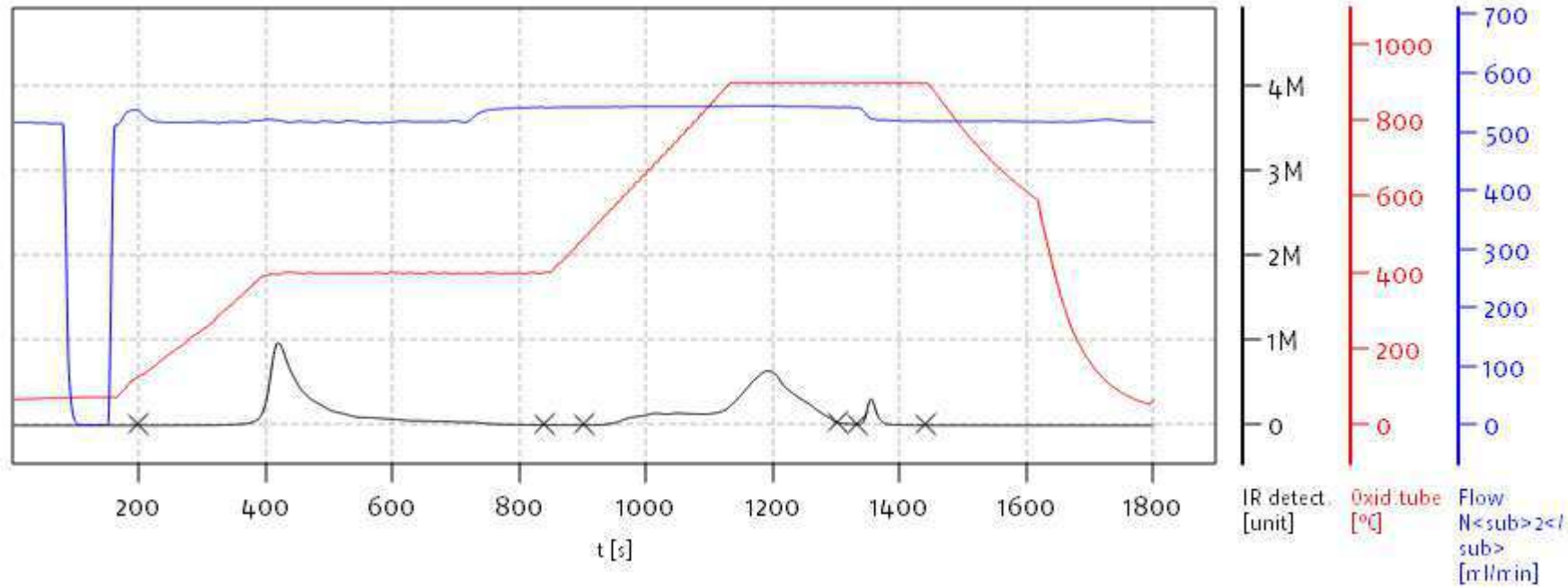
Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
68	68	BLG0049-DUP2	525.00		CARBON	7/8/2023 12:07 AM	bl	0.810	2 732 215	1.773	0.057	217 262	3 218 136	0.753	0.964	0.9216	1.0000



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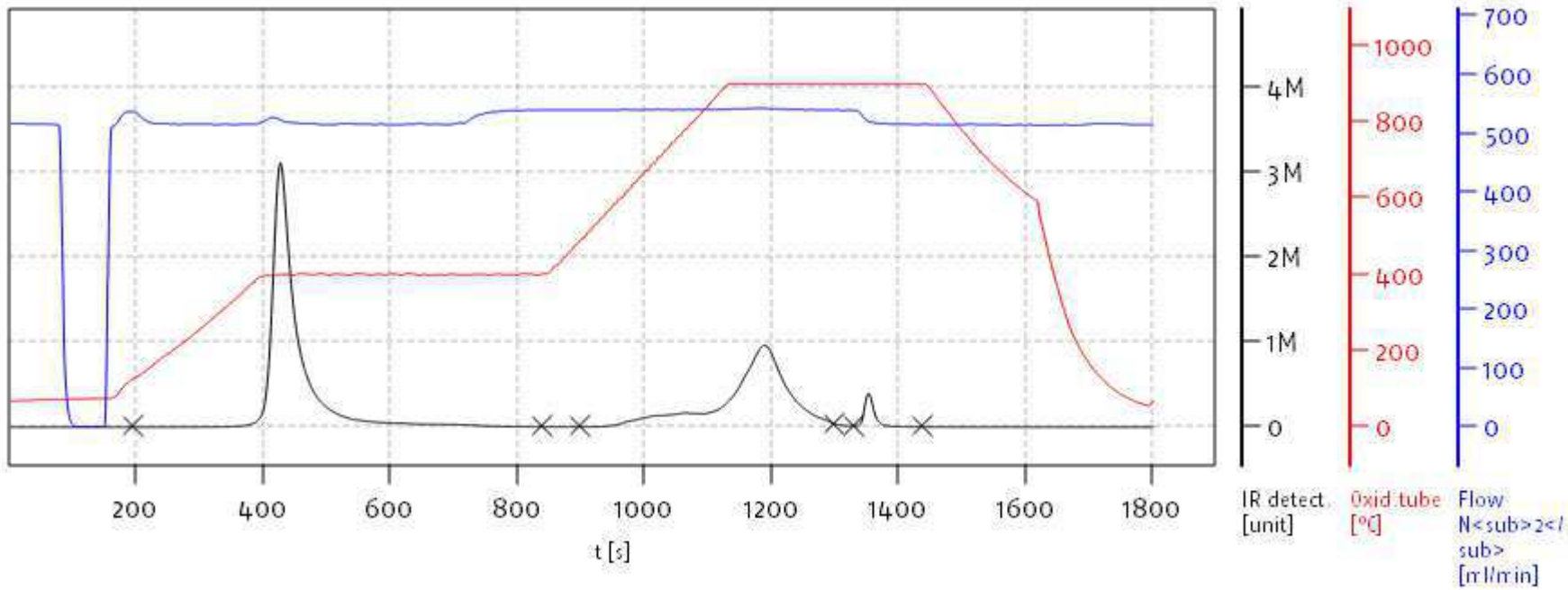
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
69	69	BLG0049-MS2	580.80		CARBON	7/8/2023 12:38 AM	bl	1.366	5 193 439	2.402	0.066	271 925	3 822 357	1.300	1.036	0.9216	1.0000



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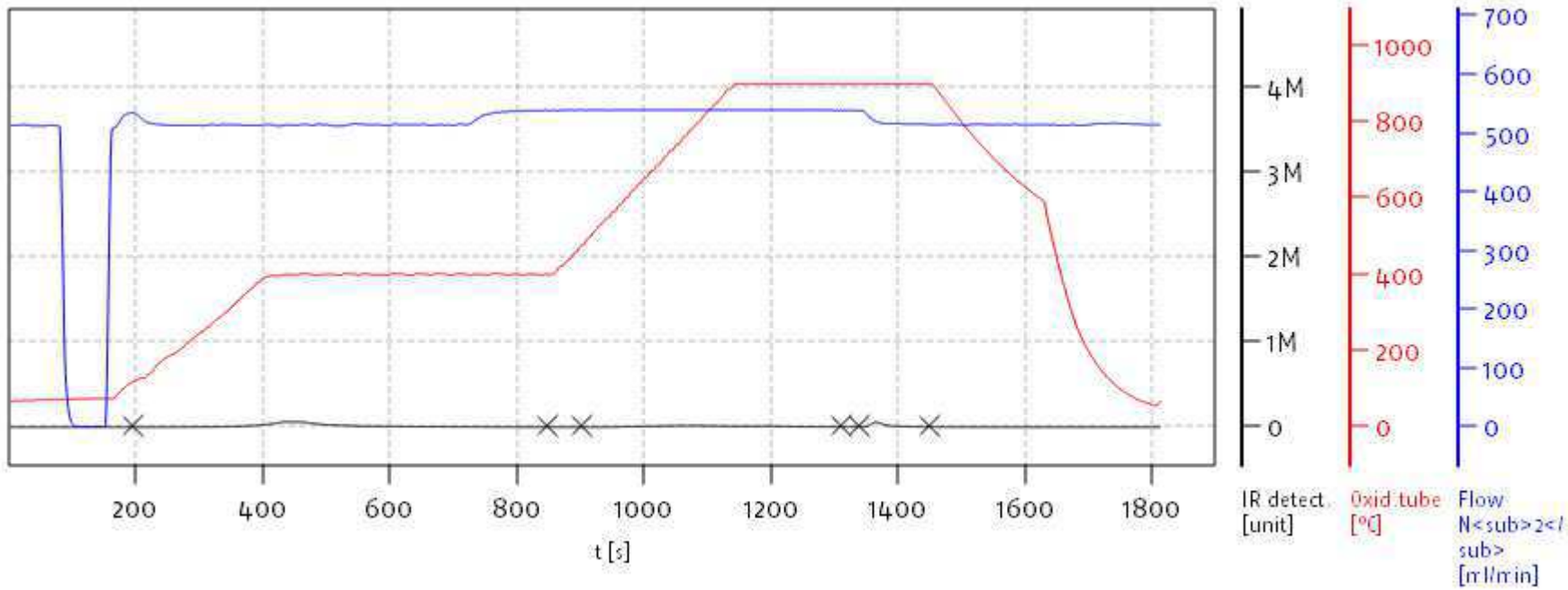
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
70	70	23G0002-03	711.40		CARBON	7/8/2023 1:08 AM	bl	0.064	302 912	0.085	0.007	62 293	125 815	0.056	0.022	0.9216	1.0000



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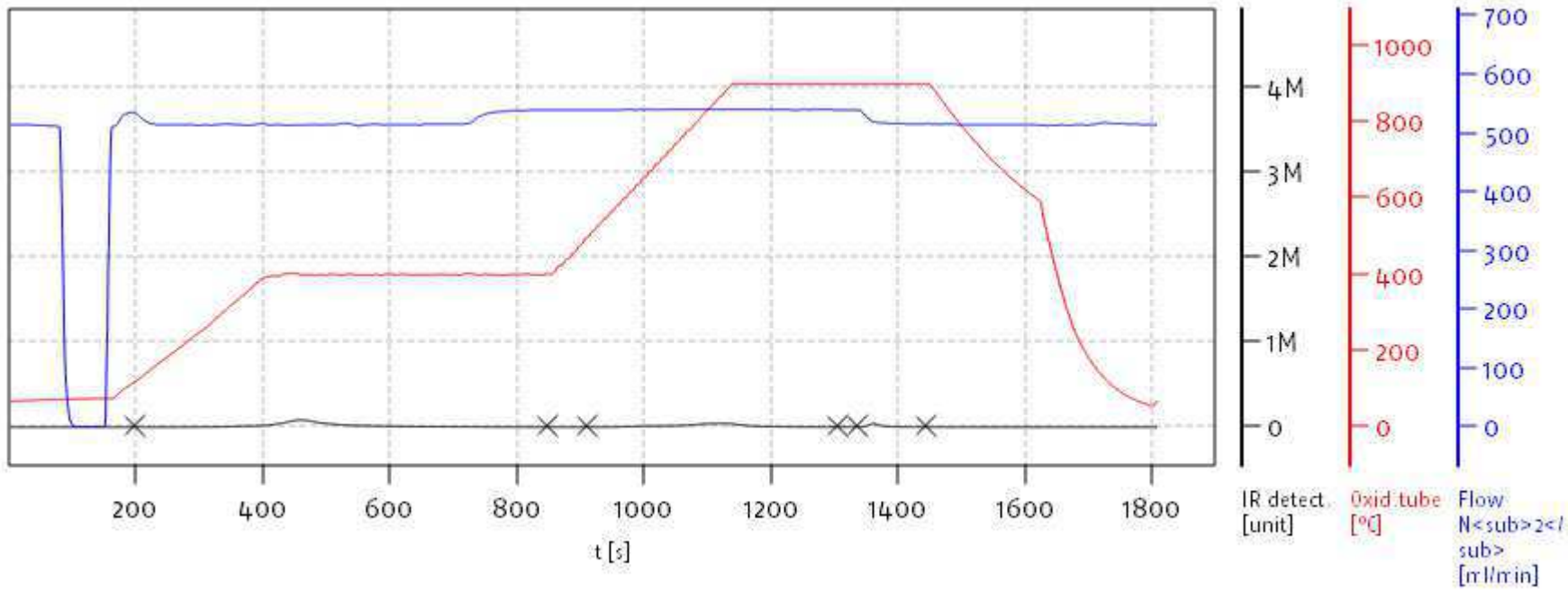
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
71	71	23G0002-10	560.70		CARBON	7/8/2023 1:39 AM	bl	0.085	346 720	0.134	0.002	37 535	199 732	0.083	0.048	0.9216	1.0000



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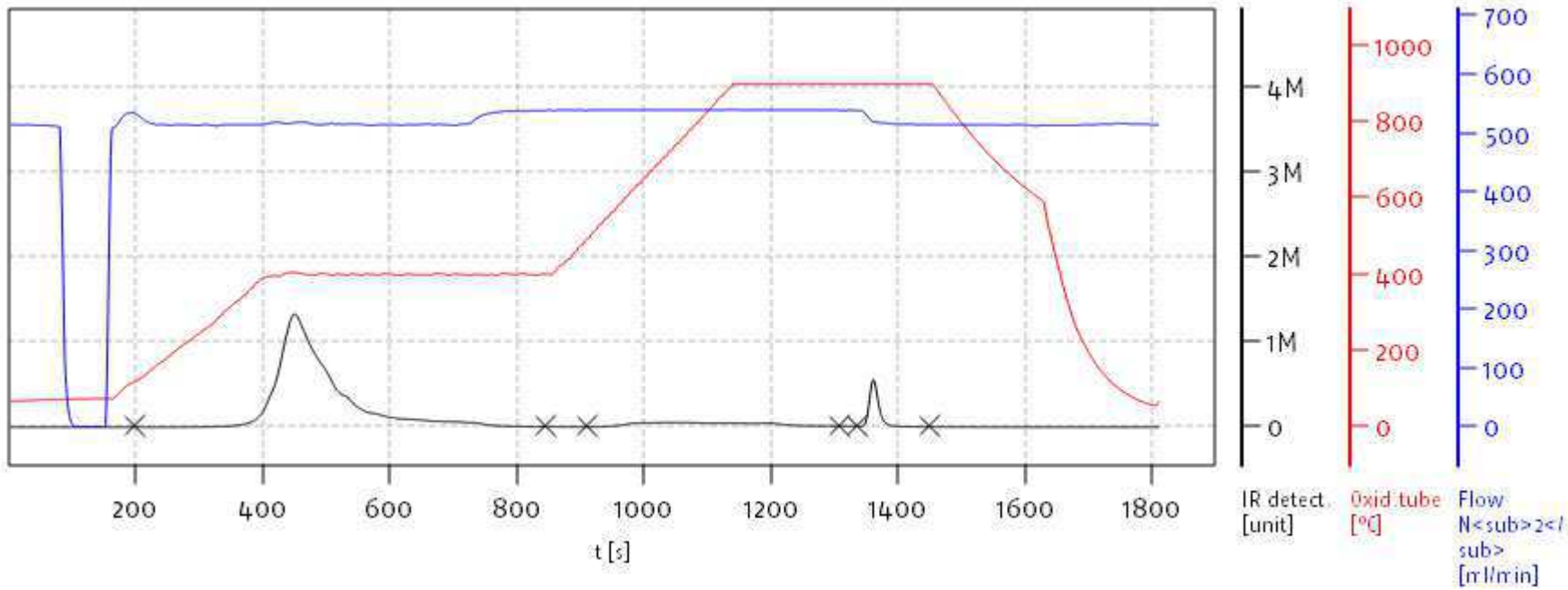
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
72	72	23G0002-14	527.90		CARBON	7/8/2023 2:09 AM	bl	1.434	4 838 965	1.580	0.102	367 122	514 486	1.332	0.146	0.9216	1.0000



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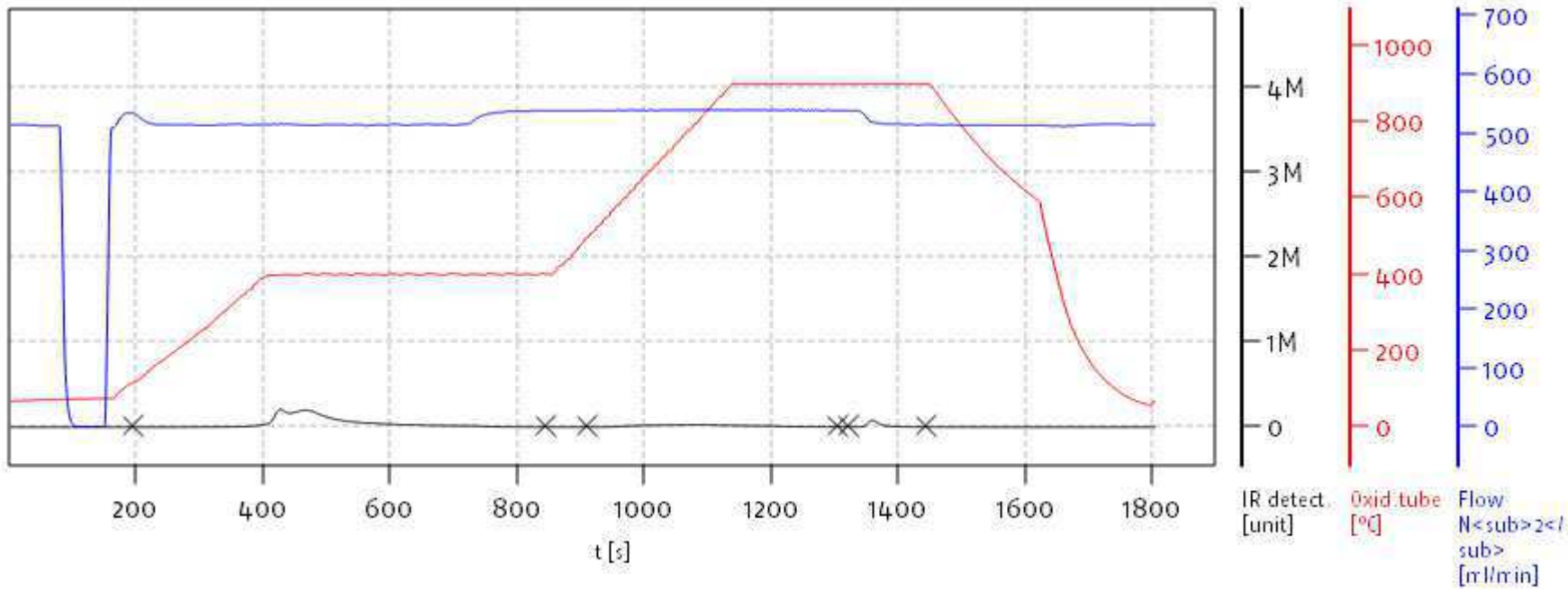
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
73	73	23G0002-15	677.80		CARBON	7/8/2023 2:40 AM	bl	0.212	963 166	0.254	0.011	74 434	208 569	0.202	0.042	0.9216	1.0000



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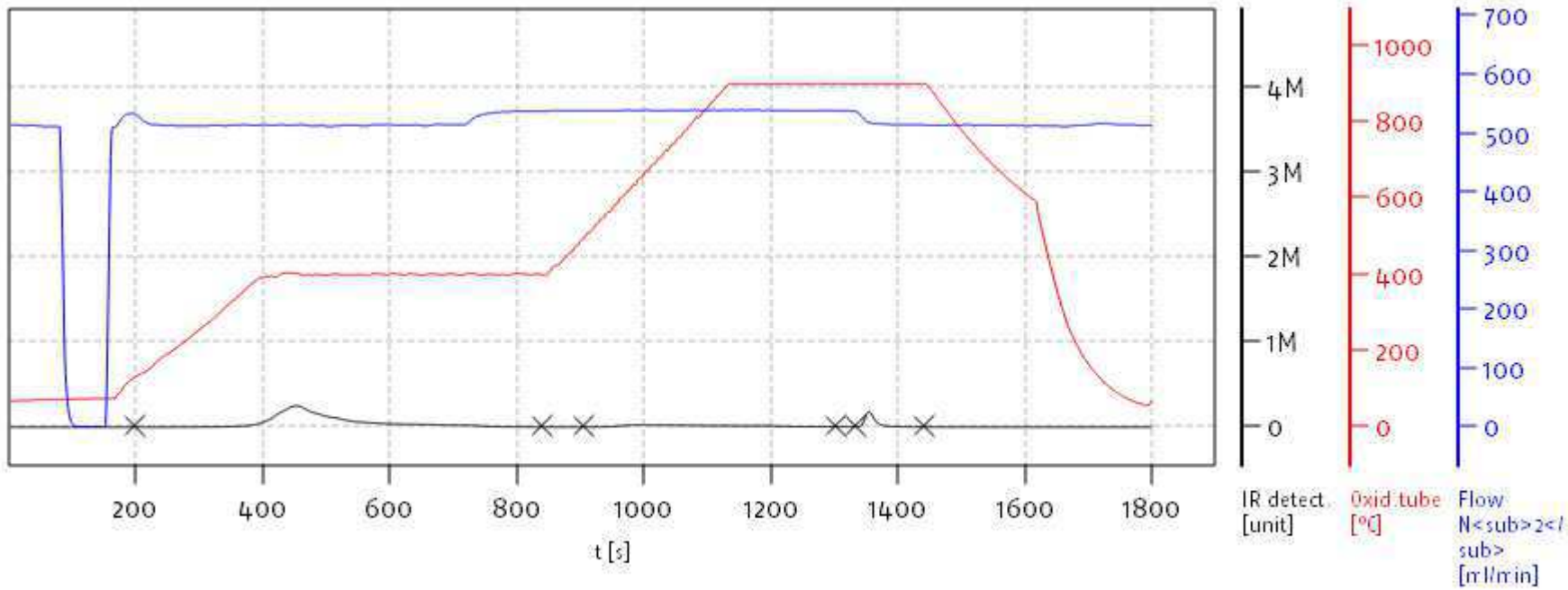
Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
74	74	23G0002-16	514.40		CARBON	7/8/2023 3:10 AM	bl	0.343	1 124 206	0.397	0.032	132 860	204 103	0.311	0.054	0.9216	1.0000



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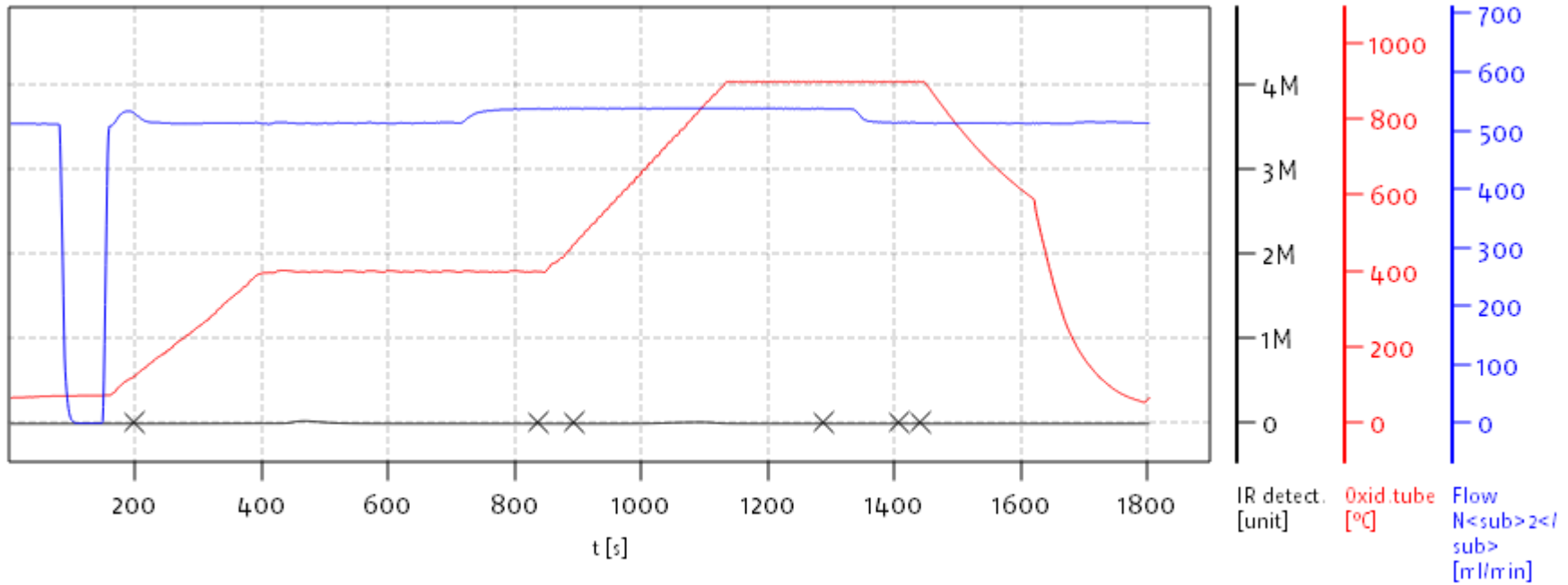
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
75	75	BLG0050-MRL1	574.10		CARBON	7/8/2023 3:41 AM	bl,C2u	0.013	81 155	0.020	0.000	64	52 405	0.013	0.007	0.9216	1.0000



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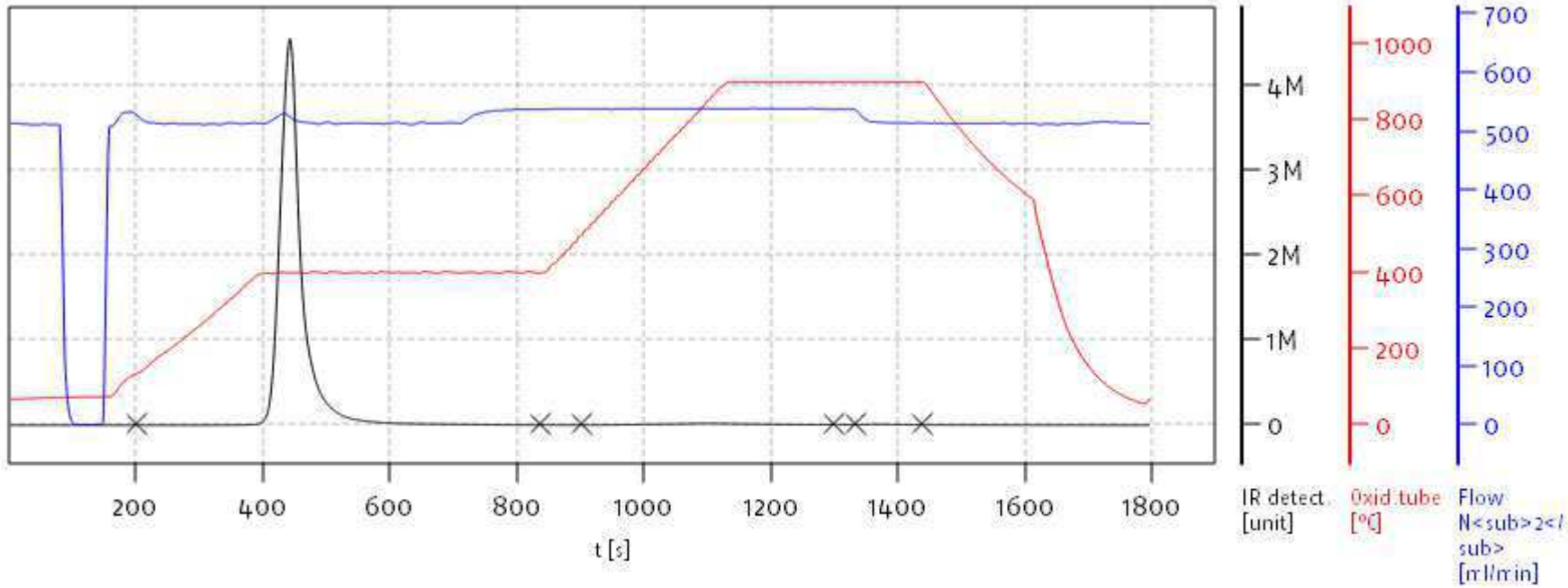
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
76	76	SLG0028-CCV6	21.80		CARBON	7/8/2023 4:11 AM	bl	44.451	6 657 745	45.313	0.000	26 175	147 438	44.451	0.863	0.9216	1.0000



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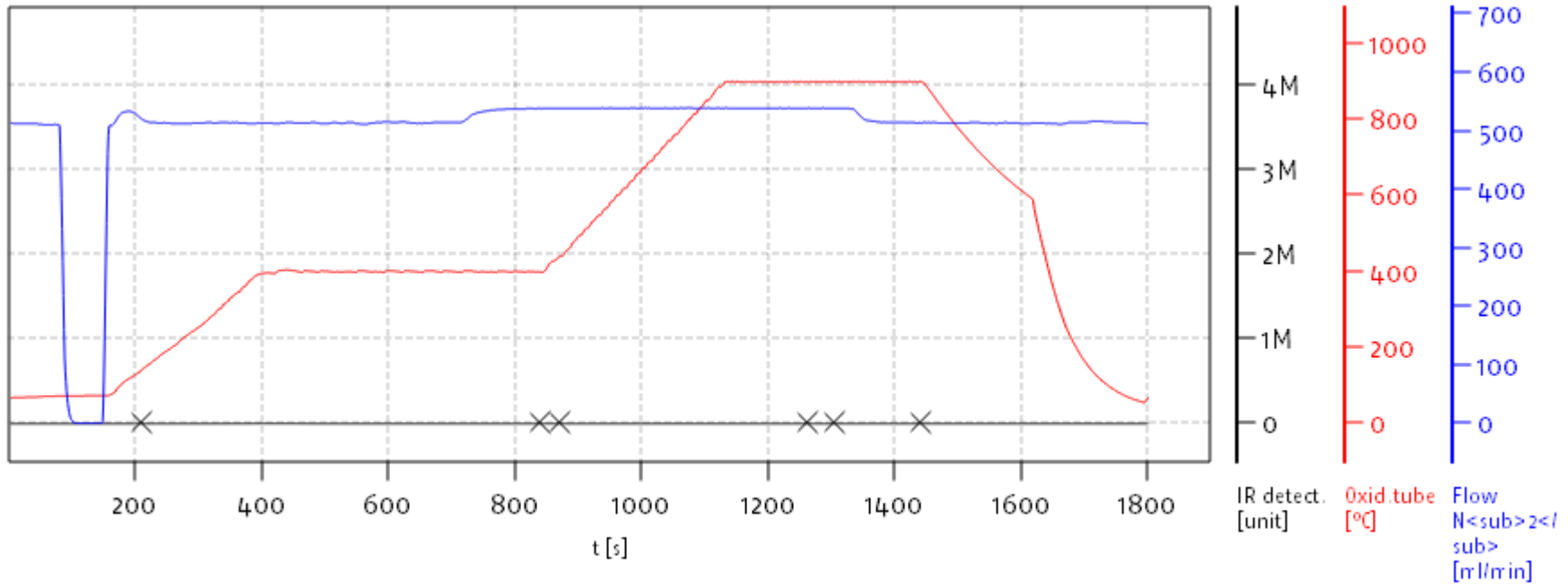
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
77	77	SLG0028-CCB6	528.40		CARBON	7/8/2023 4:41 AM	bl,C1u,C3u,C2u	0.000	7 719	0.000	0.000	414	1 381	0.000	0.000	0.9216	1.0000



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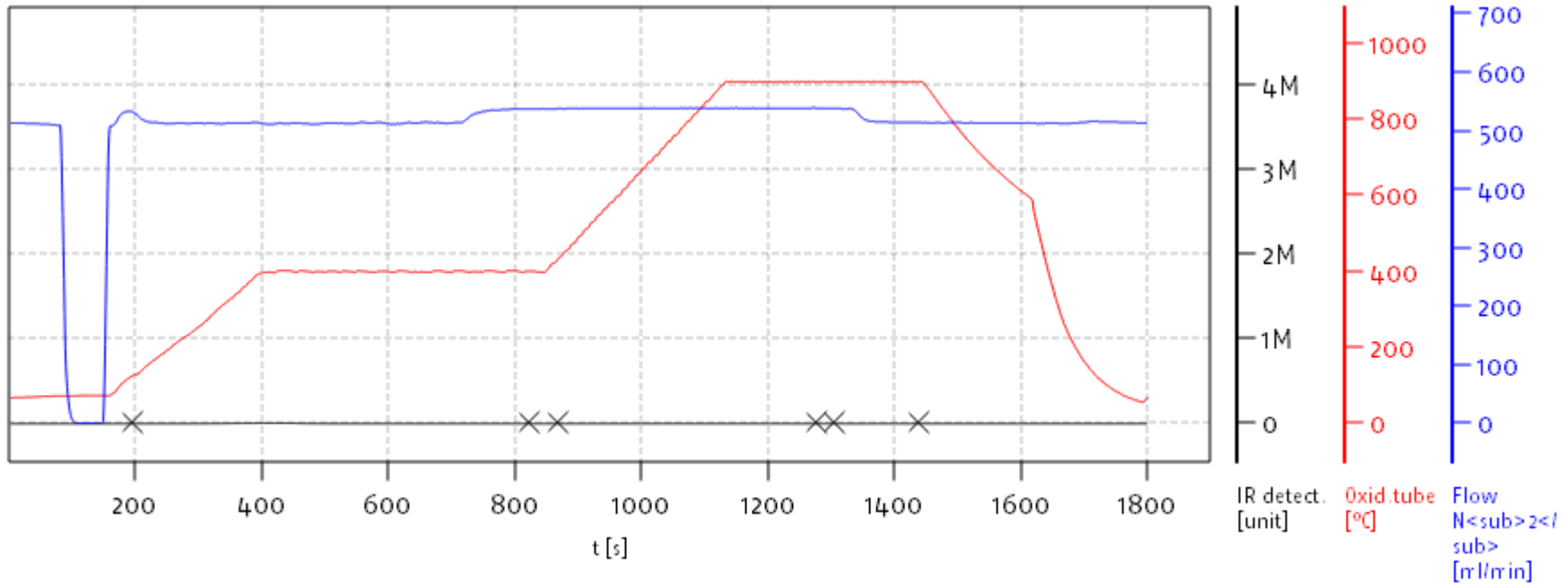
Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
78	78	BLG0050-BLK1	631.00		CARBON	7/8/2023 5:12 AM	bl,C3u,C2u	0.001	31 445	0.001	0.000	752	4 708	0.001	0.000	0.9216	1.0000



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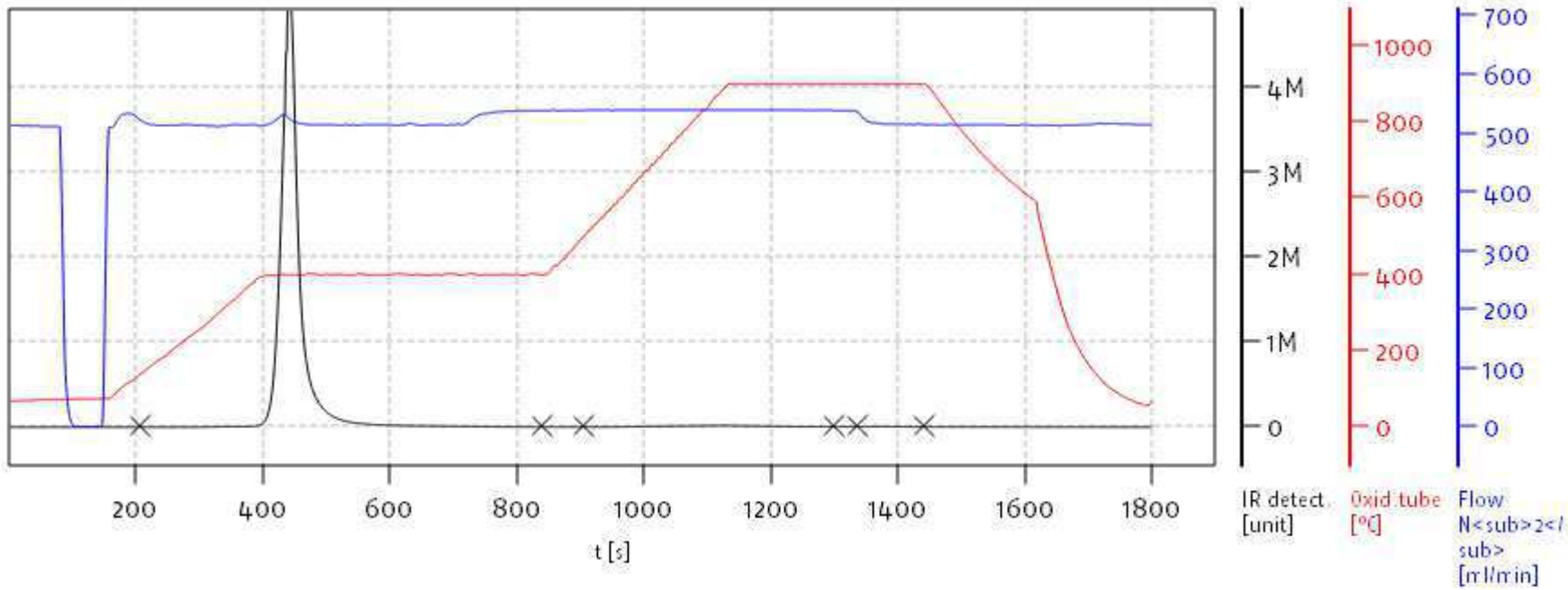
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
79	79	BLG0050-BS1	20.20		CARBON	7/8/2023 5:42 AM	bl,C2u	44.513	6 179 842	45.349	0.000	21 030	135 379	44.513	0.836	0.9216	1.0000



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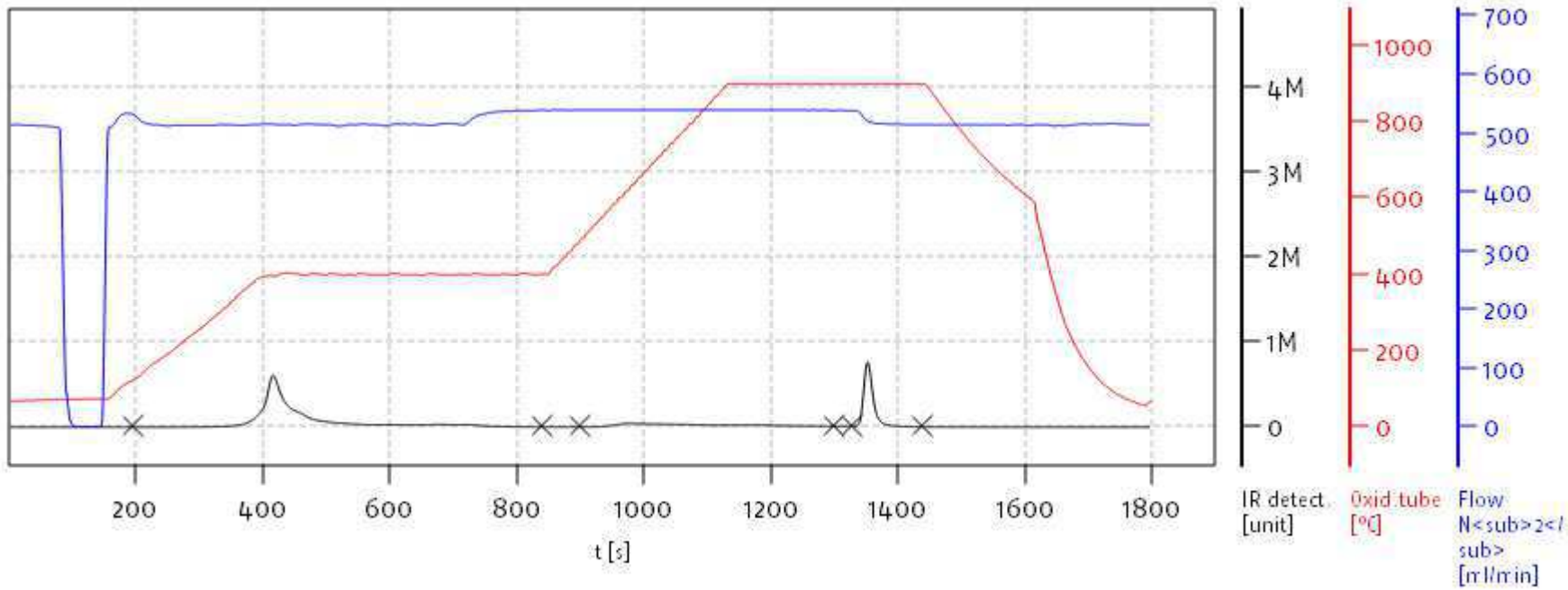
Date: Mon Jul 10 11:28:09 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Document: 070623b BF from: 7/10/2023 11:27 AM

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
80	80	23F0160-01	81.10		CARBON	7/8/2023 6:12 AM	bl	3.352	1 366 496	3.955	0.941	509 941	337 356	2.411	0.603	0.9216	1.0000



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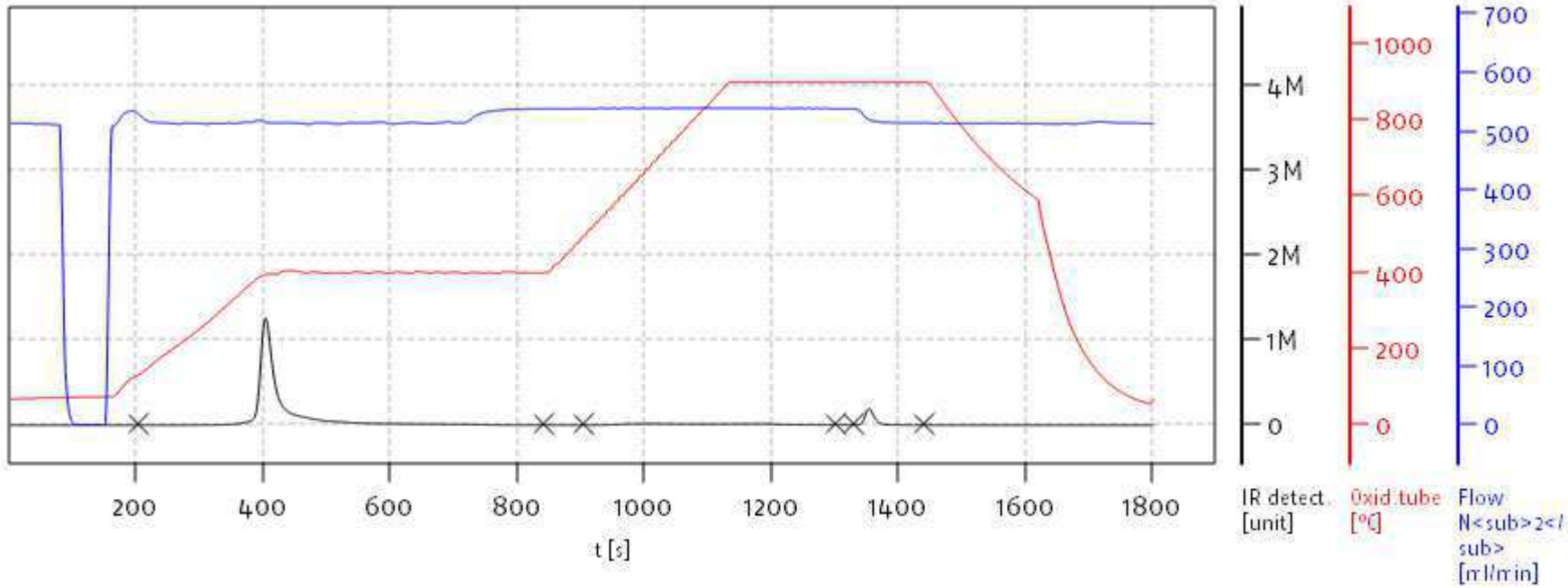
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
81	81	BLG0050-DUP1	71.00		CARBON	7/8/2023 6:43 AM	bl	3.397	1 569 480	3.668	0.225	129 468	150 087	3.172	0.271	0.9216	1.0000



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elementar
EXCELLENCE IN ELEMENTS

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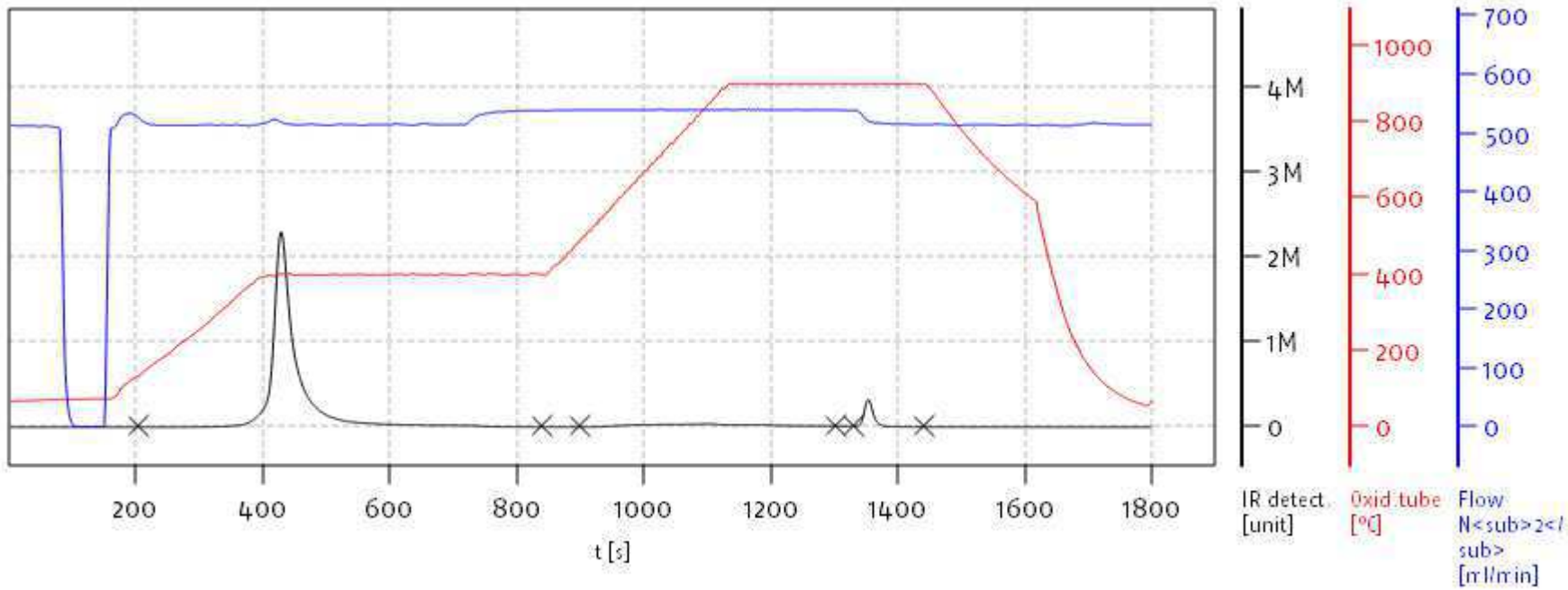
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
82	82	BLG0050-MS1	71.40		CARBON	7/8/2023 7:13 AM	bl	7.579	3 530 969	8.232	0.409	213 099	322 672	7.170	0.653	0.9216	1.0000



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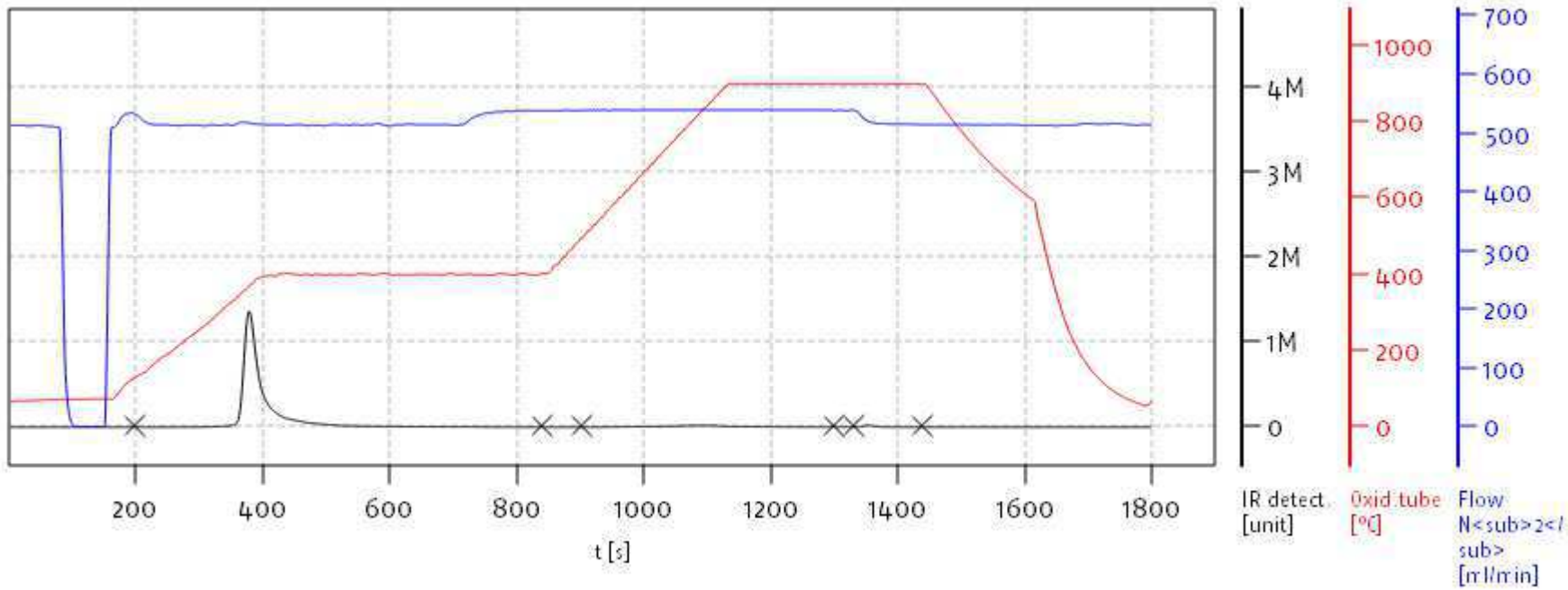
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
83	83	23F0160-02	58.00		CARBON	7/8/2023 7:44 AM	bl,C2u	4.222	1 704 180	4.412	0.000	17 815	98 271	4.222	0.190	0.9216	1.0000



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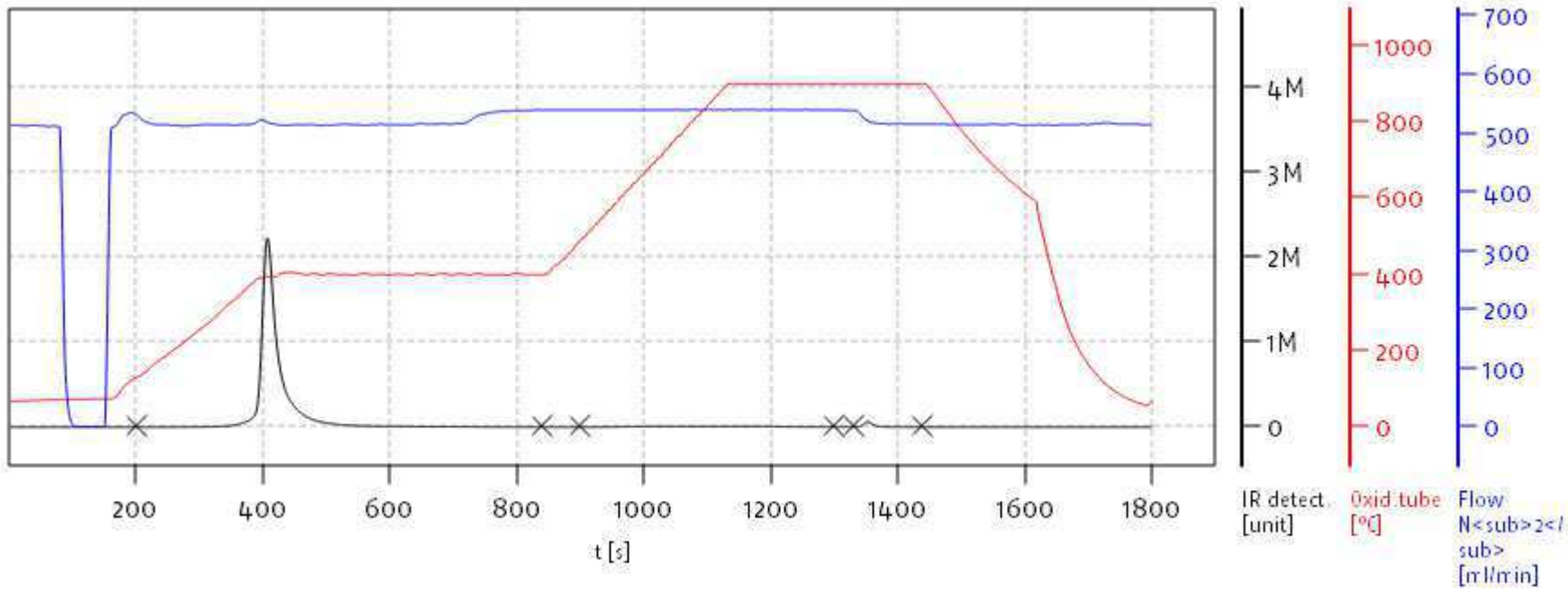
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
84	84	23F0160-03	54.80		CARBON	7/8/2023 8:14 AM	bl	6.959	2 621 932	7.127	0.042	43 455	86 610	6.917	0.167	0.9216	1.0000



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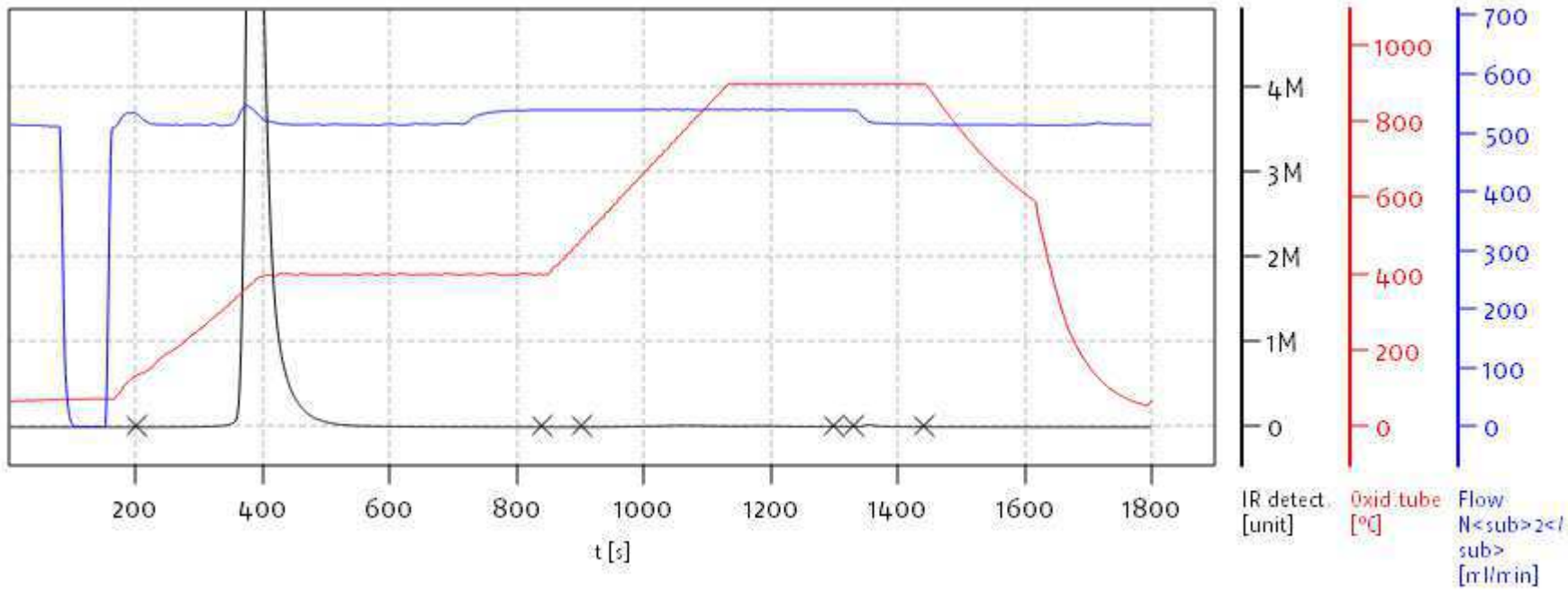
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
85	85	23F0161-01	303.30		CARBON	7/8/2023 8:44 AM	bl,C1o	5.729	11 911 703	5.782	0.002	32 164	131 272	5.727	0.054	0.9216	1.0000



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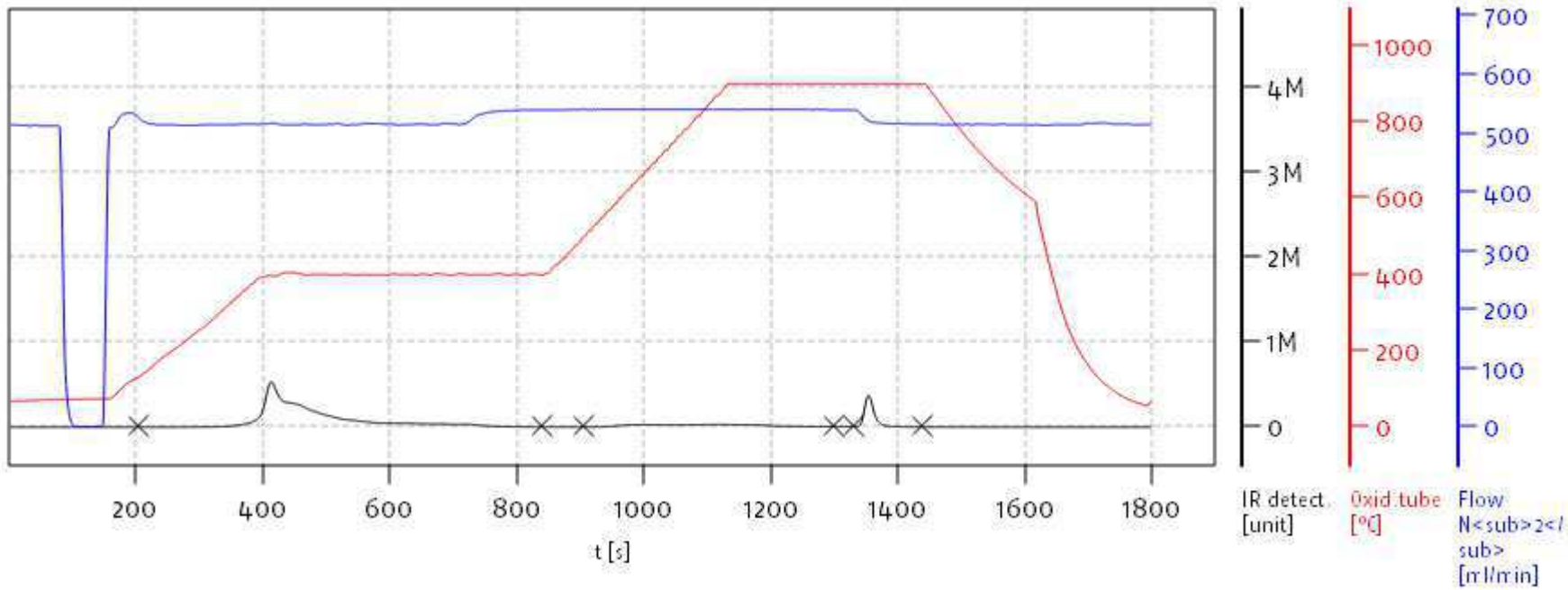
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
86	86	23F0161-02	334.40		CARBON	7/8/2023 9:15 AM	bl	0.834	1 692 988	0.952	0.107	253 453	277 407	0.727	0.118	0.9216	1.0000



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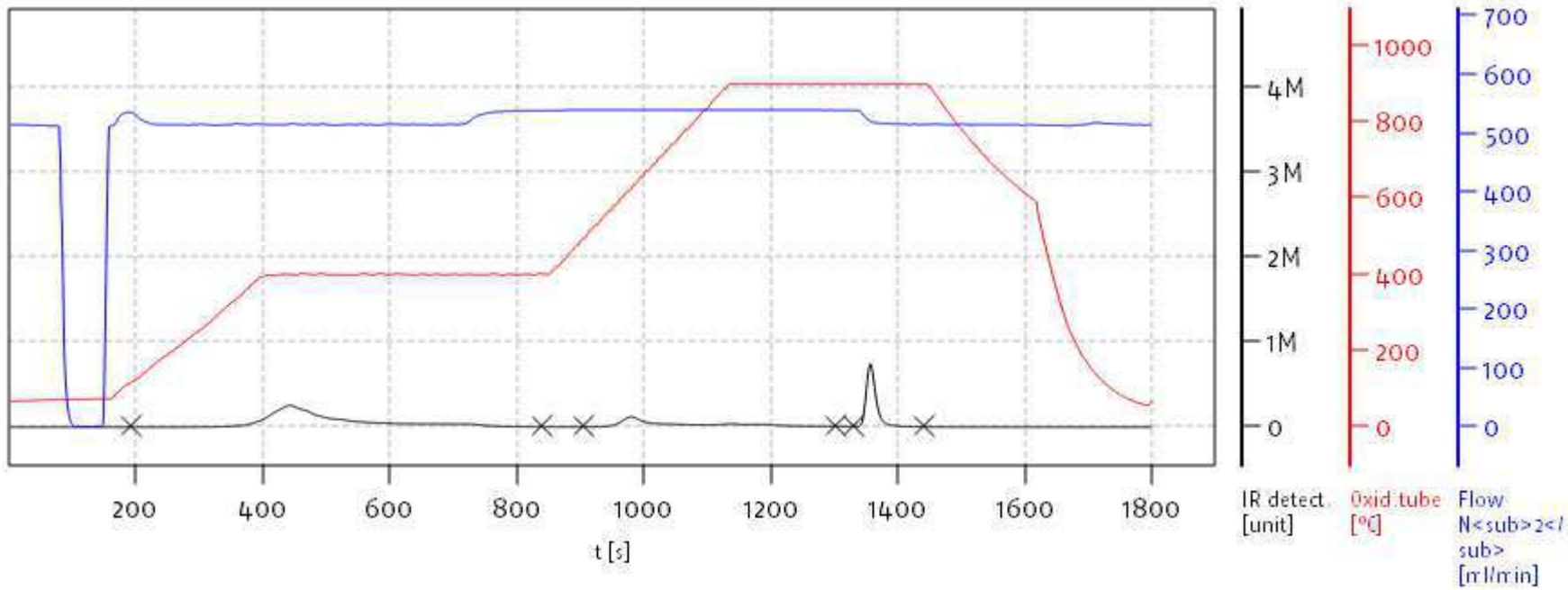
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
87	87	23F0161-03	338.70		CARBON	7/8/2023 9:45 AM	bl	0.749	1 241 814	0.951	0.226	510 810	459 338	0.524	0.202	0.9216	1.0000



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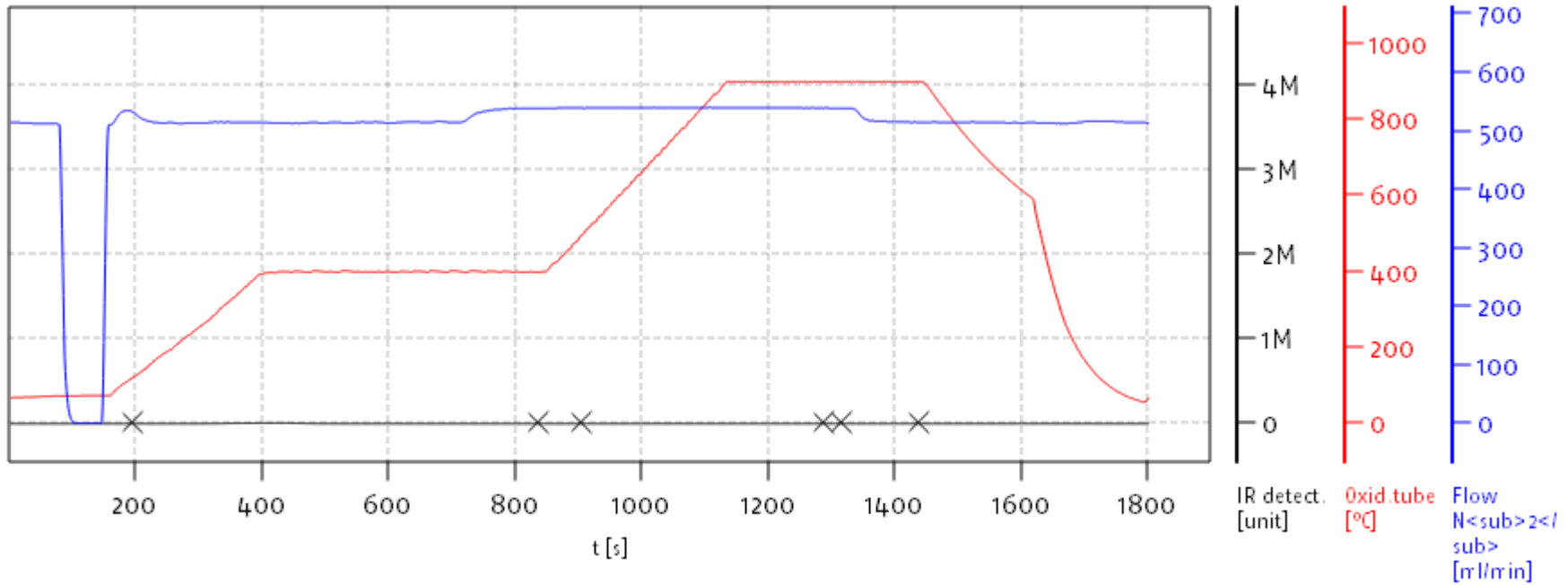
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
88	88	SLG0028-CCV7	23.40		CARBON	7/8/2023 10:16 AM	bl,C3u,C2u	0.044	35 914	0.044	0.000	753	3 514	0.044	0.000	0.9216	1.0000



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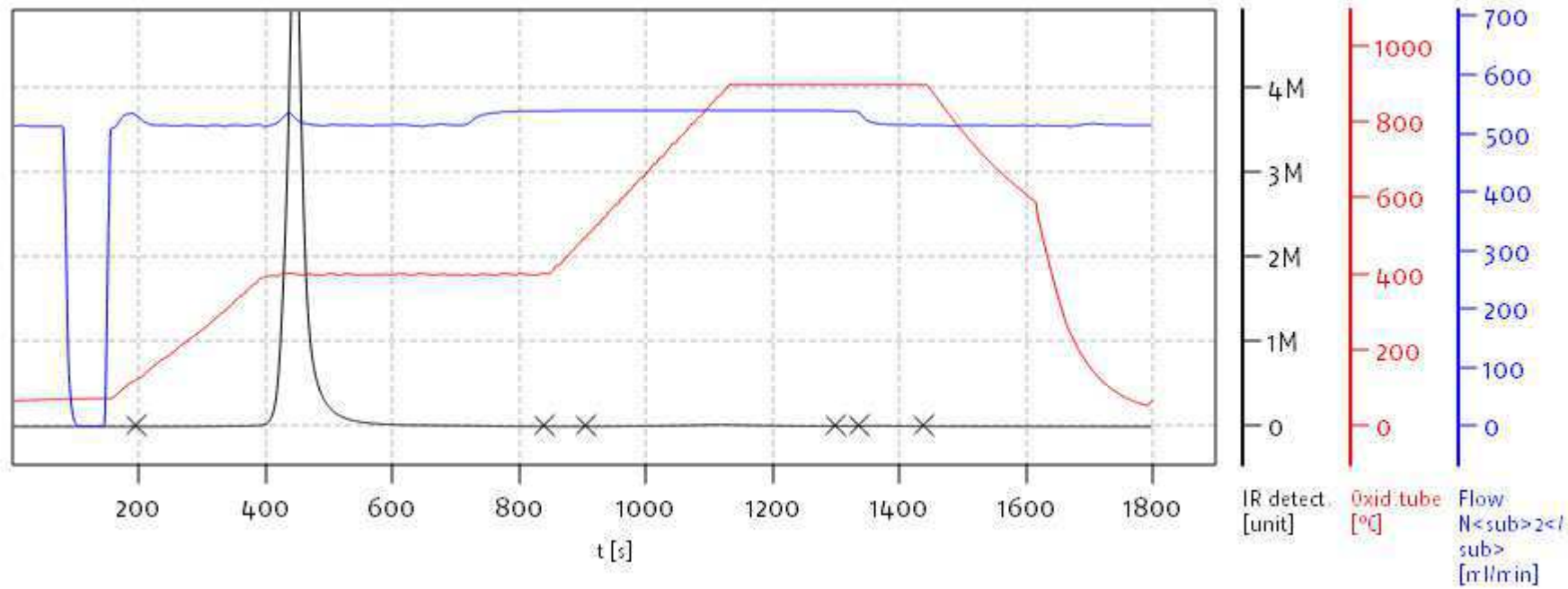
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
89	89	SLG0028-CCB7	522.50		CARBON	7/8/2023 10:46 AM	bl	1.997	7 167 775	2.035	0.000	23 587	151 515	1.997	0.037	0.9216	1.0000



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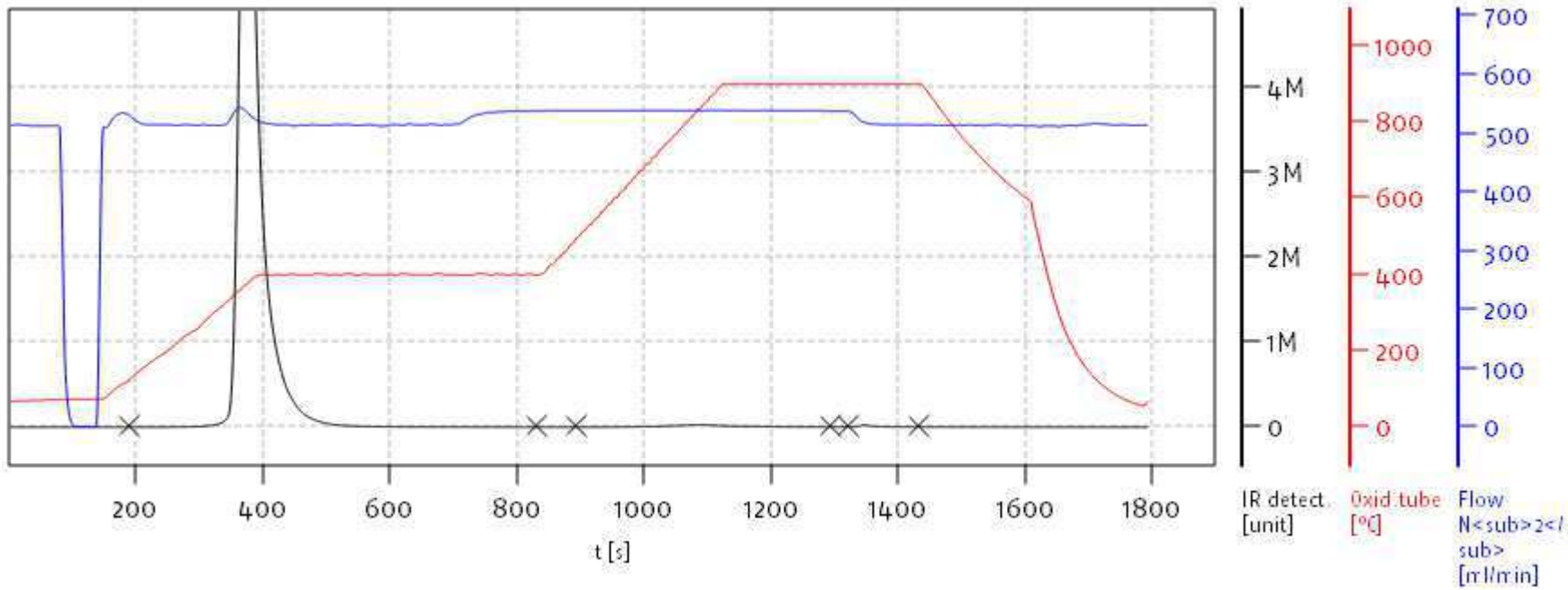
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
90	1	23F0161-04	316.20		CARBON	7/8/2023 11:16 AM	bl,C1o	5.217	11 312 901	5.263	0.000	25 983	120 810	5.217	0.046	0.9216	1.0000



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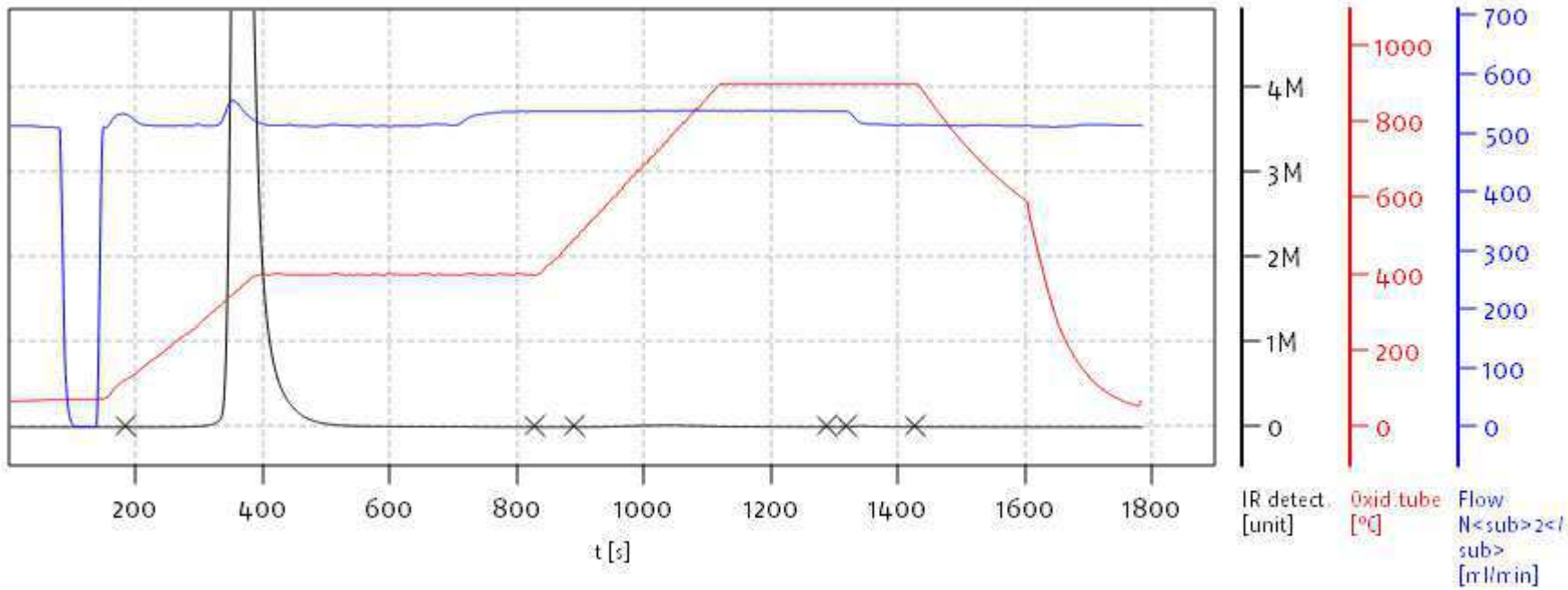
Document: 070623b BF from: 7/10/2023 11:27 AM

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
91	2	23F0161-05	311.90		CARBON	7/8/2023 11:46 AM	bl,C1o,C2u	7.658	16 368 071	7.706	0.000	18 541	123 755	7.658	0.048	0.9216	1.0000



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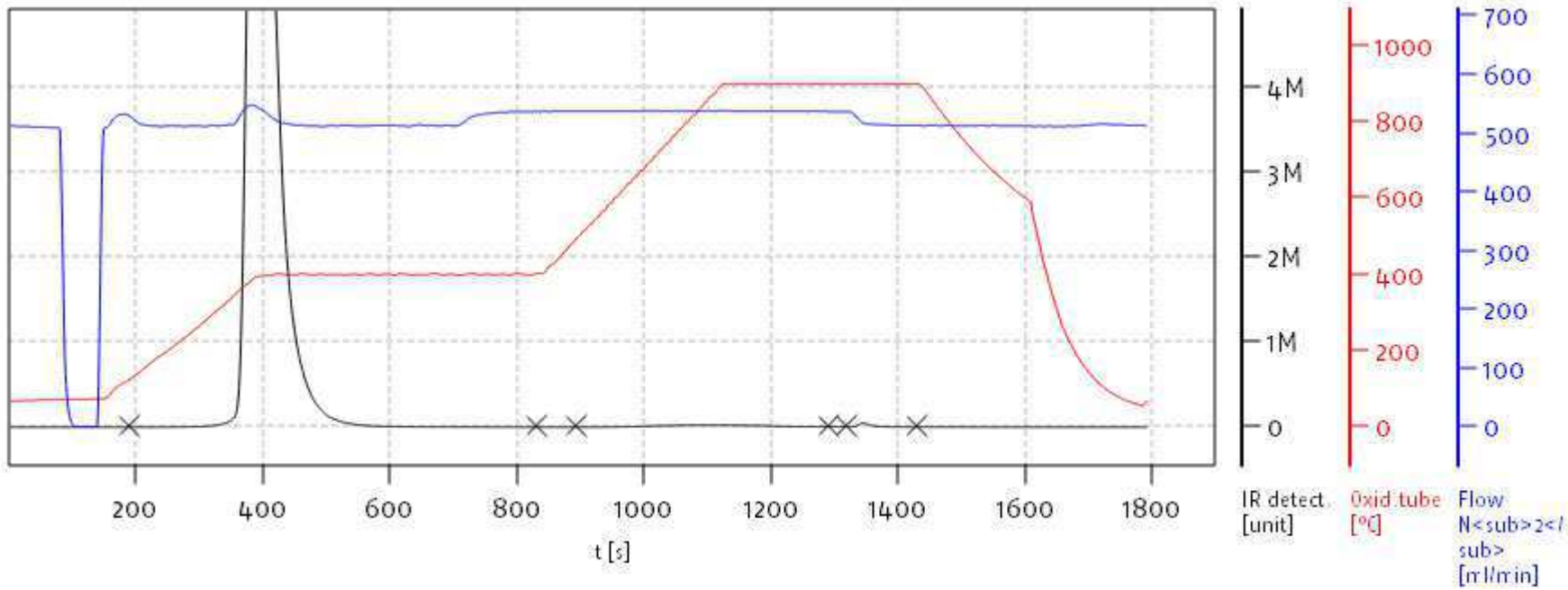
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
92	3	23F0161-06	524.30		CARBON	7/8/2023 12:16 PM	bl,C1o	5.191	18 625 846	5.236	0.006	47 176	178 583	5.185	0.045	0.9216	1.0000



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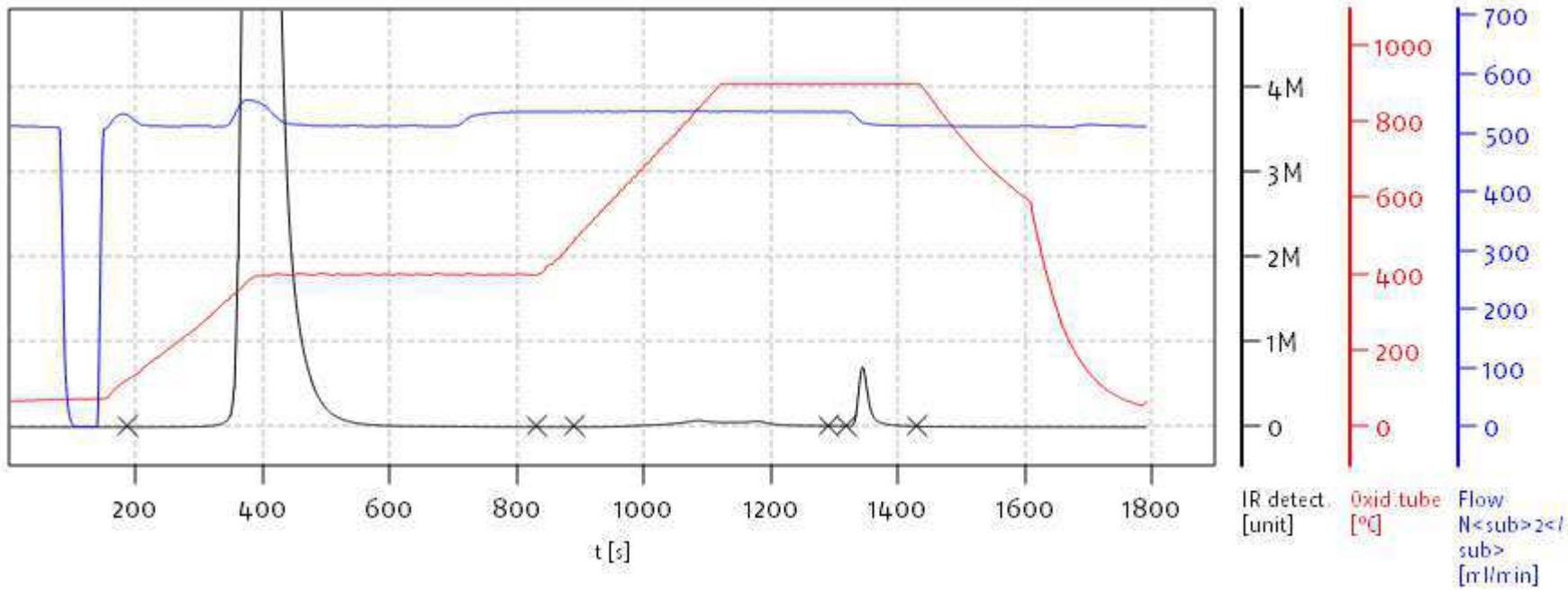
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
93	4	23F0589-01	505.40		CARBON	7/8/2023 12:47 PM	bl,C1o	8.286	28 134 404	8.430	0.157	529 822	486 604	8.129	0.144	0.9216	1.0000



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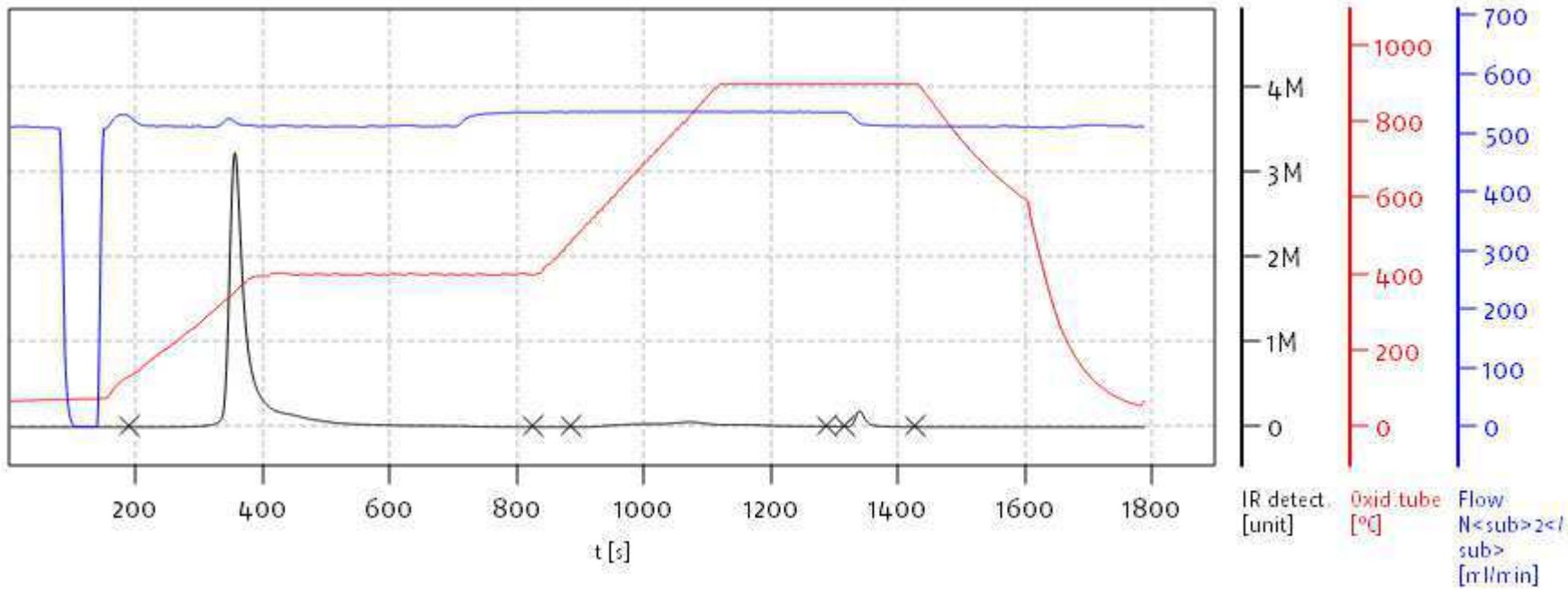
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
94	5	23F0589-02	175.10		CARBON	7/8/2023 1:17 PM	bl	3.450	4 041 174	3.769	0.101	139 962	380 467	3.350	0.318	0.9216	1.0000



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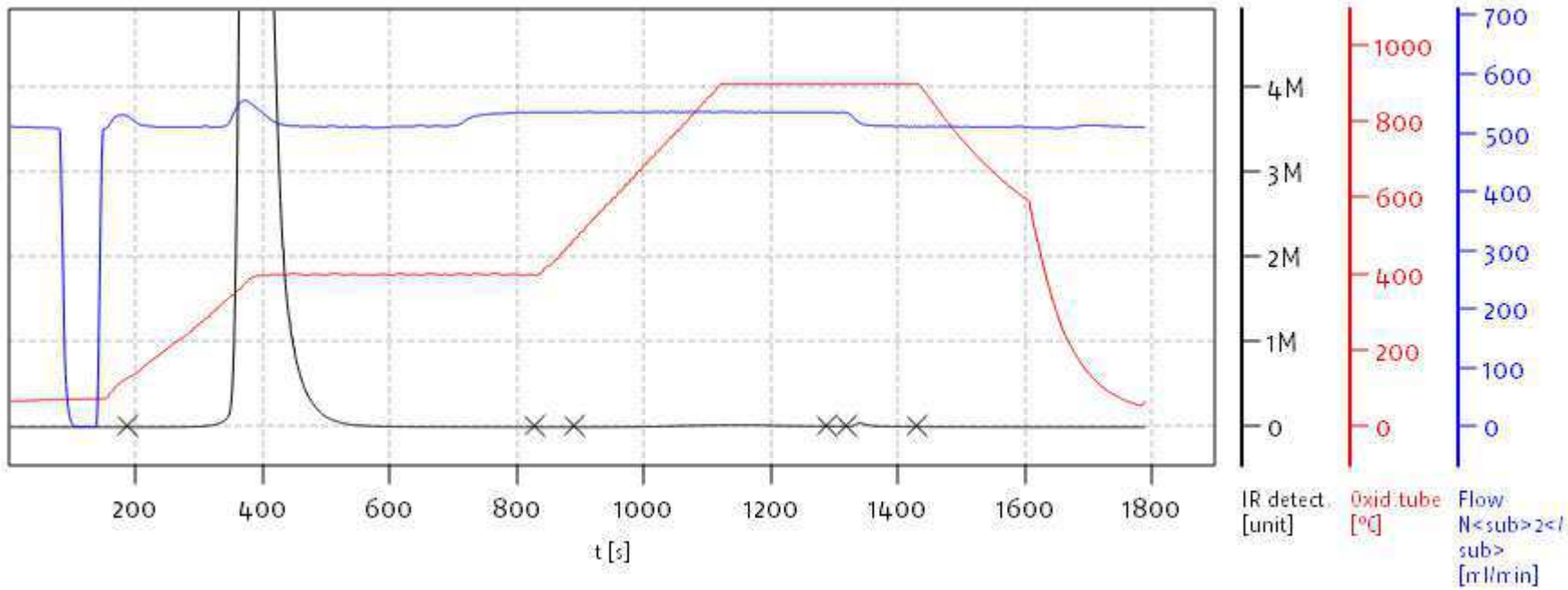
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
95	6	23F0590-01	528.30		CARBON	7/8/2023 1:47 PM	bl,C1o	6.598	23 847 144	6.643	0.008	54 709	177 080	6.591	0.044	0.9216	1.0000



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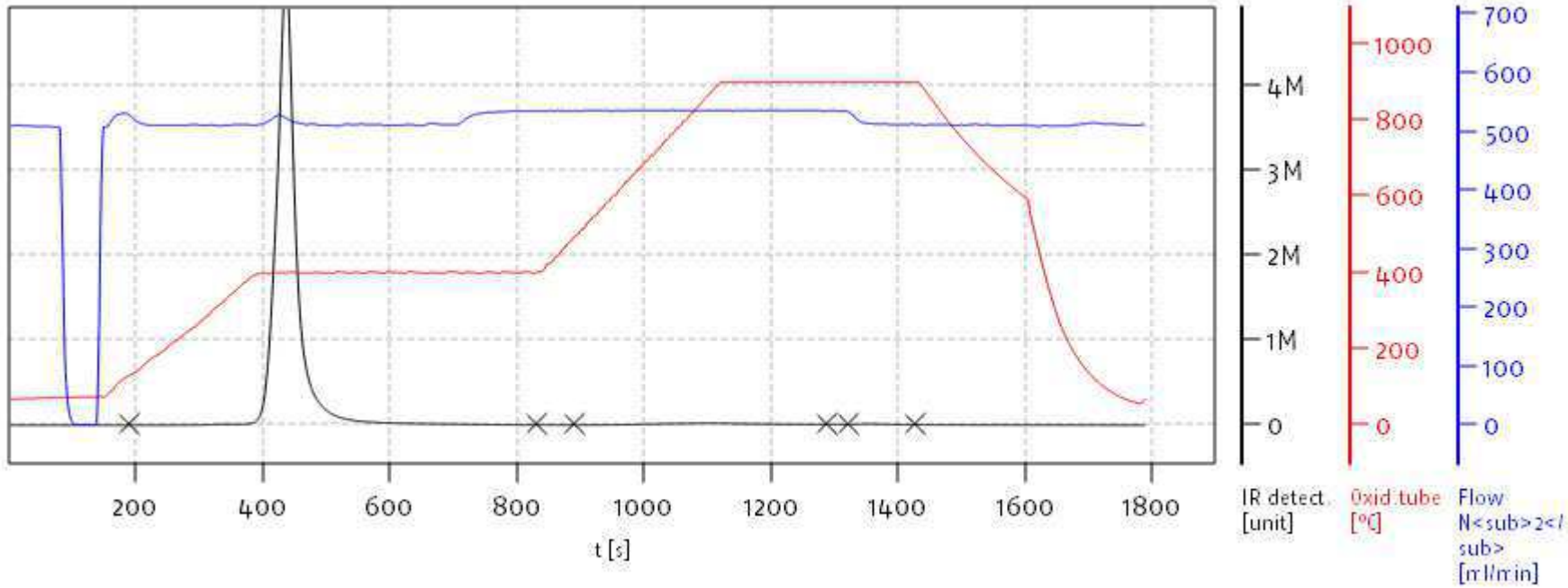
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
96	7	SLG0028-CCV8	23.60		CARBON	7/8/2023 2:17 PM	bl	44.402	7 186 550	45.436	0.066	38 676	182 687	44.336	1.034	0.9216	1.0000



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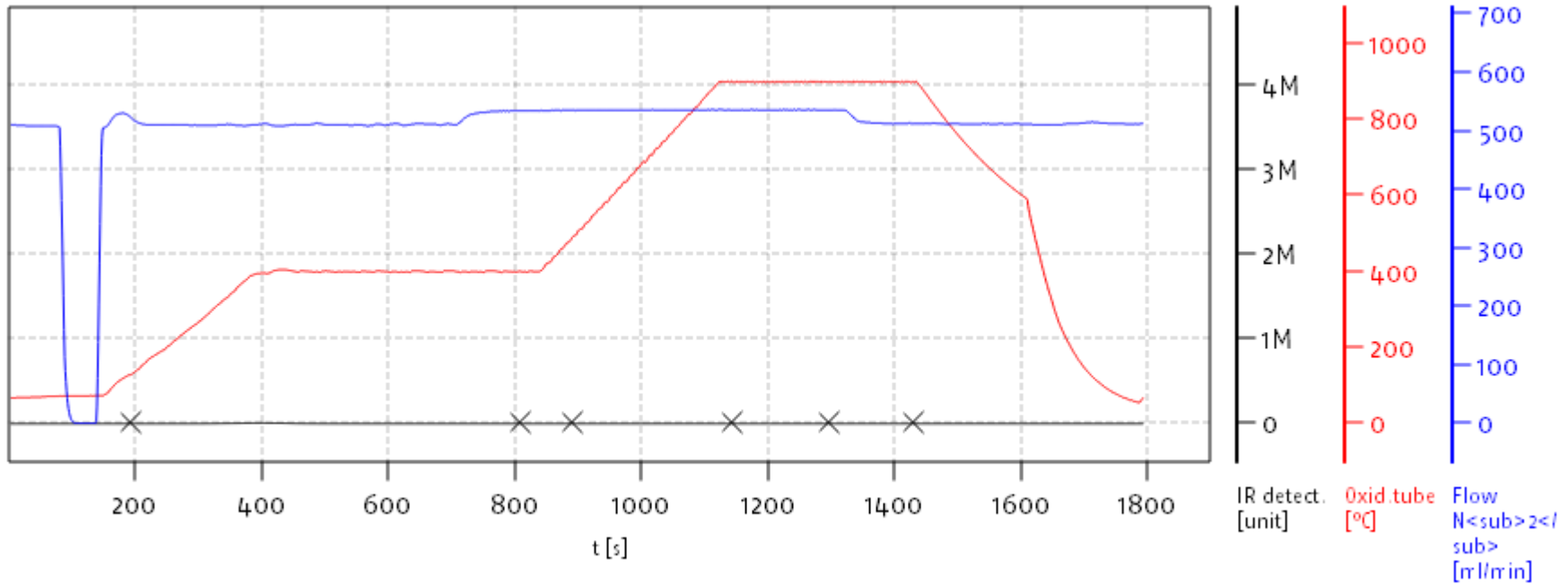
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
97	8	SLG0028-CCB8	619.70		CARBON	7/8/2023 2:48 PM	bl,C3u,C2u	0.000	28 924	0.000	0.000	869	446	0.000	0.000	0.9216	1.0000



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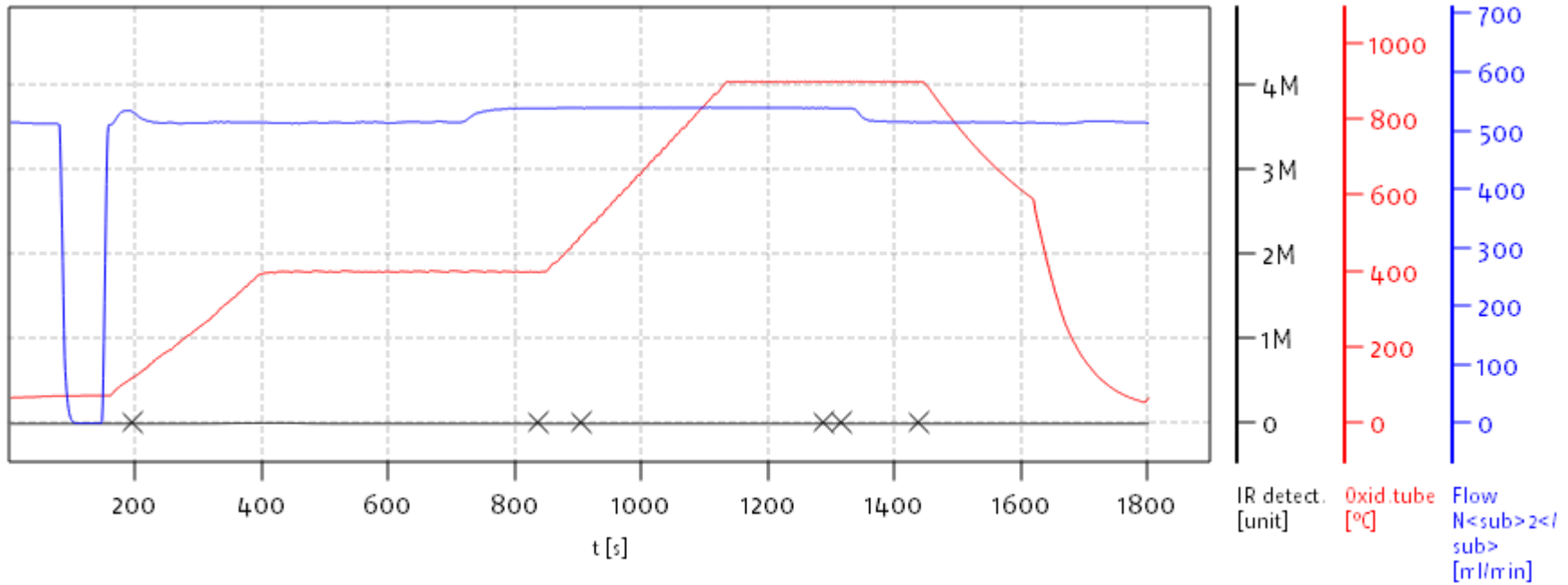
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
88	88	SLG0028-CCB7	522.50		CARBON	07/08/2023 10:16AM	bl,C3u,C2u	0.002	35 914	0.002	0.000	753	3 514	0.002	0.000	0.9216	1.0000



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Access: soliTOC superuser

Date: Mon Jul 10 16:19:20 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

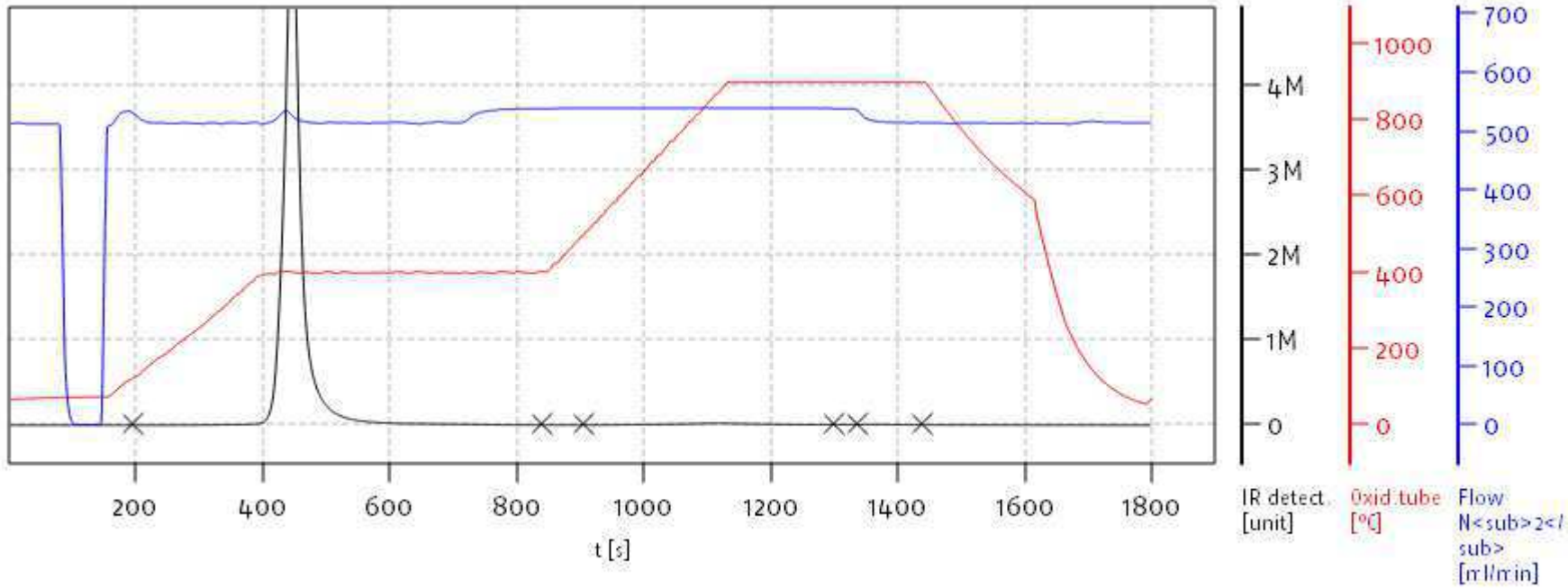
Document: 070623b BF FIXED from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

BF 071023

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
89	89	SLG0028-CCV7	23.40		CARBON	07/08/2023 10:46AM	bl	44.597	7 167 775	45.429	0.000	23 587	151 515	44.597	0.831	0.9216	1.0000



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elementar
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Analytical Resources, LLC
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 9060A m

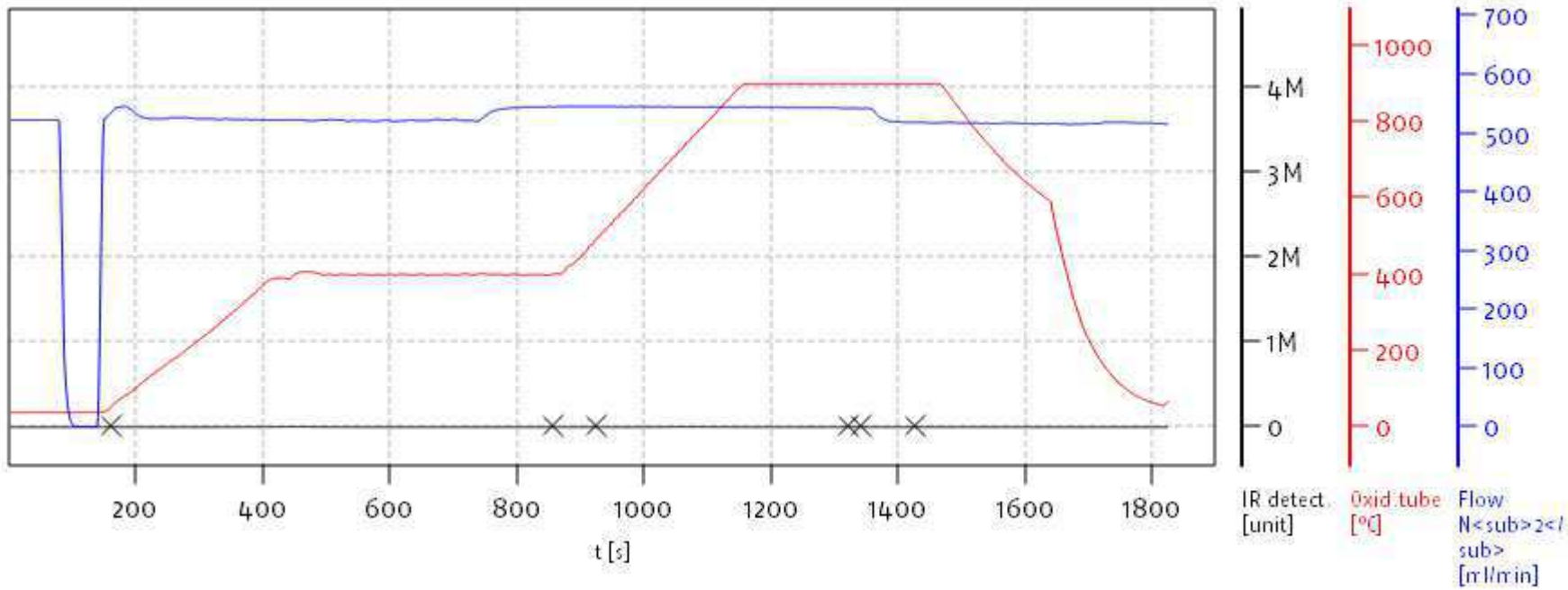
Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SLG0217	Instrument:	TOC Cube
		Calibration:	GE00052

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Initial Cal Check	SLG0217-ICV1	CubeData_07212023@0855-003	NA	07/19/23 21:27
Initial Cal Blank	SLG0217-ICB1	CubeData_07212023@0855-004	NA	07/19/23 21:57
Calibration Check	SLG0217-CCV1	CubeData_07212023@0855-015	NA	07/20/23 03:30
Calibration Blank	SLG0217-CCB1	CubeData_07212023@0855-016	NA	07/20/23 04:00
Calibration Check	SLG0217-CCV2	CubeData_07212023@0855-027	NA	07/20/23 09:34
Calibration Blank	SLG0217-CCB2	CubeData_07212023@0855-028	NA	07/20/23 10:04
Calibration Check	SLG0217-CCV3	CubeData_07212023@0855-039	NA	07/20/23 15:39
Calibration Blank	SLG0217-CCB3	CubeData_07212023@0855-040	NA	07/20/23 16:09
Calibration Check	SLG0217-CCV4	CubeData_07212023@0855-048	NA	07/20/23 23:53
Calibration Blank	SLG0217-CCB4	CubeData_07212023@0855-049	NA	07/21/23 00:23
Calibration Check	SLG0217-CCV5	CubeData_07212023@0855-060	NA	07/21/23 05:56
Calibration Blank	SLG0217-CCB5	CubeData_07212023@0855-061	NA	07/21/23 06:26

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
1	1	BLANK	1.00		CARBON	7/ 19/2023 7:56 PM	bl	0.000	23 271	0.000	0.000	1 796	16 715	0.000	0.000	1.0000	1.0000



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Access: soliTOC superuser

Date: Fri Jul 21 08:43:21 2023

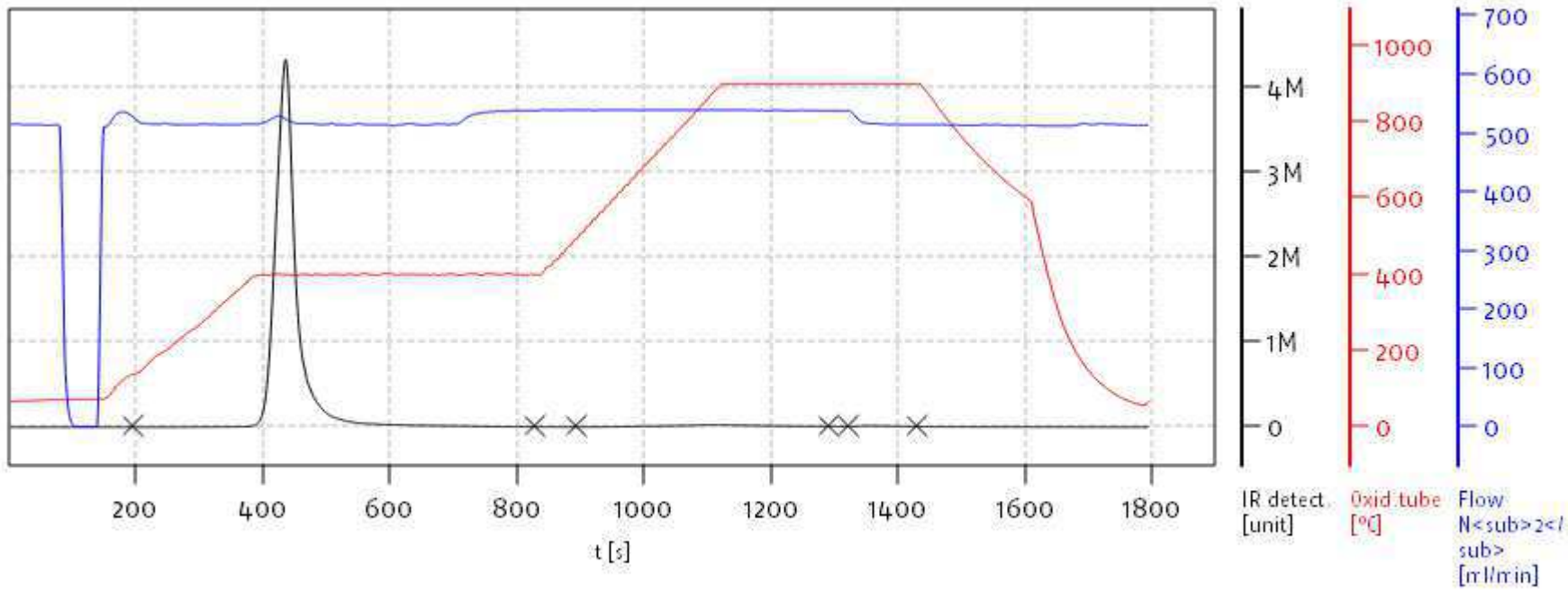
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Document: 071923 BFb from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
2	2	Dfactor	20.50		CARBON	7/19/2023 8:26 PM	bl	44.540	6 158 520	45.816	0.094	41 043	193 777	44.446	1.276	0.9372	1.0000



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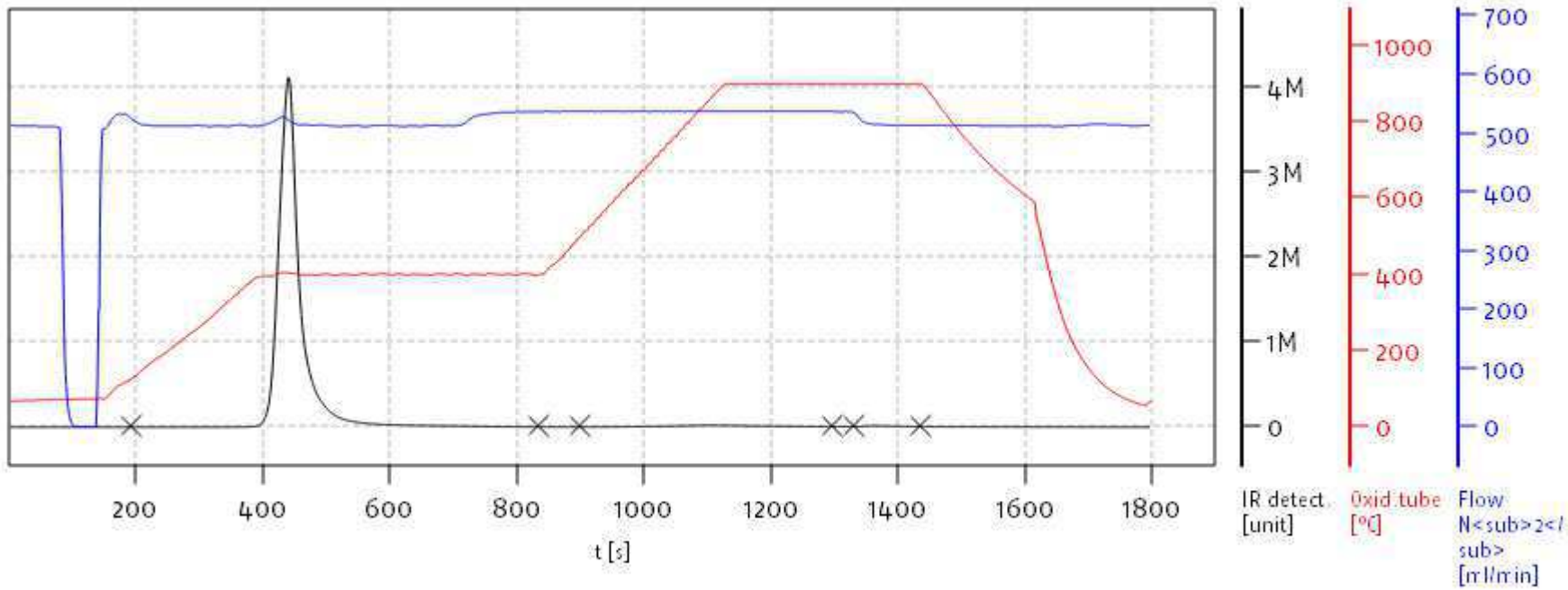
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
3	3	Dfactor	20.10		CARBON	7/19/2023 8:57 PM	bl	44.503	5 953 470	45.482	0.057	36 109	152 910	44.446	0.979	0.9507	1.0000



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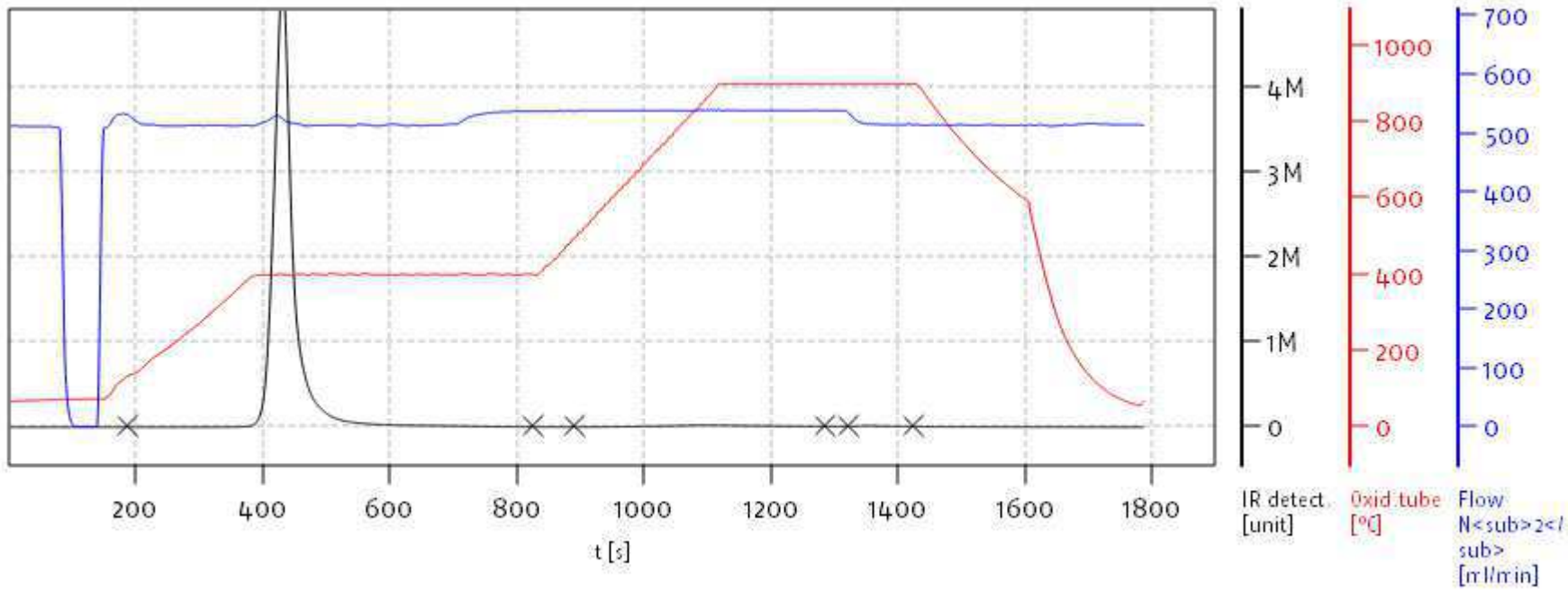
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
4	4	SLG0217-ICV1	22.70		CARBON	7/19/2023 9:27 PM	bl	45.243	6 878 620	46.223	0.067	38 382	169 002	45.177	0.979	0.9439	1.0000



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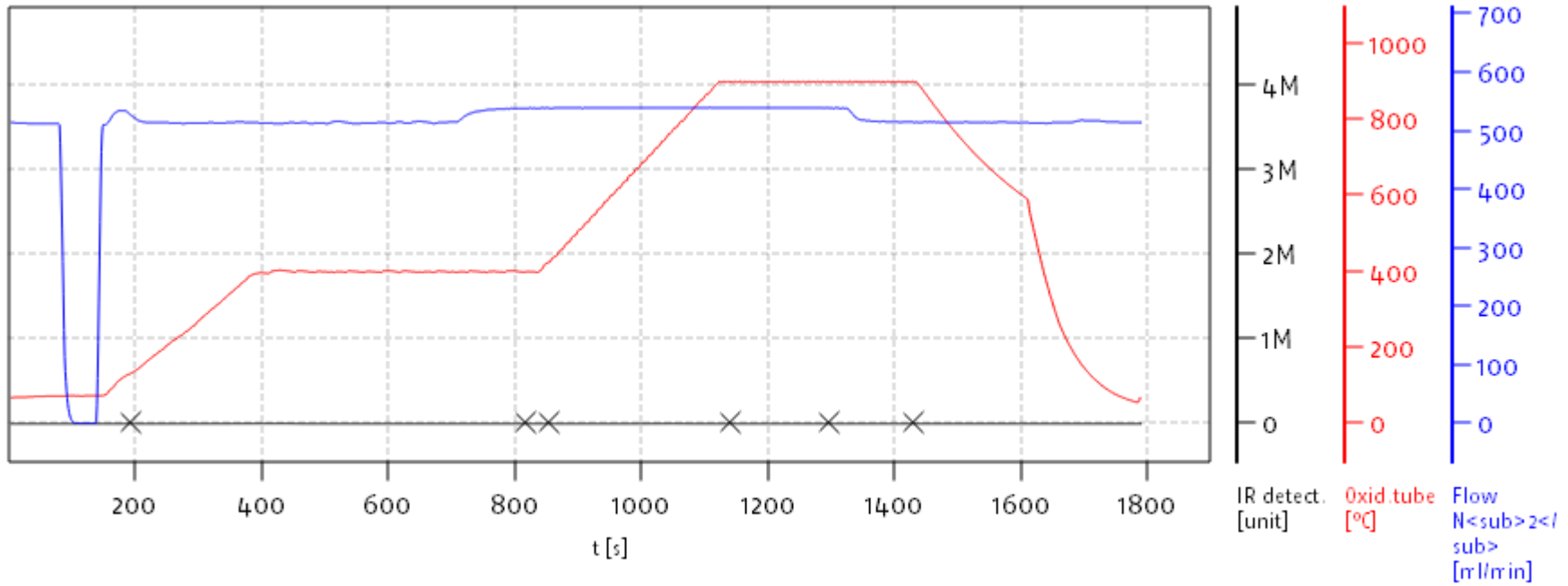
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
5	5	SLG0217-ICB1	550.10		CARBON	7/19/2023 9:57 PM	bl,C1u,C3u,C2u	0.000	12 126	0.000	0.000	1 184	3 976	0.000	0.000	0.9439	1.0000



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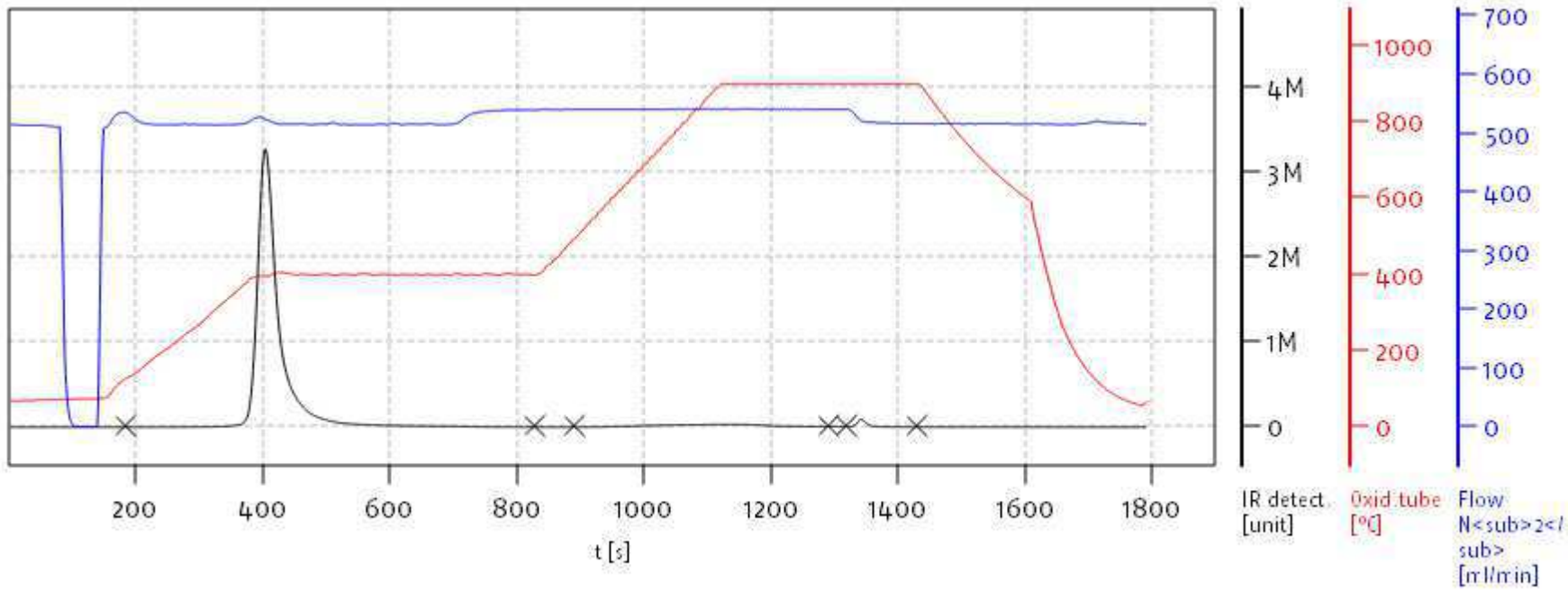
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
6	6	BLG0049-MS3	229.40	0.0073	CARBON	7/19/2023 10:27 PM	bl	3.117	4 766 290	3.265	0.025	65 511	243 005	3.092	0.148	0.9439	1.0000



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Soli TOC Cube, Carbon
Balance: BAL3
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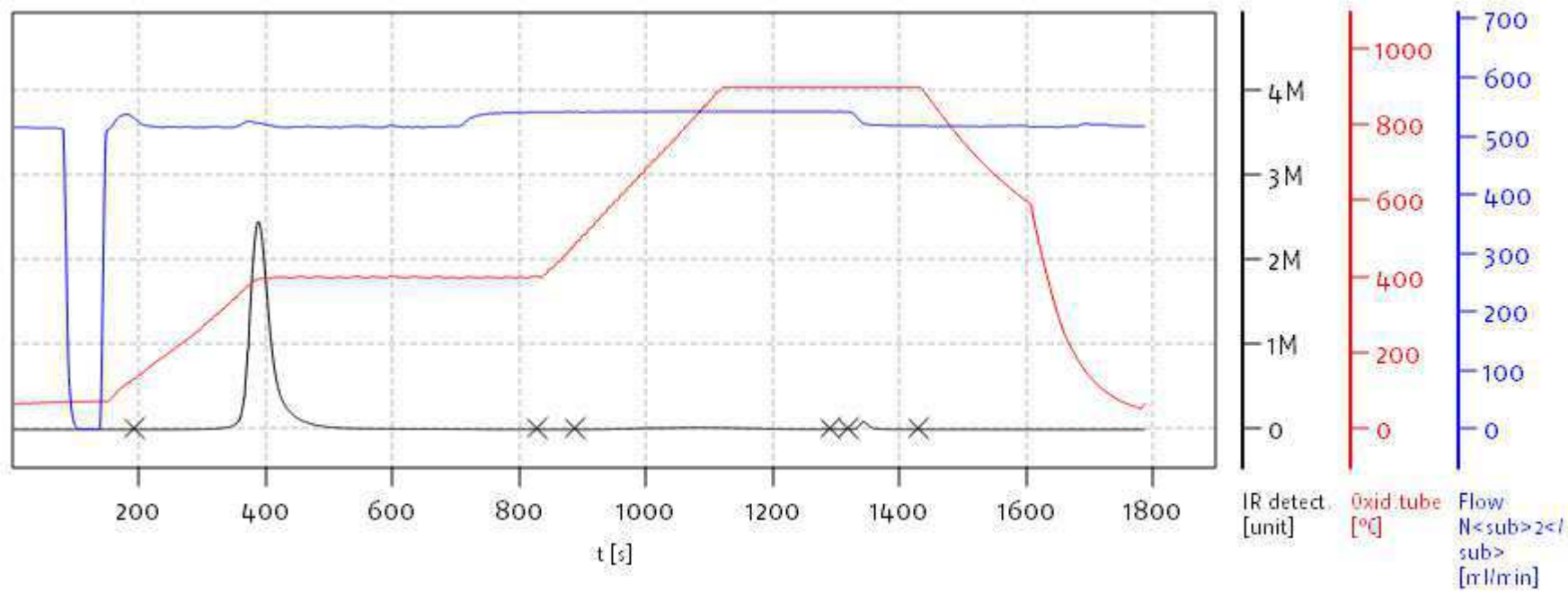
Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
7	7	23F0143-29RE1	210.20		CARBON	7/19/2023 10:57 PM	bl	2.600	3 641 320	2.699	0.027	64 122	161 246	2.573	0.100	0.9439	1.0000



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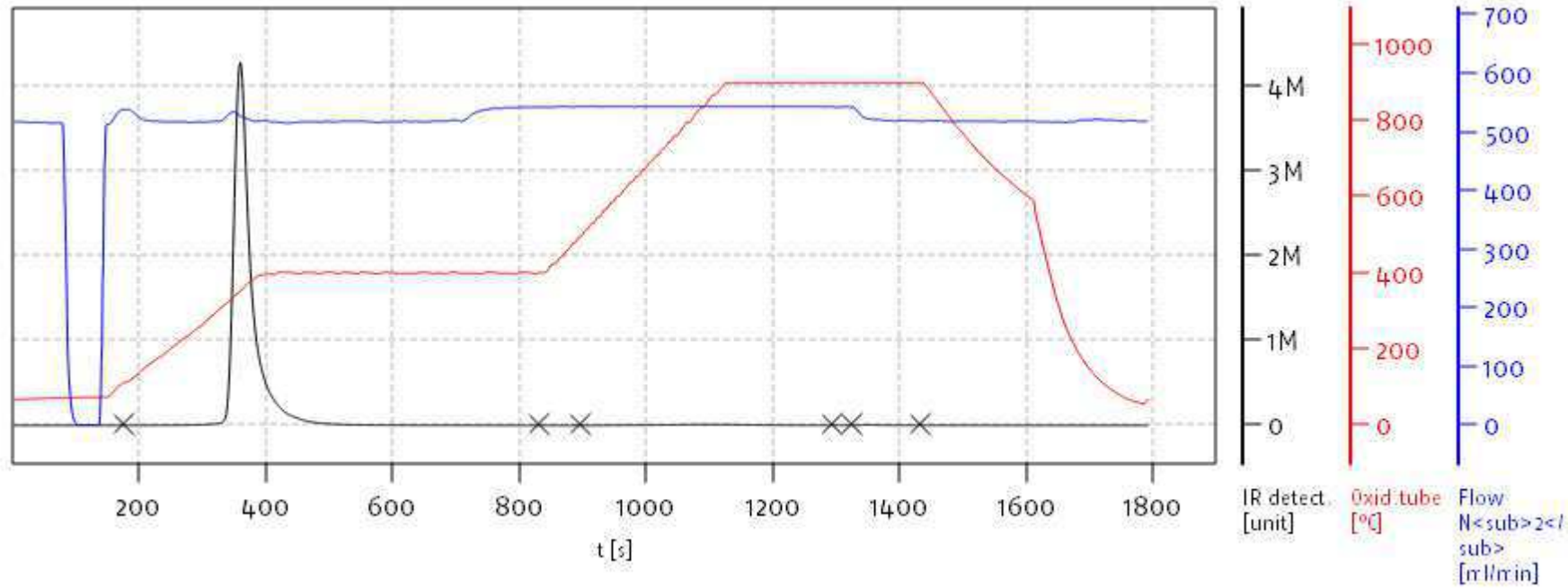
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
8	8	23F0363-03RE1	207.10		CARBON	7/19/2023 11:28 PM	bl,C2u	3.718	5 171 720	3.748	0.000	12 292	68 037	3.718	0.030	0.9439	1.0000



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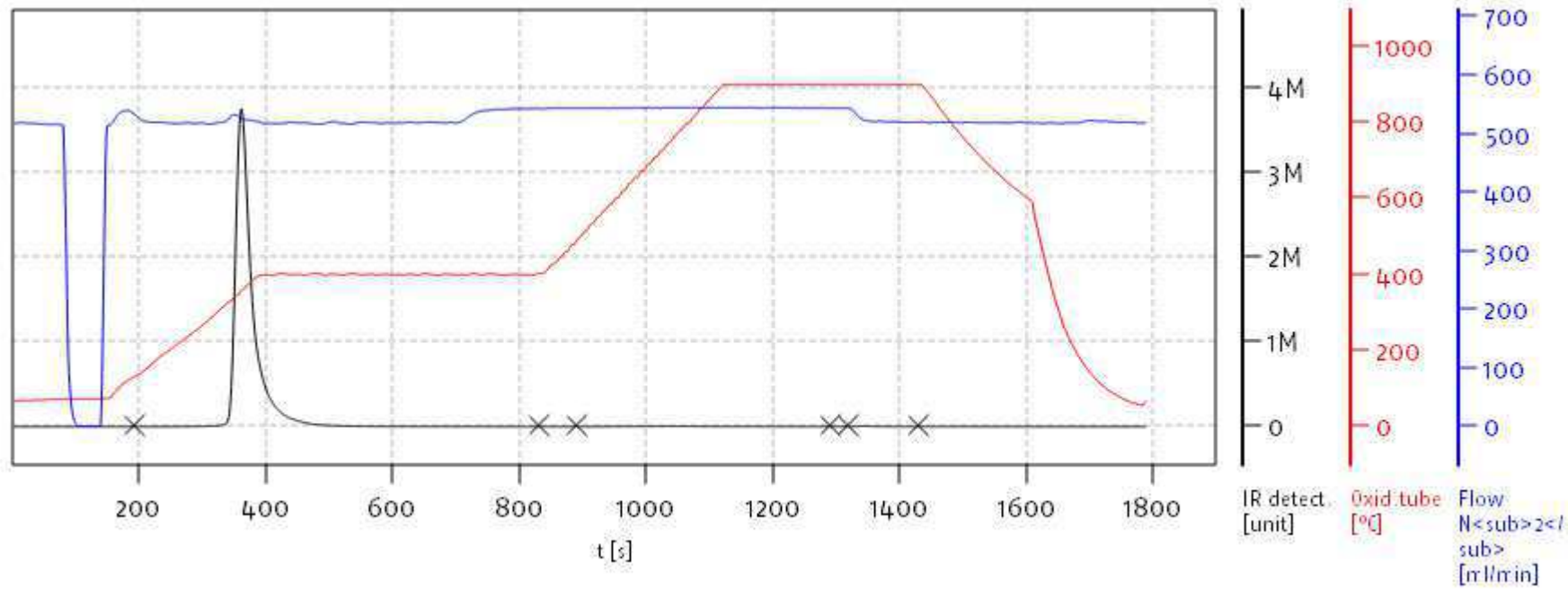
Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
9	9	23F0161-01RE1	118.90		CARBON	7/19/2023 11:58 PM	bl,C2u	5.420	4 333 460	5.425	0.000	9 247	32 232	5.420	0.004	0.9439	1.0000



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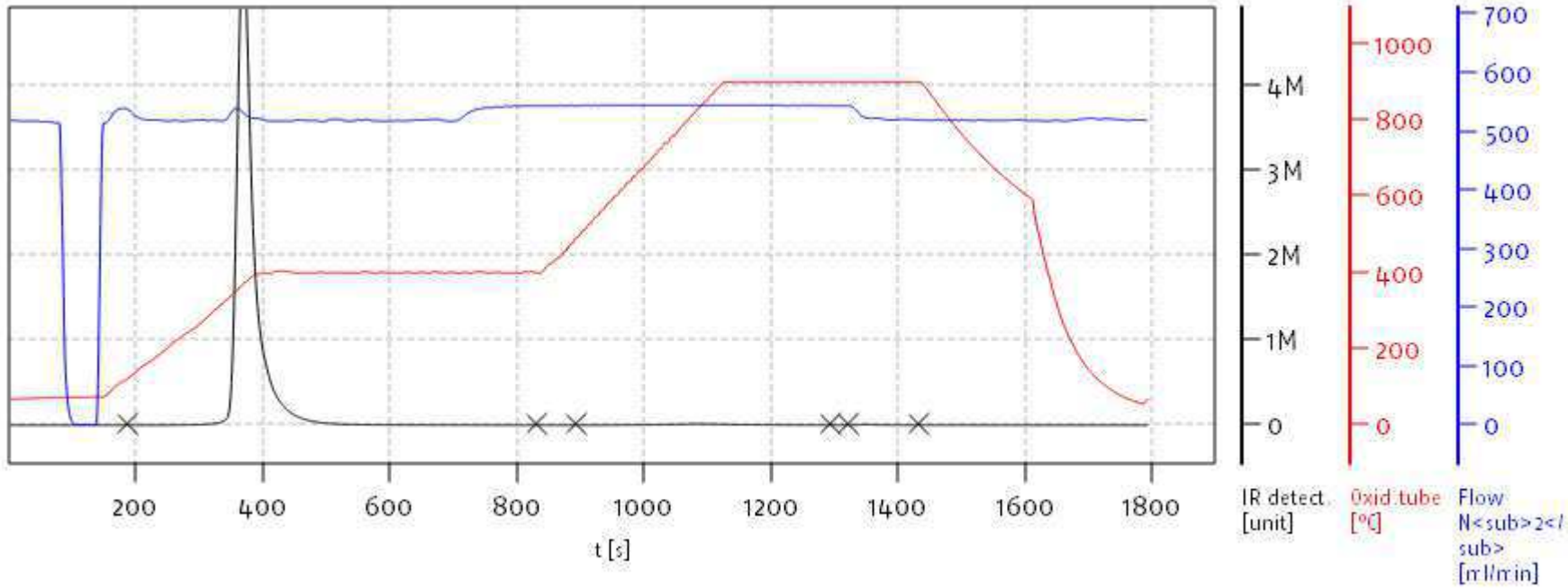
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
10	10	23F0161-04RE1	166.50		CARBON	7/20/2023 12:28 AM	bl,C2u	5.766	6 441 340	5.812	0.000	12 173	77 013	5.766	0.046	0.9439	1.0000



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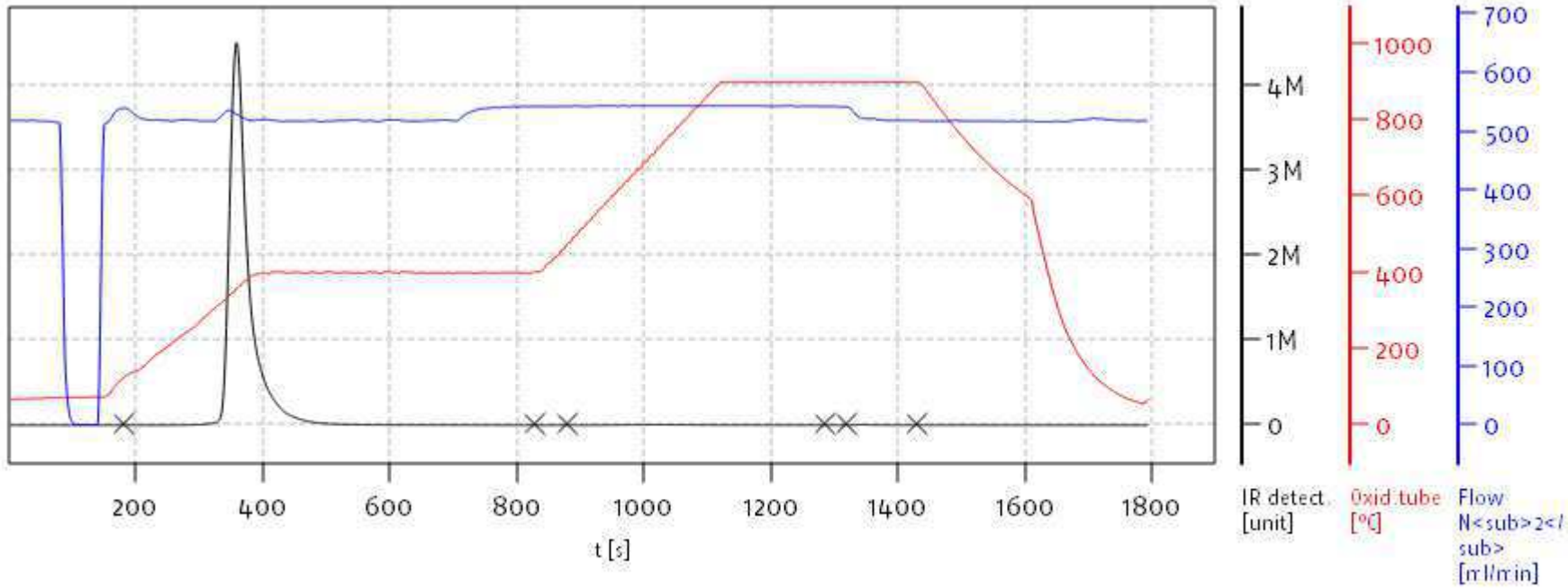
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
11	11	23F0161-05RE1	109.20		CARBON	7/20/2023 12:58 AM	bl,C2u	8.002	5 865 090	8.012	0.000	8 638	36 170	8.002	0.011	0.9439	1.0000



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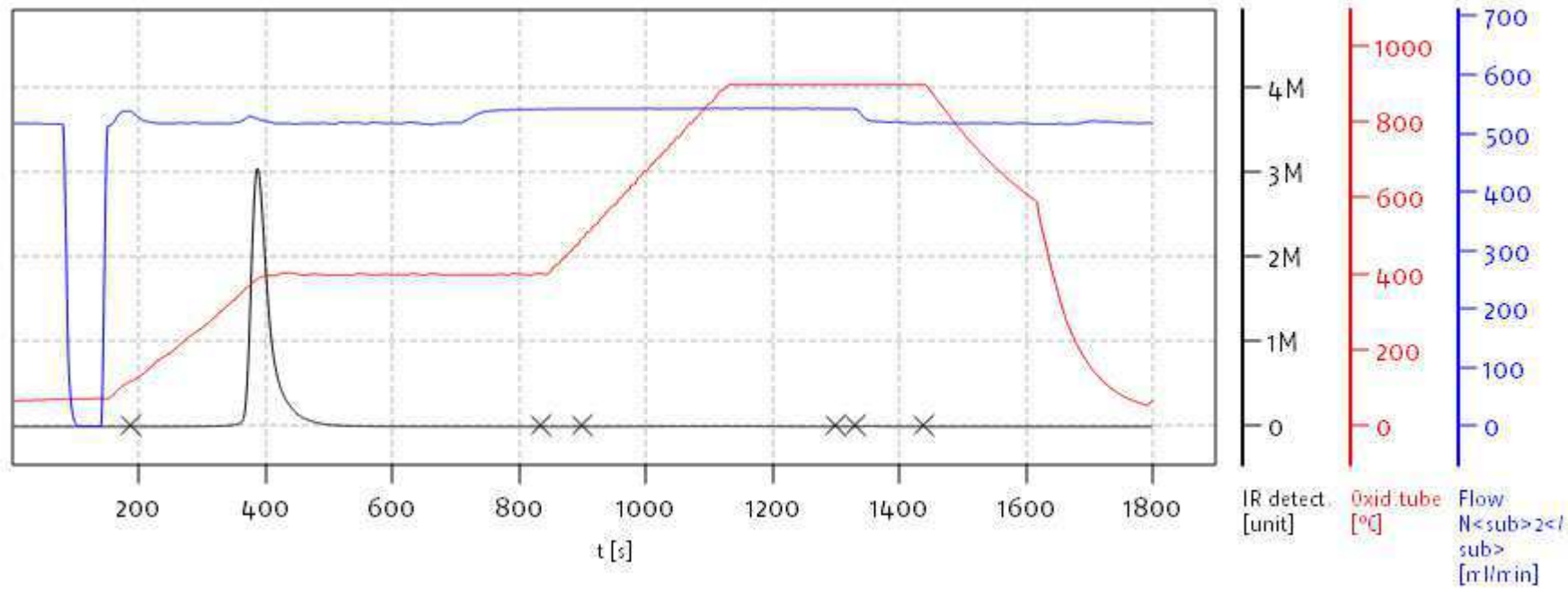
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
12	12	23F0161-06RE1	147.20		CARBON	7/20/2023 1:29 AM	bl,C2u	3.905	3 867 940	3.913	0.000	7 173	36 271	3.905	0.008	0.9439	1.0000



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Balance: BAL3
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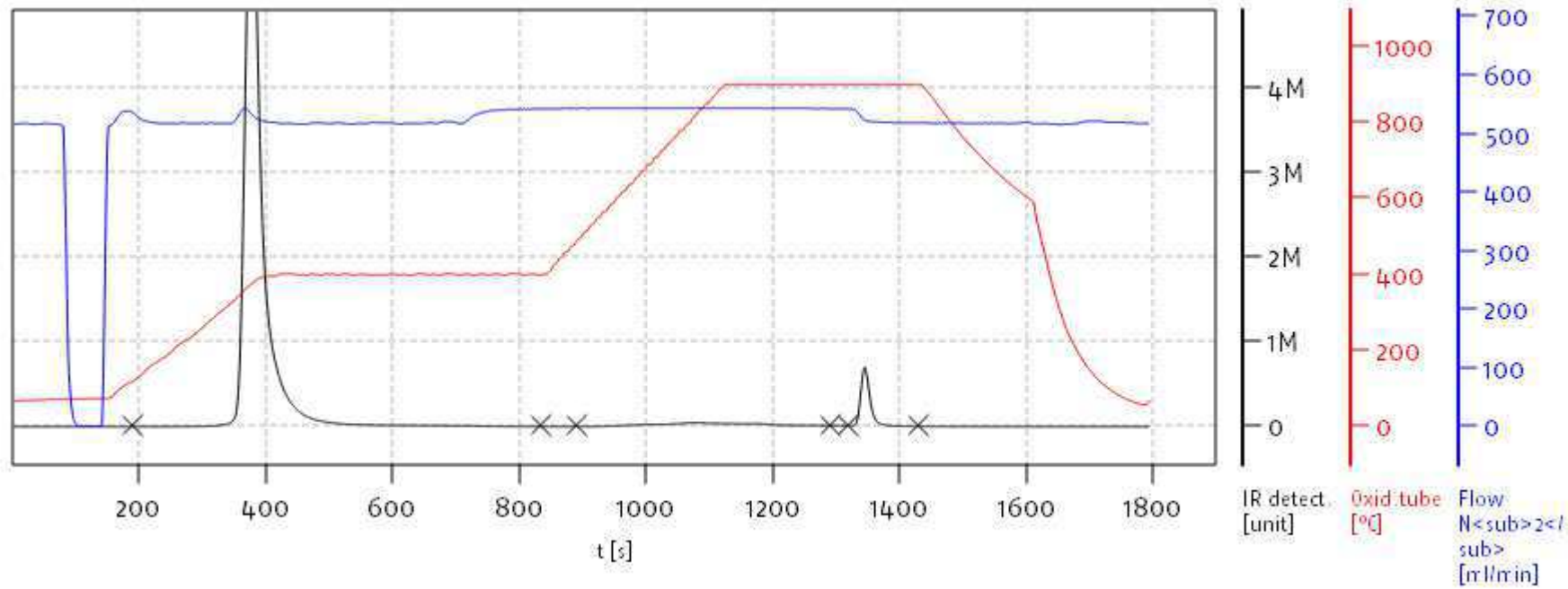
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
13	13	23F0589-01RE1	168.70		CARBON	7/20/2023 1:59 AM	bl	7.422	7 934 430	7.721	0.406	460 447	346 887	7.016	0.299	0.9439	1.0000



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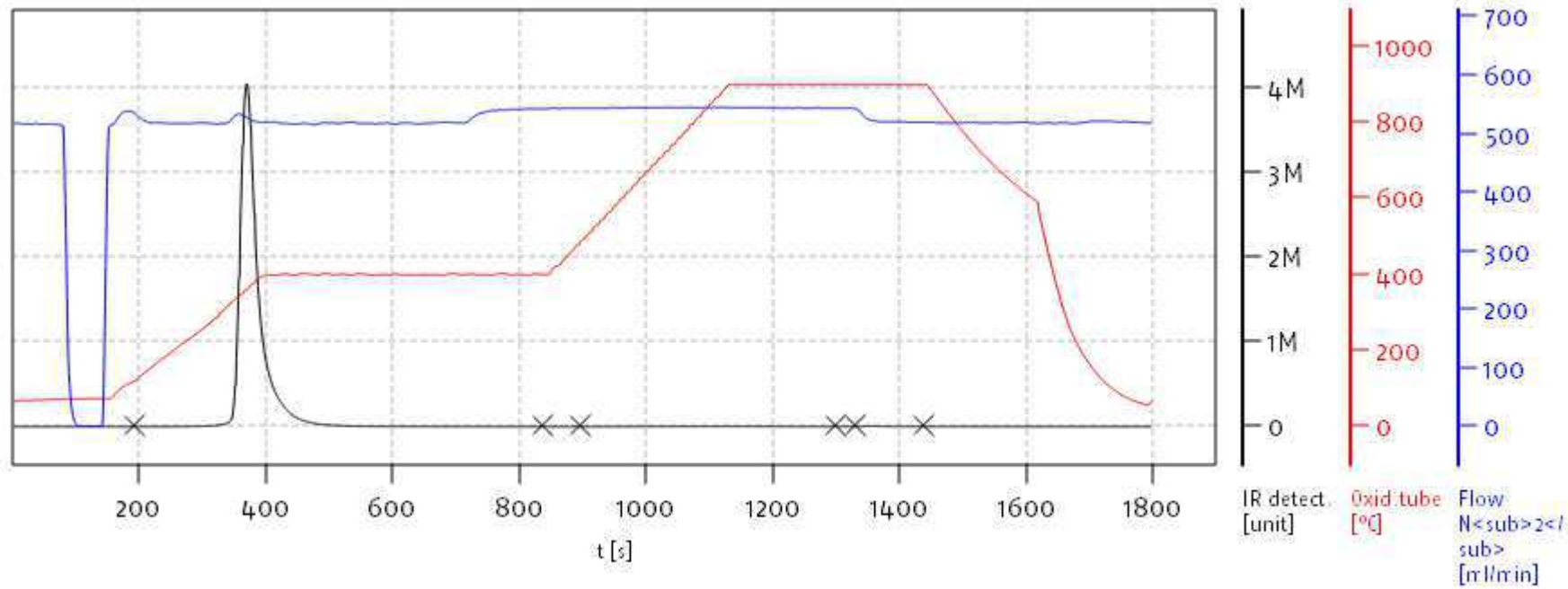
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
14	14	23F0590-01RE1	121.80		CARBON	7/20/2023 2:29 AM	bl,C2u	6.164	5 043 720	6.164	0.000	11 032	28 279	6.164	0.000	0.9439	1.0000



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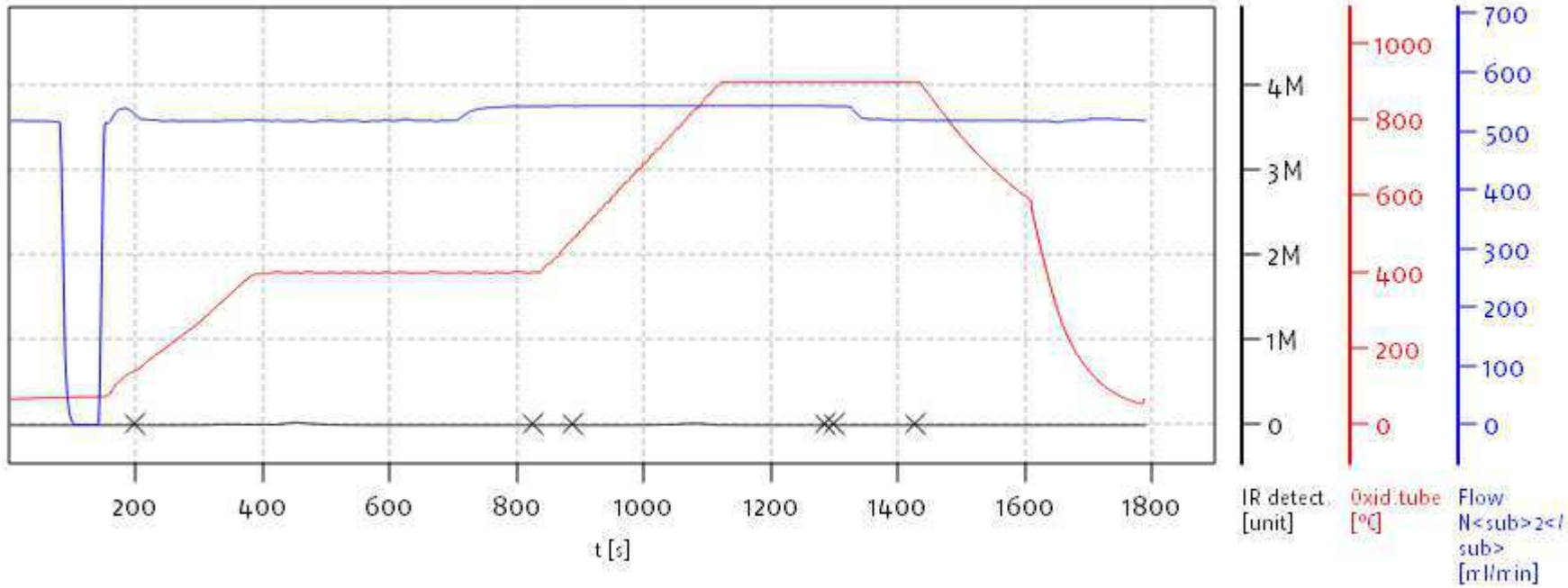
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
15	15	BLG0384-MRL1	505.70		CARBON	7/20/2023 3:00 AM	bl,C2u	0.018	90 769	0.023	0.000	528	44 922	0.018	0.005	0.9439	1.0000



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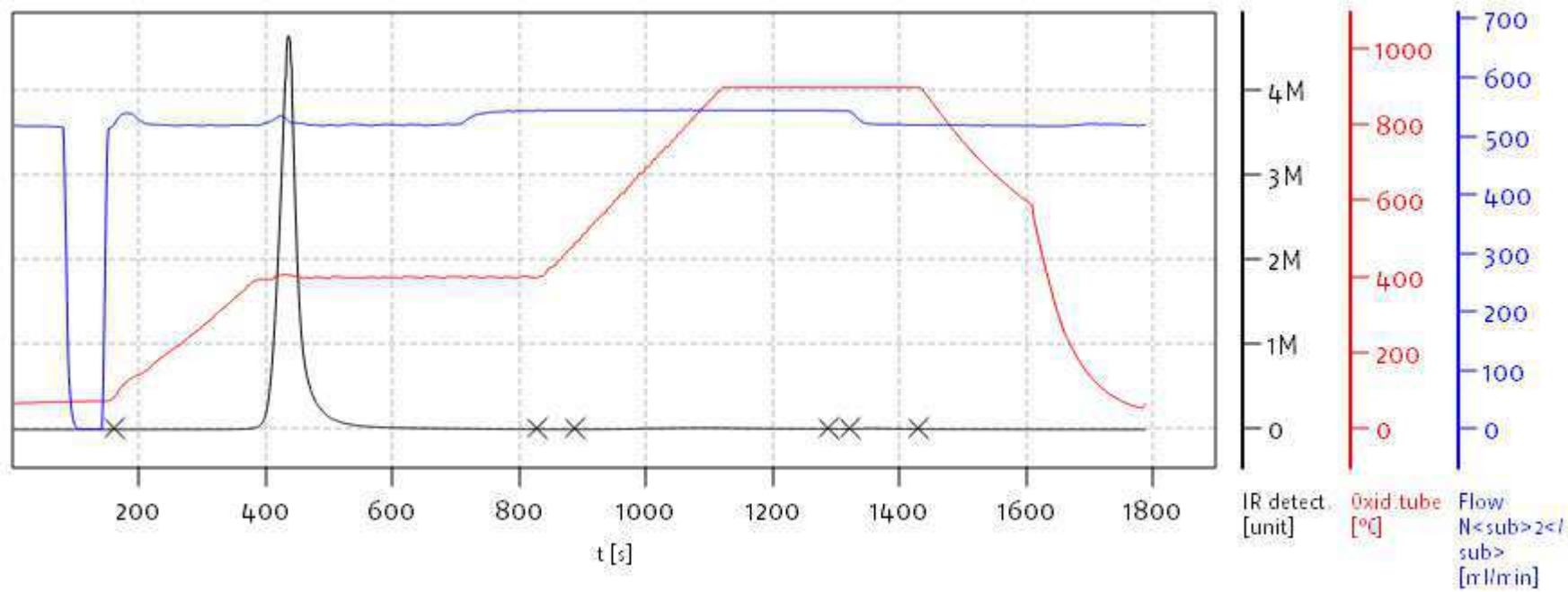
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
16	16	SLG0217-CCV1	20.00		CARBON	7/20/2023 3:30 AM	bl	45.094	6 046 080	46.144	0.051	35 237	161 260	45.044	1.050	0.9439	1.0000



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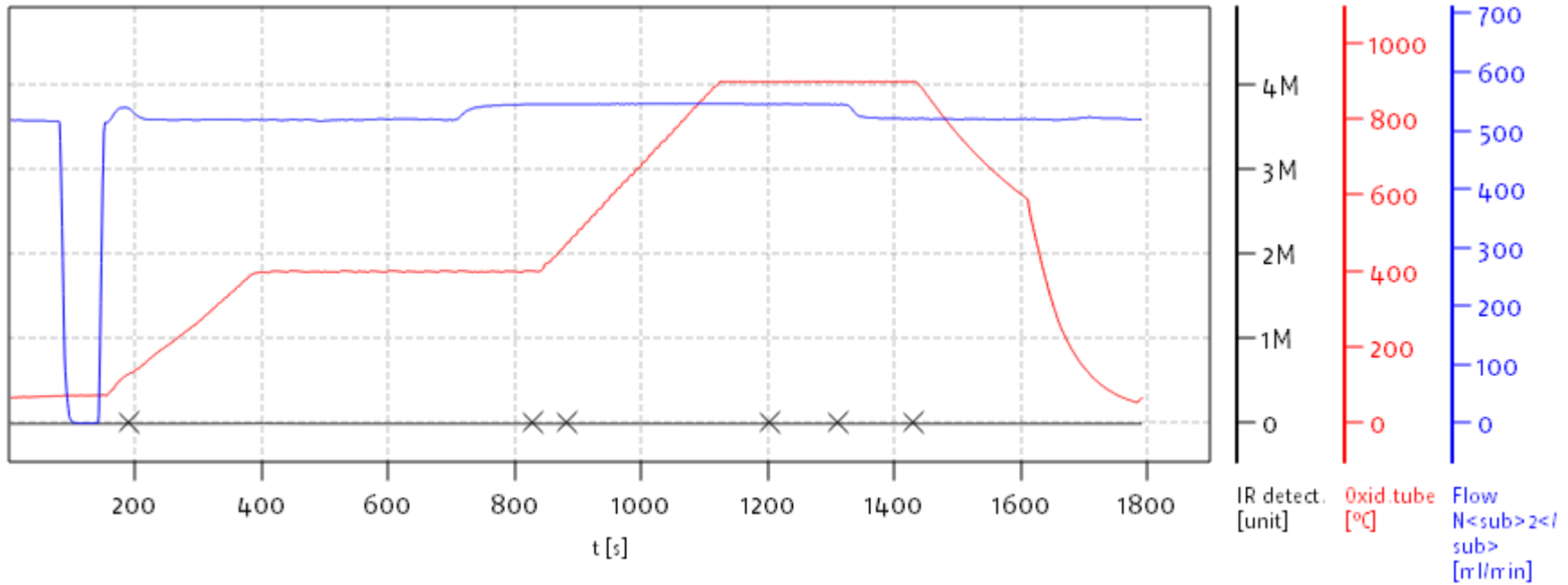
Date: Fri Jul 21 08:43:21 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Document: 071923 BFb from: --.--.-- (modified)

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
17	17	SLG0217-CCB1	590.30		CARBON	7/20/2023 4:00 AM	bl,C1u,C3u,C2u	0.000	11 613	0.000	0.000	491	1 794	0.000	0.000	0.9439	1.0000



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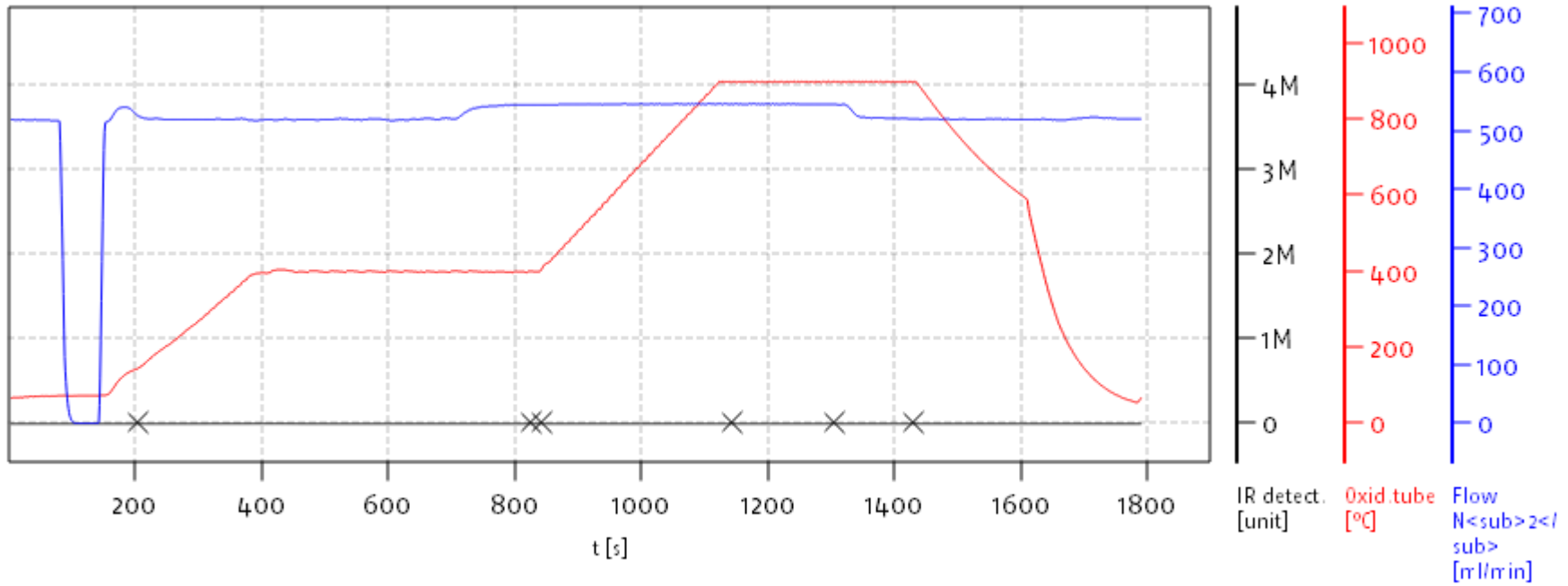
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
18	18	BLG0384-BLK1	596.00		CARBON	7/20/2023 4:30 AM	bl,C1u,C3u,C2u	0.000	9 685	0.000	0.000	862	1 451	0.000	0.000	0.9439	1.0000



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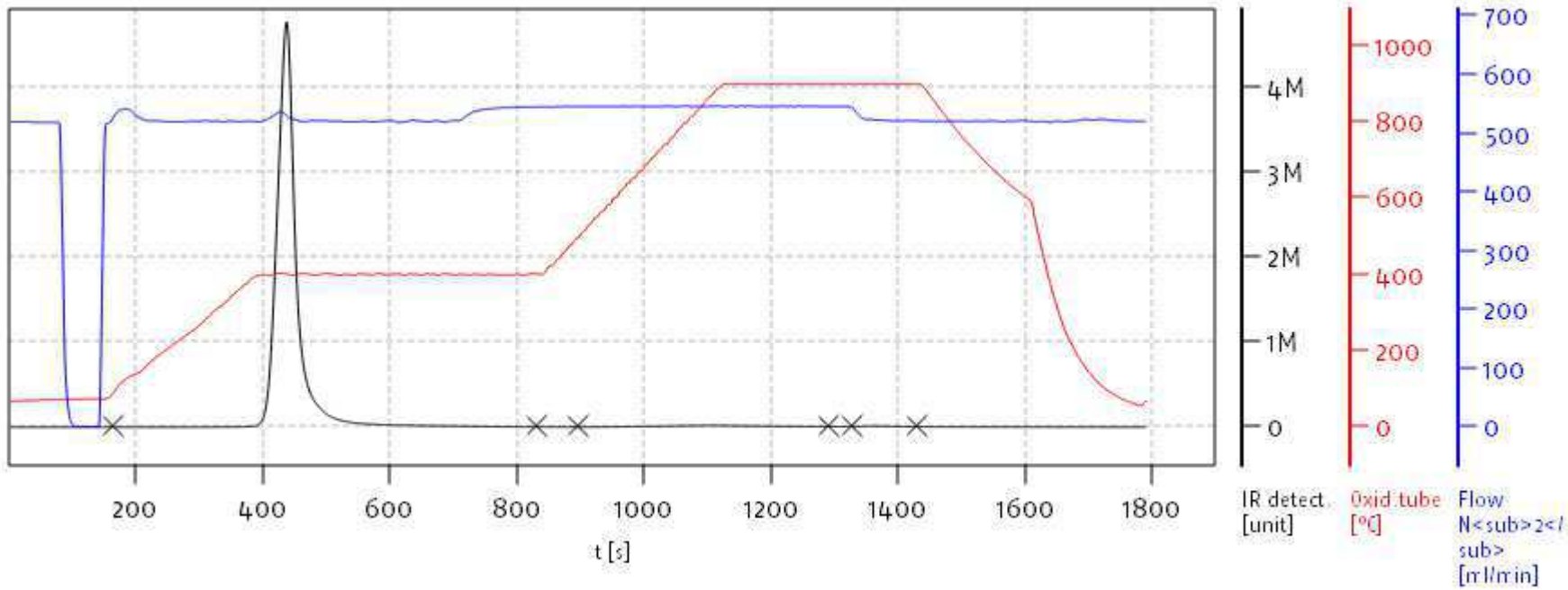
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
19	19	BLG0384-BS1	20.80		CARBON	7/20/2023 5:00 AM	bl	44.684	6 232 570	45.594	0.031	32 881	148 228	44.653	0.910	0.9439	1.0000



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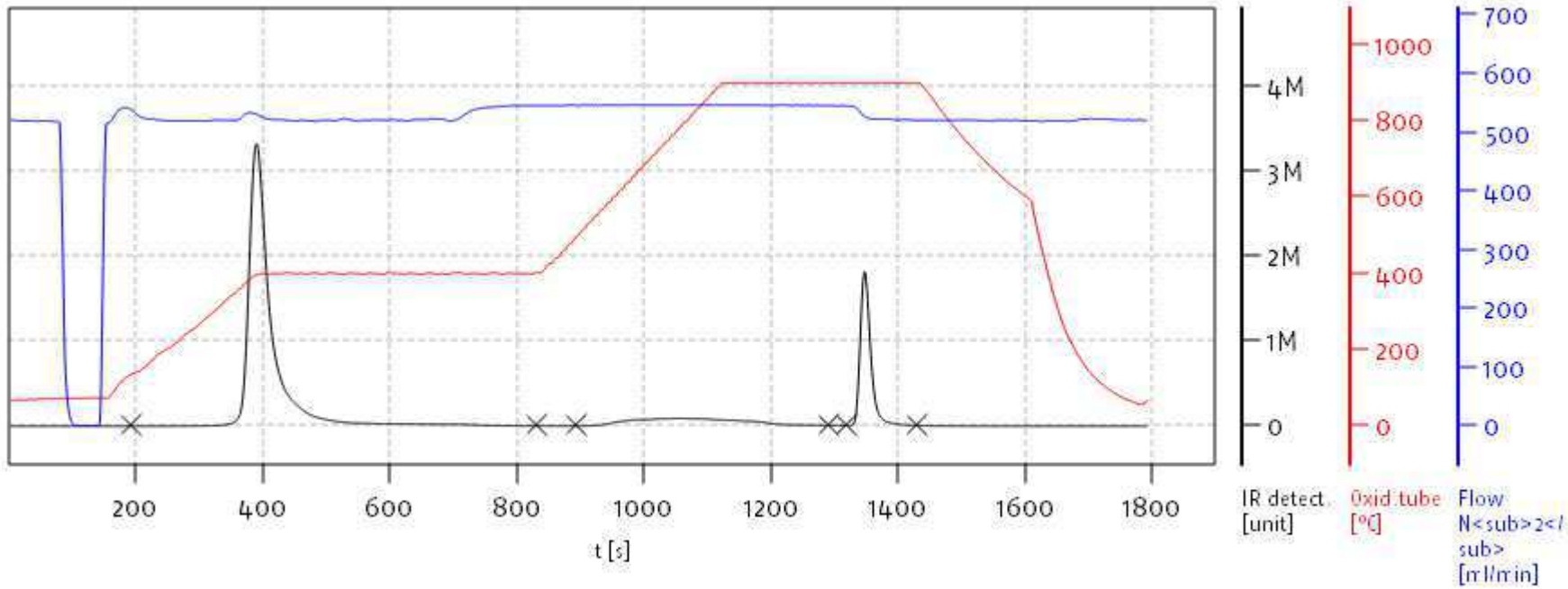
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
20	20	BLG0384-SRM1	305.70		CARBON	7/20/2023 5:31 AM	bl	3.109	5 003 890	3.482	0.672	1 324 400	749 312	2.437	0.374	0.9439	1.0000



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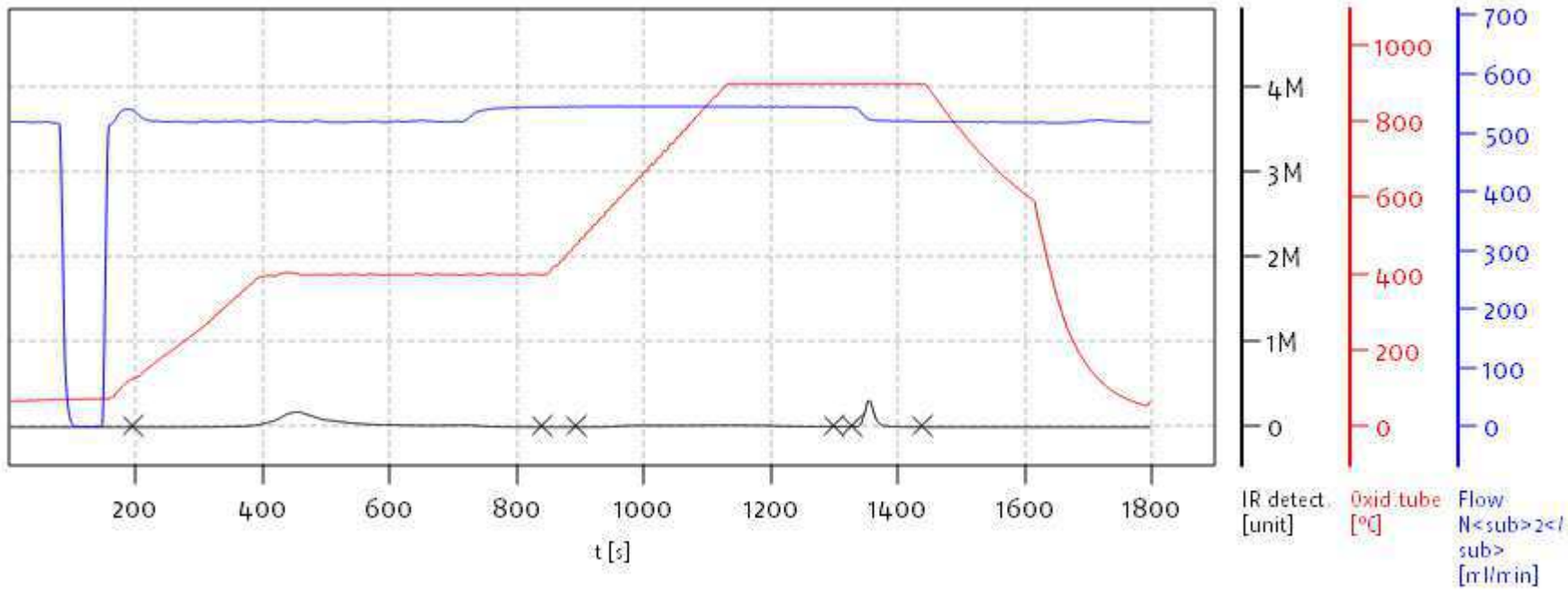
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
21	21	23D0393-13	587.20		CARBON	7/20/2023 6:01 AM	bl	0.243	787 259	0.291	0.049	212 015	206 672	0.193	0.048	0.9439	1.0000



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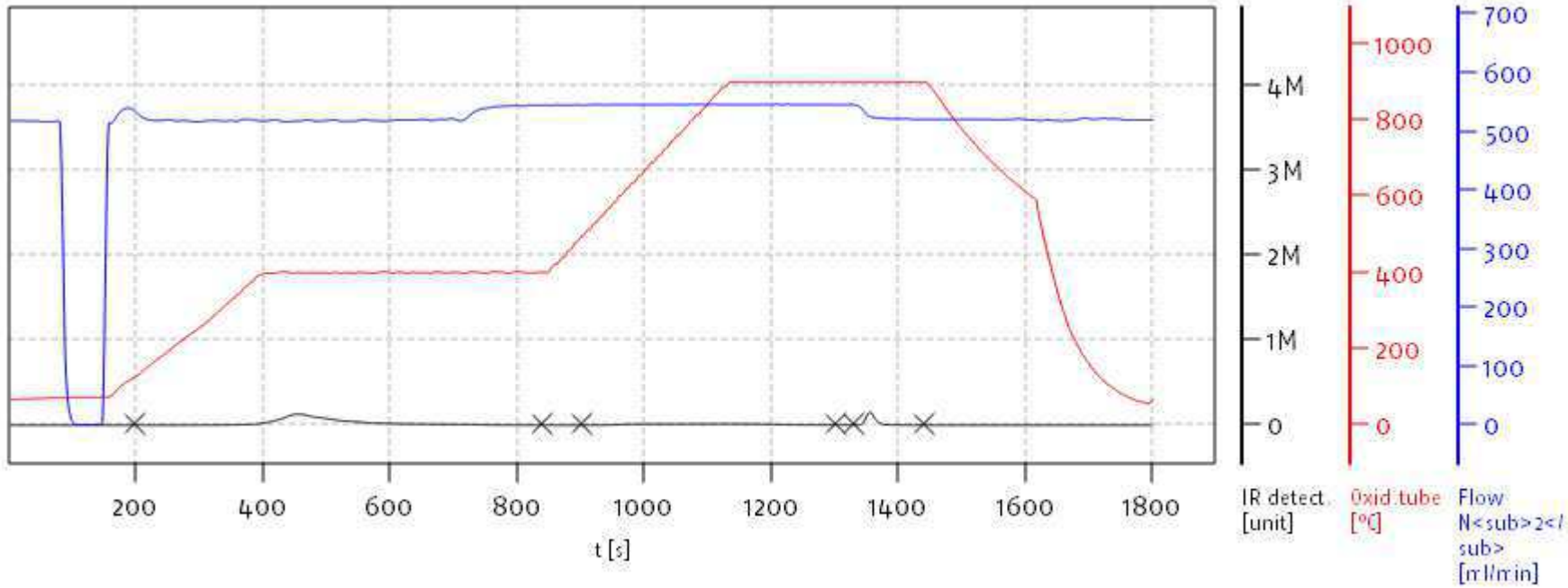
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
22	22	BLG0384-DUP1	536.30		CARBON	7/20/2023 6:31 AM	bl	0.173	572 471	0.205	0.021	101 240	135 707	0.152	0.032	0.9439	1.0000



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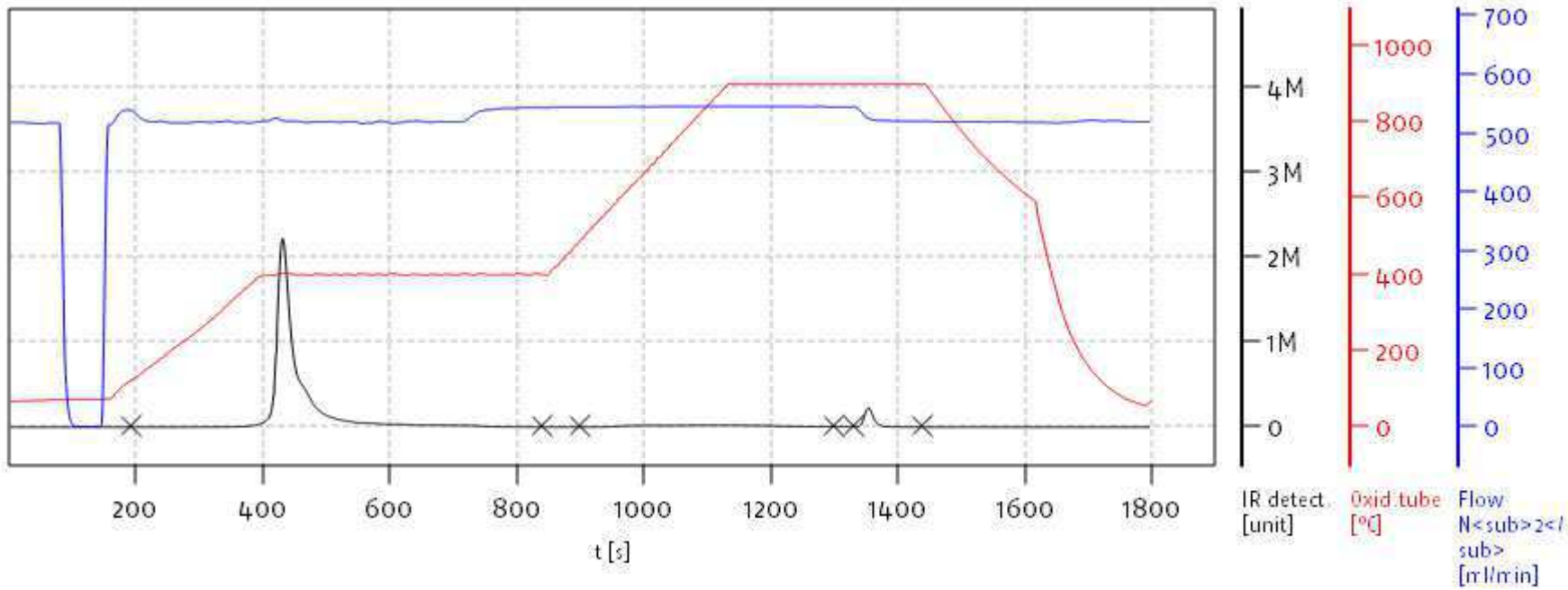
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
23	23	BLG0384-MS1	548.60	0.0083	CARBON	7/20/2023 7:02 AM	bl	0.835	2 960 380	0.886	0.035	149 002	206 658	0.800	0.051	0.9439	1.0000



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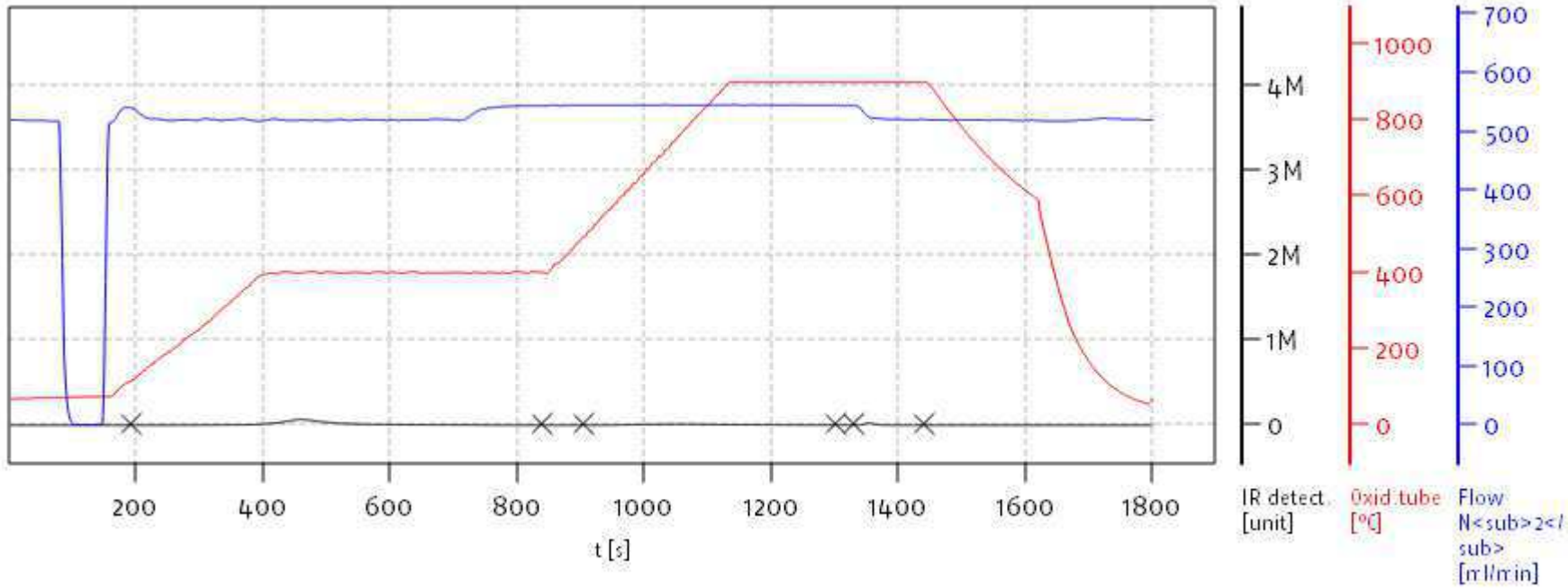
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
24	24	23D0393-14	566.30		CARBON	7/20/2023 7:32 AM	bl,C2u	0.063	265 557	0.077	0.000	16 885	80 299	0.063	0.014	0.9439	1.0000



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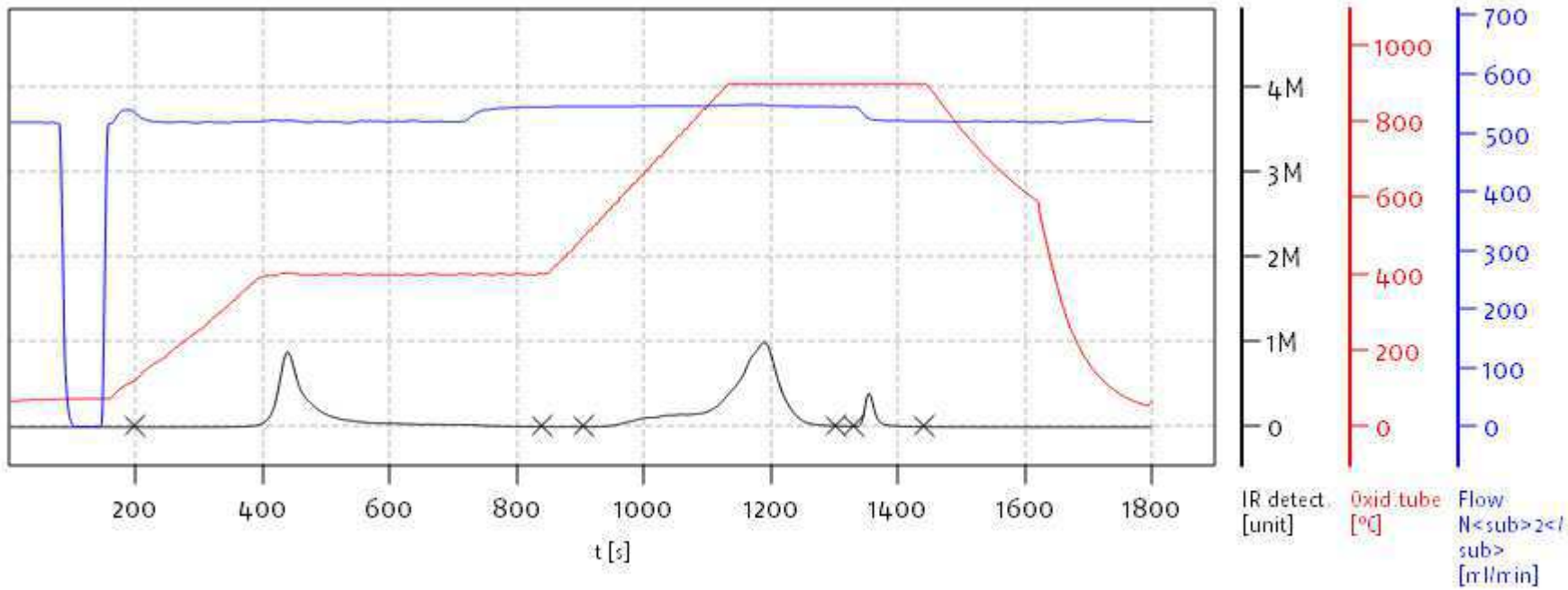
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
25	25	23G0087-01	518.70		CARBON	7/20/2023 8:03 AM	bl	0.641	1 976 390	1.717	0.079	287 867	3 545 050	0.562	1.075	0.9439	1.0000



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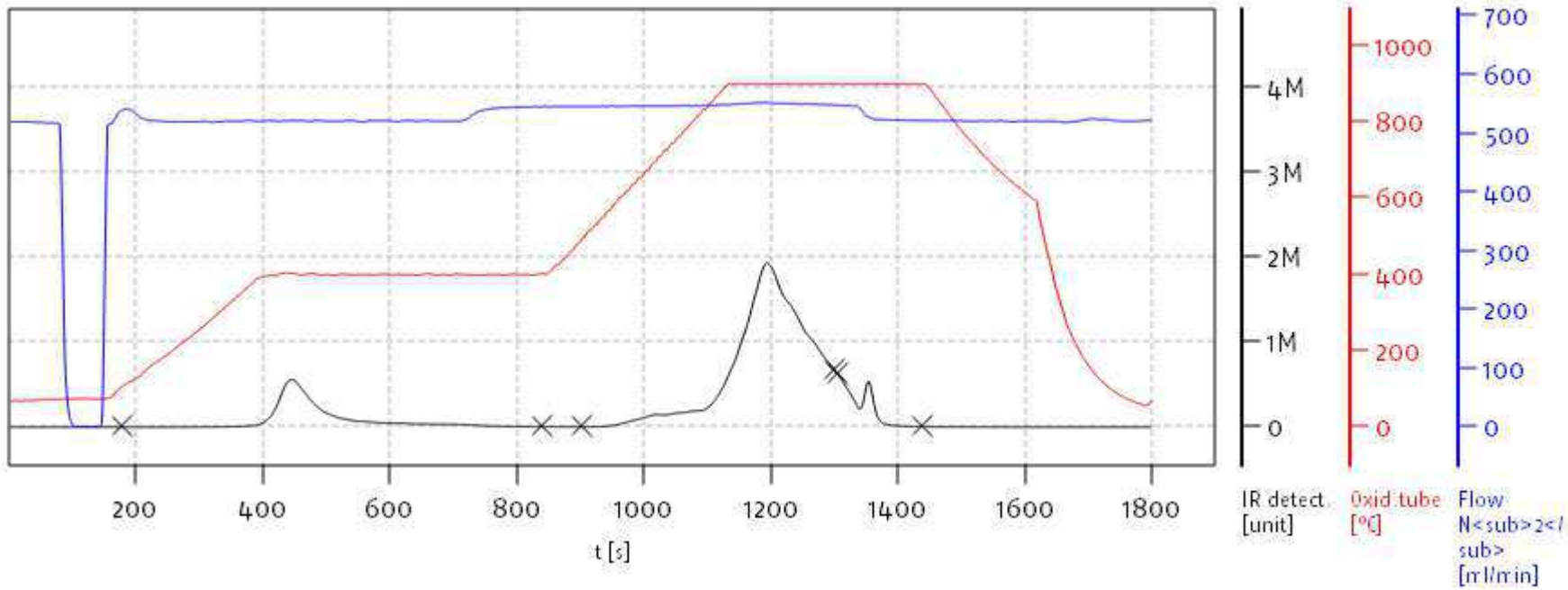
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
26	26	23G0087-02	578.70		CARBON	7/20/2023 8:33 AM	bl,C3o	0.708	1 777 810	3.208	0.255	959 886	9 150 150	0.452	2.500	0.9439	1.0000



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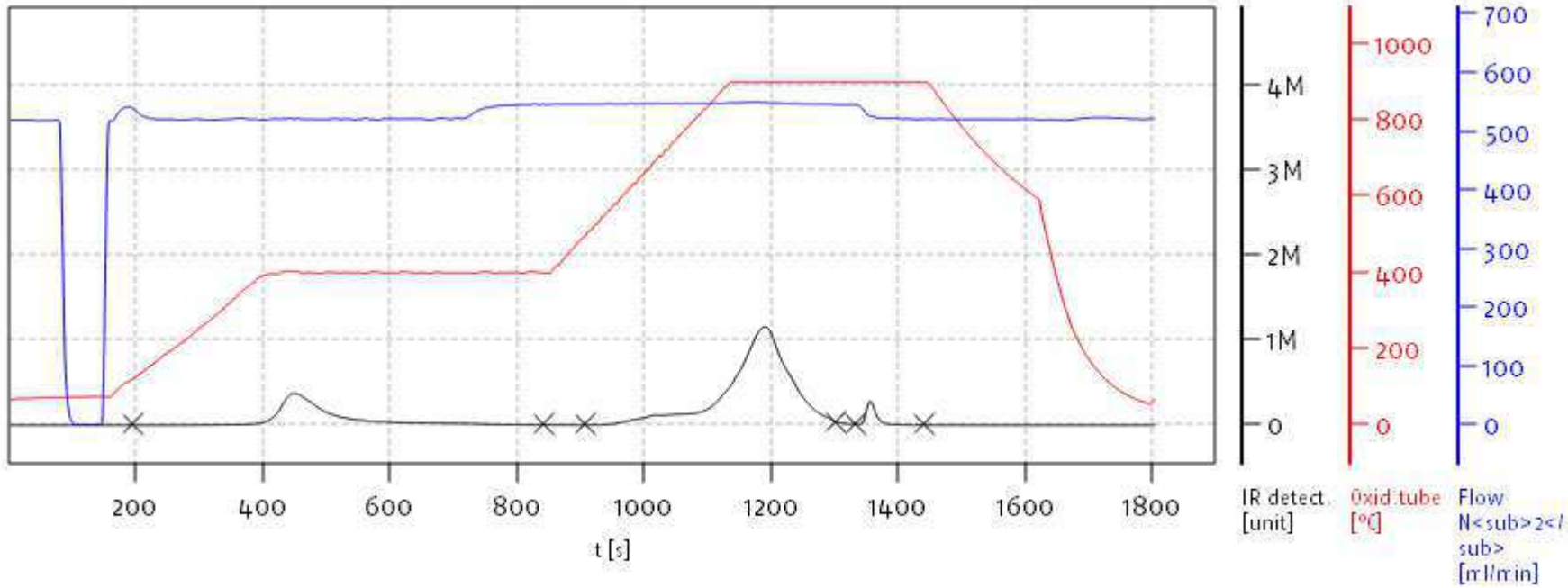
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
27	27	23G0087-03	565.30		CARBON	7/20/2023 9:03 AM	bl	0.389	1 315 730	1.689	0.048	199 382	4 663 560	0.341	1.300	0.9439	1.0000



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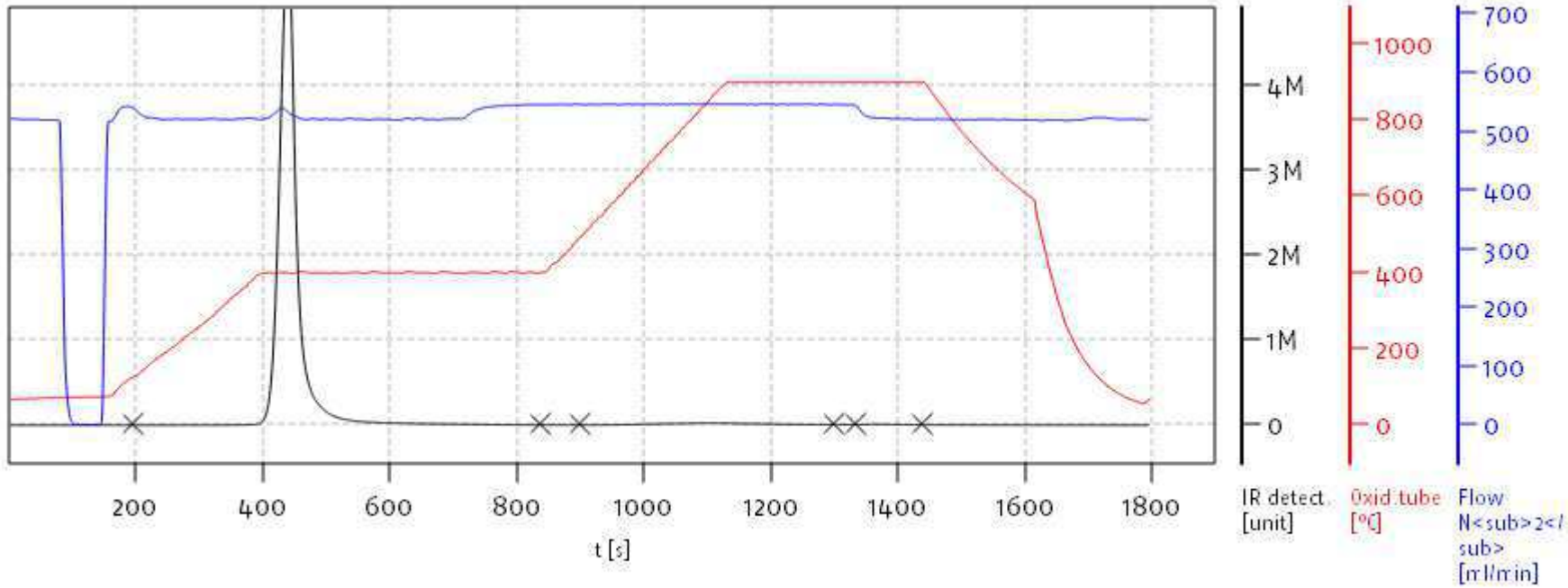
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
28	28	SLG0217-CCV2	22.40		CARBON	7/20/2023 9:34 AM	bl	45.057	6 770 150	46.182	0.000	26 513	187 768	45.057	1.125	0.9439	1.0000



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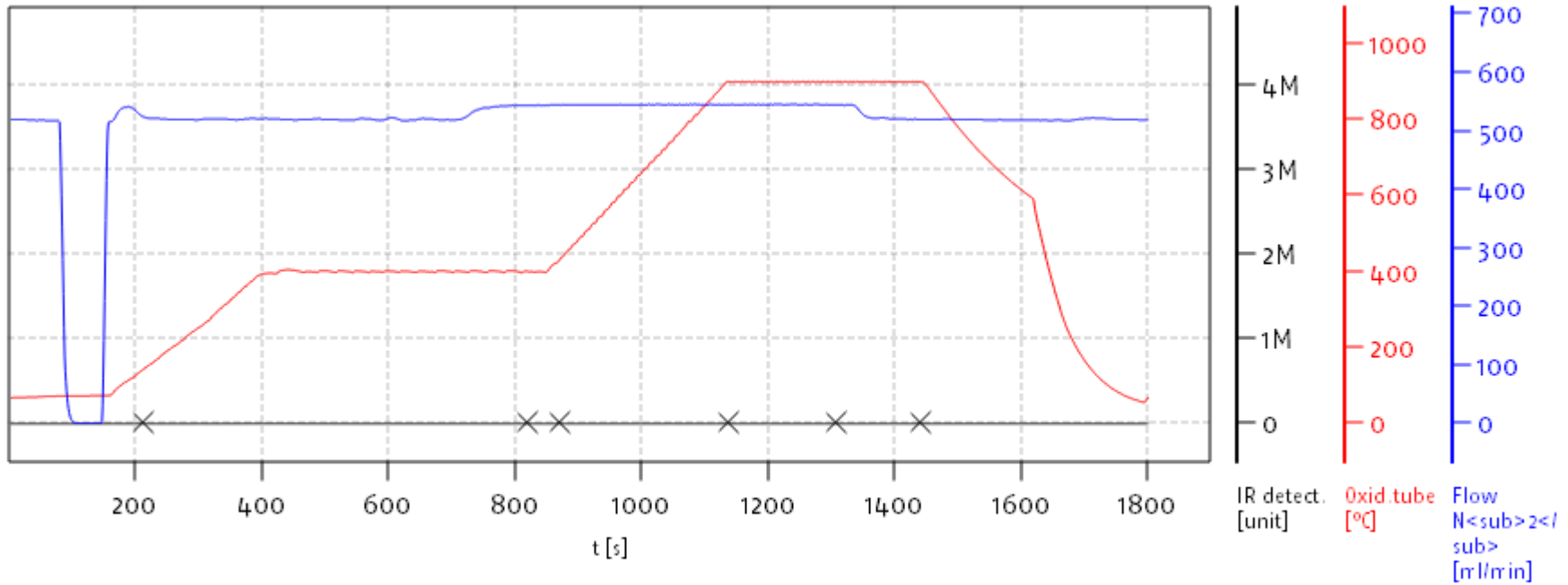
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
29	29	SLG0217-CCB2	659.40		CARBON	7/20/2023 10:04 AM	bl,C1u,C3u,C2u	0.000	4 461	0.000	0.000	453	90	0.000	0.000	0.9439	1.0000



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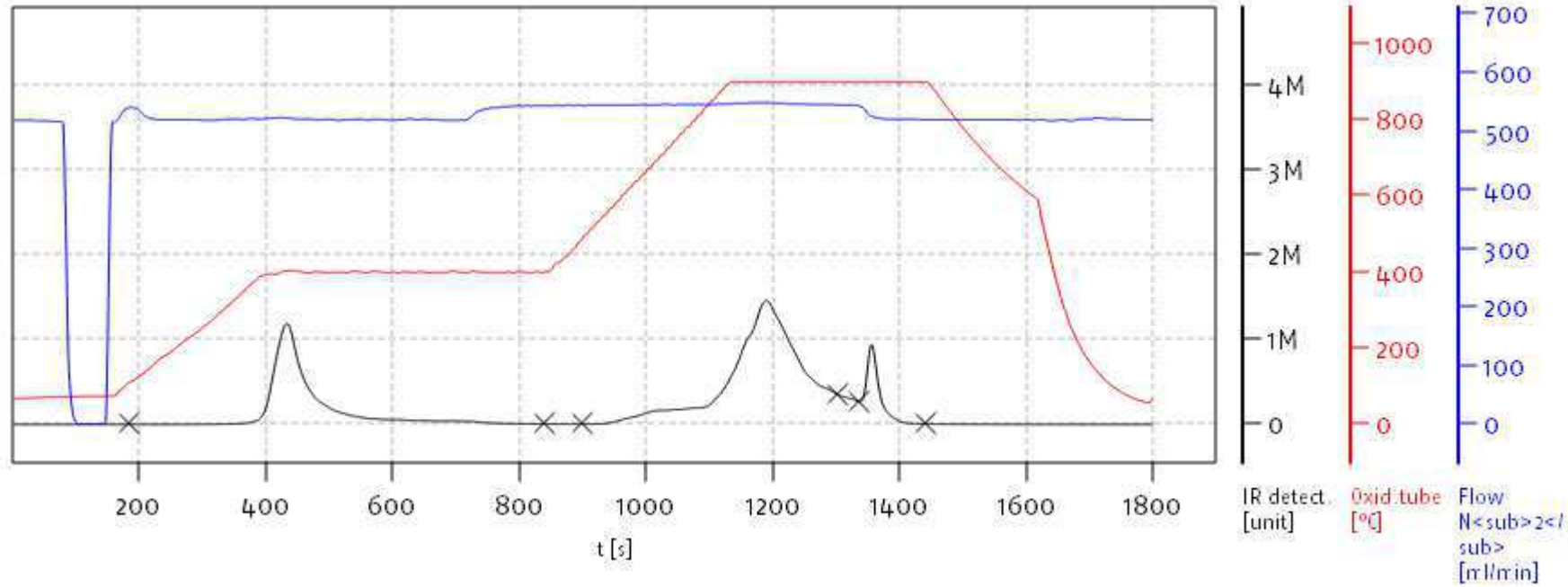
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
30	30	23G0087-04	529.80		CARBON	7/20/2023 10:34 AM	bl	1.106	3 021 920	3.132	0.260	898 848	6 795 290	0.846	2.026	0.9439	1.0000



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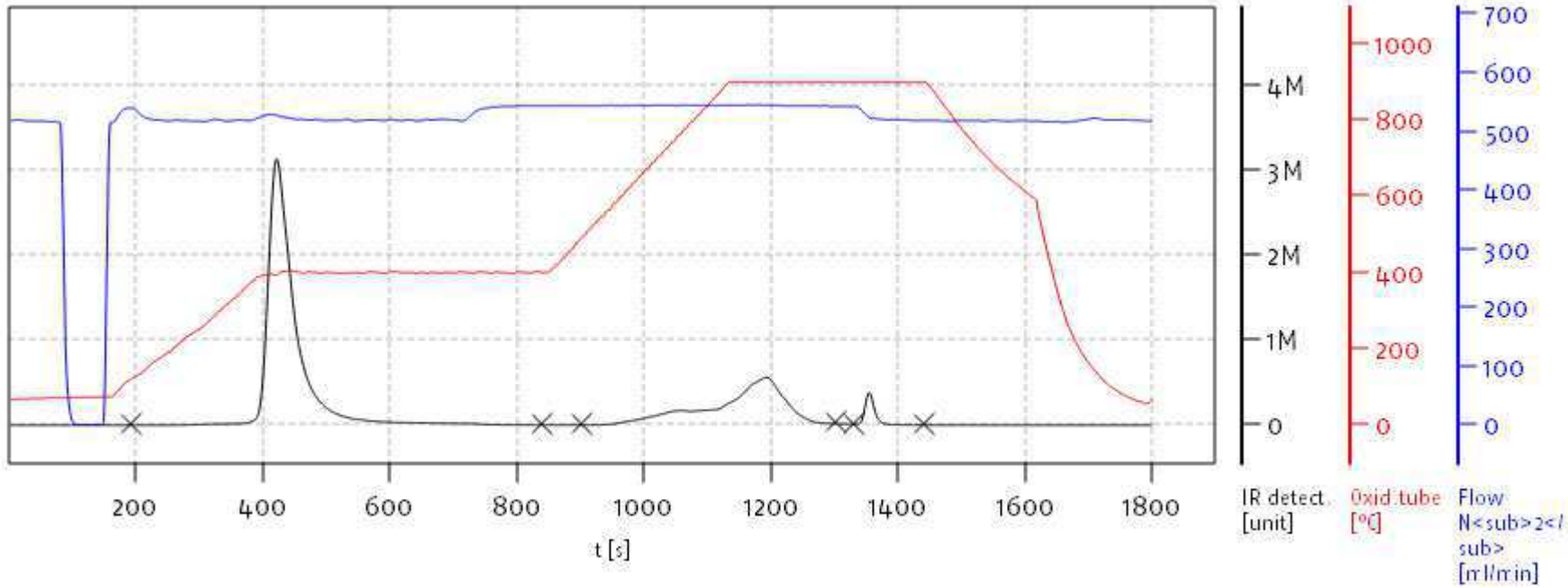
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
31	31	23G0087-05	621.20		CARBON	7/20/2023 11:05 AM	bl	1.425	5 697 910	2.078	0.058	257 200	2 589 700	1.366	0.654	0.9439	1.0000



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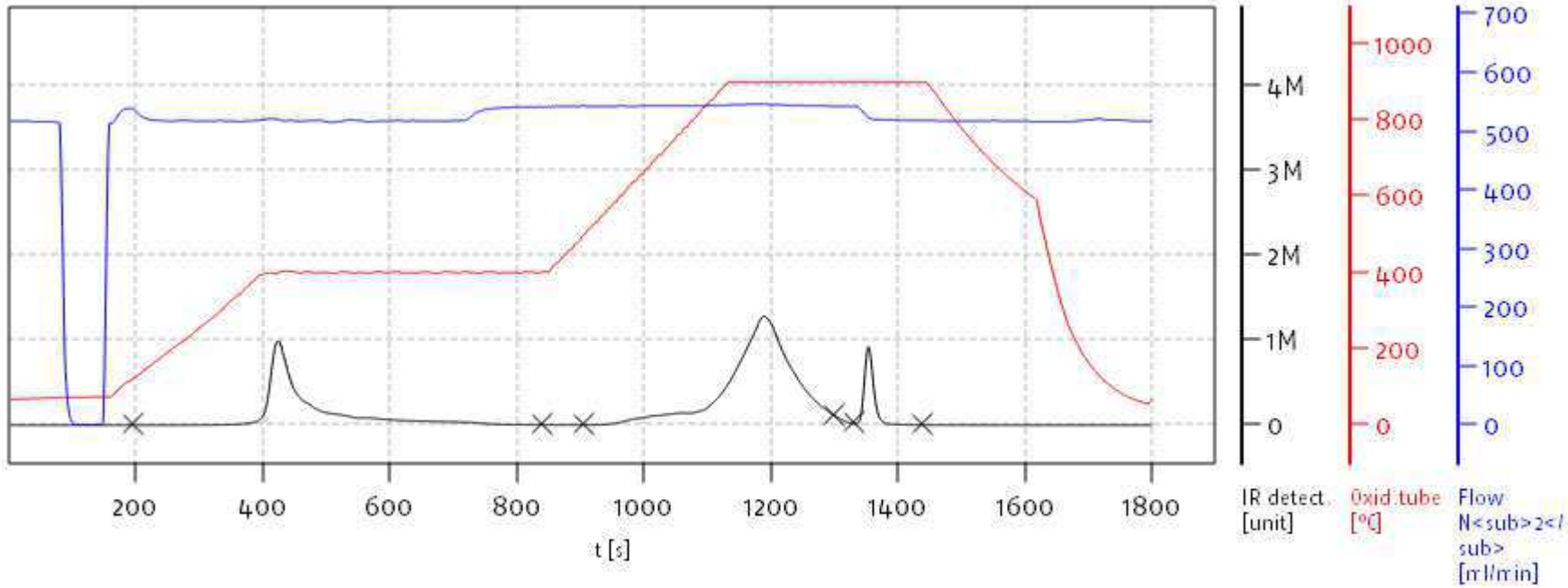
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
32	32	23G0087-06	357.10		CARBON	7/20/2023 11:35 AM	bl	1.217	2 331 960	3.603	0.252	595 852	5 400 030	0.966	2.386	0.9439	1.0000



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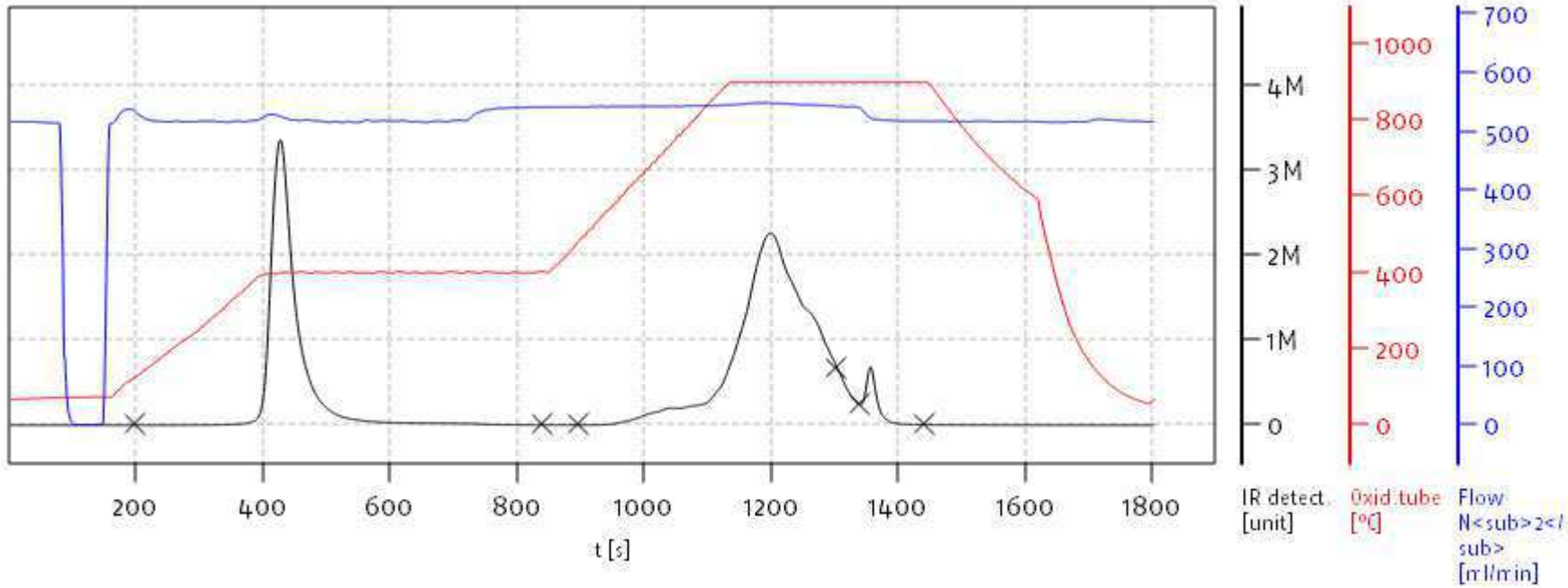
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
33	33	23G0087-07	542.20		CARBON	7/20/2023 12:06 PM	bl,C3o	1.759	5 816 180	4.922	0.161	578 203	10 841 400	1.598	3.163	0.9439	1.0000



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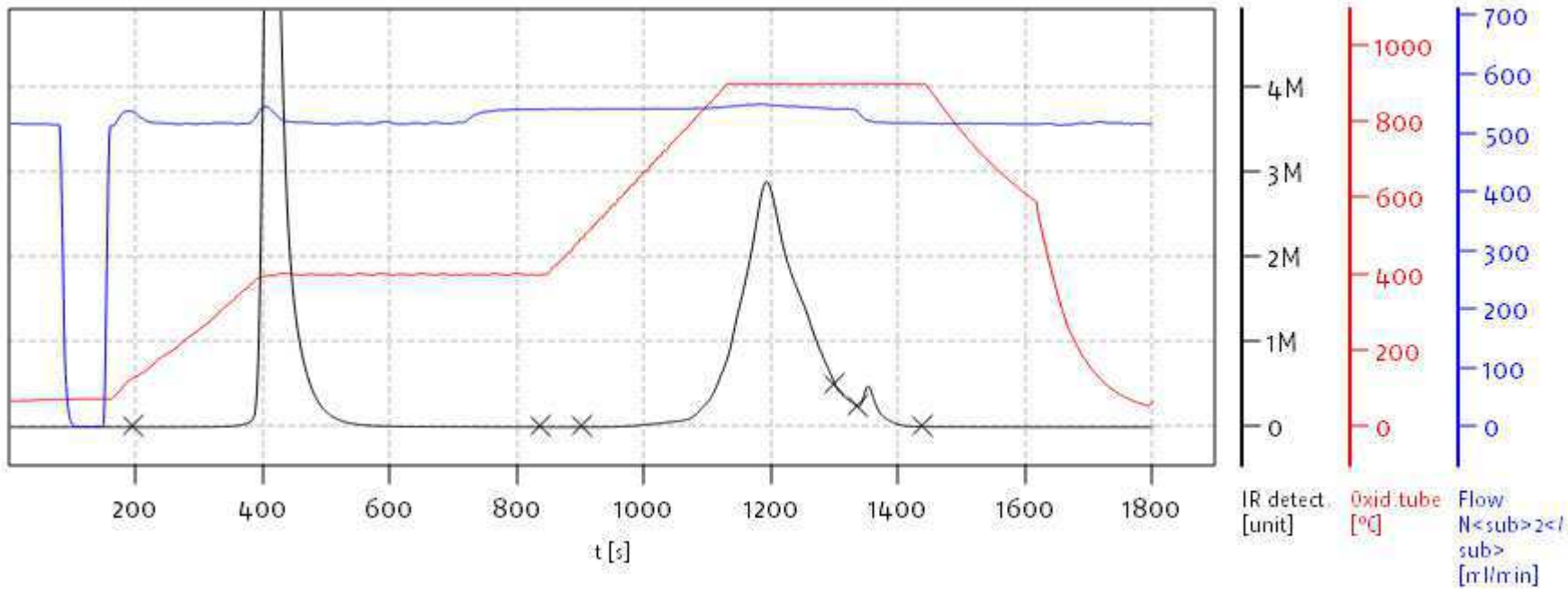
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
34	34	23G0087-08	545.20		CARBON	7/20/2023 12:36 PM	bl,C1o,C3o	3.277	11 410 400	6.664	0.151	548 726	11 671 900	3.125	3.387	0.9439	1.0000



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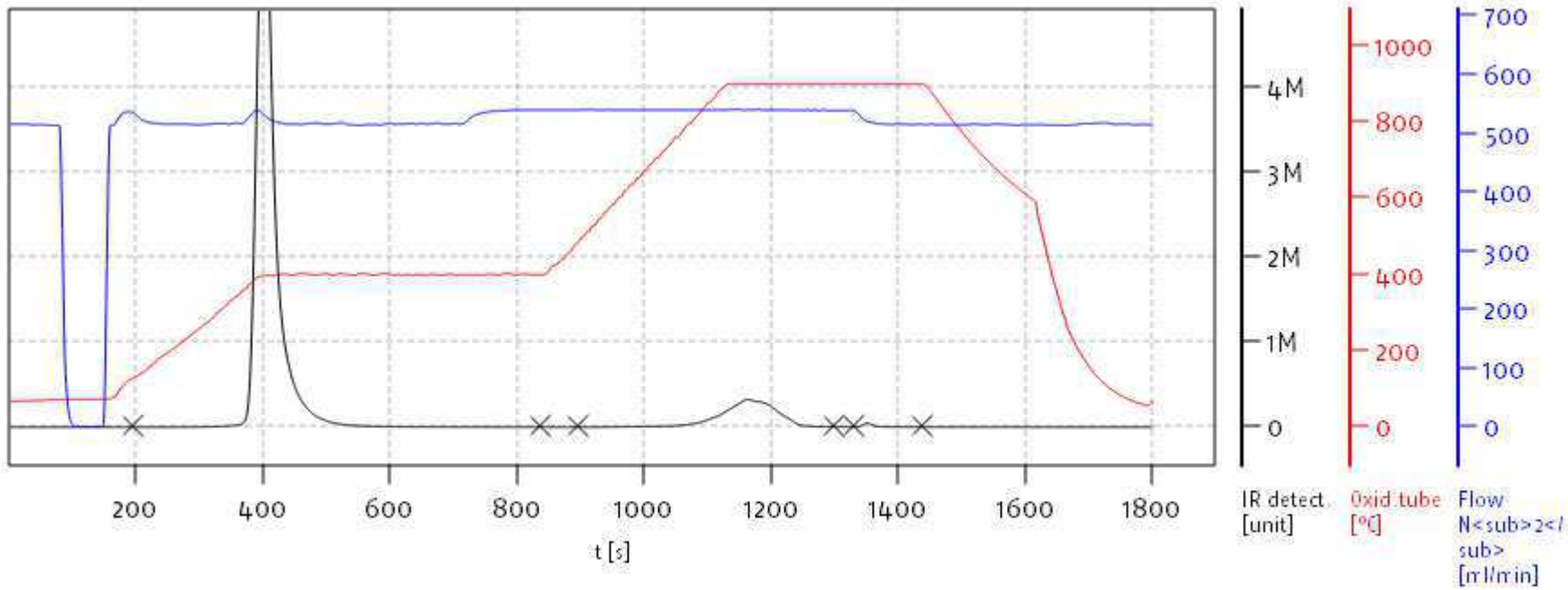
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
35	35	23G0087-09	257.60		CARBON	7/20/2023 1:06 PM	bl	4.850	8 365 300	5.581	0.005	37 055	1 215 600	4.845	0.731	0.9439	1.0000



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Date: Fri Jul 21 08:43:21 2023

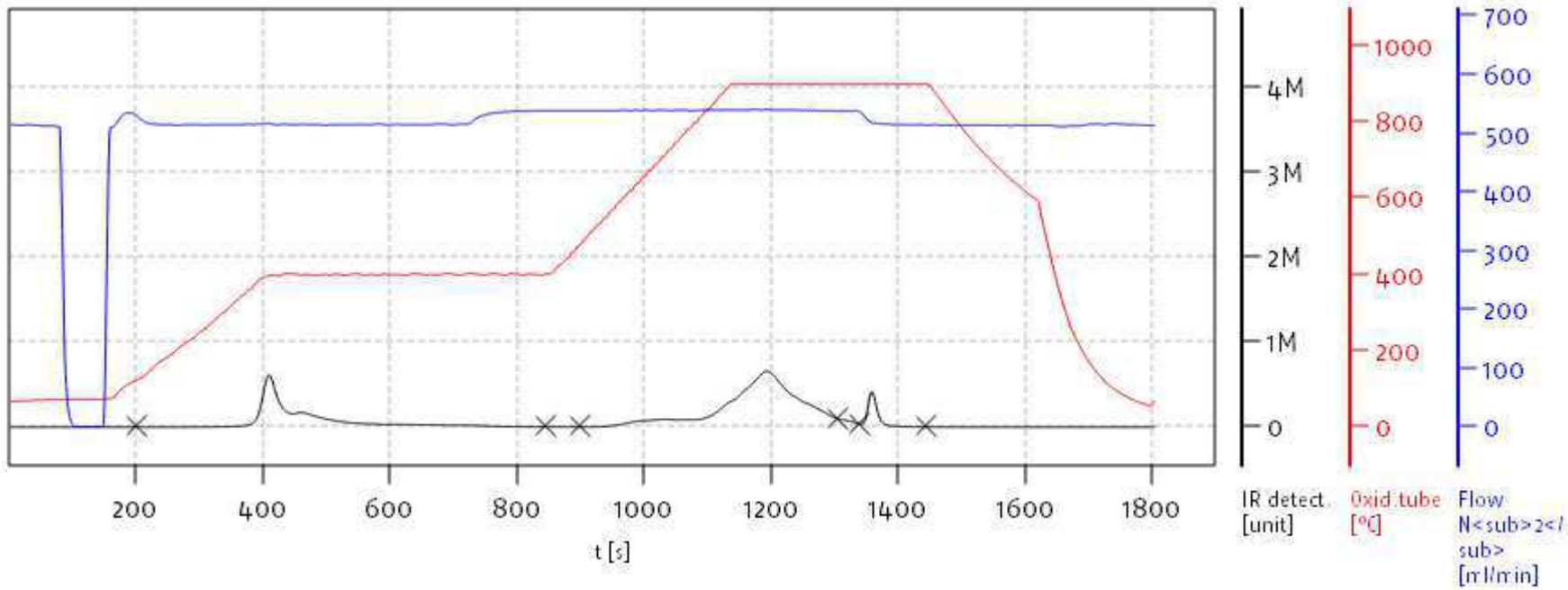
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Document: 071923 BFb from: --.--.-- (modified)

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
36	36	23G0087-10	227.90		CARBON	7/20/2023 1:37 PM	bl	1.068	1 384 830	3.240	0.177	282 933	3 149 870	0.891	2.172	0.9439	1.0000



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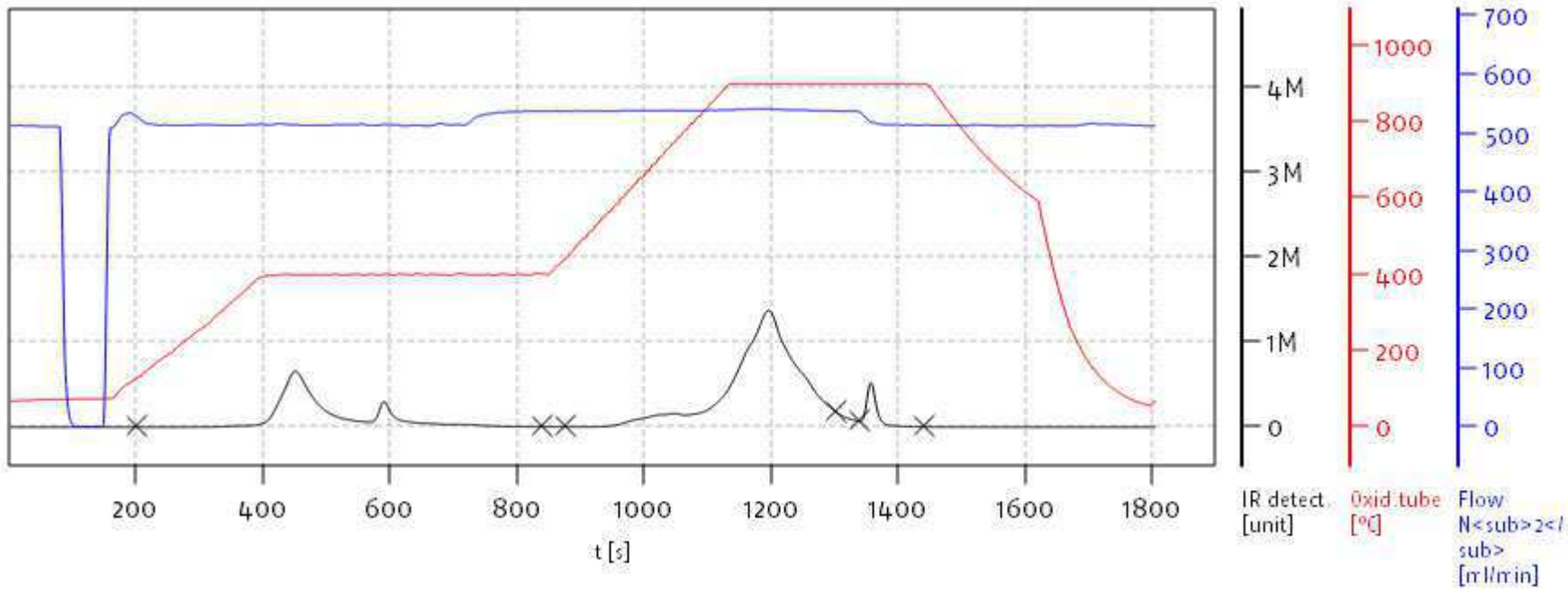
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
37	37	23G0087-11	567.50		CARBON	7/20/2023 2:07 PM	bl	0.659	2 162 960	2.312	0.096	373 106	5 941 130	0.563	1.652	0.9439	1.0000



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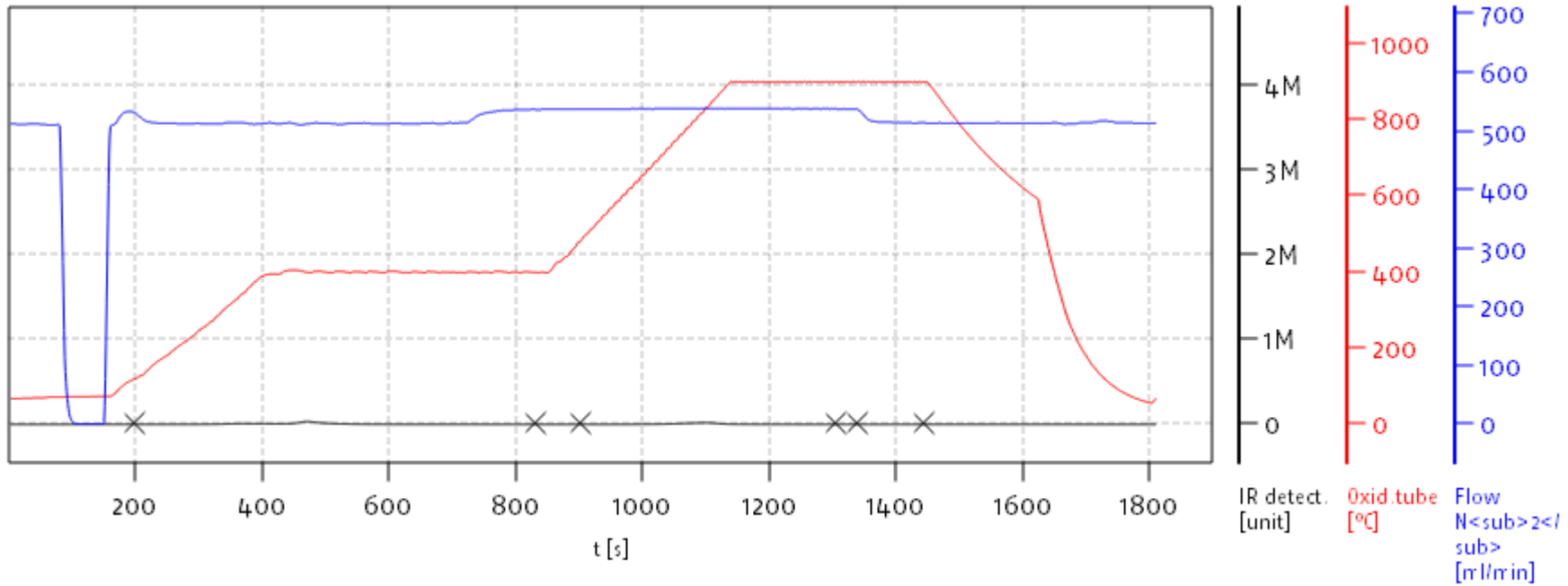
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
38	38	BLG0386-MRL1	509.60		CARBON	7/20/2023 2:38 PM	bl,C2u	0.021	99 608	0.028	0.000	310	52 114	0.021	0.007	0.9439	1.0000



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Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

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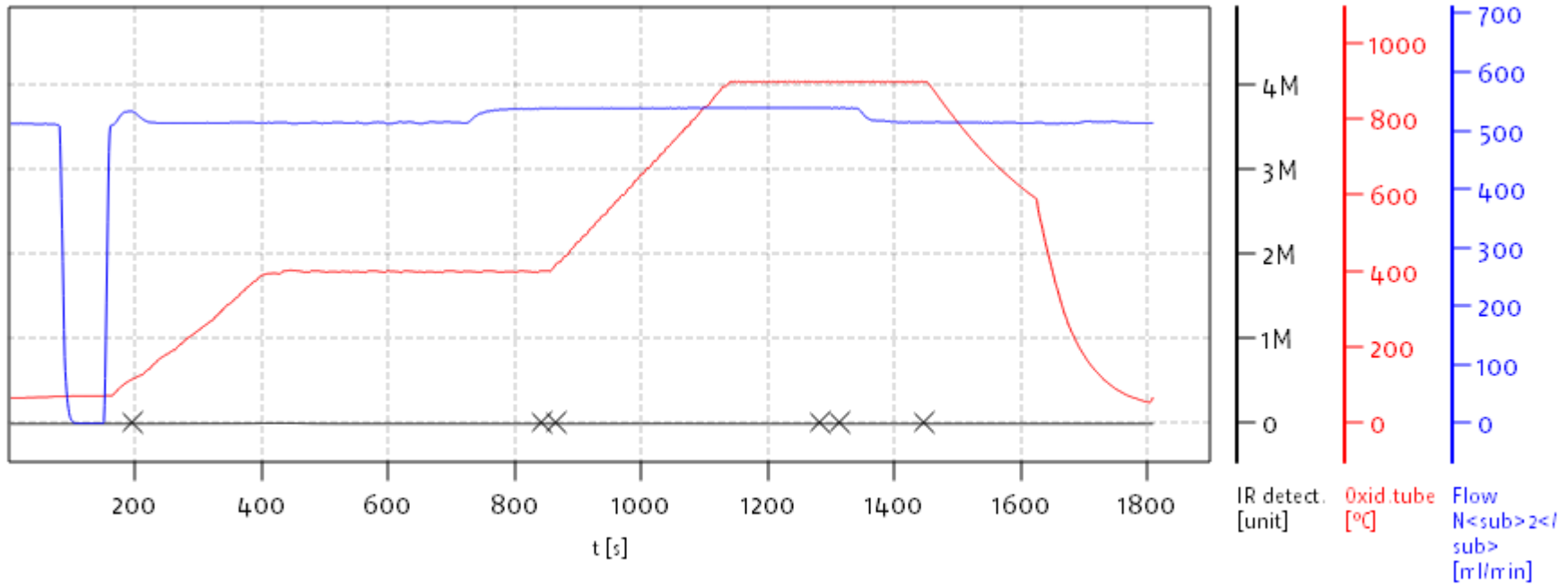
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
39	39	BLG0386-BLK1	531.00		CARBON	7/20/2023 3:08 PM	bl,C3u,C2u	0.002	34 298	0.002	0.000	531	8 320	0.002	0.000	0.9439	1.0000



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Balance: BAL3
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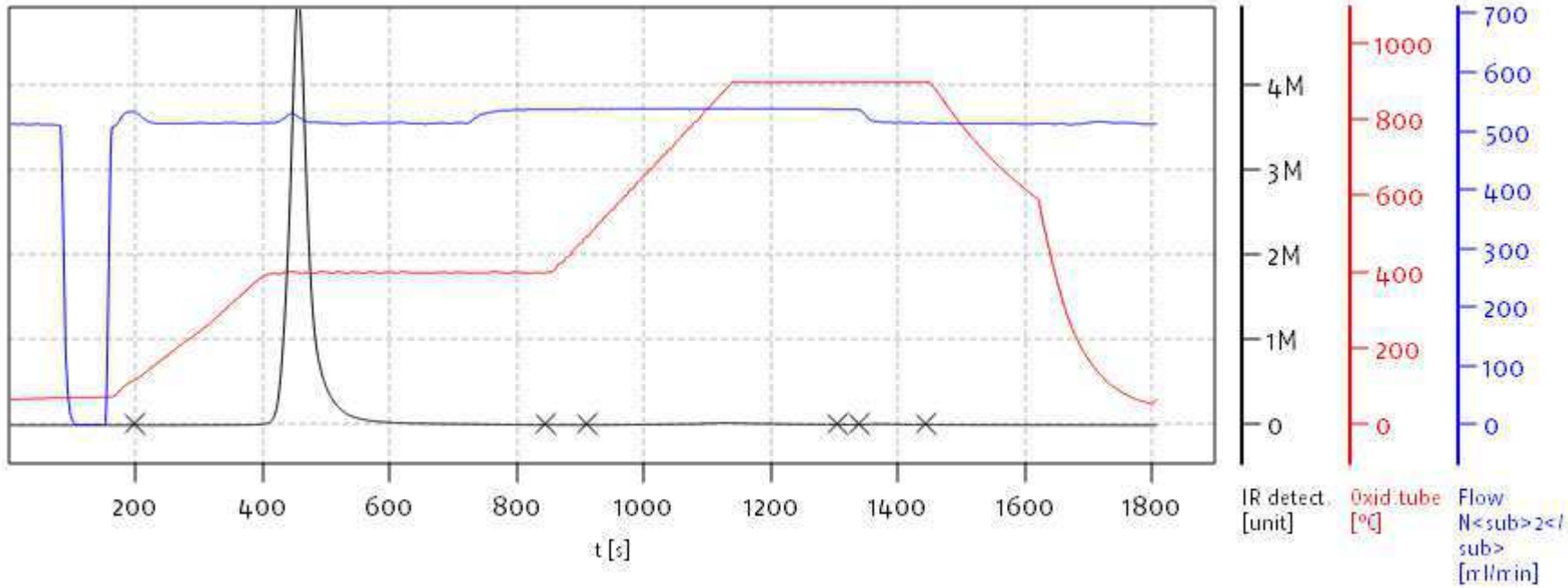
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
40	40	SLG0217-CCV3	22.90		CARBON	7/20/2023 3:39 PM	bl	45.221	6 938 760	46.248	0.045	35 421	177 157	45.176	1.027	0.9439	1.0000



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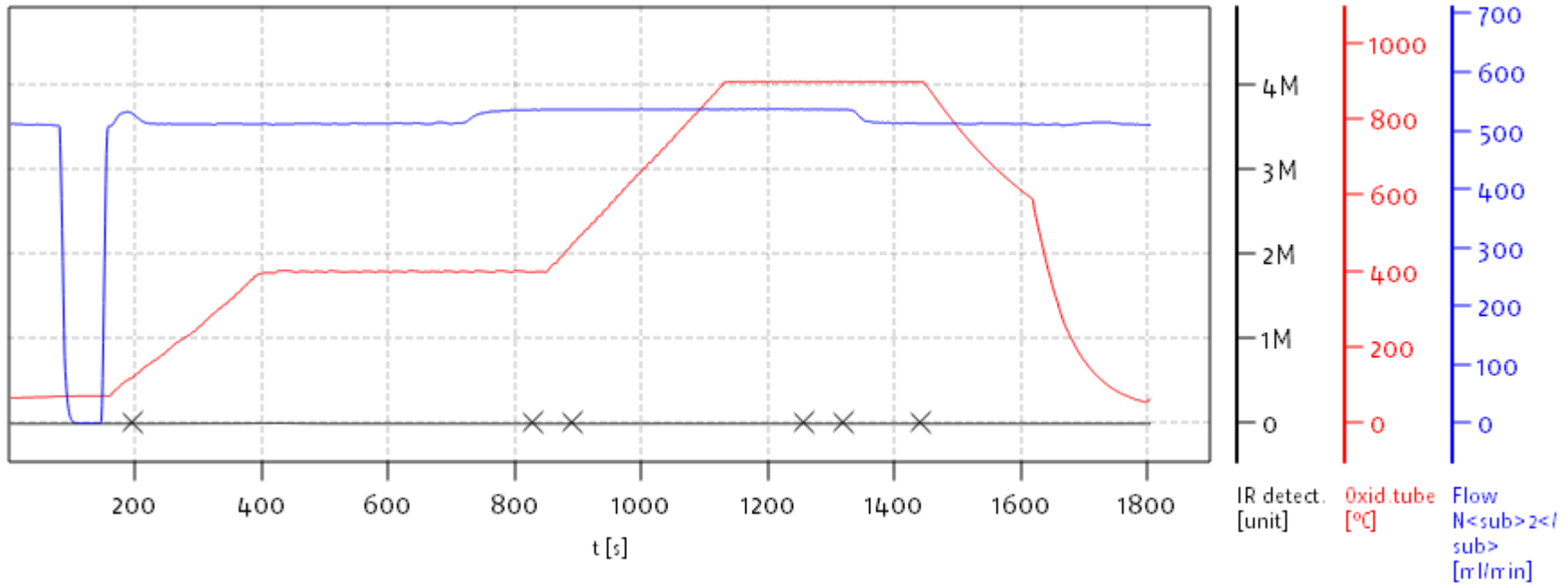
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
41	41	SLG0217-CCB3	507.20		CARBON	7/20/2023 4:09 PM	bl,C3u,C2u	0.000	27 301	0.000	0.000	728	4 254	0.000	0.000	0.9439	1.0000



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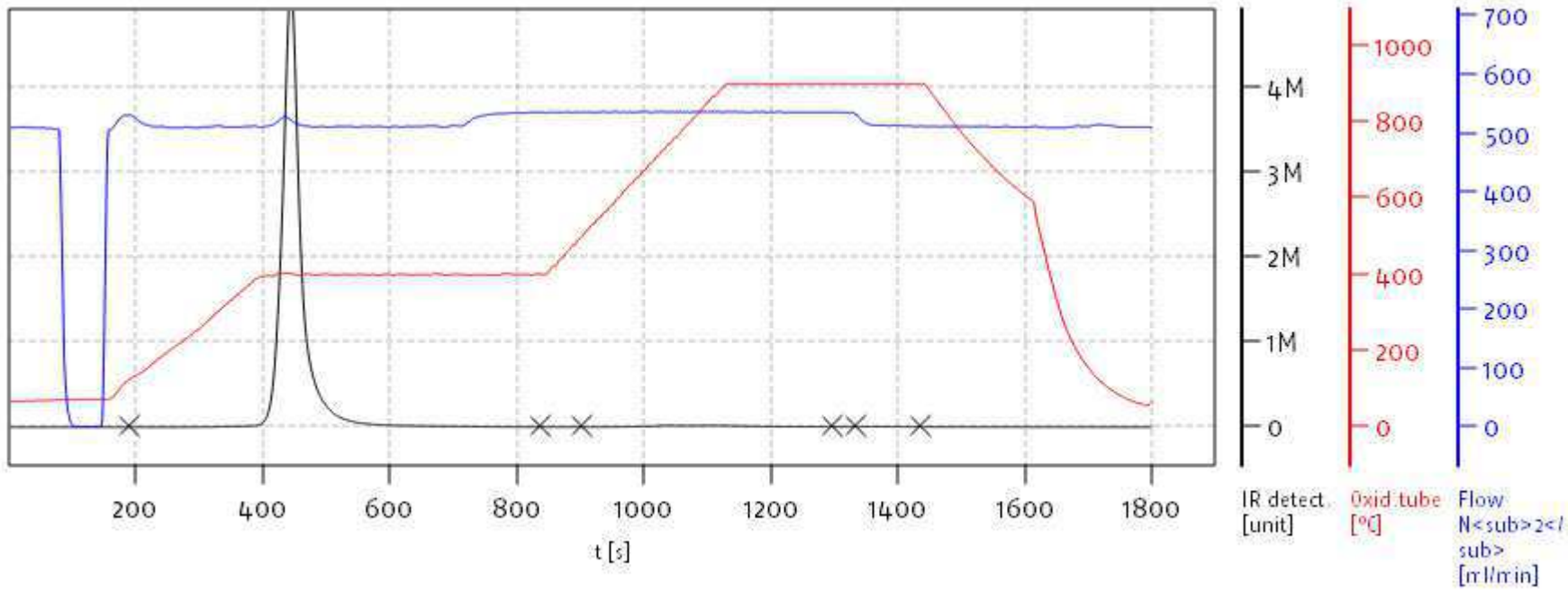
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
42	42	BLG0386-BS1	21.20		CARBON	7/20/2023 4:40 PM	bl,C2u	47.137	6 703 600	47.978	0.000	19 633	141 287	47.137	0.841	0.9439	1.0000



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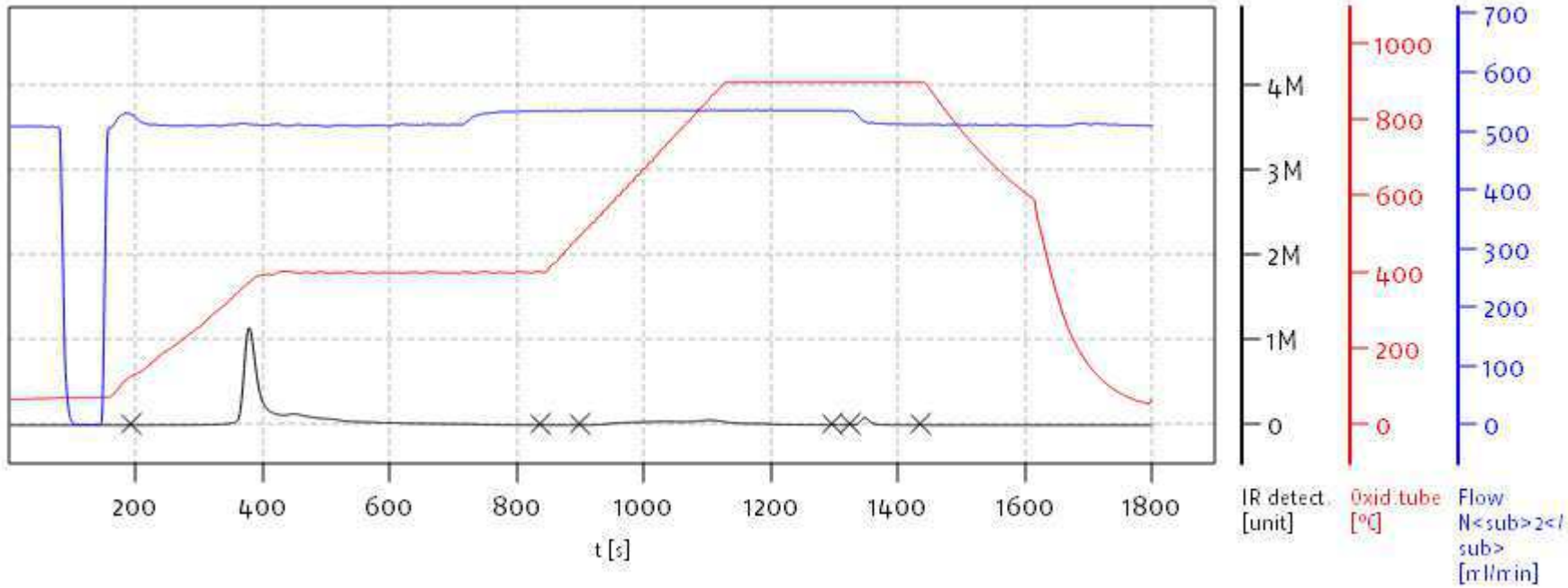
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
43	43	23G0052-01	176.90		CARBON	7/20/2023 5:10 PM	bl	1.451	1 710 160	1.747	0.028	60 237	358 706	1.423	0.296	0.9439	1.0000



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Soli TOC Cube, Carbon
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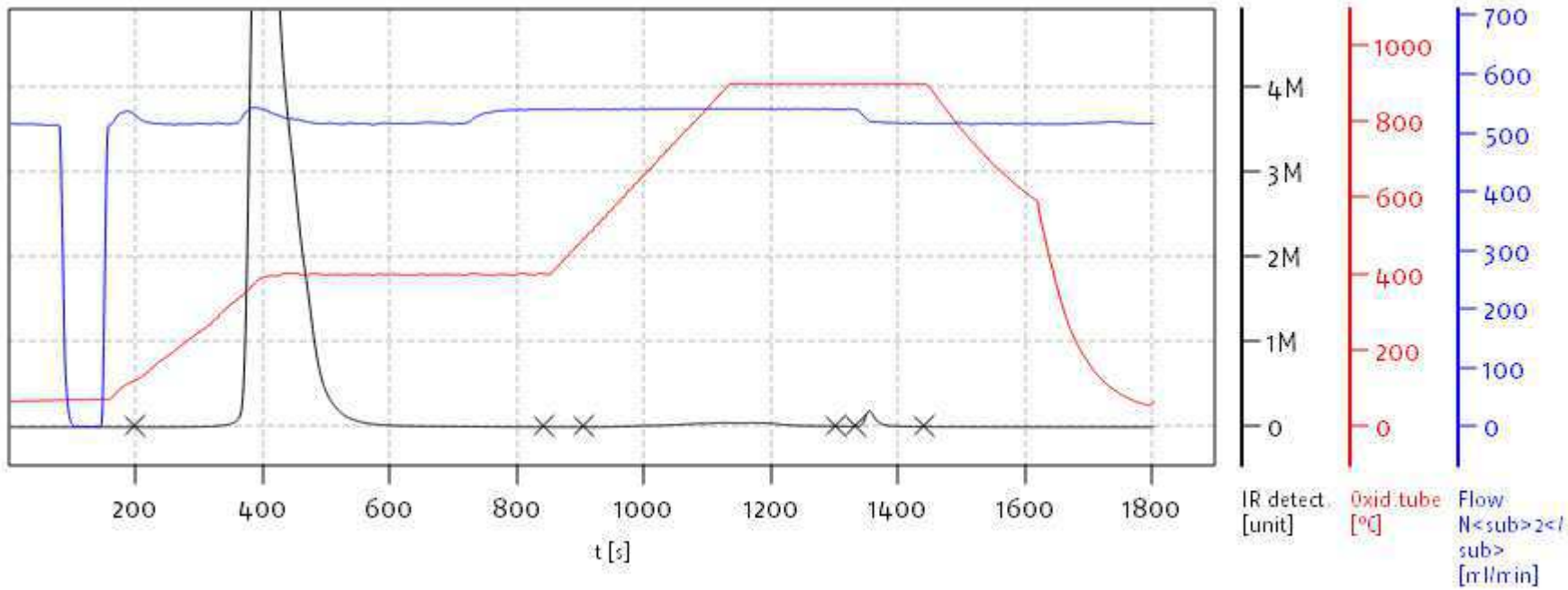
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
45	46	23G0052-02	506.40		CARBON	7/20/2023 8:50 PM	bl,C1o	5.472	18 397 560	5.582	0.041	160 526	380 527	5.431	0.110	0.9439	1.0000



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Soli TOC Cube, Carbon
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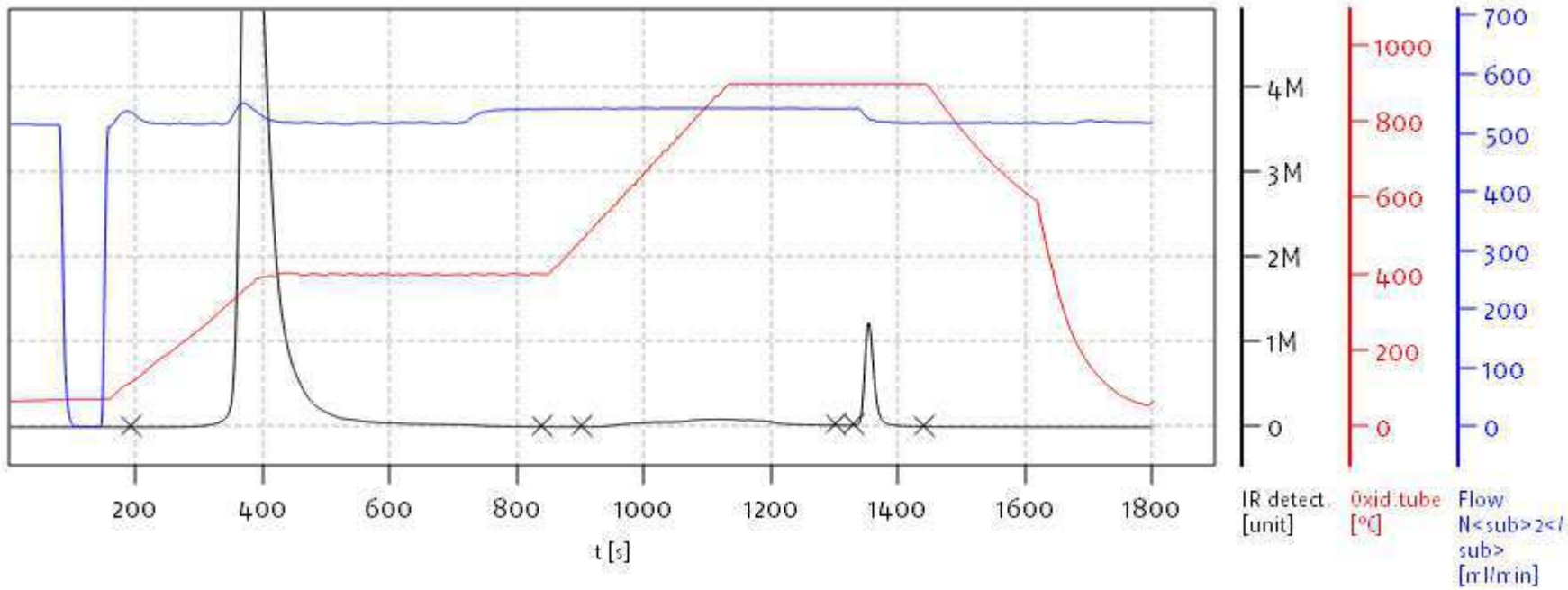
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
46	47	23G0052-03	510.70		CARBON	7/20/2023 9:21 PM	bl,C1o	4.873	15 811 738	5.101	0.246	820 635	765 117	4.627	0.229	0.9439	1.0000



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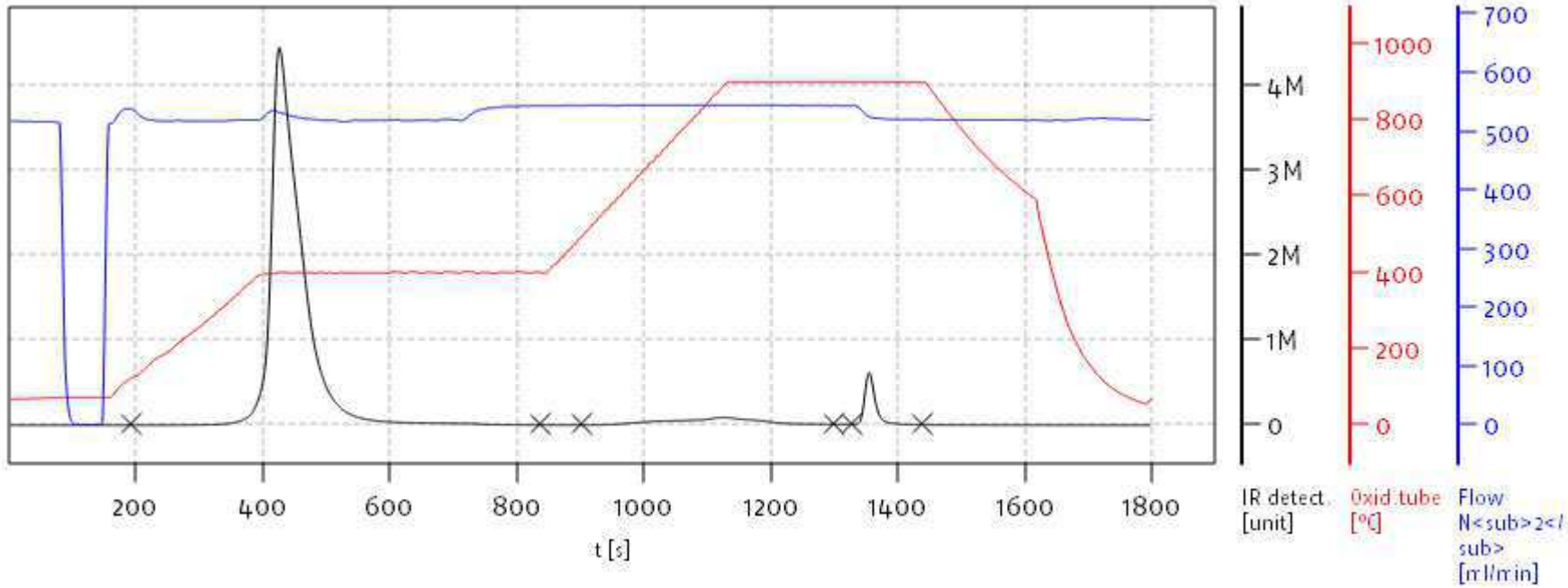
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
47	48	23G0052-04	601.40		CARBON	7/20/2023 9:51 PM	bl,C1o	2.389	9 165 676	2.530	0.114	461 609	565 257	2.275	0.141	0.9439	1.0000



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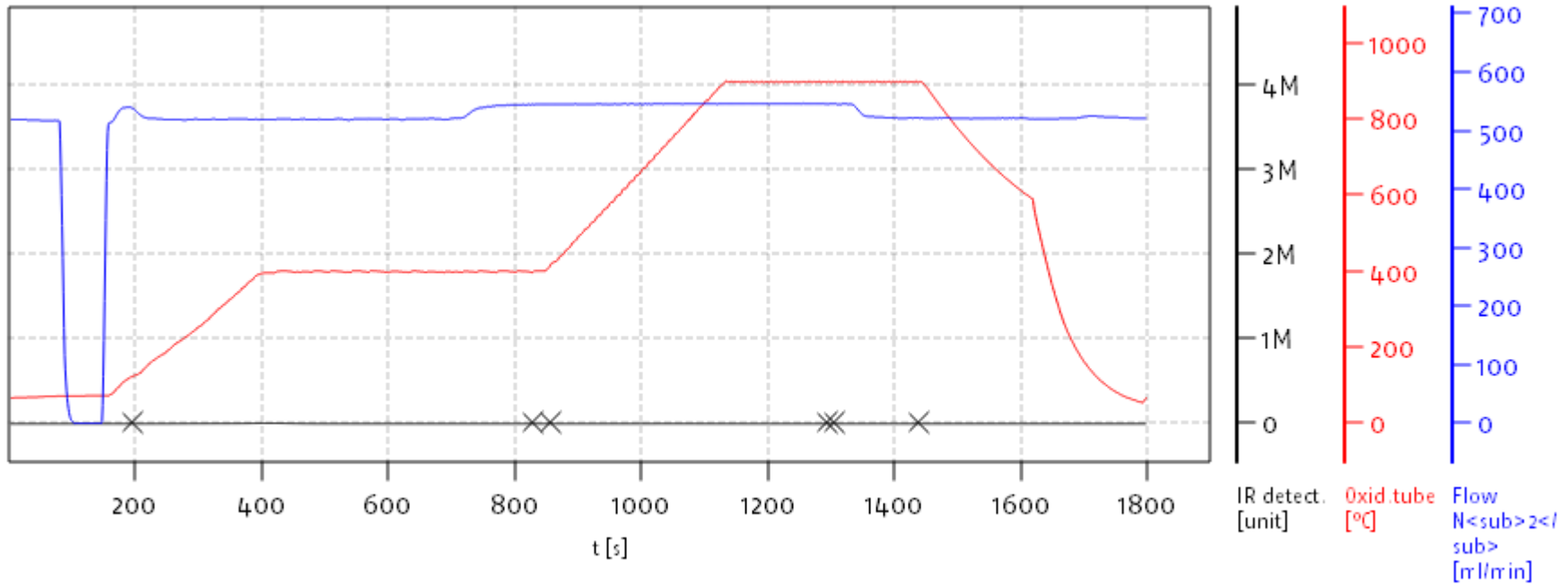
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
48	49	BLANK	1.00		CARBON	7/ 20/2023 10:22 PM	bl	0.000	27 965	0.000	0.000	710	5 051	0.000	0.000	0.9439	1.0000



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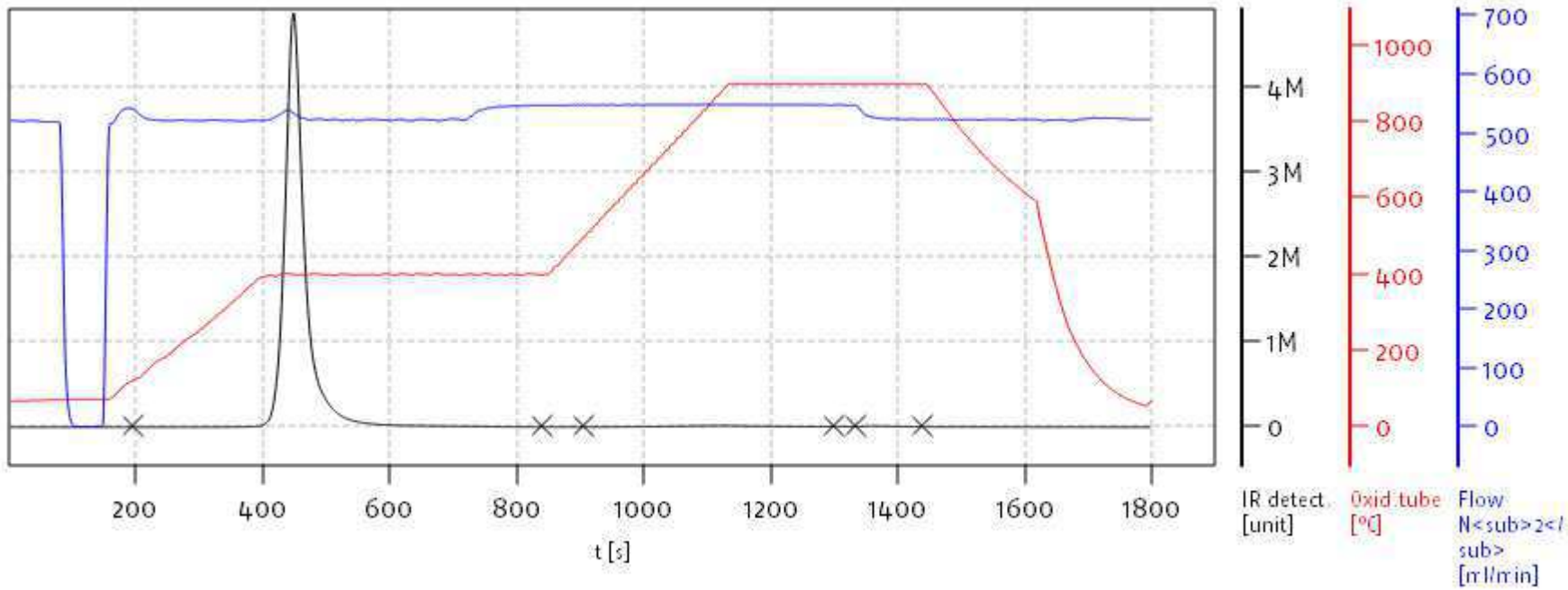
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
49	50	Dfactor	22.00		CARBON	7/20/2023 10:52 PM	bl	44.455	6 670 088	45.140	0.010	30 220	123 866	44.446	0.685	0.9283	1.0000



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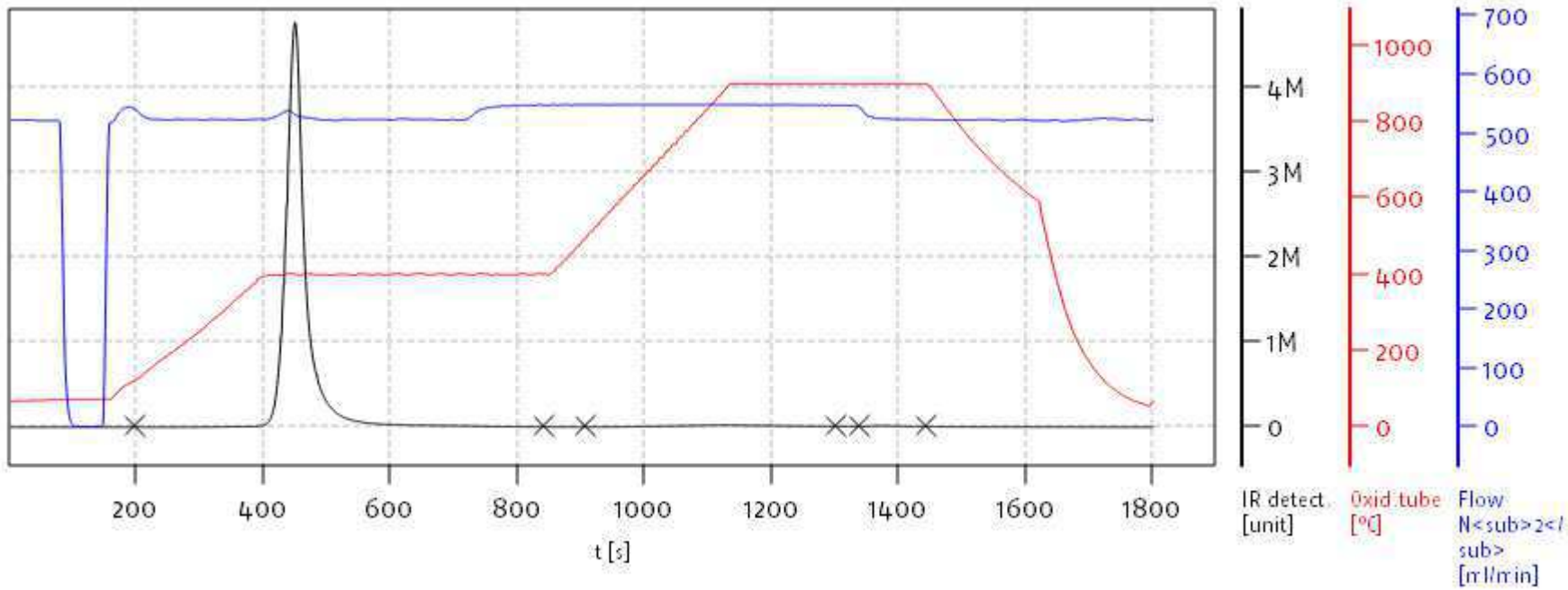
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
50	51	Dfactor	21.50		CARBON	7/20/2023 11:22 PM	bl	44.529	6 339 806	45.678	0.083	40 161	184 568	44.446	1.149	0.9546	1.0000



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Soli TOC Cube, Carbon
Balance: BAL3
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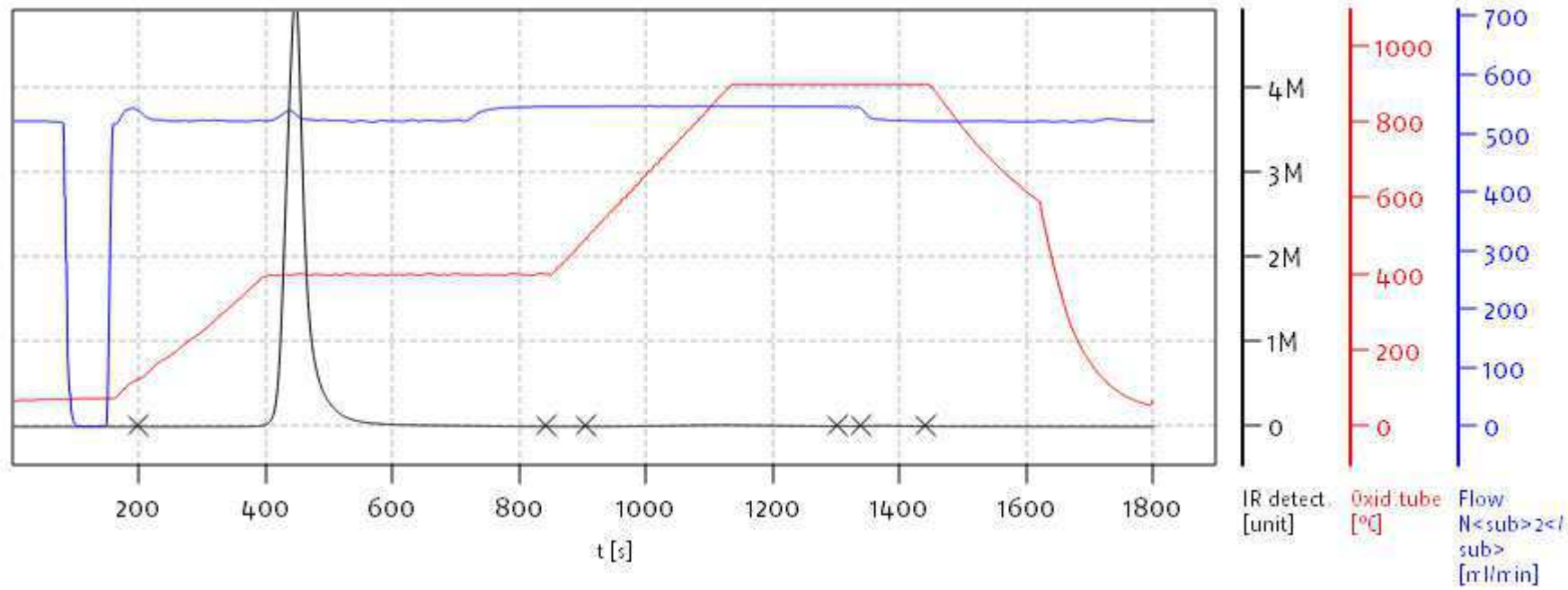
Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
51	52	SLG0217-CCV4	23.00		CARBON	7/20/2023 11:53 PM	bl	44.718	6 916 627	45.538	0.000	28 140	147 771	44.718	0.820	0.9414	1.0000



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Soli TOC Cube, Carbon
Balance: BAL3
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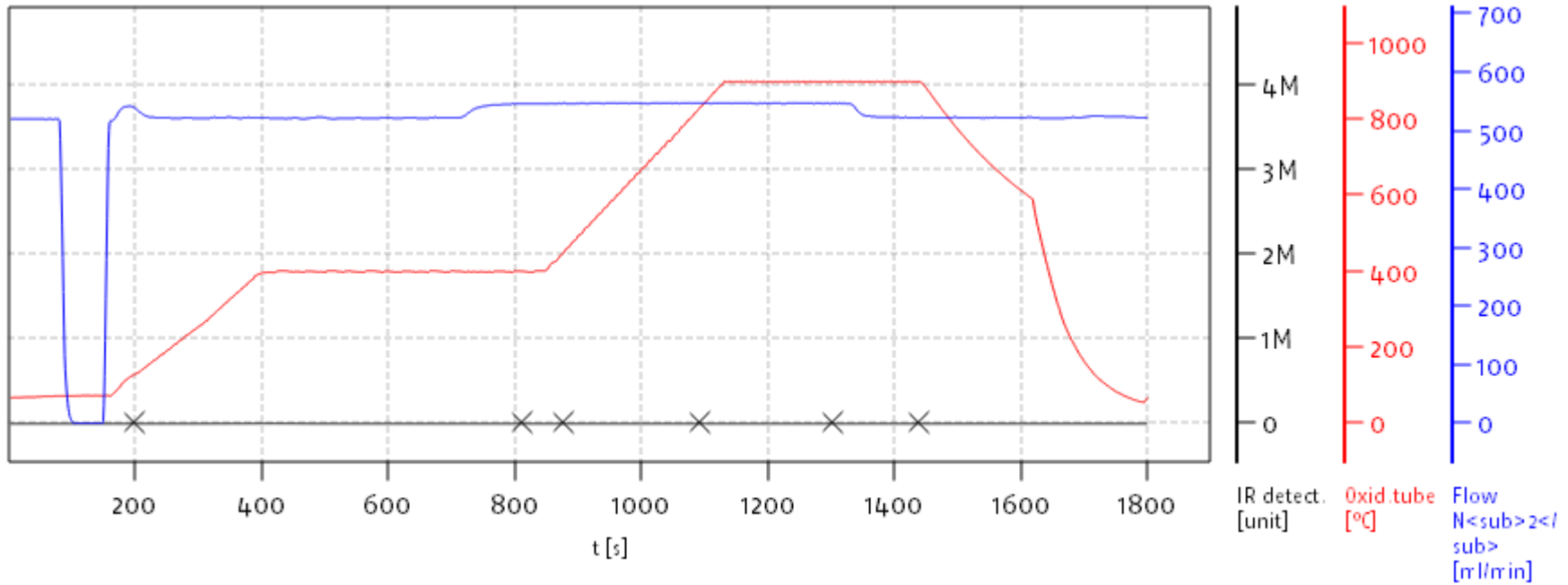
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
52	53	SLG0217-CCB4	574.10		CARBON	7/21/2023 12:23 AM	bl,C1u,C3u,C2u	0.000	11 979	0.000	0.000	1 030	232	0.000	0.000	0.9414	1.0000



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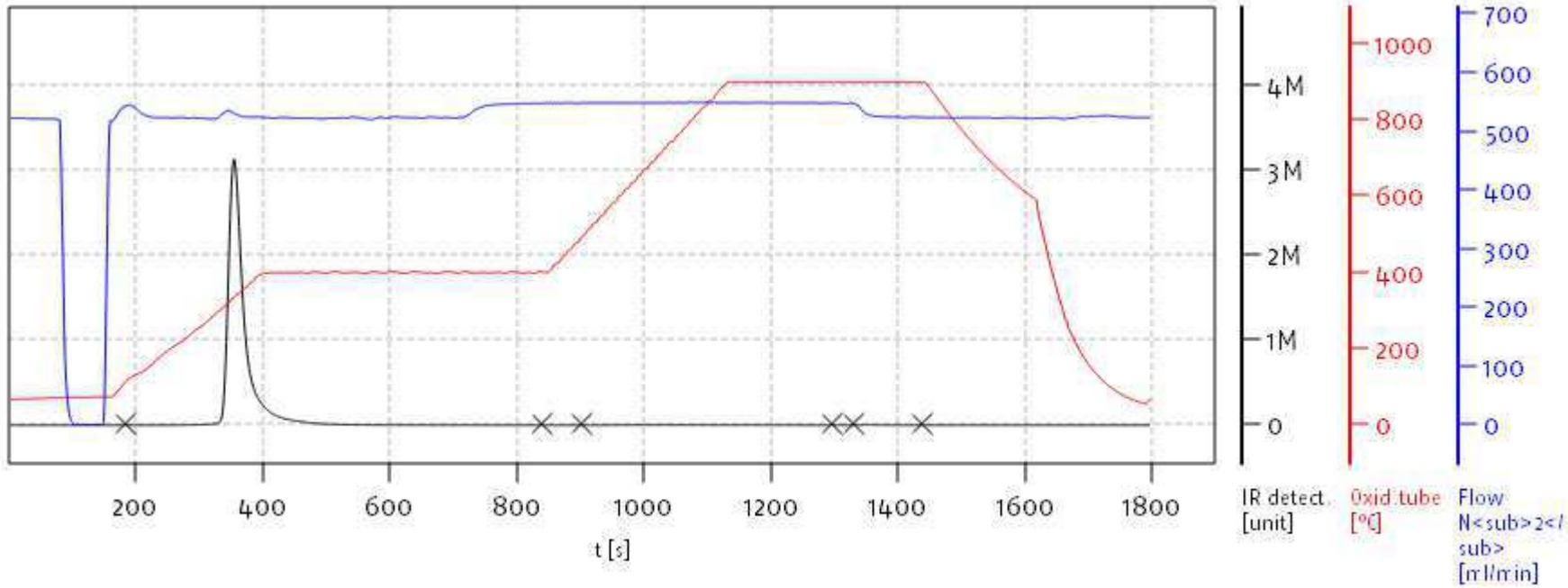
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
53	54	23G0052-05	118.70		CARBON	7/21/2023 12:53 AM	bl,C2u	4.304	3 450 511	4.304	0.000	5 971	23 826	4.304	0.000	0.9414	1.0000



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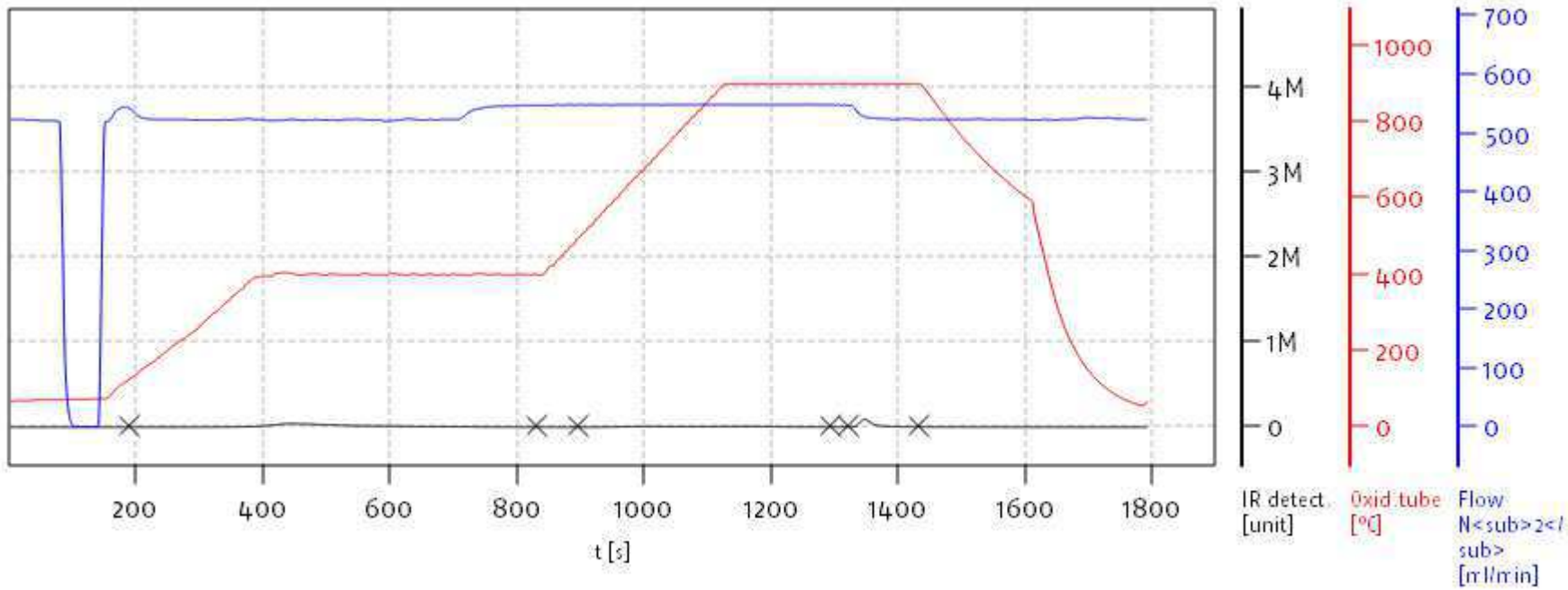
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
54	55	23G0134-01	655.80		CARBON	7/21/2023 1:24 AM	bl	0.062	241 117	0.074	0.014	84 861	77 475	0.048	0.012	0.9414	1.0000



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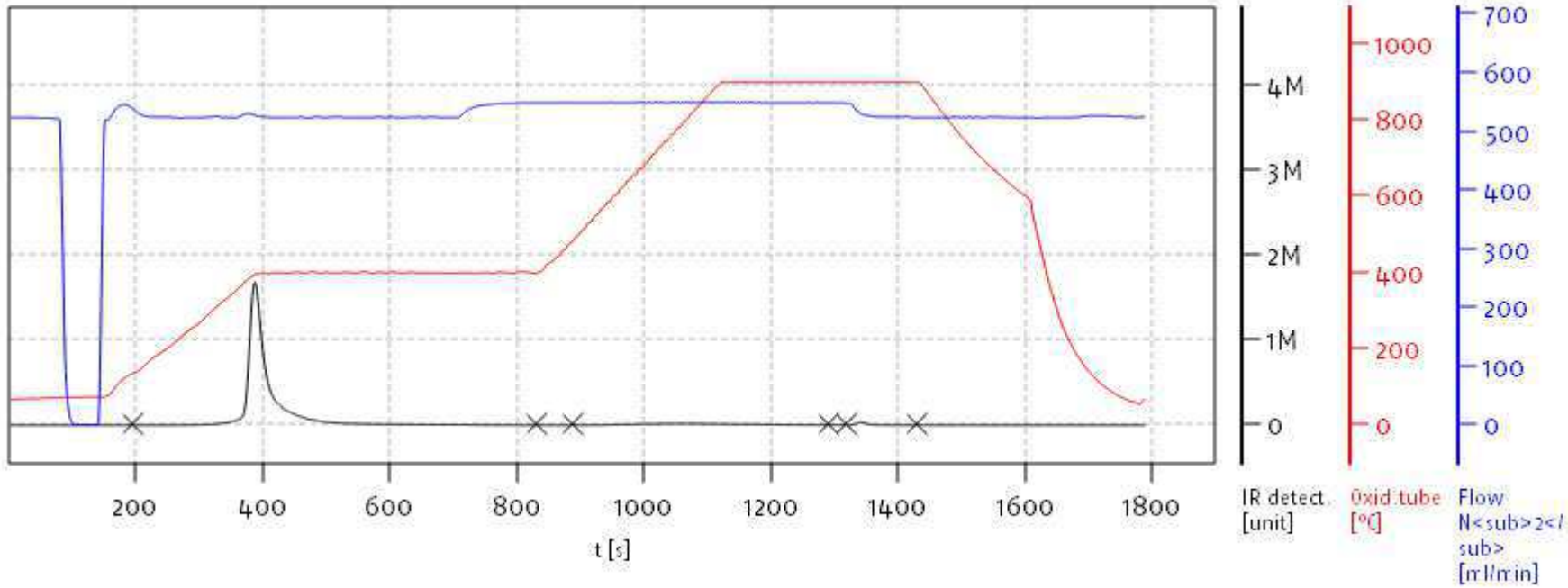
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
55	56	23G0135-01	69.90		CARBON	7/21/2023 1:54 AM	bl	4.516	2 142 798	4.754	0.000	26 166	133 949	4.516	0.238	0.9414	1.0000



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Access: soliTOC superuser

Date: Fri Jul 21 08:43:21 2023

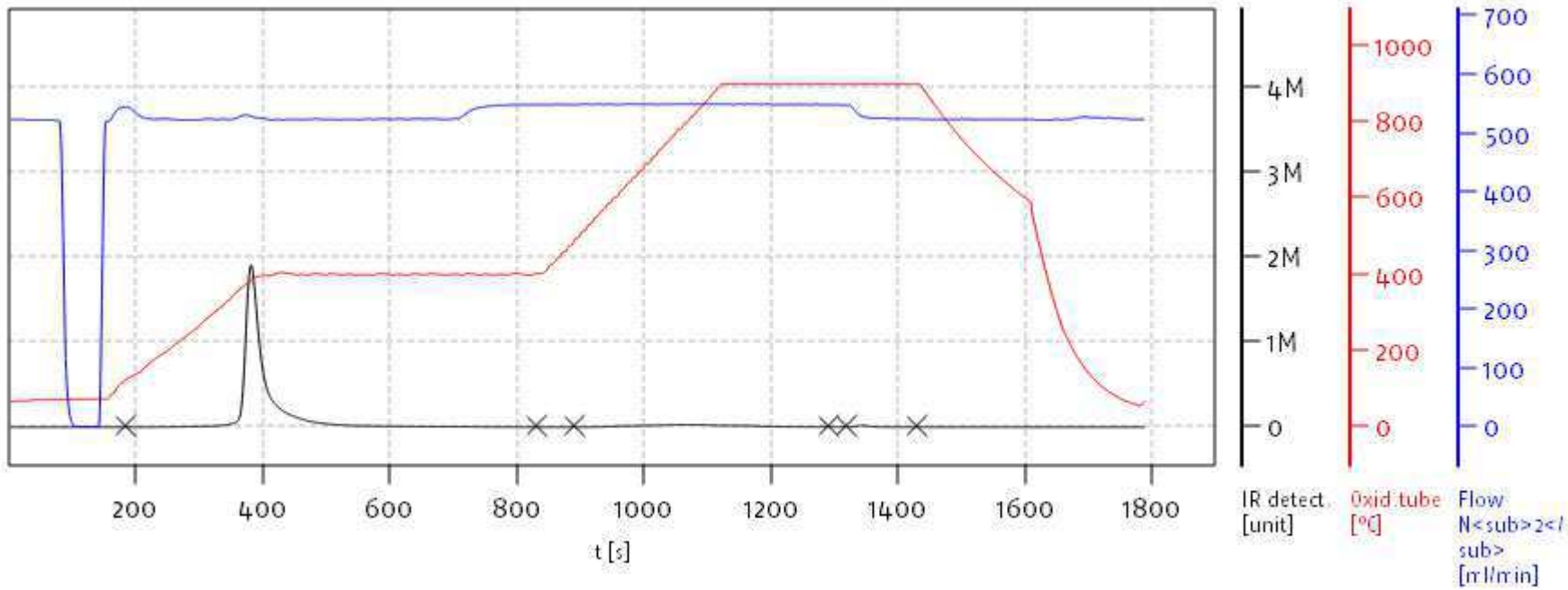
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Document: 071923 BFb from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
56	57	23G0135-02	66.50		CARBON	7/21/2023 2:24 AM	bl,C2u	5.355	2 413 485	5.745	0.000	18 256	192 446	5.355	0.390	0.9414	1.0000



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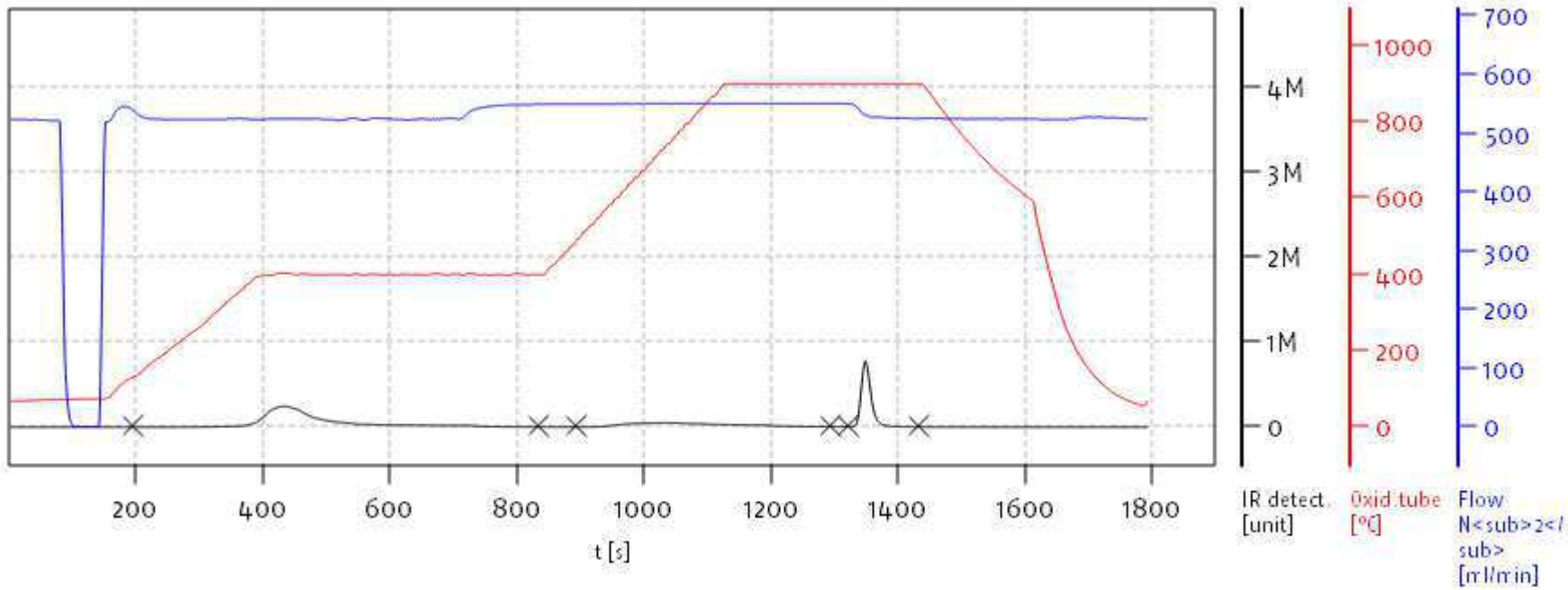
Access: soliTOC superuser

Date: Fri Jul 21 08:43:21 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
57	58	23G0349-01	519.00		CARBON	7/21/2023 2:54 AM	bl	0.434	1 007 007	0.539	0.152	527 062	373 843	0.281	0.105	0.9414	1.0000



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Date: Fri Jul 21 08:43:21 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
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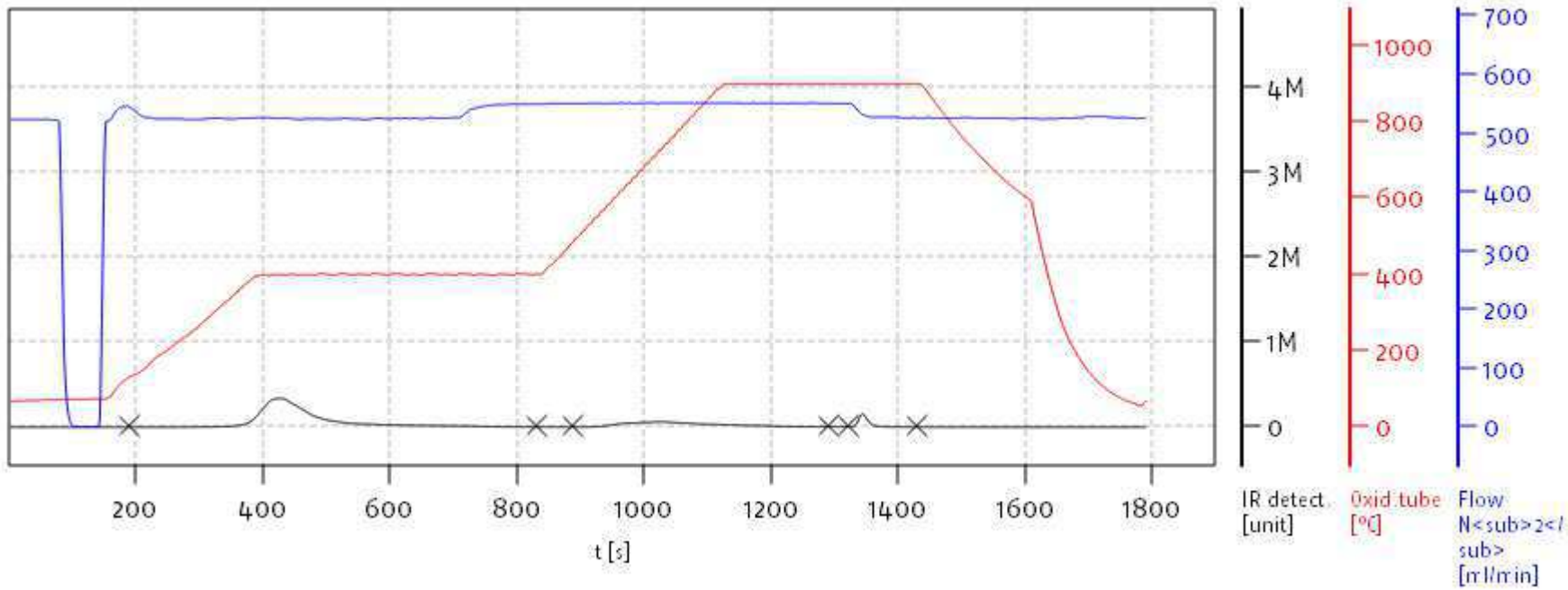
Document: 071923 BFb from: --.--.-- (modified)

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
58	59	23G0349-02	509.90		CARBON	7/21/2023 3:24 AM	bl	0.391	1 283 312	0.506	0.024	106 092	398 779	0.367	0.115	0.9414	1.0000



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Date: Fri Jul 21 08:43:21 2023

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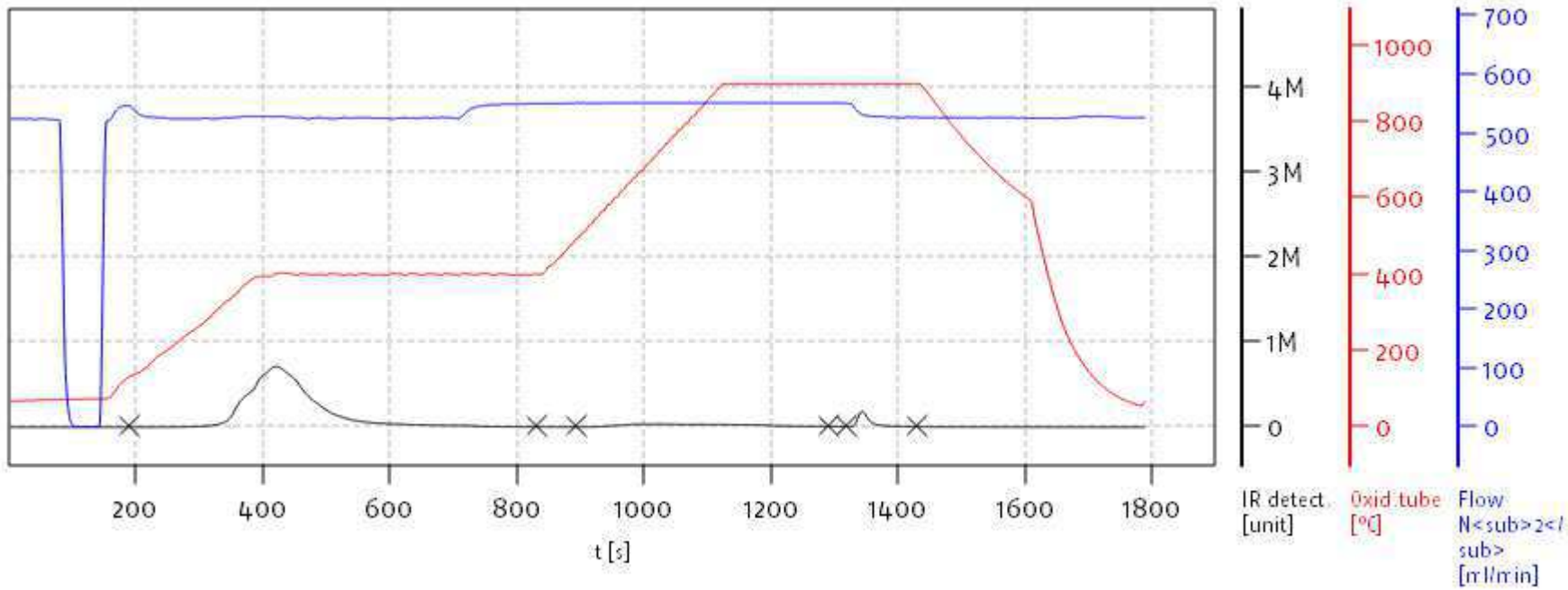
Document: 071923 BFb from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
59	60	23G0352-01	523.60		CARBON	7/21/2023 3:55 AM	bl	0.933	3 159 712	1.022	0.040	161 413	321 855	0.893	0.089	0.9414	1.0000



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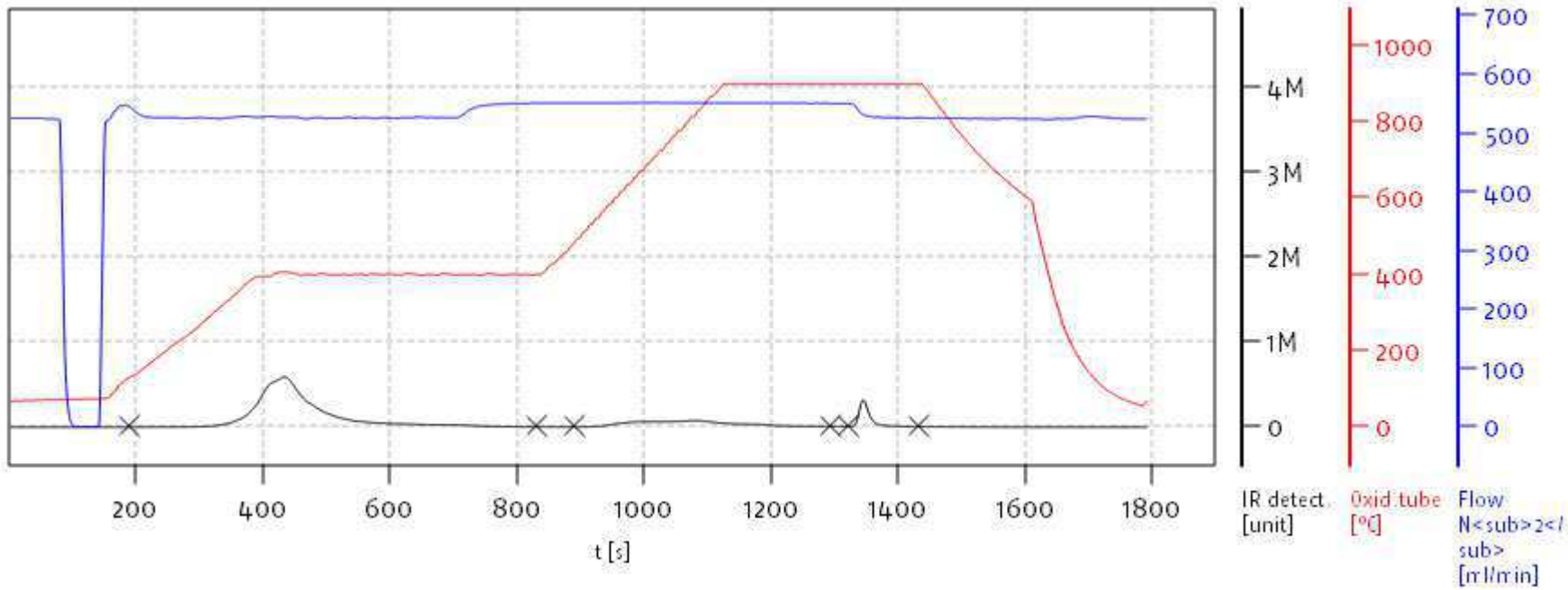
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
60	61	23G0354-01	524.60		CARBON	7/21/2023 4:25 AM	bl	0.731	2 366 966	0.892	0.066	246 339	561 816	0.666	0.161	0.9414	1.0000



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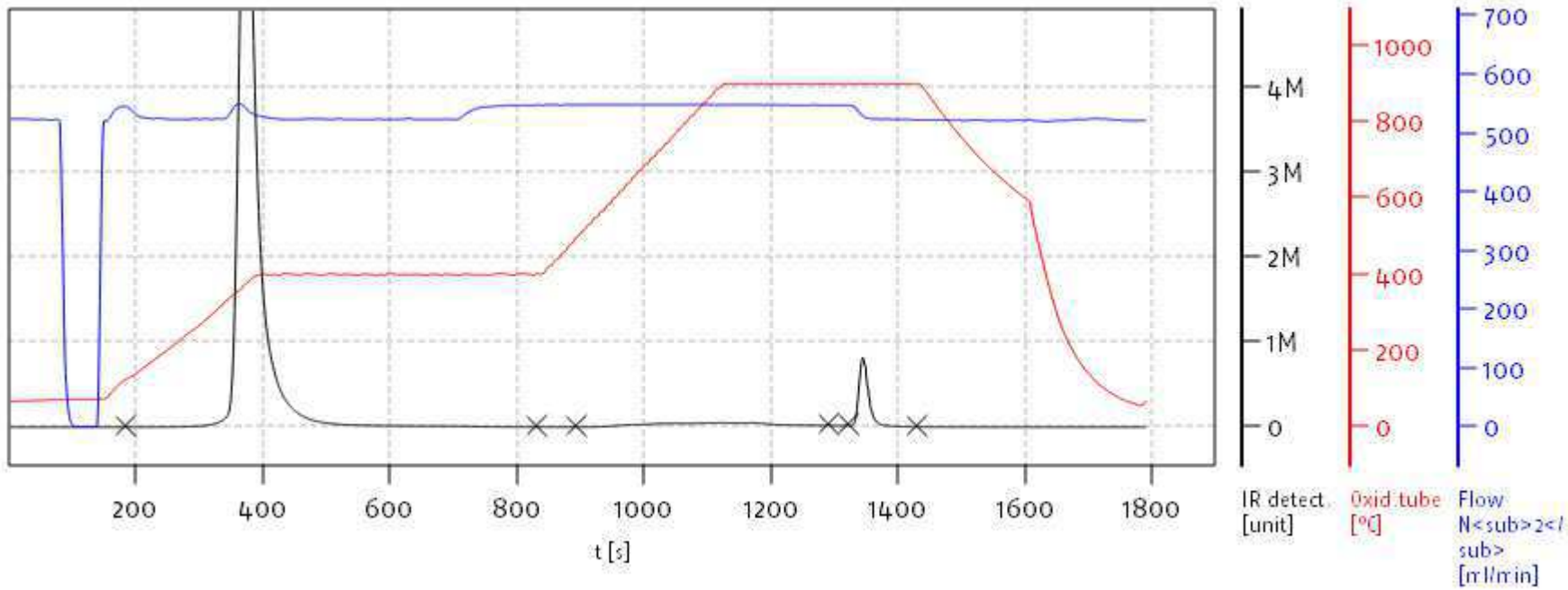
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
61	62	23G0356-01	213.60		CARBON	7/21/2023 4:55 AM	bl,C1o	6.918	9 362 728	7.243	0.393	558 183	466 529	6.525	0.325	0.9414	1.0000



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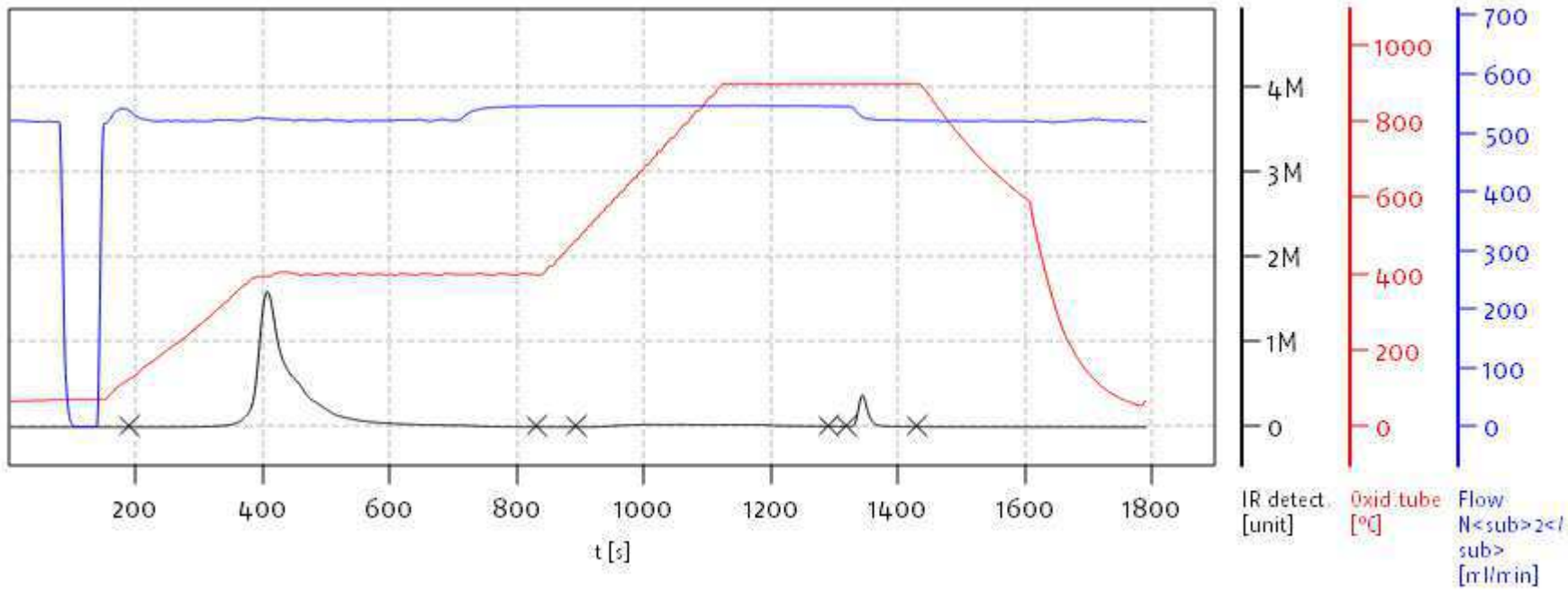
Document: 071923 BFb from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
62	63	23G0374-01	516.20		CARBON	7/21/2023 5:25 AM	bl	1.152	3 766 038	1.236	0.071	259 323	302 747	1.081	0.084	0.9414	1.0000



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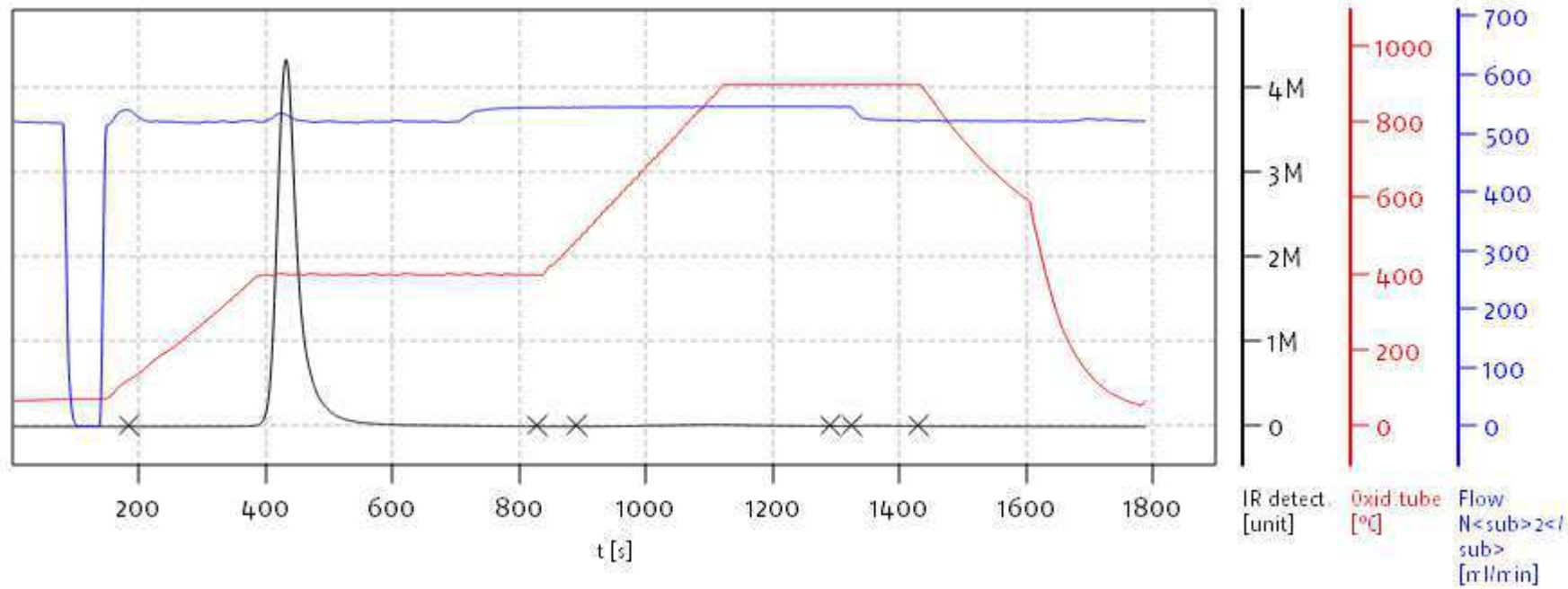
Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
63	64	SLG0217-CCV5	21.80		CARBON	7/21/2023 5:56 AM	bl	44.238	6 486 658	45.289	0.004	29 354	173 324	44.234	1.051	0.9414	1.0000



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Date: Fri Jul 21 08:43:21 2023

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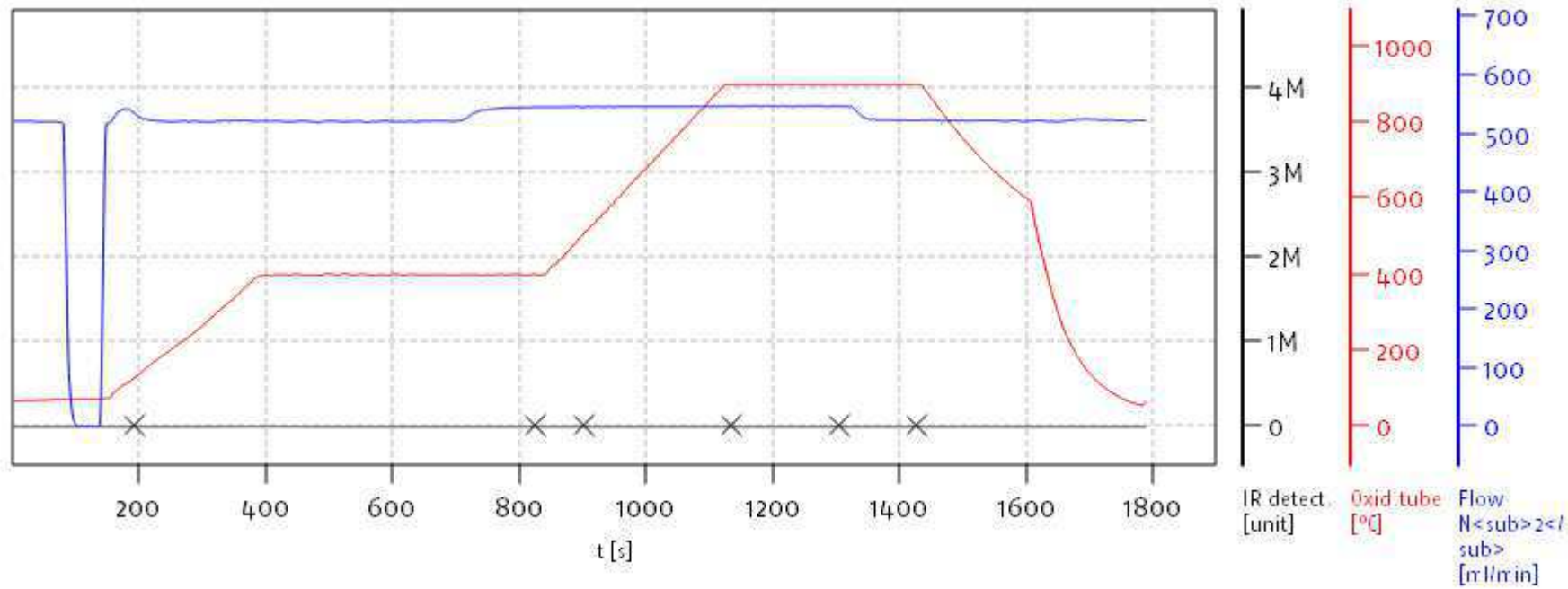
Document: 071923 BFb from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
64	65	SLG0217-CCB5	605.50		CARBON	7/21/2023 6:26 AM	bl,C1u,C3u,C2u	0.000	9 468	0.000	0.000	790	595	0.000	0.000	0.9414	1.0000



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Date: Fri Jul 21 08:43:21 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Document: 071923 BFb from: --.--.-- (modified)

INITIAL CALIBRATION DATA

EPA 9060A m

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GE00052
Instrument: TOC Cube
Calibration Date: 05/17/2023 10:07

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF
Total Organic Carbon	0.0081413	2824365	0.015378	1908831	0.02171	2161539	0.030153	2354094	0.04523	1647690	0.060306	1529782
Total Carbon	0.0081413	2824365	0.015378	1908831	0.02171	2161539	0.030153	2354094	0.04523	1647690	0.060306	1529782
Total Inorganic Carbon	0.0081413	2824365	0.015378	1908831	0.02171	2161539	0.030153	2354094	0.04523	1647690	0.060306	1529782
% Soot	0.0081413	2824365	0.015378	1908831	0.02171	2161539	0.030153	2354094	0.04523	1647690	0.060306	1529782

INITIAL CALIBRATION DATA

EPA 9060A m

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GE00052
Instrument: TOC Cube
Calibration Date: 05/17/2023 10:07

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF
Total Organic Carbon	0.075081	1526165	0.092268	1411324	0.12031	1696235	0.15107	1646548	0.24	1507392	0.306	1652209
Total Carbon	0.075081	1526165	0.092268	1411324	0.12031	1696235	0.15107	1646548	0.24	1507392	0.306	1652209
Total Inorganic Carbon	0.075081	1526165	0.092268	1411324	0.12031	1696235	0.15107	1646548	0.24	1507392	0.306	1652209
% Soot	0.075081	1526165	0.092268	1411324	0.12031	1696235	0.15107	1646548	0.24	1507392	0.306	1652209

INITIAL CALIBRATION DATA

EPA 9060A m

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GE00052
Instrument: TOC Cube
Calibration Date: 05/17/2023 10:07

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF
Total Organic Carbon	0.426	1366392	0.606	1382589	0.894	1387318	1.206	1393572	1.506	1392225	1.806	1387100
Total Carbon	0.426	1366392	0.606	1382589	0.894	1387318	1.206	1393572	1.506	1392225	1.806	1387100
Total Inorganic Carbon	0.426	1366392	0.606	1382589	0.894	1387318	1.206	1393572	1.506	1392225	1.806	1387100
% Soot	0.426	1366392	0.606	1382589	0.894	1387318	1.206	1393572	1.506	1392225	1.806	1387100

INITIAL CALIBRATION DATA

EPA 9060A m

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: GE00052
Instrument: TOC Cube
Calibration Date: 05/17/2023 10:07

Compound	Level 19		Level 20		Level 21		Level 22		Level 23		Level 24	
	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF	Conc	RF
Total Organic Carbon	2.406	1383080	2.988	1392309	4.206	1321832	4.788	1266559	5.394	1264318	7.152	1292654
Total Carbon	2.406	1383080	2.988	1392309	4.206	1321832	4.788	1266559	5.394	1264318	7.152	1292654
Total Inorganic Carbon	2.406	1383080	2.988	1392309	4.206	1321832	4.788	1266559	5.394	1264318	7.152	1292654
% Soot	2.406	1383080	2.988	1392309	4.206	1321832	4.788	1266559	5.394	1264318	7.152	1292654

INITIAL CALIBRATION DATA

EPA 9060A m

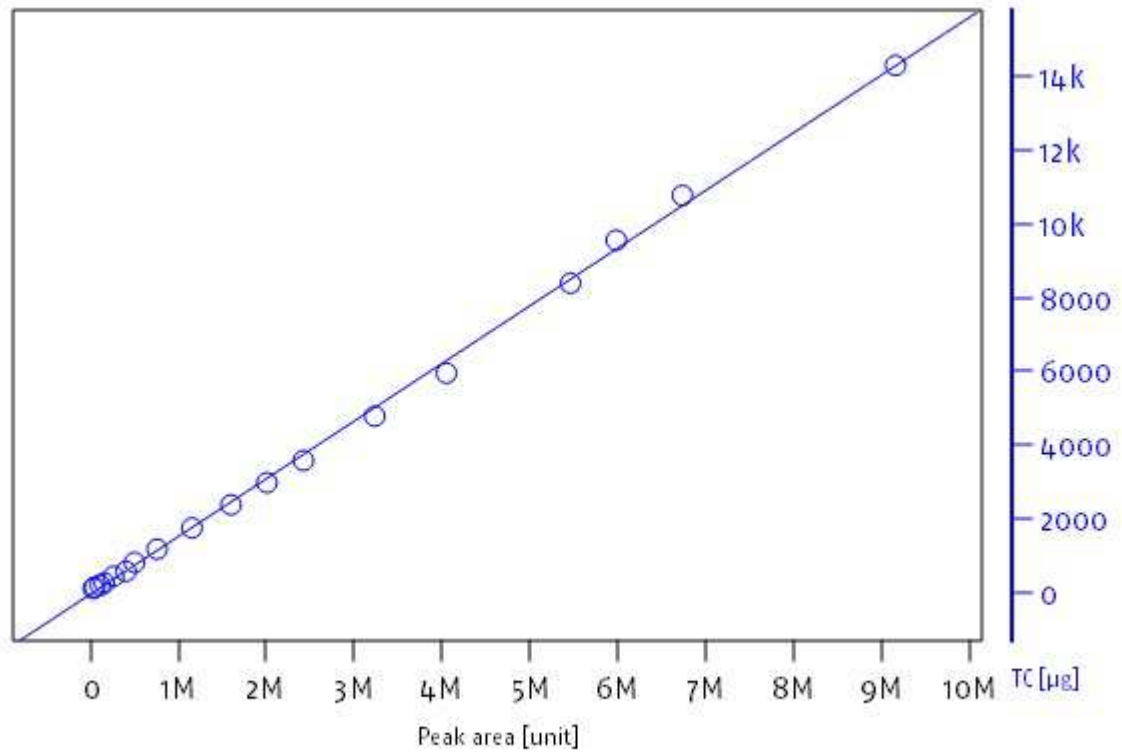
Laboratory:	Analytical Resources, LLC	SDG:	23F0536
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	GE00052	Instrument:	TOC Cube
Calibration Date:	05/17/2023 10:07		

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Total Organic Carbon	1587338	23.9	0.9987			
Total Carbon	1587338	23.9	0.9987			
Total Inorganic Carbon	1587338	23.9	0.9987			
% Soot	1587338	23.9	0.9987			

Calibration parameters TC, Whole range

a	+9.122373e-03
b	+1.560792e-06
c	+0.000000e+00
d	+0.000000e+00
e	+0.000000e+00
r	0.998690
r_old	0.998690
Proc.-SD	155.562438 µg

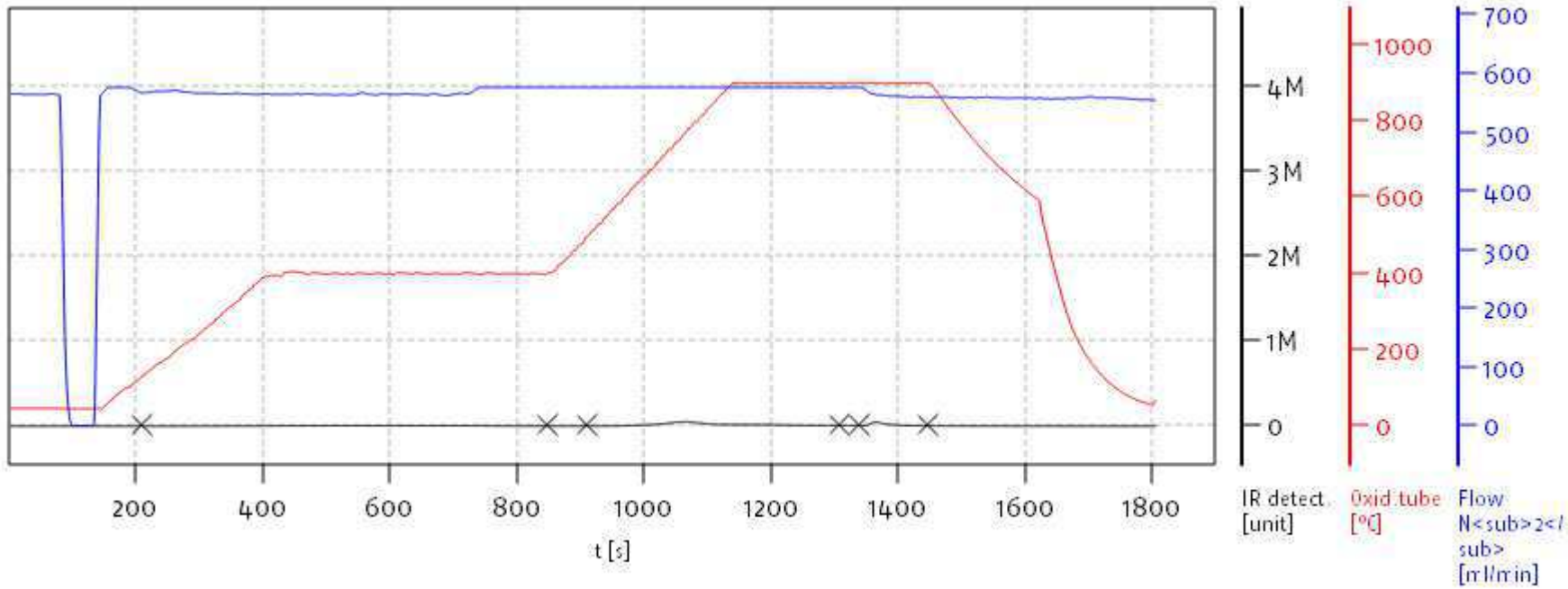
Calibration graph TC, Whole range



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
1	1	BLANK	1.00		CARBON	5/ 17/2023 11:46 AM	bl	0.000	83 718	0.000	0.000	65 731	251 400	0.000	0.000	1.0000	1.0000



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Access: soliTOC superuser

Date: Thu May 18 09:43:39 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

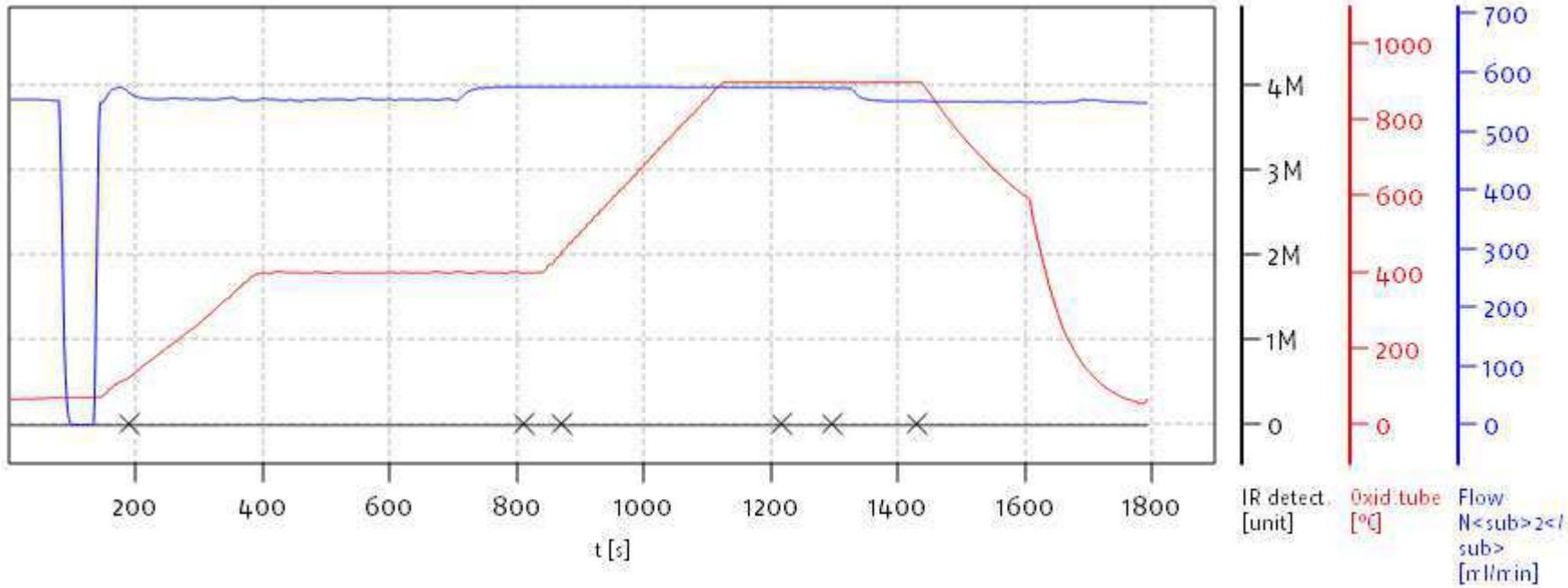
elementar
EXCELLENCE IN ELEMENTS

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
2	2	BLANK	1.00		CARBON	5/ 17/2023 12:16 PM	bl	0.000	3 043	0.000	0.000	273	1	0.000	0.000	1.0000	1.0000



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EXCELLENCE IN ELEMENTS

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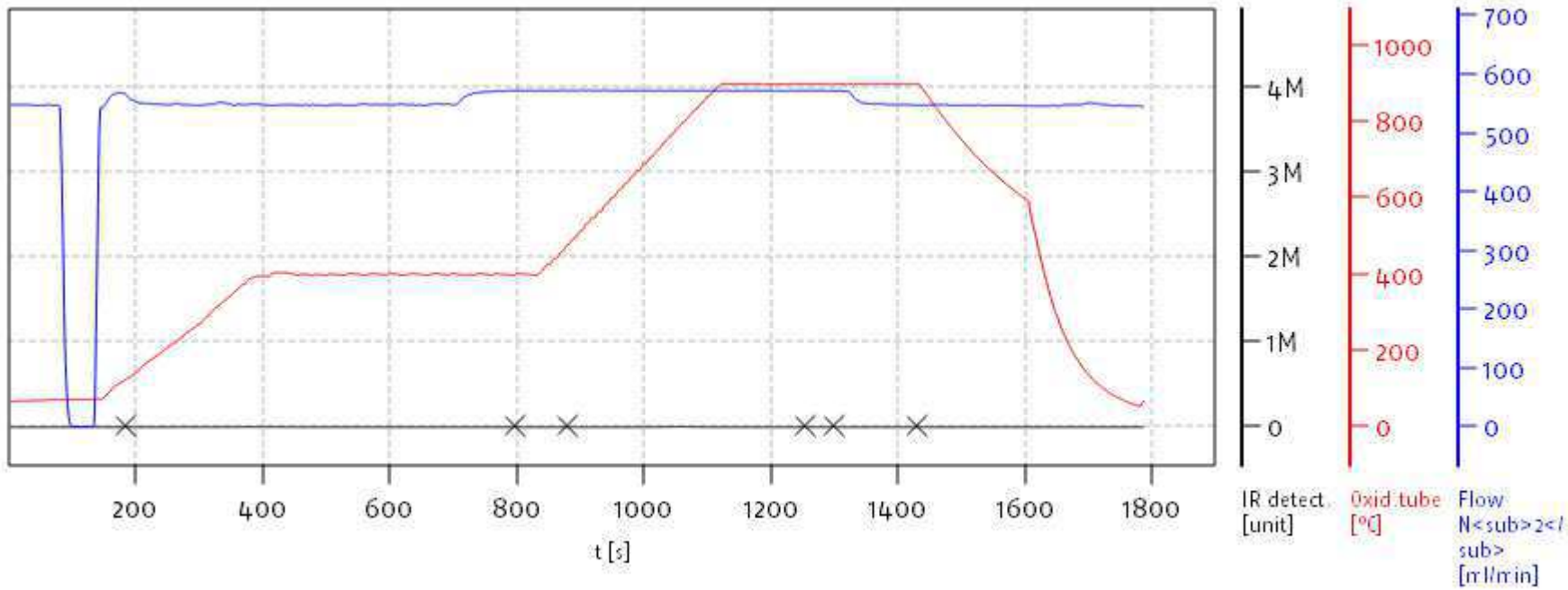
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
3	3	SLE0270-CAL1	200.00	0.0025	CARBON	5/17/2023 12:46 PM	bl,C2u	0.014	12 167	0.024	0.002	431	10 396	0.012	0.010	1.0000	1.0000



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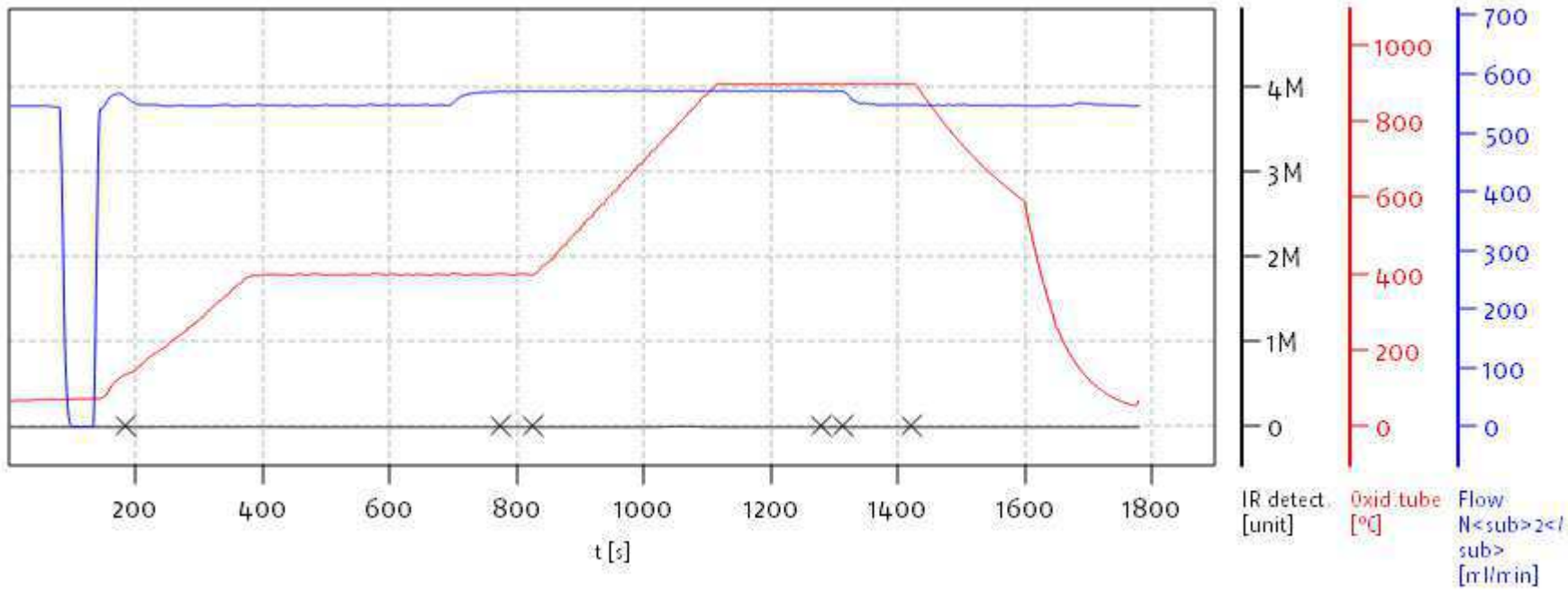
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
4	4	SLE0270-CAL2	200.00	0.0050	CARBON	5/17/2023 1:16 PM	bl,C2u	0.013	10 893	0.029	0.002	141	18 320	0.011	0.017	1.0000	1.0000



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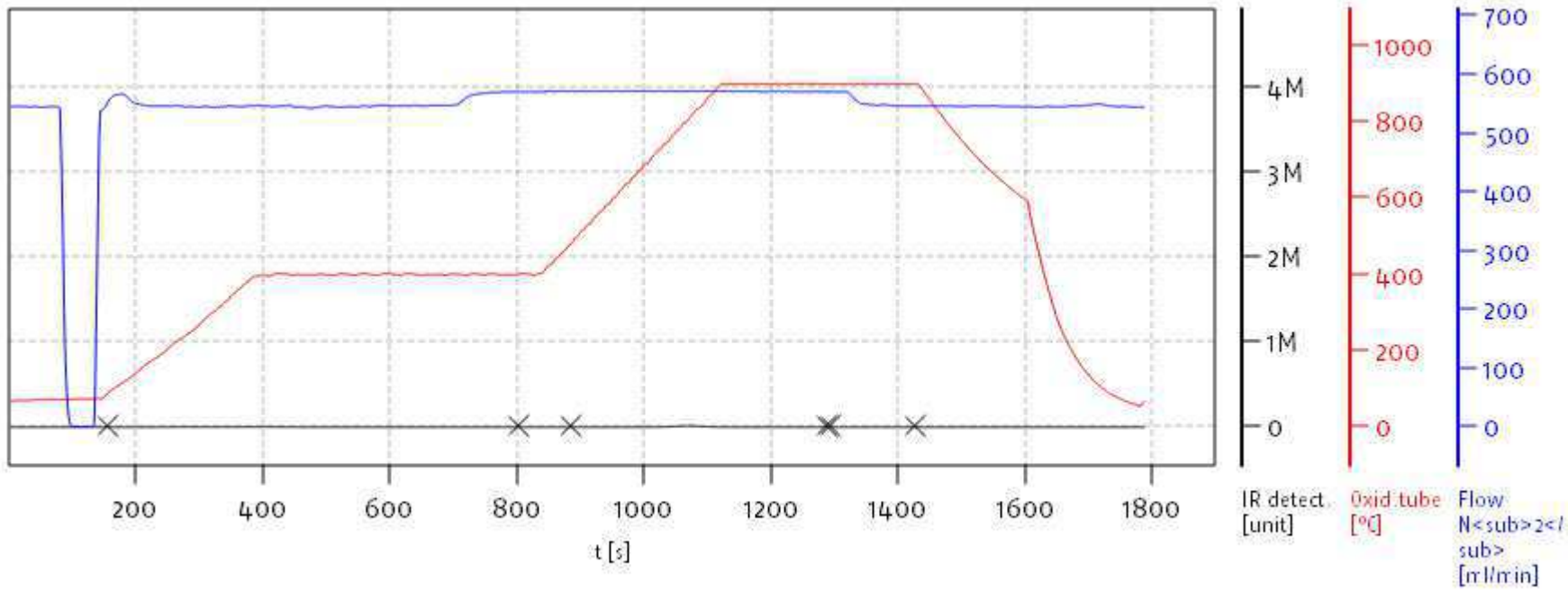
Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
5	5	SLE0270-CAL3	200.00	0.0070	CARBON	5/17/2023 1:46 PM	bl,C2u	0.018	16 667	0.043	0.002	387	29 873	0.015	0.026	1.0000	1.0000



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Date: Thu May 18 09:43:39 2023

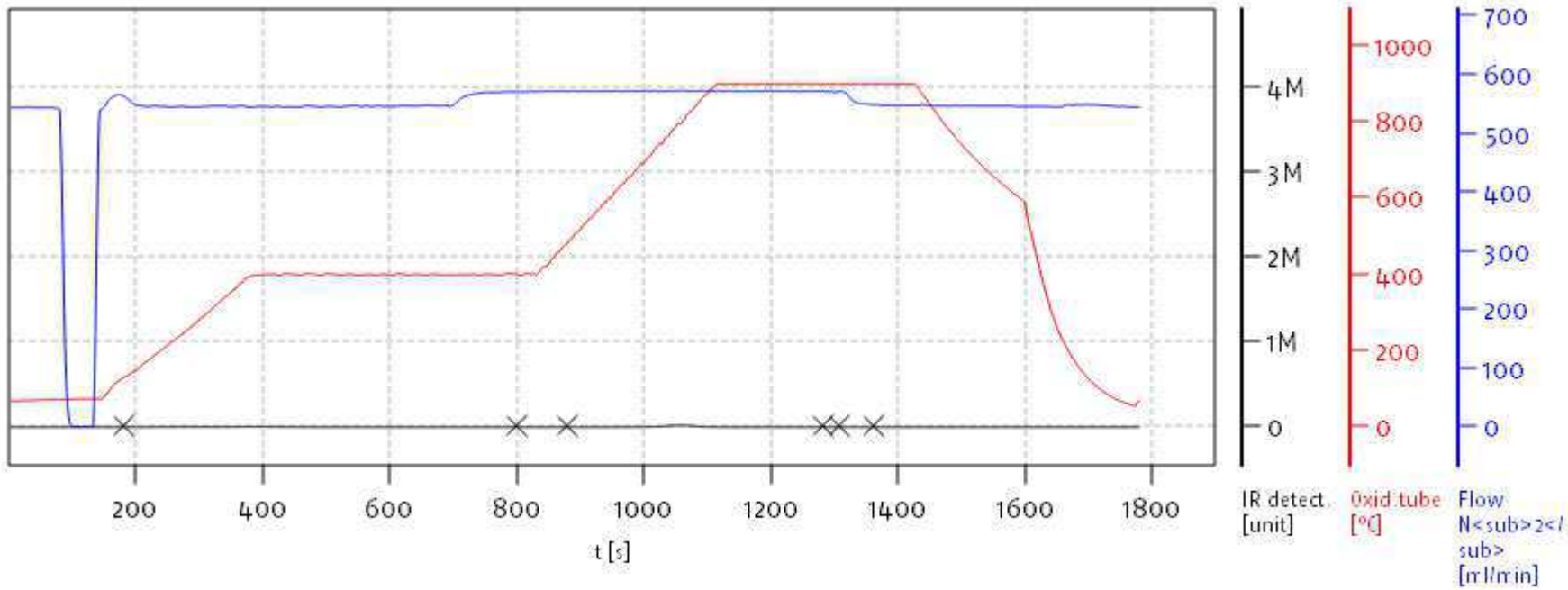
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
6	6	SLE0270-CAL4	200.00	0.0100	CARBON	5/17/2023 2:16 PM	bl,C2u	0.024	24 980	0.062	0.002	130	45 873	0.022	0.038	1.0000	1.0000



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Date: Thu May 18 09:43:39 2023

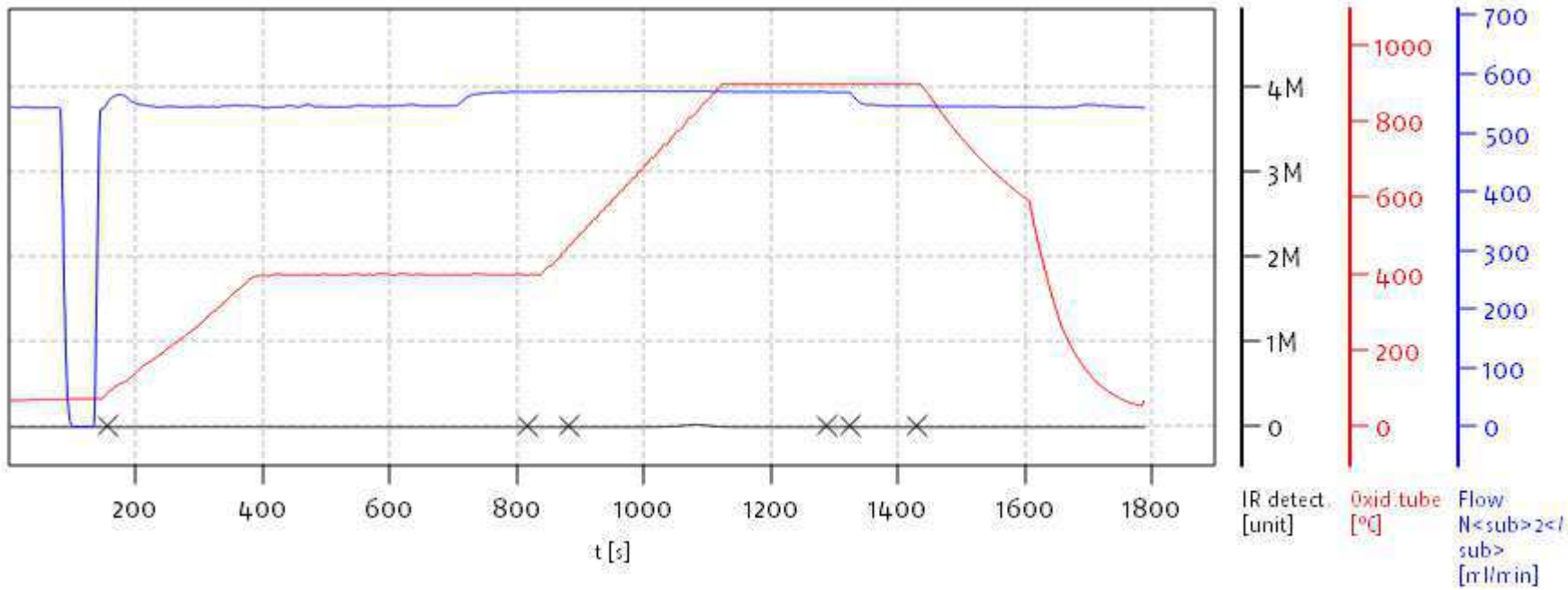
elementar
EXCELLENCE IN ELEMENTS

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
7	7	SLE0270-CAL5	200.00	0.0150	CARBON	5/17/2023 2:47 PM	bl,C2u	0.014	12 413	0.065	0.002	539	61 573	0.012	0.051	1.0000	1.0000



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Serial No: 0300.181017
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Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

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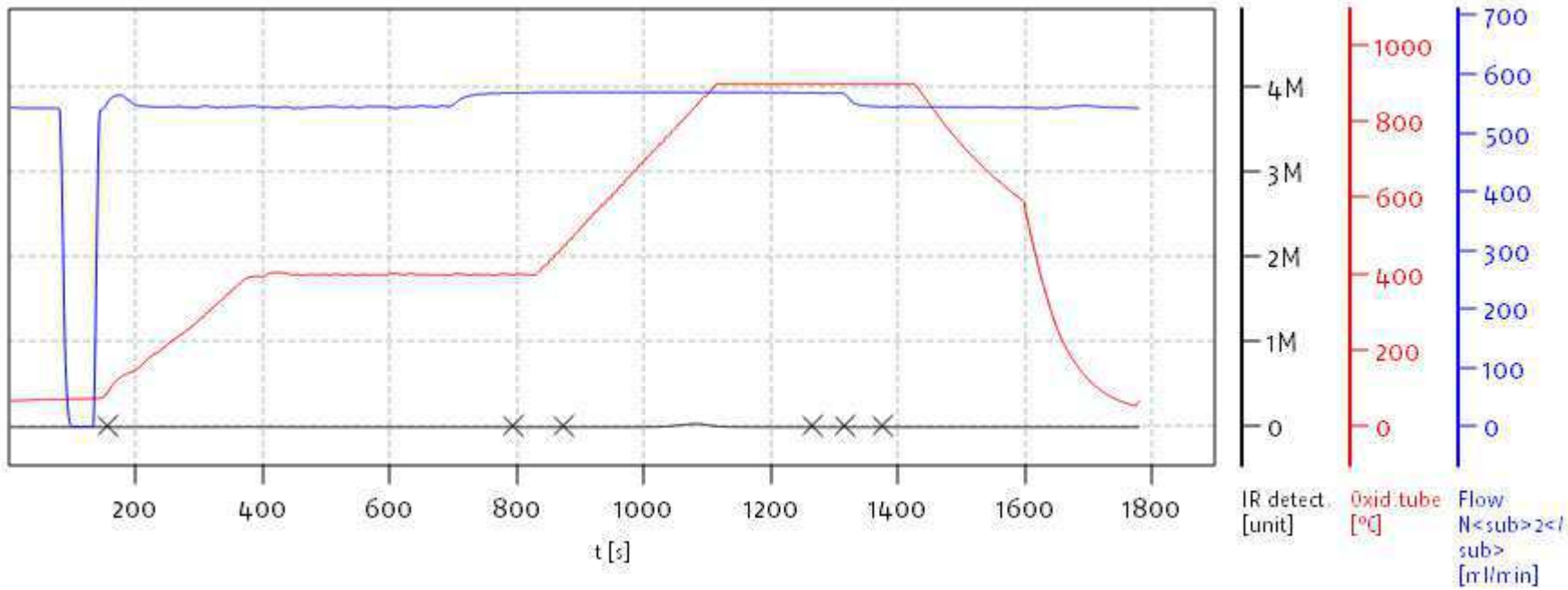
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
8	8	SLE0270-CAL6	200.00	0.0200	CARBON	5/17/2023 3:17 PM	bl,C1u,C2u	0.011	7 999	0.079	0.002	170	84 086	0.008	0.068	1.0000	1.0000



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Soli TOC Cube, Carbon
Balance: BAL3
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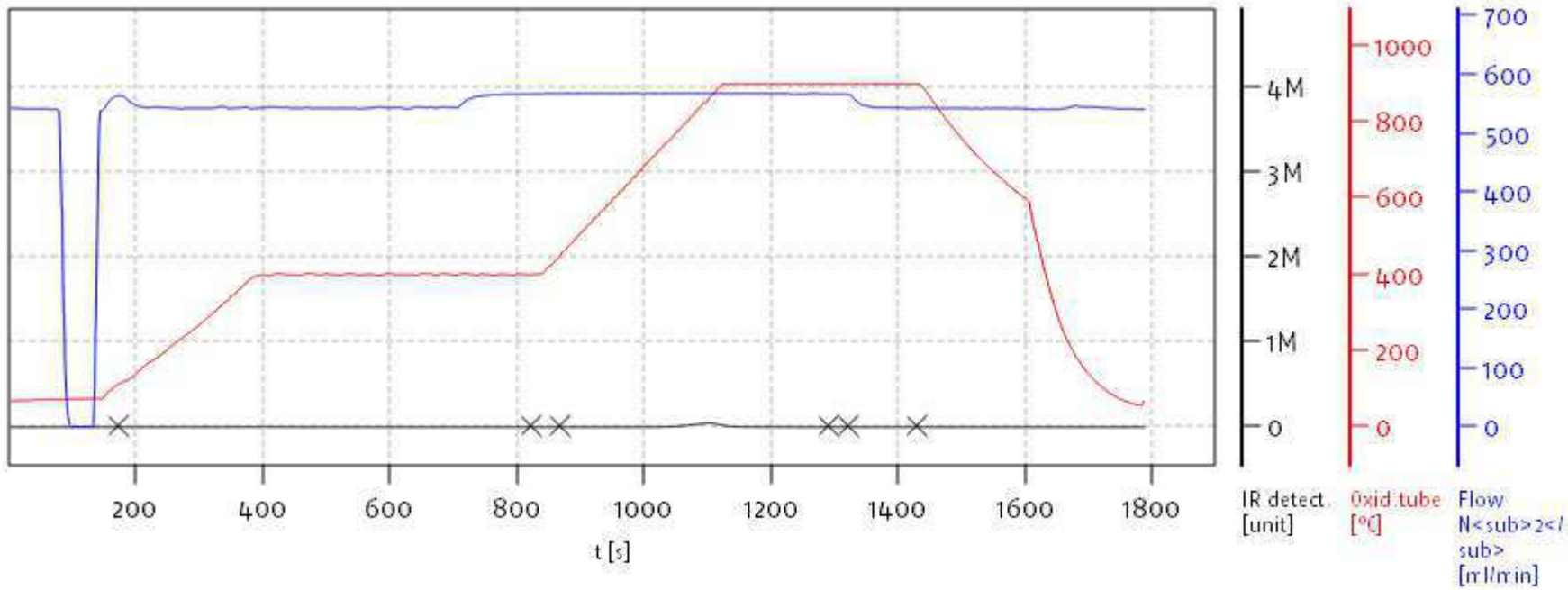
Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
9	9	SLE0270-CAL7	200.00	0.0250	CARBON	5/17/2023 3:47 PM	bl,C1u,C2u	0.011	7 612	0.097	0.003	1 386	105 588	0.008	0.085	1.0000	1.0000



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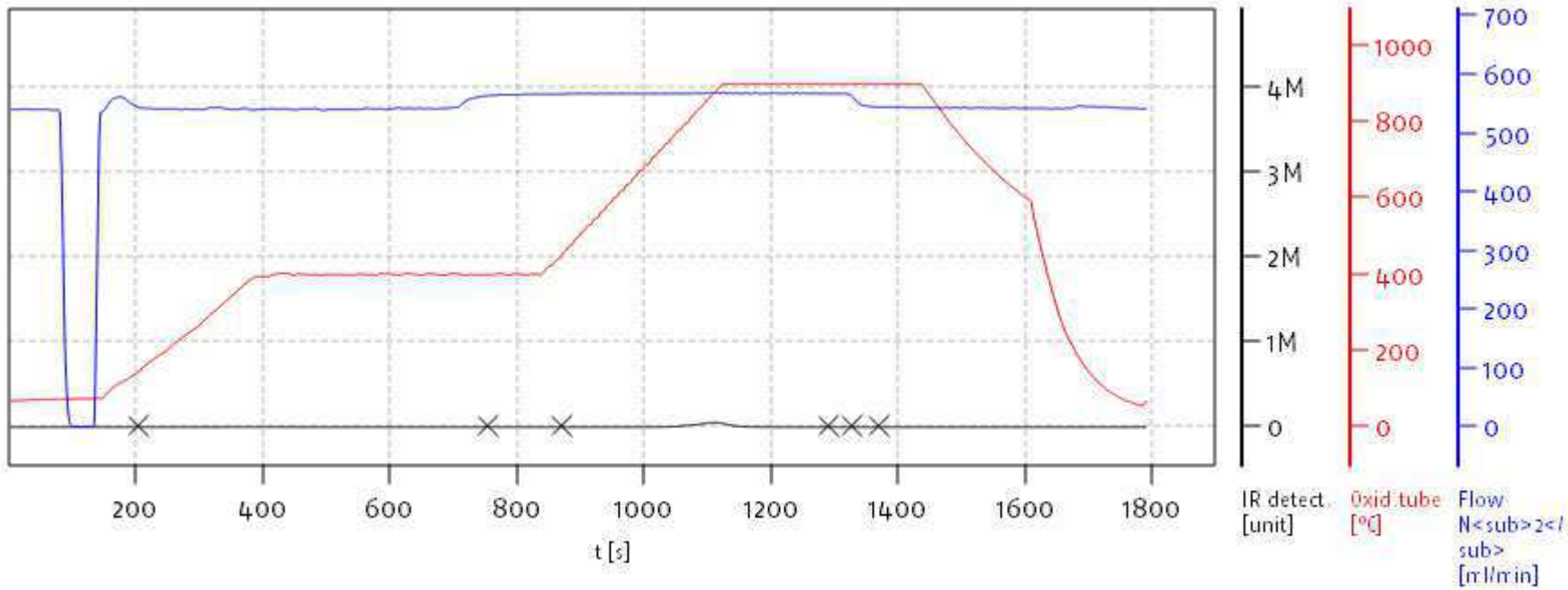
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
10	10	SLE0270-CAL8	200.00	0.0300	CARBON	5/17/2023 4:17 PM	bl,C1u,C2u	0.008	5 428	0.109	0.002	61	124 731	0.006	0.100	1.0000	1.0000



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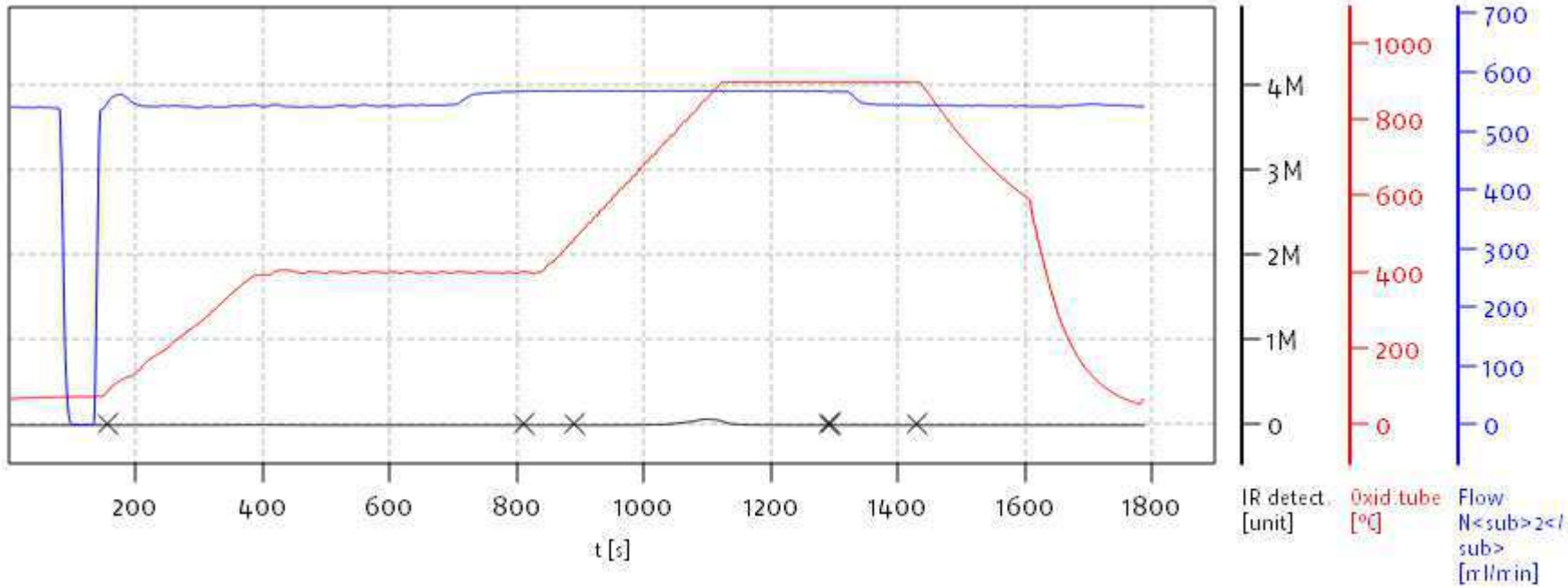
Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
11	11	SLE0270-CAL9	200.00	0.0400	CARBON	5/17/2023 4:47 PM	bl,C2u	0.019	17 233	0.167	0.003	1 274	185 567	0.016	0.148	1.0000	1.0000



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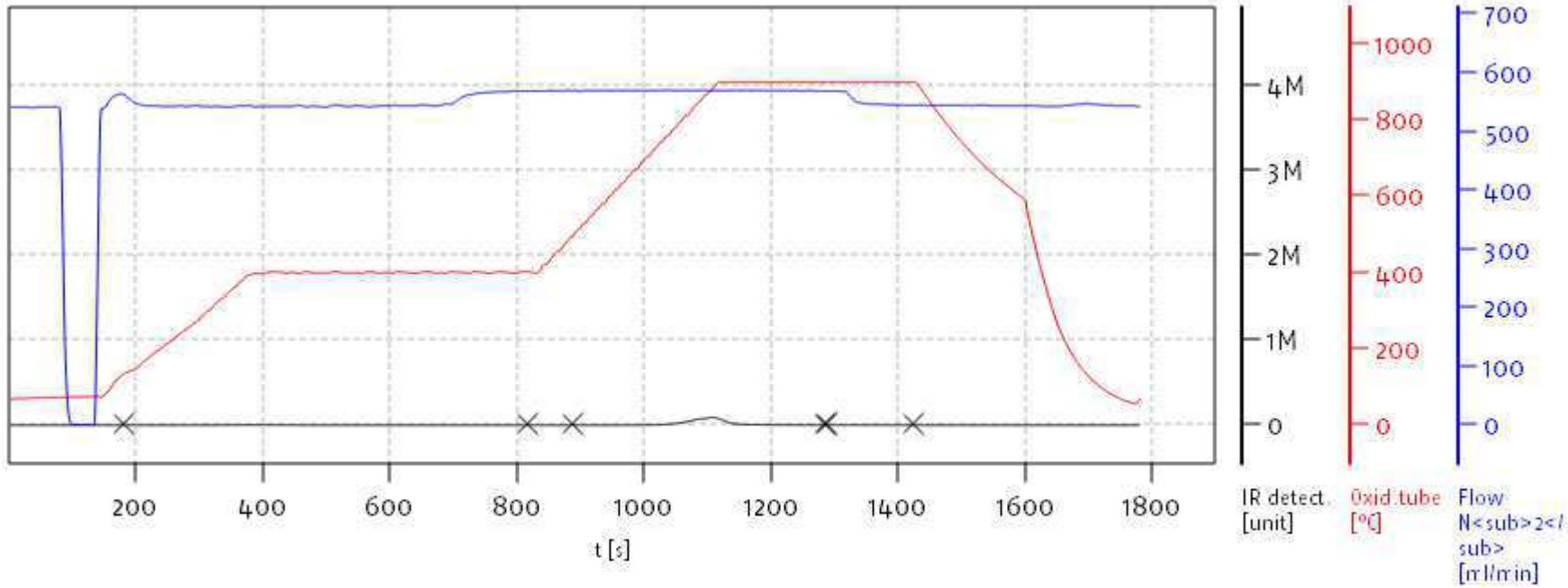
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
12	12	SLE0270-CALA	200.00	0.0500	CARBON	5/17/2023 5:17 PM	bl,C2u	0.018	11 766	0.202	0.007	6 123	230 855	0.011	0.184	1.0000	1.0000



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Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

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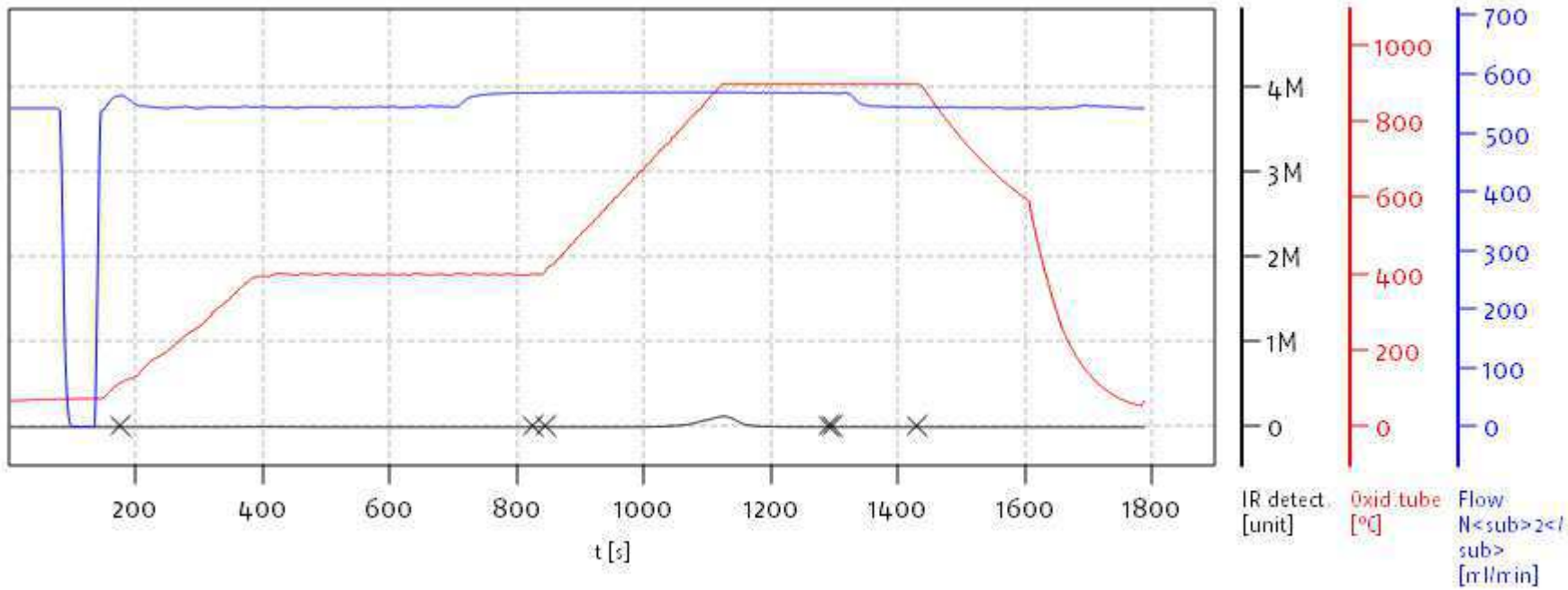
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
13	13	SLE0270-CALB	200.00	0.0040	CARBON	5/17/2023 5:47 PM	bl,C2u	0.022	18 635	0.291	0.005	3 969	339 170	0.017	0.269	1.0000	1.0000



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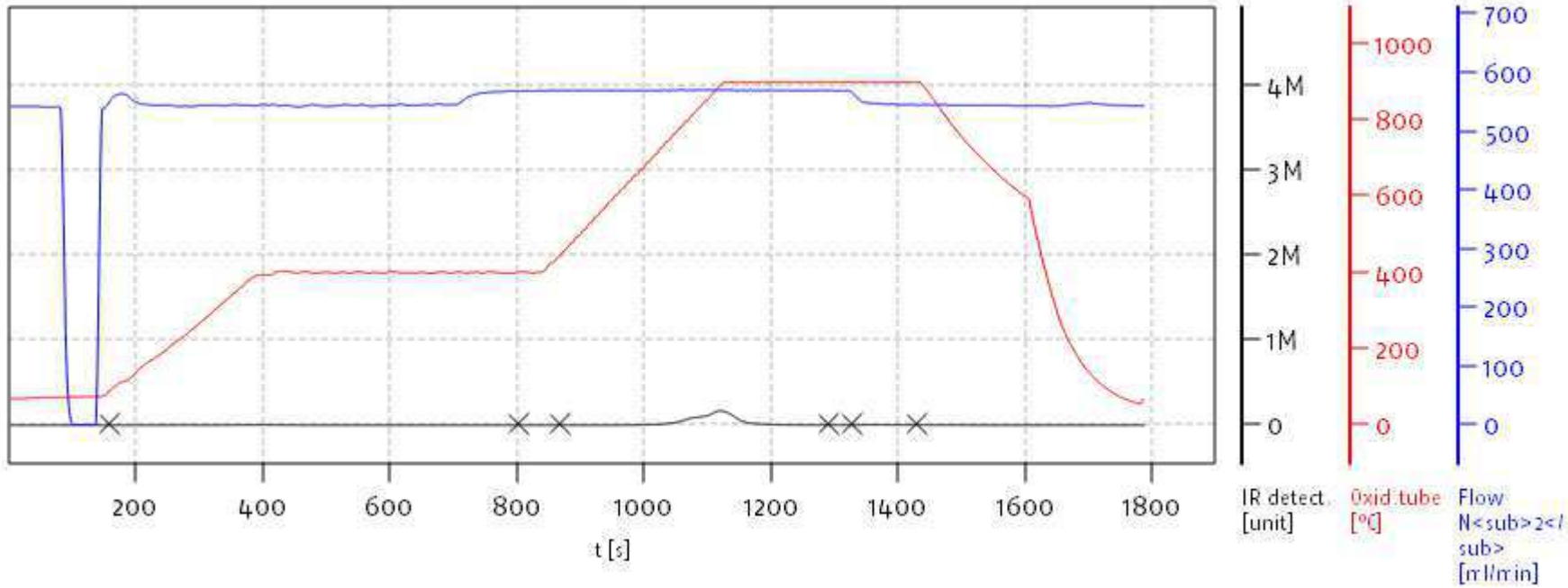
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
14	14	SLE0270-CALC	200.00	0.0050	CARBON	5/17/2023 6:18 PM	bl	0.026	14 893	0.405	0.012	12 639	478 044	0.014	0.379	1.0000	1.0000



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Soli TOC Cube, Carbon
Balance: BAL3
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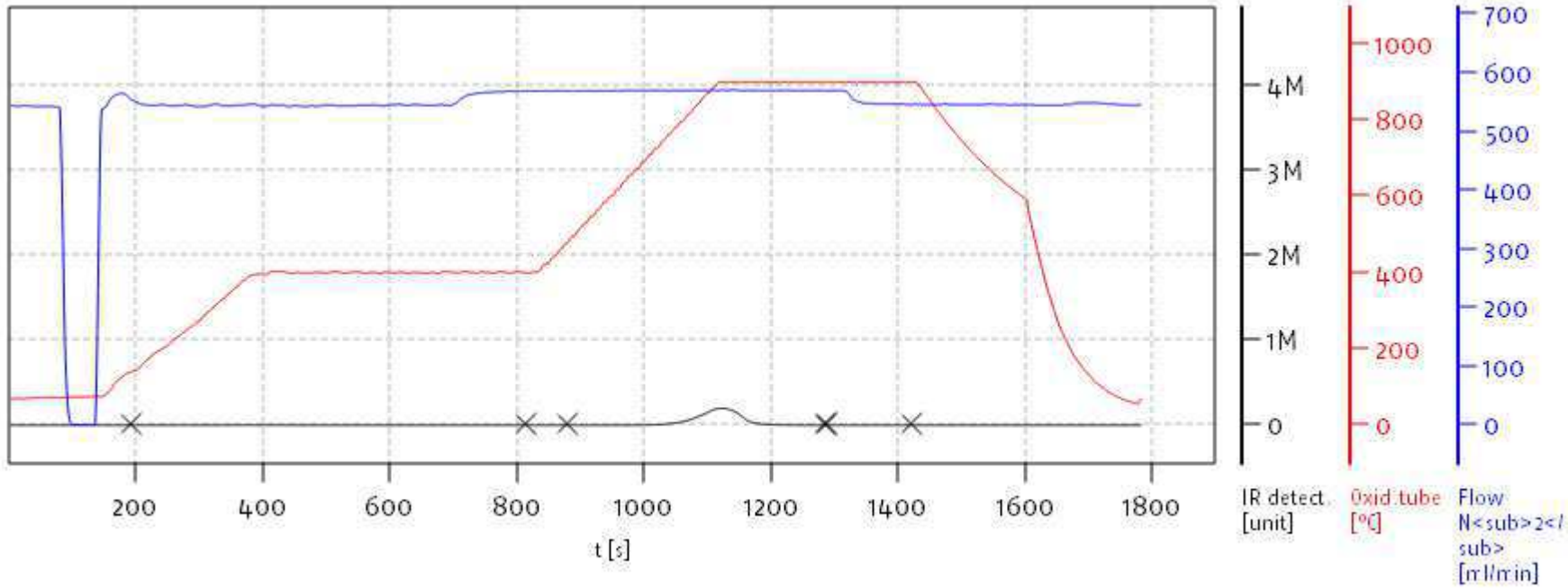
Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
15	15	SLE0270-CALD	200.00	0.0070	CARBON	5/17/2023 6:48 PM	bl,C1u,C2u	0.010	6 787	0.465	0.002	420	574 876	0.007	0.455	1.0000	1.0000



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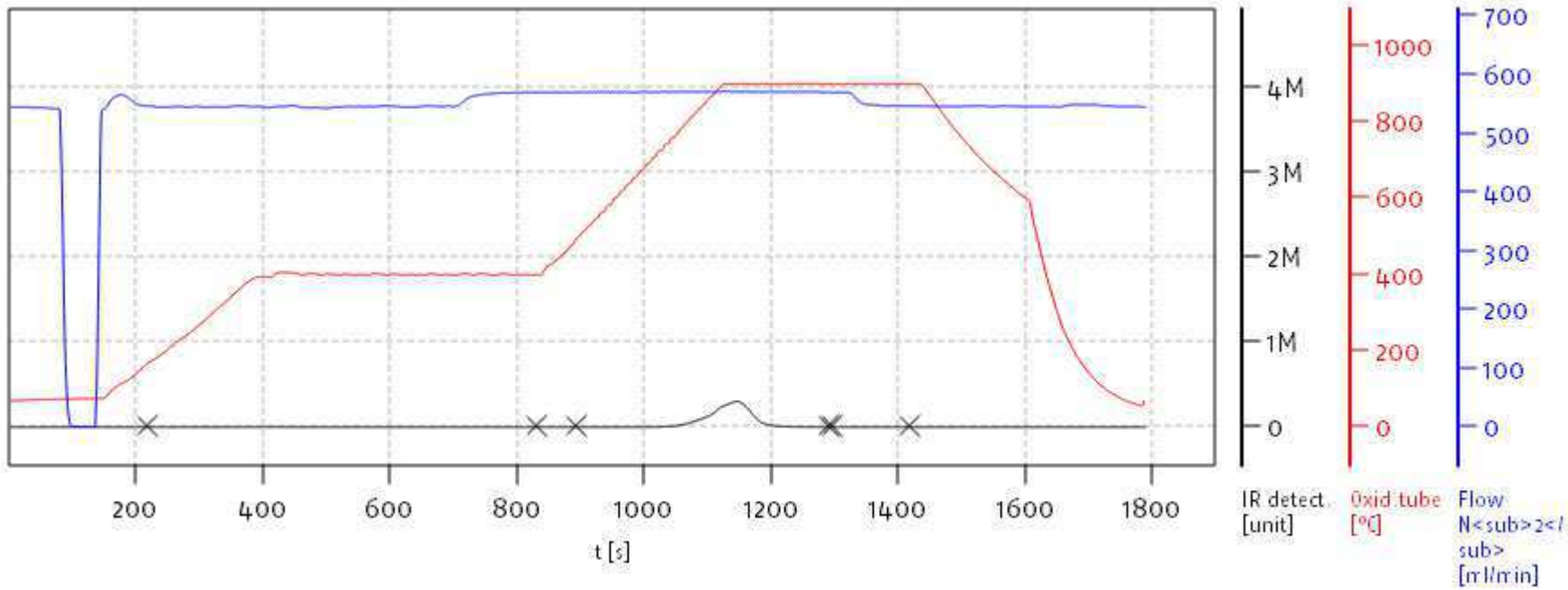
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
16	16	SLE0270-CALE	200.00	0.0100	CARBON	5/17/2023 7:18 PM	bl,C1u,C2u	0.008	4 408	0.667	0.003	771	832 670	0.006	0.658	1.0000	1.0000



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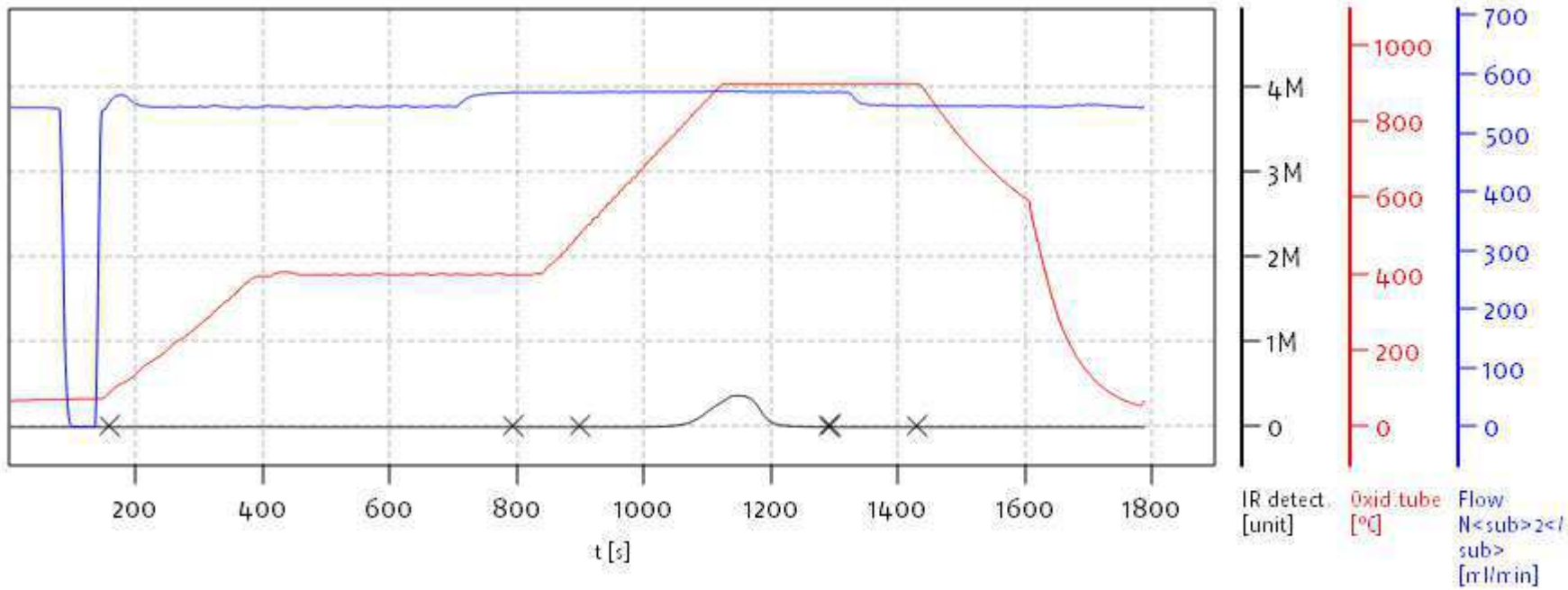
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
17	17	SLE0270-CALF	200.00	0.0150	CARBON	5/17/2023 7:48 PM	bl,C1u,C2u	0.012	8 494	0.984	0.003	1 464	1 230 304	0.009	0.972	1.0000	1.0000



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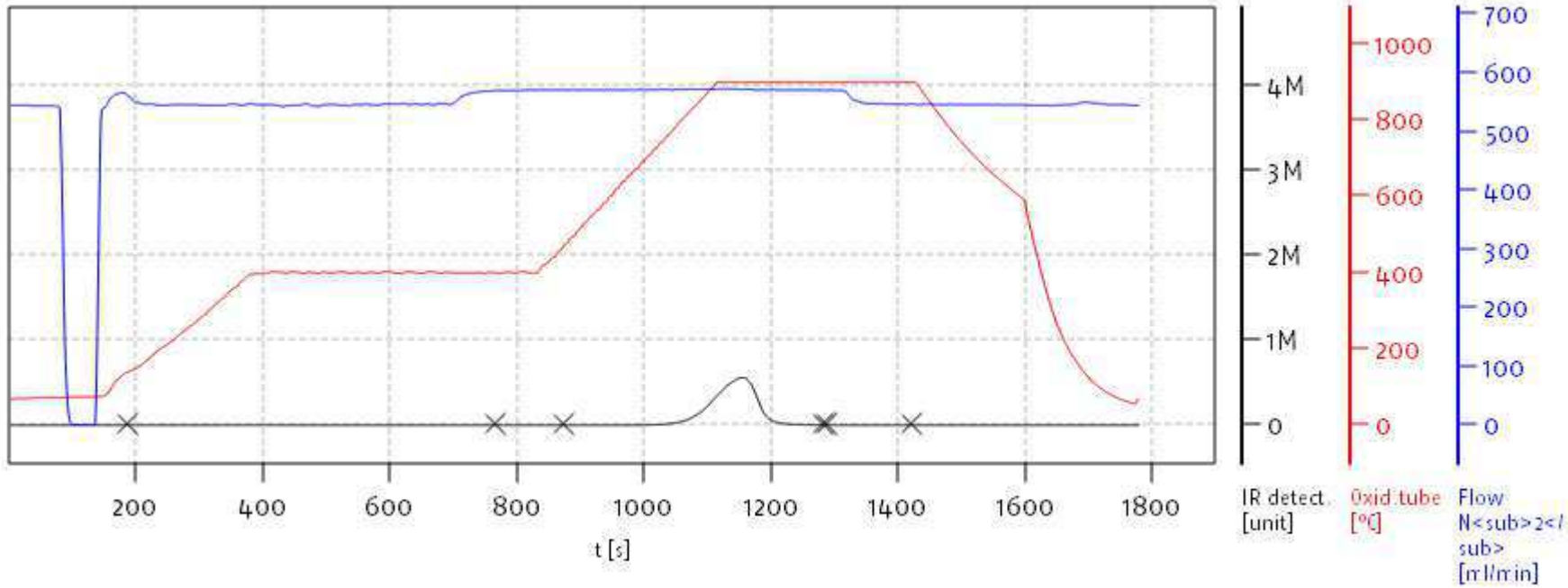
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
18	18	SLE0270-CALG	200.00	0.0200	CARBON	5/17/2023 8:18 PM	bl,C1u,C2u	0.010	5 359	1.331	0.004	1 864	1 673 425	0.006	1.321	1.0000	1.0000



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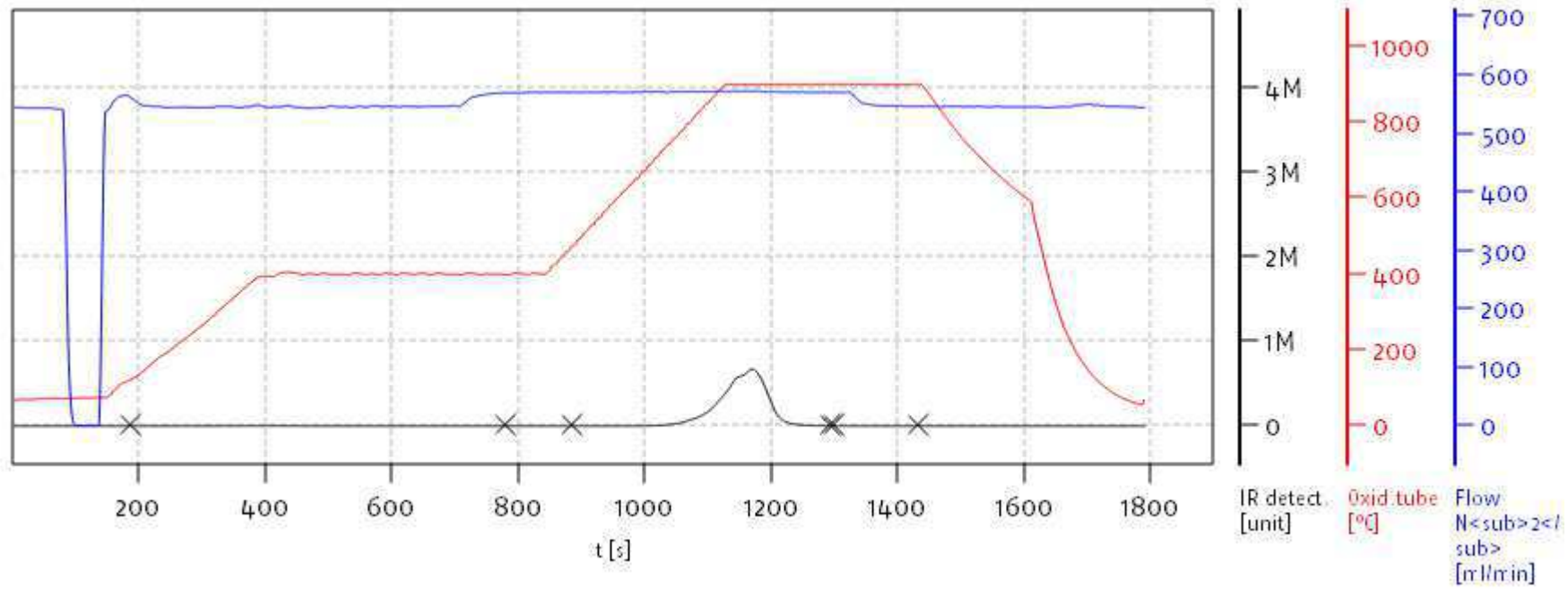
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
19	19	SLE0270-CALH	200.00	0.0250	CARBON	5/17/2023 8:48 PM	bl,C2u	0.015	11 407	1.659	0.004	2 280	2 083 004	0.011	1.644	1.0000	1.0000



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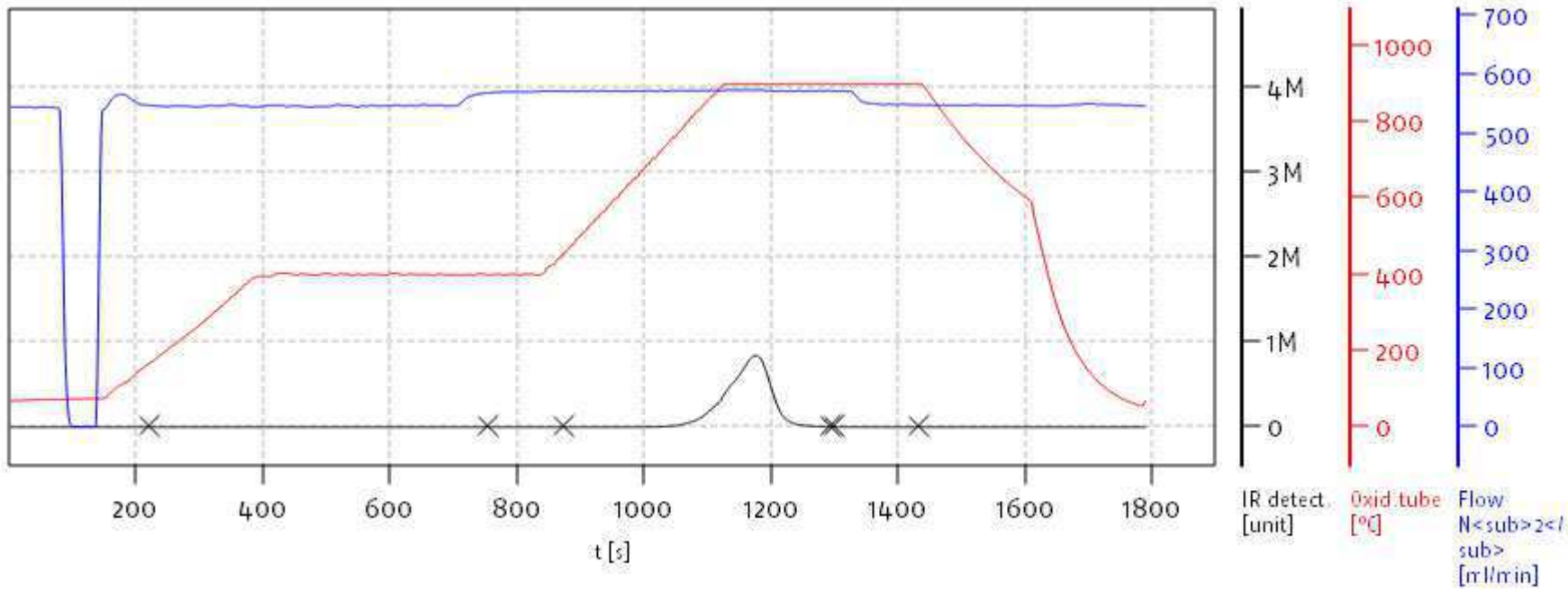
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
20	20	SLE0270-CALI	200.00	0.0300	CARBON	5/17/2023 9:19 PM	bl,C1u,C2u	0.009	2 781	1.981	0.005	3 895	2 498 427	0.004	1.971	1.0000	1.0000



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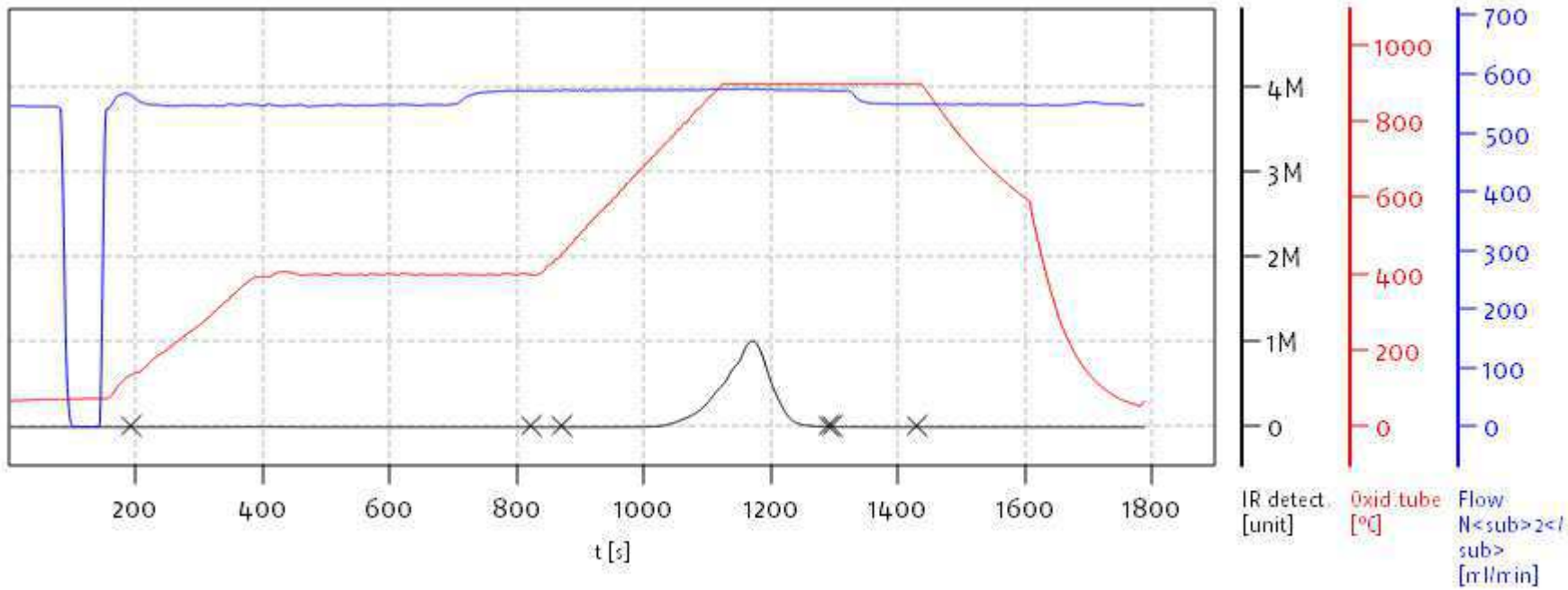
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
21	21	SLE0270-CALJ	200.00	0.0400	CARBON	5/17/2023 9:49 PM	bl,C2u	0.018	13 295	2.629	0.006	4 807	3 309 588	0.013	2.611	1.0000	1.0000



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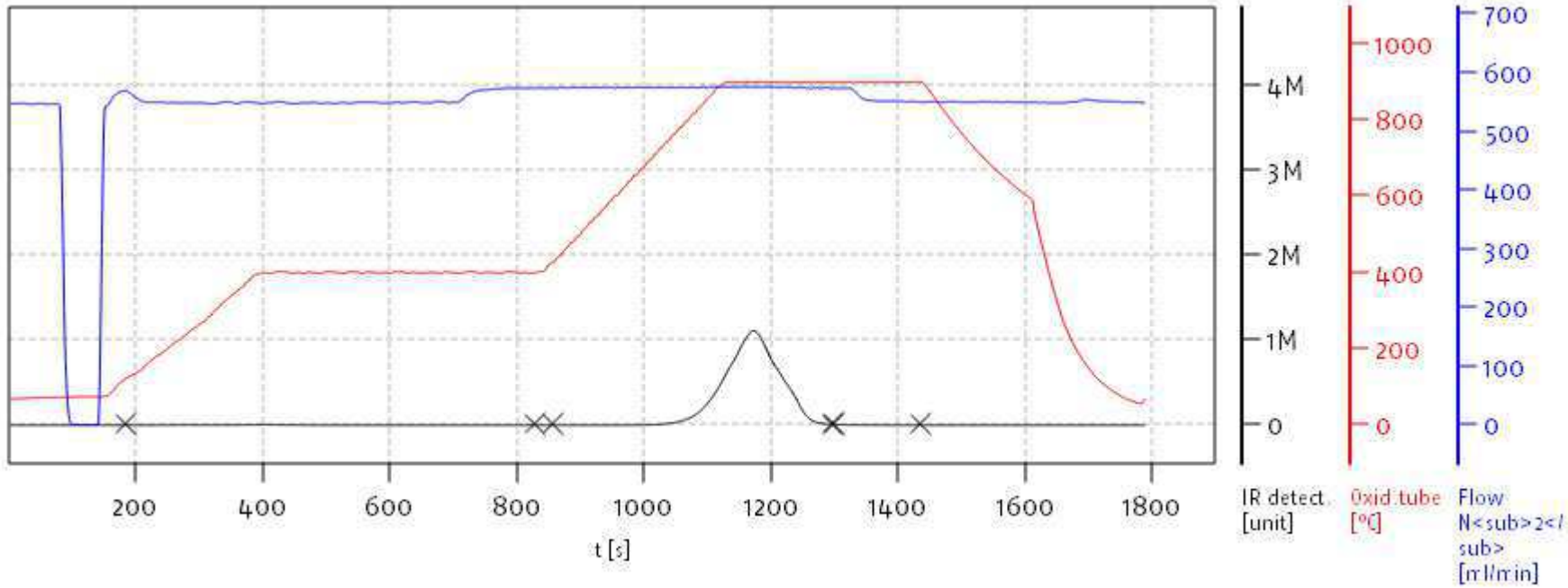
	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
22	22	SLE0270-CALK	200.00	0.0500	CARBON	5/17/2023 10:19 PM	bl	0.031	25 022	3.285	0.009	9 148	4 126 050	0.022	3.254	1.0000	1.0000



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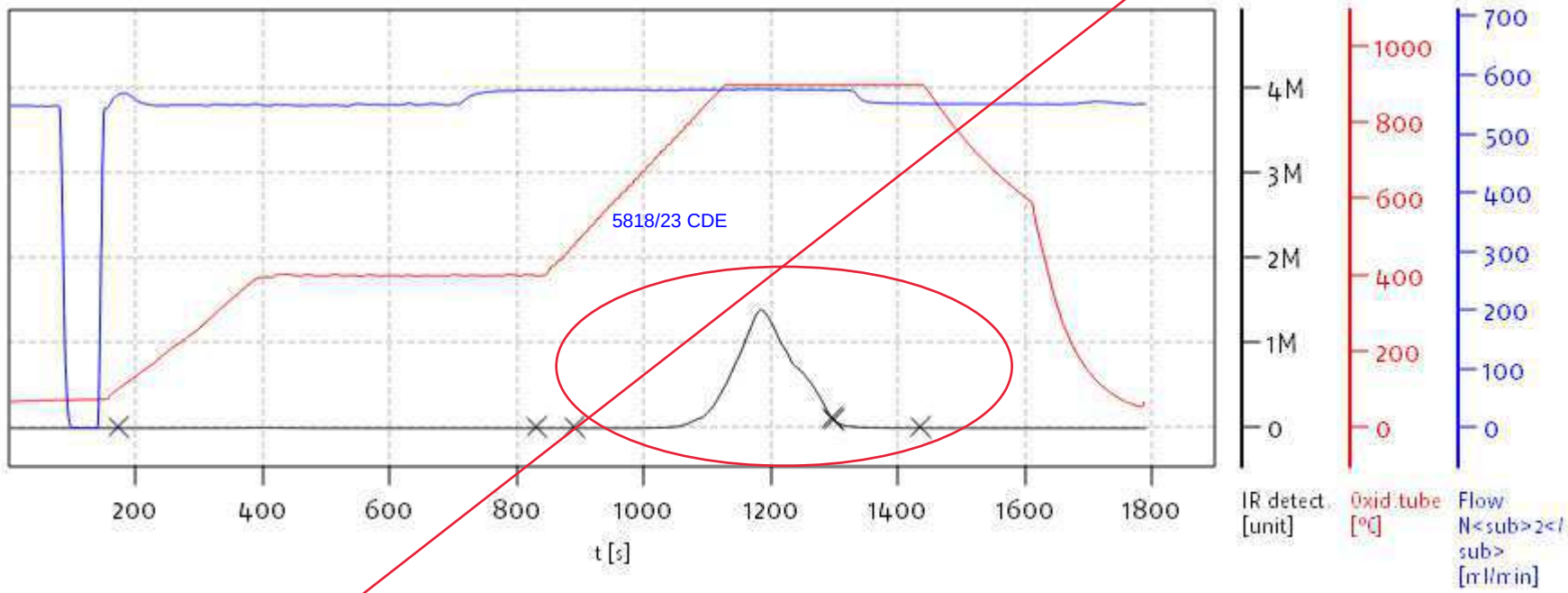
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
23	23	SLE0270-CALL	200.00	0.0700	CARBON	5/17/2023 10:49 PM	bl	0.069	21 598	4.597	0.050	60 794	5 741 652	0.019	4.528	1.0000	1.0000



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Access: soliTOC superuser

Date: Thu May 18 09:43:39 2023

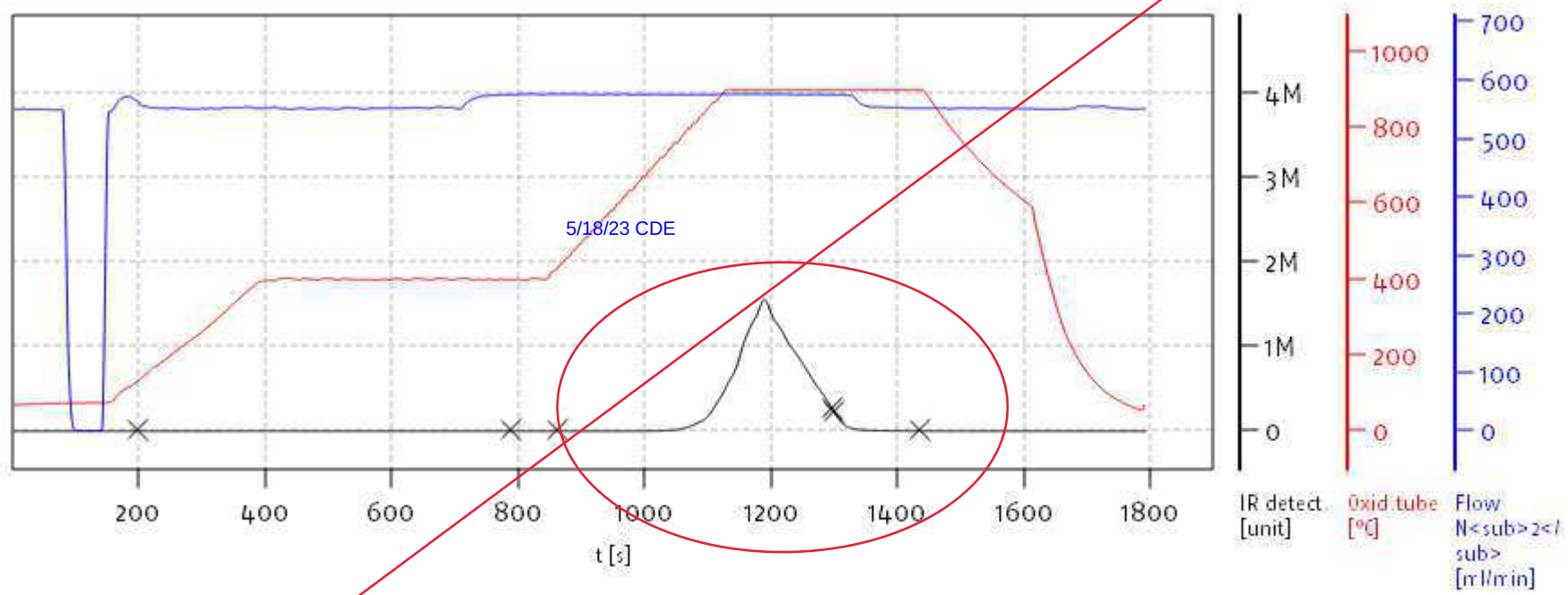
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
24	24	SLE0270-CALM	200.00	0.0800	CARBON	5/17/2023 11:19 PM	bl,C1u	0.112	5 408	5.212	0.106	131 494	6 467 914	0.006	5.100	1.0000	1.0000



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Access: soliTOC superuser

Date: Thu May 18 09:43:39 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

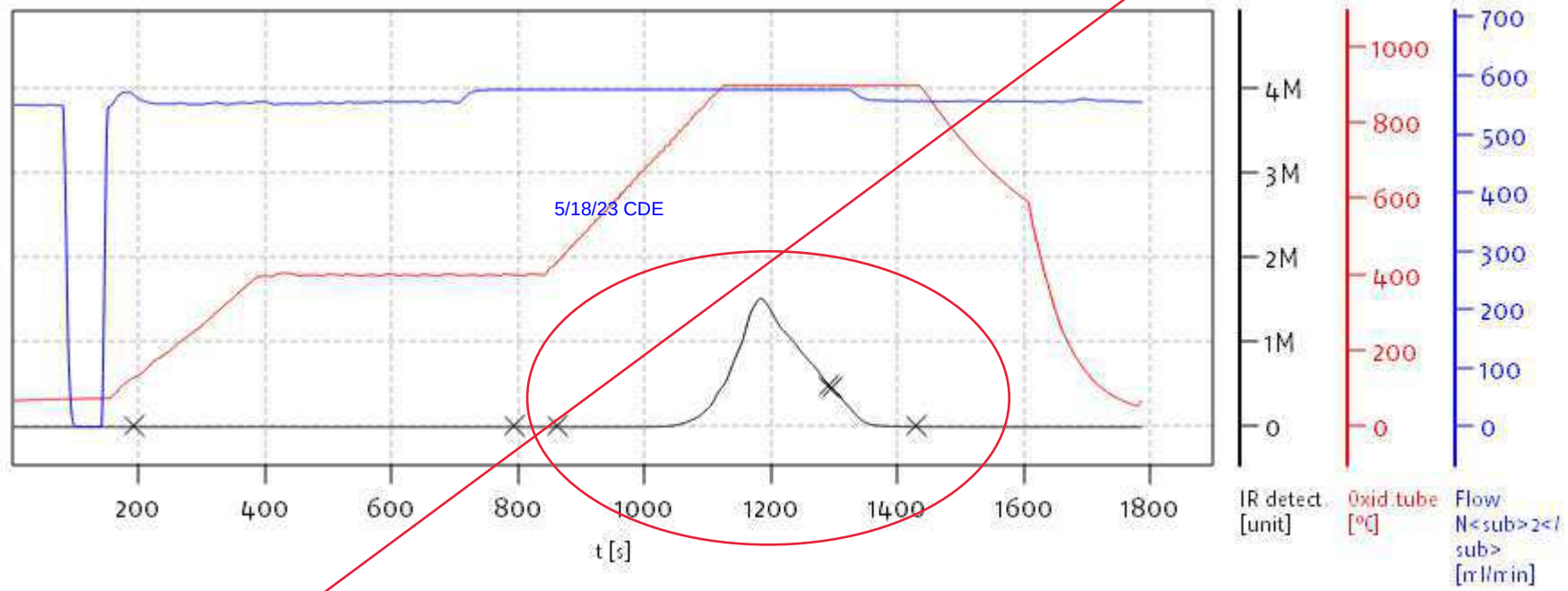
elementar
EXCELLENCE IN ELEMENTS

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
25	25	SLE0270-CALN	200.00	0.0900	CARBON	5/17/2023 11:50 PM	bl	0.408	8 745	5.832	0.399	503 842	6 879 212	0.009	5.424	1.0000	1.0000



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Access: soliTOC superuser

Date: Thu May 18 09:43:39 2023

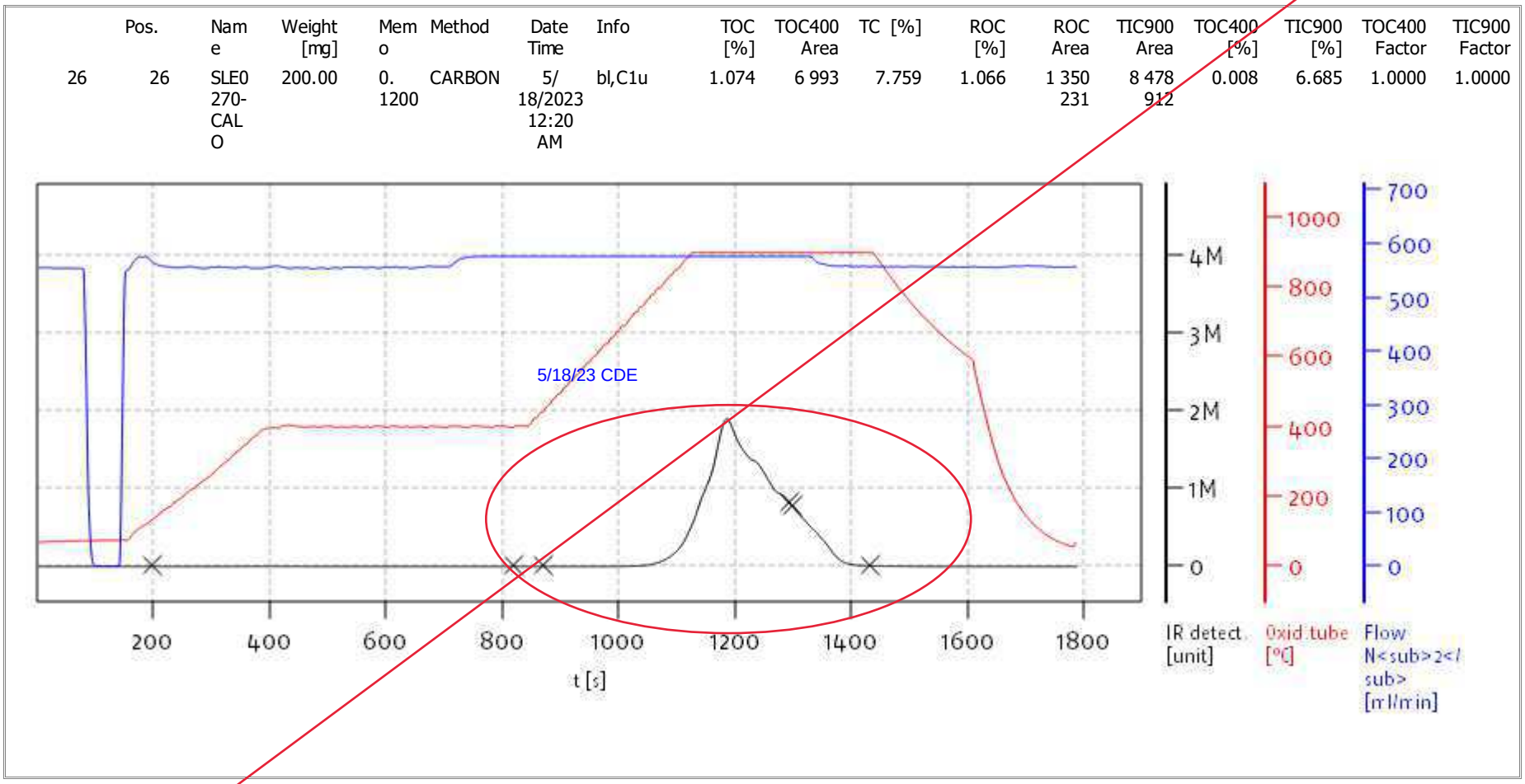
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
26	26	SLE0270-CALO	200.00	0.1200	CARBON	5/18/2023 12:20 AM	bl,C1u	1.074	6 993	7.759	1.066	1 350 231	8 478 912	0.008	6.685	1.0000	1.0000



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Access: soliTOC superuser

Date: Thu May 18 09:43:39 2023

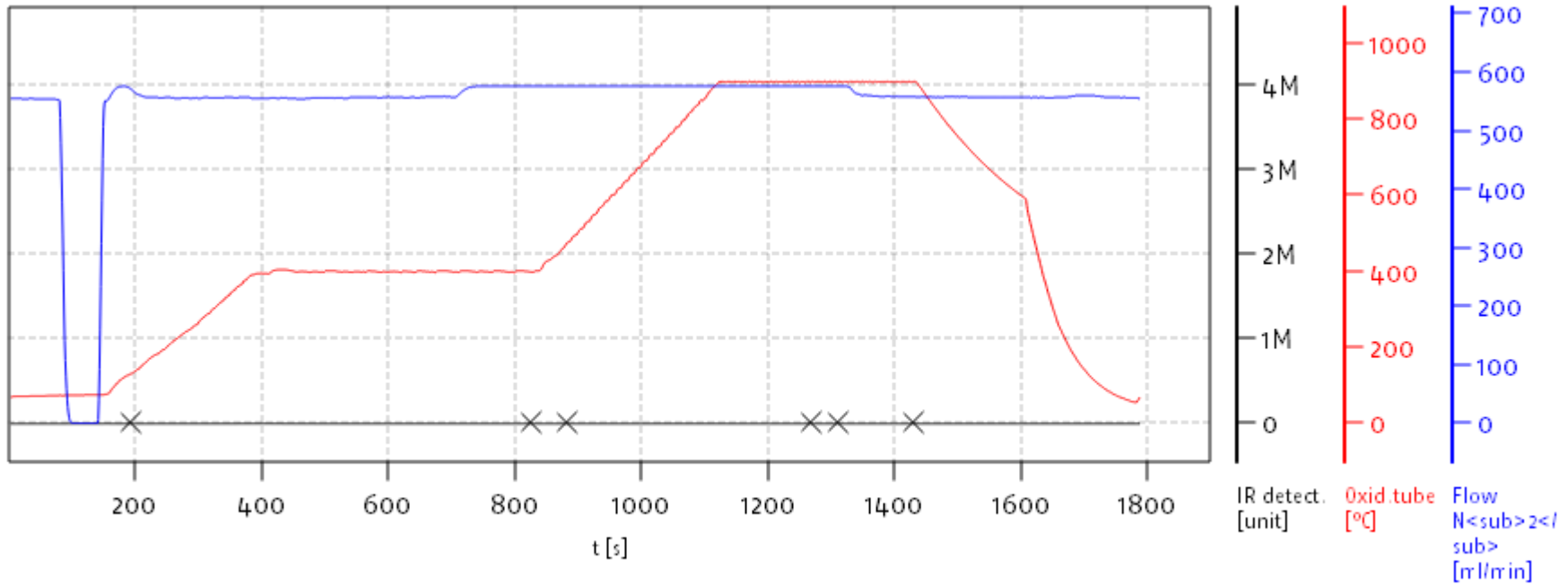
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
27	27	BLANK	1.00		CARBON	5/ 18/2023 12:50 AM	bl	0.000	5 379	0.000	0.000	0	959	0.000	0.000	1.0000	1.0000



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Date: Thu May 18 09:43:39 2023

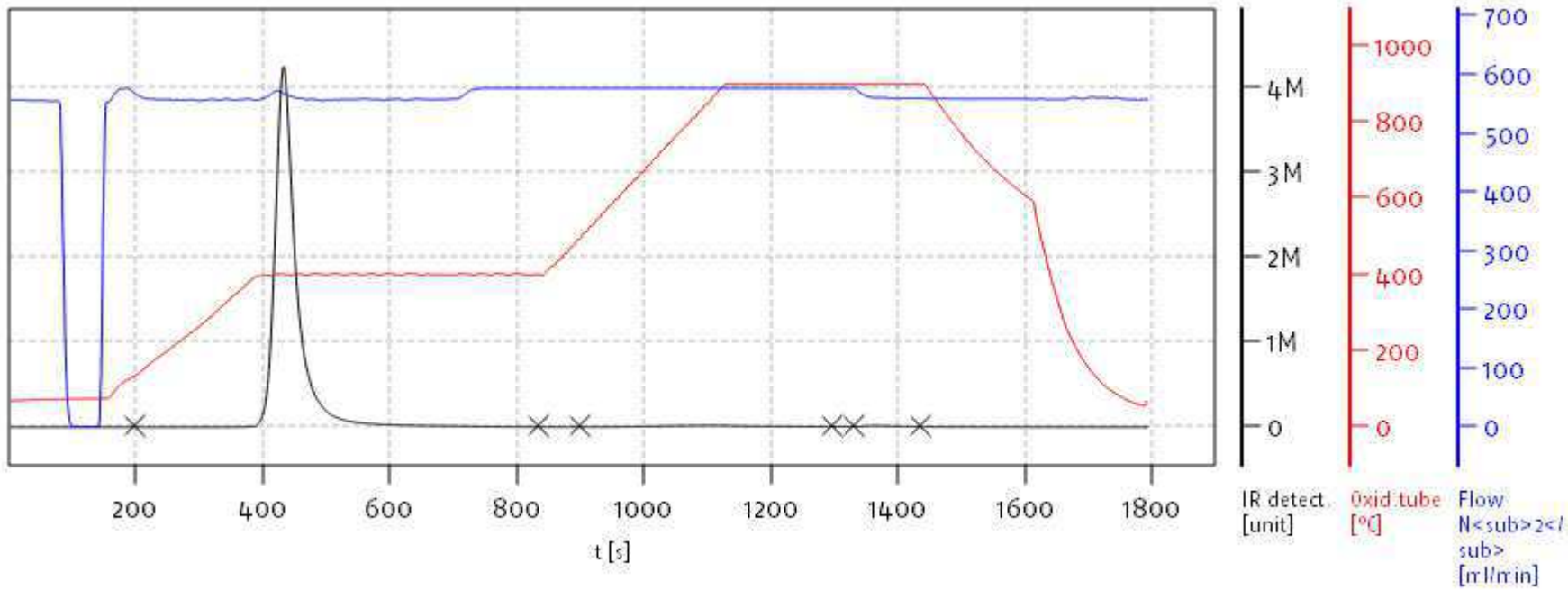
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
28	28	Dfactor	21.70		CARBON	5/18/2023 1:20 AM	bl	44.736	6 218 209	45.755	0.291	37 376	137 647	44.446	1.019	0.9835	1.0000



Name:

Access: soliTOC superuser

Date: Thu May 18 09:43:39 2023

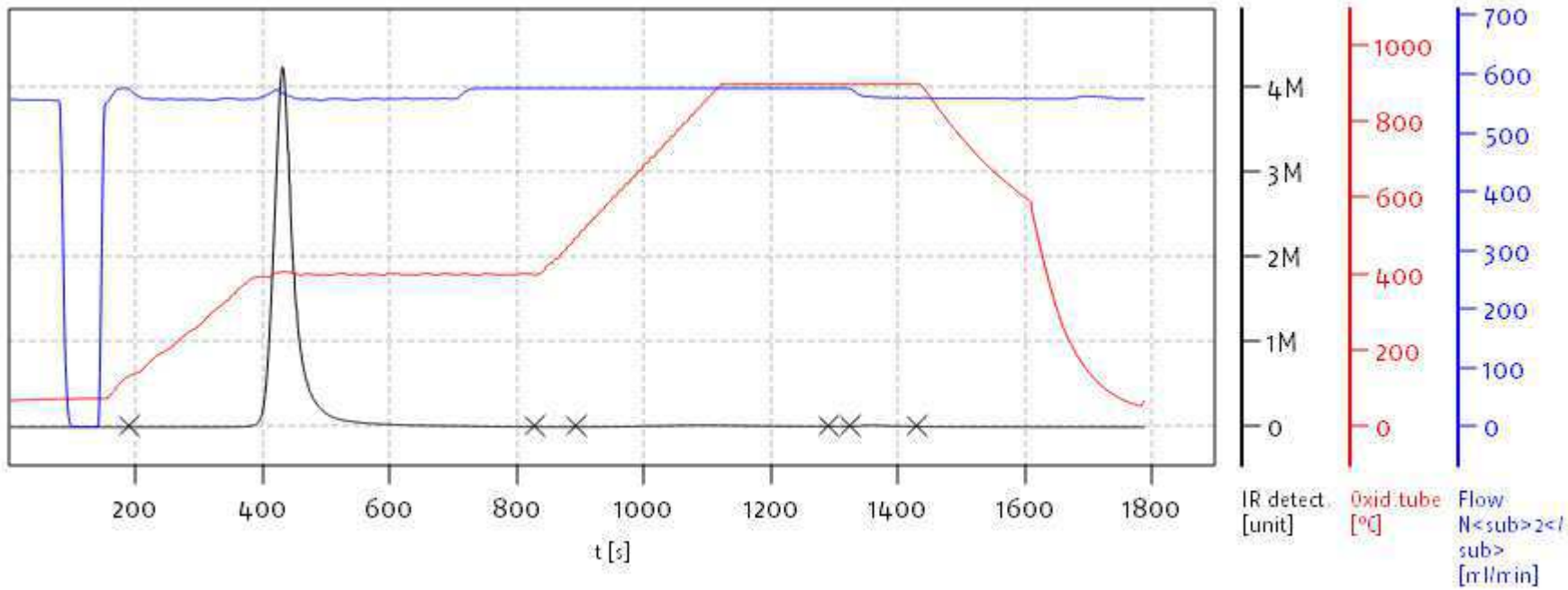
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
29	29	Dfactor	21.20		CARBON	5/18/2023 1:50 AM	bl	44.824	6 030 884	46.116	0.378	48 254	171 095	44.446	1.292	0.9907	1.0000



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Access: soliTOC superuser

Date: Thu May 18 09:43:39 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

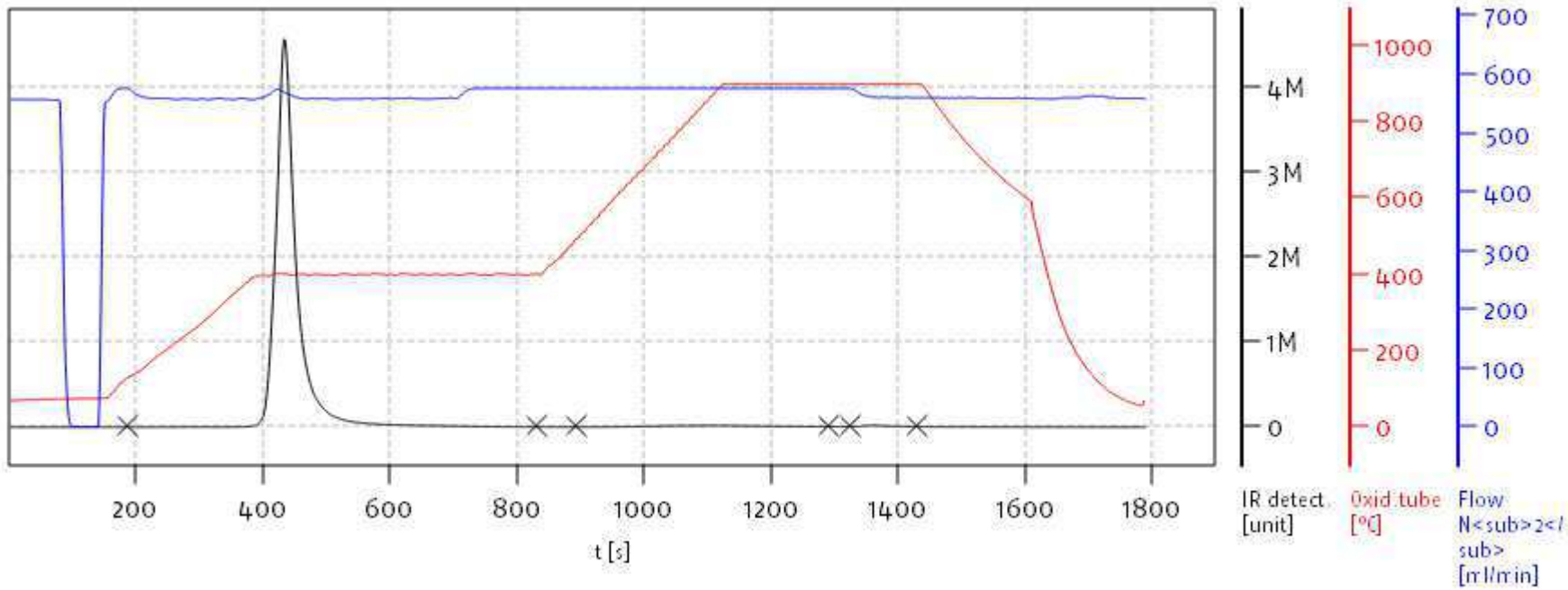
elementar
EXCELLENCE IN ELEMENTS

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
30	30	SLE0270-ICV1	22.30		CARBON	5/18/2023 2:21 AM	bl	44.949	6 392 325	46.022	0.327	43 597	149 127	44.622	1.073	0.9871	1.0000



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Date: Thu May 18 09:43:39 2023

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

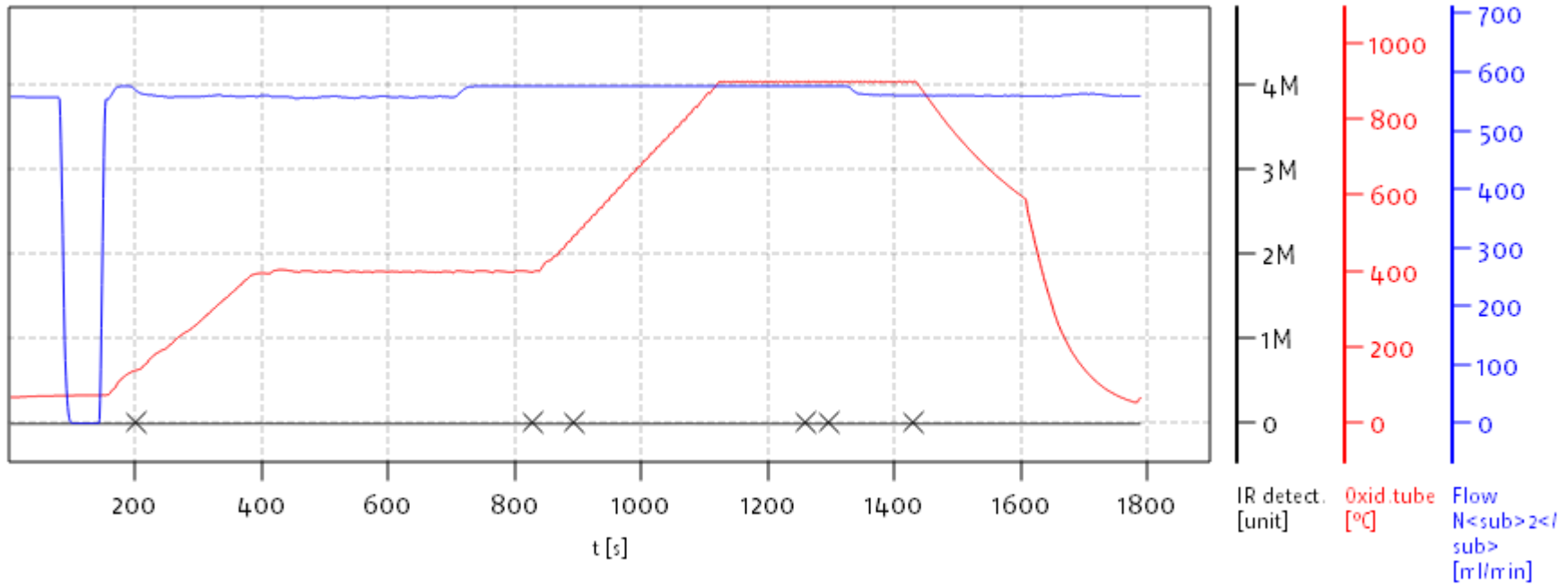
elementar
EXCELLENCE IN ELEMENTS

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
31	31	SLE0270-ICB1	530.50		CARBON	5/18/2023 2:51 AM	bl,C1u,C3u,C2u	0.003	6 198	0.005	0.001	198	1 900	0.003	0.001	0.9871	1.0000



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Date: Thu May 18 09:43:39 2023

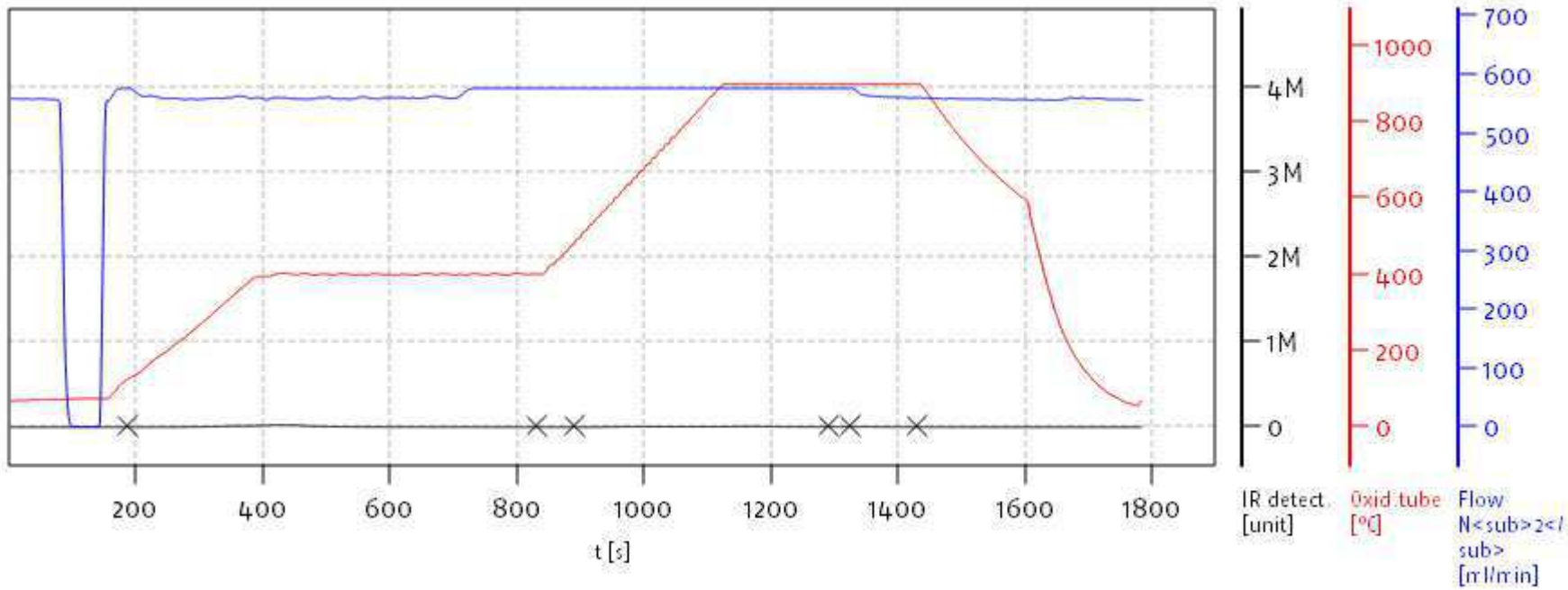
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
32	32	23D0491-10	42.50		CARBON	5/18/2023 3:21 AM	bl	0.560	138 129	0.841	0.044	9 353	73 148	0.515	0.281	0.9871	1.0000



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EXCELLENCE IN ELEMENTS

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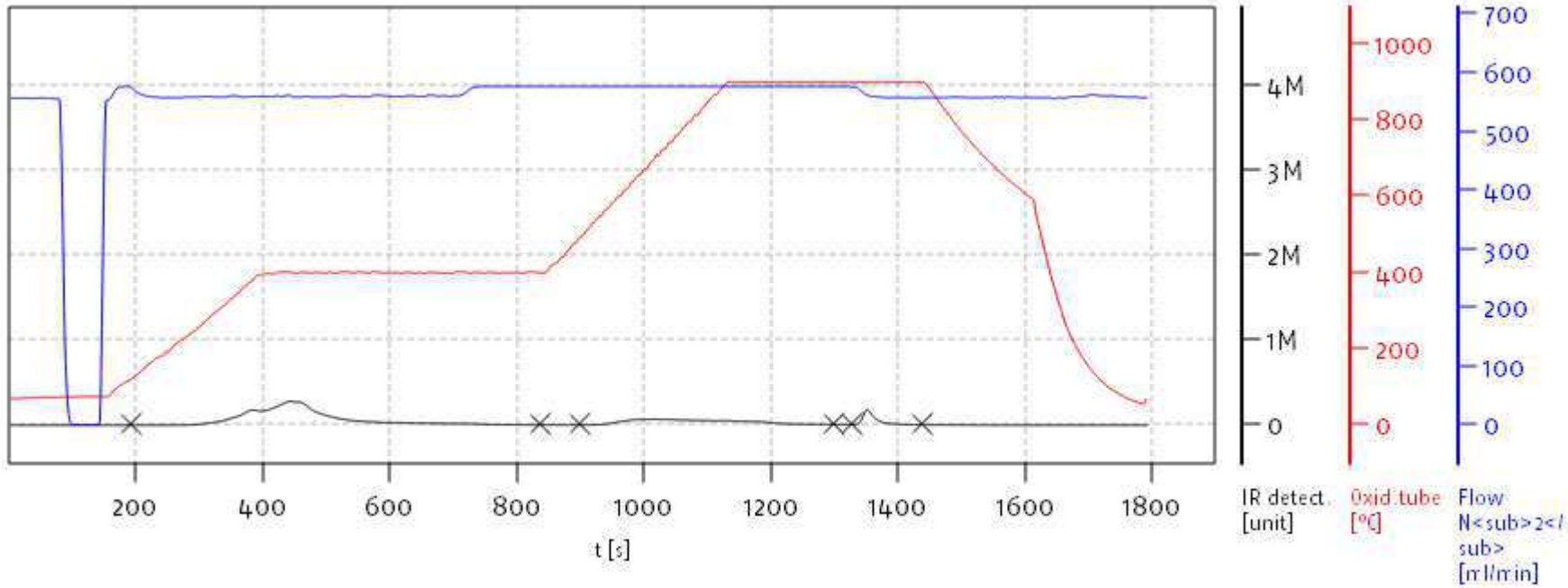
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
33	33	23D0491-10RE1	505.50		CARBON	5/18/2023 3:51 AM	bl	0.513	1 489 627	0.692	0.054	169 645	569 728	0.459	0.178	0.9871	1.0000



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Date: Thu May 18 09:43:39 2023

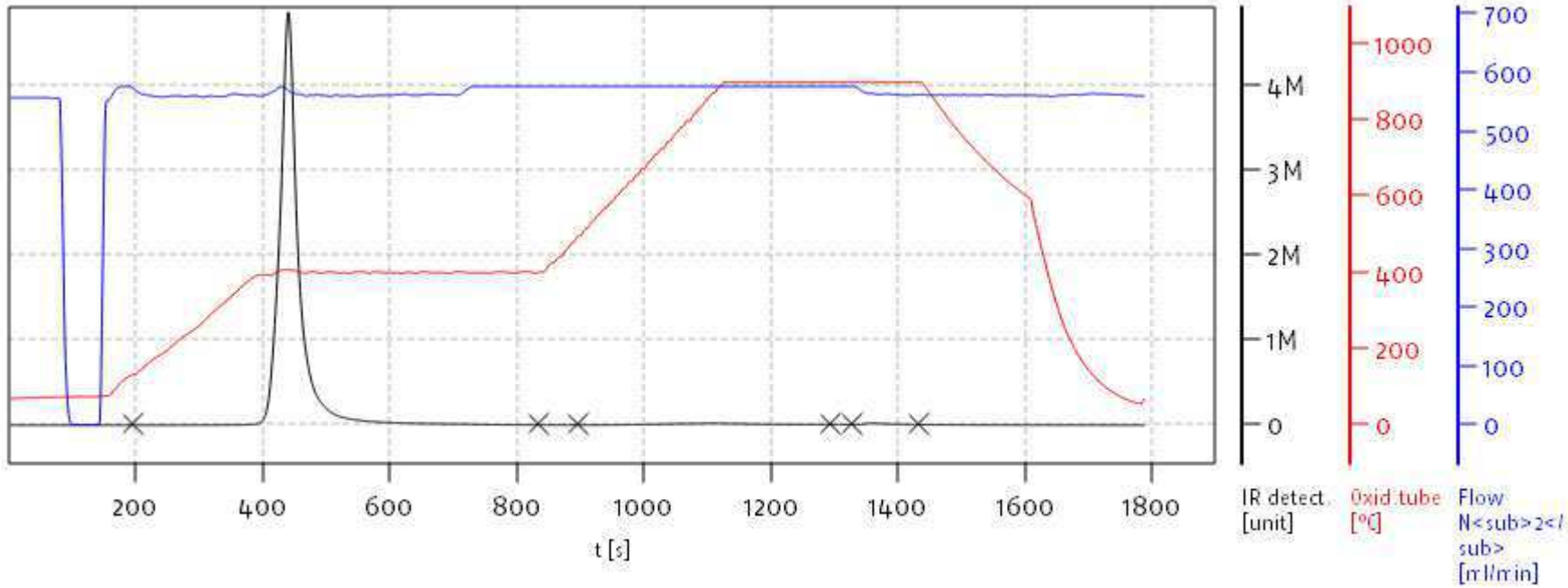
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
34	34	SLE0270-CCV1	22.20		CARBON	5/18/2023 4:21 AM	bl	44.616	6 309 271	45.769	0.375	50 146	159 806	44.241	1.153	0.9871	1.0000



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Date: Thu May 18 09:43:39 2023

elementar
EXCELLENCE IN ELEMENTS

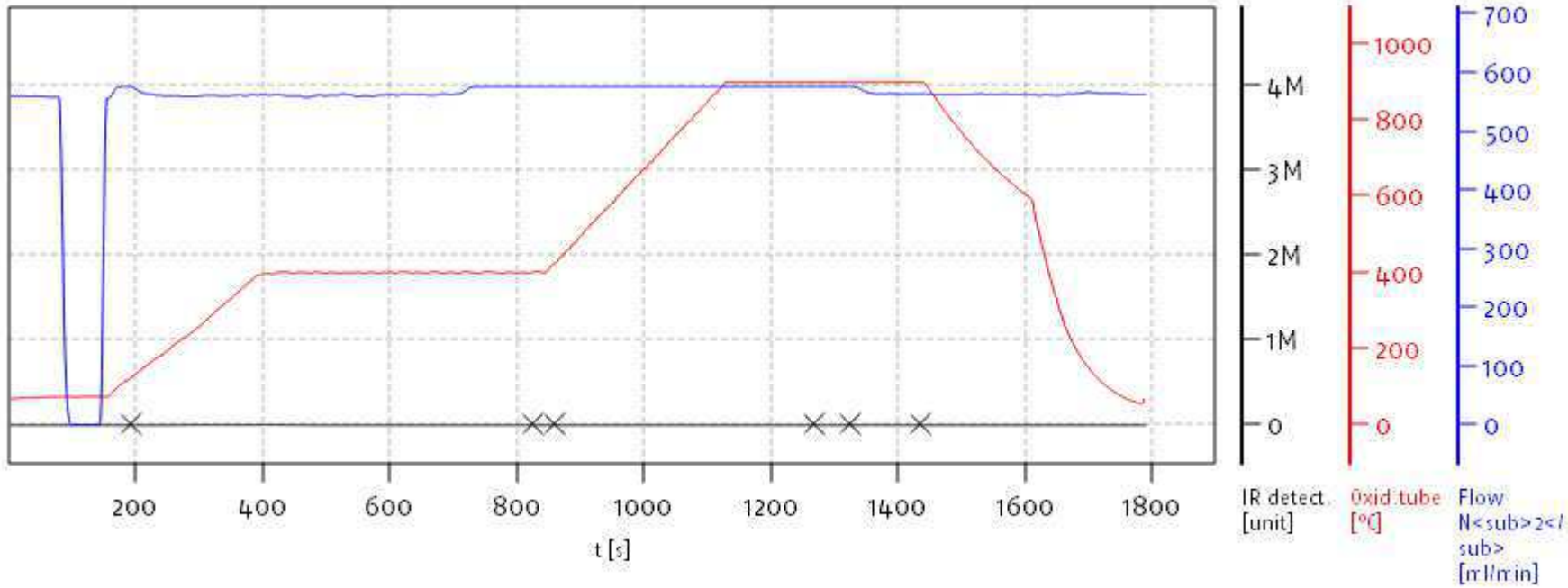
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
35	35	SLE0270-CCB1	523.30		CARBON	5/18/2023 4:52 AM	bl,C3u,C2u	0.009	22 128	0.010	0.001	2 335	2 184	0.007	0.001	0.9871	1.0000



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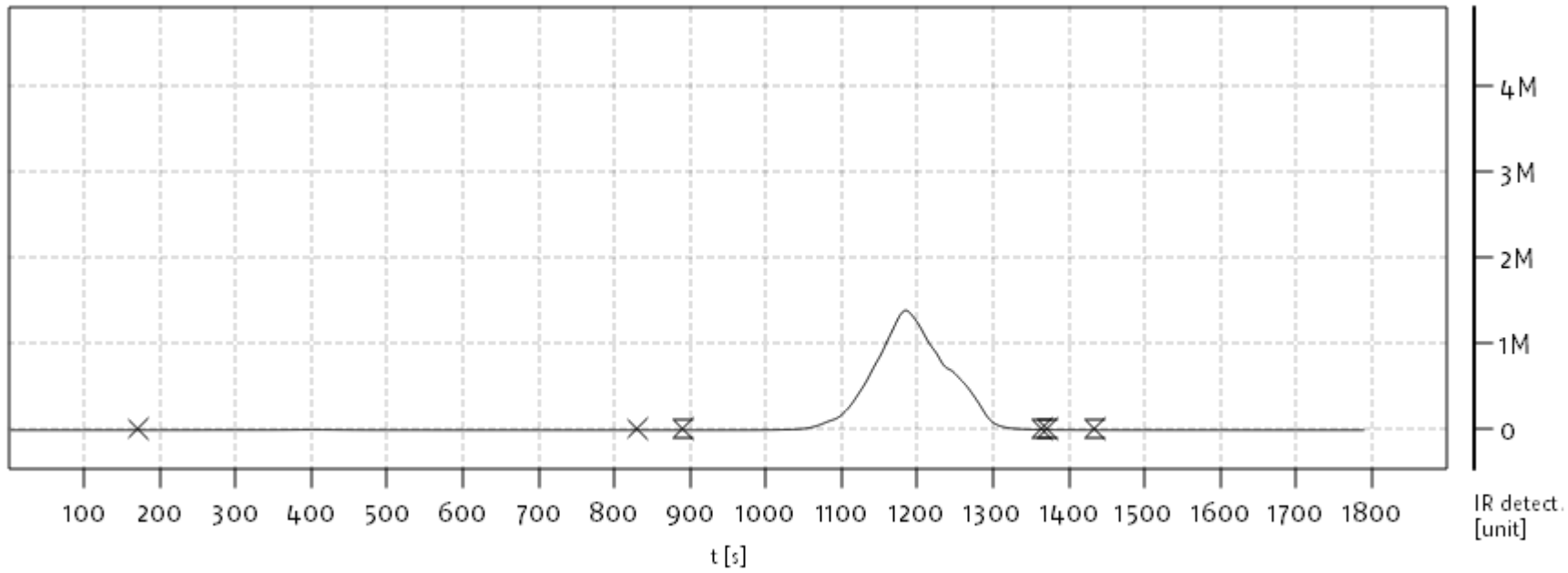
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
23	23	SLE0270-CALL	200.00	0.0700	CARBON	5/18/2023 9:47 AM	bl	0.019	21 598	4.386	0.000	**0**	**5 538 028**	0.019	4.367	1.0000	1.0000



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Access: soliTOC superuser

Date: Thu May 18 09:50:12 2023

elementar
EXCELLENCE IN ELEMENTS

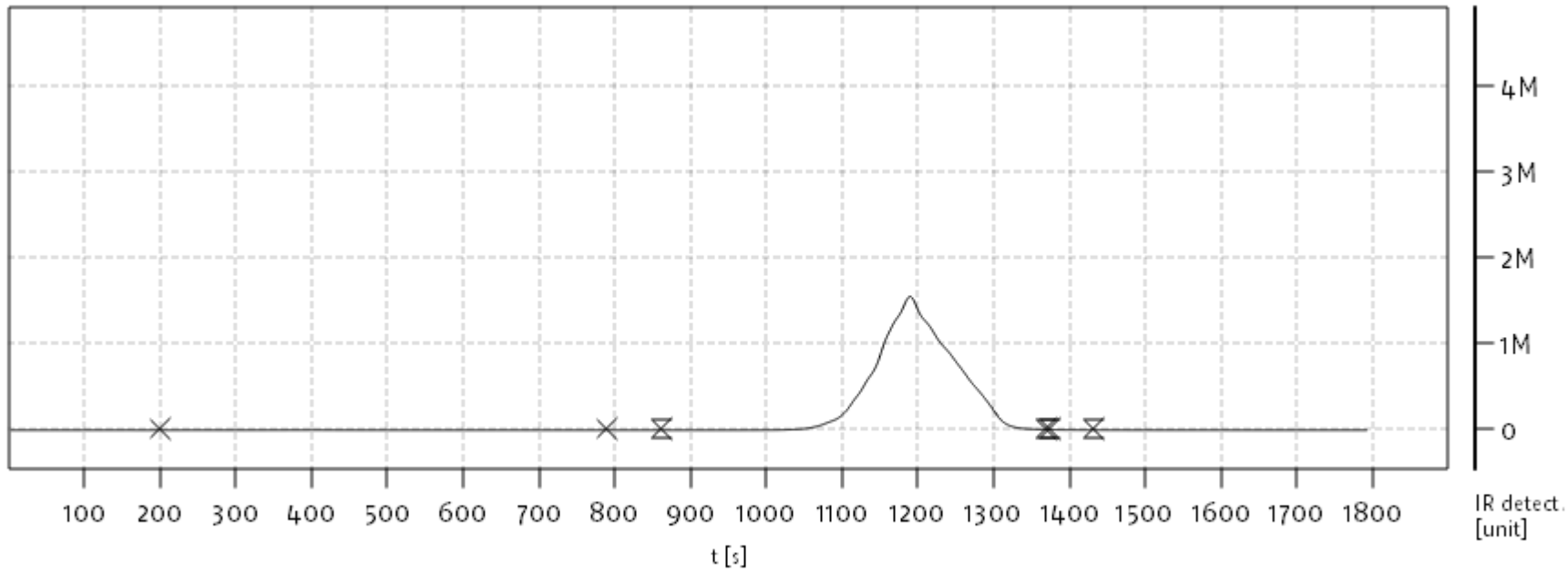
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
24	24	SLE0270-CALM	200.00	0.0800	CARBON	5/18/2023 9:48 AM	bl,C1u	0.006	5 408	4.784	0.000	**0**	**6 058 878**	0.006	4.778	1.0000	1.0000



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elementar
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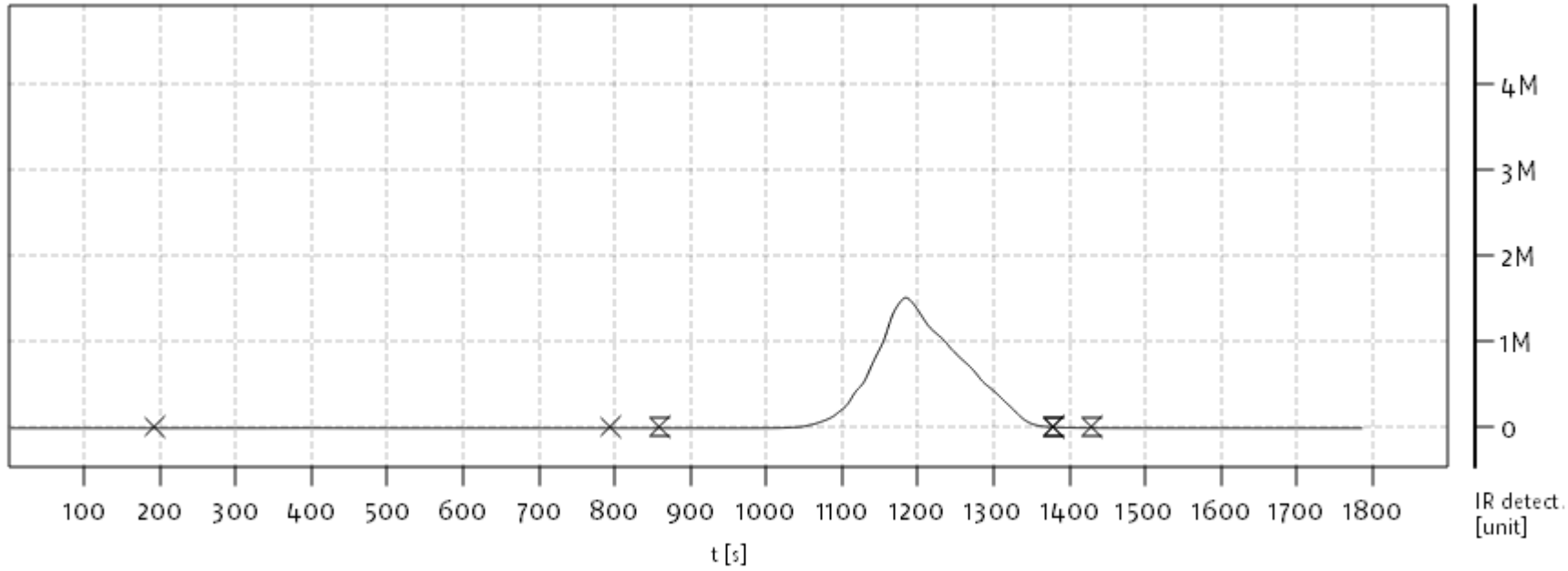
Serial No: 0300.181017
Mode CCC

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
25	25	SLE0270-CALN	200.00	0.0900	CARBON	5/18/2023 9:49 AM	bl	0.009	8 745	5.379	0.000	**0**	**6 810 985**	0.009	5.370	1.0000	1.0000



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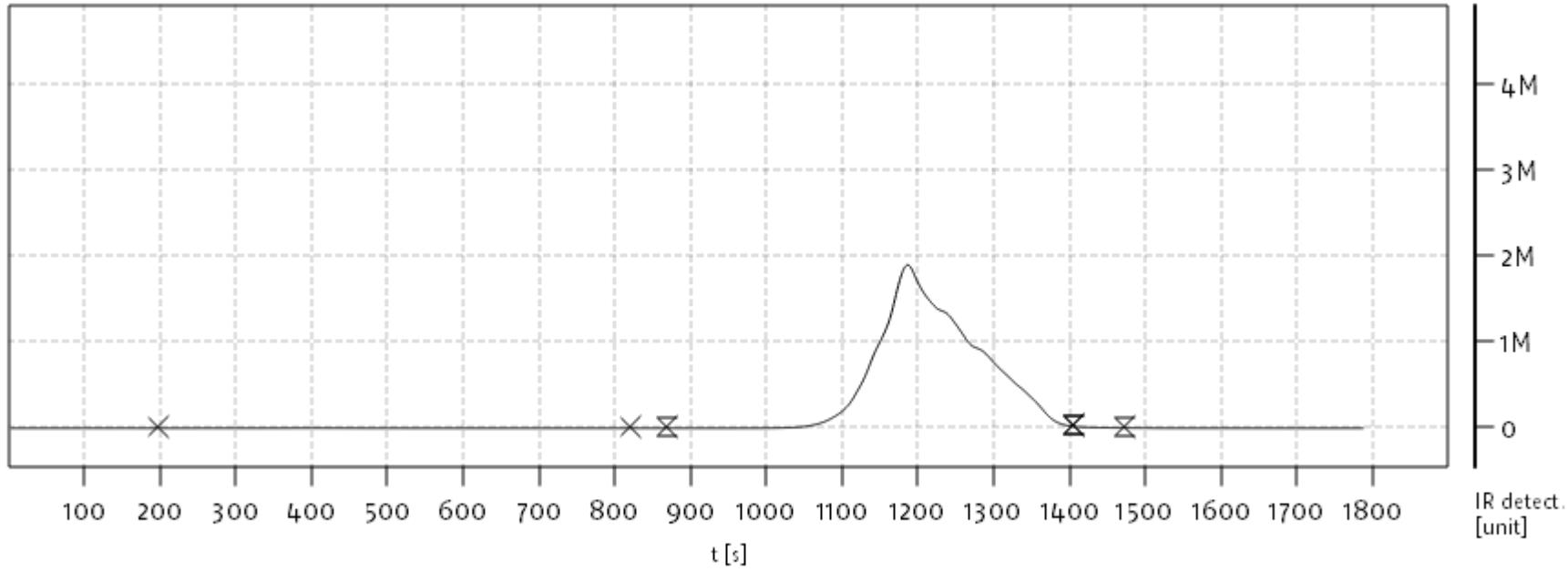
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: CDE

Analytical Resources, LLC
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Method	Date Time	Info	TOC [%]	TOC400 Area	TC [%]	ROC [%]	ROC Area	TIC900 Area	TOC400 [%]	TIC900 [%]	TOC400 Factor	TIC900 Factor
26	26	SLE0270-CALO	200.00	0.1200	CARBON	5/18/2023 9:49 AM	bl,C1u,C3o	0.008	6 993	7.291	0.000	0	9 238 066	0.008	7.283	1.0000	1.0000



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soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Document: 051723CDE GE00052 Calibration from: --.--.-- (modified)

INSTRUMENT BLANKS
EPA 9060A m

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: TOC Cube
Calibration: GE00052
Sequence: SLE0270
Date Analyzed: 05/18/23 02:51

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLE0270-ICB1	Total Organic Carbon	0.003	0.02	0.02	%	
SLE0270-CCB1	Total Organic Carbon	0.009	0.02	0.02	%	

INSTRUMENT BLANKS
EPA 9060A m

Laboratory: Analytical Resources, LLC
Client: Anchor QEA, LLC
Instrument ID: TOC Cube
Sequence: SLG0028

SDG: 23F0536
Project: Lower Duwamish AOC4
Calibration: GE00052
Date Analyzed: 07/06/23 16:13

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLG0028-ICB1	Total Organic Carbon	0.00	0.02	0.02	%	
SLG0028-CCB1	Total Organic Carbon	0.00	0.02	0.02	%	
SLG0028-CCB2	Total Organic Carbon	0.00	0.02	0.02	%	
SLG0028-CCB3	Total Organic Carbon	0.00	0.02	0.02	%	
SLG0028-CCB4	Total Organic Carbon	0.00	0.02	0.02	%	
SLG0028-CCB5	Total Organic Carbon	0.00	0.02	0.02	%	
SLG0028-CCB6	Total Organic Carbon	0.00	0.02	0.02	%	
SLG0028-CCB7	Total Organic Carbon	0.002	0.02	0.02	%	
SLG0028-CCB8	Total Organic Carbon	0.00	0.02	0.02	%	

INSTRUMENT BLANKS
EPA 9060A m

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: TOC Cube
Calibration: GE00052
Sequence: SLG0217
Date Analyzed: 07/19/23 21:57

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SLG0217-ICB1	Total Organic Carbon	0.00	0.02	0.02	%	
SLG0217-CCB1	Total Organic Carbon	0.00	0.02	0.02	%	
SLG0217-CCB2	Total Organic Carbon	0.00	0.02	0.02	%	
SLG0217-CCB3	Total Organic Carbon	0.00	0.02	0.02	%	
SLG0217-CCB4	Total Organic Carbon	0.00	0.02	0.02	%	
SLG0217-CCB5	Total Organic Carbon	0.00	0.02	0.02	%	

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 9060A m

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: TOC Cube
Calibration: GE00052
Control Limt: +/- 10.00%
Sequence: SLE0270

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLE0270-ICV1	Total Organic Carbon	44.446	45.4	102	%	EPA 9060A m
	Total Carbon	44.446	45.4	102	%	EPA 9060A m
	Total Inorganic Carbon	0.0000	45.4		%	EPA 9060A m
	% Soot	0.0000	45.4		%	EPA 9060A m
SLE0270-CCV1	Total Organic Carbon	44.446	45.2	102	%	EPA 9060A m
	Total Carbon	44.446	45.2	102	%	EPA 9060A m
	Total Inorganic Carbon	0.0000	45.2		%	EPA 9060A m
	% Soot	0.0000	45.2		%	EPA 9060A m

* Values outside of QC limits

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 9060A m

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: TOC Cube
Calibration: GE00052
Control Limt: +/- 10.00%
Sequence: SLG0028

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLG0028-CCV1	Total Organic Carbon	44.446	42.7	96.1	%	EPA 9060A m
SLG0028-CCV2	Total Organic Carbon	44.446	43.4	97.7	%	EPA 9060A m
SLG0028-CCV3	Total Organic Carbon	44.446	44.3	99.6	%	EPA 9060A m
SLG0028-CCV4	Total Organic Carbon	44.446	45.7	103	%	EPA 9060A m
SLG0028-CCV5	Total Organic Carbon	44.446	44.8	101	%	EPA 9060A m
SLG0028-CCV6	Total Organic Carbon	44.446	44.5	100	%	EPA 9060A m
SLG0028-CCV7	Total Organic Carbon	44.446	44.6	100	%	EPA 9060A m
SLG0028-CCV8	Total Organic Carbon	44.446	44.4	99.9	%	EPA 9060A m

* Values outside of QC limits

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 9060A m

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: TOC Cube
Calibration: GE00052
Control Limt: +/- 10.00%
Sequence: SLG0217

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SLG0217-ICV1	Total Organic Carbon	44.446	45.2	102	%	EPA 9060A m
	Total Carbon	44.446	46.2	104	%	EPA 9060A m
	Total Inorganic Carbon	0.0000	0.98		%	EPA 9060A m
	% Soot	0.0000	0.07		%	EPA 9060A m
SLG0217-CCV1	Total Organic Carbon	44.446	45.1	101	%	EPA 9060A m
	Total Carbon	44.446	46.1	104	%	EPA 9060A m
	Total Inorganic Carbon	0.0000	1.05		%	EPA 9060A m
	% Soot	0.0000	0.05		%	EPA 9060A m
SLG0217-CCV2	Total Organic Carbon	44.446	45.1	101	%	EPA 9060A m
	Total Carbon	44.446	46.2	104	%	EPA 9060A m
	Total Inorganic Carbon	0.0000	1.13		%	EPA 9060A m
	% Soot	0.0000	0.00		%	EPA 9060A m
SLG0217-CCV3	Total Organic Carbon	44.446	45.2	102	%	EPA 9060A m
	Total Carbon	44.446	46.2	104	%	EPA 9060A m
	Total Inorganic Carbon	0.0000	1.03		%	EPA 9060A m
	% Soot	0.0000	0.05		%	EPA 9060A m
SLG0217-CCV4	Total Organic Carbon	44.446	44.7	101	%	EPA 9060A m
	Total Carbon	44.446	45.5	102	%	EPA 9060A m
	Total Inorganic Carbon	0.0000	0.82		%	EPA 9060A m
	% Soot	0.0000	0.00		%	EPA 9060A m
SLG0217-CCV5	Total Organic Carbon	44.446	44.2	99.5	%	EPA 9060A m
	Total Carbon	44.446	45.3	102	%	EPA 9060A m
	Total Inorganic Carbon	0.0000	1.05		%	EPA 9060A m
	% Soot	0.0000	0.004		%	EPA 9060A m

* Values outside of QC limits

Analytical Resources, LLC
Analytical Chemists and Consultants

STANDARD REFERENCE MATERIAL RECOVERY

EPA 9060A m

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BLG0049-SRM1
Batch: BLG0049
Initial/Final: 0.3201 g / 0.3201 mL
Preparation: PSEP 1986 (modified)
Analyzed: 07/07/2023 11:27
Standard ID: L005590
Expires: 04/14/2032
Standard Lot#: 1941 B
Description: 1941B- Organics in Marine Sediment

ANALYTE	TRUE (% wet)	FOUND (% wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
Total Organic Carbon	2.9900	3.02	0.02	0.02		101	80 - 120

* Values outside of QC limits

HOLDING TIME SUMMARY

Analysis: EPA 9060A m

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW20-SC148A 23F0536-01	06/08/20 08:41	06/22/23 14:10	07/05/23 13:26	1,122	14	07/07/23 23:37			*
Duplicate BLG0049-DUP2	06/08/20 08:41	06/22/23 14:10	07/05/23 13:26	1,122	14	07/08/23 00:07			*
Matrix Spike BLG0049-MS2	06/08/20 08:41	06/22/23 14:10	07/05/23 13:26	1,122	14	07/08/23 00:38			*

* Indicates hold time exceedance.

METHOD DETECTION AND REPORTING LIMITS

EPA 9060A m

Laboratory: Analytical Resources, LLC
SDG: 23F0536
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Instrument: TOC Cube

Analyte	MDL	RL	Units
Total Organic Carbon	0.02	0.02	%

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Standard Record

Standard ID: B000871

Printed: 5/25/2023 9:17:22AM

Description:	Calcium Carbonate 99.9% for Calibration	Expires:	31-Oct-2030
Standard Type:	Reagent	Prepared:	28-Jun-2013
Solvent:	NA/I2605	Prepared By:	Susan Dunnihoo
Final Volume (mls):	500	Department:	Conventionals
Vials:	1	Last Edit:	08-Jul-2019 12:16 by CDE
Vendor:	Mallinckrodt	Lot #:	4072 KDHD
Vendor Catalog #:	4072-03		

Comments

Analyte	CAS Number	Concentration	Units
Total Organic Carbon		120000	ppm
Total Inorganic Carbon		120000	ppm
Total Carbon		120000	ppm
Calcium carbonate	471-34-1	1000000	ppm
% Soot		120000	ppm

MP Biomedicals, LLC

29525 Fountain Parkway
Solon, Ohio 44139

Telephone: 440/337-1200
Toll Free: 800/854-0530

Fax: 440/337-1180
web: www.mpbio.com

Certificate of Analysis

Product Description: Microcrystalline Cellulose Powder_
Catalog Number: 191499_
Lot: Q9483_

Formula: $(C_6H_{10}O_5)n$	**Formula Weight:** N/A
CAS #: 9004-34-6	**Storage:** 15 - 30°C
Physical Description: White Powder	

Test	Specification	Result
Identity Test	Passes	Passes
Purity	97.0 - 102.0%	97.0 - 102.0%
Moisture	<5.0%	3.4%
Particle Size/Mesh +60 mesh +200 mesh	Wt % <8% >45%	 <1% 55%
pH	5 - 7	6.73
Residue on Ignition	<0.05%	<0.05%
Water Soluble Substances	<12.0 mg/5 g	4.5 mg/5 g
Heavy Metals	<10 ppm	<10 ppm

H001822
Microcrystalline Cellulose Powder (TOC)
Expires 11/30/2022
Prepared By Casey English 2/22/2019

Identification A & B: Passes
Bulk Density: 0.29 g/ml
Bulk Density (graduated cylinder): 0.31 g/ml
Conductivity: 18 µS/cm
Starch: Negative
Ether Soluble Substances: 0.01%
Total Aerobic microbial Count: 100 cfu/g
Total Mold and Yeast Count: 20 cfu/g
Staphylococcus aureus: Absent/1 g
Pseudomonas aeruginosa: Absent/1 g
E. coli: Absent/1 g
Salmonella: Absent/10 g
Particle size:

- 450 mesh: 77%
- d10: 37 um
- d50: 139 um
- d90: 271 um

TUP: <9/600 cm^2
Degree of brightness: >88%
Powder flow-angle of repose: <42°
Recommended Retest Date: 11/30/2022

07/26/2018 - *John Huang, PhD*
MP Biomedicals, LLC.
Quality Control Manager

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Certificate of Analysis

Product Description: Microcrystalline Cellulose Powder_
Catalog Number: 191499_
Lot: Q9483_

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CAS #: 9004-34-6	**Storage:** 15 - 30°C
Physical Description: White Powder	

Test	Specification	Result
Identity Test	Passes	Passes
Purity	97.0 - 102.0%	97.0 - 102.0%
Moisture	<5.0%	3.4%
Particle Size/Mesh +60 mesh +200 mesh	Wt % <8% >45%	 <1% 55%
pH	5 - 7	6.73
Residue on Ignition	<0.05%	<0.05%
Water Soluble Substances	<12.0 mg/5 g	4.5 mg/5 g
Heavy Metals	<10 ppm	<10 ppm

H001822
Microcrystalline Cellulose Powder (TOC)
Expires 11/30/2022
Prepared By Casey English 2/22/2019

Identification A & B: Passes
Bulk Density: 0.29 g/ml
Bulk Density (graduated cylinder): 0.31 g/ml
Conductivity: 18 µS/cm
Starch: Negative
Ether Soluble Substances: 0.01%
Total Aerobic microbial Count: 100 cfu/g
Total Mold and Yeast Count: 20 cfu/g
Staphylococcus aureus: Absent/1 g
Pseudomonas aeruginosa: Absent/1 g
E. coli: Absent/1 g
Salmonella: Absent/10 g
Particle size:

- 450 mesh: 77%
- d10: 37 um
- d50: 139 um
- d90: 271 um

TUP: <9/600 cm^2
Degree of brightness: >88%
Powder flow-angle of repose: <42°
Recommended Retest Date: 11/30/2022

07/26/2018 - *John Huang, PhD*
MP Biomedicals, LLC.
Quality Control Manager

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Catalog Number: 191499_
Lot: Q9483_

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CAS #: 9004-34-6	**Storage:** 15 - 30°C
Physical Description: White Powder	

Test	Specification	Result
Identity Test	Passes	Passes
Purity	97.0 - 102.0%	97.0 - 102.0%
Moisture	<5.0%	3.4%
Particle Size/Mesh +60 mesh +200 mesh	Wt % <8% >45%	 <1% 55%
pH	5 - 7	6.73
Residue on Ignition	<0.05%	<0.05%
Water Soluble Substances	<12.0 mg/5 g	4.5 mg/5 g
Heavy Metals	<10 ppm	<10 ppm

H001822
Microcrystalline Cellulose Powder (TOC)
Expires 11/30/2022
Prepared By Casey English 2/22/2019

Identification A & B: Passes
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Bulk Density (graduated cylinder): 0.31 g/ml
Conductivity: 18 µS/cm
Starch: Negative
Ether Soluble Substances: 0.01%
Total Aerobic microbial Count: 100 cfu/g
Total Mold and Yeast Count: 20 cfu/g
Staphylococcus aureus: Absent/1 g
Pseudomonas aeruginosa: Absent/1 g
E. coli: Absent/1 g
Salmonella: Absent/10 g
Particle size:

- 450 mesh: 77%
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TUP: <9/600 cm^2
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Powder flow-angle of repose: <42°
Recommended Retest Date: 11/30/2022

07/26/2018 - *John Huang, PhD*
MP Biomedicals, LLC.
Quality Control Manager

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National Institute of Standards and Technology
U.S. Department of Commerce

Date of Issue:
25 April 2022

Standard Reference Material® 1941b

Organics in Marine Sediment

CERTIFICATE OF ANALYSIS

Purpose: This Standard Reference Material (SRM) is marine sediment collected at the mouth of the Baltimore (MD) Harbor. SRM 1941b is intended for use in evaluating analytical methods for the determination of selected polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, and chlorinated pesticides in marine sediment and similar matrices. Non-certified values are also provided for total organic carbon (TOC), total carbon, hydrogen, and nitrogen. All of the constituents for which certified and non-certified values are provided in SRM 1941b were naturally present in the sediment before processing.

Description: A unit of SRM 1941b consists of a bottle containing 50 g of radiation-sterilized, freeze-dried sediment.

Certified Values: Certified mass fraction values for PAHs, PCB congeners, and chlorinated pesticides are provided in Table 1 through Table 3. The certified values for the PAHs, PCB congeners, and chlorinated pesticides are based on the agreement of results obtained at NIST from two or more chemically independent analytical techniques along with results from an interlaboratory comparison study [1]. A NIST certified value is a value for which NIST has the highest confidence in its accuracy in that all known or suspected sources of bias have been investigated or taken into account [1].

Non-Certified Values: Non-certified values are provided in the Appendix A.

Additional Information: Additional information is provided in Appendices B-D.

Period of Validity: The certified values delivered by **SRM 1941b** are valid within the measurement uncertainty specified until **14 April 2032**. The certified values are nullified if the material is stored or used improperly, damaged, contaminated, or otherwise modified.

Maintenance of Certified Values: NIST will monitor this SRM over the period of its validity. If substantive technical changes occur that affect the certification, NIST will issue an amended certificate through the NIST SRM website (https://www.nist.gov/srm) and notify registered users. SRM users can register online from a link available on the NIST SRM website or fill out the user registration form that is supplied with the SRM. Registration will facilitate notification. Before making use of any of the values delivered by this material, users should verify they have the most recent version of this documentation, available through the NIST SRM website (https://www.nist.gov/srm).

Carlos A. Gonzalez, Chief
Chemical Sciences Division
Certificate Revision History on Page 5

Steven J. Choquette, Director
Office of Reference Materials

Table 1. Certified Mass Fraction Values for PAHs in SRM 1941b

PAHs	Mass Fractions[a] (µg/kg)		
Naphthalene[b,c,d,e,f,g]	848	±	95[h]
Fluorene[b,c,d,e,f,g]	85	±	15[h]
Phenanthrene[b,c,d,e,f,g]	406	±	44[h]
Anthracene[b,c,d,e,f,g]	184	±	18[h]
3-Methylphenanthrene[b,c,d]	105	±	13[h]
2-Methylphenathrene[b,c,d]	128	±	14[h]
1-Methylphenanthrene[b,c,d,g]	73.2	±	5.9[h]
Fluoranthene[b,c,d,e,f,g]	651	±	50[h]
Pyrene[b,c,d,e,f,g]	581	±	39[h]
Benz[*a*]anthracene[b,c,d,e,f,g]	335	±	25[h]
Chrysene[d,f]	291	±	31[h]
Triphenylene[d,f]	108	±	5[i]
Benzo[*b*]fluoranthene[c,e]	453	±	21[h]
Benzo[*k*]fluoranthene[b,c,d,e]	225	±	18[h]
Benzo[*e*]pyrene[b,c,d,g]	325	±	25[h]
Benzo[*a*]pyrene[b,c,d,f,g]	358	±	17[h]
Perylene[b,c,d,f,g]	397	±	45[h]
Benzo[*ghi*]perylene[b,c,d,f,g]	307	±	45[h]
Indeno[1,2,3-*cd*]pyrene[b,c,d,f,g]	341	±	57[h]
Dibenz[*a,j*]anthracene[b,c,d,f]	48.9	±	4.6[h]
Dibenz[*a,c*]anthracene[c,f]	36.7	±	5.2[h]
Dibenz[*a,h*]anthracene[c,f]	53	±	10[h]
Benzo[*b*]chrysene[b,c,d,f]	53	±	12[h]
Picene[b,c,d]	46.6	±	4.7[h]

[a] Mass fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.
[b] GC/MS (I) on 5 % phenyl-substituted methylpolysiloxane phase after PFE with DCM.
[c] GC/MS (II) on 50 % phenyl-substituted methylpolysiloxane phase after PFE with DCM.
[d] GC/MS (III) on a relatively non-polar proprietary phase after Soxhlet extraction with 50 % hexane/50 % acetone mixture.
[e] LC-FL (total) of total PAH fraction after PFE with DCM.
[f] LC-FL (isomer) of isomeric PAH fractions after PFE with DCM.
[g] 1999 Interlaboratory Comparison Study [2] with 21 to 29 laboratories submitting data for each PAH.
[h] Certified values are weighted means of the results from two to six analytical methods [3]. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2 (approximately 95 % confidence), calculated by combining a between-method variance incorporating inter-method bias with a pooled within-method variance following the ISO/JCGM Guide [4,5]. The measurand is the total mass fraction of the constituent listed and the values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.
[i] The certified value is an unweighted mean of the results from two analytical methods. The uncertainty listed with the value is an expanded uncertainty about the mean, with coverage factor 2, calculated by combining a between-method variance [6] with a pooled, within-method variance following the ISO/JCGM Guide [4,5]. The measurand is the total mass fraction of the constituent listed and the value is metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

Table 2. Certified Mass Fraction Values for PCB Congeners[a] in SRM 1941b

PCB Congeners			Mass Fractions[b] (µg/kg)		
PCB	8	(2,4'-Dichlorobiphenyl)[c,d,e,f,g]	1.65	±	0.19[h]
PCB	18	(2,2',5-Trichlorobiphenyl)[c,d,e,f,g]	2.39	±	0.29[h]
PCB	28	(2,4,4'-Trichlorobiphenyl)[c,d,e,f,g]	4.52	±	0.57[h]
PCB	31	(2,4',5-Trichlorobiphenyl)[c,e,f]	3.18	±	0.41[h]
PCB	44	(2,2'3,5'-Tetrachlorobiphenyl)[c,d,e,f,g]	3.85	±	0.20[i]
PCB	49	(2,2'4,5'-Tetrachlorobiphenyl)[c,d,e,f]	4.34	±	0.28[i]
PCB	52	(2,2',5,5'-Tetrachlorobiphenyl)[c,d,e,f,g]	5.24	±	0.28[i]
PCB	66	(2,3',4,4'-Tetrachlorobiphenyl)[c,e,f,g,j]	4.96	±	0.53[i]
PCB	87	(2,2',3,4,5'-Pentachlorobiphenyl)[c,d,f,j]	1.14	±	0.16[h]
PCB	95	(2,2',3,5',6-Pentachlorobiphenyl)[c,e,f,g]	3.93	±	0.62[i]
PCB	99	(2,2',4,4',5-Pentachlorobiphenyl)[c,d,e,f,g]	2.90	±	0.36[i]
PCB	101	(2,2',4,5,5'-Pentachlorobiphenyl)[c,e,f,g,j]	5.11	±	0.34[i]
PCB	105	(2,3,3',4,4'-Pentachlorobiphenyl)[c,d,e,f,g,j]	1.43	±	0.10[i]
PCB	110	(2,3,3',4',6-Pentachlorobiphenyl)[c,e,f,j]	4.62	±	0.36[i]
PCB	118	(2,3',4,4',5-Pentachlorobiphenyl)[c,d,e,f,g,j]	4.23	±	0.19[i]
PCB	128	(2,2',3,3',4,4'-Hexachlorobiphenyl)[c,d,e,f,g,j]	0.696	±	0.044[i]
PCB	138	(2,2',3,4,4',5'-Hexachlorobiphenyl)[c,e,f,j]	3.60	±	0.28[i]
PCB	149	(2,2',3,4',5',6-Hexachlorobiphenyl)[c,d,e,j]	4.35	±	0.26[h]
PCB	153	(2,2',4,4',5,5'-Hexachlorobiphenyl)[c,d,e,f,g,j]	5.47	±	0.32[i]
PCB	156	(2,3,3',4,4',5-Hexachlorobiphenyl)[c,d,e,f,j]	0.507	±	0.090[h]
PCB	170	(2,2',3,3',4,4',5-Heptachlorobiphenyl)[c,d,e,f,g,j]	1.35	±	0.09[i]
PCB	180	(2,2',3,4,4',5,5'-Heptachlorobiphenyl)[c,d,e,f,g,j]	3.24	±	0.51[i]
PCB	183	(2,2',3,4,4',5',6-Heptachlorobiphenyl)[c,d,e,j]	0.979	±	0.087[h]
PCB	187	(2,2',3,4',5,5',6-Heptachlorobiphenyl)[c,d,e,f,g,j]	2.17	±	0.22[i]
PCB	194	(2,2',3,3',4,4',5,5'-Octachlorobiphenyl)[c,d,e,j]	1.04	±	0.06[h]
PCB	195	(2,2',3,3',4,4',5,6-Octachlorbiphenyl)[c,e,g,j]	0.645	±	0.060[i]
PCB	201	(2,2',3,3',4,5',6,6'-Octachlorobiphenyl)[c,e,j]	0.777	±	0.034[h]
PCB	206	(2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl)[c,e,f,g,j]	2.42	±	0.19[i]
PCB	209	Decachlorobiphenyl[c,d,e,f,g,j]	4.86	±	0.45[i]

[a] PCB congeners are numbered according to the scheme proposed by Ballschmiter and Zell [7] and later revised by Schulte and Malisch [8] to conform to IUPAC rules, except PCB 201. Under the Ballschmiter and Zell numbering system, the IUPAC PCB 201 is listed as PCB 200.

[b] Mass fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.

[c] GC/MS (IA) on a relatively non-polar proprietary phase after Soxhlet extraction with 50 % hexane/50 % acetone mixture.

[d] GC-ECD (IA) on 5 % phenyl-substituted methylpolysiloxane phase after PFE extraction with DCM.

[e] GC-ECD (IB) on a relatively non-polar proprietary phase; same extracts analyzed as in GC-ECD (IA).

[f] GC/MS (II) on a relatively non-polar proprietary phase after Soxhlet extraction with DCM.

[g] 1999 Interlaboratory Comparison Study [2] with 13 to 31 laboratories submitting data for each PCB congener.

[h] Certified values are unweighted means of the results from three to five analytical methods. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2, calculated by combining a between-method variance [6] with a pooled, within method variance following the ISO/JCGM Guide [4,5]. The measurand is the total mass fraction of the constituent listed and the values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

[i] Certified values are weighted means of the results from three to six analytical methods [3]. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2 (approximately 95 % confidence), calculated by combining a between-method variance incorporating inter-method bias with a pooled within-method variance following the ISO/JCGM Guide [4,5]. The measurand is the total mass fraction of the constituent listed and the values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

[j] GC/MS (IB) on 5 % phenyl-substituted methylpolysiloxane phase; same extracts analyzed as in GC/MS (IA).

Table 3. Certified Mass Fraction Values for Chlorinated Pesticides in SRM 1941b

Chlorinated Pesticides	Mass Fractions[a] (µg/kg)
Hexachlorobenzene[b,c,d,e]	5.83 ± 0.38[f]
cis-Chlordane[b,c,d,e,g]	0.85 ± 0.11[h]
trans-Chlordane[b,c,e]	0.566 ± 0.093[f]
cis-Nonachlor[b,e,g]	0.378 ± 0.053[h]
trans-Nonachlor[b,c,d,e,g]	0.438 ± 0.073[f]
4,4'-DDE[b,d,e,g]	3.22 ± 0.28[h]
4,4'-DDD[b,d,e,g]	4.66 ± 0.46[h]

[a] Mass fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.
[b] GC/MS (IA) on a relatively non-polar proprietary phase after Soxhlet extraction with 50 % hexane/50 % acetone mixture.
[c] GC/MS (IB) on 5 % phenyl-substituted methylpolysiloxane phase; same extracts analyzed as in GC/MS (IA).
[d] GC/MS (II) on a relatively non-polar proprietary phase after Soxhlet extraction with DCM.
[e] 1999 Interlaboratory Comparison Study [2] with 13 to 31 laboratories submitting data for each pesticide.
[f] Certified values are unweighted means of the results from three to five analytical methods. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2, calculated by combining a between-method variance [6] with a pooled, within-method variance following the ISO/JCGM Guide [4,5]. The measurand is the total mass fraction of the constituent listed and the values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.
[g] GC-ECD (IA) on 5 % phenyl-substituted methylpolysiloxane phase after PFE extraction with DCM.
[h] Certified values are weighted means of the results from three to five analytical methods [3]. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2 (approximately 95 % confidence), calculated by combining a between-method variance incorporating inter-method bias with a pooled within-method variance following the ISO/JCGM Guide [4,5]. The measurand is the total mass fraction of the chlorinated pesticides listed and the values listed are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

Safety: This material is naturally occurring marine sediment from an urban area and may contain constituents of unknown toxicities; therefore, caution and care should be exercised during its handling and use.

Storage: SRM 1941b must be stored in its original bottle at temperatures less than 30 °C and away from direct sunlight.

Use: Prior to removal of subsamples for analysis, the contents of the bottle should be mixed. The mass fractions of constituents in SRM 1941b are reported on a dry-mass basis. The SRM, as received, contains a mass fraction of approximately 2.4 % moisture (see "Conversion to Dry-Mass Basis"). The sediment sample should be dried to a constant mass before weighing for analysis; or a separate subsample of the sediment should be removed from the bottle at the time of analysis and dried to determine the mass fraction on a dry-mass basis. If the constituents of interest are volatile, then the moisture must be determined with a separate subsample.

REFERENCES

[1] Beauchamp, C.R.; Camara, J.E.; Carney, J.; Choquette, S.J.; Cole, K.D.; DeRose, P.C.; Duewer, D.L.; Epstein, M.S.; Kline, M.C.; Lippa, K.A.; Lucon, E.; Molloy, J.; Nelson, M.A.; Phinney, K.W.; Polakoski, M.; Possolo, A.; Sander, L.C.; Schiel, J.E.; Sharpless, K.E.; Toman, B.; Winchester, M.R.; Windover, D.; *Metrological Tools for the Reference Materials and Reference Instruments of the NIST Material Measurement Laboratory*; NIST Special Publication (NIST SP) 260-136, 2021 edition; U.S. Government Printing Office: Washington, DC (2021); available at https://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.260-136-2021.pdf (accessed Apr 2022).

[2] Schantz, M.M.; Parris, R.M.; Wise, S.A.; *NIST/NOAA Intercomparison Exercise Program for Organic Contaminants in the Marine Environment: Description and Results of 1999 Organic Intercomparison Exercises*; NOAA Technical Memorandum NOS NCCOS CCMA 146, Silver Spring, MD (2000).

[3] Ruhkin, A.L.; Vangel, M.G.; *Estimation of a Common Mean and Weighted Means Statistics*; J. Am. Statist. Assoc., Vol. 93, pp. 303–308 (1998).

[4] JCGM 100:2008; *Evaluation of Measurement Data — Guide to the Expression of Uncertainty in Measurement* (GUM 1995 with Minor Corrections); Joint Committee for Guides in Metrology (2008); available at https://www.bipm.org/en/publications/guides (accessed Apr 2022); see also Taylor, B.N.; Kuyatt, C.E.; *Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results*; NIST Technical

Note 1297; U.S. Government Printing Office: Washington, DC (1994); available at https://www.nist.gov/pml/nist-technical-note-1297 (accessed Apr 2022).
[5] JCGM 101:2008; *Evaluation of measurement data – Supplement 1 to the "Guide to the expression of uncertainty in measurement" - Propagation of distributions using a Monte Carlo method*; JCGM (2008); available at https://www.bipm.org/en/publications/guides (accessed Apr 2022).
[6] Levenson, M.S.; Banks, D.L.; Eberhardt, K.R.; Gill, L.M.; Guthrie, W.F.; Liu, H.-K.; Vangel, M.G.; Yen, J.H.; Zhang, N.F.; *An Approach to Combining Results from Multiple Methods Motivated by the ISO GUM*; J. Res. Natl. Inst. Stand. Technol., Vol. 105, pp. 571–579 (2000).
[7] Ballschmiter, K.; Zell, M.; *Analysis of Polychlorinated Biphenyls (PCB) by Glass Capillary Gas Chromatography - Composition of Technical Aroclor- and Clophen-PCB Mixtures*; Fresenius' Z. Anal. Chem., Vol. 302, pp. 20–31 (1980).
[8] Schulte, E.; Malisch, R.; *Calculation of the Real PCB Content in Environmental Samples. I. Investigation of the Composition of Two Technical PCB Mixtures*; Fresenius' Z. Anal. Chem., Vol. 314, pp. 545–551 (1983).
[9] Schubert, P.; Schantz, M.M.; Sander, L.C.; Wise, S.A.; *Determination of Polycyclic Aromatic Hydrocarbons with Molecular Mass 300 and 302 in Environmental-Matrix Standard Reference Materials by Gas Chromatography-Mass Spectrometry*; Anal. Chem., Vol. 75, pp. 234–246 (2003).
[10] Schantz, M.M.; Kucklick, J.R..; *NIST Interlaboratory Analytical Comparison Study to Support Deepwater Horizon Natural Resource Damage Assessment: Description and Results for Crude Oil QA10OIL01*; NISTIR 7793 (2011).
[11] Wise, S.A.; Poster, D.L.; Schantz, M.M.; Kucklick, J.R.; Sander, L.C.; Lopez de Alda, M.; Schubert, P.; Parris, R.M.; Porter, B.J.; *Two New Marine Sediment Standard Reference Materials (SRMs) for the Determination of Organic Contaminants*; Anal. Bioanal. Chem., Vol. 378, pp. 1251–1264 (2004).
[12] Wise, S.A.; Chesler, S.N.; Hertz, H.S.; Hilpert, L.R.; May, W.E.; *Chemically-Bonded Aminosilane Stationary Phase for the High Performance Liquid Chromatographic Separation of Polynuclear Aromatic Hydrocarbons*; Anal. Chem., Vol. 49, pp. 2306–2310 (1977).
[13] May, W.E.; Wise, S.A.; *Liquid Chromatographic Determination of Polycyclic Aromatic Hydrocarbons in Air Particulate Extracts*; Anal. Chem., Vol. 56, pp. 225–232 (1984).
[14] Wise, S.A.; Benner, B.A.; Byrd, G.D.; Chesler, S.N.; Rebbert, R.E.; Schantz, M.M.; *Determination of Polycyclic Aromatic Hydrocarbons in a Coal Tar Standard Reference Material*; Anal. Chem., Vol. 60, pp. 887-894 (1988).
[15] Wise, S.A.; Deissler, A.; Sander, L.C.; *Liquid Chromatographic Determination of Polycyclic Aromatic Hydrocarbon Isomers of Molecular Weight 278 and 302 in Environmental Standard Reference Materials*; Polycyclic Aromat. Compd., Vol. 3, pp. 169–184 (1993).
[16] Brubaker, W.W., Jr.; Schantz, M.M.; Wise, S.A.; *Determination of Non-ortho Polychlorinated Biphenyls in Environmental Standard Reference Materials*; Fresenius' J. Anal. Chem., Vol. 367, pp. 401–406 (2000).

Certificate Revision History: 25 April 2022 (Change of period of validity; updated format; editorial changes); 16 January 2015 (Corrected IUPAC name for PCB-56 and PCB-107; editorial changes); 10 June 2014 (Units corrected from mg/kg to µg/kg in Tables 8 and 9; editorial changes); 10 April 2012 (Reference value added for alkylated PAH groups, hopanes, and steranes; extension of certification period; editorial changes); 01 December 2011 (Extension of certification period; editorial changes); 16 August 2004 (Reference values for the butyl tins removed; editorial changes); 15 July 2002 (Original certificate date).

Certain commercial equipment, instruments, or materials may be identified in this Certificate of Analysis to adequately specify the experimental procedure. Such identification does not imply recommendation or endorsement by the National Institute of Standards and Technology, nor does it imply that the materials or equipment identified are necessarily the best available for the purpose.

Users of this SRM should ensure that the Certificate of Analysis in their possession is current. This can be accomplished by contacting the Office of Reference Materials 100 Bureau Drive, Stop 2300, Gaithersburg, MD 20899-2300; telephone (301) 975-2200; e-mail srminfo@nist.gov; or the Internet at https://www.nist.gov/srm.

* * * * * * End of Certificate of Analysis* * * * * *

APPENDIX A

Non-Certified Values: Non-certified mass fraction values for additional PAHs (some in combination), additional PCB congeners, and additional chlorinated pesticides are provided in Table A1 through Table A4. Non-certified values for alkylated PAH groups are provided in Table A5 and for selected hopanes and steranes in Table A6. A non-certified value for total organic carbon is provided in Table A7. Non-certified values are values that are the best estimate of the true value; however, the values do not meet the NIST criteria for certification and are provided with associated uncertainties that may reflect only measurement precision, may not include all sources of uncertainty, or may reflect a lack of sufficient statistical agreement among multiple analytical methods [1].

Additional Non-Certified Mass Fraction Values: Non-certified mass fraction values are provided in Table A8 for carbon, hydrogen, and nitrogen.

Table A1. Non-certified Mass Fraction Values for PAHs in SRM 1941b

PAHs	Mass Fractions[a] (µg/kg)		
1-Methylnaphthalene[b,c,d,e]	127	±	14[f]
2-Methylnaphthalene[b,c,d,e]	276	±	53[f]
2,6-Dimethylnaphthalene[b,c,d,e]	75.9	±	4.5[f]
2,3,5-Trimethylnaphthalene[b,c,d,e]	25.5	±	5.1[f]
Biphenyl[b,c,d,e]	74.0	±	8.0[f]
Acenaphthylene[b,c,d,e]	53.3	±	6.4[f]
Acenaphthene[b,c,d,e]	38.4	±	5.2[f]
9-Methylphenanthrene[c]	63.5	±	2.5[g]
4-Methylphenanthrene and 9-Methylphenanthrene[b,d]	80.1	±	4.8[f]
2-Methylanthracene[c,d]	36	±	15[f]
8-Methylfluoranthene[b]	49.5	±	2.7[g]
7-Methylfluoranthene[b]	45.4	±	1.5[g]
1-Methylfluoranthene[b]	42.4	±	2.1[g]
3-Methylfluoranthene[b]	28.8	±	1.3[g]
2-Methylpyrene[b]	78.7	±	4.0[g]
4-Methylpyrene[b]	66.4	±	2.6[g]
1-Methylpyrene[b]	52.5	±	2.3[g]
Acephenanthrene[d]	30.5	±	1.9[g]
Benzo[*c*]phenanthrene[b,c,d]	58	±	15[f]
Benzo[*a*]fluoranthene[b,c,d]	73	±	18[f]
Benzo[*j*]fluoranthene[c]	217	±	5[g]
Indeno[1,2,3-*cd*]fluoranthene[d]	9.63	±	0.34[g]
Pentaphene[d]	25.3	±	1.0[g]

[a] Mass fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.
[b] GC/MS (I) on 5 % phenyl-substituted methylpolysiloxane phase after PFE with DCM.
[c] GC/MS (II) on 50 % phenyl-substituted methylpolysiloxane phase after PFE with DCM.
[d] GC/MS (III) on a relatively non-polar proprietary phase after Soxhlet extraction with 50 % hexane/50 % acetone mixture.
[e] 1999 Interlaboratory Comparison Study [2] with 14 to 26 laboratories submitting data for each PAH.
[f] Non-certified values are weighted means of the results from two to four analytical methods [3]. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2 (approximately 95 % confidence), calculated by combining a between-method variance incorporating inter-method bias with a pooled within-method variance following the ISO/JCGM Guide [4,5]. The measurand is the total mass fraction of PAHs listed as determined by the methods indicted. The values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.
[g] Non-certified values are the means of results obtained by NIST using one analytical technique. The expanded uncertainty, U, is calculated as $U = ku_c$, where u_c is one standard deviation of the analyte mean, and the coverage factor, k, is determined from the Student's t-distribution for the associated degrees of freedom (19 for footnote b and 5 for footnotes c and d) and 95 % confidence level for each analyte. The measurand is the total mass fraction of the PAHs listed as determined by the method indicted. The values listed are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

Table A2. Non-certified Mass Fraction Values for PAHs of Molecular Mass 300 and 302 in SRM 1941b

PAHs of Molecular Mass 300 and 302	Mass Fractions[a,b,c] (µg/kg)		
Coronene	72.6	±	4.7
Dibenzo[*b,e*]fluoranthene	10.3	±	0.3
Naphtho[1,2-*b*]fluoranthene	91.0	±	3.1
Naphtho[1,2-*k*]fluoranthene and Naphtho[2,3-*j*]fluoranthene	79.8	±	2.5
Naphtho[2,3-*b*]fluoranthene	23.5	±	0.3
Dibenzo[*b,k*]fluoranthene	95.6	±	3.1
Dibenzo[*a,k*]fluoranthene	26.6	±	0.4
Dibenzo[*j,l*]fluoranthene	63.8	±	1.8
Dibenzo[*a,l*]pyrene	11.1	±	1.0
Naphtho[2,3-*k*]fluoranthene	10.7	±	0.6
Naphtho[1,2-*a*]pyrene	16.7	±	1.4
Naphtho[2,3-*e*]pyrene	33.2	±	2.3
Dibenzo[*a,e*]pyrene	76.1	±	3.6
Naphtho[2,1-*a*]pyrene	59.2	±	1.8
Dibenzo[*e,i*]pyrene	35.0	±	2.4
Naphtho[2,3-*a*]pyrene	16.5	±	0.6
Benzo[*b*]perylene	38.2	±	1.2
Dibenzo[*a,i*]pyrene	25.5	±	1.0
Dibenzo[*a,h*]pyrene	6.94	±	0.29

[a] Mass fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.

[b] Non-certified values are the means of results obtained by NIST using one analytical technique. The expanded uncertainty, U, is calculated as $U = ku_c$, where u_c is one standard deviation of the analyte mean, and the coverage factor, k, is determined from the Student's t-distribution for two degrees of freedom and 95 % confidence level for each analyte. The measurand is the total mass fraction of the constituent listed as determined by the method indicted. The values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

[c] GC/MS on 50 % phenyl-substituted methylpolysiloxane phase after PFE with DCM [9].

Table A3. Non-certified Mass Fraction Values for PCB Congeners[a] in SRM 1941b

PCB Congeners			Mass Fractions[b,c] (µg/kg)		
PCB	45	(2,2',3,6-Tetrachlorobiphenyl)[d,e]	0.73	±	0.12
PCB	56	(2,3,3',4'-Tetrachlorobiphenyl)[d,f,g]	1.21	±	0.11
PCB	63	(2,3,4',5-Tetrachlorobiphenyl)[e,f,g]	0.213	±	0.040
PCB	70	(2,3',4',5-Tetrachlorobiphenyl)[e,f,g]	4.99	±	0.29
PCB	74	(2,4,4',5-Tetrachlorobiphenyl)[e,f,g]	2.04	±	0.15
PCB	77	(3,3',4,4'-Tetrachlorobiphenyl)[h]	0.31	±	0.03
PCB	107	(2,3,3',4',5-Pentachlorobiphenyl)[d,e,f,g]	0.628	±	0.028
PCB	132	(2,2',3,3',4,6'-Hexachlorobiphenyl)[d,f,g]	1.28	±	0.27
PCB	146	(2,2',3,4',5,5'-Hexachlorobiphenyl)[e,f,g]	1.22	±	0.12
PCB	158	(2,3,3',4,4',6-Hexachlorobiphenyl)[d,e,f,g]	0.65	±	0.15
PCB	163	(2,3,3',4',5,6-Hexachlorobiphenyl)[e,f,g]	1.28	±	0.06
PCB	174	(2,2',3,3',4,5,6'-Heptachlorobiphenyl)[d,e,f,g]	1.51	±	0.39
PCB	193	(2,3,3',4',5,5',6-Heptachlorobiphenyl)[d,e,f,g]	0.292	±	0.075

[a] PCB congeners are numbered according to the scheme proposed by Ballschmiter and Zell [7] and later revised by Schulte and Malisch [8] to conform with IUPAC rules, except PCB 107. Under the Ballschmiter and Zell numbering system, the IUPAC PCB 107 is listed as PCB 108.

[b] Mass fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.

[c] For these PCB congeners except PCB 77, the non-certified values are unweighted means of the results from two to four analytical methods. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2, calculated by combining a between-method variance [6] with a pooled within-method variance following the ISO/JCGM Guide [4,5]. For PCB 77, the non-certified value is the mean of results obtained by NIST using one analytical technique. The expanded uncertainty, U, is calculated as $U = ku_c$, where u_c is one standard deviation of the analyte mean, and the coverage factor, k, is determined from the Student's t-distribution corresponding to two degrees of freedom and 95 % confidence level for PCB 77. The measurand is the total mass fraction of the PCB Congeners listed as determined by the method or methods indicted. The values listed are metrologically traceable to the SI unit of mass, expressed as microgram per kilogram on a dry-mass basis.

[d] GC-ECD (IA) on 5 % phenyl-substituted methylpolysiloxane phase after PFE extraction with DCM.

[e] GC-ECD (IB) on a relatively non-polar proprietary phase; same extracts analyzed as in GC-ECD (IA).

[f] GC/MS (IA) on a relatively non-polar proprietary phase after Soxhlet extraction with 50 % hexane/50 % acetone mixture.

[g] GC/MS (IB) on 5 % phenyl-substituted methylpolysiloxane phase; same extracts analyzed as in GC/MS (IA).

[h] GC/MS NICI on a 5 % phenyl-substituted methylpolysiloxane phase; same extracts analyzed as in GC-ECD (I) fractionated using a PYE column.

Table A4. Non-certified Mass Fraction Values for Selected Chlorinated Pesticides in SRM 1941b

Chlorinated Pesticides	Mass Fractions[a,b] (µg/kg)		
2,4'-DDE[c,d]	0.38	±	0.12
4,4'-DDT[e,f]	1.12	±	0.42

[a] Mass Fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.

[b] The non-certified values are unweighted means of the results from two analytical methods. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2, calculated by combining a between-method variance [6] with a pooled, within-method variance following the ISO/JCGM Guide [4,5]. The measurand is the total mass fraction of the chlorinated pesticides listed as determined by the methods indicted. The values listed are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

[c] GC/MS (IB) on 5 % phenyl-substituted methylpolysiloxane phase; same extracts analyzed as in GC/MS (IA).

[d] GC-ECD (IB) on a relatively non-polar proprietary phase; same extracts analyzed as in GC-ECD (IA).

[e] GC/MS (II) on a relatively non-polar proprietary phase after Soxhlet extraction with DCM.

[f] 1999 Interlaboratory Comparison Study [2] with 10 laboratories submitting data for 4,4'-DDT.

Table A5. Non-certified Mass Fraction Values for Alkylated PAH Groups in SRM 1941b

Alkylated PAH Group	Mass Fraction[a,b] (µg/kg)
C2-decalins	18 ± 5
C4-decalins	41 ± 4
C2-naphthalenes	187 ± 53
C3-naphthalenes	158 ± 42
C1-benzothiophenes	25 ± 14
C2-benzothiophenes	20 ± 11
C3-benzothiophenes	22 ± 13
C4-benzothiophenes	18 ± 5
C1-fluorenes	57 ± 18
C2-fluorenes	122 ± 43
C3-fluorenes	128 ± 31
C1-phenanthrenes/anthracenes	313 ± 99
C2-phenanthrenes/anthracenes	247 ± 62
C3-phenanthrenes/anthracenes	165 ± 46
C4-phenanthrenes/anthracenes	87 ± 36
C1-dibenzothiophenes	54 ± 13
C2-dibenzothiophenes	91 ± 18
C3-dibenzothiophenes	84 ± 15
C4-dibenzothiophenes	57 ± 13
C1-fluoranthenes/pyrenes	252 ± 48
C2-fluoranthenes/pyrenes	205 ± 38
C3-fluoranthenes/pyrenes	102 ± 22
C4-fluoranthenes/pyrenes	121 ± 59
C1-benzanthraces/chrysenes/triphenylenes	208 ± 43
C2-benzanthraces/chrysenes/triphenylenes	120 ± 24
C3-benzanthraces/chrysenes/triphenylenes	73 ± 31
C4-benzanthraces/chrysenes/triphenylenes	41 ± 11

[a] The non-certified mass fraction value reported on a dry-mass basis is the median of results using one analytical technique. The expanded uncertainty, U, is calculated as $U = ku_c$, where u_c is one standard deviation of the median, and the coverage factor, $k = 2$. The measurand is the total mass fraction of the alkylated PAH groups listed as determined by the interlaboratory study methods. The values listed are metrologically traceable to the SI unit of mass fraction, expressed as micrograms per kilogram on a dry-mass basis.

[b] Data from the interlaboratory study [10].

Table A6. Non-certified Mass Fraction Values for Hopanes and Steranes in SRM 1941b

Hopane or Sterane	Mass Fraction[a,b] (µg/kg)
17α(H)-22,29,30-Trisnorhopane	54 ± 18
17α(H)-21β(H)-30-Norhopane	137 ± 21
17α(H)-21β(H)-30-Hopane	215 ± 44
17α(H)-21β(H)-22R-Homohopane	44 ± 10
17α(H)-21β(H)-22S-Homohopane	48 ± 13
5α(H)-14α(H),17α(H)-Cholestane 20R	41 ± 11
5α(H)-14β(H),17β(H)-Cholestane 20R	27 ± 6
5α(H)-14β(H),17β(H)-24-Methylcholestane 20R	21 ± 8
5α(H)-14α(H),17α(H)-24-Ethylcholestane 20R	19 ± 5
5α(H)-14β(H),17β(H)-24-Ethylcholestane 20R	41 ± 9

[a] The non-certified mass fraction value reported on a dry-mass basis is the median of results using one analytical technique. The expanded uncertainty, U, is calculated as $U = ku_c$, where u_c is one standard deviation of the median, and the coverage factor, $k = 2$. The measurand is the total mass fraction of the constituent listed as determined by the methods used during the interlaboratory study. The values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

[b] Data from the interlaboratory study [10].

Table A7. Non-certified Mass Fraction Value for Total Organic Carbon in SRM 1941b

Total Organic Carbon (TOC)	2.99 % ± 0.24 %[a,b]

[a] Mass fraction is reported on a dry-mass basis; material as received contains approximately 2.4 % moisture.

[b] The non-certified value for total organic carbon is a weighted mean value from routine measurements made by two laboratories [1]. The uncertainty listed is an expanded uncertainty about the mean, with coverage factor 2 (approximately 95 % confidence), calculated by combining a between-method variance incorporating inter-method bias with a pooled within-method variance. The reporting follows the ISO/JCGM Guides [11]. The measurand is the total mass fraction of TOC listed as determined by the methods indicted. The values listed are metrologically traceable to the SI unit of mass, expressed as a percent on a dry-mass basis.

Table A8. Additional Non-Certified Mass Fraction Values for SRM 1941b

Elements	Mass Fractions[a] (%)
Carbon	3.3
Hydrogen	1.2
Nitrogen	<0.5

[a] Mass fraction is reported on a dry-mass basis; material as received contains approximately 2.4 % moisture.

Maintenance of Non-Certified Values: NIST will monitor this material to the end of its period of validity. If substantive technical changes occur that affect the non-certified values during this period, NIST will update this Appendix and notify registered users. SRM users can register online from a link available on the NIST SRM website or fill out the user registration form that is supplied with the SRM. Registration will facilitate notification. Before making use of any of the values delivered by this material, users should verify they have the most recent version of this documentation, available through the NIST SRM website (https://www.nist.gov/srm).

* * * * * * * * * * * End of Appendix A * * * * * * * * * * *

APPENDIX B

Coordination of the technical measurements leading to the certification of this material was under the leadership of S.A. Wise of the NIST Chemical Sciences Division and M.M. Schantz, formerly of NIST

Analytical measurements for the certification of SRM 1941b were performed at NIST by J.R. Kucklick, D.L. Poster, and L.L. Yu of the NIST Chemical Sciences Division and B.J. Porter, M.M. Schantz, P. Schubert, and S. Tutschku, formerly of NIST.

Measurements for TOC were provided by a commercial laboratory and T.L. Wade of the Geochemical and Environmental Research Group, Texas A&M University (College Station, TX). The carbon, hydrogen, and nitrogen data were provided by a commercial laboratory. Results for the PAHs, PCBs, and chlorinated pesticides from 38 laboratories (see Appendix C) that participated in an interlaboratory comparison exercise coordinated by NIST were used. Results for the alkylated PAH groups, hopanes, and steranes from 33 laboratories (see Appendix D) that participated in another interlaboratory comparison exercise coordinated by NIST were also used.

Collection and preparation of SRM 1941b were performed by M.P. Cronise and C.N. Fales of the NIST Office of Reference Materials and B.J. Porter and M.M. Schantz, formerly of the NIST Chemical Sciences Division. The sediment material was collected with the assistance of G.G. Lauenstein, J. Collier, and J. Lewis (National Oceanic and Atmospheric Administration, Silver Spring, MD).

Consultation on the statistical design of the experimental work and evaluation of the data were provided by S.D. Leigh and J.H. Yen of the NIST Statistical Engineering Division.

Support aspects involved in the issuance of this SRM were coordinated through the NIST Office of Reference Materials.

Sample Collection and Preparation: The sediment used to prepare this SRM was collected from the Chesapeake Bay at the mouth of the Baltimore (MD) Harbor near the Francis Scott Key Bridge (39°12.3'N and 76°31.4'W). This location is very near the site where SRM 1941 and SRM 1941a were collected. The sediment was collected using a Kynar-coated modified Van Veen-type grab sampler. A total of approximately 3300 kg of wet sediment was collected from the site. The sediment was freeze-dried, sieved at 150 μm (100 % passing), homogenized in a cone blender, radiation sterilized (^{60}Co), and then packaged in screw-capped amber glass bottles each containing approximately 50 g.

Conversion to Dry-Mass Basis: The results for the constituents in SRM 1941b are reported on a dry-mass basis; however, the material "as received" contains residual moisture. The amount of moisture in SRM 1941b was determined by measuring the mass loss after freeze-drying subsamples of 1.1 g to 1.3 g for four days at 1 Pa with a −10 °C shelf temperature and a −50 °C condenser temperature. The moisture content in SRM 1941b at the time of the certification analyses was 2.39 % ± 0.08 % (95 % confidence level). Analytical results for the organic constituents were determined on an as-received basis and then converted to a dry-mass basis by dividing by the conversion factor of 0.9761 (gram dry mass per gram as-received mass).

Polycyclic Aromatic Hydrocarbons: The general approach used for the value assignment of the PAHs in SRM 1941b was similar to that reported in detail elsewhere [11]. The approach consisted of combining results from analyses using various combinations of different extraction techniques and solvents, clean-up/isolation procedures, and chromatographic separation and detection techniques: Soxhlet extraction and pressurized-fluid extraction (PFE) using dichloromethane (DCM) or a hexane/acetone mixture, cleanup of the extracts using solid-phase extraction (SPE) or normal-phase liquid chromatography (LC), followed by analysis using the following techniques: (1) reversed-phase liquid chromatography with fluorescence detection (LC-FL) analysis of the total PAH fraction, (2) reversed-phase LC-FL analysis of isomeric PAH fractions isolated by normal-phase LC (i.e., multidimensional LC), (3) gas chromatography/mass spectrometry (GC/MS) analysis of the PAH fraction on three stationary phases of different selectivity, i.e., a 5 % (all column compositions are given as mole fractions in %) phenyl-substituted methylpolysiloxane phase, a 50 % phenyl-substituted methylpolysiloxane phase, and a relatively non-polar proprietary phase.

Three sets of GC/MS results, designated as GC/MS (I), GC/MS (II), and GC/MS (III), were obtained using three columns with different selectivities for the separation of PAHs. For GC/MS (I) analyses, duplicate subsamples of approximately 1 g from ten bottles of SRM 1941b were extracted using PFE with DCM. Copper powder was added

to the extract to remove elemental sulfur. The concentrated extract was passed through an aminopropyl SPE cartridge and eluted with 2 % DCM in hexane (all solvent concentrations are given as volume fractions in %). The processed extract was then analyzed by GC/MS using a 0.25 mm i.d. × 60 m fused silica capillary column with a 5 % phenyl-substituted methylpolysiloxane phase (0.25 μm film thickness; DB-5 MS, J&W Scientific, Folsom, CA). The GC/MS (II) analyses were performed using 5 g subsamples from six bottles of SRM 1941b. These samples were extracted using PFE with DCM. The high molecular mass compounds were removed from the extracts using size exclusion chromatography (SEC) with a preparative-scale divinylbenzene-polystyrene column (10 μm particle size with 10 nm diameter pores), and the sulfur was removed from the extracts by adding copper powder. The concentrated extract was passed through an aminopropyl SPE cartridge and eluted with 10 % DCM in hexane. The analysis was by GC/MS using a 0.25 mm i.d. × 60 m fused silica capillary column with a 50 % phenyl-substituted methylpolysiloxane phase (0.25 μm film thickness; DB-17 MS, J&W Scientific). For the GC/MS (III), 9 g subsamples from six bottles of SRM 1941b were Soxhlet-extracted for 18 h with 250 mL of a mixture of 50 % hexane/50 % acetone. Copper powder was added to the extract to remove elemental sulfur, and the concentrated extract was passed through a silica SPE cartridge and eluted with 10 % DCM in hexane. The processed extract was then analyzed by GC/MS using a 0.25 mm i.d. × 60 m fused silica capillary column with a relatively non-polar proprietary phase (0.25 μm film thickness; DB-XLB, J&W Scientific).

Two sets of LC-FL results, designated as LC-FL (total) and LC-FL (isomer), were used in the certification process. For the LC-FL (total), subsamples of approximately 1 g from six bottles of SRM 1941b were extracted using PFE with a mixture of 50 % hexane/50 % acetone. The extracts were concentrated and then processed through an aminopropylsilane SPE cartridge using 2 % DCM in hexane to obtain the total PAH fraction. For the LC-FL (isomer), a 5 g subsample from the six bottles was extracted using PFE with DCM and processed through an aminopropylsilane SPE cartridge using 10 % DCM in hexane; the PAH fraction was then fractionated further on a semi-preparative aminopropylsilane column (μBondapak NH_2, 9 mm i.d. × 30 cm, Waters Associates, Milford, MA) to isolate isomeric PAH fractions as described previously [12–15]. The total PAH fraction and the isomeric PAH fractions were analyzed using a 5 μm particle-size polymeric octadecylsilane (C_{18}) column (4.6 mm i.d. × 25 cm, Hypersil-PAH, Keystone Scientific, Inc., Bellefonte, PA) with wavelength-programmed fluorescence detection [13,14].

For the GC/MS and LC-FL measurements described above, selected perdeuterated PAHs were added to the sediment prior to solvent extraction for use as internal standards for quantification purposes.

In addition to the analyses performed at NIST, SRM 1941b was used in an interlaboratory comparison exercise in 1999 as part of the NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment [2]. Results from 38 laboratories that participated in this exercise were used as the sixth data set in the determination of the certified values for PAHs in SRM 1941b. The laboratories participating in this exercise used the analytical procedures routinely used in their laboratories to measure the analytes of interest.

Homogeneity Assessment for PAHs: The homogeneity of SRM 1941b was assessed by analyzing duplicate samples of approximately 1 g from ten bottles selected by stratified random sampling. Samples were extracted, processed, and analyzed as described above for GC/MS (I). No statistically significant differences among bottles were observed for the PAHs at this sample size.

PAH Isomers of Molecular Mass 300 and 302: For the determination of the molecular mass 300 and 302 isomers, three subsamples of approximately 5 g each were extracted using PFE with DCM. The extracts were then concentrated with a solvent change to hexane and passed through an aminopropyl SPE cartridge and eluted with 10 % DCM in hexane. The processed extract was then analyzed by GC/MS using a 0.25 mm i.d. × 60 m fused silica capillary column with a 50 % phenyl-substituted methylpolysiloxane phase (0.25 μm film thickness; DB-17MS, J&W Scientific). Perdeuterated dibenzo[*a,i*]pyrene was added to the sediment prior to extraction for use as an internal standard [9].

PCBs and Chlorinated Pesticides: The general approach used for the determination of PCBs and chlorinated pesticides in SRM 1941b consisted of combining results from analyses using various combinations of different extraction techniques and solvents, cleanup/isolation procedures, and chromatographic separation and detection techniques. Techniques and solvents included Soxhlet extraction and PFE using DCM or a hexane/acetone mixture, clean-up/isolation using SPE or LC, followed by analysis using GC/MS and gas chromatography with electron capture detection (GC-ECD) on two columns with different selectivity for the separation of PCBs and chlorinated pesticides. The analytical methods are described in detail elsewhere [11].

Six sets of results were obtained and designated as GC-ECD (I) A and B, GC/MS (I) A and B, GC/MS (II), and Interlaboratory Comparison Exercise. For the GC-ECD (I) analyses, approximately 10 g subsamples from six bottles of SRM 1941b were extracted using PFE with DCM. Copper powder was added to the extract to remove elemental sulfur, and SEC, as described above, was used to remove the high molecular mass compounds. The concentrated extract was then fractionated on a semi-preparative aminopropylsilane column to isolate two fractions containing:

(1) the PCBs and lower-polarity pesticides and (2) the more polar pesticides. GC-ECD analyses of the two fractions were performed on two columns of different selectivities for PCB separations: 0.25 mm × 60 m fused silica capillary column with a 5 % phenyl-substituted methylpolysiloxane phase (0.25 μm film thickness; DB-5, J&W Scientific), and a 0.25 mm × 60 m fused silica capillary column with a non-polar proprietary phase (0.25 μm film thickness; DB-XLB, J&W Scientific). The results from the 5 % phenyl phase are designated as GC-ECD (IA) and the results from the proprietary phase are designated as GC-ECD (IB). For the GC-ECD analyses, two PCB congeners that are not significantly present in the sediment extract (PCB 103 and PCB 198 [7,8]) and endosulfan I-d_4, 4,4'-DDE-d_8, 4,4'-DD-d_8, and 4,4'-DDT-d_8 were added to the sediment prior to extraction for use as internal standards for quantification purposes.

Two sets of results were obtained by GC/MS. For GC/MS (I), approximately 9 g subsamples from six bottles were Soxhlet- extracted with a mixture of 50 % hexane/50 % acetone for approximately 18 h. Copper powder was added to the extract to remove elemental sulfur, and the concentrated extract was passed through a silica SPE cartridge and eluted with 10 % DCM in hexane. The processed extract was then analyzed by GC/MS with two ionization modes, electron impact (EI) and negative ion chemical ionization (NICI). The GC/MS EI method, GC/MS (IA), used a 0.25 mm i.d. × 60 m fused silica capillary column with a relatively non-polar proprietary phase (0.25 μm film thickness; DB-XLB, J&W Scientific). The GC/MS NICI method, GC/MS (IB), used a 0.25 mm i.d. × 60 m fused silica capillary column with a 5 % phenyl-substituted methylpolysiloxane phase (0.25 μm film thickness; DB-5MS, J&W Scientific). The GC/MS (II) results were obtained in the same manner as the GC/MS (IA) analyses except that three subsamples were Soxhlet-extracted with DCM for approximately 18 h. For the GC/MS analyses, selected carbon-13 labeled PCB congeners and chlorinated pesticides were added to the sediment prior to extraction for use as internal standards for quantification purposes.

In addition to the analyses performed at NIST, SRM 1941b was used in an interlaboratory comparison exercise in 1999 as part of the NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment [7]. Results from 38 laboratories that participated in this exercise were used as the sixth data set in the determination of the certified values for PCB congeners and chlorinated pesticides in SRM 1941b. The laboratories participating in this exercise used the analytical procedures routinely used in their laboratories to measure the analytes of interest.

The non-certified value for PCB 77 was determined from a separate fraction. The samples were extracted and processed as for GC-ECD (I) above. The first (PCB and lower-polarity pesticide) fraction from the semi-preparative aminopropylsilane column was further fractionated using a Cosmosil PYE (pyrenylethyl group bonded) column (5 μm particle size, 4.6 mm i.d. × 25 cm ; Phenomenex, Torrance, CA) [16]. Three fractions were collected: the first fraction contained the pesticides and multi-*ortho* PCBs, the second fraction contained the polychlorinated naphthalenes, non-*ortho* PCB congeners, and some mono-*ortho* PCB congeners, and the third fraction removed the residual planar compounds from the column. The second fraction was analyzed by GC/MS NICI using the same column as GC/MS (IB) above. Carbon-13 labeled PCB 77 was used as an internal standard for quantification purposes.

Alkylated PAH Groups, Hopanes, and Steranes: SRM 1941b was used in an interlaboratory comparison exercise in 2011 [10]. Results from 33 laboratories that participated in this exercise were used in the determination of the non-certified values for alkylated PAH groups, hopanes, and steranes in SRM 1941b. Note that not all laboratories returned data for each analyte. The laboratories participating in this exercise used the analytical procedures routinely used in their laboratories to measure the analytes of interest. For the alkylated PAHs, the majority of the laboratories (>90 %) used the parent PAH for determination of the response factor for the corresponding alkylated group.

Total Organic Carbon (TOC): Two laboratories provided results for TOC using similar procedures. Briefly, subsamples of approximately 200 mg were reacted with 6 mol/L hydrochloric acid and rinsed with deionized water prior to combustion in a gas fusion furnace. The carbon monoxide and carbon dioxide produced were measured and compared to a blank for calculation of the percent TOC. Each laboratory analyzed subsamples from three bottles of SRM 1941b. One of the laboratories also analyzed three subsamples from three bottles of SRM 1941b for carbon, hydrogen, and nitrogen.

* * * * * * * * * * * * End of Appendix B * * * * * * * * * * * * *

APPENDIX C

The laboratories listed below performed measurements that contributed to the certification of PAHs, PCBs, and chlorinated pesticides in SRM 1941b Organics in Marine Sediment.

Arthur D. Little, Inc (Cambridge, MA, USA)
Axys Analytical Services (Sidney, BC, Canada)
B & B Laboratories (College Station, TX, USA)
Battelle Ocean Sciences (Duxbury, MA, USA)
Bedford Institute of Oceanography (Dartmouth, NS, Canada)
California Department of Fish and Game (Rancho Cordova, CA, USA)
Central Contra Costa Sanitary District (Martinez, CA, USA)
Chesapeake Biological Laboratory (Solomons, MD, USA)
Centro de Investigacionies Energeticas Medioambientales y Tecnologicas (Madrid, Spain)
City of Los Angeles Environmental Monitoring Division (Playa del Rey, CA, USA)
City of San Jose Environmental Services Department (San Jose, CA, USA)
Columbia Analytical Services (Kelso, WA, USA)
East Bay Municipal Utility District (Oakland, CA, USA)
Florida Department of Environmental Protection (Tallahassee, FL, USA)
Manchester Environmental Laboratory (Port Orchard, WA, USA)
Murray State University (Murray, KY, USA)
Massachusetts Water Resources Authority Central Lab (Winthrop, MA, USA)
National Research Council of Canada (Ottawa, Ontario, Canada)
National Oceanic and Atmospheric Association (NOAA), National Marine Fisheries Service (NMFS), Auke Bay Laboratory (Juneau, AK, USA)
NOAA, National Ocean Service/Center for Coastal Environmental Health and Biomolecular Research (Charleston, SC, USA)
NOAA, NMFS, Sandy Hook Marine Laboratory (Highlands, NJ, USA)
NOAA, NMFS, Northwest Fisheries Science Center (Seattle, WA, USA)
Orange County Sanitation District (Fountain Valley, CA, USA)
Philip Analytical Services (Burlington, Ontario, Canada)
Serv de Hidrografia Naval (Buenos Aires, Argentina)
Skidaway Institute of Technology (Savannah, GA, USA)
Southwest Laboratory of Oklahoma (Broken Arrow, OK, USA)
Severn Trent Knoxville Laboratory (Knoxville, TN, USA)
Texas A&M University, Geochemical and Environmental Research Group (College Station, TX, USA)
Texas Parks and Wildlife Department (San Marcos, TX, USA)
University of California at Los Angeles, Institute of Geophysics and Planetary Physics (Los Angeles, CA, USA)
University of Connecticut, Environmental Research Institute (Storrs, CT, USA)
University of Rhode Island, Graduate School of Oceanography (Narragansett, RI, USA)
US Department of Agriculture, Environmental Chemistry Laboratory (Beltsville, MD, USA)
US Environmental Protection Agency, Atlantic Ecology Division (Narragansett, RI, USA)
US Geological Survey, National Water Quality Laboratory (Denver, CO, USA)
Woods Hole Group Environmental Lab (Raynham, MA, USA)
Wright State University (Dayton, OH, USA)

* * * * * * * * * * * End of Appendix C * * * * * * * * * * * *

APPENDIX D

The laboratories listed below performed measurements that contributed to the certification of alkylated PAH groups, hopanes, and steranes in SRM 1941b Organics in Marine Sediment.

Alpha Analytical, Inc.; Mansfield, MA
Analytical Resources, Inc.; Tukwila, WA
Axys Analytical Services; Sydney, BC, Canada
Battelle Analytical & Environmental Chemistry Laboratory; Duxbury, MA
Center for Laboratory Sciences; Pasco, WA
Columbia Analytical Services; Jacksonville, FL
Columbia Analytical Services; Rochester, NY
Columbia Analytical Services, Kelso, WA
Florida Department of Environmental Protection; Tallahassee, FL
Florida International University; North Miami, FL
Michigan Department of Natural Resources and Environment; Lansing, MI
Mississippi State Chemical Laboratory; Mississippi State, MS
NIST; Charleston, SC
NIST; Gaithersburg, MD
NOAA/NCCOS/NOS; Charleston, SC
NOAA/NMFS/Alaska Fisheries Science Center; Juneau, AK
NY State Department of Health; Albany, NY
Pace Analytical Services, Inc. Minneapolis; Minneapolis, MN
RJ Lee Group, Inc; Monroeville, PA
TDI/B&B Laboratories, Inc.; College Station, TX
TestAmerica Laboratories; Mobile, AL
TestAmerica Laboratories; West Sacramento, CA
TestAmerica Laboratories; University Park, IL
TestAmerica Laboratories; Schriever, LA
TestAmerica Laboratories; Edison, NJ
TestAmerica Laboratories; Knoxville, TN
TestAmerica Laboratories; Pittsburgh, PA
TestAmerica Laboratories; South Burlington, VT
TestAmerica Laboratories; Tacoma, WA
US Army Engineer Research and Development Center; Vicksburg, MS
USGS Columbia Environmental Research Center; Columbia, MO
University of Iowa, State Hygienic Laboratory; Iowa City, IO
Washington State Public Health Laboratories; Shoreline, WA

* * * * * * * * * * * * End of Appendix D * * * * * * * * * * * *

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NIST Division:	646	
NIST Sales Order Number: Example (0800000)	O-0000049409	
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Lot Number:	None	
Serial Number:	Not Serialized	
Purchased directly from NIST?	Yes ☐	No ☐
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	Response time with your request for a quote or order						
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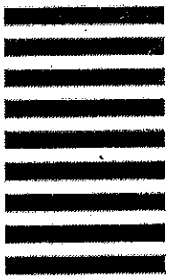

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NIST

Date of Issue:
21 April 2022

SAFETY DATA SHEET

1. Substance and Source Identification

Product Identifier

SRM Number: 1941b
SRM Name: Organics in Marine Sediment
Other Means of Identification: Not applicable.

Recommended Use of This Material and Restrictions of Use

This Standard Reference Material (SRM) is marine sediment collected at the mouth of the Baltimore (MD) Harbor. SRM 1941b is intended for use in evaluating analytical methods for the determination of selected polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, and chlorinated pesticides in marine sediment and similar matrices. All of the constituents for which certified and non-certified values are provided in SRM 1941b were naturally present in the sediment before processing. A unit of SRM 1941b consists of a bottle containing 50 g of radiation-sterilized, freeze-dried sediment.

Company Information

National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Stop 2300
Gaithersburg, Maryland 20899-2300

Telephone: 301-975-2200
E-mail: SRMMSDS@nist.gov
Website: https://www.nist.gov/srm

Emergency Telephone ChemTrec:
1-800-424-9300 (North America)
+1-703-527-3887 (International)

2. Hazards Identification

Classification

Physical Hazard: Not classified.
Health Hazard: Not classified.

Label Elements
Symbol
No Symbol/Pictogram

Signal Word
Not applicable.

Hazard Statement(s): Not applicable.

Precautionary Statement(s): Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients(s) with Unknown Acute Toxicity: Not applicable.

3. Composition and Information on Hazardous Ingredients

Substance: Marine sediment

Other Designations: Sediment.

This material is naturally occurring marine sediment from an urban area. The material contains trace amounts of polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, and should be handled with care. Components are listed in compliance with OSHA's 29 CFR 1910.1200; for the actual values see the Certificate of Analysis.

Hazardous Component(s)	CAS Number	EC Number (EINECS)	Nominal Mass Concentration (%)
Marine Sediment	Not available	Not available	100

4. First Aid Measures

Description of First Aid Measures:

Inhalation: If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration or oxygen by qualified personnel. Seek immediate medical attention.

Skin Contact: Wash skin with soap and water.

Eye Contact: Flush eyes with water for at least 15 minutes. If necessary, seek medical attention.

Ingestion: If adverse effects occur after ingestion, seek medical treatment.

Most Important Symptoms/Effects, Acute and Delayed: May cause irritation.

Indication of any immediate medical attention and special treatment needed, if necessary: If any of the above symptoms are present, seek medical attention if needed.

5. Fire Fighting Measures

Fire and Explosion Hazards: Negligible fire hazard. Avoid generating dust. See Section 9, "Physical and Chemical Properties" for flammability properties.

Extinguishing Media:
Suitable: Use extinguishing media appropriate for surrounding fire.
Unsuitable: None listed.

Specific Hazards Arising from the Chemical: None listed.

Special Protective Equipment and Precautions for Fire-Fighters: Avoid inhalation of material or combustion byproducts. Wear full protective clothing and NIOSH approved self-contained breathing apparatus (SCBA).

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Any accumulated material on surfaces should be removed and properly disposed of. Use suitable protective equipment; see Section 8, "Exposure Controls and Personal Protection".

Methods and Materials for Containment and Clean up: Collect spilled material in appropriate container for disposal. Keep out of water supplies and sewers. Keep unnecessary people away, isolate hazard area and deny entry.

7. Handling and Storage

Safe Handling Precautions: Minimize dust generation and accumulation on surfaces. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. See Section 8, "Exposure Controls and Personal Protection".

Storage: Store and handling in accordance with all current regulations and standards.

8. Exposure Controls and Personal Protection

Exposure Limits: No occupational exposure limits have been established for marine sediment. This material is a particulate matter and adequate inhalation/respiratory protection should be used to minimize exposure. The exposure limits for Particulates Not Otherwise Regulated (PNOR) are applicable.

OSHA (PEL): 15 mg/m^3 (TWA, total particulates not otherwise regulated)
OSHA (PEL) 5 mg/m^3 (TWA, respirable particulates not otherwise regulated)

Engineering Controls: Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

Personal Protection: In accordance with OSHA 29 CFR 1910.132, subpart I, wear appropriate Personal Protective Equipment (PPE) to minimize exposure to this material.

Respiratory Protection: If workplace conditions warrant a respirator, a respiratory protection program that meets OSHA 29CFR 1910.134 must be followed. Refer to NIOSH 42 CFR 84 for applicable certified respirators.

Eye/Face Protection: Wear splash resistant safety goggles with a face shield. An eye wash station should be readily available near areas of use.

Skin and Body Protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Chemical-resistant gloves should be worn at all times when handling chemicals.

9. PHYSICAL AND CHEMICAL PROPERTIES

Descriptive Properties:

Appearance (physical state, color, etc.):	amorphous powder
Molecular Formula:	not applicable
Molar Mass (g/mol):	not applicable
Odor:	not available
Odor threshold:	not available
pH:	not available
Evaporation rate:	not applicable
Melting point/freezing point (°C):	not available
Specific Gravity (water=1)	not available
Vapor Pressure (mmHg):	not applicable
Vapor Density (air = 1):	not applicable
Viscosity (cP):	not applicable
Solubility(ies):	not available
Partition coefficient (n-octanol/water):	not available
Particle Size:	<150 µm
Thermal Stability Properties:	
Autoignition Temperature (°C):	not available
Thermal Decomposition (°C):	not available
Initial boiling point and boiling range (°C):	not available
Explosive Limits, LEL (Volume %):	not available
Explosive Limits, UEL (Volume %):	not available
Flash Point (°C):	not available
Flammability (solid, gas):	not available

10. STABILITY AND REACTIVITY

Reactivity: Stable at normal temperatures and pressure.

Stability: X Stable _____ Unstable

Possible Hazardous Reactions: None listed.

Conditions to Avoid: Avoid generating dust.

Incompatible Materials: None listed.

Fire/Explosion Information: See Section 5, "Fire Fighting Measures".

Hazardous Decomposition: Thermal decomposition will produce oxides of carbon.

Hazardous Polymerization: _____ Will Occur X Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Exposure: X Inhalation X Skin _____ Ingestion

Symptoms Related to the Physical, Chemical and Toxicological Characteristics: Generated dust may cause irritation if inhaled.

Potential Health Effects (Acute, Chronic and Delayed):

Inhalation: Generated dust may cause irritation.

Skin Contact: May cause mechanical irritation.

Eye Contact: May cause mechanical irritation.

Ingestion: No data available.

Numerical Measures of Toxicity:

Acute Toxicity: Not classified; no data available.

Skin Corrosion/Irritation: Not classified; no data available.

Serious Eye damage/ Eye irritation: Not classified; no data available.

Respiratory Sensitization: Not classified; no data available.

Skin Sensitization: Not classified; no data available.

Germ Cell Mutagenicity: Not classified; no data available.

Carcinogenicity: Not classified.

Listed as a Carcinogen/Potential Carcinogen _____ Yes X No

Marine sediment is not listed by NTP, IARC or OSHA as a carcinogen.

Reproductive Toxicity: Not classified; no data available.

Specific Target Organ Toxicity, Single Exposure: Not classified; no data available.

Specific Target Organ Toxicity, Repeated Exposure: Not classified; no data available.

Aspiration Hazard: Not classified; no data available.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data: No data available.

Persistence and Degradability: No data available.

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other Adverse effects: No data available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose of waste in accordance with all applicable federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: Not regulated by DOT or IATA.

15. REGULATORY INFORMATION

U.S. Regulations:

CERCLA Sections 102a/103 (40 CFR 302.4): Not regulated.

SARA Title III Section 302 (40 CFR 355.30): Not regulated.

SARA Title III Section 304 (40 CFR 355.40): Not regulated.

SARA Title III Section 313 (40 CFR 372.65): Not regulated.

OSHA Process Safety (29 CFR 1910.119): Not regulated.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE HEALTH:	No.
CHRONIC HEALTH:	No.
FIRE:	No.
REACTIVE:	No.
PRESSURE:	No.

State Regulations:
California Proposition 65: Not listed.

U.S. TSCA Inventory: Not listed.

TSCA 12(b), Export Notification: Not listed.

Canadian Regulations:
WHMIS Information: Not provided for this material.

16. OTHER INFORMATION

Issue Date: 21 April 2022

Sources: 29 CFR Occupational Health and Safety Office (OSHA) 1910.1000, *Limits for Air Contaminants*, Table Z-1; available at https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1000TABLEZ1 (accessed Apr 2022).

Center for Disease Control (CDC) NIOSH Pocket Guide to Chemical Hazards, *Particulates not otherwise regulated*; available at https://www.cdc.gov/niosh/npg/npgd0480.html (accessed Apr 2022).

Key of Acronyms:

ACGIH	American Conference of Governmental Industrial Hygienists	NRC	Nuclear Regulatory Commission
ALI	Annual Limit on Intake	NTP	National Toxicology Program
CAS	Chemical Abstracts Service	OSHA	Occupational Safety and Health Administration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	PEL	Permissible Exposure Limit
CFR	Code of Federal Regulations	RCRA	Resource Conservation and Recovery Act
DOT	Department of Transportation	REL	Recommended Exposure Limit
EC50	Effective Concentration, 50 %	RM	Reference Material
EINECS	European Inventory of Existing Commercial Chemical Substances	RQ	Reportable Quantity
EPCRA	Emergency Planning and Community Right-to-Know Act	RTECS	Registry of Toxic Effects of Chemical Substances
IARC	International Agency for Research on Cancer	SARA	Superfund Amendments and Reauthorization Act
IATA	International Air Transportation Agency	SCBA	Self-Contained Breathing Apparatus
IDLH	Immediately Dangerous to Life and Health	SRM	Standard Reference Material
LC50	Lethal Concentration, 50 %	STEL	Short Term Exposure Limit
LD50	Lethal Dose, 50 %	TLV	Threshold Limit Value
LEL	Lower Explosive Limit	TPQ	Threshold Planning Quantity
MSDS	Material Safety Data Sheet	TSCA	Toxic Substances Control Act
NIOSH	National Institute for Occupational Safety and Health	TWA	Time Weighted Average
NIST	National Institute of Standards and Technology	UEL	Upper Explosive Limit
		WHMIS	Workplace Hazardous Materials Information System

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