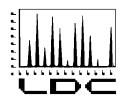
APPENDIX D - DATA VALIDATION REPORT



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

LDC #13714/13965 November 17, 2005

Windward Environmental, LLC 200 West Mercer Street, Suite 401 Seattle, WA 98119

ATTN: Ms. Marina Mitchell

SUBJECT: Lower Duwamish Waterway Group Porewater Sample Data

Validation

Dear Ms. Mitchell,

Enclosed is our revised EPA Level III and Level IV data validation of analytical chemistry results generated in support of the Lower Duwamish Waterway Group project. The primary analyses were performed by Analytical Resources, Inc. Samples were analyzed for GC/MS Volatiles by EPA SW 846 Method 8260B. Samples are referenced under the following Sample Delivery Groups: IE76, IE93, IF11, and II78. See the Sample Analysis Table (Attachment 1) for the number of samples reviewed.

Please feel free to contact us if you have any questions.

Sincerely,

Stella S. Cuenco

Project Manager/Senior Chemist

| Attachment 1 | |
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| Α | IE76 | 07/08/05 | 07/29/05 | 4 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | \Box | | | |
| В | IE93 | 07/08/05 | 07/29/05 | 8 | 0 | | | | | | | | | | | · | | | | | | | | | | | | | | | | | | | |
| С | IF11 | | 07/29/05 | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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Attachment 1

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CHEMICAL DATA QUALITY REVIEW FOR POREWATER SAMPLES

Lower Duwamish Waterway Group LDC# 13714 & 13965

This report details the findings of an EPA Level III and Level IV data validation of analytical chemistry results generated in support of the Lower Duwamish Waterway Group project. The primary analyses were performed by Analytical Resources, Inc. Samples were analyzed for GC/MS Volatiles by EPA SW 846 Method 8260B. Samples are referenced under the following Sample Delivery Groups: IE76, IE93, IF11, and II78. See the Sample Analysis Table (Attachment 1) for the number of samples reviewed and the Sample Validation Table (Attachment 2) for the sample identifications and analyses. Sample IDs ending in "**" underwent Level IV review.

The QC guidelines used for data qualification are those specified in the National Functional Guidelines for Organic Data Review (October 1999). Specific QC criteria used follows the Porewater Sampling of the Lower Duwamish Waterway Quality Assurance Project Plan (May 31, 2005). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The following items were evaluated during the review:

- Holding Times
- Sample Preservation
- Cooler Temperatures
- Instrument Calibration
- Blanks
- Surrogates
- Matrix Spike/Matrix Spike Duplicates
- Internal Standards
- Laboratory Control Samples
- Target Compound Identifications*
- Compound Quantitation and CRQLs*
- System Performance
- Field Duplicates

^{*}Data were not reviewed for Level III.

Only issues which require comment or action are discussed in this report. Data deficiencies are arranged by method. Potential effects of data anomalies have been described where possible.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- J+ The result is an estimated quantity, but the result may be biased high.
- J- The result is an estimated quantity, but the result may be biased low.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.

Overall Data Assessment

Based upon the information reviewed, the overall data quality is considered acceptable with the noted limitations.

*I. Usability

Instrument calibration, method, rinsate and equipment blank contamination and QC exceedance problems have warranted the qualification of a portion of the data set. No data was rejected.

Instrument calibration problems have warranted the qualification of detected results as estimated (J) and non-detected results as estimated (UJ) for several compounds.

Method, rinsate and equipment blank contamination have warranted the qualification of several compounds as non-detected (U).

Other QC accuracy and precision exceedances have warranted the qualification of detected results as estimated (J) and non-detected results as estimated (UJ) for several compounds.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J, UJ) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

GC/MS Volatiles by EPA SW 846 Method 8260B

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r2) was greater than or equal to 0.990.

Average relative response factors (RRF) for all volatile target compounds and system performance check compounds (SPCCs) were within method and validation criteria with the following exceptions:

| Associated SDG | Date | Compound | RRF (Limits) | Associated Samples | Flag | A or P |
|----------------------|---------|--|---|--|---|--------|
| IE76 IE93 IF11 | 6/20/05 | Acrolein 2-Chloroethylvinyl ether 4-Methyl-2-pentanone | 0.02515 (≥0.05) 0.04315 (≥0.05) 0.04723 (≥0.05) | LDW-PW-B-PZ-12** LDW-PW-B-PZ-09** LDW-PW-B-PZ-08** TRIP BLANK (6/21/05)** LDW-PW-B-PZ-11 LDW-PW-B-PZ-1 LDW-PW-G-PZ-1 LDW-PW-G-PZ-1 LDW-PW-PZ-BARB LDW-PW-PZ-MHERB TRIP BLANK (6/22/05) LDW-PW-G-PZ-05 LDW-PW-G-PZ-06 LDW-PW-G-PZ-06 LDW-PW-G-PZ-06 LDW-PW-G-PZ-02 TRIP BLANK (6/23/05) | J (all detects) UJ (all non-detects) | A |

| Associated SDG | Date | Compound | RRF (Limits) | Associated Samples | Flag | A or P |
|----------------|--------|--------------------------------------|------------------------------------|--|---|--------|
| 1178 | 8/5/05 | Acrolein 1,2-Dibromo-3-chloropropane | 0.03432 (≥0.05) 0.02911 (≥0.05) | LDW-PW-B-PE-12 LDW-PW-B-PE-14 LDW-PW-B-PE-16 LDW-PW-B-PE-10 LDW-PW-B-PE-201 LDW-PW-B-PE-202 LDW-PW-G-PE-04 LDW-PW-G-PE-03 LDW-PW-G-PE-02 LDW-PW-G-PE-05 LDW-PW-G-PE-05 LDW-PW-G-PE-07 LDW-PW-G-PE-07 LDW-PW-G-PE-08 LDW-PW-G-PE-08 LDW-PW-G-PE-09 LDW-PW-G-PE-09 LDW-PW-G-PE-101 LDW-PW-B-PE-09 LDW-PW-B-PE-11 LDW-PW-B-PE-15 LDW-PW-B-PE-15 LDW-PW-B-PE-01-EB TRIP BLANKS | J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects) | A |

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

| Associated SDG | Date | Compound | %D | Associated Samples | Flag | A or P |
|----------------|---------|---|----------------------------------|--|---|--------|
| IE76 IE93 | 6/23/05 | Acrolein Acetone | 29.88882 26.87961 | LDW-PW-B-PZ-12** LDW-PW-B-PZ-09** LDW-PW-B-PZ-08** TRIP BLANK (6/21/05)** LDW-PW-B-PZ-11 LDW-PW-B-PZ-10 LDW-PW-B-PZ-7 LDW-PW-G-PZ-4 LDW-PW-G-PZ-1 LDW-PW-PZ-EPARB LDW-PW-PZ-MHERB TRIP BLANK (6/22/05) | J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects) | A |
| IF11 | 6/24/05 | Bromomethane Methyl iodide Dibromochloromethane | 48.66726 57.88063 25.92112 | LDW-PW-G-PZ-05 LDW-PW-G-PZ-03 LDW-PW-G-PZ-06 LDW-PW-G-PZ-02 TRIP BLANK (6/23/05) | J (all detects) UJ (all non-detects) | А |

| Associated SDG | Date | Compound | %D | Associated Samples | Flag | A or P |
|----------------|-----------------------|--------------------------|----------|--|---|--------|
| II78 | 8/9/05 | Chloromethane | 29.88071 | LDW-PW-B-PE-201 LDW-PW-B-PE-202 LDW-PW-G-PE-04 LDW-PW-G-PE-03 LDW-PW-G-PE-05 LDW-PW-G-PE-06 LDW-PW-G-PE-203 LDW-PW-G-PE-204 LDW-PW-B-PE-11 LDW-PW-B-PE-11 | J (all detects) UJ (all non-detects) | A |
| 1178 | 8/10/05 (CC0610) | 2-Chloroethylvinyl ether | 43.51996 | LDW-PW-G-PE-06RE LDW-PW-G-PE-204RE | J (all detects) UJ (all non-detects) | А |
| 1178 | 8/10/05 (0460810A) | Bromomethane | 29.76774 | LDW-PW-G-PE-02DL LDW-PW-G-PE-01 LDW-PW-G-PE-07 LDW-PW-G-PE-08 LDW-PW-B-PE-09 LDW-PW-B-PE-15 LDW-PW-PE-01-EB TRIP BLANKS | J (all detects) UJ (all non-detects) | А |

All of the continuing calibration RRF values were within method and validation criteria with the following exceptions:

| Associated SDG | Date | Compound | RRF (Limits) | Associated Samples | Flag | A or P |
|-------------------|---------|--------------------------------------|------------------------------------|--|---|--------|
| IE76 IE93 | 6/23/05 | Acrolein Acetone | 0.03267 (≥0.05) 0.04081 (≥0.05) | LDW-PW-B-PZ-12** LDW-PW-B-PZ-09** LDW-PW-B-PZ-08** TRIP BLANK (6/21/05)** LDW-PW-B-PZ-11 LDW-PW-B-PZ-10 LDW-PW-B-PZ-7 LDW-PW-G-PZ-1 LDW-PW-G-PZ-1 LDW-PW-PZ-EPARB LDW-PW-PZ-MHERB TRIP BLANK (6/22/05) | J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects) | A |
| IF11 | 6/24/05 | Acrolein 2-Chloroethylvinyl ether | 0.03053 (≥0.05) 0.04115 (≥0.05) | LDW-PW-G-PZ-05 LDW-PW-G-PZ-03 LDW-PW-G-PZ-06 LDW-PW-G-PZ-02 TRIP BLANK (6/23/05) | J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects) | A |
| 1178 | 8/8/05 | Acrolein 1,2-Dibromo-3-chloropropane | 0.03161 (≥0.05) 0.02537 (≥0.05) | LDW-PW-B-PE-12 LDW-PW-B-PE-14 LDW-PW-B-PE-16 LDW-PW-B-PE-10 | J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects) | А |

| Associated SDG | Date | Compound | RRF (Limits) | Associated Samples | Flag | A or P |
|-------------------|---------|--------------------------------------|------------------------------------|---|---|--------|
| 1178 | 8/9/05 | Acrolein 1,2-Dibromo-3-chioropropane | 0.03540 (≥0.05) 0.03189 (≥0.05) | LDW-PW-B-PE-201 LDW-PW-B-PE-202 LDW-PW-G-PE-04 LDW-PW-G-PE-03 LDW-PW-G-PE-05 LDW-PW-G-PE-06 LDW-PW-G-PE-203 LDW-PW-G-PE-203 LDW-PW-G-PE-204 LDW-PW-B-PE-11 LDW-PW-B-PE-13 | J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects) | А |
| 1178 | 8/10/05 | Acrolein 1,2-Dibromo-3-chloropropane | 0.03494 (≥0.05) 0.03417 (≥0.05) | LDW-PW-G-PE-02DL LDW-PW-G-PE-01 LDW-PW-G-PE-07 LDW-PW-G-PE-08 LDW-PW-B-PE-09 LDW-PW-B-PE-15 LDW-PW-PE-01-EB TRIP BLANKS | J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects) | A |

*V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

| Associated SDG | Method Blank ID | Analysis Date | Compound TIC (RT in minutes) | Concentration | Associated Samples |
|-------------------|-----------------|------------------|---------------------------------|---------------|--|
| IE76 IE93 | MB-062305 | 6/23/05 | Methylene chloride | 0.3 ug/L | LDW-PW-B-PZ-12** LDW-PW-B-PZ-09** LDW-PW-B-PZ-08** TRIP BLANK (6/21/05)** LDW-PW-B-PZ-11 LDW-PW-B-PZ-10 LDW-PW-B-PZ-7 LDW-PW-G-PZ-4 LDW-PW-G-PZ-1 LDW-PW-PZ-EPARB LDW-PW-PZ-MHERB TRIP BLANK (6/22/05) |
| IF11 | MB-062405 | 6/24/05 | Acetone | 1.2 ug/L | LDW-PW-G-PZ-05 LDW-PW-G-PZ-03 LDW-PW-G-PZ-06 LDW-PW-G-PZ-02 TRIP BLANK (6/23/05) |

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

| Associated SDG | Sample | Compound TIC (RT in minutes) | Reported Concentration | Modified Final Concentration |
|----------------|----------------------|---------------------------------|---------------------------|---------------------------------|
| IF11 | LDW-PW-G-PZ-05 | Acetone | 3.3 ug/L | 3.3U ug/L |
| IF11 | LDW-PW-G-PZ-03 | Acetone | 2.2 ug/L | 2.2U ug/L |
| IF11 | LDW-PW-G-PZ-06 | Acetone | 6.2 ug/L | 6.2U ug/L |
| IF11 | LDW-PW-G-PZ-02 | Acetone | 3.2 ug/L | 3.2U ug/L |
| IF11 | TRIP BLANK (6/23/05) | Acetone | 1.2 ug/L | 1.2U ug/L |

Samples "TRIP BLANK (6/21/05)**" (SDG IE76), "TRIP BLANK (6/22/05)" (SDG IE93), and "TRIP BLANK (6/23/05)" (SDG IF11), and sample "TRIP BLANKS" (SDG II78) were identified as trip blanks. No volatile contaminants were found in these blanks with the following exceptions:

| Associated SDG | Trip Blank ID | Compound | Concentration | Associated Samples |
|-------------------|----------------------|----------|---------------|--|
| IF11 | TRIP BLANK (6/23/05) | Acetone | 1.2 ug/L | LDW-PW-G-PZ-05 LDW-PW-G-PZ-03 LDW-PW-G-PZ-06 LDW-PW-G-PZ-02 |

Samples LDW-PW-PZ-EPARB and LDW-PW-PZ-MHERB (SDG IE93) were identified as rinsate blanks. No volatile contaminants were found in these blanks with the following exceptions:

| Associated SDG | Rinsate Blank ID | Compound | Concentration | Associated Samples |
|-------------------|-------------------------------|--|--|--|
| *IE93 | LDW-PW-PZ-EPARB | Vinyl chloride Acetone cis-1,2-Dichloroethene Toluene Trichlorofluoromethane | 0.5 ug/L 5.0 ug/L 0.9 ug/L 0.5 ug/L 0.3 ug/L | LDW-PW-B-PZ-7 LDW-PW-G-PZ-4 LDW-PW-G-PZ-1 |
| *IF11 | LDW-PW-PZ-EPARB (SDG IE93) | Vinyl chloride Acetone cis-1,2-Dichloroethene Toluene Trichlorofluoromethane | 0.5 ug/L 5.0 ug/L 0.9 ug/L 0.5 ug/L 0.3 ug/L | LDW-PW-G-PZ-05 LDW-PW-G-PZ-03 LDW-PW-G-PZ-06 LDW-PW-G-PZ-02 |
| *IE93 | LDW-PW-PZ-MHERB | Acetone Toluene | 4.6 ug/L 0.4 ug/L | LDW-PW-B-PZ-11 LDW-PW-B-PZ-10 |
| *IE76 | LDW-PW-PZ-MHERB (SDG IE93) | Acetone Toluene | 4.6 ug/L 0.4 ug/L | LDW-PW-B-PZ-12** LDW-PW-B-PZ-09** LDW-PW-B-PZ-08** |

Sample LDW-PW-PE-01-EB (SDG II78) was identified as an equipment blank. No volatile contaminants were found in this blank with the following exceptions:

| Associated SDG | Equipment Blank ID | Compound | Concentration | Associated Samples |
|-------------------|--------------------|---|---|---|
| 1178 | LDW-PW-PE-01-EB | 1,3,5-Trimethylbenzene Acetone 1,2,4-Trimethylbenzene 2-Butanone Benzene Ethylbenzene m,p-Xylenes o-Xylene n-Propylbenzene n-Butylbenzene Naphthalene | 1.0 ug/L 48 ug/L 3.1 ug/L 1.5 ug/L 1.3 ug/L 0.4 ug/L 1.5 ug/L 0.4 ug/L 0.2 ug/L 1.4 ug/L | LDW-PW-B-PE-12 LDW-PW-B-PE-14 LDW-PW-B-PE-16 LDW-PW-B-PE-10 LDW-PW-B-PE-201 LDW-PW-G-PE-04 LDW-PW-G-PE-03 LDW-PW-G-PE-02 LDW-PW-G-PE-02 LDW-PW-G-PE-05 LDW-PW-G-PE-05 LDW-PW-G-PE-06 LDW-PW-G-PE-06 LDW-PW-G-PE-07 LDW-PW-G-PE-08 LDW-PW-G-PE-08 LDW-PW-G-PE-08 LDW-PW-G-PE-09 LDW-PW-G-PE-09 LDW-PW-G-PE-203 LDW-PW-G-PE-203 LDW-PW-G-PE-203 LDW-PW-G-PE-204 LDW-PW-G-PE-204 LDW-PW-G-PE-204 LDW-PW-G-PE-204 LDW-PW-B-PE-11 LDW-PW-B-PE-11 |

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

| Associated SDG | Sample | Compound | Reported Concentration | Modified Final Concentration |
|-------------------|------------------|---|----------------------------------|-------------------------------------|
| *IE76 | LDW-PW-B-PZ-12** | Acetone | 1.8 ug/L | 1.8U ug/L |
| *IE76 | LDW-PW-B-PZ-09** | Acetone | 2.2 ug/L | 2.2U ug/L |
| *IE76 | LDW-PW-B-PZ-08** | Acetone | 1.3 ug/L | 1.3U ug/L |
| IE93 | LDW-PW-B-PZ-7 | Acetone Trichlorofluoromethane | 1.5 ug/L 0.2 ug/L | 1.5U ug/L 0.2U ug/L |
| IE93 | LDW-PW-G-PZ-4 | Vinyl chloride Acetone cis-1,2-Dichloroethene | 1.6 ug/L 1.4 ug/L 2.0 ug/L | 1.6U ug/L 1.4U ug/L 2.0U ug/L |
| IE93 | LDW-PW-G-PZ-1 | cis-1,2-Dichloroethene | 1.4 ug/L | 1.4U ug/L |
| IF11 | LDW-PW-G-PZ-05 | Acetone | 3.3 ug/L | 3.3U ug/L. |
| IF11 | LDW-PW-G-PZ-03 | Acetone | 2.2 ug/L | 2.2U ug/L |

| Associated SDG | Sample | Compound | Reported Concentration | Modified Final Concentration |
|-------------------|-----------------------|--|--|--|
| IF11 | LDW-PW-G-PZ-06 | Acetone | 6.2 ug/L | 6.2U ug/L |
| IF11 | LDW-PW-G-PZ-02 | Acetone | 3.2 ug/L | 3.2U ug/L |
| 1178 | LDW-PW-B-PE-12 | Acetone | 60 ug/L | 60U ug/L |
| 1178 | LDW-PW-B-PE-14 | Acetone | 5.7 ug/L | 5.7U ug/L |
| 1178 | LDW-PW-B-PE-16 | Acetone | 48 ug/L | 48U ug/L |
| 1178 | LDW-PW-B-PE-10 | Acetone | 9.3 ug/L | 9.3U ug/L |
| 1178 | LDW-PW-B-PE-201 | Acetone | 12 ug/L | 12U ug/L |
| 1178 | LDW-PW-B-PE-202 | Acetone | 12 ug/L | 12U ug/L |
| 1178 | LDW-PW-G-PE-04 | Acetone | 6.4 ug/L. | 6.4U ug/L |
| II78 | LDW-PW-G-PE-03 | Acetone 1,2,4-Trimethylbenzene o-Xylene | 71 ug/L 0.2 ug/L 0.3 ug/L | 71U ug/L 0.2U ug/L 0.3U ug/L |
| 1178 | LDW-PW-G-PE-02 | Acetone | 4.5 ug/L | 4.5U ug/L |
| 1178 | LDW-PW-G-PE-02DL (5x) | Acetone | 7.6 ug/L | 7.6U ug/L |
| II78 | LDW-PW-G-PE-01 | Acetone 1,2,4-Trimethylbenzene 2-Butanone | 33 ug/L 0.2 ug/L 2.4 ug/L | 33U ug/L 0.2U ug/L 2.4U ug/L |
| 1178 | LDW-PW-G-PE-05 | Acetone Benzene | 2.6 ug/L 3.0 ug/L | 2.6U ug/L 3.0U ug/L |
| ll78 | LDW-PW-G-PE-06 | Acetone Ethylbenzene m,p-Xylenes o-Xylene | 3.5 ug/L 1.3 ug/L 0.7 ug/L 1.3 ug/L | 3.5U ug/L 1.3U ug/L 0.7U ug/L 1.3U ug/L |
| II78 | LDW-PW-G-PE-07 (2x) | Acetone Benzene | 64 ug/L 2.2 ug/L | 64U ug/L 2.2U ug/L |
| ll78 | LDW-PW-G-PE-08 | Acetone Benzene o-Xylene | 28 ug/L 3.2 ug/L 0.5 ug/L | 28U ug/L 3.2U ug/L 0.5U ug/L |
| 1178 | LDW-PW-G-PE-203 | Acetone Benzene Ethylbenzene o-Xylene | 13 ug/L 2.4 ug/L 0.2 ug/L 0.6 ug/L | 13U ug/L 2.4U ug/L 0.2U ug/L 0.6U ug/L |

| Associated SDG | Sample | Compound | Reported Concentration | Modified Final Concentration |
|-------------------|------------------------|--|---|---|
| 1178 | LDW-PW-G-PE-203RE (5x) | Acetone Benzene | 6.9 ug/L 1.6 ug/L | 6.9U ug/L 1.6U ug/L |
| 1178 | LDW-PW-G-PE-204 | Acetone Benzene Ethylbenzene o-Xylene | 36 ug/L 4.7 ug/L 0.6 ug/L 0.7 ug/L | 36U ug/L 4.7U ug/L 0.6U ug/L 0.7U ug/L |
| 1178 | LDW-PW-G-PE-204RE (5x) | Acetone Benzene | 33 ug/L 4.2 ug/L | 33U ug/L 4.2U ug/L |
| 1178 | LDW-PW-B-PE-09 | Acetone | 20 ug/L | 20U ug/L |
| 1178 | LDW-PW-B-PE-11 | Acetone Benzene | 3.7 ug/L 0.4 ug/L | 3.7U ug/L 0.4U ug/L |
| 1178 | LDW-PW-B-PE-13 | Acetone | 4.7 ug/L | 4.7U ug/L |
| 1178 | LDW-PW-B-PE-15 | Acetone 1,2,4-Trimethylbenzene | 9.6 ug/L 0.3 ug/L | 9.6U ug/L 0.3U ug/L |

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

*VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

| Associated SDG | Spike ID (Associated Samples) | Compound | MS (%R) (Limits) | MSD (%R) (Limits) | RPD (Limits) | Flag | A or P |
|-------------------|--|---|--|--|-----------------|---|--------|
| IE93 | LDW-PW-B-PZ-10MS/MSD (LDW-PW-B-PZ-10) | Chloromethane Bromomethane Vinyl chloride Methyl iodide | 61.0 (75-125) 62.5 (75-125) 72.5 (75-125) | 57.5 (75-125) 62.5 (75-125) 70.0 (75-125) 67.5 (75-125) | - - - | J (all detects) UJ (all non-detects) | A |
| IE93 | LDW-PW-B-PZ-10MS/MSD (LDW-PW-B-PZ-10) | Acetone Bromodichloromethane 4-Methyl-2-pentanone 2-Hexanone Acrolein 1,2-Dibromo-3-chloropropane | 140 (75-125) - 130 (75-125) - 137 (75-125) 130 (75-125) | 137 (75-125) 130 (75-125) 144 (75-125) 134 (75-125) 152 (75-125) 135 (75-125) | | J (all detects) | A |
| 1178 | LDW-PW-B-PE-201MS/MSD (LDW-PW-B-PE-201) | Chloromethane Bromomethane Hexachlorobutadiene n-Butylbenzene | 67.5 (75-125) 65.0 (75-125) 62.5 (75-125) 72.5 (75-125) | 65.0 (75-125) 62.5 (75-125) 55.0 (75-125) 65.0 (75-125) | | J (all detects) UJ (all non-detects) | А |

| Associated SDG | Spike ID (Associated Samples) | Compound | MS (%R) (Limits) | MSD (%R) (Limits) | RPD (Limits) | Flag | A or P |
|----------------|--|---|-----------------------------------|-----------------------------------|-----------------|---|--------|
| 1178 | LDW-PW-B-PE-201MS/MSD (LDW-PW-B-PE-201) | 2-Butanone 4-Methyl-2-pentanone 1,2-Dibromo-3-chloropropane | 138 (75-125) - 135 (75-125) | 131 (75-125) 128 (75-125) - | - | J (all detects) J (all detects) J (all detects) | А |
| 1178 | LDW-PW-PE-01-EBMS/MSD (LDW-PW-PE-01-EB) | Bromomethane Methyl iodide | 67.5 (75-125) 70.0 (75-125) | 70.0 (75-125) | - | J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects) | А |

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

| Associated SDG | LCS ID (Associated Samples) | Compound | LCS %R (Limits) | LCSD %R (Limits) | RPD (Limits) | Flag | A or P |
|-------------------|--|-------------------------------|--------------------------------|--------------------------------|-----------------|---|--------|
| IE76 IE93 | LCS-062305 (LDW-PW-B-PZ-12** LDW-PW-B-PZ-09** LDW-PW-B-PZ-08** TRIP BLANK (6/21/05)** LDW-PW-B-PZ-10 LDW-PW-B-PZ-10 LDW-PW-G-PZ-7 LDW-PW-G-PZ-4 LDW-PW-G-PZ-1 LDW-PW-PZ-EPARB LDW-PW-PZ-MHERB TRIP BLANK (6/22/05)) | Acrolein | 142 (75-125) | - | • | J (all detects) | Р |
| IE76 IE93 | LCS-062305 (LDW-PW-B-PZ-12** LDW-PW-B-PZ-09** LDW-PW-B-PZ-08** TRIP BLANK (6/21/05)** LDW-PW-B-PZ-11 LDW-PW-B-PZ-10 LDW-PW-B-PZ-7 LDW-PW-G-PZ-4 LDW-PW-G-PZ-1 LDW-PW-PZ-EPARB LDW-PW-PZ-EPARB LDW-PW-PZ-MHERB TRIP BLANK (6/22/05)) | Hexachlorobutadiene | - | • | 39.0 (≤30) | J (all detects) UJ (all non-detects) | Р |
| JF11 | LCS-062405 (LDW-PW-G-PZ-05 LDW-PW-G-PZ-03 LDW-PW-G-PZ-06 LDW-PW-G-PZ-02 TRIP BLANK (6/23/05)) | Bromomethane Methyl iodide | 55.0 (75-125) 50.0 (75-125) | 60.0 (75-125) 52.5 (75-125) | - | J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects) | Р |
| IF11 | LCS-062405 (LDW-PW-G-PZ-05 LDW-PW-G-PZ-03 LDW-PW-G-PZ-06 LDW-PW-G-PZ-02 TRIP BLANK (6/23/05)) | Acetone Acrolein | 130 (75-125) 128 (75-125) | - | - | J (all detects) J (all detects) | Р |

| Associated SDG | LCS ID (Associated Samples) | Compound | LCS %R (Limits) | LCSD %R (Limits) | RPD (Limits) | Revision Flag | n 2 A or P |
|----------------|--|---|--------------------------------|--------------------------------|-----------------|---|---------------|
| 1178 | LCS-080905 (LDW-PW-B-PE-201 LDW-PW-B-PE-202 LDW-PW-G-PE-04 LDW-PW-G-PE-03 LDW-PW-G-PE-05 LDW-PW-G-PE-05 LDW-PW-G-PE-203 LDW-PW-G-PE-203 LDW-PW-G-PE-204 LDW-PW-B-PE-11 LDW-PW-B-PE-11 | Chloromethane Bromomethane | 67.5 (75-125) | 65.0 (75-125) 72.5 (75-125) | - | J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects) | Р |
| 1178 | LCS-081005-20 (LDW-PW-G-PE-02DL LDW-PW-G-PE-01 LDW-PW-G-PE-07 LDW-PW-G-PE-08 LDW-PW-B-PE-09 LDW-PW-B-PE-15 LDW-PW-B-PE-01-EB TRIP BLANKS) | Bromomethane | 72.5 (75-125) | 70.0 (75-125) | - | J (all detects) UJ (all non-detects) | Р |
| 1178 | LCS-081005-5 (LDW-PW-G-PE-06RE LDW-PW-G-PE-204RE) | Carbon tetrachloride 2-Chloroethylvinyl ether | 74.2 (75-125) 56.6 (75-125) | - 60.0 (75-125) | - | J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects) | Р |

Standard reference material was performed at the required frequencies.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level III criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for SDG II78 with the following exceptions:

| Associated SDG | Sample | Compound | Finding | Criteria | Flag | A or P |
|----------------|----------------|------------------------|---|---|------|--------|
| 1178 | LDW-PW-G-PE-02 | cis-1,2-Dichloroethene | Sample result exceeded calibration range. | Reported result should be within calibration range. | N/A* | • |

| Associated SDG | Sample | Compound | Finding | Criteria | Flag | A or P |
|-------------------|--|--|---|---|-----------------|--------|
| 1178 | LDW-PW-G-PE-05 LDW-PW-G-PE-203 LDW-PW-G-PE-204 LDW-PW-G-PE-06 | Vinyl chloride cis-1,2-Dichloroethene | Sample result exceeded calibration range. | Reported result should be within calibration range. | N/A* N/A* | - |
| 1178 | LDW-PW-G-PE-06 | trans-1,2-Dichloroethene | Sample result exceeded calibration range. | Reported result should be within calibration range. | J (all detects) | A |

^{*}N/A = Not applicable

Since the above results were deemed unusable, these findings did not warrant qualification of the data.

All compound quantitation and CRQLs were within validation criteria for samples on which a EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level III criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory for Level IV.

Tentatively identified compounds data were not reviewed for Level III.

XIV. System Performance

The system performance was acceptable for samples on which a EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level III criteria.

XV. Overall Assessment

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

| Associated SDG | Sample | Compound | Flag | A or P |
|-------------------|------------------|--|------------------|--------|
| 1178 | LDW-PW-G-PE-02 | Acetone trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene | R R R R | A |
| 1178 | LDW-PW-G-PE-02DL | All TCL compounds except Acetone trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene | R | А |

| Associated SDG | Sample | Compound | Flag | A or P |
|----------------|--|--|--------|--------|
| 1178 | LDW-PW-G-PE-05 LDW-PW-G-PE-203 LDW-PW-G-PE-204 LDW-PW-G-PE-06 | Vinyl chloride cis-1,2-Dichloroethene | R R | А |
| 1178 | LDW-PW-G-PE-05RE LDW-PW-G-PE-203RE LDW-PW-G-PE-204RE LDW-PW-G-PE-06RE | All TCL compounds except Vinyl chloride cis-1,2-Dichloroethene | R | А |

XVI. Field Duplicates

No field duplicates were identified in these SDGs.

| LDC #: | 13714A1 | VALIDATION COMPLETENESS WORKSHEET | Date: 7/13/05 |
|-----------|------------------------|-----------------------------------|---------------|
| SDG #: | IE76 | Level IV | Page:/of_/_ |
| Laborator | ry: Analytical Resourc | es, Inc. | Reviewer: 9 |
| | | The Charles of the London | 2nd Reviewer: |

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|-------|--|-----------|-------------------------|
| I. | Technical holding times | A | Sampling dates: 6/31/05 |
| 11. | GC/MS Instrument performance check | 4 | , |
| 111. | Initial calibration | W | 70 RSD. Y2 |
| IV. | Continuing calibration | w | |
| V. | Blanks | W | |
| VI. | Surrogate spikes | A | |
| VII. | Matrix spike/Matrix spike duplicates | W | |
| VIII. | Laboratory control samples | TW | ccs D |
| IX. | Regional Quality Assurance and Quality Control | N | 1 |
| X. | Internal standards | \forall | |
| XI. | Target compound identification | A | |
| XII. | Compound quantitation/CRQLs | 4 | |
| XIII. | Tentitatively identified compounds (TICs) | N | |
| XIV. | System performance | A | |
| XV. | Overall assessment of data | A | |
| XVI. | Field duplicates | N | |
| XVII. | Field blanks | ND | TB=4 |

Note:

A = Acceptable N = Not provided/applicable SW = See worksheet

ND = No compounds detected R = Rinsate FB = Field blank

D = Duplicate TB = Trip blank EB = Equipment blank

Validated Samples

| 1 | LDW-PW-B-PZ-12 | 11 | MB-062305 | 21 | | 31 | |
|----|----------------|----|-----------|----|-----|----|--|
| 2 | LDW-PW-B-PZ-09 | 12 | | 22 | | 32 | |
| 3 | LDW-PW-B-PZ-08 | 13 | | 23 | | 33 | |
| 4 | TRIP BLANK / | 14 | | 24 | | 34 | |
| 5 | | 15 | | 25 | | 35 | |
| 6 | | 16 | | 26 | | 36 | |
| 7 | | 17 | | 27 | | 37 | |
| 8 | | 18 | | 28 | i g | 38 | |
| 9 | | 19 | | 29 | | 39 | |
| 10 | | 20 | | 30 | | 40 | |

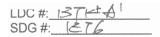


VALIDATION FINDINGS CHECKLIST

Page: /of Reviewer: 2nd Reviewer:

Method: Volatiles (EPA SW 846 Method 8260B)

| Metriod: Volatiles (El A GVV 040 Metriod 02000) | T | | T | |
|--|-----|------|----|-------------------|
| Validation Area | Yes | No | NA | Findings/Comments |
| Technical holding times | , | | | |
| All technical holding times were met. | (| | | |
| Cooler temperature criteria was met. | / | | | |
| II. GC/MS Instrument performance check | | | | |
| Were the BFB performance results reviewed and found to be within the specified criteria? | / | | | |
| Were all samples analyzed within the 12 hour clock criteria? | | | | |
| III. Initial calibration | | | | |
| Did the laboratory perform a 5 point calibration prior to sample analysis? | | | | |
| Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs? | | | | |
| Was a curve fit used for evaluation? | | | | |
| Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990? | | | | |
| Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05? | | | | |
| IV. Continuing calibration | | | | |
| Was a continuing calibration standard analyzed at least once every 12 hours for each instrument? | | | | |
| Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs? | | _ | | |
| Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05? | | | | |
| V. Blanks | | | | |
| Was a method blank associated with every sample in this SDG? | | | | |
| Was a method blank analyzed at least once every 12 hours for each matrix and concentration? | / | | | |
| Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet. | | | | |
| VI. Surrogate spikes | | | | |
| Were all surrogate %R within QC limits? | | | | |
| If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria? | | •••• | | |
| VII. Matrix spike/Matrix spike duplicates | | | | |
| Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water. | | - | | |
| Was a MS/MSD analyzed every 20 samples of each matrix? | | | | |
| Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits? | | / | | |
| VIII. Laboratory control samples | | | | |
| Was an LCS analyzed for this SDG? | / | | | |



VALIDATION FINDINGS CHECKLIST

Page: of Pag

| Validation Area | Yes | No | NA | Findings/Comments |
|--|-----|----|---|-------------------|
| Was an LCS analyzed per analytical batch? | | | | |
| Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits? | | | | |
| IX. Regional Quality Assurance and Quality Control | | | | |
| Were performance evaluation (PE) samples performed? | | | | |
| Were the performance evaluation (PF) samples within the acceptance limits? | | | | |
| X. Internal standards | 7 | | | |
| Were internal standard area counts within -50% or +100% of the associated calibration standard? | (| | | |
| Were retention times within ± 30 seconds of the associated calibration standard? | | | | |
| XI. Target compound identification | T | | | |
| Were relative retention times (RRT's) within ± 0.06 RRT units of the standard? | | | | |
| Did compound spectra meet specified EPA "Functional Guidelines" criteria? | | | | |
| Were chromatogram peaks verified and accounted for? | / | | | |
| XII. Compound quantitation/CRQLs | ı | | · | |
| Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound? | / | | | |
| Were compound quantitation and CROLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation? | | | | |
| XIII. Tentatively identified compounds (TICs) | | | | |
| Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum? | | | | |
| Were relative intensities of the major ions within \pm 20% between the sample and the reference spectra? | | | / | |
| Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)? | | | | |
| XIV. System performance | | | | |
| System performance was found to be acceptable. | | | *************************************** | |
| XV. Overall assessment of data | | | | |
| Overall assessment of data was found to be acceptable. | | | | |
| XVI. Field duplicates | | | | |
| Field duplicate pairs were identified in this SDG. | | / | | |
| Target compounds were detected in the field duplicates. | | | | |
| XVII. Field blanks | | | 1000 | |
| Field blanks were identified in this SDG. | | | | |
| Target compounds were detected in the field blanks. | | / | | |

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

| A. Chloromethane* | U. 1,1,2-Trchloroethane | OO. 2,2-Dichloropropane | III. n-Butylbenzene | CCCC 1-Chlorohexane | | |
|-----------------------------|---------------------------------|-------------------------------|--|---------------------------|--|--|
| A. Oncomenate | O. 1,1,2-11 Chloroethane | OO. 2,2-Dichloroproparie | III. n-Butylbenzene | CCCC 1-Chloronexarie | | |
| B. Bromomethane | V. Benzene | PP. Bromochloromethane | JJJ. 1 2-Dichlorobenzene | DDDD. Isopropyl alcohol | | |
| C. Vinyl choride** | W. trans-1.3-Dichloropropene | QQ. 1.1-Dichloropropene | KKK. 1,2,4-Trichlorobenzene | EEEE. Acetonitrile | | |
| D. Chloroethane | X. Bromoform* | RR. Dibromomethane | LLL. Fexachlorobutadiene | FFFF. Acrolein | | |
| E Methylene chloride | Y. 4-Methyl-2-pentanone | SS. 1,3-Dichloropropane | MMM. Naphthalene | GGGG. Acrylonitnle | | |
| F. Acetone | Z. 2-Hexanone | TT. 1,2-Dibromoethane | NNN. 1,2,3-Trichlorobenzene | HHHH. 1.4-Dioxane | | |
| G. Carbon disulfide | AA. Tetrachloroethene | UU. ',1,1,2-Tetrachloroethane | OOO. 1,3,5-Trichlorobenzene | IIII. Isobutyl alcohol | | |
| H. 1.1-Dichloroethene** | BB. 1,1.2.2 Tetrachloroethane* | VV. Isopropylbenzene | PPP. trans-1,2-Dichloroethene | JJJJ. Methacrylonitnle | | |
| I 1.1-Dichloroethane* | CC. Toluena** | WW. Bromobenzene | QQQ. cis-1,2-Dıchioroethene | KKKK. Propionitrile | | |
| J. 12-Dichloroethene, total | DD. Chlorobenzene* | XX. 1,2,3-Trichloropropane | RRR. m.p-Xylenes | LLLL. Methyl ethyl ketone | | |
| K. Chluroform* | EE. Ethylbenzene** | YY. r-Propylbenzene | SSS. 0-Xylene | MMMM Ethyl ether | | |
| L 1.2-Dichloroethane | FF. Styrene | ZZ. 2-Chlorotoluene | TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane | NNNN. Benzyl chloride | | |
| M 2-Butanone | GG. Xylenes, total | AAA. 1,3,5-Trimethylbenzene | UUU. 1.2-Dichlorotetrafluoroethane | 0000 neathy I lookide | | |
| N. 1 1.1-Trichloroethane | HH. Vinyl acetate | BBB. 4-Chlorotoluene | VVV. 4-Ethyltoluene | PPPP. | | |
| O. Carbon tetrachloride | II. 2-Chloroethylvinyl ether | CCC. tert-Butylbenzene | WWW. Ethanol | QQQQ. | | |
| P Bromodichloromethane | JJ. Dichlorodifluoromethane | DDD. 1,2,4-Trimethylbenzene | XXX. Di-isopropyl ether | RRRR. | | |
| Q. 1.2-Dichloropropane** | KK. Trichlorofluoromethane | EEE, sec-Butylbenzene | YYY. tert-Butanol | SSSS. | | |
| R. cis-1,3-Dichleropropene | LL. Methyl-tert-butyl ether | FFF. 1,3-Dichlorobenzene | ZZZ. tert-Butyl alcchol | | | |
| S. Trichloroethene | MM. 1,2-Dibromo-3-chloropropane | GGG p-isopropyltoluene | AAAA. Ethyl tert-butyl ether | UUUU. | | |
| T. Dibromochloromethane | NN. Methyl ethyl ketone | HHH. 1,4-Dichlorobenzene | BBBB. tert-Amyl methyl ether | VVVV. | | |

 $^{^*}$ = System performance check compounds (SPCC) for RRF; ** = Caibration check compounds (CCC) for %RSD.

LDC #: 137HA SDG #: 1276

VALIDATION FINDINGS WORKSHEET Initial Calibration

Page: /of/
Reviewer: 4
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

VN N/A Did the laboratory perform a 5 point calibration prior to sample analysis?

Were percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?

Was a curve fit used for evaluation? If yes, what was the acceptance criteria used for evaluation?

VN_N/A Did the initial calibration meet the acceptance criteria?

Y N N/A Were all %RSDs and RRFs within the validation criteria of ≤30 %RSD and ≥0.05 RRF?

| # | Date | Standard ID | Compound | Finding %RSD (Limit: <30.0%) | Finding RRF (Limit: <u>></u> 0.05) | Associated Samples | Qualifications |
|---|--|--|---|--|--|--|----------------|
| | 6/20/05 | ICAZ | FFF | | 0.02575 | MTBA | 1/W/A |
| | 71 | Manifest processing and the second se | 1 / | | 0.04315 | | |
| | and electric forms of charles replaced the second Common a description | | > | | 0.04315 | | |
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LDC #: 13714-01 SDG #: 1276

VALIDATION FINDINGS WORKSHEET <u>Continuing Calibration</u>

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?

Y N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF?

| # | Date | Standard ID | Compound | Finding %D (Limit: <u><</u> 25.0%) | Finding RRF (Limit: <u>></u> 0.05) | Associated Samples | Qualifications |
|---------------|--|--|--|--|--|--|---|
| | 6/23/05 | 04006=3A | FFF | 29.88882 | | M+BK | Jus/A |
| | 1 | and the second s | FFT | 29.88882 26.8T961 | | | |
| | | | | | 0.032672 | | / |
| | gastangganamarkalary anakadhunkuda 1907 (1907 (1907) (1907) | | 1 1 | | 0.04081 | | √ |
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| VALIDATION FINDINGS WORKSHEET SDG #: 1276 METHOD: GC/MS VOA (EPA SW 846 Method 8260B) Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A". YN N/A Was a method blank associated with every sample in this SDG? Y/N N/A Was a method blank analyzed at least once every 12 hours for each matrix and concentration? YN N/A Was there contamination in the method blanks? If yes, please see the qualifications below. | | | | | | | | | | /of / |
|--|----------|---|---------------------------------|--|-----|---|---|---|--|--|
| Blank analysis date: 6/23/05 Conc. units: Associated Samples: | | | | | | | | | | |
| Compound | Blank ID | | | | , s | ample Identifica | ition | | | |
| ME | -062305 | | | | | | | | | |
| Methylene chloride | 0.3 | | | | | | | | | |
| Acetone | | MANAGER AND | | | | *************************************** | | | | |
| | | | 4453-1-35 Comment of the second | | | | NATIONAL TO A STREET AND A STREET | | | |
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| CRQL | | | | | | | | | | A they what has been a through the property and the ball of the ba |
| Blank analysis date: Conc. units: | | | As | sociated Sample | es | | | | PANN-THAINING DANGE THE PANNE THE PA | |
| Compound | Blank ID | | | | S | Sample Identific | ation | | | |
| | | | | | | | | | | |
| Methylene chloride | | | | | | | | | The second secon | |
| Acetone | | | | | | | | | | |
| II . | II . | 11 | 1 | 1 | 1 | | | 1 | | E CONTRACTOR DE LA CONT |

All results were qualified using the criteria stated below except those circled.

Note: Common contaminants such as Methylene chloride, Acetone, 2-Butanone, Carbon disulfide and TICs that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

CRQL

LDC #: 13714A | SDG #: 1376

VALIDATION FINDINGS WORKSHEET Matrix Spike/Matrix Spike Duplicates

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Was a MS/MSD analyzed every 20 samples of each matrix?

Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

| # | Date | MS/MSD ID | Compound | % | MS 6R (Limits) | | MSD %R (Limi | ts) | | RPD (Limits) | | Associated Samples | | Qualifications | |
|---------------------------|------|--------------------|---------------|-------|-------------------|----------|-----------------|-------|---|------------------|---|--|---|---|--|
| | | LDW-DW-B-72-10 | A | 600 | (75-1257) | 57: | 5175 | -1257 | | ĺ |) | None | No | Qual | |
| | | (1293) | B | 625 | () | 100 | 5 (|) | | (|) | | | CONTRACTOR OF THE PROPERTY OF | |
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| | | | Y | 130 | () | 144 | Ł (|) | | (|) | | | | |
| | | | 2 | | () | 134 | 1 (|) | | (|) | | | | |
| | | | FFF | 137 | () | 152 | - (|) | | (|) | | | | |
| | | | 0000 | | () | 67. | 5(|) | | (|) | | | | |
| | | | MM | 130 | () | 135 | - (|) | | [|) | | | V | |
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| | | | | | () | | (|) | | (|) | | | | |
| | | Compo | Compound | | QC Lin | nits (So | il) | | R | PD (Soil) | | QC Limits (Water) | | RPD (Water) | |
| | Н. | 1,1-Dichloroethene | ichloroethene | | | 172% | | | | < 22% | | 61-145% | | <u><</u> 14% | |
| | S, | Trichloroethene | | 62-1 | | | | | | <u>< 24%</u> | | 71-120% | aydood www.edw.edw.edw.edw.edw.edw.edw.edw.edw. | <u><</u> 14% | |
| | V. | Benzene | | 66-14 | | | | | | <u><</u> 21% | | 76-127% | | ≤ 11% | |
| | CC. | Toluene | | | 59- | 139% | | | | <u><</u> 21% | | 76-125% | | <u><</u> 13% | |
| Additional and the second | DD. | Chlcrobenzene | | | 60- | 133% | | | | <u>< 2</u> 1% | | 75-130% | | <u><</u> 13% | |

LDC #: 1374A | SDG #: 1276

VALIDATION FINDINGS WORKSHEET Laboratory Control Samples (LCS)

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| | Reviewer: | |
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METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(N N/A

Was a LCS required?

Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

| # | Date | LCS/LCSD ID | Compound | LCS %R (Limits) | LCSD %R (Limits) | RPD (Limits) | Associated Samples | Qualifications |
|---|--|--|--|--------------------|---------------------|--------------|--|--|
| | | LCS-06-305 | FFF | 142 (75-125) | () | () | W+Bx | Jdets P |
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| SDG | #: | 1276 |

VALIDATION FINDINGS WORKSHEET Initial Calibration Calculation Verification

| | Page:_ | of |
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| | Reviewer: | 9 |
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METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

 $RRF = (A_x)(C_s)/(A_s)(C_x)$ average RRF = sum of the RRFs/number of standards A_{v} = Area of compound, C_v = Concentration of compound, A_{is} = Area of associated internal standard

%RSD = 100 * (S/X)

S = Standard deviation of the RRFs

C_{is} = Concentration of internal standard

X = Mean of the RRFs

| | | | | Reported | Recalculated | Reported | Recalculated | Reported | Recalculated |
|---|-------------|---|---|-----------------|-----------------|--------------------------|--|----------|--------------|
| # | Standard ID | Calibration Date | Compound (Reference Internal Standard) | RRF (🗘 std) | RRF (🚄 std) | Average RRF (initial) | Average RRF (initial) | %RSD | %RSD |
| 1 | IGAL | 6/20/05 | Methylene chloride (1st internal standard) | 0.74046 | 0.74046 | 0.80053 | 0.80053 | 8.44.778 | 8.4477 |
| | | 7/ | Trichlorethene (2nd internal standard) | 0.46544 | 0.1644 | 0.46206 | 0.46206 | 9.35997 | 9.3601 |
| | | | Teluene (3rd internal standard) | 2.29283 | 2.29283 | 2.14105 | 2.14105 | 11.67984 | 11.6798 |
| 2 | | | MMM Methylone-chloride (1st internal standard) | 1.20047 | 1.20047 | 1.21144 | 1. 211 Chalylan | 10.80337 | 10.8032 |
| | | | Trichlorethene (2nd internal standard) | | | | | | |
| | | | Toluene (3rd internal standard) | | 1 33 | | The second secon | | |
| 3 | | | Methylene chloride (1st internal standard) | | | | | | |
| | | A CANADA | Trichlorethene (2nd internal standard) | | | | A TOTAL CONTRACTOR OF THE PARTY | | |
| | | | Toluene (3rd internal standard) | | | | | | |
| 4 | | | Methylene chloride (1st internal standard) | | | | | | |
| | | | Trichlorethene (2nd internal standard) | | | | | | |
| | | | Toluene (3rd internal standard) | | | | | | |

| Comments: | Refer to | Initial | Calibration | findings | workshe | et for | list of | qualification | ns and | associated | samples | when | reported | results | do not | agree | within | 10.0% 0 | f the |
|--------------|----------|---------|-------------|----------|---------|--------|---------|---------------|--------|------------|---------|------|----------|---------|--------|-------|--------|---------|-------------------------------------|
| recalculated | results. | ····· | | | | | | | | | | | | | | | | | DEVINENCE AND ADDRESS OF THE PARTY. |

LDC #: 137146 | SDG #: 1676

VALIDATION FINDINGS WORKSHEET Continuing Calibration Results Verification

| | Page: | /of/_ |
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| 2nd | Reviewer | |

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Felative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF

Where: ave. RRF = initial calibration average RRF

 $RRF = (A_x)(C_{is})/(A_{is})(C_x)$

RRF = continuing cal bration RRF

 $A_x =$ Area of compound,

 A_{is} = Area of associated internal standard

 $C_x = Concentration o' compound,$

Cis = Concentration of internal standard

| principal and the second of the second | | reconstruction of the control of the | | | Reported | Recalculated | Reported | Recalculated |
|--|---|--|---|--------------------------|-------------|-------------------------------|----------|--------------|
| # | Standard ID | Calibration Date | Compound (Reference internal Standard) | Average RRF (initial) | RRF (CC) | RRF (CC) | %D | %D |
| 1 | 0400623A | 6/23/05 | Methylene choride (1st internal standard) | 0.80053 | 0.76245 | 0.76245 0.45310 2.22834 | 4.75742 | 4.75712 |
| | nig mercenansigi ammas koruman gagina ason en de dagi yan neman sigina gason en e | 7 / | Trichlorethene (2nd internal standard) | 0.46206 | 0.45310 | 0.45310 | 1.94032 | 1.94 |
| | | | Touene (3rd internal standard) | 214105 | 2.22834 | 2.22834 | 4.07698 | 4.07673 |
| 2 | | gourge and the control of the contro | MMM Methylene chloride (1st internal standard) | 1.21144 | 1.17062 | | 3.36969 | 3.3697 |
| | | | Triphlorethene (2nd internal standard) | | | | , | |
| | | | Toluene (3rd internal standard) | | | | | |
| 3 | | | Methylene chloride (1st internal standard) | | | | | |
| | | | Trichlorethene (2nd internal standard) | | | | | |
| | | a kanagagan salang salah kanagan kanagan salah sal | Toluene (3rd internal standard) | | | | | |
| 4 | | | Methylene chloride (1st internal standard) | | | | | |
| | | | Trichlorethene (2nd internal standard) | | | | | |
| | | | Toluene (3rd internal standard) | | | | | |

| Comments: | Refer to Continuing | Calibration findings | worksheet for list of | f qualifications and | associated samples | <u>when reported r</u> | esults do not a | <u>agree within 1</u> | 0.0% of the |
|--|---|----------------------|-----------------------|----------------------|--------------------|------------------------|---|-----------------------|--|
| recalculated | results. | | | | | | | | |
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LDC #: 13714A | SDG #: 1276

VALIDATION FINDINGS WORKSHEET Surrogate Results Verification

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| | Reviewer: | 9- |
| 2nd | reviewer: | |

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

% Recovery: SF/SS * 100

Where: SF = Surrogate Found

SS = Surrogate Spiked

Sample ID:

| | Surrogate Spiked | Surrogate Found | Percent Recovery Reported | Percent Recovery Recalculated | Percent Difference |
|--------------------------|---------------------|--------------------|---------------------------------|-------------------------------------|-----------------------|
| Toluene-d8 | 4 | 4.13844 | 104 | 104 | 0 |
| Bromofluorobenzene | 1 | 4.13494 | 10 > | 103 | 1 |
| 1,2-Dichloroethane-d4 | | 4.97783 | 124 | 124 | / |
| Dibromefluoromethane DCB | V | 4.35767 | 109 | 109 | V |

Sample ID:

| | Surrogate Spiked | Surrogate Found | Percent Recovery Reported | Percent Recovery Recalculated | Percent Difference |
|-----------------------|---------------------|--------------------|---------------------------------|-------------------------------------|-----------------------|
| Toluene-d8 | | | | | |
| Bromofluorobenzene | | | | | |
| 1,2-Dichloroethane-d4 | | | | | |
| Dibromofluoromethane | | | | | |

Sample ID:_____

| | Surrogate Spiked | Surrogate Found | Percent Recovery Reported | Percent Recovery Recalculated | Percent Difference |
|-----------------------|---------------------|--------------------|---------------------------------|-------------------------------------|-----------------------|
| Toluene-d8 | | | | | |
| Bromofluorobenzene | | | | | _ |
| 1,2-Dichloroethane-d4 | | | | | |
| Dibromofluoromethane | | | | | |

Sample ID:____

| | Surrogate Surrogate Spiked Found | | Percent Recovery Reported | Percent Recovery Recalculated | Percent Difference | |
|-----------------------|----------------------------------|--|---------------------------------|-------------------------------------|-----------------------|--|
| Toluene-da | | | | | | |
| Bromofluorobenzene | | | | | | |
| 1,2-Dichloroethane-d4 | | | | | | |
| Dibromofluoromethane | | | | | | |

Sample ID:_____

| | Surrogate Spiked | Surrogate Found | Percent Recovery Reported | Percent Recovery Recalculated | Percent Difference |
|-----------------------|---------------------|--------------------|--|---|-----------------------|
| Toluene-d8 | | | 3 2 2 3 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 | | |
| Bromofluorobenzene | | | | | |
| 1,2-Dichloroethane-d4 | | | | | |
| Dibromofluoromethane | | | The second secon | - AND A SOUTH BOOK LEWY CHEMICAL STATEMENT OF THE | |

LDC #: 137HA | SDG #: 1276

VALIDATION FINDINGS WORKSHEET <u>Laboratory Control Sample Results Verification</u>

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| 2nd | Reviewer: | M |

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Fecovery = 100 * SSC/SA

Where: SSC = Spiked sample concentration

SA = Spike added

RPD = I LCS - LCSD | * 2/(LCS + LCSD)

LCS = Laboraotry control sample percent recovery

LCSD = Laboratory control sample duplicate percent recovery

LCS ID: LCS-062305

| | Sp | ike | Spiked Sample | | Spiked Sample LCS | | LCSD | | LCS/I | _CSD |
|--|---|--|---------------|---------|-------------------|----------|--|---------|--|--|
| Compound | Ad (// | ded //) | Concen ([| fration | Percent F | Recovery | Percent Recovery | | RPD | |
| | LCS | LCSD | LCS | LCSD | Reported | Recalc. | Reported | Recalc. | Reported | Recalculated |
| 1.1-Dichloroethene | 4 | 4 | 3.7 | 3.8 | 92,5 | 92.5 | 95.0 | 95.0 | 2.7 | March |
| Trichloroethene | | | 3.8 | 4.1 | 95.0 | 95.0 | 102 | (02 | 7-6 | 7.6 |
| Benzene | | | 4.0 | 4.1 | 100 | 100 | 10 | 102 | 25 | |
| Toluene | | | 4.0 | 3.9 | 100 | 100 | ar.5 | 97.5 | 2.5 | 2.5 |
| Chlorobenzene | V | | 3.8 | 4.0 | 95.0 | 950 | 100 | 100 | 5./ | 5 |
| Andrew Annual An | | | 4 | | | | | | mendere de construir de la con | * |
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Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET Sample Calculation Verification

| Page:_ | |
|---------------|---|
| Reviewer: | 9 |
| 2nd reviewer: | K |

| METHOD: | GC/MS | VOA | (EPA | SW | 846 | Method | 8260B) |
|---------|-------|-----|------|----|-----|--------|--------|
|---------|-------|-----|------|----|-----|--------|--------|

Were all reported results recalculated and verified for all level IV samples?
Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

| Concer | ntratio | $n = \frac{(A_s)(I_s)(DF)}{(A_{ss})(RRF)(V_o)(\%S)}$ | Example: |
|----------------|---------|--|--|
| A_{x} | = | Area of the characteristic ion (EICP) for the compound to be measured | Sample I.D |
| A_{is} | = | Area of the characteristic ion (FICP) for the specific internal standard | |
| l _s | = | Amount of internal standard added in nanograms (ng) | Conc. = (2/07) (4) (1) (79570) (0.05829) (1) (1) |
| RRF | = | Relative response factor of the calibration standard. | , |
| V_{o} | = | Volume or weight of sample pruged in milliliters (ml) or grams (g). | =1.8197 Mf |
| Df | = | Dilution factor. | / |
| %S | = | Percent solids, applicable to soils and solid matrices | |

| | Only. | | Reported Concentration | Calculated Concentration | |
|---|---|----------|---|-----------------------------|---------------|
| # | Sample ID | Compound | () | () | Qualification |
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| LDC #: | 13714B1 | VALIDATION | COMPLETENESS | WORKSHEET | |
|-----------|------------------------|------------|--------------|-----------|--|
| SDG #: | IE93 | | Level III | | |
| Laborator | y: Analytical Resource | es, Inc. | | | |

Reviewer: 2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|-------|--|------|-------------------------|
| | Technical holding times | A | Sampling dates: 6/22/05 |
| 11. | GC/MS Instrument performance check | A | , |
| 0 mm. | Initial calibration | Tu | 70 RSD. 12 |
| IV. | Continuing calibration | w | |
| V. | Blanks | W | |
| VI. | Surrogate spikes | A | |
| VII. | Matrix spike/Matrix spike duplicates | w | |
| VIII. | Laboratory control samples | ZW. | 100 0 |
| IX. | Regional Quality Assurance and Quality Control | N | |
| X. | Internal standards | A | |
| XI. | Target compound identification | N | |
| XII. | Compound quantitation/CRQLs | N | |
| XIII. | Tentitatively identified compounds (TICs) | N | |
| XIV. | System performance | N | |
| XV. | Overall assessment of data | A | |
| XVI. | Field duplicates | N | |
| XVII. | Field blanks | SIND | TB=8* 2.FB=6.7 |

Note:

A = Acceptable N = Not provided/applicable SW = See worksheet

ND = No compounds detected R = Rinsate

FB = Field blank

D = Duplicate TB = Trip blank EB = Equipment blank

Validated Samples

| 1 | 11-0 > | | | | | |
|----|-------------------|----|-----------|----|------|--|
| 1 | LDW-PW-B-PZ-11 | 11 | 062305435 | 21 | 31 | |
| 2 | LDW-PW-B-PZ-10 | 12 | MB-06-305 | 22 | 32 | |
| 3 | LDW-PW-B-PZ-7 | 13 | | 23 | 33 | |
| 4 | LDW-PW-G-PZ-4 | 14 | | 24 | 34 | |
| 5 | LDW PW-G PZ-1 | 15 | | 25 | 35 | |
| 6 | LDW-PW-PZ-EPARB | 16 | | 26 | 36 | |
| 7 | LDW-PW-PZ-MHERB | 17 | | 27 | 37 | |
| 8 | TRIP BLANK \$ | 18 | | 28 | 38 | |
| 9 | LDW-PW-B-PZ-10MS | 19 | | 29 | 39 | |
| 10 | LDW-PW-B-PZ-10MSD | 20 | | 30 | 40 | |

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

| A. Chloromethane* | U. 1,1,2-Trichloroethane | OO. 2,2-Dichloropropane | III. n-Bulylbenzene | CCCC.1-Chlorohexane |
|-----------------------------|---------------------------------|-------------------------------|--|---------------------------|
| B. Bromomethane | V. Benzene | PP. Bromochloromethane | JJJ. 1,2-Dichlorobenzene | DDDD. Isopropyl alcohol |
| C. Vinyl choride** | W. trans-1,3-Dichloropropene | QQ. 1,1-Dichloropropene | KKK. 1,2,4-Trichloropenzene | EEEE. Acetonitrile |
| D. Choroethane | X. Bromoform* | RR. Dibromomethane | LLL. Hexachlorobutadiene | FFFF. Acrolein |
| E. Methylene chloride | Y. 4-Methyl-2-pentanone | SS. 1,3-Dichloropropane | MMM. Naphthalene | GGGG. Acrylonitrile |
| F. Acetone | Z. 2-Hexanone | TT. 1,2-Dibromoethane | NNN. 1,2,3-Trichlorcbenzene | HHHH. 1,4-Dioxane |
| G. Carbon disulfide | AA. Tetrachloroethene | UU. 1,1,1,2-Tetrachloroethane | OOO. 1.3,5-Trichlorobenzene | IIII. Isobutyl alcohol |
| 11. 1,1-Dichloroethane** | BB. 1,1,2,2-Tetrachloroethane* | VV. Isopropylbenzene | PPP. trans-1,2-Dichloroethene | JJJJ. Methacrylonitrile |
| I 1,1-Dichloroethane¹ | CC. Toluene ^{**} | WW: Bromobenzene | QQQ. cs-1,2-Dichloroethene | KKKK. Propionitrile |
| J 1,2-Dichloroethene, total | DD. Chlorobenzene* | XX. 1,2,3-Trichloropropane | RRR. m,p-Xylenes | LLLL. Methyl ethyl ketone |
| K. Choroform** | EE. Ethylberzene** | YY. n-Propylbenzene | SSS. o-Xylene | MMMM. Ethyl ether |
| L 1,2-Dichloroethane | FF. Styrene | ZZ. 2-Chlorotoluene | TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane | NNNN. Benzyl chłoride |
| M. 2-Butanone | GG. Xylenes, total | AAA. 1,3,5-Trimethylbenzene | UUU. 12-Dichlorotetrafluoroethane | 0000. nothy lodide |
| N. 1, 1,1-Trichloroethane | HH. Vinyl acetate | BBB. 4-Chlorotoluene | VVV. 4-Ethyltoluene | PPPP. |
| O. Carbon tetrachloride | II. 2-Chloroe:hylvinyl ether | CCC. tert-Butylbenzene | WWW. Ethanol | ବ୍ରଦ୍ରବର. |
| P Bromodichloromethane | JJ. Dichlorodifluoromethane | DDD. 1,2,4-Trimethylbenzene | XXX. D-isopropyl ether | RRRR. |
| Q. 1,2-Dichloropropane** | KK. Trichlorofluoromethane | EEE. sec-Butylbenzene | YYY. tert-Butanol | ssss. |
| R. cis-1,3-Dichleropropene | LL. Methyl-tert-butyl ether | FFF. 1,3-Dichlorobenzene | ZZZ. tert-Butyl alcohol | тттт. |
| S. Trichloroethene | MM. 1,2-Dib*omo-3-chloropropane | GGG. p-lsopropyltoluene | AAAA. Ethyl tert-bu:yl ether | υυυυ. |
| T. Dibromochloromethane | NN. Methyl ethyl ketone | HHH. 1,4-Dichlorobenzene | BBBB. tert-Amyl methyl ether | vvvv. |

^{^ =} System performance check compounds (SPCC) for RRF; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 1371481 SDG #: 1293

VALIDATION FINDINGS WORKSHEET Initial Calibration

| | Page: | of |
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| | Reviewer: | |
| nd | Reviewer | d |

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

| Please see qualifications below for | all q | uestions answered "N". Not | applicable q | uestions are | e identified as | "N/A". |
|-------------------------------------|-------|----------------------------|--------------|--------------|-----------------|--------|
|-------------------------------------|-------|----------------------------|--------------|--------------|-----------------|--------|

N N/A Did the laboratory perform a 5 point calibration prior to sample analysis?

Y) N N/A Were percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?

Was a curve fit used for evaluation? If yes, what was the acceptance criteria used for evaluation?

VN N/A Did the initial calibration meet the acceptance criteria?

Were all %RSDs and RRFs with n the validation criteria of ≤30 %RSD and ≥0.05 RRF?

| # | Date | Standard ID | Compound | Finding %RSD (Limit: <30.0%) | Finding RRF (Limit: <u>></u> 0.05) | Associated Samples | Qualifications |
|---|--|-------------|--|--|---|--|----------------|
| | 6/20/05 | 1 CAC | P. F. | | 0.02515 | M+BK | 1/21 X |
| | 1/ | <u> </u> | 11 | | 0.04315 | | |
| | | | · / | | 0.04315 | | |
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LDC #: 1374 B | SDG #: 1374 B |

VALIDATION FINDINGS WORKSHEET <u>Continuing Calibration</u>

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| 2nd | Feviewer | <u>A</u> |

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?

Y₁N) N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF?

| # | Date | Standard ID | Compound | Finding %D (Limit: <25.0%) | Finding RRF (Limit: <u>></u> 0.05) | Associated Samples | Qualifications |
|--|--|--|----------|--|--|--|--|
| | 6/23/05 | 0400623A | FFF | 29.88882 | | M+B4= | A LULL |
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VALIDATION FINDINGS WORKSHEET Blanks

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| METHOD: GO | /MS VOA | (EPA SW | 846 | Method | 8260B) |
|------------|---------|---------|-----|--------|--------|
|------------|---------|---------|-----|--------|--------|

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

VN N/A Was a method blank associated with every sample in this SDG?

YN N/A Was a method blank analyzed at least once every 12 hours for each matrix and concentration?

YN N/A Was there contamination in the method blanks? If yes, please see the qualifications below.

| Blank analysis da/le: 6/23/05 | |
|--|---------------------|
| Blank analysis date: 6/23/05 Conc. units: 42 | Associated Samples: |

| Compound | Blank ID | Sample Identification | | | | | | | |
|------------------------------|----------|-----------------------|--|--|--|--|--|--|---|
| Compound Methylene chloride | 5-06=305 | | | | | | | | economic con a management de la companya de la comp |
| Methylene chloride | 0.3 | | | | | | | | |
| Acetone | ₩. | | | | | | | | |
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| CRQL | | | | | | | | | |

| Blank analysis date: | |
|----------------------|---------------------|
| Conc. units: | Associated Samples: |

| Compound | Blank ID | Sample Identification | | | | | | | |
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All results were qualified using the criteria stated below except those circled.

Note: Common contaminants such as Methylene chloride. Acetone, 2-Butanone. Carbon disulfide and TICs that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 1371481 SDG #: 1293

VALIDATION FINDINGS WORKSHEET Matrix Spike/Matrix Spike Duplicates

| | Page: | /of/ |
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| | Reviewer | 9 |
| 2nd | Reviewer | |

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A'.

Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, incicate which matrix does not have an associated MS/MSD. Soil / Water.

associated MS/MSD. Soil / Water.

Was a MS/MSD analyzed every 20 samples of each matrix?

Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

| # | Date | MS/MSD ID | Compound | % | MS SR (Lim | nits', | MSD %R (Lim | | RPD (Limits) | | Associated Samples | Qualifications |
|---|------|---|--|------|---------------|------------|----------------|------------|-----------------|-------------------|--------------------|---|
| | | 9/10 | A | 60.0 | (75. | -125) | 57.5 (75 | -125) | (|) | ellone, | ·/ul/A |
| | | / | B | 625 | (|) | 62.51 |) | (|) | | |
| | | | < | 72,5 | (|) | 70.01 |) | (|) | | V |
| | | | Street, | 140 | (|) | 137 (|) | (|) | | Jdets/A |
| | | | P | | (|) | 130 (|) | 1 |) | | |
| | | | × | 130 | (|) | 144 (|) | (|) | | |
| | | | Z | | (|) | 134 (|) | (|) | | / |
| | | | FFFF | 137 | (|) | 152 (|) | (|) | | |
| | | | 0000 | | (|) | 67.5 (|) | (|) | | 1M1/A |
| | | | MM | 130 | () |) | 1351 |) | (|) | | 1dets/A |
| | | | | | (|) | (|) | (|) | | |
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| | | | | | (|) | (|) | (|) | | |
| | | Compound | | | QC Lim | its (Soil) | | RPD (Soil) | | QC Limits (Water) | RPD (Water) | |
| | H. | 1,1-Dichloroethene | | | | 59- | 172% | | <u>< 22%</u> | | 61-145% | <u><</u> 14% |
| | S. | Trichloroethene | | | | 62- | 137% | | <u>< 24%</u> | | 71-120% | ≤ 14% |
| | V. | Benzene | Benzene | | | 66- | 142% | | <u><</u> 21% | | 76-127% | < 11% |
| | CC. | Toluene | | | | 59- | 139% | | <u><</u> 21% | | 76-125% | ≤ 13% |
| | DD. | Chlorobenzene | | | | 60- | 133% | | <u><</u> 21% | | 75-130% | ≤ 13% |

LDC #: 13714B | SDG #: 1693

VALIDATION FINDINGS WORKSHEET Laboratory Control Samples (LCS)

| | Page: | |
|-----|-----------|----|
| | Reviewer: | 9 |
| 2nd | Reviewer: | of |

METHOD: GC/MS VCA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

N N/A Y(N) N/A

Was a LCS required?

Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

| # | Date | LCS/LCSD ID | Compound | LCS %R (Limits) | LCSD %R (Limits) | RPD (Limits) | Associated Samples | Qualifications |
|---|------|---|--|--------------------|---------------------|--------------|--------------------|---|
| | | LCS-062305 | FFF | 42 (75-125) | () | () | WHBA | Jolets P |
| | | | bankarlan & | () | () | 390 (830) | | 1/41/7 |
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| LDC | #: <u>13714B</u> / | - |
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CRQL

VALIDATION FINDINGS WORKSHEET Field Blanks

| | Page: | |
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| N | METHOD: GC/MS VOA (EPA SW 846 Method 8260) | | | | | | | | ZIIG Neview | The state of the s | |
|---|--|----------|---------|--------|--------|-------|------------------|-------|--|--|--|
| E | N /N/A Were field blanks identified in this SDG? W N N/A Were target compounds detected in the field blanks? Blank units: Associated sample units: Associated sample units: Associated sample units: Associated Samples: Associated Samples: Associated Samples: Associated Samples: | | | | | | | | | | |
| CONTRACTOR | Compound | Blank ID | BlackID | | | Si | ample Identifica | ition | 2000 A 100 A 1 | | |
| | | 6 | incomp | 3 | Sampa | 5 | | | | | |
| | Viethylene chloride | 0.5 | | | 1.6/4 | | | | | | |
| - | Acetone | 5.0 | 4.6 | 1.5/11 | 1.4/11 | - | _ | | | To committee a case of the latest special convey on a convenient or the set of the first of the committee of the convenient of the conveni | |
| | Chloroform QQQ | 0.9 | | | 20/11 | 1.4/4 | | | | | |
| | CC | 0.5 | 0.4 | | / | | | | | | |
| 000000000000000000000000000000000000000 | to the second | 0.3 | | 0.2/11 | | | | | And the state of t | | |

| Blank units: | Associated sample units: | | | |
|---------------------------|------------------------------|---------------------|---------------------|--|
| Sampling date: | - | | | |
| Field blank type: (circle | one) Field Blank / Rinsate / | Trip Blank / Other: | Associated Samples: | |

| Compound | Blank ID | Sample Identification | | | | | | |
|--------------------|---|-----------------------|--|---|--|--|--|--|
| | | | | | | | | |
| Methylene chloride | | | | | | | | |
| Acetone | | | | | | | | |
| Chloroform | | | | | | | | |
| | Manager and the second | | | | | | | |
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| CRQL | | | | | | | | |

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

| LDC #: | 13714C1 | VALIDATION COMPLETENESS WORKSHEET | Date: 7/13/05 |
|----------|-------------------|-----------------------------------|-----------------|
| SDG #: | IF11 | Level III | Page: _/of // |
| Laborato | ry: Analytical Re | sources, Inc. | Reviewer:_ ~ |
| | | | 2nd Reviewer: 🦫 |

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| Assessment of the control of the con | Validation Area | | Comments |
|--|--|------|-------------------------|
| | Technical holding times | A | Sampling dates: 6/23/05 |
| 4000 | GC/MS Instrument performance check | 4 | , , |
| | Initial calibration | W | 70RSD. Y 2 |
| IV. | Continuing calibration | w | |
| V. | Blanks | W | |
| VI. | Surrogate spikes | A | |
| VII. | Matrix spike/Matrix spike duplicates | N | No US MS > |
| VIII. | Laboratory control samples | W | LCS D |
| IX. | Regional Quality Assurance and Quality Control | N | |
| X. | Internal standards | A | |
| XI. | Target compound identification | N | |
| XII. | Compound quantitation/CRQLs | N | |
| XIII. | Tentitatively identified compounds (TICs) | N | |
| XIV. | System performance | N | |
| XV. | Overall assessment of data | A | |
| XVI. | Field duplicates | N | |
| XVII. | Field blanks | √w] | TB-5 |

Note:

A = Acceptable N = Not provided/applicable SW = See worksheet

ND = No compounds detected R = Rinsate FB = Field blank

D = Duplicate TB = Trip blank EB = Equipment blank

Validated Samples

| 1 | LDW-PW-G-PZ-05 | 11 | MB-062405 | 21 | 31 | |
|----|----------------|----|-----------|----|----|--|
| 2 | LDW-PW-G-PZ-03 | 12 | | 22 | 32 | |
| 3 | LDW-PW-G-PZ-06 | 13 | | 23 | 33 | |
| 4 | LDW-PW-G-PZ-02 | 14 | | 24 | 34 | |
| 5 | TRIP BLANK | 15 | | 25 | 35 | |
| 6 | 3 | 16 | | 26 | 36 | |
| 7 | | 17 | | 27 | 37 | |
| 8 | | 18 | | 28 | 38 | |
| 9 | | 19 | | 29 | 39 | |
| 10 | | 20 | | 30 | 40 | |

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

| A. Chloromethane* | U. 1,1,2-Trichloroethane | OO. 22-Dichloropropane | III. n-Butylbenzene | CCCC.1-Chlorohexane |
|------------------------------|---------------------------------|------------------------------|--|---------------------------|
| B. Bromomethane | У. Benzene | PP. Biomochloromethane | JJJ. 1,2-Dichlorobenzene | DDDD. Isopropyl alconol |
| C. Vinyl choride** | W. trans-1,3-Dichloroprocene | QQ. 11-Dichloropropene | KKK. 1,2,4-Trichlorcbenzene | EEEE. Acetonitrile |
| D. Chloroethane | X. Bromoform* | RR. Dibromomethane | LLL. Hexachlorobutadiene | FFFF. Acrolein |
| E. Mcthylene chloride | Y. 4-Methyl-2-pentanone | SS. 1,3-Dichloropropane | MMM. Naphthalene | GGGG. Acrylonitrile |
| F. Acetone | Z. 2-Hexanone | TT. 1,2-Dibromoethane | NNN. 12,3-Trichlorobenzene | HHHH. 1,4-Dioxane |
| G. Carbon disulfide | AA. Tetrachbroethene | UU. 11,1,2-Tetrachloroethane | OOO. 1,3,5-Trichlombenzene | IIII. Isobutyl alcohol |
| 11. 1," Dichloroethene** | BB. 1,1,2,2-Tetrachloroe:hane* | VV. Isopropylberizene | PPP. trans-1,2-Dichloroethene | JJJJ. Methacrylonitrile |
| 1 1,1-Dichloroethane | CC. Toluene** | WW: 3romobenzene | QQQ. cis-1,2-Dichlcroethene | KKKK. Propionitrile |
| J. 1,2-Dichloroethene, total | DD. Chlorobenzene* | XX. 1,2,3-Trichloropropane | RRR. m,p-Xylenes | LLLL. Methyl ethyl ke:one |
| K. Chloroform** | EE. Ethylbenzene** | YY. n-Propylbenzene | SSS. o-Xylene | MMMM. Ethyl ether |
| L 1,2-Dichloroethane | F. Styrene | ZZ. 2-Chlorotoluene | TTT. 1,1,2-Trichlorg-1,2,2-trifluoroethane | NNNN. Benzyl chlorice |
| M. 2-Butanone | GG. Xylenes, total | AAA. 1,3,5-Trimethylbenzene | UUU. 1,2-Dichlorotetrafluoroethane | 0000. ne+4/ lodide |
| N 1. ,1-Trichloroethane | -IH. Vinyl acetate | BBB. 4-Chlorotoluene | VVV. 4-Ethyltoluene | РРРР. |
| O Carbon tetrachloride | II. 2-Chloroethylvinyl ether | CCC. tert-Butylbenzene | WWW. Ethanol | QQQQ. |
| P Bromodichloromethane | JJ. Dichlorodifluoromethane | DDD. 1,2,4-Trimethylbenzene | XXX. Di-isopropyl ether | RRRR. |
| Q. 1,2-Dichloropropane** | KK. Trichlorofluoromethane | EEE. sec-Butylbenzene | YYY. tert-Butanol | ssss. |
| R. cis-1,3-Dichleropropene | LL. Methyl-tert-butyl ether | FFF. 1,3-Dichlorobenzene | ZZZ. tert-Butyl alconol | TTTT. |
| S Trichloroethene | MM. 1,2-Dibromo-3-chloropropane | GGG p-Isopropyltoluene | AAAA. Ethyl tert-butyl ether | ບບບບ. |
| T. Dibromochloromethane | NN. Methyl ethyl ketone | HHH. 1,4-Dichlorobenzene | BBBB. tert-Amyl methyl ether | VVVV. |

^{* =} System performance check compounds (SPCC) for RRF; ** = Calibration check compounds (CCC) for %RSD.

| LDC | #: <u>13714el</u> |
|-----|-------------------|
| SDG | #: IF U |

VALIDATION FINDINGS WORKSHEET Initial Calibration

| | Page: | |
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| | Reviewer: | <u> </u> |
| 2nd | Reviewer: | X |

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

| Please see qualifications below for all questions answered "N". Not applicable questions are identified | itified as "N/A". |
|---|-------------------|
|---|-------------------|

N N/A Did the laboratory perform a 5 point calibration prior to sample analysis?

Were percent relative standard deviations (%RSD) and relative response factors (RFF) within method criteria for all CCC's and SPCC's?

Y/N N/A Was a curve ft used for evaluation? If yes, what was the acceptance criteria used for evaluation?

N/A Did the initial calibration meet the acceptance criteria?

Y_fN N/A Were all %RSDs and FRFs within the validation criteria of ≤30 %RSD and ≥0.05 RRF?

| | | | | Finding %RSD (Limit: ≤30.0%) | Finding RRF (Limit: <u>></u> 0.05) | | |
|------------------|--|--|--|--|--|--|----------------|
| # | Date | Standard ID | Compound | (Limit: <u><</u> 30.0%) | | Associated Samples | Qualifications |
| | 6/0/05 | ICAZ | FFF | | 0.02515 | M+Bok | Alult |
| | | 3 | | | 0.04315 | | |
| | , | | | | 0.04723 | | |
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LDC #: 13714C[SDG #: 171]

VALIDATION FINDINGS WORKSHEET <u>Continuing Calibration</u>

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| | Reviewer: | 9 |
| 2nd | Reviewer: | × |

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all cuestions answered "N". Not applicable questions are identified as "N/A".

W N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?

Y\N\N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF?

| # | Date | Standard ID | Compound | Finding %D (Limit: <u><</u> 25.0%) | Finding RRF (Limit: <u>></u> 0.05) | Associated Samples | Qualifications |
|---|--|--|--|--|--|--------------------|----------------|
| | 6/24/05 | 0400634 | B | 48.66T26 | | M+BK | -/W/A |
| | | | 0000 | 5T. 88063 25.92112 | | | |
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| LDC #: 13714C1 | | | VALIDAT | TION FIND | INGS WOF | KSHEET | | | Page: |
|---|--|-------|---------|-----------|----------|--------|--|---|--------------|
| LDC #: 1371461 SDG #: 1F11 | | | | Bla | nks | | | | Reviewer |
| 000 # · | | | | | | | | | 2nd Reviewer |
| METHOD: GC/MS VOA (EPA SW 846 Method 8260B) Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A". Y N N/A | | | | | | | | | |
| - | 1-100 | | 2 | 3 | -// | 5 | | | |
| ME | -062405 | / | | | 4 | 7 | | *************************************** | |
| Methylene chloride | | | |] | | | | | |
| Acetone | 1. 2 | 3.3/U | 2.2/4 | 6.2/4 | 3.7/1 | 1.2/U | | | |
| | | | | | | , , | | | |
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| | | | 1 | 1 | | | | | |

| Blank analysis date: | |
|----------------------|---------------------|
| Conc. units: | Associated Samples: |

| Compound | Blank ID | Sample Identification | | | | | | | |
|--------------------|----------|-----------------------|--|--|--|--|--|--|--|
| | | | | | | | | | фетер желе бет бай |
| Methylene chloride | | | | | | | | | |
| Acetone | | | | | | | | | |
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| CRQL | | | | | | | | | |

All results were qualified using the criteria stated below except those circled.

Note: Common contaminants such as Methylene chloride, Acetone, 2-Butanone, Carbon disulfide and TICs that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

CRQL

| LDC #: 13746 SDG #: 1711 | | | VALIDAT | ION FINDII Field E | NGS WORI Blanks | KSHEET | | | • | ge:/ |
|-----------------------------|---------------|--|----------------|-----------------------|--------------------|------------------|-----------------|---|-------------|------|
| METHOD: GC/MS VOA (E | EPA SW 846 Me | thod 8260) | | | | | | | ZIIG Neview | 61 |
| | 105 | detected in the number of the detected in the number of th | ne field blank | | Assoc | ciated Sample | es: <u>/-</u> 4 | ۷ | | |
| Compound | Diselello | | | | | | | | | |
| Compound | Blank ID | | | | Sa | ample identifica | tion | | | |
| Compound | Siank ID | 1 | 2 | 3 | \$ Sa | ample Identifica | tion | | | |
| Methylene chloride | | / | 2 | 3 | 4 4 | ample Identifica | tion | | | |
| | 5 | 3.3/11 | | 3 62/u | 4 | ample Identifica | tion | | | |
| Methylene chloride | | 3.3/U | 2.2/u | 6.2/U | 3. ² /U | ample Identifica | tion | | | |
| Methylene chloride Acetone | 5 | 3. ³ /u | | 3 6.2/u | 4 | ample Identifica | tion | | | |

| Blank units: Associated sample units: | | |
|--|---------------------|--|
| Sampling date: | | |
| Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: | Associated Samples: | |

| Compound | Blank ID | Sample Identification | | | | | | | |
|--------------------|----------|-----------------------|--|---|--|--|--|--|--|
| | | | | | | | | | |
| Methylene chloride | | | | | | | | | |
| Acetone | | | | | | | | | |
| Chloroform | | | | | | | | | |
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| | | | | · | | | | | |
| | | | | | | | | | |
| CRQL | | | | ` | | | | | |

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

CRQL

LDC #: 187146 | SDG #: 1811

VALIDATION FINDINGS WORKSHEET Laboratory Control Samples (LCS)

| | Page: | |
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| | Reviewer: | 7 |
| 2nd | Reviewer: | DC |

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Nct applicable questions are identified as "N/A".

Y (N) N/A

Was a LCS required?

Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

| # | Date | LCS/LCSD ID | Compound | LCS %R (Limits) | LCSD %R (Limits) | RPD (Limits) | Associated Samples | Qualifications |
|--|------|--|---|--------------------|---------------------|--------------|---|--|
| | | LCS-062405 | B | 55.º (75-125) | 60.0 (75-125) | () | MITE | VUJP 1 |
| | | | F | 130 () | () | () | | Idets/P |
| | | | FFF | 128() | () | () | | |
| | | | 0000 | @.º (V) | 52.5(V) | () | | 1/W/F |
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VALIDATION COMPLETENESS WORKSHEET LDC #: 13965A1 SDG #: 1178 Level III Laboratory: Analytical Resources, Inc. Reviewer: 2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|-------|--|------|---------------------------|
| I. | Technical holding times | Δ | Sampling dates: 8 0 5 |
| H. | GC/MS Instrument performance check | Δ | |
| III. | Initial calibration | SVAV | % RSD Y 20.990 |
| IV. | Continuing calibration | SW | |
| V. | Blanks | Δ | |
| VI. | Surrogate spikes | A | |
| VII. | Matrix spike/Matrix spike duplicates | SW | |
| VIII. | Laboratory control samples | SW | res IP |
| IX. | Regional Quality Assurance and Quality Control | N | |
| Χ | Internal standards | Α | |
| XI. | Target compound identification | N | |
| XII. | Compound quantitation/CRQLs | 5W | |
| XIII. | Tentitatively identified compounds (TICs) | N | |
| XIV. | System performance | N | |
| XV. | Overall assessment of data | SW | |
| XVI. | Field duplicates | N | |
| XVII | Field blanks | 5 W | EB= 26 TB= 27 |

Note: A = Acceptable

N = Not provided/applicable SW = See worksheet

ND = No compounds detected

R = Rinsate FB = Field blank D = Duplicate

TB = Trip blank
EB = Equipment blank

w 5 5

Validated Samples

| | wall w | | | | | | |
|------------|------------------|-------------|---------------------|-------------|--------------------|-------------|--------------------|
| 1 1 | LDW-PW-B-PE-12 | 113 | LDW-PW-G-PE-01 | 21 4 | LDW-PW-G-PE-204RE | 313 | LDW-PW-PE-01-EBMSD |
| 2 1 | LDW-PW-B-PE-14 | 12 2 | LDW-PW-G-PE-05 | 22 3 | LDW-PW-B-PE-09 | 32 | |
| 3 1 | LDW-PW-B-PE-16 | 13 5 | LDW-PW-G-PE-05RE | 23 2 | LDW-PW-B-PE-11 | 33 | |
| 4 1 | LDW-PW-B-PE-10 | 14 2 | LDW-PW-G-PE-06 | 24 2 | LDW-PW-B-PE-13 | 34 \ | MB08085 - |
| 5 2 | LDW-PW-B-PE-201 | 15 니 | LDW-PW-G-PE-06RE | 25 3 | LDW-PW-B-PE-15 | 35 7 | MB08095 - |
| 6 2 | LDW-PW-B-PE-202 | 163 | LDW-PW-G-PE-07 | 26 3 | LDW-PW-PE-01-EB | 1 1 | MB08105-20 |
| 7 2 | LDW-PW-G-PE-04 | 17 3 | LDW-PW-G-PE-08 | 27 3 | TRIP BLANKS | 37 4 | MB08105-5 |
| 8 2 | LDW-PW-G-PE-03 | 18 % | LDW-PW-G-PE-203 | 28 7 | LDW-PW-B-PE-201MS | 38 5 | MB08135 |
| 9 2 | LDW-PW-G-PE-02 | 195 | LDW-PW-G-PE-203RE . | 29 2 | LDW-PW-B-PE-201MSD | 39 | |
| 103 | LDW-PW-G-PE-02DL | 20 2 | LDW-PW-G-PE-204 | 30 3 | LDW-PW-PE-01-EBMS | 40 | |

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

| | D. Triefless there | KK. Trichlorofluoromethane | CCC. tert-Butylbenzene | UUU. 1,2-Dichlorotetrafluoroethane |
|------------------------------|--------------------------------|---------------------------------|--|------------------------------------|
| A. Chloromethane* | S. Trichloroethene | KK. Inchloronuoromethane | CCC. tert-butylberizerie | 000. 1,2-Dichlorotetrandoroetriane |
| B. Bromomethane | T. Dibromochloromethane | LL. Methyl-tert-butyl ether | DDD. 1,2,4-Trimethylbenzene | VVV. 4-Ethyltoluene |
| C. Vinyl choride** | U. 1,1,2-Trichloroethane | MM. 1,2-Dibromo-3-chloropropane | EEE. sec-Butylbenzene | WWW. Ethanol |
| D. Chloroethane | V. Benzene | NN. Methyl ethyl ketone | FFF. 1.3-Dichlorobenzene | XXX. Di-isopropyl ether |
| E. Methylene chloride | W. trans-1,3-Dichloropropene | OO. 2,2-Dichloropropane | GGG. p-Isopropyltduene | YYY. tert-Butanol |
| F. Acetone | X. Bromoform* | PP. Bromochloromethane | HHH. 1,4-Dichlorobenzene | ZZZ. tert-Butyl alcohol |
| G. Carbon disulfide | Y. 4-Methyl-2-pentanone | QQ. 1,1-Dichloropropene | III. n-Butylbenzene | AAAA. Ethyl tert-butyl ether |
| H. 1,1-Dichloroethene** | Z. 2-Hexanone | RR. Dibromomethane | JJJ. 1,2-Dichlorobenzene | BBBB. tert-Amyl methyl ether |
| I. 1,1-Dichloroethane* | AA. Tetrachloroethene | SS. 1,3-Dichloropropane | KKK. 1,2,4-Trichlorobenzene | CCCC.1-Chlorohexane |
| J. 1,2-Dichloroethene, total | BB. 1,1,2,2-Tetrachloroethane* | TT. 1,2-Dibromoethane | LLL. Hexachlorobuladiene | DDDD. Isopropyl alcohol |
| K. Chloroform** | CC. Toluene** | UU. 1,1,1,2-Tetrachloroethane | MMM. Naphthalene | EEEE. Acetonitrile |
| L. 1,2-Dichloroethane | DD. Chlorobenzene* | VV. Isopropylbenzene | NNN. 1,2,3-Trichlorobenzene | FFFF. Acrolein |
| M. 2-Butanone | EE. Ethylbenzene** | WW. Bromobenzene | OOO. 1,3,5-Trichlcrobenzene | GGGG. Acrylonitrile |
| N. 1.1,1-Trichloroethane | FF. Styrene | XX. 1,2,3-Trichloropropane | PPP. trans-1,2-Dicnloroethene | HHHH. 1,4-Dioxane |
| O. Carbon tetrachloride | GG. Xylenes, total | YY. n-Propylbenzene | QQQ. cis-1,2-Dichloroethene | IIII. Isobutyl alcohol |
| P. Bromodichloromethane | HH. Vinyl acetate | ZZ. 2-Chlorotoluene | RRR. m,p-Xylenes | JJJJ. Methacrylonitrile |
| Q. 1,2-Dichloropropane** | II. 2-Chloroethylvinyl ether | AAA 1,3,5-Trimethylbenzene | SSS. o-Xylene | KKKK. Propionitrile |
| R. cis-1,3-Dichloropropene | JJ. Dichlorodifluoromethane | BBB. 4-Chlorotoluene | TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane | LLL Methy Iodide |

^{* =} System performance check compounds (SPCC) for RRF; ** = Calibration check compounds (CCC) for %RSD.

|)C #: | 30 | 65A |) |
|-------|----|-----|---|
|)G #: | 11 | 18 | |

VALIDATION FINDINGS WORKSHEET Initial Calibration

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| | | | |

ETHOD: GC/MS VOA (EPA SW 846 Method 8260B)

| lease see qua | lifications below for all questions answered "N". Not applicable questions are identified as "N/A". |
|---------------|---|
| N N/A | Did the laboratory perform a 5 point calibration prior to sample analysis? |
| N N/A | Were percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCC's and SPCC's? |

N N/A N N/A Y (N) N/A Was a curve fit used for evaluation? If yes, what was the acceptance criteria used for evaluation?_

Did the initial calibration meet the acceptance criteria?

Were all %RSDs and RRFs within the validation criteria of ≤30 %RSD and ≥0.05 RRF?

| 1 | Date | Standard ID | Compound | Finding %RSD (Limit: <30.0%) | Finding RRF (Limit: >0.05) | Associated Samples | ろ Qualifications |
|------|--|-------------|----------|---------------------------------|--|--------------------|------------------|
| T | 8505 | ICAL FINNS | FFFF | | 0.03432 | 1-012,14. 4 | J/W/A |
| | , , | | MM | | 0.02911 | 16-PB, 22-P31 | / J |
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VALIDATION FINDINGS WORKSHEET <u>Continuing Calibration</u>

| Page:_ | of |
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| Reviewer: | 5 |
| 2nd Reviewer: | 6(|
| - | |

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Flease see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Y N N/A Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?

Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF?

| | Date | Standard ID | Compound | Finding %D (Limit: <25.0%) | Finding RRF (Limit: >0.05) | Associated Samples | Qualifications |
|------|--|--|----------|-------------------------------|---------------------------------------|--------------------|---------------------------------------|
| 3 | 18/05 | 0400803A | FFFF | | 0.03161 | MB08085, #~ | ALUIC |
| ,\$c | | | MM . | | 0.02537 | 1-74 | · \ |
| | | | | | | | · · · · · · · · · · · · · · · · · · · |
| | | | | | | | |
| | | | | | | | |
| | 8/9/05 | 0400809 | 44 | 39. 59039 | | 5-79, 12, | J/UJ/A |
| | , , | | A | . 29.88071 | | 14, 18, 20 | |
| | | Advertised to the second secon | FFFF | | 0. 03540. | 23,24 28,29 | |
| 1 | | | MM. | • | 0.03189 | MB08095 | V |
| | And the same of th | | | | | | |
| | | | | | <u> </u> | 1.6 01 | 1 1 1 1 1 1 |
| - | 8/10/05 | 200610 | II | 43.51996 | | 15, 21 | 1/w/A |
| - | | | | | · · · · · · · · · · · · · · · · · · · | M808105-5 | |
| _ | 1.00 | 04608101 | В | 29-76774 | | 10.11, 16, 17, 22, | A/W/L |
| | 8/10/05 | 0400 01012 | FFFF | | 0.03494 | 10. 35 +21 30 | |
| - | and the state of t | the sales of the s | MM | | 0.03417 | 1 | |
| | | | | | | V | |
| | | | | | | • | |
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| - | - Control of the Cont | | | | | | |
| | The second and the second district and other devices and second s | | | | | | |
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| | | | | <u> </u> | | | |
| | | Batch | 45- CCV | 05 | | | |
| | | | | | | | |

| LDC #:\ | 3963A |
|---------|-------|
| SDG #: | 117 |

VALIDATION FINDINGS WORKSHEET Field Blanks

| Page: | |
|-------------|-----|
| Reviewer | 15 |
| nd Reviewer | - 4 |
| | |

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Were field blanks identified in this SDG?

Were target compounds detected in the field blanks?

Blank units: __wa | \to _ Associated sample units: __wa | \to _ Field blank / Rinsate / Trip Blank / Other:_ Associated Samples:

| Compound | Blank ID_2 | Blank ID | | | | Sample Ide | ntification | , | | |
|------------------------|------------|----------|------|-------|----------------|--------------|-----------------|---------|------|-------|
| Sampling Date | 8/1/05 | | ١ | 2 | . 3 | 4 | 5 | 4 | 7 | \$ |
| Methylene thloride AAA | 1.0 | | 7 | _ | | | V -1122- | | | • |
| Acetone P PP | 4848 | | 60 U | 5.7 U | 48 U | 9.3V | 12 U | 124 | 6.44 | 71/1 |
| Chloroform PDD | 3.1 | | ` | _ | f | - | auto-cons. | | | 0.2 V |
| M | 1.5 | | - | *** | G ANGE. | National | american. | Wilden- | _ | |
| √ | 1.3 | | - | - | _ | - | - | _ | _ | |
| EÉ | 0.4 | | - | _ | Mana, | - | _ | anto. | _ | - |
| RRR | 1.8 | | - | ~. | uparin. | *** | Size. | - | | 4 |
| CRQL SSS | 1.5 | | - | _ | / | _ | - | diam' | | 0.34 |

Associated sample units: 1-PX Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: Associated Samples:

| Compound | Blank ID 3 | Blank ID | | | | Sample Ide | entification | | | |
|-----------------------|------------|----------|----------|---|---|------------|--------------|-------|---|---|
| Sampling Date | 8/1/05 | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Methylene chloride VV | 0.4 | | - | 4 | • | - | - | - | ^ | |
| Acetone III | 0.2 | | - | | | 1 | - | Gyann | - | |
| Chloreform MMM | 1.4 | | <u> </u> | V | J | ` | _ | ••• | • | , |
| | <u>'</u> | | | | | | | | | |
| | | | | | | • | | | | |
| | | j | | | | | | | | |
| | | ν | | | | | | | | |
| CRQL | | | | | | | | | | |

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

| LDC #: | 3965A |
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| SDG #· | 1178 |

VALIDATION FINDINGS WORKSHEET Field Blanks

| Page:_ | $\frac{2}{2}$ of $\frac{3}{2}$ |
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| Reviewer:_ | F |
| Reviewer | il |

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Were field blanks identified in this SDG? Y N/N/A

Y N N/A Were target compounds detected in the field blanks?

Blank units: 49 Associated sample units: 49 Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: Associated Samples:

| Comp | pound | Blank ID 🕏 | Blank ID | | 57 | | Sample Id | entification | 21 | | |
|-----------------|---------------|------------|----------|-------|------|------|-----------|--------------|------|------|-------|
| | Sampling Date | 8/1/05 | | 9 | 10 | · 11 | 12 | 14 | 16 | 17 | 18 |
| Methylene chler | ide AAA | 1.0 | | • | , | | • | , | | | , |
| Acetone | F | 48 | | 4.511 | 7.64 | 334 | 2.64 | 3.54 | 644 | 28 M | 134 |
| Chloroform | DOD | 34 | | • | ` | 0.24 | ` | | - \ | - | ` |
| | M | 1.5 | | | | 2.40 | , | ` | | ` | |
| | <u> </u> | 1.3 | | • | | • | 3.04 | (9.4) | 2.21 | 3.2V | 2.41 |
| | 85 | 0.4 | | , | | | , | 1.34 | ` | | 0.2 U |
| | RRR | 1.8 | | • | | • | | 0.74 | • | , | • |
| CRQL | SSS | 1.5 | | | | • | | 1.34 | • | 0.54 | 0.64 |

Associated sample units: Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: Associated Samples:

| Compound | Blank ID | Blank ID | | | | Sample Ide | ntification | | | |
|--------------------|----------|----------|---|----|----|------------|-------------|----|----|----|
| Sampling Date | | | 9 | 10 | 11 | 12 | 14 | 14 | 17 | 18 |
| Methylene chloride | 0.4 | | , | , | • | • | , | , | • | |
| Acetone III | 0.2 | | • | ı | • | • | | • | • | |
| Chilerotorm MMM | 1.4 | | | , | | | | | • | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| CRQL | | | | | · | | | | | |

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

| LDC #: | 3965A1 |
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| SDG #: | 117× |

VALIDATION FINDINGS WORKSHEET Field Blanks

| | Page:_ | $\frac{3}{2}$ of $\frac{3}{2}$ |
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| | Reviewer: | D |
| nd | Reviewer: | 40 |

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

 $Y \ N / N / A$ Were field blanks identified in this SDG?

Y/N N/A Were target compounds detected in the field blanks?

| | | 3 | | | | | Jaced Campie | | | | |
|--------------------|-------------|------------|----------|------|------|------------|--------------|---------------|------|------|--|
| Compoun | d | Blank ID 3 | Blank ID | 54 | | <u>5</u> / | Sample lo | lentification | | | |
| Sar | npling Date | 3/1/05 | | 19 | 20 | . 2 | 22 | 23 | 24 | 25 | |
| Methylene chloride | AAA | 1.0 | | | | | | | | | |
| Acetone | F | 48 | | 4.94 | 364 | 334 | 20 U | 3.74 | 4.74 | 9.64 | |
| Chloroform | DOD | 3. | | | | | | | | 0-34 | |
| | M | 1.5 | | | | | | | | | |
| | V | 1/3 | | 1.64 | 4.74 | 4.24 | | 0.44 | | | |
| | EE | 0.4 | | | 0.64 | | | | | | |
| | RRR | 1.8 | | | | | | | | | |
| CRQL | 555 | 1,5 | | | 6.74 | | | | | | |

Blank units: Wall Associated sample units: Wall Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Cther: EB Associated Samples: 179 75

| Compound | Blank ID_3 | Blank ID | | | | Sample Ide | ntification | | | |
|--------------------|------------|----------|----|----|---|------------|-------------|----|----|--|
| Sampling Date | 8/1/05 | | 19 | 20 | 2 | 22 | 23 | 24 | 25 | |
| Methylene chloride | 0.4 | | | | | | | | | |
| Acetone III | 5.1 | | | | | | | | | |
| Chloroform MMM | 1,4 | | i. | | | | | | | |
| | | | | | | | | | | |
| | | | | | | • | | | | |
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| | | | | | | | | | | |
| CRQL | | | | | · | | | | | |

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

| LDC #: | 13965A |
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| SDG #: | 1178 |

N/A N N/A

VALIDATION FINDINGS WORKSHEET Matrix Spike/Matrix Spike Duplicates

| | Page:_ | |
|-----|------------|----------|
| | Reviewer:_ | <u>*</u> |
| 2nd | Reviewer: | K |
| | - | |

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an N N/A associated MS/MSD. Soil / Water.

Was a MS/MSD analyzed every 20 samples of each matrix?

Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

| # | Date | MS/MSD ID | Compound | MS %R (Limits) | MSD %R (Limits) | | RPD (Limits) | Associated Samples | Qualifications | | | |
|---------------------------|--|--------------------|----------|-------------------|--------------------|-----|-----------------|--------------------|-----------------|--|--|--|
| | | 28 +29 | A | 67.5 (18-125) | 65.0 (75-125 | () | -() | 5 | J/W/A | | | |
| | | | В | 65.0 (1) | 62.51 |) | () | l | , 1 | | | |
| | | | М | 138 () | 13) (|) | () | | 1/Adet | | | |
| | | | 1 | () | 126 (V |) | () | | | | | |
| | | | WW | 175 () | (|) | () | | V | | | |
| | | | LLL | 62.5 () | 5.01 |) | () | | JW/A | | | |
| | | | III | 72.5 () | 65.01 |) | () | V | 1, | | | |
| | | | | () | (|) | .() | | V | | | |
| | | | | () | (|) | () | | | | | |
| | | 30+31 | В | 67.5 (75-125) | 70.01 75-12 | 5) | (-) | 26 | J/us/A | | | |
| | | | LLL | 70.0 (1 .) | (- |) | (.) | V | | | | |
| | | | | () | (|) | () | | | | | |
| | | | | () | (|) | (, | | | | | |
| | | | | () | (|) | () | | | | | |
| | | | | () | (|) | () | | | | | |
| | | | | () | (|) | () | | | | | |
| | | | | () | (|) | () | | | | | |
| | | | | () | (|) | () | | | | | |
| | The state of the s | Comp | ound | QC Liı | nits (Soil) | | RPD (Soil) | QC Limits (Water) | RPD (Water) | | | |
| | H. | 1,1-Dichloroethene | | 59 | -172% | | <u><</u> 22% | 61-145% | <u><</u> 14% | | | |
| | S. | Trichloroethene | | 62 | -137% | | <u>< 24%</u> | 71-120% | <u><</u> 14% | | | |
| | V. | Benzene | | 66 | -142% | | <u><</u> 21% | 76-127% | <u>∢</u> 11% | | | |
| province considerate con- | CC. | Toluene | | 59 | -139% | | <u><</u> 21% | 76-125% | <u>< 13%</u> | | | |
| | DD. | Chlcrobenzene | | | -133% | | <u><</u> 21% | 75-130% | <u>< 13%</u> | | | |

| LDC #: | 13965A |
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| SDG #: | 1178 |

VALIDATION FINDINGS WORKSHEET Laboratory Control Samples (LCS)

| Page: | of |
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| Reviewer: | |
| 2nd Reviewer: | 45 |

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Y N N/A Was a LCS required?

Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

| # | Date | LCS/LCSD ID | Compound | LCS %R (Limits) | LCSD %R (Limits) | RPD (Limits) | Associated Samples | Qualifications |
|-----------------------------|------|---------------|------------|--------------------|---------------------|--------------|---------------------------|----------------|
| | 0 | LC5-080905 | Α | 67.5 (75-125) | 65.0(75-125) | () | 5-19, 12, 14 | 2/NJ/P |
| | | | В | () | 72.5 () | () | 18 20, 23 24 | |
| | | | | () | () | () | 18, 20, 23, 24 MB08699 | |
| | | | 0 0 | () | () | () | | • 1/ |
| | | 1-62-081005-2 | 0 8 | 77.5 () | 70.0() | () | 10, 11, 16, 17 | · V |
| | | | | , , | () | , | 12 15-7 27 MBOB105-20 | |
| | | | | , , | () | | MB08105-20 | |
| | | | | | | | | |
| | | LCS-081005-5 | 6 0 | 74.2 () | () | | 15, 21, MBUB105 5 | |
| | | | II | 56.6 | 60.0() | | MB08105 5 | V |
| | | | | () | () | () | | |
| | | - | | () | () | () | | |
| | | | | () | () | () | | |
| L. Company and Art days | | | | () | () | () | | |
| | | | | () | () | () | | |
| | | | | () | () | () | | |
| | | | | () | () | () | | |
| | | | | () | () | () | | |
| | | | | () | () | () | | |
| a or calculate (s Millions) | | | | () | () | () | | |
| | | | | () | () | () | | |
| | | | | () | () | () | | |
| | | | | () | () | () | | |

| LDC #: | - | 59 | 65 | A |
|--------|---|----|----|---|
| SDG #: | 1 | 17 | V | , |

VALIDATION FINDINGS WORKSHEET Compound Quantitation and CRQLs

| Page: | |
|--------------|----|
| Reviewer: | 19 |
| nd Reviewer: | b' |
| | |

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Rlease see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

YN N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?

Y/N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

| # | Date | Compound Sample 18 | exceeded cal Range Finding | Associated Samples | Qualifications |
|---|------|-----------------------|-------------------------------|--------------------|----------------|
| | | ଷ୍ଟ୍ର | Execeded cal Rames | 9 | J/ A det |
| | | C, 809 | 1 | 12, 18, 2 | 0 |
| | - | | | 1 10 1 | |
| | | C, PPP, AGE | V | 14 | V |
| | | | | | |
| | | | | PX | |
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| Comments: _ | See sample calculation | verification worksheet for | recalculations | | |
|-------------|------------------------|----------------------------|----------------|--|------|
| | | | | | |
| | | | | | |

LDC #: 13965A/ SDG #: 117X

VALIDATION FINDINGS WORKSHEET Overall Assessment of Data

| Pag | e:of |
|-------------|------|
| Reviewe | er: |
| 2nd Reviewe | er: |

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

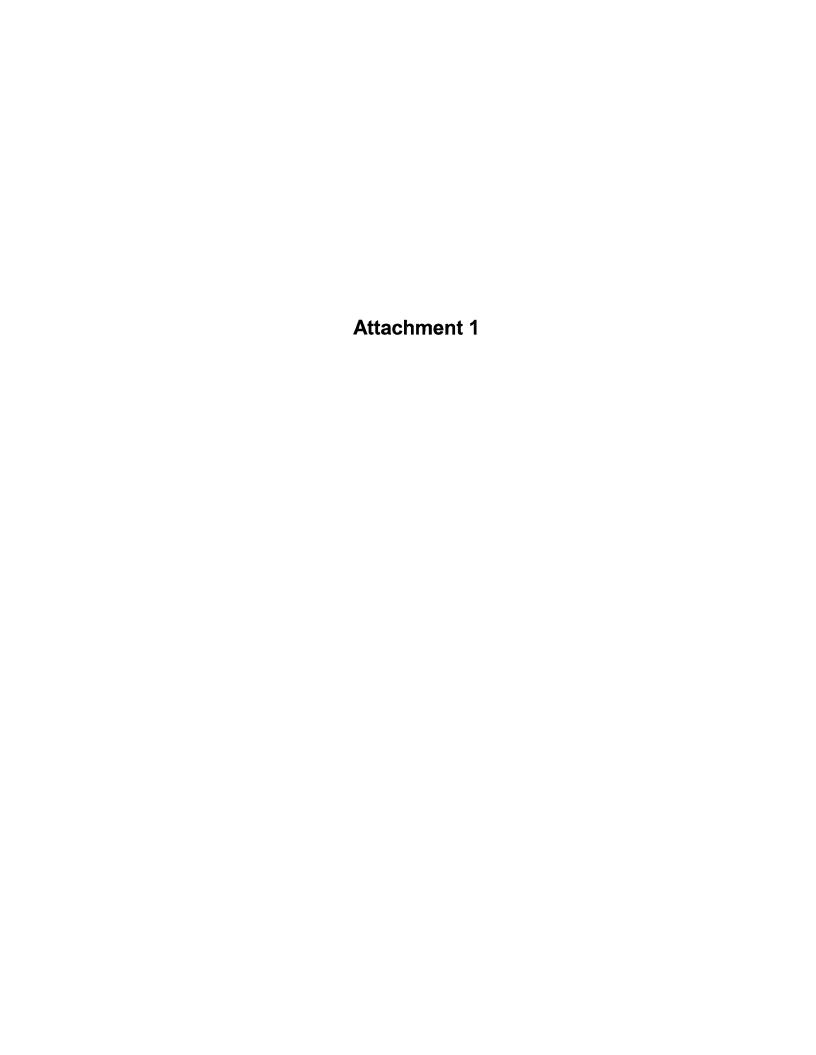
All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y/ N N/A

Was the overal quality and usability of the data acceptable?

| Date | compound -Sample ID | Finding | Associated Samples | Qualifications |
|------|-------------------------|--|--|--|
| | F, PPP, QQQ, S | PIPPP, S- lower result | 9 | R/A |
| | All except F, PPP, 999, | s diluted, higherk! | 10 | ↓ |
| | ८, रहरू | exceeded cal range | 12, 18,20 | <u> </u> |
| | All except c, QQQ | diluled, higher KL | 13, 19,2 | <i>ν</i> |
| | C, 888 | exceeded cal range | 14 | Į. |
| | All except C, QQQ | diluted higher RL | K | |
| | | | B | |
| | | | | |
| | Date | PPP, QQQ, S All except F, PPP, QQQ, C, QQQ C, QQQ C, QQQ C, QQQ | F, PPP, QQQ, S All except F, PPP, QQQ, S C, QQQ All except C, QQQ C, QQQ | F, PPP, QQQ, S FipPP, S-lower result QQQ - Exceeded cal range All except F, PPP, QQQ, S All except C, QQQ All except C, QQQQ All except C, QQQQ All except C, QQQQ All except C, QQQ All except C, QQQQ A |

Comments: # 14 PPP exceeded cal range but was ND in #15 (DO)



| Attachment 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------------|-------------------|---------------|--------------------|------------------|------------|----------|----------|----------|--|--|--|--|--|--------------|--|----------|----------|----------|--------------|----------|----------|----------|--|--|----------|--|----------|--|----------|-----|-----|----------------------------|---------------|-------------------|---------------|
| PI | F LDC | #1371 | 4 (Win | dw | ard | En | virc | nn | nen' | tal, | LL | c - | Sea | ittle | ∍ W | Α/ | Lov | ver | Du | wa | mis | h V | Vate | erw | ay | Gro | oup | , Po | ore | vat | er) | | | | |
| LDC | SDG# | DATE REC'D | (3) DATE DUE | (826 | OA 60B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Matri | c: Water/Sediment | | | 2004000000000000 | s | W | s | W | s | W | s | W | s | W | s | W | s | W | S | W | s | W | S | W | s | W | s | W | S | W | S | W | s | w | s |
| Α | IE76 | | 07/29/05 | _ | T | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| В | IE93 | | 07/29/05 | | - | | | | | | | | | | | | | | | | | | | | | | | | | | | \longrightarrow | | | |
| С | IF11 | 07/08/05 | 07/29/05 | 5 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | \dashv | _ | | |
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| $\parallel \rightarrow \parallel$ | | | | | | 1 | <u> </u> | <u> </u> | | | | <u> </u> | <u> </u> | | | | ļ | <u> </u> | | - | - | <u> </u> | | | | | - | | 1 | | | \vdash | | | $\overline{}$ |
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Attachment 1

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| Matr | ix: Water/Sediment | | | W | s | W | s | W | s | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | s | W | S | W | S | W | S | W | S | W | s |
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| Attachment 2 | |
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| roject Name: Lowe | r Duwamish Waterway | Group, Por | ewater | Param | eters/Analytica | l Method | | ř - | 1 | ÷ | Proje | ct #04-0 | 8-06 T |
|-------------------|---------------------|------------|-------------------|----------------|-----------------|----------|---|-----|---|---|-------|----------|-----------|
| Client ID # | Lab ID# | Matrix | Date Collected | VOA (8260B) | | | _ | | | | | | |
| W-PW-B-PZ-12 | IE76A | water | 06/21/05 | х | | | | | | | | | |
| W-PW-B-PZ-09 | IE76B | water | 06/21/05 | × | | | | | | | | | |
| W-PW-B-PZ-08 | IE76C | water | 06/21/05 | × | | | | | | | | | |
| IP BLANK | IE76D | water | 06/21/05 | х | | | | | | | | | - |
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| Project Name: Lower I | Duwamish Waterway | Group Por | owater | Parameters/Analytical Method | | | | | | | | | Project #04-08-06-24 | | | | |
|-----------------------|-------------------|-----------|-------------------|------------------------------|------------|-----------|--------|----|--|-----------------|----|--|----------------------|-----------|----------|--|--|
| Client ID # | Lab ID # | Matrix | Date Collected | VOA | icters/All | aryticani | wethod | ** | | an describences | '. | | rioje | 0.170-720 | | | |
| LDW-PW-B-PZ-11 | IE93A | water | 06/22/05 | Х | | | | | | | | | | | | | |
| _DW-PW-B-PZ-10 | IE93B | water | 06/22/05 | Х | | | | | | | | | | | | | |
| -DW-PW-B-PZ-7 | IE93C | water | 06/22/05 | Х | | | | | | | | | | | | | |
| _DW-PW-G-PZ-4 | IE93D | water | 06/22/05 | Х | | | | | | | | | | | | | |
| _DW-PW-G-PZ-1 | IE93E | water | 06/22/05 | х | | | _ | | | | | | | | | | |
| DW-PW-PZ-EPARB | IE93F | water | 06/22/05 | Х | | | | | | | | | | | | | |
| DW-PW-PZ-MHERB | IE93G | water | 06/22/05 | х | | | | | | | | | | | | | |
| TRIP BLANK | IE93H | water | 06/22/05 | х | | | | | | | | | | | | | |
| DW-PW-B-PZ-10MS | IE93BMS | water | 06/22/05 | х | | | | | | | | | | | | | |
| _DW-PW-B-PZ-10MSD | IE93BMSD | water | 06/22/05 | Х | | | | | | | | | | | | | |
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Attachment 2

| SDG#: IF11 | | | | VALID | ATION SAI | MPLE | TABLE | | | | | LDC#: 1 | 3714C | | |
|---------------------|-------------------|------------|-------------------|----------------|------------|----------|---------|---|--|---|---------------------|---------|-------|--|--|
| Project Name: Lower | Duwamish Waterway | Group, Por | ewater | Paran | eters/Anal | ytical N | /lethod | | | , | Project #04-08-06-2 | | | | |
| Client ID# | Lab ID# | Matrix | Date Collected | VOA (8260B) | | | | | | | | | | | |
| LDW-PW-G-PZ-05 | IF11A | water | 06/23/05 | Х | | | | | | | | | | | |
| LDW-PW-G-PZ-03 | IF11B | water | 06/23/05 | Х | | | | | | | | | | | |
| LDW-PW-G-PZ-06 | IF11C | water | 06/23/05 | Х | | | | | | | | | | | |
| LDW-PW-G-PZ-02 | IF11D | water | 06/23/05 | Х | | | | | | | | | | | |
| TRIP BLANK | IF11E | water | 06/23/05 | х | | | | | | | | | | | |
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Attachment 2

| Project Name: Lower | Duwamish Waterway | Group, Por | ewater | Paran | eters/Analytical N | Method | | | | Proje | ct #04-08 | 3-06-2 |
|---------------------|---|------------|-------------------|----------------|--------------------|--------|----------|---|---|----------|-----------|--------|
| Client ID# | Lab ID# | Matrix | Date Collected | VOA (8260B) | | | | | | | | |
| LDW-PW-B-PE-12 | 1178A | water | 08/01/05 | Х | | | | | | | | |
| _DW-PW-B-PE-14 | II78B | water | 08/01/05 | X | | | | | | | | |
| DW-PW-B-PE-16 | 1178C | water | 08/01/05 | Х | | | | | | | | |
| LDW-PW-B-PE-10 | 1178D | water | 08/01/05 | Х | | | | | | | | |
| LDW-PW-B-PE-201 | 1178E | water | 08/01/05 | Х | | | | | | | | |
| LDW-PW-B-PE-202 | II78F | water | 08/01/05 | Х | | | | | _ | | | |
| LDW-PW-G-PE-04 | II78G | water | 08/01/05 | Х | | | | | | | | |
| LDW-PW-G-PE-03 | 1178-1 | water | 08/01/05 | Х | | | | | | | | |
| LDW-PW-G-PE-02 | 1178 | water | 08/01/05 | Х | | | | | | | | |
| LDW-PW-G-PE-02DL | II78 DL | water | 08/01/05 | Х | | | | | | | | |
| LDW-PW-G-PE-01 | II78J | water | 08/01/05 | X | | | | | | | | |
| LDW-PW-G-PE-05 | 11784 | water | 08/01/05 | Х | | | | | | | | |
| LDW-PW-G-PE-05RE | II78 <re< td=""><td>water</td><td>08/01/05</td><td>Х</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></re<> | water | 08/01/05 | Х | | | | | | | | |
| LDW-PW-G-PE-06 | 1178_ | water | 08/01/05 | Х | | | | | | | | |
| LDW-PW-G-PE-06RE | 1178_RE | water | 08/01/05 | Х | | | ļ | | | | | |
| LDW-PW-G-PE-07 | 1178VI | water | 08/01/05 | Х | | | | | | | | |
| LDW-PW-G-PE-08 | 1178N | water | 08/01/05 | х | | | | | | | | |
| LDW-PW-G-PE-203 | 11780 | water | 08/01/05 | х | | | | | | | | |
| LDW-PW-G-PE-203RE | II78ORE | water | 08/01/05 | х | | | | _ | | | | |
| LDW-PW-G-PE-204 | 11782 | water | 08/01/05 | х | | | <u> </u> | | | | | |
| LDW-PW-G-PE-204RE | II78PRE | water | 08/01/05 | х | | | | | | | | |
| LDW-PW-B-PE-09 | 178Q | water | 08/01/05 | х | | | | | | <u> </u> | | |
| LDW-PW-B-PE-11 | 11783 | water | 08/01/05 | х | | | | | | | | |
| LDW-PW-B-PE-13 | 11785 | water | 08/01/05 | х | | | | | | | | |
| LDW-PW-B-PE-15 | 1178T | water | 08/01/05 | × | | | | | | | | |

| SDG#: II78 | | V VIIII | | VALID | ATION SAMPLE | TABLE | | | | | | LDC#: 1 | 3965A |
|-----------------------|-------------------|------------|-------------------|----------------|-------------------|--------|---|--|--|----------------------|--|---------|-------|
| Project Name: Lower D | Duwamish Waterway | Group, Por | ewater | Param | neters/Analytical | Method | 1 | | | Project #04-08-06-26 | | | |
| Client ID # | Lab ID# | Matrix | Date Collected | VOA (8260B) | | | | | | | | | |
| LDW-PW-PE-01-EB | 1178U | water | 08/01/05 | Х | | | | | | _ | | | |
| TRIP BLANKS | 1178V | water | 06/07/05 | Х | | | | | | _ | | | |
| LDW-PW-B-PE-201MS | II78EMS | water | 08/01/05 | Х | | | | | | _ | | | |
| LDW-PW-B-PE-201MSD | II78EMSD | water | 08/01/05 | Х | | | | | | | | | |
| LDW-PW-PE-01-EBMS | II78UMS | water | 08/01/05 | Х | | | | | | | | | |
| LDW-PW-PF-01-FRMSD | II78UMSD | water | 08/01/05 | x | | | | | | | | | |