# KING COUNTY ENVIRONMENTAL LABORATORY
# QUALITY ASSURANCE REVIEW

for

## ESTUARINE SEDIMENT ANALYTICAL DATA

## DUWAMISH/DIAGONAL SEDIMENT REMEDIATION PROJECT
## PERIMETER SEDIMENT CHARACTERIZATION
## MARCH 2006 SAMPLING EVENT


Prepared by:

Fritz Grothkopp
Laboratory Project Manager

Date: 3-7-07

Reviewed by:

Colin Elliott
Quality Assurance Officer

Date: 3/7/2007

King County Environmental Laboratory
322 West Ewing Street
Seattle, Washington 98119-1507
(206) 684-2300

## INTRODUCTION

This quality assurance (QA) narrative is intended to document the QA review conducted on the chemistry analyses performed for the Duwamish Diagonal Sediment Remediation Project, Perimeter Sediment Characterization. The QA narrative is organized into the five sections listed below.

- General Comments
- Sample Collection
- Conventional Analyses
- Metal Chemistry
- Organic Chemistry

An overview of the approach used for the QA review is detailed in the *General Comments* section. Additional information specific to each analysis is included in the appropriate analytical section.

This QA review and narrative (specifically defined as QA1) have been conducted in accordance with guidelines established through the Puget Sound Dredged Disposal Analysis (PSDDA) program, Sediment Management Standards (WAC 173-204-610) and the Sediment Sampling and Analysis Appendix (SAPA), WDOE 2003. Other approaches incorporated in the QA review have been established through collaboration between the King County Environmental Laboratory (KC Laboratory) and the Washington State Department of Ecology (Ecology) Sediment Management Unit.

## GENERAL COMMENTS

### Scope of Samples Submitted

This QA review is associated with marine sediment samples collected on March 8 & 9, 2006 as part of the Duwamish Diagonal Sediment Remediation Project, Perimeter Sediment Characterization.

Except where noted in the subcontracting sections of this QA review, all analyses have been conducted by the King County Environmental Laboratory (KCEL). Sediment analytical data are reported with associated data qualifiers and have undergone QA1 review, as summarized in this narrative report.

### Completeness

Completeness has been evaluated for this data submission and QA review by considering the following criteria:

- Comparing reported data to the planned project analyses summarized in Table 1.
- Compliance with storage conditions and holding times.
- Frequency of analysis of the complete set of quality control (QC) samples outlined in Table 2.

### Subcontracted Analyses

Analyses that have been subcontracted and the issues associated with these subcontracted analyses are noted in this narrative.

### Methods

Analytical methods are noted in the applicable analytical sections of this QA review.

### Target Lists

The reported target lists have been compared to the target analytes listed in *Table 1 - Marine Sediment Quality Standards Chemical Criteria* and *Table 3 - Puget Sound Marine Sediment Cleanup Screening Levels Chemical Criteria* contained in Chapter 173-204 WAC.

### Detection Limits

As part of the QA1 review, the detection limits reported for each parameter have been reviewed against the detection limit requirements defined in the SAP. When sample results have been reported as less than the Method Detection Limit (<MDL) and the associated detection limits are higher than those defined in the SAP, the particular samples and parameters have been identified and the circumstances explained. These summaries are included with each analytical section of this QA review.

The KC Laboratory reports include both the reporting detection limit (RDL) and the method detection limit (MDL) for each sample and parameter, where applicable. The RDL is defined as *the minimum concentration of a chemical constituent that can be reliably quantified while* the MDL is defined as *the minimum concentration of a chemical constituent that can be detected.* Some subcontracted laboratory data are available with an MDL only, in accordance with the subcontracting laboratory policies. For some methods the detection limits reported may vary from sample to sample depending on the amount of sample analyzed and any additional dilutions required.

### Storage Conditions and Holding Times

Storage conditions and holding times have been evaluated using guidelines defined in the 2003 SAPA. Preparation and analysis holding times for each method are summarized in each analytical section.

## Method Blanks

Method blank results have been used to evaluate the possible laboratory contamination of samples. Method blank results have been reviewed for the presence of analytes detected at or greater than the MDL. For analytes where the method blank response was at or above the MDL all associated sample results have been qualified with a B flag.

## Standard Reference Materials

Standard reference material (SRM) recoveries have been used to evaluate possible low or high analytical bias on a batch-specific basis. SRM analysis is included with metals and selected organic and conventional parameters (see Table 2). SRMs are purchased from outside agencies (NIST or NRCC) and must have a certified analyte value in order for a particular parameter to be evaluated. All associated sample results for the certified analytes are flagged if the SRM recoveries are unacceptable. Associated sample results are flagged with an L whenever recoveries are measured above the acceptance limits and are flagged with a G when recoveries are measured below the acceptance limits.

## Matrix Spikes

Matrix spike recoveries have been used to evaluate possible low or high analytical bias on a matrix and batch-specific basis. Matrix spikes are analyzed with metals, organics and selected conventionals parameters (see Table 2). Associated sample results are flagged with an L whenever recoveries are measured above the acceptance limits and are flagged with a G when recoveries are measured below the acceptance limits (but at or above 10%). Associated results are flagged with an X whenever recoveries are less than 10%.

For Metals only, matrix spike recovery results are used to qualify sample data only when the sample levels in the spiked sample are less than 4 times the spiked concentration. High sample levels relative to the spiked concentration can compromise the measurement of accurate spike recoveries.

## Laboratory Replicate Samples

Replicate analysis (laboratory duplicates or triplicates) is used as an indicator of method precision and is used to qualify data on an analyte and batch-specific basis. Not all replicate data are used, however, as an indicator for data qualification. Only sets of replicate results which include at least one result greater than the RDL are considered for data qualification. These guidelines have been used to account for the fact that precision obtained near the detection limit is not representative of precision obtained throughout the entire analytical range. Associated results are flagged with an E whenever the measured precision is unacceptable (greater than the acceptance limit).

## Surrogates

Surrogate recoveries have been used to evaluate possible low or high analytical bias on a sample-specific basis. Surrogates are only analyzed for organic parameters. Individual sample results are flagged with an L whenever recoveries are measured above the acceptance limits and are flagged with a G when recoveries are measured below the acceptance limits (but at or above 10%). Associated results are flagged with an X whenever recoveries are less than 10%.

## Data Qualifiers

The data qualification guidelines described above has been summarized in Table 3. This table conforms to the guidelines in the current SAPA and also shows the data qualifiers used for the Sedqual electronic data format.

## Units and Significant Figures

Units and the reporting basis vary, depending on the parameter and are explained in the analytical sections below. Data generally have been reported to three significant figures if above the RDL and two significant figures if equal to or below the RDL.

## SAMPLE COLLECTION

This section describes sampling activities associated with the collection of nine marine sediment samples on March 8 & 9, 2006. All sampling activities were conducted following guidance suggested in the Puget Sound Protocols (PSEP, 1996 and 1998).

### Sampling Locations and Station Positioning

Sampling locations (stations) were selected and the prescribed coordinates determined prior to field activities. Stations were selected to match previous Perimeter sediment events. The prescribed station coordinates are presented in the following table. Also presented in the table are the actual coordinates recorded during sampling activities. All station coordinates are recorded in state plane coordinate system North American Datum 1983 (NAD83).

| Lab Number | Locator | Cast # | # Grabs Accepted | Prescribed Northing | Actual Northing | Prescribed Easting | Actual Easting |
|---|---|---|---|---|---|---|---|
| L38326-1 | DUD_1C | | | 208754 | | 1267168 | |
| | | 1 | 2 | | 208758 | | 1267162 |
| | | 2 | 2 | | 208754 | | 1267165 |
| | | 3 | 2 | | 208754 | | 1267168 |
| | | 4 | 2 | | 208759 | | 1267160 |
| | | 5 | 2 | | 208766 | | 1267167 |
| L38326-2 | DUD_2C | | | 208651 | | 1267175 | |
| | | 1 | 1 | | 208653 | | 1267174 |
| | | 2 | 2 | | 208655 | | 1267177 |
| | | 3 | 2 | | 208655 | | 1267176 |
| | | 4 | 2 | | 208650 | | 1267169 |
| | | 5 | 2 | | 208645 | | 1267172 |
| | | 6 | 1 | | 208658 | | 1267166 |
| L38326-9 | DUD_8C | | | 208920 | | 1266864 | |
| | AREP | 1 | 2 | | 208923 | | 1266876 |
| | AREP | 2 | 2 | | 208919 | | 1266868 |
| | AREP | 3 | 2 | | 208916 | | 1266869 |
| | AREP | 4 | 2 | | 208926 | | 1266861 |
| | AREP | 5 | 2 | | 208934 | | 1266861 |
| L38326-10 | DUD_8C | | | 208920 | | 1266864 | |
| | FREP | 1 | 1 | | 208926 | | 1266863 |
| | FREP | 2 | 2 | | 208914 | | 1266877 |
| | FREP | 3 | 1 | | 208923 | | 1266866 |
| | FREP | 4 | 2 | | 208915 | | 1266864 |
| | FREP | 5 | 2 | | 208919 | | 1266861 |
| | FREP | 6 | 2 | | 208919 | | 1266864 |
| L38326-11 | DUD_9C | | | 209157 | | 1266784 | |
| | | 1 | 2 | | 209160 | | 1266777 |
| | | 2 | 2 | | 209161 | | 1266797 |
| | | 3 | 2 | | 209162 | | 1266794 |
| | | 4 | 2 | | 209154 | | 1266790 |
| | | 5 | 2 | | 209162 | | 1266792 |
| L38326-12 | DUD_10C | | | 209517 | | 1266663 | |
| | | 1 | 2 | | 209515 | | 1266667 |
| | | 2 | 2 | | 209518 | | 1266651 |
| | | 3 | 2 | | 209525 | | 1266650 |
| | | 4 | 2 | | 209511 | | 1266667 |
| | | 5 | 2 | | 209526 | | 1266665 |
| L38326-13 | DUD_11C | | | 209535 | | 1266844 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1 | 2 | | 209538 | | 1266845 |
| | | 2 | 2 | | 209533 | | 1266837 |
| | | 3 | 2 | | 209536 | | 1266839 |
| | | 4 | 2 | | 209534 | | 1266840 |
| | | 5 | 2 | | 209539 | | 1266842 |
| L38326-14 | DUD_12C | | | 209630 | | 1266813 | |
| | | 1 | 2 | | 209619 | | 1266813 |
| | | 2 | 2 | | 209624 | | 1266803 |
| | | 3 | 2 | | 209628 | | 1266804 |
| | | 4 | 2 | | 209638 | | 1266804 |
| | | 5 | 2 | | 209623 | | 1266813 |
| L38326-15 | DUD_13C | | | 207858 | | 1267240 | |
| | | 1 | 2 | | 207860 | | 1267247 |
| | | 2 | 2 | | 207865 | | 1267247 |
| | | 3 | 2 | | 207860 | | 1267233 |
| | | 4 | 2 | | 207854 | | 1267236 |
| | | 5 | 2 | | 207857 | | 1267238 |

Sediment grab samples were collected from the King County research vessel *Chinook*, which is equipped with a differential global positioning system (DGPS). Field coordinates were recorded using DGPS for each deployment of the sampler as it contacted the sediment. All field coordinates for individual grabs listed in the above table are within the +/- 3 meter accuracy limits, as defined in the SAP.

**Sample Description Table**

| Lab Sample # | Locator | Sample Collection | Average Sediment Sampling Depth [1] | Sample Usage |
|---|---|---|---|---|
| L38326-1 | DUD_1C | Surface Grabs | 16 cm | Chemistry |
| L38326-2 | DUD_2C | Surface Grabs | 8 cm | Chemistry |
| L38326-9 | DUD_8C | Surface Grabs | 5 cm | Chemistry |
| L38326-10 | DUD_8C | Surface Grabs (field replicate) | 6 cm | Chemistry |
| L38326-11 | DUD_9C | Surface Grabs | 6 cm | Chemistry |
| L38326-12 | DUD_10C | Surface Grabs | 7 cm | Chemistry |
| L38326-13 | DUD_11C | Surface Grabs | 7 cm | Chemistry |
| L38326-14 | DUD_12C | Surface Grabs | 9 cm | Chemistry |
| L38326-15 | DUD_13C | Surface Grabs | 16 cm | Chemistry |

[1] Depth of sediment collected from the successful Van Veen cast

**Sample Collection**

Sediment was collected at each station using a stainless steel, modified, 0.1 $m^2$ Van Veen grab sampler deployed via hydrowire. For each acceptable deployment, between 6-10 cm of sediment was recovered, allowing sub-sampling from the top 4 - 10 cm. Samples for these locations consisted of sediment aliquots collected from ten individual Van Veen grabs at each station with an equal amount of material collected from each grab.

Water depth at the eight subtidal cap sample stations ranged between 7-13 meters (not corrected for tide).

**Sample Handling**

The Van Veen grab samples were subsampled using a 25 cm long, 5 cm diameter stainless steel core. When necessary, less than the top 10 cm of sediment was taken in an attempt to exclude the sediment that had touched the sides or bottom of the grab sampler. Each of the aliquots was

placed into a separate stainless-steel bowl, covered with foil between grab deployments. After collecting all aliquots from ten grabs, the sediment in each bowl was thoroughly homogenized and split out into pre-labeled containers. Sample containers were supplied by the King County Environmental Laboratory and were pre-cleaned according to analytical specifications.

**Decontamination**

Individual sets of the sub-sampling and mixing equipment were dedicated to each station and sample type (chemistry grab, bioassay grab and core), precluding the need for decontamination of the field gear. The Van Veen grab sampler was decontaminated between stations by scrubbing with a brush and ambient seawater and Detergent 8 followed by a thorough *in situ* rinsing.

**Sample Storage and Preservation**

Samples were stored in ice-filled coolers from the time of collection until delivery to the King County Environmental Laboratory. Samples were delivered under chain-of-custody and were maintained as such throughout the analytical process. Samples were stored frozen (-18°C) by the laboratory until analysis with the exception of samples for particle size distribution (PSD) analysis. PSD samples were stored refrigerated at approximately 4°C. A more complete description of sample handling and storage can be found in each analytical chemistry section of this narrative.

Copies of chain-of-custody forms and field notes are included as an appendix to this QA review narrative. The collect times for individual samples are defined as the time of contact of the sampling device with the sediment for each initial grab.

## CONVENTIONAL ANALYSES

**Completeness**
Conventional data are reported for all samples and parameters summarized in Table 1. These samples were analyzed in association with the complete set of QC samples outlined in Table 2.

**Subcontracted Analyses**
All analyses were performed at the King County Environmental Lab.

**Methods**
PSD analysis was performed in accordance with ASTM and Puget Sound Protocols methodologies (*Recommended Protocols for Measuring Conventional Sediment Variables in Puget Sound* - page 9 - PSEP, 1986). TOC analysis was performed in accordance with SM5310-B and EPA 9060. Total solids analyses were performed in accordance with SM2540-G.

**Detection Limits**
The detection limits (MDLs) reported for Conventionals parameters are all within the requirements defined in the SAP, except for the following (refer to attached table SAP MDL Comparison):

| Parameter | Sample ID# | SAP MDL | Reported MDL | Reason for higher MDL Value |
|---|---|---|---|---|
| TOC | L38326-1,2,15 | 1000 | 1800, 1800, 1800 | Reduced sample size analyzed due to High Organic Background, TS<50% |
| PSD p+10.0(equals/more than) | L38326-all | 0.5 | 0.1 | MDL was updated after the SAP was completed. |
| PSD p+5.00 | L38326-all | 0.5 | 0.1 | MDL was updated after the SAP was completed. |
| PSD p+6.00 | L38326-all | 0.5 | 0.1 | MDL was updated after the SAP was completed. |
| PSD p+7.00 | L38326-all | 0.5 | 0.1 | MDL was updated after the SAP was completed. |
| PSD p+8.00 | L38326-all | 0.5 | 0.1 | MDL was updated after the SAP was completed. |
| PSD p+9.00 | L38326-all | 0.5 | 0.1 | MDL was updated after the SAP was completed. |

For all samples where the MDL did not meet the SAP MDL, the TOC levels were detectable, thus the project objectives were met. The MDLs for PSD data in the % fines range were 0.5% based on the method currently used in the laboratory. This method was not in use when the SAP was finalized.

**Reporting Requirements (significant figures, units, basis and qualifiers)**
For analyses performed at the KC Laboratory, data are reported in accordance with laboratory policy at the time the data were generated. Data are reported to three significant figures for results greater than the RDL and two significant figures for results equal to or less than the RDL. For results reported with less than two or three significant figures, significant zeroes are implied. This may not apply to subcontracted data.

In the Comprehensive Report attached, Conventionals parameters are reported in mg/Kg, dry weight basis, for TOC. Particle Size Distribution (PSD) and Total Solids are reported in percent, wet weight basis. For all parameters, the MDL and RDL values for each individual sample are reported in the same units and basis as the sample result. Any result measured at less than the

sample result. Any result measured at less than the MDL or less than the RDL, a <MDL or <RDL qualifier is added, respectively. Other qualifiers added are based on QA/QC failures and are individually explained in this narrative.

**Storage Conditions and Holding Times**

Sample storage conditions and holding times have been evaluated using guidelines established in the SAPA (WDOE, 2003). The dates and holding time criteria for the actual storage conditions used for conventional analyses are listed in the table below.

| Parameter | Lab ID# | Date Collected | Prep Date | Date Analyzed | Sample Holding Time | Extract Holding Time |
|---|---|---|---|---|---|---|
| Particle Size Distribution | L38326-1 ,2 ,9, 10 | 08-Mar-2006 | 10-Apr-2006 | 11-Apr-2006 | 6 Months at 4°C | NA |
| | L38326-11, 12 | 08-Mar-2006 | 11-Apr-2006 | 12-Apr-2006 | | |
| | L38326-13 to 15 | 09-Mar-2006 | 11-Apr-2006 | 12-Apr-2006 | | |
| Total Organic Carbon | L38326-1,2,9 to 12 | 08-Mar-2006 | 10-Apr-2006 | 19-Apr-2006 | 6 months at -18°C | 6 months at -18°C |
| | L38326-13 to 15 | 09-Mar-2006 | 10-Apr-2006 | 19-Apr-2006 | | |
| Total Solids | L38326-1,2,9 to 12 | 08-Mar-2006 | 10-Apr-2006 | 10-Apr-2006 | 6 months at -18°C | NA |
| | L38326-13 to 15 | 09-Mar-2006 | 10-Apr-2006 | 10-Apr-2006 | | |

Sample storage conditions and holding times were met for all samples in this data submission.

**Method Blanks**

Method blanks were analyzed in connection with solids and total organic carbon analyses. All method blanks results were less than the MDL.

**Standard Reference Materials**

An SRM (Buffalo River Sediment) was analyzed in connection with TOC analysis. The percent recovery for the SRM analysis was within the 80 to 120% QC limits.

**Matrix Spikes**

The matrix spike recovery for TOC was within the 75 to 125% acceptance limits. The acceptance limits are not applicable when the unspiked sample level is 4 times or greater than the spiked concentration.

**Laboratory Replicate Samples**

A set of laboratory triplicates was analyzed for each of the conventional parameters. The percent relative standard deviation (%RSD) for each triplicate set was less than or equal to the 20% acceptance limit, except for the following:

Sample L38325-6 was analyzed in triplicate for PSD. L38325-6 is of the same matrix (salt water sediment) and was analyzed in the same batch as L38326-1, -2, and -9 to -15. The clay category had a %RSD of 37%, outside the control limit of 20%. As a result, for samples L38326-1, -2, and -9 to -15, the clay category was 'E' qualified to indicate estimate values were reported. No further corrective action was taken for these samples since the clay category represented less than 10% of the total PSD of L38325-6.

## METALS CHEMISTRY

**Completeness**
Metal chemistry data are reported for all samples summarized in Table 1. These samples were analyzed for mercury and other metals in association with the complete set of QC samples outlined in Table 2.

**Subcontracted Analyses**
All analyses were performed at the King County Environmental Lab.

**Methods**
Mercury analysis was performed in accordance with EPA Method 7471A. Analysis for other metals was performed in accordance with EPA method 3050/6010.

**Target List**
The reported target list includes all metals specified in *Table 1.* Additional metals have been reported as available.

**Detection Limits**
The detection limits (MDLs) reported for Metals parameters are all within the requirements defined in the SAP.

**Reporting Requirements (significant figures, units, basis and qualifiers)**
For analyses performed at the KC Laboratory, data are reported in accordance with laboratory policy at the time the data were generated. Data are reported to three significant figures for results greater than the RDL and two significant figures for results equal to or less than the RDL. For results reported with less than two or three significant figures, significant zeroes are implied.

In the Comprehensive Report attached, Metals parameters are reported in mg/Kg, dry weight basis, for all elements. The MDL and RDL values for each individual sample are reported in the same units and basis as the sample result. Any result measured at less than the MDL or less than the RDL, a <MDL or <RDL qualifier is added, respectively. Other qualifiers added are based on QA/QC failures and are individually explained in this narrative.

**Storage Conditions and Holding Times**
Sample storage conditions and holding times have been evaluated using guidelines established in the SAPA (WDOE 2003). The dates and holding time criteria for the actual storage conditions used for metals analyses are listed in the table below.

| Parameter | Lab ID# | Date Collected | Date Digested/ Extracted | Date Analyzed | Sample Holding Time | Digestate/Extract Holding Time |
|---|---|---|---|---|---|---|
| Total Metals | L38326-1,2, 9 through 15 | 03/8/06, 03/09/06 | 3/14/06 | 3/15/06 | 2 Years at -18°C | 6 months |
| Total Mercury | L38326-1,2, 9 through 15 | 03/8/06, 03/09/06 | 3/13/06 | 3/14/06 | 28 days at -18°C | NA |

Sample storage conditions and holding times were met for all samples in this data submission.

**Method Blanks**
Method blanks were analyzed for all metals parameters and all method blank results were less than the MDL.

## Standard Reference Materials

The SRM analyzed in association with samples included in this data submission is PACS-2. This SRM is not certified for Silver, Aluminum, Beryllium, Iron or Thallium. Acceptance limits for the certified elements that are above the MDL have been developed using historical lab data since the certified SRM values and limits were determined with different analysis techniques. SRM recoveries outside these lab-defined limits indicate the method has not performed as expected and the sample data have been flagged to indicate the expected bias.

All metals SRM recoveries were within the lab-defined limits.

## Matrix Spikes

Matrix Spike recoveries were within the acceptance limits of 75% to 125% for all metals parameters with the following exceptions. The acceptance limits are not applicable for Iron since the unspiked sample level is 4 times or greater than the spiked concentration. The reported matrix spike recovery of 44% for antimony is less than the 75% QC limit. Antimony results for all samples in this data submission have been qualified with the *G* flag.

## Laboratory Replicate Samples

A laboratory duplicate sample(s) was analyzed for each metals parameter. The relative percent differences (RPDs) for the laboratory duplicate for all metals at or above the RDL were less than or equal to the acceptance limit of 20%, except for the following: The reported RPD recovery of for silver is greater than the 20% QC limit. Silver results for all samples in this data submission have been qualified with the *E* flag.

## ORGANIC CHEMISTRY

**Completeness**

Organics data are reported for all samples and parameters summarized in Table 1. These samples were analyzed in association with the complete set of QC samples outlined in Table 2.

**Methods**

BNA analysis was performed in accordance with EPA method 8270. PCB and chlorinated pesticides analysis was performed in accordance with EPA methods 8082 and 8081A.

**Target List**

The reported BNA target list includes all compounds specified in *Table 1 - Marine Sediment Quality Standards Chemical Criteria* and *Table 3 - Puget Sound Marine Sediment Cleanup Screening Levels Chemical Criteria* contained in Chapter 173-204 WAC with the exception of benzo(j)fluoranthene. The KC Laboratory has verified that analytical conditions are sufficient to calculate a total benzofluoranthene result using the reported *b* and *k* isomers.

The reported chlorobenzene target list includes, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and hexachlorobenzene.

Reported PCB data include Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260.

**Detection Limits, Units and Significant Figures**

The detection limits (MDLs) reported for Organics parameters are all within the requirements defined in the SAP, except for the following:

| Parameter (in ug/Kg) | Sample ID# | SAP MDL | Reported MDL | Reason for higher MDL Value |
|---|---|---|---|---|
| All BNA compounds | L38326-1,2 | (1) | (1) | Sample required 10x dilution due to high concentrations of co-extracted hydrocarbons |
| 1,4-Dichlorobenzene | L38326-all | (1) | (1) | |
| Benzoic Acid | L38326-all | (1) | (1) | |
| Coprostanol | L38326-all | (1) | (1) | |
| Hexachlorobutadiene | L38326-all | (1) | (1) | |
| Pentachlorophenol | L38326-all | (1) | (1) | |
| CL Pest, All except Gamma-Chlordane (and those listed next) | L38326-all | (1) | (1) | Reduced sample volume used in preparation of the sample. |
| Alpha-BHC | L38326-9, 11, 13 | (1) | (1) | Reduced sample volume used in preparation of the sample. |
| Alpha-Chlordane | L38326-9, 11, 13 | (1) | (1) | Reduced sample volume used in preparation of the sample. |
| Beta-BHC | L38326-9, 11, 13 | (1) | (1) | Reduced sample volume used in preparation of the sample. |
| Delta-BHC | L38326-9, 11, 13 | (1) | (1) | Reduced sample volume used in preparation of the sample. |
| Gamma-BHC(Lindane) | L38326-9, 11, 13 | (1) | (1) | Reduced sample volume used in preparation of the sample. |
| Aroclor-1016, 1232, 1242 | L38326-all | (1) | (1) | See Additional QA Issues at the end of this section |

(1) See attached SAP MDL Comparison Table

For Non-ionizable Organic parameters, the following table lists those samples where the reported MDL value did not meet the SAP requirements, when converted to mg/Kg TOC.

| Parameter (in mg/Kg TOC) | Sample ID# | SAP OC MDL | Reported OC MDL | Reason for higher OC MDL Value |
|---|---|---|---|---|
| 2,4-Dimethyl phenol | L38326-1, 2 | 29 | 49 | Necessary dilution due to elevated levers of Hydrocarbons |
| 2-Methyl phenol | L38326-2 | 63 | 97 | Necessary dilution due to elevated levers of Hydrocarbons |
| Benzyl alcohol | L38326-1, 2 | 57 | 96, 97 | Necessary dilution due to elevated levers of Hydrocarbons |
| Hexachlorobenzene | L38326-1, 2 | 0.38 | 0.50 | Necessary dilution due to elevated levers of Hydrocarbons |

BNAs

1) The reported MDLs for all BNA parameters for Samples L38326-1 and -2 were greater than the SAP MDL levels due to dilutions required to minimize interferences.
2) For all samples, the reported MDLs for 1,4-Dichlorobenzene, Benzoic Acid, Coprostanol, Hexachlorobutadiene and Pentachlorophenol were greater than the SAP MDL values.

PCBs

The reported MDLs for Aroclors 1016, 1232 and 1242 in selected samples were greater than the MDL values listed in the SAP. The reported MDLs for these Aroclors were elevated to compensate for overlap of PCB congeners from other Aroclors detected in the samples.

Chlorinated Pesticides

The reported MDLs for most of the Chlorinated Pesticides (except for gamma-chlordane) in all samples were greater than the MDL values listed in the SAP. The preparation method was modified for this set of samples such that 20 grams of material was extracted instead of the normal 30 and the final volume of extract was changed from 0.5 ml to 2.5 ml.

The attached SMS OC and Dry Weight Normalization MDL Check tables compare the reported MDL value to the SMS requirement. The exceedances are summarized below:

- L38325-1, 2: 2,4-Dimethylphenol, 2-Methlyphenol, Benzyl Alcohol and Hexachlorobenzene had reported MDLs above the SMS limit.

All the non-ionizable organics compounds met the SAP required OC MDL.

Note: MDLs for selected Aroclors were elevated above the SMS limit for Total PCBs. The reported levels of Total PCBs based on Aroclors detection limits should be used for comparison to SMS limits rather the MDL values.

**Reporting Requirements (significant figures, units, basis and qualifiers)**

For analyses performed at the KC Laboratory, data are reported in accordance with laboratory policy at the time the data were generated. Data are reported to three significant figures for results greater than the RDL and two significant figures for results equal to or less than the RDL. For results reported with less than two or three significant figures, significant zeroes are implied. This may not apply to subcontracted data.

In the Comprehensive Report attached, Organics parameters are reported in ug/Kg, dry weight basis. In this report format, non-ionizable organic parameters have not been converted to mg/Kg TOC. For all parameters, the MDL and RDL values for each individual sample are reported in the same units and basis as the sample result. Any result measured at less than the MDL or less than the RDL, a <MDL or <RDL qualifier is added, respectively. Other qualifiers added are based on QA/QC failures and are individually explained in this narrative.

**Storage Conditions and Holding Times**
Sample storage conditions and holding times have been evaluated using guidelines established in the SAPA (WDOE, 2003). The dates and holding time criteria for the actual storage conditions used for organics analyses are listed in the table below.

| Parameter | Lab ID# | Date Collected | Date Extracted | Date Analyzed | Sample Holding Time | Extract Holding Time |
|---|---|---|---|---|---|---|
| BNAs | L38326-1, 9 to 12 | 08-Mar-06 | 28-Mar-06 | 13-Apr-06, 26-Apr-06, 02-May-06 | 1 year at -18°C | 40 days at 4°C |
| | L38326-2 | 08-Mar-06 | 23-Mar-06 | 25-May-06 | | |
| | L38326-13 to 15 | 09-Mar-06 | 28-Mar-06 | 13-Apr-06, 26-Apr-06 | | |
| Chlorinated Pesticides | L38326-1, 2, 9 to 12 | 08-Mar-06 | 31-Mar-06 | 10-Apr-06, 17-Apr-06 | 1 year at -18°C | 40 days at 4°C |
| | L38326-13 to 15 | 09-Mar-06 | 31-Mar-06 | 17-Apr-06 | | |
| PCBs | L38326-1, 2, 9 to 12 | 08-Mar-06 | 31-Mar-06 | 11-Apr-06 | 1 year at -18°C | 40 days at 4°C |
| | L38326-13 to 15 | 09-Mar-06 | 31-Mar-06 | 12-Apr-06 | | |

Sample storage conditions and holding times were met for all samples in this data submission.

**Method Blanks**
Method blanks were analyzed for all Organics parameters and all method blank results were less than the MDL, except as noted below:

1. BNAs
The method blank analyzed with BNAs for L38326-1, 9 to 15 had a result above the MDL for Di-n-Butyl Phthalate (6 ug/Kg). Sample results for Di-n-Butyl Phthalate for those samples have been qualified with the B flag. All Di-n-Butyl Phthalate results for these samples must be treated as estimated values. The method blank analyzed for BNAs for sample L38326-2 showed no response above the MDL.

2. Chlorinated Pesticides/PCB
The method blank analyzed with Chlorinated Pesticides and PCBs for L38326 showed no responses for target compounds above the MDL.

**Surrogate Recoveries**
Surrogate recovery acceptance limits for sediment samples have been developed based on historical lab performance using the current analytical methods. The exceptions to this are the TPH methods (NWTPH-Dx, -Gx and -HCID) where method-defined surrogate acceptance limits must be applied. Recoveries measured above the acceptance limits are flagged with an L. Recoveries measured below the acceptance limits (but at or above 10%) are flagged with a G. Recoveries below 10% are flagged with an X. Surrogate recovery summaries for each method are shown below.

1. BNAs
For BNA sample data, surrogate recoveries are evaluated separately for the acid and base/neutral fractions. Within each fraction, 2 or more surrogates must be outside the acceptance limits in order to qualify the associated sample data. The following tables summarize the surrogate recoveries where multiple surrogates within a particular fraction are outside the QC

limits and the appropriate flag applied. None of the BNA samples had multiple surrogate recovery failures.

2. PCBs
Sample data are qualified when individual surrogate recoveries are outside lab-specific acceptance limits. For each set of analyses, all surrogate recoveries were within the lab-specific acceptance limits for all samples in this data submission.

3. Chlorinated Pesticides
Sample data are qualified when individual surrogate recoveries are outside lab-specific acceptance limits. For each set of analyses, all surrogate recoveries were within the lab-specific acceptance limits for all samples in this data submission.

**Standard Reference Materials (SRMs)**
The SRM results associated with these samples are summarized below, according to the analysis method. Acceptance limits for the certified parameters reported in this data set have been developed using historical lab data. SRM recoveries outside these lab-defined limits indicate the method has not performed as expected and the associated sample data have been flagged.

1. BNAs
The sediment SRM analyzed in association with the reported BNA results is 1944, certified by the National Institute of Standards and Technology (NIST). The certified organics parameters in SRM 1944 are only a partial list of all the BNA compounds reported in this analysis. All measured recoveries for this SRM were within acceptance limits.

2. PCBs and Chlorinated Pesticides
The sediment SRM analyzed in association with the reported Chlorinated Pesticides results is 1944, certified by the NIST. SRM 1944 contains certified levels of DDT. The sediment SRM analyzed in association with the reported PCB results is HS-2, certified by the National Research Council of Canada. SRM HS-2 contains Aroclor 1254. All measured recoveries for these SRMs were within acceptance limits except as shown in the table below:

| | L38326 | |
|---|---|---|
| **Compound** | **% Recovery** | **Flag** |
| | | |
| DDT | 263 | L |

**Matrix Spikes**
Matrix Spikes have been analyzed for each method. Recovery acceptance limits for each parameter in sediment have been developed based on historical lab performance using the current analytical methods. The acceptance limits are not applicable when the unspiked sample level was 4 times or greater than the spiked concentration. When applicable, matrix spike recoveries outside these lab-defined limits indicate the method has not performed as expected and the associated sample data have been flagged.

1. BNAs
Each of the reported BNA compounds were included in the matrix spike and measured recoveries for each were within their acceptance limits.

2. PCBs and Chlorinated Pesticides
Each of the reported Pesticide compounds was included in the Chlorinated Pesticide matrix spike. Aroclor 1260 and 1016 only are used as the spiking parameters for PCB matrix spike. The measured recovery for each spiked parameter was within their acceptance limits.

**Laboratory Replicate Samples**
A laboratory duplicate sample(s) was analyzed for each Organics parameter. The relative percent differences (RPDs) for laboratory duplicate for all Organic parameters at or above the RDL were less than or equal to the acceptance limit of 35%.

**Additional QA Issues**:

Pesticide:
All results for 4,4'-DDT and Methoxychlor for samples L39326-1, 2, 9, and 10 were flagged with an "E" qualifier due to the CCV failure at the end of the analytical sequence.

PCB Analysis:
PCB data reported for this set of samples include numeric values for only those Aroclors that could be positively identified in each sample and were measured above the detection limit. Identification of Aroclors 1016, 1232 and 1242 was not possible for samples L38326-1, 2, 9 to15 due to the overlap of the components from Aroclors 1248, 1254 and 1260. For those Aroclors where this overlap has occurred, the result is reported as <MDL with elevated MDL and RDL values. The elevated MDL represents the maximum amount that would have been reported for that Aroclor had it been positively identified. The RDL value has also been elevated by the same proportion.

The table below lists the samples and affected Aroclors.

| Lab Sample Number | PCB 1016 | PCB 1232 | PCB 1242 |
|---|---|---|---|
| L38326-1 | x | x | x |
| L38326-2 | x | x | x |
| L38326-9 | x | x | x |
| L38326-10 | x | x | x |
| L38326-11 | x | x | x |
| L38326-12 | x | x | x |
| L38326-13 | x | x | x |
| L38326-14 | x | x | x |
| L38326-15 | x | x | x |

**TABLE 1**
**SEDIMENT SAMPLE INVENTORY**

| Sample | Locator / Description | PSD | Solids | TOC | Metals[1] | BNAs[2] | Pest/ PCBs | Comments |
|---|---|---|---|---|---|---|---|---|
| L38326-1 | DUD_1C | X | X | X | X | X | X | |
| L38326-2 | DUD_2C | X | X | X | X | X | X | |
| L38326-9 | DUD_8C | X | X | X | X | X | X | |
| L38326-10 | DUD_8C | X | X | X | X | X | X | field replicate |
| L38326-11 | DUD_9C | X | X | X | X | X | X | |
| L38326-12 | DUD_10C | X | X | X | X | X | X | |
| L38326-13 | DUD_11C | X | X | X | X | X | X | |
| L38326-14 | DUD_12C | X | X | X | X | X | X | |
| L38326-15 | DUD_13C | X | X | X | X | X | X | |

1 Metals = Hg, Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, Se, Ag, Tl, Zn
2 BNAs = includes Chlorobenzenes

**TABLE 2**
**QC SAMPLE FREQUENCY FOR SEDIMENT CHEMICAL AND PHYSICAL PARAMETERS**

| Parameter | Method Blank | Duplicate | Triplicate | Matrix Spike | SRM | Surrogates |
|---|---|---|---|---|---|---|
| PSD | No | See Triplicate | 5% minimum, 1 per QC batch | No | No | No |
| Total Solids | 1 per QC batch | See Triplicate | 5% minimum, 1 per QC batch | No | No | No |
| TOC | 1 per QC batch | See Triplicate | 5% minimum, 1 per QC batch | 5% minimum, 1 per QC batch | 1 per QC batch | No |
| Metals | 1 per QC batch | 5% minimum, 1 per QC batch | No | 5% minimum, 1 per QC batch | 1 per QC batch | No |
| BNAs | 1 per QC batch | 5% minimum, 1 per QC batch | No | 5% minimum, 1 per QC batch | 1 per QC batch | Yes |
| PCBs/Chlorinated Pesticides | 1 per QC batch | 5% minimum, 1 per QC batch | No | 5% minimum, 1 per QC batch | 1 per QC batch | Yes |

# TABLE 3 - SUMMARY OF SEDIMENT DATA QUALIFIERS

| Condition to Qualify | King County Data Qualifier | Sedqual Data Qualifier | Organic QC Limits | Metal QC Limits | Conventional QC Limits | Comment |
|---|---|---|---|---|---|---|
| very low matrix spike recovery | X | X | < 10 % | < 10 % | < 10 % | |
| low matrix spike recovery | G | G | Compound specific | < 75% | < 75% * | |
| high matrix spike recovery | L | L | Compound specific | >125% | >125% * | |
| low standard reference material recovery | G | G | Compound and SRM specific | Element and SRM specific | < 80% | |
| high standard reference material recovery | L | L | Compound and SRM specific | Element and SRM specific | >120% | |
| high duplicate relative percent difference | E | E | >35 % | >20% | NA | for organics and metals |
| high triplicate relative standard deviation | E | E | NA | NA | > 20% | for conventionals |
| less than the reporting detection limit | <RDL** | T | NA | NA | NA | |
| less than the method detection limit | <MDL | U | NA | NA | NA | |
| contamination detected in method blank | B | B | >/=MDL | >/=MDL | >/=MDL | |
| biased data based on very low surrogate recoveries | X | X | any surrogate <10% | NA | NA | |
| biased data based on low surrogate recoveries | G | G | Surrogate specific | NA | NA | At least 2 surrogates < limit for BNAs |
| biased data based on high surrogate recoveries | L | L | Surrogate specific | NA | NA | At least 2 surrogates > limit for BNAs |
| rejected - unusable for all purposes | R | J or Q | NA | NA | NA | |
| a sample handling criteria has not been met | H | H | NA | NA | NA | container, hold time, preservation |
| | | - | | | | |

- 65% to 135% for Total Sulfides.
- ** For Sedqual files, <MDL uses a "U" flag, <RDL is not flagged since the RDL value is not included in the Sedqual templates generated by King County.

## Comprehensive and Matrix Data Reports

# King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Locator: | DUD_1C | | | | | DUD_2C | | | | | DUD_8C | | | | | DUD_8C | | | | |
| Descrip: | Cleanup area perim | | | | | Cleanup area perim | | | | | Cleanup area perim | | | | | Cleanup area perim | | | | |
| Sampled: | Mar 08, 2006 | | | | | Mar 08, 2006 | | | | | Mar 08, 2006 | | | | | Mar 08, 2006 | | | | |
| Lab ID: | L38326-1 | | | | | L38326-2 | | | | | L38326-9 | | | | | L38326-10 | | | | |
| Matrix: | SALTWTRSED | | | | | SALTWTRSED | | | | | SALTWTRSED | | | | | SALTWTRSED | | | | |
| % Solids: | 55.4 | | | | | 54.6 | | | | | 75 | | | | | 72.9 | | | | |
| Parameters | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units |
| | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | |
| **COMBINED LABS** | | | | | | | | | | | | | | | | | | | | |
| **M=CV ASTM D422(03-02-005-001)** | | | | | | | | | | | | | | | | | | | | |
| Fines * | 55.2 | | 0.5 | 1 | % | 60 | | 0.5 | 1 | % | 19.9 | | 0.5 | 1 | % | 21.8 | | 0.5 | 1 | % |
| Clay * | 10.1 | E | 0.5 | 1 | % | 16.1 | E | 0.5 | 1 | % | 6 | E | 0.5 | 1 | % | 7.6 | E | 0.5 | 1 | % |
| Silt * | 45.1 | | 0.5 | 1 | % | 43.9 | | 0.5 | 1 | % | 13.9 | | 0.5 | 1 | % | 14.2 | | 0.5 | 1 | % |
| Sand * | 32.3 | | 0.1 | 1 | % | 34.7 | | 0.1 | 1 | % | 72 | | 0.1 | 1 | % | 71.7 | | 0.1 | 1 | % |
| Gravel * | 6 | | 0.1 | 1 | % | 0.6 | <RDL | 0.1 | 1 | % | 10.4 | | 0.1 | 1 | % | 7 | | 0.1 | 1 | % |
| p+0.00 * | 0.8 | <RDL | 0.1 | 1 | % | 0.5 | <RDL | 0.1 | 1 | % | 3.6 | | 0.1 | 1 | % | 3.4 | | 0.1 | 1 | % |
| p+1.00 * | 1.7 | | 0.1 | 1 | % | 0.7 | <RDL | 0.1 | 1 | % | 5.8 | | 0.1 | 1 | % | 5.9 | | 0.1 | 1 | % |
| p+10.0(equal/more than) * | 9.2 | | 0.5 | 1 | % | 11.8 | | 0.5 | 1 | % | 5 | | 0.5 | 1 | % | 6 | | 0.5 | 1 | % |
| p+2.00 * | 6.7 | | 0.1 | 1 | % | 5.3 | | 0.1 | 1 | % | 28.5 | | 0.1 | 1 | % | 26.1 | | 0.1 | 1 | % |
| p+3.00 * | 11.8 | | 0.1 | 1 | % | 15.2 | | 0.1 | 1 | % | 25.9 | | 0.1 | 1 | % | 27.4 | | 0.1 | 1 | % |
| p+4.00 * | 11.3 | | 0.1 | 1 | % | 13.1 | | 0.1 | 1 | % | 8.2 | | 0.1 | 1 | % | 8.9 | | 0.1 | 1 | % |
| p+5.00 * | 9.2 | | 0.5 | 1 | % | 12.7 | | 0.5 | 1 | % | 5 | | 0.5 | 1 | % | 4.9 | | 0.5 | 1 | % |
| p+6.00 * | 27.6 | | 0.5 | 1 | % | 13.5 | | 0.5 | 1 | % | 4.5 | | 0.5 | 1 | % | 4.4 | | 0.5 | 1 | % |
| p+7.00 * | 7.4 | | 0.5 | 1 | % | 14.4 | | 0.5 | 1 | % | 3 | | 0.5 | 1 | % | 2.2 | | 0.5 | 1 | % |
| p+8.00 * | 0.9 | <RDL | 0.5 | 1 | % | 3.4 | | 0.5 | 1 | % | 1.5 | | 0.5 | 1 | % | 2.7 | | 0.5 | 1 | % |
| p+9.00 * | 0.9 | <RDL | 0.5 | 1 | % | 4.2 | | 0.5 | 1 | % | 1 | <RDL | 0.5 | 1 | % | 1.6 | | 0.5 | 1 | % |
| p-1.00 * | 0.3 | <RDL | 0.1 | 1 | % | 0.4 | <RDL | 0.1 | 1 | % | 3.7 | | 0.1 | 1 | % | 3.6 | | 0.1 | 1 | % |
| p-2.00 * | 0.3 | <RDL | 0.1 | 1 | % | 0.2 | <RDL | 0.1 | 1 | % | 1.6 | | 0.1 | 1 | % | 0.8 | <RDL | 0.1 | 1 | % |
| p-2.00(less than) * | 5.4 | | 0.1 | 1 | % | | <MDL | 0.1 | 1 | % | 5.1 | | 0.1 | 1 | % | 2.6 | | 0.1 | 1 | % |
| **M=CV EPA9060-PSEP96 (03-04-002-003)** | | | | | | | | | | | | | | | | | | | | |
| Total Organic Carbon | 20000 | | 1800 | 3680 | mg/Kg | 19600 | | 1800 | 3750 | mg/Kg | 4830 | | 720 | 1440 | mg/Kg | 7420 | | 860 | 1740 | mg/Kg |
| **M=CV SM2540-G (03-01-007-002)** | | | | | | | | | | | | | | | | | | | | |
| Total Solids * | 55.4 | | 0.005 | 0.01 | % | 54.6 | | 0.005 | 0.01 | % | 75 | | 0.005 | 0.01 | % | 72.9 | | 0.005 | 0.01 | % |
| **M=ES NONE** | | | | | | | | | | | | | | | | | | | | |
| Field Personnel | JO, BK, JDD, JB | | | | none | JO, BK, JDD, JB | | | | none | JO, BK, JDD, JB | | | | none | JO, BK, JDD, JB | | | | none |
| Sampcoordx1 * | 1267162 | | | | ft | 1267174 | | | | ft | 1266876 | | | | ft | 1266863 | | | | ft |
| Sampcoordx2 * | 1267165 | | | | ft | 1267177 | | | | ft | 1266868 | | | | ft | 1266877 | | | | ft |
| Sampcoordx3 * | 1267168 | | | | ft | 1267176 | | | | ft | 1266869 | | | | ft | 1266866 | | | | ft |
| Sampcoordx4 * | 1267160 | | | | ft | 1267169 | | | | ft | 1266861 | | | | ft | 1266864 | | | | ft |
| Sampcoordx5 * | 1267167 | | | | ft | 1267172 | | | | ft | 1266861 | | | | ft | 1266861 | | | | ft |
| Sampcoordx6 * | | | | | | 1267166 | | | | ft | | | | | | 1266864 | | | | ft |
| Sampcoordy1 * | 208758 | | | | ft | 208653 | | | | ft | 208923 | | | | ft | 208926 | | | | ft |
| Sampcoordy2 * | 208754 | | | | ft | 208655 | | | | ft | 208919 | | | | ft | 208914 | | | | ft |
| Sampcoordy3 * | 208754 | | | | ft | 208655 | | | | ft | 208916 | | | | ft | 208923 | | | | ft |
| Sampcoordy4 * | 208759 | | | | ft | 208650 | | | | ft | 208926 | | | | ft | 208915 | | | | ft |
| Sampcoordy5 * | 208766 | | | | ft | 208645 | | | | ft | 208934 | | | | ft | 208919 | | | | ft |
| Sampcoordy6 * | | | | | | 208658 | | | | ft | | | | | | 208919 | | | | ft |
| Sample Depth * | 7 | | | | m | 8 | | | | m | 12 | | | | m | 12 | | | | m |
| Sample Function | | | | | | | | | | | | | | | | FREP @ L38326-9 | | | | none |
| Sample Start Time * | 855 | | | | hr | 950 | | | | hr | 1044 | | | | hr | 1130 | | | | hr |
| Sampling Method * | 20042 | | | | none | 20042 | | | | none | 20042 | | | | none | 20042 | | | | none |
| Sediment Sampling Depth * | 16 | | | | cm | 8 | | | | cm | 5 | | | | cm | 6 | | | | cm |

# King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Locator: | DUD_1C | | | | | Locator: | DUD_2C | | | | | Locator: | DUD_8C | | | | | Locator: | DUD_8C | | | | |
| Descrip: | Cleanup area perim | | | | | Descrip: | Cleanup area perim | | | | | Descrip: | Cleanup area perim | | | | | Descrip: | Cleanup area perim | | | | |
| Sampled: | Mar 08, 2006 | | | | | Sampled: | Mar 08, 2006 | | | | | Sampled: | Mar 08, 2006 | | | | | Sampled: | Mar 08, 2006 | | | | |
| Lab ID: | L38326-1 | | | | | Lab ID: | L38326-2 | | | | | Lab ID: | L38326-9 | | | | | Lab ID: | L38326-10 | | | | |
| Matrix: | SALTWTRSED | | | | | Matrix: | SALTWTRSED | | | | | Matrix: | SALTWTRSED | | | | | Matrix: | SALTWTRSED | | | | |
| % Solids: | 55.4 | | | | | % Solids: | 54.6 | | | | | % Solids: | 75 | | | | | % Solids: | 72.9 | | | | |
| Parameters | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units |
| | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | |
| **COMBINED LABS** | | | | | | | | | | | | | | | | | | | | |
| Sediment Sampling Range * | 0-10 cm | | | | cm | 0-7 cm | | | | cm | 0-4 cm | | | | cm | 0-5 cm | | | | cm |
| Sediment Type | 24S10 | | | | none | 24S10 | | | | none | 32N30 | | | | none | 32N30 | | | | none |
| Tidal Condition | S | | | | none | E | | | | none | E | | | | none | E | | | | none |
| Tide Height * | 7.5 | | | | ft | 7.2 | | | | ft | 7 | | | | ft | 6 | | | | ft |
| **M=MT EPA 7471A (06-01-004-003)** | | | | | | | | | | | | | | | | | | | | |
| Mercury, Total, CVAA | 0.31 | <RDL | 0.036 | 0.354 | mg/Kg | 0.29 | <RDL | 0.037 | 0.359 | mg/Kg | 0.092 | <RDL | 0.028 | 0.275 | mg/Kg | 0.15 | <RDL | 0.027 | 0.273 | mg/Kg |
| **M=MT EPA3050A/6010B (06-02-004-002)** | | | | | | | | | | | | | | | | | | | | |
| Aluminum, Total, ICP | 16900 | | 8.8 | 44.2 | mg/Kg | 17300 | | 8.8 | 44 | mg/Kg | 11200 | | 6.5 | 32.4 | mg/Kg | 12200 | | 6.6 | 32.8 | mg/Kg |
| Antimony, Total, ICP | | <MDL,G | 2.7 | 13.2 | mg/Kg | | <MDL,G | 2.6 | 13.2 | mg/Kg | | <MDL,G | 2 | 9.73 | mg/Kg | | <MDL,G | 1.9 | 9.85 | mg/Kg |
| Arsenic, Total, ICP | 11 | <RDL | 4.3 | 22 | mg/Kg | 13 | <RDL | 4.4 | 22 | mg/Kg | 4.5 | <RDL | 3.2 | 16.3 | mg/Kg | 5.9 | <RDL | 3.3 | 16.5 | mg/Kg |
| Beryllium, Total, ICP | 0.25 | <RDL | 0.088 | 0.442 | mg/Kg | 0.24 | <RDL | 0.088 | 0.44 | mg/Kg | 0.11 | <RDL | 0.065 | 0.324 | mg/Kg | 0.13 | <RDL | 0.066 | 0.328 | mg/Kg |
| Cadmium, Total, ICP | 1.1 | <RDL | 0.27 | 1.32 | mg/Kg | 0.7 | <RDL | 0.26 | 1.32 | mg/Kg | 0.23 | <RDL | 0.2 | 0.973 | mg/Kg | 0.81 | <RDL | 0.19 | 0.985 | mg/Kg |
| Chromium, Total, ICP | 38.8 | | 0.43 | 2.2 | mg/Kg | 34.6 | | 0.44 | 2.2 | mg/Kg | 19.2 | | 0.32 | 1.63 | mg/Kg | 26.2 | | 0.33 | 1.65 | mg/Kg |
| Copper, Total, ICP | 89.9 | | 0.36 | 1.77 | mg/Kg | 98 | | 0.35 | 1.76 | mg/Kg | 51.9 | | 0.25 | 1.3 | mg/Kg | 62.1 | | 0.26 | 1.31 | mg/Kg |
| Iron, Total, ICP | 28300 | | 4.3 | 22 | mg/Kg | 30800 | | 4.4 | 22 | mg/Kg | 20100 | | 3.2 | 16.3 | mg/Kg | 21400 | | 3.3 | 16.5 | mg/Kg |
| Lead, Total, ICP | 72.7 | | 2.7 | 13.2 | mg/Kg | 55.7 | | 2.6 | 13.2 | mg/Kg | 16 | | 2 | 9.73 | mg/Kg | 30 | | 1.9 | 9.85 | mg/Kg |
| Manganese, Total, ICP | 298 | | 0.18 | 0.883 | mg/Kg | 353 | | 0.18 | 0.879 | mg/Kg | 235 | | 0.13 | 0.648 | mg/Kg | 247 | | 0.13 | 0.657 | mg/Kg |
| Nickel, Total, ICP | 25.1 | | 1.8 | 8.83 | mg/Kg | 23.6 | | 1.8 | 8.79 | mg/Kg | 16.3 | | 1.3 | 6.48 | mg/Kg | 18.8 | | 1.3 | 6.57 | mg/Kg |
| Selenium, Total, ICP | | <MDL | 4.3 | 22 | mg/Kg | | <MDL | 4.4 | 22 | mg/Kg | | <MDL | 3.2 | 16.3 | mg/Kg | | <MDL | 3.3 | 16.5 | mg/Kg |
| Silver, Total, ICP | 1.2 | <RDL,E | 0.36 | 1.77 | mg/Kg | 0.97 | <RDL,E | 0.35 | 1.76 | mg/Kg | 1.85 | E | 0.25 | 1.3 | mg/Kg | 0.73 | <RDL,E | 0.26 | 1.31 | mg/Kg |
| Thallium, Total, ICP | | <MDL | 18 | 88.3 | mg/Kg | | <MDL | 18 | 87.9 | mg/Kg | | <MDL | 13 | 64.8 | mg/Kg | | <MDL | 13 | 65.7 | mg/Kg |
| Zinc, Total, ICP | 174 | | 0.43 | 2.2 | mg/Kg | 155 | | 0.44 | 2.2 | mg/Kg | 56.3 | | 0.32 | 1.63 | mg/Kg | 72.7 | | 0.33 | 1.65 | mg/Kg |
| **M=OR EPA 3550B/8270C (7-3-01-004)** | | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | | <MDL | 4.9 | 9.62 | ug/Kg | | <MDL | 4.9 | 9.76 | ug/Kg | | <MDL | 0.36 | 0.711 | ug/Kg | | <MDL | 0.37 | 0.731 | ug/Kg |
| 1,2-Dichlorobenzene | | <MDL | 4.9 | 9.62 | ug/Kg | | <MDL | 4.9 | 9.76 | ug/Kg | | <MDL | 0.36 | 0.711 | ug/Kg | | <MDL | 0.37 | 0.731 | ug/Kg |
| 1,3-Dichlorobenzene | | <MDL | 4.9 | 9.62 | ug/Kg | | <MDL | 4.9 | 9.76 | ug/Kg | | <MDL | 0.36 | 0.711 | ug/Kg | | <MDL | 0.37 | 0.731 | ug/Kg |
| 1,4-Dichlorobenzene | | <MDL | 4.9 | 9.62 | ug/Kg | | <MDL | 4.9 | 9.76 | ug/Kg | | <MDL | 0.36 | 0.711 | ug/Kg | | <MDL | 0.37 | 0.731 | ug/Kg |
| 2,4-Dimethylphenol | | <MDL | 49 | 96.2 | ug/Kg | | <MDL | 49 | 97.6 | ug/Kg | | <MDL | 3.6 | 7.11 | ug/Kg | | <MDL | 3.7 | 7.31 | ug/Kg |
| 2-Methylnaphthalene | | <MDL | 49 | 96.2 | ug/Kg | 124 | | 49 | 97.6 | ug/Kg | | <MDL | 3.6 | 7.11 | ug/Kg | 4.1 | <RDL | 3.7 | 7.31 | ug/Kg |
| 2-Methylphenol | | <MDL | 96 | 193 | ug/Kg | | <MDL | 97 | 196 | ug/Kg | | <MDL | 7.1 | 14.3 | ug/Kg | | <MDL | 7.3 | 14.7 | ug/Kg |
| 4-Methylphenol | | <MDL | 96 | 193 | ug/Kg | | <MDL | 97 | 196 | ug/Kg | | <MDL | 7.1 | 14.3 | ug/Kg | | <MDL | 7.3 | 14.7 | ug/Kg |
| Acenaphthene | | <MDL | 49 | 96.2 | ug/Kg | 374 | | 49 | 97.6 | ug/Kg | 5.6 | <RDL | 3.6 | 7.11 | ug/Kg | 4.8 | <RDL | 3.7 | 7.31 | ug/Kg |
| Acenaphthylene | | <MDL | 49 | 96.2 | ug/Kg | | <MDL | 49 | 97.6 | ug/Kg | | <MDL | 3.6 | 7.11 | ug/Kg | | <MDL | 3.7 | 7.31 | ug/Kg |
| Anthracene | 60 | <RDL | 49 | 96.2 | ug/Kg | 399 | | 49 | 97.6 | ug/Kg | 52 | | 3.6 | 7.11 | ug/Kg | 32.9 | | 3.7 | 7.31 | ug/Kg |
| Benzo(a)anthracene | 245 | | 49 | 96.2 | ug/Kg | 954 | | 49 | 97.6 | ug/Kg | 86.8 | | 3.6 | 7.11 | ug/Kg | 104 | | 3.7 | 7.31 | ug/Kg |
| Benzo(a)pyrene | 321 | | 49 | 96.2 | ug/Kg | 549 | | 49 | 97.6 | ug/Kg | 97.5 | | 3.6 | 7.11 | ug/Kg | 80.9 | | 3.7 | 7.31 | ug/Kg |
| Benzo(b)fluoranthene | 365 | | 49 | 96.2 | ug/Kg | 626 | | 49 | 97.6 | ug/Kg | 100 | | 3.6 | 7.11 | ug/Kg | 99 | | 3.7 | 7.31 | ug/Kg |
| Benzo(g,h,i)perylene | 226 | | 49 | 96.2 | ug/Kg | 277 | | 49 | 97.6 | ug/Kg | 56.3 | | 3.6 | 7.11 | ug/Kg | 50.3 | | 3.7 | 7.31 | ug/Kg |
| Benzo(k)fluoranthene | 327 | | 49 | 96.2 | ug/Kg | 667 | | 49 | 97.6 | ug/Kg | 118 | | 3.6 | 7.11 | ug/Kg | 92.7 | | 3.7 | 7.31 | ug/Kg |
| Benzoic Acid | 700 | | 230 | 482 | ug/Kg | | <MDL | 240 | 489 | ug/Kg | 88.7 | | 17 | 35.6 | ug/Kg | 113 | | 18 | 36.6 | ug/Kg |
| Benzyl Alcohol | | <MDL | 96 | 193 | ug/Kg | | <MDL | 97 | 196 | ug/Kg | | <MDL | 7.1 | 14.3 | ug/Kg | | <MDL | 7.3 | 14.7 | ug/Kg |
| Benzyl Butyl Phthalate | 222 | | 96 | 193 | ug/Kg | 262 | | 97 | 196 | ug/Kg | 29.9 | | 7.1 | 14.3 | ug/Kg | 28.9 | | 7.3 | 14.7 | ug/Kg |
| Bis(2-Ethylhexyl)Phthalate | 2360 | | 96 | 193 | ug/Kg | 1770 | | 97 | 196 | ug/Kg | 295 | | 7.1 | 14.3 | ug/Kg | 514 | | 7.3 | 14.7 | ug/Kg |

# King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Locator: | DUD_1C | | | | | Locator: | DUD_2C | | | | | Locator: | DUD_8C | | | | | Locator: | DUD_8C | | | | |
| Descrip: | Cleanup area perim | | | | | Descrip: | Cleanup area perim | | | | | Descrip: | Cleanup area perim | | | | | Descrip: | Cleanup area perim | | | | |
| Sampled: | Mar 08, 2006 | | | | | Sampled: | Mar 08, 2006 | | | | | Sampled: | Mar 08, 2006 | | | | | Sampled: | Mar 08, 2006 | | | | |
| Lab ID: | L38326-1 | | | | | Lab ID: | L38326-2 | | | | | Lab ID: | L38326-9 | | | | | Lab ID: | L38326-10 | | | | |
| Matrix: | SALTWTRSED | | | | | Matrix: | SALTWTRSED | | | | | Matrix: | SALTWTRSED | | | | | Matrix: | SALTWTRSED | | | | |
| % Solids: | 55.4 | | | | | % Solids: | 54.6 | | | | | % Solids: | 75 | | | | | % Solids: | 72.9 | | | | |
| Parameters | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units |
| | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | | | | |
| **COMBINED LABS** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Caffeine | | <MDL | 96 | 193 | ug/Kg | | <MDL | 97 | 196 | ug/Kg | | <MDL | 7.1 | 14.3 | ug/Kg | | <MDL | 7.3 | 14.7 | ug/Kg | | | | | |
| Carbazole | 60 | <RDL | 49 | 96.2 | ug/Kg | 112 | | 49 | 97.6 | ug/Kg | | <MDL | 3.6 | 7.11 | ug/Kg | | <MDL | 3.7 | 7.31 | ug/Kg | | | | | |
| Chrysene | 336 | | 49 | 96.2 | ug/Kg | 978 | | 49 | 97.6 | ug/Kg | 135 | | 3.6 | 7.11 | ug/Kg | 101 | | 3.7 | 7.31 | ug/Kg | | | | | |
| Coprostanol | | <MDL | 960 | 1930 | ug/Kg | | <MDL | 970 | 1960 | ug/Kg | | <MDL | 71 | 143 | ug/Kg | | <MDL | 73 | 147 | ug/Kg | | | | | |
| Dibenzo(a,h)anthracene | 67 | <RDL | 49 | 96.2 | ug/Kg | 97.8 | | 49 | 97.6 | ug/Kg | 14.1 | | 3.6 | 7.11 | ug/Kg | 15.1 | | 3.7 | 7.31 | ug/Kg | | | | | |
| Dibenzofuran | | <MDL | 49 | 96.2 | ug/Kg | 229 | | 49 | 97.6 | ug/Kg | 5.1 | <RDL | 3.6 | 7.11 | ug/Kg | 4.7 | <RDL | 3.7 | 7.31 | ug/Kg | | | | | |
| Diethyl Phthalate | | <MDL | 96 | 193 | ug/Kg | | <MDL | 97 | 196 | ug/Kg | | <MDL | 7.1 | 14.3 | ug/Kg | | <MDL | 7.3 | 14.7 | ug/Kg | | | | | |
| Dimethyl Phthalate | | <MDL | 96 | 193 | ug/Kg | | <MDL | 97 | 196 | ug/Kg | | <MDL | 7.1 | 14.3 | ug/Kg | | <MDL | 7.3 | 14.7 | ug/Kg | | | | | |
| Di-N-Butyl Phthalate | | <MDL,B | 96 | 193 | ug/Kg | | <MDL | 97 | 196 | ug/Kg | 15.5 | B | 7.1 | 14.3 | ug/Kg | 15.1 | <RDL,B | 7.3 | 14.7 | ug/Kg | | | | | |
| Di-N-Octyl Phthalate | | <MDL | 96 | 193 | ug/Kg | | <MDL | 97 | 196 | ug/Kg | | <MDL | 7.1 | 14.3 | ug/Kg | | <MDL | 7.3 | 14.7 | ug/Kg | | | | | |
| Fluoranthene | 538 | | 49 | 96.2 | ug/Kg | 3390 | | 49 | 97.6 | ug/Kg | 232 | | 3.6 | 7.11 | ug/Kg | 155 | | 3.7 | 7.31 | ug/Kg | | | | | |
| Fluorene | | <MDL | 49 | 96.2 | ug/Kg | 357 | | 49 | 97.6 | ug/Kg | 9.32 | | 3.6 | 7.11 | ug/Kg | 9.31 | | 3.7 | 7.31 | ug/Kg | | | | | |
| Hexachlorobenzene | | <MDL | 9.6 | 19.3 | ug/Kg | | <MDL | 9.7 | 19.6 | ug/Kg | | <MDL | 0.71 | 1.43 | ug/Kg | | <MDL | 0.73 | 1.47 | ug/Kg | | | | | |
| Hexachlorobutadiene | | <MDL | 23 | 48.2 | ug/Kg | | <MDL | 24 | 48.9 | ug/Kg | | <MDL | 1.7 | 3.56 | ug/Kg | | <MDL | 1.8 | 3.66 | ug/Kg | | | | | |
| Hexachloroethane | | <MDL | 23 | 48.2 | ug/Kg | | <MDL | 24 | 48.9 | ug/Kg | | <MDL | 1.7 | 3.56 | ug/Kg | | <MDL | 1.8 | 3.66 | ug/Kg | | | | | |
| Indeno(1,2,3-Cd)Pyrene | 186 | | 49 | 96.2 | ug/Kg | 247 | | 49 | 97.6 | ug/Kg | 51.6 | | 3.6 | 7.11 | ug/Kg | 48.1 | | 3.7 | 7.31 | ug/Kg | | | | | |
| Naphthalene | | <MDL | 49 | 96.2 | ug/Kg | | <MDL | 49 | 97.6 | ug/Kg | | <MDL | 3.6 | 7.11 | ug/Kg | 6.3 | <RDL | 3.7 | 7.31 | ug/Kg | | | | | |
| N-Nitrosodiphenylamine | | <MDL | 96 | 193 | ug/Kg | | <MDL | 97 | 196 | ug/Kg | | <MDL | 7.1 | 14.3 | ug/Kg | | <MDL | 7.3 | 14.7 | ug/Kg | | | | | |
| Pentachlorophenol | | <MDL | 230 | 482 | ug/Kg | | <MDL | 240 | 489 | ug/Kg | | <MDL | 17 | 35.6 | ug/Kg | | <MDL | 18 | 36.6 | ug/Kg | | | | | |
| Phenanthrene | 255 | | 49 | 96.2 | ug/Kg | 1530 | | 49 | 97.6 | ug/Kg | 71.1 | | 3.6 | 7.11 | ug/Kg | 57.1 | | 3.7 | 7.31 | ug/Kg | | | | | |
| Phenol | 90 | <RDL | 49 | 193 | ug/Kg | 1510 | | 97 | 196 | ug/Kg | | <MDL | 7.1 | 14.3 | ug/Kg | | <MDL | 7.3 | 14.7 | ug/Kg | | | | | |
| Pyrene | 760 | | 49 | 96.2 | ug/Kg | 2360 | | 49 | 97.6 | ug/Kg | 189 | | 3.6 | 7.11 | ug/Kg | 192 | | 3.7 | 7.31 | ug/Kg | | | | | |
| Total HPAHS | 3380 | | 49 | 96.2 | ug/Kg | 10100 | | 49 | 97.6 | ug/Kg | 1080 | | 3.6 | 7.11 | ug/Kg | 938 | | 3.7 | 7.31 | ug/Kg | | | | | |
| Total LPAHs | 390 | | 49 | 96.2 | ug/Kg | 2880 | | 49 | 97.6 | ug/Kg | 140 | | 3.6 | 7.11 | ug/Kg | 115 | | 3.7 | 7.31 | ug/Kg | | | | | |
| **M=OR EPA 8081A/8082 (7-3-03-002)** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | | <MDL | 1.8 | 3.61 | ug/Kg | | <MDL | 1.8 | 3.66 | ug/Kg | 1.5 | <RDL | 1.3 | 2.67 | ug/Kg | 3.48 | | 1.4 | 2.74 | ug/Kg | | | | | |
| 4,4'-DDE | | <MDL | 1.8 | 3.61 | ug/Kg | | <MDL | 1.8 | 3.66 | ug/Kg | | <MDL | 1.3 | 2.67 | ug/Kg | | <MDL | 1.4 | 2.74 | ug/Kg | | | | | |
| 4,4'-DDT | | <MDL,L,E | 1.8 | 3.61 | ug/Kg | | <MDL,L,E | 1.8 | 3.66 | ug/Kg | | <MDL,L,E | 1.3 | 2.67 | ug/Kg | | <MDL,L,E | 1.4 | 2.74 | ug/Kg | | | | | |
| Aldrin | | <MDL | 1.8 | 3.61 | ug/Kg | | <MDL | 1.8 | 3.66 | ug/Kg | | <MDL | 1.3 | 2.67 | ug/Kg | | <MDL | 1.4 | 2.74 | ug/Kg | | | | | |
| Alpha-BHC | | <MDL | 0.9 | 1.81 | ug/Kg | | <MDL | 0.92 | 1.83 | ug/Kg | | <MDL | 0.67 | 1.33 | ug/Kg | | <MDL | 0.69 | 1.37 | ug/Kg | | | | | |
| Alpha-Chlordane | | <MDL | 0.9 | 1.81 | ug/Kg | | <MDL | 0.92 | 1.83 | ug/Kg | | <MDL | 0.67 | 1.33 | ug/Kg | | <MDL | 0.69 | 1.37 | ug/Kg | | | | | |
| Aroclor 1016 | | <MDL,TA | 140 | 274 | ug/Kg | | <MDL,TA | 49 | 97.8 | ug/Kg | | <MDL,TA | 40 | 79.6 | ug/Kg | | <MDL,TA | 130 | 267 | ug/Kg | | | | | |
| Aroclor 1221 | | <MDL | 4.5 | 9.03 | ug/Kg | | <MDL | 4.6 | 9.16 | ug/Kg | | <MDL | 3.3 | 6.67 | ug/Kg | | <MDL | 3.4 | 6.86 | ug/Kg | | | | | |
| Aroclor 1232 | | <MDL,TA | 250 | 511 | ug/Kg | | <MDL,TA | 88 | 175 | ug/Kg | | <MDL,TA | 79 | 156 | ug/Kg | | <MDL,TA | 250 | 491 | ug/Kg | | | | | |
| Aroclor 1242 | | <MDL,TA | 230 | 453 | ug/Kg | | <MDL,TA | 86 | 172 | ug/Kg | | <MDL,TA | 85 | 169 | ug/Kg | | <MDL,TA | 220 | 427 | ug/Kg | | | | | |
| Aroclor 1248 | 197 | | 2.3 | 4.51 | ug/Kg | 76.9 | | 2.4 | 4.58 | ug/Kg | 60.7 | | 1.7 | 3.33 | ug/Kg | 184 | | 1.8 | 3.43 | ug/Kg | | | | | |
| Aroclor 1254 | 247 | | 2.3 | 4.51 | ug/Kg | 112 | | 2.4 | 4.58 | ug/Kg | 79.2 | | 1.7 | 3.33 | ug/Kg | 195 | | 1.8 | 3.43 | ug/Kg | | | | | |
| Aroclor 1260 | 161 | | 2.3 | 4.51 | ug/Kg | 85.5 | | 2.4 | 4.58 | ug/Kg | 37.2 | | 1.7 | 3.33 | ug/Kg | 77 | | 1.8 | 3.43 | ug/Kg | | | | | |
| Beta-BHC | | <MDL | 0.9 | 1.81 | ug/Kg | | <MDL | 0.92 | 1.83 | ug/Kg | | <MDL | 0.67 | 1.33 | ug/Kg | | <MDL | 0.69 | 1.37 | ug/Kg | | | | | |
| Delta-BHC | | <MDL | 0.9 | 1.81 | ug/Kg | | <MDL | 0.92 | 1.83 | ug/Kg | | <MDL | 0.67 | 1.33 | ug/Kg | | <MDL | 0.69 | 1.37 | ug/Kg | | | | | |
| Dieldrin | | <MDL | 1.8 | 3.61 | ug/Kg | | <MDL | 1.8 | 3.66 | ug/Kg | | <MDL | 1.3 | 2.67 | ug/Kg | | <MDL | 1.4 | 2.74 | ug/Kg | | | | | |
| Endosulfan I | | <MDL | 1.8 | 3.61 | ug/Kg | | <MDL | 1.8 | 3.66 | ug/Kg | | <MDL | 1.3 | 2.67 | ug/Kg | | <MDL | 1.4 | 2.74 | ug/Kg | | | | | |
| Endosulfan II | | <MDL | 1.8 | 3.61 | ug/Kg | | <MDL | 1.8 | 3.66 | ug/Kg | | <MDL | 1.3 | 2.67 | ug/Kg | | <MDL | 1.4 | 2.74 | ug/Kg | | | | | |

# King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

| | Sample 1 | Sample 2 | Sample 3 | Sample 4 |
|---|---|---|---|---|
| Locator: | DUD_1C | DUD_2C | DUD_8C | DUD_8C |
| Descrip: | Cleanup area perim | Cleanup area perim | Cleanup area perim | Cleanup area perim |
| Sampled: | Mar 08, 2006 | Mar 08, 2006 | Mar 08, 2006 | Mar 08, 2006 |
| Lab ID: | L38326-1 | L38326-2 | L38326-9 | L38326-10 |
| Matrix: | SALTWTRSED | SALTWTRSED | SALTWTRSED | SALTWTRSED |
| % Solids: | 55.4 | 54.6 | 75 | 72.9 |

| Parameters | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | - Dry Weight Basis | | | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | | |
| **COMBINED LABS** | | | | | | | | | | | | | | | | | | | | |
| Endosulfan Sulfate | | <MDL | 1.8 | 3.61 | ug/Kg | | <MDL | 1.8 | 3.66 | ug/Kg | | <MDL | 1.3 | 2.67 | ug/Kg | | <MDL | 1.4 | 2.74 | ug/Kg |
| Endrin | | <MDL | 1.8 | 3.61 | ug/Kg | | <MDL | 1.8 | 3.66 | ug/Kg | | <MDL | 1.3 | 2.67 | ug/Kg | | <MDL | 1.4 | 2.74 | ug/Kg |
| Endrin Aldehyde | | <MDL | 3.6 | 7.22 | ug/Kg | | <MDL | 3.7 | 7.33 | ug/Kg | | <MDL | 2.7 | 5.33 | ug/Kg | | <MDL | 2.7 | 5.49 | ug/Kg |
| Gamma-BHC (Lindane) | | <MDL | 0.9 | 1.81 | ug/Kg | | <MDL | 0.92 | 1.83 | ug/Kg | | <MDL | 0.67 | 1.33 | ug/Kg | | <MDL | 0.69 | 1.37 | ug/Kg |
| Gamma-Chlordane | | <MDL | 0.9 | 1.81 | ug/Kg | | <MDL | 0.92 | 1.83 | ug/Kg | | <MDL | 0.67 | 1.33 | ug/Kg | | <MDL | 0.69 | 1.37 | ug/Kg |
| Heptachlor | | <MDL | 0.9 | 1.81 | ug/Kg | | <MDL | 0.92 | 1.83 | ug/Kg | | <MDL | 0.67 | 1.33 | ug/Kg | | <MDL | 0.69 | 1.37 | ug/Kg |
| Heptachlor Epoxide | | <MDL | 0.9 | 1.81 | ug/Kg | | <MDL | 0.92 | 1.83 | ug/Kg | | <MDL | 0.67 | 1.33 | ug/Kg | | <MDL | 0.69 | 1.37 | ug/Kg |
| Methoxychlor | | <MDL,E | 9 | 18.1 | ug/Kg | | <MDL,E | 9.2 | 18.3 | ug/Kg | | <MDL,E | 6.7 | 13.3 | ug/Kg | | <MDL,E | 6.9 | 13.7 | ug/Kg |
| Toxaphene | | <MDL | 18 | 36.1 | ug/Kg | | <MDL | 18 | 36.6 | ug/Kg | | <MDL | 13 | 26.7 | ug/Kg | | <MDL | 14 | 27.4 | ug/Kg |

* Not converted to dry weight basis for this parameter

# King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Locator: | DUD_9C | | | | | DUD_10C | | | | | DUD_11C | | | | | DUD_12C | | | | |
| Descrip: | Cleanup area perim | | | | | Cleanup area perim | | | | | Cleanup area perim | | | | | Cleanup area perim | | | | |
| Sampled: | Mar 08, 2006 | | | | | Mar 08, 2006 | | | | | Mar 09, 2006 | | | | | Mar 09, 2006 | | | | |
| Lab ID: | L38326-11 | | | | | L38326-12 | | | | | L38326-13 | | | | | L38326-14 | | | | |
| Matrix: | SALTWTRSED | | | | | SALTWTRSED | | | | | SALTWTRSED | | | | | SALTWTRSED | | | | |
| % Solids: | 76.1 | | | | | 66.6 | | | | | 78 | | | | | 70.7 | | | | |
| Parameters | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units |
| | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | |
| **COMBINED LABS** | | | | | | | | | | | | | | | | | | | | |
| **M=CV ASTM D422(03-02-005-001)** | | | | | | | | | | | | | | | | | | | | |
| Fines * | 13.2 | | 0.5 | 1 | % | 30.9 | | 0.5 | 1 | % | 12.3 | | 0.5 | 1 | % | 25.3 | | 0.5 | 1 | % |
| Clay * | 4.4 | E | 0.5 | 1 | % | 7.2 | E | 0.5 | 1 | % | 4.5 | E | 0.5 | 1 | % | 6.2 | E | 0.5 | 1 | % |
| Silt * | 8.8 | | 0.5 | 1 | % | 23.7 | | 0.5 | 1 | % | 7.8 | | 0.5 | 1 | % | 19.2 | | 0.5 | 1 | % |
| Sand * | 80.7 | | 0.1 | 1 | % | 61.5 | | 0.1 | 1 | % | 70.9 | | 0.1 | 1 | % | 69.2 | | 0.1 | 1 | % |
| Gravel * | 3.5 | | 0.1 | 1 | % | 7.3 | | 0.1 | 1 | % | 15 | | 0.1 | 1 | % | 0.9 | <RDL | 0.1 | 1 | % |
| p+0.00 * | 3.1 | | 0.1 | 1 | % | 2.1 | | 0.1 | 1 | % | 6.8 | | 0.1 | 1 | % | 1 | <RDL | 0.1 | 1 | % |
| p+1.00 * | 7.6 | | 0.1 | 1 | % | 7.7 | | 0.1 | 1 | % | 10 | | 0.1 | 1 | % | 2.2 | | 0.1 | 1 | % |
| p+10.0(equal/more than) * | 3.1 | | 0.5 | 1 | % | 5 | | 0.5 | 1 | % | 4.5 | | 0.5 | 1 | % | 4.8 | | 0.5 | 1 | % |
| p+2.00 * | 32.1 | | 0.1 | 1 | % | 20 | | 0.1 | 1 | % | 23.8 | | 0.1 | 1 | % | 13.7 | | 0.1 | 1 | % |
| p+3.00 * | 28.9 | | 0.1 | 1 | % | 19.4 | | 0.1 | 1 | % | 22.7 | | 0.1 | 1 | % | 34.8 | | 0.1 | 1 | % |
| p+4.00 * | 9 | | 0.1 | 1 | % | 12.4 | | 0.1 | 1 | % | 7.7 | | 0.1 | 1 | % | 17.5 | | 0.1 | 1 | % |
| p+5.00 * | 2.5 | | 0.5 | 1 | % | 8.6 | | 0.5 | 1 | % | 3.2 | | 0.5 | 1 | % | 6.8 | | 0.5 | 1 | % |
| p+6.00 * | 1.9 | | 0.5 | 1 | % | 2.9 | | 0.5 | 1 | % | 1.9 | | 0.5 | 1 | % | 5.5 | | 0.5 | 1 | % |
| p+7.00 * | 2.5 | | 0.5 | 1 | % | 7.2 | | 0.5 | 1 | % | 2.6 | | 0.5 | 1 | % | 4.1 | | 0.5 | 1 | % |
| p+8.00 * | 1.9 | | 0.5 | 1 | % | 5 | | 0.5 | 1 | % | | <MDL | 0.5 | 1 | % | 2.7 | | 0.5 | 1 | % |
| p+9.00 * | 1.3 | | 0.5 | 1 | % | 2.2 | | 0.5 | 1 | % | | <MDL | 0.5 | 1 | % | 1.4 | | 0.5 | 1 | % |
| p-1.00 * | 2.3 | | 0.1 | 1 | % | 1.4 | | 0.1 | 1 | % | 7.4 | | 0.1 | 1 | % | 0.6 | <RDL | 0.1 | 1 | % |
| p-2.00 * | 0.1 | <RDL | 0.1 | 1 | % | 0.1 | <RDL | 0.1 | 1 | % | 3.4 | | 0.1 | 1 | % | | <MDL | 0.1 | 1 | % |
| p-2.00(less than) * | 1.2 | | 0.1 | 1 | % | 5.8 | | 0.1 | 1 | % | 4.2 | | 0.1 | 1 | % | 0.2 | <RDL | 0.1 | 1 | % |
| **M=CV EPA9060-PSEP96 (03-04-002-003)** | | | | | | | | | | | | | | | | | | | | |
| Total Organic Carbon | 4390 | | 780 | 1540 | mg/Kg | 9440 | | 870 | 1760 | mg/Kg | 5880 | | 670 | 1320 | mg/Kg | 6620 | | 790 | 1580 | mg/Kg |
| **M=CV SM2540-G (03-01-007-002)** | | | | | | | | | | | | | | | | | | | | |
| Total Solids * | 76.1 | | 0.005 | 0.01 | % | 66.6 | | 0.005 | 0.01 | % | 78 | | 0.005 | 0.01 | % | 70.7 | | 0.005 | 0.01 | % |
| **M=ES NONE** | | | | | | | | | | | | | | | | | | | | |
| Field Personnel | JO, BK, JDD, JB | | | | none | JO, BK, JDD, JB | | | | none | JB, SH, JP | | | | none | JB, SH, JP | | | | none |
| Sampcoordx1 * | 1266777 | | | | ft | 1266667 | | | | ft | 1266845 | | | | ft | 1266813 | | | | ft |
| Sampcoordx2 * | 1266797 | | | | ft | 1266651 | | | | ft | 1266837 | | | | ft | 1266803 | | | | ft |
| Sampcoordx3 * | 1266794 | | | | ft | 1266650 | | | | ft | 1266839 | | | | ft | 1266804 | | | | ft |
| Sampcoordx4 * | 1266790 | | | | ft | 1266667 | | | | ft | 1266840 | | | | ft | 1266804 | | | | ft |
| Sampcoordx5 * | 1266792 | | | | ft | 1266665 | | | | ft | 1266842 | | | | ft | 1266813 | | | | ft |
| Sampcoordx6 * | | | | | | | | | | | | | | | | | | | | |
| Sampcoordy1 * | 209160 | | | | ft | 209515 | | | | ft | 209538 | | | | ft | 209619 | | | | ft |
| Sampcoordy2 * | 209161 | | | | ft | 209518 | | | | ft | 209533 | | | | ft | 209624 | | | | ft |
| Sampcoordy3 * | 209162 | | | | ft | 209525 | | | | ft | 209536 | | | | ft | 209628 | | | | ft |
| Sampcoordy4 * | 209154 | | | | ft | 209511 | | | | ft | 209534 | | | | ft | 209638 | | | | ft |
| Sampcoordy5 * | 209162 | | | | ft | 209526 | | | | ft | 209539 | | | | ft | 209623 | | | | ft |
| Sampcoordy6 * | | | | | | | | | | | | | | | | | | | | |
| Sample Depth * | 12 | | | | m | 13 | | | | m | 11 | | | | m | 12 | | | | m |
| Sample Function | | | | | | | | | | | | | | | | | | | | |
| Sample Start Time * | 1250 | | | | hr | 1345 | | | | hr | 1030 | | | | hr | 1135 | | | | hr |
| Sampling Method * | 20042 | | | | none | 20042 | | | | none | 20042 | | | | none | 20042 | | | | none |
| Sediment Sampling Depth * | 6 | | | | cm | 7 | | | | cm | 7 | | | | cm | 9 | | | | cm |

# King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Locator: | DUD_9C | | | | | DUD_10C | | | | | DUD_11C | | | | | DUD_12C | | | | |
| Descrip: | Cleanup area perim | | | | | Cleanup area perim | | | | | Cleanup area perim | | | | | Cleanup area perim | | | | |
| Sampled: | Mar 08, 2006 | | | | | Mar 08, 2006 | | | | | Mar 09, 2006 | | | | | Mar 09, 2006 | | | | |
| Lab ID: | L38326-11 | | | | | L38326-12 | | | | | L38326-13 | | | | | L38326-14 | | | | |
| Matrix: | SALTWTRSED | | | | | SALTWTRSED | | | | | SALTWTRSED | | | | | SALTWTRSED | | | | |
| % Solids: | 76.1 | | | | | 66.6 | | | | | 78 | | | | | 70.7 | | | | |
| Parameters | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units |
| | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | |
| **COMBINED LABS** | | | | | | | | | | | | | | | | | | | | |
| Sediment Sampling Range * | 0-5 cm | | | | cm | 0-6 cm | | | | cm | 0-6 cm | | | | cm | 0-8 cm | | | | cm |
| Sediment Type | 32S21 | | | | none | 23S20 | | | | none | 23S21 | | | | none | 21N32 | | | | none |
| Tidal Condition | E | | | | none | E | | | | none | S | | | | none | E | | | | none |
| Tide Height * | 5 | | | | ft | 4 | | | | ft | 7 | | | | ft | 6.8 | | | | ft |
| **M=MT EPA 7471A (06-01-004-003)** | | | | | | | | | | | | | | | | | | | | |
| Mercury, Total, CVAA | 0.1 | <RDL | 0.026 | 0.267 | mg/Kg | 0.489 | | 0.03 | 0.302 | mg/Kg | 0.1 | <RDL | 0.026 | 0.259 | mg/Kg | 0.14 | <RDL | 0.027 | 0.276 | mg/Kg |
| **M=MT EPA3050A/6010B (06-02-004-002)** | | | | | | | | | | | | | | | | | | | | |
| Aluminum, Total, ICP | 10800 | | 6.4 | 32.1 | mg/Kg | 12200 | | 7.7 | 38.6 | mg/Kg | 10700 | | 6.4 | 32.3 | mg/Kg | 12300 | | 7.1 | 35.2 | mg/Kg |
| Antimony, Total, ICP | | <MDL,G | 2 | 9.61 | mg/Kg | | <MDL,G | 2.3 | 11.6 | mg/Kg | | <MDL,G | 1.9 | 9.69 | mg/Kg | | <MDL,G | 2.1 | 10.6 | mg/Kg |
| Arsenic, Total, ICP | 5.1 | <RDL | 3.2 | 16 | mg/Kg | 9.9 | <RDL | 3.9 | 19.4 | mg/Kg | 4.4 | <RDL | 3.2 | 16.2 | mg/Kg | 6.9 | <RDL | 3.5 | 17.5 | mg/Kg |
| Beryllium, Total, ICP | 0.12 | <RDL | 0.064 | 0.321 | mg/Kg | 0.18 | <RDL | 0.077 | 0.386 | mg/Kg | 0.11 | <RDL | 0.064 | 0.323 | mg/Kg | 0.14 | <RDL | 0.071 | 0.352 | mg/Kg |
| Cadmium, Total, ICP | 0.37 | <RDL | 0.2 | 0.961 | mg/Kg | 0.53 | <RDL | 0.23 | 1.16 | mg/Kg | 0.19 | <RDL | 0.19 | 0.969 | mg/Kg | 0.52 | <RDL | 0.21 | 1.06 | mg/Kg |
| Chromium, Total, ICP | 21.8 | | 0.32 | 1.6 | mg/Kg | 27.8 | | 0.39 | 1.94 | mg/Kg | 21.4 | | 0.32 | 1.62 | mg/Kg | 26.7 | | 0.35 | 1.75 | mg/Kg |
| Copper, Total, ICP | 47.3 | | 0.26 | 1.28 | mg/Kg | 58.9 | | 0.32 | 1.55 | mg/Kg | 45.3 | | 0.26 | 1.29 | mg/Kg | 60.3 | | 0.28 | 1.41 | mg/Kg |
| Iron, Total, ICP | 19200 | | 3.2 | 16 | mg/Kg | 20900 | | 3.9 | 19.4 | mg/Kg | 19100 | | 3.2 | 16.2 | mg/Kg | 20900 | | 3.5 | 17.5 | mg/Kg |
| Lead, Total, ICP | 28.1 | | 2 | 9.61 | mg/Kg | 58.7 | | 2.3 | 11.6 | mg/Kg | 21.4 | | 1.9 | 9.69 | mg/Kg | 45 | | 2.1 | 10.6 | mg/Kg |
| Manganese, Total, ICP | 226 | | 0.13 | 0.641 | mg/Kg | 222 | | 0.15 | 0.773 | mg/Kg | 245 | | 0.13 | 0.646 | mg/Kg | 229 | | 0.14 | 0.704 | mg/Kg |
| Nickel, Total, ICP | 16.4 | | 1.3 | 6.41 | mg/Kg | 18.8 | | 1.5 | 7.73 | mg/Kg | 18.8 | | 1.3 | 6.46 | mg/Kg | 21.8 | | 1.4 | 7.04 | mg/Kg |
| Selenium, Total, ICP | | <MDL | 3.2 | 16 | mg/Kg | | <MDL | 3.9 | 19.4 | mg/Kg | | <MDL | 3.2 | 16.2 | mg/Kg | | <MDL | 3.5 | 17.5 | mg/Kg |
| Silver, Total, ICP | 0.58 | <RDL,E | 0.26 | 1.28 | mg/Kg | 0.8 | <RDL,E | 0.32 | 1.55 | mg/Kg | 0.38 | <RDL,E | 0.26 | 1.29 | mg/Kg | 0.71 | <RDL,E | 0.28 | 1.41 | mg/Kg |
| Thallium, Total, ICP | | <MDL | 13 | 64.1 | mg/Kg | | <MDL | 15 | 77.3 | mg/Kg | | <MDL | 13 | 64.6 | mg/Kg | | <MDL | 14 | 70.4 | mg/Kg |
| Zinc, Total, ICP | 65.6 | | 0.32 | 1.6 | mg/Kg | 108 | | 0.39 | 1.94 | mg/Kg | 60.9 | | 0.32 | 1.62 | mg/Kg | 92.5 | | 0.35 | 1.75 | mg/Kg |
| **M=OR EPA 3550B/8270C (7-3-01-004)** | | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | | <MDL | 0.35 | 0.7 | ug/Kg | | <MDL | 0.41 | 0.8 | ug/Kg | | <MDL | 0.35 | 0.683 | ug/Kg | | <MDL | 0.38 | 0.754 | ug/Kg |
| 1,2-Dichlorobenzene | | <MDL | 0.35 | 0.7 | ug/Kg | | <MDL | 0.41 | 0.8 | ug/Kg | | <MDL | 0.35 | 0.683 | ug/Kg | | <MDL | 0.38 | 0.754 | ug/Kg |
| 1,3-Dichlorobenzene | | <MDL | 0.35 | 0.7 | ug/Kg | | <MDL | 0.41 | 0.8 | ug/Kg | | <MDL | 0.35 | 0.683 | ug/Kg | | <MDL | 0.38 | 0.754 | ug/Kg |
| 1,4-Dichlorobenzene | | <MDL | 0.35 | 0.7 | ug/Kg | | <MDL | 0.41 | 0.8 | ug/Kg | | <MDL | 0.35 | 0.683 | ug/Kg | | <MDL | 0.38 | 0.754 | ug/Kg |
| 2,4-Dimethylphenol | | <MDL | 3.5 | 7 | ug/Kg | | <MDL | 4.1 | 8 | ug/Kg | | <MDL | 3.5 | 6.83 | ug/Kg | | <MDL | 3.8 | 7.54 | ug/Kg |
| 2-Methylnaphthalene | 4.1 | <RDL | 3.5 | 7 | ug/Kg | | <MDL | 4.1 | 8 | ug/Kg | | <MDL | 3.5 | 6.83 | ug/Kg | 4.7 | <RDL | 3.8 | 7.54 | ug/Kg |
| 2-Methylphenol | | <MDL | 7 | 14.1 | ug/Kg | | <MDL | 8 | 16.1 | ug/Kg | | <MDL | 6.8 | 13.7 | ug/Kg | | <MDL | 7.5 | 15.1 | ug/Kg |
| 4-Methylphenol | | <MDL | 7 | 14.1 | ug/Kg | | <MDL | 8 | 16.1 | ug/Kg | | <MDL | 6.8 | 13.7 | ug/Kg | | <MDL | 7.5 | 15.1 | ug/Kg |
| Acenaphthene | 7.57 | | 3.5 | 7 | ug/Kg | 10.2 | | 4.1 | 8 | ug/Kg | 8.29 | | 3.5 | 6.83 | ug/Kg | 6.6 | <RDL | 3.8 | 7.54 | ug/Kg |
| Acenaphthylene | | <MDL | 3.5 | 7 | ug/Kg | 9.55 | | 4.1 | 8 | ug/Kg | 8.19 | | 3.5 | 6.83 | ug/Kg | 3.8 | <RDL | 3.8 | 7.54 | ug/Kg |
| Anthracene | 43.8 | | 3.5 | 7 | ug/Kg | 64.6 | | 4.1 | 8 | ug/Kg | 50.1 | | 3.5 | 6.83 | ug/Kg | 51.2 | | 3.8 | 7.54 | ug/Kg |
| Benzo(a)anthracene | 74.1 | | 3.5 | 7 | ug/Kg | 138 | | 4.1 | 8 | ug/Kg | 83.5 | | 3.5 | 6.83 | ug/Kg | 130 | | 3.8 | 7.54 | ug/Kg |
| Benzo(a)pyrene | 99.6 | | 3.5 | 7 | ug/Kg | 198 | | 4.1 | 8 | ug/Kg | 102 | | 3.5 | 6.83 | ug/Kg | 120 | | 3.8 | 7.54 | ug/Kg |
| Benzo(b)fluoranthene | 85.3 | | 3.5 | 7 | ug/Kg | 188 | | 4.1 | 8 | ug/Kg | 91.5 | | 3.5 | 6.83 | ug/Kg | 165 | | 3.8 | 7.54 | ug/Kg |
| Benzo(g,h,i)perylene | 53.6 | | 3.5 | 7 | ug/Kg | 102 | | 4.1 | 8 | ug/Kg | 64.2 | | 3.5 | 6.83 | ug/Kg | 88.4 | | 3.8 | 7.54 | ug/Kg |
| Benzo(k)fluoranthene | 101 | | 3.5 | 7 | ug/Kg | 204 | | 4.1 | 8 | ug/Kg | 110 | | 3.5 | 6.83 | ug/Kg | 146 | | 3.8 | 7.54 | ug/Kg |
| Benzoic Acid | 64.1 | | 17 | 35.1 | ug/Kg | 127 | | 20 | 40.1 | ug/Kg | 95 | | 17 | 34.2 | ug/Kg | 91.8 | | 18 | 37.8 | ug/Kg |
| Benzyl Alcohol | | <MDL | 7 | 14.1 | ug/Kg | | <MDL | 8 | 16.1 | ug/Kg | | <MDL | 6.8 | 13.7 | ug/Kg | | <MDL | 7.5 | 15.1 | ug/Kg |
| Benzyl Butyl Phthalate | 22.1 | | 7 | 14.1 | ug/Kg | 41.4 | | 8 | 16.1 | ug/Kg | 49.9 | | 6.8 | 13.7 | ug/Kg | 64.2 | | 7.5 | 15.1 | ug/Kg |
| Bis(2-Ethylhexyl)Phthalate | 348 | | 7 | 14.1 | ug/Kg | 450 | | 8 | 16.1 | ug/Kg | 755 | | 6.8 | 13.7 | ug/Kg | 668 | | 7.5 | 15.1 | ug/Kg |

# King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Locator: | DUD_9C | | | | | DUD_10C | | | | | DUD_11C | | | | | DUD_12C | | | | |
| Descrip: | Cleanup area perim | | | | | Cleanup area perim | | | | | Cleanup area perim | | | | | Cleanup area perim | | | | |
| Sampled: | Mar 08, 2006 | | | | | Mar 08, 2006 | | | | | Mar 09, 2006 | | | | | Mar 09, 2006 | | | | |
| Lab ID: | L38326-11 | | | | | L38326-12 | | | | | L38326-13 | | | | | L38326-14 | | | | |
| Matrix: | SALTWTRSED | | | | | SALTWTRSED | | | | | SALTWTRSED | | | | | SALTWTRSED | | | | |
| % Solids: | 76.1 | | | | | 66.6 | | | | | 78 | | | | | 70.7 | | | | |
| Parameters | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units | Value | Qual | MDL | RDL | Units |
| | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | | | | - Dry Weight Basis | | |
| **COMBINED LABS** | | | | | | | | | | | | | | | | | | | | |
| Caffeine | | <MDL | 7 | 14.1 | ug/Kg | | <MDL | 8 | 16.1 | ug/Kg | | <MDL | 6.8 | 13.7 | ug/Kg | | <MDL | 7.5 | 15.1 | ug/Kg |
| Carbazole | 9.53 | | 3.5 | 7 | ug/Kg | | <MDL | 4.1 | 8 | ug/Kg | | <MDL | 3.5 | 6.83 | ug/Kg | | <MDL | 3.8 | 7.54 | ug/Kg |
| Chrysene | 127 | | 3.5 | 7 | ug/Kg | 234 | | 4.1 | 8 | ug/Kg | 158 | | 3.5 | 6.83 | ug/Kg | 156 | | 3.8 | 7.54 | ug/Kg |
| Coprostanol | | <MDL | 70 | 141 | ug/Kg | | <MDL | 80 | 161 | ug/Kg | | <MDL | 68 | 137 | ug/Kg | | <MDL | 75 | 151 | ug/Kg |
| Dibenzo(a,h)anthracene | 10.5 | | 3.5 | 7 | ug/Kg | 19.8 | | 4.1 | 8 | ug/Kg | 14.1 | | 3.5 | 6.83 | ug/Kg | 24.3 | | 3.8 | 7.54 | ug/Kg |
| Dibenzofuran | 5.4 | <RDL | 3.5 | 7 | ug/Kg | 8.65 | | 4.1 | 8 | ug/Kg | | <MDL | 3.5 | 6.83 | ug/Kg | 6.5 | <RDL | 3.8 | 7.54 | ug/Kg |
| Diethyl Phthalate | | <MDL | 7 | 14.1 | ug/Kg | | <MDL | 8 | 16.1 | ug/Kg | | <MDL | 6.8 | 13.7 | ug/Kg | | <MDL | 7.5 | 15.1 | ug/Kg |
| Dimethyl Phthalate | | <MDL | 7 | 14.1 | ug/Kg | | <MDL | 8 | 16.1 | ug/Kg | | <MDL | 6.8 | 13.7 | ug/Kg | | <MDL | 7.5 | 15.1 | ug/Kg |
| Di-N-Butyl Phthalate | 14.3 | B | 7 | 14.1 | ug/Kg | 159 | B | 8 | 16.1 | ug/Kg | 38.1 | B | 6.8 | 13.7 | ug/Kg | 61 | B | 7.5 | 15.1 | ug/Kg |
| Di-N-Octyl Phthalate | | <MDL | 7 | 14.1 | ug/Kg | | <MDL | 8 | 16.1 | ug/Kg | | <MDL | 6.8 | 13.7 | ug/Kg | | <MDL | 7.5 | 15.1 | ug/Kg |
| Fluoranthene | 180 | | 3.5 | 7 | ug/Kg | 300 | | 4.1 | 8 | ug/Kg | 231 | | 3.5 | 6.83 | ug/Kg | 218 | | 3.8 | 7.54 | ug/Kg |
| Fluorene | 8.73 | | 3.5 | 7 | ug/Kg | 17.9 | | 4.1 | 8 | ug/Kg | 14.2 | | 3.5 | 6.83 | ug/Kg | 10.8 | | 3.8 | 7.54 | ug/Kg |
| Hexachlorobenzene | | <MDL | 0.7 | 1.41 | ug/Kg | | <MDL | 0.8 | 1.61 | ug/Kg | | <MDL | 0.68 | 1.37 | ug/Kg | | <MDL | 0.75 | 1.51 | ug/Kg |
| Hexachlorobutadiene | | <MDL | 1.7 | 3.51 | ug/Kg | | <MDL | 2 | 4.01 | ug/Kg | | <MDL | 1.7 | 3.42 | ug/Kg | | <MDL | 1.8 | 3.78 | ug/Kg |
| Hexachloroethane | | <MDL | 1.7 | 3.51 | ug/Kg | | <MDL | 2 | 4.01 | ug/Kg | | <MDL | 1.7 | 3.42 | ug/Kg | | <MDL | 1.8 | 3.78 | ug/Kg |
| Indeno(1,2,3-Cd)Pyrene | 50.1 | | 3.5 | 7 | ug/Kg | 95.5 | | 4.1 | 8 | ug/Kg | 58.7 | | 3.5 | 6.83 | ug/Kg | 79.6 | | 3.8 | 7.54 | ug/Kg |
| Naphthalene | 5.1 | <RDL | 3.5 | 7 | ug/Kg | | <MDL | 4.1 | 8 | ug/Kg | 6.5 | <RDL | 3.5 | 6.83 | ug/Kg | 6.1 | <RDL | 3.8 | 7.54 | ug/Kg |
| N-Nitrosodiphenylamine | | <MDL | 7 | 14.1 | ug/Kg | | <MDL | 8 | 16.1 | ug/Kg | | <MDL | 6.8 | 13.7 | ug/Kg | | <MDL | 7.5 | 15.1 | ug/Kg |
| Pentachlorophenol | | <MDL | 17 | 35.1 | ug/Kg | | <MDL | 20 | 40.1 | ug/Kg | | <MDL | 17 | 34.2 | ug/Kg | | <MDL | 18 | 37.8 | ug/Kg |
| Phenanthrene | 59.5 | | 3.5 | 7 | ug/Kg | 110 | | 4.1 | 8 | ug/Kg | 89.4 | | 3.5 | 6.83 | ug/Kg | 84.2 | | 3.8 | 7.54 | ug/Kg |
| Phenol | | <MDL | 7 | 14.1 | ug/Kg | | <MDL | 8 | 16.1 | ug/Kg | | <MDL | 6.8 | 13.7 | ug/Kg | | <MDL | 7.5 | 15.1 | ug/Kg |
| Pyrene | 197 | | 3.5 | 7 | ug/Kg | 348 | | 4.1 | 8 | ug/Kg | 194 | | 3.5 | 6.83 | ug/Kg | 280 | | 3.8 | 7.54 | ug/Kg |
| Total HPAHS | 978 | | 3.5 | 7 | ug/Kg | 1830 | | 4.1 | 8 | ug/Kg | 1110 | | 3.5 | 6.83 | ug/Kg | 1410 | | 3.8 | 7.54 | ug/Kg |
| Total LPAHs | 129 | | 3.5 | 7 | ug/Kg | 216 | | 4.1 | 8 | ug/Kg | 177 | | 3.5 | 6.83 | ug/Kg | 167 | | 3.8 | 7.54 | ug/Kg |
| **M=OR EPA 8081A/8082 (7-3-03-002)** | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 2.4 | <RDL | 1.3 | 2.63 | ug/Kg | 2.6 | <RDL | 1.5 | 3 | ug/Kg | | <MDL | 1.3 | 2.56 | ug/Kg | 3.2 | | 1.4 | 2.83 | ug/Kg |
| 4,4'-DDE | | <MDL | 1.3 | 2.63 | ug/Kg | | <MDL | 1.5 | 3 | ug/Kg | | <MDL | 1.3 | 2.56 | ug/Kg | | <MDL | 1.4 | 2.83 | ug/Kg |
| 4,4'-DDT | | <MDL,L | 1.3 | 2.63 | ug/Kg | | <MDL,L | 1.5 | 3 | ug/Kg | | <MDL,L | 1.3 | 2.56 | ug/Kg | | <MDL,L | 1.4 | 2.83 | ug/Kg |
| Aldrin | | <MDL | 1.3 | 2.63 | ug/Kg | | <MDL | 1.5 | 3 | ug/Kg | | <MDL | 1.3 | 2.56 | ug/Kg | | <MDL | 1.4 | 2.83 | ug/Kg |
| Alpha-BHC | | <MDL | 0.66 | 1.31 | ug/Kg | | <MDL | 0.75 | 1.5 | ug/Kg | | <MDL | 0.64 | 1.28 | ug/Kg | | <MDL | 0.71 | 1.41 | ug/Kg |
| Alpha-Chlordane | | <MDL | 0.66 | 1.31 | ug/Kg | | <MDL | 0.75 | 1.5 | ug/Kg | | <MDL | 0.64 | 1.28 | ug/Kg | | <MDL | 0.71 | 1.41 | ug/Kg |
| Aroclor 1016 | | <MDL,TA | 70 | 139 | ug/Kg | | <MDL,TA | 62 | 124 | ug/Kg | | <MDL,TA | 7.7 | 15.3 | ug/Kg | | <MDL,TA | 85 | 170 | ug/Kg |
| Aroclor 1221 | | <MDL | 3.3 | 6.57 | ug/Kg | | <MDL | 3.8 | 7.51 | ug/Kg | | <MDL | 3.2 | 6.41 | ug/Kg | | <MDL | 3.5 | 7.07 | ug/Kg |
| Aroclor 1232 | | <MDL,TA | 120 | 251 | ug/Kg | | <MDL,TA | 110 | 213 | ug/Kg | | <MDL,TA | 10 | 20.6 | ug/Kg | | <MDL,TA | 160 | 310 | ug/Kg |
| Aroclor 1242 | | <MDL,TA | 130 | 261 | ug/Kg | | <MDL,TA | 130 | 269 | ug/Kg | | <MDL,TA | 12 | 24.4 | ug/Kg | | <MDL,TA | 170 | 328 | ug/Kg |
| Aroclor 1248 | 99.3 | | 1.7 | 3.29 | ug/Kg | 105 | | 2 | 3.75 | ug/Kg | 11.5 | | 1.7 | 3.21 | ug/Kg | 123 | | 1.8 | 3.54 | ug/Kg |
| Aroclor 1254 | 117 | | 1.7 | 3.29 | ug/Kg | 142 | | 2 | 3.75 | ug/Kg | 17.1 | | 1.7 | 3.21 | ug/Kg | 149 | | 1.8 | 3.54 | ug/Kg |
| Aroclor 1260 | 53.1 | | 1.7 | 3.29 | ug/Kg | 71.6 | | 2 | 3.75 | ug/Kg | 11.6 | | 1.7 | 3.21 | ug/Kg | 111 | | 1.8 | 3.54 | ug/Kg |
| Beta-BHC | | <MDL | 0.66 | 1.31 | ug/Kg | | <MDL | 0.75 | 1.5 | ug/Kg | | <MDL | 0.64 | 1.28 | ug/Kg | | <MDL | 0.71 | 1.41 | ug/Kg |
| Delta-BHC | | <MDL | 0.66 | 1.31 | ug/Kg | | <MDL | 0.75 | 1.5 | ug/Kg | | <MDL | 0.64 | 1.28 | ug/Kg | | <MDL | 0.71 | 1.41 | ug/Kg |
| Dieldrin | | <MDL | 1.3 | 2.63 | ug/Kg | | <MDL | 1.5 | 3 | ug/Kg | | <MDL | 1.3 | 2.56 | ug/Kg | | <MDL | 1.4 | 2.83 | ug/Kg |
| Endosulfan I | | <MDL | 1.3 | 2.63 | ug/Kg | | <MDL | 1.5 | 3 | ug/Kg | | <MDL | 1.3 | 2.56 | ug/Kg | | <MDL | 1.4 | 2.83 | ug/Kg |
| Endosulfan II | | <MDL | 1.3 | 2.63 | ug/Kg | | <MDL | 1.5 | 3 | ug/Kg | | <MDL | 1.3 | 2.56 | ug/Kg | | <MDL | 1.4 | 2.83 | ug/Kg |

# King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

| | Locator: DUD_9C<br>Descrip: Cleanup area perim<br>Sampled: Mar 08, 2006<br>Lab ID: L38326-11<br>Matrix: SALTWTRSED<br>% Solids: 76.1 | | | | | Locator: DUD_10C<br>Descrip: Cleanup area perim<br>Sampled: Mar 08, 2006<br>Lab ID: L38326-12<br>Matrix: SALTWTRSED<br>% Solids: 66.6 | | | | | Locator: DUD_11C<br>Descrip: Cleanup area perim<br>Sampled: Mar 09, 2006<br>Lab ID: L38326-13<br>Matrix: SALTWTRSED<br>% Solids: 78 | | | | | Locator: DUD_12C<br>Descrip: Cleanup area perim<br>Sampled: Mar 09, 2006<br>Lab ID: L38326-14<br>Matrix: SALTWTRSED<br>% Solids: 70.7 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parameters | Value | Qual | MDL - Dry Weight Basis | RDL | Units | Value | Qual | MDL - Dry Weight Basis | RDL | Units | Value | Qual | MDL - Dry Weight Basis | RDL | Units | Value | Qual | MDL - Dry Weight Basis | RDL | Units |
| **COMBINED LABS** | | | | | | | | | | | | | | | | | | | | |
| Endosulfan Sulfate | | <MDL | 1.3 | 2.63 | ug/Kg | | <MDL | 1.5 | 3 | ug/Kg | | <MDL | 1.3 | 2.56 | ug/Kg | | <MDL | 1.4 | 2.83 | ug/Kg |
| Endrin | | <MDL | 1.3 | 2.63 | ug/Kg | | <MDL | 1.5 | 3 | ug/Kg | | <MDL | 1.3 | 2.56 | ug/Kg | | <MDL | 1.4 | 2.83 | ug/Kg |
| Endrin Aldehyde | | <MDL | 2.6 | 5.26 | ug/Kg | | <MDL | 3 | 6.01 | ug/Kg | | <MDL | 2.6 | 5.13 | ug/Kg | | <MDL | 2.8 | 5.66 | ug/Kg |
| Gamma-BHC (Lindane) | | <MDL | 0.66 | 1.31 | ug/Kg | | <MDL | 0.75 | 1.5 | ug/Kg | | <MDL | 0.64 | 1.28 | ug/Kg | | <MDL | 0.71 | 1.41 | ug/Kg |
| Gamma-Chlordane | | <MDL | 0.66 | 1.31 | ug/Kg | | <MDL | 0.75 | 1.5 | ug/Kg | 0.82 | <RDL | 0.64 | 1.28 | ug/Kg | | <MDL | 0.71 | 1.41 | ug/Kg |
| Heptachlor | | <MDL | 0.66 | 1.31 | ug/Kg | | <MDL | 0.75 | 1.5 | ug/Kg | | <MDL | 0.64 | 1.28 | ug/Kg | | <MDL | 0.71 | 1.41 | ug/Kg |
| Heptachlor Epoxide | | <MDL | 0.66 | 1.31 | ug/Kg | | <MDL | 0.75 | 1.5 | ug/Kg | | <MDL | 0.64 | 1.28 | ug/Kg | | <MDL | 0.71 | 1.41 | ug/Kg |
| Methoxychlor | | <MDL | 6.6 | 13.1 | ug/Kg | | <MDL | 7.5 | 15 | ug/Kg | | <MDL | 6.4 | 12.8 | ug/Kg | | <MDL | 7.1 | 14.1 | ug/Kg |
| Toxaphene | | <MDL | 13 | 26.3 | ug/Kg | | <MDL | 15 | 30 | ug/Kg | | <MDL | 13 | 25.6 | ug/Kg | | <MDL | 14 | 28.3 | ug/Kg |

* Not converted to dry weight basis for this parameter

# King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator: DUD_13C
Descrip: PERIMETER LOCATION
Sampled: Mar 09, 2006
Lab ID: L38326-15
Matrix: SALTWTRSED
% Solids: 55.6

| Parameters | Value | Qual | MDL | RDL | Units |
|---|---|---|---|---|---|
| | | | - Dry Weight Basis | | |
| **COMBINED LABS** | | | | | |
| **M=CV ASTM D422(03-02-005-001)** | | | | | |
| Fines * | 56.5 | | 0.5 | 1 | % |
| Clay * | 11.3 | E | 0.5 | 1 | % |
| Silt * | 45.2 | | 0.5 | 1 | % |
| Sand * | 40.3 | | 0.1 | 1 | % |
| Gravel * | 0.3 | <RDL | 0.1 | 1 | % |
| p+0.00 * | 0.2 | <RDL | 0.1 | 1 | % |
| p+1.00 * | 0.3 | <RDL | 0.1 | 1 | % |
| p+10.0(equal/more than) * | 7.8 | | 0.5 | 1 | % |
| p+2.00 * | 4.1 | | 0.1 | 1 | % |
| p+3.00 * | 21.3 | | 0.1 | 1 | % |
| p+4.00 * | 14.5 | | 0.1 | 1 | % |
| p+5.00 * | 15.6 | | 0.5 | 1 | % |
| p+6.00 * | 8.7 | | 0.5 | 1 | % |
| p+7.00 * | 8.7 | | 0.5 | 1 | % |
| p+8.00 * | 12.2 | | 0.5 | 1 | % |
| p+9.00 * | 3.5 | | 0.5 | 1 | % |
| p-1.00 * | 0.1 | <RDL | 0.1 | 1 | % |
| p-2.00 * | | <MDL | 0.1 | 1 | % |
| p-2.00(less than) * | 0.1 | <RDL | 0.1 | 1 | % |
| **M=CV EPA9060-PSEP96 (03-04-002-003)** | | | | | |
| Total Organic Carbon | 16400 | | 1800 | 3780 | mg/Kg |
| **M=CV SM2540-G (03-01-007-002)** | | | | | |
| Total Solids * | 55.6 | | 0.005 | 0.01 | % |
| **M=ES NONE** | | | | | |
| Field Personnel | JB, SH, JP | | | | none |
| Sampcoordx1 * | 1267247 | | | | ft |
| Sampcoordx2 * | 1267247 | | | | ft |
| Sampcoordx3 * | 1267233 | | | | ft |
| Sampcoordx4 * | 1267236 | | | | ft |
| Sampcoordx5 * | 1267238 | | | | ft |
| Sampcoordx6 * | | | | | |
| Sampcoordy1 * | 207860 | | | | ft |
| Sampcoordy2 * | 207865 | | | | ft |
| Sampcoordy3 * | 207860 | | | | ft |
| Sampcoordy4 * | 207854 | | | | ft |
| Sampcoordy5 * | 207857 | | | | ft |
| Sampcoordy6 * | | | | | |
| Sample Depth * | 11 | | | | m |
| Sample Function | | | | | |
| Sample Start Time * | 1220 | | | | hr |
| Sampling Method * | 20042 | | | | none |
| Sediment Sampling Depth * | 16 | | | | cm |

# King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator: DUD_13C
Descrip: PERIMETER LOCATION
Sampled: Mar 09, 2006
Lab ID: L38326-15
Matrix: SALTWTRSED
% Solids: 55.6

| Parameters | Value | Qual | MDL | RDL | Units |
|---|---|---|---|---|---|
| | | | - Dry Weight Basis | | |
| **COMBINED LABS** | | | | | |
| Sediment Sampling Range * | 0-10 cm | | | | cm |
| Sediment Type | 21N31 | | | | none |
| Tidal Condition | E | | | | none |
| Tide Height * | 6 | | | | ft |
| **M=MT EPA 7471A (06-01-004-003)** | | | | | |
| Mercury, Total, CVAA | 0.32 | <RDL | 0.036 | 0.36 | mg/Kg |
| **M=MT EPA3050A/6010B (06-02-004-002)** | | | | | |
| Aluminum, Total, ICP | 16000 | | 9 | 44.8 | mg/Kg |
| Antimony, Total, ICP | | <MDL,G | 2.7 | 13.4 | mg/Kg |
| Arsenic, Total, ICP | 12 | <RDL | 4.5 | 22.3 | mg/Kg |
| Beryllium, Total, ICP | 0.25 | <RDL | 0.09 | 0.448 | mg/Kg |
| Cadmium, Total, ICP | 0.72 | <RDL | 0.27 | 1.34 | mg/Kg |
| Chromium, Total, ICP | 34.2 | | 0.45 | 2.23 | mg/Kg |
| Copper, Total, ICP | 78.6 | | 0.36 | 1.79 | mg/Kg |
| Iron, Total, ICP | 27000 | | 4.5 | 22.3 | mg/Kg |
| Lead, Total, ICP | 56.1 | | 2.7 | 13.4 | mg/Kg |
| Manganese, Total, ICP | 272 | | 0.18 | 0.894 | mg/Kg |
| Nickel, Total, ICP | 21.6 | | 1.8 | 8.94 | mg/Kg |
| Selenium, Total, ICP | | <MDL | 4.5 | 22.3 | mg/Kg |
| Silver, Total, ICP | 0.99 | <RDL,E | 0.36 | 1.79 | mg/Kg |
| Thallium, Total, ICP | | <MDL | 18 | 89.4 | mg/Kg |
| Zinc, Total, ICP | 129 | | 0.45 | 2.23 | mg/Kg |
| **M=OR EPA 3550B/8270C (7-3-01-004)** | | | | | |
| 1,2,4-Trichlorobenzene | | <MDL | 0.49 | 0.959 | ug/Kg |
| 1,2-Dichlorobenzene | | <MDL | 0.49 | 0.959 | ug/Kg |
| 1,3-Dichlorobenzene | | <MDL | 0.49 | 0.959 | ug/Kg |
| 1,4-Dichlorobenzene | | <MDL | 0.49 | 0.959 | ug/Kg |
| 2,4-Dimethylphenol | | <MDL | 4.9 | 9.59 | ug/Kg |
| 2-Methylnaphthalene | | <MDL | 4.9 | 9.59 | ug/Kg |
| 2-Methylphenol | | <MDL | 9.5 | 19.2 | ug/Kg |
| 4-Methylphenol | | <MDL | 9.5 | 19.2 | ug/Kg |
| Acenaphthene | 14.4 | | 4.9 | 9.59 | ug/Kg |
| Acenaphthylene | 19.4 | | 4.9 | 9.59 | ug/Kg |
| Anthracene | 119 | | 4.9 | 9.59 | ug/Kg |
| Benzo(a)anthracene | 228 | | 4.9 | 9.59 | ug/Kg |
| Benzo(a)pyrene | 241 | | 4.9 | 9.59 | ug/Kg |
| Benzo(b)fluoranthene | 252 | | 4.9 | 9.59 | ug/Kg |
| Benzo(g,h,i)perylene | 139 | | 4.9 | 9.59 | ug/Kg |
| Benzo(k)fluoranthene | 295 | | 4.9 | 9.59 | ug/Kg |
| Benzoic Acid | 136 | | 23 | 48 | ug/Kg |
| Benzyl Alcohol | | <MDL | 9.5 | 19.2 | ug/Kg |
| Benzyl Butyl Phthalate | 67.6 | | 9.5 | 19.2 | ug/Kg |
| Bis(2-Ethylhexyl)Phthalate | 592 | | 9.5 | 19.2 | ug/Kg |

# King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator: DUD_13C
Descrip: PERIMETER LOCATION
Sampled: Mar 09, 2006
Lab ID: L38326-15
Matrix: SALTWTRSED
% Solids: 55.6

| Parameters | Value | Qual | MDL | RDL | Units |
|---|---|---|---|---|---|
| | | | - Dry Weight Basis | | |
| **COMBINED LABS** | | | | | |
| Caffeine | | <MDL | 9.5 | 19.2 | ug/Kg |
| Carbazole | | <MDL | 4.9 | 9.59 | ug/Kg |
| Chrysene | 363 | | 4.9 | 9.59 | ug/Kg |
| Coprostanol | | <MDL | 95 | 192 | ug/Kg |
| Dibenzo(a,h)anthracene | 37.6 | | 4.9 | 9.59 | ug/Kg |
| Dibenzofuran | 14.9 | | 4.9 | 9.59 | ug/Kg |
| Diethyl Phthalate | | <MDL | 9.5 | 19.2 | ug/Kg |
| Dimethyl Phthalate | | <MDL | 9.5 | 19.2 | ug/Kg |
| Di-N-Butyl Phthalate | 42.3 | B | 9.5 | 19.2 | ug/Kg |
| Di-N-Octyl Phthalate | | <MDL | 9.5 | 19.2 | ug/Kg |
| Fluoranthene | 428 | | 4.9 | 9.59 | ug/Kg |
| Fluorene | 28.4 | | 4.9 | 9.59 | ug/Kg |
| Hexachlorobenzene | | <MDL | 0.95 | 1.92 | ug/Kg |
| Hexachlorobutadiene | | <MDL | 2.3 | 4.8 | ug/Kg |
| Hexachloroethane | | <MDL | 2.3 | 4.8 | ug/Kg |
| Indeno(1,2,3-Cd)Pyrene | 130 | | 4.9 | 9.59 | ug/Kg |
| Naphthalene | 11.2 | | 4.9 | 9.59 | ug/Kg |
| N-Nitrosodiphenylamine | | <MDL | 9.5 | 19.2 | ug/Kg |
| Pentachlorophenol | | <MDL | 23 | 48 | ug/Kg |
| Phenanthrene | 155 | | 4.9 | 9.59 | ug/Kg |
| Phenol | | <MDL | 9.5 | 19.2 | ug/Kg |
| Pyrene | 426 | | 4.9 | 9.59 | ug/Kg |
| Total HPAHS | 2540 | | 4.9 | 9.59 | ug/Kg |
| Total LPAHs | 347 | | 4.9 | 9.59 | ug/Kg |
| **M=OR EPA 8081A/8082 (7-3-03-002)** | | | | | |
| 4,4'-DDD | 2.9 | <RDL | 1.8 | 3.6 | ug/Kg |
| 4,4'-DDE | | <MDL | 1.8 | 3.6 | ug/Kg |
| 4,4'-DDT | | <MDL,L | 1.8 | 3.6 | ug/Kg |
| Aldrin | | <MDL | 1.8 | 3.6 | ug/Kg |
| Alpha-BHC | | <MDL | 0.9 | 1.8 | ug/Kg |
| Alpha-Chlordane | | <MDL | 0.9 | 1.8 | ug/Kg |
| Aroclor 1016 | | <MDL,TA | 72 | 145 | ug/Kg |
| Aroclor 1221 | | <MDL | 4.5 | 8.99 | ug/Kg |
| Aroclor 1232 | | <MDL,TA | 120 | 248 | ug/Kg |
| Aroclor 1242 | | <MDL,TA | 160 | 313 | ug/Kg |
| Aroclor 1248 | 115 | | 2.3 | 4.5 | ug/Kg |
| Aroclor 1254 | 155 | | 2.3 | 4.5 | ug/Kg |
| Aroclor 1260 | 84.5 | | 2.3 | 4.5 | ug/Kg |
| Beta-BHC | | <MDL | 0.9 | 1.8 | ug/Kg |
| Delta-BHC | | <MDL | 0.9 | 1.8 | ug/Kg |
| Dieldrin | | <MDL | 1.8 | 3.6 | ug/Kg |
| Endosulfan I | | <MDL | 1.8 | 3.6 | ug/Kg |
| Endosulfan II | | <MDL | 1.8 | 3.6 | ug/Kg |

# King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator: DUD_13C
Descrip: PERIMETER LOCATION
Sampled: Mar 09, 2006
Lab ID: L38326-15
Matrix: SALTWTRSED
% Solids: 55.6

| Parameters | Value | Qual | MDL | RDL | Units |
|---|---|---|---|---|---|
| | | | - Dry Weight Basis | | |
| **COMBINED LABS** | | | | | |
| Endosulfan Sulfate | | <MDL | 1.8 | 3.6 | ug/Kg |
| Endrin | | <MDL | 1.8 | 3.6 | ug/Kg |
| Endrin Aldehyde | | <MDL | 3.6 | 7.19 | ug/Kg |
| Gamma-BHC (Lindane) | | <MDL | 0.9 | 1.8 | ug/Kg |
| Gamma-Chlordane | | <MDL | 0.9 | 1.8 | ug/Kg |
| Heptachlor | | <MDL | 0.9 | 1.8 | ug/Kg |
| Heptachlor Epoxide | | <MDL | 0.9 | 1.8 | ug/Kg |
| Methoxychlor | | <MDL | 9 | 18 | ug/Kg |
| Toxaphene | | <MDL | 18 | 36 | ug/Kg |

* Not converted to dry weight basis for this parameter

PROJECT: 423062-200-4

# King County Environmental Lab Matrix Report

**COMBINED LABS-Solid**

| Locator | Sample Depth | Lab ID | Clay * | Fines * | Gravel * | p+0.00 * | p+1.00 * | p+10.0(equal/more than) * | p+2.00 * | p+3.00 * | p+4.00 * | p+5.00 * | p+6.00 * | p+7.00 * | p+8.00 * | p+9.00 * | p-1.00 * | p-2.00 * | p-2.00(less than) * | Sand * | Silt * | Total Organic Carbon | Total Solids * | Aluminum, Total, ICP | Arsenic, Total, ICP | Beryllium, Total, ICP | Cadmium, Total, ICP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | mg/Kg | % | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| DUD_1C | 7 | L38326-1 | 10.1 | 55.2 | 6 | 0.8 | 1.7 | 9.2 | 6.7 | 11.8 | 11.3 | 9.2 | 27.6 | 7.4 | 0.9 | 0.9 | 0.3 | 0.3 | 5.4 | 32.3 | 45.1 | 20000 | 55.4 | 16900 | 11 | 0.25 | 1.1 |
| DUD_2C | 8 | L38326-2 | 16.1 | 60 | 0.6 | 0.5 | 0.7 | 11.8 | 5.3 | 15.2 | 13.1 | 12.7 | 13.5 | 14.4 | 3.4 | 4.2 | 0.4 | 0.2 | | 34.7 | 43.9 | 19600 | 54.6 | 17300 | 13 | 0.24 | 0.7 |
| DUD_8C | 12 | L38326-9 | 6 | 19.9 | 10.4 | 3.6 | 5.8 | 5 | 28.5 | 25.9 | 8.2 | 5 | 4.5 | 3 | 1.5 | 1 | 3.7 | 1.6 | 5.1 | 72 | 13.9 | 4830 | 75 | 11200 | 4.5 | 0.11 | 0.23 |
| DUD_8C | 12 | L38326-10 | 7.6 | 21.8 | 7 | 3.4 | 5.9 | 6 | 26.1 | 27.4 | 8.9 | 4.9 | 4.4 | 2.2 | 2.7 | 1.6 | 3.6 | 0.8 | 2.6 | 71.7 | 14.2 | 7420 | 72.9 | 12200 | 5.9 | 0.13 | 0.81 |
| DUD_9C | 12 | L38326-11 | 4.4 | 13.2 | 3.5 | 3.1 | 7.6 | 3.1 | 32.1 | 28.9 | 9 | 2.5 | 1.9 | 2.5 | 1.9 | 1.3 | 2.3 | 0.1 | 1.2 | 80.7 | 8.8 | 4390 | 76.1 | 10800 | 5.1 | 0.12 | 0.37 |
| DUD_10C | 13 | L38326-12 | 7.2 | 30.9 | 7.3 | 2.1 | 7.7 | 5 | 20 | 19.4 | 12.4 | 8.6 | 2.9 | 7.2 | 5 | 2.2 | 1.4 | 0.1 | 5.8 | 61.5 | 23.7 | 9440 | 66.6 | 12200 | 9.9 | 0.18 | 0.53 |
| DUD_11C | 11 | L38326-13 | 4.5 | 12.3 | 15 | 6.8 | 10 | 4.5 | 23.8 | 22.7 | 7.7 | 3.2 | 1.9 | 2.6 | | | 7.4 | 3.4 | 4.2 | 70.9 | 7.8 | 5880 | 78 | 10700 | 4.4 | 0.11 | 0.19 |
| DUD_12C | 12 | L38326-14 | 6.2 | 25.3 | 0.9 | 1 | 2.2 | 4.8 | 13.7 | 34.8 | 17.5 | 6.8 | 5.5 | 4.1 | 2.7 | 1.4 | 0.6 | | 0.2 | 69.2 | 19.2 | 6620 | 70.7 | 12300 | 6.9 | 0.14 | 0.52 |
| DUD_13C | 11 | L38326-15 | 11.3 | 56.5 | 0.3 | 0.2 | 0.3 | 7.8 | 4.1 | 21.3 | 14.5 | 15.6 | 8.7 | 8.7 | 12.2 | 3.5 | 0.1 | | 0.1 | 40.3 | 45.2 | 16400 | 55.6 | 16000 | 12 | 0.25 | 0.72 |

PROJECT: 423062-200-4

# King County Environmental Lab Matrix Report

**COMBINED LABS-Solid**

| Locator | Sample Depth | Lab ID | Chromium, Total, ICP mg/Kg | Copper, Total, ICP mg/Kg | Iron, Total, ICP mg/Kg | Lead, Total, ICP mg/Kg | Manganese, Total, ICP mg/Kg | Mercury, Total, CVAA mg/Kg | Nickel, Total, ICP mg/Kg | Silver, Total, ICP mg/Kg | Zinc, Total, ICP mg/Kg | 2-Methylnaphthalene ug/Kg | 4,4'-DDD ug/Kg | Acenaphthene ug/Kg | Acenaphthylene ug/Kg | Anthracene ug/Kg | Aroclor 1248 ug/Kg | Aroclor 1254 ug/Kg | Aroclor 1260 ug/Kg | Benzo(a)anthracene ug/Kg | Benzo(a)pyrene ug/Kg | Benzo(b)fluoranthene ug/Kg | Benzo(g,h,i)perylene ug/Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DUD_1C | 7 | L38326-1 | 38.8 | 89.9 | 28300 | 72.7 | 298 | 0.31 | 25.1 | 1.2 | 174 | | | | | 60 | 197 | 247 | 161 | 245 | 321 | 365 | 226 |
| DUD_2C | 8 | L38326-2 | 34.6 | 98 | 30800 | 55.7 | 353 | 0.29 | 23.6 | 0.97 | 155 | 124 | | 374 | | 399 | 76.9 | 112 | 85.5 | 954 | 549 | 626 | 277 |
| DUD_8C | 12 | L38326-9 | 19.2 | 51.9 | 20100 | 16 | 235 | 0.092 | 16.3 | 1.85 | 56.3 | | 1.5 | 5.6 | | 52 | 60.7 | 79.2 | 37.2 | 86.8 | 97.5 | 100 | 56.3 |
| DUD_8C | 12 | L38326-10 | 26.2 | 62.1 | 21400 | 30 | 247 | 0.15 | 18.8 | 0.73 | 72.7 | 4.1 | 3.48 | 4.8 | | 32.9 | 184 | 195 | 77 | 104 | 80.9 | 99 | 50.3 |
| DUD_9C | 12 | L38326-11 | 21.8 | 47.3 | 19200 | 28.1 | 226 | 0.1 | 16.4 | 0.58 | 65.6 | 4.1 | 2.4 | 7.57 | | 43.8 | 99.3 | 117 | 53.1 | 74.1 | 99.6 | 85.3 | 53.6 |
| DUD_10C | 13 | L38326-12 | 27.8 | 58.9 | 20900 | 58.7 | 222 | 0.489 | 18.8 | 0.8 | 108 | | 2.6 | 10.2 | 9.55 | 64.6 | 105 | 142 | 71.6 | 138 | 198 | 188 | 102 |
| DUD_11C | 11 | L38326-13 | 21.4 | 45.3 | 19100 | 21.4 | 245 | 0.1 | 18.8 | 0.38 | 60.9 | | | 8.29 | 8.19 | 50.1 | 11.5 | 17.1 | 11.6 | 83.5 | 102 | 91.5 | 64.2 |
| DUD_12C | 12 | L38326-14 | 26.7 | 60.3 | 20900 | 45 | 229 | 0.14 | 21.8 | 0.71 | 92.5 | 4.7 | 3.2 | 6.6 | 3.8 | 51.2 | 123 | 149 | 111 | 130 | 120 | 165 | 88.4 |
| DUD_13C | 11 | L38326-15 | 34.2 | 78.6 | 27000 | 56.1 | 272 | 0.32 | 21.6 | 0.99 | 129 | | 2.9 | 14.4 | 19.4 | 119 | 115 | 155 | 84.5 | 228 | 241 | 252 | 139 |

PROJECT: 423062-200-4

# King County Environmental Lab Matrix Report

**COMBINED LABS-Solid**

| Locator | Sample Depth | Lab ID | Benzo(k)fluoranthene ug/Kg | Benzoic Acid ug/Kg | Benzyl Butyl Phthalate ug/Kg | Bis(2-Ethylhexyl)Phthalate ug/Kg | Carbazole ug/Kg | Chrysene ug/Kg | Di-N-Butyl Phthalate ug/Kg | Dibenzo(a,h)anthracene ug/Kg | Dibenzofuran ug/Kg | Fluoranthene ug/Kg | Fluorene ug/Kg | Gamma-Chlordane ug/Kg | Indeno(1,2,3-Cd)Pyrene ug/Kg | Naphthalene ug/Kg | Phenanthrene ug/Kg | Phenol ug/Kg | Pyrene ug/Kg | Total HPAHS ug/Kg | Total LPAHs ug/Kg | Sampcoordx1 * ft | Sampcoordx2 * ft |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DUD_1C | 7 | L38326-1 | 327 | 700 | 222 | 2360 | 60 | 336 | | 67 | | 538 | | | 186 | | 255 | 90 | 760 | 3380 | 390 | 1267162 | 1267165 |
| DUD_2C | 8 | L38326-2 | 667 | | 262 | 1770 | 112 | 978 | | 97.8 | 229 | 3390 | 357 | | 247 | | 1530 | 1510 | 2360 | 10100 | 2880 | 1267174 | 1267177 |
| DUD_8C | 12 | L38326-9 | 118 | 88.7 | 29.9 | 295 | | 135 | 15.5 | 14.1 | 5.1 | 232 | 9.32 | | 51.6 | | 71.1 | | 189 | 1080 | 140 | 1266876 | 1266868 |
| DUD_8C | 12 | L38326-10 | 92.7 | 113 | 28.9 | 514 | | 101 | 15.1 | 15.1 | 4.7 | 155 | 9.31 | | 48.1 | 6.3 | 57.1 | | 192 | 938 | 115 | 1266863 | 1266877 |
| DUD_9C | 12 | L38326-11 | 101 | 64.1 | 22.1 | 348 | 9.53 | 127 | 14.3 | 10.5 | 5.4 | 180 | 8.73 | | 50.1 | 5.1 | 59.5 | | 197 | 978 | 129 | 1266777 | 1266797 |
| DUD_10C | 13 | L38326-12 | 204 | 127 | 41.4 | 450 | | 234 | 159 | 19.8 | 8.65 | 300 | 17.9 | | 95.5 | | 110 | | 348 | 1830 | 216 | 1266667 | 1266651 |
| DUD_11C | 11 | L38326-13 | 110 | 95 | 49.9 | 755 | | 158 | 38.1 | 14.1 | | 231 | 14.2 | 0.82 | 58.7 | 6.5 | 89.4 | | 194 | 1110 | 177 | 1266845 | 1266837 |
| DUD_12C | 12 | L38326-14 | 146 | 91.8 | 64.2 | 668 | | 156 | 61 | 24.3 | 6.5 | 218 | 10.8 | | 79.6 | 6.1 | 84.2 | | 280 | 1410 | 167 | 1266813 | 1266803 |
| DUD_13C | 11 | L38326-15 | 295 | 136 | 67.6 | 592 | | 363 | 42.3 | 37.6 | 14.9 | 428 | 28.4 | | 130 | 11.2 | 155 | | 426 | 2540 | 347 | 1267247 | 1267247 |

PROJECT: 423062-200-4

# King County Environmental Lab Matrix Report

**COMBINED LABS-Solid**

| Locator | Sample Depth | Lab ID | Sampcoordx3 * ft | Sampcoordx4 * ft | Sampcoordx5 * ft | Sampcoordx6 * ft | Sampcoordy1 * ft | Sampcoordy2 * ft | Sampcoordy3 * ft | Sampcoordy4 * ft | Sampcoordy5 * ft | Sampcoordy6 * ft | Sample Depth * m | Sample Start Time * hr | Sampling Method * none | Sediment Sampling Depth * cm | Tide Height * ft |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DUD_1C | 7 | L38326-1 | 1267168 | 1267160 | 1267167 | | 208758 | 208754 | 208754 | 208759 | 208766 | | 7 | 855 | 20042 | 16 | 7.5 |
| DUD_2C | 8 | L38326-2 | 1267176 | 1267169 | 1267172 | 1267166 | 208653 | 208655 | 208655 | 208650 | 208645 | 208658 | 8 | 950 | 20042 | 8 | 7.2 |
| DUD_8C | 12 | L38326-9 | 1266869 | 1266861 | 1266861 | | 208923 | 208919 | 208916 | 208926 | 208934 | | 12 | 1044 | 20042 | 5 | 7 |
| DUD_8C | 12 | L38326-10 | 1266866 | 1266864 | 1266861 | 1266864 | 208926 | 208914 | 208923 | 208915 | 208919 | 208919 | 12 | 1130 | 20042 | 6 | 6 |
| DUD_9C | 12 | L38326-11 | 1266794 | 1266790 | 1266792 | | 209160 | 209161 | 209162 | 209154 | 209162 | | 12 | 1250 | 20042 | 6 | 5 |
| DUD_10C | 13 | L38326-12 | 1266650 | 1266667 | 1266665 | | 209515 | 209518 | 209525 | 209511 | 209526 | | 13 | 1345 | 20042 | 7 | 4 |
| DUD_11C | 11 | L38326-13 | 1266839 | 1266840 | 1266842 | | 209538 | 209533 | 209536 | 209534 | 209539 | | 11 | 1030 | 20042 | 7 | 7 |
| DUD_12C | 12 | L38326-14 | 1266804 | 1266804 | 1266813 | | 209619 | 209624 | 209628 | 209638 | 209623 | | 12 | 1135 | 20042 | 9 | 6.8 |
| DUD_13C | 11 | L38326-15 | 1267233 | 1267236 | 1267238 | | 207860 | 207865 | 207860 | 207854 | 207857 | | 11 | 1220 | 20042 | 16 | 6 |

# SAP MDL Comparison Table

# King County Environmental Lab Analytical Report
# SAP MDL Comparison

PROJECT: 423062-200-4

Exceeds SAP MDL

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Locator: | | DUD_1C | DUD_2C | DUD_8C AREP | DUD_8C FREP | DUD_9C | DUD_10C | DUD_11C |
| | Descrip: | | Cleanup area perim | Cleanup area perim | Cleanup area perim | Cleanup area perim | Cleanup area perim | Cleanup area perim | Cleanup area perim |
| | Sampled: | | Mar 08, 2006 | Mar 08, 2006 | Mar 08, 2006 | Mar 08, 2006 | Mar 08, 2006 | Mar 08, 2006 | Mar 09, 2006 |
| | Lab ID: | | L38326-1 | L38326-2 | L38326-9 | L38326-10 | L38326-11 | L38326-12 | L38326-13 |
| | Matrix: | | SALTWTRSED | SALTWTRSED | SALTWTRSED | SALTWTRSED | SALTWTRSED | SALTWTRSED | SALTWTRSED |
| | % Solids: | | 55.4 | 54.6 | 75 | 72.9 | 76.1 | 66.6 | 78 |
| Parameters | Units | SAP MDL | MDL - Dry Weight Basis | MDL - Dry Weight Basis | MDL - Dry Weight Basis | MDL - Dry Weight Basis | MDL - Dry Weight Basis | MDL - Dry Weight Basis | MDL - Dry Weight Basis |
| **COMBINED LABS** | | | | | | | | | |
| **M=CV ASTM D422(03-02-005-001)** | | | | | | | | | |
| Fines * | % | NA | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Clay * | % | NA | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Silt * | % | NA | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Sand * | % | NA | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Gravel * | % | NA | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| p+0.00 * | % | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| p+1.00 * | % | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| p+10.0(equal/more than) * | % | 0.1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| p+2.00 * | % | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| p+3.00 * | % | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| p+4.00 * | % | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| p+5.00 * | % | 0.1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| p+6.00 * | % | 0.1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| p+7.00 * | % | 0.1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| p+8.00 * | % | 0.1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| p+9.00 * | % | 0.1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| p-1.00 * | % | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| p-2.00 * | % | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| p-2.00(less than) * | % | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| **M=CV EPA9060-PSEP96 (03-04-002-003)** | | | | | | | | | |
| Total Organic Carbon | mg/Kg | 1000 | 1800 | 1800 | 720 | 860 | 780 | 870 | 670 |
| **M=CV SM2540-G (03-01-007-002)** | | | | | | | | | |
| Total Solids * | % | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 |
| **M=MT EPA 7471A (06-01-004-003)** | | | | | | | | | |
| Mercury, Total, CVAA | mg/Kg | 0.04 | 0.036 | 0.037 | 0.028 | 0.027 | 0.026 | 0.03 | 0.026 |
| **M=MT EPA3050A/6010B (06-02-004-002)** | | | | | | | | | |
| Aluminum, Total, ICP | mg/Kg | 10 | 8.8 | 8.8 | 6.5 | 6.6 | 6.4 | 7.7 | 6.4 |
| Antimony, Total, ICP | mg/Kg | 3 | 2.7 | 2.6 | 2 | 1.9 | 2 | 2.3 | 1.9 |
| Arsenic, Total, ICP | mg/Kg | 5 | 4.3 | 4.4 | 3.2 | 3.3 | 3.2 | 3.9 | 3.2 |
| Beryllium, Total, ICP | mg/Kg | 0.1 | 0.088 | 0.088 | 0.065 | 0.066 | 0.064 | 0.077 | 0.064 |
| Cadmium, Total, ICP | mg/Kg | 0.3 | 0.27 | 0.26 | 0.2 | 0.19 | 0.2 | 0.23 | 0.19 |
| Chromium, Total, ICP | mg/Kg | 0.5 | 0.43 | 0.44 | 0.32 | 0.33 | 0.32 | 0.39 | 0.32 |
| Copper, Total, ICP | mg/Kg | 0.4 | 0.36 | 0.35 | 0.25 | 0.26 | 0.26 | 0.32 | 0.26 |
| Iron, Total, ICP | mg/Kg | 5 | 4.3 | 4.4 | 3.2 | 3.3 | 3.2 | 3.9 | 3.2 |
| Lead, Total, ICP | mg/Kg | 3 | 2.7 | 2.6 | 2 | 1.9 | 2 | 2.3 | 1.9 |
| Manganese, Total, ICP | mg/Kg | 0.2 | 0.18 | 0.18 | 0.13 | 0.13 | 0.13 | 0.15 | 0.13 |
| Nickel, Total, ICP | mg/Kg | 2 | 1.8 | 1.8 | 1.3 | 1.3 | 1.3 | 1.5 | 1.3 |
| Selenium, Total, ICP | mg/Kg | 5 | 4.3 | 4.4 | 3.2 | 3.3 | 3.2 | 3.9 | 3.2 |
| Silver, Total, ICP | mg/Kg | 0.4 | 0.36 | 0.35 | 0.25 | 0.26 | 0.26 | 0.32 | 0.26 |
| Thallium, Total, ICP | mg/Kg | 20 | 18 | 18 | 13 | 13 | 13 | 15 | 13 |

# King County Environmental Lab Analytical Report
# SAP MDL Comparison

PROJECT: 423062-200-4

Exceeds SAP MDL

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Locator: | DUD_1C | DUD_2C | DUD_8C AREP | DUD_8C FREP | DUD_9C | DUD_10C | DUD_11C |
| Descrip: | Cleanup area perim | Cleanup area perim | Cleanup area perim | Cleanup area perim | Cleanup area perim | Cleanup area perim | Cleanup area perim |
| Sampled: | Mar 08, 2006 | Mar 08, 2006 | Mar 08, 2006 | Mar 08, 2006 | Mar 08, 2006 | Mar 08, 2006 | Mar 09, 2006 |
| Lab ID: | L38326-1 | L38326-2 | L38326-9 | L38326-10 | L38326-11 | L38326-12 | L38326-13 |
| Matrix: | SALTWTRSED | SALTWTRSED | SALTWTRSED | SALTWTRSED | SALTWTRSED | SALTWTRSED | SALTWTRSED |
| % Solids: | 55.4 | 54.6 | 75 | 72.9 | 76.1 | 66.6 | 78 |

| Parameters | Units | SAP MDL | MDL - Dry Weight Basis | MDL - Dry Weight Basis | MDL - Dry Weight Basis | MDL - Dry Weight Basis | MDL - Dry Weight Basis | MDL - Dry Weight Basis | MDL - Dry Weight Basis |
|---|---|---|---|---|---|---|---|---|---|
| Zinc, Total, ICP | mg/Kg | 0.5 | 0.43 | 0.44 | 0.32 | 0.33 | 0.32 | 0.39 | 0.32 |
| **M=OR EPA 3550B/8270C (7-3-01-004)** | | | | | | | | | |
| 1,2,4-Trichlorobenzene | ug/Kg | 0.52 | 4.9 | 4.9 | 0.36 | 0.37 | 0.35 | 0.41 | 0.35 |
| 1,2-Dichlorobenzene | ug/Kg | 0.52 | 4.9 | 4.9 | 0.36 | 0.37 | 0.35 | 0.41 | 0.35 |
| 1,3-Dichlorobenzene | ug/Kg | 0.52 | 4.9 | 4.9 | 0.36 | 0.37 | 0.35 | 0.41 | 0.35 |
| 1,4-Dichlorobenzene | ug/Kg | 0.26 | 4.9 | 4.9 | 0.36 | 0.37 | 0.35 | 0.41 | 0.35 |
| 2,4-Dimethylphenol | ug/Kg | 14 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| 2-Methylnaphthalene | ug/Kg | 28 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| 2-Methylphenol | ug/Kg | 38 | 96 | 97 | 7.1 | 7.3 | 7 | 8 | 6.8 |
| 4-Methylphenol | ug/Kg | 32 | 96 | 97 | 7.1 | 7.3 | 7 | 8 | 6.8 |
| Acenaphthene | ug/Kg | 14 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| Acenaphthylene | ug/Kg | 29 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| Anthracene | ug/Kg | 7.9 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| Benzo(a)anthracene | ug/Kg | 4 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| Benzo(a)pyrene | ug/Kg | 6 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| Benzo(b)fluoranthene | ug/Kg | 6 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| Benzo(g,h,i)perylene | ug/Kg | 16 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| Benzo(k)fluoranthene | ug/Kg | 6 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| Benzoic Acid | ug/Kg | 12 | 230 | 240 | 17 | 18 | 17 | 20 | 17 |
| Benzyl Alcohol | ug/Kg | 12 | 96 | 97 | 7.1 | 7.3 | 7 | 8 | 6.8 |
| Benzyl Butyl Phthalate | ug/Kg | 12 | 96 | 97 | 7.1 | 7.3 | 7 | 8 | 6.8 |
| Bis(2-Ethylhexyl)Phthalate | ug/Kg | 13 | 96 | 97 | 7.1 | 7.3 | 7 | 8 | 6.8 |
| Carbazole | ug/Kg | 14 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| Chrysene | ug/Kg | 7.9 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| Coprostanol | ug/Kg | 28 | 960 | 970 | 71 | 73 | 70 | 80 | 68 |
| Dibenzo(a,h)anthracene | ug/Kg | 14 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| Dibenzofuran | ug/Kg | 28 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| Diethyl Phthalate | ug/Kg | 12 | 96 | 97 | 7.1 | 7.3 | 7 | 8 | 6.8 |
| Dimethyl Phthalate | ug/Kg | 22 | 96 | 97 | 7.1 | 7.3 | 7 | 8 | 6.8 |
| Di-N-Butyl Phthalate | ug/Kg | 10 | 96 | 97 | 7.1 | 7.3 | 7 | 8 | 6.8 |
| Di-N-Octyl Phthalate | ug/Kg | 16 | 96 | 97 | 7.1 | 7.3 | 7 | 8 | 6.8 |
| Fluoranthene | ug/Kg | 16 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| Fluorene | ug/Kg | 26 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| Hexachlorobenzene | ug/Kg | 1.3 | 9.6 | 9.7 | 0.71 | 0.73 | 0.7 | 0.8 | 0.68 |
| Hexachlorobutadiene | ug/Kg | 1.5 | 23 | 24 | 1.7 | 1.8 | 1.7 | 2 | 1.7 |
| Hexachloroethane | ug/Kg | 29 | 23 | 24 | 1.7 | 1.8 | 1.7 | 2 | 1.7 |
| Indeno(1,2,3-Cd)Pyrene | ug/Kg | 18 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| Naphthalene | ug/Kg | 28 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| N-Nitrosodiphenylamine | ug/Kg | 40 | 96 | 97 | 7.1 | 7.3 | 7 | 8 | 6.8 |
| Pentachlorophenol | ug/Kg | 10 | 230 | 240 | 17 | 18 | 17 | 20 | 17 |
| Phenanthrene | ug/Kg | 7.9 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| Phenol | ug/Kg | 18 | 49 | 97 | 7.1 | 7.3 | 7 | 8 | 6.8 |

# King County Environmental Lab Analytical Report
# SAP MDL Comparison

PROJECT: 423062-200-4

Exceeds SAP MDL

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Locator: | | DUD_1C | DUD_2C | DUD_8C AREP | DUD_8C FREP | DUD_9C | DUD_10C | DUD_11C |
| | Descrip: | | Cleanup area perim | Cleanup area perim | Cleanup area perim | Cleanup area perim | Cleanup area perim | Cleanup area perim | Cleanup area perim |
| | Sampled: | | Mar 08, 2006 | Mar 08, 2006 | Mar 08, 2006 | Mar 08, 2006 | Mar 08, 2006 | Mar 08, 2006 | Mar 09, 2006 |
| | Lab ID: | | L38326-1 | L38326-2 | L38326-9 | L38326-10 | L38326-11 | L38326-12 | L38326-13 |
| | Matrix: | | SALTWTRSED | SALTWTRSED | SALTWTRSED | SALTWTRSED | SALTWTRSED | SALTWTRSED | SALTWTRSED |
| | % Solids: | | 55.4 | 54.6 | 75 | 72.9 | 76.1 | 66.6 | 78 |
| Parameters | Units | SAP MDL | MDL - Dry Weight Basis | MDL - Dry Weight Basis | MDL - Dry Weight Basis | MDL - Dry Weight Basis | MDL - Dry Weight Basis | MDL - Dry Weight Basis | MDL - Dry Weight Basis |
| Pyrene | ug/Kg | 7.9 | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| Total HPAHS | ug/Kg | NA | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| Total LPAHs | ug/Kg | NA | 49 | 49 | 3.6 | 3.7 | 3.5 | 4.1 | 3.5 |
| **M=OR EPA 8081A/8082 (7-3-03-002)** | | | | | | | | | |
| 4,4'-DDD | ug/Kg | 0.67 | 1.8 | 1.8 | 1.3 | 1.4 | 1.3 | 1.5 | 1.3 |
| 4,4'-DDE | ug/Kg | 0.67 | 1.8 | 1.8 | 1.3 | 1.4 | 1.3 | 1.5 | 1.3 |
| 4,4'-DDT | ug/Kg | 0.67 | 1.8 | 1.8 | 1.3 | 1.4 | 1.3 | 1.5 | 1.3 |
| Aldrin | ug/Kg | 0.67 | 1.8 | 1.8 | 1.3 | 1.4 | 1.3 | 1.5 | 1.3 |
| Alpha-BHC | ug/Kg | 0.67 | 0.9 | 0.92 | 0.67 | 0.69 | 0.66 | 0.75 | 0.64 |
| Alpha-Chlordane | ug/Kg | 0.67 | 0.9 | 0.92 | 0.67 | 0.69 | 0.66 | 0.75 | 0.64 |
| Aroclor 1016 | ug/Kg | 4 | 140 | 49 | 40 | 130 | 70 | 62 | 7.7 |
| Aroclor 1221 | ug/Kg | 8 | 4.5 | 4.6 | 3.3 | 3.4 | 3.3 | 3.8 | 3.2 |
| Aroclor 1232 | ug/Kg | 8 | 250 | 88 | 79 | 250 | 120 | 110 | 10 |
| Aroclor 1242 | ug/Kg | 4 | 230 | 86 | 85 | 220 | 130 | 130 | 12 |
| Aroclor 1248 | ug/Kg | 4 | 2.3 | 2.4 | 1.7 | 1.8 | 1.7 | 2 | 1.7 |
| Aroclor 1254 | ug/Kg | 4 | 2.3 | 2.4 | 1.7 | 1.8 | 1.7 | 2 | 1.7 |
| Aroclor 1260 | ug/Kg | 4 | 2.3 | 2.4 | 1.7 | 1.8 | 1.7 | 2 | 1.7 |
| Beta-BHC | ug/Kg | 0.67 | 0.9 | 0.92 | 0.67 | 0.69 | 0.66 | 0.75 | 0.64 |
| Delta-BHC | ug/Kg | 0.67 | 0.9 | 0.92 | 0.67 | 0.69 | 0.66 | 0.75 | 0.64 |
| Dieldrin | ug/Kg | 0.67 | 1.8 | 1.8 | 1.3 | 1.4 | 1.3 | 1.5 | 1.3 |
| Endosulfan I | ug/Kg | 0.67 | 1.8 | 1.8 | 1.3 | 1.4 | 1.3 | 1.5 | 1.3 |
| Endosulfan II | ug/Kg | 0.67 | 1.8 | 1.8 | 1.3 | 1.4 | 1.3 | 1.5 | 1.3 |
| Endosulfan Sulfate | ug/Kg | 0.67 | 1.8 | 1.8 | 1.3 | 1.4 | 1.3 | 1.5 | 1.3 |
| Endrin | ug/Kg | 0.67 | 1.8 | 1.8 | 1.3 | 1.4 | 1.3 | 1.5 | 1.3 |
| Endrin Aldehyde | ug/Kg | 0.67 | 3.6 | 3.7 | 2.7 | 2.7 | 2.6 | 3 | 2.6 |
| Gamma-BHC (Lindane) | ug/Kg | 0.67 | 0.9 | 0.92 | 0.67 | 0.69 | 0.66 | 0.75 | 0.64 |
| Gamma-Chlordane | ug/Kg | 2.7 | 0.9 | 0.92 | 0.67 | 0.69 | 0.66 | 0.75 | 0.64 |
| Heptachlor | ug/Kg | 0.67 | 0.9 | 0.92 | 0.67 | 0.69 | 0.66 | 0.75 | 0.64 |
| Heptachlor Epoxide | ug/Kg | 0.67 | 0.9 | 0.92 | 0.67 | 0.69 | 0.66 | 0.75 | 0.64 |
| Methoxychlor | ug/Kg | 3.3 | 9 | 9.2 | 6.7 | 6.9 | 6.6 | 7.5 | 6.4 |
| Toxaphene | ug/Kg | 6.7 | 18 | 18 | 13 | 14 | 13 | 15 | 13 |

* Not converted to dry weight basis for this parameter

# King County Environmental Lab Analytical Report
# SAP MDL Comparison

PROJECT: 423062-200-4

| | | |
|---|---|---|
| Locator: | DUD_12C | DUD_13C |
| Descrip: | Cleanup area perim | PERIMETER LOCATION |
| Sampled: | Mar 09, 2006 | Mar 09, 2006 |
| Lab ID: | L38326-14 | L38326-15 |
| Matrix: | SALTWTRSED | SALTWTRSED |
| % Solids: | 70.7 | 55.6 |

Exceeds SAP MDL

| Parameters | Units | SAP MDL | MDL - Dry Weight Basis | MDL - Dry Weight Basis |
|---|---|---|---|---|
| **COMBINED LABS** | | | | |
| **M=CV ASTM D422(03-02-005-001)** | | | | |
| Fines * | % | NA | 0.5 | 0.5 |
| Clay * | % | NA | 0.5 | 0.5 |
| Silt * | % | NA | 0.5 | 0.5 |
| Sand * | % | NA | 0.1 | 0.1 |
| Gravel * | % | NA | 0.1 | 0.1 |
| p+0.00 * | % | 0.1 | 0.1 | 0.1 |
| p+1.00 * | % | 0.1 | 0.1 | 0.1 |
| p+10.0(equal/more than) * | % | 0.1 | 0.5 | 0.5 |
| p+2.00 * | % | 0.1 | 0.1 | 0.1 |
| p+3.00 * | % | 0.1 | 0.1 | 0.1 |
| p+4.00 * | % | 0.1 | 0.1 | 0.1 |
| p+5.00 * | % | 0.1 | 0.5 | 0.5 |
| p+6.00 * | % | 0.1 | 0.5 | 0.5 |
| p+7.00 * | % | 0.1 | 0.5 | 0.5 |
| p+8.00 * | % | 0.1 | 0.5 | 0.5 |
| p+9.00 * | % | 0.1 | 0.5 | 0.5 |
| p-1.00 * | % | 0.1 | 0.1 | 0.1 |
| p-2.00 * | % | 0.1 | 0.1 | 0.1 |
| p-2.00(less than) * | % | 0.1 | 0.1 | 0.1 |
| **M=CV EPA9060-PSEP96 (03-04-002-003)** | | | | |
| Total Organic Carbon | mg/Kg | 1000 | 790 | 1800 |
| **M=CV SM2540-G (03-01-007-002)** | | | | |
| Total Solids * | % | 0.005 | 0.005 | 0.005 |
| **M=MT EPA 7471A (06-01-004-003)** | | | | |
| Mercury, Total, CVAA | mg/Kg | 0.04 | 0.027 | 0.036 |
| **M=MT EPA3050A/6010B (06-02-004-002)** | | | | |
| Aluminum, Total, ICP | mg/Kg | 10 | 7.1 | 9 |
| Antimony, Total, ICP | mg/Kg | 3 | 2.1 | 2.7 |
| Arsenic, Total, ICP | mg/Kg | 5 | 3.5 | 4.5 |
| Beryllium, Total, ICP | mg/Kg | 0.1 | 0.071 | 0.09 |
| Cadmium, Total, ICP | mg/Kg | 0.3 | 0.21 | 0.27 |
| Chromium, Total, ICP | mg/Kg | 0.5 | 0.35 | 0.45 |
| Copper, Total, ICP | mg/Kg | 0.4 | 0.28 | 0.36 |
| Iron, Total, ICP | mg/Kg | 5 | 3.5 | 4.5 |
| Lead, Total, ICP | mg/Kg | 3 | 2.1 | 2.7 |
| Manganese, Total, ICP | mg/Kg | 0.2 | 0.14 | 0.18 |
| Nickel, Total, ICP | mg/Kg | 2 | 1.4 | 1.8 |
| Selenium, Total, ICP | mg/Kg | 5 | 3.5 | 4.5 |
| Silver, Total, ICP | mg/Kg | 0.4 | 0.28 | 0.36 |
| Thallium, Total, ICP | mg/Kg | 20 | 14 | 18 |

# King County Environmental Lab Analytical Report
# SAP MDL Comparison

PROJECT: 423062-200-4

| | | |
|---|---|---|
| Locator: | DUD_12C | DUD_13C |
| Descrip: | Cleanup area perim | PERIMETER LOCATION |
| Sampled: | Mar 09, 2006 | Mar 09, 2006 |
| Lab ID: | L38326-14 | L38326-15 |
| Matrix: | SALTWTRSED | SALTWTRSED |
| % Solids: | 70.7 | 55.6 |

Exceeds SAP MDL

| Parameters | Units | SAP MDL | MDL - Dry Weight Basis | MDL - Dry Weight Basis |
|---|---|---|---|---|
| Zinc, Total, ICP | mg/Kg | 0.5 | 0.35 | 0.45 |
| **M=OR EPA 3550B/8270C (7-3-01-004)** | | | | |
| 1,2,4-Trichlorobenzene | ug/Kg | 0.52 | 0.38 | 0.49 |
| 1,2-Dichlorobenzene | ug/Kg | 0.52 | 0.38 | 0.49 |
| 1,3-Dichlorobenzene | ug/Kg | 0.52 | 0.38 | 0.49 |
| 1,4-Dichlorobenzene | ug/Kg | 0.26 | 0.38 | 0.49 |
| 2,4-Dimethylphenol | ug/Kg | 14 | 3.8 | 4.9 |
| 2-Methylnaphthalene | ug/Kg | 28 | 3.8 | 4.9 |
| 2-Methylphenol | ug/Kg | 38 | 7.5 | 9.5 |
| 4-Methylphenol | ug/Kg | 32 | 7.5 | 9.5 |
| Acenaphthene | ug/Kg | 14 | 3.8 | 4.9 |
| Acenaphthylene | ug/Kg | 29 | 3.8 | 4.9 |
| Anthracene | ug/Kg | 7.9 | 3.8 | 4.9 |
| Benzo(a)anthracene | ug/Kg | 4 | 3.8 | 4.9 |
| Benzo(a)pyrene | ug/Kg | 6 | 3.8 | 4.9 |
| Benzo(b)fluoranthene | ug/Kg | 6 | 3.8 | 4.9 |
| Benzo(g,h,i)perylene | ug/Kg | 16 | 3.8 | 4.9 |
| Benzo(k)fluoranthene | ug/Kg | 6 | 3.8 | 4.9 |
| Benzoic Acid | ug/Kg | 12 | 18 | 23 |
| Benzyl Alcohol | ug/Kg | 12 | 7.5 | 9.5 |
| Benzyl Butyl Phthalate | ug/Kg | 12 | 7.5 | 9.5 |
| Bis(2-Ethylhexyl)Phthalate | ug/Kg | 13 | 7.5 | 9.5 |
| Carbazole | ug/Kg | 14 | 3.8 | 4.9 |
| Chrysene | ug/Kg | 7.9 | 3.8 | 4.9 |
| Coprostanol | ug/Kg | 28 | 75 | 95 |
| Dibenzo(a,h)anthracene | ug/Kg | 14 | 3.8 | 4.9 |
| Dibenzofuran | ug/Kg | 28 | 3.8 | 4.9 |
| Diethyl Phthalate | ug/Kg | 12 | 7.5 | 9.5 |
| Dimethyl Phthalate | ug/Kg | 22 | 7.5 | 9.5 |
| Di-N-Butyl Phthalate | ug/Kg | 10 | 7.5 | 9.5 |
| Di-N-Octyl Phthalate | ug/Kg | 16 | 7.5 | 9.5 |
| Fluoranthene | ug/Kg | 16 | 3.8 | 4.9 |
| Fluorene | ug/Kg | 26 | 3.8 | 4.9 |
| Hexachlorobenzene | ug/Kg | 1.3 | 0.75 | 0.95 |
| Hexachlorobutadiene | ug/Kg | 1.5 | 1.8 | 2.3 |
| Hexachloroethane | ug/Kg | 29 | 1.8 | 2.3 |
| Indeno(1,2,3-Cd)Pyrene | ug/Kg | 18 | 3.8 | 4.9 |
| Naphthalene | ug/Kg | 28 | 3.8 | 4.9 |
| N-Nitrosodiphenylamine | ug/Kg | 40 | 7.5 | 9.5 |
| Pentachlorophenol | ug/Kg | 10 | 18 | 23 |
| Phenanthrene | ug/Kg | 7.9 | 3.8 | 4.9 |
| Phenol | ug/Kg | 18 | 7.5 | 9.5 |

# King County Environmental Lab Analytical Report
# SAP MDL Comparison

PROJECT: 423062-200-4

| | | |
|---|---|---|
| Locator: | DUD_12C | DUD_13C |
| Descrip: | Cleanup area perim | PERIMETER LOCATION |
| Sampled: | Mar 09, 2006 | Mar 09, 2006 |
| Lab ID: | L38326-14 | L38326-15 |
| Matrix: | SALTWTRSED | SALTWTRSED |
| % Solids: | 70.7 | 55.6 |

Exceeds SAP MDL

| Parameters | Units | SAP MDL | MDL - Dry Weight Basis | MDL - Dry Weight Basis |
|---|---|---|---|---|
| Pyrene | ug/Kg | 7.9 | 3.8 | 4.9 |
| Total HPAHS | ug/Kg | NA | 3.8 | 4.9 |
| Total LPAHs | ug/Kg | NA | 3.8 | 4.9 |
| **M=OR EPA 8081A/8082 (7-3-03-002)** | | | | |
| 4,4'-DDD | ug/Kg | 0.67 | 1.4 | 1.8 |
| 4,4'-DDE | ug/Kg | 0.67 | 1.4 | 1.8 |
| 4,4'-DDT | ug/Kg | 0.67 | 1.4 | 1.8 |
| Aldrin | ug/Kg | 0.67 | 1.4 | 1.8 |
| Alpha-BHC | ug/Kg | 0.67 | 0.71 | 0.9 |
| Alpha-Chlordane | ug/Kg | 0.67 | 0.71 | 0.9 |
| Aroclor 1016 | ug/Kg | 4 | 85 | 72 |
| Aroclor 1221 | ug/Kg | 8 | 3.5 | 4.5 |
| Aroclor 1232 | ug/Kg | 8 | 160 | 120 |
| Aroclor 1242 | ug/Kg | 4 | 170 | 160 |
| Aroclor 1248 | ug/Kg | 4 | 1.8 | 2.3 |
| Aroclor 1254 | ug/Kg | 4 | 1.8 | 2.3 |
| Aroclor 1260 | ug/Kg | 4 | 1.8 | 2.3 |
| Beta-BHC | ug/Kg | 0.67 | 0.71 | 0.9 |
| Delta-BHC | ug/Kg | 0.67 | 0.71 | 0.9 |
| Dieldrin | ug/Kg | 0.67 | 1.4 | 1.8 |
| Endosulfan I | ug/Kg | 0.67 | 1.4 | 1.8 |
| Endosulfan II | ug/Kg | 0.67 | 1.4 | 1.8 |
| Endosulfan Sulfate | ug/Kg | 0.67 | 1.4 | 1.8 |
| Endrin | ug/Kg | 0.67 | 1.4 | 1.8 |
| Endrin Aldehyde | ug/Kg | 0.67 | 2.8 | 3.6 |
| Gamma-BHC (Lindane) | ug/Kg | 0.67 | 0.71 | 0.9 |
| Gamma-Chlordane | ug/Kg | 2.7 | 0.71 | 0.9 |
| Heptachlor | ug/Kg | 0.67 | 0.71 | 0.9 |
| Heptachlor Epoxide | ug/Kg | 0.67 | 0.71 | 0.9 |
| Methoxychlor | ug/Kg | 3.3 | 7.1 | 9 |
| Toxaphene | ug/Kg | 6.7 | 14 | 18 |

* Not converted to dry weight basis for this parameter

## OC MDL Comparison Tables

SMS OC and Dry Weight Normalization Detection Limit Check

| | MDL (ug/Kg, ww) | MDL (mg/Kg, dw, oc) | SMS (mg/Kg, dw,oc) | Delta (SMS-MDL) |
|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 2.7 | 0.24 | 0.81 | 0.57 |
| 1,2-Dichlorobenzene | 2.7 | 0.24 | 2.3 | 2.1 |
| 1,4-Dichlorobenzene | 2.7 | 0.24 | 3.1 | 2.9 |
| 2-Methylnaphthalene | 27 | 2.43 | 38 | 36 |
| 2,4-Dimethylphenol | 27 | 48.74 | 29 | -20 |
| 2-Methylphenol | 53 | 95.67 | 63 | -33 |
| 4-Methylphenol | 53 | 95.67 | 670 | 574 |
| Acenaphthene | 27 | 2.43 | 16 | 14 |
| Acenaphthylene | 27 | 2.43 | 66 | 64 |
| Anthracene | 27 | 2.43 | 220 | 218 |
| Benzo(a)anthracene | 27 | 2.43 | 110 | 108 |
| Benzo(a)pyrene | 27 | 2.43 | 99 | 97 |
| Benzo(b)fluoranthene | 27 | 2.43 | 115 | 113 |
| Benzo(g,h,i)perylene | 27 | 2.43 | 31 | 29 |
| Benzo(k)fluoranthene | 27 | 2.43 | 115 | 113 |
| Benzoic Acid | 130 | 234.66 | 650 | 415 |
| Benzyl Alcohol | 53 | 95.67 | 57 | -39 |
| Benzyl Butyl Phthalate | 53 | 4.77 | 4.9 | 0.1 |
| Bis(2-Ethylhexyl)Phthalate | 53 | 4.77 | 47 | 42 |
| Chrysene | 27 | 2.43 | 110 | 108 |
| Dibenzo(a,h)anthracene | 27 | 2.43 | 12 | 10 |
| Dibenzofuran | 27 | 2.43 | 15 | 13 |
| Diethyl Phthalate | 53 | 4.77 | 61 | 56 |
| Dimethyl Phthalate | 53 | 4.77 | 53 | 48 |
| Di-N-Butyl Phthalate | 53 | 4.77 | 220 | 215 |
| Di-N-Octyl Phthalate | 53 | 4.77 | 58 | 53 |
| Fluorene | 27 | 2.43 | 23 | 21 |
| Fluoranthene | 27 | 2.43 | 160 | 158 |
| Hexachlorobenzene | 5.3 | 0.48 | 0.38 | -0.10 |
| Hexachlorobutadiene | 13 | 1.17 | 3.9 | 2.7 |
| Indeno(1,2,3-Cd)Pyrene | 27 | 2.43 | 34 | 32 |
| N-Nitrosodiphenylamine | 53 | 4.77 | 11 | 6 |
| Naphthalene | 27 | 2.43 | 99 | 97 |
| Pentachlorophenol | 130 | 234.66 | 360 | 125 |
| Phenanthrene | 27 | 2.43 | 100 | 98 |
| Phenol | 27 | 48.74 | 420 | 371 |
| Pyrene | 27 | 2.43 | 1000 | 998 |
| Aroclor 1016 | 77 | 6.94 | | |
| Aroclor 1221 | 2.5 | 0.23 | | |
| Aroclor 1232 | 140 | 12.61 | | |
| Aroclor 1242 | 130 | 11.71 | | |
| Aroclor 1248 | 1.3 | 0.12 | | |
| Aroclor 1254 | 1.3 | 0.12 | | |
| Aroclor 1260 | 1.3 | 0.12 | | |
| Total Organic Carbon (dry) | 20036.10108 | | | |
| Total Solids | 55.4 | | | |
| HPAH | 270 | 24.32 | 960 | 936 |
| LPAH | 189 | 17.03 | 370 | 353 |
| Total PCB | 140 | 12.61 | 12 | -0.6 |

SMS OC and Dry Weight Normalization Detection Limit Check

| | MDL (ug/Kg, ww) | MDL (mg/Kg, dw, oc) | SMS (mg/Kg, dw,oc) | Delta (SMS-MDL) |
|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 2.7 | 0.25 | 0.81 | 0.56 |
| 1,2-Dichlorobenzene | 2.7 | 0.25 | 2.3 | 2.0 |
| 1,4-Dichlorobenzene | 2.7 | 0.25 | 3.1 | 2.8 |
| 2-Methylnaphthalene | 27 | 2.52 | 38 | 35 |
| 2,4-Dimethylphenol | 27 | 49.45 | 29 | -20 |
| 2-Methylphenol | 53 | 97.07 | 63 | -34 |
| 4-Methylphenol | 53 | 97.07 | 670 | 573 |
| Acenaphthene | 27 | 2.52 | 16 | 13 |
| Acenaphthylene | 27 | 2.52 | 66 | 63 |
| Anthracene | 27 | 2.52 | 220 | 217 |
| Benzo(a)anthracene | 27 | 2.52 | 110 | 107 |
| Benzo(a)pyrene | 27 | 2.52 | 99 | 96 |
| Benzo(b)fluoranthene | 27 | 2.52 | 115 | 112 |
| Benzo(g,h,i)perylene | 27 | 2.52 | 31 | 28 |
| Benzo(k)fluoranthene | 27 | 2.52 | 115 | 112 |
| Benzoic Acid | 130 | 238.10 | 650 | 412 |
| Benzyl Alcohol | 53 | 97.07 | 57 | -40 |
| Benzyl Butyl Phthalate | 53 | 4.95 | 4.9 | -0.1 |
| Bis(2-Ethylhexyl)Phthalate | 53 | 4.95 | 47 | 42 |
| Chrysene | 27 | 2.52 | 110 | 107 |
| Dibenzo(a,h)anthracene | 27 | 2.52 | 12 | 9 |
| Dibenzofuran | 27 | 2.52 | 15 | 12 |
| Diethyl Phthalate | 53 | 4.95 | 61 | 56 |
| Dimethyl Phthalate | 53 | 4.95 | 53 | 48 |
| Di-N-Butyl Phthalate | 53 | 4.95 | 220 | 215 |
| Di-N-Octyl Phthalate | 53 | 4.95 | 58 | 53 |
| Fluorene | 27 | 2.52 | 23 | 20 |
| Fluoranthene | 27 | 2.52 | 160 | 157 |
| Hexachlorobenzene | 5.3 | 0.50 | 0.38 | -0.12 |
| Hexachlorobutadiene | 13 | 1.21 | 3.9 | 2.7 |
| Indeno(1,2,3-Cd)Pyrene | 27 | 2.52 | 34 | 31 |
| N-Nitrosodiphenylamine | 53 | 4.95 | 11 | 6 |
| Naphthalene | 27 | 2.52 | 99 | 96 |
| Pentachlorophenol | 130 | 238.10 | 360 | 122 |
| Phenanthrene | 27 | 2.52 | 100 | 97 |
| Phenol | 53 | 97.07 | 420 | 323 |
| Pyrene | 27 | 2.52 | 1000 | 997 |
| Aroclor 1016 | 27 | 2.52 | | |
| Aroclor 1221 | 2.5 | 0.23 | | |
| Aroclor 1232 | 48 | 4.49 | | |
| Aroclor 1242 | 47 | 4.39 | | |
| Aroclor 1248 | 1.3 | 0.12 | | |
| Aroclor 1254 | 1.3 | 0.12 | | |
| Aroclor 1260 | 1.3 | 0.12 | | |
| Total Organic Carbon (dry) | 19597.0696 | | | |
| Total Solids | 54.6 | | | |
| HPAH | 270 | 25.23 | 960 | 935 |
| LPAH | 189 | 17.66 | 370 | 352 |
| Total PCB | 48 | 4.49 | 12 | 7.5 |

SMS OC and Dry Weight Normalization Detection Limit Check

| | MDL (ug/Kg, ww) | MDL (mg/Kg, dw, oc) | SMS (mg/Kg, dw,oc) | Delta (SMS-MDL) |
|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 0.27 | 0.07 | 0.81 | 0.74 |
| 1,2-Dichlorobenzene | 0.27 | 0.07 | 2.3 | 2.2 |
| 1,4-Dichlorobenzene | 0.27 | 0.07 | 3.1 | 3.0 |
| 2-Methylnaphthalene | 2.7 | 0.75 | 38 | 37 |
| 2,4-Dimethylphenol | 2.7 | 3.60 | 29 | 25 |
| 2-Methylphenol | 5.3 | 7.07 | 63 | 56 |
| 4-Methylphenol | 5.3 | 7.07 | 670 | 663 |
| Acenaphthene | 2.7 | 0.75 | 16 | 15 |
| Acenaphthylene | 2.7 | 0.75 | 66 | 65 |
| Anthracene | 2.7 | 0.75 | 220 | 219 |
| Benzo(a)anthracene | 2.7 | 0.75 | 110 | 109 |
| Benzo(a)pyrene | 2.7 | 0.75 | 99 | 98 |
| Benzo(b)fluoranthene | 2.7 | 0.75 | 115 | 114 |
| Benzo(g,h,i)perylene | 2.7 | 0.75 | 31 | 30 |
| Benzo(k)fluoranthene | 2.7 | 0.75 | 115 | 114 |
| Benzoic Acid | 13 | 17.33 | 650 | 633 |
| Benzyl Alcohol | 5.3 | 7.07 | 57 | 50 |
| Benzyl Butyl Phthalate | 5.3 | 1.46 | 4.9 | 3.4 |
| Bis(2-Ethylhexyl)Phthalate | 5.3 | 1.46 | 47 | 46 |
| Chrysene | 2.7 | 0.75 | 110 | 109 |
| Dibenzo(a,h)anthracene | 2.7 | 0.75 | 12 | 11 |
| Dibenzofuran | 2.7 | 0.75 | 15 | 14 |
| Diethyl Phthalate | 5.3 | 1.46 | 61 | 60 |
| Dimethyl Phthalate | 5.3 | 1.46 | 53 | 52 |
| Di-N-Butyl Phthalate | 5.3 | 1.46 | 220 | 219 |
| Di-N-Octyl Phthalate | 5.3 | 1.46 | 58 | 57 |
| Fluorene | 2.7 | 0.75 | 23 | 22 |
| Fluoranthene | 2.7 | 0.75 | 160 | 159 |
| Hexachlorobenzene | 0.53 | 0.15 | 0.38 | 0.23 |
| Hexachlorobutadiene | 1.3 | 0.36 | 3.9 | 3.5 |
| Indeno(1,2,3-Cd)Pyrene | 2.7 | 0.75 | 34 | 33 |
| N-Nitrosodiphenylamine | 5.3 | 1.46 | 11 | 10 |
| Naphthalene | 2.7 | 0.75 | 99 | 98 |
| Pentachlorophenol | 13 | 17.33 | 360 | 343 |
| Phenanthrene | 2.7 | 0.75 | 100 | 99 |
| Phenol | 5.3 | 7.07 | 420 | 413 |
| Pyrene | 2.7 | 0.75 | 1000 | 999 |
| Aroclor 1016 | 30 | 8.29 | | |
| Aroclor 1221 | 2.5 | 0.69 | | |
| Aroclor 1232 | 59 | 16.30 | | |
| Aroclor 1242 | 64 | 17.68 | | |
| Aroclor 1248 | 1.3 | 0.36 | | |
| Aroclor 1254 | 1.3 | 0.36 | | |
| Aroclor 1260 | 1.3 | 0.36 | | |
| Total Organic Carbon (dry) | 4826.666667 | | | |
| Total Solids | 75 | | | |
| HPAH | 27 | 7.46 | 960 | 953 |
| LPAH | 18.9 | 5.22 | 370 | 365 |
| Total PCB | 64 | 17.68 | 12 | -5.7 |

SMS OC and Dry Weight Normalization Detection Limit Check

| | MDL (ug/Kg, ww) | MDL (mg/Kg, dw, oc) | SMS (mg/Kg, dw,oc) | Delta (SMS-MDL) |
|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 0.27 | 0.05 | 0.81 | 0.76 |
| 1,2-Dichlorobenzene | 0.27 | 0.05 | 2.3 | 2.3 |
| 1,4-Dichlorobenzene | 0.27 | 0.05 | 3.1 | 3.1 |
| 2-Methylnaphthalene | 2.7 | 0.50 | 38 | 38 |
| 2,4-Dimethylphenol | 2.7 | 3.70 | 29 | 25 |
| 2-Methylphenol | 5.3 | 7.27 | 63 | 56 |
| 4-Methylphenol | 5.3 | 7.27 | 670 | 663 |
| Acenaphthene | 2.7 | 0.50 | 16 | 16 |
| Acenaphthylene | 2.7 | 0.50 | 66 | 66 |
| Anthracene | 2.7 | 0.50 | 220 | 220 |
| Benzo(a)anthracene | 2.7 | 0.50 | 110 | 110 |
| Benzo(a)pyrene | 2.7 | 0.50 | 99 | 99 |
| Benzo(b)fluoranthene | 2.7 | 0.50 | 115 | 115 |
| Benzo(g,h,i)perylene | 2.7 | 0.50 | 31 | 31 |
| Benzo(k)fluoranthene | 2.7 | 0.50 | 115 | 115 |
| Benzoic Acid | 13 | 17.83 | 650 | 632 |
| Benzyl Alcohol | 5.3 | 7.27 | 57 | 50 |
| Benzyl Butyl Phthalate | 5.3 | 0.98 | 4.9 | 3.9 |
| Bis(2-Ethylhexyl)Phthalate | 5.3 | 0.98 | 47 | 46 |
| Chrysene | 2.7 | 0.50 | 110 | 110 |
| Dibenzo(a,h)anthracene | 2.7 | 0.50 | 12 | 12 |
| Dibenzofuran | 2.7 | 0.50 | 15 | 15 |
| Diethyl Phthalate | 5.3 | 0.98 | 61 | 60 |
| Dimethyl Phthalate | 5.3 | 0.98 | 53 | 52 |
| Di-N-Butyl Phthalate | 5.3 | 0.98 | 220 | 219 |
| Di-N-Octyl Phthalate | 5.3 | 0.98 | 58 | 57 |
| Fluorene | 2.7 | 0.50 | 23 | 23 |
| Fluoranthene | 2.7 | 0.50 | 160 | 160 |
| Hexachlorobenzene | 0.53 | 0.10 | 0.38 | 0.28 |
| Hexachlorobutadiene | 1.3 | 0.24 | 3.9 | 3.7 |
| Indeno(1,2,3-Cd)Pyrene | 2.7 | 0.50 | 34 | 34 |
| N-Nitrosodiphenylamine | 5.3 | 0.98 | 11 | 10 |
| Naphthalene | 2.7 | 0.50 | 99 | 99 |
| Pentachlorophenol | 13 | 17.83 | 360 | 342 |
| Phenanthrene | 2.7 | 0.50 | 100 | 100 |
| Phenol | 5.3 | 7.27 | 420 | 413 |
| Pyrene | 2.7 | 0.50 | 1000 | 1000 |
| Aroclor 1016 | 97 | 17.93 | | |
| Aroclor 1221 | 2.5 | 0.46 | | |
| Aroclor 1232 | 180 | 33.27 | | |
| Aroclor 1242 | 160 | 29.57 | | |
| Aroclor 1248 | 1.3 | 0.24 | | |
| Aroclor 1254 | 1.3 | 0.24 | | |
| Aroclor 1260 | 1.3 | 0.24 | | |
| Total Organic Carbon (dry) | 7421.124829 | | | |
| Total Solids | 72.9 | | | |
| HPAH | 27 | 4.99 | 960 | 955 |
| LPAH | 18.9 | 3.49 | 370 | 367 |
| Total PCB | 180 | 33.27 | 12 | -21.3 |

SMS OC and Dry Weight Normalization Detection Limit Check

| | MDL (ug/Kg, ww) | MDL (mg/Kg, dw, oc) | SMS (mg/Kg, dw,oc) | Delta (SMS-MDL) |
|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 0.27 | 0.08 | 0.81 | 0.73 |
| 1,2-Dichlorobenzene | 0.27 | 0.08 | 2.3 | 2.2 |
| 1,4-Dichlorobenzene | 0.27 | 0.08 | 3.1 | 3.0 |
| 2-Methylnaphthalene | 2.7 | 0.81 | 38 | 37 |
| 2,4-Dimethylphenol | 2.7 | 3.55 | 29 | 25 |
| 2-Methylphenol | 5.3 | 6.96 | 63 | 56 |
| 4-Methylphenol | 5.3 | 6.96 | 670 | 663 |
| Acenaphthene | 2.7 | 0.81 | 16 | 15 |
| Acenaphthylene | 2.7 | 0.81 | 66 | 65 |
| Anthracene | 2.7 | 0.81 | 220 | 219 |
| Benzo(a)anthracene | 2.7 | 0.81 | 110 | 109 |
| Benzo(a)pyrene | 2.7 | 0.81 | 99 | 98 |
| Benzo(b)fluoranthene | 2.7 | 0.81 | 115 | 114 |
| Benzo(g,h,i)perylene | 2.7 | 0.81 | 31 | 30 |
| Benzo(k)fluoranthene | 2.7 | 0.81 | 115 | 114 |
| Benzoic Acid | 13 | 17.08 | 650 | 633 |
| Benzyl Alcohol | 5.3 | 6.96 | 57 | 50 |
| Benzyl Butyl Phthalate | 5.3 | 1.59 | 4.9 | 3.3 |
| Bis(2-Ethylhexyl)Phthalate | 5.3 | 1.59 | 47 | 45 |
| Chrysene | 2.7 | 0.81 | 110 | 109 |
| Dibenzo(a,h)anthracene | 2.7 | 0.81 | 12 | 11 |
| Dibenzofuran | 2.7 | 0.81 | 15 | 14 |
| Diethyl Phthalate | 5.3 | 1.59 | 61 | 59 |
| Dimethyl Phthalate | 5.3 | 1.59 | 53 | 51 |
| Di-N-Butyl Phthalate | 5.3 | 1.59 | 220 | 218 |
| Di-N-Octyl Phthalate | 5.3 | 1.59 | 58 | 56 |
| Fluorene | 2.7 | 0.81 | 23 | 22 |
| Fluoranthene | 2.7 | 0.81 | 160 | 159 |
| Hexachlorobenzene | 0.53 | 0.16 | 0.38 | 0.22 |
| Hexachlorobutadiene | 1.3 | 0.39 | 3.9 | 3.5 |
| Indeno(1,2,3-Cd)Pyrene | 2.7 | 0.81 | 34 | 33 |
| N-Nitrosodiphenylamine | 5.3 | 1.59 | 11 | 9 |
| Naphthalene | 2.7 | 0.81 | 99 | 98 |
| Pentachlorophenol | 13 | 17.08 | 360 | 343 |
| Phenanthrene | 2.7 | 0.81 | 100 | 99 |
| Phenol | 5.3 | 6.96 | 420 | 413 |
| Pyrene | 2.7 | 0.81 | 1000 | 999 |
| Aroclor 1016 | 53 | 15.87 | | |
| Aroclor 1221 | 2.5 | 0.75 | | |
| Aroclor 1232 | 95 | 28.44 | | |
| Aroclor 1242 | 100 | 29.94 | | |
| Aroclor 1248 | 1.3 | 0.39 | | |
| Aroclor 1254 | 1.3 | 0.39 | | |
| Aroclor 1260 | 1.3 | 0.39 | | |
| Total Organic Carbon (dry) | 4388.961892 | | | |
| Total Solids | 76.1 | | | |
| HPAH | 27 | 8.08 | 960 | 952 |
| LPAH | 18.9 | 5.66 | 370 | 364 |
| Total PCB | 100 | 29.94 | 12 | -17.9 |

SMS OC and Dry Weight Normalization Detection Limit Check

| | MDL (ug/Kg, ww) | MDL (mg/Kg, dw, oc) | SMS (mg/Kg, dw,oc) | Delta (SMS-MDL) |
|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 0.27 | 0.04 | 0.81 | 0.77 |
| 1,2-Dichlorobenzene | 0.27 | 0.04 | 2.3 | 2.3 |
| 1,4-Dichlorobenzene | 0.27 | 0.04 | 3.1 | 3.1 |
| 2-Methylnaphthalene | 2.7 | 0.43 | 38 | 38 |
| 2,4-Dimethylphenol | 2.7 | 4.05 | 29 | 25 |
| 2-Methylphenol | 5.3 | 7.96 | 63 | 55 |
| 4-Methylphenol | 5.3 | 7.96 | 670 | 662 |
| Acenaphthene | 2.7 | 0.43 | 16 | 16 |
| Acenaphthylene | 2.7 | 0.43 | 66 | 66 |
| Anthracene | 2.7 | 0.43 | 220 | 220 |
| Benzo(a)anthracene | 2.7 | 0.43 | 110 | 110 |
| Benzo(a)pyrene | 2.7 | 0.43 | 99 | 99 |
| Benzo(b)fluoranthene | 2.7 | 0.43 | 115 | 115 |
| Benzo(g,h,i)perylene | 2.7 | 0.43 | 31 | 31 |
| Benzo(k)fluoranthene | 2.7 | 0.43 | 115 | 115 |
| Benzoic Acid | 13 | 19.52 | 650 | 630 |
| Benzyl Alcohol | 5.3 | 7.96 | 57 | 49 |
| Benzyl Butyl Phthalate | 5.3 | 0.84 | 4.9 | 4.1 |
| Bis(2-Ethylhexyl)Phthalate | 5.3 | 0.84 | 47 | 46 |
| Chrysene | 2.7 | 0.43 | 110 | 110 |
| Dibenzo(a,h)anthracene | 2.7 | 0.43 | 12 | 12 |
| Dibenzofuran | 2.7 | 0.43 | 15 | 15 |
| Diethyl Phthalate | 5.3 | 0.84 | 61 | 60 |
| Dimethyl Phthalate | 5.3 | 0.84 | 53 | 52 |
| Di-N-Butyl Phthalate | 5.3 | 0.84 | 220 | 219 |
| Di-N-Octyl Phthalate | 5.3 | 0.84 | 58 | 57 |
| Fluorene | 2.7 | 0.43 | 23 | 23 |
| Fluoranthene | 2.7 | 0.43 | 160 | 160 |
| Hexachlorobenzene | 0.53 | 0.08 | 0.38 | 0.30 |
| Hexachlorobutadiene | 1.3 | 0.21 | 3.9 | 3.7 |
| Indeno(1,2,3-Cd)Pyrene | 2.7 | 0.43 | 34 | 34 |
| N-Nitrosodiphenylamine | 5.3 | 0.84 | 11 | 10 |
| Naphthalene | 2.7 | 0.43 | 99 | 99 |
| Pentachlorophenol | 13 | 19.52 | 360 | 340 |
| Phenanthrene | 2.7 | 0.43 | 100 | 100 |
| Phenol | 5.3 | 7.96 | 420 | 412 |
| Pyrene | 2.7 | 0.43 | 1000 | 1000 |
| Aroclor 1016 | 41 | 6.52 | | |
| Aroclor 1221 | 2.5 | 0.40 | | |
| Aroclor 1232 | 71 | 11.29 | | |
| Aroclor 1242 | 89 | 14.15 | | |
| Aroclor 1248 | 1.3 | 0.21 | | |
| Aroclor 1254 | 1.3 | 0.21 | | |
| Aroclor 1260 | 1.3 | 0.21 | | |
| Total Organic Carbon (dry) | 9444.444444 | | | |
| Total Solids | 66.6 | | | |
| HPAH | 27 | 4.29 | 960 | 956 |
| LPAH | 18.9 | 3.00 | 370 | 367 |
| Total PCB | 89 | 14.15 | 12 | -2.1 |

SMS OC and Dry Weight Normalization Detection Limit Check

| | MDL (ug/Kg, ww) | MDL (mg/Kg, dw, oc) | SMS (mg/Kg, dw,oc) | Delta (SMS-MDL) |
|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 0.27 | 0.06 | 0.81 | 0.75 |
| 1,2-Dichlorobenzene | 0.27 | 0.06 | 2.3 | 2.2 |
| 1,4-Dichlorobenzene | 0.27 | 0.06 | 3.1 | 3.0 |
| 2-Methylnaphthalene | 2.7 | 0.59 | 38 | 37 |
| 2,4-Dimethylphenol | 2.7 | 3.46 | 29 | 26 |
| 2-Methylphenol | 5.3 | 6.79 | 63 | 56 |
| 4-Methylphenol | 5.3 | 6.79 | 670 | 663 |
| Acenaphthene | 2.7 | 0.59 | 16 | 15 |
| Acenaphthylene | 2.7 | 0.59 | 66 | 65 |
| Anthracene | 2.7 | 0.59 | 220 | 219 |
| Benzo(a)anthracene | 2.7 | 0.59 | 110 | 109 |
| Benzo(a)pyrene | 2.7 | 0.59 | 99 | 98 |
| Benzo(b)fluoranthene | 2.7 | 0.59 | 115 | 114 |
| Benzo(g,h,i)perylene | 2.7 | 0.59 | 31 | 30 |
| Benzo(k)fluoranthene | 2.7 | 0.59 | 115 | 114 |
| Benzoic Acid | 13 | 16.67 | 650 | 633 |
| Benzyl Alcohol | 5.3 | 6.79 | 57 | 50 |
| Benzyl Butyl Phthalate | 5.3 | 1.15 | 4.9 | 3.7 |
| Bis(2-Ethylhexyl)Phthalate | 5.3 | 1.15 | 47 | 46 |
| Chrysene | 2.7 | 0.59 | 110 | 109 |
| Dibenzo(a,h)anthracene | 2.7 | 0.59 | 12 | 11 |
| Dibenzofuran | 2.7 | 0.59 | 15 | 14 |
| Diethyl Phthalate | 5.3 | 1.15 | 61 | 60 |
| Dimethyl Phthalate | 5.3 | 1.15 | 53 | 52 |
| Di-N-Butyl Phthalate | 5.3 | 1.15 | 220 | 219 |
| Di-N-Octyl Phthalate | 5.3 | 1.15 | 58 | 57 |
| Fluorene | 2.7 | 0.59 | 23 | 22 |
| Fluoranthene | 2.7 | 0.59 | 160 | 159 |
| Hexachlorobenzene | 0.53 | 0.12 | 0.38 | 0.26 |
| Hexachlorobutadiene | 1.3 | 0.28 | 3.9 | 3.6 |
| Indeno(1,2,3-Cd)Pyrene | 2.7 | 0.59 | 34 | 33 |
| N-Nitrosodiphenylamine | 5.3 | 1.15 | 11 | 10 |
| Naphthalene | 2.7 | 0.59 | 99 | 98 |
| Pentachlorophenol | 13 | 16.67 | 360 | 343 |
| Phenanthrene | 2.7 | 0.59 | 100 | 99 |
| Phenol | 5.3 | 6.79 | 420 | 413 |
| Pyrene | 2.7 | 0.59 | 1000 | 999 |
| Aroclor 1016 | 6 | 1.31 | | |
| Aroclor 1221 | 2.5 | 0.54 | | |
| Aroclor 1232 | 8.1 | 1.76 | | |
| Aroclor 1242 | 9.5 | 2.07 | | |
| Aroclor 1248 | 1.3 | 0.28 | | |
| Aroclor 1254 | 1.3 | 0.28 | | |
| Aroclor 1260 | 1.3 | 0.28 | | |
| Total Organic Carbon (dry) | 5884.615385 | | | |
| Total Solids | 78 | | | |
| HPAH | 27 | 5.88 | 960 | 954 |
| LPAH | 18.9 | 4.12 | 370 | 366 |
| Total PCB | 10 | 2.07 | 12 | 9.9 |

SMS OC and Dry Weight Normalization Detection Limit Check

| | MDL (ug/Kg, ww) | MDL (mg/Kg, dw, oc) | SMS (mg/Kg, dw,oc) | Delta (SMS-MDL) |
|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 0.27 | 0.06 | 0.81 | 0.75 |
| 1,2-Dichlorobenzene | 0.27 | 0.06 | 2.3 | 2.2 |
| 1,4-Dichlorobenzene | 0.27 | 0.06 | 3.1 | 3.0 |
| 2-Methylnaphthalene | 2.7 | 0.58 | 38 | 37 |
| 2,4-Dimethylphenol | 2.7 | 3.82 | 29 | 25 |
| 2-Methylphenol | 5.3 | 7.50 | 63 | 56 |
| 4-Methylphenol | 5.3 | 7.50 | 670 | 663 |
| Acenaphthene | 2.7 | 0.58 | 16 | 15 |
| Acenaphthylene | 2.7 | 0.58 | 66 | 65 |
| Anthracene | 2.7 | 0.58 | 220 | 219 |
| Benzo(a)anthracene | 2.7 | 0.58 | 110 | 109 |
| Benzo(a)pyrene | 2.7 | 0.58 | 99 | 98 |
| Benzo(b)fluoranthene | 2.7 | 0.58 | 115 | 114 |
| Benzo(g,h,i)perylene | 2.7 | 0.58 | 31 | 30 |
| Benzo(k)fluoranthene | 2.7 | 0.58 | 115 | 114 |
| Benzoic Acid | 13 | 18.39 | 650 | 632 |
| Benzyl Alcohol | 5.3 | 7.50 | 57 | 50 |
| Benzyl Butyl Phthalate | 5.3 | 1.13 | 4.9 | 3.8 |
| Bis(2-Ethylhexyl)Phthalate | 5.3 | 1.13 | 47 | 46 |
| Chrysene | 2.7 | 0.58 | 110 | 109 |
| Dibenzo(a,h)anthracene | 2.7 | 0.58 | 12 | 11 |
| Dibenzofuran | 2.7 | 0.58 | 15 | 14 |
| Diethyl Phthalate | 5.3 | 1.13 | 61 | 60 |
| Dimethyl Phthalate | 5.3 | 1.13 | 53 | 52 |
| Di-N-Butyl Phthalate | 5.3 | 1.13 | 220 | 219 |
| Di-N-Octyl Phthalate | 5.3 | 1.13 | 58 | 57 |
| Fluorene | 2.7 | 0.58 | 23 | 22 |
| Fluoranthene | 2.7 | 0.58 | 160 | 159 |
| Hexachlorobenzene | 0.53 | 0.11 | 0.38 | 0.27 |
| Hexachlorobutadiene | 1.3 | 0.28 | 3.9 | 3.6 |
| Indeno(1,2,3-Cd)Pyrene | 2.7 | 0.58 | 34 | 33 |
| N-Nitrosodiphenylamine | 5.3 | 1.13 | 11 | 10 |
| Naphthalene | 2.7 | 0.58 | 99 | 98 |
| Pentachlorophenol | 13 | 18.39 | 360 | 342 |
| Phenanthrene | 2.7 | 0.58 | 100 | 99 |
| Phenol | 5.3 | 7.50 | 420 | 413 |
| Pyrene | 2.7 | 0.58 | 1000 | 999 |
| Aroclor 1016 | 60 | 12.82 | | |
| Aroclor 1221 | 2.5 | 0.53 | | |
| Aroclor 1232 | 110 | 23.50 | | |
| Aroclor 1242 | 120 | 25.64 | | |
| Aroclor 1248 | 1.3 | 0.28 | | |
| Aroclor 1254 | 1.3 | 0.28 | | |
| Aroclor 1260 | 1.3 | 0.28 | | |
| Total Organic Carbon (dry) | 6619.519095 | | | |
| Total Solids | 70.7 | | | |
| HPAH | 27 | 5.77 | 960 | 954 |
| LPAH | 18.9 | 4.04 | 370 | 366 |
| Total PCB | 120 | 25.64 | 12 | -13.6 |

SMS OC and Dry Weight Normalization Detection Limit Check

| | MDL (ug/Kg, ww) | MDL (mg/Kg, dw, oc) | SMS (mg/Kg, dw,oc) | Delta (SMS-MDL) |
|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 0.27 | 0.03 | 0.81 | 0.78 |
| 1,2-Dichlorobenzene | 0.27 | 0.03 | 2.3 | 2.3 |
| 1,4-Dichlorobenzene | 0.27 | 0.03 | 3.1 | 3.1 |
| 2-Methylnaphthalene | 2.7 | 0.30 | 38 | 38 |
| 2,4-Dimethylphenol | 2.7 | 4.86 | 29 | 24 |
| 2-Methylphenol | 5.3 | 9.53 | 63 | 53 |
| 4-Methylphenol | 5.3 | 9.53 | 670 | 660 |
| Acenaphthene | 2.7 | 0.30 | 16 | 16 |
| Acenaphthylene | 2.7 | 0.30 | 66 | 66 |
| Anthracene | 2.7 | 0.30 | 220 | 220 |
| Benzo(a)anthracene | 2.7 | 0.30 | 110 | 110 |
| Benzo(a)pyrene | 2.7 | 0.30 | 99 | 99 |
| Benzo(b)fluoranthene | 2.7 | 0.30 | 115 | 115 |
| Benzo(g,h,i)perylene | 2.7 | 0.30 | 31 | 31 |
| Benzo(k)fluoranthene | 2.7 | 0.30 | 115 | 115 |
| Benzoic Acid | 13 | 23.38 | 650 | 627 |
| Benzyl Alcohol | 5.3 | 9.53 | 57 | 47 |
| Benzyl Butyl Phthalate | 5.3 | 0.58 | 4.9 | 4.3 |
| Bis(2-Ethylhexyl)Phthalate | 5.3 | 0.58 | 47 | 46 |
| Chrysene | 2.7 | 0.30 | 110 | 110 |
| Dibenzo(a,h)anthracene | 2.7 | 0.30 | 12 | 12 |
| Dibenzofuran | 2.7 | 0.30 | 15 | 15 |
| Diethyl Phthalate | 5.3 | 0.58 | 61 | 60 |
| Dimethyl Phthalate | 5.3 | 0.58 | 53 | 52 |
| Di-N-Butyl Phthalate | 5.3 | 0.58 | 220 | 219 |
| Di-N-Octyl Phthalate | 5.3 | 0.58 | 58 | 57 |
| Fluorene | 2.7 | 0.30 | 23 | 23 |
| Fluoranthene | 2.7 | 0.30 | 160 | 160 |
| Hexachlorobenzene | 0.53 | 0.06 | 0.38 | 0.32 |
| Hexachlorobutadiene | 1.3 | 0.14 | 3.9 | 3.8 |
| Indeno(1,2,3-Cd)Pyrene | 2.7 | 0.30 | 34 | 34 |
| N-Nitrosodiphenylamine | 5.3 | 0.58 | 11 | 10 |
| Naphthalene | 2.7 | 0.30 | 99 | 99 |
| Pentachlorophenol | 13 | 23.38 | 360 | 337 |
| Phenanthrene | 2.7 | 0.30 | 100 | 100 |
| Phenol | 5.3 | 9.53 | 420 | 410 |
| Pyrene | 2.7 | 0.30 | 1000 | 1000 |
| Aroclor 1016 | 40 | 4.40 | | |
| Aroclor 1221 | 2.5 | 0.27 | | |
| Aroclor 1232 | 69 | 7.58 | | |
| Aroclor 1242 | 87 | 9.56 | | |
| Aroclor 1248 | 1.3 | 0.14 | | |
| Aroclor 1254 | 1.3 | 0.14 | | |
| Aroclor 1260 | 1.3 | 0.14 | | |
| Total Organic Carbon (dry) | 16366.90647 | | | |
| Total Solids | 55.6 | | | |
| HPAH | 27 | 2.97 | 960 | 957 |
| LPAH | 18.9 | 2.08 | 370 | 368 |
| Total PCB | 87 | 9.56 | 12 | 2.4 |

# CONVENTIONAL ANALYSES QC DATA

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Apr 14 2006, 02:01 pm

Work Group: WG85271 (TOTS 423062-100-4) for Department: 3 - Conventionals

Created: 14-APR-06 PrepDate: Due: Operator: CB

| Sample | Project Number | Project Description | PKey | C | Product | Matrix | Stat | UA | Workdate | Duedate |
|---|---|---|---|---|---|---|---|---|---|---|
| L38325-8 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | TOTS | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38325-9 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | TOTS | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38326-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOTS | SALTWTRSED | ANAL | U | 08-MAR-06 | 24-APR-06 |
| L38326-10 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOTS | SALTWTRSED | ANAL | U | 08-MAR-06 | 24-APR-06 |
| L38326-11 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOTS | SALTWTRSED | ANAL | U | 08-MAR-06 | 24-APR-06 |
| L38326-12 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOTS | SALTWTRSED | ANAL | U | 08-MAR-06 | 24-APR-06 |
| L38326-13 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOTS | SALTWTRSED | ANAL | U | 09-MAR-06 | 24-APR-06 |
| L38326-14 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOTS | SALTWTRSED | ANAL | U | 09-MAR-06 | 24-APR-06 |
| L38326-15 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOTS | SALTWTRSED | ANAL | U | 09-MAR-06 | 24-APR-06 |
| L38326-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOTS | SALTWTRSED | ANAL | U | 08-MAR-06 | 24-APR-06 |
| L38326-9 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOTS | SALTWTRSED | ANAL | U | 08-MAR-06 | 24-APR-06 |
| WG85271-1 | MB | | | S | TOTS | OTHR SOLID | ANAL | U | 14-APR-06 | |
| WG85271-2 | LD | | SED | S | TOTS | SALTWTRSED | ANAL | U | 14-APR-06 | |
| WG85271-3 | LT | | SED | S | TOTS | SALTWTRSED | ANAL | U | 14-APR-06 | |

Comments:

| | |
|---|---|
| L38325-8 | 3 grab comp, 0-10 cm |
| L38325-9 | 3 grab comp, 0-10 cm |
| L38326-1 | 10 Grab Comp, 0-10 cm |
| L38326-10 | 10 Grab Comp, FREP |
| L38326-11 | 10 Grab Comp, 0-10 cm |
| L38326-12 | 10 Grab Comp, 0-10 cm |
| L38326-13 | 10 Grab Comp, 0-10 cm |
| L38326-14 | 10 Grab Comp, 0-10 cm |
| L38326-15 | 10 Grab Comp, 0-10 cm |
| L38326-2 | 10 Grab Comp, 0-10 cm |
| L38326-9 | 10 Grab Comp, AREP |
| WG85271-1 | MB2 041006 |
| WG85271-2 | L38325-9 |
| WG85271-3 | WG85271-2 L38325-9 |

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 04/14/06 02:03
Run ID: R113004 Workgroup: WG85271 (TOTS 423062-100-4)

MB:WG85271-1 Matrix: OTHR SOLID Listtype: CVTOTS Method: SM2540-G (03-01-007-002) Project: Pkey: SED
(Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Qual |
|---|---|---|---|---|---|
| Total Solids | .005 | .01 | % | <MDL | |

LT:WG85271-3 LD:WG85271-2 L38325-9 Matrix: SALTWTRSED Listtype: CVTOTS Method: SM2540-G (03-01-007-002) Project: 423062-100-4 Pkey: SED
(Lab Triplicate, Lab Duplicate)

| Parameter | Mdl | Rdl | Units | SampValue | LD Value | LT Value | RSD | Qual | LabLimi |
|---|---|---|---|---|---|---|---|---|---|
| Total Solids | .005 | .01 | % | 66.7 | 65.9 | 68.8 | 2 | | 20 |

| WG85271 | CVTOTS | |
|---|---|---|
| Sample Number | % | Prep Date |
| Date Analyzed | 04/10/06 | |
| WG85271-1 | 0.000 | 04/10/06 |
| L38325-8 | 70.546 | 04/10/06 |
| L38325-9 | 66.685 | 04/10/06 |
| WG85271-2 | 65.938 | 04/10/06 |
| WG85271-3 | 68.794 | 04/10/06 |
| L38326-1 | 55.408 | 04/10/06 |
| L38326-2 | 54.610 | 04/10/06 |
| L38326-9 | 74.976 | 04/10/06 |
| L38326-10 | 72.900 | 04/10/06 |
| L38326-11 | 76.060 | 04/10/06 |
| L38326-12 | 66.576 | 04/10/06 |
| L38326-13 | 78.015 | 04/10/06 |
| L38326-14 | 70.661 | 04/10/06 |
| L38326-15 | 55.587 | 04/10/06 |

# Total Solids (Solid Matrix) - Balance Link Template

**Date Analyzed:** 4/10/2006 **Analyst:** CB

| Sample # | Crucible # | Initial Crucible Weight (g) | Sample Weight (g) | Final Crucible Weight (g) | Total Solids (%) | Comment |
|---|---|---|---|---|---|---|
| MB2 041006 | 15 | 2.2256 | 20.0000 | 2.2256 | 0.000 | WG85271-1 |
| L38325-8 | 16 | 2.2297 | 19.8296 | 16.2186 | 70.546 | |
| L38325-9 | 17 | 2.1919 | 20.4226 | 15.8107 | 66.685 | |
| L38325-9LD | 18 | 2.1806 | 19.7021 | 15.1717 | 65.938 | WG85271-2 |
| L38325-9LT | 19 | 2.1874 | 19.3367 | 15.4898 | 68.794 | WG85271-3 |
| L38326-1 | 20 | 2.1803 | 19.4773 | 12.9723 | 55.408 | |
| L38326-2 | 21 | 2.2235 | 21.4297 | 13.9263 | 54.610 | |
| L38326-9 | 22 | 2.2205 | 18.2824 | 15.9279 | 74.976 | |
| L38326-10 | 23 | 2.2138 | 21.0297 | 17.5444 | 72.900 | |
| L38326-11 | 24 | 2.2054 | 21.6633 | 18.6826 | 76.060 | |
| L38326-12 | 25 | 2.1800 | 20.1492 | 15.5946 | 66.576 | |
| L38326-13 | 26 | 2.2052 | 19.7175 | 17.5878 | 78.015 | |
| L38326-14 | 27 | 2.2194 | 19.5475 | 16.0318 | 70.661 | |
| L38326-15 | 28 | 2.1871 | 20.3508 | 13.4996 | 55.587 | |
| | | | | | | |
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King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Apr 20 2006, 03:25 pm

Work Group: WG85335 (DUDI SEDS) for Department: 3 - Conventionals

Created: 20-APR-06 PrepDate: Due: Operator:

| Sample | Project Number | Project Description | PKey | C | Product | Matrix | Stat | UA | Workdate | Duedate |
|---|---|---|---|---|---|---|---|---|---|---|
| L38325-1 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | TOC | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38325-2 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | TOC | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38325-3 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | TOC | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38325-4 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | TOC | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38325-5 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | TOC | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38325-6 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | TOC | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38325-7 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | TOC | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38325-8 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | TOC | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38325-9 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | TOC | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38326-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOC | SALTWTRSED | ANAL | U | 08-MAR-06 | 24-APR-06 |
| L38326-10 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOC | SALTWTRSED | ANAL | U | 08-MAR-06 | 24-APR-06 |
| L38326-11 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOC | SALTWTRSED | ANAL | U | 08-MAR-06 | 24-APR-06 |
| L38326-12 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOC | SALTWTRSED | ANAL | U | 08-MAR-06 | 24-APR-06 |
| L38326-13 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOC | SALTWTRSED | ANAL | U | 09-MAR-06 | 24-APR-06 |
| L38326-14 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOC | SALTWTRSED | ANAL | U | 09-MAR-06 | 24-APR-06 |
| L38326-15 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOC | SALTWTRSED | ANAL | U | 09-MAR-06 | 24-APR-06 |
| L38326-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOC | SALTWTRSED | ANAL | U | 08-MAR-06 | 24-APR-06 |
| L38326-9 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOC | SALTWTRSED | ANAL | U | 08-MAR-06 | 24-APR-06 |
| L38327-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOC | SALTWTRSED | ANAL | U | 10-MAR-06 | 24-APR-06 |
| L38327-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOC | SALTWTRSED | ANAL | U | 10-MAR-06 | 24-APR-06 |
| L38327-3 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOC | SALTWTRSED | ANAL | U | 10-MAR-06 | 24-APR-06 |
| L38327-4 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOC | SALTWTRSED | ANAL | U | 10-MAR-06 | 24-APR-06 |
| L38327-5 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOC | SALTWTRSED | ANAL | U | 10-MAR-06 | 24-APR-06 |
| L38327-6 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOC | SALTWTRSED | ANAL | U | 10-MAR-06 | 24-APR-06 |
| L38327-7 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOC | SALTWTRSED | ANAL | U | 10-MAR-06 | 24-APR-06 |
| L38327-8 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | TOC | SALTWTRSED | ANAL | U | 10-MAR-06 | 24-APR-06 |
| WG85335-1 | MB | | | S | TOC | OTHR SOLID | ANAL | U | 20-APR-06 | |
| WG85335-10 | SRM | | SED | S | TOC | SALTWTRSED | ANAL | U | 20-APR-06 | |
| WG85335-11 | SB | | | S | TOC | OTHR SOLID | ANAL | U | 20-APR-06 | |
| WG85335-12 | LD | | SED | S | TOC | SALTWTRSED | ANAL | U | 20-APR-06 | |
| WG85335-13 | LT | | SED | S | TOC | SALTWTRSED | ANAL | U | 20-APR-06 | |
| WG85335-14 | MS | | SED | S | TOC | SALTWTRSED | ANAL | U | 20-APR-06 | |
| WG85335-2 | SRM | | SED | S | TOC | SALTWTRSED | ANAL | U | 20-APR-06 | |
| WG85335-3 | SB | | | S | TOC | OTHR SOLID | ANAL | U | 20-APR-06 | |
| WG85335-4 | LD | | SED | S | TOC | SALTWTRSED | ANAL | U | 20-APR-06 | |
| WG85335-5 | LT | | SED | S | TOC | SALTWTRSED | ANAL | U | 20-APR-06 | |
| WG85335-6 | MS | | SED | S | TOC | SALTWTRSED | ANAL | U | 20-APR-06 | |
| WG85335-7 | MB | | | S | TOC | OTHR SOLID | ANAL | U | 20-APR-06 | |
| WG85335-8 | SRM | | SED | S | TOC | SALTWTRSED | ANAL | U | 20-APR-06 | |
| WG85335-9 | MB | | | S | TOC | OTHR SOLID | ANAL | U | 20-APR-06 | |

Comments:

| | |
|---|---|
| L38325-1 | 3 grab comp, 0-10 cm |
| L38325-2 | 3 grab comp, 0-10 cm |
| L38325-3 | 3 grab comp, 0-10 cm |
| L38325-4 | 3 grab comp, 0-10 cm |
| L38325-5 | 0-10 cm, AREP |
| L38325-6 | 0-10 cm, FREP |
| L38325-7 | 3 grab comp, 0-10 cm |
| L38325-8 | 3 grab comp, 0-10 cm |
| L38325-9 | 3 grab comp, 0-10 cm |
| L38326-1 | 10 Grab Comp, 0-10 cm |
| L38326-10 | 10 Grab Comp, FREP |
| L38326-11 | 10 Grab Comp, 0-10 cm |
| L38326-12 | 10 Grab Comp, 0-10 cm |
| L38326-13 | 10 Grab Comp, 0-10 cm |
| L38326-14 | 10 Grab Comp, 0-10 cm |
| L38326-15 | 10 Grab Comp, 0-10 cm |
| L38326-2 | 10 Grab Comp, 0-10 cm |
| L38326-9 | 10 Grab Comp, AREP |

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Apr 20 2006, 03:25 pm

Work Group: WG85335 (DUDI SEDS) for Department: 3 - Conventionals

Created: 20-APR-06 PrepDate: Due: Operator:

| Sample | Project Number Project Description | PKey C Product | Matrix | Stat UA Workdate Duedate |
|---|---|---|---|---|
| L38327-1 | Diver Cores, 2006 | | | |
| L38327-2 | Diver Cores, 2006, AREP | | | |
| L38327-3 | Diver Cores, 2006, FREP | | | |
| L38327-4 | Diver Cores, 2006 | | | |
| L38327-5 | Diver Cores, 2006 | | | |
| L38327-6 | Diver Cores, 2006 | | | |
| L38327-7 | Diver Cores, 2006 | | | |
| L38327-8 | Diver Cores, 2006 | | | |
| WG85335-1 | MB1 041906 | | | |
| WG85335-10 | HICONC | | | |
| WG85335-11 | WG85335-9 | | | |
| WG85335-12 | L38327-2 | | | |
| WG85335-13 | WG85335-12 L38327-2 | | | |
| WG85335-14 | L38327-2 | | | |
| WG85335-2 | HICONC | | | |
| WG85335-3 | WG85335-1 | | | |
| WG85335-4 | L38325-8 | | | |
| WG85335-5 | WG85335-4 L38325-8 | | | |
| WG85335-6 | L38325-8 | | | |
| WG85335-7 | MB1 041806 | | | |
| WG85335-8 | HICONC | | | |
| WG85335-9 | MB1 042006 | | | |

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 04/21/06 08:54
Run ID: R113063 Workgroup: WG85335 (DUDI SEDS)

MB:WG85335-1 Matrix: OTHR SOLID Listtype: CVTOC Method: EPA9060-PSEP96 (03-04-002-003) Project: Pkey: SED
(Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Qual |
|---|---|---|---|---|---|
| Total Organic Carbon | 500 | 1000 | mg/Kg | <MDL | |

SRM:WG85335-2 Matrix: SALTWTRSED Listtype: CVTOC Method: EPA9060-PSEP96 (03-04-002-003) Project: Pkey: SED
(Std Reference Material)

| Parameter | Mdl | Rdl | Units | Truevalue | SRM Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 2500 | 4910 | mg/Kg | 21900 | 21100 | 96 | | 80-120 |

SB:WG85335-3 MB:WG85335-1 Matrix: OTHR SOLID Listtype: CVTOC Method: EPA9060-PSEP96 (03-04-002-003) Project: Pkey: SED
(Spike Blank, Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Truevalue | SB Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 500 | 1000 | mg/Kg | <MDL | 2500 | 2630 | 105 | | 80-120 |

LT:WG85335-5 LD:WG85335-4 L38325-8 Matrix: SALTWTRSED Listtype: CVTOC Method: EPA9060-PSEP96 (03-04-002-003) Project: 423062-100-4 Pkey: SED
(Lab Triplicate, Lab Duplicate)

| Parameter | Mdl | Rdl | Units | SampValue | LD Value | LT Value | RSD | Qual | LabLi |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 1200 | 2500 | mg/Kg | 10800 | 11500 | 12900 | 9 | | 2 |

MS:WG85335-6 L38325-8 Matrix: SALTWTRSED Listtype: CVTOC Method: EPA9060-PSEP96 (03-04-002-003) Project: 423062-100-4 Pkey: SED
(Matrix Spike)

| Parameter | Mdl | Rdl | Units | SampValue | Truevalue | MS Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 1300 | 2590 | mg/Kg | 10800 | 6473 | 16500 | 89 | | 75-125 |

MB:WG85335-7 Matrix: OTHR SOLID Listtype: CVTOC Method: EPA9060-PSEP96 (03-04-002-003) Project: Pkey: SED
(Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Qual |
|---|---|---|---|---|---|
| Total Organic Carbon | 500 | 1000 | mg/Kg | <MDL | |

SRM:WG85335-8 Matrix: SALTWTRSED Listtype: CVTOC Method: EPA9060-PSEP96 (03-04-002-003) Project: Pkey: SED
(Std Reference Material)

| Parameter | Mdl | Rdl | Units | Truevalue | SRM Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 2500 | 4970 | mg/Kg | 21900 | 21000 | 96 | | 80-120 |

MB:WG85335-9 Matrix: OTHR SOLID Listtype: CVTOC Method: EPA9060-PSEP96 (03-04-002-003) Project: Pkey: SED
(Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Qual |
|---|---|---|---|---|---|
| Total Organic Carbon | 500 | 1000 | mg/Kg | <MDL | |

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 04/21/06 08:54
Run ID: R113063 Workgroup: WG85335 (DUDI SEDS)

SRM:WG85335-10 Matrix: SALTWTRSED Listtype: CVTOC Method: EPA9060-PSEP96 (03-04-002-003) Project: Pkey: SED
(Std Reference Material)

| Parameter | Mdl | Rdl | Units | Truevalue | SRM Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 2200 | 4490 | mg/Kg | 21900 | 20700 | 95 | | 80-120 |

SB:WG85335-11 MB:WG85335-9 Matrix: OTHR SOLID Listtype: CVTOC Method: EPA9060-PSEP96 (03-04-002-003) Project: Pkey: SED
(Spike Blank, Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Truevalue | SB Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 500 | 1000 | mg/Kg | <MDL | 2500 | 2610 | 104 | | 80-120 |

LT:WG85335-13 LD:WG85335-12 L38327-2 Matrix: SALTWTRSED Listtype: CVTOC Method: EPA9060-PSEP96 (03-04-002-003) Project: 423062-200-4 Pkey: SED
(Lab Triplicate, Lab Duplicate)

| Parameter | Mdl | Rdl | Units | SampValue | LD Value | LT Value | RSD | Qual | LabLim |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 400 | 806 | mg/Kg | 1590 | 1610 | 1670 | 3 | | 20 |

MS:WG85335-14 L38327-2 Matrix: SALTWTRSED Listtype: CVTOC Method: EPA9060-PSEP96 (03-04-002-003) Project: 423062-200-4 Pkey: SED
(Matrix Spike)

| Parameter | Mdl | Rdl | Units | SampValue | Truevalue | MS Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 400 | 790 | mg/Kg | 1590 | 1976 | 3680 | 106 | | 75-125 |

| WG85335 | CVTOC | | | | |
|---|---|---|---|---|---|
| Sample Number | mg/kg | Prep Date | MDL | RDL | |
| Date Analyzed | 4/19/2006 | | | | |
| WG85335-1 | -304.6 | 4/19/2006 | 500 | 1000 | MB1 041906 |
| WG85335-2 | 21118 | 4/19/2006 | 2453 | 4906 | SRM1 041906 |
| WG85335-3 | 2627 | 4/19/2006 | 500 | 1000 | SB1 041906 |
| L38325-8 | 10758.7 | 4/10/2006 | 1218.8 | 2437.6 | |
| WG85335-4 | 11462.5 | 4/10/2006 | 1248.6 | 2497.1 | L38325-8LD |
| WG85335-5 | 12852.2 | 4/10/2006 | 1442.6 | 2885.3 | L38325-8LT |
| WG85335-6 | 16544.2 | 4/10/2006 | 1294.7 | 2589.4 | L38325-8MS |
| L38325-9 | 12441.9 | 4/10/2006 | 1193.2 | 2386.3 | |
| L38326-1 | 11120 | 4/10/2006 | 1018.5 | 2036.9 | |
| L38326-2 | 10744.9 | 4/10/2006 | 1022.9 | 2045.7 | |
| L38326-9 | 3617.4 | 4/10/2006 | 538.9 | 1077.8 | |
| L38326-10 | 5412.1 | 4/10/2006 | 634.7 | 1269.4 | |
| L38326-11 | 3335.5 | 4/10/2006 | 586.3 | 1172.5 | |
| L38326-12 | 6288.1 | 4/10/2006 | 583.2 | 1166.4 | |
| L38326-13 | 4585.1 | 4/10/2006 | 515.7 | 1031.5 | |
| L38326-14 | 4684.6 | 4/10/2006 | 559.2 | 1118.4 | |
| L38326-15 | 9099.5 | 4/10/2006 | 1048.6 | 2097.3 | |

# TOC Solids Sample Analysis Worksheet

**Analyst:** CB
**Analysis Date:** 19-Apr-06
**Workgroup #:** WG85335

Load % Solids Data — Help w/ this function?
Load Raw Data — Help w/ this function?
Manual Calculation — Help w/ this function?
Calculator — Help w/ this function?

| Sample Number | Instrument Result 1 (%C) | Instrument Result 2 (%C) | Instrument Result 3 (%C) | RSD (%) | Average (%C) | TOC (wet weight) (mg/Kg) | Rep. 1 Mass (mg) | Rep. 2 Mass (mg) | Rep. 3 Mass (mg) | Average Mass (mg) | MDL (wet weight) (mg/Kg) | RDL (wet weight) (mg/Kg) | % Solids (@ 70°C) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CCV1 | 101.33662 | 98.21966 | 104.20564 | 3 | 101.254 | NA | 1 | 1 | 1 | 1 | NA | NA | NA | |
| RDL CK | 101.1241 | 100.947 | 106.7913 | 3 | 102.954 | NA | 0.2 | 0.2 | 0.2 | 0.2 | NA | NA | NA | |
| MB1 041906 | -0.0304612 | -0.0304612 | -0.0304612 | 0 | -0.030 | -304.6 | 200 | 200 | 200 | 200 | 500 | 1000 | 100 | |
| SRM1 041906 | 2.13915862 | 2.13566897 | 2.06056496 | 2 | 2.112 | 21118 | 40.6 | 40.6 | 41.1 | 40.76667 | 2453 | 4906 | 100 | |
| SB1 041906 | 0.2629935 | 0.2610454 | 0.2640561 | 1 | 0.263 | 2627 | 200 | 200 | 200 | 200 | 500 | 1000 | 100 | |
| L38325-8 | 1.62957032 | 1.69735446 | 1.67901783 | 2 | 1.669 | 10758.7 | 56.6 | 50.5 | 51.6 | 52.9 | 1218.8 | 2437.6 | 64 | |
| L38325-8LD | 1.79851068 | 1.7273761 | 1.79103556 | 2 | 1.772 | 11462.5 | 51.5 | 54.4 | 49.5 | 51.8 | 1248.6 | 2497.1 | 65 | |
| L38325-8LT | 1.73209167 | 1.67775285 | 1.70684302 | 2 | 1.706 | 12852.2 | 52.8 | 50.9 | 53 | 52.23333 | 1442.6 | 2885.3 | 75 | |
| L38325-8MS | 2.54166172 | 2.59059376 | 2.5656523 | 1 | 2.566 | 16544.2 | 51.2 | 48.1 | 50.1 | 49.8 | 1294.7 | 2589.4 | 64 | |
| L38325-9 | 1.95745623 | 2.00030867 | 2.04664202 | 2 | 2.001 | 12441.9 | 53 | 51.9 | 51.4 | 52.1 | 1193.2 | 2386.3 | 62 | |
| L38326-1 | 2.03288191 | 2.01776801 | 2.07940444 | 2 | 2.043 | 11120 | 56.4 | 54.4 | 49.5 | 53.43333 | 1018.5 | 2036.9 | 54 | |
| L38326-2 | 1.94775877 | 1.92401928 | 1.95692107 | 1 | 1.943 | 10744.9 | 51.9 | 58.1 | 52.2 | 54.06667 | 1022.9 | 2045.7 | 55 | |
| CCV2 | 102.22212 | 101.1241 | 101.86792 | 1 | 101.738 | NA | 1 | 1 | 1 | 1 | NA | NA | NA | |
| L38326-9 | 0.4547954 | 0.50105184 | 0.51765899 | 7 | 0.491 | 3617.4 | 108.8 | 149.3 | 151.9 | 136.6667 | 538.9 | 1077.8 | 74 | |
| L38326-10 | 0.75062669 | 0.74146275 | 0.73046195 | 1 | 0.741 | 5412.1 | 112.4 | 115.7 | 117.2 | 115.1 | 634.7 | 1269.4 | 73 | |
| L38326-11 | 0.39798846 | 0.46271887 | 0.44354204 | 8 | 0.435 | 3335.5 | 72.8 | 152.1 | 167.7 | 130.8667 | 586.3 | 1172.5 | 77 | |
| L38326-12 | 0.96346339 | 0.97805714 | 0.95266521 | 1 | 0.965 | 6288.1 | 107.9 | 112.7 | 114.7 | 111.7667 | 583.2 | 1166.4 | 65 | |
| L38326-13 | 0.60026167 | 0.59981479 | 0.61512811 | 1 | 0.605 | 4585.1 | 132 | 156.9 | 151.9 | 146.9333 | 515.7 | 1031.5 | 76 | |
| L38326-14 | 0.66080594 | 0.66758585 | 0.66309793 | 1 | 0.664 | 4684.6 | 70.7 | 148.4 | 159.5 | 126.2 | 559.2 | 1118.4 | 71 | |
| L38326-15 | 1.64910414 | 1.58227568 | 1.6587916 | 3 | 1.630 | 9099.5 | 55.5 | 51.8 | 52.4 | 53.23333 | 1048.6 | 2097.3 | 56 | |
| CCV3 | 99.77814 | 100.27402 | 100.84074 | 1 | 100.298 | NA | 1 | 1 | 1 | 1 | NA | NA | NA | |
| | | | | | | | | | | | | | | |

**Comments:**

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Apr 21 2006, 02:43 pm

Work Group: WG85276 (PSD/423062 DuDi) for Department: 3 - Conventionals

Created: 14-APR-06 PrepDate: Due: Operator: DN

| Sample | Project Number | Project Description | Pkey | C | Product | Matrix | Stat | UA | Workdate | Duedate |
|---|---|---|---|---|---|---|---|---|---|---|
| L38325-1 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | PSD | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38325-2 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | PSD | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38325-3 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | PSD | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38325-4 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | PSD | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38325-5 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | PSD | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38325-6 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | PSD | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38325-7 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | PSD | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38325-8 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | PSD | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38325-9 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | PSD | SALTWTRSED | ANAL | U | 07-MAR-06 | 24-APR-06 |
| L38326-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PSD | SALTWTRSED | ANAL | U | 08-MAR-06 | 24-APR-06 |
| L38326-10 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PSD | SALTWTRSED | ANAL | U | 08-MAR-06 | 24-APR-06 |
| L38326-11 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PSD | SALTWTRSED | ANAL | U | 08-MAR-06 | 24-APR-06 |
| L38326-12 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PSD | SALTWTRSED | ANAL | U | 08-MAR-06 | 24-APR-06 |
| L38326-13 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PSD | SALTWTRSED | ANAL | U | 09-MAR-06 | 24-APR-06 |
| L38326-14 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PSD | SALTWTRSED | ANAL | U | 09-MAR-06 | 24-APR-06 |
| L38326-15 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PSD | SALTWTRSED | ANAL | U | 09-MAR-06 | 24-APR-06 |
| L38326-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PSD | SALTWTRSED | ANAL | U | 08-MAR-06 | 24-APR-06 |
| L38326-9 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PSD | SALTWTRSED | ANAL | U | 08-MAR-06 | 24-APR-06 |
| WG85276-1 | LD | | SED | S | PSD | SALTWTRSED | ANAL | U | 21-APR-06 | |
| WG85276-2 | LT | | SED | S | PSD | SALTWTRSED | ANAL | U | 21-APR-06 | |

Comments:

| | |
|---|---|
| L38325-1 | 3 grab comp, 0-10 cm |
| L38325-2 | 3 grab comp, 0-10 cm |
| L38325-3 | 3 grab comp, 0-10 cm |
| L38325-4 | 3 grab comp, 0-10 cm |
| L38325-5 | 0-10 cm, AREP |
| L38325-6 | 0-10 cm, FREP |
| L38325-7 | 3 grab comp, 0-10 cm |
| L38325-8 | 3 grab comp, 0-10 cm |
| L38325-9 | 3 grab comp, 0-10 cm |
| L38326-1 | 10 Grab Comp, 0-10 cm |
| L38326-10 | 10 Grab Comp, FREP |
| L38326-11 | 10 Grab Comp, 0-10 cm |
| L38326-12 | 10 Grab Comp, 0-10 cm |
| L38326-13 | 10 Grab Comp, 0-10 cm |
| L38326-14 | 10 Grab Comp, 0-10 cm |
| L38326-15 | 10 Grab Comp, 0-10 cm |
| L38326-2 | 10 Grab Comp, 0-10 cm |
| L38326-9 | 10 Grab Comp, AREP |
| WG85276-1 | L38325-6 |
| WG85276-2 | WG85276-1 L38325-6 |

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 04/21/06 03:01
Run ID: R113087 Workgroup: WG85276 (PSD/423062 DuDi)

LT:WG85276-2 LD:WG85276-1 L38325-6 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422(03-02-005-001) Project: 423062-100-4 Pkey: SED
(Lab Triplicate, Lab Duplicate)

| Parameter | Mdl | Rdl | Units | SampValue | LD Value | LT Value | RSD | Qual | LabLim |
|---|---|---|---|---|---|---|---|---|---|
| Gravel | .1 | 1 | % | 19.5 | 20.6 | 20.8 | 3 | | 20 |
| Sand | .1 | 1 | % | 76.8 | 75.7 | 76 | 1 | | 20 |
| Silt | .5 | 1 | % | 1.7 | 1.9 | 2.1 | 9 | | 20 |
| Clay | .5 | 1 | % | 4 | 1.9 | 2 | 28 | E | 20 |

| WG85276 | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Prep Date | 4/11/06 | | | | | | | | | | | | | | | | | | |
| Parameter | P-2.00(LESS THAN) | P-2.00 | P-1.00 | P+0.00 | P+1.00 | P+2.00 | P+3.00 | P+4.00 | P+5.00 | P+6.00 | P+7.00 | P+8.00 | P+9.00 | P+10.0(EQUAL/MORE THAN) | GRAVEL | SAND | SILT | CLAY | FINES |
| Sample Number | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| Date Analyzed | 4/12/06 | 4/12/06 | 4/12/06 | 4/12/06 | 4/12/06 | 4/12/06 | 4/12/06 | 4/12/06 | 4/12/06 | 4/12/06 | 4/12/06 | 4/12/06 | 4/12/06 | 4/12/06 | 4/12/06 | 4/12/06 | 4/12/06 | 4/12/06 | 4/12/06 |
| L38326-11 | 1.17 | 0.10 | 2.25 | 3.07 | 7.55 | 32.09 | 28.94 | 9.03 | 2.51 | 1.88 | 2.51 | 1.88 | 1.26 | 3.14 | 3.53 | 80.69 | 8.79 | 4.39 | 13.18 |
| L38326-12 | 5.78 | 0.14 | 1.42 | 2.05 | 7.67 | 19.99 | 19.40 | 12.41 | 8.62 | 2.87 | 7.18 | 5.03 | 2.15 | 5.03 | 7.33 | 61.51 | 23.70 | 7.18 | 30.88 |
| L38326-13 | 4.21 | 3.44 | 7.39 | 6.79 | 9.97 | 23.78 | 22.70 | 7.65 | 3.23 | 1.94 | 2.59 | 0 | 0 | 4.53 | 15.04 | 70.89 | 7.76 | 4.53 | 12.29 |
| L38326-14 | 0.23 | 0.06 | 0.62 | 0.97 | 2.21 | 13.72 | 34.76 | 17.50 | 6.84 | 5.47 | 4.10 | 2.74 | 1.37 | 4.79 | 0.92 | 69.16 | 19.15 | 6.16 | 25.31 |
| L38326-15 | 0.14 | 0.07 | 0.11 | 0.15 | 0.30 | 4.11 | 21.25 | 14.53 | 15.64 | 8.69 | 8.69 | 12.16 | 3.48 | 7.82 | 0.32 | 40.34 | 45.18 | 11.29 | 56.47 |

| WG85276 | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD | CVPSD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Prep Date | 4/10/06 | | | | | | | | | | | | | | | | | | |
| Parameter | P-2.00(LESS THAN) | P-2.00 | P-1.00 | P+0.00 | P+1.00 | P+2.00 | P+3.00 | P+4.00 | P+5.00 | P+6.00 | P+7.00 | P+8.00 | P+9.00 | P+10.0(EQUAL/MORE THAN) | GRAVEL | SAND | SILT | CLAY | FINES |
| Sample Number | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| Date Analyzed | 4/11/06 | 4/11/06 | 4/11/06 | 4/11/06 | 4/11/06 | 4/11/06 | 4/11/06 | 4/11/06 | 4/11/06 | 4/11/06 | 4/11/06 | 4/11/06 | 4/11/06 | 4/11/06 | 4/11/06 | 4/11/06 | 4/11/06 | 4/11/06 | 4/11/06 |
| L38325-4 | 2.76 | 0.49 | 7.12 | 7.47 | 11.04 | 23.87 | 22.78 | 7.02 | 4.71 | 2.02 | 4.04 | 1.35 | 1.35 | 6.73 | 10.37 | 72.18 | 12.12 | 8.08 | 20.20 |
| L38325-5 | 6.94 | 3.30 | 12.32 | 12.36 | 17.08 | 27.80 | 15.19 | 2.17 | 0.58 | 0 | 0.00 | 0 | 1.17 | 2.33 | 22.56 | 74.60 | 0.58 | 3.50 | 4.08 |
| L38325-6 | 5.39 | 2.60 | 11.50 | 12.20 | 17.06 | 28.33 | 16.70 | 2.51 | 0.57 | 0.57 | 0.00 | 0.57 | 0.57 | 3.39 | 19.49 | 76.80 | 1.70 | 3.96 | 5.65 |
| WG85276-1 | 7.44 | 3.10 | 10.09 | 12.80 | 16.67 | 27.92 | 15.89 | 2.47 | 0.62 | 0.62 | 0.00 | 0.62 | 0.62 | 1.24 | 20.63 | 75.73 | 1.87 | 1.87 | 3.73 |
| WG85276-2 | 6.81 | 3.62 | 10.33 | 12.69 | 16.51 | 28.54 | 15.92 | 2.38 | 0.68 | 0 | 0.68 | 0.68 | 0 | 2.73 | 20.76 | 76.03 | 2.05 | 2.73 | 4.77 |
| L38325-7 | 0.53 | 0.01 | 0.56 | 0.28 | 0.65 | 7.24 | 16.27 | 8.92 | 17.32 | 11.21 | 13.25 | 6.11 | 5.10 | 10.19 | 1.11 | 33.36 | 47.90 | 15.29 | 63.18 |
| L38325-8 | 40.73 | 7.23 | 10.80 | 4.51 | 2.05 | 2.09 | 2.66 | 2.78 | 6.89 | 4.14 | 6.20 | 2.76 | 0.69 | 6.89 | 58.76 | 14.10 | 19.99 | 7.58 | 27.58 |
| L38325-9 | 47.99 | 5.39 | 12.45 | 4.95 | 1.87 | 0.99 | 1.67 | 1.95 | 6.06 | 6.06 | 4.71 | 2.69 | 0.67 | 6.06 | 65.82 | 11.43 | 19.52 | 6.73 | 26.26 |
| L38326-1 | 5.35 | 0.33 | 0.28 | 0.80 | 1.72 | 6.71 | 11.80 | 11.26 | 9.20 | 27.60 | 7.36 | 0.92 | 0.92 | 9.20 | 5.95 | 32.29 | 45.07 | 10.12 | 55.19 |
| L38326-2 | 0.05 | 0.17 | 0.41 | 0.47 | 0.72 | 5.27 | 15.16 | 13.13 | 12.68 | 13.52 | 14.37 | 3.38 | 4.23 | 11.83 | 0.63 | 34.74 | 43.94 | 16.06 | 60.00 |
| L38326-9 | 5.09 | 1.60 | 3.68 | 3.57 | 5.76 | 28.54 | 25.93 | 8.15 | 4.97 | 4.47 | 2.98 | 1.49 | 0.99 | 4.97 | 10.37 | 71.96 | 13.92 | 5.96 | 19.88 |
| L38326-10 | 2.59 | 0.81 | 3.56 | 3.44 | 5.90 | 26.10 | 27.35 | 8.91 | 4.91 | 4.37 | 2.18 | 2.73 | 1.64 | 6.00 | 6.96 | 71.71 | 14.19 | 7.64 | 21.83 |

# Conventionals Data Anomaly Form

**Date(s) Occurred:** *4/11/06*

**WG #(s):** *WG85276*

☒ **All samples in WKGP(s) or Sample #(s):**

**Project #(s):** *423062*

**Matrix:** ☐ **Liquid** ☒ **Solid** ☐ **Air** ☐ **Tissue** ☐ **Calibration** ☐ **Other:**

## I. Analysis

☐ Nutrients:
☐ Demands:
☐ Cyanides:
☐ Physicals:
☐ Solids:
☐ Anions:
☐ Chlorophylls:
☒ Others: *PSD*
☐ Subcontracted:

## II. Instrument

| | | |
|---|---|---|
| Ion Chromatography: | ☐ Dionex 120 | |
| Spectrophotometer: | ☐ Hitachi U3000 UV/VIS | ☐ Hach DR 890 |
| Fluorometer: | ☐ Turner 10-AU | |
| TOC Analyzer: | ☐ OI 1020A | ☐ OI TOC Analyzer |
| Autotitrator: | ☐ Metrohm 736GP Titrator | ☐ Metrohm 712 Conductometer |
| Turbidimeter: | ☐ Hach 2100AN | |
| Autoanalyzers: | ☐ Astoria2+2 (freshwater system) | ☐ Astoria2+2 (saltwater system) |
| | ☐ Astoria2 (total nutrients system) | ☐ Astoria2 (cyanide system) |
| Dissolved Oxygen: | ☐ YSI 5100 | ☐ CAT Contriburette |
| Salinometer: | ☐ Portosal 8410A | |
| pH: | ☐ Metrohm 736GP | ☐ Accument XL60 |

Others: *AT200 and PG503 Analytical Balances*

## III. Type of Sample/Analytical Anomaly

☒ Values Outside of Control Limits:

| | | |
|---|---|---|
| 1 ☐ Initial Calibration | 4 ☐ MB Anomaly | 7 ☐ MS RPD |
| 2 ☐ Continuing Calibration Checks | 5 ☐ LCS/SRM Recoveries | 8 ☐ Sample/LD RPD |
| 3 ☐ SB Spike Recoveries | 6 ☒ Sample/LD/LT RSD | 9 ☐ MS Spike Recoveries |

10 ☐ Holding time exceeded by:
11 ☐ Insufficient sample amount.
12 ☐ Inappropriate storage, container or preservation.

☐ Other

**Anomaly Description:** *The laboratory triplicate analysis for particle size distribution (PSD) for sample L38325-6 had a percent relative standard deviation (%RSD) of 37% for the clay category. This exceeded the established acceptance limit of 20% for the category. The clay category represented a small fraction of the overall sample mass associated with sample L38325-6. Variability due to the low contribution to this category is the probable cause.*

## IV. Type of Project Anomaly

☐ SAP/Work Plan specified MDLs not met.
☐ SAP/Work Plan specified QC frequency or QC type not met.
☐ SAP/Work Plan specified methodology not used.
☐ Sample exceeds regulatory and/or hazardous waste limits.
☐ Sample data results are unusual or inconsistent with expected results.
☐ Other

**Anomaly Description:**

## V. Corrective Action Taken

☐ Sample(s) re-analyzed
☐ Sample(s) re-prepared and re-analyzed
☐ Sample(s) reported "AS IS"
☒ Data qualified with the following flags: *"E"*
☐ Other

**Corrective Action Description:** *No reanalysis was required due to the clay category representing less than 10% of the overall sample mass. The data were reported to LIMS and the gravel category for all samples in the workgroup qualified with the E qualifier to indicate that an estimate value was reported for this category. No further corrective action was taken.*

## VI. Potential Effects on Data Quality

**Based upon the expected performance of this method:**

☐ It is likely the observed anomaly influenced the reported value(s).
☒ It is unlikely the observed anomaly influenced the reported value(s).
☐ The observed anomaly may have influenced the reported value(s).
☐ It is unknown whether or not the observed anomaly affected the reported value(s).

**Explanation:** *This does not affect the quality of the data. Inherent variability at low levels can be expected in the method. In these instances, a high %RSD does not necessarily indicate poor precision or poor method performance. In the case of these samples, the QC data suggest that the clay category represents too small a fraction of the overall sample constituency to be considered appropriate for evaluation against a 20% control window.*

| | Signatures | Signature Dates |
|---|---|---|
| **Reported By:** *Duc Nguyen* | Duc Nguyen | 4/21/06 |
| **Reviewer:** *Despina Strong* | | 4/24/06 |
| **Supervisor:** *Despina Strong* | | 4/24/06 |
| **QA Officer:** *Colin Elliott* (For QA1 only) | | |
| **cc: LPM:** | | |

# METAL CHEMISTRY QC DATA

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Mar 14 2006, 09:14 am

Work Group: WG84821 (Du/Di Thin L. 14-MAR-06) for Department: 6 - Metals, Trace

Created: 14-MAR-06 PrepDate: 14-MAR-06 Due: Operator: SH

| Sample | Project Number | Project Description | PKey | C | Product | Matrix | Stat | UA | Workdate | Duedate |
|---|---|---|---|---|---|---|---|---|---|---|
| L38326-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | AL-ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | FE-ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | MN-ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PP ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-10 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | AL-ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-10 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | FE-ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-10 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | MN-ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-10 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PP ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-11 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | FE-ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-11 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | MN-ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-11 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PP ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-11 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | AL-ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-12 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | AL-ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-12 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | FE-ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-12 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | MN-ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-12 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PP ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-13 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | AL-ICP | SALTWTRSED | WKGP | U | 23-APR-06 | 23-APR-06 |
| L38326-13 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | FE-ICP | SALTWTRSED | WKGP | U | 23-APR-06 | 23-APR-06 |
| L38326-13 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | MN-ICP | SALTWTRSED | WKGP | U | 23-APR-06 | 23-APR-06 |
| L38326-13 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PP ICP | SALTWTRSED | WKGP | U | 23-APR-06 | 23-APR-06 |
| L38326-14 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | AL-ICP | SALTWTRSED | WKGP | U | 23-APR-06 | 23-APR-06 |
| L38326-14 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | FE-ICP | SALTWTRSED | WKGP | U | 23-APR-06 | 23-APR-06 |
| L38326-14 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | MN-ICP | SALTWTRSED | WKGP | U | 23-APR-06 | 23-APR-06 |
| L38326-14 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PP ICP | SALTWTRSED | WKGP | U | 23-APR-06 | 23-APR-06 |
| L38326-15 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | FE-ICP | SALTWTRSED | WKGP | U | 23-APR-06 | 23-APR-06 |
| L38326-15 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | MN-ICP | SALTWTRSED | WKGP | U | 23-APR-06 | 23-APR-06 |
| L38326-15 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PP ICP | SALTWTRSED | WKGP | U | 23-APR-06 | 23-APR-06 |
| L38326-15 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | AL-ICP | SALTWTRSED | WKGP | U | 23-APR-06 | 23-APR-06 |
| L38326-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | AL-ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | FE-ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | MN-ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PP ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-9 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | AL-ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-9 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | FE-ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-9 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | MN-ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38326-9 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PP ICP | SALTWTRSED | WKGP | U | 22-APR-06 | 22-APR-06 |
| L38327-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | AL-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | FE-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | MN-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PP ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | AL-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | FE-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | MN-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PP ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-3 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | MN-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-3 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PP ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-3 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | AL-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-3 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | FE-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-4 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | AL-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-4 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | FE-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-4 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | MN-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-4 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PP ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-5 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | AL-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-5 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | FE-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-5 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | MN-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-5 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PP ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-6 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | AL-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-6 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | FE-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-6 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | MN-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-6 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PP ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-7 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PP ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Mar 14 2006, 09:14 am

Work Group: WG84821 (Du/Di Thin L. 14-MAR-06) for Department: 6 - Metals, Trace

Created: 14-MAR-06 PrepDate: 14-MAR-06 Due: Operator: SH

| Sample | Project Number | Project Description | PKey | C | Product | Matrix | Stat | UA | Workdate | Duedate |
|---|---|---|---|---|---|---|---|---|---|---|
| L38327-7 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | AL-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-7 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | FE-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-7 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | MN-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-8 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | AL-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-8 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | FE-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-8 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | MN-ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| L38327-8 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PP ICP | SALTWTRSED | WKGP | U | 09-MAY-06 | 09-MAY-06 |
| WG84821-1 | SB | | | S | ROUTINE ICP | SOLIDBLANK | WKGP | U | 14-MAR-06 | |
| WG84821-2 | SRM | | SED | S | ROUTINE ICP | SALTWTRSED | WKGP | U | 14-MAR-06 | |
| WG84821-3 | LCS | | | S | ROUTINE ICP | SOIL | WKGP | U | 14-MAR-06 | |
| WG84821-4 | MB | | | S | ROUTINE ICP | SOLIDBLANK | WKGP | U | 14-MAR-06 | |
| WG84821-5 | LD | | SED | S | ROUTINE ICP | SALTWTRSED | WKGP | U | 14-MAR-06 | |
| WG84821-6 | MS | | SED | S | ROUTINE ICP | SALTWTRSED | WKGP | U | 14-MAR-06 | |

Comments:

| | |
|---|---|
| L38326-1 | 10 Grab Comp, 0-10 cm |
| L38326-10 | 10 Grab Comp, FREP |
| L38326-11 | 10 Grab Comp, 0-10 cm |
| L38326-12 | 10 Grab Comp, 0-10 cm |
| L38326-13 | 10 Grab Comp, 0-10 cm |
| L38326-14 | 10 Grab Comp, 0-10 cm |
| L38326-15 | 10 Grab Comp, 0-10 cm |
| L38326-2 | 10 Grab Comp, 0-10 cm |
| L38326-9 | 10 Grab Comp, AREP |
| L38327-1 | Diver Cores, 2006 |
| L38327-2 | Diver Cores, 2006, AREP |
| L38327-3 | Diver Cores, 2006, FREP |
| L38327-4 | Diver Cores, 2006 |
| L38327-5 | Diver Cores, 2006 |
| L38327-6 | Diver Cores, 2006 |
| L38327-7 | Diver Cores, 2006 |
| L38327-8 | Diver Cores, 2006 |
| WG84821-1 | WG84821-4 ICPH |
| WG84821-2 | PACS2 |
| WG84821-3 | ERASOIL |
| WG84821-4 | METHOD BLANK |
| WG84821-5 | L38326-9 RPD-SOL |
| WG84821-6 | L38326-9 ICPH |

**ICP ICV Solution SOP Deviation Document**

Issue: The ICP second source Initial Calibration Verification (ICV) solution was not a secondary source between January 24, 2006 and May 12, 2006.

Explanation: The 100 mL Spex QC21 solution received November of 2005 (M-05-040) is a different bottle of the same lot as the 500 mL Spex QC21 solution used in the calibration standards (M-05-068). This smaller bottle of QC21 was put into use on January 24th, 2006 for the ICP ICV solution. The ICV should be a different source than the calibration standards in order to validate the calibration. A different lot number qualifies as a second source. Trace Metals was out of compliance for the ICP ICV standard from 1/24/2006 to 5/12/2006. A custom standard from Spex (M-06-011) was created for use in the calibration standards in order to avoid the same source problem in the future. The RDL and LCS solutions are also different sources than the ICV but with different concentrations and acceptance limits than the ICV standard. During the approximate 3 month deviation of the ICV both the RDL and LCS met acceptance limits.

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 04/05/06 03:45
Run ID: R112675 Workgroup: WG84821 (Du/Di Thin L. 14-MAR-06)

SB:WG84821-1 MB:WG84821-4 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: EPA3050A/6010B (06-02-004-002) Project: Pkey: SED
(Spike Blank, Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Truevalue | SB Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|---|
| Silver, Total, ICP | .19 | .952 | mg/Kg | <MDL | 47.6 | 45.8 | 96 | | 85-115 |
| Aluminum, Total, ICP | 4.8 | 23.8 | mg/Kg | <MDL | 1190 | 1180 | 99 | | 85-115 |
| Arsenic, Total, ICP | 2.4 | 11.9 | mg/Kg | <MDL | 47.6 | 48.1 | 101 | | 85-115 |
| Beryllium, Total, ICP | .048 | .238 | mg/Kg | <MDL | 47.6 | 46.7 | 98 | | 85-115 |
| Cadmium, Total, ICP | .14 | .714 | mg/Kg | <MDL | 47.6 | 46.6 | 98 | | 85-115 |
| Chromium, Total, ICP | .24 | 1.19 | mg/Kg | <MDL | 47.6 | 47.2 | 99 | | 85-115 |
| Copper, Total, ICP | .19 | .952 | mg/Kg | <MDL | 47.6 | 46.2 | 97 | | 85-115 |
| Iron, Total, ICP | 2.4 | 11.9 | mg/Kg | <MDL | 1240 | 1230 | 99 | | 85-115 |
| Manganese, Total, ICP | .095 | .476 | mg/Kg | <MDL | 47.6 | 47.2 | 99 | | 85-115 |
| Nickel, Total, ICP | .95 | 4.76 | mg/Kg | <MDL | 47.6 | 46.6 | 98 | | 85-115 |
| Lead, Total, ICP | 1.4 | 7.14 | mg/Kg | <MDL | 47.6 | 46.7 | 98 | | 85-115 |
| Antimony, Total, ICP | 1.4 | 7.14 | mg/Kg | <MDL | 47.6 | 47.2 | 99 | | 85-115 |
| Selenium, Total, ICP | 2.4 | 11.9 | mg/Kg | <MDL | 47.6 | 48.6 | 102 | | 85-115 |
| Thallium, Total, ICP | 9.5 | 47.6 | mg/Kg | <MDL | 47.6 | 46 | 97 | | 85-115 |
| Zinc, Total, ICP | .24 | 1.19 | mg/Kg | <MDL | 47.6 | 45.8 | 96 | | 85-115 |

SRM:WG84821-2 Matrix: SALTWTRSED Listtype: MTICP-SED Method: EPA3050A/6010B (06-02-004-002) Project: Pkey: SED
(Std Reference Material)

| Parameter | Mdl | Rdl | Units | Truevalue | SRM Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|
| Aluminum, Total, ICP | 20 | 101 | mg/Kg | 66200 | 14100 | 21 | | 10-43 |
| Chromium, Total, ICP | 1 | 5.03 | mg/Kg | 90.7 | 44.1 | 49 | | 30-70 |
| Copper, Total, ICP | .81 | 4.03 | mg/Kg | 310 | 288 | 93 | | 78-118 |
| Iron, Total, ICP | 10 | 50.3 | mg/Kg | 40900 | 29900 | 73 | | 55-95 |
| Manganese, Total, ICP | .4 | 2.01 | mg/Kg | 440 | 227 | 52 | | 35-75 |
| Nickel, Total, ICP | 4 | 20.1 | mg/Kg | 39.5 | 28 | 71 | | 51-91 |
| Lead, Total, ICP | 6 | 30.2 | mg/Kg | 183 | 166 | 91 | | 74-114 |
| Zinc, Total, ICP | 1 | 5.03 | mg/Kg | 364 | 320 | 88 | | 73-113 |

LCS:WG84821-3 Matrix: SOIL Listtype: MTICP-SED Method: EPA3050A/6010B (06-02-004-002) Project: Pkey: SED
(Lab Control Sample)

| Parameter | Mdl | Rdl | Units | Truevalue | LCS Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|
| Silver, Total, ICP | .77 | 3.86 | mg/Kg | 171 | 179 | 105 | | 80-120 |
| Aluminum, Total, ICP | 19 | 96.5 | mg/Kg | 7890 | 6640 | 84 | | 80-120 |
| Arsenic, Total, ICP | 9.6 | 48.2 | mg/Kg | 142 | 145 | 102 | | 80-120 |
| Beryllium, Total, ICP | .19 | .965 | mg/Kg | 40.6 | 40.4 | 99 | | 80-120 |
| Cadmium, Total, ICP | .58 | 2.89 | mg/Kg | 64.5 | 65.1 | 101 | | 80-120 |
| Chromium, Total, ICP | .96 | 4.82 | mg/Kg | 86.5 | 85.3 | 99 | | 80-120 |
| Copper, Total, ICP | .77 | 3.86 | mg/Kg | 68.6 | 66.4 | 97 | | 80-120 |
| Iron, Total, ICP | 9.6 | 48.2 | mg/Kg | 13600 | 12300 | 91 | | 80-120 |
| Manganese, Total, ICP | .39 | 1.93 | mg/Kg | 501 | 501 | 100 | | 80-120 |
| Nickel, Total, ICP | 3.9 | 19.3 | mg/Kg | 68.4 | 66.7 | 98 | | 80-120 |
| Lead, Total, ICP | 5.8 | 28.9 | mg/Kg | 93.6 | 95.4 | 102 | | 80-120 |
| Antimony, Total, ICP | 5.8 | 28.9 | mg/Kg | 105 | 100 | 95 | | 80-120 |
| Selenium, Total, ICP | 9.6 | 48.2 | mg/Kg | 124 | 130 | 105 | | 80-120 |
| Thallium, Total, ICP | 39 | 193 | mg/Kg | 110 | 110 | 100 | | 80-120 |
| Zinc, Total, ICP | .96 | 4.82 | mg/Kg | 296 | 288 | 97 | | 80-120 |

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 04/05/06 03:45
Run ID: R112675 Workgroup: WG84821 (Du/Di Thin L. 14-MAR-06)

MB:WG84821-4 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: EPA3050A/6010B (06-02-004-002) Project: Pkey: SED
(Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Qual |
|---|---|---|---|---|---|
| Silver, Total, ICP | .19 | .952 | mg/Kg | <MDL | |
| Aluminum, Total, ICP | 4.8 | 23.8 | mg/Kg | <MDL | |
| Arsenic, Total, ICP | 2.4 | 11.9 | mg/Kg | <MDL | |
| Beryllium, Total, ICP | .048 | .238 | mg/Kg | <MDL | |
| Cadmium, Total, ICP | .14 | .714 | mg/Kg | <MDL | |
| Chromium, Total, ICP | .24 | 1.19 | mg/Kg | <MDL | |
| Copper, Total, ICP | .19 | .952 | mg/Kg | <MDL | |
| Iron, Total, ICP | 2.4 | 11.9 | mg/Kg | <MDL | |
| Manganese, Total, ICP | .095 | .476 | mg/Kg | <MDL | |
| Nickel, Total, ICP | .95 | 4.76 | mg/Kg | <MDL | |
| Lead, Total, ICP | 1.4 | 7.14 | mg/Kg | <MDL | |
| Antimony, Total, ICP | 1.4 | 7.14 | mg/Kg | <MDL | |
| Selenium, Total, ICP | 2.4 | 11.9 | mg/Kg | <MDL | |
| Thallium, Total, ICP | 9.5 | 47.6 | mg/Kg | <MDL | |
| Zinc, Total, ICP | .24 | 1.19 | mg/Kg | <MDL | |

LD:WG84821-5 L38326-9 Matrix: SALTWTRSED Listtype: MTICP-SED Method: EPA3050A/6010B (06-02-004-002) Project: 423062-200-4 Pkey: SED
(Lab Duplicate)

| Parameter | Mdl | Rdl | Units | SampValue | LD Value | RPD | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|
| Silver, Total, ICP | .21 | 1.04 | mg/Kg | 1.39 | .33 | 123 | E | 20 |
| Aluminum, Total, ICP | 5.2 | 26.1 | mg/Kg | 8420 | 8530 | 1 | | 20 |
| Arsenic, Total, ICP | 2.6 | 13 | mg/Kg | 3.4 | 3.5 | | | 20 |
| Beryllium, Total, ICP | .052 | .261 | mg/Kg | .085 | .09 | | | 20 |
| Cadmium, Total, ICP | .16 | .782 | mg/Kg | .17 | .17 | | | 20 |
| Chromium, Total, ICP | .26 | 1.3 | mg/Kg | 14.4 | 14.8 | 3 | | 20 |
| Copper, Total, ICP | .21 | 1.04 | mg/Kg | 38.9 | 34.3 | 13 | | 20 |
| Iron, Total, ICP | 2.6 | 13 | mg/Kg | 15100 | 15200 | 1 | | 20 |
| Manganese, Total, ICP | .1 | .521 | mg/Kg | 176 | 181 | 3 | | 20 |
| Nickel, Total, ICP | 1 | 5.21 | mg/Kg | 12.2 | 12.8 | 5 | | 20 |
| Lead, Total, ICP | 1.6 | 7.82 | mg/Kg | 12 | 12.8 | 7 | | 20 |
| Antimony, Total, ICP | 1.6 | 7.82 | mg/Kg | <MDL | <MDL | | | 20 |
| Selenium, Total, ICP | 2.6 | 13 | mg/Kg | <MDL | <MDL | | | 20 |
| Thallium, Total, ICP | 10 | 52.1 | mg/Kg | <MDL | <MDL | | | 20 |
| Zinc, Total, ICP | .26 | 1.3 | mg/Kg | 42.2 | 42.9 | 2 | | 20 |

MS:WG84821-6 L38326-9 Matrix: SALTWTRSED Listtype: MTICP-SED Method: EPA3050A/6010B (06-02-004-002) Project: 423062-200-4 Pkey: SED
(Matrix Spike)

| Parameter | Mdl | Rdl | Units | SampValue | Truevalue | MS Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|---|
| Silver, Total, ICP | .2 | 1.02 | mg/Kg | 1.39 | 51.0 | 48.4 | 92 | | 75-125 |
| Aluminum, Total, ICP | 5.1 | 25.5 | mg/Kg | 8420 | 1270 | 10800 | 191 | | 75-125 |
| Arsenic, Total, ICP | 2.5 | 12.7 | mg/Kg | 3.4 | 51.0 | 54.1 | 99 | | 75-125 |
| Beryllium, Total, ICP | .051 | .255 | mg/Kg | .085 | 51.0 | 48.3 | 95 | | 75-125 |
| Cadmium, Total, ICP | .15 | .765 | mg/Kg | .17 | 51.0 | 48.8 | 95 | | 75-125 |
| Chromium, Total, ICP | .25 | 1.27 | mg/Kg | 14.4 | 51.0 | 65.9 | 101 | | 75-125 |
| Copper, Total, ICP | .2 | 1.02 | mg/Kg | 38.9 | 51.0 | 90.9 | 102 | | 75-125 |
| Iron, Total, ICP | 2.5 | 12.7 | mg/Kg | 15100 | 1330 | 17100 | 156 | | 75-125 |
| Manganese, Total, ICP | .1 | .51 | mg/Kg | 176 | 51.0 | 233 | 111 | | 75-125 |

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 04/05/06 03:45
Run ID: R112675 Workgroup: WG84821 (Du/Di Thin L. 14-MAR-06)

MS:WG84821-6 L38326-9 Matrix: SALTWTRSED Listtype: MTICP-SED Method: EPA3050A/6010B (06-02-004-002) Project: 423062-200-4 Pkey: SED
(Matrix Spike)

| Parameter | Mdl | Rdl | Units | SampValue | Truevalue | MS Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|---|
| Nickel, Total, ICP | 1 | 5.1 | mg/Kg | 12.2 | 51.0 | 60.6 | 95 | | 75-125 |
| Lead, Total, ICP | 1.5 | 7.65 | mg/Kg | 12 | 51.0 | 59.9 | 94 | | 75-125 |
| Antimony, Total, ICP | 1.5 | 7.65 | mg/Kg | <MDL | 51.0 | 22.6 | 44 | G | 75-125 |
| Selenium, Total, ICP | 2.5 | 12.7 | mg/Kg | <MDL | 51.0 | 50.1 | 98 | | 75-125 |
| Thallium, Total, ICP | 10 | 51 | mg/Kg | <MDL | 51.0 | 41 | 81 | | 75-125 |
| Zinc, Total, ICP | .25 | 1.27 | mg/Kg | 42.2 | 51.0 | 91.4 | 96 | | 75-125 |

# KING COUNTY ENVIRONMENTAL LABORATORY

Trace Metals Section ICP Preparation Log

Preparation Method: EPA 3050
Project Number(s): 423062-200-4
Project Description(s): Du/Di Thin Layer
Preparation Date: 3/14/06

Work Group #: WG84821
Analyst: SH
Matrices: Saltwater Sed.
Preparation: (1st) 2nd 3rd
Storage conditions: room temp 4° C (-20° C)

## Analytical Samples

| | Sample Number | Aliquot (g or mL) | Final Vol.(mL) | Comments | pH <2 |
|---|---|---|---|---|---|
| 1 | L38326-1 | 1.0221 | 50 | | |
| 2 | -2 | 1.0413 | | | |
| 3 | -9 | 1.0278 | | BKG | |
| 4 | -10 | 1.0443 | | | |
| 5 | -11 | 1.0253 | | | |
| 6 | -12 | 0.9715 | | | |
| 7 | -13 | 0.9920 | | | |
| 8 | -14 | 1.0048 | | | |
| 9 | -15 | 1.0060 | | | |
| 10 | L38327-1 | 1.0034 | | | |

| | Sample Number | Aliquot (g or mL) | Final Vol.(mL) | Comments | pH <2 |
|---|---|---|---|---|---|
| 11 | L38327-2 | 1.0371 | 50 | | |
| 12 | -3 | 1.0220 | | | |
| 13 | -4 | 1.0177 | | | |
| 14 | -5 | 0.9926 | | | |
| 15 | -6 | 1.0352 | | | |
| 16 | -7 | 1.0339 | | | |
| 17 | -8 | 1.0014 | | | |
| 18 | | | | | |
| 19 | | | | | |
| 20 | | | | | |

## Quality Control Samples

| | QC Sample Number | QC Sample Description | Aliquot (g or mL) | Final Vol.(mL) | Comments | pH <2 |
|---|---|---|---|---|---|---|
| 1 | WG84821-1 | Spike Blank | 1.050 | 50 | ICPH | |
| 2 | -2 | Std. Reference Material | 0.2484 | | ~~PACS~~ PACS2 MI-11-30 | |
| 3 | -3 | Lab Control Sample | 0.2591 | | ERA Soil M-05-038 | |
| 4 | -4 | Method Blank | 1.050 | | | |
| 5 | -5 | Lab Duplicate L38326-9 | 0.9596 | | | |
| 6 | -6 | Matrix Spike | 0.9808 | | ICPH | |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |

## Spike Solution

| | Solution Name | Solution ID # | Solution Conc. | Amount Used (uL) |
|---|---|---|---|---|
| 1 | Cal 1 | M-05-040 | 100mg/L | 500 |
| 2 | 2 | M-05-039 | varies | |
| 3 | 3 | M-05-042 | 100mg/L | |
| 4 | 4 | M-05-002 | 5,000mg/L | 250 |
| 5 | K | M-05-033 | 10,000mg/L | 500 |
| 6 | | | | |
| 7 | | | | |

## LCS Solution

| | Solution Name | Solution ID # | Solution Conc. | Amount Used (mL) |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |

Comments:
Analyst neglected to use ICPMarine Spike (ICPH + Mn, Zn); all Mn & Zn spikes were within control limits.
SH 3/16/06

# Trace Metals Data Anomaly Form

**Date(s) Occurred:** *3/15/06*

**WG #(s):** *WG84821*

☒ **All samples in WKGP(s) or Sample #(s):**

**Project #(s):**

**Matrix:** ☐ **Liquid** ☒ **Solid** ☐ **Air** ☐ **Tissue** ☐ **Calibration** ☐ **Other:**

## I. Analysis/Digestion

☒ Total ☐ TCLP ☐ Other:
☐ Dissolved ☐ SEM ☐ Subcontracted:

## II. Instrument

☐ CVAA ☐ CVAF ICP (☐ B ☒ E) ICP-MS (☐PE ☐X7 ☐X II)

## III. Type of Sample/Analytical Anomaly

☒ Values Outside of Control Limits:

1 ☐ Blank Contamination
2 ☐ SB Spike Recoveries
3 ☐ ISTD Recoveries
4 ☐ LCS/SRM Recoveries
5 ☒ MS/MSD Spike Recoveries
6 ☐ MS/MSD RPD
7 ☒ Sample/LD RPD

☐ Certified values developed by a method other than that which was used for the analysis.

8 ☐ Holding time exceeded by:
9 ☐ Insufficient sample amount.
10 ☐ Inappropriate storage, container, or preservation.
11 ☐ Other

**Anomaly Description:** *5.) The matrix spike recoveries for anitmony for WG84821-6 was 44%. 7.) The sample/lab duplicate RPD for silver was 123%.*

Dm 4/17/06

## IV. Type of Project Anomaly

☐ SAP/Work Plan specified MDLs not met.
☐ SAP/Work Plan specified QC frequency or QC type not met.
☐ SAP/Work Plan specified methodology not used.
☐ Sample exceeds regulatory and/or hazardous waste limits.
☐ Sample data results are unusual or inconsistent with expected results.
☐ Other

**Anomaly Description:**

## V. Corrective Action Taken

- ☐ Sample(s) re-analyzed
- ☒ Sample(s) reported "AS IS"
- ☒ Data qualified with the following flags: G, E SA 4/6/06
- ☒ Other
- ☐ Sample(s) re-prepared and re-analyzed
- ☐ Exposure deleted

**Corrective Action Description:** *5a.) The background samples ( L38326-9), lab duplicate (WG84821-5) and matrix spike (WG84821-6) were analyzed on 3/21/06 along with a Post Digestion Spike(PDS) spiked w/2.5 mg/L/ Sb, of the background sample. The PDS recovery was within control limits of +/-25% (98% ). However, the spike amount was too high, relative to the MDL. 5b.) The background sample, lab duplicate and matrix spike was analzyed again on 3/23/06 with a PDS of the lab duplicate sample (due to limited background sample volume) spiked with 0.25 mg/L Sb. The PDS recovery was within control limits at 81%. 3.) The antimony values were qualified with a "G" flag to indicate that the reported values may be biased low, based on the matrix spike recovery. 7.) The silver values were qualified with an "E" and the following text: "Estimated value due to sample/lab duplicate RPD = 123%."*

Scott Mickelson was called to confirm that no further corrective action was necessary & he concurred. 4/17/06 DM

## VI. Potential Effects on Data Quality

**Based upon the expected performance of this method:**

- ☐ It is <u>likely</u> the observed anomaly influenced the reported value(s).
- ☒ It is <u>unlikely</u> the observed anomaly influenced the reported value(s).
- ☒ The observed anomaly <u>may have</u> influenced the reported value(s).
- ☐ It is <u>unknown</u> whether or not the observed anomaly affected the reported value(s).

May have; DM 4/17/06

**Explanation:** *The PDS recoveries inidcate that there is not a matrix issue affecting the antimony recoveries in the the matrix spikes during analysis. The low matrix spike recoveries are related to the 3050 digestion procedure. The spike blank recovery (101%) indicates that the matrix may be affecting antimony during digestion.*

| | Signatures | Signature Dates |
|---|---|---|
| **Reported By:** *Susannah Hochstein* | Susannah Hochstein | 4/6/06 |
| **Reviewer:** *Steve Talbot* | [signature] | 4/11/06 |
| **Supervisor:** *Diane McElhany* | [signature] | 4/17/06 |
| **QA Officer:** *Colin Elliott* (For QA1 only) | | |
| **cc: LPM:** Grothkopp | | |

Unlikely. All silver values were < RDL but one which was just above the RDL. Values around the RDL will have greater variability & it is unlikely that there is any bias in the silver #. DM 4/17/06

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Jun 14 2006, 08:27 am

Work Group: WG84810 (Duwamish Diagonal Cap Monitoring) for Department: 6 - Metals, Trace

Created: 13-MAR-06 PrepDate: 13-MAR-06 Due: Operator: DC

| Sample | Project Number | Project Description | PKey | C | Product | Matrix | Stat | UA | Workdate | Duedate |
|---|---|---|---|---|---|---|---|---|---|---|
| L38325-1 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 04-APR-06 | 24-APR-06 |
| L38325-2 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 04-APR-06 | 24-APR-06 |
| L38325-3 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 04-APR-06 | 24-APR-06 |
| L38325-4 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 04-APR-06 | 24-APR-06 |
| L38325-5 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 04-APR-06 | 24-APR-06 |
| L38325-6 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 04-APR-06 | 24-APR-06 |
| L38325-7 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 04-APR-06 | 24-APR-06 |
| L38325-8 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 04-APR-06 | 24-APR-06 |
| L38325-9 | 423062-100-4 | Duwamish Diagonal Cap Monitoring | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 04-APR-06 | 24-APR-06 |
| L38326-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 05-APR-06 | 24-APR-06 |
| L38326-10 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 05-APR-06 | 24-APR-06 |
| L38326-11 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 05-APR-06 | 24-APR-06 |
| L38326-12 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 05-APR-06 | 24-APR-06 |
| L38326-13 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 06-APR-06 | 24-APR-06 |
| L38326-14 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 06-APR-06 | 24-APR-06 |
| L38326-15 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 06-APR-06 | 24-APR-06 |
| L38326-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 05-APR-06 | 24-APR-06 |
| L38326-9 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 05-APR-06 | 24-APR-06 |
| WG84810-1 | SRM | | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 13-MAR-06 | |
| WG84810-2 | MB | | | S | HG-CVAA | SOLIDBLANK | DONE | U | 13-MAR-06 | |
| WG84810-3 | SB | | | S | HG-CVAA | SOLIDBLANK | DONE | U | 13-MAR-06 | |
| WG84810-4 | MS | | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 13-MAR-06 | |
| WG84810-5 | MSD | | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 13-MAR-06 | |
| WG84810-6 | LD | | SED | S | HG-CVAA | SALTWTRSED | DONE | U | 13-MAR-06 | |

Comments:

| | |
|---|---|
| L38325-1 | 3 grab comp, 0-10 cm |
| L38325-2 | 3 grab comp, 0-10 cm |
| L38325-3 | 3 grab comp, 0-10 cm |
| L38325-4 | 3 grab comp, 0-10 cm |
| L38325-5 | 0-10 cm, AREP |
| L38325-6 | 0-10 cm, FREP |
| L38325-7 | 3 grab comp, 0-10 cm |
| L38325-8 | 3 grab comp, 0-10 cm |
| L38325-9 | 3 grab comp, 0-10 cm |
| L38326-1 | 10 Grab Comp, 0-10 cm |
| L38326-10 | 10 Grab Comp, FREP |
| L38326-11 | 10 Grab Comp, 0-10 cm |
| L38326-12 | 10 Grab Comp, 0-10 cm |
| L38326-13 | 10 Grab Comp, 0-10 cm |
| L38326-14 | 10 Grab Comp, 0-10 cm |
| L38326-15 | 10 Grab Comp, 0-10 cm |
| L38326-2 | 10 Grab Comp, 0-10 cm |
| L38326-9 | 10 Grab Comp, AREP |
| WG84810-1 | PACS2 |
| WG84810-2 | METHOD BLANK |
| WG84810-3 | WG84810-2 HG-SOL |
| WG84810-4 | L38325-7 HG-SOL |
| WG84810-5 | WG84810-4 L38325-7 HG-SOL-MSD |
| WG84810-6 | L38326-9 RPD-SOL |

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 06/14/06 08:24
Run ID: R112548 Workgroup: WG84810 (Duwamish Diagonal Cap Monitoring)

SRM:WG84810-1 Matrix: SALTWTRSED Listtype: MTHG-SED Method: EPA 7471A (06-01-004-003) Project: Pkey: SED
(Std Reference Material)

| Parameter | Mdl | Rdl | Units | Truevalue | SRM Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|
| Mercury, Total, CVAA | .1 | 1.03 | mg/Kg | 3.04 | 2.86 | 94 | | 80-120 |

MB:WG84810-2 Matrix: SOLIDBLANK Listtype: MTHG-SED Method: EPA 7471A (06-01-004-003) Project: Pkey: SED
(Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Qual |
|---|---|---|---|---|---|
| Mercury, Total, CVAA | .019 | .19 | mg/Kg | <MDL | |

SB:WG84810-3 MB:WG84810-2 Matrix: SOLIDBLANK Listtype: MTHG-SED Method: EPA 7471A (06-01-004-003) Project: Pkey: SED
(Spike Blank, Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Truevalue | SB Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|---|
| Mercury, Total, CVAA | .019 | .19 | mg/Kg | <MDL | 0.476 | .491 | 103 | | 85-115 |

MSD:WG84810-5 MS:WG84810-4 L38325-7 Matrix: SALTWTRSED Listtype: MTHG-SED Method: EPA 7471A (06-01-004-003) Project: 423062-100-4 Pkey: SED
(Matrix Spike Duplicate, Matrix Spike)

| Parameter | Mdl | Rdl | Units | SampValue | Truevalue | MS Value | % Rec. | Qual | LabLimit | Truevalue | MSD Value | % Rec. | Qual | RPD | Qual | Lablimit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury, Total, CVAA | .019 | .194 | mg/Kg | .093 | 0.484 | .572 | 99 | | 75-125 | 0.505 | .594 | 99 | | 0 | | 20 |

LD:WG84810-6 L38326-9 Matrix: SALTWTRSED Listtype: MTHG-SED Method: EPA 7471A (06-01-004-003) Project: 423062-200-4 Pkey: SED
(Lab Duplicate)

| Parameter | Mdl | Rdl | Units | SampValue | LD Value | RPD | Qual | LabLimi |
|---|---|---|---|---|---|---|---|---|
| Mercury, Total, CVAA | .019 | .193 | mg/Kg | .069 | .074 | | | 20 |

# KING COUNTY ENVIRONMENTAL LABORATORY

## Trace Metals Section HG-CVAA Preparation Log

Preparation Method: EPA 7471A
Work Group #: WG84810
Project Number(s): 423062
Analyst: DC
Project Description(s): DUWAMISH DIAG. CAP MONITORING
Matrices: SALTWATER SEDIMENT
Preparation Date: 3/13/06
Preparation: (1st) 2nd 3rd
Temperature: 94.4°C
Storage conditions: room temp 4° C (-20° C)

### Analytical Samples

| | Sample Number | Aliquot (g or mL) | Final Vol.(mL) | Comments | pH <2 | | Sample Number | Aliquot (g or mL) | Final Vol.(mL) | Comments | pH <2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | L38325-1 | 1.004 | 126 | | | 11 | L38326-2 | 1.022 | 126 | | |
| 2 | -2 | 1.048 | | | | 12 | L38326-9 | 0.970 | | LD | |
| 3 | -3 | 1.037 | | | | 13 | -10 | 1.007 | | | |
| 4 | -4 | 1.018 | | | | 14 | -11 | 0.986 | | | |
| 5 | -5 | 1.019 | | | | 15 | -12 | 0.995 | | | |
| 6 | -6 | 1.036 | | | | 16 | -13 | 0.990 | | | |
| 7 | -7 | 1.010 | | BKG | | 17 | -14 | 1.027 | | | |
| 8 | -8 | 1.011 | | | | 18 | -15 | 1.000 | | | |
| 9 | -9 | 1.022 | | | | 19 | | | | | |
| 10 | L38326-1 | 1.019 | | | | 20 | | | | | |

### Batch Quality Control Samples

| | QC Sample Number | QC Sample Description | Aliquot (g or mL) | Final Vol.(mL) | Solution ID # | Solution Conc. | Amount Used (uL) | pH <2 |
|---|---|---|---|---|---|---|---|---|
| 1 | WG84810-1 | SRM-NRCC PACS-2 | 0.195 | 126 | MI-11-30 | | | |
| 2 | WG84810-2 | METHOD BLANK | 1.050 | | | | | |
| 3 | WG84810-3 | SPIKE BLANK | 1.050 | | Hg-06-~~030~~ 034 DC 3/13/06 | 2ppm | 250 | |
| 4 | WG84810-4 | L38325-7 MS | 1.033 | | | | | |
| 5 | WG84810-5 | MSD | 0.990 | | | | | |
| 6 | WG84810-6 | L38326-9 LD | 1.037 | | | | | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |

### Calibration and Instrument Check Standards

prep date 3/14/06 by ST SH

| | Standard Conc. (ppb or ppt) | Cal Std | Inst Chk Std | Aliquot (g or mL) | Final Vol.(mL) | Solution ID # | Solution Conc. | Amount Used (uL) |
|---|---|---|---|---|---|---|---|---|
| 1 | 0 | ✓ | ✓ | 100 | 126 | | | |
| 2 | 0.2 (MDL) | | ✓ | | | Hg-06-034 | 2ppm | 10 |
| 3 | 1.0 | ✓ | | | | | | 50 |
| 4 | 2.5 | ✓ | | | | | | 125 |
| 5 | 5.0 (CCV) | ✓ | ✓ | | | | | 250 |
| 6 | 10.0 | ✓ | | | | | | 500 |
| 7 | 20.0 | ✓ | | | | | | 1000 |
| 8 | 7.95 (ICV) | | ✓ | | | MI-17-08 | 1.59 ppm | 500 |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | | |

* Standards, Samples and pre-digestion dilutions are based on a (100)/25/20 mL final volume

### Reagent Solution ID #'s

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $KMnO_4$ | Hg-06-029 | $K_2S_2O_8$ | N/A | $NH_2OH$-HCl | Hg-06-017 | $SnCl_2$ | Hg-06-036 |

**Comments:**

| Sample ID | Time Stamp | Sample Type |
|---|---|---|
| Calibration Blank | 3/14/2006 10:20 | Standard |
| Standard #1 | 3/14/2006 10:22 | Standard |
| Standard #2 | 3/14/2006 10:23 | Standard |
| Standard #3 | 3/14/2006 10:25 | Standard |
| Standard #4 | 3/14/2006 10:27 | Standard |
| Standard #5 | 3/14/2006 10:29 | Standard |
| IPC | 3/14/2006 10:31 | IPR |
| ICB | 3/14/2006 10:32 | ICB |
| ICV | 3/14/2006 10:34 | ICV |
| MDL | 3/14/2006 10:36 | CRDL Standard |
| WG84810-1 | 3/14/2006 10:38 | Unknown |
| WG84810-2 | 3/14/2006 10:39 | Unknown |
| WG84810-3 | 3/14/2006 10:41 | Unknown |
| L38325-1 | 3/14/2006 10:43 | Unknown |
| L38325-2 | 3/14/2006 10:45 | Unknown |
| L38325-3 | 3/14/2006 10:47 | Unknown |
| L38325-4 | 3/14/2006 10:48 | Unknown |
| L38325-5 | 3/14/2006 10:50 | Unknown |
| L38325-6 | 3/14/2006 10:52 | Unknown |
| CCV | 3/14/2006 10:54 | CCV |
| CCB | 3/14/2006 10:56 | CCB |
| L38325-7 | 3/14/2006 10:57 | Unknown |
| WG84810-4 | 3/14/2006 10:59 | Unknown |
| WG84810-5 | 3/14/2006 11:01 | Unknown |
| L38325-8 | 3/14/2006 11:03 | Unknown |
| L38325-9 | 3/14/2006 11:05 | Unknown |
| L38326-1 | 3/14/2006 11:06 | Unknown |
| L38326-2 | 3/14/2006 11:08 | Unknown |
| L38326-9 | 3/14/2006 11:10 | Unknown |
| WG84810-6 | 3/14/2006 11:12 | Unknown |
| L38326-10 | 3/14/2006 11:14 | Unknown |
| CCV | 3/14/2006 11:15 | CCV |
| CCB | 3/14/2006 11:17 | CCB |
| L38326-11 | 3/14/2006 11:19 | Unknown |
| L38326-12 | 3/14/2006 11:21 | Unknown |
| L38326-13 | 3/14/2006 11:23 | Unknown |
| L38326-14 | 3/14/2006 11:24 | Unknown |
| L38326-15 | 3/14/2006 11:26 | Unknown |
| MDL | 3/14/2006 11:28 | CRDL Standard |
| CCV | 3/14/2006 11:30 | CCV |
| CCB | 3/14/2006 11:32 | CCB |

| | | | | | |
|---|---|---|---|---|---|
| WG84810 | 6-SED | ug/L | | | |
| WG84810-1 | 14-Mar-06 | 5.5767 | 0.195 | 1 | 100 |
| WG84810-2 | 14-Mar-06 | -0.0043 | 1.050 | 1 | 100 |
| WG84810-3 | 14-Mar-06 | 5.1598 | 1.050 | 1 | 100 |
| L38325-1 | 14-Mar-06 | 0.54192 | 1.004 | 1 | 100 |
| L38325-2 | 14-Mar-06 | 1.3994 | 1.048 | 1 | 100 |
| L38325-3 | 14-Mar-06 | 1.4933 | 1.037 | 1 | 100 |
| L38325-4 | 14-Mar-06 | 0.67721 | 1.018 | 1 | 100 |
| L38325-5 | 14-Mar-06 | 0.12234 | 1.019 | 1 | 100 |
| L38325-6 | 14-Mar-06 | 0.15493 | 1.036 | 1 | 100 |
| L38325-7 | 14-Mar-06 | 0.93585 | 1.010 | 1 | 100 |
| WG84810-4 | 14-Mar-06 | 5.9075 | 1.033 | 1 | 100 |
| WG84810-5 | 14-Mar-06 | 5.8772 | 0.990 | 1 | 100 |
| L38325-8 | 14-Mar-06 | 1.3724 | 1.011 | 1 | 100 |
| L38325-9 | 14-Mar-06 | 1.1417 | 1.022 | 1 | 100 |
| L38326-1 | 14-Mar-06 | 1.702 | 1.019 | 1 | 100 |
| L38326-2 | 14-Mar-06 | 1.6435 | 1.022 | 1 | 100 |
| L38326-9 | 14-Mar-06 | 0.66624 | 0.970 | 1 | 100 |
| WG84810-6 | 14-Mar-06 | 0.77141 | 1.037 | 1 | 100 |
| L38326-10 | 14-Mar-06 | 1.0846 | 1.007 | 1 | 100 |
| L38326-11 | 14-Mar-06 | 0.77133 | 0.986 | 1 | 100 |
| L38326-12 | 14-Mar-06 | 3.2447 | 0.995 | 1 | 100 |
| L38326-13 | 14-Mar-06 | 0.78266 | 0.990 | 1 | 100 |
| L38326-14 | 14-Mar-06 | 1.0211 | 1.027 | 1 | 100 |
| L38326-15 | 14-Mar-06 | 1.7567 | 1.000 | 1 | 100 |

# ORGANIC CHEMISTRY QC DATA

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

May 31 2006, 07:24 am

Work Group: WG84979 (bs#212 bnasms) for Department: 7 - Organics, Trace

Created: 27-MAR-06 PrepDate: 28-MAR-06 Due: Operator: km

| Sample | Project Number | Project Description | PKey | C | Product | Matrix | Stat | UA | Workdate | Duedate |
|---|---|---|---|---|---|---|---|---|---|---|
| L38326-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | BNASMS | SALTWTRSED | PREP | U | 22-MAR-06 | 24-APR-06 |
| L38326-10 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | BNASMS | SALTWTRSED | PREP | U | 22-MAR-06 | 24-APR-06 |
| L38326-11 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | BNASMS | SALTWTRSED | PREP | U | 22-MAR-06 | 24-APR-06 |
| L38326-12 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | BNASMS | SALTWTRSED | PREP | U | 22-MAR-06 | 24-APR-06 |
| L38326-13 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | BNASMS | SALTWTRSED | PREP | U | 23-MAR-06 | 24-APR-06 |
| L38326-14 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | BNASMS | SALTWTRSED | PREP | U | 23-MAR-06 | 24-APR-06 |
| L38326-15 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | BNASMS | SALTWTRSED | PREP | U | 23-MAR-06 | 24-APR-06 |
| L38326-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | BNASMS | SALTWTRSED | PREP | U | 22-MAR-06 | 24-APR-06 |
| L38326-9 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | BNASMS | SALTWTRSED | PREP | U | 22-MAR-06 | 24-APR-06 |
| L38327-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | BNASMS | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | BNASMS | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-3 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | BNASMS | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-4 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | BNASMS | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-5 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | BNASMS | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-6 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | BNASMS | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-7 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | BNASMS | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-8 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | BNASMS | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| WG84979-1 | MB | | | S | BNASMS | OTHR SOLID | PREP | U | 27-MAR-06 | |
| WG84979-10 | MB | | | S | BNASMS | OTHR SOLID | WKGP | U | 31-MAY-06 | |
| WG84979-5 | SRM | | | S | BNASMS | OTHR SOLID | PREP | U | 27-MAR-06 | |
| WG84979-6 | LD | | | S | BNASMS | OTHR SOLID | PREP | U | 27-MAR-06 | |
| WG84979-7 | SB | | | S | BNASMS | OTHR SOLID | PREP | U | 27-MAR-06 | |
| WG84979-8 | MS | | SED | S | BNASMS | SALTWTRSED | PREP | U | 27-MAR-06 | |
| WG84979-9 | MSD | | SED | S | BNASMS | SALTWTRSED | PREP | U | 27-MAR-06 | |

Comments:

| | |
|---|---|
| L38326-1 | 10 Grab Comp, 0-10 cm |
| L38326-10 | 10 Grab Comp, FREP |
| L38326-11 | 10 Grab Comp, 0-10 cm |
| L38326-12 | 10 Grab Comp, 0-10 cm |
| L38326-13 | 10 Grab Comp, 0-10 cm |
| L38326-14 | 10 Grab Comp, 0-10 cm |
| L38326-15 | 10 Grab Comp, 0-10 cm |
| L38326-2 | 10 Grab Comp, 0-10 cm |
| L38326-9 | 10 Grab Comp, AREP |
| L38327-1 | Diver Cores, 2006 |
| L38327-2 | Diver Cores, 2006, AREP |
| L38327-3 | Diver Cores, 2006, FREP |
| L38327-4 | Diver Cores, 2006 |
| L38327-5 | Diver Cores, 2006 |
| L38327-6 | Diver Cores, 2006 |
| L38327-7 | Diver Cores, 2006 |
| L38327-8 | Diver Cores, 2006 |
| WG84979-1 | MB060328 |
| WG84979-10 | MB060523 |
| WG84979-5 | 1944 |
| WG84979-6 | L38326-2 |
| WG84979-7 | WG84979-1 |
| WG84979-8 | L38327-1 |
| WG84979-9 | WG84979-1 L38327-1 |

A/m
6/23/06
pmo

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 06/01/06 09:56
Run ID: R113755 Workgroup: WG84979 (bs#212 bnasms)

MB:WG84979-1 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED
(Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Qual |
|---|---|---|---|---|---|
| Phenol | 5.3 | 10.7 | ug/Kg | <MDL | |
| 1,3-Dichlorobenzene | .27 | .533 | ug/Kg | <MDL | |
| 1,4-Dichlorobenzene | .27 | .533 | ug/Kg | <MDL | |
| 1,2-Dichlorobenzene | .27 | .533 | ug/Kg | <MDL | |
| Hexachloroethane | 1.3 | 2.67 | ug/Kg | <MDL | |
| 2,4-Dimethylphenol | 2.7 | 5.33 | ug/Kg | <MDL | |
| 1,2,4-Trichlorobenzene | .27 | .533 | ug/Kg | <MDL | |
| Naphthalene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Hexachlorobutadiene | 1.3 | 2.67 | ug/Kg | <MDL | |
| Acenaphthylene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Dimethyl Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | |
| Acenaphthene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Fluorene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Diethyl Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | |
| N-Nitrosodiphenylamine | 5.3 | 10.7 | ug/Kg | <MDL | |
| Hexachlorobenzene | .53 | 1.07 | ug/Kg | <MDL | |
| Pentachlorophenol | 13 | 26.7 | ug/Kg | <MDL | |
| Phenanthrene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Anthracene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Di-N-Butyl Phthalate | 5.3 | 10.7 | ug/Kg | 6 | B |
| Fluoranthene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Pyrene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Benzyl Butyl Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | |
| Benzo(a)anthracene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Chrysene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Bis(2-Ethylhexyl)Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | |
| Di-N-Octyl Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | |
| Benzo(b)fluoranthene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Benzo(k)fluoranthene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Benzo(a)pyrene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Indeno(1,2,3-Cd)Pyrene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Dibenzo(a,h)anthracene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Benzo(g,h,i)perylene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Benzyl Alcohol | 5.3 | 10.7 | ug/Kg | <MDL | |
| 2-Methylphenol | 5.3 | 10.7 | ug/Kg | <MDL | |
| 4-Methylphenol | 5.3 | 10.7 | ug/Kg | <MDL | |
| Benzoic Acid | 13 | 26.7 | ug/Kg | <MDL | |
| 2-Methylnaphthalene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Dibenzofuran | 2.7 | 5.33 | ug/Kg | <MDL | |
| Carbazole | 2.7 | 5.33 | ug/Kg | <MDL | |
| Coprostanol | 53 | 107 | ug/Kg | <MDL | |
| Caffeine | 5.3 | 10.7 | ug/Kg | <MDL | |
| Total LPAHs | 2.7 | 5.33 | ug/Kg | <MDL | |
| Total HPAHS | 2.7 | 5.33 | ug/Kg | <MDL | |

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 06/01/06 09:56
Run ID: R113755 Workgroup: WG84979 (bs#212 bnasms)

SRM:WG84979-5 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED
(Std Reference Material)

| Parameter | Mdl | Rdl | Units | Truevalue | SRM Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|
| Naphthalene | 130 | 267 | ug/Kg | 1630 | 220 | 13 | | 10-29 |
| Phenanthrene | 270 | 533 | ug/Kg | 5200 | 4550 | 88 | | 51-106 |
| Anthracene | 270 | 533 | ug/Kg | 1750 | 931 | 53 | | 28-98 |
| Fluoranthene | 270 | 533 | ug/Kg | 8800 | 9150 | 104 | | 45-126 |
| Pyrene | 270 | 533 | ug/Kg | 9570 | 9650 | 101 | | 36-135 |
| Benzo(a)anthracene | 270 | 533 | ug/Kg | 4660 | 4520 | 97 | | 66-124 |
| Chrysene | 270 | 533 | ug/Kg | 4800 | 5720 | 119 | | 77-136 |
| Benzo(b)fluoranthene | 270 | 533 | ug/Kg | 3820 | 3370 | 88 | | 52-190 |
| Benzo(k)fluoranthene | 270 | 533 | ug/Kg | 2270 | 3200 | 141 | | 60-146 |
| Benzo(a)pyrene | 270 | 533 | ug/Kg | 4240 | 3780 | 89 | | 60-116 |
| Indeno(1,2,3-Cd)Pyrene | 270 | 533 | ug/Kg | 2740 | 2290 | 84 | | 33-121 |
| Dibenzo(a,h)anthracene | 270 | 533 | ug/Kg | 419. | 664 | 159 | | 10-200 |
| Benzo(g,h,i)perylene | 270 | 533 | ug/Kg | 2800 | 2640 | 94 | | 15-121 |

LD:WG84979-6 L38326-2 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED
(Lab Duplicate)

| Parameter | Mdl | Rdl | Units | SampValue | LD Value | RPD | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|
| Phenol | 53 | 107 | ug/Kg | 825 | 870 | 5 | | 35 |
| 1,3-Dichlorobenzene | 2.7 | 5.33 | ug/Kg | <MDL | <MDL | | | 35 |
| 1,4-Dichlorobenzene | 2.7 | 5.33 | ug/Kg | <MDL | <MDL | | | 35 |
| 1,2-Dichlorobenzene | 2.7 | 5.33 | ug/Kg | <MDL | <MDL | | | 35 |
| Hexachloroethane | 13 | 26.7 | ug/Kg | <MDL | <MDL | | | 35 |
| 2,4-Dimethylphenol | 27 | 53.3 | ug/Kg | <MDL | <MDL | | | 35 |
| 1,2,4-Trichlorobenzene | 2.7 | 5.33 | ug/Kg | <MDL | <MDL | | | 35 |
| Naphthalene | 27 | 53.3 | ug/Kg | <MDL | <MDL | | | 35 |
| Hexachlorobutadiene | 13 | 26.7 | ug/Kg | <MDL | <MDL | | | 35 |
| Acenaphthylene | 27 | 53.3 | ug/Kg | <MDL | <MDL | | | 35 |
| Dimethyl Phthalate | 53 | 107 | ug/Kg | <MDL | <MDL | | | 35 |
| Acenaphthene | 27 | 53.3 | ug/Kg | 204 | 221 | 8 | | 35 |
| Fluorene | 27 | 53.3 | ug/Kg | 195 | 196 | 1 | | 35 |
| Diethyl Phthalate | 53 | 107 | ug/Kg | <MDL | <MDL | | | 35 |
| N-Nitrosodiphenylamine | 53 | 107 | ug/Kg | <MDL | <MDL | | | 35 |
| Hexachlorobenzene | 5.3 | 10.7 | ug/Kg | <MDL | <MDL | | | 35 |
| Pentachlorophenol | 130 | 267 | ug/Kg | <MDL | <MDL | | | 35 |
| Phenanthrene | 27 | 53.3 | ug/Kg | 835 | 860 | 3 | | 35 |
| Anthracene | 27 | 53.3 | ug/Kg | 218 | 220 | 1 | | 35 |
| Di-N-Butyl Phthalate | 53 | 107 | ug/Kg | <MDL | 69 | | | 35 |
| Fluoranthene | 27 | 53.3 | ug/Kg | 1850 | 1870 | 1 | | 35 |
| Pyrene | 27 | 53.3 | ug/Kg | 1290 | 1260 | 2 | | 35 |
| Benzyl Butyl Phthalate | 53 | 107 | ug/Kg | 143 | 114 | 22 | | 35 |
| Benzo(a)anthracene | 27 | 53.3 | ug/Kg | 521 | 489 | 6 | | 35 |
| Chrysene | 27 | 53.3 | ug/Kg | 534 | 501 | 6 | | 35 |
| Bis(2-Ethylhexyl)Phthalate | 53 | 107 | ug/Kg | 966 | 1040 | 7 | | 35 |
| Di-N-Octyl Phthalate | 53 | 107 | ug/Kg | <MDL | <MDL | | | 35 |
| Benzo(b)fluoranthene | 27 | 53.3 | ug/Kg | 342 | 377 | 10 | | 35 |
| Benzo(k)fluoranthene | 27 | 53.3 | ug/Kg | 364 | 307 | 17 | | 35 |
| Benzo(a)pyrene | 27 | 53.3 | ug/Kg | 300 | 297 | 1 | | 35 |
| Indeno(1,2,3-Cd)Pyrene | 27 | 53.3 | ug/Kg | 135 | 136 | 1 | | 35 |
| Dibenzo(a,h)anthracene | 27 | 53.3 | ug/Kg | 53.4 | 52 | 3 | | 35 |

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 06/01/06 09:56
Run ID: R113755 Workgroup: WG84979 (bs#212 bnasms)

LD:WG84979-6 L38326-2 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED
(Lab Duplicate)

| Parameter | Mdl | Rdl | Units | SampValue | LD Value | RPD | Qual | LabLimi |
|---|---|---|---|---|---|---|---|---|
| Benzo(g,h,i)perylene | 27 | 53.3 | ug/Kg | 151 | 158 | 4 | | 35 |
| Benzyl Alcohol | 53 | 107 | ug/Kg | <MDL | <MDL | | | 35 |
| 2-Methylphenol | 53 | 107 | ug/Kg | <MDL | <MDL | | | 35 |
| 4-Methylphenol | 53 | 107 | ug/Kg | <MDL | <MDL | | | 35 |
| Benzoic Acid | 130 | 267 | ug/Kg | <MDL | <MDL | | | 35 |
| 2-Methylnaphthalene | 27 | 53.3 | ug/Kg | 67.6 | 71.9 | 6 | | 35 |
| Dibenzofuran | 27 | 53.3 | ug/Kg | 125 | 141 | 12 | | 35 |
| Carbazole | 27 | 53.3 | ug/Kg | 61.1 | 61.8 | 1 | | 35 |
| Coprostanol | 530 | 1070 | ug/Kg | <MDL | <MDL | | | 35 |
| Caffeine | 53 | 107 | ug/Kg | <MDL | <MDL | | | 35 |

SB:WG84979-7 MB:WG84979-1 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED
(Spike Blank, Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Truevalue | SB Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|---|
| Phenol | 5.3 | 10.7 | ug/Kg | <MDL | 15 | 198 | 49 | | 10-107 |
| 1,3-Dichlorobenzene | .27 | .533 | ug/Kg | <MDL | 15 | 165 | 41 | | 18-95 |
| 1,4-Dichlorobenzene | .27 | .533 | ug/Kg | <MDL | 15 | 172 | 43 | | 21-99 |
| 1,2-Dichlorobenzene | .27 | .533 | ug/Kg | <MDL | 15 | 177 | 44 | | 10-116 |
| Hexachloroethane | 1.3 | 2.67 | ug/Kg | <MDL | 15 | 171 | 43 | | 17-92 |
| 2,4-Dimethylphenol | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 37.5 | 9 | * | 10-81 |
| 1,2,4-Trichlorobenzene | .27 | .533 | ug/Kg | <MDL | 15 | 181 | 45 | | 13-110 |
| Naphthalene | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 177 | 44 | | 17-94 |
| Hexachlorobutadiene | 1.3 | 2.67 | ug/Kg | <MDL | 15 | 171 | 43 | | 10-97 |
| Acenaphthylene | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 232 | 58 | | 31-101 |
| Dimethyl Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | 15 | 298 | 74 | | 38-114 |
| Acenaphthene | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 213 | 53 | | 29-102 |
| Fluorene | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 275 | 69 | | 39-106 |
| Diethyl Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | 15 | 328 | 82 | | 51-118 |
| N-Nitrosodiphenylamine | 5.3 | 10.7 | ug/Kg | <MDL | 15 | 277 | 69 | | 11-148 |
| Hexachlorobenzene | .53 | 1.07 | ug/Kg | <MDL | 15 | 297 | 74 | | 40-111 |
| Pentachlorophenol | 13 | 26.7 | ug/Kg | <MDL | 15 | 197 | 49 | | 38-124 |
| Phenanthrene | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 313 | 78 | | 57-104 |
| Anthracene | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 285 | 71 | | 45-114 |
| Di-N-Butyl Phthalate | 5.3 | 10.7 | ug/Kg | 6 | 15 | 366 | 90 | | 17-180 |
| Fluoranthene | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 365 | 91 | | 55-132 |
| Pyrene | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 358 | 89 | | 48-132 |
| Benzyl Butyl Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | 15 | 358 | 90 | | 15-183 |
| Benzo(a)anthracene | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 362 | 90 | | 69-117 |
| Chrysene | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 318 | 79 | | 69-111 |
| Bis(2-Ethylhexyl)Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | 15 | 364 | 91 | | 10-182 |
| Di-N-Octyl Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | 15 | 364 | 91 | | 10-200 |
| Benzo(b)fluoranthene | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 308 | 77 | | 50-121 |
| Benzo(k)fluoranthene | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 364 | 91 | | 58-128 |
| Benzo(a)pyrene | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 305 | 76 | | 15-137 |
| Indeno(1,2,3-Cd)Pyrene | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 320 | 80 | | 51-132 |
| Dibenzo(a,h)anthracene | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 318 | 80 | | 53-129 |
| Benzo(g,h,i)perylene | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 303 | 76 | | 46-126 |
| Benzyl Alcohol | 5.3 | 10.7 | ug/Kg | <MDL | 15 | 142 | 36 | | 10-119 |
| 2-Methylphenol | 5.3 | 10.7 | ug/Kg | <MDL | 15 | 155 | 39 | | 16-91 |

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 06/01/06 09:56
Run ID: R113755 Workgroup: WG84979 (bs#212 bnasms)

SB:WG84979-7 MB:WG84979-1 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED
(Spike Blank, Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Truevalue | SB Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 5.3 | 10.7 | ug/Kg | <MDL | 15 | 161 | 40 | | 10-125 |
| Benzoic Acid | 13 | 26.7 | ug/Kg | <MDL | 15 | 45.2 | 11 | | 10-170 |
| 2-Methylnaphthalene | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 195 | 49 | | 22-99 |
| Dibenzofuran | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 249 | 62 | | 37-97 |
| Carbazole | 2.7 | 5.33 | ug/Kg | <MDL | 15 | 323 | 81 | | 44-179 |
| Coprostanol | 53 | 107 | ug/Kg | <MDL | 150 | 2300 | 57 | | 10-159 |
| Caffeine | 5.3 | 10.7 | ug/Kg | <MDL | 15 | 372 | 93 | | 45-159 |
| Total LPAHs | 2.7 | 5.33 | ug/Kg | <MDL | 7.5 | 1690 | | | |
| Total HPAHS | 2.7 | 5.33 | ug/Kg | <MDL | 7.5 | 3320 | | | |

MSD:WG84979-9 MS:WG84979-8 L38327-1 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED
(Matrix Spike Duplicate, Matrix Spike)

| Parameter | Mdl | Rdl | Units | SampValue | Truevalue | MS Value | % Rec. | Qual | LabLimit | Truevalue | MSD Value | % Rec. | Qual | RPD | Qual | Lablimit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phenol | 5.3 | 10.7 | ug/Kg | <MDL | 400. | 270 | 67 | | 10-127 | 400. | 241 | 60 | | 11 | | 35 |
| 1,3-Dichlorobenzene | .27 | .533 | ug/Kg | <MDL | 400. | 158 | 40 | | 10-103 | 400. | 159 | 40 | | 0 | | 35 |
| 1,4-Dichlorobenzene | .27 | .533 | ug/Kg | <MDL | 400. | 168 | 42 | | 10-104 | 400. | 168 | 42 | | 0 | | 35 |
| 1,2-Dichlorobenzene | .27 | .533 | ug/Kg | <MDL | 400. | 179 | 45 | | 10-105 | 400. | 178 | 44 | | 2 | | 35 |
| Hexachloroethane | 1.3 | 2.67 | ug/Kg | <MDL | 400. | 170 | 43 | | 10-89 | 400. | 163 | 41 | | 5 | | 35 |
| 2,4-Dimethylphenol | 2.7 | 5.33 | ug/Kg | <MDL | 400. | 173 | 43 | | 10-150 | 400. | 180 | 45 | | 5 | | 35 |
| 1,2,4-Trichlorobenzene | .27 | .533 | ug/Kg | <MDL | 400. | 210 | 53 | | 10-115 | 400. | 221 | 55 | | 4 | | 35 |
| Naphthalene | 2.7 | 5.33 | ug/Kg | <MDL | 400. | 207 | 52 | | 12-97 | 400. | 220 | 55 | | 6 | | 35 |
| Hexachlorobutadiene | 1.3 | 2.67 | ug/Kg | <MDL | 400. | 195 | 49 | | 10-97 | 400. | 205 | 51 | | 4 | | 35 |
| Acenaphthylene | 2.7 | 5.33 | ug/Kg | <MDL | 400. | 287 | 72 | | 27-132 | 400. | 303 | 76 | | 5 | | 35 |
| Dimethyl Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | 400. | 315 | 79 | | 13-162 | 400. | 337 | 84 | | 6 | | 35 |
| Acenaphthene | 2.7 | 5.33 | ug/Kg | <MDL | 400. | 256 | 64 | | 25-130 | 400. | 269 | 67 | | 5 | | 35 |
| Fluorene | 2.7 | 5.33 | ug/Kg | 4 | 400. | 313 | 77 | | 22-147 | 400. | 373 | 92 | | 18 | | 35 |
| Diethyl Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | 400. | 333 | 83 | | 31-150 | 400. | 356 | 89 | | 7 | | 35 |
| N-Nitrosodiphenylamine | 5.3 | 10.7 | ug/Kg | <MDL | 400. | 309 | 77 | | 10-169 | 400. | 332 | 83 | | 8 | | 35 |
| Hexachlorobenzene | .53 | 1.07 | ug/Kg | <MDL | 400. | 316 | 79 | | 18-151 | 400. | 342 | 85 | | 7 | | 35 |
| Pentachlorophenol | 13 | 26.7 | ug/Kg | <MDL | 400. | 203 | 51 | | 17-170 | 400. | 263 | 66 | | 26 | | 35 |
| Phenanthrene | 2.7 | 5.33 | ug/Kg | 24.3 | 400. | 337 | 78 | | 10-200 | 400. | 488 | 116 | | 39 | * | 35 |
| Anthracene | 2.7 | 5.33 | ug/Kg | 15.2 | 400. | 320 | 76 | | 10-181 | 400. | 532 | 129 | | 52 | * | 35 |
| Di-N-Butyl Phthalate | 5.3 | 10.7 | ug/Kg | 14.2 | 400. | 351 | 84 | | 10-194 | 400. | 397 | 96 | | 13 | | 35 |
| Fluoranthene | 2.7 | 5.33 | ug/Kg | 66 | 400. | 397 | 83 | | 12-188 | 400. | 570 | 126 | | 41 | * | 35 |
| Pyrene | 2.7 | 5.33 | ug/Kg | 54.8 | 400. | 392 | 84 | | 20-174 | 400. | 480 | 106 | | 23 | | 35 |
| Benzyl Butyl Phthalate | 5.3 | 10.7 | ug/Kg | 16.4 | 400. | 358 | 85 | | 41-145 | 400. | 392 | 94 | | 10 | | 35 |
| Benzo(a)anthracene | 2.7 | 5.33 | ug/Kg | 33 | 400. | 380 | 87 | | 32-168 | 400. | 468 | 109 | | 22 | | 35 |
| Chrysene | 2.7 | 5.33 | ug/Kg | 51.9 | 400. | 352 | 75 | | 14-184 | 400. | 500 | 112 | | 40 | * | 35 |
| Bis(2-Ethylhexyl)Phthalate | 5.3 | 10.7 | ug/Kg | 71 | 400. | 421 | 87 | | 10-189 | 400. | 462 | 98 | | 12 | | 35 |
| Di-N-Octyl Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | 400. | 357 | 89 | | 52-151 | 400. | 397 | 99 | | 11 | | 35 |
| Benzo(b)fluoranthene | 2.7 | 5.33 | ug/Kg | 37.5 | 400. | 621 | 146 | | 10-199 | 400. | 446 | 102 | | 35 | | 35 |
| Benzo(k)fluoranthene | 2.7 | 5.33 | ug/Kg | 36.7 | 400. | 672 | 159 | | 10-192 | 400. | 399 | 91 | | 54 | * | 35 |
| Benzo(a)pyrene | 2.7 | 5.33 | ug/Kg | 34.2 | 400. | 333 | 75 | | 10-200 | 400. | 392 | 89 | | 17 | | 35 |
| Indeno(1,2,3-Cd)Pyrene | 2.7 | 5.33 | ug/Kg | 19.3 | 400. | 322 | 76 | | 10-177 | 400. | 359 | 85 | | 11 | | 35 |
| Dibenzo(a,h)anthracene | 2.7 | 5.33 | ug/Kg | 6.72 | 400. | 314 | 77 | | 10-166 | 400. | 347 | 85 | | 10 | | 35 |

Matrix Spike Duplicate Report
MSD:WG84979-9 MS:WG84979-8 L38327-1 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED
(Matrix Spike Duplicate, Matrix Spike)

| Parameter | Mdl | Rdl | Units | SampValue | Truevalue | MS Value | % Rec. | Qual | LabLimit | Truevalue | MSD Value | % Rec. | Qual | RPD | Qual | Lablimit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzo(g,h,i)perylene | 2.7 | 5.33 | ug/Kg | 20.8 | 400. | 306 | 71 | | 10-173 | 400. | 340 | 80 | | 12 | | 35 |
| Benzyl Alcohol | 5.3 | 10.7 | ug/Kg | <MDL | 400. | 186 | 46 | | 10-138 | 400. | 194 | 49 | | 6 | | 35 |
| 2-Methylphenol | 5.3 | 10.7 | ug/Kg | <MDL | 400. | 273 | 68 | | 10-142 | 400. | 239 | 60 | | 13 | | 35 |
| 4-Methylphenol | 5.3 | 10.7 | ug/Kg | <MDL | 400. | 249 | 62 | | 10-163 | 400. | 243 | 61 | | 2 | | 35 |
| Benzoic Acid | 13 | 26.7 | ug/Kg | 63.8 | 400. | 228 | 41 | | 10-158 | 400. | 290 | 57 | | 33 | | 35 |
| 2-Methylnaphthalene | 2.7 | 5.33 | ug/Kg | <MDL | 400. | 250 | 62 | | 22-112 | 400. | 277 | 69 | | 11 | | 35 |
| Dibenzofuran | 2.7 | 5.33 | ug/Kg | <MDL | 400. | 290 | 73 | | 21-134 | 400. | 319 | 80 | | 9 | | 35 |
| Carbazole | 2.7 | 5.33 | ug/Kg | <MDL | 400. | 319 | 80 | | 16-200 | 400. | 366 | 92 | | 14 | | 35 |
| Coprostanol | 53 | 107 | ug/Kg | <MDL | 4000 | 1720 | 43 | | 10-183 | 4000 | 1610 | 40 | | 7 | | 35 |
| Caffeine | 5.3 | 10.7 | ug/Kg | <MDL | 400. | 355 | 89 | | 17-195 | 400. | 382 | 95 | | 7 | | 35 |
| Total LPAHs | 2.7 | 5.33 | ug/Kg | 45.5 | 200. | 1970 | | | | 200. | 2460 | | | | | |
| Total HPAHS | 2.7 | 5.33 | ug/Kg | 361 | 200. | 4090 | | | | 200. | 4300 | | | | | |

MB:WG84979-10 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED
(Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Qual |
|---|---|---|---|---|---|
| Phenol | 5.3 | 10.7 | ug/Kg | <MDL | |
| 1,3-Dichlorobenzene | .27 | .533 | ug/Kg | <MDL | |
| 1,4-Dichlorobenzene | .27 | .533 | ug/Kg | <MDL | |
| 1,2-Dichlorobenzene | .27 | .533 | ug/Kg | <MDL | |
| Hexachloroethane | 1.3 | 2.67 | ug/Kg | <MDL | |
| 2,4-Dimethylphenol | 2.7 | 5.33 | ug/Kg | <MDL | |
| 1,2,4-Trichlorobenzene | .27 | .533 | ug/Kg | <MDL | |
| Naphthalene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Hexachlorobutadiene | 1.3 | 2.67 | ug/Kg | <MDL | |
| Acenaphthylene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Dimethyl Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | |
| Acenaphthene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Fluorene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Diethyl Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | |
| N-Nitrosodiphenylamine | 5.3 | 10.7 | ug/Kg | <MDL | |
| Hexachlorobenzene | .53 | 1.07 | ug/Kg | <MDL | |
| Pentachlorophenol | 13 | 26.7 | ug/Kg | <MDL | |
| Phenanthrene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Anthracene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Di-N-Butyl Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | |
| Fluoranthene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Pyrene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Benzyl Butyl Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | |
| Benzo(a)anthracene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Chrysene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Bis(2-Ethylhexyl)Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | |
| Di-N-Octyl Phthalate | 5.3 | 10.7 | ug/Kg | <MDL | |
| Benzo(b)fluoranthene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Benzo(k)fluoranthene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Benzo(a)pyrene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Indeno(1,2,3-Cd)Pyrene | 2.7 | 5.33 | ug/Kg | <MDL | |

MB:WG84979-10 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED
(Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Qual |
|---|---|---|---|---|---|
| Dibenzo(a,h)anthracene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Benzo(g,h,i)perylene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Benzyl Alcohol | 5.3 | 10.7 | ug/Kg | <MDL | |
| 2-Methylphenol | 5.3 | 10.7 | ug/Kg | <MDL | |
| 4-Methylphenol | 5.3 | 10.7 | ug/Kg | <MDL | |
| Benzoic Acid | 13 | 26.7 | ug/Kg | <MDL | |
| 2-Methylnaphthalene | 2.7 | 5.33 | ug/Kg | <MDL | |
| Dibenzofuran | 2.7 | 5.33 | ug/Kg | <MDL | |
| Carbazole | 2.7 | 5.33 | ug/Kg | <MDL | |
| Coprostanol | 53 | 107 | ug/Kg | <MDL | |
| Caffeine | 5.3 | 10.7 | ug/Kg | <MDL | |
| Total LPAHs | 2.7 | 5.33 | ug/Kg | <MDL | |
| Total HPAHS | 2.7 | 5.33 | ug/Kg | <MDL | |

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 06/01/06 09:56
Run ID: R113755 Workgroup: WG84979 (bs#212 bnasms)

| Sample # | 2-Fluorophenol | d5-Phenol | d5-Nitrobenzene | d4-2-Chlorophenol | d4-1,2-Dichlorobenzene | 2-Fluorobiphenyl | 2,4,6-Tribromophenol | d14-Terphenyl |
|---|---|---|---|---|---|---|---|---|
| (Lab Limits) | 10-112 | 10-106 | 28-94 | 11-105 | 24-91 | 31-101 | 29-112 | 51-130 |
| L38326-1 | 47 | 59 | 69 | 58 | 46 | 75 | 99 | 95 |
| L38326-2 | 57 | 70 | 72 | 66 | 41 | 79 | 108 | 102 |
| L38326-9 | 44 | 42 | 52 | 45 | 46 | 75 | 105 | 111 |
| L38326-10 | 45 | 64 | 72 | 51 | 46 | 78 | 104 | 113 |
| L38326-11 | 37 | 48 | 66 | 50 | 44 | 78 | 107 | 103 |
| L38326-12 | 43 | 34 | 46 | 40 | 43 | 79 | 105 | 107 |
| L38326-13 | 64 | 51 | 62 | 59 | 59 | 99 | 116 L | 112 |
| L38326-14 | 49 | 73 | 85 | 52 | 51 | 84 | 95 | 102 |
| L38326-15 | 59 | 49 | 65 | 56 | 65 | 105 L | 111 | 108 |
| L38327-1 | 50 | 44 | 56 | 51 | 49 | 75 | 87 | 102 |
| L38327-2 | 72 | 87 | 73 | 85 | 58 | 88 | 100 | 115 |
| L38327-3 | 44 | 53 | 54 | 54 | 44 | 68 | 97 | 118 |
| L38327-4 | 62 | 74 | 71 | 74 | 55 | 80 | 96 | 103 |
| L38327-5 | 51 | 55 | 61 | 56 | 48 | 76 | 101 | 113 |
| L38327-6 | 37 | 39 | 52 | 40 | 42 | 71 | 82 | 106 |
| L38327-7 | 46 | 54 | 60 | 51 | 46 | 73 | 100 | 112 |
| L38327-8 | 43 | 51 | 61 | 44 | 49 | 83 | 89 | 119 |
| WG84979-1 | 31 | 44 | 57 | 44 | 49 | 63 | 30 | 103 |
| WG84979-5 | 63 | 55 | 80 | 69 | 58 | 98 | 98 | 109 |
| WG84979-6 | 55 | 69 | 68 | 68 | 44 | 91 | 115 L | 97 |
| WG84979-7 | 44 | 50 | 47 | 48 | 44 | 51 | 62 | 91 |
| WG84979-8 | 54 | 66 | 54 | 60 | 44 | 62 | 73 | 89 |
| WG84979-9 | 54 | 63 | 58 | 59 | 44 | 66 | 82 | 96 |
| WG84979-10 | 50 | 61 | 66 | 61 | 53 | 75 | 50 | 101 |

Sequence Name: C:\MSDChem\1\sequence\060413.S
Comment:
Operator:
Data Path: C:\MSDChem\1\data\060413\

Top Pre-Seq Cmd:
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Top Post-Seq Cmd:
Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

---

| Line | | Sample Name/Misc Info | | |
|---|---|---|---|---|
| 1) Sample | 1 | cond-01 | 8270B1 | cond |
| 2) Blank | 2 | BLANK-01 | 8270B1 | MECL2 |
| 3) Tune | 3 | DFTPP-1 | DFTPP | 10 NG/UL DFTPP MIX |
| 4) Sample | 4 | CCALI-01 | 8270B1 | SS#1263 D 6.00 PPM BNA STD |
| 5) Inst. Blk | 2 | BLANK-02 | 8270B1 | MECL2 |
| 6) Blank | 5 | | | |
| Datafile | | x WG84979-1 | | |
| Method | | 8270B1 | | |
| 7) SB | 6 | | | |
| Datafile | | x WG84979-7 | | |
| Method | | 8270B1 | | |
| 8) MS | 7 | | | |
| Datafile | | x WG84979-8 | | |
| Method | | 8270B1 | | |
| 9) MSD | 8 | | | |
| Datafile | | x WG84979-9 | | |
| Method | | 8270B1 | | |
| 10) SRM | 9 | | | |
| Datafile | | x WG84979-5 | | |
| Method | | 8270B1 | | |
| 11) Sample | 10 | x L38327-1 | 8270B1 | L38327-1 DU/DI CAP ok |
| 12) LD | 11 | | | |
| Datafile | | WG84979-6 – re-extract | | |
| Method | | 8270B1 | | |
| 13) Sample | 12 | L38326-2 | 8270B1 | L38326-2 DU/DI CAP – re-extract |
| 14) Sample | 13 | L38326-1 | 8270B1 | L38326-1 DU/DI CAP – run dilution |
| 15) Sample | 14 | x L38326-9 | 8270B1 | L38326-9 DU/DI CAP |
| 16) Sample | 15 | | | |
| Datafile | | x L38326-10 | | |
| Method | | 8270B1 | rerun - ISTD fail | |
| 17) Sample | 16 | | | |
| Datafile | | x L38326-11 | | |
| Method | | 8270B1 | rerun - ISTD fail | |
| 18) Sample | 17 | | | |
| Datafile | | x L38326-12 | | |
| Method | | 8270B1 | ~~rerun~~ ok | |
| 19) Sample | 18 | | | |
| Datafile | | x L38326-13 | | |
| Method | | 8270B1 | ~~rerun~~ ok | |
| 20) Sample | 19 | | | |
| Datafile | | L38326-14 | | |
| Method | | 8270B1 | rerun - ISTD fail | |
| 21) Sample | 20 | | | |
| Datafile | | x L38326-15 | | |
| Method | | 8270B1 | ok → 20 min rt 12 hr DFTPP | |
| 22) Tune | 3 | DFTPP-2 | DFTPP | 10 NG/UL DFTPP MIX → 1 hr post |
| 23) Sample | 4 | CCALI-02 | 8270B1 | SS#1263 D 6.00 PPM BNA STD 12 hr |

# Batch: \\orgizmo\EE\chem\6890j.i\060413.b

| # | Smp. # | Injection Time | Wkgp. # | QC # | Project # | Sample Description | Matrix | Amount | DilFac | IS#2-RT | IS#2-Area | Method | Init Cali | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | COND-01 | 13-APR-2006 07:30 | SDGa0282 | SDGa02 | | cond | SOIL | 0.000 | 1.0 | 20.212 | 1730097 | 8270B1.m | 11-APR-2006 | M.Doubrava |
| 2 | BLANK-01 | 13-APR-2006 08:11 | SDGa0282 | SDGa02 | | MECL2 | SOIL | 0.000 | 1.0 | 0.000 | 0 | 8270B1.m | 11-APR-2006 | M.Doubrava |
| 3 | DFTPP-1 | 13-APR-2006 08:53 | SDGa0971 | SDGa09 | | 10 NG/UL DFTPP MIX | NONE | 0.000 | 1.0 | 13.444 | 184064 | DFTPP.m | | M.Doubrava |
| 4 | CCALI-01 | 13-APR-2006 09:28 | SDGa0282 | SDGa02 | | SS#1263 D 6.00 PPM BNA STD | SOIL | 0.000 | 1.0 | 8.611 | 597101 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 5 | BLANK-02 | 13-APR-2006 10:09 | SDGa0282 | SDGa02 | | MECL2 | SOIL | 0.000 | 1.0 | 0.000 | 0 | 8270B1.m | 11-APR-2006 | M.Doubrava |
| 6 | WG84979-1 | 13-APR-2006 10:51 | WG84979 | BS#212 | | WG84979-1 MB DU/DI CAP | SOIL | 18.750 | 0.5 | 8.611 | 323805 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 7 | WG84979-7 | 13-APR-2006 11:32 | WG84979 | BS#212 | | WG84979-7 SB DU/DI CAP | SOIL | 18.750 | 0.5 | 8.611 | 539224 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 8 | WG84979-8 | 13-APR-2006 12:14 | WG84979 | BS#212 | | WG84979-8 MS L38327-1 DU/DI | SOIL | 18.750 | 0.5 | 8.611 | 904295 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 9 | WG84979-9 | 13-APR-2006 12:55 | WG84979 | BS#212 | | WG84979-9 MSD L38327-1 DU/DI | SOIL | 18.750 | 0.5 | 8.611 | 657250 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 10 | WG84979-5 | 13-APR-2006 13:37 | WG84979 | BS#212 | | WG84979-5 SRM 1944 DU/DI CAP | SOIL | 1.875 | 5.0 | 8.611 | 497499 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 11 | L38327-1 | 13-APR-2006 14:19 | WG84979 | BS#212 | | L38327-1 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.620 | 436217 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 12 | WG84979-6 | 13-APR-2006 15:00 | WG84979 | BS#212 | | WG84979-6 LD L38326-2 DU/DI | SOIL | 18.750 | 0.5 | 8.611 | 231930 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 13 | L38326-2 | 13-APR-2006 15:42 | WG84979 | BS#212 | | L38326-2 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.611 | 213174 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 14 | L38326-1 | 13-APR-2006 16:23 | WG84979 | BS#212 | | L38326-1 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.620 | 326981 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 15 | L38326-9 | 13-APR-2006 17:05 | WG84979 | BS#212 | | L38326-9 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.620 | 492895 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 16 | L38326-10 | 13-APR-2006 17:46 | WG84979 | BS#212 | | L38326-10 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.620 | 179115 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 17 | L38326-11 | 13-APR-2006 18:28 | WG84979 | BS#212 | | L38326-11 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.620 | 126345 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 18 | L38326-12 | 13-APR-2006 19:09 | WG84979 | BS#212 | | L38326-12 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.620 | 353388 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 19 | L38326-13 | 13-APR-2006 19:50 | WG84979 | BS#212 | | L38326-13 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.620 | 452707 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 20 | L38326-14 | 13-APR-2006 20:31 | WG84979 | BS#212 | | L38326-14 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.620 | 114040 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 21 | L38326-15 | 13-APR-2006 21:13 | WG84979 | BS#212 | | L38326-15 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.620 | 452657 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 22 | DFTPP-2 | 13-APR-2006 21:54 | SDGa0971 | SDGa09 | | 10 NG/UL DFTPP MIX | NONE | 0.000 | 1.0 | 13.453 | 67976 | DFTPP.m | | M.Doubrava |
| 23 | CCALI-02 | 13-APR-2006 22:29 | SDGa0282 | SDGa02 | | SS#1263 D 6.00 PPM BNA STD | SOIL | 0.000 | 1.0 | 8.620 | 286300 | 8270b1.m | 11-APR-2006 | M.Doubrava |

**Samples: 12** **QC Samples + Misc.: 8** **ContinuingCals: 1** **Tunes: 2** **Calibrations: 0**

Sequence Name: C:\MSDChem\1\sequence\060426.S
Comment:
Operator:
Data Path: C:\MSDChem\1\data\060426\

Top Pre-Seq Cmd:
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Top Post-Seq Cmd:
Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

---

| Line | | | Sample Name/Misc Info | | |
|---|---|---|---|---|---|
| 1) | Tune | 3 | DFTPP-1 | DFTPP | 10 NG/UL DFTPP MIX |
| 2) | Sample | 4 | CCALI-01 | 8270B1 | SS#1263 D 6.00 PPM BNA STD |
| 3) | Inst. Blk | 2 | BLANK-02 | 8270B1 | MECL2 |
| 4) | Sample | 5 | L38327-2 | 8270B1 | L38327-2 DU/DI CAP |
| 5) | Sample | 6 | L38327-3 | 8270B1 | L38327-3 DU/DI CAP |
| 6) | Sample | 7 | L38327-4 | 8270B1 | L38327-4 DU/DI CAP |
| 7) | Sample | 8 | L38327-5 | 8270B1 | L38327-5 DU/DI CAP |
| 8) | Sample | 9 | L38327-6 | 8270B1 | L38327-6 DU/DI CAP |
| 9) | Sample | 10 | L38327-7 | 8270B1 | L38327-7 DU/DI CAP |
| 10) | Sample | 11 | L38327-8 | 8270B1 | L38327-8 DU/DI CAP |
| 11) | Sample | 12 | L38325-3 | 8270B1 | L38325-3 DU/DI CAP |
| 12) | Sample | 13 | | | |
| | Datafile | | L38326-10 | | |
| | Method | | 8270B1 | | |
| 13) | Sample | 14 | | | |
| | Datafile | | L38326-11 | | |
| | Method | | 8270B1 | | |
| 14) | Sample | 15 | | | |
| | Datafile | | L38326-14 | | |
| | Method | | 8270B1 | | |
| 15) | Tune | 3 | DFTPP-2 | DFTPP | 10 NG/UL DFTPP MIX |
| 16) | Sample | 4 | CCALI-02 | 8270B1 | SS#1263 D 6.00 PPM BNA STD |

MS 4/26/06

# Batch: \\orgizmo\EE\chem\6890j.i\060426.b

| # | Smp. # | Injection Time | Wkgp. # | QC # | Project # | Sample Description | Matrix | Amount | DilFac | IS#2-RT | IS#2-Area | Method | Init Cali | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DFTPP-1 | 26-APR-2006 12:44 | SDGa0971 | SDGa09 | | 10 NG/UL DFTPP MIX | NONE | 0.000 | 1.0 | 13.383 | 443136 | DFTPP.m | | M.Doubrava |
| 2 | CCALI-01 | 26-APR-2006 13:19 | SDGa0282 | SDGa02 | | SS#1263 D 6.00 PPM BNA STD | SOIL | 0.000 | 1.0 | 8.575 | 1257055 | 8270B1.m | 11-APR-2006 | M.Doubrava |
| 3 | BLANK-02 | 26-APR-2006 14:00 | SDGa0282 | SDGa02 | | MECL2 | SOIL | 0.000 | 1.0 | 0.000 | 0 | 8270B1.m | 11-APR-2006 | M.Doubrava |
| 4 | L38327-2 | 26-APR-2006 14:42 | WG84979 | BS#212 | | L38327-2 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.584 | 1332900 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 5 | L38327-3 | 26-APR-2006 15:23 | WG84979 | BS#212 | | L38327-3 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.584 | 1164158 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 6 | L38327-4 | 26-APR-2006 16:05 | WG84979 | BS#212 | | L38327-4 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.584 | 1064389 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 7 | L38327-5 | 26-APR-2006 16:47 | WG84979 | BS#212 | | L38327-5 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.584 | 1014821 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 8 | L38327-6 | 26-APR-2006 17:28 | WG84979 | BS#212 | | L38327-6 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.584 | 846484 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 9 | L38327-7 | 26-APR-2006 18:10 | WG84979 | BS#212 | | L38327-7 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.584 | 1241488 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 10 | L38327-8 | 26-APR-2006 18:51 | WG84979 | BS#212 | | L38327-8 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.584 | 978834 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 11 | L38325-3 | 26-APR-2006 19:33 | WG84958 | BS#211 | | L38325-3 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.584 | 1026256 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 12 | L38326-10 | 26-APR-2006 20:14 | WG84958 | BS#211 | | L38326-10 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.593 | 1008808 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 13 | L38326-11 | 26-APR-2006 20:56 | WG84958 | BS#211 | | L38326-11 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.593 | 693330 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 14 | L38326-14 | 26-APR-2006 21:37 | WG84958 | BS#211 | | L38326-14 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.593 | 700637 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 15 | DFTPP-2 | 26-APR-2006 22:18 | SDGa0971 | SDGa09 | | 10 NG/UL DFTPP MIX | NONE | 0.000 | 1.0 | 13.392 | 242304 | DFTPP.m | | M.Doubrava |
| 16 | CCALI-02 | 26-APR-2006 22:53 | SDGa0282 | SDGa02 | | SS#1263 D 6.00 PPM BNA STD | SOIL | 0.000 | 1.0 | 8.584 | 711777 | 8270b1.m | 11-APR-2006 | M.Doubrava |

**Samples: 12** **QC Samples + Misc.: 1** **ContinuingCals: 1** **Tunes: 2** **Calibrations: 0**

Sequence Name: C:\MSDChem\1\sequence\060502.S
Comment:
Operator:
Data Path: C:\MSDChem\1\data\060502\

Top Pre-Seq Cmd:
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Top Post-Seq Cmd:
Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

---

| Line | | | Sample Name/Misc Info | | |
|---|---|---|---|---|---|
| 1) | Sample | 1 | cond-01 | 8270B1 | cond |
| 2) | Blank | 2 | BLANK-01 | 8270B1 | MECL2 |
| 3) | Tune | 3 | DFTPP-1 | DFTPP | 10 NG/UL DFTPP MIX |
| 4) | Sample | 4 | CCALI-01 | 8270B1 | SS#1263 D 6.00 PPM BNA STD |
| 5) | Inst. Blk | 2 | BLANK-02 | 8270B1 | MECL2 |
| 6) | Sample | 5 | L38325-9 | 8270B1 | L38325-9 DU/DI CAP |
| 7) | Sample | 6 | | | |
| | Datafile | | L38326-1X | | |
| | Method | | 8270B1 | | |
| 8) | Sample | 7 | | | |
| | Datafile | | L38326-2X | re-extract | |
| | Method | | 8270B1 | | |
| 9) | Sample | 8 | | | |
| | Datafile | | WG84979-6X | | |
| | Method | | 8270B1 | | |
| 10) | Sample | 9 | L38324-1 | 8270B1 | L38324-1 DENNY WAY |
| 11) | Sample | 10 | L38324-2 | 8270B1 | L38324-2 DENNY WAY |
| 12) | Blank | 2 | BLANK-03 | 8270B1 | MECL2 |
| 13) | Tune | 3 | DFTPP-2 | DFTPP | 10 NG/UL DFTPP MIX |
| 14) | Sample | 4 | CCALI-02 | 8270B1 | SS#1263 D 6.00 PPM BNA STD |

# Batch: \\orgizmo\EE\chem\6890j.i\060502.b

| # | Smp. # | Injection Time | Wkgp. # | QC # | Project # | Sample Description | Matrix | Amount | DilFac | IS#2-RT | IS#2-Area | Method | Init Cali | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | COND-01 | 02-MAY-2006 08:07 | SDGa0282 | SDGa02 | | cond | SOIL | 0.000 | 1.0 | 20.039 | 523537 | 8270B1.m | 11-APR-2006 | M.Doubrava |
| 2 | BLANK-01 | 02-MAY-2006 08:48 | SDGa0282 | SDGa02 | | MECL2 | SOIL | 0.000 | 1.0 | 0.000 | 0 | 8270B1.m | 11-APR-2006 | M.Doubrava |
| 3 | DFTPP-1 | 02-MAY-2006 09:30 | SDGa0971 | SDGa09 | | 10 NG/UL DFTPP MIX | NONE | 0.000 | 1.0 | 13.345 | 146624 | DFTPP.m | | M.Doubrava |
| 4 | CCALI-01 | 02-MAY-2006 10:04 | SDGa0282 | SDGa02 | | SS#1263 D 6.00 PPM BNA STD | SOIL | 0.000 | 1.0 | 8.547 | 559772 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 5 | BLANK-02 | 02-MAY-2006 10:46 | SDGa0282 | SDGa02 | | MECL2 | SOIL | 0.000 | 1.0 | 0.000 | 0 | 8270B1.m | 11-APR-2006 | M.Doubrava |
| 6 | L38325-9 | 02-MAY-2006 11:27 | WG84958 | BS#211 | | L38325-9 DU/DI CAP | SOIL | 18.750 | 0.5 | 8.556 | 439068 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 7 | L38326-1X | 02-MAY-2006 12:08 | WG84979 | BS#212 | | L38326-1 X 10 DIL DU/DI CAP | SOIL | 18.750 | 5.0 | 8.556 | 494685 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 8 | L38326-2X | 02-MAY-2006 12:50 | WG84979 | BS#212 | | L38326-2 X 10 DIL DU/DI CAP | SOIL | 18.750 | 5.0 | 8.556 | 560599 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 9 | WG84979-6X | 02-MAY-2006 13:31 | WG84979 | BS#212 | | WG84979-6 X 10 DIL DU/DI CAP | SOIL | 18.750 | 5.0 | 8.556 | 490079 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 10 | L38324-1 | 02-MAY-2006 14:13 | WG84958 | BS#211 | | L38324-1 DENNY WAY | SOIL | 18.750 | 0.5 | 8.556 | 427434 | 8270B1.m | 11-APR-2006 | M.Doubrava |
| 11 | L38324-2 | 02-MAY-2006 14:54 | WG84958 | BS#211 | | L38324-2 DENNY WAY | SOIL | 18.750 | 0.5 | 8.556 | 510537 | 8270B1.m | 11-APR-2006 | M.Doubrava |
| 12 | BLANK-03 | 02-MAY-2006 15:36 | SDGa0282 | SDGa02 | | MECL2 | SOIL | 0.000 | 1.0 | 0.000 | 0 | 8270B1.m | 11-APR-2006 | M.Doubrava |
| 13 | DFTPP-2 | 02-MAY-2006 16:17 | SDGa0971 | SDGa09 | | 10 NG/UL DFTPP MIX | NONE | 0.000 | 1.0 | 13.350 | 137408 | DFTPP.m | | M.Doubrava |
| 14 | CCALI-02 | 02-MAY-2006 16:52 | SDGa0282 | SDGa02 | | SS#1263 D 6.00 PPM BNA STD | SOIL | 0.000 | 1.0 | 8.556 | 681306 | 8270B1.m | 11-APR-2006 | M.Doubrava |

**Samples:** 8 **QC Samples + Misc.:** 3 **ContinuingCals:** 1 **Tunes:** 2 **Calibrations:** 0

Sequence Name: C:\MSDChem\1\sequence\060525A.S
Comment:
Operator:
Data Path: C:\MSDChem\1\data\060525A\

Top Pre-Seq Cmd:
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Top Post-Seq Cmd:
Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

---

| Line | | Sample Name/Misc Info | | |
|---|---|---|---|---|
| 1) Tune | 3 | DFTPP-1 | DFTPP | 10 NG/UL DFTPP MIX |
| 2) Sample | 4 | CCALI-01 | 8270B1 | SS#1263 D 6.00 PPM BNA STD |
| 3) Inst. Blk | 2 | BLANK-02 | 8270B1 | MECL2 |
| 4) Blank | 5 | MB-01 | 8270B1 | MB DUDI CHECK |
| 5) SB | 6 | SB-01 | 8270B1 | SB DUDI CHECK |
| 6) Sample | 7 | | | |
| Datafile | | L38326-15 | | } info only |
| Method | | 8270B1 | | |
| 7) LD | 8 | | | |
| Datafile | | L38326-15LD | | |
| Method | | 8270B1 | | |
| 8) Sample | 9 | L38326-2 | 8270B1 | L38326-2 DUDI CHECK |
| 9) LD | 10 | | | |
| Datafile | | L38326-2LD | | - rename WG84979-6 LD |
| Method | | 8270B1 | | |

of L38326-2

# Batch: \\orgizmo\EE\chem\6890j.i\060525A.b

| # | Smp. # | Injection Time | Wkgp. # | QC # | Project # | Sample Description | Matrix | Amount | DilFac | IS#2-RT | IS#2-Area | Method | Init Cali | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DFTPP-1 | 25-MAY-2006 13:17 | SDGa0971 | SDGa09 | | 10 NG/UL DFTPP MIX | NONE | 0.000 | 1.0 | 13.303 | 112400 | DFTPP.m | | M.Doubrava |
| 2 | CCALI-01 | 25-MAY-2006 13:52 | SDGa0282 | SDGa02 | | SS#1263 D 6.00 PPM BNA STD | SOIL | 0.000 | 1.0 | 8.502 | 384740 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 3 | BLANK-02 | 25-MAY-2006 14:33 | SDGa0282 | SDGa02 | | MECL2 | SOIL | 0.000 | 1.0 | 0.000 | 0 | 8270B1.m | 11-APR-2006 | M.Doubrava |
| 4 | WG84979-10 | 25-MAY-2006 15:15 | WG84979 | SDGa02 | | WG84979-10 MB DUDI CHECK | SOIL | 18.750 | 0.5 | 8.502 | 304635 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 5 | SB-01 | 25-MAY-2006 15:56 | SDGa0282 | SDGa02 | | SB DUDI CHECK | SOIL | 18.750 | 0.5 | 8.502 | 348378 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 6 | L38326-15 | 25-MAY-2006 16:38 | SDGa0282 | SDGa02 | | L38326-15 DUDI CHECK | SOIL | 18.750 | 0.5 | 8.502 | 294987 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 7 | L38326-15L | 25-MAY-2006 17:20 | SDGa0282 | SDGa02 | | LD L38326-15 DUDI CHECK | SOIL | 18.750 | 0.5 | 8.502 | 349650 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 8 | L38326-2 | 25-MAY-2006 18:01 | WG84979 | | | L38326-2 DUDI CHECK | SOIL | 18.750 | 5.0 | 8.502 | 273650 | 8270b1.m | 11-APR-2006 | M.Doubrava |
| 9 | WG84979-6 | 25-MAY-2006 18:43 | WG84979 | | | WG84979-6 LD L38326-2 DUDI C | SOIL | 18.750 | 5.0 | 8.502 | 433656 | 8270b1.m | 11-APR-2006 | M.Doubrava |

**Samples:** 2 **QC Samples + Misc.:** 5 **ContinuingCals:** 1 **Tunes:** 1 **Calibrations:** 0

# SOLID AND TISSUE SAMPLE EXTRACTION RECORD FOR BNA ANALYSIS
## TRACE ORGANICS LABORATORY

QC BATCH NO.: BS 1:1 Acetone:MeCl2

EPA SW-846 EXTRACTION METHOD: BNAsms

SONICATION EPA 3550 SOXHLET EPA 3540

WORKGROUP NO.:

BNA SURROGATE SPIKE I.D.#: 1276 100 µl Coprostanol:

BNA MATRIX SPIKE I.D.#: 1188A 100 µl Caffeine:

| Date/ Analyst | Sample Number | Project Number | Sample Description | coc | Init. Amt (g) | Spike Amount (uL) | Vf (mL) | Clean ups (GPC) | Conc. Anal. | Turn Over Date | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/23/06 | | QC | MB | | 30.0 g | 1276 100µl | 0.5 | YES | | | RE-EXTRACT |
| | | | SB | | | 1188A 100µl | | | | | SEE BS#217 |
| | | | LD (L38326-2) | | | | | | | | |
| | | | LD (L38326-15) | | | | | | | | |
| | L38326-2 | 423062 | DENNY WAY SED | | | | | | | | |
| | L38326-15 | | | | | | | | | | |

# TRACE ORGANICS LABORATORY

QC BATCH NO.: BS #212 1:1 Acetone:MeCl2 BNA SMS

WORKGROUP NO.: WG 84979

BNA SURR. #1164

EPA SW-~~846 EXTRACTION~~ METHOD:

SONICATION EPA 3550 SOXHLET EPA 3540

LL BNA SURROGATE SPIKE I.D.#: 1193

LL BNA MATRIX SPIKE I.D.#: 1188A

Coprostanol:

Caffeine:

| Date/ Analyst | Sample Number | Project Number | Sample Description | coc | Init. Amt (g) | Spike Amount (uL) | Vf (mL) | Clean ups (GPC) | Conc. Anal. | Turn Over Date | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| KM 3/28/06 | WG -1 | QC | MB | | 30.0 | 1193 100 µl | 0.5 | YES | KM | 3/30/06 | |
| | -2 | | SB | | | 1188A 100 µl | | | | | |
| | -3 | | MS (L38326-1) | | | | | | | | |
| | -4 | | MSD (L38326-1) | | | | | | | | |
| | -5 | | SRM 1944 | | 3.0 | 1164 100 µl | 5.0 | | | | |
| | -6 | | LD (L38326-2) | | 30.0 | 1193 100 µl | 0.5 | | | | |
| | -7 | | SB2 | | | 1188A 300 µl | | | | | HIGH SPIKE LEVEL |
| | -8 | | MS2 (L38327-1) | | | | | | | | |
| | -9 | | MSD2 (L38327-1) | | | | | | | | |
| | L38326-1 | 423062 200-4 | DI/DI THIN LAYER C | | | 1193 100 µl | | | | | |
| | -2 | | | | | | | | | | |
| | -9 | | | | | | | | | | |
| | -10 | | | | | | | | | | |
| | -11 | | | | | | | | | | |
| | -12 | | | | | | | | | | |
| | -13 | | | | | | | | | | |
| | -14 | | | | | | | | | | |
| | -15 | | | | | | | | | | |
| | 38327 ~~L38327~~ -1 | | | | | | | | | | |
| | -2 | | | | | | | | | | |
| | -3 | | | | | | | | | | |
| | -4 | | | | | | | | | | |
| | -5 | | | | | | | | | | |
| | -6 | | | | | | | | | | |
| | -7 | | | | | | | | | | |
| | -8 | | | | | | | | | | |

# Trace Organics Data Anomaly Form

**Date(s) Occurred:** *06/04/13, 06/04/26, 06/05/02, 06/05/25A*

**WG #(s):** *WG84979*

☐ **All samples in WKGP(s) or Sample #(s):** *Various samples*

**Project #(s):** *423062-100-004*

**Matrix:** ☐ **Liquid** ☒ **Solid** ☐ **Air** ☐ **Tissue** ☐ **Calibration** ☐ **Other:**

## I. Analysis/Extraction

| | | | |
|---|---|---|---|
| ☐ BNA | ☐ BNALL | ☐ EDC | ☐ EDC-LVI |
| ☐ CLPESTPCB | ☐ PEST | ☐ PCB | ☐ OPPEST |
| ☐ VOA-GCMS | ☐ NWTPH-GX | ☐ NWTPH-DX | ☐ NWTPH-HCID |
| ☐ BUTYL TIN | ☐ AIRTOX | ☐ AIR-SULFUR | |
| ☒ Other: *BNASMS* | | | |
| ☐ Subcontracted: | | | |

## II. Instrument

| | |
|---|---|
| GC/ICP/MS: | ☐ P |
| GC/MS: | ☐ D ☐ E ☒ J ☐ K ☐ L ☐ M ☐ N |
| GC: | ☐ F ECD ☐ G ECD ☐ H FID ☐ H OI4450PID/FID ☐ I FID |
| Extraction/Cleanup: | ☐ PFE ☐ GPC ☐ Other: |

## III. Type of Sample/Analytical Anomaly

☒ Values Outside of Control Limits:

| | |
|---|---|
| 1 ☒ Blank Contamination | 8 ☐ Surrogate Spike Recoveries |
| 2 ☐ SB/SBD Spike Recoveries | 9 ☐ SB/SBD RPD |
| 3 ☐ MS/MSD Spike Recoveries | 10 ☐ MS/MSD RPD |
| 4 ☐ LCS/SRM Recoveries | 11 ☒ Sample/LD RPD |
| 5 ☐ Initial Calibration | 12 ☒ Continuing Calibration Checks |
| 6 ☐ Performance Checks | 13 ☒ Tuning Criteria |
| 7 ☒ ISTD % Differences | |

14 ☐ Holding time exceeded by:
15 ☐ Insufficient sample amount.
16 ☐ Inappropriate storage, container or preservation.
17 ☒ Other

**Anomaly Description:**

*1. The MB (WG84979-1) contained reportable levels of Di-N-Butyl Phthalate. The level is consistant with sediment extractions and is attributed to lab background. All sample are flagged "B"with the exception of WG84979-6 and L38326. The MB (WG84979-10) is associated the re-extracted WG84979-6 and L38326-2 on 06/05/25A. WG84979-10 had no reportable targets as contaimination.*

*7. Initial analyses of WG84979 on 06/04/13 had L38326-10, -11, -14 failing ISTD % differences QA/QC. Sample were re-analyzed on 06/04/16. All samples passed ISTD % difference.*

*11. L38326-2 was extracted in duplicate as WG84979-6. The RPDs failed for all targets determined. The quantitated values differed by approximately 20 to 25 times. L38326-2 and WG84979-6 were re-extracted and analyzed on 06/05/25A. All RPDs for determined targets were within QA/QA limits.*

*12.CCALI-01 on 06/04/26 for phenol exceeded 20 % (23.3%) compared to the calibration curve. Since the failure was due to an increase in sensitivity for phenol analyses was continued. CCALI-01 on 06/05/02 for acenaphthylene exceeded 20% (21.1%) compared to the calibration curve. Since the failure was due to an increase in sensitivity analyses was continued. For pentachlorophenol, the CCALI-01 exceeded 25% (30%) compared to the calibration curve. Since the failure was due to a loss of sentivity, any reportable pentachlorophenol would be quantitated against the daliy standard. CCALI-01 on 06/05/25A for pentachlorophenol exceeded 25% (32.7%) compared to the calibration curve. Since the failure was due to a loss of sentivity, any reportable pentachlorophenol would be quantitated against the daliy standard. CCALI-01 on 06/05/25A for coprostanol exceeded 20% (23.8%) comaped to the calibration curve. Since the failure was due to a loss of sentivity, any reportable coprostanol would be quantitated against the daliy standard. CCALI-01 on 06/05/25A for di-n-octylphthalatel exceeded 20 % (24.8%) compared to the calibration curve. Since the failure was due to an increase in sensitivity for di-n-octylphthalate analyses was continued.*

*13. Injection of L383216-15 exceeded the initial 12 hour DFTPP-01 shift by 20 minutes. DFTPP-02 was injected approximately 1 hour passed the 12 shift of DFTPP-01 but passed all QA/QA tuning criteria.*

*17. Sample L38326-1 quantitated target compounds above the calibration curve. L38326-1 was diluted X 10 and reanalyzed on 06/05/02.*

## IV. Type of Project Anomaly

- [x] SAP/Work Plan specified MDLs not met.
- [ ] SAP/Work Plan specified QC frequency or QC type not met.
- [ ] SAP/Work Plan specified methodology not used.
- [ ] Sample exceeds regulatory and/or hazardous waste limits.
- [ ] Sample data results are unusual or inconsistent with expected results.
- [ ] Other

**Anomaly Description:** *For the diluted samples L38326-1, -2, and WG84979-6 the MDLs/RDLs are corrected for the dilution.*

## V. Corrective Action Taken

- [x] Sample(s) re-analyzed
- [ ] Sample(s) re-prepared and re-analyzed
- [x] Sample(s) reported "AS IS"
- [ ] Data qualified with the following flags:
- [ ] Other

**Corrective Action Description:** *see anomaly description*

## VI. Potential Effects on Data Quality

**Based upon the expected performance of this method:**

- ☐ It is likely the observed anomaly influenced the reported value(s).
- ☒ It is unlikely the observed anomaly influenced the reported value(s).
- ☐ The observed anomaly may have influenced the reported value(s).
- ☐ It is unknown whether or not the observed anomaly affected the reported value(s).

**Explanation:**

| | Signatures | Signature Dates |
|---|---|---|
| **Reported By:** *Doubrava* | | 6/8/06 |
| **Reviewer:** | | |
| **Supervisor:** *Dana Walker* | Dana M. Walker | 6/22/06 |
| **QA Officer:** *Colin Elliott* (For QA1 only) | C. Elliott | 6/8/06 |
| **cc: LPM:** *F. Grothkopp* | | |

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Apr 10 2006, 11:51 am

Work Group: WG85023 (PPLLS#50 PESTLL) for Department: 7 - Organics, Trace

Created: 29-MAR-06 PrepDate: 31-MAR-06 Due: Operator: KM/JG

| Sample | Project Number | Project Description | PKey | C | Product | Matrix | Stat | UA | Workdate | Duedate |
|---|---|---|---|---|---|---|---|---|---|---|
| L38326-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PESTLL | SALTWTRSED | PREP | U | 22-MAR-06 | 24-APR-06 |
| L38326-10 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PESTLL | SALTWTRSED | PREP | U | 22-MAR-06 | 24-APR-06 |
| L38326-11 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PESTLL | SALTWTRSED | PREP | U | 22-MAR-06 | 24-APR-06 |
| L38326-12 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PESTLL | SALTWTRSED | PREP | U | 22-MAR-06 | 24-APR-06 |
| L38326-13 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PESTLL | SALTWTRSED | PREP | U | 23-MAR-06 | 24-APR-06 |
| L38326-14 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PESTLL | SALTWTRSED | PREP | U | 23-MAR-06 | 24-APR-06 |
| L38326-15 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PESTLL | SALTWTRSED | PREP | U | 23-MAR-06 | 24-APR-06 |
| L38326-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PESTLL | SALTWTRSED | PREP | U | 22-MAR-06 | 24-APR-06 |
| L38326-9 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PESTLL | SALTWTRSED | PREP | U | 22-MAR-06 | 24-APR-06 |
| L38327-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PESTLL | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PESTLL | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-3 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PESTLL | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-4 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PESTLL | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-5 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PESTLL | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-6 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PESTLL | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-7 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PESTLL | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-8 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PESTLL | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| WG85023-1 | MB | | | S | PESTLL | OTHR SOLID | PREP | U | 29-MAR-06 | |
| WG85023-2 | SB | | | S | PESTLL | OTHR SOLID | PREP | U | 29-MAR-06 | |
| WG85023-3 | MS | | SED | S | PESTLL | SALTWTRSED | PREP | U | 29-MAR-06 | |
| WG85023-4 | MSD | | SED | S | PESTLL | SALTWTRSED | PREP | U | 29-MAR-06 | |
| WG85023-5 | SRM | | SED | S | PESTLL | SALTWTRSED | PREP | U | 29-MAR-06 | |
| WG85023-6 | LD | | SED | S | PESTLL | SALTWTRSED | PREP | U | 29-MAR-06 | |

Comments:

| | |
|---|---|
| L38326-1 | 10 Grab Comp, 0-10 cm |
| L38326-10 | 10 Grab Comp, FREP |
| L38326-11 | 10 Grab Comp, 0-10 cm |
| L38326-12 | 10 Grab Comp, 0-10 cm |
| L38326-13 | 10 Grab Comp, 0-10 cm |
| L38326-14 | 10 Grab Comp, 0-10 cm |
| L38326-15 | 10 Grab Comp, 0-10 cm |
| L38326-2 | 10 Grab Comp, 0-10 cm |
| L38326-9 | 10 Grab Comp, AREP |
| L38327-1 | Diver Cores, 2006 |
| L38327-2 | Diver Cores, 2006, AREP |
| L38327-3 | Diver Cores, 2006, FREP |
| L38327-4 | Diver Cores, 2006 |
| L38327-5 | Diver Cores, 2006 |
| L38327-6 | Diver Cores, 2006 |
| L38327-7 | Diver Cores, 2006 |
| L38327-8 | Diver Cores, 2006 |
| WG85023-1 | MB060331 |
| WG85023-2 | WG85023-1 |
| WG85023-3 | L38327-2 |
| WG85023-4 | WG85023-3 L38327-2 |
| WG85023-5 | SRM1944 |
| WG85023-6 | L38327-3 |

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 05/16/06 03:46
Run ID: R113245 Workgroup: WG85023 (PPLLS#50 PESTLL)

MB:WG85023-1 Matrix: OTHR SOLID Listtype: ORPESTLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED
(Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Qual |
|---|---|---|---|---|---|
| Alpha-BHC | .5 | 1 | ug/Kg | <MDL | |
| Beta-BHC | .5 | 1 | ug/Kg | <MDL | |
| Delta-BHC | .5 | 1 | ug/Kg | <MDL | |
| Gamma-BHC (Lindane) | .5 | 1 | ug/Kg | <MDL | |
| Heptachlor | .5 | 1 | ug/Kg | <MDL | |
| Aldrin | 1 | 2 | ug/Kg | <MDL | |
| Heptachlor Epoxide | .5 | 1 | ug/Kg | <MDL | |
| Endosulfan I | 1 | 2 | ug/Kg | <MDL | |
| Dieldrin | 1 | 2 | ug/Kg | <MDL | |
| 4,4'-DDE | 1 | 2 | ug/Kg | <MDL | |
| Endrin | 1 | 2 | ug/Kg | <MDL | |
| Endosulfan II | 1 | 2 | ug/Kg | <MDL | |
| 4,4'-DDD | 1 | 2 | ug/Kg | <MDL | |
| Endrin Aldehyde | 2 | 4 | ug/Kg | <MDL | |
| Endosulfan Sulfate | 1 | 2 | ug/Kg | <MDL | |
| 4,4'-DDT | 1 | 2 | ug/Kg | <MDL | |
| Methoxychlor | 5 | 10 | ug/Kg | <MDL | |
| Gamma-Chlordane | .5 | 1 | ug/Kg | <MDL | |
| Alpha-Chlordane | .5 | 1 | ug/Kg | <MDL | |
| Toxaphene | 10 | 20 | ug/Kg | <MDL | |

SB:WG85023-2 MB:WG85023-1 Matrix: OTHR SOLID Listtype: ORPESTLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED
(Spike Blank, Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Truevalue | SB Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|---|
| Alpha-BHC | .5 | 1 | ug/Kg | <MDL | 10.0 | 4.65 | 47 | | 20-99 |
| Beta-BHC | .5 | 1 | ug/Kg | <MDL | 10.0 | 7.68 | 77 | | 66-102 |
| Delta-BHC | .5 | 1 | ug/Kg | <MDL | 10.0 | 7.63 | 76 | | 63-108 |
| Gamma-BHC (Lindane) | .5 | 1 | ug/Kg | <MDL | 10.0 | 5.57 | 56 | | 27-130 |
| Heptachlor | .5 | 1 | ug/Kg | <MDL | 10.0 | 5.68 | 57 | | 20-137 |
| Aldrin | 1 | 2 | ug/Kg | <MDL | 10.0 | 5.52 | 55 | | 28-113 |
| Heptachlor Epoxide | .5 | 1 | ug/Kg | <MDL | 10.0 | 7.83 | 78 | | 59-107 |
| Endosulfan I | 1 | 2 | ug/Kg | <MDL | 10.0 | 8.16 | 82 | | 62-104 |
| Dieldrin | 1 | 2 | ug/Kg | <MDL | 10.0 | 9.09 | 91 | | 58-139 |
| 4,4'-DDE | 1 | 2 | ug/Kg | <MDL | 10.0 | 8.98 | 90 | | 75-111 |
| Endrin | 1 | 2 | ug/Kg | <MDL | 10.0 | 10.3 | 103 | | 60-160 |
| Endosulfan II | 1 | 2 | ug/Kg | <MDL | 10.0 | 8.83 | 88 | | 72-109 |
| 4,4'-DDD | 1 | 2 | ug/Kg | <MDL | 10.0 | 9.49 | 95 | | 78-121 |
| Endrin Aldehyde | 2 | 4 | ug/Kg | <MDL | 10.0 | <MDL | 14 | | 10-77 |
| Endosulfan Sulfate | 1 | 2 | ug/Kg | <MDL | 10.0 | 7.97 | 80 | | 61-104 |
| 4,4'-DDT | 1 | 2 | ug/Kg | <MDL | 10.0 | 9.27 | 93 | | 57-145 |
| Methoxychlor | 5 | 10 | ug/Kg | <MDL | 10.0 | 10 | 100 | | 72-131 |

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 05/16/06 03:46
Run ID: R113245 Workgroup: WG85023 (PPLLS#50 PESTLL)

Matrix Spike Duplicate Report
MSD:WG85023-4 MS:WG85023-3 L38327-2 Matrix: SALTWTRSED Listtype: ORPESTLL Method: EPA 8081A/8082 (7-3-03-002) Project: 423062-200-4 Pkey: SED
(Matrix Spike Duplicate, Matrix Spike)

| Parameter | Mdl | Rdl | Units | SampValue | Truevalue | MS Value | % Rec. | Qual | LabLimit | Truevalue | MSD Value | % Rec. | Qual | RPD | Qual | Lablimit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha-BHC | .5 | 1 | ug/Kg | <MDL | 10.0 | 9.37 | 94 | | 59-111 | 10.0 | 7.42 | 74 | | 24 | | 35 |
| Beta-BHC | .5 | 1 | ug/Kg | <MDL | 10.0 | 9.62 | 96 | | 60-119 | 10.0 | 8.54 | 85 | | 12 | | 35 |
| Delta-BHC | .5 | 1 | ug/Kg | <MDL | 10.0 | 10.3 | 103 | | 54-126 | 10.0 | 9.08 | 91 | | 12 | | 35 |
| Gamma-BHC (Lindane) | .5 | 1 | ug/Kg | <MDL | 10.0 | 9.81 | 98 | | 61-135 | 10.0 | 8.07 | 81 | | 19 | | 35 |
| Heptachlor | .5 | 1 | ug/Kg | <MDL | 10.0 | 10.8 | 108 | | 52-157 | 10.0 | 9.15 | 92 | | 16 | | 35 |
| Aldrin | 1 | 2 | ug/Kg | <MDL | 10.0 | 10.3 | 103 | | 61-119 | 10.0 | 8.65 | 87 | | 17 | | 35 |
| Heptachlor Epoxide | .5 | 1 | ug/Kg | <MDL | 10.0 | 10.7 | 107 | | 61-118 | 10.0 | 9.46 | 95 | | 12 | | 35 |
| Endosulfan I | 1 | 2 | ug/Kg | <MDL | 10.0 | 11.2 | 112 | | 64-118 | 10.0 | 9.75 | 97 | | 14 | | 35 |
| Dieldrin | 1 | 2 | ug/Kg | <MDL | 10.0 | 11.5 | 115 | | 60-139 | 10.0 | 10.1 | 101 | | 13 | | 35 |
| 4,4'-DDE | 1 | 2 | ug/Kg | <MDL | 10.0 | 10.8 | 108 | | 59-125 | 10.0 | 9.46 | 95 | | 13 | | 35 |
| Endrin | 1 | 2 | ug/Kg | <MDL | 10.0 | 12.4 | 124 | | 62-166 | 10.0 | 11 | 110 | | 12 | | 35 |
| Endosulfan II | 1 | 2 | ug/Kg | <MDL | 10.0 | 10.4 | 104 | | 36-146 | 10.0 | 9.08 | 91 | | 13 | | 35 |
| 4,4'-DDD | 1 | 2 | ug/Kg | <MDL | 10.0 | 11.1 | 111 | | 41-157 | 10.0 | 9.56 | 96 | | 14 | | 35 |
| Endrin Aldehyde | 2 | 4 | ug/Kg | <MDL | 10.0 | <MDL | 18 | | 10-66 | 10.0 | <MDL | 19 | | 5 | | 35 |
| Endosulfan Sulfate | 1 | 2 | ug/Kg | <MDL | 10.0 | 9.47 | 95 | | 46-113 | 10.0 | 8.33 | 83 | | 13 | | 35 |
| 4,4'-DDT | 1 | 2 | ug/Kg | <MDL | 10.0 | 11 | 110 | | 50-144 | 10.0 | 9.28 | 93 | | 17 | | 35 |
| Methoxychlor | 5 | 10 | ug/Kg | <MDL | 10.0 | 12.1 | 121 | | 53-129 | 10.0 | 10.6 | 106 | | 13 | | 35 |

SRM:WG85023-5 Matrix: SALTWTRSED Listtype: ORPESTLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED
(Std Reference Material)

| Parameter | Mdl | Rdl | Units | Truevalue | SRM Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|
| 4,4'-DDT | 5.3 | 10.7 | ug/Kg | 119. | 313 | 263 | L | 10-200 |
| Alpha-Chlordane | 2.7 | 5.33 | ug/Kg | 16.5 | 24.2 | 117 | | 48-144 |

LD:WG85023-6 L38327-3 Matrix: SALTWTRSED Listtype: ORPESTLL Method: EPA 8081A/8082 (7-3-03-002) Project: 423062-200-4 Pkey: SED
(Lab Duplicate)

| Parameter | Mdl | Rdl | Units | SampValue | LD Value | RPD | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|
| Alpha-BHC | .5 | 1 | ug/Kg | <MDL | <MDL | | | 35 |
| Beta-BHC | .5 | 1 | ug/Kg | <MDL | <MDL | | | 35 |
| Delta-BHC | .5 | 1 | ug/Kg | <MDL | <MDL | | | 35 |
| Gamma-BHC (Lindane) | .5 | 1 | ug/Kg | <MDL | <MDL | | | 35 |
| Heptachlor | .5 | 1 | ug/Kg | <MDL | <MDL | | | 35 |
| Aldrin | 1 | 2 | ug/Kg | <MDL | <MDL | | | 35 |
| Heptachlor Epoxide | .5 | 1 | ug/Kg | <MDL | <MDL | | | 35 |
| Endosulfan I | 1 | 2 | ug/Kg | <MDL | <MDL | | | 35 |
| Dieldrin | 1 | 2 | ug/Kg | <MDL | <MDL | | | 35 |
| 4,4'-DDE | 1 | 2 | ug/Kg | <MDL | <MDL | | | 35 |
| Endrin | 1 | 2 | ug/Kg | <MDL | <MDL | | | 35 |
| Endosulfan II | 1 | 2 | ug/Kg | <MDL | <MDL | | | 35 |
| 4,4'-DDD | 1 | 2 | ug/Kg | <MDL | <MDL | | | 35 |
| Endrin Aldehyde | 2 | 4 | ug/Kg | <MDL | <MDL | | | 35 |
| Endosulfan Sulfate | 1 | 2 | ug/Kg | <MDL | <MDL | | | 35 |
| 4,4'-DDT | 1 | 2 | ug/Kg | <MDL | <MDL | | | 35 |
| Methoxychlor | 5 | 10 | ug/Kg | <MDL | <MDL | | | 35 |
| Gamma-Chlordane | .5 | 1 | ug/Kg | <MDL | <MDL | | | 35 |
| Alpha-Chlordane | .5 | 1 | ug/Kg | <MDL | <MDL | | | 35 |

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 05/16/06 03:46
Run ID: R113245 Workgroup: WG85023 (PPLLS#50 PESTLL)

LD:WG85023-6 L38327-3 Matrix: SALTWTRSED Listtype: ORPESTLL Method: EPA 8081A/8082 (7-3-03-002) Project: 423062-200-4 Pkey: SED
(Lab Duplicate)

| Parameter | Mdl | Rdl | Units | SampValue | LD Value | RPD | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|
| Toxaphene | 10 | 20 | ug/Kg | <MDL | <MDL | | | 35 |

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 05/16/06 03:46
Run ID: R113245 Workgroup: WG85023 (PPLLS#50 PESTLL)

| Sample # (Lab Limits) | 2,4,5,6-Tetrachlo-ro-m-xylene 30-134 | Decachlorobipheny-1 15-155 |
|---|---|---|
| L38326-1 | 106 | 127 |
| L38326-2 | 112 | 117 |
| L38326-9 | 105 | 134 |
| L38326-10 | 91 | 114 |
| L38326-11 | 87 | 118 |
| L38326-12 | 100 | 132 |
| L38326-13 | 46 | 62 |
| L38326-14 | 100 | 135 |
| L38326-15 | 90 | 119 |
| L38327-1 | 81 | 116 |
| L38327-2 | 55 | 115 |
| L38327-3 | 58 | 120 |
| L38327-4 | 85 | 137 |
| L38327-5 | 78 | 133 |
| L38327-6 | 57 | 132 |
| L38327-7 | 76 | 119 |
| L38327-8 | 53 | 143 |
| WG85023-1 | 33 | 122 |
| WG85023-2 | 34 | 123 |
| WG85023-3 | 86 | 135 |
| WG85023-4 | 66 | 123 |
| WG85023-5 | 93 | 113 |
| WG85023-6 | 90 | 131 |

| Data File Name | Sample Name | Date Acquired | Vial Numb | Sample Amount | Sample Multiplie | Isodrin (RT) | Isodrin (Height) | Leptophos (RT) | Leptophos (Height) | Isodrin #2 (RT) | Isodrin #2 (Height) | Leptoph (RT) | Leptophos #2 (Height) | Misc Info | Data File Path |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COND-01.D | conditioner | 10 Apr 2006 9:51 am | 1 | 0 | 1 | | | | | | | | | | S:\MSDCHEM\2\DATA\060410\ |
| BLANK-01.D | blank | 10 Apr 2006 10:28 am | 2 | 0 | 1 | | | | | | | | | | S:\MSDCHEM\2\DATA\060410\ |
| PPES-01.D | 1211 PPES 20 PPB (BREAKDOWN) | 10 Apr 2006 11:04 am | 3 | 0 | 1 | 14.429 | 84362439 | 22.648 | 153574135 | 13.077 | 213599765 | 19.543 | 325962669 | | S:\MSDCHEM\2\DATA\060410\ |
| PEST-01.D | 1225D PEST 50 PPB (DAILY CAL) | 10 Apr 2006 11:41 am | 4 | 0 | 1 | 14.428 | 80537813 | 22.647 | 143291881 | 13.077 | 204991669 | 19.543 | 307156739 | | S:\MSDCHEM\2\DATA\060410\ |
| TOX-01.D | 1212.1 TOXAPHENE 1000 PPB | 10 Apr 2006 12:18 pm | 5 | 0 | 1 | 14.430 | 84896773 | 22.647 | 154909888 | 13.077 | 220132889 | 19.542 | 343414578 | | S:\MSDCHEM\2\DATA\060410\ |
| WG85023-1.D | MB | 10 Apr 2006 12:54 pm | 6 | 12.5 | 2.5 | 14.429 | 74234298 | 22.647 | 132608649 | 13.076 | 184268419 | 19.543 | 277670582 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| WG85023-2.D | SB | 10 Apr 2006 1:31 pm | 7 | 12.5 | 2.5 | 14.429 | 74532071 | 22.648 | 131088053 | 13.077 | 183984735 | 19.542 | 279655548 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| WG85023-3.D | MS L38327-2 | 10 Apr 2006 2:08 pm | 8 | 12.5 | 2.5 | 14.430 | 67631296 | 22.648 | 133546642 | 13.077 | 170837351 | 19.544 | 272934566 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| WG85023-4.D | MSD L38327-2 | 10 Apr 2006 2:44 pm | 9 | 12.5 | 2.5 | 14.428 | 71219604 | 22.648 | 139849028 | 13.077 | 176202255 | 19.547 | 277342539 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| WG85023-5.D | SRM 1944 | 10 Apr 2006 3:21 pm | 10 | 1.875 | 2 | 14.440 | 59586188 | 22.665 | 143526229 | 13.088 | 162061945 | 19.575 | 321968774 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| WG85023-6.D | LD L38327-3 | 10 Apr 2006 3:58 pm | 11 | 12.5 | 2.5 | 14.431 | 54892433 | 22.649 | 117391367 | 13.079 | 140104157 | 19.546 | 226219996 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| L38326-1.D | L38326-1 | 10 Apr 2006 4:35 pm | 12 | 12.5 | 2.5 | 14.439 | 47764713 | 22.666 | 115524146 | 13.088 | 126811969 | 19.575 | 256575630 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| L38326-2.D | L38326-2 | 10 Apr 2006 5:12 pm | 13 | 12.5 | 2.5 | 14.434 | 57537117 | 22.661 | 126674874 | 13.081 | 139690735 | 19.564 | 277582165 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| L38326-9.D | L38326-9 | 10 Apr 2006 5:48 pm | 14 | 12.5 | 2.5 | 14.431 | 58500938 | 22.653 | 124406253 | 13.079 | 140601758 | 19.550 | 256111363 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| L38326-10.D | L38326-10 | 10 Apr 2006 6:25 pm | 15 | 12.5 | 2.5 | 14.432 | 60049351 | 22.653 | 134253181 | 13.080 | 147054008 | 19.554 | 277670851 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| PPES-02.D | 1211 PPES 20 PPB (BREAKDOWN) | 10 Apr 2006 7:02 pm | 3 | 0 | 1 | 14.429 | 75059684 | 22.648 | 145698869 | 13.076 | 179122358 | 19.544 | 278481139 | | S:\MSDCHEM\2\DATA\060410\ |
| PEST-02.D | 1225D PEST 50 PPB (DAILY CAL) | 10 Apr 2006 7:38 pm | 4 | 0 | 1 | 14.429 | 74298940 | 22.647 | 140036543 | 13.076 | 184130670 | 19.542 | 272570182 | | S:\MSDCHEM\2\DATA\060410\ |
| L38326-11.D | L38326-11 | 10 Apr 2006 8:15 pm | 16 | 12.5 | 2.5 | 14.431 | 61785551 | 22.651 | 137300397 | 13.077 | 153283987 | 19.548 | 279749646 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| L38326-12.D | L38326-12 | 10 Apr 2006 8:52 pm | 17 | 12.5 | 2.5 | 14.431 | 61452341 | 22.652 | 135135923 | 13.079 | 144061253 | 19.551 | 262509381 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| L38326-13.D | L38326-13 | 10 Apr 2006 9:28 pm | 18 | 12.5 | 2.5 | 14.428 | 62247666 | 22.649 | 131931313 | 13.076 | 150675693 | 19.545 | 258761668 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| L38326-14.D | L38326-14 | 10 Apr 2006 10:05 pm | 19 | 12.5 | 2.5 | 14.430 | 58748949 | 22.653 | 134443405 | 13.077 | 141984164 | 19.551 | 267046486 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| L38326-15.D | L38326-15 | 10 Apr 2006 10:42 pm | 20 | 12.5 | 2.5 | 14.430 | 59733044 | 22.651 | 133339958 | 13.076 | 136565888 | 19.547 | 255255443 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| L38327-1.D | L38327-1 | 10 Apr 2006 11:19 pm | 21 | 12.5 | 2.5 | 14.428 | 64017804 | 22.647 | 132752965 | 13.076 | 149950824 | 19.543 | 255681156 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| L38327-2.D | L38327-2 | 10 Apr 2006 11:55 pm | 22 | 12.5 | 2.5 | 14.429 | 66014014 | 22.647 | 133988648 | 13.076 | 149585161 | 19.542 | 250543238 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| L38327-3.D | L38327-3 | 11 Apr 2006 12:32 am | 23 | 12.5 | 2.5 | 14.428 | 65224225 | 22.647 | 129290162 | 13.076 | 150424652 | 19.543 | 237166931 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| L38327-4.D | L38327-4 | 11 Apr 2006 1:09 am | 24 | 12.5 | 2.5 | 14.427 | 63665217 | 22.648 | 128920623 | 13.075 | 144175454 | 19.543 | 239611464 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| L38327-5.D | L38327-5 | 11 Apr 2006 1:46 am | 25 | 12.5 | 2.5 | 14.427 | 62369945 | 22.646 | 127036127 | 13.076 | 137523940 | 19.543 | 229003971 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| PPES-03.D | 1211 PPES 20 PPB (BREAKDOWN) | 11 Apr 2006 2:23 am | 3 | 0 | 1 | 14.427 | 81747262 | 22.644 | 152103995 | 13.074 | 183442768 | 19.539 | 276593258 | | S:\MSDCHEM\2\DATA\060410\ |
| PEST-03.D | 1225D PEST 50 PPB (DAILY CAL) | 11 Apr 2006 2:59 am | 4 | 0 | 1 | 14.426 | 76888624 | 22.644 | 143442753 | 13.074 | 187068795 | 19.540 | 280247652 | | S:\MSDCHEM\2\DATA\060410\ |
| L38327-6.D | L38327-6 | 11 Apr 2006 3:36 am | 26 | 12.5 | 2.5 | 14.426 | 66914424 | 22.645 | 127208035 | 13.074 | 161846524 | 19.539 | 247022319 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| L38327-7.D | L38327-7 | 11 Apr 2006 4:13 am | 27 | 12.5 | 2.5 | 14.427 | 65474629 | 22.645 | 136391264 | 13.074 | 155219683 | 19.540 | 259122892 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| L38327-8.D | L38327-8 | 11 Apr 2006 4:50 am | 28 | 12.5 | 2.5 | 14.426 | 65021609 | 22.645 | 129537355 | 13.074 | 149551081 | 19.540 | 237780120 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060410\ |
| PPES-04.D | 1211 PPES 20 PPB (BREAKDOWN) | 11 Apr 2006 5:26 am | 3 | 0 | 1 | 14.428 | 81731940 | 22.647 | 151597356 | 13.076 | 201875019 | 19.543 | 306195507 | | S:\MSDCHEM\2\DATA\060410\ |
| PEST-04.D | 1225D PEST 50 PPB (DAILY CAL) | 11 Apr 2006 6:03 am | 4 | 0 | 1 | 14.429 | 77457502 | 22.647 | 144301749 | 13.076 | 194444516 | 19.542 | 296379463 | | S:\MSDCHEM\2\DATA\060410\ |
| | | | | | Ave. | 14.430 | 67674950 | 22.649 | 135784430 | 13.077 | 164539815 | 19.547 | 271562122 | | |
| | | | | | Std. Dev. | 0.003 | 9354168 | 0.005 | 9665820 | 0.003 | 25086290 | 0.009 | 27726941 | | |
| | | | | | %RSD | | 14% | | 7% | | 15% | | 10% | | |

| Data File Name | Sample Name | Date Acquired | Vial Numb | Sample Amount | Sample Multiplie | Isodrin (RT) | Isodrin (Height) | Leptophos (RT) | Leptophos (Height) | Isodrin #2 (RT) | Isodrin #2 (Height) | Leptoph (RT) | Leptophos #2 (Height) | Misc Info | Data File Path |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COND-01.D | conditioner | 17 Apr 2006 9:40 am | 1 | 0 | 1 | | | | | | | | | | S:\MSDCHEM\2\DATA\060417\ |
| BLANK-01.D | blank | 17 Apr 2006 10:17 am | 2 | 0 | 1 | | | | | | | | | | S:\MSDCHEM\2\DATA\060417\ |
| PPES-01.D | 1211 PPES 20 PPB (BREAKDOWN) | 17 Apr 2006 10:54 am | 3 | 0 | 1 | 14.424 | 88935744 | 22.640 | 155318216 | 13.074 | 236847627 | 19.539 | 352734216 | | S:\MSDCHEM\2\DATA\060417\ |
| PEST-01.D | 1225D PEST 50 PPB (DAILY CAL) | 17 Apr 2006 11:30 am | 4 | 0 | 1 | 14.424 | 84021319 | 22.643 | 151759513 | 13.074 | 217568085 | 19.538 | 322790050 | | S:\MSDCHEM\2\DATA\060417\ |
| TOX-01.D | 1212.1 TOXAPHENE 1000 PPB | 17 Apr 2006 12:07 pm | 5 | 0 | 1 | 14.425 | 86486911 | 22.641 | 155229769 | 13.072 | 226143603 | 19.537 | 338167696 | | S:\MSDCHEM\2\DATA\060417\ |
| L38326-11.D | L38326-11 | 17 Apr 2006 12:44 pm | 6 | 12.5 | 2.5 | 14.426 | 64029323 | 22.646 | 138145944 | 13.075 | 165901064 | 19.543 | 292036382 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060417\ |
| L38326-12.D | L38326-12 | 17 Apr 2006 1:20 pm | 7 | 12.5 | 2.5 | 14.426 | 61997815 | 22.646 | 135824641 | 13.075 | 158481653 | 19.544 | 285546223 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060417\ |
| L38326-13.D | L38326-13 | 17 Apr 2006 1:57 pm | 8 | 12.5 | 2.5 | 14.426 | 63745833 | 22.643 | 131257640 | 13.074 | 167556985 | 19.541 | 281792339 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060417\ |
| L38326-14.D | L38326-14 | 17 Apr 2006 2:34 pm | 9 | 12.5 | 2.5 | 14.428 | 58351747 | 22.649 | 128219625 | 13.076 | 151980132 | 19.549 | 279334444 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060417\ |
| L38326-15.D | L38326-15 | 17 Apr 2006 3:10 pm | 10 | 12.5 | 2.5 | 14.428 | 58170080 | 22.648 | 129499532 | 13.075 | 151176579 | 19.545 | 263484815 | PPLLS50 PESTLL DUDI SOIL | S:\MSDChem\2\data\060417\ |
| L38327-1.D | L38327-1 | 17 Apr 2006 3:47 pm | 11 | 12.5 | 2.5 | 14.424 | 66113241 | 22.643 | 133266356 | 13.074 | 160995282 | 19.540 | 267289389 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060417\ |
| L38327-2.D | L38327-2 | 17 Apr 2006 4:24 pm | 12 | 12.5 | 2.5 | 14.425 | 64974081 | 22.643 | 128637492 | 13.073 | 166498738 | 19.538 | 259203210 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060417\ |
| L38327-3.D | L38327-3 | 17 Apr 2006 5:00 pm | 13 | 12.5 | 2.5 | 14.424 | 64886475 | 22.641 | 126987811 | 13.074 | 161268796 | 19.538 | 243185790 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060417\ |
| L38327-4.D | L38327-4 | 17 Apr 2006 5:37 pm | 14 | 12.5 | 2.5 | 14.424 | 62776503 | 22.643 | 123995646 | 13.074 | 158065027 | 19.539 | 242991314 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060417\ |
| COND-02.D | conditioner | 17 Apr 2006 6:14 pm | 1 | 0 | 1 | | | | | | | | | | S:\MSDCHEM\2\DATA\060417\ |
| PPES-02.D | 1211 PPES 20 PPB (BREAKDOWN) | 17 Apr 2006 6:50 pm | 3 | 0 | 1 | 14.424 | 82843868 | 22.640 | 144029310 | 13.071 | 209949900 | 19.534 | 306737462 | | S:\MSDChem\2\data\060417\ |
| PEST-02.D | 1225D PEST 50 PPB (DAILY CAL) | 17 Apr 2006 7:27 pm | 4 | 0 | 1 | 14.422 | 78310836 | 22.638 | 145364535 | 13.071 | 209914592 | 19.532 | 310356679 | | S:\MSDCHEM\2\DATA\060417\ |
| L38327-5.D | L38327-5 | 17 Apr 2006 8:04 pm | 15 | 12.5 | 2.5 | 14.422 | 64805174 | 22.639 | 130840848 | 13.071 | 160330088 | 19.533 | 249225737 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060417\ |
| L38327-6.D | L38327-6 | 17 Apr 2006 8:40 pm | 16 | 12.5 | 2.5 | 14.421 | 66817941 | 22.638 | 127131408 | 13.070 | 167851159 | 19.530 | 255839820 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060417\ |
| L38327-7.D | L38327-7 | 17 Apr 2006 9:17 pm | 17 | 12.5 | 2.5 | 14.422 | 67480176 | 22.638 | 135737966 | 13.070 | 163067374 | 19.532 | 253707926 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060417\ |
| L38327-8.D | L38327-8 | 17 Apr 2006 9:54 pm | 18 | 12.5 | 2.5 | 14.421 | 66755923 | 22.637 | 132782045 | 13.070 | 167606078 | 19.532 | 263679973 | PPLLS50 PESTLL DUDI SOIL | S:\MSDCHEM\2\DATA\060417\ |
| COND-03.D | conditioner | 17 Apr 2006 10:31 pm | 1 | 0 | 1 | | | | | | | | | | S:\MSDCHEM\2\DATA\060417\ |
| PPES-03.D | 1211 PPES 20 PPB (BREAKDOWN) | 17 Apr 2006 11:07 pm | 3 | 0 | 1 | 14.421 | 87936033 | 22.637 | 161773641 | 13.069 | 218801264 | 19.529 | 324538945 | | S:\MSDChem\2\data\060417\ |
| PEST-03.D | 1225D PEST 50 PPB (DAILY CAL) | 17 Apr 2006 11:44 pm | 4 | 0 | 1 | 14.418 | 81989678 | 22.633 | 151657198 | 13.069 | 211307882 | 19.529 | 319588709 | | S:\MSDCHEM\2\DATA\060417\ |
| | | | | | Ave. | 14.424 | 71071435 | 22.641 | 138372957 | 13.073 | 181565595 | 19.537 | 285611556 | | |
| | | | | | Std. Dev. | 0.003 | 10489628 | 0.004 | 11408506 | 0.002 | 28822198 | 0.006 | 33499230 | | |
| | | | | | %RSD | | 15% | | 8% | | 16% | | 12% | | |

# SOLID AND TISSUE SAMPLE EXTRACTION RECORD FOR PESTICIDE-LL/PCB-LL ANALYSIS
## TRACE ORGANICS LABORATORY

1:1 MeCL2:ACETONE

PCBLL/PESTLL

QC BATCH NO.: PPLLS #50

EPA SW-846 EXTRACTON METHOD:
(SONICATION EPA 3550) SOXHLET EPA 3540

2.0 ml PCB extract split from 2.5 ml total

PEST-LL WORKGROUP NO.: WG85023
PCB-LL WORKGROUP NO.: WG85024
LL PESTICIDE SURROGATE SPIKE I.D. # ~~1260~~ 1260 JG
LL PESTICIDE MATRIX SPIKE I.D. # 1163.1
LL PCB MATRIX SPIKE I.D. # 1261

| Date/ Analyst | Sample Number | Project Number | Sample Description | coc | Initial Amt(g) | | Effective Amt. (g) after split | Spike Amt. (uL) | Vf (ml) | CLEANUPS (GPC, AL,TBA) | PCB H+ | Pest-LL conc. anlyst | Pest-LL turn in Date | PCB-LL conc. anlyst | PCB-LL turn in Date | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JG/KM ~~03/30/06~~ 03/31/06 | WG85023-1 | QC | MB | | 20.0 | Pest | | 1260-100µl | 2.5 | All | | KM | 4/10/06 | | | |
| | WG85024-1 | | | | | PCB | | | 0.5 | | H+ | | | KM | 4/10/06 | |
| | WG85023-2 | | SB PESTLL | | 20.0 | Pest | | (1163.1-100µl 1260-100µl) | 2.5 | | | | | | | |
| | | | | | | PCB | | | / | | / | | | | | |
| | WG85024-2 | | SB PCBLL | | 16.0 | Pest | | (1260-100µl 1261-200µl) | ~~0.5~~ | | | | | | | JG 03/30/06 |
| | | | | | | PCB | | | 0.5 | | H+ | | | | | |
| | WG85023-3 | | PESTLL MS (L38327-2) | | 20.0 | Pest | | (1163.1-100µl 1260-100µl) | 2.5 | | | | | | | |
| | | | | | | PCB | | | / | | / | | | | | |
| | WG85023-4 | | PESTLL MSD (L38327-2) | | 20.0 | Pest | | (1163.1-100µl 1260-100µl) | 2.5 | | | | | | | |
| | | | | | | PCB | | | / | | / | | | | | |
| | WG85024-3 | | PCBLL MS (L38327-5) | | 16.0 | Pest | | 1260-100µl | / | | | | | | | |
| | | | | | | PCB | | + (1261-200µl) | 0.5 | | H+ | | | | | |
| | WG85024-4 | | PCBLL MSD (L38327-5) | | 16.0 | Pest | | + (1261-200µl) | / | | | | | | | |
| | | | | | | PCB | | | 0.5 | | H+ | | | | | |
| | WG85023-5 | | PESTLL SRM 1944 | | 3.0 | Pest | | | 2.0 | | | | | | | |
| | | | | | | PCB | | | / | | / | | | | | |
| | WG85024-5 | | PCBLL SRM HS2 | | 7.5 | Pest | | | / | | | | | | | |
| | | | | | | PCB | | | 0.5 | | H+ | | | | | |
| | WG85023-6 | | LD (L38327-3) | | 20.0 | Pest | | | 2.5 | | | | | | | |
| | WG85024-6 | | | | | PCB | | | 0.5 | | H+ | | | | | |
| | L38326-1 | 423062-200-4 | Dunwamish Diagonal Thin Layer | | 20.0 | Pest | | | 2.5 | | | | | | | |
| | | | | | | PCB | | | 0.5 | | H+ | | | | | |

Continued on Next Page

# SOLID AND TISSUE SAMPLE EXTRACTION RECORD FOR PESTICIDE-LL/PCB-LL ANALYSIS
## TRACE ORGANICS LABORATORY

1:1 MeCL2:ACETONE

PCBLL/PESTLL

PEST-LL WORKGROUP NO.: WG85023
PCB-LL WORKGROUP NO.: WG85024

QC BATCH NO.: PPLLS # 50 (continued)

LL PESTICIDE SURROGATE SPIKE I.D. #
LL PESTICIDE MATRIX SPIKE I.D. #
LL PCB MATRIX SPIKE I.D. #

EPA SW-846 EXTRACTON METHOD:
(SONICATION EPA 3550) SOXHLET EPA 3540

2.0 ml PCB extract split from 2.5 ml total

| Date/ Analyst | Sample Number | Project Number | Sample Description | coc | Initial Amt(g) | Effective Amt. (g) after split | Spike Amt. (uL) | Vf (ml) | CLEANUPS (GPC, AL,TBA) | PCB H+ | Pest-LL conc. anlyst | Pest-LL turn in Date | PCB-LL conc. anlyst | PCB-LL turn in Date | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JG/KM 03/30/06 | L38326-2 | 423062-200-4 | Duwamish Diagonal Thin Layer | | 20.0 | Pest | 1200-100µl | 2.5 | All | | KM | 4/10/06 | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | KM | 4/10/06 | |
| | L38326-9 | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38326-10 | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38326-11 | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38326-12 | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38326-13 | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38326-14 | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38326-15 | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38327-1 | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38327-2 | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38327-3 | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |

Continued on Next Page

# SOLID AND TISSUE SAMPLE EXTRACTION RECORD FOR PESTICIDE-LL/PCB-LL ANALYSIS
## TRACE ORGANICS LABORATORY

1:1 MeCL2:ACETONE

PCBLL/PESTLL

QC BATCH NO.: PPLLS # 50 (continued)

EPA SW-846 EXTRACTON METHOD:
(SONICATION EPA 3550) SOXHLET EPA 3540

2.0 ml PCB extract split from 2.5 ml total

PEST-LL WORKGROUP NO.: WG85023
PCB-LL WORKGROUP NO.: WG85024
PESTICIDE SURROGATE SPIKE I.D. #
PESTICIDE MATRIX SPIKE I.D. #
PCB MATRIX SPIKE I.D. #

| Date/ Analyst | Sample Number | Project Number | Sample Description | coc | Initial Amt(g) | Effective Amt. (g) after split | Spike Amt. (uL) | Vf (ml) | CLEANUPS (GPC, AL,TBA) | PCB H+ | Pest-LL conc. anlyst | Pest-LL turn in Date | PCB-LL conc. anlyst | PCB-LL turn in Date | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Km 4/6/06 | L38327-4 | 23062-200-4 | Dunwamish Diagonal Thin Layer | | 20.0 | Pest | 1260-100µl | 2.5 | All | | Km | 4/10/06 | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | Km | 4/10/06 | |
| | L38327-5 | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38327-6 | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38327-7 | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38327-8 | | | | | Pest | | 2.5 | | | | | | | * Blown to dryness w/ N2 prior to alumina |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | | | | | | Pest | | | | | | | | | |
| | | | | | | PCB | | | | | | | | | |
| | | | | | | Pest | | | | | | | | | |
| | | | | | | PCB | | | | | | | | | |
| | | | | | | Pest | | | | | | | | | |
| | | | | | | PCB | | | | | | | | | |
| | | | | | | Pest | | | | | | | | | |
| | | | | | | PCB | | | | | | | | | |
| | | | | | | Pest | | | | | | | | | |
| | | | | | | PCB | | | | | | | | | |
| | | | | | | Pest | | | | | | | | | |
| | | | | | | PCB | | | | | | | | | |

# Trace Organics Data Anomaly Form

**Date(s) Occurred:** *04/10,17/2006*

**WG #(s):** *85023*

☒ **All samples in WKGP(s) or Sample #(s):**

**Project #(s):** *423062*

**Matrix:** ☐ **Liquid** ☒ **Solid** ☐ **Air** ☐ **Tissue** ☐ **Calibration** ☐ **Other:**

## I. Analysis/Extraction

| | | | |
|---|---|---|---|
| ☐ BNA | ☐ BNALL | ☐ EDC | ☐ EDC-LVI |
| ☐ CLPESTPCB | ☒ PEST | ☐ PCB | ☐ OPPEST |
| ☐ VOA-GCMS | ☐ NWTPH-GX | ☐ NWTPH-DX | ☐ NWTPH-HCID |
| ☐ BUTYL TIN | ☐ AIRTOX | ☐ AIR-SULFUR | |
| ☐ Other: | | | |
| ☐ Subcontracted: | | | |

## II. Instrument

| | |
|---|---|
| GC/ICP/MS: | ☐ P |
| GC/MS: | ☐ D ☐ E ☐ J ☐ K ☐ L ☐ M ☒ N |
| GC: | ☐ F ECD ☒ G ECD ☐ H FID ☐ H OI4450PID/FID |
| | ☐ I FID |
| Extraction/Cleanup: | ☐ PFE ☐ GPC |
| | ☐ Other: |

## III. Type of Sample/Analytical Anomaly

☐ Values Outside of Control Limits:

| | |
|---|---|
| 1 ☐ Blank Contamination | 8 ☐ Surrogate Spike Recoveries |
| 2 ☐ SB/SBD Spike Recoveries | 9 ☐ SB/SBD RPD |
| 3 ☐ MS/MSD Spike Recoveries | 10 ☐ MS/MSD RPD |
| 4 ☒ LCS/SRM Recoveries | 11 ☐ Sample/LD RPD |
| 5 ☐ Initial Calibration | 12 ☒ Continuing Calibration Checks |
| 6 ☒ Performance Checks | 13 ☐ Tuning Criteria |
| 7 ☐ ISTD % Differences | |

14 ☐ Holding time exceeded by:
15 ☐ Insufficient sample amount.
16 ☐ Inappropriate storage, container or preservation.
17 ☐ Other

**Anomaly Description:** *4. The SRM had a recovery for DDT that was outside the lab limits. All DDT results are flagged with an "L". 6. PPES-02 on 4-10-06 had breakdown on the front column >15% for DDT. All DDT and breakdown components were reported from the back column. PPES-03 failed on both columns for DDT on 4-10-06. 12. Final calibration check (PEST-02) on 4-10-06 had low recoveries (<85%) for methoxyclor and DDT.*

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Apr 10 2006, 11:52 am

Work Group: WG85024 (PPLLS#50 PCBLL) for Department: 7 - Organics, Trace

Created: 29-MAR-06 PrepDate: 31-MAR-06 Due: Operator: KM/JG

| Sample | Project Number | Project Description | PKey | C | Product | Matrix | Stat | UA | Workdate | Duedate |
|---|---|---|---|---|---|---|---|---|---|---|
| L38326-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PCBLL | SALTWTRSED | PREP | U | 22-MAR-06 | 24-APR-06 |
| L38326-10 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PCBLL | SALTWTRSED | PREP | U | 22-MAR-06 | 24-APR-06 |
| L38326-11 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PCBLL | SALTWTRSED | PREP | U | 22-MAR-06 | 24-APR-06 |
| L38326-12 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PCBLL | SALTWTRSED | PREP | U | 22-MAR-06 | 24-APR-06 |
| L38326-13 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PCBLL | SALTWTRSED | PREP | U | 23-MAR-06 | 24-APR-06 |
| L38326-14 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PCBLL | SALTWTRSED | PREP | U | 23-MAR-06 | 24-APR-06 |
| L38326-15 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PCBLL | SALTWTRSED | PREP | U | 23-MAR-06 | 24-APR-06 |
| L38326-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PCBLL | SALTWTRSED | PREP | U | 22-MAR-06 | 24-APR-06 |
| L38326-9 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PCBLL | SALTWTRSED | PREP | U | 22-MAR-06 | 24-APR-06 |
| L38327-1 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PCBLL | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-2 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PCBLL | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-3 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PCBLL | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-4 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PCBLL | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-5 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PCBLL | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-6 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PCBLL | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-7 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PCBLL | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| L38327-8 | 423062-200-4 | Duwamish Diagonal Thin Layer Cap | SED | S | PCBLL | SALTWTRSED | PREP | U | 24-MAR-06 | 24-APR-06 |
| WG85024-1 | MB | | | S | PCBLL | OTHR SOLID | PREP | U | 29-MAR-06 | |
| WG85024-2 | SB | | | S | PCBLL | OTHR SOLID | PREP | U | 29-MAR-06 | |
| WG85024-3 | MS | | SED | S | PCBLL | SALTWTRSED | PREP | U | 29-MAR-06 | |
| WG85024-4 | MSD | | SED | S | PCBLL | SALTWTRSED | PREP | U | 29-MAR-06 | |
| WG85024-5 | SRM | | SED | S | PCBLL | SALTWTRSED | PREP | U | 29-MAR-06 | |
| WG85024-6 | LD | | SED | S | PCBLL | SALTWTRSED | PREP | U | 29-MAR-06 | |

Comments:

| | |
|---|---|
| L38326-1 | 10 Grab Comp, 0-10 cm |
| L38326-10 | 10 Grab Comp, FREP |
| L38326-11 | 10 Grab Comp, 0-10 cm |
| L38326-12 | 10 Grab Comp, 0-10 cm |
| L38326-13 | 10 Grab Comp, 0-10 cm |
| L38326-14 | 10 Grab Comp, 0-10 cm |
| L38326-15 | 10 Grab Comp, 0-10 cm |
| L38326-2 | 10 Grab Comp, 0-10 cm |
| L38326-9 | 10 Grab Comp, AREP |
| L38327-1 | Diver Cores, 2006 |
| L38327-2 | Diver Cores, 2006, AREP |
| L38327-3 | Diver Cores, 2006, FREP |
| L38327-4 | Diver Cores, 2006 |
| L38327-5 | Diver Cores, 2006 |
| L38327-6 | Diver Cores, 2006 |
| L38327-7 | Diver Cores, 2006 |
| L38327-8 | Diver Cores, 2006 |
| WG85024-1 | MB060331 |
| WG85024-2 | WG85024-1 |
| WG85024-3 | L38327-5 |
| WG85024-4 | WG85024-3 L38327-5 |
| WG85024-5 | SRMHS2 |
| WG85024-6 | L38327-3 |

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 04/13/06 02:19
Run ID: R112961 Workgroup: WG85024 (PPLLS#50 PCBLL)

MB:WG85024-1 Matrix: OTHR SOLID Listtype: ORPCBLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED
(Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Qual |
|---|---|---|---|---|---|
| Aroclor 1016 | 1.3 | 2.5 | ug/Kg | <MDL | |
| Aroclor 1221 | 2.5 | 5 | ug/Kg | <MDL | |
| Aroclor 1232 | 2.5 | 5 | ug/Kg | <MDL | |
| Aroclor 1242 | 1.3 | 2.5 | ug/Kg | <MDL | |
| Aroclor 1248 | 1.3 | 2.5 | ug/Kg | <MDL | |
| Aroclor 1254 | 1.3 | 2.5 | ug/Kg | <MDL | |
| Aroclor 1260 | 1.3 | 2.5 | ug/Kg | <MDL | |

SB:WG85024-2 MB:WG85024-1 Matrix: OTHR SOLID Listtype: ORPCBLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED
(Spike Blank, Method Blank)

| Parameter | Mdl | Rdl | Units | MB Value | Truevalue | SB Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | 1.3 | 2.5 | ug/Kg | <MDL | 37.5 | 20.1 | 54 | | 39-121 |
| Aroclor 1260 | 1.3 | 2.5 | ug/Kg | <MDL | 37.5 | 34.3 | 92 | | 53-140 |

MSD:WG85024-4 MS:WG85024-3 L38327-5 Matrix: SALTWTRSED Listtype: ORPCBLL Method: EPA 8081A/8082 (7-3-03-002) Project: 423062-200-4 Pkey: SED
(Matrix Spike Duplicate, Matrix Spike)

| Parameter | Mdl | Rdl | Units | SampValue | Truevalue | MS Value | % Rec. | Qual | LabLimit | Truevalue | MSD Value | % Rec. | Qual | RPD | Qual | Lablimit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | 1.3 | 2.5 | ug/Kg | <MDL | 37.5 | 32.2 | 86 | | 32-164 | 37.5 | 33.6 | 90 | | 5 | | 35 |
| Aroclor 1260 | 1.3 | 2.5 | ug/Kg | 9.93 | 37.5 | 39.6 | 79 | | 28-144 | 37.5 | 39.2 | 78 | | 1 | | 35 |

SRM:WG85024-5 Matrix: SALTWTRSED Listtype: ORPCBLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED
(Std Reference Material)

| Parameter | Mdl | Rdl | Units | Truevalue | SRM Value | % Rec. | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1254 | 2.7 | 5.33 | ug/Kg | 112. | 88.7 | 79 | | 57-139 |

LD:WG85024-6 L38327-3 Matrix: SALTWTRSED Listtype: ORPCBLL Method: EPA 8081A/8082 (7-3-03-002) Project: 423062-200-4 Pkey: SED
(Lab Duplicate)

| Parameter | Mdl | Rdl | Units | SampValue | LD Value | RPD | Qual | LabLimit |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | 1.3 | 2.5 | ug/Kg | <MDL | <MDL | | | 35 |
| Aroclor 1221 | 2.5 | 5 | ug/Kg | <MDL | <MDL | | | 35 |
| Aroclor 1232 | 2.5 | 5 | ug/Kg | <MDL | <MDL | | | 35 |
| Aroclor 1242 | 1.3 | 2.5 | ug/Kg | <MDL | <MDL | | | 35 |
| Aroclor 1248 | 1.3 | 2.5 | ug/Kg | 6.02 | 4.92 | 20 | | 35 |
| Aroclor 1254 | 1.3 | 2.5 | ug/Kg | 8.4 | 8.91 | 6 | | 35 |
| Aroclor 1260 | 1.3 | 2.5 | ug/Kg | 6 | 4.95 | 19 | | 35 |

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 04/13/06 02:19
Run ID: R112961 Workgroup: WG85024 (PPLLS#50 PCBLL)

| Sample # (Lab Limits) | 2,4,5,6-Tetrachloro-m-xylene 30-134 | | Decachlorobiphenyl 15-155 |
|---|---|---|---|
| L38326-1 | 84 | | 87 |
| L38326-2 | 92 | | 84 |
| L38326-9 | 93 | | 93 |
| L38326-10 | 81 | | 90 |
| L38326-11 | 77 | | 84 |
| L38326-12 | 90 | | 93 |
| L38326-13 | 37 | | 40 |
| L38326-14 | 80 | | 85 |
| L38326-15 | 82 | | 87 |
| L38327-1 | 66 | | 76 |
| L38327-2 | 47 | | 82 |
| L38327-3 | 64 | | 103 |
| L38327-4 | 63 | | 83 |
| L38327-5 | 66 | | 81 |
| L38327-6 | 42 | | 82 |
| L38327-7 | 67 | | 78 |
| L38327-8 | 42 | | 83 |
| WG85024-1 | 26 | G | 81 |
| WG85024-2 | 32 | | 102 |
| WG85024-3 | 74 | | 104 |
| WG85024-4 | 94 | | 109 |
| WG85024-5 | 101 | | 100 |
| WG85024-6 | 63 | | 82 |

# SOLID AND TISSUE SAMPLE EXTRACTION RECORD FOR PESTICIDE-LL/PCB-LL ANALYSIS
## TRACE ORGANICS LABORATORY

1:1 MeCL2:ACETONE

PCBLL/PESTLL

QC BATCH NO.: PPLLS #50

EPA SW-846 EXTRACTON METHOD:
SONICATION EPA 3550 SOXHLET EPA 3540

2.0 ml PCB extract split from 2.5 ml total

PEST-LL WORKGROUP NO.: WG85023
PCB-LL WORKGROUP NO.: WG85024
LL PESTICIDE SURROGATE SPIKE I.D. # ~~1260~~ 1260 JG
LL PESTICIDE MATRIX SPIKE I.D. # 1163.1
LL PCB MATRIX SPIKE I.D. # 1261

| Date/ Analyst | Sample Number | Project Number | Sample Description | coc | Initial Amt(g) | Effective Amt. (g) after split | Spike Amt. (uL) | Vf (ml) | CLEANUPS (GPC, AL,TBA) | PCB H+ | Pest-LL conc. anlyst | Pest-LL turn in Date | PCB-LL conc. anlyst | PCB-LL turn in Date | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JG/KM ~~03/30/06~~ 03/31/06 | WG85023-1 | QC | MB | | 20.0 | Pest | 1260-100µl | 2.5 | All | | KM | 4/10/06 | | | |
| | WG85024-1 | | | | | PCB | | 0.5 | | H+ | | | KM | 4/10/06 | |
| | WG85023-2 | | SB PESTLL | | 20.0 | Pest | (1163.1-100µl 1260-100µl) | 2.5 | | | | | | | |
| | WG85024-2 | | SB PCBLL | | 16.0 | PCB | | / | | / | | | | | |
| | | | | | | Pest | (1260-100µl 1261-200µl) | ~~0.5~~ | | | | | | | JG 03/30/06 |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | WG85023-3 | | PESTLL MS (L38327-2) | | 20.0 | Pest | (1163.1-100µl 1260-100µl) | 2.5 | | | | | | | |
| | | | | | | PCB | | / | | / | | | | | |
| | WG85023-4 | | PESTLL MSD (L38327-2) | | 20.0 | Pest | (1163.1-100µl 1260-100µl) | 2.5 | | | | | | | |
| | | | | | | PCB | | / | | / | | | | | |
| | WG85024-3 | | PCBLL MS (L38327-5) | | 16.0 | Pest | 1260-100µl | / | | | | | | | |
| | | | | | | PCB | +(1261-200µl) | 0.5 | | H+ | | | | | |
| | WG85024-4 | | PCBLL MSD (L38327-5) | | 16.0 | Pest | +(1261-200µl) | / | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | WG85023-5 | | PESTLL SRM 1944 | | 3.0 | Pest | | 2.0 | | | | | | | |
| | | | | | | PCB | | / | | / | | | | | |
| | WG85024-5 | | PCBLL SRM 1952 | | 7.5 | Pest | | / | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | WG85023-6 | | LD (L38327-3) | | 20.0 | Pest | | 2.5 | | | | | | | |
| | WG85024-6 | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38326-1 | 423062-200-4 | Dow amish Diagonal Thin Layer | | 20.0 | Pest | | 2.5 | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |

Continued on Next Page

# SOLID AND TISSUE SAMPLE EXTRACTION RECORD FOR PESTICIDE-LL/PCB-LL ANALYSIS
## TRACE ORGANICS LABORATORY

1:1 MeCL2:ACETONE

PCBLL/PESTLL

PEST-LL WORKGROUP NO.: WG85023
PCB-LL WORKGROUP NO.: WG85024

QC BATCH NO.: PPLLS #50 (continued)

LL PESTICIDE SURROGATE SPIKE I.D. #
LL PESTICIDE MATRIX SPIKE I.D. #
LL PCB MATRIX SPIKE I.D. #

EPA SW-846 EXTRACTON METHOD:
SONICATION EPA 3550 SOXHLET EPA 3540

2.0 ml PCB extract split from 2.5 ml total

| Date/ Analyst | Sample Number | Project Number | Sample Description | coc | Initial Amt(g) | Effective Amt. (g) after split | | Spike Amt. (uL) | Vf (ml) | CLEANUPS (GPC, AL,TBA) | PCB H+ | Pest-LL conc. anlyst | Pest-LL turn in Date | PCB-LL conc. anlyst | PCB-LL turn in Date | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JG/KM 03/30/06 | L38326-2 | 423062-200-4 | Dunwoody Diagonal Thin Layer | | 20.0 | | Pest | 1200-100µl | 2.5 | All | | KM | 4/10/06 | | | |
| | | | | | | | PCB | | 0.5 | | H+ | | | KM | 4/10/06 | |
| | L38326-9 | | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38326-10 | | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38326-11 | | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38326-12 | | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38326-13 | | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38326-14 | | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38326-15 | | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38327-1 | | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38327-2 | | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38327-3 | | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | | PCB | | 0.5 | | H+ | | | | | |

Continued On Next Page

# SOLID AND TISSUE SAMPLE EXTRACTION RECORD FOR PESTICIDE-LL/PCB-LL ANALYSIS
## TRACE ORGANICS LABORATORY

1:1 MeCL2:ACETONE

PCBLL/PESTLL

QC BATCH NO.: PPLLS # 50 (continued)

EPA SW-846 EXTRACTON METHOD:
SONICATION EPA 3550 SOXHLET EPA 3540

2.0 ml PCB extract split from 2.5 ml total

PEST-LL WORKGROUP NO.: WG85023
PCB-LL WORKGROUP NO.: WG85024
PESTICIDE SURROGATE SPIKE I.D. #
PESTICIDE MATRIX SPIKE I.D. #
PCB MATRIX SPIKE I.D. #

| Date/ Analyst | Sample Number | Project Number | Sample Description | coc | Initial Amt(g) | Effective Amt. (g) after split | Spike Amt. (uL) | Vf (ml) | CLEANUPS (GPC, AL,TBA) | PCB H+ | Pest-LL conc. anlyst | Pest-LL turn in Date | PCB-LL conc. anlyst | PCB-LL turn in Date | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kim 4/6/06 | L38327-4 | # 23062-200-4 | Duwamish Diagonal Thin Layer | | 20.0 | Pest | 1200-100µl | 2.5 | All | | Kim | 4/10/06 | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | Kim | 4/10/06 | |
| | L38327-5 | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38327-6 | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38327-7 | | | | | Pest | | 2.5 | | | | | | | |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | L38327-8 | | | | | Pest | | 2.5 | | | | | | | * Blown to dryness w/ $N_2$ prior to alumina |
| | | | | | | PCB | | 0.5 | | H+ | | | | | |
| | | | | | | Pest | | | | | | | | | |
| | | | | | | PCB | | | | | | | | | |
| | | | | | | Pest | | | | | | | | | |
| | | | | | | PCB | | | | | | | | | |
| | | | | | | Pest | | | | | | | | | |
| | | | | | | PCB | | | | | | | | | |
| | | | | | | Pest | | | | | | | | | |
| | | | | | | PCB | | | | | | | | | |
| | | | | | | Pest | | | | | | | | | |
| | | | | | | PCB | | | | | | | | | |
| | | | | | | Pest | | | | | | | | | |
| | | | | | | PCB | | | | | | | | | |

| Data File Name | Sample Name | Date Acquired | Vial Numb | Sample Amount | Sample Multiplie | Isodrin (RT) | Isodrin (Height) | Leptophos (RT) | Leptophos (Height) | Isodrin #2 (RT) | Isodrin #2 (Height) | Leptoph (RT) | Leptophos #2 (Height) | Misc Info | Data File Path |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COND-01.D | conditioner | 4/11/2006 10:37 | 1 | 0 | 1 | | | | | | | | | | S:\MSDCHEM\2\DATA\060411\ |
| BLANK-01.D | blank | 4/11/2006 11:14 | 2 | 0 | 1 | | | | | | | | | | S:\MSDCHEM\2\DATA\060411\ |
| PCB-01.D | 1218D 1016/1260 500/50 | 4/11/2006 11:50 | 3 | 0 | 1 | 14.430 | 87451707 | 22.649 | 157294734 | 13.079 | 223574191 | 19.548 | 342067479 | | S:\MSDCHEM\2\DATA\060411\ |
| PCB-02.D | 1209.1 1248 500/50 | 4/11/2006 12:27 | 4 | 0 | 1 | 14.429 | 88007998 | 22.648 | 159726229 | 13.078 | 227992845 | 19.546 | 333080625 | | S:\MSDCHEM\2\DATA\060411\ |
| PCB-03.D | 1210.1 1254 500/50 | 4/11/2006 13:03 | 5 | 0 | 1 | 14.430 | 77991858 | 22.647 | 140718154 | 13.078 | 198330538 | 19.544 | 299125362 | | S:\MSDCHEM\2\DATA\060411\ |
| PCB-04.D | 1206.1 1221 500/50 | 4/11/2006 13:40 | 6 | 0 | 1 | 14.430 | 78909667 | 22.647 | 141317249 | 13.078 | 191913832 | 19.545 | 278646475 | | S:\MSDCHEM\2\DATA\060411\ |
| PCB-05.D | 1207.1 1232 500/50 | 4/11/2006 14:17 | 7 | 0 | 1 | 14.429 | 80916996 | 22.648 | 143734155 | 13.076 | 209895732 | 19.543 | 313994529 | | S:\MSDCHEM\2\DATA\060411\ |
| PCB-06.D | 1208.1 1242 500/50 | 4/11/2006 14:53 | 8 | 0 | 1 | 14.428 | 80243881 | 22.646 | 147251829 | 13.076 | 204708398 | 19.543 | 301198606 | | S:\MSDCHEM\2\DATA\060411\ |
| WG85024-1.D | MB | 4/11/2006 15:30 | 9 | 10 | 0.5 | 14.427 | 79811343 | 22.646 | 147025439 | 13.077 | 208919857 | 19.544 | 307963683 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| WG85024-2.D | SB | 4/11/2006 16:06 | 10 | 10 | 0.5 | 14.428 | 66185621 | 22.646 | 125681970 | 13.076 | 171763005 | 19.543 | 260024019 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| WG85024-3.D | MS L38327-5 | 4/11/2006 16:44 | 11 | 10 | 0.5 | 14.429 | 58984286 | 22.649 | 126656937 | 13.077 | 163135919 | 19.547 | 278003761 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| WG85024-4.D | MSD L38327-5 | 4/11/2006 17:21 | 12 | 10 | 0.5 | 14.429 | 61833677 | 22.649 | 132248390 | 13.077 | 164087944 | 19.547 | 284775068 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| WG85024-5.D | SRM HS2 | 4/11/2006 17:57 | 13 | 4.6875 | 0.5 | 14.439 | 55793094 | 22.664 | 139113592 | 13.090 | 158942238 | 19.573 | 327114914 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| WG85024-6.D | LD L38327-3 | 4/11/2006 18:34 | 14 | 10 | 0.5 | 14.431 | 56503594 | 22.648 | 122596742 | 13.077 | 152377242 | 19.546 | 262506522 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| L38326-1.D | L38326-1 | 4/11/2006 19:11 | 15 | 10 | 0.5 | 14.450 | 44577672 | 22.686 | 122801657 | 13.100 | 129742868 | 19.607 | 274517636 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| L38326-2.D | L38326-2 | 4/11/2006 19:47 | 16 | 10 | 0.5 | 14.439 | 46250848 | 22.673 | 116421890 | 13.087 | 129899689 | 19.584 | 276005510 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| L38326-9.D | L38326-9 | 4/11/2006 20:24 | 17 | 10 | 0.5 | 14.433 | 56708677 | 22.657 | 132540559 | 13.080 | 153072378 | 19.559 | 310364525 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| L38326-10.D | L38326-10 | 4/11/2006 21:01 | 18 | 10 | 0.5 | 14.434 | 49672273 | 22.658 | 127234548 | 13.082 | 140565399 | 19.562 | 302189977 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| PCB-07.D | 1218D 1016/1260 500/50 | 4/11/2006 21:38 | 3 | 0 | 1 | 14.428 | 82698853 | 22.644 | 168203588 | 13.074 | 208769426 | 19.539 | 330834953 | | S:\MSDCHEM\2\DATA\060411\ |
| PCB-08.D | 1209.1 1248 500/50 | 4/11/2006 22:15 | 4 | 0 | 1 | 14.427 | 86310147 | 22.643 | 162192207 | 13.075 | 227614895 | 19.539 | 343931380 | | S:\MSDCHEM\2\DATA\060411\ |
| L38326-11.D | L38326-11 | 4/11/2006 22:51 | 19 | 10 | 0.5 | 14.432 | 55015143 | 22.655 | 132093838 | 13.080 | 145632979 | 19.557 | 299954036 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| L38326-12.D | L38326-12 | 4/11/2006 23:28 | 20 | 10 | 0.5 | 14.432 | 51576825 | 22.656 | 124356020 | 13.079 | 140291889 | 19.557 | 291323432 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| L38326-13.D | L38326-13 | 4/12/2006 12:05 | 21 | 10 | 0.5 | 14.430 | 62146062 | 22.651 | 136967918 | 13.077 | 161132833 | 19.550 | 297022763 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| L38326-14.D | L38326-14 | 4/12/2006 12:41 | 22 | 10 | 0.5 | 14.433 | 50637462 | 22.660 | 126421931 | 13.081 | 136539374 | 19.565 | 284679711 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| L38326-15.D | L38326-15 | 4/12/2006 1:18 | 23 | 10 | 0.5 | 14.434 | 54444181 | 22.657 | 132207499 | 13.081 | 147693298 | 19.560 | 305053454 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| L38327-1.D | L38327-1 | 4/12/2006 1:55 | 24 | 10 | 0.5 | 14.429 | 66980387 | 22.647 | 145742084 | 13.076 | 176611347 | 19.546 | 325203388 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| L38327-2.D | L38327-2 | 4/12/2006 2:32 | 25 | 10 | 0.5 | 14.428 | 61417566 | 22.647 | 126620978 | 13.075 | 158563575 | 19.541 | 269285950 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| L38327-3.D | L38327-3 | 4/12/2006 3:08 | 26 | 10 | 0.5 | 14.427 | 49192858 | 22.645 | 111887718 | 13.075 | 127012025 | 19.541 | 230309047 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| L38327-4.D | L38327-4 | 4/12/2006 3:45 | 27 | 10 | 0.5 | 14.428 | 57856870 | 22.647 | 122006742 | 13.074 | 148423435 | 19.542 | 263833450 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| L38327-5.D | L38327-5 | 4/12/2006 4:22 | 28 | 10 | 0.5 | 14.428 | 64202928 | 22.646 | 132093651 | 13.075 | 169515198 | 19.543 | 297500409 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| PCB-09.D | 1218D 1016/1260 500/50 | 4/12/2006 4:59 | 3 | 0 | 1 | 14.428 | 92227798 | 22.643 | 175642386 | 13.075 | 229674535 | 19.541 | 358878255 | | S:\MSDCHEM\2\DATA\060411\ |
| PCB-10.D | 1210.1 1254 500/50 | 4/12/2006 5:35 | 5 | 0 | 1 | 14.427 | 77052386 | 22.644 | 144209017 | 13.075 | 201268468 | 19.540 | 304534141 | | S:\MSDCHEM\2\DATA\060411\ |
| L38327-6.D | L38327-6 | 4/12/2006 6:12 | 29 | 10 | 0.5 | 14.428 | 64328109 | 22.645 | 120477981 | 13.077 | 169126789 | 19.543 | 271250082 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| L38327-7.D | L38327-7 | 4/12/2006 6:49 | 30 | 10 | 0.5 | 14.429 | 65078544 | 22.650 | 137048562 | 13.079 | 174613995 | 19.549 | 315103584 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| L38327-8.D | L38327-8 | 4/12/2006 7:25 | 31 | 10 | 0.5 | 14.431 | 67597114 | 22.649 | 139904288 | 13.078 | 173117019 | 19.546 | 298552723 | PPLLS50 PCBLL DUDI SOIL | S:\MSDCHEM\2\DATA\060411\ |
| PCB-11.D | 1218D 1016/1260 500/50 | 4/12/2006 8:02 | 3 | 0 | 1 | 14.429 | 89430412 | 22.648 | 168465558 | 13.077 | 238651880 | 19.543 | 373262655 | | S:\MSDCHEM\2\DATA\060411\ |
| PCB-12.D | 1209.1 1248 500/50 | 4/12/2006 8:39 | 4 | 0 | 1 | 14.429 | 90036087 | 22.645 | 162590706 | 13.077 | 234142441 | 19.543 | 348504617 | | S:\MSDCHEM\2\DATA\060411\ |
| | | | | | Ave. | 14.431 | 67373512 | 22.651 | 138614193 | 13.079 | 177009071 | 19.550 | 301731335 | | |
| | | | | | Std. Dev. | 0.004 | 14337689 | 0.009 | 16081416 | 0.005 | 33753697 | 0.014 | 30920884 | | |
| | | | | | %RSD | | 21% | | 12% | | 19% | | 10% | | |

# Trace Organics Data Anomaly Form

**Date(s) Occurred:** *4-11-06*

**WG #(s):** *WG85024*

☐ **All samples in WKGP(s) or Sample #(s):** *WG85024-1*

**Project #(s):** *423062*

**Matrix:** ☐ **Liquid** ☒ **Solid** ☐ **Air** ☐ **Tissue** ☐ **Calibration** ☐ **Other:**

## I. Analysis/Extraction

| | | | |
|---|---|---|---|
| ☐ BNA | ☐ BNALL | ☐ EDC | ☐ EDC-LVI |
| ☐ CLPESTPCB | ☐ PEST | ☒ PCB | ☐ OPPEST |
| ☐ VOA-GCMS | ☐ NWTPH-GX | ☐ NWTPH-DX | ☐ NWTPH-HCID |
| ☐ BUTYL TIN | ☐ AIRTOX | ☐ AIR-SULFUR | |
| ☐ Other: | | | |
| ☐ Subcontracted: | | | |

## II. Instrument

| | |
|---|---|
| GC/ICP/MS: | ☐ P |
| GC/MS: | ☐ D ☐ E ☐ J ☐ K ☐ L ☐ M ☐ N |
| GC: | ☐ F ECD ☒ G ECD ☐ H FID ☐ H OI4450PID/FID |
| | ☐ I FID |
| Extraction/Cleanup: | ☐ PFE ☐ GPC |
| | ☐ Other: |

## III. Type of Sample/Analytical Anomaly

☒ Values Outside of Control Limits:

| | |
|---|---|
| 1 ☐ Blank Contamination | 8 ☒ Surrogate Spike Recoveries |
| 2 ☐ SB/SBD Spike Recoveries | 9 ☐ SB/SBD RPD |
| 3 ☐ MS/MSD Spike Recoveries | 10 ☐ MS/MSD RPD |
| 4 ☐ LCS/SRM Recoveries | 11 ☐ Sample/LD RPD |
| 5 ☐ Initial Calibration | 12 ☒ Continuing Calibration Checks |
| 6 ☐ Performance Checks | 13 ☐ Tuning Criteria |
| 7 ☐ ISTD % Differences | |

14 ☐ Holding time exceeded by:
15 ☐ Insufficient sample amount.
16 ☐ Inappropriate storage, container or preservation.
17 ☐ Other

**Anomaly Description:** *8. TCX surrogate recovery in the blank was low at 26% recovery (limit 30-134%). 12. Aroclor 1260 is still a little high on the back column (120%ish) in the Continuing Cals. All responses are from the front column.*

## IV. Type of Project Anomaly

☒ SAP/Work Plan specified MDLs not met.
☐ SAP/Work Plan specified QC frequency or QC type not met.
☐ SAP/Work Plan specified methodology not used.
☐ Sample exceeds regulatory and/or hazardous waste limits.
☐ Sample data results are unusual or inconsistent with expected results.
☐ Other

**Anomaly Description:** *PCB data reported for this set include numeric values only for those aroclors that could be positively ID'd in each sample. ID for aroclors 1016, 1232, and 1242 was not possible for all samples due to the overlap of components from other more prominent aroclors. These samples have had their MDL/RDLs evevated to the maximum amount that would have been reported if these aroclors had been positively identified. These samples have been qualified with a "TA" and a short text message for each effected aroclor. Samples effected are: L38326-(1,2,9-15) and L38327-(1-8).*

## V. Corrective Action Taken

☐ Sample(s) re-analyzed
☐ Sample(s) re-prepared and re-analyzed
☒ Sample(s) reported "AS IS"
☒ Data qualified with the following flags: *G*
☒ Other

**Corrective Action Description:** *All parameters in the blank are flagged with a "G". This surrogate is normally on the low side and since DCB and all the other sample surrogates are in range I don't feel any further action is required. I will recalibrate for aroclor 1260 on the back column as soon as possible.*

## VI. Potential Effects on Data Quality

**Based upon the expected performance of this method:**

☐ It is likely the observed anomaly influenced the reported value(s).
☒ It is unlikely the observed anomaly influenced the reported value(s).
☐ The observed anomaly may have influenced the reported value(s).
☐ It is unknown whether or not the observed anomaly affected the reported value(s).

**Explanation:** *All other QC, spikes, and surrogates are acceptable.*

| | Signatures | Signature Dates |
|---|---|---|
| **Reported By:** *JSF* | | |
| **Reviewer:** *Gretchen Nerlin* | | |
| **Supervisor:** *Dana Walker* | | |
| **QA Officer:** *Colin Elliott* (For QA1 only) | | |
| **cc: LPM:** | | |

# Trace Organics Data Anomaly Form

Date(s) Occurred: *4-11-06*

WG #(s): *WG85024*

[ ] All samples in WKGP(s) or Sample #(s): *WG85024-1*

Project #(s): *195062*

Matrix: [ ] Liquid [X] Solid [ ] Air [ ] Tissue [ ] Calibration [ ] Other

I. Analysis/Extraction

[ ] BNA [ ] BNAEE [ ] EDC [ ] EDC-LM
[ ] CLPESTPCB [ ] PEST [X] PCB [ ] OPPEST
[ ] VOA-GCMS [ ] NWTPH-GX [ ] NWTPH-DX [ ] NWTPH-HCID
[ ] BUTYLTIN [ ] AIRTOX [ ] AIR-SULFUR
[ ] Other
[ ] Subcontracted

II. Instrument

GC/ICP/MS: [ ] P
GC/MS: [ ] D [ ] E [ ] J [ ] K [ ] L [ ] M [ ] N
GC: [ ] F ECD [X] G ECD [ ] H FID [ ] HOI4450PID/FID
[ ] I FID
Extraction/Cleanup: [ ] PFE [ ] GPC
[ ] Other

III. Type of Sample/Analytical Anomaly

[X] Values Outside of Control Limits
[ ] Blank Contamination [X] Surrogate Spike Recoveries
[ ] SB/SBD Spike Recoveries [ ] SB/SBD RPD
[ ] MS/MSD Spike Recoveries [ ] MS/MSD RPD
[ ] LCS/SRM Recoveries [ ] Sample/LD RPD
[ ] Initial Calibration [X] Continuing Calibration Checks
[ ] Performance Checks [ ] Tuning Criteria
[ ] ISTD % Differences

[ ] Holding time exceeded by
[ ] Insufficient sample amount
[ ] Inappropriate storage, container or preservation
[ ] Other

Anomaly Description: *A TCX surrogate recovery in the blank was low at 26% recovery (limit 30-150%). 12 Aroclor 1260 is still a little high on the back column (120%sd) in the Continuing Cals. All responses are from the front column.*

IV. Type of Project Anomaly

# CHAIN OF CUSTODY FORMS

Login Number: P38326



T_DUD.STAC.PERIM DUDI SEDS, STAS. C, PERIMETER

Project Number: 423062-200-4

Personnel: _____

| | | | |
|---|---|---|---|
| Sample Number | P38326-1 | P38326-2 | P38326-9 |
| Locator | DUD_1C | DUD_2C | DUD_8C |
| Short Loc. Desc. | DUD_1C | DUD_2C | DUD_8C |
| Locator Desc. | Cleanup area perimeter assessment | Cleanup area perimeter assessment | Cleanup area perimeter assessment |
| Site | DUWAMISH RIVER | DUWAMISH RIVER | DUWAMISH RIVER |
| Start Date/Time | | | |
| End Date/Time | | | |
| Sample Depth | 7 | 8 | 12 |
| Collect Date | 3/8/06 | → | → |
| Comments | 10 Grab Comp, 0-10 cm | 10 Grab Comp, 0-10 cm | 10 Grab Comp, AREP |
| PERSONNEL | JO, SK, JDD, JB | → | → |
| SAMP METH | ~~[illegible]~~ 20042 | → oil sheen | → |
| SED DEPTH | 15, 15, 10, 16, 16, 16, 16, 16, 14, 15 | 8, 8, 7.5, 9, 6, 8, 7, 8, 9, 11.5 | 5.5, 5.6, 5.5, 5, 4½, 4, 4 |
| SED SAMP RANGE | 0-10 | 0-~~10~~-7 | → 0-4 |
| SED TYPE | 2, 4, 5, 1, 0 | 2, 4, 5, 1, 0 | 3, 2, N, 3, 0 |
| TIDE COND | S | E | E |
| TIDE HT | 7.3 | 7.2 | 7 |
| TIME | 855 - 930 | 950 | 1044 - 1124 |
| Dept., Matrix, Prod | | | |
| | 3 \| SALTWTRSED \| PSD | 3 \| SALTWTRSED \| PSD | 3 \| SALTWTRSED \| PSD |
| | 3 \| SALTWTRSED \| TOC | 3 \| SALTWTRSED \| TOC | 3 \| SALTWTRSED \| TOC |
| | 3 \| SALTWTRSED \| TOTS | 3 \| SALTWTRSED \| TOTS | 3 \| SALTWTRSED \| TOTS |
| | 6 \| SALTWTRSED \| AL-ICP | 6 \| SALTWTRSED \| AL-ICP | 6 \| SALTWTRSED \| AL-ICP |
| | 6 \| SALTWTRSED \| FE-ICP | 6 \| SALTWTRSED \| FE-ICP | 6 \| SALTWTRSED \| FE-ICP |
| | 6 \| SALTWTRSED \| HG-CVAA | 6 \| SALTWTRSED \| HG-CVAA | 6 \| SALTWTRSED \| HG-CVAA |
| | 6 \| SALTWTRSED \| MN-ICP | 6 \| SALTWTRSED \| MN-ICP | 6 \| SALTWTRSED \| MN-ICP |
| | 6 \| SALTWTRSED \| PP ICP | 6 \| SALTWTRSED \| PP ICP | 6 \| SALTWTRSED \| PP ICP |

CHAIN OF CUSTODY

| RELINQUISHED BY | Date | Time |
|---|---|---|
| [signature] | 3/8/06 | 1518 |
| RECEIVED BY | Date | Time |
| [signature] | 3/8/06 | 1518 |
| Sample Number(s) 1, 2, 9, 10, 11, 12 | | |

(All)

oil sheen on grab 1, 2, 3, 6, 7, 8, 9

Coords Data

WG 84 928 WG 84 999

A/M JB 3/21 A/M JB 4/3

continue ...

DUDI SEDS, STAS. C, PERIMETER

Project Number: 423062-200-4

Personnel: _____

| Sample Number | P38326-1 | P38326-2 | P38326-9 |
|---|---|---|---|
| | 7 SALTWTRSED BNASMS | 7 SALTWTRSED BNASMS | 7 SALTWTRSED BNASMS |
| | 7 SALTWTRSED PCBLL | 7 SALTWTRSED PCBLL | 7 SALTWTRSED PCBLL |
| | 7 SALTWTRSED PESTLL | 7 SALTWTRSED PESTLL | 7 SALTWTRSED PESTLL |

continue ...

DUDI SEDS, STAS. C, PERIMETER

Project Number: 423062-200-4

Personnel: _____

| Sample Number | P38326-10 | P38326-11 | P38326-12 |
|---|---|---|---|
| Locator | DUD_8C | DUD_9C | DUD_10C |
| Short Loc. Desc. | DUD_8C | DUD_9C | DUD_10C |
| Locator Desc. | Cleanup area perimeter assessment | Cleanup area perimeter assessment | Cleanup area perimeter assessment |
| Site | DUWAMISH RIVER | DUWAMISH RIVER | DUWAMISH RIVER |
| Start Date/Time | | | |
| End Date/Time | | | |
| Sample Depth | 12 | 12 | 13 |
| Collect Date | 3/8/06 | | |
| Comments | 10 Grab Comp, FREP | 10 Grab Comp, 0-10 cm | 10 Grab Comp, 0-10 cm |
| PERSONNEL | JB, BK, JDP, JO | | |
| SAMP FUNC | Freq of C38326-9 | ********** | ********** |
| SAMP METH | 200462 | | |
| SED DEPTH | 6 0-5 cm | 3½, 4 3½, 4 3½, 3 4, 4 6½, 4½ 6 | 6½, 6½ 6½, 6½ 7½, 6½ 9, 10 5, 6½ 7 |
| SED SAMP RANGE * 0-10 cm | 5.5 4.5 3.5 8 7½ 3.5, 4 | 0-5 cm | 0-6 cm |
| SED TYPE | 3, 2, N, 3, 0 | 3, 2, S, 2, 1 | 2, 3, S, 2, 0 |
| TIDE COND | E | E | E |
| TIDE HT | 6 | 5 | 4 |
| TIME | 1130 1220 | 1250 | 1345 |
| Dept., Matrix, Prod * | 5½ 6 5 5½ 8 7½ | | |
| | 3 \| SALTWTRSED \| PSD 3½ 4 | 3 \| SALTWTRSED \| PSD | 3 \| SALTWTRSED \| PSD |
| | 3 \| SALTWTRSED \| TOC | 3 \| SALTWTRSED \| TOC | 3 \| SALTWTRSED \| TOC |
| | 3 \| SALTWTRSED \| TOTS ~~13~~ | 3 \| SALTWTRSED \| TOTS | 3 \| SALTWTRSED \| TOTS |
| | 6 \| SALTWTRSED \| AL-ICP 4½ 4½ | 6 \| SALTWTRSED \| AL-ICP | 6 \| SALTWTRSED \| AL-ICP |
| | 6 \| SALTWTRSED \| FE-ICP | 6 \| SALTWTRSED \| FE-ICP | 6 \| SALTWTRSED \| FE-ICP |
| | 6 \| SALTWTRSED \| HG-CVAA | 6 \| SALTWTRSED \| HG-CVAA | 6 \| SALTWTRSED \| HG-CVAA |

Last 5 + 6 produced dark, stinky, heavy material - not pure sand as the other cores did

continue ...

DUDI SEDS, STAS. C, PERIMETER

Project Number: 423062-200-4

Personnel: _____

| Sample Number | P38326-10 | P38326-11 | P38326-12 |
|---|---|---|---|
| | 6 SALTWTRSED MN-ICP | 6 SALTWTRSED MN-ICP | 6 SALTWTRSED MN-ICP |
| | 6 SALTWTRSED PP ICP | 6 SALTWTRSED PP ICP | 6 SALTWTRSED PP ICP |
| | 7 SALTWTRSED BNASMS | 7 SALTWTRSED BNASMS | 7 SALTWTRSED BNASMS |
| | 7 SALTWTRSED PCBLL | 7 SALTWTRSED PCBLL | 7 SALTWTRSED PCBLL |
| | 7 SALTWTRSED PESTLL | 7 SALTWTRSED PESTLL | 7 SALTWTRSED PESTLL |

continue ...

DUDI SEDS, STAS. C, PERIMETER

Project Number: 423062-200-4

Personnel: SH, JP, JB

| | | | |
|---|---|---|---|
| Sample Number | P38326-13 | P38326-14 | P38326-15 |
| Locator | DUD_11C | DUD_12C | DUD_13C |
| Short Loc. Desc. | DUD_11C | DUD_12C | DUD_13C |
| Locator Desc. | Cleanup area perimeter assessment | Cleanup area perimeter assessment | PERIMETER LOCATION 13C |
| Site | DUWAMISH RIVER | DUWAMISH RIVER | DUWAMISH RIVER |
| Start Date/Time | 1030 | 1135 | 1220 |
| End Date/Time | 1110 | 1205 | 1310 |
| Sample Depth | 11 | 12 | 11 |
| Collect Date | 09-Mar-06 | → | → |
| Comments | 10 Grab Comp, 0-10 cm | 10 Grab Comp, 0-10 cm | 10 Grab Comp, 0-10 cm |
| PERSONNEL | SH, JP, JB | → | → |
| SAMP METH | 200462 | → | → |
| SED DEPTH | 7 | 9 | 16 |
| SED SAMP RANGE | 0-6 cm | 0-8 cm | 0-10 cm |
| SED TYPE | 23S21 | 21N32 | 21N31 |
| TIDE COND | S | E | E |
| TIDE HT | 7 | 6.8 | 6 |
| TIME | 1030 | 1135 | 1220 |
| Dept., Matrix, Prod | 3 SALTWTRSED PSD<br>3 SALTWTRSED TOC<br>3 SALTWTRSED TOTS<br>6 SALTWTRSED AL-ICP<br>6 SALTWTRSED FE-ICP<br>6 SALTWTRSED HG-CVAA<br>6 SALTWTRSED MN-ICP<br>6 SALTWTRSED PP ICP | 3 SALTWTRSED PSD<br>3 SALTWTRSED TOC<br>3 SALTWTRSED TOTS<br>6 SALTWTRSED AL-ICP<br>6 SALTWTRSED FE-ICP<br>6 SALTWTRSED HG-CVAA<br>6 SALTWTRSED MN-ICP<br>6 SALTWTRSED PP ICP | 3 SALTWTRSED PSD<br>3 SALTWTRSED TOC<br>3 SALTWTRSED TOTS<br>6 SALTWTRSED AL-ICP<br>6 SALTWTRSED FE-ICP<br>6 SALTWTRSED HG-CVAA<br>6 SALTWTRSED MN-ICP<br>6 SALTWTRSED PP ICP |
| | 6,7,9,7,6,6,6,9,6,6 | 9,10,6,7,12,12,9,10,6,8 | 16,16,16,16,16,16,16,16,16,16 |

continue ...

C.O.C. ON BACK

DUDI SEDS, STAS. C, PERIMETER

Project Number: 423062-200-4

Personnel: _____

| Sample Number | P38326-13 | P38326-14 | P38326-15 |
|---|---|---|---|
| | 7 SALTWTRSED BNASMS | 7 SALTWTRSED BNASMS | 7 SALTWTRSED BNASMS |
| | 7 SALTWTRSED PCBLL | 7 SALTWTRSED PCBLL | 7 SALTWTRSED PCBLL |
| | 7 SALTWTRSED PESTLL | 7 SALTWTRSED PESTLL | 7 SALTWTRSED PESTLL |

End of Fieldsheet.

CHAIN OF CUSTODY

| RELINQUISHED BY | Date | Time |
|---|---|---|
| J. Parker | 3/9/06 | 1510 |
| RECEIVED BY | Date | Time |
| [illegible] | 3/9/06 | 1510 |

San. Number(s)

38326 13-15 (All)

# LABORATORY WORK ORDER
## Chain of Custody

**Project Name:** Duwamish/Diagonal Sediments, Perimeter C Stations
**Project Number:** 423062-200-4
**Laboratory Project Manager:** Fritz Grothkopp/John Blaine
**Telephone Number:** 684 2327/2384


King County Department of Natural Resources
Water and Land Resources Division
Environmental Laboratory
322 West Ewing Street
Seattle, Washington 98119-1507


| Note: Use only one Login No. per sheet. Sample Number | Client Locator | Collect Date | Collect Time | TOC/TOTS | PSD | Metals-ICP/HG-CVAA | BNASMS/PESTLL/PCBLL | | | | | | | | | | | Number of Containers | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Analyses | | | | | | | | | | | | | | | |
| L 38326 - 1 | DUD_1C | 3/8/06 | 855 | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | 4 | |
| L - 2 | DUD_2C | | 950 | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | 5 | |
| L - 9 | DUD-8C | | 1044 | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | 4 | |
| L - 10 | DUD-8C | | 1145 | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | 4 | |
| L - 11 | DUD-9C | | 1250 | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | 4 | |
| L - 12 | DUD-10C | | 1345 | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | 4 | |
| L - | | | | | | | | | | | | | | | | | | | |
| L - | | | | | | | | | | | | | | | | | | | |
| L - | | | | | | | | | | | | | | | | | | | |
| L - | | | | | | | | | | | | | | | | | | | |
| L - | | | | | | | | | | | | | | | | | | | |

**Additional Comments:**

**Total Number of Containers** 25

**Sampled By:** BL, JDD, JO, JB

**Relinquished By:**
Signature [signature] Date 3/8/06
Printed Name Bob Kruger Time 1518
Organization King County Environmental Laboratory

**Received By:**
Signature [signature] Date 3/8/06
Printed Name David C. Hunn Time 1518
Organization King County Environmental Laboratory

# LABORATORY WORK ORDER
## Chain of Custody

**Project Name:** Duwamish/Diagonal Sediments, Perimeter C Stations
**Project Number:** 423062-200-4
**Laboratory Project Manager:** Fritz Grothkopp/John Blaine
**Telephone Number:** 684 2327/2384

King County Department of Natural Resources
Water and Land Resources Division
Environmental Laboratory
322 West Ewing Street
Seattle, Washington 98119-1507

| Note: Use only one Login No. per sheet. Sample Number | Client Locator | Collect Date | Collect Time | Analyses: TOC/TOTS | PSD | Metals-ICP/HG-CVAA | BNASMS/PESTLL/PCBLL | Number of Containers | Comments |
|---|---|---|---|---|---|---|---|---|---|
| L38326-13 | DUD-11C | 09-Mar-06 | 1030 | 1 | 1 | 1 | 1 | 4 | |
| L38326-14 | DUD-12C | 09-Mar-06 | 1135 | 1 | 1 | 1 | 1 | 4 | |
| L38326-15 | DUD-13C | 09-Mar-06 | 1220 | 1 | 1 | 1 | 1 | 4 | |
| L - | | | | | | | | | |
| L - | | | | | | | | | |
| L - | | | | | | | | | |
| L - | | | | | | | | | |
| L - | | | | | | | | | |
| L - | | | | | | | | | |
| L - | | | | | | | | | |
| L - | | | | | | | | | |

**Additional Comments:**

**Total Number of Containers** 12

**Sampled By:** SH, JP, JB

**Relinquished By:**
Signature J. Power
Date 3/9/06
Printed Name JEAN POWER
Time 1510
Organization King County Environmental Laboratory

**Received By:**
Signature [illegible]
Date 3/9/06
Printed Name David C. Hunn
Time 1535
Organization King County Environmental Laboratory