Appendix B

QA1 Quality Assurance Review Package

Appendix B1 – Sediment Cap 2008

Appendix B2 – Sediment Cap 2009

Appendix B3 – ENR 2008

Appendix B4 – ENR 2009

Appendix B5 – Perimeter Station 2008

Appendix B6 – Perimeter Station 2009

This appendix may be found on the King County Website
or
On separately available CD

KING COUNTY ENVIRONMENTAL LABORATORY
QUALITY ASSURANCE REVIEW

for

ESTUARINE SEDIMENT ANALYTICAL DATA

DUWAMISH/DIAGONAL SEDIMENT REMEDIATION PROJECT
YEAR FOUR, CAP SEDIMENT CHARACTERIZATION
MARCH 2008 SAMPLING EVENT

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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, Year 4 Main Cap Monitoring. 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 24, 2008 as part of the Duwamish Diagonal Sediment Remediation Project, Year 4, Main Cap Monitoring. The Sampling and Analysis Plan (SAP) in effect for this sampling event is titled: Duwamish/Diagonal Sediment Remediation Dredging and Capping Operations, Sediment Monitoring Sampling and Analysis Plan. October 28, 2003. (KCEL document # 177)

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 t*he 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 2003 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 on-cap saltwater sediment samples on March 24, 2008. These samples were collected for the Duwamish/Diagonal Sediment Remediation Program. 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. A minimum of two twin-sampler deployments (i.e., three individual grabs) was required in the SAP to provide a representative sample at each station. Both the prescribed station coordinates and the actual coordinates recorded during sampling activities are presented in the following table (see below). The coordinate system, as shown, is in U.S. State Plane, Washington North 4601, NAD83.

Duwamish/Diagonal Sediment Sampling, On-Cap Stations
Actual and Prescribed Sample Coordinates, March 2008

Lab Number	Station	Cast	Grabs Accepted	Prescribed Northing	Actual Northing	Prescribed Easting	Actual Easting	Offset > 3 m
L45304-1	DUD_1A			209089		1267047		
		1	1		209095		1267049	
		2	1		209089		1267049	
		3	1		209096		1267053	
L45304-2	DUD_2A			208902		1267139		
		1	2		208907		1267137	
		2	1		208902		1267143	
L45304-3	DUD_3A			208973		1266951		
		1	2		208975		1266952	
		2	1		208970		1266951	
L45304-4	DUD_4A			209354		1266888		
		1	2		209354		1266886	
		2	2		209359		1266886	
L45304-5	DUD_5A			209410		1266805		
		1	2		209406		1266794	3.5
		2*	1		209411		1266802	
L45304-6	DUD_5A FREP			209410		1266805		
		2*	1		209411		1266802	
		3	2		209425		1266802	4.6
L45304-7	DUD_1B			208484		1267060		
		2	2		208485		1267056	
		1	2		208490		1267060	
L45304-8	DUD_2B			208621		1267079		
		1	2		208623		1267075	
		2	1		208627		1267077	
L45304-9	DUD_3B			208716		1267049		
		1	2		208714		1267053	
		2	1		208719		1267044	

* Cast #2 at this station was split between the original sample (L45304-5) and the field replicate (L45304-6)

Sediment grab samples were collected from the King County research vessel *Liberty*, which is equipped with a differential global positioning system (DGPS). Using DGPS, field coordinates were recorded for each cast of the two grab samplers, deployed in tandem, as they contacted the sediment. All field coordinates for each cast listed in the above table are within the +/- 3 meter accuracy limits, as defined in the SAP, with the exception of cast #1 and #3 for location DUD_5A.

Sample Description Table

Lab Sample #	Station	Sample Collection	Average Sediment Depth	Sample Usage
L45304-1	DUD_1A	Surface Grabs	10 cm	Chemistry
L45304-2	DUD_2A	Surface Grabs	12 cm	Chemistry
L45304-3	DUD_3A	Surface Grabs	11 cm	Chemistry
L45304-4	DUD_4A	Surface Grabs	10 cm	Chemistry
L45304-5	DUD_5A	Surface Grabs	9 cm	Chemistry
L45304-6	DUD_5A	Surface Grabs (field replicate)	9 cm	Chemistry
L45304-7	DUD_1B	Surface Grabs	12 cm	Chemistry
L45304-8	DUD_2B	Surface Grabs	9 cm	Chemistry
L45304-9	DUD_3B	Surface Grabs	11 cm	Chemistry

Sample Collection

Sediment was collected at each station using two stainless steel, modified, 0.1 m^2 Van Veen grab samplers deployed in tandem via hydrowire. For each acceptable deployment, average depths ranging between 9-12 cm of sediment were collected within each grab, allowing for sub-sampling within the upper 8-10 cm of material. A minimum of two twin-sampler deployments (i.e., three individual grabs) was required in the SAP to provide a representative sample at each station.

Water depth at the eight subtidal cap sediment stations ranged between 5-9 meters (not corrected for tide).

Sample Handling

Close to equal amounts of sediment were sub-sampled from the three or more separate grabs used for chemistry analysis. For chemistry testing, 8 to 10 cm deep aliquots, as measured from the sediment surface, were collected using a stainless steel spoon. Sediment that had touched the sides or bottom of the grab sampler was excluded. Less than the top 10 cm of sediment was sub-sampled in those instances where it was not possible to collect material down to the minimum sediment penetration depth. All aliquots were placed in a covered stainless-steel compositing bowl, specific for that station. After collecting all aliquots from three or more grabs, the sediment was thoroughly homogenized, then split out into pre-labeled containers. All sample containers were supplied by the King County Environmental Laboratory, first having been pre-cleaned according to analytical specifications.

Decontamination

Individual sets of the sub-sampling and mixing equipment were dedicated to each station, precluding the need for decontamination of said equipment. The Van Veen grab samplers were decontaminated between stations by scrubbing with a brush using 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. They 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 time is defined as that time that sampling commences at each station.

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 conducted at the King County Env 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:

Parameter	Sample ID#	SAP MDL	Reported MDL	Reason for higher MDL Value
Total Organic Carbon	L45304-7	1000	3800	Reduced sample size analyzed due to High Organic Background
Total Organic Carbon	L45304-2, 3, 8, 9	1000	3100 - 4000	Reduced sample size analyzed due to High Organic Background and total solids <50%
PSD Parameters in the % Fines range	L45304-all	0.1%	0.5%	MDL was updated after the SAP was completed

For all samples where the MDL did not meet the SAP MDL, the TOC concentrations and the clay and silt levels were detectable, thus the project objectives were met.

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 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	L45304-1 to -9	24-Mar-08	25-Mar-08	26-Mar-08	6 Months at 4°C	NA
Total Organic Carbon	L45304-1 to -4, -6 to -9	24-Mar-08	28-Apr-08	06-May-08	6 months at -18°C	6 months at -18°C
	L45304-5	24-Mar-08	28-Apr-08	07-May-08		
Total Solids	L45304-1 to -9	24-Mar-08	28-Apr-08	28-Apr-08	6 months 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 in connection with total 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.

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 with the exception of the clay and silt portions of the Particle Size Distribution. The clay portion RSD was 34% and the silt portion RSD was 102%. All results for these portions have been flagged with an "E" to indicate an estimated value. No other corrective action was taken because the silt and clay portions each represented less than 10% of the overall mass of the sample.

METALS CHEMISTRY

Completeness
Metal chemistry data are reported for all samples and parameters 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
Metals analysis was not subcontracted for these sets of samples.

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

Target List
The reported target list includes all metals specified in Table 1.

Detection Limits
The detection limits (MDL) reported for Metals parameters are all within the requirements defined by the SAP with the exception of Aluminum, Beryllium, Copper, Iron, Manganese, Silver and Zinc in samples L45304-2, 3, 8, 9. The MDLs for these metals were above the SAP MDL because to total solids in these samples was less than 50%. All of these elements, except Silver, were detected above the MDL in these 4 samples.

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 during the Third Annual PSDDA Review Meeting. 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	L45304-1 through -9	24-Mar-08	28-Apr-08	29-Apr-08	2 Years at -18°C	6 months
Total Mercury	L45304-1 through -9	24-Mar-08	09-Apr-08	10-Apr-08	28 days at -18°C	NA

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

Method Blanks
All metals method blanks results were less than the MDL

Standard Reference Materials
The SRM analyzed in association with samples included in this data submission is National Research Council of Canada PACS-2. This SRM is not certified for Silver, Arsenic or Cadmium.

Acceptance limits for the certified elements 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 indicated in the SAP.

A laboratory control sample (LCS) ERA Soil was also analyzed with the total metals digestion. All recoveries were within the certified limits of the sample. The LCS is used as a secondary check for the total metals digestion procedure because the certified values for the elements are determined using the same methodology. No results from the LCS are used to qualify data.

Matrix Spikes

All matrix spike recoveries were within the 75 to 125% QC limits with the following exceptions:

- The reported matrix spike recovery of 20% for Antimony for sample numbers L45304-1 to -9 is less than the 75% QC acceptance limit. Antimony results for all samples in this data submission have been qualified with the G flag.
- Although the matrix spike result was acceptable, the reported matrix spike duplicate recovery of 302% for Mercury for sample numbers L45304-1 through 9, failed to meet the 75 to 125% acceptance criteria. The relative percent difference (RPD) between the matrix spike and the matrix spike duplicate for Mercury in WG96125 also failed to meet the 20% acceptance criteria. Mercury results for all samples have been qualified with the "E" flag.

Laboratory Replicate Samples

The relative percent differences (RPD) for laboratory duplicate results for all metals were less than or equal to the QC limit of 20% with the following exception. The reported RPD of 55% for Mercury in WG96125 for sample numbers L45304-1 through L45304-9 failed to meet the 20% QC acceptance criteria. The Mercury results for all samples in WG96125 have been qualified with an "E".

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.

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: (Refer to the SAP MDL table at the back of the document)

BNAs

1) For all samples, the reported MDLs for Coprostanol and Pentachlorophenol were greater than the SAP MDL values. For samples L45304-2 – 4 and 7 - 9, the reported MDLs for 1,4-Dichlorobenzene were greater than the SAP MDL values.
2) For samples L45304-2, 8, 9, the reported MDLs for Benzo(a)anthracene were greater than the SAP MDL values.
3) For samples L45304-1 – 4 and 7 - 9, the reported MDLs for Benzoic Acid were greater than the SAP MDL values.

The MDL values for these 4 parameters did not meet the SAP MDLs due to relatively low total solids in selected samples and adjustments made to the method's MDLs since the SAP was prepared.

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 4, 4'-DDT, 4,4'-DDE, 4,4'-DDD, Aldrin, Dieldrin, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Methoxychlor and Toxaphene in all samples were greater than the MDL values listed in the SAP. The reported MDLs for Alpha-BHC, Alpha Chlordane, Beta-BHC, Delta-BHC, Gamma-BHC (Lindane), Heptachlor and Heptachlor Epoxide in samples L45304-2, 3, 8 and 9 were also greater than the MDL values listed in the SAP due to total solids less than 50 %.

The attached SMS OC and Dry Weight Normalization MDL Check tables compare the reported MDL value to the SMS requirement. The MDLs for all samples meet the SMS limits.

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	L45304-1 to 3	24-Mar-08	27-Mar-08	01, 03-Apr-08	1 year at -18°C	40 days at 4°C
	L45304-4 to 9	24-Mar-08	31-Mar-08	08-Apr-08		
Chlorinated Pesticides	L45304-1 to 3	24-Mar-08	28-Mar-08	24-Apr-08	1 year at -18°C	40 days at 4°C
	L45304-4 to 9	24-Mar-08	01-Apr-08	24-Apr-08		
PCB	L45304-1 to 3	24-Mar-08	28-Mar-08	29-Apr-08	1 year at -18°C	40 days at 4°C
	L45304-4 to 9	24-Mar-08	01-Apr-08	29-Apr-08		

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

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 L45304-1 to 3 had a result above the MDL for Bis (2-ethylhexyl) Phthalate (10.9 ug/Kg), Butyl Benzyl Phthalate (7.62 ug/Kg) Di-n-butyl Phthalate (6.8 ug/Kg) and Benzoic Acid (112 ug/Kg). Sample results for Bis (2-ethylhexyl) Phthalate, Butyl Benzyl Phthalate Di-n-butyl Phthalate and Benzoic Acid for those samples have been qualified with the B flag. All Bis (2-ethylhexyl) Phthalate, Butyl Benzyl Phthalate Di-n-butyl Phthalate and Benzoic Acid results for these samples must be treated as estimated values.

The method blank analyzed with BNAs for L45304-4 to 9 had a result above the MDL for Bis (2-Ethylhexyl) Phthalate (11.2 ug/Kg). Sample results for Bis (2-Ethylhexyl) Phthalate have been qualified with the B flag. All Bis (2-Ethylhexyl) Phthalate results for these samples should be treated as estimated values.

Surrogate Recoveries

Surrogate recovery acceptance limits for sediment samples have been developed based on historical lab performance using the current analytical methods. 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. All sample surrogate recoveries met acceptance limits for both batches.

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 and Alpha-Chlordane. 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. Due to a problem during preparation, a majority of the extract for the PCB SRM associated with samples L45304-1 to 3 was lost. This SRM was therefore not analyzed and reported.

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, except Toxaphene, alpha and gamma Chlordane, 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 parameters at or above the RDL were less than or equal to the acceptance limit of 35% with the following exceptions.

- The Laboratory Duplicate result for Phenol for samples L45304-1 to 3 was outside the acceptance limit at 130%. All the results for Phenol for samples L45304-1 to 3 have been flagged with an "E" to indicate an estimated value..
- The Laboratory Duplicate results for 1,4-Dichlorobenzene, Benzo(a)anthracene, Fluoranthene and Pyrene for samples L45304-4 to 9 were outside the acceptance limit at 99%, 50%, 47% and 46% respectively. All the results for 1,4-Dichlorobenzene, Benzo(a)anthracene, Fluoranthene and Pyrene for samples L45304-4 to 9 have been flagged with an "E" to indicate an estimated value.

Additional QC Issues:

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 listed below due to the overlap of the components from other more prominent Aroclors. 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.

Lab Sample Number	PCB 1016	PCB 1232	PCB 1242
L45304-1	X	X	X
L45304-2	X	X	X
L45304-3	X	X	X
L45304-4	X	X	X
L45304-7	X	X	X
L45304-8	X	X	X
L45304-9	X	X	X

Chlorinated Pesticide Analysis:

All results for Endrin Aldehyde for samples L45304-1 to -9 were flagged with an "E" qualifier due to the CCV failure at the end of the analytical sequence.

TABLE 1
SEDIMENT SAMPLE INVENTORY

Sample	Locator / Description (see SAP)	PSD	Solids	TOC	Metals[1]	BNAs[2]	Pest/ PCBs	Comments
L45304-1	DUD_1A	X	X	X	X	X	X	
L45304-2	DUD_2A	X	X	X	X	X	X	
L45304-3	DUD_3A	X	X	X	X	X	X	
L45304-4	DUD_4A	X	X	X	X	X	X	
L45304-5	DUD_5A	X	X	X	X	X	X	
L45304-6	DUD_5A	X	X	X	X	X	X	field replicate
L45304-7	DUD_1B	X	X	X	X	X	X	
L45304-8	DUD_2B	X	X	X	X	X	X	
L45304-9	DUD_3B	X	X	X	X	X	X	

1 Metals = Hg, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, Tl, Zn, Al, Fe
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: 423062-100-4																					
	Locator: DUD_1A Descrip: CLEANUP AREA A MON Sampled: 03/24/08 9:35:00 AM Lab ID: L45304-1 Matrix: SALTWTRSED % Solids: 77.1					Locator: DUD_2A Descrip: CLEANUP AREA A MON Sampled: 03/24/08 9:50:00 AM Lab ID: L45304-2 Matrix: SALTWTRSED % Solids: 41.4					Locator: DUD_3A Descrip: CLEANUP AREA A MON Sampled: 03/24/08 10:08:00 AM Lab ID: L45304-3 Matrix: SALTWTRSED % Solids: 47.4					Locator: DUD_4A Descrip: CLEANUP AREA A MON Sampled: 03/24/08 10:22:00 AM Lab ID: L45304-4 Matrix: SALTWTRSED % Solids: 63.8				
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(318V1)																				
Clay *	1.2	E	0.61	1.21	%	20.4	E	1.1	2.27	%	27.3	E	1	2.1	%	10.6	E	0.76	1.52	%
Dry Weight Factor	1.6					5.5					4.4					2.4				
Fines *	1.8		0.61	1.21	%	73.6		1.1	2.27	%	75.6		1	2.1	%	27.3		0.76	1.52	%
Gravel *	8.3		0.12	1.21	%	1.1		0.23	2.27	%		<MDL	0.21	2.1	%	2.9		0.15	1.52	%
p+0.00 *	27.8		0.12	1.21	%	0.8	<RDL	0.23	2.27	%	0.2	<RDL	0.21	2.1	%	1.8		0.15	1.52	%
p+1.00 *	42.1		0.12	1.21	%	1.2		0.23	2.27	%	0.4	<RDL	0.21	2.1	%	5.1		0.15	1.52	%
p+10.0(equal/more than) *	1.2		0.61	1.21	%	15.9		1.1	2.27	%	16.8		1	2.1	%	9.1		0.76	1.52	%
p+2.00 *	17.9		0.12	1.21	%	2.6		0.23	2.27	%	4		0.21	2.1	%	23.6		0.15	1.52	%
p+3.00 *	0.6	<RDL	0.12	1.21	%	5.4		0.23	2.27	%	8.5		0.21	2.1	%	29.1		0.15	1.52	%
p+4.00 *		<MDL	0.12	1.21	%	8.4		0.23	2.27	%	6.3		0.21	2.1	%	7.9		0.15	1.52	%
p+5.00 *	0.6	<RDL	0.61	1.21	%	5.7		1.1	2.27	%	4.2		1	2.1	%	4.6		0.76	1.52	%
p+6.00 *		<MDL	0.61	1.21	%	22.7		1.1	2.27	%	17.8		1	2.1	%	3		0.76	1.52	%
p+7.00 *		<MDL	0.61	1.21	%	18.1		1.1	2.27	%	15.7		1	2.1	%	5.3		0.76	1.52	%
p+8.00 *		<MDL	0.61	1.21	%	6.8		1.1	2.27	%	10.5		1	2.1	%	3.8		0.76	1.52	%
p+9.00 *		<MDL	0.61	1.21	%	4.5		1.1	2.27	%	10.5		1	2.1	%	1.5		0.76	1.52	%
p-1.00 *	6.5		0.12	1.21	%	0.3	<RDL	0.23	2.27	%		<MDL	0.21	2.1	%	1.1		0.15	1.52	%
p-2.00 *	0.5	<RDL	0.12	1.21	%		<MDL	0.23	2.27	%		<MDL	0.21	2.1	%		<MDL	0.15	1.52	%
p-2.00(less than) *	1.4		0.12	1.21	%	0.8	<RDL	0.23	2.27	%		<MDL	0.21	2.1	%	1.8		0.15	1.52	%
Sand *	88.4		0.12	1.21	%	18.4		0.23	2.27	%	19.3		0.21	2.1	%	67.5		0.15	1.52	%
Silt *	0.6	<RDL,E	0.61	1.21	%	53.2	E	1.1	2.27	%	48.3	E	1	2.1	%	16.7	E	0.76	1.52	%
M=CV EPA 9060-PSEP96(337V3)																				
Total Organic Carbon	3550		990	1970	mg/Kg	36000		3100	6090	mg/Kg	21700		4000	8120	mg/Kg	14500		1000	2010	mg/Kg
M=CV SM2540-G (307V3)																				
Total Solids *	77.1		0.005	0.01	%	41.4		0.005	0.01	%	47.4		0.005	0.01	%	63.8		0.005	0.01	%
M=ES NONE																				
Field Personnel	SH,BK,JB				none	SH,BK,JB				none	SH,BK,JB				none	SH,BK,JB				none
Sampcoordx1 *	1267049				ft	1267137				ft	1266952				ft	1266886				ft
Sampcoordx2 *	1267049				ft	1267143				ft	1266951				ft	1266886				ft
Sampcoordx3 *	1267053				ft															
Sampcoordy1 *	209095				ft	208907				ft	208975				ft	209354				ft
Sampcoordy2 *	209089				ft	208902				ft	208970				ft	209359				ft
Sampcoordy3 *	209096				ft															
Sample Depth *	5				m	7				m	9				m	7				m
Sample Function																				
Sample Information																				
Sampling Method *	20042				none	20042				none	20042				none	20042				none
Sediment Sampling Depth *	10				cm	12				cm	11				cm	10				cm
Sediment Sampling Range *	0-9 cm				cm	0-10 cm				cm	0-10 cm				cm	0-9 cm				cm
Sediment Type	34S16				none	21D37				none	21N21				none	23S21				none
Tidal Condition	E				none	E				none	E				none	E				none
Tide Height *	8				ft	7				ft	7				ft	6				ft
M=MT CVAA EPA 7471B (604V4)																				

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4																				
	Locator:	DUD_1A				Locator:	DUD_2A				Locator:	DUD_3A				Locator:	DUD_4A			
	Descrip:	CLEANUP AREA A MON				Descrip:	CLEANUP AREA A MON				Descrip:	CLEANUP AREA A MON				Descrip:	CLEANUP AREA A MON			
	Sampled:	03/24/08 9:35:00 AM				Sampled:	03/24/08 9:50:00 AM				Sampled:	03/24/08 10:08:00 AM				Sampled:	03/24/08 10:22:00 AM			
	Lab ID:	L45304-1				Lab ID:	L45304-2				Lab ID:	L45304-3				Lab ID:	L45304-4			
	Matrix:	SALTWTRSED				Matrix:	SALTWTRSED				Matrix:	SALTWTRSED				Matrix:	SALTWTRSED			
	% Solids:	77.1				% Solids:	41.4				% Solids:	47.4				% Solids:	63.8			
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																				
Mercury, Total, CVAA	0.027	<RDL,E	0.0065	0.0649	mg/Kg	0.209	E	0.012	0.119	mg/Kg	0.194	E	0.01	0.101	mg/Kg	0.116	E	0.0077	0.0763	mg/Kg
M=MT ICP EPA3050B/6010C MOD(612V3)																				
Aluminum, Total, ICP	8960		6.5	32.4	mg/Kg	22800		12	59.9	mg/Kg	24100		11	52.5	mg/Kg	14300		7.8	38.9	mg/Kg
Antimony, Total, ICP		<MDL,G	0.97	4.86	mg/Kg		<MDL,G	1.8	9.01	mg/Kg		<MDL,G	1.6	7.89	mg/Kg		<MDL,G	1.2	5.83	mg/Kg
Arsenic, Total, ICP	3.4	<RDL	1.6	8.11	mg/Kg	16.4		2.9	15	mg/Kg	13.7		2.5	13.1	mg/Kg	7.4	<RDL	1.9	9.73	mg/Kg
Beryllium, Total, ICP	0.14	<RDL	0.065	0.324	mg/Kg	0.48	<RDL	0.12	0.599	mg/Kg	0.51	<RDL	0.11	0.525	mg/Kg	0.27	<RDL	0.078	0.389	mg/Kg
Cadmium, Total, ICP	0.56	<RDL	0.13	0.649	mg/Kg	0.7	<RDL	0.24	1.2	mg/Kg	0.49	<RDL	0.21	1.05	mg/Kg	0.42	<RDL	0.16	0.777	mg/Kg
Chromium, Total, ICP	22.4		0.19	0.973	mg/Kg	36		0.36	1.8	mg/Kg	31.2		0.32	1.58	mg/Kg	30.7		0.24	1.17	mg/Kg
Copper, Total, ICP	31.8		0.26	1.3	mg/Kg	98.3		0.48	2.4	mg/Kg	77.8		0.42	2.1	mg/Kg	56		0.31	1.56	mg/Kg
Iron, Total, ICP	17400		3.2	16.2	mg/Kg	34800		6	30	mg/Kg	33500		5.3	26.4	mg/Kg	21900		3.9	19.4	mg/Kg
Lead, Total, ICP	37.2		1.3	6.49	mg/Kg	66.9		2.4	12	mg/Kg	43.2		2.1	10.5	mg/Kg	36.1		1.6	7.77	mg/Kg
Manganese, Total, ICP	197		0.13	0.649	mg/Kg	382		0.24	1.2	mg/Kg	369		0.21	1.05	mg/Kg	262		0.16	0.777	mg/Kg
Nickel, Total, ICP	29.4		0.32	1.62	mg/Kg	26.8		0.6	3	mg/Kg	24.3		0.53	2.64	mg/Kg	21.9		0.39	1.94	mg/Kg
Selenium, Total, ICP		<MDL	1.6	8.11	mg/Kg		<MDL	2.9	15	mg/Kg		<MDL	2.5	13.1	mg/Kg		<MDL	1.9	9.73	mg/Kg
Silver, Total, ICP		<MDL	0.26	1.3	mg/Kg		<MDL	0.48	2.4	mg/Kg		<MDL	0.42	2.1	mg/Kg		<MDL	0.31	1.56	mg/Kg
Thallium, Total, ICP		<MDL	2.6	13	mg/Kg		<MDL	4.8	24	mg/Kg		<MDL	4.2	21	mg/Kg		<MDL	3.1	15.6	mg/Kg
Zinc, Total, ICP	153		0.32	1.62	mg/Kg	211		0.6	3	mg/Kg	153		0.53	2.64	mg/Kg	135		0.39	1.94	mg/Kg
M=OR EPA 3550B/8270C (7-3-01-004)																				
1,2,4-Trichlorobenzene		<MDL	0.13	0.259	ug/Kg		<MDL	0.24	0.483	ug/Kg		<MDL	0.21	0.422	ug/Kg		<MDL	0.16	0.313	ug/Kg
1,2-Dichlorobenzene		<MDL	0.26	0.519	ug/Kg		<MDL	0.48	0.966	ug/Kg		<MDL	0.42	0.844	ug/Kg		<MDL	0.31	0.627	ug/Kg
1,3-Dichlorobenzene		<MDL	0.26	0.519	ug/Kg		<MDL	0.48	0.966	ug/Kg		<MDL	0.42	0.844	ug/Kg		<MDL	0.31	0.627	ug/Kg
1,4-Dichlorobenzene	636		0.26	0.519	ug/Kg	2.75		0.48	0.966	ug/Kg	6.92		0.42	0.844	ug/Kg	9.97	E	0.31	0.627	ug/Kg
2,4-Dimethylphenol		<MDL	1.3	2.59	ug/Kg		<MDL	2.4	4.83	ug/Kg		<MDL	2.1	4.22	ug/Kg		<MDL	1.6	3.13	ug/Kg
2-Methylnaphthalene	11.5		2.6	5.19	ug/Kg	10.6		4.8	9.66	ug/Kg	10.2		4.2	8.44	ug/Kg	8.57		3.1	6.27	ug/Kg
2-Methylphenol		<MDL	2.6	5.19	ug/Kg		<MDL	4.8	9.66	ug/Kg		<MDL	4.2	8.44	ug/Kg		<MDL	3.1	6.27	ug/Kg
4-Methylphenol		<MDL	5.2	10.4	ug/Kg		<MDL	9.7	19.3	ug/Kg		<MDL	8.4	16.9	ug/Kg	34.5		6.3	12.5	ug/Kg
Acenaphthene	7.04		2.6	5.19	ug/Kg	16.1		4.8	9.66	ug/Kg	15.5		4.2	8.44	ug/Kg	20.8		3.1	6.27	ug/Kg
Acenaphthylene		<MDL	2.6	5.19	ug/Kg	12.7		4.8	9.66	ug/Kg	8.95		4.2	8.44	ug/Kg	5.2	<RDL	3.1	6.27	ug/Kg
Anthracene	10.8		2.6	5.19	ug/Kg	84.3		4.8	9.66	ug/Kg	81		4.2	8.44	ug/Kg	150		3.1	6.27	ug/Kg
Benzo(a)anthracene	37.5		2.6	5.19	ug/Kg	261		4.8	9.66	ug/Kg	172		4.2	8.44	ug/Kg	310	E	3.1	6.27	ug/Kg
Benzo(a)pyrene	44.4		2.6	5.19	ug/Kg	263		4.8	9.66	ug/Kg	186		4.2	8.44	ug/Kg	285		3.1	6.27	ug/Kg
Benzo(b)fluoranthene	40.5		2.6	5.19	ug/Kg	350		4.8	9.66	ug/Kg	209		4.2	8.44	ug/Kg	337		3.1	6.27	ug/Kg
Benzo(g,h,i)perylene	33.9		2.6	5.19	ug/Kg	178		4.8	9.66	ug/Kg	122		4.2	8.44	ug/Kg	205		3.1	6.27	ug/Kg
Benzo(k)fluoranthene	39.7		2.6	5.19	ug/Kg	273		4.8	9.66	ug/Kg	222		4.2	8.44	ug/Kg	277		3.1	6.27	ug/Kg
Benzoic Acid	171	B	13	25.9	ug/Kg	365	B	24	48.3	ug/Kg	338	B	21	42.2	ug/Kg	318		16	31.3	ug/Kg
Benzyl Alcohol		<MDL	2.6	5.19	ug/Kg		<MDL	4.8	9.66	ug/Kg		<MDL	4.2	8.44	ug/Kg		<MDL	3.1	6.27	ug/Kg
Benzyl Butyl Phthalate	123	B	1.3	2.59	ug/Kg	148	B	2.4	4.83	ug/Kg	64.3	B	2.1	4.22	ug/Kg	150		1.6	3.13	ug/Kg
Bis(2-Ethylhexyl)Phthalate	722	B	5.2	10.4	ug/Kg	1870	B	9.7	19.3	ug/Kg	1100	B	8.4	16.9	ug/Kg	1110	B	6.3	12.5	ug/Kg
Caffeine		<MDL	5.2	10.4	ug/Kg		<MDL	9.7	19.3	ug/Kg		<MDL	8.4	16.9	ug/Kg		<MDL	6.3	12.5	ug/Kg
Carbazole	10.6		2.6	5.19	ug/Kg	37.7		4.8	9.66	ug/Kg	28.7		4.2	8.44	ug/Kg	30.6		3.1	6.27	ug/Kg
Chrysene	63		2.6	5.19	ug/Kg	389		4.8	9.66	ug/Kg	257		4.2	8.44	ug/Kg	354		3.1	6.27	ug/Kg
Coprostanol		<MDL	52	104	ug/Kg		<MDL	97	193	ug/Kg		<MDL	84	169	ug/Kg		<MDL	63	125	ug/Kg
Dibenzo(a,h)anthracene	14.3		2.6	5.19	ug/Kg	78		4.8	9.66	ug/Kg	60.3		4.2	8.44	ug/Kg	95		3.1	6.27	ug/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4																				
	Locator:	DUD_1A				Locator:	DUD_2A				Locator:	DUD_3A				Locator:	DUD_4A			
	Descrip:	CLEANUP AREA A MON				Descrip:	CLEANUP AREA A MON				Descrip:	CLEANUP AREA A MON				Descrip:	CLEANUP AREA A MON			
	Sampled:	03/24/08 9:35:00 AM				Sampled:	03/24/08 9:50:00 AM				Sampled:	03/24/08 10:08:00 AM				Sampled:	03/24/08 10:22:00 AM			
	Lab ID:	L45304-1				Lab ID:	L45304-2				Lab ID:	L45304-3				Lab ID:	L45304-4			
	Matrix:	SALTWTRSED				Matrix:	SALTWTRSED				Matrix:	SALTWTRSED				Matrix:	SALTWTRSED			
	% Solids:	77.1				% Solids:	41.4				% Solids:	47.4				% Solids:	63.8			
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																				
Dibenzofuran	4.4	<RDL	2.6	5.19	ug/Kg	15.2		4.8	9.66	ug/Kg	15.3		4.2	8.44	ug/Kg	13.2		3.1	6.27	ug/Kg
Diethyl Phthalate		<MDL	5.2	10.4	ug/Kg		<MDL	9.7	19.3	ug/Kg		<MDL	8.4	16.9	ug/Kg		<MDL	6.3	12.5	ug/Kg
Dimethyl Phthalate	293		5.2	10.4	ug/Kg		<MDL	9.7	19.3	ug/Kg	20.3		8.4	16.9	ug/Kg	71.3		6.3	12.5	ug/Kg
Di-N-Butyl Phthalate	354	B	5.2	10.4	ug/Kg	68.6	B	9.7	19.3	ug/Kg	17.6	B	8.4	16.9	ug/Kg	19.3		6.3	12.5	ug/Kg
Di-N-Octyl Phthalate		<MDL	5.2	10.4	ug/Kg		<MDL	9.7	19.3	ug/Kg		<MDL	8.4	16.9	ug/Kg		<MDL	6.3	12.5	ug/Kg
Fluoranthene	104		2.6	5.19	ug/Kg	527		4.8	9.66	ug/Kg	319		4.2	8.44	ug/Kg	560	E	3.1	6.27	ug/Kg
Fluorene	9.64		2.6	5.19	ug/Kg	32.1		4.8	9.66	ug/Kg	26.2		4.2	8.44	ug/Kg	48.9		3.1	6.27	ug/Kg
Hexachlorobenzene		<MDL	0.13	0.259	ug/Kg		<MDL	0.24	0.483	ug/Kg		<MDL	0.21	0.422	ug/Kg		<MDL	0.16	0.313	ug/Kg
Hexachlorobutadiene		<MDL	0.65	1.3	ug/Kg		<MDL	1.2	2.42	ug/Kg		<MDL	1.1	2.11	ug/Kg		<MDL	0.78	1.57	ug/Kg
Hexachloroethane		<MDL	1.3	2.59	ug/Kg		<MDL	2.4	4.83	ug/Kg		<MDL	2.1	4.22	ug/Kg		<MDL	1.6	3.13	ug/Kg
Indeno(1,2,3-Cd)Pyrene	32.2		2.6	5.19	ug/Kg	182		4.8	9.66	ug/Kg	134		4.2	8.44	ug/Kg	199		3.1	6.27	ug/Kg
Naphthalene	3.1	<RDL	2.6	5.19	ug/Kg	18.8		4.8	9.66	ug/Kg	8.9		4.2	8.44	ug/Kg	50		3.1	6.27	ug/Kg
N-Nitrosodiphenylamine		<MDL	5.2	10.4	ug/Kg		<MDL	9.7	19.3	ug/Kg		<MDL	8.4	16.9	ug/Kg		<MDL	6.3	12.5	ug/Kg
Pentachlorophenol		<MDL	13	25.9	ug/Kg		<MDL	24	48.3	ug/Kg		<MDL	21	42.2	ug/Kg		<MDL	16	31.3	ug/Kg
Phenanthrene	65		2.6	5.19	ug/Kg	194		4.8	9.66	ug/Kg	155		4.2	8.44	ug/Kg	378		3.1	6.27	ug/Kg
Phenol		<MDL,E	5.2	10.4	ug/Kg		<MDL,E	9.7	19.3	ug/Kg		<MDL,E	8.4	16.9	ug/Kg	190		6.3	12.5	ug/Kg
Pyrene	108		2.6	5.19	ug/Kg	618		4.8	9.66	ug/Kg	340		4.2	8.44	ug/Kg	602	E	3.1	6.27	ug/Kg
Total HPAHS	518		2.6	5.19	ug/Kg	3120		4.8	9.66	ug/Kg	2020		4.2	8.44	ug/Kg	3230		3.1	6.27	ug/Kg
Total LPAHs	107		2.6	5.19	ug/Kg	370		4.8	9.66	ug/Kg	306		4.2	8.44	ug/Kg	643		3.1	6.27	ug/Kg
M=OR EPA 8081A/8082 (7-3-03-002)																				
4,4'-DDD		<MDL	0.87	1.73	ug/Kg		<MDL	1.6	3.21	ug/Kg	1.8	<RDL	1.4	2.81	ug/Kg	1.4	<RDL	1.1	2.08	ug/Kg
4,4'-DDE		<MDL	0.87	1.73	ug/Kg		<MDL	1.6	3.21	ug/Kg		<MDL	1.4	2.81	ug/Kg		<MDL	1.1	2.08	ug/Kg
4,4'-DDT		<MDL	0.87	1.73	ug/Kg		<MDL	1.6	3.21	ug/Kg	5.86		1.4	2.81	ug/Kg		<MDL	1.1	2.08	ug/Kg
Aldrin		<MDL	0.87	1.73	ug/Kg		<MDL	1.6	3.21	ug/Kg		<MDL	1.4	2.81	ug/Kg		<MDL	1.1	2.08	ug/Kg
Alpha-BHC		<MDL	0.43	0.865	ug/Kg		<MDL	0.8	1.61	ug/Kg		<MDL	0.7	1.41	ug/Kg		<MDL	0.52	1.05	ug/Kg
Alpha-Chlordane		<MDL	0.43	0.865	ug/Kg		<MDL	0.8	1.61	ug/Kg		<MDL	0.7	1.41	ug/Kg		<MDL	0.52	1.05	ug/Kg
Beta-BHC		<MDL	0.43	0.865	ug/Kg		<MDL	0.8	1.61	ug/Kg		<MDL	0.7	1.41	ug/Kg		<MDL	0.52	1.05	ug/Kg
Delta-BHC		<MDL	0.43	0.865	ug/Kg		<MDL	0.8	1.61	ug/Kg		<MDL	0.7	1.41	ug/Kg		<MDL	0.52	1.05	ug/Kg
Dieldrin		<MDL	0.87	1.73	ug/Kg		<MDL	1.6	3.21	ug/Kg		<MDL	1.4	2.81	ug/Kg		<MDL	1.1	2.08	ug/Kg
Endosulfan I		<MDL	0.87	1.73	ug/Kg		<MDL	1.6	3.21	ug/Kg		<MDL	1.4	2.81	ug/Kg		<MDL	1.1	2.08	ug/Kg
Endosulfan II		<MDL	0.87	1.73	ug/Kg		<MDL	1.6	3.21	ug/Kg		<MDL	1.4	2.81	ug/Kg		<MDL	1.1	2.08	ug/Kg
Endosulfan Sulfate		<MDL	0.87	1.73	ug/Kg		<MDL	1.6	3.21	ug/Kg		<MDL	1.4	2.81	ug/Kg		<MDL	1.1	2.08	ug/Kg
Endrin		<MDL	0.87	1.73	ug/Kg		<MDL	1.6	3.21	ug/Kg		<MDL	1.4	2.81	ug/Kg		<MDL	1.1	2.08	ug/Kg
Endrin Aldehyde		<MDL,E	0.87	1.73	ug/Kg		<MDL,E	1.6	3.21	ug/Kg		<MDL,E	1.4	2.81	ug/Kg		<MDL,E	1.1	2.08	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.43	0.865	ug/Kg		<MDL	0.8	1.61	ug/Kg		<MDL	0.7	1.41	ug/Kg		<MDL	0.52	1.05	ug/Kg
Gamma-Chlordane	0.84	<RDL	0.43	0.865	ug/Kg		<MDL	0.8	1.61	ug/Kg	2.76		0.7	1.41	ug/Kg	2.29		0.52	1.05	ug/Kg
Heptachlor		<MDL	0.43	0.865	ug/Kg		<MDL	0.8	1.61	ug/Kg		<MDL	0.7	1.41	ug/Kg		<MDL	0.52	1.05	ug/Kg
Heptachlor Epoxide		<MDL	0.43	0.865	ug/Kg		<MDL	0.8	1.61	ug/Kg		<MDL	0.7	1.41	ug/Kg		<MDL	0.52	1.05	ug/Kg
Methoxychlor		<MDL	4.3	8.65	ug/Kg		<MDL	8	16.1	ug/Kg		<MDL	7	14.1	ug/Kg		<MDL	5.2	10.5	ug/Kg
Toxaphene		<MDL	8.7	17.3	ug/Kg		<MDL	16	32.1	ug/Kg		<MDL	14	28.1	ug/Kg		<MDL	11	20.8	ug/Kg
M=OR EPA 8081A/8082 (7-3-103-000)																				
Aroclor 1016		<MDL,TA	8	16	ug/Kg		<MDL,TA	22	44.7	ug/Kg		<MDL,TA	15	29.7	ug/Kg		<MDL,TA	15	30.4	ug/Kg
Aroclor 1221		<MDL	2.2	4.32	ug/Kg		<MDL	4.1	8.04	ug/Kg		<MDL	3.6	7.03	ug/Kg		<MDL	2.7	5.22	ug/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator:	DUD_1A					Locator:	DUD_2A					Locator:	DUD_3A					Locator:	DUD_4A				
Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON				
Sampled:	03/24/08 9:35:00 AM					Sampled:	03/24/08 9:50:00 AM					Sampled:	03/24/08 10:08:00 AM					Sampled:	03/24/08 10:22:00 AM				
Lab ID:	L45304-1					Lab ID:	L45304-2					Lab ID:	L45304-3					Lab ID:	L45304-4				
Matrix:	SALTWTRSED					Matrix:	SALTWTRSED					Matrix:	SALTWTRSED					Matrix:	SALTWTRSED				
% Solids:	77.1					% Solids:	41.4					% Solids:	47.4					% Solids:	63.8				
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																				
Aroclor 1232		<MDL,TA	12	23	ug/Kg		<MDL,TA	31	61.8	ug/Kg		<MDL,TA	20	40.7	ug/Kg		<MDL,TA	20	40.9	ug/Kg
Aroclor 1242		<MDL,TA	14	27.4	ug/Kg		<MDL,TA	36	73.2	ug/Kg		<MDL,TA	25	49.4	ug/Kg		<MDL,TA	24	46.6	ug/Kg
Aroclor 1248	10.1		1.1	2.17	ug/Kg	37		2	4.03	ug/Kg	23.6		1.8	3.52	ug/Kg	20.4		1.3	2.62	ug/Kg
Aroclor 1254	12.8		1.1	2.17	ug/Kg	60.9		2	4.03	ug/Kg	36.9		1.8	3.52	ug/Kg	32.9		1.3	2.62	ug/Kg
Aroclor 1260	4.58		1.1	2.17	ug/Kg	41.3		2	4.03	ug/Kg	33.3		1.8	3.52	ug/Kg	23.2		1.3	2.62	ug/Kg
Total Aroclors	27.4		1.1	2.17	ug/Kg	139		2	4.03	ug/Kg	93.7		1.8	3.52	ug/Kg	76.3		1.3	2.62	ug/Kg

* Not converted to dry weight basis for this parameter

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4																				
	Locator:	DUD_5A				Locator:	DUD_5A				Locator:	DUD_1B				Locator:	DUD_2B			
	Descrip:	CLEANUP AREA A MON				Descrip:	CLEANUP AREA A MON				Descrip:	CLEANUP AREA A MON				Descrip:	CLEANUP AREA A MON			
	Sampled:	03/24/08 10:30:00 AM				Sampled:	03/24/08 10:40:00 AM				Sampled:	03/24/08 10:55:00 AM				Sampled:	03/24/08 11:10:00 AM			
	Lab ID:	L45304-5				Lab ID:	L45304-6				Lab ID:	L45304-7				Lab ID:	L45304-8			
	Matrix:	SALTWTRSED				Matrix:	SALTWTRSED				Matrix:	SALTWTRSED				Matrix:	SALTWTRSED			
	% Solids:	81.8				% Solids:	81.6				% Solids:	57.5				% Solids:	44.7			
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(318V1)																				
Clay *	1.8	E	0.61	1.22	%	1.2	E	0.61	1.22	%	13.5	E	0.84	1.69	%	22.9	E	1	1.99	%
Dry Weight Factor	1.5					1.5					2.9					4.5				
Fines *	2.4		0.61	1.22	%	2.4		0.61	1.22	%	43.9		0.84	1.69	%	67.8		1	1.99	%
Gravel *	20		0.12	1.22	%	20.5		0.12	1.22	%	4.3		0.17	1.69	%	2		0.2	1.99	%
p+0.00 *	10.4		0.12	1.22	%	11.3		0.12	1.22	%	0.8	<RDL	0.17	1.69	%	0.5	<RDL	0.2	1.99	%
p+1.00 *	15.4		0.12	1.22	%	17.7		0.12	1.22	%	2		0.17	1.69	%	1	<RDL	0.2	1.99	%
p+10.0(equal/more than) *	1.2		0.61	1.22	%	1.2		0.61	1.22	%	9.3		0.84	1.69	%	15		1	1.99	%
p+2.00 *	31.4		0.12	1.22	%	31.5		0.12	1.22	%	15.7		0.17	1.69	%	3.9		0.2	1.99	%
p+3.00 *	17.7		0.12	1.22	%	14.7		0.12	1.22	%	22.9		0.17	1.69	%	8		0.2	1.99	%
p+4.00 *	2.6		0.12	1.22	%	1.8		0.12	1.22	%	9.7		0.17	1.69	%	6.9		0.2	1.99	%
p+5.00 *		<MDL	0.61	1.22	%	0.61	<RDL	0.61	1.22	%	10.1		0.84	1.69	%	4		1	1.99	%
p+6.00 *		<MDL	0.61	1.22	%	0.61	<RDL	0.61	1.22	%	5.9		0.84	1.69	%	17		1	1.99	%
p+7.00 *		<MDL	0.61	1.22	%		<MDL	0.61	1.22	%	8.4		0.84	1.69	%	13		1	1.99	%
p+8.00 *	0.6	<RDL	0.61	1.22	%		<MDL	0.61	1.22	%	5.9		0.84	1.69	%	11		1	1.99	%
p+9.00 *	0.6	<RDL	0.61	1.22	%		<MDL	0.61	1.22	%	4.2		0.84	1.69	%	8		1	1.99	%
p-1.00 *	11.2		0.12	1.22	%	10		0.12	1.22	%	1	<RDL	0.17	1.69	%	0.6	<RDL	0.2	1.99	%
p-2.00 *	3.2		0.12	1.22	%	1.9		0.12	1.22	%	0.3	<RDL	0.17	1.69	%	1	<RDL	0.2	1.99	%
p-2.00(less than) *	5.6		0.12	1.22	%	8.6		0.12	1.22	%	3		0.17	1.69	%	0.5	<RDL	0.2	1.99	%
Sand *	77.5		0.12	1.22	%	77		0.12	1.22	%	51.1		0.17	1.69	%	20.3		0.2	1.99	%
Silt *	0.6	<RDL,E	0.61	1.22	%	1.2	E	0.61	1.22	%	30.4	E	0.84	1.69	%	44.9	E	1	1.99	%
M=CV EPA 9060-PSEP96(337V3)																				
Total Organic Carbon	1500		500	990	mg/Kg	1100		480	950	mg/Kg	14700		3800	7630	mg/Kg	21400		3600	7360	mg/Kg
M=CV SM2540-G (307V3)																				
Total Solids *	81.8		0.005	0.01	%	81.6		0.005	0.01	%	57.5		0.005	0.01	%	44.7		0.005	0.01	%
M=ES NONE																				
Field Personnel	SH,BK,JB				none	SH,BK,JB				none	SH,BK,JB				none	SH,BK,JB				none
Sampcoordx1 *	1266794				ft	1266802				ft	1267060				ft	1267075				ft
Sampcoordx2 *	1266802				ft	1266802				ft	1267056				ft	1267077				ft
Sampcoordx3 *																				
Sampcoordy1 *	209406				ft	209411				ft	208490				ft	208623				ft
Sampcoordy2 *	209411				ft	209425				ft	208485				ft	208627				ft
Sampcoordy3 *																				
Sample Depth *	9				m	9				m	9				m	7				m
Sample Function						FREP @L45304-5				none										
Sample Information	At 5A AREP, cast #1 slightly exceeded 3				none	At 5A FREP, cast #3 slightly exceeded				none										
Sampling Method *	20042				none	20042				none	20042				none	20042				none
Sediment Sampling Depth *	9				cm	9				cm	12				cm	9				cm
Sediment Sampling Range *	0-8 cm				cm	0-8 cm				cm	0-10 cm				cm	0-8 cm				cm
Sediment Type	34S21				none	34S21				none	12N36				none	21S31				none
Tidal Condition	E				none	E				none	E				none	E				none
Tide Height *	6				ft	5				ft	4.8				ft	3.8				ft
M=MT CVAA EPA 7471B (604V4)																				

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4																				
	Locator: DUD_5A Descrip: CLEANUP AREA A MON Sampled: 03/24/08 10:30:00 AM Lab ID: L45304-5 Matrix: SALTWTRSED % Solids: 81.8					Locator: DUD_5A Descrip: CLEANUP AREA A MON Sampled: 03/24/08 10:40:00 AM Lab ID: L45304-6 Matrix: SALTWTRSED % Solids: 81.6					Locator: DUD_1B Descrip: CLEANUP AREA A MON Sampled: 03/24/08 10:55:00 AM Lab ID: L45304-7 Matrix: SALTWTRSED % Solids: 57.5					Locator: DUD_2B Descrip: CLEANUP AREA A MON Sampled: 03/24/08 11:10:00 AM Lab ID: L45304-8 Matrix: SALTWTRSED % Solids: 44.7				
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																				
Mercury, Total, CVAA	0.016	<RDL,E	0.0061	0.0614	mg/Kg	0.016	<RDL,E	0.006	0.0596	mg/Kg	0.317	E	0.0083	0.0842	mg/Kg	0.172	E	0.011	0.111	mg/Kg
M=MT ICP EPA3050B/6010C MOD(612V3)																				
Aluminum, Total, ICP	11000		6.1	30.4	mg/Kg	12900		6.1	30.5	mg/Kg	16600		8.7	43.3	mg/Kg	24200		11	55.7	mg/Kg
Antimony, Total, ICP		<MDL,G	0.92	4.56	mg/Kg		<MDL,G	0.92	4.57	mg/Kg		<MDL,G	1.3	6.5	mg/Kg		<MDL,G	1.7	8.37	mg/Kg
Arsenic, Total, ICP	2.7	<RDL	1.5	7.6	mg/Kg	2.1	<RDL	1.5	7.62	mg/Kg	9.2	<RDL	2.1	10.9	mg/Kg	13	<RDL	2.7	13.9	mg/Kg
Beryllium, Total, ICP	0.12	<RDL	0.061	0.304	mg/Kg	0.13	<RDL	0.061	0.305	mg/Kg	0.33	<RDL	0.087	0.433	mg/Kg	0.49	<RDL	0.11	0.557	mg/Kg
Cadmium, Total, ICP		<MDL	0.12	0.608	mg/Kg		<MDL	0.12	0.61	mg/Kg	0.33	<RDL	0.17	0.868	mg/Kg	0.47	<RDL	0.22	1.11	mg/Kg
Chromium, Total, ICP	19.6		0.18	0.912	mg/Kg	28.3		0.18	0.914	mg/Kg	29.2		0.26	1.3	mg/Kg	31.5		0.34	1.67	mg/Kg
Copper, Total, ICP	64.4		0.24	1.22	mg/Kg	30.9		0.25	1.22	mg/Kg	63.8		0.35	1.74	mg/Kg	85.2		0.45	2.23	mg/Kg
Iron, Total, ICP	19400		3.1	15.2	mg/Kg	21100		3.1	15.2	mg/Kg	25700		4.3	21.7	mg/Kg	33600		5.6	28	mg/Kg
Lead, Total, ICP	6.34		1.2	6.08	mg/Kg	4.4	<RDL	1.2	6.1	mg/Kg	33		1.7	8.68	mg/Kg	45.4		2.2	11.1	mg/Kg
Manganese, Total, ICP	296		0.12	0.608	mg/Kg	382		0.12	0.61	mg/Kg	280		0.17	0.868	mg/Kg	360		0.22	1.11	mg/Kg
Nickel, Total, ICP	22.5		0.31	1.52	mg/Kg	22.8		0.31	1.52	mg/Kg	21.7		0.43	2.17	mg/Kg	24.4		0.56	2.8	mg/Kg
Selenium, Total, ICP		<MDL	1.5	7.6	mg/Kg		<MDL	1.5	7.62	mg/Kg		<MDL	2.1	10.9	mg/Kg		<MDL	2.7	13.9	mg/Kg
Silver, Total, ICP		<MDL	0.24	1.22	mg/Kg	1.68		0.25	1.22	mg/Kg		<MDL	0.35	1.74	mg/Kg		<MDL	0.45	2.23	mg/Kg
Thallium, Total, ICP		<MDL	2.4	12.2	mg/Kg		<MDL	2.5	12.2	mg/Kg		<MDL	3.5	17.4	mg/Kg		<MDL	4.5	22.3	mg/Kg
Zinc, Total, ICP	41.1		0.31	1.52	mg/Kg	39.3		0.31	1.52	mg/Kg	106		0.43	2.17	mg/Kg	152		0.56	2.8	mg/Kg
M=OR EPA 3550B/8270C (7-3-01-004)																				
1,2,4-Trichlorobenzene		<MDL	0.12	0.244	ug/Kg		<MDL	0.12	0.245	ug/Kg		<MDL	0.17	0.348	ug/Kg		<MDL	0.22	0.447	ug/Kg
1,2-Dichlorobenzene		<MDL	0.24	0.489	ug/Kg		<MDL	0.25	0.49	ug/Kg	2.35		0.35	0.696	ug/Kg		<MDL	0.45	0.895	ug/Kg
1,3-Dichlorobenzene		<MDL	0.24	0.489	ug/Kg		<MDL	0.25	0.49	ug/Kg		<MDL	0.35	0.696	ug/Kg		<MDL	0.45	0.895	ug/Kg
1,4-Dichlorobenzene	0.594	E	0.24	0.489	ug/Kg	1.67	E	0.25	0.49	ug/Kg	2.12	E	0.35	0.696	ug/Kg	2.37	E	0.45	0.895	ug/Kg
2,4-Dimethylphenol		<MDL	1.2	2.44	ug/Kg		<MDL	1.2	2.45	ug/Kg		<MDL	1.7	3.48	ug/Kg		<MDL	2.2	4.47	ug/Kg
2-Methylnaphthalene		<MDL	2.4	4.89	ug/Kg		<MDL	2.5	4.9	ug/Kg	5	<RDL	3.5	6.96	ug/Kg	7.8	<RDL	4.5	8.95	ug/Kg
2-Methylphenol		<MDL	2.4	4.89	ug/Kg		<MDL	2.5	4.9	ug/Kg		<MDL	3.5	6.96	ug/Kg		<MDL	4.5	8.95	ug/Kg
4-Methylphenol		<MDL	4.9	9.78	ug/Kg		<MDL	4.9	9.8	ug/Kg	44.9		7	13.9	ug/Kg	69.8		8.9	17.9	ug/Kg
Acenaphthene	2.6	<RDL	2.4	4.89	ug/Kg		<MDL	2.5	4.9	ug/Kg	11		3.5	6.96	ug/Kg	9.82		4.5	8.95	ug/Kg
Acenaphthylene		<MDL	2.4	4.89	ug/Kg		<MDL	2.5	4.9	ug/Kg	9.11		3.5	6.96	ug/Kg	5.8	<RDL	4.5	8.95	ug/Kg
Anthracene	10.7		2.4	4.89	ug/Kg	2.6	<RDL	2.5	4.9	ug/Kg	64.7		3.5	6.96	ug/Kg	69.1		4.5	8.95	ug/Kg
Benzo(a)anthracene	28.7	E	2.4	4.89	ug/Kg	5.87	E	2.5	4.9	ug/Kg	137	E	3.5	6.96	ug/Kg	156	E	4.5	8.95	ug/Kg
Benzo(a)pyrene	29.3		2.4	4.89	ug/Kg	11.8		2.5	4.9	ug/Kg	156		3.5	6.96	ug/Kg	167		4.5	8.95	ug/Kg
Benzo(b)fluoranthene	30		2.4	4.89	ug/Kg	11		2.5	4.9	ug/Kg	235		3.5	6.96	ug/Kg	222		4.5	8.95	ug/Kg
Benzo(g,h,i)perylene	12.7		2.4	4.89	ug/Kg	5.47		2.5	4.9	ug/Kg	89.4		3.5	6.96	ug/Kg	111		4.5	8.95	ug/Kg
Benzo(k)fluoranthene	28.7		2.4	4.89	ug/Kg	11.8		2.5	4.9	ug/Kg	142		3.5	6.96	ug/Kg	220		4.5	8.95	ug/Kg
Benzoic Acid	150		12	24.4	ug/Kg	154		12	24.5	ug/Kg	289		17	34.8	ug/Kg	331		22	44.7	ug/Kg
Benzyl Alcohol		<MDL	2.4	4.89	ug/Kg		<MDL	2.5	4.9	ug/Kg		<MDL	3.5	6.96	ug/Kg		<MDL	4.5	8.95	ug/Kg
Benzyl Butyl Phthalate	15.2		1.2	2.44	ug/Kg	11.8		1.2	2.45	ug/Kg	48.3		1.7	3.48	ug/Kg	77.6		2.2	4.47	ug/Kg
Bis(2-Ethylhexyl)Phthalate	97.9	B	4.9	9.78	ug/Kg	53.6	B	4.9	9.8	ug/Kg	417	B	7	13.9	ug/Kg	707	B	8.9	17.9	ug/Kg
Caffeine		<MDL	4.9	9.78	ug/Kg		<MDL	4.9	9.8	ug/Kg		<MDL	7	13.9	ug/Kg		<MDL	8.9	17.9	ug/Kg
Carbazole	4.4	<RDL	2.4	4.89	ug/Kg		<MDL	2.5	4.9	ug/Kg	15.6		3.5	6.96	ug/Kg	17.5		4.5	8.95	ug/Kg
Chrysene	39.2		2.4	4.89	ug/Kg	14.2		2.5	4.9	ug/Kg	230		3.5	6.96	ug/Kg	235		4.5	8.95	ug/Kg
Coprostanol		<MDL	49	97.8	ug/Kg		<MDL	49	98	ug/Kg		<MDL	70	139	ug/Kg		<MDL	89	179	ug/Kg
Dibenzo(a,h)anthracene	2.9	<RDL	2.4	4.89	ug/Kg		<MDL	2.5	4.9	ug/Kg	34.1		3.5	6.96	ug/Kg	41.4		4.5	8.95	ug/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator:	DUD_5A	DUD_5A	DUD_1B	DUD_2B
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sampled:	03/24/08 10:30:00 AM	03/24/08 10:40:00 AM	03/24/08 10:55:00 AM	03/24/08 11:10:00 AM
Lab ID:	L45304-5	L45304-6	L45304-7	L45304-8
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	81.8	81.6	57.5	44.7

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																				
Dibenzofuran		<MDL	2.4	4.89	ug/Kg		<MDL	2.5	4.9	ug/Kg	9.74		3.5	6.96	ug/Kg	12.5		4.5	8.95	ug/Kg
Diethyl Phthalate	5.9	<RDL	4.9	9.78	ug/Kg		<MDL	4.9	9.8	ug/Kg	8.2	<RDL	7	13.9	ug/Kg		<MDL	8.9	17.9	ug/Kg
Dimethyl Phthalate	20.7		4.9	9.78	ug/Kg		<MDL	4.9	9.8	ug/Kg		<MDL	7	13.9	ug/Kg	90.6		8.9	17.9	ug/Kg
Di-N-Butyl Phthalate	6.2	<RDL	4.9	9.78	ug/Kg		<MDL	4.9	9.8	ug/Kg	14	<RDL	7	13.9	ug/Kg	24.8		8.9	17.9	ug/Kg
Di-N-Octyl Phthalate		<MDL	4.9	9.78	ug/Kg		<MDL	4.9	9.8	ug/Kg		<MDL	7	13.9	ug/Kg		<MDL	8.9	17.9	ug/Kg
Fluoranthene	61	E	2.4	4.89	ug/Kg	13.2	E	2.5	4.9	ug/Kg	245	E	3.5	6.96	ug/Kg	268	E	4.5	8.95	ug/Kg
Fluorene	6.47		2.4	4.89	ug/Kg	4.2	<RDL	2.5	4.9	ug/Kg	21		3.5	6.96	ug/Kg	45.4		4.5	8.95	ug/Kg
Hexachlorobenzene		<MDL	0.12	0.244	ug/Kg		<MDL	0.12	0.245	ug/Kg		<MDL	0.17	0.348	ug/Kg		<MDL	0.22	0.447	ug/Kg
Hexachlorobutadiene		<MDL	0.61	1.22	ug/Kg		<MDL	0.61	1.23	ug/Kg		<MDL	0.87	1.74	ug/Kg		<MDL	1.1	2.24	ug/Kg
Hexachloroethane		<MDL	1.2	2.44	ug/Kg		<MDL	1.2	2.45	ug/Kg		<MDL	1.7	3.48	ug/Kg		<MDL	2.2	4.47	ug/Kg
Indeno(1,2,3-Cd)Pyrene	15.2		2.4	4.89	ug/Kg	7.14		2.5	4.9	ug/Kg	88.3		3.5	6.96	ug/Kg	107		4.5	8.95	ug/Kg
Naphthalene		<MDL	2.4	4.89	ug/Kg		<MDL	2.5	4.9	ug/Kg	7.62		3.5	6.96	ug/Kg	8.1	<RDL	4.5	8.95	ug/Kg
N-Nitrosodiphenylamine		<MDL	4.9	9.78	ug/Kg		<MDL	4.9	9.8	ug/Kg		<MDL	7	13.9	ug/Kg		<MDL	8.9	17.9	ug/Kg
Pentachlorophenol		<MDL	12	24.4	ug/Kg		<MDL	12	24.5	ug/Kg		<MDL	17	34.8	ug/Kg		<MDL	22	44.7	ug/Kg
Phenanthrene	41.3		2.4	4.89	ug/Kg	7.49		2.5	4.9	ug/Kg	128		3.5	6.96	ug/Kg	120		4.5	8.95	ug/Kg
Phenol	67		4.9	9.78	ug/Kg	101		4.9	9.8	ug/Kg	400		7	13.9	ug/Kg	436		8.9	17.9	ug/Kg
Pyrene	71	E	2.4	4.89	ug/Kg	13	E	2.5	4.9	ug/Kg	259	E	3.5	6.96	ug/Kg	282	E	4.5	8.95	ug/Kg
Total HPAHS	319		2.4	4.89	ug/Kg	93.1		2.5	4.9	ug/Kg	1620		3.5	6.96	ug/Kg	1810		4.5	8.95	ug/Kg
Total LPAHs	62.8		2.4	4.89	ug/Kg	14.7		2.5	4.9	ug/Kg	247		3.5	6.96	ug/Kg	248		4.5	8.95	ug/Kg
M=OR EPA 8081A/8082 (7-3-03-002)																				
4,4'-DDD		<MDL	0.82	1.63	ug/Kg		<MDL	0.82	1.63	ug/Kg	1.4	<RDL	1.2	2.31	ug/Kg	2.1	<RDL	1.5	2.98	ug/Kg
4,4'-DDE		<MDL	0.82	1.63	ug/Kg		<MDL	0.82	1.63	ug/Kg		<MDL	1.2	2.31	ug/Kg		<MDL	1.5	2.98	ug/Kg
4,4'-DDT		<MDL	0.82	1.63	ug/Kg		<MDL	0.82	1.63	ug/Kg		<MDL	1.2	2.31	ug/Kg	6.82		1.5	2.98	ug/Kg
Aldrin		<MDL	0.82	1.63	ug/Kg		<MDL	0.82	1.63	ug/Kg		<MDL	1.2	2.31	ug/Kg		<MDL	1.5	2.98	ug/Kg
Alpha-BHC		<MDL	0.4	0.815	ug/Kg		<MDL	0.4	0.817	ug/Kg		<MDL	0.57	1.16	ug/Kg		<MDL	0.74	1.49	ug/Kg
Alpha-Chlordane		<MDL	0.4	0.815	ug/Kg		<MDL	0.4	0.817	ug/Kg		<MDL	0.57	1.16	ug/Kg		<MDL	0.74	1.49	ug/Kg
Beta-BHC		<MDL	0.4	0.815	ug/Kg		<MDL	0.4	0.817	ug/Kg		<MDL	0.57	1.16	ug/Kg		<MDL	0.74	1.49	ug/Kg
Delta-BHC		<MDL	0.4	0.815	ug/Kg		<MDL	0.4	0.817	ug/Kg		<MDL	0.57	1.16	ug/Kg		<MDL	0.74	1.49	ug/Kg
Dieldrin		<MDL	0.82	1.63	ug/Kg		<MDL	0.82	1.63	ug/Kg		<MDL	1.2	2.31	ug/Kg		<MDL	1.5	2.98	ug/Kg
Endosulfan I		<MDL	0.82	1.63	ug/Kg		<MDL	0.82	1.63	ug/Kg		<MDL	1.2	2.31	ug/Kg		<MDL	1.5	2.98	ug/Kg
Endosulfan II		<MDL	0.82	1.63	ug/Kg		<MDL	0.82	1.63	ug/Kg		<MDL	1.2	2.31	ug/Kg		<MDL	1.5	2.98	ug/Kg
Endosulfan Sulfate		<MDL	0.82	1.63	ug/Kg		<MDL	0.82	1.63	ug/Kg		<MDL	1.2	2.31	ug/Kg		<MDL	1.5	2.98	ug/Kg
Endrin		<MDL	0.82	1.63	ug/Kg		<MDL	0.82	1.63	ug/Kg		<MDL	1.2	2.31	ug/Kg		<MDL	1.5	2.98	ug/Kg
Endrin Aldehyde		<MDL,E	0.82	1.63	ug/Kg		<MDL,E	0.82	1.63	ug/Kg		<MDL,E	1.2	2.31	ug/Kg		<MDL,E	1.5	2.98	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.4	0.815	ug/Kg		<MDL	0.4	0.817	ug/Kg		<MDL	0.57	1.16	ug/Kg		<MDL	0.74	1.49	ug/Kg
Gamma-Chlordane		<MDL	0.4	0.815	ug/Kg		<MDL	0.4	0.817	ug/Kg		<MDL	0.57	1.16	ug/Kg		<MDL	0.74	1.49	ug/Kg
Heptachlor		<MDL	0.4	0.815	ug/Kg		<MDL	0.4	0.817	ug/Kg		<MDL	0.57	1.16	ug/Kg		<MDL	0.74	1.49	ug/Kg
Heptachlor Epoxide		<MDL	0.4	0.815	ug/Kg		<MDL	0.4	0.817	ug/Kg		<MDL	0.57	1.16	ug/Kg		<MDL	0.74	1.49	ug/Kg
Methoxychlor		<MDL	4	8.15	ug/Kg		<MDL	4	8.17	ug/Kg		<MDL	5.7	11.6	ug/Kg		<MDL	7.4	14.9	ug/Kg
Toxaphene		<MDL	8.2	16.3	ug/Kg		<MDL	8.2	16.3	ug/Kg		<MDL	12	23.1	ug/Kg		<MDL	15	29.8	ug/Kg
M=OR EPA 8081A/8082 (7-3-103-000)																				
Aroclor 1016		<MDL,TA	2.3	4.56	ug/Kg		<MDL	1	2.05	ug/Kg		<MDL,TA	24	48.7	ug/Kg		<MDL,TA	18	36.7	ug/Kg
Aroclor 1221		<MDL	2.1	4.07	ug/Kg		<MDL	2.1	4.08	ug/Kg		<MDL	3	5.79	ug/Kg		<MDL	3.8	7.45	ug/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator:	DUD_5A	DUD_5A	DUD_1B	DUD_2B
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sampled:	03/24/08 10:30:00 AM	03/24/08 10:40:00 AM	03/24/08 10:55:00 AM	03/24/08 11:10:00 AM
Lab ID:	L45304-5	L45304-6	L45304-7	L45304-8
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	81.8	81.6	57.5	44.7

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																				
Aroclor 1232		<MDL	2.1	4.07	ug/Kg		<MDL	2.1	4.08	ug/Kg		<MDL,TA	30	57.6	ug/Kg		<MDL,TA	27	53	ug/Kg
Aroclor 1242		<MDL	1	2.04	ug/Kg		<MDL	1	2.05	ug/Kg		<MDL,TA	42	83.8	ug/Kg		<MDL,TA	31	62	ug/Kg
Aroclor 1248	2.78		1	2.04	ug/Kg		<MDL	1	2.05	ug/Kg	37.2		1.4	2.9	ug/Kg	30.9		1.9	3.74	ug/Kg
Aroclor 1254	3.72		1	2.04	ug/Kg	3.05		1	2.05	ug/Kg	92.7		1.4	2.9	ug/Kg	52.1		1.9	3.74	ug/Kg
Aroclor 1260	2.43		1	2.04	ug/Kg	2.25		1	2.05	ug/Kg	35.7		1.4	2.9	ug/Kg	32.4		1.9	3.74	ug/Kg
Total Aroclors	8.92		1	2.04	ug/Kg	5.31		1	2.05	ug/Kg	166		1.4	2.9	ug/Kg	115		1.9	3.74	ug/Kg

* Not converted to dry weight basis for this parameter

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator: DUD_3B
Descrip: CLEANUP AREA A MON
Sampled: 03/24/08 11:25:00 AM
Lab ID: L45304-9
Matrix: SALTWTRSED
% Solids: 44.8

Parameters	Value	Qual	MDL	RDL	Units
			- Dry Weight Basis		
COMBINED LABS					
M=CV ASTM D422(318V1)					
Clay *	23.7	E	1.1	2.16	%
Dry Weight Factor	4.8				
Fines *	67.9		1.1	2.16	%
Gravel *	13.4		0.22	2.16	%
p+0.00 *	0.7	<RDL	0.22	2.16	%
p+1.00 *	0.9	<RDL	0.22	2.16	%
p+10.0(equal/more than) *	15.1		1.1	2.16	%
p+2.00 *	4.9		0.22	2.16	%
p+3.00 *	8.6		0.22	2.16	%
p+4.00 *	7.3		0.22	2.16	%
p+5.00 *	5.4		1.1	2.16	%
p+6.00 *	16.2		1.1	2.16	%
p+7.00 *	12.9		1.1	2.16	%
p+8.00 *	9.7		1.1	2.16	%
p+9.00 *	8.6		1.1	2.16	%
p-1.00 *	0.9	<RDL	0.22	2.16	%
p-2.00 *	0.7	<RDL	0.22	2.16	%
p-2.00(less than) *	11.8		0.22	2.16	%
Sand *	22.4		0.22	2.16	%
Silt *	44.2	E	1.1	2.16	%
M=CV EPA 9060-PSEP96(337V3)					
Total Organic Carbon	22800		4000	7900	mg/Kg
M=CV SM2540-G (307V3)					
Total Solids *	44.8		0.005	0.01	%
M=ES NONE					
Field Personnel	SH,BK,JB				none
Sampcoordx1 *	1267053				ft
Sampcoordx2 *	1267044				ft
Sampcoordx3 *					
Sampcoordy1 *	208714				ft
Sampcoordy2 *	208719				ft
Sampcoordy3 *					
Sample Depth *	6				m
Sample Function					
Sample Information					
Sampling Method *	20042				none
Sediment Sampling Depth *	11				cm
Sediment Sampling Range *	0-10 cm				cm
Sediment Type	21N31				none
Tidal Condition	E				none
Tide Height *	3				ft
M=MT CVAA EPA 7471B (604V4)					

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator: DUD_3B
Descrip: CLEANUP AREA A MON
Sampled: 03/24/08 11:25:00 AM
Lab ID: L45304-9
Matrix: SALTWTRSED
% Solids: 44.8

Parameters	Value	Qual	MDL	RDL	Units
			- Dry Weight Basis		
COMBINED LABS					
Mercury, Total, CVAA	0.239	E	0.011	0.106	mg/Kg
M=MT ICP EPA3050B/6010C MOD(612V3)					
Aluminum, Total, ICP	23700		11	55.6	mg/Kg
Antimony, Total, ICP		<MDL,G	1.7	8.33	mg/Kg
Arsenic, Total, ICP	13	<RDL	2.7	13.9	mg/Kg
Beryllium, Total, ICP	0.49	<RDL	0.11	0.556	mg/Kg
Cadmium, Total, ICP	0.42	<RDL	0.22	1.11	mg/Kg
Chromium, Total, ICP	31.3		0.33	1.67	mg/Kg
Copper, Total, ICP	75.7		0.45	2.22	mg/Kg
Iron, Total, ICP	33300		5.6	27.7	mg/Kg
Lead, Total, ICP	40.8		2.2	11.1	mg/Kg
Manganese, Total, ICP	355		0.22	1.11	mg/Kg
Nickel, Total, ICP	24.3		0.56	2.77	mg/Kg
Selenium, Total, ICP		<MDL	2.7	13.9	mg/Kg
Silver, Total, ICP		<MDL	0.45	2.22	mg/Kg
Thallium, Total, ICP		<MDL	4.5	22.2	mg/Kg
Zinc, Total, ICP	146		0.56	2.77	mg/Kg
M=OR EPA 3550B/8270C (7-3-01-004)					
1,2,4-Trichlorobenzene		<MDL	0.22	0.446	ug/Kg
1,2-Dichlorobenzene		<MDL	0.45	0.893	ug/Kg
1,3-Dichlorobenzene		<MDL	0.45	0.893	ug/Kg
1,4-Dichlorobenzene	2.83	E	0.45	0.893	ug/Kg
2,4-Dimethylphenol		<MDL	2.2	4.46	ug/Kg
2-Methylnaphthalene	7.4	<RDL	4.5	8.93	ug/Kg
2-Methylphenol		<MDL	4.5	8.93	ug/Kg
4-Methylphenol	51.8		8.9	17.9	ug/Kg
Acenaphthene	12.2		4.5	8.93	ug/Kg
Acenaphthylene	12.4		4.5	8.93	ug/Kg
Anthracene	69.2		4.5	8.93	ug/Kg
Benzo(a)anthracene	186	E	4.5	8.93	ug/Kg
Benzo(a)pyrene	191		4.5	8.93	ug/Kg
Benzo(b)fluoranthene	248		4.5	8.93	ug/Kg
Benzo(g,h,i)perylene	126		4.5	8.93	ug/Kg
Benzo(k)fluoranthene	246		4.5	8.93	ug/Kg
Benzoic Acid	299		22	44.6	ug/Kg
Benzyl Alcohol		<MDL	4.5	8.93	ug/Kg
Benzyl Butyl Phthalate	61.4		2.2	4.46	ug/Kg
Bis(2-Ethylhexyl)Phthalate	991	B	8.9	17.9	ug/Kg
Caffeine		<MDL	8.9	17.9	ug/Kg
Carbazole	21.9		4.5	8.93	ug/Kg
Chrysene	277		4.5	8.93	ug/Kg
Coprostanol		<MDL	89	179	ug/Kg
Dibenzo(a,h)anthracene	58.7		4.5	8.93	ug/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator: DUD_3B
Descrip: CLEANUP AREA A MON
Sampled: 03/24/08 11:25:00 AM
Lab ID: L45304-9
Matrix: SALTWTRSED
% Solids: 44.8

Parameters	Value	Qual	MDL	RDL	Units
		- Dry Weight Basis			
COMBINED LABS					
Dibenzofuran	11.3		4.5	8.93	ug/Kg
Diethyl Phthalate		<MDL	8.9	17.9	ug/Kg
Dimethyl Phthalate	21		8.9	17.9	ug/Kg
Di-N-Butyl Phthalate	32.1		8.9	17.9	ug/Kg
Di-N-Octyl Phthalate		<MDL	8.9	17.9	ug/Kg
Fluoranthene	306	E	4.5	8.93	ug/Kg
Fluorene	23		4.5	8.93	ug/Kg
Hexachlorobenzene		<MDL	0.22	0.446	ug/Kg
Hexachlorobutadiene		<MDL	1.1	2.23	ug/Kg
Hexachloroethane		<MDL	2.2	4.46	ug/Kg
Indeno(1,2,3-Cd)Pyrene	124		4.5	8.93	ug/Kg
Naphthalene	8.3	<RDL	4.5	8.93	ug/Kg
N-Nitrosodiphenylamine		<MDL	8.9	17.9	ug/Kg
Pentachlorophenol		<MDL	22	44.6	ug/Kg
Phenanthrene	134		4.5	8.93	ug/Kg
Phenol	413		8.9	17.9	ug/Kg
Pyrene	313	E	4.5	8.93	ug/Kg
Total HPAHS	2070		4.5	8.93	ug/Kg
Total LPAHs	266		4.5	8.93	ug/Kg
M=OR EPA 8081A/8082 (7-3-03-002)					
4,4'-DDD	2.1	<RDL	1.5	2.97	ug/Kg
4,4'-DDE		<MDL	1.5	2.97	ug/Kg
4,4'-DDT	6.23		1.5	2.97	ug/Kg
Aldrin		<MDL	1.5	2.97	ug/Kg
Alpha-BHC		<MDL	0.74	1.49	ug/Kg
Alpha-Chlordane		<MDL	0.74	1.49	ug/Kg
Beta-BHC		<MDL	0.74	1.49	ug/Kg
Delta-BHC		<MDL	0.74	1.49	ug/Kg
Dieldrin		<MDL	1.5	2.97	ug/Kg
Endosulfan I		<MDL	1.5	2.97	ug/Kg
Endosulfan II		<MDL	1.5	2.97	ug/Kg
Endosulfan Sulfate		<MDL	1.5	2.97	ug/Kg
Endrin		<MDL	1.5	2.97	ug/Kg
Endrin Aldehyde		<MDL,E	1.5	2.97	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.74	1.49	ug/Kg
Gamma-Chlordane		<MDL	0.74	1.49	ug/Kg
Heptachlor		<MDL	0.74	1.49	ug/Kg
Heptachlor Epoxide		<MDL	0.74	1.49	ug/Kg
Methoxychlor		<MDL	7.4	14.9	ug/Kg
Toxaphene		<MDL	15	29.7	ug/Kg
M=OR EPA 8081A/8082 (7-3-103-000)					
Aroclor 1016		<MDL,TA	25	49.8	ug/Kg
Aroclor 1221		<MDL	3.8	7.43	ug/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator: DUD_3B
Descrip: CLEANUP AREA A MON
Sampled: 03/24/08 11:25:00 AM
Lab ID: L45304-9
Matrix: SALTWTRSED
% Solids: 44.8

Parameters	Value	Qual	MDL	RDL	Units
			- Dry Weight Basis		
COMBINED LABS					
Aroclor 1232		<MDL,TA	38	73.9	ug/Kg
Aroclor 1242		<MDL,TA	40	79.2	ug/Kg
Aroclor 1248	36.6		1.9	3.73	ug/Kg
Aroclor 1254	55.8		1.9	3.73	ug/Kg
Aroclor 1260	37.9		1.9	3.73	ug/Kg
Total Aroclors	130		1.9	3.73	ug/Kg

* Not converted to dry weight basis for this parameter

PROJECT: 423062-100-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Clay * %	Dry Weight Factor	Fines * %	Gravel * %	Sand * %	Silt * %	Total Organic Carbon mg/Kg	Total Solids * %	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) * %	Aluminum, Total, ICP mg/Kg	Arsenic, Total, ICP mg/Kg
DUD_1A	5	L45304-1	1.2	1.6	1.8	8.3	88.4	0.6	3550	77.1	27.8	42.1	1.2	17.9	0.6		0.6					6.5	0.5	1.4	8960	3.4
DUD_2A	7	L45304-2	20.4	5.5	73.6	1.1	18.4	53.2	36000	41.4	0.8	1.2	15.9	2.6	5.4	8.4	5.7	22.7	18.1	6.8	4.5	0.3		0.8	22800	16.4
DUD_3A	9	L45304-3	27.3	4.4	75.6		19.3	48.3	21700	47.4	0.2	0.4	16.8	4	8.5	6.3	4.2	17.8	15.7	10.5	10.5				24100	13.7
DUD_4A	7	L45304-4	10.6	2.4	27.3	2.9	67.5	16.7	14500	63.8	1.8	5.1	9.1	23.6	29.1	7.9	4.6	3	5.3	3.8	1.5	1.1		1.8	14300	7.4
DUD_5A	9	L45304-5	1.8	1.5	2.4	20	77.5	0.6	1500	81.8	10.4	15.4	1.2	31.4	17.7	2.6				0.6	0.6	11.2	3.2	5.6	11000	2.7
DUD_5A	9	L45304-6	1.2	1.5	2.4	20.5	77	1.2	1100	81.6	11.3	17.7	1.2	31.5	14.7	1.8	0.61	0.61				10	1.9	8.6	12900	2.1
DUD_1B	9	L45304-7	13.5	2.9	43.9	4.3	51.1	30.4	14700	57.5	0.8	2	9.3	15.7	22.9	9.7	10.1	5.9	8.4	5.9	4.2	1	0.3	3	16600	9.2
DUD_2B	7	L45304-8	22.9	4.5	67.8	2	20.3	44.9	21400	44.7	0.5	1	15	3.9	8	6.9	4	17	13	11	8	0.6	1	0.5	24200	13
DUD_3B	6	L45304-9	23.7	4.8	67.9	13.4	22.4	44.2	22800	44.8	0.7	0.9	15.1	4.9	8.6	7.3	5.4	16.2	12.9	9.7	8.6	0.9	0.7	11.8	23700	13

PROJECT: 423062-100-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Beryllium, Total, ICP mg/Kg	Cadmium, Total, ICP mg/Kg	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	1,2-Dichlorobenzene ug/Kg	1,4-Dichlorobenzene ug/Kg	2-Methylnaphthalene ug/Kg	4,4'-DDD ug/Kg	4,4'-DDT ug/Kg	4-Methylphenol ug/Kg	Acenaphthene ug/Kg	Acenaphthylene ug/Kg	Anthracene ug/Kg	Aroclor 1248 ug/Kg
DUD_1A	5	L45304-1	0.14	0.56	22.4	31.8	17400	37.2	197	0.027	29.4		153		636	11.5				7.04		10.8	10.1
DUD_2A	7	L45304-2	0.48	0.7	36	98.3	34800	66.9	382	0.209	26.8		211		2.75	10.6				16.1	12.7	84.3	37
DUD_3A	9	L45304-3	0.51	0.49	31.2	77.8	33500	43.2	369	0.194	24.3		153		6.92	10.2	1.8	5.86		15.5	8.95	81	23.6
DUD_4A	7	L45304-4	0.27	0.42	30.7	56	21900	36.1	262	0.116	21.9		135		9.97	8.57	1.4		34.5	20.8	5.2	150	20.4
DUD_5A	9	L45304-5	0.12		19.6	64.4	19400	6.34	296	0.016	22.5		41.1		0.594					2.6		10.7	2.78
DUD_5A	9	L45304-6	0.13		28.3	30.9	21100	4.4	382	0.016	22.8	1.68	39.3		1.67							2.6	
DUD_1B	9	L45304-7	0.33	0.33	29.2	63.8	25700	33	280	0.317	21.7		106	2.35	2.12	5	1.4		44.9	11	9.11	64.7	37.2
DUD_2B	7	L45304-8	0.49	0.47	31.5	85.2	33600	45.4	360	0.172	24.4		152		2.37	7.8	2.1	6.82	69.8	9.82	5.8	69.1	30.9
DUD_3B	6	L45304-9	0.49	0.42	31.3	75.7	33300	40.8	355	0.239	24.3		146		2.83	7.4	2.1	6.23	51.8	12.2	12.4	69.2	36.6

PROJECT: 423062-100-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Aroclor 1254	Aroclor 1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Benzyl Butyl Phthalate	Bis(2-Ethylhexyl)Phthalate	Carbazole	Chrysene	Di-N-Butyl Phthalate	Dibenzo(a,h)anthracene	Dibenzofuran	Diethyl Phthalate	Dimethyl Phthalate	Fluoranthene	Fluorene	Gamma-Chlordane	Indeno(1,2,3-Cd)Pyrene	Naphthalene
			ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
DUD_1A	5	L45304-1	12.8	4.58	37.5	44.4	40.5	33.9	39.7	171	123	722	10.6	63	354	14.3	4.4		293	104	9.64	0.84	32.2	3.1
DUD_2A	7	L45304-2	60.9	41.3	261	263	350	178	273	365	148	1870	37.7	389	68.6	78	15.2			527	32.1		182	18.8
DUD_3A	9	L45304-3	36.9	33.3	172	186	209	122	222	338	64.3	1100	28.7	257	17.6	60.3	15.3		20.3	319	26.2	2.76	134	8.9
DUD_4A	7	L45304-4	32.9	23.2	310	285	337	205	277	318	150	1110	30.6	354	19.3	95	13.2		71.3	560	48.9	2.29	199	50
DUD_5A	9	L45304-5	3.72	2.43	28.7	29.3	30	12.7	28.7	150	15.2	97.9	4.4	39.2	6.2	2.9		5.9	20.7	61	6.47		15.2	
DUD_5A	9	L45304-6	3.05	2.25	5.87	11.8	11	5.47	11.8	154	11.8	53.6		14.2						13.2	4.2		7.14	
DUD_1B	9	L45304-7	92.7	35.7	137	156	235	89.4	142	289	48.3	417	15.6	230	14	34.1	9.74	8.2		245	21		88.3	7.62
DUD_2B	7	L45304-8	52.1	32.4	156	167	222	111	220	331	77.6	707	17.5	235	24.8	41.4	12.5		90.6	268	45.4		107	8.1
DUD_3B	6	L45304-9	55.8	37.9	186	191	248	126	246	299	61.4	991	21.9	277	32.1	58.7	11.3		21	306	23		124	8.3

PROJECT: 423062-100-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Phenanthrene ug/Kg	Phenol ug/Kg	Pyrene ug/Kg	Total Aroclors ug/Kg	Total HPAHS ug/Kg	Total LPAHs ug/Kg	Sampcoordx1 * ft	Sampcoordx2 * ft	Sampcoordx3 * ft	Sampcoordy1 * ft	Sampcoordy2 * ft	Sampcoordy3 * ft	Sample Depth * m	Sampling Method * none	Sediment Sampling Depth * cm	Tide Height * ft
DUD_1A	5	L45304-1	65		108	27.4	518	107	1267049	1267049	1267053	209095	209089	209096	5	20042	10	8
DUD_2A	7	L45304-2	194		618	139	3120	370	1267137	1267143		208907	208902		7	20042	12	7
DUD_3A	9	L45304-3	155		340	93.7	2020	306	1266952	1266951		208975	208970		9	20042	11	7
DUD_4A	7	L45304-4	378	190	602	76.3	3230	643	1266886	1266886		209354	209359		7	20042	10	6
DUD_5A	9	L45304-5	41.3	67	71	8.92	319	62.8	1266794	1266802		209406	209411		9	20042	9	6
DUD_5A	9	L45304-6	7.49	101	13	5.31	93.1	14.7	1266802	1266802		209411	209425		9	20042	9	5
DUD_1B	9	L45304-7	128	400	259	166	1620	247	1267060	1267056		208490	208485		9	20042	12	4.8
DUD_2B	7	L45304-8	120	436	282	115	1810	248	1267075	1267077		208623	208627		7	20042	9	3.8
DUD_3B	6	L45304-9	134	413	313	130	2070	266	1267053	1267044		208714	208719		6	20042	11	3

SAP MDL Comparison Table

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator:	DUD_1A	DUD_2A	DUD_3A	DUD_4A	DUD_5A	DUD_5A
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sampled:	03/24/08 9:35:00 AM	03/24/08 9:50:00 AM	03/24/08 10:08:00 AM	03/24/08 10:22:00 AM	03/24/08 10:30:00 AM	03/24/08 10:40:00 AM
Lab ID:	L45304-1	L45304-2	L45304-3	L45304-4	L45304-5	L45304-6
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	77.1	41.4	47.4	63.8	81.8	81.6

Parameters	Units	SAP MDL @50% Solids	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(318V1)								
Fines *	%	NA	0.61	1.1	1	0.76	0.61	0.61
Gravel *	%	NA	0.12	0.23	0.21	0.15	0.12	0.12
Sand *	%	NA	0.12	0.23	0.21	0.15	0.12	0.12
Silt *	%	NA	0.61	1.1	1	0.76	0.61	0.61
Clay *	%	NA	0.61	1.1	1	0.76	0.61	0.61
p+0.00 *	%	0.1	0.12	0.23	0.21	0.15	0.12	0.12
p+1.00 *	%	0.1	0.12	0.23	0.21	0.15	0.12	0.12
p+10.0(equal/more than) *	%	0.1	0.61	1.1	1	0.76	0.61	0.61
p+2.00 *	%	0.1	0.12	0.23	0.21	0.15	0.12	0.12
p+3.00 *	%	0.1	0.12	0.23	0.21	0.15	0.12	0.12
p+4.00 *	%	0.1	0.12	0.23	0.21	0.15	0.12	0.12
p+5.00 *	%	0.1	0.61	1.1	1	0.76	0.61	0.61
p+6.00 *	%	0.1	0.61	1.1	1	0.76	0.61	0.61
p+7.00 *	%	0.1	0.61	1.1	1	0.76	0.61	0.61
p+8.00 *	%	0.1	0.61	1.1	1	0.76	0.61	0.61
p+9.00 *	%	0.1	0.61	1.1	1	0.76	0.61	0.61
p-1.00 *	%	0.1	0.12	0.23	0.21	0.15	0.12	0.12
p-2.00 *	%	0.1	0.12	0.23	0.21	0.15	0.12	0.12
p-2.00(less than) *	%	0.1	0.12	0.23	0.21	0.15	0.12	0.12
M=CV EPA 9060-PSEP96(337V3)								
Total Organic Carbon	mg/Kg	1000	990	3100	4000	1000	500	480
M=CV SM2540-G (307V3)								
Total Solids *	%	0.005	0.005	0.005	0.005	0.005	0.005	0.005
M=MT CVAA EPA 7471B (604V4)								
Mercury, Total, CVAA	mg/Kg	0.04	0.0065	0.012	0.01	0.0077	0.0061	0.006
M=MT ICP EPA3050B/6010C MOD(612V3)								
Aluminum, Total, ICP	mg/Kg	10	6.5	12	11	7.8	6.1	6.1
Antimony, Total, ICP	mg/Kg	3	0.97	1.8	1.6	1.2	0.92	0.92
Arsenic, Total, ICP	mg/Kg	5	1.6	2.9	2.5	1.9	1.5	1.5
Beryllium, Total, ICP	mg/Kg	0.1	0.065	0.12	0.11	0.078	0.061	0.061
Cadmium, Total, ICP	mg/Kg	0.3	0.13	0.24	0.21	0.16	0.12	0.12
Chromium, Total, ICP	mg/Kg	0.5	0.19	0.36	0.32	0.24	0.18	0.18
Copper, Total, ICP	mg/Kg	0.4	0.26	0.48	0.42	0.31	0.24	0.25
Iron, Total, ICP	mg/Kg	5	3.2	6	5.3	3.9	3.1	3.1
Lead, Total, ICP	mg/Kg	3	1.3	2.4	2.1	1.6	1.2	1.2
Manganese, Total, ICP	mg/Kg	0.2	0.13	0.24	0.21	0.16	0.12	0.12
Nickel, Total, ICP	mg/Kg	2	0.32	0.6	0.53	0.39	0.31	0.31
Selenium, Total, ICP	mg/Kg	5	1.6	2.9	2.5	1.9	1.5	1.5
Silver, Total, ICP	mg/Kg	0.4	0.26	0.48	0.42	0.31	0.24	0.25
Thallium, Total, ICP	mg/Kg	20	2.6	4.8	4.2	3.1	2.4	2.5
Zinc, Total, ICP	mg/Kg	0.5	0.32	0.6	0.53	0.39	0.31	0.31
M=OR EPA 3550B/8270C (7-3-01-004)								

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator:	DUD_1A	DUD_2A	DUD_3A	DUD_4A	DUD_5A	DUD_5A
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sampled:	03/24/08 9:35:00 AM	03/24/08 9:50:00 AM	03/24/08 10:08:00 AM	03/24/08 10:22:00 AM	03/24/08 10:30:00 AM	03/24/08 10:40:00 AM
Lab ID:	L45304-1	L45304-2	L45304-3	L45304-4	L45304-5	L45304-6
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	77.1	41.4	47.4	63.8	81.8	81.6

Parameters	Units	SAP MDL @50% Solids	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								
1,2,4-Trichlorobenzene	ug/Kg	0.52	0.13	0.24	0.21	0.16	0.12	0.12
1,2-Dichlorobenzene	ug/Kg	0.52	0.26	0.48	0.42	0.31	0.24	0.25
1,3-Dichlorobenzene	ug/Kg	0.52	0.26	0.48	0.42	0.31	0.24	0.25
1,4-Dichlorobenzene	ug/Kg	0.26	0.26	0.48	0.42	0.31	0.24	0.25
2,4-Dimethylphenol	ug/Kg	14	1.3	2.4	2.1	1.6	1.2	1.2
2-Methylnaphthalene	ug/Kg	28	2.6	4.8	4.2	3.1	2.4	2.5
2-Methylphenol	ug/Kg	38	2.6	4.8	4.2	3.1	2.4	2.5
4-Methylphenol	ug/Kg	32	5.2	9.7	8.4	6.3	4.9	4.9
Acenaphthene	ug/Kg	14	2.6	4.8	4.2	3.1	2.4	2.5
Acenaphthylene	ug/Kg	29	2.6	4.8	4.2	3.1	2.4	2.5
Anthracene	ug/Kg	7.9	2.6	4.8	4.2	3.1	2.4	2.5
Benzo(a)anthracene	ug/Kg	4	2.6	4.8	4.2	3.1	2.4	2.5
Benzo(a)pyrene	ug/Kg	6	2.6	4.8	4.2	3.1	2.4	2.5
Benzo(b)fluoranthene	ug/Kg	6	2.6	4.8	4.2	3.1	2.4	2.5
Benzo(g,h,i)perylene	ug/Kg	16	2.6	4.8	4.2	3.1	2.4	2.5
Benzo(k)fluoranthene	ug/Kg	6	2.6	4.8	4.2	3.1	2.4	2.5
Benzoic Acid	ug/Kg	12	13	24	21	16	12	12
Benzyl Alcohol	ug/Kg	12	2.6	4.8	4.2	3.1	2.4	2.5
Benzyl Butyl Phthalate	ug/Kg	12	1.3	2.4	2.1	1.6	1.2	1.2
Bis(2-Ethylhexyl)Phthalate	ug/Kg	13	5.2	9.7	8.4	6.3	4.9	4.9
Carbazole	ug/Kg	14	2.6	4.8	4.2	3.1	2.4	2.5
Chrysene	ug/Kg	7.9	2.6	4.8	4.2	3.1	2.4	2.5
Coprostanol	ug/Kg	28	52	97	84	63	49	49
Dibenzo(a,h)anthracene	ug/Kg	14	2.6	4.8	4.2	3.1	2.4	2.5
Dibenzofuran	ug/Kg	28	2.6	4.8	4.2	3.1	2.4	2.5
Diethyl Phthalate	ug/Kg	12	5.2	9.7	8.4	6.3	4.9	4.9
Dimethyl Phthalate	ug/Kg	22	5.2	9.7	8.4	6.3	4.9	4.9
Di-N-Butyl Phthalate	ug/Kg	10	5.2	9.7	8.4	6.3	4.9	4.9
Di-N-Octyl Phthalate	ug/Kg	16	5.2	9.7	8.4	6.3	4.9	4.9
Fluoranthene	ug/Kg	16	2.6	4.8	4.2	3.1	2.4	2.5
Fluorene	ug/Kg	26	2.6	4.8	4.2	3.1	2.4	2.5
Hexachlorobenzene	ug/Kg	1.3	0.13	0.24	0.21	0.16	0.12	0.12
Hexachlorobutadiene	ug/Kg	1.5	0.65	1.2	1.1	0.78	0.61	0.61
Hexachloroethane	ug/Kg	29	1.3	2.4	2.1	1.6	1.2	1.2
Indeno(1,2,3-Cd)Pyrene	ug/Kg	18	2.6	4.8	4.2	3.1	2.4	2.5
Naphthalene	ug/Kg	28	2.6	4.8	4.2	3.1	2.4	2.5
N-Nitrosodiphenylamine	ug/Kg	40	5.2	9.7	8.4	6.3	4.9	4.9
Pentachlorophenol	ug/Kg	10	13	24	21	16	12	12
Phenanthrene	ug/Kg	7.9	2.6	4.8	4.2	3.1	2.4	2.5
Phenol	ug/Kg	18	5.2	9.7	8.4	6.3	4.9	4.9
Pyrene	ug/Kg	7.9	2.6	4.8	4.2	3.1	2.4	2.5
Total HPAHS	ug/Kg	NA	2.6	4.8	4.2	3.1	2.4	2.5
Total LPAHs	ug/Kg	NA	2.6	4.8	4.2	3.1	2.4	2.5

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator:	DUD_1A	DUD_2A	DUD_3A	DUD_4A	DUD_5A	DUD_5A
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sampled:	03/24/08 9:35:00 AM	03/24/08 9:50:00 AM	03/24/08 10:08:00 AM	03/24/08 10:22:00 AM	03/24/08 10:30:00 AM	03/24/08 10:40:00 AM
Lab ID:	L45304-1	L45304-2	L45304-3	L45304-4	L45304-5	L45304-6
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	77.1	41.4	47.4	63.8	81.8	81.6

Parameters	Units	SAP MDL @50% Solids	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=OR EPA 8081A/8082 (7-3-03-002)								
4,4'-DDD	ug/Kg	0.67	0.87	1.6	1.4	1.1	0.82	0.82
4,4'-DDE	ug/Kg	0.67	0.87	1.6	1.4	1.1	0.82	0.82
4,4'-DDT	ug/Kg	0.67	0.87	1.6	1.4	1.1	0.82	0.82
Aldrin	ug/Kg	0.67	0.87	1.6	1.4	1.1	0.82	0.82
Alpha-BHC	ug/Kg	0.67	0.43	0.8	0.7	0.52	0.4	0.4
Alpha-Chlordane	ug/Kg	0.67	0.43	0.8	0.7	0.52	0.4	0.4
Aroclor 1016	ug/Kg	4	8	22	15	15	2.3	1
Aroclor 1221	ug/Kg	8	2.2	4.1	3.6	2.7	2.1	2.1
Aroclor 1232	ug/Kg	8	12	31	20	20	2.1	2.1
Aroclor 1242	ug/Kg	4	14	36	25	24	1	1
Aroclor 1248	ug/Kg	4	1.1	2	1.8	1.3	1	1
Aroclor 1254	ug/Kg	4	1.1	2	1.8	1.3	1	1
Aroclor 1260	ug/Kg	4	1.1	2	1.8	1.3	1	1
Beta-BHC	ug/Kg	0.67	0.43	0.8	0.7	0.52	0.4	0.4
Delta-BHC	ug/Kg	0.67	0.43	0.8	0.7	0.52	0.4	0.4
Dieldrin	ug/Kg	0.67	0.87	1.6	1.4	1.1	0.82	0.82
Endosulfan I	ug/Kg	0.67	0.87	1.6	1.4	1.1	0.82	0.82
Endosulfan II	ug/Kg	0.67	0.87	1.6	1.4	1.1	0.82	0.82
Endosulfan Sulfate	ug/Kg	0.67	0.87	1.6	1.4	1.1	0.82	0.82
Endrin	ug/Kg	0.67	0.87	1.6	1.4	1.1	0.82	0.82
Endrin Aldehyde	ug/Kg	0.67	0.87	1.6	1.4	1.1	0.82	0.82
Gamma-BHC (Lindane)	ug/Kg	0.67	0.43	0.8	0.7	0.52	0.4	0.4
Gamma-Chlordane	ug/Kg	2.7	0.43	0.8	0.7	0.52	0.4	0.4
Heptachlor	ug/Kg	0.67	0.43	0.8	0.7	0.52	0.4	0.4
Heptachlor Epoxide	ug/Kg	0.67	0.43	0.8	0.7	0.52	0.4	0.4
Methoxychlor	ug/Kg	3.3	4.3	8	7	5.2	4	4
Toxaphene	ug/Kg	6.7	8.7	16	14	11	8.2	8.2

* Not converted to dry weight basis for this parameter

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator:	DUD_1B	DUD_2B	DUD_3B
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sampled:	03/24/08 10:55:00 AM	03/24/08 11:10:00 AM	03/24/08 11:25:00 AM
Lab ID:	L45304-7	L45304-8	L45304-9
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	57.5	44.7	44.8

Parameters	Units	SAP MDL @50% Solids	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS					
M=CV ASTM D422(318V1)					
Fines *	%	NA	0.84	1	1.1
Gravel *	%	NA	0.17	0.2	0.22
Sand *	%	NA	0.17	0.2	0.22
Silt *	%	NA	0.84	1	1.1
Clay *	%	NA	0.84	1	1.1
p+0.00 *	%	0.1	0.17	0.2	0.22
p+1.00 *	%	0.1	0.17	0.2	0.22
p+10.0(equal/more than) *	%	0.1	0.84	1	1.1
p+2.00 *	%	0.1	0.17	0.2	0.22
p+3.00 *	%	0.1	0.17	0.2	0.22
p+4.00 *	%	0.1	0.17	0.2	0.22
p+5.00 *	%	0.1	0.84	1	1.1
p+6.00 *	%	0.1	0.84	1	1.1
p+7.00 *	%	0.1	0.84	1	1.1
p+8.00 *	%	0.1	0.84	1	1.1
p+9.00 *	%	0.1	0.84	1	1.1
p-1.00 *	%	0.1	0.17	0.2	0.22
p-2.00 *	%	0.1	0.17	0.2	0.22
p-2.00(less than) *	%	0.1	0.17	0.2	0.22
M=CV EPA 9060-PSEP96(337V3)					
Total Organic Carbon	mg/Kg	1000	3800	3600	4000
M=CV SM2540-G (307V3)					
Total Solids *	%	0.005	0.005	0.005	0.005
M=MT CVAA EPA 7471B (604V4)					
Mercury, Total, CVAA	mg/Kg	0.04	0.0083	0.011	0.011
M=MT ICP EPA3050B/6010C MOD(612V3)					
Aluminum, Total, ICP	mg/Kg	10	8.7	11	11
Antimony, Total, ICP	mg/Kg	3	1.3	1.7	1.7
Arsenic, Total, ICP	mg/Kg	5	2.1	2.7	2.7
Beryllium, Total, ICP	mg/Kg	0.1	0.087	0.11	0.11
Cadmium, Total, ICP	mg/Kg	0.3	0.17	0.22	0.22
Chromium, Total, ICP	mg/Kg	0.5	0.26	0.34	0.33
Copper, Total, ICP	mg/Kg	0.4	0.35	0.45	0.45
Iron, Total, ICP	mg/Kg	5	4.3	5.6	5.6
Lead, Total, ICP	mg/Kg	3	1.7	2.2	2.2
Manganese, Total, ICP	mg/Kg	0.2	0.17	0.22	0.22
Nickel, Total, ICP	mg/Kg	2	0.43	0.56	0.56
Selenium, Total, ICP	mg/Kg	5	2.1	2.7	2.7
Silver, Total, ICP	mg/Kg	0.4	0.35	0.45	0.45
Thallium, Total, ICP	mg/Kg	20	3.5	4.5	4.5
Zinc, Total, ICP	mg/Kg	0.5	0.43	0.56	0.56
M=OR EPA 3550B/8270C (7-3-01-004)					

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator:	DUD_1B	DUD_2B	DUD_3B
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sampled:	03/24/08 10:55:00 AM	03/24/08 11:10:00 AM	03/24/08 11:25:00 AM
Lab ID:	L45304-7	L45304-8	L45304-9
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	57.5	44.7	44.8

Parameters	Units	SAP MDL @50% Solids	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS					
1,2,4-Trichlorobenzene	ug/Kg	0.52	0.17	0.22	0.22
1,2-Dichlorobenzene	ug/Kg	0.52	0.35	0.45	0.45
1,3-Dichlorobenzene	ug/Kg	0.52	0.35	0.45	0.45
1,4-Dichlorobenzene	ug/Kg	0.26	0.35	0.45	0.45
2,4-Dimethylphenol	ug/Kg	14	1.7	2.2	2.2
2-Methylnaphthalene	ug/Kg	28	3.5	4.5	4.5
2-Methylphenol	ug/Kg	38	3.5	4.5	4.5
4-Methylphenol	ug/Kg	32	7	8.9	8.9
Acenaphthene	ug/Kg	14	3.5	4.5	4.5
Acenaphthylene	ug/Kg	29	3.5	4.5	4.5
Anthracene	ug/Kg	7.9	3.5	4.5	4.5
Benzo(a)anthracene	ug/Kg	4	3.5	4.5	4.5
Benzo(a)pyrene	ug/Kg	6	3.5	4.5	4.5
Benzo(b)fluoranthene	ug/Kg	6	3.5	4.5	4.5
Benzo(g,h,i)perylene	ug/Kg	16	3.5	4.5	4.5
Benzo(k)fluoranthene	ug/Kg	6	3.5	4.5	4.5
Benzoic Acid	ug/Kg	12	17	22	22
Benzyl Alcohol	ug/Kg	12	3.5	4.5	4.5
Benzyl Butyl Phthalate	ug/Kg	12	1.7	2.2	2.2
Bis(2-Ethylhexyl)Phthalate	ug/Kg	13	7	8.9	8.9
Carbazole	ug/Kg	14	3.5	4.5	4.5
Chrysene	ug/Kg	7.9	3.5	4.5	4.5
Coprostanol	ug/Kg	28	70	89	89
Dibenzo(a,h)anthracene	ug/Kg	14	3.5	4.5	4.5
Dibenzofuran	ug/Kg	28	3.5	4.5	4.5
Diethyl Phthalate	ug/Kg	12	7	8.9	8.9
Dimethyl Phthalate	ug/Kg	22	7	8.9	8.9
Di-N-Butyl Phthalate	ug/Kg	10	7	8.9	8.9
Di-N-Octyl Phthalate	ug/Kg	16	7	8.9	8.9
Fluoranthene	ug/Kg	16	3.5	4.5	4.5
Fluorene	ug/Kg	26	3.5	4.5	4.5
Hexachlorobenzene	ug/Kg	1.3	0.17	0.22	0.22
Hexachlorobutadiene	ug/Kg	1.5	0.87	1.1	1.1
Hexachloroethane	ug/Kg	29	1.7	2.2	2.2
Indeno(1,2,3-Cd)Pyrene	ug/Kg	18	3.5	4.5	4.5
Naphthalene	ug/Kg	28	3.5	4.5	4.5
N-Nitrosodiphenylamine	ug/Kg	40	7	8.9	8.9
Pentachlorophenol	ug/Kg	10	17	22	22
Phenanthrene	ug/Kg	7.9	3.5	4.5	4.5
Phenol	ug/Kg	18	7	8.9	8.9
Pyrene	ug/Kg	7.9	3.5	4.5	4.5
Total HPAHS	ug/Kg	NA	3.5	4.5	4.5
Total LPAHs	ug/Kg	NA	3.5	4.5	4.5

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator:	DUD_1B	DUD_2B	DUD_3B
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sampled:	03/24/08 10:55:00 AM	03/24/08 11:10:00 AM	03/24/08 11:25:00 AM
Lab ID:	L45304-7	L45304-8	L45304-9
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	57.5	44.7	44.8

Parameters	Units	SAP MDL @50% Solids	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS					
M=OR EPA 8081A/8082 (7-3-03-002)					
4,4'-DDD	ug/Kg	0.67	1.2	1.5	1.5
4,4'-DDE	ug/Kg	0.67	1.2	1.5	1.5
4,4'-DDT	ug/Kg	0.67	1.2	1.5	1.5
Aldrin	ug/Kg	0.67	1.2	1.5	1.5
Alpha-BHC	ug/Kg	0.67	0.57	0.74	0.74
Alpha-Chlordane	ug/Kg	0.67	0.57	0.74	0.74
Aroclor 1016	ug/Kg	4	24	18	25
Aroclor 1221	ug/Kg	8	3	3.8	3.8
Aroclor 1232	ug/Kg	8	30	27	38
Aroclor 1242	ug/Kg	4	42	31	40
Aroclor 1248	ug/Kg	4	1.4	1.9	1.9
Aroclor 1254	ug/Kg	4	1.4	1.9	1.9
Aroclor 1260	ug/Kg	4	1.4	1.9	1.9
Beta-BHC	ug/Kg	0.67	0.57	0.74	0.74
Delta-BHC	ug/Kg	0.67	0.57	0.74	0.74
Dieldrin	ug/Kg	0.67	1.2	1.5	1.5
Endosulfan I	ug/Kg	0.67	1.2	1.5	1.5
Endosulfan II	ug/Kg	0.67	1.2	1.5	1.5
Endosulfan Sulfate	ug/Kg	0.67	1.2	1.5	1.5
Endrin	ug/Kg	0.67	1.2	1.5	1.5
Endrin Aldehyde	ug/Kg	0.67	1.2	1.5	1.5
Gamma-BHC (Lindane)	ug/Kg	0.67	0.57	0.74	0.74
Gamma-Chlordane	ug/Kg	2.7	0.57	0.74	0.74
Heptachlor	ug/Kg	0.67	0.57	0.74	0.74
Heptachlor Epoxide	ug/Kg	0.67	0.57	0.74	0.74
Methoxychlor	ug/Kg	3.3	5.7	7.4	7.4
Toxaphene	ug/Kg	6.7	12	15	15

* Not converted to dry weight basis for this parameter

SMS OC and Dry Weight Normalization MDL Check 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	0.1	0.04	0.81	0.77
1,2-Dichlorobenzene	0.2	0.07	2.3	2.2
1,4-Dichlorobenzene	0.2	0.07	3.1	3.0
2-Methylnaphthalene	2	0.73	38	37
2,4-Dimethylphenol	1	1.30	29	28
2-Methylphenol	2	2.59	63	60
4-Methylphenol	4	5.19	670	665
Acenaphthene	2	0.73	16	15
Acenaphthylene	2	0.73	66	65
Anthracene	2	0.73	220	219
Benzo(a)anthracene	2	0.73	110	109
Benzo(a)pyrene	2	0.73	99	98
Benzo(b)fluoranthene	2	0.73	115	114
Benzo(g,h,i)perylene	2	0.73	31	30
Benzo(k)fluoranthene	2	0.73	115	114
Benzoic Acid	10	12.97	650	637
Benzyl Alcohol	2	2.59	57	54
Benzyl Butyl Phthalate	1	0.36	4.9	4.5
Bis(2-Ethylhexyl)Phthalate	4	1.46	47	46
Chrysene	2	0.73	110	109
Dibenzo(a,h)anthracene	2	0.73	12	11
Dibenzofuran	2	0.73	15	14
Diethyl Phthalate	4	1.46	61	60
Dimethyl Phthalate	4	1.46	53	52
Di-N-Butyl Phthalate	4	1.46	220	219
Di-N-Octyl Phthalate	4	1.46	58	57
Fluorene	2	0.73	23	22
Fluoranthene	2	0.73	160	159
Hexachlorobenzene	0.1	0.04	0.38	0.34
Hexachlorobutadiene	0.5	0.18	3.9	3.7
Indeno(1,2,3-Cd)Pyrene	2	0.73	34	33
N-Nitrosodiphenylamine	4	1.46	11	10
Naphthalene	2	0.73	99	98
Pentachlorophenol	10	12.97	360	347
Phenanthrene	2	0.73	100	99
Phenol	4	5.19	420	415
Pyrene	2	0.73	1000	999
Aroclor 1016	6.2	2.26		
Aroclor 1221	1.7	0.62		
Aroclor 1232	8.9	3.25		
Aroclor 1242	11	4.01		
Aroclor 1248	0.83	0.30		
Aroclor 1254	0.83	0.30		
Aroclor 1260	0.83	0.30		
Total Organic Carbon (dry)	3553.8262			
Total Solids	77.1			
HPAH	20	7.30	960	953
LPAH	14	5.11	370	365
Total PCB	11	4.01	12	8.0

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.01	2.3	2.3
1,4-Dichlorobenzene	0.2	0.01	3.1	3.1
2-Methylnaphthalene	2	0.13	38	38
2,4-Dimethylphenol	1	2.42	29	27
2-Methylphenol	2	4.83	63	58
4-Methylphenol	4	9.66	670	660
Acenaphthene	2	0.13	16	16
Acenaphthylene	2	0.13	66	66
Anthracene	2	0.13	220	220
Benzo(a)anthracene	2	0.13	110	110
Benzo(a)pyrene	2	0.13	99	99
Benzo(b)fluoranthene	2	0.13	115	115
Benzo(g,h,i)perylene	2	0.13	31	31
Benzo(k)fluoranthene	2	0.13	115	115
Benzoic Acid	10	24.15	650	626
Benzyl Alcohol	2	4.83	57	52
Benzyl Butyl Phthalate	1	0.07	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.27	47	47
Chrysene	2	0.13	110	110
Dibenzo(a,h)anthracene	2	0.13	12	12
Dibenzofuran	2	0.13	15	15
Diethyl Phthalate	4	0.27	61	61
Dimethyl Phthalate	4	0.27	53	53
Di-N-Butyl Phthalate	4	0.27	220	220
Di-N-Octyl Phthalate	4	0.27	58	58
Fluorene	2	0.13	23	23
Fluoranthene	2	0.13	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.03	3.9	3.9
Indeno(1,2,3-Cd)Pyrene	2	0.13	34	34
N-Nitrosodiphenylamine	4	0.27	11	11
Naphthalene	2	0.13	99	99
Pentachlorophenol	10	24.15	360	336
Phenanthrene	2	0.13	100	100
Phenol	4	9.66	420	410
Pyrene	2	0.13	1000	1000
Aroclor 1016	9.2	0.62		
Aroclor 1221	1.7	0.11		
Aroclor 1232	13	0.87		
Aroclor 1242	15	1.01		
Aroclor 1248	0.83	0.06		
Aroclor 1254	0.83	0.06		
Aroclor 1260	0.83	0.06		
Total Organic Carbon (dry)	35990.33816			
Total Solids	41.4			
HPAH	20	1.34	960	959
LPAH	14	0.94	370	369
Total PCB	15	1.01	12	11.0

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.19	38	38
2,4-Dimethylphenol	1	2.11	29	27
2-Methylphenol	2	4.22	63	59
4-Methylphenol	4	8.44	670	662
Acenaphthene	2	0.19	16	16
Acenaphthylene	2	0.19	66	66
Anthracene	2	0.19	220	220
Benzo(a)anthracene	2	0.19	110	110
Benzo(a)pyrene	2	0.19	99	99
Benzo(b)fluoranthene	2	0.19	115	115
Benzo(g,h,i)perylene	2	0.19	31	31
Benzo(k)fluoranthene	2	0.19	115	115
Benzoic Acid	10	21.10	650	629
Benzyl Alcohol	2	4.22	57	53
Benzyl Butyl Phthalate	1	0.10	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.39	47	47
Chrysene	2	0.19	110	110
Dibenzo(a,h)anthracene	2	0.19	12	12
Dibenzofuran	2	0.19	15	15
Diethyl Phthalate	4	0.39	61	61
Dimethyl Phthalate	4	0.39	53	53
Di-N-Butyl Phthalate	4	0.39	220	220
Di-N-Octyl Phthalate	4	0.39	58	58
Fluorene	2	0.19	23	23
Fluoranthene	2	0.19	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.05	3.9	3.9
Indeno(1,2,3-Cd)Pyrene	2	0.19	34	34
N-Nitrosodiphenylamine	4	0.39	11	11
Naphthalene	2	0.19	99	99
Pentachlorophenol	10	21.10	360	339
Phenanthrene	2	0.19	100	100
Phenol	4	8.44	420	412
Pyrene	2	0.19	1000	1000
Aroclor 1016	7.1	0.69		
Aroclor 1221	1.7	0.17		
Aroclor 1232	9.6	0.93		
Aroclor 1242	12	1.17		
Aroclor 1248	0.83	0.08		
Aroclor 1254	0.83	0.08		
Aroclor 1260	0.83	0.08		
Total Organic Carbon (dry)	21729.95781			
Total Solids	47.4			
HPAH	20	1.94	960	958
LPAH	14	1.36	370	369
Total PCB	12	1.17	12	10.8

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.22	38	38
2,4-Dimethylphenol	1	1.57	29	27
2-Methylphenol	2	3.13	63	60
4-Methylphenol	4	6.27	670	664
Acenaphthene	2	0.22	16	16
Acenaphthylene	2	0.22	66	66
Anthracene	2	0.22	220	220
Benzo(a)anthracene	2	0.22	110	110
Benzo(a)pyrene	2	0.22	99	99
Benzo(b)fluoranthene	2	0.22	115	115
Benzo(g,h,i)perylene	2	0.22	31	31
Benzo(k)fluoranthene	2	0.22	115	115
Benzoic Acid	10	15.67	650	634
Benzyl Alcohol	2	3.13	57	54
Benzyl Butyl Phthalate	1	0.11	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.43	47	47
Chrysene	2	0.22	110	110
Dibenzo(a,h)anthracene	2	0.22	12	12
Dibenzofuran	2	0.22	15	15
Diethyl Phthalate	4	0.43	61	61
Dimethyl Phthalate	4	0.43	53	53
Di-N-Butyl Phthalate	4	0.43	220	220
Di-N-Octyl Phthalate	4	0.43	58	58
Fluorene	2	0.22	23	23
Fluoranthene	2	0.22	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.05	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.22	34	34
N-Nitrosodiphenylamine	4	0.43	11	11
Naphthalene	2	0.22	99	99
Pentachlorophenol	10	15.67	360	344
Phenanthrene	2	0.22	100	100
Phenol	4	6.27	420	414
Pyrene	2	0.22	1000	1000
Aroclor 1016	9.7	1.05		
Aroclor 1221	1.7	0.18		
Aroclor 1232	13	1.40		
Aroclor 1242	15	1.62		
Aroclor 1248	0.83	0.09		
Aroclor 1254	0.83	0.09		
Aroclor 1260	0.83	0.09		
Total Organic Carbon (dry)	14529.78056			
Total Solids	63.8			
HPAH	20	2.16	960	958
LPAH	14	1.51	370	368
Total PCB	15	1.62	12	10.4

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	0.1	0.08	0.81	0.73
1,2-Dichlorobenzene	0.2	0.16	2.3	2.1
1,4-Dichlorobenzene	0.2	0.16	3.1	2.9
2-Methylnaphthalene	2	1.63	38	36
2,4-Dimethylphenol	1	1.22	29	28
2-Methylphenol	2	2.44	63	61
4-Methylphenol	4	4.89	670	665
Acenaphthene	2	1.63	16	14
Acenaphthylene	2	1.63	66	64
Anthracene	2	1.63	220	218
Benzo(a)anthracene	2	1.63	110	108
Benzo(a)pyrene	2	1.63	99	97
Benzo(b)fluoranthene	2	1.63	115	113
Benzo(g,h,i)perylene	2	1.63	31	29
Benzo(k)fluoranthene	2	1.63	115	113
Benzoic Acid	10	12.22	650	638
Benzyl Alcohol	2	2.44	57	55
Benzyl Butyl Phthalate	1	0.81	4.9	4.1
Bis(2-Ethylhexyl)Phthalate	4	3.25	47	44
Chrysene	2	1.63	110	108
Dibenzo(a,h)anthracene	2	1.63	12	10
Dibenzofuran	2	1.63	15	13
Diethyl Phthalate	4	3.25	61	58
Dimethyl Phthalate	4	3.25	53	50
Di-N-Butyl Phthalate	4	3.25	220	217
Di-N-Octyl Phthalate	4	3.25	58	55
Fluorene	2	1.63	23	21
Fluoranthene	2	1.63	160	158
Hexachlorobenzene	0.1	0.08	0.38	0.30
Hexachlorobutadiene	0.5	0.41	3.9	3.5
Indeno(1,2,3-Cd)Pyrene	2	1.63	34	32
N-Nitrosodiphenylamine	4	3.25	11	8
Naphthalene	2	1.63	99	97
Pentachlorophenol	10	12.22	360	348
Phenanthrene	2	1.63	100	98
Phenol	4	4.89	420	415
Pyrene	2	1.63	1000	998
Aroclor 1016	1.9	1.54		
Aroclor 1221	1.7	1.38		
Aroclor 1232	1.7	1.38		
Aroclor 1242	0.83	0.67		
Aroclor 1248	0.83	0.67		
Aroclor 1254	0.83	0.67		
Aroclor 1260	0.83	0.67		
Total Organic Carbon (dry)	1503.667482			
Total Solids	81.8			
HPAH	20	16.26	960	944
LPAH	14	11.38	370	359
Total PCB	1.9	1.54	12	10.5

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	0.1	0.11	0.81	0.70
1,2-Dichlorobenzene	0.2	0.22	2.3	2.1
1,4-Dichlorobenzene	0.2	0.22	3.1	2.9
2-Methylnaphthalene	2	2.22	38	36
2,4-Dimethylphenol	1	1.23	29	28
2-Methylphenol	2	2.45	63	61
4-Methylphenol	4	4.90	670	665
Acenaphthene	2	2.22	16	14
Acenaphthylene	2	2.22	66	64
Anthracene	2	2.22	220	218
Benzo(a)anthracene	2	2.22	110	108
Benzo(a)pyrene	2	2.22	99	97
Benzo(b)fluoranthene	2	2.22	115	113
Benzo(g,h,i)perylene	2	2.22	31	29
Benzo(k)fluoranthene	2	2.22	115	113
Benzoic Acid	10	12.25	650	638
Benzyl Alcohol	2	2.45	57	55
Benzyl Butyl Phthalate	1	1.11	4.9	3.8
Bis(2-Ethylhexyl)Phthalate	4	4.44	47	43
Chrysene	2	2.22	110	108
Dibenzo(a,h)anthracene	2	2.22	12	10
Dibenzofuran	2	2.22	15	13
Diethyl Phthalate	4	4.44	61	57
Dimethyl Phthalate	4	4.44	53	49
Di-N-Butyl Phthalate	4	4.44	220	216
Di-N-Octyl Phthalate	4	4.44	58	54
Fluorene	2	2.22	23	21
Fluoranthene	2	2.22	160	158
Hexachlorobenzene	0.1	0.11	0.38	0.27
Hexachlorobutadiene	0.5	0.56	3.9	3.3
Indeno(1,2,3-Cd)Pyrene	2	2.22	34	32
N-Nitrosodiphenylamine	4	4.44	11	7
Naphthalene	2	2.22	99	97
Pentachlorophenol	10	12.25	360	348
Phenanthrene	2	2.22	100	98
Phenol	4	4.90	420	415
Pyrene	2	2.22	1000	998
Aroclor 1016	0.83	0.92		
Aroclor 1221	1.7	1.89		
Aroclor 1232	1.7	1.89		
Aroclor 1242	0.83	0.92		
Aroclor 1248	0.83	0.92		
Aroclor 1254	0.83	0.92		
Aroclor 1260	0.83	0.92		
Total Organic Carbon (dry)	1102.941176			
Total Solids	81.6			
HPAH	20	22.22	960	938
LPAH	14	15.56	370	354
Total PCB	1.7	1.89	12	10.1

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.24	38	38
2,4-Dimethylphenol	1	1.74	29	27
2-Methylphenol	2	3.48	63	60
4-Methylphenol	4	6.96	670	663
Acenaphthene	2	0.24	16	16
Acenaphthylene	2	0.24	66	66
Anthracene	2	0.24	220	220
Benzo(a)anthracene	2	0.24	110	110
Benzo(a)pyrene	2	0.24	99	99
Benzo(b)fluoranthene	2	0.24	115	115
Benzo(g,h,i)perylene	2	0.24	31	31
Benzo(k)fluoranthene	2	0.24	115	115
Benzoic Acid	10	17.39	650	633
Benzyl Alcohol	2	3.48	57	54
Benzyl Butyl Phthalate	1	0.12	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.47	47	47
Chrysene	2	0.24	110	110
Dibenzo(a,h)anthracene	2	0.24	12	12
Dibenzofuran	2	0.24	15	15
Diethyl Phthalate	4	0.47	61	61
Dimethyl Phthalate	4	0.47	53	53
Di-N-Butyl Phthalate	4	0.47	220	220
Di-N-Octyl Phthalate	4	0.47	58	58
Fluorene	2	0.24	23	23
Fluoranthene	2	0.24	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.06	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.24	34	34
N-Nitrosodiphenylamine	4	0.47	11	11
Naphthalene	2	0.24	99	99
Pentachlorophenol	10	17.39	360	343
Phenanthrene	2	0.24	100	100
Phenol	4	6.96	420	413
Pyrene	2	0.24	1000	1000
Aroclor 1016	14	1.65		
Aroclor 1221	1.7	0.20		
Aroclor 1232	17	2.01		
Aroclor 1242	24	2.83		
Aroclor 1248	0.83	0.10		
Aroclor 1254	0.83	0.10		
Aroclor 1260	0.83	0.10		
Total Organic Carbon (dry)	14730.43478			
Total Solids	57.5			
HPAH	20	2.36	960	958
LPAH	14	1.65	370	368
Total PCB	24	2.83	12	9.2

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.21	38	38
2,4-Dimethylphenol	1	2.24	29	27
2-Methylphenol	2	4.47	63	59
4-Methylphenol	4	8.95	670	661
Acenaphthene	2	0.21	16	16
Acenaphthylene	2	0.21	66	66
Anthracene	2	0.21	220	220
Benzo(a)anthracene	2	0.21	110	110
Benzo(a)pyrene	2	0.21	99	99
Benzo(b)fluoranthene	2	0.21	115	115
Benzo(g,h,i)perylene	2	0.21	31	31
Benzo(k)fluoranthene	2	0.21	115	115
Benzoic Acid	10	22.37	650	628
Benzyl Alcohol	2	4.47	57	53
Benzyl Butyl Phthalate	1	0.10	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.42	47	47
Chrysene	2	0.21	110	110
Dibenzo(a,h)anthracene	2	0.21	12	12
Dibenzofuran	2	0.21	15	15
Diethyl Phthalate	4	0.42	61	61
Dimethyl Phthalate	4	0.42	53	53
Di-N-Butyl Phthalate	4	0.42	220	220
Di-N-Octyl Phthalate	4	0.42	58	58
Fluorene	2	0.21	23	23
Fluoranthene	2	0.21	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.05	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.21	34	34
N-Nitrosodiphenylamine	4	0.42	11	11
Naphthalene	2	0.21	99	99
Pentachlorophenol	10	22.37	360	338
Phenanthrene	2	0.21	100	100
Phenol	4	8.95	420	411
Pyrene	2	0.21	1000	1000
Aroclor 1016	8.2	0.86		
Aroclor 1221	1.7	0.18		
Aroclor 1232	12	1.25		
Aroclor 1242	14	1.46		
Aroclor 1248	0.83	0.09		
Aroclor 1254	0.83	0.09		
Aroclor 1260	0.83	0.09		
Total Organic Carbon (dry)	21409.39597			
Total Solids	44.7			
HPAH	20	2.09	960	958
LPAH	14	1.46	370	369
Total PCB	14	1.46	12	10.5

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.20	38	38
2,4-Dimethylphenol	1	2.23	29	27
2-Methylphenol	2	4.46	63	59
4-Methylphenol	4	8.93	670	661
Acenaphthene	2	0.20	16	16
Acenaphthylene	2	0.20	66	66
Anthracene	2	0.20	220	220
Benzo(a)anthracene	2	0.20	110	110
Benzo(a)pyrene	2	0.20	99	99
Benzo(b)fluoranthene	2	0.20	115	115
Benzo(g,h,i)perylene	2	0.20	31	31
Benzo(k)fluoranthene	2	0.20	115	115
Benzoic Acid	10	22.32	650	628
Benzyl Alcohol	2	4.46	57	53
Benzyl Butyl Phthalate	1	0.10	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.39	47	47
Chrysene	2	0.20	110	110
Dibenzo(a,h)anthracene	2	0.20	12	12
Dibenzofuran	2	0.20	15	15
Diethyl Phthalate	4	0.39	61	61
Dimethyl Phthalate	4	0.39	53	53
Di-N-Butyl Phthalate	4	0.39	220	220
Di-N-Octyl Phthalate	4	0.39	58	58
Fluorene	2	0.20	23	23
Fluoranthene	2	0.20	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.05	3.9	3.9
Indeno(1,2,3-Cd)Pyrene	2	0.20	34	34
N-Nitrosodiphenylamine	4	0.39	11	11
Naphthalene	2	0.20	99	99
Pentachlorophenol	10	22.32	360	338
Phenanthrene	2	0.20	100	100
Phenol	4	8.93	420	411
Pyrene	2	0.20	1000	1000
Aroclor 1016	11	1.08		
Aroclor 1221	1.7	0.17		
Aroclor 1232	17	1.67		
Aroclor 1242	18	1.76		
Aroclor 1248	0.83	0.08		
Aroclor 1254	0.83	0.08		
Aroclor 1260	0.83	0.08		
Total Organic Carbon (dry)	22767.85714			
Total Solids	44.8			
HPAH	20	1.96	960	958
LPAH	14	1.37	370	369
Total PCB	18	1.76	12	10.2

CONVENTIONAL ANALYSES QC DATA

LIMSView Batch Report - run on 05/13/08, 10:25 am

WG95914 (Particle Size Distribution)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45304-1	423062-100-4	SALTWTRSED	3/24/2008 9:35	25-Mar-08	26-Mar-08	WG95914-1, -2	
L45304-2	423062-100-4	SALTWTRSED	3/24/2008 9:50	25-Mar-08	26-Mar-08	WG95914-1, -2	
L45304-3	423062-100-4	SALTWTRSED	3/24/2008 10:08	25-Mar-08	26-Mar-08	WG95914-1, -2	
L45304-4	423062-100-4	SALTWTRSED	3/24/2008 10:22	25-Mar-08	26-Mar-08	WG95914-1, -2	
L45304-5	423062-100-4	SALTWTRSED	3/24/2008 10:30	25-Mar-08	26-Mar-08	WG95914-1, -2	
L45304-6	423062-100-4	SALTWTRSED	3/24/2008 10:40	25-Mar-08	26-Mar-08	WG95914-1, -2	FREP @L45304-5
L45304-7	423062-100-4	SALTWTRSED	3/24/2008 10:55	25-Mar-08	26-Mar-08	WG95914-1, -2	
L45304-8	423062-100-4	SALTWTRSED	3/24/2008 11:10	25-Mar-08	26-Mar-08	WG95914-1, -2	
L45304-9	423062-100-4	SALTWTRSED	3/24/2008 11:25	25-Mar-08	26-Mar-08	WG95914-1, -2	
WG95914-1	LD	SALTWTRSED		25-Mar-08	26-Mar-08	WG95914-1, -2	L45304-6
WG95914-2	LT	SALTWTRSED		25-Mar-08	26-Mar-08	WG95914-1, -2	WG95914-1 L45304-6

n on 05/13/08 10:25 am

Workgroup: WG95914 (Particle Size Distribution)

(Lab Triplicate, Lab Duplicate) L45304-6

Parameter	MDL	RDL	Units	SampValue	LD Value	LT Value	RSD	Qual	LabLimit
Clay	0.57	1.14	%	1.2	2.5	2.3	34	E	20
Gravel	0.11	1.14	%	20.5	14.7	18.5	16		20
Sand	0.11	1.14	%	77	81.3	78.2	3		20
Silt	0.57	1.14	%	1.2	<MDL	0.6	102	E	20

Conventionals Data Anomaly Form

Date(s) Occurred: *03/26/08*

WG #(s): *WG95914*

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

Project #(s): *423062-100-4*

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

I. Analysis

☐ Nutrients:
☐ Demands:
☐ Cyanides:
☐ Physicals:
☐ Solids:
☐ Anions:
☐ Chlorophylls:
☒ Others: *Particle Size Distribution*
☐ 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) on sample L45304-6 had a percent relative standard deviation (%RSD) of 102% for the silt category and 34% for the clay category. This exceeded the established acceptance limit of 20% for these categories. The silt and clay categories represented a small fraction (1.2% for both) of the overall sample mass associated with sample L45304-6. 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 silt and clay category representing less than 10% of the overall sample mass. The data were reported to LIMS and the silt and clay categories for all samples in the workgroup were qualified with the E qualifier to indicate that an estimate value was reported for this category. No further corrective action was required.*

VI. Potential Effects on Data Quality

Based upon the expected performance of this method:

☒ None; corrective action entirely corrected anomaly (explanation optional): *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 this sample, the QC data suggest that the silt and clay categories represents too small a fraction of the overall sample constituency to be considered appropriate for evaluation against a 20% control window.*

☐ Potential effect explanation (explanation mandatory):

	Signatures	Signature Dates
Reported By: *Casey Maggart*		
Reviewer: *Keith Solberg*		
Supervisor: *Brian Prosch*		
QA Officer: *Colin Elliott* (For QA1 only)		
cc: LPM:		

WG95967 (Total Organic Carbon)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45304-1	423062-100-4	SALTWTRSED	3/24/2008 9:35	28-Apr-08	6-May-08	WG95967-1, -2, -3, -4, -5, -6	
L45304-2	423062-100-4	SALTWTRSED	3/24/2008 9:50	28-Apr-08	6-May-08	WG95967-1, -2, -3, -4, -5, -6	
L45304-3	423062-100-4	SALTWTRSED	3/24/2008 10:08	28-Apr-08	6-May-08	WG95967-1, -2, -3, -4, -5, -6	
L45304-4	423062-100-4	SALTWTRSED	3/24/2008 10:22	28-Apr-08	6-May-08	WG95967-1, -2, -3, -4, -5, -6	
L45304-5	423062-100-4	SALTWTRSED	3/24/2008 10:30	28-Apr-08	7-May-08	WG95967-1, -2, -3, -4, -5, -6	
L45304-6	423062-100-4	SALTWTRSED	3/24/2008 10:40	28-Apr-08	6-May-08	WG95967-1, -2, -3, -4, -5, -6	FREP @L45304-5
L45304-7	423062-100-4	SALTWTRSED	3/24/2008 10:55	28-Apr-08	6-May-08	WG95967-1, -2, -3, -4, -5, -6	
L45304-8	423062-100-4	SALTWTRSED	3/24/2008 11:10	28-Apr-08	6-May-08	WG95967-1, -2, -3, -4, -5, -6	
L45304-9	423062-100-4	SALTWTRSED	3/24/2008 11:25	28-Apr-08	6-May-08	WG95967-1, -2, -3, -4, -5, -6	
WG95967-1	MB	OTHR SOLID		6-May-08	6-May-08	WG95967-1, -2, -3, -4, -5, -6	MB1 080506
WG95967-2	SB	OTHR SOLID		6-May-08	6-May-08	WG95967-1, -2, -3, -4, -5, -6	WG95967-1
WG95967-3	SRM	OTHR SOLID		6-May-08	6-May-08	WG95967-1, -2, -3, -4, -5, -6	HICONC
WG95967-4	LD	SALTWTRSED		28-Apr-08	6-May-08	WG95967-1, -2, -3, -4, -5, -6	L45304-2
WG95967-5	LT	SALTWTRSED		28-Apr-08	6-May-08	WG95967-1, -2, -3, -4, -5, -6	WG95967-4 L45304-2
WG95967-6	MS	SALTWTRSED		28-Apr-08	6-May-08	WG95967-1, -2, -3, -4, -5, -6	L45304-2

Workgroup: WG95967 (Total Organic Carbon)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Organic Carbon	500	1000	mg/Kg	<MDL	

(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	2670	107		80--120

(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
Total Organic Carbon	2500	4960	mg/Kg	36900	33500	91		80--120

(Lab Triplicate, Lab Duplicate) L45304-2

Parameter	MDL	RDL	Units	SampValue	LD Value	LT Value	RSD	Qual	LabLimit
Total Organic Carbon	1700	3310	mg/Kg	14900	14700	16400	6		20

(Matrix Spike) L45304-2

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Organic Carbon	1700	3340	mg/Kg	14900	8337	22900	96		75--125

WG95970 (Total Solids)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45304-1	423062-100-4	SALTWTRSED	3/24/2008 9:35	28-Apr-08	28-Apr-08	WG95970-1, -2, -3	
L45304-2	423062-100-4	SALTWTRSED	3/24/2008 9:50	28-Apr-08	28-Apr-08	WG95970-1, -2, -3	
L45304-3	423062-100-4	SALTWTRSED	3/24/2008 10:08	28-Apr-08	28-Apr-08	WG95970-1, -2, -3	
L45304-4	423062-100-4	SALTWTRSED	3/24/2008 10:22	28-Apr-08	28-Apr-08	WG95970-1, -2, -3	
L45304-5	423062-100-4	SALTWTRSED	3/24/2008 10:30	28-Apr-08	28-Apr-08	WG95970-1, -2, -3	
L45304-6	423062-100-4	SALTWTRSED	3/24/2008 10:40	28-Apr-08	28-Apr-08	WG95970-1, -2, -3	FREP @L45304-5
L45304-7	423062-100-4	SALTWTRSED	3/24/2008 10:55	28-Apr-08	28-Apr-08	WG95970-1, -2, -3	
L45304-8	423062-100-4	SALTWTRSED	3/24/2008 11:10	28-Apr-08	28-Apr-08	WG95970-1, -2, -3	
L45304-9	423062-100-4	SALTWTRSED	3/24/2008 11:25	28-Apr-08	28-Apr-08	WG95970-1, -2, -3	
WG95970-1	MB	OTHR SOLID		28-Apr-08	28-Apr-08	WG95970-1, -2, -3	MB1 080428
WG95970-2	LD	SALTWTRSED		28-Apr-08	28-Apr-08	WG95970-1, -2, -3	L45304-7
WG95970-3	LT	SALTWTRSED		28-Apr-08	28-Apr-08	WG95970-1, -2, -3	WG95970-2 L45304-7

Workgroup: WG95970 (Total Solids)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Solids	0.005	0.01	%	<MDL	

(Lab Triplicate, Lab Duplicate) L45304-7

Parameter	MDL	RDL	Units	SampValue	LD Value	LT Value	RSD	Qual	LabLimit
Total Solids	0.005	0.01	%	57.5	57.7	58.2	1		20

METAL CHEMISTRY QC DATA

LIMSView Batch Report - run on 05/13/08, 10:25 am

WG96125 (Total Mercury by CVAA)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45304-1	423062-100-4	SALTWTRSED	3/24/2008 9:35	9-Apr-08	10-Apr-08	WG96125-1, -2, -3, -4, -5, -6	
L45304-2	423062-100-4	SALTWTRSED	3/24/2008 9:50	9-Apr-08	10-Apr-08	WG96125-1, -2, -3, -4, -5, -6	
L45304-3	423062-100-4	SALTWTRSED	3/24/2008 10:08	9-Apr-08	10-Apr-08	WG96125-1, -2, -3, -4, -5, -6	
L45304-4	423062-100-4	SALTWTRSED	3/24/2008 10:22	9-Apr-08	10-Apr-08	WG96125-1, -2, -3, -4, -5, -6	
L45304-5	423062-100-4	SALTWTRSED	3/24/2008 10:30	9-Apr-08	10-Apr-08	WG96125-1, -2, -3, -4, -5, -6	
L45304-6	423062-100-4	SALTWTRSED	3/24/2008 10:40	9-Apr-08	10-Apr-08	WG96125-1, -2, -3, -4, -5, -6	FREP @L45304-5
L45304-7	423062-100-4	SALTWTRSED	3/24/2008 10:55	9-Apr-08	10-Apr-08	WG96125-1, -2, -3, -4, -5, -6	
L45304-8	423062-100-4	SALTWTRSED	3/24/2008 11:10	9-Apr-08	10-Apr-08	WG96125-1, -2, -3, -4, -5, -6	
L45304-9	423062-100-4	SALTWTRSED	3/24/2008 11:25	9-Apr-08	10-Apr-08	WG96125-1, -2, -3, -4, -5, -6	
WG96125-1	SRM	SALTWTRSED		9-Apr-08	10-Apr-08	WG96125-1, -2, -3, -4, -5, -6	PACS2
WG96125-2	MB	SOLIDBLANK		9-Apr-08	10-Apr-08	WG96125-1, -2, -3, -4, -5, -6	METHOD BLANK
WG96125-3	SB	SOLIDBLANK		9-Apr-08	10-Apr-08	WG96125-1, -2, -3, -4, -5, -6	WG96125-2 HG-SMID
WG96125-4	MS	SALTWTRSED		9-Apr-08	10-Apr-08	WG96125-1, -2, -3, -4, -5, -6	L45304-3 HG-SMID
WG96125-5	MSD	SALTWTRSED		9-Apr-08	10-Apr-08	WG96125-1, -2, -3, -4, -5, -6	WG96125-4 L45304-3 HG-SMID-MSD
WG96125-6	LD	SALTWTRSED		9-Apr-08	10-Apr-08	WG96125-1, -2, -3, -4, -5, -6	L45304-3 RPD-SOL

LIMSView Analytical QC Report - run on 05/13/08 10:25 am

Workgroup: WG96125 (Total Mercury by CVAA)

SRM:WG96125-1 Matrix: SALTWTRSED Listtype: MTHG-MIDS Method: CVAA EPA 7471B (604V4) Project: NONE Pkey: SED
(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
Mercury, Total, CVAA	0.051	0.51	mg/Kg	3.04	2.79	92		80--120

MB:WG96125-2 Matrix: SOLIDBLANK Listtype: MTHG-MIDS Method: CVAA EPA 7471B (604V4) Project: Pkey: SED
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAA	0.0048	0.0476	mg/Kg	<MDL	

SB:WG96125-3 MB:WG96125-2 Matrix: SOLIDBLANK Listtype: MTHG-MIDS Method: CVAA EPA 7471B (604V4) Project: NONE Pkey: SED
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Mercury, Total, CVAA	0.0048	0.0476	mg/Kg	<MDL	0.0952	0.0913	96		85--115

MSD:WG96125-5 MS:WG96125-4 L45304-3 Matrix: SALTWTRSED Listtype: MTHG-MIDS Method: CVAA EPA 7471B (604V4) Project: 423062-100-4 Pkey: SED
(Matrix Spike Duplicate, Matrix Spike) L45304-3

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Mercury, Total, CVAA	0.0049	0.0491	mg/Kg	0.0919	0.0983	0.177	87		75--125	0.0982	0.389	302	*	111	E	20

LD:WG96125-6 L45304-3 Matrix: SALTWTRSED Listtype: MTHG-MIDS Method: CVAA EPA 7471B (604V4) Project: 423062-100-4 Pkey: SED
(Lab Duplicate) L45304-3

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Mercury, Total, CVAA	0.0048	0.0482	mg/Kg	0.0919	0.162	55	E	20

LIMSView Batch Report - run on 05/13/08, 10:25 am

WG96349 (Total Metals by ICP)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45304-1	423062-100-4	SALTWTRSED	3/24/2008 9:35	28-Apr-08	29-Apr-08	WG96349-1, -2, -6, -3, -4, -5	
L45304-2	423062-100-4	SALTWTRSED	3/24/2008 9:50	28-Apr-08	29-Apr-08	WG96349-1, -2, -6, -3, -4, -5	
L45304-3	423062-100-4	SALTWTRSED	3/24/2008 10:08	28-Apr-08	29-Apr-08	WG96349-1, -2, -6, -3, -4, -5	
L45304-4	423062-100-4	SALTWTRSED	3/24/2008 10:22	28-Apr-08	29-Apr-08	WG96349-1, -2, -6, -3, -4, -5	
L45304-5	423062-100-4	SALTWTRSED	3/24/2008 10:30	28-Apr-08	29-Apr-08	WG96349-1, -2, -6, -3, -4, -5	
L45304-6	423062-100-4	SALTWTRSED	3/24/2008 10:40	28-Apr-08	29-Apr-08	WG96349-1, -2, -6, -3, -4, -5	FREP @L45304-5
L45304-7	423062-100-4	SALTWTRSED	3/24/2008 10:55	28-Apr-08	29-Apr-08	WG96349-1, -2, -6, -3, -4, -5	
L45304-8	423062-100-4	SALTWTRSED	3/24/2008 11:10	28-Apr-08	29-Apr-08	WG96349-1, -2, -6, -3, -4, -5	
L45304-9	423062-100-4	SALTWTRSED	3/24/2008 11:25	28-Apr-08	29-Apr-08	WG96349-1, -2, -6, -3, -4, -5	
WG96349-1	SB	SOLIDBLANK		28-Apr-08	29-Apr-08	WG96349-1, -2, -6, -3, -4, -5	WG96349-3 ICPMARINE SPIKE BLANK
WG96349-2	SRM	SALTWTRSED		28-Apr-08	29-Apr-08	WG96349-1, -2, -6, -3, -4, -5	PACS2 M1-11-30
WG96349-3	MB	SOLIDBLANK		28-Apr-08	29-Apr-08	WG96349-1, -2, -6, -3, -4, -5	DIGESTED METHOD BLANK
WG96349-4	LD	SALTWTRSED		28-Apr-08	29-Apr-08	WG96349-1, -2, -6, -3, -4, -5	L45304-2 RPD-SOL LAB DUPLICATE
WG96349-5	MS	SALTWTRSED		28-Apr-08	29-Apr-08	WG96349-1, -2, -6, -3, -4, -5	L45304-2 ICPMARINE MATRIX SPIKE
WG96349-6	LCS	SOIL		28-Apr-08	29-Apr-08	WG96349-1, -2, -6, -3, -4, -5	ERASOIL M-07-023

LIMSView Analytical QC Report - run on 05/13/08 10:25 am
Workgroup: WG96349 (Total Metals by ICP)

SB:WG96349-1 MB:WG96349-3 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: ICP EPA3050B/6010C MOD(612V3) Project: NONE Pkey: SED
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Aluminum, Total, ICP	4.8	23.8	mg/Kg	<MDL	6710	6600	98		85--115
Antimony, Total, ICP	0.71	3.57	mg/Kg	<MDL	47.6	49.4	104		85--115
Arsenic, Total, ICP	1.2	5.95	mg/Kg	<MDL	47.6	49.8	105		85--115
Beryllium, Total, ICP	0.048	0.238	mg/Kg	<MDL	47.6	45.3	95		85--115
Cadmium, Total, ICP	0.095	0.476	mg/Kg	<MDL	47.6	48.2	101		85--115
Chromium, Total, ICP	0.14	0.714	mg/Kg	<MDL	47.6	47.3	99		85--115
Copper, Total, ICP	0.19	0.952	mg/Kg	<MDL	47.6	46.6	98		85--115
Iron, Total, ICP	2.4	11.9	mg/Kg	<MDL	4810	4560	95		85--115
Lead, Total, ICP	0.95	4.76	mg/Kg	<MDL	47.6	48	101		85--115
Manganese, Total, ICP	0.095	0.476	mg/Kg	<MDL	238	231	97		85--115
Nickel, Total, ICP	0.24	1.19	mg/Kg	<MDL	47.6	47.4	100		85--115
Selenium, Total, ICP	1.2	5.95	mg/Kg	<MDL	47.6	49.5	104		85--115
Silver, Total, ICP	0.19	0.952	mg/Kg	<MDL	47.6	47	99		85--115
Thallium, Total, ICP	1.9	9.52	mg/Kg	<MDL	47.6	46	97		85--115
Zinc, Total, ICP	0.24	1.19	mg/Kg	<MDL	238	241	101		85--115

SRM:WG96349-2 Matrix: SALTWTRSED Listtype: MTICP-SED Method: ICP EPA3050B/6010C MOD(612V3) Project: NONE Pkey: SED
(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
Aluminum, Total, ICP	20	100	mg/Kg	66200	14700	22		10--43
Chromium, Total, ICP	0.6	3.01	mg/Kg	90.7	45.9	51		30--70
Copper, Total, ICP	0.8	4.02	mg/Kg	310	290	93		78--118
Iron, Total, ICP	10	50.2	mg/Kg	40900	30900	76		55--95
Lead, Total, ICP	4	20.1	mg/Kg	183	177	97		74--114
Manganese, Total, ICP	0.4	2.01	mg/Kg	440	237	54		35--75
Nickel, Total, ICP	1	5.02	mg/Kg	39.5	29.8	76		51--91
Zinc, Total, ICP	1	5.02	mg/Kg	364	338	93		73--113

LIMSView Analytical QC Report - run on 05/13/08 10:25 am

MB:WG96349-3 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: ICP EPA3050B/6010C MOD(612V3) Project: Pkey: SED

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Aluminum, Total, ICP	4.8	23.8	mg/Kg	<MDL	
Antimony, Total, ICP	0.71	3.57	mg/Kg	<MDL	
Arsenic, Total, ICP	1.2	5.95	mg/Kg	<MDL	
Beryllium, Total, ICP	0.048	0.238	mg/Kg	<MDL	
Cadmium, Total, ICP	0.095	0.476	mg/Kg	<MDL	
Chromium, Total, ICP	0.14	0.714	mg/Kg	<MDL	
Copper, Total, ICP	0.19	0.952	mg/Kg	<MDL	
Iron, Total, ICP	2.4	11.9	mg/Kg	<MDL	
Lead, Total, ICP	0.95	4.76	mg/Kg	<MDL	
Manganese, Total, ICP	0.095	0.476	mg/Kg	<MDL	
Nickel, Total, ICP	0.24	1.19	mg/Kg	<MDL	
Selenium, Total, ICP	1.2	5.95	mg/Kg	<MDL	
Silver, Total, ICP	0.19	0.952	mg/Kg	<MDL	
Thallium, Total, ICP	1.9	9.52	mg/Kg	<MDL	
Zinc, Total, ICP	0.24	1.19	mg/Kg	<MDL	

LD:WG96349-4 L45304-2 Matrix: SALTWTRSED Listtype: MTICP-SED Method: ICP EPA3050B/6010C MOD(612V3) Project: 423062-100-4 Pkey: SED

(Lab Duplicate) L45304-2

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Aluminum, Total, ICP	5	25	mg/Kg	9420	9260	2		20
Antimony, Total, ICP	0.75	3.74	mg/Kg	<MDL	<MDL			20
Arsenic, Total, ICP	1.2	6.24	mg/Kg	6.77	6.81	1		20
Beryllium, Total, ICP	0.05	0.25	mg/Kg	0.2	0.19			20
Cadmium, Total, ICP	0.1	0.499	mg/Kg	0.29	0.28			20
Chromium, Total, ICP	0.15	0.749	mg/Kg	14.9	14.7	1		20
Copper, Total, ICP	0.2	0.998	mg/Kg	40.7	38.2	6		20
Iron, Total, ICP	2.5	12.5	mg/Kg	14400	14100	2		20
Lead, Total, ICP	1	4.99	mg/Kg	27.7	22.9	19		20
Manganese, Total, ICP	0.1	0.499	mg/Kg	158	153	3		20
Nickel, Total, ICP	0.25	1.25	mg/Kg	11.1	10.5	5		20
Selenium, Total, ICP	1.2	6.24	mg/Kg	<MDL	<MDL			20
Silver, Total, ICP	0.2	0.998	mg/Kg	<MDL	<MDL			20
Thallium, Total, ICP	2	9.98	mg/Kg	<MDL	<MDL			20
Zinc, Total, ICP	0.25	1.25	mg/Kg	87.5	87.9	0		20

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MS:WG96349-5 L45304-2 Matrix: SALTWTRSED Listtype: MTICP-SED Method: ICP EPA3050B/6010C MOD(612V3) Project: 423062-100-4 Pkey: SED

(Matrix Spike) L45304-2

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Aluminum, Total, ICP	5	24.9	mg/Kg	9420	7020	17500	115		75--125
Antimony, Total, ICP	0.75	3.73	mg/Kg	<MDL	49.8	9.72	20	G	75--125
Arsenic, Total, ICP	1.2	6.22	mg/Kg	6.77	49.8	58.8	105		75--125
Beryllium, Total, ICP	0.05	0.249	mg/Kg	0.2	49.8	46.9	94		75--125
Cadmium, Total, ICP	0.1	0.498	mg/Kg	0.29	49.8	50.6	101		75--125
Chromium, Total, ICP	0.15	0.746	mg/Kg	14.9	49.8	64.2	99		75--125
Copper, Total, ICP	0.2	0.995	mg/Kg	40.7	49.8	89.1	97		75--125
Iron, Total, ICP	2.5	12.4	mg/Kg	14400	5030	19000	91		75--125
Lead, Total, ICP	1	4.98	mg/Kg	27.7	49.8	71.6	88		75--125
Manganese, Total, ICP	0.1	0.498	mg/Kg	158	249	385	91		75--125
Nickel, Total, ICP	0.25	1.24	mg/Kg	11.1	49.8	58.9	96		75--125
Selenium, Total, ICP	1.2	6.22	mg/Kg	<MDL	49.8	50.7	102		75--125
Silver, Total, ICP	0.2	0.995	mg/Kg	<MDL	49.8	49.2	99		75--125
Thallium, Total, ICP	2	9.95	mg/Kg	<MDL	49.8	46.3	93		75--125
Zinc, Total, ICP	0.25	1.24	mg/Kg	87.5	249	335	99		75--125

LCS:WG96349-6 Matrix: SOIL Listtype: MTICP-SED Method: ICP EPA3050B/6010C MOD(612V3) Project: NONE Pkey: SED

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Aluminum, Total, ICP	20	100	mg/Kg	8260	7300	88		61--139
Antimony, Total, ICP	3	15	mg/Kg	90.2	54.5	60		10--211
Arsenic, Total, ICP	5	25.1	mg/Kg	132	139	105		80--120
Beryllium, Total, ICP	0.2	1	mg/Kg	89.5	89.4	100		80--120
Cadmium, Total, ICP	0.4	2	mg/Kg	66.5	69.9	105		80--120
Chromium, Total, ICP	0.6	3.01	mg/Kg	72.9	72.1	99		79--121
Copper, Total, ICP	0.8	4.01	mg/Kg	68.5	66.6	97		80--120
Iron, Total, ICP	10	50.1	mg/Kg	13400	10700	80		50--149
Lead, Total, ICP	4	20	mg/Kg	130	139	107		80--120
Manganese, Total, ICP	0.4	2	mg/Kg	453	459	101		80--120
Nickel, Total, ICP	1	5.01	mg/Kg	55.6	57.9	104		80--120
Selenium, Total, ICP	5	25.1	mg/Kg	161	174	108		78--122
Silver, Total, ICP	0.8	4.01	mg/Kg	101	106	105		66--134
Thallium, Total, ICP	8	40.1	mg/Kg	133	138	104		77--123
Zinc, Total, ICP	1	5.01	mg/Kg	177	179	101		79--121

Trace Metals Data Anomaly Form

Date(s) Occurred: *4-29-2008*

WG #(s): *WG96349*

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

Project #(s): *423062*

Matrix: ☐ **Liquid** ☒ **Solid** ☒ **QA1** ☒ **QA2** ☐ **Tissue** ☐ **Calibration** ☐ **Other:**

I. Analysis/Digestion

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

II. Instrument

CVAA (☐ M-6000A ☐ M-7500) 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: *The following element in the Matrix Spike (WG96349-5) failed to meet the +/- 25% acceptance criteria; Antimony at 20%.*

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:

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V. Corrective Action Taken

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

Corrective Action Description: *The low matrix spike recovery for Antimony is related to the 3050B digestion procedure. The spike blank recovery (104%) indicates that the matrix may be affecting Antimony during digestion. The Antimony results will be qualified with a "G". No further corrective action is required for Antimony as per the Trace Metals decision dated 8-1-2006.*

A laboratory control sample ERA Soil (LCS) was also analyzed. The LCS is used as a secondary check for the total metals digestion procedure because the certified values for the elements are determined using the same methodology. The % recovery of Antimony in the LCS was within the certified limits of the sample.

VI. Potential Effects on Data Quality:

☐ None; corrective action entirely corrected anomaly (explanation optional):

☒ Potential effect explanation (explanation mandatory): *The reported values for Antimony may be biased low, as indicated by the low matrix spike recovery.*

	Signatures	Signature Dates
Reported By: Brian Mazikowski		
Reviewer: Erica Prentice		
Supervisor: *Diane McElhany*		
QA Officer: *Colin Elliott* **(For QA1 only)**		
cc: LPM: Fritz Grothkopp		

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ORGANIC CHEMISTRY QC DATA

WG95938 (Semi Volatile Organics)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45302-1	423062-200-4	SALTWTRSED	3/24/2008 12:08	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45302-2	423062-200-4	SALTWTRSED	3/24/2008 12:28	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45302-3	423062-200-4	SALTWTRSED	3/24/2008 13:05	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45302-4	423062-200-4	SALTWTRSED	3/24/2008 13:21	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	FREP @ L45302-3
L45302-5	423062-200-4	SALTWTRSED	3/24/2008 14:03	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45302-6	423062-200-4	SALTWTRSED	3/24/2008 14:30	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45302-7	423062-200-4	SALTWTRSED	3/25/2008 9:00	27-Mar-08	1-Apr-08	WG95938-5	
L45302-8	423062-200-4	SALTWTRSED	3/25/2008 9:45	27-Mar-08	1-Apr-08	WG95938-5	
L45302-9	423062-200-4	SALTWTRSED	3/25/2008 10:30	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-1	423062-200-4	SALTWTRSED	3/25/2008 11:15	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-2	423062-200-4	SALTWTRSED	3/25/2008 11:30	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-3	423062-200-4	SALTWTRSED	3/25/2008 11:40	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	FREP @ L45303-2
L45303-4	423062-200-4	SALTWTRSED	3/25/2008 12:00	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-5	423062-200-4	SALTWTRSED	3/25/2008 12:10	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-6	423062-200-4	SALTWTRSED	3/25/2008 12:25	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-7	423062-200-4	SALTWTRSED	3/25/2008 12:40	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-8	423062-200-4	SALTWTRSED	3/25/2008 12:54	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45304-1	423062-100-4	SALTWTRSED	3/24/2008 9:35	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45304-2	423062-100-4	SALTWTRSED	3/24/2008 9:50	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45304-3	423062-100-4	SALTWTRSED	3/24/2008 10:08	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
WG95938-1	MB	OTHR SOLID		27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	MB080327
WG95938-2	SB	OTHR SOLID		27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	WG95938-1
WG95938-3	MS	SALTWTRSED		27-Mar-08	2-Apr-08	WG95938-1, -2, -6, -3, -4, -5	L45302-1
WG95938-4	MSD	SALTWTRSED		27-Mar-08	2-Apr-08	WG95938-1, -2, -6, -3, -4, -5	WG95938-3 L45302-1
WG95938-5	SRM	SALTWTRSED		27-Mar-08	1-Apr-08	WG95938-5	1944
WG95938-6	LD	SALTWTRSED		27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	L45302-2

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Workgroup: WG95938 (Semi Volatile Organics)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	
2-Methylnaphthalene	2	4	ug/Kg	<MDL	
2-Methylphenol	2	4	ug/Kg	<MDL	
4-Methylphenol	4	8	ug/Kg	<MDL	
Acenaphthene	2	4	ug/Kg	<MDL	
Acenaphthylene	2	4	ug/Kg	<MDL	
Anthracene	2	4	ug/Kg	<MDL	
Benzo(a)anthracene	2	4	ug/Kg	<MDL	
Benzo(a)pyrene	2	4	ug/Kg	<MDL	
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	
Benzoic Acid	10	20	ug/Kg	112	B
Benzyl Alcohol	2	4	ug/Kg	<MDL	
Benzyl Butyl Phthalate	1	2	ug/Kg	7.62	B
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	10.9	B
Caffeine	4	8	ug/Kg	<MDL	
Carbazole	2	4	ug/Kg	<MDL	
Chrysene	2	4	ug/Kg	<MDL	
Coprostanol	40	80	ug/Kg	<MDL	
Di-N-Butyl Phthalate	4	8	ug/Kg	6.8	B
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	
Dibenzofuran	2	4	ug/Kg	<MDL	
Diethyl Phthalate	4	8	ug/Kg	<MDL	
Dimethyl Phthalate	4	8	ug/Kg	<MDL	
Fluoranthene	2	4	ug/Kg	<MDL	
Fluorene	2	4	ug/Kg	<MDL	
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	
Hexachloroethane	1	2	ug/Kg	<MDL	
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	
Naphthalene	2	4	ug/Kg	<MDL	
Pentachlorophenol	10	20	ug/Kg	<MDL	
Phenanthrene	2	4	ug/Kg	<MDL	
Phenol	4	8	ug/Kg	<MDL	

Pyrene	2	4	ug/Kg	<MDL
Total HPAHS	2	4	ug/Kg	<MDL
Total LPAHs	2	4	ug/Kg	<MDL

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	375	162	43		13--110
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	375	174	46		10--116
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	375	182	48		18--95
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	375	148	39		21--99
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	375	77.2	21		10--81
2-Methylnaphthalene	2	4	ug/Kg	<MDL	375	174	47		22--99
2-Methylphenol	2	4	ug/Kg	<MDL	375	87.4	23		16--91
4-Methylphenol	4	8	ug/Kg	<MDL	375	102	27		10--125
Acenaphthene	2	4	ug/Kg	<MDL	375	237	63		29--102
Acenaphthylene	2	4	ug/Kg	<MDL	375	254	68		31--101
Anthracene	2	4	ug/Kg	<MDL	375	280	75		45--114
Benzo(a)anthracene	2	4	ug/Kg	<MDL	375	304	81		69--117
Benzo(a)pyrene	2	4	ug/Kg	<MDL	375	277	74		15--137
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	375	286	76		50--121
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	375	252	67		46--126
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	375	294	78		58--128
Benzoic Acid	10	20	ug/Kg	112	375	265	41		10--170
Benzyl Alcohol	2	4	ug/Kg	<MDL	375	119	32		10--119
Benzyl Butyl Phthalate	1	2	ug/Kg	7.62	375	344	90		15--183
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	10.9	375	334	86		10--182
Caffeine	4	8	ug/Kg	<MDL	375	279	74		45--159
Carbazole	2	4	ug/Kg	<MDL	375	296	79		44--179
Chrysene	2	4	ug/Kg	<MDL	375	281	75		69--111
Coprostanol	40	80	ug/Kg	<MDL	3750	2100	56		10--159
Di-N-Butyl Phthalate	4	8	ug/Kg	6.8	375	291	76		17--180
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	375	339	91		10--200
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	375	333	89		53--129
Dibenzofuran	2	4	ug/Kg	<MDL	375	255	68		37--97
Diethyl Phthalate	4	8	ug/Kg	<MDL	375	223	59		51--118
Dimethyl Phthalate	4	8	ug/Kg	<MDL	375	222	59		38--114
Fluoranthene	2	4	ug/Kg	<MDL	375	256	68		55--132
Fluorene	2	4	ug/Kg	<MDL	375	226	60		39--106
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	375	223	59		40--111
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	375	146	39		10--97
Hexachloroethane	1	2	ug/Kg	<MDL	375	174	46		17--92
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	375	302	80		51--132
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	375	248	66		11--148
Naphthalene	2	4	ug/Kg	<MDL	375	154	41		17--94
Pentachlorophenol	10	20	ug/Kg	<MDL	375	245	65		38--124
Phenanthrene	2	4	ug/Kg	<MDL	375	265	71		57--104
Phenol	4	8	ug/Kg	<MDL	375	110	29		10--107
Pyrene	2	4	ug/Kg	<MDL	375	272	73		48--132

Total HPAHS	2	4	ug/Kg	<MDL	3750	2860	76		25--150						
Total LPAHs	2	4	ug/Kg	<MDL	2630	1590	61		25--150						

(Matrix Spike Duplicate, Matrix Spike) L45302-1

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
1,2,4-Trichlorobenzene	0.5	1	ug/Kg	<MDL	375	231	62		10--115	375	205	55		12		35
1,2-Dichlorobenzene	1	2	ug/Kg	<MDL	375	211	56		10--105	375	190	51		9		35
1,3-Dichlorobenzene	1	2	ug/Kg	<MDL	375	206	55		10--103	375	196	52		6		35
1,4-Dichlorobenzene	1	2	ug/Kg	1.08	375	199	53		10--104	375	163	43		21		35
2,4-Dimethylphenol	5	10	ug/Kg	<MDL	375	258	69		10--150	375	227	60		14		35
2-Methylnaphthalene	10	20	ug/Kg	5.25	375	284	74		22--112	375	236	62		18		35
2-Methylphenol	10	20	ug/Kg	<MDL	375	282	75		10--142	375	254	68		10		35
4-Methylphenol	20	40	ug/Kg	<MDL	375	256	68		10--163	375	231	62		9		35
Acenaphthene	10	20	ug/Kg	7.85	375	309	80		25--130	375	289	75		6		35
Acenaphthylene	10	20	ug/Kg	5.31	375	323	85		27--132	375	309	81		5		35
Anthracene	10	20	ug/Kg	36.1	375	388	94		10--181	375	373	90		4		35
Benzo(a)anthracene	10	20	ug/Kg	145	375	481	90		32--168	375	447	81		11		35
Benzo(a)pyrene	10	20	ug/Kg	118	375	473	95		10--200	375	425	82		15		35
Benzo(b)fluoranthene	10	20	ug/Kg	169	375	484	84		10--199	375	427	69		20		35
Benzo(g,h,i)perylene	10	20	ug/Kg	77.6	375	269	51		10--173	375	261	49		4		35
Benzo(k)fluoranthene	10	20	ug/Kg	126	375	566	117		10--192	375	472	92		24		35
Benzoic Acid	50	100	ug/Kg	295	375	625	88		10--158	375	590	79		11		35
Benzyl Alcohol	10	20	ug/Kg	<MDL	375	127	34		10--138	375	153	41		19		35
Benzyl Butyl Phthalate	5	10	ug/Kg	77.9	375	442	97		41--145	375	442	97		0		35
Bis(2-Ethylhexyl)Phthalate	20	40	ug/Kg	1040	375	1700	176		10--189	375	1420	101		54	*	35
Caffeine	20	40	ug/Kg	<MDL	375	249	66		17--195	375	266	71		7		35
Carbazole	10	20	ug/Kg	74.3	375	320	66		16--200	375	376	80		19		35
Chrysene	10	20	ug/Kg	202	375	570	98		14--184	375	496	79		21		35
Coprostanol	200	400	ug/Kg	<MDL	3750	1250	33		10--183	3750	825	22		40	*	35
Di-N-Butyl Phthalate	20	40	ug/Kg	23.3	375	309	76		10--194	375	329	81		6		35
Di-N-Octyl Phthalate	20	40	ug/Kg	<MDL	375	512	137		52--151	375	485	129		6		35
Dibenzo(a,h)anthracene	10	20	ug/Kg	42.9	375	336	78		10--166	375	319	74		5		35
Dibenzofuran	10	20	ug/Kg	6.47	375	313	82		21--134	375	297	78		5		35
Diethyl Phthalate	20	40	ug/Kg	<MDL	375	255	68		31--150	375	243	65		5		35
Dimethyl Phthalate	20	40	ug/Kg	<MDL	375	252	67		13--162	375	239	64		5		35
Fluoranthene	10	20	ug/Kg	239	375	501	70		12--188	375	482	65		7		35
Fluorene	10	20	ug/Kg	23.4	375	293	72		22--147	375	277	68		6		35
Hexachlorobenzene	0.5	1	ug/Kg	<MDL	375	251	67		18--151	375	242	65		3		35
Hexachlorobutadiene	2.5	5	ug/Kg	<MDL	375	206	55		10--97	375	184	49		12		35
Hexachloroethane	5	10	ug/Kg	<MDL	375	208	55		10--89	375	191	51		8		35
Indeno(1,2,3-Cd)Pyrene	10	20	ug/Kg	85.8	375	355	72		10--177	375	339	68		6		35
N-Nitrosodiphenylamine	20	40	ug/Kg	<MDL	375	307	82		10--169	375	298	79		4		35
Naphthalene	10	20	ug/Kg	4.36	375	252	66		12--97	375	221	58		13		35
Pentachlorophenol	50	100	ug/Kg	<MDL	375	280	75		17--170	375	278	74		1		35
Phenanthrene	10	20	ug/Kg	105	375	464	96		10--200	375	390	76		23		35
Phenol	20	40	ug/Kg	37.2	375	262	60		10--127	375	234	52		14		35
Pyrene	10	20	ug/Kg	406	375	648	64		20--174	375	519	30		72	*	35
Total HPAHS	10	20	ug/Kg	1610	3750	4680	82		25--150	3750	4190	69		17		35

Total LPAHs	10	20	ug/Kg	177	2630	2310	81		25--150	2630	2090	73	10	35

(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
Anthracene	270	533	ug/Kg	1750	632	36		28--98
Benzo(a)anthracene	270	533	ug/Kg	4660	3220	69		66--124
Benzo(a)pyrene	270	533	ug/Kg	4240	2660	63		60--116
Benzo(b)fluoranthene	270	533	ug/Kg	3820	2560	67		52--190
Benzo(g,h,i)perylene	270	533	ug/Kg	2800	1430	51		15--121
Benzo(k)fluoranthene	270	533	ug/Kg	2270	2440	107		60--146
Chrysene	270	533	ug/Kg	4800	4260	89		77--136
Dibenzo(a,h)anthracene	130	267	ug/Kg	419	341	81		10--200
Fluoranthene	270	533	ug/Kg	8800	6020	68		45--126
Indeno(1,2,3-Cd)Pyrene	270	533	ug/Kg	2740	1820	66		33--121
Naphthalene	130	267	ug/Kg	1630	250	16		10--29
Phenanthrene	270	533	ug/Kg	5200	3530	68		51--106
Pyrene	270	533	ug/Kg	9570	6290	66		36--135

(Lab Duplicate) L45302-2

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	<MDL			35
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	<MDL			35
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	<MDL			35
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	0.778	1.05	30		35
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	<MDL			35
2-Methylnaphthalene	2	4	ug/Kg	20.9	25.8	21		35
2-Methylphenol	2	4	ug/Kg	<MDL	<MDL			35
4-Methylphenol	4	8	ug/Kg	<MDL	<MDL			35
Acenaphthene	2	4	ug/Kg	48.3	63.1	27		35
Acenaphthylene	2	4	ug/Kg	9.02	9.84	9		35
Anthracene	2	4	ug/Kg	75.6	92.6	20		35
Benzo(a)anthracene	2	4	ug/Kg	319	303	5		35
Benzo(a)pyrene	2	4	ug/Kg	175	170	3		35
Benzo(b)fluoranthene	2	4	ug/Kg	272	222	20		35
Benzo(g,h,i)perylene	2	4	ug/Kg	74	83.8	12		35
Benzo(k)fluoranthene	2	4	ug/Kg	190	208	9		35
Benzoic Acid	10	20	ug/Kg	587	754	25		35
Benzyl Alcohol	2	4	ug/Kg	<MDL	<MDL			35
Benzyl Butyl Phthalate	1	2	ug/Kg	58.5	68.4	16		35
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	722	893	21		35
Caffeine	4	8	ug/Kg	<MDL	<MDL			35
Carbazole	2	4	ug/Kg	16.8	19.6	16		35
Chrysene	2	4	ug/Kg	342	349	2		35
Coprostanol	40	80	ug/Kg	<MDL	<MDL			35
Di-N-Butyl Phthalate	4	8	ug/Kg	16.4	20.1	20		35
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Dibenzo(a,h)anthracene	2	4	ug/Kg	45.4	47.1	4		35
Dibenzofuran	2	4	ug/Kg	31.9	38.9	20		35

Diethyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Dimethyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Fluoranthene	2	4	ug/Kg	719	662	8		35
Fluorene	2	4	ug/Kg	59.2	66.6	12		35
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	<MDL			35
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	<MDL			35
Hexachloroethane	1	2	ug/Kg	<MDL	<MDL			35
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	95.1	96.8	2		35
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	<MDL			35
Naphthalene	2	4	ug/Kg	5.99	5.62	6		35
Pentachlorophenol	10	20	ug/Kg	<MDL	<MDL			35
Phenanthrene	2	4	ug/Kg	302	336	11		35
Phenol	4	8	ug/Kg	19.8	93	130	E	35
Pyrene	2	4	ug/Kg	974	912	7		35
Total HPAHS	2	4	ug/Kg	3130	3050	2		35
Total LPAHs	2	4	ug/Kg	499	587	16		35

Surrogate:	2,4,6-Tribromophenol	2-Fluorobiphenyl	2-Fluorophenol	d14-Terphenyl	d4-1,2-Dichlorobenzene	d4-2-Chlorophenol	d5-Nitrobenzene	d5-Phenol
(Lab Limits)	29--112	31--101	10--112	51--130	24--91	11--105	28--94	10--106
L45302-1	66	69	35	129	36	33	30	40
L45302-2	64	64	29	129	34	20	30	28
L45302-3	69	64	37	107	36	29	31	20
L45302-4	65	65	42	92	40	37	37	23
L45302-5	70	69	51	92	47	39	42	23
L45302-6	61	58	19	100	29	14	34	20
L45302-7	65	66	24	125	32	36	31	63
L45302-8	62	64	48	129	46	75	30	72
L45302-9	62	65	35	110	35	23	41	19
L45303-1	75	59	44	80	41	53	60	47
L45303-2	76	48	36	77	34	42	49	32
L45303-3	72	52	39	78	38	49	54	38
L45303-4	78	52	47	80	46	53	64	36
L45303-5	75	49	41	83	40	49	55	39
L45303-6	46	33	28	56	28	33	36	28
L45303-7	70	53	43	75	40	49	57	41
L45303-8	74	54	44	79	41	51	58	41
L45304-1	65	65	58	80	58	61	70	47
L45304-2	69	65	49	104	48	57	63	46
L45304-3	73	62	50	94	50	50	65	36
WG95938-1	68	31	39	75	40	43	60	22
WG95938-2	62	38	45	77	70	47	48	32
WG95938-3	96	71	74	101	106 L	92	82	87
WG95938-4	78	58	52	79	76	68	59	67
WG95938-5	72	59	54	74	50	65	59	62
WG95938-6	65	63	44	113	42	42	44	34

LIMSView Batch Report - run on 05/13/08, 10:24 am

WG95990 (Semi Volatile Organics)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45304-4	423062-100-4	SALTWTRSED	3/24/2008 10:22	31-Mar-08	8-Apr-08	WG95990-1, -2, -3, -4, -5, -6	
L45304-5	423062-100-4	SALTWTRSED	3/24/2008 10:30	31-Mar-08	8-Apr-08	WG95990-1, -2, -3, -4, -5, -6	
L45304-6	423062-100-4	SALTWTRSED	3/24/2008 10:40	31-Mar-08	8-Apr-08	WG95990-1, -2, -3, -4, -5, -6	FREP @L45304-5
L45304-7	423062-100-4	SALTWTRSED	3/24/2008 10:55	31-Mar-08	8-Apr-08	WG95990-1, -2, -3, -4, -5, -6	
L45304-8	423062-100-4	SALTWTRSED	3/24/2008 11:10	31-Mar-08	8-Apr-08	WG95990-1, -2, -3, -4, -5, -6	
L45304-9	423062-100-4	SALTWTRSED	3/24/2008 11:25	31-Mar-08	8-Apr-08	WG95990-1, -2, -3, -4, -5, -6	
WG95990-1	MB	OTHR SOLID		31-Mar-08	8-Apr-08	WG95990-1, -2, -3, -4, -5, -6	MB080331
WG95990-2	SB	OTHR SOLID		31-Mar-08	8-Apr-08	WG95990-1, -2, -3, -4, -5, -6	WG95990-1
WG95990-3	MS	SALTWTRSED		31-Mar-08	8-Apr-08	WG95990-1, -2, -3, -4, -5, -6	L45304-5
WG95990-4	MSD	SALTWTRSED		31-Mar-08	8-Apr-08	WG95990-1, -2, -3, -4, -5, -6	WG95990-3 L45304-5
WG95990-5	SRM	SALTWTRSED		31-Mar-08	8-Apr-08	WG95990-1, -2, -3, -4, -5, -6	1944
WG95990-6	LD	SALTWTRSED		31-Mar-08	8-Apr-08	WG95990-1, -2, -3, -4, -5, -6	L45304-6

LIMSView Analytical QC Report - run on 05/13/08 10:24 am

Workgroup: WG95990 (Semi Volatile Organics)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	
2-Methylnaphthalene	2	4	ug/Kg	<MDL	
2-Methylphenol	2	4	ug/Kg	<MDL	
4-Methylphenol	4	8	ug/Kg	<MDL	
Acenaphthene	2	4	ug/Kg	<MDL	
Acenaphthylene	2	4	ug/Kg	<MDL	
Anthracene	2	4	ug/Kg	<MDL	
Benzo(a)anthracene	2	4	ug/Kg	<MDL	
Benzo(a)pyrene	2	4	ug/Kg	<MDL	
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	
Benzoic Acid	10	20	ug/Kg	<MDL	
Benzyl Alcohol	2	4	ug/Kg	<MDL	
Benzyl Butyl Phthalate	1	2	ug/Kg	<MDL	
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	11.2	B
Caffeine	4	8	ug/Kg	<MDL	
Carbazole	2	4	ug/Kg	<MDL	
Chrysene	2	4	ug/Kg	<MDL	
Coprostanol	40	80	ug/Kg	<MDL	
Di-N-Butyl Phthalate	4	8	ug/Kg	<MDL	
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	
Dibenzofuran	2	4	ug/Kg	<MDL	
Diethyl Phthalate	4	8	ug/Kg	<MDL	
Dimethyl Phthalate	4	8	ug/Kg	<MDL	
Fluoranthene	2	4	ug/Kg	<MDL	
Fluorene	2	4	ug/Kg	<MDL	
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	
Hexachloroethane	1	2	ug/Kg	<MDL	
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	
Naphthalene	2	4	ug/Kg	<MDL	
Pentachlorophenol	10	20	ug/Kg	<MDL	
Phenanthrene	2	4	ug/Kg	<MDL	
Phenol	4	8	ug/Kg	<MDL	

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Pyrene	2	4	ug/Kg	<MDL
Total HPAHS	2	4	ug/Kg	<MDL
Total LPAHs	2	4	ug/Kg	<MDL

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	375	201	54		13--110
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	375	245	65		10--116
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	375	257	69		18--95
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	375	227	61		21--99
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	375	24.5	7	*	10--81
2-Methylnaphthalene	2	4	ug/Kg	<MDL	375	171	46		22--99
2-Methylphenol	2	4	ug/Kg	<MDL	375	79.1	21		16--91
4-Methylphenol	4	8	ug/Kg	<MDL	375	83.9	22		10--125
Acenaphthene	2	4	ug/Kg	<MDL	375	237	63		29--102
Acenaphthylene	2	4	ug/Kg	<MDL	375	255	68		31--101
Anthracene	2	4	ug/Kg	<MDL	375	217	58		45--114
Benzo(a)anthracene	2	4	ug/Kg	<MDL	375	278	74		69--117
Benzo(a)pyrene	2	4	ug/Kg	<MDL	375	189	50		15--137
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	375	283	75		50--121
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	375	244	65		46--126
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	375	281	75		58--128
Benzoic Acid	10	20	ug/Kg	<MDL	375	189	50		10--170
Benzyl Alcohol	2	4	ug/Kg	<MDL	375	164	44		10--119
Benzyl Butyl Phthalate	1	2	ug/Kg	<MDL	375	351	94		15--183
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	11.2	375	331	85		10--182
Caffeine	4	8	ug/Kg	<MDL	375	246	66		45--159
Carbazole	2	4	ug/Kg	<MDL	375	265	71		44--179
Chrysene	2	4	ug/Kg	<MDL	375	271	72		69--111
Coprostanol	40	80	ug/Kg	<MDL	3750	1780	47		10--159
Di-N-Butyl Phthalate	4	8	ug/Kg	<MDL	375	282	75		17--180
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	375	349	93		10--200
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	375	331	88		53--129
Dibenzofuran	2	4	ug/Kg	<MDL	375	257	68		37--97
Diethyl Phthalate	4	8	ug/Kg	<MDL	375	231	61		51--118
Dimethyl Phthalate	4	8	ug/Kg	<MDL	375	232	62		38--114
Fluoranthene	2	4	ug/Kg	<MDL	375	224	60		55--132
Fluorene	2	4	ug/Kg	<MDL	375	228	61		39--106
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	375	217	58		40--111
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	375	177	47		10--97
Hexachloroethane	1	2	ug/Kg	<MDL	375	214	57		17--92
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	375	295	79		51--132
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	375	147	39		11--148
Naphthalene	2	4	ug/Kg	<MDL	375	198	53		17--94
Pentachlorophenol	10	20	ug/Kg	<MDL	375	203	54		38--124
Phenanthrene	2	4	ug/Kg	<MDL	375	262	70		57--104
Phenol	4	8	ug/Kg	<MDL	375	127	34		10--107

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Pyrene	2	4	ug/Kg	<MDL	375	278	74	48--132
Total HPAHS	2	4	ug/Kg	<MDL	3750	2670	71	25--150
Total LPAHs	2	4	ug/Kg	<MDL	2630	1570	60	25--150

(Matrix Spike Duplicate, Matrix Spike) L45304-5

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	375	167	45		10--115	375	177	47		4		35
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	375	223	60		10--105	375	219	58		3		35
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	375	225	60		10--103	375	240	64		6		35
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	0.486	375	202	54		10--104	375	187	50		8		35
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	375	130	35		10--150	375	136	36		3		35
2-Methylnaphthalene	2	4	ug/Kg	<MDL	375	194	52		22--112	375	207	55		6		35
2-Methylphenol	2	4	ug/Kg	<MDL	375	140	37		10--142	375	131	35		6		35
4-Methylphenol	4	8	ug/Kg	<MDL	375	154	41		10--163	375	145	39		5		35
Acenaphthene	2	4	ug/Kg	2.1	375	236	62		25--130	375	242	64		3		35
Acenaphthylene	2	4	ug/Kg	<MDL	375	251	67		27--132	375	249	67		0		35
Anthracene	2	4	ug/Kg	8.76	375	300	78		10--181	375	298	77		1		35
Benzo(a)anthracene	2	4	ug/Kg	23.5	375	303	75		32--168	375	316	78		4		35
Benzo(a)pyrene	2	4	ug/Kg	24	375	291	71		10--200	375	296	72		1		35
Benzo(b)fluoranthene	2	4	ug/Kg	24.5	375	306	75		10--199	375	352	87		15		35
Benzo(g,h,i)perylene	2	4	ug/Kg	10.4	375	213	54		10--173	375	206	52		4		35
Benzo(k)fluoranthene	2	4	ug/Kg	23.5	375	308	76		10--192	375	289	71		7		35
Benzoic Acid	10	20	ug/Kg	123	375	293	45		10--158	375	343	59		27		35
Benzyl Alcohol	2	4	ug/Kg	<MDL	375	170	45		10--138	375	183	49		9		35
Benzyl Butyl Phthalate	1	2	ug/Kg	12.4	375	350	90		41--145	375	358	92		2		35
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	80.1	375	528	119		10--189	375	452	99		18		35
Caffeine	4	8	ug/Kg	<MDL	375	255	68		17--195	375	180	48		34		35
Carbazole	2	4	ug/Kg	3.6	375	245	64		16--200	375	215	56		13		35
Chrysene	2	4	ug/Kg	32.1	375	288	68		14--184	375	301	72		6		35
Coprostanol	40	80	ug/Kg	<MDL	3750	1350	36		10--183	3750	1010	27		29		35
Di-N-Butyl Phthalate	4	8	ug/Kg	5.1	375	297	78		10--194	375	279	73		7		35
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	375	398	106		52--151	375	419	112		6		35
Dibenzo(a,h)anthracene	2	4	ug/Kg	2.4	375	295	78		10--166	375	291	77		1		35
Dibenzofuran	2	4	ug/Kg	<MDL	375	243	65		21--134	375	253	67		3		35
Diethyl Phthalate	4	8	ug/Kg	4.8	375	208	54		31--150	375	218	57		5		35
Dimethyl Phthalate	4	8	ug/Kg	16.9	375	211	52		13--162	375	224	55		6		35
Fluoranthene	2	4	ug/Kg	49.9	375	256	55		12--188	375	231	48		14		35
Fluorene	2	4	ug/Kg	5.29	375	218	57		22--147	375	227	59		3		35
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	375	234	62		18--151	375	244	65		5		35
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	375	150	40		10--97	375	153	41		2		35
Hexachloroethane	1	2	ug/Kg	<MDL	375	194	52		10--89	375	182	48		8		35
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	12.4	375	264	67		10--177	375	259	66		2		35
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	375	184	49		10--169	375	153	41		18		35
Naphthalene	2	4	ug/Kg	<MDL	375	176	47		12--97	375	178	48		2		35
Pentachlorophenol	10	20	ug/Kg	<MDL	375	277	74		17--170	375	262	70		6		35
Phenanthrene	2	4	ug/Kg	33.8	375	285	67		10--200	375	293	69		3		35
Phenol	4	8	ug/Kg	54.8	375	174	32		10--127	375	220	44		32		35

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Pyrene	2	4	ug/Kg	58.1	375	283	60		20--174	375	317	69	14	35
Total HPAHS	2	4	ug/Kg	261	3750	2810	68		25--150	3750	2860	69	1	35
Total LPAHs	2	4	ug/Kg	51.4	2630	1660	61		25--150	2630	1700	63	3	35

(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
Anthracene	270	533	ug/Kg	1750	727	42		28--98
Benzo(a)anthracene	270	533	ug/Kg	4660	3090	66		66--124
Benzo(a)pyrene	270	533	ug/Kg	4240	2720	64		60--116
Benzo(b)fluoranthene	270	533	ug/Kg	3820	2220	58		52--190
Benzo(g,h,i)perylene	270	533	ug/Kg	2800	1830	65		15--121
Benzo(k)fluoranthene	270	533	ug/Kg	2270	3050	134		60--146
Chrysene	270	533	ug/Kg	4800	4260	89		77--136
Dibenzo(a,h)anthracene	130	267	ug/Kg	419	347	83		10--200
Fluoranthene	270	533	ug/Kg	8800	5130	58		45--126
Indeno(1,2,3-Cd)Pyrene	270	533	ug/Kg	2740	1620	59		33--121
Naphthalene	130	267	ug/Kg	1630	314	19		10--29
Phenanthrene	270	533	ug/Kg	5200	3450	66		51--106
Pyrene	270	533	ug/Kg	9570	6300	66		36--135

(Lab Duplicate) L45304-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	<MDL			35
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	<MDL			35
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	<MDL			35
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	1.36	0.459	99	E	35
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	<MDL			35
2-Methylnaphthalene	2	4	ug/Kg	<MDL	<MDL			35
2-Methylphenol	2	4	ug/Kg	<MDL	<MDL			35
4-Methylphenol	4	8	ug/Kg	<MDL	<MDL			35
Acenaphthene	2	4	ug/Kg	<MDL	<MDL			35
Acenaphthylene	2	4	ug/Kg	<MDL	<MDL			35
Anthracene	2	4	ug/Kg	2.1	2.5			35
Benzo(a)anthracene	2	4	ug/Kg	4.79	8.01	50	E	35
Benzo(a)pyrene	2	4	ug/Kg	9.65	11.4	17		35
Benzo(b)fluoranthene	2	4	ug/Kg	9.01	11.8	26		35
Benzo(g,h,i)perylene	2	4	ug/Kg	4.46	5	11		35
Benzo(k)fluoranthene	2	4	ug/Kg	9.61	12.3	24		35
Benzoic Acid	10	20	ug/Kg	126	158	23		35
Benzyl Alcohol	2	4	ug/Kg	<MDL	<MDL			35
Benzyl Butyl Phthalate	1	2	ug/Kg	9.61	9.12	5		35
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	43.7	38.6	12		35
Caffeine	4	8	ug/Kg	<MDL	<MDL			35
Carbazole	2	4	ug/Kg	<MDL	<MDL			35
Chrysene	2	4	ug/Kg	11.6	16.2	33		35
Coprostanol	40	80	ug/Kg	<MDL	<MDL			35
Di-N-Butyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35

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Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	<MDL			35
Dibenzofuran	2	4	ug/Kg	<MDL	<MDL			35
Diethyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Dimethyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Fluoranthene	2	4	ug/Kg	10.8	17.5	47	E	35
Fluorene	2	4	ug/Kg	3.4	3.4			35
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	<MDL			35
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	<MDL			35
Hexachloroethane	1	2	ug/Kg	<MDL	<MDL			35
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	5.83	7.14	20		35
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	<MDL			35
Naphthalene	2	4	ug/Kg	<MDL	<MDL			35
Pentachlorophenol	10	20	ug/Kg	<MDL	<MDL			35
Phenanthrene	2	4	ug/Kg	6.11	8.15	29		35
Phenol	4	8	ug/Kg	82.4	69.7	17		35
Pyrene	2	4	ug/Kg	10.6	17	46	E	35
Total HPAHS	2	4	ug/Kg	76	106	33		35
Total LPAHs	2	4	ug/Kg	12	15.4	24		35

Surrogate:	**2,4,6-Tribromophenol**	**2-Fluorobiphenyl**	**2-Fluorophenol**	**d14-Terphenyl**	**d4-1,2-Dichlorobenzene**	**d4-2-Chlorophenol**	**d5-Nitrobenzene**	**d5-Phenol**
(Lab Limits)	**29--112**	**31--101**	**10--112**	**51--130**	**24--91**	**11--105**	**28--94**	**10--106**
L45304-4	57	54	48	79	49	47	65	35
L45304-5	67	43	49	82	47	55	60	36
L45304-6	56	42	49	75	47	55	57	38
L45304-7	55	39	43	68	41	45	52	30
L45304-8	55	47	44	72	46	44	61	30
L45304-9	54	47	42	72	42	47	56	33
WG95990-1	47	35	39	71	53	39	66	23
WG95990-2	48	40	56	77	90	60	56	36
WG95990-3	57	43	51	72	83	50	47	37
WG95990-4	60	45	57	83	83	60	52	40
WG95990-5	59	55	63	69	58	73	66	64
WG95990-6	56	37	53	71	53	52	68	29

WG95964 (PCB)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45302-1	423062-200-4	SALTWTRSED	3/24/2008 12:08	28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-2	423062-200-4	SALTWTRSED	3/24/2008 12:28	28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-3	423062-200-4	SALTWTRSED	3/24/2008 13:05	28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-4	423062-200-4	SALTWTRSED	3/24/2008 13:21	28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	FREP @ L45302-3
L45302-5	423062-200-4	SALTWTRSED	3/24/2008 14:03	28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-6	423062-200-4	SALTWTRSED	3/24/2008 14:30	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-7	423062-200-4	SALTWTRSED	3/25/2008 9:00	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-8	423062-200-4	SALTWTRSED	3/25/2008 9:45	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-9	423062-200-4	SALTWTRSED	3/25/2008 10:30	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-1	423062-200-4	SALTWTRSED	3/25/2008 11:15	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-2	423062-200-4	SALTWTRSED	3/25/2008 11:30	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-3	423062-200-4	SALTWTRSED	3/25/2008 11:40	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	FREP @ L45303-2
L45303-4	423062-200-4	SALTWTRSED	3/25/2008 12:00	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-5	423062-200-4	SALTWTRSED	3/25/2008 12:10	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-6	423062-200-4	SALTWTRSED	3/25/2008 12:25	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-7	423062-200-4	SALTWTRSED	3/25/2008 12:40	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-8	423062-200-4	SALTWTRSED	3/25/2008 12:54	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45304-1	423062-100-4	SALTWTRSED	3/24/2008 9:35	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45304-2	423062-100-4	SALTWTRSED	3/24/2008 9:50	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45304-3	423062-100-4	SALTWTRSED	3/24/2008 10:08	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
WG95964-1	MB	OTHR SOLID		28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	MB080328
WG95964-2	SB	OTHR SOLID		28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	WG95964-1
WG95964-3	MS	SALTWTRSED		28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	L45302-4
WG95964-4	MSD	SALTWTRSED		28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	WG95964-3 L45302-4
WG95964-6	LD	SALTWTRSED		28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	L45304-1

Workgroup: WG95964 (PCB)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	
Aroclor 1221	1.7	3.33	ug/Kg	<MDL	
Aroclor 1232	1.7	3.33	ug/Kg	<MDL	
Aroclor 1242	0.83	1.67	ug/Kg	<MDL	
Aroclor 1248	0.83	1.67	ug/Kg	<MDL	
Aroclor 1254	0.83	1.67	ug/Kg	<MDL	
Aroclor 1260	0.83	1.67	ug/Kg	<MDL	
Total Aroclors	0.83	1.67	ug/Kg	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	25	16.9	68		39--121
Aroclor 1260	0.83	1.67	ug/Kg	<MDL	25	20	80		53--140

(Matrix Spike Duplicate, Matrix Spike) L45302-4

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	25	14.6	58		32--164	25	18.8	75		26		35
Aroclor 1260	0.83	1.67	ug/Kg	19.8	25	35.9	64		28--144	25	40.9	84		27		35

(Lab Duplicate) L45304-1

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Aroclor 1016	6.6	13.2	ug/Kg	<MDL	<MDL			35
Aroclor 1221	2.9	5.73	ug/Kg	<MDL	<MDL			35
Aroclor 1232	13	25.7	ug/Kg	<MDL	<MDL			35
Aroclor 1242	11	21.8	ug/Kg	<MDL	<MDL			35
Aroclor 1248	0.83	1.67	ug/Kg	7.75	8.49	9		35
Aroclor 1254	0.83	1.67	ug/Kg	9.84	10.1	3		35
Aroclor 1260	0.83	1.67	ug/Kg	3.53	3.8	7		35
Total Aroclors	0.83	1.67	ug/Kg	21.1	22.4	6		35

Surrogate:	2,4,5,6-Tetrachloro-m-xylene	Decachlorobiphenyl
(Lab Limits)	30--134	15--155
L45302-1	73	61
L45302-2	69	60
L45302-3	72	67
L45302-4	70	67
L45302-5	69	64
L45302-6	72	66
L45302-7	73	60
L45302-8	64	59
L45302-9	73	66
L45303-1	76	68
L45303-2	64	63
L45303-3	70	69
L45303-4	63	65
L45303-5	48	47
L45303-6	64	59
L45303-7	70	64
L45303-8	69	64
L45304-1	69	57
L45304-2	69	56
L45304-3	65	59
WG95964-1	62	73
WG95964-2	73	95
WG95964-3	85	90
WG95964-4	90	87
WG95964-6	76	57

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WG96007 (PCB)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45304-4	423062-100-4	SALTWTRSED	3/24/2008 10:22	1-Apr-08	29-Apr-08	WG96007-1, -2, -3, -4, -5, -6	
L45304-5	423062-100-4	SALTWTRSED	3/24/2008 10:30	1-Apr-08	29-Apr-08	WG96007-1, -2, -3, -4, -5, -6	
L45304-6	423062-100-4	SALTWTRSED	3/24/2008 10:40	1-Apr-08	29-Apr-08	WG96007-1, -2, -3, -4, -5, -6	FREP @L45304-5
L45304-7	423062-100-4	SALTWTRSED	3/24/2008 10:55	1-Apr-08	29-Apr-08	WG96007-1, -2, -3, -4, -5, -6	
L45304-8	423062-100-4	SALTWTRSED	3/24/2008 11:10	1-Apr-08	29-Apr-08	WG96007-1, -2, -3, -4, -5, -6	
L45304-9	423062-100-4	SALTWTRSED	3/24/2008 11:25	1-Apr-08	29-Apr-08	WG96007-1, -2, -3, -4, -5, -6	
WG96007-1	MB	OTHR SOLID		1-Apr-08	29-Apr-08	WG96007-1, -2, -3, -4, -5, -6	MB040108
WG96007-2	SB	OTHR SOLID		1-Apr-08	29-Apr-08	WG96007-1, -2, -3, -4, -5, -6	WG96007-1
WG96007-3	MS	SALTWTRSED		1-Apr-08	29-Apr-08	WG96007-1, -2, -3, -4, -5, -6	L45304-6
WG96007-4	MSD	SALTWTRSED		1-Apr-08	29-Apr-08	WG96007-1, -2, -3, -4, -5, -6	WG96007-3 L45304-6
WG96007-5	SRM	SALTWTRSED		1-Apr-08	29-Apr-08	WG96007-1, -2, -3, -4, -5, -6	HS-2
WG96007-6	LD	SALTWTRSED		1-Apr-08	29-Apr-08	WG96007-1, -2, -3, -4, -5, -6	L45304-4

LIMSView Analytical QC Report - run on 05/13/08 10:24 am
Workgroup: WG96007 (PCB)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	
Aroclor 1221	1.7	3.33	ug/Kg	<MDL	
Aroclor 1232	1.7	3.33	ug/Kg	<MDL	
Aroclor 1242	0.83	1.67	ug/Kg	<MDL	
Aroclor 1248	0.83	1.67	ug/Kg	<MDL	
Aroclor 1254	0.83	1.67	ug/Kg	<MDL	
Aroclor 1260	0.83	1.67	ug/Kg	<MDL	
Total Aroclors	0.83	1.67	ug/Kg	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	25	14.5	58		39--121
Aroclor 1260	0.83	1.67	ug/Kg	<MDL	25	17.7	71		53--140

(Matrix Spike Duplicate, Matrix Spike) L45304-6

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	25	18.4	73		32--164	25	17.5	70		4		35
Aroclor 1260	0.83	1.67	ug/Kg	1.84	25	17.8	64		28--144	25	18.3	66		3		35

(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
Aroclor 1254	2.7	5.33	ug/Kg	55.9	72.7	130		57--139

(Lab Duplicate) L45304-4

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Aroclor 1016	10	20.1	ug/Kg	<MDL	<MDL			35
Aroclor 1221	1.7	3.33	ug/Kg	<MDL	<MDL			35
Aroclor 1232	1.7	3.33	ug/Kg	<MDL	<MDL			35
Aroclor 1242	15	30.3	ug/Kg	<MDL	<MDL			35
Aroclor 1248	0.83	1.67	ug/Kg	13	14.1	8		35
Aroclor 1254	0.83	1.67	ug/Kg	21	22.7	8		35
Aroclor 1260	0.83	1.67	ug/Kg	14.8	18	20		35
Total Aroclors	0.83	1.67	ug/Kg	48.7	54.8	12		35

LIMSView Analytical QC Report - run on 05/13/08 10:24 am

Surrogate:	2,4,5,6-Tetrachloro-m-xylene	Decachlorobiphenyl
(Lab Limits)	30--134	15--155
L45304-4	73	63
L45304-5	60	64
L45304-6	53	66
L45304-7	60	63
L45304-8	65	70
L45304-9	67	65
WG96007-1	35	70
WG96007-2	60	82
WG96007-3	74	79
WG96007-4	58	81
WG96007-5	79	85
WG96007-6	65	62

WG95963 (Chlorinated Pesticides)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45302-1	423062-200-4	SALTWTRSED	3/24/2008 12:08	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-2	423062-200-4	SALTWTRSED	3/24/2008 12:28	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-3	423062-200-4	SALTWTRSED	3/24/2008 13:05	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-4	423062-200-4	SALTWTRSED	3/24/2008 13:21	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	FREP @ L45302-3
L45302-5	423062-200-4	SALTWTRSED	3/24/2008 14:03	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-6	423062-200-4	SALTWTRSED	3/24/2008 14:30	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-7	423062-200-4	SALTWTRSED	3/25/2008 9:00	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-8	423062-200-4	SALTWTRSED	3/25/2008 9:45	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-9	423062-200-4	SALTWTRSED	3/25/2008 10:30	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-1	423062-200-4	SALTWTRSED	3/25/2008 11:15	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-2	423062-200-4	SALTWTRSED	3/25/2008 11:30	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-3	423062-200-4	SALTWTRSED	3/25/2008 11:40	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	FREP @ L45303-2
L45303-4	423062-200-4	SALTWTRSED	3/25/2008 12:00	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-5	423062-200-4	SALTWTRSED	3/25/2008 12:10	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-6	423062-200-4	SALTWTRSED	3/25/2008 12:25	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-7	423062-200-4	SALTWTRSED	3/25/2008 12:40	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-8	423062-200-4	SALTWTRSED	3/25/2008 12:54	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45304-1	423062-100-4	SALTWTRSED	3/24/2008 9:35	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45304-2	423062-100-4	SALTWTRSED	3/24/2008 9:50	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45304-3	423062-100-4	SALTWTRSED	3/24/2008 10:08	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
WG95963-1	MB	OTHR SOLID		28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	MB080328
WG95963-2	SB	OTHR SOLID		28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	WG95963-1
WG95963-3	MS	SALTWTRSED		28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	L45302-3
WG95963-4	MSD	SALTWTRSED		28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	WG95963-3 L45302-3
WG95963-5	SRM	SALTWTRSED		28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	1944
WG95963-6	LD	SALTWTRSED		28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	L45304-1

Workgroup: WG95963 (Chlorinated Pesticides)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	
Aldrin	0.67	1.33	ug/Kg	<MDL	
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	
Alpha-Chlordane	0.33	0.667	ug/Kg	<MDL	
Beta-BHC	0.33	0.667	ug/Kg	<MDL	
Delta-BHC	0.33	0.667	ug/Kg	<MDL	
Dieldrin	0.67	1.33	ug/Kg	<MDL	
Endosulfan I	0.67	1.33	ug/Kg	<MDL	
Endosulfan II	0.67	1.33	ug/Kg	<MDL	
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	
Endrin	0.67	1.33	ug/Kg	<MDL	
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	
Gamma-Chlordane	0.33	0.667	ug/Kg	<MDL	
Heptachlor	0.33	0.667	ug/Kg	<MDL	
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	
Methoxychlor	3.3	6.67	ug/Kg	<MDL	
Toxaphene	6.7	13.3	ug/Kg	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	6.67	5.91	89		78--121
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	6.67	5.87	88		75--111
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	6.67	5.9	89		57--145
Aldrin	0.67	1.33	ug/Kg	<MDL	6.67	4.42	66		28--113
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.91	74		20--99
Beta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.21	78		66--102
Delta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.22	78		63--108
Dieldrin	0.67	1.33	ug/Kg	<MDL	6.67	5.67	85		58--139
Endosulfan I	0.67	1.33	ug/Kg	<MDL	6.67	5.22	78		62--104
Endosulfan II	0.67	1.33	ug/Kg	<MDL	6.67	5.3	80		72--109
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	6.67	4.76	71		61--104
Endrin	0.67	1.33	ug/Kg	<MDL	6.67	5.24	79		60--160
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	6.67	0.7	10		10--77
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	6.67	5.01	75		27--130
Heptachlor	0.33	0.667	ug/Kg	<MDL	6.67	5.06	76		20--137
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	6.67	5.18	78		59--107
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	7.29	109		72--131

(Matrix Spike Duplicate, Matrix Spike) L45302-3

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
4,4'-DDD	0.67	1.33	ug/Kg	1.96	6.67	6.74	72		41--157	6.67	6.12	62		15		35
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	6.67	7.15	107		59--125	6.67	6.42	96		11		35
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	6.67	6.49	97		50--144	6.67	5.98	90		7		35
Aldrin	0.67	1.33	ug/Kg	<MDL	6.67	4.28	64		61--119	6.67	3.9	59	*	8		35
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.56	68		59--111	6.67	4.16	62		9		35
Beta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.72	71		60--119	6.67	4.38	66		7		35
Delta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.49	67		54--126	6.67	4.12	62		8		35
Dieldrin	0.67	1.33	ug/Kg	<MDL	6.67	5.48	82		60--139	6.67	4.97	75		9		35
Endosulfan I	0.67	1.33	ug/Kg	<MDL	6.67	4.57	68		64--113	6.67	4.16	62	*	9		35
Endosulfan II	0.67	1.33	ug/Kg	<MDL	6.67	4.78	72		36--146	6.67	4.34	65		10		35
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	6.67	5.92	89		46--113	6.67	5.11	77		14		35
Endrin	0.67	1.33	ug/Kg	<MDL	6.67	5.61	84		62--166	6.67	5.15	77		9		35
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	6.67	2.54	38		10--66	6.67	2.49	37		3		35
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	6.67	4.52	68		61--135	6.67	4.04	61		11		35
Heptachlor	0.33	0.667	ug/Kg	<MDL	6.67	4.64	70		52--157	6.67	4.27	64		9		35
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	6.67	4.56	68		61--118	6.67	4.18	63		8		35
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	6.2	93		53--129	6.67	5.6	85		9		35

(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
4,4'-DDT	5.3	10.7	ug/Kg	119	154	129		10--200
Alpha-Chlordane	2.7	5.33	ug/Kg	16.5	16.8	101		48--144

(Lab Duplicate) L45304-1

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	0.87			35
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	<MDL			35
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	<MDL			35
Aldrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Alpha-Chlordane	0.33	0.667	ug/Kg	<MDL	<MDL			35
Beta-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Delta-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Dieldrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan I	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan II	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	<MDL			35
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	<MDL			35
Gamma-Chlordane	0.33	0.667	ug/Kg	0.65	0.748	14		35
Heptachlor	0.33	0.667	ug/Kg	<MDL	<MDL			35
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	<MDL			35
Methoxychlor	3.3	6.67	ug/Kg	<MDL	<MDL			35
Toxaphene	6.7	13.3	ug/Kg	<MDL	<MDL			35

Surrogate:	2,4,5,6-Tetrachloro-m-xylene	Decachlorobiphenyl
(Lab Limits)	30--134	15--155
L45302-1	67	76
L45302-2	67	73
L45302-3	70	68
L45302-4	67	67
L45302-5	63	67
L45302-6	64	56
L45302-7	68	58
L45302-8	67	55
L45302-9	69	60
L45303-1	72	65
L45303-2	68	62
L45303-3	82	75
L45303-4	82	74
L45303-5	53	46
L45303-6	78	68
L45303-7	81	73
L45303-8	81	73
L45304-1	81	66
L45304-2	77	63
L45304-3	74	68
WG95963-1	64	78
WG95963-2	70	87
WG95963-3	66	68
WG95963-4	63	61
WG95963-5	64	85
WG95963-6	64	75

LIMSView Batch Report - run on 05/13/08, 10:24 am

WG96005 (Chlorinated Pesticides)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45304-4	423062-100-4	SALTWTRSED	3/24/2008 10:22	1-Apr-08	24-Apr-08	WG96005-1, -2, -3, -4, -5, -6	
L45304-5	423062-100-4	SALTWTRSED	3/24/2008 10:30	1-Apr-08	24-Apr-08	WG96005-1, -2, -3, -4, -5, -6	
L45304-6	423062-100-4	SALTWTRSED	3/24/2008 10:40	1-Apr-08	24-Apr-08	WG96005-1, -2, -3, -4, -5, -6	FREP @L45304-5
L45304-7	423062-100-4	SALTWTRSED	3/24/2008 10:55	1-Apr-08	24-Apr-08	WG96005-1, -2, -3, -4, -5, -6	
L45304-8	423062-100-4	SALTWTRSED	3/24/2008 11:10	1-Apr-08	24-Apr-08	WG96005-1, -2, -3, -4, -5, -6	
L45304-9	423062-100-4	SALTWTRSED	3/24/2008 11:25	1-Apr-08	24-Apr-08	WG96005-1, -2, -3, -4, -5, -6	
WG96005-1	MB	OTHR SOLID		1-Apr-08	24-Apr-08	WG96005-1, -2, -3, -4, -5, -6	MB040108
WG96005-2	SB	OTHR SOLID		1-Apr-08	24-Apr-08	WG96005-1, -2, -3, -4, -5, -6	WG96005-1
WG96005-3	MS	SALTWTRSED		1-Apr-08	24-Apr-08	WG96005-1, -2, -3, -4, -5, -6	L45304-5
WG96005-4	MSD	SALTWTRSED		1-Apr-08	24-Apr-08	WG96005-1, -2, -3, -4, -5, -6	WG96005-3 L45304-5
WG96005-5	SRM	SALTWTRSED		1-Apr-08	24-Apr-08	WG96005-1, -2, -3, -4, -5, -6	1944
WG96005-6	LD	SALTWTRSED		1-Apr-08	24-Apr-08	WG96005-1, -2, -3, -4, -5, -6	L45304-4

LIMSView Analytical QC Report - run on 05/13/08 10:24 am
Workgroup: WG96005 (Chlorinated Pesticides)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	
Aldrin	0.67	1.33	ug/Kg	<MDL	
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	
Alpha-Chlordane	0.33	0.667	ug/Kg	<MDL	
Beta-BHC	0.33	0.667	ug/Kg	<MDL	
Delta-BHC	0.33	0.667	ug/Kg	<MDL	
Dieldrin	0.67	1.33	ug/Kg	<MDL	
Endosulfan I	0.67	1.33	ug/Kg	<MDL	
Endosulfan II	0.67	1.33	ug/Kg	<MDL	
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	
Endrin	0.67	1.33	ug/Kg	<MDL	
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	
Gamma-Chlordane	0.33	0.667	ug/Kg	<MDL	
Heptachlor	0.33	0.667	ug/Kg	<MDL	
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	
Methoxychlor	3.3	6.67	ug/Kg	<MDL	
Toxaphene	6.7	13.3	ug/Kg	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	6.67	7.3	110		78--121
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	6.67	6.34	95		75--111
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	6.67	5.21	78		57--145
Aldrin	0.67	1.33	ug/Kg	<MDL	6.67	4.25	64		28--113
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.45	67		20--99
Beta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.9	89		66--102
Delta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.75	86		63--108
Dieldrin	0.67	1.33	ug/Kg	<MDL	6.67	6.07	91		58--139
Endosulfan I	0.67	1.33	ug/Kg	<MDL	6.67	5.5	82		62--104
Endosulfan II	0.67	1.33	ug/Kg	<MDL	6.67	5.56	83		72--109
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	6.67	4.86	73		61--104
Endrin	0.67	1.33	ug/Kg	<MDL	6.67	6.3	94		60--160
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	6.67	<MDL	0	*	10--77
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	6.67	4.84	73		27--130
Heptachlor	0.33	0.667	ug/Kg	<MDL	6.67	4.72	71		20--137
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	6.67	5.54	83		59--107
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	6.3	94		72--131

LIMSView Analytical QC Report - run on 05/13/08 10:24 am

(Matrix Spike Duplicate, Matrix Spike) L45304-5

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	6.67	6.81	102		41--157	6.67	6.7	101		1		35
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	6.67	6.52	98		59--125	6.67	6.32	95		3		35
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	6.67	5.82	87		50--144	6.67	5.85	88		1		35
Aldrin	0.67	1.33	ug/Kg	<MDL	6.67	5.05	76		61--119	6.67	5	75		1		35
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.43	81		59--111	6.67	5.65	85		5		35
Beta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.9	88		60--119	6.67	5.99	90		2		35
Delta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.3	79		54--126	6.67	5.66	85		7		35
Dieldrin	0.67	1.33	ug/Kg	<MDL	6.67	5.89	88		60--139	6.67	5.86	88		0		35
Endosulfan I	0.67	1.33	ug/Kg	<MDL	6.67	5.57	84		64--113	6.67	5.31	80		5		35
Endosulfan II	0.67	1.33	ug/Kg	<MDL	6.67	4.93	74		36--146	6.67	5.09	76		3		35
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	6.67	4.69	70		46--113	6.67	4.65	70		0		35
Endrin	0.67	1.33	ug/Kg	<MDL	6.67	5.8	87		62--166	6.67	5.91	89		2		35
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	6.67	1.2	18		10--66	6.67	1.1	17		6		35
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	6.67	5.6	84		61--135	6.67	5.68	85		1		35
Heptachlor	0.33	0.667	ug/Kg	<MDL	6.67	5.75	86		52--157	6.67	5.9	88		2		35
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	6.67	5.75	86		61--118	6.67	5.64	85		1		35
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	6.79	102		53--129	6.67	6.6	100		2		35

(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
4,4'-DDT	5.3	10.7	ug/Kg	119	179	150		10--200
Alpha-Chlordane	2.7	5.33	ug/Kg	16.5	20.3	123		48--144

(Lab Duplicate) L45304-4

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
4,4'-DDD	0.67	1.33	ug/Kg	0.9	0.94			35
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	<MDL			35
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	<MDL			35
Aldrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Alpha-Chlordane	0.33	0.667	ug/Kg	<MDL	<MDL			35
Beta-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Delta-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Dieldrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan I	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan II	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	<MDL			35
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	<MDL			35
Gamma-Chlordane	0.33	0.667	ug/Kg	1.46	1.38	5		35
Heptachlor	0.33	0.667	ug/Kg	<MDL	<MDL			35
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	<MDL			35
Methoxychlor	3.3	6.67	ug/Kg	<MDL	<MDL			35
Toxaphene	6.7	13.3	ug/Kg	<MDL	<MDL			35

LIMSView Analytical QC Report - run on 05/13/08 10:24 am

Surrogate:	2,4,5,6-Tetrachloro-m-xylene	Decachlorobiphenyl
(Lab Limits)	30--134	15--155
L45304-4	82	77
L45304-5	83	79
L45304-6	64	70
L45304-7	80	71
L45304-8	75	69
L45304-9	75	58
WG96005-1	45	74
WG96005-2	60	82
WG96005-3	76	84
WG96005-4	82	80
WG96005-5	86	89
WG96005-6	82	79

CHAIN OF CUSTODY FORMS

Login Number: P45304 Page: 1

T_DUD.STAAB.ON DUDI SEDS, STAS. A,B, ON-CAP

Project Number: 423062-100-4 Personnel: _____

Sample No. (Type)	P45304-1	P45304-2	P45304-3
Locator	DUD_1A	DUD_2A	DUD_3A
Short Loc. Desc.	DUD_1A	DUD_2A	DUD_3A
Locator Desc.	CLEANUP AREA A MONITORING LOCATION 1	CLEANUP AREA A MONITORING LOCATION 2	CLEANUP AREA A MONITORING LOCATION 3
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	3/24/08 0935	→ 950	→ 1008
End Date/Time			
Time Span			
Sample Depth	5	7	9
Comments	3 grab comp, 0-10 cm	3 grab comp, 0-10 cm	3 grab comp, 0-10 cm
PERSONNEL	BK, SH, JB	→	→
SAMP METH	20042 →		→
SED DEPTH	10, 10, 10	15, 15, 7 (12)	(11), 12, 10
SED SAMP RANGE	0-10 cm	→ 0-10cm	→ 0-10 cm
SED TYPE	34S16	21D37	21N21
TIDE COND	E	E	E
TIDE HT	8	7	7
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-M	6 SALTWTRSED HG-CVAA-M	6 SALTWTRSED HG-CVAA-M
	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

2 photos of Sed

lots of trash and leaves - one live crab, one live sand lance(?) in second grab

2 photos of seds

continue ...

COORDS WG 96136

RELINQUISHED BY: [signature] Date: 3/24/08 Time: 1625

RECEIVED BY: [signature] Date: 3/24/08 Time: 16:27

Sample Number(s): (All)

DUDI SEDS, STAS. A,B, ON-CAP

Project Number: 423062-100-4 Personnel: _____

Sample No. (Type)	P45304-4	P45304-5	P45304-6
Locator	DUD_4A	DUD_5A	DUD_5A
Short Loc. Desc.	DUD_4A	DUD_5A	DUD_5A
Locator Desc.	CLEANUP AREA A MONITORING LOCATION 4	CLEANUP AREA A MONITORING LOCATION 5	CLEANUP AREA A MONITORING LOCATION 5
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	3/24/08 1022	→ 1030	→ 1040
End Date/Time			
Time Span			
Sample Depth	7	9	9
Comments	3 grab comp, 0-10 cm	0-10 cm, AREP	0-10 cm, FREP
PERSONNEL	BK, SH, JB	→	→
SAMP METH	20042		→
SED DEPTH	8, 9, 12 (10)	8 (9), 9	8, 7, 12 (9)
SED SAMP RANGE	0-9 cm	0-8	→ 0-8
SED TYPE	23521	34521	34521
TIDE COND	E	E	E
TIDE HT	6	6	5
SAMP FUNC	**********	**********	FREP@ 45304-5
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-M	6 SALTWTRSED HG-CVAA-M	6 SALTWTRSED HG-CVAA-M
	6 SALTWTRSED MN-ICP	6 SALTWTRSED MN-ICP	6 SALTWTRSED MN-ICP
	6 SALTWTRSED PP ICP	6 SALTWTRSED PP ICP	6 SALTWTRSED PP ICP

Samp info?

Samp info?

continue ...

DUDI SEDS, STAS. A,B, ON-CAP

Project Number: 423062-100-4 Personnel: _____

Sample No. (Type)	P45304-7	P45304-8	P45304-9
Locator	DUD_1B	DUD_2B	DUD_3B
Short Loc. Desc.	DUD_1B	DUD_2B	DUD_3B
Locator Desc.	CLEANUP AREA A MONITORING LOCATION 1	CLEANUP AREA A MONITORING LOCATION 2	CLEANUP AREA A MONITORING LOCATION 3
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	3/24/08 1055	→ 1110	→ 1125
End Date/Time			
Time Span			
Sample Depth	9	7	6
Comments	3 grab comp, 0-10 cm	3 grab comp, 0-10 cm	3 grab comp, 0-10 cm
PERSONNEL	BK, SH, JB	→	→
SAMP METH	20042		
SED DEPTH	13, (12), 12	7, 8, 12 (9)	10, (11), 11
SED SAMP RANGE	0-10 cm	0-8 cm	0-10 cm
SED TYPE	12N36	21531	21N31
TIDE COND	E	E	E
TIDE HT	4.8	3.8	3
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-M	6 SALTWTRSED HG-CVAA-M	6 SALTWTRSED HG-CVAA-M
	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

continue ...

LABORATORY WORK ORDER
Chain of Custody

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

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

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
L 45304-1	DUD_1A	24-MAR-08	0935	1	1	1	1	4	
L -2	DUD_2A		0950	1	1	1	1	4	
L -3	DUD_3A		1008	1	1	1	1	4	
L -4	DUD_4A		1022	1	1	1	1	4	
L -5	DUD_5A		1030	1	1	1	1	4	
L -6	DUD_5A		1040	1	2	1	1	5	Replicate, PSD duplicate
L -7	DUD_1B		1055	1	1	1	1	4	
L -8	DUD_2B		1110	1	1	1	1	4	
L -9	DUD_3B		1125	1	1	1	1	4	
L -									
L -									

Additional Comments:

Total Number of Containers: 37

Sampled By: SH, BK, JB

Relinquished By:
Signature: Stephanie Hess
Printed Name: Stephanie HeSS
Organization: King County Environmental Laboratory
Date: 3/24/08
Time: 1625

Received By:
Signature: J R K
Printed Name: Jason Kinnard
Organization: King County Environmental Laboratory
Date: 3/24/08
Time: 16:27

KING COUNTY ENVIRONMENTAL LABORATORY
QUALITY ASSURANCE REVIEW

for

ESTUARINE SEDIMENT ANALYTICAL DATA

DUWAMISH/DIAGONAL SEDIMENT REMEDIATION PROJECT
YEAR FIVE, CAP SEDIMENT CHARACTERIZATION
APRIL 2009 SAMPLING EVENT

Prepared by:

Fritz Grothkopp
Laboratory Project Manager

Date: 3-8-10

Reviewed by:

Colin Elliott
QA Officer

Date: March 8, 2010

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, Year 5 Main Cap Monitoring. 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 2008. 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 April 27 & 28, 2009 as part of the Duwamish Diagonal Sediment Remediation Project, Year 5, Main Cap Monitoring. The Sampling and Analysis Plan (SAP) in effect for this sampling event is titled: Duwamish/Diagonal Sediment Remediation Dredging and Capping Operations, Sediment Monitoring Sampling and Analysis Plan. October 28, 2003. (KCEL document # 177)

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 t*he 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 2008 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 based on the rules below.

1. Add a "B" flag to all parameters if the associated blank is ≥ the MDL and the sample result is ≥ MDL but ≤ 5 times the blank.
2. Add a "B2" flag to common organic lab contaminants (Acetone, 2-Butanone, Methylene Chloride, Bis (2-ethylhexyl) Phthalate, Butyl Benzyl Phthalate and Di-n-butyl Phthalate) if the method blank is ≥ the MDL and the sample result is > 5 and ≤ 10 times the blank.
3. Add a "B3" flag to all other parameters if the associated blank is ≥ the MDL and the sample result is > 5 and ≤ 10 times the blank.

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 may be flagged with a JL whenever recoveries are measured above the acceptance limits and may be flagged with a JG 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 may be flagged with a JL whenever recoveries are measured above the acceptance limits and may be flagged with a JG when recoveries are measured below the acceptance limits. Flags are applied to specific sample results based on matrix spike recoveries only if the unacceptable recovery is indicative of a consistent bias for all associated samples.

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. The original sample results are flagged with a J or JK whenever the measured precision is unacceptable (greater than the acceptance limit). Associated sample data will also be flagged if the unacceptable precision is expected in samples of the same matrix and composition.

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 may be flagged with a JL whenever recoveries are measured above the acceptance limits and may be flagged with a JG when recoveries are measured below the acceptance limits. Flags are applied to reported results based on surrogate recoveries only if the unacceptable recovery is indicative of a bias for the associated parameters.

Data Qualifiers

The data qualification guidelines described above has been summarized in Table 3. This table conforms to the guidelines in the 2008 SAPA and also shows the data qualifiers used for the Washington Dept of Ecology EIM 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 on-cap saltwater sediment samples on April 27 & 28, 2009. These samples were collected for the Duwamish/Diagonal Sediment Remediation Program. 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. A minimum of two twin-sampler deployments (i.e., three individual grabs) was required in the SAP to provide a representative sample at each station. Both the prescribed station coordinates and the actual coordinates recorded during sampling activities are presented in the following table (see below). The coordinate system, as shown, is in U.S. State Plane, Washington North 4601, NAD83.

Duwamish/Diagonal Sediment Sampling, On-Cap Stations
Actual and Prescribed Sample Coordinates, April 2009

Lab Number	Locator	Cast	Grabs Accepted	Prescribed Northing	Actual Northing	Prescribed Easting	Actual Easting	Offset > 3 m
L47890-1	DUD_1A			209089		1267047		
		1	1		209085		1267044	
		2	1		209086		1267045	
		3	1		209089		1267043	
L47890-2	DUD_2A			208902		1267139		
		1	2		208902		1267141	
		2	1		208903		1267135	
L47890-3	DUD_3A			208973		1266951		
		1	1		208974		1266956	
		2	2		208975		1266955	
L47890-4	DUD_4A			209354		1266888		
		1	2		209357		1266886	
		2	1		209354		1266888	
	DUD_5A			209410		1266805		
L47890-5		1	2		209410		1266795	
		2*	2		209411		1266797	
L47890-6	DUD_5A			209410		1266805		
	FREP	2*	2		209411		1266797	
		3	2		209405		1266799	
L47890-7	DUD_1B			208484		1267060		
		1	2		208483		1267058	
		2	1		208487		1267057	
L47890-8	DUD_2B			208621		1267079		
		1	2		208621		1267076	
		2	1		208619		1267087	
L47890-9	DUD_3B			208716		1267049		
		1	2		208716		1267049	
		2	1		208713		1267053	

* Cast #2 at this station was split between the original sample (L47890-5) and the field replicate (L47890-6)

Sediment grab samples were collected from the King County research vessel *Liberty*, which is equipped with a differential global positioning system (DGPS). Using DGPS, field coordinates were recorded for each cast of the two grab samplers, deployed in tandem, as they contacted the sediment. All field coordinates for each cast listed in the above table are within the +/- 3 meter accuracy limits, as defined in the SAP.

Sample Description Table

Lab Sample #	Station	Sample Collection	Average Sediment Depth	Sample Usage
L47890-1	DUD_1A	Surface Grabs	12 cm	Chemistry
L47890-2	DUD_2A	Surface Grabs	17 cm	Chemistry
L47890-3	DUD_3A	Surface Grabs	10 cm	Chemistry
L47890-4	DUD_4A	Surface Grabs	12 cm	Chemistry
L47890-5	DUD_5A	Surface Grabs	8 cm	Chemistry
L47890-6	DUD_5A	Surface Grabs (field replicate)	8 cm	Chemistry
L47890-7	DUD_1B	Surface Grabs	16 cm	Chemistry
L47890-8	DUD_2B	Surface Grabs	13 cm	Chemistry
L47890-9	DUD_3B	Surface Grabs	15 cm	Chemistry

Sample Collection

Sediment was collected at each station using two stainless steel, modified, 0.1 m^2 Van Veen grab samplers deployed in tandem via hydrowire. For each acceptable deployment, average depths ranging between 8 - 17 cm of sediment were collected within each grab, allowing for sub-sampling within the upper 7-10 cm of material. A minimum of two twin-sampler deployments (i.e., three individual grabs) was required in the SAP to provide a representative sample at each station.

Water depth at the eight subtidal cap sediment stations ranged between 5 - 10 meters (not corrected for tide).

Sample Handling

Close to equal amounts of sediment were sub-sampled from the three or more separate grabs used for chemistry analysis. For chemistry testing, 7 to 10 cm deep aliquots, as measured from the sediment surface, were collected using a stainless steel spoon. Sediment that had touched the sides or bottom of the grab sampler was excluded. Less than the top 10 cm of sediment was sub-sampled in those instances where it was not possible to collect material down to the minimum sediment penetration depth. All aliquots were placed in a covered stainless-steel compositing bowl, specific for that station. After collecting all aliquots from three or more grabs, the sediment was thoroughly homogenized, then split out into pre-labeled containers. All sample containers were supplied by the King County Environmental Laboratory, first having been pre-cleaned according to analytical specifications.

Decontamination

Individual sets of the sub-sampling and mixing equipment were dedicated to each station, precluding the need for decontamination of said equipment. The Van Veen grab samplers were decontaminated between stations by scrubbing with a brush using ambient water 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. They 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 time is defined as that time that sampling commences at each station.

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 conducted at the King County Env 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:

Parameter	Sample ID#	SAP MDL	Reported MDL	Reason for higher MDL Value
Total Organic Carbon	L47890-1,4	1000	1840 - 1990	Reduced sample size analyzed due to High Organic Background
Total Organic Carbon	L47890-2, 3, 7,8, 9	1000	1830 - 2000	Reduced sample size analyzed due to High Organic Background and total solids <50%
PSD Parameters in the % Fines range	L47890-all	0.1%	0.5%	MDL was updated after the SAP was completed

For all samples where the MDL did not meet the SAP MDL, the TOC concentrations and the clay and silt levels were detectable, thus the project objectives were met.

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 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, 2008). 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	L47890-1	28-Apr-2009	27-May-2009	28-May-2009	6 Months at 4°C	NA
	L47890-2,3,4,5,6	28-Apr-2009	29-May-2009	01-Jun-2009		
	L47890-7,8,9	27-Apr-2009	01-Jun-2009	02-Jun-2009		
Total Organic Carbon	L47890-1,2,3,4,5,6	28-Apr-2009	01-Jun-2009	10-Jun-2009	6 months at -18°C	6 months at -18°C
	L47890-7,9	27-Apr-2009	01-Jun-2009	11-Jun-2009		
	L47890-8	27-Apr-2009	01-Jun-2009	10-Jun-2009		
Total Solids	L47890-1,2,3,4,5,6	28-Apr-2009	01-Jun-2009	02-Jun-2009	6 months at -18°C	NA
	L47890-7,8,9	27-Apr-2009				

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

Method Blanks

Method blanks were analyzed in connection with total 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.

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 with the exception of the silt portion of the Particle Size Distribution. The silt portion RSD was 32% for L47890-6. For samples that showed a similar consistency and similar PSD results (L47890-5 and -6), the Silt data have been flagged with a "J" to indicate an estimated value. No other corrective action was taken because the silt and clay portions each represented less than 10% of the overall mass of the sample.

METALS CHEMISTRY

Completeness
Metal chemistry data are reported for all samples and parameters 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
Metals analysis was not subcontracted for these sets of samples.

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

Target List
The reported target list includes all metals specified in Table 1.

Detection Limits
In some instances, the detection limits (MDLs) reported for this sample set of ICP Metals, are slightly greater than the requirements defined by the SAP. The varying ICP MDLs can be attributed to a change in sample preparation from prior analyses of Duwamish Diagonal samples. For this sample set, a great amount of sample material was used, approximately 2 grams with all the samples in this set being analyzed at a 2x dilution. The detection limits (MDLs) reported for Mercury are all within the requirements defined by the SAP. All element MDLs that did not meet SAP MDL limits were due to total solids being less than 50 % in the sample.

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 during the Third Annual PSDDA Review Meeting. 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	L47890-1 - 9	27, 28-Apr-09	19-May-09	20-May-09	2 Years at -18°C	6 months
Total Mercury	L47890-1 - 9	27, 28-Apr-09	18-May-09	19-May-09	28 days at -18°C	NA

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

Method Blanks
All metals method blanks results were less than the MDL

Standard Reference Materials
The SRM analyzed in association with samples included in this data submission is National Research Council of Canada PACS-2. This SRM is not certified for Beryllium, Selenium, Thallium, Silver, Arsenic or Cadmium. Acceptance limits for the certified elements 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 qualified to indicate the expected bias.

All metals SRM recoveries were within the lab defined limits indicated in the SAP.

A laboratory control sample (LCS) ERA Soil was also analyzed with the total metals digestion. All recoveries were within the certified limits of the sample. The LCS is used as a secondary check for the total metals digestion procedure because the certified values for the elements are determined using the same methodology. No results from the LCS are used to qualify data.

Matrix Spikes
All matrix spike recoveries were within the 75% to 125% QC limits with the following exceptions: The reported matrix spike recovery of 34% for Antimony in WG102409 for sample numbers L47890-1 - 9 failed to meet the 75% to 125% QC acceptance criteria. Antimony results for all samples in WG102409 have been qualified with a "JG". The reported matrix spike recovery of -12% for Chromium in WG102409 for sample numbers L47890-1 - 9 failed to meet the 75% to 125% QC acceptance criteria. The Chromium results for the Background sample L47890-1, the Lab Duplicate WG102409-4 and the Matrix Spike WG102409-5 in WG102409 have been qualified with a "J". The reported matrix spike recovery of 50% for Lead in WG102409 for sample numbers L47890-1 - 9 failed to meet the 75% to 125% QC acceptance criteria. The Lead results for the Background sample L47890-1 and the Matrix Spike WG102409-5 in WG102409 have been qualified with a "J". The "J" flag was used for Chromium and Lead since it is expected that the low recoveries are due to heterogeneity of those elements in the Background sample rather than a low bias. Heterogeneity was not consistently observed in other batches of samples for this project so the "J" flag is only being applied to L47890-1.

Laboratory Replicate Samples
The relative percent differences (RPDs) for laboratory duplicate results for all metals were less than or equal to the QC limit of 20% with the exceptions: The reported RPD of 44% for Chromium in WG102409 for sample numbers L47890-1 - 9 failed to meet the 20% QC acceptance limit. Chromium results for the Background Sample L47890-1 and the Lab Duplicate WG102409-4 in WG102409 have been qualified with a "J". The reported RPD of 41% for Mercury in WG102343 for sample numbers L47890-1 - 9 failed to meet the 20% QC acceptance limit. Mercury results for the Background Sample L47890-5 and the Lab Duplicate WG102343-6 in WG102343 have been qualified with a "J". For both Chromium and Mercury, heterogeneity was not consistently observed in other batches of samples for this project so the "J" flag is only being applied to L47890-1 and -5, respectively.

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

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.

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: (Refer to the SAP MDL table at the back of the document)

BNAs

1) For all samples, the reported MDLs for Coprostanol and Pentachlorophenol were greater than the SAP MDL values.
2) For samples L47890-2 – 4 and 7 - 9, the reported MDLs for 1,4-Dichlorobenzene were greater than the SAP MDL values.
3) For samples L47890-2, 3, 7, 8, 9, the reported MDLs for Benzo(a)anthracene were greater than the SAP MDL values.
4) For samples L47890-1 – 5 and 7 - 9, the reported MDLs for Benzoic Acid were greater than the SAP MDL values.

The MDL values for these 4 parameters did not meet the SAP MDLs due to relatively low total solids in selected samples and adjustments made to the method's MDLs since the SAP was prepared.

PCBs
The reported MDL 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 4, 4'-DDT, 4,4'-DDE, 4,4'-DDD, Aldrin, Dieldrin, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Methoxychlor and Toxaphene in all samples were greater than the MDL values listed in the SAP. The reported MDLs for Alpha-BHC, Alpha Chlordane, Beta-BHC, Delta-BHC, Gamma-BHC (Lindane), Heptachlor and Heptachlor Epoxide in samples L47890-2, 3, 7, 8 and 9 were also greater than the MDL values listed in the SAP due to total solids less than 50 %.

The attached SMS OC and Dry Weight Normalization MDL Check tables compare the reported MDL value to the SMS requirement. The MDLs for all samples meet the SMS limits.

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	L47890-1 to 9	27, 28-Apr-09	04-May-09	28-May-09	1 year at -18°C	40 days at 4°C
Chlorinated Pesticides	L47890-1 to 9	27, 28-Apr-09	05-May-09	08, 09-Jun-09	1 year at -18°C	40 days at 4°C
PCB	L47890-1 to 9	27, 28-Apr-09	05-May-09	12, 13-Jun-09	1 year at -18°C	40 days at 4°C

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 L47890-1 to 9 had a result above the MDL for Bis (2-ethylhexyl) Phthalate (11 ug/Kg), Butyl Benzyl Phthalate (4.07 ug/Kg) and Di-n-butyl Phthalate (10.9 ug/Kg). Results for Butyl Benzyl Phthalate and Di-n-butyl Phthalate for those samples where the measured levels were above the MDL have been qualified with the B or B2 flag. All flagged data for, Butyl Benzyl Phthalate and Di-n-butyl Phthalate for these samples must be treated as estimated values. For 2 samples (L47890-5, -6), the levels of Bis (2-ethylhexyl) Phthalate were less than 5 times the blank response so these data have been qualified with the B flag and must be treated as estimated values. All other samples showed levels of Bis (2-ethylhexyl) Phthalate much greater than the blank so no qualification was needed.

The method blanks analyzed with PCB and Chlorinated Pesticides were less than MDL for all compounds.

Surrogate Recoveries

Surrogate recovery acceptance limits for sediment samples have been developed based on historical lab performance using the current analytical methods. Recoveries measured above the acceptance limits may be flagged with a JL. Recoveries measured below the acceptance limits may be flagged with a JG.

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. All sample surrogate recoveries met acceptance limits.

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 and Alpha-Chlordane. 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.

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 may not be 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
For the BNA compounds that were included in the matrix spike, the measured recoveries for each were within their acceptance limits with the following exceptions. MS recovery failed for the following compounds: Phenanthrene, Di-n-butyl Phthalate, Fluoranthene and Pyrene. Each of these compounds had acceptable recovery in the Matrix Spike Duplicate (MSD) except for Pyrene which showed low recoveries in both the MS and MSD. It is expected that the low recoveries are due to heterogeneity in the Background sample for these 4 parameters rather than a significant low bias. These 4 parameters in background sample (L47890-1) have been qualified with a "J" flag to indicate they are estimated values.

The following compounds were not included in the matrix spike and matrix spike duplicate: 2-Methylnaphthalene, 2-Methylphenol, 4-Methylphenol, Benzoic Acid, Benzyl Alcohol, Caffeine, Coprostanol, Dibenzofuran, Total 4-Nonylphenol due to an omission of these compounds from the spiking standard.

2. PCBs and Chlorinated Pesticides

Each of the reported Pesticide compounds, except Toxaphene, alpha and gamma Chlordane, 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 parameters at or above the RDL were less than or equal to the acceptance limit of 35%.

Additional QC Issues:

BNA Analysis

The results for bis(2-ethylhexyl) phthalate, di-n-octyl phthalate and fluoranthene for sample L47890-1 exceeded the highest standard in the calibration curve associated with this sample. The results have all been flagged with an "E".

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 may not be possible for samples listed below 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.

Lab Sample Number	PCB 1016	PCB-1221	PCB 1232	PCB 1242
L47890-1	x		x	x
L47890-2	x		x	x
L47890-3	x		x	x
L47890-4	x		x	x
L47890-5				x
L47890-6				x
L47890-7	x		x	x
L47890-8	x		x	x
L47890-9	x			x

All results for Aroclor 1260 have been flagged with a "JG" due to a low recovery of all Aroclor 1260 CCV during analysis. It is expected that all results reported for Aroclor 1260 may be biased low.

TABLE 1
SEDIMENT SAMPLE INVENTORY

Sample	Locator / Description (see SAP)	PSD	Solids	TOC	Metals[1]	BNAs[2]	Pest/ PCBs	Comments
L47890-1	DUD_1A	X	X	X	X	X	X	
L47890-2	DUD_2A	X	X	X	X	X	X	
L47890-3	DUD_3A	X	X	X	X	X	X	
L47890-4	DUD_4A	X	X	X	X	X	X	
L47890-5	DUD_5A	X	X	X	X	X	X	
L47890-6	DUD_5A	X	X	X	X	X	X	field replicate
L47890-7	DUD_1B	X	X	X	X	X	X	
L47890-8	DUD_2B	X	X	X	X	X	X	
L47890-9	DUD_3B	X	X	X	X	X	X	

1 Metals = Hg, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, Tl, Zn, Al, Fe
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	Possible EIM Data Qualifier	Organic QC Limits	Metal QC Limits	Conventional QC Limits	Comment
low matrix spike recovery	JG	JG	Compound specific	< 75%	< 75%	
high matrix spike recovery	JL	JL	Compound specific	>125%	>125%	
low standard reference material recovery	JG	JG	Compound and SRM specific	Element and SRM specific	< 80%	
high standard reference material recovery	JL	JL	Compound and SRM specific	Element and SRM specific	>120%	
high duplicate relative percent difference	JK or J	JK	>35 %	>20%	NA	for organics and metals
high triplicate relative standard deviation	JK or J	JK	NA	NA	> 20%	for conventionals
less than the reporting detection limit	<RDL**	JT	NA	NA	NA	
less than the method detection limit	<MDL	U	NA	NA	NA	
contamination detected in method blank	B	B	MB >/=MDL & Result </= 5x Blank	MB >/=MDL & Result </= 5x Blank	MB >/=MDL & Result </= 5x Blank	
contamination detected in method blank	B2	B	MB >/=MDL & Result > 5x but >/= 10x Blank	MB >/=MDL & Result > 5x but >/= 10x Blank	MB >/=MDL & Result > 5x but >/= 10x Blank	Common Lab Contaminants*
contamination detected in method blank	B3	B	MB >/=MDL & Result > 5x but >/= 10x Blank	MB >/=MDL & Result > 5x but >/= 10x Blank	MB >/=MDL & Result > 5x but >/= 10x Blank	All other parameters
biased data based on low surrogate recoveries	JG	JG	Surrogate specific	NA	NA	At least 2 surrogates < limit for BNAs
biased data based on high surrogate recoveries	JL	JL	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	SH	JK or J	NA	NA	NA	container, preservation
Holding time not met	H	JK or J				

*Common Lab Contaminants: Acetone, 2-Butanone, Methylene Chloride, Bis(2-ethylhexyl) Phthalate, Butyl Benzyl Phthalate and Di-n-butyl Phthalate

Comprehensive and Matrix Data Reports

King County Environmental Lab Analytical Report

Project:	423062-100-4					Project:	423062-100-4					Project:	423062-100-4				
Locator:	DUD_1A					Locator:	DUD_2A					Locator:	DUD_3A				
Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON				
Sample:	L47890-1					Sample:	L47890-2					Sample:	L47890-3				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/28/09 8:45					ColDate:	4/28/09 9:10					ColDate:	4/28/09 9:26				
TimeSpan:						TimeSpan:						TimeSpan:					
TotalSolid:	76.1					TotalSolid:	41.9					TotalSolid:	48.6				
ClientLoc:						ClientLoc:						ClientLoc:					
SampDepth:	6					SampDepth:	7					SampDepth:	10				
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
M=CV ASTM D422															
Clay*	3.2		0.65	1.29	%	41.1		1.2	2.35	%	33.4		1	2.09	%
Fines*	7.1		0.65	1.29	%	98.7		1.2	2.35	%	84.6		1	2.09	%
Gravel*	36.9		0.13	1.29	%		<MDL	0.24	2.35	%		<MDL	0.21	2.09	%
Sand*	50.6		0.13	1.29	%	8.3		0.24	2.35	%	17.8		0.21	2.09	%
Silt*	3.9		0.65	1.29	%	57.6		1.2	2.35	%	51.2		1	2.09	%
p+0.00*	19.6		0.13	1.29	%	0.3	<RDL	0.24	2.35	%		<MDL	0.21	2.09	%
p+1.00*	18		0.13	1.29	%	0.6	<RDL	0.24	2.35	%	0.3	<RDL	0.21	2.09	%
p+10.0(equal/more than)*	1.9		0.65	1.29	%	30.6		1.2	2.35	%	27.2		1	2.09	%
p+2.00*	9.4		0.13	1.29	%		<MDL	0.24	2.35	%	3.5		0.21	2.09	%
p+3.00*	3.3		0.13	1.29	%	2.4		0.24	2.35	%	7.4		0.21	2.09	%
p+4.00*	0.3	<RDL	0.13	1.29	%	5		0.24	2.35	%	6.6		0.21	2.09	%
p+5.00*		<MDL	0.65	1.29	%	7.1		1.2	2.35	%	4.2		1	2.09	%
p+6.00*	0.6	<RDL	0.65	1.29	%	28.2		1.2	2.35	%	28.2		1	2.09	%
p+7.00*	1.9		0.65	1.29	%	15.3		1.2	2.35	%	12.5		1	2.09	%
p+8.00*	1.3		0.65	1.29	%	7.1		1.2	2.35	%	6.3		1	2.09	%
p+9.00*	1.3		0.65	1.29	%	10.6		1.2	2.35	%	6.3		1	2.09	%
p-1.00*	12.1		0.13	1.29	%		<MDL	0.24	2.35	%		<MDL	0.21	2.09	%
p-2.00*	2.3		0.13	1.29	%		<MDL	0.24	2.35	%		<MDL	0.21	2.09	%
p-2.00(less than)*	22.5		0.13	1.29	%		<MDL	0.24	2.35	%		<MDL	0.21	2.09	%
CV SW846 9060-PSEP96															
Total Organic Carbon	16300		1800	3610	mg/Kg	28400		2000	3910	mg/Kg	19400		2000	3970	mg/Kg
M=CV SM2540-G															
Total Solids*	76.1		0.005	0.01	%	41.9		0.005	0.01	%	48.6		0.005	0.01	%
M=ES NONE															
Field Personnel*	BK,JDD,JB,JeneeC				none	BK,JDD,JB,JeneeC				none	BK,JDD,JB,JeneeC				none
Sampcoordx1*	1267044				ft	1267141				ft	1266956				ft
Sampcoordx2*	1267045				ft	1267135				ft	1266955				ft
Sampcoordx3*	1267043				ft										
Sampcoordy1*	209085				ft	208902				ft	208974				ft
Sampcoordy2*	209086				ft	208903				ft	208975				ft
Sampcoordy3*	209089				ft										
Sample Depth*	6				m	7				m	10				m
Sampling Method*	20143				none	20143				none	20143				none
Sediment Sampling Depth*	12				cm	17				cm	10				cm
Sediment Sampling Range*					cm					cm					cm
Sediment Type*	43W33				none	20N20				none	21N30				none
Tidal Condition*	E				none	E				none	E				none
Tide Height*	8				ft	6				ft	5				ft
Sample Function*															
MT SW846 3050B*SW846 6010C															

King County Environmental Lab Analytical Report

Project:	423062-100-4	423062-100-4	423062-100-4
Locator:	DUD_1A	DUD_2A	DUD_3A
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sample:	L47890-1	L47890-2	L47890-3
Matrix:	SF SALTWTRSED	SF SALTWTRSED	SF SALTWTRSED
ColDate:	4/28/09 8:45	4/28/09 9:10	4/28/09 9:26
TimeSpan:			
TotalSolid:	76.1	41.9	48.6
ClientLoc:			
SampDepth:	6	7	10
DRY Weight Basis			

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
Aluminum, Total, ICP	10400		6.2	31.1	mg/Kg	28400		12	59.9	mg/Kg	25100		10	51.6	mg/Kg
Antimony, Total, ICP		<MDL,JG	0.93	4.66	mg/Kg		<MDL,JG	1.8	8.97	mg/Kg		<MDL,JG	1.5	7.74	mg/Kg
Arsenic, Total, ICP	6.6	<RDL	1.6	7.78	mg/Kg	14	<RDL	3.1	15	mg/Kg	12	<RDL	2.7	12.9	mg/Kg
Beryllium, Total, ICP	0.22	<RDL	0.062	0.311	mg/Kg	0.57	<RDL	0.12	0.599	mg/Kg	0.531		0.1	0.516	mg/Kg
Cadmium, Total, ICP	0.679		0.12	0.623	mg/Kg	0.69	<RDL	0.24	1.2	mg/Kg	0.47	<RDL	0.21	1.03	mg/Kg
Chromium, Total, ICP	63.5	J	0.18	0.934	mg/Kg	33.4		0.36	1.79	mg/Kg	29.8		0.31	1.55	mg/Kg
Copper, Total, ICP	46.8		0.25	1.25	mg/Kg	78.8		0.48	2.39	mg/Kg	72.6		0.41	2.06	mg/Kg
Iron, Total, ICP	17900		3.2	15.5	mg/Kg	38700		6	29.8	mg/Kg	34400		5.1	25.7	mg/Kg
Lead, Total, ICP	43.8	J	1.2	6.23	mg/Kg	35.6		2.4	12	mg/Kg	31.1		2.1	10.3	mg/Kg
Manganese, Total, ICP	218		0.12	0.623	mg/Kg	415		0.24	1.2	mg/Kg	399		0.21	1.03	mg/Kg
Nickel, Total, ICP	31.5		0.32	1.55	mg/Kg	27.2		0.6	2.98	mg/Kg	24.9		0.51	2.57	mg/Kg
Selenium, Total, ICP		<MDL	1.6	7.78	mg/Kg		<MDL	3.1	15	mg/Kg		<MDL	2.7	12.9	mg/Kg
Silver, Total, ICP		<MDL	0.25	1.25	mg/Kg		<MDL	0.48	2.39	mg/Kg		<MDL	0.41	2.06	mg/Kg
Thallium, Total, ICP		<MDL	2.5	12.5	mg/Kg		<MDL	4.8	23.9	mg/Kg		<MDL	4.1	20.6	mg/Kg
Zinc, Total, ICP	164		0.32	1.55	mg/Kg	148		0.6	2.98	mg/Kg	120		0.51	2.57	mg/Kg
MT SW846 7471B															
Mercury, Total, CVAA	0.0557		0.0033	0.0323	mg/Kg	0.187		0.006	0.0587	mg/Kg	0.21		0.0051	0.0519	mg/Kg
OR EPA 3550B/8270C (7-3-01-004)															
1,2,4-Trichlorobenzene		<MDL	0.13	0.263	ug/Kg		<MDL	0.24	0.477	ug/Kg		<MDL	0.21	0.412	ug/Kg
1,2-Dichlorobenzene		<MDL	0.26	0.526	ug/Kg		<MDL	0.48	0.955	ug/Kg		<MDL	0.41	0.823	ug/Kg
1,3-Dichlorobenzene		<MDL	0.26	0.526	ug/Kg		<MDL	0.48	0.955	ug/Kg		<MDL	0.41	0.823	ug/Kg
1,4-Dichlorobenzene	11.3		0.26	0.526	ug/Kg		<MDL	0.48	0.955	ug/Kg	2.98		0.41	0.823	ug/Kg
2,4-Dimethylphenol		<MDL	1.3	2.63	ug/Kg		<MDL	2.4	4.77	ug/Kg		<MDL	2.1	4.12	ug/Kg
2-Methylnaphthalene	16.7		2.6	5.26	ug/Kg	8.6	<RDL	4.8	9.55	ug/Kg	8.5		4.1	8.23	ug/Kg
2-Methylphenol		<MDL	2.6	5.26	ug/Kg		<MDL	4.8	9.55	ug/Kg		<MDL	4.1	8.23	ug/Kg
4-Methylphenol		<MDL	5.3	10.5	ug/Kg		<MDL	9.5	19.1	ug/Kg		<MDL	8.2	16.5	ug/Kg
Acenaphthene	41.1		2.6	5.26	ug/Kg	13.7		4.8	9.55	ug/Kg	8	<RDL	4.1	8.23	ug/Kg
Acenaphthylene		<MDL	2.6	5.26	ug/Kg		<MDL	4.8	9.55	ug/Kg	8.33		4.1	8.23	ug/Kg
Anthracene	94.2		2.6	5.26	ug/Kg	49.6		4.8	9.55	ug/Kg	63.8		4.1	8.23	ug/Kg
Benzo(a)anthracene	310		2.6	5.26	ug/Kg	163		4.8	9.55	ug/Kg	170		4.1	8.23	ug/Kg
Benzo(a)pyrene	261		2.6	5.26	ug/Kg	138		4.8	9.55	ug/Kg	163		4.1	8.23	ug/Kg
Benzo(b)fluoranthene	323		2.6	5.26	ug/Kg	203		4.8	9.55	ug/Kg	249		4.1	8.23	ug/Kg
Benzo(g,h,i)perylene	209		2.6	5.26	ug/Kg	96.9		4.8	9.55	ug/Kg	110		4.1	8.23	ug/Kg
Benzo(k)fluoranthene	231		2.6	5.26	ug/Kg	160		4.8	9.55	ug/Kg	147		4.1	8.23	ug/Kg
Benzoic Acid		<MDL	13	26.3	ug/Kg	346		24	47.7	ug/Kg	321		21	41.2	ug/Kg
Benzyl Alcohol		<MDL	2.6	5.26	ug/Kg		<MDL	4.8	9.55	ug/Kg		<MDL	4.1	8.23	ug/Kg
Benzyl Butyl Phthalate		<MDL	1.3	2.63	ug/Kg	90.5	B2	2.4	4.77	ug/Kg	37.7	B	2.1	4.12	ug/Kg
Bis(2-Ethylhexyl)Phthalate	876	E	5.3	10.5	ug/Kg	974		9.5	19.1	ug/Kg	527		8.2	16.5	ug/Kg
Caffeine		<MDL	5.3	10.5	ug/Kg		<MDL	9.5	19.1	ug/Kg		<MDL	8.2	16.5	ug/Kg
Carbazole	92.4		2.6	5.26	ug/Kg	21.7		4.8	9.55	ug/Kg	19.2		4.1	8.23	ug/Kg
Chrysene	314		2.6	5.26	ug/Kg	202		4.8	9.55	ug/Kg	204		4.1	8.23	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-100-4					Project:	423062-100-4					Project:	423062-100-4			
Locator:	DUD_1A					Locator:	DUD_2A					Locator:	DUD_3A			
Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON			
Sample:	L47890-1					Sample:	L47890-2					Sample:	L47890-3			
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED			
ColDate:	4/28/09 8:45					ColDate:	4/28/09 9:10					ColDate:	4/28/09 9:26			
TimeSpan:						TimeSpan:						TimeSpan:				
TotalSolid:	76.1					TotalSolid:	41.9					TotalSolid:	48.6			
ClientLoc:						ClientLoc:						ClientLoc:				
SampDepth:	6					SampDepth:	7					SampDepth:	10			
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**				
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Coprostanol		<MDL	53	105	ug/Kg		<MDL	95	191	ug/Kg		<MDL	82	165	ug/Kg
Di-N-Butyl Phthalate	31.4	B,J	5.3	10.5	ug/Kg	33.9	B	9.5	19.1	ug/Kg	43	B	8.2	16.5	ug/Kg
Di-N-Octyl Phthalate	821	E	5.3	10.5	ug/Kg		<MDL	9.5	19.1	ug/Kg		<MDL	8.2	16.5	ug/Kg
Dibenzo(a,h)anthracene	93.6		2.6	5.26	ug/Kg	41.3		4.8	9.55	ug/Kg	42.8		4.1	8.23	ug/Kg
Dibenzofuran	29.8		2.6	5.26	ug/Kg	10.9		4.8	9.55	ug/Kg	10.2		4.1	8.23	ug/Kg
Diethyl Phthalate		<MDL	5.3	10.5	ug/Kg		<MDL	9.5	19.1	ug/Kg		<MDL	8.2	16.5	ug/Kg
Dimethyl Phthalate		<MDL	5.3	10.5	ug/Kg		<MDL	9.5	19.1	ug/Kg		<MDL	8.2	16.5	ug/Kg
Fluoranthene	720	E,J	2.6	5.26	ug/Kg	294		4.8	9.55	ug/Kg	272		4.1	8.23	ug/Kg
Fluorene	38.8		2.6	5.26	ug/Kg	17.5		4.8	9.55	ug/Kg	18		4.1	8.23	ug/Kg
Hexachlorobenzene		<MDL	0.13	0.263	ug/Kg		<MDL	0.24	0.477	ug/Kg		<MDL	0.21	0.412	ug/Kg
Hexachlorobutadiene		<MDL	0.66	1.31	ug/Kg		<MDL	1.2	2.39	ug/Kg		<MDL	1	2.06	ug/Kg
Hexachloroethane		<MDL	1.3	2.63	ug/Kg		<MDL	2.4	4.77	ug/Kg		<MDL	2.1	4.12	ug/Kg
Indeno(1,2,3-Cd)Pyrene	189		2.6	5.26	ug/Kg	83.3		4.8	9.55	ug/Kg	107		4.1	8.23	ug/Kg
N-Nitrosodiphenylamine		<MDL	5.3	10.5	ug/Kg		<MDL	9.5	19.1	ug/Kg		<MDL	8.2	16.5	ug/Kg
Naphthalene	189		2.6	5.26	ug/Kg	50.4		4.8	9.55	ug/Kg	16.7		4.1	8.23	ug/Kg
Pentachlorophenol		<MDL	13	26.3	ug/Kg		<MDL	24	47.7	ug/Kg		<MDL	21	41.2	ug/Kg
Phenanthrene	481	J	2.6	5.26	ug/Kg	109		4.8	9.55	ug/Kg	105		4.1	8.23	ug/Kg
Phenol		<MDL	5.3	10.5	ug/Kg		<MDL	9.5	19.1	ug/Kg	151		8.2	16.5	ug/Kg
Pyrene	951	J	2.6	5.26	ug/Kg	301	JG	4.8	9.55	ug/Kg	300	JG	4.1	8.23	ug/Kg
Total 4-Nonylphenol	1420		6.6	13.1	ug/Kg	339		12	23.9	ug/Kg	152		10	20.6	ug/Kg
Total HPAHS	3600		2.6	5.26	ug/Kg	1680		4.8	9.55	ug/Kg	1770		4.1	8.23	ug/Kg
Total LPAHs	862		2.6	5.26	ug/Kg	248		4.8	9.55	ug/Kg	228		4.1	8.23	ug/Kg
OR SW846 3550B*SW846 8081B															
4,4'-DDD*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDE*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDT*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
Aldrin		<MDL	0.88	1.75	ug/Kg		<MDL	1.6	3.17	ug/Kg		<MDL	1.4	2.74	ug/Kg
Alpha-BHC		<MDL	0.43	0.876	ug/Kg		<MDL	0.79	1.59	ug/Kg		<MDL	0.68	1.37	ug/Kg
Alpha-Chlordane		<MDL	0.43	0.876	ug/Kg		<MDL	0.79	1.59	ug/Kg		<MDL	0.68	1.37	ug/Kg
Beta-BHC		<MDL	0.43	0.876	ug/Kg		<MDL	0.79	1.59	ug/Kg		<MDL	0.68	1.37	ug/Kg
Delta-BHC		<MDL	0.43	0.876	ug/Kg		<MDL	0.79	1.59	ug/Kg		<MDL	0.68	1.37	ug/Kg
Dieldrin		<MDL	0.88	1.75	ug/Kg		<MDL	1.6	3.17	ug/Kg		<MDL	1.4	2.74	ug/Kg
Endosulfan I		<MDL	0.88	1.75	ug/Kg		<MDL	1.6	3.17	ug/Kg		<MDL	1.4	2.74	ug/Kg
Endosulfan II		<MDL	0.88	1.75	ug/Kg		<MDL	1.6	3.17	ug/Kg		<MDL	1.4	2.74	ug/Kg
Endosulfan Sulfate		<MDL	0.88	1.75	ug/Kg		<MDL	1.6	3.17	ug/Kg		<MDL	1.4	2.74	ug/Kg
Endrin		<MDL	0.88	1.75	ug/Kg		<MDL	1.6	3.17	ug/Kg		<MDL	1.4	2.74	ug/Kg
Endrin Aldehyde		<MDL	0.88	1.75	ug/Kg		<MDL	1.6	3.17	ug/Kg		<MDL	1.4	2.74	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.43	0.876	ug/Kg		<MDL	0.79	1.59	ug/Kg		<MDL	0.68	1.37	ug/Kg
Gamma-Chlordane		<MDL	0.43	0.876	ug/Kg		<MDL	0.79	1.59	ug/Kg		<MDL	0.68	1.37	ug/Kg
Heptachlor		<MDL	0.43	0.876	ug/Kg		<MDL	0.79	1.59	ug/Kg		<MDL	0.68	1.37	ug/Kg
Heptachlor Epoxide		<MDL	0.43	0.876	ug/Kg		<MDL	0.79	1.59	ug/Kg		<MDL	0.68	1.37	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-100-4					Project:	423062-100-4					Project:	423062-100-4			
Locator:	DUD_1A					Locator:	DUD_2A					Locator:	DUD_3A			
Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON			
Sample:	L47890-1					Sample:	L47890-2					Sample:	L47890-3			
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED			
ColDate:	4/28/09 8:45					ColDate:	4/28/09 9:10					ColDate:	4/28/09 9:26			
TimeSpan:						TimeSpan:						TimeSpan:				
TotalSolid:	76.1					TotalSolid:	41.9					TotalSolid:	48.6			
ClientLoc:						ClientLoc:						ClientLoc:				
SampDepth:	6					SampDepth:	7					SampDepth:	10			
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**				
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Methoxychlor		<MDL	4.3	8.76	ug/Kg		<MDL	7.9	15.9	ug/Kg		<MDL	6.8	13.7	ug/Kg
Toxaphene		<MDL	8.8	17.5	ug/Kg		<MDL	16	31.7	ug/Kg		<MDL	14	27.4	ug/Kg
OR SW846 3550B*SW846 8082A															
Aroclor 1016		<MDL,TA	9.9	19.8	ug/Kg		<MDL,TA	14	28.4	ug/Kg		<MDL,TA	10	20.8	ug/Kg
Aroclor 1221		<MDL	2.2	4.38	ug/Kg		<MDL	4.1	7.95	ug/Kg		<MDL	3.5	6.85	ug/Kg
Aroclor 1232		<MDL,TA	22	43.8	ug/Kg		<MDL,TA	41	79.5	ug/Kg		<MDL,TA	29	57.4	ug/Kg
Aroclor 1242		<MDL,TA	22	43.8	ug/Kg		<MDL,TA	33	67.1	ug/Kg		<MDL,TA	14	27.8	ug/Kg
Aroclor 1248	15.1		1.1	2.19	ug/Kg	30.5		2	3.99	ug/Kg	20.1		1.7	3.44	ug/Kg
Aroclor 1254	25.9		1.1	2.19	ug/Kg	49.9		2	3.99	ug/Kg	46.5		1.7	3.44	ug/Kg
Aroclor 1260	15.9	JG	1.1	2.19	ug/Kg	22.4	JG	2	3.99	ug/Kg	18.6	JG	1.7	3.44	ug/Kg
Total Aroclors	56.8		1.1	2.19	ug/Kg	103		2	3.99	ug/Kg	85.2		1.7	3.44	ug/Kg
* Not converted to dry weight basis															

King County Environmental Lab Analytical Report

Project:	423062-100-4					Project:	423062-100-4					Project:	423062-100-4				
Locator:	DUD_4A					Locator:	DUD_5A					Locator:	DUD_5A				
Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON				
Sample:	L47890-4					Sample:	L47890-5					Sample:	L47890-6				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/28/09 9:45					ColDate:	4/28/09 10:02					ColDate:	4/28/09 10:22				
TimeSpan:						TimeSpan:						TimeSpan:					
TotalSolid:	60.3					TotalSolid:	79.6					TotalSolid:	84.8				
ClientLoc:						ClientLoc:						ClientLoc:					
SampDepth:	7					SampDepth:	9					SampDepth:	9				
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
M=CV ASTM D422															
Clay*	21.4		0.82	1.64	%	6.1		0.61	1.22	%	4.9		0.62	1.24	%
Fines*	48.5		0.82	1.64	%	8.6		0.61	1.22	%	6.2		0.62	1.24	%
Gravel*	6.3		0.16	1.64	%	21.2		0.12	1.22	%	19.2		0.12	1.24	%
Sand*	52		0.16	1.64	%	71.4		0.12	1.22	%	73.3		0.12	1.24	%
Silt*	27.1		0.82	1.64	%	2.4	J	0.61	1.22	%	1.2	J	0.62	1.24	%
p+0.00*	1.8		0.16	1.64	%	11.4		0.12	1.22	%	9.1		0.12	1.24	%
p+1.00*	4.6		0.16	1.64	%	15.9		0.12	1.22	%	16.3		0.12	1.24	%
p+10.0(equal/more than)*	16.4		0.82	1.64	%	4.3		0.61	1.22	%	3.7		0.62	1.24	%
p+2.00*	18.4		0.16	1.64	%	29.4		0.12	1.22	%	31.5		0.12	1.24	%
p+3.00*	27.2		0.16	1.64	%	12.9		0.12	1.22	%	14.3		0.12	1.24	%
p+4.00*		<MDL	0.16	1.64	%	1.9		0.12	1.22	%	2.1		0.12	1.24	%
p+5.00*	2.5		0.82	1.64	%		<MDL	0.61	1.22	%		<MDL	0.62	1.24	%
p+6.00*	9.9		0.82	1.64	%	0.6	<RDL	0.61	1.22	%		<MDL	0.62	1.24	%
p+7.00*	9.9		0.82	1.64	%	0.6	<RDL	0.61	1.22	%		<MDL	0.62	1.24	%
p+8.00*	4.9		0.82	1.64	%	1.2		0.61	1.22	%	1.2		0.62	1.24	%
p+9.00*	4.9		0.82	1.64	%	1.8		0.61	1.22	%	1.2		0.62	1.24	%
p-1.00*	1.2		0.16	1.64	%	9.7		0.12	1.22	%	9.9		0.12	1.24	%
p-2.00*		<MDL	0.16	1.64	%	3.1		0.12	1.22	%	2.5		0.12	1.24	%
p-2.00(less than)*	5.1		0.16	1.64	%	8.4		0.12	1.22	%	6.9		0.12	1.24	%
CV SW846 9060-PSEP96															
Total Organic Carbon	15700		2000	3860	mg/Kg	2190		500	1020	mg/Kg	1580		500	1000	mg/Kg
M=CV SM2540-G															
Total Solids*	60.3		0.005	0.01	%	79.6		0.005	0.01	%	84.8		0.005	0.01	%
M=ES NONE															
Field Personnel*	BK,JDD,JB,JeneeC				none	BK,JDD,JB,JeneeC				none	BK,JDD,JB,JeneeC				none
Sampcoordx1*	1266886				ft	1266795				ft	1266797				ft
Sampcoordx2*	1266888				ft	1266797				ft	1266799				ft
Sampcoordx3*															
Sampcoordy1*	209357				ft	209410				ft	209411				ft
Sampcoordy2*	209354				ft	209411				ft	209405				ft
Sampcoordy3*															
Sample Depth*	7				m	9				m	9				m
Sampling Method*	20143				none	20143				none	20143				none
Sediment Sampling Depth*	12				cm	8				cm	8				cm
Sediment Sampling Range*					cm					cm					cm
Sediment Type*	20N30				none	34N20				none	34N20				none
Tidal Condition*	E				none	E				none	E				none
Tide Height*	4.8				ft	2.5				ft	3.5				ft
Sample Function*											FREP @ L47890-5				none
MT SW846 3050B*SW846 6010C															

King County Environmental Lab Analytical Report

Project:	423062-100-4	423062-100-4	423062-100-4
Locator:	DUD_4A	DUD_5A	DUD_5A
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sample:	L47890-4	L47890-5	L47890-6
Matrix:	SF SALTWTRSED	SF SALTWTRSED	SF SALTWTRSED
ColDate:	4/28/09 9:45	4/28/09 10:02	4/28/09 10:22
TimeSpan:			
TotalSolid:	60.3	79.6	84.8
ClientLoc:			
SampDepth:	7	9	9
DRY Weight Basis		**DRY Weight Basis**	**DRY Weight Basis**

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
Aluminum, Total, ICP	18900		8.6	43.3	mg/Kg	11100		6.4	32.2	mg/Kg	11500		7.4	37.3	mg/Kg
Antimony, Total, ICP		<MDL,JG	1.3	6.5	mg/Kg		<MDL,JG	0.97	4.82	mg/Kg		<MDL,JG	1.1	5.6	mg/Kg
Arsenic, Total, ICP	7.6	<RDL	2.2	10.8	mg/Kg	3.3	<RDL	1.6	8.04	mg/Kg	2.8	<RDL	1.9	9.33	mg/Kg
Beryllium, Total, ICP	0.32	<RDL	0.086	0.433	mg/Kg	0.15	<RDL	0.064	0.322	mg/Kg	0.15	<RDL	0.074	0.373	mg/Kg
Cadmium, Total, ICP	0.36	<RDL	0.17	0.866	mg/Kg		<MDL	0.13	0.643	mg/Kg		<MDL	0.15	0.746	mg/Kg
Chromium, Total, ICP	27.5		0.27	1.3	mg/Kg	16.5		0.19	0.965	mg/Kg	16		0.22	1.12	mg/Kg
Copper, Total, ICP	70.6		0.35	1.72	mg/Kg	38.9		0.25	1.28	mg/Kg	35.4		0.29	1.5	mg/Kg
Iron, Total, ICP	28200		4.3	21.7	mg/Kg	20100		3.3	16.1	mg/Kg	20400		3.8	18.6	mg/Kg
Lead, Total, ICP	22.6		1.7	8.66	mg/Kg	5.5	<RDL	1.3	6.43	mg/Kg	5.5	<RDL	1.5	7.46	mg/Kg
Manganese, Total, ICP	313		0.17	0.866	mg/Kg	305		0.13	0.643	mg/Kg	432		0.15	0.746	mg/Kg
Nickel, Total, ICP	25.4		0.43	2.17	mg/Kg	16.5		0.33	1.61	mg/Kg	16.6		0.38	1.86	mg/Kg
Selenium, Total, ICP		<MDL	2.2	10.8	mg/Kg		<MDL	1.6	8.04	mg/Kg		<MDL	1.9	9.33	mg/Kg
Silver, Total, ICP	0.53	<RDL	0.35	1.72	mg/Kg		<MDL	0.25	1.28	mg/Kg		<MDL	0.29	1.5	mg/Kg
Thallium, Total, ICP		<MDL	3.5	17.2	mg/Kg		<MDL	2.5	12.8	mg/Kg		<MDL	2.9	15	mg/Kg
Zinc, Total, ICP	94.9		0.43	2.17	mg/Kg	36.8		0.33	1.61	mg/Kg	36.6		0.38	1.86	mg/Kg
MT SW846 7471B															
Mercury, Total, CVAA	0.112		0.0041	0.041	mg/Kg	0.023	<RDL,J	0.0031	0.0313	mg/Kg	0.02	<RDL	0.0029	0.0291	mg/Kg
OR EPA 3550B/8270C (7-3-01-004)															
1,2,4-Trichlorobenzene		<MDL	0.17	0.332	ug/Kg		<MDL	0.13	0.251	ug/Kg		<MDL	0.12	0.236	ug/Kg
1,2-Dichlorobenzene		<MDL	0.33	0.663	ug/Kg		<MDL	0.25	0.503	ug/Kg		<MDL	0.24	0.472	ug/Kg
1,3-Dichlorobenzene		<MDL	0.33	0.663	ug/Kg		<MDL	0.25	0.503	ug/Kg		<MDL	0.24	0.472	ug/Kg
1,4-Dichlorobenzene	3.55		0.33	0.663	ug/Kg		<MDL	0.25	0.503	ug/Kg		<MDL	0.24	0.472	ug/Kg
2,4-Dimethylphenol		<MDL	1.7	3.32	ug/Kg		<MDL	1.3	2.51	ug/Kg		<MDL	1.2	2.36	ug/Kg
2-Methylnaphthalene	5.8	<RDL	3.3	6.63	ug/Kg	3.9	<RDL	2.5	5.03	ug/Kg		<MDL	2.4	4.72	ug/Kg
2-Methylphenol		<MDL	3.3	6.63	ug/Kg		<MDL	2.5	5.03	ug/Kg		<MDL	2.4	4.72	ug/Kg
4-Methylphenol		<MDL	6.6	13.3	ug/Kg		<MDL	5	10.1	ug/Kg		<MDL	4.7	9.43	ug/Kg
Acenaphthene	9.14		3.3	6.63	ug/Kg	15.1		2.5	5.03	ug/Kg		<MDL	2.4	4.72	ug/Kg
Acenaphthylene	4.6	<RDL	3.3	6.63	ug/Kg		<MDL	2.5	5.03	ug/Kg		<MDL	2.4	4.72	ug/Kg
Anthracene	70.5		3.3	6.63	ug/Kg	43.3		2.5	5.03	ug/Kg	4.5	<RDL	2.4	4.72	ug/Kg
Benzo(a)anthracene	159		3.3	6.63	ug/Kg	87.7		2.5	5.03	ug/Kg	10.6		2.4	4.72	ug/Kg
Benzo(a)pyrene	138		3.3	6.63	ug/Kg	70.1		2.5	5.03	ug/Kg	13.7		2.4	4.72	ug/Kg
Benzo(b)fluoranthene	169		3.3	6.63	ug/Kg	71.5		2.5	5.03	ug/Kg	18.5		2.4	4.72	ug/Kg
Benzo(g,h,i)perylene	99.2		3.3	6.63	ug/Kg	37.2		2.5	5.03	ug/Kg	8.44		2.4	4.72	ug/Kg
Benzo(k)fluoranthene	143		3.3	6.63	ug/Kg	70.7		2.5	5.03	ug/Kg	14.6		2.4	4.72	ug/Kg
Benzoic Acid	192		17	33.2	ug/Kg	118		13	25.1	ug/Kg	84.2		12	23.6	ug/Kg
Benzyl Alcohol		<MDL	3.3	6.63	ug/Kg		<MDL	2.5	5.03	ug/Kg		<MDL	2.4	4.72	ug/Kg
Benzyl Butyl Phthalate	42.5	B2	1.7	3.32	ug/Kg	7.29	B	1.3	2.51	ug/Kg	11.5	B	1.2	2.36	ug/Kg
Bis(2-Ethylhexyl)Phthalate	620		6.6	13.3	ug/Kg	58.5	B	5	10.1	ug/Kg	51.5	B	4.7	9.43	ug/Kg
Caffeine		<MDL	6.6	13.3	ug/Kg		<MDL	5	10.1	ug/Kg		<MDL	4.7	9.43	ug/Kg
Carbazole	29.5		3.3	6.63	ug/Kg	25.1		2.5	5.03	ug/Kg		<MDL	2.4	4.72	ug/Kg
Chrysene	189		3.3	6.63	ug/Kg	86.1		2.5	5.03	ug/Kg	17		2.4	4.72	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-100-4	423062-100-4	423062-100-4
Locator:	DUD_4A	DUD_5A	DUD_5A
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sample:	L47890-4	L47890-5	L47890-6
Matrix:	SF SALTWTRSED	SF SALTWTRSED	SF SALTWTRSED
ColDate:	4/28/09 9:45	4/28/09 10:02	4/28/09 10:22
TimeSpan:			
TotalSolid:	60.3	79.6	84.8
ClientLoc:			
SampDepth:	7	9	9
DRY Weight Basis			

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
Coprostanol		<MDL	66	133	ug/Kg		<MDL	50	101	ug/Kg		<MDL	47	94.3	ug/Kg
Di-N-Butyl Phthalate	25.9	B	6.6	13.3	ug/Kg	14.9	B	5	10.1	ug/Kg	11.4	B	4.7	9.43	ug/Kg
Di-N-Octyl Phthalate		<MDL	6.6	13.3	ug/Kg		<MDL	5	10.1	ug/Kg		<MDL	4.7	9.43	ug/Kg
Dibenzo(a,h)anthracene	37.5		3.3	6.63	ug/Kg	16.6		2.5	5.03	ug/Kg	3.5	<RDL	2.4	4.72	ug/Kg
Dibenzofuran	7.71		3.3	6.63	ug/Kg	7.99		2.5	5.03	ug/Kg		<MDL	2.4	4.72	ug/Kg
Diethyl Phthalate		<MDL	6.6	13.3	ug/Kg		<MDL	5	10.1	ug/Kg		<MDL	4.7	9.43	ug/Kg
Dimethyl Phthalate	51.2		6.6	13.3	ug/Kg		<MDL	5	10.1	ug/Kg		<MDL	4.7	9.43	ug/Kg
Fluoranthene	308		3.3	6.63	ug/Kg	206		2.5	5.03	ug/Kg	23.8		2.4	4.72	ug/Kg
Fluorene	15.3		3.3	6.63	ug/Kg	14.9		2.5	5.03	ug/Kg	2.6	<RDL	2.4	4.72	ug/Kg
Hexachlorobenzene		<MDL	0.17	0.332	ug/Kg		<MDL	0.13	0.251	ug/Kg		<MDL	0.12	0.236	ug/Kg
Hexachlorobutadiene		<MDL	0.83	1.66	ug/Kg		<MDL	0.63	1.26	ug/Kg		<MDL	0.59	1.18	ug/Kg
Hexachloroethane		<MDL	1.7	3.32	ug/Kg		<MDL	1.3	2.51	ug/Kg		<MDL	1.2	2.36	ug/Kg
Indeno(1,2,3-Cd)Pyrene	85.9		3.3	6.63	ug/Kg	38.2		2.5	5.03	ug/Kg	8.25		2.4	4.72	ug/Kg
N-Nitrosodiphenylamine		<MDL	6.6	13.3	ug/Kg		<MDL	5	10.1	ug/Kg		<MDL	4.7	9.43	ug/Kg
Naphthalene	65.7		3.3	6.63	ug/Kg		<MDL	2.5	5.03	ug/Kg		<MDL	2.4	4.72	ug/Kg
Pentachlorophenol		<MDL	17	33.2	ug/Kg		<MDL	13	25.1	ug/Kg		<MDL	12	23.6	ug/Kg
Phenanthrene	132		3.3	6.63	ug/Kg	148		2.5	5.03	ug/Kg	9.81		2.4	4.72	ug/Kg
Phenol	32.5		6.6	13.3	ug/Kg	17.3		5	10.1	ug/Kg	57.1		4.7	9.43	ug/Kg
Pyrene	332	JG	3.3	6.63	ug/Kg	193	JG	2.5	5.03	ug/Kg	24.1	JG	2.4	4.72	ug/Kg
Total 4-Nonylphenol	342		8.3	16.6	ug/Kg		<MDL	6.3	12.6	ug/Kg		<MDL	5.9	11.8	ug/Kg
Total HPAHS	1660		3.3	6.63	ug/Kg	877		2.5	5.03	ug/Kg	143		2.4	4.72	ug/Kg
Total LPAHs	302		3.3	6.63	ug/Kg	229		2.5	5.03	ug/Kg	20.5		2.4	4.72	ug/Kg
OR SW846 3550B*SW846 8081B															
4,4'-DDD*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDE*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDT*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
Aldrin		<MDL	1.1	2.21	ug/Kg		<MDL	0.84	1.67	ug/Kg		<MDL	0.79	1.57	ug/Kg
Alpha-BHC		<MDL	0.55	1.11	ug/Kg		<MDL	0.41	0.838	ug/Kg		<MDL	0.39	0.787	ug/Kg
Alpha-Chlordane		<MDL	0.55	1.11	ug/Kg		<MDL	0.41	0.838	ug/Kg		<MDL	0.39	0.787	ug/Kg
Beta-BHC		<MDL	0.55	1.11	ug/Kg		<MDL	0.41	0.838	ug/Kg		<MDL	0.39	0.787	ug/Kg
Delta-BHC		<MDL	0.55	1.11	ug/Kg		<MDL	0.41	0.838	ug/Kg		<MDL	0.39	0.787	ug/Kg
Dieldrin		<MDL	1.1	2.21	ug/Kg		<MDL	0.84	1.67	ug/Kg		<MDL	0.79	1.57	ug/Kg
Endosulfan I		<MDL	1.1	2.21	ug/Kg		<MDL	0.84	1.67	ug/Kg		<MDL	0.79	1.57	ug/Kg
Endosulfan II		<MDL	1.1	2.21	ug/Kg		<MDL	0.84	1.67	ug/Kg		<MDL	0.79	1.57	ug/Kg
Endosulfan Sulfate		<MDL	1.1	2.21	ug/Kg		<MDL	0.84	1.67	ug/Kg		<MDL	0.79	1.57	ug/Kg
Endrin		<MDL	1.1	2.21	ug/Kg		<MDL	0.84	1.67	ug/Kg		<MDL	0.79	1.57	ug/Kg
Endrin Aldehyde		<MDL	1.1	2.21	ug/Kg		<MDL	0.84	1.67	ug/Kg		<MDL	0.79	1.57	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.55	1.11	ug/Kg		<MDL	0.41	0.838	ug/Kg		<MDL	0.39	0.787	ug/Kg
Gamma-Chlordane		<MDL	0.55	1.11	ug/Kg		<MDL	0.41	0.838	ug/Kg		<MDL	0.39	0.787	ug/Kg
Heptachlor		<MDL	0.55	1.11	ug/Kg		<MDL	0.41	0.838	ug/Kg		<MDL	0.39	0.787	ug/Kg
Heptachlor Epoxide		<MDL	0.55	1.11	ug/Kg		<MDL	0.41	0.838	ug/Kg		<MDL	0.39	0.787	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-100-4	423062-100-4	423062-100-4
Locator:	DUD_4A	DUD_5A	DUD_5A
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sample:	L47890-4	L47890-5	L47890-6
Matrix:	SF SALTWTRSED	SF SALTWTRSED	SF SALTWTRSED
ColDate:	4/28/09 9:45	4/28/09 10:02	4/28/09 10:22
TimeSpan:			
TotalSolid:	60.3	79.6	84.8
ClientLoc:			
SampDepth:	7	9	9
DRY Weight Basis		**DRY Weight Basis**	**DRY Weight Basis**

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
Methoxychlor		<MDL	5.5	11.1	ug/Kg		<MDL	4.1	8.38	ug/Kg		<MDL	3.9	7.87	ug/Kg
Toxaphene		<MDL	11	22.1	ug/Kg		<MDL	8.4	16.7	ug/Kg		<MDL	7.9	15.7	ug/Kg
OR SW846 3550B*SW846 8082A															
Aroclor 1016		<MDL,TA	6.3	12.7	ug/Kg		<MDL	1	2.1	ug/Kg		<MDL	0.98	1.97	ug/Kg
Aroclor 1221		<MDL	2.8	5.52	ug/Kg		<MDL	2.1	4.18	ug/Kg		<MDL	2	3.93	ug/Kg
Aroclor 1232		<MDL,TA	12	23.9	ug/Kg		<MDL	2.1	4.18	ug/Kg		<MDL	2	3.93	ug/Kg
Aroclor 1242		<MDL,TA	9.3	18.7	ug/Kg		<MDL,TA	1.9	3.68	ug/Kg		<MDL,TA	2.9	5.98	ug/Kg
Aroclor 1248	12.8		1.4	2.77	ug/Kg	2.39		1	2.1	ug/Kg	2.71		0.98	1.97	ug/Kg
Aroclor 1254	29		1.4	2.77	ug/Kg	5.38		1	2.1	ug/Kg	4.88		0.98	1.97	ug/Kg
Aroclor 1260	11	JG	1.4	2.77	ug/Kg	2.8	JG	1	2.1	ug/Kg	2.22	JG	0.98	1.97	ug/Kg
Total Aroclors	52.7		1.4	2.77	ug/Kg	10.6		1	2.1	ug/Kg	9.81		0.98	1.97	ug/Kg

* Not converted to dry weight basis

King County Environmental Lab Analytical Report

Project:	423062-100-4					Project:	423062-100-4					Project:	423062-100-4				
Locator:	DUD_1B					Locator:	DUD_2B					Locator:	DUD_3B				
Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON				
Sample:	L47890-7					Sample:	L47890-8					Sample:	L47890-9				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/27/09 14:25					ColDate:	4/27/09 14:50					ColDate:	4/27/09 15:15				
TimeSpan:						TimeSpan:						TimeSpan:					
TotalSolid:	46.4					TotalSolid:	40.9					TotalSolid:	40.9				
ClientLoc:						ClientLoc:						ClientLoc:					
SampDepth:	8					SampDepth:	5					SampDepth:	5				
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
M=CV ASTM D422															
Clay*	25.1		1	2.09	%	31.2		1.2	2.4	%	31.9		1.2	2.46	%
Fines*	76.2		1	2.09	%	87.5		1.2	2.4	%	93.4		1.2	2.46	%
Gravel*	0.3	<RDL	0.21	2.09	%	1.4		0.24	2.4	%	0.3	<RDL	0.25	2.46	%
Sand*	14.7		0.21	2.09	%	3.4		0.24	2.4	%	2.7		0.25	2.46	%
Silt*	51.2		1	2.09	%	56.3		1.2	2.4	%	61.4		1.2	2.46	%
p+0.00*		<MDL	0.21	2.09	%		<MDL	0.24	2.4	%		<MDL	0.25	2.46	%
p+1.00*	0.4	<RDL	0.21	2.09	%		<MDL	0.24	2.4	%		<MDL	0.25	2.46	%
p+10.0(equal/more than)*	14.6		1	2.09	%	19.2		1.2	2.4	%	19.7		1.2	2.46	%
p+2.00*	3.3		0.21	2.09	%	0.9	<RDL	0.24	2.4	%		<MDL	0.25	2.46	%
p+3.00*	5.8		0.21	2.09	%	2		0.24	2.4	%	0.5	<RDL	0.25	2.46	%
p+4.00*	5.2		0.21	2.09	%	0.5	<RDL	0.24	2.4	%	2.2		0.25	2.46	%
p+5.00*	6.3		1	2.09	%	4.8		1.2	2.4	%	8.6		1.2	2.46	%
p+6.00*	16.7		1	2.09	%	19.2		1.2	2.4	%	20.9		1.2	2.46	%
p+7.00*	14.6		1	2.09	%	16.8		1.2	2.4	%	16		1.2	2.46	%
p+8.00*	13.6		1	2.09	%	15.6		1.2	2.4	%	16		1.2	2.46	%
p+9.00*	10.4		1	2.09	%	12		1.2	2.4	%	12.3		1.2	2.46	%
p-1.00*		<MDL	0.21	2.09	%		<MDL	0.24	2.4	%		<MDL	0.25	2.46	%
p-2.00*	0.3	<RDL	0.21	2.09	%		<MDL	0.24	2.4	%	0.3	<RDL	0.25	2.46	%
p-2.00(less than)*		<MDL	0.21	2.09	%	1.4		0.24	2.4	%		<MDL	0.25	2.46	%
CV SW846 9060-PSEP96															
Total Organic Carbon	18100		1800	3660	mg/Kg	18100		2000	3990	mg/Kg	17700		1900	3690	mg/Kg
M=CV SM2540-G															
Total Solids*	46.4		0.005	0.01	%	40.9		0.005	0.01	%	40.9		0.005	0.01	%
M=ES NONE															
Field Personnel*	JD,JO,JeneeC,JB				none	JD,JO,JeneeC,JB				none	JD,JO,JeneeC,JB				none
Sampcoordx1*	1267058				ft	1267076				ft	1267049				ft
Sampcoordx2*	1267057				ft	1267087				ft	1267053				ft
Sampcoordx3*															
Sampcoordy1*	208483				ft	208621				ft	208716				ft
Sampcoordy2*	208487				ft	208619				ft	208713				ft
Sampcoordy3*															
Sample Depth*	8				m	5				m	5				m
Sampling Method*	20143				none	20143				none	20143				none
Sediment Sampling Depth*	16				cm	13				cm	15				cm
Sediment Sampling Range*					cm					cm					cm
Sediment Type*	20N20				none	20N20				none	20N30				none
Tidal Condition*	F				none	F				none	F				none
Tide Height*	-1.5				ft	-1				ft	0.5				ft
Sample Function*															
MT SW846 3050B*SW846 6010C															

King County Environmental Lab Analytical Report

Project:	423062-100-4	423062-100-4	423062-100-4
Locator:	DUD_1B	DUD_2B	DUD_3B
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sample:	L47890-7	L47890-8	L47890-9
Matrix:	SF SALTWTRSED	SF SALTWTRSED	SF SALTWTRSED
ColDate:	4/27/09 14:25	4/27/09 14:50	4/27/09 15:15
TimeSpan:			
TotalSolid:	46.4	40.9	40.9
ClientLoc:			
SampDepth:	8	5	5
DRY Weight Basis			

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
Aluminum, Total, ICP	26100		11	52.6	mg/Kg	31500		13	63.6	mg/Kg	32300		12	59.2	mg/Kg
Antimony, Total, ICP		<MDL,JG	1.6	7.91	mg/Kg		<MDL,JG	1.9	9.56	mg/Kg		<MDL,JG	1.8	8.88	mg/Kg
Arsenic, Total, ICP	11	<RDL	2.6	13.2	mg/Kg	12	<RDL	3.2	15.9	mg/Kg	12	<RDL	2.9	14.8	mg/Kg
Beryllium, Total, ICP	0.554		0.11	0.526	mg/Kg	0.643		0.13	0.636	mg/Kg	0.655		0.12	0.592	mg/Kg
Cadmium, Total, ICP	0.45	<RDL	0.21	1.05	mg/Kg	0.44	<RDL	0.24	1.27	mg/Kg	0.42	<RDL	0.24	1.18	mg/Kg
Chromium, Total, ICP	28.9		0.32	1.58	mg/Kg	32		0.39	1.91	mg/Kg	28.6		0.37	1.78	mg/Kg
Copper, Total, ICP	60.8		0.43	2.11	mg/Kg	62.3		0.51	2.54	mg/Kg	56		0.46	2.37	mg/Kg
Iron, Total, ICP	34300		5.2	26.3	mg/Kg	40300		6.4	31.8	mg/Kg	40100		5.9	29.6	mg/Kg
Lead, Total, ICP	22.6		2.1	10.5	mg/Kg	20.9		2.4	12.7	mg/Kg	15.7		2.4	11.8	mg/Kg
Manganese, Total, ICP	386		0.21	1.05	mg/Kg	501		0.24	1.27	mg/Kg	474		0.24	1.18	mg/Kg
Nickel, Total, ICP	25.9		0.52	2.63	mg/Kg	29.6		0.64	3.18	mg/Kg	27.1		0.59	2.96	mg/Kg
Selenium, Total, ICP		<MDL	2.6	13.2	mg/Kg		<MDL	3.2	15.9	mg/Kg		<MDL	2.9	14.8	mg/Kg
Silver, Total, ICP		<MDL	0.43	2.11	mg/Kg		<MDL	0.51	2.54	mg/Kg		<MDL	0.46	2.37	mg/Kg
Thallium, Total, ICP		<MDL	4.3	21.1	mg/Kg		<MDL	5.1	25.4	mg/Kg		<MDL	4.6	23.7	mg/Kg
Zinc, Total, ICP	96.8		0.52	2.63	mg/Kg	101		0.64	3.18	mg/Kg	90.7		0.59	2.96	mg/Kg
MT SW846 7471B															
Mercury, Total, CVAA	0.164		0.0054	0.0545	mg/Kg	0.163		0.0061	0.0609	mg/Kg	0.135		0.0061	0.0611	mg/Kg
OR EPA 3550B/8270C (7-3-01-004)															
1,2,4-Trichlorobenzene		<MDL	0.22	0.431	ug/Kg		<MDL	0.24	0.489	ug/Kg		<MDL	0.24	0.489	ug/Kg
1,2-Dichlorobenzene		<MDL	0.43	0.862	ug/Kg		<MDL	0.49	0.978	ug/Kg		<MDL	0.49	0.978	ug/Kg
1,3-Dichlorobenzene		<MDL	0.43	0.862	ug/Kg		<MDL	0.49	0.978	ug/Kg		<MDL	0.49	0.978	ug/Kg
1,4-Dichlorobenzene		<MDL	0.43	0.862	ug/Kg		<MDL	0.49	0.978	ug/Kg		<MDL	0.49	0.978	ug/Kg
2,4-Dimethylphenol		<MDL	2.2	4.31	ug/Kg		<MDL	2.4	4.89	ug/Kg		<MDL	2.4	4.89	ug/Kg
2-Methylnaphthalene	5.2	<RDL	4.3	8.62	ug/Kg	5.9	<RDL	4.9	9.78	ug/Kg	12.1		4.9	9.78	ug/Kg
2-Methylphenol		<MDL	4.3	8.62	ug/Kg		<MDL	4.9	9.78	ug/Kg		<MDL	4.9	9.78	ug/Kg
4-Methylphenol		<MDL	8.6	17.2	ug/Kg		<MDL	9.8	19.6	ug/Kg		<MDL	9.8	19.6	ug/Kg
Acenaphthene	4.5	<RDL	4.3	8.62	ug/Kg	5.1	<RDL	4.9	9.78	ug/Kg	7.3	<RDL	4.9	9.78	ug/Kg
Acenaphthylene	5.8	<RDL	4.3	8.62	ug/Kg		<MDL	4.9	9.78	ug/Kg		<MDL	4.9	9.78	ug/Kg
Anthracene	34.7		4.3	8.62	ug/Kg	33.3		4.9	9.78	ug/Kg	20		4.9	9.78	ug/Kg
Benzo(a)anthracene	87.3		4.3	8.62	ug/Kg	95.4		4.9	9.78	ug/Kg	49.4		4.9	9.78	ug/Kg
Benzo(a)pyrene	80		4.3	8.62	ug/Kg	87.3		4.9	9.78	ug/Kg	49.9		4.9	9.78	ug/Kg
Benzo(b)fluoranthene	112		4.3	8.62	ug/Kg	105		4.9	9.78	ug/Kg	66.5		4.9	9.78	ug/Kg
Benzo(g,h,i)perylene	52.8		4.3	8.62	ug/Kg	57.2		4.9	9.78	ug/Kg	31.1		4.9	9.78	ug/Kg
Benzo(k)fluoranthene	101		4.3	8.62	ug/Kg	111		4.9	9.78	ug/Kg	69.4		4.9	9.78	ug/Kg
Benzoic Acid	182		22	43.1	ug/Kg	249		24	48.9	ug/Kg	320		24	48.9	ug/Kg
Benzyl Alcohol		<MDL	4.3	8.62	ug/Kg		<MDL	4.9	9.78	ug/Kg		<MDL	4.9	9.78	ug/Kg
Benzyl Butyl Phthalate	25	B	2.2	4.31	ug/Kg	38.1	B	2.4	4.89	ug/Kg	42.1	B	2.4	4.89	ug/Kg
Bis(2-Ethylhexyl)Phthalate	269		8.6	17.2	ug/Kg	301		9.8	19.6	ug/Kg	303		9.8	19.6	ug/Kg
Caffeine		<MDL	8.6	17.2	ug/Kg		<MDL	9.8	19.6	ug/Kg		<MDL	9.8	19.6	ug/Kg
Carbazole	18.3		4.3	8.62	ug/Kg	10.9		4.9	9.78	ug/Kg	10.9		4.9	9.78	ug/Kg
Chrysene	122		4.3	8.62	ug/Kg	127		4.9	9.78	ug/Kg	70.2		4.9	9.78	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-100-4	423062-100-4	423062-100-4
Locator:	DUD_1B	DUD_2B	DUD_3B
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sample:	L47890-7	L47890-8	L47890-9
Matrix:	SF SALTWTRSED	SF SALTWTRSED	SF SALTWTRSED
ColDate:	4/27/09 14:25	4/27/09 14:50	4/27/09 15:15
TimeSpan:			
TotalSolid:	46.4	40.9	40.9
ClientLoc:			
SampDepth:	8	5	5
DRY Weight Basis			

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
Coprostanol		<MDL	86	172	ug/Kg		<MDL	98	196	ug/Kg		<MDL	98	196	ug/Kg
Di-N-Butyl Phthalate	28.2	B	8.6	17.2	ug/Kg	30.8	B	9.8	19.6	ug/Kg	35.5	B	9.8	19.6	ug/Kg
Di-N-Octyl Phthalate		<MDL	8.6	17.2	ug/Kg		<MDL	9.8	19.6	ug/Kg		<MDL	9.8	19.6	ug/Kg
Dibenzo(a,h)anthracene	20.6		4.3	8.62	ug/Kg	23.1		4.9	9.78	ug/Kg	12.5		4.9	9.78	ug/Kg
Dibenzofuran	5.8	<RDL	4.3	8.62	ug/Kg	6.4	<RDL	4.9	9.78	ug/Kg	9.5	<RDL	4.9	9.78	ug/Kg
Diethyl Phthalate		<MDL	8.6	17.2	ug/Kg		<MDL	9.8	19.6	ug/Kg		<MDL	9.8	19.6	ug/Kg
Dimethyl Phthalate		<MDL	8.6	17.2	ug/Kg		<MDL	9.8	19.6	ug/Kg		<MDL	9.8	19.6	ug/Kg
Fluoranthene	175		4.3	8.62	ug/Kg	175		4.9	9.78	ug/Kg	133		4.9	9.78	ug/Kg
Fluorene	11.6		4.3	8.62	ug/Kg	12.2		4.9	9.78	ug/Kg	13.1		4.9	9.78	ug/Kg
Hexachlorobenzene		<MDL	0.22	0.431	ug/Kg		<MDL	0.24	0.489	ug/Kg		<MDL	0.24	0.489	ug/Kg
Hexachlorobutadiene		<MDL	1.1	2.16	ug/Kg		<MDL	1.2	2.44	ug/Kg		<MDL	1.2	2.44	ug/Kg
Hexachloroethane		<MDL	2.2	4.31	ug/Kg		<MDL	2.4	4.89	ug/Kg		<MDL	2.4	4.89	ug/Kg
Indeno(1,2,3-Cd)Pyrene	49.1		4.3	8.62	ug/Kg	53.3		4.9	9.78	ug/Kg	29.8		4.9	9.78	ug/Kg
N-Nitrosodiphenylamine		<MDL	8.6	17.2	ug/Kg		<MDL	9.8	19.6	ug/Kg		<MDL	9.8	19.6	ug/Kg
Naphthalene		<MDL	4.3	8.62	ug/Kg	7.6	<RDL	4.9	9.78	ug/Kg	7.3	<RDL	4.9	9.78	ug/Kg
Pentachlorophenol		<MDL	22	43.1	ug/Kg		<MDL	24	48.9	ug/Kg		<MDL	24	48.9	ug/Kg
Phenanthrene	61		4.3	8.62	ug/Kg	61.1		4.9	9.78	ug/Kg	81.4		4.9	9.78	ug/Kg
Phenol		<MDL	8.6	17.2	ug/Kg		<MDL	9.8	19.6	ug/Kg		<MDL	9.8	19.6	ug/Kg
Pyrene	172	JG	4.3	8.62	ug/Kg	171	JG	4.9	9.78	ug/Kg	126	JG	4.9	9.78	ug/Kg
Total 4-Nonylphenol		<MDL	11	21.6	ug/Kg		<MDL	12	24.4	ug/Kg		<MDL	12	24.4	ug/Kg
Total HPAHS	972		4.3	8.62	ug/Kg	1000		4.9	9.78	ug/Kg	638		4.9	9.78	ug/Kg
Total LPAHs	127		4.3	8.62	ug/Kg	129		4.9	9.78	ug/Kg	145		4.9	9.78	ug/Kg
OR SW846 3550B*SW846 8081B															
4,4'-DDD*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDE*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDT*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
Aldrin		<MDL	1.4	2.87	ug/Kg		<MDL	1.6	3.25	ug/Kg		<MDL	1.6	3.25	ug/Kg
Alpha-BHC		<MDL	0.71	1.44	ug/Kg		<MDL	0.81	1.63	ug/Kg		<MDL	0.81	1.63	ug/Kg
Alpha-Chlordane		<MDL	0.71	1.44	ug/Kg		<MDL	0.81	1.63	ug/Kg		<MDL	0.81	1.63	ug/Kg
Beta-BHC		<MDL	0.71	1.44	ug/Kg		<MDL	0.81	1.63	ug/Kg		<MDL	0.81	1.63	ug/Kg
Delta-BHC		<MDL	0.71	1.44	ug/Kg		<MDL	0.81	1.63	ug/Kg		<MDL	0.81	1.63	ug/Kg
Dieldrin		<MDL	1.4	2.87	ug/Kg		<MDL	1.6	3.25	ug/Kg		<MDL	1.6	3.25	ug/Kg
Endosulfan I		<MDL	1.4	2.87	ug/Kg		<MDL	1.6	3.25	ug/Kg		<MDL	1.6	3.25	ug/Kg
Endosulfan II		<MDL	1.4	2.87	ug/Kg		<MDL	1.6	3.25	ug/Kg		<MDL	1.6	3.25	ug/Kg
Endosulfan Sulfate		<MDL	1.4	2.87	ug/Kg		<MDL	1.6	3.25	ug/Kg		<MDL	1.6	3.25	ug/Kg
Endrin		<MDL	1.4	2.87	ug/Kg		<MDL	1.6	3.25	ug/Kg		<MDL	1.6	3.25	ug/Kg
Endrin Aldehyde		<MDL	1.4	2.87	ug/Kg		<MDL	1.6	3.25	ug/Kg		<MDL	1.6	3.25	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.71	1.44	ug/Kg		<MDL	0.81	1.63	ug/Kg		<MDL	0.81	1.63	ug/Kg
Gamma-Chlordane		<MDL	0.71	1.44	ug/Kg		<MDL	0.81	1.63	ug/Kg		<MDL	0.81	1.63	ug/Kg
Heptachlor		<MDL	0.71	1.44	ug/Kg		<MDL	0.81	1.63	ug/Kg		<MDL	0.81	1.63	ug/Kg
Heptachlor Epoxide		<MDL	0.71	1.44	ug/Kg		<MDL	0.81	1.63	ug/Kg		<MDL	0.81	1.63	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-100-4	423062-100-4	423062-100-4
Locator:	DUD_1B	DUD_2B	DUD_3B
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sample:	L47890-7	L47890-8	L47890-9
Matrix:	SF SALTWTRSED	SF SALTWTRSED	SF SALTWTRSED
ColDate:	4/27/09 14:25	4/27/09 14:50	4/27/09 15:15
TimeSpan:			
TotalSolid:	46.4	40.9	40.9
ClientLoc:			
SampDepth:	8	5	5
DRY Weight Basis			

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
Methoxychlor		<MDL	7.1	14.4	ug/Kg		<MDL	8.1	16.3	ug/Kg		<MDL	8.1	16.3	ug/Kg
Toxaphene		<MDL	14	28.7	ug/Kg		<MDL	16	32.5	ug/Kg		<MDL	16	32.5	ug/Kg
OR SW846 3550B*SW846 8082A															
Aroclor 1016		<MDL,TA	5.8	11.8	ug/Kg		<MDL,TA	5.6	11.4	ug/Kg		<MDL,TA	2.9	5.87	ug/Kg
Aroclor 1221		<MDL	3.7	7.18	ug/Kg		<MDL	4.2	8.14	ug/Kg		<MDL	4.2	8.14	ug/Kg
Aroclor 1232		<MDL,TA	12	24.6	ug/Kg		<MDL,TA	13	27.1	ug/Kg		<MDL	4.2	8.14	ug/Kg
Aroclor 1242		<MDL,TA	8.8	17.5	ug/Kg		<MDL,TA	7.6	15.3	ug/Kg		<MDL,TA	5.6	11.2	ug/Kg
Aroclor 1248	15.3		1.8	3.6	ug/Kg	11.6		2	4.08	ug/Kg	5.48		2	4.08	ug/Kg
Aroclor 1254	31.9		1.8	3.6	ug/Kg	23.9		2	4.08	ug/Kg	10.6		2	4.08	ug/Kg
Aroclor 1260	10.7	JG	1.8	3.6	ug/Kg	9.22	JG	2	4.08	ug/Kg	5.72	JG	2	4.08	ug/Kg
Total Aroclors	58		1.8	3.6	ug/Kg	44.7		2	4.08	ug/Kg	21.8		2	4.08	ug/Kg
* Not converted to dry weight basis															

PROJECT: 423062-100-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Dry Weight Factor	Fines * %	Gravel * %	Sand * %	Silt * %	Clay * %	Total Organic Carbon mg/Kg	Total Solids * %	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) * %	Sampcoordx1 * ft	Sampcoordx2 * ft
DUD_1A	6	L47890-1	1.7	7.1	36.9	50.6	3.9	3.2	16300	76.1	19.6	18	1.9	9.4	3.3	0.3		0.6	1.9	1.3	1.3	12.1	2.3	22.5	1267044	1267045
DUD_2A	7	L47890-2	5.61	98.7		8.3	57.6	41.1	28400	41.9	0.3	0.6	30.6		2.4	5	7.1	28.2	15.3	7.1	10.6				1267141	1267135
DUD_3A	10	L47890-3	4.3	84.6		17.8	51.2	33.4	19400	48.6		0.3	27.2	3.5	7.4	6.6	4.2	28.2	12.5	6.3	6.3				1266956	1266955
DUD_4A	7	L47890-4	2.72	48.5	6.3	52	27.1	21.4	15700	60.3	1.8	4.6	16.4	18.4	27.2		2.5	9.9	9.9	4.9	4.9	1.2		5.1	1266886	1266888
DUD_5A	9	L47890-5	1.53	8.6	21.2	71.4	2.4	6.1	2190	79.6	11.4	15.9	4.3	29.4	12.9	1.9		0.6	0.6	1.2	1.8	9.7	3.1	8.4	1266795	1266797
DUD_5A	9	L47890-6	1.46	6.2	19.2	73.3	1.2	4.9	1580	84.8	9.1	16.3	3.7	31.5	14.3	2.1				1.2	1.2	9.9	2.5	6.9	1266797	1266799
DUD_1B	8	L47890-7	4.5	76.2	0.3	14.7	51.2	25.1	18100	46.4		0.4	14.6	3.3	5.8	5.2	6.3	16.7	14.6	13.6	10.4		0.3		1267058	1267057
DUD_2B	5	L47890-8	5.87	87.5	1.4	3.4	56.3	31.2	18100	40.9			19.2	0.9	2	0.5	4.8	19.2	16.8	15.6	12			1.4	1267076	1267087
DUD_3B	5	L47890-9	6.01	93.4	0.3	2.7	61.4	31.9	17700	40.9			19.7		0.5	2.2	8.6	20.9	16	16	12.3		0.3		1267049	1267053

PROJECT: 423062-100-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Sampcoordx3 *	Sampcoordy1 *	Sampcoordy2 *	Sampcoordy3 *	Sample Depth *	Sampling Method *	Sediment Sampling Depth *	Tide Height *	Aluminum, Total, ICP	Arsenic, Total, ICP	Beryllium, Total, ICP	Cadmium, Total, ICP	Chromium, Total, ICP	Copper, Total, ICP	Iron, Total, ICP	Lead, Total, ICP	Manganese, Total, ICP	Mercury, Total, CVAA	Nickel, Total, ICP	Silver, Total, ICP	Zinc, Total, ICP
			ft	ft	ft	ft	m	none	cm	ft	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
DUD_1A	6	L47890-1	1267043	209085	209086	209089	6	20143	12	8	10400	6.6	0.22	0.679	63.5	46.8	17900	43.8	218	0.0557	31.5		164
DUD_2A	7	L47890-2		208902	208903		7	20143	17	6	28400	14	0.57	0.69	33.4	78.8	38700	35.6	415	0.187	27.2		148
DUD_3A	10	L47890-3		208974	208975		10	20143	10	5	25100	12	0.531	0.47	29.8	72.6	34400	31.1	399	0.21	24.9		120
DUD_4A	7	L47890-4		209357	209354		7	20143	12	4.8	18900	7.6	0.32	0.36	27.5	70.6	28200	22.6	313	0.112	25.4	0.53	94.9
DUD_5A	9	L47890-5		209410	209411		9	20143	8	2.5	11100	3.3	0.15		16.5	38.9	20100	5.5	305	0.023	16.5		36.8
DUD_5A	9	L47890-6		209411	209405		9	20143	8	3.5	11500	2.8	0.15		16	35.4	20400	5.5	432	0.02	16.6		36.6
DUD_1B	8	L47890-7		208483	208487		8	20143	16	-1.5	26100	11	0.554	0.45	28.9	60.8	34300	22.6	386	0.164	25.9		96.8
DUD_2B	5	L47890-8		208621	208619		5	20143	13	-1	31500	12	0.643	0.44	32	62.3	40300	20.9	501	0.163	29.6		101
DUD_3B	5	L47890-9		208716	208713		5	20143	15	0.5	32300	12	0.655	0.42	28.6	56	40100	15.7	474	0.135	27.1		90.7

PROJECT: 423062-100-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	1,4-Dichlorobenzene ug/Kg	2-Methylnaphthalene 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	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	Di-N-Octyl Phthalate ug/Kg	Dibenzo(a,h)anthracene ug/Kg	Dibenzofuran ug/Kg
DUD_1A	6	L47890-1	11.3	16.7	41.1		94.2	15.1	25.9	15.9	310	261	323	209	231			876	92.4	314	31.4	821	93.6	29.8
DUD_2A	7	L47890-2		8.6	13.7		49.6	30.5	49.9	22.4	163	138	203	96.9	160	346	90.5	974	21.7	202	33.9		41.3	10.9
DUD_3A	10	L47890-3	2.98	8.5	8	8.33	63.8	20.1	46.5	18.6	170	163	249	110	147	321	37.7	527	19.2	204	43		42.8	10.2
DUD_4A	7	L47890-4	3.55	5.8	9.14	4.6	70.5	12.8	29	11	159	138	169	99.2	143	192	42.5	620	29.5	189	25.9		37.5	7.71
DUD_5A	9	L47890-5		3.9	15.1		43.3	2.39	5.38	2.8	87.7	70.1	71.5	37.2	70.7	118	7.29	58.5	25.1	86.1	14.9		16.6	7.99
DUD_5A	9	L47890-6					4.5	2.71	4.88	2.22	10.6	13.7	18.5	8.44	14.6	84.2	11.5	51.5		17	11.4		3.5	
DUD_1B	8	L47890-7		5.2	4.5	5.8	34.7	15.3	31.9	10.7	87.3	80	112	52.8	101	182	25	269	18.3	122	28.2		20.6	5.8
DUD_2B	5	L47890-8		5.9	5.1		33.3	11.6	23.9	9.22	95.4	87.3	105	57.2	111	249	38.1	301	10.9	127	30.8		23.1	6.4
DUD_3B	5	L47890-9		12.1	7.3		20	5.48	10.6	5.72	49.4	49.9	66.5	31.1	69.4	320	42.1	303	10.9	70.2	35.5		12.5	9.5

PROJECT: 423062-100-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Dimethyl Phthalate	Fluoranthene	Fluorene	Indeno(1,2,3-Cd)Pyrene	Naphthalene	Phenanthrene	Phenol	Pyrene	Total 4-Nonylphenol	Total Aroclors	Total HPAHS	Total LPAHs
			ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
DUD_1A	6	L47890-1		720	38.8	189	189	481		951	1420	56.8	3600	862
DUD_2A	7	L47890-2		294	17.5	83.3	50.4	109		301	339	103	1680	248
DUD_3A	10	L47890-3		272	18	107	16.7	105	151	300	152	85.2	1770	228
DUD_4A	7	L47890-4	51.2	308	15.3	85.9	65.7	132	32.5	332	342	52.7	1660	302
DUD_5A	9	L47890-5		206	14.9	38.2		148	17.3	193		10.6	877	229
DUD_5A	9	L47890-6		23.8	2.6	8.25		9.81	57.1	24.1		9.81	143	20.5
DUD_1B	8	L47890-7		175	11.6	49.1		61		172		58	972	127
DUD_2B	5	L47890-8		175	12.2	53.3	7.6	61.1		171		44.7	1000	129
DUD_3B	5	L47890-9		133	13.1	29.8	7.3	81.4		126		21.8	638	145

SAP MDL Comparison Table

King County Environmental Lab SAP MDL Comparison Table

PROJECT: 423062-100-4

Locator:	DUD_1A	DUD_2A	DUD_3A	DUD_4A	DUD_5A	DUD_5A
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sampled:	04/28/09 8:45:00 AM	04/28/09 9:10:00 AM	04/28/09 9:26:00 AM	04/28/09 9:45:00 AM	04/28/09 10:02:00 AM	04/28/09 10:22:00 AM
Lab ID:	L47890-1	L47890-2	L47890-3	L47890-4	L47890-5	L47890-6
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	76.1	41.9	48.6	60.3	79.6	84.8

Parameters	Units	SAP MDL (@50% TS)	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								
Fines *	%	NA	0.65	1.2	1	0.82	0.61	0.62
Clay *	%	NA	0.65	1.2	1	0.82	0.61	0.62
Silt *	%	NA	0.65	1.2	1	0.82	0.61	0.62
Sand *	%	NA	0.13	0.24	0.21	0.16	0.12	0.12
Gravel *	%	NA	0.13	0.24	0.21	0.16	0.12	0.12
p+0.00 *	%	0.1	0.13	0.24	0.21	0.16	0.12	0.12
p+1.00 *	%	0.1	0.13	0.24	0.21	0.16	0.12	0.12
p+10.0(equal/more than) *	%	0.1	0.65	1.2	1	0.82	0.61	0.62
p+2.00 *	%	0.1	0.13	0.24	0.21	0.16	0.12	0.12
p+3.00 *	%	0.1	0.13	0.24	0.21	0.16	0.12	0.12
p+4.00 *	%	0.1	0.13	0.24	0.21	0.16	0.12	0.12
p+5.00 *	%	0.1	0.65	1.2	1	0.82	0.61	0.62
p+6.00 *	%	0.1	0.65	1.2	1	0.82	0.61	0.62
p+7.00 *	%	0.1	0.65	1.2	1	0.82	0.61	0.62
p+8.00 *	%	0.1	0.65	1.2	1	0.82	0.61	0.62
p+9.00 *	%	0.1	0.65	1.2	1	0.82	0.61	0.62
p-1.00 *	%	0.1	0.13	0.24	0.21	0.16	0.12	0.12
p-2.00 *	%	0.1	0.13	0.24	0.21	0.16	0.12	0.12
p-2.00(less than) *	%	0.1	0.13	0.24	0.21	0.16	0.12	0.12
M=CV SM2540-G								
Total Solids *	%	0.005	0.005	0.005	0.005	0.005	0.005	0.005
M=CV SW846 9060-PSEP96								
Total Organic Carbon	mg/Kg	1000	1800	2000	2000	2000	500	500
M=MT SW846 7471B								
Mercury, Total, CVAA	mg/Kg	0.04	0.0033	0.006	0.0051	0.0041	0.0031	0.0029
M=MT SW846 3050B*SW846 6010C								
Aluminum, Total, ICP	mg/Kg	10	6.2	12	10	8.6	6.4	7.4
Antimony, Total, ICP	mg/Kg	3	0.93	1.8	1.5	1.3	0.97	1.1
Arsenic, Total, ICP	mg/Kg	5	1.6	3.1	2.7	2.2	1.6	1.9
Beryllium, Total, ICP	mg/Kg	0.1	0.062	0.12	0.1	0.086	0.064	0.074
Cadmium, Total, ICP	mg/Kg	0.3	0.12	0.24	0.21	0.17	0.13	0.15
Chromium, Total, ICP	mg/Kg	0.5	0.18	0.36	0.31	0.27	0.19	0.22
Copper, Total, ICP	mg/Kg	0.4	0.25	0.48	0.41	0.35	0.25	0.29
Iron, Total, ICP	mg/Kg	5	3.2	6	5.1	4.3	3.3	3.8
Lead, Total, ICP	mg/Kg	3	1.2	2.4	2.1	1.7	1.3	1.5
Manganese, Total, ICP	mg/Kg	0.2	0.12	0.24	0.21	0.17	0.13	0.15
Nickel, Total, ICP	mg/Kg	2	0.32	0.6	0.51	0.43	0.33	0.38
Selenium, Total, ICP	mg/Kg	5	1.6	3.1	2.7	2.2	1.6	1.9
Silver, Total, ICP	mg/Kg	0.4	0.25	0.48	0.41	0.35	0.25	0.29
Thallium, Total, ICP	mg/Kg	20	2.5	4.8	4.1	3.5	2.5	2.9
Zinc, Total, ICP	mg/Kg	0.5	0.32	0.6	0.51	0.43	0.33	0.38
M=OR EPA 3550B/8270C (7-3-01-004)								

King County Environmental Lab SAP MDL Comparison Table

PROJECT: 423062-100-4

Locator:	DUD_1A	DUD_2A	DUD_3A	DUD_4A	DUD_5A	DUD_5A
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sampled:	04/28/09 8:45:00 AM	04/28/09 9:10:00 AM	04/28/09 9:26:00 AM	04/28/09 9:45:00 AM	04/28/09 10:02:00 AM	04/28/09 10:22:00 AM
Lab ID:	L47890-1	L47890-2	L47890-3	L47890-4	L47890-5	L47890-6
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	76.1	41.9	48.6	60.3	79.6	84.8

Parameters	Units	SAP MDL (@50% TS)	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								
1,2,4-Trichlorobenzene	ug/Kg	0.52	0.13	0.24	0.21	0.17	0.13	0.12
1,2-Dichlorobenzene	ug/Kg	0.52	0.26	0.48	0.41	0.33	0.25	0.24
1,3-Dichlorobenzene	ug/Kg	0.52	0.26	0.48	0.41	0.33	0.25	0.24
1,4-Dichlorobenzene	ug/Kg	0.26	0.26	0.48	0.41	0.33	0.25	0.24
2,4-Dimethylphenol	ug/Kg	14	1.3	2.4	2.1	1.7	1.3	1.2
2-Methylnaphthalene	ug/Kg	28	2.6	4.8	4.1	3.3	2.5	2.4
2-Methylphenol	ug/Kg	38	2.6	4.8	4.1	3.3	2.5	2.4
4-Methylphenol	ug/Kg	32	5.3	9.5	8.2	6.6	5	4.7
Acenaphthene	ug/Kg	14	2.6	4.8	4.1	3.3	2.5	2.4
Acenaphthylene	ug/Kg	29	2.6	4.8	4.1	3.3	2.5	2.4
Anthracene	ug/Kg	7.9	2.6	4.8	4.1	3.3	2.5	2.4
Benzo(a)anthracene	ug/Kg	4	2.6	4.8	4.1	3.3	2.5	2.4
Benzo(a)pyrene	ug/Kg	6	2.6	4.8	4.1	3.3	2.5	2.4
Benzo(b)fluoranthene	ug/Kg	6	2.6	4.8	4.1	3.3	2.5	2.4
Benzo(g,h,i)perylene	ug/Kg	16	2.6	4.8	4.1	3.3	2.5	2.4
Benzo(k)fluoranthene	ug/Kg	6	2.6	4.8	4.1	3.3	2.5	2.4
Benzoic Acid	ug/Kg	12	13	24	21	17	13	12
Benzyl Alcohol	ug/Kg	12	2.6	4.8	4.1	3.3	2.5	2.4
Benzyl Butyl Phthalate	ug/Kg	12	1.3	2.4	2.1	1.7	1.3	1.2
Bis(2-Ethylhexyl)Phthalate	ug/Kg	13	5.3	9.5	8.2	6.6	5	4.7
Carbazole	ug/Kg	14	2.6	4.8	4.1	3.3	2.5	2.4
Chrysene	ug/Kg	7.9	2.6	4.8	4.1	3.3	2.5	2.4
Coprostanol	ug/Kg	28	53	95	82	66	50	47
Dibenzo(a,h)anthracene	ug/Kg	14	2.6	4.8	4.1	3.3	2.5	2.4
Dibenzofuran	ug/Kg	28	2.6	4.8	4.1	3.3	2.5	2.4
Diethyl Phthalate	ug/Kg	12	5.3	9.5	8.2	6.6	5	4.7
Dimethyl Phthalate	ug/Kg	22	5.3	9.5	8.2	6.6	5	4.7
Di-N-Butyl Phthalate	ug/Kg	10	5.3	9.5	8.2	6.6	5	4.7
Di-N-Octyl Phthalate	ug/Kg	16	5.3	9.5	8.2	6.6	5	4.7
Fluoranthene	ug/Kg	16	2.6	4.8	4.1	3.3	2.5	2.4
Fluorene	ug/Kg	26	2.6	4.8	4.1	3.3	2.5	2.4
Hexachlorobenzene	ug/Kg	1.3	0.13	0.24	0.21	0.17	0.13	0.12
Hexachlorobutadiene	ug/Kg	1.5	0.66	1.2	1	0.83	0.63	0.59
Hexachloroethane	ug/Kg	29	1.3	2.4	2.1	1.7	1.3	1.2
Indeno(1,2,3-Cd)Pyrene	ug/Kg	18	2.6	4.8	4.1	3.3	2.5	2.4
Naphthalene	ug/Kg	28	2.6	4.8	4.1	3.3	2.5	2.4
N-Nitrosodiphenylamine	ug/Kg	40	5.3	9.5	8.2	6.6	5	4.7
Pentachlorophenol	ug/Kg	10	13	24	21	17	13	12
Phenanthrene	ug/Kg	7.9	2.6	4.8	4.1	3.3	2.5	2.4
Phenol	ug/Kg	18	5.3	9.5	8.2	6.6	5	4.7
Pyrene	ug/Kg	7.9	2.6	4.8	4.1	3.3	2.5	2.4
Total HPAHS	ug/Kg	NA	2.6	4.8	4.1	3.3	2.5	2.4
Total LPAHs	ug/Kg	NA	2.6	4.8	4.1	3.3	2.5	2.4

King County Environmental Lab SAP MDL Comparison Table

PROJECT: 423062-100-4

Locator:	DUD_1A	DUD_2A	DUD_3A	DUD_4A	DUD_5A	DUD_5A
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sampled:	04/28/09 8:45:00 AM	04/28/09 9:10:00 AM	04/28/09 9:26:00 AM	04/28/09 9:45:00 AM	04/28/09 10:02:00 AM	04/28/09 10:22:00 AM
Lab ID:	L47890-1	L47890-2	L47890-3	L47890-4	L47890-5	L47890-6
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	76.1	41.9	48.6	60.3	79.6	84.8

Parameters	Units	SAP MDL (@50% TS)	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=OR SW846 3550B*SW846 8081B								
4,4'-DDD	ug/Kg	0.67	0.88	1.6	1.4	1.1	0.84	0.79
4,4'-DDE	ug/Kg	0.67	0.88	1.6	1.4	1.1	0.84	0.79
4,4'-DDT	ug/Kg	0.67	0.88	1.6	1.4	1.1	0.84	0.79
Aldrin	ug/Kg	0.67	0.88	1.6	1.4	1.1	0.84	0.79
Alpha-BHC	ug/Kg	0.67	0.43	0.79	0.68	0.55	0.41	0.39
Alpha-Chlordane	ug/Kg	0.67	0.43	0.79	0.68	0.55	0.41	0.39
Beta-BHC	ug/Kg	0.67	0.43	0.79	0.68	0.55	0.41	0.39
Delta-BHC	ug/Kg	0.67	0.43	0.79	0.68	0.55	0.41	0.39
Dieldrin	ug/Kg	0.67	0.88	1.6	1.4	1.1	0.84	0.79
Endosulfan I	ug/Kg	0.67	0.88	1.6	1.4	1.1	0.84	0.79
Endosulfan II	ug/Kg	0.67	0.88	1.6	1.4	1.1	0.84	0.79
Endosulfan Sulfate	ug/Kg	0.67	0.88	1.6	1.4	1.1	0.84	0.79
Endrin	ug/Kg	0.67	0.88	1.6	1.4	1.1	0.84	0.79
Endrin Aldehyde	ug/Kg	0.67	0.88	1.6	1.4	1.1	0.84	0.79
Gamma-BHC (Lindane)	ug/Kg	0.67	0.43	0.79	0.68	0.55	0.41	0.39
Gamma-Chlordane	ug/Kg	2.7	0.43	0.79	0.68	0.55	0.41	0.39
Heptachlor	ug/Kg	0.67	0.43	0.79	0.68	0.55	0.41	0.39
Heptachlor Epoxide	ug/Kg	0.67	0.43	0.79	0.68	0.55	0.41	0.39
Methoxychlor	ug/Kg	3.3	4.3	7.9	6.8	5.5	4.1	3.9
Toxaphene	ug/Kg	6.7	8.8	16	14	11	8.4	7.9
M=OR SW846 3550B*SW846 8082A								
Aroclor 1016	ug/Kg	4	9.9	14	10	6.3	1	0.98
Aroclor 1221	ug/Kg	8	2.2	4.1	3.5	2.8	2.1	2
Aroclor 1232	ug/Kg	8	22	41	29	12	2.1	2
Aroclor 1242	ug/Kg	4	22	33	14	9.3	1.9	2.9
Aroclor 1248	ug/Kg	4	1.1	2	1.7	1.4	1	0.98
Aroclor 1254	ug/Kg	4	1.1	2	1.7	1.4	1	0.98
Aroclor 1260	ug/Kg	4	1.1	2	1.7	1.4	1	0.98
Total Aroclors	ug/Kg	NA	1.1	2	1.7	1.4	1	0.98

* Not converted to dry weight basis for this parameter

King County Environmental Lab SAP MDL Comparison Table

PROJECT: 423062-100-4	DUD_1B	DUD_2B	DUD_3B
	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
	04/27/09 2:25:00 PM	04/27/09 2:50:00 PM	04/27/09 3:15:00 PM
	L47890-7	L47890-8	L47890-9
	SALTWTRSED	SALTWTRSED	SALTWTRSED
	46.4	40.9	40.9

Parameters	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS			
M=CV ASTM D422			
Fines *	1	1.2	1.2
Clay *	1	1.2	1.2
Silt *	1	1.2	1.2
Sand *	0.21	0.24	0.25
Gravel *	0.21	0.24	0.25
p+0.00 *	0.21	0.24	0.25
p+1.00 *	0.21	0.24	0.25
p+10.0(equal/more than) *	1	1.2	1.2
p+2.00 *	0.21	0.24	0.25
p+3.00 *	0.21	0.24	0.25
p+4.00 *	0.21	0.24	0.25
p+5.00 *	1	1.2	1.2
p+6.00 *	1	1.2	1.2
p+7.00 *	1	1.2	1.2
p+8.00 *	1	1.2	1.2
p+9.00 *	1	1.2	1.2
p-1.00 *	0.21	0.24	0.25
p-2.00 *	0.21	0.24	0.25
p-2.00(less than) *	0.21	0.24	0.25
M=CV SM2540-G			
Total Solids *	0.005	0.005	0.005
M=CV SW846 9060-PSEP96			
Total Organic Carbon	1800	2000	1900
M=MT SW846 7471B			
Mercury, Total, CVAA	0.0054	0.0061	0.0061
M=MT SW846 3050B*SW846 6010C			
Aluminum, Total, ICP	11	13	12
Antimony, Total, ICP	1.6	1.9	1.8
Arsenic, Total, ICP	2.6	3.2	2.9
Beryllium, Total, ICP	0.11	0.13	0.12
Cadmium, Total, ICP	0.21	0.24	0.24
Chromium, Total, ICP	0.32	0.39	0.37
Copper, Total, ICP	0.43	0.51	0.46
Iron, Total, ICP	5.2	6.4	5.9
Lead, Total, ICP	2.1	2.4	2.4
Manganese, Total, ICP	0.21	0.24	0.24
Nickel, Total, ICP	0.52	0.64	0.59
Selenium, Total, ICP	2.6	3.2	2.9
Silver, Total, ICP	0.43	0.51	0.46
Thallium, Total, ICP	4.3	5.1	4.6
Zinc, Total, ICP	0.52	0.64	0.59
M=OR EPA 3550B/8270C (7-3-01-004)			

King County Environmental Lab SAP MDL Comparison Table

PROJECT: 423062-100-4	DUD_1B	DUD_2B	DUD_3B
	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
	04/27/09 2:25:00 PM	04/27/09 2:50:00 PM	04/27/09 3:15:00 PM
	L47890-7	L47890-8	L47890-9
	SALTWTRSED	SALTWTRSED	SALTWTRSED
	46.4	40.9	40.9

Parameters	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS			
1,2,4-Trichlorobenzene	0.22	0.24	0.24
1,2-Dichlorobenzene	0.43	0.49	0.49
1,3-Dichlorobenzene	0.43	0.49	0.49
1,4-Dichlorobenzene	0.43	0.49	0.49
2,4-Dimethylphenol	2.2	2.4	2.4
2-Methylnaphthalene	4.3	4.9	4.9
2-Methylphenol	4.3	4.9	4.9
4-Methylphenol	8.6	9.8	9.8
Acenaphthene	4.3	4.9	4.9
Acenaphthylene	4.3	4.9	4.9
Anthracene	4.3	4.9	4.9
Benzo(a)anthracene	4.3	4.9	4.9
Benzo(a)pyrene	4.3	4.9	4.9
Benzo(b)fluoranthene	4.3	4.9	4.9
Benzo(g,h,i)perylene	4.3	4.9	4.9
Benzo(k)fluoranthene	4.3	4.9	4.9
Benzoic Acid	22	24	24
Benzyl Alcohol	4.3	4.9	4.9
Benzyl Butyl Phthalate	2.2	2.4	2.4
Bis(2-Ethylhexyl)Phthalate	8.6	9.8	9.8
Carbazole	4.3	4.9	4.9
Chrysene	4.3	4.9	4.9
Coprostanol	86	98	98
Dibenzo(a,h)anthracene	4.3	4.9	4.9
Dibenzofuran	4.3	4.9	4.9
Diethyl Phthalate	8.6	9.8	9.8
Dimethyl Phthalate	8.6	9.8	9.8
Di-N-Butyl Phthalate	8.6	9.8	9.8
Di-N-Octyl Phthalate	8.6	9.8	9.8
Fluoranthene	4.3	4.9	4.9
Fluorene	4.3	4.9	4.9
Hexachlorobenzene	0.22	0.24	0.24
Hexachlorobutadiene	1.1	1.2	1.2
Hexachloroethane	2.2	2.4	2.4
Indeno(1,2,3-Cd)Pyrene	4.3	4.9	4.9
Naphthalene	4.3	4.9	4.9
N-Nitrosodiphenylamine	8.6	9.8	9.8
Pentachlorophenol	22	24	24
Phenanthrene	4.3	4.9	4.9
Phenol	8.6	9.8	9.8
Pyrene	4.3	4.9	4.9
Total HPAHS	4.3	4.9	4.9
Total LPAHs	4.3	4.9	4.9

King County Environmental Lab SAP MDL Comparison Table

PROJECT: 423062-100-4	DUD_1B	DUD_2B	DUD_3B
	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
	04/27/09 2:25:00 PM	04/27/09 2:50:00 PM	04/27/09 3:15:00 PM
	L47890-7	L47890-8	L47890-9
	SALTWTRSED	SALTWTRSED	SALTWTRSED
	46.4	40.9	40.9

Parameters	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS			
M=OR SW846 3550B*SW846 8081B			
4,4'-DDD	1.4	1.6	1.6
4,4'-DDE	1.4	1.6	1.6
4,4'-DDT	1.4	1.6	1.6
Aldrin	1.4	1.6	1.6
Alpha-BHC	0.71	0.81	0.81
Alpha-Chlordane	0.71	0.81	0.81
Beta-BHC	0.71	0.81	0.81
Delta-BHC	0.71	0.81	0.81
Dieldrin	1.4	1.6	1.6
Endosulfan I	1.4	1.6	1.6
Endosulfan II	1.4	1.6	1.6
Endosulfan Sulfate	1.4	1.6	1.6
Endrin	1.4	1.6	1.6
Endrin Aldehyde	1.4	1.6	1.6
Gamma-BHC (Lindane)	0.71	0.81	0.81
Gamma-Chlordane	0.71	0.81	0.81
Heptachlor	0.71	0.81	0.81
Heptachlor Epoxide	0.71	0.81	0.81
Methoxychlor	7.1	8.1	8.1
Toxaphene	14	16	16
M=OR SW846 3550B*SW846 8082A			
Aroclor 1016	5.8	5.6	2.9
Aroclor 1221	3.7	4.2	4.2
Aroclor 1232	12	13	4.2
Aroclor 1242	8.8	7.6	5.6
Aroclor 1248	1.8	2	2
Aroclor 1254	1.8	2	2
Aroclor 1260	1.8	2	2
Total Aroclors	1.8	2	2

* 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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.16	38	38
2,4-Dimethylphenol	1	1.31	29	28
2-Methylphenol	2	2.63	63	60
4-Methylphenol	4	5.26	670	665
Acenaphthene	2	0.16	16	16
Acenaphthylene	2	0.16	66	66
Anthracene	2	0.16	220	220
Benzo(a)anthracene	2	0.16	110	110
Benzo(a)pyrene	2	0.16	99	99
Benzo(b)fluoranthene	2	0.16	115	115
Benzo(g,h,i)perylene	2	0.16	31	31
Benzo(k)fluoranthene	2	0.16	115	115
Benzoic Acid	10	13.14	650	637
Benzyl Alcohol	2	2.63	57	54
Benzyl Butyl Phthalate	1	0.08	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.32	47	47
Chrysene	2	0.16	110	110
Dibenzo(a,h)anthracene	2	0.16	12	12
Dibenzofuran	2	0.16	15	15
Diethyl Phthalate	4	0.32	61	61
Dimethyl Phthalate	4	0.32	53	53
Di-N-Butyl Phthalate	4	0.32	220	220
Di-N-Octyl Phthalate	4	0.32	58	58
Fluorene	2	0.16	23	23
Fluoranthene	2	0.16	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.04	3.9	3.9
Indeno(1,2,3-Cd)Pyrene	2	0.16	34	34
N-Nitrosodiphenylamine	4	0.32	11	11
Naphthalene	2	0.16	99	99
Pentachlorophenol	10	13.14	360	347
Phenanthrene	2	0.16	100	100
Phenol	4	5.26	420	415
Pyrene	2	0.16	1000	1000
Aroclor 1016	7.5	0.60		
Aroclor 1221	1.7	0.14		
Aroclor 1232	1.7	0.14		
Aroclor 1242	0.83	0.07		
Aroclor 1248	0.83	0.07		
Aroclor 1254	0.83	0.07		
Aroclor 1260	0.83	0.07		
Total Organic Carbon (dry)	16294.34954			
Total Solids	76.1			
HPAH	20	1.61	960	958
LPAH	14	1.13	370	369
Total PCB	7.5	0.60	12	11.4

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.17	38	38
2,4-Dimethylphenol	1	2.39	29	27
2-Methylphenol	2	4.77	63	58
4-Methylphenol	4	9.55	670	660
Acenaphthene	2	0.17	16	16
Acenaphthylene	2	0.17	66	66
Anthracene	2	0.17	220	220
Benzo(a)anthracene	2	0.17	110	110
Benzo(a)pyrene	2	0.17	99	99
Benzo(b)fluoranthene	2	0.17	115	115
Benzo(g,h,i)perylene	2	0.17	31	31
Benzo(k)fluoranthene	2	0.17	115	115
Benzoic Acid	10	23.87	650	626
Benzyl Alcohol	2	4.77	57	52
Benzyl Butyl Phthalate	1	0.08	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.34	47	47
Chrysene	2	0.17	110	110
Dibenzo(a,h)anthracene	2	0.17	12	12
Dibenzofuran	2	0.17	15	15
Diethyl Phthalate	4	0.34	61	61
Dimethyl Phthalate	4	0.34	53	53
Di-N-Butyl Phthalate	4	0.34	220	220
Di-N-Octyl Phthalate	4	0.34	58	58
Fluorene	2	0.17	23	23
Fluoranthene	2	0.17	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.04	3.9	3.9
Indeno(1,2,3-Cd)Pyrene	2	0.17	34	34
N-Nitrosodiphenylamine	4	0.34	11	11
Naphthalene	2	0.17	99	99
Pentachlorophenol	10	23.87	360	336
Phenanthrene	2	0.17	100	100
Phenol	4	9.55	420	410
Pyrene	2	0.17	1000	1000
Aroclor 1016	6	0.50		
Aroclor 1221	1.7	0.14		
Aroclor 1232	1.7	0.14		
Aroclor 1242	0.83	0.07		
Aroclor 1248	0.83	0.07		
Aroclor 1254	0.83	0.07		
Aroclor 1260	0.83	0.07		
Total Organic Carbon (dry)	28400.95465			
Total Solids	41.9			
HPAH	20	1.68	960	958
LPAH	14	1.18	370	369
Total PCB	6	0.50	12	11.5

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.21	38	38
2,4-Dimethylphenol	1	2.06	29	27
2-Methylphenol	2	4.12	63	59
4-Methylphenol	4	8.23	670	662
Acenaphthene	2	0.21	16	16
Acenaphthylene	2	0.21	66	66
Anthracene	2	0.21	220	220
Benzo(a)anthracene	2	0.21	110	110
Benzo(a)pyrene	2	0.21	99	99
Benzo(b)fluoranthene	2	0.21	115	115
Benzo(g,h,i)perylene	2	0.21	31	31
Benzo(k)fluoranthene	2	0.21	115	115
Benzoic Acid	10	20.58	650	629
Benzyl Alcohol	2	4.12	57	53
Benzyl Butyl Phthalate	1	0.11	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.42	47	47
Chrysene	2	0.21	110	110
Dibenzo(a,h)anthracene	2	0.21	12	12
Dibenzofuran	2	0.21	15	15
Diethyl Phthalate	4	0.42	61	61
Dimethyl Phthalate	4	0.42	53	53
Di-N-Butyl Phthalate	4	0.42	220	220
Di-N-Octyl Phthalate	4	0.42	58	58
Fluorene	2	0.21	23	23
Fluoranthene	2	0.21	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.05	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.21	34	34
N-Nitrosodiphenylamine	4	0.42	11	11
Naphthalene	2	0.21	99	99
Pentachlorophenol	10	20.58	360	339
Phenanthrene	2	0.21	100	100
Phenol	4	8.23	420	412
Pyrene	2	0.21	1000	1000
Aroclor 1016	5	0.53		
Aroclor 1221	1.7	0.18		
Aroclor 1232	1.7	0.18		
Aroclor 1242	0.83	0.09		
Aroclor 1248	0.83	0.09		
Aroclor 1254	0.83	0.09		
Aroclor 1260	0.83	0.09		
Total Organic Carbon (dry)	19403.29218			
Total Solids	48.6			
HPAH	20	2.12	960	958
LPAH	14	1.48	370	369
Total PCB	5	0.53	12	11.5

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.21	38	38
2,4-Dimethylphenol	1	1.66	29	27
2-Methylphenol	2	3.32	63	60
4-Methylphenol	4	6.63	670	663
Acenaphthene	2	0.21	16	16
Acenaphthylene	2	0.21	66	66
Anthracene	2	0.21	220	220
Benzo(a)anthracene	2	0.21	110	110
Benzo(a)pyrene	2	0.21	99	99
Benzo(b)fluoranthene	2	0.21	115	115
Benzo(g,h,i)perylene	2	0.21	31	31
Benzo(k)fluoranthene	2	0.21	115	115
Benzoic Acid	10	16.58	650	633
Benzyl Alcohol	2	3.32	57	54
Benzyl Butyl Phthalate	1	0.11	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.42	47	47
Chrysene	2	0.21	110	110
Dibenzo(a,h)anthracene	2	0.21	12	12
Dibenzofuran	2	0.21	15	15
Diethyl Phthalate	4	0.42	61	61
Dimethyl Phthalate	4	0.42	53	53
Di-N-Butyl Phthalate	4	0.42	220	220
Di-N-Octyl Phthalate	4	0.42	58	58
Fluorene	2	0.21	23	23
Fluoranthene	2	0.21	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.05	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.21	34	34
N-Nitrosodiphenylamine	4	0.42	11	11
Naphthalene	2	0.21	99	99
Pentachlorophenol	10	16.58	360	343
Phenanthrene	2	0.21	100	100
Phenol	4	6.63	420	413
Pyrene	2	0.21	1000	1000
Aroclor 1016	3.8	0.40		
Aroclor 1221	1.7	0.18		
Aroclor 1232	1.7	0.18		
Aroclor 1242	0.83	0.09		
Aroclor 1248	0.83	0.09		
Aroclor 1254	0.83	0.09		
Aroclor 1260	0.83	0.09		
Total Organic Carbon (dry)	15655.05804			
Total Solids	60.3			
HPAH	20	2.12	960	958
LPAH	14	1.48	370	369
Total PCB	3.8	0.40	12	11.6

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	0.1	0.06	0.81	0.75
1,2-Dichlorobenzene	0.2	0.11	2.3	2.2
1,4-Dichlorobenzene	0.2	0.11	3.1	3.0
2-Methylnaphthalene	2	1.15	38	37
2,4-Dimethylphenol	1	1.26	29	28
2-Methylphenol	2	2.51	63	60
4-Methylphenol	4	5.03	670	665
Acenaphthene	2	1.15	16	15
Acenaphthylene	2	1.15	66	65
Anthracene	2	1.15	220	219
Benzo(a)anthracene	2	1.15	110	109
Benzo(a)pyrene	2	1.15	99	98
Benzo(b)fluoranthene	2	1.15	115	114
Benzo(g,h,i)perylene	2	1.15	31	30
Benzo(k)fluoranthene	2	1.15	115	114
Benzoic Acid	10	12.56	650	637
Benzyl Alcohol	2	2.51	57	54
Benzyl Butyl Phthalate	1	0.57	4.9	4.3
Bis(2-Ethylhexyl)Phthalate	4	2.30	47	45
Chrysene	2	1.15	110	109
Dibenzo(a,h)anthracene	2	1.15	12	11
Dibenzofuran	2	1.15	15	14
Diethyl Phthalate	4	2.30	61	59
Dimethyl Phthalate	4	2.30	53	51
Di-N-Butyl Phthalate	4	2.30	220	218
Di-N-Octyl Phthalate	4	2.30	58	56
Fluorene	2	1.15	23	22
Fluoranthene	2	1.15	160	159
Hexachlorobenzene	0.1	0.06	0.38	0.32
Hexachlorobutadiene	0.5	0.29	3.9	3.6
Indeno(1,2,3-Cd)Pyrene	2	1.15	34	33
N-Nitrosodiphenylamine	4	2.30	11	9
Naphthalene	2	1.15	99	98
Pentachlorophenol	10	12.56	360	347
Phenanthrene	2	1.15	100	99
Phenol	4	5.03	420	415
Pyrene	2	1.15	1000	999
Aroclor 1016	0.83	0.48		
Aroclor 1221	1.7	0.98		
Aroclor 1232	1.7	0.98		
Aroclor 1242	0.83	0.48		
Aroclor 1248	0.83	0.48		
Aroclor 1254	0.83	0.48		
Aroclor 1260	0.83	0.48		
Total Organic Carbon (dry)	2185.929648			
Total Solids	79.6			
HPAH	20	11.49	960	949
LPAH	14	8.05	370	362
Total PCB	1.7	0.98	12	11.0

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	0.1	0.07	0.81	0.74
1,2-Dichlorobenzene	0.2	0.15	2.3	2.2
1,4-Dichlorobenzene	0.2	0.15	3.1	3.0
2-Methylnaphthalene	2	1.49	38	37
2,4-Dimethylphenol	1	1.18	29	28
2-Methylphenol	2	2.36	63	61
4-Methylphenol	4	4.72	670	665
Acenaphthene	2	1.49	16	15
Acenaphthylene	2	1.49	66	65
Anthracene	2	1.49	220	219
Benzo(a)anthracene	2	1.49	110	109
Benzo(a)pyrene	2	1.49	99	98
Benzo(b)fluoranthene	2	1.49	115	114
Benzo(g,h,i)perylene	2	1.49	31	30
Benzo(k)fluoranthene	2	1.49	115	114
Benzoic Acid	10	11.79	650	638
Benzyl Alcohol	2	2.36	57	55
Benzyl Butyl Phthalate	1	0.75	4.9	4.2
Bis(2-Ethylhexyl)Phthalate	4	2.99	47	44
Chrysene	2	1.49	110	109
Dibenzo(a,h)anthracene	2	1.49	12	11
Dibenzofuran	2	1.49	15	14
Diethyl Phthalate	4	2.99	61	58
Dimethyl Phthalate	4	2.99	53	50
Di-N-Butyl Phthalate	4	2.99	220	217
Di-N-Octyl Phthalate	4	2.99	58	55
Fluorene	2	1.49	23	22
Fluoranthene	2	1.49	160	159
Hexachlorobenzene	0.1	0.07	0.38	0.31
Hexachlorobutadiene	0.5	0.37	3.9	3.5
Indeno(1,2,3-Cd)Pyrene	2	1.49	34	33
N-Nitrosodiphenylamine	4	2.99	11	8
Naphthalene	2	1.49	99	98
Pentachlorophenol	10	11.79	360	348
Phenanthrene	2	1.49	100	99
Phenol	4	4.72	420	415
Pyrene	2	1.49	1000	999
Aroclor 1016	0.83	0.62		
Aroclor 1221	1.7	1.27		
Aroclor 1232	1.7	1.27		
Aroclor 1242	0.83	0.62		
Aroclor 1248	0.83	0.62		
Aroclor 1254	0.83	0.62		
Aroclor 1260	0.83	0.62		
Total Organic Carbon (dry)	1580.188679			
Total Solids	84.8			
HPAH	20	14.93	960	945
LPAH	14	10.45	370	360
Total PCB	1.7	1.27	12	10.7

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.24	38	38
2,4-Dimethylphenol	1	2.16	29	27
2-Methylphenol	2	4.31	63	59
4-Methylphenol	4	8.62	670	661
Acenaphthene	2	0.24	16	16
Acenaphthylene	2	0.24	66	66
Anthracene	2	0.24	220	220
Benzo(a)anthracene	2	0.24	110	110
Benzo(a)pyrene	2	0.24	99	99
Benzo(b)fluoranthene	2	0.24	115	115
Benzo(g,h,i)perylene	2	0.24	31	31
Benzo(k)fluoranthene	2	0.24	115	115
Benzoic Acid	10	21.55	650	628
Benzyl Alcohol	2	4.31	57	53
Benzyl Butyl Phthalate	1	0.12	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.48	47	47
Chrysene	2	0.24	110	110
Dibenzo(a,h)anthracene	2	0.24	12	12
Dibenzofuran	2	0.24	15	15
Diethyl Phthalate	4	0.48	61	61
Dimethyl Phthalate	4	0.48	53	53
Di-N-Butyl Phthalate	4	0.48	220	220
Di-N-Octyl Phthalate	4	0.48	58	58
Fluorene	2	0.24	23	23
Fluoranthene	2	0.24	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.06	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.24	34	34
N-Nitrosodiphenylamine	4	0.48	11	11
Naphthalene	2	0.24	99	99
Pentachlorophenol	10	21.55	360	338
Phenanthrene	2	0.24	100	100
Phenol	4	8.62	420	411
Pyrene	2	0.24	1000	1000
Aroclor 1016	2.7	0.32		
Aroclor 1221	1.7	0.20		
Aroclor 1232	1.7	0.20		
Aroclor 1242	0.83	0.10		
Aroclor 1248	0.83	0.10		
Aroclor 1254	0.83	0.10		
Aroclor 1260	0.83	0.10		
Total Organic Carbon (dry)	18125			
Total Solids	46.4			
HPAH	20	2.38	960	958
LPAH	14	1.66	370	368
Total PCB	2.7	0.32	12	11.7

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.03	2.3	2.3
1,4-Dichlorobenzene	0.2	0.03	3.1	3.1
2-Methylnaphthalene	2	0.27	38	38
2,4-Dimethylphenol	1	2.44	29	27
2-Methylphenol	2	4.89	63	58
4-Methylphenol	4	9.78	670	660
Acenaphthene	2	0.27	16	16
Acenaphthylene	2	0.27	66	66
Anthracene	2	0.27	220	220
Benzo(a)anthracene	2	0.27	110	110
Benzo(a)pyrene	2	0.27	99	99
Benzo(b)fluoranthene	2	0.27	115	115
Benzo(g,h,i)perylene	2	0.27	31	31
Benzo(k)fluoranthene	2	0.27	115	115
Benzoic Acid	10	24.45	650	626
Benzyl Alcohol	2	4.89	57	52
Benzyl Butyl Phthalate	1	0.14	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.54	47	46
Chrysene	2	0.27	110	110
Dibenzo(a,h)anthracene	2	0.27	12	12
Dibenzofuran	2	0.27	15	15
Diethyl Phthalate	4	0.54	61	60
Dimethyl Phthalate	4	0.54	53	52
Di-N-Butyl Phthalate	4	0.54	220	219
Di-N-Octyl Phthalate	4	0.54	58	57
Fluorene	2	0.27	23	23
Fluoranthene	2	0.27	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.07	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.27	34	34
N-Nitrosodiphenylamine	4	0.54	11	10
Naphthalene	2	0.27	99	99
Pentachlorophenol	10	24.45	360	336
Phenanthrene	2	0.27	100	100
Phenol	4	9.78	420	410
Pyrene	2	0.27	1000	1000
Aroclor 1016	2.3	0.31		
Aroclor 1221	1.7	0.23		
Aroclor 1232	1.7	0.23		
Aroclor 1242	0.83	0.11		
Aroclor 1248	0.83	0.11		
Aroclor 1254	0.83	0.11		
Aroclor 1260	0.83	0.11		
Total Organic Carbon (dry)	18068.45966			
Total Solids	40.9			
HPAH	20	2.71	960	957
LPAH	14	1.89	370	368
Total PCB	2.3	0.31	12	11.7

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.03	2.3	2.3
1,4-Dichlorobenzene	0.2	0.03	3.1	3.1
2-Methylnaphthalene	2	0.28	38	38
2,4-Dimethylphenol	1	2.44	29	27
2-Methylphenol	2	4.89	63	58
4-Methylphenol	4	9.78	670	660
Acenaphthene	2	0.28	16	16
Acenaphthylene	2	0.28	66	66
Anthracene	2	0.28	220	220
Benzo(a)anthracene	2	0.28	110	110
Benzo(a)pyrene	2	0.28	99	99
Benzo(b)fluoranthene	2	0.28	115	115
Benzo(g,h,i)perylene	2	0.28	31	31
Benzo(k)fluoranthene	2	0.28	115	115
Benzoic Acid	10	24.45	650	626
Benzyl Alcohol	2	4.89	57	52
Benzyl Butyl Phthalate	1	0.14	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.55	47	46
Chrysene	2	0.28	110	110
Dibenzo(a,h)anthracene	2	0.28	12	12
Dibenzofuran	2	0.28	15	15
Diethyl Phthalate	4	0.55	61	60
Dimethyl Phthalate	4	0.55	53	52
Di-N-Butyl Phthalate	4	0.55	220	219
Di-N-Octyl Phthalate	4	0.55	58	57
Fluorene	2	0.28	23	23
Fluoranthene	2	0.28	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.07	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.28	34	34
N-Nitrosodiphenylamine	4	0.55	11	10
Naphthalene	2	0.28	99	99
Pentachlorophenol	10	24.45	360	336
Phenanthrene	2	0.28	100	100
Phenol	4	9.78	420	410
Pyrene	2	0.28	1000	1000
Aroclor 1016	1.2	0.17		
Aroclor 1221	1.7	0.23		
Aroclor 1232	1.7	0.23		
Aroclor 1242	0.83	0.11		
Aroclor 1248	0.83	0.11		
Aroclor 1254	0.83	0.11		
Aroclor 1260	0.83	0.11		
Total Organic Carbon (dry)	17701.71149			
Total Solids	40.9			
HPAH	20	2.76	960	957
LPAH	14	1.93	370	368
Total PCB	1.7	0.23	12	11.8

CONVENTIONAL ANALYSES QC DATA

King County Environmental Lab Batch Report

WG102538 PSD

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47813-5	423589-090-4	CSO Near Full Characterization	CVPSD	IN-LINESED	4/14/2009 14:45	5/27/2009 0:00	5/28/2009 0:00		
L47890-1	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 8:45	5/27/2009 0:00	5/28/2009 0:00		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 10:44	5/27/2009 0:00	5/28/2009 0:00		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 10:55	5/27/2009 0:00	5/28/2009 0:00		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 11:00	5/27/2009 0:00	5/28/2009 0:00		FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 11:53	5/27/2009 0:00	5/28/2009 0:00		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 12:02	5/27/2009 0:00	5/28/2009 0:00		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 12:12	5/27/2009 0:00	5/28/2009 0:00		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 12:22	5/27/2009 0:00	5/28/2009 0:00	WG102538-1, -2, L47890-6	
WG102538-1	LD		CVPSD	IN-LINESED		5/27/2009 0:00	5/28/2009 0:00		L47813-5
WG102538-2	LT		CVPSD	IN-LINESED		5/27/2009 0:00	5/28/2009 0:00		WG102538-1 L47813-5
WG102612-1	LD		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		L47890-6
WG102612-2	LT		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		WG102612-1 L47890-6
WG102612-3	LD		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		L47888-2
WG102612-4	LT		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		WG102612-3 L47888-2

King County Environmental Lab Analytical QC Report

Workgroup: WG102538 PSD

LT:WG102538-2 LD:WG102538-1 L47813-5 Matrix: IN-LINESED Listtype: CVPSD Method: ASTM D422 Project: 423589-090-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	0.78	1.57	%	6.5	6.4	6.3	2		20
Gravel	0.16	1.57	%	11.4	9.1	13.6	20		20
Sand	0.16	1.57	%	63.1	64.6	62.7	2		20
Silt	0.78	1.57	%	13	12.9	12.6	2		20

LT:WG102612-2 LD:WG102612-1 L47890-6 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422 Project: 423062-100-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	0.6	1.2	%	4.9	4.7	4.8	2		20
Gravel	0.12	1.2	%	19.2	18	19.7	5		20
Sand	0.12	1.2	%	73.3	78.3	73.5	4		20
Silt	0.6	1.2	%	1.2	1.8	2.4	32	*	20

LT:WG102612-4 LD:WG102612-3 L47888-2 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422 Project: 423062-200-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	1.1	2.24	%	39.6	41.5	40.3	2		20
Gravel	0.22	2.24	%	0.22	0.4	<MDL			20
Sand	0.22	2.24	%	12.5	11	8.7	18		20
Silt	1.1	2.24	%	49.6	49.4	53.7	5		20

King County Environmental Lab Batch Report

WG102612 PSD

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/27/2009 12:10	5/29/2008 0:00	6/1/2009 0:00		
L47890-2	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 9:10	5/29/2008 0:00	6/1/2009 0:00		
L47890-3	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 9:26	5/29/2008 0:00	6/1/2009 0:00		
L47890-4	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 9:45	5/29/2008 0:00	6/1/2009 0:00		
L47890-5	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 10:02	5/29/2008 0:00	6/1/2009 0:00		
L47890-6	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 10:22	5/29/2008 0:00	6/1/2009 0:00	WG102612-1, -2, -3, -4	FREP @ L47890-5
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 12:36	5/29/2008 0:00	6/1/2009 0:00		
WG102612-1	LD		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		L47890-6
WG102612-2	LT		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		WG102612-1 L47890-6
WG102612-3	LD		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		L47888-2
WG102612-4	LT		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		WG102612-3 L47888-2

King County Environmental Lab Analytical QC Report

Workgroup: WG102612 PSD

LT:WG102612-2 LD:WG102612-1 L47890-6 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422 Project: 423062-100-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	0.6	1.2	%	4.9	4.7	4.8	2		20
Gravel	0.12	1.2	%	19.2	18	19.7	5		20
Sand	0.12	1.2	%	73.3	78.3	73.5	4		20
Silt	0.6	1.2	%	1.2	1.8	2.4	32	*	20

LT:WG102612-4 LD:WG102612-3 L47888-2 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422 Project: 423062-200-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	1.1	2.24	%	39.6	41.5	40.3	2		20
Gravel	0.22	2.24	%	0.22	0.4	<MDL			20
Sand	0.22	2.24	%	12.5	11	8.7	18		20
Silt	1.1	2.24	%	49.6	49.4	53.7	5		20

King County Environmental Lab Batch Report

WG102625 PSD

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/27/2009 10:36	6/1/2009 0:00	6/2/2009 0:00		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 12:45	6/1/2009 0:00	6/2/2009 0:00		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 14:00	6/1/2009 0:00	6/2/2009 0:00		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/29/2009 8:25	6/1/2009 0:00	6/2/2009 0:00		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/29/2009 8:55	6/1/2009 0:00	6/2/2009 0:00	WG102612-3, -4	
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/29/2009 9:37	6/1/2009 0:00	6/2/2009 0:00		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/29/2009 10:00	6/1/2009 0:00	6/2/2009 0:00		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/29/2009 10:40	6/1/2009 0:00	6/4/2009 0:00		
L47890-7	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/27/2009 14:25	6/1/2009 0:00	6/2/2009 0:00		
L47890-8	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/27/2009 14:50	6/1/2009 0:00	6/2/2009 0:00	WG102612-1, -2	
L47890-9	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/27/2009 15:15	6/1/2009 0:00	6/2/2009 0:00		
WG102612-1	LD		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		L47890-6
WG102612-2	LT		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		WG102612-1 L47890-6
WG102612-3	LD		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		L47888-2
WG102612-4	LT		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		WG102612-3 L47888-2

King County Environmental Lab Analytical QC Report

Workgroup: WG102625 PSD

LT:WG102612-2 LD:WG102612-1 L47890-6 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422 Project: 423062-100-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	0.6	1.2	%	4.9	4.7	4.8	2		20
Gravel	0.12	1.2	%	19.2	18	19.7	5		20
Sand	0.12	1.2	%	73.3	78.3	73.5	4		20
Silt	0.6	1.2	%	1.2	1.8	2.4	32	*	20

LT:WG102612-4 LD:WG102612-3 L47888-2 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422 Project: 423062-200-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	1.1	2.24	%	39.6	41.5	40.3	2		20
Gravel	0.22	2.24	%	0.22	0.4	<MDL			20
Sand	0.22	2.24	%	12.5	11	8.7	18		20
Silt	1.1	2.24	%	49.6	49.4	53.7	5		20

Conventionals Data Anomaly Form

Date(s) Occurred: *06/01/09*

WG #(s): *WG102612*

☐ **All samples in WKGP(s)** **or** ☒ **Sample #(s):** *L47890-5, L47890-6, L47890-6 LD (WG102612-1), L47890-6 LT (WG102612-2)*

Project #(s): *423062-100-4*

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

I. Analysis

☐ Nutrients:
☐ Demands:
☐ Cyanides:
☐ Physicals:
☐ Solids:
☐ Anions:
☐ Chlorophylls:
☒ Others: *Particle Size Distribution*
☐ 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
[2] ☐ Continuing Calibration Checks
[3] ☐ SB Spike Recoveries
[4] ☐ MB Anomaly
[5] ☐ LCS/SRM Recoveries
[6] ☒ Sample/LD/LT RSD
[7] ☐ MS RPD
[8] ☐ Sample/LD RPD
[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) on sample L47890-6 had a relative standard deviation (%RSD) of 32% for the silt category which exceeded the established acceptance limit of 20%. The silt category represents a small fraction (1.2%) of the overall sample mass associated with sample L46890-6. 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: *"J"*
☐ Other

Corrective Action Description: *The silt category for samples L47890-5, L47890-6, L47890-6 LD (WG102612-1), and L47890-6 LT (WG102612-2) were qualified with the "J" qualifier to indicate that an estimated value was reported for this category. The other associated samples in this batch were listed as the same matrix, but were of a different consistency. Samples L47890-5, -6 were noted to be "sandier" than the other samples and results showed the samples to consist more of gravel and sand. All other associated samples consisted mainly of silt and clay, which were consistant with the passing matrix QC performed on L47888-2, which is of the same matrix but a different project. No further corrective action was required.*

VI. Potential Effects on Data Quality

Based upon the expected performance of this method:

☒ None; corrective action entirely corrected anomaly (explanation optional): *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 this sample, the QC data suggest that the silt category represents too small a fraction of the overall sample constituency to be considered appropriate for evaluation against a 20% control window.*

☐ Potential effect explanation (explanation mandatory):

	Signatures	Signature Dates
Reported By: *Casey Maggart*		
Reviewer: *Keith Solberg*		
Supervisor: *Brian Prosch*		
QA Officer: *Colin Elliott* (For QA1 only)		
cc: LPM:		

King County Environmental Lab Batch Report

WG102503 Total Organic Carbon

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47813-6	423589-090-4	CSO Near Full Characterization	CVTOC	IN-LINESED	4/14/2009 14:45	5/26/2009 16:00	6/9/2009 9:40		
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/27/2009 10:36	5/26/2009 16:00	6/9/2009 13:53		
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/27/2009 12:10	5/26/2009 16:00	6/9/2009 14:15		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:45	5/26/2009 16:00	6/9/2009 14:37		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 14:00	5/26/2009 16:00	6/9/2009 14:58		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 8:25	5/26/2009 16:00	6/9/2009 15:20		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 8:55	5/26/2009 16:00	6/9/2009 15:41		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 9:37	5/26/2009 16:00	6/10/2009 9:32		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 10:00	5/26/2009 16:00	6/10/2009 11:08		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 10:40	5/26/2009 16:00	6/10/2009 11:29		
L47890-1	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 8:45	6/1/2009 15:05	6/10/2009 12:14		
L47890-2	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 9:10	6/1/2009 15:05	6/10/2009 12:50		
L47890-3	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 9:26	6/1/2009 15:05	6/10/2009 13:12		
L47890-4	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 9:45	6/1/2009 15:05	6/10/2009 13:34		
L47890-5	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 10:02	6/1/2009 15:05	6/10/2009 14:05		
L47890-6	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 10:22	6/1/2009 15:05	6/10/2009 14:26		FREP @ L47890-5
L47890-7	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/27/2009 14:25	6/1/2009 15:05	6/11/2009 10:26		
L47890-8	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/27/2009 14:50	6/1/2009 15:05	6/10/2009 14:48		
L47890-9	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/27/2009 15:15	6/1/2009 15:05	6/11/2009 10:50		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 10:44	6/1/2009 15:05	6/11/2009 12:44		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 10:55	6/1/2009 15:05	6/11/2009 13:44		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 11:00	6/1/2009 15:05	6/11/2009 14:14		FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 11:53	6/1/2009 15:05	6/11/2009 14:35		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:02	6/1/2009 15:05	6/11/2009 15:00		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:12	6/1/2009 15:05	6/11/2009 11:58		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:22	6/1/2009 15:05	6/11/2009 12:20	WG102503-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20	
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:36	6/1/2009 15:05	6/11/2009 15:25		
L48029-1	423258-100-1	Reclaimed Water Nutrient Characterization	CVTOC	SOIL	5/11/2009 13:40	5/26/2009 16:00	6/9/2009 11:13		
L48029-2	423258-100-1	Reclaimed Water Nutrient Characterization	CVTOC	SOIL	5/11/2009 14:10	5/26/2009 16:00	6/9/2009 12:55		
L48029-3	423258-100-1	Reclaimed Water Nutrient Characterization	CVTOC	SOIL	5/11/2009 14:26	5/26/2009 16:00	6/9/2009 13:17		
WG102503-1	MB		CVTOC	OTHR SOLID		6/9/2009 8:45	6/9/2009 8:45		MB1 06/09/09 08:45
WG102503-2	SRM		CVTOC	OTHR SOLID		6/9/2009 9:02	6/9/2009 9:02		HICONC
WG102503-3	SB		CVTOC	OTHR SOLID		6/9/2009 9:22	6/9/2009 9:22		WG102503-1
WG102503-4	LD		CVTOC	IN-LINESED		5/26/2009 16:00	6/9/2009 10:05		L47813-6
WG102503-5	LT		CVTOC	IN-LINESED		5/26/2009 16:00	6/9/2009 10:29		WG102503-4 L47813-6
WG102503-6	MS		CVTOC	IN-LINESED		5/26/2009 16:00	6/9/2009 10:50		L47813-6
WG102503-7	LD		CVTOC	SOIL		5/26/2009 16:00	6/9/2009 11:35		L48029-1

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WG102503-8	LT	CVTOC	SOIL	5/26/2009 16:00	6/9/2009 12:12	WG102503-7 L48029-1
WG102503-9	MS	CVTOC	SOIL	5/26/2009 16:00	6/9/2009 12:34	L48029-1
WG102503-10	MB	CVTOC	OTHR SOLID	6/10/2009 8:36	6/10/2009 8:36	MB1 06/10/09
WG102503-11	SRM	CVTOC	OTHR SOLID	6/10/2009 8:53	6/10/2009 8:53	HICONC
WG102503-12	SB	CVTOC	OTHR SOLID	6/10/2009 9:13	6/10/2009 9:13	WG102503-10
WG102503-13	LD	CVTOC	SALTWTRSED	5/26/2009 16:00	6/10/2009 9:54	L47888-7
WG102503-14	LT	CVTOC	SALTWTRSED	5/26/2009 16:00	6/10/2009 10:23	WG102503-13 L47888-7
WG102503-15	MS	CVTOC	SALTWTRSED	5/26/2009 16:00	6/10/2009 10:44	L47888-7
WG102503-16	LD	CVTOC	SALTWTRSED	6/1/2009 15:05	6/10/2009 15:10	L47890-8
WG102503-17	LT	CVTOC	SALTWTRSED	6/1/2009 15:05	6/10/2009 15:31	WG102503-16 L47890-8
WG102503-18	MS	CVTOC	SALTWTRSED	6/1/2009 15:05	6/10/2009 15:53	L47890-8
WG102503-19	MB	CVTOC	OTHR SOLID	6/11/2009 9:47	6/11/2009 9:47	MB1 06/11/09
WG102503-20	SRM	CVTOC	OTHR SOLID	6/11/2009 10:04	6/11/2009 10:04	HICONC

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Workgroup: WG102503 Total Organic Carbon

MB:WG102503-1 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Organic Carbon	500	1000	mg/Kg	<MDL	

SRM:WG102503-2 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	2700	5340	mg/Kg	33480	32100	96		80--120

SB:WG102503-3 MB:WG102503-1 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	500	1000	mg/Kg	<MDL	2500	2620	105		80--120

LT:WG102503-5 LD:WG102503-4 L47813-6 Matrix: IN-LINESED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423589-090-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Organic Carbon	3500	6950	mg/Kg	24500	23200	23700	3		20

MS:WG102503-6 L47813-6 Matrix: IN-LINESED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423589-090-4
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	3500	7050	mg/Kg	24500	17620	43700	109		75--125

LT:WG102503-8 LD:WG102503-7 L48029-1 Matrix: SOIL Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423258-100-1
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Organic Carbon	650	1300	mg/Kg	4870	6480	6110	15		20

King County Environmental Lab Analytical QC Report

MS:WG102503-9 L48029-1 Matrix: SOIL Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423258-100-1
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	620	1250	mg/Kg	4870	3116	8040	102		75--125

MB:WG102503-10 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Organic Carbon	500	1000	mg/Kg	<MDL	

SRM:WG102503-11 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	2500	4900	mg/Kg	36900	34000	92		80--120

SB:WG102503-12 MB:WG102503-10 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	500	1000	mg/Kg	<MDL	2500	2590	104		80--120

LT:WG102503-14 LD:WG102503-13 L47888-7 Matrix: SALTWTRSED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423062-200-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Organic Carbon	1100	2170	mg/Kg	6890	6910	7030	1		20

MS:WG102503-15 L47888-7 Matrix: SALTWTRSED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423062-200-4
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	1100	2170	mg/Kg	6890	5436	12100	95		75--125

LT:WG102503-17 LD:WG102503-16 L47890-8 Matrix: SALTWTRSED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423062-100-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Organic Carbon	770	1540	mg/Kg	7390	7490	7520	1		20

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MS:WG102503-18 L47890-8 Matrix: SALTWTRSED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423062-100-4
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	770	1550	mg/Kg	7390	3905	11000	92		75--125

MB:WG102503-19 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Organic Carbon	500	1000	mg/Kg	<MDL	

SRM:WG102503-20 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	2400	4710	mg/Kg	36900	34000	92		80--120

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WG102628 Total Solids

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47890-1	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/28/2009 8:45	6/1/2009 13:30	6/2/2009 9:07		
L47890-2	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/28/2009 9:10	6/1/2009 13:30	6/2/2009 9:07		
L47890-3	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/28/2009 9:26	6/1/2009 13:30	6/2/2009 9:08		
L47890-4	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/28/2009 9:45	6/1/2009 13:30	6/2/2009 9:08		
L47890-5	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/28/2009 10:02	6/1/2009 13:30	6/2/2009 9:10		
L47890-6	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/28/2009 10:22	6/1/2009 13:30	6/2/2009 9:11		FREP @ L47890-5
L47890-7	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/27/2009 14:25	6/1/2009 13:30	6/2/2009 9:13		
L47890-8	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/27/2009 14:50	6/1/2009 13:30	6/2/2009 9:16		
L47890-9	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/27/2009 15:15	6/1/2009 13:30	6/2/2009 9:17		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 10:44	6/1/2009 13:30	6/2/2009 9:17		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 10:55	6/1/2009 13:30	6/2/2009 9:17	WG102628-1, -2, -3	
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 11:00	6/1/2009 13:30	6/2/2009 9:18		FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 11:53	6/1/2009 13:30	6/2/2009 9:23		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 12:02	6/1/2009 13:30	6/2/2009 9:23		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 12:12	6/1/2009 13:30	6/2/2009 9:24		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 12:22	6/1/2009 13:30	6/2/2009 9:24		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 12:36	6/1/2009 13:30	6/2/2009 9:25		
WG102628-1	MB		CVTOTS	OTHR SOLID		6/1/2009 13:30	6/2/2009 9:07		MB1 06/01/09 13:30
WG102628-2	LD		CVTOTS	SALTWTRSED		6/1/2009 13:30	6/2/2009 9:08		L47890-4
WG102628-3	LT		CVTOTS	SALTWTRSED		6/1/2009 13:30	6/2/2009 9:09		WG102628-2 L47890-4

King County Environmental Lab Analytical QC Report

Workgroup: WG102628 Total Solids

MB:WG102628-1 Matrix: OTHR SOLID Listtype: CVTOTS Method: SM2540-G Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Solids	0.005	0.01	%	<MDL	

LT:WG102628-3 LD:WG102628-2 L47890-4 Matrix: SALTWTRSED Listtype: CVTOTS Method: SM2540-G Project: 423062-100-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Solids	0.005	0.01	%	60.3	60.3	60.8	0		20

METAL CHEMISTRY QC DATA

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WG102343 Total Mercury

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47890-1	423062-100-4	Duwamish Diagonal Cap Monitoring	MTHG-MIDS	SALTWTRSED	4/28/2009 8:45	5/18/2009 12:05	5/19/2009 13:56		
L47890-2	423062-100-4	Duwamish Diagonal Cap Monitoring	MTHG-MIDS	SALTWTRSED	4/28/2009 9:10	5/18/2009 12:05	5/19/2009 13:58		
L47890-3	423062-100-4	Duwamish Diagonal Cap Monitoring	MTHG-MIDS	SALTWTRSED	4/28/2009 9:26	5/18/2009 12:05	5/19/2009 13:59		
L47890-4	423062-100-4	Duwamish Diagonal Cap Monitoring	MTHG-MIDS	SALTWTRSED	4/28/2009 9:45	5/18/2009 12:05	5/19/2009 14:05		
L47890-5	423062-100-4	Duwamish Diagonal Cap Monitoring	MTHG-MIDS	SALTWTRSED	4/28/2009 10:02	5/18/2009 12:05	5/19/2009 13:49		
L47890-6	423062-100-4	Duwamish Diagonal Cap Monitoring	MTHG-MIDS	SALTWTRSED	4/28/2009 10:22	5/18/2009 12:05	5/19/2009 14:07		FREP @ L47890-5
L47890-7	423062-100-4	Duwamish Diagonal Cap Monitoring	MTHG-MIDS	SALTWTRSED	4/27/2009 14:25	5/18/2009 12:05	5/19/2009 14:08		
L47890-8	423062-100-4	Duwamish Diagonal Cap Monitoring	MTHG-MIDS	SALTWTRSED	4/27/2009 14:50	5/18/2009 12:05	5/19/2009 14:10		
L47890-9	423062-100-4	Duwamish Diagonal Cap Monitoring	MTHG-MIDS	SALTWTRSED	4/27/2009 15:15	5/18/2009 12:05	5/19/2009 14:12	WG102343-1, -2, -3, -4, -5, -6	
WG102343-1	SRM		MTHG-MIDS	SALTWTRSED		5/18/2009 12:05	5/19/2009 13:43		PACS2
WG102343-2	MB		MTHG-MIDS	SOLIDBLANK		5/18/2009 12:05	5/19/2009 13:45		METHOD BLANK
WG102343-3	SB		MTHG-MIDS	SOLIDBLANK		5/18/2009 12:05	5/19/2009 13:47		WG102343-2 HG-SMID
WG102343-4	MS		MTHG-MIDS	SALTWTRSED		5/18/2009 12:05	5/19/2009 13:50		L47890-5 HG-SMID
WG102343-5	MSD		MTHG-MIDS	SALTWTRSED		5/18/2009 12:05	5/19/2009 13:52		WG102343-4 L47890-5 HG-SMID-MSD
WG102343-6	LD		MTHG-MIDS	SALTWTRSED		5/18/2009 12:05	5/19/2009 13:54		L47890-5 RPD-SOL

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Workgroup: WG102343 Total Mercury

SRM:WG102343-1 Matrix: SALTWTRSED Listtype: MTHG-MIDS Method: SW846 7471B Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Mercury, Total, CVAA	0.051	0.513	mg/Kg	3.04	2.81	92		80--120

MB:WG102343-2 Matrix: SOLIDBLANK Listtype: MTHG-MIDS Method: SW846 7471B Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAA	0.0024	0.0244	mg/Kg	<MDL	

SB:WG102343-3 MB:WG102343-2 Matrix: SOLIDBLANK Listtype: MTHG-MIDS Method: SW846 7471B Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Mercury, Total, CVAA	0.0024	0.0244	mg/Kg	<MDL	0.0488	0.0483	99		85--115

MSD:WG102343-5 MS:WG102343-4 L47890-5 Matrix: SALTWTRSED Listtype: MTHG-MIDS Method: SW846 7471B Project: 423062-100-4
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Mercury, Total, CVAA	0.0025	0.0247	mg/Kg	0.018	0.0501	0.0656	95		75--125	0.0495	0.0638	93		2		20

LD:WG102343-6 L47890-5 Matrix: SALTWTRSED Listtype: MTHG-MIDS Method: SW846 7471B Project: 423062-100-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Mercury, Total, CVAA	0.0025	0.0248	mg/Kg	0.018	0.0269	41	*	20

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WG102409 Total Metals

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47890-1	423062-100-4	Duwamish Diagonal Cap Monitoring	MTICP-SED	SALTWTRSED	4/28/2009 8:45	5/19/2009 12:30	5/20/2009 16:03		
L47890-2	423062-100-4	Duwamish Diagonal Cap Monitoring	MTICP-SED	SALTWTRSED	4/28/2009 9:10	5/19/2009 12:30	5/20/2009 16:19		
L47890-3	423062-100-4	Duwamish Diagonal Cap Monitoring	MTICP-SED	SALTWTRSED	4/28/2009 9:26	5/19/2009 12:30	5/20/2009 16:25		
L47890-4	423062-100-4	Duwamish Diagonal Cap Monitoring	MTICP-SED	SALTWTRSED	4/28/2009 9:45	5/19/2009 12:30	5/20/2009 16:30		
L47890-5	423062-100-4	Duwamish Diagonal Cap Monitoring	MTICP-SED	SALTWTRSED	4/28/2009 10:02	5/19/2009 12:30	5/20/2009 16:47		
L47890-6	423062-100-4	Duwamish Diagonal Cap Monitoring	MTICP-SED	SALTWTRSED	4/28/2009 10:22	5/19/2009 12:30	5/20/2009 16:52		FREP @ L47890-5
L47890-7	423062-100-4	Duwamish Diagonal Cap Monitoring	MTICP-SED	SALTWTRSED	4/27/2009 14:25	5/19/2009 12:30	5/20/2009 16:58		
L47890-8	423062-100-4	Duwamish Diagonal Cap Monitoring	MTICP-SED	SALTWTRSED	4/27/2009 14:50	5/19/2009 12:30	5/20/2009 17:03	WG102409-1, -2, -3, -6, -4, -5	
L47890-9	423062-100-4	Duwamish Diagonal Cap Monitoring	MTICP-SED	SALTWTRSED	4/27/2009 15:15	5/19/2009 12:30	5/20/2009 17:09		
WG102409-1	SB		MTICP-SED	SOLIDBLANK		5/19/2009 12:30	5/20/2009 15:40		WG102409-3 ICPMARINE
WG102409-2	LCS		MTICP-SED	SOIL		5/19/2009 12:30	5/20/2009 15:46		ERASOIL
WG102409-3	MB		MTICP-SED	SOLIDBLANK		5/19/2009 12:30	5/20/2009 15:52		METHOD BLANK
WG102409-4	LD		MTICP-SED	SALTWTRSED		5/19/2009 12:30	5/20/2009 16:08		L47890-1 RPD-SOL L47890-1
WG102409-5	MS		MTICP-SED	SALTWTRSED		5/19/2009 12:30	5/20/2009 16:14		ICPMARINE
WG102409-6	SRM		MTICP-SED	SALTWTRSED		5/19/2009 12:30	5/20/2009 15:57		PACS2

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Workgroup: WG102409 Total Metals

MB:WG102409-3 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Aluminum, Total, ICP	4.5	22.7	mg/Kg	<MDL	
Antimony, Total, ICP	0.68	3.41	mg/Kg	<MDL	
Arsenic, Total, ICP	1.1	5.68	mg/Kg	<MDL	
Beryllium, Total, ICP	0.045	0.227	mg/Kg	<MDL	
Cadmium, Total, ICP	0.091	0.455	mg/Kg	<MDL	
Chromium, Total, ICP	0.14	0.682	mg/Kg	<MDL	
Copper, Total, ICP	0.18	0.909	mg/Kg	<MDL	
Iron, Total, ICP	2.3	11.4	mg/Kg	<MDL	
Lead, Total, ICP	0.91	4.55	mg/Kg	<MDL	
Manganese, Total, ICP	0.091	0.455	mg/Kg	<MDL	
Nickel, Total, ICP	0.23	1.14	mg/Kg	<MDL	
Selenium, Total, ICP	1.1	5.68	mg/Kg	<MDL	
Silver, Total, ICP	0.18	0.909	mg/Kg	<MDL	
Thallium, Total, ICP	1.8	9.09	mg/Kg	<MDL	
Zinc, Total, ICP	0.23	1.14	mg/Kg	<MDL	

SB:WG102409-1 MB:WG102409-3 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE (Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP	4.5	22.7	mg/Kg	<MDL	4570	4690	103		85--115
Antimony, Total, ICP	0.68	3.41	mg/Kg	<MDL	22.7	22.8	100		85--115
Arsenic, Total, ICP	1.1	5.68	mg/Kg	<MDL	22.7	23.3	103		85--115
Beryllium, Total, ICP	0.045	0.227	mg/Kg	<MDL	22.7	22.8	100		85--115
Cadmium, Total, ICP	0.091	0.455	mg/Kg	<MDL	22.7	22.7	100		85--115
Chromium, Total, ICP	0.14	0.682	mg/Kg	<MDL	22.7	22.5	99		85--115
Copper, Total, ICP	0.18	0.909	mg/Kg	<MDL	22.7	23	101		85--115
Iron, Total, ICP	2.3	11.4	mg/Kg	<MDL	2300	2360	103		85--115
Lead, Total, ICP	0.91	4.55	mg/Kg	<MDL	22.7	22	97		85--115
Manganese, Total, ICP	0.091	0.455	mg/Kg	<MDL	114	115	101		85--115
Nickel, Total, ICP	0.23	1.14	mg/Kg	<MDL	22.7	22.1	97		85--115
Selenium, Total, ICP	1.1	5.68	mg/Kg	<MDL	22.7	22	97		85--115
Silver, Total, ICP	0.18	0.909	mg/Kg	<MDL	22.7	22.6	99		85--115
Thallium, Total, ICP	1.8	9.09	mg/Kg	<MDL	22.7	21.9	96		85--115
Zinc, Total, ICP	0.23	1.14	mg/Kg	<MDL	114	111	98		85--115

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LCS:WG102409-2 Matrix: SOIL Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP	41	205	mg/Kg	8260	7750	94		61--139
Antimony, Total, ICP	6.1	30.7	mg/Kg	90.2	79.7	88		10--211
Arsenic, Total, ICP	10	51.1	mg/Kg	132	139	105		80--120
Beryllium, Total, ICP	0.41	2.05	mg/Kg	89.5	88.6	99		80--120
Cadmium, Total, ICP	0.82	4.09	mg/Kg	66.5	69.4	104		80--120
Chromium, Total, ICP	1.2	6.14	mg/Kg	72.9	69.6	96		79--121
Copper, Total, ICP	1.6	8.18	mg/Kg	68.5	68.1	99		80--120
Iron, Total, ICP	20	102	mg/Kg	13400	12500	93		50--149
Lead, Total, ICP	8.2	40.9	mg/Kg	130	125	96		80--120
Manganese, Total, ICP	0.82	4.09	mg/Kg	453	457	101		80--120
Nickel, Total, ICP	2	10.2	mg/Kg	55.6	56.8	102		80--120
Selenium, Total, ICP	10	51.1	mg/Kg	161	166	103		78--122
Silver, Total, ICP	1.6	8.18	mg/Kg	101	103	102		66--134
Thallium, Total, ICP	16	81.8	mg/Kg	133	133	100		77--123
Zinc, Total, ICP	2	10.2	mg/Kg	177	175	99		79--121

LD:WG102409-4 L47890-1 Matrix: SALTWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: 423062-100-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Aluminum, Total, ICP	4.9	24.4	mg/Kg	7940	7750	2		20
Antimony, Total, ICP	0.73	3.66	mg/Kg	<MDL	<MDL			20
Arsenic, Total, ICP	1.2	6.11	mg/Kg	5	4.8			20
Beryllium, Total, ICP	0.049	0.244	mg/Kg	0.17	0.15			20
Cadmium, Total, ICP	0.098	0.489	mg/Kg	0.517	0.46	11		20
Chromium, Total, ICP	0.15	0.733	mg/Kg	48.3	30.7	44	*	20
Copper, Total, ICP	0.2	0.977	mg/Kg	35.6	41.6	16		20
Iron, Total, ICP	2.4	12.2	mg/Kg	13600	13400	1		20
Lead, Total, ICP	0.98	4.89	mg/Kg	33.3	35.4	6		20
Manganese, Total, ICP	0.098	0.489	mg/Kg	166	168	2		20
Nickel, Total, ICP	0.24	1.22	mg/Kg	24	21.9	9		20
Selenium, Total, ICP	1.2	6.11	mg/Kg	<MDL	<MDL			20
Silver, Total, ICP	0.2	0.977	mg/Kg	<MDL	<MDL			20
Thallium, Total, ICP	2	9.77	mg/Kg	<MDL	<MDL			20
Zinc, Total, ICP	0.24	1.22	mg/Kg	125	145	15		20

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MS:WG102409-5 L47890-1 Matrix: SALTWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: 423062-100-4
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP	4.9	24.7	mg/Kg	7940	4960	13200	106		75--125
Antimony, Total, ICP	0.74	3.7	mg/Kg	<MDL	24.7	8.38	34	*	75--125
Arsenic, Total, ICP	1.2	6.17	mg/Kg	5	24.7	28.1	94		75--125
Beryllium, Total, ICP	0.049	0.247	mg/Kg	0.17	24.7	24.6	99		75--125
Cadmium, Total, ICP	0.099	0.494	mg/Kg	0.517	24.7	24	95		75--125
Chromium, Total, ICP	0.15	0.741	mg/Kg	48.3	24.7	45.3	-12	*	75--125
Copper, Total, ICP	0.2	0.988	mg/Kg	35.6	24.7	56.5	85		75--125
Iron, Total, ICP	2.5	12.3	mg/Kg	13600	2490	15800			(No MS/MSD %Rec. due to 4x rule)
Lead, Total, ICP	0.99	4.94	mg/Kg	33.3	24.7	45.5	50	*	75--125
Manganese, Total, ICP	0.099	0.494	mg/Kg	166	123	275	88		75--125
Nickel, Total, ICP	0.25	1.23	mg/Kg	24	24.7	46.5	91		75--125
Selenium, Total, ICP	1.2	6.17	mg/Kg	<MDL	24.7	22.3	90		75--125
Silver, Total, ICP	0.2	0.988	mg/Kg	<MDL	24.7	24.6	100		75--125
Thallium, Total, ICP	2	9.88	mg/Kg	<MDL	24.7	23.6	96		75--125
Zinc, Total, ICP	0.25	1.23	mg/Kg	125	123	224	81		75--125

SRM:WG102409-6 Matrix: SALTWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP	41	206	mg/Kg	66200	15700	24		10--43
Chromium, Total, ICP	1.2	6.18	mg/Kg	90.7	46.2	51		30--70
Copper, Total, ICP	1.6	8.24	mg/Kg	310	316	102		78--118
Iron, Total, ICP	21	103	mg/Kg	40900	30700	75		55--95
Lead, Total, ICP	8.2	41.2	mg/Kg	183	172	94		74--114
Manganese, Total, ICP	0.82	4.12	mg/Kg	440	245	56		35--75
Nickel, Total, ICP	2.1	10.3	mg/Kg	39.5	31.1	79		51--91
Zinc, Total, ICP	2.1	10.3	mg/Kg	364	351	97		73--113

ORGANIC CHEMISTRY QC DATA

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WG101983 Semivolatile Organics

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47890-1	423062-100-4	Duwamish Diagonal Cap Monitoring	ORBNASMS	SALTWTRSED	4/28/2009 8:45	5/4/2009 7:00	5/28/2009 11:00		
L47890-2	423062-100-4	Duwamish Diagonal Cap Monitoring	ORBNASMS	SALTWTRSED	4/28/2009 9:10	5/4/2009 7:00	5/28/2009 11:47		
L47890-3	423062-100-4	Duwamish Diagonal Cap Monitoring	ORBNASMS	SALTWTRSED	4/28/2009 9:26	5/4/2009 7:00	5/28/2009 12:34		
L47890-4	423062-100-4	Duwamish Diagonal Cap Monitoring	ORBNASMS	SALTWTRSED	4/28/2009 9:45	5/4/2009 7:00	5/28/2009 13:22		
L47890-5	423062-100-4	Duwamish Diagonal Cap Monitoring	ORBNASMS	SALTWTRSED	4/28/2009 10:02	5/4/2009 7:00	5/28/2009 14:10		
L47890-6	423062-100-4	Duwamish Diagonal Cap Monitoring	ORBNASMS	SALTWTRSED	4/28/2009 10:22	5/4/2009 7:00	5/28/2009 14:59		FREP @ L47890-5
L47890-7	423062-100-4	Duwamish Diagonal Cap Monitoring	ORBNASMS	SALTWTRSED	4/27/2009 14:25	5/4/2009 7:00	5/28/2009 15:48		
L47890-8	423062-100-4	Duwamish Diagonal Cap Monitoring	ORBNASMS	SALTWTRSED	4/27/2009 14:50	5/4/2009 7:00	5/28/2009 16:36	WG101983-1, -2, -3, -4, -5, -6	
L47890-9	423062-100-4	Duwamish Diagonal Cap Monitoring	ORBNASMS	SALTWTRSED	4/27/2009 15:15	5/4/2009 7:00	5/28/2009 17:26		
WG101983-1	MB		ORBNASMS	OTHR SOLID		5/4/2009 7:00	5/20/2009 10:49		MB090504
WG101983-2	SB		ORBNASMS	OTHR SOLID		5/4/2009 7:00	5/20/2009 12:21		WG101983-1
WG101983-3	MS		ORBNASMS	SALTWTRSED		5/4/2009 7:00	5/28/2009 7:54		L47890-1
WG101983-4	MSD		ORBNASMS	SALTWTRSED		5/4/2009 7:00	5/28/2009 8:40		WG101983-3 L47890-1
WG101983-5	SRM		ORBNASMS	SALTWTRSED		5/4/2009 7:00	5/28/2009 9:26		#1944
WG101983-6	LD		ORBNASMS	SALTWTRSED		5/4/2009 7:00	5/28/2009 10:13		L47890-2

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Workgroup: WG101983 Semivolatile Organics

MB:WG101983-1 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-100-4
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	
2-Methylnaphthalene	2	4	ug/Kg	<MDL	
2-Methylphenol	2	4	ug/Kg	<MDL	
4-Methylphenol	4	8	ug/Kg	<MDL	
Acenaphthene	2	4	ug/Kg	<MDL	
Acenaphthylene	2	4	ug/Kg	<MDL	
Anthracene	2	4	ug/Kg	<MDL	
Benzo(a)anthracene	2	4	ug/Kg	<MDL	
Benzo(a)pyrene	2	4	ug/Kg	<MDL	
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	
Benzoic Acid	10	20	ug/Kg	<MDL	
Benzyl Alcohol	2	4	ug/Kg	<MDL	
Benzyl Butyl Phthalate	1	2	ug/Kg	4.07	B
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	11	B
Caffeine	4	8	ug/Kg	<MDL	
Carbazole	2	4	ug/Kg	<MDL	
Chrysene	2	4	ug/Kg	<MDL	
Coprostanol	40	80	ug/Kg	<MDL	
Di-N-Butyl Phthalate	4	8	ug/Kg	10.9	B
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	
Dibenzofuran	2	4	ug/Kg	<MDL	
Diethyl Phthalate	4	8	ug/Kg	<MDL	
Dimethyl Phthalate	4	8	ug/Kg	<MDL	
Fluoranthene	2	4	ug/Kg	<MDL	
Fluorene	2	4	ug/Kg	<MDL	
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	
Hexachloroethane	1	2	ug/Kg	<MDL	
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	

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N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL
Naphthalene	2	4	ug/Kg	<MDL
Pentachlorophenol	10	20	ug/Kg	<MDL
Phenanthrene	2	4	ug/Kg	<MDL
Phenol	4	8	ug/Kg	<MDL
Pyrene	2	4	ug/Kg	<MDL
Total 4-Nonylphenol	5	10	ug/Kg	<MDL
Total HPAHS	2	4	ug/Kg	<MDL
Total LPAHs	2	4	ug/Kg	<MDL

SB:WG101983-2 MB:WG101983-1 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-100-4 (Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	250	165	66		13--110
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	159	64		10--116
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	162	65		18--95
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	163	65		21--99
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	250	21	8	*	10--81
Acenaphthene	2	4	ug/Kg	<MDL	250	184	73		29--102
Acenaphthylene	2	4	ug/Kg	<MDL	250	184	74		31--101
Anthracene	2	4	ug/Kg	<MDL	250	205	82		45--114
Benzo(a)anthracene	2	4	ug/Kg	<MDL	250	247	99		69--117
Benzo(a)pyrene	2	4	ug/Kg	<MDL	250	217	87		15--137
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	250	255	102		50--121
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	250	218	87		46--126
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	250	265	106		58--128
Benzyl Butyl Phthalate	1	2	ug/Kg	4.07	250	212	83		15--183
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	11	250	201	76		10--182
Carbazole	2	4	ug/Kg	<MDL	250	217	87		44--179
Chrysene	2	4	ug/Kg	<MDL	250	193	77		69--111
Di-N-Butyl Phthalate	4	8	ug/Kg	10.9	250	229	87		17--180
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	250	287	115		10--200
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	250	289	115		53--129
Diethyl Phthalate	4	8	ug/Kg	<MDL	250	198	79		51--118
Dimethyl Phthalate	4	8	ug/Kg	<MDL	250	203	81		38--114
Fluoranthene	2	4	ug/Kg	<MDL	250	225	90		55--132
Fluorene	2	4	ug/Kg	<MDL	250	199	79		39--106
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	250	136	54		40--111
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	250	156	62		10--97
Hexachloroethane	1	2	ug/Kg	<MDL	250	168	67		17--92
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	250	259	104		51--132

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N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	250	32.4	13	11--148
Naphthalene	2	4	ug/Kg	<MDL	250	115	46	17--94
Pentachlorophenol	10	20	ug/Kg	<MDL	250	109	44	38--124
Phenanthrene	2	4	ug/Kg	<MDL	250	198	79	57--104
Phenol	4	8	ug/Kg	<MDL	250	27.7	11	10--107
Pyrene	2	4	ug/Kg	<MDL	250	240	96	48--132
Total HPAHS	2	4	ug/Kg	<MDL	2500	2410	96	25--150
Total LPAHs	2	4	ug/Kg	<MDL	1750	1090	62	25--150

MSD:WG101983-4 MS:WG101983-3 L47890-1 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-100-4
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	250	132	53		10--115	250	128	51		4		35
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	131	52		10--105	250	136	54		4		35
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	130	52		10--103	250	126	50		4		35
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	8.6	250	148	56		10--104	250	156	59		5		35
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	250	98.8	40		10--150	250	109	44		10		35
Acenaphthene	2	4	ug/Kg	31.3	250	220	75		25--130	250	244	85		13		35
Acenaphthylene	2	4	ug/Kg	<MDL	250	243	97		27--132	250	252	101		4		35
Anthracene	2	4	ug/Kg	71.7	250	282	84		10--181	250	338	106		23		35
Benzo(a)anthracene	2	4	ug/Kg	236	250	459	89		32--168	250	458	89		0		35
Benzo(a)pyrene	2	4	ug/Kg	199	250	364	66		10--200	250	333	54		20		35
Benzo(b)fluoranthene	2	4	ug/Kg	246	250	382	54		10--199	250	358	45		18		35
Benzo(g,h,i)perylene	2	4	ug/Kg	159	250	283	50		10--173	250	285	50		0		35
Benzo(k)fluoranthene	2	4	ug/Kg	176	250	325	60		10--192	250	284	43		33		35
Benzyl Butyl Phthalate	1	2	ug/Kg	<MDL	250	361	144		41--145	250	298	119		19		35
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	667	250	1040	147		10--189	250	882	86		52	*	35
Carbazole	2	4	ug/Kg	70.3	250	242	69		16--200	250	284	85		21		35
Chrysene	2	4	ug/Kg	239	250	362	49		14--184	250	383	58		17		35
Di-N-Butyl Phthalate	4	8	ug/Kg	23.9	250	648	250	*	10--194	250	273	100		86	*	35
Di-N-Octyl Phthalate	4	8	ug/Kg	625	250	832	83		52--151	250	878	101		20		35
Dibenzo(a,h)anthracene	2	4	ug/Kg	71.2	250	269	79		10--166	250	237	66		18		35
Diethyl Phthalate	4	8	ug/Kg	<MDL	250	184	74		31--150	250	175	70		6		35
Dimethyl Phthalate	4	8	ug/Kg	<MDL	250	184	74		13--162	250	205	82		10		35
Fluoranthene	2	4	ug/Kg	548	250	466	-33	*	12--188	250	738	76				35
Fluorene	2	4	ug/Kg	29.5	250	207	71		22--147	250	221	77		8		35
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	250	150	60		18--151	250	165	66		10		35
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	250	128	51		10--97	250	128	51		0		35
Hexachloroethane	1	2	ug/Kg	<MDL	250	143	57		10--89	250	152	61		7		35
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	144	250	280	54		10--177	250	279	54		0		35
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	250	186	74		10--169	250	207	83		11		35

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Naphthalene	2	4	ug/Kg	144	250	203	24		12--97	250	206	25		4	35
Pentachlorophenol	10	20	ug/Kg	<MDL	250	187	75		17--170	250	206	82		9	35
Phenanthrene	2	4	ug/Kg	366	250	347	-8	*	10--200	250	582	86			35
Phenol	4	8	ug/Kg	<MDL	250	170	68		10--127	250	214	86		23	35
Pyrene	2	4	ug/Kg	724	250	700	-9	*	20--174	250	762	15	*		35
Total HPAHS	2	4	ug/Kg	2740	2500	3890	46		25--150	2500	4120	55		18	35
Total LPAHs	2	4	ug/Kg	656	1750	1510	49		25--150	1750	1850	69		34	35

SRM:WG101983-5 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-100-4
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Anthracene	2	4	ug/Kg	13.1	5.41	41		28--98
Benzo(a)anthracene	2	4	ug/Kg	34.9	29.9	86		66--124
Benzo(a)pyrene	2	4	ug/Kg	31.8	21.4	67		60--116
Benzo(b)fluoranthene	2	4	ug/Kg	28.6	27.5	96		52--190
Benzo(g,h,i)perylene	2	4	ug/Kg	21	12.8	61		15--121
Benzo(k)fluoranthene	2	4	ug/Kg	17	23.8	140		60--146
Chrysene	2	4	ug/Kg	36	32.4	90		77--136
Dibenzo(a,h)anthracene	2	4	ug/Kg	3.14	6.05	193		10--200
Fluoranthene	2	4	ug/Kg	66	53.2	81		45--126
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	20.6	13.1	64		33--121
Naphthalene	2	4	ug/Kg	12.2	2.2	18		10--29
Phenanthrene	2	4	ug/Kg	39	27.8	71		51--106
Pyrene	2	4	ug/Kg	71.8	61.5	86		36--135

LD:WG101983-6 L47890-2 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-100-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	<MDL			35
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	<MDL			35
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	<MDL			35
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	<MDL			35
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	<MDL			35
2-Methylnaphthalene	2	4	ug/Kg	3.6	4.47	21		35
2-Methylphenol	2	4	ug/Kg	<MDL	<MDL			35
4-Methylphenol	4	8	ug/Kg	<MDL	<MDL			35
Acenaphthene	2	4	ug/Kg	5.76	6.19	7		35
Acenaphthylene	2	4	ug/Kg	<MDL	<MDL			35
Anthracene	2	4	ug/Kg	20.8	21.8	5		35
Benzo(a)anthracene	2	4	ug/Kg	68.1	72.1	6		35

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Benzo(a)pyrene	2	4	ug/Kg	57.9	63.4	9	35
Benzo(b)fluoranthene	2	4	ug/Kg	85.1	92.6	8	35
Benzo(g,h,i)perylene	2	4	ug/Kg	40.6	43.2	6	35
Benzo(k)fluoranthene	2	4	ug/Kg	66.9	69.9	4	35
Benzoic Acid	10	20	ug/Kg	145	189	27	35
Benzyl Alcohol	2	4	ug/Kg	<MDL	<MDL		35
Benzyl Butyl Phthalate	1	2	ug/Kg	37.9	38.3	1	35
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	408	469	14	35
Caffeine	4	8	ug/Kg	<MDL	<MDL		35
Carbazole	2	4	ug/Kg	9.09	9.96	9	35
Chrysene	2	4	ug/Kg	84.6	110	26	35
Coprostanol	40	80	ug/Kg	<MDL	<MDL		35
Di-N-Butyl Phthalate	4	8	ug/Kg	14.2	18.4	26	35
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	<MDL		35
Dibenzo(a,h)anthracene	2	4	ug/Kg	17.3	18.3	6	35
Dibenzofuran	2	4	ug/Kg	4.56	5.2	13	35
Diethyl Phthalate	4	8	ug/Kg	<MDL	<MDL		35
Dimethyl Phthalate	4	8	ug/Kg	<MDL	<MDL		35
Fluoranthene	2	4	ug/Kg	123	137	11	35
Fluorene	2	4	ug/Kg	7.33	7.98	8	35
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	<MDL		35
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	<MDL		35
Hexachloroethane	1	2	ug/Kg	<MDL	<MDL		35
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	34.9	37.6	8	35
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	<MDL		35
Naphthalene	2	4	ug/Kg	21.1	23.5	11	35
Pentachlorophenol	10	20	ug/Kg	<MDL	<MDL		35
Phenanthrene	2	4	ug/Kg	45.7	48.5	6	35
Phenol	4	8	ug/Kg	<MDL	<MDL		35
Pyrene	2	4	ug/Kg	126	137	9	35
Total 4-Nonylphenol	5	10	ug/Kg	142	113	23	35
Total HPAHS	2	4	ug/Kg	704	781	10	35
Total LPAHs	2	4	ug/Kg	104	113	8	35

King County Environmental Lab Analytical QC Report

Surrogate: (Lab Limits)	2,4,6-Tribromo phenol 29--112	2-Fluorobiphenyl 31--101	2-Fluorophenol 10--112	d14-Terphenyl 51--130	d4-1,2-Dichlorobenzene 24--91	d4-2-Chlorophenol 11--105	d5-Nitrobenzene 28--94	5-Phenol 10--106
L47890-1	91	74	63	130	51	65	69	77
L47890-2	107	70	65	100	54	67	70	77
L47890-3	99	68	67	102	54	64	78	69
L47890-4	104	72	63	112	49	63	82	68
L47890-5	108	71	93	102	59	58	83	35
L47890-6	93	62	66	94	52	61	70	54
L47890-7	103	68	60	101	51	58	64	56
L47890-8	100	69	58	87	46	52	68	40
L47890-9	108	72	82	101	55	41	72	26
WG101983-1	94	52	23	92	35	3 *	83	9 *
WG101983-2	66	44	77	98	86	40	67	15
WG101983-3	87	67	49	106	67	58	56	61
WG101983-4	97	78	64	98	69	67	55	79
WG101983-5	104	66	72	92	52	65	65	79
WG101983-6	102	67	55	95	49	59	73	60

Trace Organics Data Anomaly Form

Date(s) Occurred: *09/05/28*

WG #(s): *WG101983*

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

Project #(s): *423062-100-4 Duwamish Cap Monitoring*

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. WG101983-1 MB - the extraction blank had a quantitatable levels of Di-N-Butyl Phthalate at 10.9 ug/Kg, Benzyl Butyl Phthalate at 4.07 ug/Kg and Bis(2EH)phthalate at 11 ug/Kg.

2. Since the recoveries of 2,4-Dimethylphenol in the MS/MSD and %RPD were all within QA lab limits and no surrogates exceeded lab limits, the low recovery in the SB have no affect on the data and should be used without bias. It has been observed in past data sets that the SB recoveries are lower that the MS and MSD recoveries because of an absence of a matrix and samples concentration to 0.5 mls. The lab derived limits for the SB should take this phenomena in to account, however, it's possible to lower recoveries by vigorous concentration, not concentrating to exactly 0.5 mls, or addition of slightly to much ISTD prior to injection.

3. WG101983-3 MS of L47890-1 had 4 of the 36 spiked analytes exceeded the established lab limits and were asterisked on the QA/QC report. Phenanthrene, Di-N-Butyl Phthalate, Fluoranthene, and Pyrene were J flagged for sample L47890-1 in accordance with QA protocols for values outside QC limits.

7. L47890-1 had 1 ISTD exceed the QC limit for % difference from the daily calibration check standard. The area counts for D10-Acenaphthalene are enhanced due to the petroleum and hydrocarbon background in the same. This phenomenon has been observed in past data sets. The compounds reported that were quantitated by D10-Acenaphthalene (Acenaphthalene, Fluroene, and 2-Fluorobiphenyl) behave in a similar fashion and can be used unbiased.

10. Phenanthrene, Fluoranthene, and Pyrene had negative recoveries for WG101983-3 MS since the native concentrations in L47890-1 were higher than the spike recoveries . The recoveries for WG101983-4 MSD were within QA/QC lab limits. Di-N-Butyl Phthalate and Bis (2EH) Phthalate had high recoveries for WG101983-3 MS. The recoveries for WG101983-4 MSD were within QA/QC lab limits. The high recoveries caused the %RPD to exceed QA/QC lab limits. Since 67 of 72 spiked analytes and 34 of 36 % RPDs were recovered within QA/QC lab limits, the MS and MSD can be used unbiased for precision and accuracy results.

17A. L47890-1 had 3 compounds reported that were higher than the calibration curve. Bis 92-Ethylhexyl) Phthalate, Di-N-Octyl Phthalate and Fluoranthene were quantitated and reported slightly above the calibration curve. The compounds were flagged "E" per QA/QC protocol.

17B. WG101983-2 SB, WG101983-3 MS, and WG101983-4 MSD have no recoveries for Benzyl Alcohol, 2-Methylphenol, 4-Methylphenol, Benzoic Acid, 2-Methylnaphthalene, Dibenzofuran, Coprostanol, and Caffeine. Spiking solutions independently are purchased from suppliers and are purposely not part of the solution used to generate the calibration curve. The compounds were not in the spiking solution as purchased from the manufacturer, which was an oversight, and has been corrected.

☐ Potential effect explanation (explanation mandatory):

King County Environmental Lab Batch Report

WG101991 PCB

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47890-1	423062-100-4	Duwamish Diagonal Cap Monitoring	ORPCBLL	SALTWTRSED	4/28/2009 8:45	5/5/2009 7:00	6/13/2009 0:14		
L47890-2	423062-100-4	Duwamish Diagonal Cap Monitoring	ORPCBLL	SALTWTRSED	4/28/2009 9:10	5/5/2009 7:00	6/13/2009 0:54		
L47890-3	423062-100-4	Duwamish Diagonal Cap Monitoring	ORPCBLL	SALTWTRSED	4/28/2009 9:26	5/5/2009 7:00	6/13/2009 1:33		
L47890-4	423062-100-4	Duwamish Diagonal Cap Monitoring	ORPCBLL	SALTWTRSED	4/28/2009 9:45	5/5/2009 7:00	6/13/2009 2:12		
L47890-5	423062-100-4	Duwamish Diagonal Cap Monitoring	ORPCBLL	SALTWTRSED	4/28/2009 10:02	5/5/2009 7:00	6/13/2009 2:51		
L47890-6	423062-100-4	Duwamish Diagonal Cap Monitoring	ORPCBLL	SALTWTRSED	4/28/2009 10:22	5/5/2009 7:00	6/12/2009 20:50		FREP @ L47890-5
L47890-7	423062-100-4	Duwamish Diagonal Cap Monitoring	ORPCBLL	SALTWTRSED	4/27/2009 14:25	5/5/2009 7:00	6/12/2009 21:32		
L47890-8	423062-100-4	Duwamish Diagonal Cap Monitoring	ORPCBLL	SALTWTRSED	4/27/2009 14:50	5/5/2009 7:00	6/13/2009 3:30	WG101991-1, -2, -3, -4, -5, -6	
L47890-9	423062-100-4	Duwamish Diagonal Cap Monitoring	ORPCBLL	SALTWTRSED	4/27/2009 15:15	5/5/2009 7:00	6/13/2009 4:09		
WG101991-1	MB		ORPCBLL	SOLIDBLANK		5/5/2009 7:00	6/12/2009 16:50		MB090505
WG101991-2	SB		ORPCBLL	SOLIDBLANK		5/5/2009 7:00	6/12/2009 17:32		WG101991-1
WG101991-3	MS		ORPCBLL	SALTWTRSED		5/5/2009 7:00	6/12/2009 18:13		L47890-6
WG101991-4	MSD		ORPCBLL	SALTWTRSED		5/5/2009 7:00	6/12/2009 18:52		WG101991-3 L47890-6
WG101991-5	SRM		ORPCBLL	SALTWTRSED		5/5/2009 7:00	6/12/2009 19:31		HS-2
WG101991-6	LD		ORPCBLL	SALTWTRSED		5/5/2009 7:00	6/12/2009 20:11		L47890-7

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Workgroup: WG101991 PCB

MB:WG101991-1 Matrix: SOLIDBLANK Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: NONE
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	
Aroclor 1221	1.7	3.33	ug/Kg	<MDL	
Aroclor 1232	1.7	3.33	ug/Kg	<MDL	
Aroclor 1242	0.83	1.67	ug/Kg	<MDL	
Aroclor 1248	0.83	1.67	ug/Kg	<MDL	
Aroclor 1254	0.83	1.67	ug/Kg	<MDL	
Aroclor 1260	0.83	1.67	ug/Kg	<MDL	
Total Aroclors	0.83	1.67	ug/Kg	<MDL	

SB:WG101991-2 MB:WG101991-1 Matrix: SOLIDBLANK Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	25	13.1	53		39--121
Aroclor 1260	0.83	1.67	ug/Kg	<MDL	25	18.7	75		53--140

MSD:WG101991-4 MS:WG101991-3 L47890-6 Matrix: SALTWTRSED Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: 423062-100-4
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	25	17.9	72		32--164	25	17.2	69		4		50
Aroclor 1260	0.83	1.67	ug/Kg	1.88	25	17.9	64		28--144	25	17.8	64		0		50

SRM:WG101991-5 Matrix: SALTWTRSED Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Aroclor 1254	2.7	5.33	ug/Kg	112	116	103		57--139

King County Environmental Lab Analytical QC Report

LD:WG101991-6 L47890-7 Matrix: SALTWTRSED Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: 423062-100-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Aroclor 1016	2.7	5.4	ug/Kg	<MDL	<MDL			100
Aroclor 1221	1.7	3.33	ug/Kg	<MDL	<MDL			100
Aroclor 1232	1.7	3.33	ug/Kg	<MDL	<MDL			100
Aroclor 1242	0.83	1.67	ug/Kg	<MDL	<MDL			100
Aroclor 1248	0.83	1.67	ug/Kg	7.08	5.61	23		100
Aroclor 1254	0.83	1.67	ug/Kg	14.8	12.7	15		100
Aroclor 1260	0.83	1.67	ug/Kg	4.97	4.96	0		100
Total Aroclors	0.83	1.67	ug/Kg	26.9	23.3	14		100

Surrogate: (Lab Limits)	2,4,5,6-Tetrachloro m xylene 10--118	Decachloro biphenyl 12--158
L47890-1	72	56
L47890-2	68	71
L47890-3	67	64
L47890-4	66	61
L47890-5	64	76
L47890-6	66	81
L47890-7	68	77
L47890-8	65	68
L47890-9	56	74
WG101991-1	52	90
WG101991-2	40	89
WG101991-3	73	78
WG101991-4	67	74
WG101991-5	66	70
WG101991-6	63	70

Trace Organics Data Anomaly Form

Date(s) Occurred: *6/12/2009*

WG #(s): *101991*

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

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	☐ VOA-SULFUR		
☐ Other:			
☐ Subcontracted:			

II. Instrument

GC/ICP/MS: ☐ P

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

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

Anomaly Description: *The Aroclor 1260 CCV was consistently low.*

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: *JG- low CCV recovery*
☐ Other

Corrective Action Description: *Run attempted twice with different CCV vials and instrument maintenance performed; both times with the same low 1260 result.*

VI. Potential Effects on Data Quality:

☐ None; corrective action entirely corrected anomaly (explanation optional):

☒ Potential effect explanation (explanation mandatory): *The reported sample values for Aroclor 1260 may be up to 32% lower than true value. All other CCVs and QC(including 1260) had values with in the appropriate acceptance ranges.*

	Signatures	Signature Dates
Reported By: *Gretchen Nerlin*		
Reviewer: *Jim Fiscus*		
Supervisor: *Dana Walker*		
QA Officer: *Colin Elliott* **(For QA1 only)**		
cc: LPM: Fritz Grothkopp		

King County Environmental Lab Batch Report

WG101988 Chlorinated Pesticides

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47890-1	423062-100-4	Duwamish Diagonal Cap Monitoring	ORPESTLL	SALTWTRSED	4/28/2009 8:45	5/5/2009 7:00	6/8/2009 22:27		
L47890-2	423062-100-4	Duwamish Diagonal Cap Monitoring	ORPESTLL	SALTWTRSED	4/28/2009 9:10	5/5/2009 7:00	6/8/2009 23:04		
L47890-3	423062-100-4	Duwamish Diagonal Cap Monitoring	ORPESTLL	SALTWTRSED	4/28/2009 9:26	5/5/2009 7:00	6/8/2009 23:42		
L47890-4	423062-100-4	Duwamish Diagonal Cap Monitoring	ORPESTLL	SALTWTRSED	4/28/2009 9:45	5/5/2009 7:00	6/9/2009 0:19		
L47890-5	423062-100-4	Duwamish Diagonal Cap Monitoring	ORPESTLL	SALTWTRSED	4/28/2009 10:02	5/5/2009 7:00	6/9/2009 0:56		
L47890-6	423062-100-4	Duwamish Diagonal Cap Monitoring	ORPESTLL	SALTWTRSED	4/28/2009 10:22	5/5/2009 7:00	6/9/2009 1:33		FREP @ L47890-5
L47890-7	423062-100-4	Duwamish Diagonal Cap Monitoring	ORPESTLL	SALTWTRSED	4/27/2009 14:25	5/5/2009 7:00	6/9/2009 2:10		
L47890-8	423062-100-4	Duwamish Diagonal Cap Monitoring	ORPESTLL	SALTWTRSED	4/27/2009 14:50	5/5/2009 7:00	6/9/2009 2:47	WG101988-1, -2, -3, -4, -5, -6	
L47890-9	423062-100-4	Duwamish Diagonal Cap Monitoring	ORPESTLL	SALTWTRSED	4/27/2009 15:15	5/5/2009 7:00	6/9/2009 3:25		
WG101988-1	MB		ORPESTLL	OTHR SOLID		5/5/2009 7:00	6/8/2009 16:52		MB090505
WG101988-2	SB		ORPESTLL	OTHR SOLID		5/5/2009 7:00	6/8/2009 17:30		WG101988-1
WG101988-3	MS		ORPESTLL	SALTWTRSED		5/5/2009 7:00	6/8/2009 18:07		L47890-5
WG101988-4	MSD		ORPESTLL	SALTWTRSED		5/5/2009 7:00	6/8/2009 18:44		WG101988-3 L47890-5
WG101988-5	SRM		ORPESTLL	SALTWTRSED		5/5/2009 7:00	6/8/2009 19:21		1944
WG101988-6	LD		ORPESTLL	SALTWTRSED		5/5/2009 7:00	6/8/2009 19:58		L47890-7

King County Environmental Lab Analytical QC Report

Workgroup: WG101988 Chlorinated Pesticides

MB:WG101988-1 Matrix: OTHR SOLID Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: NONE
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	
Aldrin	0.67	1.33	ug/Kg	<MDL	
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	
Alpha-Chlordane	0.33	0.667	ug/Kg	<MDL	
Beta-BHC	0.33	0.667	ug/Kg	<MDL	
Delta-BHC	0.33	0.667	ug/Kg	<MDL	
Dieldrin	0.67	1.33	ug/Kg	<MDL	
Endosulfan I	0.67	1.33	ug/Kg	<MDL	
Endosulfan II	0.67	1.33	ug/Kg	<MDL	
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	
Endrin	0.67	1.33	ug/Kg	<MDL	
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	
Gamma-Chlordane	0.33	0.667	ug/Kg	<MDL	
Heptachlor	0.33	0.667	ug/Kg	<MDL	
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	
Methoxychlor	3.3	6.67	ug/Kg	<MDL	
Toxaphene	6.7	13.3	ug/Kg	<MDL	

King County Environmental Lab Analytical QC Report

SB:WG101988-2 MB:WG101988-1 Matrix: OTHR SOLID Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	6.67	5.52	83		78--121
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	6.67	5.39	81		75--111
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	6.67	5.24	79		57--145
Aldrin	0.67	1.33	ug/Kg	<MDL	6.67	4	60		28--113
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	6.67	3.95	59		20--99
Beta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.76	71		66--102
Delta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.19	63		63--108
Dieldrin	0.67	1.33	ug/Kg	<MDL	6.67	5.29	79		58--139
Endosulfan I	0.67	1.33	ug/Kg	<MDL	6.67	4.92	74		62--104
Endosulfan II	0.67	1.33	ug/Kg	<MDL	6.67	4.31	65	*	72--109
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	6.67	3.65	55	*	61--104
Endrin	0.67	1.33	ug/Kg	<MDL	6.67	5.65	85		60--160
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	6.67	<MDL	0	*	10--77
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	6.67	4.28	64		27--130
Heptachlor	0.33	0.667	ug/Kg	<MDL	6.67	4.74	71		20--137
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	6.67	4.85	73		59--107
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	6	90		72--131

King County Environmental Lab Analytical QC Report

MSD:WG101988-4 MS:WG101988-3 L47890-5 Matrix: SALTWTRSED Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: 423062-100-4
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	6.67	6.02	90		41–157	6.67	5.7	85		6		50
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	6.67	5.89	88		59–125	6.67	5.91	89		1		50
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	6.67	6.02	90		50–144	6.67	5.93	89		1		50
Aldrin	0.67	1.33	ug/Kg	<MDL	6.67	4.74	71		61–119	6.67	4.8	72		1		50
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.6	69		59–111	6.67	4.68	70		1		50
Beta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.07	76		60–119	6.67	4.96	74		3		50
Delta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.12	77		54–126	6.67	5.08	76		1		50
Dieldrin	0.67	1.33	ug/Kg	<MDL	6.67	5.75	86		60–139	6.67	5.6	84		2		50
Endosulfan I	0.67	1.33	ug/Kg	<MDL	6.67	5.54	83		64–113	6.67	5.29	79		5		50
Endosulfan II	0.67	1.33	ug/Kg	<MDL	6.67	5.35	80		36–146	6.67	5.16	77		4		50
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	6.67	4.74	71		46–113	6.67	4.38	66		7		50
Endrin	0.67	1.33	ug/Kg	<MDL	6.67	6.46	97		62–166	6.67	6.1	92		5		50
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	6.67	0.9	13		10–66	6.67	0.76	11		17		50
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	6.67	4.77	72		61–135	6.67	4.79	72		0		50
Heptachlor	0.33	0.667	ug/Kg	<MDL	6.67	5.53	83		52–157	6.67	5.65	85		2		50
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	6.67	5.29	79		61–118	6.67	5.26	79		0		50
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	6.9	104		53–129	6.67	6.5	97		7		50

SRM:WG101988-5 Matrix: SALTWTRSED Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
4,4'-DDT	5.3	10.7	ug/Kg	119	166	139		10–200
Alpha-Chlordane	2.7	5.33	ug/Kg	16.5	20	121		48–144

King County Environmental Lab Analytical QC Report

LD:WG101988-6 L47890-7 Matrix: SALTWTRSED Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: 423062-100-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	<MDL			35
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	<MDL			35
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	<MDL			35
Aldrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Alpha-Chlordane	0.33	0.667	ug/Kg	<MDL	<MDL			35
Beta-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Delta-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Dieldrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan I	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan II	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	<MDL			35
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	<MDL			35
Gamma-Chlordane	0.33	0.667	ug/Kg	<MDL	<MDL			35
Heptachlor	0.33	0.667	ug/Kg	<MDL	<MDL			35
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	<MDL			35
Methoxychlor	3.3	6.67	ug/Kg	<MDL	<MDL			35
Toxaphene	6.7	13.3	ug/Kg	<MDL	<MDL			35

King County Environmental Lab Analytical QC Report

Surrogate: (Lab Limits)	2,4,5,6-Tetrachloro m xylene 10--118	Decachloro biphenyl 12--158
L47890-1	68	94
L47890-2	57	78
L47890-3	54	72
L47890-4	57	81
L47890-5	49	77
L47890-6	54	84
L47890-7	55	86
L47890-8	56	80
L47890-9	47	86
WG101988-1	43	78
WG101988-2	43	78
WG101988-3	52	84
WG101988-4	56	81
WG101988-5	70	99
WG101988-6	55	79

CHAIN OF CUSTODY FORMS

Login Number: P47890

Page: 1

T_DUD.STAAB.ON

DUDI SEDS, STAS. A,B, ON-CAP

Project Number: 423062-100-4

Personnel: John Blaine, Jim Dev, ~~Jeff Broker, Jndy Gates~~, Jenée Colton

Sample No. (Type)	P47890-1	P47890-2	P47890-3
Locator	DUD_1A	DUD_2A	DUD_3A
Short Loc. Desc.	DUD_1A	DUD_2A	DUD_3A
Locator Desc.	CLEANUP AREA A MONITORING LOCATION 1	CLEANUP AREA A MONITORING LOCATION 2	CLEANUP AREA A MONITORING LOCATION 3
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	~~4/28/09 0845~~ ~~4/27/09 1425~~ dc 4/27/09	4/28/09 0910	4/28/09 0926
End Date/Time	4/28/09 0910 ~~1440~~ dc 4/27/09	" 0921	" 0935
Time Span			
Sample Depth	6	7	10
Comments	3 Grab Comp, 0-10 cm	3 Grab Comp, 0-10 cm	3 Grab Comp, 0-10 cm
PERSONNEL	JD, JB, JC	JC, JD, JB	JC, JD, JB
SAMP METH	20143		20
SED DEPTH	~~cm #1-7 #2-13 #3-17~~ dc cm #1-10 #2-11 #3-	#1-17 #2-17 #3 17	#1-13 #2-7 #3-11
SED SAMP RANGE			
SED TYPE	~~2ØN2Ø~~ JC 43W33	2ØN2Ø	21N3Ø
TIDE COND	E	E	E
TIDE HT	8	6	5
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-M	6 SALTWTRSED HG-CVAA-M	6 SALTWTRSED HG-CVAA-M
	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

Coords
WS 102308
~~Brown silt with grey laminations~~ Spoon Samples dc 4/27/09

F. Data
WG 102366
5/21
JC 4/27/09

Spoon Samples
Gravel w/ Mi organic debris on surface
petroleum odor

ANALYSIS REQUEST/CHAIN OF CUSTODY
Relinquished by: John Blaine Date: 4-28-09 Time: 1600
Received by: Date: 4/28/09 Time: 1610
Samples Number(s): 1-6 (AD)

continue ...

DUDI SEDS, STAS. A,B, ON-CAP

Project Number: 423062-100-4 Personnel: John Blaine, Jim Devereaux, Jenée Colton

Sample No. (Type)	P47890-4	P47890-5	P47890-6 (FREP for -5)
Locator	DUD_4A	DUD_5A	DUD_5A
Short Loc. Desc.	DUD_4A	DUD_5A	DUD_5A
Locator Desc.	CLEANUP AREA A MONITORING LOCATION 4	CLEANUP AREA A MONITORING LOCATION 5	CLEANUP AREA A MONITORING LOCATION 5
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	4/28/09 0945	4/28/09 1002	4/28/09 1022
End Date/Time	" 0958	" 1022	" 1037
Time Span			
Sample Depth	7	9	9
Comments	3 Grab Comp, 0-10 cm	3 Grab Comp, 0-10 cm, AREP	3 Grab Comp, 0-10 cm, FREP
PERSONNEL	JC, JB, JD	JC, JB, JD	JC, JB, JD
SAMP METH	20143		
SED DEPTH	#1-9 #2-13 #3-13 (3)	#1 (8) #2-7 #3-9	#1 (8) #2-7 #3-8
SED SAMP RANGE			
SED TYPE	2ØN3Ø	34Ø2Ø	34N2Ø
TIDE COND	E	E	E
TIDE HT	4.8	2.5	3.5
SAMP FUNC	**********	**********	
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-M	6 SALTWTRSED HG-CVAA-M	6 SALTWTRSED HG-CVAA-M
	6 SALTWTRSED MN-ICP	6 SALTWTRSED MN-ICP	6 SALTWTRSED MN-ICP
	6 SALTWTRSED PP ICP	6 SALTWTRSED PP ICP	6 SALTWTRSED PP ICP

continue ...

DUDI SEDS, STAS. A,B, ON-CAP

Project Number: 423062-100-4 Personnel: Jeff Droker, Judy Och, Terrie Colton

Sample No. (Type)	P47890-7	P47890-8	P47890-9
Locator	DUD_1B	DUD_2B	DUD_3B
Short Loc. Desc.	DUD_1B	DUD_2B	DUD_3B
Locator Desc.	CLEANUP AREA A MONITORING LOCATION 1	CLEANUP AREA A MONITORING LOCATION 2	CLEANUP AREA A MONITORING LOCATION 3
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	4/27/09 ~~1~~ 1425	4/27/09 1450	4/27/09 1515
End Date/Time	" 1440	" 1505	4/27/09 1530
Time Span			
Sample Depth	8	5	5
Comments	3 Grab Comp, 0-10 cm	3 Grab Comp, 0-10 cm	3 Grab Comp, 0-10 cm
PERSONNEL			
SAMP METH	20143		
SED DEPTH	Cm #1-17 #2-13 #3-17 6	#1-13 #2-13 #3-14	#1-13 #2-14 #3-17
SED SAMP RANGE			
SED TYPE	2ØN2Ø	2ØN2Ø	2ØN3Ø
TIDE COND	F	F	F
TIDE HT	-1.5	-1	0.5
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-M	6 |SALTWTRSED|HG-CVAA-M	6 |SALTWTRSED|HG-CVAA-M
	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

Spoon Samples
Thick brown layer on grey → black w/depth

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
[signature]	4/27/09	1655
RECEIVED BY	Date	Time
[signature]	4-27-09	1655
Sample Number(s) 47890 7,8,9 (All)		

Thin lt brown on dk brown/grey to black streaks

continue ...

KING COUNTY ENVIRONMENTAL LABORATORY
QUALITY ASSURANCE REVIEW

For

ESTUARINE SEDIMENT ANALYTICAL DATA

DUWAMISH/DIAGONAL SEDIMENT REMEDIATION PROJECT
YEAR THREE, ENR CAP SEDIMENT CHARACTERIZATION
MARCH 2008 SAMPLING EVENT

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Date: Oct 1, 2008

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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 Year Three, ENR Cap Sediment Characterization, March 2008 Sampling Event. 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 25, 2008 as part of the Duwamish/Diagonal Sediment Remediation Project Year Three, ENR Cap Sediment Characterization Sampling Event. The Sampling and Analysis Plan (SAP) in effect for this sampling event is titled: Duwamish/Diagonal Sediment Remediation Dredging and Capping Operations, Sediment Monitoring Sampling and Analysis Plan. October 28, 2003. (KCEL document # 177)

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 2003 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 eight thin-layer saltwater sediment samples in March 25, 2008. These samples were collected for the Duwamish/Diagonal Sediment Remediation Program. 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. Samples consisted of sediment aliquots collected from only one sampler deployment to minimize bottom disturbance at each of these thin-capped stations. Both the prescribed station coordinates and the actual coordinates recorded during sampling activities are presented in the following table (see below). The coordinate system, as shown, is in U.S. State Plane, Washington North 4601, NAD83.

Duwamish/Diagonal Sediment Sampling, Thin Layer Stations
Actual and Prescribed Sample Coordinates, March 2008

Lab Number	Station	Cast	Grabs Accepted	Prescribed Northing	Actual Northing	Prescribed Easting	Actual Easting	Offset > 3 m
L45303-1	DUD_3C	1	1	208144	208145	1267146	1267145	
L45303-2	DUD_4C	1	1	208239	208237	1267116	1267115	
L45303-3 FREP	DUD_4C	1	1	208239	208240	1267116	1267115	
L45303-4	DUD_5C	1	1	208263	208265	1267025	1267024	
L45303-5	DUD_6C	1	1	208501	208505	1266950	1266948	
L45303-6	DUD_7C	1	1	208486	208486	1266902	1266900	
L45303-7	DUD_14C	1	1	208002	208001	1267193	1267195	
L45303-8	DUD_15C	1	1	207968	207969	1267057	1267057	

Sediment grab samples were collected from the King County research vessel *Liberty*, which is equipped with a differential global positioning system (DGPS). Using DGPS, field coordinates were recorded for each cast of the two grab samplers, deployed in tandem, as they contacted the sediment. All field coordinates for each cast listed in the above table are within the +/- 3 meter accuracy limits, as defined in the SAP.

Sample Description Table

Lab Sample #	Station	Sample Collection	Average Sediment Depth	Sample Usage
L45303-1	DUD_3C	Surface Grabs	13 cm	Chemistry
L45303-2	DUD_4C	Surface Grabs	9 cm	Chemistry
L45303-3	DUD_4C	Surface Grabs (field replicate)	10 cm	Chemistry
L45303-4	DUD_5C	Surface Grabs	8 cm	Chemistry
L45303-5	DUD_6C	Surface Grabs	8 cm	Chemistry
L45303-6	DUD_7C	Surface Grabs	11 cm	Chemistry
L45303-7	DUD_14C	Surface Grabs	11 cm	Chemistry
L45303-8	DUD_15C	Surface Grabs	11 cm	Chemistry

Sample Collection

Sediment was collected at each station using two stainless steel, modified, 0.1 m^2 Van Veen grab samplers deployed in tandem via hydrowire. For each acceptable deployment, average depths ranging between 8-13 cm of sediment were collected within each grab, allowing for sub-sampling

within the upper 7 to 10 cm of material. Samples consisted of sediment aliquots collected from only one sampler deployment to minimize bottom disturbance at each of these thin-capped stations.

Water depth at the eight subtidal cap sample stations ranged between 9-11 meters (not corrected for tide).

Sample Handling

Sediment aliquots were sub-sampled from a single grab from a single deployment at each station. For chemistry testing, 7 to 10 cm deep aliquots, as measured from the sediment surface, were collected using a stainless steel spoon. Sediment that had touched the sides or bottom of the grab sampler was excluded. Less than the top 10 cm of sediment was sub-sampled in those instances where it was not possible to collect material down to the minimum sediment penetration depth. All aliquots were placed in a covered stainless-steel compositing bowl, specific for that station. The sediment was thoroughly homogenized, then split out into pre-labeled containers. All sample containers were supplied by the King County Environmental Laboratory, first having been pre-cleaned according to analytical specifications.

Decontamination

Individual sets of the sub-sampling and mixing equipment were dedicated to each station, precluding the need for decontamination of said equipment. The Van Veen grab samplers were decontaminated between stations by scrubbing with a brush using ambient water 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. They 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 time is defined as that time that sampling commences at each station.

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 Laboratory.

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:

Parameter	Sample ID	SAP MDL	Reported MDL	Reason for higher MDL Value
TOC	L45303-all	1000	1200 – 3400	Elevated levels of TOC
PSD Parameters in the % Fines range	L45303-all	0.1%	0.5%	MDL was updated after the SAP was completed

For all samples where the MDL did not meet the SAP MDL, the TOC levels along with % clay and % slit values were above the detection limit, thus the project objectives were met.

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 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	L45303-1 to -8	25-Mar-08	08-Apr-2008	09-Apr-2008	6 Months at 4°C	NA
Total Organic Carbon	L45303-1 to -3, 5 to 8	25-Mar-08	17-Apr-08	07-May-08	6 months at -18°C	6 months at -18°C
	L45303-4	25-Mar-08	28-Apr-08	07-May-08		
Total Solids	L45303-1 to -8	25-Mar-08	09-Apr-08	09-Apr-08	6 months at -18°C	NA

Sample storage conditions and holding times were met for all samples in this data submission except as noted under "Additional QA Issues" at the end of this section.

Method Blanks
Method blanks were analyzed in connection with total solids/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.

Additional QA Issues:
All of the TOC results for this sample group have been flagged with H because the samples were left outside of refrigeration for 24 hours prior to sample preparation. It is uncertain if this had a significant effect on the TOC results.

METALS CHEMISTRY

Completeness
Metal chemistry data are reported for all samples and parameters 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
Metals analysis was not subcontracted for these sets of samples.

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

Target List
The reported target list includes all metals specified in Table 1.

Detection Limits
The detection limits (MDLs) reported for Metals parameters are all within the requirements defined by 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 during the Third Annual PSDDA Review Meeting. 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	L45303-1 through -8	25-Mar-08	28-Apr-08	28-Apr-08	2 Years at -18°C	6 months
Total Mercury	L45303-1 through -8	25-Mar-08	14-Apr-08	15-Apr-08	28 days at -18°C	NA

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

Method Blanks
All metals method blanks results were less than the MDL

Standard Reference Materials
The SRM analyzed in association with samples included in this data submission is National Research Council of Canada PACS-2. This SRM is not certified for Silver, Arsenic or Cadmium. Acceptance limits for the certified elements 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 and also those indicated in the SAP.

Matrix Spikes

All matrix spike recoveries were within the 75 to 125% QC limits with the following exceptions:

The reported matrix spike recovery of 20% for Antimony for sample numbers L45303-1 to 8 is less than the 75% QC acceptance limit. Antimony results for all samples in this data submission have been qualified with the G flag.

Laboratory Replicate Samples

The relative percent differences (RPDs) for laboratory duplicate results for all metals were less than or equal to the QC limit of 20%.

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.

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
1,4-Dichlorobenzene	L45303-1, 4, 6 to 8	0.26	0.27 to 0.32	Elevated MDL due to matrix interferences[1]
Benzoic Acid	L45303- 1, 3, 4, 6 to 8	12	13 to 16	Elevated MDL due to matrix interferences[1]
Coprostanol	L45303- 1 to 8	28	48 to 66	Elevated MDL due to matrix interferences[1]
Pentachlorophenol	L45303- 1 to 4, 6 to 8	10	12 to 16	Elevated MDL due to matrix interferences[1]
4,4'-DDD	L45303- 1 to 8	0.67	0.81 to 1.1	Prep method was altered for this set of samples
4,4'-DDE	L45303- 1 to 8	0.67	0.81 to 1.1	Prep method was altered for this set of samples
4,4'-DDT	L45303- 1 to 8	0.67	0.81 to 1.1	Prep method was altered for this set of samples
Aldrin	L45303- 1 to 8	0.67	0.81 to 1.1	Prep method was altered for this set of samples
Aroclor 1016	L45303-1 to 4, 6 to 8	4	5 to 27	See "Additional QA issues" sub-section at the end of the organic section.
Aroclor 1232	L45303-1, 3, 4, 6 to 8	8	9.3 to 41	See "Additional QA issues" sub-section at the end of the organic section.
Aroclor 1242	L45303-1 to 8	4	9 to 47	See "Additional QA issues" sub-section at the end of the organic section.
Dieldrin	L45303- 1 to 8	0.67	0.81 to 1.1	Prep method was altered for this set of samples
Endosulfan I	L45303- 1 to 8	0.67	0.81 to 1.1	Prep method was altered for this set of samples

Endosulfan II	L45303- 1 to 8	0.67	0.81 to 1.1	Prep method was altered for this set of samples
Endosulfan Sulfate	L45303- 1 to 8	0.67	0.81 to 1.1	Prep method was altered for this set of samples
Endrin	L45303- 1 to 8	0.67	0.81 to 1.1	Prep method was altered for this set of samples
Endrin Aldehyde	L45303- 1 to 8	0.67	0.81 to 1.1	Prep method was altered for this set of samples
Methoxychlor	L45303- 1 to 8	3.3	4.0 to 5.4	Prep method was altered for this set of samples
Toxaphene	L45303- 1 to 8	6.7	8.1 to 11	Prep method was altered for this set of samples

[1] MDL values for this method have been adjusted higher since the SAP was prepared.

For Non-ionizable Organic parameters, the MDLs for all samples meet the SMS limits, when converted to mg/Kg TOC.

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	L45303-1 to 8	25-Mar-08	27-Mar-08	1, 3-Apr-08	1 year at -18°C	40 days at 4°C
Chlorinated Pesticides	L45303-1 to 8	25-Mar-08	28-Mar-08	23, 24-Apr-08	1 year at -18°C	40 days at 4°C
PCB	L45303-1 to 8	25-Mar-08	28-Mar-08	28, 29-Apr-08	1 year at -18°C	40 days at 4°C

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 L45303-1 to 9 had a result above the MDL for Bis (2-ethylhexyl) Phthalate (10.9 ug/Kg), Butyl Benzyl Phthalate (7.62 ug/Kg) Di-n-butyl Phthalate (6.8 ug/Kg) and Benzoic Acid (112 ug/Kg). Sample results for Bis (2-ethylhexyl) Phthalate, Butyl

Benzyl Phthalate Di-n-butyl Phthalate and Benzoic Acid for those samples have been qualified with the B flag. All Bis (2-ethylhexyl) Phthalate, Butyl Benzyl Phthalate Di-n-butyl Phthalate and Benzoic Acid results for these samples must be treated as estimated values.

Surrogate Recoveries

Surrogate recovery acceptance limits for sediment samples have been developed based on historical lab performance using the current analytical methods. 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. 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 although the SAP lists the obsolete acceptance limits of 80 to 120%. 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. 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 and alpha Chlordane. All measured recoveries for this SRM were within acceptance limits.

2. PCBs

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. This SRM was not reported due to loss of the extract during sample preparation.

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 was 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, except Toxaphene, alpha and gamma Chlordane, 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% with the exception of phenol with an RPD of 130. All phenol results have been flagged with an "E" to indicate an estimated value.

Additional QA Issues:

Pesticide:
All results for Endrin Aldehyde for samples L45303-1 to -9 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 always possible 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
L45303-1	x	x	x
L45303-2	x		x
L45303-3	x	x	x
L45303-4	x	x	x
L45303-5			x
L45303-6	x	x	x
L45303-7	x	x	x
L45303-8	x	x	x

TABLE 1
SEDIMENT SAMPLE INVENTORY

Sample	Locator / Description (see SAP)	PSD	Solids	TOC	Metals[1]	BNAs[2]	Pest/ PCBs	Comments
L45303-1	DUD_3C	x	x	x	x	x	x	
L45303-2	DUD_4C	x	x	x	x	x	x	
L45303-3	DUD_4C	x	x	x	x	x	x	field replicate
L45303-4	DUD_5C	x	x	x	x	x	x	
L45303-5	DUD_6C	x	x	x	x	x	x	
L45303-6	DUD_7C	x	x	x	x	x	x	
L45303-7	DUD_14C	x	x	x	x	x	x	
L45303-8	DUD_15C	x	x	x	x	x	x	

1 Metals = Hg, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, Tl, Zn, Fe, Al,
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	to 125%	to 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	to 120%	
high duplicate relative percent difference	E	E	to 35 %	to 20%	NA	for organics and metals
high triplicate relative standard deviation	E	E	NA	NA	to 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	to /=MDL	to /=MDL	to /=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.

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4																				
	Locator:	DUD_3C				Locator:	DUD_4C				Locator:	DUD_4C				Locator:	DUD_5C			
	Descrip:	CLEANUP AREA PERIM				Descrip:	CLEANUP AREA PERIM				Descrip:	CLEANUP AREA PERIM				Descrip:	CLEANUP AREA PERIM			
	Sampled:	03/25/08 11:15:00 AM				Sampled:	03/25/08 11:30:00 AM				Sampled:	03/25/08 11:40:00 AM				Sampled:	03/25/08 12:00:00 PM			
	Lab ID:	L45303-1				Lab ID:	L45303-2				Lab ID:	L45303-3				Lab ID:	L45303-4			
	Matrix:	SALTWTRSED				Matrix:	SALTWTRSED				Matrix:	SALTWTRSED				Matrix:	SALTWTRSED			
	% Solids:	63.2				% Solids:	81.9				% Solids:	79.5				% Solids:	74.5			
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(318V1)																				
Clay *	14.4		0.76	1.51	%	4.2		0.61	1.21	%	4.9		0.61	1.22	%	5.1		0.64	1.27	%
Dry Weight Factor	2.4					1.5					1.5					1.7				
Fines *	36.3		0.76	1.51	%	7.3		0.61	1.21	%	9.2		0.61	1.22	%	13.4		0.64	1.27	%
Gravel *	9.6		0.15	1.51	%	44.5		0.12	1.21	%	38.2		0.12	1.22	%	17.4		0.13	1.27	%
p+0.00 *	1.4		0.15	1.51	%	4.3		0.12	1.21	%	4.5		0.12	1.22	%	2.6		0.13	1.27	%
p+1.00 *	3.9		0.15	1.51	%	7.9		0.12	1.21	%	7.4		0.12	1.22	%	6.7		0.13	1.27	%
p+10.0(equal/more than) *	9.1		0.76	1.51	%	3		0.61	1.21	%	3.7		0.61	1.22	%	3.8		0.64	1.27	%
p+2.00 *	20.1		0.15	1.51	%	21.7		0.12	1.21	%	23.7		0.12	1.22	%	33.3		0.13	1.27	%
p+3.00 *	17.7		0.15	1.51	%	12.1		0.12	1.21	%	13.6		0.12	1.22	%	22.3		0.13	1.27	%
p+4.00 *	7.7		0.15	1.51	%	2.4		0.12	1.21	%	2.4		0.12	1.22	%	4.5		0.13	1.27	%
p+5.00 *	6.1		0.76	1.51	%	0.61	<RDL	0.61	1.21	%	1.2		0.61	1.22	%	3.2		0.64	1.27	%
p+6.00 *	5.3		0.76	1.51	%	0.61	<RDL	0.61	1.21	%	0.6	<RDL	0.61	1.22	%	1.3		0.64	1.27	%
p+7.00 *	6.8		0.76	1.51	%	0.61	<RDL	0.61	1.21	%	1.2		0.61	1.22	%	1.9		0.64	1.27	%
p+8.00 *	3.8		0.76	1.51	%	1.2		0.61	1.21	%	1.2		0.61	1.22	%	1.9		0.64	1.27	%
p+9.00 *	5.3		0.76	1.51	%	1.2		0.61	1.21	%	1.2		0.61	1.22	%	1.3		0.64	1.27	%
p-1.00 *	3.3		0.15	1.51	%	17.1		0.12	1.21	%	14.9		0.12	1.22	%	7.5		0.13	1.27	%
p-2.00 *	4.5		0.15	1.51	%	12.5		0.12	1.21	%	9.5		0.12	1.22	%	7.1		0.13	1.27	%
p-2.00(less than) *	1.8		0.15	1.51	%	15		0.12	1.21	%	13.7		0.12	1.22	%	2.8		0.13	1.27	%
Sand *	50.8		0.15	1.51	%	48.6		0.12	1.21	%	51.5		0.12	1.22	%	69.3		0.13	1.27	%
Silt *	21.9		0.76	1.51	%	3		0.61	1.21	%	4.3		0.61	1.22	%	8.3		0.64	1.27	%
M=CV EPA 9060-PSEP96(337V3)																				
Total Organic Carbon	13000	H	2800	5760	mg/Kg	3660	H	1200	2470	mg/Kg	5020	H	2000	4040	mg/Kg	5220	H	1900	3870	mg/Kg
M=CV SM2540-G (307V2)																				
Total Solids *	63.2		0.005	0.01	%	81.9		0.005	0.01	%	79.5		0.005	0.01	%	74.5		0.005	0.01	%
M=ES NONE																				
Field Personnel	JB,CB,CE,JDD				none	JB,CB,CE,JDD				none	JB,CB,CE,JDD				none	JB,CB,CE,JDD				none
Sampcoordx1 *	1267145				ft	1267115				ft	1267115				ft	1267024				ft
Sampcoordy1 *	208145				ft	208237				ft	208240				ft	208265				ft
Sample Depth *	10				m	9				m	9				m	11				m
Sample Function											FREP @ L45303-2				none					
Sampling Method *	20042				none	20042				none	20042				none	20042				none
Sediment Sampling Depth *	13				cm	9				cm	10				cm	8				cm
Sediment Sampling Range *	0-10 cm				cm	0-8 cm				cm	0-9 cm				cm	0-7 cm				cm
Sediment Type	32N30				none	43N30				none	43N30				none	34N30				none
Tidal Condition	E				none	E				none	E				none	E				none
Tide Height *	4				ft	3.5				ft	3.3				ft	3				ft
M=MT CVAA EPA 7471B (604V4)																				
Mercury, Total, CVAA	0.119		0.0076	0.0755	mg/Kg	0.038	<RDL	0.0062	0.0619	mg/Kg	0.059	<RDL	0.0063	0.0623	mg/Kg	0.046	<RDL	0.0067	0.0668	mg/Kg
M=MT ICP EPA3050B/6010C MOD(612V3)																				
Aluminum, Total, ICP	15000		7.9	39.4	mg/Kg	9230		6.1	30.4	mg/Kg	10300		6.3	31.3	mg/Kg	10600		6.7	33.3	mg/Kg
Antimony, Total, ICP		<MDL,G	1.2	5.92	mg/Kg		<MDL,G	0.92	4.57	mg/Kg		<MDL,G	0.94	4.69	mg/Kg		<MDL,G	0.99	4.99	mg/Kg
Arsenic, Total, ICP	9	<RDL	1.9	9.86	mg/Kg	4.3	<RDL	1.5	7.62	mg/Kg	4.8	<RDL	1.5	7.81	mg/Kg	4.7	<RDL	1.6	8.31	mg/Kg
Beryllium, Total, ICP	0.28	<RDL	0.079	0.394	mg/Kg	0.16	<RDL	0.061	0.304	mg/Kg	0.16	<RDL	0.063	0.313	mg/Kg	0.19	<RDL	0.067	0.333	mg/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

	Locator:	Descrip:	Sampled:	Lab ID:	Matrix:	% Solids:
	DUD_3C	CLEANUP AREA PERIM	03/25/08 11:15:00 AM	L45303-1	SALTWTRSED	63.2
	DUD_4C	CLEANUP AREA PERIM	03/25/08 11:30:00 AM	L45303-2	SALTWTRSED	81.9
	DUD_4C	CLEANUP AREA PERIM	03/25/08 11:40:00 AM	L45303-3	SALTWTRSED	79.5
	DUD_5C	CLEANUP AREA PERIM	03/25/08 12:00:00 PM	L45303-4	SALTWTRSED	74.5

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																				
Cadmium, Total, ICP	0.3	<RDL	0.16	0.788	mg/Kg	0.16	<RDL	0.12	0.609	mg/Kg	0.23	<RDL	0.12	0.625	mg/Kg	0.16	<RDL	0.13	0.666	mg/Kg
Chromium, Total, ICP	23.9		0.24	1.18	mg/Kg	15.8		0.18	0.913	mg/Kg	17.7		0.19	0.938	mg/Kg	18.7		0.2	0.997	mg/Kg
Copper, Total, ICP	52.2		0.32	1.58	mg/Kg	31.1		0.24	1.22	mg/Kg	35.3		0.25	1.25	mg/Kg	38.5		0.27	1.33	mg/Kg
Iron, Total, ICP	23300		4	19.8	mg/Kg	16600		3.1	15.3	mg/Kg	17100		3.1	15.6	mg/Kg	18700		3.4	16.6	mg/Kg
Lead, Total, ICP	31.3		1.6	7.88	mg/Kg	10.2		1.2	6.09	mg/Kg	12.3		1.2	6.25	mg/Kg	10.8		1.3	6.66	mg/Kg
Manganese, Total, ICP	256		0.16	0.788	mg/Kg	258		0.12	0.609	mg/Kg	219		0.12	0.625	mg/Kg	258		0.13	0.666	mg/Kg
Nickel, Total, ICP	18.8		0.4	1.98	mg/Kg	13.8		0.31	1.53	mg/Kg	14.8		0.31	1.56	mg/Kg	17.2		0.34	1.66	mg/Kg
Selenium, Total, ICP		<MDL	1.9	9.86	mg/Kg		<MDL	1.5	7.62	mg/Kg		<MDL	1.5	7.81	mg/Kg		<MDL	1.6	8.31	mg/Kg
Silver, Total, ICP		<MDL	0.32	1.58	mg/Kg		<MDL	0.24	1.22	mg/Kg		<MDL	0.25	1.25	mg/Kg		<MDL	0.27	1.33	mg/Kg
Thallium, Total, ICP		<MDL	3.2	15.8	mg/Kg		<MDL	2.4	12.2	mg/Kg		<MDL	2.5	12.5	mg/Kg		<MDL	2.7	13.3	mg/Kg
Zinc, Total, ICP	91.3		0.4	1.98	mg/Kg	45.4		0.31	1.53	mg/Kg	48.9		0.31	1.56	mg/Kg	54.5		0.34	1.66	mg/Kg
M=OR EPA 3550B/8270C (7-3-01-004)																				
1,2,4-Trichlorobenzene	0.28	<RDL	0.16	0.316	ug/Kg		<MDL	0.12	0.244	ug/Kg		<MDL	0.13	0.252	ug/Kg		<MDL	0.13	0.268	ug/Kg
1,2-Dichlorobenzene		<MDL	0.32	0.633	ug/Kg		<MDL	0.24	0.488	ug/Kg		<MDL	0.25	0.503	ug/Kg		<MDL	0.27	0.537	ug/Kg
1,3-Dichlorobenzene		<MDL	0.32	0.633	ug/Kg		<MDL	0.24	0.488	ug/Kg		<MDL	0.25	0.503	ug/Kg		<MDL	0.27	0.537	ug/Kg
1,4-Dichlorobenzene	0.94		0.32	0.633	ug/Kg	0.28	<RDL	0.24	0.488	ug/Kg	0.42	<RDL	0.25	0.503	ug/Kg	0.51	<RDL	0.27	0.537	ug/Kg
2,4-Dimethylphenol		<MDL	1.6	3.16	ug/Kg		<MDL	1.2	2.44	ug/Kg		<MDL	1.3	2.52	ug/Kg		<MDL	1.3	2.68	ug/Kg
2-Methylnaphthalene		<MDL	3.2	6.33	ug/Kg		<MDL	2.4	4.88	ug/Kg		<MDL	2.5	5.03	ug/Kg		<MDL	2.7	5.37	ug/Kg
2-Methylphenol		<MDL	3.2	6.33	ug/Kg		<MDL	2.4	4.88	ug/Kg		<MDL	2.5	5.03	ug/Kg		<MDL	2.7	5.37	ug/Kg
4-Methylphenol		<MDL	6.3	12.7	ug/Kg		<MDL	4.9	9.77	ug/Kg		<MDL	5	10.1	ug/Kg		<MDL	5.4	10.7	ug/Kg
Acenaphthene	5.7	<RDL	3.2	6.33	ug/Kg		<MDL	2.4	4.88	ug/Kg		<MDL	2.5	5.03	ug/Kg	3.8	<RDL	2.7	5.37	ug/Kg
Acenaphthylene	6.2	<RDL	3.2	6.33	ug/Kg	2.7	<RDL	2.4	4.88	ug/Kg	3	<RDL	2.5	5.03	ug/Kg	4.6	<RDL	2.7	5.37	ug/Kg
Anthracene	37.3		3.2	6.33	ug/Kg	13.2		2.4	4.88	ug/Kg	21.1		2.5	5.03	ug/Kg	25.2		2.7	5.37	ug/Kg
Benzo(a)anthracene	87.5		3.2	6.33	ug/Kg	33.5		2.4	4.88	ug/Kg	37.4		2.5	5.03	ug/Kg	51.8		2.7	5.37	ug/Kg
Benzo(a)pyrene	99.8		3.2	6.33	ug/Kg	41.5		2.4	4.88	ug/Kg	44.5		2.5	5.03	ug/Kg	58.1		2.7	5.37	ug/Kg
Benzo(b)fluoranthene	136		3.2	6.33	ug/Kg	58.1		2.4	4.88	ug/Kg	56.2		2.5	5.03	ug/Kg	75.7		2.7	5.37	ug/Kg
Benzo(g,h,i)perylene	46.5		3.2	6.33	ug/Kg	18.3		2.4	4.88	ug/Kg	19.1		2.5	5.03	ug/Kg	24.8		2.7	5.37	ug/Kg
Benzo(k)fluoranthene	111		3.2	6.33	ug/Kg	43.6		2.4	4.88	ug/Kg	48.1		2.5	5.03	ug/Kg	65.2		2.7	5.37	ug/Kg
Benzoic Acid	275	B	16	31.6	ug/Kg	241	B	12	24.4	ug/Kg	177	B	13	25.2	ug/Kg	200	B	13	26.8	ug/Kg
Benzyl Alcohol		<MDL	3.2	6.33	ug/Kg		<MDL	2.4	4.88	ug/Kg		<MDL	2.5	5.03	ug/Kg		<MDL	2.7	5.37	ug/Kg
Benzyl Butyl Phthalate	29.7	B	1.6	3.16	ug/Kg	13.3	B	1.2	2.44	ug/Kg	16.2	B	1.3	2.52	ug/Kg	15.7	B	1.3	2.68	ug/Kg
Bis(2-Ethylhexyl)Phthalate	204	B	6.3	12.7	ug/Kg	98.8	B	4.9	9.77	ug/Kg	143	B	5	10.1	ug/Kg	130	B	5.4	10.7	ug/Kg
Caffeine		<MDL	6.3	12.7	ug/Kg		<MDL	4.9	9.77	ug/Kg		<MDL	5	10.1	ug/Kg		<MDL	5.4	10.7	ug/Kg
Carbazole	8.37		3.2	6.33	ug/Kg	3.2	<RDL	2.4	4.88	ug/Kg	4.9	<RDL	2.5	5.03	ug/Kg	7.95		2.7	5.37	ug/Kg
Chrysene	142		3.2	6.33	ug/Kg	55.4		2.4	4.88	ug/Kg	61.3		2.5	5.03	ug/Kg	81.9		2.7	5.37	ug/Kg
Coprostanol		<MDL	63	127	ug/Kg		<MDL	49	97.7	ug/Kg		<MDL	50	101	ug/Kg		<MDL	54	107	ug/Kg
Dibenzo(a,h)anthracene	22.3		3.2	6.33	ug/Kg	5.86		2.4	4.88	ug/Kg	5.42		2.5	5.03	ug/Kg	7.56		2.7	5.37	ug/Kg
Dibenzofuran	5.2	<RDL	3.2	6.33	ug/Kg		<MDL	2.4	4.88	ug/Kg		<MDL	2.5	5.03	ug/Kg	5.7		2.7	5.37	ug/Kg
Diethyl Phthalate	8.4	<RDL	6.3	12.7	ug/Kg	5.6	<RDL	4.9	9.77	ug/Kg	6.8	<RDL	5	10.1	ug/Kg	6.4	<RDL	5.4	10.7	ug/Kg
Dimethyl Phthalate	15.2		6.3	12.7	ug/Kg	10.2		4.9	9.77	ug/Kg		<MDL	5	10.1	ug/Kg		<MDL	5.4	10.7	ug/Kg
Di-N-Butyl Phthalate	15.1	B	6.3	12.7	ug/Kg	7.2	<RDL,B	4.9	9.77	ug/Kg	5.5	<RDL,B	5	10.1	ug/Kg	11.5	B	5.4	10.7	ug/Kg
Di-N-Octyl Phthalate		<MDL	6.3	12.7	ug/Kg		<MDL	4.9	9.77	ug/Kg		<MDL	5	10.1	ug/Kg	31		5.4	10.7	ug/Kg
Fluoranthene	171		3.2	6.33	ug/Kg	57.6		2.4	4.88	ug/Kg	65.4		2.5	5.03	ug/Kg	103		2.7	5.37	ug/Kg
Fluorene	12.6		3.2	6.33	ug/Kg	6.43		2.4	4.88	ug/Kg	7.45		2.5	5.03	ug/Kg	9.97		2.7	5.37	ug/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

	DUD_3C	DUD_4C	DUD_4C	DUD_5C
Locator:	DUD_3C	DUD_4C	DUD_4C	DUD_5C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sampled:	03/25/08 11:15:00 AM	03/25/08 11:30:00 AM	03/25/08 11:40:00 AM	03/25/08 12:00:00 PM
Lab ID:	L45303-1	L45303-2	L45303-3	L45303-4
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	63.2	81.9	79.5	74.5

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																				
Hexachlorobenzene		<MDL	0.16	0.316	ug/Kg		<MDL	0.12	0.244	ug/Kg		<MDL	0.13	0.252	ug/Kg		<MDL	0.13	0.268	ug/Kg
Hexachlorobutadiene		<MDL	0.79	1.58	ug/Kg		<MDL	0.61	1.22	ug/Kg		<MDL	0.63	1.26	ug/Kg		<MDL	0.67	1.34	ug/Kg
Hexachloroethane		<MDL	1.6	3.16	ug/Kg		<MDL	1.2	2.44	ug/Kg		<MDL	1.3	2.52	ug/Kg		<MDL	1.3	2.68	ug/Kg
Indeno(1,2,3-Cd)Pyrene	54.3		3.2	6.33	ug/Kg	22		2.4	4.88	ug/Kg	22.8		2.5	5.03	ug/Kg	29.5		2.7	5.37	ug/Kg
Naphthalene	4.6	<RDL	3.2	6.33	ug/Kg		<MDL	2.4	4.88	ug/Kg		<MDL	2.5	5.03	ug/Kg		<MDL	2.7	5.37	ug/Kg
N-Nitrosodiphenylamine		<MDL	6.3	12.7	ug/Kg		<MDL	4.9	9.77	ug/Kg		<MDL	5	10.1	ug/Kg		<MDL	5.4	10.7	ug/Kg
Pentachlorophenol		<MDL	16	31.6	ug/Kg		<MDL	12	24.4	ug/Kg		<MDL	13	25.2	ug/Kg		<MDL	13	26.8	ug/Kg
Phenanthrene	72.5		3.2	6.33	ug/Kg	23.2		2.4	4.88	ug/Kg	29.1		2.5	5.03	ug/Kg	46.2		2.7	5.37	ug/Kg
Phenol	69.8	E	6.3	12.7	ug/Kg	51.2	E	4.9	9.77	ug/Kg	31.3	E	5	10.1	ug/Kg	33.8	E	5.4	10.7	ug/Kg
Pyrene	158		3.2	6.33	ug/Kg	56		2.4	4.88	ug/Kg	66.4		2.5	5.03	ug/Kg	85.1		2.7	5.37	ug/Kg
Total HPAHS	1030		3.2	6.33	ug/Kg	392		2.4	4.88	ug/Kg	426		2.5	5.03	ug/Kg	583		2.7	5.37	ug/Kg
Total LPAHs	142		3.2	6.33	ug/Kg	49.6		2.4	4.88	ug/Kg	66.2		2.5	5.03	ug/Kg	93.8		2.7	5.37	ug/Kg
M=OR EPA 8081A/8082 (7-3-03-002)																				
4,4'-DDD	1.2	<RDL	1.1	2.1	ug/Kg		<MDL	0.82	1.62	ug/Kg		<MDL	0.84	1.67	ug/Kg		<MDL	0.9	1.79	ug/Kg
4,4'-DDE		<MDL	1.1	2.1	ug/Kg		<MDL	0.82	1.62	ug/Kg		<MDL	0.84	1.67	ug/Kg		<MDL	0.9	1.79	ug/Kg
4,4'-DDT	5.05		1.1	2.1	ug/Kg		<MDL	0.82	1.62	ug/Kg	1.97		0.84	1.67	ug/Kg		<MDL	0.9	1.79	ug/Kg
Aldrin		<MDL	1.1	2.1	ug/Kg		<MDL	0.82	1.62	ug/Kg		<MDL	0.84	1.67	ug/Kg		<MDL	0.9	1.79	ug/Kg
Alpha-BHC		<MDL	0.52	1.06	ug/Kg		<MDL	0.4	0.814	ug/Kg		<MDL	0.42	0.839	ug/Kg		<MDL	0.44	0.895	ug/Kg
Alpha-Chlordane		<MDL	0.52	1.06	ug/Kg		<MDL	0.4	0.814	ug/Kg		<MDL	0.42	0.839	ug/Kg		<MDL	0.44	0.895	ug/Kg
Beta-BHC		<MDL	0.52	1.06	ug/Kg		<MDL	0.4	0.814	ug/Kg		<MDL	0.42	0.839	ug/Kg		<MDL	0.44	0.895	ug/Kg
Delta-BHC		<MDL	0.52	1.06	ug/Kg		<MDL	0.4	0.814	ug/Kg		<MDL	0.42	0.839	ug/Kg		<MDL	0.44	0.895	ug/Kg
Dieldrin		<MDL	1.1	2.1	ug/Kg		<MDL	0.82	1.62	ug/Kg		<MDL	0.84	1.67	ug/Kg		<MDL	0.9	1.79	ug/Kg
Endosulfan I		<MDL	1.1	2.1	ug/Kg		<MDL	0.82	1.62	ug/Kg		<MDL	0.84	1.67	ug/Kg		<MDL	0.9	1.79	ug/Kg
Endosulfan II		<MDL	1.1	2.1	ug/Kg		<MDL	0.82	1.62	ug/Kg		<MDL	0.84	1.67	ug/Kg		<MDL	0.9	1.79	ug/Kg
Endosulfan Sulfate		<MDL	1.1	2.1	ug/Kg		<MDL	0.82	1.62	ug/Kg		<MDL	0.84	1.67	ug/Kg		<MDL	0.9	1.79	ug/Kg
Endrin		<MDL	1.1	2.1	ug/Kg		<MDL	0.82	1.62	ug/Kg		<MDL	0.84	1.67	ug/Kg		<MDL	0.9	1.79	ug/Kg
Endrin Aldehyde		<MDL,E	1.1	2.1	ug/Kg		<MDL,E	0.82	1.62	ug/Kg		<MDL,E	0.84	1.67	ug/Kg		<MDL,E	0.9	1.79	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.52	1.06	ug/Kg		<MDL	0.4	0.814	ug/Kg		<MDL	0.42	0.839	ug/Kg		<MDL	0.44	0.895	ug/Kg
Gamma-Chlordane		<MDL	0.52	1.06	ug/Kg		<MDL	0.4	0.814	ug/Kg		<MDL	0.42	0.839	ug/Kg		<MDL	0.44	0.895	ug/Kg
Heptachlor		<MDL	0.52	1.06	ug/Kg		<MDL	0.4	0.814	ug/Kg		<MDL	0.42	0.839	ug/Kg		<MDL	0.44	0.895	ug/Kg
Heptachlor Epoxide		<MDL	0.52	1.06	ug/Kg		<MDL	0.4	0.814	ug/Kg		<MDL	0.42	0.839	ug/Kg		<MDL	0.44	0.895	ug/Kg
Methoxychlor		<MDL	5.2	10.6	ug/Kg		<MDL	4	8.14	ug/Kg		<MDL	4.2	8.39	ug/Kg		<MDL	4.4	8.95	ug/Kg
Toxaphene		<MDL	11	21	ug/Kg		<MDL	8.2	16.2	ug/Kg		<MDL	8.4	16.7	ug/Kg		<MDL	9	17.9	ug/Kg
M=OR EPA 8081A/8082 (7-3-103-000)																				
Aroclor 1016		<MDL,TA	27	55.1	ug/Kg		<MDL,TA	5	10.1	ug/Kg		<MDL,TA	5.9	11.7	ug/Kg		<MDL,TA	7	14	ug/Kg
Aroclor 1221		<MDL,TA	5.5	11.1	ug/Kg		<MDL	2.1	4.07	ug/Kg		<MDL,TA	2.6	5.19	ug/Kg		<MDL	2.3	4.47	ug/Kg
Aroclor 1232		<MDL,TA	41	83.7	ug/Kg		<MDL,TA	7.3	14.8	ug/Kg		<MDL,TA	9.3	18.6	ug/Kg		<MDL,TA	11	22.7	ug/Kg
Aroclor 1242		<MDL,TA	47	94.1	ug/Kg		<MDL,TA	9	18.1	ug/Kg		<MDL,TA	11	22	ug/Kg		<MDL,TA	12	24.6	ug/Kg
Aroclor 1248	44.3		1.3	2.64	ug/Kg	8.24		1	2.04	ug/Kg	9.91		1	2.1	ug/Kg	11.2		1.1	2.24	ug/Kg
Aroclor 1254	61.2		1.3	2.64	ug/Kg	12.9		1	2.04	ug/Kg	15.8		1	2.1	ug/Kg	16.1		1.1	2.24	ug/Kg
Aroclor 1260	35.3		1.3	2.64	ug/Kg	8.63		1	2.04	ug/Kg	13.7		1	2.1	ug/Kg	11.6		1.1	2.24	ug/Kg
Total Aroclors	141		1.3	2.64	ug/Kg	29.8		1	2.04	ug/Kg	39.5		1	2.1	ug/Kg	38.9		1.1	2.24	ug/Kg

* Not converted to dry weight basis for this parameter

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

	Locator:	Descrip:	Sampled:	Lab ID:	Matrix:	% Solids:
	DUD_6C	CLEANUP AREA PERIM	03/25/08 12:10:00 PM	L45303-5	SALTWTRSED	82.7
	DUD_7C	CLEANUP AREA PERIM	03/25/08 12:25:00 PM	L45303-6	SALTWTRSED	60.9
	DUD_14C	PERIMETER LOCATION	03/25/08 12:40:00 PM	L45303-7	SALTWTRSED	62.3
	DUD_15C	DUDI PERIMETER LOC	03/25/08 12:54:00 PM	L45303-8	SALTWTRSED	65.1

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(318V1)																				
Clay *	3		0.6	1.19	%	12.7		0.79	1.59	%	11.4		0.76	1.51	%	8.9		0.68	1.36	%
Dry Weight Factor	1.4					2.6					2.4					2.1				
Fines *	4.2		0.6	1.19	%	38.9		0.79	1.59	%	36.3		0.76	1.51	%	29.3		0.68	1.36	%
Gravel *	48.9		0.12	1.19	%	10.4		0.16	1.59	%	9.6		0.15	1.51	%	24.8		0.14	1.36	%
p+0.00 *	4.4		0.12	1.19	%	1.2		0.16	1.59	%	1	<RDL	0.15	1.51	%	2		0.14	1.36	%
p+1.00 *	7.6		0.12	1.19	%	3.1		0.16	1.59	%	2.9		0.15	1.51	%	3.5		0.14	1.36	%
p+10.0(equal/more than) *	1.8		0.6	1.19	%	8.7		0.79	1.59	%	7.6		0.76	1.51	%	6.1		0.68	1.36	%
p+2.00 *	22.4		0.12	1.19	%	19.4		0.16	1.59	%	19.3		0.15	1.51	%	12.8		0.14	1.36	%
p+3.00 *	10.4		0.12	1.19	%	16.2		0.16	1.59	%	20.6		0.15	1.51	%	14.5		0.14	1.36	%
p+4.00 *	1.7		0.12	1.19	%	8.3		0.16	1.59	%	8.5		0.15	1.51	%	9.4		0.14	1.36	%
p+5.00 *		<MDL	0.6	1.19	%	7.9		0.79	1.59	%	7.6		0.76	1.51	%	6.8		0.68	1.36	%
p+6.00 *	0.6	<RDL	0.6	1.19	%	5.6		0.79	1.59	%	5.3		0.76	1.51	%	4.1		0.68	1.36	%
p+7.00 *	0.6	<RDL	0.6	1.19	%	7.1		0.79	1.59	%	7.6		0.76	1.51	%	5.5		0.68	1.36	%
p+8.00 *		<MDL	0.6	1.19	%	5.6		0.79	1.59	%	4.5		0.76	1.51	%	4.1		0.68	1.36	%
p+9.00 *	1.2		0.6	1.19	%	4		0.79	1.59	%	3.8		0.76	1.51	%	2.7		0.68	1.36	%
p-1.00 *	17.6		0.12	1.19	%	3		0.16	1.59	%	2.8		0.15	1.51	%	7.4		0.14	1.36	%
p-2.00 *	17.1		0.12	1.19	%	5		0.16	1.59	%	2.5		0.15	1.51	%	8.4		0.14	1.36	%
p-2.00(less than) *	14.1		0.12	1.19	%	2.3		0.16	1.59	%	4.4		0.15	1.51	%	9		0.14	1.36	%
Sand *	46.6		0.12	1.19	%	48.2		0.16	1.59	%	52.3		0.15	1.51	%	42.2		0.14	1.36	%
Silt *	1.2		0.6	1.19	%	26.2		0.79	1.59	%	25		0.76	1.51	%	20.4		0.68	1.36	%
M=CV EPA 9060-PSEP96(337V3)																				
Total Organic Carbon	2810	H	1200	2390	mg/Kg	11600	H	2300	4610	mg/Kg	13100	H	3400	6690	mg/Kg	10700	H	2500	4930	mg/Kg
M=CV SM2540-G (307V2)																				
Total Solids *	82.7		0.005	0.01	%	60.9		0.005	0.01	%	62.3		0.005	0.01	%	65.1		0.005	0.01	%
M=ES NONE																				
Field Personnel	JB,CB,CE,JDD				none	JB,CB,CE,JDD				none	JB,CB,CE,JDD				none	JB,CB,CE,JDD				none
Sampcoordx1 *	1266948				ft	1266900				ft	1267195				ft	1267057				ft
Sampcoordy1 *	208505				ft	208486				ft	208001				ft	207969				ft
Sample Depth *	11				m	9				m	9				m	9				m
Sample Function																				
Sampling Method *	20042				none	20042				none	20042				none	20042				none
Sediment Sampling Depth *	8				cm	11				cm	11				cm	11				cm
Sediment Sampling Range *	0-7 cm				cm	0-10 cm				cm	0-10 cm				cm	0-10 cm				cm
Sediment Type	43N30				none	23N30				none	32P30				none	42N30				none
Tidal Condition	E				none	E				none	E				none	E				none
Tide Height *	2.8				ft	2				ft	1.8				ft	1				ft
M=MT CVAA EPA 7471B (604V4)																				
Mercury, Total, CVAA	0.144		0.0062	0.0622	mg/Kg	0.104		0.0082	0.0821	mg/Kg	0.116		0.0083	0.0839	mg/Kg	0.118		0.008	0.0799	mg/Kg
M=MT ICP EPA3050B/6010C MOD(612V3)																				
Aluminum, Total, ICP	7900		6	30	mg/Kg	16000		8.2	40.7	mg/Kg	14200		8	40	mg/Kg	14000		7.7	38.2	mg/Kg
Antimony, Total, ICP		<MDL,G	0.89	4.5	mg/Kg		<MDL,G	1.2	6.12	mg/Kg		<MDL,G	1.2	6	mg/Kg		<MDL,G	1.2	5.73	mg/Kg
Arsenic, Total, ICP	3.1	<RDL	1.5	7.5	mg/Kg	8.4	<RDL	2	10.2	mg/Kg	9.1	<RDL	1.9	10	mg/Kg	9.1	<RDL	1.8	9.54	mg/Kg
Beryllium, Total, ICP	0.13	<RDL	0.06	0.3	mg/Kg	0.33	<RDL	0.082	0.407	mg/Kg	0.29	<RDL	0.08	0.4	mg/Kg	0.28	<RDL	0.077	0.382	mg/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator:	DUD_6C	DUD_7C	DUD_14C	DUD_15C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	PERIMETER LOCATION	DUDI PERIMETER LOC
Sampled:	03/25/08 12:10:00 PM	03/25/08 12:25:00 PM	03/25/08 12:40:00 PM	03/25/08 12:54:00 PM
Lab ID:	L45303-5	L45303-6	L45303-7	L45303-8
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	82.7	60.9	62.3	65.1

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																				
Cadmium, Total, ICP		<MDL	0.12	0.6	mg/Kg	0.28	<RDL	0.16	0.816	mg/Kg	0.34	<RDL	0.16	0.801	mg/Kg	0.23	<RDL	0.15	0.763	mg/Kg
Chromium, Total, ICP	11.7		0.18	0.9	mg/Kg	23.6		0.25	1.22	mg/Kg	23.3		0.24	1.2	mg/Kg	22.6		0.23	1.15	mg/Kg
Copper, Total, ICP	26.1		0.24	1.2	mg/Kg	46.8		0.33	1.63	mg/Kg	53.3		0.32	1.6	mg/Kg	48.2		0.31	1.53	mg/Kg
Iron, Total, ICP	14400		3	15	mg/Kg	23500		4.1	20.4	mg/Kg	22800		4	20.1	mg/Kg	24000		3.8	19	mg/Kg
Lead, Total, ICP	6.53		1.2	6	mg/Kg	25.8		1.6	8.16	mg/Kg	28.7		1.6	8.01	mg/Kg	26.4		1.5	7.63	mg/Kg
Manganese, Total, ICP	210		0.12	0.6	mg/Kg	258		0.16	0.816	mg/Kg	244		0.16	0.801	mg/Kg	253		0.15	0.763	mg/Kg
Nickel, Total, ICP	11.3		0.3	1.5	mg/Kg	17.7		0.41	2.04	mg/Kg	18.8		0.4	2.01	mg/Kg	18.6		0.38	1.9	mg/Kg
Selenium, Total, ICP		<MDL	1.5	7.5	mg/Kg		<MDL	2	10.2	mg/Kg		<MDL	1.9	10	mg/Kg		<MDL	1.8	9.54	mg/Kg
Silver, Total, ICP		<MDL	0.24	1.2	mg/Kg		<MDL	0.33	1.63	mg/Kg		<MDL	0.32	1.6	mg/Kg		<MDL	0.31	1.53	mg/Kg
Thallium, Total, ICP		<MDL	2.4	12	mg/Kg		<MDL	3.3	16.3	mg/Kg		<MDL	3.2	16	mg/Kg		<MDL	3.1	15.3	mg/Kg
Zinc, Total, ICP	36.2		0.3	1.5	mg/Kg	88.5		0.41	2.04	mg/Kg	97.1		0.4	2.01	mg/Kg	86		0.38	1.9	mg/Kg
M=OR EPA 3550B/8270C (7-3-01-004)																				
1,2,4-Trichlorobenzene		<MDL	0.12	0.242	ug/Kg		<MDL	0.16	0.328	ug/Kg		<MDL	0.16	0.321	ug/Kg		<MDL	0.15	0.307	ug/Kg
1,2-Dichlorobenzene		<MDL	0.24	0.484	ug/Kg		<MDL	0.33	0.657	ug/Kg		<MDL	0.32	0.642	ug/Kg		<MDL	0.31	0.614	ug/Kg
1,3-Dichlorobenzene		<MDL	0.24	0.484	ug/Kg		<MDL	0.33	0.657	ug/Kg		<MDL	0.32	0.642	ug/Kg		<MDL	0.31	0.614	ug/Kg
1,4-Dichlorobenzene		<MDL	0.24	0.484	ug/Kg	0.49	<RDL	0.33	0.657	ug/Kg	0.849		0.32	0.642	ug/Kg	0.711		0.31	0.614	ug/Kg
2,4-Dimethylphenol		<MDL	1.2	2.42	ug/Kg		<MDL	1.6	3.28	ug/Kg		<MDL	1.6	3.21	ug/Kg		<MDL	1.5	3.07	ug/Kg
2-Methylnaphthalene		<MDL	2.4	4.84	ug/Kg		<MDL	3.3	6.57	ug/Kg		<MDL	3.2	6.42	ug/Kg		<MDL	3.1	6.14	ug/Kg
2-Methylphenol		<MDL	2.4	4.84	ug/Kg		<MDL	3.3	6.57	ug/Kg		<MDL	3.2	6.42	ug/Kg		<MDL	3.1	6.14	ug/Kg
4-Methylphenol		<MDL	4.8	9.67	ug/Kg		<MDL	6.6	13.1	ug/Kg		<MDL	6.4	12.8	ug/Kg		<MDL	6.1	12.3	ug/Kg
Acenaphthene		<MDL	2.4	4.84	ug/Kg	3.9	<RDL	3.3	6.57	ug/Kg	6.76		3.2	6.42	ug/Kg	8.42		3.1	6.14	ug/Kg
Acenaphthylene		<MDL	2.4	4.84	ug/Kg		<MDL	3.3	6.57	ug/Kg	7.72		3.2	6.42	ug/Kg	4.9	<RDL	3.1	6.14	ug/Kg
Anthracene	7.79		2.4	4.84	ug/Kg	18.4		3.3	6.57	ug/Kg	51.7		3.2	6.42	ug/Kg	36.7		3.1	6.14	ug/Kg
Benzo(a)anthracene	15.4		2.4	4.84	ug/Kg	47		3.3	6.57	ug/Kg	127		3.2	6.42	ug/Kg	92.8		3.1	6.14	ug/Kg
Benzo(a)pyrene	20.4		2.4	4.84	ug/Kg	49.3		3.3	6.57	ug/Kg	136		3.2	6.42	ug/Kg	105		3.1	6.14	ug/Kg
Benzo(b)fluoranthene	27.7		2.4	4.84	ug/Kg	49.1		3.3	6.57	ug/Kg	196		3.2	6.42	ug/Kg	129		3.1	6.14	ug/Kg
Benzo(g,h,i)perylene	8.31		2.4	4.84	ug/Kg	18.7		3.3	6.57	ug/Kg	58.1		3.2	6.42	ug/Kg	41.5		3.1	6.14	ug/Kg
Benzo(k)fluoranthene	21.4		2.4	4.84	ug/Kg	56.8		3.3	6.57	ug/Kg	144		3.2	6.42	ug/Kg	130		3.1	6.14	ug/Kg
Benzoic Acid	145	B	12	24.2	ug/Kg	192	B	16	32.8	ug/Kg	238	B	16	32.1	ug/Kg	192	B	15	30.7	ug/Kg
Benzyl Alcohol		<MDL	2.4	4.84	ug/Kg		<MDL	3.3	6.57	ug/Kg		<MDL	3.2	6.42	ug/Kg		<MDL	3.1	6.14	ug/Kg
Benzyl Butyl Phthalate	13.9	B	1.2	2.42	ug/Kg	20.5	B	1.6	3.28	ug/Kg	30.3	B	1.6	3.21	ug/Kg	22.4	B	1.5	3.07	ug/Kg
Bis(2-Ethylhexyl)Phthalate	65.8	B	4.8	9.67	ug/Kg	104	B	6.6	13.1	ug/Kg	222	B	6.4	12.8	ug/Kg	237	B	6.1	12.3	ug/Kg
Caffeine		<MDL	4.8	9.67	ug/Kg		<MDL	6.6	13.1	ug/Kg		<MDL	6.4	12.8	ug/Kg		<MDL	6.1	12.3	ug/Kg
Carbazole	2.7	<RDL	2.4	4.84	ug/Kg	5.1	<RDL	3.3	6.57	ug/Kg	13.4		3.2	6.42	ug/Kg	10.6		3.1	6.14	ug/Kg
Chrysene	33.5		2.4	4.84	ug/Kg	75.5		3.3	6.57	ug/Kg	196		3.2	6.42	ug/Kg	148		3.1	6.14	ug/Kg
Coprostanol		<MDL	48	96.7	ug/Kg		<MDL	66	131	ug/Kg		<MDL	64	128	ug/Kg		<MDL	61	123	ug/Kg
Dibenzo(a,h)anthracene		<MDL	2.4	4.84	ug/Kg	3.4	<RDL	3.3	6.57	ug/Kg	32.9		3.2	6.42	ug/Kg	24.6		3.1	6.14	ug/Kg
Dibenzofuran		<MDL	2.4	4.84	ug/Kg	4.1	<RDL	3.3	6.57	ug/Kg	6.1	<RDL	3.2	6.42	ug/Kg	6.14		3.1	6.14	ug/Kg
Diethyl Phthalate		<MDL	4.8	9.67	ug/Kg	7.9	<RDL	6.6	13.1	ug/Kg		<MDL	6.4	12.8	ug/Kg	8.1	<RDL	6.1	12.3	ug/Kg
Dimethyl Phthalate		<MDL	4.8	9.67	ug/Kg		<MDL	6.6	13.1	ug/Kg	14.2		6.4	12.8	ug/Kg		<MDL	6.1	12.3	ug/Kg
Di-N-Butyl Phthalate	5.1	<RDL,B	4.8	9.67	ug/Kg	10	<RDL,B	6.6	13.1	ug/Kg	13.7	B	6.4	12.8	ug/Kg	10	<RDL,B	6.1	12.3	ug/Kg
Di-N-Octyl Phthalate		<MDL	4.8	9.67	ug/Kg		<MDL	6.6	13.1	ug/Kg		<MDL	6.4	12.8	ug/Kg		<MDL	6.1	12.3	ug/Kg
Fluoranthene	39.8		2.4	4.84	ug/Kg	76		3.3	6.57	ug/Kg	205		3.2	6.42	ug/Kg	175		3.1	6.14	ug/Kg
Fluorene	5.44		2.4	4.84	ug/Kg	8.56		3.3	6.57	ug/Kg	16		3.2	6.42	ug/Kg	14.8		3.1	6.14	ug/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator:	DUD_6C					Locator:	DUD_7C					Locator:	DUD_14C					Locator:	DUD_15C				
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	PERIMETER LOCATION					Descrip:	DUDI PERIMETER LOC				
Sampled:	03/25/08 12:10:00 PM					Sampled:	03/25/08 12:25:00 PM					Sampled:	03/25/08 12:40:00 PM					Sampled:	03/25/08 12:54:00 PM				
Lab ID:	L45303-5					Lab ID:	L45303-6					Lab ID:	L45303-7					Lab ID:	L45303-8				
Matrix:	SALTWTRSED					Matrix:	SALTWTRSED					Matrix:	SALTWTRSED					Matrix:	SALTWTRSED				
% Solids:	82.7					% Solids:	60.9					% Solids:	62.3					% Solids:	65.1				
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																				
Hexachlorobenzene		<MDL	0.12	0.242	ug/Kg		<MDL	0.16	0.328	ug/Kg		<MDL	0.16	0.321	ug/Kg		<MDL	0.15	0.307	ug/Kg
Hexachlorobutadiene		<MDL	0.6	1.21	ug/Kg		<MDL	0.82	1.64	ug/Kg		<MDL	0.8	1.61	ug/Kg		<MDL	0.77	1.54	ug/Kg
Hexachloroethane		<MDL	1.2	2.42	ug/Kg		<MDL	1.6	3.28	ug/Kg		<MDL	1.6	3.21	ug/Kg		<MDL	1.5	3.07	ug/Kg
Indeno(1,2,3-Cd)Pyrene	11.1		2.4	4.84	ug/Kg	24.3		3.3	6.57	ug/Kg	70.6		3.2	6.42	ug/Kg	54.5		3.1	6.14	ug/Kg
Naphthalene		<MDL	2.4	4.84	ug/Kg		<MDL	3.3	6.57	ug/Kg	4.7	<RDL	3.2	6.42	ug/Kg	4.8	<RDL	3.1	6.14	ug/Kg
N-Nitrosodiphenylamine		<MDL	4.8	9.67	ug/Kg		<MDL	6.6	13.1	ug/Kg		<MDL	6.4	12.8	ug/Kg		<MDL	6.1	12.3	ug/Kg
Pentachlorophenol		<MDL	12	24.2	ug/Kg		<MDL	16	32.8	ug/Kg		<MDL	16	32.1	ug/Kg		<MDL	15	30.7	ug/Kg
Phenanthrene	15.6		2.4	4.84	ug/Kg	31.7		3.3	6.57	ug/Kg	89.9		3.2	6.42	ug/Kg	90.5		3.1	6.14	ug/Kg
Phenol	28.7	E	4.8	9.67	ug/Kg	14.1	E	6.6	13.1	ug/Kg	62.3	E	6.4	12.8	ug/Kg	29	E	6.1	12.3	ug/Kg
Pyrene	38.1		2.4	4.84	ug/Kg	71.6		3.3	6.57	ug/Kg	191		3.2	6.42	ug/Kg	197		3.1	6.14	ug/Kg
Total HPAHS	216		2.4	4.84	ug/Kg	471		3.3	6.57	ug/Kg	1360		3.2	6.42	ug/Kg	1100		3.1	6.14	ug/Kg
Total LPAHs	32.4		2.4	4.84	ug/Kg	68.6		3.3	6.57	ug/Kg	180		3.2	6.42	ug/Kg	163		3.1	6.14	ug/Kg
M=OR EPA 8081A/8082 (7-3-03-002)																				
4,4'-DDD		<MDL	0.81	1.61	ug/Kg		<MDL	1.1	2.18	ug/Kg		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.04	ug/Kg
4,4'-DDE		<MDL	0.81	1.61	ug/Kg		<MDL	1.1	2.18	ug/Kg		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.04	ug/Kg
4,4'-DDT		<MDL	0.81	1.61	ug/Kg		<MDL	1.1	2.18	ug/Kg		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.04	ug/Kg
Aldrin		<MDL	0.81	1.61	ug/Kg		<MDL	1.1	2.18	ug/Kg		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.04	ug/Kg
Alpha-BHC		<MDL	0.4	0.807	ug/Kg		<MDL	0.54	1.1	ug/Kg		<MDL	0.53	1.07	ug/Kg		<MDL	0.51	1.02	ug/Kg
Alpha-Chlordane		<MDL	0.4	0.807	ug/Kg		<MDL	0.54	1.1	ug/Kg		<MDL	0.53	1.07	ug/Kg		<MDL	0.51	1.02	ug/Kg
Beta-BHC		<MDL	0.4	0.807	ug/Kg		<MDL	0.54	1.1	ug/Kg		<MDL	0.53	1.07	ug/Kg		<MDL	0.51	1.02	ug/Kg
Delta-BHC		<MDL	0.4	0.807	ug/Kg		<MDL	0.54	1.1	ug/Kg		<MDL	0.53	1.07	ug/Kg		<MDL	0.51	1.02	ug/Kg
Dieldrin		<MDL	0.81	1.61	ug/Kg		<MDL	1.1	2.18	ug/Kg		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.04	ug/Kg
Endosulfan I		<MDL	0.81	1.61	ug/Kg		<MDL	1.1	2.18	ug/Kg		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.04	ug/Kg
Endosulfan II		<MDL	0.81	1.61	ug/Kg		<MDL	1.1	2.18	ug/Kg		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.04	ug/Kg
Endosulfan Sulfate		<MDL	0.81	1.61	ug/Kg		<MDL	1.1	2.18	ug/Kg		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.04	ug/Kg
Endrin		<MDL	0.81	1.61	ug/Kg		<MDL	1.1	2.18	ug/Kg		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.04	ug/Kg
Endrin Aldehyde		<MDL,E	0.81	1.61	ug/Kg		<MDL,E	1.1	2.18	ug/Kg		<MDL,E	1.1	2.13	ug/Kg		<MDL,E	1	2.04	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.4	0.807	ug/Kg		<MDL	0.54	1.1	ug/Kg		<MDL	0.53	1.07	ug/Kg		<MDL	0.51	1.02	ug/Kg
Gamma-Chlordane		<MDL	0.4	0.807	ug/Kg		<MDL	0.54	1.1	ug/Kg		<MDL	0.53	1.07	ug/Kg		<MDL	0.51	1.02	ug/Kg
Heptachlor		<MDL	0.4	0.807	ug/Kg		<MDL	0.54	1.1	ug/Kg		<MDL	0.53	1.07	ug/Kg		<MDL	0.51	1.02	ug/Kg
Heptachlor Epoxide		<MDL	0.4	0.807	ug/Kg		<MDL	0.54	1.1	ug/Kg		<MDL	0.53	1.07	ug/Kg		<MDL	0.51	1.02	ug/Kg
Methoxychlor		<MDL	4	8.07	ug/Kg		<MDL	5.4	11	ug/Kg		<MDL	5.3	10.7	ug/Kg		<MDL	5.1	10.2	ug/Kg
Toxaphene		<MDL	8.1	16.1	ug/Kg		<MDL	11	21.8	ug/Kg		<MDL	11	21.3	ug/Kg		<MDL	10	20.4	ug/Kg
M=OR EPA 8081A/8082 (7-3-103-000)																				
Aroclor 1016		<MDL,TA	2.9	5.72	ug/Kg		<MDL,TA	15	29.4	ug/Kg		<MDL,TA	16	32.9	ug/Kg		<MDL,TA	11	21.4	ug/Kg
Aroclor 1221		<MDL	2.1	4.03	ug/Kg		<MDL	2.8	5.47	ug/Kg		<MDL,TA	4.2	8.46	ug/Kg		<MDL,TA	2.9	5.94	ug/Kg
Aroclor 1232		<MDL,TA	4.2	8.38	ug/Kg		<MDL,TA	25	48.4	ug/Kg		<MDL,TA	24	48	ug/Kg		<MDL,TA	15	31.3	ug/Kg
Aroclor 1242		<MDL,TA	4.5	9.03	ug/Kg		<MDL,TA	21	42.9	ug/Kg		<MDL,TA	30	59.4	ug/Kg		<MDL,TA	18	36.9	ug/Kg
Aroclor 1248	4.17		1	2.02	ug/Kg	17.7		1.4	2.74	ug/Kg	34.5		1.3	2.68	ug/Kg	18.6		1.3	2.57	ug/Kg
Aroclor 1254	6.24		1	2.02	ug/Kg	24		1.4	2.74	ug/Kg	64.8		1.3	2.68	ug/Kg	31		1.3	2.57	ug/Kg
Aroclor 1260	3.62		1	2.02	ug/Kg	15.6		1.4	2.74	ug/Kg	28.4		1.3	2.68	ug/Kg	20		1.3	2.57	ug/Kg
Total Aroclors	14		1	2.02	ug/Kg	57.5		1.4	2.74	ug/Kg	128		1.3	2.68	ug/Kg	69.7		1.3	2.57	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 * %	Dry Weight Factor	Fines * %	Gravel * %	Sand * %	Silt * %	Total Organic Carbon mg/Kg	Total Solids * %	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) * %	Aluminum, Total, ICP mg/Kg	Arsenic, Total, ICP mg/Kg	Beryllium, Total, ICP mg/Kg
DUD_3C	10	L45303-1	14.4	2.4	36.3	9.6	50.8	21.9	13000	63.2	1.4	3.9	9.1	20.1	17.7	7.7	6.1	5.3	6.8	3.8	5.3	3.3	4.5	1.8	15000	9	0.28
DUD_4C	9	L45303-2	4.2	1.5	7.3	44.5	48.6	3	3660	81.9	4.3	7.9	3	21.7	12.1	2.4	0.61	0.61	0.61	1.2	1.2	17.1	12.5	15	9230	4.3	0.16
DUD_4C	9	L45303-3	4.9	1.5	9.2	38.2	51.5	4.3	5020	79.5	4.5	7.4	3.7	23.7	13.6	2.4	1.2	0.6	1.2	1.2	1.2	14.9	9.5	13.7	10300	4.8	0.16
DUD_5C	11	L45303-4	5.1	1.7	13.4	17.4	69.3	8.3	5220	74.5	2.6	6.7	3.8	33.3	22.3	4.5	3.2	1.3	1.9	1.9	1.3	7.5	7.1	2.8	10600	4.7	0.19
DUD_6C	11	L45303-5	3	1.4	4.2	48.9	46.6	1.2	2810	82.7	4.4	7.6	1.8	22.4	10.4	1.7		0.6	0.6		1.2	17.6	17.1	14.1	7900	3.1	0.13
DUD_7C	9	L45303-6	12.7	2.6	38.9	10.4	48.2	26.2	11600	60.9	1.2	3.1	8.7	19.4	16.2	8.3	7.9	5.6	7.1	5.6	4	3	5	2.3	16000	8.4	0.33
DUD_14C	9	L45303-7	11.4	2.4	36.3	9.6	52.3	25	13100	62.3	1	2.9	7.6	19.3	20.6	8.5	7.6	5.3	7.6	4.5	3.8	2.8	2.5	4.4	14200	9.1	0.29
DUD_15C	9	L45303-8	8.9	2.1	29.3	24.8	42.2	20.4	10700	65.1	2	3.5	6.1	12.8	14.5	9.4	6.8	4.1	5.5	4.1	2.7	7.4	8.4	9	14000	9.1	0.28

PROJECT: 423062-200-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Cadmium, Total, ICP mg/Kg	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	Zinc, Total, ICP mg/Kg	1,2,4-Trichlorobenzene ug/Kg	1,4-Dichlorobenzene ug/Kg	4,4'-DDD ug/Kg	4,4'-DDT 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
DUD_3C	10	L45303-1	0.3	23.9	52.2	23300	31.3	256	0.119	18.8	91.3	0.28	0.94	1.2	5.05	5.7	6.2	37.3	44.3	61.2	35.3	87.5	99.8
DUD_4C	9	L45303-2	0.16	15.8	31.1	16600	10.2	258	0.038	13.8	45.4		0.28				2.7	13.2	8.24	12.9	8.63	33.5	41.5
DUD_4C	9	L45303-3	0.23	17.7	35.3	17100	12.3	219	0.059	14.8	48.9		0.42		1.97		3	21.1	9.91	15.8	13.7	37.4	44.5
DUD_5C	11	L45303-4	0.16	18.7	38.5	18700	10.8	258	0.046	17.2	54.5		0.51			3.8	4.6	25.2	11.2	16.1	11.6	51.8	58.1
DUD_6C	11	L45303-5		11.7	26.1	14400	6.53	210	0.144	11.3	36.2							7.79	4.17	6.24	3.62	15.4	20.4
DUD_7C	9	L45303-6	0.28	23.6	46.8	23500	25.8	258	0.104	17.7	88.5		0.49			3.9		18.4	17.7	24	15.6	47	49.3
DUD_14C	9	L45303-7	0.34	23.3	53.3	22800	28.7	244	0.116	18.8	97.1		0.849			6.76	7.72	51.7	34.5	64.8	28.4	127	136
DUD_15C	9	L45303-8	0.23	22.6	48.2	24000	26.4	253	0.118	18.6	86		0.711			8.42	4.9	36.7	18.6	31	20	92.8	105

PROJECT: 423062-200-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Benzo(b)fluoranthene ug/Kg	Benzo(g,h,i)perylene ug/Kg	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	Di-N-Octyl Phthalate ug/Kg	Dibenzo(a,h)anthracene ug/Kg	Dibenzofuran ug/Kg	Diethyl Phthalate ug/Kg	Dimethyl Phthalate ug/Kg	Fluoranthene ug/Kg	Fluorene ug/Kg	Indeno(1,2,3-Cd)Pyrene ug/Kg	Naphthalene ug/Kg	Phenanthrene ug/Kg	Phenol ug/Kg	Pyrene ug/Kg	Total Aroclors ug/Kg
DUD_3C	10	L45303-1	136	46.5	111	275	29.7	204	8.37	142	15.1		22.3	5.2	8.4	15.2	171	12.6	54.3	4.6	72.5	69.8	158	141
DUD_4C	9	L45303-2	58.1	18.3	43.6	241	13.3	98.8	3.2	55.4	7.2		5.86		5.6	10.2	57.6	6.43	22		23.2	51.2	56	29.8
DUD_4C	9	L45303-3	56.2	19.1	48.1	177	16.2	143	4.9	61.3	5.5		5.42		6.8		65.4	7.45	22.8		29.1	31.3	66.4	39.5
DUD_5C	11	L45303-4	75.7	24.8	65.2	200	15.7	130	7.95	81.9	11.5	31	7.56	5.7	6.4		103	9.97	29.5		46.2	33.8	85.1	38.9
DUD_6C	11	L45303-5	27.7	8.31	21.4	145	13.9	65.8	2.7	33.5	5.1						39.8	5.44	11.1		15.6	28.7	38.1	14
DUD_7C	9	L45303-6	49.1	18.7	56.8	192	20.5	104	5.1	75.5	10		3.4	4.1	7.9		76	8.56	24.3		31.7	14.1	71.6	57.5
DUD_14C	9	L45303-7	196	58.1	144	238	30.3	222	13.4	196	13.7		32.9	6.1		14.2	205	16	70.6	4.7	89.9	62.3	191	128
DUD_15C	9	L45303-8	129	41.5	130	192	22.4	237	10.6	148	10		24.6	6.14	8.1		175	14.8	54.5	4.8	90.5	29	197	69.7

PROJECT: 423062-200-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Total HPAHS ug/Kg	Total LPAHs ug/Kg	Sampcoordx1 * ft	Sampcoordy1 * ft	Sample Depth * m	Sampling Method * none	Sediment Sampling Depth * cm	Tide Height * ft
DUD_3C	10	L45303-1	1030	142	1267145	208145	10	20042	13	4
DUD_4C	9	L45303-2	392	49.6	1267115	208237	9	20042	9	3.5
DUD_4C	9	L45303-3	426	66.2	1267115	208240	9	20042	10	3.3
DUD_5C	11	L45303-4	583	93.8	1267024	208265	11	20042	8	3
DUD_6C	11	L45303-5	216	32.4	1266948	208505	11	20042	8	2.8
DUD_7C	9	L45303-6	471	68.6	1266900	208486	9	20042	11	2
DUD_14C	9	L45303-7	1360	180	1267195	208001	9	20042	11	1.8
DUD_15C	9	L45303-8	1100	163	1267057	207969	9	20042	11	1

SAP MDL Comparison Table

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator:	DUD_3C	DUD_4C	DUD_4C	DUD_5C	DUD_6C	DUD_7C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sampled:	03/25/08 11:15:00 AM	03/25/08 11:30:00 AM	03/25/08 11:40:00 AM	03/25/08 12:00:00 PM	03/25/08 12:10:00 PM	03/25/08 12:25:00 PM
Lab ID:	L45303-1	L45303-2	L45303-3	L45303-4	L45303-5	L45303-6
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	63.2	81.9	79.5	74.5	82.7	60.9

Parameters	Units	SAP MDL (@50% TS)	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(318V1)								
Fines *	%	NA	0.76	0.61	0.61	0.64	0.6	0.79
Clay *	%	NA	0.76	0.61	0.61	0.64	0.6	0.79
Silt *	%	NA	0.76	0.61	0.61	0.64	0.6	0.79
Sand *	%	NA	0.15	0.12	0.12	0.13	0.12	0.16
Gravel *	%	NA	0.15	0.12	0.12	0.13	0.12	0.16
p+0.00 *	%	0.1	0.15	0.12	0.12	0.13	0.12	0.16
p+1.00 *	%	0.1	0.15	0.12	0.12	0.13	0.12	0.16
p+10.0(equal/more than) *	%	0.1	0.76	0.61	0.61	0.64	0.6	0.79
p+2.00 *	%	0.1	0.15	0.12	0.12	0.13	0.12	0.16
p+3.00 *	%	0.1	0.15	0.12	0.12	0.13	0.12	0.16
p+4.00 *	%	0.1	0.15	0.12	0.12	0.13	0.12	0.16
p+5.00 *	%	0.1	0.76	0.61	0.61	0.64	0.6	0.79
p+6.00 *	%	0.1	0.76	0.61	0.61	0.64	0.6	0.79
p+7.00 *	%	0.1	0.76	0.61	0.61	0.64	0.6	0.79
p+8.00 *	%	0.1	0.76	0.61	0.61	0.64	0.6	0.79
p+9.00 *	%	0.1	0.76	0.61	0.61	0.64	0.6	0.79
p-1.00 *	%	0.1	0.15	0.12	0.12	0.13	0.12	0.16
p-2.00 *	%	0.1	0.15	0.12	0.12	0.13	0.12	0.16
p-2.00(less than) *	%	0.1	0.15	0.12	0.12	0.13	0.12	0.16
M=CV EPA 9060-PSEP96(337V3)								
Total Organic Carbon	mg/Kg	1000	2800	1200	2000	1900	1200	2300
M=CV SM2540-G (307V2)								
Total Solids *	%	0.005	0.005	0.005	0.005	0.005	0.005	0.005
M=MT CVAA EPA 7471B (604V4)								
Mercury, Total, CVAA	mg/Kg	0.04	0.0076	0.0062	0.0063	0.0067	0.0062	0.0082
M=MT ICP EPA3050B/6010C MOD(612V3)								
Aluminum, Total, ICP	mg/Kg	10	7.9	6.1	6.3	6.7	6	8.2
Antimony, Total, ICP	mg/Kg	3	1.2	0.92	0.94	0.99	0.89	1.2
Arsenic, Total, ICP	mg/Kg	5	1.9	1.5	1.5	1.6	1.5	2
Beryllium, Total, ICP	mg/Kg	0.1	0.079	0.061	0.063	0.067	0.06	0.082
Cadmium, Total, ICP	mg/Kg	0.3	0.16	0.12	0.12	0.13	0.12	0.16
Chromium, Total, ICP	mg/Kg	0.5	0.24	0.18	0.19	0.2	0.18	0.25
Copper, Total, ICP	mg/Kg	0.4	0.32	0.24	0.25	0.27	0.24	0.33
Iron, Total, ICP	mg/Kg	5	4	3.1	3.1	3.4	3	4.1
Lead, Total, ICP	mg/Kg	3	1.6	1.2	1.2	1.3	1.2	1.6
Manganese, Total, ICP	mg/Kg	0.2	0.16	0.12	0.12	0.13	0.12	0.16
Nickel, Total, ICP	mg/Kg	2	0.4	0.31	0.31	0.34	0.3	0.41
Selenium, Total, ICP	mg/Kg	5	1.9	1.5	1.5	1.6	1.5	2
Silver, Total, ICP	mg/Kg	0.4	0.32	0.24	0.25	0.27	0.24	0.33
Thallium, Total, ICP	mg/Kg	20	3.2	2.4	2.5	2.7	2.4	3.3
Zinc, Total, ICP	mg/Kg	0.5	0.4	0.31	0.31	0.34	0.3	0.41
M=OR EPA 3550B/8270C (7-3-01-004)								
1,2,4-Trichlorobenzene	ug/Kg	0.52	0.16	0.12	0.13	0.13	0.12	0.16

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator:	DUD_3C	DUD_4C	DUD_4C	DUD_5C	DUD_6C	DUD_7C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sampled:	03/25/08 11:15:00 AM	03/25/08 11:30:00 AM	03/25/08 11:40:00 AM	03/25/08 12:00:00 PM	03/25/08 12:10:00 PM	03/25/08 12:25:00 PM
Lab ID:	L45303-1	L45303-2	L45303-3	L45303-4	L45303-5	L45303-6
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	63.2	81.9	79.5	74.5	82.7	60.9

Parameters	Units	SAP MDL (@50% TS)	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								
1,2-Dichlorobenzene	ug/Kg	0.52	0.32	0.24	0.25	0.27	0.24	0.33
1,3-Dichlorobenzene	ug/Kg	0.52	0.32	0.24	0.25	0.27	0.24	0.33
1,4-Dichlorobenzene	ug/Kg	0.26	0.32	0.24	0.25	0.27	0.24	0.33
2,4-Dimethylphenol	ug/Kg	14	1.6	1.2	1.3	1.3	1.2	1.6
2-Methylnaphthalene	ug/Kg	28	3.2	2.4	2.5	2.7	2.4	3.3
2-Methylphenol	ug/Kg	38	3.2	2.4	2.5	2.7	2.4	3.3
4-Methylphenol	ug/Kg	32	6.3	4.9	5	5.4	4.8	6.6
Acenaphthene	ug/Kg	14	3.2	2.4	2.5	2.7	2.4	3.3
Acenaphthylene	ug/Kg	29	3.2	2.4	2.5	2.7	2.4	3.3
Anthracene	ug/Kg	7.9	3.2	2.4	2.5	2.7	2.4	3.3
Benzo(a)anthracene	ug/Kg	4	3.2	2.4	2.5	2.7	2.4	3.3
Benzo(a)pyrene	ug/Kg	6	3.2	2.4	2.5	2.7	2.4	3.3
Benzo(b)fluoranthene	ug/Kg	6	3.2	2.4	2.5	2.7	2.4	3.3
Benzo(g,h,i)perylene	ug/Kg	16	3.2	2.4	2.5	2.7	2.4	3.3
Benzo(k)fluoranthene	ug/Kg	6	3.2	2.4	2.5	2.7	2.4	3.3
Benzoic Acid	ug/Kg	12	16	12	13	13	12	16
Benzyl Alcohol	ug/Kg	12	3.2	2.4	2.5	2.7	2.4	3.3
Benzyl Butyl Phthalate	ug/Kg	12	1.6	1.2	1.3	1.3	1.2	1.6
Bis(2-Ethylhexyl)Phthalate	ug/Kg	13	6.3	4.9	5	5.4	4.8	6.6
Carbazole	ug/Kg	14	3.2	2.4	2.5	2.7	2.4	3.3
Chrysene	ug/Kg	7.9	3.2	2.4	2.5	2.7	2.4	3.3
Coprostanol	ug/Kg	28	63	49	50	54	48	66
Dibenzo(a,h)anthracene	ug/Kg	14	3.2	2.4	2.5	2.7	2.4	3.3
Dibenzofuran	ug/Kg	28	3.2	2.4	2.5	2.7	2.4	3.3
Diethyl Phthalate	ug/Kg	12	6.3	4.9	5	5.4	4.8	6.6
Dimethyl Phthalate	ug/Kg	22	6.3	4.9	5	5.4	4.8	6.6
Di-N-Butyl Phthalate	ug/Kg	10	6.3	4.9	5	5.4	4.8	6.6
Di-N-Octyl Phthalate	ug/Kg	16	6.3	4.9	5	5.4	4.8	6.6
Fluoranthene	ug/Kg	16	3.2	2.4	2.5	2.7	2.4	3.3
Fluorene	ug/Kg	26	3.2	2.4	2.5	2.7	2.4	3.3
Hexachlorobenzene	ug/Kg	1.3	0.16	0.12	0.13	0.13	0.12	0.16
Hexachlorobutadiene	ug/Kg	1.5	0.79	0.61	0.63	0.67	0.6	0.82
Hexachloroethane	ug/Kg	29	1.6	1.2	1.3	1.3	1.2	1.6
Indeno(1,2,3-Cd)Pyrene	ug/Kg	18	3.2	2.4	2.5	2.7	2.4	3.3
Naphthalene	ug/Kg	28	3.2	2.4	2.5	2.7	2.4	3.3
N-Nitrosodiphenylamine	ug/Kg	40	6.3	4.9	5	5.4	4.8	6.6
Pentachlorophenol	ug/Kg	10	16	12	13	13	12	16
Phenanthrene	ug/Kg	7.9	3.2	2.4	2.5	2.7	2.4	3.3
Phenol	ug/Kg	18	6.3	4.9	5	5.4	4.8	6.6
Pyrene	ug/Kg	7.9	3.2	2.4	2.5	2.7	2.4	3.3
Total HPAHS	ug/Kg	NA	3.2	2.4	2.5	2.7	2.4	3.3
Total LPAHs	ug/Kg	NA	3.2	2.4	2.5	2.7	2.4	3.3
M=OR EPA 8081A/8082 (7-3-03-002)								
4,4'-DDD	ug/Kg	0.67	1.1	0.82	0.84	0.9	0.81	1.1

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator:	DUD_3C	DUD_4C	DUD_4C	DUD_5C	DUD_6C	DUD_7C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sampled:	03/25/08 11:15:00 AM	03/25/08 11:30:00 AM	03/25/08 11:40:00 AM	03/25/08 12:00:00 PM	03/25/08 12:10:00 PM	03/25/08 12:25:00 PM
Lab ID:	L45303-1	L45303-2	L45303-3	L45303-4	L45303-5	L45303-6
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	63.2	81.9	79.5	74.5	82.7	60.9

Parameters	Units	SAP MDL (@50% TS)	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								
4,4'-DDE	ug/Kg	0.67	1.1	0.82	0.84	0.9	0.81	1.1
4,4'-DDT	ug/Kg	0.67	1.1	0.82	0.84	0.9	0.81	1.1
Aldrin	ug/Kg	0.67	1.1	0.82	0.84	0.9	0.81	1.1
Alpha-BHC	ug/Kg	0.67	0.52	0.4	0.42	0.44	0.4	0.54
Alpha-Chlordane	ug/Kg	0.67	0.52	0.4	0.42	0.44	0.4	0.54
Aroclor 1016	ug/Kg	4	27	5	5.9	7	2.9	15
Aroclor 1221	ug/Kg	8	5.5	2.1	2.6	2.3	2.1	2.8
Aroclor 1232	ug/Kg	8	41	7.3	9.3	11	4.2	25
Aroclor 1242	ug/Kg	4	47	9	11	12	4.5	21
Aroclor 1248	ug/Kg	4	1.3	1	1	1.1	1	1.4
Aroclor 1254	ug/Kg	4	1.3	1	1	1.1	1	1.4
Aroclor 1260	ug/Kg	4	1.3	1	1	1.1	1	1.4
Beta-BHC	ug/Kg	0.67	0.52	0.4	0.42	0.44	0.4	0.54
Delta-BHC	ug/Kg	0.67	0.52	0.4	0.42	0.44	0.4	0.54
Dieldrin	ug/Kg	0.67	1.1	0.82	0.84	0.9	0.81	1.1
Endosulfan I	ug/Kg	0.67	1.1	0.82	0.84	0.9	0.81	1.1
Endosulfan II	ug/Kg	0.67	1.1	0.82	0.84	0.9	0.81	1.1
Endosulfan Sulfate	ug/Kg	0.67	1.1	0.82	0.84	0.9	0.81	1.1
Endrin	ug/Kg	0.67	1.1	0.82	0.84	0.9	0.81	1.1
Endrin Aldehyde	ug/Kg	0.67	1.1	0.82	0.84	0.9	0.81	1.1
Gamma-BHC (Lindane)	ug/Kg	0.67	0.52	0.4	0.42	0.44	0.4	0.54
Gamma-Chlordane	ug/Kg	2.7	0.52	0.4	0.42	0.44	0.4	0.54
Heptachlor	ug/Kg	0.67	0.52	0.4	0.42	0.44	0.4	0.54
Heptachlor Epoxide	ug/Kg	0.67	0.52	0.4	0.42	0.44	0.4	0.54
Methoxychlor	ug/Kg	3.3	5.2	4	4.2	4.4	4	5.4
Toxaphene	ug/Kg	6.7	11	8.2	8.4	9	8.1	11

* Not converted to dry weight basis for this parameter

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator:	DUD_14C	DUD_15C
Descrip:	PERIMETER LOCATION	DUDI PERIMETER LOC
Sampled:	03/25/08 12:40:00 PM	03/25/08 12:54:00 PM
Lab ID:	L45303-7	L45303-8
Matrix:	SALTWTRSED	SALTWTRSED
% Solids:	62.3	65.1

Parameters	Units	SAP MDL (@50% TS)	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS				
M=CV ASTM D422(318V1)				
Fines *	%	NA	0.76	0.68
Clay *	%	NA	0.76	0.68
Silt *	%	NA	0.76	0.68
Sand *	%	NA	0.15	0.14
Gravel *	%	NA	0.15	0.14
p+0.00 *	%	0.1	0.15	0.14
p+1.00 *	%	0.1	0.15	0.14
p+10.0(equal/more than) *	%	0.1	0.76	0.68
p+2.00 *	%	0.1	0.15	0.14
p+3.00 *	%	0.1	0.15	0.14
p+4.00 *	%	0.1	0.15	0.14
p+5.00 *	%	0.1	0.76	0.68
p+6.00 *	%	0.1	0.76	0.68
p+7.00 *	%	0.1	0.76	0.68
p+8.00 *	%	0.1	0.76	0.68
p+9.00 *	%	0.1	0.76	0.68
p-1.00 *	%	0.1	0.15	0.14
p-2.00 *	%	0.1	0.15	0.14
p-2.00(less than) *	%	0.1	0.15	0.14
M=CV EPA 9060-PSEP96(337V3)				
Total Organic Carbon	mg/Kg	1000	3400	2500
M=CV SM2540-G (307V2)				
Total Solids *	%	0.005	0.005	0.005
M=MT CVAA EPA 7471B (504V4)				
Mercury, Total, CVAA	mg/Kg	0.04	0.0083	0.008
M=MT ICP EPA3050B/6010C MOD(612V3)				
Aluminum, Total, ICP	mg/Kg	10	8	7.7
Antimony, Total, ICP	mg/Kg	3	1.2	1.2
Arsenic, Total, ICP	mg/Kg	5	1.9	1.8
Beryllium, Total, ICP	mg/Kg	0.1	0.08	0.077
Cadmium, Total, ICP	mg/Kg	0.3	0.16	0.15
Chromium, Total, ICP	mg/Kg	0.5	0.24	0.23
Copper, Total, ICP	mg/Kg	0.4	0.32	0.31
Iron, Total, ICP	mg/Kg	5	4	3.8
Lead, Total, ICP	mg/Kg	3	1.6	1.5
Manganese, Total, ICP	mg/Kg	0.2	0.16	0.15
Nickel, Total, ICP	mg/Kg	2	0.4	0.38
Selenium, Total, ICP	mg/Kg	5	1.9	1.8
Silver, Total, ICP	mg/Kg	0.4	0.32	0.31
Thallium, Total, ICP	mg/Kg	20	3.2	3.1
Zinc, Total, ICP	mg/Kg	0.5	0.4	0.38
M=OR EPA 3550B/8270C (7-3-01-004)				
1,2,4-Trichlorobenzene	ug/Kg	0.52	0.16	0.15

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator:	DUD_14C	DUD_15C
Descrip:	PERIMETER LOCATION	DUDI PERIMETER LOC
Sampled:	03/25/08 12:40:00 PM	03/25/08 12:54:00 PM
Lab ID:	L45303-7	L45303-8
Matrix:	SALTWTRSED	SALTWTRSED
% Solids:	62.3	65.1

Parameters	Units	SAP MDL (@50% TS)	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS				
1,2-Dichlorobenzene	ug/Kg	0.52	0.32	0.31
1,3-Dichlorobenzene	ug/Kg	0.52	0.32	0.31
1,4-Dichlorobenzene	ug/Kg	0.26	0.32	0.31
2,4-Dimethylphenol	ug/Kg	14	1.6	1.5
2-Methylnaphthalene	ug/Kg	28	3.2	3.1
2-Methylphenol	ug/Kg	38	3.2	3.1
4-Methylphenol	ug/Kg	32	6.4	6.1
Acenaphthene	ug/Kg	14	3.2	3.1
Acenaphthylene	ug/Kg	29	3.2	3.1
Anthracene	ug/Kg	7.9	3.2	3.1
Benzo(a)anthracene	ug/Kg	4	3.2	3.1
Benzo(a)pyrene	ug/Kg	6	3.2	3.1
Benzo(b)fluoranthene	ug/Kg	6	3.2	3.1
Benzo(g,h,i)perylene	ug/Kg	16	3.2	3.1
Benzo(k)fluoranthene	ug/Kg	6	3.2	3.1
Benzoic Acid	ug/Kg	12	16	15
Benzyl Alcohol	ug/Kg	12	3.2	3.1
Benzyl Butyl Phthalate	ug/Kg	12	1.6	1.5
Bis(2-Ethylhexyl)Phthalate	ug/Kg	13	6.4	6.1
Carbazole	ug/Kg	14	3.2	3.1
Chrysene	ug/Kg	7.9	3.2	3.1
Coprostanol	ug/Kg	28	64	61
Dibenzo(a,h)anthracene	ug/Kg	14	3.2	3.1
Dibenzofuran	ug/Kg	28	3.2	3.1
Diethyl Phthalate	ug/Kg	12	6.4	6.1
Dimethyl Phthalate	ug/Kg	22	6.4	6.1
Di-N-Butyl Phthalate	ug/Kg	10	6.4	6.1
Di-N-Octyl Phthalate	ug/Kg	16	6.4	6.1
Fluoranthene	ug/Kg	16	3.2	3.1
Fluorene	ug/Kg	26	3.2	3.1
Hexachlorobenzene	ug/Kg	1.3	0.16	0.15
Hexachlorobutadiene	ug/Kg	1.5	0.8	0.77
Hexachloroethane	ug/Kg	29	1.6	1.5
Indeno(1,2,3-Cd)Pyrene	ug/Kg	18	3.2	3.1
Naphthalene	ug/Kg	28	3.2	3.1
N-Nitrosodiphenylamine	ug/Kg	40	6.4	6.1
Pentachlorophenol	ug/Kg	10	16	15
Phenanthrene	ug/Kg	7.9	3.2	3.1
Phenol	ug/Kg	18	6.4	6.1
Pyrene	ug/Kg	7.9	3.2	3.1
Total HPAHS	ug/Kg	NA	3.2	3.1
Total LPAHs	ug/Kg	NA	3.2	3.1
M=OR EPA 8081A/8082 (7-3-03-002)				
4,4'-DDD	ug/Kg	0.67	1.1	1

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator:	DUD_14C	DUD_15C
Descrip:	PERIMETER LOCATION	DUDI PERIMETER LOC
Sampled:	03/25/08 12:40:00 PM	03/25/08 12:54:00 PM
Lab ID:	L45303-7	L45303-8
Matrix:	SALTWTRSED	SALTWTRSED
% Solids:	62.3	65.1

Parameters	Units	SAP MDL (@50% TS)	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS				
4,4'-DDE	ug/Kg	0.67	1.1	1
4,4'-DDT	ug/Kg	0.67	1.1	1
Aldrin	ug/Kg	0.67	1.1	1
Alpha-BHC	ug/Kg	0.67	0.53	0.51
Alpha-Chlordane	ug/Kg	0.67	0.53	0.51
Aroclor 1016	ug/Kg	4	16	11
Aroclor 1221	ug/Kg	8	4.2	2.9
Aroclor 1232	ug/Kg	8	24	15
Aroclor 1242	ug/Kg	4	30	18
Aroclor 1248	ug/Kg	4	1.3	1.3
Aroclor 1254	ug/Kg	4	1.3	1.3
Aroclor 1260	ug/Kg	4	1.3	1.3
Beta-BHC	ug/Kg	0.67	0.53	0.51
Delta-BHC	ug/Kg	0.67	0.53	0.51
Dieldrin	ug/Kg	0.67	1.1	1
Endosulfan I	ug/Kg	0.67	1.1	1
Endosulfan II	ug/Kg	0.67	1.1	1
Endosulfan Sulfate	ug/Kg	0.67	1.1	1
Endrin	ug/Kg	0.67	1.1	1
Endrin Aldehyde	ug/Kg	0.67	1.1	1
Gamma-BHC (Lindane)	ug/Kg	0.67	0.53	0.51
Gamma-Chlordane	ug/Kg	2.7	0.53	0.51
Heptachlor	ug/Kg	0.67	0.53	0.51
Heptachlor Epoxide	ug/Kg	0.67	0.53	0.51
Methoxychlor	ug/Kg	3.3	5.3	5.1
Toxaphene	ug/Kg	6.7	11	10

* Not converted to dry weight basis for this parameter

SMS OC and Dry Weight Normalization MDL Check 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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.24	38	38
2,4-Dimethylphenol	1	1.58	29	27
2-Methylphenol	2	3.16	63	60
4-Methylphenol	4	6.33	670	664
Acenaphthene	2	0.24	16	16
Acenaphthylene	2	0.24	66	66
Anthracene	2	0.24	220	220
Benzo(a)anthracene	2	0.24	110	110
Benzo(a)pyrene	2	0.24	99	99
Benzo(b)fluoranthene	2	0.24	115	115
Benzo(g,h,i)perylene	2	0.24	31	31
Benzo(k)fluoranthene	2	0.24	115	115
Benzoic Acid	10	15.82	650	634
Benzyl Alcohol	2	3.16	57	54
Benzyl Butyl Phthalate	1	0.12	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.49	47	47
Chrysene	2	0.24	110	110
Dibenzo(a,h)anthracene	2	0.24	12	12
Dibenzofuran	2	0.24	15	15
Diethyl Phthalate	4	0.49	61	61
Dimethyl Phthalate	4	0.49	53	53
Di-N-Butyl Phthalate	4	0.49	220	220
Di-N-Octyl Phthalate	4	0.49	58	58
Fluorene	2	0.24	23	23
Fluoranthene	2	0.24	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.06	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.24	34	34
N-Nitrosodiphenylamine	4	0.49	11	11
Naphthalene	2	0.24	99	99
Pentachlorophenol	10	15.82	360	344
Phenanthrene	2	0.24	100	100
Phenol	4	6.33	420	414
Pyrene	2	0.24	1000	1000
Aroclor 1016	17	2.07		
Aroclor 1221	3.5	0.43		
Aroclor 1232	26	3.16		
Aroclor 1242	30	3.65		
Aroclor 1248	0.83	0.10		
Aroclor 1254	0.83	0.10		
Aroclor 1260	0.83	0.10		
Total Organic Carbon (dry)	13006.32911			
Total Solids	63.2			
HPAH	20	2.43	960	958
LPAH	14	1.70	370	368
Total PCB	30	3.65	12	8.4

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	0.1	0.03	0.81	0.78
1,2-Dichlorobenzene	0.2	0.07	2.3	2.2
1,4-Dichlorobenzene	0.2	0.07	3.1	3.0
2-Methylnaphthalene	2	0.67	38	37
2,4-Dimethylphenol	1	1.22	29	28
2-Methylphenol	2	2.44	63	61
4-Methylphenol	4	4.88	670	665
Acenaphthene	2	0.67	16	15
Acenaphthylene	2	0.67	66	65
Anthracene	2	0.67	220	219
Benzo(a)anthracene	2	0.67	110	109
Benzo(a)pyrene	2	0.67	99	98
Benzo(b)fluoranthene	2	0.67	115	114
Benzo(g,h,i)perylene	2	0.67	31	30
Benzo(k)fluoranthene	2	0.67	115	114
Benzoic Acid	10	12.21	650	638
Benzyl Alcohol	2	2.44	57	55
Benzyl Butyl Phthalate	1	0.33	4.9	4.6
Bis(2-Ethylhexyl)Phthalate	4	1.33	47	46
Chrysene	2	0.67	110	109
Dibenzo(a,h)anthracene	2	0.67	12	11
Dibenzofuran	2	0.67	15	14
Diethyl Phthalate	4	1.33	61	60
Dimethyl Phthalate	4	1.33	53	52
Di-N-Butyl Phthalate	4	1.33	220	219
Di-N-Octyl Phthalate	4	1.33	58	57
Fluorene	2	0.67	23	22
Fluoranthene	2	0.67	160	159
Hexachlorobenzene	0.1	0.03	0.38	0.35
Hexachlorobutadiene	0.5	0.17	3.9	3.7
Indeno(1,2,3-Cd)Pyrene	2	0.67	34	33
N-Nitrosodiphenylamine	4	1.33	11	10
Naphthalene	2	0.67	99	98
Pentachlorophenol	10	12.21	360	348
Phenanthrene	2	0.67	100	99
Phenol	4	4.88	420	415
Pyrene	2	0.67	1000	999
Aroclor 1016	4.1	1.37		
Aroclor 1221	1.7	0.57		
Aroclor 1232	6	2.00		
Aroclor 1242	7.4	2.47		
Aroclor 1248	0.83	0.28		
Aroclor 1254	0.83	0.28		
Aroclor 1260	0.83	0.28		
Total Organic Carbon (dry)	3663.003663			
Total Solids	81.9			
HPAH	20	6.67	960	953
LPAH	14	4.67	370	365
Total PCB	7.4	2.47	12	9.5

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	0.1	0.03	0.81	0.78
1,2-Dichlorobenzene	0.2	0.05	2.3	2.2
1,4-Dichlorobenzene	0.2	0.05	3.1	3.0
2-Methylnaphthalene	2	0.50	38	37
2,4-Dimethylphenol	1	1.26	29	28
2-Methylphenol	2	2.52	63	60
4-Methylphenol	4	5.03	670	665
Acenaphthene	2	0.50	16	15
Acenaphthylene	2	0.50	66	65
Anthracene	2	0.50	220	219
Benzo(a)anthracene	2	0.50	110	109
Benzo(a)pyrene	2	0.50	99	98
Benzo(b)fluoranthene	2	0.50	115	114
Benzo(g,h,i)perylene	2	0.50	31	30
Benzo(k)fluoranthene	2	0.50	115	114
Benzoic Acid	10	12.58	650	637
Benzyl Alcohol	2	2.52	57	54
Benzyl Butyl Phthalate	1	0.25	4.9	4.6
Bis(2-Ethylhexyl)Phthalate	4	1.00	47	46
Chrysene	2	0.50	110	109
Dibenzo(a,h)anthracene	2	0.50	12	11
Dibenzofuran	2	0.50	15	14
Diethyl Phthalate	4	1.00	61	60
Dimethyl Phthalate	4	1.00	53	52
Di-N-Butyl Phthalate	4	1.00	220	219
Di-N-Octyl Phthalate	4	1.00	58	57
Fluorene	2	0.50	23	22
Fluoranthene	2	0.50	160	159
Hexachlorobenzene	0.1	0.03	0.38	0.35
Hexachlorobutadiene	0.5	0.13	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.50	34	33
N-Nitrosodiphenylamine	4	1.00	11	10
Naphthalene	2	0.50	99	98
Pentachlorophenol	10	12.58	360	347
Phenanthrene	2	0.50	100	99
Phenol	4	5.03	420	415
Pyrene	2	0.50	1000	999
Aroclor 1016	4.7	1.18		
Aroclor 1221	2.1	0.53		
Aroclor 1232	7.4	1.85		
Aroclor 1242	8.7	2.18		
Aroclor 1248	0.83	0.21		
Aroclor 1254	0.83	0.21		
Aroclor 1260	0.83	0.21		
Total Organic Carbon (dry)	5018.867925			
Total Solids	79.5			
HPAH	20	5.01	960	955
LPAH	14	3.51	370	366
Total PCB	8.7	2.18	12	9.8

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	0.1	0.03	0.81	0.78
1,2-Dichlorobenzene	0.2	0.05	2.3	2.2
1,4-Dichlorobenzene	0.2	0.05	3.1	3.0
2-Methylnaphthalene	2	0.51	38	37
2,4-Dimethylphenol	1	1.34	29	28
2-Methylphenol	2	2.68	63	60
4-Methylphenol	4	5.37	670	665
Acenaphthene	2	0.51	16	15
Acenaphthylene	2	0.51	66	65
Anthracene	2	0.51	220	219
Benzo(a)anthracene	2	0.51	110	109
Benzo(a)pyrene	2	0.51	99	98
Benzo(b)fluoranthene	2	0.51	115	114
Benzo(g,h,i)perylene	2	0.51	31	30
Benzo(k)fluoranthene	2	0.51	115	114
Benzoic Acid	10	13.42	650	637
Benzyl Alcohol	2	2.68	57	54
Benzyl Butyl Phthalate	1	0.26	4.9	4.6
Bis(2-Ethylhexyl)Phthalate	4	1.03	47	46
Chrysene	2	0.51	110	109
Dibenzo(a,h)anthracene	2	0.51	12	11
Dibenzofuran	2	0.51	15	14
Diethyl Phthalate	4	1.03	61	60
Dimethyl Phthalate	4	1.03	53	52
Di-N-Butyl Phthalate	4	1.03	220	219
Di-N-Octyl Phthalate	4	1.03	58	57
Fluorene	2	0.51	23	22
Fluoranthene	2	0.51	160	159
Hexachlorobenzene	0.1	0.03	0.38	0.35
Hexachlorobutadiene	0.5	0.13	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.51	34	33
N-Nitrosodiphenylamine	4	1.03	11	10
Naphthalene	2	0.51	99	98
Pentachlorophenol	10	13.42	360	347
Phenanthrene	2	0.51	100	99
Phenol	4	5.37	420	415
Pyrene	2	0.51	1000	999
Aroclor 1016	5.2	1.34		
Aroclor 1221	1.7	0.44		
Aroclor 1232	8.5	2.19		
Aroclor 1242	9.1	2.34		
Aroclor 1248	0.83	0.21		
Aroclor 1254	0.83	0.21		
Aroclor 1260	0.83	0.21		
Total Organic Carbon (dry)	5221.47651			
Total Solids	74.5			
HPAH	20	5.14	960	955
LPAH	14	3.60	370	366
Total PCB	9.1	2.34	12	9.7

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	0.1	0.04	0.81	0.77
1,2-Dichlorobenzene	0.2	0.09	2.3	2.2
1,4-Dichlorobenzene	0.2	0.09	3.1	3.0
2-Methylnaphthalene	2	0.86	38	37
2,4-Dimethylphenol	1	1.21	29	28
2-Methylphenol	2	2.42	63	61
4-Methylphenol	4	4.84	670	665
Acenaphthene	2	0.86	16	15
Acenaphthylene	2	0.86	66	65
Anthracene	2	0.86	220	219
Benzo(a)anthracene	2	0.86	110	109
Benzo(a)pyrene	2	0.86	99	98
Benzo(b)fluoranthene	2	0.86	115	114
Benzo(g,h,i)perylene	2	0.86	31	30
Benzo(k)fluoranthene	2	0.86	115	114
Benzoic Acid	10	12.09	650	638
Benzyl Alcohol	2	2.42	57	55
Benzyl Butyl Phthalate	1	0.43	4.9	4.5
Bis(2-Ethylhexyl)Phthalate	4	1.72	47	45
Chrysene	2	0.86	110	109
Dibenzo(a,h)anthracene	2	0.86	12	11
Dibenzofuran	2	0.86	15	14
Diethyl Phthalate	4	1.72	61	59
Dimethyl Phthalate	4	1.72	53	51
Di-N-Butyl Phthalate	4	1.72	220	218
Di-N-Octyl Phthalate	4	1.72	58	56
Fluorene	2	0.86	23	22
Fluoranthene	2	0.86	160	159
Hexachlorobenzene	0.1	0.04	0.38	0.34
Hexachlorobutadiene	0.5	0.22	3.9	3.7
Indeno(1,2,3-Cd)Pyrene	2	0.86	34	33
N-Nitrosodiphenylamine	4	1.72	11	9
Naphthalene	2	0.86	99	98
Pentachlorophenol	10	12.09	360	348
Phenanthrene	2	0.86	100	99
Phenol	4	4.84	420	415
Pyrene	2	0.86	1000	999
Aroclor 1016	2.4	1.03		
Aroclor 1221	1.7	0.73		
Aroclor 1232	3.5	1.51		
Aroclor 1242	3.7	1.59		
Aroclor 1248	0.83	0.36		
Aroclor 1254	0.83	0.36		
Aroclor 1260	0.83	0.36		
Total Organic Carbon (dry)	2805.320435			
Total Solids	82.7			
HPAH	20	8.62	960	951
LPAH	14	6.03	370	364
Total PCB	3.7	1.59	12	10.4

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.03	2.3	2.3
1,4-Dichlorobenzene	0.2	0.03	3.1	3.1
2-Methylnaphthalene	2	0.28	38	38
2,4-Dimethylphenol	1	1.64	29	27
2-Methylphenol	2	3.28	63	60
4-Methylphenol	4	6.57	670	663
Acenaphthene	2	0.28	16	16
Acenaphthylene	2	0.28	66	66
Anthracene	2	0.28	220	220
Benzo(a)anthracene	2	0.28	110	110
Benzo(a)pyrene	2	0.28	99	99
Benzo(b)fluoranthene	2	0.28	115	115
Benzo(g,h,i)perylene	2	0.28	31	31
Benzo(k)fluoranthene	2	0.28	115	115
Benzoic Acid	10	16.42	650	634
Benzyl Alcohol	2	3.28	57	54
Benzyl Butyl Phthalate	1	0.14	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.56	47	46
Chrysene	2	0.28	110	110
Dibenzo(a,h)anthracene	2	0.28	12	12
Dibenzofuran	2	0.28	15	15
Diethyl Phthalate	4	0.56	61	60
Dimethyl Phthalate	4	0.56	53	52
Di-N-Butyl Phthalate	4	0.56	220	219
Di-N-Octyl Phthalate	4	0.56	58	57
Fluorene	2	0.28	23	23
Fluoranthene	2	0.28	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.07	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.28	34	34
N-Nitrosodiphenylamine	4	0.56	11	10
Naphthalene	2	0.28	99	99
Pentachlorophenol	10	16.42	360	344
Phenanthrene	2	0.28	100	100
Phenol	4	6.57	420	413
Pyrene	2	0.28	1000	1000
Aroclor 1016	8.9	1.26		
Aroclor 1221	1.7	0.24		
Aroclor 1232	15	2.12		
Aroclor 1242	13	1.84		
Aroclor 1248	0.83	0.12		
Aroclor 1254	0.83	0.12		
Aroclor 1260	0.83	0.12		
Total Organic Carbon (dry)	11625.61576			
Total Solids	60.9			
HPAH	20	2.82	960	957
LPAH	14	1.98	370	368
Total PCB	15	2.12	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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.25	38	38
2,4-Dimethylphenol	1	1.61	29	27
2-Methylphenol	2	3.21	63	60
4-Methylphenol	4	6.42	670	664
Acenaphthene	2	0.25	16	16
Acenaphthylene	2	0.25	66	66
Anthracene	2	0.25	220	220
Benzo(a)anthracene	2	0.25	110	110
Benzo(a)pyrene	2	0.25	99	99
Benzo(b)fluoranthene	2	0.25	115	115
Benzo(g,h,i)perylene	2	0.25	31	31
Benzo(k)fluoranthene	2	0.25	115	115
Benzoic Acid	10	16.05	650	634
Benzyl Alcohol	2	3.21	57	54
Benzyl Butyl Phthalate	1	0.12	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.49	47	47
Chrysene	2	0.25	110	110
Dibenzo(a,h)anthracene	2	0.25	12	12
Dibenzofuran	2	0.25	15	15
Diethyl Phthalate	4	0.49	61	61
Dimethyl Phthalate	4	0.49	53	53
Di-N-Butyl Phthalate	4	0.49	220	220
Di-N-Octyl Phthalate	4	0.49	58	58
Fluorene	2	0.25	23	23
Fluoranthene	2	0.25	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.06	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.25	34	34
N-Nitrosodiphenylamine	4	0.49	11	11
Naphthalene	2	0.25	99	99
Pentachlorophenol	10	16.05	360	344
Phenanthrene	2	0.25	100	100
Phenol	4	6.42	420	414
Pyrene	2	0.25	1000	1000
Aroclor 1016	10	1.23		
Aroclor 1221	2.6	0.32		
Aroclor 1232	15	1.84		
Aroclor 1242	19	2.33		
Aroclor 1248	0.83	0.10		
Aroclor 1254	0.83	0.10		
Aroclor 1260	0.83	0.10		
Total Organic Carbon (dry)	13065.81059			
Total Solids	62.3			
HPAH	20	2.46	960	958
LPAH	14	1.72	370	368
Total PCB	19	2.33	12	9.7

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.03	2.3	2.3
1,4-Dichlorobenzene	0.2	0.03	3.1	3.1
2-Methylnaphthalene	2	0.29	38	38
2,4-Dimethylphenol	1	1.54	29	27
2-Methylphenol	2	3.07	63	60
4-Methylphenol	4	6.14	670	664
Acenaphthene	2	0.29	16	16
Acenaphthylene	2	0.29	66	66
Anthracene	2	0.29	220	220
Benzo(a)anthracene	2	0.29	110	110
Benzo(a)pyrene	2	0.29	99	99
Benzo(b)fluoranthene	2	0.29	115	115
Benzo(g,h,i)perylene	2	0.29	31	31
Benzo(k)fluoranthene	2	0.29	115	115
Benzoic Acid	10	15.36	650	635
Benzyl Alcohol	2	3.07	57	54
Benzyl Butyl Phthalate	1	0.14	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.57	47	46
Chrysene	2	0.29	110	110
Dibenzo(a,h)anthracene	2	0.29	12	12
Dibenzofuran	2	0.29	15	15
Diethyl Phthalate	4	0.57	61	60
Dimethyl Phthalate	4	0.57	53	52
Di-N-Butyl Phthalate	4	0.57	220	219
Di-N-Octyl Phthalate	4	0.57	58	57
Fluorene	2	0.29	23	23
Fluoranthene	2	0.29	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.07	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.29	34	34
N-Nitrosodiphenylamine	4	0.57	11	10
Naphthalene	2	0.29	99	99
Pentachlorophenol	10	15.36	360	345
Phenanthrene	2	0.29	100	100
Phenol	4	6.14	420	414
Pyrene	2	0.29	1000	1000
Aroclor 1016	6.9	0.99		
Aroclor 1221	1.9	0.27		
Aroclor 1232	10	1.43		
Aroclor 1242	12	1.72		
Aroclor 1248	0.83	0.12		
Aroclor 1254	0.83	0.12		
Aroclor 1260	0.83	0.12		
Total Organic Carbon (dry)	10721.96621			
Total Solids	65.1			
HPAH	20	2.87	960	957
LPAH	14	2.01	370	368
Total PCB	12	1.72	12	10.3

CONVENTIONAL ANALYSES QC DATA

LIMSView Batch Report - run on 05/13/08, 10:24 am

WG96094 (Particle Size Distribution)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45303-1	423062-200-4	SALTWTRSED	3/25/2008 11:15	8-Apr-08	9-Apr-08		
L45303-2	423062-200-4	SALTWTRSED	3/25/2008 11:30	8-Apr-08	9-Apr-08		
L45303-3	423062-200-4	SALTWTRSED	3/25/2008 11:40	8-Apr-08	9-Apr-08		FREP @ L45303-2
L45303-4	423062-200-4	SALTWTRSED	3/25/2008 12:00	8-Apr-08	9-Apr-08		
L45303-5	423062-200-4	SALTWTRSED	3/25/2008 12:10	8-Apr-08	9-Apr-08		
L45303-6	423062-200-4	SALTWTRSED	3/25/2008 12:25	8-Apr-08	9-Apr-08		
L45303-7	423062-200-4	SALTWTRSED	3/25/2008 12:40	8-Apr-08	9-Apr-08		
L45303-8	423062-200-4	SALTWTRSED	3/25/2008 12:54	8-Apr-08	9-Apr-08		

LIMSView Analytical QC Report - run on 05/13/08 10:24 am

Workgroup: WG96094 (Particle Size Distribution)) Run ID: R125374
(These sample associated with QC from WG96051))

LIMSView Analytical QC Report - run on 05/13/08 10:21 am

Workgroup: WG96051 (Particle Size Distribution)

(Lab Triplicate, Lab Duplicate) L45302-2

Parameter	MDL	RDL	Units	SampValue	LD Value	LT Value	RSD	Qual	LabLimit
Clay	1.1	2.17	%	19.5	19.3	21.7	7		20
Gravel	0.22	2.17	%	1.3	1.3	1.4	3		20
Sand	0.22	2.17	%	26	25.4	25.2	2		20
Silt	1.1	2.17	%	49.8	49.3	49.8	1		20

WG95966 (Total Organic Carbon)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45303-1	423062-200-4	SALTWTRSED	3/25/2008 11:15	17-Apr-08	7-May-08	WG95966-1, -2, -3, -4, -5, -6	
L45303-2	423062-200-4	SALTWTRSED	3/25/2008 11:30	17-Apr-08	7-May-08	WG95966-1, -2, -3, -4, -5, -6	
L45303-3	423062-200-4	SALTWTRSED	3/25/2008 11:40	17-Apr-08	7-May-08	WG95966-1, -2, -3, -4, -5, -6	FREP @ L45303-2
L45303-4	423062-200-4	SALTWTRSED	3/25/2008 12:00	28-Apr-08	7-May-08	WG95967-4, -5, -6, WG95966-1, -2, -3, -4, -5, -6	
L45303-5	423062-200-4	SALTWTRSED	3/25/2008 12:10	17-Apr-08	7-May-08	WG95966-1, -2, -3, -4, -5, -6	
L45303-6	423062-200-4	SALTWTRSED	3/25/2008 12:25	17-Apr-08	7-May-08	WG95966-1, -2, -3, -4, -5, -6	
L45303-7	423062-200-4	SALTWTRSED	3/25/2008 12:40	17-Apr-08	7-May-08	WG95966-1, -2, -3, -4, -5, -6	
L45303-8	423062-200-4	SALTWTRSED	3/25/2008 12:54	17-Apr-08	7-May-08	WG95966-1, -2, -3, -4, -5, -6	
WG95966-1	MB	OTHR SOLID		7-May-08	7-May-08	WG95966-1, -2, -3, -4, -5, -6	MB1 080507
WG95966-2	SB	OTHR SOLID		7-May-08	7-May-08	WG95966-1, -2, -3, -4, -5, -6	WG95966-1
WG95966-3	SRM	OTHR SOLID		7-May-08	7-May-08	WG95966-1, -2, -3, -4, -5, -6	HICONC
WG95966-4	LD	SALTWTRSED		17-Apr-08	7-May-08	WG95966-1, -2, -3, -4, -5, -6	L45303-8
WG95966-5	LT	SALTWTRSED		17-Apr-08	7-May-08	WG95966-1, -2, -3, -4, -5, -6	WG95966-4 L45303-8
WG95966-6	MS	SALTWTRSED		17-Apr-08	7-May-08	WG95966-1, -2, -3, -4, -5, -6	L45303-8
WG95967-4	LD	SALTWTRSED		28-Apr-08	6-May-08		L45304-2
WG95967-5	LT	SALTWTRSED		28-Apr-08	6-May-08		WG95967-4 L45304-2
WG95967-6	MS	SALTWTRSED		28-Apr-08	6-May-08		L45304-2

Workgroup: WG95966 (Total Organic Carbon)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Organic Carbon	500	1000	mg/Kg	<MDL	

(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

(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
Total Organic Carbon	2400	4820	mg/Kg	36900	33700	91		80--120

(Lab Triplicate, Lab Duplicate) L45303-8

Parameter	MDL	RDL	Units	SampValue	LD Value	LT Value	RSD	Qual	LabLimit
Total Organic Carbon	1700	3340	mg/Kg	6980	6740	6950	2		20

(Matrix Spike) L45303-8

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Organic Carbon	1700	3310	mg/Kg	6980	8261	15200	99		75--125

(Lab Triplicate, Lab Duplicate) L45304-2

Parameter	MDL	RDL	Units	SampValue	LD Value	LT Value	RSD	Qual	LabLimit
Total Organic Carbon	1700	3310	mg/Kg	14900	14700	16400	6		20

(Matrix Spike) L45304-2

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Organic Carbon	1700	3340	mg/Kg	14900	8337	22900	96		75--125

WG95969 (Total Solids)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45303-1	423062-200-4	SALTWTRSED	3/25/2008 11:15	9-Apr-08	9-Apr-08	WG95969-1, -2, -3, -4, -5	
L45303-2	423062-200-4	SALTWTRSED	3/25/2008 11:30	9-Apr-08	9-Apr-08	WG95969-1, -2, -3, -4, -5	
L45303-3	423062-200-4	SALTWTRSED	3/25/2008 11:40	9-Apr-08	9-Apr-08	WG95969-1, -2, -3, -4, -5	FREP @ L45303-2
L45303-4	423062-200-4	SALTWTRSED	3/25/2008 12:00	9-Apr-08	9-Apr-08	WG95969-1, -2, -3, -4, -5	
L45303-5	423062-200-4	SALTWTRSED	3/25/2008 12:10	9-Apr-08	9-Apr-08	WG95969-1, -2, -3, -4, -5	
L45303-6	423062-200-4	SALTWTRSED	3/25/2008 12:25	9-Apr-08	9-Apr-08	WG95969-1, -2, -3, -4, -5	
L45303-7	423062-200-4	SALTWTRSED	3/25/2008 12:40	9-Apr-08	9-Apr-08	WG95969-1, -2, -3, -4, -5	
L45303-8	423062-200-4	SALTWTRSED	3/25/2008 12:54	9-Apr-08	9-Apr-08	WG95969-1, -2, -3, -4, -5	
L45451-1	421195CI2	FRSHWTRSED	4/8/2008 12:25	9-Apr-08	9-Apr-08	WG95969-1, -2, -3, -4, -5	
L45451-2	421195CI2	FRSHWTRSED	4/8/2008 12:05	9-Apr-08	9-Apr-08	WG95969-1, -2, -3, -4, -5	
WG95969-1	MB	OTHR SOLID		9-Apr-08	9-Apr-08	WG95969-1, -2, -3, -4, -5	MB1 080409
WG95969-2	LD	SALTWTRSED		9-Apr-08	9-Apr-08	WG95969-1, -2, -3, -4, -5	L45303-5
WG95969-3	LT	SALTWTRSED		9-Apr-08	9-Apr-08	WG95969-1, -2, -3, -4, -5	WG95969-2 L45303-5
WG95969-4	LD	FRSHWTRSED		9-Apr-08	9-Apr-08	WG95969-1, -2, -3, -4, -5	L45451-1
WG95969-5	LT	FRSHWTRSED		9-Apr-08	9-Apr-08	WG95969-1, -2, -3, -4, -5	WG95969-4 L45451-1

Workgroup: WG95969 (Total Solids)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Solids	0.005	0.01	%	<MDL	

(Lab Triplicate, Lab Duplicate) L45303-5

Parameter	MDL	RDL	Units	SampValue	LD Value	LT Value	RSD	Qual	LabLimit
Total Solids	0.005	0.01	%	82.7	82.6	86	2		20

(Lab Triplicate, Lab Duplicate) L45451-1

Parameter	MDL	RDL	Units	SampValue	LD Value	LT Value	RSD	Qual	LabLimit
Total Solids	0.005	0.01	%	38.2	28.6	39.5	17		20

Conventionals Data Anomaly Form

Date(s) Occurred: *4/17/08*

WG #(s): *WG95966*

☐ **All samples in WKGP(s)** **or** ☒ **Sample #(s):** *L45303-1 to -8, 8 LD (WG95966-4), 8 LT (WG95966-5), 8 MS (WG95966-6)*

Project #(s): *423062-200-4*

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

I. Analysis

☐ Nutrients:
☒ Demands: *Total Organic Carbon (TOC)*
☐ Cyanides:
☐ Physicals:
☐ Solids:
☐ Anions:
☐ Chlorophylls:
☐ Others:
☐ 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:

III. Type of Sample/Analytical Anomaly

☐ Values Outside of Control Limits:
[1] ☐ Initial Calibration
[2] ☐ Continuing Calibration Checks
[3] ☐ SB Spike Recoveries
[4] ☐ MB Anomaly
[5] ☐ LCS/SRM Recoveries
[6] ☐ Sample/LD/LT RSD
[7] ☐ MS RPD
[8] ☐ Sample/LD RPD
[9] ☐ MS Spike Recoveries

[10] ☐ Holding time exceeded by:
[11] ☐ Insufficient sample amount.

[12] ☒ Inappropriate storage, container or preservation.
☐ Other

Anomaly Description: *The samples were transferred from frozen storage (-20 C) to the Conventionals Lab (Room Temperature) for preparation for TOC analysis on 16 April. The samples were not prepared that day and due to analyst oversight, were left out at room temperature until the next day (17 April) when preparation was begun.*

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: *H*
☐ Other

Corrective Action Description: *When the analyst discovered his mistake, he documented the occurrence and then processed the samples as normal. The affected TOC data have been qualified with an 'H' to indicate that standard sample handling criteria were not met. In addition, the following text has been appended to each affected result, "Held at room temp overnight prior to analysis."*

VI. Potential Effects on Data Quality

Based upon the expected performance of this method:

☐ None; corrective action entirely corrected anomaly (explanation optional):

☒ Potential effect explanation (explanation mandatory): *Holding these samples at room temperature overnight may have led to degradation of the target analytes. To what degree sample results are biased is unknown. The results of this analysis appear consistent with historical data from these locators, however, these data should be used with caution.*

	Signatures	Signature Dates
Reported By: *David Hunn*		
Reviewer: *Debbie Osada*		
Supervisor: *Brian Prosch*		
QA Officer: *Colin Elliott* (For QA1 only)		
cc: LPM: *Fritz Grothkopp*		

METAL CHEMISTRY QC DATA

LIMSView Batch Report - run on 05/13/08, 10:21 am

WG96195 (Total Mercury by CVAA)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45302-1	423062-200-4	SALTWTRSED	3/24/2008 12:08	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45302-2	423062-200-4	SALTWTRSED	3/24/2008 12:28	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45302-3	423062-200-4	SALTWTRSED	3/24/2008 13:05	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45302-4	423062-200-4	SALTWTRSED	3/24/2008 13:21	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	FREP @ L45302-3
L45302-5	423062-200-4	SALTWTRSED	3/24/2008 14:03	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45302-6	423062-200-4	SALTWTRSED	3/24/2008 14:30	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45302-7	423062-200-4	SALTWTRSED	3/25/2008 9:00	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45302-8	423062-200-4	SALTWTRSED	3/25/2008 9:45	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45302-9	423062-200-4	SALTWTRSED	3/25/2008 10:30	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45303-1	423062-200-4	SALTWTRSED	3/25/2008 11:15	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45303-2	423062-200-4	SALTWTRSED	3/25/2008 11:30	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45303-3	423062-200-4	SALTWTRSED	3/25/2008 11:40	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	FREP @ L45303-2
L45303-4	423062-200-4	SALTWTRSED	3/25/2008 12:00	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45303-5	423062-200-4	SALTWTRSED	3/25/2008 12:10	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45303-6	423062-200-4	SALTWTRSED	3/25/2008 12:25	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45303-7	423062-200-4	SALTWTRSED	3/25/2008 12:40	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45303-8	423062-200-4	SALTWTRSED	3/25/2008 12:54	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
WG96195-1	SRM	SALTWTRSED		14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	PACS2
WG96195-2	MB	SOLIDBLANK		14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	METHOD BLANK
WG96195-3	SB	SOLIDBLANK		14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	WG96195-2 HG-SMID
WG96195-4	MS	SALTWTRSED		14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	L45302-2 HG-SMID
WG96195-5	MSD	SALTWTRSED		14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	WG96195-4 L45302-2 HG-SMID-MSD
WG96195-6	LD	SALTWTRSED		14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	L45302-2 RPD-SOL

LIMSView Analytical QC Report - run on 05/13/08 10:21 am

Workgroup: WG96195 (Total Mercury by CVAA)

(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
Mercury, Total, CVAA	0.047	0.465	mg/Kg	3.04	2.62	86		80--120

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAA	0.0048	0.0476	mg/Kg	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Mercury, Total, CVAA	0.0048	0.0476	mg/Kg	<MDL	0.0952	0.0919	96		85--115

(Matrix Spike Duplicate, Matrix Spike) L45302-2

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Mercury, Total, CVAA	0.0051	0.0512	mg/Kg	0.0843	0.0993	0.16	77		75--125	0.0965	0.158	76		1		20

(Lab Duplicate) L45302-2

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Mercury, Total, CVAA	0.0049	0.0491	mg/Kg	0.0843	0.0901	7		20

WG96348 (Total Metals by ICP)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45302-1	423062-200-4	SALTWTRSED	3/24/2008 12:08	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45302-2	423062-200-4	SALTWTRSED	3/24/2008 12:28	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45302-3	423062-200-4	SALTWTRSED	3/24/2008 13:05	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45302-4	423062-200-4	SALTWTRSED	3/24/2008 13:21	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	FREP @ L45302-3
L45302-5	423062-200-4	SALTWTRSED	3/24/2008 14:03	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45302-6	423062-200-4	SALTWTRSED	3/24/2008 14:30	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45302-7	423062-200-4	SALTWTRSED	3/25/2008 9:00	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45302-8	423062-200-4	SALTWTRSED	3/25/2008 9:45	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45302-9	423062-200-4	SALTWTRSED	3/25/2008 10:30	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45303-1	423062-200-4	SALTWTRSED	3/25/2008 11:15	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45303-2	423062-200-4	SALTWTRSED	3/25/2008 11:30	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45303-3	423062-200-4	SALTWTRSED	3/25/2008 11:40	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	FREP @ L45303-2
L45303-4	423062-200-4	SALTWTRSED	3/25/2008 12:00	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45303-5	423062-200-4	SALTWTRSED	3/25/2008 12:10	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45303-6	423062-200-4	SALTWTRSED	3/25/2008 12:25	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45303-7	423062-200-4	SALTWTRSED	3/25/2008 12:40	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45303-8	423062-200-4	SALTWTRSED	3/25/2008 12:54	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
WG96348-1	SB	SOLIDBLANK		28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	WG96348-3 ICPMARINE SPIKE BLANK
WG96348-2	SRM	SALTWTRSED		28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	PACS2 M1-11-30
WG96348-3	MB	SOLIDBLANK		28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	DIGESTED METHOD BALNK
WG96348-4	LD	SALTWTRSED		28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	L45302-1 RPD-SOL LAB DUPLICATE
WG96348-5	MS	SALTWTRSED		28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	L45302-1 ICPMARINE MATRIX SPIKE
WG96348-6	LCS	OTHR SOLID		28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	ERASOIL M-07-023

Workgroup: WG96348 (Total Metals by ICP)

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Aluminum, Total, ICP	4.8	23.8	mg/Kg	<MDL	6710	6550	98		85--115
Antimony, Total, ICP	0.71	3.57	mg/Kg	<MDL	47.6	48.5	102		85--115
Arsenic, Total, ICP	1.2	5.95	mg/Kg	<MDL	47.6	48.7	102		85--115
Beryllium, Total, ICP	0.048	0.238	mg/Kg	<MDL	47.6	46.5	98		85--115
Cadmium, Total, ICP	0.095	0.476	mg/Kg	<MDL	47.6	47.7	100		85--115
Chromium, Total, ICP	0.14	0.714	mg/Kg	<MDL	47.6	47.2	99		85--115
Copper, Total, ICP	0.19	0.952	mg/Kg	<MDL	47.6	46.5	98		85--115
Iron, Total, ICP	2.4	11.9	mg/Kg	<MDL	4810	4600	96		85--115
Lead, Total, ICP	0.95	4.76	mg/Kg	<MDL	47.6	47.2	99		85--115
Manganese, Total, ICP	0.095	0.476	mg/Kg	<MDL	238	233	98		85--115
Nickel, Total, ICP	0.24	1.19	mg/Kg	<MDL	47.6	46.4	97		85--115
Selenium, Total, ICP	1.2	5.95	mg/Kg	<MDL	47.6	49.1	103		85--115
Silver, Total, ICP	0.19	0.952	mg/Kg	<MDL	47.6	47	99		85--115
Thallium, Total, ICP	1.9	9.52	mg/Kg	<MDL	47.6	46.3	97		85--115
Zinc, Total, ICP	0.24	1.19	mg/Kg	<MDL	238	238	100		85--115

(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
Aluminum, Total, ICP	20	99.5	mg/Kg	66200	14300	22		10--43
Chromium, Total, ICP	0.6	2.99	mg/Kg	90.7	46.6	51		30--70
Copper, Total, ICP	0.8	3.98	mg/Kg	310	293	94		78--118
Iron, Total, ICP	10	49.8	mg/Kg	40900	30000	73		55--95
Lead, Total, ICP	4	19.9	mg/Kg	183	174	95		74--114
Manganese, Total, ICP	0.4	1.99	mg/Kg	440	231	53		35--75
Nickel, Total, ICP	1	4.98	mg/Kg	39.5	30	76		51--91
Zinc, Total, ICP	1	4.98	mg/Kg	364	353	97		73--113

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Aluminum, Total, ICP	4.8	23.8	mg/Kg	<MDL	
Antimony, Total, ICP	0.71	3.57	mg/Kg	<MDL	
Arsenic, Total, ICP	1.2	5.95	mg/Kg	<MDL	
Beryllium, Total, ICP	0.048	0.238	mg/Kg	<MDL	
Cadmium, Total, ICP	0.095	0.476	mg/Kg	<MDL	
Chromium, Total, ICP	0.14	0.714	mg/Kg	<MDL	
Copper, Total, ICP	0.19	0.952	mg/Kg	<MDL	
Iron, Total, ICP	2.4	11.9	mg/Kg	<MDL	
Lead, Total, ICP	0.95	4.76	mg/Kg	<MDL	
Manganese, Total, ICP	0.095	0.476	mg/Kg	<MDL	
Nickel, Total, ICP	0.24	1.19	mg/Kg	<MDL	
Selenium, Total, ICP	1.2	5.95	mg/Kg	<MDL	
Silver, Total, ICP	0.19	0.952	mg/Kg	<MDL	
Thallium, Total, ICP	1.9	9.52	mg/Kg	<MDL	
Zinc, Total, ICP	0.24	1.19	mg/Kg	<MDL	

(Lab Duplicate) L45302-1

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Aluminum, Total, ICP	5	24.9	mg/Kg	9530	9580	1		20
Antimony, Total, ICP	0.75	3.74	mg/Kg	<MDL	<MDL			20
Arsenic, Total, ICP	1.2	6.23	mg/Kg	6.76	7.2	6		20
Beryllium, Total, ICP	0.05	0.249	mg/Kg	0.2	0.21			20
Cadmium, Total, ICP	0.1	0.498	mg/Kg	0.31	0.3			20
Chromium, Total, ICP	0.15	0.748	mg/Kg	16	17.3	7		20
Copper, Total, ICP	0.2	0.997	mg/Kg	40.7	40.4	1		20
Iron, Total, ICP	2.5	12.5	mg/Kg	14700	14800	1		20
Lead, Total, ICP	1	4.98	mg/Kg	26.8	25.9	3		20
Manganese, Total, ICP	0.1	0.498	mg/Kg	165	166	1		20
Nickel, Total, ICP	0.25	1.25	mg/Kg	11.1	11.7	5		20
Selenium, Total, ICP	1.2	6.23	mg/Kg	<MDL	<MDL			20
Silver, Total, ICP	0.2	0.997	mg/Kg	0.22	<MDL			20
Thallium, Total, ICP	2	9.97	mg/Kg	<MDL	<MDL			20
Zinc, Total, ICP	0.25	1.25	mg/Kg	88.9	91.5	3		20

(Matrix Spike) L45302-1

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Aluminum, Total, ICP	5	24.9	mg/Kg	9530	7020	17900	119		75--125
Antimony, Total, ICP	0.75	3.74	mg/Kg	<MDL	49.8	10	20	G	75--125
Arsenic, Total, ICP	1.2	6.23	mg/Kg	6.76	49.8	56.9	101		75--125
Beryllium, Total, ICP	0.05	0.249	mg/Kg	0.2	49.8	47.3	94		75--125
Cadmium, Total, ICP	0.1	0.498	mg/Kg	0.31	49.8	49.6	99		75--125
Chromium, Total, ICP	0.15	0.747	mg/Kg	16	49.8	65.7	100		75--125
Copper, Total, ICP	0.2	0.996	mg/Kg	40.7	49.8	89.4	98		75--125
Iron, Total, ICP	2.5	12.5	mg/Kg	14700	5030	19700	100		75--125
Lead, Total, ICP	1	4.98	mg/Kg	26.8	49.8	74.5	96		75--125
Manganese, Total, ICP	0.1	0.498	mg/Kg	165	249	401	95		75--125
Nickel, Total, ICP	0.25	1.25	mg/Kg	11.1	49.8	58.8	96		75--125
Selenium, Total, ICP	1.2	6.23	mg/Kg	<MDL	49.8	49.4	99		75--125
Silver, Total, ICP	0.2	0.996	mg/Kg	0.22	49.8	48.3	96		75--125
Thallium, Total, ICP	2	9.96	mg/Kg	<MDL	49.8	45.9	92		75--125
Zinc, Total, ICP	0.25	1.25	mg/Kg	88.9	249	334	98		75--125

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Aluminum, Total, ICP	20	102	mg/Kg	8260	7040	85		61--139
Antimony, Total, ICP	3.1	15.3	mg/Kg	90.2	63.9	71		10--211
Arsenic, Total, ICP	5.1	25.5	mg/Kg	132	135	102		80--120
Beryllium, Total, ICP	0.2	1.02	mg/Kg	89.5	89.4	100		80--120
Cadmium, Total, ICP	0.41	2.04	mg/Kg	66.5	66.8	100		80--120
Chromium, Total, ICP	0.61	3.06	mg/Kg	72.9	69.6	96		79--121
Copper, Total, ICP	0.82	4.09	mg/Kg	68.5	66	96		80--120
Iron, Total, ICP	10	51.1	mg/Kg	13400	10700	80		50--149
Lead, Total, ICP	4.1	20.4	mg/Kg	130	135	104		80--120
Manganese, Total, ICP	0.41	2.04	mg/Kg	453	453	100		80--120
Nickel, Total, ICP	1	5.11	mg/Kg	55.6	55.9	101		80--120
Selenium, Total, ICP	5.1	25.5	mg/Kg	161	169	105		78--122
Silver, Total, ICP	0.82	4.09	mg/Kg	101	106	105		66--134
Thallium, Total, ICP	8.2	40.9	mg/Kg	133	131	98		77--123
Zinc, Total, ICP	1	5.11	mg/Kg	177	175	99		79--121

ORGANIC CHEMISTRY QC DATA

WG95938 (Semi Volatile Organics)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45302-1	423062-200-4	SALTWTRSED	3/24/2008 12:08	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45302-2	423062-200-4	SALTWTRSED	3/24/2008 12:28	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45302-3	423062-200-4	SALTWTRSED	3/24/2008 13:05	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45302-4	423062-200-4	SALTWTRSED	3/24/2008 13:21	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	FREP @ L45302-3
L45302-5	423062-200-4	SALTWTRSED	3/24/2008 14:03	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45302-6	423062-200-4	SALTWTRSED	3/24/2008 14:30	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45302-7	423062-200-4	SALTWTRSED	3/25/2008 9:00	27-Mar-08	1-Apr-08	WG95938-5	
L45302-8	423062-200-4	SALTWTRSED	3/25/2008 9:45	27-Mar-08	1-Apr-08	WG95938-5	
L45302-9	423062-200-4	SALTWTRSED	3/25/2008 10:30	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-1	423062-200-4	SALTWTRSED	3/25/2008 11:15	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-2	423062-200-4	SALTWTRSED	3/25/2008 11:30	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-3	423062-200-4	SALTWTRSED	3/25/2008 11:40	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	FREP @ L45303-2
L45303-4	423062-200-4	SALTWTRSED	3/25/2008 12:00	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-5	423062-200-4	SALTWTRSED	3/25/2008 12:10	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-6	423062-200-4	SALTWTRSED	3/25/2008 12:25	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-7	423062-200-4	SALTWTRSED	3/25/2008 12:40	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-8	423062-200-4	SALTWTRSED	3/25/2008 12:54	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45304-1	423062-100-4	SALTWTRSED	3/24/2008 9:35	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45304-2	423062-100-4	SALTWTRSED	3/24/2008 9:50	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45304-3	423062-100-4	SALTWTRSED	3/24/2008 10:08	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
WG95938-1	MB	OTHR SOLID		27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	MB080327
WG95938-2	SB	OTHR SOLID		27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	WG95938-1
WG95938-3	MS	SALTWTRSED		27-Mar-08	2-Apr-08	WG95938-1, -2, -6, -3, -4, -5	L45302-1
WG95938-4	MSD	SALTWTRSED		27-Mar-08	2-Apr-08	WG95938-1, -2, -6, -3, -4, -5	WG95938-3 L45302-1
WG95938-5	SRM	SALTWTRSED		27-Mar-08	1-Apr-08	WG95938-5	1944
WG95938-6	LD	SALTWTRSED		27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	L45302-2

LIMSView Analytical QC Report - run on 05/13/08 10:20 am

Workgroup: WG95938 (Semi Volatile Organics)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	
2-Methylnaphthalene	2	4	ug/Kg	<MDL	
2-Methylphenol	2	4	ug/Kg	<MDL	
4-Methylphenol	4	8	ug/Kg	<MDL	
Acenaphthene	2	4	ug/Kg	<MDL	
Acenaphthylene	2	4	ug/Kg	<MDL	
Anthracene	2	4	ug/Kg	<MDL	
Benzo(a)anthracene	2	4	ug/Kg	<MDL	
Benzo(a)pyrene	2	4	ug/Kg	<MDL	
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	
Benzoic Acid	10	20	ug/Kg	112	B
Benzyl Alcohol	2	4	ug/Kg	<MDL	
Benzyl Butyl Phthalate	1	2	ug/Kg	7.62	B
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	10.9	B
Caffeine	4	8	ug/Kg	<MDL	
Carbazole	2	4	ug/Kg	<MDL	
Chrysene	2	4	ug/Kg	<MDL	
Coprostanol	40	80	ug/Kg	<MDL	
Di-N-Butyl Phthalate	4	8	ug/Kg	6.8	B
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	
Dibenzofuran	2	4	ug/Kg	<MDL	
Diethyl Phthalate	4	8	ug/Kg	<MDL	
Dimethyl Phthalate	4	8	ug/Kg	<MDL	
Fluoranthene	2	4	ug/Kg	<MDL	
Fluorene	2	4	ug/Kg	<MDL	
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	
Hexachloroethane	1	2	ug/Kg	<MDL	
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	
Naphthalene	2	4	ug/Kg	<MDL	
Pentachlorophenol	10	20	ug/Kg	<MDL	
Phenanthrene	2	4	ug/Kg	<MDL	
Phenol	4	8	ug/Kg	<MDL	

Pyrene	2	4	ug/Kg	<MDL
Total HPAHS	2	4	ug/Kg	<MDL
Total LPAHs	2	4	ug/Kg	<MDL

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	375	162	43		13--110
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	375	174	46		10--116
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	375	182	48		18--95
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	375	148	39		21--99
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	375	77.2	21		10--81
2-Methylnaphthalene	2	4	ug/Kg	<MDL	375	174	47		22--99
2-Methylphenol	2	4	ug/Kg	<MDL	375	87.4	23		16--91
4-Methylphenol	4	8	ug/Kg	<MDL	375	102	27		10--125
Acenaphthene	2	4	ug/Kg	<MDL	375	237	63		29--102
Acenaphthylene	2	4	ug/Kg	<MDL	375	254	68		31--101
Anthracene	2	4	ug/Kg	<MDL	375	280	75		45--114
Benzo(a)anthracene	2	4	ug/Kg	<MDL	375	304	81		69--117
Benzo(a)pyrene	2	4	ug/Kg	<MDL	375	277	74		15--137
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	375	286	76		50--121
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	375	252	67		46--126
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	375	294	78		58--128
Benzoic Acid	10	20	ug/Kg	112	375	265	41		10--170
Benzyl Alcohol	2	4	ug/Kg	<MDL	375	119	32		10--119
Benzyl Butyl Phthalate	1	2	ug/Kg	7.62	375	344	90		15--183
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	10.9	375	334	86		10--182
Caffeine	4	8	ug/Kg	<MDL	375	279	74		45--159
Carbazole	2	4	ug/Kg	<MDL	375	296	79		44--179
Chrysene	2	4	ug/Kg	<MDL	375	281	75		69--111
Coprostanol	40	80	ug/Kg	<MDL	3750	2100	56		10--159
Di-N-Butyl Phthalate	4	8	ug/Kg	6.8	375	291	76		17--180
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	375	339	91		10--200
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	375	333	89		53--129
Dibenzofuran	2	4	ug/Kg	<MDL	375	255	68		37--97
Diethyl Phthalate	4	8	ug/Kg	<MDL	375	223	59		51--118
Dimethyl Phthalate	4	8	ug/Kg	<MDL	375	222	59		38--114
Fluoranthene	2	4	ug/Kg	<MDL	375	256	68		55--132
Fluorene	2	4	ug/Kg	<MDL	375	226	60		39--106
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	375	223	59		40--111
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	375	146	39		10--97
Hexachloroethane	1	2	ug/Kg	<MDL	375	174	46		17--92
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	375	302	80		51--132
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	375	248	66		11--148
Naphthalene	2	4	ug/Kg	<MDL	375	154	41		17--94
Pentachlorophenol	10	20	ug/Kg	<MDL	375	245	65		38--124
Phenanthrene	2	4	ug/Kg	<MDL	375	265	71		57--104
Phenol	4	8	ug/Kg	<MDL	375	110	29		10--107
Pyrene	2	4	ug/Kg	<MDL	375	272	73		48--132

Total HPAHS	2	4	ug/Kg	<MDL	3750	2860	76		25--150						
Total LPAHs	2	4	ug/Kg	<MDL	2630	1590	61		25--150						

(Matrix Spike Duplicate, Matrix Spike) L45302-1

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
1,2,4-Trichlorobenzene	0.5	1	ug/Kg	<MDL	375	231	62		10--115	375	205	55		12		35
1,2-Dichlorobenzene	1	2	ug/Kg	<MDL	375	211	56		10--105	375	190	51		9		35
1,3-Dichlorobenzene	1	2	ug/Kg	<MDL	375	206	55		10--103	375	196	52		6		35
1,4-Dichlorobenzene	1	2	ug/Kg	1.08	375	199	53		10--104	375	163	43		21		35
2,4-Dimethylphenol	5	10	ug/Kg	<MDL	375	258	69		10--150	375	227	60		14		35
2-Methylnaphthalene	10	20	ug/Kg	5.25	375	284	74		22--112	375	236	62		18		35
2-Methylphenol	10	20	ug/Kg	<MDL	375	282	75		10--142	375	254	68		10		35
4-Methylphenol	20	40	ug/Kg	<MDL	375	256	68		10--163	375	231	62		9		35
Acenaphthene	10	20	ug/Kg	7.85	375	309	80		25--130	375	289	75		6		35
Acenaphthylene	10	20	ug/Kg	5.31	375	323	85		27--132	375	309	81		5		35
Anthracene	10	20	ug/Kg	36.1	375	388	94		10--181	375	373	90		4		35
Benzo(a)anthracene	10	20	ug/Kg	145	375	481	90		32--168	375	447	81		11		35
Benzo(a)pyrene	10	20	ug/Kg	118	375	473	95		10--200	375	425	82		15		35
Benzo(b)fluoranthene	10	20	ug/Kg	169	375	484	84		10--199	375	427	69		20		35
Benzo(g,h,i)perylene	10	20	ug/Kg	77.6	375	269	51		10--173	375	261	49		4		35
Benzo(k)fluoranthene	10	20	ug/Kg	126	375	566	117		10--192	375	472	92		24		35
Benzoic Acid	50	100	ug/Kg	295	375	625	88		10--158	375	590	79		11		35
Benzyl Alcohol	10	20	ug/Kg	<MDL	375	127	34		10--138	375	153	41		19		35
Benzyl Butyl Phthalate	5	10	ug/Kg	77.9	375	442	97		41--145	375	442	97		0		35
Bis(2-Ethylhexyl)Phthalate	20	40	ug/Kg	1040	375	1700	176		10--189	375	1420	101		54	*	35
Caffeine	20	40	ug/Kg	<MDL	375	249	66		17--195	375	266	71		7		35
Carbazole	10	20	ug/Kg	74.3	375	320	66		16--200	375	376	80		19		35
Chrysene	10	20	ug/Kg	202	375	570	98		14--184	375	496	79		21		35
Coprostanol	200	400	ug/Kg	<MDL	3750	1250	33		10--183	3750	825	22		40	*	35
Di-N-Butyl Phthalate	20	40	ug/Kg	23.3	375	309	76		10--194	375	329	81		6		35
Di-N-Octyl Phthalate	20	40	ug/Kg	<MDL	375	512	137		52--151	375	485	129		6		35
Dibenzo(a,h)anthracene	10	20	ug/Kg	42.9	375	336	78		10--166	375	319	74		5		35
Dibenzofuran	10	20	ug/Kg	6.47	375	313	82		21--134	375	297	78		5		35
Diethyl Phthalate	20	40	ug/Kg	<MDL	375	255	68		31--150	375	243	65		5		35
Dimethyl Phthalate	20	40	ug/Kg	<MDL	375	252	67		13--162	375	239	64		5		35
Fluoranthene	10	20	ug/Kg	239	375	501	70		12--188	375	482	65		7		35
Fluorene	10	20	ug/Kg	23.4	375	293	72		22--147	375	277	68		6		35
Hexachlorobenzene	0.5	1	ug/Kg	<MDL	375	251	67		18--151	375	242	65		3		35
Hexachlorobutadiene	2.5	5	ug/Kg	<MDL	375	206	55		10--97	375	184	49		12		35
Hexachloroethane	5	10	ug/Kg	<MDL	375	208	55		10--89	375	191	51		8		35
Indeno(1,2,3-Cd)Pyrene	10	20	ug/Kg	85.8	375	355	72		10--177	375	339	68		6		35
N-Nitrosodiphenylamine	20	40	ug/Kg	<MDL	375	307	82		10--169	375	298	79		4		35
Naphthalene	10	20	ug/Kg	4.36	375	252	66		12--97	375	221	58		13		35
Pentachlorophenol	50	100	ug/Kg	<MDL	375	280	75		17--170	375	278	74		1		35
Phenanthrene	10	20	ug/Kg	105	375	464	96		10--200	375	390	76		23		35
Phenol	20	40	ug/Kg	37.2	375	262	60		10--127	375	234	52		14		35
Pyrene	10	20	ug/Kg	406	375	648	64		20--174	375	519	30		72	*	35
Total HPAHS	10	20	ug/Kg	1610	3750	4680	82		25--150	3750	4190	69		17		35

Total LPAHs	10	20	ug/Kg	177	2630	2310	81		25--150	2630	2090	73	10	35

(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
Anthracene	270	533	ug/Kg	1750	632	36		28--98
Benzo(a)anthracene	270	533	ug/Kg	4660	3220	69		66--124
Benzo(a)pyrene	270	533	ug/Kg	4240	2660	63		60--116
Benzo(b)fluoranthene	270	533	ug/Kg	3820	2560	67		52--190
Benzo(g,h,i)perylene	270	533	ug/Kg	2800	1430	51		15--121
Benzo(k)fluoranthene	270	533	ug/Kg	2270	2440	107		60--146
Chrysene	270	533	ug/Kg	4800	4260	89		77--136
Dibenzo(a,h)anthracene	130	267	ug/Kg	419	341	81		10--200
Fluoranthene	270	533	ug/Kg	8800	6020	68		45--126
Indeno(1,2,3-Cd)Pyrene	270	533	ug/Kg	2740	1820	66		33--121
Naphthalene	130	267	ug/Kg	1630	250	16		10--29
Phenanthrene	270	533	ug/Kg	5200	3530	68		51--106
Pyrene	270	533	ug/Kg	9570	6290	66		36--135

(Lab Duplicate) L45302-2

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	<MDL			35
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	<MDL			35
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	<MDL			35
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	0.778	1.05	30		35
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	<MDL			35
2-Methylnaphthalene	2	4	ug/Kg	20.9	25.8	21		35
2-Methylphenol	2	4	ug/Kg	<MDL	<MDL			35
4-Methylphenol	4	8	ug/Kg	<MDL	<MDL			35
Acenaphthene	2	4	ug/Kg	48.3	63.1	27		35
Acenaphthylene	2	4	ug/Kg	9.02	9.84	9		35
Anthracene	2	4	ug/Kg	75.6	92.6	20		35
Benzo(a)anthracene	2	4	ug/Kg	319	303	5		35
Benzo(a)pyrene	2	4	ug/Kg	175	170	3		35
Benzo(b)fluoranthene	2	4	ug/Kg	272	222	20		35
Benzo(g,h,i)perylene	2	4	ug/Kg	74	83.8	12		35
Benzo(k)fluoranthene	2	4	ug/Kg	190	208	9		35
Benzoic Acid	10	20	ug/Kg	587	754	25		35
Benzyl Alcohol	2	4	ug/Kg	<MDL	<MDL			35
Benzyl Butyl Phthalate	1	2	ug/Kg	58.5	68.4	16		35
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	722	893	21		35
Caffeine	4	8	ug/Kg	<MDL	<MDL			35
Carbazole	2	4	ug/Kg	16.8	19.6	16		35
Chrysene	2	4	ug/Kg	342	349	2		35
Coprostanol	40	80	ug/Kg	<MDL	<MDL			35
Di-N-Butyl Phthalate	4	8	ug/Kg	16.4	20.1	20		35
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Dibenzo(a,h)anthracene	2	4	ug/Kg	45.4	47.1	4		35
Dibenzofuran	2	4	ug/Kg	31.9	38.9	20		35

Diethyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Dimethyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Fluoranthene	2	4	ug/Kg	719	662	8		35
Fluorene	2	4	ug/Kg	59.2	66.6	12		35
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	<MDL			35
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	<MDL			35
Hexachloroethane	1	2	ug/Kg	<MDL	<MDL			35
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	95.1	96.8	2		35
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	<MDL			35
Naphthalene	2	4	ug/Kg	5.99	5.62	6		35
Pentachlorophenol	10	20	ug/Kg	<MDL	<MDL			35
Phenanthrene	2	4	ug/Kg	302	336	11		35
Phenol	4	8	ug/Kg	19.8	93	130	E	35
Pyrene	2	4	ug/Kg	974	912	7		35
Total HPAHS	2	4	ug/Kg	3130	3050	2		35
Total LPAHs	2	4	ug/Kg	499	587	16		35

Surrogate: (Lab Limits)	2,4,6-Tribromophenol 29--112	2-Fluorobiphenyl 31--101	2-Fluorophenol 10--112	d14-Terphenyl 51--130	d4-1,2-Dichlorobenzene 24--91	d4-2-Chlorophenol 11--105	d5-Nitrobenzene 28--94	d5-Phenol 10--106
L45302-1	66	69	35	129	36	33	30	40
L45302-2	64	64	29	129	34	20	30	28
L45302-3	69	64	37	107	36	29	31	20
L45302-4	65	65	42	92	40	37	37	23
L45302-5	70	69	51	92	47	39	42	23
L45302-6	61	58	19	100	29	14	34	20
L45302-7	65	66	24	125	32	36	31	63
L45302-8	62	64	48	129	46	75	30	72
L45302-9	62	65	35	110	35	23	41	19
L45303-1	75	59	44	80	41	53	60	47
L45303-2	76	48	36	77	34	42	49	32
L45303-3	72	52	39	78	38	49	54	38
L45303-4	78	52	47	80	46	53	64	36
L45303-5	75	49	41	83	40	49	55	39
L45303-6	46	33	28	56	28	33	36	28
L45303-7	70	53	43	75	40	49	57	41
L45303-8	74	54	44	79	41	51	58	41
L45304-1	65	65	58	80	58	61	70	47
L45304-2	69	65	49	104	48	57	63	46
L45304-3	73	62	50	94	50	50	65	36
WG95938-1	68	31	39	75	40	43	60	22
WG95938-2	62	38	45	77	70	47	48	32
WG95938-3	96	71	74	101	106 L	92	82	87
WG95938-4	78	58	52	79	76	68	59	67
WG95938-5	72	59	54	74	50	65	59	62
WG95938-6	65	63	44	113	42	42	44	34

WG95964 (PCB)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45302-1	423062-200-4	SALTWTRSED	3/24/2008 12:08	28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-2	423062-200-4	SALTWTRSED	3/24/2008 12:28	28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-3	423062-200-4	SALTWTRSED	3/24/2008 13:05	28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-4	423062-200-4	SALTWTRSED	3/24/2008 13:21	28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	FREP @ L45302-3
L45302-5	423062-200-4	SALTWTRSED	3/24/2008 14:03	28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-6	423062-200-4	SALTWTRSED	3/24/2008 14:30	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-7	423062-200-4	SALTWTRSED	3/25/2008 9:00	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-8	423062-200-4	SALTWTRSED	3/25/2008 9:45	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-9	423062-200-4	SALTWTRSED	3/25/2008 10:30	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-1	423062-200-4	SALTWTRSED	3/25/2008 11:15	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-2	423062-200-4	SALTWTRSED	3/25/2008 11:30	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-3	423062-200-4	SALTWTRSED	3/25/2008 11:40	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	FREP @ L45303-2
L45303-4	423062-200-4	SALTWTRSED	3/25/2008 12:00	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-5	423062-200-4	SALTWTRSED	3/25/2008 12:10	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-6	423062-200-4	SALTWTRSED	3/25/2008 12:25	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-7	423062-200-4	SALTWTRSED	3/25/2008 12:40	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-8	423062-200-4	SALTWTRSED	3/25/2008 12:54	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45304-1	423062-100-4	SALTWTRSED	3/24/2008 9:35	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45304-2	423062-100-4	SALTWTRSED	3/24/2008 9:50	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45304-3	423062-100-4	SALTWTRSED	3/24/2008 10:08	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
WG95964-1	MB	OTHR SOLID		28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	MB080328
WG95964-2	SB	OTHR SOLID		28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	WG95964-1
WG95964-3	MS	SALTWTRSED		28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	L45302-4
WG95964-4	MSD	SALTWTRSED		28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	WG95964-3 L45302-4
WG95964-6	LD	SALTWTRSED		28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	L45304-1

Workgroup: WG95964 (PCB)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	
Aroclor 1221	1.7	3.33	ug/Kg	<MDL	
Aroclor 1232	1.7	3.33	ug/Kg	<MDL	
Aroclor 1242	0.83	1.67	ug/Kg	<MDL	
Aroclor 1248	0.83	1.67	ug/Kg	<MDL	
Aroclor 1254	0.83	1.67	ug/Kg	<MDL	
Aroclor 1260	0.83	1.67	ug/Kg	<MDL	
Total Aroclors	0.83	1.67	ug/Kg	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	25	16.9	68		39--121
Aroclor 1260	0.83	1.67	ug/Kg	<MDL	25	20	80		53--140

(Matrix Spike Duplicate, Matrix Spike) L45302-4

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	25	14.6	58		32--164	25	18.8	75		26		35
Aroclor 1260	0.83	1.67	ug/Kg	19.8	25	35.9	64		28--144	25	40.9	84		27		35

(Lab Duplicate) L45304-1

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Aroclor 1016	6.6	13.2	ug/Kg	<MDL	<MDL			35
Aroclor 1221	2.9	5.73	ug/Kg	<MDL	<MDL			35
Aroclor 1232	13	25.7	ug/Kg	<MDL	<MDL			35
Aroclor 1242	11	21.8	ug/Kg	<MDL	<MDL			35
Aroclor 1248	0.83	1.67	ug/Kg	7.75	8.49	9		35
Aroclor 1254	0.83	1.67	ug/Kg	9.84	10.1	3		35
Aroclor 1260	0.83	1.67	ug/Kg	3.53	3.8	7		35
Total Aroclors	0.83	1.67	ug/Kg	21.1	22.4	6		35

Surrogate:	2,4,5,6-Tetrachloro-m-xylene	Decachlorobiphenyl
(Lab Limits)	30--134	15--155
L45302-1	73	61
L45302-2	69	60
L45302-3	72	67
L45302-4	70	67
L45302-5	69	64
L45302-6	72	66
L45302-7	73	60
L45302-8	64	59
L45302-9	73	66
L45303-1	76	68
L45303-2	64	63
L45303-3	70	69
L45303-4	63	65
L45303-5	48	47
L45303-6	64	59
L45303-7	70	64
L45303-8	69	64
L45304-1	69	57
L45304-2	69	56
L45304-3	65	59
WG95964-1	62	73
WG95964-2	73	95
WG95964-3	85	90
WG95964-4	90	87
WG95964-6	76	57

WG95963 (Chlorinated Pesticides)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45302-1	423062-200-4	SALTWTRSED	3/24/2008 12:08	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-2	423062-200-4	SALTWTRSED	3/24/2008 12:28	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-3	423062-200-4	SALTWTRSED	3/24/2008 13:05	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-4	423062-200-4	SALTWTRSED	3/24/2008 13:21	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	FREP @ L45302-3
L45302-5	423062-200-4	SALTWTRSED	3/24/2008 14:03	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-6	423062-200-4	SALTWTRSED	3/24/2008 14:30	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-7	423062-200-4	SALTWTRSED	3/25/2008 9:00	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-8	423062-200-4	SALTWTRSED	3/25/2008 9:45	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-9	423062-200-4	SALTWTRSED	3/25/2008 10:30	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-1	423062-200-4	SALTWTRSED	3/25/2008 11:15	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-2	423062-200-4	SALTWTRSED	3/25/2008 11:30	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-3	423062-200-4	SALTWTRSED	3/25/2008 11:40	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	FREP @ L45303-2
L45303-4	423062-200-4	SALTWTRSED	3/25/2008 12:00	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-5	423062-200-4	SALTWTRSED	3/25/2008 12:10	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-6	423062-200-4	SALTWTRSED	3/25/2008 12:25	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-7	423062-200-4	SALTWTRSED	3/25/2008 12:40	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-8	423062-200-4	SALTWTRSED	3/25/2008 12:54	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45304-1	423062-100-4	SALTWTRSED	3/24/2008 9:35	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45304-2	423062-100-4	SALTWTRSED	3/24/2008 9:50	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45304-3	423062-100-4	SALTWTRSED	3/24/2008 10:08	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
WG95963-1	MB	OTHR SOLID		28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	MB080328
WG95963-2	SB	OTHR SOLID		28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	WG95963-1
WG95963-3	MS	SALTWTRSED		28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	L45302-3
WG95963-4	MSD	SALTWTRSED		28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	WG95963-3 L45302-3
WG95963-5	SRM	SALTWTRSED		28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	1944
WG95963-6	LD	SALTWTRSED		28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	L45304-1

Workgroup: WG95963 (Chlorinated Pesticides)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	
Aldrin	0.67	1.33	ug/Kg	<MDL	
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	
Alpha-Chlordane	0.33	0.667	ug/Kg	<MDL	
Beta-BHC	0.33	0.667	ug/Kg	<MDL	
Delta-BHC	0.33	0.667	ug/Kg	<MDL	
Dieldrin	0.67	1.33	ug/Kg	<MDL	
Endosulfan I	0.67	1.33	ug/Kg	<MDL	
Endosulfan II	0.67	1.33	ug/Kg	<MDL	
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	
Endrin	0.67	1.33	ug/Kg	<MDL	
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	
Gamma-Chlordane	0.33	0.667	ug/Kg	<MDL	
Heptachlor	0.33	0.667	ug/Kg	<MDL	
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	
Methoxychlor	3.3	6.67	ug/Kg	<MDL	
Toxaphene	6.7	13.3	ug/Kg	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	6.67	5.91	89		78--121
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	6.67	5.87	88		75--111
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	6.67	5.9	89		57--145
Aldrin	0.67	1.33	ug/Kg	<MDL	6.67	4.42	66		28--113
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.91	74		20--99
Beta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.21	78		66--102
Delta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.22	78		63--108
Dieldrin	0.67	1.33	ug/Kg	<MDL	6.67	5.67	85		58--139
Endosulfan I	0.67	1.33	ug/Kg	<MDL	6.67	5.22	78		62--104
Endosulfan II	0.67	1.33	ug/Kg	<MDL	6.67	5.3	80		72--109
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	6.67	4.76	71		61--104
Endrin	0.67	1.33	ug/Kg	<MDL	6.67	5.24	79		60--160
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	6.67	0.7	10		10--77
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	6.67	5.01	75		27--130
Heptachlor	0.33	0.667	ug/Kg	<MDL	6.67	5.06	76		20--137
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	6.67	5.18	78		59--107
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	7.29	109		72--131

(Matrix Spike Duplicate, Matrix Spike) L45302-3

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
4,4'-DDD	0.67	1.33	ug/Kg	1.96	6.67	6.74	72		41--157	6.67	6.12	62		15		35
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	6.67	7.15	107		59--125	6.67	6.42	96		11		35
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	6.67	6.49	97		50--144	6.67	5.98	90		7		35
Aldrin	0.67	1.33	ug/Kg	<MDL	6.67	4.28	64		61--119	6.67	3.9	59	*	8		35
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.56	68		59--111	6.67	4.16	62		9		35
Beta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.72	71		60--119	6.67	4.38	66		7		35
Delta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.49	67		54--126	6.67	4.12	62		8		35
Dieldrin	0.67	1.33	ug/Kg	<MDL	6.67	5.48	82		60--139	6.67	4.97	75		9		35
Endosulfan I	0.67	1.33	ug/Kg	<MDL	6.67	4.57	68		64--113	6.67	4.16	62	*	9		35
Endosulfan II	0.67	1.33	ug/Kg	<MDL	6.67	4.78	72		36--146	6.67	4.34	65		10		35
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	6.67	5.92	89		46--113	6.67	5.11	77		14		35
Endrin	0.67	1.33	ug/Kg	<MDL	6.67	5.61	84		62--166	6.67	5.15	77		9		35
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	6.67	2.54	38		10--66	6.67	2.49	37		3		35
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	6.67	4.52	68		61--135	6.67	4.04	61		11		35
Heptachlor	0.33	0.667	ug/Kg	<MDL	6.67	4.64	70		52--157	6.67	4.27	64		9		35
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	6.67	4.56	68		61--118	6.67	4.18	63		8		35
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	6.2	93		53--129	6.67	5.6	85		9		35

(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
4,4'-DDT	5.3	10.7	ug/Kg	119	154	129		10--200
Alpha-Chlordane	2.7	5.33	ug/Kg	16.5	16.8	101		48--144

(Lab Duplicate) L45304-1

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	0.87			35
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	<MDL			35
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	<MDL			35
Aldrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Alpha-Chlordane	0.33	0.667	ug/Kg	<MDL	<MDL			35
Beta-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Delta-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Dieldrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan I	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan II	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	<MDL			35
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	<MDL			35
Gamma-Chlordane	0.33	0.667	ug/Kg	0.65	0.748	14		35
Heptachlor	0.33	0.667	ug/Kg	<MDL	<MDL			35
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	<MDL			35
Methoxychlor	3.3	6.67	ug/Kg	<MDL	<MDL			35
Toxaphene	6.7	13.3	ug/Kg	<MDL	<MDL			35

Surrogate:	2,4,5,6-Tetrachloro-m-xylene	Decachlorobiphenyl
(Lab Limits)	30--134	15--155
L45302-1	67	76
L45302-2	67	73
L45302-3	70	68
L45302-4	67	67
L45302-5	63	67
L45302-6	64	56
L45302-7	68	58
L45302-8	67	55
L45302-9	69	60
L45303-1	72	65
L45303-2	68	62
L45303-3	82	75
L45303-4	82	74
L45303-5	53	46
L45303-6	78	68
L45303-7	81	73
L45303-8	81	73
L45304-1	81	66
L45304-2	77	63
L45304-3	74	68
WG95963-1	64	78
WG95963-2	70	87
WG95963-3	66	68
WG95963-4	63	61
WG95963-5	64	85
WG95963-6	64	75

CHAIN OF CUSTODY FORMS

Login Number: P45303

T - DUD.STAC.THIN

DUDI SEDS, STAS. C, THIN

Project Number: 423062-200-4

Personnel: JB, CB, CE, JDD

Sample No. (Type)	P45303-1	P45303-2	P45303-3
Locator	DUD_3C	DUD_4C	DUD_4C
Short Loc. Desc.	DUD_3C	DUD_4C	DUD_4C
Locator Desc.	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	25 Mar 08 1115	1130	~~1130~~ 1140
End Date/Time			
Time Span			
Sample Depth	10	9	9
Comments	Take Minimum Casts	Take Minimum Casts, AREP	Take Minimum Casts, FREP
PERSONNEL			
SAMP METH	20042		
SED DEPTH	13	9	10
~~SED SAMP RANGE~~	0 - 10 cm	0 - 8 cm	0 - 9 cm
SED TYPE	~~23N30~~ 32N30	43N30	43N30
TIDE COND	E	E	E
TIDE HT	4	3.5	3.3
SAMP FUNC	**********	**********	FREP @ 645303.2
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-M	6 |SALTWTRSED|HG-CVAA-M	6 |SALTWTRSED|HG-CVAA-M
	6 |SALTWTRSED|MN-ICP	6 |SALTWTRSED|MN-ICP	6 |SALTWTRSED|MN-ICP
	6 |SALTWTRSED|PP ICP	6 |SALTWTRSED|PP ICP	6 |SALTWTRSED|PP ICP

Data WG 96144 A & R JB 4/29

COORDS WG 96136

Continue ...

	Date	Time
[signature]	3/25/08	1505
RECEIVED BY [signature]	3/25/08	15:50

Sample Number(s) 45303 1-8 (All)

DUDI SEDS, STAS. C, THIN

Project Number: 423062-200-4 Personnel: _____

Sample No. (Type)	P45303-4	P45303-5	P45303-6
Locator	DUD_5C	DUD_6C	DUD_7C
Short Loc. Desc.	DUD_5C	DUD_6C	DUD_7C
Locator Desc.	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	3/25/08 1200	1210	1225
End Date/Time			
Time Span			
Sample Depth	11	11	9
Comments	Take Minimum Casts	Take Minimum Casts	Take Minimum Casts
PERSONNEL	JB, CB, CE, JDD		
SAMP METH	20042		
SED DEPTH	8	8	11
~~SED SAMP RANGE~~	0-7 cm		0-10 cm
SED TYPE	34N30	43N30	23N30
TIDE COND	E	E	E
TIDE HT	3	2.8	2
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-M	6 SALTWTRSED HG-CVAA-M	6 SALTWTRSED HG-CVAA-M
	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

continue ...

DUDI SEDS, STAS. C, THIN

Project Number: 423062-200-4 Personnel: _____

Sample No. (Type)	P45303-7	P45303-8
Locator	DUD_14C	DUD_15C
Short Loc. Desc.	DUD_14C	DUD_15C
Locator Desc.	PERIMETER LOCATION 14C	DUDI PERIMETER LOCATION 15C
Site	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	3/25/08 1040 →	1254
End Date/Time		
Time Span		
Sample Depth	9	9
Comments	Take Minimum Casts	Take Minimum Casts
PERSONNEL	JS, CB, CE, JDP →	
SAMP METH	20042 →	
SED DEPTH	11	11
~~SED SAMP RANGE~~	0-10 cm →	
SED TYPE	32P30	42N30
TIDE COND	E	E
TIDE HT	1.8	1
Dept., Matrix, Prod		
	3 SALTWTRSED PSD	3 SALTWTRSED PSD
	3 SALTWTRSED TOC	3 SALTWTRSED TOC
	3 SALTWTRSED TOTS	3 SALTWTRSED TOTS
	6 SALTWTRSED AL-ICP	6 SALTWTRSED AL-ICP
	6 SALTWTRSED FE-ICP	6 SALTWTRSED FE-ICP
	6 SALTWTRSED HG-CVAA-M	6 SALTWTRSED HG-CVAA-M
	6 SALTWTRSED MN-ICP	6 SALTWTRSED MN-ICP
	6 SALTWTRSED PP ICP	6 SALTWTRSED PP ICP
	7 SALTWTRSED BNASMS	7 SALTWTRSED BNASMS
	7 SALTWTRSED PCBLL	7 SALTWTRSED PCBLL

continue ...

LABORATORY WORK ORDER
Chain of Custody

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

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

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
L45302 - 7	DUD_11C	25-MAR-08		1	1	1	1	4	
L45302 - 8	DUD_12C			1	1	1	1	4	
L45302 - 9	DUD_13C			1	1	1	1	4	
L45303 - 1	DUD_3C			1	1	1	1	4	
L45303 - 2	DUD_4C			1	1	1	1	4	
L45303 - 3	DUD_4C			1	1	1	1	4	FREP
L45303 - 4	DUD_5C			1	1	1	1	4	
L45303 - 5	DUD_6C			1	1	1	1	4	
L45303 - 6	DUD_7C			1	1	1	1	4	
L45303 - 7	DUP_14C			1	1	1	1	4	
L45303 - 8	DUD_15C			1	1	1	1	4	

Additional Comments:

Total Number of Containers: 44

Sampled By: JB, JDD, CE, CB

Relinquished By:
Signature: [signature]
Printed Name: Jim Devereaux
Organization: King County Environmental Laboratory
Date: 3/25/08
Time: 1505

Received By:
Signature: [signature]
Printed Name: Jason Kinnaird
Organization: King County Environmental Laboratory
Date: 3/25/08
Time: 1550

KING COUNTY ENVIRONMENTAL LABORATORY
QUALITY ASSURANCE REVIEW

For

ESTUARINE SEDIMENT ANALYTICAL DATA

DUWAMISH/DIAGONAL SEDIMENT REMEDIATION PROJECT
YEAR FOUR, ENR CAP SEDIMENT CHARACTERIZATION
APRIL 2009 SAMPLING EVENT

Prepared by:

Fritz Grothkopp
Laboratory Project Manager

Date: 3/8/10

Reviewed by:

Colin Elliott
Quality Assurance Officer

Date: march 8, 2010

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 Year Four, ENR Cap Sediment Characterization, April 2009 Sampling Event. 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 2008. 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 April 28, 2009 as part of the Duwamish/Diagonal Sediment Remediation Project Year Four, ENR Cap Sediment Characterization Sampling Event. The Sampling and Analysis Plan (SAP) in effect for this sampling event is titled: Duwamish/Diagonal Sediment Remediation Dredging and Capping Operations, Sediment Monitoring Sampling and Analysis Plan. October 28, 2003. (KCEL document # 177)

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 t*he 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 2008 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 based on the rules below.

1. Add a "B" flag to all parameters if the associated blank is ≥ the MDL and the sample result is ≥ MDL but ≤ 5 times the blank.
2. Add a "B2" flag to common organic lab contaminants (Acetone, 2-Butanone, Methylene Chloride, Bis (2-ethylhexyl) Phthalate, Butyl Benzyl Phthalate and Di-n-butyl Phthalate) if the method blank is ≥ the MDL and the sample result is > 5 and ≤ 10 times the blank.
3. Add a "B3" flag to all other parameters if the associated blank is ≥ the MDL and the sample result is > 5 and ≤ 10 times the blank.

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 may be flagged with a JL whenever recoveries are measured above the acceptance limits and may be flagged with a JG 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 may be flagged with a JL whenever recoveries are measured above the acceptance limits and may be flagged with a JG when recoveries are measured below the acceptance limits (but at or above 10%). Flags are applied to specific sample results based on matrix spike recoveries only if the unacceptable recovery is indicative of a consistent bias for all associated samples.

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. The original sample are flagged with a J or JK whenever the measured precision is unacceptable (greater than the acceptance limit).). Associated sample data will also be flagged if the unacceptable precision is expected in samples of the same matrix and composition.

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 may be flagged with a JL whenever recoveries are measured above the acceptance limits and may be flagged with a JG when recoveries are measured below the acceptance limits (but at

or above 10%). Flags are applied to reported results based on surrogate recoveries only if the unacceptable recovery is indicative of a bias for the associated parameters.

Data Qualifiers

The data qualification guidelines described above has been summarized in Table 3. This table conforms to the guidelines in the 2008 SAPA and also shows the data qualifiers used for the Washington Dept of Ecology EIM 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 eight thin-layer saltwater sediment samples in April 28, 2009. These samples were collected for the Duwamish/Diagonal Sediment Remediation Program. 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. Samples consisted of sediment aliquots collected from only one sampler deployment to minimize bottom disturbance at each of these thin-capped stations. Both the prescribed station coordinates and the actual coordinates recorded during sampling activities are presented in the following table (see below). The coordinate system, as shown, is in U.S. State Plane, Washington North 4601, NAD83.

Duwamish/Diagonal Sediment Sampling, Thin Layer Stations
Actual and Prescribed Sample Coordinates, April 2009

Lab Number	Locator	Cast	Grabs Accepted	Prescribed Northing	Actual Northing	Prescribed Easting	Actual Easting	Offset > 3 m
L47893-1	DUD_3C	1	1	208144	208143	1267146	1267148	
L47893-2	DUD_4C	1	1	208239	208239	1267116	1267109	
L47893-3	DUD_4C	2	1	208239	208239	1267116	1267116	
L47893-4	DUD_5C	1	1	208263	208269	1267025	1267027	
L47893-5	DUD_6C	1	1	208501	208495	1266950	1266945	
L47893-6	DUD_7C	1	1	208486	208484	1266902	1266900	
L47893-7	DUD_14C	1	1	208002	207999	1267193	1267194	
L47893-8	DUD_15C	1	1	207968	207968	1267057	1267052	

Sediment grab samples were collected from the King County research vessel *Liberty*, which is equipped with a differential global positioning system (DGPS). Using DGPS, field coordinates were recorded for each cast of the two grab samplers, deployed in tandem, as they contacted the sediment. All field coordinates for each cast listed in the above table are within the +/- 3 meter accuracy limits, as defined in the SAP.

Sample Description Table

Lab Sample #	Station	Sample Collection	Average Sediment Depth	Sample Usage
L47893-1	DUD_3C	Surface Grabs	13 cm	Chemistry
L47893-2	DUD_4C	Surface Grabs	13 cm	Chemistry
L47893-3	DUD_4C	Surface Grabs (field replicate)	13 cm	Chemistry
L47893-4	DUD_5C	Surface Grabs	13 cm	Chemistry
L47893-5	DUD_6C	Surface Grabs	11 cm	Chemistry
L47893-6	DUD_7C	Surface Grabs	17 cm	Chemistry
L47893-7	DUD_14C	Surface Grabs	15 cm	Chemistry
L47893-8	DUD_15C	Surface Grabs	14 cm	Chemistry

Sample Collection

Sediment was collected at each station using two stainless steel, modified, 0.1 m^2 Van Veen grab samplers deployed in tandem via hydrowire. For each acceptable deployment, average depths ranging between 11 - 17 cm of sediment were collected within each grab, allowing for sub-

sampling within the upper 10 cm of material. Samples consisted of sediment aliquots collected from only one sampler deployment to minimize bottom disturbance at each of these thin-capped stations.

Water depth at the eight subtidal cap sample stations ranged between 8 - 10 meters (not corrected for tide).

Sample Handling

Sediment aliquots were sub-sampled from a single grab from a single deployment at each station. For chemistry testing, 10 cm deep aliquots, as measured from the sediment surface, were collected using a stainless steel spoon. Sediment that had touched the sides or bottom of the grab sampler was excluded. Less than the top 10 cm of sediment was sub-sampled in those instances where it was not possible to collect material down to the minimum sediment penetration depth. All aliquots were placed in a covered stainless-steel compositing bowl, specific for that station. The sediment was thoroughly homogenized, then split out into pre-labeled containers. All sample containers were supplied by the King County Environmental Laboratory, first having been pre-cleaned according to analytical specifications.

Decontamination

Individual sets of the sub-sampling and mixing equipment were dedicated to each station, precluding the need for decontamination of said equipment. The Van Veen grab samplers were decontaminated between stations by scrubbing with a brush using ambient water 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. They 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 time is defined as that time that sampling commences at each station.

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 Laboratory.

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:

Parameter	Sample ID	SAP MDL	Reported MDL	Reason for higher MDL Value
TOC	L47893-all	1000	1100 – 1900	Elevated levels of TOC
PSD Parameters in the % Fines range	L47893-all	0.1%	0.5%	MDL was updated after the SAP was completed

For all samples where the MDL did not meet the SAP MDL, the TOC levels along with % clay and % slit values were above the detection limit, thus the project objectives were met.

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 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, 2008). 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	L47893-1,2,3,4,5,6,7	28-Apr-2009	27-May-2009	28-May-2009	6 Months at 4°C	NA
	L47893-8	28-Apr-2009	29-May-2009	01-Jun-2009		
Total Organic Carbon	L47893-1,2,3,4,5,6,7,8	28-Apr-2009	01-Jun-2009	11-Jun-2009	6 months at -18°C	6 months at -18°C
Total Solids	L47893-1,2,3,4,5,6,7,8	28-Apr-2009	01-Jun-2009	02-Jun-2009	6 months at -18°C	NA

Sample storage conditions and holding times were met for all samples in this data submission except as noted under "Additional QA Issues" at the end of this section.

Method Blanks

Method blanks were analyzed in connection with total solids/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, with the exception of the silt portion of the Particle Size Distribution. The silt portion RSD was 32% for Sample L47890-6 which was associated with Sample L47893-8. Since Sample L47893-8 did not show a similar consistency and similar PSD results to L47890-6, the Silt data was not flagged.

Additional QA Issues:

During preparation for TOC analysis, Samples L47893-6 and -7 were accidentally switched which compromised the accuracy of the results. Instead of analyzing these compromised aliquots, portions of sample from the Total Solids prep were used. Since the Total Solids were dried at a higher temperature (100C vs. 70C) the TOC results for these 2 samples may be biased. The TOC results for Samples L47893-6 and -7 have been qualified with the SH flag.

METALS CHEMISTRY

Completeness
Metal chemistry data are reported for all samples and parameters 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
Metals analysis was not subcontracted for these sets of samples.

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

Target List
The reported target list includes all metals specified in Table 1.

Detection Limits
In some instances, the detection limits (MDLs) reported for this sample set of ICP Metals, are slightly greater than the requirements defined by the SAP. The varying ICP MDLs can be attributed to a change in sample preparation from prior analyses of Duwamish Diagonal samples. For this sample set, a great amount of sample material was used, approximately 2 grams with all the samples in this set being analyzed at a 2x dilution. The detection limits (MDLs) reported for Mercury are all within the requirements defined by the SAP. All element MDLs that did not meet SAP MDL limits were due to total solids being less than 50 % in the sample.

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 during the Third Annual PSDDA Review Meeting. 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	L47893-1>8	28-Apr-09	18-May-09	19-May-09	2 Years at -18°C	6 months
Total Mercury	L47893-1>8	28-Apr-09	18-May-09	19-May-09	28 days at -18°C	NA

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

Method Blanks
All metals method blanks results were less than the MDL

Standard Reference Materials
The SRM analyzed in association with samples included in this data submission is National Research Council of Canada PACS-2. This SRM is not certified for Beryllium, Selenium, Thallium, Silver, Arsenic or Cadmium. Acceptance limits for the certified elements 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 qualified to indicate the expected bias.

All metals SRM recoveries were within the lab defined limits indicated in the SAP.

A laboratory control sample (LCS) ERA Soil was also analyzed with the total metals digestion. All recoveries were within the certified limits of the sample. The LCS is used as a secondary check for the total metals digestion procedure because the certified values for the elements are determined using the same methodology. No results from the LCS are used to qualify data.

Matrix Spikes
All matrix spike recoveries were within the 75% to 125% QC limits with the following exceptions:

The reported matrix spike recovery of 15% for Antimony in WG102346 for sample numbers L47893-1 - 8 failed to meet the 75% to 125% QC acceptance criteria. Antimony results for all samples in WG102346 have been qualified with a "JG". The reported matrix spike recovery of 132% for Aluminum in WG102346 for sample numbers L47893-1 - 8 failed to meet the 75% to 125% QC acceptance criteria. The Aluminum results for only the Background Sample L47893-1 and the Matrix Spike WG102346-5 in WG102346 have been qualified with a "JL".

Laboratory Replicate Samples
The relative percent differences (RPDs) for laboratory duplicate results for all metals were less than or equal to the QC limit of 20%.

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

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.

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[2]	Reason for higher MDL Value
1,4-Dichlorobenzene	L47893-1, 4, 6 to 8	0.26		Elevated MDL due to matrix interferences[1]
Benzo(a)anthracene	L47893-6, 8	4		Total Solids < 50%
Benzoic Acid	L47893- 1 to 8	12		Elevated MDL due to matrix interferences[1]
Coprostanol	L47893- 1 to 8	28		Elevated MDL due to matrix interferences[1]
Pentachlorophenol	L47893- 1 to 8	10		Elevated MDL due to matrix interferences[1]
4,4'-DDD	L47893- 1 to 8	0.67		Prep method was altered for this set of samples
4,4'-DDE	L47893- 1 to 8	0.67		Prep method was altered for this set of samples
4,4'-DDT	L47893- 1 to 8	0.67		Prep method was altered for this set of samples
Aldrin	L47893- 1 to 8	0.67		Prep method was altered for this set of samples
Aroclor 1016, 1232 and 1242	L47893-1 to 8	4		See "Additional QA issues" sub-section at the end of the organic section.
Dieldrin	L47893- 1 to 8	0.67		Prep method was altered for this set of samples
Endosulfan I	L47893- 1 to 8	0.67		Prep method was altered for this set of samples
Endosulfan II	L47893- 1 to 8	0.67		Prep method was altered for this set of samples
Endosulfan Sulfate	L47893- 1 to 8	0.67		Prep method was altered for this set of samples

Endrin	L47893- 1 to 8	0.67		Prep method was altered for this set of samples
Endrin Aldehyde	L47893- 1 to 8	0.67		Prep method was altered for this set of samples
Methoxychlor	L47893- 1 to 8	3.3		Prep method was altered for this set of samples
Toxaphene	L47893- 1 to 8	6.7		Prep method was altered for this set of samples

[1] MDL values for this method have been adjusted higher since the SAP was prepared.
[2] See attached SAP MDL summary table

Samples L47893-6 and -8 failed SAP MDL levels for all chlorinated pesticides except Gamma-Chlordane due to total solids being less than 50%.

For Non-ionizable Organic parameters, the MDLs for all samples meet the SMS limits, when converted to mg/Kg TOC.

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	L47893-1 to 8	28-Apr-09	1-May-09	20, 21, 28-May-09	1 year at -18°C	40 days at 4°C
Chlorinated Pesticides	L47893-1 to 8	28-Apr-09	5-May-09	30-May-09	1 year at -18°C	40 days at 4°C
PCB	L47893-1 to 8	28-Apr-09	5-May-09	9-Jun-09	1 year at -18°C	40 days at 4°C

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 L47893-1 to -8 had a result above the MDL for Bis (2-ethylhexyl) Phthalate (35.1 ug/Kg) and Butyl Benzyl Phthalate (4.06 ug/Kg). Sample results for Bis (2-ethylhexyl) Phthalate, Butyl Benzyl Phthalate for those samples where the measured levels were above the MDL have been qualified with the appropriate B flag, based on Table 3 below.

Those Bis (2-ethylhexyl) Phthalate and Butyl Benzyl Phthalate results that are flagged with either a B or B2 must be treated as estimated values.

Surrogate Recoveries

Surrogate recovery acceptance limits for sediment samples have been developed based on historical lab performance using the current analytical methods. Recoveries measured above the acceptance limits may be flagged with a JL. Recoveries measured below the acceptance limits (but at or above 10%) may be flagged with a JG.

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. 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 although the SAP lists the obsolete acceptance limits of 80 to 120%. 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. 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 and alpha Chlordane. All measured recoveries for this SRM were within acceptance limits.

2. PCBs

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. This SRM was not reported due to loss of the extract during sample preparation.

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
For the BNA compounds that were included in the matrix spike, the measured recoveries for each were within their acceptance limits.

The following compounds were not included in the matrix spike and matrix spike duplicate: 2-Methylnaphthalene, 2-Methylphenol, 4-Methylphenol, Benzoic Acid, Benzyl Alcohol, Caffeine, Coprostanol, Dibenzofuran, Total 4-Nonylphenol due to an omission of these compounds from the spiking standard.

2. PCBs and Chlorinated Pesticides
Each of the reported Pesticide compounds, except Toxaphene, alpha and gamma Chlordane, 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 the laboratory duplicate for all Organic parameters at or above the RDL were less than or equal to the acceptance limit of 35% with the exception of 2-methyl naphthalene, Acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, benzoic acid, benzyl butyl phthalate, carbazole, chrysene, di-n-butyl phthalate, dibenzo(a,h)anthracene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, phenol and pyrene. The sample used for the lab duplicate (L47893-2) was re-prepared and re-analyzed in triplicate. The percent relative standard deviations (RSD) were outside of the limit of 35% for the compounds listed in the previous sentence. Only the results for this list of compound in the sample L47893-2 were flagged with a "J" to indicate an estimated value, since it is uncertain if all samples have this same problem of non-homogeneity.

Additional QA Issues:

BNA Analysis
Four samples, L47893-1, -2, -4, -8, were analyzed outside the 12 hour instrumental sequence. A CCV standard was analyzed at the end of the full analysis sequence. All instrumental performance monitoring requirements were met, therefore, data quality should not be affected.

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 may not be possible for samples listed below 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-1221	PCB 1232	PCB 1242
L47893-1	x		x	x
L47893-2	x		x	x
L47893-3	x			x
L47893-4	x			x
L47893-5	x			x
L47893-6	x			x
L47893-7	x		x	x
L47893-8	x		x	x

TABLE 1
SEDIMENT SAMPLE INVENTORY

Sample	Locator / Description (see SAP)	PSD	Solids	TOC	Metals[1]	BNAs[2]	Pest/ PCBs	Comments
L47893-1	DUD_3C	x	x	x	x	x	x	
L47893-2	DUD_4C	x	x	x	x	x	x	
L47893-3	DUD_4C	x	x	x	x	x	x	field replicate
L47893-4	DUD_5C	x	x	x	x	x	x	
L47893-5	DUD_6C	x	x	x	x	x	x	
L47893-6	DUD_7C	x	x	x	x	x	x	
L47893-7	DUD_14C	x	x	x	x	x	x	
L47893-8	DUD_15C	x	x	x	x	x	x	

1 Metals = Hg, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, Tl, Zn, Fe, Al,
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	Possible EIM Data Qualifier	Organic QC Limits	Metal QC Limits	Conventional QC Limits	Comment
low matrix spike recovery	JG	JG	Compound specific	< 75%	< 75% *	
high matrix spike recovery	JL	JL	Compound specific	>125%	>125% *	
low standard reference material recovery	JG	JG	Compound and SRM specific	Element and SRM specific	< 80%	
high standard reference material recovery	JL	JL	Compound and SRM specific	Element and SRM specific	>120%	
high duplicate relative percent difference	JK or J	JK	>35 %	>20%	NA	for organics and metals
high triplicate relative standard deviation	JK or J	JK	NA	NA	> 20%	for conventionals
less than the reporting detection limit	<RDL**	JT	NA	NA	NA	
less than the method detection limit	<MDL	U	NA	NA	NA	
contamination detected in method blank	B	B	MB >/=MDL & Result </= 5x Blank	MB >/=MDL & Result </= 5x Blank	MB >/=MDL & Result </= 5x Blank	
contamination detected in method blank	B2	B	MB >/=MDL & Result > 5x but >/= 10x Blank	MB >/=MDL & Result > 5x but >/= 10x Blank	MB >/=MDL & Result > 5x but >/= 10x Blank	Common Lab Contaminants
contamination detected in method blank	B3	B	MB >/=MDL & Result > 5x but >/= 10x Blank	MB >/=MDL & Result > 5x but >/= 10x Blank	MB >/=MDL & Result > 5x but >/= 10x Blank	All other parameters
biased data based on low surrogate recoveries	JG	JG	Surrogate specific	NA	NA	At least 2 surrogates < limit for BNAs
biased data based on high surrogate recoveries	JL	JL	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	SH	JK or J	NA	NA	NA	container, preservation
Holding time not met	H	JK or J				hold time

- Common Lab Contaminants: Acetone, 2-Butanone, Methylene Chloride, Bis(2-ethylhexyl) Phthalate, Butyl Benzyl Phthalate and Di-n-butyl Phthalate

Comprehensive and Matrix Data Reports

King County Environmental Lab Analytical Report

	Project:	423062-200-4				Project:	423062-200-4				Project:	423062-200-4			
	Locator:	DUD_3C				Locator:	DUD_4C				Locator:	DUD_4C			
	Descrip:	CLEANUP AREA PERIM				Descrip:	CLEANUP AREA PERIM				Descrip:	CLEANUP AREA PERIM			
	Sample:	L47893-1				Sample:	L47893-2				Sample:	L47893-3			
	Matrix:	SF SALTWTRSED				Matrix:	SF SALTWTRSED				Matrix:	SF SALTWTRSED			
	ColDate:	4/28/09 10:44				ColDate:	4/28/09 10:55				ColDate:	4/28/09 11:00			
	TimeSpan:					TimeSpan:					TimeSpan:				
	TotalSolid:	55.4				TotalSolid:	76.9				TotalSolid:	76.3			
	ClientLoc:					ClientLoc:					ClientLoc:				
	SampDepth:	10				SampDepth:	10				SampDepth:	10			
	DRY Weight Basis					**DRY Weight Basis**					**DRY Weight Basis**				
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
M=CV ASTM D422															
Clay*	16		0.89	1.78	%	5.1		0.64	1.28	%	5.3		0.67	1.33	%
Fines*	56		0.89	1.78	%	14.1		0.64	1.28	%	20		0.67	1.33	%
Gravel*	9.9		0.18	1.78	%	42.3		0.13	1.28	%	30		0.13	1.33	%
Sand*	31.5		0.18	1.78	%	40.8		0.13	1.28	%	49		0.13	1.33	%
Silt*	40		0.89	1.78	%	9		0.64	1.28	%	14.6		0.67	1.33	%
p+0.00*	0.6	<RDL	0.18	1.78	%	3.5		0.13	1.28	%	3.4		0.13	1.33	%
p+1.00*	1.6		0.18	1.78	%	6.1		0.13	1.28	%	6.3		0.13	1.33	%
p+10.0(equal/more than)*	8.9		0.89	1.78	%	2.6		0.64	1.28	%	2.7		0.67	1.33	%
p+2.00*	10.8		0.18	1.78	%	18.1		0.13	1.28	%	20.6		0.13	1.33	%
p+3.00*	12		0.18	1.78	%	11		0.13	1.28	%	14.9		0.13	1.33	%
p+4.00*	6.5		0.18	1.78	%	2.1		0.13	1.28	%	3.8		0.13	1.33	%
p+5.00*	4.4		0.89	1.78	%	2.6		0.64	1.28	%	5.3		0.67	1.33	%
p+6.00*	14.2		0.89	1.78	%	1.9		0.64	1.28	%	2.7		0.67	1.33	%
p+7.00*	12.4		0.89	1.78	%	2.6		0.64	1.28	%	4		0.67	1.33	%
p+8.00*	8.9		0.89	1.78	%	1.9		0.64	1.28	%	2.7		0.67	1.33	%
p+9.00*	7.1		0.89	1.78	%	2.6		0.64	1.28	%	2.7		0.67	1.33	%
p-1.00*	2.1		0.18	1.78	%	15.2		0.13	1.28	%	10.4		0.13	1.33	%
p-2.00*	0.8	<RDL	0.18	1.78	%	11.4		0.13	1.28	%	9.6		0.13	1.33	%
p-2.00(less than)*	7.1		0.18	1.78	%	15.7		0.13	1.28	%	10		0.13	1.33	%
CV SW846 9060-PSEP96															
Total Organic Carbon	16000		1800	3770	mg/Kg	6230		1100	2160	mg/Kg	6280		1300	2580	mg/Kg
M=CV SM2540-G															
Total Solids*	55.4		0.005	0.01	%	76.9		0.005	0.01	%	76.3		0.005	0.01	%
M=ES NONE															
Field Personnel*	BK,JDD,JB,JeneeC				none	BK,JDD,JB,JeneeC				none	BK,JDD,JB,JeneeC				none
Sampcoordx1*	1267148				ft	1267109				ft	1267116				ft
Sampcoordy1*	208143				ft	208239				ft	208239				ft
Sample Depth*	10				m	10				m	10				m
Sampling Method*	20143				none	20143				none	20143				none
Sediment Sampling Depth*	13				cm	13				cm	13				cm
Sediment Sampling Range*					cm					cm					cm
Sediment Type*	20N30				none	30N30				none	30N30				none
Tidal Condition*	E				none	E				none	E				none
Tide Height*	3				ft	2.5				ft	2				ft
Sample Function*											FREP @ L47893-2				none
MT SW846 3050B*SW846 6010C															
Aluminum, Total, ICP	21300		9	45.1	mg/Kg	12100		6.1	30.6	mg/Kg	12900		6.6	32.5	mg/Kg
Antimony, Total, ICP		<MDL,JG	1.4	6.77	mg/Kg		<MDL,JG	0.92	4.59	mg/Kg		<MDL,JG	0.97	4.88	mg/Kg
Arsenic, Total, ICP	9.6	<RDL	2.3	11.3	mg/Kg	3.8	<RDL	1.6	7.66	mg/Kg	4.6	<RDL	1.6	8.13	mg/Kg
Beryllium, Total, ICP	0.531		0.09	0.451	mg/Kg	0.3	<RDL	0.061	0.306	mg/Kg	0.31	<RDL	0.066	0.325	mg/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_3C					Locator:	DUD_4C					Locator:	DUD_4C				
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM				
Sample:	L47893-1					Sample:	L47893-2					Sample:	L47893-3				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/28/09 10:44					ColDate:	4/28/09 10:55					ColDate:	4/28/09 11:00				
TimeSpan:						TimeSpan:						TimeSpan:					
TotalSolid:	55.4					TotalSolid:	76.9					TotalSolid:	76.3				
ClientLoc:						ClientLoc:						ClientLoc:					
SampDepth:	10					SampDepth:	10					SampDepth:	10				
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Cadmium, Total, ICP	0.42	<RDL	0.18	0.904	mg/Kg	0.16	<RDL	0.12	0.612	mg/Kg	0.16	<RDL	0.13	0.65	mg/Kg
Chromium, Total, ICP	27.4		0.27	1.36	mg/Kg	15		0.18	0.918	mg/Kg	19.1		0.2	0.975	mg/Kg
Copper, Total, ICP	66.1		0.36	1.81	mg/Kg	38.9		0.25	1.22	mg/Kg	38.5		0.26	1.3	mg/Kg
Iron, Total, ICP	30700		4.5	22.6	mg/Kg	18900		3.1	15.3	mg/Kg	20100		3.3	16.3	mg/Kg
Lead, Total, ICP	29.1		1.8	9.04	mg/Kg	7.49		1.2	6.12	mg/Kg	11.9		1.3	6.5	mg/Kg
Manganese, Total, ICP	330		0.18	0.904	mg/Kg	235		0.12	0.612	mg/Kg	245		0.13	0.65	mg/Kg
Nickel, Total, ICP	22		0.45	2.26	mg/Kg	14.3		0.31	1.53	mg/Kg	16.1		0.33	1.63	mg/Kg
Selenium, Total, ICP		<MDL	2.3	11.3	mg/Kg		<MDL	1.6	7.66	mg/Kg		<MDL	1.6	8.13	mg/Kg
Silver, Total, ICP		<MDL	0.36	1.81	mg/Kg		<MDL	0.25	1.22	mg/Kg		<MDL	0.26	1.3	mg/Kg
Thallium, Total, ICP		<MDL	3.6	18.1	mg/Kg		<MDL	2.5	12.2	mg/Kg		<MDL	2.6	13	mg/Kg
Zinc, Total, ICP	105		0.45	2.26	mg/Kg	40.7		0.31	1.53	mg/Kg	51.2		0.33	1.63	mg/Kg
MT SW846 7471B															
Mercury, Total, CVAA	0.174		0.0045	0.0451	mg/Kg	0.0714		0.0033	0.0321	mg/Kg	0.0695		0.0033	0.0324	mg/Kg
OR EPA 3550B/8270C (7-3-01-004)															
1,2,4-Trichlorobenzene		<MDL	0.18	0.361	ug/Kg		<MDL	0.13	0.26	ug/Kg		<MDL	0.13	0.262	ug/Kg
1,2-Dichlorobenzene		<MDL	0.36	0.722	ug/Kg		<MDL	0.26	0.52	ug/Kg		<MDL	0.26	0.524	ug/Kg
1,3-Dichlorobenzene		<MDL	0.36	0.722	ug/Kg		<MDL	0.26	0.52	ug/Kg		<MDL	0.26	0.524	ug/Kg
1,4-Dichlorobenzene		<MDL	0.36	0.722	ug/Kg		<MDL	0.26	0.52	ug/Kg		<MDL	0.26	0.524	ug/Kg
2,4-Dimethylphenol		<MDL	1.8	3.61	ug/Kg		<MDL	1.3	2.6	ug/Kg		<MDL	1.3	2.62	ug/Kg
2-Methylnaphthalene		<MDL	3.6	7.22	ug/Kg		<MDL	2.6	5.2	ug/Kg		<MDL	2.6	5.24	ug/Kg
2-Methylphenol		<MDL	3.6	7.22	ug/Kg		<MDL	2.6	5.2	ug/Kg		<MDL	2.6	5.24	ug/Kg
4-Methylphenol		<MDL	7.2	14.4	ug/Kg		<MDL	5.2	10.4	ug/Kg		<MDL	5.2	10.5	ug/Kg
Acenaphthene	3.6	<RDL	3.6	7.22	ug/Kg		<MDL	2.6	5.2	ug/Kg		<MDL	2.6	5.24	ug/Kg
Acenaphthylene	3.8	<RDL	3.6	7.22	ug/Kg		<MDL	2.6	5.2	ug/Kg		<MDL	2.6	5.24	ug/Kg
Anthracene	33.6		3.6	7.22	ug/Kg	15.1		2.6	5.2	ug/Kg	20.2		2.6	5.24	ug/Kg
Benzo(a)anthracene	87.9		3.6	7.22	ug/Kg	23.1		2.6	5.2	ug/Kg	42.7		2.6	5.24	ug/Kg
Benzo(a)pyrene	37.5		3.6	7.22	ug/Kg	12.6		2.6	5.2	ug/Kg	45.1		2.6	5.24	ug/Kg
Benzo(b)fluoranthene	49.3		3.6	7.22	ug/Kg	17		2.6	5.2	ug/Kg	58.6		2.6	5.24	ug/Kg
Benzo(g,h,i)perylene	13.7		3.6	7.22	ug/Kg	4	<RDL	2.6	5.2	ug/Kg	25.2		2.6	5.24	ug/Kg
Benzo(k)fluoranthene	59.4		3.6	7.22	ug/Kg	21.7		2.6	5.2	ug/Kg	54.3		2.6	5.24	ug/Kg
Benzoic Acid	95.1		18	36.1	ug/Kg	37.5		13	26	ug/Kg	65.7		13	26.2	ug/Kg
Benzyl Alcohol		<MDL	3.6	7.22	ug/Kg		<MDL	2.6	5.2	ug/Kg		<MDL	2.6	5.24	ug/Kg
Benzyl Butyl Phthalate	19.7	B	1.8	3.61	ug/Kg	11.6	B	1.3	2.6	ug/Kg	11	B	1.3	2.62	ug/Kg
Bis(2-Ethylhexyl)Phthalate	264	B	7.2	14.4	ug/Kg	144	B	5.2	10.4	ug/Kg	519		5.2	10.5	ug/Kg
Caffeine		<MDL	7.2	14.4	ug/Kg		<MDL	5.2	10.4	ug/Kg		<MDL	5.2	10.5	ug/Kg
Carbazole	10.3		3.6	7.22	ug/Kg	3.1	<RDL	2.6	5.2	ug/Kg	5	<RDL	2.6	5.24	ug/Kg
Chrysene	124		3.6	7.22	ug/Kg	50.6		2.6	5.2	ug/Kg	55.2		2.6	5.24	ug/Kg
Coprostanol		<MDL	72	144	ug/Kg		<MDL	52	104	ug/Kg		<MDL	52	105	ug/Kg
Di-N-Butyl Phthalate	13	<RDL	7.2	14.4	ug/Kg	7.4	<RDL	5.2	10.4	ug/Kg	6.7	<RDL	5.2	10.5	ug/Kg
Di-N-Octyl Phthalate		<MDL	7.2	14.4	ug/Kg		<MDL	5.2	10.4	ug/Kg		<MDL	5.2	10.5	ug/Kg
Dibenzo(a,h)anthracene	5.6	<RDL	3.6	7.22	ug/Kg		<MDL	2.6	5.2	ug/Kg	10.4		2.6	5.24	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4			
Locator:	DUD_3C					Locator:	DUD_4C					Locator:	DUD_4C			
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM			
Sample:	L47893-1					Sample:	L47893-2					Sample:	L47893-3			
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED			
ColDate:	4/28/09 10:44					ColDate:	4/28/09 10:55					ColDate:	4/28/09 11:00			
TimeSpan:						TimeSpan:						TimeSpan:				
TotalSolid:	55.4					TotalSolid:	76.9					TotalSolid:	76.3			
ClientLoc:						ClientLoc:						ClientLoc:				
SampDepth:	10					SampDepth:	10					SampDepth:	10			
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**				
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	
Dibenzofuran	4.9	<RDL	3.6	7.22	ug/Kg		<MDL	2.6	5.2	ug/Kg		<MDL	2.6	5.24	ug/Kg	
Diethyl Phthalate		<MDL	7.2	14.4	ug/Kg		<MDL	5.2	10.4	ug/Kg		<MDL	5.2	10.5	ug/Kg	
Dimethyl Phthalate		<MDL	7.2	14.4	ug/Kg		<MDL	5.2	10.4	ug/Kg		<MDL	5.2	10.5	ug/Kg	
Fluoranthene	175		3.6	7.22	ug/Kg	58.4		2.6	5.2	ug/Kg	68.2		2.6	5.24	ug/Kg	
Fluorene	8.7		3.6	7.22	ug/Kg	4.4	<RDL	2.6	5.2	ug/Kg	5.54		2.6	5.24	ug/Kg	
Hexachlorobenzene		<MDL	0.18	0.361	ug/Kg		<MDL	0.13	0.26	ug/Kg		<MDL	0.13	0.262	ug/Kg	
Hexachlorobutadiene		<MDL	0.9	1.81	ug/Kg		<MDL	0.65	1.3	ug/Kg		<MDL	0.66	1.31	ug/Kg	
Hexachloroethane		<MDL	1.8	3.61	ug/Kg		<MDL	1.3	2.6	ug/Kg		<MDL	1.3	2.62	ug/Kg	
Indeno(1,2,3-Cd)Pyrene	13		3.6	7.22	ug/Kg	4	<RDL	2.6	5.2	ug/Kg	24.5		2.6	5.24	ug/Kg	
N-Nitrosodiphenylamine		<MDL	7.2	14.4	ug/Kg		<MDL	5.2	10.4	ug/Kg		<MDL	5.2	10.5	ug/Kg	
Naphthalene		<MDL	3.6	7.22	ug/Kg		<MDL	2.6	5.2	ug/Kg		<MDL	2.6	5.24	ug/Kg	
Pentachlorophenol		<MDL	18	36.1	ug/Kg		<MDL	13	26	ug/Kg		<MDL	13	26.2	ug/Kg	
Phenanthrene	57.6		3.6	7.22	ug/Kg	17.3		2.6	5.2	ug/Kg	23.7		2.6	5.24	ug/Kg	
Phenol		<MDL	7.2	14.4	ug/Kg		<MDL	5.2	10.4	ug/Kg		<MDL	5.2	10.5	ug/Kg	
Pyrene	200		3.6	7.22	ug/Kg	79.7		2.6	5.2	ug/Kg	84.1		2.6	5.24	ug/Kg	
Total 4-Nonylphenol		<MDL	9	18.1	ug/Kg		<MDL	6.5	13	ug/Kg		<MDL	6.6	13.1	ug/Kg	
Total HPAHS	765		3.6	7.22	ug/Kg	273		2.6	5.2	ug/Kg	468		2.6	5.24	ug/Kg	
Total LPAHs	111		3.6	7.22	ug/Kg	39.9		2.6	5.2	ug/Kg	56.2		2.6	5.24	ug/Kg	
OR SW846 3550B*SW846 8081B																
4,4'-DDD*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg	
4,4'-DDE*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg	
4,4'-DDT*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg	
Aldrin		<MDL	1.2	2.4	ug/Kg		<MDL	0.87	1.73	ug/Kg		<MDL	0.88	1.74	ug/Kg	
Alpha-BHC		<MDL	0.6	1.2	ug/Kg		<MDL	0.43	0.867	ug/Kg		<MDL	0.43	0.874	ug/Kg	
Alpha-Chlordane		<MDL	0.6	1.2	ug/Kg		<MDL	0.43	0.867	ug/Kg		<MDL	0.43	0.874	ug/Kg	
Beta-BHC		<MDL	0.6	1.2	ug/Kg		<MDL	0.43	0.867	ug/Kg		<MDL	0.43	0.874	ug/Kg	
Delta-BHC		<MDL	0.6	1.2	ug/Kg		<MDL	0.43	0.867	ug/Kg		<MDL	0.43	0.874	ug/Kg	
Dieldrin		<MDL	1.2	2.4	ug/Kg		<MDL	0.87	1.73	ug/Kg		<MDL	0.88	1.74	ug/Kg	
Endosulfan I		<MDL	1.2	2.4	ug/Kg		<MDL	0.87	1.73	ug/Kg		<MDL	0.88	1.74	ug/Kg	
Endosulfan II		<MDL	1.2	2.4	ug/Kg		<MDL	0.87	1.73	ug/Kg		<MDL	0.88	1.74	ug/Kg	
Endosulfan Sulfate		<MDL	1.2	2.4	ug/Kg		<MDL	0.87	1.73	ug/Kg		<MDL	0.88	1.74	ug/Kg	
Endrin		<MDL	1.2	2.4	ug/Kg		<MDL	0.87	1.73	ug/Kg		<MDL	0.88	1.74	ug/Kg	
Endrin Aldehyde		<MDL	1.2	2.4	ug/Kg		<MDL	0.87	1.73	ug/Kg		<MDL	0.88	1.74	ug/Kg	
Gamma-BHC (Lindane)		<MDL	0.6	1.2	ug/Kg		<MDL	0.43	0.867	ug/Kg		<MDL	0.43	0.874	ug/Kg	
Gamma-Chlordane		<MDL	0.6	1.2	ug/Kg		<MDL	0.43	0.867	ug/Kg		<MDL	0.43	0.874	ug/Kg	
Heptachlor		<MDL	0.6	1.2	ug/Kg		<MDL	0.43	0.867	ug/Kg		<MDL	0.43	0.874	ug/Kg	
Heptachlor Epoxide		<MDL	0.6	1.2	ug/Kg		<MDL	0.43	0.867	ug/Kg		<MDL	0.43	0.874	ug/Kg	
Methoxychlor		<MDL	6	12	ug/Kg		<MDL	4.3	8.67	ug/Kg		<MDL	4.3	8.74	ug/Kg	
Toxaphene		<MDL	12	24	ug/Kg		<MDL	8.7	17.3	ug/Kg		<MDL	8.8	17.4	ug/Kg	
OR SW846 3550B*SW846 8082A																
Aroclor 1016		<MDL,TA	16	32.1	ug/Kg		<MDL,TA	5.2	10.4	ug/Kg		<MDL,TA	7.7	15.5	ug/Kg	

King County Environmental Lab Analytical Report

Project:	423062-200-4	423062-200-4	423062-200-4
Locator:	DUD_3C	DUD_4C	DUD_4C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sample:	L47893-1	L47893-2	L47893-3
Matrix:	SF SALTWTRSED	SF SALTWTRSED	SF SALTWTRSED
ColDate:	4/28/09 10:44	4/28/09 10:55	4/28/09 11:00
TimeSpan:			
TotalSolid:	55.4	76.9	76.3
ClientLoc:			
SampDepth:	10	10	10
DRY Weight Basis		**DRY Weight Basis**	**DRY Weight Basis**

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
Aroclor 1221		<MDL	3.1	6.01	ug/Kg		<MDL	2.2	4.33	ug/Kg		<MDL	2.2	4.36	ug/Kg
Aroclor 1232		<MDL,TA	34	68.2	ug/Kg		<MDL,TA	11	22.2	ug/Kg		<MDL	2.2	4.36	ug/Kg
Aroclor 1242		<MDL,TA	51	99.8	ug/Kg		<MDL,TA	18	37.6	ug/Kg		<MDL,TA	28	56	ug/Kg
Aroclor 1248	34.7		1.5	3.01	ug/Kg	11.5		1.1	2.17	ug/Kg	18.6		1.1	2.19	ug/Kg
Aroclor 1254	45.5		1.5	3.01	ug/Kg	19.1		1.1	2.17	ug/Kg	23.3		1.1	2.19	ug/Kg
Aroclor 1260	29.2		1.5	3.01	ug/Kg	11.2		1.1	2.17	ug/Kg	14.7		1.1	2.19	ug/Kg
Total Aroclors	109		1.5	3.01	ug/Kg	41.7		1.1	2.17	ug/Kg	56.6		1.1	2.19	ug/Kg

* Not converted to dry weight basis

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_5C					Locator:	DUD_6C					Locator:	DUD_7C				
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM				
Sample:	L47893-4					Sample:	L47893-5					Sample:	L47893-6				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/28/09 11:53					ColDate:	4/28/09 12:02					ColDate:	4/28/09 12:12				
TimeSpan:						TimeSpan:						TimeSpan:					
TotalSolid:	57					TotalSolid:	77.4					TotalSolid:	47.4				
ClientLoc:						ClientLoc:						ClientLoc:					
SampDepth:	10					SampDepth:	10					SampDepth:	10				
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
M=CV ASTM D422															
Clay*	12.4		0.83	1.66	%	2.6		0.64	1.28	%	26.9		1	2.07	%
Fines*	48		0.83	1.66	%	14		0.64	1.28	%	83.7		1	2.07	%
Gravel*	5.3		0.17	1.66	%	51.9		0.13	1.28	%		<MDL	0.21	2.07	%
Sand*	39.9		0.17	1.66	%	32.7		0.13	1.28	%	8.8		0.21	2.07	%
Silt*	35.6		0.83	1.66	%	11.5		0.64	1.28	%	56.8		1	2.07	%
p+0.00*	0.7	<RDL	0.17	1.66	%	2.6		0.13	1.28	%		<MDL	0.21	2.07	%
p+1.00*	3.2		0.17	1.66	%	4.8		0.13	1.28	%		<MDL	0.21	2.07	%
p+10.0(equal/more than)*	6.6		0.83	1.66	%	1.9		0.64	1.28	%	14.5		1	2.07	%
p+2.00*	19.4		0.17	1.66	%	15.4		0.13	1.28	%	0.5	<RDL	0.21	2.07	%
p+3.00*	10.6		0.17	1.66	%	9.9		0.13	1.28	%	0.8	<RDL	0.21	2.07	%
p+4.00*	5.9		0.17	1.66	%		<MDL	0.13	1.28	%	7.5		0.21	2.07	%
p+5.00*	6.6		0.83	1.66	%	3.8		0.64	1.28	%	6.2		1	2.07	%
p+6.00*	11.6		0.83	1.66	%	1.3		0.64	1.28	%	23.8		1	2.07	%
p+7.00*	8.3		0.83	1.66	%	2.6		0.64	1.28	%	14.5		1	2.07	%
p+8.00*	9.1		0.83	1.66	%	3.8		0.64	1.28	%	12.4		1	2.07	%
p+9.00*	5.8		0.83	1.66	%	0.6	<RDL	0.64	1.28	%	12.4		1	2.07	%
p-1.00*	2		0.17	1.66	%	12.5		0.13	1.28	%		<MDL	0.21	2.07	%
p-2.00*	2.2		0.17	1.66	%	15		0.13	1.28	%		<MDL	0.21	2.07	%
p-2.00(less than)*	1.2		0.17	1.66	%	24.4		0.13	1.28	%		<MDL	0.21	2.07	%
CV SW846 9060-PSEP96															
Total Organic Carbon	12400		1400	2860	mg/Kg	5660		1100	2270	mg/Kg	16900	SH	1900	3820	mg/Kg
M=CV SM2540-G															
Total Solids*	57		0.005	0.01	%	77.4		0.005	0.01	%	47.4		0.005	0.01	%
M=ES NONE															
Field Personnel*	BK,JDD,JB,JeneeC				none	BK,JDD,JB,JeneeC				none	BK,JDD,JB,JeneeC				none
Sampcoordx1*	1267027				ft	1266945				ft	1266900				ft
Sampcoordy1*	208269				ft	208495				ft	208484				ft
Sample Depth*	10				m	10				m	10				m
Sampling Method*	20143				none	20143				none	20143				none
Sediment Sampling Depth*	13				cm	11				cm	17				cm
Sediment Sampling Range*					cm					cm					cm
Sediment Type*	20N20				none	34N30				none	20N20				none
Tidal Condition*	E				none	E				none	E				none
Tide Height*	1				ft	0				ft	-0.5				ft
Sample Function*															
MT SW846 3050B*SW846 6010C															
Aluminum, Total, ICP	20200		9.1	45.6	mg/Kg	12600		5	25.1	mg/Kg	28500		11	54.2	mg/Kg
Antimony, Total, ICP		<MDL,JG	1.4	6.84	mg/Kg		<MDL,JG	0.75	3.76	mg/Kg		<MDL,JG	1.6	8.12	mg/Kg
Arsenic, Total, ICP	7.2	<RDL	2.3	11.4	mg/Kg	4.4	<RDL	1.3	6.25	mg/Kg	11	<RDL	2.7	13.5	mg/Kg
Beryllium, Total, ICP	0.521		0.091	0.456	mg/Kg	0.319		0.05	0.251	mg/Kg	0.751		0.11	0.542	mg/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4			
Locator:	DUD_5C					Locator:	DUD_6C					Locator:	DUD_7C			
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM			
Sample:	L47893-4					Sample:	L47893-5					Sample:	L47893-6			
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED			
ColDate:	4/28/09 11:53					ColDate:	4/28/09 12:02					ColDate:	4/28/09 12:12			
TimeSpan:						TimeSpan:						TimeSpan:				
TotalSolid:	57					TotalSolid:	77.4					TotalSolid:	47.4			
ClientLoc:						ClientLoc:						ClientLoc:				
SampDepth:	10					SampDepth:	10					SampDepth:	10			
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**				
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Cadmium, Total, ICP	0.25	<RDL	0.18	0.911	mg/Kg	0.16	<RDL	0.1	0.501	mg/Kg	0.32	<RDL	0.21	1.08	mg/Kg
Chromium, Total, ICP	23.5		0.28	1.37	mg/Kg	16.4		0.16	0.751	mg/Kg	27.4		0.32	1.63	mg/Kg
Copper, Total, ICP	39.1		0.37	1.82	mg/Kg	29.2		0.21	1	mg/Kg	48.5		0.44	2.17	mg/Kg
Iron, Total, ICP	27400		4.6	22.8	mg/Kg	19000		2.5	12.5	mg/Kg	35400		5.5	27	mg/Kg
Lead, Total, ICP	10.7		1.8	9.11	mg/Kg	7.89		1	5.01	mg/Kg	14.1		2.1	10.8	mg/Kg
Manganese, Total, ICP	309		0.18	0.911	mg/Kg	239		0.1	0.501	mg/Kg	426		0.21	1.08	mg/Kg
Nickel, Total, ICP	21.6		0.46	2.28	mg/Kg	14.7		0.25	1.25	mg/Kg	26.4		0.55	2.7	mg/Kg
Selenium, Total, ICP		<MDL	2.3	11.4	mg/Kg		<MDL	1.3	6.25	mg/Kg		<MDL	2.7	13.5	mg/Kg
Silver, Total, ICP		<MDL	0.37	1.82	mg/Kg		<MDL	0.21	1	mg/Kg		<MDL	0.44	2.17	mg/Kg
Thallium, Total, ICP		<MDL	3.7	18.2	mg/Kg		<MDL	2.1	10	mg/Kg		<MDL	4.4	21.7	mg/Kg
Zinc, Total, ICP	63		0.46	2.28	mg/Kg	42.4		0.25	1.25	mg/Kg	80.2		0.55	2.7	mg/Kg
MT SW846 7471B															
Mercury, Total, CVAA	0.102		0.0044	0.044	mg/Kg	0.0656		0.0031	0.0315	mg/Kg	0.128		0.0051	0.0515	mg/Kg
OR EPA 3550B/8270C (7-3-01-004)															
1,2,4-Trichlorobenzene		<MDL	0.18	0.351	ug/Kg		<MDL	0.13	0.258	ug/Kg		<MDL	0.21	0.422	ug/Kg
1,2-Dichlorobenzene		<MDL	0.35	0.702	ug/Kg		<MDL	0.26	0.517	ug/Kg		<MDL	0.42	0.844	ug/Kg
1,3-Dichlorobenzene		<MDL	0.35	0.702	ug/Kg		<MDL	0.26	0.517	ug/Kg		<MDL	0.42	0.844	ug/Kg
1,4-Dichlorobenzene		<MDL	0.35	0.702	ug/Kg		<MDL	0.26	0.517	ug/Kg		<MDL	0.42	0.844	ug/Kg
2,4-Dimethylphenol		<MDL	1.8	3.51	ug/Kg		<MDL	1.3	2.58	ug/Kg		<MDL	2.1	4.22	ug/Kg
2-Methylnaphthalene		<MDL	3.5	7.02	ug/Kg		<MDL	2.6	5.17	ug/Kg		<MDL	4.2	8.44	ug/Kg
2-Methylphenol		<MDL	3.5	7.02	ug/Kg		<MDL	2.6	5.17	ug/Kg		<MDL	4.2	8.44	ug/Kg
4-Methylphenol		<MDL	7	14	ug/Kg		<MDL	5.2	10.3	ug/Kg		<MDL	8.4	16.9	ug/Kg
Acenaphthene		<MDL	3.5	7.02	ug/Kg		<MDL	2.6	5.17	ug/Kg		<MDL	4.2	8.44	ug/Kg
Acenaphthylene		<MDL	3.5	7.02	ug/Kg		<MDL	2.6	5.17	ug/Kg		<MDL	4.2	8.44	ug/Kg
Anthracene	11.6		3.5	7.02	ug/Kg	9.47		2.6	5.17	ug/Kg	10.1		4.2	8.44	ug/Kg
Benzo(a)anthracene	27.7		3.5	7.02	ug/Kg	29.1		2.6	5.17	ug/Kg	23.4		4.2	8.44	ug/Kg
Benzo(a)pyrene	29.5		3.5	7.02	ug/Kg	25.7		2.6	5.17	ug/Kg	24.7		4.2	8.44	ug/Kg
Benzo(b)fluoranthene	39.5		3.5	7.02	ug/Kg	35.9		2.6	5.17	ug/Kg	39		4.2	8.44	ug/Kg
Benzo(g,h,i)perylene	15.5		3.5	7.02	ug/Kg	13.4		2.6	5.17	ug/Kg	14.7		4.2	8.44	ug/Kg
Benzo(k)fluoranthene	35.8		3.5	7.02	ug/Kg	32.7		2.6	5.17	ug/Kg	27		4.2	8.44	ug/Kg
Benzoic Acid	84.6		18	35.1	ug/Kg	55.7		13	25.8	ug/Kg	121		21	42.2	ug/Kg
Benzyl Alcohol		<MDL	3.5	7.02	ug/Kg		<MDL	2.6	5.17	ug/Kg		<MDL	4.2	8.44	ug/Kg
Benzyl Butyl Phthalate	11.8	B	1.8	3.51	ug/Kg	8.29	B	1.3	2.58	ug/Kg	11.7	B	2.1	4.22	ug/Kg
Bis(2-Ethylhexyl)Phthalate	381	B2	7	14	ug/Kg	151	B	5.2	10.3	ug/Kg	219	B	8.4	16.9	ug/Kg
Caffeine		<MDL	7	14	ug/Kg		<MDL	5.2	10.3	ug/Kg		<MDL	8.4	16.9	ug/Kg
Carbazole	4.2	<RDL	3.5	7.02	ug/Kg	3.7	<RDL	2.6	5.17	ug/Kg		<MDL	4.2	8.44	ug/Kg
Chrysene	37.9		3.5	7.02	ug/Kg	36.4		2.6	5.17	ug/Kg	32.3		4.2	8.44	ug/Kg
Coprostanol		<MDL	70	140	ug/Kg		<MDL	52	103	ug/Kg		<MDL	84	169	ug/Kg
Di-N-Butyl Phthalate	8.4	<RDL	7	14	ug/Kg	5.4	<RDL	5.2	10.3	ug/Kg	14	<RDL	8.4	16.9	ug/Kg
Di-N-Octyl Phthalate		<MDL	7	14	ug/Kg		<MDL	5.2	10.3	ug/Kg		<MDL	8.4	16.9	ug/Kg
Dibenzo(a,h)anthracene	7.67		3.5	7.02	ug/Kg	5.2	<RDL	2.6	5.17	ug/Kg	7.4	<RDL	4.2	8.44	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4			
Locator:	DUD_5C					Locator:	DUD_6C					Locator:	DUD_7C			
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM			
Sample:	L47893-4					Sample:	L47893-5					Sample:	L47893-6			
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED			
ColDate:	4/28/09 11:53					ColDate:	4/28/09 12:02					ColDate:	4/28/09 12:12			
TimeSpan:						TimeSpan:						TimeSpan:				
TotalSolid:	57					TotalSolid:	77.4					TotalSolid:	47.4			
ClientLoc:						ClientLoc:						ClientLoc:				
SampDepth:	10					SampDepth:	10					SampDepth:	10			
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**				
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Dibenzofuran		<MDL	3.5	7.02	ug/Kg		<MDL	2.6	5.17	ug/Kg		<MDL	4.2	8.44	ug/Kg
Diethyl Phthalate		<MDL	7	14	ug/Kg		<MDL	5.2	10.3	ug/Kg		<MDL	8.4	16.9	ug/Kg
Dimethyl Phthalate		<MDL	7	14	ug/Kg		<MDL	5.2	10.3	ug/Kg		<MDL	8.4	16.9	ug/Kg
Fluoranthene	66.8		3.5	7.02	ug/Kg	88.2		2.6	5.17	ug/Kg	57.4		4.2	8.44	ug/Kg
Fluorene	6.3	<RDL	3.5	7.02	ug/Kg	4.5	<RDL	2.6	5.17	ug/Kg	6.3	<RDL	4.2	8.44	ug/Kg
Hexachlorobenzene		<MDL	0.18	0.351	ug/Kg		<MDL	0.13	0.258	ug/Kg		<MDL	0.21	0.422	ug/Kg
Hexachlorobutadiene		<MDL	0.88	1.75	ug/Kg		<MDL	0.65	1.29	ug/Kg		<MDL	1.1	2.11	ug/Kg
Hexachloroethane		<MDL	1.8	3.51	ug/Kg		<MDL	1.3	2.58	ug/Kg		<MDL	2.1	4.22	ug/Kg
Indeno(1,2,3-Cd)Pyrene	16.1		3.5	7.02	ug/Kg	12.3		2.6	5.17	ug/Kg	15		4.2	8.44	ug/Kg
N-Nitrosodiphenylamine		<MDL	7	14	ug/Kg		<MDL	5.2	10.3	ug/Kg		<MDL	8.4	16.9	ug/Kg
Naphthalene		<MDL	3.5	7.02	ug/Kg		<MDL	2.6	5.17	ug/Kg		<MDL	4.2	8.44	ug/Kg
Pentachlorophenol		<MDL	18	35.1	ug/Kg		<MDL	13	25.8	ug/Kg		<MDL	21	42.2	ug/Kg
Phenanthrene	30		3.5	7.02	ug/Kg	17.3		2.6	5.17	ug/Kg	26.6		4.2	8.44	ug/Kg
Phenol		<MDL	7	14	ug/Kg		<MDL	5.2	10.3	ug/Kg		<MDL	8.4	16.9	ug/Kg
Pyrene	63.3		3.5	7.02	ug/Kg	74.4		2.6	5.17	ug/Kg	63.1		4.2	8.44	ug/Kg
Total 4-Nonylphenol		<MDL	8.8	17.5	ug/Kg		<MDL	6.5	12.9	ug/Kg		<MDL	11	21.1	ug/Kg
Total HPAHS	340		3.5	7.02	ug/Kg	353		2.6	5.17	ug/Kg	304		4.2	8.44	ug/Kg
Total LPAHs	55.6		3.5	7.02	ug/Kg	36		2.6	5.17	ug/Kg	53		4.2	8.44	ug/Kg
OR SW846 3550B*SW846 8081B															
4,4'-DDD*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDE*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDT*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
Aldrin		<MDL	1.2	2.33	ug/Kg		<MDL	0.87	1.72	ug/Kg		<MDL	1.4	2.81	ug/Kg
Alpha-BHC		<MDL	0.58	1.17	ug/Kg		<MDL	0.43	0.862	ug/Kg		<MDL	0.7	1.41	ug/Kg
Alpha-Chlordane		<MDL	0.58	1.17	ug/Kg		<MDL	0.43	0.862	ug/Kg		<MDL	0.7	1.41	ug/Kg
Beta-BHC		<MDL	0.58	1.17	ug/Kg		<MDL	0.43	0.862	ug/Kg		<MDL	0.7	1.41	ug/Kg
Delta-BHC		<MDL	0.58	1.17	ug/Kg		<MDL	0.43	0.862	ug/Kg		<MDL	0.7	1.41	ug/Kg
Dieldrin		<MDL	1.2	2.33	ug/Kg		<MDL	0.87	1.72	ug/Kg		<MDL	1.4	2.81	ug/Kg
Endosulfan I		<MDL	1.2	2.33	ug/Kg		<MDL	0.87	1.72	ug/Kg		<MDL	1.4	2.81	ug/Kg
Endosulfan II		<MDL	1.2	2.33	ug/Kg		<MDL	0.87	1.72	ug/Kg		<MDL	1.4	2.81	ug/Kg
Endosulfan Sulfate		<MDL	1.2	2.33	ug/Kg		<MDL	0.87	1.72	ug/Kg		<MDL	1.4	2.81	ug/Kg
Endrin		<MDL	1.2	2.33	ug/Kg		<MDL	0.87	1.72	ug/Kg		<MDL	1.4	2.81	ug/Kg
Endrin Aldehyde		<MDL	1.2	2.33	ug/Kg		<MDL	0.87	1.72	ug/Kg		<MDL	1.4	2.81	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.58	1.17	ug/Kg		<MDL	0.43	0.862	ug/Kg		<MDL	0.7	1.41	ug/Kg
Gamma-Chlordane		<MDL	0.58	1.17	ug/Kg		<MDL	0.43	0.862	ug/Kg		<MDL	0.7	1.41	ug/Kg
Heptachlor		<MDL	0.58	1.17	ug/Kg		<MDL	0.43	0.862	ug/Kg		<MDL	0.7	1.41	ug/Kg
Heptachlor Epoxide		<MDL	0.58	1.17	ug/Kg		<MDL	0.43	0.862	ug/Kg		<MDL	0.7	1.41	ug/Kg
Methoxychlor		<MDL	5.8	11.7	ug/Kg		<MDL	4.3	8.62	ug/Kg		<MDL	7	14.1	ug/Kg
Toxaphene		<MDL	12	23.3	ug/Kg		<MDL	8.7	17.2	ug/Kg		<MDL	14	28.1	ug/Kg
OR SW846 3550B*SW846 8082A															
Aroclor 1016		<MDL,TA	5.8	11.5	ug/Kg		<MDL,TA	3.7	7.58	ug/Kg		<MDL,TA	10	20.4	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4							
Locator:	DUD_5C					Locator:	DUD_6C					Locator:	DUD_7C							
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM							
Sample:	L47893-4					Sample:	L47893-5					Sample:	L47893-6							
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED							
ColDate:	4/28/09 11:53					ColDate:	4/28/09 12:02					ColDate:	4/28/09 12:12							
TimeSpan:						TimeSpan:						TimeSpan:								
TotalSolid:	57					TotalSolid:	77.4					TotalSolid:	47.4							
ClientLoc:						ClientLoc:						ClientLoc:								
SampDepth:	10					SampDepth:	10					SampDepth:	10							
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**								
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**		**Value**	**Qual**	**MDL**	**RDL**	**Units**				
Aroclor 1221		<MDL	3	5.84	ug/Kg		<MDL	2.2	4.3	ug/Kg			<MDL	3.6	7.03	ug/Kg				
Aroclor 1232		<MDL	3	5.84	ug/Kg		<MDL	2.2	4.3	ug/Kg			<MDL	3.6	7.03	ug/Kg				
Aroclor 1242		<MDL,TA	15	28.9	ug/Kg		<MDL,TA	14	29.1	ug/Kg			<MDL,TA	25	49.2	ug/Kg				
Aroclor 1248	10.8		1.5	2.93	ug/Kg	10.8		1.1	2.16	ug/Kg		16.8		1.8	3.52	ug/Kg				
Aroclor 1254	13.1		1.5	2.93	ug/Kg	11.8		1.1	2.16	ug/Kg		20.4		1.8	3.52	ug/Kg				
Aroclor 1260	10.4		1.5	2.93	ug/Kg	6.71		1.1	2.16	ug/Kg		9.75		1.8	3.52	ug/Kg				
Total Aroclors	34.4		1.5	2.93	ug/Kg	29.3		1.1	2.16	ug/Kg		46.8		1.8	3.52	ug/Kg				
* Not converted to dry weight basis																				

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_14C					Locator:	DUD_15C				
Descrip:	PERIMETER LOCATION					Descrip:	DUDI PERIMETER LOC				
Sample:	L47893-7					Sample:	L47893-8				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/28/09 12:22					ColDate:	4/28/09 12:36				
TimeSpan:						TimeSpan:					
TotalSolid:	50.8					TotalSolid:	46.6				
ClientLoc:						ClientLoc:					
SampDepth:	8					SampDepth:	8				
DRY Weight Basis						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
M=CV ASTM D422										
Clay*	19.3		0.96	1.93	%	34.1		1.1	2.13	%
Fines*	71.4		0.96	1.93	%	82		1.1	2.13	%
Gravel*	0.6	<RDL	0.19	1.93	%	4.5		0.21	2.13	%
Sand*	25.1		0.19	1.93	%	13.1		0.21	2.13	%
Silt*	52.1		0.96	1.93	%	47.9		1.1	2.13	%
p+0.00*	0.19	<RDL	0.19	1.93	%		<MDL	0.21	2.13	%
p+1.00*	0.8	<RDL	0.19	1.93	%	0.4	<RDL	0.21	2.13	%
p+10.0(equal/more than)*	11.6		0.96	1.93	%	24.5		1.1	2.13	%
p+2.00*	6.5		0.19	1.93	%	1.8		0.21	2.13	%
p+3.00*	9.8		0.19	1.93	%	2		0.21	2.13	%
p+4.00*	7.9		0.19	1.93	%	8.7		0.21	2.13	%
p+5.00*	7.7		0.96	1.93	%	9.6		1.1	2.13	%
p+6.00*	18.3		0.96	1.93	%	14.9		1.1	2.13	%
p+7.00*	14.5		0.96	1.93	%	13.8		1.1	2.13	%
p+8.00*	11.6		0.96	1.93	%	9.6		1.1	2.13	%
p+9.00*	7.7		0.96	1.93	%	9.6		1.1	2.13	%
p-1.00*		<MDL	0.19	1.93	%	0.6	<RDL	0.21	2.13	%
p-2.00*	0.2	<RDL	0.19	1.93	%	1.7		0.21	2.13	%
p-2.00(less than)*	0.3	<RDL	0.19	1.93	%	2.2		0.21	2.13	%
CV SW846 9060-PSEP96										
Total Organic Carbon	17400	SH	1900	3740	mg/Kg	16200		1900	3730	mg/Kg
M=CV SM2540-G										
Total Solids*	50.8		0.005	0.01	%	46.6		0.005	0.01	%
M=ES NONE										
Field Personnel*	BK,JDD,JB,JeneeC				none	BK,JDD,JB,JeneeC				none
Sampcoordx1*	1267194				ft	1267052				ft
Sampcoordy1*	207999				ft	207968				ft
Sample Depth*	8				m	8				m
Sampling Method*	20143				none	20143				none
Sediment Sampling Depth*	15				cm	14				cm
Sediment Sampling Range*					cm					cm
Sediment Type*	21N30				none	21N30				none
Tidal Condition*	E				none	E				none
Tide Height*	-1				ft	-1.2				ft
Sample Function*										
MT SW846 3050B*SW846 6010C										
Aluminum, Total, ICP	23600		9.8	48.8	mg/Kg	27900		11	53.6	mg/Kg
Antimony, Total, ICP		<MDL,JG	1.5	7.32	mg/Kg		<MDL,JG	1.6	8.05	mg/Kg
Arsenic, Total, ICP	11	<RDL	2.4	12.2	mg/Kg	10	<RDL	2.8	13.4	mg/Kg
Beryllium, Total, ICP	0.618		0.098	0.488	mg/Kg	0.723		0.11	0.536	mg/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_14C					Locator:	DUD_15C				
Descrip:	PERIMETER LOCATION					Descrip:	DUDI PERIMETER LOC				
Sample:	L47893-7					Sample:	L47893-8				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/28/09 12:22					ColDate:	4/28/09 12:36				
TimeSpan:						TimeSpan:					
TotalSolid:	50.8					TotalSolid:	46.6				
ClientLoc:						ClientLoc:					
SampDepth:	8					SampDepth:	8				
DRY Weight Basis						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Cadmium, Total, ICP	0.39	<RDL	0.19	0.974	mg/Kg	0.3	<RDL	0.21	1.07	mg/Kg
Chromium, Total, ICP	28.1		0.3	1.46	mg/Kg	27.9		0.32	1.61	mg/Kg
Copper, Total, ICP	61.8		0.39	1.95	mg/Kg	48.9		0.43	2.15	mg/Kg
Iron, Total, ICP	32100		4.9	24.4	mg/Kg	34800		5.4	26.8	mg/Kg
Lead, Total, ICP	27.2		1.9	9.74	mg/Kg	13.9		2.1	10.7	mg/Kg
Manganese, Total, ICP	350		0.19	0.974	mg/Kg	393		0.21	1.07	mg/Kg
Nickel, Total, ICP	24		0.49	2.44	mg/Kg	26		0.54	2.68	mg/Kg
Selenium, Total, ICP		<MDL	2.4	12.2	mg/Kg		<MDL	2.8	13.4	mg/Kg
Silver, Total, ICP		<MDL	0.39	1.95	mg/Kg		<MDL	0.43	2.15	mg/Kg
Thallium, Total, ICP		<MDL	3.9	19.5	mg/Kg		<MDL	4.3	21.5	mg/Kg
Zinc, Total, ICP	105		0.49	2.44	mg/Kg	78.5		0.54	2.68	mg/Kg
MT SW846 7471B										
Mercury, Total, CVAA	0.197		0.0049	0.0496	mg/Kg	0.131		0.0054	0.0534	mg/Kg
OR EPA 3550B/8270C (7-3-01-004)										
1,2,4-Trichlorobenzene		<MDL	0.2	0.394	ug/Kg		<MDL	0.21	0.429	ug/Kg
1,2-Dichlorobenzene		<MDL	0.39	0.787	ug/Kg		<MDL	0.43	0.858	ug/Kg
1,3-Dichlorobenzene		<MDL	0.39	0.787	ug/Kg		<MDL	0.43	0.858	ug/Kg
1,4-Dichlorobenzene		<MDL	0.39	0.787	ug/Kg		<MDL	0.43	0.858	ug/Kg
2,4-Dimethylphenol		<MDL	2	3.94	ug/Kg		<MDL	2.1	4.29	ug/Kg
2-Methylnaphthalene		<MDL	3.9	7.87	ug/Kg		<MDL	4.3	8.58	ug/Kg
2-Methylphenol		<MDL	3.9	7.87	ug/Kg		<MDL	4.3	8.58	ug/Kg
4-Methylphenol		<MDL	7.9	15.7	ug/Kg		<MDL	8.6	17.2	ug/Kg
Acenaphthene	5.9	<RDL	3.9	7.87	ug/Kg		<MDL	4.3	8.58	ug/Kg
Acenaphthylene	4.3	<RDL	3.9	7.87	ug/Kg		<MDL	4.3	8.58	ug/Kg
Anthracene	44.9		3.9	7.87	ug/Kg	11.9		4.3	8.58	ug/Kg
Benzo(a)anthracene	113		3.9	7.87	ug/Kg	27.3		4.3	8.58	ug/Kg
Benzo(a)pyrene	104		3.9	7.87	ug/Kg	28.8		4.3	8.58	ug/Kg
Benzo(b)fluoranthene	119		3.9	7.87	ug/Kg	29		4.3	8.58	ug/Kg
Benzo(g,h,i)perylene	50.2		3.9	7.87	ug/Kg	14.6		4.3	8.58	ug/Kg
Benzo(k)fluoranthene	123		3.9	7.87	ug/Kg	46.8		4.3	8.58	ug/Kg
Benzoic Acid	90.6		20	39.4	ug/Kg	79.8		21	42.9	ug/Kg
Benzyl Alcohol		<MDL	3.9	7.87	ug/Kg		<MDL	4.3	8.58	ug/Kg
Benzyl Butyl Phthalate	24.6	B	2	3.94	ug/Kg	13.1	B	2.1	4.29	ug/Kg
Bis(2-Ethylhexyl)Phthalate	274	B	7.9	15.7	ug/Kg	588	B2	8.6	17.2	ug/Kg
Caffeine		<MDL	7.9	15.7	ug/Kg		<MDL	8.6	17.2	ug/Kg
Carbazole	10.7		3.9	7.87	ug/Kg		<MDL	4.3	8.58	ug/Kg
Chrysene	150		3.9	7.87	ug/Kg	37.1		4.3	8.58	ug/Kg
Coprostanol		<MDL	79	157	ug/Kg		<MDL	86	172	ug/Kg
Di-N-Butyl Phthalate	15.9		7.9	15.7	ug/Kg		<MDL	8.6	17.2	ug/Kg
Di-N-Octyl Phthalate		<MDL	7.9	15.7	ug/Kg		<MDL	8.6	17.2	ug/Kg
Dibenzo(a,h)anthracene	18.2		3.9	7.87	ug/Kg	7.1	<RDL	4.3	8.58	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_14C					Locator:	DUD_15C				
Descrip:	PERIMETER LOCATION					Descrip:	DUDI PERIMETER LOC				
Sample:	L47893-7					Sample:	L47893-8				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/28/09 12:22					ColDate:	4/28/09 12:36				
TimeSpan:						TimeSpan:					
TotalSolid:	50.8					TotalSolid:	46.6				
ClientLoc:						ClientLoc:					
SampDepth:	8					SampDepth:	8				
DRY Weight Basis						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Dibenzofuran	5.9	<RDL	3.9	7.87	ug/Kg		<MDL	4.3	8.58	ug/Kg
Diethyl Phthalate		<MDL	7.9	15.7	ug/Kg		<MDL	8.6	17.2	ug/Kg
Dimethyl Phthalate		<MDL	7.9	15.7	ug/Kg		<MDL	8.6	17.2	ug/Kg
Fluoranthene	193		3.9	7.87	ug/Kg	67.2		4.3	8.58	ug/Kg
Fluorene	11.3		3.9	7.87	ug/Kg	6.9	<RDL	4.3	8.58	ug/Kg
Hexachlorobenzene		<MDL	0.2	0.394	ug/Kg		<MDL	0.21	0.429	ug/Kg
Hexachlorobutadiene		<MDL	0.98	1.97	ug/Kg		<MDL	1.1	2.15	ug/Kg
Hexachloroethane		<MDL	2	3.94	ug/Kg		<MDL	2.1	4.29	ug/Kg
Indeno(1,2,3-Cd)Pyrene	51.8		3.9	7.87	ug/Kg	14.5		4.3	8.58	ug/Kg
N-Nitrosodiphenylamine		<MDL	7.9	15.7	ug/Kg		<MDL	8.6	17.2	ug/Kg
Naphthalene		<MDL	3.9	7.87	ug/Kg		<MDL	4.3	8.58	ug/Kg
Pentachlorophenol		<MDL	20	39.4	ug/Kg		<MDL	21	42.9	ug/Kg
Phenanthrene	71.1		3.9	7.87	ug/Kg	28.5		4.3	8.58	ug/Kg
Phenol		<MDL	7.9	15.7	ug/Kg		<MDL	8.6	17.2	ug/Kg
Pyrene	236		3.9	7.87	ug/Kg	67.4		4.3	8.58	ug/Kg
Total 4-Nonylphenol		<MDL	9.8	19.7	ug/Kg		<MDL	11	21.5	ug/Kg
Total HPAHS	1160		3.9	7.87	ug/Kg	339		4.3	8.58	ug/Kg
Total LPAHs	143		3.9	7.87	ug/Kg	55.8		4.3	8.58	ug/Kg
OR SW846 3550B*SW846 8081B										
4,4'-DDD*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDE*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDT*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
Aldrin		<MDL	1.3	2.62	ug/Kg		<MDL	1.4	2.85	ug/Kg
Alpha-BHC		<MDL	0.65	1.31	ug/Kg		<MDL	0.71	1.43	ug/Kg
Alpha-Chlordane		<MDL	0.65	1.31	ug/Kg		<MDL	0.71	1.43	ug/Kg
Beta-BHC		<MDL	0.65	1.31	ug/Kg		<MDL	0.71	1.43	ug/Kg
Delta-BHC		<MDL	0.65	1.31	ug/Kg		<MDL	0.71	1.43	ug/Kg
Dieldrin		<MDL	1.3	2.62	ug/Kg		<MDL	1.4	2.85	ug/Kg
Endosulfan I		<MDL	1.3	2.62	ug/Kg		<MDL	1.4	2.85	ug/Kg
Endosulfan II		<MDL	1.3	2.62	ug/Kg		<MDL	1.4	2.85	ug/Kg
Endosulfan Sulfate		<MDL	1.3	2.62	ug/Kg		<MDL	1.4	2.85	ug/Kg
Endrin		<MDL	1.3	2.62	ug/Kg		<MDL	1.4	2.85	ug/Kg
Endrin Aldehyde		<MDL	1.3	2.62	ug/Kg		<MDL	1.4	2.85	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.65	1.31	ug/Kg		<MDL	0.71	1.43	ug/Kg
Gamma-Chlordane		<MDL	0.65	1.31	ug/Kg		<MDL	0.71	1.43	ug/Kg
Heptachlor		<MDL	0.65	1.31	ug/Kg		<MDL	0.71	1.43	ug/Kg
Heptachlor Epoxide		<MDL	0.65	1.31	ug/Kg		<MDL	0.71	1.43	ug/Kg
Methoxychlor		<MDL	6.5	13.1	ug/Kg		<MDL	7.1	14.3	ug/Kg
Toxaphene		<MDL	13	26.2	ug/Kg		<MDL	14	28.5	ug/Kg
OR SW846 3550B*SW846 8082A										
Aroclor 1016		<MDL,TA	18	34.8	ug/Kg		<MDL,TA	4.7	9.29	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_14C					Locator:	DUD_15C				
Descrip:	PERIMETER LOCATION					Descrip:	DUDI PERIMETER LOC				
Sample:	L47893-7					Sample:	L47893-8				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/28/09 12:22					ColDate:	4/28/09 12:36				
TimeSpan:						TimeSpan:					
TotalSolid:	50.8					TotalSolid:	46.6				
ClientLoc:						ClientLoc:					
SampDepth:	8					SampDepth:	8				
DRY Weight Basis						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Aroclor 1221		<MDL	3.3	6.56	ug/Kg		<MDL	3.6	7.15	ug/Kg
Aroclor 1232		<MDL,TA	33	65.9	ug/Kg		<MDL,TA	6.4	12.7	ug/Kg
Aroclor 1242		<MDL,TA	53	106	ug/Kg		<MDL,TA	14	28.1	ug/Kg
Aroclor 1248	37.2		1.6	3.29	ug/Kg	10.2		1.8	3.58	ug/Kg
Aroclor 1254	45.9		1.6	3.29	ug/Kg	12.9		1.8	3.58	ug/Kg
Aroclor 1260	60.8		1.6	3.29	ug/Kg	7.9		1.8	3.58	ug/Kg
Total Aroclors	144		1.6	3.29	ug/Kg	30.9		1.8	3.58	ug/Kg
* Not converted to dry weight basis										

PROJECT: 423062-200-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Dry Weight Factor	Fines * %	Gravel * %	Sand * %	Silt * %	Clay * %	Total Organic Carbon mg/Kg	Total Solids * %	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) * %	Sampcoordx1 * ft	Sampcoordy1 * ft
DUD_3C	10	L47893-1	3.21	56	9.9	31.5	40	16	16000	55.4	0.6	1.6	8.9	10.8	12	6.5	4.4	14.2	12.4	8.9	7.1	2.1	0.8	7.1	1267148	208143
DUD_4C	10	L47893-2	1.66	14.1	42.3	40.8	9	5.1	6230	76.9	3.5	6.1	2.6	18.1	11	2.1	2.6	1.9	2.6	1.9	2.6	15.2	11.4	15.7	1267109	208239
DUD_4C	10	L47893-3	1.74	20	30	49	14.6	5.3	6280	76.3	3.4	6.3	2.7	20.6	14.9	3.8	5.3	2.7	4	2.7	2.7	10.4	9.6	10	1267116	208239
DUD_5C	10	L47893-4	2.91	48	5.3	39.9	35.6	12.4	12400	57	0.7	3.2	6.6	19.4	10.6	5.9	6.6	11.6	8.3	9.1	5.8	2	2.2	1.2	1267027	208269
DUD_6C	10	L47893-5	1.65	14	51.9	32.7	11.5	2.6	5660	77.4	2.6	4.8	1.9	15.4	9.9		3.8	1.3	2.6	3.8	0.6	12.5	15	24.4	1266945	208495
DUD_7C	10	L47893-6	4.37	83.7		8.8	56.8	26.9	16900	47.4			14.5	0.5	0.8	7.5	6.2	23.8	14.5	12.4	12.4				1266900	208484
DUD_14C	8	L47893-7	3.8	71.4	0.6	25.1	52.1	19.3	17400	50.8	0.19	0.8	11.6	6.5	9.8	7.9	7.7	18.3	14.5	11.6	7.7		0.2	0.3	1267194	207999
DUD_15C	8	L47893-8	4.57	82	4.5	13.1	47.9	34.1	16200	46.6		0.4	24.5	1.8	2	8.7	9.6	14.9	13.8	9.6	9.6	0.6	1.7	2.2	1267052	207968

PROJECT: 423062-200-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Sample Depth *	Sampling Method *	Sediment Sampling Depth *	Tide Height *	Aluminum, Total, ICP	Arsenic, Total, ICP	Beryllium, Total, ICP	Cadmium, Total, ICP	Chromium, Total, ICP	Copper, Total, ICP	Iron, Total, ICP	Lead, Total, ICP	Manganese, Total, ICP	Mercury, Total, CVAA	Nickel, Total, ICP	Zinc, Total, ICP	Acenaphthene	Acenaphthylene	Anthracene	Aroclor 1248	Aroclor 1254	Aroclor 1260
			m	none	cm	ft	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
DUD_3C	10	L47893-1	10	20143	13	3	21300	9.6	0.531	0.42	27.4	66.1	30700	29.1	330	0.174	22	105	3.6	3.8	33.6	34.7	45.5	29.2
DUD_4C	10	L47893-2	10	20143	13	2.5	12100	3.8	0.3	0.16	15	38.9	18900	7.49	235	0.0714	14.3	40.7			15.1	11.5	19.1	11.2
DUD_4C	10	L47893-3	10	20143	13	2	12900	4.6	0.31	0.16	19.1	38.5	20100	11.9	245	0.0695	16.1	51.2			20.2	18.6	23.3	14.7
DUD_5C	10	L47893-4	10	20143	13	1	20200	7.2	0.521	0.25	23.5	39.1	27400	10.7	309	0.102	21.6	63			11.6	10.8	13.1	10.4
DUD_6C	10	L47893-5	10	20143	11	0	12600	4.4	0.319	0.16	16.4	29.2	19000	7.89	239	0.0656	14.7	42.4			9.47	10.8	11.8	6.71
DUD_7C	10	L47893-6	10	20143	17	-0.5	28500	11	0.751	0.32	27.4	48.5	35400	14.1	426	0.128	26.4	80.2			10.1	16.8	20.4	9.75
DUD_14C	8	L47893-7	8	20143	15	-1	23600	11	0.618	0.39	28.1	61.8	32100	27.2	350	0.197	24	105	5.9	4.3	44.9	37.2	45.9	60.8
DUD_15C	8	L47893-8	8	20143	14	-1.2	27900	10	0.723	0.3	27.9	48.9	34800	13.9	393	0.131	26	78.5			11.9	10.2	12.9	7.9

PROJECT: 423062-200-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Benzo(a)anthracene ug/Kg	Benzo(a)pyrene ug/Kg	Benzo(b)fluoranthene ug/Kg	Benzo(g,h,i)perylene ug/Kg	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	Indeno(1,2,3-Cd)Pyrene ug/Kg	Phenanthrene ug/Kg	Pyrene ug/Kg	Total Aroclors ug/Kg	Total HPAHS ug/Kg	Total LPAHs ug/Kg
DUD_3C	10	L47893-1	87.9	37.5	49.3	13.7	59.4	95.1	19.7	264	10.3	124	13	5.6	4.9	175	8.7	13	57.6	200	109	765	111
DUD_4C	10	L47893-2	23.1	12.6	17	4	21.7	37.5	11.6	144	3.1	50.6	7.4			58.4	4.4	4	17.3	79.7	41.7	273	39.9
DUD_4C	10	L47893-3	42.7	45.1	58.6	25.2	54.3	65.7	11	519	5	55.2	6.7	10.4		68.2	5.54	24.5	23.7	84.1	56.6	468	56.2
DUD_5C	10	L47893-4	27.7	29.5	39.5	15.5	35.8	84.6	11.8	381	4.2	37.9	8.4	7.67		66.8	6.3	16.1	30	63.3	34.4	340	55.6
DUD_6C	10	L47893-5	29.1	25.7	35.9	13.4	32.7	55.7	8.29	151	3.7	36.4	5.4	5.2		88.2	4.5	12.3	17.3	74.4	29.3	353	36
DUD_7C	10	L47893-6	23.4	24.7	39	14.7	27	121	11.7	219		32.3	14	7.4		57.4	6.3	15	26.6	63.1	46.8	304	53
DUD_14C	8	L47893-7	113	104	119	50.2	123	90.6	24.6	274	10.7	150	15.9	18.2	5.9	193	11.3	51.8	71.1	236	144	1160	143
DUD_15C	8	L47893-8	27.3	28.8	29	14.6	46.8	79.8	13.1	588		37.1		7.1		67.2	6.9	14.5	28.5	67.4	30.9	339	55.8

SAP MDL Comparison Table

King County Environmental Lab SAP MDL Comparison Table

PROJECT: 423062-200-4

Locator:	DUD_3C	DUD_4C	DUD_4C	DUD_5C	DUD_6C	DUD_7C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sampled:	04/28/09 10:44:00 AM	04/28/09 10:55:00 AM	04/28/09 11:00:00 AM	04/28/09 11:53:00 AM	04/28/09 12:02:00 PM	04/28/09 12:12:00 PM
Lab ID:	L47893-1	L47893-2	L47893-3	L47893-4	L47893-5	L47893-6
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	55.4	76.9	76.3	57	77.4	47.4

Parameters	Units	SAP MDL (@50% TS)	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								
Fines *	%	NA	0.89	0.64	0.67	0.83	0.64	1
Gravel *	%	NA	0.18	0.13	0.13	0.17	0.13	0.21
Sand *	%	NA	0.18	0.13	0.13	0.17	0.13	0.21
Silt *	%	NA	0.89	0.64	0.67	0.83	0.64	1
Clay *	%	NA	0.89	0.64	0.67	0.83	0.64	1
p+0.00 *	%	0.1	0.18	0.13	0.13	0.17	0.13	0.21
p+1.00 *	%	0.1	0.18	0.13	0.13	0.17	0.13	0.21
p+10.0(equal/more than) *	%	0.1	0.89	0.64	0.67	0.83	0.64	1
p+2.00 *	%	0.1	0.18	0.13	0.13	0.17	0.13	0.21
p+3.00 *	%	0.1	0.18	0.13	0.13	0.17	0.13	0.21
p+4.00 *	%	0.1	0.18	0.13	0.13	0.17	0.13	0.21
p+5.00 *	%	0.1	0.89	0.64	0.67	0.83	0.64	1
p+6.00 *	%	0.1	0.89	0.64	0.67	0.83	0.64	1
p+7.00 *	%	0.1	0.89	0.64	0.67	0.83	0.64	1
p+8.00 *	%	0.1	0.89	0.64	0.67	0.83	0.64	1
p+9.00 *	%	0.1	0.89	0.64	0.67	0.83	0.64	1
p-1.00 *	%	0.1	0.18	0.13	0.13	0.17	0.13	0.21
p-2.00 *	%	0.1	0.18	0.13	0.13	0.17	0.13	0.21
p-2.00(less than) *	%	0.1	0.18	0.13	0.13	0.17	0.13	0.21
M=CV SW846 9060-PSEP96								
Total Organic Carbon	mg/Kg	1000	1800	1100	1300	1400	1100	1900
M=CV SM2540-G								
Total Solids *	%	0.005	0.005	0.005	0.005	0.005	0.005	0.005
M=MT SW846 7471B								
Mercury, Total, CVAA	mg/Kg	0.04	0.0045	0.0033	0.0033	0.0044	0.0031	0.0051
M=MT SW846 3050B*SW846 6010C								
Aluminum, Total, ICP	mg/Kg	10	9	6.1	6.6	9.1	5	11
Antimony, Total, ICP	mg/Kg	3	1.4	0.92	0.97	1.4	0.75	1.6
Arsenic, Total, ICP	mg/Kg	5	2.3	1.6	1.6	2.3	1.3	2.7
Beryllium, Total, ICP	mg/Kg	0.1	0.09	0.061	0.066	0.091	0.05	0.11
Cadmium, Total, ICP	mg/Kg	0.3	0.18	0.12	0.13	0.18	0.1	0.21
Chromium, Total, ICP	mg/Kg	0.5	0.27	0.18	0.2	0.28	0.16	0.32
Copper, Total, ICP	mg/Kg	0.4	0.36	0.25	0.26	0.37	0.21	0.44
Iron, Total, ICP	mg/Kg	5	4.5	3.1	3.3	4.6	2.5	5.5
Lead, Total, ICP	mg/Kg	3	1.8	1.2	1.3	1.8	1	2.1
Manganese, Total, ICP	mg/Kg	0.2	0.18	0.12	0.13	0.18	0.1	0.21
Nickel, Total, ICP	mg/Kg	2	0.45	0.31	0.33	0.46	0.25	0.55
Selenium, Total, ICP	mg/Kg	5	2.3	1.6	1.6	2.3	1.3	2.7
Silver, Total, ICP	mg/Kg	0.4	0.36	0.25	0.26	0.37	0.21	0.44
Thallium, Total, ICP	mg/Kg	20	3.6	2.5	2.6	3.7	2.1	4.4
Zinc, Total, ICP	mg/Kg	0.5	0.45	0.31	0.33	0.46	0.25	0.55
M=OR EPA 3550B/8270C (7-3-01-004)								

King County Environmental Lab SAP MDL Comparison Table

PROJECT: 423062-200-4

Locator:	DUD_3C	DUD_4C	DUD_4C	DUD_5C	DUD_6C	DUD_7C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sampled:	04/28/09 10:44:00 AM	04/28/09 10:55:00 AM	04/28/09 11:00:00 AM	04/28/09 11:53:00 AM	04/28/09 12:02:00 PM	04/28/09 12:12:00 PM
Lab ID:	L47893-1	L47893-2	L47893-3	L47893-4	L47893-5	L47893-6
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	55.4	76.9	76.3	57	77.4	47.4

Parameters	Units	SAP MDL (@50% TS)	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								
1,2,4-Trichlorobenzene	ug/Kg	0.52	0.18	0.13	0.13	0.18	0.13	0.21
1,2-Dichlorobenzene	ug/Kg	0.52	0.36	0.26	0.26	0.35	0.26	0.42
1,3-Dichlorobenzene	ug/Kg	0.52	0.36	0.26	0.26	0.35	0.26	0.42
1,4-Dichlorobenzene	ug/Kg	0.26	0.36	0.26	0.26	0.35	0.26	0.42
2,4-Dimethylphenol	ug/Kg	14	1.8	1.3	1.3	1.8	1.3	2.1
2-Methylnaphthalene	ug/Kg	28	3.6	2.6	2.6	3.5	2.6	4.2
2-Methylphenol	ug/Kg	38	3.6	2.6	2.6	3.5	2.6	4.2
4-Methylphenol	ug/Kg	32	7.2	5.2	5.2	7	5.2	8.4
Acenaphthene	ug/Kg	14	3.6	2.6	2.6	3.5	2.6	4.2
Acenaphthylene	ug/Kg	29	3.6	2.6	2.6	3.5	2.6	4.2
Anthracene	ug/Kg	7.9	3.6	2.6	2.6	3.5	2.6	4.2
Benzo(a)anthracene	ug/Kg	4	3.6	2.6	2.6	3.5	2.6	4.2
Benzo(a)pyrene	ug/Kg	6	3.6	2.6	2.6	3.5	2.6	4.2
Benzo(b)fluoranthene	ug/Kg	6	3.6	2.6	2.6	3.5	2.6	4.2
Benzo(g,h,i)perylene	ug/Kg	16	3.6	2.6	2.6	3.5	2.6	4.2
Benzo(k)fluoranthene	ug/Kg	6	3.6	2.6	2.6	3.5	2.6	4.2
Benzoic Acid	ug/Kg	12	18	13	13	18	13	21
Benzyl Alcohol	ug/Kg	12	3.6	2.6	2.6	3.5	2.6	4.2
Benzyl Butyl Phthalate	ug/Kg	12	1.8	1.3	1.3	1.8	1.3	2.1
Bis(2-Ethylhexyl)Phthalate	ug/Kg	13	7.2	5.2	5.2	7	5.2	8.4
Carbazole	ug/Kg	14	3.6	2.6	2.6	3.5	2.6	4.2
Chrysene	ug/Kg	7.9	3.6	2.6	2.6	3.5	2.6	4.2
Coprostanol	ug/Kg	28	72	52	52	70	52	84
Dibenzo(a,h)anthracene	ug/Kg	14	3.6	2.6	2.6	3.5	2.6	4.2
Dibenzofuran	ug/Kg	28	3.6	2.6	2.6	3.5	2.6	4.2
Diethyl Phthalate	ug/Kg	12	7.2	5.2	5.2	7	5.2	8.4
Dimethyl Phthalate	ug/Kg	22	7.2	5.2	5.2	7	5.2	8.4
Di-N-Butyl Phthalate	ug/Kg	10	7.2	5.2	5.2	7	5.2	8.4
Di-N-Octyl Phthalate	ug/Kg	16	7.2	5.2	5.2	7	5.2	8.4
Fluoranthene	ug/Kg	16	3.6	2.6	2.6	3.5	2.6	4.2
Fluorene	ug/Kg	26	3.6	2.6	2.6	3.5	2.6	4.2
Hexachlorobenzene	ug/Kg	1.3	0.18	0.13	0.13	0.18	0.13	0.21
Hexachlorobutadiene	ug/Kg	1.5	0.9	0.65	0.66	0.88	0.65	1.1
Hexachloroethane	ug/Kg	29	1.8	1.3	1.3	1.8	1.3	2.1
Indeno(1,2,3-Cd)Pyrene	ug/Kg	18	3.6	2.6	2.6	3.5	2.6	4.2
Naphthalene	ug/Kg	28	3.6	2.6	2.6	3.5	2.6	4.2
N-Nitrosodiphenylamine	ug/Kg	40	7.2	5.2	5.2	7	5.2	8.4
Pentachlorophenol	ug/Kg	10	18	13	13	18	13	21
Phenanthrene	ug/Kg	7.9	3.6	2.6	2.6	3.5	2.6	4.2
Phenol	ug/Kg	18	7.2	5.2	5.2	7	5.2	8.4
Pyrene	ug/Kg	7.9	3.6	2.6	2.6	3.5	2.6	4.2
Total HPAHS	ug/Kg	NA	3.6	2.6	2.6	3.5	2.6	4.2
Total LPAHs	ug/Kg	NA	3.6	2.6	2.6	3.5	2.6	4.2

King County Environmental Lab SAP MDL Comparison Table

PROJECT: 423062-200-4

Locator:	DUD_3C	DUD_4C	DUD_4C	DUD_5C	DUD_6C	DUD_7C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sampled:	04/28/09 10:44:00 AM	04/28/09 10:55:00 AM	04/28/09 11:00:00 AM	04/28/09 11:53:00 AM	04/28/09 12:02:00 PM	04/28/09 12:12:00 PM
Lab ID:	L47893-1	L47893-2	L47893-3	L47893-4	L47893-5	L47893-6
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	55.4	76.9	76.3	57	77.4	47.4

Parameters	Units	SAP MDL (@50% TS)	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=OR SW846 3550B*SW846 8081B								
4,4'-DDD	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
4,4'-DDE	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
4,4'-DDT	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
Aldrin	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
Alpha-BHC	ug/Kg	0.67	0.6	0.43	0.43	0.58	0.43	0.7
Alpha-Chlordane	ug/Kg	0.67	0.6	0.43	0.43	0.58	0.43	0.7
Beta-BHC	ug/Kg	0.67	0.6	0.43	0.43	0.58	0.43	0.7
Delta-BHC	ug/Kg	0.67	0.6	0.43	0.43	0.58	0.43	0.7
Dieldrin	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
Endosulfan I	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
Endosulfan II	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
Endosulfan Sulfate	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
Endrin	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
Endrin Aldehyde	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
Gamma-BHC (Lindane)	ug/Kg	0.67	0.6	0.43	0.43	0.58	0.43	0.7
Gamma-Chlordane	ug/Kg	2.7	0.6	0.43	0.43	0.58	0.43	0.7
Heptachlor	ug/Kg	0.67	0.6	0.43	0.43	0.58	0.43	0.7
Heptachlor Epoxide	ug/Kg	0.67	0.6	0.43	0.43	0.58	0.43	0.7
Methoxychlor	ug/Kg	3.3	6	4.3	4.3	5.8	4.3	7
Toxaphene	ug/Kg	6.7	12	8.7	8.8	12	8.7	14
M=OR SW846 3550B*SW846 8082A								
Aroclor 1016	ug/Kg	4	16	5.2	7.7	5.8	3.7	10
Aroclor 1221	ug/Kg	8	3.1	2.2	2.2	3	2.2	3.6
Aroclor 1232	ug/Kg	8	34	11	2.2	3	2.2	3.6
Aroclor 1242	ug/Kg	4	51	18	28	15	14	25
Aroclor 1248	ug/Kg	4	1.5	1.1	1.1	1.5	1.1	1.8
Aroclor 1254	ug/Kg	4	1.5	1.1	1.1	1.5	1.1	1.8
Aroclor 1260	ug/Kg	4	1.5	1.1	1.1	1.5	1.1	1.8
Total Aroclors	ug/Kg		1.5	1.1	1.1	1.5	1.1	1.8

* Not converted to dry weight basis for this parameter

King County Environmental Lab SAP MDL Comparison Table

PROJECT: 423062-200-4	DUD_14C	DUD_15C
	PERIMETER LOCATION	DUDI PERIMETER LOC
	04/28/09 12:22:00 PM	04/28/09 12:36:00 PM
	L47893-7	L47893-8
	SALTWTRSED	SALTWTRSED
	50.8	46.6

Parameters	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS		
M=CV ASTM D422		
Fines *	0.96	1.1
Gravel *	0.19	0.21
Sand *	0.19	0.21
Silt *	0.96	1.1
Clay *	0.96	1.1
p+0.00 *	0.19	0.21
p+1.00 *	0.19	0.21
p+10.0(equal/more than) *	0.96	1.1
p+2.00 *	0.19	0.21
p+3.00 *	0.19	0.21
p+4.00 *	0.19	0.21
p+5.00 *	0.96	1.1
p+6.00 *	0.96	1.1
p+7.00 *	0.96	1.1
p+8.00 *	0.96	1.1
p+9.00 *	0.96	1.1
p-1.00 *	0.19	0.21
p-2.00 *	0.19	0.21
p-2.00(less than) *	0.19	0.21
M=CV SW846 9060-PSEP96		
Total Organic Carbon	1900	1900
M=CV SM2540-G		
Total Solids *	0.005	0.005
M=MT SW846 7471B		
Mercury, Total, CVAA	0.0049	0.0054
M=MT SW846 3050B*SW846 6010C		
Aluminum, Total, ICP	9.8	11
Antimony, Total, ICP	1.5	1.6
Arsenic, Total, ICP	2.4	2.8
Beryllium, Total, ICP	0.098	0.11
Cadmium, Total, ICP	0.19	0.21
Chromium, Total, ICP	0.3	0.32
Copper, Total, ICP	0.39	0.43
Iron, Total, ICP	4.9	5.4
Lead, Total, ICP	1.9	2.1
Manganese, Total, ICP	0.19	0.21
Nickel, Total, ICP	0.49	0.54
Selenium, Total, ICP	2.4	2.8
Silver, Total, ICP	0.39	0.43
Thallium, Total, ICP	3.9	4.3
Zinc, Total, ICP	0.49	0.54
M=OR EPA 3550B/8270C (7-3-01-004)		

King County Environmental Lab SAP MDL Comparison Table

PROJECT: 423062-200-4	DUD_14C	DUD_15C
	PERIMETER LOCATION	DUDI PERIMETER LOC
	04/28/09 12:22:00 PM	04/28/09 12:36:00 PM
	L47893-7	L47893-8
	SALTWTRSED	SALTWTRSED
	50.8	46.6

Parameters	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS		
1,2,4-Trichlorobenzene	0.2	0.21
1,2-Dichlorobenzene	0.39	0.43
1,3-Dichlorobenzene	0.39	0.43
1,4-Dichlorobenzene	0.39	0.43
2,4-Dimethylphenol	2	2.1
2-Methylnaphthalene	3.9	4.3
2-Methylphenol	3.9	4.3
4-Methylphenol	7.9	8.6
Acenaphthene	3.9	4.3
Acenaphthylene	3.9	4.3
Anthracene	3.9	4.3
Benzo(a)anthracene	3.9	4.3
Benzo(a)pyrene	3.9	4.3
Benzo(b)fluoranthene	3.9	4.3
Benzo(g,h,i)perylene	3.9	4.3
Benzo(k)fluoranthene	3.9	4.3
Benzoic Acid	20	21
Benzyl Alcohol	3.9	4.3
Benzyl Butyl Phthalate	2	2.1
Bis(2-Ethylhexyl)Phthalate	7.9	8.6
Carbazole	3.9	4.3
Chrysene	3.9	4.3
Coprostanol	79	86
Dibenzo(a,h)anthracene	3.9	4.3
Dibenzofuran	3.9	4.3
Diethyl Phthalate	7.9	8.6
Dimethyl Phthalate	7.9	8.6
Di-N-Butyl Phthalate	7.9	8.6
Di-N-Octyl Phthalate	7.9	8.6
Fluoranthene	3.9	4.3
Fluorene	3.9	4.3
Hexachlorobenzene	0.2	0.21
Hexachlorobutadiene	0.98	1.1
Hexachloroethane	2	2.1
Indeno(1,2,3-Cd)Pyrene	3.9	4.3
Naphthalene	3.9	4.3
N-Nitrosodiphenylamine	7.9	8.6
Pentachlorophenol	20	21
Phenanthrene	3.9	4.3
Phenol	7.9	8.6
Pyrene	3.9	4.3
Total HPAHS	3.9	4.3
Total LPAHs	3.9	4.3

King County Environmental Lab SAP MDL Comparison Table

PROJECT: 423062-200-4	DUD_14C	DUD_15C
	PERIMETER LOCATION	DUDI PERIMETER LOC
	04/28/09 12:22:00 PM	04/28/09 12:36:00 PM
	L47893-7	L47893-8
	SALTWTRSED	SALTWTRSED
	50.8	46.6

Parameters	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS		
M=OR SW846 3550B*SW846 8081B		
4,4'-DDD	1.3	1.4
4,4'-DDE	1.3	1.4
4,4'-DDT	1.3	1.4
Aldrin	1.3	1.4
Alpha-BHC	0.65	0.71
Alpha-Chlordane	0.65	0.71
Beta-BHC	0.65	0.71
Delta-BHC	0.65	0.71
Dieldrin	1.3	1.4
Endosulfan I	1.3	1.4
Endosulfan II	1.3	1.4
Endosulfan Sulfate	1.3	1.4
Endrin	1.3	1.4
Endrin Aldehyde	1.3	1.4
Gamma-BHC (Lindane)	0.65	0.71
Gamma-Chlordane	0.65	0.71
Heptachlor	0.65	0.71
Heptachlor Epoxide	0.65	0.71
Methoxychlor	6.5	7.1
Toxaphene	13	14
M=OR SW846 3550B*SW846 8082A		
Aroclor 1016	18	4.7
Aroclor 1221	3.3	3.6
Aroclor 1232	33	6.4
Aroclor 1242	53	14
Aroclor 1248	1.6	1.8
Aroclor 1254	1.6	1.8
Aroclor 1260	1.6	1.8
Total Aroclors	1.6	1.8

* Not converted to dry weight basis for this parameter

SMS OC and Dry Weight Normalization MDL Check 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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.23	38	38
2,4-Dimethylphenol	1	1.81	29	27
2-Methylphenol	2	3.61	63	59
4-Methylphenol	4	7.22	670	663
Acenaphthene	2	0.23	16	16
Acenaphthylene	2	0.23	66	66
Anthracene	2	0.23	220	220
Benzo(a)anthracene	2	0.23	110	110
Benzo(a)pyrene	2	0.23	99	99
Benzo(b)fluoranthene	2	0.23	115	115
Benzo(g,h,i)perylene	2	0.23	31	31
Benzo(k)fluoranthene	2	0.23	115	115
Benzoic Acid	10	18.05	650	632
Benzyl Alcohol	2	3.61	57	53
Benzyl Butyl Phthalate	1	0.11	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.45	47	47
Chrysene	2	0.23	110	110
Dibenzo(a,h)anthracene	2	0.23	12	12
Dibenzofuran	2	0.23	15	15
Diethyl Phthalate	4	0.45	61	61
Dimethyl Phthalate	4	0.45	53	53
Di-N-Butyl Phthalate	4	0.45	220	220
Di-N-Octyl Phthalate	4	0.45	58	58
Fluorene	2	0.23	23	23
Fluoranthene	2	0.23	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.06	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.23	34	34
N-Nitrosodiphenylamine	4	0.45	11	11
Naphthalene	2	0.23	99	99
Pentachlorophenol	10	18.05	360	342
Phenanthrene	2	0.23	100	100
Phenol	4	7.22	420	413
Pyrene	2	0.23	1000	1000
Aroclor 1016	8.9	1.00		
Aroclor 1221	1.7	0.19		
Aroclor 1232	1.7	0.19		
Aroclor 1242	0.83	0.09		
Aroclor 1248	0.83	0.09		
Aroclor 1254	0.83	0.09		
Aroclor 1260	0.83	0.09		
Total Organic Carbon (dry)	16028.88087			
Total Solids	55.4			
HPAH	20	2.25	960	958
LPAH	14	1.58	370	368
Total PCB	8.9	1.00	12	11.0

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	0.1	0.02	0.81	0.79
1,2-Dichlorobenzene	0.2	0.04	2.3	2.3
1,4-Dichlorobenzene	0.2	0.04	3.1	3.1
2-Methylnaphthalene	2	0.42	38	38
2,4-Dimethylphenol	1	1.30	29	28
2-Methylphenol	2	2.60	63	60
4-Methylphenol	4	5.20	670	665
Acenaphthene	2	0.42	16	16
Acenaphthylene	2	0.42	66	66
Anthracene	2	0.42	220	220
Benzo(a)anthracene	2	0.42	110	110
Benzo(a)pyrene	2	0.42	99	99
Benzo(b)fluoranthene	2	0.42	115	115
Benzo(g,h,i)perylene	2	0.42	31	31
Benzo(k)fluoranthene	2	0.42	115	115
Benzoic Acid	10	13.00	650	637
Benzyl Alcohol	2	2.60	57	54
Benzyl Butyl Phthalate	1	0.21	4.9	4.7
Bis(2-Ethylhexyl)Phthalate	4	0.84	47	46
Chrysene	2	0.42	110	110
Dibenzo(a,h)anthracene	2	0.42	12	12
Dibenzofuran	2	0.42	15	15
Diethyl Phthalate	4	0.84	61	60
Dimethyl Phthalate	4	0.84	53	52
Di-N-Butyl Phthalate	4	0.84	220	219
Di-N-Octyl Phthalate	4	0.84	58	57
Fluorene	2	0.42	23	23
Fluoranthene	2	0.42	160	160
Hexachlorobenzene	0.1	0.02	0.38	0.36
Hexachlorobutadiene	0.5	0.10	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.42	34	34
N-Nitrosodiphenylamine	4	0.84	11	10
Naphthalene	2	0.42	99	99
Pentachlorophenol	10	13.00	360	347
Phenanthrene	2	0.42	100	100
Phenol	4	5.20	420	415
Pyrene	2	0.42	1000	1000
Aroclor 1016	4	0.84		
Aroclor 1221	1.7	0.35		
Aroclor 1232	1.7	0.35		
Aroclor 1242	0.83	0.17		
Aroclor 1248	0.83	0.17		
Aroclor 1254	0.83	0.17		
Aroclor 1260	0.83	0.17		
Total Organic Carbon (dry)	6228.868661			
Total Solids	76.9			
HPAH	20	4.18	960	956
LPAH	14	2.92	370	367
Total PCB	4	0.84	12	11.2

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	0.1	0.02	0.81	0.79
1,2-Dichlorobenzene	0.2	0.04	2.3	2.3
1,4-Dichlorobenzene	0.2	0.04	3.1	3.1
2-Methylnaphthalene	2	0.42	38	38
2,4-Dimethylphenol	1	1.31	29	28
2-Methylphenol	2	2.62	63	60
4-Methylphenol	4	5.24	670	665
Acenaphthene	2	0.42	16	16
Acenaphthylene	2	0.42	66	66
Anthracene	2	0.42	220	220
Benzo(a)anthracene	2	0.42	110	110
Benzo(a)pyrene	2	0.42	99	99
Benzo(b)fluoranthene	2	0.42	115	115
Benzo(g,h,i)perylene	2	0.42	31	31
Benzo(k)fluoranthene	2	0.42	115	115
Benzoic Acid	10	13.11	650	637
Benzyl Alcohol	2	2.62	57	54
Benzyl Butyl Phthalate	1	0.21	4.9	4.7
Bis(2-Ethylhexyl)Phthalate	4	0.84	47	46
Chrysene	2	0.42	110	110
Dibenzo(a,h)anthracene	2	0.42	12	12
Dibenzofuran	2	0.42	15	15
Diethyl Phthalate	4	0.84	61	60
Dimethyl Phthalate	4	0.84	53	52
Di-N-Butyl Phthalate	4	0.84	220	219
Di-N-Octyl Phthalate	4	0.84	58	57
Fluorene	2	0.42	23	23
Fluoranthene	2	0.42	160	160
Hexachlorobenzene	0.1	0.02	0.38	0.36
Hexachlorobutadiene	0.5	0.10	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.42	34	34
N-Nitrosodiphenylamine	4	0.84	11	10
Naphthalene	2	0.42	99	99
Pentachlorophenol	10	13.11	360	347
Phenanthrene	2	0.42	100	100
Phenol	4	5.24	420	415
Pyrene	2	0.42	1000	1000
Aroclor 1016	5.9	1.23		
Aroclor 1221	1.7	0.35		
Aroclor 1232	1.7	0.35		
Aroclor 1242	0.83	0.17		
Aroclor 1248	0.83	0.17		
Aroclor 1254	0.83	0.17		
Aroclor 1260	0.83	0.17		
Total Organic Carbon (dry)	6277.85059			
Total Solids	76.3			
HPAH	20	4.18	960	956
LPAH	14	2.92	370	367
Total PCB	5.9	1.23	12	10.8

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.03	2.3	2.3
1,4-Dichlorobenzene	0.2	0.03	3.1	3.1
2-Methylnaphthalene	2	0.28	38	38
2,4-Dimethylphenol	1	1.75	29	27
2-Methylphenol	2	3.51	63	59
4-Methylphenol	4	7.02	670	663
Acenaphthene	2	0.28	16	16
Acenaphthylene	2	0.28	66	66
Anthracene	2	0.28	220	220
Benzo(a)anthracene	2	0.28	110	110
Benzo(a)pyrene	2	0.28	99	99
Benzo(b)fluoranthene	2	0.28	115	115
Benzo(g,h,i)perylene	2	0.28	31	31
Benzo(k)fluoranthene	2	0.28	115	115
Benzoic Acid	10	17.54	650	632
Benzyl Alcohol	2	3.51	57	53
Benzyl Butyl Phthalate	1	0.14	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.57	47	46
Chrysene	2	0.28	110	110
Dibenzo(a,h)anthracene	2	0.28	12	12
Dibenzofuran	2	0.28	15	15
Diethyl Phthalate	4	0.57	61	60
Dimethyl Phthalate	4	0.57	53	52
Di-N-Butyl Phthalate	4	0.57	220	219
Di-N-Octyl Phthalate	4	0.57	58	57
Fluorene	2	0.28	23	23
Fluoranthene	2	0.28	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.07	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.28	34	34
N-Nitrosodiphenylamine	4	0.57	11	10
Naphthalene	2	0.28	99	99
Pentachlorophenol	10	17.54	360	342
Phenanthrene	2	0.28	100	100
Phenol	4	7.02	420	413
Pyrene	2	0.28	1000	1000
Aroclor 1016	3.3	0.47		
Aroclor 1221	1.7	0.24		
Aroclor 1232	1.7	0.24		
Aroclor 1242	0.83	0.12		
Aroclor 1248	0.83	0.12		
Aroclor 1254	0.83	0.12		
Aroclor 1260	0.83	0.12		
Total Organic Carbon (dry)	12403.50877			
Total Solids	57			
HPAH	20	2.83	960	957
LPAH	14	1.98	370	368
Total PCB	3.3	0.47	12	11.5

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	0.1	0.02	0.81	0.79
1,2-Dichlorobenzene	0.2	0.05	2.3	2.3
1,4-Dichlorobenzene	0.2	0.05	3.1	3.1
2-Methylnaphthalene	2	0.46	38	38
2,4-Dimethylphenol	1	1.29	29	28
2-Methylphenol	2	2.58	63	60
4-Methylphenol	4	5.17	670	665
Acenaphthene	2	0.46	16	16
Acenaphthylene	2	0.46	66	66
Anthracene	2	0.46	220	220
Benzo(a)anthracene	2	0.46	110	110
Benzo(a)pyrene	2	0.46	99	99
Benzo(b)fluoranthene	2	0.46	115	115
Benzo(g,h,i)perylene	2	0.46	31	31
Benzo(k)fluoranthene	2	0.46	115	115
Benzoic Acid	10	12.92	650	637
Benzyl Alcohol	2	2.58	57	54
Benzyl Butyl Phthalate	1	0.23	4.9	4.7
Bis(2-Ethylhexyl)Phthalate	4	0.91	47	46
Chrysene	2	0.46	110	110
Dibenzo(a,h)anthracene	2	0.46	12	12
Dibenzofuran	2	0.46	15	15
Diethyl Phthalate	4	0.91	61	60
Dimethyl Phthalate	4	0.91	53	52
Di-N-Butyl Phthalate	4	0.91	220	219
Di-N-Octyl Phthalate	4	0.91	58	57
Fluorene	2	0.46	23	23
Fluoranthene	2	0.46	160	160
Hexachlorobenzene	0.1	0.02	0.38	0.36
Hexachlorobutadiene	0.5	0.11	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.46	34	34
N-Nitrosodiphenylamine	4	0.91	11	10
Naphthalene	2	0.46	99	99
Pentachlorophenol	10	12.92	360	347
Phenanthrene	2	0.46	100	100
Phenol	4	5.17	420	415
Pyrene	2	0.46	1000	1000
Aroclor 1016	2.9	0.66		
Aroclor 1221	1.7	0.39		
Aroclor 1232	1.7	0.39		
Aroclor 1242	0.83	0.19		
Aroclor 1248	0.83	0.19		
Aroclor 1254	0.83	0.19		
Aroclor 1260	0.83	0.19		
Total Organic Carbon (dry)	5658.914729			
Total Solids	77.4			
HPAH	20	4.57	960	955
LPAH	14	3.20	370	367
Total PCB	2.9	0.66	12	11.3

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.25	38	38
2,4-Dimethylphenol	1	2.11	29	27
2-Methylphenol	2	4.22	63	59
4-Methylphenol	4	8.44	670	662
Acenaphthene	2	0.25	16	16
Acenaphthylene	2	0.25	66	66
Anthracene	2	0.25	220	220
Benzo(a)anthracene	2	0.25	110	110
Benzo(a)pyrene	2	0.25	99	99
Benzo(b)fluoranthene	2	0.25	115	115
Benzo(g,h,i)perylene	2	0.25	31	31
Benzo(k)fluoranthene	2	0.25	115	115
Benzoic Acid	10	21.10	650	629
Benzyl Alcohol	2	4.22	57	53
Benzyl Butyl Phthalate	1	0.12	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.50	47	47
Chrysene	2	0.25	110	110
Dibenzo(a,h)anthracene	2	0.25	12	12
Dibenzofuran	2	0.25	15	15
Diethyl Phthalate	4	0.50	61	61
Dimethyl Phthalate	4	0.50	53	53
Di-N-Butyl Phthalate	4	0.50	220	220
Di-N-Octyl Phthalate	4	0.50	58	58
Fluorene	2	0.25	23	23
Fluoranthene	2	0.25	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.06	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.25	34	34
N-Nitrosodiphenylamine	4	0.50	11	11
Naphthalene	2	0.25	99	99
Pentachlorophenol	10	21.10	360	339
Phenanthrene	2	0.25	100	100
Phenol	4	8.44	420	412
Pyrene	2	0.25	1000	1000
Aroclor 1016	4.8	0.60		
Aroclor 1221	1.7	0.21		
Aroclor 1232	1.7	0.21		
Aroclor 1242	0.83	0.10		
Aroclor 1248	0.83	0.10		
Aroclor 1254	0.83	0.10		
Aroclor 1260	0.83	0.10		
Total Organic Carbon (dry)	16940.92827			
Total Solids	47.4			
HPAH	20	2.49	960	958
LPAH	14	1.74	370	368
Total PCB	4.8	0.60	12	11.4

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.23	38	38
2,4-Dimethylphenol	1	1.97	29	27
2-Methylphenol	2	3.94	63	59
4-Methylphenol	4	7.87	670	662
Acenaphthene	2	0.23	16	16
Acenaphthylene	2	0.23	66	66
Anthracene	2	0.23	220	220
Benzo(a)anthracene	2	0.23	110	110
Benzo(a)pyrene	2	0.23	99	99
Benzo(b)fluoranthene	2	0.23	115	115
Benzo(g,h,i)perylene	2	0.23	31	31
Benzo(k)fluoranthene	2	0.23	115	115
Benzoic Acid	10	19.69	650	630
Benzyl Alcohol	2	3.94	57	53
Benzyl Butyl Phthalate	1	0.11	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.45	47	47
Chrysene	2	0.23	110	110
Dibenzo(a,h)anthracene	2	0.23	12	12
Dibenzofuran	2	0.23	15	15
Diethyl Phthalate	4	0.45	61	61
Dimethyl Phthalate	4	0.45	53	53
Di-N-Butyl Phthalate	4	0.45	220	220
Di-N-Octyl Phthalate	4	0.45	58	58
Fluorene	2	0.23	23	23
Fluoranthene	2	0.23	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.06	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.23	34	34
N-Nitrosodiphenylamine	4	0.45	11	11
Naphthalene	2	0.23	99	99
Pentachlorophenol	10	19.69	360	340
Phenanthrene	2	0.23	100	100
Phenol	4	7.87	420	412
Pyrene	2	0.23	1000	1000
Aroclor 1016	8.9	1.00		
Aroclor 1221	1.7	0.19		
Aroclor 1232	1.7	0.19		
Aroclor 1242	0.83	0.09		
Aroclor 1248	0.83	0.09		
Aroclor 1254	0.83	0.09		
Aroclor 1260	0.83	0.09		
Total Organic Carbon (dry)	17440.94488			
Total Solids	50.8			
HPAH	20	2.26	960	958
LPAH	14	1.58	370	368
Total PCB	8.9	1.00	12	11.0

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.03	2.3	2.3
1,4-Dichlorobenzene	0.2	0.03	3.1	3.1
2-Methylnaphthalene	2	0.26	38	38
2,4-Dimethylphenol	1	2.15	29	27
2-Methylphenol	2	4.29	63	59
4-Methylphenol	4	8.58	670	661
Acenaphthene	2	0.26	16	16
Acenaphthylene	2	0.26	66	66
Anthracene	2	0.26	220	220
Benzo(a)anthracene	2	0.26	110	110
Benzo(a)pyrene	2	0.26	99	99
Benzo(b)fluoranthene	2	0.26	115	115
Benzo(g,h,i)perylene	2	0.26	31	31
Benzo(k)fluoranthene	2	0.26	115	115
Benzoic Acid	10	21.46	650	629
Benzyl Alcohol	2	4.29	57	53
Benzyl Butyl Phthalate	1	0.13	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.53	47	46
Chrysene	2	0.26	110	110
Dibenzo(a,h)anthracene	2	0.26	12	12
Dibenzofuran	2	0.26	15	15
Diethyl Phthalate	4	0.53	61	60
Dimethyl Phthalate	4	0.53	53	52
Di-N-Butyl Phthalate	4	0.53	220	219
Di-N-Octyl Phthalate	4	0.53	58	57
Fluorene	2	0.26	23	23
Fluoranthene	2	0.26	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.07	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.26	34	34
N-Nitrosodiphenylamine	4	0.53	11	10
Naphthalene	2	0.26	99	99
Pentachlorophenol	10	21.46	360	339
Phenanthrene	2	0.26	100	100
Phenol	4	8.58	420	411
Pyrene	2	0.26	1000	1000
Aroclor 1016	2.2	0.29		
Aroclor 1221	1.7	0.23		
Aroclor 1232	1.7	0.23		
Aroclor 1242	0.83	0.11		
Aroclor 1248	0.83	0.11		
Aroclor 1254	0.83	0.11		
Aroclor 1260	0.83	0.11		
Total Organic Carbon (dry)	16201.71674			
Total Solids	46.6			
HPAH	20	2.65	960	957
LPAH	14	1.85	370	368
Total PCB	2.2	0.29	12	11.7

CONVENTIONAL ANALYSES QC DATA

WG102538 Particle Size Distribution

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47813-5	423589-090-4	CSO Near Full Characterization	CVPSD	IN-LINESED	4/14/2009 14:45	5/27/2009 0:00	5/28/2009 0:00	WG102538-1, -2, L47890-6	
L47890-1	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 8:45	5/27/2009 0:00	5/28/2009 0:00	WG102538-1, -2, L47890-6, WG102612-1, -2	
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 10:44	5/27/2009 0:00	5/28/2009 0:00		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 10:55	5/27/2009 0:00	5/28/2009 0:00		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 11:00	5/27/2009 0:00	5/28/2009 0:00	WG102538-1, -2, L47890-6, WG102612-3, -4	FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 11:53	5/27/2009 0:00	5/28/2009 0:00		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 12:02	5/27/2009 0:00	5/28/2009 0:00		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 12:12	5/27/2009 0:00	5/28/2009 0:00		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 12:22	5/27/2009 0:00	5/28/2009 0:00		
WG102538-1	LD		CVPSD	IN-LINESED		5/27/2009 0:00	5/28/2009 0:00	WG102538-1, -2, L47890-6	L47813-5
WG102538-2	LT		CVPSD	IN-LINESED		5/27/2009 0:00	5/28/2009 0:00		WG102538-1 L47813-5
WG102612-1	LD		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		L47890-6
WG102612-2	LT		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		WG102612-1 L47890-6
WG102612-3	LD		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		L47888-2
WG102612-4	LT		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		WG102612-3 L47888-2

Workgroup: WG102538 Particle Size Distribution

LT:WG102538-2 LD:WG102538-1 L47813-5 Matrix: IN-LINESED Listtype: CVPSD Method: ASTM D422 Project: 423589-090-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	0.78	1.57	%	6.5	6.4	6.3	2		20
Gravel	0.16	1.57	%	11.4	9.1	13.6	20		20
Sand	0.16	1.57	%	63.1	64.6	62.7	2		20
Silt	0.78	1.57	%	13	12.9	12.6	2		20

LT:WG102612-2 LD:WG102612-1 L47890-6 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422 Project: 423062-100-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	0.6	1.2	%	4.9	4.7	4.8	2		20
Gravel	0.12	1.2	%	19.2	18	19.7	5		20
Sand	0.12	1.2	%	73.3	78.3	73.5	4		20
Silt	0.6	1.2	%	1.2	1.8	2.4	32	*	20

LT:WG102612-4 LD:WG102612-3 L47888-2 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422 Project: 423062-200-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	1.1	2.24	%	39.6	41.5	40.3	2		20
Gravel	0.22	2.24	%	0.22	0.4	<MDL			20
Sand	0.22	2.24	%	12.5	11	8.7	18		20
Silt	1.1	2.24	%	49.6	49.4	53.7	5		20

WG102612 Particle Size Distribution

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/27/2009 12:10	5/29/2008 0:00	6/1/2009 0:00		
L47890-2	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 9:10	5/29/2008 0:00	6/1/2009 0:00		
L47890-3	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 9:26	5/29/2008 0:00	6/1/2009 0:00		
L47890-4	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 9:45	5/29/2008 0:00	6/1/2009 0:00		
L47890-5	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 10:02	5/29/2008 0:00	6/1/2009 0:00		
L47890-6	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 10:22	5/29/2008 0:00	6/1/2009 0:00	WG102612-1, -2, -3, -4	FREP @ L47890-5
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 12:36	5/29/2008 0:00	6/1/2009 0:00		
WG102612-1	LD		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		L47890-6
WG102612-2	LT		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		WG102612-1 L47890-6
WG102612-3	LD		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		L47888-2
WG102612-4	LT		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		WG102612-3 L47888-2

Workgroup: WG102612 Particle Size Distribution

LT:WG102612-2 LD:WG102612-1 L47890-6 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422 Project: 423062-100-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	0.6	1.2	%	4.9	4.7	4.8	2		20
Gravel	0.12	1.2	%	19.2	18	19.7	5		20
Sand	0.12	1.2	%	73.3	78.3	73.5	4		20
Silt	0.6	1.2	%	1.2	1.8	2.4	32	*	20

LT:WG102612-4 LD:WG102612-3 L47888-2 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422 Project: 423062-200-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	1.1	2.24	%	39.6	41.5	40.3	2		20
Gravel	0.22	2.24	%	0.22	0.4	<MDL			20
Sand	0.22	2.24	%	12.5	11	8.7	18		20
Silt	1.1	2.24	%	49.6	49.4	53.7	5		20

WG102503 Total Organic Carbon

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47813-6	423589-090-4	CSO Near Full Characterization	CVTOC	IN-LINESED	4/14/2009 14:45	5/26/2009 16:00	6/9/2009 9:40		
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/27/2009 10:36	5/26/2009 16:00	6/9/2009 13:53		
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/27/2009 12:10	5/26/2009 16:00	6/9/2009 14:15		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:45	5/26/2009 16:00	6/9/2009 14:37		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 14:00	5/26/2009 16:00	6/9/2009 14:58		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 8:25	5/26/2009 16:00	6/9/2009 15:20		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 8:55	5/26/2009 16:00	6/9/2009 15:41		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 9:37	5/26/2009 16:00	6/10/2009 9:32		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 10:00	5/26/2009 16:00	6/10/2009 11:08		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 10:40	5/26/2009 16:00	6/10/2009 11:29		
L47890-1	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 8:45	6/1/2009 15:05	6/10/2009 12:14		
L47890-2	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 9:10	6/1/2009 15:05	6/10/2009 12:50		
L47890-3	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 9:26	6/1/2009 15:05	6/10/2009 13:12		
L47890-4	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 9:45	6/1/2009 15:05	6/10/2009 13:34		
L47890-5	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 10:02	6/1/2009 15:05	6/10/2009 14:05		
L47890-6	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 10:22	6/1/2009 15:05	6/10/2009 14:26		FREP @ L47890-5
L47890-7	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/27/2009 14:25	6/1/2009 15:05	6/11/2009 10:26		
L47890-8	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/27/2009 14:50	6/1/2009 15:05	6/10/2009 14:48		
L47890-9	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/27/2009 15:15	6/1/2009 15:05	6/11/2009 10:50		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 10:44	6/1/2009 15:05	6/11/2009 12:44		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 10:55	6/1/2009 15:05	6/11/2009 13:44		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 11:00	6/1/2009 15:05	6/11/2009 14:14		FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 11:53	6/1/2009 15:05	6/11/2009 14:35		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:02	6/1/2009 15:05	6/11/2009 15:00		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:12	6/1/2009 15:05	6/11/2009 11:58		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:22	6/1/2009 15:05	6/11/2009 12:20	WG102503-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20	
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:36	6/1/2009 15:05	6/11/2009 15:25		
L48029-1	423258-100-1	Reclaimed Water Nutrient Characterization	CVTOC	SOIL	5/11/2009 13:40	5/26/2009 16:00	6/9/2009 11:13		
L48029-2	423258-100-1	Reclaimed Water Nutrient Characterization	CVTOC	SOIL	5/11/2009 14:10	5/26/2009 16:00	6/9/2009 12:55		
L48029-3	423258-100-1	Reclaimed Water Nutrient Characterization	CVTOC	SOIL	5/11/2009 14:26	5/26/2009 16:00	6/9/2009 13:17		
WG102503-1	MB		CVTOC	OTHR SOLID		6/9/2009 8:45	6/9/2009 8:45		MB1 06/09/09 08:45
WG102503-2	SRM		CVTOC	OTHR SOLID		6/9/2009 9:02	6/9/2009 9:02		HICONC
WG102503-3	SB		CVTOC	OTHR SOLID		6/9/2009 9:22	6/9/2009 9:22		WG102503-1
WG102503-4	LD		CVTOC	IN-LINESED		5/26/2009 16:00	6/9/2009 10:05		L47813-6
WG102503-5	LT		CVTOC	IN-LINESED		5/26/2009 16:00	6/9/2009 10:29		WG102503-4 L47813-6
WG102503-6	MS		CVTOC	IN-LINESED		5/26/2009 16:00	6/9/2009 10:50		L47813-6
WG102503-7	LD		CVTOC	SOIL		5/26/2009 16:00	6/9/2009 11:35		L48029-1

WG102503-8	LT	CVTOC	SOIL	5/26/2009 16:00	6/9/2009 12:12		WG102503-7 L48029-1
WG102503-9	MS	CVTOC	SOIL	5/26/2009 16:00	6/9/2009 12:34		L48029-1
WG102503-10	MB	CVTOC	OTHR SOLID	6/10/2009 8:36	6/10/2009 8:36		MB1 06/10/09
WG102503-11	SRM	CVTOC	OTHR SOLID	6/10/2009 8:53	6/10/2009 8:53		HICONC
WG102503-12	SB	CVTOC	OTHR SOLID	6/10/2009 9:13	6/10/2009 9:13		WG102503-10
WG102503-13	LD	CVTOC	SALTWTRSED	5/26/2009 16:00	6/10/2009 9:54		L47888-7
WG102503-14	LT	CVTOC	SALTWTRSED	5/26/2009 16:00	6/10/2009 10:23		WG102503-13 L47888-7
WG102503-15	MS	CVTOC	SALTWTRSED	5/26/2009 16:00	6/10/2009 10:44		L47888-7
WG102503-16	LD	CVTOC	SALTWTRSED	6/1/2009 15:05	6/10/2009 15:10		L47890-8
WG102503-17	LT	CVTOC	SALTWTRSED	6/1/2009 15:05	6/10/2009 15:31		WG102503-16 L47890-8
WG102503-18	MS	CVTOC	SALTWTRSED	6/1/2009 15:05	6/10/2009 15:53		L47890-8
WG102503-19	MB	CVTOC	OTHR SOLID	6/11/2009 9:47	6/11/2009 9:47		MB1 06/11/09
WG102503-20	SRM	CVTOC	OTHR SOLID	6/11/2009 10:04	6/11/2009 10:04		HICONC

Workgroup: WG102503 Total Organic Carbon

MB:WG102503-1 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Organic Carbon	500	1000	mg/Kg	<MDL	

SRM:WG102503-2 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE (Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	2700	5340	mg/Kg	33480	32100	96		80--120

SB:WG102503-3 MB:WG102503-1 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE (Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	500	1000	mg/Kg	<MDL	2500	2620	105		80--120

LT:WG102503-5 LD:WG102503-4 L47813-6 Matrix: IN-LINESED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423589-090-4 (Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Organic Carbon	3500	6950	mg/Kg	24500	23200	23700	3		20

MS:WG102503-6 L47813-6 Matrix: IN-LINESED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423589-090-4 (Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	3500	7050	mg/Kg	24500	17620	43700	109		75--125

LT:WG102503-8 LD:WG102503-7 L48029-1 Matrix: SOIL Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423258-100-1 (Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Organic Carbon	650	1300	mg/Kg	4870	6480	6110	15		20

MS:WG102503-9 L48029-1 Matrix: SOIL Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423258-100-1
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	620	1250	mg/Kg	4870	3116	8040	102		75--125

MB:WG102503-10 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Organic Carbon	500	1000	mg/Kg	<MDL	

SRM:WG102503-11 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	2500	4900	mg/Kg	36900	34000	92		80--120

SB:WG102503-12 MB:WG102503-10 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	500	1000	mg/Kg	<MDL	2500	2590	104		80--120

LT:WG102503-14 LD:WG102503-13 L47888-7 Matrix: SALTWTRSED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423062-200-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Organic Carbon	1100	2170	mg/Kg	6890	6910	7030	1		20

MS:WG102503-15 L47888-7 Matrix: SALTWTRSED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423062-200-4
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	1100	2170	mg/Kg	6890	5436	12100	95		75--125

LT:WG102503-17 LD:WG102503-16 L47890-8 Matrix: SALTWTRSED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423062-100-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Organic Carbon	770	1540	mg/Kg	7390	7490	7520	1		20

MS:WG102503-18 L47890-8 Matrix: SALTWTRSED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423062-100-4
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	770	1550	mg/Kg	7390	3905	11000	92		75--125

MB:WG102503-19 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Organic Carbon	500	1000	mg/Kg	<MDL	

SRM:WG102503-20 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	2400	4710	mg/Kg	36900	34000	92		80--120

Conventionals Data Anomaly Form

Date(s) Occurred: *06/01/08*

WG #(s): *WG102503*

☐ **All samples in WKGP(s)** **or** ☒ **Sample #(s):** *L47893-6 and -7*

Project #(s): *423062-200-4*

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

I. Analysis

☐ Nutrients:
☒ Demands: *Total Organic Carbon (TOC)*
☐ Cyanides:
☐ Physicals:
☐ Solids:
☐ Anions:
☐ Chlorophylls:
☐ Others:
☐ 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:

III. Type of Sample/Analytical Anomaly

☐ Values Outside of Control Limits:
[1] ☐ Initial Calibration
[2] ☐ Continuing Calibration Checks
[3] ☐ SB Spike Recoveries
[4] ☐ MB Anomaly
[5] ☐ LCS/SRM Recoveries
[6] ☐ Sample/LD/LT RSD
[7] ☐ MS RPD
[8] ☐ Sample/LD RPD
[9] ☐ MS Spike Recoveries

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

☒ Other

Anomaly Description: *Due to analyst error, samples L47893-6 and -7 were accidentally switched during sample prepation. TOC samples are dried at at 70 degree Celsius, then they are pulverized and treated with 10% phosphoric acid prior to TOC analysis. After pulverization of the samples, they were switched during transferring between the mixer mills and the TOC crucibles, which could have cross-contaminated both samples.*

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: *SH*
☐ Other

Corrective Action Description: *Analyst was not able to reprepare samples L47893-6 and -7 due to time constraint. The TOC preparation and analysis for samples L47893-6 and -7 were continued with the total solids aliquots (dried at 104 instead of 70 degree Celsius), which were prepared at the same time as the TOC samples. As a result, each of the TOC result for samples L47893-6 and -7 have been qualified with an 'SH' to indicate that the sample handling criteria was not met and the following text added to the textfield, "See DAF for details".*

VI. Potential Effects on Data Quality

Based upon the expected performance of this method:

☐ None; corrective action entirely corrected anomaly (explanation optional):

☒ Potential effect explanation (explanation mandatory): *Prior to TOC soil/sediment analysis, samples are dried at 70 degree Celsius, then they are pulverized and treated with 10% phosphoric acid to remove inorganic and most volatile carbon. In this case, the reported TOC values were acquired with samples that were dried at 104 instead of the standard 70 degree Celsius, which could have contributed some degradation to the target analyte. The amount of potential degradation associated with a higher drying temperature would most likely be negligible compared to the concentration of TOC present. However, drying the samples at a higher temperature could have degraded some of the target analyte, therefore the TOC data for these samples could be biased and should be used with caution.*

	Signatures	Signature Dates
Reported By: *Duc Nguyen*		
Reviewer: *David C Hunn*		
Supervisor: *Brian Prosch*		
QA Officer: *Colin Elliott* **(For QA1 only)**		
cc: LPM: *Fritz Grothkopp*		

WG102628 Total Solids

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47890-1	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/28/2009 8:45	6/1/2009 13:30	6/2/2009 9:07		
L47890-2	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/28/2009 9:10	6/1/2009 13:30	6/2/2009 9:07		
L47890-3	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/28/2009 9:26	6/1/2009 13:30	6/2/2009 9:08		
L47890-4	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/28/2009 9:45	6/1/2009 13:30	6/2/2009 9:08		
L47890-5	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/28/2009 10:02	6/1/2009 13:30	6/2/2009 9:10		
L47890-6	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/28/2009 10:22	6/1/2009 13:30	6/2/2009 9:11		FREP @ L47890-5
L47890-7	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/27/2009 14:25	6/1/2009 13:30	6/2/2009 9:13		
L47890-8	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/27/2009 14:50	6/1/2009 13:30	6/2/2009 9:16		
L47890-9	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/27/2009 15:15	6/1/2009 13:30	6/2/2009 9:17		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 10:44	6/1/2009 13:30	6/2/2009 9:17		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 10:55	6/1/2009 13:30	6/2/2009 9:17	WG102628-1, -2, -3	
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 11:00	6/1/2009 13:30	6/2/2009 9:18		FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 11:53	6/1/2009 13:30	6/2/2009 9:23		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 12:02	6/1/2009 13:30	6/2/2009 9:23		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 12:12	6/1/2009 13:30	6/2/2009 9:24		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 12:22	6/1/2009 13:30	6/2/2009 9:24		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 12:36	6/1/2009 13:30	6/2/2009 9:25		
WG102628-1	MB		CVTOTS	OTHR SOLID		6/1/2009 13:30	6/2/2009 9:07		MB1 06/01/09 13:30
WG102628-2	LD		CVTOTS	SALTWTRSED		6/1/2009 13:30	6/2/2009 9:08		L47890-4
WG102628-3	LT		CVTOTS	SALTWTRSED		6/1/2009 13:30	6/2/2009 9:09		WG102628-2 L47890-4

Workgroup: WG102628 Total Solids

MB:WG102628-1 Matrix: OTHR SOLID Listtype: CVTOTS Method: SM2540-G Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Solids	0.005	0.01	%	<MDL	

LT:WG102628-3 LD:WG102628-2 L47890-4 Matrix: SALTWTRSED Listtype: CVTOTS Method: SM2540-G Project: 423062-100-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Solids	0.005	0.01	%	60.3	60.3	60.8	0		20

METAL CHEMISTRY QC DATA

WG102346 Total Metals by ICP

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/27/2009 10:36	5/18/2009 14:00	5/19/2009 16:35		
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/27/2009 12:10	5/18/2009 14:00	5/19/2009 16:52		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 12:45	5/18/2009 14:00	5/19/2009 16:57		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 14:00	5/18/2009 14:00	5/19/2009 17:03		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/29/2009 8:25	5/18/2009 14:00	5/19/2009 17:19		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/29/2009 8:55	5/18/2009 14:00	5/19/2009 17:25		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/29/2009 9:37	5/18/2009 14:00	5/19/2009 17:30		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/29/2009 10:00	5/18/2009 14:00	5/19/2009 17:36		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/29/2009 10:40	5/18/2009 14:00	5/19/2009 17:41		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 10:44	5/18/2009 14:00	5/19/2009 17:47		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 10:55	5/18/2009 14:00	5/19/2009 17:52		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 11:00	5/18/2009 14:00	5/19/2009 17:58	WG102346-1, -2, -3, -6, -4, -5	FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 11:53	5/18/2009 14:00	5/19/2009 18:03		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 12:02	5/18/2009 14:00	5/19/2009 18:09		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 12:12	5/18/2009 14:00	5/19/2009 18:26		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 12:22	5/18/2009 14:00	5/19/2009 18:31		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 12:36	5/18/2009 14:00	5/19/2009 18:37		
WG102346-1	SB		MTICP-SED	SOLIDBLANK		5/18/2009 14:00	5/19/2009 16:13		WG102346-3 ICPMARINE
WG102346-2	LCS		MTICP-SED	SOIL		5/18/2009 14:00	5/19/2009 16:18		ERASOIL
WG102346-3	MB		MTICP-SED	SOLIDBLANK		5/18/2009 14:00	5/19/2009 16:24		METHOD BLANK
WG102346-4	LD		MTICP-SED	SALTWTRSED		5/18/2009 14:00	5/19/2009 16:41		L47888-1 RPD-SOL
WG102346-5	MS		MTICP-SED	SALTWTRSED		5/18/2009 14:00	5/19/2009 16:46		L47888-1 ICPMARINE
WG102346-6	SRM		MTICP-SED	SALTWTRSED		5/18/2009 14:00	5/19/2009 16:30		PACS2

Workgroup: WG102346 Total Metals by ICP

MB:WG102346-3 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Aluminum, Total, ICP	3.8	19.2	mg/Kg	<MDL	
Antimony, Total, ICP	0.58	2.88	mg/Kg	<MDL	
Arsenic, Total, ICP	0.96	4.81	mg/Kg	<MDL	
Beryllium, Total, ICP	0.038	0.192	mg/Kg	<MDL	
Cadmium, Total, ICP	0.077	0.385	mg/Kg	<MDL	
Chromium, Total, ICP	0.12	0.577	mg/Kg	<MDL	
Copper, Total, ICP	0.15	0.769	mg/Kg	<MDL	
Iron, Total, ICP	1.9	9.62	mg/Kg	<MDL	
Lead, Total, ICP	0.77	3.85	mg/Kg	<MDL	
Manganese, Total, ICP	0.077	0.385	mg/Kg	<MDL	
Nickel, Total, ICP	0.19	0.962	mg/Kg	<MDL	
Selenium, Total, ICP	0.96	4.81	mg/Kg	<MDL	
Silver, Total, ICP	0.15	0.769	mg/Kg	<MDL	
Thallium, Total, ICP	1.5	7.69	mg/Kg	<MDL	
Zinc, Total, ICP	0.19	0.962	mg/Kg	<MDL	

SB:WG102346-1 MB:WG102346-3 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE (Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP	3.8	19.2	mg/Kg	<MDL	3870	3940	102		85--115
Antimony, Total, ICP	0.58	2.88	mg/Kg	<MDL	19.2	19.3	100		85--115
Arsenic, Total, ICP	0.96	4.81	mg/Kg	<MDL	19.2	19.5	102		85--115
Beryllium, Total, ICP	0.038	0.192	mg/Kg	<MDL	19.2	19.1	99		85--115
Cadmium, Total, ICP	0.077	0.385	mg/Kg	<MDL	19.2	18.9	99		85--115
Chromium, Total, ICP	0.12	0.577	mg/Kg	<MDL	19.2	18.9	98		85--115
Copper, Total, ICP	0.15	0.769	mg/Kg	<MDL	19.2	19.3	100		85--115
Iron, Total, ICP	1.9	9.62	mg/Kg	<MDL	1940	1970	101		85--115
Lead, Total, ICP	0.77	3.85	mg/Kg	<MDL	19.2	18.6	97		85--115
Manganese, Total, ICP	0.077	0.385	mg/Kg	<MDL	96.2	97.2	101		85--115
Nickel, Total, ICP	0.19	0.962	mg/Kg	<MDL	19.2	18.6	97		85--115
Selenium, Total, ICP	0.96	4.81	mg/Kg	<MDL	19.2	18.3	95		85--115
Silver, Total, ICP	0.15	0.769	mg/Kg	<MDL	19.2	19.1	99		85--115
Thallium, Total, ICP	1.5	7.69	mg/Kg	<MDL	19.2	18.4	96		85--115
Zinc, Total, ICP	0.19	0.962	mg/Kg	<MDL	96.2	93.4	97		85--115

LCS:WG102346-2 Matrix: SOIL Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP	41	205	mg/Kg	8260	8420	102		61--139
Antimony, Total, ICP	6.2	30.8	mg/Kg	90.2	77.7	86		10--211
Arsenic, Total, ICP	10	51.3	mg/Kg	132	146	110		80--120
Beryllium, Total, ICP	0.41	2.05	mg/Kg	89.5	94.6	106		80--120
Cadmium, Total, ICP	0.82	4.1	mg/Kg	66.5	75.5	114		80--120
Chromium, Total, ICP	1.2	6.16	mg/Kg	72.9	76.7	105		79--121
Copper, Total, ICP	1.6	8.21	mg/Kg	68.5	72.2	105		80--120
Iron, Total, ICP	21	103	mg/Kg	13400	12500	93		50--149
Lead, Total, ICP	8.2	41	mg/Kg	130	135	104		80--120
Manganese, Total, ICP	0.82	4.1	mg/Kg	453	487	108		80--120
Nickel, Total, ICP	2.1	10.3	mg/Kg	55.6	60	108		80--120
Selenium, Total, ICP	10	51.3	mg/Kg	161	175	109		78--122
Silver, Total, ICP	1.6	8.21	mg/Kg	101	112	111		66--134
Thallium, Total, ICP	16	82.1	mg/Kg	133	146	110		77--123
Zinc, Total, ICP	2.1	10.3	mg/Kg	177	188	106		79--121

LD:WG102346-4 L47888-1 Matrix: SALTWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: 423062-200-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Aluminum, Total, ICP	4.6	22.9	mg/Kg	12900	12600	2		20
Antimony, Total, ICP	0.69	3.43	mg/Kg	<MDL	<MDL			20
Arsenic, Total, ICP	1.1	5.72	mg/Kg	5.8	5.78	0		20
Beryllium, Total, ICP	0.046	0.229	mg/Kg	0.352	0.34	3		20
Cadmium, Total, ICP	0.092	0.458	mg/Kg	0.24	0.22			20
Chromium, Total, ICP	0.14	0.686	mg/Kg	14.2	13.7	3		20
Copper, Total, ICP	0.18	0.915	mg/Kg	32.4	32.4	0		20
Iron, Total, ICP	2.3	11.4	mg/Kg	16900	16600	2		20
Lead, Total, ICP	0.92	4.58	mg/Kg	14.3	13.8	3		20
Manganese, Total, ICP	0.092	0.458	mg/Kg	202	198	2		20
Nickel, Total, ICP	0.23	1.14	mg/Kg	11.7	11.4	2		20
Selenium, Total, ICP	1.1	5.72	mg/Kg	<MDL	<MDL			20
Silver, Total, ICP	0.18	0.915	mg/Kg	<MDL	<MDL			20
Thallium, Total, ICP	1.8	9.15	mg/Kg	<MDL	<MDL			20
Zinc, Total, ICP	0.23	1.14	mg/Kg	59.9	58.8	2		20

MS:WG102346-5 L47888-1 Matrix: SALTWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: 423062-200-4
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP	4.7	23.7	mg/Kg	12900	4770	19200	132	*	75--125
Antimony, Total, ICP	0.71	3.56	mg/Kg	<MDL	23.7	3.67	15	*	75--125
Arsenic, Total, ICP	1.2	5.94	mg/Kg	5.8	23.7	28.1	94		75--125
Beryllium, Total, ICP	0.047	0.237	mg/Kg	0.352	23.7	23	95		75--125
Cadmium, Total, ICP	0.095	0.475	mg/Kg	0.24	23.7	22.5	94		75--125
Chromium, Total, ICP	0.14	0.712	mg/Kg	14.2	23.7	37	96		75--125
Copper, Total, ICP	0.19	0.95	mg/Kg	32.4	23.7	56	99		75--125
Iron, Total, ICP	2.4	11.9	mg/Kg	16900	2400	19600			(No MS/MSD %Rec. due to 4x rule)
Lead, Total, ICP	0.95	4.75	mg/Kg	14.3	23.7	35.9	91		75--125
Manganese, Total, ICP	0.095	0.475	mg/Kg	202	119	319	98		75--125
Nickel, Total, ICP	0.24	1.19	mg/Kg	11.7	23.7	33.9	93		75--125
Selenium, Total, ICP	1.2	5.94	mg/Kg	<MDL	23.7	21.1	89		75--125
Silver, Total, ICP	0.19	0.95	mg/Kg	<MDL	23.7	24.1	101		75--125
Thallium, Total, ICP	1.9	9.5	mg/Kg	<MDL	23.7	22.1	93		75--125
Zinc, Total, ICP	0.24	1.19	mg/Kg	59.9	119	167	90		75--125

SRM:WG102346-6 Matrix: SALTWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP	41	203	mg/Kg	66200	15700	24		10--43
Chromium, Total, ICP	1.2	6.08	mg/Kg	90.7	46.2	51		30--70
Copper, Total, ICP	1.6	8.11	mg/Kg	310	305	98		78--118
Iron, Total, ICP	20	101	mg/Kg	40900	30300	74		55--95
Lead, Total, ICP	8.1	40.5	mg/Kg	183	167	91		74--114
Manganese, Total, ICP	0.81	4.05	mg/Kg	440	241	55		35--75
Nickel, Total, ICP	2	10.1	mg/Kg	39.5	29.6	75		51--91
Zinc, Total, ICP	2	10.1	mg/Kg	364	336	92		73--113

WG102342 Total Mercury by CVAA

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/27/2009 10:36	5/18/2009 9:00	5/19/2009 11:35		
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/27/2009 12:10	5/18/2009 9:00	5/19/2009 11:42		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 12:45	5/18/2009 9:00	5/19/2009 12:24		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 14:00	5/18/2009 9:00	5/19/2009 12:26		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/29/2009 8:25	5/18/2009 9:00	5/19/2009 11:56		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/29/2009 8:55	5/18/2009 9:00	5/19/2009 11:58		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/29/2009 9:37	5/18/2009 9:00	5/19/2009 12:00		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/29/2009 10:00	5/18/2009 9:00	5/19/2009 12:02		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/29/2009 10:40	5/18/2009 9:00	5/19/2009 12:03		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 10:44	5/18/2009 9:00	5/19/2009 12:05		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 10:55	5/18/2009 9:00	5/19/2009 12:07		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 11:00	5/18/2009 9:00	5/19/2009 12:09		FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 11:53	5/18/2009 9:00	5/19/2009 12:11	WG102342-1, -2, -3, -4, -5, -6	
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 12:02	5/18/2009 9:00	5/19/2009 12:12		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 12:12	5/18/2009 9:00	5/19/2009 12:19		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 12:22	5/18/2009 9:00	5/19/2009 12:21		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 12:36	5/18/2009 9:00	5/19/2009 12:22		
WG102342-1	SRM		MTHG-MIDS	SALTWTRSED		5/18/2009 9:00	5/19/2009 11:29		PACS2
WG102342-2	MB		MTHG-MIDS	SOLIDBLANK		5/18/2009 9:00	5/19/2009 11:31		METHOD BLANK
WG102342-3	SB		MTHG-MIDS	SOLIDBLANK		5/18/2009 9:00	5/19/2009 11:33		WG102342-2 HG-SMID
WG102342-4	MS		MTHG-MIDS	SALTWTRSED		5/18/2009 9:00	5/19/2009 11:37		L47888-1 HG-SMID
WG102342-5	MSD		MTHG-MIDS	SALTWTRSED		5/18/2009 9:00	5/19/2009 11:38		WG102342-4 L47888-1 HG-SMID-MSD
WG102342-6	LD		MTHG-MIDS	SALTWTRSED		5/18/2009 9:00	5/19/2009 11:40		L47888-1 RPD-SOL

Workgroup: WG102342 Total Mercury by CVAA

SRM:WG102342-1 Matrix: SALTWTRSED Listtype: MTHG-MIDS Method: SW846 7471B Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Mercury, Total, CVAA	0.051	0.513	mg/Kg	3.04	2.99	98		80--120

MB:WG102342-2 Matrix: SOLIDBLANK Listtype: MTHG-MIDS Method: SW846 7471B Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAA	0.0024	0.0244	mg/Kg	<MDL	

SB:WG102342-3 MB:WG102342-2 Matrix: SOLIDBLANK Listtype: MTHG-MIDS Method: SW846 7471B Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Mercury, Total, CVAA	0.0024	0.0244	mg/Kg	<MDL	0.0488	0.0496	102		85--115

MSD:WG102342-5 MS:WG102342-4 L47888-1 Matrix: SALTWTRSED Listtype: MTHG-MIDS Method: SW846 7471B Project: 423062-200-4
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Mercury, Total, CVAA	0.0025	0.0247	mg/Kg	0.0742	0.05	0.122	96		75--125	0.0494	0.121	95		1		20

LD:WG102342-6 L47888-1 Matrix: SALTWTRSED Listtype: MTHG-MIDS Method: SW846 7471B Project: 423062-200-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Mercury, Total, CVAA	0.0025	0.0247	mg/Kg	0.0742	0.0778	5		20

ORGANIC CHEMISTRY QC DATA

WG101942 Semi Volatile Organics

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/27/2009 10:36	5/1/2009 7:00	5/20/2009 16:51		
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/27/2009 12:10	5/1/2009 7:00	5/20/2009 17:37		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 12:45	5/1/2009 7:00	5/20/2009 18:23		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 14:00	5/1/2009 7:00	5/20/2009 19:09		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/29/2009 8:25	5/1/2009 7:00	5/20/2009 19:54		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/29/2009 8:55	5/1/2009 7:00	5/20/2009 20:39		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/29/2009 9:37	5/1/2009 7:00	5/20/2009 21:25		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/29/2009 10:00	5/1/2009 7:00	5/20/2009 22:10		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/29/2009 10:40	5/1/2009 7:00	5/20/2009 22:55		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 10:44	5/1/2009 7:00	5/20/2009 23:40		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 10:55	5/1/2009 7:00	5/21/2009 0:25		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 11:00	5/1/2009 7:00	5/28/2009 18:14	WG101942-1, -2, -3, -4, -5, -6	FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 11:53	5/1/2009 7:00	5/28/2009 19:02		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 12:02	5/1/2009 7:00	5/28/2009 19:50		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 12:12	5/1/2009 7:00	5/28/2009 20:38		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 12:22	5/1/2009 7:00	5/28/2009 21:25		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 12:36	5/1/2009 7:00	5/28/2009 22:11		
WG101942-1	MB		ORBNASMS	OTHR SOLID		5/1/2009 7:00	5/20/2009 11:35		MB090501
WG101942-2	SB		ORBNASMS	OTHR SOLID		5/1/2009 7:00	5/20/2009 13:07		WG101942-1
WG101942-3	MS		ORBNASMS	SALTWTRSED		5/1/2009 7:00	5/20/2009 13:46		L47888-1
WG101942-4	MSD		ORBNASMS	SALTWTRSED		5/1/2009 7:00	5/20/2009 14:32		WG101942-3 L47888-1
WG101942-5	SRM		ORBNASMS	SALTWTRSED		5/1/2009 7:00	5/20/2009 15:19		1944
WG101942-6	LD		ORBNASMS	SALTWTRSED		5/1/2009 7:00	5/20/2009 16:05		L47888-2

Workgroup: WG101942 Semi Volatile Organics

MB:WG101942-1 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	
2-Methylnaphthalene	2	4	ug/Kg	<MDL	
2-Methylphenol	2	4	ug/Kg	<MDL	
4-Methylphenol	4	8	ug/Kg	<MDL	
Acenaphthene	2	4	ug/Kg	<MDL	
Acenaphthylene	2	4	ug/Kg	<MDL	
Anthracene	2	4	ug/Kg	<MDL	
Benzo(a)anthracene	2	4	ug/Kg	<MDL	
Benzo(a)pyrene	2	4	ug/Kg	<MDL	
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	
Benzoic Acid	10	20	ug/Kg	<MDL	
Benzyl Alcohol	2	4	ug/Kg	<MDL	
Benzyl Butyl Phthalate	1	2	ug/Kg	4.06	B
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	35.1	B
Caffeine	4	8	ug/Kg	<MDL	
Carbazole	2	4	ug/Kg	<MDL	
Chrysene	2	4	ug/Kg	<MDL	
Coprostanol	40	80	ug/Kg	<MDL	
Di-N-Butyl Phthalate	4	8	ug/Kg	<MDL	
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	
Dibenzofuran	2	4	ug/Kg	<MDL	
Diethyl Phthalate	4	8	ug/Kg	<MDL	
Dimethyl Phthalate	4	8	ug/Kg	<MDL	
Fluoranthene	2	4	ug/Kg	<MDL	
Fluorene	2	4	ug/Kg	<MDL	
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	
Hexachloroethane	1	2	ug/Kg	<MDL	
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	

N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL
Naphthalene	2	4	ug/Kg	<MDL
Pentachlorophenol	10	20	ug/Kg	<MDL
Phenanthrene	2	4	ug/Kg	<MDL
Phenol	4	8	ug/Kg	<MDL
Pyrene	2	4	ug/Kg	<MDL
Total 4-Nonylphenol	5	10	ug/Kg	<MDL
Total HPAHS	2	4	ug/Kg	<MDL
Total LPAHs	2	4	ug/Kg	<MDL

SB:WG101942-2 MB:WG101942-1 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	250	180	72		13--110
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	135	54		10--116
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	160	64		18--95
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	155	62		21--99
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	250	33.8	14		10--81
Acenaphthene	2	4	ug/Kg	<MDL	250	181	72		29--102
Acenaphthylene	2	4	ug/Kg	<MDL	250	194	78		31--101
Anthracene	2	4	ug/Kg	<MDL	250	226	90		45--114
Benzo(a)anthracene	2	4	ug/Kg	<MDL	250	269	108		69--117
Benzo(a)pyrene	2	4	ug/Kg	<MDL	250	228	91		15--137
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	250	268	107		50--121
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	250	217	87		46--126
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	250	222	89		58--128
Benzyl Butyl Phthalate	1	2	ug/Kg	4.06	250	238	94		15--183
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	35.1	250	230	78		10--182
Carbazole	2	4	ug/Kg	<MDL	250	236	94		44--179
Chrysene	2	4	ug/Kg	<MDL	250	212	85		69--111
Di-N-Butyl Phthalate	4	8	ug/Kg	<MDL	250	247	99		17--180
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	250	266	106		10--200
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	250	275	110		53--129
Diethyl Phthalate	4	8	ug/Kg	<MDL	250	192	77		51--118
Dimethyl Phthalate	4	8	ug/Kg	<MDL	250	192	77		38--114
Fluoranthene	2	4	ug/Kg	<MDL	250	245	98		55--132
Fluorene	2	4	ug/Kg	<MDL	250	189	75		39--106
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	250	148	59		40--111
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	250	188	75		10--97
Hexachloroethane	1	2	ug/Kg	<MDL	250	139	56		17--92
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	250	250	100		51--132

N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	250	137	55	11--148
Naphthalene	2	4	ug/Kg	<MDL	250	129	51	17--94
Pentachlorophenol	10	20	ug/Kg	<MDL	250	139	56	38--124
Phenanthrene	2	4	ug/Kg	<MDL	250	214	86	57--104
Phenol	4	8	ug/Kg	<MDL	250	26.6	11	10--107
Pyrene	2	4	ug/Kg	<MDL	250	272	109	48--132
Total HPAHS	2	4	ug/Kg	<MDL	2500	2460	98	25--150
Total LPAHs	2	4	ug/Kg	<MDL	1750	1130	65	25--150

MSD:WG101942-4 MS:WG101942-3 L47888-1 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	250	117	47		10--115	250	119	48		2		35
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	106	43		10--105	250	120	48		11		35
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	103	41		10--103	250	123	49		18		35
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	109	44		10--104	250	124	49		11		35
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	250	160	64		10--150	250	141	57		12		35
Acenaphthene	2	4	ug/Kg	3.7	250	196	77		25--130	250	173	68		12		35
Acenaphthylene	2	4	ug/Kg	3	250	217	86		27--132	250	196	77		11		35
Anthracene	2	4	ug/Kg	20.1	250	262	97		10--181	250	245	90		7		35
Benzo(a)anthracene	2	4	ug/Kg	81	250	342	105		32--168	250	332	100		5		35
Benzo(a)pyrene	2	4	ug/Kg	62.6	250	287	90		10--200	250	256	77		16		35
Benzo(b)fluoranthene	2	4	ug/Kg	104	250	352	99		10--199	250	365	104		5		35
Benzo(g,h,i)perylene	2	4	ug/Kg	27.6	250	148	48		10--173	250	131	41		16		35
Benzo(k)fluoranthene	2	4	ug/Kg	75.1	250	323	99		10--192	250	270	78		24		35
Benzyl Butyl Phthalate	1	2	ug/Kg	33.6	250	254	88		41--145	250	234	80		10		35
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	249	250	459	84		10--189	250	427	71		17		35
Carbazole	2	4	ug/Kg	8.74	250	237	91		16--200	250	217	83		9		35
Chrysene	2	4	ug/Kg	103	250	303	80		14--184	250	315	85		6		35
Di-N-Butyl Phthalate	4	8	ug/Kg	11.7	250	229	87		10--194	250	203	77		12		35
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	250	346	138		52--151	250	372	149		8		35
Dibenzo(a,h)anthracene	2	4	ug/Kg	14.4	250	177	65		10--166	250	159	58		11		35
Diethyl Phthalate	4	8	ug/Kg	<MDL	250	168	67		31--150	250	144	58		14		35
Dimethyl Phthalate	4	8	ug/Kg	<MDL	250	169	67		13--162	250	148	59		13		35
Fluoranthene	2	4	ug/Kg	180	250	408	91		12--188	250	382	81		12		35
Fluorene	2	4	ug/Kg	6.54	250	190	73		22--147	250	165	63		15		35
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	250	150	60		18--151	250	139	56		7		35
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	250	111	44		10--97	250	118	47		7		35
Hexachloroethane	1	2	ug/Kg	<MDL	250	124	50		10--89	250	120	48		4		35
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	26.5	250	175	60		10--177	250	153	51		16		35
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	250	172	69		10--169	250	158	63		9		35

Naphthalene	2	4	ug/Kg	3.2	250	162	63	12--97	250	129	50	23	35
Pentachlorophenol	10	20	ug/Kg	<MDL	250	191	76	17--170	250	181	73	4	35
Phenanthrene	2	4	ug/Kg	51.2	250	292	96	10--200	250	253	81	17	35
Phenol	4	8	ug/Kg	<MDL	250	102	41	10--127	250	96.9	39	5	35
Pyrene	2	4	ug/Kg	163	250	423	104	20--174	250	367	82	24	35
Total HPAHS	2	4	ug/Kg	837	2500	2940	84	25--150	2500	2730	76	10	35
Total LPAHs	2	4	ug/Kg	91.3	1750	1320	70	25--150	1750	1160	61	14	35

SRM:WG101942-5 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Anthracene	20	40	ug/Kg	131	77.6	59		28--98
Benzo(a)anthracene	20	40	ug/Kg	349	374	107		66--124
Benzo(a)pyrene	20	40	ug/Kg	318	248	78		60--116
Benzo(b)fluoranthene	20	40	ug/Kg	286	277	97		52--190
Benzo(g,h,i)perylene	20	40	ug/Kg	210	74.7	36		15--121
Benzo(k)fluoranthene	20	40	ug/Kg	170	226	133		60--146
Chrysene	20	40	ug/Kg	360	399	111		77--136
Dibenzo(a,h)anthracene	20	40	ug/Kg	31.4	38	120		10--200
Fluoranthene	20	40	ug/Kg	660	698	106		45--126
Indeno(1,2,3-Cd)Pyrene	20	40	ug/Kg	206	88.1	43		33--121
Naphthalene	20	40	ug/Kg	122	28	23		10--29
Phenanthrene	20	40	ug/Kg	390	372	95		51--106
Pyrene	20	40	ug/Kg	718	723	101		36--135

LD:WG101942-6 L47888-2 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	<MDL			35
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	<MDL			35
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	<MDL			35
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	0.667	0.592	12		35
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	<MDL			35
2-Methylnaphthalene	2	4	ug/Kg	15.5	22.8	38	*	35
2-Methylphenol	2	4	ug/Kg	<MDL	<MDL			35
4-Methylphenol	4	8	ug/Kg	<MDL	<MDL			35
Acenaphthene	2	4	ug/Kg	46.7	72.9	44	*	35
Acenaphthylene	2	4	ug/Kg	4.99	17.2	110	*	35
Anthracene	2	4	ug/Kg	42.4	80.3	62	*	35
Benzo(a)anthracene	2	4	ug/Kg	140	296	72	*	35

Benzo(a)pyrene	2	4	ug/Kg	66.7	139	70	*	35
Benzo(b)fluoranthene	2	4	ug/Kg	105	327	103	*	35
Benzo(g,h,i)perylene	2	4	ug/Kg	19.4	46.3	82	*	35
Benzo(k)fluoranthene	2	4	ug/Kg	93.9	202	73	*	35
Benzoic Acid	10	20	ug/Kg	110	254	79	*	35
Benzyl Alcohol	2	4	ug/Kg	<MDL	<MDL			35
Benzyl Butyl Phthalate	1	2	ug/Kg	19.3	28.9	40	*	35
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	207	281	30		35
Caffeine	4	8	ug/Kg	<MDL	<MDL			35
Carbazole	2	4	ug/Kg	10.4	84.6	156	*	35
Chrysene	2	4	ug/Kg	142	392	94	*	35
Coprostanol	40	80	ug/Kg	<MDL	<MDL			35
Di-N-Butyl Phthalate	4	8	ug/Kg	7.2	11	42	*	35
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Dibenzo(a,h)anthracene	2	4	ug/Kg	9.9	23.9	83	*	35
Dibenzofuran	2	4	ug/Kg	28.6	45.8	46	*	35
Diethyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Dimethyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Fluoranthene	2	4	ug/Kg	441	990	77	*	35
Fluorene	2	4	ug/Kg	32.2	64.2	66	*	35
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	<MDL			35
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	<MDL			35
Hexachloroethane	1	2	ug/Kg	<MDL	<MDL			35
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	19.7	49.2	86	*	35
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	<MDL			35
Naphthalene	2	4	ug/Kg	7.29	8.52	16		35
Pentachlorophenol	10	20	ug/Kg	<MDL	<MDL			35
Phenanthrene	2	4	ug/Kg	215	588	93	*	35
Phenol	4	8	ug/Kg	11.5	22.4	65	*	35
Pyrene	2	4	ug/Kg	383	916	82	*	35
Total 4-Nonylphenol	5	10	ug/Kg	67.9	71.6	5		35
Total HPAHS	2	4	ug/Kg	1420	3380	82	*	35
Total LPAHs	2	4	ug/Kg	365	854	80	*	35

Surrogate: (Lab Limits)	2,4,6-Tribromo phenol 29--112	2-Fluorobiphenyl 31--101	2-Fluorophenol 10--112	d14-Terphenyl 51--130	d4-1,2-Dichlorobenzene 24--91	d4-2-Chlorophenol 11--105	d5-Nitrobenzene 28--94	5-Phenol 10--106
L47888-1	104	67	51	106	43	49	63	60
L47888-2	100	62	43	109	47	49	65	74
L47888-3	90	66	53	122	49	54	52	46
L47888-4	86	67	58	125	49	54	51	47
L47888-5	98	55	48	108	43	45	46	39
L47888-6	103	57	47	116	47	53	38	48
L47888-7	97	56	42	113	41	47	44	46
L47888-8	90	55	42	111	45	52	39	47
L47888-9	92	65	39	115	48	43	40	39
L47893-1	104	57	39	111	45	43	38	28
L47893-2	98	61	35	115	49	51	33	41
L47893-3	112	69	49	110	48	51	58	41
L47893-4	100	59	70	97	48	51	59	45
L47893-5	83	52	67	102	43	45	50	33
L47893-6	80	57	64	97	39	42	53	34
L47893-7	111	75	66	98	41	44	53	34
L47893-8	81	59	63	91	31	44	48	36
WG101942-1	59	56	55	97	49	46	53	46
WG101942-2	80	51	58	102	72	32	47	12
WG101942-3	88	62	48	99	58	47	48	46
WG101942-4	80	56	56	87	63	46	47	45
WG101942-5	106	82	86	109	71	87	86	99
WG101942-6	100	71	54	111	39	55	63	59

Trace Organics Data Anomaly Form

Date(s) Occurred: *09/05/20*

WG #(s): *WG101942*

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

Project #(s): *423062-100-4 Duwamish Cap Monitoring*

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. WG101942-1 MB - the extraction blank had a quantitatable levels of Benzyl Butyl Phthalate at 4.06 ug/Kg and Bis(2EH)phthalate at 35.1 ug/Kg.

11. WG101942-5 LD of L47888-2 had 24 of 28 reported analytes exceeded lab QA/QC limits for %RSD.

17C. WG101942-2 SB, WG101942-3 MS, and WG101942-4 MSD have no recoveries for Benzyl Alcohol, 2-Methylphenol, 4-Methylphenol, Benzoic Acid, 2-Methylnaphthalene, Dibenzofuran, Coprostanol, and Caffeine. Spiking solutions independently are purchased from suppliers and are purposely not part of the solution used to generate the calibration curve. The compounds were not in the spiking solution as purchased from the manufacturer, which was an oversight, and has been corrected.

☒ Potential effect explanation (explanation mandatory):

11. The analyses of the sample (L47888-2) and the lab duplicate (WG101942-6) demonstrated the potential homogeneity problems for the PAH analytes in higher concentrations . One possible explanation for the ranges in concentrations found would be the source of the PAH contamination. PAHs are abundant in petroleum products in varying concentrations. The "oils" usually coat or encapsulate the sediment particles in a random fashion. The PAHs are also abundant in asphalts or creosotes which can be "flecks" or "specks" in the samples. The "oils" and/or "specks" create homogeneity issues when taking an aliquot of the sample for analysis. The PAHs for samples L47888-2 and WG109142-6- LD were flagged J as estimates. The range of the PAHs vary approximately 2-3 times in concentration for the 2 aliquots and should be noted in data usage.

	Signatures	**Signature Dates**
Reported By: *M. Doubrava*		
Reviewer:	_____	_____
Supervisor: *Dana Walker*	_____	_____
QA Officer: *Colin Elliott*	_____	_____
(For QA1 only)	_____	_____
cc: LPM:		

WG102009 PCB

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/27/2009 10:36	5/5/2009 8:00	6/8/2009 21:48		
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/27/2009 12:10	5/5/2009 8:00	6/8/2009 22:30		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 12:45	5/5/2009 8:00	6/8/2009 23:11		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 14:00	5/5/2009 8:00	6/9/2009 1:52		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/29/2009 8:25	5/5/2009 8:00	6/9/2009 3:50		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/29/2009 8:55	5/5/2009 8:00	6/9/2009 4:31		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/29/2009 9:37	5/5/2009 8:00	6/9/2009 5:12		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/29/2009 10:00	5/5/2009 8:00	6/9/2009 5:54		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/29/2009 10:40	5/5/2009 8:00	6/9/2009 6:35		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 10:44	5/5/2009 8:00	6/9/2009 7:17		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 10:55	5/5/2009 8:00	6/9/2009 9:59		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 11:00	5/5/2009 8:00	6/9/2009 10:40	WG102009-1, -2, -3, -4, -5, -6	FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 11:53	5/5/2009 8:00	6/9/2009 11:21		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 12:02	5/5/2009 8:00	6/9/2009 12:01		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 12:12	5/5/2009 8:00	6/9/2009 12:42		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 12:22	5/5/2009 8:00	6/9/2009 13:24		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 12:36	5/5/2009 8:00	6/9/2009 14:05		
WG102009-1	MB		ORPCBLL	OTHR SOLID		5/5/2009 8:00	6/8/2009 17:43		MB090505
WG102009-2	SB		ORPCBLL	OTHR SOLID		5/5/2009 8:00	6/8/2009 18:25		WG102009-1
WG102009-3	MS		ORPCBLL	SALTWTRSED		5/5/2009 8:00	6/8/2009 19:06		L47893-1
WG102009-4	MSD		ORPCBLL	SALTWTRSED		5/5/2009 8:00	6/8/2009 19:47		WG102009-3 L47893-1
WG102009-5	SRM		ORPCBLL	OTHR SOLID		5/5/2009 8:00	6/8/2009 20:27		HS-2
WG102009-6	LD		ORPCBLL	SALTWTRSED		5/5/2009 8:00	6/8/2009 21:06		L47888-2

Workgroup: WG102009 (pplls#79 pcbll) Run ID: R135136

MB:WG102009-1 Matrix: OTHR SOLID Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: NONE
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	
Aroclor 1221	1.7	3.33	ug/Kg	<MDL	
Aroclor 1232	1.7	3.33	ug/Kg	<MDL	
Aroclor 1242	0.83	1.67	ug/Kg	<MDL	
Aroclor 1248	0.83	1.67	ug/Kg	<MDL	
Aroclor 1254	0.83	1.67	ug/Kg	<MDL	
Aroclor 1260	0.83	1.67	ug/Kg	<MDL	
Total Aroclors	0.83	1.67	ug/Kg	<MDL	

SB:WG102009-2 MB:WG102009-1 Matrix: OTHR SOLID Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	25	19.3	77		39--121
Aroclor 1260	0.83	1.67	ug/Kg	<MDL	25	22.8	91		53--140

MSD:WG102009-4 MS:WG102009-3 L47893-1 Matrix: SALTWTRSED Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: 423062-200-4
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	25	19.9	79		32--164	25	20.3	81		3		50
Aroclor 1260	0.83	1.67	ug/Kg	16.2	25	34.3	73		28--144	25	31	59		21		50

SRM:WG102009-5 Matrix: OTHR SOLID Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Aroclor 1254	2.7	5.33	ug/Kg	112	74.7	67		57--139

LD:WG102009-6 L47888-2 Matrix: SALTWTRSED Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: 423062-200-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Aroclor 1016	5.3	10.5	ug/Kg	<MDL	<MDL			100
Aroclor 1221	1.7	3.33	ug/Kg	<MDL	<MDL			100
Aroclor 1232	1.7	3.33	ug/Kg	<MDL	<MDL			100
Aroclor 1242	0.83	1.67	ug/Kg	<MDL	<MDL			100
Aroclor 1248	0.83	1.67	ug/Kg	14.6	12.2	18		100
Aroclor 1254	0.83	1.67	ug/Kg	15.8	16.6	5		100
Aroclor 1260	0.83	1.67	ug/Kg	9.53	9.02	6		100
Total Aroclors	0.83	1.67	ug/Kg	39.9	37.9	5		100

Surrogate: (Lab Limits)	2,4,5,6-Tetrachloro m xylene 10--118	Decachloro biphenyl 12--158
L47888-1	96	82
L47888-2	100	80
L47888-3	102	129
L47888-4	104	140
L47888-5	100	89
L47888-6	107	93
L47888-7	107	83
L47888-8	104	77
L47888-9	98	85
L47893-1	114	100
L47893-2	108	104
L47893-3	117	106
L47893-4	101	95
L47893-5	97	102
L47893-6	114	108
L47893-7	112	93
L47893-8	101	102
WG102009-1	67	99
WG102009-2	71	98
WG102009-3	100	85
WG102009-4	88	78
WG102009-5	82	73
WG102009-6	75	66

WG102008 Chlorinated Pesticides

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/27/2009 10:36	5/5/2009 8:00	6/8/2009 16:15		
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/27/2009 12:10	5/5/2009 8:00	5/29/2009 18:44		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 12:45	5/5/2009 8:00	5/29/2009 19:21		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 14:00	5/5/2009 8:00	5/29/2009 21:50		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/29/2009 8:25	5/5/2009 8:00	5/29/2009 22:27		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/29/2009 8:55	5/5/2009 8:00	5/29/2009 23:04		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/29/2009 9:37	5/5/2009 8:00	5/29/2009 23:41		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/29/2009 10:00	5/5/2009 8:00	5/30/2009 0:19		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/29/2009 10:40	5/5/2009 8:00	5/30/2009 0:56		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 10:44	5/5/2009 8:00	5/30/2009 1:33		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 10:55	5/5/2009 8:00	5/30/2009 2:10		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 11:00	5/5/2009 8:00	5/30/2009 2:47	WG102008-1, -2, -3, -4, -5, -6	FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 11:53	5/5/2009 8:00	5/30/2009 5:16		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 12:02	5/5/2009 8:00	5/30/2009 5:53		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 12:12	5/5/2009 8:00	5/30/2009 6:31		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 12:22	5/5/2009 8:00	5/30/2009 7:08		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 12:36	5/5/2009 8:00	5/30/2009 7:45		
WG102008-1	MB		ORPESTLL	OTHR SOLID		5/5/2009 8:00	5/29/2009 14:23		MB090505
WG102008-2	SB		ORPESTLL	OTHR SOLID		5/5/2009 8:00	5/29/2009 15:00		WG102008-1
WG102008-3	MS		ORPESTLL	SALTWTRSED		5/5/2009 8:00	6/8/2009 15:01		L47888-1
WG102008-4	MSD		ORPESTLL	SALTWTRSED		5/5/2009 8:00	6/8/2009 15:38		WG102008-3 L47888-1
WG102008-5	SRM		ORPESTLL	OTHR SOLID		5/5/2009 8:00	5/29/2009 16:52		1944
WG102008-6	LD		ORPESTLL	SALTWTRSED		5/5/2009 8:00	5/29/2009 17:29		L47888-2

Workgroup: WG102008 (pplls#79 pestll) Run ID: R134817

MB:WG102008-1 Matrix: OTHR SOLID Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: NONE
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	
Aldrin	0.67	1.33	ug/Kg	<MDL	
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	
Alpha-Chlordane	0.33	0.667	ug/Kg	<MDL	
Beta-BHC	0.33	0.667	ug/Kg	<MDL	
Delta-BHC	0.33	0.667	ug/Kg	<MDL	
Dieldrin	0.67	1.33	ug/Kg	<MDL	
Endosulfan I	0.67	1.33	ug/Kg	<MDL	
Endosulfan II	0.67	1.33	ug/Kg	<MDL	
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	
Endrin	0.67	1.33	ug/Kg	<MDL	
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	
Gamma-Chlordane	0.33	0.667	ug/Kg	<MDL	
Heptachlor	0.33	0.667	ug/Kg	<MDL	
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	
Methoxychlor	3.3	6.67	ug/Kg	<MDL	
Toxaphene	6.7	13.3	ug/Kg	<MDL	

SB:WG102008-2 MB:WG102008-1 Matrix: OTHR SOLID Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	6.67	5.34	80		78--121
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	6.67	5.59	84		75--111
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	6.67	5.63	84		57--145
Aldrin	0.67	1.33	ug/Kg	<MDL	6.67	4.13	62		28--113
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.4	66		20--99
Beta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.04	76		66--102
Delta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.55	68		63--108
Dieldrin	0.67	1.33	ug/Kg	<MDL	6.67	5.48	82		58--139
Endosulfan I	0.67	1.33	ug/Kg	<MDL	6.67	5.05	76		62--104
Endosulfan II	0.67	1.33	ug/Kg	<MDL	6.67	5.12	77		72--109
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	6.67	4.29	64		61--104
Endrin	0.67	1.33	ug/Kg	<MDL	6.67	5.28	79		60--160
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	6.67	0.83	12		10--77
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	6.67	4.49	67		27--130
Heptachlor	0.33	0.667	ug/Kg	<MDL	6.67	4.54	68		20--137
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	6.67	4.99	75		59--107
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	7.15	107		72--131

MSD:WG102008-4 MS:WG102008-3 L47888-1 Matrix: SALTWTRSED Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: 423062-200-4
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	6.67	6.66	100		41--157	6.67	5.64	85		16		50
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	6.67	6.69	100		59--125	6.67	5.71	86		15		50
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	6.67	6.74	101		50--144	6.67	5.72	86		16		50
Aldrin	0.67	1.33	ug/Kg	<MDL	6.67	5.12	77		61--119	6.67	4.4	66		15		50
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.17	78		59--111	6.67	4.5	68		14		50
Beta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.08	76		60--119	6.67	4.53	68		11		50
Delta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.28	79		54--126	6.67	4.65	70		12		50
Dieldrin	0.67	1.33	ug/Kg	<MDL	6.67	6.16	92		60--139	6.67	5.31	80		14		50
Endosulfan I	0.67	1.33	ug/Kg	<MDL	6.67	5.82	87		64--113	6.67	4.99	75		15		50
Endosulfan II	0.67	1.33	ug/Kg	<MDL	6.67	6.24	94		36--146	6.67	5.31	80		16		50
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	6.67	5.03	76		46--113	6.67	4.32	65		16		50
Endrin	0.67	1.33	ug/Kg	<MDL	6.67	6.82	102		62--166	6.67	6.02	90		13		50
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	6.67	2.32	35		10--66	6.67	1.98	30		15		50
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	6.67	5.06	76		61--135	6.67	4.48	67		13		50
Heptachlor	0.33	0.667	ug/Kg	<MDL	6.67	5.96	89		52--157	6.67	5.37	80		11		50
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	6.67	5.58	84		61--118	6.67	4.96	74		13		50
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	7.62	114		53--129	6.67	6.7	100		13		50

SRM:WG102008-5 Matrix: OTHR SOLID Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
4,4'-DDT	5.3	10.7	ug/Kg	119	152	128		10--200
Alpha-Chlordane	2.7	5.33	ug/Kg	16.5	13.7	83		48--144

LD:WG102008-6 L47888-2 Matrix: SALTWTRSED Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: 423062-200-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	<MDL			35
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	<MDL			35
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	<MDL			35
Aldrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Alpha-Chlordane	0.33	0.667	ug/Kg	<MDL	<MDL			35
Beta-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Delta-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Dieldrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan I	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan II	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	<MDL			35
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	<MDL			35
Gamma-Chlordane	0.33	0.667	ug/Kg	<MDL	<MDL			35
Heptachlor	0.33	0.667	ug/Kg	<MDL	<MDL			35
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	<MDL			35
Methoxychlor	3.3	6.67	ug/Kg	<MDL	<MDL			35
Toxaphene	6.7	13.3	ug/Kg	<MDL	<MDL			35

Surrogate: (Lab Limits)	2,4,5,6-Tetra chloro m xylene 10--118	Decachl oro biphenyl 12--158
L47888-1	63	74
L47888-2	57	58
L47888-3	59	74
L47888-4	56	66
L47888-5	53	55
L47888-6	56	59
L47888-7	53	53
L47888-8	55	56
L47888-9	53	54
L47893-1	57	57
L47893-2	52	52
L47893-3	59	56
L47893-4	53	64
L47893-5	56	59
L47893-6	58	60
L47893-7	54	55
L47893-8	56	56
WG102008-1	47	79
WG102008-2	53	81
WG102008-3	71	108
WG102008-4	62	143
WG102008-5	60	88
WG102008-6	53	57

CHAIN OF CUSTODY FORMS

Login Number: P47893

Page: 1

T_DUD, STAC, THIN

DUDI SEDS, STAS. C, THIN

Project Number: 423062-200-4

Personnel: John Blaine, Jim Devereaux

Sample No. (Type)	P47893-1	P47893-2	P47893-3 (FREP for -2)
Locator	DUD_3C	DUD_4C	DUD_4C
Short Loc. Desc.	DUD_3C	DUD_4C	DUD_4C
Locator Desc.	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	4/28/09 1044	4/28/09 1055	4/28/09 1100
End Date/Time	" 1046	1057	1105
Time Span			
Sample Depth	10	10	10
Comments	1 Grab Comp, 0-10 cm	1 Grab Comp, 0-10 cm, AREP	1 Grab Comp, 0-10 cm, FREP
PERSONNEL	JG, JB, JD →		
SAMP METH	20143 →		
SED DEPTH	13cm	13 cm	13 cm
SED SAMP RANGE			
SED TYPE	2ØN3Ø	3ØN3Ø	3ØN3Ø
TIDE COND	E	E	E
TIDE HT	3	2.5	2
SAMP FUNC	**********	**********	

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-M	6 SALTWTRSED HG-CVAA-M	6 SALTWTRSED HG-CVAA-M	
6 SALTWTRSED MN-ICP	6 SALTWTRSED MN-ICP	6 SALTWTRSED MN-ICP	
6 SALTWTRSED PP ICP	6 SALTWTRSED PP ICP	6 SALTWTRSED PP ICP	

Boards WG102389 AHW 5/19

100m Samples

F. Data WG102365 AHW 5/21

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
John Blaine	4-28-09	1610
RECEIVED BY	Date	Time
	4-28-09	1610

Sample Number(s) 1-8 (All)

continue ...

DUDI SEDS, STAS. C, THIN

Project Number: 423062-200-4 Personnel: John Blaney, Jim Devereaux, Jeve Colton

Sample No. (Type)	P47893-4	P47893-5	P47893-6
Locator	DUD_5C	DUD_6C	DUD_7C
Short Loc. Desc.	DUD_5C	DUD_6C	DUD_7C
Locator Desc.	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	4/28/09 1153	4/28/09 1202	4/28/09 1212
End Date/Time	" 1155	" 1204	" 1215
Time Span			
Sample Depth	10	10	10
Comments	1 Grab Comp, 0-10 cm	1 Grab Comp, 0-10 cm	1 Grab Comp, 0-10 cm
PERSONNEL	JD, JB, JC →	→	→
SAMP METH	20143 →	→	→
SED DEPTH	13 cm	11 cm	17 cm
SED SAMP RANGE			
SED TYPE	20N20	34N30	20N20
TIDE COND	E	E	E
TIDE HT	1	0	-0.5
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-M	6 SALTWTRSED HG-CVAA-M	6 SALTWTRSED HG-CVAA-M
	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

continue ...

DUDI SEDS, STAS. C, THIN

Project Number: 423062-200-4

Personnel: John Blaine, Jim Devereaux, Jenee Colton

Sample No. (Type)	P47893-7	P47893-8	
Locator	DUD_14C	DUD_15C	
Short Loc. Desc.	DUD_14C	DUD_15C	
Locator Desc.	PERIMETER LOCATION 14C	DUDI PERIMETER LOCATION 15C	
Site	DUWAMISH RIVER	DUWAMISH RIVER	
Start Date/Time	4/28/09 1222	4/28/09 1236	
End Date/Time	" 1225	" 1240	
Time Span			
Sample Depth	8	8	
Comments	1 Grab Comp, 0-10 cm	1 Grab Comp, 0-10 cm	
PERSONNEL			
SAMP METH	20143 →		
SED DEPTH	15 CM	14 CM	
SED SAMP RANGE			
SED TYPE	21N3Ø	21N3Ø	
TIDE COND	E	E	
TIDE HT	-1	-1.2	
Dept., Matrix, Prod			
	3 SALTWTRSED PSD	3 SALTWTRSED PSD	
	3 SALTWTRSED TOC	3 SALTWTRSED TOC	
	3 SALTWTRSED TOTS	3 SALTWTRSED TOTS	
	6 SALTWTRSED AL-ICP	6 SALTWTRSED AL-ICP	
	6 SALTWTRSED FE-ICP	6 SALTWTRSED FE-ICP	
	6 SALTWTRSED HG-CVAA-M	6 SALTWTRSED HG-CVAA-M	
	6 SALTWTRSED MN-ICP	6 SALTWTRSED MN-ICP	
	6 SALTWTRSED PP ICP	6 SALTWTRSED PP ICP	
	7 SALTWTRSED BNASMS	7 SALTWTRSED BNASMS	
	7 SALTWTRSED PCBLL	7 SALTWTRSED PCBLL	

continue ...

KING COUNTY ENVIRONMENTAL LABORATORY
QUALITY ASSURANCE REVIEW

For

ESTUARINE SEDIMENT ANALYTICAL DATA

DUWAMISH/DIAGONAL SEDIMENT REMEDIATION PROJECT
YEAR FOUR, ENR CAP SEDIMENT CHARACTERIZATION
APRIL 2009 SAMPLING EVENT

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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 Year Four, ENR Cap Sediment Characterization, April 2009 Sampling Event. 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 2008. 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 April 28, 2009 as part of the Duwamish/Diagonal Sediment Remediation Project Year Four, ENR Cap Sediment Characterization Sampling Event. The Sampling and Analysis Plan (SAP) in effect for this sampling event is titled: Duwamish/Diagonal Sediment Remediation Dredging and Capping Operations, Sediment Monitoring Sampling and Analysis Plan. October 28, 2003. (KCEL document # 177)

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 t*he 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 2008 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 based on the rules below.

1. Add a "B" flag to all parameters if the associated blank is ≥ the MDL and the sample result is ≥ MDL but ≤ 5 times the blank.
2. Add a "B2" flag to common organic lab contaminants (Acetone, 2-Butanone, Methylene Chloride, Bis (2-ethylhexyl) Phthalate, Butyl Benzyl Phthalate and Di-n-butyl Phthalate) if the method blank is ≥ the MDL and the sample result is > 5 and ≤ 10 times the blank.
3. Add a "B3" flag to all other parameters if the associated blank is ≥ the MDL and the sample result is > 5 and ≤ 10 times the blank.

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 may be flagged with a JL whenever recoveries are measured above the acceptance limits and may be flagged with a JG 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 may be flagged with a JL whenever recoveries are measured above the acceptance limits and may be flagged with a JG when recoveries are measured below the acceptance limits (but at or above 10%). Flags are applied to specific sample results based on matrix spike recoveries only if the unacceptable recovery is indicative of a consistent bias for all associated samples.

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. The original sample are flagged with a J or JK whenever the measured precision is unacceptable (greater than the acceptance limit).). Associated sample data will also be flagged if the unacceptable precision is expected in samples of the same matrix and composition.

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 may be flagged with a JL whenever recoveries are measured above the acceptance limits and may be flagged with a JG when recoveries are measured below the acceptance limits (but at

or above 10%). Flags are applied to reported results based on surrogate recoveries only if the unacceptable recovery is indicative of a bias for the associated parameters.

Data Qualifiers

The data qualification guidelines described above has been summarized in Table 3. This table conforms to the guidelines in the 2008 SAPA and also shows the data qualifiers used for the Washington Dept of Ecology EIM 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 eight thin-layer saltwater sediment samples in April 28, 2009. These samples were collected for the Duwamish/Diagonal Sediment Remediation Program. 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. Samples consisted of sediment aliquots collected from only one sampler deployment to minimize bottom disturbance at each of these thin-capped stations. Both the prescribed station coordinates and the actual coordinates recorded during sampling activities are presented in the following table (see below). The coordinate system, as shown, is in U.S. State Plane, Washington North 4601, NAD83.

Duwamish/Diagonal Sediment Sampling, Thin Layer Stations
Actual and Prescribed Sample Coordinates, April 2009

Lab Number	Locator	Cast	Grabs Accepted	Prescribed Northing	Actual Northing	Prescribed Easting	Actual Easting	Offset > 3 m
L47893-1	DUD_3C	1	1	208144	208143	1267146	1267148	
L47893-2	DUD_4C	1	1	208239	208239	1267116	1267109	
L47893-3	DUD_4C	2	1	208239	208239	1267116	1267116	
L47893-4	DUD_5C	1	1	208263	208269	1267025	1267027	
L47893-5	DUD_6C	1	1	208501	208495	1266950	1266945	
L47893-6	DUD_7C	1	1	208486	208484	1266902	1266900	
L47893-7	DUD_14C	1	1	208002	207999	1267193	1267194	
L47893-8	DUD_15C	1	1	207968	207968	1267057	1267052	

Sediment grab samples were collected from the King County research vessel *Liberty*, which is equipped with a differential global positioning system (DGPS). Using DGPS, field coordinates were recorded for each cast of the two grab samplers, deployed in tandem, as they contacted the sediment. All field coordinates for each cast listed in the above table are within the +/- 3 meter accuracy limits, as defined in the SAP.

Sample Description Table

Lab Sample #	Station	Sample Collection	Average Sediment Depth	Sample Usage
L47893-1	DUD_3C	Surface Grabs	13 cm	Chemistry
L47893-2	DUD_4C	Surface Grabs	13 cm	Chemistry
L47893-3	DUD_4C	Surface Grabs (field replicate)	13 cm	Chemistry
L47893-4	DUD_5C	Surface Grabs	13 cm	Chemistry
L47893-5	DUD_6C	Surface Grabs	11 cm	Chemistry
L47893-6	DUD_7C	Surface Grabs	17 cm	Chemistry
L47893-7	DUD_14C	Surface Grabs	15 cm	Chemistry
L47893-8	DUD_15C	Surface Grabs	14 cm	Chemistry

Sample Collection

Sediment was collected at each station using two stainless steel, modified, 0.1 m^2 Van Veen grab samplers deployed in tandem via hydrowire. For each acceptable deployment, average depths ranging between 11 - 17 cm of sediment were collected within each grab, allowing for sub-

sampling within the upper 10 cm of material. Samples consisted of sediment aliquots collected from only one sampler deployment to minimize bottom disturbance at each of these thin-capped stations.

Water depth at the eight subtidal cap sample stations ranged between 8 - 10 meters (not corrected for tide).

Sample Handling

Sediment aliquots were sub-sampled from a single grab from a single deployment at each station. For chemistry testing, 10 cm deep aliquots, as measured from the sediment surface, were collected using a stainless steel spoon. Sediment that had touched the sides or bottom of the grab sampler was excluded. Less than the top 10 cm of sediment was sub-sampled in those instances where it was not possible to collect material down to the minimum sediment penetration depth. All aliquots were placed in a covered stainless-steel compositing bowl, specific for that station. The sediment was thoroughly homogenized, then split out into pre-labeled containers. All sample containers were supplied by the King County Environmental Laboratory, first having been pre-cleaned according to analytical specifications.

Decontamination

Individual sets of the sub-sampling and mixing equipment were dedicated to each station, precluding the need for decontamination of said equipment. The Van Veen grab samplers were decontaminated between stations by scrubbing with a brush using ambient water 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. They 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 time is defined as that time that sampling commences at each station.

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 Laboratory.

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:

Parameter	Sample ID	SAP MDL	Reported MDL	Reason for higher MDL Value
TOC	L47893-all	1000	1100 – 1900	Elevated levels of TOC
PSD Parameters in the % Fines range	L47893-all	0.1%	0.5%	MDL was updated after the SAP was completed

For all samples where the MDL did not meet the SAP MDL, the TOC levels along with % clay and % slit values were above the detection limit, thus the project objectives were met.

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 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, 2008). 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	L47893-1,2,3,4,5,6,7	28-Apr-2009	27-May-2009	28-May-2009	6 Months at 4°C	NA
	L47893-8	28-Apr-2009	29-May-2009	01-Jun-2009		
Total Organic Carbon	L47893-1,2,3,4,5,6,7,8	28-Apr-2009	01-Jun-2009	11-Jun-2009	6 months at -18°C	6 months at -18°C
Total Solids	L47893-1,2,3,4,5,6,7,8	28-Apr-2009	01-Jun-2009	02-Jun-2009	6 months at -18°C	NA

Sample storage conditions and holding times were met for all samples in this data submission except as noted under "Additional QA Issues" at the end of this section.

Method Blanks

Method blanks were analyzed in connection with total solids/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, with the exception of the silt portion of the Particle Size Distribution. The silt portion RSD was 32% for Sample L47890-6 which was associated with Sample L47893-8. Since Sample L47893-8 did not show a similar consistency and similar PSD results to L47890-6, the Silt data was not flagged.

Additional QA Issues:

During preparation for TOC analysis, Samples L47893-6 and -7 were accidentally switched which compromised the accuracy of the results. Instead of analyzing these compromised aliquots, portions of sample from the Total Solids prep were used. Since the Total Solids were dried at a higher temperature (100C vs. 70C) the TOC results for these 2 samples may be biased. The TOC results for Samples L47893-6 and -7 have been qualified with the SH flag.

METALS CHEMISTRY

Completeness
Metal chemistry data are reported for all samples and parameters 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
Metals analysis was not subcontracted for these sets of samples.

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

Target List
The reported target list includes all metals specified in Table 1.

Detection Limits
In some instances, the detection limits (MDLs) reported for this sample set of ICP Metals, are slightly greater than the requirements defined by the SAP. The varying ICP MDLs can be attributed to a change in sample preparation from prior analyses of Duwamish Diagonal samples. For this sample set, a great amount of sample material was used, approximately 2 grams with all the samples in this set being analyzed at a 2x dilution. The detection limits (MDLs) reported for Mercury are all within the requirements defined by the SAP. All element MDLs that did not meet SAP MDL limits were due to total solids being less than 50 % in the sample.

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 during the Third Annual PSDDA Review Meeting. 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	L47893-1>8	28-Apr-09	18-May-09	19-May-09	2 Years at -18°C	6 months
Total Mercury	L47893-1>8	28-Apr-09	18-May-09	19-May-09	28 days at -18°C	NA

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

Method Blanks
All metals method blanks results were less than the MDL

Standard Reference Materials
The SRM analyzed in association with samples included in this data submission is National Research Council of Canada PACS-2. This SRM is not certified for Beryllium, Selenium, Thallium, Silver, Arsenic or Cadmium. Acceptance limits for the certified elements 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 qualified to indicate the expected bias.

All metals SRM recoveries were within the lab defined limits indicated in the SAP.

A laboratory control sample (LCS) ERA Soil was also analyzed with the total metals digestion. All recoveries were within the certified limits of the sample. The LCS is used as a secondary check for the total metals digestion procedure because the certified values for the elements are determined using the same methodology. No results from the LCS are used to qualify data.

Matrix Spikes
All matrix spike recoveries were within the 75% to 125% QC limits with the following exceptions:

The reported matrix spike recovery of 15% for Antimony in WG102346 for sample numbers L47893-1 - 8 failed to meet the 75% to 125% QC acceptance criteria. Antimony results for all samples in WG102346 have been qualified with a "JG". The reported matrix spike recovery of 132% for Aluminum in WG102346 for sample numbers L47893-1 - 8 failed to meet the 75% to 125% QC acceptance criteria. The Aluminum results for only the Background Sample L47893-1 and the Matrix Spike WG102346-5 in WG102346 have been qualified with a "JL".

Laboratory Replicate Samples
The relative percent differences (RPDs) for laboratory duplicate results for all metals were less than or equal to the QC limit of 20%.

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

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.

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[2]	Reason for higher MDL Value
1,4-Dichlorobenzene	L47893-1, 4, 6 to 8	0.26		Elevated MDL due to matrix interferences[1]
Benzo(a)anthracene	L47893-6, 8	4		Total Solids < 50%
Benzoic Acid	L47893- 1 to 8	12		Elevated MDL due to matrix interferences[1]
Coprostanol	L47893- 1 to 8	28		Elevated MDL due to matrix interferences[1]
Pentachlorophenol	L47893- 1 to 8	10		Elevated MDL due to matrix interferences[1]
4,4'-DDD	L47893- 1 to 8	0.67		Prep method was altered for this set of samples
4,4'-DDE	L47893- 1 to 8	0.67		Prep method was altered for this set of samples
4,4'-DDT	L47893- 1 to 8	0.67		Prep method was altered for this set of samples
Aldrin	L47893- 1 to 8	0.67		Prep method was altered for this set of samples
Aroclor 1016, 1232 and 1242	L47893-1 to 8	4		See "Additional QA issues" sub-section at the end of the organic section.
Dieldrin	L47893- 1 to 8	0.67		Prep method was altered for this set of samples
Endosulfan I	L47893- 1 to 8	0.67		Prep method was altered for this set of samples
Endosulfan II	L47893- 1 to 8	0.67		Prep method was altered for this set of samples
Endosulfan Sulfate	L47893- 1 to 8	0.67		Prep method was altered for this set of samples

Endrin	L47893- 1 to 8	0.67		Prep method was altered for this set of samples
Endrin Aldehyde	L47893- 1 to 8	0.67		Prep method was altered for this set of samples
Methoxychlor	L47893- 1 to 8	3.3		Prep method was altered for this set of samples
Toxaphene	L47893- 1 to 8	6.7		Prep method was altered for this set of samples

[1] MDL values for this method have been adjusted higher since the SAP was prepared.
[2] See attached SAP MDL summary table

Samples L47893-6 and -8 failed SAP MDL levels for all chlorinated pesticides except Gamma-Chlordane due to total solids being less than 50%.

For Non-ionizable Organic parameters, the MDLs for all samples meet the SMS limits, when converted to mg/Kg TOC.

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	L47893-1 to 8	28-Apr-09	1-May-09	20, 21, 28-May-09	1 year at -18°C	40 days at 4°C
Chlorinated Pesticides	L47893-1 to 8	28-Apr-09	5-May-09	30-May-09	1 year at -18°C	40 days at 4°C
PCB	L47893-1 to 8	28-Apr-09	5-May-09	9-Jun-09	1 year at -18°C	40 days at 4°C

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 L47893-1 to -8 had a result above the MDL for Bis (2-ethylhexyl) Phthalate (35.1 ug/Kg) and Butyl Benzyl Phthalate (4.06 ug/Kg). Sample results for Bis (2-ethylhexyl) Phthalate, Butyl Benzyl Phthalate for those samples where the measured levels were above the MDL have been qualified with the appropriate B flag, based on Table 3 below.

Those Bis (2-ethylhexyl) Phthalate and Butyl Benzyl Phthalate results that are flagged with either a B or B2 must be treated as estimated values.

Surrogate Recoveries

Surrogate recovery acceptance limits for sediment samples have been developed based on historical lab performance using the current analytical methods. Recoveries measured above the acceptance limits may be flagged with a JL. Recoveries measured below the acceptance limits (but at or above 10%) may be flagged with a JG.

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. 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 although the SAP lists the obsolete acceptance limits of 80 to 120%. 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. 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 and alpha Chlordane. All measured recoveries for this SRM were within acceptance limits.

2. PCBs

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. This SRM was not reported due to loss of the extract during sample preparation.

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
For the BNA compounds that were included in the matrix spike, the measured recoveries for each were within their acceptance limits.

The following compounds were not included in the matrix spike and matrix spike duplicate: 2-Methylnaphthalene, 2-Methylphenol, 4-Methylphenol, Benzoic Acid, Benzyl Alcohol, Caffeine, Coprostanol, Dibenzofuran, Total 4-Nonylphenol due to an omission of these compounds from the spiking standard.

2. PCBs and Chlorinated Pesticides
Each of the reported Pesticide compounds, except Toxaphene, alpha and gamma Chlordane, 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 the laboratory duplicate for all Organic parameters at or above the RDL were less than or equal to the acceptance limit of 35% with the exception of 2-methyl naphthalene, Acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, benzoic acid, benzyl butyl phthalate, carbazole, chrysene, di-n-butyl phthalate, dibenzo(a,h)anthracene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, phenol and pyrene. The sample used for the lab duplicate (L47893-2) was re-prepared and re-analyzed in triplicate. The percent relative standard deviations (RSD) were outside of the limit of 35% for the compounds listed in the previous sentence. Only the results for this list of compound in the sample L47893-2 were flagged with a "J" to indicate an estimated value, since it is uncertain if all samples have this same problem of non-homogeneity.

Additional QA Issues:

BNA Analysis
Four samples, L47893-1, -2, -4, -8, were analyzed outside the 12 hour instrumental sequence. A CCV standard was analyzed at the end of the full analysis sequence. All instrumental performance monitoring requirements were met, therefore, data quality should not be affected.

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 may not be possible for samples listed below 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-1221	PCB 1232	PCB 1242
L47893-1	x		x	x
L47893-2	x		x	x
L47893-3	x			x
L47893-4	x			x
L47893-5	x			x
L47893-6	x			x
L47893-7	x		x	x
L47893-8	x		x	x

TABLE 1
SEDIMENT SAMPLE INVENTORY

Sample	Locator / Description (see SAP)	PSD	Solids	TOC	Metals[1]	BNAs[2]	Pest/ PCBs	Comments
L47893-1	DUD_3C	x	x	x	x	x	x	
L47893-2	DUD_4C	x	x	x	x	x	x	
L47893-3	DUD_4C	x	x	x	x	x	x	field replicate
L47893-4	DUD_5C	x	x	x	x	x	x	
L47893-5	DUD_6C	x	x	x	x	x	x	
L47893-6	DUD_7C	x	x	x	x	x	x	
L47893-7	DUD_14C	x	x	x	x	x	x	
L47893-8	DUD_15C	x	x	x	x	x	x	

1 Metals = Hg, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, Tl, Zn, Fe, Al,
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	Possible EIM Data Qualifier	Organic QC Limits	Metal QC Limits	Conventional QC Limits	Comment
low matrix spike recovery	JG	JG	Compound specific	< 75%	< 75% *	
high matrix spike recovery	JL	JL	Compound specific	>125%	>125% *	
low standard reference material recovery	JG	JG	Compound and SRM specific	Element and SRM specific	< 80%	
high standard reference material recovery	JL	JL	Compound and SRM specific	Element and SRM specific	>120%	
high duplicate relative percent difference	JK or J	JK	>35 %	>20%	NA	for organics and metals
high triplicate relative standard deviation	JK or J	JK	NA	NA	> 20%	for conventionals
less than the reporting detection limit	<RDL**	JT	NA	NA	NA	
less than the method detection limit	<MDL	U	NA	NA	NA	
contamination detected in method blank	B	B	MB >/=MDL & Result </= 5x Blank	MB >/=MDL & Result </= 5x Blank	MB >/=MDL & Result </= 5x Blank	
contamination detected in method blank	B2	B	MB >/=MDL & Result > 5x but >/= 10x Blank	MB >/=MDL & Result > 5x but >/= 10x Blank	MB >/=MDL & Result > 5x but >/= 10x Blank	Common Lab Contaminants
contamination detected in method blank	B3	B	MB >/=MDL & Result > 5x but >/= 10x Blank	MB >/=MDL & Result > 5x but >/= 10x Blank	MB >/=MDL & Result > 5x but >/= 10x Blank	All other parameters
biased data based on low surrogate recoveries	JG	JG	Surrogate specific	NA	NA	At least 2 surrogates < limit for BNAs
biased data based on high surrogate recoveries	JL	JL	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	SH	JK or J	NA	NA	NA	container, preservation
Holding time not met	H	JK or J				hold time

- Common Lab Contaminants: Acetone, 2-Butanone, Methylene Chloride, Bis(2-ethylhexyl) Phthalate, Butyl Benzyl Phthalate and Di-n-butyl Phthalate

Comprehensive and Matrix Data Reports

King County Environmental Lab Analytical Report

	Project:	423062-200-4				Project:	423062-200-4				Project:	423062-200-4			
	Locator:	DUD_3C				Locator:	DUD_4C				Locator:	DUD_4C			
	Descrip:	CLEANUP AREA PERIM				Descrip:	CLEANUP AREA PERIM				Descrip:	CLEANUP AREA PERIM			
	Sample:	L47893-1				Sample:	L47893-2				Sample:	L47893-3			
	Matrix:	SF SALTWTRSED				Matrix:	SF SALTWTRSED				Matrix:	SF SALTWTRSED			
	ColDate:	4/28/09 10:44				ColDate:	4/28/09 10:55				ColDate:	4/28/09 11:00			
	TimeSpan:					TimeSpan:					TimeSpan:				
	TotalSolid:	55.4				TotalSolid:	76.9				TotalSolid:	76.3			
	ClientLoc:					ClientLoc:					ClientLoc:				
	SampDepth:	10				SampDepth:	10				SampDepth:	10			
	DRY Weight Basis					**DRY Weight Basis**					**DRY Weight Basis**				
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
M=CV ASTM D422															
Clay*	16		0.89	1.78	%	5.1		0.64	1.28	%	5.3		0.67	1.33	%
Fines*	56		0.89	1.78	%	14.1		0.64	1.28	%	20		0.67	1.33	%
Gravel*	9.9		0.18	1.78	%	42.3		0.13	1.28	%	30		0.13	1.33	%
Sand*	31.5		0.18	1.78	%	40.8		0.13	1.28	%	49		0.13	1.33	%
Silt*	40		0.89	1.78	%	9		0.64	1.28	%	14.6		0.67	1.33	%
p+0.00*	0.6	<RDL	0.18	1.78	%	3.5		0.13	1.28	%	3.4		0.13	1.33	%
p+1.00*	1.6		0.18	1.78	%	6.1		0.13	1.28	%	6.3		0.13	1.33	%
p+10.0(equal/more than)*	8.9		0.89	1.78	%	2.6		0.64	1.28	%	2.7		0.67	1.33	%
p+2.00*	10.8		0.18	1.78	%	18.1		0.13	1.28	%	20.6		0.13	1.33	%
p+3.00*	12		0.18	1.78	%	11		0.13	1.28	%	14.9		0.13	1.33	%
p+4.00*	6.5		0.18	1.78	%	2.1		0.13	1.28	%	3.8		0.13	1.33	%
p+5.00*	4.4		0.89	1.78	%	2.6		0.64	1.28	%	5.3		0.67	1.33	%
p+6.00*	14.2		0.89	1.78	%	1.9		0.64	1.28	%	2.7		0.67	1.33	%
p+7.00*	12.4		0.89	1.78	%	2.6		0.64	1.28	%	4		0.67	1.33	%
p+8.00*	8.9		0.89	1.78	%	1.9		0.64	1.28	%	2.7		0.67	1.33	%
p+9.00*	7.1		0.89	1.78	%	2.6		0.64	1.28	%	2.7		0.67	1.33	%
p-1.00*	2.1		0.18	1.78	%	15.2		0.13	1.28	%	10.4		0.13	1.33	%
p-2.00*	0.8	<RDL	0.18	1.78	%	11.4		0.13	1.28	%	9.6		0.13	1.33	%
p-2.00(less than)*	7.1		0.18	1.78	%	15.7		0.13	1.28	%	10		0.13	1.33	%
CV SW846 9060-PSEP96															
Total Organic Carbon	16000		1800	3770	mg/Kg	6230		1100	2160	mg/Kg	6280		1300	2580	mg/Kg
M=CV SM2540-G															
Total Solids*	55.4		0.005	0.01	%	76.9		0.005	0.01	%	76.3		0.005	0.01	%
M=ES NONE															
Field Personnel*	BK,JDD,JB,JeneeC				none	BK,JDD,JB,JeneeC				none	BK,JDD,JB,JeneeC				none
Sampcoordx1*	1267148				ft	1267109				ft	1267116				ft
Sampcoordy1*	208143				ft	208239				ft	208239				ft
Sample Depth*	10				m	10				m	10				m
Sampling Method*	20143				none	20143				none	20143				none
Sediment Sampling Depth*	13				cm	13				cm	13				cm
Sediment Sampling Range*					cm					cm					cm
Sediment Type*	20N30				none	30N30				none	30N30				none
Tidal Condition*	E				none	E				none	E				none
Tide Height*	3				ft	2.5				ft	2				ft
Sample Function*											FREP @ L47893-2				none
MT SW846 3050B*SW846 6010C															
Aluminum, Total, ICP	21300		9	45.1	mg/Kg	12100		6.1	30.6	mg/Kg	12900		6.6	32.5	mg/Kg
Antimony, Total, ICP		<MDL,JG	1.4	6.77	mg/Kg		<MDL,JG	0.92	4.59	mg/Kg		<MDL,JG	0.97	4.88	mg/Kg
Arsenic, Total, ICP	9.6	<RDL	2.3	11.3	mg/Kg	3.8	<RDL	1.6	7.66	mg/Kg	4.6	<RDL	1.6	8.13	mg/Kg
Beryllium, Total, ICP	0.531		0.09	0.451	mg/Kg	0.3	<RDL	0.061	0.306	mg/Kg	0.31	<RDL	0.066	0.325	mg/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_3C					Locator:	DUD_4C					Locator:	DUD_4C				
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM				
Sample:	L47893-1					Sample:	L47893-2					Sample:	L47893-3				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/28/09 10:44					ColDate:	4/28/09 10:55					ColDate:	4/28/09 11:00				
TimeSpan:						TimeSpan:						TimeSpan:					
TotalSolid:	55.4					TotalSolid:	76.9					TotalSolid:	76.3				
ClientLoc:						ClientLoc:						ClientLoc:					
SampDepth:	10					SampDepth:	10					SampDepth:	10				
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Cadmium, Total, ICP	0.42	<RDL	0.18	0.904	mg/Kg	0.16	<RDL	0.12	0.612	mg/Kg	0.16	<RDL	0.13	0.65	mg/Kg
Chromium, Total, ICP	27.4		0.27	1.36	mg/Kg	15		0.18	0.918	mg/Kg	19.1		0.2	0.975	mg/Kg
Copper, Total, ICP	66.1		0.36	1.81	mg/Kg	38.9		0.25	1.22	mg/Kg	38.5		0.26	1.3	mg/Kg
Iron, Total, ICP	30700		4.5	22.6	mg/Kg	18900		3.1	15.3	mg/Kg	20100		3.3	16.3	mg/Kg
Lead, Total, ICP	29.1		1.8	9.04	mg/Kg	7.49		1.2	6.12	mg/Kg	11.9		1.3	6.5	mg/Kg
Manganese, Total, ICP	330		0.18	0.904	mg/Kg	235		0.12	0.612	mg/Kg	245		0.13	0.65	mg/Kg
Nickel, Total, ICP	22		0.45	2.26	mg/Kg	14.3		0.31	1.53	mg/Kg	16.1		0.33	1.63	mg/Kg
Selenium, Total, ICP		<MDL	2.3	11.3	mg/Kg		<MDL	1.6	7.66	mg/Kg		<MDL	1.6	8.13	mg/Kg
Silver, Total, ICP		<MDL	0.36	1.81	mg/Kg		<MDL	0.25	1.22	mg/Kg		<MDL	0.26	1.3	mg/Kg
Thallium, Total, ICP		<MDL	3.6	18.1	mg/Kg		<MDL	2.5	12.2	mg/Kg		<MDL	2.6	13	mg/Kg
Zinc, Total, ICP	105		0.45	2.26	mg/Kg	40.7		0.31	1.53	mg/Kg	51.2		0.33	1.63	mg/Kg
MT SW846 7471B															
Mercury, Total, CVAA	0.174		0.0045	0.0451	mg/Kg	0.0714		0.0033	0.0321	mg/Kg	0.0695		0.0033	0.0324	mg/Kg
OR EPA 3550B/8270C (7-3-01-004)															
1,2,4-Trichlorobenzene		<MDL	0.18	0.361	ug/Kg		<MDL	0.13	0.26	ug/Kg		<MDL	0.13	0.262	ug/Kg
1,2-Dichlorobenzene		<MDL	0.36	0.722	ug/Kg		<MDL	0.26	0.52	ug/Kg		<MDL	0.26	0.524	ug/Kg
1,3-Dichlorobenzene		<MDL	0.36	0.722	ug/Kg		<MDL	0.26	0.52	ug/Kg		<MDL	0.26	0.524	ug/Kg
1,4-Dichlorobenzene		<MDL	0.36	0.722	ug/Kg		<MDL	0.26	0.52	ug/Kg		<MDL	0.26	0.524	ug/Kg
2,4-Dimethylphenol		<MDL	1.8	3.61	ug/Kg		<MDL	1.3	2.6	ug/Kg		<MDL	1.3	2.62	ug/Kg
2-Methylnaphthalene		<MDL	3.6	7.22	ug/Kg		<MDL	2.6	5.2	ug/Kg		<MDL	2.6	5.24	ug/Kg
2-Methylphenol		<MDL	3.6	7.22	ug/Kg		<MDL	2.6	5.2	ug/Kg		<MDL	2.6	5.24	ug/Kg
4-Methylphenol		<MDL	7.2	14.4	ug/Kg		<MDL	5.2	10.4	ug/Kg		<MDL	5.2	10.5	ug/Kg
Acenaphthene	3.6	<RDL	3.6	7.22	ug/Kg		<MDL	2.6	5.2	ug/Kg		<MDL	2.6	5.24	ug/Kg
Acenaphthylene	3.8	<RDL	3.6	7.22	ug/Kg		<MDL	2.6	5.2	ug/Kg		<MDL	2.6	5.24	ug/Kg
Anthracene	33.6		3.6	7.22	ug/Kg	15.1		2.6	5.2	ug/Kg	20.2		2.6	5.24	ug/Kg
Benzo(a)anthracene	87.9		3.6	7.22	ug/Kg	23.1		2.6	5.2	ug/Kg	42.7		2.6	5.24	ug/Kg
Benzo(a)pyrene	37.5		3.6	7.22	ug/Kg	12.6		2.6	5.2	ug/Kg	45.1		2.6	5.24	ug/Kg
Benzo(b)fluoranthene	49.3		3.6	7.22	ug/Kg	17		2.6	5.2	ug/Kg	58.6		2.6	5.24	ug/Kg
Benzo(g,h,i)perylene	13.7		3.6	7.22	ug/Kg	4	<RDL	2.6	5.2	ug/Kg	25.2		2.6	5.24	ug/Kg
Benzo(k)fluoranthene	59.4		3.6	7.22	ug/Kg	21.7		2.6	5.2	ug/Kg	54.3		2.6	5.24	ug/Kg
Benzoic Acid	95.1		18	36.1	ug/Kg	37.5		13	26	ug/Kg	65.7		13	26.2	ug/Kg
Benzyl Alcohol		<MDL	3.6	7.22	ug/Kg		<MDL	2.6	5.2	ug/Kg		<MDL	2.6	5.24	ug/Kg
Benzyl Butyl Phthalate	19.7	B	1.8	3.61	ug/Kg	11.6	B	1.3	2.6	ug/Kg	11	B	1.3	2.62	ug/Kg
Bis(2-Ethylhexyl)Phthalate	264	B	7.2	14.4	ug/Kg	144	B	5.2	10.4	ug/Kg	519		5.2	10.5	ug/Kg
Caffeine		<MDL	7.2	14.4	ug/Kg		<MDL	5.2	10.4	ug/Kg		<MDL	5.2	10.5	ug/Kg
Carbazole	10.3		3.6	7.22	ug/Kg	3.1	<RDL	2.6	5.2	ug/Kg	5	<RDL	2.6	5.24	ug/Kg
Chrysene	124		3.6	7.22	ug/Kg	50.6		2.6	5.2	ug/Kg	55.2		2.6	5.24	ug/Kg
Coprostanol		<MDL	72	144	ug/Kg		<MDL	52	104	ug/Kg		<MDL	52	105	ug/Kg
Di-N-Butyl Phthalate	13	<RDL	7.2	14.4	ug/Kg	7.4	<RDL	5.2	10.4	ug/Kg	6.7	<RDL	5.2	10.5	ug/Kg
Di-N-Octyl Phthalate		<MDL	7.2	14.4	ug/Kg		<MDL	5.2	10.4	ug/Kg		<MDL	5.2	10.5	ug/Kg
Dibenzo(a,h)anthracene	5.6	<RDL	3.6	7.22	ug/Kg		<MDL	2.6	5.2	ug/Kg	10.4		2.6	5.24	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4			
Locator:	DUD_3C					Locator:	DUD_4C					Locator:	DUD_4C			
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM			
Sample:	L47893-1					Sample:	L47893-2					Sample:	L47893-3			
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED			
ColDate:	4/28/09 10:44					ColDate:	4/28/09 10:55					ColDate:	4/28/09 11:00			
TimeSpan:						TimeSpan:						TimeSpan:				
TotalSolid:	55.4					TotalSolid:	76.9					TotalSolid:	76.3			
ClientLoc:						ClientLoc:						ClientLoc:				
SampDepth:	10					SampDepth:	10					SampDepth:	10			
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**				
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	
Dibenzofuran	4.9	<RDL	3.6	7.22	ug/Kg		<MDL	2.6	5.2	ug/Kg		<MDL	2.6	5.24	ug/Kg	
Diethyl Phthalate		<MDL	7.2	14.4	ug/Kg		<MDL	5.2	10.4	ug/Kg		<MDL	5.2	10.5	ug/Kg	
Dimethyl Phthalate		<MDL	7.2	14.4	ug/Kg		<MDL	5.2	10.4	ug/Kg		<MDL	5.2	10.5	ug/Kg	
Fluoranthene	175		3.6	7.22	ug/Kg	58.4		2.6	5.2	ug/Kg	68.2		2.6	5.24	ug/Kg	
Fluorene	8.7		3.6	7.22	ug/Kg	4.4	<RDL	2.6	5.2	ug/Kg	5.54		2.6	5.24	ug/Kg	
Hexachlorobenzene		<MDL	0.18	0.361	ug/Kg		<MDL	0.13	0.26	ug/Kg		<MDL	0.13	0.262	ug/Kg	
Hexachlorobutadiene		<MDL	0.9	1.81	ug/Kg		<MDL	0.65	1.3	ug/Kg		<MDL	0.66	1.31	ug/Kg	
Hexachloroethane		<MDL	1.8	3.61	ug/Kg		<MDL	1.3	2.6	ug/Kg		<MDL	1.3	2.62	ug/Kg	
Indeno(1,2,3-Cd)Pyrene	13		3.6	7.22	ug/Kg	4	<RDL	2.6	5.2	ug/Kg	24.5		2.6	5.24	ug/Kg	
N-Nitrosodiphenylamine		<MDL	7.2	14.4	ug/Kg		<MDL	5.2	10.4	ug/Kg		<MDL	5.2	10.5	ug/Kg	
Naphthalene		<MDL	3.6	7.22	ug/Kg		<MDL	2.6	5.2	ug/Kg		<MDL	2.6	5.24	ug/Kg	
Pentachlorophenol		<MDL	18	36.1	ug/Kg		<MDL	13	26	ug/Kg		<MDL	13	26.2	ug/Kg	
Phenanthrene	57.6		3.6	7.22	ug/Kg	17.3		2.6	5.2	ug/Kg	23.7		2.6	5.24	ug/Kg	
Phenol		<MDL	7.2	14.4	ug/Kg		<MDL	5.2	10.4	ug/Kg		<MDL	5.2	10.5	ug/Kg	
Pyrene	200		3.6	7.22	ug/Kg	79.7		2.6	5.2	ug/Kg	84.1		2.6	5.24	ug/Kg	
Total 4-Nonylphenol		<MDL	9	18.1	ug/Kg		<MDL	6.5	13	ug/Kg		<MDL	6.6	13.1	ug/Kg	
Total HPAHS	765		3.6	7.22	ug/Kg	273		2.6	5.2	ug/Kg	468		2.6	5.24	ug/Kg	
Total LPAHs	111		3.6	7.22	ug/Kg	39.9		2.6	5.2	ug/Kg	56.2		2.6	5.24	ug/Kg	
OR SW846 3550B*SW846 8081B																
4,4'-DDD*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg	
4,4'-DDE*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg	
4,4'-DDT*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg	
Aldrin		<MDL	1.2	2.4	ug/Kg		<MDL	0.87	1.73	ug/Kg		<MDL	0.88	1.74	ug/Kg	
Alpha-BHC		<MDL	0.6	1.2	ug/Kg		<MDL	0.43	0.867	ug/Kg		<MDL	0.43	0.874	ug/Kg	
Alpha-Chlordane		<MDL	0.6	1.2	ug/Kg		<MDL	0.43	0.867	ug/Kg		<MDL	0.43	0.874	ug/Kg	
Beta-BHC		<MDL	0.6	1.2	ug/Kg		<MDL	0.43	0.867	ug/Kg		<MDL	0.43	0.874	ug/Kg	
Delta-BHC		<MDL	0.6	1.2	ug/Kg		<MDL	0.43	0.867	ug/Kg		<MDL	0.43	0.874	ug/Kg	
Dieldrin		<MDL	1.2	2.4	ug/Kg		<MDL	0.87	1.73	ug/Kg		<MDL	0.88	1.74	ug/Kg	
Endosulfan I		<MDL	1.2	2.4	ug/Kg		<MDL	0.87	1.73	ug/Kg		<MDL	0.88	1.74	ug/Kg	
Endosulfan II		<MDL	1.2	2.4	ug/Kg		<MDL	0.87	1.73	ug/Kg		<MDL	0.88	1.74	ug/Kg	
Endosulfan Sulfate		<MDL	1.2	2.4	ug/Kg		<MDL	0.87	1.73	ug/Kg		<MDL	0.88	1.74	ug/Kg	
Endrin		<MDL	1.2	2.4	ug/Kg		<MDL	0.87	1.73	ug/Kg		<MDL	0.88	1.74	ug/Kg	
Endrin Aldehyde		<MDL	1.2	2.4	ug/Kg		<MDL	0.87	1.73	ug/Kg		<MDL	0.88	1.74	ug/Kg	
Gamma-BHC (Lindane)		<MDL	0.6	1.2	ug/Kg		<MDL	0.43	0.867	ug/Kg		<MDL	0.43	0.874	ug/Kg	
Gamma-Chlordane		<MDL	0.6	1.2	ug/Kg		<MDL	0.43	0.867	ug/Kg		<MDL	0.43	0.874	ug/Kg	
Heptachlor		<MDL	0.6	1.2	ug/Kg		<MDL	0.43	0.867	ug/Kg		<MDL	0.43	0.874	ug/Kg	
Heptachlor Epoxide		<MDL	0.6	1.2	ug/Kg		<MDL	0.43	0.867	ug/Kg		<MDL	0.43	0.874	ug/Kg	
Methoxychlor		<MDL	6	12	ug/Kg		<MDL	4.3	8.67	ug/Kg		<MDL	4.3	8.74	ug/Kg	
Toxaphene		<MDL	12	24	ug/Kg		<MDL	8.7	17.3	ug/Kg		<MDL	8.8	17.4	ug/Kg	
OR SW846 3550B*SW846 8082A																
Aroclor 1016		<MDL,TA	16	32.1	ug/Kg		<MDL,TA	5.2	10.4	ug/Kg		<MDL,TA	7.7	15.5	ug/Kg	

King County Environmental Lab Analytical Report

Project:	423062-200-4	423062-200-4	423062-200-4
Locator:	DUD_3C	DUD_4C	DUD_4C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sample:	L47893-1	L47893-2	L47893-3
Matrix:	SF SALTWTRSED	SF SALTWTRSED	SF SALTWTRSED
ColDate:	4/28/09 10:44	4/28/09 10:55	4/28/09 11:00
TimeSpan:			
TotalSolid:	55.4	76.9	76.3
ClientLoc:			
SampDepth:	10	10	10
DRY Weight Basis		**DRY Weight Basis**	**DRY Weight Basis**

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
Aroclor 1221		<MDL	3.1	6.01	ug/Kg		<MDL	2.2	4.33	ug/Kg		<MDL	2.2	4.36	ug/Kg
Aroclor 1232		<MDL,TA	34	68.2	ug/Kg		<MDL,TA	11	22.2	ug/Kg		<MDL	2.2	4.36	ug/Kg
Aroclor 1242		<MDL,TA	51	99.8	ug/Kg		<MDL,TA	18	37.6	ug/Kg		<MDL,TA	28	56	ug/Kg
Aroclor 1248	34.7		1.5	3.01	ug/Kg	11.5		1.1	2.17	ug/Kg	18.6		1.1	2.19	ug/Kg
Aroclor 1254	45.5		1.5	3.01	ug/Kg	19.1		1.1	2.17	ug/Kg	23.3		1.1	2.19	ug/Kg
Aroclor 1260	29.2		1.5	3.01	ug/Kg	11.2		1.1	2.17	ug/Kg	14.7		1.1	2.19	ug/Kg
Total Aroclors	109		1.5	3.01	ug/Kg	41.7		1.1	2.17	ug/Kg	56.6		1.1	2.19	ug/Kg

* Not converted to dry weight basis

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_5C					Locator:	DUD_6C					Locator:	DUD_7C				
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM				
Sample:	L47893-4					Sample:	L47893-5					Sample:	L47893-6				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/28/09 11:53					ColDate:	4/28/09 12:02					ColDate:	4/28/09 12:12				
TimeSpan:						TimeSpan:						TimeSpan:					
TotalSolid:	57					TotalSolid:	77.4					TotalSolid:	47.4				
ClientLoc:						ClientLoc:						ClientLoc:					
SampDepth:	10					SampDepth:	10					SampDepth:	10				
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
M=CV ASTM D422															
Clay*	12.4		0.83	1.66	%	2.6		0.64	1.28	%	26.9		1	2.07	%
Fines*	48		0.83	1.66	%	14		0.64	1.28	%	83.7		1	2.07	%
Gravel*	5.3		0.17	1.66	%	51.9		0.13	1.28	%		<MDL	0.21	2.07	%
Sand*	39.9		0.17	1.66	%	32.7		0.13	1.28	%	8.8		0.21	2.07	%
Silt*	35.6		0.83	1.66	%	11.5		0.64	1.28	%	56.8		1	2.07	%
p+0.00*	0.7	<RDL	0.17	1.66	%	2.6		0.13	1.28	%		<MDL	0.21	2.07	%
p+1.00*	3.2		0.17	1.66	%	4.8		0.13	1.28	%		<MDL	0.21	2.07	%
p+10.0(equal/more than)*	6.6		0.83	1.66	%	1.9		0.64	1.28	%	14.5		1	2.07	%
p+2.00*	19.4		0.17	1.66	%	15.4		0.13	1.28	%	0.5	<RDL	0.21	2.07	%
p+3.00*	10.6		0.17	1.66	%	9.9		0.13	1.28	%	0.8	<RDL	0.21	2.07	%
p+4.00*	5.9		0.17	1.66	%		<MDL	0.13	1.28	%	7.5		0.21	2.07	%
p+5.00*	6.6		0.83	1.66	%	3.8		0.64	1.28	%	6.2		1	2.07	%
p+6.00*	11.6		0.83	1.66	%	1.3		0.64	1.28	%	23.8		1	2.07	%
p+7.00*	8.3		0.83	1.66	%	2.6		0.64	1.28	%	14.5		1	2.07	%
p+8.00*	9.1		0.83	1.66	%	3.8		0.64	1.28	%	12.4		1	2.07	%
p+9.00*	5.8		0.83	1.66	%	0.6	<RDL	0.64	1.28	%	12.4		1	2.07	%
p-1.00*	2		0.17	1.66	%	12.5		0.13	1.28	%		<MDL	0.21	2.07	%
p-2.00*	2.2		0.17	1.66	%	15		0.13	1.28	%		<MDL	0.21	2.07	%
p-2.00(less than)*	1.2		0.17	1.66	%	24.4		0.13	1.28	%		<MDL	0.21	2.07	%
CV SW846 9060-PSEP96															
Total Organic Carbon	12400		1400	2860	mg/Kg	5660		1100	2270	mg/Kg	16900	SH	1900	3820	mg/Kg
M=CV SM2540-G															
Total Solids*	57		0.005	0.01	%	77.4		0.005	0.01	%	47.4		0.005	0.01	%
M=ES NONE															
Field Personnel*	BK,JDD,JB,JeneeC				none	BK,JDD,JB,JeneeC				none	BK,JDD,JB,JeneeC				none
Sampcoordx1*	1267027				ft	1266945				ft	1266900				ft
Sampcoordy1*	208269				ft	208495				ft	208484				ft
Sample Depth*	10				m	10				m	10				m
Sampling Method*	20143				none	20143				none	20143				none
Sediment Sampling Depth*	13				cm	11				cm	17				cm
Sediment Sampling Range*					cm					cm					cm
Sediment Type*	20N20				none	34N30				none	20N20				none
Tidal Condition*	E				none	E				none	E				none
Tide Height*	1				ft	0				ft	-0.5				ft
Sample Function*															
MT SW846 3050B*SW846 6010C															
Aluminum, Total, ICP	20200		9.1	45.6	mg/Kg	12600		5	25.1	mg/Kg	28500		11	54.2	mg/Kg
Antimony, Total, ICP		<MDL,JG	1.4	6.84	mg/Kg		<MDL,JG	0.75	3.76	mg/Kg		<MDL,JG	1.6	8.12	mg/Kg
Arsenic, Total, ICP	7.2	<RDL	2.3	11.4	mg/Kg	4.4	<RDL	1.3	6.25	mg/Kg	11	<RDL	2.7	13.5	mg/Kg
Beryllium, Total, ICP	0.521		0.091	0.456	mg/Kg	0.319		0.05	0.251	mg/Kg	0.751		0.11	0.542	mg/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4			
Locator:	DUD_5C					Locator:	DUD_6C					Locator:	DUD_7C			
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM			
Sample:	L47893-4					Sample:	L47893-5					Sample:	L47893-6			
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED			
ColDate:	4/28/09 11:53					ColDate:	4/28/09 12:02					ColDate:	4/28/09 12:12			
TimeSpan:						TimeSpan:						TimeSpan:				
TotalSolid:	57					TotalSolid:	77.4					TotalSolid:	47.4			
ClientLoc:						ClientLoc:						ClientLoc:				
SampDepth:	10					SampDepth:	10					SampDepth:	10			
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**				
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Cadmium, Total, ICP	0.25	<RDL	0.18	0.911	mg/Kg	0.16	<RDL	0.1	0.501	mg/Kg	0.32	<RDL	0.21	1.08	mg/Kg
Chromium, Total, ICP	23.5		0.28	1.37	mg/Kg	16.4		0.16	0.751	mg/Kg	27.4		0.32	1.63	mg/Kg
Copper, Total, ICP	39.1		0.37	1.82	mg/Kg	29.2		0.21	1	mg/Kg	48.5		0.44	2.17	mg/Kg
Iron, Total, ICP	27400		4.6	22.8	mg/Kg	19000		2.5	12.5	mg/Kg	35400		5.5	27	mg/Kg
Lead, Total, ICP	10.7		1.8	9.11	mg/Kg	7.89		1	5.01	mg/Kg	14.1		2.1	10.8	mg/Kg
Manganese, Total, ICP	309		0.18	0.911	mg/Kg	239		0.1	0.501	mg/Kg	426		0.21	1.08	mg/Kg
Nickel, Total, ICP	21.6		0.46	2.28	mg/Kg	14.7		0.25	1.25	mg/Kg	26.4		0.55	2.7	mg/Kg
Selenium, Total, ICP		<MDL	2.3	11.4	mg/Kg		<MDL	1.3	6.25	mg/Kg		<MDL	2.7	13.5	mg/Kg
Silver, Total, ICP		<MDL	0.37	1.82	mg/Kg		<MDL	0.21	1	mg/Kg		<MDL	0.44	2.17	mg/Kg
Thallium, Total, ICP		<MDL	3.7	18.2	mg/Kg		<MDL	2.1	10	mg/Kg		<MDL	4.4	21.7	mg/Kg
Zinc, Total, ICP	63		0.46	2.28	mg/Kg	42.4		0.25	1.25	mg/Kg	80.2		0.55	2.7	mg/Kg
MT SW846 7471B															
Mercury, Total, CVAA	0.102		0.0044	0.044	mg/Kg	0.0656		0.0031	0.0315	mg/Kg	0.128		0.0051	0.0515	mg/Kg
OR EPA 3550B/8270C (7-3-01-004)															
1,2,4-Trichlorobenzene		<MDL	0.18	0.351	ug/Kg		<MDL	0.13	0.258	ug/Kg		<MDL	0.21	0.422	ug/Kg
1,2-Dichlorobenzene		<MDL	0.35	0.702	ug/Kg		<MDL	0.26	0.517	ug/Kg		<MDL	0.42	0.844	ug/Kg
1,3-Dichlorobenzene		<MDL	0.35	0.702	ug/Kg		<MDL	0.26	0.517	ug/Kg		<MDL	0.42	0.844	ug/Kg
1,4-Dichlorobenzene		<MDL	0.35	0.702	ug/Kg		<MDL	0.26	0.517	ug/Kg		<MDL	0.42	0.844	ug/Kg
2,4-Dimethylphenol		<MDL	1.8	3.51	ug/Kg		<MDL	1.3	2.58	ug/Kg		<MDL	2.1	4.22	ug/Kg
2-Methylnaphthalene		<MDL	3.5	7.02	ug/Kg		<MDL	2.6	5.17	ug/Kg		<MDL	4.2	8.44	ug/Kg
2-Methylphenol		<MDL	3.5	7.02	ug/Kg		<MDL	2.6	5.17	ug/Kg		<MDL	4.2	8.44	ug/Kg
4-Methylphenol		<MDL	7	14	ug/Kg		<MDL	5.2	10.3	ug/Kg		<MDL	8.4	16.9	ug/Kg
Acenaphthene		<MDL	3.5	7.02	ug/Kg		<MDL	2.6	5.17	ug/Kg		<MDL	4.2	8.44	ug/Kg
Acenaphthylene		<MDL	3.5	7.02	ug/Kg		<MDL	2.6	5.17	ug/Kg		<MDL	4.2	8.44	ug/Kg
Anthracene	11.6		3.5	7.02	ug/Kg	9.47		2.6	5.17	ug/Kg	10.1		4.2	8.44	ug/Kg
Benzo(a)anthracene	27.7		3.5	7.02	ug/Kg	29.1		2.6	5.17	ug/Kg	23.4		4.2	8.44	ug/Kg
Benzo(a)pyrene	29.5		3.5	7.02	ug/Kg	25.7		2.6	5.17	ug/Kg	24.7		4.2	8.44	ug/Kg
Benzo(b)fluoranthene	39.5		3.5	7.02	ug/Kg	35.9		2.6	5.17	ug/Kg	39		4.2	8.44	ug/Kg
Benzo(g,h,i)perylene	15.5		3.5	7.02	ug/Kg	13.4		2.6	5.17	ug/Kg	14.7		4.2	8.44	ug/Kg
Benzo(k)fluoranthene	35.8		3.5	7.02	ug/Kg	32.7		2.6	5.17	ug/Kg	27		4.2	8.44	ug/Kg
Benzoic Acid	84.6		18	35.1	ug/Kg	55.7		13	25.8	ug/Kg	121		21	42.2	ug/Kg
Benzyl Alcohol		<MDL	3.5	7.02	ug/Kg		<MDL	2.6	5.17	ug/Kg		<MDL	4.2	8.44	ug/Kg
Benzyl Butyl Phthalate	11.8	B	1.8	3.51	ug/Kg	8.29	B	1.3	2.58	ug/Kg	11.7	B	2.1	4.22	ug/Kg
Bis(2-Ethylhexyl)Phthalate	381	B2	7	14	ug/Kg	151	B	5.2	10.3	ug/Kg	219	B	8.4	16.9	ug/Kg
Caffeine		<MDL	7	14	ug/Kg		<MDL	5.2	10.3	ug/Kg		<MDL	8.4	16.9	ug/Kg
Carbazole	4.2	<RDL	3.5	7.02	ug/Kg	3.7	<RDL	2.6	5.17	ug/Kg		<MDL	4.2	8.44	ug/Kg
Chrysene	37.9		3.5	7.02	ug/Kg	36.4		2.6	5.17	ug/Kg	32.3		4.2	8.44	ug/Kg
Coprostanol		<MDL	70	140	ug/Kg		<MDL	52	103	ug/Kg		<MDL	84	169	ug/Kg
Di-N-Butyl Phthalate	8.4	<RDL	7	14	ug/Kg	5.4	<RDL	5.2	10.3	ug/Kg	14	<RDL	8.4	16.9	ug/Kg
Di-N-Octyl Phthalate		<MDL	7	14	ug/Kg		<MDL	5.2	10.3	ug/Kg		<MDL	8.4	16.9	ug/Kg
Dibenzo(a,h)anthracene	7.67		3.5	7.02	ug/Kg	5.2	<RDL	2.6	5.17	ug/Kg	7.4	<RDL	4.2	8.44	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4			
Locator:	DUD_5C					Locator:	DUD_6C					Locator:	DUD_7C			
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM			
Sample:	L47893-4					Sample:	L47893-5					Sample:	L47893-6			
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED			
ColDate:	4/28/09 11:53					ColDate:	4/28/09 12:02					ColDate:	4/28/09 12:12			
TimeSpan:						TimeSpan:						TimeSpan:				
TotalSolid:	57					TotalSolid:	77.4					TotalSolid:	47.4			
ClientLoc:						ClientLoc:						ClientLoc:				
SampDepth:	10					SampDepth:	10					SampDepth:	10			
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**				
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Dibenzofuran		<MDL	3.5	7.02	ug/Kg		<MDL	2.6	5.17	ug/Kg		<MDL	4.2	8.44	ug/Kg
Diethyl Phthalate		<MDL	7	14	ug/Kg		<MDL	5.2	10.3	ug/Kg		<MDL	8.4	16.9	ug/Kg
Dimethyl Phthalate		<MDL	7	14	ug/Kg		<MDL	5.2	10.3	ug/Kg		<MDL	8.4	16.9	ug/Kg
Fluoranthene	66.8		3.5	7.02	ug/Kg	88.2		2.6	5.17	ug/Kg	57.4		4.2	8.44	ug/Kg
Fluorene	6.3	<RDL	3.5	7.02	ug/Kg	4.5	<RDL	2.6	5.17	ug/Kg	6.3	<RDL	4.2	8.44	ug/Kg
Hexachlorobenzene		<MDL	0.18	0.351	ug/Kg		<MDL	0.13	0.258	ug/Kg		<MDL	0.21	0.422	ug/Kg
Hexachlorobutadiene		<MDL	0.88	1.75	ug/Kg		<MDL	0.65	1.29	ug/Kg		<MDL	1.1	2.11	ug/Kg
Hexachloroethane		<MDL	1.8	3.51	ug/Kg		<MDL	1.3	2.58	ug/Kg		<MDL	2.1	4.22	ug/Kg
Indeno(1,2,3-Cd)Pyrene	16.1		3.5	7.02	ug/Kg	12.3		2.6	5.17	ug/Kg	15		4.2	8.44	ug/Kg
N-Nitrosodiphenylamine		<MDL	7	14	ug/Kg		<MDL	5.2	10.3	ug/Kg		<MDL	8.4	16.9	ug/Kg
Naphthalene		<MDL	3.5	7.02	ug/Kg		<MDL	2.6	5.17	ug/Kg		<MDL	4.2	8.44	ug/Kg
Pentachlorophenol		<MDL	18	35.1	ug/Kg		<MDL	13	25.8	ug/Kg		<MDL	21	42.2	ug/Kg
Phenanthrene	30		3.5	7.02	ug/Kg	17.3		2.6	5.17	ug/Kg	26.6		4.2	8.44	ug/Kg
Phenol		<MDL	7	14	ug/Kg		<MDL	5.2	10.3	ug/Kg		<MDL	8.4	16.9	ug/Kg
Pyrene	63.3		3.5	7.02	ug/Kg	74.4		2.6	5.17	ug/Kg	63.1		4.2	8.44	ug/Kg
Total 4-Nonylphenol		<MDL	8.8	17.5	ug/Kg		<MDL	6.5	12.9	ug/Kg		<MDL	11	21.1	ug/Kg
Total HPAHS	340		3.5	7.02	ug/Kg	353		2.6	5.17	ug/Kg	304		4.2	8.44	ug/Kg
Total LPAHs	55.6		3.5	7.02	ug/Kg	36		2.6	5.17	ug/Kg	53		4.2	8.44	ug/Kg
OR SW846 3550B*SW846 8081B															
4,4'-DDD*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDE*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDT*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
Aldrin		<MDL	1.2	2.33	ug/Kg		<MDL	0.87	1.72	ug/Kg		<MDL	1.4	2.81	ug/Kg
Alpha-BHC		<MDL	0.58	1.17	ug/Kg		<MDL	0.43	0.862	ug/Kg		<MDL	0.7	1.41	ug/Kg
Alpha-Chlordane		<MDL	0.58	1.17	ug/Kg		<MDL	0.43	0.862	ug/Kg		<MDL	0.7	1.41	ug/Kg
Beta-BHC		<MDL	0.58	1.17	ug/Kg		<MDL	0.43	0.862	ug/Kg		<MDL	0.7	1.41	ug/Kg
Delta-BHC		<MDL	0.58	1.17	ug/Kg		<MDL	0.43	0.862	ug/Kg		<MDL	0.7	1.41	ug/Kg
Dieldrin		<MDL	1.2	2.33	ug/Kg		<MDL	0.87	1.72	ug/Kg		<MDL	1.4	2.81	ug/Kg
Endosulfan I		<MDL	1.2	2.33	ug/Kg		<MDL	0.87	1.72	ug/Kg		<MDL	1.4	2.81	ug/Kg
Endosulfan II		<MDL	1.2	2.33	ug/Kg		<MDL	0.87	1.72	ug/Kg		<MDL	1.4	2.81	ug/Kg
Endosulfan Sulfate		<MDL	1.2	2.33	ug/Kg		<MDL	0.87	1.72	ug/Kg		<MDL	1.4	2.81	ug/Kg
Endrin		<MDL	1.2	2.33	ug/Kg		<MDL	0.87	1.72	ug/Kg		<MDL	1.4	2.81	ug/Kg
Endrin Aldehyde		<MDL	1.2	2.33	ug/Kg		<MDL	0.87	1.72	ug/Kg		<MDL	1.4	2.81	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.58	1.17	ug/Kg		<MDL	0.43	0.862	ug/Kg		<MDL	0.7	1.41	ug/Kg
Gamma-Chlordane		<MDL	0.58	1.17	ug/Kg		<MDL	0.43	0.862	ug/Kg		<MDL	0.7	1.41	ug/Kg
Heptachlor		<MDL	0.58	1.17	ug/Kg		<MDL	0.43	0.862	ug/Kg		<MDL	0.7	1.41	ug/Kg
Heptachlor Epoxide		<MDL	0.58	1.17	ug/Kg		<MDL	0.43	0.862	ug/Kg		<MDL	0.7	1.41	ug/Kg
Methoxychlor		<MDL	5.8	11.7	ug/Kg		<MDL	4.3	8.62	ug/Kg		<MDL	7	14.1	ug/Kg
Toxaphene		<MDL	12	23.3	ug/Kg		<MDL	8.7	17.2	ug/Kg		<MDL	14	28.1	ug/Kg
OR SW846 3550B*SW846 8082A															
Aroclor 1016		<MDL,TA	5.8	11.5	ug/Kg		<MDL,TA	3.7	7.58	ug/Kg		<MDL,TA	10	20.4	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4							
Locator:	DUD_5C					Locator:	DUD_6C					Locator:	DUD_7C							
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM							
Sample:	L47893-4					Sample:	L47893-5					Sample:	L47893-6							
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED							
ColDate:	4/28/09 11:53					ColDate:	4/28/09 12:02					ColDate:	4/28/09 12:12							
TimeSpan:						TimeSpan:						TimeSpan:								
TotalSolid:	57					TotalSolid:	77.4					TotalSolid:	47.4							
ClientLoc:						ClientLoc:						ClientLoc:								
SampDepth:	10					SampDepth:	10					SampDepth:	10							
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**								
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**		**Value**	**Qual**	**MDL**	**RDL**	**Units**				
Aroclor 1221		<MDL	3	5.84	ug/Kg		<MDL	2.2	4.3	ug/Kg			<MDL	3.6	7.03	ug/Kg				
Aroclor 1232		<MDL	3	5.84	ug/Kg		<MDL	2.2	4.3	ug/Kg			<MDL	3.6	7.03	ug/Kg				
Aroclor 1242		<MDL,TA	15	28.9	ug/Kg		<MDL,TA	14	29.1	ug/Kg			<MDL,TA	25	49.2	ug/Kg				
Aroclor 1248	10.8		1.5	2.93	ug/Kg	10.8		1.1	2.16	ug/Kg		16.8		1.8	3.52	ug/Kg				
Aroclor 1254	13.1		1.5	2.93	ug/Kg	11.8		1.1	2.16	ug/Kg		20.4		1.8	3.52	ug/Kg				
Aroclor 1260	10.4		1.5	2.93	ug/Kg	6.71		1.1	2.16	ug/Kg		9.75		1.8	3.52	ug/Kg				
Total Aroclors	34.4		1.5	2.93	ug/Kg	29.3		1.1	2.16	ug/Kg		46.8		1.8	3.52	ug/Kg				
* Not converted to dry weight basis																				

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_14C					Locator:	DUD_15C				
Descrip:	PERIMETER LOCATION					Descrip:	DUDI PERIMETER LOC				
Sample:	L47893-7					Sample:	L47893-8				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/28/09 12:22					ColDate:	4/28/09 12:36				
TimeSpan:						TimeSpan:					
TotalSolid:	50.8					TotalSolid:	46.6				
ClientLoc:						ClientLoc:					
SampDepth:	8					SampDepth:	8				
DRY Weight Basis						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
M=CV ASTM D422										
Clay*	19.3		0.96	1.93	%	34.1		1.1	2.13	%
Fines*	71.4		0.96	1.93	%	82		1.1	2.13	%
Gravel*	0.6	<RDL	0.19	1.93	%	4.5		0.21	2.13	%
Sand*	25.1		0.19	1.93	%	13.1		0.21	2.13	%
Silt*	52.1		0.96	1.93	%	47.9		1.1	2.13	%
p+0.00*	0.19	<RDL	0.19	1.93	%		<MDL	0.21	2.13	%
p+1.00*	0.8	<RDL	0.19	1.93	%	0.4	<RDL	0.21	2.13	%
p+10.0(equal/more than)*	11.6		0.96	1.93	%	24.5		1.1	2.13	%
p+2.00*	6.5		0.19	1.93	%	1.8		0.21	2.13	%
p+3.00*	9.8		0.19	1.93	%	2		0.21	2.13	%
p+4.00*	7.9		0.19	1.93	%	8.7		0.21	2.13	%
p+5.00*	7.7		0.96	1.93	%	9.6		1.1	2.13	%
p+6.00*	18.3		0.96	1.93	%	14.9		1.1	2.13	%
p+7.00*	14.5		0.96	1.93	%	13.8		1.1	2.13	%
p+8.00*	11.6		0.96	1.93	%	9.6		1.1	2.13	%
p+9.00*	7.7		0.96	1.93	%	9.6		1.1	2.13	%
p-1.00*		<MDL	0.19	1.93	%	0.6	<RDL	0.21	2.13	%
p-2.00*	0.2	<RDL	0.19	1.93	%	1.7		0.21	2.13	%
p-2.00(less than)*	0.3	<RDL	0.19	1.93	%	2.2		0.21	2.13	%
CV SW846 9060-PSEP96										
Total Organic Carbon	17400	SH	1900	3740	mg/Kg	16200		1900	3730	mg/Kg
M=CV SM2540-G										
Total Solids*	50.8		0.005	0.01	%	46.6		0.005	0.01	%
M=ES NONE										
Field Personnel*	BK,JDD,JB,JeneeC				none	BK,JDD,JB,JeneeC				none
Sampcoordx1*	1267194				ft	1267052				ft
Sampcoordy1*	207999				ft	207968				ft
Sample Depth*	8				m	8				m
Sampling Method*	20143				none	20143				none
Sediment Sampling Depth*	15				cm	14				cm
Sediment Sampling Range*					cm					cm
Sediment Type*	21N30				none	21N30				none
Tidal Condition*	E				none	E				none
Tide Height*	-1				ft	-1.2				ft
Sample Function*										
MT SW846 3050B*SW846 6010C										
Aluminum, Total, ICP	23600		9.8	48.8	mg/Kg	27900		11	53.6	mg/Kg
Antimony, Total, ICP		<MDL,JG	1.5	7.32	mg/Kg		<MDL,JG	1.6	8.05	mg/Kg
Arsenic, Total, ICP	11	<RDL	2.4	12.2	mg/Kg	10	<RDL	2.8	13.4	mg/Kg
Beryllium, Total, ICP	0.618		0.098	0.488	mg/Kg	0.723		0.11	0.536	mg/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_14C					Locator:	DUD_15C				
Descrip:	PERIMETER LOCATION					Descrip:	DUDI PERIMETER LOC				
Sample:	L47893-7					Sample:	L47893-8				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/28/09 12:22					ColDate:	4/28/09 12:36				
TimeSpan:						TimeSpan:					
TotalSolid:	50.8					TotalSolid:	46.6				
ClientLoc:						ClientLoc:					
SampDepth:	8					SampDepth:	8				
DRY Weight Basis						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Cadmium, Total, ICP	0.39	<RDL	0.19	0.974	mg/Kg	0.3	<RDL	0.21	1.07	mg/Kg
Chromium, Total, ICP	28.1		0.3	1.46	mg/Kg	27.9		0.32	1.61	mg/Kg
Copper, Total, ICP	61.8		0.39	1.95	mg/Kg	48.9		0.43	2.15	mg/Kg
Iron, Total, ICP	32100		4.9	24.4	mg/Kg	34800		5.4	26.8	mg/Kg
Lead, Total, ICP	27.2		1.9	9.74	mg/Kg	13.9		2.1	10.7	mg/Kg
Manganese, Total, ICP	350		0.19	0.974	mg/Kg	393		0.21	1.07	mg/Kg
Nickel, Total, ICP	24		0.49	2.44	mg/Kg	26		0.54	2.68	mg/Kg
Selenium, Total, ICP		<MDL	2.4	12.2	mg/Kg		<MDL	2.8	13.4	mg/Kg
Silver, Total, ICP		<MDL	0.39	1.95	mg/Kg		<MDL	0.43	2.15	mg/Kg
Thallium, Total, ICP		<MDL	3.9	19.5	mg/Kg		<MDL	4.3	21.5	mg/Kg
Zinc, Total, ICP	105		0.49	2.44	mg/Kg	78.5		0.54	2.68	mg/Kg
MT SW846 7471B										
Mercury, Total, CVAA	0.197		0.0049	0.0496	mg/Kg	0.131		0.0054	0.0534	mg/Kg
OR EPA 3550B/8270C (7-3-01-004)										
1,2,4-Trichlorobenzene		<MDL	0.2	0.394	ug/Kg		<MDL	0.21	0.429	ug/Kg
1,2-Dichlorobenzene		<MDL	0.39	0.787	ug/Kg		<MDL	0.43	0.858	ug/Kg
1,3-Dichlorobenzene		<MDL	0.39	0.787	ug/Kg		<MDL	0.43	0.858	ug/Kg
1,4-Dichlorobenzene		<MDL	0.39	0.787	ug/Kg		<MDL	0.43	0.858	ug/Kg
2,4-Dimethylphenol		<MDL	2	3.94	ug/Kg		<MDL	2.1	4.29	ug/Kg
2-Methylnaphthalene		<MDL	3.9	7.87	ug/Kg		<MDL	4.3	8.58	ug/Kg
2-Methylphenol		<MDL	3.9	7.87	ug/Kg		<MDL	4.3	8.58	ug/Kg
4-Methylphenol		<MDL	7.9	15.7	ug/Kg		<MDL	8.6	17.2	ug/Kg
Acenaphthene	5.9	<RDL	3.9	7.87	ug/Kg		<MDL	4.3	8.58	ug/Kg
Acenaphthylene	4.3	<RDL	3.9	7.87	ug/Kg		<MDL	4.3	8.58	ug/Kg
Anthracene	44.9		3.9	7.87	ug/Kg	11.9		4.3	8.58	ug/Kg
Benzo(a)anthracene	113		3.9	7.87	ug/Kg	27.3		4.3	8.58	ug/Kg
Benzo(a)pyrene	104		3.9	7.87	ug/Kg	28.8		4.3	8.58	ug/Kg
Benzo(b)fluoranthene	119		3.9	7.87	ug/Kg	29		4.3	8.58	ug/Kg
Benzo(g,h,i)perylene	50.2		3.9	7.87	ug/Kg	14.6		4.3	8.58	ug/Kg
Benzo(k)fluoranthene	123		3.9	7.87	ug/Kg	46.8		4.3	8.58	ug/Kg
Benzoic Acid	90.6		20	39.4	ug/Kg	79.8		21	42.9	ug/Kg
Benzyl Alcohol		<MDL	3.9	7.87	ug/Kg		<MDL	4.3	8.58	ug/Kg
Benzyl Butyl Phthalate	24.6	B	2	3.94	ug/Kg	13.1	B	2.1	4.29	ug/Kg
Bis(2-Ethylhexyl)Phthalate	274	B	7.9	15.7	ug/Kg	588	B2	8.6	17.2	ug/Kg
Caffeine		<MDL	7.9	15.7	ug/Kg		<MDL	8.6	17.2	ug/Kg
Carbazole	10.7		3.9	7.87	ug/Kg		<MDL	4.3	8.58	ug/Kg
Chrysene	150		3.9	7.87	ug/Kg	37.1		4.3	8.58	ug/Kg
Coprostanol		<MDL	79	157	ug/Kg		<MDL	86	172	ug/Kg
Di-N-Butyl Phthalate	15.9		7.9	15.7	ug/Kg		<MDL	8.6	17.2	ug/Kg
Di-N-Octyl Phthalate		<MDL	7.9	15.7	ug/Kg		<MDL	8.6	17.2	ug/Kg
Dibenzo(a,h)anthracene	18.2		3.9	7.87	ug/Kg	7.1	<RDL	4.3	8.58	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_14C					Locator:	DUD_15C				
Descrip:	PERIMETER LOCATION					Descrip:	DUDI PERIMETER LOC				
Sample:	L47893-7					Sample:	L47893-8				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/28/09 12:22					ColDate:	4/28/09 12:36				
TimeSpan:						TimeSpan:					
TotalSolid:	50.8					TotalSolid:	46.6				
ClientLoc:						ClientLoc:					
SampDepth:	8					SampDepth:	8				
DRY Weight Basis						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Dibenzofuran	5.9	<RDL	3.9	7.87	ug/Kg		<MDL	4.3	8.58	ug/Kg
Diethyl Phthalate		<MDL	7.9	15.7	ug/Kg		<MDL	8.6	17.2	ug/Kg
Dimethyl Phthalate		<MDL	7.9	15.7	ug/Kg		<MDL	8.6	17.2	ug/Kg
Fluoranthene	193		3.9	7.87	ug/Kg	67.2		4.3	8.58	ug/Kg
Fluorene	11.3		3.9	7.87	ug/Kg	6.9	<RDL	4.3	8.58	ug/Kg
Hexachlorobenzene		<MDL	0.2	0.394	ug/Kg		<MDL	0.21	0.429	ug/Kg
Hexachlorobutadiene		<MDL	0.98	1.97	ug/Kg		<MDL	1.1	2.15	ug/Kg
Hexachloroethane		<MDL	2	3.94	ug/Kg		<MDL	2.1	4.29	ug/Kg
Indeno(1,2,3-Cd)Pyrene	51.8		3.9	7.87	ug/Kg	14.5		4.3	8.58	ug/Kg
N-Nitrosodiphenylamine		<MDL	7.9	15.7	ug/Kg		<MDL	8.6	17.2	ug/Kg
Naphthalene		<MDL	3.9	7.87	ug/Kg		<MDL	4.3	8.58	ug/Kg
Pentachlorophenol		<MDL	20	39.4	ug/Kg		<MDL	21	42.9	ug/Kg
Phenanthrene	71.1		3.9	7.87	ug/Kg	28.5		4.3	8.58	ug/Kg
Phenol		<MDL	7.9	15.7	ug/Kg		<MDL	8.6	17.2	ug/Kg
Pyrene	236		3.9	7.87	ug/Kg	67.4		4.3	8.58	ug/Kg
Total 4-Nonylphenol		<MDL	9.8	19.7	ug/Kg		<MDL	11	21.5	ug/Kg
Total HPAHS	1160		3.9	7.87	ug/Kg	339		4.3	8.58	ug/Kg
Total LPAHs	143		3.9	7.87	ug/Kg	55.8		4.3	8.58	ug/Kg
OR SW846 3550B*SW846 8081B										
4,4'-DDD*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDE*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDT*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
Aldrin		<MDL	1.3	2.62	ug/Kg		<MDL	1.4	2.85	ug/Kg
Alpha-BHC		<MDL	0.65	1.31	ug/Kg		<MDL	0.71	1.43	ug/Kg
Alpha-Chlordane		<MDL	0.65	1.31	ug/Kg		<MDL	0.71	1.43	ug/Kg
Beta-BHC		<MDL	0.65	1.31	ug/Kg		<MDL	0.71	1.43	ug/Kg
Delta-BHC		<MDL	0.65	1.31	ug/Kg		<MDL	0.71	1.43	ug/Kg
Dieldrin		<MDL	1.3	2.62	ug/Kg		<MDL	1.4	2.85	ug/Kg
Endosulfan I		<MDL	1.3	2.62	ug/Kg		<MDL	1.4	2.85	ug/Kg
Endosulfan II		<MDL	1.3	2.62	ug/Kg		<MDL	1.4	2.85	ug/Kg
Endosulfan Sulfate		<MDL	1.3	2.62	ug/Kg		<MDL	1.4	2.85	ug/Kg
Endrin		<MDL	1.3	2.62	ug/Kg		<MDL	1.4	2.85	ug/Kg
Endrin Aldehyde		<MDL	1.3	2.62	ug/Kg		<MDL	1.4	2.85	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.65	1.31	ug/Kg		<MDL	0.71	1.43	ug/Kg
Gamma-Chlordane		<MDL	0.65	1.31	ug/Kg		<MDL	0.71	1.43	ug/Kg
Heptachlor		<MDL	0.65	1.31	ug/Kg		<MDL	0.71	1.43	ug/Kg
Heptachlor Epoxide		<MDL	0.65	1.31	ug/Kg		<MDL	0.71	1.43	ug/Kg
Methoxychlor		<MDL	6.5	13.1	ug/Kg		<MDL	7.1	14.3	ug/Kg
Toxaphene		<MDL	13	26.2	ug/Kg		<MDL	14	28.5	ug/Kg
OR SW846 3550B*SW846 8082A										
Aroclor 1016		<MDL,TA	18	34.8	ug/Kg		<MDL,TA	4.7	9.29	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_14C					Locator:	DUD_15C				
Descrip:	PERIMETER LOCATION					Descrip:	DUDI PERIMETER LOC				
Sample:	L47893-7					Sample:	L47893-8				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/28/09 12:22					ColDate:	4/28/09 12:36				
TimeSpan:						TimeSpan:					
TotalSolid:	50.8					TotalSolid:	46.6				
ClientLoc:						ClientLoc:					
SampDepth:	8					SampDepth:	8				
DRY Weight Basis						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Aroclor 1221		<MDL	3.3	6.56	ug/Kg		<MDL	3.6	7.15	ug/Kg
Aroclor 1232		<MDL,TA	33	65.9	ug/Kg		<MDL,TA	6.4	12.7	ug/Kg
Aroclor 1242		<MDL,TA	53	106	ug/Kg		<MDL,TA	14	28.1	ug/Kg
Aroclor 1248	37.2		1.6	3.29	ug/Kg	10.2		1.8	3.58	ug/Kg
Aroclor 1254	45.9		1.6	3.29	ug/Kg	12.9		1.8	3.58	ug/Kg
Aroclor 1260	60.8		1.6	3.29	ug/Kg	7.9		1.8	3.58	ug/Kg
Total Aroclors	144		1.6	3.29	ug/Kg	30.9		1.8	3.58	ug/Kg
* Not converted to dry weight basis										

PROJECT: 423062-200-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Dry Weight Factor	Fines * %	Gravel * %	Sand * %	Silt * %	Clay * %	Total Organic Carbon mg/Kg	Total Solids * %	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) * %	Sampcoordx1 * ft	Sampcoordy1 * ft
DUD_3C	10	L47893-1	3.21	56	9.9	31.5	40	16	16000	55.4	0.6	1.6	8.9	10.8	12	6.5	4.4	14.2	12.4	8.9	7.1	2.1	0.8	7.1	1267148	208143
DUD_4C	10	L47893-2	1.66	14.1	42.3	40.8	9	5.1	6230	76.9	3.5	6.1	2.6	18.1	11	2.1	2.6	1.9	2.6	1.9	2.6	15.2	11.4	15.7	1267109	208239
DUD_4C	10	L47893-3	1.74	20	30	49	14.6	5.3	6280	76.3	3.4	6.3	2.7	20.6	14.9	3.8	5.3	2.7	4	2.7	2.7	10.4	9.6	10	1267116	208239
DUD_5C	10	L47893-4	2.91	48	5.3	39.9	35.6	12.4	12400	57	0.7	3.2	6.6	19.4	10.6	5.9	6.6	11.6	8.3	9.1	5.8	2	2.2	1.2	1267027	208269
DUD_6C	10	L47893-5	1.65	14	51.9	32.7	11.5	2.6	5660	77.4	2.6	4.8	1.9	15.4	9.9		3.8	1.3	2.6	3.8	0.6	12.5	15	24.4	1266945	208495
DUD_7C	10	L47893-6	4.37	83.7		8.8	56.8	26.9	16900	47.4			14.5	0.5	0.8	7.5	6.2	23.8	14.5	12.4	12.4				1266900	208484
DUD_14C	8	L47893-7	3.8	71.4	0.6	25.1	52.1	19.3	17400	50.8	0.19	0.8	11.6	6.5	9.8	7.9	7.7	18.3	14.5	11.6	7.7		0.2	0.3	1267194	207999
DUD_15C	8	L47893-8	4.57	82	4.5	13.1	47.9	34.1	16200	46.6		0.4	24.5	1.8	2	8.7	9.6	14.9	13.8	9.6	9.6	0.6	1.7	2.2	1267052	207968

PROJECT: 423062-200-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Sample Depth *	Sampling Method *	Sediment Sampling Depth *	Tide Height *	Aluminum, Total, ICP	Arsenic, Total, ICP	Beryllium, Total, ICP	Cadmium, Total, ICP	Chromium, Total, ICP	Copper, Total, ICP	Iron, Total, ICP	Lead, Total, ICP	Manganese, Total, ICP	Mercury, Total, CVAA	Nickel, Total, ICP	Zinc, Total, ICP	Acenaphthene	Acenaphthylene	Anthracene	Aroclor 1248	Aroclor 1254	Aroclor 1260
			m	none	cm	ft	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
DUD_3C	10	L47893-1	10	20143	13	3	21300	9.6	0.531	0.42	27.4	66.1	30700	29.1	330	0.174	22	105	3.6	3.8	33.6	34.7	45.5	29.2
DUD_4C	10	L47893-2	10	20143	13	2.5	12100	3.8	0.3	0.16	15	38.9	18900	7.49	235	0.0714	14.3	40.7			15.1	11.5	19.1	11.2
DUD_4C	10	L47893-3	10	20143	13	2	12900	4.6	0.31	0.16	19.1	38.5	20100	11.9	245	0.0695	16.1	51.2			20.2	18.6	23.3	14.7
DUD_5C	10	L47893-4	10	20143	13	1	20200	7.2	0.521	0.25	23.5	39.1	27400	10.7	309	0.102	21.6	63			11.6	10.8	13.1	10.4
DUD_6C	10	L47893-5	10	20143	11	0	12600	4.4	0.319	0.16	16.4	29.2	19000	7.89	239	0.0656	14.7	42.4			9.47	10.8	11.8	6.71
DUD_7C	10	L47893-6	10	20143	17	-0.5	28500	11	0.751	0.32	27.4	48.5	35400	14.1	426	0.128	26.4	80.2			10.1	16.8	20.4	9.75
DUD_14C	8	L47893-7	8	20143	15	-1	23600	11	0.618	0.39	28.1	61.8	32100	27.2	350	0.197	24	105	5.9	4.3	44.9	37.2	45.9	60.8
DUD_15C	8	L47893-8	8	20143	14	-1.2	27900	10	0.723	0.3	27.9	48.9	34800	13.9	393	0.131	26	78.5			11.9	10.2	12.9	7.9

PROJECT: 423062-200-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Benzo(a)anthracene ug/Kg	Benzo(a)pyrene ug/Kg	Benzo(b)fluoranthene ug/Kg	Benzo(g,h,i)perylene ug/Kg	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	Indeno(1,2,3-Cd)Pyrene ug/Kg	Phenanthrene ug/Kg	Pyrene ug/Kg	Total Aroclors ug/Kg	Total HPAHS ug/Kg	Total LPAHs ug/Kg
DUD_3C	10	L47893-1	87.9	37.5	49.3	13.7	59.4	95.1	19.7	264	10.3	124	13	5.6	4.9	175	8.7	13	57.6	200	109	765	111
DUD_4C	10	L47893-2	23.1	12.6	17	4	21.7	37.5	11.6	144	3.1	50.6	7.4			58.4	4.4	4	17.3	79.7	41.7	273	39.9
DUD_4C	10	L47893-3	42.7	45.1	58.6	25.2	54.3	65.7	11	519	5	55.2	6.7	10.4		68.2	5.54	24.5	23.7	84.1	56.6	468	56.2
DUD_5C	10	L47893-4	27.7	29.5	39.5	15.5	35.8	84.6	11.8	381	4.2	37.9	8.4	7.67		66.8	6.3	16.1	30	63.3	34.4	340	55.6
DUD_6C	10	L47893-5	29.1	25.7	35.9	13.4	32.7	55.7	8.29	151	3.7	36.4	5.4	5.2		88.2	4.5	12.3	17.3	74.4	29.3	353	36
DUD_7C	10	L47893-6	23.4	24.7	39	14.7	27	121	11.7	219		32.3	14	7.4		57.4	6.3	15	26.6	63.1	46.8	304	53
DUD_14C	8	L47893-7	113	104	119	50.2	123	90.6	24.6	274	10.7	150	15.9	18.2	5.9	193	11.3	51.8	71.1	236	144	1160	143
DUD_15C	8	L47893-8	27.3	28.8	29	14.6	46.8	79.8	13.1	588		37.1		7.1		67.2	6.9	14.5	28.5	67.4	30.9	339	55.8

SAP MDL Comparison Table

King County Environmental Lab SAP MDL Comparison Table

PROJECT: 423062-200-4

Locator:	DUD_3C	DUD_4C	DUD_4C	DUD_5C	DUD_6C	DUD_7C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sampled:	04/28/09 10:44:00 AM	04/28/09 10:55:00 AM	04/28/09 11:00:00 AM	04/28/09 11:53:00 AM	04/28/09 12:02:00 PM	04/28/09 12:12:00 PM
Lab ID:	L47893-1	L47893-2	L47893-3	L47893-4	L47893-5	L47893-6
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	55.4	76.9	76.3	57	77.4	47.4

Parameters	Units	SAP MDL (@50% TS)	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								
Fines *	%	NA	0.89	0.64	0.67	0.83	0.64	1
Gravel *	%	NA	0.18	0.13	0.13	0.17	0.13	0.21
Sand *	%	NA	0.18	0.13	0.13	0.17	0.13	0.21
Silt *	%	NA	0.89	0.64	0.67	0.83	0.64	1
Clay *	%	NA	0.89	0.64	0.67	0.83	0.64	1
p+0.00 *	%	0.1	0.18	0.13	0.13	0.17	0.13	0.21
p+1.00 *	%	0.1	0.18	0.13	0.13	0.17	0.13	0.21
p+10.0(equal/more than) *	%	0.1	0.89	0.64	0.67	0.83	0.64	1
p+2.00 *	%	0.1	0.18	0.13	0.13	0.17	0.13	0.21
p+3.00 *	%	0.1	0.18	0.13	0.13	0.17	0.13	0.21
p+4.00 *	%	0.1	0.18	0.13	0.13	0.17	0.13	0.21
p+5.00 *	%	0.1	0.89	0.64	0.67	0.83	0.64	1
p+6.00 *	%	0.1	0.89	0.64	0.67	0.83	0.64	1
p+7.00 *	%	0.1	0.89	0.64	0.67	0.83	0.64	1
p+8.00 *	%	0.1	0.89	0.64	0.67	0.83	0.64	1
p+9.00 *	%	0.1	0.89	0.64	0.67	0.83	0.64	1
p-1.00 *	%	0.1	0.18	0.13	0.13	0.17	0.13	0.21
p-2.00 *	%	0.1	0.18	0.13	0.13	0.17	0.13	0.21
p-2.00(less than) *	%	0.1	0.18	0.13	0.13	0.17	0.13	0.21
M=CV SW846 9060-PSEP96								
Total Organic Carbon	mg/Kg	1000	1800	1100	1300	1400	1100	1900
M=CV SM2540-G								
Total Solids *	%	0.005	0.005	0.005	0.005	0.005	0.005	0.005
M=MT SW846 7471B								
Mercury, Total, CVAA	mg/Kg	0.04	0.0045	0.0033	0.0033	0.0044	0.0031	0.0051
M=MT SW846 3050B*SW846 6010C								
Aluminum, Total, ICP	mg/Kg	10	9	6.1	6.6	9.1	5	11
Antimony, Total, ICP	mg/Kg	3	1.4	0.92	0.97	1.4	0.75	1.6
Arsenic, Total, ICP	mg/Kg	5	2.3	1.6	1.6	2.3	1.3	2.7
Beryllium, Total, ICP	mg/Kg	0.1	0.09	0.061	0.066	0.091	0.05	0.11
Cadmium, Total, ICP	mg/Kg	0.3	0.18	0.12	0.13	0.18	0.1	0.21
Chromium, Total, ICP	mg/Kg	0.5	0.27	0.18	0.2	0.28	0.16	0.32
Copper, Total, ICP	mg/Kg	0.4	0.36	0.25	0.26	0.37	0.21	0.44
Iron, Total, ICP	mg/Kg	5	4.5	3.1	3.3	4.6	2.5	5.5
Lead, Total, ICP	mg/Kg	3	1.8	1.2	1.3	1.8	1	2.1
Manganese, Total, ICP	mg/Kg	0.2	0.18	0.12	0.13	0.18	0.1	0.21
Nickel, Total, ICP	mg/Kg	2	0.45	0.31	0.33	0.46	0.25	0.55
Selenium, Total, ICP	mg/Kg	5	2.3	1.6	1.6	2.3	1.3	2.7
Silver, Total, ICP	mg/Kg	0.4	0.36	0.25	0.26	0.37	0.21	0.44
Thallium, Total, ICP	mg/Kg	20	3.6	2.5	2.6	3.7	2.1	4.4
Zinc, Total, ICP	mg/Kg	0.5	0.45	0.31	0.33	0.46	0.25	0.55
M=OR EPA 3550B/8270C (7-3-01-004)								

King County Environmental Lab SAP MDL Comparison Table

PROJECT: 423062-200-4

Locator:	DUD_3C	DUD_4C	DUD_4C	DUD_5C	DUD_6C	DUD_7C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sampled:	04/28/09 10:44:00 AM	04/28/09 10:55:00 AM	04/28/09 11:00:00 AM	04/28/09 11:53:00 AM	04/28/09 12:02:00 PM	04/28/09 12:12:00 PM
Lab ID:	L47893-1	L47893-2	L47893-3	L47893-4	L47893-5	L47893-6
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	55.4	76.9	76.3	57	77.4	47.4

Parameters	Units	SAP MDL (@50% TS)	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								
1,2,4-Trichlorobenzene	ug/Kg	0.52	0.18	0.13	0.13	0.18	0.13	0.21
1,2-Dichlorobenzene	ug/Kg	0.52	0.36	0.26	0.26	0.35	0.26	0.42
1,3-Dichlorobenzene	ug/Kg	0.52	0.36	0.26	0.26	0.35	0.26	0.42
1,4-Dichlorobenzene	ug/Kg	0.26	0.36	0.26	0.26	0.35	0.26	0.42
2,4-Dimethylphenol	ug/Kg	14	1.8	1.3	1.3	1.8	1.3	2.1
2-Methylnaphthalene	ug/Kg	28	3.6	2.6	2.6	3.5	2.6	4.2
2-Methylphenol	ug/Kg	38	3.6	2.6	2.6	3.5	2.6	4.2
4-Methylphenol	ug/Kg	32	7.2	5.2	5.2	7	5.2	8.4
Acenaphthene	ug/Kg	14	3.6	2.6	2.6	3.5	2.6	4.2
Acenaphthylene	ug/Kg	29	3.6	2.6	2.6	3.5	2.6	4.2
Anthracene	ug/Kg	7.9	3.6	2.6	2.6	3.5	2.6	4.2
Benzo(a)anthracene	ug/Kg	4	3.6	2.6	2.6	3.5	2.6	4.2
Benzo(a)pyrene	ug/Kg	6	3.6	2.6	2.6	3.5	2.6	4.2
Benzo(b)fluoranthene	ug/Kg	6	3.6	2.6	2.6	3.5	2.6	4.2
Benzo(g,h,i)perylene	ug/Kg	16	3.6	2.6	2.6	3.5	2.6	4.2
Benzo(k)fluoranthene	ug/Kg	6	3.6	2.6	2.6	3.5	2.6	4.2
Benzoic Acid	ug/Kg	12	18	13	13	18	13	21
Benzyl Alcohol	ug/Kg	12	3.6	2.6	2.6	3.5	2.6	4.2
Benzyl Butyl Phthalate	ug/Kg	12	1.8	1.3	1.3	1.8	1.3	2.1
Bis(2-Ethylhexyl)Phthalate	ug/Kg	13	7.2	5.2	5.2	7	5.2	8.4
Carbazole	ug/Kg	14	3.6	2.6	2.6	3.5	2.6	4.2
Chrysene	ug/Kg	7.9	3.6	2.6	2.6	3.5	2.6	4.2
Coprostanol	ug/Kg	28	72	52	52	70	52	84
Dibenzo(a,h)anthracene	ug/Kg	14	3.6	2.6	2.6	3.5	2.6	4.2
Dibenzofuran	ug/Kg	28	3.6	2.6	2.6	3.5	2.6	4.2
Diethyl Phthalate	ug/Kg	12	7.2	5.2	5.2	7	5.2	8.4
Dimethyl Phthalate	ug/Kg	22	7.2	5.2	5.2	7	5.2	8.4
Di-N-Butyl Phthalate	ug/Kg	10	7.2	5.2	5.2	7	5.2	8.4
Di-N-Octyl Phthalate	ug/Kg	16	7.2	5.2	5.2	7	5.2	8.4
Fluoranthene	ug/Kg	16	3.6	2.6	2.6	3.5	2.6	4.2
Fluorene	ug/Kg	26	3.6	2.6	2.6	3.5	2.6	4.2
Hexachlorobenzene	ug/Kg	1.3	0.18	0.13	0.13	0.18	0.13	0.21
Hexachlorobutadiene	ug/Kg	1.5	0.9	0.65	0.66	0.88	0.65	1.1
Hexachloroethane	ug/Kg	29	1.8	1.3	1.3	1.8	1.3	2.1
Indeno(1,2,3-Cd)Pyrene	ug/Kg	18	3.6	2.6	2.6	3.5	2.6	4.2
Naphthalene	ug/Kg	28	3.6	2.6	2.6	3.5	2.6	4.2
N-Nitrosodiphenylamine	ug/Kg	40	7.2	5.2	5.2	7	5.2	8.4
Pentachlorophenol	ug/Kg	10	18	13	13	18	13	21
Phenanthrene	ug/Kg	7.9	3.6	2.6	2.6	3.5	2.6	4.2
Phenol	ug/Kg	18	7.2	5.2	5.2	7	5.2	8.4
Pyrene	ug/Kg	7.9	3.6	2.6	2.6	3.5	2.6	4.2
Total HPAHS	ug/Kg	NA	3.6	2.6	2.6	3.5	2.6	4.2
Total LPAHs	ug/Kg	NA	3.6	2.6	2.6	3.5	2.6	4.2

King County Environmental Lab SAP MDL Comparison Table

PROJECT: 423062-200-4

Locator:	DUD_3C	DUD_4C	DUD_4C	DUD_5C	DUD_6C	DUD_7C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sampled:	04/28/09 10:44:00 AM	04/28/09 10:55:00 AM	04/28/09 11:00:00 AM	04/28/09 11:53:00 AM	04/28/09 12:02:00 PM	04/28/09 12:12:00 PM
Lab ID:	L47893-1	L47893-2	L47893-3	L47893-4	L47893-5	L47893-6
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	55.4	76.9	76.3	57	77.4	47.4

Parameters	Units	SAP MDL (@50% TS)	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=OR SW846 3550B*SW846 8081B								
4,4'-DDD	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
4,4'-DDE	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
4,4'-DDT	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
Aldrin	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
Alpha-BHC	ug/Kg	0.67	0.6	0.43	0.43	0.58	0.43	0.7
Alpha-Chlordane	ug/Kg	0.67	0.6	0.43	0.43	0.58	0.43	0.7
Beta-BHC	ug/Kg	0.67	0.6	0.43	0.43	0.58	0.43	0.7
Delta-BHC	ug/Kg	0.67	0.6	0.43	0.43	0.58	0.43	0.7
Dieldrin	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
Endosulfan I	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
Endosulfan II	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
Endosulfan Sulfate	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
Endrin	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
Endrin Aldehyde	ug/Kg	0.67	1.2	0.87	0.88	1.2	0.87	1.4
Gamma-BHC (Lindane)	ug/Kg	0.67	0.6	0.43	0.43	0.58	0.43	0.7
Gamma-Chlordane	ug/Kg	2.7	0.6	0.43	0.43	0.58	0.43	0.7
Heptachlor	ug/Kg	0.67	0.6	0.43	0.43	0.58	0.43	0.7
Heptachlor Epoxide	ug/Kg	0.67	0.6	0.43	0.43	0.58	0.43	0.7
Methoxychlor	ug/Kg	3.3	6	4.3	4.3	5.8	4.3	7
Toxaphene	ug/Kg	6.7	12	8.7	8.8	12	8.7	14
M=OR SW846 3550B*SW846 8082A								
Aroclor 1016	ug/Kg	4	16	5.2	7.7	5.8	3.7	10
Aroclor 1221	ug/Kg	8	3.1	2.2	2.2	3	2.2	3.6
Aroclor 1232	ug/Kg	8	34	11	2.2	3	2.2	3.6
Aroclor 1242	ug/Kg	4	51	18	28	15	14	25
Aroclor 1248	ug/Kg	4	1.5	1.1	1.1	1.5	1.1	1.8
Aroclor 1254	ug/Kg	4	1.5	1.1	1.1	1.5	1.1	1.8
Aroclor 1260	ug/Kg	4	1.5	1.1	1.1	1.5	1.1	1.8
Total Aroclors	ug/Kg		1.5	1.1	1.1	1.5	1.1	1.8

* Not converted to dry weight basis for this parameter

King County Environmental Lab SAP MDL Comparison Table

PROJECT: 423062-200-4	DUD_14C	DUD_15C
	PERIMETER LOCATION	DUDI PERIMETER LOC
	04/28/09 12:22:00 PM	04/28/09 12:36:00 PM
	L47893-7	L47893-8
	SALTWTRSED	SALTWTRSED
	50.8	46.6

Parameters	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS		
M=CV ASTM D422		
Fines *	0.96	1.1
Gravel *	0.19	0.21
Sand *	0.19	0.21
Silt *	0.96	1.1
Clay *	0.96	1.1
p+0.00 *	0.19	0.21
p+1.00 *	0.19	0.21
p+10.0(equal/more than) *	0.96	1.1
p+2.00 *	0.19	0.21
p+3.00 *	0.19	0.21
p+4.00 *	0.19	0.21
p+5.00 *	0.96	1.1
p+6.00 *	0.96	1.1
p+7.00 *	0.96	1.1
p+8.00 *	0.96	1.1
p+9.00 *	0.96	1.1
p-1.00 *	0.19	0.21
p-2.00 *	0.19	0.21
p-2.00(less than) *	0.19	0.21
M=CV SW846 9060-PSEP96		
Total Organic Carbon	1900	1900
M=CV SM2540-G		
Total Solids *	0.005	0.005
M=MT SW846 7471B		
Mercury, Total, CVAA	0.0049	0.0054
M=MT SW846 3050B*SW846 6010C		
Aluminum, Total, ICP	9.8	11
Antimony, Total, ICP	1.5	1.6
Arsenic, Total, ICP	2.4	2.8
Beryllium, Total, ICP	0.098	0.11
Cadmium, Total, ICP	0.19	0.21
Chromium, Total, ICP	0.3	0.32
Copper, Total, ICP	0.39	0.43
Iron, Total, ICP	4.9	5.4
Lead, Total, ICP	1.9	2.1
Manganese, Total, ICP	0.19	0.21
Nickel, Total, ICP	0.49	0.54
Selenium, Total, ICP	2.4	2.8
Silver, Total, ICP	0.39	0.43
Thallium, Total, ICP	3.9	4.3
Zinc, Total, ICP	0.49	0.54
M=OR EPA 3550B/8270C (7-3-01-004)		

King County Environmental Lab SAP MDL Comparison Table

PROJECT: 423062-200-4	DUD_14C	DUD_15C
	PERIMETER LOCATION	DUDI PERIMETER LOC
	04/28/09 12:22:00 PM	04/28/09 12:36:00 PM
	L47893-7	L47893-8
	SALTWTRSED	SALTWTRSED
	50.8	46.6

Parameters	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS		
1,2,4-Trichlorobenzene	0.2	0.21
1,2-Dichlorobenzene	0.39	0.43
1,3-Dichlorobenzene	0.39	0.43
1,4-Dichlorobenzene	0.39	0.43
2,4-Dimethylphenol	2	2.1
2-Methylnaphthalene	3.9	4.3
2-Methylphenol	3.9	4.3
4-Methylphenol	7.9	8.6
Acenaphthene	3.9	4.3
Acenaphthylene	3.9	4.3
Anthracene	3.9	4.3
Benzo(a)anthracene	3.9	4.3
Benzo(a)pyrene	3.9	4.3
Benzo(b)fluoranthene	3.9	4.3
Benzo(g,h,i)perylene	3.9	4.3
Benzo(k)fluoranthene	3.9	4.3
Benzoic Acid	20	21
Benzyl Alcohol	3.9	4.3
Benzyl Butyl Phthalate	2	2.1
Bis(2-Ethylhexyl)Phthalate	7.9	8.6
Carbazole	3.9	4.3
Chrysene	3.9	4.3
Coprostanol	79	86
Dibenzo(a,h)anthracene	3.9	4.3
Dibenzofuran	3.9	4.3
Diethyl Phthalate	7.9	8.6
Dimethyl Phthalate	7.9	8.6
Di-N-Butyl Phthalate	7.9	8.6
Di-N-Octyl Phthalate	7.9	8.6
Fluoranthene	3.9	4.3
Fluorene	3.9	4.3
Hexachlorobenzene	0.2	0.21
Hexachlorobutadiene	0.98	1.1
Hexachloroethane	2	2.1
Indeno(1,2,3-Cd)Pyrene	3.9	4.3
Naphthalene	3.9	4.3
N-Nitrosodiphenylamine	7.9	8.6
Pentachlorophenol	20	21
Phenanthrene	3.9	4.3
Phenol	7.9	8.6
Pyrene	3.9	4.3
Total HPAHS	3.9	4.3
Total LPAHs	3.9	4.3

King County Environmental Lab SAP MDL Comparison Table

PROJECT: 423062-200-4	DUD_14C	DUD_15C
	PERIMETER LOCATION	DUDI PERIMETER LOC
	04/28/09 12:22:00 PM	04/28/09 12:36:00 PM
	L47893-7	L47893-8
	SALTWTRSED	SALTWTRSED
	50.8	46.6

Parameters	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS		
M=OR SW846 3550B*SW846 8081B		
4,4'-DDD	1.3	1.4
4,4'-DDE	1.3	1.4
4,4'-DDT	1.3	1.4
Aldrin	1.3	1.4
Alpha-BHC	0.65	0.71
Alpha-Chlordane	0.65	0.71
Beta-BHC	0.65	0.71
Delta-BHC	0.65	0.71
Dieldrin	1.3	1.4
Endosulfan I	1.3	1.4
Endosulfan II	1.3	1.4
Endosulfan Sulfate	1.3	1.4
Endrin	1.3	1.4
Endrin Aldehyde	1.3	1.4
Gamma-BHC (Lindane)	0.65	0.71
Gamma-Chlordane	0.65	0.71
Heptachlor	0.65	0.71
Heptachlor Epoxide	0.65	0.71
Methoxychlor	6.5	7.1
Toxaphene	13	14
M=OR SW846 3550B*SW846 8082A		
Aroclor 1016	18	4.7
Aroclor 1221	3.3	3.6
Aroclor 1232	33	6.4
Aroclor 1242	53	14
Aroclor 1248	1.6	1.8
Aroclor 1254	1.6	1.8
Aroclor 1260	1.6	1.8
Total Aroclors	1.6	1.8

* Not converted to dry weight basis for this parameter

SMS OC and Dry Weight Normalization MDL Check 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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.23	38	38
2,4-Dimethylphenol	1	1.81	29	27
2-Methylphenol	2	3.61	63	59
4-Methylphenol	4	7.22	670	663
Acenaphthene	2	0.23	16	16
Acenaphthylene	2	0.23	66	66
Anthracene	2	0.23	220	220
Benzo(a)anthracene	2	0.23	110	110
Benzo(a)pyrene	2	0.23	99	99
Benzo(b)fluoranthene	2	0.23	115	115
Benzo(g,h,i)perylene	2	0.23	31	31
Benzo(k)fluoranthene	2	0.23	115	115
Benzoic Acid	10	18.05	650	632
Benzyl Alcohol	2	3.61	57	53
Benzyl Butyl Phthalate	1	0.11	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.45	47	47
Chrysene	2	0.23	110	110
Dibenzo(a,h)anthracene	2	0.23	12	12
Dibenzofuran	2	0.23	15	15
Diethyl Phthalate	4	0.45	61	61
Dimethyl Phthalate	4	0.45	53	53
Di-N-Butyl Phthalate	4	0.45	220	220
Di-N-Octyl Phthalate	4	0.45	58	58
Fluorene	2	0.23	23	23
Fluoranthene	2	0.23	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.06	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.23	34	34
N-Nitrosodiphenylamine	4	0.45	11	11
Naphthalene	2	0.23	99	99
Pentachlorophenol	10	18.05	360	342
Phenanthrene	2	0.23	100	100
Phenol	4	7.22	420	413
Pyrene	2	0.23	1000	1000
Aroclor 1016	8.9	1.00		
Aroclor 1221	1.7	0.19		
Aroclor 1232	1.7	0.19		
Aroclor 1242	0.83	0.09		
Aroclor 1248	0.83	0.09		
Aroclor 1254	0.83	0.09		
Aroclor 1260	0.83	0.09		
Total Organic Carbon (dry)	16028.88087			
Total Solids	55.4			
HPAH	20	2.25	960	958
LPAH	14	1.58	370	368
Total PCB	8.9	1.00	12	11.0

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	0.1	0.02	0.81	0.79
1,2-Dichlorobenzene	0.2	0.04	2.3	2.3
1,4-Dichlorobenzene	0.2	0.04	3.1	3.1
2-Methylnaphthalene	2	0.42	38	38
2,4-Dimethylphenol	1	1.30	29	28
2-Methylphenol	2	2.60	63	60
4-Methylphenol	4	5.20	670	665
Acenaphthene	2	0.42	16	16
Acenaphthylene	2	0.42	66	66
Anthracene	2	0.42	220	220
Benzo(a)anthracene	2	0.42	110	110
Benzo(a)pyrene	2	0.42	99	99
Benzo(b)fluoranthene	2	0.42	115	115
Benzo(g,h,i)perylene	2	0.42	31	31
Benzo(k)fluoranthene	2	0.42	115	115
Benzoic Acid	10	13.00	650	637
Benzyl Alcohol	2	2.60	57	54
Benzyl Butyl Phthalate	1	0.21	4.9	4.7
Bis(2-Ethylhexyl)Phthalate	4	0.84	47	46
Chrysene	2	0.42	110	110
Dibenzo(a,h)anthracene	2	0.42	12	12
Dibenzofuran	2	0.42	15	15
Diethyl Phthalate	4	0.84	61	60
Dimethyl Phthalate	4	0.84	53	52
Di-N-Butyl Phthalate	4	0.84	220	219
Di-N-Octyl Phthalate	4	0.84	58	57
Fluorene	2	0.42	23	23
Fluoranthene	2	0.42	160	160
Hexachlorobenzene	0.1	0.02	0.38	0.36
Hexachlorobutadiene	0.5	0.10	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.42	34	34
N-Nitrosodiphenylamine	4	0.84	11	10
Naphthalene	2	0.42	99	99
Pentachlorophenol	10	13.00	360	347
Phenanthrene	2	0.42	100	100
Phenol	4	5.20	420	415
Pyrene	2	0.42	1000	1000
Aroclor 1016	4	0.84		
Aroclor 1221	1.7	0.35		
Aroclor 1232	1.7	0.35		
Aroclor 1242	0.83	0.17		
Aroclor 1248	0.83	0.17		
Aroclor 1254	0.83	0.17		
Aroclor 1260	0.83	0.17		
Total Organic Carbon (dry)	6228.868661			
Total Solids	76.9			
HPAH	20	4.18	960	956
LPAH	14	2.92	370	367
Total PCB	4	0.84	12	11.2

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	0.1	0.02	0.81	0.79
1,2-Dichlorobenzene	0.2	0.04	2.3	2.3
1,4-Dichlorobenzene	0.2	0.04	3.1	3.1
2-Methylnaphthalene	2	0.42	38	38
2,4-Dimethylphenol	1	1.31	29	28
2-Methylphenol	2	2.62	63	60
4-Methylphenol	4	5.24	670	665
Acenaphthene	2	0.42	16	16
Acenaphthylene	2	0.42	66	66
Anthracene	2	0.42	220	220
Benzo(a)anthracene	2	0.42	110	110
Benzo(a)pyrene	2	0.42	99	99
Benzo(b)fluoranthene	2	0.42	115	115
Benzo(g,h,i)perylene	2	0.42	31	31
Benzo(k)fluoranthene	2	0.42	115	115
Benzoic Acid	10	13.11	650	637
Benzyl Alcohol	2	2.62	57	54
Benzyl Butyl Phthalate	1	0.21	4.9	4.7
Bis(2-Ethylhexyl)Phthalate	4	0.84	47	46
Chrysene	2	0.42	110	110
Dibenzo(a,h)anthracene	2	0.42	12	12
Dibenzofuran	2	0.42	15	15
Diethyl Phthalate	4	0.84	61	60
Dimethyl Phthalate	4	0.84	53	52
Di-N-Butyl Phthalate	4	0.84	220	219
Di-N-Octyl Phthalate	4	0.84	58	57
Fluorene	2	0.42	23	23
Fluoranthene	2	0.42	160	160
Hexachlorobenzene	0.1	0.02	0.38	0.36
Hexachlorobutadiene	0.5	0.10	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.42	34	34
N-Nitrosodiphenylamine	4	0.84	11	10
Naphthalene	2	0.42	99	99
Pentachlorophenol	10	13.11	360	347
Phenanthrene	2	0.42	100	100
Phenol	4	5.24	420	415
Pyrene	2	0.42	1000	1000
Aroclor 1016	5.9	1.23		
Aroclor 1221	1.7	0.35		
Aroclor 1232	1.7	0.35		
Aroclor 1242	0.83	0.17		
Aroclor 1248	0.83	0.17		
Aroclor 1254	0.83	0.17		
Aroclor 1260	0.83	0.17		
Total Organic Carbon (dry)	6277.85059			
Total Solids	76.3			
HPAH	20	4.18	960	956
LPAH	14	2.92	370	367
Total PCB	5.9	1.23	12	10.8

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.03	2.3	2.3
1,4-Dichlorobenzene	0.2	0.03	3.1	3.1
2-Methylnaphthalene	2	0.28	38	38
2,4-Dimethylphenol	1	1.75	29	27
2-Methylphenol	2	3.51	63	59
4-Methylphenol	4	7.02	670	663
Acenaphthene	2	0.28	16	16
Acenaphthylene	2	0.28	66	66
Anthracene	2	0.28	220	220
Benzo(a)anthracene	2	0.28	110	110
Benzo(a)pyrene	2	0.28	99	99
Benzo(b)fluoranthene	2	0.28	115	115
Benzo(g,h,i)perylene	2	0.28	31	31
Benzo(k)fluoranthene	2	0.28	115	115
Benzoic Acid	10	17.54	650	632
Benzyl Alcohol	2	3.51	57	53
Benzyl Butyl Phthalate	1	0.14	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.57	47	46
Chrysene	2	0.28	110	110
Dibenzo(a,h)anthracene	2	0.28	12	12
Dibenzofuran	2	0.28	15	15
Diethyl Phthalate	4	0.57	61	60
Dimethyl Phthalate	4	0.57	53	52
Di-N-Butyl Phthalate	4	0.57	220	219
Di-N-Octyl Phthalate	4	0.57	58	57
Fluorene	2	0.28	23	23
Fluoranthene	2	0.28	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.07	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.28	34	34
N-Nitrosodiphenylamine	4	0.57	11	10
Naphthalene	2	0.28	99	99
Pentachlorophenol	10	17.54	360	342
Phenanthrene	2	0.28	100	100
Phenol	4	7.02	420	413
Pyrene	2	0.28	1000	1000
Aroclor 1016	3.3	0.47		
Aroclor 1221	1.7	0.24		
Aroclor 1232	1.7	0.24		
Aroclor 1242	0.83	0.12		
Aroclor 1248	0.83	0.12		
Aroclor 1254	0.83	0.12		
Aroclor 1260	0.83	0.12		
Total Organic Carbon (dry)	12403.50877			
Total Solids	57			
HPAH	20	2.83	960	957
LPAH	14	1.98	370	368
Total PCB	3.3	0.47	12	11.5

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	0.1	0.02	0.81	0.79
1,2-Dichlorobenzene	0.2	0.05	2.3	2.3
1,4-Dichlorobenzene	0.2	0.05	3.1	3.1
2-Methylnaphthalene	2	0.46	38	38
2,4-Dimethylphenol	1	1.29	29	28
2-Methylphenol	2	2.58	63	60
4-Methylphenol	4	5.17	670	665
Acenaphthene	2	0.46	16	16
Acenaphthylene	2	0.46	66	66
Anthracene	2	0.46	220	220
Benzo(a)anthracene	2	0.46	110	110
Benzo(a)pyrene	2	0.46	99	99
Benzo(b)fluoranthene	2	0.46	115	115
Benzo(g,h,i)perylene	2	0.46	31	31
Benzo(k)fluoranthene	2	0.46	115	115
Benzoic Acid	10	12.92	650	637
Benzyl Alcohol	2	2.58	57	54
Benzyl Butyl Phthalate	1	0.23	4.9	4.7
Bis(2-Ethylhexyl)Phthalate	4	0.91	47	46
Chrysene	2	0.46	110	110
Dibenzo(a,h)anthracene	2	0.46	12	12
Dibenzofuran	2	0.46	15	15
Diethyl Phthalate	4	0.91	61	60
Dimethyl Phthalate	4	0.91	53	52
Di-N-Butyl Phthalate	4	0.91	220	219
Di-N-Octyl Phthalate	4	0.91	58	57
Fluorene	2	0.46	23	23
Fluoranthene	2	0.46	160	160
Hexachlorobenzene	0.1	0.02	0.38	0.36
Hexachlorobutadiene	0.5	0.11	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.46	34	34
N-Nitrosodiphenylamine	4	0.91	11	10
Naphthalene	2	0.46	99	99
Pentachlorophenol	10	12.92	360	347
Phenanthrene	2	0.46	100	100
Phenol	4	5.17	420	415
Pyrene	2	0.46	1000	1000
Aroclor 1016	2.9	0.66		
Aroclor 1221	1.7	0.39		
Aroclor 1232	1.7	0.39		
Aroclor 1242	0.83	0.19		
Aroclor 1248	0.83	0.19		
Aroclor 1254	0.83	0.19		
Aroclor 1260	0.83	0.19		
Total Organic Carbon (dry)	5658.914729			
Total Solids	77.4			
HPAH	20	4.57	960	955
LPAH	14	3.20	370	367
Total PCB	2.9	0.66	12	11.3

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.25	38	38
2,4-Dimethylphenol	1	2.11	29	27
2-Methylphenol	2	4.22	63	59
4-Methylphenol	4	8.44	670	662
Acenaphthene	2	0.25	16	16
Acenaphthylene	2	0.25	66	66
Anthracene	2	0.25	220	220
Benzo(a)anthracene	2	0.25	110	110
Benzo(a)pyrene	2	0.25	99	99
Benzo(b)fluoranthene	2	0.25	115	115
Benzo(g,h,i)perylene	2	0.25	31	31
Benzo(k)fluoranthene	2	0.25	115	115
Benzoic Acid	10	21.10	650	629
Benzyl Alcohol	2	4.22	57	53
Benzyl Butyl Phthalate	1	0.12	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.50	47	47
Chrysene	2	0.25	110	110
Dibenzo(a,h)anthracene	2	0.25	12	12
Dibenzofuran	2	0.25	15	15
Diethyl Phthalate	4	0.50	61	61
Dimethyl Phthalate	4	0.50	53	53
Di-N-Butyl Phthalate	4	0.50	220	220
Di-N-Octyl Phthalate	4	0.50	58	58
Fluorene	2	0.25	23	23
Fluoranthene	2	0.25	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.06	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.25	34	34
N-Nitrosodiphenylamine	4	0.50	11	11
Naphthalene	2	0.25	99	99
Pentachlorophenol	10	21.10	360	339
Phenanthrene	2	0.25	100	100
Phenol	4	8.44	420	412
Pyrene	2	0.25	1000	1000
Aroclor 1016	4.8	0.60		
Aroclor 1221	1.7	0.21		
Aroclor 1232	1.7	0.21		
Aroclor 1242	0.83	0.10		
Aroclor 1248	0.83	0.10		
Aroclor 1254	0.83	0.10		
Aroclor 1260	0.83	0.10		
Total Organic Carbon (dry)	16940.92827			
Total Solids	47.4			
HPAH	20	2.49	960	958
LPAH	14	1.74	370	368
Total PCB	4.8	0.60	12	11.4

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.23	38	38
2,4-Dimethylphenol	1	1.97	29	27
2-Methylphenol	2	3.94	63	59
4-Methylphenol	4	7.87	670	662
Acenaphthene	2	0.23	16	16
Acenaphthylene	2	0.23	66	66
Anthracene	2	0.23	220	220
Benzo(a)anthracene	2	0.23	110	110
Benzo(a)pyrene	2	0.23	99	99
Benzo(b)fluoranthene	2	0.23	115	115
Benzo(g,h,i)perylene	2	0.23	31	31
Benzo(k)fluoranthene	2	0.23	115	115
Benzoic Acid	10	19.69	650	630
Benzyl Alcohol	2	3.94	57	53
Benzyl Butyl Phthalate	1	0.11	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.45	47	47
Chrysene	2	0.23	110	110
Dibenzo(a,h)anthracene	2	0.23	12	12
Dibenzofuran	2	0.23	15	15
Diethyl Phthalate	4	0.45	61	61
Dimethyl Phthalate	4	0.45	53	53
Di-N-Butyl Phthalate	4	0.45	220	220
Di-N-Octyl Phthalate	4	0.45	58	58
Fluorene	2	0.23	23	23
Fluoranthene	2	0.23	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.06	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.23	34	34
N-Nitrosodiphenylamine	4	0.45	11	11
Naphthalene	2	0.23	99	99
Pentachlorophenol	10	19.69	360	340
Phenanthrene	2	0.23	100	100
Phenol	4	7.87	420	412
Pyrene	2	0.23	1000	1000
Aroclor 1016	8.9	1.00		
Aroclor 1221	1.7	0.19		
Aroclor 1232	1.7	0.19		
Aroclor 1242	0.83	0.09		
Aroclor 1248	0.83	0.09		
Aroclor 1254	0.83	0.09		
Aroclor 1260	0.83	0.09		
Total Organic Carbon (dry)	17440.94488			
Total Solids	50.8			
HPAH	20	2.26	960	958
LPAH	14	1.58	370	368
Total PCB	8.9	1.00	12	11.0

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.03	2.3	2.3
1,4-Dichlorobenzene	0.2	0.03	3.1	3.1
2-Methylnaphthalene	2	0.26	38	38
2,4-Dimethylphenol	1	2.15	29	27
2-Methylphenol	2	4.29	63	59
4-Methylphenol	4	8.58	670	661
Acenaphthene	2	0.26	16	16
Acenaphthylene	2	0.26	66	66
Anthracene	2	0.26	220	220
Benzo(a)anthracene	2	0.26	110	110
Benzo(a)pyrene	2	0.26	99	99
Benzo(b)fluoranthene	2	0.26	115	115
Benzo(g,h,i)perylene	2	0.26	31	31
Benzo(k)fluoranthene	2	0.26	115	115
Benzoic Acid	10	21.46	650	629
Benzyl Alcohol	2	4.29	57	53
Benzyl Butyl Phthalate	1	0.13	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.53	47	46
Chrysene	2	0.26	110	110
Dibenzo(a,h)anthracene	2	0.26	12	12
Dibenzofuran	2	0.26	15	15
Diethyl Phthalate	4	0.53	61	60
Dimethyl Phthalate	4	0.53	53	52
Di-N-Butyl Phthalate	4	0.53	220	219
Di-N-Octyl Phthalate	4	0.53	58	57
Fluorene	2	0.26	23	23
Fluoranthene	2	0.26	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.07	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.26	34	34
N-Nitrosodiphenylamine	4	0.53	11	10
Naphthalene	2	0.26	99	99
Pentachlorophenol	10	21.46	360	339
Phenanthrene	2	0.26	100	100
Phenol	4	8.58	420	411
Pyrene	2	0.26	1000	1000
Aroclor 1016	2.2	0.29		
Aroclor 1221	1.7	0.23		
Aroclor 1232	1.7	0.23		
Aroclor 1242	0.83	0.11		
Aroclor 1248	0.83	0.11		
Aroclor 1254	0.83	0.11		
Aroclor 1260	0.83	0.11		
Total Organic Carbon (dry)	16201.71674			
Total Solids	46.6			
HPAH	20	2.65	960	957
LPAH	14	1.85	370	368
Total PCB	2.2	0.29	12	11.7

CONVENTIONAL ANALYSES QC DATA

WG102538 Particle Size Distribution

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47813-5	423589-090-4	CSO Near Full Characterization	CVPSD	IN-LINESED	4/14/2009 14:45	5/27/2009 0:00	5/28/2009 0:00	WG102538-1, -2, L47890-6	
L47890-1	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 8:45	5/27/2009 0:00	5/28/2009 0:00	WG102538-1, -2, L47890-6, WG102612-1, -2	
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 10:44	5/27/2009 0:00	5/28/2009 0:00		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 10:55	5/27/2009 0:00	5/28/2009 0:00		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 11:00	5/27/2009 0:00	5/28/2009 0:00	WG102538-1, -2, L47890-6, WG102612-3, -4	FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 11:53	5/27/2009 0:00	5/28/2009 0:00		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 12:02	5/27/2009 0:00	5/28/2009 0:00		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 12:12	5/27/2009 0:00	5/28/2009 0:00		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 12:22	5/27/2009 0:00	5/28/2009 0:00		
WG102538-1	LD		CVPSD	IN-LINESED		5/27/2009 0:00	5/28/2009 0:00	WG102538-1, -2, L47890-6	L47813-5
WG102538-2	LT		CVPSD	IN-LINESED		5/27/2009 0:00	5/28/2009 0:00		WG102538-1 L47813-5
WG102612-1	LD		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		L47890-6
WG102612-2	LT		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		WG102612-1 L47890-6
WG102612-3	LD		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		L47888-2
WG102612-4	LT		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		WG102612-3 L47888-2

Workgroup: WG102538 Particle Size Distribution

LT:WG102538-2 LD:WG102538-1 L47813-5 Matrix: IN-LINESED Listtype: CVPSD Method: ASTM D422 Project: 423589-090-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	0.78	1.57	%	6.5	6.4	6.3	2		20
Gravel	0.16	1.57	%	11.4	9.1	13.6	20		20
Sand	0.16	1.57	%	63.1	64.6	62.7	2		20
Silt	0.78	1.57	%	13	12.9	12.6	2		20

LT:WG102612-2 LD:WG102612-1 L47890-6 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422 Project: 423062-100-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	0.6	1.2	%	4.9	4.7	4.8	2		20
Gravel	0.12	1.2	%	19.2	18	19.7	5		20
Sand	0.12	1.2	%	73.3	78.3	73.5	4		20
Silt	0.6	1.2	%	1.2	1.8	2.4	32	*	20

LT:WG102612-4 LD:WG102612-3 L47888-2 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422 Project: 423062-200-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	1.1	2.24	%	39.6	41.5	40.3	2		20
Gravel	0.22	2.24	%	0.22	0.4	<MDL			20
Sand	0.22	2.24	%	12.5	11	8.7	18		20
Silt	1.1	2.24	%	49.6	49.4	53.7	5		20

WG102612 Particle Size Distribution

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/27/2009 12:10	5/29/2008 0:00	6/1/2009 0:00		
L47890-2	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 9:10	5/29/2008 0:00	6/1/2009 0:00		
L47890-3	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 9:26	5/29/2008 0:00	6/1/2009 0:00		
L47890-4	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 9:45	5/29/2008 0:00	6/1/2009 0:00		
L47890-5	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 10:02	5/29/2008 0:00	6/1/2009 0:00		
L47890-6	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 10:22	5/29/2008 0:00	6/1/2009 0:00	WG102612-1, -2, -3, -4	FREP @ L47890-5
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 12:36	5/29/2008 0:00	6/1/2009 0:00		
WG102612-1	LD		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		L47890-6
WG102612-2	LT		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		WG102612-1 L47890-6
WG102612-3	LD		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		L47888-2
WG102612-4	LT		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		WG102612-3 L47888-2

Workgroup: WG102612 Particle Size Distribution

LT:WG102612-2 LD:WG102612-1 L47890-6 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422 Project: 423062-100-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	0.6	1.2	%	4.9	4.7	4.8	2		20
Gravel	0.12	1.2	%	19.2	18	19.7	5		20
Sand	0.12	1.2	%	73.3	78.3	73.5	4		20
Silt	0.6	1.2	%	1.2	1.8	2.4	32	*	20

LT:WG102612-4 LD:WG102612-3 L47888-2 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422 Project: 423062-200-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	1.1	2.24	%	39.6	41.5	40.3	2		20
Gravel	0.22	2.24	%	0.22	0.4	<MDL			20
Sand	0.22	2.24	%	12.5	11	8.7	18		20
Silt	1.1	2.24	%	49.6	49.4	53.7	5		20

WG102503 Total Organic Carbon

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47813-6	423589-090-4	CSO Near Full Characterization	CVTOC	IN-LINESED	4/14/2009 14:45	5/26/2009 16:00	6/9/2009 9:40		
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/27/2009 10:36	5/26/2009 16:00	6/9/2009 13:53		
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/27/2009 12:10	5/26/2009 16:00	6/9/2009 14:15		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:45	5/26/2009 16:00	6/9/2009 14:37		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 14:00	5/26/2009 16:00	6/9/2009 14:58		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 8:25	5/26/2009 16:00	6/9/2009 15:20		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 8:55	5/26/2009 16:00	6/9/2009 15:41		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 9:37	5/26/2009 16:00	6/10/2009 9:32		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 10:00	5/26/2009 16:00	6/10/2009 11:08		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 10:40	5/26/2009 16:00	6/10/2009 11:29		
L47890-1	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 8:45	6/1/2009 15:05	6/10/2009 12:14		
L47890-2	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 9:10	6/1/2009 15:05	6/10/2009 12:50		
L47890-3	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 9:26	6/1/2009 15:05	6/10/2009 13:12		
L47890-4	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 9:45	6/1/2009 15:05	6/10/2009 13:34		
L47890-5	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 10:02	6/1/2009 15:05	6/10/2009 14:05		
L47890-6	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 10:22	6/1/2009 15:05	6/10/2009 14:26		FREP @ L47890-5
L47890-7	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/27/2009 14:25	6/1/2009 15:05	6/11/2009 10:26		
L47890-8	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/27/2009 14:50	6/1/2009 15:05	6/10/2009 14:48		
L47890-9	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/27/2009 15:15	6/1/2009 15:05	6/11/2009 10:50		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 10:44	6/1/2009 15:05	6/11/2009 12:44		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 10:55	6/1/2009 15:05	6/11/2009 13:44		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 11:00	6/1/2009 15:05	6/11/2009 14:14		FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 11:53	6/1/2009 15:05	6/11/2009 14:35		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:02	6/1/2009 15:05	6/11/2009 15:00		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:12	6/1/2009 15:05	6/11/2009 11:58		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:22	6/1/2009 15:05	6/11/2009 12:20	WG102503-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20	
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:36	6/1/2009 15:05	6/11/2009 15:25		
L48029-1	423258-100-1	Reclaimed Water Nutrient Characterization	CVTOC	SOIL	5/11/2009 13:40	5/26/2009 16:00	6/9/2009 11:13		
L48029-2	423258-100-1	Reclaimed Water Nutrient Characterization	CVTOC	SOIL	5/11/2009 14:10	5/26/2009 16:00	6/9/2009 12:55		
L48029-3	423258-100-1	Reclaimed Water Nutrient Characterization	CVTOC	SOIL	5/11/2009 14:26	5/26/2009 16:00	6/9/2009 13:17		
WG102503-1	MB		CVTOC	OTHR SOLID		6/9/2009 8:45	6/9/2009 8:45		MB1 06/09/09 08:45
WG102503-2	SRM		CVTOC	OTHR SOLID		6/9/2009 9:02	6/9/2009 9:02		HICONC
WG102503-3	SB		CVTOC	OTHR SOLID		6/9/2009 9:22	6/9/2009 9:22		WG102503-1
WG102503-4	LD		CVTOC	IN-LINESED		5/26/2009 16:00	6/9/2009 10:05		L47813-6
WG102503-5	LT		CVTOC	IN-LINESED		5/26/2009 16:00	6/9/2009 10:29		WG102503-4 L47813-6
WG102503-6	MS		CVTOC	IN-LINESED		5/26/2009 16:00	6/9/2009 10:50		L47813-6
WG102503-7	LD		CVTOC	SOIL		5/26/2009 16:00	6/9/2009 11:35		L48029-1

WG102503-8	LT	CVTOC	SOIL	5/26/2009 16:00	6/9/2009 12:12		WG102503-7 L48029-1
WG102503-9	MS	CVTOC	SOIL	5/26/2009 16:00	6/9/2009 12:34		L48029-1
WG102503-10	MB	CVTOC	OTHR SOLID	6/10/2009 8:36	6/10/2009 8:36		MB1 06/10/09
WG102503-11	SRM	CVTOC	OTHR SOLID	6/10/2009 8:53	6/10/2009 8:53		HICONC
WG102503-12	SB	CVTOC	OTHR SOLID	6/10/2009 9:13	6/10/2009 9:13		WG102503-10
WG102503-13	LD	CVTOC	SALTWTRSED	5/26/2009 16:00	6/10/2009 9:54		L47888-7
WG102503-14	LT	CVTOC	SALTWTRSED	5/26/2009 16:00	6/10/2009 10:23		WG102503-13 L47888-7
WG102503-15	MS	CVTOC	SALTWTRSED	5/26/2009 16:00	6/10/2009 10:44		L47888-7
WG102503-16	LD	CVTOC	SALTWTRSED	6/1/2009 15:05	6/10/2009 15:10		L47890-8
WG102503-17	LT	CVTOC	SALTWTRSED	6/1/2009 15:05	6/10/2009 15:31		WG102503-16 L47890-8
WG102503-18	MS	CVTOC	SALTWTRSED	6/1/2009 15:05	6/10/2009 15:53		L47890-8
WG102503-19	MB	CVTOC	OTHR SOLID	6/11/2009 9:47	6/11/2009 9:47		MB1 06/11/09
WG102503-20	SRM	CVTOC	OTHR SOLID	6/11/2009 10:04	6/11/2009 10:04		HICONC

Workgroup: WG102503 Total Organic Carbon

MB:WG102503-1 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Organic Carbon	500	1000	mg/Kg	<MDL	

SRM:WG102503-2 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE (Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	2700	5340	mg/Kg	33480	32100	96		80--120

SB:WG102503-3 MB:WG102503-1 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE (Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	500	1000	mg/Kg	<MDL	2500	2620	105		80--120

LT:WG102503-5 LD:WG102503-4 L47813-6 Matrix: IN-LINESED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423589-090-4 (Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Organic Carbon	3500	6950	mg/Kg	24500	23200	23700	3		20

MS:WG102503-6 L47813-6 Matrix: IN-LINESED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423589-090-4 (Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	3500	7050	mg/Kg	24500	17620	43700	109		75--125

LT:WG102503-8 LD:WG102503-7 L48029-1 Matrix: SOIL Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423258-100-1 (Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Organic Carbon	650	1300	mg/Kg	4870	6480	6110	15		20

MS:WG102503-9 L48029-1 Matrix: SOIL Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423258-100-1
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	620	1250	mg/Kg	4870	3116	8040	102		75--125

MB:WG102503-10 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Organic Carbon	500	1000	mg/Kg	<MDL	

SRM:WG102503-11 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	2500	4900	mg/Kg	36900	34000	92		80--120

SB:WG102503-12 MB:WG102503-10 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	500	1000	mg/Kg	<MDL	2500	2590	104		80--120

LT:WG102503-14 LD:WG102503-13 L47888-7 Matrix: SALTWTRSED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423062-200-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Organic Carbon	1100	2170	mg/Kg	6890	6910	7030	1		20

MS:WG102503-15 L47888-7 Matrix: SALTWTRSED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423062-200-4
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	1100	2170	mg/Kg	6890	5436	12100	95		75--125

LT:WG102503-17 LD:WG102503-16 L47890-8 Matrix: SALTWTRSED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423062-100-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Organic Carbon	770	1540	mg/Kg	7390	7490	7520	1		20

MS:WG102503-18 L47890-8 Matrix: SALTWTRSED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423062-100-4
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	770	1550	mg/Kg	7390	3905	11000	92		75--125

MB:WG102503-19 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Organic Carbon	500	1000	mg/Kg	<MDL	

SRM:WG102503-20 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	2400	4710	mg/Kg	36900	34000	92		80--120

Conventionals Data Anomaly Form

Date(s) Occurred: *06/01/08*

WG #(s): *WG102503*

☐ **All samples in WKGP(s)** **or** ☒ **Sample #(s):** *L47893-6 and -7*

Project #(s): *423062-200-4*

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

I. Analysis

☐ Nutrients:
☒ Demands: *Total Organic Carbon (TOC)*
☐ Cyanides:
☐ Physicals:
☐ Solids:
☐ Anions:
☐ Chlorophylls:
☐ Others:
☐ 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:

III. Type of Sample/Analytical Anomaly

☐ Values Outside of Control Limits:
[1] ☐ Initial Calibration
[2] ☐ Continuing Calibration Checks
[3] ☐ SB Spike Recoveries
[4] ☐ MB Anomaly
[5] ☐ LCS/SRM Recoveries
[6] ☐ Sample/LD/LT RSD
[7] ☐ MS RPD
[8] ☐ Sample/LD RPD
[9] ☐ MS Spike Recoveries

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

☒ Other

Anomaly Description: *Due to analyst error, samples L47893-6 and -7 were accidentally switched during sample prepation. TOC samples are dried at at 70 degree Celsius, then they are pulverized and treated with 10% phosphoric acid prior to TOC analysis. After pulverization of the samples, they were switched during transferring between the mixer mills and the TOC crucibles, which could have cross-contaminated both samples.*

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: *SH*
☐ Other

Corrective Action Description: *Analyst was not able to reprepare samples L47893-6 and -7 due to time constraint. The TOC preparation and analysis for samples L47893-6 and -7 were continued with the total solids aliquots (dried at 104 instead of 70 degree Celsius), which were prepared at the same time as the TOC samples. As a result, each of the TOC result for samples L47893-6 and -7 have been qualified with an 'SH' to indicate that the sample handling criteria was not met and the following text added to the textfield, "See DAF for details".*

VI. Potential Effects on Data Quality

Based upon the expected performance of this method:

☐ None; corrective action entirely corrected anomaly (explanation optional):

☒ Potential effect explanation (explanation mandatory): *Prior to TOC soil/sediment analysis, samples are dried at 70 degree Celsius, then they are pulverized and treated with 10% phosphoric acid to remove inorganic and most volatile carbon. In this case, the reported TOC values were acquired with samples that were dried at 104 instead of the standard 70 degree Celsius, which could have contributed some degradation to the target analyte. The amount of potential degradation associated with a higher drying temperature would most likely be negligible compared to the concentration of TOC present. However, drying the samples at a higher temperature could have degraded some of the target analyte, therefore the TOC data for these samples could be biased and should be used with caution.*

	Signatures	Signature Dates
Reported By: *Duc Nguyen*		
Reviewer: *David C Hunn*		
Supervisor: *Brian Prosch*		
QA Officer: *Colin Elliott* **(For QA1 only)**		
cc: LPM: *Fritz Grothkopp*		

WG102628 Total Solids

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47890-1	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/28/2009 8:45	6/1/2009 13:30	6/2/2009 9:07		
L47890-2	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/28/2009 9:10	6/1/2009 13:30	6/2/2009 9:07		
L47890-3	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/28/2009 9:26	6/1/2009 13:30	6/2/2009 9:08		
L47890-4	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/28/2009 9:45	6/1/2009 13:30	6/2/2009 9:08		
L47890-5	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/28/2009 10:02	6/1/2009 13:30	6/2/2009 9:10		
L47890-6	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/28/2009 10:22	6/1/2009 13:30	6/2/2009 9:11		FREP @ L47890-5
L47890-7	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/27/2009 14:25	6/1/2009 13:30	6/2/2009 9:13		
L47890-8	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/27/2009 14:50	6/1/2009 13:30	6/2/2009 9:16		
L47890-9	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOTS	SALTWTRSED	4/27/2009 15:15	6/1/2009 13:30	6/2/2009 9:17		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 10:44	6/1/2009 13:30	6/2/2009 9:17		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 10:55	6/1/2009 13:30	6/2/2009 9:17	WG102628-1, -2, -3	
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 11:00	6/1/2009 13:30	6/2/2009 9:18		FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 11:53	6/1/2009 13:30	6/2/2009 9:23		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 12:02	6/1/2009 13:30	6/2/2009 9:23		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 12:12	6/1/2009 13:30	6/2/2009 9:24		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 12:22	6/1/2009 13:30	6/2/2009 9:24		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 12:36	6/1/2009 13:30	6/2/2009 9:25		
WG102628-1	MB		CVTOTS	OTHR SOLID		6/1/2009 13:30	6/2/2009 9:07		MB1 06/01/09 13:30
WG102628-2	LD		CVTOTS	SALTWTRSED		6/1/2009 13:30	6/2/2009 9:08		L47890-4
WG102628-3	LT		CVTOTS	SALTWTRSED		6/1/2009 13:30	6/2/2009 9:09		WG102628-2 L47890-4

Workgroup: WG102628 Total Solids

MB:WG102628-1 Matrix: OTHR SOLID Listtype: CVTOTS Method: SM2540-G Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Solids	0.005	0.01	%	<MDL	

LT:WG102628-3 LD:WG102628-2 L47890-4 Matrix: SALTWTRSED Listtype: CVTOTS Method: SM2540-G Project: 423062-100-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Solids	0.005	0.01	%	60.3	60.3	60.8	0		20

METAL CHEMISTRY QC DATA

WG102346 Total Metals by ICP

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/27/2009 10:36	5/18/2009 14:00	5/19/2009 16:35		
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/27/2009 12:10	5/18/2009 14:00	5/19/2009 16:52		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 12:45	5/18/2009 14:00	5/19/2009 16:57		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 14:00	5/18/2009 14:00	5/19/2009 17:03		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/29/2009 8:25	5/18/2009 14:00	5/19/2009 17:19		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/29/2009 8:55	5/18/2009 14:00	5/19/2009 17:25		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/29/2009 9:37	5/18/2009 14:00	5/19/2009 17:30		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/29/2009 10:00	5/18/2009 14:00	5/19/2009 17:36		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/29/2009 10:40	5/18/2009 14:00	5/19/2009 17:41		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 10:44	5/18/2009 14:00	5/19/2009 17:47		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 10:55	5/18/2009 14:00	5/19/2009 17:52		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 11:00	5/18/2009 14:00	5/19/2009 17:58	WG102346-1, -2, -3, -6, -4, -5	FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 11:53	5/18/2009 14:00	5/19/2009 18:03		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 12:02	5/18/2009 14:00	5/19/2009 18:09		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 12:12	5/18/2009 14:00	5/19/2009 18:26		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 12:22	5/18/2009 14:00	5/19/2009 18:31		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 12:36	5/18/2009 14:00	5/19/2009 18:37		
WG102346-1	SB		MTICP-SED	SOLIDBLANK		5/18/2009 14:00	5/19/2009 16:13		WG102346-3 ICPMARINE
WG102346-2	LCS		MTICP-SED	SOIL		5/18/2009 14:00	5/19/2009 16:18		ERASOIL
WG102346-3	MB		MTICP-SED	SOLIDBLANK		5/18/2009 14:00	5/19/2009 16:24		METHOD BLANK
WG102346-4	LD		MTICP-SED	SALTWTRSED		5/18/2009 14:00	5/19/2009 16:41		L47888-1 RPD-SOL
WG102346-5	MS		MTICP-SED	SALTWTRSED		5/18/2009 14:00	5/19/2009 16:46		L47888-1 ICPMARINE
WG102346-6	SRM		MTICP-SED	SALTWTRSED		5/18/2009 14:00	5/19/2009 16:30		PACS2

Workgroup: WG102346 Total Metals by ICP

MB:WG102346-3 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Aluminum, Total, ICP	3.8	19.2	mg/Kg	<MDL	
Antimony, Total, ICP	0.58	2.88	mg/Kg	<MDL	
Arsenic, Total, ICP	0.96	4.81	mg/Kg	<MDL	
Beryllium, Total, ICP	0.038	0.192	mg/Kg	<MDL	
Cadmium, Total, ICP	0.077	0.385	mg/Kg	<MDL	
Chromium, Total, ICP	0.12	0.577	mg/Kg	<MDL	
Copper, Total, ICP	0.15	0.769	mg/Kg	<MDL	
Iron, Total, ICP	1.9	9.62	mg/Kg	<MDL	
Lead, Total, ICP	0.77	3.85	mg/Kg	<MDL	
Manganese, Total, ICP	0.077	0.385	mg/Kg	<MDL	
Nickel, Total, ICP	0.19	0.962	mg/Kg	<MDL	
Selenium, Total, ICP	0.96	4.81	mg/Kg	<MDL	
Silver, Total, ICP	0.15	0.769	mg/Kg	<MDL	
Thallium, Total, ICP	1.5	7.69	mg/Kg	<MDL	
Zinc, Total, ICP	0.19	0.962	mg/Kg	<MDL	

SB:WG102346-1 MB:WG102346-3 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE (Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP	3.8	19.2	mg/Kg	<MDL	3870	3940	102		85--115
Antimony, Total, ICP	0.58	2.88	mg/Kg	<MDL	19.2	19.3	100		85--115
Arsenic, Total, ICP	0.96	4.81	mg/Kg	<MDL	19.2	19.5	102		85--115
Beryllium, Total, ICP	0.038	0.192	mg/Kg	<MDL	19.2	19.1	99		85--115
Cadmium, Total, ICP	0.077	0.385	mg/Kg	<MDL	19.2	18.9	99		85--115
Chromium, Total, ICP	0.12	0.577	mg/Kg	<MDL	19.2	18.9	98		85--115
Copper, Total, ICP	0.15	0.769	mg/Kg	<MDL	19.2	19.3	100		85--115
Iron, Total, ICP	1.9	9.62	mg/Kg	<MDL	1940	1970	101		85--115
Lead, Total, ICP	0.77	3.85	mg/Kg	<MDL	19.2	18.6	97		85--115
Manganese, Total, ICP	0.077	0.385	mg/Kg	<MDL	96.2	97.2	101		85--115
Nickel, Total, ICP	0.19	0.962	mg/Kg	<MDL	19.2	18.6	97		85--115
Selenium, Total, ICP	0.96	4.81	mg/Kg	<MDL	19.2	18.3	95		85--115
Silver, Total, ICP	0.15	0.769	mg/Kg	<MDL	19.2	19.1	99		85--115
Thallium, Total, ICP	1.5	7.69	mg/Kg	<MDL	19.2	18.4	96		85--115
Zinc, Total, ICP	0.19	0.962	mg/Kg	<MDL	96.2	93.4	97		85--115

LCS:WG102346-2 Matrix: SOIL Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP	41	205	mg/Kg	8260	8420	102		61--139
Antimony, Total, ICP	6.2	30.8	mg/Kg	90.2	77.7	86		10--211
Arsenic, Total, ICP	10	51.3	mg/Kg	132	146	110		80--120
Beryllium, Total, ICP	0.41	2.05	mg/Kg	89.5	94.6	106		80--120
Cadmium, Total, ICP	0.82	4.1	mg/Kg	66.5	75.5	114		80--120
Chromium, Total, ICP	1.2	6.16	mg/Kg	72.9	76.7	105		79--121
Copper, Total, ICP	1.6	8.21	mg/Kg	68.5	72.2	105		80--120
Iron, Total, ICP	21	103	mg/Kg	13400	12500	93		50--149
Lead, Total, ICP	8.2	41	mg/Kg	130	135	104		80--120
Manganese, Total, ICP	0.82	4.1	mg/Kg	453	487	108		80--120
Nickel, Total, ICP	2.1	10.3	mg/Kg	55.6	60	108		80--120
Selenium, Total, ICP	10	51.3	mg/Kg	161	175	109		78--122
Silver, Total, ICP	1.6	8.21	mg/Kg	101	112	111		66--134
Thallium, Total, ICP	16	82.1	mg/Kg	133	146	110		77--123
Zinc, Total, ICP	2.1	10.3	mg/Kg	177	188	106		79--121

LD:WG102346-4 L47888-1 Matrix: SALTWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: 423062-200-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Aluminum, Total, ICP	4.6	22.9	mg/Kg	12900	12600	2		20
Antimony, Total, ICP	0.69	3.43	mg/Kg	<MDL	<MDL			20
Arsenic, Total, ICP	1.1	5.72	mg/Kg	5.8	5.78	0		20
Beryllium, Total, ICP	0.046	0.229	mg/Kg	0.352	0.34	3		20
Cadmium, Total, ICP	0.092	0.458	mg/Kg	0.24	0.22			20
Chromium, Total, ICP	0.14	0.686	mg/Kg	14.2	13.7	3		20
Copper, Total, ICP	0.18	0.915	mg/Kg	32.4	32.4	0		20
Iron, Total, ICP	2.3	11.4	mg/Kg	16900	16600	2		20
Lead, Total, ICP	0.92	4.58	mg/Kg	14.3	13.8	3		20
Manganese, Total, ICP	0.092	0.458	mg/Kg	202	198	2		20
Nickel, Total, ICP	0.23	1.14	mg/Kg	11.7	11.4	2		20
Selenium, Total, ICP	1.1	5.72	mg/Kg	<MDL	<MDL			20
Silver, Total, ICP	0.18	0.915	mg/Kg	<MDL	<MDL			20
Thallium, Total, ICP	1.8	9.15	mg/Kg	<MDL	<MDL			20
Zinc, Total, ICP	0.23	1.14	mg/Kg	59.9	58.8	2		20

MS:WG102346-5 L47888-1 Matrix: SALTWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: 423062-200-4
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP	4.7	23.7	mg/Kg	12900	4770	19200	132	*	75--125
Antimony, Total, ICP	0.71	3.56	mg/Kg	<MDL	23.7	3.67	15	*	75--125
Arsenic, Total, ICP	1.2	5.94	mg/Kg	5.8	23.7	28.1	94		75--125
Beryllium, Total, ICP	0.047	0.237	mg/Kg	0.352	23.7	23	95		75--125
Cadmium, Total, ICP	0.095	0.475	mg/Kg	0.24	23.7	22.5	94		75--125
Chromium, Total, ICP	0.14	0.712	mg/Kg	14.2	23.7	37	96		75--125
Copper, Total, ICP	0.19	0.95	mg/Kg	32.4	23.7	56	99		75--125
Iron, Total, ICP	2.4	11.9	mg/Kg	16900	2400	19600			(No MS/MSD %Rec. due to 4x rule)
Lead, Total, ICP	0.95	4.75	mg/Kg	14.3	23.7	35.9	91		75--125
Manganese, Total, ICP	0.095	0.475	mg/Kg	202	119	319	98		75--125
Nickel, Total, ICP	0.24	1.19	mg/Kg	11.7	23.7	33.9	93		75--125
Selenium, Total, ICP	1.2	5.94	mg/Kg	<MDL	23.7	21.1	89		75--125
Silver, Total, ICP	0.19	0.95	mg/Kg	<MDL	23.7	24.1	101		75--125
Thallium, Total, ICP	1.9	9.5	mg/Kg	<MDL	23.7	22.1	93		75--125
Zinc, Total, ICP	0.24	1.19	mg/Kg	59.9	119	167	90		75--125

SRM:WG102346-6 Matrix: SALTWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP	41	203	mg/Kg	66200	15700	24		10--43
Chromium, Total, ICP	1.2	6.08	mg/Kg	90.7	46.2	51		30--70
Copper, Total, ICP	1.6	8.11	mg/Kg	310	305	98		78--118
Iron, Total, ICP	20	101	mg/Kg	40900	30300	74		55--95
Lead, Total, ICP	8.1	40.5	mg/Kg	183	167	91		74--114
Manganese, Total, ICP	0.81	4.05	mg/Kg	440	241	55		35--75
Nickel, Total, ICP	2	10.1	mg/Kg	39.5	29.6	75		51--91
Zinc, Total, ICP	2	10.1	mg/Kg	364	336	92		73--113

WG102342 Total Mercury by CVAA

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/27/2009 10:36	5/18/2009 9:00	5/19/2009 11:35		
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/27/2009 12:10	5/18/2009 9:00	5/19/2009 11:42		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 12:45	5/18/2009 9:00	5/19/2009 12:24		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 14:00	5/18/2009 9:00	5/19/2009 12:26		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/29/2009 8:25	5/18/2009 9:00	5/19/2009 11:56		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/29/2009 8:55	5/18/2009 9:00	5/19/2009 11:58		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/29/2009 9:37	5/18/2009 9:00	5/19/2009 12:00		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/29/2009 10:00	5/18/2009 9:00	5/19/2009 12:02		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/29/2009 10:40	5/18/2009 9:00	5/19/2009 12:03		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 10:44	5/18/2009 9:00	5/19/2009 12:05		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 10:55	5/18/2009 9:00	5/19/2009 12:07		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 11:00	5/18/2009 9:00	5/19/2009 12:09		FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 11:53	5/18/2009 9:00	5/19/2009 12:11	WG102342-1, -2, -3, -4, -5, -6	
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 12:02	5/18/2009 9:00	5/19/2009 12:12		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 12:12	5/18/2009 9:00	5/19/2009 12:19		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 12:22	5/18/2009 9:00	5/19/2009 12:21		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 12:36	5/18/2009 9:00	5/19/2009 12:22		
WG102342-1	SRM		MTHG-MIDS	SALTWTRSED		5/18/2009 9:00	5/19/2009 11:29		PACS2
WG102342-2	MB		MTHG-MIDS	SOLIDBLANK		5/18/2009 9:00	5/19/2009 11:31		METHOD BLANK
WG102342-3	SB		MTHG-MIDS	SOLIDBLANK		5/18/2009 9:00	5/19/2009 11:33		WG102342-2 HG-SMID
WG102342-4	MS		MTHG-MIDS	SALTWTRSED		5/18/2009 9:00	5/19/2009 11:37		L47888-1 HG-SMID
WG102342-5	MSD		MTHG-MIDS	SALTWTRSED		5/18/2009 9:00	5/19/2009 11:38		WG102342-4 L47888-1 HG-SMID-MSD
WG102342-6	LD		MTHG-MIDS	SALTWTRSED		5/18/2009 9:00	5/19/2009 11:40		L47888-1 RPD-SOL

Workgroup: WG102342 Total Mercury by CVAA

SRM:WG102342-1 Matrix: SALTWTRSED Listtype: MTHG-MIDS Method: SW846 7471B Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Mercury, Total, CVAA	0.051	0.513	mg/Kg	3.04	2.99	98		80--120

MB:WG102342-2 Matrix: SOLIDBLANK Listtype: MTHG-MIDS Method: SW846 7471B Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAA	0.0024	0.0244	mg/Kg	<MDL	

SB:WG102342-3 MB:WG102342-2 Matrix: SOLIDBLANK Listtype: MTHG-MIDS Method: SW846 7471B Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Mercury, Total, CVAA	0.0024	0.0244	mg/Kg	<MDL	0.0488	0.0496	102		85--115

MSD:WG102342-5 MS:WG102342-4 L47888-1 Matrix: SALTWTRSED Listtype: MTHG-MIDS Method: SW846 7471B Project: 423062-200-4
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Mercury, Total, CVAA	0.0025	0.0247	mg/Kg	0.0742	0.05	0.122	96		75--125	0.0494	0.121	95		1		20

LD:WG102342-6 L47888-1 Matrix: SALTWTRSED Listtype: MTHG-MIDS Method: SW846 7471B Project: 423062-200-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Mercury, Total, CVAA	0.0025	0.0247	mg/Kg	0.0742	0.0778	5		20

ORGANIC CHEMISTRY QC DATA

WG101942 Semi Volatile Organics

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/27/2009 10:36	5/1/2009 7:00	5/20/2009 16:51		
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/27/2009 12:10	5/1/2009 7:00	5/20/2009 17:37		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 12:45	5/1/2009 7:00	5/20/2009 18:23		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 14:00	5/1/2009 7:00	5/20/2009 19:09		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/29/2009 8:25	5/1/2009 7:00	5/20/2009 19:54		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/29/2009 8:55	5/1/2009 7:00	5/20/2009 20:39		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/29/2009 9:37	5/1/2009 7:00	5/20/2009 21:25		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/29/2009 10:00	5/1/2009 7:00	5/20/2009 22:10		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/29/2009 10:40	5/1/2009 7:00	5/20/2009 22:55		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 10:44	5/1/2009 7:00	5/20/2009 23:40		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 10:55	5/1/2009 7:00	5/21/2009 0:25		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 11:00	5/1/2009 7:00	5/28/2009 18:14	WG101942-1, -2, -3, -4, -5, -6	FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 11:53	5/1/2009 7:00	5/28/2009 19:02		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 12:02	5/1/2009 7:00	5/28/2009 19:50		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 12:12	5/1/2009 7:00	5/28/2009 20:38		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 12:22	5/1/2009 7:00	5/28/2009 21:25		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 12:36	5/1/2009 7:00	5/28/2009 22:11		
WG101942-1	MB		ORBNASMS	OTHR SOLID		5/1/2009 7:00	5/20/2009 11:35		MB090501
WG101942-2	SB		ORBNASMS	OTHR SOLID		5/1/2009 7:00	5/20/2009 13:07		WG101942-1
WG101942-3	MS		ORBNASMS	SALTWTRSED		5/1/2009 7:00	5/20/2009 13:46		L47888-1
WG101942-4	MSD		ORBNASMS	SALTWTRSED		5/1/2009 7:00	5/20/2009 14:32		WG101942-3 L47888-1
WG101942-5	SRM		ORBNASMS	SALTWTRSED		5/1/2009 7:00	5/20/2009 15:19		1944
WG101942-6	LD		ORBNASMS	SALTWTRSED		5/1/2009 7:00	5/20/2009 16:05		L47888-2

Workgroup: WG101942 Semi Volatile Organics

MB:WG101942-1 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	
2-Methylnaphthalene	2	4	ug/Kg	<MDL	
2-Methylphenol	2	4	ug/Kg	<MDL	
4-Methylphenol	4	8	ug/Kg	<MDL	
Acenaphthene	2	4	ug/Kg	<MDL	
Acenaphthylene	2	4	ug/Kg	<MDL	
Anthracene	2	4	ug/Kg	<MDL	
Benzo(a)anthracene	2	4	ug/Kg	<MDL	
Benzo(a)pyrene	2	4	ug/Kg	<MDL	
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	
Benzoic Acid	10	20	ug/Kg	<MDL	
Benzyl Alcohol	2	4	ug/Kg	<MDL	
Benzyl Butyl Phthalate	1	2	ug/Kg	4.06	B
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	35.1	B
Caffeine	4	8	ug/Kg	<MDL	
Carbazole	2	4	ug/Kg	<MDL	
Chrysene	2	4	ug/Kg	<MDL	
Coprostanol	40	80	ug/Kg	<MDL	
Di-N-Butyl Phthalate	4	8	ug/Kg	<MDL	
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	
Dibenzofuran	2	4	ug/Kg	<MDL	
Diethyl Phthalate	4	8	ug/Kg	<MDL	
Dimethyl Phthalate	4	8	ug/Kg	<MDL	
Fluoranthene	2	4	ug/Kg	<MDL	
Fluorene	2	4	ug/Kg	<MDL	
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	
Hexachloroethane	1	2	ug/Kg	<MDL	
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	

N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL
Naphthalene	2	4	ug/Kg	<MDL
Pentachlorophenol	10	20	ug/Kg	<MDL
Phenanthrene	2	4	ug/Kg	<MDL
Phenol	4	8	ug/Kg	<MDL
Pyrene	2	4	ug/Kg	<MDL
Total 4-Nonylphenol	5	10	ug/Kg	<MDL
Total HPAHS	2	4	ug/Kg	<MDL
Total LPAHs	2	4	ug/Kg	<MDL

SB:WG101942-2 MB:WG101942-1 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	250	180	72		13--110
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	135	54		10--116
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	160	64		18--95
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	155	62		21--99
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	250	33.8	14		10--81
Acenaphthene	2	4	ug/Kg	<MDL	250	181	72		29--102
Acenaphthylene	2	4	ug/Kg	<MDL	250	194	78		31--101
Anthracene	2	4	ug/Kg	<MDL	250	226	90		45--114
Benzo(a)anthracene	2	4	ug/Kg	<MDL	250	269	108		69--117
Benzo(a)pyrene	2	4	ug/Kg	<MDL	250	228	91		15--137
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	250	268	107		50--121
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	250	217	87		46--126
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	250	222	89		58--128
Benzyl Butyl Phthalate	1	2	ug/Kg	4.06	250	238	94		15--183
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	35.1	250	230	78		10--182
Carbazole	2	4	ug/Kg	<MDL	250	236	94		44--179
Chrysene	2	4	ug/Kg	<MDL	250	212	85		69--111
Di-N-Butyl Phthalate	4	8	ug/Kg	<MDL	250	247	99		17--180
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	250	266	106		10--200
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	250	275	110		53--129
Diethyl Phthalate	4	8	ug/Kg	<MDL	250	192	77		51--118
Dimethyl Phthalate	4	8	ug/Kg	<MDL	250	192	77		38--114
Fluoranthene	2	4	ug/Kg	<MDL	250	245	98		55--132
Fluorene	2	4	ug/Kg	<MDL	250	189	75		39--106
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	250	148	59		40--111
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	250	188	75		10--97
Hexachloroethane	1	2	ug/Kg	<MDL	250	139	56		17--92
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	250	250	100		51--132

N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	250	137	55	11--148
Naphthalene	2	4	ug/Kg	<MDL	250	129	51	17--94
Pentachlorophenol	10	20	ug/Kg	<MDL	250	139	56	38--124
Phenanthrene	2	4	ug/Kg	<MDL	250	214	86	57--104
Phenol	4	8	ug/Kg	<MDL	250	26.6	11	10--107
Pyrene	2	4	ug/Kg	<MDL	250	272	109	48--132
Total HPAHS	2	4	ug/Kg	<MDL	2500	2460	98	25--150
Total LPAHs	2	4	ug/Kg	<MDL	1750	1130	65	25--150

MSD:WG101942-4 MS:WG101942-3 L47888-1 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	250	117	47		10--115	250	119	48		2		35
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	106	43		10--105	250	120	48		11		35
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	103	41		10--103	250	123	49		18		35
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	109	44		10--104	250	124	49		11		35
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	250	160	64		10--150	250	141	57		12		35
Acenaphthene	2	4	ug/Kg	3.7	250	196	77		25--130	250	173	68		12		35
Acenaphthylene	2	4	ug/Kg	3	250	217	86		27--132	250	196	77		11		35
Anthracene	2	4	ug/Kg	20.1	250	262	97		10--181	250	245	90		7		35
Benzo(a)anthracene	2	4	ug/Kg	81	250	342	105		32--168	250	332	100		5		35
Benzo(a)pyrene	2	4	ug/Kg	62.6	250	287	90		10--200	250	256	77		16		35
Benzo(b)fluoranthene	2	4	ug/Kg	104	250	352	99		10--199	250	365	104		5		35
Benzo(g,h,i)perylene	2	4	ug/Kg	27.6	250	148	48		10--173	250	131	41		16		35
Benzo(k)fluoranthene	2	4	ug/Kg	75.1	250	323	99		10--192	250	270	78		24		35
Benzyl Butyl Phthalate	1	2	ug/Kg	33.6	250	254	88		41--145	250	234	80		10		35
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	249	250	459	84		10--189	250	427	71		17		35
Carbazole	2	4	ug/Kg	8.74	250	237	91		16--200	250	217	83		9		35
Chrysene	2	4	ug/Kg	103	250	303	80		14--184	250	315	85		6		35
Di-N-Butyl Phthalate	4	8	ug/Kg	11.7	250	229	87		10--194	250	203	77		12		35
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	250	346	138		52--151	250	372	149		8		35
Dibenzo(a,h)anthracene	2	4	ug/Kg	14.4	250	177	65		10--166	250	159	58		11		35
Diethyl Phthalate	4	8	ug/Kg	<MDL	250	168	67		31--150	250	144	58		14		35
Dimethyl Phthalate	4	8	ug/Kg	<MDL	250	169	67		13--162	250	148	59		13		35
Fluoranthene	2	4	ug/Kg	180	250	408	91		12--188	250	382	81		12		35
Fluorene	2	4	ug/Kg	6.54	250	190	73		22--147	250	165	63		15		35
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	250	150	60		18--151	250	139	56		7		35
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	250	111	44		10--97	250	118	47		7		35
Hexachloroethane	1	2	ug/Kg	<MDL	250	124	50		10--89	250	120	48		4		35
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	26.5	250	175	60		10--177	250	153	51		16		35
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	250	172	69		10--169	250	158	63		9		35

Naphthalene	2	4	ug/Kg	3.2	250	162	63	12--97	250	129	50	23	35
Pentachlorophenol	10	20	ug/Kg	<MDL	250	191	76	17--170	250	181	73	4	35
Phenanthrene	2	4	ug/Kg	51.2	250	292	96	10--200	250	253	81	17	35
Phenol	4	8	ug/Kg	<MDL	250	102	41	10--127	250	96.9	39	5	35
Pyrene	2	4	ug/Kg	163	250	423	104	20--174	250	367	82	24	35
Total HPAHS	2	4	ug/Kg	837	2500	2940	84	25--150	2500	2730	76	10	35
Total LPAHs	2	4	ug/Kg	91.3	1750	1320	70	25--150	1750	1160	61	14	35

SRM:WG101942-5 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Anthracene	20	40	ug/Kg	131	77.6	59		28--98
Benzo(a)anthracene	20	40	ug/Kg	349	374	107		66--124
Benzo(a)pyrene	20	40	ug/Kg	318	248	78		60--116
Benzo(b)fluoranthene	20	40	ug/Kg	286	277	97		52--190
Benzo(g,h,i)perylene	20	40	ug/Kg	210	74.7	36		15--121
Benzo(k)fluoranthene	20	40	ug/Kg	170	226	133		60--146
Chrysene	20	40	ug/Kg	360	399	111		77--136
Dibenzo(a,h)anthracene	20	40	ug/Kg	31.4	38	120		10--200
Fluoranthene	20	40	ug/Kg	660	698	106		45--126
Indeno(1,2,3-Cd)Pyrene	20	40	ug/Kg	206	88.1	43		33--121
Naphthalene	20	40	ug/Kg	122	28	23		10--29
Phenanthrene	20	40	ug/Kg	390	372	95		51--106
Pyrene	20	40	ug/Kg	718	723	101		36--135

LD:WG101942-6 L47888-2 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	<MDL			35
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	<MDL			35
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	<MDL			35
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	0.667	0.592	12		35
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	<MDL			35
2-Methylnaphthalene	2	4	ug/Kg	15.5	22.8	38	*	35
2-Methylphenol	2	4	ug/Kg	<MDL	<MDL			35
4-Methylphenol	4	8	ug/Kg	<MDL	<MDL			35
Acenaphthene	2	4	ug/Kg	46.7	72.9	44	*	35
Acenaphthylene	2	4	ug/Kg	4.99	17.2	110	*	35
Anthracene	2	4	ug/Kg	42.4	80.3	62	*	35
Benzo(a)anthracene	2	4	ug/Kg	140	296	72	*	35

Benzo(a)pyrene	2	4	ug/Kg	66.7	139	70	*	35
Benzo(b)fluoranthene	2	4	ug/Kg	105	327	103	*	35
Benzo(g,h,i)perylene	2	4	ug/Kg	19.4	46.3	82	*	35
Benzo(k)fluoranthene	2	4	ug/Kg	93.9	202	73	*	35
Benzoic Acid	10	20	ug/Kg	110	254	79	*	35
Benzyl Alcohol	2	4	ug/Kg	<MDL	<MDL			35
Benzyl Butyl Phthalate	1	2	ug/Kg	19.3	28.9	40	*	35
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	207	281	30		35
Caffeine	4	8	ug/Kg	<MDL	<MDL			35
Carbazole	2	4	ug/Kg	10.4	84.6	156	*	35
Chrysene	2	4	ug/Kg	142	392	94	*	35
Coprostanol	40	80	ug/Kg	<MDL	<MDL			35
Di-N-Butyl Phthalate	4	8	ug/Kg	7.2	11	42	*	35
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Dibenzo(a,h)anthracene	2	4	ug/Kg	9.9	23.9	83	*	35
Dibenzofuran	2	4	ug/Kg	28.6	45.8	46	*	35
Diethyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Dimethyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Fluoranthene	2	4	ug/Kg	441	990	77	*	35
Fluorene	2	4	ug/Kg	32.2	64.2	66	*	35
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	<MDL			35
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	<MDL			35
Hexachloroethane	1	2	ug/Kg	<MDL	<MDL			35
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	19.7	49.2	86	*	35
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	<MDL			35
Naphthalene	2	4	ug/Kg	7.29	8.52	16		35
Pentachlorophenol	10	20	ug/Kg	<MDL	<MDL			35
Phenanthrene	2	4	ug/Kg	215	588	93	*	35
Phenol	4	8	ug/Kg	11.5	22.4	65	*	35
Pyrene	2	4	ug/Kg	383	916	82	*	35
Total 4-Nonylphenol	5	10	ug/Kg	67.9	71.6	5		35
Total HPAHS	2	4	ug/Kg	1420	3380	82	*	35
Total LPAHs	2	4	ug/Kg	365	854	80	*	35

Surrogate: (Lab Limits)	2,4,6-Tribromo phenol 29--112	2-Fluorobiphenyl 31--101	2-Fluorophenol 10--112	d14-Terphenyl 51--130	d4-1,2-Dichlorobenzene 24--91	d4-2-Chlorophenol 11--105	d5-Nitrobenzene 28--94	5-Phenol 10--106
L47888-1	104	67	51	106	43	49	63	60
L47888-2	100	62	43	109	47	49	65	74
L47888-3	90	66	53	122	49	54	52	46
L47888-4	86	67	58	125	49	54	51	47
L47888-5	98	55	48	108	43	45	46	39
L47888-6	103	57	47	116	47	53	38	48
L47888-7	97	56	42	113	41	47	44	46
L47888-8	90	55	42	111	45	52	39	47
L47888-9	92	65	39	115	48	43	40	39
L47893-1	104	57	39	111	45	43	38	28
L47893-2	98	61	35	115	49	51	33	41
L47893-3	112	69	49	110	48	51	58	41
L47893-4	100	59	70	97	48	51	59	45
L47893-5	83	52	67	102	43	45	50	33
L47893-6	80	57	64	97	39	42	53	34
L47893-7	111	75	66	98	41	44	53	34
L47893-8	81	59	63	91	31	44	48	36
WG101942-1	59	56	55	97	49	46	53	46
WG101942-2	80	51	58	102	72	32	47	12
WG101942-3	88	62	48	99	58	47	48	46
WG101942-4	80	56	56	87	63	46	47	45
WG101942-5	106	82	86	109	71	87	86	99
WG101942-6	100	71	54	111	39	55	63	59

Trace Organics Data Anomaly Form

Date(s) Occurred: *09/05/20*

WG #(s): *WG101942*

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

Project #(s): *423062-100-4 Duwamish Cap Monitoring*

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. WG101942-1 MB - the extraction blank had a quantitatable levels of Benzyl Butyl Phthalate at 4.06 ug/Kg and Bis(2EH)phthalate at 35.1 ug/Kg.

11. WG101942-5 LD of L47888-2 had 24 of 28 reported analytes exceeded lab QA/QC limits for %RSD.

17C. WG101942-2 SB, WG101942-3 MS, and WG101942-4 MSD have no recoveries for Benzyl Alcohol, 2-Methylphenol, 4-Methylphenol, Benzoic Acid, 2-Methylnaphthalene, Dibenzofuran, Coprostanol, and Caffeine. Spiking solutions independently are purchased from suppliers and are purposely not part of the solution used to generate the calibration curve. The compounds were not in the spiking solution as purchased from the manufacturer, which was an oversight, and has been corrected.

☒ Potential effect explanation (explanation mandatory):

11. The analyses of the sample (L47888-2) and the lab duplicate (WG101942-6) demonstrated the potential homogeneity problems for the PAH analytes in higher concentrations . One possible explanation for the ranges in concentrations found would be the source of the PAH contamination. PAHs are abundant in petroleum products in varying concentrations. The "oils" usually coat or encapsulate the sediment particles in a random fashion. The PAHs are also abundant in asphalts or creosotes which can be "flecks" or "specks" in the samples. The "oils" and/or "specks" create homogeneity issues when taking an aliquot of the sample for analysis. The PAHs for samples L47888-2 and WG109142-6- LD were flagged J as estimates. The range of the PAHs vary approximately 2-3 times in concentration for the 2 aliquots and should be noted in data usage.

	Signatures	**Signature Dates**
Reported By: *M. Doubrava*		
Reviewer:	_____	_____
Supervisor: *Dana Walker*	_____	_____
QA Officer: *Colin Elliott*	_____	_____
(For QA1 only)	_____	_____
cc: LPM:		

WG102009 PCB

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/27/2009 10:36	5/5/2009 8:00	6/8/2009 21:48		
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/27/2009 12:10	5/5/2009 8:00	6/8/2009 22:30		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 12:45	5/5/2009 8:00	6/8/2009 23:11		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 14:00	5/5/2009 8:00	6/9/2009 1:52		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/29/2009 8:25	5/5/2009 8:00	6/9/2009 3:50		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/29/2009 8:55	5/5/2009 8:00	6/9/2009 4:31		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/29/2009 9:37	5/5/2009 8:00	6/9/2009 5:12		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/29/2009 10:00	5/5/2009 8:00	6/9/2009 5:54		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/29/2009 10:40	5/5/2009 8:00	6/9/2009 6:35		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 10:44	5/5/2009 8:00	6/9/2009 7:17		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 10:55	5/5/2009 8:00	6/9/2009 9:59		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 11:00	5/5/2009 8:00	6/9/2009 10:40	WG102009-1, -2, -3, -4, -5, -6	FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 11:53	5/5/2009 8:00	6/9/2009 11:21		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 12:02	5/5/2009 8:00	6/9/2009 12:01		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 12:12	5/5/2009 8:00	6/9/2009 12:42		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 12:22	5/5/2009 8:00	6/9/2009 13:24		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 12:36	5/5/2009 8:00	6/9/2009 14:05		
WG102009-1	MB		ORPCBLL	OTHR SOLID		5/5/2009 8:00	6/8/2009 17:43		MB090505
WG102009-2	SB		ORPCBLL	OTHR SOLID		5/5/2009 8:00	6/8/2009 18:25		WG102009-1
WG102009-3	MS		ORPCBLL	SALTWTRSED		5/5/2009 8:00	6/8/2009 19:06		L47893-1
WG102009-4	MSD		ORPCBLL	SALTWTRSED		5/5/2009 8:00	6/8/2009 19:47		WG102009-3 L47893-1
WG102009-5	SRM		ORPCBLL	OTHR SOLID		5/5/2009 8:00	6/8/2009 20:27		HS-2
WG102009-6	LD		ORPCBLL	SALTWTRSED		5/5/2009 8:00	6/8/2009 21:06		L47888-2

Workgroup: WG102009 (pplls#79 pcbll) Run ID: R135136

MB:WG102009-1 Matrix: OTHR SOLID Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: NONE
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	
Aroclor 1221	1.7	3.33	ug/Kg	<MDL	
Aroclor 1232	1.7	3.33	ug/Kg	<MDL	
Aroclor 1242	0.83	1.67	ug/Kg	<MDL	
Aroclor 1248	0.83	1.67	ug/Kg	<MDL	
Aroclor 1254	0.83	1.67	ug/Kg	<MDL	
Aroclor 1260	0.83	1.67	ug/Kg	<MDL	
Total Aroclors	0.83	1.67	ug/Kg	<MDL	

SB:WG102009-2 MB:WG102009-1 Matrix: OTHR SOLID Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	25	19.3	77		39--121
Aroclor 1260	0.83	1.67	ug/Kg	<MDL	25	22.8	91		53--140

MSD:WG102009-4 MS:WG102009-3 L47893-1 Matrix: SALTWTRSED Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: 423062-200-4
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	25	19.9	79		32--164	25	20.3	81		3		50
Aroclor 1260	0.83	1.67	ug/Kg	16.2	25	34.3	73		28--144	25	31	59		21		50

SRM:WG102009-5 Matrix: OTHR SOLID Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Aroclor 1254	2.7	5.33	ug/Kg	112	74.7	67		57--139

LD:WG102009-6 L47888-2 Matrix: SALTWTRSED Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: 423062-200-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Aroclor 1016	5.3	10.5	ug/Kg	<MDL	<MDL			100
Aroclor 1221	1.7	3.33	ug/Kg	<MDL	<MDL			100
Aroclor 1232	1.7	3.33	ug/Kg	<MDL	<MDL			100
Aroclor 1242	0.83	1.67	ug/Kg	<MDL	<MDL			100
Aroclor 1248	0.83	1.67	ug/Kg	14.6	12.2	18		100
Aroclor 1254	0.83	1.67	ug/Kg	15.8	16.6	5		100
Aroclor 1260	0.83	1.67	ug/Kg	9.53	9.02	6		100
Total Aroclors	0.83	1.67	ug/Kg	39.9	37.9	5		100

Surrogate: (Lab Limits)	2,4,5,6-Tetrachloro m xylene 10--118	Decachloro biphenyl 12--158
L47888-1	96	82
L47888-2	100	80
L47888-3	102	129
L47888-4	104	140
L47888-5	100	89
L47888-6	107	93
L47888-7	107	83
L47888-8	104	77
L47888-9	98	85
L47893-1	114	100
L47893-2	108	104
L47893-3	117	106
L47893-4	101	95
L47893-5	97	102
L47893-6	114	108
L47893-7	112	93
L47893-8	101	102
WG102009-1	67	99
WG102009-2	71	98
WG102009-3	100	85
WG102009-4	88	78
WG102009-5	82	73
WG102009-6	75	66

WG102008 Chlorinated Pesticides

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/27/2009 10:36	5/5/2009 8:00	6/8/2009 16:15		
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/27/2009 12:10	5/5/2009 8:00	5/29/2009 18:44		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 12:45	5/5/2009 8:00	5/29/2009 19:21		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 14:00	5/5/2009 8:00	5/29/2009 21:50		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/29/2009 8:25	5/5/2009 8:00	5/29/2009 22:27		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/29/2009 8:55	5/5/2009 8:00	5/29/2009 23:04		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/29/2009 9:37	5/5/2009 8:00	5/29/2009 23:41		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/29/2009 10:00	5/5/2009 8:00	5/30/2009 0:19		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/29/2009 10:40	5/5/2009 8:00	5/30/2009 0:56		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 10:44	5/5/2009 8:00	5/30/2009 1:33		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 10:55	5/5/2009 8:00	5/30/2009 2:10		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 11:00	5/5/2009 8:00	5/30/2009 2:47	WG102008-1, -2, -3, -4, -5, -6	FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 11:53	5/5/2009 8:00	5/30/2009 5:16		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 12:02	5/5/2009 8:00	5/30/2009 5:53		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 12:12	5/5/2009 8:00	5/30/2009 6:31		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 12:22	5/5/2009 8:00	5/30/2009 7:08		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 12:36	5/5/2009 8:00	5/30/2009 7:45		
WG102008-1	MB		ORPESTLL	OTHR SOLID		5/5/2009 8:00	5/29/2009 14:23		MB090505
WG102008-2	SB		ORPESTLL	OTHR SOLID		5/5/2009 8:00	5/29/2009 15:00		WG102008-1
WG102008-3	MS		ORPESTLL	SALTWTRSED		5/5/2009 8:00	6/8/2009 15:01		L47888-1
WG102008-4	MSD		ORPESTLL	SALTWTRSED		5/5/2009 8:00	6/8/2009 15:38		WG102008-3 L47888-1
WG102008-5	SRM		ORPESTLL	OTHR SOLID		5/5/2009 8:00	5/29/2009 16:52		1944
WG102008-6	LD		ORPESTLL	SALTWTRSED		5/5/2009 8:00	5/29/2009 17:29		L47888-2

Workgroup: WG102008 (pplls#79 pestll) Run ID: R134817

MB:WG102008-1 Matrix: OTHR SOLID Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: NONE
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	
Aldrin	0.67	1.33	ug/Kg	<MDL	
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	
Alpha-Chlordane	0.33	0.667	ug/Kg	<MDL	
Beta-BHC	0.33	0.667	ug/Kg	<MDL	
Delta-BHC	0.33	0.667	ug/Kg	<MDL	
Dieldrin	0.67	1.33	ug/Kg	<MDL	
Endosulfan I	0.67	1.33	ug/Kg	<MDL	
Endosulfan II	0.67	1.33	ug/Kg	<MDL	
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	
Endrin	0.67	1.33	ug/Kg	<MDL	
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	
Gamma-Chlordane	0.33	0.667	ug/Kg	<MDL	
Heptachlor	0.33	0.667	ug/Kg	<MDL	
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	
Methoxychlor	3.3	6.67	ug/Kg	<MDL	
Toxaphene	6.7	13.3	ug/Kg	<MDL	

SB:WG102008-2 MB:WG102008-1 Matrix: OTHR SOLID Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	6.67	5.34	80		78--121
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	6.67	5.59	84		75--111
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	6.67	5.63	84		57--145
Aldrin	0.67	1.33	ug/Kg	<MDL	6.67	4.13	62		28--113
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.4	66		20--99
Beta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.04	76		66--102
Delta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.55	68		63--108
Dieldrin	0.67	1.33	ug/Kg	<MDL	6.67	5.48	82		58--139
Endosulfan I	0.67	1.33	ug/Kg	<MDL	6.67	5.05	76		62--104
Endosulfan II	0.67	1.33	ug/Kg	<MDL	6.67	5.12	77		72--109
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	6.67	4.29	64		61--104
Endrin	0.67	1.33	ug/Kg	<MDL	6.67	5.28	79		60--160
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	6.67	0.83	12		10--77
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	6.67	4.49	67		27--130
Heptachlor	0.33	0.667	ug/Kg	<MDL	6.67	4.54	68		20--137
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	6.67	4.99	75		59--107
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	7.15	107		72--131

MSD:WG102008-4 MS:WG102008-3 L47888-1 Matrix: SALTWTRSED Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: 423062-200-4
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	6.67	6.66	100		41--157	6.67	5.64	85		16		50
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	6.67	6.69	100		59--125	6.67	5.71	86		15		50
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	6.67	6.74	101		50--144	6.67	5.72	86		16		50
Aldrin	0.67	1.33	ug/Kg	<MDL	6.67	5.12	77		61--119	6.67	4.4	66		15		50
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.17	78		59--111	6.67	4.5	68		14		50
Beta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.08	76		60--119	6.67	4.53	68		11		50
Delta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.28	79		54--126	6.67	4.65	70		12		50
Dieldrin	0.67	1.33	ug/Kg	<MDL	6.67	6.16	92		60--139	6.67	5.31	80		14		50
Endosulfan I	0.67	1.33	ug/Kg	<MDL	6.67	5.82	87		64--113	6.67	4.99	75		15		50
Endosulfan II	0.67	1.33	ug/Kg	<MDL	6.67	6.24	94		36--146	6.67	5.31	80		16		50
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	6.67	5.03	76		46--113	6.67	4.32	65		16		50
Endrin	0.67	1.33	ug/Kg	<MDL	6.67	6.82	102		62--166	6.67	6.02	90		13		50
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	6.67	2.32	35		10--66	6.67	1.98	30		15		50
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	6.67	5.06	76		61--135	6.67	4.48	67		13		50
Heptachlor	0.33	0.667	ug/Kg	<MDL	6.67	5.96	89		52--157	6.67	5.37	80		11		50
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	6.67	5.58	84		61--118	6.67	4.96	74		13		50
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	7.62	114		53--129	6.67	6.7	100		13		50

SRM:WG102008-5 Matrix: OTHR SOLID Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
4,4'-DDT	5.3	10.7	ug/Kg	119	152	128		10--200
Alpha-Chlordane	2.7	5.33	ug/Kg	16.5	13.7	83		48--144

LD:WG102008-6 L47888-2 Matrix: SALTWTRSED Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: 423062-200-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	<MDL			35
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	<MDL			35
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	<MDL			35
Aldrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Alpha-Chlordane	0.33	0.667	ug/Kg	<MDL	<MDL			35
Beta-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Delta-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Dieldrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan I	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan II	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	<MDL			35
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	<MDL			35
Gamma-Chlordane	0.33	0.667	ug/Kg	<MDL	<MDL			35
Heptachlor	0.33	0.667	ug/Kg	<MDL	<MDL			35
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	<MDL			35
Methoxychlor	3.3	6.67	ug/Kg	<MDL	<MDL			35
Toxaphene	6.7	13.3	ug/Kg	<MDL	<MDL			35

Surrogate: (Lab Limits)	2,4,5,6-Tetra chloro m xylene 10--118	Decachl oro biphenyl 12--158
L47888-1	63	74
L47888-2	57	58
L47888-3	59	74
L47888-4	56	66
L47888-5	53	55
L47888-6	56	59
L47888-7	53	53
L47888-8	55	56
L47888-9	53	54
L47893-1	57	57
L47893-2	52	52
L47893-3	59	56
L47893-4	53	64
L47893-5	56	59
L47893-6	58	60
L47893-7	54	55
L47893-8	56	56
WG102008-1	47	79
WG102008-2	53	81
WG102008-3	71	108
WG102008-4	62	143
WG102008-5	60	88
WG102008-6	53	57

CHAIN OF CUSTODY FORMS

Login Number: P47893

Page: 1

T_DUD, STAC, THIN

DUDI SEDS, STAS. C, THIN

Project Number: 423062-200-4

Personnel: John Blaine, Jim Devereaux

Sample No. (Type)	P47893-1	P47893-2	P47893-3 (FREP for -2)
Locator	DUD_3C	DUD_4C	DUD_4C
Short Loc. Desc.	DUD_3C	DUD_4C	DUD_4C
Locator Desc.	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	4/28/09 1044	4/28/09 1055	4/28/09 1100
End Date/Time	" 1046	1057	1105
Time Span			
Sample Depth	10	10	10
Comments	1 Grab Comp, 0-10 cm	1 Grab Comp, 0-10 cm, AREP	1 Grab Comp, 0-10 cm, FREP
PERSONNEL	JG, JB, JD →		
SAMP METH	20143 →		
SED DEPTH	13cm	13 cm	13 cm
SED SAMP RANGE			
SED TYPE	2ØN3Ø	3ØN3Ø	3ØN3Ø
TIDE COND	E	E	E
TIDE HT	3	2.5	2
SAMP FUNC	**********	**********	

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-M	6 SALTWTRSED HG-CVAA-M	6 SALTWTRSED HG-CVAA-M	
6 SALTWTRSED MN-ICP	6 SALTWTRSED MN-ICP	6 SALTWTRSED MN-ICP	
6 SALTWTRSED PP ICP	6 SALTWTRSED PP ICP	6 SALTWTRSED PP ICP	

Boards WG102389 AHW 5/19

100m Samples

F. Data WG102365 AHW 5/21

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
John Blaine	4-28-09	1610
RECEIVED BY	Date	Time
	4-28-09	1610

Sample Number(s) 1-8 (All)

continue ...

DUDI SEDS, STAS. C, THIN

Project Number: 423062-200-4 Personnel: John Blaney, Jim Devereaux, Jeve Colton

Sample No. (Type)	P47893-4	P47893-5	P47893-6
Locator	DUD_5C	DUD_6C	DUD_7C
Short Loc. Desc.	DUD_5C	DUD_6C	DUD_7C
Locator Desc.	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	4/28/09 1153	4/28/09 1202	4/28/09 1212
End Date/Time	" 1155	" 1204	" 1215
Time Span			
Sample Depth	10	10	10
Comments	1 Grab Comp, 0-10 cm	1 Grab Comp, 0-10 cm	1 Grab Comp, 0-10 cm
PERSONNEL	JD, JB, JC →	→	→
SAMP METH	20143 →	→	→
SED DEPTH	13 cm	11 cm	17 cm
SED SAMP RANGE			
SED TYPE	20N20	34N30	20N20
TIDE COND	E	E	E
TIDE HT	1	0	-0.5
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-M	6 SALTWTRSED HG-CVAA-M	6 SALTWTRSED HG-CVAA-M
	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

continue ...

DUDI SEDS, STAS. C, THIN

Project Number: 423062-200-4

Personnel: John Blaine, Jim Devereaux, Jenee Colton

Sample No. (Type)	P47893-7	P47893-8	
Locator	DUD_14C	DUD_15C	
Short Loc. Desc.	DUD_14C	DUD_15C	
Locator Desc.	PERIMETER LOCATION 14C	DUDI PERIMETER LOCATION 15C	
Site	DUWAMISH RIVER	DUWAMISH RIVER	
Start Date/Time	4/28/09 1222	4/28/09 1236	
End Date/Time	" 1225	" 1240	
Time Span			
Sample Depth	8	8	
Comments	1 Grab Comp, 0-10 cm	1 Grab Comp, 0-10 cm	
PERSONNEL			
SAMP METH	20143 →		
SED DEPTH	15 CM	14 CM	
SED SAMP RANGE			
SED TYPE	21N3Ø	21N3Ø	
TIDE COND	E	E	
TIDE HT	-1	-1.2	
Dept., Matrix, Prod			
	3 SALTWTRSED PSD	3 SALTWTRSED PSD	
	3 SALTWTRSED TOC	3 SALTWTRSED TOC	
	3 SALTWTRSED TOTS	3 SALTWTRSED TOTS	
	6 SALTWTRSED AL-ICP	6 SALTWTRSED AL-ICP	
	6 SALTWTRSED FE-ICP	6 SALTWTRSED FE-ICP	
	6 SALTWTRSED HG-CVAA-M	6 SALTWTRSED HG-CVAA-M	
	6 SALTWTRSED MN-ICP	6 SALTWTRSED MN-ICP	
	6 SALTWTRSED PP ICP	6 SALTWTRSED PP ICP	
	7 SALTWTRSED BNASMS	7 SALTWTRSED BNASMS	
	7 SALTWTRSED PCBLL	7 SALTWTRSED PCBLL	

continue ...

KING COUNTY ENVIRONMENTAL LABORATORY
QUALITY ASSURANCE REVIEW

for

ESTUARINE SEDIMENT ANALYTICAL DATA

DUWAMISH/DIAGONAL SEDIMENT REMEDIATION PROJECT
PERIMETER SEDIMENT CHARACTERIZATION
MARCH 2008 SAMPLING EVENT

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Date: Oct 1, 2008

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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 24 & 25, 2008 as part of the Duwamish Diagonal Sediment Remediation Project, Perimeter Sediment Characterization. The Sampling and Analysis Plan (SAP) in effect for this sampling event is titled: Duwamish/Diagonal Sediment Remediation Dredging and Capping Operations Sediment Monitoring Sampling and Analysis Plan. October 28, 2003. (KCEL document # 177)

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 t*he 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 2003 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 perimeter saltwater sediment samples on March 24th and 25th, 2008. These samples were collected for the Duwamish/Diagonal Sediment Remediation Program. 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. As required by the SAP, each sample at every location was composed of sediment aliquots of equal amounts from ten individual Van Veen grabs. Both the prescribed station coordinates and the actual coordinates recorded during sampling activities are presented in the following table (see below). The coordinate system, as shown, is in U.S. State Plane, Washington North 4601, NAD83.

Duwamish/Diagonal Sediment Sampling, Perimeter Stations
Actual and Prescribed Sample Coordinates, March 2008

Lab Number	Station	Cast	Grabs Accepted	Prescribed Northing	Actual Northing	Prescribed Easting	Actual Easting	Offset > 3 m
L45302-1	DUD_1C			208754		1267168		
		1	2		208757		1267166	
		2	2		208756		1267169	
		3	2		208761		1267165	
		4	2		208755		1267168	
		5	2		208754		1267165	
L45302-2	DUD_2C			208651		1267175		
		1	2		208650		1267175	
		2	2		208657		1267170	
		3	2		208653		1267165	
		4	2		208650		1267166	
		5	2		208654		1267166	
L45302-3	DUD_8C			208920		1266864		
		1	2		208919		1266864	
		2	2		208918		1266866	
		3	2		208918		1266867	
		4	2		208914		1266867	
		5	2		208917		1266867	
L45302-4	DUD_8C FREP			208920		1266864		
		1	2		208923		1266866	
		2	1		208928		1266865	
		3	2		208925		1266868	
		4	2		208922		1266863	
		5	2		208918		1266867	
		6	1		208919		1266866	
L45302-5	DUD_9C			209157		1266784		
		1	2		209157		1266786	
		2	2		209158		1266784	
		3	2		209159		1266781	
		4	2		209159		1266787	
		5	2		209160		1266786	
L45302-6	DUD_10C			209517		1266663		
		1	2		209518		1266660	
		2	2		209518		1266660	
		3	2		209513		1266662	

		4	2		209513		1266661	
		5	2		209514		1266665	
L45302-7	DUD_11C			209535		1266844		
		1	1		209540		1266840	
		2	2		209537		1266843	
		3	2		209536		1266841	
		4	2		209539		1266849	
		5	2		209538		1266844	
		6	1		209539		1266841	
L45302-8	DUD_12C			209630		1266813		
		1	2		209629		1266815	
		2	2		209629		1266811	
		3	2		209628		1266813	
		4	2		209632		1266812	
		5	2		209634		1266808	
L45302-9	DUD_13C			207858		1267240		
		1	2		207858		1267238	
		2	2		207861		1267240	
		3	2		207864		1267234	
		4	2		207858		1267241	
		5	2		207858		1267239	

Sediment grab samples were collected from the King County research vessel *Liberty*, which is equipped with a differential global positioning system (DGPS). Using DGPS, field coordinates were recorded for each cast of the two grab samplers, deployed in tandem, as they contacted the sediment. All field coordinates for each cast listed in the above table are within the +/- 3 meter accuracy limits, as defined in the SAP.

Sample Description Table

Lab Sample #	Station	Sample Collection	Average Sediment Depth	Sample Usage
L45302-1	DUD_1C	Surface Grabs	15 cm	Chemistry
L45302-2	DUD_2C	Surface Grabs	9 cm	Chemistry
L45302-3	DUD_8C	Surface Grabs	8 cm	Chemistry
L45302-4	DUD_8C	Surface Grabs (field replicate)	7 cm	Chemistry
L45302-5	DUD_9C	Surface Grabs	7 cm	Chemistry
L45302-6	DUD_10C	Surface Grabs	8 cm	Chemistry
L45302-7	DUD_11C	Surface Grabs	8 cm	Chemistry
L45302-8	DUD_12C	Surface Grabs	9 cm	Chemistry
L45302-9	DUD_13C	Surface Grabs	15 cm	Chemistry

Sample Collection

Sediment was collected at each station using two stainless steel, modified, 0.1 m^2 Van Veen grab samplers deployed in tandem via hydrowire. For each acceptable deployment, average depths ranging between 7-15 cm of sediment were collected within each grab, allowing for sub-sampling within the upper 6-10 cm of material. As required by the SAP, each sample at every location was composed of sediment aliquots of equal amounts from ten individual Van Veen grabs.

Water depth at the eight subtidal cap sample stations ranged between 5-11 meters (not corrected for tide).

Sample Handling

Close to equal amounts of sediment were sub-sampled from the ten separate grabs used for chemistry analysis. For chemistry testing, 6 to 10 cm deep aliquots, as measured from the sediment surface, were collected using a stainless steel spoon. Sediment that had touched the sides or bottom of the grab sampler was excluded. Less than the top 10 cm of sediment was sub-sampled in those instances where it was not possible to collect material down to the target sediment penetration depth. All aliquots were placed in a covered stainless-steel compositing bowl, specific for that station. After collecting all aliquots from each of ten grabs, the sediment was thoroughly homogenized, then split out into pre-labeled containers. All sample containers were supplied by the King County Environmental Laboratory, first having been pre-cleaned according to analytical specifications.

Decontamination

Individual sets of the sub-sampling and mixing equipment were dedicated to each station, precluding the need for decontamination of said equipment. The Van Veen grab samplers were decontaminated between stations by scrubbing with a brush using 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. They 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 time is defined as that time that sampling commences at each station.

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	L45302-1 to -3, -6 to -9	1000	1300 to 3100	Reduced sample size analyzed due to High Organic Background and TS < 50%
PSD Parameters in the % Fines range	L45302-all	0.1%	0.5%	MDL was updated after the SAP was completed

For all samples where the MDL did not meet the SAP MDL, the TOC levels along with % clay and % slit values were above the detection limit, thus the project objectives were met.

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 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	L45302-1 to 9	24, 25-Mar-08	31-Mar-08	02-Apr-08	6 Months at 4°C	NA
Total Organic Carbon	L45302-1, 2, 3, 4, 6	24-Mar-08	07-Apr-08	15-Apr-08	6 months at -18°C	6 months at -18°C
	L45302-5, 7, 8, 9	24, 25-Mar-08	07-Apr-08	16-Apr-08		
Total Solids	L45302-1 to -9	24, 25-Mar-08	07-Apr-08	07-Apr-08	6 months 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 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.

METALS CHEMISTRY

Completeness
Metal chemistry data are reported for all samples and parameters 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
Metals analysis was not subcontracted for these sets of samples.

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

Target List
The reported target list includes all metals specified in Table 1.

Detection Limits
The detection limits (MDLs) reported for Metals parameters are all within the requirements defined by the SAP with the following exception. Aluminum, Beryllium, Copper, Iron, Manganese, Silver and Zinc for samples L45302-1, -2 were slightly above the SAP values. Total Solids for these two samples were below 50%. All of these elements were detected above the MDL in these 2 samples.

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 during the Third Annual PSDDA Review Meeting. 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	L45302-1 through -9	24, 25-Mar-08	28-Apr-08	28-Apr-08	2 Years at -18°C	6 months
Total Mercury	L45302-1 through -9	24, 25-Mar-08	14-Apr-08	15-Apr-08	28 days at -18°C	NA

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

Method Blanks
All metals method blanks results were less than the MDL

Standard Reference Materials
The SRM analyzed in association with samples included in this data submission is National Research Council of Canada PACS-2. This SRM is not certified for Silver, Arsenic or Cadmium. Acceptance limits for the certified elements 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 indicated in the SAP.

Matrix Spikes

All matrix spike recoveries were within the 75 to 125% QC limits with the following exceptions:

The reported matrix spike recovery of 20% for Antimony in WG96348 for sample numbers L45302-1 to -9 is less than the 75% QC acceptance limit. Antimony results for all samples in this data submission have been qualified with the G flag.

Laboratory Replicate Samples

The relative percent differences (RPDs) for laboratory duplicate results for all metals were less than or equal to the QC limit of 20%.

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.

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
1,4-Dichlorobenzene	L45302-all	(1)	(1)	See explanation below
Benzoic Acid	L45302-all	(1)	(1)	See explanation below
Coprostanol	L45302-all	(1)	(1)	See explanation below
Pentachlorophenol	L45302-all	(1)	(1)	See explanation below
Benzo(a)anthracene	L45302-1,2	(1)	(1)	Total solids <50%
Selected Pesticides	L45302-all	(1)	(1)	See explanation below
Aroclor-1016, 1221, 1232, 1242	L45302-all	(1)	(1)	See Additional QA Issues at the end of this section

(1) See attached SAP MDL Comparison Table

BNAs

1) The reported MDLs for Benzo(a)anthracene for Samples L45302-1 and -2 were greater than the SAP MDL levels due to total solids less than 50%.
2) For all samples, the reported MDLs for 1,4-Dichlorobenzene, Benzoic Acid, Coprostanol, and Pentachlorophenol were greater than the SAP MDL values. The MDL values in the SAP don't match those currently reported by this method. It is still expected the data will meet the project objectives since the reported MDLs for these parameters are at or below the SMS limits.

PCBs

The reported MDLs for Aroclors 1016, 1221, 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 4, 4'-DDT, 4,4'-DDE, 4,4'-DDD, Aldrin, Dieldrin, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Methoxychlor and Toxaphene in all samples were greater than the MDL values listed in the SAP. The reported MDLs for Alpha-BHC, Alpha Chlordane, Beta-BHC, Delta-BHC, Gamma-BHC (Lindane), Heptachlor and Heptachlor Epoxide in samples L45302-1, 2 were greater than the MDL values listed in the SAP due to total solids less than 50 %.

The attached SMS OC and Dry Weight Normalization MDL Check tables compare the reported MDL value to the SMS requirement. All the compounds in the reported MDL met the SMS limits with the exception of Total PCBs for selected samples. The reported levels of Total PCBs based on Aroclors detected should be used for comparison to SMS limits rather the MDL values. Since Aroclors were detected in all samples, the elevated MDLs for Total PCBs are not significant.

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	L45302-1 to 9	24, 25-Mar-08	27-Mar-08	1, 2-Apr-08	1 year at -18°C	40 days at 4°C
Chlorinated Pesticides	L45302-1 to 9	24, 25-Mar-08	28-Mar-08	23, 24-Apr-08	1 year at -18°C	40 days at 4°C
PCB	L45302-1 to 9	24, 25-Mar-08	28-Mar-08	28, 29-Apr-08	1 year at -18°C	40 days at 4°C

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 L45302-1 to 9 had a result above the MDL for Bis (2-ethylhexyl) Phthalate (10.9 ug/Kg), Butyl Benzyl Phthalate (7.62 ug/Kg) Di-n-butyl Phthalate (6.8 ug/Kg) and Benzoic Acid (112 ug/Kg). Sample results for Bis (2-ethylhexyl) Phthalate, Butyl Benzyl Phthalate Di-n-butyl Phthalate and Benzoic Acid for those samples have been qualified with the B flag. All Bis (2-ethylhexyl) Phthalate, Butyl Benzyl Phthalate Di-n-butyl Phthalate and Benzoic Acid results for these samples must be treated as estimated values.

Surrogate Recoveries

Surrogate recovery acceptance limits for sediment samples have been developed based on historical lab performance using the current analytical methods. 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. 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. 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 and alpha Chlordane. All measured recoveries for this SRM were within acceptance limits.

2. PCBs
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. This SRM was not reported due to loss of the extract during sample preparation.

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, except Toxaphene, alpha and gamma Chlordane, 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% with the exception of phenol with an RPD of 130. All phenol results have been flagged with an "E" to indicate an estimated value.

Additional QA Issues:

Pesticide:

All results for Endrin Aldehyde for samples L45302-1 to -9 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, 1221, 1232 and 1242 was not always possible 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-1221	PCB 1232	PCB 1242
L45302-1	x	x	x	x
L45302-2	x		x	x
L45302-3	x	x	x	x
L45302-4	x	x	x	x
L45302-5	x	x	x	x
L45302-6	x		x	x
L45302-7	x		x	x
L45302-8	x	x	x	x
L45302-9	x	x	x	x

TABLE 1
SEDIMENT SAMPLE INVENTORY

Sample	Locator / Description	PSD	Solids	TOC	Metals[1]	BNAs[2]	Pest/ PCBs	Comments
L45302-1	DUD_1C	X	X	X	X	X	X	
L45302-2	DUD_2C	X	X	X	X	X	X	
L45302-3	DUD_8C	X	X	X	X	X	X	
L45302-4	DUD_8C	X	X	X	X	X	X	field replicate
L45302-5	DUD_9C	X	X	X	X	X	X	
L45302-6	DUD_10C	X	X	X	X	X	X	
L45302-7	DUD_11C	X	X	X	X	X	X	
L45302-8	DUD_12C	X	X	X	X	X	X	
L45302-9	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					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:	03/24/08 12:08:00 PM					Sampled:	03/24/08 12:28:00 PM					Sampled:	03/24/08 1:05:00 PM					Sampled:	03/24/08 1:21:00 PM				
Lab ID:	L45302-1					Lab ID:	L45302-2					Lab ID:	L45302-3					Lab ID:	L45302-4				
Matrix:	SALTWTRSED					Matrix:	SALTWTRSED					Matrix:	SALTWTRSED					Matrix:	SALTWTRSED				
% Solids:	44.6					% Solids:	45.6					% Solids:	73.9					% Solids:	75.4				
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(318V1)																				
Clay *	19.8		1.1	2.2	%	19.5		1.1	2.16	%	4.5		0.64	1.28	%	5.3		0.66	1.32	%
Dry Weight Factor	4.9					4.7					1.7					1.8				
Fines *	74.9		1.1	2.2	%	69.2		1.1	2.16	%	10.3		0.64	1.28	%	11.2		0.66	1.32	%
Gravel *	1.5		0.22	2.2	%	1.3		0.22	2.16	%	16.8		0.13	1.28	%	25.2		0.13	1.32	%
p+0.00 *	0.4	<RDL	0.22	2.2	%	0.4	<RDL	0.22	2.16	%	6.4		0.13	1.28	%	6.7		0.13	1.32	%
p+1.00 *	0.8	<RDL	0.22	2.2	%	0.9	<RDL	0.22	2.16	%	9.9		0.13	1.28	%	10.2		0.13	1.32	%
p+10.0(equal/more than) *	15.4		1.1	2.2	%	13		1.1	2.16	%	3.2		0.64	1.28	%	4		0.66	1.32	%
p+2.00 *	3		0.22	2.2	%	5.4		0.22	2.16	%	30.1		0.13	1.28	%	28.1		0.13	1.32	%
p+3.00 *	6.5		0.22	2.2	%	9.4		0.22	2.16	%	19		0.13	1.28	%	17.1		0.13	1.32	%
p+4.00 *	9.8		0.22	2.2	%	9.9		0.22	2.16	%	4.8		0.13	1.28	%	4.2		0.13	1.32	%
p+5.00 *	5.5		1.1	2.2	%	4.3		1.1	2.16	%	2.6		0.64	1.28	%	2.6		0.66	1.32	%
p+6.00 *	31.9		1.1	2.2	%	26		1.1	2.16	%	0.6	<RDL	0.64	1.28	%	0.7	<RDL	0.66	1.32	%
p+7.00 *	13.2		1.1	2.2	%	13		1.1	2.16	%	1.3		0.64	1.28	%	1.3		0.66	1.32	%
p+8.00 *	4.4		1.1	2.2	%	6.5		1.1	2.16	%	1.3		0.64	1.28	%	1.3		0.66	1.32	%
p+9.00 *	4.4		1.1	2.2	%	6.5		1.1	2.16	%	1.3		0.64	1.28	%	1.3		0.66	1.32	%
p-1.00 *		<MDL	0.22	2.2	%	0.3	<RDL	0.22	2.16	%	8.8		0.13	1.28	%	10.4		0.13	1.32	%
p-2.00 *		<MDL	0.22	2.2	%		<MDL	0.22	2.16	%	3.6		0.13	1.28	%	5.9		0.13	1.32	%
p-2.00(less than) *	1.5		0.22	2.2	%	1	<RDL	0.22	2.16	%	4.4		0.13	1.28	%	8.9		0.13	1.32	%
Sand *	20.5		0.22	2.2	%	26		0.22	2.16	%	70.3		0.13	1.28	%	66.2		0.13	1.32	%
Silt *	55.1		1.1	2.2	%	49.8		1.1	2.16	%	5.8		0.64	1.28	%	5.9		0.66	1.32	%
M=CV EPA 9060-PSEP96(337V3)																				
Total Organic Carbon	28900		2900	6030	mg/Kg	24100		3100	6290	mg/Kg	4760		1300	2580	mg/Kg	3540		1000	2100	mg/Kg
M=CV SM2540-G (307V2)																				
Total Solids *	44.6		0.005	0.01	%	45.6		0.005	0.01	%	73.9		0.005	0.01	%	75.4		0.005	0.01	%
M=ES NONE																				
Field Personnel	SH,BK,JB				none	SH,BK,JB				none	SH,BK,JB				none	SH,BK,JB				none
Sampcoordx1 *	1267166				ft	1267175				ft	1266864				ft	1266866				ft
Sampcoordx2 *	1267169				ft	1267170				ft	1266866				ft	1266865				ft
Sampcoordx3 *	1267165				ft	1267165				ft	1266867				ft	1266868				ft
Sampcoordx4 *	1267168				ft	1267166				ft	1266867				ft	1266863				ft
Sampcoordx5 *	1267165				ft	1267166				ft	1266867				ft	1266867				ft
Sampcoordx6 *																1266866				ft
Sampcoordy1 *	208757				ft	208650				ft	208919				ft	208923				ft
Sampcoordy2 *	208756				ft	208657				ft	208918				ft	208928				ft
Sampcoordy3 *	208761				ft	208653				ft	208918				ft	208925				ft
Sampcoordy4 *	208755				ft	208650				ft	208914				ft	208922				ft
Sampcoordy5 *	208754				ft	208654				ft	208917				ft	208918				ft
Sampcoordy6 *																208919				ft
Sample Depth *	5				m	5				m	10				m	10				m
Sample Function																FREP @ L45302-3				none
Sampling Method *	20042				none	20042				none	20042				none	20042				none
Sediment Sampling Depth *	15				cm	9				cm	8				cm	7				cm

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4																				
	Locator: DUD_1C Descrip: CLEANUP AREA PERIM Sampled: 03/24/08 12:08:00 PM Lab ID: L45302-1 Matrix: SALTWTRSED % Solids: 44.6					Locator: DUD_2C Descrip: CLEANUP AREA PERIM Sampled: 03/24/08 12:28:00 PM Lab ID: L45302-2 Matrix: SALTWTRSED % Solids: 45.6					Locator: DUD_8C Descrip: CLEANUP AREA PERIM Sampled: 03/24/08 1:05:00 PM Lab ID: L45302-3 Matrix: SALTWTRSED % Solids: 73.9					Locator: DUD_8C Descrip: CLEANUP AREA PERIM Sampled: 03/24/08 1:21:00 PM Lab ID: L45302-4 Matrix: SALTWTRSED % Solids: 75.4				
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	0-8 cm				cm	0-7 cm				cm	0-6 cm				cm
Sediment Type	21T36				none	21N31				none	34S21				none	34S21				none
Tidal Condition	E				none	E				none	S				none	S				none
Tide Height *	2				ft	1.5				ft	0.7				ft	0.3				ft
M=MT CVAA EPA 7471B (604V4)																				
Mercury, Total, CVAA	0.208		0.011	0.11	mg/Kg	0.185		0.011	0.112	mg/Kg	0.0765		0.0068	0.0674	mg/Kg	0.053	<RDL	0.0068	0.0678	mg/Kg
M=MT ICP EPA3050B/6010C MOD(612V3)																				
Aluminum, Total, ICP	21400		11	55.6	mg/Kg	20600		11	54.8	mg/Kg	10700		6.8	33.7	mg/Kg	12100		6.6	32.9	mg/Kg
Antimony, Total, ICP		<MDL,G	1.7	8.36	mg/Kg		<MDL,G	1.6	8.2	mg/Kg		<MDL,G	1	5.05	mg/Kg		<MDL,G	0.99	4.95	mg/Kg
Arsenic, Total, ICP	15.2		2.7	13.9	mg/Kg	14.6		2.6	13.7	mg/Kg	6.4	<RDL	1.6	8.42	mg/Kg	4.5	<RDL	1.6	8.24	mg/Kg
Beryllium, Total, ICP	0.45	<RDL	0.11	0.556	mg/Kg	0.44	<RDL	0.11	0.548	mg/Kg	0.16	<RDL	0.068	0.337	mg/Kg	0.16	<RDL	0.066	0.329	mg/Kg
Cadmium, Total, ICP	0.7	<RDL	0.22	1.11	mg/Kg	0.53	<RDL	0.22	1.09	mg/Kg	0.42	<RDL	0.14	0.674	mg/Kg	0.23	<RDL	0.13	0.659	mg/Kg
Chromium, Total, ICP	35.9		0.34	1.67	mg/Kg	34.2		0.33	1.64	mg/Kg	22.1		0.2	1.01	mg/Kg	23.7		0.2	0.988	mg/Kg
Copper, Total, ICP	91.3		0.45	2.23	mg/Kg	82.5		0.44	2.19	mg/Kg	50.9		0.27	1.35	mg/Kg	54.6		0.27	1.32	mg/Kg
Iron, Total, ICP	33000		5.6	27.8	mg/Kg	32200		5.5	27.4	mg/Kg	18900		3.4	16.8	mg/Kg	21900		3.3	16.4	mg/Kg
Lead, Total, ICP	60.1		2.2	11.1	mg/Kg	50.7		2.2	10.9	mg/Kg	26.4		1.4	6.74	mg/Kg	18		1.3	6.59	mg/Kg
Manganese, Total, ICP	370		0.22	1.11	mg/Kg	364		0.22	1.09	mg/Kg	226		0.14	0.674	mg/Kg	296		0.13	0.659	mg/Kg
Nickel, Total, ICP	24.9		0.56	2.78	mg/Kg	23.5		0.55	2.74	mg/Kg	17.3		0.34	1.68	mg/Kg	18.8		0.33	1.64	mg/Kg
Selenium, Total, ICP		<MDL	2.7	13.9	mg/Kg		<MDL	2.6	13.7	mg/Kg		<MDL	1.6	8.42	mg/Kg		<MDL	1.6	8.24	mg/Kg
Silver, Total, ICP	0.49	<RDL	0.45	2.23	mg/Kg	0.48	<RDL	0.44	2.19	mg/Kg	0.45	<RDL	0.27	1.35	mg/Kg		<MDL	0.27	1.32	mg/Kg
Thallium, Total, ICP		<MDL	4.5	22.3	mg/Kg		<MDL	4.4	21.9	mg/Kg		<MDL	2.7	13.5	mg/Kg		<MDL	2.7	13.2	mg/Kg
Zinc, Total, ICP	199		0.56	2.78	mg/Kg	168		0.55	2.74	mg/Kg	67		0.34	1.68	mg/Kg	58.1		0.33	1.64	mg/Kg
M=OR EPA 3550B/8270C (7-3-01-004)																				
1,2,4-Trichlorobenzene		<MDL	0.22	0.448	ug/Kg		<MDL	0.22	0.439	ug/Kg		<MDL	0.14	0.271	ug/Kg		<MDL	0.13	0.265	ug/Kg
1,2-Dichlorobenzene		<MDL	0.45	0.897	ug/Kg		<MDL	0.44	0.877	ug/Kg		<MDL	0.27	0.541	ug/Kg	0.48	<RDL	0.27	0.531	ug/Kg
1,3-Dichlorobenzene		<MDL	0.45	0.897	ug/Kg		<MDL	0.44	0.877	ug/Kg		<MDL	0.27	0.541	ug/Kg		<MDL	0.27	0.531	ug/Kg
1,4-Dichlorobenzene	2.42		0.45	0.897	ug/Kg	1.71		0.44	0.877	ug/Kg		<MDL	0.27	0.541	ug/Kg	0.855		0.27	0.531	ug/Kg
2,4-Dimethylphenol		<MDL	2.2	4.48	ug/Kg		<MDL	2.2	4.39	ug/Kg		<MDL	1.4	2.71	ug/Kg		<MDL	1.3	2.65	ug/Kg
2-Methylnaphthalene	11.8		4.5	8.97	ug/Kg	45.8		4.4	8.77	ug/Kg	5.49		2.7	5.41	ug/Kg	3.3	<RDL	2.7	5.31	ug/Kg
2-Methylphenol		<MDL	4.5	8.97	ug/Kg		<MDL	4.4	8.77	ug/Kg		<MDL	2.7	5.41	ug/Kg		<MDL	2.7	5.31	ug/Kg
4-Methylphenol		<MDL	9	17.9	ug/Kg		<MDL	8.8	17.5	ug/Kg		<MDL	5.4	10.8	ug/Kg		<MDL	5.3	10.6	ug/Kg
Acenaphthene	17.6		4.5	8.97	ug/Kg	106		4.4	8.77	ug/Kg	4.2	<RDL	2.7	5.41	ug/Kg	7.72		2.7	5.31	ug/Kg
Acenaphthylene	11.9		4.5	8.97	ug/Kg	19.8		4.4	8.77	ug/Kg	2.8	<RDL	2.7	5.41	ug/Kg	2.7	<RDL	2.7	5.31	ug/Kg
Anthracene	80.9		4.5	8.97	ug/Kg	166		4.4	8.77	ug/Kg	24.6		2.7	5.41	ug/Kg	25.6		2.7	5.31	ug/Kg
Benzo(a)anthracene	325		4.5	8.97	ug/Kg	700		4.4	8.77	ug/Kg	53.5		2.7	5.41	ug/Kg	49.5		2.7	5.31	ug/Kg
Benzo(a)pyrene	265		4.5	8.97	ug/Kg	384		4.4	8.77	ug/Kg	65.6		2.7	5.41	ug/Kg	47.5		2.7	5.31	ug/Kg
Benzo(b)fluoranthene	379		4.5	8.97	ug/Kg	596		4.4	8.77	ug/Kg	82.3		2.7	5.41	ug/Kg	54.4		2.7	5.31	ug/Kg
Benzo(g,h,i)perylene	174		4.5	8.97	ug/Kg	162		4.4	8.77	ug/Kg	36.4		2.7	5.41	ug/Kg	26.4		2.7	5.31	ug/Kg
Benzo(k)fluoranthene	283		4.5	8.97	ug/Kg	417		4.4	8.77	ug/Kg	82.9		2.7	5.41	ug/Kg	50.9		2.7	5.31	ug/Kg
Benzoic Acid	661	B	22	44.8	ug/Kg	1290	B	22	43.9	ug/Kg	287	B	14	27.1	ug/Kg	187	B	13	26.5	ug/Kg
Benzyl Alcohol		<MDL	4.5	8.97	ug/Kg		<MDL	4.4	8.77	ug/Kg		<MDL	2.7	5.41	ug/Kg		<MDL	2.7	5.31	ug/Kg
Benzyl Butyl Phthalate	175	B	2.2	4.48	ug/Kg	128	B	2.2	4.39	ug/Kg	31.9	B	1.4	2.71	ug/Kg	19.2	B	1.3	2.65	ug/Kg
Bis(2-Ethylhexyl)Phthalate	2330	B	9	17.9	ug/Kg	1580	B	8.8	17.5	ug/Kg	552	B	5.4	10.8	ug/Kg	247	B	5.3	10.6	ug/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

	DUD_1C	DUD_2C	DUD_8C	DUD_8C
Locator:	DUD_1C	DUD_2C	DUD_8C	DUD_8C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sampled:	03/24/08 12:08:00 PM	03/24/08 12:28:00 PM	03/24/08 1:05:00 PM	03/24/08 1:21:00 PM
Lab ID:	L45302-1	L45302-2	L45302-3	L45302-4
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	44.6	45.6	73.9	75.4

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	9	17.9	ug/Kg		<MDL	8.8	17.5	ug/Kg		<MDL	5.4	10.8	ug/Kg		<MDL	5.3	10.6	ug/Kg
Carbazole	167		4.5	8.97	ug/Kg	36.8		4.4	8.77	ug/Kg	11.1		2.7	5.41	ug/Kg	8.14		2.7	5.31	ug/Kg
Chrysene	453		4.5	8.97	ug/Kg	750		4.4	8.77	ug/Kg	83.4		2.7	5.41	ug/Kg	67.9		2.7	5.31	ug/Kg
Coprostanol		<MDL	90	179	ug/Kg		<MDL	88	175	ug/Kg		<MDL	54	108	ug/Kg		<MDL	53	106	ug/Kg
Dibenzo(a,h)anthracene	96.2		4.5	8.97	ug/Kg	99.6		4.4	8.77	ug/Kg	12.5		2.7	5.41	ug/Kg	7.9		2.7	5.31	ug/Kg
Dibenzofuran	14.5		4.5	8.97	ug/Kg	70		4.4	8.77	ug/Kg	5.3	<RDL	2.7	5.41	ug/Kg	6.23		2.7	5.31	ug/Kg
Diethyl Phthalate		<MDL	9	17.9	ug/Kg		<MDL	8.8	17.5	ug/Kg		<MDL	5.4	10.8	ug/Kg		<MDL	5.3	10.6	ug/Kg
Dimethyl Phthalate		<MDL	9	17.9	ug/Kg		<MDL	8.8	17.5	ug/Kg		<MDL	5.4	10.8	ug/Kg	15.5		5.3	10.6	ug/Kg
Di-N-Butyl Phthalate	52.2	B	9	17.9	ug/Kg	36	B	8.8	17.5	ug/Kg	18.9	B	5.4	10.8	ug/Kg	7.2	<RDL,B	5.3	10.6	ug/Kg
Di-N-Octyl Phthalate		<MDL	9	17.9	ug/Kg		<MDL	8.8	17.5	ug/Kg		<MDL	5.4	10.8	ug/Kg		<MDL	5.3	10.6	ug/Kg
Fluoranthene	536		4.5	8.97	ug/Kg	1580		4.4	8.77	ug/Kg	75.1		2.7	5.41	ug/Kg	110		2.7	5.31	ug/Kg
Fluorene	52.5		4.5	8.97	ug/Kg	130		4.4	8.77	ug/Kg	25.4		2.7	5.41	ug/Kg	13.4		2.7	5.31	ug/Kg
Hexachlorobenzene		<MDL	0.22	0.448	ug/Kg		<MDL	0.22	0.439	ug/Kg		<MDL	0.14	0.271	ug/Kg		<MDL	0.13	0.265	ug/Kg
Hexachlorobutadiene		<MDL	1.1	2.24	ug/Kg		<MDL	1.1	2.19	ug/Kg		<MDL	0.68	1.35	ug/Kg		<MDL	0.66	1.33	ug/Kg
Hexachloroethane		<MDL	2.2	4.48	ug/Kg		<MDL	2.2	4.39	ug/Kg		<MDL	1.4	2.71	ug/Kg		<MDL	1.3	2.65	ug/Kg
Indeno(1,2,3-Cd)Pyrene	192		4.5	8.97	ug/Kg	209		4.4	8.77	ug/Kg	41.4		2.7	5.41	ug/Kg	29.8		2.7	5.31	ug/Kg
Naphthalene	9.78		4.5	8.97	ug/Kg	13.1		4.4	8.77	ug/Kg	3.5	<RDL	2.7	5.41	ug/Kg		<MDL	2.7	5.31	ug/Kg
N-Nitrosodiphenylamine		<MDL	9	17.9	ug/Kg		<MDL	8.8	17.5	ug/Kg		<MDL	5.4	10.8	ug/Kg		<MDL	5.3	10.6	ug/Kg
Pentachlorophenol		<MDL	22	44.8	ug/Kg		<MDL	22	43.9	ug/Kg		<MDL	14	27.1	ug/Kg		<MDL	13	26.5	ug/Kg
Phenanthrene	235		4.5	8.97	ug/Kg	662		4.4	8.77	ug/Kg	46		2.7	5.41	ug/Kg	68.2		2.7	5.31	ug/Kg
Phenol	83.4	E	9	17.9	ug/Kg	43.4	E	8.8	17.5	ug/Kg		<MDL,E	5.4	10.8	ug/Kg		<MDL,E	5.3	10.6	ug/Kg
Pyrene	910		4.5	8.97	ug/Kg	2140		4.4	8.77	ug/Kg	169		2.7	5.41	ug/Kg	135		2.7	5.31	ug/Kg
Total HPAHS	3610		4.5	8.97	ug/Kg	6860		4.4	8.77	ug/Kg	702		2.7	5.41	ug/Kg	580		2.7	5.31	ug/Kg
Total LPAHs	397		4.5	8.97	ug/Kg	1090		4.4	8.77	ug/Kg	97.4		2.7	5.41	ug/Kg	123		2.7	5.31	ug/Kg
M=OR EPA 8081A/8082 (7-3-03-002)																				
4,4'-DDD		<MDL	1.5	2.98	ug/Kg		<MDL	1.5	2.92	ug/Kg	2.65		0.91	1.8	ug/Kg	1.2	<RDL	0.89	1.76	ug/Kg
4,4'-DDE		<MDL	1.5	2.98	ug/Kg		<MDL	1.5	2.92	ug/Kg		<MDL	0.91	1.8	ug/Kg		<MDL	0.89	1.76	ug/Kg
4,4'-DDT		<MDL	1.5	2.98	ug/Kg		<MDL	1.5	2.92	ug/Kg		<MDL	0.91	1.8	ug/Kg		<MDL	0.89	1.76	ug/Kg
Aldrin		<MDL	1.5	2.98	ug/Kg		<MDL	1.5	2.92	ug/Kg		<MDL	0.91	1.8	ug/Kg		<MDL	0.89	1.76	ug/Kg
Alpha-BHC		<MDL	0.74	1.5	ug/Kg		<MDL	0.72	1.46	ug/Kg		<MDL	0.45	0.903	ug/Kg		<MDL	0.44	0.885	ug/Kg
Alpha-Chlordane		<MDL	0.74	1.5	ug/Kg		<MDL	0.72	1.46	ug/Kg		<MDL	0.45	0.903	ug/Kg		<MDL	0.44	0.885	ug/Kg
Beta-BHC		<MDL	0.74	1.5	ug/Kg		<MDL	0.72	1.46	ug/Kg		<MDL	0.45	0.903	ug/Kg		<MDL	0.44	0.885	ug/Kg
Delta-BHC		<MDL	0.74	1.5	ug/Kg		<MDL	0.72	1.46	ug/Kg		<MDL	0.45	0.903	ug/Kg		<MDL	0.44	0.885	ug/Kg
Dieldrin		<MDL	1.5	2.98	ug/Kg		<MDL	1.5	2.92	ug/Kg		<MDL	0.91	1.8	ug/Kg		<MDL	0.89	1.76	ug/Kg
Endosulfan I		<MDL	1.5	2.98	ug/Kg		<MDL	1.5	2.92	ug/Kg		<MDL	0.91	1.8	ug/Kg		<MDL	0.89	1.76	ug/Kg
Endosulfan II		<MDL	1.5	2.98	ug/Kg		<MDL	1.5	2.92	ug/Kg		<MDL	0.91	1.8	ug/Kg		<MDL	0.89	1.76	ug/Kg
Endosulfan Sulfate		<MDL	1.5	2.98	ug/Kg		<MDL	1.5	2.92	ug/Kg		<MDL	0.91	1.8	ug/Kg		<MDL	0.89	1.76	ug/Kg
Endrin		<MDL	1.5	2.98	ug/Kg		<MDL	1.5	2.92	ug/Kg		<MDL	0.91	1.8	ug/Kg		<MDL	0.89	1.76	ug/Kg
Endrin Aldehyde		<MDL,E	1.5	2.98	ug/Kg		<MDL,E	1.5	2.92	ug/Kg		<MDL,E	0.91	1.8	ug/Kg		<MDL,E	0.89	1.76	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.74	1.5	ug/Kg		<MDL	0.72	1.46	ug/Kg		<MDL	0.45	0.903	ug/Kg		<MDL	0.44	0.885	ug/Kg
Gamma-Chlordane	6.84		0.74	1.5	ug/Kg	4.25		0.72	1.46	ug/Kg		<MDL	0.45	0.903	ug/Kg		<MDL	0.44	0.885	ug/Kg
Heptachlor		<MDL	0.74	1.5	ug/Kg		<MDL	0.72	1.46	ug/Kg		<MDL	0.45	0.903	ug/Kg		<MDL	0.44	0.885	ug/Kg
Heptachlor Epoxide		<MDL	0.74	1.5	ug/Kg		<MDL	0.72	1.46	ug/Kg		<MDL	0.45	0.903	ug/Kg		<MDL	0.44	0.885	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:	03/24/08 12:08:00 PM					Sampled:	03/24/08 12:28:00 PM					Sampled:	03/24/08 1:05:00 PM					Sampled:	03/24/08 1:21:00 PM				
Lab ID:	L45302-1					Lab ID:	L45302-2					Lab ID:	L45302-3					Lab ID:	L45302-4				
Matrix:	SALTWTRSED					Matrix:	SALTWTRSED					Matrix:	SALTWTRSED					Matrix:	SALTWTRSED				
% Solids:	44.6					% Solids:	45.6					% Solids:	73.9					% Solids:	75.4				
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																				
Methoxychlor		<MDL	7.4	15	ug/Kg		<MDL	7.2	14.6	ug/Kg		<MDL	4.5	9.03	ug/Kg		<MDL	4.4	8.85	ug/Kg
Toxaphene		<MDL	15	29.8	ug/Kg		<MDL	15	29.2	ug/Kg		<MDL	9.1	18	ug/Kg		<MDL	8.9	17.6	ug/Kg
M=OR EPA 8081A/8082 (7-3-103-000)																				
Aroclor 1016		<MDL,TA	61	120	ug/Kg		<MDL,TA	33	65.1	ug/Kg		<MDL,TA	130	257	ug/Kg		<MDL,TA	48	95.1	ug/Kg
Aroclor 1221		<MDL,TA	12	24.4	ug/Kg		<MDL,TA	7.9	15.9	ug/Kg		<MDL,TA	24	48.6	ug/Kg		<MDL,TA	9.3	18.4	ug/Kg
Aroclor 1232		<MDL,TA	90	180	ug/Kg		<MDL,TA	42	83.6	ug/Kg		<MDL,TA	220	434	ug/Kg		<MDL,TA	80	160	ug/Kg
Aroclor 1242		<MDL,TA	94	190	ug/Kg		<MDL,TA	46	93.4	ug/Kg		<MDL,TA	200	403	ug/Kg		<MDL,TA	86	171	ug/Kg
Aroclor 1248	87.4		1.9	3.74	ug/Kg	41.9		1.8	3.66	ug/Kg	165		1.1	2.26	ug/Kg	67.8		1.1	2.21	ug/Kg
Aroclor 1254	112		1.9	3.74	ug/Kg	56.8		1.8	3.66	ug/Kg	165		1.1	2.26	ug/Kg	78.8		1.1	2.21	ug/Kg
Aroclor 1260	63.2		1.9	3.74	ug/Kg	42.8		1.8	3.66	ug/Kg	77.4		1.1	2.26	ug/Kg	26.3		1.1	2.21	ug/Kg
Total Aroclors	262		1.9	3.74	ug/Kg	142		1.8	3.66	ug/Kg	407		1.1	2.26	ug/Kg	172		1.1	2.21	ug/Kg

* Not converted to dry weight basis for this parameter

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

	DUD_9C	DUD_10C	DUD_11C	DUD_12C
Locator:	DUD_9C	DUD_10C	DUD_11C	DUD_12C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sampled:	03/24/08 2:03:00 PM	03/24/08 2:30:00 PM	03/25/08 9:00:00 AM	03/25/08 9:45:00 AM
Lab ID:	L45302-5	L45302-6	L45302-7	L45302-8
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	72.1	65.7	72.8	64.9

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(318V1)																				
Clay *	5.8		0.64	1.28	%	12.2		0.76	1.52	%	5.9		0.65	1.31	%	13.1		0.77	1.54	%
Dry Weight Factor	1.8					2.3					1.8					2.4				
Fines *	16		0.64	1.28	%	33.5		0.76	1.52	%	15.7		0.65	1.31	%	43.2		0.77	1.54	%
Gravel *	10.2		0.13	1.28	%	4.7		0.15	1.52	%	6.8		0.13	1.31	%	0.4	<RDL	0.15	1.54	%
p+0.00 *	4.4		0.13	1.28	%	2.7		0.15	1.52	%	3.7		0.13	1.31	%	0.6	<RDL	0.15	1.54	%
p+1.00 *	11.2		0.13	1.28	%	11.9		0.15	1.52	%	7.2		0.13	1.31	%	1.7		0.15	1.54	%
p+10.0(equal/more than) *	3.8		0.64	1.28	%	9.1		0.76	1.52	%	3.9		0.65	1.31	%	9.3		0.77	1.54	%
p+2.00 *	35.7		0.13	1.28	%	24.3		0.15	1.52	%	28.7		0.13	1.31	%	13.2		0.15	1.54	%
p+3.00 *	16.2		0.13	1.28	%	13.9		0.15	1.52	%	28.1		0.13	1.31	%	28.4		0.15	1.54	%
p+4.00 *	6.3		0.13	1.28	%	7.7		0.15	1.52	%	6.8		0.13	1.31	%	12.8		0.15	1.54	%
p+5.00 *	3.2		0.64	1.28	%	4.6		0.76	1.52	%	2.6		0.65	1.31	%	4.6		0.77	1.54	%
p+6.00 *	2.6		0.64	1.28	%	4.6		0.76	1.52	%	2.6		0.65	1.31	%	10.8		0.77	1.54	%
p+7.00 *	2.6		0.64	1.28	%	7.6		0.76	1.52	%	2		0.65	1.31	%	8.5		0.77	1.54	%
p+8.00 *	1.9		0.64	1.28	%	4.6		0.76	1.52	%	2.6		0.65	1.31	%	6.2		0.77	1.54	%
p+9.00 *	1.9		0.64	1.28	%	3		0.76	1.52	%	2		0.65	1.31	%	3.9		0.77	1.54	%
p-1.00 *	3.6		0.13	1.28	%	1.4		0.15	1.52	%	3.3		0.13	1.31	%	0.4	<RDL	0.15	1.54	%
p-2.00 *	1.4		0.13	1.28	%	0.7	<RDL	0.15	1.52	%	1	<RDL	0.13	1.31	%		<MDL	0.15	1.54	%
p-2.00(less than) *	5.2		0.13	1.28	%	2.6		0.15	1.52	%	2.6		0.13	1.31	%		<MDL	0.15	1.54	%
Sand *	73.8		0.13	1.28	%	60.4		0.15	1.52	%	74.6		0.13	1.31	%	56.7		0.15	1.54	%
Silt *	10.2		0.64	1.28	%	21.3		0.76	1.52	%	9.8		0.65	1.31	%	30.1		0.77	1.54	%
M=CV EPA 9060-PSEP96(337V3)																				
Total Organic Carbon	6730		980	1970	mg/Kg	9270		2700	5540	mg/Kg	6650		2200	4410	mg/Kg	12600		1800	3760	mg/Kg
M=CV SM2540-G (307V2)																				
Total Solids *	72.1		0.005	0.01	%	65.7		0.005	0.01	%	72.8		0.005	0.01	%	64.9		0.005	0.01	%
M=ES NONE																				
Field Personnel	SH,BK,JB				none	SH,BK,JB				none	JB,CB,CE,JDD				none	JB,CB,CE,JDD				none
Sampcoordx1 *	1266786				ft	1266660				ft	1266840				ft	1266815				ft
Sampcoordx2 *	1266784				ft	1266660				ft	1266843				ft	1266811				ft
Sampcoordx3 *	1266781				ft	1266662				ft	1266841				ft	1266813				ft
Sampcoordx4 *	1266787				ft	1266661				ft	1266849				ft	1266812				ft
Sampcoordx5 *	1266786				ft	1266665				ft	1266844				ft	1266808				ft
Sampcoordx6 *											1266841				ft					
Sampcoordy1 *	209157				ft	209518				ft	209540				ft	209629				ft
Sampcoordy2 *	209158				ft	209518				ft	209537				ft	209629				ft
Sampcoordy3 *	209159				ft	209513				ft	209536				ft	209628				ft
Sampcoordy4 *	209159				ft	209513				ft	209539				ft	209632				ft
Sampcoordy5 *	209160				ft	209514				ft	209538				ft	209634				ft
Sampcoordy6 *											209539				ft					
Sample Depth *	10				m	11				m	11				m	11				m
Sample Function																				
Sampling Method *	20042				none	20042				none	20042				none	20042				none
Sediment Sampling Depth *	7				cm	8				cm	8				cm	9				cm

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

	Locator:	Descrip:	Sampled:	Lab ID:	Matrix:	% Solids:
	DUD_9C	CLEANUP AREA PERIM	03/24/08 2:03:00 PM	L45302-5	SALTWTRSED	72.1
	DUD_10C	CLEANUP AREA PERIM	03/24/08 2:30:00 PM	L45302-6	SALTWTRSED	65.7
	DUD_11C	CLEANUP AREA PERIM	03/25/08 9:00:00 AM	L45302-7	SALTWTRSED	72.8
	DUD_12C	CLEANUP AREA PERIM	03/25/08 9:45:00 AM	L45302-8	SALTWTRSED	64.9

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 *	0-6 cm				cm	0-7 cm				cm	0-7 cm				cm	0-8 cm				cm
Sediment Type	34S21				none	23N31				none	32N30				none	23N30				none
Tidal Condition	S				none	F				none	E				none	E				none
Tide Height *	0.8				ft	1.5				ft	9				ft	8				ft
M=MT CVAA EPA 7471B (604V4)																				
Mercury, Total, CVAA	0.0824		0.0067	0.0666	mg/Kg	0.128		0.0081	0.0801	mg/Kg	0.0732		0.0066	0.0661	mg/Kg	0.188		0.0077	0.0764	mg/Kg
M=MT ICP EPA3050B/6010C MOD(612V3)																				
Aluminum, Total, ICP	10900		6.9	34.5	mg/Kg	13000		7.6	38.1	mg/Kg	11800		6.9	34.2	mg/Kg	14500		7.7	38.4	mg/Kg
Antimony, Total, ICP		<MDL,G	1	5.19	mg/Kg		<MDL,G	1.1	5.71	mg/Kg		<MDL,G	1	5.12	mg/Kg		<MDL,G	1.2	5.75	mg/Kg
Arsenic, Total, ICP	6.2	<RDL	1.7	8.64	mg/Kg	9.62		1.8	9.5	mg/Kg	5.5	<RDL	1.6	8.54	mg/Kg	12		1.8	9.58	mg/Kg
Beryllium, Total, ICP	0.17	<RDL	0.069	0.345	mg/Kg	0.26	<RDL	0.076	0.381	mg/Kg	0.19	<RDL	0.069	0.342	mg/Kg	0.29	<RDL	0.077	0.384	mg/Kg
Cadmium, Total, ICP	0.43	<RDL	0.14	0.692	mg/Kg	0.44	<RDL	0.15	0.76	mg/Kg	0.21	<RDL	0.14	0.683	mg/Kg	0.74	<RDL	0.15	0.767	mg/Kg
Chromium, Total, ICP	21.6		0.21	1.04	mg/Kg	25.6		0.23	1.14	mg/Kg	21.2		0.21	1.02	mg/Kg	32.7		0.23	1.15	mg/Kg
Copper, Total, ICP	52.1		0.28	1.38	mg/Kg	49.3		0.3	1.52	mg/Kg	49.7		0.27	1.37	mg/Kg	71.3		0.31	1.53	mg/Kg
Iron, Total, ICP	19600		3.5	17.3	mg/Kg	21200		3.8	19	mg/Kg	20100		3.4	17	mg/Kg	28000		3.9	19.1	mg/Kg
Lead, Total, ICP	39.1		1.4	6.92	mg/Kg	43.5		1.5	7.6	mg/Kg	19.8		1.4	6.83	mg/Kg	94.9		1.5	7.67	mg/Kg
Manganese, Total, ICP	234		0.14	0.692	mg/Kg	236		0.15	0.76	mg/Kg	243		0.14	0.683	mg/Kg	253		0.15	0.767	mg/Kg
Nickel, Total, ICP	18		0.35	1.73	mg/Kg	20.7		0.38	1.9	mg/Kg	19.6		0.34	1.7	mg/Kg	27.6		0.39	1.91	mg/Kg
Selenium, Total, ICP		<MDL	1.7	8.64	mg/Kg		<MDL	1.8	9.5	mg/Kg		<MDL	1.6	8.54	mg/Kg		<MDL	1.8	9.58	mg/Kg
Silver, Total, ICP	0.36	<RDL	0.28	1.38	mg/Kg		<MDL	0.3	1.52	mg/Kg		<MDL	0.27	1.37	mg/Kg	0.51	<RDL	0.31	1.53	mg/Kg
Thallium, Total, ICP		<MDL	2.8	13.8	mg/Kg		<MDL	3	15.2	mg/Kg		<MDL	2.7	13.7	mg/Kg		<MDL	3.1	15.3	mg/Kg
Zinc, Total, ICP	74.8		0.35	1.73	mg/Kg	107		0.38	1.9	mg/Kg	74		0.34	1.7	mg/Kg	147		0.39	1.91	mg/Kg
M=OR EPA 3550B/8270C (7-3-01-004)																				
1,2,4-Trichlorobenzene		<MDL	0.14	0.277	ug/Kg		<MDL	0.15	0.304	ug/Kg		<MDL	0.14	0.275	ug/Kg		<MDL	0.15	0.308	ug/Kg
1,2-Dichlorobenzene	0.839		0.28	0.555	ug/Kg		<MDL	0.3	0.609	ug/Kg		<MDL	0.27	0.549	ug/Kg		<MDL	0.31	0.616	ug/Kg
1,3-Dichlorobenzene		<MDL	0.28	0.555	ug/Kg		<MDL	0.3	0.609	ug/Kg		<MDL	0.27	0.549	ug/Kg		<MDL	0.31	0.616	ug/Kg
1,4-Dichlorobenzene	3.2		0.28	0.555	ug/Kg	3.58		0.3	0.609	ug/Kg	1.48		0.27	0.549	ug/Kg	5.81		0.31	0.616	ug/Kg
2,4-Dimethylphenol		<MDL	1.4	2.77	ug/Kg		<MDL	1.5	3.04	ug/Kg		<MDL	1.4	2.75	ug/Kg		<MDL	1.5	3.08	ug/Kg
2-Methylnaphthalene	5.1	<RDL	2.8	5.55	ug/Kg	6.77		3	6.09	ug/Kg	4.7	<RDL	2.7	5.49	ug/Kg	10.2		3.1	6.16	ug/Kg
2-Methylphenol		<MDL	2.8	5.55	ug/Kg		<MDL	3	6.09	ug/Kg		<MDL	2.7	5.49	ug/Kg		<MDL	3.1	6.16	ug/Kg
4-Methylphenol		<MDL	5.5	11.1	ug/Kg		<MDL	6.1	12.2	ug/Kg		<MDL	5.5	11	ug/Kg		<MDL	6.2	12.3	ug/Kg
Acenaphthene	5	<RDL	2.8	5.55	ug/Kg	5.3	<RDL	3	6.09	ug/Kg	3.4	<RDL	2.7	5.49	ug/Kg	10.2		3.1	6.16	ug/Kg
Acenaphthylene	4.2	<RDL	2.8	5.55	ug/Kg	3.8	<RDL	3	6.09	ug/Kg	3.8	<RDL	2.7	5.49	ug/Kg	7.46		3.1	6.16	ug/Kg
Anthracene	25.1		2.8	5.55	ug/Kg	41.1		3	6.09	ug/Kg	27.7		2.7	5.49	ug/Kg	56.5		3.1	6.16	ug/Kg
Benzo(a)anthracene	52.1		2.8	5.55	ug/Kg	84.9		3	6.09	ug/Kg	90.9		2.7	5.49	ug/Kg	162		3.1	6.16	ug/Kg
Benzo(a)pyrene	71		2.8	5.55	ug/Kg	109		3	6.09	ug/Kg	92		2.7	5.49	ug/Kg	194		3.1	6.16	ug/Kg
Benzo(b)fluoranthene	92.5		2.8	5.55	ug/Kg	145		3	6.09	ug/Kg	128		2.7	5.49	ug/Kg	222		3.1	6.16	ug/Kg
Benzo(g,h,i)perylene	39.4		2.8	5.55	ug/Kg	63.9		3	6.09	ug/Kg	54		2.7	5.49	ug/Kg	122		3.1	6.16	ug/Kg
Benzo(k)fluoranthene	66		2.8	5.55	ug/Kg	103		3	6.09	ug/Kg	87.9		2.7	5.49	ug/Kg	206		3.1	6.16	ug/Kg
Benzoic Acid	239	B	14	27.7	ug/Kg	286	B	15	30.4	ug/Kg	217	B	14	27.5	ug/Kg	260	B	15	30.8	ug/Kg
Benzyl Alcohol		<MDL	2.8	5.55	ug/Kg		<MDL	3	6.09	ug/Kg		<MDL	2.7	5.49	ug/Kg		<MDL	3.1	6.16	ug/Kg
Benzyl Butyl Phthalate	25.1	B	1.4	2.77	ug/Kg	44.1	B	1.5	3.04	ug/Kg	73.8	B	1.4	2.75	ug/Kg	95.5	B	1.5	3.08	ug/Kg
Bis(2-Ethylhexyl)Phthalate	393	B	5.5	11.1	ug/Kg	329	B	6.1	12.2	ug/Kg	559	B	5.5	11	ug/Kg	958	B	6.2	12.3	ug/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

	DUD_9C	DUD_10C	DUD_11C	DUD_12C
Locator:	DUD_9C	DUD_10C	DUD_11C	DUD_12C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sampled:	03/24/08 2:03:00 PM	03/24/08 2:30:00 PM	03/25/08 9:00:00 AM	03/25/08 9:45:00 AM
Lab ID:	L45302-5	L45302-6	L45302-7	L45302-8
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	72.1	65.7	72.8	64.9

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																				
Caffeine		<MDL	5.5	11.1	ug/Kg		<MDL	6.1	12.2	ug/Kg		<MDL	5.5	11	ug/Kg		<MDL	6.2	12.3	ug/Kg
Carbazole	9.81		2.8	5.55	ug/Kg	15.1		3	6.09	ug/Kg	14.4		2.7	5.49	ug/Kg	24.5		3.1	6.16	ug/Kg
Chrysene	87.5		2.8	5.55	ug/Kg	128		3	6.09	ug/Kg	117		2.7	5.49	ug/Kg	210		3.1	6.16	ug/Kg
Coprostanol		<MDL	55	111	ug/Kg		<MDL	61	122	ug/Kg		<MDL	55	110	ug/Kg		<MDL	62	123	ug/Kg
Dibenzo(a,h)anthracene	15.7		2.8	5.55	ug/Kg	25.9		3	6.09	ug/Kg	20.6		2.7	5.49	ug/Kg	61.3		3.1	6.16	ug/Kg
Dibenzofuran	4.3	<RDL	2.8	5.55	ug/Kg	5.2	<RDL	3	6.09	ug/Kg	4.7	<RDL	2.7	5.49	ug/Kg	7.64		3.1	6.16	ug/Kg
Diethyl Phthalate		<MDL	5.5	11.1	ug/Kg		<MDL	6.1	12.2	ug/Kg		<MDL	5.5	11	ug/Kg		<MDL	6.2	12.3	ug/Kg
Dimethyl Phthalate		<MDL	5.5	11.1	ug/Kg		<MDL	6.1	12.2	ug/Kg		<MDL	5.5	11	ug/Kg		<MDL	6.2	12.3	ug/Kg
Di-N-Butyl Phthalate	1320	B	5.5	11.1	ug/Kg	12.8	B	6.1	12.2	ug/Kg	14.8	B	5.5	11	ug/Kg	19.9	B	6.2	12.3	ug/Kg
Di-N-Octyl Phthalate		<MDL	5.5	11.1	ug/Kg		<MDL	6.1	12.2	ug/Kg		<MDL	5.5	11	ug/Kg		<MDL	6.2	12.3	ug/Kg
Fluoranthene	78.4		2.8	5.55	ug/Kg	133		3	6.09	ug/Kg	150		2.7	5.49	ug/Kg	254		3.1	6.16	ug/Kg
Fluorene	27		2.8	5.55	ug/Kg	28.9		3	6.09	ug/Kg	25.1		2.7	5.49	ug/Kg	36.1		3.1	6.16	ug/Kg
Hexachlorobenzene		<MDL	0.14	0.277	ug/Kg		<MDL	0.15	0.304	ug/Kg		<MDL	0.14	0.275	ug/Kg		<MDL	0.15	0.308	ug/Kg
Hexachlorobutadiene		<MDL	0.69	1.39	ug/Kg		<MDL	0.76	1.52	ug/Kg		<MDL	0.69	1.37	ug/Kg		<MDL	0.77	1.54	ug/Kg
Hexachloroethane		<MDL	1.4	2.77	ug/Kg		<MDL	1.5	3.04	ug/Kg		<MDL	1.4	2.75	ug/Kg		<MDL	1.5	3.08	ug/Kg
Indeno(1,2,3-Cd)Pyrene	44.2		2.8	5.55	ug/Kg	69.6		3	6.09	ug/Kg	59.9		2.7	5.49	ug/Kg	131		3.1	6.16	ug/Kg
Naphthalene	4	<RDL	2.8	5.55	ug/Kg		<MDL	3	6.09	ug/Kg		<MDL	2.7	5.49	ug/Kg	9.78		3.1	6.16	ug/Kg
N-Nitrosodiphenylamine		<MDL	5.5	11.1	ug/Kg		<MDL	6.1	12.2	ug/Kg		<MDL	5.5	11	ug/Kg		<MDL	6.2	12.3	ug/Kg
Pentachlorophenol		<MDL	14	27.7	ug/Kg		<MDL	15	30.4	ug/Kg		<MDL	14	27.5	ug/Kg		<MDL	15	30.8	ug/Kg
Phenanthrene	45.5		2.8	5.55	ug/Kg	66.7		3	6.09	ug/Kg	65.7		2.7	5.49	ug/Kg	149		3.1	6.16	ug/Kg
Phenol		<MDL,E	5.5	11.1	ug/Kg		<MDL,E	6.1	12.2	ug/Kg		<MDL,E	5.5	11	ug/Kg	70.7	E	6.2	12.3	ug/Kg
Pyrene	164		2.8	5.55	ug/Kg	225		3	6.09	ug/Kg	206		2.7	5.49	ug/Kg	569		3.1	6.16	ug/Kg
Total HPAHS	710		2.8	5.55	ug/Kg	1090		3	6.09	ug/Kg	989		2.7	5.49	ug/Kg	2110		3.1	6.16	ug/Kg
Total LPAHs	99.6		2.8	5.55	ug/Kg	141		3	6.09	ug/Kg	119		2.7	5.49	ug/Kg	265		3.1	6.16	ug/Kg
M=OR EPA 8081A/8082 (7-3-03-002)																				
4,4'-DDD	1.8	<RDL	0.93	1.84	ug/Kg		<MDL	1	2.02	ug/Kg		<MDL	0.92	1.83	ug/Kg	1.8	<RDL	1	2.05	ug/Kg
4,4'-DDE		<MDL	0.93	1.84	ug/Kg		<MDL	1	2.02	ug/Kg		<MDL	0.92	1.83	ug/Kg		<MDL	1	2.05	ug/Kg
4,4'-DDT		<MDL	0.93	1.84	ug/Kg		<MDL	1	2.02	ug/Kg		<MDL	0.92	1.83	ug/Kg		<MDL	1	2.05	ug/Kg
Aldrin		<MDL	0.93	1.84	ug/Kg		<MDL	1	2.02	ug/Kg		<MDL	0.92	1.83	ug/Kg		<MDL	1	2.05	ug/Kg
Alpha-BHC		<MDL	0.46	0.925	ug/Kg		<MDL	0.5	1.02	ug/Kg		<MDL	0.45	0.916	ug/Kg		<MDL	0.51	1.03	ug/Kg
Alpha-Chlordane		<MDL	0.46	0.925	ug/Kg		<MDL	0.5	1.02	ug/Kg		<MDL	0.45	0.916	ug/Kg		<MDL	0.51	1.03	ug/Kg
Beta-BHC		<MDL	0.46	0.925	ug/Kg		<MDL	0.5	1.02	ug/Kg		<MDL	0.45	0.916	ug/Kg		<MDL	0.51	1.03	ug/Kg
Delta-BHC		<MDL	0.46	0.925	ug/Kg		<MDL	0.5	1.02	ug/Kg		<MDL	0.45	0.916	ug/Kg		<MDL	0.51	1.03	ug/Kg
Dieldrin		<MDL	0.93	1.84	ug/Kg		<MDL	1	2.02	ug/Kg		<MDL	0.92	1.83	ug/Kg		<MDL	1	2.05	ug/Kg
Endosulfan I		<MDL	0.93	1.84	ug/Kg		<MDL	1	2.02	ug/Kg		<MDL	0.92	1.83	ug/Kg		<MDL	1	2.05	ug/Kg
Endosulfan II		<MDL	0.93	1.84	ug/Kg		<MDL	1	2.02	ug/Kg		<MDL	0.92	1.83	ug/Kg		<MDL	1	2.05	ug/Kg
Endosulfan Sulfate		<MDL	0.93	1.84	ug/Kg		<MDL	1	2.02	ug/Kg		<MDL	0.92	1.83	ug/Kg		<MDL	1	2.05	ug/Kg
Endrin		<MDL	0.93	1.84	ug/Kg		<MDL	1	2.02	ug/Kg		<MDL	0.92	1.83	ug/Kg		<MDL	1	2.05	ug/Kg
Endrin Aldehyde		<MDL,E	0.93	1.84	ug/Kg		<MDL,E	1	2.02	ug/Kg		<MDL,E	0.92	1.83	ug/Kg		<MDL,E	1	2.05	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.46	0.925	ug/Kg		<MDL	0.5	1.02	ug/Kg		<MDL	0.45	0.916	ug/Kg		<MDL	0.51	1.03	ug/Kg
Gamma-Chlordane		<MDL	0.46	0.925	ug/Kg		<MDL	0.5	1.02	ug/Kg		<MDL	0.45	0.916	ug/Kg		<MDL	0.51	1.03	ug/Kg
Heptachlor		<MDL	0.46	0.925	ug/Kg		<MDL	0.5	1.02	ug/Kg		<MDL	0.45	0.916	ug/Kg		<MDL	0.51	1.03	ug/Kg
Heptachlor Epoxide		<MDL	0.46	0.925	ug/Kg		<MDL	0.5	1.02	ug/Kg		<MDL	0.45	0.916	ug/Kg		<MDL	0.51	1.03	ug/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator:	DUD_9C					Locator:	DUD_10C					Locator:	DUD_11C					Locator:	DUD_12C				
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM				
Sampled:	03/24/08 2:03:00 PM					Sampled:	03/24/08 2:30:00 PM					Sampled:	03/25/08 9:00:00 AM					Sampled:	03/25/08 9:45:00 AM				
Lab ID:	L45302-5					Lab ID:	L45302-6					Lab ID:	L45302-7					Lab ID:	L45302-8				
Matrix:	SALTWTRSED					Matrix:	SALTWTRSED					Matrix:	SALTWTRSED					Matrix:	SALTWTRSED				
% Solids:	72.1					% Solids:	65.7					% Solids:	72.8					% Solids:	64.9				
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																				
Methoxychlor		<MDL	4.6	9.25	ug/Kg		<MDL	5	10.2	ug/Kg		<MDL	4.5	9.16	ug/Kg		<MDL	5.1	10.3	ug/Kg
Toxaphene		<MDL	9.3	18.4	ug/Kg		<MDL	10	20.2	ug/Kg		<MDL	9.2	18.3	ug/Kg		<MDL	10	20.5	ug/Kg
M=OR EPA 8081A/8082 (7-3-103-000)																				
Aroclor 1016		<MDL,TA	83	165	ug/Kg		<MDL,TA	35	68.5	ug/Kg		<MDL,TA	9.8	19.5	ug/Kg		<MDL,TA	49	97.8	ug/Kg
Aroclor 1221		<MDL,TA	17	34.4	ug/Kg		<MDL,TA	6.1	12.1	ug/Kg		<MDL	2.3	4.57	ug/Kg		<MDL,TA	10	20.2	ug/Kg
Aroclor 1232		<MDL,TA	140	275	ug/Kg		<MDL,TA	52	103	ug/Kg		<MDL,TA	14	27.6	ug/Kg		<MDL,TA	80	159	ug/Kg
Aroclor 1242		<MDL,TA	140	282	ug/Kg		<MDL,TA	79	160	ug/Kg		<MDL,TA	16	33	ug/Kg		<MDL,TA	110	225	ug/Kg
Aroclor 1248	113		1.2	2.32	ug/Kg	56.6		1.3	2.54	ug/Kg	15.8		1.1	2.29	ug/Kg	74.3		1.3	2.57	ug/Kg
Aroclor 1254	122		1.2	2.32	ug/Kg	70.2		1.3	2.54	ug/Kg	26.5		1.1	2.29	ug/Kg	96.8		1.3	2.57	ug/Kg
Aroclor 1260	47		1.2	2.32	ug/Kg	32.6		1.3	2.54	ug/Kg	17.4		1.1	2.29	ug/Kg	74.7		1.3	2.57	ug/Kg
Total Aroclors	282		1.2	2.32	ug/Kg	160		1.3	2.54	ug/Kg	59.9		1.1	2.29	ug/Kg	245		1.3	2.57	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: 03/25/08 10:30:00 AM
Lab ID: L45302-9
Matrix: SALTWTRSED
% Solids: 56.4

Parameters	Value	Qual	MDL	RDL	Units
			- Dry Weight Basis		
COMBINED LABS					
M=CV ASTM D422(318V1)					
Clay *	16		0.84	1.69	%
Dry Weight Factor	3				
Fines *	50.6		0.84	1.69	%
Gravel *	0.3	<RDL	0.17	1.69	%
p+0.00 *	0.2	<RDL	0.17	1.69	%
p+1.00 *	0.4	<RDL	0.17	1.69	%
p+10.0(equal/more than) *	11		0.84	1.69	%
p+2.00 *	5.2		0.17	1.69	%
p+3.00 *	20.2		0.17	1.69	%
p+4.00 *	14		0.17	1.69	%
p+5.00 *	3.4		0.84	1.69	%
p+6.00 *	13.5		0.84	1.69	%
p+7.00 *	11.8		0.84	1.69	%
p+8.00 *	5.9		0.84	1.69	%
p+9.00 *	5.1		0.84	1.69	%
p-1.00 *	0.3	<RDL	0.17	1.69	%
p-2.00 *		<MDL	0.17	1.69	%
p-2.00(less than) *		<MDL	0.17	1.69	%
Sand *	40.1		0.17	1.69	%
Silt *	34.6		0.84	1.69	%
M=CV EPA 9060-PSEP96(337V3)					
Total Organic Carbon	17100		2000	3850	mg/Kg
M=CV SM2540-G (307V2)					
Total Solids *	56.4		0.005	0.01	%
M=ES NONE					
Field Personnel	JB,CB,CE,JDD				none
Sampcoordx1 *	1267238				ft
Sampcoordx2 *	1267240				ft
Sampcoordx3 *	1267234				ft
Sampcoordx4 *	1267241				ft
Sampcoordx5 *	1267239				ft
Sampcoordx6 *					
Sampcoordy1 *	207858				ft
Sampcoordy2 *	207861				ft
Sampcoordy3 *	207864				ft
Sampcoordy4 *	207858				ft
Sampcoordy5 *	207858				ft
Sampcoordy6 *					
Sample Depth *	10				m
Sample Function					
Sampling Method *	20042				none
Sediment Sampling Depth *	15				cm

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator: DUD_13C
Descrip: PERIMETER LOCATION
Sampled: 03/25/08 10:30:00 AM
Lab ID: L45302-9
Matrix: SALTWTRSED
% Solids: 56.4

Parameters	Value	Qual	MDL	RDL	Units
			- Dry Weight Basis		
COMBINED LABS					
Sediment Sampling Range *	0-10 cm				cm
Sediment Type	21N30				none
Tidal Condition	E				none
Tide Height *	5.5				ft
M=MT CVAA EPA 7471B (604V4)					
Mercury, Total, CVAA	0.202		0.0085	0.0858	mg/Kg
M=MT ICP EPA3050B/6010C MOD(612V3)					
Aluminum, Total, ICP	17100		8.9	44.1	mg/Kg
Antimony, Total, ICP		<MDL,G	1.3	6.61	mg/Kg
Arsenic, Total, ICP	9.9	<RDL	2.1	11	mg/Kg
Beryllium, Total, ICP	0.35	<RDL	0.089	0.441	mg/Kg
Cadmium, Total, ICP	0.53	<RDL	0.18	0.883	mg/Kg
Chromium, Total, ICP	30.9		0.27	1.32	mg/Kg
Copper, Total, ICP	71.8		0.35	1.76	mg/Kg
Iron, Total, ICP	26400		4.4	22	mg/Kg
Lead, Total, ICP	47.2		1.8	8.83	mg/Kg
Manganese, Total, ICP	266		0.18	0.883	mg/Kg
Nickel, Total, ICP	21.5		0.44	2.2	mg/Kg
Selenium, Total, ICP		<MDL	2.1	11	mg/Kg
Silver, Total, ICP	0.44	<RDL	0.35	1.76	mg/Kg
Thallium, Total, ICP		<MDL	3.5	17.6	mg/Kg
Zinc, Total, ICP	129		0.44	2.2	mg/Kg
M=OR EPA 3550B/8270C (7-3-01-004)					
1,2,4-Trichlorobenzene		<MDL	0.18	0.355	ug/Kg
1,2-Dichlorobenzene	0.55	<RDL	0.35	0.709	ug/Kg
1,3-Dichlorobenzene		<MDL	0.35	0.709	ug/Kg
1,4-Dichlorobenzene	1.33		0.35	0.709	ug/Kg
2,4-Dimethylphenol		<MDL	1.8	3.55	ug/Kg
2-Methylnaphthalene	6.4	<RDL	3.5	7.09	ug/Kg
2-Methylphenol		<MDL	3.5	7.09	ug/Kg
4-Methylphenol		<MDL	7.1	14.2	ug/Kg
Acenaphthene	9.01		3.5	7.09	ug/Kg
Acenaphthylene	7.29		3.5	7.09	ug/Kg
Anthracene	59.9		3.5	7.09	ug/Kg
Benzo(a)anthracene	154		3.5	7.09	ug/Kg
Benzo(a)pyrene	165		3.5	7.09	ug/Kg
Benzo(b)fluoranthene	243		3.5	7.09	ug/Kg
Benzo(g,h,i)perylene	89.5		3.5	7.09	ug/Kg
Benzo(k)fluoranthene	141		3.5	7.09	ug/Kg
Benzoic Acid	264	B	18	35.5	ug/Kg
Benzyl Alcohol		<MDL	3.5	7.09	ug/Kg
Benzyl Butyl Phthalate	57.8	B	1.8	3.55	ug/Kg
Bis(2-Ethylhexyl)Phthalate	484	B	7.1	14.2	ug/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator: DUD_13C
Descrip: PERIMETER LOCATION
Sampled: 03/25/08 10:30:00 AM
Lab ID: L45302-9
Matrix: SALTWTRSED
% Solids: 56.4

Parameters	Value	Qual	MDL	RDL	Units
			- Dry Weight Basis		
COMBINED LABS					
Caffeine		<MDL	7.1	14.2	ug/Kg
Carbazole	15.8		3.5	7.09	ug/Kg
Chrysene	234		3.5	7.09	ug/Kg
Coprostanol		<MDL	71	142	ug/Kg
Dibenzo(a,h)anthracene	39		3.5	7.09	ug/Kg
Dibenzofuran	7.52		3.5	7.09	ug/Kg
Diethyl Phthalate		<MDL	7.1	14.2	ug/Kg
Dimethyl Phthalate	77.8		7.1	14.2	ug/Kg
Di-N-Butyl Phthalate	21.8	B	7.1	14.2	ug/Kg
Di-N-Octyl Phthalate		<MDL	7.1	14.2	ug/Kg
Fluoranthene	211		3.5	7.09	ug/Kg
Fluorene	39.7		3.5	7.09	ug/Kg
Hexachlorobenzene		<MDL	0.18	0.355	ug/Kg
Hexachlorobutadiene		<MDL	0.89	1.77	ug/Kg
Hexachloroethane		<MDL	1.8	3.55	ug/Kg
Indeno(1,2,3-Cd)Pyrene	106		3.5	7.09	ug/Kg
Naphthalene	4.8	<RDL	3.5	7.09	ug/Kg
N-Nitrosodiphenylamine		<MDL	7.1	14.2	ug/Kg
Pentachlorophenol		<MDL	18	35.5	ug/Kg
Phenanthrene	103		3.5	7.09	ug/Kg
Phenol	24.1	E	7.1	14.2	ug/Kg
Pyrene	324		3.5	7.09	ug/Kg
Total HPAHS	1690		3.5	7.09	ug/Kg
Total LPAHs	216		3.5	7.09	ug/Kg
M=OR EPA 8081A/8082 (7-3-03-002)					
4,4'-DDD	1.7	<RDL	1.2	2.36	ug/Kg
4,4'-DDE		<MDL	1.2	2.36	ug/Kg
4,4'-DDT		<MDL	1.2	2.36	ug/Kg
Aldrin		<MDL	1.2	2.36	ug/Kg
Alpha-BHC		<MDL	0.59	1.18	ug/Kg
Alpha-Chlordane		<MDL	0.59	1.18	ug/Kg
Beta-BHC		<MDL	0.59	1.18	ug/Kg
Delta-BHC		<MDL	0.59	1.18	ug/Kg
Dieldrin		<MDL	1.2	2.36	ug/Kg
Endosulfan I		<MDL	1.2	2.36	ug/Kg
Endosulfan II		<MDL	1.2	2.36	ug/Kg
Endosulfan Sulfate		<MDL	1.2	2.36	ug/Kg
Endrin		<MDL	1.2	2.36	ug/Kg
Endrin Aldehyde		<MDL,E	1.2	2.36	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.59	1.18	ug/Kg
Gamma-Chlordane		<MDL	0.59	1.18	ug/Kg
Heptachlor		<MDL	0.59	1.18	ug/Kg
Heptachlor Epoxide		<MDL	0.59	1.18	ug/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator: DUD_13C
Descrip: PERIMETER LOCATION
Sampled: 03/25/08 10:30:00 AM
Lab ID: L45302-9
Matrix: SALTWTRSED
% Solids: 56.4

Parameters	Value	Qual	MDL	RDL	Units
		- Dry Weight Basis			
COMBINED LABS					
Methoxychlor		<MDL	5.9	11.8	ug/Kg
Toxaphene		<MDL	12	23.6	ug/Kg
M=OR EPA 8081A/8082 (7-3-103-000)					
Aroclor 1016		<MDL,TA	50	98	ug/Kg
Aroclor 1221		<MDL,TA	9.4	18.6	ug/Kg
Aroclor 1232		<MDL,TA	74	149	ug/Kg
Aroclor 1242		<MDL,TA	120	236	ug/Kg
Aroclor 1248	78		1.5	2.96	ug/Kg
Aroclor 1254	104		1.5	2.96	ug/Kg
Aroclor 1260	58.5		1.5	2.96	ug/Kg
Total Aroclors	241		1.5	2.96	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 * %	Dry Weight Factor	Fines * %	Gravel * %	Sand * %	Silt * %	Total Organic Carbon mg/Kg	Total Solids * %	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) * %	Aluminum, Total, ICP mg/Kg	Arsenic, Total, ICP mg/Kg	Beryllium, Total, ICP mg/Kg
DUD_1C	5	L45302-1	19.8	4.9	74.9	1.5	20.5	55.1	28900	44.6	0.4	0.8	15.4	3	6.5	9.8	5.5	31.9	13.2	4.4	4.4			1.5	21400	15.2	0.45
DUD_2C	5	L45302-2	19.5	4.7	69.2	1.3	26	49.8	24100	45.6	0.4	0.9	13	5.4	9.4	9.9	4.3	26	13	6.5	6.5	0.3		1	20600	14.6	0.44
DUD_8C	10	L45302-3	4.5	1.7	10.3	16.8	70.3	5.8	4760	73.9	6.4	9.9	3.2	30.1	19	4.8	2.6	0.6	1.3	1.3	1.3	8.8	3.6	4.4	10700	6.4	0.16
DUD_8C	10	L45302-4	5.3	1.8	11.2	25.2	66.2	5.9	3540	75.4	6.7	10.2	4	28.1	17.1	4.2	2.6	0.7	1.3	1.3	1.3	10.4	5.9	8.9	12100	4.5	0.16
DUD_9C	10	L45302-5	5.8	1.8	16	10.2	73.8	10.2	6730	72.1	4.4	11.2	3.8	35.7	16.2	6.3	3.2	2.6	2.6	1.9	1.9	3.6	1.4	5.2	10900	6.2	0.17
DUD_10C	11	L45302-6	12.2	2.3	33.5	4.7	60.4	21.3	9270	65.7	2.7	11.9	9.1	24.3	13.9	7.7	4.6	4.6	7.6	4.6	3	1.4	0.7	2.6	13000	9.62	0.26
DUD_11C	11	L45302-7	5.9	1.8	15.7	6.8	74.6	9.8	6650	72.8	3.7	7.2	3.9	28.7	28.1	6.8	2.6	2.6	2	2.6	2	3.3	1	2.6	11800	5.5	0.19
DUD_12C	11	L45302-8	13.1	2.4	43.2	0.4	56.7	30.1	12600	64.9	0.6	1.7	9.3	13.2	28.4	12.8	4.6	10.8	8.5	6.2	3.9	0.4			14500	12	0.29
DUD_13C	10	L45302-9	16	3	50.6	0.3	40.1	34.6	17100	56.4	0.2	0.4	11	5.2	20.2	14	3.4	13.5	11.8	5.9	5.1	0.3			17100	9.9	0.35

PROJECT: 423062-200-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Cadmium, Total, ICP mg/Kg	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	1,2-Dichlorobenzene ug/Kg	1,4-Dichlorobenzene ug/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
DUD_1C	5	L45302-1	0.7	35.9	91.3	33000	60.1	370	0.208	24.9	0.49	199		2.42	11.8		17.6	11.9	80.9	87.4	112	63.2	325
DUD_2C	5	L45302-2	0.53	34.2	82.5	32200	50.7	364	0.185	23.5	0.48	168		1.71	45.8		106	19.8	166	41.9	56.8	42.8	700
DUD_8C	10	L45302-3	0.42	22.1	50.9	18900	26.4	226	0.0765	17.3	0.45	67			5.49	2.65	4.2	2.8	24.6	165	165	77.4	53.5
DUD_8C	10	L45302-4	0.23	23.7	54.6	21900	18	296	0.053	18.8		58.1	0.48	0.855	3.3	1.2	7.72	2.7	25.6	67.8	78.8	26.3	49.5
DUD_9C	10	L45302-5	0.43	21.6	52.1	19600	39.1	234	0.0824	18	0.36	74.8	0.839	3.2	5.1	1.8	5	4.2	25.1	113	122	47	52.1
DUD_10C	11	L45302-6	0.44	25.6	49.3	21200	43.5	236	0.128	20.7		107		3.58	6.77		5.3	3.8	41.1	56.6	70.2	32.6	84.9
DUD_11C	11	L45302-7	0.21	21.2	49.7	20100	19.8	243	0.0732	19.6		74		1.48	4.7		3.4	3.8	27.7	15.8	26.5	17.4	90.9
DUD_12C	11	L45302-8	0.74	32.7	71.3	28000	94.9	253	0.188	27.6	0.51	147		5.81	10.2	1.8	10.2	7.46	56.5	74.3	96.8	74.7	162
DUD_13C	10	L45302-9	0.53	30.9	71.8	26400	47.2	266	0.202	21.5	0.44	129	0.55	1.33	6.4	1.7	9.01	7.29	59.9	78	104	58.5	154

PROJECT: 423062-200-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Benzo(a)pyrene ug/Kg	Benzo(b)fluoranthene ug/Kg	Benzo(g,h,i)perylene ug/Kg	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	Dimethyl Phthalate 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 Aroclors ug/Kg
DUD_1C	5	L45302-1	265	379	174	283	661	175	2330	167	453	52.2	96.2	14.5		536	52.5	6.84	192	9.78	235	83.4	910	262
DUD_2C	5	L45302-2	384	596	162	417	1290	128	1580	36.8	750	36	99.6	70		1580	130	4.25	209	13.1	662	43.4	2140	142
DUD_8C	10	L45302-3	65.6	82.3	36.4	82.9	287	31.9	552	11.1	83.4	18.9	12.5	5.3		75.1	25.4		41.4	3.5	46		169	407
DUD_8C	10	L45302-4	47.5	54.4	26.4	50.9	187	19.2	247	8.14	67.9	7.2	7.9	6.23	15.5	110	13.4		29.8		68.2		135	172
DUD_9C	10	L45302-5	71	92.5	39.4	66	239	25.1	393	9.81	87.5	1320	15.7	4.3		78.4	27		44.2	4	45.5		164	282
DUD_10C	11	L45302-6	109	145	63.9	103	286	44.1	329	15.1	128	12.8	25.9	5.2		133	28.9		69.6		66.7		225	160
DUD_11C	11	L45302-7	92	128	54	87.9	217	73.8	559	14.4	117	14.8	20.6	4.7		150	25.1		59.9		65.7		206	59.9
DUD_12C	11	L45302-8	194	222	122	206	260	95.5	958	24.5	210	19.9	61.3	7.64		254	36.1		131	9.78	149	70.7	569	245
DUD_13C	10	L45302-9	165	243	89.5	141	264	57.8	484	15.8	234	21.8	39	7.52	77.8	211	39.7		106	4.8	103	24.1	324	241

PROJECT: 423062-200-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Total HPAHS ug/Kg	Total LPAHs ug/Kg	Sampcoordx1 * ft	Sampcoordx2 * ft	Sampcoordx3 * ft	Sampcoordx4 * ft	Sampcoordx5 * ft	Sampcoordx6 * ft	Sampcoordy1 * ft	Sampcoordy2 * ft	Sampcoordy3 * ft	Sampcoordy4 * ft	Sampcoordy5 * ft	Sampcoordy6 * ft	Sample Depth * m	Sampling Method * none	Sediment Sampling Depth * cm	Tide Height * ft
DUD_1C	5	L45302-1	3610	397	1267166	1267169	1267165	1267168	1267165		208757	208756	208761	208755	208754		5	20042	15	2
DUD_2C	5	L45302-2	6860	1090	1267175	1267170	1267165	1267166	1267166		208650	208657	208653	208650	208654		5	20042	9	1.5
DUD_8C	10	L45302-3	702	97.4	1266864	1266866	1266867	1266867	1266867		208919	208918	208918	208914	208917		10	20042	8	0.7
DUD_8C	10	L45302-4	580	123	1266866	1266865	1266868	1266863	1266867	1266866	208923	208928	208925	208922	208918	208919	10	20042	7	0.3
DUD_9C	10	L45302-5	710	99.6	1266786	1266784	1266781	1266787	1266786		209157	209158	209159	209159	209160		10	20042	7	0.8
DUD_10C	11	L45302-6	1090	141	1266660	1266660	1266662	1266661	1266665		209518	209518	209513	209513	209514		11	20042	8	1.5
DUD_11C	11	L45302-7	989	119	1266840	1266843	1266841	1266849	1266844	1266841	209540	209537	209536	209539	209538	209539	11	20042	8	9
DUD_12C	11	L45302-8	2110	265	1266815	1266811	1266813	1266812	1266808		209629	209629	209628	209632	209634		11	20042	9	8
DUD_13C	10	L45302-9	1690	216	1267238	1267240	1267234	1267241	1267239		207858	207861	207864	207858	207858		10	20042	15	5.5

SAP MDL Comparison Table

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator:	DUD_1C	DUD_2C	DUD_8C	DUD_8C	DUD_9C	DUD_10C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sampled:	03/24/08 12:08:00 PM	03/24/08 12:28:00 PM	03/24/08 1:05:00 PM	03/24/08 1:21:00 PM	03/24/08 2:03:00 PM	03/24/08 2:30:00 PM
Lab ID:	L45302-1	L45302-2	L45302-3	L45302-4	L45302-5	L45302-6
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	44.6	45.6	73.9	75.4	72.1	65.7

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
COMBINED LABS								
M=CV ASTM D422(318V1)								
Fines *	%	NA	1.1	1.1	0.64	0.66	0.64	0.76
Gravel *	%	NA	0.22	0.22	0.13	0.13	0.13	0.15
Sand *	%	NA	0.22	0.22	0.13	0.13	0.13	0.15
Silt *	%	NA	1.1	1.1	0.64	0.66	0.64	0.76
Clay *	%	NA	1.1	1.1	0.64	0.66	0.64	0.76
p+0.00 *	%	0.1	0.22	0.22	0.13	0.13	0.13	0.15
p+1.00 *	%	0.1	0.22	0.22	0.13	0.13	0.13	0.15
p+10.0(equal/more than) *	%	0.1	1.1	1.1	0.64	0.66	0.64	0.76
p+2.00 *	%	0.1	0.22	0.22	0.13	0.13	0.13	0.15
p+3.00 *	%	0.1	0.22	0.22	0.13	0.13	0.13	0.15
p+4.00 *	%	0.1	0.22	0.22	0.13	0.13	0.13	0.15
p+5.00 *	%	0.1	1.1	1.1	0.64	0.66	0.64	0.76
p+6.00 *	%	0.1	1.1	1.1	0.64	0.66	0.64	0.76
p+7.00 *	%	0.1	1.1	1.1	0.64	0.66	0.64	0.76
p+8.00 *	%	0.1	1.1	1.1	0.64	0.66	0.64	0.76
p+9.00 *	%	0.1	1.1	1.1	0.64	0.66	0.64	0.76
p-1.00 *	%	0.1	0.22	0.22	0.13	0.13	0.13	0.15
p-2.00 *	%	0.1	0.22	0.22	0.13	0.13	0.13	0.15
p-2.00(less than) *	%	0.1	0.22	0.22	0.13	0.13	0.13	0.15
M=CV EPA 9060-PSEP96(337V3)								
Total Organic Carbon	mg/Kg	1000	2900	3100	1300	1000	980	2700
M=CV SM2540-G (307V2)								
Total Solids *	%	0.005	0.005	0.005	0.005	0.005	0.005	0.005
M=MT CVAA EPA 7471B (604V4)								
Mercury, Total, CVAA	mg/Kg	0.04	0.011	0.011	0.0068	0.0068	0.0067	0.0081
M=MT ICP EPA3050B/6010C MOD(612V3)								
Aluminum, Total, ICP	mg/Kg	10	11	11	6.8	6.6	6.9	7.6
Antimony, Total, ICP	mg/Kg	3	1.7	1.6	1	0.99	1	1.1
Arsenic, Total, ICP	mg/Kg	5	2.7	2.6	1.6	1.6	1.7	1.8
Beryllium, Total, ICP	mg/Kg	0.1	0.11	0.11	0.068	0.066	0.069	0.076
Cadmium, Total, ICP	mg/Kg	0.3	0.22	0.22	0.14	0.13	0.14	0.15
Chromium, Total, ICP	mg/Kg	0.5	0.34	0.33	0.2	0.2	0.21	0.23
Copper, Total, ICP	mg/Kg	0.4	0.45	0.44	0.27	0.27	0.28	0.3
Iron, Total, ICP	mg/Kg	5	5.6	5.5	3.4	3.3	3.5	3.8
Lead, Total, ICP	mg/Kg	3	2.2	2.2	1.4	1.3	1.4	1.5
Manganese, Total, ICP	mg/Kg	0.2	0.22	0.22	0.14	0.13	0.14	0.15
Nickel, Total, ICP	mg/Kg	2	0.56	0.55	0.34	0.33	0.35	0.38
Selenium, Total, ICP	mg/Kg	5	2.7	2.6	1.6	1.6	1.7	1.8
Silver, Total, ICP	mg/Kg	0.4	0.45	0.44	0.27	0.27	0.28	0.3
Thallium, Total, ICP	mg/Kg	20	4.5	4.4	2.7	2.7	2.8	3
Zinc, Total, ICP	mg/Kg	0.5	0.56	0.55	0.34	0.33	0.35	0.38
M=OR EPA 3550B/8270C (7-3-01-004)								

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator:	DUD_1C	DUD_2C	DUD_8C	DUD_8C	DUD_9C	DUD_10C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sampled:	03/24/08 12:08:00 PM	03/24/08 12:28:00 PM	03/24/08 1:05:00 PM	03/24/08 1:21:00 PM	03/24/08 2:03:00 PM	03/24/08 2:30:00 PM
Lab ID:	L45302-1	L45302-2	L45302-3	L45302-4	L45302-5	L45302-6
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	44.6	45.6	73.9	75.4	72.1	65.7

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
COMBINED LABS								
1,2,4-Trichlorobenzene	ug/Kg	0.52	0.22	0.22	0.14	0.13	0.14	0.15
1,2-Dichlorobenzene	ug/Kg	0.52	0.45	0.44	0.27	0.27	0.28	0.3
1,3-Dichlorobenzene	ug/Kg	0.52	0.45	0.44	0.27	0.27	0.28	0.3
1,4-Dichlorobenzene	ug/Kg	0.26	0.45	0.44	0.27	0.27	0.28	0.3
2,4-Dimethylphenol	ug/Kg	14	2.2	2.2	1.4	1.3	1.4	1.5
2-Methylnaphthalene	ug/Kg	28	4.5	4.4	2.7	2.7	2.8	3
2-Methylphenol	ug/Kg	38	4.5	4.4	2.7	2.7	2.8	3
4-Methylphenol	ug/Kg	32	9	8.8	5.4	5.3	5.5	6.1
Acenaphthene	ug/Kg	14	4.5	4.4	2.7	2.7	2.8	3
Acenaphthylene	ug/Kg	29	4.5	4.4	2.7	2.7	2.8	3
Anthracene	ug/Kg	7.9	4.5	4.4	2.7	2.7	2.8	3
Benzo(a)anthracene	ug/Kg	4	4.5	4.4	2.7	2.7	2.8	3
Benzo(a)pyrene	ug/Kg	6	4.5	4.4	2.7	2.7	2.8	3
Benzo(b)fluoranthene	ug/Kg	6	4.5	4.4	2.7	2.7	2.8	3
Benzo(g,h,i)perylene	ug/Kg	16	4.5	4.4	2.7	2.7	2.8	3
Benzo(k)fluoranthene	ug/Kg	6	4.5	4.4	2.7	2.7	2.8	3
Benzoic Acid	ug/Kg	12	22	22	14	13	14	15
Benzyl Alcohol	ug/Kg	12	4.5	4.4	2.7	2.7	2.8	3
Benzyl Butyl Phthalate	ug/Kg	12	2.2	2.2	1.4	1.3	1.4	1.5
Bis(2-Ethylhexyl)Phthalate	ug/Kg	13	9	8.8	5.4	5.3	5.5	6.1
Carbazole	ug/Kg	14	4.5	4.4	2.7	2.7	2.8	3
Chrysene	ug/Kg	7.9	4.5	4.4	2.7	2.7	2.8	3
Coprostanol	ug/Kg	28	90	88	54	53	55	61
Dibenzo(a,h)anthracene	ug/Kg	14	4.5	4.4	2.7	2.7	2.8	3
Dibenzofuran	ug/Kg	28	4.5	4.4	2.7	2.7	2.8	3
Diethyl Phthalate	ug/Kg	12	9	8.8	5.4	5.3	5.5	6.1
Dimethyl Phthalate	ug/Kg	22	9	8.8	5.4	5.3	5.5	6.1
Di-N-Butyl Phthalate	ug/Kg	10	9	8.8	5.4	5.3	5.5	6.1
Di-N-Octyl Phthalate	ug/Kg	16	9	8.8	5.4	5.3	5.5	6.1
Fluoranthene	ug/Kg	16	4.5	4.4	2.7	2.7	2.8	3
Fluorene	ug/Kg	26	4.5	4.4	2.7	2.7	2.8	3
Hexachlorobenzene	ug/Kg	1.3	0.22	0.22	0.14	0.13	0.14	0.15
Hexachlorobutadiene	ug/Kg	1.5	1.1	1.1	0.68	0.66	0.69	0.76
Hexachloroethane	ug/Kg	29	2.2	2.2	1.4	1.3	1.4	1.5
Indeno(1,2,3-Cd)Pyrene	ug/Kg	18	4.5	4.4	2.7	2.7	2.8	3
Naphthalene	ug/Kg	28	4.5	4.4	2.7	2.7	2.8	3
N-Nitrosodiphenylamine	ug/Kg	40	9	8.8	5.4	5.3	5.5	6.1
Pentachlorophenol	ug/Kg	10	22	22	14	13	14	15
Phenanthrene	ug/Kg	7.9	4.5	4.4	2.7	2.7	2.8	3
Phenol	ug/Kg	18	9	8.8	5.4	5.3	5.5	6.1
Pyrene	ug/Kg	7.9	4.5	4.4	2.7	2.7	2.8	3
Total HPAHS	ug/Kg	NA	4.5	4.4	2.7	2.7	2.8	3
Total LPAHs	ug/Kg	NA	4.5	4.4	2.7	2.7	2.8	3

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator:	DUD_1C	DUD_2C	DUD_8C	DUD_8C	DUD_9C	DUD_10C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sampled:	03/24/08 12:08:00 PM	03/24/08 12:28:00 PM	03/24/08 1:05:00 PM	03/24/08 1:21:00 PM	03/24/08 2:03:00 PM	03/24/08 2:30:00 PM
Lab ID:	L45302-1	L45302-2	L45302-3	L45302-4	L45302-5	L45302-6
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	44.6	45.6	73.9	75.4	72.1	65.7

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
COMBINED LABS								
M=OR EPA 8081A/8082 (7-3-03-002)								
4,4'-DDD	ug/Kg	0.67	1.5	1.5	0.91	0.89	0.93	1
4,4'-DDE	ug/Kg	0.67	1.5	1.5	0.91	0.89	0.93	1
4,4'-DDT	ug/Kg	0.67	1.5	1.5	0.91	0.89	0.93	1
Aldrin	ug/Kg	0.67	1.5	1.5	0.91	0.89	0.93	1
Alpha-BHC	ug/Kg	0.67	0.74	0.72	0.45	0.44	0.46	0.5
Alpha-Chlordane	ug/Kg	0.67	0.74	0.72	0.45	0.44	0.46	0.5
Aroclor 1016	ug/Kg	4	61	33	130	48	83	35
Aroclor 1221	ug/Kg	8	12	7.9	24	9.3	17	6.1
Aroclor 1232	ug/Kg	8	90	42	220	80	140	52
Aroclor 1242	ug/Kg	4	94	46	200	86	140	79
Aroclor 1248	ug/Kg	4	1.9	1.8	1.1	1.1	1.2	1.3
Aroclor 1254	ug/Kg	4	1.9	1.8	1.1	1.1	1.2	1.3
Aroclor 1260	ug/Kg	4	1.9	1.8	1.1	1.1	1.2	1.3
Beta-BHC	ug/Kg	0.67	0.74	0.72	0.45	0.44	0.46	0.5
Delta-BHC	ug/Kg	0.67	0.74	0.72	0.45	0.44	0.46	0.5
Dieldrin	ug/Kg	0.67	1.5	1.5	0.91	0.89	0.93	1
Endosulfan I	ug/Kg	0.67	1.5	1.5	0.91	0.89	0.93	1
Endosulfan II	ug/Kg	0.67	1.5	1.5	0.91	0.89	0.93	1
Endosulfan Sulfate	ug/Kg	0.67	1.5	1.5	0.91	0.89	0.93	1
Endrin	ug/Kg	0.67	1.5	1.5	0.91	0.89	0.93	1
Endrin Aldehyde	ug/Kg	0.67	1.5	1.5	0.91	0.89	0.93	1
Gamma-BHC (Lindane)	ug/Kg	0.67	0.74	0.72	0.45	0.44	0.46	0.5
Gamma-Chlordane	ug/Kg	2.7	0.74	0.72	0.45	0.44	0.46	0.5
Heptachlor	ug/Kg	0.67	0.74	0.72	0.45	0.44	0.46	0.5
Heptachlor Epoxide	ug/Kg	0.67	0.74	0.72	0.45	0.44	0.46	0.5
Methoxychlor	ug/Kg	3.3	7.4	7.2	4.5	4.4	4.6	5
Toxaphene	ug/Kg	6.7	15	15	9.1	8.9	9.3	10

* Not converted to dry weight basis for this parameter

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator:	DUD_11C	DUD_12C	DUD_13C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	PERIMETER LOCATION
Sampled:	03/25/08 9:00:00 AM	03/25/08 9:45:00 AM	03/25/08 10:30:00 AM
Lab ID:	L45302-7	L45302-8	L45302-9
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	72.8	64.9	56.4

Parameters	Units	SAP MDL	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS					
M=CV ASTM D422(318V1)					
Fines *	%	NA	0.65	0.77	0.84
Gravel *	%	NA	0.13	0.15	0.17
Sand *	%	NA	0.13	0.15	0.17
Silt *	%	NA	0.65	0.77	0.84
Clay *	%	NA	0.65	0.77	0.84
p+0.00 *	%	0.1	0.13	0.15	0.17
p+1.00 *	%	0.1	0.13	0.15	0.17
p+10.0(equal/more than) *	%	0.1	0.65	0.77	0.84
p+2.00 *	%	0.1	0.13	0.15	0.17
p+3.00 *	%	0.1	0.13	0.15	0.17
p+4.00 *	%	0.1	0.13	0.15	0.17
p+5.00 *	%	0.1	0.65	0.77	0.84
p+6.00 *	%	0.1	0.65	0.77	0.84
p+7.00 *	%	0.1	0.65	0.77	0.84
p+8.00 *	%	0.1	0.65	0.77	0.84
p+9.00 *	%	0.1	0.65	0.77	0.84
p-1.00 *	%	0.1	0.13	0.15	0.17
p-2.00 *	%	0.1	0.13	0.15	0.17
p-2.00(less than) *	%	0.1	0.13	0.15	0.17
M=CV EPA 9060-PSEP96(337V3)					
Total Organic Carbon	mg/Kg	1000	2200	1800	2000
M=CV SM2540-G (307V2)					
Total Solids *	%	0.005	0.005	0.005	0.005
M=MT CVAA EPA 7471B (604V4)					
Mercury, Total, CVAA	mg/Kg	0.04	0.0066	0.0077	0.0085
M=MT ICP EPA3050B/6010C MOD(612V3)					
Aluminum, Total, ICP	mg/Kg	10	6.9	7.7	8.9
Antimony, Total, ICP	mg/Kg	3	1	1.2	1.3
Arsenic, Total, ICP	mg/Kg	5	1.6	1.8	2.1
Beryllium, Total, ICP	mg/Kg	0.1	0.069	0.077	0.089
Cadmium, Total, ICP	mg/Kg	0.3	0.14	0.15	0.18
Chromium, Total, ICP	mg/Kg	0.5	0.21	0.23	0.27
Copper, Total, ICP	mg/Kg	0.4	0.27	0.31	0.35
Iron, Total, ICP	mg/Kg	5	3.4	3.9	4.4
Lead, Total, ICP	mg/Kg	3	1.4	1.5	1.8
Manganese, Total, ICP	mg/Kg	0.2	0.14	0.15	0.18
Nickel, Total, ICP	mg/Kg	2	0.34	0.39	0.44
Selenium, Total, ICP	mg/Kg	5	1.6	1.8	2.1
Silver, Total, ICP	mg/Kg	0.4	0.27	0.31	0.35
Thallium, Total, ICP	mg/Kg	20	2.7	3.1	3.5
Zinc, Total, ICP	mg/Kg	0.5	0.34	0.39	0.44
M=OR EPA 3550B/8270C (7-3-01-004)					

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator:	DUD_11C	DUD_12C	DUD_13C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	PERIMETER LOCATION
Sampled:	03/25/08 9:00:00 AM	03/25/08 9:45:00 AM	03/25/08 10:30:00 AM
Lab ID:	L45302-7	L45302-8	L45302-9
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	72.8	64.9	56.4

Parameters	Units	SAP MDL	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS					
1,2,4-Trichlorobenzene	ug/Kg	0.52	0.14	0.15	0.18
1,2-Dichlorobenzene	ug/Kg	0.52	0.27	0.31	0.35
1,3-Dichlorobenzene	ug/Kg	0.52	0.27	0.31	0.35
1,4-Dichlorobenzene	ug/Kg	0.26	0.27	0.31	0.35
2,4-Dimethylphenol	ug/Kg	14	1.4	1.5	1.8
2-Methylnaphthalene	ug/Kg	28	2.7	3.1	3.5
2-Methylphenol	ug/Kg	38	2.7	3.1	3.5
4-Methylphenol	ug/Kg	32	5.5	6.2	7.1
Acenaphthene	ug/Kg	14	2.7	3.1	3.5
Acenaphthylene	ug/Kg	29	2.7	3.1	3.5
Anthracene	ug/Kg	7.9	2.7	3.1	3.5
Benzo(a)anthracene	ug/Kg	4	2.7	3.1	3.5
Benzo(a)pyrene	ug/Kg	6	2.7	3.1	3.5
Benzo(b)fluoranthene	ug/Kg	6	2.7	3.1	3.5
Benzo(g,h,i)perylene	ug/Kg	16	2.7	3.1	3.5
Benzo(k)fluoranthene	ug/Kg	6	2.7	3.1	3.5
Benzoic Acid	ug/Kg	12	14	15	18
Benzyl Alcohol	ug/Kg	12	2.7	3.1	3.5
Benzyl Butyl Phthalate	ug/Kg	12	1.4	1.5	1.8
Bis(2-Ethylhexyl)Phthalate	ug/Kg	13	5.5	6.2	7.1
Carbazole	ug/Kg	14	2.7	3.1	3.5
Chrysene	ug/Kg	7.9	2.7	3.1	3.5
Coprostanol	ug/Kg	28	55	62	71
Dibenzo(a,h)anthracene	ug/Kg	14	2.7	3.1	3.5
Dibenzofuran	ug/Kg	28	2.7	3.1	3.5
Diethyl Phthalate	ug/Kg	12	5.5	6.2	7.1
Dimethyl Phthalate	ug/Kg	22	5.5	6.2	7.1
Di-N-Butyl Phthalate	ug/Kg	10	5.5	6.2	7.1
Di-N-Octyl Phthalate	ug/Kg	16	5.5	6.2	7.1
Fluoranthene	ug/Kg	16	2.7	3.1	3.5
Fluorene	ug/Kg	26	2.7	3.1	3.5
Hexachlorobenzene	ug/Kg	1.3	0.14	0.15	0.18
Hexachlorobutadiene	ug/Kg	1.5	0.69	0.77	0.89
Hexachloroethane	ug/Kg	29	1.4	1.5	1.8
Indeno(1,2,3-Cd)Pyrene	ug/Kg	18	2.7	3.1	3.5
Naphthalene	ug/Kg	28	2.7	3.1	3.5
N-Nitrosodiphenylamine	ug/Kg	40	5.5	6.2	7.1
Pentachlorophenol	ug/Kg	10	14	15	18
Phenanthrene	ug/Kg	7.9	2.7	3.1	3.5
Phenol	ug/Kg	18	5.5	6.2	7.1
Pyrene	ug/Kg	7.9	2.7	3.1	3.5
Total HPAHS	ug/Kg	NA	2.7	3.1	3.5
Total LPAHs	ug/Kg	NA	2.7	3.1	3.5

King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator:	DUD_11C	DUD_12C	DUD_13C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	PERIMETER LOCATION
Sampled:	03/25/08 9:00:00 AM	03/25/08 9:45:00 AM	03/25/08 10:30:00 AM
Lab ID:	L45302-7	L45302-8	L45302-9
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	72.8	64.9	56.4

Parameters	Units	SAP MDL	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS					
M=OR EPA 8081A/8082 (7-3-03-002)					
4,4'-DDD	ug/Kg	0.67	0.92	1	1.2
4,4'-DDE	ug/Kg	0.67	0.92	1	1.2
4,4'-DDT	ug/Kg	0.67	0.92	1	1.2
Aldrin	ug/Kg	0.67	0.92	1	1.2
Alpha-BHC	ug/Kg	0.67	0.45	0.51	0.59
Alpha-Chlordane	ug/Kg	0.67	0.45	0.51	0.59
Aroclor 1016	ug/Kg	4	9.8	49	50
Aroclor 1221	ug/Kg	8	2.3	10	9.4
Aroclor 1232	ug/Kg	8	14	80	74
Aroclor 1242	ug/Kg	4	16	110	120
Aroclor 1248	ug/Kg	4	1.1	1.3	1.5
Aroclor 1254	ug/Kg	4	1.1	1.3	1.5
Aroclor 1260	ug/Kg	4	1.1	1.3	1.5
Beta-BHC	ug/Kg	0.67	0.45	0.51	0.59
Delta-BHC	ug/Kg	0.67	0.45	0.51	0.59
Dieldrin	ug/Kg	0.67	0.92	1	1.2
Endosulfan I	ug/Kg	0.67	0.92	1	1.2
Endosulfan II	ug/Kg	0.67	0.92	1	1.2
Endosulfan Sulfate	ug/Kg	0.67	0.92	1	1.2
Endrin	ug/Kg	0.67	0.92	1	1.2
Endrin Aldehyde	ug/Kg	0.67	0.92	1	1.2
Gamma-BHC (Lindane)	ug/Kg	0.67	0.45	0.51	0.59
Gamma-Chlordane	ug/Kg	2.7	0.45	0.51	0.59
Heptachlor	ug/Kg	0.67	0.45	0.51	0.59
Heptachlor Epoxide	ug/Kg	0.67	0.45	0.51	0.59
Methoxychlor	ug/Kg	3.3	4.5	5.1	5.9
Toxaphene	ug/Kg	6.7	9.2	10	12

* 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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.16	38	38
2,4-Dimethylphenol	1	2.24	29	27
2-Methylphenol	2	4.48	63	59
4-Methylphenol	4	8.97	670	661
Acenaphthene	2	0.16	16	16
Acenaphthylene	2	0.16	66	66
Anthracene	2	0.16	220	220
Benzo(a)anthracene	2	0.16	110	110
Benzo(a)pyrene	2	0.16	99	99
Benzo(b)fluoranthene	2	0.16	115	115
Benzo(g,h,i)perylene	2	0.16	31	31
Benzo(k)fluoranthene	2	0.16	115	115
Benzoic Acid	10	22.42	650	628
Benzyl Alcohol	2	4.48	57	53
Benzyl Butyl Phthalate	1	0.08	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.31	47	47
Chrysene	2	0.16	110	110
Dibenzo(a,h)anthracene	2	0.16	12	12
Dibenzofuran	2	0.16	15	15
Diethyl Phthalate	4	0.31	61	61
Dimethyl Phthalate	4	0.31	53	53
Di-N-Butyl Phthalate	4	0.31	220	220
Di-N-Octyl Phthalate	4	0.31	58	58
Fluorene	2	0.16	23	23
Fluoranthene	2	0.16	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.04	3.9	3.9
Indeno(1,2,3-Cd)Pyrene	2	0.16	34	34
N-Nitrosodiphenylamine	4	0.31	11	11
Naphthalene	2	0.16	99	99
Pentachlorophenol	10	22.42	360	338
Phenanthrene	2	0.16	100	100
Phenol	4	8.97	420	411
Pyrene	2	0.16	1000	1000
Aroclor 1016	27	2.09		
Aroclor 1221	5.5	0.43		
Aroclor 1232	40	3.10		
Aroclor 1242	42	3.26		
Aroclor 1248	0.83	0.06		
Aroclor 1254	0.83	0.06		
Aroclor 1260	0.83	0.06		
Total Organic Carbon (dry)	28923.76682			
Total Solids	44.6			
HPAH	20	1.55	960	958
LPAH	14	1.09	370	369
Total PCB	42	3.26	12	8.7

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.18	38	38
2,4-Dimethylphenol	1	2.19	29	27
2-Methylphenol	2	4.39	63	59
4-Methylphenol	4	8.77	670	661
Acenaphthene	2	0.18	16	16
Acenaphthylene	2	0.18	66	66
Anthracene	2	0.18	220	220
Benzo(a)anthracene	2	0.18	110	110
Benzo(a)pyrene	2	0.18	99	99
Benzo(b)fluoranthene	2	0.18	115	115
Benzo(g,h,i)perylene	2	0.18	31	31
Benzo(k)fluoranthene	2	0.18	115	115
Benzoic Acid	10	21.93	650	628
Benzyl Alcohol	2	4.39	57	53
Benzyl Butyl Phthalate	1	0.09	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.36	47	47
Chrysene	2	0.18	110	110
Dibenzo(a,h)anthracene	2	0.18	12	12
Dibenzofuran	2	0.18	15	15
Diethyl Phthalate	4	0.36	61	61
Dimethyl Phthalate	4	0.36	53	53
Di-N-Butyl Phthalate	4	0.36	220	220
Di-N-Octyl Phthalate	4	0.36	58	58
Fluorene	2	0.18	23	23
Fluoranthene	2	0.18	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.05	3.9	3.9
Indeno(1,2,3-Cd)Pyrene	2	0.18	34	34
N-Nitrosodiphenylamine	4	0.36	11	11
Naphthalene	2	0.18	99	99
Pentachlorophenol	10	21.93	360	338
Phenanthrene	2	0.18	100	100
Phenol	4	8.77	420	411
Pyrene	2	0.18	1000	1000
Aroclor 1016	15	1.36		
Aroclor 1221	3.6	0.33		
Aroclor 1232	19	1.73		
Aroclor 1242	21	1.91		
Aroclor 1248	0.83	0.08		
Aroclor 1254	0.83	0.08		
Aroclor 1260	0.83	0.08		
Total Organic Carbon (dry)	24122.80702			
Total Solids	45.6			
HPAH	20	1.82	960	958
LPAH	14	1.27	370	369
Total PCB	21	1.91	12	10.1

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	0.1	0.03	0.81	0.78
1,2-Dichlorobenzene	0.2	0.06	2.3	2.2
1,4-Dichlorobenzene	0.2	0.06	3.1	3.0
2-Methylnaphthalene	2	0.57	38	37
2,4-Dimethylphenol	1	1.35	29	28
2-Methylphenol	2	2.71	63	60
4-Methylphenol	4	5.41	670	665
Acenaphthene	2	0.57	16	15
Acenaphthylene	2	0.57	66	65
Anthracene	2	0.57	220	219
Benzo(a)anthracene	2	0.57	110	109
Benzo(a)pyrene	2	0.57	99	98
Benzo(b)fluoranthene	2	0.57	115	114
Benzo(g,h,i)perylene	2	0.57	31	30
Benzo(k)fluoranthene	2	0.57	115	114
Benzoic Acid	10	13.53	650	636
Benzyl Alcohol	2	2.71	57	54
Benzyl Butyl Phthalate	1	0.28	4.9	4.6
Bis(2-Ethylhexyl)Phthalate	4	1.14	47	46
Chrysene	2	0.57	110	109
Dibenzo(a,h)anthracene	2	0.57	12	11
Dibenzofuran	2	0.57	15	14
Diethyl Phthalate	4	1.14	61	60
Dimethyl Phthalate	4	1.14	53	52
Di-N-Butyl Phthalate	4	1.14	220	219
Di-N-Octyl Phthalate	4	1.14	58	57
Fluorene	2	0.57	23	22
Fluoranthene	2	0.57	160	159
Hexachlorobenzene	0.1	0.03	0.38	0.35
Hexachlorobutadiene	0.5	0.14	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.57	34	33
N-Nitrosodiphenylamine	4	1.14	11	10
Naphthalene	2	0.57	99	98
Pentachlorophenol	10	13.53	360	346
Phenanthrene	2	0.57	100	99
Phenol	4	5.41	420	415
Pyrene	2	0.57	1000	999
Aroclor 1016	95	26.99		
Aroclor 1221	18	5.11		
Aroclor 1232	160	45.45		
Aroclor 1242	150	42.61		
Aroclor 1248	0.83	0.24		
Aroclor 1254	0.83	0.24		
Aroclor 1260	0.83	0.24		
Total Organic Carbon (dry)	4763.193505			
Total Solids	73.9			
HPAH	20	5.68	960	954
LPAH	14	3.98	370	366
Total PCB	160	45.45	12	-33.5

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	0.1	0.04	0.81	0.77
1,2-Dichlorobenzene	0.2	0.07	2.3	2.2
1,4-Dichlorobenzene	0.2	0.07	3.1	3.0
2-Methylnaphthalene	2	0.75	38	37
2,4-Dimethylphenol	1	1.33	29	28
2-Methylphenol	2	2.65	63	60
4-Methylphenol	4	5.31	670	665
Acenaphthene	2	0.75	16	15
Acenaphthylene	2	0.75	66	65
Anthracene	2	0.75	220	219
Benzo(a)anthracene	2	0.75	110	109
Benzo(a)pyrene	2	0.75	99	98
Benzo(b)fluoranthene	2	0.75	115	114
Benzo(g,h,i)perylene	2	0.75	31	30
Benzo(k)fluoranthene	2	0.75	115	114
Benzoic Acid	10	13.26	650	637
Benzyl Alcohol	2	2.65	57	54
Benzyl Butyl Phthalate	1	0.37	4.9	4.5
Bis(2-Ethylhexyl)Phthalate	4	1.50	47	46
Chrysene	2	0.75	110	109
Dibenzo(a,h)anthracene	2	0.75	12	11
Dibenzofuran	2	0.75	15	14
Diethyl Phthalate	4	1.50	61	60
Dimethyl Phthalate	4	1.50	53	52
Di-N-Butyl Phthalate	4	1.50	220	219
Di-N-Octyl Phthalate	4	1.50	58	57
Fluorene	2	0.75	23	22
Fluoranthene	2	0.75	160	159
Hexachlorobenzene	0.1	0.04	0.38	0.34
Hexachlorobutadiene	0.5	0.19	3.9	3.7
Indeno(1,2,3-Cd)Pyrene	2	0.75	34	33
N-Nitrosodiphenylamine	4	1.50	11	10
Naphthalene	2	0.75	99	98
Pentachlorophenol	10	13.26	360	347
Phenanthrene	2	0.75	100	99
Phenol	4	5.31	420	415
Pyrene	2	0.75	1000	999
Aroclor 1016	36	13.48		
Aroclor 1221	7	2.62		
Aroclor 1232	60	22.47		
Aroclor 1242	65	24.34		
Aroclor 1248	0.83	0.31		
Aroclor 1254	0.83	0.31		
Aroclor 1260	0.83	0.31		
Total Organic Carbon (dry)	3541.114058			
Total Solids	75.4			
HPAH	20	7.49	960	953
LPAH	14	5.24	370	365
Total PCB	65	24.34	12	-12.3

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	0.1	0.02	0.81	0.79
1,2-Dichlorobenzene	0.2	0.04	2.3	2.3
1,4-Dichlorobenzene	0.2	0.04	3.1	3.1
2-Methylnaphthalene	2	0.41	38	38
2,4-Dimethylphenol	1	1.39	29	28
2-Methylphenol	2	2.77	63	60
4-Methylphenol	4	5.55	670	664
Acenaphthene	2	0.41	16	16
Acenaphthylene	2	0.41	66	66
Anthracene	2	0.41	220	220
Benzo(a)anthracene	2	0.41	110	110
Benzo(a)pyrene	2	0.41	99	99
Benzo(b)fluoranthene	2	0.41	115	115
Benzo(g,h,i)perylene	2	0.41	31	31
Benzo(k)fluoranthene	2	0.41	115	115
Benzoic Acid	10	13.87	650	636
Benzyl Alcohol	2	2.77	57	54
Benzyl Butyl Phthalate	1	0.21	4.9	4.7
Bis(2-Ethylhexyl)Phthalate	4	0.82	47	46
Chrysene	2	0.41	110	110
Dibenzo(a,h)anthracene	2	0.41	12	12
Dibenzofuran	2	0.41	15	15
Diethyl Phthalate	4	0.82	61	60
Dimethyl Phthalate	4	0.82	53	52
Di-N-Butyl Phthalate	4	0.82	220	219
Di-N-Octyl Phthalate	4	0.82	58	57
Fluorene	2	0.41	23	23
Fluoranthene	2	0.41	160	160
Hexachlorobenzene	0.1	0.02	0.38	0.36
Hexachlorobutadiene	0.5	0.10	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.41	34	34
N-Nitrosodiphenylamine	4	0.82	11	10
Naphthalene	2	0.41	99	99
Pentachlorophenol	10	13.87	360	346
Phenanthrene	2	0.41	100	100
Phenol	4	5.55	420	414
Pyrene	2	0.41	1000	1000
Aroclor 1016	60	12.37		
Aroclor 1221	12	2.47		
Aroclor 1232	99	20.41		
Aroclor 1242	100	20.62		
Aroclor 1248	0.83	0.17		
Aroclor 1254	0.83	0.17		
Aroclor 1260	0.83	0.17		
Total Organic Carbon (dry)	6726.768377			
Total Solids	72.1			
HPAH	20	4.12	960	956
LPAH	14	2.89	370	367
Total PCB	100	20.62	12	-8.6

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	0.1	0.02	0.81	0.79
1,2-Dichlorobenzene	0.2	0.03	2.3	2.3
1,4-Dichlorobenzene	0.2	0.03	3.1	3.1
2-Methylnaphthalene	2	0.33	38	38
2,4-Dimethylphenol	1	1.52	29	27
2-Methylphenol	2	3.04	63	60
4-Methylphenol	4	6.09	670	664
Acenaphthene	2	0.33	16	16
Acenaphthylene	2	0.33	66	66
Anthracene	2	0.33	220	220
Benzo(a)anthracene	2	0.33	110	110
Benzo(a)pyrene	2	0.33	99	99
Benzo(b)fluoranthene	2	0.33	115	115
Benzo(g,h,i)perylene	2	0.33	31	31
Benzo(k)fluoranthene	2	0.33	115	115
Benzoic Acid	10	15.22	650	635
Benzyl Alcohol	2	3.04	57	54
Benzyl Butyl Phthalate	1	0.16	4.9	4.7
Bis(2-Ethylhexyl)Phthalate	4	0.66	47	46
Chrysene	2	0.33	110	110
Dibenzo(a,h)anthracene	2	0.33	12	12
Dibenzofuran	2	0.33	15	15
Diethyl Phthalate	4	0.66	61	60
Dimethyl Phthalate	4	0.66	53	52
Di-N-Butyl Phthalate	4	0.66	220	219
Di-N-Octyl Phthalate	4	0.66	58	57
Fluorene	2	0.33	23	23
Fluoranthene	2	0.33	160	160
Hexachlorobenzene	0.1	0.02	0.38	0.36
Hexachlorobutadiene	0.5	0.08	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.33	34	34
N-Nitrosodiphenylamine	4	0.66	11	10
Naphthalene	2	0.33	99	99
Pentachlorophenol	10	15.22	360	345
Phenanthrene	2	0.33	100	100
Phenol	4	6.09	420	414
Pyrene	2	0.33	1000	1000
Aroclor 1016	23	3.78		
Aroclor 1221	4	0.66		
Aroclor 1232	34	5.58		
Aroclor 1242	52	8.54		
Aroclor 1248	0.83	0.14		
Aroclor 1254	0.83	0.14		
Aroclor 1260	0.83	0.14		
Total Organic Carbon (dry)	9269.406393			
Total Solids	65.7			
HPAH	20	3.28	960	957
LPAH	14	2.30	370	368
Total PCB	52	8.54	12	3.5

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	0.1	0.02	0.81	0.79
1,2-Dichlorobenzene	0.2	0.04	2.3	2.3
1,4-Dichlorobenzene	0.2	0.04	3.1	3.1
2-Methylnaphthalene	2	0.41	38	38
2,4-Dimethylphenol	1	1.37	29	28
2-Methylphenol	2	2.75	63	60
4-Methylphenol	4	5.49	670	665
Acenaphthene	2	0.41	16	16
Acenaphthylene	2	0.41	66	66
Anthracene	2	0.41	220	220
Benzo(a)anthracene	2	0.41	110	110
Benzo(a)pyrene	2	0.41	99	99
Benzo(b)fluoranthene	2	0.41	115	115
Benzo(g,h,i)perylene	2	0.41	31	31
Benzo(k)fluoranthene	2	0.41	115	115
Benzoic Acid	10	13.74	650	636
Benzyl Alcohol	2	2.75	57	54
Benzyl Butyl Phthalate	1	0.21	4.9	4.7
Bis(2-Ethylhexyl)Phthalate	4	0.83	47	46
Chrysene	2	0.41	110	110
Dibenzo(a,h)anthracene	2	0.41	12	12
Dibenzofuran	2	0.41	15	15
Diethyl Phthalate	4	0.83	61	60
Dimethyl Phthalate	4	0.83	53	52
Di-N-Butyl Phthalate	4	0.83	220	219
Di-N-Octyl Phthalate	4	0.83	58	57
Fluorene	2	0.41	23	23
Fluoranthene	2	0.41	160	160
Hexachlorobenzene	0.1	0.02	0.38	0.36
Hexachlorobutadiene	0.5	0.10	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.41	34	34
N-Nitrosodiphenylamine	4	0.83	11	10
Naphthalene	2	0.41	99	99
Pentachlorophenol	10	13.74	360	346
Phenanthrene	2	0.41	100	100
Phenol	4	5.49	420	415
Pyrene	2	0.41	1000	1000
Aroclor 1016	7.1	1.47		
Aroclor 1221	1.7	0.35		
Aroclor 1232	10	2.07		
Aroclor 1242	12	2.48		
Aroclor 1248	0.83	0.17		
Aroclor 1254	0.83	0.17		
Aroclor 1260	0.83	0.17		
Total Organic Carbon (dry)	6648.351648			
Total Solids	72.8			
HPAH	20	4.13	960	956
LPAH	14	2.89	370	367
Total PCB	12	2.48	12	9.5

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.24	38	38
2,4-Dimethylphenol	1	1.54	29	27
2-Methylphenol	2	3.08	63	60
4-Methylphenol	4	6.16	670	664
Acenaphthene	2	0.24	16	16
Acenaphthylene	2	0.24	66	66
Anthracene	2	0.24	220	220
Benzo(a)anthracene	2	0.24	110	110
Benzo(a)pyrene	2	0.24	99	99
Benzo(b)fluoranthene	2	0.24	115	115
Benzo(g,h,i)perylene	2	0.24	31	31
Benzo(k)fluoranthene	2	0.24	115	115
Benzoic Acid	10	15.41	650	635
Benzyl Alcohol	2	3.08	57	54
Benzyl Butyl Phthalate	1	0.12	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.49	47	47
Chrysene	2	0.24	110	110
Dibenzo(a,h)anthracene	2	0.24	12	12
Dibenzofuran	2	0.24	15	15
Diethyl Phthalate	4	0.49	61	61
Dimethyl Phthalate	4	0.49	53	53
Di-N-Butyl Phthalate	4	0.49	220	220
Di-N-Octyl Phthalate	4	0.49	58	58
Fluorene	2	0.24	23	23
Fluoranthene	2	0.24	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.06	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.24	34	34
N-Nitrosodiphenylamine	4	0.49	11	11
Naphthalene	2	0.24	99	99
Pentachlorophenol	10	15.41	360	345
Phenanthrene	2	0.24	100	100
Phenol	4	6.16	420	414
Pyrene	2	0.24	1000	1000
Aroclor 1016	32	3.92		
Aroclor 1221	6.6	0.81		
Aroclor 1232	52	6.36		
Aroclor 1242	73	8.94		
Aroclor 1248	0.83	0.10		
Aroclor 1254	0.83	0.10		
Aroclor 1260	0.83	0.10		
Total Organic Carbon (dry)	12588.59784			
Total Solids	64.9			
HPAH	20	2.45	960	958
LPAH	14	1.71	370	368
Total PCB	73	8.94	12	3.1

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.21	38	38
2,4-Dimethylphenol	1	1.77	29	27
2-Methylphenol	2	3.55	63	59
4-Methylphenol	4	7.09	670	663
Acenaphthene	2	0.21	16	16
Acenaphthylene	2	0.21	66	66
Anthracene	2	0.21	220	220
Benzo(a)anthracene	2	0.21	110	110
Benzo(a)pyrene	2	0.21	99	99
Benzo(b)fluoranthene	2	0.21	115	115
Benzo(g,h,i)perylene	2	0.21	31	31
Benzo(k)fluoranthene	2	0.21	115	115
Benzoic Acid	10	17.73	650	632
Benzyl Alcohol	2	3.55	57	53
Benzyl Butyl Phthalate	1	0.10	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.41	47	47
Chrysene	2	0.21	110	110
Dibenzo(a,h)anthracene	2	0.21	12	12
Dibenzofuran	2	0.21	15	15
Diethyl Phthalate	4	0.41	61	61
Dimethyl Phthalate	4	0.41	53	53
Di-N-Butyl Phthalate	4	0.41	220	220
Di-N-Octyl Phthalate	4	0.41	58	58
Fluorene	2	0.21	23	23
Fluoranthene	2	0.21	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.05	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.21	34	34
N-Nitrosodiphenylamine	4	0.41	11	11
Naphthalene	2	0.21	99	99
Pentachlorophenol	10	17.73	360	342
Phenanthrene	2	0.21	100	100
Phenol	4	7.09	420	413
Pyrene	2	0.21	1000	1000
Aroclor 1016	28	2.90		
Aroclor 1221	5.3	0.55		
Aroclor 1232	42	4.34		
Aroclor 1242	67	6.93		
Aroclor 1248	0.83	0.09		
Aroclor 1254	0.83	0.09		
Aroclor 1260	0.83	0.09		
Total Organic Carbon (dry)	17145.39007			
Total Solids	56.4			
HPAH	20	2.07	960	958
LPAH	14	1.45	370	369
Total PCB	67	6.93	12	5.1

CONVENTIONAL ANALYSES QC DATA

LIMSView Batch Report - run on 05/13/08, 10:21 am

WG96051 (Particle Size Distribution)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45302-1	423062-200-4	SALTWTRSED	3/24/2008 12:08	31-Mar-08	2-Apr-08	WG96051-1, -2	
L45302-2	423062-200-4	SALTWTRSED	3/24/2008 12:28	31-Mar-08	2-Apr-08	WG96051-1, -2	
L45302-3	423062-200-4	SALTWTRSED	3/24/2008 13:05	31-Mar-08	2-Apr-08	WG96051-1, -2	
L45302-4	423062-200-4	SALTWTRSED	3/24/2008 13:21	31-Mar-08	2-Apr-08	WG96051-1, -2	FREP @ L45302-3
L45302-5	423062-200-4	SALTWTRSED	3/24/2008 14:03	31-Mar-08	2-Apr-08	WG96051-1, -2	
L45302-6	423062-200-4	SALTWTRSED	3/24/2008 14:30	31-Mar-08	2-Apr-08	WG96051-1, -2	
L45302-7	423062-200-4	SALTWTRSED	3/25/2008 9:00	31-Mar-08	2-Apr-08	WG96051-1, -2	
L45302-8	423062-200-4	SALTWTRSED	3/25/2008 9:45	31-Mar-08	2-Apr-08	WG96051-1, -2	
L45302-9	423062-200-4	SALTWTRSED	3/25/2008 10:30	31-Mar-08	2-Apr-08	WG96051-1, -2	
WG96051-1	LD	SALTWTRSED		31-Mar-08	2-Apr-08	WG96051-1, -2	L45302-2
WG96051-2	LT	SALTWTRSED		31-Mar-08	2-Apr-08	WG96051-1, -2	WG96051-1 L45302-2

LIMSView Analytical QC Report - run on 05/13/08 10:21 am

Workgroup: WG96051 (Particle Size Distribution)

(Lab Triplicate, Lab Duplicate) L45302-2

Parameter	MDL	RDL	Units	SampValue	LD Value	LT Value	RSD	Qual	LabLimit
Clay	1.1	2.17	%	19.5	19.3	21.7	7		20
Gravel	0.22	2.17	%	1.3	1.3	1.4	3		20
Sand	0.22	2.17	%	26	25.4	25.2	2		20
Silt	1.1	2.17	%	49.8	49.3	49.8	1		20

WG95965 (Total Organic Carbon)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45302-1	423062-200-4	SALTWTRSED	3/24/2008 12:08	7-Apr-08	15-Apr-08	WG95965-1, -2, -3, -4, -5, -6, -7, -8	
L45302-2	423062-200-4	SALTWTRSED	3/24/2008 12:28	7-Apr-08	15-Apr-08	WG95965-1, -2, -3, -4, -5, -6, -7, -8	
L45302-3	423062-200-4	SALTWTRSED	3/24/2008 13:05	7-Apr-08	15-Apr-08	WG95965-1, -2, -3, -4, -5, -6, -7, -8	
L45302-4	423062-200-4	SALTWTRSED	3/24/2008 13:21	7-Apr-08	15-Apr-08	WG95965-1, -2, -3, -4, -5, -6, -7, -8	FREP @ L45302-3
L45302-5	423062-200-4	SALTWTRSED	3/24/2008 14:03	7-Apr-08	16-Apr-08	WG95965-1, -2, -3, -4, -5, -6, -7, -8	
L45302-6	423062-200-4	SALTWTRSED	3/24/2008 14:30	7-Apr-08	15-Apr-08	WG95965-1, -2, -3, -4, -5, -6, -7, -8	
L45302-7	423062-200-4	SALTWTRSED	3/25/2008 9:00	7-Apr-08	16-Apr-08	WG95965-1, -2, -3, -4, -5, -6, -7, -8	
L45302-8	423062-200-4	SALTWTRSED	3/25/2008 9:45	7-Apr-08	16-Apr-08	WG95965-1, -2, -3, -4, -5, -6, -7, -8	
L45302-9	423062-200-4	SALTWTRSED	3/25/2008 10:30	7-Apr-08	16-Apr-08	WG95965-1, -2, -3, -4, -5, -6, -7, -8	
WG95965-1	MB	OTHR SOLID		15-Apr-08	15-Apr-08	WG95965-1, -2, -3, -4, -5, -6, -7, -8	MB1 080415
WG95965-2	SB	OTHR SOLID		15-Apr-08	15-Apr-08	WG95965-1, -2, -3, -4, -5, -6, -7, -8	WG95965-1
WG95965-3	SRM	OTHR SOLID		15-Apr-08	15-Apr-08	WG95965-1, -2, -3, -4, -5, -6, -7, -8	HICONC
WG95965-4	LD	SALTWTRSED		7-Apr-08	15-Apr-08	WG95965-1, -2, -3, -4, -5, -6, -7, -8	L45302-6
WG95965-5	LT	SALTWTRSED		7-Apr-08	15-Apr-08	WG95965-1, -2, -3, -4, -5, -6, -7, -8	WG95965-4 L45302-6
WG95965-6	MS	SALTWTRSED		7-Apr-08	15-Apr-08	WG95965-1, -2, -3, -4, -5, -6, -7, -8	L45302-6
WG95965-7	MB	OTHR SOLID		16-Apr-08	16-Apr-08	WG95965-1, -2, -3, -4, -5, -6, -7, -8	MB1 080416
WG95965-8	SRM	OTHR SOLID		16-Apr-08	16-Apr-08	WG95965-1, -2, -3, -4, -5, -6, -7, -8	HICONC

Workgroup: WG95965 (Total Organic Carbon)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Organic Carbon	500	1000	mg/Kg	<MDL	

(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	2660	106		80--120

(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
Total Organic Carbon	2500	5000	mg/Kg	36900	34300	93		80--120

(Lab Triplicate, Lab Duplicate) L45302-6

Parameter	MDL	RDL	Units	SampValue	LD Value	LT Value	RSD	Qual	LabLimit
Total Organic Carbon	1800	3530	mg/Kg	6090	5970	6130	1		20

(Matrix Spike) L45302-6

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Organic Carbon	1800	3600	mg/Kg	6090	9005	15900	109		75--125

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Organic Carbon	500	1000	mg/Kg	<MDL	

(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
Total Organic Carbon	2500	4980	mg/Kg	36900	35500	96		80--120

WG96118 (Total Solids)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45302-1	423062-200-4	SALTWTRSED	3/24/2008 12:08	7-Apr-08	7-Apr-08	WG95814-1, WG96118-1, -2	
L45302-2	423062-200-4	SALTWTRSED	3/24/2008 12:28	7-Apr-08	7-Apr-08	WG95814-1, WG96118-1, -2	
L45302-3	423062-200-4	SALTWTRSED	3/24/2008 13:05	7-Apr-08	7-Apr-08	WG95814-1, WG96118-1, -2	
L45302-4	423062-200-4	SALTWTRSED	3/24/2008 13:21	7-Apr-08	7-Apr-08	WG95814-1, WG96118-1, -2	FREP @ L45302-3
L45302-5	423062-200-4	SALTWTRSED	3/24/2008 14:03	7-Apr-08	7-Apr-08	WG95814-1, WG96118-1, -2	
L45302-6	423062-200-4	SALTWTRSED	3/24/2008 14:30	7-Apr-08	7-Apr-08	WG95814-1, WG96118-1, -2	
L45302-7	423062-200-4	SALTWTRSED	3/25/2008 9:00	7-Apr-08	7-Apr-08	WG95814-1, WG96118-1, -2	
L45302-8	423062-200-4	SALTWTRSED	3/25/2008 9:45	7-Apr-08	7-Apr-08	WG95814-1, WG96118-1, -2	
L45302-9	423062-200-4	SALTWTRSED	3/25/2008 10:30	7-Apr-08	7-Apr-08	WG95814-1, WG96118-1, -2	
WG96118-1	LD	SALTWTRSED		7-Apr-08	7-Apr-08	WG95814-1, WG96118-1, -2	L45302-4
WG96118-2	LT	SALTWTRSED		7-Apr-08	7-Apr-08	WG95814-1, WG96118-1, -2	WG96118-1 L45302-4
WG95814-1	MB	OTHR SOLID		7-Apr-08	7-Apr-08		MB1 080407

Workgroup: WG96118 (Total Solids)

(Lab Triplicate, Lab Duplicate) L45302-4

Parameter	MDL	RDL	Units	SampValue	LD Value	LT Value	RSD	Qual	LabLimit
Total Solids	0.005	0.01	%	75.4	75.3	77.5	2		20

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Solids	0.005	0.01	%	<MDL	

METAL CHEMISTRY QC DATA

LIMSView Batch Report - run on 05/13/08, 10:21 am

WG96195 (Total Mercury by CVAA)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45302-1	423062-200-4	SALTWTRSED	3/24/2008 12:08	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45302-2	423062-200-4	SALTWTRSED	3/24/2008 12:28	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45302-3	423062-200-4	SALTWTRSED	3/24/2008 13:05	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45302-4	423062-200-4	SALTWTRSED	3/24/2008 13:21	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	FREP @ L45302-3
L45302-5	423062-200-4	SALTWTRSED	3/24/2008 14:03	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45302-6	423062-200-4	SALTWTRSED	3/24/2008 14:30	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45302-7	423062-200-4	SALTWTRSED	3/25/2008 9:00	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45302-8	423062-200-4	SALTWTRSED	3/25/2008 9:45	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45302-9	423062-200-4	SALTWTRSED	3/25/2008 10:30	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45303-1	423062-200-4	SALTWTRSED	3/25/2008 11:15	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45303-2	423062-200-4	SALTWTRSED	3/25/2008 11:30	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45303-3	423062-200-4	SALTWTRSED	3/25/2008 11:40	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	FREP @ L45303-2
L45303-4	423062-200-4	SALTWTRSED	3/25/2008 12:00	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45303-5	423062-200-4	SALTWTRSED	3/25/2008 12:10	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45303-6	423062-200-4	SALTWTRSED	3/25/2008 12:25	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45303-7	423062-200-4	SALTWTRSED	3/25/2008 12:40	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
L45303-8	423062-200-4	SALTWTRSED	3/25/2008 12:54	14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	
WG96195-1	SRM	SALTWTRSED		14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	PACS2
WG96195-2	MB	SOLIDBLANK		14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	METHOD BLANK
WG96195-3	SB	SOLIDBLANK		14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	WG96195-2 HG-SMID
WG96195-4	MS	SALTWTRSED		14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	L45302-2 HG-SMID
WG96195-5	MSD	SALTWTRSED		14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	WG96195-4 L45302-2 HG-SMID-MSD
WG96195-6	LD	SALTWTRSED		14-Apr-08	15-Apr-08	WG96195-1, -2, -3, -4, -5, -6	L45302-2 RPD-SOL

LIMSView Analytical QC Report - run on 05/13/08 10:21 am

Workgroup: WG96195 (Total Mercury by CVAA)

(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
Mercury, Total, CVAA	0.047	0.465	mg/Kg	3.04	2.62	86		80--120

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAA	0.0048	0.0476	mg/Kg	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Mercury, Total, CVAA	0.0048	0.0476	mg/Kg	<MDL	0.0952	0.0919	96		85--115

(Matrix Spike Duplicate, Matrix Spike) L45302-2

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Mercury, Total, CVAA	0.0051	0.0512	mg/Kg	0.0843	0.0993	0.16	77		75--125	0.0965	0.158	76		1		20

(Lab Duplicate) L45302-2

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Mercury, Total, CVAA	0.0049	0.0491	mg/Kg	0.0843	0.0901	7		20

WG96348 (Total Metals by ICP)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45302-1	423062-200-4	SALTWTRSED	3/24/2008 12:08	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45302-2	423062-200-4	SALTWTRSED	3/24/2008 12:28	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45302-3	423062-200-4	SALTWTRSED	3/24/2008 13:05	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45302-4	423062-200-4	SALTWTRSED	3/24/2008 13:21	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	FREP @ L45302-3
L45302-5	423062-200-4	SALTWTRSED	3/24/2008 14:03	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45302-6	423062-200-4	SALTWTRSED	3/24/2008 14:30	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45302-7	423062-200-4	SALTWTRSED	3/25/2008 9:00	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45302-8	423062-200-4	SALTWTRSED	3/25/2008 9:45	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45302-9	423062-200-4	SALTWTRSED	3/25/2008 10:30	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45303-1	423062-200-4	SALTWTRSED	3/25/2008 11:15	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45303-2	423062-200-4	SALTWTRSED	3/25/2008 11:30	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45303-3	423062-200-4	SALTWTRSED	3/25/2008 11:40	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	FREP @ L45303-2
L45303-4	423062-200-4	SALTWTRSED	3/25/2008 12:00	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45303-5	423062-200-4	SALTWTRSED	3/25/2008 12:10	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45303-6	423062-200-4	SALTWTRSED	3/25/2008 12:25	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45303-7	423062-200-4	SALTWTRSED	3/25/2008 12:40	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
L45303-8	423062-200-4	SALTWTRSED	3/25/2008 12:54	28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	
WG96348-1	SB	SOLIDBLANK		28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	WG96348-3 ICPMARINE SPIKE BLANK
WG96348-2	SRM	SALTWTRSED		28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	PACS2 M1-11-30
WG96348-3	MB	SOLIDBLANK		28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	DIGESTED METHOD BALNK
WG96348-4	LD	SALTWTRSED		28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	L45302-1 RPD-SOL LAB DUPLICATE
WG96348-5	MS	SALTWTRSED		28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	L45302-1 ICPMARINE MATRIX SPIKE
WG96348-6	LCS	OTHR SOLID		28-Apr-08	28-Apr-08	WG96348-1, -2, -6, -3, -4, -5	ERASOIL M-07-023

Workgroup: WG96348 (Total Metals by ICP)

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Aluminum, Total, ICP	4.8	23.8	mg/Kg	<MDL	6710	6550	98		85--115
Antimony, Total, ICP	0.71	3.57	mg/Kg	<MDL	47.6	48.5	102		85--115
Arsenic, Total, ICP	1.2	5.95	mg/Kg	<MDL	47.6	48.7	102		85--115
Beryllium, Total, ICP	0.048	0.238	mg/Kg	<MDL	47.6	46.5	98		85--115
Cadmium, Total, ICP	0.095	0.476	mg/Kg	<MDL	47.6	47.7	100		85--115
Chromium, Total, ICP	0.14	0.714	mg/Kg	<MDL	47.6	47.2	99		85--115
Copper, Total, ICP	0.19	0.952	mg/Kg	<MDL	47.6	46.5	98		85--115
Iron, Total, ICP	2.4	11.9	mg/Kg	<MDL	4810	4600	96		85--115
Lead, Total, ICP	0.95	4.76	mg/Kg	<MDL	47.6	47.2	99		85--115
Manganese, Total, ICP	0.095	0.476	mg/Kg	<MDL	238	233	98		85--115
Nickel, Total, ICP	0.24	1.19	mg/Kg	<MDL	47.6	46.4	97		85--115
Selenium, Total, ICP	1.2	5.95	mg/Kg	<MDL	47.6	49.1	103		85--115
Silver, Total, ICP	0.19	0.952	mg/Kg	<MDL	47.6	47	99		85--115
Thallium, Total, ICP	1.9	9.52	mg/Kg	<MDL	47.6	46.3	97		85--115
Zinc, Total, ICP	0.24	1.19	mg/Kg	<MDL	238	238	100		85--115

(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
Aluminum, Total, ICP	20	99.5	mg/Kg	66200	14300	22		10--43
Chromium, Total, ICP	0.6	2.99	mg/Kg	90.7	46.6	51		30--70
Copper, Total, ICP	0.8	3.98	mg/Kg	310	293	94		78--118
Iron, Total, ICP	10	49.8	mg/Kg	40900	30000	73		55--95
Lead, Total, ICP	4	19.9	mg/Kg	183	174	95		74--114
Manganese, Total, ICP	0.4	1.99	mg/Kg	440	231	53		35--75
Nickel, Total, ICP	1	4.98	mg/Kg	39.5	30	76		51--91
Zinc, Total, ICP	1	4.98	mg/Kg	364	353	97		73--113

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Aluminum, Total, ICP	4.8	23.8	mg/Kg	<MDL	
Antimony, Total, ICP	0.71	3.57	mg/Kg	<MDL	
Arsenic, Total, ICP	1.2	5.95	mg/Kg	<MDL	
Beryllium, Total, ICP	0.048	0.238	mg/Kg	<MDL	
Cadmium, Total, ICP	0.095	0.476	mg/Kg	<MDL	
Chromium, Total, ICP	0.14	0.714	mg/Kg	<MDL	
Copper, Total, ICP	0.19	0.952	mg/Kg	<MDL	
Iron, Total, ICP	2.4	11.9	mg/Kg	<MDL	
Lead, Total, ICP	0.95	4.76	mg/Kg	<MDL	
Manganese, Total, ICP	0.095	0.476	mg/Kg	<MDL	
Nickel, Total, ICP	0.24	1.19	mg/Kg	<MDL	
Selenium, Total, ICP	1.2	5.95	mg/Kg	<MDL	
Silver, Total, ICP	0.19	0.952	mg/Kg	<MDL	
Thallium, Total, ICP	1.9	9.52	mg/Kg	<MDL	
Zinc, Total, ICP	0.24	1.19	mg/Kg	<MDL	

(Lab Duplicate) L45302-1

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Aluminum, Total, ICP	5	24.9	mg/Kg	9530	9580	1		20
Antimony, Total, ICP	0.75	3.74	mg/Kg	<MDL	<MDL			20
Arsenic, Total, ICP	1.2	6.23	mg/Kg	6.76	7.2	6		20
Beryllium, Total, ICP	0.05	0.249	mg/Kg	0.2	0.21			20
Cadmium, Total, ICP	0.1	0.498	mg/Kg	0.31	0.3			20
Chromium, Total, ICP	0.15	0.748	mg/Kg	16	17.3	7		20
Copper, Total, ICP	0.2	0.997	mg/Kg	40.7	40.4	1		20
Iron, Total, ICP	2.5	12.5	mg/Kg	14700	14800	1		20
Lead, Total, ICP	1	4.98	mg/Kg	26.8	25.9	3		20
Manganese, Total, ICP	0.1	0.498	mg/Kg	165	166	1		20
Nickel, Total, ICP	0.25	1.25	mg/Kg	11.1	11.7	5		20
Selenium, Total, ICP	1.2	6.23	mg/Kg	<MDL	<MDL			20
Silver, Total, ICP	0.2	0.997	mg/Kg	0.22	<MDL			20
Thallium, Total, ICP	2	9.97	mg/Kg	<MDL	<MDL			20
Zinc, Total, ICP	0.25	1.25	mg/Kg	88.9	91.5	3		20

(Matrix Spike) L45302-1

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Aluminum, Total, ICP	5	24.9	mg/Kg	9530	7020	17900	119		75--125
Antimony, Total, ICP	0.75	3.74	mg/Kg	<MDL	49.8	10	20	G	75--125
Arsenic, Total, ICP	1.2	6.23	mg/Kg	6.76	49.8	56.9	101		75--125
Beryllium, Total, ICP	0.05	0.249	mg/Kg	0.2	49.8	47.3	94		75--125
Cadmium, Total, ICP	0.1	0.498	mg/Kg	0.31	49.8	49.6	99		75--125
Chromium, Total, ICP	0.15	0.747	mg/Kg	16	49.8	65.7	100		75--125
Copper, Total, ICP	0.2	0.996	mg/Kg	40.7	49.8	89.4	98		75--125
Iron, Total, ICP	2.5	12.5	mg/Kg	14700	5030	19700	100		75--125
Lead, Total, ICP	1	4.98	mg/Kg	26.8	49.8	74.5	96		75--125
Manganese, Total, ICP	0.1	0.498	mg/Kg	165	249	401	95		75--125
Nickel, Total, ICP	0.25	1.25	mg/Kg	11.1	49.8	58.8	96		75--125
Selenium, Total, ICP	1.2	6.23	mg/Kg	<MDL	49.8	49.4	99		75--125
Silver, Total, ICP	0.2	0.996	mg/Kg	0.22	49.8	48.3	96		75--125
Thallium, Total, ICP	2	9.96	mg/Kg	<MDL	49.8	45.9	92		75--125
Zinc, Total, ICP	0.25	1.25	mg/Kg	88.9	249	334	98		75--125

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Aluminum, Total, ICP	20	102	mg/Kg	8260	7040	85		61--139
Antimony, Total, ICP	3.1	15.3	mg/Kg	90.2	63.9	71		10--211
Arsenic, Total, ICP	5.1	25.5	mg/Kg	132	135	102		80--120
Beryllium, Total, ICP	0.2	1.02	mg/Kg	89.5	89.4	100		80--120
Cadmium, Total, ICP	0.41	2.04	mg/Kg	66.5	66.8	100		80--120
Chromium, Total, ICP	0.61	3.06	mg/Kg	72.9	69.6	96		79--121
Copper, Total, ICP	0.82	4.09	mg/Kg	68.5	66	96		80--120
Iron, Total, ICP	10	51.1	mg/Kg	13400	10700	80		50--149
Lead, Total, ICP	4.1	20.4	mg/Kg	130	135	104		80--120
Manganese, Total, ICP	0.41	2.04	mg/Kg	453	453	100		80--120
Nickel, Total, ICP	1	5.11	mg/Kg	55.6	55.9	101		80--120
Selenium, Total, ICP	5.1	25.5	mg/Kg	161	169	105		78--122
Silver, Total, ICP	0.82	4.09	mg/Kg	101	106	105		66--134
Thallium, Total, ICP	8.2	40.9	mg/Kg	133	131	98		77--123
Zinc, Total, ICP	1	5.11	mg/Kg	177	175	99		79--121

ORGANIC CHEMISTRY QC DATA

WG95938 (Semi Volatile Organics)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45302-1	423062-200-4	SALTWTRSED	3/24/2008 12:08	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45302-2	423062-200-4	SALTWTRSED	3/24/2008 12:28	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45302-3	423062-200-4	SALTWTRSED	3/24/2008 13:05	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45302-4	423062-200-4	SALTWTRSED	3/24/2008 13:21	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	FREP @ L45302-3
L45302-5	423062-200-4	SALTWTRSED	3/24/2008 14:03	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45302-6	423062-200-4	SALTWTRSED	3/24/2008 14:30	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45302-7	423062-200-4	SALTWTRSED	3/25/2008 9:00	27-Mar-08	1-Apr-08	WG95938-5	
L45302-8	423062-200-4	SALTWTRSED	3/25/2008 9:45	27-Mar-08	1-Apr-08	WG95938-5	
L45302-9	423062-200-4	SALTWTRSED	3/25/2008 10:30	27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-1	423062-200-4	SALTWTRSED	3/25/2008 11:15	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-2	423062-200-4	SALTWTRSED	3/25/2008 11:30	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-3	423062-200-4	SALTWTRSED	3/25/2008 11:40	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	FREP @ L45303-2
L45303-4	423062-200-4	SALTWTRSED	3/25/2008 12:00	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-5	423062-200-4	SALTWTRSED	3/25/2008 12:10	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-6	423062-200-4	SALTWTRSED	3/25/2008 12:25	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-7	423062-200-4	SALTWTRSED	3/25/2008 12:40	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45303-8	423062-200-4	SALTWTRSED	3/25/2008 12:54	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45304-1	423062-100-4	SALTWTRSED	3/24/2008 9:35	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45304-2	423062-100-4	SALTWTRSED	3/24/2008 9:50	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
L45304-3	423062-100-4	SALTWTRSED	3/24/2008 10:08	27-Mar-08	3-Apr-08	WG95938-1, -2, -6, -3, -4, -5	
WG95938-1	MB	OTHR SOLID		27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	MB080327
WG95938-2	SB	OTHR SOLID		27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	WG95938-1
WG95938-3	MS	SALTWTRSED		27-Mar-08	2-Apr-08	WG95938-1, -2, -6, -3, -4, -5	L45302-1
WG95938-4	MSD	SALTWTRSED		27-Mar-08	2-Apr-08	WG95938-1, -2, -6, -3, -4, -5	WG95938-3 L45302-1
WG95938-5	SRM	SALTWTRSED		27-Mar-08	1-Apr-08	WG95938-5	1944
WG95938-6	LD	SALTWTRSED		27-Mar-08	1-Apr-08	WG95938-1, -2, -6, -3, -4, -5	L45302-2

LIMSView Analytical QC Report - run on 05/13/08 10:20 am

Workgroup: WG95938 (Semi Volatile Organics)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	
2-Methylnaphthalene	2	4	ug/Kg	<MDL	
2-Methylphenol	2	4	ug/Kg	<MDL	
4-Methylphenol	4	8	ug/Kg	<MDL	
Acenaphthene	2	4	ug/Kg	<MDL	
Acenaphthylene	2	4	ug/Kg	<MDL	
Anthracene	2	4	ug/Kg	<MDL	
Benzo(a)anthracene	2	4	ug/Kg	<MDL	
Benzo(a)pyrene	2	4	ug/Kg	<MDL	
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	
Benzoic Acid	10	20	ug/Kg	112	B
Benzyl Alcohol	2	4	ug/Kg	<MDL	
Benzyl Butyl Phthalate	1	2	ug/Kg	7.62	B
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	10.9	B
Caffeine	4	8	ug/Kg	<MDL	
Carbazole	2	4	ug/Kg	<MDL	
Chrysene	2	4	ug/Kg	<MDL	
Coprostanol	40	80	ug/Kg	<MDL	
Di-N-Butyl Phthalate	4	8	ug/Kg	6.8	B
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	
Dibenzofuran	2	4	ug/Kg	<MDL	
Diethyl Phthalate	4	8	ug/Kg	<MDL	
Dimethyl Phthalate	4	8	ug/Kg	<MDL	
Fluoranthene	2	4	ug/Kg	<MDL	
Fluorene	2	4	ug/Kg	<MDL	
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	
Hexachloroethane	1	2	ug/Kg	<MDL	
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	
Naphthalene	2	4	ug/Kg	<MDL	
Pentachlorophenol	10	20	ug/Kg	<MDL	
Phenanthrene	2	4	ug/Kg	<MDL	
Phenol	4	8	ug/Kg	<MDL	

Pyrene	2	4	ug/Kg	<MDL
Total HPAHS	2	4	ug/Kg	<MDL
Total LPAHs	2	4	ug/Kg	<MDL

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	375	162	43		13--110
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	375	174	46		10--116
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	375	182	48		18--95
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	375	148	39		21--99
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	375	77.2	21		10--81
2-Methylnaphthalene	2	4	ug/Kg	<MDL	375	174	47		22--99
2-Methylphenol	2	4	ug/Kg	<MDL	375	87.4	23		16--91
4-Methylphenol	4	8	ug/Kg	<MDL	375	102	27		10--125
Acenaphthene	2	4	ug/Kg	<MDL	375	237	63		29--102
Acenaphthylene	2	4	ug/Kg	<MDL	375	254	68		31--101
Anthracene	2	4	ug/Kg	<MDL	375	280	75		45--114
Benzo(a)anthracene	2	4	ug/Kg	<MDL	375	304	81		69--117
Benzo(a)pyrene	2	4	ug/Kg	<MDL	375	277	74		15--137
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	375	286	76		50--121
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	375	252	67		46--126
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	375	294	78		58--128
Benzoic Acid	10	20	ug/Kg	112	375	265	41		10--170
Benzyl Alcohol	2	4	ug/Kg	<MDL	375	119	32		10--119
Benzyl Butyl Phthalate	1	2	ug/Kg	7.62	375	344	90		15--183
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	10.9	375	334	86		10--182
Caffeine	4	8	ug/Kg	<MDL	375	279	74		45--159
Carbazole	2	4	ug/Kg	<MDL	375	296	79		44--179
Chrysene	2	4	ug/Kg	<MDL	375	281	75		69--111
Coprostanol	40	80	ug/Kg	<MDL	3750	2100	56		10--159
Di-N-Butyl Phthalate	4	8	ug/Kg	6.8	375	291	76		17--180
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	375	339	91		10--200
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	375	333	89		53--129
Dibenzofuran	2	4	ug/Kg	<MDL	375	255	68		37--97
Diethyl Phthalate	4	8	ug/Kg	<MDL	375	223	59		51--118
Dimethyl Phthalate	4	8	ug/Kg	<MDL	375	222	59		38--114
Fluoranthene	2	4	ug/Kg	<MDL	375	256	68		55--132
Fluorene	2	4	ug/Kg	<MDL	375	226	60		39--106
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	375	223	59		40--111
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	375	146	39		10--97
Hexachloroethane	1	2	ug/Kg	<MDL	375	174	46		17--92
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	375	302	80		51--132
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	375	248	66		11--148
Naphthalene	2	4	ug/Kg	<MDL	375	154	41		17--94
Pentachlorophenol	10	20	ug/Kg	<MDL	375	245	65		38--124
Phenanthrene	2	4	ug/Kg	<MDL	375	265	71		57--104
Phenol	4	8	ug/Kg	<MDL	375	110	29		10--107
Pyrene	2	4	ug/Kg	<MDL	375	272	73		48--132

Total HPAHS	2	4	ug/Kg	<MDL	3750	2860	76		25--150						
Total LPAHs	2	4	ug/Kg	<MDL	2630	1590	61		25--150						

(Matrix Spike Duplicate, Matrix Spike) L45302-1

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
1,2,4-Trichlorobenzene	0.5	1	ug/Kg	<MDL	375	231	62		10--115	375	205	55		12		35
1,2-Dichlorobenzene	1	2	ug/Kg	<MDL	375	211	56		10--105	375	190	51		9		35
1,3-Dichlorobenzene	1	2	ug/Kg	<MDL	375	206	55		10--103	375	196	52		6		35
1,4-Dichlorobenzene	1	2	ug/Kg	1.08	375	199	53		10--104	375	163	43		21		35
2,4-Dimethylphenol	5	10	ug/Kg	<MDL	375	258	69		10--150	375	227	60		14		35
2-Methylnaphthalene	10	20	ug/Kg	5.25	375	284	74		22--112	375	236	62		18		35
2-Methylphenol	10	20	ug/Kg	<MDL	375	282	75		10--142	375	254	68		10		35
4-Methylphenol	20	40	ug/Kg	<MDL	375	256	68		10--163	375	231	62		9		35
Acenaphthene	10	20	ug/Kg	7.85	375	309	80		25--130	375	289	75		6		35
Acenaphthylene	10	20	ug/Kg	5.31	375	323	85		27--132	375	309	81		5		35
Anthracene	10	20	ug/Kg	36.1	375	388	94		10--181	375	373	90		4		35
Benzo(a)anthracene	10	20	ug/Kg	145	375	481	90		32--168	375	447	81		11		35
Benzo(a)pyrene	10	20	ug/Kg	118	375	473	95		10--200	375	425	82		15		35
Benzo(b)fluoranthene	10	20	ug/Kg	169	375	484	84		10--199	375	427	69		20		35
Benzo(g,h,i)perylene	10	20	ug/Kg	77.6	375	269	51		10--173	375	261	49		4		35
Benzo(k)fluoranthene	10	20	ug/Kg	126	375	566	117		10--192	375	472	92		24		35
Benzoic Acid	50	100	ug/Kg	295	375	625	88		10--158	375	590	79		11		35
Benzyl Alcohol	10	20	ug/Kg	<MDL	375	127	34		10--138	375	153	41		19		35
Benzyl Butyl Phthalate	5	10	ug/Kg	77.9	375	442	97		41--145	375	442	97		0		35
Bis(2-Ethylhexyl)Phthalate	20	40	ug/Kg	1040	375	1700	176		10--189	375	1420	101		54	*	35
Caffeine	20	40	ug/Kg	<MDL	375	249	66		17--195	375	266	71		7		35
Carbazole	10	20	ug/Kg	74.3	375	320	66		16--200	375	376	80		19		35
Chrysene	10	20	ug/Kg	202	375	570	98		14--184	375	496	79		21		35
Coprostanol	200	400	ug/Kg	<MDL	3750	1250	33		10--183	3750	825	22		40	*	35
Di-N-Butyl Phthalate	20	40	ug/Kg	23.3	375	309	76		10--194	375	329	81		6		35
Di-N-Octyl Phthalate	20	40	ug/Kg	<MDL	375	512	137		52--151	375	485	129		6		35
Dibenzo(a,h)anthracene	10	20	ug/Kg	42.9	375	336	78		10--166	375	319	74		5		35
Dibenzofuran	10	20	ug/Kg	6.47	375	313	82		21--134	375	297	78		5		35
Diethyl Phthalate	20	40	ug/Kg	<MDL	375	255	68		31--150	375	243	65		5		35
Dimethyl Phthalate	20	40	ug/Kg	<MDL	375	252	67		13--162	375	239	64		5		35
Fluoranthene	10	20	ug/Kg	239	375	501	70		12--188	375	482	65		7		35
Fluorene	10	20	ug/Kg	23.4	375	293	72		22--147	375	277	68		6		35
Hexachlorobenzene	0.5	1	ug/Kg	<MDL	375	251	67		18--151	375	242	65		3		35
Hexachlorobutadiene	2.5	5	ug/Kg	<MDL	375	206	55		10--97	375	184	49		12		35
Hexachloroethane	5	10	ug/Kg	<MDL	375	208	55		10--89	375	191	51		8		35
Indeno(1,2,3-Cd)Pyrene	10	20	ug/Kg	85.8	375	355	72		10--177	375	339	68		6		35
N-Nitrosodiphenylamine	20	40	ug/Kg	<MDL	375	307	82		10--169	375	298	79		4		35
Naphthalene	10	20	ug/Kg	4.36	375	252	66		12--97	375	221	58		13		35
Pentachlorophenol	50	100	ug/Kg	<MDL	375	280	75		17--170	375	278	74		1		35
Phenanthrene	10	20	ug/Kg	105	375	464	96		10--200	375	390	76		23		35
Phenol	20	40	ug/Kg	37.2	375	262	60		10--127	375	234	52		14		35
Pyrene	10	20	ug/Kg	406	375	648	64		20--174	375	519	30		72	*	35
Total HPAHS	10	20	ug/Kg	1610	3750	4680	82		25--150	3750	4190	69		17		35

Total LPAHs	10	20	ug/Kg	177	2630	2310	81		25--150	2630	2090	73	10	35

(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
Anthracene	270	533	ug/Kg	1750	632	36		28--98
Benzo(a)anthracene	270	533	ug/Kg	4660	3220	69		66--124
Benzo(a)pyrene	270	533	ug/Kg	4240	2660	63		60--116
Benzo(b)fluoranthene	270	533	ug/Kg	3820	2560	67		52--190
Benzo(g,h,i)perylene	270	533	ug/Kg	2800	1430	51		15--121
Benzo(k)fluoranthene	270	533	ug/Kg	2270	2440	107		60--146
Chrysene	270	533	ug/Kg	4800	4260	89		77--136
Dibenzo(a,h)anthracene	130	267	ug/Kg	419	341	81		10--200
Fluoranthene	270	533	ug/Kg	8800	6020	68		45--126
Indeno(1,2,3-Cd)Pyrene	270	533	ug/Kg	2740	1820	66		33--121
Naphthalene	130	267	ug/Kg	1630	250	16		10--29
Phenanthrene	270	533	ug/Kg	5200	3530	68		51--106
Pyrene	270	533	ug/Kg	9570	6290	66		36--135

(Lab Duplicate) L45302-2

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	<MDL			35
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	<MDL			35
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	<MDL			35
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	0.778	1.05	30		35
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	<MDL			35
2-Methylnaphthalene	2	4	ug/Kg	20.9	25.8	21		35
2-Methylphenol	2	4	ug/Kg	<MDL	<MDL			35
4-Methylphenol	4	8	ug/Kg	<MDL	<MDL			35
Acenaphthene	2	4	ug/Kg	48.3	63.1	27		35
Acenaphthylene	2	4	ug/Kg	9.02	9.84	9		35
Anthracene	2	4	ug/Kg	75.6	92.6	20		35
Benzo(a)anthracene	2	4	ug/Kg	319	303	5		35
Benzo(a)pyrene	2	4	ug/Kg	175	170	3		35
Benzo(b)fluoranthene	2	4	ug/Kg	272	222	20		35
Benzo(g,h,i)perylene	2	4	ug/Kg	74	83.8	12		35
Benzo(k)fluoranthene	2	4	ug/Kg	190	208	9		35
Benzoic Acid	10	20	ug/Kg	587	754	25		35
Benzyl Alcohol	2	4	ug/Kg	<MDL	<MDL			35
Benzyl Butyl Phthalate	1	2	ug/Kg	58.5	68.4	16		35
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	722	893	21		35
Caffeine	4	8	ug/Kg	<MDL	<MDL			35
Carbazole	2	4	ug/Kg	16.8	19.6	16		35
Chrysene	2	4	ug/Kg	342	349	2		35
Coprostanol	40	80	ug/Kg	<MDL	<MDL			35
Di-N-Butyl Phthalate	4	8	ug/Kg	16.4	20.1	20		35
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Dibenzo(a,h)anthracene	2	4	ug/Kg	45.4	47.1	4		35
Dibenzofuran	2	4	ug/Kg	31.9	38.9	20		35

Diethyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Dimethyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Fluoranthene	2	4	ug/Kg	719	662	8		35
Fluorene	2	4	ug/Kg	59.2	66.6	12		35
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	<MDL			35
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	<MDL			35
Hexachloroethane	1	2	ug/Kg	<MDL	<MDL			35
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	95.1	96.8	2		35
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	<MDL			35
Naphthalene	2	4	ug/Kg	5.99	5.62	6		35
Pentachlorophenol	10	20	ug/Kg	<MDL	<MDL			35
Phenanthrene	2	4	ug/Kg	302	336	11		35
Phenol	4	8	ug/Kg	19.8	93	130	E	35
Pyrene	2	4	ug/Kg	974	912	7		35
Total HPAHS	2	4	ug/Kg	3130	3050	2		35
Total LPAHs	2	4	ug/Kg	499	587	16		35

Surrogate:	2,4,6-Tribromophenol	2-Fluorobiphenyl	2-Fluorophenol	d14-Terphenyl	d4-1,2-Dichlorobenzene	d4-2-Chlorophenol	d5-Nitrobenzene	d5-Phenol
(Lab Limits)	29--112	31--101	10--112	51--130	24--91	11--105	28--94	10--106
L45302-1	66	69	35	129	36	33	30	40
L45302-2	64	64	29	129	34	20	30	28
L45302-3	69	64	37	107	36	29	31	20
L45302-4	65	65	42	92	40	37	37	23
L45302-5	70	69	51	92	47	39	42	23
L45302-6	61	58	19	100	29	14	34	20
L45302-7	65	66	24	125	32	36	31	63
L45302-8	62	64	48	129	46	75	30	72
L45302-9	62	65	35	110	35	23	41	19
L45303-1	75	59	44	80	41	53	60	47
L45303-2	76	48	36	77	34	42	49	32
L45303-3	72	52	39	78	38	49	54	38
L45303-4	78	52	47	80	46	53	64	36
L45303-5	75	49	41	83	40	49	55	39
L45303-6	46	33	28	56	28	33	36	28
L45303-7	70	53	43	75	40	49	57	41
L45303-8	74	54	44	79	41	51	58	41
L45304-1	65	65	58	80	58	61	70	47
L45304-2	69	65	49	104	48	57	63	46
L45304-3	73	62	50	94	50	50	65	36
WG95938-1	68	31	39	75	40	43	60	22
WG95938-2	62	38	45	77	70	47	48	32
WG95938-3	96	71	74	101	106 L	92	82	87
WG95938-4	78	58	52	79	76	68	59	67
WG95938-5	72	59	54	74	50	65	59	62
WG95938-6	65	63	44	113	42	42	44	34

WG95963 (Chlorinated Pesticides)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45302-1	423062-200-4	SALTWTRSED	3/24/2008 12:08	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-2	423062-200-4	SALTWTRSED	3/24/2008 12:28	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-3	423062-200-4	SALTWTRSED	3/24/2008 13:05	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-4	423062-200-4	SALTWTRSED	3/24/2008 13:21	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	FREP @ L45302-3
L45302-5	423062-200-4	SALTWTRSED	3/24/2008 14:03	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-6	423062-200-4	SALTWTRSED	3/24/2008 14:30	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-7	423062-200-4	SALTWTRSED	3/25/2008 9:00	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-8	423062-200-4	SALTWTRSED	3/25/2008 9:45	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45302-9	423062-200-4	SALTWTRSED	3/25/2008 10:30	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-1	423062-200-4	SALTWTRSED	3/25/2008 11:15	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-2	423062-200-4	SALTWTRSED	3/25/2008 11:30	28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-3	423062-200-4	SALTWTRSED	3/25/2008 11:40	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	FREP @ L45303-2
L45303-4	423062-200-4	SALTWTRSED	3/25/2008 12:00	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-5	423062-200-4	SALTWTRSED	3/25/2008 12:10	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-6	423062-200-4	SALTWTRSED	3/25/2008 12:25	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-7	423062-200-4	SALTWTRSED	3/25/2008 12:40	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45303-8	423062-200-4	SALTWTRSED	3/25/2008 12:54	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45304-1	423062-100-4	SALTWTRSED	3/24/2008 9:35	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45304-2	423062-100-4	SALTWTRSED	3/24/2008 9:50	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
L45304-3	423062-100-4	SALTWTRSED	3/24/2008 10:08	28-Mar-08	24-Apr-08	WG95963-1, -2, -3, -4, -5, -6	
WG95963-1	MB	OTHR SOLID		28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	MB080328
WG95963-2	SB	OTHR SOLID		28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	WG95963-1
WG95963-3	MS	SALTWTRSED		28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	L45302-3
WG95963-4	MSD	SALTWTRSED		28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	WG95963-3 L45302-3
WG95963-5	SRM	SALTWTRSED		28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	1944
WG95963-6	LD	SALTWTRSED		28-Mar-08	23-Apr-08	WG95963-1, -2, -3, -4, -5, -6	L45304-1

Workgroup: WG95963 (Chlorinated Pesticides)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	
Aldrin	0.67	1.33	ug/Kg	<MDL	
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	
Alpha-Chlordane	0.33	0.667	ug/Kg	<MDL	
Beta-BHC	0.33	0.667	ug/Kg	<MDL	
Delta-BHC	0.33	0.667	ug/Kg	<MDL	
Dieldrin	0.67	1.33	ug/Kg	<MDL	
Endosulfan I	0.67	1.33	ug/Kg	<MDL	
Endosulfan II	0.67	1.33	ug/Kg	<MDL	
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	
Endrin	0.67	1.33	ug/Kg	<MDL	
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	
Gamma-Chlordane	0.33	0.667	ug/Kg	<MDL	
Heptachlor	0.33	0.667	ug/Kg	<MDL	
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	
Methoxychlor	3.3	6.67	ug/Kg	<MDL	
Toxaphene	6.7	13.3	ug/Kg	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	6.67	5.91	89		78--121
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	6.67	5.87	88		75--111
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	6.67	5.9	89		57--145
Aldrin	0.67	1.33	ug/Kg	<MDL	6.67	4.42	66		28--113
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.91	74		20--99
Beta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.21	78		66--102
Delta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.22	78		63--108
Dieldrin	0.67	1.33	ug/Kg	<MDL	6.67	5.67	85		58--139
Endosulfan I	0.67	1.33	ug/Kg	<MDL	6.67	5.22	78		62--104
Endosulfan II	0.67	1.33	ug/Kg	<MDL	6.67	5.3	80		72--109
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	6.67	4.76	71		61--104
Endrin	0.67	1.33	ug/Kg	<MDL	6.67	5.24	79		60--160
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	6.67	0.7	10		10--77
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	6.67	5.01	75		27--130
Heptachlor	0.33	0.667	ug/Kg	<MDL	6.67	5.06	76		20--137
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	6.67	5.18	78		59--107
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	7.29	109		72--131

(Matrix Spike Duplicate, Matrix Spike) L45302-3

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
4,4'-DDD	0.67	1.33	ug/Kg	1.96	6.67	6.74	72		41--157	6.67	6.12	62		15		35
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	6.67	7.15	107		59--125	6.67	6.42	96		11		35
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	6.67	6.49	97		50--144	6.67	5.98	90		7		35
Aldrin	0.67	1.33	ug/Kg	<MDL	6.67	4.28	64		61--119	6.67	3.9	59	*	8		35
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.56	68		59--111	6.67	4.16	62		9		35
Beta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.72	71		60--119	6.67	4.38	66		7		35
Delta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.49	67		54--126	6.67	4.12	62		8		35
Dieldrin	0.67	1.33	ug/Kg	<MDL	6.67	5.48	82		60--139	6.67	4.97	75		9		35
Endosulfan I	0.67	1.33	ug/Kg	<MDL	6.67	4.57	68		64--113	6.67	4.16	62	*	9		35
Endosulfan II	0.67	1.33	ug/Kg	<MDL	6.67	4.78	72		36--146	6.67	4.34	65		10		35
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	6.67	5.92	89		46--113	6.67	5.11	77		14		35
Endrin	0.67	1.33	ug/Kg	<MDL	6.67	5.61	84		62--166	6.67	5.15	77		9		35
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	6.67	2.54	38		10--66	6.67	2.49	37		3		35
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	6.67	4.52	68		61--135	6.67	4.04	61		11		35
Heptachlor	0.33	0.667	ug/Kg	<MDL	6.67	4.64	70		52--157	6.67	4.27	64		9		35
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	6.67	4.56	68		61--118	6.67	4.18	63		8		35
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	6.2	93		53--129	6.67	5.6	85		9		35

(Std Reference Material)

Parameter	MDL	RDL	Units	TrueValue	SRM Value	% Rec.	Qual	LabLimit
4,4'-DDT	5.3	10.7	ug/Kg	119	154	129		10--200
Alpha-Chlordane	2.7	5.33	ug/Kg	16.5	16.8	101		48--144

(Lab Duplicate) L45304-1

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	0.87			35
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	<MDL			35
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	<MDL			35
Aldrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Alpha-Chlordane	0.33	0.667	ug/Kg	<MDL	<MDL			35
Beta-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Delta-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Dieldrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan I	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan II	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	<MDL			35
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	<MDL			35
Gamma-Chlordane	0.33	0.667	ug/Kg	0.65	0.748	14		35
Heptachlor	0.33	0.667	ug/Kg	<MDL	<MDL			35
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	<MDL			35
Methoxychlor	3.3	6.67	ug/Kg	<MDL	<MDL			35
Toxaphene	6.7	13.3	ug/Kg	<MDL	<MDL			35

Surrogate:	2,4,5,6-Tetrachloro-m-xylene	Decachlorobiphenyl
(Lab Limits)	30--134	15--155
L45302-1	67	76
L45302-2	67	73
L45302-3	70	68
L45302-4	67	67
L45302-5	63	67
L45302-6	64	56
L45302-7	68	58
L45302-8	67	55
L45302-9	69	60
L45303-1	72	65
L45303-2	68	62
L45303-3	82	75
L45303-4	82	74
L45303-5	53	46
L45303-6	78	68
L45303-7	81	73
L45303-8	81	73
L45304-1	81	66
L45304-2	77	63
L45304-3	74	68
WG95963-1	64	78
WG95963-2	70	87
WG95963-3	66	68
WG95963-4	63	61
WG95963-5	64	85
WG95963-6	64	75

WG95964 (PCB)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45302-1	423062-200-4	SALTWTRSED	3/24/2008 12:08	28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-2	423062-200-4	SALTWTRSED	3/24/2008 12:28	28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-3	423062-200-4	SALTWTRSED	3/24/2008 13:05	28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-4	423062-200-4	SALTWTRSED	3/24/2008 13:21	28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	FREP @ L45302-3
L45302-5	423062-200-4	SALTWTRSED	3/24/2008 14:03	28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-6	423062-200-4	SALTWTRSED	3/24/2008 14:30	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-7	423062-200-4	SALTWTRSED	3/25/2008 9:00	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-8	423062-200-4	SALTWTRSED	3/25/2008 9:45	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45302-9	423062-200-4	SALTWTRSED	3/25/2008 10:30	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-1	423062-200-4	SALTWTRSED	3/25/2008 11:15	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-2	423062-200-4	SALTWTRSED	3/25/2008 11:30	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-3	423062-200-4	SALTWTRSED	3/25/2008 11:40	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	FREP @ L45303-2
L45303-4	423062-200-4	SALTWTRSED	3/25/2008 12:00	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-5	423062-200-4	SALTWTRSED	3/25/2008 12:10	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-6	423062-200-4	SALTWTRSED	3/25/2008 12:25	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-7	423062-200-4	SALTWTRSED	3/25/2008 12:40	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45303-8	423062-200-4	SALTWTRSED	3/25/2008 12:54	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45304-1	423062-100-4	SALTWTRSED	3/24/2008 9:35	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45304-2	423062-100-4	SALTWTRSED	3/24/2008 9:50	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
L45304-3	423062-100-4	SALTWTRSED	3/24/2008 10:08	28-Mar-08	29-Apr-08	WG95964-1, -2, -3, -4, -6	
WG95964-1	MB	OTHR SOLID		28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	MB080328
WG95964-2	SB	OTHR SOLID		28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	WG95964-1
WG95964-3	MS	SALTWTRSED		28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	L45302-4
WG95964-4	MSD	SALTWTRSED		28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	WG95964-3 L45302-4
WG95964-6	LD	SALTWTRSED		28-Mar-08	28-Apr-08	WG95964-1, -2, -3, -4, -6	L45304-1

Workgroup: WG95964 (PCB)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	
Aroclor 1221	1.7	3.33	ug/Kg	<MDL	
Aroclor 1232	1.7	3.33	ug/Kg	<MDL	
Aroclor 1242	0.83	1.67	ug/Kg	<MDL	
Aroclor 1248	0.83	1.67	ug/Kg	<MDL	
Aroclor 1254	0.83	1.67	ug/Kg	<MDL	
Aroclor 1260	0.83	1.67	ug/Kg	<MDL	
Total Aroclors	0.83	1.67	ug/Kg	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	25	16.9	68		39--121
Aroclor 1260	0.83	1.67	ug/Kg	<MDL	25	20	80		53--140

(Matrix Spike Duplicate, Matrix Spike) L45302-4

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	25	14.6	58		32--164	25	18.8	75		26		35
Aroclor 1260	0.83	1.67	ug/Kg	19.8	25	35.9	64		28--144	25	40.9	84		27		35

(Lab Duplicate) L45304-1

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Aroclor 1016	6.6	13.2	ug/Kg	<MDL	<MDL			35
Aroclor 1221	2.9	5.73	ug/Kg	<MDL	<MDL			35
Aroclor 1232	13	25.7	ug/Kg	<MDL	<MDL			35
Aroclor 1242	11	21.8	ug/Kg	<MDL	<MDL			35
Aroclor 1248	0.83	1.67	ug/Kg	7.75	8.49	9		35
Aroclor 1254	0.83	1.67	ug/Kg	9.84	10.1	3		35
Aroclor 1260	0.83	1.67	ug/Kg	3.53	3.8	7		35
Total Aroclors	0.83	1.67	ug/Kg	21.1	22.4	6		35

Surrogate:	2,4,5,6-Tetrachloro-m-xylene	Decachlorobiphenyl
(Lab Limits)	30--134	15--155
L45302-1	73	61
L45302-2	69	60
L45302-3	72	67
L45302-4	70	67
L45302-5	69	64
L45302-6	72	66
L45302-7	73	60
L45302-8	64	59
L45302-9	73	66
L45303-1	76	68
L45303-2	64	63
L45303-3	70	69
L45303-4	63	65
L45303-5	48	47
L45303-6	64	59
L45303-7	70	64
L45303-8	69	64
L45304-1	69	57
L45304-2	69	56
L45304-3	65	59
WG95964-1	62	73
WG95964-2	73	95
WG95964-3	85	90
WG95964-4	90	87
WG95964-6	76	57

CHAIN OF CUSTODY FORMS

Login Number: P45302 Page: 1

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

Project Number: 423062-200-4 Personnel: _____

Sample No. (Type)	P45302-1	P45302-2	P45302-3
Locator	DUD_1C	DUD_2C	DUD_8C
Short Loc. Desc.	DUD_1C	DUD_2C	DUD_8C
Locator Desc.	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	3/24/08 1208	→ 1228	1305
End Date/Time			
Time Span			
Sample Depth	5	5	10
Comments	10 Grab Comp, 0-10 cm	10 Grab Comp, 0-10 cm	10 Grab Comp AREP
PERSONNEL	SH, BK, JB	→	→
SAMP METH	20042		
SED DEPTH	15,13,15,15,15,14,15,14,15,15	11,10,10,10,15,14,10,11,9	7,8,8,9,6,6,5,9,8,0
SED SAMP RANGE	0-10 cm	~~0-10~~ 0-8	~~0-10~~ 0-7 cm
SED TYPE	21T36	21N31	34521
TIDE COND	E	E	S
TIDE HT	2	1,5	0,7
Dept., Matrix, Prod			
	3 SALTWTRSED PSD	3 SALTWTRSED PSD (2)	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-M	6 SALTWTRSED HG-CVAA-M	6 SALTWTRSED HG-CVAA-M
	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

RECEIVED BY: [signature] Date: 3/24/08 Time: 1625
Sample Number(s): 45302 1-6 (All) Date: 3/24/08 Time: 1627

visible sheen in grab #4 - photo

DATA
WO 96142
A&W JB 4/29

2 Shrimp in grab 3, 4

continue ...

COORDS
WO 96136
A&W JB 4/29

DUDI SEDS, STAS. C, PERIMETER

Project Number: 423062-200-4 Personnel: _____

Sample No. (Type)	P45302-4	P45302-5	P45302-6
Locator	DUD_8C	DUD_9C	DUD_10C
Short Loc. Desc.	DUD_8C	DUD_9C	DUD_10C
Locator Desc.	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	3/24/08 1321	→ 1403	1430
End Date/Time			
Time Span			
Sample Depth	10	10	11
Comments	10 Grab Comp, FREP	10 Grab Comp, 0-10 cm	10 Grab Comp, 0-10 cm
PERSONNEL	BK, SH, JB	→	→
SAMP FUNC	FREP @ 45302-3	**********	**********
SAMP METH	20042	→	→
SED DEPTH	5,7,5,6,6,(7),8,8,9,8	6.7,6,9,(7),9,6,7,8,8	7,10,9,7,6,5,(8),9,9,10
SED SAMP RANGE	0-6 cm	→ 0-6 cm	→ 0-7
SED TYPE	34521	34521	23N31
TIDE COND	S	S	F
TIDE HT	0.3	0.8	1.5
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-M	6 SALTWTRSED HG-CVAA-M	6 SALTWTRSED HG-CVAA-M
	6 SALTWTRSED MN-ICP	6 SALTWTRSED MN-ICP	6 SALTWTRSED MN-ICP
	6 SALTWTRSED PP ICP	6 SALTWTRSED PP ICP	6 SALTWTRSED PP ICP

1 crab in grab 3

continue ...

DUDI SEDS, STAS. C, PERIMETER

Project Number: 423062-200-4 Personnel: JB, CB, CE, JDD

Sample No. (Type)	P45302-7	P45302-8	P45302-9
Locator	DUD_11C	DUD_12C	DUD_13C
Short Loc. Desc.	DUD_11C	DUD_12C	DUD_13C
Locator Desc.	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO	PERIMETER LOCATION 13C
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	3/25/08 0900	0945	1030
End Date/Time			
Time Span			
Sample Depth	11	11	10
Comments	10 Grab Comp, 0-10 cm	10 Grab Comp, 0-10 cm	10 Grab Comp, 0-10 cm
PERSONNEL			
SAMP METH	20042		
SED DEPTH	10,7,8,8,9,6,7,6.5,7.5,7	10,9.5,6,10,6,10,10,10.8,10	14,16,15,15,13,14,17,15,17,16
SED SAMP RANGE	0-7 cm	0-8 cm	0-10 cm
SED TYPE	32N30	23N30	21N30
TIDE COND	E	E	E
TIDE HT	9	8	5.5
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-M	6 SALTWTRSED HG-CVAA-M	6 SALTWTRSED HG-CVAA-M
	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

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
	3/25/08	1505
RECEIVED BY	Date	Time
	3/25/08	1550

Number(s)
45302 7-9

continue ...

LABORATORY WORK ORDER
Chain of Custody

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

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

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
L 45302 - 1	DUD_1C	24-Mar-08	1208	1	1	1	1	4	
L - 2	DUD_2C		1228	1	2	1	1	5	PSD duplicate
L - 3	DUD_8C		1305	1	1	1	1	4	
L - 4	DUD_8C		1321	1	1	1	1	4	Replicate Field
L - 5	DUD_9C		1403	1	1	1	1	4	
L - 6	DUD_10C		1430	1	1	1	1	4	
L -									
L -									
L -									
L -									
L -									

Additional Comments:

Total Number of Containers: 25

Sampled By: SH, BK, JB

Relinquished By:
Signature: Stephanie Hess
Printed Name: Stephanie Hess
Organization: King County Environmental Laboratory
Date: 3/24/08
Time: 1625

Received By:
Signature: Jason Kinnard
Printed Name: Jason Kinnard
Organization: King County Environmental Laboratory
Date: 3/24/08
Time: 16:27

LABORATORY WORK ORDER

Chain of Custody

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

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

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
L45302 - 7	DUD_11C	25-MAR-08		1	1	1	1	4	
L45302 - 8	DUD_12C			1	1	1	1	4	
L45302 - 9	DUD_13C			1	1	1	1	4	
L45303 - 1	DUD_3C			1	1	1	1	4	
L45303 - 2	DUD_4C			1	1	1	1	4	
L45303 - 3	DUD_4C			1	1	1	1	4	FREP
L45303 - 4	DUD_5C			1	1	1	1	4	
L45303 - 5	DUD_6C			1	1	1	1	4	
L45303 - 6	DUD_7C			1	1	1	1	4	
L45303 - 7	DUP_14C			1	1	1	1	4	
L45303 - 8	DUD_15C			1	1	1	1	4	

Additional Comments:

Total Number of Containers: 44

Sampled By: JB, JDD, CE, CB

Relinquished By:	Received By:
Signature:	Signature / Date
Printed Name: Jim Devereaux — Date: 3/25/08	Printed Name / Time
Organization: King County Environmental Laboratory — Time: 1505	Organization: King County Environmental Laboratory

SOLID SAMPLE RECEIPT RECORD

LOGIN NUMBER(S): 45302-(1-6)	PROJECT NUMBER: 423062200-004	SUBCONTRACT: Y (N)	Product(s):
COLLECT DATE(S): 3/24/08	DATE RECEIVED: 3/24/08	CHANGES: Y (N)	Parameter(s):

SAMPLE RECEIPT CONDITIONS

CONDITION	ACCEPTABLE?	Comment ID	CONDITION	ACCEPTABLE?	Comment ID
Labels / Fieldsheets	(Y) / N		Sample Volumes	(Y) / N	
Containers	(Y) / N		Holding Times	(Y) / N	
Temperature (w/ ice)	(Y) / N / NA		Delivery Location	(Y) / N	

PRESERVATION CHECKLIST

Product / Preservation	SM Action	Acceptable?	Corrective Action
TOTSULFIDE / ZnAc	☐ √ documentation	Y / N	☐ Notify CONV
Other:			
Other:			

SAMPLE CONTAINER DESCRIPTION AND COUNT

Container Description	AQUATOX #	AQUATOX Sample No.	CONVENTIONALS #	CONVENTIONALS Sample No.	METALS #	METALS Sample No.	MICROBIOLOGY #	MICROBIOLOGY Sample No.	ORGANICS #	ORGANICS Sample No.
4oz PP CWM										
8oz PP CWM					6	1-6				
16oz PP CWM			7	1,2(2x) 3-6						
4oz GCWM			6	1-6						
8oz GCWM										
16oz GCWM									6	1-6
2L GCWM										
Specimen Cup										
Other										
Other										

CHECK HEADSPACE

Product (SM Action)	Check For	Acceptable?	Corrective Action
VOA (Check documentation)	Zero Headspace	Y / N	☐ Notify ORG
TOTSULFIDE (Check documentation)	Zero Headspace	Y / N	☐ Notify CONV
Other:			
Other:			

COMMENTS/NOTIFICATIONS

CC: ☐ AQUATOX, ☐ CONV, ☐ METALS, ☐ MICRO, ☐ ORG, ☐ _____

SIGNATURE: [signature]

DATE & TIME: 3/24/08 16:45

SOLID SAMPLE RECEIPT RECORD

LOGIN NUMBER(S): 45302-(7,8,9) | PROJECT NUMBER: 423062-200-4 | SUBCONTRACT: Y / (N) | Product(s):

COLLECT DATE(S): 3/25/08 | DATE RECEIVED: 3/25/08 | CHANGES: Y / (N) | Parameter(s):

SAMPLE RECEIPT CONDITIONS

CONDITION	ACCEPTABLE?	Comment ID	CONDITION	ACCEPTABLE?	Comment ID
Labels / Fieldsheets	(Y) N		Sample Volumes	(Y) / N	
Containers	(Y) / N		Holding Times	(Y) / N	
Temperature (w/ Ice)	(Y) N / NA		Delivery Location	(Y) N	

PRESERVATION CHECKLIST

Product / Preservation	SM Action	Acceptable?	Corrective Action
TOTSULFIDE / ZnAc	☐ √ documentation	Y / N	☐ Notify CONV
Other:			
Other:			

SAMPLE CONTAINER DESCRIPTION AND COUNT

Container Description	AQUATOX #	AQUATOX Sample No.	CONVENTIONALS #	CONVENTIONALS Sample No.	METALS #	METALS Sample No.	MICROBIOLOGY #	MICROBIOLOGY Sample No.	ORGANICS #	ORGANICS Sample No.
4oz PP CWM										
8oz PP CWM					3	7-9				
16oz PP CWM			3	7-9						
4oz GCWM			3	7-9						
8oz GCWM										
16oz GCWM									3	7-9
2L GCWM										
Specimen Cup										
Other										
Other										

CHECK HEADSPACE

Product (SM Action)	Check For	Acceptable?	Corrective Action
VOA (Check documentation)	Zero Headspace	Y / N	☐ Notify ORG
TOTSULFIDE (Check documentation)	Zero Headspace	Y / N	☐ Notify CONV
Other:			
Other:			

COMMENTS/NOTIFICATIONS

CC: ☐ AQUATOX, ☐ CONV, ☐ METALS, ☐ MICRO, ☐ ORG, ☐ _____

SIGNATURE: [signature]

DATE & TIME: 3/25/08 13:55

KING COUNTY ENVIRONMENTAL LABORATORY
QUALITY ASSURANCE REVIEW

for

ESTUARINE SEDIMENT ANALYTICAL DATA

DUWAMISH/DIAGONAL SEDIMENT REMEDIATION PROJECT
PERIMETER SEDIMENT CHARACTERIZATION
APRIL 2009 SAMPLING EVENT

Prepared by:

Fritz Grothkopp
Laboratory Project Manager

Date: 3-8-10

Reviewed by:

Colin Elliott
Quality Assurance Officer

Date: March 8, 2010

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 2008. 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 April 27, 28 & 29, 2009 as part of the Duwamish Diagonal Sediment Remediation Project, Perimeter Sediment Characterization. The Sampling and Analysis Plan (SAP) in effect for this sampling event is titled: Duwamish/Diagonal Sediment Remediation Dredging and Capping Operations Sediment Monitoring Sampling and Analysis Plan. October 28, 2003. (KCEL document # 177)

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 2008 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 based on the rules below.

1. Add a "B" flag to all parameters if the associated blank is ≥ the MDL and the sample result is ≥ MDL but ≤ 5 times the blank.
2. Add a "B2" flag to common organic lab contaminants (Acetone, 2-Butanone, Methylene Chloride, Bis (2-ethylhexyl) Phthalate, Butyl Benzyl Phthalate and Di-n-butyl Phthalate) if the method blank is ≥ the MDL and the sample result is > 5 and ≤ 10 times the blank.
3. Add a "B3" flag to all other parameters if the associated blank is ≥ the MDL and the sample result is > 5 and ≤ 10 times the blank.

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 may be flagged with a JL whenever recoveries are measured above the acceptance limits and may be flagged with a JG 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 may be flagged with a JL whenever recoveries are measured above the acceptance limits and may be flagged with a JG when recoveries are measured below the acceptance limits. Flags are applied to specific sample results based on matrix spike recoveries only if the unacceptable recovery is indicative of a consistent bias for all associated samples.

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. The original sample results are flagged with a J or JK whenever the measured precision is unacceptable (greater than the acceptance limit). Associated sample data will also be flagged if the unacceptable precision is expected in samples of the same matrix and composition.

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 may be flagged with a JL whenever recoveries are measured above the acceptance limits and may be flagged with a JG when recoveries are measured below the acceptance limits. Flags are applied to reported results based on surrogate recoveries only if the unacceptable recovery is indicative of a bias for the associated parameters.

Data Qualifiers

The data qualification guidelines described above has been summarized in Table 3. This table conforms to the guidelines in the 2008 SAPA and also shows the data qualifiers used for the Washington Dept of Ecology EIM 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 perimeter saltwater sediment samples on April 27, 28 & 29, 2009. These samples were collected for the Duwamish/Diagonal Sediment Remediation Program. 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. As required by the SAP, each sample at every location was composed of sediment aliquots of equal amounts from ten individual Van Veen grabs. Both the prescribed station coordinates and the actual coordinates recorded during sampling activities are presented in the following table (see below). The coordinate system, as shown, is in U.S. State Plane, Washington North 4601, NAD83.

Duwamish/Diagonal Sediment Sampling, Perimeter Stations
Actual and Prescribed Sample Coordinates, April 2009

Lab Number	Locator	Cast	Grabs Accepted	Prescribed Northing	Actual Northing	Prescribed Easting	Actual Easting	Offset > 3 m
L47888-1	DUD_1C			208754		1267168		
		1	2		208753		1267172	
		2	2		208753		1267170	
		3	2		208746		1267175	3.2
		4	1		208748		1267170	
		5	2		208749		1267165	
		6	1		208751		1267170	
L47888-2	DUD_2C			208651		1267175		
		1	2		208648		1267172	
		2	2		208645		1267174	
		3	2		208645		1267171	
		4	2		208646		1267165	3.3
		5	2		208651		1267167	
L47888-3	DUD_8C			208920		1266864		
		1	1		208923		1266863	
		2	2		208917		1266862	
		3	2		208914		1266858	
		4	2		208910		1266866	3.2
		5	2		208924		1266863	
		6	2		208918		1266862	
L47888-4	DUD_8C			208920		1266864		
	FREP	6	2		208918		1266862	
		7	2		208915		1266867	
		8	2		208915		1266868	
		9	1		208917		1266866	
		10	2		208919		1266862	
		11	1		208923		1266863	
		12	1		208917		1266862	
L47888-5	DUD_9C			209157		1266784		
		1	2		209155		1266790	
		2	2		209158		1266780	
		3	1		209154		1266788	
		4	2		209158		1266783	
		5	2		209161		1266785	

		6	1		209154		1266784	
L47888-6	DUD_10C			209517		1266663		
		1	2		209520		1266661	
		2	2		209520		1266664	
		3	2		209518		1266668	
		4	2		209516		1266663	
		5	2		209516		1266666	
L47888-7	DUD_11C			209535		1266844		
		1	2		209540		1266841	
		2	2		209530		1266844	
		3	2		209534		1266842	
		4	2		209534		1266844	
		5	2		209535		1266841	
L47888-8	DUD_12C			209630		1266813		
		1	2		209630		1266817	
		2	2		209630		1266813	
		3	2		209625		1266815	
		4	1		209632		1266821	
		5	2		209630		1266807	
		6	1		209631		1266812	
L47888-9	DUD_13C			207858		1267240		
		1	2		207861		1267237	
		2	2		207862		1267240	
		3	2		207858		1267248	
		4	2		207858		1267237	
		5	2		207860		1267238	

Sediment grab samples were collected from the King County research vessel *Liberty*, which is equipped with a differential global positioning system (DGPS). Using DGPS, field coordinates were recorded for each cast of the two grab samplers, deployed in tandem, as they contacted the sediment. All field coordinates for each cast listed in the above table are within the +/- 3 meter accuracy limits, except for one cast each for Stations DUD_1C, DUD_2C and DUD_8C. Since each of these grabs was outside the 3 meter limit by no more than 0.3 meters, it is not expected that it compromised data quality.

Sample Description Table

Lab Sample #	Station	Sample Collection	Average Sediment Depth	Sample Usage
L47888-1	DUD_1C	Surface Grabs	17 cm	Chemistry
L47888-2	DUD_2C	Surface Grabs	17 cm	Chemistry
L47888-3	DUD_8C	Surface Grabs	10 cm	Chemistry
L47888-4	DUD_8C	Surface Grabs (field replicate)	12 cm	Chemistry
L47888-5	DUD_9C	Surface Grabs	9 cm	Chemistry
L47888-6	DUD_10C	Surface Grabs	9 cm	Chemistry
L47888-7	DUD_11C	Surface Grabs	11 cm	Chemistry
L47888-8	DUD_12C	Surface Grabs	11 cm	Chemistry
L47888-9	DUD_13C	Surface Grabs	15 cm	Chemistry

Sample Collection

Sediment was collected at each station using two stainless steel, modified, 0.1 m^2 Van Veen grab samplers deployed in tandem via hydrowire. For each acceptable deployment, average depths ranging between 9-17 cm of sediment, were collected within each grab, allowing for sub-sampling

within the upper 8-10 cm of material. As required by the SAP, each sample at every location was composed of sediment aliquots of equal amounts from ten individual Van Veen grabs.

Water depth at the eight subtidal cap sample stations ranged between 4-14 meters (not corrected for tide).

Sample Handling

Close to equal amounts of sediment were sub-sampled from the ten separate grabs used for chemistry analysis. For chemistry testing, 8 to 10 cm deep aliquots, as measured from the sediment surface, were collected using a stainless steel spoon. Sediment that had touched the sides or bottom of the grab sampler was excluded. Less than the top 10 cm of sediment was sub-sampled in those instances where it was not possible to collect material down to the target sediment penetration depth. All aliquots were placed in a covered stainless-steel compositing bowl, specific for that station. After collecting all aliquots from each of ten grabs, the sediment was thoroughly homogenized, then split out into pre-labeled containers. All sample containers were supplied by the King County Environmental Laboratory, first having been pre-cleaned according to analytical specifications.

Decontamination

Individual sets of the sub-sampling and mixing equipment were dedicated to each station, precluding the need for decontamination of said equipment. The Van Veen grab samplers were decontaminated between stations by scrubbing with a brush using ambient water 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. They 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 time is defined as that time that sampling commences at each station.

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	L47888-1 to -9	1000	1700 to 2100	Reduced sample size analyzed due to High Organic Background and TS < 50%
PSD Parameters in the % Fines range	L47888-all	0.1%	0.5%	MDL was updated after the SAP was completed

For all samples where the MDL did not meet the SAP MDL, the TOC levels along with % clay and % slit values were above the detection limit, thus the project objectives were met.

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 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, 2008). 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	L47888-1	27-Apr-2009	01-Jun-2009	02-Jun-2009	6 Months at 4°C	NA
	L47888-2	27-Apr-2009	29-May-2009	01-Jun-2009		
	L47888-3,4	28-Apr-2009	01-Jun-2009	02-Jun-2009		
	L47888-5,6,7,8	29-Apr-2009	01-Jun-2009	02-Jun-2009		
	L47888-9	29-Apr-2009	01-Jun-2009	04-Jun-2009		
Total Organic Carbon	L47888-1,2	27-Apr-2009	26-May-2009	09-Jun-2009	6 months at -18°C	6 months at -18°C
	L47888-3,4	28-Apr-2009	26-May-2009	09-Jun-2009		
	L47888-5,6	29-Apr-2009	26-May-2009	09-Jun-2009		
	L47888-7,8,9	29-Apr-2009	26-May-2009	10-Jun-2009		
Total Solids	L47888-1,2	27-Apr-2009	26-May-2009	27-May-2009	6 months at -18°C	NA
	L47888-3,4	28-Apr-2009	26-May-2009	27-May-2009		
	L47888-5,6,7,8,9	29-Apr-2009	26-May-2009	27-May-2009		

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.

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.

METALS CHEMISTRY

Completeness
Metal chemistry data are reported for all samples and parameters 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
Metals analysis was not subcontracted for these sets of samples.

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

Target List
The reported target list includes all metals specified in Table 1.

Detection Limits
In some instances, the detection limits (MDLs) reported for this sample set of ICP Metals, are slightly greater than the requirements defined by the SAP. The varying ICP MDLs can be attributed to a change in sample preparation from prior analyses of Duwamish Diagonal samples. For this sample set, a greater amount of sample material was used, approximately 2 grams with all the samples in this set being analyzed at a 2x dilution. The detection limits (MDLs) reported for Mercury are all within the requirements defined by the SAP. All element MDLs that did not meet SAP MDL limits were due to total solids being less than 50 % in the sample.

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 during the Third Annual PSDDA Review Meeting. 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	L47888-1>9	27, 28 & 29-Apr-09	5/18/2009	5/19/2009	2 Years at -18°C	6 months
Total Mercury	L47888-1>9	27, 28 & 29-Apr-09	5/18/2009	5/19/2009	28 days at -18°C	NA

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

Method Blanks
All metals method blanks results were less than the MDL

Standard Reference Materials
The SRM analyzed in association with samples included in this data submission is National Research Council of Canada PACS-2. This SRM is not certified for Beryllium, Selenium, Thallium, Silver, Arsenic or Cadmium. Acceptance limits for the certified elements 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 qualified to indicate the expected bias.

All metals SRM recoveries were within the lab defined limits indicated in the SAP.

A laboratory control sample (LCS) ERA Soil was also analyzed with the total metals digestion. All recoveries were within the certified limits of the sample. The LCS is used as a secondary check for the total metals digestion procedure because the certified values for the elements are determined using the same methodology. No results from the LCS are used to qualify data.

Matrix Spikes
All matrix spike recoveries were within the 75% to 125% QC limits with the following exceptions:

The reported matrix spike recovery of 15% for Antimony in WG102346 for sample numbers L47888-1 to -9 failed to meet the 75% to 125% QC acceptance criteria. Antimony results for all samples in WG102346 have been qualified with a "JG". The reported matrix spike recovery of 132% for Aluminum in WG102346 for sample numbers L47888-1 to -9 failed to meet the 75% to 125% QC acceptance criteria. The Aluminum results for the Background Sample L47888-1 and the Matrix Spike WG102346-5 in WG102346 have been qualified with a "JL".

Laboratory Replicate Samples
The relative percent differences (RPDs) for laboratory duplicate results for all metals were less than or equal to the QC limit of 20%.

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

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.

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
1,4-Dichlorobenzene	L47888-all	(1)	(1)	See explanation below
Benzoic Acid	L47888-all	(1)	(1)	See explanation below
Coprostanol	L47888-all	(1)	(1)	See explanation below
Pentachlorophenol	L47888-all	(1)	(1)	See explanation below
Benzo(a)anthracene	L47888-1,2,9	(1)	(1)	Total solids <50%
Selected Pesticides	L47888-all	(1)	(1)	See explanation below
Aroclor-1016, 1221, 1232, 1242	L47888-all	(1)	(1)	See Additional QA Issues at the end of this section

(1) See attached SAP MDL Comparison Table

BNAs

1) The reported MDLs for Benzo(a)anthracene for Samples L47888-1, -2 and -9 were greater than the SAP MDL levels due to total solids less than 50%.
2) For all samples, the reported MDLs for 1,4-Dichlorobenzene, Benzoic Acid, Coprostanol, and Pentachlorophenol were greater than the SAP MDL values. The MDL values in the SAP don't match those currently reported by this method. It is still expected the data will meet the project objectives since the reported MDLs for these parameters are at or below the SMS limits.

PCBs
The reported MDLs for Aroclors 1016, 1221, 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. For Sample L47888-3 and -4 the MDLs for all Aroclors were elevated due to required dilutions.

Chlorinated Pesticides
The reported MDLs for 4, 4'-DDT, 4,4'-DDE, 4,4'-DDD, Aldrin, Dieldrin, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Methoxychlor and Toxaphene in all samples were greater than the MDL values listed in the SAP. The reported MDLs for Alpha-BHC, Alpha Chlordane, Beta-BHC, Delta-BHC, Gamma-BHC (Lindane), Heptachlor and Heptachlor Epoxide

in samples L47888-1, 2 were greater than the MDL values listed in the SAP due to total solids less than 50 %.

The attached SMS OC and Dry Weight Normalization MDL Check tables compare the reported MDL value to the SMS requirement. All the compounds in the reported MDL met the SMS limits with the exception of Total PCBs for selected samples. The reported levels of Total PCBs based on Aroclors detected should be used for comparison to SMS limits rather the MDL values. Since Aroclors were detected in all samples, the elevated MDLs for Total PCBs are not significant.

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	L47888-1 to 9, L48332-1	27, 28 & 29-Apr-09	01-May-09	20-May-09	1 year at -18°C	40 days at 4°C
BNA	L48332-1 (re-prep & re-analysis of L47888-2)	27-Apr-09	11-Jun-09	15-Jun-09	1 year at -18°C	40 days at 4°C
Chlorinated Pesticides	L47888-1 to 9	27, 28 & 29-Apr-09	05-May-09	29, 30-May-09, 08-Jun-09	1 year at -18°C	40 days at 4°C
PCB	L47888-1 to 9	27, 28 & 29-Apr-09	05-May-09	08, 09-Jun-09	1 year at -18°C	40 days at 4°C

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. BNA
The method blank analyzed with BNA (WG101942) for L47888-1 to 9 had a result above the MDL for Bis (2-ethylhexyl) Phthalate (35.1 ug/Kg) and Butyl Benzyl Phthalate (4.06 ug/Kg). Sample results for Bis (2-ethylhexyl) Phthalate and Butyl Benzyl Phthalate for those samples where the measured levels were above the MDL have been qualified with the appropriate B flag based on Table 3 below. Those Bis (2-ethylhexyl) Phthalate and Butyl Benzyl Phthalate results that are flagged with either a B or B2 must be treated as estimated values.

The method blank analyzed with BNA (WG102845) for L48332-1 (a re-preparation and re-analysis of L47888-2) had a result above the MDL for Bis (2-ethylhexyl) Phthalate (15 ug/Kg) and Di-n-Butyl Phthalate (5.8 ug/Kg). Sample results for Di-n-Butyl Phthalate for this sample have been qualified with the B flag based on Table 3 below and must be treated as an estimated value. For Bis (2-ethylhexyl) Phthalate, the sample results were greater than 10 times the method blank response so the sample results have not been qualified.

Surrogate Recoveries

Surrogate recovery acceptance limits for sediment samples have been developed based on historical lab performance using the current analytical methods. Recoveries measured above the acceptance limits may be flagged with a JL. Recoveries measured below the acceptance limits (but at or above 10%) may be flagged with a JG. 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. 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. 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 and alpha Chlordane. All measured recoveries for this SRM were within acceptance limits.

2. PCBs

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 this SRM were within acceptance limits.

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
For the BNA compounds that were included in the matrix spike, the measured recoveries for each were within their acceptance limits.

The following compounds were not included in the matrix spike and matrix spike duplicate: 2-Methylnaphthalene, 2-Methylphenol, 4-Methylphenol, Benzoic Acid, Benzyl Alcohol, Caffeine, Coprostanol, Dibenzofuran, Total 4-Nonylphenol due to an omission of these compounds from the spiking standard.

2. PCBs and Chlorinated Pesticides
Each of the reported Pesticide compounds, except Toxaphene, alpha and gamma Chlordane, 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% with the following exceptions. 2-Methyl naphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, benzoic acid, benzyl butyl phthalate, carbazole, chrysene, di-n-butyl phthalate, dibenzo(a,h)anthracene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-cd) pyrene, Phenanthrene, phenol and pyrene. For Sample L47888-2, the laboratory duplicate, these compounds were flagged with a "J" to indicate an estimated value. No other samples associated with this batch have been flagged, since it is uncertain if all samples have this same problem of non-homogeneity.

The laboratory duplicate sample, L47888-2, was re-prepared and re-analyzed in triplicate as sample L48332-1. The percent RSD for the triplicate results were less than or equal to the acceptance limit of 35% with the following exceptions. 2-methyl naphthalene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, Dibenzo(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene had %RSD values greater than 35%. These compounds in Sample L48332-1 were flagged with a "J" to indicate an estimated value.

Additional QA Issues:

BNA Analysis
Two samples, L47888-8, -9, were analyzed outside the 12 hour instrumental sequence. A CCV standard was analyzed at the end of the full analysis sequence. All instrumental performance monitoring requirements were met, therefore, data quality should not be affected.

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, 1221, 1232 and 1242 was not always possible 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-1221	PCB 1232	PCB 1242
L47888-1	x		x	x
L47888-2	x		x	x
L47888-3	x		x	x
L47888-4	x		x	x
L47888-5	x		x	x
L47888-6	x		x	x
L47888-7	x			x
L47888-8	x	x	x	x
L47888-9	x			x

TABLE 1
SEDIMENT SAMPLE INVENTORY

Sample	Locator / Description	PSD	Solids	TOC	Metals[1]	BNAs[2]	Pest/ PCBs	Comments
L47888-1	DUD_1C	X	X	X	X	X	X	
L47888-2	DUD_2C	X	X	X	X	X	X	
L47888-3	DUD_8C	X	X	X	X	X	X	
L47888-4	DUD_8C	X	X	X	X	X	X	field replicate
L47888-5	DUD_9C	X	X	X	X	X	X	
L47888-6	DUD_10C	X	X	X	X	X	X	
L47888-7	DUD_11C	X	X	X	X	X	X	
L47888-8	DUD_12C	X	X	X	X	X	X	
L47888-9	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	Possible EIM Data Qualifier	Organic QC Limits	Metal QC Limits	Conventional QC Limits	Comment
low matrix spike recovery	JG	JG	Compound specific	< 75%	< 75%	
high matrix spike recovery	JL	JL	Compound specific	>125%	>125%	
low standard reference material recovery	JG	JG	Compound and SRM specific	Element and SRM specific	< 80%	
high standard reference material recovery	JL	JL	Compound and SRM specific	Element and SRM specific	>120%	
high duplicate relative percent difference	JK or J	JK	>35 %	>20%	NA	for organics and metals
high triplicate relative standard deviation	JK or J	JK	NA	NA	> 20%	for conventionals
less than the reporting detection limit	<RDL**	JT	NA	NA	NA	
less than the method detection limit	<MDL	U	NA	NA	NA	
contamination detected in method blank	B	B	MB >/=MDL & Result </= 5x Blank	MB >/=MDL & Result </= 5x Blank	MB >/=MDL & Result </= 5x Blank	
contamination detected in method blank	B2	B	MB >/=MDL & Result > 5x but >/= 10x Blank	MB >/=MDL & Result > 5x but >/= 10x Blank	MB >/=MDL & Result > 5x but >/= 10x Blank	Common Lab Contaminants*
contamination detected in method blank	B3	B	MB >/=MDL & Result > 5x but >/= 10x Blank	MB >/=MDL & Result > 5x but >/= 10x Blank	MB >/=MDL & Result > 5x but >/= 10x Blank	All other parameters
biased data based on low surrogate recoveries	JG	JG	Surrogate specific	NA	NA	At least 2 surrogates < limit for BNAs
biased data based on high surrogate recoveries	JL	JL	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	SH	JK or J	NA	NA	NA	container, preservation
Holding time not met	H	JK or J				

*COMMON LAB CONTAMINANTS: ACETONE, 2-BUTANONE, METHYLENE CHLORIDE, BIS(2-ETHYLHEXYL) PHTHALATE, BUTYL BENZYL PHTHALATE AND DI-N-BUTYL PHTHALATE

Comprehensive and Matrix Data Reports

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_1C					Locator:	DUD_2C					Locator:	DUD_8C				
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM				
Sample:	L47888-1					Sample:	L47888-2					Sample:	L47888-3				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/27/09 10:36					ColDate:	4/27/09 12:10					ColDate:	4/28/09 12:45				
TimeSpan:						TimeSpan:						TimeSpan:					
TotalSolid:	42.1					TotalSolid:	43					TotalSolid:	59.8				
ClientLoc:						ClientLoc:						ClientLoc:					
SampDepth:	5					SampDepth:	4					SampDepth:	8				
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
M=CV ASTM D422															
Clay*	29.3		1.2	2.34	%	39.6		1.1	2.2	%	6.4		0.8	1.61	%
Fines*	85.5		1.2	2.34	%	89.2		1.1	2.2	%	53.8		0.8	1.61	%
Gravel*	0.7	<RDL	0.23	2.34	%	0.22	<RDL	0.22	2.2	%	9.6		0.16	1.61	%
Sand*	7.2		0.23	2.34	%	12.5		0.22	2.2	%	33.2		0.16	1.61	%
Silt*	56.2		1.2	2.34	%	49.6		1.1	2.2	%	47.4		0.8	1.61	%
p+0.00*		<MDL	0.23	2.34	%		<MDL	0.22	2.2	%	2.4		0.16	1.61	%
p+1.00*		<MDL	0.23	2.34	%	0.2	<RDL	0.22	2.2	%	4.7		0.16	1.61	%
p+10.0(equal/more than)*	18.7		1.2	2.34	%	28.6		1.1	2.2	%	4.8		0.8	1.61	%
p+2.00*	0.5	<RDL	0.23	2.34	%	1.6		0.22	2.2	%	11.5		0.16	1.61	%
p+3.00*	1.9		0.23	2.34	%	10.6		0.22	2.2	%	7.8		0.16	1.61	%
p+4.00*	4.8		0.23	2.34	%		<MDL	0.22	2.2	%	6.7		0.16	1.61	%
p+5.00*	5.9		1.2	2.34	%	2.2		1.1	2.2	%	2.4		0.8	1.61	%
p+6.00*	22.2		1.2	2.34	%	23.1		1.1	2.2	%	36.9		0.8	1.61	%
p+7.00*	15.2		1.2	2.34	%		<MDL	1.1	2.2	%	4.8		0.8	1.61	%
p+8.00*	12.9		1.2	2.34	%	24.2		1.1	2.2	%	3.2		0.8	1.61	%
p+9.00*	10.5		1.2	2.34	%	11		1.1	2.2	%	1.6		0.8	1.61	%
p-1.00*		<MDL	0.23	2.34	%	0.22	<RDL	0.22	2.2	%	3.5		0.16	1.61	%
p-2.00*		<MDL	0.23	2.34	%		<MDL	0.22	2.2	%	0.5	<RDL	0.16	1.61	%
p-2.00(less than)*	0.7	<RDL	0.23	2.34	%		<MDL	0.22	2.2	%	5.6		0.16	1.61	%
CV SW846 9060-PSEP96															
Total Organic Carbon	22200		1900	3900	mg/Kg	20800		1800	3630	mg/Kg	21900		1800	3800	mg/Kg
M=CV SM2540-G															
Total Solids*	42.1		0.005	0.01	%	43		0.005	0.01	%	59.8		0.005	0.01	%
M=ES NONE															
Field Personnel*	JD,JO,JeneeC,JB				none	JD,JO,JeneeC,JB				none	BK,JDD,JB,JeneeC				none
Sampcoordx1*	1267172				ft	1267172				ft	1266863				ft
Sampcoordx2*	1267170				ft	1267174				ft	1266862				ft
Sampcoordx3*	1267175				ft	1267171				ft	1266858				ft
Sampcoordx4*	1267170				ft	1267165				ft	1266866				ft
Sampcoordx5*	1267165				ft	1267167				ft	1266863				ft
Sampcoordx6*	1267170				ft						1266862				ft
Sampcoordy1*	208753				ft	208648				ft	208923				ft
Sampcoordy2*	208753				ft	208645				ft	208917				ft
Sampcoordy3*	208746				ft	208645				ft	208914				ft
Sampcoordy4*	208748				ft	208646				ft	208910				ft
Sampcoordy5*	208749				ft	208651				ft	208924				ft
Sampcoordy6*	208751				ft						208918				ft
Sampcoordx7*															
Sampcoordy7*															
Sample Depth*	5				m	4				m	8				m

King County Environmental Lab Analytical Report

Project:	423062-200-4	423062-200-4	423062-200-4
Locator:	DUD_1C	DUD_2C	DUD_8C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sample:	L47888-1	L47888-2	L47888-3
Matrix:	SF SALTWTRSED	SF SALTWTRSED	SF SALTWTRSED
ColDate:	4/27/09 10:36	4/27/09 12:10	4/28/09 12:45
TimeSpan:			
TotalSolid:	42.1	43	59.8
ClientLoc:			
SampDepth:	5	4	8
DRY Weight Basis			

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
Sampling Method*	20143				none	20143				none	20143				none
Sediment Sampling Depth*	17				cm	17				cm	10				cm
Sediment Sampling Range*					cm					cm					cm
Sediment Type*	20N20				none	20N20				none	21W13				none
Tidal Condition*	E				none	E				none	E				none
Tide Height*	1				ft	-2				ft	-1.5				ft
Sample Function*															
MT SW846 3050B*SW846 6010C															
Aluminum, Total, ICP	30600	JL	11	56.1	mg/Kg	28400		11	57.4	mg/Kg	19100		10	50.2	mg/Kg
Antimony, Total, ICP		<MDL,JG	1.7	8.43	mg/Kg		<MDL,JG	1.7	8.63	mg/Kg		<MDL,JG	1.5	7.53	mg/Kg
Arsenic, Total, ICP	14	<RDL	2.9	14	mg/Kg	12	<RDL	2.8	14.4	mg/Kg	15.7		2.5	12.5	mg/Kg
Beryllium, Total, ICP	0.836		0.11	0.561	mg/Kg	0.76		0.11	0.574	mg/Kg	0.533		0.1	0.502	mg/Kg
Cadmium, Total, ICP	0.57	<RDL	0.23	1.12	mg/Kg	0.47	<RDL	0.23	1.15	mg/Kg	3.86		0.2	1	mg/Kg
Chromium, Total, ICP	33.7		0.33	1.68	mg/Kg	30.9		0.35	1.72	mg/Kg	81.3		0.3	1.51	mg/Kg
Copper, Total, ICP	77		0.45	2.25	mg/Kg	72.1		0.47	2.3	mg/Kg	102		0.4	2.01	mg/Kg
Iron, Total, ICP	40100		5.7	28	mg/Kg	38100		5.8	28.8	mg/Kg	27900		5	25.1	mg/Kg
Lead, Total, ICP	34		2.3	11.2	mg/Kg	32.1		2.3	11.5	mg/Kg	95.7		2	10	mg/Kg
Manganese, Total, ICP	480		0.23	1.12	mg/Kg	449		0.23	1.15	mg/Kg	304		0.2	1	mg/Kg
Nickel, Total, ICP	27.8		0.57	2.8	mg/Kg	25.8		0.58	2.88	mg/Kg	24.2		0.5	2.51	mg/Kg
Selenium, Total, ICP		<MDL	2.9	14	mg/Kg		<MDL	2.8	14.4	mg/Kg		<MDL	2.5	12.5	mg/Kg
Silver, Total, ICP		<MDL	0.45	2.25	mg/Kg		<MDL	0.47	2.3	mg/Kg	4.06		0.4	2.01	mg/Kg
Thallium, Total, ICP		<MDL	4.5	22.5	mg/Kg		<MDL	4.7	23	mg/Kg		<MDL	4	20.1	mg/Kg
Zinc, Total, ICP	142		0.57	2.8	mg/Kg	125		0.58	2.88	mg/Kg	192		0.5	2.51	mg/Kg
MT SW846 7471B															
Mercury, Total, CVAA	0.176		0.0059	0.0594	mg/Kg	0.168		0.0056	0.057	mg/Kg	0.602		0.0084	0.0841	mg/Kg
OR EPA 3550B/8270C (7-3-01-004)															
1,2,4-Trichlorobenzene		<MDL	0.24	0.475	ug/Kg		<MDL	0.23	0.465	ug/Kg		<MDL	0.17	0.334	ug/Kg
1,2-Dichlorobenzene		<MDL	0.48	0.95	ug/Kg		<MDL	0.47	0.93	ug/Kg		<MDL	0.33	0.669	ug/Kg
1,3-Dichlorobenzene		<MDL	0.48	0.95	ug/Kg		<MDL	0.47	0.93	ug/Kg		<MDL	0.33	0.669	ug/Kg
1,4-Dichlorobenzene		<MDL	0.48	0.95	ug/Kg	1.55		0.47	0.93	ug/Kg	5.97		0.33	0.669	ug/Kg
2,4-Dimethylphenol		<MDL	2.4	4.75	ug/Kg		<MDL	2.3	4.65	ug/Kg		<MDL	1.7	3.34	ug/Kg
2-Methylnaphthalene	8.6	<RDL	4.8	9.5	ug/Kg	36	J	4.7	9.3	ug/Kg	20.4		3.3	6.69	ug/Kg
2-Methylphenol		<MDL	4.8	9.5	ug/Kg		<MDL	4.7	9.3	ug/Kg		<MDL	3.3	6.69	ug/Kg
4-Methylphenol		<MDL	9.5	19	ug/Kg		<MDL	9.3	18.6	ug/Kg		<MDL	6.7	13.4	ug/Kg
Acenaphthene	8.8	<RDL	4.8	9.5	ug/Kg	109	J	4.7	9.3	ug/Kg	11.9		3.3	6.69	ug/Kg
Acenaphthylene	7.1	<RDL	4.8	9.5	ug/Kg	11.6	J	4.7	9.3	ug/Kg	12.3		3.3	6.69	ug/Kg
Anthracene	47.7		4.8	9.5	ug/Kg	98.6	J	4.7	9.3	ug/Kg	58.2		3.3	6.69	ug/Kg
Benzo(a)anthracene	192		4.8	9.5	ug/Kg	326	J	4.7	9.3	ug/Kg	110		3.3	6.69	ug/Kg
Benzo(a)pyrene	149		4.8	9.5	ug/Kg	155	J	4.7	9.3	ug/Kg	88.3		3.3	6.69	ug/Kg
Benzo(b)fluoranthene	247		4.8	9.5	ug/Kg	244	J	4.7	9.3	ug/Kg	94.3		3.3	6.69	ug/Kg
Benzo(g,h,i)perylene	65.6		4.8	9.5	ug/Kg	45.1	J	4.7	9.3	ug/Kg	41.6		3.3	6.69	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_1C					Locator:	DUD_2C					Locator:	DUD_8C				
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM				
Sample:	L47888-1					Sample:	L47888-2					Sample:	L47888-3				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/27/09 10:36					ColDate:	4/27/09 12:10					ColDate:	4/28/09 12:45				
TimeSpan:						TimeSpan:						TimeSpan:					
TotalSolid:	42.1					TotalSolid:	43					TotalSolid:	59.8				
ClientLoc:						ClientLoc:						ClientLoc:					
SampDepth:	5					SampDepth:	4					SampDepth:	8				
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Benzo(k)fluoranthene	178		4.8	9.5	ug/Kg	218	J	4.7	9.3	ug/Kg	89.5		3.3	6.69	ug/Kg
Benzoic Acid	425		24	47.5	ug/Kg	256	J	23	46.5	ug/Kg	211		17	33.4	ug/Kg
Benzyl Alcohol		<MDL	4.8	9.5	ug/Kg		<MDL	4.7	9.3	ug/Kg		<MDL	3.3	6.69	ug/Kg
Benzyl Butyl Phthalate	79.8	B2	2.4	4.75	ug/Kg	44.9	J,B	2.3	4.65	ug/Kg		<MDL	1.7	3.34	ug/Kg
Bis(2-Ethylhexyl)Phthalate	591	B2	9.5	19	ug/Kg	481	B2	9.3	18.6	ug/Kg	895		6.7	13.4	ug/Kg
Caffeine		<MDL	9.5	19	ug/Kg		<MDL	9.3	18.6	ug/Kg		<MDL	6.7	13.4	ug/Kg
Carbazole	20.8		4.8	9.5	ug/Kg	24.2	J	4.7	9.3	ug/Kg		<MDL	3.3	6.69	ug/Kg
Chrysene	245		4.8	9.5	ug/Kg	330	J	4.7	9.3	ug/Kg	142		3.3	6.69	ug/Kg
Coprostanol		<MDL	95	190	ug/Kg		<MDL	93	186	ug/Kg		<MDL	67	134	ug/Kg
Di-N-Butyl Phthalate	27.8		9.5	19	ug/Kg	17	<RDL,J	9.3	18.6	ug/Kg	27.1		6.7	13.4	ug/Kg
Di-N-Octyl Phthalate		<MDL	9.5	19	ug/Kg		<MDL	9.3	18.6	ug/Kg		<MDL	6.7	13.4	ug/Kg
Dibenzo(a,h)anthracene	34.2		4.8	9.5	ug/Kg	23	J	4.7	9.3	ug/Kg	18.4		3.3	6.69	ug/Kg
Dibenzofuran	8.3	<RDL	4.8	9.5	ug/Kg	66.5	J	4.7	9.3	ug/Kg	13.7		3.3	6.69	ug/Kg
Diethyl Phthalate		<MDL	9.5	19	ug/Kg		<MDL	9.3	18.6	ug/Kg		<MDL	6.7	13.4	ug/Kg
Dimethyl Phthalate		<MDL	9.5	19	ug/Kg		<MDL	9.3	18.6	ug/Kg		<MDL	6.7	13.4	ug/Kg
Fluoranthene	428		4.8	9.5	ug/Kg	1030	J	4.7	9.3	ug/Kg	236		3.3	6.69	ug/Kg
Fluorene	15.5		4.8	9.5	ug/Kg	74.9	J	4.7	9.3	ug/Kg	17.9		3.3	6.69	ug/Kg
Hexachlorobenzene		<MDL	0.24	0.475	ug/Kg		<MDL	0.23	0.465	ug/Kg		<MDL	0.17	0.334	ug/Kg
Hexachlorobutadiene		<MDL	1.2	2.38	ug/Kg		<MDL	1.2	2.33	ug/Kg		<MDL	0.84	1.67	ug/Kg
Hexachloroethane		<MDL	2.4	4.75	ug/Kg		<MDL	2.3	4.65	ug/Kg		<MDL	1.7	3.34	ug/Kg
Indeno(1,2,3-Cd)Pyrene	62.9		4.8	9.5	ug/Kg	45.8	J	4.7	9.3	ug/Kg	32.6		3.3	6.69	ug/Kg
N-Nitrosodiphenylamine		<MDL	9.5	19	ug/Kg		<MDL	9.3	18.6	ug/Kg		<MDL	6.7	13.4	ug/Kg
Naphthalene	7.6	<RDL	4.8	9.5	ug/Kg	17		4.7	9.3	ug/Kg	12.5		3.3	6.69	ug/Kg
Pentachlorophenol		<MDL	24	47.5	ug/Kg		<MDL	23	46.5	ug/Kg		<MDL	17	33.4	ug/Kg
Phenanthrene	122		4.8	9.5	ug/Kg	500	J	4.7	9.3	ug/Kg	105		3.3	6.69	ug/Kg
Phenol		<MDL	9.5	19	ug/Kg	26.7	J	9.3	18.6	ug/Kg		<MDL	6.7	13.4	ug/Kg
Pyrene	387		4.8	9.5	ug/Kg	891	J	4.7	9.3	ug/Kg	630		3.3	6.69	ug/Kg
Total 4-Nonylphenol	164		12	23.8	ug/Kg	158		12	23.3	ug/Kg		<MDL	8.4	16.7	ug/Kg
Total HPAHS	1990		4.8	9.5	ug/Kg	3300	J	4.7	9.3	ug/Kg	1480		3.3	6.69	ug/Kg
Total LPAHs	217		4.8	9.5	ug/Kg	849	J	4.7	9.3	ug/Kg	237		3.3	6.69	ug/Kg
OR SW846 3550B*SW846 8081B															
4,4'-DDD*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDE*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDT*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
Aldrin		<MDL	1.6	3.16	ug/Kg		<MDL	1.6	3.09	ug/Kg		<MDL	1.1	2.22	ug/Kg
Alpha-BHC		<MDL	0.78	1.58	ug/Kg		<MDL	0.77	1.55	ug/Kg		<MDL	0.55	1.12	ug/Kg
Alpha-Chlordane		<MDL	0.78	1.58	ug/Kg		<MDL	0.77	1.55	ug/Kg		<MDL	0.55	1.12	ug/Kg
Beta-BHC		<MDL	0.78	1.58	ug/Kg		<MDL	0.77	1.55	ug/Kg		<MDL	0.55	1.12	ug/Kg
Delta-BHC		<MDL	0.78	1.58	ug/Kg		<MDL	0.77	1.55	ug/Kg		<MDL	0.55	1.12	ug/Kg
Dieldrin		<MDL	1.6	3.16	ug/Kg		<MDL	1.6	3.09	ug/Kg		<MDL	1.1	2.22	ug/Kg
Endosulfan I		<MDL	1.6	3.16	ug/Kg		<MDL	1.6	3.09	ug/Kg		<MDL	1.1	2.22	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4	423062-200-4	423062-200-4
Locator:	DUD_1C	DUD_2C	DUD_8C
Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sample:	L47888-1	L47888-2	L47888-3
Matrix:	SF SALTWTRSED	SF SALTWTRSED	SF SALTWTRSED
ColDate:	4/27/09 10:36	4/27/09 12:10	4/28/09 12:45
TimeSpan:			
TotalSolid:	42.1	43	59.8
ClientLoc:			
SampDepth:	5	4	8
DRY Weight Basis			

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
Endosulfan II		<MDL	1.6	3.16	ug/Kg		<MDL	1.6	3.09	ug/Kg		<MDL	1.1	2.22	ug/Kg
Endosulfan Sulfate		<MDL	1.6	3.16	ug/Kg		<MDL	1.6	3.09	ug/Kg		<MDL	1.1	2.22	ug/Kg
Endrin		<MDL	1.6	3.16	ug/Kg		<MDL	1.6	3.09	ug/Kg		<MDL	1.1	2.22	ug/Kg
Endrin Aldehyde		<MDL	1.6	3.16	ug/Kg		<MDL	1.6	3.09	ug/Kg		<MDL	1.1	2.22	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.78	1.58	ug/Kg		<MDL	0.77	1.55	ug/Kg		<MDL	0.55	1.12	ug/Kg
Gamma-Chlordane		<MDL	0.78	1.58	ug/Kg		<MDL	0.77	1.55	ug/Kg		<MDL	0.55	1.12	ug/Kg
Heptachlor		<MDL	0.78	1.58	ug/Kg		<MDL	0.77	1.55	ug/Kg		<MDL	0.55	1.12	ug/Kg
Heptachlor Epoxide		<MDL	0.78	1.58	ug/Kg		<MDL	0.77	1.55	ug/Kg		<MDL	0.55	1.12	ug/Kg
Methoxychlor		<MDL	7.8	15.8	ug/Kg		<MDL	7.7	15.5	ug/Kg		<MDL	5.5	11.2	ug/Kg
Toxaphene		<MDL	16	31.6	ug/Kg		<MDL	16	30.9	ug/Kg		<MDL	11	22.2	ug/Kg
OR SW846 3550B*SW846 8082A															
Aroclor 1016		<MDL,TA	15	29.7	ug/Kg		<MDL,TA	17	35.1	ug/Kg		<MDL,TA	420	849	ug/Kg
Aroclor 1221		<MDL	4	7.91	ug/Kg		<MDL	4	7.74	ug/Kg		<MDL	28	55.7	ug/Kg
Aroclor 1232		<MDL,TA	48	92.9	ug/Kg		<MDL,TA	40	80.2	ug/Kg		<MDL,TA	380	776	ug/Kg
Aroclor 1242		<MDL,TA	48	92.9	ug/Kg		<MDL,TA	44	89.5	ug/Kg		<MDL,TA	1200	2310	ug/Kg
Aroclor 1248	31.1		2	3.97	ug/Kg	34		1.9	3.88	ug/Kg	719		14	27.9	ug/Kg
Aroclor 1254	41.6		2	3.97	ug/Kg	36.7		1.9	3.88	ug/Kg	893		14	27.9	ug/Kg
Aroclor 1260	22.2		2	3.97	ug/Kg	22.2		1.9	3.88	ug/Kg	388		14	27.9	ug/Kg
Total Aroclors	95		2	3.97	ug/Kg	92.8		1.9	3.88	ug/Kg	2010		14	27.9	ug/Kg
* Not converted to dry weight basis															

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_8C					Locator:	DUD_9C					Locator:	DUD_10C				
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM				
Sample:	L47888-4					Sample:	L47888-5					Sample:	L47888-6				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/28/09 14:00					ColDate:	4/29/09 8:25					ColDate:	4/29/09 8:55				
TimeSpan:						TimeSpan:						TimeSpan:					
TotalSolid:	63					TotalSolid:	62.3					TotalSolid:	63.9				
ClientLoc:						ClientLoc:						ClientLoc:					
SampDepth:	8					SampDepth:	12					SampDepth:	14				
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
M=CV ASTM D422															
Clay*	4.6		0.77	1.53	%	12.9		0.8	1.61	%	11		0.78	1.56	%
Fines*	45.2		0.77	1.53	%	42.6		0.8	1.61	%	36.8		0.78	1.56	%
Gravel*	10.1		0.15	1.53	%	11.1		0.16	1.61	%	3.9		0.16	1.56	%
Sand*	51.3		0.15	1.53	%	45.5		0.16	1.61	%	55.1		0.16	1.56	%
Silt*	40.6		0.77	1.53	%	29.7		0.8	1.61	%	25.8		0.78	1.56	%
p+0.00*	2.6		0.15	1.53	%	3		0.16	1.61	%	3		0.16	1.56	%
p+1.00*	5.5		0.15	1.53	%	6.9		0.16	1.61	%	10.9		0.16	1.56	%
p+10.0(equal/more than)*	3.1		0.77	1.53	%	8		0.8	1.61	%	6.3		0.78	1.56	%
p+2.00*	16.9		0.15	1.53	%	18.6		0.16	1.61	%	21.4		0.16	1.56	%
p+3.00*	26.4		0.15	1.53	%	11.3		0.16	1.61	%	13.3		0.16	1.56	%
p+4.00*		<MDL	0.15	1.53	%	5.7		0.16	1.61	%	6.5		0.16	1.56	%
p+5.00*	4.6		0.77	1.53	%	3.2		0.8	1.61	%	3.1		0.78	1.56	%
p+6.00*	22.2		0.77	1.53	%	11.2		0.8	1.61	%	9.4		0.78	1.56	%
p+7.00*	11.5		0.77	1.53	%	7.2		0.8	1.61	%	6.3		0.78	1.56	%
p+8.00*	2.3		0.77	1.53	%	8		0.8	1.61	%	7		0.78	1.56	%
p+9.00*	1.5		0.77	1.53	%	4.8		0.8	1.61	%	4.7		0.78	1.56	%
p-1.00*	2.9		0.15	1.53	%	3.1		0.16	1.61	%	2.2		0.16	1.56	%
p-2.00*	1.2		0.15	1.53	%	0.7	<RDL	0.16	1.61	%	1	<RDL	0.16	1.56	%
p-2.00(less than)*	6		0.15	1.53	%	7.3		0.16	1.61	%	0.8	<RDL	0.16	1.56	%
CV SW846 9060-PSEP96															
Total Organic Carbon	23200		2100	4080	mg/Kg	11000		1900	3720	mg/Kg	10000		1900	3650	mg/Kg
M=CV SM2540-G															
Total Solids*	63		0.005	0.01	%	62.3		0.005	0.01	%	63.9		0.005	0.01	%
M=ES NONE															
Field Personnel*	BK,JDD,JB,JeneeC				none	BK,JDD,SH				none	BK,JDD,SH				none
Sampcoordx1*	1266862				ft	1266790				ft	1266661				ft
Sampcoordx2*	1266867				ft	1266780				ft	1266664				ft
Sampcoordx3*	1266868				ft	1266788				ft	1266668				ft
Sampcoordx4*	1266866				ft	1266783				ft	1266663				ft
Sampcoordx5*	1266862				ft	1266785				ft	1266666				ft
Sampcoordx6*	1266863				ft	1266784				ft					
Sampcoordy1*	208918				ft	209155				ft	209520				ft
Sampcoordy2*	208915				ft	209158				ft	209520				ft
Sampcoordy3*	208915				ft	209154				ft	209518				ft
Sampcoordy4*	208917				ft	209158				ft	209516				ft
Sampcoordy5*	208919				ft	209161				ft	209516				ft
Sampcoordy6*	208923				ft	209154				ft					
Sampcoordx7*	1266862				ft										
Sampcoordy7*	208917				ft										
Sample Depth*	8				m	12				m	14				m

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_8C					Locator:	DUD_9C					Locator:	DUD_10C				
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM				
Sample:	L47888-4					Sample:	L47888-5					Sample:	L47888-6				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/28/09 14:00					ColDate:	4/29/09 8:25					ColDate:	4/29/09 8:55				
TimeSpan:						TimeSpan:						TimeSpan:					
TotalSolid:	63					TotalSolid:	62.3					TotalSolid:	63.9				
ClientLoc:						ClientLoc:						ClientLoc:					
SampDepth:	8					SampDepth:	12					SampDepth:	14				
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Sampling Method*	20143				none	20143				none	20143				none
Sediment Sampling Depth*	12				cm	9				cm	9				cm
Sediment Sampling Range*					cm					cm					cm
Sediment Type*	13W14				none	13N21				none	13N36				none
Tidal Condition*	S				none	E				none	E				none
Tide Height*	-2.9				ft	9				ft	8				ft
Sample Function*	FREP @ L47888-3				none										
MT SW846 3050B*SW846 6010C															
Aluminum, Total, ICP	16700		7.9	39.7	mg/Kg	17800		8	40.1	mg/Kg	16000		7.8	39	mg/Kg
Antimony, Total, ICP		<MDL,JG	1.2	5.95	mg/Kg		<MDL,JG	1.2	6.04	mg/Kg		<MDL,JG	1.2	5.85	mg/Kg
Arsenic, Total, ICP	15.4		2.1	9.92	mg/Kg	7.4	<RDL	2.1	10	mg/Kg	8.9	<RDL	1.9	9.75	mg/Kg
Beryllium, Total, ICP	0.473		0.079	0.397	mg/Kg	0.457		0.08	0.401	mg/Kg	0.405		0.078	0.39	mg/Kg
Cadmium, Total, ICP	3.08		0.16	0.794	mg/Kg	0.63	<RDL	0.16	0.804	mg/Kg	0.36	<RDL	0.16	0.779	mg/Kg
Chromium, Total, ICP	80.8		0.24	1.19	mg/Kg	27		0.24	1.21	mg/Kg	24.1		0.23	1.17	mg/Kg
Copper, Total, ICP	82.2		0.32	1.59	mg/Kg	46.1		0.32	1.61	mg/Kg	53.8		0.31	1.56	mg/Kg
Iron, Total, ICP	25200		4	19.8	mg/Kg	25200		4	20.1	mg/Kg	25200		3.9	19.6	mg/Kg
Lead, Total, ICP	83.8		1.6	7.94	mg/Kg	18.3		1.6	8.04	mg/Kg	26.6		1.6	7.79	mg/Kg
Manganese, Total, ICP	259		0.16	0.794	mg/Kg	289		0.16	0.804	mg/Kg	297		0.16	0.779	mg/Kg
Nickel, Total, ICP	23.2		0.4	1.98	mg/Kg	21.5		0.4	2.01	mg/Kg	21.6		0.39	1.96	mg/Kg
Selenium, Total, ICP		<MDL	2.1	9.92	mg/Kg		<MDL	2.1	10	mg/Kg		<MDL	1.9	9.75	mg/Kg
Silver, Total, ICP	3.41		0.32	1.59	mg/Kg		<MDL	0.32	1.61	mg/Kg		<MDL	0.31	1.56	mg/Kg
Thallium, Total, ICP		<MDL	3.2	15.9	mg/Kg		<MDL	3.2	16.1	mg/Kg		<MDL	3.1	15.6	mg/Kg
Zinc, Total, ICP	170		0.4	1.98	mg/Kg	66.3		0.4	2.01	mg/Kg	82.5		0.39	1.96	mg/Kg
MT SW846 7471B															
Mercury, Total, CVAA	0.622		0.0079	0.0792	mg/Kg	0.12		0.004	0.0401	mg/Kg	0.127		0.0039	0.0385	mg/Kg
OR EPA 3550B/8270C (7-3-01-004)															
1,2,4-Trichlorobenzene		<MDL	0.16	0.317	ug/Kg		<MDL	0.16	0.321	ug/Kg		<MDL	0.16	0.313	ug/Kg
1,2-Dichlorobenzene	6.76		0.32	0.635	ug/Kg		<MDL	0.32	0.642	ug/Kg		<MDL	0.31	0.626	ug/Kg
1,3-Dichlorobenzene		<MDL	0.32	0.635	ug/Kg		<MDL	0.32	0.642	ug/Kg		<MDL	0.31	0.626	ug/Kg
1,4-Dichlorobenzene	5.21		0.32	0.635	ug/Kg	2.13		0.32	0.642	ug/Kg		<MDL	0.31	0.626	ug/Kg
2,4-Dimethylphenol		<MDL	1.6	3.17	ug/Kg		<MDL	1.6	3.21	ug/Kg		<MDL	1.6	3.13	ug/Kg
2-Methylnaphthalene	22.1		3.2	6.35	ug/Kg		<MDL	3.2	6.42	ug/Kg		<MDL	3.1	6.26	ug/Kg
2-Methylphenol		<MDL	3.2	6.35	ug/Kg		<MDL	3.2	6.42	ug/Kg		<MDL	3.1	6.26	ug/Kg
4-Methylphenol		<MDL	6.3	12.7	ug/Kg		<MDL	6.4	12.8	ug/Kg		<MDL	6.3	12.5	ug/Kg
Acenaphthene	8.75		3.2	6.35	ug/Kg	3.4	<RDL	3.2	6.42	ug/Kg	28.3		3.1	6.26	ug/Kg
Acenaphthylene	8.63		3.2	6.35	ug/Kg		<MDL	3.2	6.42	ug/Kg	6.96		3.1	6.26	ug/Kg
Anthracene	48.4		3.2	6.35	ug/Kg	14.9		3.2	6.42	ug/Kg	73.6		3.1	6.26	ug/Kg
Benzo(a)anthracene	87.8		3.2	6.35	ug/Kg	43.3		3.2	6.42	ug/Kg	232		3.1	6.26	ug/Kg
Benzo(a)pyrene	48.4		3.2	6.35	ug/Kg	31.8		3.2	6.42	ug/Kg	72.5		3.1	6.26	ug/Kg
Benzo(b)fluoranthene	54.4		3.2	6.35	ug/Kg	41.3		3.2	6.42	ug/Kg	105		3.1	6.26	ug/Kg
Benzo(g,h,i)perylene	21.1		3.2	6.35	ug/Kg	13.7		3.2	6.42	ug/Kg	22.8		3.1	6.26	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_8C					Locator:	DUD_9C					Locator:	DUD_10C				
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM				
Sample:	L47888-4					Sample:	L47888-5					Sample:	L47888-6				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/28/09 14:00					ColDate:	4/29/09 8:25					ColDate:	4/29/09 8:55				
TimeSpan:						TimeSpan:						TimeSpan:					
TotalSolid:	63					TotalSolid:	62.3					TotalSolid:	63.9				
ClientLoc:						ClientLoc:						ClientLoc:					
SampDepth:	8					SampDepth:	12					SampDepth:	14				
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Benzo(k)fluoranthene	49.4		3.2	6.35	ug/Kg	39		3.2	6.42	ug/Kg	88.4		3.1	6.26	ug/Kg
Benzoic Acid	132		16	31.7	ug/Kg	104		16	32.1	ug/Kg	117		16	31.3	ug/Kg
Benzyl Alcohol		<MDL	3.2	6.35	ug/Kg		<MDL	3.2	6.42	ug/Kg		<MDL	3.1	6.26	ug/Kg
Benzyl Butyl Phthalate		<MDL	1.6	3.17	ug/Kg	12.6	B	1.6	3.21	ug/Kg	23.2	B	1.6	3.13	ug/Kg
Bis(2-Ethylhexyl)Phthalate	1000		6.3	12.7	ug/Kg	464	B2	6.4	12.8	ug/Kg	305	B2	6.3	12.5	ug/Kg
Caffeine		<MDL	6.3	12.7	ug/Kg		<MDL	6.4	12.8	ug/Kg		<MDL	6.3	12.5	ug/Kg
Carbazole		<MDL	3.2	6.35	ug/Kg	7.87		3.2	6.42	ug/Kg	17.8		3.1	6.26	ug/Kg
Chrysene	94.3		3.2	6.35	ug/Kg	53.1		3.2	6.42	ug/Kg	216		3.1	6.26	ug/Kg
Coprostanol		<MDL	63	127	ug/Kg		<MDL	64	128	ug/Kg		<MDL	63	125	ug/Kg
Di-N-Butyl Phthalate	36.7		6.3	12.7	ug/Kg	10	<RDL	6.4	12.8	ug/Kg	11	<RDL	6.3	12.5	ug/Kg
Di-N-Octyl Phthalate		<MDL	6.3	12.7	ug/Kg		<MDL	6.4	12.8	ug/Kg		<MDL	6.3	12.5	ug/Kg
Dibenzo(a,h)anthracene	9.21		3.2	6.35	ug/Kg	6.74		3.2	6.42	ug/Kg	9.73		3.1	6.26	ug/Kg
Dibenzofuran	9.86		3.2	6.35	ug/Kg	3.9	<RDL	3.2	6.42	ug/Kg	13		3.1	6.26	ug/Kg
Diethyl Phthalate		<MDL	6.3	12.7	ug/Kg		<MDL	6.4	12.8	ug/Kg		<MDL	6.3	12.5	ug/Kg
Dimethyl Phthalate		<MDL	6.3	12.7	ug/Kg		<MDL	6.4	12.8	ug/Kg		<MDL	6.3	12.5	ug/Kg
Fluoranthene	286		3.2	6.35	ug/Kg	94.2		3.2	6.42	ug/Kg	540		3.1	6.26	ug/Kg
Fluorene	16.8		3.2	6.35	ug/Kg	6.97		3.2	6.42	ug/Kg	30.7		3.1	6.26	ug/Kg
Hexachlorobenzene		<MDL	0.16	0.317	ug/Kg		<MDL	0.16	0.321	ug/Kg		<MDL	0.16	0.313	ug/Kg
Hexachlorobutadiene		<MDL	0.79	1.59	ug/Kg		<MDL	0.8	1.61	ug/Kg		<MDL	0.78	1.56	ug/Kg
Hexachloroethane		<MDL	1.6	3.17	ug/Kg		<MDL	1.6	3.21	ug/Kg		<MDL	1.6	3.13	ug/Kg
Indeno(1,2,3-Cd)Pyrene	18.3		3.2	6.35	ug/Kg	12.3		3.2	6.42	ug/Kg	23.5		3.1	6.26	ug/Kg
N-Nitrosodiphenylamine		<MDL	6.3	12.7	ug/Kg		<MDL	6.4	12.8	ug/Kg		<MDL	6.3	12.5	ug/Kg
Naphthalene	12.2		3.2	6.35	ug/Kg		<MDL	3.2	6.42	ug/Kg	3.4	<RDL	3.1	6.26	ug/Kg
Pentachlorophenol		<MDL	16	31.7	ug/Kg		<MDL	16	32.1	ug/Kg		<MDL	16	31.3	ug/Kg
Phenanthrene	84.9		3.2	6.35	ug/Kg	41.9		3.2	6.42	ug/Kg	222		3.1	6.26	ug/Kg
Phenol		<MDL	6.3	12.7	ug/Kg		<MDL	6.4	12.8	ug/Kg		<MDL	6.3	12.5	ug/Kg
Pyrene	651		3.2	6.35	ug/Kg	119		3.2	6.42	ug/Kg	565		3.1	6.26	ug/Kg
Total 4-Nonylphenol		<MDL	7.9	15.9	ug/Kg		<MDL	8	16.1	ug/Kg		<MDL	7.8	15.6	ug/Kg
Total HPAHS	1320		3.2	6.35	ug/Kg	454		3.2	6.42	ug/Kg	1880		3.1	6.26	ug/Kg
Total LPAHs	202		3.2	6.35	ug/Kg	74.6		3.2	6.42	ug/Kg	369		3.1	6.26	ug/Kg
OR SW846 3550B*SW846 8081B															
4,4'-DDD*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDE*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDT*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
Aldrin		<MDL	1.1	2.11	ug/Kg		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.08	ug/Kg
Alpha-BHC		<MDL	0.52	1.06	ug/Kg		<MDL	0.53	1.07	ug/Kg		<MDL	0.52	1.04	ug/Kg
Alpha-Chlordane		<MDL	0.52	1.06	ug/Kg		<MDL	0.53	1.07	ug/Kg		<MDL	0.52	1.04	ug/Kg
Beta-BHC		<MDL	0.52	1.06	ug/Kg		<MDL	0.53	1.07	ug/Kg		<MDL	0.52	1.04	ug/Kg
Delta-BHC		<MDL	0.52	1.06	ug/Kg		<MDL	0.53	1.07	ug/Kg		<MDL	0.52	1.04	ug/Kg
Dieldrin		<MDL	1.1	2.11	ug/Kg		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.08	ug/Kg
Endosulfan I		<MDL	1.1	2.11	ug/Kg		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.08	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_8C					Locator:	DUD_9C					Locator:	DUD_10C				
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM				
Sample:	L47888-4					Sample:	L47888-5					Sample:	L47888-6				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/28/09 14:00					ColDate:	4/29/09 8:25					ColDate:	4/29/09 8:55				
TimeSpan:						TimeSpan:						TimeSpan:					
TotalSolid:	63					TotalSolid:	62.3					TotalSolid:	63.9				
ClientLoc:						ClientLoc:						ClientLoc:					
SampDepth:	8					SampDepth:	12					SampDepth:	14				
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Endosulfan II		<MDL	1.1	2.11	ug/Kg		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.08	ug/Kg
Endosulfan Sulfate		<MDL	1.1	2.11	ug/Kg		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.08	ug/Kg
Endrin		<MDL	1.1	2.11	ug/Kg		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.08	ug/Kg
Endrin Aldehyde		<MDL	1.1	2.11	ug/Kg		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.08	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.52	1.06	ug/Kg		<MDL	0.53	1.07	ug/Kg		<MDL	0.52	1.04	ug/Kg
Gamma-Chlordane		<MDL	0.52	1.06	ug/Kg		<MDL	0.53	1.07	ug/Kg		<MDL	0.52	1.04	ug/Kg
Heptachlor		<MDL	0.52	1.06	ug/Kg		<MDL	0.53	1.07	ug/Kg		<MDL	0.52	1.04	ug/Kg
Heptachlor Epoxide		<MDL	0.52	1.06	ug/Kg		<MDL	0.53	1.07	ug/Kg		<MDL	0.52	1.04	ug/Kg
Methoxychlor		<MDL	5.2	10.6	ug/Kg		<MDL	5.3	10.7	ug/Kg		<MDL	5.2	10.4	ug/Kg
Toxaphene		<MDL	11	21.1	ug/Kg		<MDL	11	21.3	ug/Kg		<MDL	10	20.8	ug/Kg
OR SW846 3550B*SW846 8082A															
Aroclor 1016		<MDL,TA	810	1620	ug/Kg		<MDL,TA	32	63.4	ug/Kg		<MDL,TA	23	46.8	ug/Kg
Aroclor 1221		<MDL	52	106	ug/Kg		<MDL	2.7	5.35	ug/Kg		<MDL	2.7	5.21	ug/Kg
Aroclor 1232		<MDL,TA	320	641	ug/Kg		<MDL,TA	13	27	ug/Kg		<MDL,TA	31	63.4	ug/Kg
Aroclor 1242		<MDL,TA	3300	6510	ug/Kg		<MDL,TA	100	197	ug/Kg		<MDL,TA	86	172	ug/Kg
Aroclor 1248	1620		27	52.9	ug/Kg	61.6		1.3	2.68	ug/Kg	49.9		1.3	2.61	ug/Kg
Aroclor 1254	1620		27	52.9	ug/Kg	79.6		1.3	2.68	ug/Kg	63.4		1.3	2.61	ug/Kg
Aroclor 1260	698		27	52.9	ug/Kg	25.5		1.3	2.68	ug/Kg	28.5		1.3	2.61	ug/Kg
Total Aroclors	3940		27	52.9	ug/Kg	167		1.3	2.68	ug/Kg	142		1.3	2.61	ug/Kg
* Not converted to dry weight basis															

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_11C					Locator:	DUD_12C					Locator:	DUD_13C				
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	PERIMETER LOCATION				
Sample:	L47888-7					Sample:	L47888-8					Sample:	L47888-9				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/29/09 9:37					ColDate:	4/29/09 10:00					ColDate:	4/29/09 10:40				
TimeSpan:						TimeSpan:						TimeSpan:					
TotalSolid:	62.3					TotalSolid:	63.9					TotalSolid:	46.7				
ClientLoc:						ClientLoc:						ClientLoc:					
SampDepth:	9					SampDepth:	10					SampDepth:	10				
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
M=CV ASTM D422															
Clay*	13.9		0.77	1.55	%	13.2		0.78	1.55	%	32.1		1.1	2.14	%
Fines*	37.9		0.77	1.55	%	44.2		0.78	1.55	%	81.4		1.1	2.14	%
Gravel*	4.8		0.15	1.55	%	0.4	<RDL	0.16	1.55	%		<MDL	0.21	2.14	%
Sand*	54.3		0.15	1.55	%	51.3		0.16	1.55	%	14.8		0.21	2.14	%
Silt*	24		0.77	1.55	%	31		0.78	1.55	%	49.2		1.1	2.14	%
p+0.00*	1.8		0.15	1.55	%	0.4	<RDL	0.16	1.55	%		<MDL	0.21	2.14	%
p+1.00*	4.6		0.15	1.55	%	1.4		0.16	1.55	%	0.2	<RDL	0.21	2.14	%
p+10.0(equal/more than)*	7.7		0.77	1.55	%	7.8		0.78	1.55	%	16.1		1.1	2.14	%
p+2.00*	23.1		0.15	1.55	%	10.3		0.16	1.55	%	1.8		0.21	2.14	%
p+3.00*	18.2		0.15	1.55	%	27.2		0.16	1.55	%	5.2		0.21	2.14	%
p+4.00*	6.7		0.15	1.55	%	12.2		0.16	1.55	%	7.5		0.21	2.14	%
p+5.00*	3.1		0.77	1.55	%	3.1		0.78	1.55	%	4.3		1.1	2.14	%
p+6.00*	7.7		0.77	1.55	%	10.9		0.78	1.55	%	19.3		1.1	2.14	%
p+7.00*	6.2		0.77	1.55	%	9.3		0.78	1.55	%	15		1.1	2.14	%
p+8.00*	7		0.77	1.55	%	7.8		0.78	1.55	%	10.7		1.1	2.14	%
p+9.00*	6.2		0.77	1.55	%	5.4		0.78	1.55	%	16.1		1.1	2.14	%
p-1.00*	2.1		0.15	1.55	%	0.4	<RDL	0.16	1.55	%		<MDL	0.21	2.14	%
p-2.00*	0.8	<RDL	0.15	1.55	%		<MDL	0.16	1.55	%		<MDL	0.21	2.14	%
p-2.00(less than)*	1.9		0.15	1.55	%		<MDL	0.16	1.55	%		<MDL	0.21	2.14	%
CV SW846 9060-PSEP96															
Total Organic Carbon	11100		1900	3720	mg/Kg	11800		1700	3580	mg/Kg	19000		1800	3550	mg/Kg
M=CV SM2540-G															
Total Solids*	62.3		0.005	0.01	%	63.9		0.005	0.01	%	46.7		0.005	0.01	%
M=ES NONE															
Field Personnel*	BK,JDD,SH				none	BK,JDD,SH				none	BK,JDD,SH				none
Sampcoordx1*	1266841				ft	1266817				ft	1267237				ft
Sampcoordx2*	1266844				ft	1266813				ft	1267240				ft
Sampcoordx3*	1266842				ft	1266815				ft	1267248				ft
Sampcoordx4*	1266844				ft	1266821				ft	1267237				ft
Sampcoordx5*	1266841				ft	1266807				ft	1267238				ft
Sampcoordx6*						1266812				ft					
Sampcoordy1*	209540				ft	209630				ft	207861				ft
Sampcoordy2*	209530				ft	209630				ft	207862				ft
Sampcoordy3*	209534				ft	209625				ft	207858				ft
Sampcoordy4*	209534				ft	209632				ft	207858				ft
Sampcoordy5*	209535				ft	209630				ft	207860				ft
Sampcoordy6*						209631				ft					
Sampcoordx7*															
Sampcoordy7*															
Sample Depth*	9				m	10				m	10				m

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_11C					Locator:	DUD_12C					Locator:	DUD_13C				
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	PERIMETER LOCATION				
Sample:	L47888-7					Sample:	L47888-8					Sample:	L47888-9				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/29/09 9:37					ColDate:	4/29/09 10:00					ColDate:	4/29/09 10:40				
TimeSpan:						TimeSpan:						TimeSpan:					
TotalSolid:	62.3					TotalSolid:	63.9					TotalSolid:	46.7				
ClientLoc:						ClientLoc:						ClientLoc:					
SampDepth:	9					SampDepth:	10					SampDepth:	10				
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Sampling Method*	20143				none	20143				none	20143				none
Sediment Sampling Depth*	11				cm	11				cm	15				cm
Sediment Sampling Range*					cm					cm					cm
Sediment Type*	12N21				none	12N21				none	21P21				none
Tidal Condition*	E				none	E				none	E				none
Tide Height*	7				ft	6				ft	5				ft
Sample Function*															
MT SW846 3050B*SW846 6010C															
Aluminum, Total, ICP	18500		7.7	38.8	mg/Kg	17700		8	40.2	mg/Kg	26600		11	53.7	mg/Kg
Antimony, Total, ICP		<MDL,JG	1.2	5.81	mg/Kg		<MDL,JG	1.2	6.04	mg/Kg		<MDL,JG	1.6	8.05	mg/Kg
Arsenic, Total, ICP	7.4	<RDL	1.9	9.7	mg/Kg	9.1	<RDL	2	10.1	mg/Kg	11	<RDL	2.8	13.4	mg/Kg
Beryllium, Total, ICP	0.441		0.077	0.388	mg/Kg	0.44		0.08	0.402	mg/Kg	0.679		0.11	0.537	mg/Kg
Cadmium, Total, ICP	0.32	<RDL	0.16	0.775	mg/Kg	0.5	<RDL	0.16	0.806	mg/Kg	0.41	<RDL	0.21	1.07	mg/Kg
Chromium, Total, ICP	26		0.22	1.16	mg/Kg	29.3		0.23	1.21	mg/Kg	29.8		0.32	1.61	mg/Kg
Copper, Total, ICP	54.1		0.3	1.55	mg/Kg	66.2		0.33	1.61	mg/Kg	62.5		0.43	2.14	mg/Kg
Iron, Total, ICP	26800		3.9	19.4	mg/Kg	25800		4.1	20.2	mg/Kg	35100		5.4	26.8	mg/Kg
Lead, Total, ICP	19.6		1.6	7.75	mg/Kg	58.1		1.6	8.06	mg/Kg	27.4		2.1	10.7	mg/Kg
Manganese, Total, ICP	305		0.16	0.775	mg/Kg	286		0.16	0.806	mg/Kg	392		0.21	1.07	mg/Kg
Nickel, Total, ICP	23.8		0.39	1.94	mg/Kg	24.6		0.41	2.02	mg/Kg	25.5		0.54	2.68	mg/Kg
Selenium, Total, ICP		<MDL	1.9	9.7	mg/Kg		<MDL	2	10.1	mg/Kg		<MDL	2.8	13.4	mg/Kg
Silver, Total, ICP		<MDL	0.3	1.55	mg/Kg	0.36	<RDL	0.33	1.61	mg/Kg		<MDL	0.43	2.14	mg/Kg
Thallium, Total, ICP		<MDL	3	15.5	mg/Kg		<MDL	3.3	16.1	mg/Kg		<MDL	4.3	21.4	mg/Kg
Zinc, Total, ICP	85.7		0.39	1.94	mg/Kg	112		0.41	2.02	mg/Kg	102		0.54	2.68	mg/Kg
MT SW846 7471B															
Mercury, Total, CVAA	0.107		0.004	0.0398	mg/Kg	0.16		0.0039	0.039	mg/Kg	0.188		0.0054	0.0537	mg/Kg
OR EPA 3550B/8270C (7-3-01-004)															
1,2,4-Trichlorobenzene		<MDL	0.16	0.321	ug/Kg		<MDL	0.16	0.313	ug/Kg		<MDL	0.21	0.428	ug/Kg
1,2-Dichlorobenzene		<MDL	0.32	0.642	ug/Kg		<MDL	0.31	0.626	ug/Kg		<MDL	0.43	0.857	ug/Kg
1,3-Dichlorobenzene		<MDL	0.32	0.642	ug/Kg		<MDL	0.31	0.626	ug/Kg		<MDL	0.43	0.857	ug/Kg
1,4-Dichlorobenzene	1.53		0.32	0.642	ug/Kg	2.22		0.31	0.626	ug/Kg		<MDL	0.43	0.857	ug/Kg
2,4-Dimethylphenol		<MDL	1.6	3.21	ug/Kg		<MDL	1.6	3.13	ug/Kg		<MDL	2.1	4.28	ug/Kg
2-Methylnaphthalene		<MDL	3.2	6.42	ug/Kg		<MDL	3.1	6.26	ug/Kg	6.6	<RDL	4.3	8.57	ug/Kg
2-Methylphenol		<MDL	3.2	6.42	ug/Kg		<MDL	3.1	6.26	ug/Kg		<MDL	4.3	8.57	ug/Kg
4-Methylphenol	6.7	<RDL	6.4	12.8	ug/Kg		<MDL	6.3	12.5	ug/Kg		<MDL	8.6	17.1	ug/Kg
Acenaphthene	4.7	<RDL	3.2	6.42	ug/Kg	6.76		3.1	6.26	ug/Kg		<MDL	4.3	8.57	ug/Kg
Acenaphthylene	3.2	<RDL	3.2	6.42	ug/Kg	3.4	<RDL	3.1	6.26	ug/Kg		<MDL	4.3	8.57	ug/Kg
Anthracene	44		3.2	6.42	ug/Kg	35.5		3.1	6.26	ug/Kg	28.5		4.3	8.57	ug/Kg
Benzo(a)anthracene	107		3.2	6.42	ug/Kg	79		3.1	6.26	ug/Kg	76		4.3	8.57	ug/Kg
Benzo(a)pyrene	51.7		3.2	6.42	ug/Kg	40.4		3.1	6.26	ug/Kg	32.3		4.3	8.57	ug/Kg
Benzo(b)fluoranthene	70		3.2	6.42	ug/Kg	58.1		3.1	6.26	ug/Kg	45.8		4.3	8.57	ug/Kg
Benzo(g,h,i)perylene	21.2		3.2	6.42	ug/Kg	15.8		3.1	6.26	ug/Kg	9.89		4.3	8.57	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4				
Locator:	DUD_11C					Locator:	DUD_12C					Locator:	DUD_13C				
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	PERIMETER LOCATION				
Sample:	L47888-7					Sample:	L47888-8					Sample:	L47888-9				
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED				
ColDate:	4/29/09 9:37					ColDate:	4/29/09 10:00					ColDate:	4/29/09 10:40				
TimeSpan:						TimeSpan:						TimeSpan:					
TotalSolid:	62.3					TotalSolid:	63.9					TotalSolid:	46.7				
ClientLoc:						ClientLoc:						ClientLoc:					
SampDepth:	9					SampDepth:	10					SampDepth:	10				
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
Benzo(k)fluoranthene	70.8		3.2	6.42	ug/Kg	54.8		3.1	6.26	ug/Kg	50.5		4.3	8.57	ug/Kg
Benzoic Acid	142		16	32.1	ug/Kg	78.9		16	31.3	ug/Kg	87.4		21	42.8	ug/Kg
Benzyl Alcohol		<MDL	3.2	6.42	ug/Kg		<MDL	3.1	6.26	ug/Kg		<MDL	4.3	8.57	ug/Kg
Benzyl Butyl Phthalate	124		1.6	3.21	ug/Kg	22.1	B	1.6	3.13	ug/Kg	35.5	B	2.1	4.28	ug/Kg
Bis(2-Ethylhexyl)Phthalate	1150		6.4	12.8	ug/Kg	465	B2	6.3	12.5	ug/Kg	296	B	8.6	17.1	ug/Kg
Caffeine		<MDL	6.4	12.8	ug/Kg		<MDL	6.3	12.5	ug/Kg		<MDL	8.6	17.1	ug/Kg
Carbazole	17.3		3.2	6.42	ug/Kg	13.6		3.1	6.26	ug/Kg	9.51		4.3	8.57	ug/Kg
Chrysene	136		3.2	6.42	ug/Kg	119		3.1	6.26	ug/Kg	110		4.3	8.57	ug/Kg
Coprostanol		<MDL	64	128	ug/Kg		<MDL	63	125	ug/Kg		<MDL	86	171	ug/Kg
Di-N-Butyl Phthalate	11	<RDL	6.4	12.8	ug/Kg	12	<RDL	6.3	12.5	ug/Kg	12	<RDL	8.6	17.1	ug/Kg
Di-N-Octyl Phthalate		<MDL	6.4	12.8	ug/Kg		<MDL	6.3	12.5	ug/Kg		<MDL	8.6	17.1	ug/Kg
Dibenzo(a,h)anthracene	10.6		3.2	6.42	ug/Kg	7.37		3.1	6.26	ug/Kg	5.1	<RDL	4.3	8.57	ug/Kg
Dibenzofuran	5	<RDL	3.2	6.42	ug/Kg	5.3	<RDL	3.1	6.26	ug/Kg		<MDL	4.3	8.57	ug/Kg
Diethyl Phthalate		<MDL	6.4	12.8	ug/Kg		<MDL	6.3	12.5	ug/Kg		<MDL	8.6	17.1	ug/Kg
Dimethyl Phthalate		<MDL	6.4	12.8	ug/Kg		<MDL	6.3	12.5	ug/Kg		<MDL	8.6	17.1	ug/Kg
Fluoranthene	218		3.2	6.42	ug/Kg	169		3.1	6.26	ug/Kg	149		4.3	8.57	ug/Kg
Fluorene	11.2		3.2	6.42	ug/Kg	9.94		3.1	6.26	ug/Kg	9.29		4.3	8.57	ug/Kg
Hexachlorobenzene		<MDL	0.16	0.321	ug/Kg		<MDL	0.16	0.313	ug/Kg		<MDL	0.21	0.428	ug/Kg
Hexachlorobutadiene		<MDL	0.8	1.61	ug/Kg		<MDL	0.78	1.56	ug/Kg		<MDL	1.1	2.14	ug/Kg
Hexachloroethane		<MDL	1.6	3.21	ug/Kg		<MDL	1.6	3.13	ug/Kg		<MDL	2.1	4.28	ug/Kg
Indeno(1,2,3-Cd)Pyrene	21.2		3.2	6.42	ug/Kg	15.1		3.1	6.26	ug/Kg	10.5		4.3	8.57	ug/Kg
N-Nitrosodiphenylamine		<MDL	6.4	12.8	ug/Kg		<MDL	6.3	12.5	ug/Kg		<MDL	8.6	17.1	ug/Kg
Naphthalene	5.8	<RDL	3.2	6.42	ug/Kg		<MDL	3.1	6.26	ug/Kg		<MDL	4.3	8.57	ug/Kg
Pentachlorophenol		<MDL	16	32.1	ug/Kg		<MDL	16	31.3	ug/Kg		<MDL	21	42.8	ug/Kg
Phenanthrene	92.1		3.2	6.42	ug/Kg	73.4		3.1	6.26	ug/Kg	45.6		4.3	8.57	ug/Kg
Phenol		<MDL	6.4	12.8	ug/Kg		<MDL	6.3	12.5	ug/Kg		<MDL	8.6	17.1	ug/Kg
Pyrene	246		3.2	6.42	ug/Kg	235		3.1	6.26	ug/Kg	162		4.3	8.57	ug/Kg
Total 4-Nonylphenol		<MDL	8	16.1	ug/Kg		<MDL	7.8	15.6	ug/Kg		<MDL	11	21.4	ug/Kg
Total HPAHS	953		3.2	6.42	ug/Kg	793		3.1	6.26	ug/Kg	651		4.3	8.57	ug/Kg
Total LPAHs	164		3.2	6.42	ug/Kg	133		3.1	6.26	ug/Kg	98.7		4.3	8.57	ug/Kg
OR SW846 3550B*SW846 8081B															
4,4'-DDD*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDE*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
4,4'-DDT*		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg		<MDL	0.67	1.33	ug/Kg
Aldrin		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.08	ug/Kg		<MDL	1.4	2.85	ug/Kg
Alpha-BHC		<MDL	0.53	1.07	ug/Kg		<MDL	0.52	1.04	ug/Kg		<MDL	0.71	1.43	ug/Kg
Alpha-Chlordane		<MDL	0.53	1.07	ug/Kg		<MDL	0.52	1.04	ug/Kg		<MDL	0.71	1.43	ug/Kg
Beta-BHC		<MDL	0.53	1.07	ug/Kg		<MDL	0.52	1.04	ug/Kg		<MDL	0.71	1.43	ug/Kg
Delta-BHC		<MDL	0.53	1.07	ug/Kg		<MDL	0.52	1.04	ug/Kg		<MDL	0.71	1.43	ug/Kg
Dieldrin		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.08	ug/Kg		<MDL	1.4	2.85	ug/Kg
Endosulfan I		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.08	ug/Kg		<MDL	1.4	2.85	ug/Kg

King County Environmental Lab Analytical Report

Project:	423062-200-4					Project:	423062-200-4					Project:	423062-200-4							
Locator:	DUD_11C					Locator:	DUD_12C					Locator:	DUD_13C							
Descrip:	CLEANUP AREA PERIM					Descrip:	CLEANUP AREA PERIM					Descrip:	PERIMETER LOCATION							
Sample:	L47888-7					Sample:	L47888-8					Sample:	L47888-9							
Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED					Matrix:	SF SALTWTRSED							
ColDate:	4/29/09 9:37					ColDate:	4/29/09 10:00					ColDate:	4/29/09 10:40							
TimeSpan:						TimeSpan:						TimeSpan:								
TotalSolid:	62.3					TotalSolid:	63.9					TotalSolid:	46.7							
ClientLoc:						ClientLoc:						ClientLoc:								
SampDepth:	9					SampDepth:	10					SampDepth:	10							
DRY Weight Basis						**DRY Weight Basis**						**DRY Weight Basis**								
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**					
Endosulfan II		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.08	ug/Kg		<MDL	1.4	2.85	ug/Kg					
Endosulfan Sulfate		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.08	ug/Kg		<MDL	1.4	2.85	ug/Kg					
Endrin		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.08	ug/Kg		<MDL	1.4	2.85	ug/Kg					
Endrin Aldehyde		<MDL	1.1	2.13	ug/Kg		<MDL	1	2.08	ug/Kg		<MDL	1.4	2.85	ug/Kg					
Gamma-BHC (Lindane)		<MDL	0.53	1.07	ug/Kg		<MDL	0.52	1.04	ug/Kg		<MDL	0.71	1.43	ug/Kg					
Gamma-Chlordane		<MDL	0.53	1.07	ug/Kg		<MDL	0.52	1.04	ug/Kg		<MDL	0.71	1.43	ug/Kg					
Heptachlor		<MDL	0.53	1.07	ug/Kg		<MDL	0.52	1.04	ug/Kg		<MDL	0.71	1.43	ug/Kg					
Heptachlor Epoxide		<MDL	0.53	1.07	ug/Kg		<MDL	0.52	1.04	ug/Kg		<MDL	0.71	1.43	ug/Kg					
Methoxychlor		<MDL	5.3	10.7	ug/Kg		<MDL	5.2	10.4	ug/Kg		<MDL	7.1	14.3	ug/Kg					
Toxaphene		<MDL	11	21.3	ug/Kg		<MDL	10	20.8	ug/Kg		<MDL	14	28.5	ug/Kg					
OR SW846 3550B*SW846 8082A																				
Aroclor 1016		<MDL,TA	12	24.2	ug/Kg		<MDL,TA	49	96.2	ug/Kg		<MDL,TA	15	29.1	ug/Kg					
Aroclor 1221		<MDL	2.7	5.35	ug/Kg		<MDL,TA	16	31.8	ug/Kg		<MDL	3.6	7.13	ug/Kg					
Aroclor 1232		<MDL	2.7	5.35	ug/Kg		<MDL,TA	19	37.1	ug/Kg		<MDL	3.6	7.13	ug/Kg					
Aroclor 1242		<MDL,TA	30	59.6	ug/Kg		<MDL,TA	150	296	ug/Kg		<MDL,TA	41	82.4	ug/Kg					
Aroclor 1248	21.5		1.3	2.68	ug/Kg	89.5		1.3	2.61	ug/Kg	26.6		1.8	3.58	ug/Kg					
Aroclor 1254	28.9		1.3	2.68	ug/Kg	109		1.3	2.61	ug/Kg	45.2		1.8	3.58	ug/Kg					
Aroclor 1260	16.5		1.3	2.68	ug/Kg	41.2		1.3	2.61	ug/Kg	19.7		1.8	3.58	ug/Kg					
Total Aroclors	66.9		1.3	2.68	ug/Kg	239		1.3	2.61	ug/Kg	91.4		1.8	3.58	ug/Kg					
* Not converted to dry weight basis																				

PROJECT: 423062-200-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Dry Weight Factor	Fines *	Gravel *	Sand *	Silt *	Clay *	Total Organic Carbon	Total Solids *	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) *	Aluminum, Total, ICP	Arsenic, Total, ICP	Beryllium, Total, ICP
				%	%	%	%	%	mg/Kg	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	mg/Kg	mg/Kg	mg/Kg
DUD_1C	5	L47888-1	5.56	85.5	0.7	7.2	56.2	29.3	22200	42.1			18.7	0.5	1.9	4.8	5.9	22.2	15.2	12.9	10.5			0.7	30600	14	0.836
DUD_2C	4	L47888-2	5.12	89.2	0.22	12.5	49.6	39.6	20800	43		0.2	28.6	1.6	10.6		2.2	23.1		24.2	11	0.22			28400	12	0.76
DUD_8C	8	L47888-3	2.69	53.8	9.6	33.2	47.4	6.4	21900	59.8	2.4	4.7	4.8	11.5	7.8	6.7	2.4	36.9	4.8	3.2	1.6	3.5	0.5	5.6	19100	15.7	0.533
DUD_8C	8	L47888-4	2.43	45.2	10.1	51.3	40.6	4.6	23200	63	2.6	5.5	3.1	16.9	26.4		4.6	22.2	11.5	2.3	1.5	2.9	1.2	6	16700	15.4	0.473
DUD_9C	12	L47888-5	2.58	42.6	11.1	45.5	29.7	12.9	11000	62.3	3	6.9	8	18.6	11.3	5.7	3.2	11.2	7.2	8	4.8	3.1	0.7	7.3	17800	7.4	0.457
DUD_10C	14	L47888-6	2.44	36.8	3.9	55.1	25.8	11	10000	63.9	3	10.9	6.3	21.4	13.3	6.5	3.1	9.4	6.3	7	4.7	2.2	1	0.8	16000	8.9	0.405
DUD_11C	9	L47888-7	2.49	37.9	4.8	54.3	24	13.9	11100	62.3	1.8	4.6	7.7	23.1	18.2	6.7	3.1	7.7	6.2	7	6.2	2.1	0.8	1.9	18500	7.4	0.441
DUD_12C	10	L47888-8	2.43	44.2	0.4	51.3	31	13.2	11800	63.9	0.4	1.4	7.8	10.3	27.2	12.2	3.1	10.9	9.3	7.8	5.4	0.4			17700	9.1	0.44
DUD_13C	10	L47888-9	4.58	81.4		14.8	49.2	32.1	19000	46.7		0.2	16.1	1.8	5.2	7.5	4.3	19.3	15	10.7	16.1				26600	11	0.679
DUD_2C		L48332-1								43																	

PROJECT: 423062-200-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Cadmium, Total, ICP mg/Kg	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	1,2-Dichlorobenzene ug/Kg	1,4-Dichlorobenzene ug/Kg	2-Methylnaphthalene ug/Kg	4-Methylphenol 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
DUD_1C	5	L47888-1	0.57	33.7	77	40100	34	480	0.176	27.8		142			8.6		8.8	7.1	47.7	31.1	41.6	22.2	192
DUD_2C	4	L47888-2	0.47	30.9	72.1	38100	32.1	449	0.168	25.8		125		1.55	36		109	11.6	98.6	34	36.7	22.2	326
DUD_8C	8	L47888-3	3.86	81.3	102	27900	95.7	304	0.602	24.2	4.06	192		5.97	20.4		11.9	12.3	58.2	719	893	388	110
DUD_8C	8	L47888-4	3.08	80.8	82.2	25200	83.8	259	0.622	23.2	3.41	170	6.76	5.21	22.1		8.75	8.63	48.4	1620	1620	698	87.8
DUD_9C	12	L47888-5	0.63	27	46.1	25200	18.3	289	0.12	21.5		66.3		2.13			3.4		14.9	61.6	79.6	25.5	43.3
DUD_10C	14	L47888-6	0.36	24.1	53.8	25200	26.6	297	0.127	21.6		82.5					28.3	6.96	73.6	49.9	63.4	28.5	232
DUD_11C	9	L47888-7	0.32	26	54.1	26800	19.6	305	0.107	23.8		85.7		1.53		6.7	4.7	3.2	44	21.5	28.9	16.5	107
DUD_12C	10	L47888-8	0.5	29.3	66.2	25800	58.1	286	0.16	24.6	0.36	112		2.22			6.76	3.4	35.5	89.5	109	41.2	79
DUD_13C	10	L47888-9	0.41	29.8	62.5	35100	27.4	392	0.188	25.5		102			6.6				28.5	26.6	45.2	19.7	76
DUD_2C		L48332-1													26		107	10	103				356

PROJECT: 423062-200-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Benzyl Butyl Phthalate	Bis(2-Ethylhexyl)Phthalate	Carbazole	Chrysene	Di-N-Butyl Phthalate	Dibenzo(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno(1,2,3-Cd)Pyrene	Naphthalene	Phenanthrene	Phenol	Pyrene	Total 4-Nonylphenol	Total Aroclors	Total HPAHS
			ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
DUD_1C	5	L47888-1	149	247	65.6	178	425	79.8	591	20.8	245	27.8	34.2	8.3	428	15.5	62.9	7.6	122		387	164	95	1990
DUD_2C	4	L47888-2	155	244	45.1	218	256	44.9	481	24.2	330	17	23	66.5	1030	74.9	45.8	17	500	26.7	891	158	92.8	3300
DUD_8C	8	L47888-3	88.3	94.3	41.6	89.5	211		895		142	27.1	18.4	13.7	236	17.9	32.6	12.5	105		630		2010	1480
DUD_8C	8	L47888-4	48.4	54.4	21.1	49.4	132		1000		94.3	36.7	9.21	9.86	286	16.8	18.3	12.2	84.9		651		3940	1320
DUD_9C	12	L47888-5	31.8	41.3	13.7	39	104	12.6	464	7.87	53.1	10	6.74	3.9	94.2	6.97	12.3		41.9		119		167	454
DUD_10C	14	L47888-6	72.5	105	22.8	88.4	117	23.2	305	17.8	216	11	9.73	13	540	30.7	23.5	3.4	222		565		142	1880
DUD_11C	9	L47888-7	51.7	70	21.2	70.8	142	124	1150	17.3	136	11	10.6	5	218	11.2	21.2	5.8	92.1		246		66.9	953
DUD_12C	10	L47888-8	40.4	58.1	15.8	54.8	78.9	22.1	465	13.6	119	12	7.37	5.3	169	9.94	15.1		73.4		235		239	793
DUD_13C	10	L47888-9	32.3	45.8	9.89	50.5	87.4	35.5	296	9.51	110	12	5.1		149	9.29	10.5		45.6		162		91.4	651
DUD_2C		L48332-1	193	270	74.7	223	323	44.7	449	33.5	349	26	33	65.3	1060	86.7	74.9	11	542	32.1	865	129		3490

PROJECT: 423062-200-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Total LPAHs ug/Kg	Sampcoordx1 * ft	Sampcoordx2 * ft	Sampcoordx3 * ft	Sampcoordx4 * ft	Sampcoordx5 * ft	Sampcoordx6 * ft	Sampcoordx7 * ft	Sampcoordy1 * ft	Sampcoordy2 * ft	Sampcoordy3 * ft	Sampcoordy4 * ft	Sampcoordy5 * ft	Sampcoordy6 * ft	Sampcoordy7 * ft	Sample Depth * m	Sampling Method * none	Sediment Sampling Depth * cm
DUD_1C	5	L47888-1	217	1267172	1267170	1267175	1267170	1267165	1267170		208753	208753	208746	208748	208749	208751		5	20143	17
DUD_2C	4	L47888-2	849	1267172	1267174	1267171	1267165	1267167			208648	208645	208645	208646	208651			4	20143	17
DUD_8C	8	L47888-3	237	1266863	1266862	1266858	1266866	1266863	1266862		208923	208917	208914	208910	208924	208918		8	20143	10
DUD_8C	8	L47888-4	202	1266862	1266867	1266868	1266866	1266862	1266863	1266862	208918	208915	208915	208917	208919	208923	208917	8	20143	12
DUD_9C	12	L47888-5	74.6	1266790	1266780	1266788	1266783	1266785	1266784		209155	209158	209154	209158	209161	209154		12	20143	9
DUD_10C	14	L47888-6	369	1266661	1266664	1266668	1266663	1266666			209520	209520	209518	209516	209516			14	20143	9
DUD_11C	9	L47888-7	164	1266841	1266844	1266842	1266844	1266841			209540	209530	209534	209534	209535			9	20143	11
DUD_12C	10	L47888-8	133	1266817	1266813	1266815	1266821	1266807	1266812		209630	209630	209625	209632	209630	209631		10	20143	11
DUD_13C	10	L47888-9	98.7	1267237	1267240	1267248	1267237	1267238			207861	207862	207858	207858	207860			10	20143	15
DUD_2C		L48332-1	886																	

PROJECT: 423062-200-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Tide Height * ft
DUD_1C	5	L47888-1	1
DUD_2C	4	L47888-2	-2
DUD_8C	8	L47888-3	-1.5
DUD_8C	8	L47888-4	-2.9
DUD_9C	12	L47888-5	9
DUD_10C	14	L47888-6	8
DUD_11C	9	L47888-7	7
DUD_12C	10	L47888-8	6
DUD_13C	10	L47888-9	5
DUD_2C		L48332-1	

SAP MDL Comparison Table

King County Environmental Lab SAP MDL Comparison

PROJECT: 423062-200-4

Locator:		DUD_1C	DUD_2C	DUD_8C	DUD_8C	DUD_9C	DUD_10C
Descrip:		CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sampled:		04/27/09 10:36:00 AM	04/27/09 12:10:00 PM	04/28/09 12:45:00 PM	04/28/09 2:00:00 PM	04/29/09 8:25:00 AM	04/29/09 8:55:00 AM
Lab ID:							
Matrix:		L47888-1	L47888-2	L47888-3	L47888-4	L47888-5	L47888-6
% Solids:		SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
		42.1	43	59.8	63	62.3	63.9
	Units	SAP MDL					
Parameters			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								
Fines *	%	NA	1.2	1.1	0.8	0.77	0.8	0.78
Clay *	%	NA	1.2	1.1	0.8	0.77	0.8	0.78
Silt *	%	NA	1.2	1.1	0.8	0.77	0.8	0.78
Sand *	%	NA	0.23	0.22	0.16	0.15	0.16	0.16
Gravel *	%	NA	0.23	0.22	0.16	0.15	0.16	0.16
p+0.00 *	%	0.1	0.23	0.22	0.16	0.15	0.16	0.16
p+1.00 *	%	0.1	0.23	0.22	0.16	0.15	0.16	0.16
p+10.0(equal/more than) *	%	0.1	1.2	1.1	0.8	0.77	0.8	0.78
p+2.00 *	%	0.1	0.23	0.22	0.16	0.15	0.16	0.16
p+3.00 *	%	0.1	0.23	0.22	0.16	0.15	0.16	0.16
p+4.00 *	%	0.1	0.23	0.22	0.16	0.15	0.16	0.16
p+5.00 *	%	0.1	1.2	1.1	0.8	0.77	0.8	0.78
p+6.00 *	%	0.1	1.2	1.1	0.8	0.77	0.8	0.78
p+7.00 *	%	0.1	1.2	1.1	0.8	0.77	0.8	0.78
p+8.00 *	%	0.1	1.2	1.1	0.8	0.77	0.8	0.78
p+9.00 *	%	0.1	1.2	1.1	0.8	0.77	0.8	0.78
p-1.00 *	%	0.1	0.23	0.22	0.16	0.15	0.16	0.16
p-2.00 *	%	0.1	0.23	0.22	0.16	0.15	0.16	0.16
p-2.00(less than) *	%	0.1	0.23	0.22	0.16	0.15	0.16	0.16
M=CV SW846 9060-PSEP96								
Total Organic Carbon	mg/Kg	1000	1900	1800	1800	2100	1900	1900
M=CV SM2540-G								
Total Solids *	%	0.005	0.005	0.005	0.005	0.005	0.005	0.005
M=MT SW846 7471B								
Mercury, Total, CVAA	mg/Kg	0.04	0.0059	0.0059	0.0059	0.0059	0.0059	0.0059
M=MT SW846 3050B*SW846 6010C								
Aluminum, Total, ICP	mg/Kg	10	11	11	10	7.9	8	7.8
Antimony, Total, ICP	mg/Kg	3	1.7	1.7	1.5	1.2	1.2	1.2
Arsenic, Total, ICP	mg/Kg	5	2.9	2.8	2.5	2.1	2.1	1.9
Beryllium, Total, ICP	mg/Kg	0.1	0.11	0.11	0.1	0.079	0.08	0.078
Cadmium, Total, ICP	mg/Kg	0.3	0.23	0.23	0.2	0.16	0.16	0.16
Chromium, Total, ICP	mg/Kg	0.5	0.33	0.35	0.3	0.24	0.24	0.23
Copper, Total, ICP	mg/Kg	0.4	0.45	0.47	0.4	0.32	0.32	0.31
Iron, Total, ICP	mg/Kg	5	5.7	5.8	5	4	4	3.9
Lead, Total, ICP	mg/Kg	3	2.3	2.3	2	1.6	1.6	1.6
Manganese, Total, ICP	mg/Kg	0.2	0.23	0.23	0.2	0.16	0.16	0.16
Nickel, Total, ICP	mg/Kg	2	0.57	0.58	0.5	0.4	0.4	0.39
Selenium, Total, ICP	mg/Kg	5	2.9	2.8	2.5	2.1	2.1	1.9
Silver, Total, ICP	mg/Kg	0.4	0.45	0.47	0.4	0.32	0.32	0.31
Thallium, Total, ICP	mg/Kg	20	4.5	4.7	4	3.2	3.2	3.1

King County Environmental Lab SAP MDL Comparison

PROJECT: 423062-200-4

Locator:		DUD_1C	DUD_2C	DUD_8C	DUD_8C	DUD_9C	DUD_10C
Descrip:		CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
Sampled:		04/27/09 10:36:00 AM	04/27/09 12:10:00 PM	04/28/09 12:45:00 PM	04/28/09 2:00:00 PM	04/29/09 8:25:00 AM	04/29/09 8:55:00 AM
Lab ID:							
Matrix:		L47888-1	L47888-2	L47888-3	L47888-4	L47888-5	L47888-6
% Solids:		SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
		42.1	43	59.8	63	62.3	63.9
	Units	SAP MDL					
Parameters			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							
Zinc, Total, ICP	mg/Kg	0.5	0.57	0.58	0.5	0.4	0.4	0.39
M=OR EPA 3550B/8270C (7-3-01-004)								
1,2,4-Trichlorobenzene	ug/Kg	0.52	0.24	0.23	0.17	0.16	0.16	0.16
1,2-Dichlorobenzene	ug/Kg	0.52	0.48	0.47	0.33	0.32	0.32	0.31
1,3-Dichlorobenzene	ug/Kg	0.52	0.48	0.47	0.33	0.32	0.32	0.31
1,4-Dichlorobenzene	ug/Kg	0.26	0.48	0.47	0.33	0.32	0.32	0.31
2,4-Dimethylphenol	ug/Kg	14	2.4	2.3	1.7	1.6	1.6	1.6
2-Methylnaphthalene	ug/Kg	28	4.8	4.7	3.3	3.2	3.2	3.1
2-Methylphenol	ug/Kg	38	4.8	4.7	3.3	3.2	3.2	3.1
4-Methylphenol	ug/Kg	32	9.5	9.3	6.7	6.3	6.4	6.3
Acenaphthene	ug/Kg	14	4.8	4.7	3.3	3.2	3.2	3.1
Acenaphthylene	ug/Kg	29	4.8	4.7	3.3	3.2	3.2	3.1
Anthracene	ug/Kg	7.9	4.8	4.7	3.3	3.2	3.2	3.1
Benzo(a)anthracene	ug/Kg	4	4.8	4.7	3.3	3.2	3.2	3.1
Benzo(a)pyrene	ug/Kg	6	4.8	4.7	3.3	3.2	3.2	3.1
Benzo(b)fluoranthene	ug/Kg	6	4.8	4.7	3.3	3.2	3.2	3.1
Benzo(g,h,i)perylene	ug/Kg	16	4.8	4.7	3.3	3.2	3.2	3.1
Benzo(k)fluoranthene	ug/Kg	6	4.8	4.7	3.3	3.2	3.2	3.1
Benzoic Acid	ug/Kg	12	24	23	17	16	16	16
Benzyl Alcohol	ug/Kg	12	4.8	4.7	3.3	3.2	3.2	3.1
Benzyl Butyl Phthalate	ug/Kg	12	2.4	2.3	1.7	1.6	1.6	1.6
Bis(2-Ethylhexyl)Phthalate	ug/Kg	13	9.5	9.3	6.7	6.3	6.4	6.3
Carbazole	ug/Kg	14	4.8	4.7	3.3	3.2	3.2	3.1
Chrysene	ug/Kg	7.9	4.8	4.7	3.3	3.2	3.2	3.1
Coprostanol	ug/Kg	28	95	93	67	63	64	63
Dibenzo(a,h)anthracene	ug/Kg	14	4.8	4.7	3.3	3.2	3.2	3.1
Dibenzofuran	ug/Kg	28	4.8	4.7	3.3	3.2	3.2	3.1
Diethyl Phthalate	ug/Kg	12	9.5	9.3	6.7	6.3	6.4	6.3
Dimethyl Phthalate	ug/Kg	22	9.5	9.3	6.7	6.3	6.4	6.3
Di-N-Butyl Phthalate	ug/Kg	10	9.5	9.3	6.7	6.3	6.4	6.3
Di-N-Octyl Phthalate	ug/Kg	16	9.5	9.3	6.7	6.3	6.4	6.3
Fluoranthene	ug/Kg	16	4.8	4.7	3.3	3.2	3.2	3.1
Fluorene	ug/Kg	26	4.8	4.7	3.3	3.2	3.2	3.1
Hexachlorobenzene	ug/Kg	1.3	0.24	0.23	0.17	0.16	0.16	0.16
Hexachlorobutadiene	ug/Kg	1.5	1.2	1.2	0.84	0.79	0.8	0.78
Hexachloroethane	ug/Kg	29	2.4	2.3	1.7	1.6	1.6	1.6
Indeno(1,2,3-Cd)Pyrene	ug/Kg	18	4.8	4.7	3.3	3.2	3.2	3.1
Naphthalene	ug/Kg	28	4.8	4.7	3.3	3.2	3.2	3.1
N-Nitrosodiphenylamine	ug/Kg	40	9.5	9.3	6.7	6.3	6.4	6.3
Pentachlorophenol	ug/Kg	10	24	23	17	16	16	16
Phenanthrene	ug/Kg	7.9	4.8	4.7	3.3	3.2	3.2	3.1

King County Environmental Lab SAP MDL Comparison

PROJECT: 423062-200-4

	Locator:	DUD_1C	DUD_2C	DUD_8C	DUD_8C	DUD_9C	DUD_10C
	Descrip:	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM	CLEANUP AREA PERIM
	Sampled:	04/27/09 10:36:00 AM	04/27/09 12:10:00 PM	04/28/09 12:45:00 PM	04/28/09 2:00:00 PM	04/29/09 8:25:00 AM	04/29/09 8:55:00 AM
	Lab ID:						
	Matrix:	L47888-1	L47888-2	L47888-3	L47888-4	L47888-5	L47888-6
	% Solids:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
		42.1	43	59.8	63	62.3	63.9

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
COMBINED LABS								
Phenol	ug/Kg	18	9.5	9.3	6.7	6.3	6.4	6.3
Pyrene	ug/Kg	7.9	4.8	4.7	3.3	3.2	3.2	3.1
Total HPAHS	ug/Kg	NA	4.8	4.7	3.3	3.2	3.2	3.1
Total LPAHs	ug/Kg	NA	4.8	4.7	3.3	3.2	3.2	3.1
M=OR SW846 3550B*SW846 8081B								
4,4'-DDD	ug/Kg	0.67	1.6	1.6	1.1	1.1	1.1	1
4,4'-DDE	ug/Kg	0.67	1.6	1.6	1.1	1.1	1.1	1
4,4'-DDT	ug/Kg	0.67	1.6	1.6	1.1	1.1	1.1	1
Aldrin	ug/Kg	0.67	1.6	1.6	1.1	1.1	1.1	1
Alpha-BHC	ug/Kg	0.67	0.78	0.77	0.55	0.52	0.53	0.52
Alpha-Chlordane	ug/Kg	0.67	0.78	0.77	0.55	0.52	0.53	0.52
Beta-BHC	ug/Kg	0.67	0.78	0.77	0.55	0.52	0.53	0.52
Delta-BHC	ug/Kg	0.67	0.78	0.77	0.55	0.52	0.53	0.52
Dieldrin	ug/Kg	0.67	1.6	1.6	1.1	1.1	1.1	1
Endosulfan I	ug/Kg	0.67	1.6	1.6	1.1	1.1	1.1	1
Endosulfan II	ug/Kg	0.67	1.6	1.6	1.1	1.1	1.1	1
Endosulfan Sulfate	ug/Kg	0.67	1.6	1.6	1.1	1.1	1.1	1
Endrin	ug/Kg	0.67	1.6	1.6	1.1	1.1	1.1	1
Endrin Aldehyde	ug/Kg	0.67	1.6	1.6	1.1	1.1	1.1	1
Gamma-BHC (Lindane)	ug/Kg	0.67	0.78	0.77	0.55	0.52	0.53	0.52
Gamma-Chlordane	ug/Kg	2.7	0.78	0.77	0.55	0.52	0.53	0.52
Heptachlor	ug/Kg	0.67	0.78	0.77	0.55	0.52	0.53	0.52
Heptachlor Epoxide	ug/Kg	0.67	0.78	0.77	0.55	0.52	0.53	0.52
Methoxychlor	ug/Kg	3.3	7.8	7.7	5.5	5.2	5.3	5.2
Toxaphene	ug/Kg	6.7	16	16	11	11	11	10
M=OR SW846 3550B*SW846 8082A								
Aroclor 1016	ug/Kg	4	15	17	420	810	32	23
Aroclor 1221	ug/Kg	8	4	4	28	52	2.7	2.7
Aroclor 1232	ug/Kg	8	48	40	380	320	13	31
Aroclor 1242	ug/Kg	4	48	44	1200	3300	100	86
Aroclor 1248	ug/Kg	4	2	1.9	14	27	1.3	1.3
Aroclor 1254	ug/Kg	4	2	1.9	14	27	1.3	1.3
Aroclor 1260	ug/Kg	4	2	1.9	14	27	1.3	1.3
Total Aroclors	ug/Kg	NA	2	1.9	14	27	1.3	1.3

* Not converted to dry weight basis for this parameter

King County Environmental Lab SAP MDL Comparison

PROJECT: 423062-200-4	DUD_11C	DUD_12C	DUD_13C	DUD_2C
	CLEANUP AREA PERIM	CLEANUP AREA PERIM	PERIMETER LOCATION	CLEANUP AREA PERIM
	04/29/09 9:37:00 AM	04/29/09 10:00:00 AM	04/29/09 10:40:00 AM	04/27/09 12:10:00 PM
	L47888-7	L47888-8	L47888-9	L48332-1
	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
	62.3	63.9	46.7	43
Parameters	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS				
M=CV ASTM D422				
Fines *	0.77	0.78	1.1	
Clay *	0.77	0.78	1.1	
Silt *	0.77	0.78	1.1	
Sand *	0.15	0.16	0.21	
Gravel *	0.15	0.16	0.21	
p+0.00 *	0.15	0.16	0.21	
p+1.00 *	0.15	0.16	0.21	
p+10.0(equal/more than) *	0.77	0.78	1.1	
p+2.00 *	0.15	0.16	0.21	
p+3.00 *	0.15	0.16	0.21	
p+4.00 *	0.15	0.16	0.21	
p+5.00 *	0.77	0.78	1.1	
p+6.00 *	0.77	0.78	1.1	
p+7.00 *	0.77	0.78	1.1	
p+8.00 *	0.77	0.78	1.1	
p+9.00 *	0.77	0.78	1.1	
p-1.00 *	0.15	0.16	0.21	
p-2.00 *	0.15	0.16	0.21	
p-2.00(less than) *	0.15	0.16	0.21	
M=CV SW846 9060-PSEP96				
Total Organic Carbon	1900	1700	1800	
M=CV SM2540-G				
Total Solids *	0.005	0.005	0.005	0.005
M=MT SW846 7471B				
Mercury, Total, CVAA	0.0059	0.0059	0.0059	
M=MT SW846 3050B*SW846 6010C				
Aluminum, Total, ICP	7.7	8	11	
Antimony, Total, ICP	1.2	1.2	1.6	
Arsenic, Total, ICP	1.9	2	2.8	
Beryllium, Total, ICP	0.077	0.08	0.11	
Cadmium, Total, ICP	0.16	0.16	0.21	
Chromium, Total, ICP	0.22	0.23	0.32	
Copper, Total, ICP	0.3	0.33	0.43	
Iron, Total, ICP	3.9	4.1	5.4	
Lead, Total, ICP	1.6	1.6	2.1	
Manganese, Total, ICP	0.16	0.16	0.21	
Nickel, Total, ICP	0.39	0.41	0.54	
Selenium, Total, ICP	1.9	2	2.8	
Silver, Total, ICP	0.3	0.33	0.43	
Thallium, Total, ICP	3	3.3	4.3	

King County Environmental Lab SAP MDL Comparison

PROJECT: 423062-200-4	DUD_11C	DUD_12C	DUD_13C	DUD_2C
	CLEANUP AREA PERIM	CLEANUP AREA PERIM	PERIMETER LOCATION	CLEANUP AREA PERIM
	04/29/09 9:37:00 AM	04/29/09 10:00:00 AM	04/29/09 10:40:00 AM	04/27/09 12:10:00 PM
	L47888-7	L47888-8	L47888-9	L48332-1
	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
	62.3	63.9	46.7	43
Parameters	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS				
Zinc, Total, ICP	0.39	0.41	0.54	
M=OR EPA 3550B/8270C (7-3-01-004)				
1,2,4-Trichlorobenzene	0.16	0.16	0.21	0.3
1,2-Dichlorobenzene	0.32	0.31	0.43	0.63
1,3-Dichlorobenzene	0.32	0.31	0.43	0.63
1,4-Dichlorobenzene	0.32	0.31	0.43	0.63
2,4-Dimethylphenol	1.6	1.6	2.1	3
2-Methylnaphthalene	3.2	3.1	4.3	6.3
2-Methylphenol	3.2	3.1	4.3	6.3
4-Methylphenol	6.4	6.3	8.6	12
Acenaphthene	3.2	3.1	4.3	6.3
Acenaphthylene	3.2	3.1	4.3	6.3
Anthracene	3.2	3.1	4.3	6.3
Benzo(a)anthracene	3.2	3.1	4.3	6.3
Benzo(a)pyrene	3.2	3.1	4.3	6.3
Benzo(b)fluoranthene	3.2	3.1	4.3	6.3
Benzo(g,h,i)perylene	3.2	3.1	4.3	6.3
Benzo(k)fluoranthene	3.2	3.1	4.3	6.3
Benzoic Acid	16	16	21	30
Benzyl Alcohol	3.2	3.1	4.3	6.3
Benzyl Butyl Phthalate	1.6	1.6	2.1	3
Bis(2-Ethylhexyl)Phthalate	6.4	6.3	8.6	12
Carbazole	3.2	3.1	4.3	6.3
Chrysene	3.2	3.1	4.3	6.3
Coprostanol	64	63	86	120
Dibenzo(a,h)anthracene	3.2	3.1	4.3	6.3
Dibenzofuran	3.2	3.1	4.3	6.3
Diethyl Phthalate	6.4	6.3	8.6	12
Dimethyl Phthalate	6.4	6.3	8.6	12
Di-N-Butyl Phthalate	6.4	6.3	8.6	12
Di-N-Octyl Phthalate	6.4	6.3	8.6	12
Fluoranthene	3.2	3.1	4.3	6.3
Fluorene	3.2	3.1	4.3	6.3
Hexachlorobenzene	0.16	0.16	0.21	0.3
Hexachlorobutadiene	0.8	0.78	1.1	1.6
Hexachloroethane	1.6	1.6	2.1	3
Indeno(1,2,3-Cd)Pyrene	3.2	3.1	4.3	6.3
Naphthalene	3.2	3.1	4.3	6.3
N-Nitrosodiphenylamine	6.4	6.3	8.6	12
Pentachlorophenol	16	16	21	30
Phenanthrene	3.2	3.1	4.3	6.3

King County Environmental Lab SAP MDL Comparison

PROJECT: 423062-200-4	DUD_11C CLEANUP AREA PERIM 04/29/09 9:37:00 AM L47888-7 SALTWTRSED 62.3	DUD_12C CLEANUP AREA PERIM 04/29/09 10:00:00 AM L47888-8 SALTWTRSED 63.9	DUD_13C PERIMETER LOCATION 04/29/09 10:40:00 AM L47888-9 SALTWTRSED 46.7	DUD_2C CLEANUP AREA PERIM 04/27/09 12:10:00 PM L48332-1 SALTWTRSED 43
Parameters	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS				
Phenol	6.4	6.3	8.6	12
Pyrene	3.2	3.1	4.3	6.3
Total HPAHS	3.2	3.1	4.3	6.3
Total LPAHs	3.2	3.1	4.3	6.3
M=OR SW846 3550B*SW846 8081B				
4,4'-DDD	1.1	1	1.4	
4,4'-DDE	1.1	1	1.4	
4,4'-DDT	1.1	1	1.4	
Aldrin	1.1	1	1.4	
Alpha-BHC	0.53	0.52	0.71	
Alpha-Chlordane	0.53	0.52	0.71	
Beta-BHC	0.53	0.52	0.71	
Delta-BHC	0.53	0.52	0.71	
Dieldrin	1.1	1	1.4	
Endosulfan I	1.1	1	1.4	
Endosulfan II	1.1	1	1.4	
Endosulfan Sulfate	1.1	1	1.4	
Endrin	1.1	1	1.4	
Endrin Aldehyde	1.1	1	1.4	
Gamma-BHC (Lindane)	0.53	0.52	0.71	
Gamma-Chlordane	0.53	0.52	0.71	
Heptachlor	0.53	0.52	0.71	
Heptachlor Epoxide	0.53	0.52	0.71	
Methoxychlor	5.3	5.2	7.1	
Toxaphene	11	10	14	
M=OR SW846 3550B*SW846 8082A				
Aroclor 1016	12	49	15	
Aroclor 1221	2.7	16	3.6	
Aroclor 1232	2.7	19	3.6	
Aroclor 1242	30	150	41	
Aroclor 1248	1.3	1.3	1.8	
Aroclor 1254	1.3	1.3	1.8	
Aroclor 1260	1.3	1.3	1.8	
Total Aroclors	1.3	1.3	1.8	

* 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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.21	38	38
2,4-Dimethylphenol	1	2.38	29	27
2-Methylphenol	2	4.75	63	58
4-Methylphenol	4	9.50	670	660
Acenaphthene	2	0.21	16	16
Acenaphthylene	2	0.21	66	66
Anthracene	2	0.21	220	220
Benzo(a)anthracene	2	0.21	110	110
Benzo(a)pyrene	2	0.21	99	99
Benzo(b)fluoranthene	2	0.21	115	115
Benzo(g,h,i)perylene	2	0.21	31	31
Benzo(k)fluoranthene	2	0.21	115	115
Benzoic Acid	10	23.75	650	626
Benzyl Alcohol	2	4.75	57	52
Benzyl Butyl Phthalate	1	0.11	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.43	47	47
Chrysene	2	0.21	110	110
Dibenzo(a,h)anthracene	2	0.21	12	12
Dibenzofuran	2	0.21	15	15
Diethyl Phthalate	4	0.43	61	61
Dimethyl Phthalate	4	0.43	53	53
Di-N-Butyl Phthalate	4	0.43	220	220
Di-N-Octyl Phthalate	4	0.43	58	58
Fluorene	2	0.21	23	23
Fluoranthene	2	0.21	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.05	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.21	34	34
N-Nitrosodiphenylamine	4	0.43	11	11
Naphthalene	2	0.21	99	99
Pentachlorophenol	10	23.75	360	336
Phenanthrene	2	0.21	100	100
Phenol	4	9.50	420	410
Pyrene	2	0.21	1000	1000
Aroclor 1016	6.2	0.66		
Aroclor 1221	1.7	0.18		
Aroclor 1232	1.7	0.18		
Aroclor 1242	0.83	0.09		
Aroclor 1248	0.83	0.09		
Aroclor 1254	0.83	0.09		
Aroclor 1260	0.83	0.09		
Total Organic Carbon (dry)	22209.02613			
Total Solids	42.1			
HPAH	20	2.14	960	958
LPAH	14	1.50	370	369
Total PCB	6.2	0.66	12	11.3

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.22	38	38
2,4-Dimethylphenol	1	2.33	29	27
2-Methylphenol	2	4.65	63	58
4-Methylphenol	4	9.30	670	661
Acenaphthene	2	0.22	16	16
Acenaphthylene	2	0.22	66	66
Anthracene	2	0.22	220	220
Benzo(a)anthracene	2	0.22	110	110
Benzo(a)pyrene	2	0.22	99	99
Benzo(b)fluoranthene	2	0.22	115	115
Benzo(g,h,i)perylene	2	0.22	31	31
Benzo(k)fluoranthene	2	0.22	115	115
Benzoic Acid	10	23.26	650	627
Benzyl Alcohol	2	4.65	57	52
Benzyl Butyl Phthalate	1	0.11	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.45	47	47
Chrysene	2	0.22	110	110
Dibenzo(a,h)anthracene	2	0.22	12	12
Dibenzofuran	2	0.22	15	15
Diethyl Phthalate	4	0.45	61	61
Dimethyl Phthalate	4	0.45	53	53
Di-N-Butyl Phthalate	4	0.45	220	220
Di-N-Octyl Phthalate	4	0.45	58	58
Fluorene	2	0.22	23	23
Fluoranthene	2	0.22	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.06	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.22	34	34
N-Nitrosodiphenylamine	4	0.45	11	11
Naphthalene	2	0.22	99	99
Pentachlorophenol	10	23.26	360	337
Phenanthrene	2	0.22	100	100
Phenol	4	9.30	420	411
Pyrene	2	0.22	1000	1000
Aroclor 1016	7.5	0.84		
Aroclor 1221	1.7	0.19		
Aroclor 1232	1.7	0.19		
Aroclor 1242	0.83	0.09		
Aroclor 1248	0.83	0.09		
Aroclor 1254	0.83	0.09		
Aroclor 1260	0.83	0.09		
Total Organic Carbon (dry)	20767.44186			
Total Solids	43			
HPAH	20	2.24	960	958
LPAH	14	1.57	370	368
Total PCB	7.5	0.84	12	11.2

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.15	38	38
2,4-Dimethylphenol	1	1.67	29	27
2-Methylphenol	2	3.34	63	60
4-Methylphenol	4	6.69	670	663
Acenaphthene	2	0.15	16	16
Acenaphthylene	2	0.15	66	66
Anthracene	2	0.15	220	220
Benzo(a)anthracene	2	0.15	110	110
Benzo(a)pyrene	2	0.15	99	99
Benzo(b)fluoranthene	2	0.15	115	115
Benzo(g,h,i)perylene	2	0.15	31	31
Benzo(k)fluoranthene	2	0.15	115	115
Benzoic Acid	10	16.72	650	633
Benzyl Alcohol	2	3.34	57	54
Benzyl Butyl Phthalate	1	0.08	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.31	47	47
Chrysene	2	0.15	110	110
Dibenzo(a,h)anthracene	2	0.15	12	12
Dibenzofuran	2	0.15	15	15
Diethyl Phthalate	4	0.31	61	61
Dimethyl Phthalate	4	0.31	53	53
Di-N-Butyl Phthalate	4	0.31	220	220
Di-N-Octyl Phthalate	4	0.31	58	58
Fluorene	2	0.15	23	23
Fluoranthene	2	0.15	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.04	3.9	3.9
Indeno(1,2,3-Cd)Pyrene	2	0.15	34	34
N-Nitrosodiphenylamine	4	0.31	11	11
Naphthalene	2	0.15	99	99
Pentachlorophenol	10	16.72	360	343
Phenanthrene	2	0.15	100	100
Phenol	4	6.69	420	413
Pyrene	2	0.15	1000	1000
Aroclor 1016	250	19.08		
Aroclor 1221	17	1.30		
Aroclor 1232	230	17.56		
Aroclor 1242	690	52.67		
Aroclor 1248	8.3	0.63		
Aroclor 1254	8.3	0.63		
Aroclor 1260	8.3	0.63		
Total Organic Carbon (dry)	21906.35452			
Total Solids	59.8			
HPAH	20	1.53	960	958
LPAH	14	1.07	370	369
Total PCB	690	52.67	12	-40.7

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.01	2.3	2.3
1,4-Dichlorobenzene	0.2	0.01	3.1	3.1
2-Methylnaphthalene	2	0.14	38	38
2,4-Dimethylphenol	1	1.59	29	27
2-Methylphenol	2	3.17	63	60
4-Methylphenol	4	6.35	670	664
Acenaphthene	2	0.14	16	16
Acenaphthylene	2	0.14	66	66
Anthracene	2	0.14	220	220
Benzo(a)anthracene	2	0.14	110	110
Benzo(a)pyrene	2	0.14	99	99
Benzo(b)fluoranthene	2	0.14	115	115
Benzo(g,h,i)perylene	2	0.14	31	31
Benzo(k)fluoranthene	2	0.14	115	115
Benzoic Acid	10	15.87	650	634
Benzyl Alcohol	2	3.17	57	54
Benzyl Butyl Phthalate	1	0.07	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.27	47	47
Chrysene	2	0.14	110	110
Dibenzo(a,h)anthracene	2	0.14	12	12
Dibenzofuran	2	0.14	15	15
Diethyl Phthalate	4	0.27	61	61
Dimethyl Phthalate	4	0.27	53	53
Di-N-Butyl Phthalate	4	0.27	220	220
Di-N-Octyl Phthalate	4	0.27	58	58
Fluorene	2	0.14	23	23
Fluoranthene	2	0.14	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.03	3.9	3.9
Indeno(1,2,3-Cd)Pyrene	2	0.14	34	34
N-Nitrosodiphenylamine	4	0.27	11	11
Naphthalene	2	0.14	99	99
Pentachlorophenol	10	15.87	360	344
Phenanthrene	2	0.14	100	100
Phenol	4	6.35	420	414
Pyrene	2	0.14	1000	1000
Aroclor 1016	510	34.93		
Aroclor 1221	33	2.26		
Aroclor 1232	200	13.70		
Aroclor 1242	2100	143.84		
Aroclor 1248	17	1.16		
Aroclor 1254	17	1.16		
Aroclor 1260	17	1.16		
Total Organic Carbon (dry)	23174.60317			
Total Solids	63			
HPAH	20	1.37	960	959
LPAH	14	0.96	370	369
Total PCB	2100	143.84	12	-131.8

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.03	2.3	2.3
1,4-Dichlorobenzene	0.2	0.03	3.1	3.1
2-Methylnaphthalene	2	0.29	38	38
2,4-Dimethylphenol	1	1.61	29	27
2-Methylphenol	2	3.21	63	60
4-Methylphenol	4	6.42	670	664
Acenaphthene	2	0.29	16	16
Acenaphthylene	2	0.29	66	66
Anthracene	2	0.29	220	220
Benzo(a)anthracene	2	0.29	110	110
Benzo(a)pyrene	2	0.29	99	99
Benzo(b)fluoranthene	2	0.29	115	115
Benzo(g,h,i)perylene	2	0.29	31	31
Benzo(k)fluoranthene	2	0.29	115	115
Benzoic Acid	10	16.05	650	634
Benzyl Alcohol	2	3.21	57	54
Benzyl Butyl Phthalate	1	0.15	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.58	47	46
Chrysene	2	0.29	110	110
Dibenzo(a,h)anthracene	2	0.29	12	12
Dibenzofuran	2	0.29	15	15
Diethyl Phthalate	4	0.58	61	60
Dimethyl Phthalate	4	0.58	53	52
Di-N-Butyl Phthalate	4	0.58	220	219
Di-N-Octyl Phthalate	4	0.58	58	57
Fluorene	2	0.29	23	23
Fluoranthene	2	0.29	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.07	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.29	34	34
N-Nitrosodiphenylamine	4	0.58	11	10
Naphthalene	2	0.29	99	99
Pentachlorophenol	10	16.05	360	344
Phenanthrene	2	0.29	100	100
Phenol	4	6.42	420	414
Pyrene	2	0.29	1000	1000
Aroclor 1016	20	2.92		
Aroclor 1221	1.7	0.25		
Aroclor 1232	8.4	1.22		
Aroclor 1242	0.83	0.12		
Aroclor 1248	0.83	0.12		
Aroclor 1254	0.83	0.12		
Aroclor 1260	0.83	0.12		
Total Organic Carbon (dry)	11011.23596			
Total Solids	62.3			
HPAH	20	2.92	960	957
LPAH	14	2.04	370	368
Total PCB	20	2.92	12	9.1

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	0.1	0.02	0.81	0.79
1,2-Dichlorobenzene	0.2	0.03	2.3	2.3
1,4-Dichlorobenzene	0.2	0.03	3.1	3.1
2-Methylnaphthalene	2	0.31	38	38
2,4-Dimethylphenol	1	1.56	29	27
2-Methylphenol	2	3.13	63	60
4-Methylphenol	4	6.26	670	664
Acenaphthene	2	0.31	16	16
Acenaphthylene	2	0.31	66	66
Anthracene	2	0.31	220	220
Benzo(a)anthracene	2	0.31	110	110
Benzo(a)pyrene	2	0.31	99	99
Benzo(b)fluoranthene	2	0.31	115	115
Benzo(g,h,i)perylene	2	0.31	31	31
Benzo(k)fluoranthene	2	0.31	115	115
Benzoic Acid	10	15.65	650	634
Benzyl Alcohol	2	3.13	57	54
Benzyl Butyl Phthalate	1	0.16	4.9	4.7
Bis(2-Ethylhexyl)Phthalate	4	0.63	47	46
Chrysene	2	0.31	110	110
Dibenzo(a,h)anthracene	2	0.31	12	12
Dibenzofuran	2	0.31	15	15
Diethyl Phthalate	4	0.63	61	60
Dimethyl Phthalate	4	0.63	53	52
Di-N-Butyl Phthalate	4	0.63	220	219
Di-N-Octyl Phthalate	4	0.63	58	57
Fluorene	2	0.31	23	23
Fluoranthene	2	0.31	160	160
Hexachlorobenzene	0.1	0.02	0.38	0.36
Hexachlorobutadiene	0.5	0.08	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.31	34	34
N-Nitrosodiphenylamine	4	0.63	11	10
Naphthalene	2	0.31	99	99
Pentachlorophenol	10	15.65	360	344
Phenanthrene	2	0.31	100	100
Phenol	4	6.26	420	414
Pyrene	2	0.31	1000	1000
Aroclor 1016	15	2.34		
Aroclor 1221	1.7	0.27		
Aroclor 1232	1.7	0.27		
Aroclor 1242	0.83	0.13		
Aroclor 1248	0.83	0.13		
Aroclor 1254	0.83	0.13		
Aroclor 1260	0.83	0.13		
Total Organic Carbon (dry)	10015.64945			
Total Solids	63.9			
HPAH	20	3.13	960	957
LPAH	14	2.19	370	368
Total PCB	15	2.34	12	9.7

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.03	2.3	2.3
1,4-Dichlorobenzene	0.2	0.03	3.1	3.1
2-Methylnaphthalene	2	0.29	38	38
2,4-Dimethylphenol	1	1.61	29	27
2-Methylphenol	2	3.21	63	60
4-Methylphenol	4	6.42	670	664
Acenaphthene	2	0.29	16	16
Acenaphthylene	2	0.29	66	66
Anthracene	2	0.29	220	220
Benzo(a)anthracene	2	0.29	110	110
Benzo(a)pyrene	2	0.29	99	99
Benzo(b)fluoranthene	2	0.29	115	115
Benzo(g,h,i)perylene	2	0.29	31	31
Benzo(k)fluoranthene	2	0.29	115	115
Benzoic Acid	10	16.05	650	634
Benzyl Alcohol	2	3.21	57	54
Benzyl Butyl Phthalate	1	0.15	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.58	47	46
Chrysene	2	0.29	110	110
Dibenzo(a,h)anthracene	2	0.29	12	12
Dibenzofuran	2	0.29	15	15
Diethyl Phthalate	4	0.58	61	60
Dimethyl Phthalate	4	0.58	53	52
Di-N-Butyl Phthalate	4	0.58	220	219
Di-N-Octyl Phthalate	4	0.58	58	57
Fluorene	2	0.29	23	23
Fluoranthene	2	0.29	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.07	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.29	34	34
N-Nitrosodiphenylamine	4	0.58	11	10
Naphthalene	2	0.29	99	99
Pentachlorophenol	10	16.05	360	344
Phenanthrene	2	0.29	100	100
Phenol	4	6.42	420	414
Pyrene	2	0.29	1000	1000
Aroclor 1016	7.6	1.10		
Aroclor 1221	1.7	0.25		
Aroclor 1232	1.7	0.25		
Aroclor 1242	19	2.76		
Aroclor 1248	0.83	0.12		
Aroclor 1254	0.83	0.12		
Aroclor 1260	0.83	0.12		
Total Organic Carbon (dry)	11059.39005			
Total Solids	62.3			
HPAH	20	2.90	960	957
LPAH	14	2.03	370	368
Total PCB	19	2.76	12	9.2

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.03	2.3	2.3
1,4-Dichlorobenzene	0.2	0.03	3.1	3.1
2-Methylnaphthalene	2	0.26	38	38
2,4-Dimethylphenol	1	1.56	29	27
2-Methylphenol	2	3.13	63	60
4-Methylphenol	4	6.26	670	664
Acenaphthene	2	0.26	16	16
Acenaphthylene	2	0.26	66	66
Anthracene	2	0.26	220	220
Benzo(a)anthracene	2	0.26	110	110
Benzo(a)pyrene	2	0.26	99	99
Benzo(b)fluoranthene	2	0.26	115	115
Benzo(g,h,i)perylene	2	0.26	31	31
Benzo(k)fluoranthene	2	0.26	115	115
Benzoic Acid	10	15.65	650	634
Benzyl Alcohol	2	3.13	57	54
Benzyl Butyl Phthalate	1	0.13	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.53	47	46
Chrysene	2	0.26	110	110
Dibenzo(a,h)anthracene	2	0.26	12	12
Dibenzofuran	2	0.26	15	15
Diethyl Phthalate	4	0.53	61	60
Dimethyl Phthalate	4	0.53	53	52
Di-N-Butyl Phthalate	4	0.53	220	219
Di-N-Octyl Phthalate	4	0.53	58	57
Fluorene	2	0.26	23	23
Fluoranthene	2	0.26	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.07	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.26	34	34
N-Nitrosodiphenylamine	4	0.53	11	10
Naphthalene	2	0.26	99	99
Pentachlorophenol	10	15.65	360	344
Phenanthrene	2	0.26	100	100
Phenol	4	6.26	420	414
Pyrene	2	0.26	1000	1000
Aroclor 1016	31	4.11		
Aroclor 1221	10	1.32		
Aroclor 1232	12	1.59		
Aroclor 1242	0.83	0.11		
Aroclor 1248	0.83	0.11		
Aroclor 1254	0.83	0.11		
Aroclor 1260	0.83	0.11		
Total Organic Carbon (dry)	11815.33646			
Total Solids	63.9			
HPAH	20	2.65	960	957
LPAH	14	1.85	370	368
Total PCB	31	4.11	12	7.9

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.23	38	38
2,4-Dimethylphenol	1	2.14	29	27
2-Methylphenol	2	4.28	63	59
4-Methylphenol	4	8.57	670	661
Acenaphthene	2	0.23	16	16
Acenaphthylene	2	0.23	66	66
Anthracene	2	0.23	220	220
Benzo(a)anthracene	2	0.23	110	110
Benzo(a)pyrene	2	0.23	99	99
Benzo(b)fluoranthene	2	0.23	115	115
Benzo(g,h,i)perylene	2	0.23	31	31
Benzo(k)fluoranthene	2	0.23	115	115
Benzoic Acid	10	21.41	650	629
Benzyl Alcohol	2	4.28	57	53
Benzyl Butyl Phthalate	1	0.11	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.45	47	47
Chrysene	2	0.23	110	110
Dibenzo(a,h)anthracene	2	0.23	12	12
Dibenzofuran	2	0.23	15	15
Diethyl Phthalate	4	0.45	61	61
Dimethyl Phthalate	4	0.45	53	53
Di-N-Butyl Phthalate	4	0.45	220	220
Di-N-Octyl Phthalate	4	0.45	58	58
Fluorene	2	0.23	23	23
Fluoranthene	2	0.23	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.06	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.23	34	34
N-Nitrosodiphenylamine	4	0.45	11	11
Naphthalene	2	0.23	99	99
Pentachlorophenol	10	21.41	360	339
Phenanthrene	2	0.23	100	100
Phenol	4	8.57	420	411
Pyrene	2	0.23	1000	1000
Aroclor 1016	6.8	0.77		
Aroclor 1221	1.7	0.19		
Aroclor 1232	1.7	0.19		
Aroclor 1242	0.83	0.09		
Aroclor 1248	0.83	0.09		
Aroclor 1254	0.83	0.09		
Aroclor 1260	0.83	0.09		
Total Organic Carbon (dry)	19014.98929			
Total Solids	46.7			
HPAH	20	2.25	960	958
LPAH	14	1.58	370	368
Total PCB	6.8	0.77	12	11.2

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	0.13	0.01	0.81	0.80
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	1.3	3.02	29	26
2-Methylphenol	2.7	6.28	63	57
4-Methylphenol	5.3	12.33	670	658
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	30.23	650	620
Benzyl Alcohol	2.7	6.28	57	51
Benzyl Butyl Phthalate	1.3	0.15	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	5.3	0.60	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	0.60	61	60
Dimethyl Phthalate	5.3	0.60	53	52
Di-N-Butyl Phthalate	5.3	0.60	220	219
Di-N-Octyl Phthalate	5.3	0.60	58	57
Fluorene	2.7	0.30	23	23
Fluoranthene	2.7	0.30	160	160
Hexachlorobenzene	0.13	0.01	0.38	0.37
Hexachlorobutadiene	0.67	0.08	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2.7	0.30	34	34
N-Nitrosodiphenylamine	5.3	0.60	11	10
Naphthalene	2.7	0.30	99	99
Pentachlorophenol	13	30.23	360	330
Phenanthrene	2.7	0.30	100	100
Phenol	5.3	12.33	420	408
Pyrene	2.7	0.30	1000	1000
Aroclor 1016	1.3	0.15		
Aroclor 1221	2.5	0.28		
Aroclor 1232	2.5	0.28		
Aroclor 1242	1.3	0.15		
Aroclor 1248	1.3	0.15		
Aroclor 1254	1.3	0.15		
Aroclor 1260	1.3	0.15		
Total Organic Carbon (dry)	20651.16279			
Total Solids	43			
HPAH	27	3.04	960	957
LPAH	18.9	2.13	370	368
Total PCB	2.5	0.28	12	11.7

CONVENTIONAL ANALYSES QC DATA

King County Environmental Lab Batch Report

WG102612 PSD

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/27/2009 12:10	5/29/2008 0:00	6/1/2009 0:00	WG102612-1, -2, -3, -4	
L47890-2	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 9:10	5/29/2008 0:00	6/1/2009 0:00		
L47890-3	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 9:26	5/29/2008 0:00	6/1/2009 0:00		
L47890-4	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 9:45	5/29/2008 0:00	6/1/2009 0:00		
L47890-5	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 10:02	5/29/2008 0:00	6/1/2009 0:00		
L47890-6	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/28/2009 10:22	5/29/2008 0:00	6/1/2009 0:00		FREP @ L47890-5
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 12:36	5/29/2008 0:00	6/1/2009 0:00		
WG102612-1	LD		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		L47890-6
WG102612-2	LT		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		WG102612-1 L47890-6
WG102612-3	LD		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		L47888-2
WG102612-4	LT		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		WG102612-3 L47888-2

King County Environmental Lab Analytical QC Report

Workgroup: WG102612 PSD

LT:WG102612-2 LD:WG102612-1 L47890-6 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422 Project: 423062-100-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	0.6	1.2	%	4.9	4.7	4.8	2		20
Gravel	0.12	1.2	%	19.2	18	19.7	5		20
Sand	0.12	1.2	%	73.3	78.3	73.5	4		20
Silt	0.6	1.2	%	1.2	1.8	2.4	32	*	20

LT:WG102612-4 LD:WG102612-3 L47888-2 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422 Project: 423062-200-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	1.1	2.24	%	39.6	41.5	40.3	2		20
Gravel	0.22	2.24	%	0.22	0.4	<MDL			20
Sand	0.22	2.24	%	12.5	11	8.7	18		20
Silt	1.1	2.24	%	49.6	49.4	53.7	5		20

King County Environmental Lab Batch Report

WG102625 PSD

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/27/2009 10:36	6/1/2009 0:00	6/2/2009 0:00	WG102612-3, -4	
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 12:45	6/1/2009 0:00	6/2/2009 0:00		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/28/2009 14:00	6/1/2009 0:00	6/2/2009 0:00		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/29/2009 8:25	6/1/2009 0:00	6/2/2009 0:00		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/29/2009 8:55	6/1/2009 0:00	6/2/2009 0:00		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/29/2009 9:37	6/1/2009 0:00	6/2/2009 0:00		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/29/2009 10:00	6/1/2009 0:00	6/2/2009 0:00		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVPSD	SALTWTRSED	4/29/2009 10:40	6/1/2009 0:00	6/4/2009 0:00		
L47890-7	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/27/2009 14:25	6/1/2009 0:00	6/2/2009 0:00		
L47890-8	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/27/2009 14:50	6/1/2009 0:00	6/2/2009 0:00		
L47890-9	423062-100-4	Duwamish Diagonal Cap Monitoring	CVPSD	SALTWTRSED	4/27/2009 15:15	6/1/2009 0:00	6/2/2009 0:00		
WG102612-1	LD		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		L47890-6
WG102612-2	LT		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		WG102612-1 L47890-6
WG102612-3	LD		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		L47888-2
WG102612-4	LT		CVPSD	SALTWTRSED		5/29/2008 0:00	6/1/2009 0:00		WG102612-3 L47888-2

King County Environmental Lab Analytical QC Report

Workgroup: WG102625 PSD

LT:WG102612-2 LD:WG102612-1 L47890-6 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422 Project: 423062-100-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	0.6	1.2	%	4.9	4.7	4.8	2		20
Gravel	0.12	1.2	%	19.2	18	19.7	5		20
Sand	0.12	1.2	%	73.3	78.3	73.5	4		20
Silt	0.6	1.2	%	1.2	1.8	2.4	32	*	20

LT:WG102612-4 LD:WG102612-3 L47888-2 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422 Project: 423062-200-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	1.1	2.24	%	39.6	41.5	40.3	2		20
Gravel	0.22	2.24	%	0.22	0.4	<MDL			20
Sand	0.22	2.24	%	12.5	11	8.7	18		20
Silt	1.1	2.24	%	49.6	49.4	53.7	5		20

King County Environmental Lab Batch Report

WG102503 Total Organic Carbon

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47813-6	423589-090-4	CSO Near Full Characterization	CVTOC	IN-LINESED	4/14/2009 14:45	5/26/2009 16:00	6/9/2009 9:40	WG102503-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20	
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/27/2009 10:36	5/26/2009 16:00	6/9/2009 13:53		
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/27/2009 12:10	5/26/2009 16:00	6/9/2009 14:15		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:45	5/26/2009 16:00	6/9/2009 14:37		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 14:00	5/26/2009 16:00	6/9/2009 14:58		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 8:25	5/26/2009 16:00	6/9/2009 15:20		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 8:55	5/26/2009 16:00	6/9/2009 15:41		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 9:37	5/26/2009 16:00	6/10/2009 9:32		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 10:00	5/26/2009 16:00	6/10/2009 11:08		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/29/2009 10:40	5/26/2009 16:00	6/10/2009 11:29		
L47890-1	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 8:45	6/1/2009 15:05	6/10/2009 12:14		
L47890-2	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 9:10	6/1/2009 15:05	6/10/2009 12:50		
L47890-3	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 9:26	6/1/2009 15:05	6/10/2009 13:12		
L47890-4	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 9:45	6/1/2009 15:05	6/10/2009 13:34		
L47890-5	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 10:02	6/1/2009 15:05	6/10/2009 14:05		
L47890-6	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/28/2009 10:22	6/1/2009 15:05	6/10/2009 14:26		FREP @ L47890-5
L47890-7	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/27/2009 14:25	6/1/2009 15:05	6/11/2009 10:26		
L47890-8	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/27/2009 14:50	6/1/2009 15:05	6/10/2009 14:48		
L47890-9	423062-100-4	Duwamish Diagonal Cap Monitoring	CVTOC	SALTWTRSED	4/27/2009 15:15	6/1/2009 15:05	6/11/2009 10:50		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 10:44	6/1/2009 15:05	6/11/2009 12:44		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 10:55	6/1/2009 15:05	6/11/2009 13:44		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 11:00	6/1/2009 15:05	6/11/2009 14:14		FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 11:53	6/1/2009 15:05	6/11/2009 14:35		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:02	6/1/2009 15:05	6/11/2009 15:00		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:12	6/1/2009 15:05	6/11/2009 11:58		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:22	6/1/2009 15:05	6/11/2009 12:20		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOC	SALTWTRSED	4/28/2009 12:36	6/1/2009 15:05	6/11/2009 15:25		
L48029-1	423258-100-1	Reclaimed Water Nutrient Characterization	CVTOC	SOIL	5/11/2009 13:40	5/26/2009 16:00	6/9/2009 11:13		
L48029-2	423258-100-1	Reclaimed Water Nutrient Characterization	CVTOC	SOIL	5/11/2009 14:10	5/26/2009 16:00	6/9/2009 12:55		
L48029-3	423258-100-1	Reclaimed Water Nutrient Characterization	CVTOC	SOIL	5/11/2009 14:26	5/26/2009 16:00	6/9/2009 13:17		
WG102503-1	MB		CVTOC	OTHR SOLID		6/9/2009 8:45	6/9/2009 8:45		MB1 06/09/09 08:45
WG102503-2	SRM		CVTOC	OTHR SOLID		6/9/2009 9:02	6/9/2009 9:02		HICONC
WG102503-3	SB		CVTOC	OTHR SOLID		6/9/2009 9:22	6/9/2009 9:22		WG102503-1
WG102503-4	LD		CVTOC	IN-LINESED		5/26/2009 16:00	6/9/2009 10:05		L47813-6
WG102503-5	LT		CVTOC	IN-LINESED		5/26/2009 16:00	6/9/2009 10:29		WG102503-4 L47813-6
WG102503-6	MS		CVTOC	IN-LINESED		5/26/2009 16:00	6/9/2009 10:50		L47813-6
WG102503-7	LD		CVTOC	SOIL		5/26/2009 16:00	6/9/2009 11:35		L48029-1

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WG102503-8	LT	CVTOC	SOIL	5/26/2009 16:00	6/9/2009 12:12		WG102503-7 L48029-1
WG102503-9	MS	CVTOC	SOIL	5/26/2009 16:00	6/9/2009 12:34		L48029-1
WG102503-10	MB	CVTOC	OTHR SOLID	6/10/2009 8:36	6/10/2009 8:36		MB1 06/10/09
WG102503-11	SRM	CVTOC	OTHR SOLID	6/10/2009 8:53	6/10/2009 8:53		HICONC
WG102503-12	SB	CVTOC	OTHR SOLID	6/10/2009 9:13	6/10/2009 9:13		WG102503-10
WG102503-13	LD	CVTOC	SALTWTRSED	5/26/2009 16:00	6/10/2009 9:54		L47888-7
WG102503-14	LT	CVTOC	SALTWTRSED	5/26/2009 16:00	6/10/2009 10:23		WG102503-13 L47888-7
WG102503-15	MS	CVTOC	SALTWTRSED	5/26/2009 16:00	6/10/2009 10:44		L47888-7
WG102503-16	LD	CVTOC	SALTWTRSED	6/1/2009 15:05	6/10/2009 15:10		L47890-8
WG102503-17	LT	CVTOC	SALTWTRSED	6/1/2009 15:05	6/10/2009 15:31		WG102503-16 L47890-8
WG102503-18	MS	CVTOC	SALTWTRSED	6/1/2009 15:05	6/10/2009 15:53		L47890-8
WG102503-19	MB	CVTOC	OTHR SOLID	6/11/2009 9:47	6/11/2009 9:47		MB1 06/11/09
WG102503-20	SRM	CVTOC	OTHR SOLID	6/11/2009 10:04	6/11/2009 10:04		HICONC

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Workgroup: WG102503 Total Organic Carbon

MB:WG102503-1 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Organic Carbon	500	1000	mg/Kg	<MDL	

SRM:WG102503-2 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	2700	5340	mg/Kg	33480	32100	96		80--120

SB:WG102503-3 MB:WG102503-1 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	500	1000	mg/Kg	<MDL	2500	2620	105		80--120

LT:WG102503-5 LD:WG102503-4 L47813-6 Matrix: IN-LINESED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423589-090-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Organic Carbon	3500	6950	mg/Kg	24500	23200	23700	3		20

MS:WG102503-6 L47813-6 Matrix: IN-LINESED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423589-090-4
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	3500	7050	mg/Kg	24500	17620	43700	109		75--125

LT:WG102503-8 LD:WG102503-7 L48029-1 Matrix: SOIL Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423258-100-1
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Organic Carbon	650	1300	mg/Kg	4870	6480	6110	15		20

King County Environmental Lab Analytical QC Report

MS:WG102503-9 L48029-1 Matrix: SOIL Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423258-100-1
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	620	1250	mg/Kg	4870	3116	8040	102		75--125

MB:WG102503-10 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Organic Carbon	500	1000	mg/Kg	<MDL	

SRM:WG102503-11 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	2500	4900	mg/Kg	36900	34000	92		80--120

SB:WG102503-12 MB:WG102503-10 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	500	1000	mg/Kg	<MDL	2500	2590	104		80--120

LT:WG102503-14 LD:WG102503-13 L47888-7 Matrix: SALTWTRSED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423062-200-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Organic Carbon	1100	2170	mg/Kg	6890	6910	7030	1		20

MS:WG102503-15 L47888-7 Matrix: SALTWTRSED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423062-200-4
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	1100	2170	mg/Kg	6890	5436	12100	95		75--125

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LT:WG102503-17 LD:WG102503-16 L47890-8 Matrix: SALTWTRSED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423062-100-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Organic Carbon	770	1540	mg/Kg	7390	7490	7520	1		20

MS:WG102503-18 L47890-8 Matrix: SALTWTRSED Listtype: CVTOC Method: SW846 9060-PSEP96 Project: 423062-100-4
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	770	1550	mg/Kg	7390	3905	11000	92		75--125

MB:WG102503-19 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Organic Carbon	500	1000	mg/Kg	<MDL	

SRM:WG102503-20 Matrix: OTHR SOLID Listtype: CVTOC Method: SW846 9060-PSEP96 Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Total Organic Carbon	2400	4710	mg/Kg	36900	34000	92		80--120

King County Environmental Lab Batch Report

WG102500 Total Solids

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47814-1	421163	IW COMPLIANCE MONITORING	CVTOTS	IN-LINESED	4/14/2009 14:45	5/26/2009 14:38	5/27/2009 9:33	WG102500-1, -2, -3, -4, -5, -6, -7	
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/27/2009 10:36	5/26/2009 14:38	5/27/2009 9:34		
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/27/2009 12:10	5/26/2009 14:38	5/27/2009 9:35		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 12:45	5/26/2009 14:38	5/27/2009 9:35		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/28/2009 14:00	5/26/2009 14:38	5/27/2009 9:37		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/29/2009 8:25	5/26/2009 14:38	5/27/2009 9:37		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/29/2009 8:55	5/26/2009 14:38	5/27/2009 9:38		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/29/2009 9:37	5/26/2009 14:38	5/27/2009 9:38		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/29/2009 10:00	5/26/2009 14:38	5/27/2009 9:38		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/29/2009 10:40	5/26/2009 14:38	5/27/2009 9:39		
L48029-1	423258-100-1	Reclaimed Water Nutrient Characterization	CVTOTS	SOIL	5/11/2009 13:40	5/26/2009 14:38	5/27/2009 9:40		
L48029-2	423258-100-1	Reclaimed Water Nutrient Characterization	CVTOTS	SOIL	5/11/2009 14:10	5/26/2009 14:38	5/27/2009 9:40		
L48029-3	423258-100-1	Reclaimed Water Nutrient Characterization	CVTOTS	SOIL	5/11/2009 14:26	5/26/2009 14:38	5/27/2009 9:41		
WG102500-1	MB		CVTOTS	OTHR SOLID		5/26/2009 14:38	5/27/2009 9:33		MB1 05/26/09 16:00
WG102500-2	LD		CVTOTS	IN-LINESED		5/26/2009 14:38	5/27/2009 9:34		L47814-1
WG102500-3	LT		CVTOTS	IN-LINESED		5/26/2009 14:38	5/27/2009 9:34		WG102500-2 L47814-1
WG102500-4	LD		CVTOTS	SALTWTRSED		5/26/2009 14:38	5/27/2009 9:36		L47888-3
WG102500-5	LT		CVTOTS	SALTWTRSED		5/26/2009 14:38	5/27/2009 9:36		WG102500-4 L47888-3
WG102500-6	LD		CVTOTS	SOIL		5/26/2009 14:38	5/27/2009 9:40		L48029-2
WG102500-7	LT		CVTOTS	SOIL		5/26/2009 14:38	5/27/2009 9:41		WG102500-6 L48029-2

King County Environmental Lab Analytical QC Report

Workgroup: WG102500 Total Solids

MB:WG102500-1 Matrix: OTHR SOLID Listtype: CVTOTS Method: SM2540-G Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Solids	0.005	0.01	%	<MDL	

LT:WG102500-3 LD:WG102500-2 L47814-1 Matrix: IN-LINESED Listtype: CVTOTS Method: SM2540-G Project: 421163
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Solids	0.005	0.01	%	62	62.3	63.9	2		20

LT:WG102500-5 LD:WG102500-4 L47888-3 Matrix: SALTWTRSED Listtype: CVTOTS Method: SM2540-G Project: 423062-200-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Solids	0.005	0.01	%	59.8	58.6	60.2	1		20

LT:WG102500-7 LD:WG102500-6 L48029-2 Matrix: SOIL Listtype: CVTOTS Method: SM2540-G Project: 423258-100-1
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Solids	0.005	0.01	%	90.3	90.4	91.1	0		20

King County Environmental Lab Batch Report

WG102846 Total Solids

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L48332-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	CVTOTS	SALTWTRSED	4/27/2009 12:10	5/26/2009 14:38	5/27/2009 9:35	WG102500-1	
WG102500-1	MB		CVTOTS	OTHR SOLID		5/26/2009 14:38	5/27/2009 9:33		MB1 05/26/09 16:00

King County Environmental Lab Analytical QC Report

Workgroup: WG102846 Total Solids

MB:WG102500-1 Matrix: OTHR SOLID Listtype: CVTOTS Method: SM2540-G Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Solids	0.005	0.01	%	<MDL	

METAL CHEMISTRY QC DATA

King County Environmental Lab Batch Report

WG102342 Total Mercury

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/27/2009 10:36	5/18/2009 9:00	5/19/2009 11:35	WG102342-1, -2, -3, -4, -5, -6	
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/27/2009 12:10	5/18/2009 9:00	5/19/2009 11:42		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 12:45	5/18/2009 9:00	5/19/2009 12:24		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 14:00	5/18/2009 9:00	5/19/2009 12:26		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/29/2009 8:25	5/18/2009 9:00	5/19/2009 11:56		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/29/2009 8:55	5/18/2009 9:00	5/19/2009 11:58		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/29/2009 9:37	5/18/2009 9:00	5/19/2009 12:00		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/29/2009 10:00	5/18/2009 9:00	5/19/2009 12:02		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/29/2009 10:40	5/18/2009 9:00	5/19/2009 12:03		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 10:44	5/18/2009 9:00	5/19/2009 12:05		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 10:55	5/18/2009 9:00	5/19/2009 12:07		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 11:00	5/18/2009 9:00	5/19/2009 12:09		FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 11:53	5/18/2009 9:00	5/19/2009 12:11		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 12:02	5/18/2009 9:00	5/19/2009 12:12		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 12:12	5/18/2009 9:00	5/19/2009 12:19		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 12:22	5/18/2009 9:00	5/19/2009 12:21		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTHG-MIDS	SALTWTRSED	4/28/2009 12:36	5/18/2009 9:00	5/19/2009 12:22		
WG102342-1	SRM		MTHG-MIDS	SALTWTRSED		5/18/2009 9:00	5/19/2009 11:29		PACS2
WG102342-2	MB		MTHG-MIDS	SOLIDBLANK		5/18/2009 9:00	5/19/2009 11:31		METHOD BLANK
WG102342-3	SB		MTHG-MIDS	SOLIDBLANK		5/18/2009 9:00	5/19/2009 11:33		WG102342-2 HG-SMID
WG102342-4	MS		MTHG-MIDS	SALTWTRSED		5/18/2009 9:00	5/19/2009 11:37		L47888-1 HG-SMID
WG102342-5	MSD		MTHG-MIDS	SALTWTRSED		5/18/2009 9:00	5/19/2009 11:38		WG102342-4 L47888-1 HG-SMID-MSD
WG102342-6	LD		MTHG-MIDS	SALTWTRSED		5/18/2009 9:00	5/19/2009 11:40		L47888-1 RPD-SOL

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Workgroup: WG102342 Total Mercury

SRM:WG102342-1 Matrix: SALTWTRSED Listtype: MTHG-MIDS Method: SW846 7471B Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Mercury, Total, CVAA	0.051	0.513	mg/Kg	3.04	2.99	98		80--120

MB:WG102342-2 Matrix: SOLIDBLANK Listtype: MTHG-MIDS Method: SW846 7471B Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAA	0.0024	0.0244	mg/Kg	<MDL	

SB:WG102342-3 MB:WG102342-2 Matrix: SOLIDBLANK Listtype: MTHG-MIDS Method: SW846 7471B Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Mercury, Total, CVAA	0.0024	0.0244	mg/Kg	<MDL	0.0488	0.0496	102		85--115

MSD:WG102342-5 MS:WG102342-4 L47888-1 Matrix: SALTWTRSED Listtype: MTHG-MIDS Method: SW846 7471B Project: 423062-200-4
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Mercury, Total, CVAA	0.0025	0.0247	mg/Kg	0.0742	0.05	0.122	96		75--125	0.0494	0.121	95		1		20

LD:WG102342-6 L47888-1 Matrix: SALTWTRSED Listtype: MTHG-MIDS Method: SW846 7471B Project: 423062-200-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Mercury, Total, CVAA	0.0025	0.0247	mg/Kg	0.0742	0.0778	5		20

King County Environmental Lab Batch Report

WG102346 Total Metals

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/27/2009 10:36	5/18/2009 14:00	5/19/2009 16:35	WG102346-1, -2, -3, -6, -4, -5	
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/27/2009 12:10	5/18/2009 14:00	5/19/2009 16:52		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 12:45	5/18/2009 14:00	5/19/2009 16:57		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 14:00	5/18/2009 14:00	5/19/2009 17:03		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/29/2009 8:25	5/18/2009 14:00	5/19/2009 17:19		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/29/2009 8:55	5/18/2009 14:00	5/19/2009 17:25		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/29/2009 9:37	5/18/2009 14:00	5/19/2009 17:30		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/29/2009 10:00	5/18/2009 14:00	5/19/2009 17:36		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/29/2009 10:40	5/18/2009 14:00	5/19/2009 17:41		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 10:44	5/18/2009 14:00	5/19/2009 17:47		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 10:55	5/18/2009 14:00	5/19/2009 17:52		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 11:00	5/18/2009 14:00	5/19/2009 17:58		FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 11:53	5/18/2009 14:00	5/19/2009 18:03		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 12:02	5/18/2009 14:00	5/19/2009 18:09		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 12:12	5/18/2009 14:00	5/19/2009 18:26		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 12:22	5/18/2009 14:00	5/19/2009 18:31		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	MTICP-SED	SALTWTRSED	4/28/2009 12:36	5/18/2009 14:00	5/19/2009 18:37		
									WG102346-3
WG102346-1	SB		MTICP-SED	SOLIDBLANK		5/18/2009 14:00	5/19/2009 16:13		ICPMARINE
WG102346-2	LCS		MTICP-SED	SOIL		5/18/2009 14:00	5/19/2009 16:18		ERASOIL
WG102346-3	MB		MTICP-SED	SOLIDBLANK		5/18/2009 14:00	5/19/2009 16:24		METHOD BLANK
WG102346-4	LD		MTICP-SED	SALTWTRSED		5/18/2009 14:00	5/19/2009 16:41		L47888-1 RPD-SOL
									L47888-1
WG102346-5	MS		MTICP-SED	SALTWTRSED		5/18/2009 14:00	5/19/2009 16:46		ICPMARINE
WG102346-6	SRM		MTICP-SED	SALTWTRSED		5/18/2009 14:00	5/19/2009 16:30		PACS2

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Workgroup: WG102346 Total Metals

MB:WG102346-3 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Aluminum, Total, ICP	3.8	19.2	mg/Kg	<MDL	
Antimony, Total, ICP	0.58	2.88	mg/Kg	<MDL	
Arsenic, Total, ICP	0.96	4.81	mg/Kg	<MDL	
Beryllium, Total, ICP	0.038	0.192	mg/Kg	<MDL	
Cadmium, Total, ICP	0.077	0.385	mg/Kg	<MDL	
Chromium, Total, ICP	0.12	0.577	mg/Kg	<MDL	
Copper, Total, ICP	0.15	0.769	mg/Kg	<MDL	
Iron, Total, ICP	1.9	9.62	mg/Kg	<MDL	
Lead, Total, ICP	0.77	3.85	mg/Kg	<MDL	
Manganese, Total, ICP	0.077	0.385	mg/Kg	<MDL	
Nickel, Total, ICP	0.19	0.962	mg/Kg	<MDL	
Selenium, Total, ICP	0.96	4.81	mg/Kg	<MDL	
Silver, Total, ICP	0.15	0.769	mg/Kg	<MDL	
Thallium, Total, ICP	1.5	7.69	mg/Kg	<MDL	
Zinc, Total, ICP	0.19	0.962	mg/Kg	<MDL	

SB:WG102346-1 MB:WG102346-3 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE (Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP	3.8	19.2	mg/Kg	<MDL	3870	3940	102		85--115
Antimony, Total, ICP	0.58	2.88	mg/Kg	<MDL	19.2	19.3	100		85--115
Arsenic, Total, ICP	0.96	4.81	mg/Kg	<MDL	19.2	19.5	102		85--115
Beryllium, Total, ICP	0.038	0.192	mg/Kg	<MDL	19.2	19.1	99		85--115
Cadmium, Total, ICP	0.077	0.385	mg/Kg	<MDL	19.2	18.9	99		85--115
Chromium, Total, ICP	0.12	0.577	mg/Kg	<MDL	19.2	18.9	98		85--115
Copper, Total, ICP	0.15	0.769	mg/Kg	<MDL	19.2	19.3	100		85--115
Iron, Total, ICP	1.9	9.62	mg/Kg	<MDL	1940	1970	101		85--115
Lead, Total, ICP	0.77	3.85	mg/Kg	<MDL	19.2	18.6	97		85--115
Manganese, Total, ICP	0.077	0.385	mg/Kg	<MDL	96.2	97.2	101		85--115
Nickel, Total, ICP	0.19	0.962	mg/Kg	<MDL	19.2	18.6	97		85--115
Selenium, Total, ICP	0.96	4.81	mg/Kg	<MDL	19.2	18.3	95		85--115
Silver, Total, ICP	0.15	0.769	mg/Kg	<MDL	19.2	19.1	99		85--115
Thallium, Total, ICP	1.5	7.69	mg/Kg	<MDL	19.2	18.4	96		85--115
Zinc, Total, ICP	0.19	0.962	mg/Kg	<MDL	96.2	93.4	97		85--115

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LCS:WG102346-2 Matrix: SOIL Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP	41	205	mg/Kg	8260	8420	102		61--139
Antimony, Total, ICP	6.2	30.8	mg/Kg	90.2	77.7	86		10--211
Arsenic, Total, ICP	10	51.3	mg/Kg	132	146	110		80--120
Beryllium, Total, ICP	0.41	2.05	mg/Kg	89.5	94.6	106		80--120
Cadmium, Total, ICP	0.82	4.1	mg/Kg	66.5	75.5	114		80--120
Chromium, Total, ICP	1.2	6.16	mg/Kg	72.9	76.7	105		79--121
Copper, Total, ICP	1.6	8.21	mg/Kg	68.5	72.2	105		80--120
Iron, Total, ICP	21	103	mg/Kg	13400	12500	93		50--149
Lead, Total, ICP	8.2	41	mg/Kg	130	135	104		80--120
Manganese, Total, ICP	0.82	4.1	mg/Kg	453	487	108		80--120
Nickel, Total, ICP	2.1	10.3	mg/Kg	55.6	60	108		80--120
Selenium, Total, ICP	10	51.3	mg/Kg	161	175	109		78--122
Silver, Total, ICP	1.6	8.21	mg/Kg	101	112	111		66--134
Thallium, Total, ICP	16	82.1	mg/Kg	133	146	110		77--123
Zinc, Total, ICP	2.1	10.3	mg/Kg	177	188	106		79--121

LD:WG102346-4 L47888-1 Matrix: SALTWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: 423062-200-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Aluminum, Total, ICP	4.6	22.9	mg/Kg	12900	12600	2		20
Antimony, Total, ICP	0.69	3.43	mg/Kg	<MDL	<MDL			20
Arsenic, Total, ICP	1.1	5.72	mg/Kg	5.8	5.78	0		20
Beryllium, Total, ICP	0.046	0.229	mg/Kg	0.352	0.34	3		20
Cadmium, Total, ICP	0.092	0.458	mg/Kg	0.24	0.22			20
Chromium, Total, ICP	0.14	0.686	mg/Kg	14.2	13.7	3		20
Copper, Total, ICP	0.18	0.915	mg/Kg	32.4	32.4	0		20
Iron, Total, ICP	2.3	11.4	mg/Kg	16900	16600	2		20
Lead, Total, ICP	0.92	4.58	mg/Kg	14.3	13.8	3		20
Manganese, Total, ICP	0.092	0.458	mg/Kg	202	198	2		20
Nickel, Total, ICP	0.23	1.14	mg/Kg	11.7	11.4	2		20
Selenium, Total, ICP	1.1	5.72	mg/Kg	<MDL	<MDL			20
Silver, Total, ICP	0.18	0.915	mg/Kg	<MDL	<MDL			20
Thallium, Total, ICP	1.8	9.15	mg/Kg	<MDL	<MDL			20
Zinc, Total, ICP	0.23	1.14	mg/Kg	59.9	58.8	2		20

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MS:WG102346-5 L47888-1 Matrix: SALTWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: 423062-200-4
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP	4.7	23.7	mg/Kg	12900	4770	19200	132	*	75--125
Antimony, Total, ICP	0.71	3.56	mg/Kg	<MDL	23.7	3.67	15	*	75--125
Arsenic, Total, ICP	1.2	5.94	mg/Kg	5.8	23.7	28.1	94		75--125
Beryllium, Total, ICP	0.047	0.237	mg/Kg	0.352	23.7	23	95		75--125
Cadmium, Total, ICP	0.095	0.475	mg/Kg	0.24	23.7	22.5	94		75--125
Chromium, Total, ICP	0.14	0.712	mg/Kg	14.2	23.7	37	96		75--125
Copper, Total, ICP	0.19	0.95	mg/Kg	32.4	23.7	56	99		75--125
Iron, Total, ICP	2.4	11.9	mg/Kg	16900	2400	19600			(No MS/MSD %Rec. due to 4x rule)
Lead, Total, ICP	0.95	4.75	mg/Kg	14.3	23.7	35.9	91		75--125
Manganese, Total, ICP	0.095	0.475	mg/Kg	202	119	319	98		75--125
Nickel, Total, ICP	0.24	1.19	mg/Kg	11.7	23.7	33.9	93		75--125
Selenium, Total, ICP	1.2	5.94	mg/Kg	<MDL	23.7	21.1	89		75--125
Silver, Total, ICP	0.19	0.95	mg/Kg	<MDL	23.7	24.1	101		75--125
Thallium, Total, ICP	1.9	9.5	mg/Kg	<MDL	23.7	22.1	93		75--125
Zinc, Total, ICP	0.24	1.19	mg/Kg	59.9	119	167	90		75--125

SRM:WG102346-6 Matrix: SALTWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP	41	203	mg/Kg	66200	15700	24		10--43
Chromium, Total, ICP	1.2	6.08	mg/Kg	90.7	46.2	51		30--70
Copper, Total, ICP	1.6	8.11	mg/Kg	310	305	98		78--118
Iron, Total, ICP	20	101	mg/Kg	40900	30300	74		55--95
Lead, Total, ICP	8.1	40.5	mg/Kg	183	167	91		74--114
Manganese, Total, ICP	0.81	4.05	mg/Kg	440	241	55		35--75
Nickel, Total, ICP	2	10.1	mg/Kg	39.5	29.6	75		51--91
Zinc, Total, ICP	2	10.1	mg/Kg	364	336	92		73--113

ORGANIC CHEMISTRY QC DATA

King County Environmental Lab Batch Report

WG101942 Semi Volatile Organics

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/27/2009 10:36	5/1/2009 7:00	5/20/2009 16:51	WG101942-1, -2, -3, -4, -5, -6	
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/27/2009 12:10	5/1/2009 7:00	5/20/2009 17:37		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 12:45	5/1/2009 7:00	5/20/2009 18:23		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 14:00	5/1/2009 7:00	5/20/2009 19:09		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/29/2009 8:25	5/1/2009 7:00	5/20/2009 19:54		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/29/2009 8:55	5/1/2009 7:00	5/20/2009 20:39		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/29/2009 9:37	5/1/2009 7:00	5/20/2009 21:25		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/29/2009 10:00	5/1/2009 7:00	5/20/2009 22:10		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/29/2009 10:40	5/1/2009 7:00	5/20/2009 22:55		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 10:44	5/1/2009 7:00	5/20/2009 23:40		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 10:55	5/1/2009 7:00	5/21/2009 0:25		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 11:00	5/1/2009 7:00	5/28/2009 18:14		FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 11:53	5/1/2009 7:00	5/28/2009 19:02		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 12:02	5/1/2009 7:00	5/28/2009 19:50		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 12:12	5/1/2009 7:00	5/28/2009 20:38		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 12:22	5/1/2009 7:00	5/28/2009 21:25		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/28/2009 12:36	5/1/2009 7:00	5/28/2009 22:11		
WG101942-1	MB		ORBNASMS	OTHR SOLID		5/1/2009 7:00	5/20/2009 11:35		MB090501
WG101942-2	SB		ORBNASMS	OTHR SOLID		5/1/2009 7:00	5/20/2009 13:07		WG101942-1
WG101942-3	MS		ORBNASMS	SALTWTRSED		5/1/2009 7:00	5/20/2009 13:46		L47888-1
WG101942-4	MSD		ORBNASMS	SALTWTRSED		5/1/2009 7:00	5/20/2009 14:32		WG101942-3 L47888-1
WG101942-5	SRM		ORBNASMS	SALTWTRSED		5/1/2009 7:00	5/20/2009 15:19		1944
WG101942-6	LD		ORBNASMS	SALTWTRSED		5/1/2009 7:00	5/20/2009 16:05		L47888-2

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Workgroup: WG101942 Semi Volatile Organics

MB:WG101942-1 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	
2-Methylnaphthalene	2	4	ug/Kg	<MDL	
2-Methylphenol	2	4	ug/Kg	<MDL	
4-Methylphenol	4	8	ug/Kg	<MDL	
Acenaphthene	2	4	ug/Kg	<MDL	
Acenaphthylene	2	4	ug/Kg	<MDL	
Anthracene	2	4	ug/Kg	<MDL	
Benzo(a)anthracene	2	4	ug/Kg	<MDL	
Benzo(a)pyrene	2	4	ug/Kg	<MDL	
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	
Benzoic Acid	10	20	ug/Kg	<MDL	
Benzyl Alcohol	2	4	ug/Kg	<MDL	
Benzyl Butyl Phthalate	1	2	ug/Kg	4.06	B
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	35.1	B
Caffeine	4	8	ug/Kg	<MDL	
Carbazole	2	4	ug/Kg	<MDL	
Chrysene	2	4	ug/Kg	<MDL	
Coprostanol	40	80	ug/Kg	<MDL	
Di-N-Butyl Phthalate	4	8	ug/Kg	<MDL	
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	
Dibenzofuran	2	4	ug/Kg	<MDL	
Diethyl Phthalate	4	8	ug/Kg	<MDL	
Dimethyl Phthalate	4	8	ug/Kg	<MDL	
Fluoranthene	2	4	ug/Kg	<MDL	
Fluorene	2	4	ug/Kg	<MDL	
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	
Hexachloroethane	1	2	ug/Kg	<MDL	
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	

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N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL
Naphthalene	2	4	ug/Kg	<MDL
Pentachlorophenol	10	20	ug/Kg	<MDL
Phenanthrene	2	4	ug/Kg	<MDL
Phenol	4	8	ug/Kg	<MDL
Pyrene	2	4	ug/Kg	<MDL
Total 4-Nonylphenol	5	10	ug/Kg	<MDL
Total HPAHS	2	4	ug/Kg	<MDL
Total LPAHs	2	4	ug/Kg	<MDL

SB:WG101942-2 MB:WG101942-1 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	250	180	72		13--110
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	135	54		10--116
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	160	64		18--95
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	155	62		21--99
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	250	33.8	14		10--81
Acenaphthene	2	4	ug/Kg	<MDL	250	181	72		29--102
Acenaphthylene	2	4	ug/Kg	<MDL	250	194	78		31--101
Anthracene	2	4	ug/Kg	<MDL	250	226	90		45--114
Benzo(a)anthracene	2	4	ug/Kg	<MDL	250	269	108		69--117
Benzo(a)pyrene	2	4	ug/Kg	<MDL	250	228	91		15--137
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	250	268	107		50--121
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	250	217	87		46--126
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	250	222	89		58--128
Benzyl Butyl Phthalate	1	2	ug/Kg	4.06	250	238	94		15--183
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	35.1	250	230	78		10--182
Carbazole	2	4	ug/Kg	<MDL	250	236	94		44--179
Chrysene	2	4	ug/Kg	<MDL	250	212	85		69--111
Di-N-Butyl Phthalate	4	8	ug/Kg	<MDL	250	247	99		17--180
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	250	266	106		10--200
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	250	275	110		53--129
Diethyl Phthalate	4	8	ug/Kg	<MDL	250	192	77		51--118
Dimethyl Phthalate	4	8	ug/Kg	<MDL	250	192	77		38--114
Fluoranthene	2	4	ug/Kg	<MDL	250	245	98		55--132
Fluorene	2	4	ug/Kg	<MDL	250	189	75		39--106
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	250	148	59		40--111
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	250	188	75		10--97
Hexachloroethane	1	2	ug/Kg	<MDL	250	139	56		17--92
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	250	250	100		51--132

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N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	250	137	55	11--148
Naphthalene	2	4	ug/Kg	<MDL	250	129	51	17--94
Pentachlorophenol	10	20	ug/Kg	<MDL	250	139	56	38--124
Phenanthrene	2	4	ug/Kg	<MDL	250	214	86	57--104
Phenol	4	8	ug/Kg	<MDL	250	26.6	11	10--107
Pyrene	2	4	ug/Kg	<MDL	250	272	109	48--132
Total HPAHS	2	4	ug/Kg	<MDL	2500	2460	98	25--150
Total LPAHs	2	4	ug/Kg	<MDL	1750	1130	65	25--150

MSD:WG101942-4 MS:WG101942-3 L47888-1 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	250	117	47		10--115	250	119	48		2		35
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	106	43		10--105	250	120	48		11		35
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	103	41		10--103	250	123	49		18		35
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	250	109	44		10--104	250	124	49		11		35
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	250	160	64		10--150	250	141	57		12		35
Acenaphthene	2	4	ug/Kg	3.7	250	196	77		25--130	250	173	68		12		35
Acenaphthylene	2	4	ug/Kg	3	250	217	86		27--132	250	196	77		11		35
Anthracene	2	4	ug/Kg	20.1	250	262	97		10--181	250	245	90		7		35
Benzo(a)anthracene	2	4	ug/Kg	81	250	342	105		32--168	250	332	100		5		35
Benzo(a)pyrene	2	4	ug/Kg	62.6	250	287	90		10--200	250	256	77		16		35
Benzo(b)fluoranthene	2	4	ug/Kg	104	250	352	99		10--199	250	365	104		5		35
Benzo(g,h,i)perylene	2	4	ug/Kg	27.6	250	148	48		10--173	250	131	41		16		35
Benzo(k)fluoranthene	2	4	ug/Kg	75.1	250	323	99		10--192	250	270	78		24		35
Benzyl Butyl Phthalate	1	2	ug/Kg	33.6	250	254	88		41--145	250	234	80		10		35
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	249	250	459	84		10--189	250	427	71		17		35
Carbazole	2	4	ug/Kg	8.74	250	237	91		16--200	250	217	83		9		35
Chrysene	2	4	ug/Kg	103	250	303	80		14--184	250	315	85		6		35
Di-N-Butyl Phthalate	4	8	ug/Kg	11.7	250	229	87		10--194	250	203	77		12		35
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	250	346	138		52--151	250	372	149		8		35
Dibenzo(a,h)anthracene	2	4	ug/Kg	14.4	250	177	65		10--166	250	159	58		11		35
Diethyl Phthalate	4	8	ug/Kg	<MDL	250	168	67		31--150	250	144	58		14		35
Dimethyl Phthalate	4	8	ug/Kg	<MDL	250	169	67		13--162	250	148	59		13		35
Fluoranthene	2	4	ug/Kg	180	250	408	91		12--188	250	382	81		12		35
Fluorene	2	4	ug/Kg	6.54	250	190	73		22--147	250	165	63		15		35
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	250	150	60		18--151	250	139	56		7		35
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	250	111	44		10--97	250	118	47		7		35
Hexachloroethane	1	2	ug/Kg	<MDL	250	124	50		10--89	250	120	48		4		35
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	26.5	250	175	60		10--177	250	153	51		16		35
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	250	172	69		10--169	250	158	63		9		35

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Naphthalene	2	4	ug/Kg	3.2	250	162	63	12--97	250	129	50	23	35
Pentachlorophenol	10	20	ug/Kg	<MDL	250	191	76	17--170	250	181	73	4	35
Phenanthrene	2	4	ug/Kg	51.2	250	292	96	10--200	250	253	81	17	35
Phenol	4	8	ug/Kg	<MDL	250	102	41	10--127	250	96.9	39	5	35
Pyrene	2	4	ug/Kg	163	250	423	104	20--174	250	367	82	24	35
Total HPAHS	2	4	ug/Kg	837	2500	2940	84	25--150	2500	2730	76	10	35
Total LPAHs	2	4	ug/Kg	91.3	1750	1320	70	25--150	1750	1160	61	14	35

SRM:WG101942-5 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Anthracene	20	40	ug/Kg	131	77.6	59		28--98
Benzo(a)anthracene	20	40	ug/Kg	349	374	107		66--124
Benzo(a)pyrene	20	40	ug/Kg	318	248	78		60--116
Benzo(b)fluoranthene	20	40	ug/Kg	286	277	97		52--190
Benzo(g,h,i)perylene	20	40	ug/Kg	210	74.7	36		15--121
Benzo(k)fluoranthene	20	40	ug/Kg	170	226	133		60--146
Chrysene	20	40	ug/Kg	360	399	111		77--136
Dibenzo(a,h)anthracene	20	40	ug/Kg	31.4	38	120		10--200
Fluoranthene	20	40	ug/Kg	660	698	106		45--126
Indeno(1,2,3-Cd)Pyrene	20	40	ug/Kg	206	88.1	43		33--121
Naphthalene	20	40	ug/Kg	122	28	23		10--29
Phenanthrene	20	40	ug/Kg	390	372	95		51--106
Pyrene	20	40	ug/Kg	718	723	101		36--135

LD:WG101942-6 L47888-2 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
1,2,4-Trichlorobenzene	0.1	0.2	ug/Kg	<MDL	<MDL			35
1,2-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	<MDL			35
1,3-Dichlorobenzene	0.2	0.4	ug/Kg	<MDL	<MDL			35
1,4-Dichlorobenzene	0.2	0.4	ug/Kg	0.667	0.592	12		35
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	<MDL			35
2-Methylnaphthalene	2	4	ug/Kg	15.5	22.8	38	*	35
2-Methylphenol	2	4	ug/Kg	<MDL	<MDL			35
4-Methylphenol	4	8	ug/Kg	<MDL	<MDL			35
Acenaphthene	2	4	ug/Kg	46.7	72.9	44	*	35
Acenaphthylene	2	4	ug/Kg	4.99	17.2	110	*	35
Anthracene	2	4	ug/Kg	42.4	80.3	62	*	35
Benzo(a)anthracene	2	4	ug/Kg	140	296	72	*	35

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Benzo(a)pyrene	2	4	ug/Kg	66.7	139	70	*	35
Benzo(b)fluoranthene	2	4	ug/Kg	105	327	103	*	35
Benzo(g,h,i)perylene	2	4	ug/Kg	19.4	46.3	82	*	35
Benzo(k)fluoranthene	2	4	ug/Kg	93.9	202	73	*	35
Benzoic Acid	10	20	ug/Kg	110	254	79	*	35
Benzyl Alcohol	2	4	ug/Kg	<MDL	<MDL			35
Benzyl Butyl Phthalate	1	2	ug/Kg	19.3	28.9	40	*	35
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	207	281	30		35
Caffeine	4	8	ug/Kg	<MDL	<MDL			35
Carbazole	2	4	ug/Kg	10.4	84.6	156	*	35
Chrysene	2	4	ug/Kg	142	392	94	*	35
Coprostanol	40	80	ug/Kg	<MDL	<MDL			35
Di-N-Butyl Phthalate	4	8	ug/Kg	7.2	11	42	*	35
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Dibenzo(a,h)anthracene	2	4	ug/Kg	9.9	23.9	83	*	35
Dibenzofuran	2	4	ug/Kg	28.6	45.8	46	*	35
Diethyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Dimethyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Fluoranthene	2	4	ug/Kg	441	990	77	*	35
Fluorene	2	4	ug/Kg	32.2	64.2	66	*	35
Hexachlorobenzene	0.1	0.2	ug/Kg	<MDL	<MDL			35
Hexachlorobutadiene	0.5	1	ug/Kg	<MDL	<MDL			35
Hexachloroethane	1	2	ug/Kg	<MDL	<MDL			35
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	19.7	49.2	86	*	35
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	<MDL			35
Naphthalene	2	4	ug/Kg	7.29	8.52	16		35
Pentachlorophenol	10	20	ug/Kg	<MDL	<MDL			35
Phenanthrene	2	4	ug/Kg	215	588	93	*	35
Phenol	4	8	ug/Kg	11.5	22.4	65	*	35
Pyrene	2	4	ug/Kg	383	916	82	*	35
Total 4-Nonylphenol	5	10	ug/Kg	67.9	71.6	5		35
Total HPAHS	2	4	ug/Kg	1420	3380	82	*	35
Total LPAHs	2	4	ug/Kg	365	854	80	*	35

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Surrogate: (Lab Limits)	2,4,6-Tribromo phenol 29--112	2-Fluorobiphenyl 31--101	2-Fluorophenol 10--112	d14-Terphenyl 51--130	d4-1,2-Dichlorobenzene 24--91	d4-2-Chlorophenol 11--105	d5-Nitrobenzene 28--94	5-Phenol 10--106
L47888-1	104	67	51	106	43	49	63	60
L47888-2	100	62	43	109	47	49	65	74
L47888-3	90	66	53	122	49	54	52	46
L47888-4	86	67	58	125	49	54	51	47
L47888-5	98	55	48	108	43	45	46	39
L47888-6	103	57	47	116	47	53	38	48
L47888-7	97	56	42	113	41	47	44	46
L47888-8	90	55	42	111	45	52	39	47
L47888-9	92	65	39	115	48	43	40	39
L47893-1	104	57	39	111	45	43	38	28
L47893-2	98	61	35	115	49	51	33	41
L47893-3	112	69	49	110	48	51	58	41
L47893-4	100	59	70	97	48	51	59	45
L47893-5	83	52	67	102	43	45	50	33
L47893-6	80	57	64	97	39	42	53	34
L47893-7	111	75	66	98	41	44	53	34
L47893-8	81	59	63	91	31	44	48	36
WG101942-1	59	56	55	97	49	46	53	46
WG101942-2	80	51	58	102	72	32	47	12
WG101942-3	88	62	48	99	58	47	48	46
WG101942-4	80	56	56	87	63	46	47	45
WG101942-5	106	82	86	109	71	87	86	99
WG101942-6	100	71	54	111	39	55	63	59

King County Environmental Lab Batch Report

WG102845 Semi Volatile Organics

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L48332-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORBNASMS	SALTWTRSED	4/27/2009 12:10	6/11/2009 10:00	6/15/2009 14:39		
WG102845-1	MB		ORBNASMS	OTHR SOLID		6/11/2009 10:00	6/15/2009 9:15		MB090611
WG102845-2	SB		ORBNASMS	OTHR SOLID		6/11/2009 10:00	6/15/2009 10:01	WG102845-1, -2, -3, -4	WG102845-1
WG102845-3	LD		ORBNASMS	SALTWTRSED		6/11/2009 10:00	6/15/2009 13:06		L48332-1
WG102845-4	LT		ORBNASMS	SALTWTRSED		6/11/2009 10:00	6/15/2009 13:53		WG102845-3 L48332-1

King County Environmental Lab Analytical QC Report

Workgroup: WG102845 Semi Volatile Organics

MB:WG102845-1 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
1,2,4-Trichlorobenzene	0.13	0.267	ug/Kg	<MDL	
1,2-Dichlorobenzene	0.27	0.533	ug/Kg	<MDL	
1,3-Dichlorobenzene	0.27	0.533	ug/Kg	<MDL	
1,4-Dichlorobenzene	0.27	0.533	ug/Kg	<MDL	
2,4-Dimethylphenol	1.3	2.67	ug/Kg	<MDL	
2-Methylnaphthalene	2.7	5.33	ug/Kg	<MDL	
2-Methylphenol	2.7	5.33	ug/Kg	<MDL	
4-Methylphenol	5.3	10.7	ug/Kg	<MDL	
Acenaphthene	2.7	5.33	ug/Kg	<MDL	
Acenaphthylene	2.7	5.33	ug/Kg	<MDL	
Anthracene	2.7	5.33	ug/Kg	<MDL	
Benzo(a)anthracene	2.7	5.33	ug/Kg	<MDL	
Benzo(a)pyrene	2.7	5.33	ug/Kg	<MDL	
Benzo(b)fluoranthene	2.7	5.33	ug/Kg	<MDL	
Benzo(g,h,i)perylene	2.7	5.33	ug/Kg	<MDL	
Benzo(k)fluoranthene	2.7	5.33	ug/Kg	<MDL	
Benzoic Acid	13	26.7	ug/Kg	<MDL	
Benzyl Alcohol	2.7	5.33	ug/Kg	<MDL	
Benzyl Butyl Phthalate	1.3	2.67	ug/Kg	<MDL	
Bis(2-Ethylhexyl)Phthalate	5.3	10.7	ug/Kg	15	B
Caffeine	5.3	10.7	ug/Kg	<MDL	
Carbazole	2.7	5.33	ug/Kg	<MDL	
Chrysene	2.7	5.33	ug/Kg	<MDL	
Coprostanol	53	107	ug/Kg	<MDL	
Di-N-Butyl Phthalate	5.3	10.7	ug/Kg	5.8	B
Di-N-Octyl Phthalate	5.3	10.7	ug/Kg	<MDL	
Dibenzo(a,h)anthracene	2.7	5.33	ug/Kg	<MDL	
Dibenzofuran	2.7	5.33	ug/Kg	<MDL	
Diethyl Phthalate	5.3	10.7	ug/Kg	<MDL	
Dimethyl Phthalate	5.3	10.7	ug/Kg	<MDL	
Fluoranthene	2.7	5.33	ug/Kg	<MDL	
Fluorene	2.7	5.33	ug/Kg	<MDL	
Hexachlorobenzene	0.13	0.267	ug/Kg	<MDL	
Hexachlorobutadiene	0.67	1.33	ug/Kg	<MDL	
Hexachloroethane	1.3	2.67	ug/Kg	<MDL	
Indeno(1,2,3-Cd)Pyrene	2.7	5.33	ug/Kg	<MDL	

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N-Nitrosodiphenylamine	5.3	10.7	ug/Kg	<MDL
Naphthalene	2.7	5.33	ug/Kg	<MDL
Pentachlorophenol	13	26.7	ug/Kg	<MDL
Phenanthrene	2.7	5.33	ug/Kg	<MDL
Phenol	5.3	10.7	ug/Kg	<MDL
Pyrene	2.7	5.33	ug/Kg	<MDL
Total 4-Nonylphenol	6.7	13.3	ug/Kg	<MDL
Total HPAHS	2.7	5.33	ug/Kg	<MDL
Total LPAHs	2.7	5.33	ug/Kg	<MDL

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SB:WG102845-2 MB:WG102845-1 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
1,2,4-Trichlorobenzene	0.13	0.267	ug/Kg	<MDL	333	177	53		13--110
1,2-Dichlorobenzene	0.27	0.533	ug/Kg	<MDL	333	165	49		10--116
1,3-Dichlorobenzene	0.27	0.533	ug/Kg	<MDL	333	169	51		18--95
1,4-Dichlorobenzene	0.27	0.533	ug/Kg	<MDL	333	170	51		21--99
2,4-Dimethylphenol	1.3	2.67	ug/Kg	<MDL	333	34.5	10		10--81
Acenaphthene	2.7	5.33	ug/Kg	<MDL	333	242	73		29--102
Acenaphthylene	2.7	5.33	ug/Kg	<MDL	333	262	79		31--101
Anthracene	2.7	5.33	ug/Kg	<MDL	333	339	102		45--114
Benzo(a)anthracene	2.7	5.33	ug/Kg	<MDL	333	374	112		69--117
Benzo(a)pyrene	2.7	5.33	ug/Kg	<MDL	333	316	95		15--137
Benzo(b)fluoranthene	2.7	5.33	ug/Kg	<MDL	333	323	97		50--121
Benzo(g,h,i)perylene	2.7	5.33	ug/Kg	<MDL	333	288	86		46--126
Benzo(k)fluoranthene	2.7	5.33	ug/Kg	<MDL	333	299	90		58--128
Benzyl Butyl Phthalate	1.3	2.67	ug/Kg	<MDL	333	312	94		15--183
Bis(2-Ethylhexyl)Phthalate	5.3	10.7	ug/Kg	15	333	276	78		10--182
Carbazole	2.7	5.33	ug/Kg	<MDL	333	358	107		44--179
Chrysene	2.7	5.33	ug/Kg	<MDL	333	289	87		69--111
Di-N-Butyl Phthalate	5.3	10.7	ug/Kg	5.8	333	344	102		17--180
Di-N-Octyl Phthalate	5.3	10.7	ug/Kg	<MDL	333	331	99		10--200
Dibenzo(a,h)anthracene	2.7	5.33	ug/Kg	<MDL	333	355	107		53--129
Diethyl Phthalate	5.3	10.7	ug/Kg	<MDL	333	314	94		51--118
Dimethyl Phthalate	5.3	10.7	ug/Kg	<MDL	333	268	80		38--114
Fluoranthene	2.7	5.33	ug/Kg	<MDL	333	347	104		55--132
Fluorene	2.7	5.33	ug/Kg	<MDL	333	274	82		39--106
Hexachlorobenzene	0.13	0.267	ug/Kg	<MDL	333	189	57		40--111
Hexachlorobutadiene	0.67	1.33	ug/Kg	<MDL	333	171	51		10--97
Hexachloroethane	1.3	2.67	ug/Kg	<MDL	333	172	51		17--92
Indeno(1,2,3-Cd)Pyrene	2.7	5.33	ug/Kg	<MDL	333	326	98		51--132
N-Nitrosodiphenylamine	5.3	10.7	ug/Kg	<MDL	333	205	61		11--148
Naphthalene	2.7	5.33	ug/Kg	<MDL	333	183	55		17--94
Pentachlorophenol	13	26.7	ug/Kg	<MDL	333	224	67		38--124
Phenanthrene	2.7	5.33	ug/Kg	<MDL	333	298	89		57--104
Phenol	5.3	10.7	ug/Kg	<MDL	333	162	49		10--107
Pyrene	2.7	5.33	ug/Kg	<MDL	333	378	113		48--132
Total HPAHS	2.7	5.33	ug/Kg	<MDL	3330	3300	99		25--150
Total LPAHs	2.7	5.33	ug/Kg	<MDL	2330	1600	69		25--150

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LT:WG102845-4 LD:WG102845-3 L48332-1 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
1,2,4-Trichlorobenzene	0.13	0.267	ug/Kg	<MDL	<MDL	<MDL			35
1,2-Dichlorobenzene	0.27	0.533	ug/Kg	<MDL	<MDL	<MDL			35
1,3-Dichlorobenzene	0.27	0.533	ug/Kg	<MDL	<MDL	<MDL			35
1,4-Dichlorobenzene	0.27	0.533	ug/Kg	<MDL	<MDL	<MDL			35
2,4-Dimethylphenol	1.3	2.67	ug/Kg	<MDL	<MDL	<MDL			35
2-Methylnaphthalene	2.7	5.33	ug/Kg	11.2	11.4	23.5	46	*	35
2-Methylphenol	2.7	5.33	ug/Kg	<MDL	<MDL	<MDL			35
4-Methylphenol	5.3	10.7	ug/Kg	<MDL	<MDL	<MDL			35
Acenaphthene	2.7	5.33	ug/Kg	46.2	48	61.3	16		35
Acenaphthylene	2.7	5.33	ug/Kg	4.5	5.59	9.37	39	*	35
Anthracene	2.7	5.33	ug/Kg	44.1	38.4	94.3	52	*	35
Benzo(a)anthracene	2.7	5.33	ug/Kg	153	217	472	60	*	35
Benzo(a)pyrene	2.7	5.33	ug/Kg	83.2	111	192	44	*	35
Benzo(b)fluoranthene	2.7	5.33	ug/Kg	116	159	267	43	*	35
Benzo(g,h,i)perylene	2.7	5.33	ug/Kg	32.1	44.5	67.5	37	*	35
Benzo(k)fluoranthene	2.7	5.33	ug/Kg	96.1	121	226	47	*	35
Benzoic Acid	13	26.7	ug/Kg	139	136	199	22		35
Benzyl Alcohol	2.7	5.33	ug/Kg	<MDL	<MDL	<MDL			35
Benzyl Butyl Phthalate	1.3	2.67	ug/Kg	19.2	20.3	21.9	7		35
Bis(2-Ethylhexyl)Phthalate	5.3	10.7	ug/Kg	193	241	246	13		35
Caffeine	5.3	10.7	ug/Kg	<MDL	<MDL	<MDL			35
Carbazole	2.7	5.33	ug/Kg	14.4	11	20.2	31		35
Chrysene	2.7	5.33	ug/Kg	150	177	386	54	*	35
Coprostanol	53	107	ug/Kg	<MDL	<MDL	<MDL			35
Di-N-Butyl Phthalate	5.3	10.7	ug/Kg	11.2	13	8.4	21		35
Di-N-Octyl Phthalate	5.3	10.7	ug/Kg	<MDL	<MDL	<MDL			35
Dibenzo(a,h)anthracene	2.7	5.33	ug/Kg	14.2	19.2	36.6	50	*	35
Dibenzofuran	2.7	5.33	ug/Kg	28.1	29.5	38.6	18		35
Diethyl Phthalate	5.3	10.7	ug/Kg	<MDL	<MDL	<MDL			35
Dimethyl Phthalate	5.3	10.7	ug/Kg	<MDL	<MDL	<MDL			35
Fluoranthene	2.7	5.33	ug/Kg	454	684	1240	51	*	35
Fluorene	2.7	5.33	ug/Kg	37.3	35.3	58.9	30		35
Hexachlorobenzene	0.13	0.267	ug/Kg	<MDL	<MDL	<MDL			35
Hexachlorobutadiene	0.67	1.33	ug/Kg	<MDL	<MDL	<MDL			35
Hexachloroethane	1.3	2.67	ug/Kg	<MDL	<MDL	<MDL			35
Indeno(1,2,3-Cd)Pyrene	2.7	5.33	ug/Kg	32.2	43	68.9	39	*	35
N-Nitrosodiphenylamine	5.3	10.7	ug/Kg	<MDL	<MDL	<MDL			35
Naphthalene	2.7	5.33	ug/Kg	4.8	4.7	22.9	97	*	35

King County Environmental Lab Analytical QC Report

Pentachlorophenol	13	26.7	ug/Kg	<MDL	<MDL	<MDL			35
Phenanthrene	2.7	5.33	ug/Kg	233	218	343	26		35
Phenol	5.3	10.7	ug/Kg	13.8	16.5	11.4	18		35
Pyrene	2.7	5.33	ug/Kg	372	491	1010	54	*	35
Total 4-Nonylphenol	6.7	13.3	ug/Kg	55.3	77	178	63	*	35
Total HPAHS	2.7	5.33	ug/Kg	1500	2070	3970	51	*	35
Total LPAHs	2.7	5.33	ug/Kg	381	361	613	31		35

Surrogate: (Lab Limits)	2,4,6-Tribromo phenol 29--112	2-Fluorobiphenyl 31--101	2-Fluorophenol 10--112	d14-Terphenyl 51--130	d4-1,2-Dichlorobenzene 24--91	d4-2-Chlorophenol 11--105	d5-Nitrobenzene 28--94	d5-Phenol 10--106
L48332-1	124 *	60	49	110	48	57	63	65
WG102845-1	105	48	56	103	56	56	80	58
WG102845-2	93	49	50	114	68	54	60	60
WG102845-3	99	59	44	94	39	50	52	65
WG102845-4	115 *	60	53	102	47	55	69	57

Trace Organics Data Anomaly Form

Date(s) Occurred: *09/05/20*

WG #(s): *WG101942*

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

Project #(s): *423062-100-4 Duwamish Cap Monitoring*

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. WG101942-1 MB - the extraction blank had a quantitatable levels of Benzyl Butyl Phthalate at 4.06 ug/Kg and Bis(2EH)phthalate at 35.1 ug/Kg.

11. WG101942-5 LD of L47888-2 had 24 of 28 reported analytes exceeded lab QA/QC limits for %RSD.

17C. WG101942-2 SB, WG101942-3 MS, and WG101942-4 MSD have no recoveries for Benzyl Alcohol, 2-Methylphenol, 4-Methylphenol, Benzoic Acid, 2-Methylnaphthalene, Dibenzofuran, Coprostanol, and Caffeine. Spiking solutions independently are purchased from suppliers and are purposely not part of the solution used to generate the calibration curve. The compounds were not in the spiking solution as purchased from the manufacturer, which was an oversight, and has been corrected.

☒ Potential effect explanation (explanation mandatory):

11. The analyses of the sample (L47888-2) and the lab duplicate (WG101942-6) demonstrated the potential homogeneity problems for the PAH analytes in higher concentrations . One possible explanation for the ranges in concentrations found would be the source of the PAH contamination. PAHs are abundant in petroleum products in varying concentrations. The "oils" usually coat or encapsulate the sediment particles in a random fashion. The PAHs are also abundant in asphalts or creosotes which can be "flecks" or "specks" in the samples. The "oils" and/or "specks" create homogeneity issues when taking an aliquot of the sample for analysis. The PAHs for samples L47888-2 and WG109142-6- LD were flagged J as estimates. The range of the PAHs vary approximately 2-3 times in concentration for the 2 aliquots and should be noted in data usage.

	Signatures	**Signature Dates**
Reported By: *M. Doubrava*		
Reviewer:	_____	_____
Supervisor: *Dana Walker*	_____	_____
QA Officer: *Colin Elliott*	_____	_____
(For QA1 only)	_____	_____
cc: LPM:		

Trace Organics Data Anomaly Form

Date(s) Occurred: *09/06/15*

WG #(s): *WG102845*

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

Project #(s): *423062-100-4 Duwamish Cap Monitoring*

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. WG102845-1 MB - the extraction blank had a quantitatable levels of Di-N-Butyl Phthalate at 5.8 ug/Kg and Bis(2EH)phthalate at 15 ug/Kg.

11. WG102845-3 LD and WG102845-4 LT of L48332-1 had 16 of 27 reported analytes exceeded lab QA/QC limits for %RSD.

17. L48332-1 was a re-extract of DU/DI sediment sample L47888-2. The extracting was repeated to confirm sample homogeneity issues for some of the target analytes. The original extraction L47888-2 and WG101942-6 LD had many of the target analytes exceed QA/QC lab limits for %RSD.

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: *B, J*
☐ Other

Corrective Action Description:

VI. Potential Effects on Data Quality:

☒ None; corrective action entirely corrected anomaly (explanation optional):

1. All values were reported above the RDL and samples were flagged "B" as per QA/QC protocol. These nominal levels are at "normal" lab background contamination for this project . The source of the contamination is most likely from the extraction lab, as the instrument blanks indicated no phthalates were detected.

☒ Potential effect explanation (explanation mandatory):

11. The analyses of the sample (L48332-1), the lab duplicate (WG102845-3) and the lab triplicate (WG102845-4) demonstrated the potential homogeneity problems for the PAH analytes in higher concentrations . One possible explanation for the ranges in concentrations found would be the source of the PAH contamination. PAHs are abundant in petroleum products in varying concentrations. The "oils" usually coat or encapsulate the sediment particles in a random fashion. The PAHs are also abundant in asphalts or creosotes which can be "flecks" or "specks" in the samples. The "oils" and/or "specks" create homogeneity issues when taking an aliquot of the sample for analysis. The PAHs for samples L48332-1, LD and LT were flagged J as estimates. The range of the PAHs vary approximately 2-3 times in concentration for the 3 aliquots and should be noted in data usage.

	Signatures	Signature Dates
Reported By: *M. Doubrava*		
Reviewer:		
Supervisor: *Dana Walker*		
QA Officer: *Colin Elliott* (For QA1 only)		
cc: LPM:		

King County Environmental Lab Batch Report

WG102008 Chlorinated Pesticides

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/27/2009 10:36	5/5/2009 8:00	6/8/2009 16:15	WG102008-1, -2, -3, -4, -5, -6	
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/27/2009 12:10	5/5/2009 8:00	5/29/2009 18:44		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 12:45	5/5/2009 8:00	5/29/2009 19:21		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 14:00	5/5/2009 8:00	5/29/2009 21:50		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/29/2009 8:25	5/5/2009 8:00	5/29/2009 22:27		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/29/2009 8:55	5/5/2009 8:00	5/29/2009 23:04		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/29/2009 9:37	5/5/2009 8:00	5/29/2009 23:41		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/29/2009 10:00	5/5/2009 8:00	5/30/2009 0:19		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/29/2009 10:40	5/5/2009 8:00	5/30/2009 0:56		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 10:44	5/5/2009 8:00	5/30/2009 1:33		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 10:55	5/5/2009 8:00	5/30/2009 2:10		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 11:00	5/5/2009 8:00	5/30/2009 2:47		FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 11:53	5/5/2009 8:00	5/30/2009 5:16		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 12:02	5/5/2009 8:00	5/30/2009 5:53		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 12:12	5/5/2009 8:00	5/30/2009 6:31		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 12:22	5/5/2009 8:00	5/30/2009 7:08		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPESTLL	SALTWTRSED	4/28/2009 12:36	5/5/2009 8:00	5/30/2009 7:45		
WG102008-1	MB		ORPESTLL	OTHR SOLID		5/5/2009 8:00	5/29/2009 14:23		MB090505
WG102008-2	SB		ORPESTLL	OTHR SOLID		5/5/2009 8:00	5/29/2009 15:00		WG102008-1
WG102008-3	MS		ORPESTLL	SALTWTRSED		5/5/2009 8:00	6/8/2009 15:01		L47888-1
WG102008-4	MSD		ORPESTLL	SALTWTRSED		5/5/2009 8:00	6/8/2009 15:38		WG102008-3 L47888-1
WG102008-5	SRM		ORPESTLL	OTHR SOLID		5/5/2009 8:00	5/29/2009 16:52		1944
WG102008-6	LD		ORPESTLL	SALTWTRSED		5/5/2009 8:00	5/29/2009 17:29		L47888-2

King County Environmental Lab Analytical QC Report

Workgroup: WG102008 Chlorinated Pesticides

MB:WG102008-1 Matrix: OTHR SOLID Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: NONE
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	
Aldrin	0.67	1.33	ug/Kg	<MDL	
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	
Alpha-Chlordane	0.33	0.667	ug/Kg	<MDL	
Beta-BHC	0.33	0.667	ug/Kg	<MDL	
Delta-BHC	0.33	0.667	ug/Kg	<MDL	
Dieldrin	0.67	1.33	ug/Kg	<MDL	
Endosulfan I	0.67	1.33	ug/Kg	<MDL	
Endosulfan II	0.67	1.33	ug/Kg	<MDL	
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	
Endrin	0.67	1.33	ug/Kg	<MDL	
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	
Gamma-Chlordane	0.33	0.667	ug/Kg	<MDL	
Heptachlor	0.33	0.667	ug/Kg	<MDL	
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	
Methoxychlor	3.3	6.67	ug/Kg	<MDL	
Toxaphene	6.7	13.3	ug/Kg	<MDL	

King County Environmental Lab Analytical QC Report

SB:WG102008-2 MB:WG102008-1 Matrix: OTHR SOLID Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	6.67	5.34	80		78--121
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	6.67	5.59	84		75--111
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	6.67	5.63	84		57--145
Aldrin	0.67	1.33	ug/Kg	<MDL	6.67	4.13	62		28--113
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.4	66		20--99
Beta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.04	76		66--102
Delta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	4.55	68		63--108
Dieldrin	0.67	1.33	ug/Kg	<MDL	6.67	5.48	82		58--139
Endosulfan I	0.67	1.33	ug/Kg	<MDL	6.67	5.05	76		62--104
Endosulfan II	0.67	1.33	ug/Kg	<MDL	6.67	5.12	77		72--109
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	6.67	4.29	64		61--104
Endrin	0.67	1.33	ug/Kg	<MDL	6.67	5.28	79		60--160
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	6.67	0.83	12		10--77
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	6.67	4.49	67		27--130
Heptachlor	0.33	0.667	ug/Kg	<MDL	6.67	4.54	68		20--137
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	6.67	4.99	75		59--107
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	7.15	107		72--131

King County Environmental Lab Analytical QC Report

MSD:WG102008-4 MS:WG102008-3 L47888-1 Matrix: SALTWTRSED Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: 423062-200-4
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	6.67	6.66	100		41--157	6.67	5.64	85		16		50
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	6.67	6.69	100		59--125	6.67	5.71	86		15		50
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	6.67	6.74	101		50--144	6.67	5.72	86		16		50
Aldrin	0.67	1.33	ug/Kg	<MDL	6.67	5.12	77		61--119	6.67	4.4	66		15		50
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.17	78		59--111	6.67	4.5	68		14		50
Beta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.08	76		60--119	6.67	4.53	68		11		50
Delta-BHC	0.33	0.667	ug/Kg	<MDL	6.67	5.28	79		54--126	6.67	4.65	70		12		50
Dieldrin	0.67	1.33	ug/Kg	<MDL	6.67	6.16	92		60--139	6.67	5.31	80		14		50
Endosulfan I	0.67	1.33	ug/Kg	<MDL	6.67	5.82	87		64--113	6.67	4.99	75		15		50
Endosulfan II	0.67	1.33	ug/Kg	<MDL	6.67	6.24	94		36--146	6.67	5.31	80		16		50
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	6.67	5.03	76		46--113	6.67	4.32	65		16		50
Endrin	0.67	1.33	ug/Kg	<MDL	6.67	6.82	102		62--166	6.67	6.02	90		13		50
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	6.67	2.32	35		10--66	6.67	1.98	30		15		50
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	6.67	5.06	76		61--135	6.67	4.48	67		13		50
Heptachlor	0.33	0.667	ug/Kg	<MDL	6.67	5.96	89		52--157	6.67	5.37	80		11		50
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	6.67	5.58	84		61--118	6.67	4.96	74		13		50
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	7.62	114		53--129	6.67	6.7	100		13		50

SRM:WG102008-5 Matrix: OTHR SOLID Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
4,4'-DDT	5.3	10.7	ug/Kg	119	152	128		10--200
Alpha-Chlordane	2.7	5.33	ug/Kg	16.5	13.7	83		48--144

King County Environmental Lab Analytical QC Report

LD:WG102008-6 L47888-2 Matrix: SALTWTRSED Listtype: ORPESTLL Method: SW846 3550B*SW846 8081B Project: 423062-200-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
4,4'-DDD	0.67	1.33	ug/Kg	<MDL	<MDL			35
4,4'-DDE	0.67	1.33	ug/Kg	<MDL	<MDL			35
4,4'-DDT	0.67	1.33	ug/Kg	<MDL	<MDL			35
Aldrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Alpha-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Alpha-Chlordane	0.33	0.667	ug/Kg	<MDL	<MDL			35
Beta-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Delta-BHC	0.33	0.667	ug/Kg	<MDL	<MDL			35
Dieldrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan I	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan II	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan Sulfate	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin	0.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin Aldehyde	0.67	1.33	ug/Kg	<MDL	<MDL			35
Gamma-BHC (Lindane)	0.33	0.667	ug/Kg	<MDL	<MDL			35
Gamma-Chlordane	0.33	0.667	ug/Kg	<MDL	<MDL			35
Heptachlor	0.33	0.667	ug/Kg	<MDL	<MDL			35
Heptachlor Epoxide	0.33	0.667	ug/Kg	<MDL	<MDL			35
Methoxychlor	3.3	6.67	ug/Kg	<MDL	<MDL			35
Toxaphene	6.7	13.3	ug/Kg	<MDL	<MDL			35

King County Environmental Lab Analytical QC Report

Surrogate: (Lab Limits)	2,4,5,6-Tetra chloro m xylene 10--118	Decachl oro biphenyl 12--158
L47888-1	63	74
L47888-2	57	58
L47888-3	59	74
L47888-4	56	66
L47888-5	53	55
L47888-6	56	59
L47888-7	53	53
L47888-8	55	56
L47888-9	53	54
L47893-1	57	57
L47893-2	52	52
L47893-3	59	56
L47893-4	53	64
L47893-5	56	59
L47893-6	58	60
L47893-7	54	55
L47893-8	56	56
WG102008-1	47	79
WG102008-2	53	81
WG102008-3	71	108
WG102008-4	62	143
WG102008-5	60	88
WG102008-6	53	57

King County Environmental Lab Batch Report

WG102009 PCB

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47888-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/27/2009 10:36	5/5/2009 8:00	6/8/2009 21:48	WG102009-1, -2, -3, -4, -5, -6	
L47888-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/27/2009 12:10	5/5/2009 8:00	6/8/2009 22:30		
L47888-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 12:45	5/5/2009 8:00	6/8/2009 23:11		
L47888-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 14:00	5/5/2009 8:00	6/9/2009 1:52		FREP @ L47888-3
L47888-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/29/2009 8:25	5/5/2009 8:00	6/9/2009 3:50		
L47888-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/29/2009 8:55	5/5/2009 8:00	6/9/2009 4:31		
L47888-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/29/2009 9:37	5/5/2009 8:00	6/9/2009 5:12		
L47888-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/29/2009 10:00	5/5/2009 8:00	6/9/2009 5:54		
L47888-9	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/29/2009 10:40	5/5/2009 8:00	6/9/2009 6:35		
L47893-1	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 10:44	5/5/2009 8:00	6/9/2009 7:17		
L47893-2	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 10:55	5/5/2009 8:00	6/9/2009 9:59		
L47893-3	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 11:00	5/5/2009 8:00	6/9/2009 10:40		FREP @ L47893-2
L47893-4	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 11:53	5/5/2009 8:00	6/9/2009 11:21		
L47893-5	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 12:02	5/5/2009 8:00	6/9/2009 12:01		
L47893-6	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 12:12	5/5/2009 8:00	6/9/2009 12:42		
L47893-7	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 12:22	5/5/2009 8:00	6/9/2009 13:24		
L47893-8	423062-200-4	Duwamish Diagonal Thin Layer Cap MON.	ORPCBLL	SALTWTRSED	4/28/2009 12:36	5/5/2009 8:00	6/9/2009 14:05		
WG102009-1	MB		ORPCBLL	OTHR SOLID		5/5/2009 8:00	6/8/2009 17:43		MB090505
WG102009-2	SB		ORPCBLL	OTHR SOLID		5/5/2009 8:00	6/8/2009 18:25		WG102009-1
WG102009-3	MS		ORPCBLL	SALTWTRSED		5/5/2009 8:00	6/8/2009 19:06		L47893-1
WG102009-4	MSD		ORPCBLL	SALTWTRSED		5/5/2009 8:00	6/8/2009 19:47		WG102009-3 L47893-1
WG102009-5	SRM		ORPCBLL	OTHR SOLID		5/5/2009 8:00	6/8/2009 20:27		HS-2
WG102009-6	LD		ORPCBLL	SALTWTRSED		5/5/2009 8:00	6/8/2009 21:06		L47888-2

King County Environmental Lab Analytical QC Report

Workgroup: WG102009 PCB

MB:WG102009-1 Matrix: OTHR SOLID Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: NONE
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	
Aroclor 1221	1.7	3.33	ug/Kg	<MDL	
Aroclor 1232	1.7	3.33	ug/Kg	<MDL	
Aroclor 1242	0.83	1.67	ug/Kg	<MDL	
Aroclor 1248	0.83	1.67	ug/Kg	<MDL	
Aroclor 1254	0.83	1.67	ug/Kg	<MDL	
Aroclor 1260	0.83	1.67	ug/Kg	<MDL	
Total Aroclors	0.83	1.67	ug/Kg	<MDL	

SB:WG102009-2 MB:WG102009-1 Matrix: OTHR SOLID Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	25	19.3	77		39--121
Aroclor 1260	0.83	1.67	ug/Kg	<MDL	25	22.8	91		53--140

MSD:WG102009-4 MS:WG102009-3 L47893-1 Matrix: SALTWTRSED Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: 423062-200-4
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Aroclor 1016	0.83	1.67	ug/Kg	<MDL	25	19.9	79		32--164	25	20.3	81		3		50
Aroclor 1260	0.83	1.67	ug/Kg	16.2	25	34.3	73		28--144	25	31	59		21		50

SRM:WG102009-5 Matrix: OTHR SOLID Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: NONE
(Std Reference Material)

Parameter	MDL	RDL	Units	True Value	SRM Value	% Rec.	Qual	Lab Limit
Aroclor 1254	2.7	5.33	ug/Kg	112	74.7	67		57--139

King County Environmental Lab Analytical QC Report

LD:WG102009-6 L47888-2 Matrix: SALTWTRSED Listtype: ORPCBLL Method: SW846 3550B*SW846 8082A Project: 423062-200-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Aroclor 1016	5.3	10.5	ug/Kg	<MDL	<MDL			100
Aroclor 1221	1.7	3.33	ug/Kg	<MDL	<MDL			100
Aroclor 1232	1.7	3.33	ug/Kg	<MDL	<MDL			100
Aroclor 1242	0.83	1.67	ug/Kg	<MDL	<MDL			100
Aroclor 1248	0.83	1.67	ug/Kg	14.6	12.2	18		100
Aroclor 1254	0.83	1.67	ug/Kg	15.8	16.6	5		100
Aroclor 1260	0.83	1.67	ug/Kg	9.53	9.02	6		100
Total Aroclors	0.83	1.67	ug/Kg	39.9	37.9	5		100

King County Environmental Lab Analytical QC Report

Surrogate: (Lab Limits)	2,4,5,6-Tetra chloro m xylene 10--118	Decachl oro biphenyl 12--158
L47888-1	96	82
L47888-2	100	80
L47888-3	102	129
L47888-4	104	140
L47888-5	100	89
L47888-6	107	93
L47888-7	107	83
L47888-8	104	77
L47888-9	98	85
L47893-1	114	100
L47893-2	108	104
L47893-3	117	106
L47893-4	101	95
L47893-5	97	102
L47893-6	114	108
L47893-7	112	93
L47893-8	101	102
WG102009-1	67	99
WG102009-2	71	98
WG102009-3	100	85
WG102009-4	88	78
WG102009-5	82	73
WG102009-6	75	66

CHAIN OF CUSTODY FORMS

Login Number: P47888

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

Project Number: 423062-200-4

Personnel: Jeff Droker, Judy Ochs, Jenée Cotton

Sample No. (Type)	P47888-1	P47888-2	P47888-3
Locator	DUD_1C	DUD_2C	DUD_8C
Short Loc. Desc.	DUD_1C	DUD_2C	DUD_8C
Locator Desc.	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	4/27/09 1036	4/27/09 1210	4/28/09 1245
~~End Date/Time~~	1150	1250	" JC ~~1249~~ 1400
~~Time Span~~			
Sample Depth	5	4	8
Comments	10 Grab Comp, 0-10 cm	10 Grab Comp, 0-10 cm	10 Grab Comp, 0-10 cm, AREP
PERSONNEL	JD JO JC →	→	JB, JD, JC
SAMP METH	20143 →	→	→
SED DEPTH cm	#1-16 3-17 5-17 7-17 9-17 #2-17 4-17 6-17 8-17 10-17	#1-16 3-17 5-17 7-17 9-17 #2-17 4-16 6-17 8-17 10-17	#1-9 cm #3-11 #5-15 #7-9 #9-11 #2-11 #4-12 #6-12 #8-12 10-16
SED SAMP RANGE	0-10 cm →	→	→
SED TYPE	20N20	20N20	21W13
TIDE COND	E	E	E
TIDE HT	1	-2	-1.5
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-M	6 |SALTWTRSED|HG-CVAA-M	6 |SALTWTRSED|HG-CVAA-M
	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

Coords. E. Data

WG102329 2 cm brown silt A&M JB 5-19 Black underneath 1 core sample per grab light surface organic debris

WG102371 4 cm brown A&M JB 5/21 silt Black under 1 core/grab

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
JD Droker	4/27/09	1655
RECEIVED BY	Date	Time
[signature]	4-27-09	1655

Sample Number(s) 47888 1-2 (All)

continue ...

DUDI SEDS, STAS. C, PERIMETER

Project Number: 423062-200-4 Personnel: John Blaine, Jim Devereaux, Jane Colton

Sample No. (Type)	P47888-4 (FREP for -3)	P47888-5	P47888-6
Locator	DUD_8C	DUD_9C	DUD_10C
Short Loc. Desc.	DUD_8C	DUD_9C	DUD_10C
Locator Desc.	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	4/28/09 1400	4/29/09 0825	4/29/09 0855
End Date/Time			
Time Span			
Sample Depth	8	12	14
Comments	10 Grab Comp, 0-10 cm, FREP	10 Grab Comp, 0-10 cm	10 Grab Comp, 0-10 cm
PERSONNEL	JB, JD, JC	JDD, SH, BK	→
SAMP FUNC	FREP for L47888-3	**********	**********
SAMP METH	20143 →		
SED DEPTH	#1-10 #3-10 #5-14 #7-14 #9-9 (Cm 2-14 4-11 6-12 8-10 10-13)	#1-10 #3-11 #5-9 #7-10 #9-8 (2-9 4-10 6-10 8-8 10-9)	#1-8 #3-7 #5-10 #7-12 #9-9 (2-7 4-7 6-9 8-10 10-)
SED SAMP RANGE	0-10 Cm	0-10 cm	0-10 cm
SED TYPE	13W14	13N21	(SH) ~~13N16~~ 13N36
TIDE COND	S	E	E
TIDE HT	-2.9	9	8
Dept., Matrix, Prod	3 | SALTWTRSED | PSD 3 | SALTWTRSED | TOC 3 | SALTWTRSED | TOTS 6 | SALTWTRSED | AL-ICP 6 | SALTWTRSED | FE-ICP 6 | SALTWTRSED | HG-CVAA-M 6 | SALTWTRSED | MN-ICP 6 | SALTWTRSED | PP ICP	3 | SALTWTRSED | PSD 3 | SALTWTRSED | TOC 3 | SALTWTRSED | TOTS 6 | SALTWTRSED | AL-ICP 6 | SALTWTRSED | FE-ICP 6 | SALTWTRSED | HG-CVAA-M 6 | SALTWTRSED | MN-ICP 6 | SALTWTRSED | PP ICP	3 | SALTWTRSED | PSD 3 | SALTWTRSED | TOC 3 | SALTWTRSED | TOTS 6 | SALTWTRSED | AL-ICP 6 | SALTWTRSED | FE-ICP 6 | SALTWTRSED | HG-CVAA-M 6 | SALTWTRSED | MN-ICP 6 | SALTWTRSED | PP ICP

2-4 cm mud/silt covering clay/sand cap →

CHAIN OF CUSTODY
RELINQUISHED BY: [signature] Date: 4/29/09 Time: 1235
RECEIVED BY: [signature] Date: 4-29-09 Time: 1235
Sample Number(s): 47888-5-9 (ALL)

photo of grab #2
Several 2cm amphipods,
5cm shrimp
5cm crab
observed in grabs

photo of grab #3 continue ...
numerous tube worm
leech polychaet
annelids, ~~oligochaete~~
Small Snails
5cm Starfish
observed in grabs

DUDI SEDS, STAS. C, PERIMETER

Project Number: 423062-200-4 Personnel: SH, JDD, BK

Sample No. (Type)	P47888-7	P47888-8	P47888-9
Locator	DUD_11C	DUD_12C	DUD_13C
Short Loc. Desc.	DUD_11C	DUD_12C	DUD_13C
Locator Desc.	CLEANUP AREA PERIMETER ASSESSMENT LO	CLEANUP AREA PERIMETER ASSESSMENT LO	PERIMETER LOCATION 13C
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time	4/29/09 0937	→ 1000	→ 1040
End Date/Time			
Time Span			
Sample Depth	9	10	10
Comments	10 Grab Comp, 0-10 cm	10 Grab Comp, 0-10 cm	10 Grab Comp, 0-10 cm
PERSONNEL	SH, JDD, BK	→	→
SAMP METH	20143		
SED DEPTH	0-10 cm	#1 12 / 2-11 #3 -9 / 4-11 #5 -12 / 6-8 #7 -11 / 8-14 #9 -8 / 10-13	#1 -15 / 2-15 #3 -15 / 4-15 #5 15 / 6-15 #7 15 / 8-15 #9 -1 / 10 -1
SED SAMP RANGE	#1 -11 / 2-11 #3 -12 / 4-11 #5 -11 / 6-12 #7 10 / 8-11 #9 -11 / 10-12	0-10 cm	→ 0-10 cm
SED TYPE	12N21	12N21	21P21
TIDE COND	E		
TIDE HT	7	6	5
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-M	6 SALTWTRSED HG-CVAA-M	6 SALTWTRSED HG-CVAA-M
	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

8-9 cm mud/silt covering cap

photo of grab #1
tube worms, hermit crabs,
5cm spider crab
barnacles
~~oligo~~chaetes
poly

photo of grab #1
tube worms
~~oligochaetes~~
polychaetes

photo of grab #1
continue ...
lots of new deposits over cap here
Very full grabs
Starfish
~~Oligochaetes~~ polychaetes

Login Number: L48332

RE-ANALYSIS OF L47888-2

Project Number: 423062-200-4

Personnel: _____

Sample No. (Type)	L48332-1	
Locator	DUD_2C	
Short Loc. Desc.	DUD_2C	
Locator Desc.	CLEANUP AREA PERIMETER ASSESSMENT LO	
Site	DUWAMISH RIVER	
Start Date/Time		
End Date/Time		
Time Span		
Sample Depth		
Comments		
CLIENT LOC		
SAMP INFO		
Dept., Matrix, Prod		
	3 SALTWTRSED TOTS	
	7 SALTWTRSED BNASMS	

End of Fieldsheet.

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
RECEIVED BY Independent Testing	Date 6-11-09	Time 910
Sample Number(s) (All)		