South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix F
Data Validation Reports

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2010 Remedial Investigation Soil Sampling Event
South Park Landfill

Data Validation Report

Prepared for
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List of Abbreviations and Acronyms

Abbreviation/ Acronym	Definition
ARI	Analytical Resources, Inc. Laboratory
DNR	Do not report
LCS	Laboratory control sample
LCSD	Laboratory control sample duplicate
MS	Matrix spike
MSD	Matrix spike duplicate
RPD	Relative percent difference
QC	Quality control
SDG	Sample delivery group
TPH	Total petroleum hydrocarbons
USEPA	U. S. Environmental Protection Agency

1.0 Project Narrative

1.1 OVERVIEW OF DATA VALIDATION

This report summarizes the results of the Compliance Screening (Level I) performed on select analyses of the soil and rinse blank QC sample data for the South Park Landfill 2010 Remedial Investigation Soil Sampling Event. Select analyses that were reviewed in this report include the following:

- Metals—USEPA Method 6010B
- Mercury—USEPA Method 7471A
- TPHs—NWTPH-Dx
- TPHs—NWTPH-Gx

Additional data validation results for analyses not covered in this document, including Semivolatile Organic Compounds, Organophosphate Pesticides, Pentachlorophenol, Organochlorine Pesticides, Herbicides, Polychlorinated Biphenyls, and Dioxan Furan Compounds were performed by EcoChem, Inc. and summarized in their Data Validation Report under separate cover.

A complete list of the samples analyzed for metals, mercury, and TPHs is provided below.

Project Sample Index

SDG (Batch)	Sample ID	Lab ID	6010B	7071A	NWTPH-Dx	NWTPH-Gx
RZ45	SS-03-0-2-120610	RZ45A	X	X	X	X
RZ45	SS-03-2-4-120610	RZ45B	X	X	X	X
RZ45	SS-03-4-6-120610	RZ45C	X	X	X	X
RZ45	SS-02-0-2-120610	RZ45D	X	X	X	X
RZ45	SS-02-2-4-120610	RZ45E	X	X	X	X
RZ45	SS-02-4-6-120610	RZ45F	X	X	X	X
RZ45	SS-01-0-2-120610	RZ45G	X	X	X	X
RZ45	SS-01-2-4-120610	RZ45H	X	X	X	X
RZ45	SS-01-4-6-120610	RZ45I	X	X	X	X
RZ45	SS-02-6-8-120610	RZ45J	X	X	X	X
RZ67	SS-P-120810	RZ67B	X	X	X	X
RZ67	RB-120810	RZ67C	X	X	X	X

The chemical analyses listed in the table above were performed by ARI in Tukwila, Washington. Soil samples and one rinse blank QC sample were collected between December 6, 2010 and December 8, 2010 and submitted to ARI for chemical analyses.

The data were reviewed using guidance and quality control criteria documented in the analytical methods*, National Functional Guidelines for Inorganic Data Review* (USEPA 1994 and 2004),

National Functional Guidelines for Organic Data Review (USEPA 1999 and 2008) and the *Sampling and Analysis Plan, Appendix D of the Remedial Investigation/Feasibility Study Work Plan for South Park Landfill Site* (Farallon Consulting, LLC 2010).

Floyd|Snider's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. When compounds are analyzed at multiple dilutions, select results will be assigned a DNR qualification as a more appropriate result is reported from another dilution. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions, reasons, and validation criteria are included as Appendix A. The Qualified Data Summary Table is included in Appendix B. Data validation worksheets (excel worksheets) will be kept on file at Floyd|Snider.

2.0 Data Validation Report
Metals by USEPA 6010B

This report documents the review of analytical data from the analyses of soil samples, one rinse blank QC sample, and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

2.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

2.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

Cooler temperature and preservation	[1,2] MS
Extraction and analysis holding times	[2] Lab sample duplicates
Blank contamination	Reporting limits and reported results
LCS	Target analyte list

Notes
1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued, as discussed below

Appendix A presents data validation criteria tables for inorganic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

2.2.1 Matrix Spike

The MS recoveries for sample SS-03-0-2-120610 from SDG RZ45 were outside control limits high (75-125%) for both Aluminum (173%) and Iron (287%). However, for both analytes the original sample concentration was ≥4x the spike amount. Per USEPA Guidelines, spike recovery limits do not apply when sample concentration exceeds the spike concentration by ≥4x, and the data shall be reported unflagged even if the percent recovery does not meet the acceptance criteria. Therefore, no Aluminum or Iron results will be qualified based on this information.

The MS recoveries for sample SS-P-120810 from SDG RZ67 were outside control limits high (75-125%) for Aluminum (661%), Iron (1,980%), and Zinc (169%). However, for these three analytes the original sample concentration was ≥4x the spike amount. Per USEPA Guidelines, spike recovery limits do not apply when sample concentration exceeds the spike concentration by ≥4x, and the data shall be reported unflagged even if the percent recovery does not meet the

acceptance criteria. Therefore, no Aluminum, Iron, or Zinc results will be qualified based on this information.

The MS recovery for sample SS-P-120810 from SDG RZ67 was outside control limits high (75-125%) for Manganese (187%). A post spike was performed and the recovery was within control limits. Per USEPA Guidelines, when the spike recovery is outside the control limits high, all detected results for the analyte from samples of a similar matrix are to be flagged "J" as estimated. SS-P-120810 was the only soil sample in this SDG, therefore only the SS-P-120810 Manganese result will be flagged "J" for estimated.

2.2.2 Lab Sample Duplicates

The duplicate RPDs for SS-P-120810 and its lab duplicate from SDG RZ67 were outside of USEPA Guidelines control limits high (±20%) for Aluminum (37%), Arsenic (25%), Copper (151%), and Lead (39%). Per USEPA Guidelines, if the results from a duplicate analysis are outside the control limits, the results for that analyte in all associated samples of the same matrix are flagged "J" as estimated. SS-P-120810 was the only soil sample in this SDG and the RPD results are not applicable to the rinse blank QC sample. The results for Aluminum, Arsenic, Copper, and Lead for sample SS-P-120810 will be flagged "J" as estimated.

2.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the LCS percent recovery values. Precision was generally acceptable, as demonstrated by the majority of the lab sample/lab sample duplicate RPDs.

All data are acceptable for use as qualified, see Appendix B for details.

Data Validation Report
Mercury by USEPA 7471A

This report documents the review of analytical data from the analyses of soil samples, one rinse blank QC sample, and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

3.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

3.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

Cooler temperature and preservation	MS
Extraction and analysis holding times	Lab sample duplicates
Blank contamination	Reporting limits and reported results
LCS	Target analyte list

All QC requirements were met without exception, and did not require further evaluation.

3.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the MS and LCS percent recovery values. Precision was acceptable, as demonstrated by the lab sample/lab sample duplicate RPDs.

All data, as reported by the lab, are acceptable for use.

3.0 Data Validation Report TPHs by NWTPH-Dx

This report documents the review of analytical data from the analyses of soil samples, one rinse blank QC sample, and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

4.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and any anomalies were discussed in the case narrative.

4.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

	Cooler temperature and preservation	Initial and continuing calibration
	Extraction and analysis holding times	Reporting limits and reported results
	Blank contamination	Target analyte list
[1]	MS and MSD	LCS and LCSD
	Surrogate recoveries	Compound identification

Notes
1 Quality control outliers that impact the reported data were noted. Data qualifiers were issued, as discussed below

Appendix A presents data validation criteria tables for diesel range hydrocarbon analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

4.2.1 Matrix Spike and Matrix Spike Duplicate

The MSD percent recovery for sample SS-03-0-2-120610 from SDG RZ45 for Diesel was 215% and outside the advisory control limits high (56-108%). The MS percent recovery was within control limits. Per USEPA Guidelines as applied to this method, professional judgment is to be used if only one recovery is outside of control limits. In addition, the RPD was 58.4% and outside the laboratory control limits of ±20%. Per USEPA Guidelines as applied to this method, if the RPD is outside of control limits the result of the parent sample should be qualified "J" as estimated. Therefore, it is with professional judgment that the Diesel result for SS-03-0-2-12610 be qualified "J" as estimated based on the MSD recovery being outside advisory control limits in conjunction with the RPD also being outside control limits.

4.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the MS and LCS percent recovery values. Precision was acceptable, as demonstrated by the LCS/LSCD RPDs.

All data are acceptable for use as qualified, see Appendix B for details.

5.0 Data Validation Report TPHs by NWTPH-Gx

This report documents the review of analytical data from the analyses of soil samples, one rinse blank QC sample, and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

5.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and any anomalies were discussed in the case narrative.

5.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

	Cooler temperature and preservation	Initial and continuing calibrations
	Extraction and analysis holding times	Reporting limits and reported results
	Blank contamination	Target analyte list
[1]	MS and MSD	LCS and LCSD
	Surrogate recoveries	Compound identification

Notes
1 Quality control results are discussed below, but no data were qualified.

Appendix A presents data validation criteria tables for diesel range hydrocarbon analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

5.2.1 Matrix Spike and Matrix Spike Duplicate

The MS and MSD percent recoveries for Gasoline Range Hydrocarbons in sample SS-03-0-2-120160 from SDG RZ45 were 173% and 172% respectively, and outside advisory control limits high (75-124%). Per UESPA Guidelines as applied to this method, detected results of the parent sample should be qualified “J” as estimated when both the MS and MSD percent recoveries are outside the control limits high. The Gasoline Range Hydrocarbon result for SS-03-0-2-120610 was a non-detect. In addition, the LCS and LCSD percent recoveries were within control limits and provide acceptable proof of accuracy. Therefore, it is with professional judgment that no additional qualifiers be added to the result.

5.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the LCS percent recovery values. Precision was acceptable, as demonstrated by the LCS/LSCD RPDs.

All data, as reported by the lab, are acceptable for use.

2010 Remedial Investigation Soil Sampling Event
South Park Landfill

Data Validation Report

Appendix A
Data Qualifier Definitions and Criteria Tables

DATA VALIDATION QUALIFIER CODES
National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is a Floyd|Snider qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

Floyd|Snider Validation Guidelines for Metals Analysis by ICP-MS (Based on Inorganic NFG 1994 & 2004)

Validation QC Element	Acceptance Criteria	Action
Cooler Temperature and Preservation	Cooler temperature: 4°C ±2° Waters: Nitric Acid to pH < 2 For Dissolved Metals: 0.45um filter & preserve after filtration	Floyd|Snider Professional Judgment—no qualification based on cooler temperature outliers J/UJ if pH preservation requirements are not met
Holding Time	180 days from date sampled Frozen tissues—HT extended to 2 years	J/UJ if holding time exceeded
Tune	Prior to ICAL monitoring compounds analyzed 5 times wih Std Dev. < 5% mass calibration <0.1 amu from True Value Resolution < 0.9 AMU @ 10% peak height or <0.75 amu @ 5% peak height	Use Professional Judgment to evaluate tune J/UJ if tune criteria not met
Initial Calibration	Blank + minimum 1 standard If more than 1 standard, r>0.995	J/UJ if r<0.995 (for multi point cal)
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R within ±10% of true value	J/UJ if %R 75–89% J if %R = 111-125% R if %R > 125% R if %R < 75%
Continuing Calibration Verification (CCV)	Every ten samples, immediately following ICV/ICB and at end of run ±10% of true value	J/UJ if %R = 75–89% J if %R 111-125% R if %R > 125% R if %R < 75%

Initial and Continuing Calibration Blanks (ICB/CCB)	After each ICV and CCV
	every ten samples and end of run
	| blank | < IDL (MDL)
		Action level is 5x absolute value of blank conc.
		For (+)blanks, U results < action level
		For (-) blanks, J/UJ results < action level

Validation QC Element	Acceptance Criteria	Action
Reporting Limit Standard (CRI)	2x RL analyzed beginning of run Not required for Al, Ba, Ca, Fe, Mg, Na, K %R = 70%-130% (50%-150% Co,Mn, Zn)	R, < 2x RL if %R < 50% (< 30% Co,Mn, Zn) J < 2x RL, UJ if %R 50-69% (30%-49% Co,Mn, Zn) J < 2x RL if %R 130%-180% (150%-200% Co,Mn, Zn) R < 2x RL if %R > 180% (200% Co, Mn, Zn)
Interference Check Samples (ICSA/ICSAB)	Required by SW 6020, but not 200.8 ICSAB %R 80% - 120% for all spiked elements | ICSA | < IDL (MDL) for all unspiked elements	For samples with Al, Ca, Fe, or Mg > ICS levels R if %R < 50% J if %R >120% J/UJ if %R = 50% to 79% Use Professional Judgment for ICSA to determine if bias is present
Method Blank	One per matrix per batch (batch not to exceed 20 samples) blank < MDL	Action level is 5x blank concentration U results < action level
Laboratory Control Sample (LCS)	One per matrix per batch Blank Spike: %R within 80%-120%	R if %R < 50% J/UJ if %R = 50-79% J if %R >120%
	CRM: Result within manufacturer's certified acceptance range or project guidelines	J/UJ if < LCL, J if > UCL
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	One per matrix per batch 75-125% for samples where results do not exceed 4x spike level	J if %R>125% J/UJ if %R <75% J/R if %R<30% or J/UJ if Post Spike %R 75%-125% Qualify all samples in batch
Post-digestion Spike	If Matrix Spike is outside 75-125%, Spike parent sample at 2x the sample conc.	No qualifiers assigned based on this element
Laboratory Duplicate (or MS/MSD)	One per matrix per batch RPD < 20% for samples > 5x RL Diff < RL for samples > RL and < 5 x RL (Diff < 2x RL for solids)	J/UJ if RPD > 20% or diff > RL All samples in batch
Serial Dilution	5x dilution one per matrix %D < 10% for original sample values > 50x MDL	J/UJ if %D >10% All samples in batch

Validation QC Element	Acceptance Criteria	Action
Internal Standards	Every sample SW6020: 60%-125% of cal blank IS 200.8: 30%-120% of cal blank IS	J /UJ all analytes associated with IS outlier
Field Blank	Blank < MDL	Action level is 5x blank conc. U sample values < AL in associated field samples only
Field Duplicate	For results > 5x RL: Water: RPD < 35% Solid: RPD < 50% For results < 5 x RL: Water: Diff < RL Solid: Diff < 2x RL	J/UJ in parent samples only
Linear Range	Sample concentrations must fall within range	J values over range

Floyd|Snider Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range and Gasoline Range (Based on USEPA National Functional Guidelines as applied to criteria in NWTPH-Dx and NWTPH-Gx, June 1997, Ecology & Oregon DEQ)

Validation QC Element	Acceptance Criteria	Action
Cooler Temperature & Preservation	4°C± 2°C Water: HCl to pH < 2	J/UJ if greater than 6 deg. C
Holding Time	Ext. Waters: 14 days preserved 7 days unpreserved Ext. Solids: 14 Days Analysis: 40 days from extraction	J/UJ if hold times exceeded J/R if exceeded > 3X (Floyd|Snider PJ)
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: R2 >0.990 If used, RSD of response factors <20%	Narrate if fewer than 5 calibration levels or if %R >15% J/UJ if R2 <0.990 J/UJ if %RSD > 20%
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 85% to 115%	Narrate if frequency not met. J/UJ if %R < 85% J if %R >115%
Method Blank	At least one per batch (<10 samples) Method Blank No results >RL	U (at the RL) if sample result is < RL & < 5X blank result.
		U (at reported sample value) if sample result is > RL and < 5X blank result
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in the field blank after method blank qualifiers are assigned.
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J if both %R > upper control limit (UCL) J/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked. Use PJ if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (<10 samples) RPD < lab control limit	J if RPD > lab control limits

Validation QC Element	Acceptance Criteria	Action
LCS (not required by method)	%R within lab control limits	J/UJ if %R < LCL J if %R > UCL J/R if any %R <10% (Floyd|Snider PJ)
Surrogates	2-fluorobiphenyl, p-terphenyl, o-terphenyl, and/or pentacosane added to all samples (inc. QC samples). %R = 50-150%	J/UJ if %R < LCL J if %R > UCL J/R if any %R <10% No action if 2 or more surrogates are used, and only one is outside control limits. (Floyd|Snider PJ)
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J
Field Duplicates	Use project control limits, if stated in QAPP Floyd|Snider default: water: RPD < 35% solids: RPD < 50%	Narrate (Floyd|Snider PJ to qualify)
Two analyses for one sample (dilution)	Report only one result per analyte	"DNR" (or client requested qualifier) all results that should not be reported

Abbreviation:
PJ Professional judgment

2010 Remedial Investigation Soil Sampling Event
South Park Landfill

Data Validation Report

Appendix B
Qualified Data Summary Table

Qualified Data Summary Table
2010 Remedial Investigation Soil Sampling Event

SDG	Sample ID	Lab ID	Method	Analyte	Result	Units	Lab Qualifier	DV Qualifier
RZ45	SS-03-0-2-120610	10-30435 RZ45A	NWTPH-Dx	Diesel	780	mg/kg		J
RZ67	SS-P-120810	RZ67B	6010B	Aluminum	7,400	mg/kg		J
RZ68	SS-P-120810	RZ67B	6010B	Arsenic	7	mg/kg		J
RZ67	SS-P-120810	RZ67B	6010B	Copper	24.5	mg/kg		J
RZ67	SS-P-120810	RZ67B	6010B	Lead	29	mg/kg		J
RZ67	SS-P-120810	RZ67B	6010B	Manganese	148	mg/kg		J

DV Qualifiers:

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix F
Data Validation Reports

Surface Soil Data Validation Reports

EcoChem, INC.
Environmental Data Quality

DATA VALIDATION REPORT

South Park Landfill Site

Prepared for:

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EcoChem Project: C15211-1

March 21, 2011

Approved for Release:

Christine Ransom
Project Manager
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of summary validation (EPA Stage 2B) and compliance screening (EPA Stage 2A) performed on soil and quality control (QC) sample data for the South Park Landfill Site Remedial Investigation/Feasibility Study. A complete list of samples is provided in the **Sample Index**.

Frontier Analytical Laboratory (El Dorado Hills, California) performed the dioxin/furan analyses. Analytical Resources Incorporated (Tukwila, Washington) performed the remainder of the analyses. The analytical methods and EcoChem project chemists are listed in the table below.

Analysis	Method	Primary Review	Secondary Review
Semivolatile Organic Compounds	SW8270D	E. Clayton	C. Ransom
Organophosphate Pesticides	SW8270D-SIM		
Pentachlorophenol	SW8041	M. Swanson	C. Mott
Organochlorine Pesticides	SW8081B		
Herbicides	SW8151A		
Polychlorinated Biphenyls	SW8082		
Dioxin Furan Compounds	EPA 1613	D. Kerlin	

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *South Park Landfill Site, Remedial Investigation/Feasibility Study Work Plan* (Farallon, 11/10); *National Functional Guidelines for Inorganic Data Review* (USEPA 1994 & 2004); *National Functional Guidelines for Organic Data Review* (USEPA 1999 & 2008). and *USEPA National Functional Guidelines for Chlorinated Dioxin/Furan Data Review* (USEPA, September 2005).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions, reason codes, and validation criteria are included as **APPENDIX A**. A Qualified Data Summary Table is included in **APPENDIX B**. Data Validation Worksheets will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

SAMPLE INDEX
South Park Landfill Site RIFS

SDG	Sample ID	Laboratory ID	SVOC 8270D	OP Pest 8270D-SIM	PCP 8041	OC Pest 8081B	Herb 8151A	PCB 8082	Dioxin 1613B
6501	DU1	6501-001-SA							✓
6501	DU2	6501-002-SA							✓
6501	DU3	6501-003-SA							✓
RZ45	SS-03-0-2-120610	10-30435-RZ45A	✓	✓	✓	✓	✓	✓	
RZ45	SS-03-2-4-120610	10-30436-RZ45B	✓	✓	✓	✓	✓	✓	
RZ45	SS-03-4-6-120610	10-30437-RZ45C	✓	✓	✓	✓	✓	✓	
RZ45	SS-02-0-2-120610	10-30438-RZ45D	✓	✓	✓	✓	✓	✓	
RZ45	SS-02-2-4-120610	10-30439-RZ45E	✓	✓	✓	✓	✓	✓	
RZ45	SS-02-4-6-120610	10-30440-RZ45F	✓	✓	✓	✓	✓	✓	
RZ45	SS-01-0-2-120610	10-30441-RZ45G	✓	✓	✓	✓	✓	✓	
RZ45	SS-01-2-4-120610	10-30442-RZ45H	✓	✓	✓	✓	✓	✓	
RZ45	SS-01-4-6-120610	10-30443-RZ45I	✓	✓	✓	✓	✓	✓	
RZ45	SS-02-6-8-120610	10-30444-RZ45J	✓	✓	✓	✓	✓	✓	
RZ67	SS-PD-120810	10-30567-RZ67A		✓					
RZ67	SS-P-120810	10-30568-RZ67B	✓	✓	✓	✓	✓	✓	
RZ67	RB-120810	10-30569-RZ67C	✓	✓	✓	✓	✓	✓	

DATA VALIDATION REPORT
South Park Landfill RIFS
Semivolatile Organic Compounds by Method 8270D

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Analytical Resources, Inc., Tukwila, Washington, analyzed the samples. Refer to the **Sample Index** for a list of samples that were reviewed.

SDG	Number of Samples	Validation Level
RZ45	10 Soil	EPA Stage 2B
RZ67	1 Soil	EPA Stage 2B
	1 Rinsate Blank	EPA Stage 2A

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	2	Matrix Spike/Matrix Spike Duplicate (MS/MSD)
	Initial Calibration (ICAL)		Internal Standards
1	Continuing Calibration (CCAL)	1	Field Duplicates
2	Laboratory Blanks		Target Analyte list
1	Field Blanks		Reporting Limits
	Surrogate Compounds		Compound Identification
2	Laboratory Control Samples (LCS/LCSD)	2	Reported Results

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 2° to 6°C. Several coolers were received outside of these limits, with temperatures ranging from 1.9°C to 10.1°C. The temperature outliers did not impact data quality; therefore no qualifiers were assigned.

Continuing Calibration

All relative response factor (RRF) values were greater than the 0.05 minimum control limit. With the exceptions noted below, the percent difference (%D) values were within the ±25% control limit.

SDG RZ45 (CCAL 12/16/10, Instrument NT6): The %D values for 3-nitroaniline; 2,3-dinitrophenol; 4-nitrophenol; and 4-nitroaniline were outside of control limits and indicate potential high bias. These analytes were not detected in the associated samples; therefore no qualification of data was necessary.

SDG RZ67 (CCAL 12/17/10, Instrument NT4): The %D value for benzidine was outside of the control limits and indicates a potential low bias. Results for benzidine are rejected based on poor recoveries in the laboratory control sample; therefore, no additional qualifiers were assigned.

Laboratory Blanks

SDG RZ45: Bis(2-ethylhexyl)phthalate was detected in the method blank. In order to evaluate the effect on the field sample data, an action level was established at 10 times the method blank concentration [bis(2-ethylhexyl)phthalate is a common lab contaminant]. Positive results in the associated samples that were less than the action level were qualified as not-detected (U-7).

SDG RZ67: The analyte 1,4-dichlorobenzene was detected in the method blank associated with Sample SS-P-12080. The 1,4-dichlorobenzene result for this sample was qualified as not detected (U-7).

Field Blanks

SDG RZ67: One rinsate blank (RB-120810) was submitted. No target analytes were detected in this blank.

Laboratory Control Samples

Laboratory control sample/laboratory control sample duplicates (LCS/LCSD) were analyzed at the proper frequency. For LCS/LCSD recoveries that were less than the lower control limit, positive results and/or non-detects in the parent sample only were estimated (J/UJ-10) to indicate a potential low bias. If the recoveries were also less than 10%, positive results were estimated (J-10) and non-detects were rejected (R-10) due to the extreme low bias. For recoveries greater than the upper control limit, positive results only in the parent sample were estimated (J-10) to indicate a potential high bias. No action was taken if only one of the LCS or LCSD recoveries was outside of the control limit. Outliers resulting in qualification of the data are discussed below.

SDG RZ45: The %R values for benzidine were less than 10%. Benzidine was not detected in any of the associated samples; all benzidine results were rejected (R-10).

SDG RZ67: The %R value for benzidine was less than 10% for the LCS sample. Benzidine was not detected in the associated sample; the benzidine result was rejected (R-10).

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicates (MS/MSD) were analyzed at the proper frequency. For MS/MSD recoveries that were less than the lower control limit, positive results and/or non-detects in the parent sample only were estimated (J/UJ-8) to indicate a potential low bias. If the recoveries were also less than 10%, positive results were estimated (J-8) and non-detects were rejected (R-8) due to the extreme low bias. For recoveries greater than the upper control limit, positive results only in the parent sample were estimated (J-8) to indicate a potential high bias. No action was taken if only one of the MS or MSD recoveries was outside of the control limit or if the native concentration in the parent sample was greater than 4X the spike amount.

For MS/MSD relative percent difference values that were greater than the control limit, positive results only in the parent sample were estimated (J-9). The following outliers resulted in qualification of data:

SDG RZ45: Sample SS-03-0-2-120610 was used for the MS/MSD analyses. The recoveries for benzidine were less than 10%. Benzidine was not detected in the parent sample; the result was rejected (R-8).

The RPD value for chrysene was greater than the control limit of 30%. The chrysene result in the parent sample was estimated (J-9).

SDG RZ67: Sample SS-P-120810 was used for the MS/MSD analyses. The MS/MSD %R values for 4-chloroaniline and benzidine were less than 10%. These analytes were not detected in the parent sample; results were rejected (R-8).

The recoveries for 3,3'-dichlorbenzidine, aniline, and hexachlorocyclopentadiene were less than the lower control limit. These analytes were not detected in the parent sample; results were estimated (UJ-8).

The RPD value for 2,4-dinitrophenol; 4,6-dinitro-2-methylphenol, and phenanthrene were greater than the control limit of 30%. Phenanthrene was the only one of these analytes detected in the parent sample. The phenanthrene result was estimated (J-9).

Field Duplicates

No field duplicates were submitted.

Reported Results

SDG RZ45: The concentration of bis(2-ethylhexyl)phthalate was greater than the calibration range of the instrument in Sample SS-02-0-4-120610. The sample was re-analyzed at dilution; both sets of data were reported. The result for bis(2-ethylhexyl)phthalate ion the original analysis was rejected (R-20). The results for all other analytes in the dilution were rejected (R-11).

Sample SS-02-0-2-120610 was also re-analyzed at dilution, however all analytes were within the calibration range in the original analysis. All results from the dilution were rejected (R-11).

For sample SS-01-4-6-120610, the "U" flag for total benzofluoranthene was missing from the EDD. The hardcopy quantification report confirmed that this analyte was not-detected in this sample. The "U" flag was added to the EDD and no further action was taken.

SDG RZ67: For sample RB-120810, the "U" flag for total benzofluoranthene was missing from the EDD. The "U" flag was added to the EDD and no further action was taken.

III. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was generally acceptable, as demonstrated by the surrogate LCS/LCSD, and MS/MSD %R values; precision was also acceptable as demonstrated by the LCS/LCSD and MS/MSD RPD values.

Detection limits were elevated based on method blank contamination. Data were estimated based on LCS/LCSD and MS/MSD %R outliers and MS/MSD RPD outliers.

Several results were rejected due to LCS/LCSD and MS/MSD recoveries that were less than 10%. Data were also rejected to indicate which results should not be used from multiple reported analyses.

Rejected data should not be used for any purpose. All other data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
South Park Landfill RIFS
Pentachlorophenol by EPA Method 8041

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Analytical Resources, Inc., Tukwila, Washington, analyzed the samples. Refer to the **Sample Index** for a list of samples that were reviewed.

SDG	Number of Samples	Validation Level
RZ45	10 Soil	EPA Stage 2B
RZ67	1 Soil	EPA Stage 2B
	1 Rinsate Blank	EPA Stage 2A

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	1	Field Duplicates
	Initial Calibration (ICAL)		Retention Time Window
	Continuing Calibration (CCAL)		Target Analyte List
	Laboratory Blanks		Compound Identification
1	Field Blanks		Compound Quantitation
1	Surrogate Compounds		Reporting Limits
1	Laboratory Control Samples (LCS)	2	Reported Results
1	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)		

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 2° to 6°C. Several coolers were received outside of these limits, with temperatures ranging from 1.9°C to 10.1°C. The temperature outliers did not impact data quality; therefore no qualifiers were assigned.

Field Blanks

SDG RZ67: One equipment rinsate, RB-120810, was submitted. Pentachlorophenol was not detected in this sample.

Surrogate Compounds

The standard surrogate compounds for Method 8041 were not added to the samples during extraction. The sample extracts were also analyzed for herbicides by Method 8151 and surrogate recoveries were acceptable for that method. Based on the absence of quality control data, all results are estimated (see **Reported Results** section).

Laboratory Control Samples

Pentachlorophenol was not included in the solution used to spike the laboratory control sample (LCS). The LCS extract was also analyzed for herbicides by Method 8151; recoveries for the herbicide compounds indicated acceptable extraction performance. Based on the absence of quality control data, all results are estimated (see **Reported Results** section).

Matrix Spike/Matrix Spike Duplicates

Pentachlorophenol was not included in the spiking solution used for the matrix spike/matrix spike duplicate (MS/MSD) analyses. The MS/MSD extracts were also analyzed for herbicides by Method 8151; recoveries of the herbicide compounds indicated acceptable precision and accuracy. Based on the absence of quality control data, all results are estimated (see **Reported Results** section).

Field Duplicates

No field duplicate sample was submitted with these SDG.

Reported Results

All samples were initially prepared and analyzed by Method 8151; however the laboratory unintentionally omitted pentachlorophenol from the calibration standard and quality control spike solutions. In order to provide results for pentachlorophenol, the laboratory used extracts prepared for Method 8151 and analyzed the samples by Method 8041. Because of the absence of information regarding the precision or accuracy of the analysis for pentachlorophenol, all results were estimated (J/UJ-14).

IV. OVERALL ASSESSMENT

As determined by this evaluation, the laboratory did not follow the specified analytical method. There was no measure of laboratory accuracy or precision for Method 8041; however the results for the analysis of the extracts by Method 8151 indicated acceptable laboratory performance.

All results were estimated based on the absence of surrogate, LCS, or MS/MSD recovery information.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
South Park Landfill RIFS
Organochlorine Pesticides by EPA Method 8081

This report documents the review of analytical data from the analyses of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

SDG	Number of Samples	Validation Level
RZ45	10 Soil	EPA Stage 2B
RZ67	1 Soil	EPA Stage 2B
	1 Rinsate Blank	EPA Stage 2A

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	2	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
	Initial Calibration (ICAL)	1	Field Duplicates
2	Continuing Calibration (CCAL)		Retention Time Window
2	DDT/Endrin Breakdown		Target Analyte List
	Laboratory Blanks		Compound Identification
1	Field Blanks	2	Compound Quantitation
	Surrogate Compounds		Reporting Limits
	Laboratory Control Samples (LCS)		Reported Results

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 2° to 6°C. Several coolers were received outside of these limits, with temperatures ranging from 1.9°C to 10.1°C. The temperature outliers did not impact data quality; therefore no qualifiers were assigned.

Continuing Calibration

SDG RZ45: The percent difference (%D) values for heptachlor, 4,4'-DDT, methoxychlor, and toxaphene were outside of the control limits of ±25%, indicating a potential low bias. The results for these analytes were estimated (J/UJ-5B) in the associated samples.

The %D value for 4,4'-DDD was outside of the control limits indicating a potential high bias; positive results for this analyte in the associated samples were estimated (J-5B).

SDG RZ67: The %D values for heptachlor, 4,4'-DDT, methoxychlor and toxaphene were outside of the control limits of, indicating a potential low bias. The results for these analytes were estimated (UJ-5B) in Sample SS-P-120810.

The %D value for 4,4'-DDD was outside of the control limits, indicating a potential high bias. This analyte was not detected in Sample SS-P-120810; no qualification was necessary based on the potential high bias.

DDT/Endrin Breakdown

Performance evaluation mixtures (PEM) were analyzed to measure the percent breakdown of 4,4'-DDT and endrin. The percent breakdown values were less than the control limit of 20%, with the exceptions noted below.

When the percent breakdown value was greater than 20%, positive results for 4,4'-DDT and/or endrin were estimated (J-5B). Any positive results for the breakdown products (4,4'-DDD & 4,4'-DDE or endrin ketone & endrin aldehyde) were also estimated (J-5B). If 4,4'-DDT and/or endrin were not detected in a given sample but the associated breakdown products were, then the 4,4'-DDT and/or endrin results were rejected (R-5B) and the positive results for the breakdown products were qualified as tentatively identified (NJ-5B).

SDG RZ45: The percent breakdown for 4,4'-DDT was greater than the 20% control limit for the PEM analyses of 12/22/10 @ 10:49 and 12/22/10 @ 14:45. The results for 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT in the samples bracketed by these PEM analyses were qualified as specified above. Refer to the **Qualified Data Summary Table** (Appendix B) for a complete list of qualified data.

Field Blanks

SDG RZ67: One equipment rinsate, RB-120810, was submitted. No target analytes were detected in this blank.

Matrix Spike/Matrix Spike Duplicates

Matrix spike sample (MS/MSD) recoveries that were less than the lower control limit, positive results and/or non-detects in the parent sample only were estimated (J/UJ-8) to indicate a potential low bias. If the recoveries were also less than 10%, positive results were estimated (J-

8) and non-detects were rejected (R-8) due to the extreme low bias. For recoveries greater than the upper control limit, positive results only in the parent sample were estimated (J-8) to indicate a potential high bias. No action was taken if only one of the MS or MSD recoveries was outside of the control limit or if the native concentration in the parent sample was greater than 4X the spike amount.

For relative percent difference (RPD) values that were greater than the control limit, only positive results in the parent sample were estimated (J-9). The following outliers resulted in qualification of data:

SDG RZ45: Sample SS-03-2-4-120610 was used for the MS/MSD analyses. The %R values for methoxychlor were less than the lower control limit. This analyte was not detected in the parent sample; the result was estimated (UJ-8).

SDG RZ67: Sample SS-P-120810 was used for the MS/MSD analyses. The %R values for 4,4'-DDT and methoxychlor were less than the lower control limit. These analytes not detected in the parent sample; results were estimated (UJ-8).

The RPD values for trans-chlordane and cis-chlordane were greater than the control limit. These analytes were estimated (J-9) in the parent sample.

Field Duplicates

No field duplicate samples were submitted.

Compound Quantitation

The results from the two analytical columns were compared for agreement. An elevated RPD value may indicate the presence of an interference resulting in a high bias. When the RPD value was greater than 40% but less than 60% the reported value was estimated (J-3). If the RPD value was greater than 60%, the result was qualified as a tentative identification (NJ-3). Confirmation outliers resulting in data qualification are discussed below.

SDG RZ45: 4,4'-DDT (1 result), cis-chlordane (7 results) – J-3
4,4'-DDT (3 results), cis-chlordane (3 results), trans-chlordane (2 results) - NJ-3

SDG RZ67: trans-chlordane (1 result) - NJ-3

Reporting Limits

Most samples were analyzed at dilution due to matrix interferences. Reporting limits were elevated accordingly.

Several chromatograms indicated non-target background interference. The reporting limits (RL) for these analytes were flagged "Y" by the laboratory. These "Y" flagged results were qualified (U-22) to indicate that they were not-detected at an elevated RL. The following results were qualified:

SDG RZ45: aldrin (4 results), beta-BHC (1 result), delta-BHC (2 results), dieldrin (7 results), endosulfan I (3 results), endrin (2 results), gamma-BHC (1 result), heptachlor (5 results), heptachlor epoxide (9 results).

IV. OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable, as demonstrated by the surrogate, laboratory control sample and MS/MSD recoveries; precision was also acceptable as demonstrated by the MS/MSD RPD values.

Reporting limits were elevated based on non-target background interferences. Data were estimated based on CCAL %D outliers, MS/MSD recovery and RPD outliers, and second column confirmation RPD outliers. Data were tentatively identified due to column confirmation RPD outliers and DDT breakdown outliers. Data were rejected due to DDT breakdown outliers. Data were flagged as do-not-report (DNR) to indicate which results from multiple reported analyses should not be used.

Data that have been rejected or flagged DNR should not be used for any purpose.

All other data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
South Park Landfill RIFS
Herbicides by EPA Method 8151

This report documents the review of analytical data from the analyses of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

SDG	Number of Samples	Validation Level
RZ45	10 Soil	EPA Stage 2B
RZ67	1 Soil	EPA Stage 2B
	1 Rinsate Blank	EPA Stage 2A

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	1	Field Duplicates
	Initial Calibration (ICAL)		Retention Time Window
	Continuing Calibration (CCAL)		Target Analyte List
	Laboratory Blanks		Compound Identification
1	Field Blanks		Compound Quantitation
	Surrogate Compounds		Reporting Limits
	Laboratory Control Samples (LCS)		Reported Results
2	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)		

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 2° to 6°C. Several coolers were received outside of these limits, with temperatures ranging from 1.9°C to 10.1°C. The temperature outliers did not impact data quality; therefore no qualifiers were assigned.

Field Blanks

SDG RZ67: One equipment rinsate, RB-120810, was submitted. No target analytes were detected in this blank.

Matrix Spike/Matrix Spike Duplicates

SDG RZ45: Matrix spike/matrix spike duplicate (MS/MSD) analyses were performed using Sample SS-03-2-4-120610. The MS %R value for dinoseb was less than the lower control limit and the MSD %R value was greater than the upper control limit. Dinoseb was not detected in the parent sample; the result was estimated (UJ-8) with no bias assigned.

SDG RZ67: No MS/MSD analyses were performed in association with the rinsate blank. Laboratory precision and accuracy were evaluated using the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) results.

Field Duplicates

No field duplicates were submitted.

IV. OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and MS/MSD recoveries. Precision was also acceptable as demonstrated by the LCS/LCSD and MS/MSD elative percent difference values.

Data were qualified based on MS/MSD recovery outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
South Park Landfill RIFS
Orthophosphate Pesticides by Method 8270D-SIM

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Analytical Resources, Inc., Tukwila, Washington, analyzed the samples. Refer to the **Sample Index** for a list of samples that were reviewed.

SDG	Number of Samples	Validation Level
RZ45	10 Soil	EPA Stage 2B
RZ67	2 Soil	EPA Stage 2B
	1 Rinsate Blank	EPA Stage 2A

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	1	Matrix Spike/Matrix Spike Duplicate (MS/MSD)
	Initial Calibration (ICAL)		Internal Standards
1	Continuing Calibration (CCAL)	1	Field Duplicates
	Laboratory Blanks		Target Analyte list
1	Field Blanks	2	Reporting Limits
1	Surrogate Compounds		Compound Identification
2	Laboratory Control Samples (LCS/LCSD)		Reported Results

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 2° to 6°C. Several coolers were received outside of these limits, with temperatures ranging from 1.9°C to 10.1°C. The temperature outliers did not impact data quality; therefore no qualifiers were assigned.

Continuing Calibration

All relative response factor (RRF) values were greater than the 0.05 minimum control limit. With the exception noted below, the values for percent difference (%D) were within the ±25% control limits.

SDG RZ67: The %D value for monocrotophos was outside of the control limits and indicated a potential high bias. This analyte was not detected in the associated samples; therefore no qualification of data was necessary.

Field Blanks

SDG RZ67: One rinsate blank, RB-120810, was submitted. No target analytes were detected in this blank.

Surrogate Recovery

SDG RZ45: Matrix interference prevented the quantitation of the surrogate tributyl phosphate in several samples. Because the recoveries for triphenyl phosphate (second surrogate compound) were acceptable; no action was taken.

Laboratory Control Samples

SDG RZ67: The percent recovery (%R) values for monocrotophos were less than the lower control limit for the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) associated with the rinsate blank. The result for monocrotophos in this sample was estimated (UJ-10) to indicate a potential low bias.

The LCS/LCSD %R values for merphos oxone were greater than the upper control limit. This analyte was not detected in the associated sample; therefore no qualification of data was necessary based on the potential high bias.

Matrix Spike/Matrix Spike Duplicate

SDG RZ45: Sample SS-03-2-4-120610 was used for the matrix spike/matrix spike duplicate (MS/MSD) analyses. The %R values for chlorpyrifos were greater than the upper control limit. This analyte was not detected in the parent sample; therefore no qualification of data was necessary based on the potential high bias.

Field Duplicates

SDG RZ67: One set of field duplicates were submitted; SS-P-120810 and SS-PD-120810. There were no positive results for either sample. Field precision was acceptable.

Reporting Limits

SDG RZ45: The chromatograms indicated non-target background interferences for the analyte EPN in Samples SS-02-0-2-120610 and SS-03-0-2-120610. The reporting limits (RL) for these analytes were flagged "Y" by the laboratory. These "Y" flagged results were qualified (U-22) to indicate that they were not-detected at an elevated RL.

III. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and MS/MSD %R values; and precision was acceptable as demonstrated by the LCS/LCSD, MS/MSD, and field duplicate relative percent difference values.

Reporting limits were elevated due to background interferences. One data point was estimated based on LCS/LCSD %R outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
South Park Landfill RIFS
Dioxin/Furan Compounds by Method 1613

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory quality control (QC) samples. Samples were analyzed by Frontier Analytical Laboratory, El Dorado Hills, California. Refer to the **Sample Index** for a complete list of samples.

SDG	Number of Samples	Validation Level
6501	3 Soil	EPA Stage 2B

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. TECHNICAL DATA VALIDATION

The quality control (QC) requirements reviewed are summarized in the following table:

1	Sample Receipt, Preservation, and Holding Times		Ongoing Precision and Recovery (OPR)
	System Performance and Resolution Checks	2	Laboratory Duplicates
	Initial Calibration (ICAL)	1	Field Duplicates
	Calibration Verification (CVER)		Target Analyte List
	Method Blanks	2	Reported Results
	Labeled Compound Recovery		Compound Identification
1	Matrix Spike/Matrix Spike Duplicates (MS/MSD)		

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

Sample Receipt, Preservation, and Holding Times

The samples were transferred from Analytical Resources, Inc (ARI) to Frontier Analytical Laboratory. As stated in validation guidance documents, samples should be maintained within the advisory temperature range of 2°C to 6°C. The temperature recorded by Frontier was 0.0°C, which is less than the lower control limit. The temperature outlier did not impact data quality; therefore no data were qualified.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples were not analyzed. Laboratory accuracy was evaluated from the on-going precision and recovery (OPR) standard and labeled compound recoveries.

Laboratory Duplicates

The laboratory duplicate analysis was performed using Sample DU3. With the exceptions noted below, the relative percent difference (RPD) values were less than the control limit of 25%.

Analyte	RPD
1,2,3,4,7,8-HxCDF	36.4%
1,2,3,4,6,7,8-HpCDF	25.3%
1,2,3,4,7,8,9-HpCDF	29.9%
OCDF	38.8%
Total HxCDF	29.9%
Total HpCDF	33.4%

The results for the above analytes were estimated (J-9) in the parent sample only.

Field Duplicates

No field duplicate samples were submitted.

Reported Results

Positive results for 2,3,7,8-TCDF that were greater than the reporting limit were confirmed on a DB-225 column as specified by the method. The results from the DB-225 column were reported.

The laboratory assigned "D and/or M" flags to several of the reported homologue group totals to indicate that a diphenyl ether (D) or some other interference (M) was present, resulting in a high bias in the reported result. All analytes that were "D" and/or "M" flagged were estimated (J-14).

III. OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the labeled compound and OPR recoveries. With the exceptions noted above, precision was also acceptable as demonstrated by laboratory duplicate RPD values.

Data were estimated based on interference from diphenyl ether and laboratory duplicate RPD outliers.

All data, as qualified, are acceptable for use.

EcoChem, INC.
Environmental Data Quality

APPENDIX A
DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES
Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

DATA QUALIFIER REASON CODES

1	Holding Time/Sample Preservation
2	Chromatographic pattern in sample does not match pattern of calibration standard.
3	Compound Confirmation
4	Tentatively Identified Compound (TIC) (associated with NJ only)
5A	Calibration (initial)
5B	Calibration (continuing)
6	Field Blank Contamination
7	Lab Blank Contamination (e.g., method blank, instrument, etc.)
8	Matrix Spike(MS & MSD) Recoveries
9	Precision (all replicates)
10	Laboratory Control Sample Recoveries
11	A more appropriate result is reported (associated with “R” and “DNR” only)
12	Reference Material
13	Surrogate Spike Recoveries (a.k.a., labeled compounds & recovery standards)
14	Other (define in validation report)
15	GFAA Post Digestion Spike Recoveries
16	ICP Serial Dilution % Difference
17	ICP Interference Check Standard Recovery
18	Trip Blank Contamination
19	Internal Standard Performance (e.g., area, retention time, recovery)
20	Linear Range Exceeded
21	Potential False Positives
22	Elevated Detection Limit Due to Interference (i.e., laboratory, chemical and/or matrix)

EcoChem Validation Guidelines for Semivolatile Analysis by GC/MS (Based on Organic NFG 1999)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature	4°C ±2°	J(+)/UJ(-) if greater than 6 deg. C (EcoChem PJ)	1
Holding Time	Water: 7 days from collection Soil: 14 days from collection Analysis: 40 days from extraction	Water: J(+)/UJ(-) if ext. > 7 and < 21 days J(+)/R(-) if ext > 21 days (EcoChem PJ) Solids/Wastes: J(+)/UJ(-) if ext. > 14 and < 42 days J(+)/R(-) if ext. > 42 days (EcoChem PJ) J(+)/UJ(-) if analysis >40 days	1
Tuning	DFTPP Beginning of each 12 hour period Method acceptance criteria	R(+/-) all analytes in all samples associated with the tune	5A
Initial Calibration (Minimum 5 stds.)	RRF > 0.05	(EcoChem PJ, see TM-06) If MDL= reporting limit: J(+)/R(-) if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF <0.05	5A
	%RSD < 30%	(EcoChem PJ, see TM-06) J(+) if %RSD > 30%	5A
Continuing Calibration (Prior to each 12 hr. shift)	RRF > 0.05	(EcoChem PJ, see TM-06) If MDL= reporting limit: J(+)/R(-) if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF <0.05	5B
	%D <25%	(EcoChem PJ, see TM-06) If > +/-90%: J+/R- If -90% to -26%: J+ (high bias) If 26% to 90%: J+/UJ- (low bias)	5B
Method Blank	One per matrix per batch No results > CRQL	U(+) if sample (+) result is less than CRQL and less than appropriate 5X or 10X rule (raise sample value to CRQL)	7
		U(+) if sample (+) result is greater than or equal to CRQL and less than appropriate 5X and 10X rule (at reported sample value)	7
	No TICs present	R(+) TICs using 10X rule	7
Field Blanks (Not Required)	No results > CRQL	Apply 5X/10X rule; U(+) < action level	6

EcoChem Validation Guidelines for Semivolatile Analysis by GC/MS (Based on Organic NFG 1999)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
MS/MSD (recovery)	One per matrix per batch Use method acceptance criteria	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
MS/MSD (RPD)	One per matrix per batch Use method acceptance criteria	J(+) in parent sample if RPD > CL	9
LCS CLP low conc. H2O only	One per lab batch Within method control limits	J(+) assoc. cmpd if > UCL J(+)/R(-) assoc. cmpd if < LCL J(+)/R(-) all cmpds if half are < LCL	10
LCS regular SVOA (H2O & solid)	One per lab batch Lab or method control limits	J(+) if %R > UCL J(+)/UJ(-) if %R <LCL J(+)/R(-) if %R < 10% (EcoChem PJ)	10
LCS/LCSD *(if required)*	One set per matrix and batch of 20 samples RPD < 35%	J(+)/UJ(-) assoc. cmpd. in all samples	9
Surrogates	Minimum of 3 acid and 3 base/neutral compounds Use method acceptance criteria	Do not qualify if only 1 acid and/or 1 B/N surrogate is out unless <10% J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) if %R < 10%	13
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	J(+) if > 200% J(+)/UJ(-) if < 50% J(+)/R(-) if < 25% RT>30 seconds, narrate and Notify PM	19
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (EcoChem PJ)	9
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NJ the TIC unless: R(+) common laboratory contaminants See Technical Director for ID issues	4
Quantitation/ Identification	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	See Technical Director if outliers	14 21 (false +)

EcoChem Validation Guidelines for Pesticides, PCBs, Herbicides, and Phenol by GC/ECD (Based on Organic NFG 1999 & EPA SW-846 Methods 8081/8082/8041/8151)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature	4°C ±2°	J(+)/UJ(-) if greater than 6 deg. C (EcoChem PJ)	1
Holding Time	Water: 7 days from collection Soil: 14 days from collection Analysis: 40 days from extraction	J(+)/UJ(-) if ext/analyzed > HT J(+)/R(-) if ext/analyzed > 3X HT (EcoChem PJ)	1
Resolution Check	Beginning of ICAL Sequence Within RTW Resolution >90%	Narrate (Use Professional Judgement to qualify)	14
Instrument Performance (Breakdown)	DDT Breakdown: < 20% Endrin Breakdown: <20% Combined Breakdown: <30% Compounds within RTW	J(+) DDT NJ(+) DDD and/or DDE R(-) DDT - If (+) for either DDE or DDD J(+) Endrin NJ(+) EK and/or EA R(-) Endrin - If (+) for either EK or EA	5A
Retention Times	Surrogates: TCX (+/- 0.05); DCB (+/- 0.10) Target compounds: elute before heptachlor epoxide (+/- 0.05) elute after heptachlor epoxide (+/- 0.07)	NJ(+)/R(-) results for analytes with RT shifts For full DV, use PJ based on examination of raw data	5B
Initial Calibration	Pesticides: Low=CRQL, Mid=4X, High=16X Multiresponse - one point Calibration %RSD<20% %RSD<30% for surr; two comp. may exceed if <30% Resolution in Mix A and Mix B >90%	J(+)/UJ(-)	5A
Continuing Calibration	Alternating PEM standard and INDA/INDB standards every 12 hours (each preceeded by an inst. Blank) %D < 25% Resolution >90% in IND mixes; 100% for PEM	J(+)/UJ(-) J(+)R(-) if %D > 90% PJ for resolution	5B
Method Blank	One per matrix per batch No results > CRQL	U(+) if sample result is < CRQL and < 5X rule (raise sample value to CRQL) U(+) if sample result is > or equal to CRQL and < 5X rule (at reported sample value)	7
Instrument Blanks	Analyzed at the beginning of every 12 hour sequence No analyte > 1/2 CRQL	Same as Method Blank	7
Field Blanks	Not addressed by NFG No results > CRQL	Apply 5X rule; U(+) < action level	6

EcoChem Validation Guidelines for Pesticides, PCBs, Herbicides, and Phenol by GC/ECD (Based on Organic NFG 1999 & EPA SW-846 Methods 8081/8082/8041/8151)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
MS/MSD (recovery)	One set per matrix per batch Method Acceptance Criteria	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
MS/MSD (RPD)	One set per matrix per batch Method Acceptance Criteria	J(+) in parent sample if RPD > CL	9
LCS	One per SDG Method Acceptance Criteria	J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) using PJ if %R <<LCL (< 10%)	10
LCS/LCSD *(if required)*	One set per matrix and batch of 20 samples RPD < 35%	J(+)/UJ(-) assoc. cmpd. in all samples	9
Surrogates	TCX and DCB added to every sample %R = 30-150%	J(+)/UJ(-) if both %R = 10 - 60% J(+) if both >150% J(+)/R(-) if any %R <10%	13
Quantitation/ Identification	Quantitated using ICAL calibration factor (CF) RPD between columns <40%	J(+) if RPD = 40 - 60% NJ(+) if RPD >60% EcoChem PJ - See TM-08	3
Two analyses for one sample	Report only one result per analyte	"DNR" results that should not be used to avoid reporting two results for one sample	11
Sample Clean-up	GPC required for soil samples Florisil required for all samples Sulfur is optional Clean-up standard check %R within CLP limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL	14
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate (Qualifiy if required by project QAPP)	9

EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler/Storage Temperature	Waters/Solids < 4°C Tissues <-10°C	EcoChem PJ, see TM-05	1
Holding Time	Extraction - Water: 30 days from collection *Note:* Under CWA, SDWA, and RCRA the HT for H2O is 7 days* Extraction - Soil: 30 days from collection Analysis: 40 days from extraction	J(+)/UJ(-) if ext > 30 days J(+)/UJ(-) if analysis > 40 Days EcoChem PJ, see TM-05	1
Mass Resolution	>=10,000 resolving power at m/z 304.9824 Exact mass of m/z 380.9760 w/in 5 ppm of theoretical value (380.97410 to 380.97790) . Analyzed prior to ICAL and at the start and end of each 12 hr. shift	R(+/-) if not met	14
Window Defining Mix and Column Performance Mix	Window defining mixture/Isomer specificity std run before ICAL and CCAL Valley < 25% (valley = (x/y)*100%) x = ht. of TCDD y = baseline to bottom of valley For all isomers eluting near 2378-TCDD/TCDF isomers (TCDD only for 8290)	J(+) if valley > 25%	5A (ICAL) 5B (CCAL
Initial Calibration	Minimum of five standards %RSD < 20% for native compounds %RSD <30% for labeled compounds (%RSD <35% for labeled compounds under 1613b)	J(+) natives if %RSD > 20%	5A
	Abs. RT of $^{13}C_{12}$-1234-TCDD >25 min on DB5 >15 min on DB-225	EcoChem PJ, see TM-05	
	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	EcoChem PJ, see TM-05	
	S/N ratio > 10 for all native and labeled compounds in CS1 std.	If <10, elevate Det. Limit or R(-)	

EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Continuing Calibration	Analyzed at the start and end of each 12 hour shift. %D+/-20% for native compounds %D +/-30% for labeled compounds (Must meet limits in Table 6, Method 1613B) (If %Ds in the closing CCAL are w/in 25%/35% the avg RF from the two CCAL may be used to calculate samples per Method 8290, Section 8.3.2.4)	Do not qualify labeled compounds. Narrate in report for labeled compound %D outliers. For native compound %D outliers: 8290: J(+)/UJ(-) if %D = 20% - 75% J(+)/R(-) if %D > 75% 1613: J(+)/UJ(-) if %D is outside Table 6 limits J(+)/R(-) if %D is +/- 75% of Table 6 limit	5B
	Abs. RT of $^{13}C_{12}$-1234-TCDD and $^{13}C12$-123789-HxCDD +/- 15 sec of ICAL.	EcoChem PJ, see ICAL section of TM-05	
	RRT of all other compounds must meet Table 2 of 1613B.	EcoChem PJ, see TM-05	
	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	EcoChem PJ, see TM-05	
	S/N ratio > 10	If <10, elevate Det. Limit or R(-)	
Method Blank	One per matrix per batch No positive results	If sample result <5X action level, qualify U at reported value.	7
Field Blanks (Not Required)	No positive results	If sample result <5X action level, qualify U at reported value.	6
LCS / OPR	Concentrations must meet limits in Table 6, Method 1613B or lab limits.	J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) using PJ if %R <<LCL (< 10%)	10
MS/MSD (recovery)	May not analyze MS/MSD %R should meet lab limits.	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
MS/MSD (RPD)	May not analyze MS/MSD RPD < 20%	J(+) in parent sample if RPD > CL	9

EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Lab Duplicate	RPD <25% if present.	J(+)/UJ(-) if outside limts	9
Labeled Compounds / Internal Standards	*Method 8290:* %R = 40% - 135% in all samples --- *Method 1613B:* %R must meet limits specified in Table 7, Method 1613	J(+)/UJ(-) if %R = 10% to LCL J(+) if %R > UCL J(+)/R(-) if %R < 10%	13
Quantitation/ Identification	Ions for analyte, IS, and rec. std. must max w/in 2 sec. S/N >2.5 IA ratios meet limits in Table 9 of 1613B or Table 8 of 8290 RRTs w/in limits in Table 2 of 1613B	If RT criteria not met, use PJ (see TM-05) If S/N criteria not met, J(+). if unlabelled ion abundance not met, change to EMPC If labelled ion abundance not met, J(+).	21
EMPC (estimated maximum possible concentration)	If quantitation idenfication criteria are not met, laboratory should report an EMPC value.	If laboratory correctly reported an EMPC value, qualify with U to indicate that the value is a detection limit.	14
Interferences	PCDF interferences from PCDPE	If both detected, change PCDF result to EMPC	14
Second Column Confirmation	All 2378-TCDF hits must be confirmed on a DB-225 (or equiv) column. All QC specs in this table must be met for the confirmation analysis.	Report lower of the two values. If not performed use PJ (see TM-05).	3
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (EcoChem PJ)	9
Two analyses for one sample	Report only one result per analyte	"DNR" results that should not be used	11

EcoChem, INC.
Environmental Data Quality

APPENDIX B
QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
South Park Landfill Site RIFS

SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
6501	DU1	6501-001-SA	EPA 1613 D/F	Total PeCDF	144	pg/g	D,M	J	14
6501	DU1	6501-001-SA	EPA 1613 D/F	Total TCDF	118	pg/g	D,M	J	14
6501	DU2	6501-002-SA	EPA 1613 D/F	1,2,3,6,7,8-HxCDF	102	pg/g	D,M	J	14
6501	DU2	6501-002-SA	EPA 1613 D/F	Total HxCDF	1400	pg/g	D,M	J	14
6501	DU2	6501-002-SA	EPA 1613 D/F	Total PeCDF	1310	pg/g	D,M	J	14
6501	DU2	6501-002-SA	EPA 1613 D/F	Total TCDF	1290	pg/g	D,M	J	14
6501	DU3	6501-003-DUP	EPA 1613 D/F	1,2,3,6,7,8-HxCDF	22.2	pg/g	D,M	J	14
6501	DU3	6501-003-DUP	EPA 1613 D/F	Total HxCDF	389	pg/g	D,M	J	14
6501	DU3	6501-003-DUP	EPA 1613 D/F	Total PeCDF	271	pg/g	D,M	J	14
6501	DU3	6501-003-DUP	EPA 1613 D/F	Total TCDF	235	pg/g	D,M	J	14
6501	DU3	6501-003-SA	EPA 1613 D/F	1,2,3,6,7,8-HxCDF	26.4	pg/g	D,M	J	14
6501	DU3	6501-003-SA	EPA 1613 D/F	Total HxCDF	526	pg/g	D,M	J	14
6501	DU3	6501-003-SA	EPA 1613 D/F	Total PeCDF	324	pg/g	D,M	J	14
6501	DU3	6501-003-SA	EPA 1613 D/F	Total TCDF	241	pg/g	D,M	J	14
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8041	Pentachlorophenol	38	ug/kg	U	UJ	14
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8041	Pentachlorophenol	16	ug/kg	U	UJ	14
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8041	Pentachlorophenol	13	ug/kg	U	UJ	14
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8041	Pentachlorophenol	31	ug/kg	U	UJ	14
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8041	Pentachlorophenol	33	ug/kg	U	UJ	14
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8041	Pentachlorophenol	31	ug/kg	U	UJ	14
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8041	Pentachlorophenol	50	ug/kg		J	14
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8041	Pentachlorophenol	19	ug/kg	U	UJ	14
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8041	Pentachlorophenol	15	ug/kg	U	UJ	14
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8041	Pentachlorophenol	30	ug/kg	U	UJ	14
RZ67	SS-P-120810	10-30568-RZ67B	SW8041	Pentachlorophenol	11	ug/kg	U	UJ	14
RZ67	RB-120810	10-30569-RZ67C	SW8041	Pentachlorophenol	0.25	ug/L	U	UJ	14
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	4,4'-DDD	40	ug/kg		NJ	5B
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	4,4'-DDE	20	ug/kg		NJ	5B
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	4,4'-DDT	9.3	ug/kg	U	R	5B
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	Aldrin	12	ug/kg	Y	U	22
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	cis-Chlordane	28	ug/kg	P	J	3
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	delta-BHC	38	ug/kg	Y	U	22
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	Heptachlor	9.8	ug/kg	Y	UJ	5B,22
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	Methoxychlor	46	ug/kg	U	UJ	5B
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	Toxaphene	460	ug/kg	U	UJ	5B
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	trans-Chlordane	47	ug/kg	P	NJ	3
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8081B	4,4'-DDD	39	ug/kg		NJ	5B
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8081B	4,4'-DDE	17	ug/kg		NJ	5B
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8081B	4,4'-DDT	3.2	ug/kg	U	R	5B
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8081B	cis-Chlordane	14	ug/kg	P	J	3
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8081B	Dieldrin	4.7	ug/kg	Y	U	22
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8081B	Heptachlor	1.6	ug/kg	U	UJ	5B
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8081B	Heptachlor Epoxide	4.8	ug/kg	Y	U	22
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8081B	Methoxychlor	16	ug/kg	U	UJ	5B,8

Qualified Data Summary Table
South Park Landfill Site RIFS

SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8081B	Toxaphene	160	ug/kg	U	UJ	5B
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	4,4'-DDD	120	ug/kg		NJ	5B
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	4,4'-DDE	18	ug/kg	J	NJ	5B
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	4,4'-DDT	16	ug/kg	U	R	5B
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	Aldrin	30	ug/kg	Y	U	22
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	cis-Chlordane	210	ug/kg	EP	DNR	20
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	gamma-BHC (Lindane)	16	ug/kg	Y	U	22
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	Heptachlor	24	ug/kg	Y	UJ	5B,22
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	Heptachlor Epoxide	24	ug/kg	Y	U	22
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	Methoxychlor	80	ug/kg	U	UJ	5B
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	Toxaphene	800	ug/kg	U	UJ	5B
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	trans-Chlordane	140	ug/kg	E	DNR	20
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	4,4'-DDD	110	ug/kg		DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	4,4'-DDE	32	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	4,4'-DDT	32	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Aldrin	32	ug/kg	Y	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	alpha-BHC	16	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	beta-BHC	16	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	delta-BHC	16	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Dieldrin	32	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Endosulfan I	16	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Endosulfan II	32	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Endosulfan Sulfate	32	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Endrin	32	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Endrin Aldehyde	32	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Endrin Ketone	32	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	gamma-BHC (Lindane)	16	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Heptachlor	23	ug/kg	Y	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Heptachlor Epoxide	24	ug/kg	Y	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Methoxychlor	160	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Toxaphene	1600	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	4,4'-DDD	210	ug/kg	E	DNR	20
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	4,4'-DDE	84	ug/kg		NJ	5B
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	4,4'-DDT	7.6	ug/kg	U	R	5B
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	cis-Chlordane	14	ug/kg	P	J	3
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	Dieldrin	13	ug/kg	Y	U	22
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	Heptachlor	4.5	ug/kg	Y	UJ	5B,22
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	Heptachlor Epoxide	13	ug/kg	Y	U	22
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	Methoxychlor	38	ug/kg	U	UJ	5B
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	Toxaphene	380	ug/kg	U	UJ	5B
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	trans-Chlordane	20	ug/kg	P	NJ	3
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	4,4'-DDE	76	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	4,4'-DDT	76	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Aldrin	38	ug/kg	U	DNR	11

Qualified Data Summary Table
South Park Landfill Site RIFS

SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	alpha-BHC	38	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	beta-BHC	38	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	cis-Chlordane	38	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	delta-BHC	38	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Dieldrin	76	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Endosulfan I	38	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Endosulfan II	76	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Endosulfan Sulfate	76	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Endrin	76	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Endrin Aldehyde	76	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Endrin Ketone	76	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	gamma-BHC (Lindane)	38	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Heptachlor	38	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Heptachlor Epoxide	38	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Methoxychlor	380	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Toxaphene	3800	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	trans-Chlordane	38	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	4,4'-DDD	3800	ug/kg	ES	DNR	20
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	4,4'-DDE	860	ug/kg	E	DNR	20
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	4,4'-DDT	230	ug/kg	E	DNR	20
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	beta-BHC	19	ug/kg	Y	U	22
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	cis-Chlordane	300	ug/kg	P	J	3
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	Dieldrin	59	ug/kg	Y	U	22
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	Endosulfan I	21	ug/kg	Y	U	22
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	Endrin	19	ug/kg	Y	U	22
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	Heptachlor	9.6	ug/kg	Y	UJ	5B,22
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	Heptachlor Epoxide	140	ug/kg	Y	U	22
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	Methoxychlor	67	ug/kg	U	UJ	5B
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	Toxaphene	670	ug/kg	U	UJ	5B
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	4,4'-DDD	3900	ug/kg	E	DNR	20
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Aldrin	67	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	alpha-BHC	67	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	beta-BHC	67	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	cis-Chlordane	340	ug/kg	P	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	delta-BHC	67	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Dieldrin	130	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Endosulfan I	67	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Endosulfan II	130	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Endosulfan Sulfate	130	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Endrin	130	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Endrin Aldehyde	130	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Endrin Ketone	130	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	gamma-BHC (Lindane)	67	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Heptachlor	67	ug/kg	U	DNR	11

Qualified Data Summary Table
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SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Heptachlor Epoxide	67	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Methoxychlor	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Toxaphene	6700	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	trans-Chlordane	360	ug/kg		DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	4,4'-DDE	1300	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	4,4'-DDT	1300	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Aldrin	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	alpha-BHC	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	beta-BHC	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	cis-Chlordane	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	delta-BHC	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Dieldrin	1300	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Endosulfan I	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Endosulfan II	1300	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Endosulfan Sulfate	1300	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Endrin	1300	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Endrin Aldehyde	1300	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Endrin Ketone	1300	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	gamma-BHC (Lindane)	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Heptachlor	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Heptachlor Epoxide	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Methoxychlor	6700	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Toxaphene	67000	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	trans-Chlordane	670	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	4,4'-DDD	4800	ug/kg	ESP	DNR	20
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	4,4'-DDE	740	ug/kg	E	DNR	20
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	4,4'-DDT	120	ug/kg	P	NJ	3,5B
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	Aldrin	22	ug/kg	Y	U	22
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	cis-Chlordane	480	ug/kg	P	J	3
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	Dieldrin	65	ug/kg	Y	U	22
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	Endosulfan I	28	ug/kg	Y	U	22
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	Endrin	20	ug/kg	Y	U	22
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	Heptachlor	6.2	ug/kg	U	UJ	5B
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	Heptachlor Epoxide	180	ug/kg	Y	U	22
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	Methoxychlor	62	ug/kg	U	UJ	5B
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	Toxaphene	620	ug/kg	U	UJ	5B
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	4,4'-DDD	4800	ug/kg	E	DNR	20
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	4,4'-DDT	120	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Aldrin	62	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	alpha-BHC	62	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	beta-BHC	62	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	cis-Chlordane	510	ug/kg	P	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	delta-BHC	62	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Dieldrin	120	ug/kg	U	DNR	11

Qualified Data Summary Table
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SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Endosulfan I	62	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Endosulfan II	120	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Endosulfan Sulfate	120	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Endrin	120	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Endrin Aldehyde	120	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Endrin Ketone	120	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	gamma-BHC (Lindane)	62	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Heptachlor	62	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Heptachlor Epoxide	62	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Methoxychlor	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Toxaphene	6200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	trans-Chlordane	510	ug/kg		DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	4,4'-DDE	1200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	4,4'-DDT	1200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Aldrin	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	alpha-BHC	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	beta-BHC	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	cis-Chlordane	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	delta-BHC	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Dieldrin	1200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Endosulfan I	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Endosulfan II	1200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Endosulfan Sulfate	1200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Endrin	1200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Endrin Aldehyde	1200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Endrin Ketone	1200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	gamma-BHC (Lindane)	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Heptachlor	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Heptachlor Epoxide	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Methoxychlor	6200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Toxaphene	62000	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	trans-Chlordane	620	ug/kg	U	DNR	11
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8081B	4,4'-DDD	24	ug/kg		NJ	5B
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8081B	4,4'-DDE	85	ug/kg		NJ	5B
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8081B	4,4'-DDT	16	ug/kg	U	R	5B
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8081B	Aldrin	12	ug/kg	Y	U	22
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8081B	delta-BHC	11	ug/kg	Y	U	22
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8081B	Heptachlor	8.1	ug/kg	U	UJ	5B
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8081B	Heptachlor Epoxide	80	ug/kg	Y	U	22
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8081B	Methoxychlor	81	ug/kg	U	UJ	5B
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8081B	Toxaphene	810	ug/kg	U	UJ	5B
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8081B	4,4'-DDD	1800	ug/kg	ES	DNR	20
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8081B	4,4'-DDE	320	ug/kg	E	DNR	20
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8081B	4,4'-DDT	66	ug/kg	P	NJ	3,5B

Qualified Data Summary Table
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SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8081B	cis-Chlordane	31	ug/kg	P	NJ	3
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8081B	Dieldrin	30	ug/kg	Y	U	22
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8081B	Heptachlor	8	ug/kg	U	UJ	5B
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8081B	Heptachlor Epoxide	59	ug/kg	Y	U	22
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8081B	Methoxychlor	80	ug/kg	U	UJ	5B
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8081B	Toxaphene	800	ug/kg	U	UJ	5B
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	4,4'-DDT	160	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Aldrin	80	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	alpha-BHC	80	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	beta-BHC	80	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	cis-Chlordane	80	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	delta-BHC	80	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Dieldrin	160	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Endosulfan I	80	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Endosulfan II	160	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Endosulfan Sulfate	160	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Endrin	160	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Endrin Aldehyde	160	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Endrin Ketone	160	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	gamma-BHC (Lindane)	80	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Heptachlor	80	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Heptachlor Epoxide	80	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Methoxychlor	800	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Toxaphene	8000	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	trans-Chlordane	80	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8081B	4,4'-DDD	500	ug/kg	ES	DNR	20
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8081B	4,4'-DDE	99	ug/kg	E	DNR	20
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8081B	4,4'-DDT	6.3	ug/kg	P	J	3,5B
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8081B	cis-Chlordane	8.2	ug/kg	P	J	3
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8081B	Dieldrin	4.5	ug/kg	Y	U	22
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8081B	Heptachlor	1.7	ug/kg	U	UJ	5B
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8081B	Heptachlor Epoxide	17	ug/kg	Y	U	22
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8081B	Methoxychlor	17	ug/kg	U	UJ	5B
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8081B	Toxaphene	170	ug/kg	U	UJ	5B
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	4,4'-DDD	570	ug/kg	E	DNR	20
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	4,4'-DDE	82	ug/kg		J	5B
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	4,4'-DDT	33	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Aldrin	17	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	alpha-BHC	17	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	beta-BHC	17	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	cis-Chlordane	17	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	delta-BHC	17	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Dieldrin	33	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Endosulfan I	17	ug/kg	U	DNR	11

Qualified Data Summary Table
South Park Landfill Site RIFS

SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Endosulfan II	33	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Endosulfan Sulfate	33	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Endrin	33	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Endrin Aldehyde	33	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Endrin Ketone	33	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	gamma-BHC (Lindane)	17	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Heptachlor	17	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Heptachlor Epoxide	17	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Methoxychlor	170	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Toxaphene	1700	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	trans-Chlordane	17	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	4,4'-DDE	170	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	4,4'-DDT	170	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Aldrin	83	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	alpha-BHC	83	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	beta-BHC	83	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	cis-Chlordane	83	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	delta-BHC	83	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Dieldrin	170	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Endosulfan I	83	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Endosulfan II	170	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Endosulfan Sulfate	170	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Endrin	170	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Endrin Aldehyde	170	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Endrin Ketone	170	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	gamma-BHC (Lindane)	83	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Heptachlor	83	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Heptachlor Epoxide	83	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Methoxychlor	830	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Toxaphene	8300	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	trans-Chlordane	83	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	4,4'-DDD	3400	ug/kg	ES	DNR	20
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	4,4'-DDE	760	ug/kg	E	DNR	20
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	4,4'-DDT	92	ug/kg	P	NJ	3,5B
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	cis-Chlordane	250	ug/kg	P	J	3
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	Dieldrin	48	ug/kg	Y	U	22
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	Endosulfan I	19	ug/kg	Y	U	22
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	Heptachlor	11	ug/kg	Y	UJ	5B,22
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	Heptachlor Epoxide	130	ug/kg	Y	U	22
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	Methoxychlor	60	ug/kg	U	UJ	5B
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	Toxaphene	600	ug/kg	U	UJ	5B
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	4,4'-DDD	3700	ug/kg	E	DNR	20
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	4,4'-DDE	580	ug/kg		J	5B
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	4,4'-DDT	120	ug/kg	U	DNR	11

Qualified Data Summary Table
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SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Aldrin	60	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	alpha-BHC	60	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	beta-BHC	60	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	cis-Chlordane	330	ug/kg	P	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	delta-BHC	60	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Dieldrin	120	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Endosulfan I	60	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Endosulfan II	120	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Endosulfan Sulfate	120	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Endrin	120	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Endrin Aldehyde	120	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Endrin Ketone	120	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	gamma-BHC (Lindane)	60	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Heptachlor	60	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Heptachlor Epoxide	60	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Methoxychlor	600	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Toxaphene	6000	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	trans-Chlordane	340	ug/kg		DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	4,4'-DDE	600	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	4,4'-DDT	600	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Aldrin	300	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	alpha-BHC	300	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	beta-BHC	300	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	cis-Chlordane	300	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	delta-BHC	300	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Dieldrin	600	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Endosulfan I	300	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Endosulfan II	600	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Endosulfan Sulfate	600	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Endrin	600	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Endrin Aldehyde	600	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Endrin Ketone	600	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	gamma-BHC (Lindane)	300	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Heptachlor	300	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Heptachlor Epoxide	300	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Methoxychlor	3000	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Toxaphene	30000	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	trans-Chlordane	300	ug/kg	U	DNR	11
RZ67	SS-P-120810	10-30568-RZ67B	SW8081B	4,4'-DDT	3.1	ug/kg	U	UJ	5B,8
RZ67	SS-P-120810	10-30568-RZ67B	SW8081B	cis-Chlordane	3.6	ug/kg		J	9
RZ67	SS-P-120810	10-30568-RZ67B	SW8081B	Heptachlor	1.5	ug/kg	U	UJ	5B
RZ67	SS-P-120810	10-30568-RZ67B	SW8081B	Methoxychlor	15	ug/kg	U	UJ	5B,8
RZ67	SS-P-120810	10-30568-RZ67B	SW8081B	Toxaphene	150	ug/kg	U	UJ	5B
RZ67	SS-P-120810	10-30568-RZ67B	SW8081B	trans-Chlordane	7.1	ug/kg	P	NJ	3,9

Qualified Data Summary Table
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SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8082	Aroclor 1254	330	ug/kg	Y	U	22
RZ45	SS-P-120810	10-30568-RZ67B	SW8082	Aroclor 1248	240	ug/kg	Y	U	22
RZ45	SS-P-120810	10-30568-RZ67B	SW8082	Aroclor 1260	96	ug/kg	Y	U	22
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8151A	Dinoseb	32	ug/kg	U	UJ	8
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8270D	Benzidine	1800	ug/kg	U	R	8,10
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8270D	Benzo(a)anthracene	370	ug/kg		J	9
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8270D	Chrysene	570	ug/kg		J	9
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8270D	Benzidine	380	ug/kg	U	R	10
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8270D	bis(2-Ethylhexyl)phthalate	220	ug/kg	B	U	7
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8270D	Benzidine	360	ug/kg	U	R	10
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8270D	bis(2-Ethylhexyl)phthalate	230	ug/kg	B	U	7
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8270D	Benzidine	760	ug/kg	U	R	10
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	1,2,4-Trichlorobenzene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	1,2-Dichlorobenzene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	1,2-Diphenylhydrazine	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	1,3-Dichlorobenzene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	1,4-Dichlorobenzene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	1-Methylnaphthalene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,2'-Oxybis(1-Chloropropane)	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,3,4,6-Tetrachlorophenol	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,3,5,6-Tetrachlorophenol	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,4,5-Trichlorophenol	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,4,6-Trichlorophenol	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,4-Dichlorophenol	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,4-Dimethylphenol	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,4-Dinitrophenol	2300	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,4-Dinitrotoluene	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,6-Dinitrotoluene	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2-Chloronaphthalene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2-Chlorophenol	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2-Methylnaphthalene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2-Methylphenol	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2-Nitroaniline	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2-Nitrophenol	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	3,3'-Dichlorobenzidine	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	3-Nitroaniline	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	4,6-Dinitro-2-Methylphenol	2300	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	4-Bromophenyl-phenylether	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	4-Chloro-3-methylphenol	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	4-Chloroaniline	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	4-Chlorophenyl-phenylether	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	4-Methylphenol	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	4-Nitroaniline	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	4-Nitrophenol	1100	ug/kg	U	DNR	11

Qualified Data Summary Table
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SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Acenaphthene	240	ug/kg		DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Acenaphthylene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Aniline	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Anthracene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Azobenzene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Benzidine	2300	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Benzo(a)anthracene	160	ug/kg	J	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Benzo(a)pyrene	120	ug/kg	J	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Benzo(g,h,i)perylene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Benzyl Alcohol	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	bis(2-Chloroethoxy) Methane	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Bis-(2-Chloroethyl) Ether	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	bis(2-Ethylhexyl)phthalate	940	ug/kg	B	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Butylbenzylphthalate	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Carbazole	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Chrysene	260	ug/kg		DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Dibenz(a,h)anthracene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Dibenzofuran	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Diethylphthalate	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Dimethylphthalate	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Di-n-Butylphthalate	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Di-n-Octyl phthalate	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Fluoranthene	590	ug/kg		DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Fluorene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Hexachlorobenzene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Hexachlorobutadiene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Hexachlorocyclopentadiene	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Hexachloroethane	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Indeno(1,2,3-cd)pyrene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Isophorone	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Naphthalene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Nitrobenzene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	N-Nitrosodimethylamine	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	N-Nitroso-Di-N-Propylamine	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	N-Nitrosodiphenylamine	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Pentachlorophenol	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Phenanthrene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Phenol	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Pyrene	460	ug/kg		DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Pyridine	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Total Benzofluoranthenes	230	ug/kg		DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8270D	Benzidine	1100	ug/kg	U	R	10
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8270D	bis(2-Ethylhexyl)phthalate	520	ug/kg	B	U	7
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8270D	Benzidine	1100	ug/kg	U	R	10

Qualified Data Summary Table
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SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8270D	Benzidine	590	ug/kg	U	R	10
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8270D	bis(2-Ethylhexyl)phthalate	330	ug/kg	B	U	7
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8270D	Benzidine	740	ug/kg	U	R	10
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8270D	bis(2-Ethylhexyl)phthalate	6300	ug/kg	E	R	20
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	1,2,4-Trichlorobenzene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	1,2-Dichlorobenzene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	1,2-Diphenylhydrazine	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	1,3-Dichlorobenzene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	1,4-Dichlorobenzene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	1-Methylnaphthalene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,2'-Oxybis(1-Chloropropane)	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,3,4,6-Tetrachlorophenol	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,3,5,6-Tetrachlorophenol	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,4,5-Trichlorophenol	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,4,6-Trichlorophenol	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,4-Dichlorophenol	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,4-Dimethylphenol	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,4-Dinitrophenol	2200	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,4-Dinitrotoluene	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,6-Dinitrotoluene	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2-Chloronaphthalene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2-Chlorophenol	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2-Methylnaphthalene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2-Methylphenol	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2-Nitroaniline	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2-Nitrophenol	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	3,3'-Dichlorobenzidine	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	3-Nitroaniline	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	4,6-Dinitro-2-Methylphenol	2200	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	4-Bromophenyl-phenylether	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	4-Chloro-3-methylphenol	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	4-Chloroaniline	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	4-Chlorophenyl-phenylether	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	4-Methylphenol	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	4-Nitroaniline	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	4-Nitrophenol	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Acenaphthene	150	ug/kg	J	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Acenaphthylene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Aniline	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Anthracene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Azobenzene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Benzidine	2200	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Benzo(a)anthracene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Benzo(a)pyrene	220	ug/kg	U	DNR	11

Qualified Data Summary Table
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SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Benzo(g,h,i)perylene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Benzyl Alcohol	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	bis(2-Chloroethoxy) Methane	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Bis-(2-Chloroethyl) Ether	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	bis(2-Ethylhexyl)phthalate	5700	ug/kg	B	DNR	
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Butylbenzylphthalate	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Carbazole	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Chrysene	210	ug/kg	J	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Dibenz(a,h)anthracene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Dibenzofuran	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Diethylphthalate	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Dimethylphthalate	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Di-n-Butylphthalate	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Di-n-Octyl phthalate	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Fluoranthene	440	ug/kg		DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Fluorene	120	ug/kg	J	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Hexachlorobenzene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Hexachlorobutadiene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Hexachlorocyclopentadiene	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Hexachloroethane	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Indeno(1,2,3-cd)pyrene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Isophorone	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Naphthalene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Nitrobenzene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	N-Nitrosodimethylamine	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	N-Nitroso-Di-N-Propylamine	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	N-Nitrosodiphenylamine	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Pentachlorophenol	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Phenanthrene	1400	ug/kg		DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Phenol	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Pyrene	490	ug/kg		DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Pyridine	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Total Benzofluoranthenes	220	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8270D	Benzidine	340	ug/kg	U	R	10
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8270D	bis(2-Ethylhexyl)phthalate	280	ug/kg	B	U	7
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8270D	Benzidine	1100	ug/kg	U	R	10
RZ67	SS-P-120810	10-30568-RZ67B	SW8270D	1,4-Dichlorobenzene	52	ug/kg	B	U	7
RZ67	SS-P-120810	10-30568-RZ67B	SW8270D	3,3'-Dichlorobenzidine	110	ug/kg	U	UJ	8
RZ67	SS-P-120810	10-30568-RZ67B	SW8270D	4-Chloroaniline	110	ug/kg	U	R	8
RZ67	SS-P-120810	10-30568-RZ67B	SW8270D	Aniline	23	ug/kg	U	UJ	8
RZ67	SS-P-120810	10-30568-RZ67B	SW8270D	Benzidine	230	ug/kg	U	R	8,10
RZ67	SS-P-120810	10-30568-RZ67B	SW8270D	Hexachlorocyclopentadiene	110	ug/kg	U	UJ	8
RZ67	SS-P-120810	10-30568-RZ67B	SW8270D	Phenanthrene	43	ug/kg		J	9
RZ67	SS-03-0-2-120610	10-30435-RZ45A	SW8270D SIM	EPN	740	ug/kg	Y	U	22

Qualified Data Summary Table
South Park Landfill Site RIFS

SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ67	SS-02-0-2-120610	10-30438-RZ45D	SW8270D SIM	EPN	610	ug/kg	Y	U	22
RZ67	RB-120810	10-30569-RZ67C	SW8270D SIM	Monocrotophos	1	ug/L	U	UJ	10

EcoChem, INC.
Environmental Data Quality

DATA VALIDATION REPORT

South Park Landfill Site

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March 21, 2011

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PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of summary validation (EPA Stage 2B) and compliance screening (EPA Stage 2A) performed on soil and quality control (QC) sample data for the South Park Landfill Site Remedial Investigation/Feasibility Study. A complete list of samples is provided in the **Sample Index**.

Frontier Analytical Laboratory (El Dorado Hills, California) performed the dioxin/furan analyses. Analytical Resources Incorporated (Tukwila, Washington) performed the remainder of the analyses. The analytical methods and EcoChem project chemists are listed in the table below.

Analysis	Method	Primary Review	Secondary Review
Semivolatile Organic Compounds	SW8270D	E. Clayton	C. Ransom
Organophosphate Pesticides	SW8270D-SIM		
Pentachlorophenol	SW8041	M. Swanson	C. Mott
Organochlorine Pesticides	SW8081B		
Herbicides	SW8151A		
Polychlorinated Biphenyls	SW8082		
Dioxin Furan Compounds	EPA 1613	D. Kerlin	

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *South Park Landfill Site, Remedial Investigation/Feasibility Study Work Plan* (Farallon, 11/10); *National Functional Guidelines for Inorganic Data Review* (USEPA 1994 & 2004); *National Functional Guidelines for Organic Data Review* (USEPA 1999 & 2008). and *USEPA National Functional Guidelines for Chlorinated Dioxin/Furan Data Review* (USEPA, September 2005).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions, reason codes, and validation criteria are included as **APPENDIX A**. A Qualified Data Summary Table is included in **APPENDIX B**. Data Validation Worksheets will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted with this report.

SAMPLE INDEX
South Park Landfill Site RIFS

SDG	Sample ID	Laboratory ID	SVOC 8270D	OP Pest 8270D-SIM	PCP 8041	OC Pest 8081B	Herb 8151A	PCB 8082	Dioxin 1613B
6501	DU1	6501-001-SA							✓
6501	DU2	6501-002-SA							✓
6501	DU3	6501-003-SA							✓
RZ45	SS-03-0-2-120610	10-30435-RZ45A	✓	✓	✓	✓	✓	✓	
RZ45	SS-03-2-4-120610	10-30436-RZ45B	✓	✓	✓	✓	✓	✓	
RZ45	SS-03-4-6-120610	10-30437-RZ45C	✓	✓	✓	✓	✓	✓	
RZ45	SS-02-0-2-120610	10-30438-RZ45D	✓	✓	✓	✓	✓	✓	
RZ45	SS-02-2-4-120610	10-30439-RZ45E	✓	✓	✓	✓	✓	✓	
RZ45	SS-02-4-6-120610	10-30440-RZ45F	✓	✓	✓	✓	✓	✓	
RZ45	SS-01-0-2-120610	10-30441-RZ45G	✓	✓	✓	✓	✓	✓	
RZ45	SS-01-2-4-120610	10-30442-RZ45H	✓	✓	✓	✓	✓	✓	
RZ45	SS-01-4-6-120610	10-30443-RZ45I	✓	✓	✓	✓	✓	✓	
RZ45	SS-02-6-8-120610	10-30444-RZ45J	✓	✓	✓	✓	✓	✓	
RZ67	SS-PD-120810	10-30567-RZ67A		✓					
RZ67	SS-P-120810	10-30568-RZ67B	✓	✓	✓	✓	✓	✓	
RZ67	RB-120810	10-30569-RZ67C	✓	✓	✓	✓	✓	✓	

DATA VALIDATION REPORT
South Park Landfill RIFS
Semivolatile Organic Compounds by Method 8270D

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Analytical Resources, Inc., Tukwila, Washington, analyzed the samples. Refer to the **Sample Index** for a list of samples that were reviewed.

SDG	Number of Samples	Validation Level
RZ45	10 Soil	EPA Stage 2B
RZ67	1 Soil	EPA Stage 2B
	1 Rinsate Blank	EPA Stage 2A

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	2	Matrix Spike/Matrix Spike Duplicate (MS/MSD)
	Initial Calibration (ICAL)		Internal Standards
1	Continuing Calibration (CCAL)	1	Field Duplicates
2	Laboratory Blanks		Target Analyte list
1	Field Blanks		Reporting Limits
	Surrogate Compounds		Compound Identification
2	Laboratory Control Samples (LCS/LCSD)	2	Reported Results

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 2° to 6°C. Several coolers were received outside of these limits, with temperatures ranging from 1.9°C to 10.1°C. The temperature outliers did not impact data quality; therefore no qualifiers were assigned.

Continuing Calibration

All relative response factor (RRF) values were greater than the 0.05 minimum control limit. With the exceptions noted below, the percent difference (%D) values were within the ±25% control limit.

SDG RZ45 (CCAL 12/16/10, Instrument NT6): The %D values for 3-nitroaniline; 2,3-dinitrophenol; 4-nitrophenol; and 4-nitroaniline were outside of control limits and indicate potential high bias. These analytes were not detected in the associated samples; therefore no qualification of data was necessary.

SDG RZ67 (CCAL 12/17/10, Instrument NT4): The %D value for benzidine was outside of the control limits and indicates a potential low bias. Results for benzidine are rejected based on poor recoveries in the laboratory control sample; therefore, no additional qualifiers were assigned.

Laboratory Blanks

SDG RZ45: Bis(2-ethylhexyl)phthalate was detected in the method blank. In order to evaluate the effect on the field sample data, an action level was established at 10 times the method blank concentration [bis(2-ethylhexyl)phthalate is a common lab contaminant]. Positive results in the associated samples that were less than the action level were qualified as not-detected (U-7).

SDG RZ67: The analyte 1,4-dichlorobenzene was detected in the method blank associated with Sample SS-P-12080. The 1,4-dichlorobenzene result for this sample was qualified as not detected (U-7).

Field Blanks

SDG RZ67: One rinsate blank (RB-120810) was submitted. No target analytes were detected in this blank.

Laboratory Control Samples

Laboratory control sample/laboratory control sample duplicates (LCS/LCSD) were analyzed at the proper frequency. For LCS/LCSD recoveries that were less than the lower control limit, positive results and/or non-detects in the parent sample only were estimated (J/UJ-10) to indicate a potential low bias. If the recoveries were also less than 10%, positive results were estimated (J-10) and non-detects were rejected (R-10) due to the extreme low bias. For recoveries greater than the upper control limit, positive results only in the parent sample were estimated (J-10) to indicate a potential high bias. No action was taken if only one of the LCS or LCSD recoveries was outside of the control limit. Outliers resulting in qualification of the data are discussed below.

SDG RZ45: The %R values for benzidine were less than 10%. Benzidine was not detected in any of the associated samples; all benzidine results were rejected (R-10).

SDG RZ67: The %R value for benzidine was less than 10% for the LCS sample. Benzidine was not detected in the associated sample; the benzidine result was rejected (R-10).

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicates (MS/MSD) were analyzed at the proper frequency. For MS/MSD recoveries that were less than the lower control limit, positive results and/or non-detects in the parent sample only were estimated (J/UJ-8) to indicate a potential low bias. If the recoveries were also less than 10%, positive results were estimated (J-8) and non-detects were rejected (R-8) due to the extreme low bias. For recoveries greater than the upper control limit, positive results only in the parent sample were estimated (J-8) to indicate a potential high bias. No action was taken if only one of the MS or MSD recoveries was outside of the control limit or if the native concentration in the parent sample was greater than 4X the spike amount.

For MS/MSD relative percent difference values that were greater than the control limit, positive results only in the parent sample were estimated (J-9). The following outliers resulted in qualification of data:

SDG RZ45: Sample SS-03-0-2-120610 was used for the MS/MSD analyses. The recoveries for benzidine were less than 10%. Benzidine was not detected in the parent sample; the result was rejected (R-8).

The RPD value for chrysene was greater than the control limit of 30%. The chrysene result in the parent sample was estimated (J-9).

SDG RZ67: Sample SS-P-120810 was used for the MS/MSD analyses. The MS/MSD %R values for 4-chloroaniline and benzidine were less than 10%. These analytes were not detected in the parent sample; results were rejected (R-8).

The recoveries for 3,3'-dichlorbenzidine, aniline, and hexachlorocyclopentadiene were less than the lower control limit. These analytes were not detected in the parent sample; results were estimated (UJ-8).

The RPD value for 2,4-dinitrophenol; 4,6-dinitro-2-methylphenol, and phenanthrene were greater than the control limit of 30%. Phenanthrene was the only one of these analytes detected in the parent sample. The phenanthrene result was estimated (J-9).

Field Duplicates

No field duplicates were submitted.

Reported Results

SDG RZ45: The concentration of bis(2-ethylhexyl)phthalate was greater than the calibration range of the instrument in Sample SS-02-0-4-120610. The sample was re-analyzed at dilution; both sets of data were reported. The result for bis(2-ethylhexyl)phthalate ion the original analysis was rejected (R-20). The results for all other analytes in the dilution were rejected (R-11).

Sample SS-02-0-2-120610 was also re-analyzed at dilution, however all analytes were within the calibration range in the original analysis. All results from the dilution were rejected (R-11).

For sample SS-01-4-6-120610, the "U" flag for total benzofluoranthene was missing from the EDD. The hardcopy quantification report confirmed that this analyte was not-detected in this sample. The "U" flag was added to the EDD and no further action was taken.

SDG RZ67: For sample RB-120810, the "U" flag for total benzofluoranthene was missing from the EDD. The "U" flag was added to the EDD and no further action was taken.

III. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was generally acceptable, as demonstrated by the surrogate LCS/LCSD, and MS/MSD %R values; precision was also acceptable as demonstrated by the LCS/LCSD and MS/MSD RPD values.

Detection limits were elevated based on method blank contamination. Data were estimated based on LCS/LCSD and MS/MSD %R outliers and MS/MSD RPD outliers.

Several results were rejected due to LCS/LCSD and MS/MSD recoveries that were less than 10%. Data were also rejected to indicate which results should not be used from multiple reported analyses.

Rejected data should not be used for any purpose. All other data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
South Park Landfill RIFS
Pentachlorophenol by EPA Method 8041

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Analytical Resources, Inc., Tukwila, Washington, analyzed the samples. Refer to the **Sample Index** for a list of samples that were reviewed.

SDG	Number of Samples	Validation Level
RZ45	10 Soil	EPA Stage 2B
RZ67	1 Soil	EPA Stage 2B
	1 Rinsate Blank	EPA Stage 2A

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	1	Field Duplicates
	Initial Calibration (ICAL)		Retention Time Window
	Continuing Calibration (CCAL)		Target Analyte List
	Laboratory Blanks		Compound Identification
1	Field Blanks		Compound Quantitation
1	Surrogate Compounds		Reporting Limits
1	Laboratory Control Samples (LCS)	2	Reported Results
1	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)		

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 2° to 6°C. Several coolers were received outside of these limits, with temperatures ranging from 1.9°C to 10.1°C. The temperature outliers did not impact data quality; therefore no qualifiers were assigned.

Field Blanks

SDG RZ67: One equipment rinsate, RB-120810, was submitted. Pentachlorophenol was not detected in this sample.

Surrogate Compounds

The standard surrogate compounds for Method 8041 were not added to the samples during extraction. The sample extracts were also analyzed for herbicides by Method 8151 and surrogate recoveries were acceptable for that method. Based on the absence of quality control data, all results are estimated (see **Reported Results** section).

Laboratory Control Samples

Pentachlorophenol was not included in the solution used to spike the laboratory control sample (LCS). The LCS extract was also analyzed for herbicides by Method 8151; recoveries for the herbicide compounds indicated acceptable extraction performance. Based on the absence of quality control data, all results are estimated (see **Reported Results** section).

Matrix Spike/Matrix Spike Duplicates

Pentachlorophenol was not included in the spiking solution used for the matrix spike/matrix spike duplicate (MS/MSD) analyses. The MS/MSD extracts were also analyzed for herbicides by Method 8151; recoveries of the herbicide compounds indicated acceptable precision and accuracy. Based on the absence of quality control data, all results are estimated (see **Reported Results** section).

Field Duplicates

No field duplicate sample was submitted with these SDG.

Reported Results

All samples were initially prepared and analyzed by Method 8151; however the laboratory unintentionally omitted pentachlorophenol from the calibration standard and quality control spike solutions. In order to provide results for pentachlorophenol, the laboratory used extracts prepared for Method 8151 and analyzed the samples by Method 8041. Because of the absence of information regarding the precision or accuracy of the analysis for pentachlorophenol, all results were estimated (J/UJ-14).

IV. OVERALL ASSESSMENT

As determined by this evaluation, the laboratory did not follow the specified analytical method. There was no measure of laboratory accuracy or precision for Method 8041; however the results for the analysis of the extracts by Method 8151 indicated acceptable laboratory performance.

All results were estimated based on the absence of surrogate, LCS, or MS/MSD recovery information.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
South Park Landfill RIFS
Organochlorine Pesticides by EPA Method 8081

This report documents the review of analytical data from the analyses of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

SDG	Number of Samples	Validation Level
RZ45	10 Soil	EPA Stage 2B
RZ67	1 Soil	EPA Stage 2B
	1 Rinsate Blank	EPA Stage 2A

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	2	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
	Initial Calibration (ICAL)	1	Field Duplicates
2	Continuing Calibration (CCAL)		Retention Time Window
2	DDT/Endrin Breakdown		Target Analyte List
	Laboratory Blanks		Compound Identification
1	Field Blanks	2	Compound Quantitation
	Surrogate Compounds		Reporting Limits
	Laboratory Control Samples (LCS)		Reported Results

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 2° to 6°C. Several coolers were received outside of these limits, with temperatures ranging from 1.9°C to 10.1°C. The temperature outliers did not impact data quality; therefore no qualifiers were assigned.

Continuing Calibration

SDG RZ45: The percent difference (%D) values for heptachlor, 4,4'-DDT, methoxychlor, and toxaphene were outside of the control limits of ±25%, indicating a potential low bias. The results for these analytes were estimated (J/UJ-5B) in the associated samples.

The %D value for 4,4'-DDD was outside of the control limits indicating a potential high bias; positive results for this analyte in the associated samples were estimated (J-5B).

SDG RZ67: The %D values for heptachlor, 4,4'-DDT, methoxychlor and toxaphene were outside of the control limits of, indicating a potential low bias. The results for these analytes were estimated (UJ-5B) in Sample SS-P-120810.

The %D value for 4,4'-DDD was outside of the control limits, indicating a potential high bias. This analyte was not detected in Sample SS-P-120810; no qualification was necessary based on the potential high bias.

DDT/Endrin Breakdown

Performance evaluation mixtures (PEM) were analyzed to measure the percent breakdown of 4,4'-DDT and endrin. The percent breakdown values were less than the control limit of 20%, with the exceptions noted below.

When the percent breakdown value was greater than 20%, positive results for 4,4'-DDT and/or endrin were estimated (J-5B). Any positive results for the breakdown products (4,4'-DDD & 4,4'-DDE or endrin ketone & endrin aldehyde) were also estimated (J-5B). If 4,4'-DDT and/or endrin were not detected in a given sample but the associated breakdown products were, then the 4,4'-DDT and/or endrin results were rejected (R-5B) and the positive results for the breakdown products were qualified as tentatively identified (NJ-5B).

SDG RZ45: The percent breakdown for 4,4'-DDT was greater than the 20% control limit for the PEM analyses of 12/22/10 @ 10:49 and 12/22/10 @ 14:45. The results for 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT in the samples bracketed by these PEM analyses were qualified as specified above. Refer to the **Qualified Data Summary Table** (Appendix B) for a complete list of qualified data.

Field Blanks

SDG RZ67: One equipment rinsate, RB-120810, was submitted. No target analytes were detected in this blank.

Matrix Spike/Matrix Spike Duplicates

Matrix spike sample (MS/MSD) recoveries that were less than the lower control limit, positive results and/or non-detects in the parent sample only were estimated (J/UJ-8) to indicate a potential low bias. If the recoveries were also less than 10%, positive results were estimated (J-

8) and non-detects were rejected (R-8) due to the extreme low bias. For recoveries greater than the upper control limit, positive results only in the parent sample were estimated (J-8) to indicate a potential high bias. No action was taken if only one of the MS or MSD recoveries was outside of the control limit or if the native concentration in the parent sample was greater than 4X the spike amount.

For relative percent difference (RPD) values that were greater than the control limit, only positive results in the parent sample were estimated (J-9). The following outliers resulted in qualification of data:

SDG RZ45: Sample SS-03-2-4-120610 was used for the MS/MSD analyses. The %R values for methoxychlor were less than the lower control limit. This analyte was not detected in the parent sample; the result was estimated (UJ-8).

SDG RZ67: Sample SS-P-120810 was used for the MS/MSD analyses. The %R values for 4,4'-DDT and methoxychlor were less than the lower control limit. These analytes not detected in the parent sample; results were estimated (UJ-8).

The RPD values for trans-chlordane and cis-chlordane were greater than the control limit. These analytes were estimated (J-9) in the parent sample.

Field Duplicates

No field duplicate samples were submitted.

Compound Quantitation

The results from the two analytical columns were compared for agreement. An elevated RPD value may indicate the presence of an interference resulting in a high bias. When the RPD value was greater than 40% but less than 60% the reported value was estimated (J-3). If the RPD value was greater than 60%, the result was qualified as a tentative identification (NJ-3). Confirmation outliers resulting in data qualification are discussed below.

SDG RZ45: 4,4'-DDT (1 result), cis-chlordane (7 results) – J-3
4,4'-DDT (3 results), cis-chlordane (3 results), trans-chlordane (2 results) - NJ-3

SDG RZ67: trans-chlordane (1 result) - NJ-3

Reporting Limits

Most samples were analyzed at dilution due to matrix interferences. Reporting limits were elevated accordingly.

Several chromatograms indicated non-target background interference. The reporting limits (RL) for these analytes were flagged "Y" by the laboratory. These "Y" flagged results were qualified (U-22) to indicate that they were not-detected at an elevated RL. The following results were qualified:

SDG RZ45: aldrin (4 results), beta-BHC (1 result), delta-BHC (2 results), dieldrin (7 results), endosulfan I (3 results), endrin (2 results), gamma-BHC (1 result), heptachlor (5 results), heptachlor epoxide (9 results).

IV. OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable, as demonstrated by the surrogate, laboratory control sample and MS/MSD recoveries; precision was also acceptable as demonstrated by the MS/MSD RPD values.

Reporting limits were elevated based on non-target background interferences. Data were estimated based on CCAL %D outliers, MS/MSD recovery and RPD outliers, and second column confirmation RPD outliers. Data were tentatively identified due to column confirmation RPD outliers and DDT breakdown outliers. Data were rejected due to DDT breakdown outliers. Data were flagged as do-not-report (DNR) to indicate which results from multiple reported analyses should not be used.

Data that have been rejected or flagged DNR should not be used for any purpose.

All other data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
South Park Landfill RIFS
Herbicides by EPA Method 8151

This report documents the review of analytical data from the analyses of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Analytical Resources, Inc., Tukwila, Washington. Refer to the **Sample Index** for a complete list of samples.

SDG	Number of Samples	Validation Level
RZ45	10 Soil	EPA Stage 2B
RZ67	1 Soil	EPA Stage 2B
	1 Rinsate Blank	EPA Stage 2A

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	1	Field Duplicates
	Initial Calibration (ICAL)		Retention Time Window
	Continuing Calibration (CCAL)		Target Analyte List
	Laboratory Blanks		Compound Identification
1	Field Blanks		Compound Quantitation
	Surrogate Compounds		Reporting Limits
	Laboratory Control Samples (LCS)		Reported Results
2	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)		

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 2° to 6°C. Several coolers were received outside of these limits, with temperatures ranging from 1.9°C to 10.1°C. The temperature outliers did not impact data quality; therefore no qualifiers were assigned.

Field Blanks

SDG RZ67: One equipment rinsate, RB-120810, was submitted. No target analytes were detected in this blank.

Matrix Spike/Matrix Spike Duplicates

SDG RZ45: Matrix spike/matrix spike duplicate (MS/MSD) analyses were performed using Sample SS-03-2-4-120610. The MS %R value for dinoseb was less than the lower control limit and the MSD %R value was greater than the upper control limit. Dinoseb was not detected in the parent sample; the result was estimated (UJ-8) with no bias assigned.

SDG RZ67: No MS/MSD analyses were performed in association with the rinsate blank. Laboratory precision and accuracy were evaluated using the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) results.

Field Duplicates

No field duplicates were submitted.

IV. OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and MS/MSD recoveries. Precision was also acceptable as demonstrated by the LCS/LCSD and MS/MSD elative percent difference values.

Data were qualified based on MS/MSD recovery outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
South Park Landfill RIFS
Orthophosphate Pesticides by Method 8270D-SIM

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Analytical Resources, Inc., Tukwila, Washington, analyzed the samples. Refer to the **Sample Index** for a list of samples that were reviewed.

SDG	Number of Samples	Validation Level
RZ45	10 Soil	EPA Stage 2B
RZ67	2 Soil	EPA Stage 2B
	1 Rinsate Blank	EPA Stage 2A

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	1	Matrix Spike/Matrix Spike Duplicate (MS/MSD)
	Initial Calibration (ICAL)		Internal Standards
1	Continuing Calibration (CCAL)	1	Field Duplicates
	Laboratory Blanks		Target Analyte list
1	Field Blanks	2	Reporting Limits
1	Surrogate Compounds		Compound Identification
2	Laboratory Control Samples (LCS/LCSD)		Reported Results

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

Sample Receipt, Preservation, and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 2° to 6°C. Several coolers were received outside of these limits, with temperatures ranging from 1.9°C to 10.1°C. The temperature outliers did not impact data quality; therefore no qualifiers were assigned.

Continuing Calibration

All relative response factor (RRF) values were greater than the 0.05 minimum control limit. With the exception noted below, the values for percent difference (%D) were within the ±25% control limits.

SDG RZ67: The %D value for monocrotophos was outside of the control limits and indicated a potential high bias. This analyte was not detected in the associated samples; therefore no qualification of data was necessary.

Field Blanks

SDG RZ67: One rinsate blank, RB-120810, was submitted. No target analytes were detected in this blank.

Surrogate Recovery

SDG RZ45: Matrix interference prevented the quantitation of the surrogate tributyl phosphate in several samples. Because the recoveries for triphenyl phosphate (second surrogate compound) were acceptable; no action was taken.

Laboratory Control Samples

SDG RZ67: The percent recovery (%R) values for monocrotophos were less than the lower control limit for the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) associated with the rinsate blank. The result for monocrotophos in this sample was estimated (UJ-10) to indicate a potential low bias.

The LCS/LCSD %R values for merphos oxone were greater than the upper control limit. This analyte was not detected in the associated sample; therefore no qualification of data was necessary based on the potential high bias.

Matrix Spike/Matrix Spike Duplicate

SDG RZ45: Sample SS-03-2-4-120610 was used for the matrix spike/matrix spike duplicate (MS/MSD) analyses. The %R values for chlorpyrifos were greater than the upper control limit. This analyte was not detected in the parent sample; therefore no qualification of data was necessary based on the potential high bias.

Field Duplicates

SDG RZ67: One set of field duplicates were submitted; SS-P-120810 and SS-PD-120810. There were no positive results for either sample. Field precision was acceptable.

Reporting Limits

SDG RZ45: The chromatograms indicated non-target background interferences for the analyte EPN in Samples SS-02-0-2-120610 and SS-03-0-2-120610. The reporting limits (RL) for these analytes were flagged "Y" by the laboratory. These "Y" flagged results were qualified (U-22) to indicate that they were not-detected at an elevated RL.

III. OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and MS/MSD %R values; and precision was acceptable as demonstrated by the LCS/LCSD, MS/MSD, and field duplicate relative percent difference values.

Reporting limits were elevated due to background interferences. One data point was estimated based on LCS/LCSD %R outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
South Park Landfill RIFS
Dioxin/Furan Compounds by Method 1613

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory quality control (QC) samples. Samples were analyzed by Frontier Analytical Laboratory, El Dorado Hills, California. Refer to the **Sample Index** for a complete list of samples.

SDG	Number of Samples	Validation Level
6501	3 Soil	EPA Stage 2B

I. DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

II. TECHNICAL DATA VALIDATION

The quality control (QC) requirements reviewed are summarized in the following table:

1	Sample Receipt, Preservation, and Holding Times		Ongoing Precision and Recovery (OPR)
	System Performance and Resolution Checks	2	Laboratory Duplicates
	Initial Calibration (ICAL)	1	Field Duplicates
	Calibration Verification (CVER)		Target Analyte List
	Method Blanks	2	Reported Results
	Labeled Compound Recovery		Compound Identification
1	Matrix Spike/Matrix Spike Duplicates (MS/MSD)		

[1] ***Quality control results are discussed below, but no data were qualified.***
[2] ***Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.***

Sample Receipt, Preservation, and Holding Times

The samples were transferred from Analytical Resources, Inc (ARI) to Frontier Analytical Laboratory. As stated in validation guidance documents, samples should be maintained within the advisory temperature range of 2°C to 6°C. The temperature recorded by Frontier was 0.0°C, which is less than the lower control limit. The temperature outlier did not impact data quality; therefore no data were qualified.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples were not analyzed. Laboratory accuracy was evaluated from the on-going precision and recovery (OPR) standard and labeled compound recoveries.

Laboratory Duplicates

The laboratory duplicate analysis was performed using Sample DU3. With the exceptions noted below, the relative percent difference (RPD) values were less than the control limit of 25%.

Analyte	RPD
1,2,3,4,7,8-HxCDF	36.4%
1,2,3,4,6,7,8-HpCDF	25.3%
1,2,3,4,7,8,9-HpCDF	29.9%
OCDF	38.8%
Total HxCDF	29.9%
Total HpCDF	33.4%

The results for the above analytes were estimated (J-9) in the parent sample only.

Field Duplicates

No field duplicate samples were submitted.

Reported Results

Positive results for 2,3,7,8-TCDF that were greater than the reporting limit were confirmed on a DB-225 column as specified by the method. The results from the DB-225 column were reported.

The laboratory assigned "D and/or M" flags to several of the reported homologue group totals to indicate that a diphenyl ether (D) or some other interference (M) was present, resulting in a high bias in the reported result. All analytes that were "D" and/or "M" flagged were estimated (J-14).

III. OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the labeled compound and OPR recoveries. With the exceptions noted above, precision was also acceptable as demonstrated by laboratory duplicate RPD values.

Data were estimated based on interference from diphenyl ether and laboratory duplicate RPD outliers.

All data, as qualified, are acceptable for use.

EcoChem, INC.
Environmental Data Quality

APPENDIX A
DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES
Based on National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

DATA QUALIFIER REASON CODES

1	Holding Time/Sample Preservation
2	Chromatographic pattern in sample does not match pattern of calibration standard.
3	Compound Confirmation
4	Tentatively Identified Compound (TIC) (associated with NJ only)
5A	Calibration (initial)
5B	Calibration (continuing)
6	Field Blank Contamination
7	Lab Blank Contamination (e.g., method blank, instrument, etc.)
8	Matrix Spike(MS & MSD) Recoveries
9	Precision (all replicates)
10	Laboratory Control Sample Recoveries
11	A more appropriate result is reported (associated with “R” and “DNR” only)
12	Reference Material
13	Surrogate Spike Recoveries (a.k.a., labeled compounds & recovery standards)
14	Other (define in validation report)
15	GFAA Post Digestion Spike Recoveries
16	ICP Serial Dilution % Difference
17	ICP Interference Check Standard Recovery
18	Trip Blank Contamination
19	Internal Standard Performance (e.g., area, retention time, recovery)
20	Linear Range Exceeded
21	Potential False Positives
22	Elevated Detection Limit Due to Interference (i.e., laboratory, chemical and/or matrix)

EcoChem Validation Guidelines for Semivolatile Analysis by GC/MS (Based on Organic NFG 1999)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature	4°C ±2°	J(+)/UJ(-) if greater than 6 deg. C (EcoChem PJ)	1
Holding Time	Water: 7 days from collection Soil: 14 days from collection Analysis: 40 days from extraction	Water: J(+)/UJ(-) if ext. > 7 and < 21 days J(+)/R(-) if ext > 21 days (EcoChem PJ) Solids/Wastes: J(+)/UJ(-) if ext. > 14 and < 42 days J(+)/R(-) if ext. > 42 days (EcoChem PJ) J(+)/UJ(-) if analysis >40 days	1
Tuning	DFTPP Beginning of each 12 hour period Method acceptance criteria	R(+/-) all analytes in all samples associated with the tune	5A
Initial Calibration (Minimum 5 stds.)	RRF > 0.05	(EcoChem PJ, see TM-06) If MDL= reporting limit: J(+)/R(-) if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF <0.05	5A
	%RSD < 30%	(EcoChem PJ, see TM-06) J(+) if %RSD > 30%	5A
Continuing Calibration (Prior to each 12 hr. shift)	RRF > 0.05	(EcoChem PJ, see TM-06) If MDL= reporting limit: J(+)/R(-) if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF <0.05	5B
	%D <25%	(EcoChem PJ, see TM-06) If > +/-90%: J+/R- If -90% to -26%: J+ (high bias) If 26% to 90%: J+/UJ- (low bias)	5B
Method Blank	One per matrix per batch No results > CRQL	U(+) if sample (+) result is less than CRQL and less than appropriate 5X or 10X rule (raise sample value to CRQL)	7
		U(+) if sample (+) result is greater than or equal to CRQL and less than appropriate 5X and 10X rule (at reported sample value)	7
	No TICs present	R(+) TICs using 10X rule	7
Field Blanks (Not Required)	No results > CRQL	Apply 5X/10X rule; U(+) < action level	6

EcoChem Validation Guidelines for Semivolatile Analysis by GC/MS (Based on Organic NFG 1999)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
MS/MSD (recovery)	One per matrix per batch Use method acceptance criteria	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
MS/MSD (RPD)	One per matrix per batch Use method acceptance criteria	J(+) in parent sample if RPD > CL	9
LCS CLP low conc. H2O only	One per lab batch Within method control limits	J(+) assoc. cmpd if > UCL J(+)/R(-) assoc. cmpd if < LCL J(+)/R(-) all cmpds if half are < LCL	10
LCS regular SVOA (H2O & solid)	One per lab batch Lab or method control limits	J(+) if %R > UCL J(+)/UJ(-) if %R <LCL J(+)/R(-) if %R < 10% (EcoChem PJ)	10
LCS/LCSD *(if required)*	One set per matrix and batch of 20 samples RPD < 35%	J(+)/UJ(-) assoc. cmpd. in all samples	9
Surrogates	Minimum of 3 acid and 3 base/neutral compounds Use method acceptance criteria	Do not qualify if only 1 acid and/or 1 B/N surrogate is out unless <10% J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) if %R < 10%	13
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	J(+) if > 200% J(+)/UJ(-) if < 50% J(+)/R(-) if < 25% RT>30 seconds, narrate and Notify PM	19
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (EcoChem PJ)	9
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NJ the TIC unless: R(+) common laboratory contaminants See Technical Director for ID issues	4
Quantitation/ Identification	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	See Technical Director if outliers	14 21 (false +)

EcoChem Validation Guidelines for Pesticides, PCBs, Herbicides, and Phenol by GC/ECD (Based on Organic NFG 1999 & EPA SW-846 Methods 8081/8082/8041/8151)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler Temperature	4°C ±2°	J(+)/UJ(-) if greater than 6 deg. C (EcoChem PJ)	1
Holding Time	Water: 7 days from collection Soil: 14 days from collection Analysis: 40 days from extraction	J(+)/UJ(-) if ext/analyzed > HT J(+)/R(-) if ext/analyzed > 3X HT (EcoChem PJ)	1
Resolution Check	Beginning of ICAL Sequence Within RTW Resolution >90%	Narrate (Use Professional Judgement to qualify)	14
Instrument Performance (Breakdown)	DDT Breakdown: < 20% Endrin Breakdown: <20% Combined Breakdown: <30% Compounds within RTW	J(+) DDT NJ(+) DDD and/or DDE R(-) DDT - If (+) for either DDE or DDD J(+) Endrin NJ(+) EK and/or EA R(-) Endrin - If (+) for either EK or EA	5A
Retention Times	Surrogates: TCX (+/- 0.05); DCB (+/- 0.10) Target compounds: elute before heptachlor epoxide (+/- 0.05) elute after heptachlor epoxide (+/- 0.07)	NJ(+)/R(-) results for analytes with RT shifts For full DV, use PJ based on examination of raw data	5B
Initial Calibration	Pesticides: Low=CRQL, Mid=4X, High=16X Multiresponse - one point Calibration %RSD<20% %RSD<30% for surr; two comp. may exceed if <30% Resolution in Mix A and Mix B >90%	J(+)/UJ(-)	5A
Continuing Calibration	Alternating PEM standard and INDA/INDB standards every 12 hours (each preceeded by an inst. Blank) %D < 25% Resolution >90% in IND mixes; 100% for PEM	J(+)/UJ(-) J(+)R(-) if %D > 90% PJ for resolution	5B
Method Blank	One per matrix per batch No results > CRQL	U(+) if sample result is < CRQL and < 5X rule (raise sample value to CRQL) U(+) if sample result is > or equal to CRQL and < 5X rule (at reported sample value)	7
Instrument Blanks	Analyzed at the beginning of every 12 hour sequence No analyte > 1/2 CRQL	Same as Method Blank	7
Field Blanks	Not addressed by NFG No results > CRQL	Apply 5X rule; U(+) < action level	6

EcoChem Validation Guidelines for Pesticides, PCBs, Herbicides, and Phenol by GC/ECD (Based on Organic NFG 1999 & EPA SW-846 Methods 8081/8082/8041/8151)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
MS/MSD (recovery)	One set per matrix per batch Method Acceptance Criteria	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
MS/MSD (RPD)	One set per matrix per batch Method Acceptance Criteria	J(+) in parent sample if RPD > CL	9
LCS	One per SDG Method Acceptance Criteria	J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) using PJ if %R <<LCL (< 10%)	10
LCS/LCSD *(if required)*	One set per matrix and batch of 20 samples RPD < 35%	J(+)/UJ(-) assoc. cmpd. in all samples	9
Surrogates	TCX and DCB added to every sample %R = 30-150%	J(+)/UJ(-) if both %R = 10 - 60% J(+) if both >150% J(+)/R(-) if any %R <10%	13
Quantitation/ Identification	Quantitated using ICAL calibration factor (CF) RPD between columns <40%	J(+) if RPD = 40 - 60% NJ(+) if RPD >60% EcoChem PJ - See TM-08	3
Two analyses for one sample	Report only one result per analyte	"DNR" results that should not be used to avoid reporting two results for one sample	11
Sample Clean-up	GPC required for soil samples Florisil required for all samples Sulfur is optional Clean-up standard check %R within CLP limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL	14
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate (Qualifiy if required by project QAPP)	9

EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Cooler/Storage Temperature	Waters/Solids < 4°C Tissues <-10°C	EcoChem PJ, see TM-05	1
Holding Time	Extraction - Water: 30 days from collection *Note:* Under CWA, SDWA, and RCRA the HT for H2O is 7 days* Extraction - Soil: 30 days from collection Analysis: 40 days from extraction	J(+)/UJ(-) if ext > 30 days J(+)/UJ(-) if analysis > 40 Days EcoChem PJ, see TM-05	1
Mass Resolution	>=10,000 resolving power at m/z 304.9824 Exact mass of m/z 380.9760 w/in 5 ppm of theoretical value (380.97410 to 380.97790) . Analyzed prior to ICAL and at the start and end of each 12 hr. shift	R(+/-) if not met	14
Window Defining Mix and Column Performance Mix	Window defining mixture/Isomer specificity std run before ICAL and CCAL Valley < 25% (valley = (x/y)*100%) x = ht. of TCDD y = baseline to bottom of valley For all isomers eluting near 2378-TCDD/TCDF isomers (TCDD only for 8290)	J(+) if valley > 25%	5A (ICAL) 5B (CCAL
Initial Calibration	Minimum of five standards %RSD < 20% for native compounds %RSD <30% for labeled compounds (%RSD <35% for labeled compounds under 1613b)	J(+) natives if %RSD > 20%	5A
	Abs. RT of $^{13}C_{12}$-1234-TCDD >25 min on DB5 >15 min on DB-225	EcoChem PJ, see TM-05	
	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	EcoChem PJ, see TM-05	
	S/N ratio > 10 for all native and labeled compounds in CS1 std.	If <10, elevate Det. Limit or R(-)	

EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Continuing Calibration	Analyzed at the start and end of each 12 hour shift. %D+/-20% for native compounds %D +/-30% for labeled compounds (Must meet limits in Table 6, Method 1613B) (If %Ds in the closing CCAL are w/in 25%/35% the avg RF from the two CCAL may be used to calculate samples per Method 8290, Section 8.3.2.4)	Do not qualify labeled compounds. Narrate in report for labeled compound %D outliers. For native compound %D outliers: 8290: J(+)/UJ(-) if %D = 20% - 75% J(+)/R(-) if %D > 75% 1613: J(+)/UJ(-) if %D is outside Table 6 limits J(+)/R(-) if %D is +/- 75% of Table 6 limit	5B
	Abs. RT of $^{13}C_{12}$-1234-TCDD and $^{13}C12$-123789-HxCDD +/- 15 sec of ICAL.	EcoChem PJ, see ICAL section of TM-05	
	RRT of all other compounds must meet Table 2 of 1613B.	EcoChem PJ, see TM-05	
	Ion Abundance ratios within QC limits (Table 8 of method 8290) (Table 9 of method 1613B)	EcoChem PJ, see TM-05	
	S/N ratio > 10	If <10, elevate Det. Limit or R(-)	
Method Blank	One per matrix per batch No positive results	If sample result <5X action level, qualify U at reported value.	7
Field Blanks (Not Required)	No positive results	If sample result <5X action level, qualify U at reported value.	6
LCS / OPR	Concentrations must meet limits in Table 6, Method 1613B or lab limits.	J(+) if %R > UCL J(+)/UJ(-) if %R < LCL J(+)/R(-) using PJ if %R <<LCL (< 10%)	10
MS/MSD (recovery)	May not analyze MS/MSD %R should meet lab limits.	Qualify parent only unless other QC indicates systematic problems: J(+) if both %R > UCL J(+)/UJ(-) if both %R < LCL J(+)/R(-) if both %R < 10% PJ if only one %R outlier	8
MS/MSD (RPD)	May not analyze MS/MSD RPD < 20%	J(+) in parent sample if RPD > CL	9

EcoChem Validation Guidelines for Dioxin/Furan Analysis by HRMS
(Based on EPA Reg. 10 SOP, Rev. 2, 1996 & EPA SW-846, Methods 1613b and 8290)

VALIDATION QC ELEMENT	ACCEPTANCE CRITERIA	ACTION	REASON CODE
Lab Duplicate	RPD <25% if present.	J(+)/UJ(-) if outside limts	9
Labeled Compounds / Internal Standards	*Method 8290:* %R = 40% - 135% in all samples --- *Method 1613B:* %R must meet limits specified in Table 7, Method 1613	J(+)/UJ(-) if %R = 10% to LCL J(+) if %R > UCL J(+)/R(-) if %R < 10%	13
Quantitation/ Identification	Ions for analyte, IS, and rec. std. must max w/in 2 sec. S/N >2.5 IA ratios meet limits in Table 9 of 1613B or Table 8 of 8290 RRTs w/in limits in Table 2 of 1613B	If RT criteria not met, use PJ (see TM-05) If S/N criteria not met, J(+). if unlabelled ion abundance not met, change to EMPC If labelled ion abundance not met, J(+).	21
EMPC (estimated maximum possible concentration)	If quantitation idenfication criteria are not met, laboratory should report an EMPC value.	If laboratory correctly reported an EMPC value, qualify with U to indicate that the value is a detection limit.	14
Interferences	PCDF interferences from PCDPE	If both detected, change PCDF result to EMPC	14
Second Column Confirmation	All 2378-TCDF hits must be confirmed on a DB-225 (or equiv) column. All QC specs in this table must be met for the confirmation analysis.	Report lower of the two values. If not performed use PJ (see TM-05).	3
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (EcoChem PJ)	9
Two analyses for one sample	Report only one result per analyte	"DNR" results that should not be used	11

EcoChem, INC.
Environmental Data Quality

APPENDIX B
QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
South Park Landfill Site RIFS

SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
6501	DU1	6501-001-SA	EPA 1613 D/F	Total PeCDF	144	pg/g	D,M	J	14
6501	DU1	6501-001-SA	EPA 1613 D/F	Total TCDF	118	pg/g	D,M	J	14
6501	DU2	6501-002-SA	EPA 1613 D/F	1,2,3,6,7,8-HxCDF	102	pg/g	D,M	J	14
6501	DU2	6501-002-SA	EPA 1613 D/F	Total HxCDF	1400	pg/g	D,M	J	14
6501	DU2	6501-002-SA	EPA 1613 D/F	Total PeCDF	1310	pg/g	D,M	J	14
6501	DU2	6501-002-SA	EPA 1613 D/F	Total TCDF	1290	pg/g	D,M	J	14
6501	DU3	6501-003-DUP	EPA 1613 D/F	1,2,3,6,7,8-HxCDF	22.2	pg/g	D,M	J	14
6501	DU3	6501-003-DUP	EPA 1613 D/F	Total HxCDF	389	pg/g	D,M	J	14
6501	DU3	6501-003-DUP	EPA 1613 D/F	Total PeCDF	271	pg/g	D,M	J	14
6501	DU3	6501-003-DUP	EPA 1613 D/F	Total TCDF	235	pg/g	D,M	J	14
6501	DU3	6501-003-SA	EPA 1613 D/F	1,2,3,6,7,8-HxCDF	26.4	pg/g	D,M	J	14
6501	DU3	6501-003-SA	EPA 1613 D/F	Total HxCDF	526	pg/g	D,M	J	14
6501	DU3	6501-003-SA	EPA 1613 D/F	Total PeCDF	324	pg/g	D,M	J	14
6501	DU3	6501-003-SA	EPA 1613 D/F	Total TCDF	241	pg/g	D,M	J	14
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8041	Pentachlorophenol	38	ug/kg	U	UJ	14
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8041	Pentachlorophenol	16	ug/kg	U	UJ	14
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8041	Pentachlorophenol	13	ug/kg	U	UJ	14
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8041	Pentachlorophenol	31	ug/kg	U	UJ	14
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8041	Pentachlorophenol	33	ug/kg	U	UJ	14
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8041	Pentachlorophenol	31	ug/kg	U	UJ	14
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8041	Pentachlorophenol	50	ug/kg		J	14
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8041	Pentachlorophenol	19	ug/kg	U	UJ	14
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8041	Pentachlorophenol	15	ug/kg	U	UJ	14
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8041	Pentachlorophenol	30	ug/kg	U	UJ	14
RZ67	SS-P-120810	10-30568-RZ67B	SW8041	Pentachlorophenol	11	ug/kg	U	UJ	14
RZ67	RB-120810	10-30569-RZ67C	SW8041	Pentachlorophenol	0.25	ug/L	U	UJ	14
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	4,4'-DDD	40	ug/kg		NJ	5B
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	4,4'-DDE	20	ug/kg		NJ	5B
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	4,4'-DDT	9.3	ug/kg	U	R	5B
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	Aldrin	12	ug/kg	Y	U	22
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	cis-Chlordane	28	ug/kg	P	J	3
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	delta-BHC	38	ug/kg	Y	U	22
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	Heptachlor	9.8	ug/kg	Y	UJ	5B,22
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	Methoxychlor	46	ug/kg	U	UJ	5B
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	Toxaphene	460	ug/kg	U	UJ	5B
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8081B	trans-Chlordane	47	ug/kg	P	NJ	3
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8081B	4,4'-DDD	39	ug/kg		NJ	5B
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8081B	4,4'-DDE	17	ug/kg		NJ	5B
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8081B	4,4'-DDT	3.2	ug/kg	U	R	5B
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8081B	cis-Chlordane	14	ug/kg	P	J	3
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8081B	Dieldrin	4.7	ug/kg	Y	U	22
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8081B	Heptachlor	1.6	ug/kg	U	UJ	5B
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8081B	Heptachlor Epoxide	4.8	ug/kg	Y	U	22
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8081B	Methoxychlor	16	ug/kg	U	UJ	5B,8
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8081B	Toxaphene	160	ug/kg	U	UJ	5B
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	4,4'-DDD	120	ug/kg		NJ	5B
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	4,4'-DDE	18	ug/kg	J	NJ	5B
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	4,4'-DDT	16	ug/kg	U	R	5B
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	Aldrin	30	ug/kg	Y	U	22
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	cis-Chlordane	210	ug/kg	EP	DNR	20
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	gamma-BHC (Lindane)	16	ug/kg	Y	U	22
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	Heptachlor	24	ug/kg	Y	UJ	5B,22

Qualified Data Summary Table
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SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	Heptachlor Epoxide	24	ug/kg	Y	U	22
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	Methoxychlor	80	ug/kg	U	UJ	5B
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	Toxaphene	800	ug/kg	U	UJ	5B
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8081B	trans-Chlordane	140	ug/kg	E	DNR	20
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	4,4'-DDD	110	ug/kg		DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	4,4'-DDE	32	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	4,4'-DDT	32	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Aldrin	32	ug/kg	Y	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	alpha-BHC	16	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	beta-BHC	16	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	delta-BHC	16	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Dieldrin	32	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Endosulfan I	16	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Endosulfan II	32	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Endosulfan Sulfate	32	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Endrin	32	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Endrin Aldehyde	32	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Endrin Ketone	32	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	gamma-BHC (Lindane)	16	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Heptachlor	23	ug/kg	Y	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Heptachlor Epoxide	24	ug/kg	Y	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Methoxychlor	160	ug/kg	U	DNR	11
RZ45	SS-03-4-6-120610	10-30437-RZ45CDL	SW8081B	Toxaphene	1600	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	4,4'-DDD	210	ug/kg	E	DNR	20
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	4,4'-DDE	84	ug/kg		NJ	5B
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	4,4'-DDT	7.6	ug/kg	U	R	5B
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	cis-Chlordane	14	ug/kg	P	J	3
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	Dieldrin	13	ug/kg	Y	U	22
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	Heptachlor	4.5	ug/kg	Y	UJ	5B,22
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	Heptachlor Epoxide	13	ug/kg	Y	U	22
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	Methoxychlor	38	ug/kg	U	UJ	5B
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	Toxaphene	380	ug/kg	U	UJ	5B
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8081B	trans-Chlordane	20	ug/kg	P	NJ	3
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	4,4'-DDE	76	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	4,4'-DDT	76	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Aldrin	38	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	alpha-BHC	38	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	beta-BHC	38	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	cis-Chlordane	38	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	delta-BHC	38	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Dieldrin	76	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Endosulfan I	38	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Endosulfan II	76	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Endosulfan Sulfate	76	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Endrin	76	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Endrin Aldehyde	76	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Endrin Ketone	76	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	gamma-BHC (Lindane)	38	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Heptachlor	38	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Heptachlor Epoxide	38	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Methoxychlor	380	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	Toxaphene	3800	ug/kg	U	DNR	11

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SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8081B	trans-Chlordane	38	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	4,4'-DDD	3800	ug/kg	ES	DNR	20
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	4,4'-DDE	860	ug/kg	E	DNR	20
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	4,4'-DDT	230	ug/kg	E	DNR	20
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	beta-BHC	19	ug/kg	Y	U	22
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	cis-Chlordane	300	ug/kg	P	J	3
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	Dieldrin	59	ug/kg	Y	U	22
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	Endosulfan I	21	ug/kg	Y	U	22
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	Endrin	19	ug/kg	Y	U	22
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	Heptachlor	9.6	ug/kg	Y	UJ	5B,22
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	Heptachlor Epoxide	140	ug/kg	Y	U	22
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	Methoxychlor	67	ug/kg	U	UJ	5B
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8081B	Toxaphene	670	ug/kg	U	UJ	5B
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	4,4'-DDD	3900	ug/kg	E	DNR	20
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Aldrin	67	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	alpha-BHC	67	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	beta-BHC	67	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	cis-Chlordane	340	ug/kg	P	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	delta-BHC	67	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Dieldrin	130	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Endosulfan I	67	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Endosulfan II	130	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Endosulfan Sulfate	130	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Endrin	130	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Endrin Aldehyde	130	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Endrin Ketone	130	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	gamma-BHC (Lindane)	67	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Heptachlor	67	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Heptachlor Epoxide	67	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Methoxychlor	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	Toxaphene	6700	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL	SW8081B	trans-Chlordane	360	ug/kg		DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	4,4'-DDE	1300	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	4,4'-DDT	1300	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Aldrin	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	alpha-BHC	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	beta-BHC	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	cis-Chlordane	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	delta-BHC	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Dieldrin	1300	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Endosulfan I	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Endosulfan II	1300	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Endosulfan Sulfate	1300	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Endrin	1300	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Endrin Aldehyde	1300	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Endrin Ketone	1300	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	gamma-BHC (Lindane)	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Heptachlor	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Heptachlor Epoxide	670	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Methoxychlor	6700	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	Toxaphene	67000	ug/kg	U	DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45EDL2	SW8081B	trans-Chlordane	670	ug/kg	U	DNR	11

Qualified Data Summary Table
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SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	4,4'-DDD	4800	ug/kg	ESP	DNR	20
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	4,4'-DDE	740	ug/kg	E	DNR	20
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	4,4'-DDT	120	ug/kg	P	NJ	3,5B
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	Aldrin	22	ug/kg	Y	U	22
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	cis-Chlordane	480	ug/kg	P	J	3
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	Dieldrin	65	ug/kg	Y	U	22
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	Endosulfan I	28	ug/kg	Y	U	22
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	Endrin	20	ug/kg	Y	U	22
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	Heptachlor	6.2	ug/kg	U	UJ	5B
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	Heptachlor Epoxide	180	ug/kg	Y	U	22
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	Methoxychlor	62	ug/kg	U	UJ	5B
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8081B	Toxaphene	620	ug/kg	U	UJ	5B
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	4,4'-DDD	4800	ug/kg	E	DNR	20
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	4,4'-DDT	120	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Aldrin	62	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	alpha-BHC	62	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	beta-BHC	62	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	cis-Chlordane	510	ug/kg	P	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	delta-BHC	62	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Dieldrin	120	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Endosulfan I	62	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Endosulfan II	120	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Endosulfan Sulfate	120	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Endrin	120	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Endrin Aldehyde	120	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Endrin Ketone	120	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	gamma-BHC (Lindane)	62	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Heptachlor	62	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Heptachlor Epoxide	62	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Methoxychlor	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	Toxaphene	6200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL	SW8081B	trans-Chlordane	510	ug/kg		DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	4,4'-DDE	1200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	4,4'-DDT	1200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Aldrin	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	alpha-BHC	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	beta-BHC	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	cis-Chlordane	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	delta-BHC	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Dieldrin	1200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Endosulfan I	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Endosulfan II	1200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Endosulfan Sulfate	1200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Endrin	1200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Endrin Aldehyde	1200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Endrin Ketone	1200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	gamma-BHC (Lindane)	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Heptachlor	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Heptachlor Epoxide	620	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Methoxychlor	6200	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	Toxaphene	62000	ug/kg	U	DNR	11
RZ45	SS-02-4-6-120610	10-30440-RZ45FDL2	SW8081B	trans-Chlordane	620	ug/kg	U	DNR	11

Qualified Data Summary Table
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SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8081B	4,4'-DDD	24	ug/kg		NJ	5B
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8081B	4,4'-DDE	85	ug/kg		NJ	5B
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8081B	4,4'-DDT	16	ug/kg	U	R	5B
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8081B	Aldrin	12	ug/kg	Y	U	22
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8081B	delta-BHC	11	ug/kg	Y	U	22
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8081B	Heptachlor	8.1	ug/kg	U	UJ	5B
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8081B	Heptachlor Epoxide	80	ug/kg	Y	U	22
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8081B	Methoxychlor	81	ug/kg	U	UJ	5B
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8081B	Toxaphene	810	ug/kg	U	UJ	5B
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8081B	4,4'-DDD	1800	ug/kg	ES	DNR	20
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8081B	4,4'-DDE	320	ug/kg	E	DNR	20
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8081B	4,4'-DDT	66	ug/kg	P	NJ	3,5B
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8081B	cis-Chlordane	31	ug/kg	P	NJ	3
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8081B	Dieldrin	30	ug/kg	Y	U	22
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8081B	Heptachlor	8	ug/kg	U	UJ	5B
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8081B	Heptachlor Epoxide	59	ug/kg	Y	U	22
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8081B	Methoxychlor	80	ug/kg	U	UJ	5B
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8081B	Toxaphene	800	ug/kg	U	UJ	5B
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	4,4'-DDT	160	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Aldrin	80	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	alpha-BHC	80	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	beta-BHC	80	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	cis-Chlordane	80	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	delta-BHC	80	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Dieldrin	160	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Endosulfan I	80	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Endosulfan II	160	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Endosulfan Sulfate	160	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Endrin	160	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Endrin Aldehyde	160	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Endrin Ketone	160	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	gamma-BHC (Lindane)	80	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Heptachlor	80	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Heptachlor Epoxide	80	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Methoxychlor	800	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	Toxaphene	8000	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8081B	trans-Chlordane	80	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8081B	4,4'-DDD	500	ug/kg	ES	DNR	20
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8081B	4,4'-DDE	99	ug/kg	E	DNR	20
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8081B	4,4'-DDT	6.3	ug/kg	P	J	3,5B
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8081B	cis-Chlordane	8.2	ug/kg	P	J	3
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8081B	Dieldrin	4.5	ug/kg	Y	U	22
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8081B	Heptachlor	1.7	ug/kg	U	UJ	5B
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8081B	Heptachlor Epoxide	17	ug/kg	Y	U	22
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8081B	Methoxychlor	17	ug/kg	U	UJ	5B
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8081B	Toxaphene	170	ug/kg	U	UJ	5B
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	4,4'-DDD	570	ug/kg	E	DNR	20
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	4,4'-DDE	82	ug/kg		J	5B
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	4,4'-DDT	33	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Aldrin	17	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	alpha-BHC	17	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	beta-BHC	17	ug/kg	U	DNR	11

Qualified Data Summary Table
South Park Landfill Site RIFS

SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	cis-Chlordane	17	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	delta-BHC	17	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Dieldrin	33	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Endosulfan I	17	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Endosulfan II	33	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Endosulfan Sulfate	33	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Endrin	33	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Endrin Aldehyde	33	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Endrin Ketone	33	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	gamma-BHC (Lindane)	17	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Heptachlor	17	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Heptachlor Epoxide	17	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Methoxychlor	170	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	Toxaphene	1700	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL	SW8081B	trans-Chlordane	17	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	4,4'-DDE	170	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	4,4'-DDT	170	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Aldrin	83	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	alpha-BHC	83	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	beta-BHC	83	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	cis-Chlordane	83	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	delta-BHC	83	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Dieldrin	170	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Endosulfan I	83	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Endosulfan II	170	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Endosulfan Sulfate	170	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Endrin	170	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Endrin Aldehyde	170	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Endrin Ketone	170	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	gamma-BHC (Lindane)	83	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Heptachlor	83	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Heptachlor Epoxide	83	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Methoxychlor	830	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	Toxaphene	8300	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45IDL2	SW8081B	trans-Chlordane	83	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	4,4'-DDD	3400	ug/kg	ES	DNR	20
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	4,4'-DDE	760	ug/kg	E	DNR	20
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	4,4'-DDT	92	ug/kg	P	NJ	3,5B
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	cis-Chlordane	250	ug/kg	P	J	3
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	Dieldrin	48	ug/kg	Y	U	22
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	Endosulfan I	19	ug/kg	Y	U	22
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	Heptachlor	11	ug/kg	Y	UJ	5B,22
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	Heptachlor Epoxide	130	ug/kg	Y	U	22
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	Methoxychlor	60	ug/kg	U	UJ	5B
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8081B	Toxaphene	600	ug/kg	U	UJ	5B
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	4,4'-DDD	3700	ug/kg	E	DNR	20
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	4,4'-DDE	580	ug/kg		J	5B
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	4,4'-DDT	120	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Aldrin	60	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	alpha-BHC	60	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	beta-BHC	60	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	cis-Chlordane	330	ug/kg	P	DNR	11

Qualified Data Summary Table
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SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	delta-BHC	60	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Dieldrin	120	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Endosulfan I	60	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Endosulfan II	120	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Endosulfan Sulfate	120	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Endrin	120	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Endrin Aldehyde	120	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Endrin Ketone	120	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	gamma-BHC (Lindane)	60	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Heptachlor	60	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Heptachlor Epoxide	60	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Methoxychlor	600	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	Toxaphene	6000	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL	SW8081B	trans-Chlordane	340	ug/kg		DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	4,4'-DDE	600	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	4,4'-DDT	600	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Aldrin	300	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	alpha-BHC	300	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	beta-BHC	300	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	cis-Chlordane	300	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	delta-BHC	300	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Dieldrin	600	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Endosulfan I	300	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Endosulfan II	600	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Endosulfan Sulfate	600	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Endrin	600	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Endrin Aldehyde	600	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Endrin Ketone	600	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	gamma-BHC (Lindane)	300	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Heptachlor	300	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Heptachlor Epoxide	300	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Methoxychlor	3000	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	Toxaphene	30000	ug/kg	U	DNR	11
RZ45	SS-02-6-8-120610	10-30444-RZ45JDL2	SW8081B	trans-Chlordane	300	ug/kg	U	DNR	11
RZ67	SS-P-120810	10-30568-RZ67B	SW8081B	4,4'-DDT	3.1	ug/kg	U	UJ	5B,8
RZ67	SS-P-120810	10-30568-RZ67B	SW8081B	cis-Chlordane	3.6	ug/kg		J	9
RZ67	SS-P-120810	10-30568-RZ67B	SW8081B	Heptachlor	1.5	ug/kg	U	UJ	5B
RZ67	SS-P-120810	10-30568-RZ67B	SW8081B	Methoxychlor	15	ug/kg	U	UJ	5B,8
RZ67	SS-P-120810	10-30568-RZ67B	SW8081B	Toxaphene	150	ug/kg	U	UJ	5B
RZ67	SS-P-120810	10-30568-RZ67B	SW8081B	trans-Chlordane	7.1	ug/kg	P	NJ	3,9
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8082	Aroclor 1254	330	ug/kg	Y	U	22
RZ45	SS-P-120810	10-30568-RZ67B	SW8082	Aroclor 1248	240	ug/kg	Y	U	22
RZ45	SS-P-120810	10-30568-RZ67B	SW8082	Aroclor 1260	96	ug/kg	Y	U	22
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8151A	Dinoseb	32	ug/kg	U	UJ	8
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8270D	Benzidine	1800	ug/kg	U	R	8,10
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8270D	Benzo(a)anthracene	370	ug/kg		J	9
RZ45	SS-03-0-2-120610	10-30435-RZ45A	SW8270D	Chrysene	570	ug/kg		J	9
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8270D	Benzidine	380	ug/kg	U	R	10
RZ45	SS-03-2-4-120610	10-30436-RZ45B	SW8270D	bis(2-Ethylhexyl)phthalate	220	ug/kg	B	U	7
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8270D	Benzidine	360	ug/kg	U	R	10
RZ45	SS-03-4-6-120610	10-30437-RZ45C	SW8270D	bis(2-Ethylhexyl)phthalate	230	ug/kg	B	U	7
RZ45	SS-02-0-2-120610	10-30438-RZ45D	SW8270D	Benzidine	760	ug/kg	U	R	10

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SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	1,2,4-Trichlorobenzene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	1,2-Dichlorobenzene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	1,2-Diphenylhydrazine	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	1,3-Dichlorobenzene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	1,4-Dichlorobenzene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	1-Methylnaphthalene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,2'-Oxybis(1-Chloropropane)	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,3,4,6-Tetrachlorophenol	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,3,5,6-Tetrachlorophenol	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,4,5-Trichlorophenol	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,4,6-Trichlorophenol	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,4-Dichlorophenol	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,4-Dimethylphenol	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,4-Dinitrophenol	2300	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,4-Dinitrotoluene	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2,6-Dinitrotoluene	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2-Chloronaphthalene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2-Chlorophenol	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2-Methylnaphthalene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2-Methylphenol	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2-Nitroaniline	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	2-Nitrophenol	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	3,3'-Dichlorobenzidine	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	3-Nitroaniline	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	4,6-Dinitro-2-Methylphenol	2300	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	4-Bromophenyl-phenylether	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	4-Chloro-3-methylphenol	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	4-Chloroaniline	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	4-Chlorophenyl-phenylether	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	4-Methylphenol	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	4-Nitroaniline	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	4-Nitrophenol	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Acenaphthene	240	ug/kg		DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Acenaphthylene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Aniline	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Anthracene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Azobenzene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Benzidine	2300	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Benzo(a)anthracene	160	ug/kg	J	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Benzo(a)pyrene	120	ug/kg	J	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Benzo(g,h,i)perylene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Benzyl Alcohol	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	bis(2-Chloroethoxy) Methane	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Bis-(2-Chloroethyl) Ether	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	bis(2-Ethylhexyl)phthalate	940	ug/kg	B	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Butylbenzylphthalate	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Carbazole	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Chrysene	260	ug/kg		DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Dibenz(a,h)anthracene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Dibenzofuran	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Diethylphthalate	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Dimethylphthalate	230	ug/kg	U	DNR	11

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SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Di-n-Butylphthalate	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Di-n-Octyl phthalate	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Fluoranthene	590	ug/kg		DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Fluorene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Hexachlorobenzene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Hexachlorobutadiene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Hexachlorocyclopentadiene	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Hexachloroethane	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Indeno(1,2,3-cd)pyrene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Isophorone	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Naphthalene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Nitrobenzene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	N-Nitrosodimethylamine	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	N-Nitroso-Di-N-Propylamine	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	N-Nitrosodiphenylamine	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Pentachlorophenol	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Phenanthrene	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Phenol	230	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Pyrene	460	ug/kg		DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Pyridine	1100	ug/kg	U	DNR	11
RZ45	SS-02-0-2-120610	10-30438-RZ45DDL	SW8270D	Total Benzofluoranthenes	230	ug/kg		DNR	11
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8270D	Benzidine	1100	ug/kg	U	R	10
RZ45	SS-02-2-4-120610	10-30439-RZ45E	SW8270D	bis(2-Ethylhexyl)phthalate	520	ug/kg	B	U	7
RZ45	SS-02-4-6-120610	10-30440-RZ45F	SW8270D	Benzidine	1100	ug/kg	U	R	10
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8270D	Benzidine	590	ug/kg	U	R	10
RZ45	SS-01-0-2-120610	10-30441-RZ45G	SW8270D	bis(2-Ethylhexyl)phthalate	330	ug/kg	B	U	7
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8270D	Benzidine	740	ug/kg	U	R	10
RZ45	SS-01-2-4-120610	10-30442-RZ45H	SW8270D	bis(2-Ethylhexyl)phthalate	6300	ug/kg	E	R	20
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	1,2,4-Trichlorobenzene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	1,2-Dichlorobenzene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	1,2-Diphenylhydrazine	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	1,3-Dichlorobenzene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	1,4-Dichlorobenzene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	1-Methylnaphthalene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,2'-Oxybis(1-Chloropropane)	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,3,4,6-Tetrachlorophenol	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,3,5,6-Tetrachlorophenol	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,4,5-Trichlorophenol	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,4,6-Trichlorophenol	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,4-Dichlorophenol	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,4-Dimethylphenol	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,4-Dinitrophenol	2200	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,4-Dinitrotoluene	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2,6-Dinitrotoluene	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2-Chloronaphthalene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2-Chlorophenol	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2-Methylnaphthalene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2-Methylphenol	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2-Nitroaniline	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	2-Nitrophenol	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	3,3'-Dichlorobenzidine	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	3-Nitroaniline	1100	ug/kg	U	DNR	11

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SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	4,6-Dinitro-2-Methylphenol	2200	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	4-Bromophenyl-phenylether	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	4-Chloro-3-methylphenol	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	4-Chloroaniline	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	4-Chlorophenyl-phenylether	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	4-Methylphenol	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	4-Nitroaniline	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	4-Nitrophenol	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Acenaphthene	150	ug/kg	J	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Acenaphthylene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Aniline	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Anthracene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Azobenzene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Benzidine	2200	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Benzo(a)anthracene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Benzo(a)pyrene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Benzo(g,h,i)perylene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Benzyl Alcohol	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	bis(2-Chloroethoxy) Methane	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Bis-(2-Chloroethyl) Ether	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Butylbenzylphthalate	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Carbazole	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Chrysene	210	ug/kg	J	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Dibenz(a,h)anthracene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Dibenzofuran	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Diethylphthalate	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Dimethylphthalate	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Di-n-Butylphthalate	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Di-n-Octyl phthalate	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Fluoranthene	440	ug/kg		DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Fluorene	120	ug/kg	J	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Hexachlorobenzene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Hexachlorobutadiene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Hexachlorocyclopentadiene	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Hexachloroethane	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Indeno(1,2,3-cd)pyrene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Isophorone	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Naphthalene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Nitrobenzene	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	N-Nitrosodimethylamine	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	N-Nitroso-Di-N-Propylamine	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	N-Nitrosodiphenylamine	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Pentachlorophenol	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Phenanthrene	1400	ug/kg		DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Phenol	220	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Pyrene	490	ug/kg		DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Pyridine	1100	ug/kg	U	DNR	11
RZ45	SS-01-2-4-120610	10-30442-RZ45HDL	SW8270D	Total Benzofluoranthenes	220	ug/kg	U	DNR	11
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8270D	Benzidine	340	ug/kg	U	R	10
RZ45	SS-01-4-6-120610	10-30443-RZ45I	SW8270D	bis(2-Ethylhexyl)phthalate	280	ug/kg	B	U	7
RZ45	SS-02-6-8-120610	10-30444-RZ45J	SW8270D	Benzidine	1100	ug/kg	U	R	10
RZ67	SS-P-120810	10-30568-RZ67B	SW8270D	1,4-Dichlorobenzene	52	ug/kg	B	U	7

Qualified Data Summary Table
South Park Landfill Site RIFS

SDG	Sample Id	Laboratory ID	Method	Analyte	Result	Units	Laboratory Qualifier	Validation Qualifier	Validation Reason
RZ67	SS-P-120810	10-30568-RZ67B	SW8270D	3,3'-Dichlorobenzidine	110	ug/kg	U	UJ	8
RZ67	SS-P-120810	10-30568-RZ67B	SW8270D	4-Chloroaniline	110	ug/kg	U	R	8
RZ67	SS-P-120810	10-30568-RZ67B	SW8270D	Aniline	23	ug/kg	U	UJ	8
RZ67	SS-P-120810	10-30568-RZ67B	SW8270D	Benzidine	230	ug/kg	U	R	8,10
RZ67	SS-P-120810	10-30568-RZ67B	SW8270D	Hexachlorocyclopentadiene	110	ug/kg	U	UJ	8
RZ67	SS-P-120810	10-30568-RZ67B	SW8270D	Phenanthrene	43	ug/kg		J	9
RZ67	SS-03-0-2-120610	10-30435-RZ45A	SW8270D SIM	EPN	740	ug/kg	Y	U	22
RZ67	SS-02-0-2-120610	10-30438-RZ45D	SW8270D SIM	EPN	610	ug/kg	Y	U	22
RZ67	RB-120810	10-30569-RZ67C	SW8270D SIM	Monocrotophos	1	ug/L	U	UJ	10

South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix F
Data Validation Reports

Groundwater Data Validation Reports

Monitoring Well Sampling Event
South Park Landfill

Data Validation Report

Prepared for
Seattle Public Utilities

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March 2011

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List of Abbreviations and Acronyms

Abbreviation/ Acronym	Definition
ARI	Analytical Resources, Inc. Laboratory
DNR	Do not report
DRO	Diesel range organics
GRO	Gasoline range organics
HCL	Hydrochloric acid
LCS	Laboratory control sample
LCSD	Laboratory control sample duplicate
MEE	Methane, Ethane, Ethene
MS	Matrix spike
MSD	Matrix spike duplicate
PAH	Polycyclic aromatic hydrocarbon
RL	Reporting limit
RPD	Relative percent difference
QA	Quality assurance
QC	Quality control
SAP	Sampling and Analysis Plan
SVOC	Semivolatile organic compound
TCMX	2,4,5,6-Tetrachlorometaxylene
TPH	Total petroleum hydrocarbons
USEPA	U. S. Environmental Protection Agency
VOA	Volatile organic analysis
VOC	Volatile organic compound

1.0 Project Narrative

1.1 OVERVIEW OF DATA VALIDATION

This report summarizes the results of the Compliance Screening (Level I) performed on the groundwater and quality control sample data for the South Park Landfill Monitoring Well Sampling Event. A complete list of samples is provided in Table 1.1.

The chemical analyses were performed by ARI in Tukwila, WA. Groundwater samples were collected between January 26, 2011 and January 28, 2011 and submitted to ARI for chemical analyses. The analytical methods include the following:

- VOCs—USEPA Method 8260C
- Vinyl Chloride—USEPA Method 8260C-SIM
- SVOCs—USEPA Method 8270D
- PAHs—USEPA Method 8270D-SIM
- Pesticides—USEPA Method 8081
- Pentachlorophenol—USEPA Method 8041
- TPHs—NWTPH-Dx
- TPHs—NWTPH-Gx
- Metals—USEPA Method 200.8
- Mercury—USEPA Method 7470M
- Dissolved Gases—RSK 175
- Alkalinity—Standard Method 2320
- Sulfate—USEPA Method 375.2
- Sulfide—USEPA Method 376.2
- Nitrate+Nitrite—USEPA Method 353.2
- Dissolved Organic Carbon—USEPA Method 415.1

The data were reviewed using guidance and quality control criteria documented in the analytical methods*, National Functional Guidelines for Inorganic Data Review* (USEPA 1994 and 2004), *National Functional Guidelines for Organic Data Review* (USEPA 1999 and 2008) and the *Sampling and Analysis Plan, Appendix D of the Remedial Investigation/Feasibility Study Work Plan for South Park Landfill Site* (Farallon Consulting, LLC 2010).

Floyd|Snider's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. When compounds are analyzed at multiple dilutions, select results will be assigned a DNR qualification to indicate a more appropriate result is reported from another dilution. If values have no data qualifier

assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions, reasons, and validation criteria are included as Appendix A. The Qualified Data Summary Table is included in Appendix B. Data validation worksheets (excel worksheets) will be kept on file at Floyd|Snider.

2.0 Data Validation Report VOCs by USEPA Method 8260C

This report documents the review of analytical data from the analyses of groundwater samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

2.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

2.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

[1]	Cooler temperature and preservation	[2]	Internal standards and continuing calibration
	Extraction and analysis holding times		Blank contamination
	Surrogate recoveries		LCS and LCSD
	MS and MSD		Field duplicates
	Reporting limits and reported results		Target analyte list

Notes
1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued, as discussed below

Appendix A presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

2.2.1 Cooler Temperature and Preservation

Sample KMW-05-012711 did not pass the preservation check, having a pH of approximately13. However, the sample was analyzed within the seven day technical holding time for unpreserved samples. Per USEPA Guidelines, if there is no evidence that the sample was properly preserved, and the sample was analyzed within the technical holding time of seven days from sample collection, no qualification of the data is necessary. Therefore, since the sample was collected 1/27/2011 and analyzed on 1/30/2011, falling well within the seven day limit, it is with professional judgment that no data for this sample be qualified based on the failure to pass the preservation check.

2.2.2 Internal Standards and Continuing Calibration

The 1/28/2011 continuing calibration for Acrolein was 37.5%, and fell outside both the laboratory's 20% control limit, and the USEPA Guideline of 25%. Per the lab, internal standard areas were within control limits. Therefore, per USEPA Guidelines, all Acrolein results analyzed on 1/28/2011 will be qualified "J" as estimated. Please see Appendix B for the full list of samples that were qualified for this analyte.

2.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the matrix spike and laboratory control sample percent recovery values. Precision was acceptable, as demonstrated by the MS/MSD RPDs and LCS/LCSD RPDs.

All data are acceptable for use as qualified, see Appendix B for details.

3.0 Data Validation Report
Vinyl Chloride by USEPA Method 8260C-SIM

This report documents the review of analytical data from the analyses of groundwater samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

3.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

3.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

[1] Cooler temperature and preservation	Internal standards and continuing calibration
Extraction and analysis holding times	Blank contamination
Surrogate recoveries	LCS and LCSD
MS and MSD	Field duplicates
Reporting limits and reported results	Target analyte list

Notes
1 Quality control results are discussed below, but no data were qualified.

Appendix A presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

3.2.1 Cooler Temperature and Preservation

Sample KMW-05-012711 did not pass the preservation check, having a pH of approximately 13. However, the sample was analyzed within the seven day technical holding time for unpreserved samples. Per USEPA Guidelines, if there is no evidence that the sample was properly preserved, and the sample was analyzed within the technical holding time of seven days from sample collection, no qualification of the data is necessary. Therefore, since the sample was collected 1/27/2011 and analyzed on 2/1/2011, falling within the seven day limit, it is with professional judgment that no data for this sample be qualified based on the failure to pass the preservation check.

3.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the matrix spike and laboratory control sample percent recovery values. Precision was acceptable, as demonstrated by the MS/MSD RPDs and LCS/LCSD RPDs.

All data, as reported by the lab, are acceptable for use.

4.0 Data Validation Report SVOCs by USEPA Method 8270D

This report documents the review of analytical data from the analyses of groundwater samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

4.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

4.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

[1]	Cooler temperature and preservation		Internal standards and continuing calibration
	Extraction and analysis holding times		Blank contamination
	Surrogate recoveries		LCS and LCSD
[1]	MS and MSD		Field duplicates
	Reporting limits and reported results		Target analyte list

Notes
1 Quality control results are discussed below, but no data were qualified.

Appendix A presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

4.2.1 Cooler Temperature and Preservation

Sample containers for KMW-04-012811 used for this analysis arrived in a cooler with a temperature of 8.1°C, which falls outside the recommended temperature range of 2.0-6.0°C. KMW-04-012811 was sampled on 1/28/2011 at 12:00, placed on ice, and was delivered on 1/28/2011 at 14:15, having less than 2.5 hours to cool. Therefore, it is with professional judgment that no data for this sample be qualified based on cooler temperature due to minimal cooling time between sampling and delivery.

4.2.2 Matrix Spike and Matrix Spike Duplicate

The percent recovery for 3,3'-Dichlorobenzidine (47.2%) was outside the advisory control limits (50-128%) for the matrix spike of MW-27-012711. The matrix spike duplicate percent recovery

was within control limits. Per USEPA Guidelines, no action is taken on MS/MSD data alone. As the MSD recovery was within control limits and all other QA/QC requirements for this analyte were met, it is with professional judgment that no data be qualified based on this information.

4.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the matrix spike and laboratory control sample percent recovery values. Precision was acceptable, as demonstrated by the MS/MSD RPDs and LCS/LCSD RPDs.

All data, as reported by the lab, are acceptable for use.

5.0 Data Validation Report
PAHs by USEPA Method 8270D-SIM

This report documents the review of analytical data from the analyses of groundwater samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

5.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

5.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

[1]	Cooler temperature and preservation		Internal standards and continuing calibration
	Extraction and analysis holding times	[2]	Blank contamination
	Surrogate recoveries		LCS and LCSD
	MS and MSD		Field duplicates
	Reporting limits and reported results		Target analyte list

Notes
1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued, as discussed below

Appendix A presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

5.2.1 Cooler Temperature and Preservation

Sample containers for KMW-04-012811 used for this analysis arrived in a cooler with a temperature of 8.1°C, which falls outside the recommended temperature range of 2.0-6.0°C. KMW-04-012811 was sampled on 1/28/2011 at 12:00, placed on ice, and was delivered on 1/28/2011 at 14:15, having less than 2.5 hours to cool. Therefore, it is with professional judgment that no data for this sample be qualified based on cooler temperature due to minimal cooling time between sampling and delivery.

5.2.2 Blank Contamination

The method blank associated with sample delivery groups SG40 and SG57 had no analytes detected above the reporting limits, however Naphthalene was detected at 0.0058 µg/L (below the 0.010 µg/L RL) and flagged "J" by the lab. Per USEPA Guidelines, if the analyte is detected in the sample and also in the associated blank, it is qualified if the sample concentration is less than five times the blank concentration, or below 0.029 µg/L in this instance. Only one sample, MW-29-012611, had a detected concentration below this threshold. All other results were either non-detects, or above five times the blank concentration. Therefore, it is with professional judgment that the result from MW-29-012611 be flagged as "UB" to indicate it should be considered undetected at a reporting limit that has been elevated to the concentration found in the sample due to blank contamination.

The method blank associated with sample delivery groups SG70 and SG71 was had no analytes detected above reporting limits, however Naphthalene was detected at 0.0068 µg/L (below the 0.010 µg/L RL) and flagged "J" by the lab. Per USEPA Guidelines, if the analyte is detected in the sample and also in the associated blank, it is qualified if the sample concentration is less than five times the blank concentration, or below 0.034 µg/L in this instance. Therefore, it is with professional judgment that the results from RB-012811, KMW-01A-012811, KMW-04-012811, and KMW-08-012811 all be flagged as "UB" to indicate they should be considered undetected at a reporting limit that has been elevated to the concentration found in the sample due to blank contamination.

Please see Appendix B for full details on the qualified samples for this analysis.

5.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the matrix spike and laboratory control sample percent recovery values. Precision was acceptable, as demonstrated by the MS/MSD RPDs and LCS/LCSD RPDs.

Dilutions were analyzed for some samples. All data are acceptable for use as qualified; please see Appendix B for details.

6.0 Data Validation Report Pesticides by USEPA Method 8081

This report documents the review of analytical data from the analyses of groundwater samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

6.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

6.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

[1]	Cooler temperature and preservation		Internal standards and continuing calibration
	Extraction and analysis holding times		Blank contamination
[1]	Surrogate recoveries		LCS and LCSD
	MS and MSD		Field duplicates
	Reporting limits and reported results		Target analyte list

Notes
1 Quality control results are discussed below, but no data were qualified.

Appendix A presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

6.2.1 Cooler Temperature and Preservation

Sample containers for KMW-04-012811 used for this analysis arrived in a cooler with a temperature of 8.1°C, which falls outside the recommended temperature range of 2.0-6.0°C. KMW-04-012811 was sampled on 1/28/2011 at 12:00, placed on ice, and was delivered on 1/28/2011 at 14:15, having less than 2.5 hours to cool. Therefore, it is with professional judgment that no data for this sample be qualified based on cooler temperature due to minimal cooling time between sampling and delivery.

6.2.2 Surrogate Recoveries

The recovery of TCMX for sample KMW-05-012711 was flagged as “NR” for not reported due to interference. The sample was reanalyzed at dilution with similar results. Per USEPA

Guidelines, if low or no surrogate recoveries are from sample dilution, professional judgment should be used to determine if the resulting data should be qualified. All results were non detects in this sample and flagged "Y" by the lab to indicate raised reporting limits due to matrix interference. It is with professional judgment that no additional qualifiers based on the surrogate recovery issue be added to those already given by the laboratory.

6.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the matrix spike and laboratory control sample percent recovery values. Precision was acceptable, as demonstrated by the MS/MSD RPDs and LCS/LCSD RPDs.

All data, as reported by the lab, are acceptable for use.

7.0 Data Validation Report
Pentachlorophenol by USEPA Method 8041

This report documents the review of analytical data from the analyses of groundwater samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

7.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

7.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

[1]	Cooler temperature and preservation		Internal standards and continuing calibration
	Extraction and analysis holding times		Blank contamination
	Surrogate recoveries		LCS and LCSD
	MS and MSD		Field duplicates
	Reporting limits and reported results		Target analyte list
[2]	Compound identification		

Notes
1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued, as discussed below

Appendix A presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

7.2.1 Cooler Temperature and Preservation

Sample containers for KMW-04-012811 used for this analysis arrived in a cooler with a temperature of 8.1°C, which falls outside the recommended temperature range of 2.0-6.0°C. KMW-04-012811 was sampled on 1/28/2011 at 12:00, placed on ice, and was delivered on 1/28/2011 at 14:15, having less than 2.5 hours to cool. Therefore, it is with professional judgment that no data for this sample be qualified based on cooler temperature due to minimal cooling time between sampling and delivery.

7.2.2 Compound Identification

The Pentachlorophenol result for sample KMW-05-012711 was flagged “P” by the lab to indicate that it was detected on both chromatographic columns, but with a high RPD between the columns. It is with professional judgment that the Pentachlorophenol result for sample KMW-05-012711 be qualified “J” to indicate an estimated value to reflect the high RPD between the columns.

7.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the matrix spike and laboratory control sample percent recovery values. Precision was acceptable, as demonstrated by the MS/MSD RPDs and LCS/LCSD RPDs.

All data are acceptable for use as qualified; please see Appendix B for details.

8.0 Data Validation Report TPHs by NWTPH-Dx

This report documents the review of analytical data from the analyses of groundwater samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

8.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and any anomalies were discussed in the case narrative.

8.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

[1]	Cooler temperature and preservation		Field duplicates
	Extraction and analysis holding times		Reporting limits and reported results
	Blank contamination		Target analyte list
	MS and MSD		LCS and LCSD
[2]	Surrogate recoveries	[2]	Compound identification
	Internal standards and continuing calibration		

Notes
1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued, as discussed below

Appendix A presents data validation criteria tables for diesel range hydrocarbon analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

8.2.1 Cooler Temperature and Preservation

Sample containers for KMW-04-012811 used for this analysis arrived in a cooler with a temperature of 8.1°C, which falls outside the recommended temperature range of 2.0-6.0°C. KMW-04-012811 was sampled on 1/28/2011 at 12:00, placed on ice, and was delivered on 1/28/2011 at 14:15, having less than 2.5 hours to cool. Therefore, it is with professional judgment that no data for this sample be qualified based on cooler temperature due to minimal cooling time between sampling and delivery.

8.2.2 Surrogate Recoveries

Per the laboratory, sample KMW-05-012711 required multiple treatments of acid and silica cleanups as it created an emulsion during extraction. The surrogate recovery of o-terphenyl was 38.8% and outside the control limits low (49-118%). Based on USEPA Guidelines as applied to this method, all results for sample KMW-05-012711 should be flagged "J" as estimated.

8.2.3 Compound Identification

The response for sample KMW-05-012711 was noted by the lab as "DRO/Motor Oil", indicating that there was an unknown response in the diesel range and a match for the Motor Oil pattern in the residual range. Therefore based on USEPA Guidelines as applied to this method, the results for Diesel for sample KMW-05-012711 should be flagged "J" as estimated.

8.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by matrix spike and laboratory control sample percent recovery values. Precision was acceptable, as demonstrated by the MS/MSD RPDs and LCS/LCSD RPDs.

All data are acceptable for use as qualified; please see Appendix B for details.

9.0 Data Validation Report TPHs by NWTPH-Gx

This report documents the review of analytical data from the analyses of groundwater samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

9.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and any anomalies were discussed in the case narrative.

9.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

[1]	Cooler temperature and preservation		Field duplicates
	Extraction and analysis holding times		Reporting limits and reported results
	Blank contamination		Target analyte list
	MS and MSD		LCS and LCSD
	Surrogate recoveries	[2]	Compound identification
	Internal standards and continuing calibration		

Notes
1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued, as discussed below

Appendix A presents data validation criteria tables for gasoline range hydrocarbon analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

9.2.1 Cooler Temperature and Preservation

Sample containers for KMW-04-012811 used for this analysis arrived in a cooler with a temperature of 8.1°C, which falls outside the recommended temperature range of 2.0-6.0°C. KMW-04-012811 was sampled on 1/28/2011 at 12:00, placed on ice, and was delivered on 1/28/2011 at 14:15, having less than 2.5 hours to cool. Therefore, it is with professional judgment that no data for this sample be qualified based on cooler temperature due to minimal cooling time between sampling and delivery.

Sample KMW-05-012711 did not pass the preservation check, having a pH of approximately13. However, the sample was analyzed within the seven day technical holding time for unpreserved

samples. Per USEPA Guidelines, if there is no evidence that the sample was properly preserved, and the sample was analyzed within the technical holding time of seven days from sample collection, no qualification of the data is necessary. Therefore, since the sample was collected 1/27/2011 and analyzed on 2/1/2011, falling within the seven day limit, it is with professional judgment that no data for this sample be qualified based on the failure to pass the preservation check.

9.2.2 Compound Identification

The response for sample KMW-05-012711 was noted by the laboratory as "GRO" indicating that there was a response in the gasoline range not matching a fuel pattern. Therefore based on USEPA Guidelines as applied to this method, the result for Gasoline in sample KMW-05-012711 should be flagged "J" as estimated.

9.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by matrix spike and laboratory control sample percent recovery values. Precision was acceptable, as demonstrated by the MS/MSD RPDs and LCS/LCSD RPDs.

All data are acceptable for use as qualified; please see Appendix B for details.

10.0 Data Validation Report
Select Metals by USEPA Method 200.8

This report documents the review of analytical data from the analyses of groundwater samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

10.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

10.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

[1]	Cooler temperature and preservation		Lab sample duplicates
	Extraction and analysis holding times		Field duplicates
	Blank contamination		Reporting limits and reported results
	LCS		Target analyte list
[1]	MS		Internal standards and continuing calibration

Notes
1 Quality control results are discussed below, but no data were qualified.

Appendix A presents data validation criteria tables for inorganic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

10.2.1 Cooler Temperature and Preservation

Sample containers for KMW-04-012811 used for this analysis arrived in a cooler with a temperature of 8.1°C, which falls outside the recommended temperature range of 2.0-6.0°C. KMW-04-012811 was sampled on 1/28/2011 at 12:00, placed on ice, and was delivered on 1/28/2011 at 14:15, having less than 2.5 hours to cool. Therefore, it is with professional judgment that no data for this sample be qualified based on cooler temperature due to minimal cooling time between sampling and delivery.

10.2.2 Matrix Spike

All Matrix Spike recoveries for Total and Dissolved Manganese were not applicable as the original concentrations were greater than four times (x4) the spike concentration in all instances.

Per USEPA Guidelines where than sample concentration is ≥4x the spike added, the data shall be reported unflagged even if the percent recovery does not meet the acceptance criteria. Therefore, no Total or Dissolved Manganese results will be qualified based on this matrix spike recovery information.

10.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the matrix spike and laboratory control sample percent recovery values. Precision was acceptable, as demonstrated by the lab sample/lab sample duplicate RPDs.

All data, as reported by the lab, are acceptable for use.

11.0 Data Validation Report
Mercury by USEPA Method 7470M

This report documents the review of analytical data from the analyses of groundwater samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

11.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

11.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

[1]	Cooler temperature and preservation	Lab sample duplicates
	Extraction and analysis holding times	Field duplicates
	Blank contamination	Reporting limits and reported results
	LCS	Target analyte list
	MS	Internal standards and continuing calibration

Notes
1 Quality control results are discussed below, but no data were qualified.

Appendix A presents data validation criteria tables for inorganic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

11.2.1 Cooler Temperature and Preservation

Sample containers for KMW-04-012811 used for this analysis arrived in a cooler with a temperature of 8.1°C, which falls outside the recommended temperature range of 2.0-6.0°C. KMW-04-012811 was sampled on 1/28/2011 at 12:00, placed on ice, and was delivered on 1/28/2011 at 14:15, having less than 2.5 hours to cool. Therefore, it is with professional judgment that no data for this sample be qualified based on cooler temperature due to minimal cooling time between sampling and delivery.

11.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the matrix spike and laboratory control sample

percent recovery values. Precision was acceptable, as demonstrated by the lab sample/lab sample duplicate RPDs.

All data, as reported by the lab, are acceptable for use.

12.0 Data Validation Report
Dissolved Gases by RSK 175

This report documents the review of analytical data from the analyses of groundwater samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

12.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and any anomalies were discussed in the case narrative.

12.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

[1]	Cooler temperature and preservation		Internal standards and continuing calibration
	Extraction and analysis holding times		Blank contamination
	Surrogate recoveries		LCS and LCSD
[1]	MS and MSD		Field duplicates
	Reporting limits and reported results		Target analyte list

Notes
1 Quality control results are discussed below, but no data were qualified.

QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

12.2.1 Cooler Temperature and Preservation

Per the laboratory, the MEE vials for MW-26-012711 were received empty. Unused preserved volume from VOC vials were used to complete the MEE analysis. Per Table D-2 of the SAP the MEE vials were 40ml VOA vials with HCL preservation. The VOC vials used for this analysis were also preserved with HCL. Therefore, it is with professional judgment that no results for this sample be qualified based on the sample volume coming from vials designated for VOC analysis and not MEE analysis, as the sample container and preservation methods are compatible.

12.2.2 Matrix Spike and Matrix Spike Duplicate

The MS/MSD recoveries for Methane were 124.7% and 127.8% and outside laboratory control limits high (80-120%). The RPD was within control limits and the recoveries for the LCS/LCSD were within control limits. Per USEPA Guidelines, no action is taken on MS/MSD data alone. Therefore, it is with professional judgment that no Methane data be qualified based on the MS/MSD data as the MS/MSD RPD and LCS/LCSD recoveries were within control limits.

12.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the laboratory control sample and laboratory control sample duplicate percent recovery values. Precision was acceptable, as demonstrated by the MS/MSD RPDs and LCS/LCSD RPDs.

All data, as reported by the lab, are acceptable for use.

13.0 Data Validation Report
Alkalinity by Standard Method 2320

This report documents the review of analytical data from the analyses of groundwater samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

13.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and any anomalies were discussed in the case narrative.

13.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

	Cooler temperature and preservation	Lab sample duplicates
	Extraction and analysis holding times	Field duplicates
[1]	Blank contamination	Reporting limits and reported results
	Standard reference material	Target analyte list

Notes
1 Quality control results are discussed below, but no data were qualified.

QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

13.3.1 Blank Contamination

No lab blank was analyzed for alkalinity. The reference material recovery was within control limits, and the field rinse blank sample was a non-detect. Per USEPA Guidelines as applied to this method, if the appropriate number of blanks were not analyzed, professional judgment should be used to determine if the associated sampled data should be qualified. It is with professional judgment that not data be qualified based on the lack of a lab blank for alkalinity as the reference material recovery was within control limits and the field rinse blank was a non-detect.

13.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the matrix spike and standard reference material percent recovery values. Precision was acceptable, as demonstrated by the lab sample/lab sample duplicate RPDs.

All data, as reported by the lab, are acceptable for use.

14.0 Data Validation Report
Sulfate by USEPA Method 375.2

This report documents the review of analytical data from the analyses of groundwater samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

14.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and any anomalies were discussed in the case narrative.

14.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

Cooler temperature and preservation		[1]	Lab sample duplicates
Extraction and analysis holding times			Field duplicates
Blank contamination			Reporting limits and reported results
MS			Target analyte list
Standard reference material			

Notes
1 Quality control outliers that impact the reported data were noted. Data qualifiers were issued, as discussed below

QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

14.2.1 Lab Sample Duplicates

The lab sample/lab sample duplicate RPD for sulfate was 142.1% for sample MW-30-012711, and was outside the control limits of ±30% by over 90%. This sample also happened to be the field duplicate to MW-25-012711. The original sulfate result for MW-30-012711 was 27.4 mg/L, and the result for MW-25-012711 was 26.7 mg/L with an RPD of 2.6%, indicating that the original result is likely to be a legitimate value. Per USEPA Guidelines, professional judgment is to be used to qualify those results that are determined to be affected by the RPD as "J" for estimated. Due to the RPD exceeding the control limits by such a significant amount, the Sulfate result for MW-30-012711 will be qualified "J" as estimated. It is with professional judgment that the remaining sulfate results shall also be qualified "J" as estimated due to the similarity in matrix between the samples. Please see Appendix B for a full list of qualified sulfate results.

14.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the matrix spike and standard reference material percent recovery values. Precision was acceptable, as demonstrated by the lab sample/lab sample duplicate RPDs.

All data are acceptable for use as qualified; please see Appendix B for details.

15.0 Data Validation Report
Sulfide by USEPA Method 376.2

This report documents the review of analytical data from the analyses of groundwater samples and the associated laboratory quality control (QC) samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

15.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and any anomalies were discussed in the case narrative.

15.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

	Cooler temperature and preservation	Lab sample duplicates
	Extraction and analysis holding times	Field duplicates
	Blank contamination	Reporting limits and reported results
[1]	MS	Target analyte list
	LCS	

Notes
1 Quality control results are discussed below, but no data were qualified.

QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

15.2.1 Matrix Spike

The matrix spike percent recovery of Sulfide was 139.6% and outside laboratory control limits high (75-125%). Per USEPA Guidelines as applied to this method, no action is taken on MS/MSD data alone. Therefore, it is with professional judgment that no Sulfide data be qualified based on this information, as all other QA/QC objectives were met for this analysis.

15.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the lab control sample percent recovery values. . Precision was acceptable, as demonstrated by the lab sample/lab sample duplicate RPDs.

All data, as reported by the lab, are acceptable for use.

16.0 Data Validation Report
Nitrate+Nitrite by USEPA Method 353.2

This report documents the review of analytical data from the analyses of groundwater samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

16.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and any anomalies were discussed in the case narrative.

16.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

	Cooler temperature and preservation	Lab sample duplicates
	Extraction and analysis holding times	Field duplicates
	Blank contamination	Reporting limits and reported results
[1]	MS	Target analyte list
	Standard reference material	

Notes
1 Quality control results are discussed below, but no data were qualified.

QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

16.2.1 Matrix Spike

The matrix spike percent recovery of Nitrate + Nitrite was 65.4% and outside laboratory control limits low. (75-125%) Per USEPA Guidelines as applied to this method, no action is taken on MS/MSD data alone. Therefore, it is with professional judgment that no Nitrate + Nitrite data be qualified based on this information alone, as all other QA/QC objectives were met for this analysis.

16.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the standard reference material percent recovery values. . Precision was acceptable, as demonstrated by the lab sample/lab sample duplicate RPDs.

All data, as reported by the lab, are acceptable for use.

17.0 Data Validation Report
Dissolved Organic Carbon by USEPA Method 415.1

This report documents the review of analytical data from the analyses of groundwater samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

17.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and any anomalies were discussed in the case narrative.

17.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

Cooler temperature and preservation	Lab sample duplicates
Extraction and analysis holding times	Field duplicates
Blank contamination	Reporting limits and reported results
MS	Target analyte list
Standard reference material	

All QC requirements were met without exception, and did not require further evaluation.

17.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the matrix spike and standard reference material percent recovery values. . Precision was acceptable, as demonstrated by the lab sample/lab sample duplicate RPDs.

All data, as reported by the lab, are acceptable for use.

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Tables

Table 1.1
Sample Index

Sample ID	Lab ID	VOCs by 8260C	Vinyl Chloride by 8260C-SIM	SVOCs by 8270D	PAHs by 8270D-SIM	Pesticides by 8081	Pentachlorophenol by SW8041	TPHs by NWTPH-Dx/Gx	Metals by 200.8	Mercury by 7470M	Conventionals by RSK 175, SM 2320, 375.2, 376.2, 353.2, & 415.1
MW-29-012611	SG40A, SG51A, SF51F	SG40	SG40	SG40	SG40	SG40	SG40	SG40	SG40	SG51	
MW-04-012611	SG40B, SG51B, SG51G	SG40	SG40	SG40	SG40	SG40	SG40	SG40	SG40	SG51	
MW-18-012611	SG40C, SG51C, SG51H	SG40	SG40	SG40	SG40	SG40	SG40	SG40	SG40	SG51	
MW-14-012611	SG40D, SG51D, SG51J	SG40	SG40	SG40	SG40	SG40	SG40	SG40	SG40	SG51	
MW-12-012611	SG40E, SG51E, SG51J	SG40	SG40	SG40	SG40	SG40	SG40	SG40	SG40	SG51	
MW-01-012711	SG57A, SG58A, SG48G	SG57	SG57	SG57	SG57	SG57	SG57	SG57	SG57	SG58	
MW-03-012711	SG57B, SG58B, SG58H	SG57	SG57	SG57	SG57	SG57	SG57	SG57	SG57	SG58	
KMW-07-012711	SG57C, SG58C, SG58I	SG57	SG57	SG57	SG57	SG57	SG57	SG57	SG57	SG58	
KMW-06-012711	SG57D, SG58E, SG58J	SG57	SG57	SG57	SG57	SG57	SG57	SG57	SG57	SG58	
KMW-05-012711	SG57E, SG58E, SG58K	SG57	SG57	SG57	SG57	SG57	SG57	SG57	SG57	SG58	
KMW-03A-012711	SG57F, SG58F, SG58L	SG57	SG57	SG57	SG57	SG57	SG57	SG57	SG57	SG58	
TB-012611	SG57M	SG57	SG57	SG57	SG57	SG57	SG57	SG57			
MW-24-012711	SG70A, SG76A, SG76I	SG70	SG70	SG70	SG70	SG70	SG70	SG70	SG70	SG76	SG70
MW-25-012711	SG70B, SG76B, SG76J	SG70	SG70	SG70	SG70	SG70	SG70	SG70	SG70	SG76	SG70
MW-26-012711	SG70C, SG76C, SG76K	SG70	SG70	SG70	SG70	SG70	SG70	SG70	SG70	SG76	SG70
MW-08-012711	SG70D, SG76D, SG76L	SG70	SG70	SG70	SG70	SG70	SG70	SG70	SG70	SG76	SG70
MW-10-012711	SG70F, SG76F, SG76N	SG70	SG70	SG70	SG70	SG70	SG70	SG70	SG70	SG76	SG70
MW-27-012711	SG70F, SG76F, SG76N	SG70	SG70	SG70	SG70	SG70	SG70	SG70	SG70	SG76	SG70

Sample ID	Lab ID	VOCs by 8260C	Vinyl Chloride by 8260C-SIM	SVOCs by 8270D	PAHs by 8270D-SIM	Pesticides by 8081	Pentachlorophenol by SW8041	TPHs by NWTPH-Dx/Gx	Metals by 200.8	Mercury by 7470M	Conventionals by RSK 175, SM 2320, 375.2, 376.2, 353.2, & 415.1
MW-30-012711	SG70G, SG76G, SG70O	SG70	SG70	SG70	SG70	SG70	SG70	SG70	SG70	SG76	SG70
RB-012811	SG70H, SG76H, SG76P	SG70	SG70	SG70	SG70	SG70	SG70	SG70	SG70	SG76	SG70
TB-012711	SG70I	SG70	SG70								
KMW-01A-012811	SG71A, SG72A, SG72D	SG71	SG71	SG71	SG71	SG71	SG71	SG71	SG71	SG72	
KMW-04-012811	SG71B, SG72B, SG72E	SG71	SG71	SG71	SG71	SG71	SG71	SG71	SG71	SG72	
KMW-08-012811	SG71C, SG72C, SG72F	SG71	SG71	SG71	SG71	SG71	SG71	SG71	SG71	SG72	

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Appendix A
Data Qualifier Definitions and Criteria Tables

DATA VALIDATION QUALIFIER CODES
National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is a Floyd|Snider qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

Floyd|Snider Validation Guidelines for Metals Analysis by ICP-MS (Based on Inorganic NFG 1994 & 2004)

Validation QC Element	Acceptance Criteria	Action
Cooler Temperature and Preservation	Cooler temperature: 4°C ±2° Waters: Nitric Acid to pH < 2 For Dissolved Metals: 0.45um filter & preserve after filtration	Floyd|Snider Professional Judgment—no qualification based on cooler temperature outliers J/UJ if pH preservation requirements are not met
Holding Time	180 days from date sampled Frozen tissues—HT extended to 2 years	J/UJ if holding time exceeded
Tune	Prior to ICAL monitoring compounds analyzed 5 times wih Std Dev. < 5% mass calibration <0.1 amu from True Value Resolution < 0.9 AMU @ 10% peak height or <0.75 amu @ 5% peak height	Use Professional Judgment to evaluate tune J/UJ if tune criteria not met
Initial Calibration	Blank + minimum 1 standard If more than 1 standard, r>0.995	J/UJ if r<0.995 (for multi point cal)
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R within ±10% of true value	J/UJ if %R 75–89% J if %R = 111-125% R if %R > 125% R if %R < 75%
Continuing Calibration Verification (CCV)	Every ten samples, immediately following ICV/ICB and at end of run ±10% of true value	J/UJ if %R = 75–89% J if %R 111-125% R if %R > 125% R if %R < 75%

Initial and Continuing Calibration Blanks (ICB/CCB)	After each ICV and CCV
	every ten samples and end of run
	| blank | < IDL (MDL)
		Action level is 5x absolute value of blank conc.
		For (+)blanks, U results < action level
		For (-) blanks, J/UJ results < action level

Validation QC Element	Acceptance Criteria	Action
Reporting Limit Standard (CRI)	2x RL analyzed beginning of run Not required for Al, Ba, Ca, Fe, Mg, Na, K %R = 70%-130% (50%-150% Co,Mn, Zn)	R, < 2x RL if %R < 50% (< 30% Co,Mn, Zn) J < 2x RL, UJ if %R 50-69% (30%-49% Co,Mn, Zn) J < 2x RL if %R 130%-180% (150%-200% Co,Mn, Zn) R < 2x RL if %R > 180% (200% Co, Mn, Zn)
Interference Check Samples (ICSA/ICSAB)	Required by SW 6020, but not 200.8 ICSAB %R 80% - 120% for all spiked elements | ICSA | < IDL (MDL) for all unspiked elements	For samples with Al, Ca, Fe, or Mg > ICS levels R if %R < 50% J if %R >120% J/UJ if %R = 50% to 79% Use Professional Judgment for ICSA to determine if bias is present
Method Blank	One per matrix per batch (batch not to exceed 20 samples) blank < MDL	Action level is 5x blank concentration U results < action level
Laboratory Control Sample (LCS)	One per matrix per batch Blank Spike: %R within 80%-120%	R if %R < 50% J/UJ if %R = 50-79% J if %R >120%
	CRM: Result within manufacturer's certified acceptance range or project guidelines	J/UJ if < LCL, J if > UCL
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	One per matrix per batch 75-125% for samples where results do not exceed 4x spike level	J if %R>125% J/UJ if %R <75% J/R if %R<30% or J/UJ if Post Spike %R 75%-125% Qualify all samples in batch
Post-digestion Spike	If Matrix Spike is outside 75-125%, Spike parent sample at 2x the sample conc.	No qualifiers assigned based on this element
Laboratory Duplicate (or MS/MSD)	One per matrix per batch RPD < 20% for samples > 5x RL Diff < RL for samples > RL and < 5 x RL (Diff < 2x RL for solids)	J/UJ if RPD > 20% or diff > RL All samples in batch
Serial Dilution	5x dilution one per matrix %D < 10% for original sample values > 50x MDL	J/UJ if %D >10% All samples in batch

Validation QC Element	Acceptance Criteria	Action
Internal Standards	Every sample SW6020: 60%-125% of cal blank IS 200.8: 30%-120% of cal blank IS	J /UJ all analytes associated with IS outlier
Field Blank	Blank < MDL	Action level is 5x blank conc. U sample values < AL in associated field samples only
Field Duplicate	For results > 5x RL: Water: RPD < 35% Solid: RPD < 50% For results < 5 x RL: Water: Diff < RL Solid: Diff < 2x RL	J/UJ in parent samples only
Linear Range	Sample concentrations must fall within range	J values over range

Floyd|Snider Validation Guidelines for Semivolatile Analysis by GC/MS (Based on Organic NFG 1999)

Validation QC Element	Acceptance Criteria	Action
Cooler Temperature	4°C ± 2°	J/UJ if greater than 6 deg. C (Floyd|Snider PJ)
Holding Time	Water: 7 days from collection Soil: 14 days from collection Analysis: 40 days from extraction	Water: J/UJ if ext. > 7 and < 21 days J/R if ext > 21 days (Floyd|Snider PJ) Solids/Wastes: J/UJ if ext. > 14 and < 42 days J/R if ext. > 42 days (Floyd|Snider PJ) J/UJ if analysis >40 days
Tuning	DFTPP Beginning of each 12 hour period Method acceptance criteria	R all analytes in all samples associated with the tune
Initial Calibration (Minimum 5 stds.)	RRF > 0.05	(Floyd|Snider PJ) If MDL= reporting limit: J/R if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF <0.05
	%RSD < 30%	(Floyd|Snider PJ) J if %RSD > 30%
Continuing Calibration (Prior to each 12 hr. shift)	RRF > 0.05	(Floyd|Snider PJ) If MDL= reporting limit: J/R if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF < 0.05
	%D <25%	(Floyd|Snider PJ) If > +/-90%: J/RIf -90% to -26%: J (high bias) If 26% to 90%: J/UJ (low bias)
Method Blank	One per matrix per batch No results > CRQL	U if sample result is less than CRQL and less than appropriate 5X or 10X rule (raise sample value to CRQL)
		U if sample result is greater than or equal to CRQL and less than appropriate 5X and 10X rule (at reported sample value)

Validation QC Element	**Acceptance Criteria**	**Action**
Method Blank (continued)	No TICs present	RTICs using 10X rule
Field Blanks (Not Required)	No results > CRQL	Apply 5X/10X rule; U < action level
MS/MSD (recovery)	One per matrix per batch Use method acceptance criteria	Qualify parent only unless other QC indicates systematic problems: J if both %R > UCL J/UJ if both %R < LCL J/R if both %R < 10% Floyd|Snider PJ if only one %R outlier
MS/MSD (RPD)	One per matrix per batch Use method acceptance criteria	J in parent sample if RPD > CL
LCS CLP **low conc. H2O only**	One per lab batch Within method control limits	J assoc. cmpd if > UCL J/R assoc. cmpd if < LCL J/R all cmpds if half are < LCL
LCS **regular SVOA (H2O & solid)**	One per lab batch Lab or method control limits	J if %R > UCL J/UJ if %R <LCL J /R if %R < 10% (Floyd|Snider PJ)
LCS/LCSD *(if required)*	One set per matrix and batch of 20 samples RPD < 35%	J/UJ associated compounds in all samples
Surrogates	Minimum of 3 acid and 3 base/neutral compounds Use method acceptance criteria	Do not qualify if only 1 acid and/or 1 B/N surrogate is out unless <10% J if %R > UCL J/UJ if %R < LCL J/R if %R < 10%
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	J if > 200% J/UJ if < 50% J/R if < 25% RT>30 seconds, narrate and Notify PM
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (Floyd|Snider PJ)

Validation QC Element	Acceptance Criteria	Action
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NJ the TIC unless: R common laboratory contaminants See Technical Director for ID issues
Quantitation/ Identification	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	See Technical Director if outliers

Abbreviation:
PJ Professional judgment

Floyd|Snider Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range and Gasoline Range (Based on USEPA National Functional Guidelines as applied to criteria in NWTPH-Dx and NWTPH-Gx, June 1997, Ecology & Oregon DEQ)

Validation QC Element	Acceptance Criteria	Action
Cooler Temperature & Preservation	4°C± 2°C Water: HCl to pH < 2	J/UJ if greater than 6 deg. C
Holding Time	Ext. Waters: 14 days preserved 7 days unpreserved Ext. Solids: 14 Days Analysis: 40 days from extraction	J/UJ if hold times exceeded J/R if exceeded > 3X (Floyd|Snider PJ)
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: R2 >0.990 If used, RSD of response factors <20%	Narrate if fewer than 5 calibration levels or if %R >15% J/UJ if R2 <0.990 J/UJ if %RSD > 20%
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 85% to 115%	Narrate if frequency not met. J/UJ if %R < 85% J if %R >115%
Method Blank	At least one per batch (<10 samples) Method Blank No results >RL	U (at the RL) if sample result is < RL & < 5X blank result.
		U (at reported sample value) if sample result is > RL and < 5X blank result
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in the field blank after method blank qualifiers are assigned.
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J if both %R > upper control limit (UCL) J/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked. Use PJ if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (<10 samples) RPD < lab control limit	J if RPD > lab control limits

Validation QC Element	Acceptance Criteria	Action
LCS (not required by method)	%R within lab control limits	J/UJ if %R < LCL J if %R > UCL J/R if any %R <10% (Floyd|Snider PJ)
Surrogates	2-fluorobiphenyl, p-terphenyl, o-terphenyl, and/or pentacosane added to all samples (inc. QC samples). %R = 50-150%	J/UJ if %R < LCL J if %R > UCL J/R if any %R <10% No action if 2 or more surrogates are used, and only one is outside control limits. (Floyd|Snider PJ)
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J
Field Duplicates	Use project control limits, if stated in QAPP Floyd|Snider default: water: RPD < 35% solids: RPD < 50%	Narrate (Floyd|Snider PJ to qualify)
Two analyses for one sample (dilution)	Report only one result per analyte	"DNR" (or client requested qualifier) all results that should not be reported

Abbreviation:
PJ Professional judgment

Floyd|Snider Validation Guidelines for Volatile Analysis by GC/MS (Based on Organic NFG 1999)

Validation QC Element	Acceptance Criteria	Action
Cooler Temperature	4°C±2°C Water: HCl to pH < 2	J/UJ if greater than 6 deg. C (Floyd|Snider PJ)
Hold Time	Waters: 14 days preserved 7 Days: unpreserved (for aromatics) Solids: 14 Days	J/UJ if hold times exceeded If exceeded by > 3X HT: J/R (Floyd|Snider PJ)
Tuning	BFB Beginning of each 12 hour period Method acceptance criteria	R all analytes in all samples associated with the tune
Initial Calibration (Minimum 5 stds.)	RRF > 0.05	(Floyd|Snider PJ) If MDL= reporting limit: J/R if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF <0.05
	%RSD < 30%	(Floyd|Snider PJ) J if %RSD > 30%
Continuing Calibration (Prior to each 12 hr. shift)	RRF > 0.05	(Floyd|Snider PJ) If MDL= reporting limit: J/R if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF <0.05
	%D <25%	(Floyd|Snider PJ) If > +/-90%: J/RIf -90% to -26%: J (high bias) If 26% to 90%: J/UJ (low bias)
Method Blank	One per matrix per batch No results > CRQL	U if sample result is less than CRQL and less than appropriate 5X or 10X rule (raise sample value to CRQL)
		U if sample result is greater than or equal to CRQL and less than appropriate 5X and 10X rule (at reported sample value)
	No TICs present	R TICs using 10X rule
Storage Blank	One per SDG <CRQL	U the specific analyte(s) results in all assoc. samples using the 5x or 10x rule

Validation QC Element	**Acceptance Criteria**	**Action**
Trip Blank	Frequency as per project QAPP	Same as method blank for positive results remaining in trip blank after method blank qualifiers are assigned
Field Blanks (if required in QAPP)	No results > CRQL	Apply 5X/10X rule; U < action level
MS/MSD (recovery)	One per matrix per batch Use method acceptance criteria	Qualify parent only unless other QC indicates systematic problems: J if both %R > UCL J/UJ if both %R < LCL J/R if both %R < 10% PJ if only one %R outlier
MS/MSD (RPD)	One per matrix per batch Use method acceptance criteria	J in parent sample if RPD > CL
LCS *low conc. H2O VOA*	One per lab batch Within method control limits	J assoc. cmpd if > UCL J/R assoc. cmpd if < LCL J/R all cmpds if half are < LCL
LCS *regular VOA (H2O & solid)*	One per lab batch Lab or method control limits	J if %R > UCL J/UJ if %R <LCL J/R if %R < 10% (Floyd|Snider PJ)
LCS/LCSD *(if required)*	One set per matrix and batch of 20 samples RPD < 35%	J/UJ assoc. cmpd. in all samples
Surrogates	Added to all samples Within method control limits	J if %R >UCL J/UJ if %R <LCL but >10% J/R if <10%
Internal Standard (IS)	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	J if > 200% J/UJ if < 50% J/R if < 25% RT>30 seconds, narrate and Notify PM
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (Floyd|Snider PJ)
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NJ the TIC unless: R common laboratory contaminants See Technical Director for ID issues

Validation QC Element	Acceptance Criteria	Action
Quantitation/ Identification	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	See Technical Director if outliers

Notes:

PJ[1] No action if there are 4+ surrogates and only 1 outlier

Monitoring Well Sampling Event
South Park Landfill

Data Validation Report

Appendix B
Qualified Data Summary Table

Qualified Data Summary Table
South Park Landfill Monitoring Well Sampling

SDG	Sample ID	Lab ID	Method	Analyte	Result	Units	Lab Qualifier	DV Qualifiers
SG40	MW-29-012611	SG40A	SW8260C	Acrolein	5	µg/L	U	J
SG40	MW-04-012611	SG40B	SW8260C	Acrolein	5	µg/L	U	J
SG40	MW-18-012611	SG40C	SW8260C	Acrolein	5	µg/L	U	J
SG40	MW-14-012611	SG40D	SW8260C	Acrolein	5	µg/L	U	J
SG40	MW-12-012611	SG40E	SW8260C	Acrolein	5	µg/L	U	J
SG57	MW-01-012711	SG57A	SW8260C	Acrolein	5	µg/L	U	J
SG57	MW-03-012711	SG57B	SW8260C	Acrolein	5	µg/L	U	J
SG57	KMW-07-012711	SG57C	SW8260C	Acrolein	5	µg/L	U	J
SG57	KMW-06-012711	SG57D	SW8260C	Acrolein	5	µg/L	U	J
SG57	KMW-03A-012711	SG57F	SW8260C	Acrolein	5	µg/L	U	J
SG57	TB-012611	SG57M	SW8260C	Acrolein	5	µg/L	U	J
SG40	MW-29-012611	SG40A	SW8270D-SIM	Naphthalene	0.010	µg/L	B	UB
SG57	KMW-05-012711	SG57E	SW8270D-SIM	Naphthalene	110	µg/L	EB	DNR
SG57	KMW-05-012711	SG57E-DL	SW8270D-SIM	Benzo(a)pyrene	2	µg/L	U	DNR
SG70	RB-012811	SG70H	SW8270D-SIM	Naphthalene	0.021	µg/L	B	UB
SG71	KMW-01A-012811	SG71A	SW8270D-SIM	Naphthalene	0.013	µg/L	B	UB
SG71	KMW-04-012811	SG71B	SW8270D-SIM	Naphthalene	0.016	µg/L	B	UB
SG71	KMW-08-012811	SG71C	SW8270D-SIM	Naphthalene	0.015	µg/L	B	UB
SG57	KMW-05-012711	SG57E	SW8041	Pentachlorophenol	5.9	µg/L	P	J
SG57	KMW-05-012711	11-1784 SG57E	NWTPH-Dx	Diesel	0.48	mg/L		J

SDG	Sample ID	Lab ID	Method	Analyte	Result	Units	Lab Qualifier	DV Qualifiers
SG57	KMW-05-012711	11-1784 SG57E	NWTPH-Dx	Motor Oil	2.5	mg/L		J
SG57	KMW-05-012711	11-1784 SG57E	NWTPH-Gx	Gasoline	1.5	mg/L		J
SG70	MW-24-012711	11-1866 SG70A	375.2	Sulfate	5.8	mg/L		J
SG70	MW-25-012711	11-1867 SG70B	375.2	Sulfate	26.7	mg/L		J
SG70	MW-26-012711	11-1868 SG70C	375.2	Sulfate	5.8	mg/L		J
SG70	MW-08-012711	11-1869 SG70D	375.2	Sulfate	9.5	mg/L		J
SG70	MW-10-012811	11-1870 SG70E	375.2	Sulfate	176	mg/L		J
SG70	MW-27-012711	11-1871 SG70F	375.2	Sulfate	19.1	mg/L		J
SG70	MW-30-012711	11-1872 SG70G	375.2	Sulfate	27.4	mg/L		J
SG70	RB-012811	11-1873 SG70H	375.2	Sulfate	2	mg/L	U	J

Lab Qualifiers:

B Analyte detected in an associated Method Blank at a concentration greater than one-half the reporting limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

EB Estimated concentration calculated for an analyte response above the valid instrument calibration range. Analyte detected in an associated Method Blank at a concentration greater than one-half the reporting limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

P The analyte was detected on both chromatographic columns by the quantified values differ by ≥40% RPD with no obvious chromatographic interference.

U Indicates that the target analyte was not detected at the reported concentration.

DV Qualifiers:

DNR Do Not Report, another dilution or analysis has a more appropriate result.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UB Undetected with an elevated reporting limit due to blank contamination.

July 2011 Groundwater Sampling Event
South Park Landfill

Data Validation Report

Prepared for

Seattle Public Utilities

Prepared by

Floyd|Snider
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August 2011

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List of Abbreviations and Acronyms

Abbreviation/ Acronym	Definition
ARI	Analytical Resources, Inc. Laboratory
DNR	Do not report
LCS	Laboratory control sample
LCSD	Laboratory control sample duplicate
MS	Matrix spike
MSD	Matrix spike duplicate
RPD	Relative percent difference
QC	Quality control
SDG	Sample delivery group
USEPA	U. S. Environmental Protection Agency
VOC	Volatile organic compound

1.0 Project Narrative

1.1 OVERVIEW OF DATA VALIDATION

This report summarizes the results of the Compliance Screening (Level I) performed on the groundwater and field QC sample data for the South Park Landfill July 2011 Groundwater Monitoring Event. A complete list of samples is provided below.

Project Sample Index

SDG (Batch)	Sample ID	Lab ID	8260C
TD58	MW-30-070811	11-14828 TD58A	X
TD58	MW-31-070811	11-14829 TD58B	X
TD58	MW-32-070811	11-14830 TD58C	X
TD58	MW-33-070811	11-14831 TD58D	X
TD58	MW-34-070811	11-14832 TD58E	X
TD58	TB-070711	11-14833 TD58F	X

The chemical analyses were performed by Analytical Resources, Inc. (ARI) Tukwila, WA. Groundwater samples were collected on July 8, 2011 and submitted to ARI for chemical analyses. The analytical methods include the following:

- Select VOCs—USEPA Method 8260C

The data were reviewed using guidance and quality control criteria documented in the analytical methods*, National Functional Guidelines for Inorganic Data Review* (USEPA 1994 and 2004), and the *Sampling and Analysis Plan, Appendix D of the Remedial Investigation/Feasibility Study Work Plan for South Park Landfill Site* (Farallon Consulting, LLC 2010).

Floyd|Snider's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. When compounds are analyzed at multiple dilutions, select results will be assigned a Do Not Report (DNR) qualification as a more appropriate result is reported from another dilution. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions, reasons, and validation criteria are included as Attachment A. As no data was qualified for this data set, the standard Qualified Data Summary Table was not populated, and has not been included as an attachment. Data validation worksheets (excel worksheets) will be kept on file at Floyd|Snider.

2.0 Data Validation Report
Select VOCs by USEPA Method 8260C

This report documents the review of analytical data from the analyses of groundwater and field QC samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Jessi Massingale.

2.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

2.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

[1]	Cooler temperature and preservation	Matrix spike (MS) and MS Duplicate (MSD)
	Extraction and analysis holding times	Surrogate recoveries
	Blank contamination	Target analyte list
	Laboratory control sample (LCS) and LCS duplicate (LCSD)	Reporting limits and reported results

Notes
1 Quality control results are discussed below, but no data were qualified.

Appendix A presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

2.2.1 Cooler Temperature and Preservation

The lab noted that the sample cooler temperature (7.3°C) was outside of the laboratory standard of 4±2°C. Samples were delivered to the lab the same day they were collected from the field. Only 30 minutes elapsed between when the final sample was collected and the cooler was delivered to the lab, leaving insufficient time for the cooler temperature to drop within the standard range. It is with professional judgment that no sample results be qualified based on cooler temperature, as the samples were delivered with minimal holding time.

2.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the matrix spike and laboratory control sample percent recovery values. Precision was acceptable, as demonstrated by the MS/MSD RPDs and LCS/LSCD RPDs.

All data, as reported by the lab, are acceptable for use.

July 2011 Groundwater Sampling Event
South Park Landfill

Data Validation Report

Appendix A
Data Qualifier Definitions and Criteria Tables

Floyd|Snider Validation Guidelines for Volatile Analysis by GC/MS (Based on Organic NFG 1999)

Validation QC Element	Acceptance Criteria	Action
Cooler Temperature	4°C±2°C Water: HCl to pH < 2	J/UJ if greater than 6 deg. C (Floyd|Snider PJ)
Hold Time	Waters: 14 days preserved 7 Days: unpreserved (for aromatics) Solids: 14 Days	J/UJ if hold times exceeded If exceeded by > 3X HT: J/R (Floyd|Snider PJ)
Tuning	BFB Beginning of each 12 hour period Method acceptance criteria	R all analytes in all samples associated with the tune
Initial Calibration (Minimum 5 stds.)	RRF > 0.05	(Floyd|Snider PJ) If MDL= reporting limit: J/R if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF <0.05
	%RSD < 30%	(Floyd|Snider PJ) J if %RSD > 30%
Continuing Calibration (Prior to each 12 hr. shift)	RRF > 0.05	(Floyd|Snider PJ) If MDL= reporting limit: J/R if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF <0.05
	%D <25%	(Floyd|Snider PJ) If > +/-90%: J/RIf -90% to -26%: J (high bias) If 26% to 90%: J/UJ (low bias)
Method Blank	One per matrix per batch No results > CRQL	U if sample result is less than CRQL and less than appropriate 5X or 10X rule (raise sample value to CRQL)
		U if sample result is greater than or equal to CRQL and less than appropriate 5X and 10X rule (at reported sample value)
	No TICs present	R TICs using 10X rule
Storage Blank	One per SDG <CRQL	U the specific analyte(s) results in all assoc. samples using the 5x or 10x rule

Validation QC Element	**Acceptance Criteria**	**Action**
Trip Blank	Frequency as per project QAPP	Same as method blank for positive results remaining in trip blank after method blank qualifiers are assigned
Field Blanks (if required in QAPP)	No results > CRQL	Apply 5X/10X rule; U < action level
MS/MSD (recovery)	One per matrix per batch Use method acceptance criteria	Qualify parent only unless other QC indicates systematic problems: J if both %R > UCL J/UJ if both %R < LCL J/R if both %R < 10% PJ if only one %R outlier
MS/MSD (RPD)	One per matrix per batch Use method acceptance criteria	J in parent sample if RPD > CL
LCS *low conc. H2O VOA*	One per lab batch Within method control limits	J assoc. cmpd if > UCL J/R assoc. cmpd if < LCL J/R all cmpds if half are < LCL
LCS *regular VOA (H2O & solid)*	One per lab batch Lab or method control limits	J if %R > UCL J/UJ if %R <LCL J/R if %R < 10% (Floyd|Snider PJ)
LCS/LCSD *(if required)*	One set per matrix and batch of 20 samples RPD < 35%	J/UJ assoc. cmpd. in all samples
Surrogates	Added to all samples Within method control limits	J if %R >UCL J/UJ if %R <LCL but >10% J/R if <10%
Internal Standard (IS)	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	J if > 200% J/UJ if < 50% J/R if < 25% RT>30 seconds, narrate and Notify PM
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (Floyd|Snider PJ)
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NJ the TIC unless: R common laboratory contaminants See Technical Director for ID issues

Validation QC Element	Acceptance Criteria	Action
Quantitation/ Identification	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	See Technical Director if outliers

Notes:

PJ[1] No action if there are 4+ surrogates and only 1 outlier

April 2013 Groundwater Sampling Event
South Park Landfill

Data Validation Report

Prepared for

Seattle Public Utilities

Prepared by

Floyd|Snider
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July 2013

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List of Abbreviations and Acronyms

Abbreviation/ Acronym	Definition
ARI	Analytical Resources, Inc. Laboratory
CLP	Contract Laboratory Program
LCS	Laboratory control sample
LCSD	Laboratory control sample duplicate
MS	Matrix spike

Abbreviation/ Acronym	Definition
RPD	Relative percent difference
QC	Quality control
SDG	Sample Delivery Group
USEPA	U. S. Environmental Protection Agency
VOC	Volatile organic compound

1.0 Project Narrative

1.1 OVERVIEW OF DATA VALIDATION

This report summarizes the results of the Compliance Screening (Level I) performed on the groundwater and field quality control (QC) sample data for the South Park Landfill April 2013 Groundwater Monitoring Event. A complete list of samples is provided below.

Project Sample Index

SDG (Batch)	Sample ID	Lab ID	8260C	8260C-SIM	6010B
WJ94	SPL-GW-MW32-040113	WJ94A/WJ94G	X	X	X
WJ94	SPL-GW-MW33-040113	WJ94B/WG94H	X	X	X
WJ94	SPL-GW-MW25-040113	WJ94C/WJ94I	X	X	X
WJ94	SPL-GW-MW60-040113	WJ94D/WJ94J	X	X	X
WJ94	TripBlank #1	WJ94E	X	X	
WJ94	TripBlank #2	WJ94F	X	X	
WK09	SPL-GW-MW30-040213	WK09A/WK09/K	X	X	X
WK09	SPL-GW-MW31-040213	WK09B/WK09L	X	X	X
WK09	SPL_GW-MW24-040213	WK09C/WK09M	X	X	X
WK09	SPL-GW-MW26-040213	WK09D/WK09N	X	X	X
WK09	SPL-GW-MW08-040213	WK09E/WK09O	X	X	X
WK09	SPL-GW-MW27-040213	WK09F/WK09P	X	X	X
WK09	SPL-GW-MW10-040213	WK09G/WK09Q	X	X	X
WK09	SPL-GW-MW80-040213	WK09H	X	X	X
WK09	TripBlank #1	WK09I	X	X	
WK09	TripBlank #2	WK09J	X	X	
WK27	SPL-GW-MW18-040313	WK27A/WK27I	X	X	X
WK27	SPL-GW-MW29-040313	WK27B/WK27J	X	X	X
WK27	SPL-GW-MW14-040313	WK27C/WK27K	X	X	X
WK27	SPL-GW-MW12-040313	WK27D/WK27L	X	X	X
WK27	SPL-GW-KMW03A-040313	WK27E/WK27M	X	X	X
WK27	SPL-GW-KMW05-040313	WK27F/WK27N	X	X	X
WK27	TripBlank #1	WK27G	X	X	
WK27	TripBlank #2	WK27H	X	X	
WK40	SPL-GW-KMW08-040413	WK40A/WK40C	X	X	X
WK40	SPL-GW-MW61-040413	WK40B/WK40C	X	X	X
WK40	TripBlank #1	WK40E	X	X	

The chemical analyses were performed by Analytical Resources, Inc. (ARI) located in Tukwila, Washington. Groundwater samples were collected between April 1 and April 4, 2013 and submitted to ARI for chemical analyses. The analytical methods include the following:

- Select volatile organic compounds (VOCs)—U.S. Environmental Protection Agency (USEPA) Method 8260C
- Vinyl chloride—USEPA Method 8260C-SIM
- Select metals—USEPA Method 6010B

The data were reviewed using guidance and QC criteria documented in the analytical methods, *National Functional Guidelines for Inorganic Data Review* (USEPA 1994 and 2004), *National Functional Guidelines for Organic Data Review* (USEPA 1999 and 2008), and the *Sampling and Analysis Plan, Appendix D of the Remedial Investigation/Feasibility Study Work Plan for South Park Landfill Site* (Farallon Consulting, LLC 2010).

Conventional parameters such as alkalinity, nitrate, nitrite, chloride, sulfate, and sulfide were also analyzed; however, they do not have data quality compliance requirements, and, therefore, the results were not included in this data validation report.

Floyd|Snider's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. When compounds are analyzed at multiple dilutions, select results will be assigned a Do Not Report (DNR) qualification as a more appropriate result is reported from another dilution. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions, reasons, and validation criteria are included as Appendix A. As no data were qualified for this data set, the standard Qualified Data Summary Table was not populated, and has not been included as an attachment. Data validation worksheets (excel worksheets) will be kept on file at Floyd|Snider.

2.0 Data Validation Report
Select VOCs by USEPA Method 8260C

This report documents the review of analytical data from the analyses of groundwater and field QC samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Jessi Massingale.

2.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

2.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

[1]	Cooler temperature and preservation	Surrogate recoveries
	Extraction and analysis holding times	Target analyte list
	Blank contamination	Reporting limits and reported results
	Laboratory control sample (LCS) and LCS duplicate (LCSD)	

Notes:
1 Quality control results are discussed below, but no data were qualified.

Appendix A presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

2.2.1 Cooler Temperature and Preservation

For Sample Delivery Group (SDG) WJ94 the laboratory noted that the sample cooler temperatures (11.3°C and 6.3°C) were outside of the laboratory standard of 4±2°C. Samples were delivered to the laboratory the same day they were collected from the field. Only 60 minutes elapsed between when the final sample was collected and the cooler was delivered to the laboratory, leaving insufficient time for the cooler temperature to drop within the standard range. It is with professional judgment that no sample results be qualified based on cooler temperature, as the samples were delivered with minimal holding time.

2.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the sample surrogate, LCS, and LCSD percent recovery values. Precision was acceptable, as demonstrated by the LCS/LCSD relative percent difference (RPD).

All data, as reported by the laboratory, are acceptable for use.

3.0 Data Validation Report
Vinyl Chloride by USEPA Method 8260C-SIM

This report documents the review of analytical data from the analyses of groundwater and field QC samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Jessi Massingale.

3.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

3.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

[1]	Cooler temperature and preservation	Surrogate recoveries
	Extraction and analysis holding times	Target analyte list
	Blank contamination	Reporting limits and reported results
	LCS and LCSD	

Notes:
1 Quality control results are discussed below, but no data were qualified.

Appendix A presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

3.2.1 Cooler Temperature and Preservation

For SDG WJ94 the laboratory noted that the sample cooler temperatures (11.3°C and 6.3°C) were outside of the laboratory standard of 4±2°C. Samples were delivered to the laboratory the same day they were collected from the field. Only 60 minutes elapsed between when the final sample was collected and the cooler was delivered to the laboratory, leaving insufficient time for the cooler temperature to drop within the standard range. It is with professional judgment that no sample results be qualified based on cooler temperature, as the samples were delivered with minimal holding time.

3.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the sample surrogate, LCS, and LCSD percent recovery values. Precision was acceptable, as demonstrated by the LCS/LCSD RPD.

All data, as reported by the laboratory, are acceptable for use.

4.0 Data Validation Report
Select Metals by USEPA Method 6010B

This report documents the review of analytical data from the analyses of groundwater and field QC samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Jessi Massingale.

4.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

4.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

[1] Cooler temperature and preservation	[1] Lab Sample and Lab Sample Duplicate
Extraction and analysis holding times	Target analyte list
Blank contamination	Reporting limits and reported results
[1] Matrix Spike (MS)	

Notes:
1 Quality control results are discussed below, but no data were qualified.

Appendix A presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

4.2.1 Cooler Temperature and Preservation

For SDG WJ94 the laboratory noted that the sample cooler temperatures (11.3°C and 6.3°C) were outside of the laboratory standard of 4±2°C. Samples were delivered to the laboratory the same day they were collected from the field. Only 60 minutes elapsed between when the final sample was collected and the cooler was delivered to the laboratory, leaving insufficient time for the cooler temperature to drop within the standard range. It is with professional judgment that no sample results be qualified based on cooler temperature, as the samples were delivered with minimal holding time.

4.2.2 Matrix Spike

For the analysis of total metals in SDG WJ94, the laboratory noted that the MS for iron and manganese may not be applicable, as the original concentrations in the sample exceeded the spike concentration by a factor of four (4x) or greater. Recoveries were still within control limits. Consistent with USEPA Contract Laboratory Program (CLP) guidance, it is with professional judgment that no total metal results be qualified based on this MS recovery information.

For the analysis of dissolved metals in SDG WJ94, the laboratory noted that the MS for calcium, iron, magnesium, manganese, and sodium may not be applicable, as the original concentrations in the sample exceeded the spike concentration by a factor of four (4x) or greater. Magnesium, manganese, and sodium had recoveries that were still within control limits. Calcium was spiked at 10 milligrams per liter (mg/L) with an original concentration of 68.3 mg/L, and iron was spiked at 2 mg/L with an original concentration of 23.8 mg/L. Per USEPA guidelines spike recovery limits do not apply when a sample concentration exceeds the spike concentration by a factor of four (4x) or greater. In such an event, the results shall be reported unqualified even if the percent recovery does not meet the acceptance criteria. Consistent with USEPA CLP guidance, it is with professional judgment that no dissolved metal results be qualified based on this MS recovery information.

For the analysis of dissolved metals in SDG WK04, the laboratory noted that the MS recovery for calcium may not be applicable, as the original concentration in the sample exceeded the spike concentration by a factor of four (4x) or greater. The recovery was still within control limits. Consistent with USEPA CLP guidance, it is with professional judgment that no dissolved calcium results be qualified based on this MS recovery information.

For the analysis of total metals in SDG WK27A, the laboratory noted that the MS recovery for iron may not be applicable, as the original concentration in the sample exceeded the spike concentration by a factor of four (4x) or greater. The recovery was still within control limits. Consistent with USEPA CLP guidance, it is with professional judgment that no total iron results be qualified based on this MS recovery information.

For the analysis of dissolved metals in SDG WK27A, the laboratory noted that the MS recoveries for calcium, iron, and magnesium may not be applicable, as the original concentrations in the sample exceeded the spike concentration by a factor of four (4x) or greater. The magnesium recovery was still within control limits. Calcium was spiked at 10 mg/L with an original concentration of 70.8 mg/L, and iron was spiked at 2 mg/L with an original concentration of 59.5 mg/L. Per USEPA guidelines, spike recovery limits do not apply when a sample concentration exceeds the spike concentration by a factor of four (4x) or greater. In such an event, the results shall be reported unqualified even if the percent recovery does not meet the acceptance criteria. Consistent with USEPA CLP guidance, it is with professional judgment that no dissolved metal results be qualified based on this MS recovery information.

4.2.3 Lab Sample and Lab Sample Duplicate

For the analysis of total and dissolved metals in SDG WK40, no sample/sample duplicate was run, as there were only two samples in the sample delivery group. It is with professional judgment that no results be qualified based on missing duplicate analysis, as all other sample delivery groups for this event demonstrated adequate precision for this laboratory for this method.

4.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by MS percent recovery values. Precision was acceptable, as demonstrated by the sample/sample duplicate RPDs as discussed above.

All data, as reported by the laboratory, are acceptable for use.

5.0 References

Farallon Consulting, LLC. 2010. *Sampling and Analysis Plan, Appendix D of the Remedial Investigation/Feasibility Study Work Plan for South Park Landfill Site*.

U.S. Environmental Protection Agency (USEPA). 2004, 1994. *National Functional Guidelines for Inorganic Data Review*.

———. 2008, 1999. *National Functional Guidelines for Organic Data Review*.

April 2013 Groundwater Sampling Event
South Park Landfill

Data Validation Report

Appendix A
Data Qualifier Definitions and Criteria Tables

DATA VALIDATION QUALIFIER CODES
National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is a Floyd|Snider qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

Floyd|Snider Validation Guidelines for Metals Analysis by ICP-MS (Based on Inorganic NFG 1994 & 2004)

Validation QC Element	Acceptance Criteria	Action
Cooler Temperature and Preservation	Cooler temperature: 4°C ±2° Waters: Nitric Acid to pH < 2 For Dissolved Metals: 0.45um filter & preserve after filtration	Floyd|Snider Professional Judgment—no qualification based on cooler temperature outliers J/UJ if pH preservation requirements are not met
Holding Time	180 days from date sampled Frozen tissues—HT extended to 2 years	J/UJ if holding time exceeded
Tune	Prior to ICAL monitoring compounds analyzed 5 times wih Std Dev. < 5% mass calibration <0.1 amu from True Value Resolution < 0.9 AMU @ 10% peak height or <0.75 amu @ 5% peak height	Use Professional Judgment to evaluate tune J/UJ if tune criteria not met
Initial Calibration	Blank + minimum 1 standard If more than 1 standard, r>0.995	J/UJ if r<0.995 (for multi point cal)
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R within ±10% of true value	J/UJ if %R 75–89% J if %R = 111-125% R if %R > 125% R if %R < 75%
Continuing Calibration Verification (CCV)	Every ten samples, immediately following ICV/ICB and at end of run ±10% of true value	J/UJ if %R = 75–89% J if %R 111-125% R if %R > 125% R if %R < 75%

Initial and Continuing Calibration Blanks (ICB/CCB)	After each ICV and CCV
	every ten samples and end of run
	| blank | < IDL (MDL)
		Action level is 5x absolute value of blank conc.
		For (+)blanks, U results < action level
		For (-) blanks, J/UJ results < action level

Validation QC Element	Acceptance Criteria	Action
Reporting Limit Standard (CRI)	2x RL analyzed beginning of run Not required for Al, Ba, Ca, Fe, Mg, Na, K %R = 70%-130% (50%-150% Co,Mn, Zn)	R, < 2x RL if %R < 50% (< 30% Co,Mn, Zn) J < 2x RL, UJ if %R 50-69% (30%-49% Co,Mn, Zn) J < 2x RL if %R 130%-180% (150%-200% Co,Mn, Zn) R < 2x RL if %R > 180% (200% Co, Mn, Zn)
Interference Check Samples (ICSA/ICSAB)	Required by SW 6020, but not 200.8 ICSAB %R 80% - 120% for all spiked elements | ICSA | < IDL (MDL) for all unspiked elements	For samples with Al, Ca, Fe, or Mg > ICS levels R if %R < 50% J if %R >120% J/UJ if %R = 50% to 79% Use Professional Judgment for ICSA to determine if bias is present
Method Blank	One per matrix per batch (batch not to exceed 20 samples) blank < MDL	Action level is 5x blank concentration U results < action level
Laboratory Control Sample (LCS)	One per matrix per batch Blank Spike: %R within 80%-120%	R if %R < 50% J/UJ if %R = 50-79% J if %R >120%
	CRM: Result within manufacturer's certified acceptance range or project guidelines	J/UJ if < LCL, J if > UCL
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	One per matrix per batch 75-125% for samples where results do not exceed 4x spike level	J if %R>125% J/UJ if %R <75% J/R if %R<30% or J/UJ if Post Spike %R 75%-125% Qualify all samples in batch
Post-digestion Spike	If Matrix Spike is outside 75-125%, Spike parent sample at 2x the sample conc.	No qualifiers assigned based on this element
Laboratory Duplicate (or MS/MSD)	One per matrix per batch RPD < 20% for samples > 5x RL Diff < RL for samples > RL and < 5 x RL (Diff < 2x RL for solids)	J/UJ if RPD > 20% or diff > RL All samples in batch
Serial Dilution	5x dilution one per matrix %D < 10% for original sample values > 50x MDL	J/UJ if %D >10% All samples in batch

Validation QC Element	Acceptance Criteria	Action
Internal Standards	Every sample SW6020: 60%-125% of cal blank IS 200.8: 30%-120% of cal blank IS	J /UJ all analytes associated with IS outlier
Field Blank	Blank < MDL	Action level is 5x blank conc. U sample values < AL in associated field samples only
Field Duplicate	For results > 5x RL: Water: RPD < 35% Solid: RPD < 50% For results < 5 x RL: Water: Diff < RL Solid: Diff < 2x RL	J/UJ in parent samples only
Linear Range	Sample concentrations must fall within range	J values over range

Floyd|Snider Validation Guidelines for Metals Analysis by ICP-MS (Based on Inorganic NFG 1994 & 2004)

Validation QC Element	Acceptance Criteria	Action
Cooler Temperature and Preservation	Cooler temperature: 4°C ±2° Waters: Nitric Acid to pH < 2 For Dissolved Metals: 0.45um filter & preserve after filtration	Floyd|Snider Professional Judgment—no qualification based on cooler temperature outliers J/UJ if pH preservation requirements are not met
Holding Time	180 days from date sampled Frozen tissues—HT extended to 2 years	J/UJ if holding time exceeded
Tune	Prior to ICAL monitoring compounds analyzed 5 times wih Std Dev. < 5% mass calibration <0.1 amu from True Value Resolution < 0.9 AMU @ 10% peak height or <0.75 amu @ 5% peak height	Use Professional Judgment to evaluate tune J/UJ if tune criteria not met
Initial Calibration	Blank + minimum 1 standard If more than 1 standard, r>0.995	J/UJ if r<0.995 (for multi point cal)
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R within ±10% of true value	J/UJ if %R 75–89% J if %R = 111-125% R if %R > 125% R if %R < 75%
Continuing Calibration Verification (CCV)	Every ten samples, immediately following ICV/ICB and at end of run ±10% of true value	J/UJ if %R = 75–89% J if %R 111-125% R if %R > 125% R if %R < 75%

Initial and Continuing Calibration Blanks (ICB/CCB)	After each ICV and CCV
	every ten samples and end of run
	| blank | < IDL (MDL)
		Action level is 5x absolute value of blank conc.
		For (+)blanks, U results < action level
		For (-) blanks, J/UJ results < action level

Validation QC Element	Acceptance Criteria	Action
Reporting Limit Standard (CRI)	2x RL analyzed beginning of run Not required for Al, Ba, Ca, Fe, Mg, Na, K %R = 70%-130% (50%-150% Co,Mn, Zn)	R, < 2x RL if %R < 50% (< 30% Co,Mn, Zn) J < 2x RL, UJ if %R 50-69% (30%-49% Co,Mn, Zn) J < 2x RL if %R 130%-180% (150%-200% Co,Mn, Zn) R < 2x RL if %R > 180% (200% Co, Mn, Zn)
Interference Check Samples (ICSA/ICSAB)	Required by SW 6020, but not 200.8 ICSAB %R 80% - 120% for all spiked elements | ICSA | < IDL (MDL) for all unspiked elements	For samples with Al, Ca, Fe, or Mg > ICS levels R if %R < 50% J if %R >120% J/UJ if %R = 50% to 79% Use Professional Judgment for ICSA to determine if bias is present
Method Blank	One per matrix per batch (batch not to exceed 20 samples) blank < MDL	Action level is 5x blank concentration U results < action level
Laboratory Control Sample (LCS)	One per matrix per batch Blank Spike: %R within 80%-120%	R if %R < 50% J/UJ if %R = 50-79% J if %R >120%
	CRM: Result within manufacturer's certified acceptance range or project guidelines	J/UJ if < LCL, J if > UCL
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	One per matrix per batch 75-125% for samples where results do not exceed 4x spike level	J if %R>125% J/UJ if %R <75% J/R if %R<30% or J/UJ if Post Spike %R 75%-125% Qualify all samples in batch
Post-digestion Spike	If Matrix Spike is outside 75-125%, Spike parent sample at 2x the sample conc.	No qualifiers assigned based on this element
Laboratory Duplicate (or MS/MSD)	One per matrix per batch RPD < 20% for samples > 5x RL Diff < RL for samples > RL and < 5 x RL (Diff < 2x RL for solids)	J/UJ if RPD > 20% or diff > RL All samples in batch
Serial Dilution	5x dilution one per matrix %D < 10% for original sample values > 50x MDL	J/UJ if %D >10% All samples in batch

Validation QC Element	Acceptance Criteria	Action
Internal Standards	Every sample SW6020: 60%-125% of cal blank IS 200.8: 30%-120% of cal blank IS	J /UJ all analytes associated with IS outlier
Field Blank	Blank < MDL	Action level is 5x blank conc. U sample values < AL in associated field samples only
Field Duplicate	For results > 5x RL: Water: RPD < 35% Solid: RPD < 50% For results < 5 x RL: Water: Diff < RL Solid: Diff < 2x RL	J/UJ in parent samples only
Linear Range	Sample concentrations must fall within range	J values over range

July 2013 Groundwater Sampling Event
South Park Landfill

Data Validation Report

Prepared for
Seattle Public Utilities

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September 2013

Table of Contents

List of Appendices

List of Abbreviations and Acronyms

Abbreviation/ Acronym	Definition
ARI	Analytical Resources, Inc. Laboratory
CLP	Contract Laboratory Program
LCS	Laboratory control sample
LCSD	Laboratory control sample duplicate
mg/L	Milligrams per liter
MS	Matrix spike
RPD	Relative percent difference
QC	Quality control
SDG	Sample Delivery Group
USEPA	U. S. Environmental Protection Agency
VOC	Volatile organic compound

1.0 Project Narrative

1.1 OVERVIEW OF DATA VALIDATION

This report summarizes the results of the Compliance Screening (Level I) performed on the groundwater and field quality control (QC) sample data for the South Park Landfill July 2013 Groundwater Monitoring Event. A complete list of samples is provided below.

Project Sample Index

SDG (Batch)	Sample ID	Lab ID	8260C	8260C-SIM	6010B
WX53	SPL-GW-MW32-071513	WX53A/WX53F	X	X	X
WX53	SPL-GW-MW33-071513	WX53B/WX53G	X	X	X
WX53	SPL-GW-MW25-071513	WX53C/WX53H	X	X	X
WX53	SPL-GW-MW60-071513	WX53D/WX53I	X	X	X
WX53	SPL-GW-MW10-071513	WX53E/WX53J	X	X	X
WX53	TripBlank #1	WX53K	X	X	
WX53	TripBlank #2	WX53L	X	X	
WX67	SPL-GW-MW30-071613	WX67A/WX67I	X	X	X
WX67	SPL-GW-MW31-071613	WX67B/WX67J	X	X	X
WX67	SPL-GW-MW26-071613	WX67C/WX67K	X	X	X
WX67	SPL_GW-MW24-071613	WX67D/WX67L	X	X	X
WX67	SPL-GW-MW08-071613	WX67E/WX67M	X	X	X
WX67	SPL-GW-MW27-071613	WX67F/WX67N	X	X	X
WX67	TripBlank #1	WX67G	X	X	
WX67	TripBlank #2	WX67H	X	X	
WX79	SPL-GW-MW12-071713	WX79A/WX79G	X	X	X
WX79	SPL-GW-MW18-071713	WX79B/WX79H	X	X	X
WX79	SPL-GW-MW29-071713	WX79C/WX79I	X	X	X
WX79	SPL-GW-MW14-071713	WX79D/WX79J	X	X	X
WX79	SPL-GW-MW80-071713	WX79E	X	X	
WX79	TripBlank	WX79F	X	X	
WX91	SPL-GW-KMW05-071813	WX91A/WX91F	X	X	X
WX91	SPL-GW-KMW03A-071813	WX91B/WX91G	X	X	X
WX91	SPL-GW-KMW08-071813	WX91C/WX91H	X	X	X
WX91	SPL-GW-MW61-071813	WX91D/WX91I	X	X	X
WX91	TripBlank	WX91E	X	X	

The chemical analyses were performed by Analytical Resources, Inc. (ARI), located in Tukwila, Washington. Groundwater samples were collected between July 15 and July 18, 2013, and were submitted to ARI for chemical analyses. The analytical methods include the following:

- Select volatile organic compounds (VOCs)—U.S. Environmental Protection Agency (USEPA) Method 8260C
- Vinyl chloride—USEPA Method 8260C-SIM
- Select metals—USEPA Method 6010B

The data were reviewed using guidance and QC criteria documented in the analytical methods, *National Functional Guidelines for Inorganic Data Review* (USEPA 1994 and 2004), *National Functional Guidelines for Organic Data Review* (USEPA 1999 and 2008), and the *Sampling and Analysis Plan, Appendix D of the Remedial Investigation/Feasibility Study Work Plan for South Park Landfill Site* (Farallon Consulting, LLC 2010).

Conventional parameters such as alkalinity, nitrate, nitrite, chloride, sulfate, and sulfide were also analyzed; however, they do not have data quality compliance requirements, and, therefore, the results were not included in this data validation report.

Floyd|Snider's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. When compounds are analyzed at multiple dilutions, select results will be assigned a Do Not Report (DNR) qualification as a more appropriate result is reported from another dilution. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions, reasons, and validation criteria are included as Appendix A. As no data were qualified for this data set, the standard Qualified Data Summary Table was not populated, and has not been included as an attachment. Data validation worksheets (Excel worksheets) will be kept on file at Floyd|Snider.

2.0 Data Validation Report
Select VOCs by USEPA Method 8260C

This report documents the review of analytical data from the analyses of groundwater and field QC samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Jessi Massingale.

2.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

2.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

[1]	Cooler temperature and preservation		Surrogate recoveries
[2]	Extraction and analysis holding times	[2]	Analyte response
	Blank contamination		Target analyte list
	Laboratory control sample (LCS) and LCS duplicate (LCSD)		Reporting limits and reported results

Notes:
1 Quality control results are discussed below, but no data were qualified.
2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued, as discussed below.

Appendix A presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

2.2.1 Cooler Temperature and Preservation

For Sample Delivery Group (SDG) WX53 the laboratory noted that the sample cooler temperatures (9.3°C and 10.3°C) were outside of the laboratory standard of 4±2°C. Samples were delivered to the laboratory the same day they were collected from the field. Less than 60 minutes elapsed between when the final sample was collected and the cooler was delivered to the laboratory, leaving insufficient time for the cooler temperature to drop within the standard range. It is with professional judgment that no sample results be qualified based on cooler temperature, as the samples were delivered with minimal holding time.

2.2.2 Extraction and Analysis Holding Times

For SDG WX79 the laboratory noted that due to trichloroethene carry over with the USEPA Method 8260 analysis, cis-1,2-dichlorethene and trichloroethene were reported from the Select Ion Monitoring (SIM) Method 8260 (USEPA Method 8260C-SIM) analysis for more accurate quantification. For sample SPL-GW-MW12-071713, the cis-1,2-dichloroethene results exceeded

the USEPA Method 8260C-SIM detector range and has been qualified "DNR." Due to the previous 8260 carry over, all preserved vials had been used, and a dilution was run outside the method-recommended 7 day holding time on an unpreserved vial for analysis with USEPA Method 8260. It is with professional judgment that the cis-1,2-dichloroethene result for SPL-GW-MW12-071713 be given the data validation qualifier of "J-H" to indicated it is estimated due to analysis outside of holding time, with a final qualifier of "J."

2.2.3 Analyte Response

For SDG WX67, the laboratory assigned the trichloroethene result for SPL-GW-MW26-071613 with an "M" flag to indicate that the reported concentration is an estimated value that was confirmed by an analyst, but with low spectral match parameters. Therefore, the final qualifier for this result is a "JM" to comply with database qualifier standardization.

2.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the sample surrogate, LCS, and LCSD percent recovery values. Precision was acceptable, as demonstrated by the LCS/LCSD relative percent difference (RPD).

All data are acceptable for use as qualified. Refer to Appendix B for details.

3.0 Data Validation Report
Vinyl Chloride by USEPA Method 8260C-SIM

This report documents the review of analytical data from the analyses of groundwater and field QC samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Jessi Massingale.

3.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

3.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

[1]	Cooler temperature and preservation	Surrogate recoveries
	Extraction and analysis holding times	Target analyte list
	Blank contamination	Reporting limits and reported results
	LCS and LCSD	

Note:
1 Quality control results are discussed below, but no data were qualified.

Appendix A presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

3.2.1 Cooler Temperature and Preservation

For SDG WX53, the laboratory noted that the sample cooler temperatures (9.3°C and 10.3°C) were outside of the laboratory standard of 4±2°C. Samples were delivered to the laboratory the same day they were collected from the field. Less than 60 minutes elapsed between when the final sample was collected and the cooler was delivered to the laboratory, leaving insufficient time for the cooler temperature to drop within the standard range. It is with professional judgment that no sample results be qualified based on cooler temperature, as the samples were delivered with minimal holding time.

3.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the sample surrogate, LCS, and LCSD percent recovery values. Precision was acceptable, as demonstrated by the LCS/LCSD RPD.

All data, as reported by the laboratory, are acceptable for use.

4.0 Data Validation Report
Select Metals by USEPA Method 6010B

This report documents the review of analytical data from the analyses of groundwater and field QC samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Jessi Massingale.

4.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

4.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

[1]	Cooler temperature and preservation	Lab Sample and Lab Sample Duplicate
	Extraction and analysis holding times	Target analyte list
	Blank contamination	Reporting limits and reported results
[1]	Matrix Spike (MS)	

Note:
1 Quality control results are discussed below, but no data were qualified.

Appendix A presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

4.2.1 Cooler Temperature and Preservation

For SDG WX53, the laboratory noted that the sample cooler temperatures (9.3°C and 10.3°C) were outside of the laboratory standard of 4±2°C. Samples were delivered to the laboratory the same day they were collected from the field. Less than 60 minutes elapsed between when the final sample was collected and the cooler was delivered to the laboratory, leaving insufficient time for the cooler temperature to drop within the standard range. It is with professional judgment that no sample results be qualified based on cooler temperature, as the samples were delivered with minimal holding time.

4.2.2 Matrix Spike

For the analysis of total metals in SDG WX53, the laboratory noted that the MS for iron and manganese may not be applicable, as the original concentrations in the sample exceeded the spike concentration by a factor of four (4x) or greater. Iron was spiked at 2 milligrams per liter (mg/L) with an original concentration of 26.7 mg/L, and manganese was spiked at 0.5 mg/L with an original concentration of 2.48 mg/L. Per USEPA guidelines, spike recovery limits do not apply when a sample concentration exceeds the spike concentration by a factor of four (4x) or greater. In such an event, the results shall be reported unqualified even if the percent recovery

does not meet the acceptance criteria. Consistent with USEPA Contract Laboratory Program (CLP) guidance, it is with professional judgment that no total metal results be qualified based on this MS recovery information.

For the analysis of dissolved metals in SDG WX53, the laboratory noted that the MS for calcium, iron, magnesium, manganese, and sodium may not be applicable, as the original concentrations in the sample exceeded the spike concentration by a factor of four (4x) or greater. Calcium, magnesium, manganese, and sodium had recoveries that were still within control limits. Iron was spiked at 2 mg/L with an original concentration of 26.4 mg/L. Per USEPA guidelines, spike recovery limits do not apply when a sample concentration exceeds the spike concentration by a factor of four (4x) or greater. In such an event, the results shall be reported unqualified even if the percent recovery does not meet the acceptance criteria. Consistent with USEPA CLP guidance, it is with professional judgment that no dissolved metal results be qualified based on this MS recovery information.

4.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by MS percent recovery values. Precision was acceptable, as demonstrated by the sample/sample duplicate RPDs as discussed above.

All data, as reported by the laboratory, are acceptable for use.

5.0 References

Farallon Consulting, LLC. 2010. *Sampling and Analysis Plan, Appendix D of the Remedial Investigation/Feasibility Study Work Plan for South Park Landfill Site*.

U.S. Environmental Protection Agency (USEPA). 2004, 1994. *National Functional Guidelines for Inorganic Data Review*.

———. 2008, 1999. *National Functional Guidelines for Organic Data Review*.

July 2013 Groundwater Sampling Event
South Park Landfill

Data Validation Report

Appendix A
Data Qualifier Definitions and Criteria Tables

Floyd|Snider Validation Guidelines for Volatile Analysis by GC/MS (Based on Organic NFG 1999)

Validation QC Element	Acceptance Criteria	Action
Cooler Temperature	4°C±2°C Water: HCl to pH < 2	J/UJ if greater than 6 deg. C (Floyd|Snider PJ)
Hold Time	Waters: 14 days preserved 7 Days: unpreserved (for aromatics) Solids: 14 Days	J/UJ if hold times exceeded If exceeded by > 3X HT: J/R (Floyd|Snider PJ)
Tuning	BFB Beginning of each 12 hour period Method acceptance criteria	R all analytes in all samples associated with the tune
Initial Calibration (Minimum 5 stds.)	RRF > 0.05	(Floyd|Snider PJ) If MDL= reporting limit: J/R if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF <0.05
	%RSD < 30%	(Floyd|Snider PJ) J if %RSD > 30%
Continuing Calibration (Prior to each 12 hr. shift)	RRF > 0.05	(Floyd|Snider PJ) If MDL= reporting limit: J/R if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF <0.05
	%D <25%	(Floyd|Snider PJ) If > +/-90%: J/RIf -90% to -26%: J (high bias) If 26% to 90%: J/UJ (low bias)
Method Blank	One per matrix per batch No results > CRQL	U if sample result is less than CRQL and less than appropriate 5X or 10X rule (raise sample value to CRQL)
		U if sample result is greater than or equal to CRQL and less than appropriate 5X and 10X rule (at reported sample value)
	No TICs present	R TICs using 10X rule
Storage Blank	One per SDG <CRQL	U the specific analyte(s) results in all assoc. samples using the 5x or 10x rule

Validation QC Element	**Acceptance Criteria**	**Action**
Trip Blank	Frequency as per project QAPP	Same as method blank for positive results remaining in trip blank after method blank qualifiers are assigned
Field Blanks (if required in QAPP)	No results > CRQL	Apply 5X/10X rule; U < action level
MS/MSD (recovery)	One per matrix per batch Use method acceptance criteria	Qualify parent only unless other QC indicates systematic problems: J if both %R > UCL J/UJ if both %R < LCL J/R if both %R < 10% PJ if only one %R outlier
MS/MSD (RPD)	One per matrix per batch Use method acceptance criteria	J in parent sample if RPD > CL
LCS *low conc. H2O VOA*	One per lab batch Within method control limits	J assoc. cmpd if > UCL J/R assoc. cmpd if < LCL J/R all cmpds if half are < LCL
LCS *regular VOA (H2O & solid)*	One per lab batch Lab or method control limits	J if %R > UCL J/UJ if %R <LCL J/R if %R < 10% (Floyd|Snider PJ)
LCS/LCSD *(if required)*	One set per matrix and batch of 20 samples RPD < 35%	J/UJ assoc. cmpd. in all samples
Surrogates	Added to all samples Within method control limits	J if %R >UCL J/UJ if %R <LCL but >10% J/R if <10%
Internal Standard (IS)	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	J if > 200% J/UJ if < 50% J/R if < 25% RT>30 seconds, narrate and Notify PM
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (Floyd|Snider PJ)
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NJ the TIC unless: R common laboratory contaminants See Technical Director for ID issues

Validation QC Element	Acceptance Criteria	Action
Quantitation/ Identification	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	See Technical Director if outliers

Notes:

PJ[1] No action if there are 4+ surrogates and only 1 outlier

Floyd|Snider Validation Guidelines for Metals Analysis by ICP-MS (Based on Inorganic NFG 1994 & 2004)

Validation QC Element	Acceptance Criteria	Action
Cooler Temperature and Preservation	Cooler temperature: 4°C ±2° Waters: Nitric Acid to pH < 2 For Dissolved Metals: 0.45um filter & preserve after filtration	Floyd|Snider Professional Judgment—no qualification based on cooler temperature outliers J/UJ if pH preservation requirements are not met
Holding Time	180 days from date sampled Frozen tissues—HT extended to 2 years	J/UJ if holding time exceeded
Tune	Prior to ICAL monitoring compounds analyzed 5 times wih Std Dev. < 5% mass calibration <0.1 amu from True Value Resolution < 0.9 AMU @ 10% peak height or <0.75 amu @ 5% peak height	Use Professional Judgment to evaluate tune J/UJ if tune criteria not met
Initial Calibration	Blank + minimum 1 standard If more than 1 standard, r>0.995	J/UJ if r<0.995 (for multi point cal)
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R within ±10% of true value	J/UJ if %R 75–89% J if %R = 111-125% R if %R > 125% R if %R < 75%
Continuing Calibration Verification (CCV)	Every ten samples, immediately following ICV/ICB and at end of run ±10% of true value	J/UJ if %R = 75–89% J if %R 111-125% R if %R > 125% R if %R < 75%

Initial and Continuing Calibration Blanks (ICB/CCB)	After each ICV and CCV
	every ten samples and end of run
	| blank | < IDL (MDL)
		Action level is 5x absolute value of blank conc.
		For (+)blanks, U results < action level
		For (-) blanks, J/UJ results < action level

Validation QC Element	Acceptance Criteria	Action
Reporting Limit Standard (CRI)	2x RL analyzed beginning of run Not required for Al, Ba, Ca, Fe, Mg, Na, K %R = 70%-130% (50%-150% Co,Mn, Zn)	R, < 2x RL if %R < 50% (< 30% Co,Mn, Zn) J < 2x RL, UJ if %R 50-69% (30%-49% Co,Mn, Zn) J < 2x RL if %R 130%-180% (150%-200% Co,Mn, Zn) R < 2x RL if %R > 180% (200% Co, Mn, Zn)
Interference Check Samples (ICSA/ICSAB)	Required by SW 6020, but not 200.8 ICSAB %R 80% - 120% for all spiked elements | ICSA | < IDL (MDL) for all unspiked elements	For samples with Al, Ca, Fe, or Mg > ICS levels R if %R < 50% J if %R >120% J/UJ if %R = 50% to 79% Use Professional Judgment for ICSA to determine if bias is present
Method Blank	One per matrix per batch (batch not to exceed 20 samples) blank < MDL	Action level is 5x blank concentration U results < action level
Laboratory Control Sample (LCS)	One per matrix per batch Blank Spike: %R within 80%-120%	R if %R < 50% J/UJ if %R = 50-79% J if %R >120%
	CRM: Result within manufacturer's certified acceptance range or project guidelines	J/UJ if < LCL, J if > UCL
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	One per matrix per batch 75-125% for samples where results do not exceed 4x spike level	J if %R>125% J/UJ if %R <75% J/R if %R<30% or J/UJ if Post Spike %R 75%-125% Qualify all samples in batch
Post-digestion Spike	If Matrix Spike is outside 75-125%, Spike parent sample at 2x the sample conc.	No qualifiers assigned based on this element
Laboratory Duplicate (or MS/MSD)	One per matrix per batch RPD < 20% for samples > 5x RL Diff < RL for samples > RL and < 5 x RL (Diff < 2x RL for solids)	J/UJ if RPD > 20% or diff > RL All samples in batch
Serial Dilution	5x dilution one per matrix %D < 10% for original sample values > 50x MDL	J/UJ if %D >10% All samples in batch

Validation QC Element	Acceptance Criteria	Action
Internal Standards	Every sample SW6020: 60%-125% of cal blank IS 200.8: 30%-120% of cal blank IS	J /UJ all analytes associated with IS outlier
Field Blank	Blank < MDL	Action level is 5x blank conc. U sample values < AL in associated field samples only
Field Duplicate	For results > 5x RL: Water: RPD < 35% Solid: RPD < 50% For results < 5 x RL: Water: Diff < RL Solid: Diff < 2x RL	J/UJ in parent samples only
Linear Range	Sample concentrations must fall within range	J values over range

DATA VALIDATION QUALIFIER CODES
National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is a Floyd|Snider qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

July 2013 Groundwater Sampling Event
South Park Landfill

Data Validation Report

Appendix B
Qualified Data Summary Table

Table B.1
Qualified Data Summary Table
July 2013 Groundwater Sampling Event

SDG	Sample ID	Lab ID	Method	Analyte	Result	Units	Lab Qualifier	DV Qualifier	Final Qualifier
WX67	SPL-GW-MW26-071613	WX67C 13-14991	EPA 8260C	Trichloroethene	0.37	µg/L	M	J	JM
WX79	SPL-GW-MW12-071713	WX79A 13-15130	EPA 8260C-SIM	cis-1,2-Dichloroethene	5.7	µg/L	E	DNR	DNR
WX79	SPL-GW-MW12-071713	WX79A 13-15130	EPA 8260C	cis-1,2-Dichloroethene	5.4	µg/L		J-H	J

Qualifiers:

DNR Do not report. A more appropriate result from another analysis or dilution is available.

E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

J The analyte was detected; the result should be considered an estimate.

J-H The analyte was positively identified; the associated numerical value should be considered an estimate due to analysis outside of method holding time.

JM The analyte was detected; the result should be considered an estimated due to poor spectral match.

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters.

March 2014 Groundwater Sampling Event
South Park Landfill

Data Validation Report

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April 2014

DRAFT

Table of Contents

List of Attachments

List of Abbreviations and Acronyms

Abbreviation/ Acronym	Definition
ARI	Analytical Resources, Inc. Laboratory
LCS	Laboratory control sample
LCSD	Laboratory control sample duplicate
MS	Matrix spike
RPD	Relative percent difference
QC	Quality control
SDG	Sample Delivery Group
USEPA	U. S. Environmental Protection Agency
VOC	Volatile organic compound

1.0 Project Narrative

1.1 OVERVIEW OF DATA VALIDATION

This report summarizes the results of the Compliance Screening (Level I) performed on the groundwater and field quality control (QC) sample data for the South Park Landfill March 2014 Groundwater Monitoring Event. A complete list of samples is provided below.

Project Sample Index

SDG (Batch)	Sample ID	Lab ID	8260C	8260C-SIM	6010B
YD18	SPL-GW-KMW08-031714	YD18A 14-4581/YD18H 14-4588	X	X	X
YD18	SPL-GW-MW61-031714	YD18B 14-4582/YD18I 14-4589	X	X	X
YD18	SPL-GW-KMW03A-031714	YD18C 14-4583/YD18J 14-4590	X	X	X
YD18	SPL-GW-KMW05-031714	YD18D 14-4584/YD18K 14-4590	X	X	X
YD18	SPL-GW-MW25-031714	YD18E 14-4585/YD18L 14-4592	X	X	X
YD18	SPL-GW-MW60-031714	YD18F 14-4586/YD18M 14-4593	X	X	X
YD18	SPL-GW-MW10-031714	YD18G 14-4587/YD18N 14-4594	X	X	X
YD18	Trip Blanks	YD18O 14-4595	X	X	
YD33	SPL-GW-MW32-031814	YD33A 14-4787/YD33G 14-4793	X	X	X
YD33	SPL-GW-MW-33-031814	YD33B 14-4788/YD33H 14-4794	X	X	X
YD33	SPL-GW-MW18-031814	YD33C 14-4789/YD33I 14-4795	X	X	X
YD33	SPL-GW-MW14-031814	YD33D 14-4790/YD33J 14-4796	X	X	X
YD33	SPL-GW-MW29-031814	YD33E 14-4791/YD33K 14-4797	X	X	X
YD33	SPL-GW-MW12-031814	YD33F 14-4792/YD33L 14-4798	X	X	X
YD33	Trip Blanks	YD33M 14-4799	X	X	
YD53	SPL-GW-MW31-031914	YD53A 14-4863/YD53I 14-4871	X	X	X
YD53	SPL-GW-MW320-031914	YD53B 14-4864/YD53J 14-4872	X	X	X
YD53	SPL-GW-MW26-031914	YD53C 14-4865/YD53K 14-4873	X	X	X
YD53	SPL-GW-MW24-031914	YD53D 14-4866/YD53L 14-4874	X	X	X
YD53	SPL-GW-MW08-031914	YD53E 14-4867/YD53M 14-4875	X	X	X
YD53	SPL-GW-MW27-031914	YD53F 14-4868/YD53N 14-4876	X	X	X
YD53	SPL-GW-MW80-031914	YD53G 14-4869	X	X	
YD53	Trip Blanks	YD53H 14-4870	X	X	

The chemical analyses were performed by Analytical Resources, Inc. (ARI), located in Tukwila, Washington. Groundwater samples were collected between March 17 and 19, 2014, and were submitted to ARI for chemical analyses. The analytical methods include the following:

- Select volatile organic compounds (VOCs)—U.S. Environmental Protection Agency (USEPA) Method 8260C
- Vinyl chloride—USEPA Method 8260C-SIM
- Select metals—USEPA Method 6010B

The data were reviewed using guidance and QC criteria documented in the analytical methods, *National Functional Guidelines for Inorganic Data Review* (USEPA 1994 and 2004), *National Functional Guidelines for Organic Data Review* (USEPA 1999 and 2008), and the *Sampling and Analysis Plan, Appendix D of the Remedial Investigation/Feasibility Study Work Plan for South Park Landfill Site* (Farallon Consulting, LLC 2010).

Conventional parameters such as alkalinity, nitrate, nitrite, chloride, sulfate, and sulfide were also analyzed; however, they do not have data quality compliance requirements, and, therefore, the results were not included in this data validation report.

Floyd|Snider's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be rejected and should not be used for any site evaluation purposes. When compounds are analyzed at multiple dilutions, select results will be assigned a Do Not Report (DNR) qualification as a more appropriate result is reported from another dilution. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions, reasons, and validation criteria are included as Attachment 1. The Qualified Data Summary Table is included in Attachment 2. Data validation worksheets (excel worksheets) will be kept on file at Floyd|Snider.

2.0 Data Validation Report
Select VOCs by USEPA Method 8260C

This report documents the review of analytical data from the analyses of groundwater and field QC samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Jessi Massingale.

2.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

2.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

Cooler temperature and preservation	Surrogate recoveries
Extraction and analysis holding times	Analyte response
Blank contamination	Reporting limits and reported results
Laboratory control sample (LCS) and LCS duplicate (LCSD)	Target analyte list

All QC requirements were met without exception, and did not require further evaluation.

2.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by surrogate, LCS, and LCSD percent recovery values. Precision was acceptable, as demonstrated by the LCS/LCSD relative percent difference (RPD).

All data, as reported by the laboratory, are acceptable for use.

3.0 Data Validation Report
Vinyl Chloride by USEPA Method 8260C-SIM

This report documents the review of analytical data from the analyses of groundwater and field QC samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Jessi Massingale.

3.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

3.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

Cooler temperature and preservation	Surrogate recoveries
Extraction and analysis holding times	[1] Analyte response
Blank contamination	Reporting limits and reported results
LCS and LCSD	Target analyte list

Note:
1 Quality control outliers that impact the reported data were noted. Data qualifiers were issued, as discussed below.

Attachment 1 presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

3.2.1 Analyte Response

For SDG YD53, the vinyl chloride result for SPL-GW-MW31-031914 was flagged by the laboratory as exceeding the valid instrument calibration range. It has been flagged “DNR” as a more appropriate result is available from the SW8260C analysis.

3.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the sample surrogate, LCS, and LCSD percent recovery values. Precision was acceptable, as demonstrated by the LCS/LCSD RPD.

All data are acceptable for use as qualified; refer to Attachment 2 for details.

4.0 Data Validation Report
Select Metals by USEPA Method 6010B

This report documents the review of analytical data from the analyses of groundwater and field QC samples and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Jessi Massingale.

4.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and any anomalies were discussed in the case narrative.

4.2 Technical Data Validation

The QC requirements that were reviewed are listed below.

QC Requirements

Cooler temperature and preservation	LCS
Extraction and analysis holding times	Sample and sample duplicate RPD
Blank contamination	Reporting limits and reported results
Matrix spike (MS)	Target analyte list

All QC requirements were met without exception, and did not require further evaluation.

4.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by MS and LCS percent recovery values. Precision was acceptable, as demonstrated by the sample/sample duplicate RPD.

All data, as reported by the laboratory, are acceptable for use.

5.0 References

Farallon Consulting, LLC. 2010. *Sampling and Analysis Plan, Appendix D of the Remedial Investigation/Feasibility Study Work Plan for South Park Landfill Site*.

U.S. Environmental Protection Agency (USEPA). 1994. *National Functional Guidelines for Inorganic Data Review*.

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March 2014 Groundwater Sampling Event
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Data Validation Report

Attachment 1
Data Qualifier Definitions and Criteria Tables

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DATA VALIDATION QUALIFIER CODES
National Functional Guidelines

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is a Floyd|Snider qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.

Floyd|Snider Validation Guidelines for Volatile Analysis by GC/MS (Based on Organic NFG 1999)

Validation QC Element	Acceptance Criteria	Action
Cooler Temperature	4°C±2°C Water: HCl to pH < 2	J/UJ if greater than 6 deg. C (Floyd|Snider PJ)
Hold Time	Waters: 14 days preserved 7 Days: unpreserved (for aromatics) Solids: 14 Days	J/UJ if hold times exceeded If exceeded by > 3X HT: J/R (Floyd|Snider PJ)
Tuning	BFB Beginning of each 12 hour period Method acceptance criteria	R all analytes in all samples associated with the tune
Initial Calibration (Minimum 5 stds.)	RRF > 0.05	(Floyd|Snider PJ) If MDL= reporting limit: J/R if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF <0.05
	%RSD < 30%	(Floyd|Snider PJ) J if %RSD > 30%
Continuing Calibration (Prior to each 12 hr. shift)	RRF > 0.05	(Floyd|Snider PJ) If MDL= reporting limit: J/R if RRF < 0.05 If reporting limit > MDL: note in worksheet if RRF <0.05
	%D <25%	(Floyd|Snider PJ) If > +/-90%: J/RIf -90% to -26%: J (high bias) If 26% to 90%: J/UJ (low bias)
Method Blank	One per matrix per batch No results > CRQL	U if sample result is less than CRQL and less than appropriate 5X or 10X rule (raise sample value to CRQL)
		U if sample result is greater than or equal to CRQL and less than appropriate 5X and 10X rule (at reported sample value)
	No TICs present	R TICs using 10X rule
Storage Blank	One per SDG <CRQL	U the specific analyte(s) results in all assoc. samples using the 5x or 10x rule

Validation QC Element	**Acceptance Criteria**	**Action**
Trip Blank	Frequency as per project QAPP	Same as method blank for positive results remaining in trip blank after method blank qualifiers are assigned
Field Blanks (if required in QAPP)	No results > CRQL	Apply 5X/10X rule; U < action level
MS/MSD (recovery)	One per matrix per batch Use method acceptance criteria	Qualify parent only unless other QC indicates systematic problems: J if both %R > UCL J/UJ if both %R < LCL J/R if both %R < 10% PJ if only one %R outlier
MS/MSD (RPD)	One per matrix per batch Use method acceptance criteria	J in parent sample if RPD > CL
LCS *low conc. H2O VOA*	One per lab batch Within method control limits	J assoc. cmpd if > UCL J/R assoc. cmpd if < LCL J/R all cmpds if half are < LCL
LCS *regular VOA (H2O & solid)*	One per lab batch Lab or method control limits	J if %R > UCL J/UJ if %R <LCL J/R if %R < 10% (Floyd|Snider PJ)
LCS/LCSD *(if required)*	One set per matrix and batch of 20 samples RPD < 35%	J/UJ assoc. cmpd. in all samples
Surrogates	Added to all samples Within method control limits	J if %R >UCL J/UJ if %R <LCL but >10% J/R if <10%
Internal Standard (IS)	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	J if > 200% J/UJ if < 50% J/R if < 25% RT>30 seconds, narrate and Notify PM
Field Duplicates	Use QAPP limits. If no QAPP: Solids: RPD <50% OR absolute diff. < 2X RL (for results < 5X RL) Aqueous: RPD <35% OR absolute diff. < 1X RL (for results < 5X RL)	Narrate and qualify if required by project (Floyd|Snider PJ)
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NJ the TIC unless: R common laboratory contaminants See Technical Director for ID issues

Validation QC Element	Acceptance Criteria	Action
Quantitation/ Identification	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	See Technical Director if outliers

Notes:

PJ[1] No action if there are 4+ surrogates and only 1 outlier

Floyd|Snider Validation Guidelines for Metals Analysis by ICP-MS (Based on Inorganic NFG 1994 & 2004)

Validation QC Element	Acceptance Criteria	Action
Cooler Temperature and Preservation	Cooler temperature: 4°C ±2° Waters: Nitric Acid to pH < 2 For Dissolved Metals: 0.45um filter & preserve after filtration	Floyd|Snider Professional Judgment—no qualification based on cooler temperature outliers J/UJ if pH preservation requirements are not met
Holding Time	180 days from date sampled Frozen tissues—HT extended to 2 years	J/UJ if holding time exceeded
Tune	Prior to ICAL monitoring compounds analyzed 5 times wih Std Dev. < 5% mass calibration <0.1 amu from True Value Resolution < 0.9 AMU @ 10% peak height or <0.75 amu @ 5% peak height	Use Professional Judgment to evaluate tune J/UJ if tune criteria not met
Initial Calibration	Blank + minimum 1 standard If more than 1 standard, r>0.995	J/UJ if r<0.995 (for multi point cal)
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R within ±10% of true value	J/UJ if %R 75–89% J if %R = 111-125% R if %R > 125% R if %R < 75%
Continuing Calibration Verification (CCV)	Every ten samples, immediately following ICV/ICB and at end of run ±10% of true value	J/UJ if %R = 75–89% J if %R 111-125% R if %R > 125% R if %R < 75%

Initial and Continuing Calibration Blanks (ICB/CCB)	After each ICV and CCV
	every ten samples and end of run
	| blank | < IDL (MDL)
		Action level is 5x absolute value of blank conc.
		For (+)blanks, U results < action level
		For (-) blanks, J/UJ results < action level

Validation QC Element	Acceptance Criteria	Action
Reporting Limit Standard (CRI)	2x RL analyzed beginning of run Not required for Al, Ba, Ca, Fe, Mg, Na, K %R = 70%-130% (50%-150% Co,Mn, Zn)	R, < 2x RL if %R < 50% (< 30% Co,Mn, Zn) J < 2x RL, UJ if %R 50-69% (30%-49% Co,Mn, Zn) J < 2x RL if %R 130%-180% (150%-200% Co,Mn, Zn) R < 2x RL if %R > 180% (200% Co, Mn, Zn)
Interference Check Samples (ICSA/ICSAB)	Required by SW 6020, but not 200.8 ICSAB %R 80% - 120% for all spiked elements | ICSA | < IDL (MDL) for all unspiked elements	For samples with Al, Ca, Fe, or Mg > ICS levels R if %R < 50% J if %R >120% J/UJ if %R = 50% to 79% Use Professional Judgment for ICSA to determine if bias is present
Method Blank	One per matrix per batch (batch not to exceed 20 samples) blank < MDL	Action level is 5x blank concentration U results < action level
Laboratory Control Sample (LCS)	One per matrix per batch Blank Spike: %R within 80%-120%	R if %R < 50% J/UJ if %R = 50-79% J if %R >120%
	CRM: Result within manufacturer's certified acceptance range or project guidelines	J/UJ if < LCL, J if > UCL
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	One per matrix per batch 75-125% for samples where results do not exceed 4x spike level	J if %R>125% J/UJ if %R <75% J/R if %R<30% or J/UJ if Post Spike %R 75%-125% Qualify all samples in batch
Post-digestion Spike	If Matrix Spike is outside 75-125%, Spike parent sample at 2x the sample conc.	No qualifiers assigned based on this element
Laboratory Duplicate (or MS/MSD)	One per matrix per batch RPD < 20% for samples > 5x RL Diff < RL for samples > RL and < 5 x RL (Diff < 2x RL for solids)	J/UJ if RPD > 20% or diff > RL All samples in batch
Serial Dilution	5x dilution one per matrix %D < 10% for original sample values > 50x MDL	J/UJ if %D >10% All samples in batch

Validation QC Element	Acceptance Criteria	Action
Internal Standards	Every sample SW6020: 60%-125% of cal blank IS 200.8: 30%-120% of cal blank IS	J /UJ all analytes associated with IS outlier
Field Blank	Blank < MDL	Action level is 5x blank conc. U sample values < AL in associated field samples only
Field Duplicate	For results > 5x RL: Water: RPD < 35% Solid: RPD < 50% For results < 5 x RL: Water: Diff < RL Solid: Diff < 2x RL	J/UJ in parent samples only
Linear Range	Sample concentrations must fall within range	J values over range

March 2014 Groundwater Sampling Event
South Park Landfill

Data Validation Report

Attachment 2
Qualified Data Summary Table

DRAFT

Table 2.1
Qualified Data Summary Table
March 2014 Groundwater Sampling Event

SDG	Sample ID	Lab ID	Method	Analyte	Result	Units	Lab Qualifier	DV Qualifiers
YD53	SPL-GW-MW31-031914	YD53A 14-4863	SW8260C-SIM	Vinyl Chloride	5.7	µg/L	E	DNR

Qualifiers:

DNR Do not report. A more appropriate result from another analysis or dilution is available.

E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix F
Data Validation Reports

Reconnaissance Groundwater Data Validation Reports

Table of Contents

List of Appendices

List of Abbreviations and Acronyms

Abbreviation/ Acronym	Definition
ARI	Analytical Resources, Inc. Laboratory
DNR	Do not report
LCS	Laboratory control sample
LCSD	Laboratory control sample duplicate
MS	Matrix spike
MSD	Matrix spike duplicate
RPD	Relative percent difference
QC	Quality control
SDG	Sample delivery group
USEPA	U. S. Environmental Protection Agency
VOC	Volatile organic compound

1.0 Project Narrative

1.1 OVERVIEW OF DATA VALIDATION

This report summarizes the results of the Compliance Screening (Level I) performed on the groundwater sample data for the Reconnaissance Probe Groundwater Sampling Event. A complete list of samples is provided below.

Project Sample Index

SDG (Batch)	Sample ID	Lab ID	8260C	8260C-SIM	200.8 Total	200.8 Dissolved
SM08	FB07-10-030711	SM08A/SM08K	SM08A	SM08A	SM08A	SM08K
SM08	FB08-13-030711	SM08B/SM08L	SM08B	SM08B	SM08B	SM08L
SM08	FB09-13-030711	SM08C/SM08M	SM08C	SM08C	SM08C	SM08M
SM08	FB10-13-030711	SM08D/SM08N	SM08D	SM08D	SM08D	SM08N
SM08	FB11-13-030711	SM08E/SM08O	SM08E	SM08E	SM08E	SM08O
SM08	FB15-13-030711	SM08F/SM08P	SM08F	SM08F	SM08F	SM08P
SM08	RB-030811	SM08G/SM08Q	SM08G	SM08G	SM08G	SM08Q
SM08	FB12-14-030811	SM08H/SM08R	SM08H	SM08H	SM08H	SM08R
SM08	FB13-19-030811	SM08I/SM08S	SM08I	SM08I	SM08I	SM08S
SM08	Trip Blank	SM08J	SM08J	SM08J		
SM91	FB14-12-031111	SM91A/SM91D	SM91A	SM91A	SM91A	SM91D
SM91	FB14-22-031111	SM91B/SM91E	SM91B	SM91B	SM91B	SM91E
SM91	FB14-38-031111	SM91C/SM91F	SM91C	SM91C	SM91C	SM91F

The chemical analyses were performed by ARI in Tukwila, Washington. Groundwater and field QC samples were collected between March 7, 2011 and March 11, 2011 and submitted to ARI for chemical analyses. The analytical methods include the following:

- Total Arsenic—USEPA Method 200.8
- Dissolved Arsenic—USEPA Method 200.8
- Select VOCs—USEPA Method 8260C
- Vinyl Chloride—USEPA Method 8260C-SIM

The data were reviewed using guidance and quality control criteria documented in the analytical methods*, National Functional Guidelines for Inorganic Data Review* (USEPA 1994 and 2004), *National Functional Guidelines for Organic Data Review* (USEPA 1999 and 2008) and the *Sampling and Analysis Plan, Appendix D of the Remedial Investigation/Feasibility Study Work Plan for South Park Landfill Site* (Farallon Consulting, LLC 2010).

Floyd|Snider's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes, but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values are assigned an R, the data are to be

rejected and should not be used for any site evaluation purposes. When compounds are analyzed at multiple dilutions, select results will be assigned a DNR qualification as a more appropriate result is reported from another dilution. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Data qualifier definitions, reasons, and validation criteria are included as Appendix A. The Qualified Data Summary Table is included in Appendix B. Data validation worksheets (excel worksheets) will be kept on file at Floyd|Snider.

2.0 Data Validation Report
Total Arsenic by USEPA 200.8

This report documents the review of analytical data from the analyses of groundwater, field QC samples, and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

2.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

2.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

Cooler temperature and preservation	Lab sample duplicates
Extraction and analysis holding times	Reporting limits and reported results
Blank contamination	Target analyte list
Laboratory Control Sample (LCS)	[1] Other
Matrix Spike (MS)	

Notes
1 Additional laboratory sample notes are discussed below, but no data were qualified.

Appendix A presents data validation criteria tables for inorganic compound analysis. All QC requirements were met without exception, and did not require further evaluation. Additional notes included in ARI's case narrative are discussed below.

2.2.1 Other

The laboratory data reviewer noted that total arsenic values were at times less than the dissolved arsenic values for samples that had been centrifuged in SDG SM08, indicating possible precipitation of the arsenic before the centrifugation process.

The laboratory data reviewer noted that total arsenic values were equal to the dissolved arsenic values for sample FB14-38-031111 from SDG SM91, which had been centrifuged, indicating possible precipitation of the arsenic before the centrifugation process.

These laboratory observations are noted here for completeness. No data was qualified based on these observations.

2.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the matrix spike and laboratory control sample percent recovery values. Precision was acceptable, as demonstrated by the lab sample/lab sample duplicate RPD.

All data, as reported by the lab, are acceptable for use.

3.0 Data Validation Report
Dissolved Arsenic by USEPA 200.8

This report documents the review of analytical data from the analyses of groundwater, field QC samples, and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

3.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

3.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

Cooler temperature and preservation	MS
Extraction and analysis holding times	Lab sample duplicates
Blank contamination	Reporting limits and reported results
LCS	Target analyte list

All QC requirements were met without exception, and did not require further evaluation.

3.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the matrix spike and laboratory control sample percent recovery values. Precision was acceptable, as demonstrated by the lab sample/lab sample duplicate RPDs.

All data, as reported by the lab, are acceptable for use.

4.0 Data Validation Report
Select VOCs by USEPA 8260C

This report documents the review of analytical data from the analyses of groundwater, field QC samples, and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

4.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

4.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

Cooler temperature and preservation	[1] MS and MSD
Extraction and analysis holding times	Reporting limits and reported results
Blank contamination	Target analyte list
Surrogate recoveries	Internal standards and calibrations
LCS and LCSD	

Notes
1 Quality control results are discussed below, but no data were qualified.

Appendix A presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

4.2.1 Matrix Spike and Matrix Spike Duplicates

No MS/MSDs were performed due to insufficient sample volume for SDG SM91. Per USEPA Guidelines, no qualifications should be based on MS/MSD data alone. Therefore, it is with professional judgment that no data be qualified based on the lack of MS/MSD data as all other QA/QC objectives for this analysis were met. The LCS/LCSD recoveries and RPD are sufficient proof of accuracy and precision.

4.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by MS and LCS percent recovery values. Precision was acceptable, as demonstrated by the MS/MSD RPDs and LCS/LSCD RPDs.

All data, as reported by the lab, are acceptable for use.

5.0 Data Validation Report
Vinyl Chloride by USEPA 8260C-SIM

This report documents the review of analytical data from the analyses of groundwater, field QC samples, and the associated laboratory QC samples. Samples were analyzed by ARI. Compliance Screening (Level I) was performed on all analytical results by Chell Black as the primary data reviewer, and secondary review was performed by Erin Breckel.

5.1 DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

5.2 TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

QC Requirements

Cooler temperature and preservation	[1] MS and MSD
Extraction and analysis holding times	[1] Dilutions
Blank contamination	Reporting limits and reported results
Surrogate recoveries	Target analyte list
LCS and LCSD	Internal standards and calibrations

Notes
1 Quality control results are discussed below, but no data were qualified.

Appendix A presents data validation criteria tables for organic compound analysis. QC requirements that were met without exception are not discussed below. QC requirements that required further evaluation and had exceptions to the validation criteria are discussed below.

5.2.1 Matrix Spike and Matrix Spike Duplicates

No MS/MSDs were performed due to insufficient sample volume for SDG SM91. Per USEPA Guidelines, no qualifications should be based on MS/MSD data alone. Therefore, it is with professional judgment that no data be qualified based on the lack of MS/MSD data as all other QA/QC objectives for this analysis were met. The LCS/LCSD recoveries and RPD are sufficient proof of accuracy and precision.

5.2.2 Dilutions

The Vinyl Chloride result for sample FB14-23-031111 from SDG SM91 exceeded the calibration range of the detector. The result will be marked DNR, and the Vinyl Chloride result for this sample from the 8260C analysis will be considered the valid reportable result.

5.3 OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by MS and LCS percent recovery values. Precision was acceptable, as demonstrated by the MS/MSD RPDs and LCS/LSCD RPDs.

All data are acceptable for use as qualified, see Appendix B for details.

South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix F
Data Validation Reports

Soil Gas Data Validation Reports

Herrera Environmental Consultants, Inc.

Memorandum

To Project File 10-04820-000

From Gina Catarra, Herrera Environmental Consultants

Date September 23, 2011

Subject Data Quality Assurance Review of South Park RI/FS Air Monitoring Data

This memorandum presents a review of data quality for 6 air samples collected for the South Park RI/FS on May 11th, 2011. Air Toxics, Ltd., of Folsom, California analyzed the samples for:

- Volatile organic compounds (VOCs) by modified method TO-15

Results for the following samples were validated.

Sample ID	Date Collected	Matrix	Analyses
GP-27	5/11/11	Air	VOCs
GP-25	5/11/11	Air	VOCs
S. Piezo Transfer Sta.	5/11/11	Air	VOCs
KMW-05	5/11/11	Air	VOCs
N. Piezo Transfer Sta.	5/11/11	Air	VOCs
KMW-04	5/11/11	Air	VOCs

The laboratory's performance was reviewed in accordance with quality control (QC) criteria established by the laboratory and in the specified method.

Quality control data summaries submitted by the laboratories were reviewed; raw data were not submitted by the laboratories. Data qualifiers (flags) were added to the sample results in the laboratory reports. Data validation results are summarized below, followed by definitions of data qualifiers.

Custody, Preservation, Holding Times, and Completeness—Acceptable

The samples were properly preserved and sample custody was maintained from sample collection to receipt at the laboratory. All samples were analyzed within the required method holding time. The laboratory report was complete and contained results for all samples and tests requested on the chain-of-custody (COC) form.

Laboratory Reporting Limits—Acceptable with Qualification

The laboratory reporting limits were reasonable for the methods. Reporting limits for samples GP-25, KMW-05, and KMW-04 were elevated because dilutions of these samples were performed due to high level of target compounds (samples GP-25 and KMW-05) or non-target compounds (KMW-04).

Sample GP-25 had reported results for hexane and cyclohexane, and sample KMW-05 had a result for 2,2,4-trimethylpentane that exceeded the calibration range of the instrument. Hexane and cyclohexane results for sample GP-27, and the 2,2,4-trimethylpentane result for sample KMW-05 were qualified as estimated (J), as shown in the following table.

The laboratory reported a carbon disulfide result for sample KMW-05 that was below the reporting limit. The reported result for carbon disulfide was qualified as estimated (J) by the laboratory, as shown in the following table.

Sample ID	Sample Date	Parameter	Reason for Qualification	Qualifier
GP-25	5/11/11	Hexane	Exceeded instrument calibration range	J
GP-25	5/11/11	Cyclohexane	Exceeded instrument calibration range	J
KMW-05	5/11/11	Carbon disulfide	Detected result less than reporting limit	J
KMW-05	5/11/11	2,2,4-Trimethylpentane	Exceeded instrument calibration range	J

Instrument Calibration Verification—Acceptable with Qualification

Continuing calibration verification (CCV) samples were analyzed with the samples, as required by the method. Chloromethane recovery (69 percent) in the CCV analyzed on 5/26/2011 at 7:13 am was below the 70 percent recovery limit established by the method. Chloromethane results for the associated samples were qualified by the laboratory as estimated non-detected (UJ), as shown in the following table.

Sample ID	Sample Date	Parameter	Reason for Qualification	Qualifier
KMW-05	5/11/11	Chloromethane	Low CCV recovery	J
N. Piezo Transfer Sta.	5/11/11	Chloromethane	Low CCV recovery	J
KMW-04	5/11/11	Chloromethane	Low CCV recovery	J

Method Blank Analysis—Acceptable

Method blanks were analyzed at the required frequency. Method blanks did not contain levels of target analytes above the laboratory reporting limits.

Laboratory Control Sample Analysis—Acceptable

Laboratory control sample and laboratory control sample duplicates (LSC/LCSD) were analyzed with samples at the required frequency. The percent recovery values for all compounds met the criteria established by the method (70 to 130 percent).

Surrogate Analysis—Acceptable

Three surrogate compounds (toluene-d8, 1,2-dichloroethane-d4, and 4-bromofluorobenzene) were added to all samples. The percent recovery values (ranging from 94 to 124 percent) for all surrogate compounds met the 70 to 130 percent criteria established by the method.

Matrix Spike Analysis—Not Analyzed

Matrix spike samples were not analyzed.

Laboratory Duplicate Analysis—Not Analyzed

Laboratory duplicates were not analyzed.

Definition of Data Qualifiers

The following data qualifier definitions are taken from the laboratory report narrative.

U Compound analyzed for but not detected above the reporting limit.

J The associated value is an estimated quantity.

UJ Non-detected compound associated with low bias in the CCV.

South Park Landfill

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Appendix G
Former West Ditch Soil Sample Photographs and Grain Size Analyses

Table of Contents

This appendix contains the following items:

- Soil Sample Photographs
- Grain Size Analyses

South Park Landfill RI

Fromer West Ditch Soil Sampling – Culvert Sample Location (SS-P)

SS-P sample location looking toward Occidental

SS-P sample location looking toward Former West Ditch

The culvert is buried approximately 4.5 feet below ground surface with the pipe estimated at 6 to 8 inches in diameter. Clear water was observed discharging at the surface estimated at about 30 gpm. A stainless steel bucket type sampler was used to catch the flow of material exiting the culvert.

Soil collected from culvert

Soil consisted of medium to coarse sand with organics, brick, plastic and glass debris

Former West Ditch Soil Sampling – Sample Locations (SS-1, SS-2, SS-3)

Piston Corer – 8 feet in length pushed into West Ditch soils at SS-2. Two feet of standing water in ditch. About 6 feet of soil recovered in core.

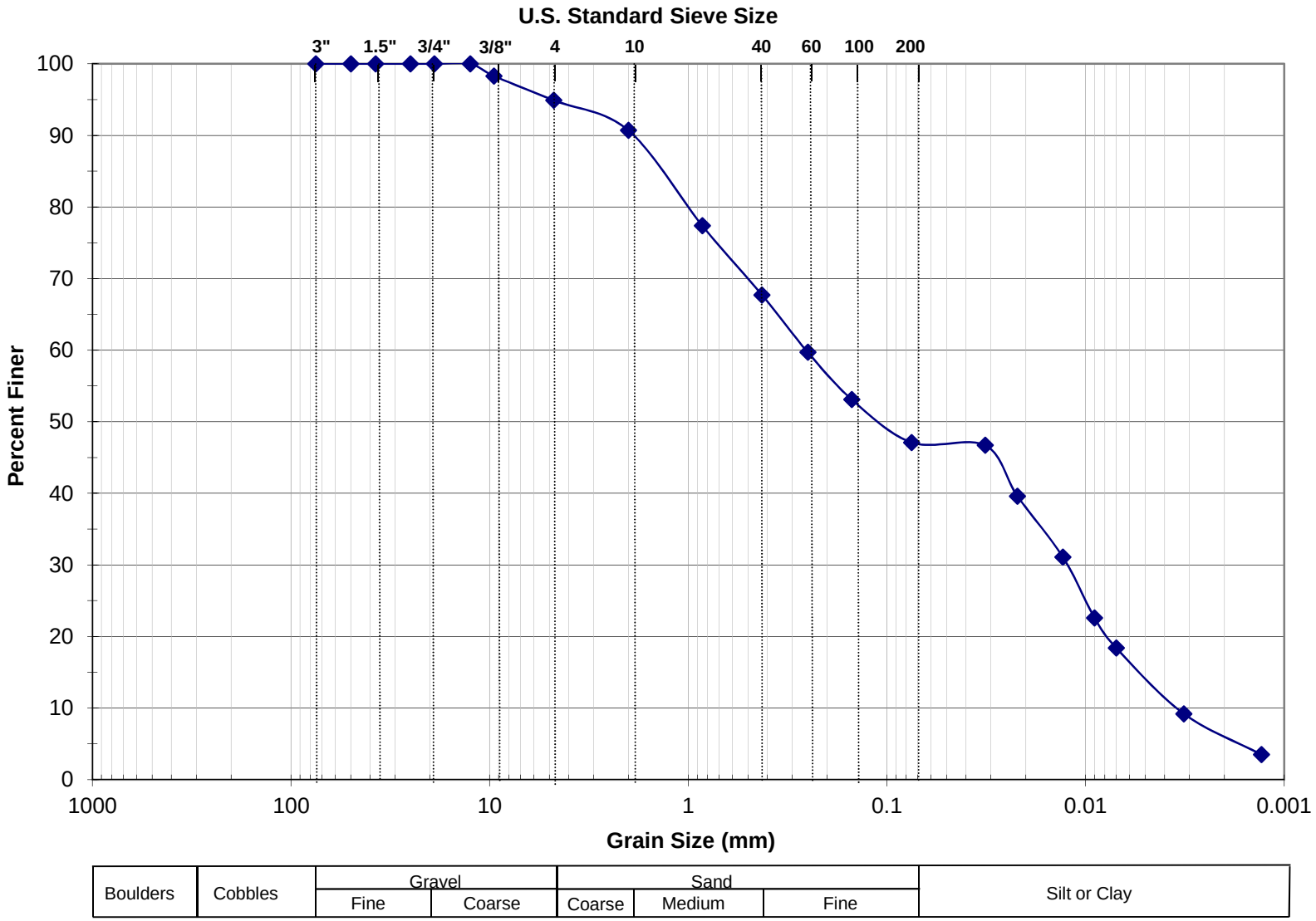
Former West Ditch Core Sample SS-03

Former West Ditch Core SS-2 with approx. 6 feet of recovered soil

Former West Ditch Soil – SS-2 0 to 4 feet depth

Former West Ditch Soil – SS-2 4 to 6 feet depth

SS-3 4 to 6 foot depth



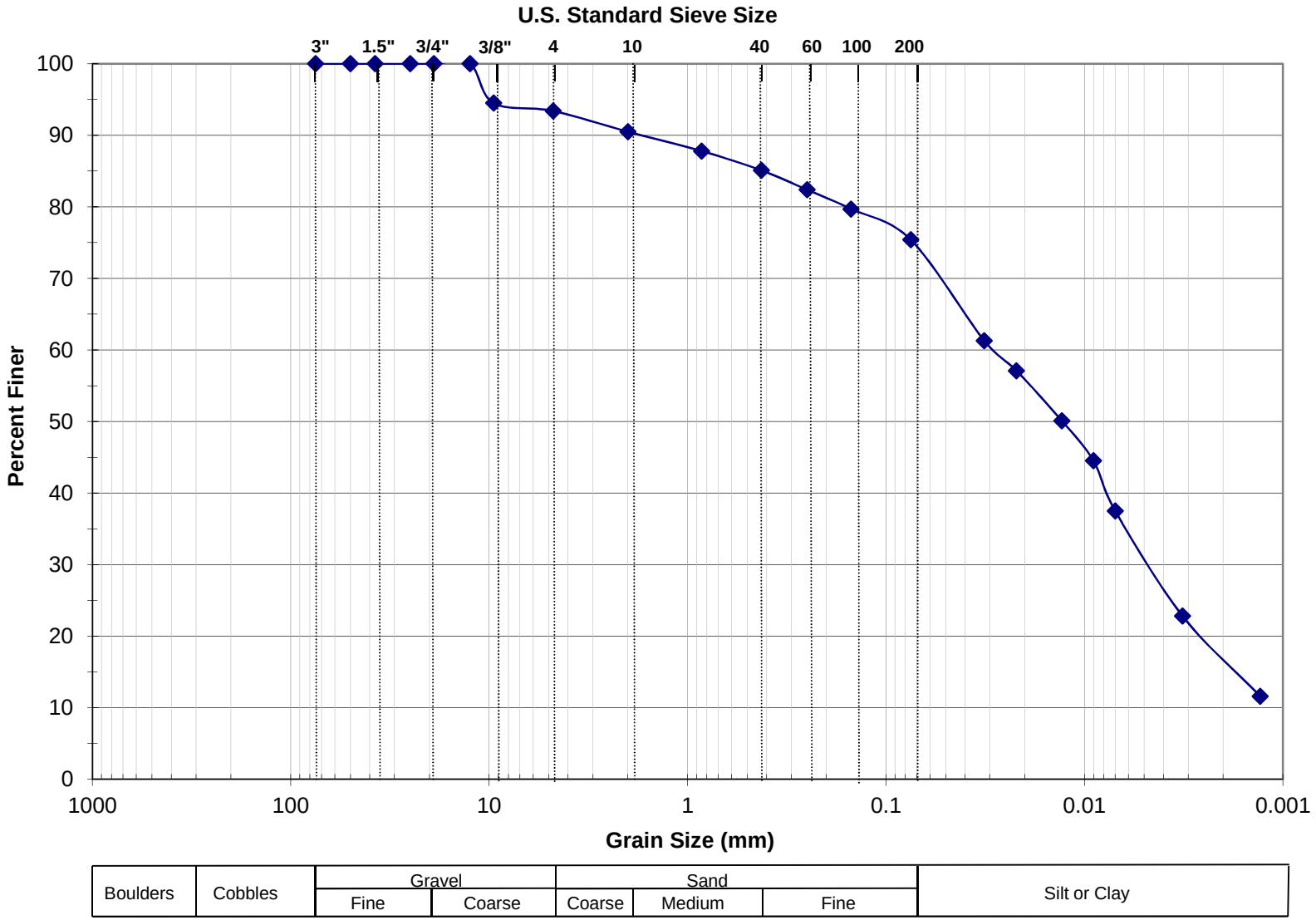
Project Name. South Park Landfill

Grain Size Distribution Chart

Project No. 100116

Boring: SS-01

Sample ID (depth): SS-01-0-2-120610 (0 to 2 ft)



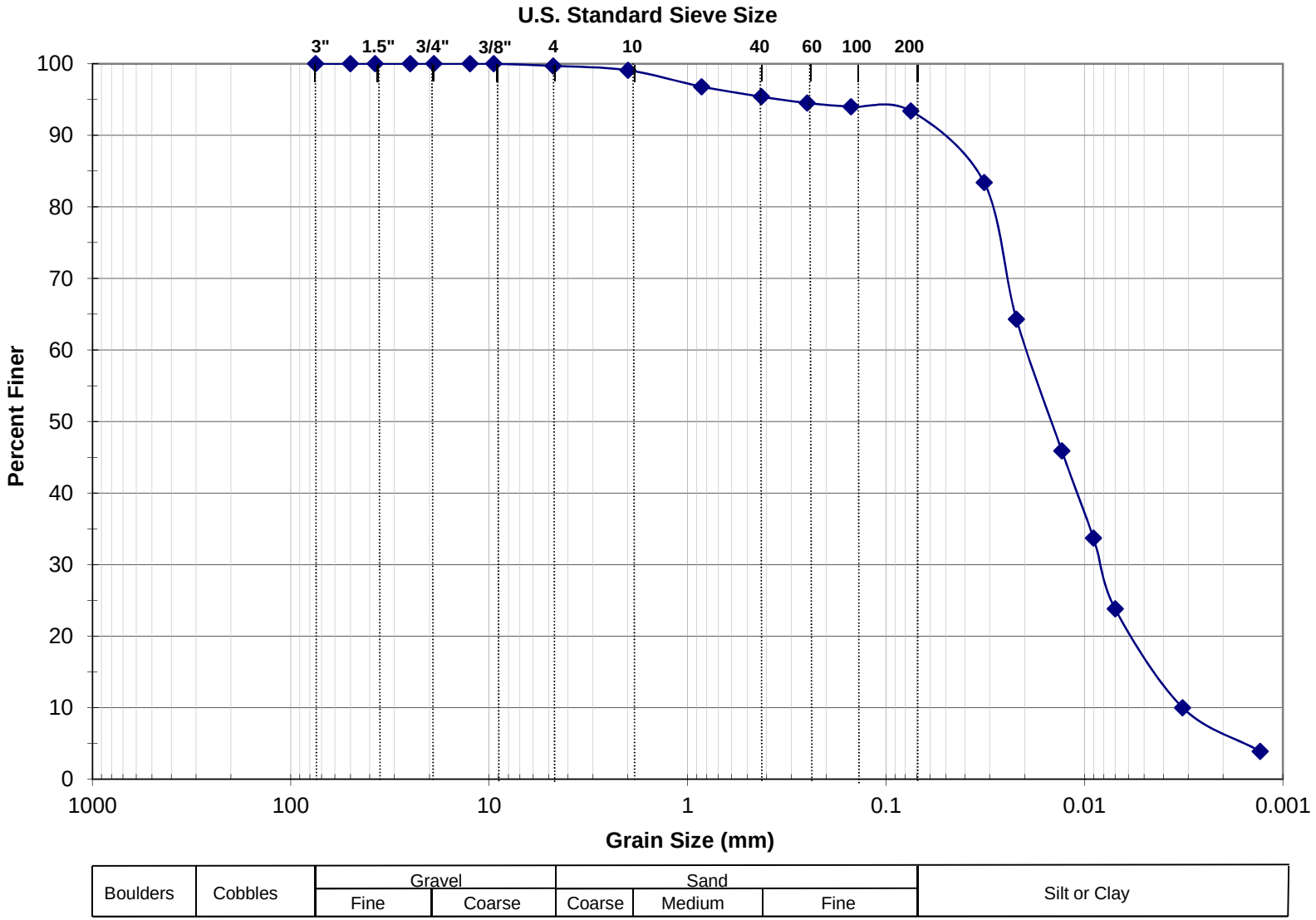
Project Name. South Park Landfill

Grain Size Distribution Chart

Project No. 100116

Boring: SS-01

Sample ID (depth): SS-01-2-4-120610 (2 to 4 ft)



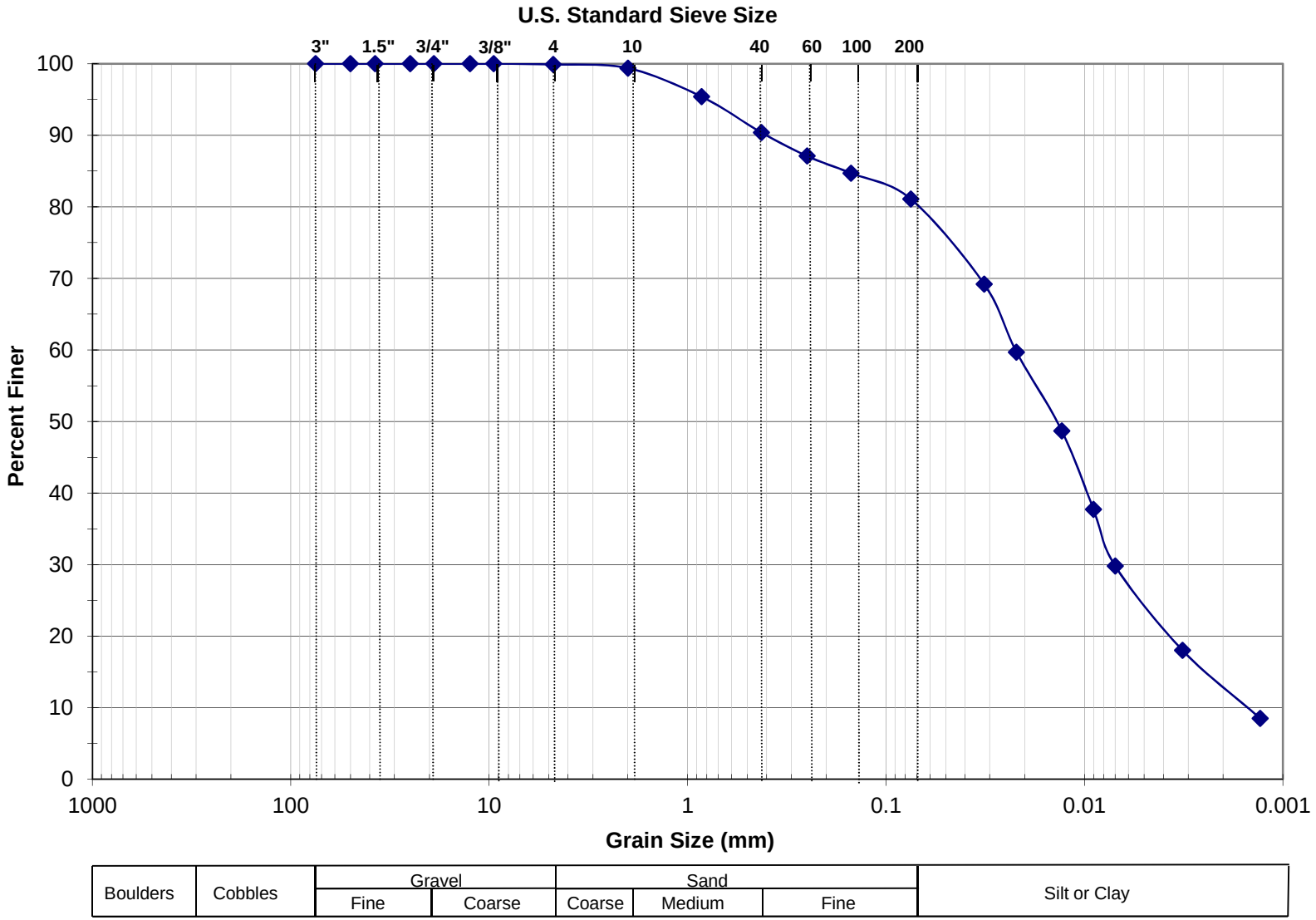
Project Name. South Park Landfill

Grain Size Distribution Chart

Project No. 100116

Boring: SS-01

Sample ID (depth): SS-01-4-6-120610 (4 to 6 ft)



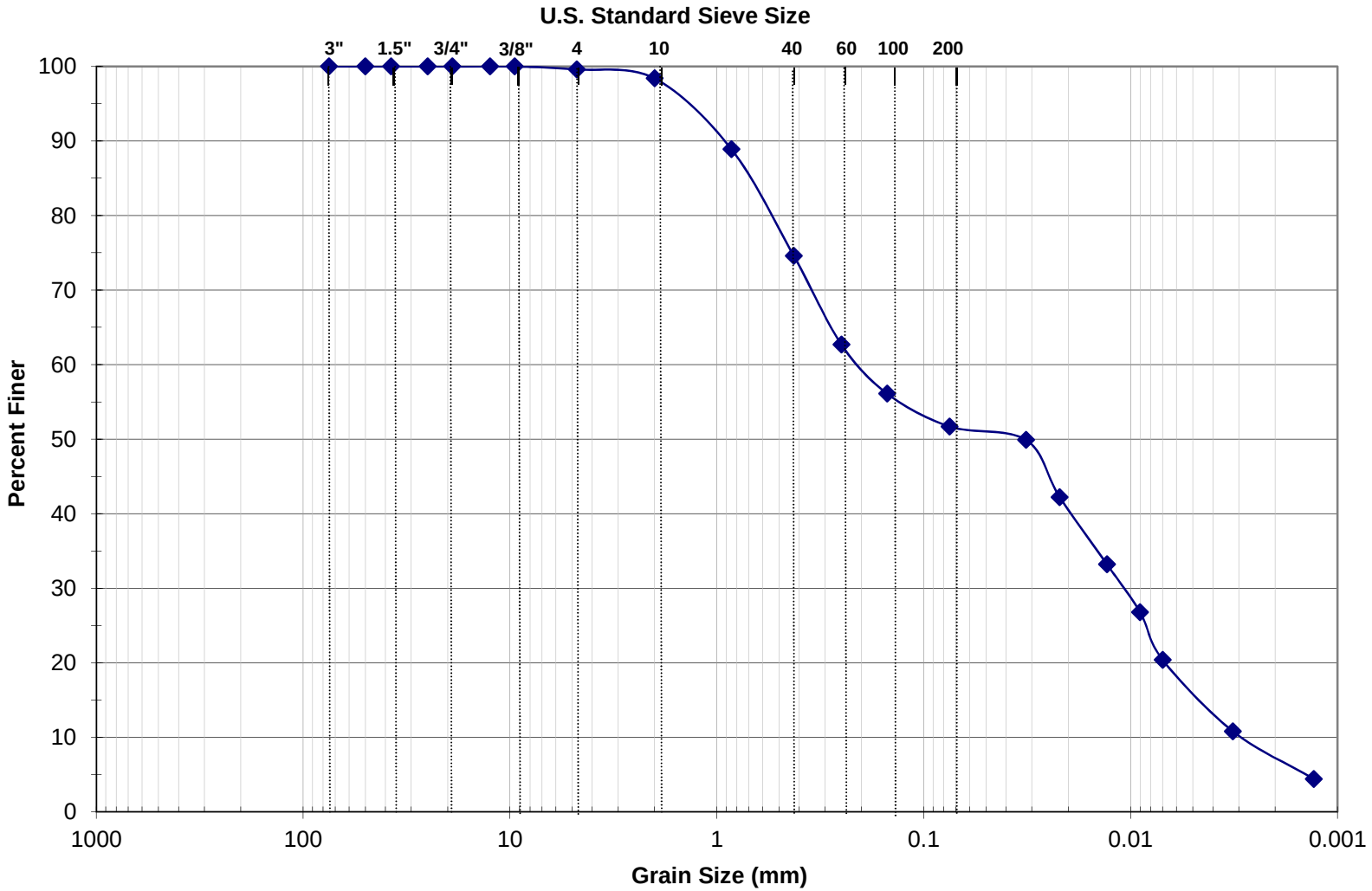
Project Name. South Park Landfill

Grain Size Distribution Chart

Project No. 100116

Boring: SS-02

Sample ID (depth): SS-02-0-2-120610 (0 to 2 ft)



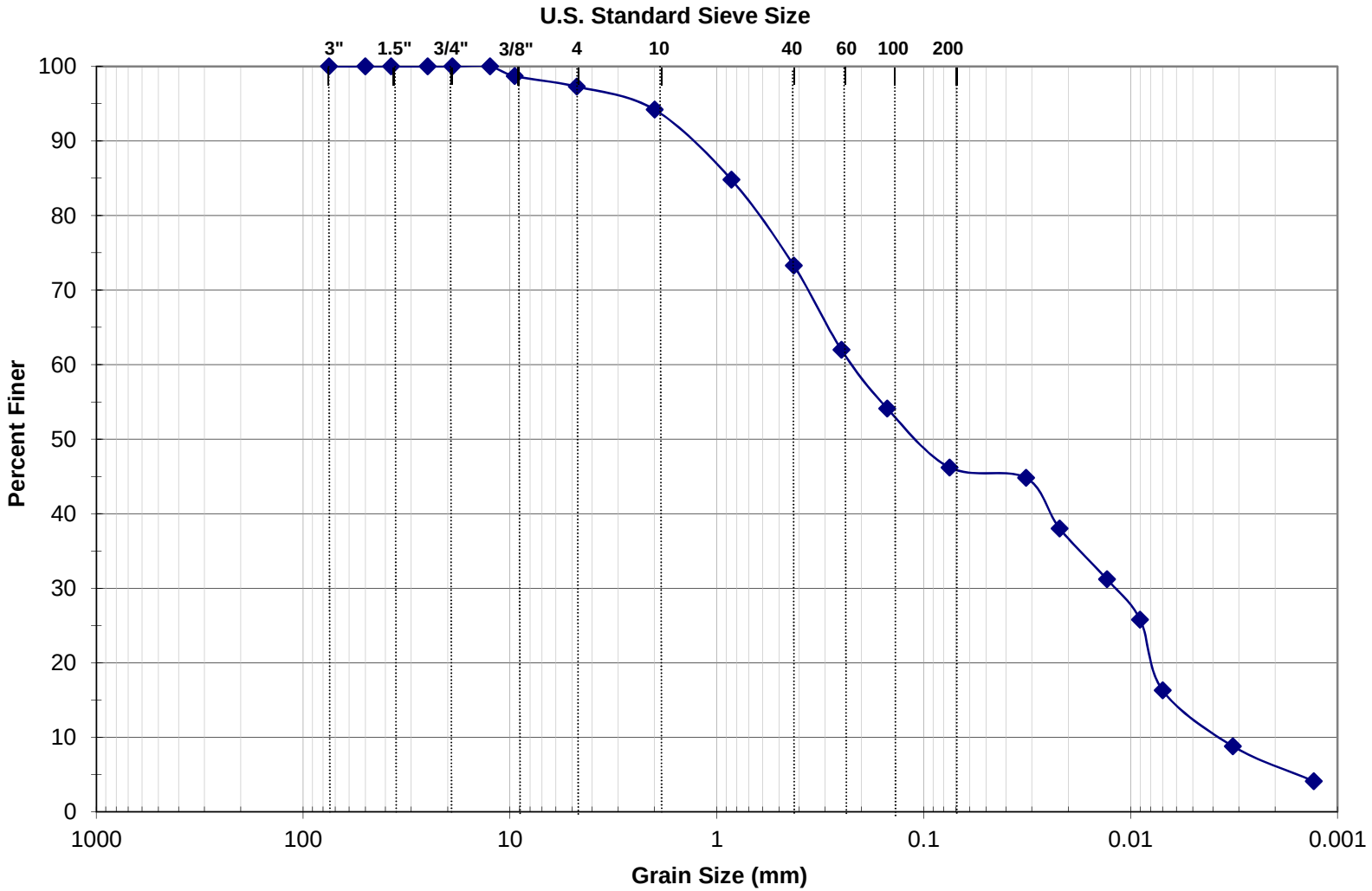
Project Name. South Park Landfill

Grain Size Distribution Chart

Project No. 100116

Boring: SS-02

Sample ID (depth): SS-02-2-4-120610 (2 to 4 ft)



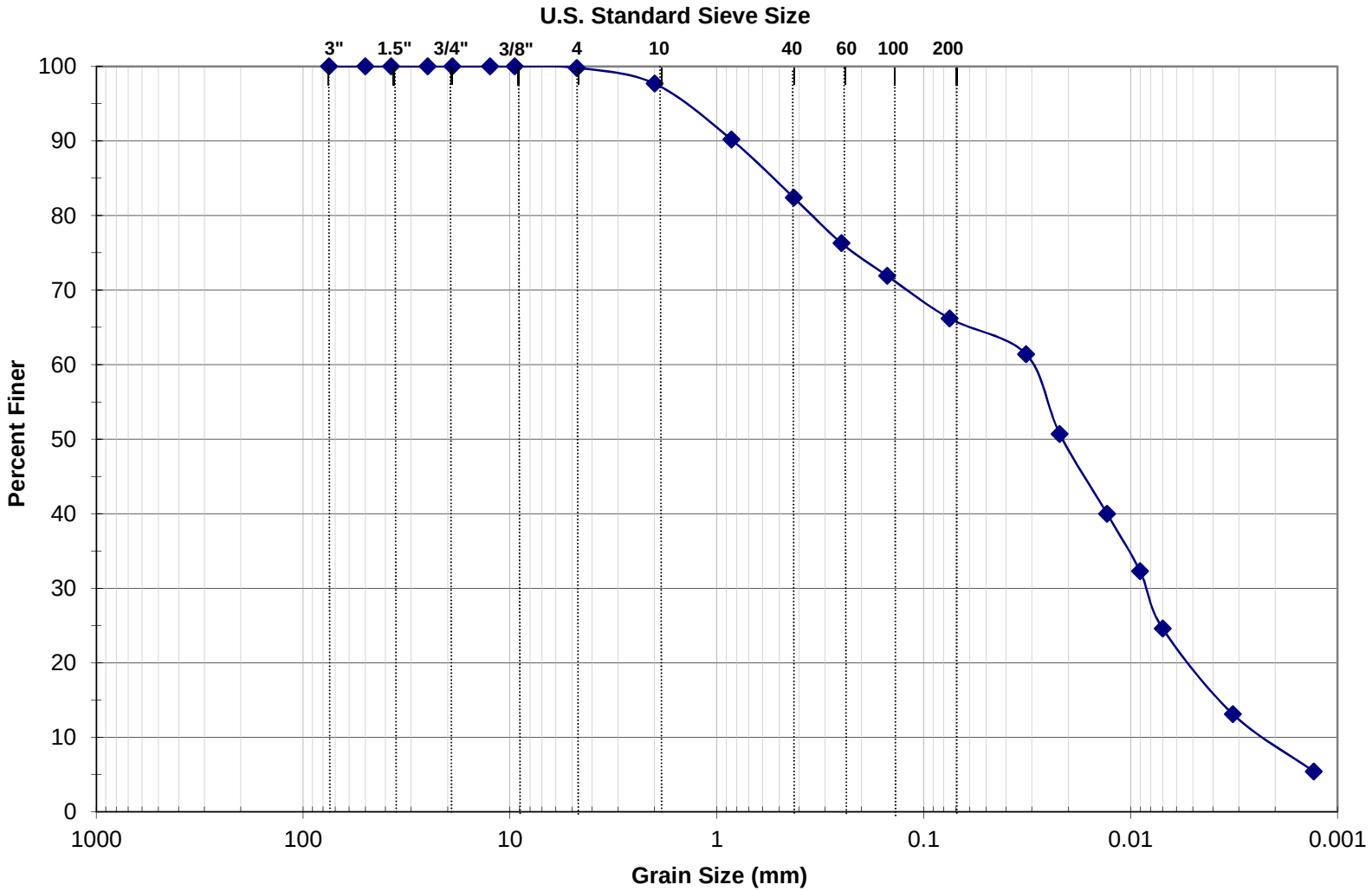
Project Name. South Park Landfill

Grain Size Distribution Chart

Project No. 100116

Boring: SS-02

Sample ID (depth): SS-02-4-6-120610 (4 to 6 ft)



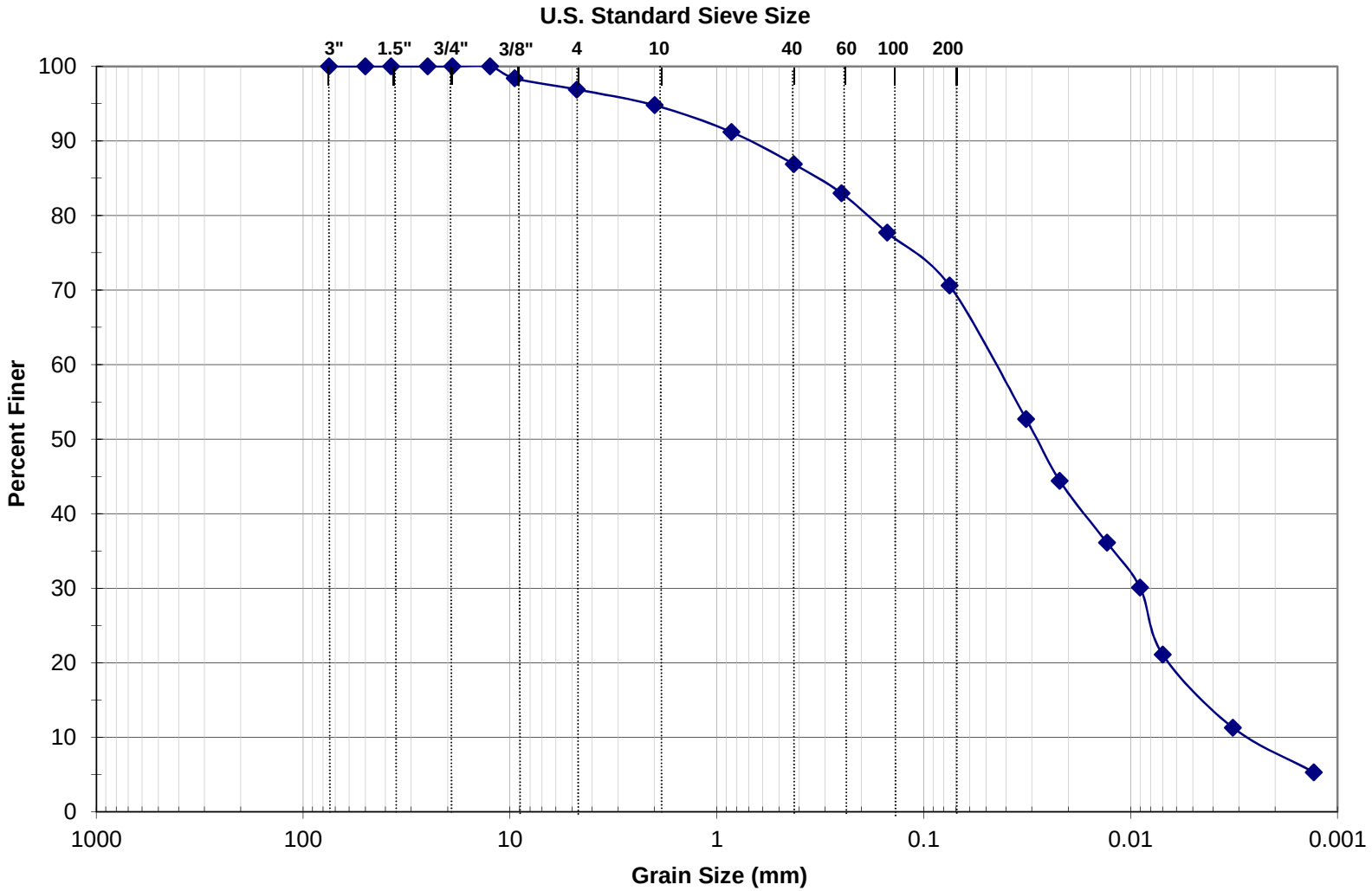
Project Name. South Park Landfill

Grain Size Distribution Chart

Project No. 100116

Boring: SS-02

Sample ID (depth): SS-02-6-8-120610 (6 to 8 ft)



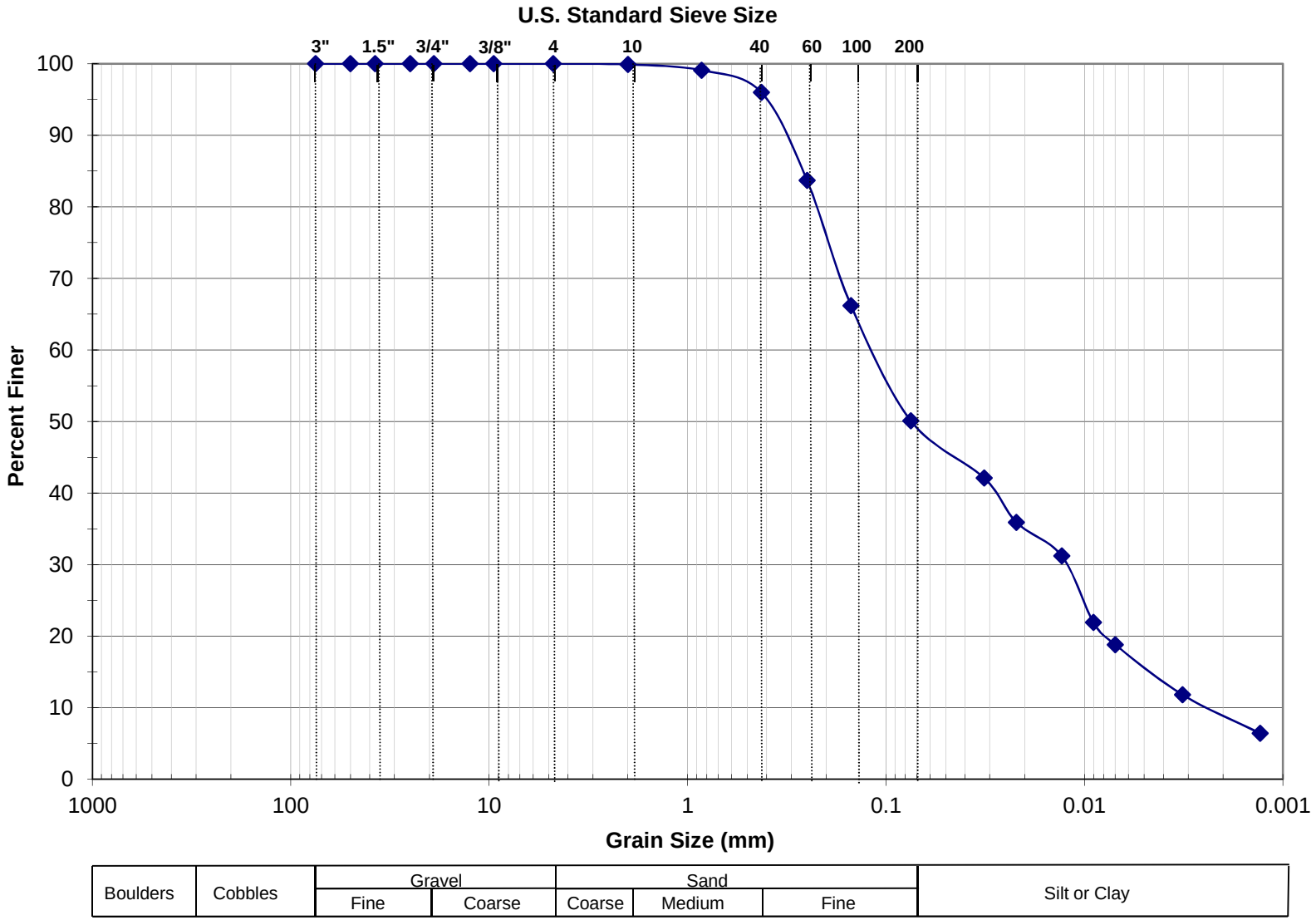
Project Name. South Park Landfill

Grain Size Distribution Chart

Project No. 100116

Boring: SS-03

Sample ID (depth): SS-03-0-2-120610 (0 to 2 ft)



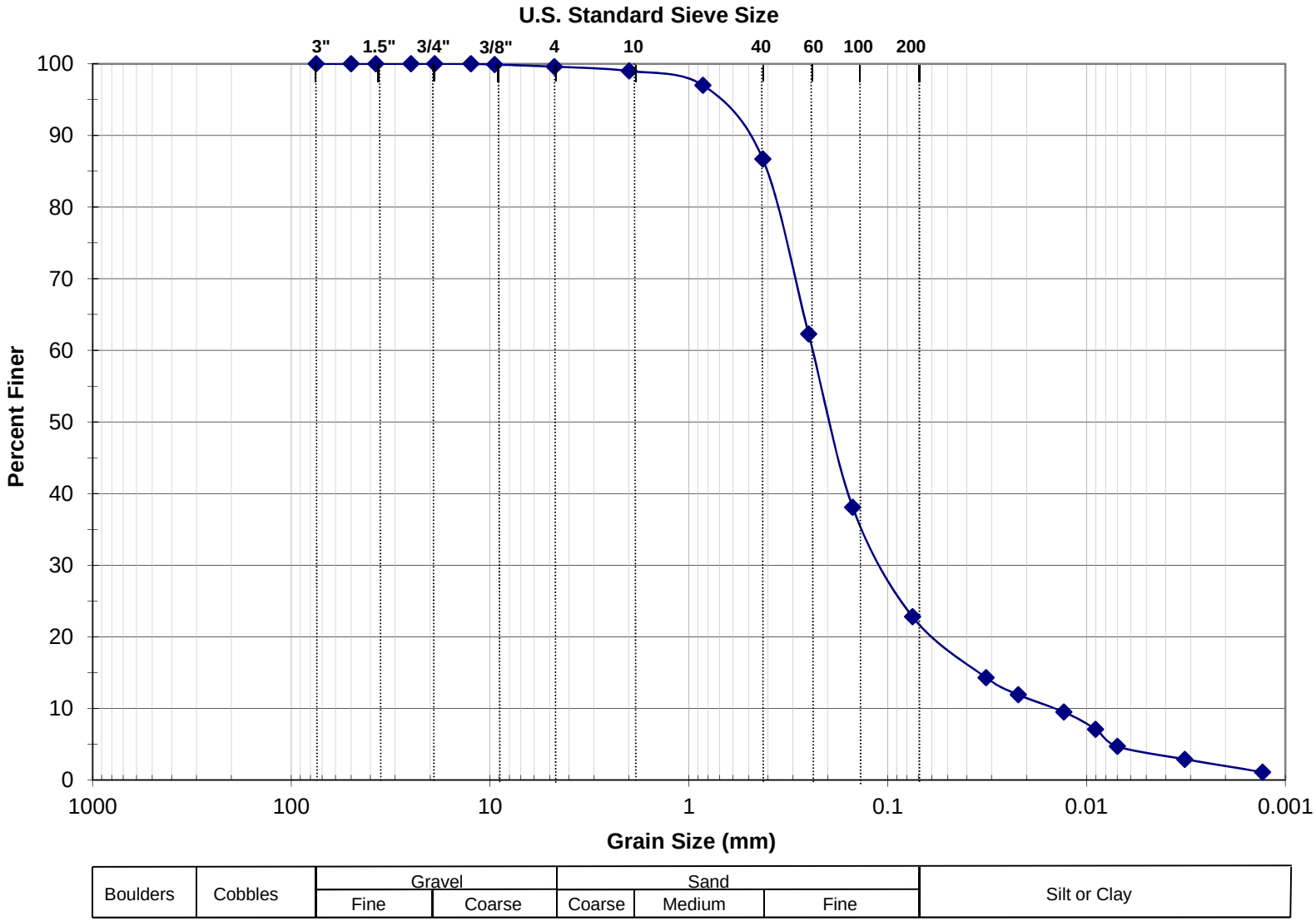
Project Name. South Park Landfill

Grain Size Distribution Chart

Project No. 100116

Boring: SS-03

Sample ID (depth): SS-03-2-4-120610 (2 to 4 ft)



Project Name. South Park Landfill

Grain Size Distribution Chart

Project No. 100116

Boring: SS-03

Sample ID (depth): SS-03-4-6-120610 (4 to 6 ft)

South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix H
Dioxin/Furan Sample Photographs and Lab Multi-Increment Sampling Composite Process

Additional Documentation of Multi-Increment Compositing Procedure

Field samples were presented to the lab in 4 oz jars. Duplicate samples were archived and frozen.

Samples from all three decision units were composited, dried, sieved to 2 mm, and split.

Drying was performed in trays in a dedicated room. Trays were protected by aluminum foil tent. Soil was turned 2-3 times per day for approximately three days.

A stainless steel 2mm sieve was used by hand to remove large particles. A shaker table was not used. For DU1, a large quantity of leaves, twigs, and roots were removed; these organics appeared to represent a small mass fraction of the samples. For DU3, the sieved quantity removed was approximately half of the sample mass.

Figure 1: 2mm Sieve

Additional Documentation of Multi-Increment Compositing Procedure

Figure 2: DU 1 Sample fraction not passing 2mm sieve.

Figure 3: DU 2 Sample fraction not passing 2mm sieve.

Additional Documentation of Multi-Increment Compositing Procedure

Figure 4: DU 3 Sample fraction not passing 2mm sieve.

Additional Documentation of Multi-Increment Compositing Procedure

Splits were first attempted using a Jones-type or chute riffle splitter. However, significant fines were present in the DU1 sample and easily became airborne while being placed in and falling from the splitter. These fines were taken up by the hood ventilation. This loss of fines would have continued with each of multiple passes. As dioxin has been known to be preferentially present on very fine particles, this loss of fines was judged to be unacceptable.

Figure 5: Jones-type or chute riffle splitter

Additional Documentation of Multi-Increment Compositing Procedure

The splits followed an Army Corps of Engineers Multi-Increment protocol: The laboratory lots were placed in trays at approximately ½" deep. The trays were overlaid by a 30 section grid. Samples were procured by taking approximately a 0.3 ± 0.1gram subsample from each section to yield a final 10 gr sample for analysis. A stainless steel V-spatula was used to remove soil from a random location in each section for each sample. The technician selected the random locations. After a sample was generated, the soil was smoothed before taking another round of 0.3 gr subsamples. For each decision unit, five 10 gr samples were prepared for dioxin analysis and three 5 gr samples were taken for TOC analysis.

Figure 6: Splitting tray with 30 section grid

Additional Documentation of Multi-Increment Compositing Procedure

Figure 7: Detail photo of grid sub-section sample

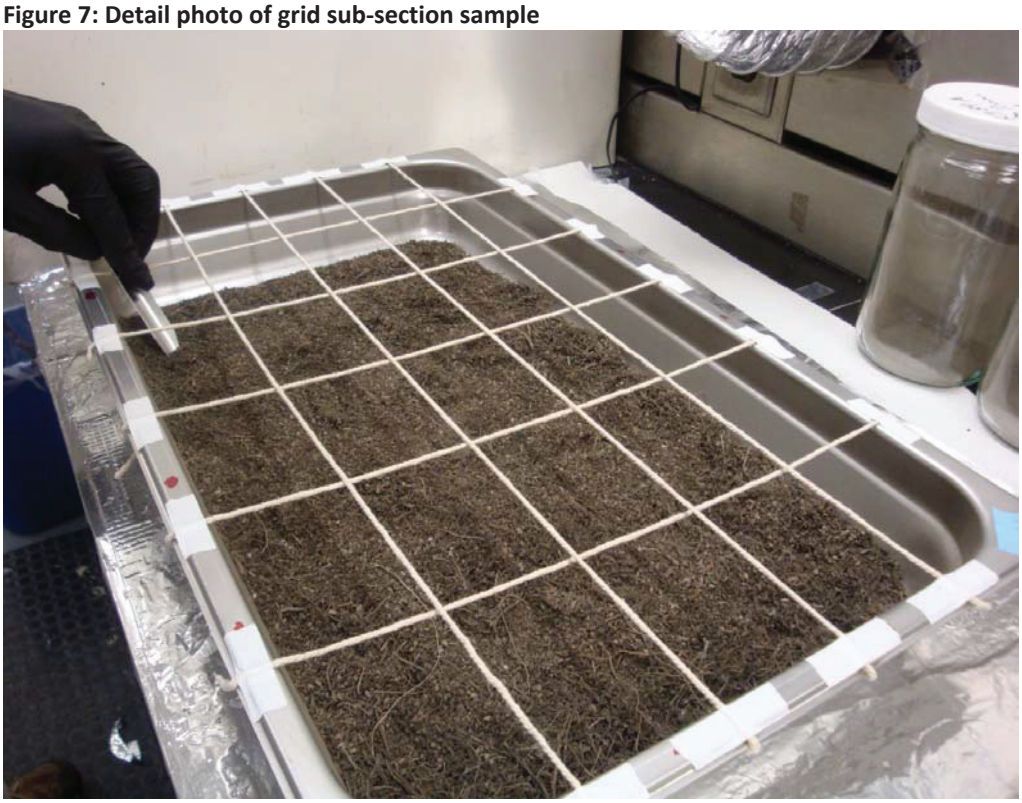


Figure 8: Grid sub-section sampling

Additional Documentation of Multi-Increment Compositing Procedure

Figure 9: Checking the mass of each grid sub-section sample

South Park Landfill
Project: 100116

Date: 12/2/10
Field Personnel: AET, MAR, ES

DECISION UNIT 1 SAMPLE TABLE

Location number	Time	Soil Descriptions
DU1-1C-0.5-113010	930	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-2R-0.5-113010	935	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-3L-0.5-113010	942	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-4C-0.5-113010	946	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-5R-0.5-113010	950	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-6L-0.5-113010	956	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-7C-0.5-113010	1000	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-8R-0.5-113010	1007	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-9L-0.5-113010	1015	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-10C-0.5-113010	1020	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-11R-0.5-113010	1030	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-12L-0.5-113010	1036	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-13C-0.5-113010	1045	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-14R-0.5-113010	1050	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-15L-0.5-113010	1054	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-16C-0.5-113010	1127	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-17R-0.5-113010	1137	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-18L-0.5-113010	1142	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-19C-0.5-113010	1153	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-20R-0.5-113010	1159	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-21L-0.5-113010	1206	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-22C-0.5-113010	1211	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-23R-0.5-113010	1217	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-24L-0.5-113010	1222	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-25C-0.5-113010	1226	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-26R-0.5-113010	1235	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-27L-0.5-113010	1247	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-28C-0.5-113010	1257	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-29R-0.5-113010	1300	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots
DU1-30L-0.5-113010	1305	Very soft, wet, dark brown to black, organic muck abundant organic including leaves, twigs and roots

South Park Landfill
Project: 100116

Date: 12/2/10
Field Personnel: AET, MAR, ES

DECISION UNIT 2 SAMPLE TABLE

Location number	Time	Soil description	Comments:
DU2-1-0.5-120210	845	Loose, moist, dark brown sandy silt, top soil. Trace brick, foil, plastic and fabric	sod
DU2-2-0.5-120210	851	Loose, moist, dark brown sandy silt, top soil	sod
DU2-3-0.5-120210	857	Loose, moist, dark brown sandy silt, top soil	sod
DU2-4-0.5-120210	925	Loose, moist, dark brown sandy silt, top soil	sod
DU2-5-0.5-120210	930	Loose, moist, dark brown sandy silt, top soil	sod
DU2-6-0.5-120210	943	Loose, moist, dark brown sandy silt, top soil over brown m-f sand. Trace plastic	sod
DU2-7-0.5-120210	948	Loose, moist, dark brown slightly silty sand	sod
DU2-8-0.5-120210	955	Loose, moist, dark brown sandy silt, top soil. Trace brick and glass	sod
DU2-9-0.5-120210	1000	Loose, moist, dark brown sandy silt, top soil. Abundant leaves and acorns.	sod
DU2-10-0.5-120210	1007	Loose, moist, dark brown sandy silt, top soil. Abundant leaves and acorns.	sod
DU2-11-0.5-120210	1034	Loose, moist, dark brown sandy silt, top soil	sod
DU2-12-0.5-120210	1013	Loose, moist, dark brown sandy silt, top soil	sod
DU2-13-0.5-120210	1015	Loose, moist, dark brown sandy silt, top soil	sod
DU2-14-0.5-120210	1110	Loose, moist, dark brown sandy silt, top soil	sod
DU2-15-0.5-120210	1119	Loose, moist, dark brown slightly gravelly sandy silt, top soil	sod
DU2-16-0.5-120210	1050	Loose, moist, dark brown sandy silt, top soil over brown m-f sand.	sod
DU2-17-0.5-120210	1116	Loose, moist, dark brown slightly silty sand	sod
DU2-18-0.5-120210	1122	Loose, moist, dark brown sandy silt, top soil	sod
DU2-19-0.5-120210	1125	Loose, moist, dark brown sandy silt, top soil	sod
DU2-20-0.5-120210	1250	Loose, moist, dark brown sandy silt, top soil	sod, N of fence.
DU2-21-0.5-120210	1253	Loose, moist, brown gravel trace silt and sand	sod N of fence
DU2-22-0.5-120210	1130	Loose, moist, dark brown sandy silt, top soil	sod
DU2-23-0.5-120210	1255	Loose, moist, brown slightly sandy gravel	bare soil, N of fence
DU2-24-0.5-120210	1131	Loose, moist, dark brown sandy silt, top soil over brown m-f sand.	sod
DU2-25-0.5-120210	1136	Loose, moist, dark brown sandy silt, top soil over brown sandy gravel	sod
DU2-26-0.5-120210	1138	Loose, moist, dark brown sandy silt, top soil over brown sandy gravel	sod
DU2-27-0.5-120210	1142	Loose, moist, dark brown sandy silt, top soil over brown sandy gravel	sod
DU2-28-0.5-120210	1200	Loose, moist, dark brown sandy silt, top soil over brown sandy gravel	sod
DU2-29-0.5-120210	1105	Loose, moist, dark brown sandy silt, top soil. Abundant leaves	sod
DU2-30-0.5-120210	1105	Loose, moist, dark brown slightly gravelly, sandy silt, top soil. Trace paper	sod

South Park Landfill
Project: 100116

Date: 12/1/10 - 12/3/10
Field Personnel: AET, MAR, ES

DECISION UNIT 3 SAMPLE TABLE

Location number	Time	Soil Decriptions
DU3-1-0.5-120310	1100	Medium dense, moist, brown, silty gravel, abundant roots
DU3-2-0.5-120310	1040	Medium dense, moist, brown, silty gravel, abundant roots
DU3-3-0.5-120110	1515	Dense, moist, brownish-gray, silty sand with gravel, abundant roots
DU3-4-0.5-120110	1450	Dense, moist, brownish-gray, silty sand with gravel, abundant roots
DU3-5-0.5-120110	1430	Dense, moist, brownish-gray, silty sand with gravel, abundant roots
DU3-6-0.5-120310	1225	Medium dense, moist, brown, silty gravel, abundant roots
DU3-7-0.5-120310	1142	Medium dense, moist, brown, silty gravel, abundant roots
DU3-8-0.5-120310	1102	Medium dense, moist brownish-gray, sand with silt and gravel, trace roots
DU3-9-0.5-120310	1042	Medium dense, moist brownish-gray, sand with silt and gravel, trace roots
DU3-10-0.5-120110	1510	Medium dense, moist brownish-gray, sand with silt and gravel, trace roots
DU3-11-0.5-120110	1445	Medium dense, moist brownish-gray, sand with silt and gravel, trace roots
DU3-12-0.5-120110	1425	Medium dense, moist brownish-gray, sand with silt and gravel, trace roots
DU3-13-0.5-120310	1215	Medium dense, moist, brown, silty gravel, abundant roots
DU3-14-0.5-120310	1208	Medium dense, moist brownish-gray, sand with silt and gravel, trace roots
DU3-15-0.5-120310	1156	Medium dense, moist brownish-gray, sand with silt and gravel, trace roots
DU3-16-0.5-120310	1105	Medium dense, moist brownish-gray, sand with silt and gravel, trace roots
DU3-17-0.5-120310	1050	Medium dense, moist brownish-gray, sand with silt and gravel, trace roots
DU3-18-0.5-120110	1500	Medium dense, moist brownish-gray, sand with silt and gravel, trace roots
DU3-19-0.5-120110	1440	Medium dense, moist brownish-gray, sand with silt and gravel, trace roots
DU3-20-0.5-120110	1415	Medium dense, moist brownish-gray, sand with silt and gravel, trace roots
DU3-21-0.5-120210	1422	Medium dense, moist, brown, silty gravel, abundant roots
DU3-22-0.5-120210	1427	Medium dense, moist brownish-gray, sand with silt and gravel, trace roots
DU3-23-0.5-120310	1210	Medium dense, moist brownish-gray, sand with silt and gravel, trace roots
DU3-24-0.5-120310	1145	Medium dense, moist brownish-gray, sand with silt and gravel, trace roots
DU3-25-0.5-120310	1109	Medium dense, moist brownish-gray, sand with silt and gravel, trace roots
DU3-26-0.5-120210	1510	Medium dense, moist, brown, silty sand with gravel abundant organics, roots
DU3-27-0.5-120310	836	Dense, moist, brown, silty sand with gravel
DU3-28-0.5-120310	912	Dense, moist, brown, silty sand with gravel
DU3-29-0.5-120310	914	Dense, moist, brown, silty sand with gravel
DU3-30-0.5-120210	1406	Dense, moist, brown, silty sand with gravel with organic, roots
DU3-31-0.5-120310	1020	Dense, moist, brown, silty sand with gravel with organic, roots
DU3-32-0.5-120210	1435	Dense, moist, brown, silty sand with gravel

DECISION UNIT 3 SAMPLE TABLE (continued)

Location number	Time	Soil Decriptions
DU3-33-0.5-120210	1449	Dense, moist, brown, silty sand with gravel
DU3-34-0.5-120210	1458	Dense, moist, brown, silty sand with gravel
DU3-35-0.5-120210	1513	Dense, slightly moist, gray, silty sand with gravel, recycled concrete
DU3-36-0.5-120310	830	Dense, slightly moist, gray, silty sand with gravel, recycled concrete
DU3-37-0.5-120310	910	Dense, moist, brown, silty sand with gravel
DU3-38-0.5-120310	918	Dense, moist, brown, silty sand with gravel
DU3-39-0.5-120210	1411	Dense, moist, brown, silty sand with gravel
DU3-40-0.5-120210	1357	Dense, moist, brown, silty sand with gravel
DU3-41-0.5-120210	1440	Dense, slightly moist, gray, silty sand with gravel, recycled concrete
DU3-42-0.5-120210	1445	Dense, slightly moist, gray, silty sand with gravel, recycled concrete
DU3-43-0.5-120210	1452	Dense, slightly moist, gray, silty sand with gravel, recycled concrete
DU3-44-0.5-120210	1511	Dense, slightly moist, gray, silty sand with gravel, recycled concrete
DU3-45-0.5-120310	840	Dense, slightly moist, gray, silty sand with gravel, recycled concrete
DU3-46-0.5-120310	910	Dense, moist, brown, silty sand with gravel
DU3-47-0.5-120310	855	Dense, moist, brown, silty sand with gravel
DU3-48-0.5-120210	1350	Dense, moist, brown, silty sand with gravel with organic, roots
DU3-49-0.5-120210	1352	Dense, moist, brown, silty sand with gravel
DU3-50-0.5-120210	1355	Dense, moist, brown, silty sand with gravel with organic, roots
DU3-51-0.5-120210	1348	Dense, moist, brown, silty sand with gravel
DU3-52-0.5-120210	1340	Dense, moist, brown, silty sand with gravel
DU3-53-0.5-120210	1344	Dense, moist, brown, silty sand with gravel
DU3-54-0.5-120210	1331	Dense, moist, brown, silty sand with gravel
DU3-55-0.5-120210	1331	Dense, moist, brown, silty sand with gravel
DU3-56-0.5-120210	1315	Dense, moist, brown, silty sand with gravel
DU3-57-0.5-120210	1328	Dense, moist, brown, silty sand with gravel with organic, roots
DU3-58-0.5-120210	1322	Dense, moist, brown, silty sand with gravel with organic, roots
DU3-59-0.5-120210	1317	Dense, moist, brown, silty sand with gravel with organic, roots
DU3-60-0.5-120210	1533	Soft, very moist to wet organic silt, abundant roots, leaves

South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix I
Hydrogeological Data and Groundwater Elevation Contours

Table of Contents

This appendix contains the following items:

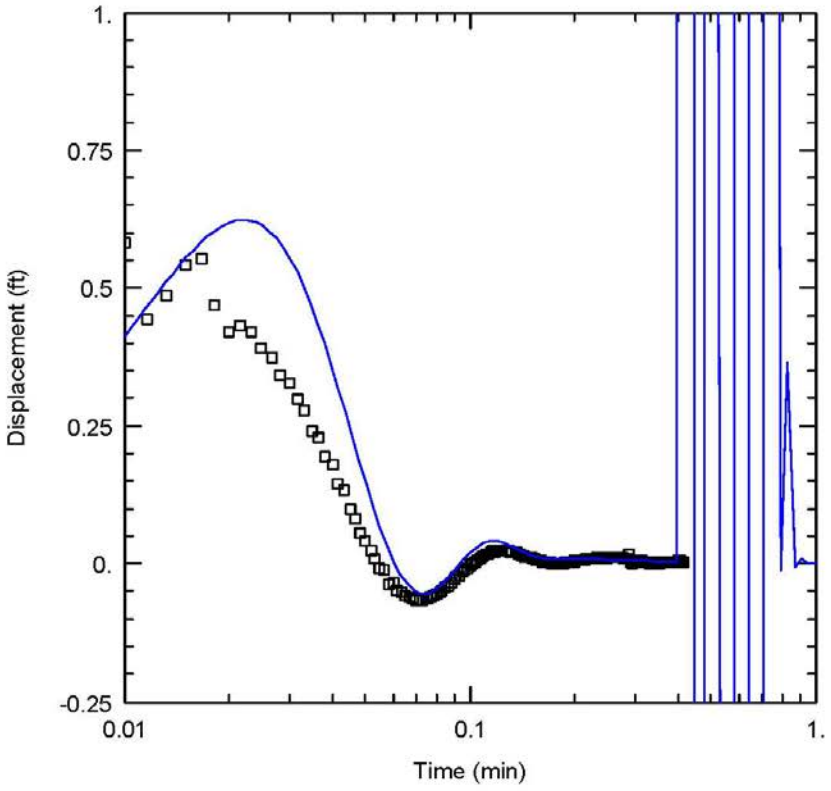
- Slug Test Data
- Groundwater Elevation Contour Maps

South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix I
Hydrogeological Data and Groundwater Elevation Contours

Slug Test Data



WELL TEST ANALYSIS

Data Set: P:\Sparklf VB9741B\RI FS\Slug Testing\Aqtesolv files\MW25-#1fBZ.aqt
Date: 09/27/11 Time: 14:14:37

PROJECT INFORMATION

Company: Aspect
Client: SouthPark
Test Well: MW-25
Test Date: 1/20/11

AQUIFER DATA

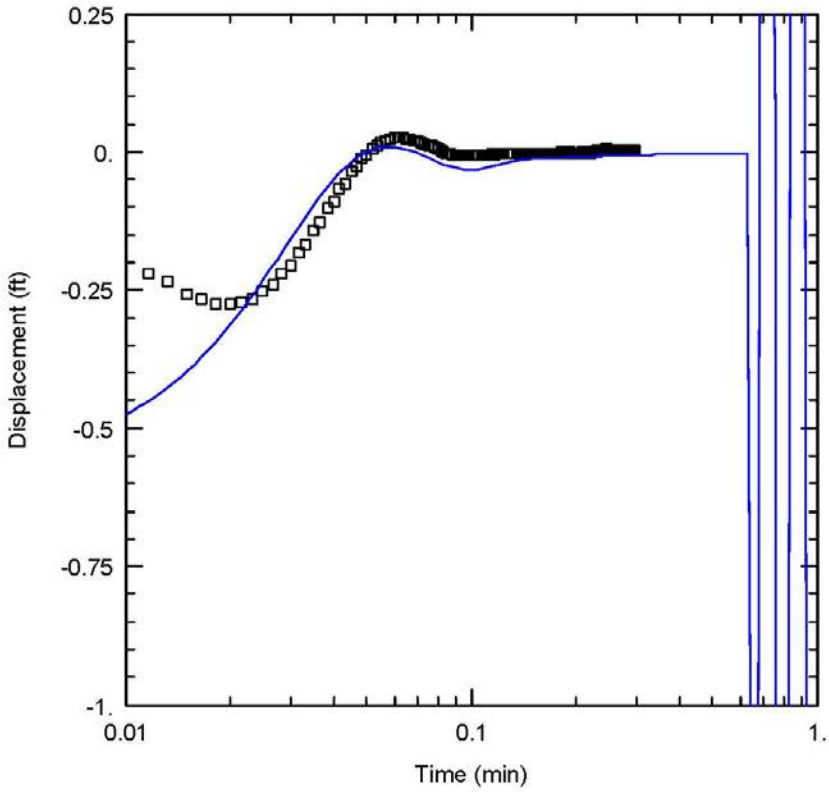
Saturated Thickness: 25.5 ft Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW25#1)

Initial Displacement: 1.1 ft
Total Well Penetration Depth: 7. ft
Casing Radius: 0.0833 ft
Static Water Column Height: 17.64 ft
Screen Length: 5. ft
Well Radius: 0.4375 ft

SOLUTION

Aquifer Model: Confined
Kr = 0.1018 ft/min
Kz/Kr = 0.1
Solution Method: Butler-Zhan
Ss = 0.0001 ft^{-1}
Le = 30. ft



WELL TEST ANALYSIS

Data Set: P:\Sparklf VB9741B\RI FS\Slug Testing\Aqtesolv files\MW10-#4R.aqt
Date: 09/27/11 Time: 14:13:58

PROJECT INFORMATION

Company: Aspect
Client: SouthPark
Test Well: MW-10
Test Date: 1/20/11

AQUIFER DATA

Saturated Thickness: 33.5 ft Anisotropy Ratio (Kz/Kr): 0.1

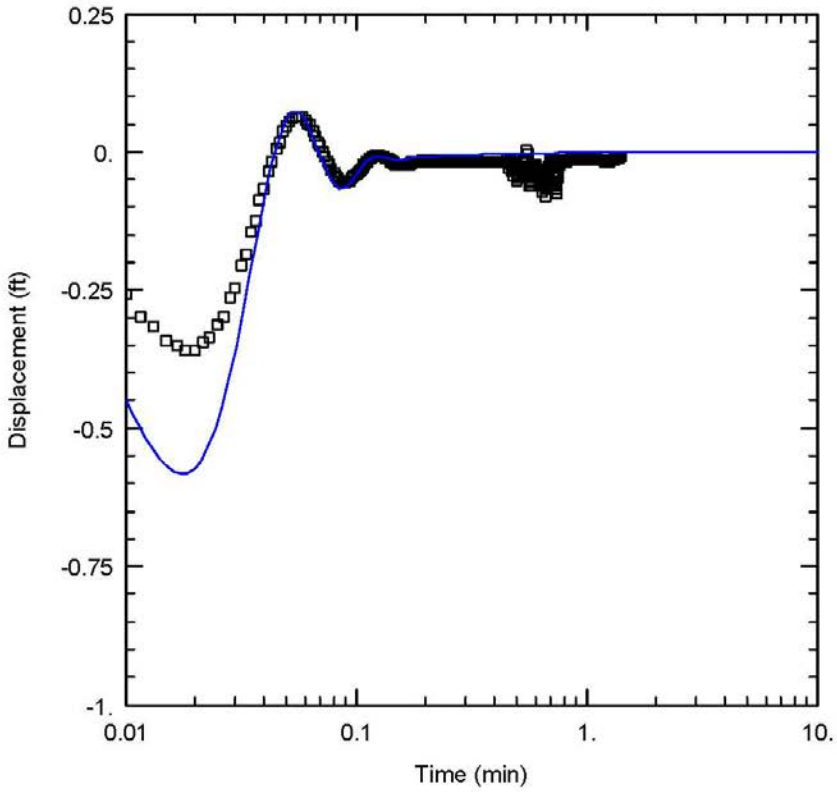
WELL DATA (MW10-#4R)

Initial Displacement: -0.55 ft
Total Well Penetration Depth: 33. ft
Casing Radius: 0.0833 ft
Static Water Column Height: 34.5 ft
Screen Length: 10. ft
Well Radius: 0.4375 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Butler-Zhan

Kr = 0.04464 ft/min
Kz/Kr = 0.1
Ss = 3.0E-5 ft^{-1}
Le = 35.48 ft



WELL TEST ANALYSIS

Data Set: P:\SparkIf VB9741B\RI FS\Slug Testing\Aqtesolv files\MW26-#1rBZ.aqt
Date: 09/27/11 Time: 14:14:45

PROJECT INFORMATION

Company: Aspect
Client: SouthPark
Test Well: MW-26
Test Date: 1/20/11

AQUIFER DATA

Saturated Thickness: 37.5 ft Anisotropy Ratio (Kz/Kr): 0.1

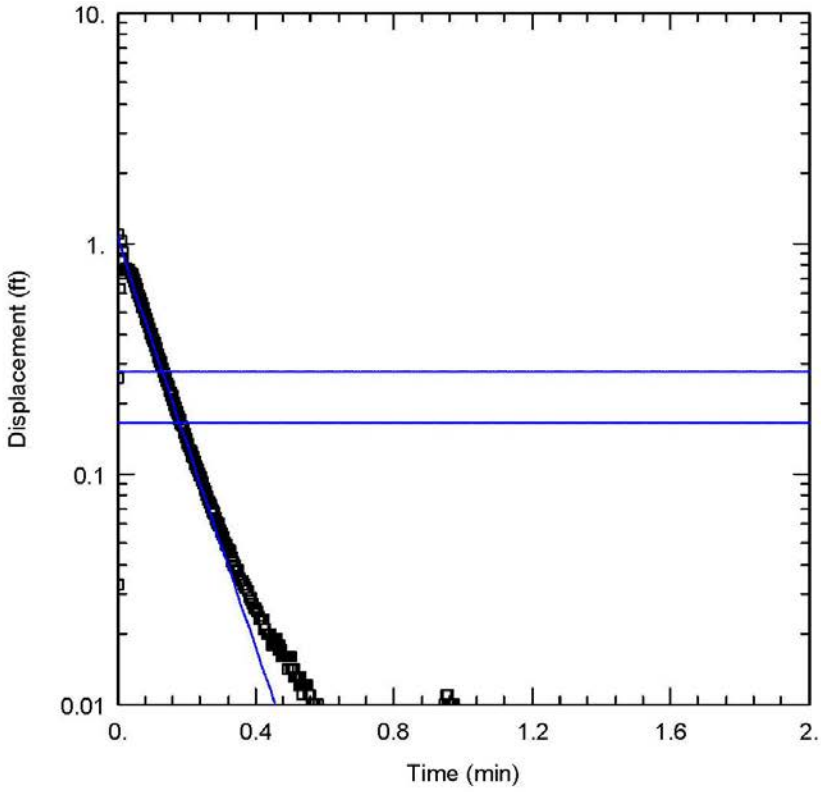
WELL DATA (MW26#1)

Initial Displacement: -1.1 ft
Total Well Penetration Depth: 13.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 19.48 ft
Screen Length: 10. ft
Well Radius: 0.4375 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Butler-Zhan

Kr = 0.07218 ft/min
Kz/Kr = 0.1
Ss = 0.0001 ft^{-1}
Le = 16.87 ft



WELL TEST ANALYSIS

Data Set: P:\Sparklf VB9741B\RI FS\Slug Testing\Aqtesolv files\MW24-#3fH.aqt
Date: 09/27/11 Time: 14:14:13

PROJECT INFORMATION

Company: Aspect
Client: SouthPark
Test Well: MW-24
Test Date: 1/20/11

AQUIFER DATA

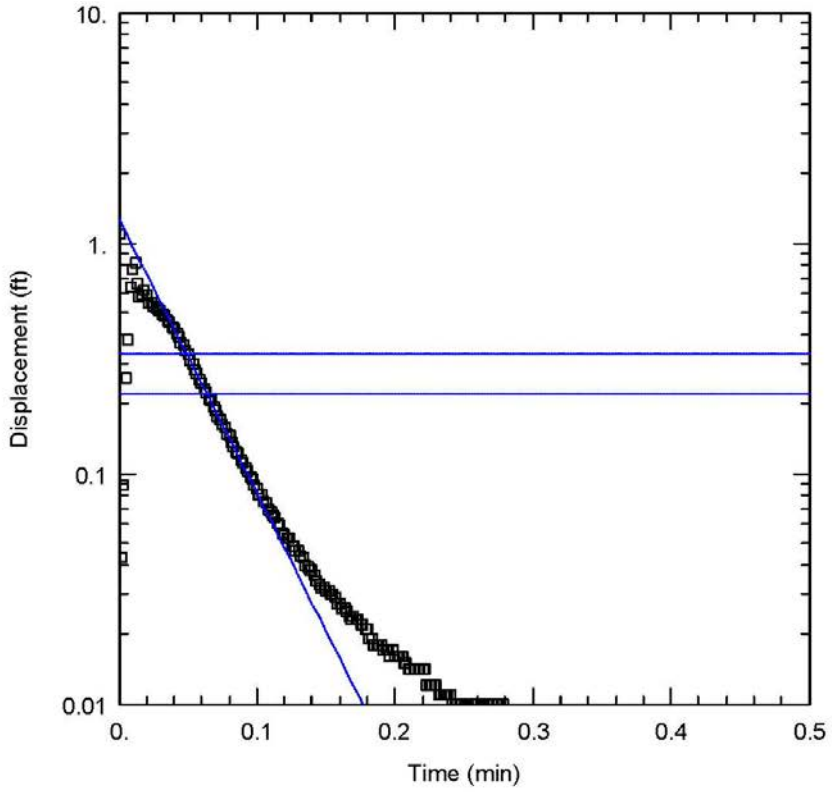
Saturated Thickness: 38. ft Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW24-#3)

Initial Displacement: 1.1 ft
Total Well Penetration Depth: 39.45 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 39.45 ft
Screen Length: 10. ft
Well Radius: 0.4375 ft

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.01767 ft/min y0 = 1.053 ft



WELL TEST ANALYSIS

Data Set: P:\Sparklf VB9741B\RI FS\Slug Testing\Aqtesolv files\MW27-#1fBR.aqt
Date: 09/27/11 Time: 14:14:54

PROJECT INFORMATION

Company: Aspect
Client: SouthPark
Test Well: MW-27
Test Date: 1/20/11

AQUIFER DATA

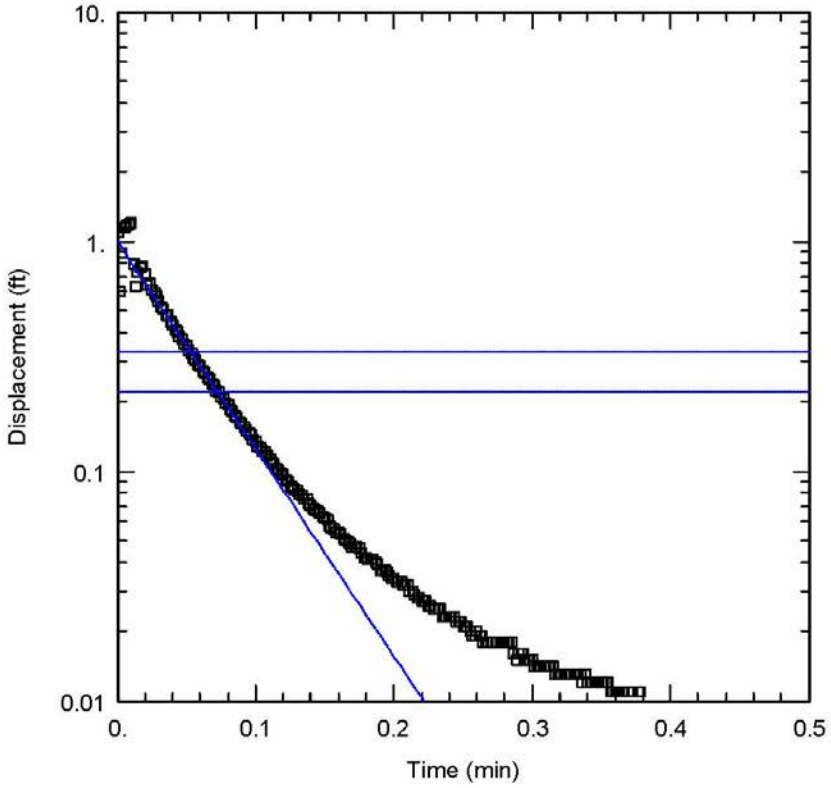
Saturated Thickness: 49. ft Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW27-#1)

Initial Displacement: 1.1 ft
Total Well Penetration Depth: 15.44 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 15.44 ft
Screen Length: 10. ft
Well Radius: 0.4375 ft

SOLUTION

Aquifer Model: Unconfined
K = 0.02883 ft/min
Solution Method: Bouwer-Rice
y0 = 1.27 ft



WELL TEST ANALYSIS

Data Set: P:\Sparklf VB9741B\RI FS\Slug Testing\Aqtesolv files\MW8-7fBR.aqt
Date: 09/27/11 Time: 14:16:05

PROJECT INFORMATION

Company: Aspect
Project: SouthPark
Test Well: MW8
Test Date: 1/20/11

AQUIFER DATA

Saturated Thickness: 44.36 ft Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW8-7)

Initial Displacement: 1.1 ft
Total Well Penetration Depth: 30.86 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 30.86 ft
Screen Length: 10. ft
Well Radius: 0.4375 ft

SOLUTION

Aquifer Model: Unconfined
K = 0.02466 ft/min
Solution Method: Bouwer-Rice
y0 = 1. ft

South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix I
Hydrogeological Data and Groundwater Elevation Contours

Groundwater Elevation Contour Maps

KENYON ST
S KENYON ST
OCCIDENTAL AVE S
1st AVE S
STATE ROUTE 509
STATE ROUTE 509
KENYON BUSINESS PARK
2nd AVE S
STATE ROUTE 99
STATE ROUTE 99 MEDIAN
5th AVE S
S MONROE ST
E ELMGROVE ST
S SULLIVAN ST
S SULLIVAN ST
EMERSON POWER PRODUCTS
SEATTLE SOUTH RECYCLING AND DISPOSAL STATION
SPPD PROPERTY
EAST-WEST CHANNEL (NO FLOW)
CULVERT
CULVERT
KMW-7 (13.94)
KMW-6 (8.54)
KMW-3A (8.48)
KMW-5 (10.31)
KMW-4 (8.48)
KMW-8 (13.77)
KMW-2 (NM)
KMW-2B (NM)
KMW-1A (8.58)
MW-12 (12.70)
MW-3 (14.75)
MW-14 (16.50)
MW-1 (17.78)
MW-4 (9.30)
HMW-1 (NM)
MW-25 (6.55)
MW-10 (6.54)
MW-26 (6.60)
MW-24 (6.63)
MW-27 (6.81)
MW-8 (6.79)
MW-18 (7.08)
13.00
12.00
11.00
10.00
9.00
8.00
7.00
14.00
15.00
16.00
17.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
8.00
7.00

LEGEND

- SOUTH PARK LANDFILL BOUNDARY
- DITCH OR CHANNEL
- FENCE
- BUILDING
- MONITORING WELL SCREENED IN UPPER ZONE OF SHALLOW AQUIFER
- MONITORING WELL SCREENED IN LOWER ZONE OF SHALLOW AQUIFER
- (6.89) GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
- (NM) NOT MEASURED
- 7.00 GROUNDWATER ELEVATION CONTOUR, DASHED WHERE INFERRED
- APPROXIMATE DIRECTION OF GROUNDWATER FLOW

NOTES:
1. FIGURE INCLUDES INFORMATION PRESENTED IN COLOR. PHOTOCOPIES MAY NOT DEPICT ALL INTENDED INFORMATION ON THE ORIGINAL DRAWING.
2. ALL LOCATIONS ARE APPROXIMATE

N

0 200
APPROXIMATE SCALE IN FEET

Figure from FINAL REMEDIAL INVESTIGATION/FEASABILITY STUDY WORK PLAN, Farallon Consulting, 2010.

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Seattle, Washington

Figure I.1
Groundwater Elevation Contour Map
March 2009

CAD Path: Q:\South Park Landfill\2011-09\100116-I-7.dwg 11x17 Landscape || Date Saved: Jan 05, 2012 || User: pbaker

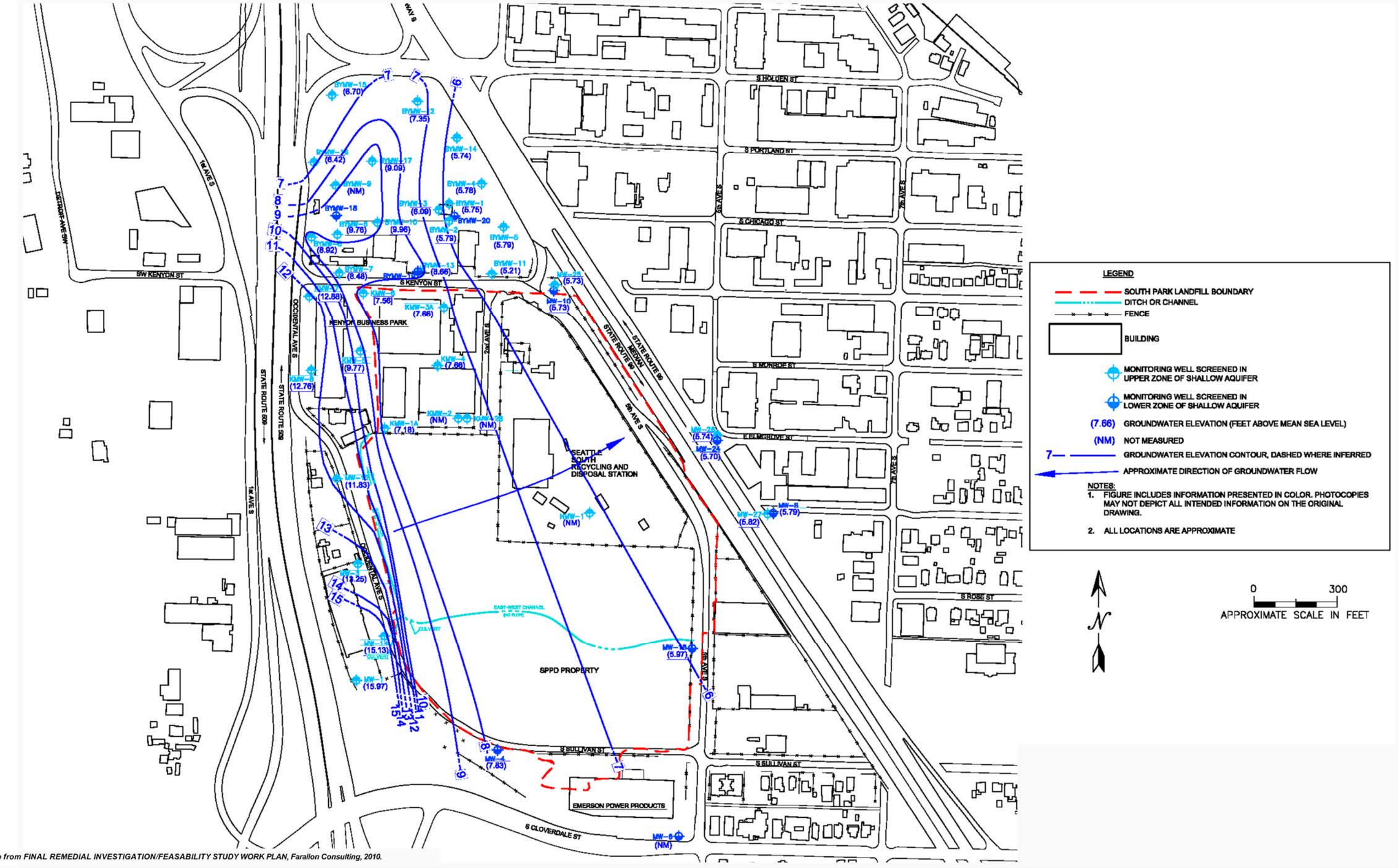

Figure from FINAL REMEDIAL INVESTIGATION/FEASABILITY STUDY WORK PLAN, Farallon Consulting, 2010.

LEGEND

- SOUTH PARK LANDFILL BOUNDARY
- DITCH OR CHANNEL
- FENCE
- BUILDING
- MONITORING WELL SCREENED IN UPPER ZONE OF SHALLOW AQUIFER
- MONITORING WELL SCREENED IN LOWER ZONE OF SHALLOW AQUIFER
- (7.66) GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
- (NM) NOT MEASURED
- 7 GROUNDWATER ELEVATION CONTOUR, DASHED WHERE INFERRED
- APPROXIMATE DIRECTION OF GROUNDWATER FLOW

NOTES:

1. FIGURE INCLUDES INFORMATION PRESENTED IN COLOR. PHOTOCOPIES MAY NOT DEPICT ALL INTENDED INFORMATION ON THE ORIGINAL DRAWING.
2. ALL LOCATIONS ARE APPROXIMATE

N

0 300

APPROXIMATE SCALE IN FEET

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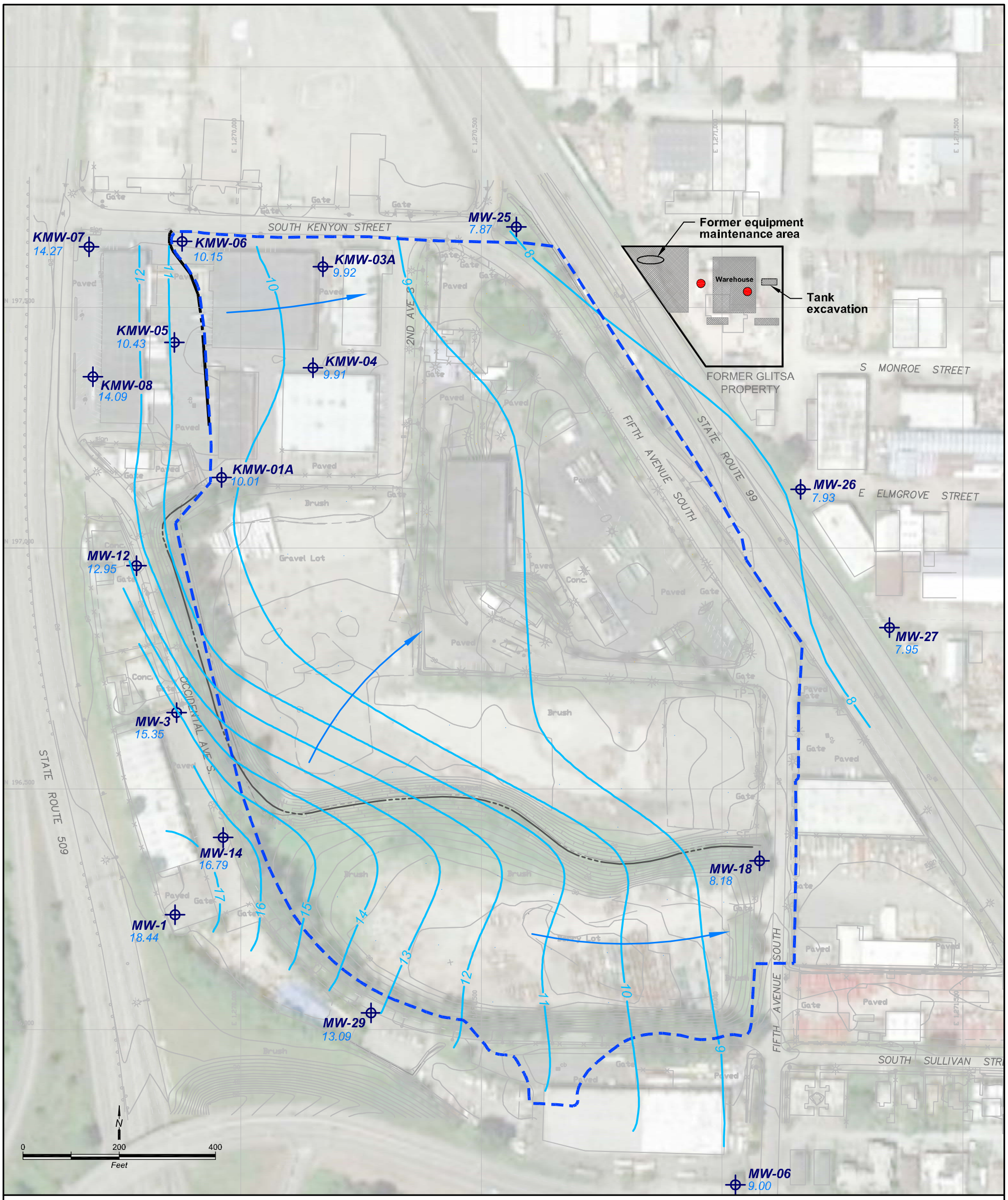
Seattle, Washington

Figure I.2
Groundwater Elevation Contour Map
August 2009

CAD Path: Q:\South Park Landfill\2011-09\100116-1.8.dwg 11x17 Landscape || Date Saved: Jan 05, 2012 || User: pbaker



Legend

- 10 — Groundwater elevation contour (Jan. 2011)
- MW-27 7.95 — Monitoring well and groundwater elevation (Jan. 2011)
- Former Glitsa property monitoring well
- Area within former Glitsa property that may have historically been used by automobile wrecking yard
- Landfill Boundary (Revised based on RI/FS)
- Groundwater flow direction

Note: Water levels at SG-1S, PZ-1, PZ-2, PZ-3, HMW-1, MW-04, MW-08, MW-10, and MW-24 were not used in the creation of the groundwater elevation contour map.

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Figure I.3
Groundwater Elevation Contour Map
January 2011

CAD Path: Q:\South Park Landfill\2011-09\100116-I.9.dwg 11x17 Portrait || Date Saved: Jan 05, 2012 || User: pbaker

Legend

- Revised Landfill Boundary (Based on RI/FS)
- 10 — Groundwater Elevation Contour (June 2011)
- MW-29 11.79 — Monitoring Well and Groundwater Elevation (June 2011)
- Former Glitsa Property Monitoring Well
- Area within former Glitsa property that may have historically been used as automobile wrecking yard
- Particle Tracking Point
- Groundwater Flow Direction

N

0 200 400

Scale in Feet

Notes:

- Water levels at SG-1S, MW-04, MW-08, MW-10, MW-24, and MW-30 were not used in the creation of the groundwater elevation contour map. The average groundwater flow velocity between MW-25 and MW-31 is 0.55 feet per day.
- Other seasonal groundwater elevations/contours are available in Appendix I.
- RI/FS - Remedial Investigation / Feasibility Study

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Figure I.4
Groundwater Elevation Contour Map
June 2011

CAD Path: Q:\South Park Landfill\2011-09\100116-5.9.dwg 11x17 Portrait || Date Saved: March 20, 2012 || User: pbaker

Legend

- Flow Paths (Orange Denotes Start Point)
- 1ft Groundwater Elevation Contours
- Revised Landfill Boundary (Based on RI/FS)
- Tax Parcels

Monitoring Well Locations

- Not Included in Analysis
- Used for Contouring and Flow Path Analysis

Notes:
- Tax parcels provided by King County Geographic Information Systems Center.
- Aerial imagery provided by Esri, August 1, 2011.
- Water Levels at KMW-02B, MW-01, MW-04, MW-08, MW-10, MW-24, and MW-30 were not used in the creation of the groundwater elevation contour map.

SR 509
S KENYON ST
OCCIDENTAL AVE S
5TH AVE S
S SULLIVAN ST
S CLOVERDALE ST

KMW-07 13.93
KMW-06 9.10
KMW-03A 8.98
KMW-05 10.30
KMW-08 13.86
KMW-04 8.97
KMW-01A 9.02
KMW-02B
MW-25 6.69
MW-10
MW-31 6.45
MW-30
FB-14
MW-32 6.77
MW-33 6.82
MW-26 6.69
MW-24
MW-27 6.80
MW-08
MW-12 12.67
MW-03
MW-14 16.36
MW-01
MW-29 12.23
MW-04
MW-18 7.08
FB-07
FB-08
FB-09
FB-10
FB-11
FB-12
FB-13

13.5
9.5
8.5
7.5
10.5
12.5
13.5
14.5

0 100 200 400
Scale in Feet

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Seattle, Washington

Figure I.5
Groundwater Elevation Contour Map
April 2013

I:\GIS\Projects\COS-SPARK\MXD\RIFS\RIFS_2017\Appendix I\Figure I.5 (GW Elevation Contour Map-April 2013).mxd
9/29/2017

Legend

Flow Path (Orange Denotes Start Point)

1-Foot Groundwater Elevation Contours

Revised Landfill Boundary (Based on RI/FS)

Tax Parcels

Monitoring Well Locations

Not Included in Analysis

Used for Contouring and Flow Path Analysis

Notes:
- Tax parcels provided by King County Geographic Information Systems Center.
- Aerial imagery provided by Esri, August 1, 2011.
- Water levels at KMW-02B, MW-01, MW-04, MW-08, MW-10, MW-24, and MW-30 were not used in the creation of the groundwater elevation contour map.

SR 509

S KENYON ST

OCCIDENTAL AVE S

5TH AVE S

S SULLIVAN ST

S CLOVERDALE ST

KMW-07 13.43
KMW-06 7.91
KMW-03A 7.94
MW-25 5.79
MW-10
MW-31 5.70
MW-30
FB-14
MW-32 5.77
KMW-05 9.86
KMW-08 13.30
KMW-04 7.93
MW-33 5.94
KMW-02B 8.22
SG-2N 9.23
KMW-01A 7.55
MW-26 5.88
MW-24
FB-07
FB-08
MW-12 12.30
FB-09
FB-10
FB-11
MW-27 5.98
MW-08
FB-13
MW-03
FB-12
SG-1S 9.54
MW-14 15.66
MW-18 6.09
MW-01
MW-29 10.66
MW-04
MW-06 7.14

12 11 10 9 8 7 6 13 14 15

N

0 100 200 400
Scale in Feet

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Seattle, Washington

Figure I.6
Groundwater Elevation Contour Map
July 2013

I:\GIS\Projects\COS-SPARK\MXD\RIFS\RIFS_2017\Appendix I\Figure I.6 (Groundwater Elevation Contour Map-Jul 2013).mxd
9/29/2017

Legend

- Flow Path (Orange Denotes Start Point)
- 1-Foot Groundwater Elevation Contours
- Revised Landfill Boundary (Based on RI/FS)
- Tax Parcel

Monitoring Well Locations

- Not Included in Analysis
- Used for Contouring and Flow Path Analysis

Notes:
- Tax parcels provided by King County Geographic Information Systems Center.
- Aerial imagery provided by Esri, August 1, 2011.
- Water levels at MW-01, MW-04, MW-08, MW-10, MW-24, and MW-30 were not used in the creation of the groundwater elevation contour map.

SR 509
S KENYON ST
OCCIDENTAL AVE S
5TH AVE S
S SULLIVAN ST
S CLOVERDALE ST

KMW-07 13.43
KMW-06 7.91
KMW-03A 7.94
MW-25 5.79
MW-10
MW-31 5.70
MW-30
FB-14
MW-32 5.77
KMW-05 9.86
KMW-08 13.30
KMW-04 7.93
KMW-02B 8.22
MW-33 5.94
SG-2N 9.23
KMW-01A 7.55
FB-07
FB-08
FB-09
FB-10
FB-11
MW-12 12.30
MW-26 5.88
MW-24
MW-27 5.98
MW-08
FB-13
FB-12
MW-03
SG-1S 9.54
MW-14 15.66
MW-18 6.09
MW-01
MW-29 10.66
MW-04
MW-06 7.14

14 8 9 10 11 13 15 12 14

0 100 200 400
Scale in Feet

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Remedial Investigation/Feasibility Study
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Seattle, Washington

Figure I.7
Groundwater Elevation Contour Map
March 2014

I:\GIS\Projects\COS-SPARK\MXD\RIFS\RIFS_2017\Appendix I\Figure I.7(Groundwater Elevation Contour Map-Mar 2014).mxd
9/29/2017

South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix J
Groundwater Quality Trend Plots, Maps, and Data

Table of Contents

This appendix contains the following items:

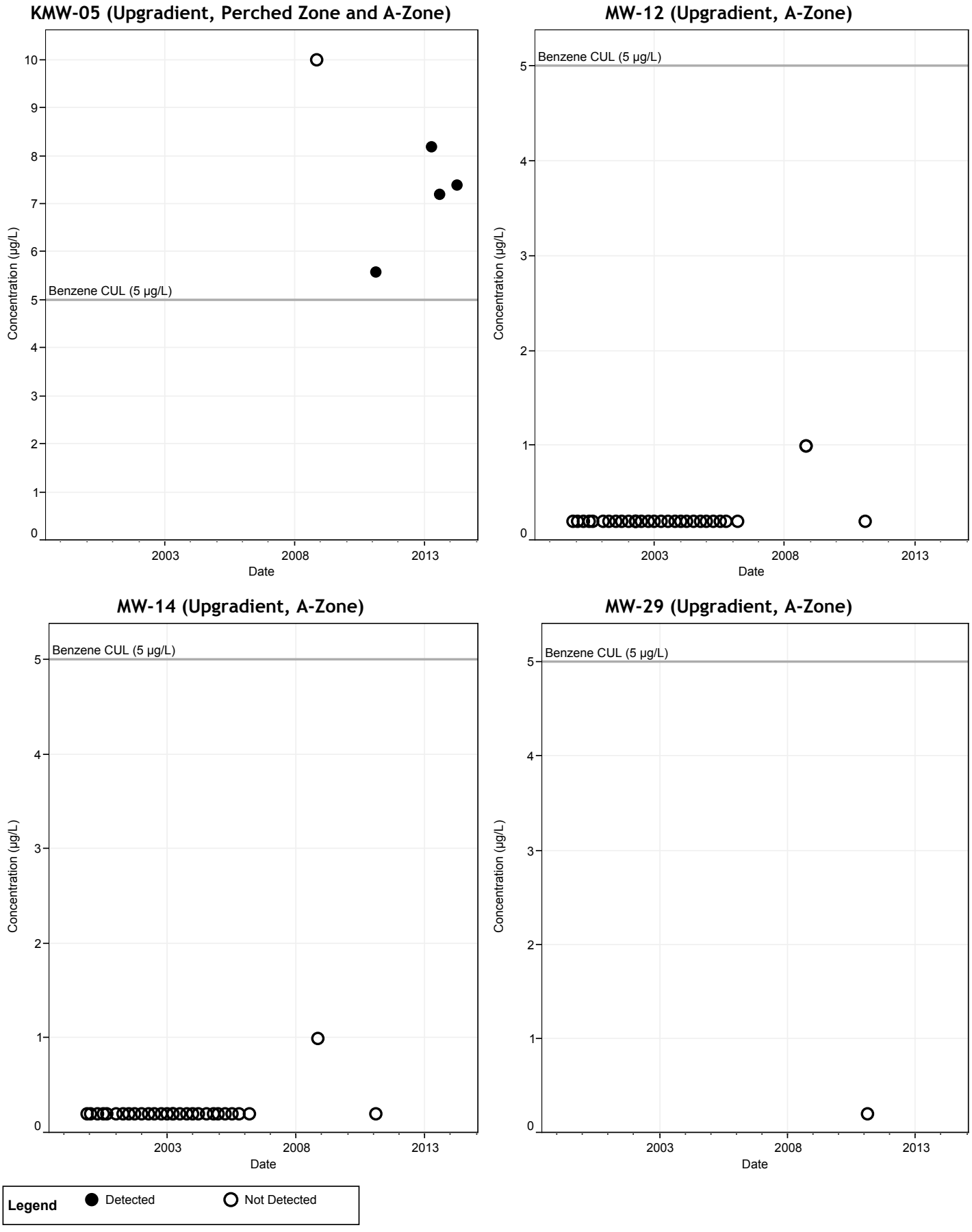
South Park Landfill

Remedial Investigation/ Feasibility Study

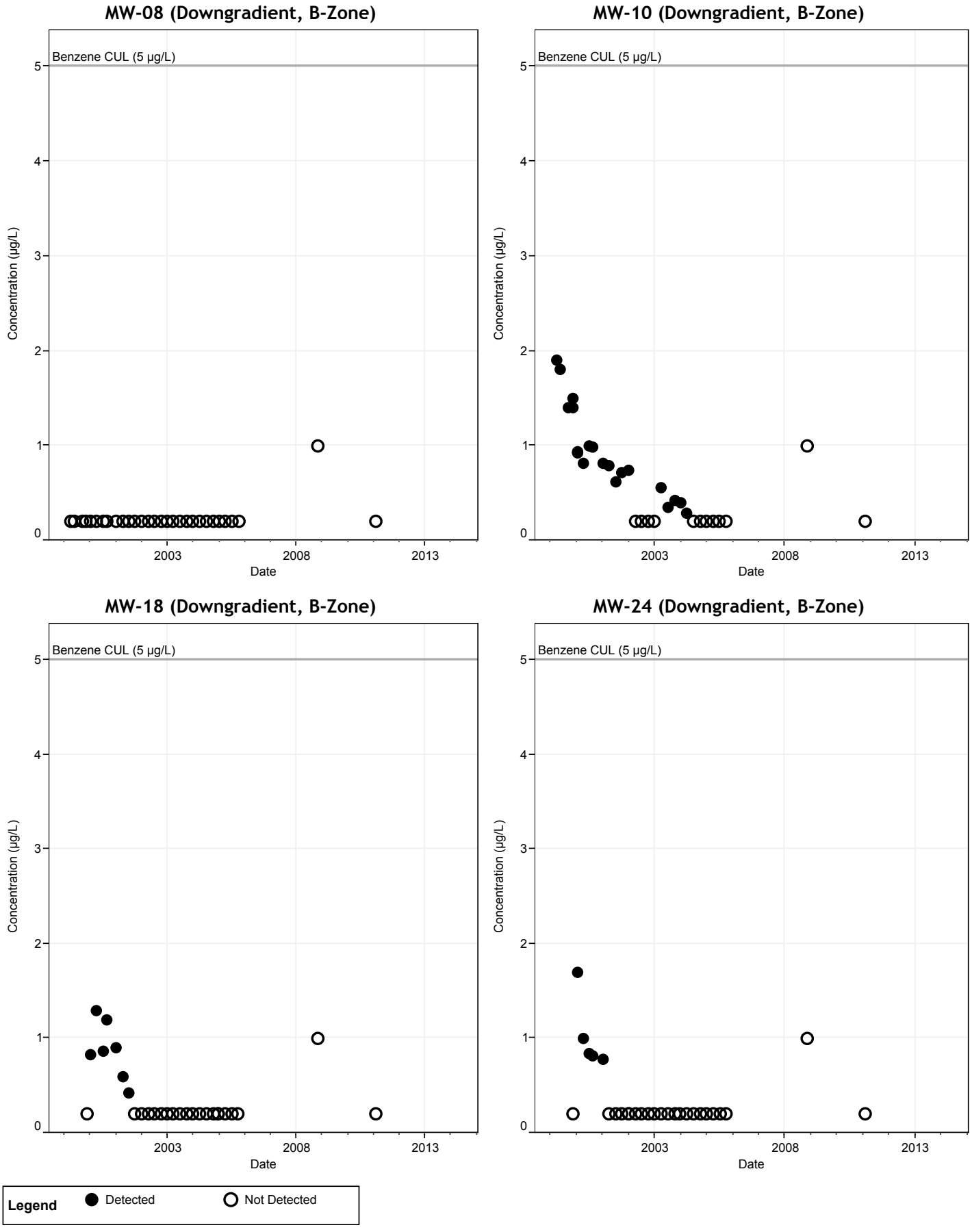
Appendix J
Groundwater Quality Trend Plots, Maps, and Data

Groundwater Quality Trend Plots

Benzene, Upgradient

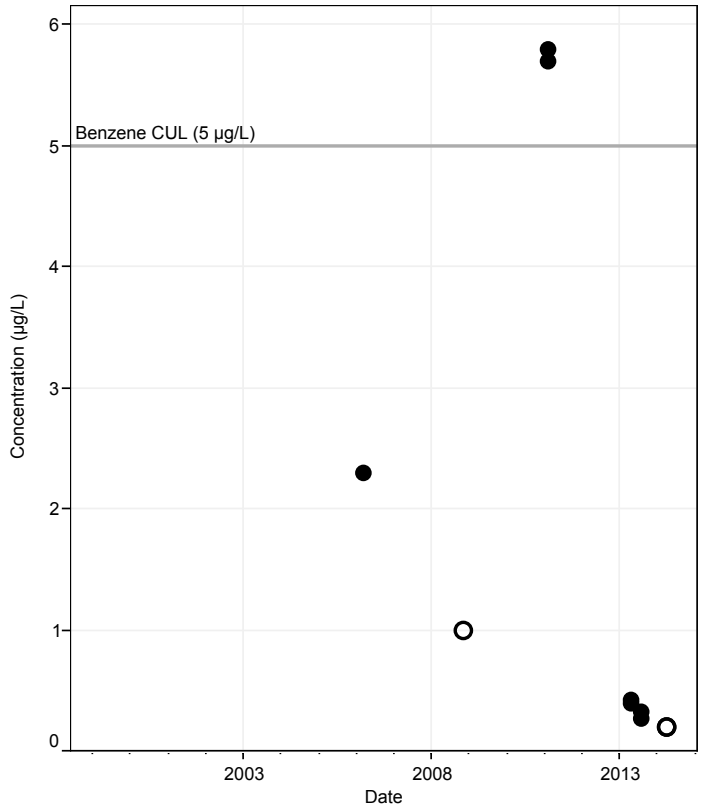


Benzene, Downgradient

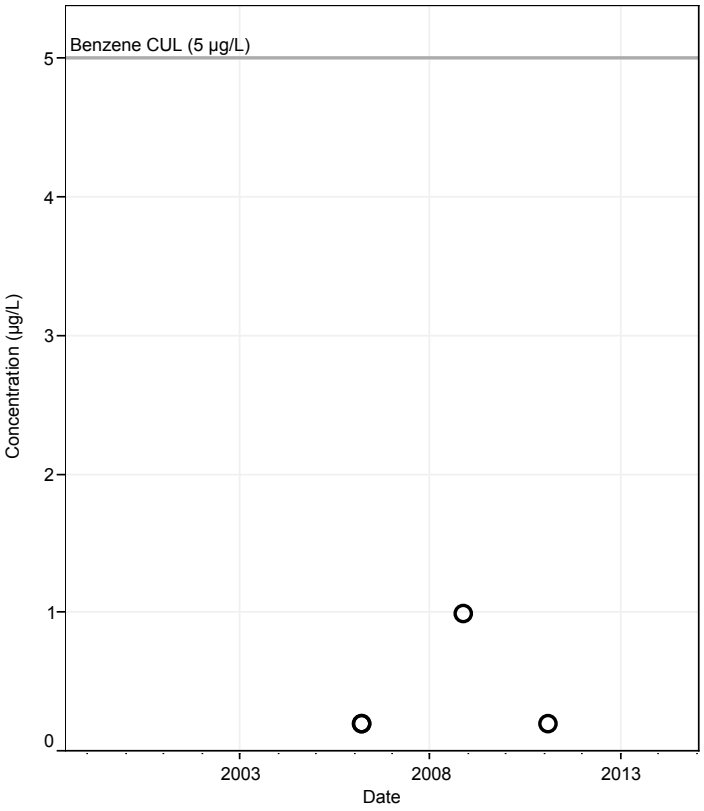


Benzene, Downgradient

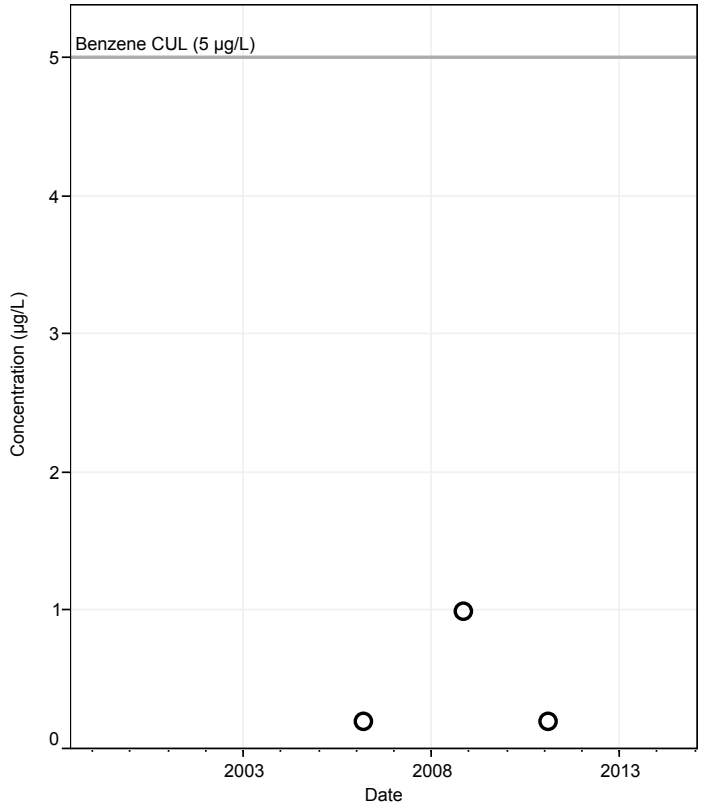
MW-25 (Downgradient, A-Zone)

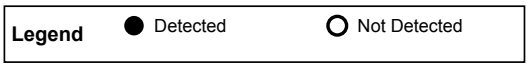


MW-26 (Downgradient, A-Zone)



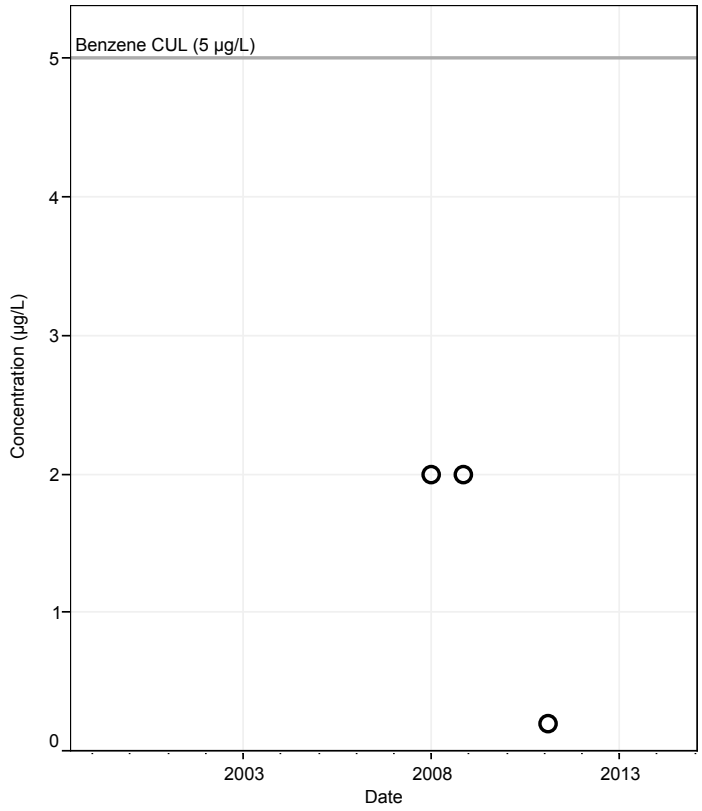
MW-27 (Downgradient, A-Zone)



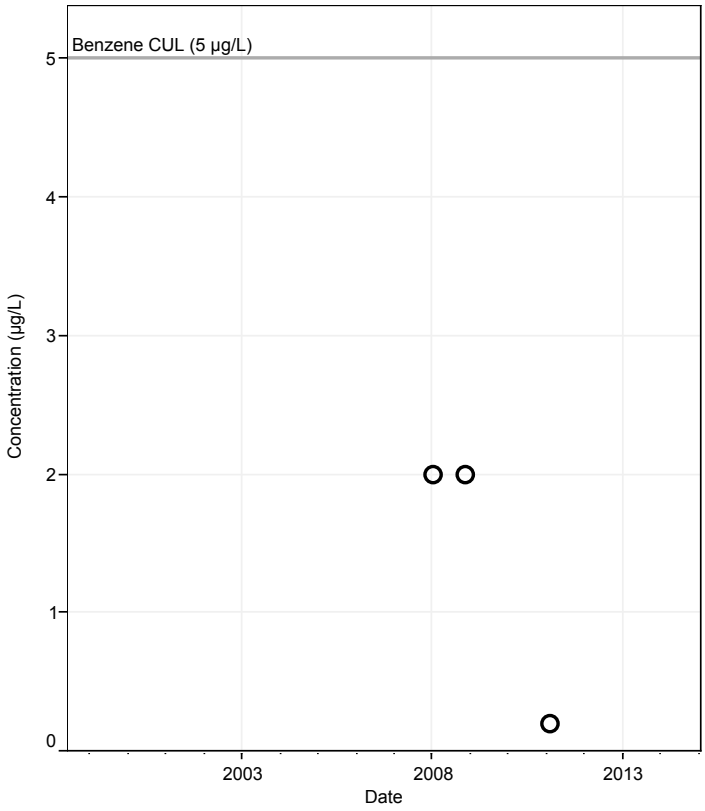


Benzene, In-waste

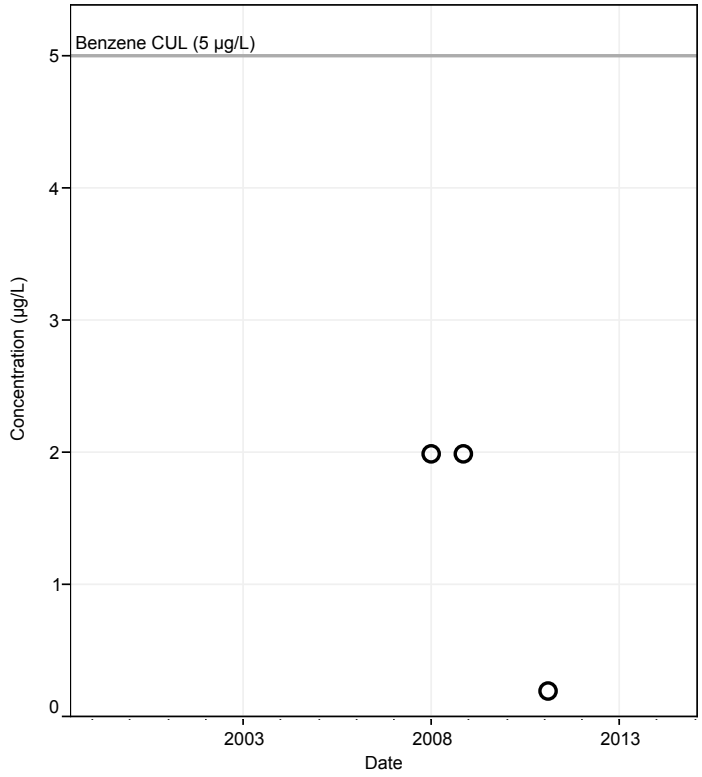
KMW-01A (Upgradient, Perched Zone and A-Zone)



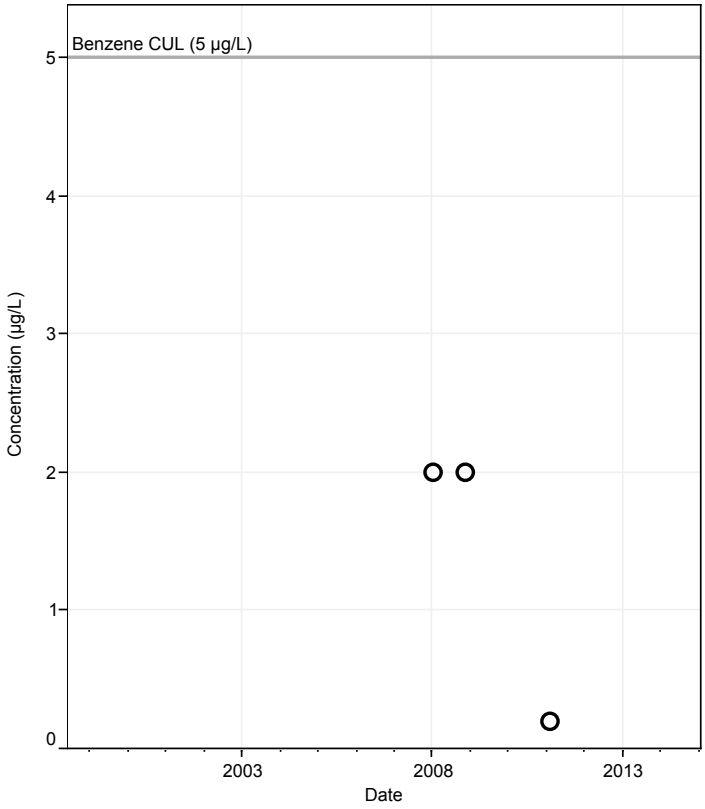
KMW-03A (Downgradient, Perched Zone and A-Zone)



KMW-04 (Interior well (In-waste), Perched Zone and A-Zone)

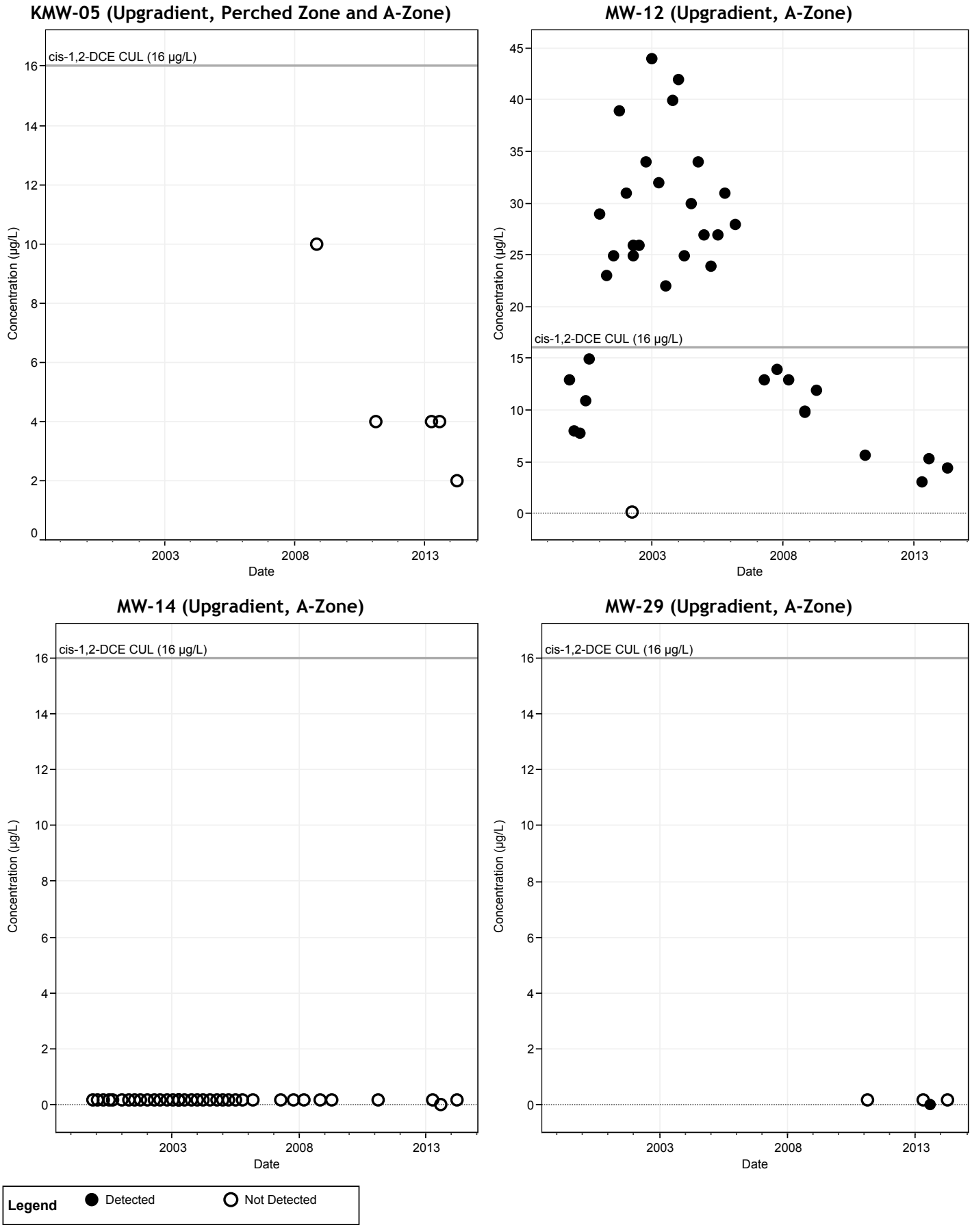


KMW-06 (Upgradient, Perched Zone and A-Zone)

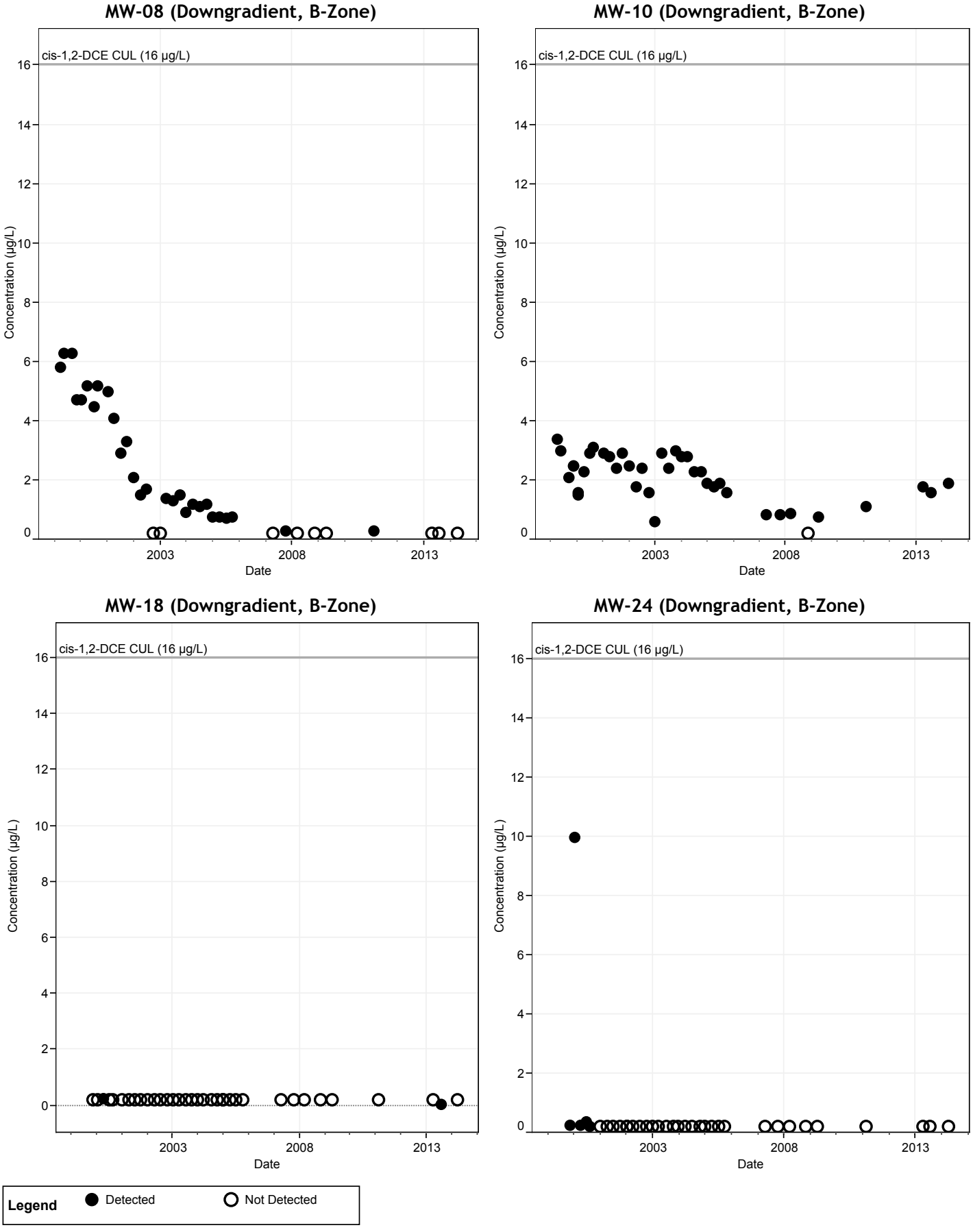


Legend ○ Not Detected

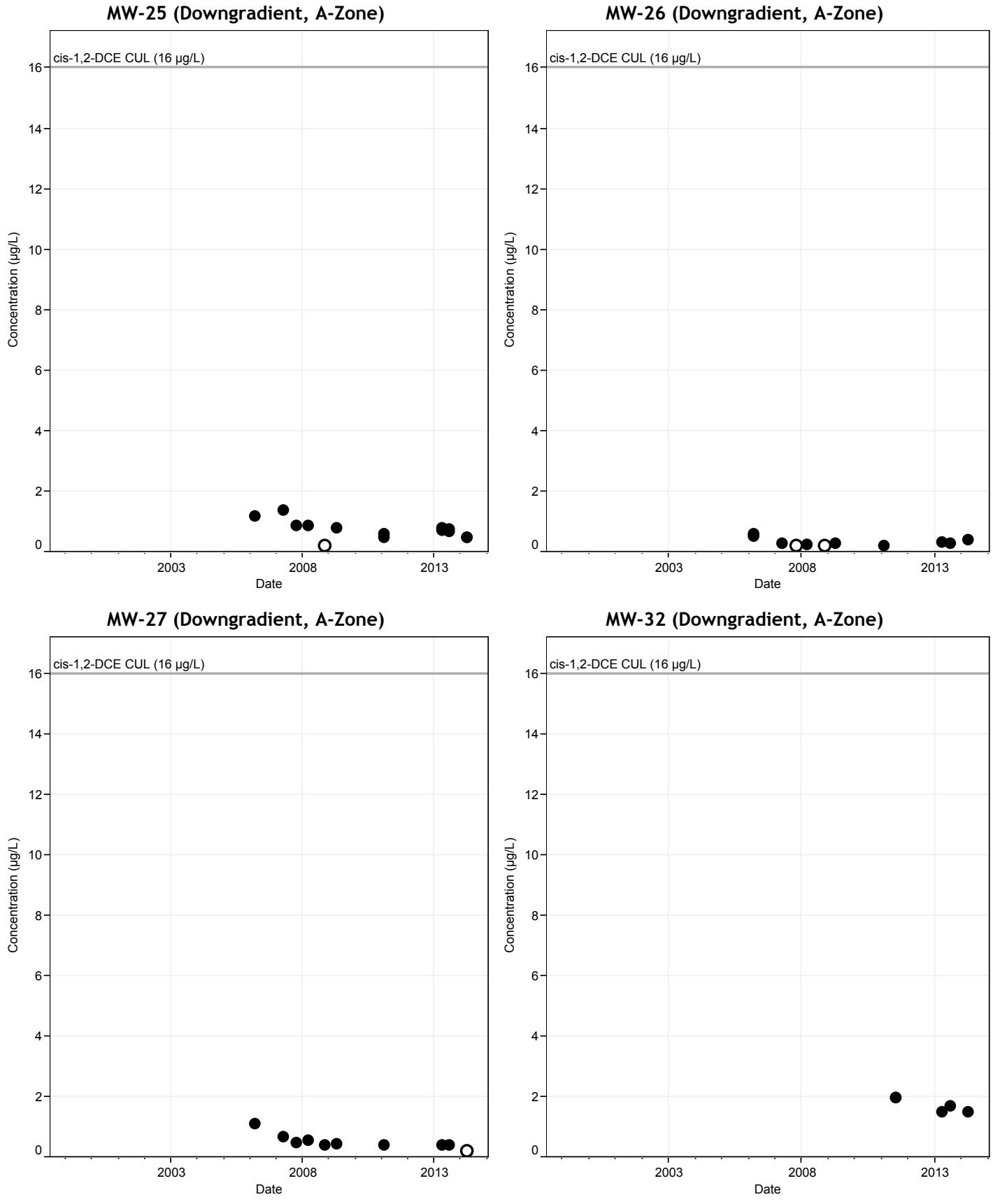
cis-1,2-DCE, Upgradient



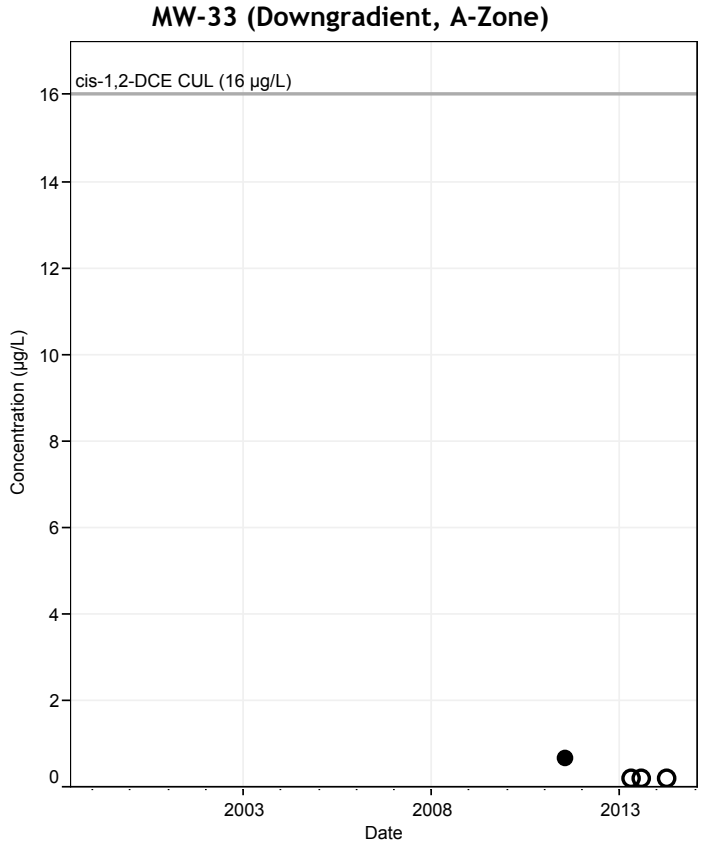
cis-1,2-DCE, Downgradient

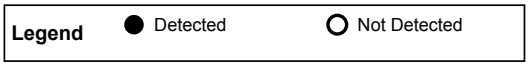


cis-1,2-DCE, Downgradient

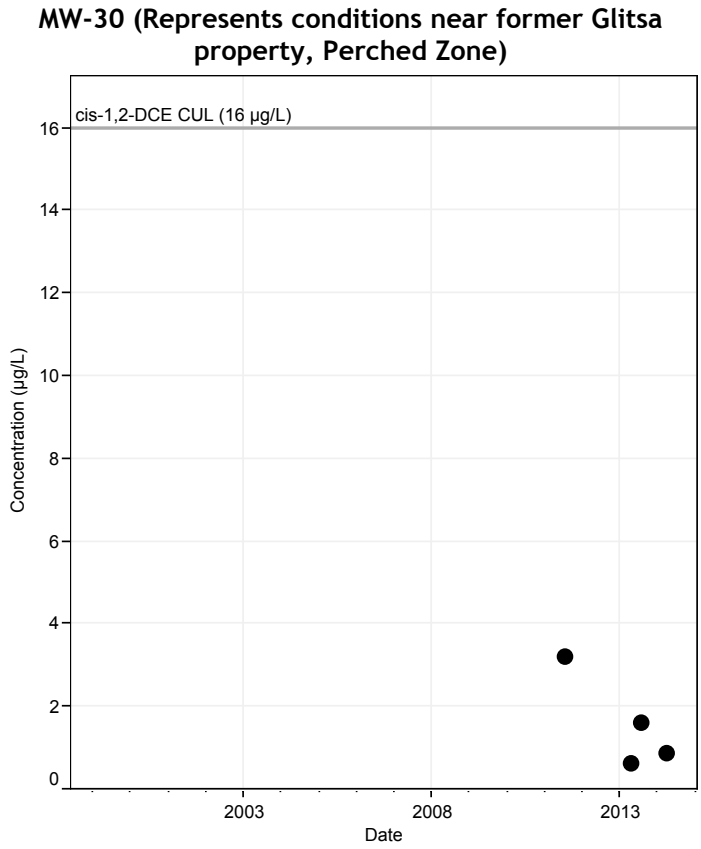


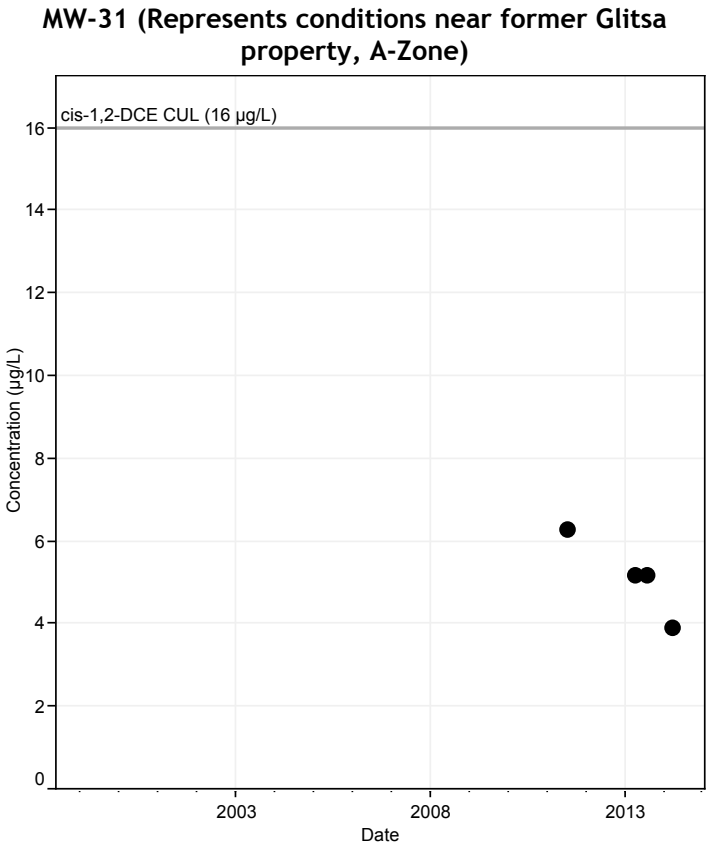
cis-1,2-DCE, Downgradient

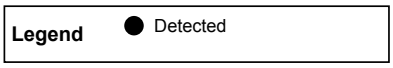




cis-1,2-DCE, Glitsa Property

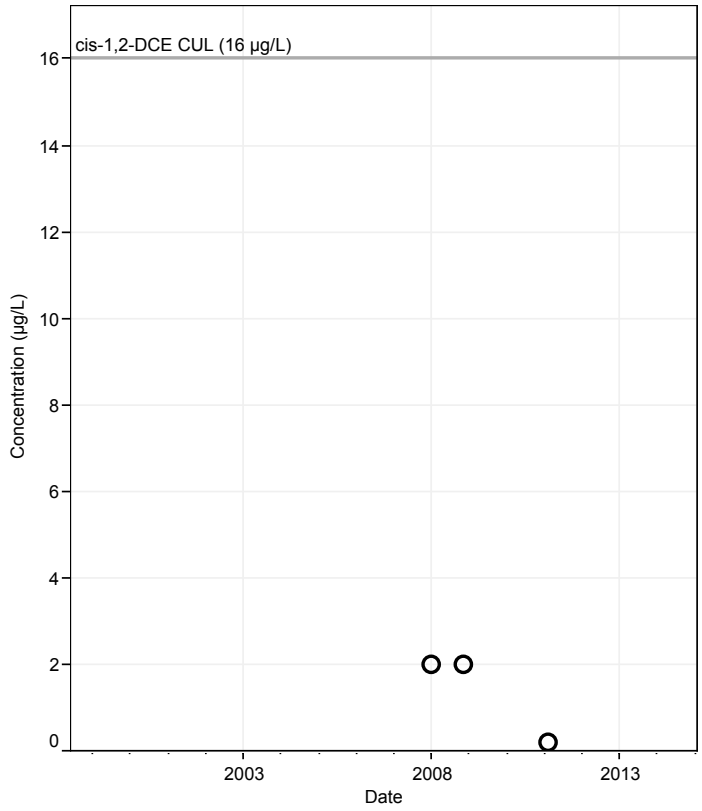




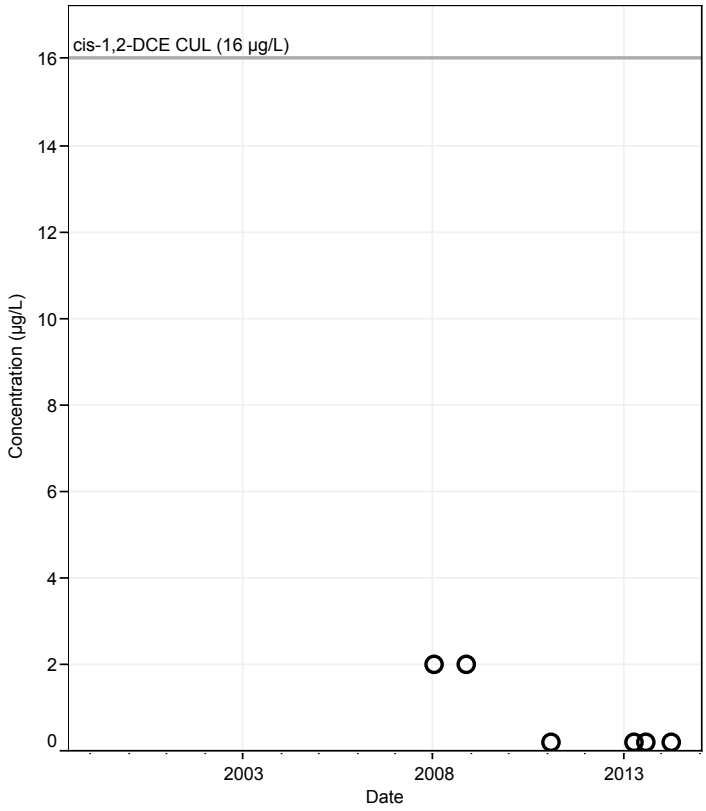


cis-1,2-DCE, In-waste

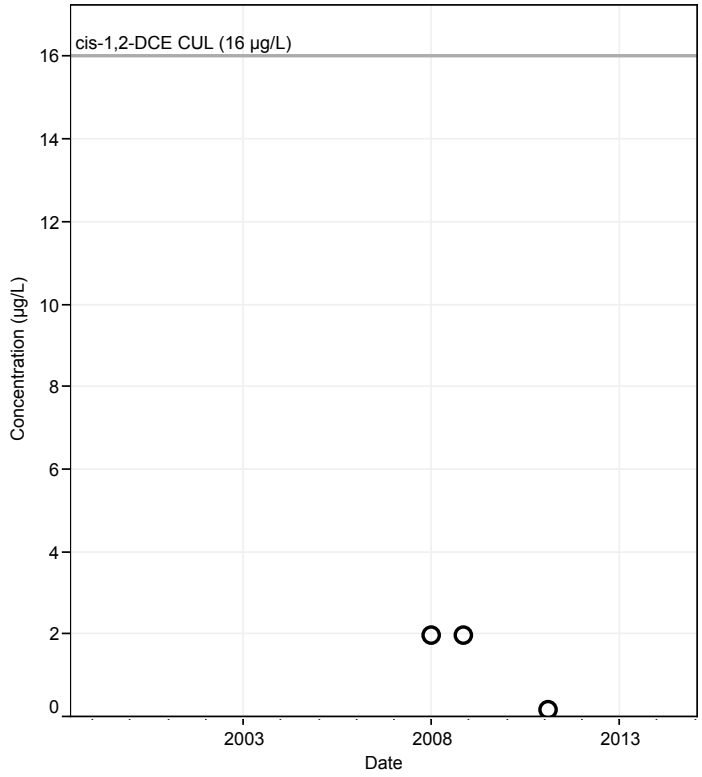
KMW-01A (Upgradient, Perched Zone and A-Zone)



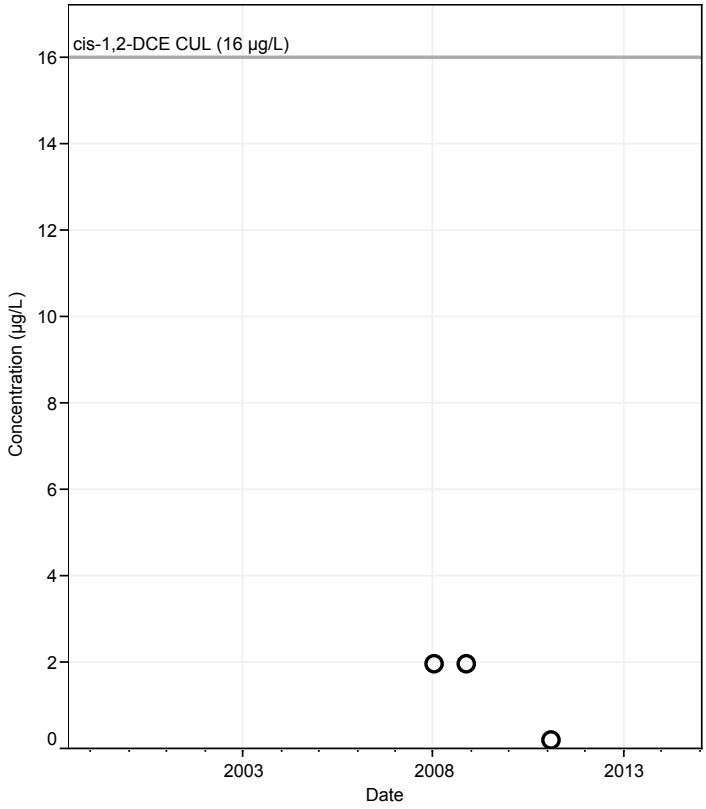
KMW-03A (Downgradient, Perched Zone and A-Zone)



KMW-04 (Interior well (In-waste), Perched Zone and A-Zone)

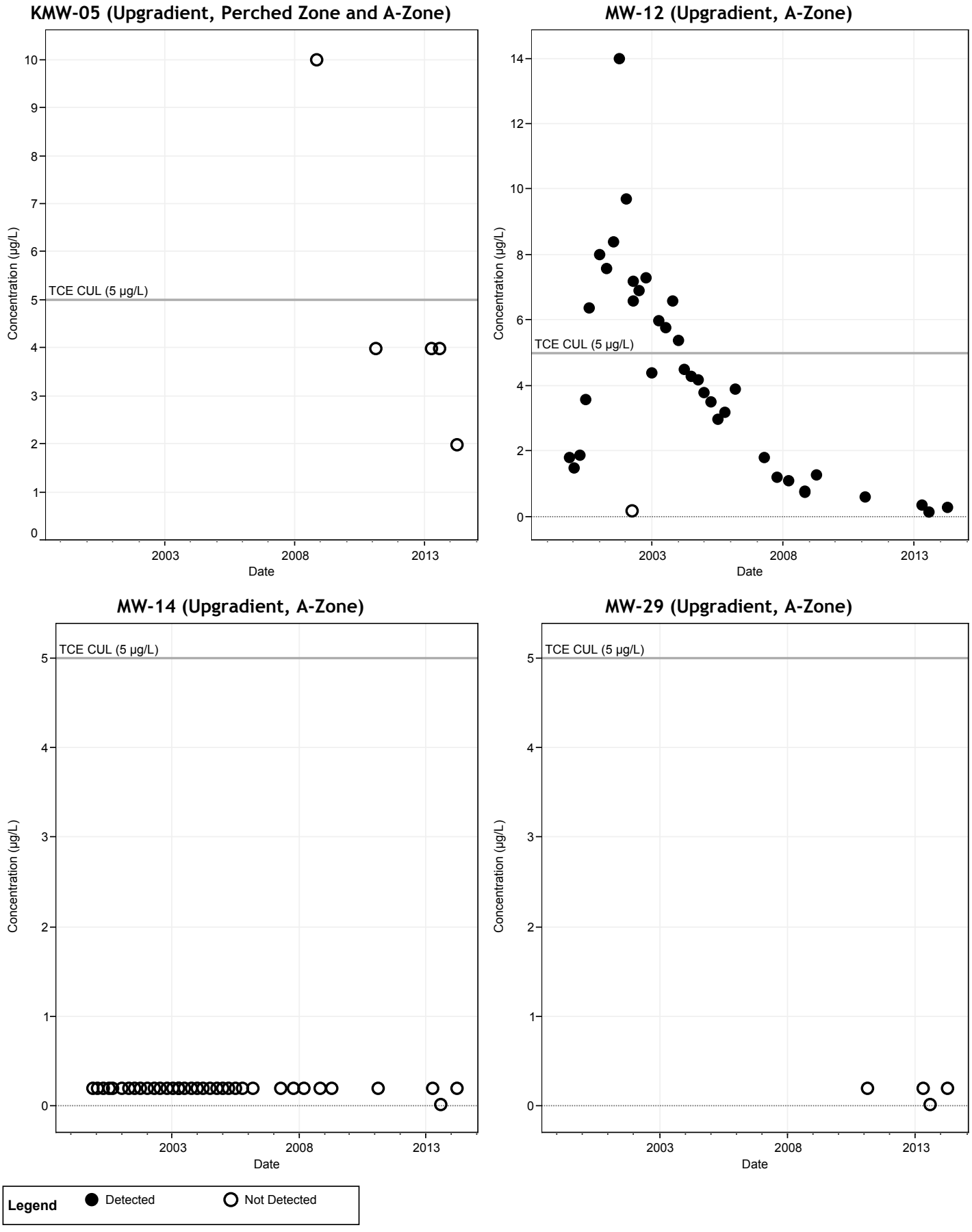


KMW-06 (Upgradient, Perched Zone and A-Zone)

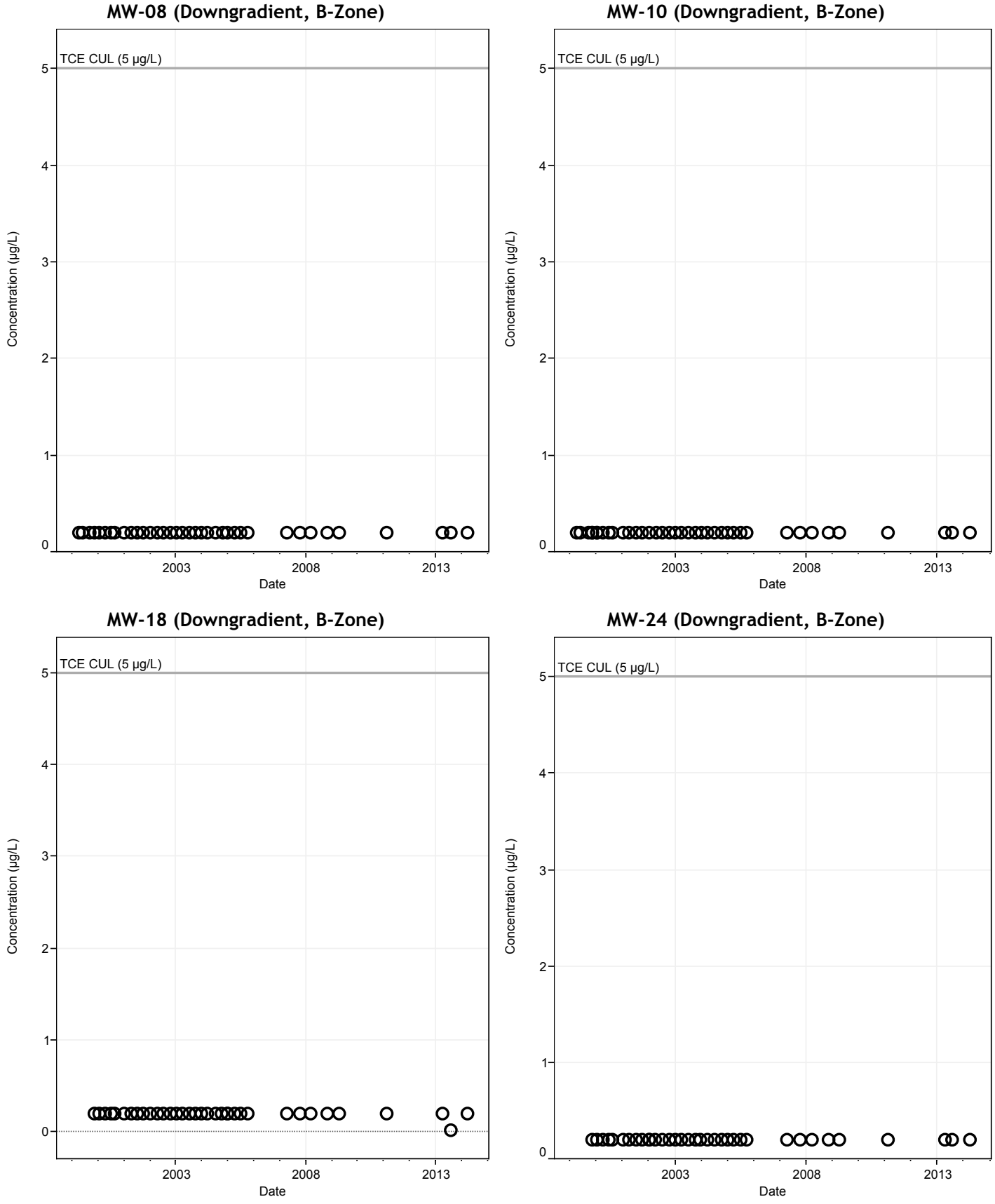


Legend ○ Not Detected

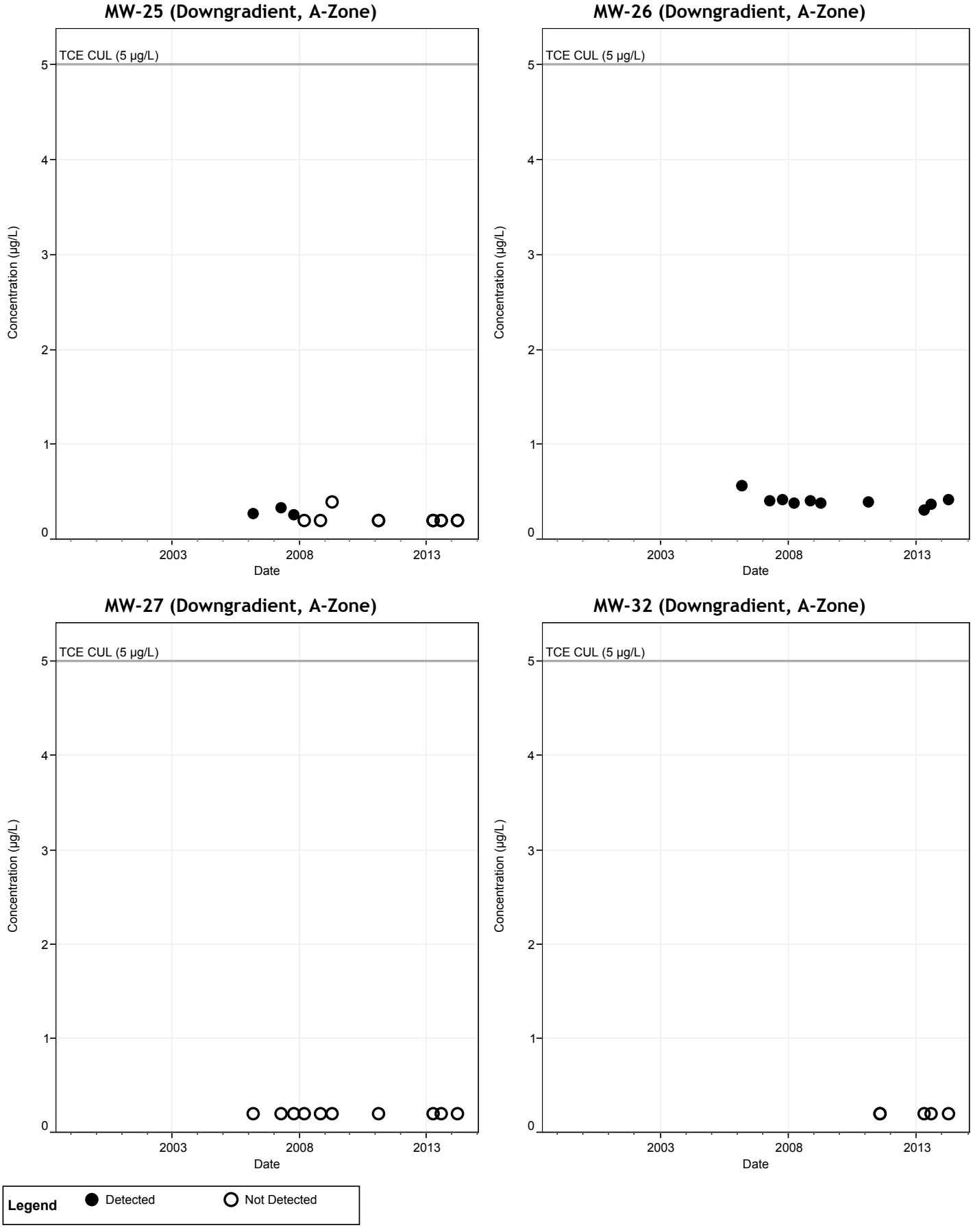
TCE, Upgradient



TCE, Downgradient

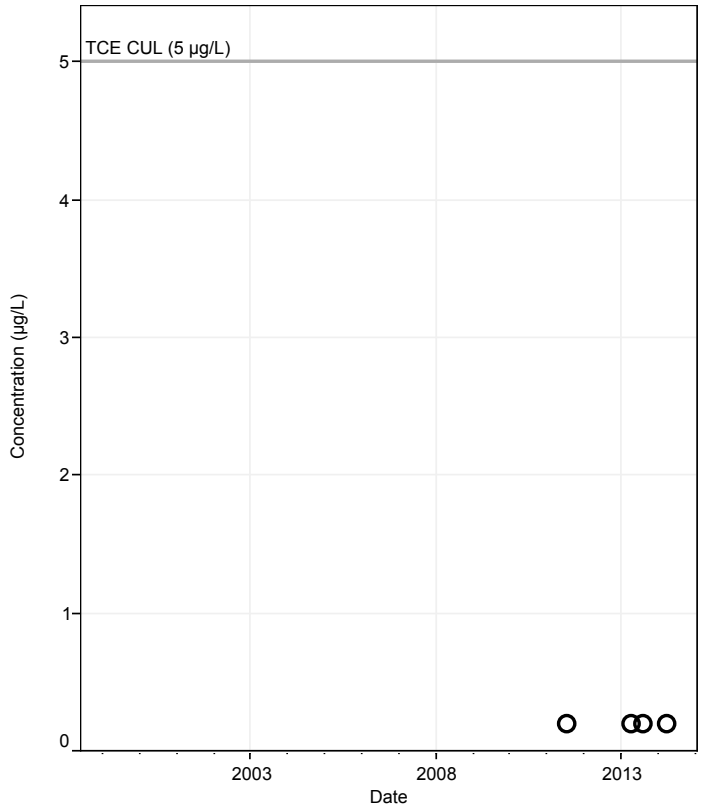


TCE, Downgradient



TCE, Downgradient

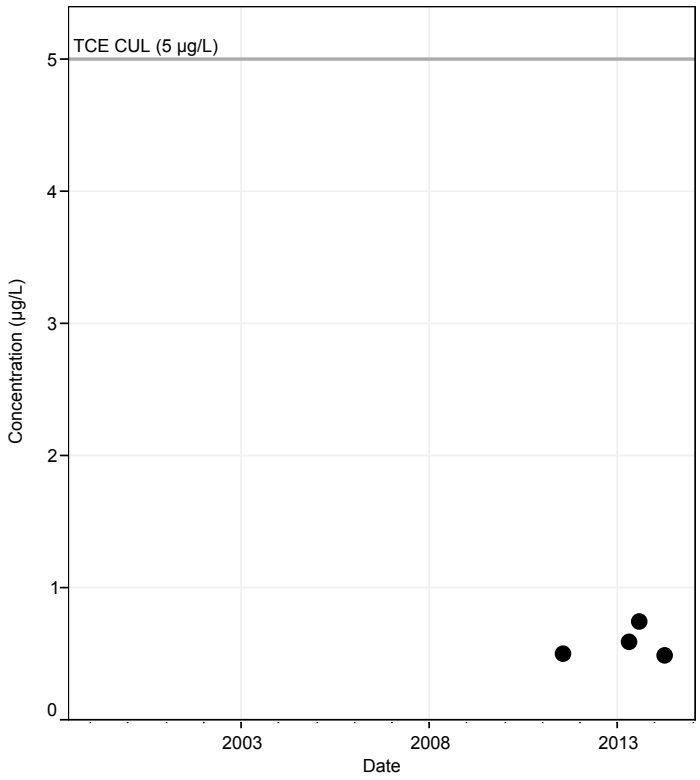
MW-33 (Downgradient, A-Zone)



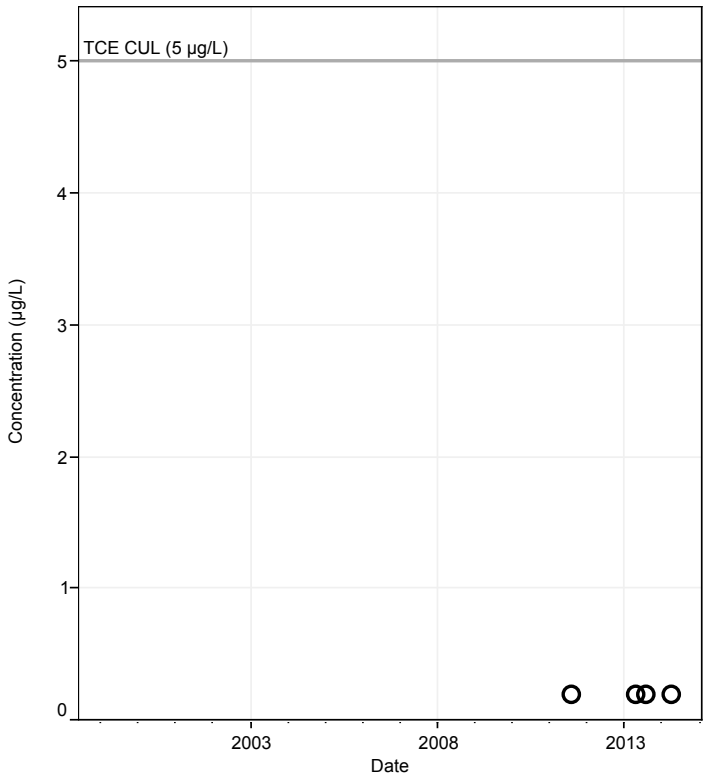
Legend ○ Not Detected

TCE, Glitsa Property

MW-30 (Represents conditions near former Glitsa property, Perched Zone)



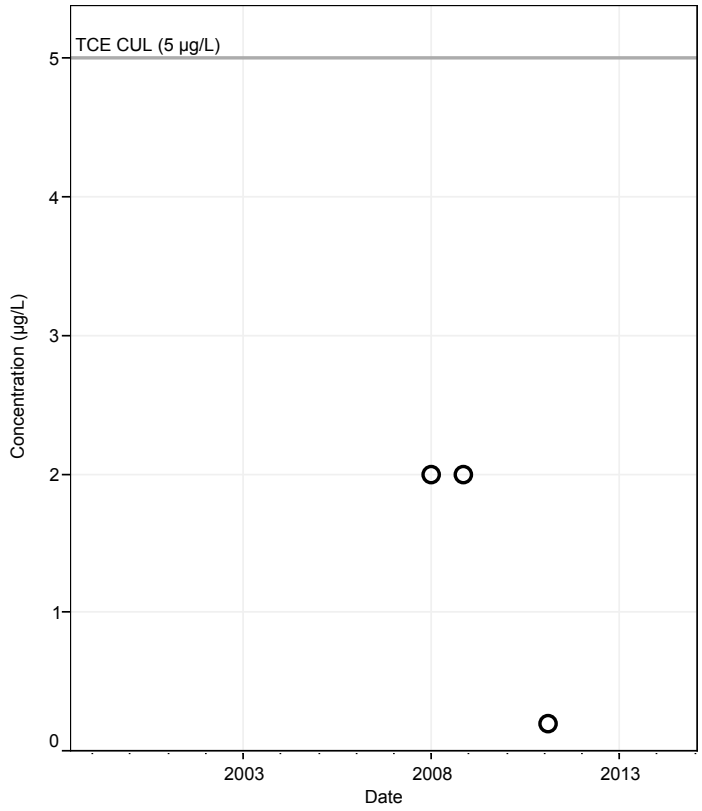
MW-31 (Represents conditions near former Glitsa property, A-Zone)



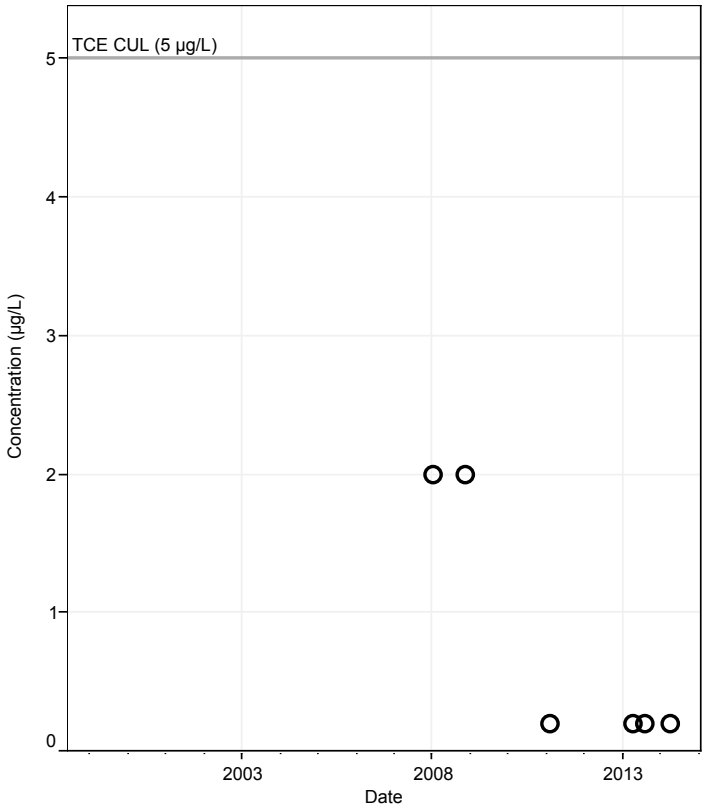
Legend ● Detected ○ Not Detected

TCE, In-waste

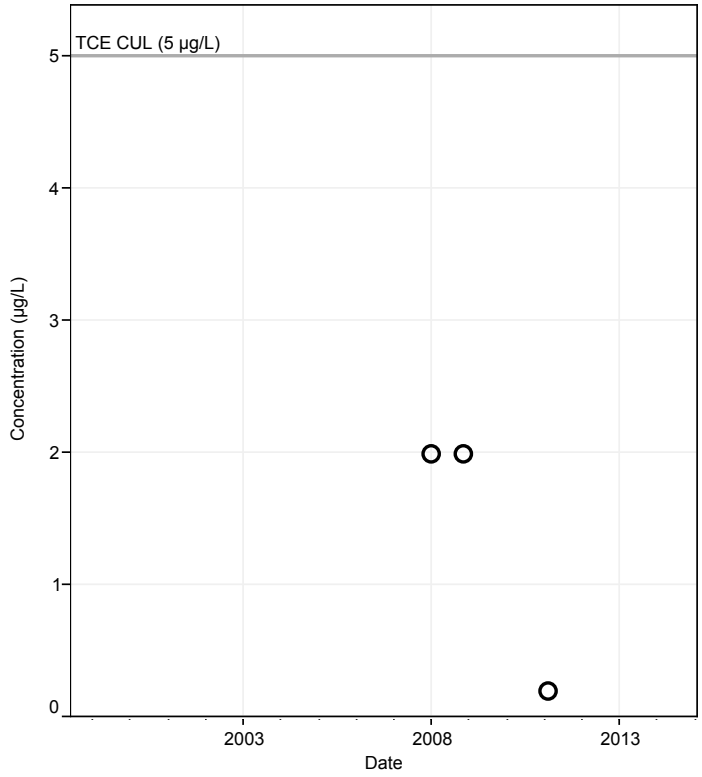
KMW-01A (Upgradient, Perched Zone and A-Zone)



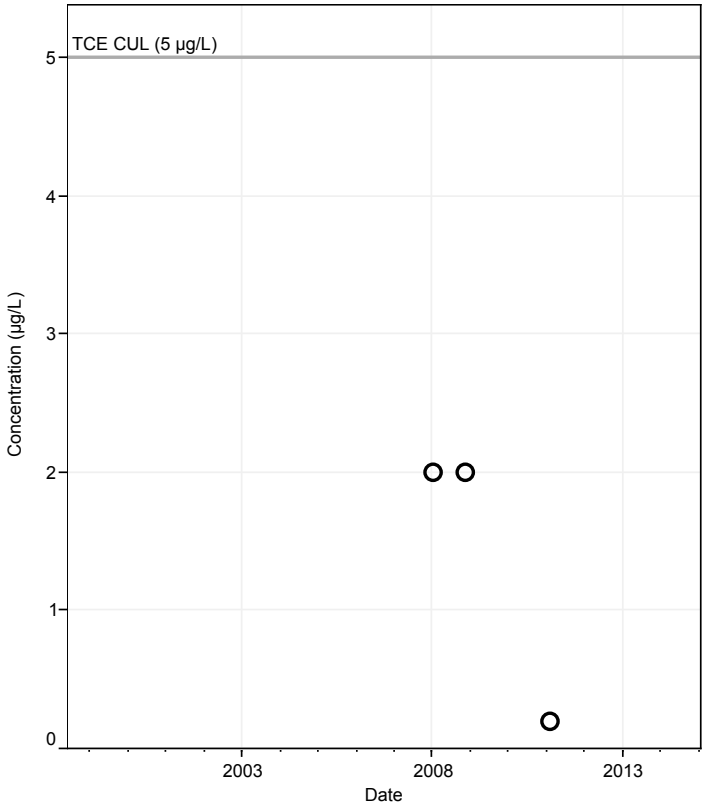
KMW-03A (Downgradient, Perched Zone and A-Zone)



KMW-04 (Interior well (In-waste), Perched Zone and A-Zone)

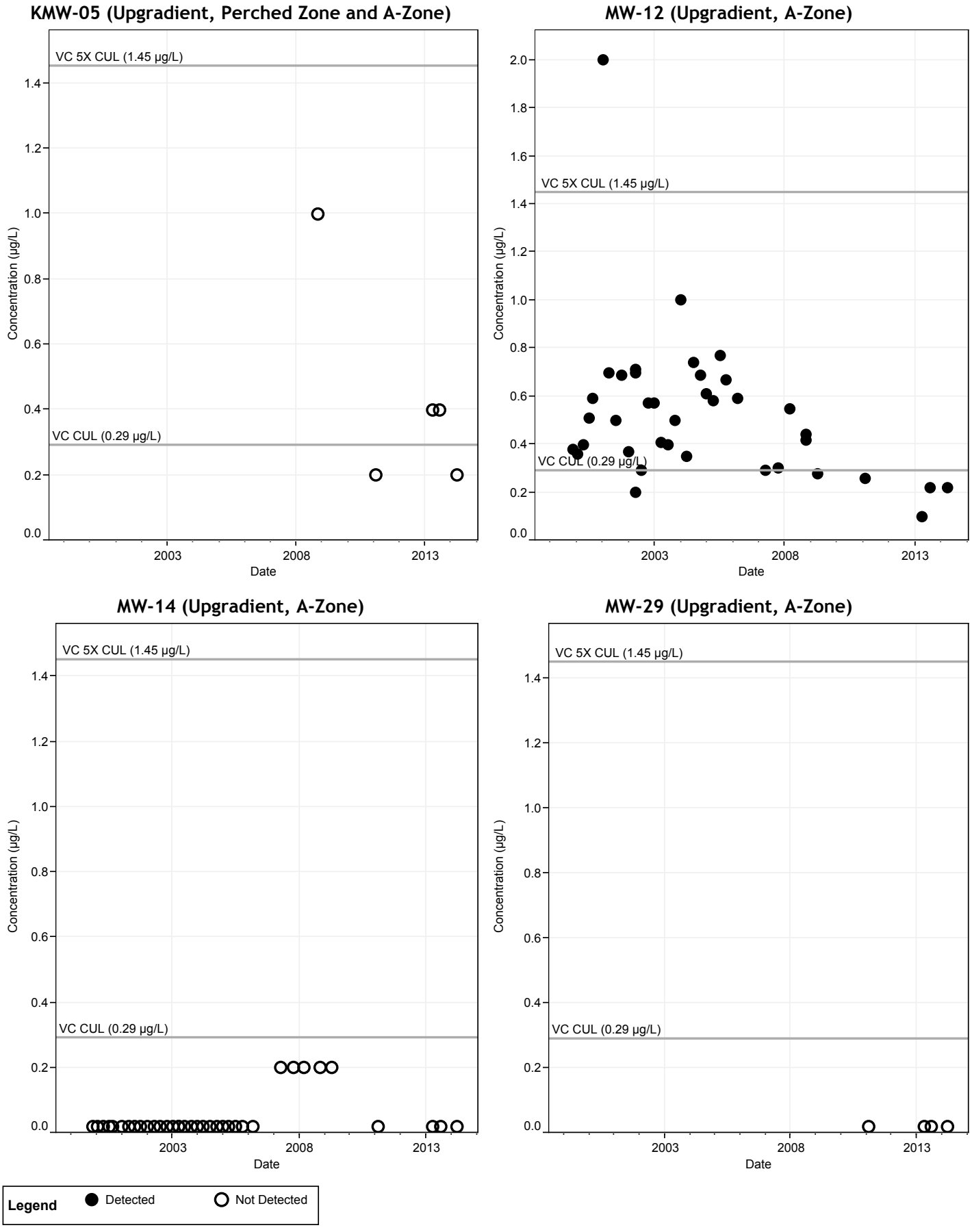


KMW-06 (Upgradient, Perched Zone and A-Zone)

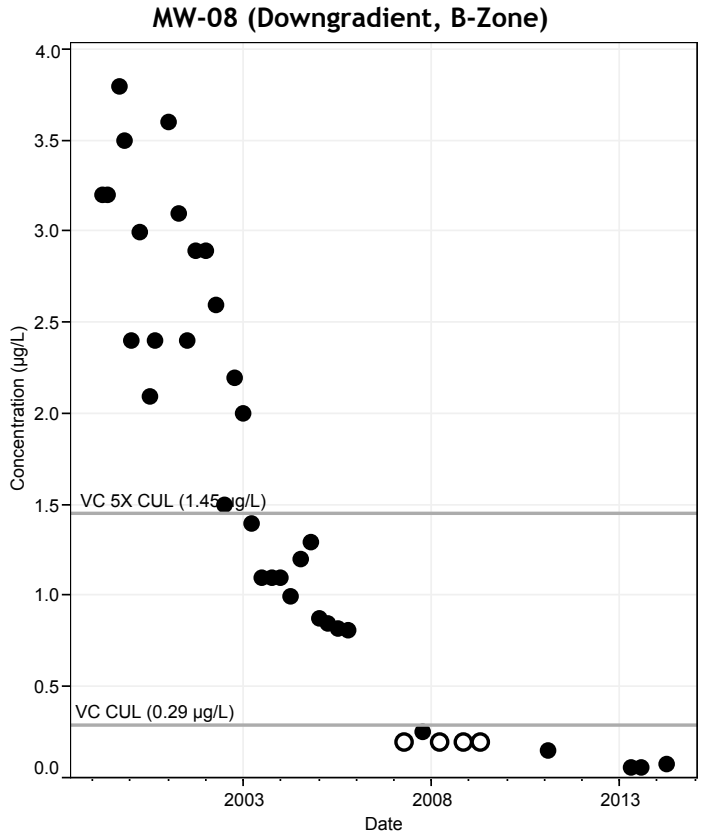


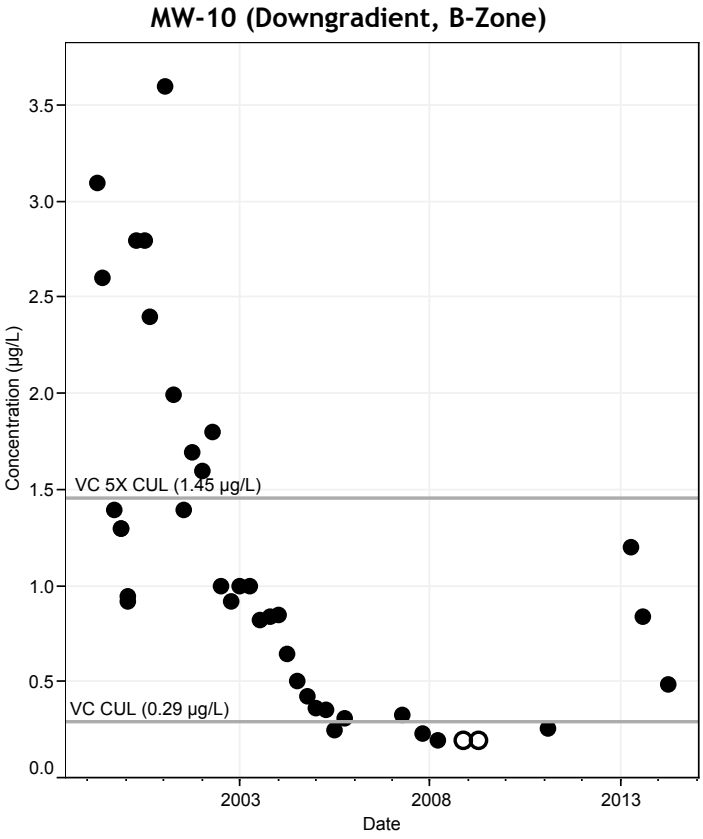
Legend ○ Not Detected

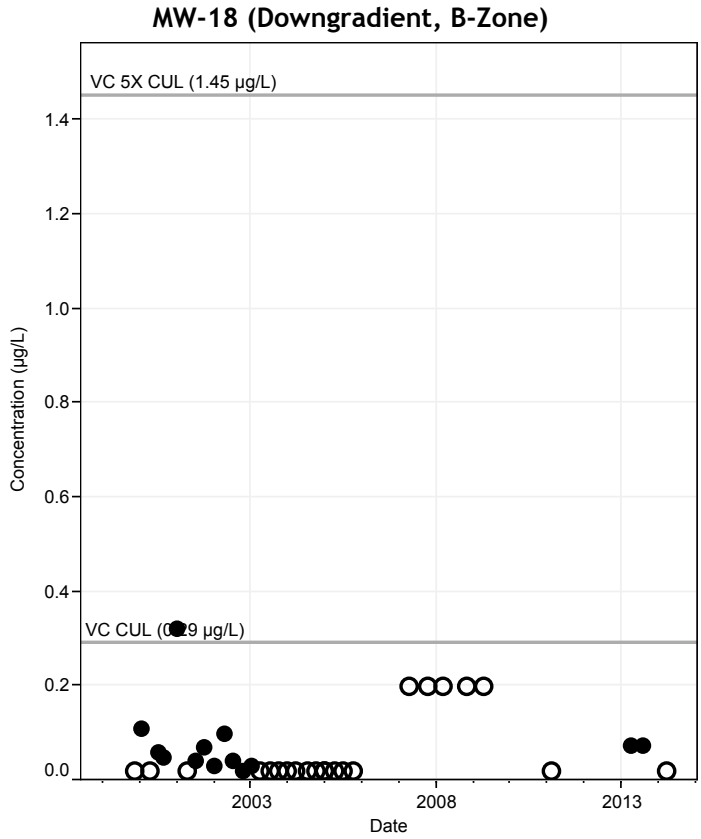
Vinyl Chloride, Upgradient

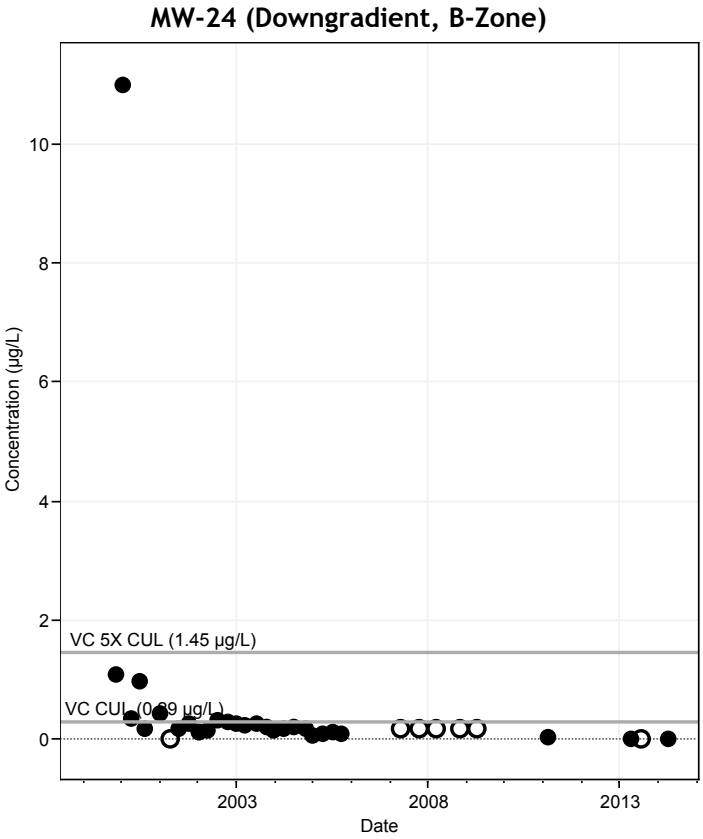


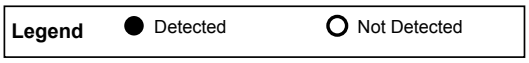
Vinyl Chloride, Downgradient



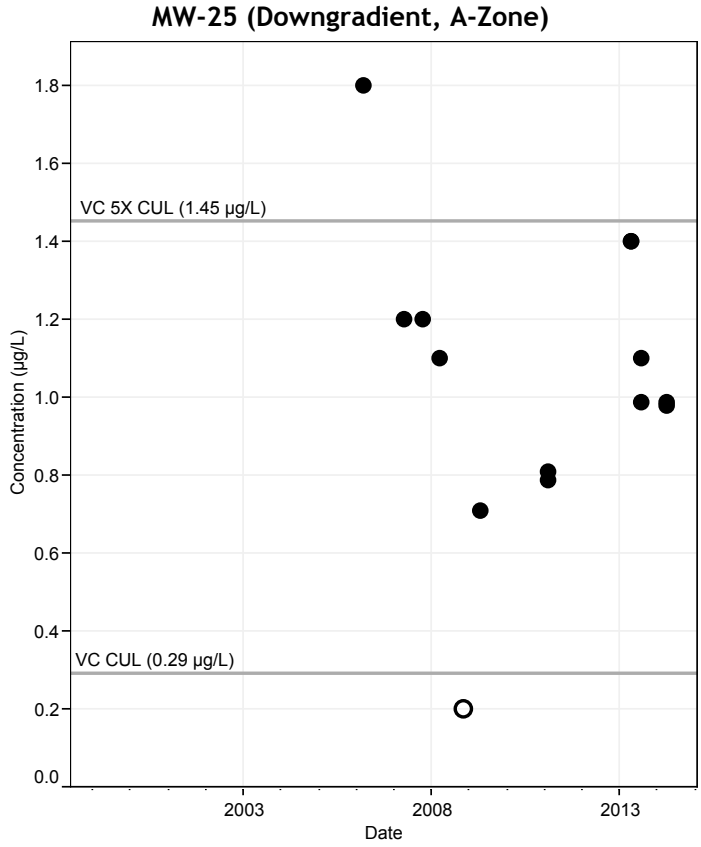


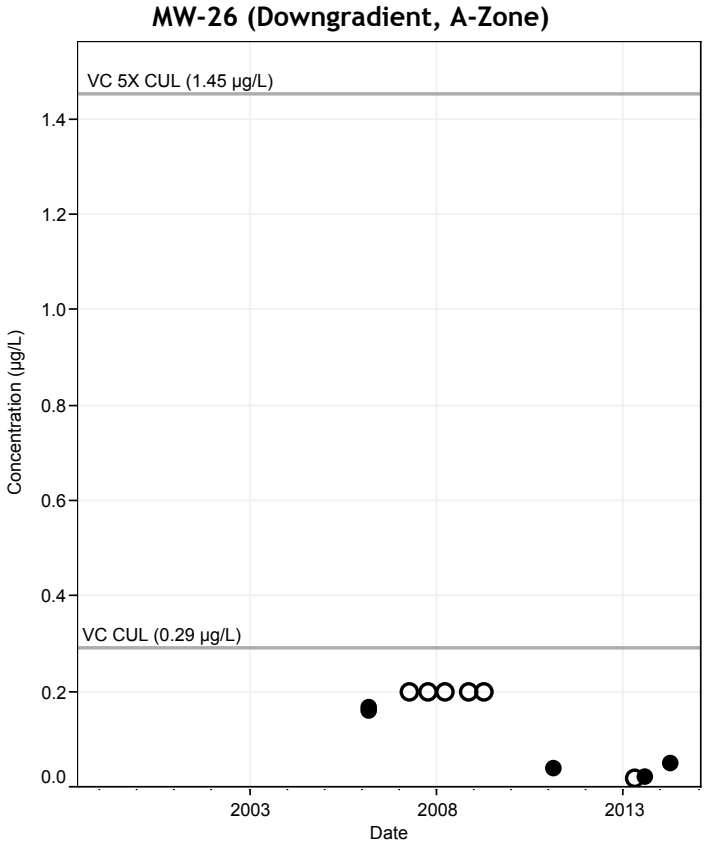


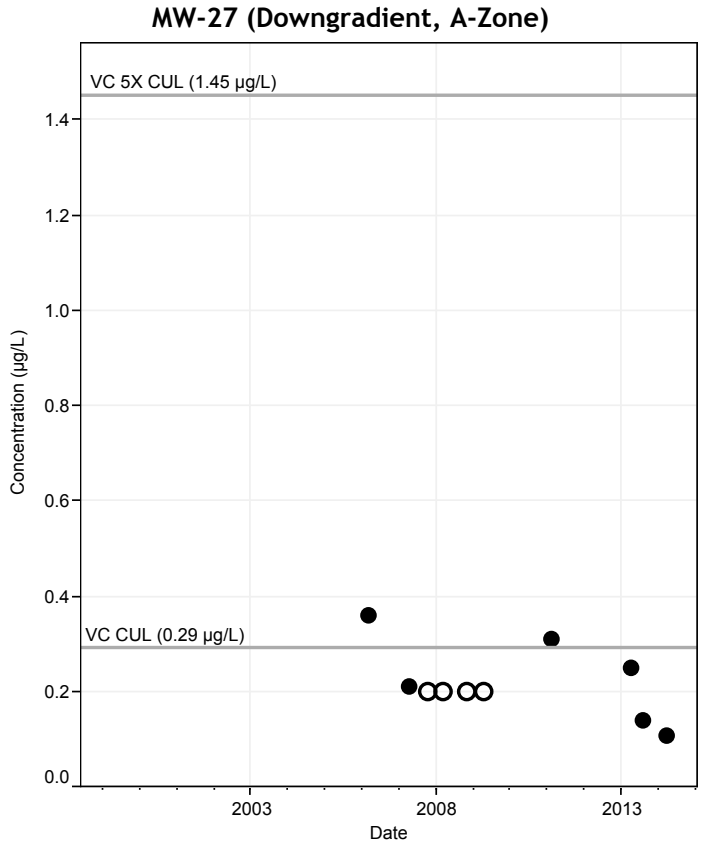


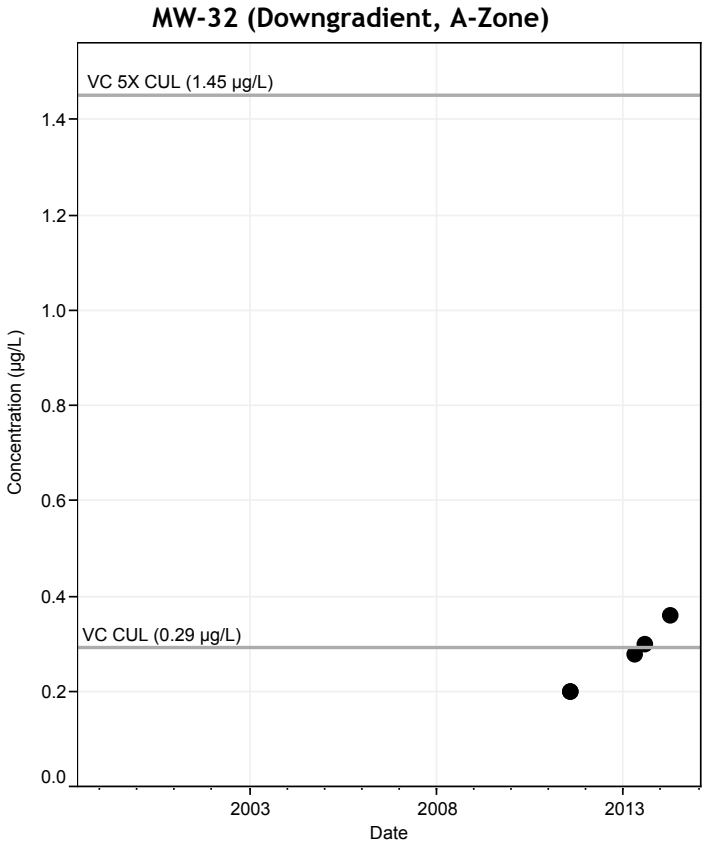


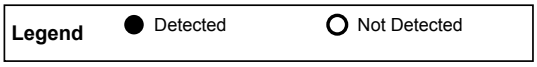
Vinyl Chloride, Downgradient



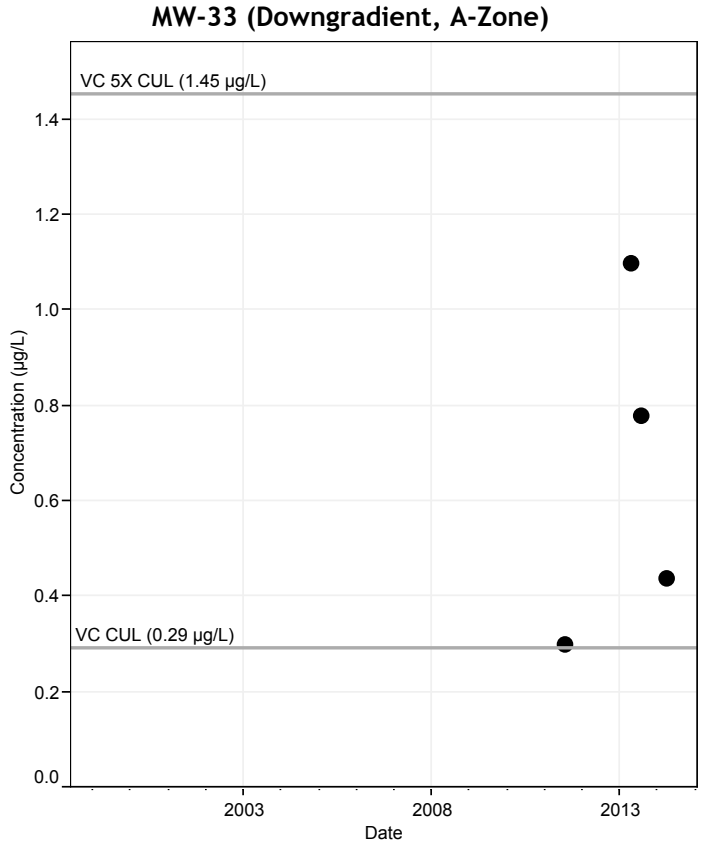








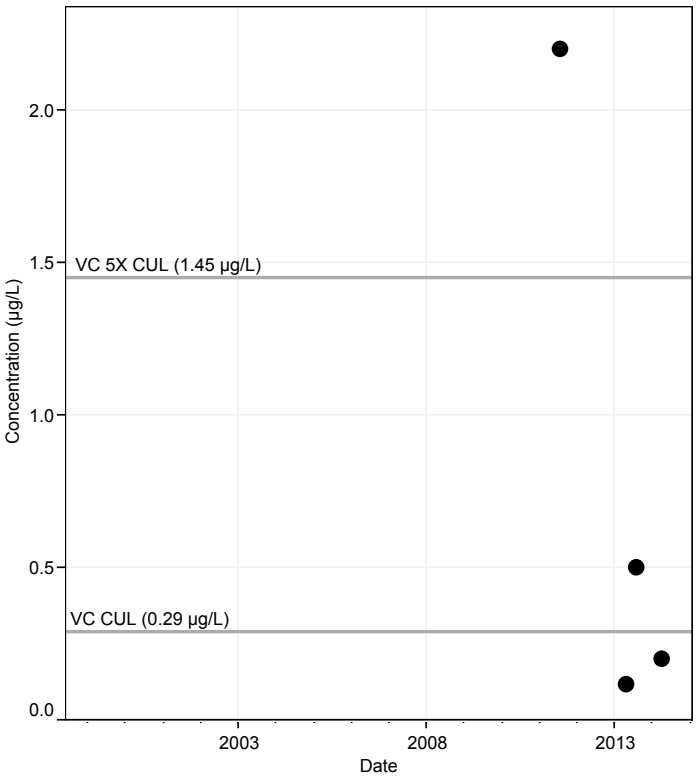
Vinyl Chloride, Downgradient



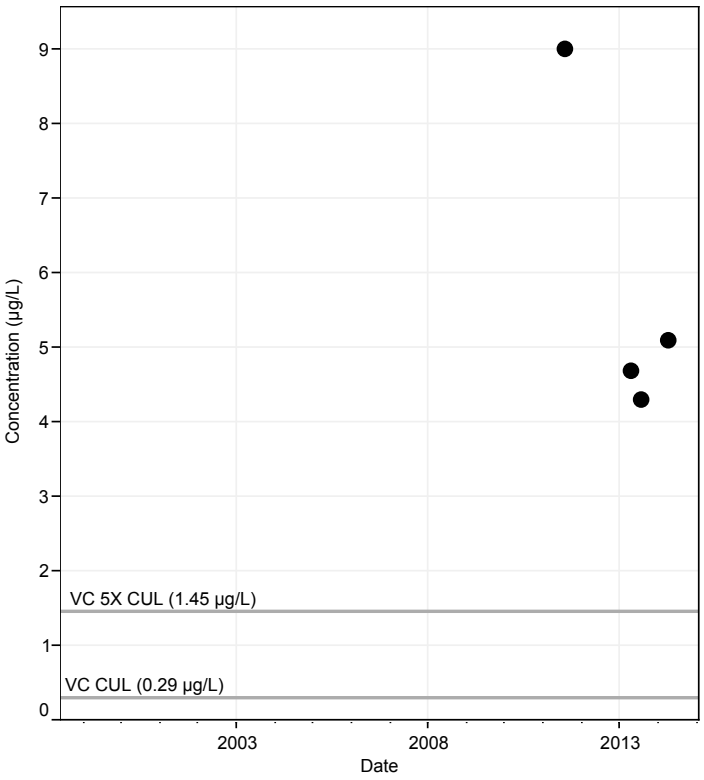
Legend ● Detected

Vinyl Chloride, Glitsa Property

MW-30 (Represents conditions near former Glitsa property, Perched Zone)



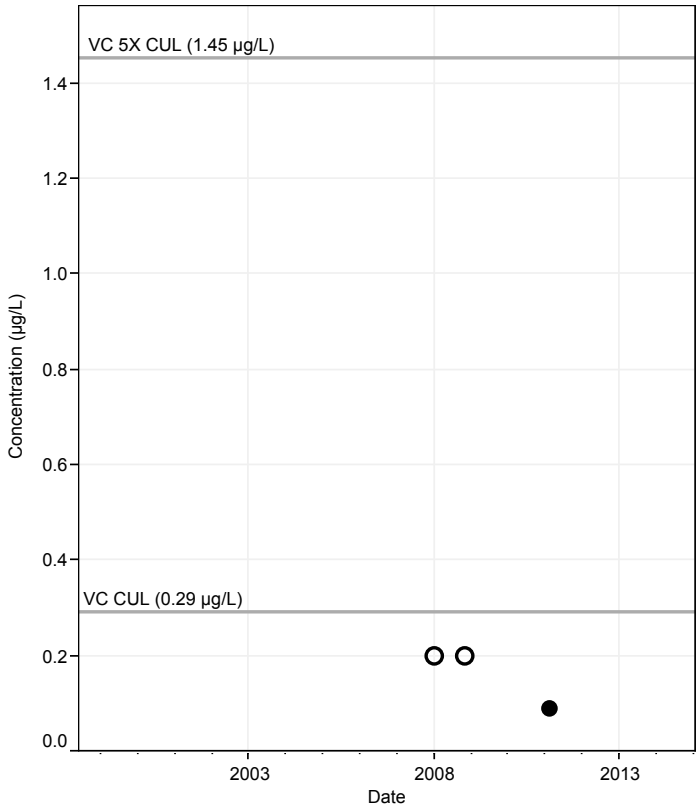
MW-31 (Represents conditions near former Glitsa property, A-Zone)



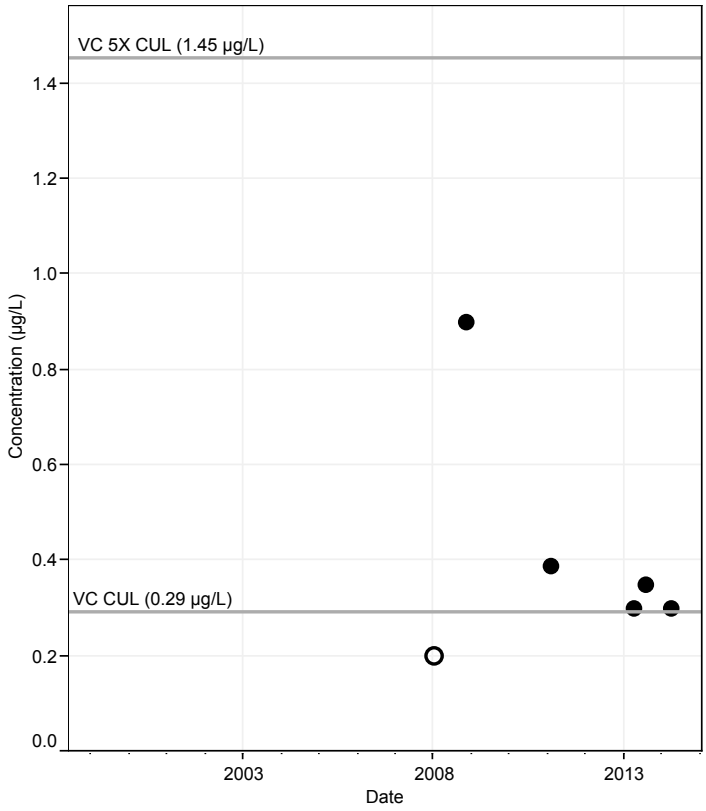
Legend ● Detected

Vinyl Chloride, In-waste

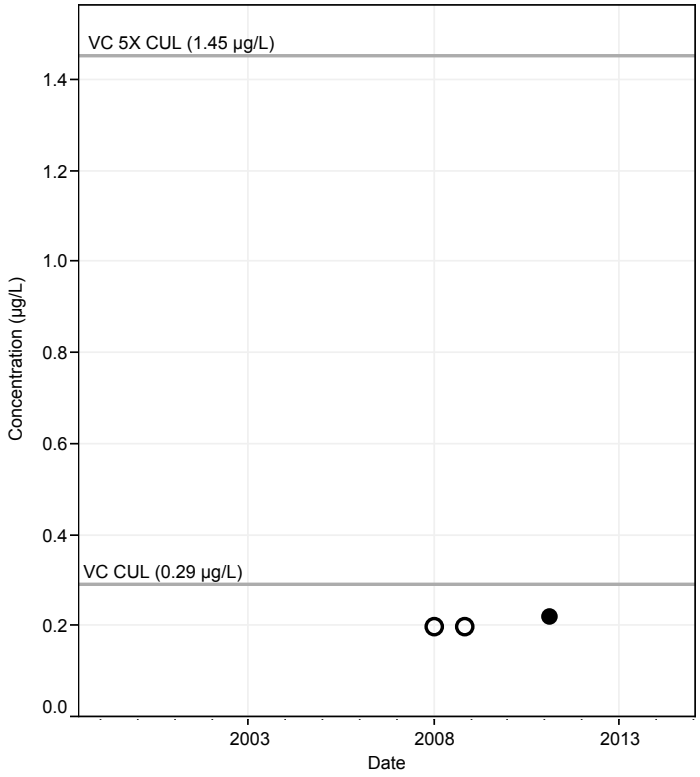
KMW-01A (Upgradient, Perched Zone and A-Zone)



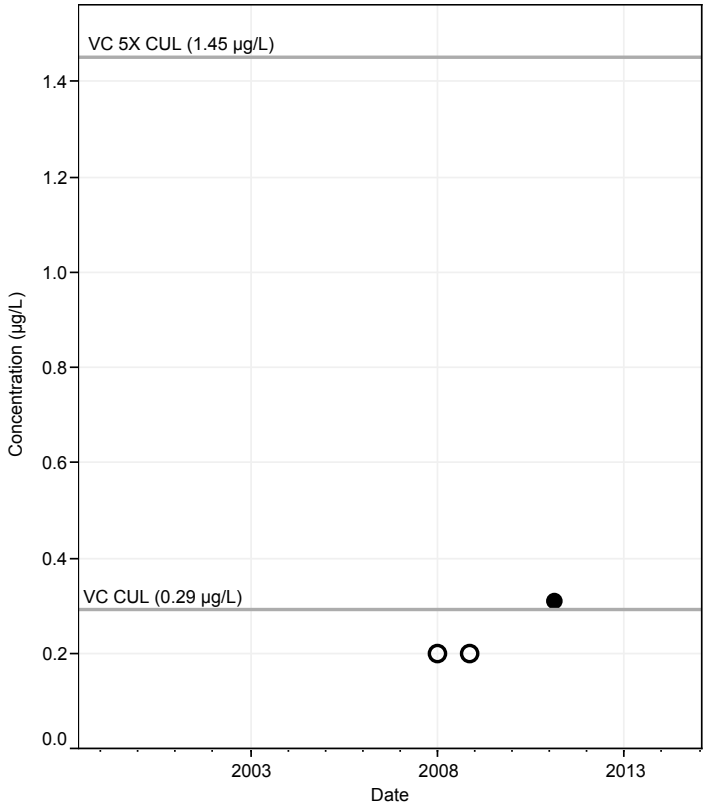
KMW-03A (Downgradient, Perched Zone and A-Zone)

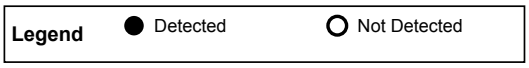


KMW-04 (Interior well (In-waste), Perched Zone and A-Zone)

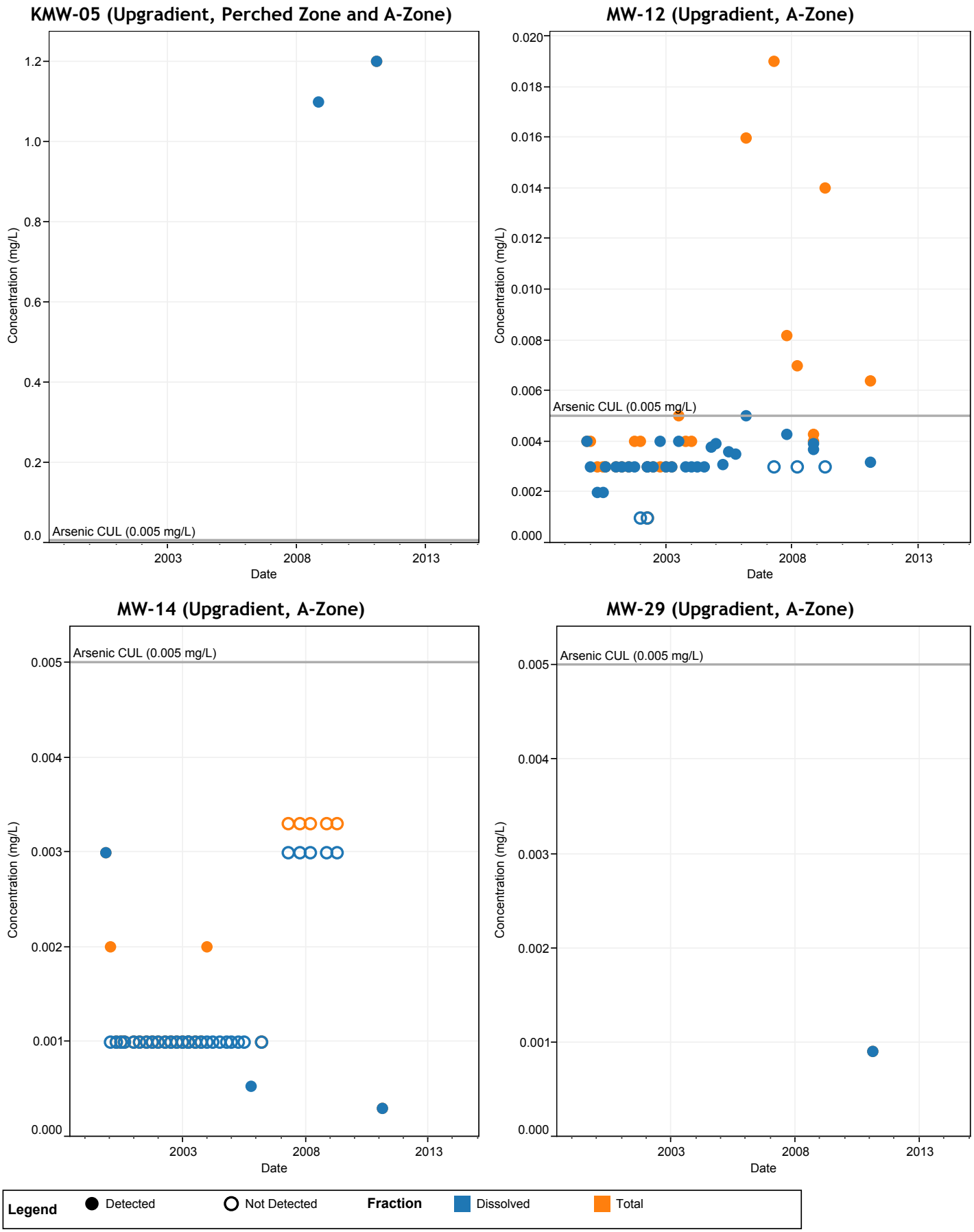


KMW-06 (Upgradient, Perched Zone and A-Zone)

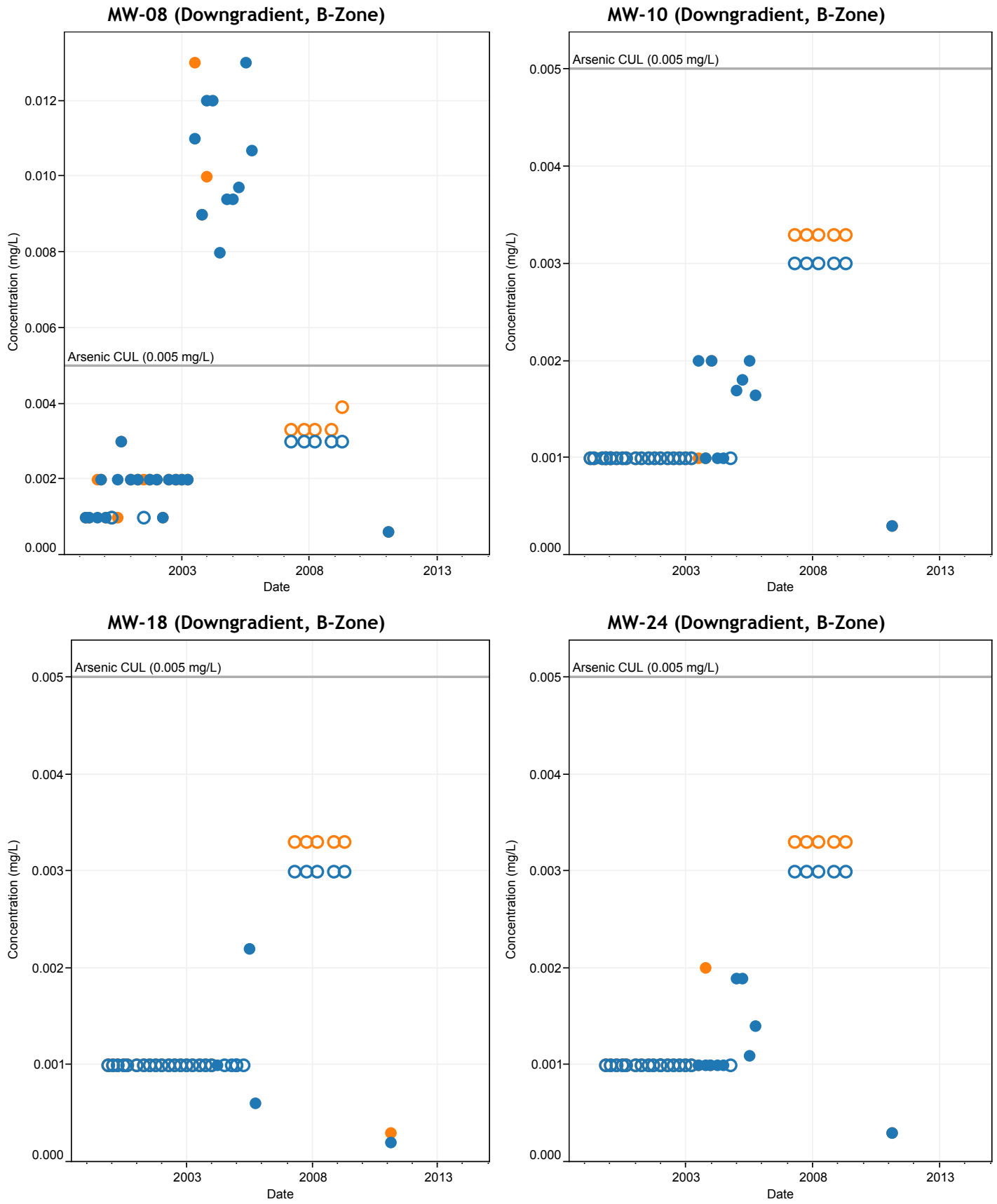




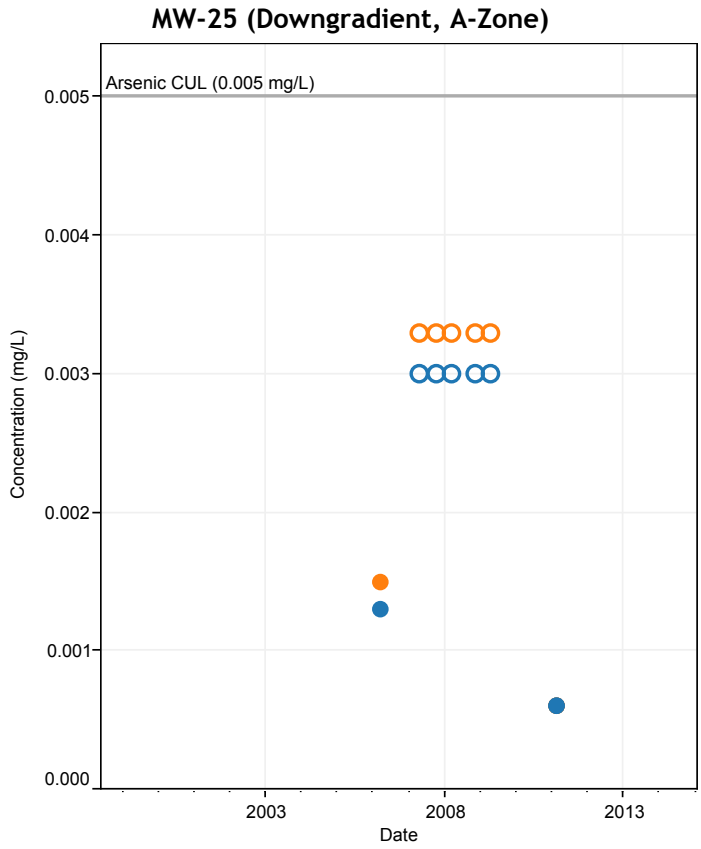
Arsenic, Upgradient

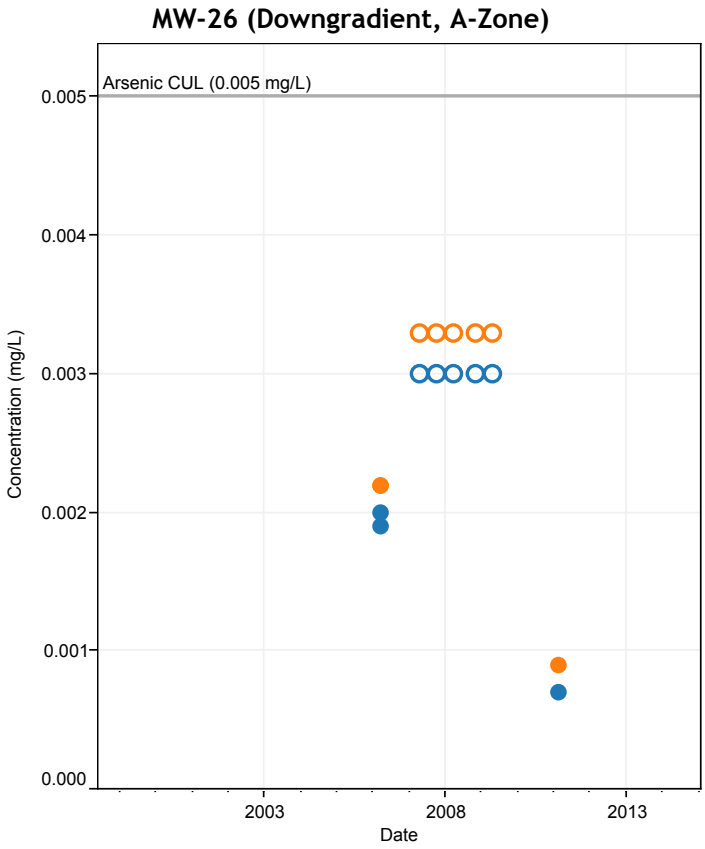


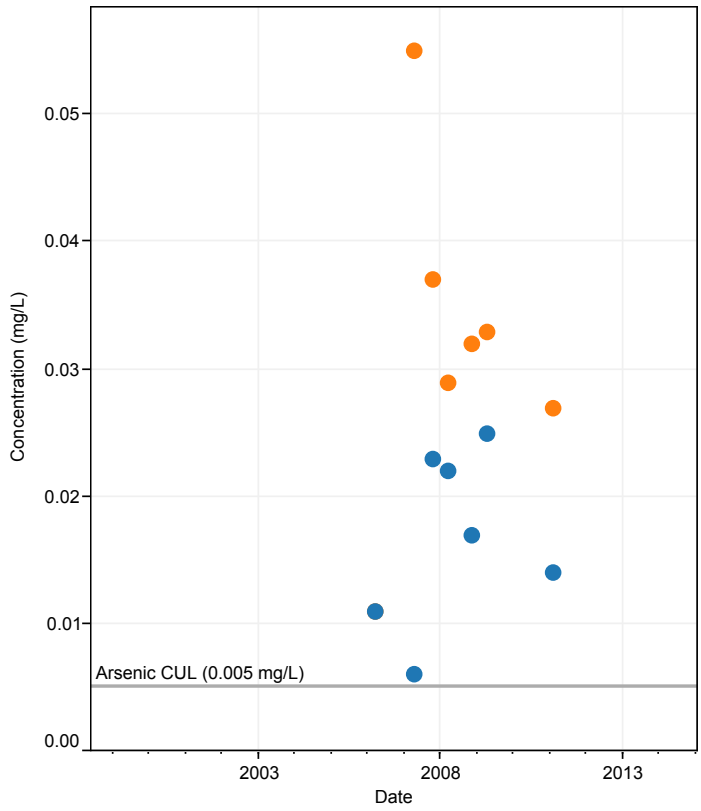
Arsenic, Downgradient

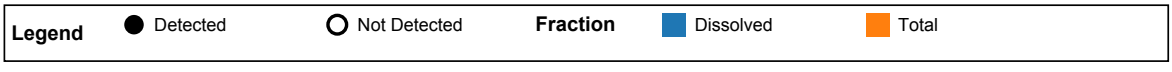


Arsenic, Downgradient



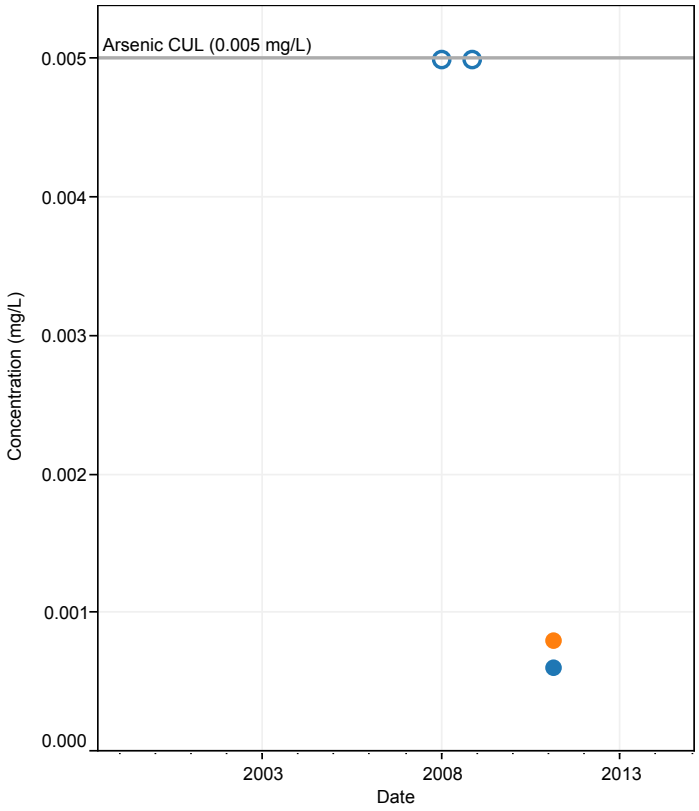




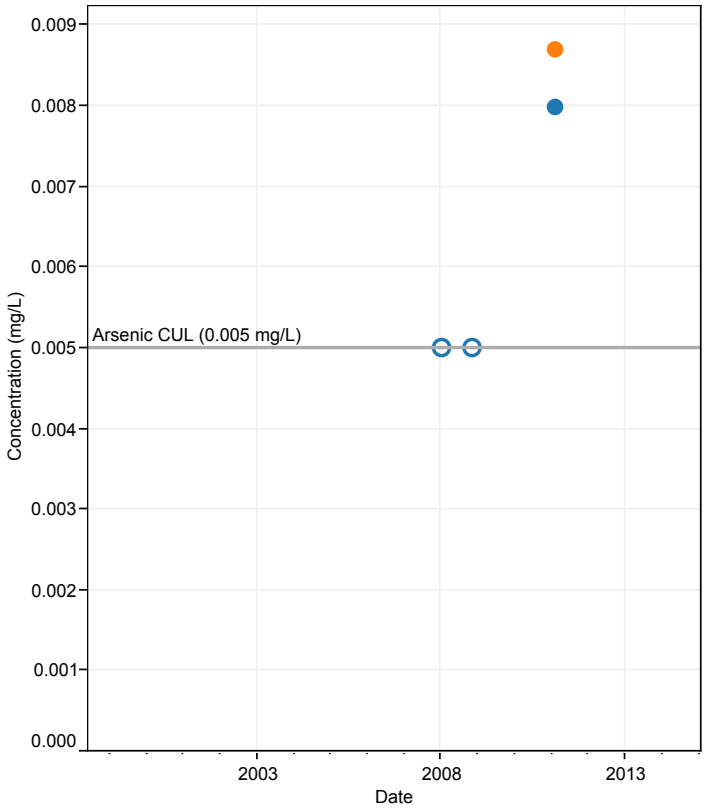


Arsenic, In-waste

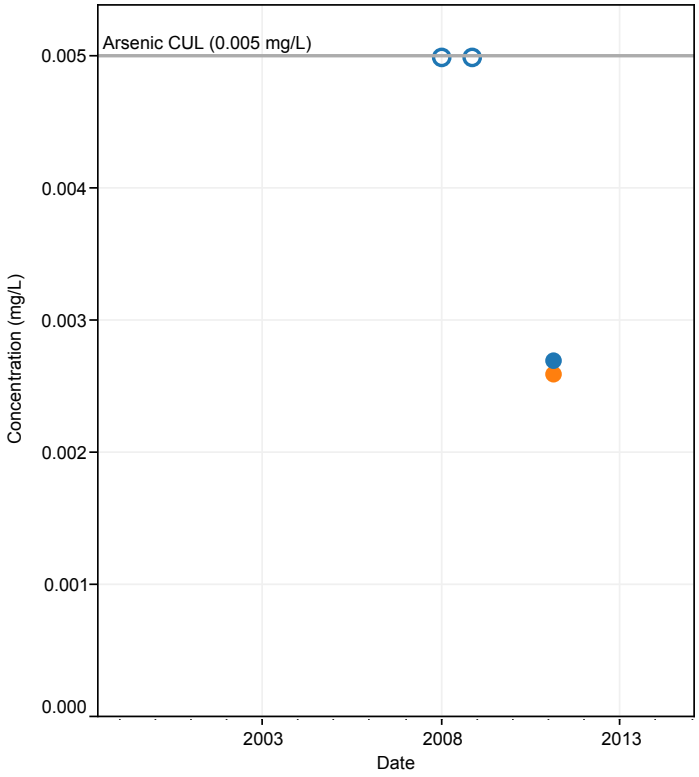
KMW-01A (Upgradient, Perched Zone and A-Zone)



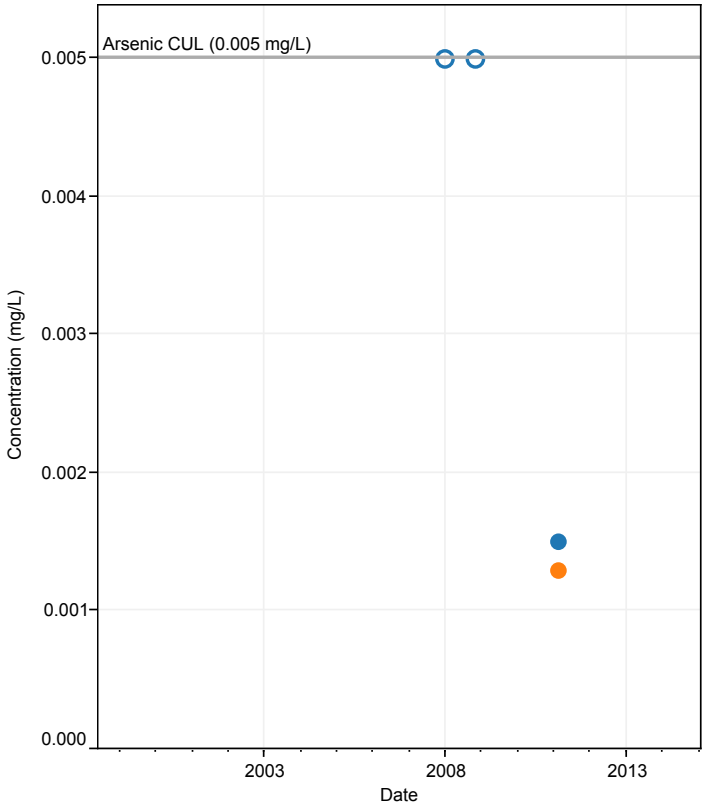
KMW-03A (Downgradient, Perched Zone and A-Zone)

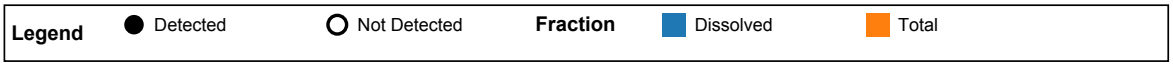


KMW-04 (Interior well (In-waste), Perched Zone and A-Zone)

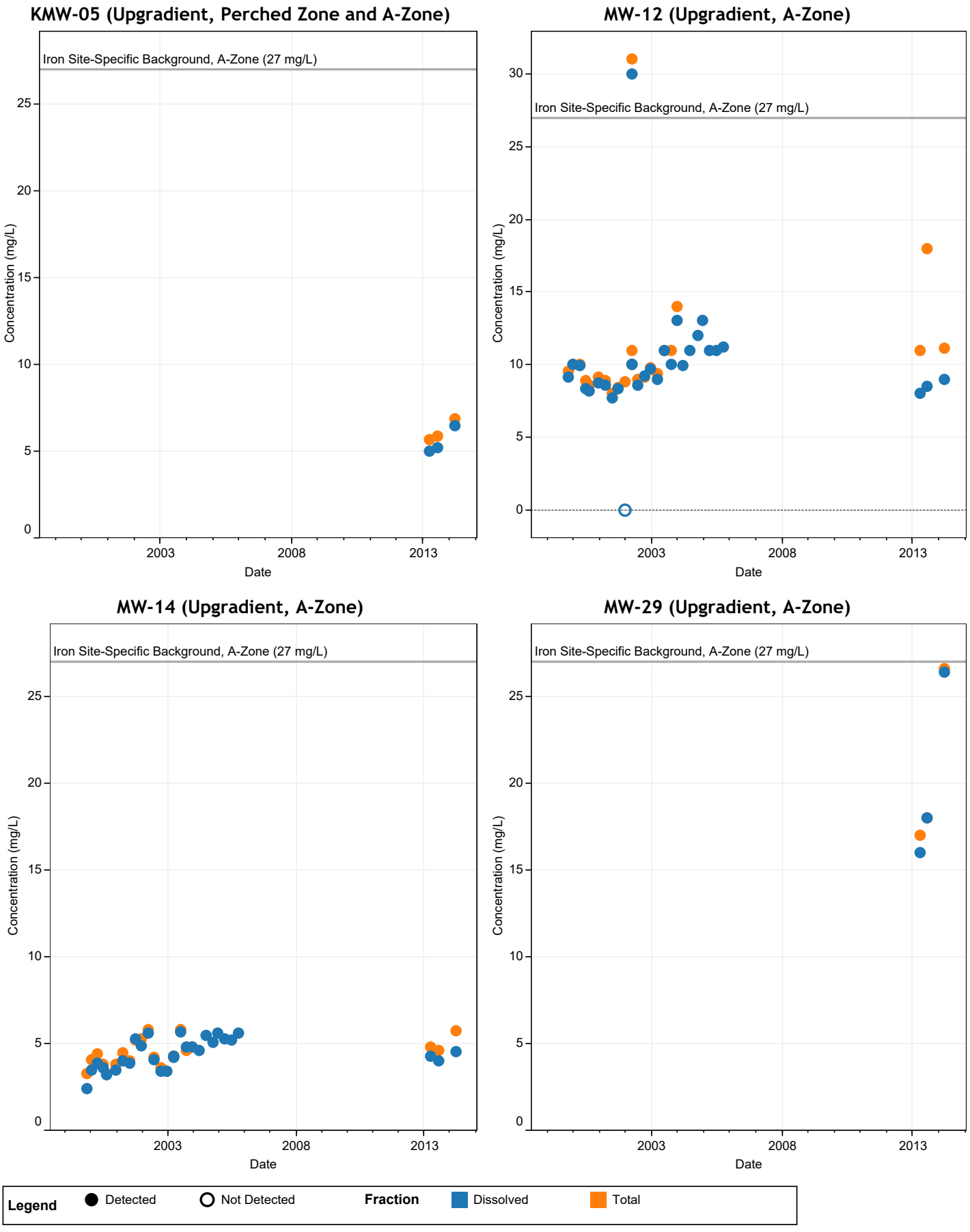


KMW-06 (Upgradient, Perched Zone and A-Zone)

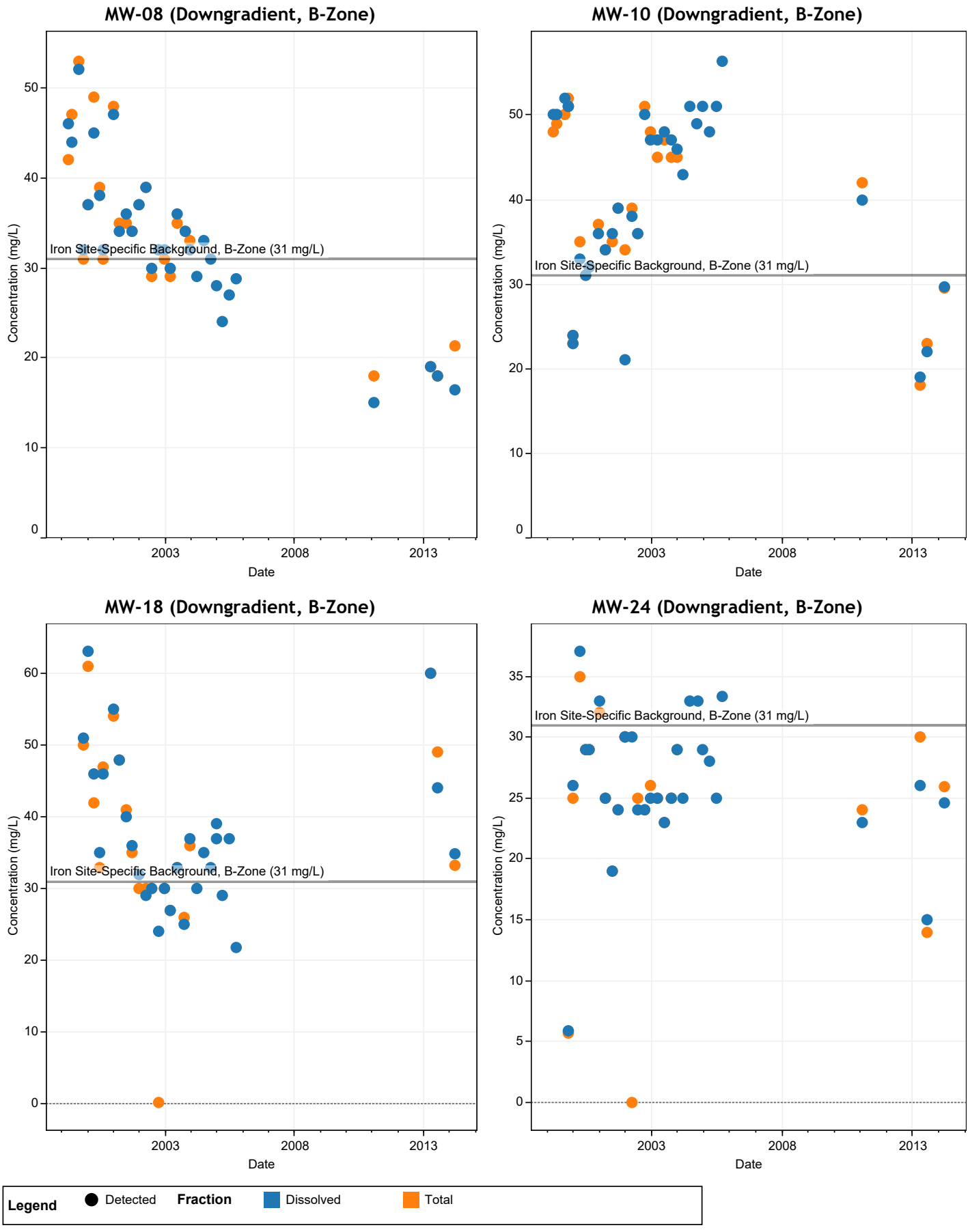




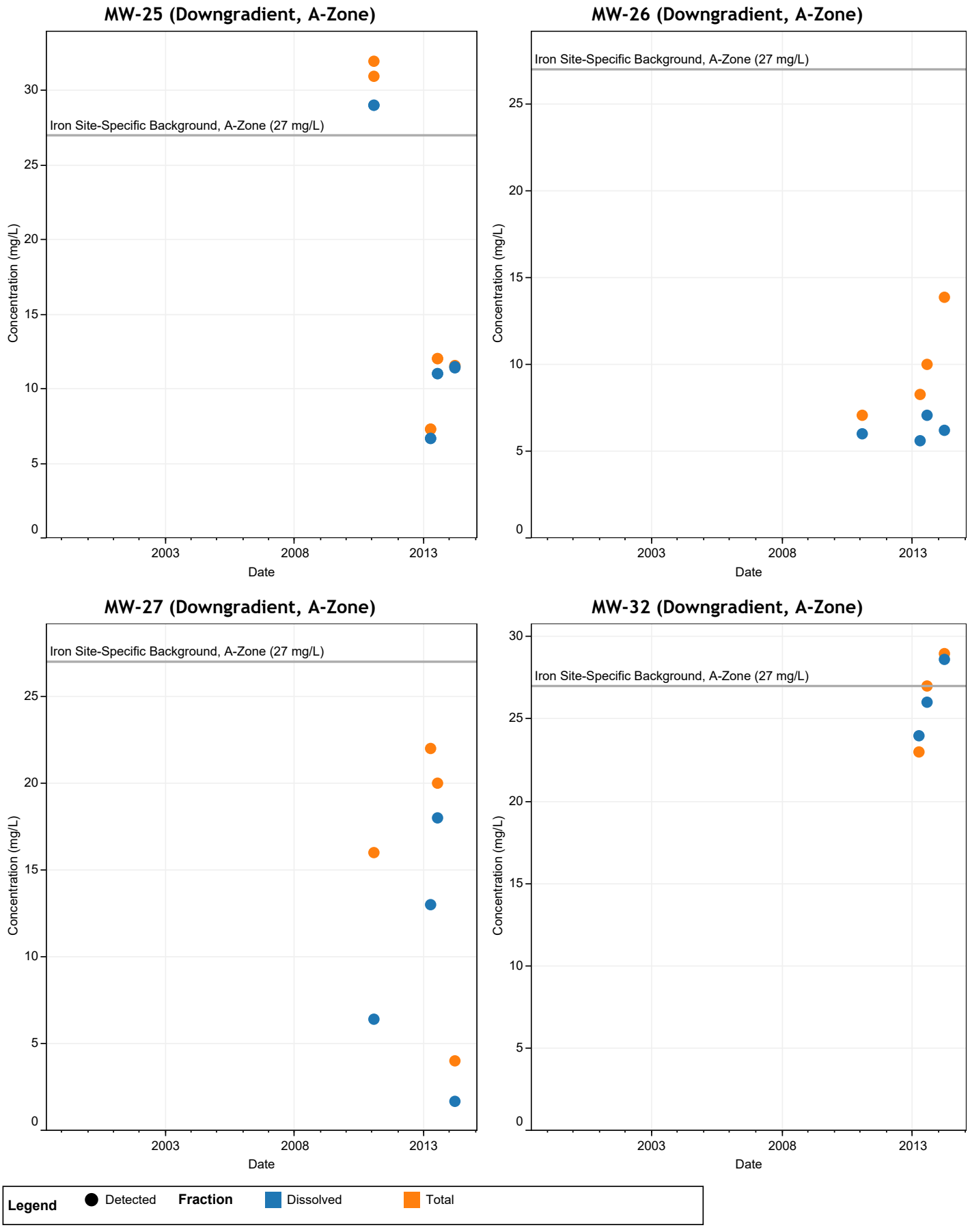
Iron, Upgradient



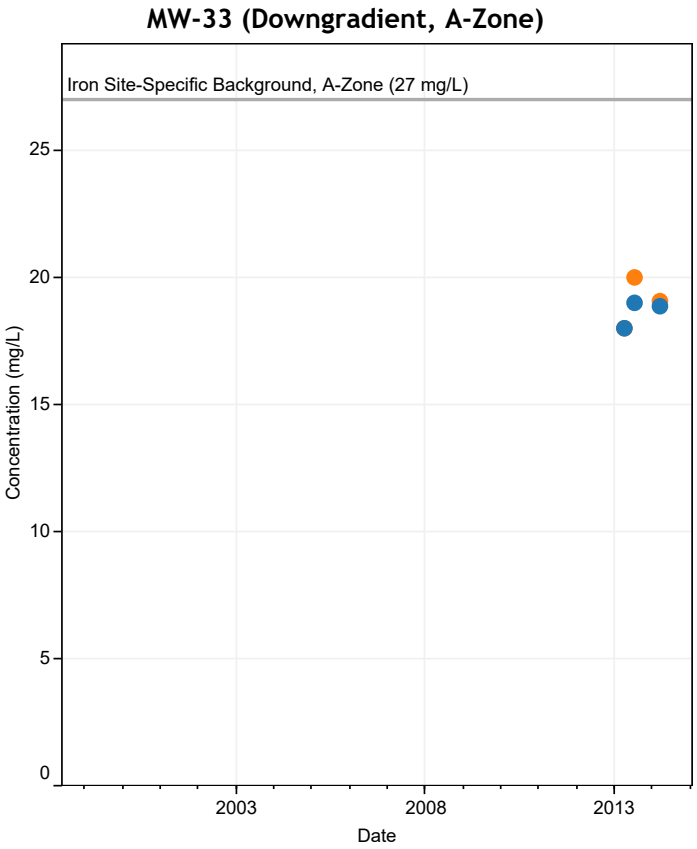
Iron, Downgradient

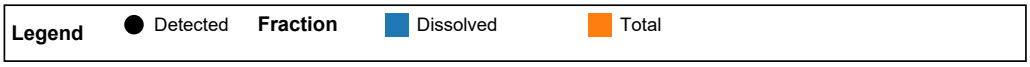


Iron, Downgradient

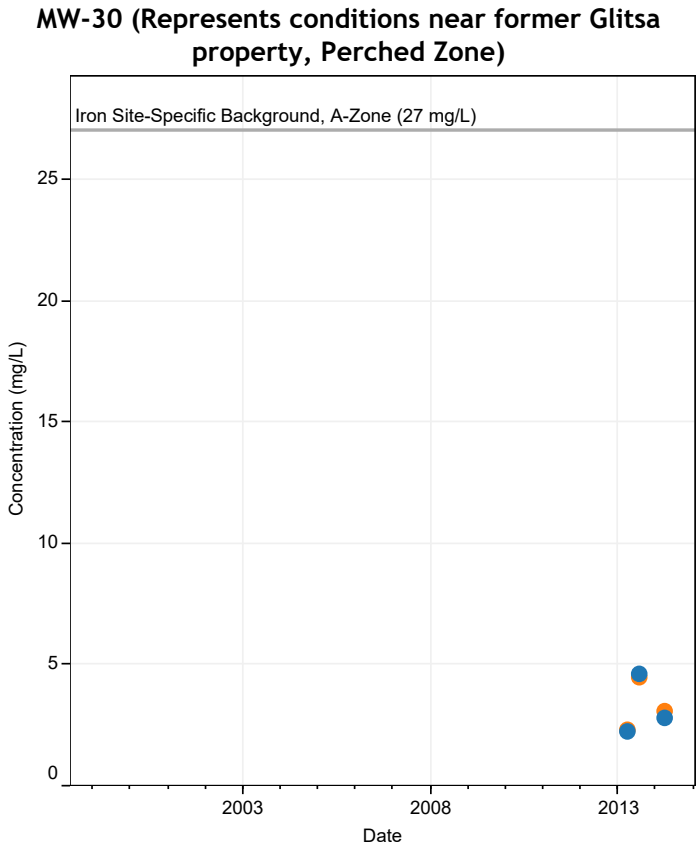


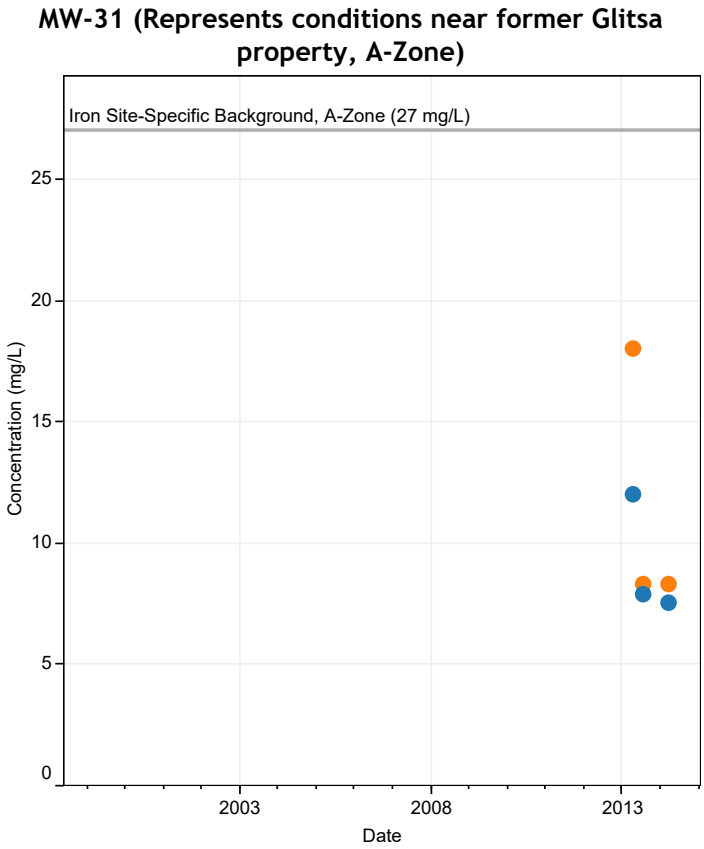
Iron, Downgradient

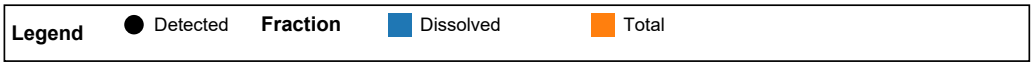




Iron, Glitsa Property

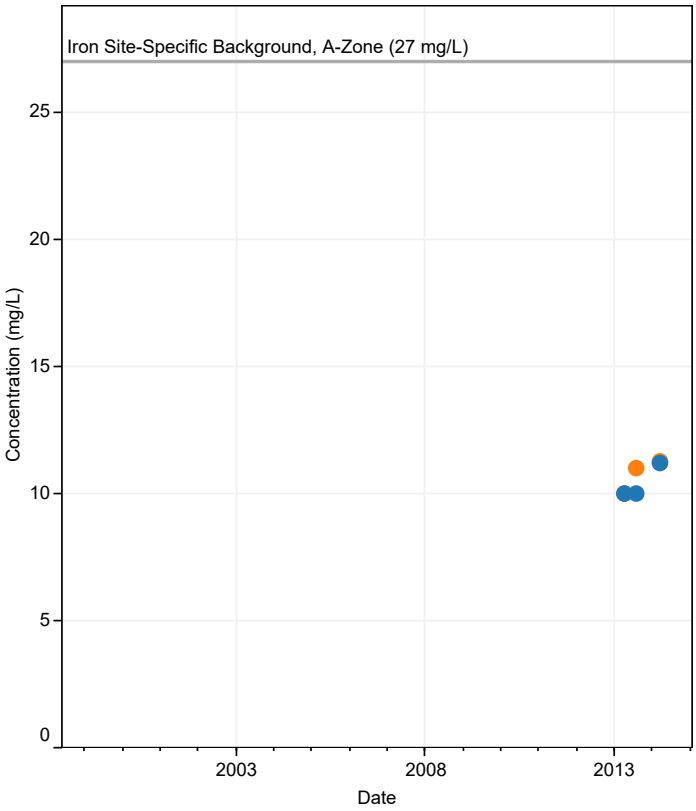






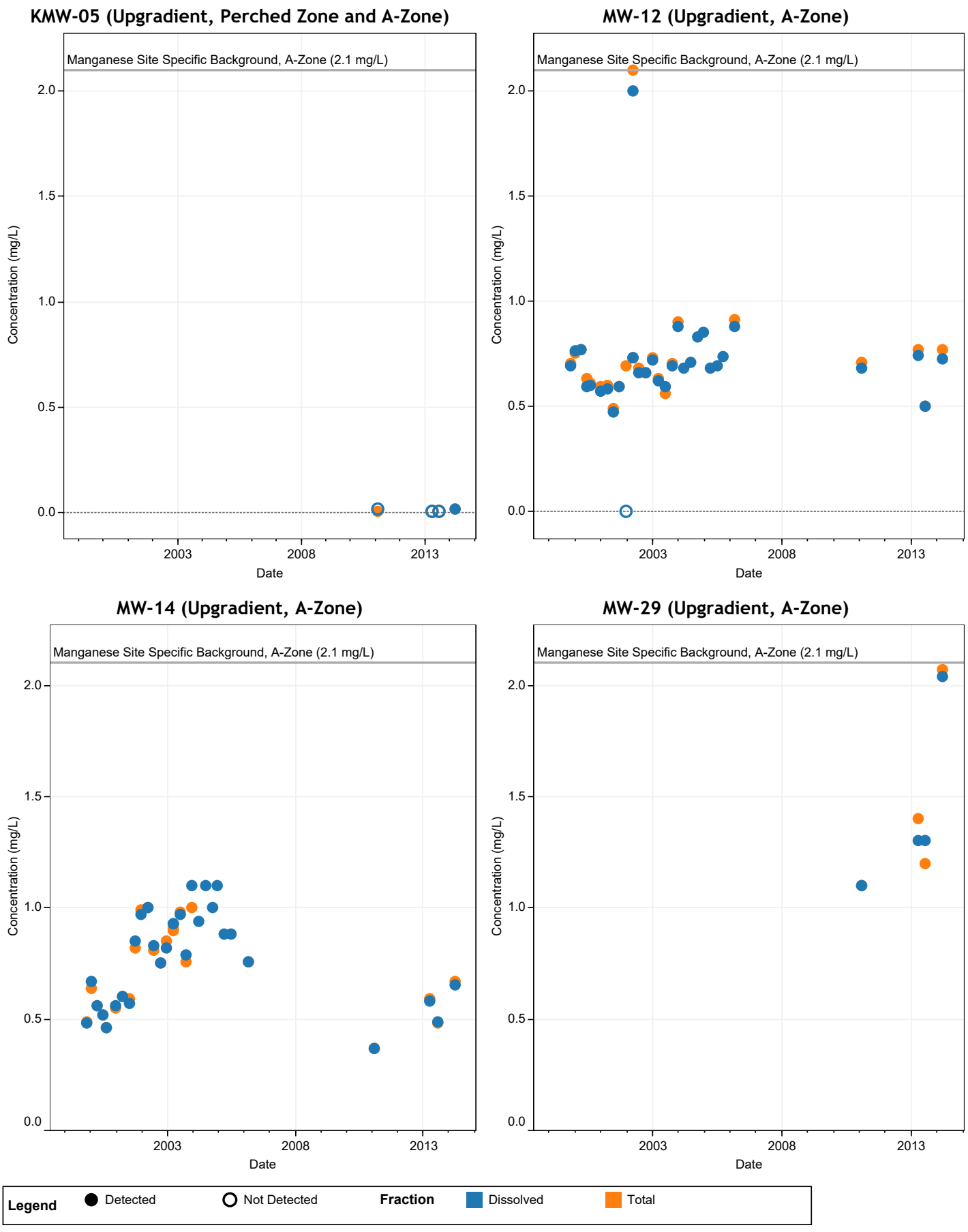
Iron, In-waste

KMW-03A (Downgradient, Perched Zone and A-Zone)

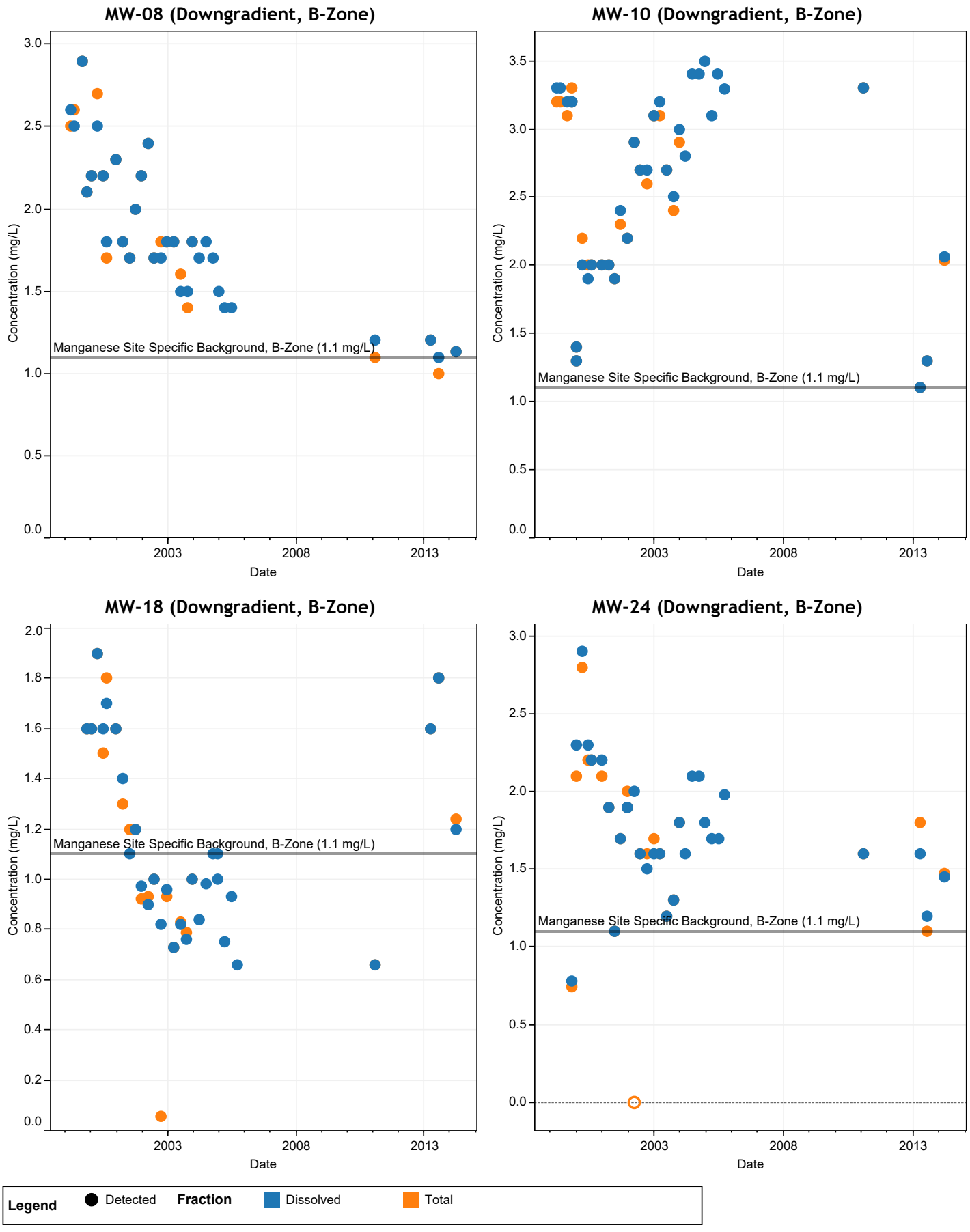


Legend Detected **Fraction** Dissolved Total

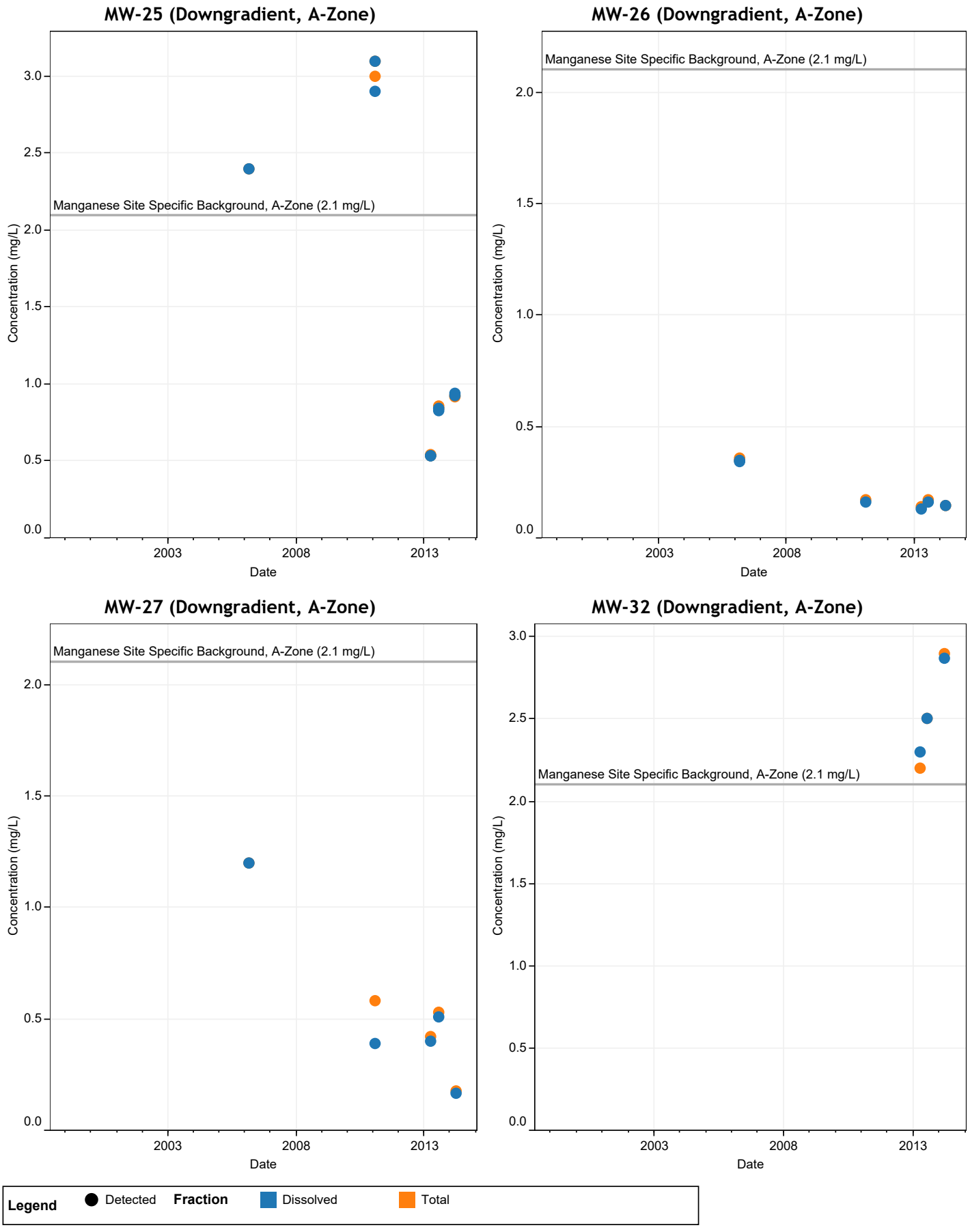
Manganese, Upgradient



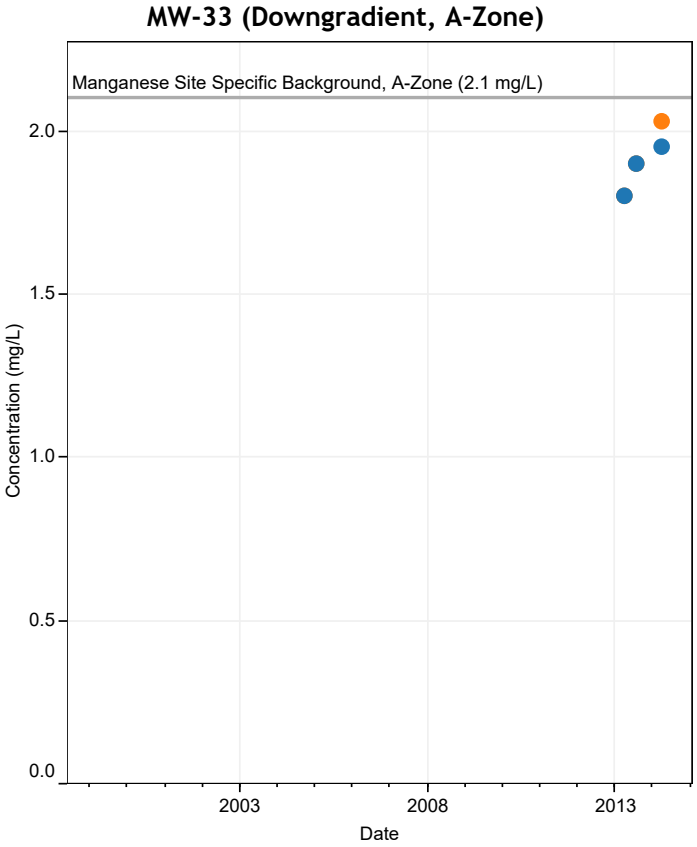
Manganese, Downgradient

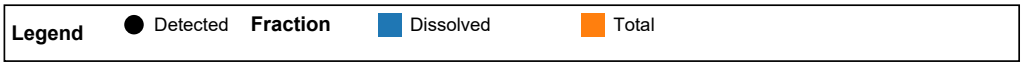


Manganese, Downgradient



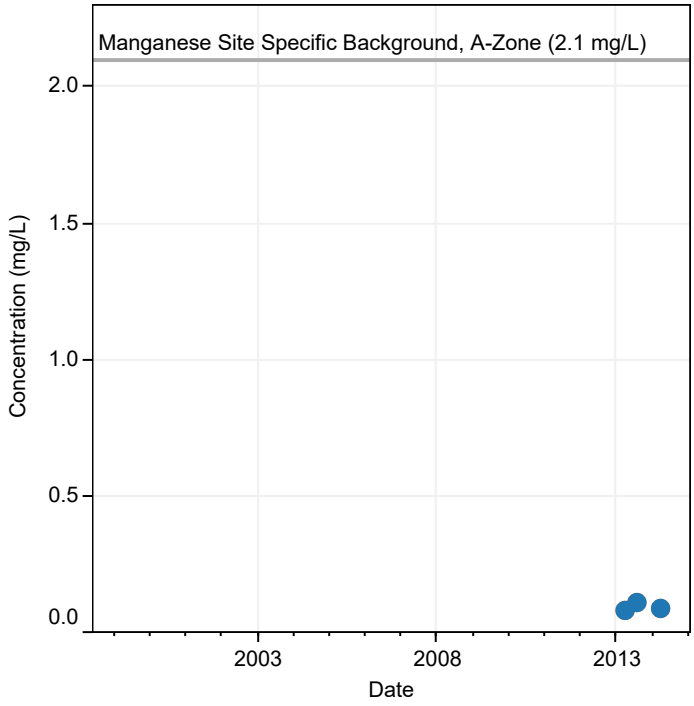
Manganese, Downgradient



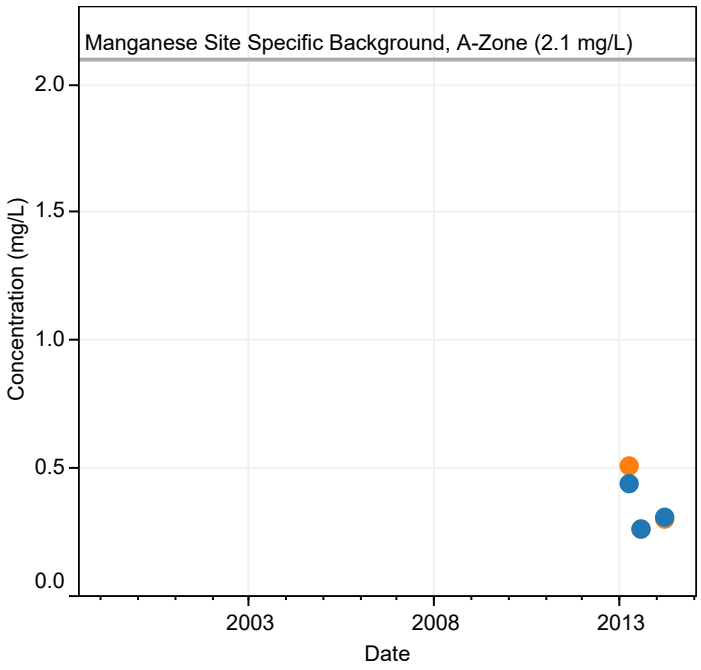


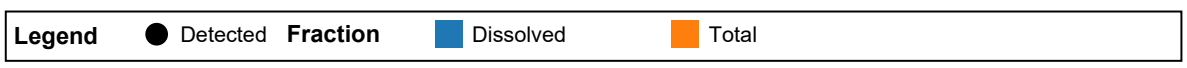
Manganese, Glitsa Property

MW-30 (Represents conditions near former Glitsa property, Perched Zone)



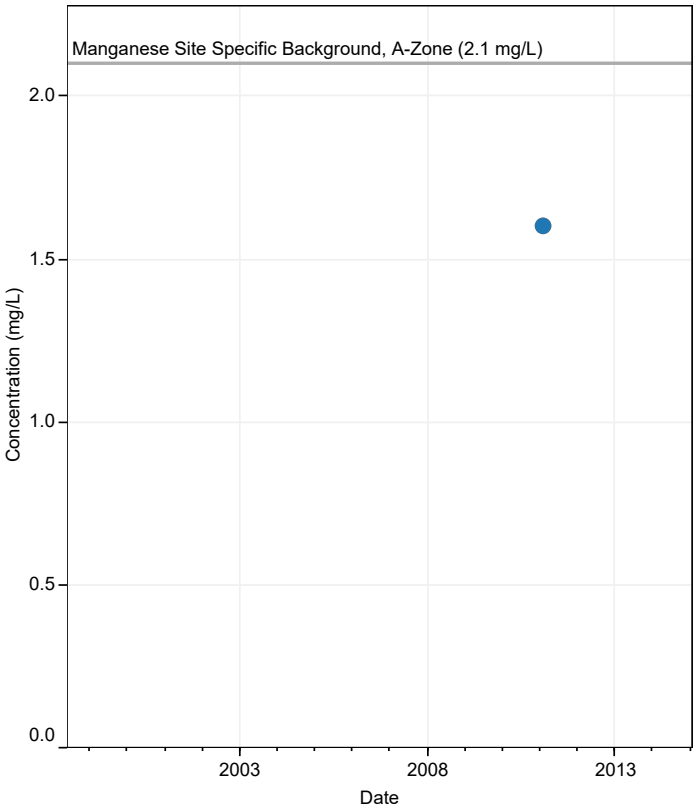
MW-31 (Represents conditions near former Glitsa property, A-Zone)



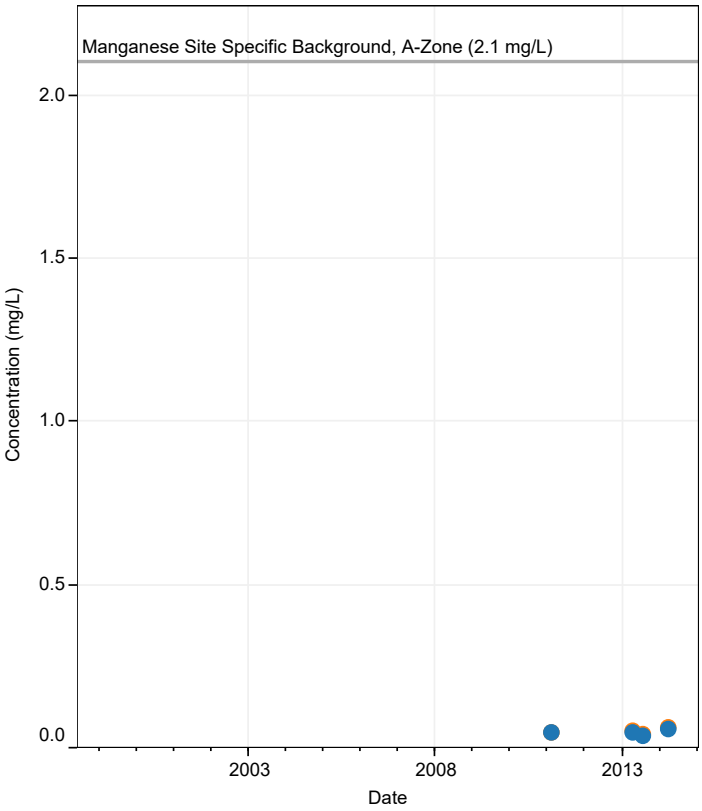


Manganese, In-waste

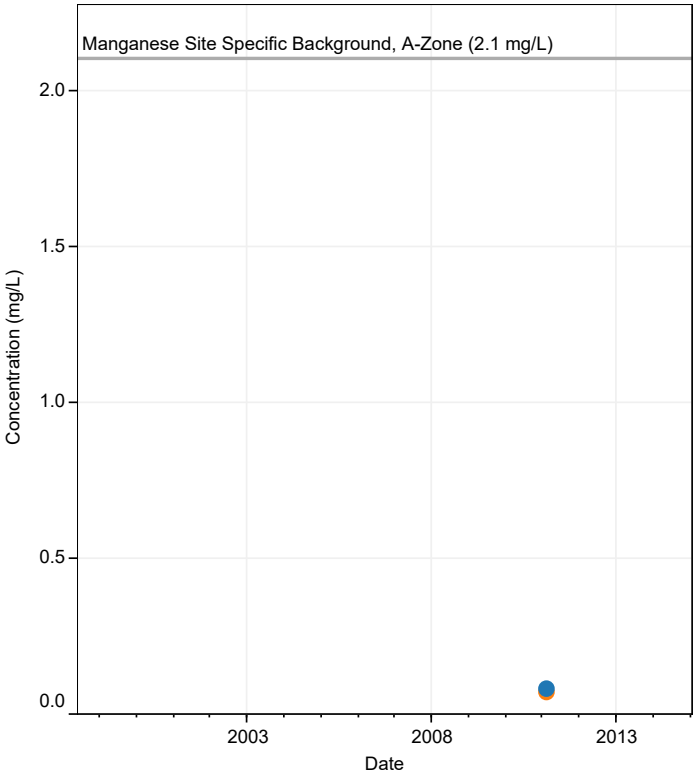
KMW-01A (Upgradient, Perched Zone and A-Zone)



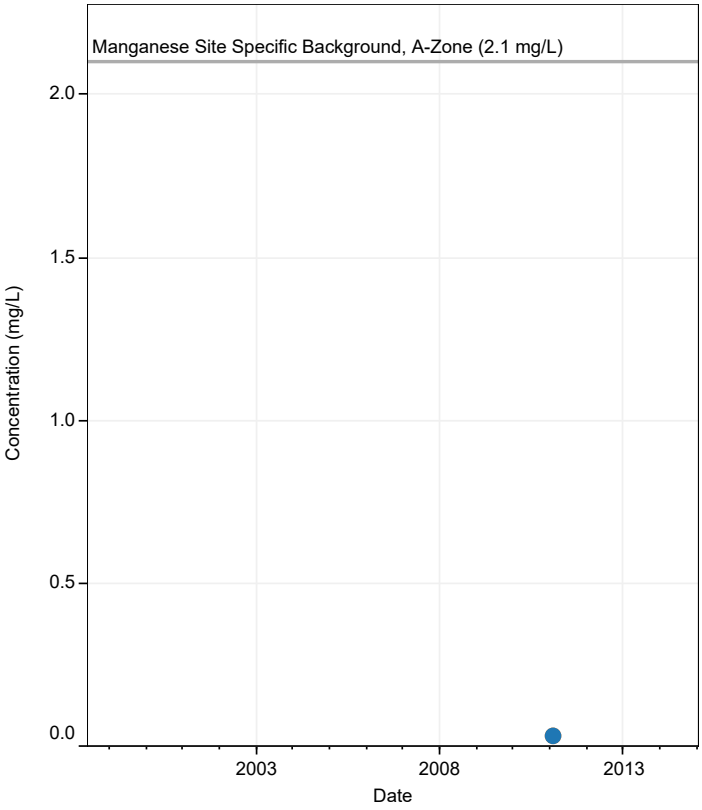
KMW-03A (Downgradient, Perched Zone and A-Zone)

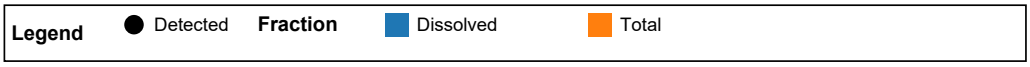


KMW-04 (Interior well (In-waste), Perched Zone and A-Zone)

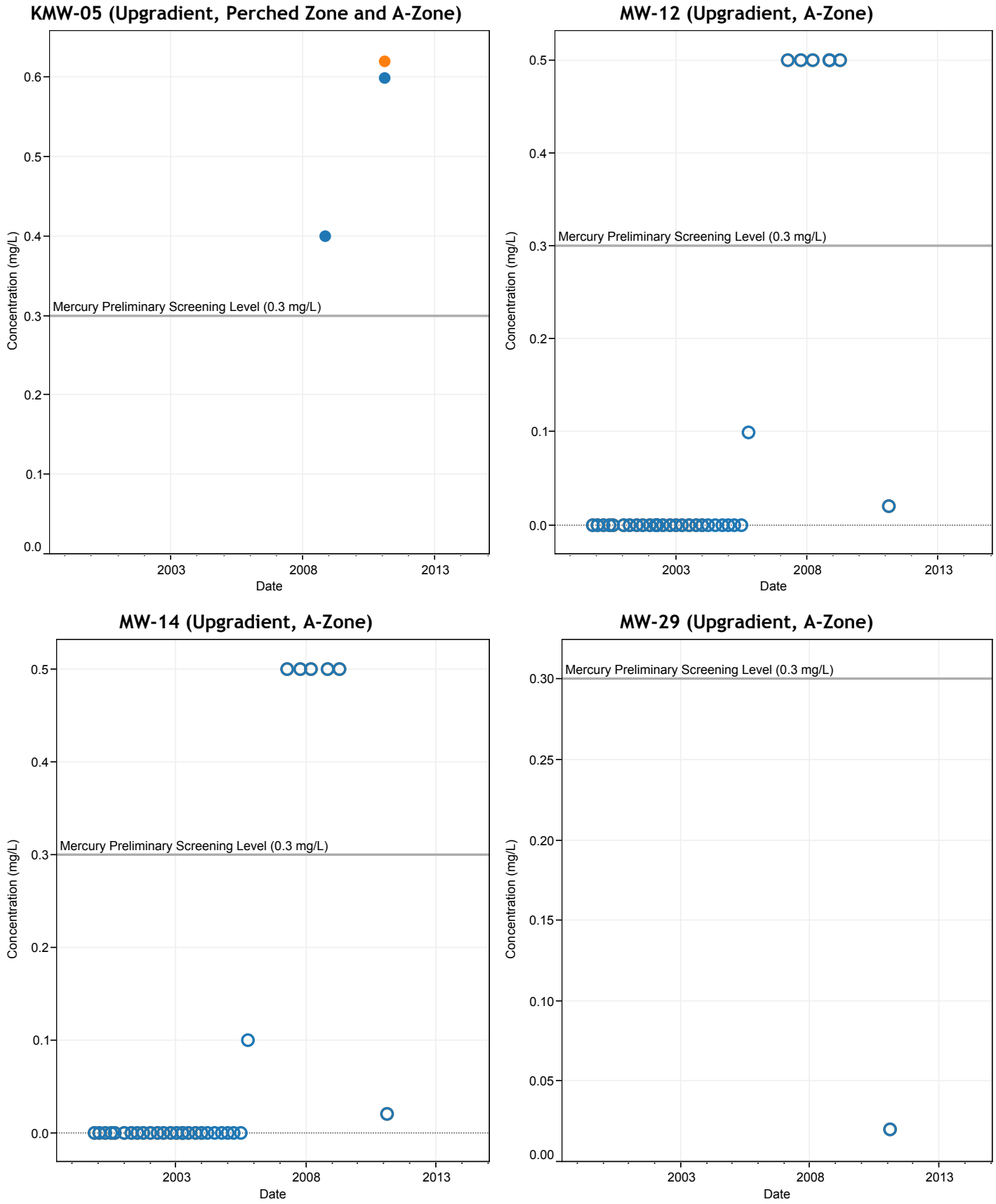


KMW-06 (Upgradient, Perched Zone and A-Zone)

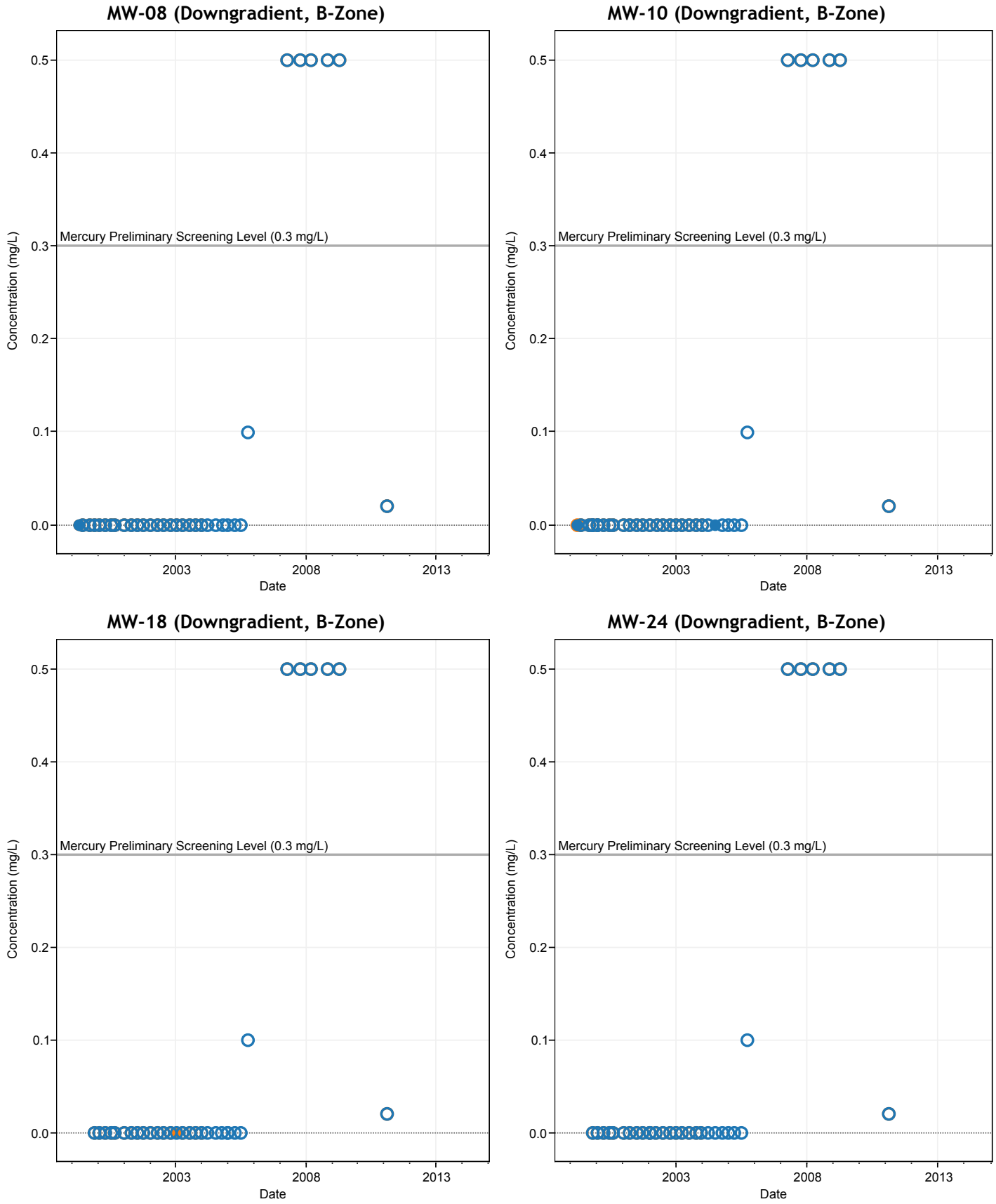




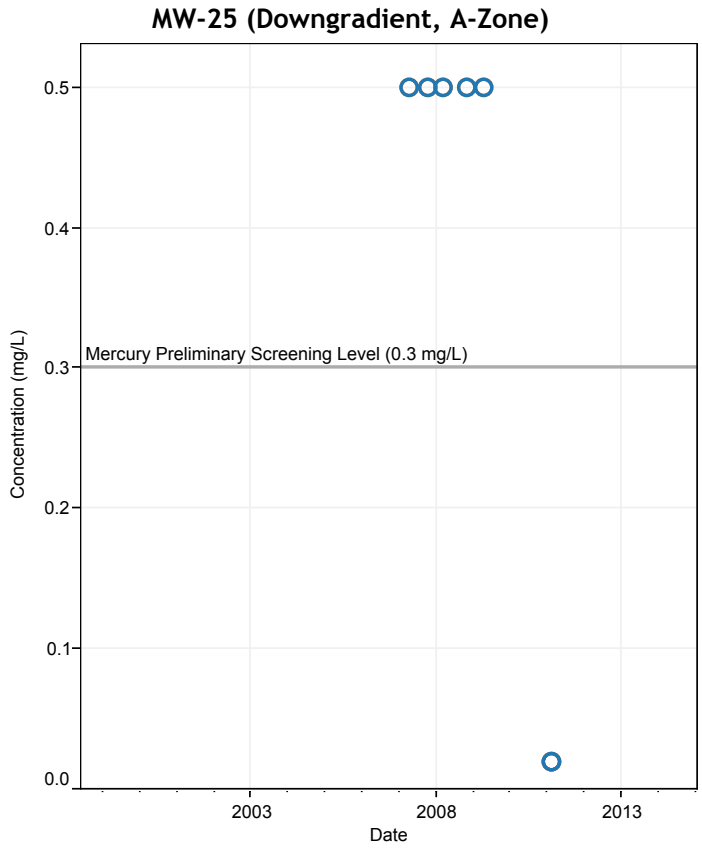
Mercury, Upgradient

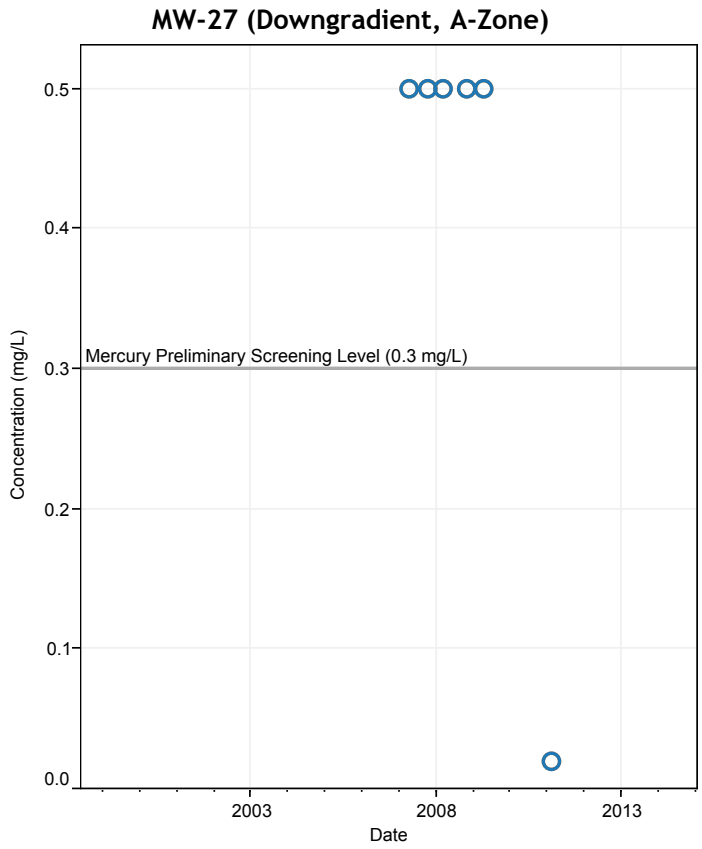


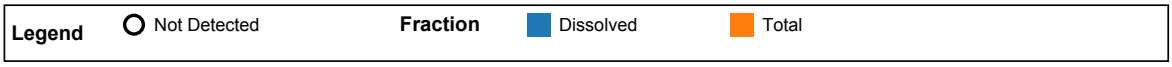
Mercury, Downgradient



Mercury, Downgradient

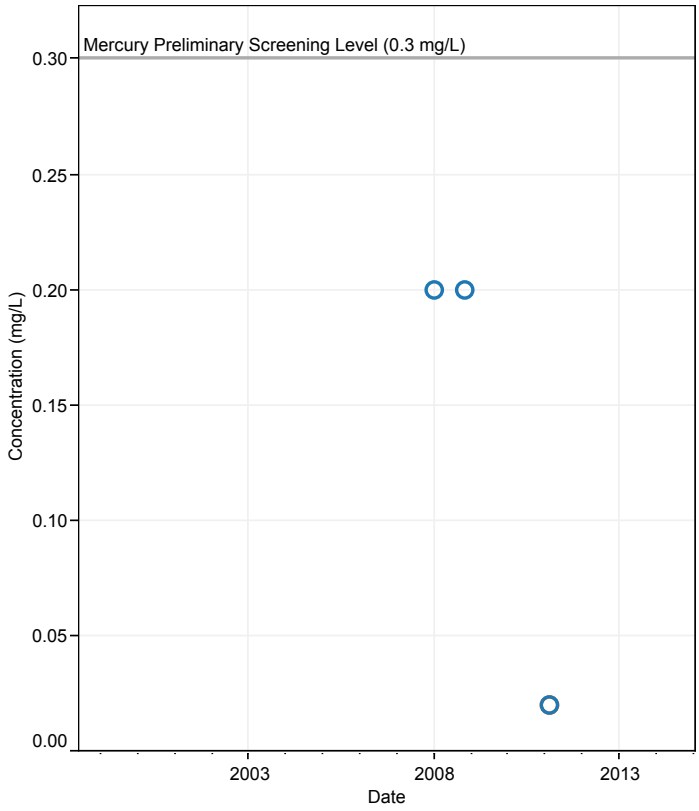




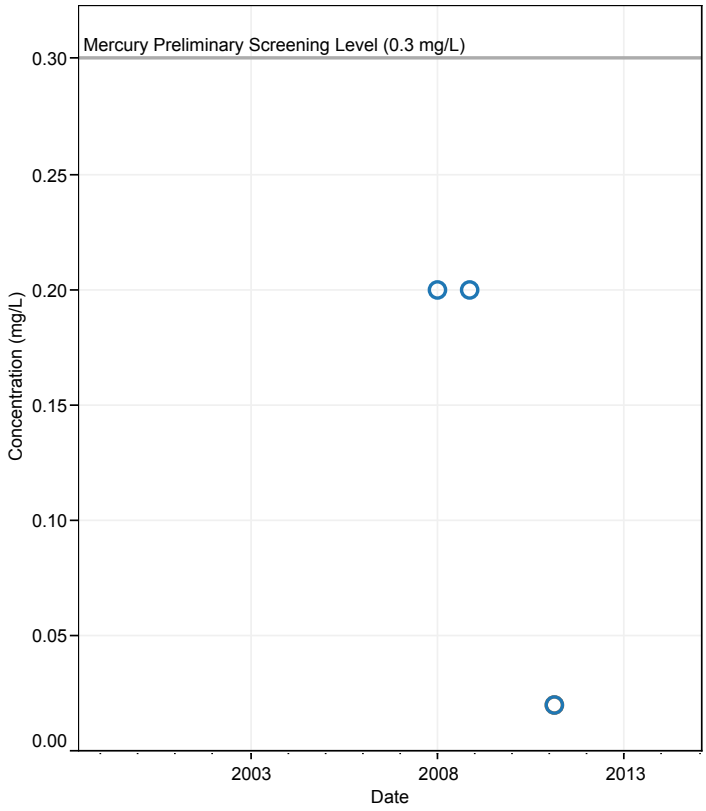


Mercury, In-waste

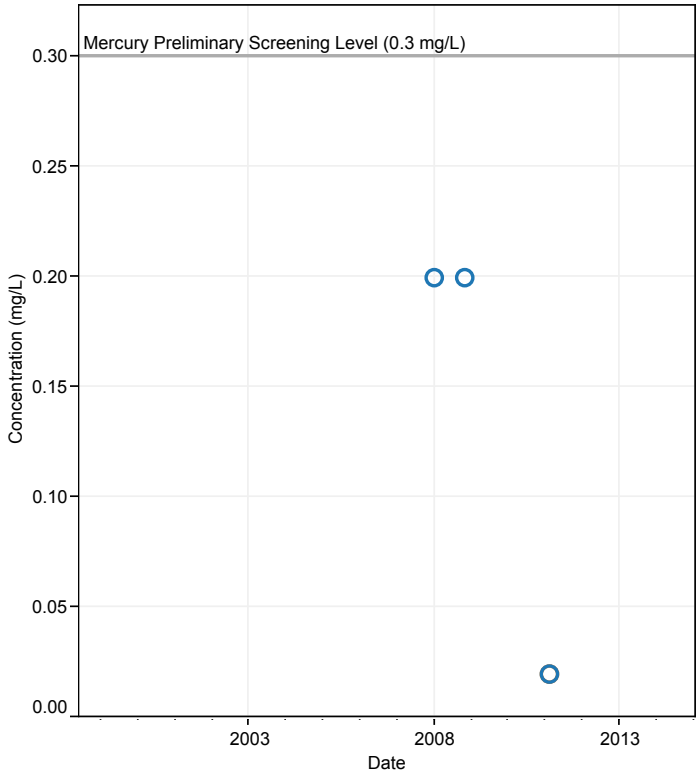
KMW-01A (Upgradient, Perched Zone and A-Zone)



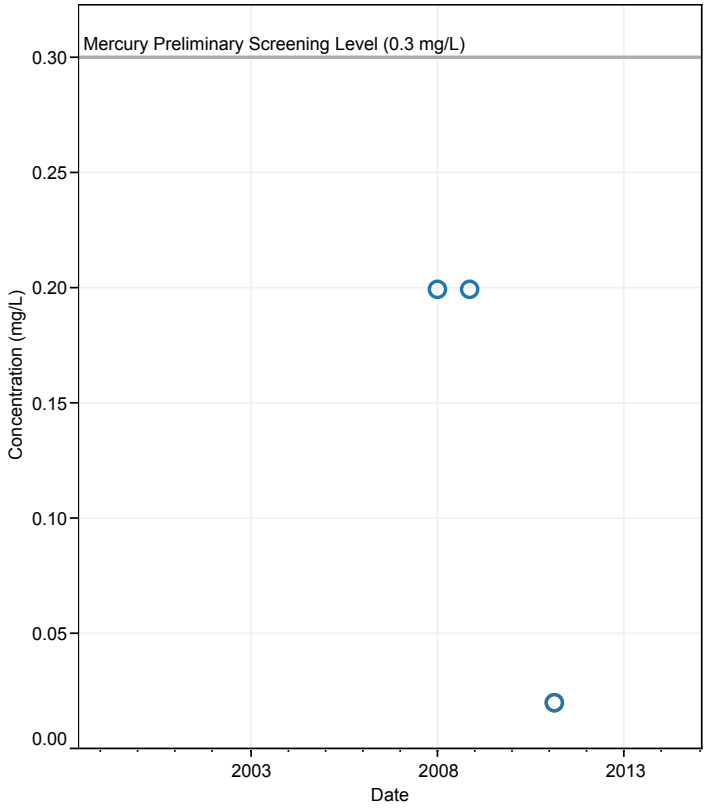
KMW-03A (Downgradient, Perched Zone and A-Zone)

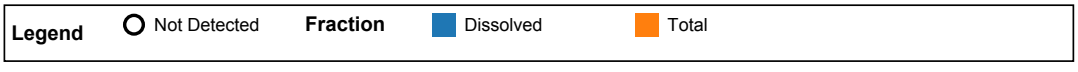


KMW-04 (Interior well (In-waste), Perched Zone and A-Zone)



KMW-06 (Upgradient, Perched Zone and A-Zone)





South Park Landfill

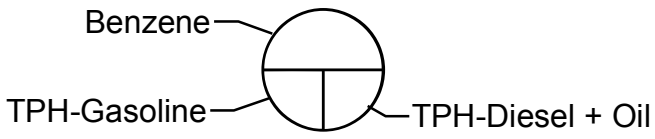
Remedial Investigation/ Feasibility Study

Appendix J
Groundwater Quality Trend Plots, Maps, and Data

Figures

Legend

- Generalized Groundwater Flow[1]
- Edge of Refuse (July 2017)
- Landfill Parcel
- 1,000-foot Perimeter from Landfill Boundary



Location Labels:

KMW-07
@ 5-20 feet (ft)
(Jan-2011)
TPH-G: 0.25U
TPH-D/O: 0.1U
Benz: 0.2U

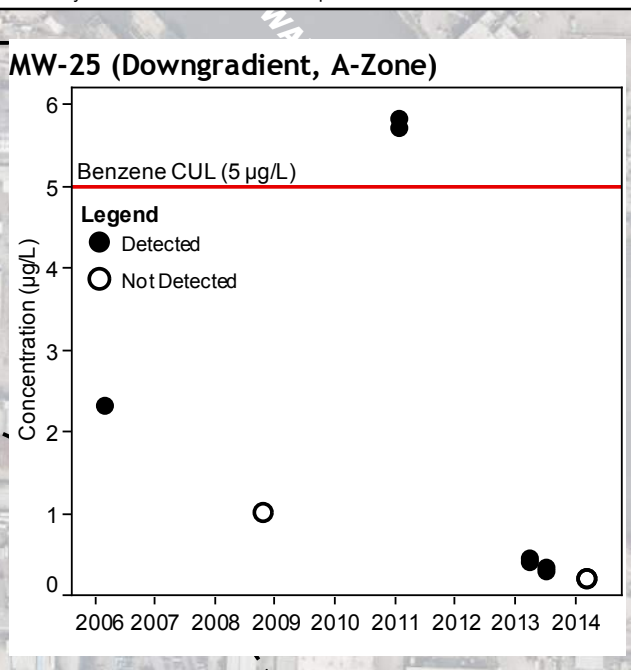
- *Well ID*
- *Well Screen Depth Interval*
- *Sample Month/Year*
- *TPH-Gasoline Concentration in mg/L*
- *TPH-Diesel + Oil Concentration in mg/L*
- *Benzene Concentration in µg/L*

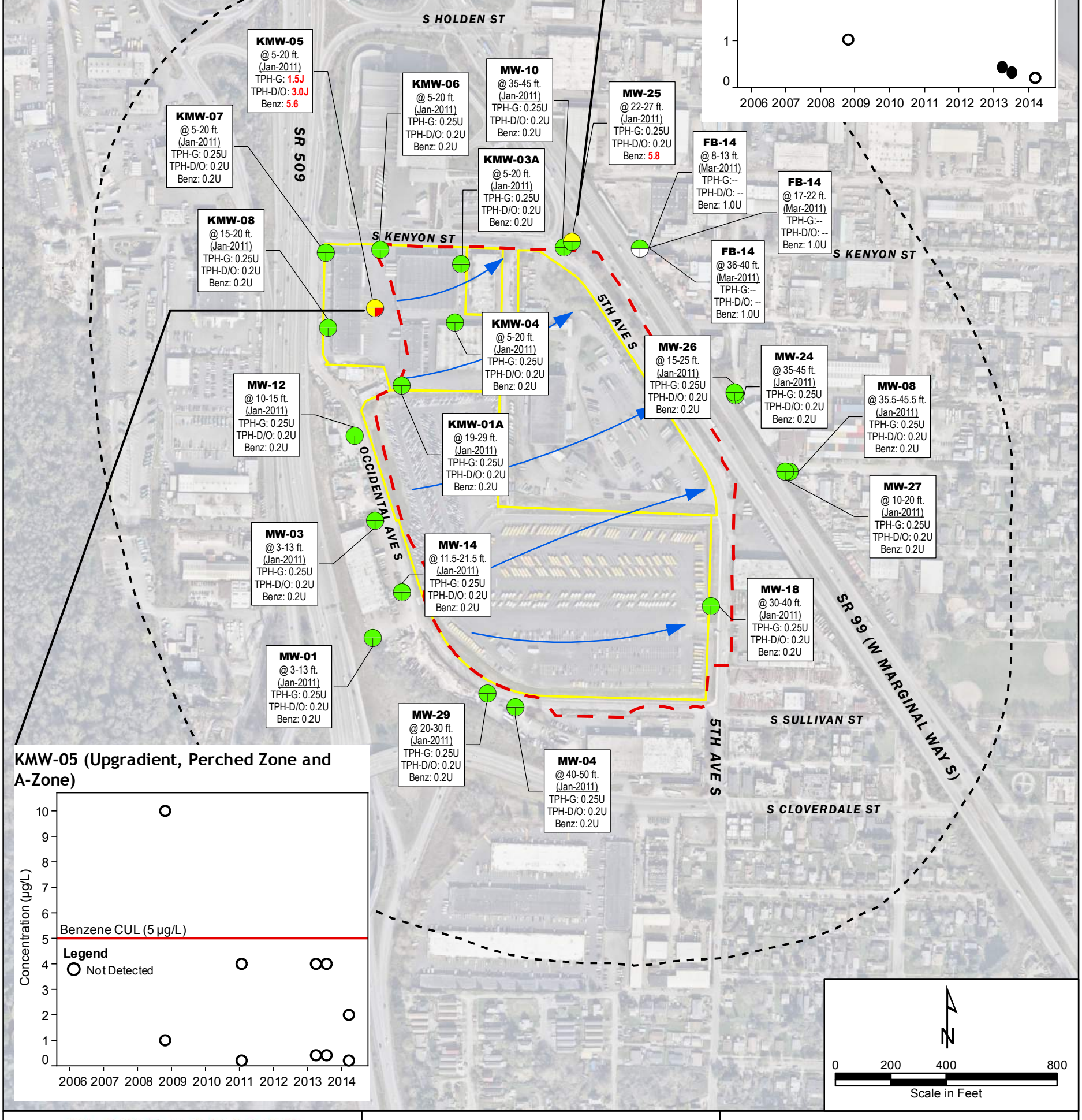
Color	Description	Benzene	TPH-Gasoline	TPH-Diesel+Oil
□	Not measured			
	Less than CUL	< 5 µg/L	< 0.8 mg/L	< 0.5 mg/L
	Between the CUL and 2 times the CUL	Between 5 and 10 µg/L	Between 0.8 and 1.6 mg/L	Between 0.5 and 1.0 mg/L
	Greater than 2 times the CUL	> 10 µg/L	> 1.6 mg/L	> 1.0 mg/L

Notes:
1. Generalized flow developed based on modeled groundwater flow presented in Figures 5.9A and 5.9B of the RI/FS.
- Tax parcels provided by King County Geographic Information Systems Center.
- Orthoimagery provided by NearMap, September 27, 2015.
- Trend plots represent benzene concentrations for locations KMW-05 and MW-25 for sampling events through March 2014.
- Benzene results for FB-14 are based on Ecology split samples.
- **BOLD, RED TEXT** indicates exceedance of CUL.

Abbreviations:
- Benz = Benzene
- CUL = Cleanup level
- Ecology = Washington Department of Ecology
- ft = Feet
- µg/L = Micrograms per liter
- mg/L = Milligrams per liter
- RI/FS = Remedial Investigation/Feasibility Study
- TPH-D/O = Diesel- and oil-range total petroleum hydrocarbon
- TPH-G = Gasoline-range total petroleum hydrocarbon

Qualifiers:
J The analyte is detected and the quantity is estimated.
U The analyte was not detected at the reported concentration.





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South Park Landfill
Seattle, Washington

Figure J.1
2011 TPH and Benzene in Groundwater

I:\GIS\Projects\COS-SPARK\MXD\RIFS\RIFS_2017_FEB18\Appendix J\Figure J.1 2011 TPH and Benzene in GW.mxd
2/14/2018

Legend

- Generalized Groundwater Flow[1]
- Edge of Refuse (July 2017)
- Landfill Parcel
- 1,000-foot Perimeter from Landfill Boundary

Vinyl Chloride
cis-1,2-Dichloroethene
Trichloroethene

Location Labels:

MW-30
@ 8-13 feet (ft)
(Jul-2011)
TCE: 0.5
cis-DCE: 3.2
VC: 2.2

- *Well ID*
- *Well Screen Depth Interval*
- *Sample Month/Year*
- *Trichloroethene Concentration in µg/L*
- *cis-1,2-Dichloroethene Concentration in µg/L*
- *Vinyl Chloride Concentration in µg/L*

Color	Description	TCE	cis-DCE	VC
	Not measured			
	Not detected with detection level >CUL	> 4 µg/L	> 16 µg/L	> 0.29 µg/L
	Less than CUL	< 4 µg/L	< 16 µg/L	< 0.29 µg/L
	Between the CUL and 2 times the CUL; Between the CUL and 5 times the CUL for VC	Between 4 and 8 µg/L	Between 16 and 32 µg/L	Between 0.29 and 1.45 µg/L
	Greater than 2 times the CUL; Greater than 5 times the CUL for VC	> 8 µg/L	> 32 µg/L	> 1.45 µg/L

Notes:
1. Generalized flow developed based on modeled groundwater flow presented in Figures 5.9A and 5.9B of the RI/FS.
· Tax parcels provided by King County Geographic Information Systems Center.
· Orthoimagery provided by NearMap, September 27, 2015.
· **BOLD, RED TEXT** indicates exceedance of CUL.

Abbreviations:
· CUL = Cleanup level
· DCE = Dichloroethene
· µg/L = Micrograms per liter
· RI/FS = Remedial Investigation/Feasibility Study
· TCE = Trichloroethene
· VC = Vinyl chloride

Qualifier:
U The analyte was not detected at the reported concentration.

LOWER DUWAMISH WATERWAY

KMW-06 @ 5-20 ft. (Jan-2011) TCE: 0.2U cis-DCE: 0.2U VC: **0.31**
KMW-03A @ 5-20 ft. (Jan-2011) TCE: 0.2U cis-DCE: 0.2U VC: **0.39**
KMW-05 @ 5-20 ft. (Jan-2011) TCE: 4U cis-DCE: 0.2U VC: 0.2U
KMW-07 @ 5-20 ft. (Jan-2011) TCE: 0.2U cis-DCE: 0.2U VC: 0.02U
KMW-04 @ 5-20 ft. (Jan-2011) TCE: 0.2U cis-DCE: 0.2U VC: 0.22
KMW-08 @ 15-20 ft. (Jan-2011) TCE: 0.2U cis-DCE: 0.2U VC: 0.02U
KMW-01A @ 19-29 ft. (Jan-2011) TCE: 0.2U cis-DCE: 0.2U VC: 0.091
FB-07 @ 5-10 ft. (Mar-2011) TCE: 0.2U cis-DCE: 0.2U VC: 002U
FB-08 @ 8-13 ft. (Mar-2011) TCE: 0.2U cis-DCE: 12 VC: **1.2**
FB-09 @ 9-14 ft. (Mar-2011) TCE: 0.2U cis-DCE: 4.3 VC: 0.11
FB-10 @ 9-14 ft. (Mar-2011) TCE: 0.2U cis-DCE: 0.4 VC: 0.026
FB-11 @ 10-15 ft. (Mar-2011) TCE: 0.2U cis-DCE: 0.5 VC: 0.02U
MW-14 @ 11.5-21.5 ft. (Jan-2011) TCE: 0.2U cis-DCE: 0.2U VC: 0.02U
MW-01 @ 3-13.5 ft. (Jan-2011) TCE: 0.2U cis-DCE: 0.2U VC: 0.02U
MW-29 @ 20-30 ft. (Jan-2011) TCE: 0.2U cis-DCE: 0.2U VC: 0.02U
MW-04 @ 40-50 ft. (Jan-2011) TCE: 0.0U cis-DCE: 0.2U VC: 0.22
MW-03 @ 3-11 ft. (Jan-2011) TCE: 0.2U cis-DCE: 0.2U VC: 0.02U
MW-12 @ 10-15 ft. (Jan-2011) TCE: 0.6 cis-DCE: 5.7 VC: 0.26
MW-18 @ 30-40 ft. (Jan-2011) TCE: 0.2U cis-DCE: 0.2U VC: 0.02
FB-13 @ 15-20 ft. (Mar-2011) TCE: 0.2U cis-DCE: 0.2U VC: **0.34**
MW-10 @ 35-45 ft. (Jan-2011) TCE: 0.2U cis-DCE: 1.1 VC: 0.26
MW-25 @ 22-27 ft. (Jan-2011) TCE: 0.2U cis-DCE: 0.6 VC: **0.79**
FW-14 @ 8-13 ft. (Mar-2011) TCE: 2.6 cis-DCE: 0.4 VC: 0.029
FW-14 @ 17-22 ft. (Mar-2011) TCE: 0.2U cis-DCE: **20.0** VC: **5.1**
FW-14 @ 36-40 ft. (Mar-2011) TCE: 0.2U cis-DCE: 7.7 VC: **0.4**
MW-26 @ 15-25 ft. (Jan-2011) TCE: 0.4 cis-DCE: 0.2 VC: 0.04
MW-24 @ 35-45 ft. (Jan-2011) TCE: 0.2U cis-DCE: 0.2U VC: 0.051
MW-08 @ 35.5-45.5 ft. (Jan-2011) TCE: 0.2U cis-DCE: 0.3U VC: 0.015
MW-27 @ 10-20 ft. (Jan-2011) TCE: 0.2U cis-DCE: 0.4U VC: **0.31**
FB-12 @ 30-40 ft. (Mar-2011) TCE: 0.8 cis-DCE: 1.7 VC: **1.4**

S HOLDEN ST
S KENYON ST
S KENYON ST
1ST AVE S
SR 509
OCCIDENTAL AVE S
5TH AVE S
5TH AVE S
S SULLIVAN ST
S CLOVERDALE ST
SR 99 (W MARGINAL WAY S)

N
0 200 400 800
Scale in Feet

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South Park Landfill
Seattle, Washington

Figure J.2
Chlorinated Ethenes in Groundwater
Wet Season—January 2011

I:\GIS\Projects\COS-SPARK\MXD\RIFS\RIFS_2017_FEB18\Appendix J\Figure J.2 GW Chlorinated Ethenes— January 2011.mxd
2/14/2018

Legend

- Generalized Groundwater Flow[1]
- Edge of Refuse (July 2017)
- Landfill Parcel
- 1,000-foot Perimeter from Landfill Boundary

Vinyl Chloride
Trichloroethene
cis-1,2-Dichloroethene

Location Labels:

MW-30
@ 8-13 feet (ft)
(Jul-2011)
TCE: 0.5
cis-DCE: 3.2
VC: 2.2

- *Well ID*
- *Well Screen Depth Interval*
- *Sample Month/Year*
- *Trichloroethene Concentration in µg/L*
- *cis-1,2-Dichloroethene Concentration in µg/L*
- *Vinyl Chloride Concentration in µg/L*

Color	Description	TCE	cis-DCE	VC
	Not measured			
	Not detected with detection level >CUL	> 4 µg/L	> 16 µg/L	> 0.29 µg/L
	Less than CUL	< 4 µg/L	< 16 µg/L	< 0.29 µg/L
	Between the CUL and 2 times the CUL; Between the CUL and 5 times the CUL for VC	Between 4 and 8 µg/L	Between 16 and 32 µg/L	Between 0.29 and 1.45 µg/L
	Greater than 2 times the CUL; Greater than 5 times the CUL for VC	> 8 µg/L	> 32 µg/L	> 1.45 µg/L

Notes:
1. Generalized flow developed based on modeled groundwater flow presented in Figures 5.9A and 5.9B of the RI/FS.
· Tax parcels provided by King County Geographic Information Systems Center.
· Orthoimagery provided by NearMap, September 27, 2015.
· **BOLD, RED TEXT** indicates exceedance of CUL.

Abbreviations:
· CUL = Cleanup level
· DCE = Dichloroethene
· µg/L = Micrograms per liter
· RI/FS = Remedial Investigation/Feasibility Study
· TCE = Trichloroethene
· VC = Vinyl chloride

Qualifier:
U The analyte was not detected at the reported concentration.

MW-31
@ 18-23 ft.
(Jul-2011)
TCE: 0.2U
cis-DCE: 2
VC: **9**

MW-32
@ 18-23 ft.
(Jul-2011)
TCE: 0.2U
cis-DCE: 2
VC: 0.2

MW-30
@ 18-23 ft.
(Jul-2011)
TCE: 0.5U
cis-DCE: 3.2
VC: **2.2**

MW-33
@ 8-13 ft.
(Jul-2011)
TCE: 0.2U
cis-DCE: 0.7
VC: **0.3**

LOWER DUWAMISH WATERWAY
S HOLDEN ST
S KENYON ST
S KENYON ST
5TH AVE S
1ST AVE S
SR 509
OCCIDENTAL AVE S
8TH AVE S
SR 99 (W MARGINAL WAY S)
5TH AVE S
S SULLIVAN ST
S CLOVERDALE ST

N
0 200 400 800
Scale in Feet

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Figure J.3
Chlorinated Ethenes in Groundwater
Dry Season—July 2011

I:\GIS\Projects\COS-SPARK\MXD\RIFS\RIFS_2017_FEB18\Appendix J\Figure J.3 GW Chlorinated Ethenes—July 2011.mxd
2/14/2018

Legend

- Generalized Groundwater Flow[1]
- Edge of Refuse (July 2017)
- Landfill Parcel
- 1,000-foot Perimeter from Landfill Boundary

Vinyl Chloride
cis-1,2-Dichloroethene
Trichloroethene

Location Labels:

MW-25
@ 22-27 ft.
(Apr-2013)
TCE: 0.2U
cis-DCE: 0.8
VC: 1.4

- *Well ID*
- *Well Screen Depth Interval*
- *Sample Month/Year*
- *Trichloroethene Concentration in µg/L*
- *cis-1,2-Dichloroethene Concentration in µg/L*
- *Vinyl Chloride Concentration in µg/L*

Color	Description	TCE	cis-DCE	VC
	Not measured			
	Not detected with detection level >CUL	> 4 µg/L	> 16 µg/L	> 0.29 µg/L
	Less than CUL	< 4 µg/L	< 16 µg/L	< 0.29 µg/L
	Between the CUL and 2 times the CUL; Between the CUL and 5 times the CUL for VC	Between 4 and 8 µg/L	Between 16 and 32 µg/L	Between 0.29 and 1.45 µg/L
	Greater than 2 times the CUL; Greater than 5 times the CUL for VC	> 8 µg/L	> 32 µg/L	> 1.45 µg/L

Notes:
1. Generalized flow developed based on modeled groundwater flow presented in Figures 5.9A and 5.9B of the RI/FS.
· Tax parcels provided by King County Geographic Information Systems Center.
· Orthoimagery provided by NearMap, September 27, 2015.
· **BOLD, GRAY TEXT** indicates exceedance of CUL in a non-detect sample.
· **BOLD, RED TEXT** indicates exceedance of CUL.

Abbreviations:
· CUL = Cleanup level
· DCE = Dichloroethene
· µg/L = Micrograms per liter
· RI/FS = Remedial Investigation/Feasibility Study
· TCE = Trichloroethene
· VC = Vinyl chloride

Qualifiers:
U The analyte was not detected at the reported concentration.

LOWER DUWAMISH WATERWAY

S HOLDEN ST

MW-10
@ 35-45 ft.
(Apr-2013)
TCE: 0.2U
cis-DCE: 1.8
VC: 1.2

KMW-05
@ 5-20 ft.
(Apr-2013)
TCE: 4U
cis-DCE: 0.2U
VC: 0.4U

KMW-03A
@ 5-20 ft.
(Apr-2013)
TCE: 0.2U
cis-DCE: 0.2U
VC: 0.3

MW-31
@ 18-23 ft.
(Apr-2013)
TCE: 0.2U
cis-DCE: 5.2
VC: 4.7

MW-30
@ 8-13 ft.
(Apri-2013)
TCE: 0.6
cis-DCE: 0.64
VC: 0.12

KMW-08
@ 15-20 ft.
(Apr-2013)
TCE: 0.2U
cis-DCE: 0.2U
VC: 0.02U

S KENYON ST

S KENYON ST

MW-26
@ 15-25 ft.
(Apri-2013)
TCE: 0.31
cis-DCE: 0.33
VC:0.02U

MW-24
@ 35-45 ft.
(Apr-2013)
TCE: 0.2U
cis-DCE: 0.2U
VC: 0.032

MW-32
@ 18-23 ft.
(Apr-2013)
TCE: 0.2U
cis-DCE: 1.5
VC: 0.28

5TH AVE S

1ST AVE S

SR 509

MW-27
@ 10-20 ft.
(Apr-2013)
TCE: 0.2U
cis-DCE: 0.4
VC: 0.25

MW-33
@ 8-13 ft.
(Apr-2013)
TCE: 0.2U
cis-DCE: 0.2U
VC: 1.1

MW-12
@ 10-15 ft.
(Apr-2013)
TCE: 0.37
cis-DCE: 3.1
VC: 0.1

OCCIDENTAL AVE S

MW-08
@ 35.5-45.5 ft.
(Apr-2013)
TCE: 0.2U
cis-DCE: 0.2U
VC: 0.063

SR 99 (W MARGINAL WAY S)

MW-18
@ 30-40 ft.
(Apr-2013)
TCE: 0.2U
cis-DCE: 0.2U
VC: 0.072

MW-14
@ 11.5-21.5 ft.
(Apr-2013)
TCE: 0.2U
cis-DCE: 0.2U
VC: 0.02U

5TH AVE S

S SULLIVAN ST

MW-29
@ 20-30 ft.
(Apr-2013)
TCE: 0.2U
cis-DCE: 0.2U
VC: 0.02U

S CLOVERDALE ST

N

0 200 400 800
Scale in Feet

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Figure J.4
Chlorinated Ethenes in Groundwater
Wet Season—April 2013

I:\GIS\Projects\COS-SPARK\MXD\RIFS\RIFS_2017_FEB18\Appendix J\Figure J.4 GW Chlorinated Ethenes— April 2013.mxd
2/14/2018

Legend

Modeled Flow Path (Orange Denotes Start Point)

Edge of Refuse (July 2017)

Landfill Parcel

1,000-foot Perimeter from Landfill Boundary

Vinyl Chloride

cis-1,2-Dichloroethene

Trichloroethene

Location Labels:

MW-30
@ 8-13 ft.
(Jul-2013)
TCE: 0.75
cis-DCE: 1.6
VC: **0.5**

- *Well ID*
- *Well Screen Depth Interval*
- *Sample Month/Year*
- *Trichloroethene Concentration in µg/L*
- *cis-1,2-Dichloroethene Concentration in µg/L*
- *Vinyl Chloride Concentration in µg/L*

Color	Description	TCE	cis-DCE	VC
	Not measured			
	Not detected with detection level >CUL	> 4 µg/L	> 16 µg/L	> 0.29 µg/L
	Less than CUL	< 4 µg/L	< 16 µg/L	< 0.29 µg/L
	Between the CUL and 2 times the CUL; Between the CUL and 5 times the CUL for VC	Between 4 and 8 µg/L	Between 16 and 32 µg/L	Between 0.29 and 1.45 µg/L
	Greater than 2 times the CUL; Greater than 5 times the CUL for VC	> 8 µg/L	> 32 µg/L	> 1.45 µg/L

Notes:
- Tax parcels provided by King County Geographic Information Systems Center.
- Orthoimagery provided by NearMap, September 27, 2015.
- **BOLD, GRAY TEXT** indicates exceedance of CUL in a non-detect sample.
- **BOLD, RED TEXT** indicates exceedance of CUL.

Abbreviations:
- CUL = Cleanup level
- DCE = Dichloroethene
- µg/L = Micrograms per liter
- TCE = Trichloroethene
- VC = Vinyl chloride

Qualifier:
U The analyte was not detected at the reported concentration.

LOWER DUWAMISH WATERWAY

S HOLDEN ST

MW-25
@ 22-27 ft.
(Jul-2013)
TCE: 0.2U
cis-DCE: 0.7
VC: **1.1**

MW-10
@ 35-45 ft.
(Jul-2013)
TCE: 0.2U
cis-DCE: 1.6
VC: **0.84**

MW-31
@ 18-23 ft.
(Jul-2013)
TCE: 0.2U
cis-DCE: 5.2
VC: **4.3**

MW-30
@ 8-13 ft.
(Jul-2013)
TCE: 0.75
cis-DCE: 1.6
VC: **0.5**

KMW-03A
@ 5-20 ft.
(Jul-2013)
TCE: 0.2U
cis-DCE: 0.2U
VC: **0.35**

KMW-05
@ 5-20 ft.
(Jul-2013)
TCE: 4U
cis-DCE: 4U
VC: 0.4U

KMW-08
@ 15-20 ft.
(Jul-2013)
TCE: 0.2U
cis-DCE: 0.2U
VC: 0.02U

S KENYON ST

S KENYON ST

MW-33
@ 8-13 ft.
(Jul-2013)
TCE: 0.2U
cis-DCE: 0.2U
VC: **0.78**

MW-24
@ 35-45 ft.
(Jul-2013)
TCE: 0.2U
cis-DCE: 0.2U
VC: 0.02U

MW-32
@ 18-23 ft.
(Jul-2013)
TCE: 0.2U
cis-DCE: 1.7
VC: **0.3**

MW-26
@ 15-25 ft.
(Jul-2013)
TCE: 0.37JM
cis-DCE: 0.3
VC: 0.022

MW-27
@ 10-20 ft.
(Jul-2013)
TCE: 0.2U
cis-DCE: 0.41
VC: 0.14

MW-08
@ 35.5-45.5 ft.
(Jul-2013)
TCE: 0.2U
cis-DCE: 0.2U
VC: 0.063

1ST AVE S

SR 509

OCCIDENTAL AVE S

5TH AVE S

MW-12
@ 10-15 ft.
(Jul-2013)
TCE: 0.15
cis-DCE: 5.4J
VC: 0.22

MW-14
@ 11.5-21.5 ft.
(Jul-2013)
TCE: 0.02U
cis-DCE: 0.02U
VC: 0.02U

MW-29
@ 20-30 ft.
(Jul-2013)
TCE: 0.02U
cis-DCE: 0.034
VC: 0.02U

MW-18
@ 30-40 ft.
(Jul-2013)
TCE: 0.02U
cis-DCE: 0.044
VC: 0.075

5TH AVE S

SR 99 (W MARGINAL WAY S)

S SULLIVAN ST

S CLOVERDALE ST

N

0 200 400 800

Scale in Feet

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Remedial Investigation/Feasibility Study
South Park Landfill
Seattle, Washington

Figure J.5
Chlorinated Ethenes in Groundwater
Dry Season—July 2013

I:\GIS\Projects\COS-SPARK\MXD\RIFS\RIFS_2017_FEB18\Appendix J\Figure J.5 GW Chlorinated Ethenes—July 2013.mxd
2/14/2018

Legend

- Modeled Flow Path (Orange Denotes Start Point)
- Edge of Refuse (July 2017)
- Landfill Parcel
- 1,000-foot Perimeter from Landfill Boundary

Vinyl Chloride / *cis*-1,2-Dichloroethene / Trichloroethene

Location Labels:

MW-25
@ 22-27 ft.
(Mar-2014)
TCE: 0.2U
cis-DCE: 0.48
VC: **0.99**

- *Well ID*
- *Well Screen Depth Interval*
- *Sample Month/Year*
- *Trichloroethene Concentration in µg/L*
- *cis-1,2-Dichloroethene Concentration in µg/L*
- *Vinyl Chloride Concentration in µg/L*

Color	Description	TCE	cis-DCE	VC
□	Not measured			
■	Not detected with detection level >CUL	> 4 µg/L	> 16 µg/L	> 0.29 µg/L
■	Less than CUL	< 4 µg/L	< 16 µg/L	< 0.29 µg/L
■	Between the CUL and 2 times the CUL; Between the CUL and 5 times the CUL for VC	Between 4 and 8 µg/L	Between 16 and 32 µg/L	Between 0.29 and 1.45 µg/L
■	Greater than 2 times the CUL; Greater than 5 times the CUL for VC	> 8 µg/L	> 32 µg/L	> 1.45 µg/L

Notes:
- Tax parcels provided by King County Geographic Information Systems Center.
- Orthoimagery provided by NearMap, September 27, 2015.
- **BOLD, RED TEXT** indicates exceedance of CUL.

Abbreviations:
- CUL = Cleanup level
- DCE = Dichloroethene
- µg/L = Micrograms per liter
- TCE = Trichloroethene
- VC = Vinyl Chloride

Qualifier:
U The analyte was not detected at the reported concentration.

LOWER DUWAMISH WATERWAY

S HOLDEN ST

KMW-03A
@ 5-20 ft.
(Mar-2014)
TCE: 0.2U
cis-DCE: 0.2U
VC: **0.3**

KMW-05
@ 5-20 ft.
(Mar-2014)
TCE: 2U
cis-DCE: 2U
VC: 0.2U

KMW-08
@ 15-20 ft.
(Mar-2014)
TCE: 0.2U
cis-DCE: 0.2U
VC: 0.02U

MW-10
@ 35-45 ft.
(Mar-2014)
TCE: 0.2U
cis-DCE: 1.9
VC: **0.49**

MW-31
@ 18-23 ft.
(Mar-2014)
TCE: 0.2U
cis-DCE: 3.9
VC: **5.1**

MW-30
@ 8-13 ft.
(Mar-2014)
TCE: 0.49
cis-DCE: 0.89
VC: 0.2

MW-33
@ 17-22 ft.
(Mar-2014)
TCE: 0.2U
cis-DCE: 0.2U
VC: **0.44**

MW-24
@ 35-45 ft.
(Mar-2014)
TCE: 0.2U
cis-DCE: 0.2U
VC: 0.034

MW-27
@ 10-20 ft.
(Mar-2014)
TCE: 0.2U
cis-DCE: 0.2U
VC: 0.11

MW-08
@ 35.5-45.5 ft.
(Mar-2014)
TCE: 0.2U
cis-DCE: 0.2U
VC: 0.08

MW-32
@ 17-22 ft.
(Mar-2014)
TCE: 0.2U
cis-DCE: 1.5
VC: **0.36**

MW-26
@ 15-25 ft.
(Mar-2014)
TCE: 0.42
cis-DCE: 0.43
VC: 0.053

MW-12
@ 10-15 ft.
(Mar-2014)
TCE: 0.3
cis-DCE: 4.5
VC: 0.22

MW-14
@ 11.5-21.5 ft.
(Mar-2014)
TCE: 0.2U
cis-DCE: 0.2U
VC: 0.02U

MW-29
@ 20-30 ft.
(Mar-2014)
TCE: 0.2U
cis-DCE: 0.2U
VC: 0.02U

MW-18
@ 30-40 ft.
(Mar-2014)
TCE: 0.2U
cis-DCE: 0.2U
VC: 0.02U

S KENYON ST
S KENYON ST
1ST AVE S
SR 509
OCCIDENTAL AVE S
5TH AVE S
5TH AVE S
S SULLIVAN ST
S CLOVERDALE ST
SR 99 (W MARGINAL WAY S)

N

0 200 400 800
Scale in Feet

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Remedial Investigation/Feasibility Study
South Park Landfill
Seattle, Washington

Figure J.6
Chlorinated Ethenes in Groundwater
Wet Season—March 2014

I:\GIS\Projects\COS-SPARK\MXD\RIFS\RIFS_2017_FEB18\Appendix J\Figure J.6 GW Chlorinated Ethenes—March 2014.mxd
2/14/2018

Legend

- Generalized Groundwater Flow[1]
- Edge of Refuse (July 2017)
- Landfill Parcel
- 1,000-foot Perimeter from Landfill Boundary

Total Arsenic

Dissolved Arsenic

Location Labels:

KMW-07
@ 5-20 feet (ft)
(Jan-2011)
As(T): 5.7
As(D): 4.2
pH: 6.72
Turb: 5.91

- *Well ID*
- *Well Screen Depth Interval*
- *Sample Month/Year*
- *Total Arsenic Concentration in µg/L*
- *Dissolved Arsenic Concentration in µg/L*
- *pH*
- *Turbidity in Nephelometric Turbidity Units (NTU)*

Color	Description	Arsenic
□	Not measured	
■	Less than background-based CUL	< 5 µg/L
■	Between the background-based CUL and 2 times the CUL	Between 5 and 10 µg/L
■	Greater than 2 times the CUL	> 10 µg/L

Notes:
1. Generalized flow developed based on modeled groundwater flow presented in Figures 5.9A and 5.9B of the RI/FS.
· Tax parcels provided by King County Geographic Information Systems Center.
· Orthoimagery provided by NearMap, September 27, 2015.
· **BOLD, RED TEXT** indicates exceedance of CUL.
* Because of elevated turbidity, total arsenic was analyzed after the sample was centrifuged at the laboratory.

Abbreviations:
· As = Arsenic
· CUL = Cleanup level
· µg/L = Micrograms per liter
· RI/FS = Remedial Investigation/Feasibility Study
· Turb = Turbidity

Qualifier:
U The analyte was not detected at the reported concentration.

LOWER DUWAMISH WATERWAY

S HOLDEN ST

S KENYON ST

S KENYON ST

S SULLIVAN ST

S CLOVERDALE ST

1ST AVE S

SR 509

OCCIDENTAL AVE S

5TH AVE S

5TH AVE S

SR 99 (W MARGINAL WAY S)

MW-10
@ 35-45 ft.
(Jan-2011)
As(T): 0.3
As(D): 0.3
pH: 6.8
Turb: 13.8

FB-14
@ 8-13 ft.
(Mar-2011)
As(T): 0.4
As(D): 0.3
pH: 6.53
Turb: 3.78

KMW-05
@ 5-20 ft.
(Jan-2011)
As(T): **1,230**
As(D): **1,210**
pH: 13.2
Turb: 5.85

KMW-03A
@ 5-20 ft.
(Jan-2011)
As(T): **8.7**
As(D): **8.0**
pH: 7.78
Turb: 9.01

MW-25
@ 22-27 ft.
(Jan-2011)
As(T): 0.6
As(D): 0.6
pH: 6.54
Turb: 63

KMW-06
@ 5-20 ft.
(Jan-2011)
As(T): 1.3
As(D): 1.5
pH: 7.46
Turb: 3.36

FB-14
@ 17-22 ft.
(Mar-2011)
As(T): 2.0
As(D): 0.4
pH: 6.42
Turb: 49.2

KMW-07
@ 5-20 ft.
(Jan-2011)
As(T): **5.7**
As(D): 4.2
pH: 6.72
Turb: 5.91

KMW-08
@ 15-20 ft.
(Jan-2011)
As(T): **5.1**
As(D): 4.2
pH: 6.57
Turb: 3.59

KMW-04
@ 5-20 ft.
(Jan-2011)
As(T): 2.6
As(D): 2.7
pH: 7.38
Turb: 2.61

FB-14
@ 36-40 ft.
(Mar-2011)
As(T): 0.5*
As(D): 0.5
pH: 6.62
Turb: 528

MW-24
@ 35-45 ft.
(Jan-2011)
As(T): 0.3
As(D): 0.3
pH: 6.62
Turb: --

FB-07
@ 5-10 ft.
(Mar-2011)
As(T): 3.4*
As(D): 2.4
pH: 6.99
Turb: 187

FB-08
@ 8-13 ft.
(Mar-2011)
As(T): 0.9*
As(D): 1.5
pH: 7.08
Turb: 351

KMW-01A
@ 19-29 ft.
(Jan-2011)
As(T): 0.8
As(D): 0.6
pH: 6.93
Turb: 13.1

MW-26
@ 15-25 ft.
(Jan-2011)
As(T): 0.9
As(D): 0.7
pH: 6.05
Turb: --

MW-27
@ 10-20 ft.
(Jan-2011)
As(T): **27.2**
As(D): **13.9**
pH: 6.54
Turb: 13.9

FB-09
@ 9-14 ft.
(Mar-2011)
As(T): 0.9*
As(D): 1.9
pH: 7.71
Turb: 716

FB-10
@ 9-14 ft.
(Mar-2011)
As(T): 2.6*
As(D): 2.8
pH: 6.93
Turb: 78.1

MW-12
@ 10-15 ft.
(Jan-2011)
As(T): **6.4**
As(D): 3.2
pH: 6.58
Turb: 59.6

FB-13
@ 15-20 ft.
(Mar-2011)
As(T): 2.0
As(D): 1.6
pH: 6.86
Turb: 54.2

MW-08
@ 35.5-45.5 ft.
(Jan-2011)
As(T): 0.6
As(D): 0.6
pH: 6.68
Turb: 58.2

MW-03
@ 3-13 ft.
(Jan-2011)
As(T): 1.0
As(D): 1.0
pH: 7.12
Turb: 6.03

FB-11
@ 10-15 ft.
(Mar-2011)
As(T): 1.5*
As(D): 2.6
pH: 11.9
Turb: 402

MW-14
@ 11.5-21.5 ft.
(Jan-2011)
As(T): 0.3
As(D): 0.3
pH: 6.79
Turb: 9.15

FB-12
@ 10-15 ft.
(Mar-2011)
As(T): 2.3
As(D): 2.2
pH: 6.5
Turb: 19.3

MW-18
@ 30-40 ft.
(Jan-2011)
As(T): 0.3
As(D): 0.2
pH: 6.8
Turb: 6.71

MW-01
@ 3-13 ft.
(Jan-2011)
As(T): 3.5
As(D): 3.2
pH: 6.95
Turb: 4.39

MW-29
@ 20-30 ft.
(Jan-2011)
As(T): 0.9
As(D): 0.9
pH: 6.67
Turb: 11.3

MW-04
@ 40-50 ft.
(Jan-2011)
As(T): 0.2U
As(D): 0.2U
pH: 8.09
Turb: 1.44

N

0 200 400 800

Scale in Feet

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Remedial Investigation/Feasibility Study
South Park Landfill
Seattle, Washington

Figure J.7
Total and Dissolved Arsenic
in Groundwater—January–March 2011

I:\GIS\Projects\COS-SPARK\MXD\RIFS\RIFS_2017_FEB18\Appendix J\Figure J.7 Total and Dissolved Arsenic in Groundwater January-March 2011.mxd
2/14/2018

Legend

- Edge of Refuse (July 2017)
- Landfill Parcel
- 1,000-foot Perimeter from Landfill Boundary

Iron / Manganese

Location Labels:

MW-32
@ 19-34 feet (ft)
A-Zone
(Jan-2011)
Fe (T/D): 27/26
Mn (T/D): **2.5/2.5**

- *Well ID*
- *Well Screen Depth Interval*
- *Aquifer Zone*
- *Sample Month/Year*
- *Total and Dissolved Iron Concentration in mg/L*
- *Total and Dissolved Manganese Concentration in mg/L*

Color	Description	Total Fe	Total Mn
□	Not measured		
■	Less than CUL		
	A-Zone	≤ 27 mg/L	≤ 2.2 mg/L
	B-Zone	≤ 31 mg/L	≤ 2.2 mg/L
■	Between the CUL and two times the criteria		
	A-Zone	Between 27 and 54 mg/L	Between 2.2 and 4.4 mg/L
	B-Zone	Between 31 and 62 mg/L	Between 2.2 and 4.4 mg/L
■	Greater than 2 times the CUL		
	A-Zone	> 54 mg/L	> 4.4 mg/L
	B-Zone	> 62 mg/L	> 4.4 mg/L

Notes:
· Tax parcels provided by King County Geographic Information Systems Center.
· Orthoimagery provided by NearMap, September 27, 2015.
· **BOLD TEXT** indicates exceedance of criteria.

Abbreviations:
· CUL = Cleanup level
· ft = Feet
· mg/L = Milligrams per liter

Qualifier:
U The analyte was not detected at the reported concentration.

LOWER DUWAMISH WATERWAY

S HOLDEN ST

KMW-05
@ 5-20 feet(ft)
A-Zone
(Jan-2011)
Fe (T/D): --/--
Mn (T/D): 0.01/0.02

KMW-06
@ 5-20 feet(ft)
A-Zone
(Jan-2011)
Fe (T/D): --/--
Mn (T/D): 0.03/0.03

KMW-03A
@ 9-24 feet(ft)
A-Zone
(Jan-2011)
Fe (T/D): --/--
Mn (T/D): 0.048/0.047

MW-25
@ 22-27 feet(ft)
A-Zone
(Jan-2011)
Fe (T/D): **32/29**
Mn (T/D): **3.1/3.1**

SR 509

MW-10
@ 35-45 feet(ft)
B-Zone
(Jan-2011)
Fe (T/D): **42/40**
Mn (T/D): **3.3/3.3**

S KENYON ST

KMW-07
@ 5-20 feet(ft)
A-Zone
(Jan-2011)
Fe (T/D): --/--
Mn (T/D): 0.26/0.2

MW-26
@ 15-25 feet(ft)
A-Zone
(Jan-2011)
Fe (T/D): 7.1/6
Mn (T/D): 0.17/0.16

S KENYON ST

5TH AVE S

KMW-08
@ 5-20 feet(ft)
A-Zone
(Jan-2011)
Fe (T/D): --/--
Mn (T/D): 0.36/0.36

KMW-04
@ 5-20 feet(ft)
A-Zone
(Jul-2013)
Fe (T/D): --/--
Mn (T/D): 0.069/0.08

MW-24
@ 35-45 feet(ft)
B-Zone
(Jan-2011)
Fe (T/D): 24/23
Mn (T/D): 1.6/1.6

KMW-01A
@ 5-21 feet(ft)
A-Zone
(Jan-2011)
Fe (T/D): --/--
Mn (T/D): 1.6/1.6

MW-08
@ 35.6-45.6 feet(ft)
B-Zone
(Jan-2011)
Fe (T/D): 18/15
Mn (T/D): 1.1/1.2

MW-12
@ 10-15 feet(ft)
A-Zone
(Jan-2011)
Fe (T/D): --/--
Mn (T/D): 0.71/0.68

1ST AVE S

OCCIDENTAL AVE S

MW-27
@ 10-20 feet(ft)
A-Zone
(Jan-2011)
Fe (T/D): 16/6.4
Mn (T/D): 0.58/0.39

MW-03
@ 2-13 feet(ft)
A-Zone
(Jan-2011)
Fe (T/D): --/--
Mn (T/D): 0.0071/0.0046

SR 99 (W MARGINAL WAY S)

MW-14
@ 11.5-21.5 feet(ft)
A-Zone
(Jan-2011)
Fe (T/D): --/--
Mn (T/D): 0.37/0.37

MW-18
@ 30-40 feet(ft)
B-Zone
(Jan-2011)
Fe (T/D): --/--
Mn (T/D): 0.66/0.66

S SULLIVAN ST

MW-01
@ 3-13 feet(ft)
A-Zone
(Jan-2011)
Fe (T/D): --/--
Mn (T/D): 0.49/0.49

MW-29
@ 20-30 feet(ft)
A-Zone
(Jan-2011)
Fe (T/D): --/--
Mn (T/D): 1.1/1.1

5TH AVE S

S CLOVERDALE ST

MW-04
@ 40.6-50.6 feet(ft)
B-Zone
(Jan-2011)
Fe (T/D): --/--
Mn (T/D): 0.009/0.0097

N

0 200 400 800
Scale in Feet

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Remedial Investigation/Feasibility Study
South Park Landfill
Seattle, Washington

Figure J.8
Iron and Manganese in Groundwater
Wet Season—January 2011

I:\GIS\Projects\COS-SPARK\MXD\RIFS\RIFS_2017_FEB18\Appendix J\Figure J.8 GW Iron and Mang—Jan 2011.mxd
2/14/2018

Legend

- Edge of Refuse (July 2017)
- Landfill Parcel
- 1,000-foot Perimeter from Landfill Boundary

Iron / Manganese

Location Labels:

MW-32
@ 19-34 feet (ft)
A-Zone
(Apr-2013)
Fe (T/D): 23/24
Mn (T/D): 2.2/2.3

- *Well ID*
- *Well Screen Depth Interval*
- *Aquifer Zone*
- *Sample Month/Year*
- *Total and Dissolved Iron Concentration in mg/L*
- *Total and Dissolved Manganese Concentration in mg/L*

Color	Description	Total Fe	Total Mn
□	Not measured		
■	Less than CUL		
	A-Zone	≤ 27 mg/L	≤ 2.2 mg/L
	B-Zone	≤ 31 mg/L	≤ 2.2 mg/L
■	Between the CUL and two times the criteria		
	A-Zone	Between 27 and 54 mg/L	Between 2.2 and 4.4 mg/L
	B-Zone	Between 31 and 62 mg/L	Between 2.2 and 4.4 mg/L
■	Greater than 2 times the CUL		
	A-Zone	> 54 mg/L	> 4.4 mg/L
	B-Zone	> 62 mg/L	> 4.4 mg/L

Notes:
· Tax parcels provided by King County Geographic Information Systems Center.
· Orthoimagery provided by NearMap, September 27, 2015.
· **BOLD TEXT** indicates exceedance of criteria.

Abbreviations:
· CUL = Cleanup level
· ft = Feet
· mg/L = Milligrams per liter

Qualifier:
U The analyte was not detected at the reported concentration.

LOWER DUWAMISH WATERWAY

KMW-03A
@ 9-24 feet (ft)
A-Zone
(Apr-2013)
Fe (T/D): 10/10
Mn (T/D): 0.05/0.048

MW-25
@ 22-27 feet (ft)
A-Zone
(Apr-2013)
Fe (T/D): 7.3/6.7
Mn (T/D): 0.54/0.53

MW-31
@ 18-23 feet (ft)
A-Zone
(Apr-2013)
Fe (T/D): 18/12
Mn (T/D): 0.51/0.44

MW-10
@ 35-45 feet (ft)
B-Zone
(Apr-2013)
Fe (T/D): 18/19
Mn (T/D): 1.1/1.1

MW-30
@ 8-13 feet (ft)
A-Zone
(Apr-2013)
Fe (T/D): 2.3/2.2
Mn (T/D): 0.08/0.079

KMW-05
@ 5-20 feet (ft)
A-Zone
(Apr-2013)
Fe (T/D): 5.7/5
Mn (T/D): 0.01 U/0.01 U

KMW-08
@ 5-20 feet (ft)
A-Zone
(Apr-2013)
Fe (T/D): 0.15/0.07
Mn (T/D): 0.24/0.24

MW-32
@ 19-24 feet (ft)
A-Zone
(Apr-2013)
Fe (T/D): 23/24
Mn (T/D): 2.2/2.3

MW-26
@ 15-25 feet (ft)
A-Zone
(Apr-2013)
Fe (T/D): 8.3/5.6
Mn (T/D): 0.14/0.13

MW-12
@ 10-15 feet (ft)
A-Zone
(Apr-2013)
Fe (T/D): 11/8
Mn (T/D): 0.77/0.74

MW-24
@ 35-45 feet (ft)
B-Zone
(Apr-2013)
Fe (T/D): 30/26
Mn (T/D): 1.8/1.6

MW-33
@ 20-25 feet (ft)
A-Zone
(Apr-2013)
Fe (T/D): 18/18
Mn (T/D): 1.8/1.8

MW-08
@ 35.6-45.6 feet (ft)
B-Zone
(Apr-2013)
Fe (T/D): 19/19
Mn (T/D): 1.2/1.2

MW-27
@ 10-20 feet (ft)
A-Zone
(Apr-2013)
Fe (T/D): 22/13
Mn (T/D): 0.42/0.4

MW-14
@ 11.5-21.5 feet (ft)
A-Zone
(Apr-2013)
Fe (T/D): 4.8/4.3
Mn (T/D): 0.59/0.58

MW-18
@ 30-40 feet (ft)
B-Zone
(Apr-2013)
Fe (T/D): **60/60**
Mn (T/D): 1.6/1.6

MW-29
@ 20-30 feet (ft)
A-Zone
(Apr-2013)
Fe (T/D): 17/16
Mn (T/D): 1.4/1.3

S HOLDEN ST
SR 509
S KENYON ST
5TH AVE S
1ST AVE S
OCCIDENTAL AVE S
SR 99 (W MARGINAL WAY S)
S SULLIVAN ST
S CLOVERDALE ST

N
0 200 400 800
Scale in Feet

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Remedial Investigation/Feasibility Study
South Park Landfill
Seattle, Washington

Figure J.9
Iron and Manganese in Groundwater
Wet Season—April 2013

I:\GIS\Projects\COS-SPARK\MXD\RIFS\RIFS_2017_FEB18\Appendix J\Figure J.9 GW Iron and Mang—April 2013.mxd
2/14/2018

Legend

Edge of Refuse (July 2017)

Landfill Parcel

1,000-foot Perimeter from Landfill Boundary

Iron

Manganese

Location Labels:

MW-32
@ 19-34 feet (ft)
A-Zone
(Jul-2013)
Fe (T/D): 27/26
Mn (T/D): **2.5/2.5**

- *Well ID*
- *Well Screen Depth Interval*
- *Aquifer Zone*
- *Sample Month/Year*
- *Total and Dissolved Iron Concentration in mg/L*
- *Total and Dissolved Manganese Concentration in mg/L*

Color	Description	Total Fe	Total Mn
□	Not measured		
■	Less than CUL		
	A-Zone	≤ 27 mg/L	≤ 2.2 mg/L
	B-Zone	≤ 31 mg/L	≤ 2.2 mg/L
■	Between the CUL and two times the criteria		
	A-Zone	Between 27 and 54 mg/L	Between 2.2 and 4.4 mg/L
	B-Zone	Between 31 and 62 mg/L	Between 2.2 and 4.4 mg/L
■	Greater than 2 times the CUL		
	A-Zone	> 54 mg/L	> 4.4 mg/L
	B-Zone	> 62 mg/L	> 4.4 mg/L

Notes:
· Tax parcels provided by King County Geographic Information Systems Center.
· Orthoimagery provided by NearMap, September 27, 2015.
· **BOLD TEXT** indicates exceedance of criteria.

Abbreviations:
· CUL = Cleanup level
· ft = Feet
· mg/L = Milligrams per liter

Qualifier:
U The analyte was not detected at the reported concentration.

LOWER DUWAMISH WATERWAY

S HOLDEN ST

MW-10
@ 35-45 feet (ft)
B-Zone
(Jul-2013)
Fe (T/D): 23/22
Mn (T/D):1.3/1.3

MW-25
@ 22-27 feet (ft)
A-Zone
(Jul-2013)
Fe (T/D): 12/11
Mn (T/D): 0.86/0.84

MW-31
@ 18-23 feet (ft)
A-Zone
(Jul-2013)
Fe (T/D): 8.3/7.9
Mn (T/D): 0.26/0.26

KMW-05
@ 5-20 feet (ft)
A-Zone
(Jul-2013)
Fe (T/D): 5.9/5.2
Mn (T/D): 0.01 U/0.01 U

KMW-03A
@ 9-24 feet (ft)
A-Zone
(Jul-2013)
Fe (T/D): 11/10
Mn (T/D): 0.04/0.036

SR 509

S KENYON ST

KMW-08
@ 5-20 feet (ft)
A-Zone
(Jul-2013)
Fe (T/D): 0.31/0.16
Mn (T/D): 0.17/0.17

MW-30
@ 8-13 feet (ft)
A-Zone
(Jul-2013)
Fe (T/D): 4.5/4.6
Mn (T/D): 0.11/0.11

S KENYON ST

MW-24
@ 35-45 feet (ft)
B-Zone
(Jul-2013)
Fe (T/D): 14/15
Mn (T/D): 1.1/1.2

5TH AVE S

MW-12
@ 10-15 feet (ft)
A-Zone
(Jul-2013)
Fe (T/D): 18/8.5
Mn (T/D): 0.5/0.5

MW-26
@ 15-25 feet (ft)
A-Zone
(Jul-2013)
Fe (T/D): 10/7.1
Mn (T/D): 0.17/0.16

MW-33
@ 20-25 feet (ft)
A-Zone
(Jul-2013)
Fe (T/D): 20/19
Mn (T/D): 1.9/1.9

1ST AVE S

OCCIDENTAL AVE S

MW-08
@ 35.6-45.6 feet (ft)
B-Zone
(Jul-2013)
Fe (T/D): 18/18
Mn (T/D): 1/1.1

MW-14
@ 11.5-21.5 feet (ft)
A-Zone
(Jul-2013)
Fe (T/D): 4.6/4
Mn (T/D): 0.48/0.49

MW-27
@ 10-20 feet (ft)
A-Zone
(Jul-2013)
Fe (T/D): 20/18
Mn (T/D): 0.53/0.51

MW-18
@ 30-40 feet (ft)
B-Zone
(Jul-2013)
Fe (T/D): **49/44**
Mn (T/D): 1.8/1.8

SR 99 (W MARGINAL WAY S)

MW-29
@ 20-30 feet (ft)
A-Zone
(Jul-2013)
Fe (T/D): 18/18
Mn (T/D): 1.2/1.3

5TH AVE S

S SULLIVAN ST

S CLOVERDALE ST

N

0 200 400 800

Scale in Feet

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Seattle, Washington

Figure J.10
Iron and Manganese in Groundwater
Dry Season—July 2013

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2/14/2018

Legend

Edge of Refuse (July 2017)

Landfill Parcel

1,000-foot Perimeter from Landfill Boundary

Iron

Manganese

Location Labels:

MW-32
@ 19-34 feet (ft)
A-Zone
(Mar-2014)
Fe (T/D): **29/28.6**
Mn (T/D): **2.9/2.87**

- *Well ID*
- *Well Screen Depth Interval*
- *Aquifer Zone*
- *Sample Month/Year*
- *Total and Dissolved Iron Concentration in mg/L*
- *Total and Dissolved Manganese Concentration in mg/L*

Color	Description	Total Fe	Total Mn
□	Not measured		
■	Less than CUL		
	A-Zone	≤ 27 mg/L	≤ 2.2 mg/L
	B-Zone	≤ 31 mg/L	≤ 2.2 mg/L
■	Between the CUL and two times the criteria		
	A-Zone	Between 27 and 54 mg/L	Between 2.2 and 4.4 mg/L
	B-Zone	Between 31 and 62 mg/L	Between 2.2 and 4.4 mg/L
■	Greater than 2 times the CUL		
	A-Zone	> 54 mg/L	> 4.4 mg/L
	B-Zone	> 62 mg/L	> 4.4 mg/L

Notes:
· Tax parcels provided by King County Geographic Information Systems Center.
· Orthoimagery provided by NearMap, September 27, 2015.
· **BOLD TEXT** indicates exceedance of criteria.

Abbreviations:
· CUL = Cleanup level
· ft = Feet
· mg/L = Milligrams per liter

Qualifier:
U The analyte was not detected at the reported concentration.

LOWER DUWAMISH WATERWAY

S HOLDEN ST

KMW-03A
@ 9-24 feet (ft)
A-Zone
(Mar-2014)
Fe (T/D): 11/11
Mn (T/D): 0.06/0.058

MW-10
@ 35-45 feet (ft)
B-Zone
(Mar-2014)
Fe (T/D): 30/30
Mn (T/D): 2/2.1

MW-25
@ 22-27 feet (ft)
A-Zone
(Mar-2014)
Fe (T/D): 12/12
Mn (T/D): 0.92/0.94

MW-32
@ 19-24 feet (ft)
A-Zone
(Mar-2014)
Fe (T/D): **29/29**
Mn (T/D): **2.9/2.9**

MW-31
@ 18-23 feet (ft)
A-Zone
(Mar-2014)
Fe (T/D): 8.3/7.5
Mn (T/D): 0.3/0.31

KMW-05
@ 5-20 feet (ft)
A-Zone
(Mar-2014)
Fe (T/D): 6.9/6.5
Mn (T/D): 0.02/0.02

SR 509

S KENYON ST

MW-30
@ 8-13 feet (ft)
A-Zone
(Mar-2014)
Fe (T/D): 3.1/2.8
Mn (T/D): 0.09/0.09

S KENYON ST

KMW-08
@ 5-20 feet (ft)
A-Zone
(Mar-2014)
Fe (T/D): 0.31/0.21
Mn (T/D): 0.31/0.3

5TH AVE S

MW-26
@ 15-25 feet (ft)
A-Zone
(Mar-2014)
Fe (T/D): 14/6.2
Mn (T/D): 0.15/0.15

MW-24
@ 35-45 feet (ft)
B-Zone
(Mar-2014)
Fe (T/D): 26/25
Mn (T/D): 1.5/1.5

MW-12
@ 10-15 feet (ft)
A-Zone
(Mar-2014)
Fe (T/D): 11/9
Mn (T/D): 0.77/0.72

1ST AVE S

OCCIDENTAL AVE S

MW-33
@ 20-25 feet (ft)
A-Zone
(Mar-2014)
Fe (T/D): 19/19
Mn (T/D): 2/2

MW-08
@ 35.6-45.6 feet (ft)
B-Zone
(Mar-2014)
Fe (T/D): 21/16
Mn (T/D): 1.1/1.1

MW-27
@ 10-20 feet (ft)
A-Zone
(Mar-2014)
Fe (T/D): 4/1.7
Mn (T/D): 0.18/0.17

MW-14
@ 11.5-21.5 feet (ft)
A-Zone
(Mar-2014)
Fe (T/D): 5.8/4.6
Mn (T/D): 0.67/0.66

MW-18
@ 30-40 feet (ft)
B-Zone
(Mar-2014)
Fe (T/D): **33/35**
Mn (T/D): 1.2/1.2

SR 99 (W MARGINAL WAY S)

MW-29
@ 20-30 feet (ft)
A-Zone
(Mar-2014)
Fe (T/D): 27/26
Mn (T/D): 2.1/2

5TH AVE S

S SULLIVAN ST

S CLOVERDALE ST

N

0 200 400 800

Scale in Feet

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Seattle, Washington

Figure J.11
Iron and Manganese in Groundwater
Wet Season—March 2014

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2/14/2018

Legend

Well Locations:

- A-Zone Monitoring Well
- Perched Zone & A-Zone Monitoring Well
- B-Zone Monitoring Well
- Perched Zone Monitoring Well

- Edge of Refuse (July 2017)
- Landfill Parcel
- 1,000-foot Perimeter from Landfill Boundary

Well Labels:

MW-10
@ 35-45 feet (ft) ← *Well ID*
DO: 0.65 ← *Well Screen Depth Interval*
ORP: ***-121.9*** ← *Dissolved Oxygen in mg/L*
Nit: ***0.05U*** ← *Oxidation Reduction Potential in mV*
Sulf: 176 ← *Nitrate as Nitrogen in mg/L*
Meth: 51 ← *Sulfate in mg/L*
Eth: ***18.2*** ← *Methane in µg/L*
Ethane in µg/L

· ***BLUE ITALICS*** indicate favorable conditions for natural attenuation of hydrocarbon fuels or chlorinated solvents (values from USEPA/600/R-98/128 1998):
- Dissolved Oxygen: less than 0.5 mg/L
- Oxidation Reduction Potential: less than 50 mV
- Nitrate as Nitrogen: less than 1 mg/L
- Sulfate: less than 20 mg/L
- Methane: greater than 500 µg/L
- Ethane: greater than 10 µg/L

Notes:
· Tax parcels provided by King County Geographic Information Systems Center.
· Orthoimagery provided by NearMap, September 27, 2015.
· Only well locations sampled for natural attenuation parameters are illustrated.
· Attenuation parameters are from March 2014 sampling event except methane and ethane, which were not analyzed for after 2011.

Abbreviations:
· µg/L = Micrograms per liter
· mg/L = Milligrams per liter
· mV = Millivolts

Qualifier:
· U The analyte was not detected at the reported concentration.

LOWER DUWAMISH WATERWAY

S HOLDEN ST

KMW-03A
@ 5-20 ft.
DO: ***0.37***
ORP: ***-145.9***
Nit: ***0.1***
Sulf: ***0.4***
Meth: --
Eth: --

MW-10
@ 35-45 ft.
DO: 0.16
ORP: ***-112.6***
Nit: ***0.01U***
Sulf: 109
Meth: 51
Eth: ***18.2***

MW-25
@ 22-27 ft.
DO: ***0.33***
ORP: ***-21.9***
Nit: ***0.1***
Sulf: ***7.7***
Meth: ***3,490***
Eth: ***57.3***

MW-31
@ 18-23 ft.
DO: ***0.19***
ORP: ***-21.9***
Nit: ***0.1***
Sulf: ***0.4***
Meth: --
Eth: --

MW-30
@ 8-13 ft.
DO: 0.52
ORP: 60.8
Nit: ***0.2***
Sulf: 20.6
Meth: --
Eth: --

KMW-05
@ 5-20 ft.
DO: ***0.24***
ORP: ***-145.4***
Nit: 2U
Sulf: 1,000
Meth: --
Eth: --

S KENYON ST

S KENYON ST

MW-33
@ 8-13 ft.
DO: ***0.44***
ORP: ***-23.5***
Nit: ***0.1U***
Sulf: ***0.1U***
Meth: --
Eth: --

MW-26
@ 15-25 ft.
DO: ***0.42***
ORP: ***32.4***
Nit: ***0.1***
Sulf: ***8.9***
Meth: 11.6
Eth: 1.2U

KMW-08
@ 15-20 ft.
DO: 0.58
ORP: 130.3
Nit: ***0.1U***
Sulf: 27.9
Meth: --
Eth: --

1ST AVE S

SR 509

MW-32
@ 18-23 ft.
DO: 0.56
ORP: *-20.8*
Nit: *0.1*
Sulf: 71.3
Meth: --
Eth: --

5TH AVE S

MW-24
@ 35-45 ft.
DO: ***0.27***
ORP: ***-77.3***
Nit: ***0.01***
Sulf: ***0.5***
Meth: ***7,320***
Eth: ***12.1***

MW-08
@ 35.5-45.5 ft.
DO: ***0.15***
ORP: ***-72.0***
Nit: ***0.01***
Sulf: ***2.6***
Meth: ***1,690***
Eth: 1.2U

MW-12
@ 10-15 ft.
DO: ***0.45***
ORP: 70.1
Nit: ***0.1***
Sulf: ***13.2***
Meth: --
Eth: --

OCCIDENTAL AVE S

MW-27
@ 10-20 ft.
DO: 0.85
ORP: ***25.4***
Nit: ***0.2***
Sulf: ***6.9***
Meth: 494
Eth: 1.2U

MW-14
@ 11.5-21.5 ft.
DO: ***0.36***
ORP: ***24.2***
Nit: ***0.1***
Sulf: ***2***
Meth: --
Eth: --

MW-18
@ 30-40 ft.
DO: ***0.43***
ORP: ***-76.2***
Nit: ***0.1U***
Sulf: ***0.1U***
Meth: --
Eth: --

SR 99 (W MARGINAL WAY S)

MW-29
@ 20-30 ft.
DO: ***0.31***
ORP: ***24.7***
Nit: ***0.1U***
Sulf: 286
Meth: --
Eth: --

5TH AVE S

S SULLIVAN ST

S CLOVERDALE ST

N

0 200 400 800
Scale in Feet

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Seattle, Washington

Figure J.12
Natural Attenuation Parameters in Groundwater—March 2014

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2/14/2018

South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix J
Groundwater Quality Trend Plots, Maps, and Data

Tables

Table J.1
Results of January and July 2011 Groundwater Sampling Events

		Location	KMW-01A	KMW-03A	KMW-04	KMW-05	KMW-06	KMW-07	KMW-08	MW-01	MW-03	MW-04	MW-08	MW-10
		Sample ID	KMW-01A-012811	KMW-03A-012711	KMW-04-012811	KMW-05-012711	KMW-06-012711	KMW-07-012711	KMW-08-012811	MW-01-012711	MW-03-012711	MW-04-012611	MW-08-012711	MW-10-012811
		Sample Date	1/28/2011	1/27/2011	1/28/2011	1/27/2011	1/27/2011	1/27/2011	1/28/2011	1/27/2011	1/27/2011	1/26/2011	1/27/2011	1/28/2011
		Depth Range	19–29 ft	5–20 ft	5–20 ft	5–20 ft	5–20 ft	5–20 ft	15–20 ft	3–13 ft	3–13 ft	40–50 ft	35.5–45.5 ft	35–45 ft
Detected Chemicals	**Unit**													
Volatile Organic Compounds (USEPA 8260C/8260-SIM)														
Benzene	µg/L	0.2 U	0.2 U	0.2 U	**5.6**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
cis-1,2-Dichloroethene	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3 U	**1.1**	
trans-1,2-Dichloroethene	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
Trichloroethene	µg/L	0.2 U	0.2 U	0.2 U	4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
Vinyl chloride	µg/L	**0.091**	**0.39**	**0.22**	0.2 U	**0.31**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	**0.15**	**0.26**	
Semivolatile Organic Compounds (USEPA 8270D/8270-SIM/8041)														
Benzo(a)pyrene	µg/L	0.01 U	0.01 U	0.01 U	**0.31**	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Naphthalene	µg/L	0.013 UB	**0.3**	0.016 UB	**140**	**0.12**	**0.079** JB	0.015 UB	0.035 UB	0.058 UB	0.01 U	0.01 U	0.01 U	
Pentachlorophenol	µg/L	0.25 U	0.25 U	0.25 U	**5.9** J	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
Pentachlorophenol	µg/L	2.5 U	2.5 U	2.5 U	**4.0**	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	
Petroleum Hydrocarbons (NWTPH)														
Diesel-range Hydrocarbons	mg/L	0.1 U	0.1 U	0.1 U	**0.48** J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
Gasoline-range Hydrocarbons	mg/L	0.25 U	0.25 U	0.25 U	**1.5** J	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
Motor Oil-range Hydrocarbons	mg/L	0.2 U	0.2 U	0.2 U	**2.5** J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
Metals (USEPA 200.8)														
Arsenic (Dissolved)	mg/L	**0.0006**	**0.008**	**0.0027**	**1.21**	**0.0015**	**0.0042**	**0.0042**	**0.0032**	**0.001**	**0.0002 U**	**0.0006**	**0.0003**	
Arsenic (Total)	mg/L	**0.0008**	**0.0087**	**0.0026**	**1.23**	**0.0013**	**0.0057**	**0.0051**	**0.0035**	**0.001**	**0.0002 U**	**0.0006**	**0.0003**	
Chromium (Dissolved)	mg/L	0.0005 U	0.0005 U	0.001 U	**0.15**	0.0005 U	0.0005 U	0.001 U	0.0005 U	0.0005 U	0.0005 U	0.001 U	0.001 U	
Chromium (Total)	mg/L	**0.0007**	0.0005 U	0.0005 U	**0.15**	0.0005 U	0.0005 U	0.001 U	0.0005 U	0.0005 U	0.0005 U	0.002 U	0.002 U	
Iron (Dissolved)	mg/L	--	--	--		--	--	--	--	--	--	**15.3**	**39.7**	
Iron (Total)	mg/L	--	--	--		--	--	--	--	--	--	**18**	**41.9**	
Lead (Dissolved)	mg/L	0.001 U	0.001 U	0.001 U	**0.132**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Lead (Total)	mg/L	**0.023**	**0.005**	0.001 U	**0.166**	**0.003**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Manganese (Dissolved)	mg/L	**1.55**	**0.047**	**0.080**	0.02 U	**0.030**	**0.20**	**0.36**	**0.49**	**0.005**	**0.010**	**1.2**	**3.3**	
Manganese (Total)	mg/L	**1.55**	**0.048**	**0.069**	**0.01**	**0.030**	**0.25**	**0.36**	**0.49**	**0.007**	**0.009**	**1.1**	**3.3**	
Mercury (Dissolved)	mg/L	0.00002 U	0.00002 U	0.00002 U	**0.00060**	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	
Mercury (Total)	mg/L	0.00002 U	0.00002 U	0.00002 U	**0.00062**	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	
Conventionals (Various)[1]														
Alkalinity (as $CaCO_3$)	mg/L	--	--	--	--	--	--	--	--	--	--	**378**	**676**	
Dissolved Organic Carbon	mg/L	--	--	--	--	--	--	--	--	--	--	**9.62**	**11.4**	
N-Nitrite	mg-N/L	--	--	--	--	--	--	--	--	--	--	0.05 U	**0.073**	
Sulfate	mg/L	--	--	--	--	--	--	--	--	--	--	**9.5 J**	**176 J**	
Dissolved Gases (RSK 175)														
Ethane	µg/L	--	--	--	--	--	--	--	--	--	--	1.2 U	**18**	
Methane	µg/L	--	--	--	--	--	--	--	--	--	--	**1,690**	**51**	

Notes:

BOLD Detected.

-- Not analyzed.

1 Analytical methods for conventionals analysis: alkalinity by SM 2320, DOC by USEPA 415.1, N-Nitrite by USEPA 353.2, and sulfate by USEPA 375.2.

Abbreviations:

$CaCO_3$ Calcium carbonate
DOC Dissolved organic carbon
dup Duplicate
ft Feet
GW Groundwater
µg/L Micrograms per liter
mg/L Milligrams per liter
mg-N/L Miligrams of nitrogen per liter
NWTPH Northwest total petroleum hydrocarbons
RSK Dissolved gas analysis in water
USEPA U.S. Environmental Protection Agency

Qualifiiers:

J Estimated value
JB Estimated due to presence of blank contamination
U Not detected
UB Not detected at elevated reportling limit due to blank

Table J.1
Results of January and July 2011 Groundwater Sampling Events

	Location	MW-12	MW-14	MW-18	MW-24	MW-25	MW-25 (dup)	MW-26	MW-27	MW-29	MW-30	MW-31	MW-32	MW-32 (dup)	MW-33
	Sample ID	MW-12-012611	MW-14-012611	MW-18-012611	MW-24-012711	MW-25-012711	MW-30-012711	MW-26-012711	MW-27-012711	MW-29-012611	MW-30-070811	MW-31-070811	MW-32-070811	MW-34-070811	MW-33-070811
	Sample Date	1/26/2011	1/26/2011	1/26/2011	1/27/2011	1/27/2011	1/27/2011	1/27/2011	1/27/2011	1/26/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011	7/8/2011
	Depth Range	10–15 ft	11.5–21.5 ft	30–40 ft	35–45 ft	22–27 ft	22–27 ft	15–25 ft	10–20 ft	20–30 ft	8–13 ft	18–23 ft	19–24 ft	19–24 ft	20–25 ft
Detected Chemicals	**Unit**														
Volatile Organic Compounds (USEPA 8260C/8260-SIM)															
Benzene	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	**5.7**	**5.8**	0.2 U	0.2 U	0.2 U					
cis-1,2-Dichloroethene	µg/L	**5.7**	0.2 U	0.2 U	0.2 U	**0.6**	**0.5**	**0.2**	0.4 U	0.2 U	**3.2**	**6.3**	**2**	**2**	**0.7**
trans-1,2-Dichloroethene	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	**0.3**	0.2 U	0.2 U	0.2 U	0.2 U	**1.2**	**0.3**	**0.3**	0.2 U
Trichloroethene	µg/L	**0.6**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.4**	0.2 U	0.2 U	**0.5**	0.2 U	0.2 U	0.2 U	0.2 U
Vinyl chloride	µg/L	**0.26**	**0.02 U**	**0.02 U**	**0.051**	**0.79**	**0.81**	**0.04**	**0.31**	0.02 U	**2.2**	**9.0**	**0.2**	**0.2**	**0.3**
Semi-volatile Organic Compounds (USEPA 8270D/8270-SIM/8041)															
Benzo(a)pyrene	µg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	--	--	--	--
Naphthalene	µg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 UB	--	--	--	--	--
Pentachlorophenol	µg/L	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	--
Pentachlorophenol	µg/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	--	--	--	--	--
Petroleum Hydrocarbons (NWTPH)															
Diesel-range Hydrocarbons	mg/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	--	--
Gasoline-range Hydrocarbons	mg/L	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	--	--	--	--	--
Motor Oil-range Hydrocarbons	mg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--	--
Metals (USEPA 200.8)															
Arsenic (Dissolved)	mg/L	**0.0032**	**0.0003**	**0.0002**	**0.0003**	**0.0006**	**0.0006**	**0.0007**	**0.0139**	**0.0009**	--	--	--	--	--
Arsenic (Total)	mg/L	**0.0064**	**0.0003**	**0.0003**	**0.0003**	**0.0006**	**0.0006**	**0.0009**	**0.0272**	**0.0009**	--	--	--	--	--
Chromium (Dissolved)	mg/L	0.0007	0.0005 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	**0.0020**	**0.0030**	--	--	--	--	--
Chromium (Total)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	**0.0040**	**0.0031**	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	**23.4**	**28.8**	**29.2**	**5.98**	**6.39**		--	--	--	--	--
Iron (Total)	mg/L	--	--	--	**23.5**	**31.6**	**31.2**	**7.05**	**16.3**		--	--	--	--	--
Lead (Dissolved)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--	--	--	--	--
Lead (Total)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--	--	--	--	--
Manganese (Dissolved)	mg/L	**0.68**	**0.37**	**0.66**	**1.6**	**2.9**	**3.1**	**0.16**	**0.39**	**1.07**	--	--	--	--	--
Manganese (Total)	mg/L	**0.71**	**0.37**	**0.66**	**1.6**	**3.1**	**3.0**	**0.17**	**0.58**	**1.06**	--	--	--	--	--
Mercury (Dissolved)	mg/L	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	--	--	--	--	--
Mercury (Total)	mg/L	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	--	--	--	--	--
Conventionals (Various)[1]															
Alkalinity (as $CaCO_3$)	mg/L	--	--	--	**487**	**633**	**637**	**37.4**	**140**	--	--	--	--	--	--
Dissolved Organic Carbon	mg/L	--	--	--	**12.7**	**19.3**	**19.4**	**3.24**	**7.81**	--	--	--	--	--	--
N-Nitrite	mg-N/L	--	--	--	0.05 U	0.1 U	0.1 U	0.05 U	0.01 U	--	--	--	--	--	--
Sulfate	mg/L	--	--	--	**5.8 J**	**26.7 J**	**27.4 J**	**5.8 J**	**19.1 J**	--	--	--	--	--	--
Dissolved Gases (RSK 175)															
Ethane	µg/L	--	--		**12**	**57**	**54**	1.2 U	1.2 U	--	--	--	--	--	--
Methane	µg/L	--	--		**7,320**	**3,490**	**3,330**	**12**	**494**	--	--	--	--	--	--

Notes:

BOLD Detected.

-- Not analyzed.

1 Analytical methods for conventionals analysis: alkalinity by SM 2320, DOC by USEPA 415.1, N-Nitrite by USEPA 353.2, and sulfate by USEPA 375.2.

Abbreviations:

$CaCO_3$ Calcium carbonate
DOC Dissolved organic carbon
dup Duplicate
ft Feet
GW Groundwater
µg/L Micrograms per liter
mg/L Milligrams per liter
mg-N/L Miligrams of nitrogen per liter
NWTPH Northwest total petroleum hydrocarbons
RSK Dissolved gas analysis in water
USEPA U.S. Environmental Protection Agency

Qualifiiers:

J Estimated value
JB Estimated due to presence of blank contamination
U Not detected
UB Not detected at elevated reportling limit due to blank

Table J.2
April 2013 Groundwater Sample Analytical Results

	Location	KMW-03A	KMW-05	KMW-08		MW-08	MW-10	MW-12	MW-14	MW-18	MW-24
	X-coord[1]	1270170.48	1269861.86	1269692.89	1269692.89	1271368.12	1270569.12	1269783.23	1269963.2	1271077.67	1271162.48
	Y-coord[1]	197585.09	197427.44	197356.14	197356.14	196837.87	197647.09	196963.92	196398.73	196350.26	197102.37
	Sample ID	SPL-GW-KMW03A-040313	SPL-GW-KMW05-040313	SPL-GW-KMW08-040413	SPL-GW-MW61-040413	SPL-GW-MW08-040213	SPL-GW-MW10-040213	SPL-GW-MW12-040313	SPL-GW-MW14-040313	SPL-GW-MW18-040313	SPL-GW-MW24-040213
	Sample Date	04/03/2013	04/03/2013	04/04/2013	04/04/2013	04/02/2013	04/02/2013	04/03/2013	04/03/2013	04/03/2013	04/02/2013
Analyte	**Units**										
Conventionals by USEPA 300.0, 350.1M, 376.2, and SM 2320											
Chloride	mg/L	12.9	158	9.5	9.4	189	15.8	17.4	13.1	16.3	33.2
Sulfate	mg/L	0.4	1,150	27.9	27.6	3.8	56.3	17.8	2.3	76.5	0.3
Sulfide	mg/L	0.05 U	30.6	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
N-ammonia	mg-N/L	3.04	74.3	0.22	0.235	2.96	3.74	0.692	0.236	2.27	3.52
N-nitrate	mg-N/L	0.1 U	5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
N-nitrite	mg-N/L	0.1 U	5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Alkalinity	mg/L $CaCO_3$	368	7,510	154	158	375	276	153	261	430	420
Bicarbonate	mg/L $CaCO_3$	368	1 U	154	158	375	276	153	261	430	420
Carbonate	mg/L $CaCO_3$	1 U	2,640	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hydroxide	mg/L $CaCO_3$	1 U	4,860	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Metals by SW6010C											
Calcium, dissolved	mg/L	84.3	9.8	40.3	40.3	46	44.3	30.8	50.6	70.8	73.4
Iron, dissolved	mg/L	10.4	5	0.07	0.07	19.1	19.2	7.97	4.29	59.5	26
Iron, total	mg/L	10.2	5.7	0.15	0.15	19	18.4	11.3	4.8	59.6	29.5
Magnesium, dissolved	mg/L	27.1	0.5 U	8.89	8.89	47.8	28.2	16.4	30.5	62.2	33
Manganese, dissolved	mg/L	0.048	0.01 U	0.24	0.242	1.19	1.1	0.742	0.576	1.57	1.64
Manganese, total	mg/L	0.05	0.01 U	0.241	0.241	1.17	1.05	0.769	0.587	1.57	1.79
Potassium, dissolved	mg/L	15.5	4,160	22.9	22.8	16.9	9.2	4	4.9	16.6	12.3
Sodium, dissolved	mg/L	24.5	1,520	22.7	22.3	157	59.4	20.8	16.3	33.8	58.7
VOCs by SW8260C											
Benzene	µg/L		8.2	0.2 U	0.2 U	--	--	--	--	--	--
cis-1,2-Dichloroethene	µg/L	0.2 U	4 U	0.2 U	0.2 U	0.2 U	1.8	3.1	0.2 U	0.2 U	0.2 U
Trichloroethene	µg/L	0.2 U	4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.37	0.2 U	0.2 U	0.2 U
VOCs by SW8260C-SIM											
Vinyl chloride	µg/L	0.3	0.4 U	0.02 U	0.02 U	0.063	1.2	0.1	0.02 U	0.072	0.032
Field Parameters											
Dissolved oxygen	mg/L	0.72	0.60	0.95	--	2.23	1.70	2.05	2.39	2.95	2.70
ORP	mV	-227.6	-560.4	110.4	--	-98.5	-109.3	-14.0	-50.2	-103.5	-86.6
pH	pH	7.68	13.11	6.66	--	6.82	6.80	6.68	6.70	6.60	6.68
Specific conductance	µS/cm	823.0	31,561.0	398.0	--	1,331.0	715.0	435.6	597.7	1,172.0	913.0

		Proposed CUL (Potential Scenarios)		
Monitored Analytes	**Units**	**Drinking Water**	**Protection of Surface Water**	**Upgradient or Background**
Benzene	µg/L	5	51	--
cis-1,2-Dichloroethene	µg/L	16	900	--
Trichloroethene	µg/L	4.9	30	--
Vinyl chloride	µg/L	0.29	2.40	--
Iron	mg/L	--	--	18
Manganese	mg/L	--	--	2.0

Notes:

-- Not analyzed for.

1 Coordinates are in Washington State Plane North NAD 83 feet.

Abbreviations:

$CaCO_3$ Calcium carbonate
CUL Cleanup level
µg/L Micrograms per liter
µS/cm Microsiemens per centimeter
mg/L Milligrams per liter
mg-N/L Milligrams per liter as nitrogen
mV Millivolt
NAD 83 North American Datum of 1983
ORP Oxidation reduction potential
VOC Volatile organic compound

Qualifier:

U Analyte was not detected at given reporting limit.

Table J.2
April 2013 Groundwater Sample Analytical Results

	Location	MW-25		MW-26	MW-27	MW-29	MW-30	MW-31	MW-32	MW-33
	X-coord[1]	1270572.18	1270572.18	1271163.2	1271347.6	1270272.103	1270826.64	1270825.71	1270622.16	1270751.02
	Y-coord[1]	197667.54	197667.54	197122.51	196835.03	196033.286	197655.77	197660.37	197416.52	197257.91
	Sample ID	SPL-GW-MW25-040113	SPL-GW-MW60-040113	SPL-GW-MW26-040213	SPL-GW-MW27-040213	SPL-GW-MW29-040313	SPL-GW-MW30-040213	SPL-GW-MW31-040213	SPL-GW-MW32-040113	SPL-GW-MW33-040113
	Sample Date	04/01/2013	04/01/2013	04/02/2013	04/02/2013	04/03/2013	04/02/2013	04/02/2013	04/01/2013	04/01/2013
Analyte	**Units**									
Conventionals by USEPA 300.0, 350.1M, 376.2, and SM 2320										
Chloride	mg/L	6.1	6.2	11.1	11.8	17.8	37.3	12.5	33.8	88.6
Sulfate	mg/L	4	4.5	12.1	6.2	282	19.4	0.1	12.8	1.4
Sulfide	mg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
N-ammonia	mg-N/L	2.11	2.1	0.18	1.59	0.754	0.299	2.19	9.35	14.7
N-nitrate	mg-N/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
N-nitrite	mg-N/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Alkalinity	mg/L $CaCO_3$	134	136	33.7	104	259	171	171	672	661
Bicarbonate	mg/L $CaCO_3$	134	136	33.7	104	259	171	171	672	661
Carbonate	mg/L $CaCO_3$	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hydroxide	mg/L $CaCO_3$	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Metals by SW6010C										
Calcium, dissolved	mg/L	19.5	19.7	8.92	16.2	147	65.1	24.5	68.3	37.1
Iron, dissolved	mg/L	6.7	6.68	5.58	12.5	15.8	2.21	11.9	23.8	18.4
Iron, total	mg/L	7.25	7.28	8.26	21.6	16.6	2.3	18.3	22.9	18.4
Magnesium, dissolved	mg/L	5.2	5.23	3.27	4.36	35.5	12.3	7.06	44.1	22.1
Manganese, dissolved	mg/L	0.525	0.528	0.129	0.395	1.31	0.079	0.442	2.31	1.84
Manganese, total	mg/L	0.536	0.53	0.136	0.417	1.36	0.08	0.505	2.2	1.83
Potassium, dissolved	mg/L	2.8	2.8	2.9	3.3	10.8	3.9	4.2	14.9	9.6
Sodium, dissolved	mg/L	33.8	33.7	9.5	30.3	21.4	14.3	40.3	162	265
VOCs by SW8260C										
Benzene	µg/L	0.43	0.4	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	µg/L	0.72	0.8	0.33	0.4	0.2 U	0.64	5.2	1.5	0.2 U
Trichloroethene	µg/L	0.2 U	0.2 U	0.31	0.2 U	0.2 U	0.6	0.2 U	0.2 U	0.2 U
VOCs by SW8260C-SIM										
Vinyl chloride	µg/L	1.4	1.4	0.02 U	0.25	0.02 U	0.12	4.7	0.28	1.1
Field Parameters										
Dissolved oxygen	mg/L	1.20	--	1.72	1.98	2.33	1.28	2.06	1.11	2.53
ORP	mV	-58.2	--	-13.3	-86.9	-28.7	6.0	-50.2	-97.7	-101.4
pH	pH	6.78	--	6.32	6.75	6.53	6.53	6.56	6.76	6.75
Specific conductance	µS/cm	288.8	--	148.7	280.7	1156.0	488.5	386.7	1339.0	1526.0

		Proposed CUL (Potential Scenarios)		
Monitored Analytes	**Units**	**Drinking Water**	**Protection of Surface Water**	**Upgradient or Background**
Benzene	µg/L	5	51	--
cis-1,2-Dichloroethene	µg/L	16	900	--
Trichloroethene	µg/L	4.9	30	--
Vinyl chloride	µg/L	0.29	2.40	--
Iron	mg/L	--	--	18
Manganese	mg/L	--	--	2.0

Notes:

-- Not analyzed for.

1 Coordinates are in Washington State Plane North NAD 83 feet.

Abbreviations:

$CaCO_3$ Calcium carbonate
CUL Cleanup level
µg/L Micrograms per liter
µS/cm Microsiemens per centimeter
mg/L Milligrams per liter
mg-N/L Milligrams per liter as nitrogen
mV Millivolt
NAD 83 North American Datum of 1983
ORP Oxidation reduction potential
VOC Volatile organic compound

Qualifier:

U Analyte was not detected at given reporting limit.

Table J.3
July 2013 Groundwater Sample Analytical Results

	Location	KMW-03A	KMW-05	KMW-08		MW-08	MW-10	MW-12	MW-14	MW-18	MW-24
	X-coord[1]	1270170.48	1269861.86	1269692.89	1269692.89	1271368.12	1270569.12	1269783.23	1269963.2	1271077.67	1271162.48
	Y-coord[1]	197585.09	197427.44	197356.14	197356.14	196837.87	197647.09	196963.92	196398.73	196350.26	197102.37
	Sample ID	SPL-GW-KMW03A-071813	SPL-GW-KMW05-071813	SPL-GW-KMW08-071813	SPL-GW-MW61-071813	SPL-GW-MW08-071613	SPL-GW-MW10-071513	SPL-GW-MW12-071713	SPL-GW-MW14-071713	SPL-GW-MW18-071713	SPL-GW-MW24-071613
	Sample Date	7/18/2013	7/18/2013	7/18/2013	7/18/2013	7/16/2013	7/15/2013	7/17/2013	7/17/2013	7/17/2013	7/16/2013
Analyte	**Units**										
Conventionals by USEPA 300.0, 350.1M, 376.2, and SM 2320											
Chloride	mg/L	12.8	163	8.4	8.4	145	17.1	14.4	26.3	21.5	38.1
Sulfate	mg/L	0.1 U	1,140	23.7	23.6	2.3	69.2	5.4	3.4	10.8	4.9
Sulfide	mg/L	0.05 U	23.6	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.118	0.05 U	0.077
N-ammonia	mg-N/L	3.06	64.4	0.596	0.339	3.1	3.69	0.744	0.228	2.58	2.53
N-nitrate	mg-N/L	0.1 U	10 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
N-nitrite	mg-N/L	0.1 U	10 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Alkalinity	mg/L $CaCO_3$	354	7,930	156	150	356	309	171	206	574	340
Bicarbonate	mg/L $CaCO_3$	354	1 U	156	150	356	309	171	206	574	340
Carbonate	mg/L $CaCO_3$	1 U	2,570	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hydroxide	mg/L $CaCO_3$	1 U	5,370	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Metals by SW6010C											
Calcium, dissolved	mg/L	76.1	10.7	30.2	30.2	41.6	49.5	30.6	42.8	69.6	59.4
Iron, dissolved	mg/L	10.4	5.2	0.16	0.16	17.7	21.9	8.49	4.04	44.4	14.6
Iron, total	mg/L	10.8	5.9	0.31	0.29	17.6	22.7	17.7	4.64	48.9	14.1
Magnesium, dissolved	mg/L	26	0.5 U	6.51	6.49	38.3	31.4	14.7	23.8	65.9	26.8
Manganese, dissolved	mg/L	0.036	0.01 U	0.165	0.165	1.05	1.29	0.495	0.494	1.84	1.15
Manganese, total	mg/L	0.04	0.01 U	0.172	0.17	1.03	1.32	0.504	0.48	1.83	1.13
Potassium, dissolved	mg/L	14.7	4,280	28	27.5	15.1	9.2	3.7	4.6	16.9	11.2
Sodium, dissolved	mg/L	22.7	1,570	24.2	24.1	133	57.4	21.5	15.7	46	58.4
VOCs by SW8260C											
Benzene	µg/L		7.2	0.2 U	0.2 U						
cis-1,2-Dichloroethene	µg/L	0.2 U	4 U	0.2 U	0.2 U	0.2 U	1.6	5.4 J	0.02 U	0.044	0.2 U
Trichloroethene	µg/L	0.2 U	4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.15[2]	0.02 U	0.02 U	0.2 U
VOCs by SW8260C-SIM											
Vinyl chloride	µg/L	0.35	0.4 U	0.02 U	0.02 U	0.063	0.84	0.22	0.02 U	0.075	0.02 U
Field Parameters											
Dissolved oxygen	mg/L	1.46	1.05	1.42	--	2.33	1.90	2.29	1.70	2.51	2.52
ORP	mV	-216.60	-536.50	65.50	--	-87.10	-91.90	-17.70	-67.40	-762.00	-43.20
pH	pH	7.62	12.91	6.69	--	6.77	6.73	6.71	6.77	6.61	6.70
Specific conductance	µS/cm	717.00	31,928.00	404.00	--	1,149.00	784.00	384.60	496.00	1,093.00	768.00

		Proposed CUL (Potential Scenarios)		
Monitored Analytes	**Units**	**Drinking Water**	**Protection of Surface Water**	**Upgradient or Background**
Benzene	µg/L	5	51	--
cis-1,2-Dichloroethene	µg/L	16	900	--
Trichloroethene	µg/L	4.9	30	--
Vinyl chloride	µg/L	0.29	2.40	--
Iron	mg/L	--	--	18
Manganese	mg/L	--	--	2.0

Notes:

-- Not analyzed for.

1 Coordinates are in Washington State Plane North NAD 83 feet.

2 Result is from SW8260C-SIM analysis due to trichloroethene carry over in the SW8260C analysis.

Abbreviations:

$CaCO_3$ Calcium carbonate
CUL Cleanup level
µg/L Micrograms per liter
µS/cm Microsiemens per centimeter
mg/L Milligrams per liter
mg-N/L Milligrams per liter as nitrogen
mV Millivolt
NAD 83 North American Datum of 1983
ORP Oxidation reduction potential
USEPA U.S. Environmental Protection Agency
VOC Volatile organic compound

Qualifiers:

U Analyte was not detected at given reporting limit.
J Analyte was detected; the result should be considered an estimate.
JM Analyte was detected; the result should be considered an estimate due to poor spectral match.

Table J.3
July 2013 Groundwater Sample Analytical Results

Location		MW-25		MW-26	MW-27	MW-29	MW-30	MW-31	MW-32	MW-33
X-coord[1]		1270572.18	1270572.18	1271163.2	1271347.6	1270272.103	1270826.64	1270825.71	1270622.16	1270751.02
Y-coord[1]		197667.54	197667.54	197122.51	196835.03	196033.286	197655.77	197660.37	197416.52	197257.91
Sample ID		SPL-GW-MW25-071513	SPL-GW-MW60-071513	SPL-GW-MW26-071613	SPL-GW-MW27-071613	SPL-GW-MW29-071713	SPL-GW-MW30-071613	SPL-GW-MW31-071613	SPL-GW-MW32-071513	SPL-GW-MW33-071513
Sample Date		7/15/2013	7/15/2013	7/16/2013	7/16/2013	7/17/2013	7/16/2013	7/16/2013	7/15/2013	7/15/2013
Analyte	**Units**									
Conventionals by USEPA 300.0, 350.1M, 376.2, and SM 2320										
Chloride	mg/L	7.5	7.6	15.1	24.7	18.4	29.9	16.3	30.3	87.5
Sulfate	mg/L	0.4	0.4	11.6	0.4	295	11.3	0.1	19.2	0.1
Sulfide	mg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
N-ammonia	mg-N/L	2.82	2.89	0.1	2.02	0.855	0.515	1.68	10	15.6
N-nitrate	mg-N/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
N-nitrite	mg-N/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Alkalinity	mg/L $CaCO_3$	191	194	48.4	100	279	217	110	670	676
Bicarbonate	mg/L $CaCO_3$	191	194	48.4	100	279	217	110	670	676
Carbonate	mg/L $CaCO_3$	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hydroxide	mg/L $CaCO_3$	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Metals by SW6010C										
Calcium, dissolved	mg/L	32.3	33.1	11.1	14.4	158	68.5	13.6	77.2	37.7
Iron, dissolved	mg/L	11.1	11.2	7.11	17.8	18.2	4.58	7.89	26.4	19.3
Iron, total	mg/L	11.7	11.8	10.3	19.5	18.3	4.53	8.29	26.7	19.5
Magnesium, dissolved	mg/L	8.75	8.84	4.07	4.37	36.8	13	4	48.8	22.2
Manganese, dissolved	mg/L	0.84	0.831	0.16	0.507	1.25	0.111	0.258	2.46	1.87
Manganese, total	mg/L	0.856	0.839	0.165	0.528	1.24	0.111	0.264	2.48	1.88
Potassium, dissolved	mg/L	3.4	3.5	3.1	3.4	11.3	5	3.1	16.1	9.6
Sodium, dissolved	mg/L	35.4	35.7	11	31	22.7	16.8	35.1	138	273
VOCs by SW8260C										
Benzene	µg/L	0.28	0.33							
cis-1,2-Dichloroethene	µg/L	0.75	0.7	0.3	0.41	0.034	1.6	5.2	1.7	0.2 U
Trichloroethene	µg/L	0.2 U	0.2 U	0.37 JM	0.2 U	0.02 U	0.75	0.2 U	0.2 U	0.2 U
VOCs by SW8260C-SIM										
Vinyl chloride	µg/L	1.1	0.99	0.022	0.14	0.02 U	0.5	4.3	0.3	0.78
Field Parameters										
Dissolved oxygen	mg/L	2.27	--	2.08	1.97	2.18	3.16	2.31	3.26	3.01
ORP	mV	-54.00	--	10.40	-93.50	-40.30	2.60	-46.60	-89.10	-95.10
pH	pH	6.63	--	6.21	6.80	6.44	6.47	6.57	6.71	6.70
Specific conductance	µS/cm	400.40	--	185.10	323.20	1,095.00	519.80	293.00	1,333.00	1,576.00

		Proposed CUL (Potential Scenarios)		
Monitored Analytes	**Units**	**Drinking Water**	**Protection of Surface Water**	**Upgradient or Background**
Benzene	µg/L	5	51	--
cis-1,2-Dichloroethene	µg/L	16	900	--
Trichloroethene	µg/L	4.9	30	--
Vinyl chloride	µg/L	0.29	2.40	--
Iron	mg/L	--	--	18
Manganese	mg/L	--	--	2.0

Notes:

-- Not analyzed for.

1 Coordinates are in Washington State Plane North NAD 83 feet.

2 Result is from SW8260C-SIM analysis due to trichloroethene carry over in the SW8260C analysis.

Abbreviations:

$CaCO_3$ Calcium carbonate
CUL Cleanup level
µg/L Micrograms per liter
µS/cm Microsiemens per centimeter
mg/L Milligrams per liter
mg-N/L Milligrams per liter as nitrogen
mV Millivolt
NAD 83 North American Datum of 1983
ORP Oxidation reduction potential
USEPA U.S. Environmental Protection Agency
VOC Volatile organic compound

Qualifiers:

U Analyte was not detected at given reporting limit.
J Analyte was detected; the result should be considered an estimate.
JM Analyte was detected; the result should be considered an estimate due to poor spectral match.

Table J.4
March 2014 Groundwater Sample Analytical Results

Location		KMW-03A	KMW-05	KMW-08		MW-08	MW-10	MW-12	MW-14	MW-18	MW-24	MW-25	
X-coord[1]		1270170.48	1269861.86	1269692.89	1269692.89	1271368.12	1270569.12	1269783.23	1269963.2	1271077.67	1271162.48	1270572.18	1270572.18
Y-coord[1]		197585.09	197427.44	197356.14	197356.14	196837.87	197647.09	196963.92	196398.73	196350.26	197102.37	197667.54	197667.54
Sample ID		SPL-GW-KMW03A-031714	SPL-GW-KMW05-031714	SPL-GW-KMW08-031714	SPL-GW-MW61-031714	SPL-GW-MW08-031914	SPL-GW-MW10-031714	SPL-GW-MW12-031814	SPL-GW-MW14-031814	SPL-GW-MW18-031814	SPL-GW-MW24-031914	SPL-GW-MW25-031714	SPL-GW-MW60-031714
Sample Date		03/17/2014	03/17/2014	03/17/2014	03/17/2014	03/19/2014	03/17/2014	03/18/2014	03/18/2014	03/18/2014	03/19/2014	03/17/2014	03/17/2014
Analyte	**Units**												
Conventionals by EPA 300.0, 350.1M, 376.2, and SM 2320													
Chloride	mg/L	15.4	154	14.7	14.7	194	25	20.1	19.6	13.3	42.3	8.6	8.7
Sulfate	mg/L	0.4	1000	27.9	27.7	2.6	109	13.2	2	0.1 U	0.5	7.7	7.7
Sulfide	mg/L	0.05 U	28.1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
N-Ammonia	mg-N/L	3.17	64.2	0.342	0.36	2.9	4.87	0.734	0.204	1.98	3.8	2.87	2.89
N-Nitrate	mg-N/L	0.1	2 U	0.1 U	0.1 U	0.1	0.1 U	0.1	0.1	0.1 U	0.1	0.1	0.1
N-Nitrite	mg-N/L	0.1 U	2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Alkalinity	mg/L CaCO3	378	8290	186	186	378	372	186	246	361	405	169	169
Bicarbonate	mg/L CaCO3	378	1 U	186	186	378	372	186	246	361	405	169	169
Carbonate	mg/L CaCO3	1 U	2820	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hydroxide	mg/L CaCO3	1 U	5460	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Metals by SW6010C													
Calcium, dissolved	mg/L	85.8	12.3	42.4	42.7	42.6	77.5	32.6	48.9	45.2	70.1	29.8	30
Iron, dissolved	mg/L	11.2	6.5	0.21	0.17	16.4	29.7	9.01	4.56	34.8	24.6	11.4	11.5
Iron, total	mg/L	11.3	6.9	0.3	0.31	21.3	29.6	11.1	5.76	33.3	25.9	11.6	11.5
Magnesium, dissolved	mg/L	25.7	0.5 U	10	9.86	47.2	43.3	16.9	28	41.7	29.4	8.85	8.92
Manganese, dissolved	mg/L	0.058	0.02	0.298	0.298	1.13	2.06	0.722	0.656	1.2	1.45	0.924	0.943
Manganese, total	mg/L	0.06	0.02	0.305	0.302	1.13	2.04	0.768	0.669	1.24	1.47	0.923	0.916
Potassium, dissolved	mg/L	14.1	4370	29.3	28.5	16.7	10.6	4	4.9	13.8	12.6	4.7	3.8
Sodium, dissolved	mg/L	24.5	1620	29.8	29.7	154	55.4	22.6	17	34.6	60.8	31.9	31.6
VOCs by SW8260C													
Benzene	ug/L		7.4	0.2 U	0.2 U							0.2 U	0.2 U
cis-1,2-Dichloroethene	ug/L	0.2 U	2 U	0.2 U	0.2 U	0.2 U	1.9	4.5	0.2 U	0.2 U	0.2 U	0.48	0.5
Trichloroethene	ug/L	0.2 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
VOCs by SW8260C-SIM													
Vinyl Chloride	ug/L	0.3	0.2 U	0.02 U	0.02 U	0.08	0.49	0.22	0.02 U	0.02 U	0.034	0.99	0.98
Field Parameters													
Dissolved Oxygen	mg\L	0.37	0.24	0.58	--	0.15	0.16	0.45	0.36	0.43	0.27	0.33	--
ORP	mV	-145.9	-145.4	130.3	--	-72.0	-112.6	70.1	24.2	-76.2	-77.3	-21.9	--
pH	pH	7.50	13.20	6.33	--	6.86	6.94	6.37	6.50	6.46	6.71	6.32	--
Specific Conductance	µS/cm	736.0	30,339.0	454.9	--	1,336.0	1,020.0	406.3	513.2	745.0	899.0	384.7	--

Monitored Analytes	Units	Proposed CUL (Potential Scenarios)		
		Drinking Water	Protection of Surface	Upgradient or
Benzene	µg/L	5	51	--
cis-1,2-Dichloroethene	µg/L	16	900	--
Trichloroethene	µg/L	4.9	30	--
Vinyl chloride	µg/L	0.29	2.40	--
Iron	mg/L	--	--	18
Manganese	mg/L	--	--	2.0

Notes:

-- Not analyzed for.

1 Coordinates are in Washington State Plane North NAD 83 feet.

2 Result is from SW8260C analysis because the SW8260C-SIM result exceeded the instrument calibration range.

Abbreviations:

$CaCO_3$ Calcium carbonate
CUL Cleanup level
µg/L Micrograms per liter
µS/cm Microsiemens per centimeter
mg/L Milligrams per liter
mg-N/L Milligrams per liter as nitrogen
mV Millivolt
NAD 83 North American Datum of 1983
ORP Oxidation reduction potential
VOC Volatile organic compound

Qualifier:

U Analyte was not detected at given reporting limit.

Table J.4
March 2014 Groundwater Sample Analytical Results

	Location	MW-26	MW-27	MW-29	MW-30	MW-31	MW-32	MW-33
	X-coord[1]	1271163.2	1271347.6	1270272.103	1270826.64	1270825.71	1270622.16	1270751.02
	Y-coord[1]	197122.51	196835.03	196033.286	197655.77	197660.37	197416.52	197257.91
	Sample ID	SPL-GW-MW26-031914	SPL-GW-MW27-031914	SPL-GW-MW29-031814	SPL-GW-MW30-031914	SPL-GW-MW31-031914	SPL-GW-MW32-031814	SPL-GW-MW33-031814
	Sample Date	03/19/2014	03/19/2014	03/18/2014	03/19/2014	03/19/2014	03/18/2014	03/18/2014
Analyte	**Units**							
Conventionals by EPA 300.0, 350.1M, 376.2, and SM 2320								
Chloride	mg/L	9.2	15.9	37.2	24.8	20.1	26	81.7
Sulfate	mg/L	8.9	6.9	286	20.6	0.4	71.3	0.1 U
Sulfide	mg/L	0.05 U	0.05 U	0.053	0.05 U	0.05 U	0.05 U	0.05 U
N-Ammonia	mg-N/L	0.084	0.471	0.976	0.396	1.58	9.26	14.7
N-Nitrate	mg-N/L	0.1	0.2	0.1 U	0.2	0.1	0.1	0.1 U
N-Nitrite	mg-N/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Alkalinity	mg/L CaCO3	52.3	99.2	391	190	95.2	607	268
Bicarbonate	mg/L CaCO3	52.3	99.2	391	190	95.2	607	268
Carbonate	mg/L CaCO3	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hydroxide	mg/L CaCO3	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Metals by SW6010C								
Calcium, dissolved	mg/L	12.7	24.7	190	60	13.6	86.8	37
Iron, dissolved	mg/L	6.18	1.69	26.4	2.8	7.54	28.6	18.9
Iron, total	mg/L	13.9	4.01	26.6	3.08	8.29	29	19.1
Magnesium, dissolved	mg/L	4.29	5.84	49.4	11.9	4.8	55.8	21.7
Manganese, dissolved	mg/L	0.145	0.167	2.04	0.09	0.306	2.87	1.95
Manganese, total	mg/L	0.147	0.177	2.07	0.09	0.303	2.9	2.03
Potassium, dissolved	mg/L	3.2	3.2	13.5	4.7	3	15.7	9.6
Sodium, dissolved	mg/L	9.8	18.2	30.3	17.4	29.2	110	264
VOCs by SW8260C								
Benzene	ug/L							
cis-1,2-Dichloroethene	ug/L	0.43	0.2 U	0.2 U	0.89	3.9	1.5	0.2 U
Trichloroethene	ug/L	0.42	0.2 U	0.2 U	0.49	0.2 U	0.2 U	0.2 U
VOCs by SW8260C-SIM								
Vinyl Chloride	ug/L	0.053	0.11	0.02 U	0.2	5.1[2]	0.36	0.44
Field Parameters								
Dissolved Oxygen	mg\L	0.42	0.85	0.31	0.52	0.19	0.56	0.44
ORP	mV	32.4	25.4	24.7	60.8	-21.9	-20.8	-23.5
pH	pH	6.22	6.59	6.39	6.45	6.62	6.55	6.51
Specific Conductance	µS/cm	173.4	251.4	1,314.0	503.8	268.8	1,315.0	1,522.0

		Proposed CUL (Potential Scenarios)		
Monitored Analytes	**Units**	**Drinking Water**	**Protection of Surface**	**Upgradient or**
Benzene	µg/L	5	51	--
cis-1,2-Dichloroethene	µg/L	16	900	--
Trichloroethene	µg/L	4.9	30	--
Vinyl chloride	µg/L	0.29	2.40	--
Iron	mg/L	--	--	18
Manganese	mg/L	--	--	2.0

Notes:

-- Not analyzed for.

1 Coordinates are in Washington State Plane North NAD 83 feet.

2 Result is from SW8260C analysis because the SW8260C-SIM result exceeded the instrument calibration range.

Abbreviations:

$CaCO_3$ Calcium carbonate
CUL Cleanup level
µg/L Micrograms per liter
µS/cm Microsiemens per centimeter
mg/L Milligrams per liter
mg-N/L Milligrams per liter as nitrogen
mV Millivolt
NAD 83 North American Datum of 1983
ORP Oxidation reduction potential
VOC Volatile organic compound

Qualifier:

U Analyte was not detected at given reporting limit.

South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix K
Bioscreen Modeling Results for Groundwater Memorandum

20 YEARS FLOYD | SNIDER
strategy ▪ science ▪ engineering

Two Union Square
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Memorandum

To: Teri A. Floyd, Ph.D., Project Manager

Copies:

From: Emily Jones, PE

Date: June 24, 2016

Project No: COS-SPARK

Re: **Numerical Modeling of Vinyl Chloride Concentrations in Groundwater Downgradient of Source Area**

1.0 INTRODUCTION AND DESCRIPTION OF MODEL

This technical memorandum presents the results of the numerical modeling process used to estimate vinyl chloride concentrations in downgradient groundwater wells based on known and potential sources of vinyl chloride within the boundaries of the South Park Landfill (Landfill). Modeling was completed with the U.S. Environmental Protection Agency (USEPA) developed BIOSCREEN-AT. BIOSCREEN is one of the modeling tools recommended by Ecology for estimating downgradient groundwater concentrations (Ecology 2005).

The USEPA developed the BIOSCREEN model to help evaluate attenuation and degradation processes of contamination in groundwater between a designated source area and a downgradient point or points (USEPA 1996). The USEPA BIOSCREEN model Version 1.4 utilizes the Domenico solution for solute transport which incorporates approximations for solute transport to simulate advection, dispersion, and adsorption. The BIOSCREEN model can be used to represent solute transport with or without biodegradation. An update to the BIOSCREEN Version 1.4, BIOSCREEN-AT Version 1.43, was released by S.S. Papadopulos & Associates, which performs a more rigorous analytical solution to the transport equations utilized in the original model, thereby eliminating the approximations in evaluation introduced by the Domenico solution (Karanovic et al. 2007).

The model is designed to estimate downgradient groundwater concentrations from a known source area over time, after transport and natural attenuation processes are considered. This memorandum describes modeling completed for this purpose, which was conducted as part of the South Park Landfill Remedial Investigation and Feasibility Study (RI/FS). The RI/FS provides more information on site-specific input parameters than presented in this memorandum.

2.0 DESCRIPTION OF MODELING APPROACH

Throughout the modeling effort, vinyl chloride concentrations within the Landfill were represented as a constant source. Outside of the source area, biodegradation of vinyl chloride was represented by a first order decay process.

Initial model runs were performed to calibrate the first order decay rate and fraction of organic carbon to represent conditions at the Landfill. Site-specific and calibrated input parameters and their source, including a description of the technical rationale behind their selection, are presented in Table 1 (attached). Calibrated input parameters are discussed in further detail in Section 3.0.

During initial model runs, the source area was represented by direct-push probe FB-12, 300 feet upgradient of monitoring well MW-27 in the southern region of the Landfill. Model runs were completed at multiple simulation times ranging between 1 and 5 years. Simulation times of 2, 2.25, and 3 years correspond to the amount of time elapsed between initial data collection efforts in 2011 and subsequent groundwater well monitoring events conducted at MW-27 between 2013 and 2014. The average concentration detected in MW-27 in these data collection efforts was 0.17 microgram per liter (µg/L); thus, the goal of model calibration was to achieve a downgradient groundwater concentration of approximately 0.17 µg/L after a time period of 3 years had elapsed. Additional model runs were completed at simulation times of 4 and 5 years to verify that modeled concentrations at a simulation time of 3 years were approaching steady state conditions.

After calibration, model runs representing the northern region of the Landfill were completed using these calibrated parameters and the site-specific parameters presented and described in Table 2 (attached). Modeling was completed to estimate the maximum expected concentrations in MW-31 attributable to various potential source areas within the Landfill. Monitoring well MW-25 was assumed to be the upgradient source area for this evaluation. MW-32 and MW-33 were also considered, but had lower source area concentrations and/or were farther away; thus, concentrations in MW-31 that could be attributable to these wells are lower than if the source is represented by MW-25. Initial source area concentration data were based on the measured average concentrations of vinyl chloride measured in these wells; these concentrations are assumed to be representative of concentrations throughout the modeled source area. Modeling was completed at various simulation times until steady state was reached in the downgradient wells.

Modeling assumes that the vinyl chloride plume's centerline and direction of travel is the straight-line distance between the assumed source area and the downgradient well. The model assumes biodegradation occurs only downgradient of the source zone. In the calibration runs, the concentration in the source zone is assumed to be constant and equivalent to the measured concentrations from direct push probe sample FB-12. Downgradient concentrations in MW-27 are known, allowing for calibration of the degradation rate and soil fraction of organic carbon (f_{oc}).

3.0 RESULTS OF MODEL CALIBRATION

The Model Toxics Control Act (MTCA) default soil fraction of organic carbon content is 0.001 g/g or 0.1 percent (WAC Chapter 173-340-747). Measured results from other sites in the Lower Duwamish Valley indicate that much higher values, of up to 2 percent, may be appropriate. The fraction of organic carbon selected for use in the BIOSCREEN-AT model is related to the retardation factor, *R*, calculated by the model. The greater the fraction of organic carbon, the greater the retardation factor, the slower the chemical being modeled (in this case, vinyl chloride) will move in groundwater, and the more the chemical will disperse from the source zone. The fraction of organic carbon was assumed to be constant throughout the Landfill and was set to a value of 0.0084 g/g, or 0.84 percent after model calibration to site data. This value is near the middle of the expected range of values based on the MTCA default and data from adjacent sites. The resulting retardation factor calculated by the model is 2.0. Uncertainties associated with this parameter or other modeled solute transport parameters, like dispersion, are accounted for in calibration of the first order decay coefficient (λ; Newell et al. 1996).

Literature values for vinyl chloride's first order decay coefficient vary from 0.09 yr^{-1} to 4.5 yr^{-1} in groundwater (Newell et al. 1996). Initial model runs were completed using a first order decay coefficient at the low end of this range. The value of the coefficient was increased until the downgradient groundwater results predicted by the model simulated site data observed in MW-27 and the model indicated that steady state downgradient groundwater conditions would be achieved within an appropriate timeframe based on available data for the Landfill. The best fit to the data was achieved using a first order decay coefficient of 0.8 yr^{-1}. Table 3 presents the results obtained in the calibration runs with f_{oc} = 0.0084 and the decay coefficient of 0.8 yr^{-1}.

Table 3
Modeled Vinyl Chloride Concentrations in MW-27: Source Area Represented by FB-12[1,2]

Measured Concentration in MW-27 during Remedial Investigation Events		
Modeled Simulation Time (yr)	**Modeled Downgradient Vinyl Chloride Groundwater Concentrations at MW-27 (µg/L)**	**Measured Concentration in MW-27 during Remedial Investigation Events (µg/L)**
1	0	--
2	0.05	0.25
2.25	0.09	0.14
3	0.17	0.11
4	0.19	--
5	0.19	--
	Average Measured Concentration	**0.17**

Notes:
1 MW-27 is located in the southern region of the South Park Landfill; Table 1 summarizes BIOSCREEN-AT input values entered to generate these results.
2 FB-12 is located 300 feet west (upgradient) of MW-27. Thus, downgradient groundwater concentrations presented in this table are the model-generated outputs at a distance of 300 feet.

Abbreviation:
yr Year

4.0 RESULTS OF MODELING TO ESTIMATE CONCENTRATIONS IN MW-31

Results of modeling to estimate concentrations in MW-31 attributable to various potential source areas within the Landfill are shown in Table 4 (below). Representing the source area by the average detected groundwater concentration in MW-25 (i.e., 1.1 µg/L) results in predicted steady state groundwater concentrations in MW-31 of 0.25 µg/L, below the vinyl chloride groundwater cleanup level of 0.29 µg/L. These results show that the Landfill is unlikely to be a significant contributor to vinyl chloride groundwater concentrations greater than the cleanup level measured in MW-31.

Figure 5.12 in the RI/FS includes trend plots for the three upgradient source area wells (MW-25, MW-32, and MW-33) showing 10 years of data for MW-25 and four years for the newer MW-32 and MW-33. The relative stability of the trend plots, the short travel times between the wells, and BIOSCREEN modeling estimates, also indicate that the Landfill is unlikely to have been a significant contributor to vinyl chloride groundwater concentrations at MW-31 over the last decade.

Table 4
Modeled Steady State Groundwater Vinyl Chloride Concentrations at MW-31

Run 1: From MW-25 (250 feet to MW-31)	
Maximum Source Concentration = 1.8 µg/L	**Average Source Concentration is 1.1 µg/L**
0.41 µg/L	0.25 µg/L
Run 2: From MW-33 (410 feet to MW-31)	
Maximum Source Concentration = 1.1 µg/L	**Average Source Concentration is 0.66 µg/L**
0.10 µg/L	0.06 µg/L
Run 3: From MW-32 (320 feet to MW-31)	
Maximum Source Concentration = 0.36 µg/L	**Average Source Concentration is 0.29 µg/L**
0.05 µg/L	0.04 µg/L

5.0 REFERENCES

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LIST OF ATTACHMENTS

Table 1 BIOSCREEN-AT Model Inputs: Southern Region of the South Park Landfill

Table 2 BIOSCREEN-AT Model Inputs: Northern Region of the South Park Landfill

Tables

Table 1
BIOSCREEN-AT Model Inputs: Southern Region of the South Park Landfill

Parameter	Value	Unit	Source/Description and Selection Rationale
Hydrogeology			
Hydraulic Conductivity	0.0201	cm/s	Horizontal hydraulic conductivity values based on the January 19, 2011 slug test in MW-27 and historical pumping test data from MW-8 (AESI 2000).
Horizontal Hydraulic Gradient	0.0026	foot/foot	Hydraulic gradient calculated based on the June 2011 groundwater elevation contour map.
Porosity	0.23	-	Average of effective porosity values for fine to medium sand (21 to 26 percent, respectively; Fetter 1994) expressed to two significant figures based on well log soil descriptions.
Dispersion			
Estimated Plume Length	100	feet	One-third of the distance between the leading edge of the modeled source zone and downgradient groundwater well. Estimated plume length is appropriate in scale when vinyl chloride data collected in 2011 from nearby probes and wells is considered.
Adsorption			
Soil Bulk Density	1.5	kg/L	MTCA default value (Eq. 747-1).
Organic Carbon Partition Coefficient (K_{oc})	18.6	L/kg	MTCA default value for vinyl chloride.
Fraction Organic Carbon (f_{oc})	0.0084	-	Determined during model calibration. Starting values included 0.001 (MTCA default value in Eq. 747-1) and 0.01 to 0.02 typical values for the silty sand at the top of the Alluvial Aquifer. At the default value of 0.001 the travel time for vinyl chloride is much faster, less dispersion occurs, and calibration using empirical data forces the decay constant higher. The selected value represents conditions present at the South Park Landfill assuming a constant source, i.e., that the source zone does not decay over time.
Biodegradation			
First Order Decay Coefficient (λ)	0.8	yr^{-1}	Determined during model calibration with site-specific data; literature values range from a low of 0.09 yr^{-1} to 4.5 yr^{-1} for vinyl chloride in groundwater (Karanovic et al. 2007). The final value selected for this parameter was 0.8 yr^{-1} based on calibration to the average detected concentration in MW-27 and a simulation time of 3 years. The simulation time of 3 years was selected to allow sufficient time for migration of the plume.
General			
Modeled Area Length	600	feet	Based on area of affected groundwater plume and selected to provide information about its transport properties; allows the modeler to easily determine the distance at which groundwater is not influenced by downgradient dispersion of vinyl chloride for the model input parameters selected.
Modeled Area Width	200	feet	Chosen to allow sufficient horizontal dispersivity in consideration of the source zone and modeled area length.
Simulation Time	1–5	years	Simulation times of 2, 2.25, and 3 years were selected to correspond to dates when actual downgradient groundwater samples were collected for comparison to modeled results. Additional simulation times of 4 and 5 years were modeled to ensure that downgradient concentrations had reached steady state conditions.
Source Data			
Vinyl Chloride Source Groundwater Concentration	1.4	µg/L	The greatest upgradient concentration measured during initial data collection efforts in 2011 (1.4 µg/L in FB-12) was selected to assess vinyl chloride attenuation in groundwater based on actual site data.
Source Thickness in Saturated Zone	11	feet	Estimated site-specific value based on seasonal variation in the elevation of the shallow groundwater table at the South Park Landfill.
Source Zone Length	100	feet	Source length chosen to provide sufficient source mass for BIOSCREEN-AT mobility modeling.
Source Zone Width	75	feet	Source length chosen to provide sufficient source mass for BIOSCREEN-AT mobility modeling.

Abbreviations:
cm/s Centimeters per second
Eq. Equation
kg Kilograms
L Liter
µg Microgram
MTCA Model Toxics Control Act
yr Year

Table 2
BIOSCREEN-AT Model Inputs: Northern Region of the South Park Landfill

Parameter	Value	Unit	Source/Description and Selection Rationale
Hydrogeology			
Hydraulic Conductivity	0.0201	cm/s	Horizontal hydraulic conductivity values based on the January 19, 2011 slug test in MW-25 and historical pumping test data from MW-10 (AESI 2000).
Horizontal Hydraulic Gradient	0.0029	foot/foot	Hydraulic gradient calculated based on the June 2011 groundwater elevation contour map.
Porosity	0.23	-	Average of effective porosity values for fine to medium sand (21 to 26 percent, respectively; Fetter 1994) expressed to two significant figures based on well log soil descriptions.
Dispersion			
Estimated Plume Length	100	feet	One-third of the distance between the leading edge of the modeled source zone and downgradient groundwater well. Estimated plume length is appropriate in scale when vinyl chloride data collected in 2011 from nearby probes and wells is considered.
Adsorption			
Soil Bulk Density	1.5	kg/L	MTCA default value (Eq. 747-1).
Organic Carbon Partition Coefficient (K_{oc})	18.6	L/kg	MTCA default value for vinyl chloride.
Fraction Organic Carbon (f_{oc})	0.0084	-	Value derived from model calibration as discussed in Section 3.
Biodegradation			
First Order Decay Coefficient (λ)	0.8	yr^{-1}	Literature values range from a low of 0.09 yr^{-1} to 4.5 yr^{-1} for vinyl chloride in groundwater (Karanovic et al. 2007). The final value selected for this parameter was 0.8 yr^{-1} based on calibration to site data, as described in the memorandum text and in Table 1.
General			
Modeled Area Length	varies	feet	Varied based on distance between source area and downgradient well. Selected to allow the modeler to easily determine the distance at which groundwater is not influenced by downgradient dispersion of vinyl chloride for the model input parameters selected.
Modeled Area Width	200	feet	Chosen to allow sufficient horizontal dispersivity in consideration of the source zone and modeled area length.
Simulation Time	1–5	years	Simulation times between 1 and 5 years were selected to ensure that downgradient concentrations had reached steady state conditions.
Source Data			
Vinyl Chloride Source Groundwater Concentrations	varies	µg/L	The maximum and average vinyl chloride concentration detected in the upgradient well selected to represent the source area to MW-31. Specific maximum and average input values are indicated for each modeled source area in Table 4.
Source Thickness in Saturated Zone	11	feet	Estimated site-specific value based on seasonal variation in the elevation of the shallow groundwater table at the South Park Landfill.
Source Zone Length	100	feet	Source length chosen to provide sufficient source mass for BIOSCREEN-AT mobility modeling.
Source Zone Width	75	feet	Source length chosen to provide sufficient source mass for BIOSCREEN-AT mobility modeling.

Abbreviations:
cm/s Centimeters per second
Eq. Equation
kg Kilograms
L Liter
µg Micrograms
MTCA Model Toxics Control Act
yr Year

South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix L
Supplemental Investigations

South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix L
Supplemental Investigations

Attachment L.1
Supplemental Landfill Gas Investigation at KIP Memorandum

TECHNICAL MEMORANDUM
Revised

Date: August 19, 2016

To: Teri Floyd, FloydISnider

From: Bruce Carpenter and Michael Spillane, Herrera Environmental Consultants

Subject: September/October 2015 LFG Sampling Results at Kenyon Industrial Park

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Introduction

The South Park PLP Group requested FloydISnider and Herrera Environmental Consultants (Herrera) to conduct landfill gas (LFG) characterization at Kenyon Industrial Park (KIP). The purpose of the investigation was to determine LFG concentrations extending across a swale situated adjacent to the northern portion of the west South Park Landfill (Landfill) boundary (Figure 1). Push probes were installed across the swale along five transects. The borings were logged and LFG measurements made at each location. LFG monitoring was also conducted at two gas probes and seven monitoring wells previously installed on the KIP property.

Site Background

LFG probes GP-24 and GP-25 were installed in the swale area at KIP in January 2011 as part of the South Park Landfill Remedial Investigation (RI) conducted under Agreed Order No. 6706 with the Department of Ecology. Both probes were installed beyond the Landfill limits with the intent to act as LFG perimeter probes. Methane concentrations in GP-24 ranged from 5 to 48 percent by volume during nine monitoring events performed from February to December 2011; concentrations in GP-25 ranged from 26 to 85 percent over the same period. A one-time gas monitoring conducted at KMW-05 (a groundwater monitoring well screening across the water table), between GP-24 and GP-25, in May 2011 also indicated a methane concentration of 50 percent by volume.

Historical aerial photographs were reviewed to evaluate extent of the swale separating the Landfill from offsite operations farther to the west (Figure 1). The photographs were also evaluated to identify cement kiln dust (CKD), known to have been deposited in this area. CKD is a fine-grained material that can inhibit the movement of methane in the subsurface.

Monitoring wells KMW-07 and KMW-08, located west of both the swale and the northwestern building on KIP, were monitored for methane in November 2011. No methane was detected in KMW-07, and a concentration of 0.2 percent by volume was detected in KMW-08.

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Field Investigation

The field investigation was conducted September 29 through October 15, 2015. Herrera provided oversight for installation of 25 temporary vibratory probes and monitored two permanent gas probes and seven monitoring wells (screening across the water table) for LFG.

Underground Utility Location Service contacted participating agencies or companies with underground utilities in the area, and utility lines and equipment were marked along the property boundaries. APS of North Bend located underground utilities at each proposed boring location on the property. Utility drawings available through Seattle Public Utilities also were reviewed.

Subsurface conditions were evaluated by first installing a vibratory probe for the purpose of logging the soil sequence down to either silt overbank deposits or to groundwater (approximately 10 feet for most locations). A second, adjacent, probe was then installed to the specific depth of interest for characterizing LFG concentrations within the vertical profile. The exploratory borings were advanced using a probe-drive sampler attached to a driven probe rod. During drilling, discrete soil samples for soil classification and field screening were collected continuously at 5-foot intervals using 5-foot-long by 2-inch-outside-diameter probe-drive samplers with dedicated clear Lexan® liners. The samplers were sealed with piston stop pins while being pushed or driven to the desired sampling depth. The piston stop pins were retracted into the samplers while being pushed or driven to obtain a soil sample. Following retrieval, the soil-filled Lexan® liners were removed from the samplers and cut open to expose the soil cores. Soil encountered during drilling was visually inspected and classified according to the Unified Soil Classification System (USCS; American Society for Testing and Materials [ASTM] D2488-09). Depth to groundwater, if encountered, was recorded on the borehole log.

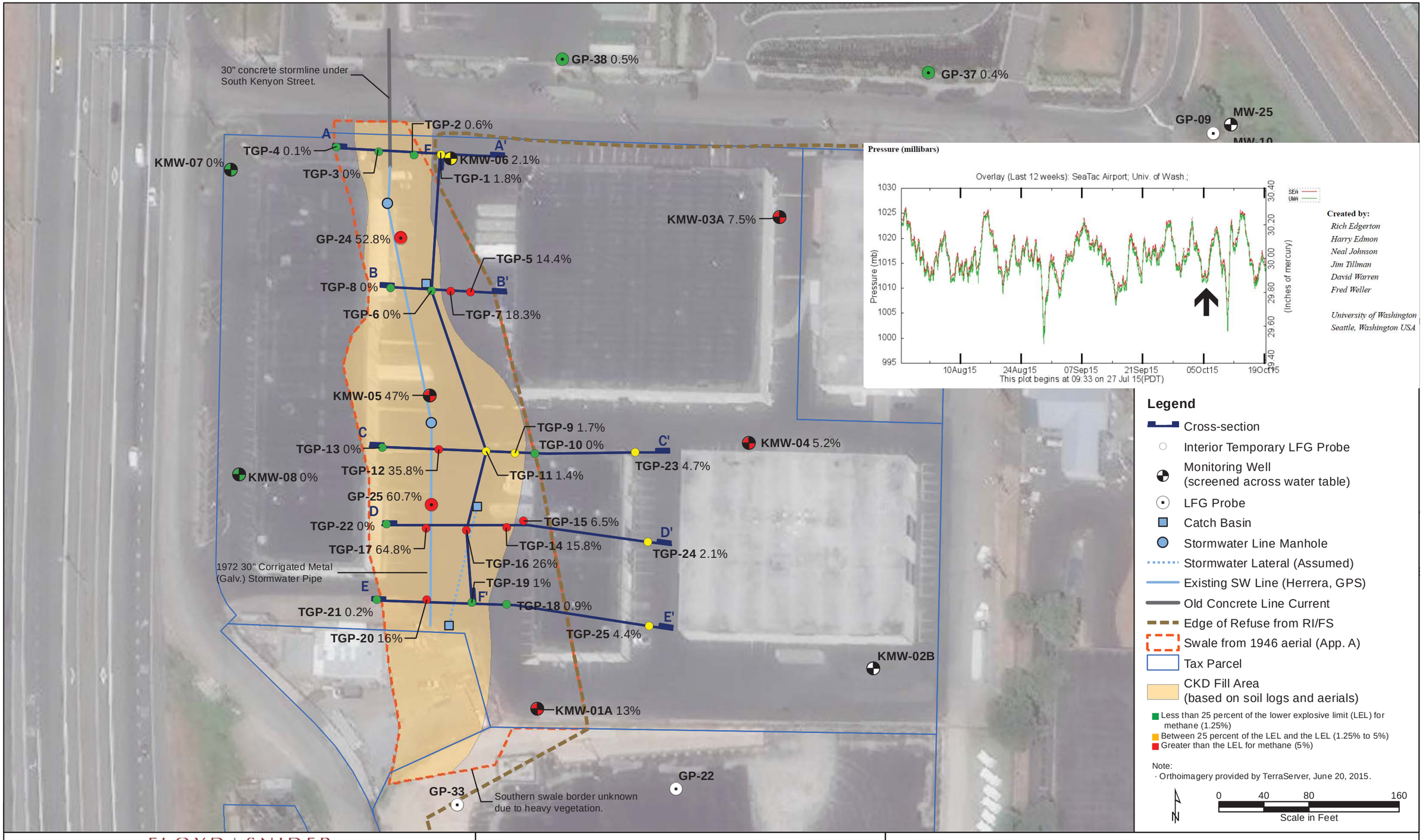
The initial boreholes were monitored following probe removal for the presence of LFG (including methane, carbon dioxide, oxygen, and hydrogen sulfide), with a Landtec GEM 2000 Plus. A photoionization detector (PID) also was used to monitor each borehole and each soil sample for volatile organic compounds (VOCs). Following completion, the boreholes were plugged with bentonite pellets.

To target specific strata adjacent to each initial borehole location, a Post-Run Tubing System, with a 1.5-inch-diameter probe rod was driven to the selected monitoring depth, followed by insertion of 1/4-inch-diameter polyethylene tubing. The GEM was connected directly to the tubing and LFG was monitored after removal of three casing volumes.

Soil cuttings generated during drilling activities were placed in one 55-gallon drum and stored at the northwest corner of the former transfer station.

Field Investigation Results

Herrera provided oversight for installation and conducted LFG monitoring of 25 temporary probes (TGP-1 through TGP-25), and monitored two permanent gas probes (GP-24 and -25) and seven monitoring wells (KMW-01A, -03A, -04, -05, -06, -07, -08) (Figure 1). Probe boring records are provided in Appendix A.



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Kenyon Industrial Park
South Park Landfill
2015 LFG Investigation Kenyon Industrial Park

Figure 1
October 2015 LFG Sampling Locations, Results, and Cross-Sections

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12/1/2015

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Kenyon Industrial Park
South Park Landfill
2015 LFG Investigation Kenyon Industrial Park

Figure 2
October 2015 LFG Sampling Locations and CKD Thickness

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10/22/2015

Twenty-four of the probes were completed through asphalt, with thicknesses ranging from 1 to 3.5 inches; aggregate thickness beneath asphalt ranged from 2 to 9 inches and varied from crushed rock to sandy gravel. Fill (soil fill and/or CKD) material was encountered beneath the aggregate. It ranged in thickness from 6 to 14.5 feet and was underlain by a silt overbank deposit. CKD was encountered within the fill material, generally as a single layer, at depths ranging from 0.5 to 9 feet below ground surface (bgs), with thicknesses ranging from 2.5 inches to 8.5 feet (Figure 2). Figures 3 through 7 provide hydrogeologic cross-sections completed along the five transects, and Figure 8 depicts a cross-section in a north-south direction through the swale. In addition to CKD, fill material typically contained sand and gravel, with occasional brick fragments, broken glass, and charred wood.

Groundwater was measured in the temporary probes at depths ranging from 3 to 12 feet bgs across the site. Stained soil with a sheen and petroleum hydrocarbon odor was observed in temporary borings TGP-6, -8, -11, -14, -16, and -23 at depths ranging from 5.5 to 14.5 feet bgs.

Methane measured in open boreholes during initial temporary probe installations reflected concentrations associated with all strata combined at each of the 25 locations (Table 1). Methane concentrations within targeted strata ranged from 0 to 64.8 percent by volume (Table 1). Targeted strata depths ranged from 2 to 9.5 feet bgs, such that they were above groundwater and in permeable fill material (CKD was avoided, if possible).

Table 2 provides a summary of LFG monitoring conducted in monitoring wells KMW-01A, -03A, -04, -05, -06, -07, and -08, and gas probes GP-24 and -25. Methane concentrations ranged from 0 to 60.7 percent by volume, comparable to historical measurements.

Discussion

Methane measurements shown on Figure 1 indicate consistently low concentrations along the entire western side of the swale, consistently high concentrations along the north-south centerline of the swale, and mixed results along the eastern side of the swale.

Typically, CKD is a dense, low permeability material that limits migration of methane. Eight targeted strata tests were completed with the probe set within CKD, due to the presence of groundwater and absence of soil fill material. Methane concentrations were extremely low, ranging from 0.0 to 1.4 percent at six test locations. At locations TGP-16 and -20, CKD was less than 2 feet thick, overlain and underlain by more permeable soil fill material. Methane concentrations in the CKD were 26 and 16 percent at TGP-16 and -20, respectively.

Table 1. Temporary Gas Probe Measurements at Kenyon Industrial Park, King County, Washington – September 29, and October 13 and 14, 2015.

Location	Date	Time	Total Depth (ft bgs)	Water Level (ATD) (ft bgs)	Methane (% volume) in borehole	Bar Hole Probe Setting (ft bgs)	Methane (% volume) Bar Hole Test	CKD Thickness (ft)	Barometer (inches Hg)
TGP-1	9/29/2015	12:02	10	None	0.2	9.5	1.8	None	29.90
TGP-2	9/29/2015	12:50	10	None	0.3	7.0	0.6	3.0	29.86
TGP-3	9/29/2015	13:30	10	None	0.0	7.0	0.0	3.0	29.88
TGP-4	9/29/2015	14:18	10	None	0.1	7.0	0.1	None	29.91
TGP-5	9/29/2015	15:25	10	None	23.4	6.0	14.4	None	29.81
TGP-6	9/29/2015	16:25	10	6.99	9.6	5.0	0.0	8.5	29.77
TGP-7	10/13/2015	9:35	10	None	0.9	6.0	18.3	None	30.23
TGP-8	10/13/2015	10:45	12	6.50	0.1	5.0	0.0	6.0	30.24
TGP-9	10/13/2015	11:31	8	6.00	0.2	5.0	1.7	0.2	30.25
TGP-10	10/13/2015	12:28	10	8.10	0.0	5.0	0.0	None	30.23
TGP-11	10/13/2015	13:50	12	7.00	0.4	3.5	1.4	5.5	30.22
TGP-12	10/13/2015	15:15	10	None	2.1	8.0	35.8	1.5	30.21
TGP-13	10/13/2015	16:40	8	3.50	0.0	3.0	0.0	3.5	30.22
TGP-14	10/14/2015	13:20	10	7.50	4.9	3.0	15.8	0.3	30.21
TGP-15	10/14/2015	14:01	10	8.00	5.7	5.0	6.5	None	30.18
TGP-16	10/14/2015	14:36	10	9.60	0.0	4.0	26.0	2.0	30.14
TGP-17	10/14/2015	15:15	10	6.80	1.4	5.0	64.8	3.8	30.11
TGP-18	10/14/2015	10:35	10	None	2.9	8.0	0.9	None	30.25
TGP-19	10/14/2015	11:08	10	None	4.2	6.0	1.0	7.6	30.24
TGP-20	10/14/2015	11:35	10	5.40	0.9	3.0	16.0	1.0	30.23
TGP-21	10/14/2015	12:33	10	4.95	0.5	3.0	0.2	0.3	30.22
TGP-22	10/14/2015	15:54	5	3.00	0.0	2.0	0.0	2.5	30.12
TGP-23	10/14/2015	16:56	15	12.00	4.8	5.0	4.7	None	30.12
TGP-24	10/14/2015	17:28	10	None	4.2	5.0	2.1	None	30.11
TGP-25	10/14/2015	18:00	10	None	4.6	9.5	4.4	None	30.10

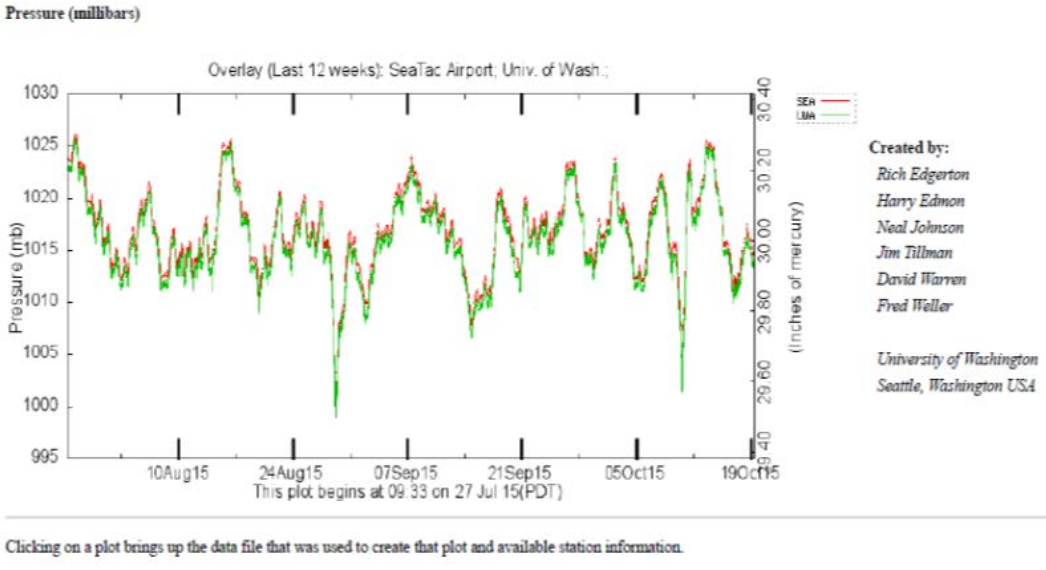
ft = feet; bgs = below ground surface; CKD = cement kiln dust; ATD = at time of drilling; Hg = mercury

Table 2. Gas Probe Measurements at Kenyon Industrial Park and South Transfer Station, King County, Washington – October 15, 2015.

Results from 2015 Supplemental Investigation at Kenyon Industrial Park								Historical Results Feb thru Nov 2011	
Location	Date	Time	Barometer (inches Hg)	Carbon Dioxide (% volume)	Oxygen (% volume)	Hydrogen Sulfide (ppmv)	Methane (% volume)	Methane (% volume)	No. of Events
KMW-01A	10/15/2015	13:25	30.0	7.2	0.1	2	13	not measured	
KMW-03A	10/15/2015	12:40	30.0	0.8	0.1	0	7.5	not measured	
KMW-04	10/15/2015	13:00	30.0	1.6	0	0	5.2	0	2
KMW-05	10/15/2015	11:38	30.0	0	5.0	0	47	50	1
KMW-06	10/15/2015	10:13	30.0	4.7	0.2	0	2.1	12	1
KMW-07	10/15/2015	9:31	30.1	0.1	21	0	0	0	1
KMW-08	10/15/2015	8:45	30.1	0	8.4	0	0	0.2	1
GP-24	10/15/2015	11:11	30.0	0	0.1	0	53	4.6 - 48	9
GP-25	10/15/2015	12:05	30.0	0.1	3.8	0	61	26 - 85	10
GP-37	10/15/2015	14:15	30.0	14	1.2	0	0.4	New probes; no historical data available	
GP-38	10/15/2015	13:45	30.0	16	1.5	0	0.5		

Hg = mercury

ppmv = parts per million volume (ppmv)



Conclusions

- Methane concentrations within the Landfill ranged from not detected to 7.5 percent.
- Methane concentrations within the swale area were the highest in the study area, but they were variable by location, ranging from not detected to 64.8 percent.
- Methane concentrations adjacent to the western building were near zero.
- CKD appears to strongly influence where methane is detected, with the highest concentrations at the base of the swale beneath the CKD (where decaying vegetation was detected) and much lower within the relatively non-porous CKD.

West
A

East
A'

TGP-4
TGP-3
Existing Stormwater Line
TGP-2
Landfill Boundary
TGP-1
KMW-06

Asphalt/ Aggregate

Cement Kiln Dust

Fill

Silt Overbank Deposit

Refuse

7-ft BGS
0.1%

7-ft BGS
0.0%

7-ft BGS
0.6%

9.5-ft BGS
1.8%

2.1%

To 21-ft BGS

Elevation in Feet (NAVD 88)

21
18
15
12
9
6
3

0
15
30
45
60
75
90
105
120
135

Distance in Feet

CONFIDENTIAL

Figure 3.
Cross-Section A-A', South Park Landfill, Seattle, Washington.

Legend

- Approximate Ground Surface
- Refuse
- Bar Hole probe setting
  Feet Below Ground Surface - BGS
  0.1% - Percent methane by volume
- Monitoring well screen

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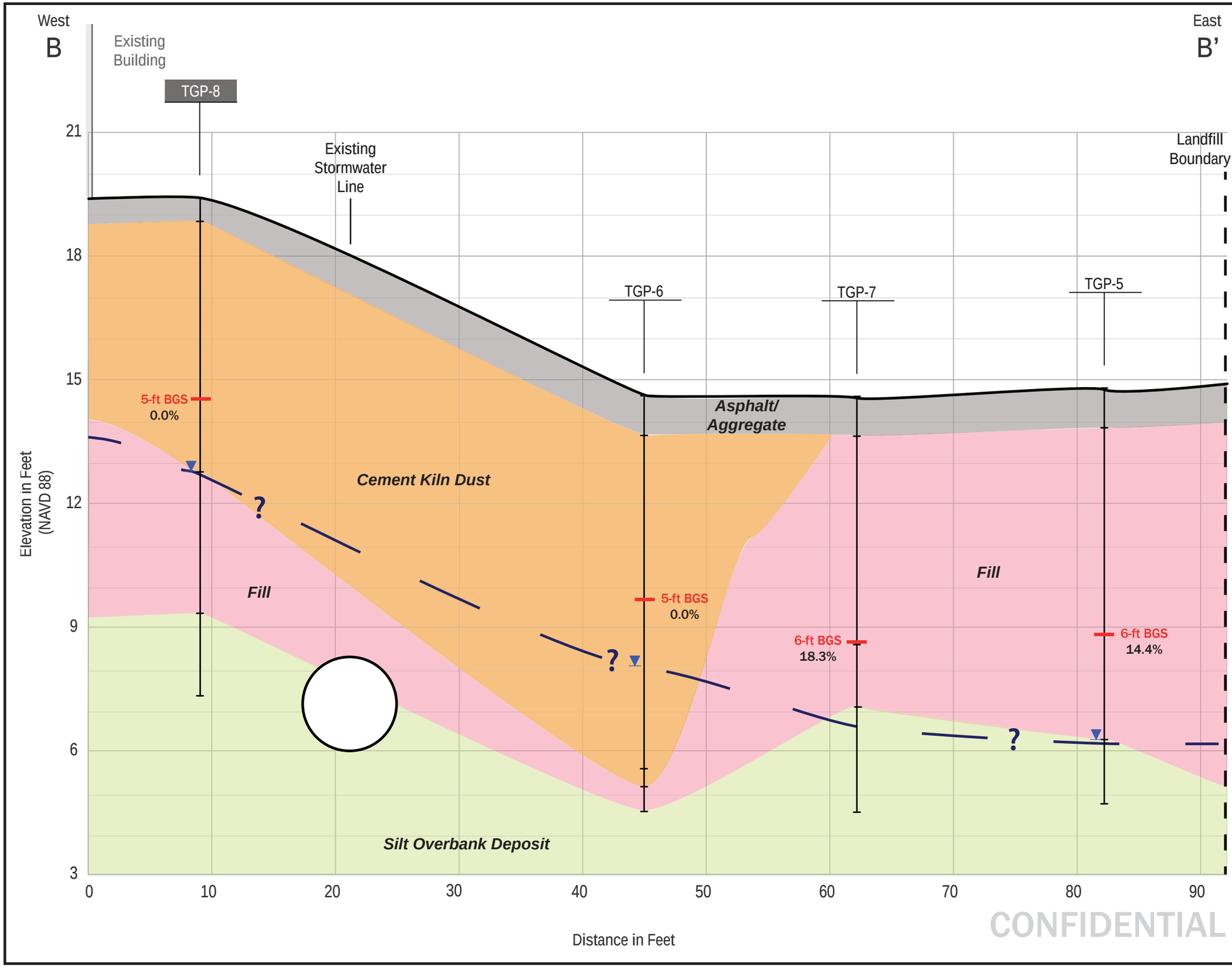

Figure 4.
Cross-Section B-B', South Park Landfill, Seattle, Washington.

Legend

- Groundwater Level
- Approximate Ground Surface
- TGP-# Proposed Compliance Gas Probe Location
- ? Approximate Seasonal Low Groundwater
- Bar Hole probe setting
  Feet Below Ground Surface - BGS
  0.1% - Percent methane by volume

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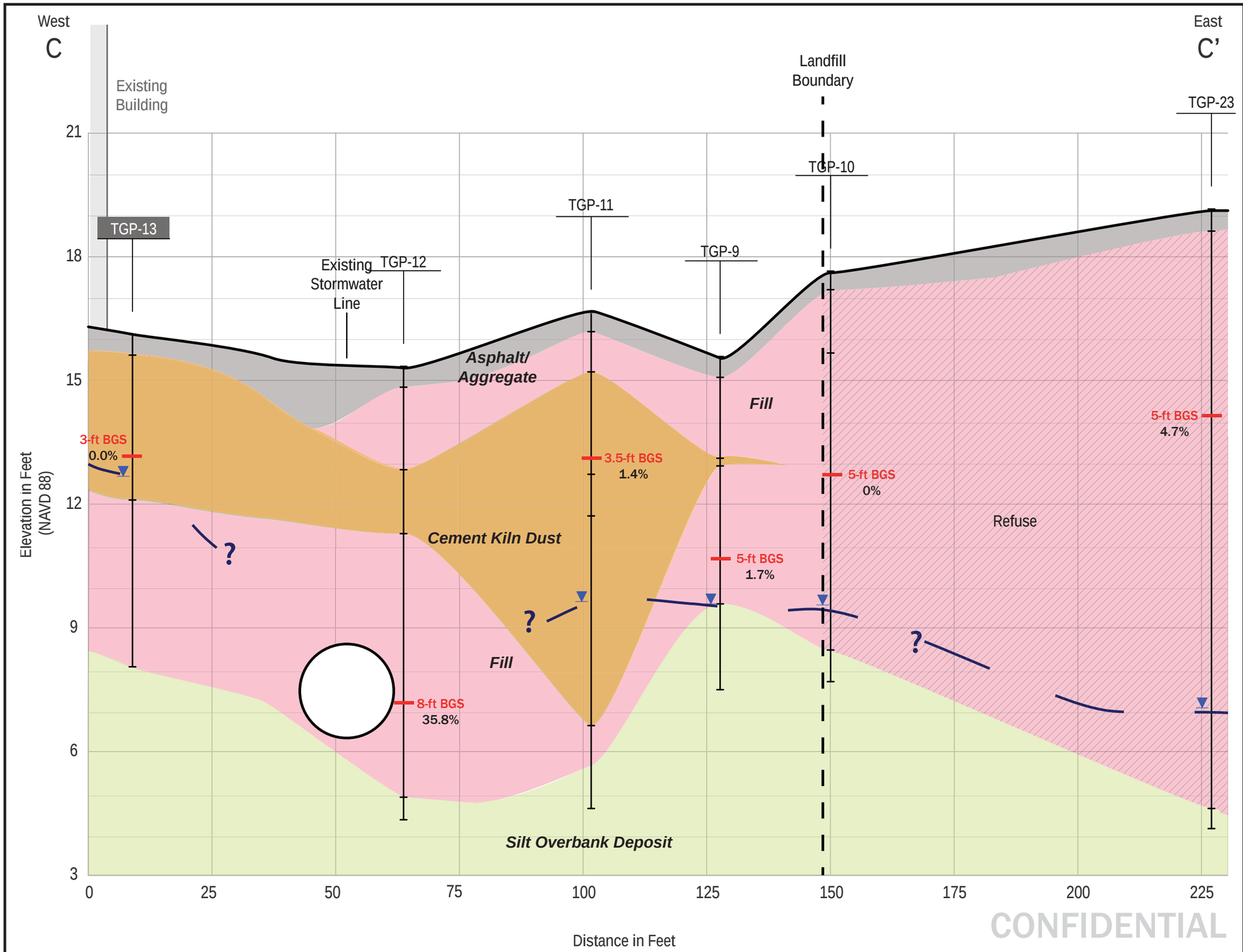

Figure 5.
Cross-Section C-C', South Park Landfill, Seattle, Washington.

Legend

- Groundwater Level
- Approximate Ground Surface
- TGP-# Proposed Compliance Gas Probe Location
- ? Approximate Seasonal Low Groundwater
- Refuse
- Bar Hole probe setting
  Feet Below Ground Surface - BGS
  0.1% - Percent methane by volume

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West
D

East
D'

Existing Building

Landfill Boundary

TGP-22

TGP-17

TGP-16

TGP-14

TGP-15

TGP-24

Existing Stormwater Line

3-ft BGS
0.0%

Cement Kiln Dust

Asphalt/ Aggregate

Refuse

5-ft BGS
2.1%

Fill

3-ft BGS
15.8%

4-ft BGS
26.0%

5-ft BGS
64.8%

5-ft BGS
6.5%

Fill

Silt Overbank Deposit

Elevation in Feet (NAVD 88)

21
18
15
12
9
6
3

0
25
50
75
100
125
150
175
200
225

Distance in Feet

Figure 6.
Cross-Section D-D', South Park Landfill, Seattle, Washington.

Legend

- Groundwater Level
- Approximate Ground Surface
- Approximate Seasonal Low Groundwater
- Refuse
- Bar Hole probe setting
  Feet Below Ground Surface - BGS
  0.1% - Percent methane by volume

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West
E

East
E'

Landfill
Boundary

TGP-25

TGP-21

TGP-20

Existing
Stormwater
Line

TGP-19

TGP-18

Asphalt/
Aggregate

3-ft BGS
0.2%

Fill

Refuse

3-ft BGS
16%

Cement Kiln Dust

Fill

9.5-ft BGS
4.4%

Fill

6-ft BGS
1.0%

8-ft BGS
0.9%

Silt Overbank Deposit

Elevation in Feet
(NAVD 88)

21
18
15
12
9
6
3

0
30
60
90
120
150
180
210
240
270

Distance in Feet

CONFIDENTIAL

Figure 7.
Cross-Section E-E', South Park Landfill, Seattle, Washington.

Legend

- Groundwater Level
- Approximate Ground Surface
- TGP-# Proposed Compliance Gas Probe Location
- Approximate Seasonal Low Groundwater
- Refuse
- Bar Hole probe setting
  Feet Below Ground Surface - BGS
  0.1% - Percent methane by volume

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North
F

South
F'

TGP-2
GP-24
TGP-6
TGP-11
GP-25
TGP-16
TGP-19

Asphalt/
Aggregate

Fill

Cement Kiln Dust

Fill

Silt Overbank Deposit

7.5-ft BGS
0.6%

53%

5-ft BGS
0.0%

3.5-ft BGS
1.4%

61%

4-ft BGS
26%

6-ft BGS
1.0%

?

Elevation in Feet
(NAVD 88)

21
18
15
12
9
6
3

0
50
100
150
200
250
300
350
400
450

Distance in Feet

CONFIDENTIAL

Figure 8.
Cross-Section, South Park Landfill, Seattle, Washington.

Legend

- Groundwater Level
- Approximate Ground Surface
- Approximate Seasonal Low Groundwater
- Bar Hole probe setting
  Feet Below Ground Surface - BGS
  0.1% - Percent methane by volume
- Gas probe screen

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APPENDIX A

Probe Boring Records

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-1
Total depth 10 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Northern transect	Sampling method	5 ft core with plastic liner
Client	City of Seattle		easternmost location, west of KMW-06	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	September 29, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 3", aggregate – 4", crushed rock
0	5-foot core with liner	40		1	SW/ Fill	Brown to black, gravelly SAND, brick, glass fragments, fill, dry
				2		
				3		
				4		
				5		Charred wood fragments
0	5-foot core with liner	30		6	GW/ SW/ Fill	Gray to black gravelly SAND, glass fragments, fill, damp
				7		
				8		2-inch zone of buff colored sandy GRAVEL, damp
				9		
				10	CH	Dark gray silty CLAY, damp
						Groundwater not encountered during drilling. Set bar hole probe at 9.5 ft bgs. Backfilled borehole with bentonite chips. CH4: 0.2% CO2: 0.1% O2: 20.7% H2S: 0.0 ppmv

PID – photoionization detector

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-2
Total depth 10 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Northern transect	Sampling method	5 ft core with plastic liner
Client	City of Seattle		second probe from easternmost location	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	September 29, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 2", aggregate – 3.5", crushed rock
				1	SM/Fill	Gray to brown silty SAND, fill, dry
					Fill	Buff colored, cement kiln dust, fill, dry
				2		
0	5-foot core with liner	60				
				3		
				4		
					SM/ Fill	Dark brown gravelly silty SAND, fill, damp
				5		
						Black silty SAND, charred wood, glass, plastic, fill, damp
				6		
				7		Dark brown silty SAND, brick and asphalt fragments, fill, damp
0	5-foot core with liner	80				
				8		
				9	CH	Gray silty CLAY, damp
				10		
						Groundwater not encountered during drilling. Set bar hole probe at 7.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 0.3% CO2: 6.6% O2: 0.6% H2S: 0.0 ppmv

PID – photoionization detector

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-3
Total depth 10 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Northern transect	Sampling method	5 ft core with plastic liner
Client	City of Seattle		third probe from easternmost location	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	September 29, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 1.5", aggregate – 5.5", crushed rock
				1	SM/Fill	Brown silty SAND, fill, dry
					Fill	Buff colored, cement kiln dust, fill, dry
0	5-foot core with liner	70		2		
				3		
				4		
					SM/Fill	Brown sandy SILT, fill, damp
				5	SW/Fill	Gray to brown gravelly SAND, fill, damp
						Dark brown gravelly SAND, glass, brick fragments, trace of gravel, fill, damp
0	5-foot core with liner	15		6		
				7		
				8		
				9		
					CH	Gray silty CLAY, damp
				10		
						Groundwater not encountered during drilling. Set bar hole probe at 7.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 0.0% CO2: 0.0% O2: 21.7% H2S: 0.0 ppmv

PID – photoionization detector

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-4
Total depth 10 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Northern Transect	Sampling method	5 ft core with plastic liner
Client	City of Seattle		Westernmost location	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	September 29, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 3.5", aggregate – 2.0", crushed rock
0	5-foot core with liner	60		1	SW/Fill	Brown to gray gravelly SAND, fill, damp
				2		
				3	SP/Fill	Brown medium SAND, fill, damp
				4		
				5		
0	5-foot core with liner	30			SW/Fill	Dark brown gravelly SAND, fill, damp
				6		
				7		
						Gray gravelly SAND, fill, damp
				8		
				9		
					CH	Gray silty CLAY, with cobbles, fill, damp
				10		
						Groundwater not encountered during drilling. Set bar hole probe at 7.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 0.1% CO2: 1.6% O2: 19.4% H2S: 0.0 ppmv

PID – photoionization detector

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-5
Total depth 10 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Second transect from north	Sampling method	5 ft core with plastic liner
Client	City of Seattle		easternmost probe location	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	September 29, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 2.5", aggregate – 8.5", crushed rock
0	5-foot core with liner	70		1	SW/Fill	Brown gravelly SAND, brick, glass fragments, fill, damp
				2		
				3		Black gravelly SAND, pieces of rubber tire, glass, fill, damp
				4		
				5		
0	5-foot core with liner	70	▽	6	SM/Fill	Dark brown to black silty SAND, wood fragments, trace of gravel fill, damp
				7		
				8		Groundwater encountered during drilling at 8.5 feet
				9	CH	Dark gray silty CLAY, wet
				10		
						Set bar hole probe at 6.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 23.4% CO2: 19.5% O2: 0.0% H2S: 1.0 ppmv

PID – photoionization detector

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-6
Total depth 10 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Second transect from north	Sampling method	5 ft core with plastic liner
Client	City of Seattle		third location to west	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	September 29, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
				1		Asphalt – 3.0", aggregate – 4", crushed rock
0	5-foot core with liner	100		2	Fill	Buff colored cement kiln dust, fill, damp
				3		
				4		
				5		
0	5-foot core with liner	100	▽	6		Ground water encountered during drilling at 6.5 feet
			▼ 6.99	7		Static water level measured at 6.99 feet
				8		
				9		
					CL	Black gravelly CLAY, petroleum odor, wet
				10	CH	Gray to black, silty CLAY, wet
						Set bar hole probe at 5.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 9.6% CO2: 0.0% O2: 17.9% H2S: 2.0 ppmv

PID – photoionization detector

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-7
Total depth 10 feet
Sheet 1 of 1

Project name South Park LF
Project number 10-04850-000
Client City of Seattle
HEC rep. Bruce Carpenter

Drilling Contractor ESN
Location Second transect from north between TGP-6 and TGP-5
Date October 13, 2015

Drilling method Push-probe rig
Sampling method 4 ft core with plastic liner
Air monitoring (Y/N) Yes
Instrument(s) PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 2.0", aggregate – 8", crushed rock
				1		
					SWFill	Brown gravelly SAND, fill, dry
0	4-foot core with liner	75		2	SM/Fill	Dark brown silty gravelly SAND, fill, dry
				3	ML/Fill	Gray to brown sandy SILT, trace of gravel, brick fragments, fill, dry
				4		
					SW/Fill	Brown gravelly SAND, trace of silt, fill, damp
				5		
					ML	Gray clayey SILT, damp
0	4-foot core with liner	70		6	SM	Gray to brown silty SAND, damp
				7		Dark brown silty SAND, damp
				8	MH	Brown clayey SILT, damp
0	2-foot core with liner	100		9		
				10		
						Groundwater not encountered Set bar hole probe at 6.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 0.9% CO2: 0.7% O2: 20.2% H2S: 0.0 ppmv

PID – photoionization detector

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-8
Total depth 12 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Second Transect from north	Sampling method	4 ft core with plastic liner
Client	City of Seattle		westernmost probe	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	October 13, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 2.0", aggregate – 5", crushed rock
0	4-foot core with liner	100		1	Fill	Buff colored cement kiln dust
				2		
				3		
				4		
0	4-foot core with liner	75	▼ 6.5	5		
				6		Static water level measured at 6.5 feet
				7	Fill	Crushed brick
					GW/Fill	Gray GRAVEL. Crushed rock, fill, damp
				8	SW/Fill	Black gravelly SAND, rock fragments, fill, hydrocarbon stain, wet
0	2-foot core with liner	No Recovery	▽	9		Ground water encountered during drilling at 8.0 feet No recovery
				10		
0	2-foot core with	50		11	MH	Brown clayey SILT, wet
				12		
						Set bar hole probe at 5.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 0.1% CO2: 3.3% O2: 13.4% H2S: 0.0 ppmv

PID – photoionization detector

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-9
Total depth 8 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Third transect from north	Sampling method	4 ft core with plastic liner
Client	City of Seattle		west of TGP-10	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	October 13, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 1.0", aggregate – 7", crushed rock
0	4-foot core with liner	100		1	ML/Fill	Gray to brown sandy SILT, fill, damp
				2		
					SP/Fill	Brown medium SAND, trace of gravel, fill, damp
				3	ML/Fill	Gray sandy SILT, fill, damp
				4		2.5 inches Buff colored cement kiln dust, fill, damp
0	4-foot core with liner	50	▼/▽ 6.0	5	SW	Gray gravelly SAND, trace of silt, fill, damp
				6		Static water level measured at 6.0 feet
				7	SM/Fill	Ground water encountered during drilling at 6.0 feet Gray silty SAND, trace of gravel, fill, wet
				8		
						Set bar hole probe at 5.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 0.2% CO2: 0.2% O2: 17.3% H2S: 0.0 ppmv

PID – photoionization detector

HERRERA

SOIL PROBE BORING RECORD

Boring ID TGP-10
Total depth 10 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Third transect from north	Sampling method	4 ft core with plastic liner
Client	City of Seattle		easternmost probe	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	October 13, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 2.0", aggregate –6", crushed rock
0	4-foot core with liner	75		1	SWFill	Brown gravelly SAND, trace of silt, charred wood, fill, damp
				2	ML/Fill	Brown sandy SILT, trace of clay, glass, fill, damp
				3	SM/Fill	Tan silty SAND, fill, damp
				4		Wood fragments
0	4-foot core with liner	50		5		
				6	ML/Fill	Brown to black sandy SILT, glass, brick fragments, fill, damp
				7		
			▼	8		Trace of gravel
0	2-foot core with liner	100	8.10 ▽	9		Static water level measured at 8.10 feet Groundwater encountered at 9.0 feet
					SM/Fill	Black silty SAND, charred wood, fill, wet
				10	CH	Brown clayey SILT, wet
						Set bar hole probe at 5.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 0.0% CO2: 0.5% O2: 19.9% H2S: 0.0 ppmv

PID – photoionization detector

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-11
Total depth 12 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Third transect from north	Sampling method	4 ft core with plastic liner
Client	City of Seattle		middle probe	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	October 13, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 1.0", aggregate – 7.0", crushed rock
				1	SM/Fill	3-inch Brown silty SAND, trace of gravel, damp,
					ML/Fill	3-inch Gray sandy SILT, fill, damp
0	4-foot core with liner	95		2	Fill	Buff colored CKD, fill, damp
					ML/Fill	2-inch gravelly sandy SILT, fill, damp
				3		
					SM/Fill	Gray gravelly SILT, fill, damp
				4	Fill	Buff colored cement kiln dust, fill, damp
					SM/Fill	2-inch Brown silty SAND, fill, damp
				5	Fill	Buff colored cement kiln dust, fill, damp
0	4-foot core with liner	100				
				6		
			▼ 7.0	7		Static water level measured at 7.0 feet
				8		
0	2-foot core with liner	No Recovery		9		No recovery
			▽	10		Groundwater encountered during drilling at 10.0 feet
					OH	Black clayey SILT, organic material, sheen, wet
0	2-foot core with	50		11		
				12		
						Set bar hole probe at 8.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 0.4% CO2: 0.0% O2: 21.1% H2S: 0.0 ppmv

PID – photoionization detector

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-12
Total depth 10 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Middle transect, fourth from	Sampling method	4 ft core with plastic liner
Client	City of Seattle		easternmost location	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	October 13, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 1.0", aggregate – 6.0", crushed rock
				1	GW/Fill	4-inch Dark Brown sandy GRAVEL, fill, dry
					SW/Fill	Tan gravelly SAND, 2-inch piece of wood, fill, dry
0	4-foot core with liner	100		2		
				3	Fill	Buff colored cement kiln dust, fill, dry
				4		
					SM/Fill	Black silty SAND, wood fragments, fill, damp
				5		
0	4-foot core with liner	90				
				6		
					ML/Fill	Gray sandy SILT, fill, damp
				7		
					SM	Black silty SAND, organic material, damp
				8		
0	2-foot core with liner	100				
				9		
						Gray silty SAND, damp
				10	OH	Dark gray silty CLAY, damp
						Groundwater not encountered during drilling. Set bar hole probe at 8 ft bgs. Backfilled borehole with bentonite chips. CH4: 2.1% CO2: 0.0% O2: 20.6% H2S: 0.0 ppmv

PID – photoionization detector

HERRERA

SOIL PROBE BORING RECORD

Boring ID TGP-13
Total depth 8 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Third transect from north	Sampling method	4 ft core with plastic liner
Client	City of Seattle		westernmost probe	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	October 13, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 1.0", aggregate – 5.0", silty gravel
0	4-foot core with liner	100	▼ 3.5	1	Fill	Buff colored cement kiln dust, fill, dry
				2		
				3		Static water level measured at 3.5 feet
				4		damp
0	4-foot core with liner	100	▽ 6.0	5	SW/Fill	Gray gravelly SAND, damp
				6	SP/Fill	Gray medium SAND, fill, damp
				7		wet, ground water encountered during drilling at 6.0 feet
				8		
						Set bar hole probe at 3.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 0.0% CO2: 0.0% O2: 20.9% H2S: 0.0 ppmv

PID – photoionization detector

HERRERA

SOIL PROBE BORING RECORD

Boring ID TGP-14
Total depth 10 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Fourth transect from north	Sampling method	5 ft core with plastic liner
Client	City of Seattle		second probe from easternmost location	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	October 14, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
0	5-foot core with liner	80		1		Asphalt – 1.0", aggregate – 9.0", crushed rock
				2	SW/Fill	Black gravelly SAND, fill, dry
				3		Gray gravelly SAND, fill, damp
				4	Fill ML/Fill	3-inch Buff colored cement kiln dust, fill, damp Black sandy SILT, brick fragments, fill, damp
				5		
				6		
0	5-foot core with liner	80	▼ 7.50	7	SM/Fill CH/Fill	2-inch Gray silty SAND, fill, damp Dark gray to black silty CLAY, organic material, fill, damp
				8	SM/Fill	Static water level measured at 7.50 feet Brown silty SAND, glass, plastic, brick fragm ents, fill, damp
				9	GW/Fill	Ground water encountered during drilling at 8.00 feet Gray to brown sandy GRAVEL, trace of silt, sheen, wet
				10	GM/Fill	Black sandy GRAVEL, trace of silt, sheen, wet
						Set bar hole probe at 3.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 4.9% CO2: 0.2% O2: 15.8% H2S: 0.0 ppmv

PID – photoionization detector

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-15
Total depth 10 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Fourth transect from north	Sampling method	5 ft core with plastic liner
Client	City of Seattle		Easternmost probe location	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	October 14, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
				1		Asphalt – 1", aggregate – 8", crushed rock
0	5-foot core with liner	75		2	ML/Fill	Light brown sandy SILT, fill, damp
				3		Gray-brown mottled sandy SILT, fill, damp
				4		
					OL/Fill	Dark brown-black clayey SILT, fill, organic material
0	5-foot core with liner	60		5	SM/Fill	Brown sandy SILT brick fragments, fill, damp Glass, with gravel
				6		
				7		
			▼ 8.00	8	ML/Fill	Dark brown-black gravelly SILT, organic material, wood fragments, Static water level measured at 8.00 feet moist
				9		Groundwater encountered during drilling at 9.5 feet.
			▽	10	ML	Gray-brown sandy SILT, wet
						Set bar hole probe at 5.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 5.7% CO2: 4.6% O2: 4.8% H2S: 0.0 ppmv

PID – photoionization detector

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-16
Total depth 10 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Fourth transect from north	Sampling method	5 ft core with plastic liner
Client	City of Seattle		Middle probe location	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	October 14, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
				1		Asphalt – 1", aggregate – 8", crushed rock
					SW/Fill	Tan gravelly SAND, fill, damp
				2		
0	5-foot core with liner	80			Fill	Buff colored cement kiln dust, wood fragments, fill, damp
				3		
					GW/Fill	5" black sandy GRAVEL, fill, damp
				4	Fill	Buff colored cement kiln dust, fill, damp
				5	SM/Fill	Black sandy SILT, brick fragments, fil, wet Petroleum hydrocarbon odor
				6		
					ML/Fill	Dark brown clayey SILT, fill, damp
0	5-foot core with liner	60	▽	7		Groundwater encountered during drilling at 7 feet.
					SM/Fill	Black sandy SILT, organic material, wood fragments, fill, wet
				8		
					OH	Gray clayey SILT, organic material, wet
				9		
			▼			Static water level measured at 9.6 feet.
			9.6	10		
						Set bar hole probe at 4.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 4.3% CO2: 0.0% O2: 9.8% H2S: 0.0 ppmv

PID – photoionization detector

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-17
Total depth 10 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Fourth transect from north	Sampling method	5 ft core with plastic liner
Client	City of Seattle		second probe from westernmost location	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	October 14, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 1.0", aggregate – 5.0", sandy gravel
				1	ML/Fill	Tan gravelly SILT, trace sand, fill, damp
					Fill	Buff colored cement kiln dust, damp
0	5-foot core with liner	75		2		
				3		
				4		
				5	ML/Fill	2" tan sandy SILT, 4"Dark brown sandy SILT, fill, damp
					OL/Fill	As above, organic material, sticks, wood and few brick fragments
				6		
			▼			Static water level measured at 6.80 feet.
0	5-foot core with liner	60	6.80	7		
				8		
			▽			Groundwater encountered during drilling at 9.0 feet
				9	SM/Fill	Dark gray silty SAND, trace clay, fill, wet
					ML	Brown clayey SILT, damp
				10		
						Set bar hole probe at 5.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 1.4% CO2: 0.0% O2: 21.3% H2S: 0.0 ppmv

PID – photoionization detector

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-18
Total depth 10 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Southern transect	Sampling method	5 ft core with plastic liner
Client	City of Seattle		second probe from easternmost location	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	October 14, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 1", aggregate – 9", sandy gravel
				1		
					GW/Fill	5" Brown-gray sandy GRAVEL, fill, damp
				2		4" Black sandy GRAVEL, charred wood, fill, damp
0	5-foot core with liner	100			ML/Fill	Gray sandy SILT, trace gravel, damp
				3		
				4		
						Gray-brown sandy SILT, fill, damp
				5	SP/ML/Fill	2" Gray medium SAND lens, fill
					ML/Fill	Gray sandy SILT, fill, damp
0	5-foot core with liner	90		6	SM/Fill	Black silty SAND, trace gravel, wood fragments, and glass, damp
				7		
				8		
				9		
				10	CH	Gray-brown silty CLAY, damp
						Groundwater not encountered during drilling. Set bar hole probe at 8.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 2.9% CO2: 0.2% O2: 19.2% H2S: 0.0 ppmv

PID – photoionization detector

HERRERA

SOIL PROBE BORING RECORD

Boring ID TGP-19
Total depth 10 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Southern transect	Sampling method	5 ft core with plastic liner
Client	City of Seattle		Second probe from easternmost location	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	October 14, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 1", aggregate – 6.0", sandy gravel
0	5-foot core with liner	100		1	Fill	Buff colored cement kiln dust, fill, damp
				2		
				3		
				4		
				5		
0	5-foot core with liner	100		6	ML/Fill	4" lens of dark brown SILT, fill, damp
				7	Fill	Buff colored cement kiln dust, fill, damp
				8		
				9	OH	Cobbles, Black silty CLAY, organic material, damp
				10		Brown silty CLAY, organic material, damp
						Groundwater not encountered during drilling. Set bar hole probe at 6.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 4.2% CO2: 0.0% O2: 20.4% H2S: 0.0 ppmv

PID – photoionization detector

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-20
Total depth 10 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Southern transect	Sampling method	5 ft core with plastic liner
Client	City of Seattle		Second probe from westernmost location	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	October 14, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 1", aggregate – 4", sandy gravel
				1	GP/Fill	4" Gray GRAVEL, fill, damp
					SW/Fill	4" Black gravelly SAND, fill, damp
				2	SM/Fill	Gray silty SAND, trace gravel, fill, damp
0	5-foot core with liner	100				
				3	Fill	Buff colored cement kiln dust, fill, damp
				4	SM/Fill	Gray-brown mottled gravelly SILT, fill, damp
			▼	5		Groundwater encountered during at 5.0 feet.
			5.4			Gray sandy SILT, trace clay, fill, wet. Static water level measured at 5.4 feet
0	5-foot core with liner	80		6		
				7		
				8		Dark brown-black sandy SILT, damp
				9	CH	Gray silty CLAY, damp
					OH	Gray-brown clayey SILT, organic material, wood fragments
				10		
						Set bar hole probe at 3.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 0.9% CO2: 0.0% O2: 20.6% H2S: 0.0 ppmv

PID – photoionization detector

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-21
Total depth 10 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Southern transect	Sampling method	5 ft core with plastic liner
Client	City of Seattle		westernmost probe location	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	October 14, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Grass, topsoil
				1	GW/Fill	Brown sandy GRAVEL, fill, damp
				2		
0	5-foot core with liner	70			ML/Fill	Brown gravelly SILT, fill, damp
				3		Tan sandy SILT, damp
					Fill	3" Buff colored cement kiln dust, fill, damp
				4	ML/Fill	3" Brown sandy SILT, fill, damp
					SM/Fill	Gray silty SAND, fill, wet, groundwater encountered at 4 feet
			▼ 4.95	5		Static water level measured at 4.95 feet
				6		
					CH	Gray-brown clayey SILT, damp
				7		
0	5-foot core with liner	80				
				8		
						Brown clayey SILT, damp
				9		
				10		
						Set bar hole probe at 3.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 0.5% CO2: 0.1% O2: 20.8% H2S: 0.0 ppmv

PID – photoionization detector

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-22
Total depth 5 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe
Project number	10-04850-000	Location	Fourth transect from north	Sampling method	5 ft core with plastic liner
Client	City of Seattle		westernmost probe location	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	October 14, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 1", aggregate – 4", sandy gravel
				1	GW/Fill	Brown sandy GRAVEL, fill, dry
					Fill	Buff colored cement kiln dust, fill, damp
	5-foot			2		
0	core	80				
	with		▼	3		Static water level measured at 3.0 feet
	liner		3.0			
				4	SW/Fill	Brown gravelly SAND, fill, damp, groundwater encountered at 4.0 feet.
			▽		ML/Fill	3" Light brown sandy SILT, fill, and 3" Black sandy SILT, fill, wet
				5	SP/Fill	Gray medium SAND, fill, wet
						Set bar hole probe at 2.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 0.0% CO2: 0.0% O2: 21.6% H2S: 0.0 ppmv

PID – photoionization detector

SOIL PROBE BORING RECORD

HERRERA

Boring ID TGP-23
Total depth 15 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Northernmost probe on landfill	Sampling method	5 ft core with plastic liner
Client	City of Seattle			Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	October 14, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 1", aggregate – 4", sandy gravel
0	5-foot core with liner	70		1	GW/Fill	4" Dark brown gravelly SAND, fill, dry
						Light brown gravelly SAND, fill, damp
				2		
				3		
					CL/Fill	6" Gray clayey SILT, trace gravel, fill, damp
				4	GC/Fill	Black –gray clayey GRAVEL, crushed rock, fill
				5	SM/Fill	Dark-brown silty SAND, glass and brick fragments, organic material, wood waste, fill
-	5-foot core with liner	NR			NR	No Recovery
				6		
				7		
				8		
				9		
				10		
0	5-foot core with liner	6	▼ 12.00			No Recovery
				11		
				12		Static water level measured at 12.00 feet.
				13		
				14		
			▽			Groundwater encountered during drilling at 14.5 feet
				15	GM/Fill	Black sandy GRAVEL, broken glass, fill, hydrocarbon odor, wet
						Set bar hole probe at 5.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 4.8% CO2: 1.7% O2: 0.3% H2S: 0.0 ppmv

PID – photoionization detector

HERRERA

SOIL PROBE BORING RECORD

Boring ID TGP-24
Total depth 10 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Middle probe located within	Sampling method	5 ft core with plastic liner
Client	City of Seattle		landfill	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	October 14, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 1.0", aggregate – 4.0", sandy gravel
2.4	5-foot core with liner	60		1	SM/Fill	Light brown gravelly SAND, fill, damp
				2		
				3		
				4	ML/Fill	4" Gray clayey SILT, fill
					SW/Fill	4" Black gravelly SAND, crushed rock, fill
				5	SM/Fill	4" Dark white specks, silty SAND, brick fragments, fill, damp
1.0	5-foot core with liner	30			SW/Fill	Black gravelly SAND, brick fragments, fill, damp
				6		
					Fill	4" Brick fragments, fill
				7	SM/Fill	4" Brown silty SAND, fill
				8	Fill	3" Black charred wood
					SM/Fill	3" Brown silty SAND, fill, damp
				9		
				10		
						Groundwater not encountered during drilling. Set bar hole probe at 5.0 ft bgs. Backfilled borehole with bentonite chips. CH4: 4.2% CO2: 2.8% O2: 3.4% H2S: 0.0 ppmv

PID – photoionization detector

HERRERA

SOIL PROBE BORING RECORD

Boring ID TGP-25
Total depth 10 feet
Sheet 1 of 1

Project name	South Park LF	Drilling Contractor	ESN	Drilling method	Push-probe rig
Project number	10-04850-000	Location	Southernmost probe located	Sampling method	5 ft core with plastic liner
Client	City of Seattle		Within landfill	Air monitoring (Y/N)	Yes
HEC rep.	Bruce Carpenter	Date	October 14, 2015	Instrument(s)	PID, GEM Plus

PID (ppm)	Sample type, interval	% recovery	Water level (feet)	Depth (feet, BGS)	Soil group	Soil description
						Asphalt – 1.0", aggregate – 9.0", sandy gravel
				1		
					SW/Fill	Light brown gravelly SAND, fill, damp
				2		
0	5-foot core with liner	80				
				3		
				4	ML/Fill	Gray sandy SILT, fill, damp
					SW/Fill	Gray gravelly SAND, fill, damp
				5	ML/Fill	Gray sandy SILT, fill, dry
				6		
					SW/Fill	Black gravelly SAND, crushed rock, fill, dry
				7	SP/Fill	4" Buff colored SAND, fill
1.4	5-foot core with liner	75				4" Orange-brown SAND, fill
				8		
					SW/Fill	Brown-black gravelly SAND, fill, damp
				9	Fill	Broken glass, nail, brick fragments, fill
				10		
						Groundwater not encountered during drilling. Set bar hole probe at 9.5 ft bgs. Backfilled borehole with bentonite chips. CH4: 4.6% CO2: 6.3% O2: 0.3% H2S: 0.0 ppmv

PID – photoionization detector

South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix L
Supplemental Investigations

Attachment L.2
Monthly Monitoring for New LFG Probes – September 2016 through August 2017

HERRERA

TECHNICAL MEMORANDUM

Date: September 19, 2017

To: Teri Floyd, Floyd|Snider

From: Bruce Carpenter and Michael Spillane, Herrera Environmental Consultants

Subject: LFG Monitoring Results at Kenyon Industrial Park

INTRODUCTION

The South Park PLP Group requested Floyd|Snider and Herrera Environmental Consultants (Herrera) install five landfill gas (LFG) compliance perimeter gas probes at Kenyon Industrial Park (KIP), based on results of a LFG characterization conducted at KIP by Herrera in September/October 2015. The 2015 investigation was conducted to determine LFG concentrations extending across a swale situated adjacent to the northern portion of the west South Park Landfill (Landfill) boundary (Figure 1).

Five probes, GP-39 through GP-43, were installed in September 2016, based on the *Compliance Probe Installation and Monitoring Work Plan* provided in Attachment A. The purpose of these probes is to monitor the potential pathway of methane to the building. The borings were logged by a Herrera licensed hydrogeologist and LFG measurements made at each location. Gas probe boring logs, including probe construction details, are provided in Attachment B.

LFG PROBE MONITORING

Following probe installation, Herrera performed monthly monitoring beginning in September 2016. LFG monitoring was also conducted at two gas probes, GP-24 and GP-25, and four monitoring wells, KMW-01A, KMW-03A, KMW-04, and KMW-06, previously installed on the KIP property. The additional monitoring was conducted to determine distribution of LFG throughout KIP. Two perimeter probes, including GP-22 and GP-33 located on South Park Property Development (SPPD), the adjacent property to the south, also were monitored to determine effectiveness of the active LFG collection system constructed on SPPD.

A summary of probe monitoring results is provided in Table 1. During the 12-month monitoring period, September 2016 through August 2017, water levels fluctuated from 0.69 to 2.70 feet across the site. The highest water levels were measured in April 2017 and the lowest levels in August 2017. Figure 2 depicts Cross Section A A', including Probes GP-39 through GP-43. It provides initial methane and water levels measured on September 26, 2016.

During the 12-month monitoring period, results were as follows:

- No methane was detected in probe GP-39 with the exception of 0.1 percent during the initial monitoring period. The screen in this probe is open to fill material located above and below the cement Kiln Dust (CKD). Typically CKD is a dense, low permeable layer that impedes the flow of LFG.

- Methane concentrations ranged from 0 to 7.5 percent in probe GP-40. During the November 2016 and April 2017 monitoring periods, high water levels prevented purging more than one probe volume. The probe screen straddles two fill zones and CKD, but during all 12 monitoring periods, the water level was above the lower fill zone and CKD.

- No methane was detected in probe GP-41. The screen in this probe is open to the lower fill zone and CKD, which extends to the asphalt/aggregate, within 1 foot of ground surface. The water level extended above the top of the screen during monitoring performed in February, March, April, and June 2017.

- No methane was detected in probe GP-42. The screen in this probe straddles two fill zones and CKD.

- Methane concentrations ranged from 0.5 to 46.4 percent in probe GP-43. During 7 of the 12 monitoring periods, high water levels prevented measurements from equilibrating. The probe screen straddles two fill zones and CKD.

- No methane was detected in a manhole located north of KIP and the swale in the center of Kenyon Street.

Methane concentrations in the other probes and wells measured across KIP are typical of historical readings taken prior to the 12-month monitoring period results discussed in this memorandum. The two lower explosion level (LEL) exceedances measured in probes GP-22 and GP-33 during December 14, 2016, were attributed to an unscheduled shutdown of the LFG extraction system on SPPD. The methane concentrations dropped below the LEL during subsequent monitoring when the extraction system was operational.

CONCLUSIONS

- Five LFG Compliance Probes, GP-39, 40, 41, 42, and 43 were installed in September 2016 to monitor the potential pathway of methane to the westernmost building on KIP.

- During 12 months of LFG probe monitoring from September 2016 through August 2017, no methane was detected in probes GP-39, GP-41, and GP-42, with the exception of a reading of 0.1 percent during initial monitoring in GP-39.

- Methane concentrations ranged from 0.0 to 7.5 percent in probe GP-40, including one LEL exceedance during 12 monitoring periods.

- Methane concentrations measured in probe GP-43 ranged from 0.5 to 46.4 percent during 12 monitoring periods. High water levels and flow faults prevented the methane concentration from equilibrating during 7 of the 12 monitoring periods. The final methane concentration measured during this monitoring period, on August 28, 2017, was 0.5 percent, the lowest measurement during 12 months of monitoring.

30" concrete stormline under South Kenyon Street.

Monitored Manhole

GP-38

GP-37

GP-09

MW-25

MW-10

KMW-07

KMW-06

KMW-03A

A

GP-24

GP-39

GP-40

KMW-05

GP-41

KMW-04

KMW-08

GP-25

GP-42

1972 30" Corrigated Metal (Galv.) Stormwater Pipe

GP-43

A'

KMW-02B

KMW-01A

GP-22

GP-33

Southern swale border unknown due to heavy vegetation.

Legend

- Monitoring Well
- LFG Probe
- Catch Basin
- Stormwater Line Manhole
- Stormwater Lateral (Assumed)
- Existing SW Line (Herrera, GPS)
- Old Concrete Line Current
- Edge of Refuse from RI/FS
- Swale from 1946 aerial (App. A)
- Tax Parcel
- CKD Fill Area (based on soil logs and aerials)
- A-A' Cross Section

Note:
· Orthoimagery provided by TerraServer, June 20, 2015.

N

0 40 80 160

Scale in Feet

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HERRERA

Kenyon Industrial Park
South Park Landfill

Figure 1
Landfill Gas Probe Location Map

K:\Projects\Y2010\10-04850-000\Project\201702_Updates\proposed_compliance_LFG_probe.mxd
5/19/2017

North

A

South

A'

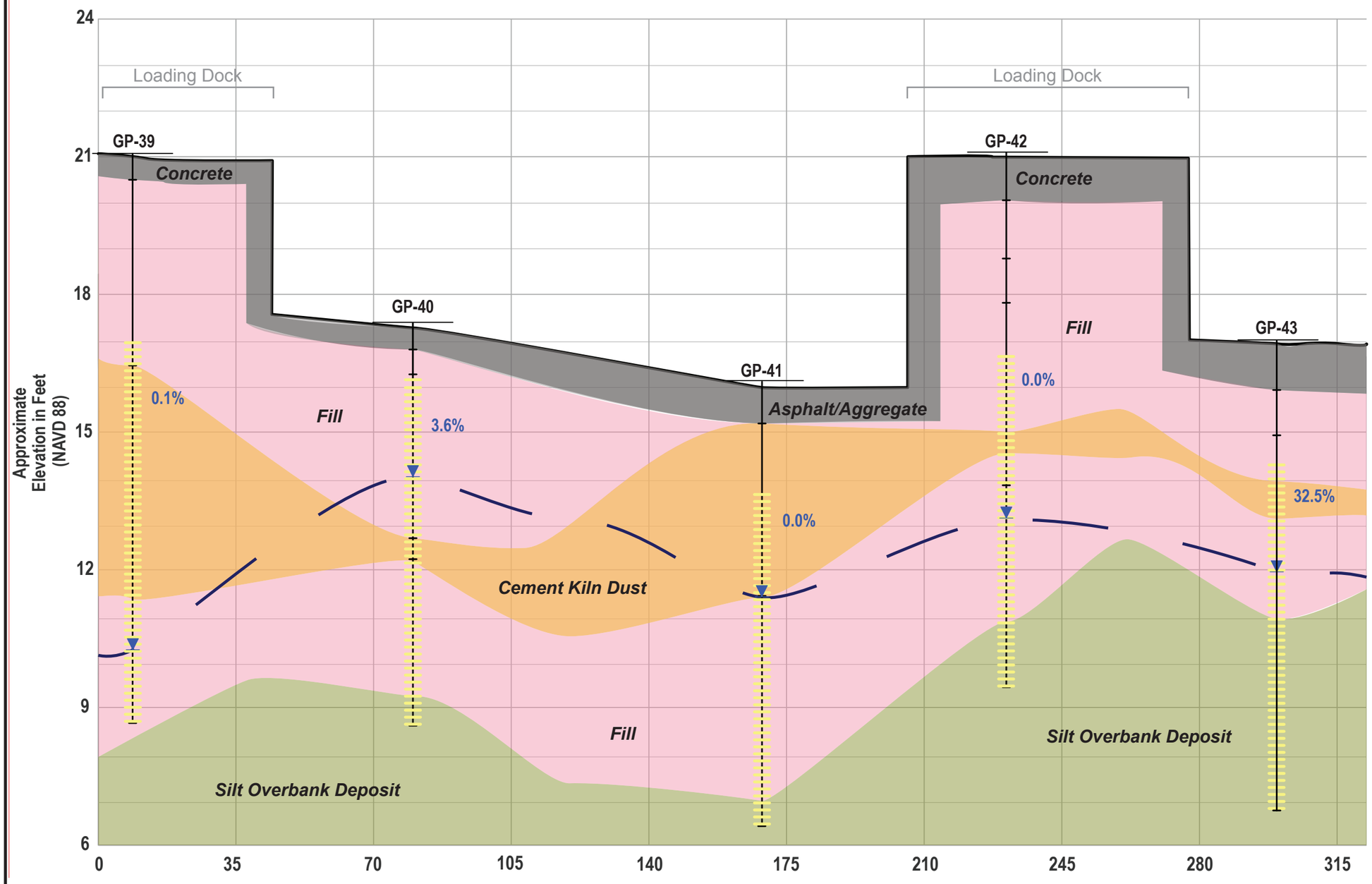

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Figure 2.
Cross Section A A', South Park Landfill, Seattle, Washington.

Legend

- Groundwater Level (9/26/17)
- Approximate Ground Surface
- Gas probe screen
- 0.1 Percent methane by volume 9/26/17

G:\Graphics\Y2010\10-04850-000\Ai\crosssection_A-A.ai (05/09/2017)

Table 1. Landfill Gas Monitoring Results Kenyon Industrial Park/South Park Landfill, Seattle, Washington.

Monitoring Stations	Date	Barometric Pressure (inches Hg)	Well Head Pressure (inches H_2O)	Methane (percent volume)	Carbon Dioxide (percent volume)	Oxygen (percent volume)	Hydrogen Sulfide (ppmv)	Static Water Level (ft bgs)	Screen Setting (ft bgs)	Range of CKD (ft bgs)
GP-24	1/31/2017	30.32	0.00	**21.1**	0.0	3.3	0	5.77	5.5–10.5	1.0–7.0
GP-24	2/27/2017	29.74	-0.01	**16.0**[a]	0.0	4.4	0	5.18[b]	5.5–10.5	1.0–7.0
GP-24	3/20/2017	29.96	NM	4.3[a]	0.0	4.2	0	5.37[b]	5.5–10.5	1.0–7.0
GP-24	4/12/2017	29.75	NM	**8.1**[a]	0.0	5.8	0	5.45[b]	5.5–10.5	1.0–7.0
GP-24	5/15/2017	29.93	NM	**16.0**[a]	0.0	4.0	0	5.60	5.5–10.5	1.0–7.0
GP-24	6/15/2017	29.82	-0.02	**38.0**	0.0	1.5	0	5.80	5.5–10.5	1.0–7.0
GP-24	7/18/2017	29.83	0.00	**47.4**	0.0	0.3	6	6.42	5.5–10.5	1.0–7.0
GP-24	8/28/2017	29.67	0.00	**53.1**	0.0	0.1	5	6.49	5.5–10.5	1.0–7.0
GP-25	1/31/2017	30.44	NM	**70.7**	0.0	9.8	0	6.54	5.4–10.4	1.0–5.0
GP-25	2/27/2017	29.76	NM	**68.5**	0.1	0.0	0	6.08	5.4–10.4	1.0–5.0
GP-25	3/20/2017	29.96	NM	**70.0**	0.0	0.2	0	6.00	5.4–10.4	1.0–5.0
GP-25	4/12/2017	29.74	NM	**73.2**	0.0	0.3	1	5.85	5.4–10.4	1.0–5.0
GP-25	5/15/2017	29.93	NM	**72.1**	0.0	0.2	0	6.10	5.4–10.4	1.0–5.0
GP-25	6/15/2017	29.82	NM	**77.5**	0.0	0.2	1	6.02	5.4–10.4	1.0–5.0
GP-25	7/18/2017	29.83	NM	**75.3**	0.0	0.0	0	6.36	5.4–10.4	1.0–5.0
GP-25	8/28/2017	29.67	NM	**76.5**	0.0	0.1	0	6.41	5.4–10.4	1.0–5.0
GP-39	9/26/2016	30.03	NM	0.1	2.5	14.0	0	10.54[c]	5.0–12.3	4.8–9.5
GP-39	10/3/2016	29.91	NM	0.0	3.1	14.6	0	10.57[c]	5.0–12.3	4.8–9.5
GP-39	11/18/2016	29.83	NM	0.0	1.2	19.2	0	10.13[c]	5.0–12.3	4.8–9.5
GP-39	12/14/2016	29.98	0.00	0.0	1.1	21.6	NM	10.12[c]	5.0–12.3	4.8–9.5
GP-39	1/31/2017	30.31	0.00	0.0	0.4	20.2	0	10.15[c]	5.0–12.3	4.8–9.5
GP-39	2/27/2017	29.76	0.00	0.0	0.6	20.5	0	9.94[c]	5.0–12.3	4.8–9.5
GP-39	3/20/2017	29.96	0.03	0.0	0.5	20.1	0	9.42[c]	5.0–12.3	4.8–9.5

Table 1 (continued). Landfill Gas Monitoring Results Kenyon Industrial Park/South Park Landfill, Seattle, Washington.

Monitoring Stations	Date	Barometric Pressure (inches Hg)	Well Head Pressure (inches H_2O)	Methane (percent volume)	Carbon Dioxide (percent volume)	Oxygen (percent volume)	Hydrogen Sulfide (ppmv)	Static Water Level (ft bgs)	Screen Setting (ft bgs)	Range of CKD (ft bgs)
GP-39	4/12/2017	29.75	0.00	0.0	0.5	20.2	0	9.95[c]	5.0–12.3	4.8–9.5
GP-39	5/15/2017	29.93	0.00	0.0	0.6	19.7	0	10.03[c]	5.0–12.3	4.8–9.5
GP-39	6/15/2017	29.82	0.00	0.0	1.0	16.8	0	10.16[c]	5.0–12.3	4.8–9.5
GP-39	7/18/2017	29.83	0.00	0.0	1.3	15.1	0	10.33	5.0–12.3	4.8–9.5
GP-39	8/28/2017	29.66	0.00	0.0	2.3	14.6	0	10.63	5.0–12.3	4.8–9.5
GP-40	9/26/2016	30.01	NM	3.6	4.5	11.0	0	3.25	1.3–8.6	4.0–4.5
GP-40	10/3/2016	29.91	NM	1.2	4.5	11.2	0	3.27	1.3–8.6	4.0–4.5
GP-40	11/18/2016	29.82	NM	0.0[a]	0.0	20.6	0	2.28	1.3–8.6	4.0–4.5
GP-40	12/14/2016	29.97	0.03	0.7	2.4	13.5	NM	2.52	1.3–8.6	4.0–4.5
GP-40	1/31/2017	30.31	0.00	0.0	2.0	13.2	0	3.06	1.3–8.6	4.0–4.5
GP-40	2/27/2017	29.76	0.00	1.5	2.0	13.0	0	2.26	1.3–8.6	4.0–4.5
GP-40	3/20/2017	29.96	0.00	0.0	0.2	20.1	0	2.10	1.3–8.6	4.0–4.5
GP-40	4/12/2017	29.96	0.00	1.3	1.0	5.5	0	1.78[a]	1.3–8.6	4.0–4.5
GP-40	5/15/2017	29.93	-0.03	0.3	3.4	14.2	0	2.64	1.3–8.6	4.0–4.5
GP-40	6/15/2017	29.82	0.00	4.0	5.6	8.0	0	3.08	1.3–8.6	4.0–4.5
GP-40	7/18/2017	29.83	-0.01	2.4	6.5	7.9	0	3.36	1.3–8.6	4.0–4.5
GP-40	8/28/2017	29.67	0.00	**7.5**	7.5	4.5	0	3.36	1.3–8.6	4.0–4.5
GP-41	9/26/2016	30.01	NM	0.0	0.4	19.0	0	4.36	2.3–9.6	0.8–4.5
GP-41	10/3/2016	29.91	NM	0.0	0.4	19.5	0	4.28	2.3–9.6	0.8–4.5
GP-41	11/18/2016	29.82	NM	0.0[a]	0.0	19.6	0	2.57	2.3–9.6	0.8–4.5
GP-41	12/14/2016	29.97	-0.08	0.0	0.1	22.3	NM	3.04	2.3–9.6	0.8–4.5
GP-41	1/31/2017	30.31	0.00	0.0	0.0	21.2	0	3.64	2.3–9.6	0.8–4.5
GP-41	2/27/2017	29.76	0.00	0.0[a]	0.0	20.9	0	1.85[b]	2.3–9.6	0.8–4.5
GP-41	3/20/2017	29.96	NM	0.0[a]	0.0	20.9	0	1.92[b]	2.3–9.6	0.8–4.5

Table 1 (continued). Landfill Gas Monitoring Results Kenyon Industrial Park/South Park Landfill, Seattle, Washington.

Monitoring Stations	Date	Barometric Pressure (inches Hg)	Well Head Pressure (inches H_2O)	Methane (percent volume)	Carbon Dioxide (percent volume)	Oxygen (percent volume)	Hydrogen Sulfide (ppmv)	Static Water Level (ft bgs)	Screen Setting (ft bgs)	Range of CKD (ft bgs)
GP-41	4/12/2017	29.75	NM	0.0[a]	0.0	20.6	0	1.73[b]	2.3–9.6	0.8–4.5
GP-41	5/15/2017	29.93	NM	0.0[a]	0.1	20.8	0	2.44	2.3–9.6	0.8–4.5
GP-41	6/15/2017	29.82	NM	0.0[a]	0.1	20.6	0	1.88[b]	2.3–9.6	0.8–4.5
GP-41	7/18/2017	29.83	0.00	0.0	0.2	19.5	0	4.27	2.3–9.6	0.8–4.5
GP-41	8/28/2017	29.67	0.00	0.0	0.4	19.0	0	4.43	2.3–9.6	0.8–4.5
GP-42	9/26/2016	30.01	NM	0.0	1.2	17.8	0	7.62[c]	4.2–11.5	6.0–6.5
GP-42	10/3/2016	29.91	NM	0.0	1.2	18.2	0	7.73[c]	4.2–11.5	6.0–6.5
GP-42	11/18/2016	29.82	NM	0.0	0.5	19.8	0	6.32[c]	4.2–11.5	6.0–6.5
GP-42	12/14/2016	29.95	-0.04	0.0	0.6	21.6	NM	6.70[c]	4.2–11.5	6.0–6.5
GP-42	1/31/2017	30.31	0.00	0.0	0.2	20.6	0	7.32[c]	4.2–11.5	6.0–6.5
GP-42	2/27/2017	30.31	0.00	0.0	0.3	20.4	0	6.20[c]	4.2–11.5	6.0–6.5
GP-42	3/20/2017	29.96	0.00	0.0	0.2	20.5	0	6.19[c]	4.2–11.5	6.0–6.5
GP-42	4/12/2017	29.74	0.00	0.0	0.3	20.1	0	5.76[c]	4.2–11.5	6.0–6.5
GP-42	5/15/2017	29.93	-0.01	0.0	0.5	20.1	0	6.58[c]	4.2–11.5	6.0–6.5
GP-42	6/15/2017	29.82	0.00	0.0	0.7	19.0	0	7.15[c]	4.2–11.5	6.0–6.5
GP-42	7/18/2017	29.83	0.00	0.0	0.7	18.4	0	7.75	4.2–11.5	6.0–6.5
GP-42	8/28/2017	29.67	0.00	0.0	1.0	17.3	0	7.93	4.2–11.5	6.0–6.5
GP-43	9/26/2016	30.01	NM	**32.5**	2.8	0.6	0	4.90	2.6–9.9	3.0–3.7
GP-43	10/3/2016	29.91	NM	**32.7**	2.9	0.6	0	5.05	2.6–9.9	3.0–3.7
GP-43	11/18/2016	29.82	NM	1.5[d]	3.5	15.4	0	4.05	2.6–9.9	3.0–3.7
GP-43	12/14/2016	29.95	0.00	1.1[e]	2.7	19.5	NM	2.94	2.6–9.9	3.0–3.7
GP-43	1/31/2017	30.31	0.00	0.9	1.2	17.8	0	3.94	2.6–9.9	3.0–3.7
GP-43	2/27/2017[f]	29.76	0.02	**21.2**[a]	3.2	2.7	0	3.78	2.6–9.9	3.0–3.7
GP-43	2/27/2017[f]	29.72	NM	**11.9**[a]	1.9	13.5	0	3.70	2.6–9.9	3.0–3.7

Table 1 (continued). Landfill Gas Monitoring Results Kenyon Industrial Park/South Park Landfill, Seattle, Washington.

Monitoring Stations	Date	Barometric Pressure (inches Hg)	Well Head Pressure (inches H_2O)	Methane (percent volume)	Carbon Dioxide (percent volume)	Oxygen (percent volume)	Hydrogen Sulfide (ppmv)	Static Water Level (ft bgs)	Screen Setting (ft bgs)	Range of CKD (ft bgs)
GP-43	3/20/2017	29.96	0.00	4.5[a]	1.0	0.9	0	3.62	2.6–9.9	3.0–3.7
GP-43	4/12/2017	29.74	0.05	**7.2**[g]	1.2	0.4	0	4.03	2.6–9.9	3.0–3.7
GP-43	5/15/2017	29.94	0.00	**46.4**[g]	2.5	2.3	0	4.35	2.6–9.9	3.0–3.7
GP-43	6/15/2017	29.82	0.00	**16.3**	2.1	0.3	0	4.60	2.6–9.9	3.0–3.7
GP-43	7/18/2017	29.83	0.00	**17.1**	2.9	3.3	0	4.98	2.6–9.9	3.0–3.7
GP-43	8/28/2017	29.68	0.00	0.5	1.5	17.3	0	5.05	2.6–9.9	3.0–3.7
KMW-01A	10/3/2016	29.87	NM	**8.3**	6.5	0.6	2	11.02	5.6–21.6	NP
KMW-01A	11/18/2016	29.86	NM	4.7	4.8	0.3	5	9.81	5.6–21.6	NP
KMW-01A	12/14/2016	30.00	0.00	4.0	5.0	0.00	NM	NM	5.6–21.6	NP
KMW-01A	1/31/2017	30.40	0.00	1.6	3.9	0.0	3	10.09	5.6–21.6	NP
KMW-01A	2/27/2017	29.72	0.00	0.9	3.6	0.0	2	9.29	5.6–21.6	NP
KMW-01A	3/20/2017	29.90	-0.04	0.8	2.7	0.2	1	9.14	5.6–21.6	NP
KMW-01A	4/12/2017	29.72	0.00	0.7	2.7	0.2	2	8.83	5.6–21.6	NP
KMW-01A	5/15/2017	29.94	0.00	0.8	2.6	0.2	2	9.43	5.6–21.6	NP
KMW-01A	6/15/2017	29.82	0.00	0.8	3.2	0.2	0	9.97	5.6–21.6	NP
KMW-01A	7/18/2017	29.83	0.00	**5.8**	3.6	0.1	8	10.61	5.6–21.6	NP
KMW-01A	8/28/2017	29.70	0.00	**11.9**	5.5	0.0	12	11.08	5.6–21.6	NP
KMW-03A	11/18/2016	29.89	NM	1.2	2.3	6.2	0	11.23	9.7–24.7	NP
KMW-03A	12/14/2016	30.00	NM	2.2	2.4	0.1	NM	11.27	9.7–24.7	NP
KMW-03A	1/31/2017	30.43	NM	3.2	2.7	0.0	0	11.02	9.7–24.7	NP
KMW-03A	2/27/2017	29.72	NM	2.7	2.8	0.0	0	10.50	9.7–24.7	NP
KMW-03A	3/20/2017	29.91	NM	3.8	3.0	0.4	0	10.25	9.7–24.7	NP
KMW-03A	4/12/2017	29.72	NM	4.1	4.0	0.2	0	10.10	9.7–24.7	NP
KMW-03A	5/15/2017	29.94	NM	2.4	4.4	0.3	0	10.30	9.7–24.7	NP

Table 1 (continued). Landfill Gas Monitoring Results Kenyon Industrial Park/South Park Landfill, Seattle, Washington.

Monitoring Stations	Date	Barometric Pressure (inches Hg)	Well Head Pressure (inches H_2O)	Methane (percent volume)	Carbon Dioxide (percent volume)	Oxygen (percent volume)	Hydrogen Sulfide (ppmv)	Static Water Level (ft bgs)	Screen Setting (ft bgs)	Range of CKD (ft bgs)
KMW-03A	6/15/2017	29.82	NM	1.3	3.8	0.3	0	10.78	9.7–24.7	NP
KMW-03A	7/18/2017	29.87	NM	1.5	3.1	0.5	0	11.30	9.7–24.7	NP
KMW-03A	8/28/2017	29.72	NM	0.7	4.1	0.0	0	11.70	9.7–24.7	NP
KMW-04	11/18/2016	29.88	NM	3.8	1.9	0.2	0	12.22	5.3–20.3	NP
KMW-04	12/14/2016	30.00	NM	3.0	1.4	4.9	NM	11.89	5.3–20.3	NP
KMW-04	1/31/2017	30.40	NM	0.3	0.4	17.3	0	11.74	5.3–20.3	NP
KMW-04	2/27/2017	29.71	NM	2.7	1.3	0.2	0	11.20	5.3–20.3	NP
KMW-04	3/20/2017	29.90	NM	1.3	0.6	9.7	0	11.10	5.3–20.3	NP
KMW-04	4/12/2017	29.72	NM	0.2	0.4	18.6	0	10.92	5.3–20.3	NP
KMW-04	5/15/2017	29.94	NM	2.1	1.1	0.3	0	11.01	5.3–20.3	NP
KMW-04	6/15/2017	29.82	NM	2.2	1.5	0.2	0	11.49	5.3–20.3	NP
KMW-04	7/18/2017	29.87	NM	0.6	0.6	13.2	0	11.95	5.3–20.3	NP
KMW-04	8/28/2017	29.71	NM	2.3	1.6	0.0	0	12.38	5.3–20.3	NP
KMW-06	11/18/2016	29.90	NM	0.2	6.3	0.2	0	9.77	5.5–20.5	NP
KMW-06	12/14/2016	30.04	NM	0.2	6.6	0.0	NM	9.80	5.5–20.5	NP
KMW-06	1/31/2017	30.43	NM	0.0	3.9	9.2	0	9.75	5.5–20.5	NP
KMW-06	2/27/2017	29.72	NM	0.0	4.7	6.8	0	9.18	5.5–20.5	NP
KMW-06	3/20/2017	29.91	NM	0.0	6.0	0.3	0	8.91	5.5–20.5	NP
KMW-06	4/12/2017	29.71	NM	0.0	5.2	6.0	0	8.80	5.5–20.5	NP
KMW-06	5/15/2017	29.95	NM	0.0	4.1	10.8	0	9.10	5.5–20.5	NP
KMW-06	6/15/2017	29.82	NM	0.0	9.1	0.5	0	9.70	5.5–20.5	NP
KMW-06	7/18/2017	29.92	NM	0.1	9.9	0.1	0	10.22	5.5–20.5	NP
KMW-06	8/28/2017	29.69	NM	0.2	10.9	0.1	0	10.65	5.5–20.5	NP

Table 1 (continued). Landfill Gas Monitoring Results Kenyon Industrial Park/South Park Landfill, Seattle, Washington.

Monitoring Stations	Date	Barometric Pressure (inches Hg)	Well Head Pressure (inches H_2O)	Methane (percent volume)	Carbon Dioxide (percent volume)	Oxygen (percent volume)	Hydrogen Sulfide (ppmv)	Static Water Level (ft bgs)	Screen Setting (ft bgs)	Range of CKD (ft bgs)
GP-22	10/3/2016	29.83	0.00	4.2	11.3	0.1	0	NM	5.0–21.0	NP
GP-22	11/18/2016	29.85	0.00	3.9	8.0	0.1	4	NM	5.0–21.0	NP
GP-22	12/14/2016	29.90	-0.07	**9.2**	8.6	0.0	NM	NM	5.0–21.0	NP
GP-22	1/31/2017	30.34	-0.01	3.3	5.3	0.0	2	NM	5.0–21.0	NP
GP-22	2/27/2017	Well screen flooded – no gas monitoring data collected.								
GP-22	3/20/2017	Well screen flooded – no gas monitoring data collected.								
GP-22	4/12/2017	Well screen flooded – no gas monitoring data collected.								
GP-22	5/15/2017	Well screen flooded – no gas monitoring data collected.								
GP-22	6/15/2017	Well screen flooded – no gas monitoring data collected.								
GP-22	7/18/2017	Well screen blocked – no gas monitoring data collected.								
GP-22	8/28/2017	Well screen blocked – no gas monitoring data collected.								
GP-33	10/3/2016	29.83	0.0	0.7	9.9	0.2	0	NM	5.0–10.0	NP
GP-33	11/18/2016	29.85	0.0	1.5	4.5	7.0	0	NM	5.0–10.0	NP
GP-33	12/14/2016	29.91	-0.06	**5.3**	3.6	0.0	NM	NM	5.0–10.0	NP
GP-33	1/31/2017	30.04	0.00	1.3	6.0	0.8	0	NM	5.0–10.0	NP
GP-33	2/27/2017	Well screen flooded – no gas monitoring data collected.								
GP-33	3/20/2017	29.91	0.00	4.3	6.9	0.7	0	NM	5.0–10.0	NP
GP-33	4/12/2017	Well screen flooded – no gas monitoring data collected.								
GP-33	5/15/2017	29.94	0.00	1.3	3.4	1.9	0	NM	5.0–10.0	NP
GP-33	6/15/2017	29.82	NM	0.0	4.0	7.3	0	NM	5.0–10.0	NP
GP-33	7/18/2017	29.92	-0.01	0.0	7.3	5.0	0	NM	5.0–10.0	NP
GP-33	8/28/2017	29.74	0.00	0.0	8.7	3.3	0	NM	5.0–10.0	NP
Manhole	9/26/2016	30.01	NA	0.0	0.0	20.4	0	NA	NA	NA
Manhole	10/3/2016	29.91	NA	0.0	0.1	20.8	0	NA	NA	NA

Table 1 (continued). Landfill Gas Monitoring Results Kenyon Industrial Park/South Park Landfill, Seattle, Washington.

Monitoring Stations	Date	Barometric Pressure (inches Hg)	Well Head Pressure (inches H_2O)	Methane (percent volume)	Carbon Dioxide (percent volume)	Oxygen (percent volume)	Hydrogen Sulfide (ppmv)	Static Water Level (ft bgs)	Screen Setting (ft bgs)	Range of CKD (ft bgs)
Manhole	11/18/2016	29.83	NA	0.0	0.0	21.2	0	NA	NA	NA
Manhole	12/14/2016	29.93	NA	0.0	0.0	22.6	0	NA	NA	NA
Manhole	1/31/2017	30.31	NA	0.0	0.0	21.2	0	NA	NA	NA
Manhole	2/27/2017	29.76	NA	0.0	0.1	21.0	0	NA	NA	NA
Manhole	3/20/2017	29.91	NA	0.0	0.1	21.0	0	NA	NA	NA
Manhole	4/12/2017	29.82	NA	0.0	0.1	21.3	0	NA	NA	NA
Manhole	5/15/2017	29.95	NA	0.0	0.1	21.1	0	NA	NA	NA
Manhole	6/15/2017	29.83	NA	0.0	0.2	20.5	0	NA	NA	NA
Manhole	7/18/2017	29.93	NA	0.0	0.0	21.0	0	NA	NA	NA
Manhole	8/28/2017	29.82	NA	0.0	0.0	20.4	0	NA	NA	NA

Notes:

Highlighted results are greater than the LEL of 5.1 percent at 20°C.

[a] Unable to purge more than one probe volume, water level too high.

[b] Water level above top of screen.

[c] Probe installed on loading dock 4 feet above ground surface.

[d] Measurements did not stabilize, GEM faulted due to high water level after purging 2-1/4 volumes.

[e] Measurements did not stabilize, GEM faulted due to high water level after purging 2-1/2 volumes.

[f] Initial measurement at 9:30 am, re-monitored at 2:37 p.m.

[g] Measurements did not stabilize, GEM faulted due to high water level after purging 1-1/4 volumes.

Abbreviations:

C	Celsius	NM	Not measured
H_2O	Water	NP	Not present
Hg	Mercury	ppmv	Parts per million by volume
LEL	Lower explosion level	bgs	Below ground surface
NA	Not applicable		

ATTACHMENT A

Compliance Probe Installation and Monitoring Work Plan

HERRERA
20 YEARS FLOYD | SNIDER
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Technical Memorandum

To: Jerome Cruz, Washington State Department of Ecology

Copies: Ching Pi Wang (Department of Ecology); South Park Landfill PLP Group

From: Teri Floyd, Ph.D. (Floyd|Snider) and Mike Spillane (Herrera)

Date: September 7, 2016

Project No: South Park Landfill

Re: **Compliance Probe Installation and Monitoring Work Plan, Kenyon Industrial Park, Seattle, WA**

INTRODUCTION

The South Park PLP Group requested Floyd|Snider and Herrera Environmental Consultants (Herrera) prepare this Work Plan to install five compliance perimeter gas probes at Kenyon Industrial Park (KIP). The proposed probe locations are based on the results of a landfill gas (LFG) characterization conducted at KIP by Herrera in September/October 2015 (Figure 1). The investigation was conducted across a swale situated adjacent to the northern portion of the west South Park Landfill (Landfill) boundary. Details of the characterization are provided in a Revised Technical Memorandum produced by Herrera on August 19, 2016. The purpose of these probes is to monitor the potential pathway of methane to the building.

PROBE INSTALLATION

Five new probes will be installed as close to the building as possible. Boring locations for new LFG probes GP-39 through GP-43 will be marked and measured in the field, and the locations adjusted, as necessary, based on access constraints and presence of utilities. One-Call and private utility location services will be used to confirm subsurface utility locations. The proposed boring locations are outside of the Landfill footprint and installation is not expected to occur in solid waste.

Drill Type and Configuration

The LFG probe borings will be advanced using a push-probe drill rig to approximately 10 feet below ground surface [bgs], based on depth to groundwater, which has been measured at depths ranging from 3 to 6.5 feet in temporary probes TGP-8, TGP-13, and TGP-21 completed during the September/October LFG investigation. Extending probes to 10 feet bgs will ensure probes extend

deep enough to account for fluctuating groundwater elevations with a 2 foot contingency. However, the probes will not be installed more than 1 foot into the Silt Overbank Deposit if it is encountered. The probe screen depths will be installed between 2 feet and approximately 10 feet bgs to allow monitoring of potential LFG migration throughout fluctuating groundwater levels without blinding of the screen. At least part of the screen depth will be beneath the CKD deposit when it is encountered. The location of the screen depth relative to the CKD deposit will be carefully indicated on the log.

Gas probes will be constructed with 0.75-inch schedule 40 polyvinyl chloride (PVC), including 8 feet of 0.010-inch machine-slotted well screen with a 10/20 silica sand prepacked filter. A #2/12 sand filter pack will extend 6 inches above the top of the screen and a blank riser above the screen will be sealed by bentonite chips and concrete. The gas probes will be constructed in accordance with Washington Administrative Code (WAC) 173-160-400, Minimum Standards for Construction and Maintenance of Resource Protection Wells and Geotechnical Soil Borings. Each probe will include a locking cap.

Completion of the probes will include an 8-inch diameter flush-mount protective casing. The existing asphaltic surface will be saw cut 4 inches larger than the 8-inch protective casing and the interstitial area finished with 2,000 PSI concrete to a depth matching the existing paving.

Soil Logging Procedures

Discrete soil samples will be collected continuously at 5-foot intervals for soil classification and field screening using a 2-inch diameter probe-drive sampler, attached to the probe rods that will complete a 2.25-inch diameter borehole. A dedicated plastic liner will be inserted inside the drive sampler. Soil will be classified by a licensed geologist in general accordance with the Unified Soil Classification System (USCS) and the American Society for Testing and Materials (ASTM) D2488-06, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).

During drilling, conditions at the borehole will be monitored for the presence of volatile organic compounds (VOCs) using a photoionization detector (PID). The PID is designed to detect and measure VOC vapor in air, but it does not detect methane. The VOC concentration will be used to monitor worker health and safety during drilling.

Pertinent geologic and hydrogeologic subsurface conditions and PID readings will be recorded on a soil probe boring log. A Landtec GEM 2000 (Plus) meter will be used to measure methane, carbon dioxide, carbon monoxide, oxygen, and hydrogen sulfide.

Investigation-derived waste, including soil and water generated during gas probe installations, will be placed into 20-gallon drums, then labeled and stored on the STSII property pending analytical results including pH and RCRA metals. Decontamination water will be used to hydrate bentonite chips during probe construction. It is anticipated that the volume of decontamination water generated will be less than 5 gallons.

A gas probe boring log, including installation details, will be completed for each probe. The logs will provide a soil description, water level, instrument readings, and construction details.

LANDFILL GAS MONITORING PROCEDURES

The five new probes and the manhole in South Kenyon Street will be monitored monthly as soon as 1 week after probe installation.

Barometric pressure will be tracked and LFG monitoring will be performed during a period of falling pressure of at least 12 hours (when possible). The barometric conditions for the previous 48 hours will be considered in the selection of the monitoring period. If optimum barometric pressure conditions do not occur during a particular month, monthly monitoring will still be performed. The Landtec Gem 2000 Plus will be calibrated daily with methane, according to procedures provided in the operations manual.

Gas probe monitoring will be conducted by attaching a Tygon tube with quick-connect fittings to the well cap or silicon tubing directly to the stopcock. The tubing will be attached to a water filter and to the intake of the GEM 2000 Plus multi-meter. Downhole pressure relative to atmospheric pressure will be measured after connecting the GEM 2000 Plus to the gas probe stopcock prior to purging.

Water levels will be monitored in each probe with a water level indicator to determine that there is unsaturated screen section.

Methane, carbon dioxide, oxygen, and hydrogen sulfide concentrations, probe pressure and barometric pressure will be measured using the GEM 2000 Plus. LFG at all probe and monitoring locations will be monitored using a purge time that will evacuate a minimum of one probe volume from each probe prior to recording gas measurements.

All parameters except barometric pressure will be monitored at 20-second intervals during purging. A minimum of one pore volume will be purged. A 0.75-inch diameter Schedule 40 PVC probe volume is 100 milliliters per foot, the GEM flow rate is 300 milliliters per minute. It will take approximately 3 minutes and 20 seconds to purge one volume from each probe. During purging, parameters will be recorded at minimum 20-second intervals, until parameters are stabilized. Stabilization is defined as three readings over a 1-minute period that are within 10 percent of one another. Monitoring and water level data will be recorded on the Gas Monitoring Log form (Figure 2).

LIST OF ATTACHMENTS

Figure 1 October 2015 LFG Sampling Locations and Results and Proposed Compliance Probe Locations

Figure 2 Gas Probe Data Sheet

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HERRERA

Kenyon Industrial Park
South Park Landfill
2015 LFG Investigation

Figure 1
October 2015 LFG Sampling Locations and Results and Proposed Compliance Probe Locations

I:\GIS\Projects\COS-SPARK\MXD\Figure 1 October 2015 LFG Sampling Locations and Results and Proposed Compliance Probe Locations.mxd
9/6/2016

Gas Probe Data Sheet

Gas Probe ID: GP-

Sample ID: NA

Date and Time:

Total Casing Volume (cc):

Canister ID:

Initial Canister Pressure:

Final Canister Pressure

Field Personnel

Casing Volume Purged	Volume Purged (cc)	Purge Rate (ml/min)	PURGE TIME				CH_4 (% Volume)	$C0_2$ (% Volume)	0_2 (% Volume)	H2S (% Volume)	CO (% Volume)
0			0	min	0	sec					
1/4				min		sec					
1/2				min		sec					
3/4				min		sec					
1				min		sec					
1-1/4				min		sec					
1-1/2				min		sec					
1-3/4				min		sec					
2				min		sec					
2-1/4				min		sec					
2-1/2				min		sec					
2-3/4				min		sec					
3				min		sec					

Comments/Special Instructions:

Barometric Pressure: GP-

Well head Pressure: NA

Well Diameter: 0.75”

Water Level/Well Bottom:

Screen:

Equipment Used: Gem 2000 (Plus), Water Level Meter

Figure 2. Gas Probe Data Sheet.

ATTACHMENT B

Gas Probe Boring Logs

GAS PROBE BORING LOG

HERRERA

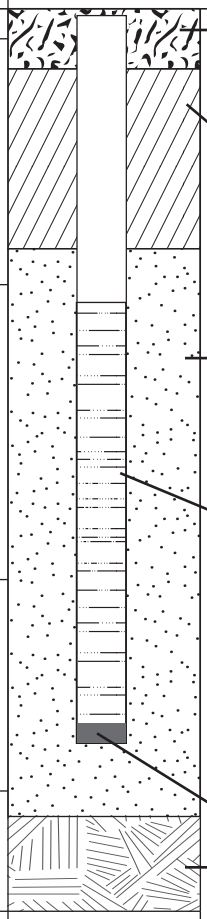
Well ID GP-39
Total depth: 15'
Sheet 1 of 1

Project name: South Park Landfill/KIP
Project number: 10-04850-000
Client: City of Seattle

Drilling Contractor: ESN NW
Drilling method: Push probe rig
Sampling method: 5' core sample
Instrument(s): GEM/PID

Location: N. loading dock - KIP
HEC rep: Bruce Carpenter
Date: 09/14/2016

PID (ppm)	Sampling interval	% Recovery	Depth (feet, BGS)	Soil Group	Water Level (feet)	Soil Description
			1			6" Concrete (loading dock)
0		80	2	GW/ SW		Brown-Gray sandy GRAVEL, to gravelly SAND, fill, dry
			3			
			4			4" zone black gravelly SAND, dry (original ground surface)
			5	Fill		Buff colored cement kiln dust (CKD), fill, dry
0		100	6			damp to wet
			7			
			8			
			9			
			10			
0		80	11	GW/ SW	▼ 10.6'	Brown-black, sandy GRAVEL, wet, groundwater encountered at 9.5'
			12			Brown,sandy GRAVEL, gravelly Sand, wet
			13			
			14	ML		Brown-gray clayey SILT, (silt overbank deposit), wet
			15			
						CH_4 - 0.3 CO_2 - 1.7 O_2 - 15.2 H_2S - 0



Probe Detail

- Concrete seal, 0' - 1'
- Hydrated bentonite chips, 1' - 4'
- #2/12 sand filter pack, 4' - 13.5'
- 3/4-inch dia. schedule 40 PVC 10 slot prepacked screen 5'-12.3'
- PVC endcap
- Hole caved in

GAS PROBE BORING LOG

HERRERA

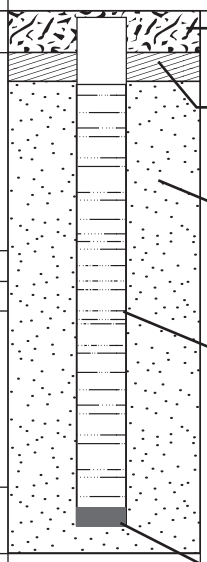
Well ID GP-40
Total depth: 9'
Sheet 1 of 1

Project name: South Park Landfill/KIP
Project number: 10-04850-000
Client: City of Seattle

Drilling Contractor: ESN NW
Drilling method: Push probe rig
Sampling method: 5' core sample
Instrument(s): GEM/PID

Location: S. TPG-8 and NW of KMW-05
HEC rep: Bruce Carpenter
Date: 09/14/2016

PID (ppm)	Sampling interval	% Recovery	Depth (feet, BGS)	Soil Group	Water Level (feet)	Soil Description
			1			Asphalt 3"; Aggregate 6"
			2	SM		Brown silty, SAND, fill, damp
			3		▼ 3.25'	Brown, silty SAND, damp
0	X	40	4			groundwater encountered at 3.2'
			5	Fill		Buff colored CKD, fill, wet
				SM		Brown-gray, medium SAND, wet
			6			No recovery
0	X	15	7			
			8			
			9	ML		Gray-brown clayey SILT, wood, (silt overbank deposit) wet
						Refusal at 9' bgs



CH_4 - 0.8
CO_2 - 0.7
O_2 - 19.5
H_2S - 0

GAS PROBE BORING LOG

HERRERA

Well ID GP-41
Total depth: 10'
Sheet 1 of 1

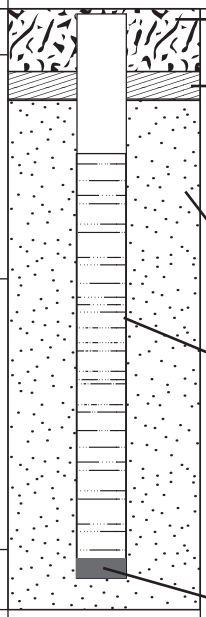
Project name: South Park Landfill/KIP
Project number: 10-04850-000
Client: City of Seattle

Drilling Contractor: ESN NW
Drilling method: Push probe rig
Sampling method: 5' core sample
Instrument(s): GEM/PID

Location: Adjacent to TGP-13
HEC rep: Bruce Carpenter
Date: 09/14/2016

PID (ppm)	Sampling interval	% Recovery	Depth (feet, BGS)	Soil Group	Water Level (feet)	Soil Description
			1			2" Asphalt 6" aggregate, silty, gravel
			2	FILL		Buff colored cement kiln dust (CKD), dry
0	X	25	3			
			4			
			5		▼ 4.3'	
			6	SM		Brown silty SAND, fill, damp groundwater encountered at 4.3'
0	X	30	7			Sand, fill/poor recovery
			8			
			9			
			10	ML		Dark gray-dark brown clayey SILT, damp, organic material, wood (silt overback deposit)

CH_4 - 0.0
CO_2 - 0.0
O_2 - 20.2
H_2S - 0



GAS PROBE BORING LOG

HERRERA

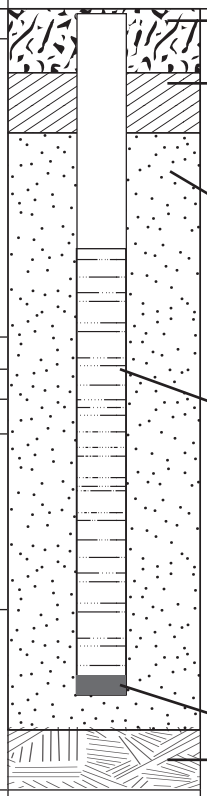
Well ID GP-42
Total depth: 13'
Sheet 1 of 1

Project name: South Park Landfill/KIP
Project number: 10-04850-000
Client: City of Seattle

Drilling Contractor: ESN NW
Drilling method: Push probe rig
Sampling method: 5' core sample
Instrument(s): GEM/PID

Location: Adjacent to TGP-22
HEC rep: Bruce Carpenter
Date: 09/14/2016

PID (ppm)	Sampling interval	% Recovery	Depth (feet, BGS)	Soil Group	Water Level (feet)	Soil Description
			1			4" concrete
			2	SP		Brown medium SAND, fill, damp
0	X	65	3			
			4			
			5			
			6	SM		Brown-silty SAND, damp
				FILL		Buff colored cement kiln dust, damp
			7	ML		3" black sandy silt, hydrocarbon, odor, damp
0	X	50	8		▼ 7.62'	Gray medium SAND, fill, damp
			9	SP		
			10			Groundwater encountered at 9.5'
			11	ML		Dark brown clayey SILT, damp (silt overback deposit)
0	X	35	12			
			13			
						CH_4 - 0.2 CO_2 - 0.1 O_2 - 19.8 H_2S - 0



GAS PROBE BORING LOG

HERRERA

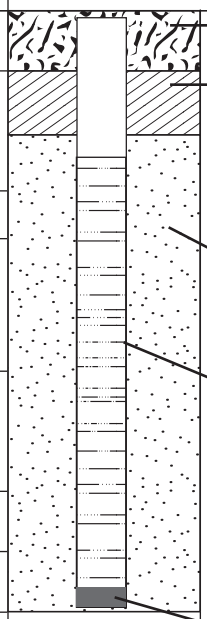
Well ID GP-43
Total depth: 10'
Sheet 1 of 1

Project name: South Park Landfill/KIP
Project number: 10-04850-000
Client: City of Seattle

Drilling Contractor: ESN NW
Drilling method: Push probe rig
Sampling method: 5' core sample
Instrument(s): GEM/PID

Location: Adjacent to TGP-21
HEC rep: Bruce Carpenter
Date: 09/14/2016

PID (ppm)	Sampling interval	% Recovery	Depth (feet, BGS)	Soil Group	Water Level (feet)	Soil Description
			1			Grass, topsoil
			2	ML		
			3			Brown, gravelly SILT, fill, damp
0		50	4	FILL		8" Buff colored cement kiln dust (CKD)
			5	SM	▼ 4.90'	Gray fine silty SAND, fill, damp
			6			Groundwater encountered at 6'
			7	CH		Gray-brown clayey SILT, wet
0		100	8			
			9	ML		Brown sandy SILT, wet
			10	OL		Dark brown clayey SILT, wood chips, organic matter (silt overbank deposit)
						CH_4 - 0.0 CO_2 - 0.1 O_2 - 20.9 H_2S - 0



South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix L
Supplemental Investigations

Attachment L.3
Lenci Phase II Subsurface Sampling and Testing (Environmental Associates 2017)

PHASE-II SUBSURFACE SAMPLING & TESTING

Frank Lenci Corporation Property
424-432 South Cloverdale Street
Seattle, Washington

FRANK LENCI CORPORATION

ENVIRONMENTAL
ASSOCIATES, INC.

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Bellevue, Washington 98004
(425) 455-9025 Office
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April 28, 2017 PR-3156-2

Frank Lenci Corporation
c/o Mr. John Pietromonaco john@pietroprop.com
Pietromonaco Properties
7900 SE 28th Street, Suite 400
Mercer Island, Washington 98040

RE: Preliminary Phase-II Subsurface Sampling & Testing
Lenci Parcel
424-432 South Cloverdale Street
Seattle, Washington

Dear Mr. Pietromonaco:

The contents of this report are confidential and are intended solely for your use and the use of your representatives. A single electronic copy of this report is being distributed to you. No other distribution or discussion of these findings will take place without your prior approval in writing.

Background

Earlier environmental reviews reflect that following a period of agricultural use as a farm, the predominant use of the site during much of the 1960's and 1970's was as an auto recycling facility (wrecking yard).

The subject property (Lenci Parcel) lies south of and adjacent to the boundary of the former South Park Landfill operations area. The landfill is currently the focus of a Remedial Investigation / Feasibility Study (RI/FS), being overseen by the Washington State Department of Ecology (WDOE). Based upon our conversations, it is our understanding that the Client has been advised by the WDOE that a review of historical aerial imagery suggests that a portion of the subject site (referred to by the agency as a "lobe") may have historically been subject to landfill activities. This suspected "lobe" and its spatial location relative to the subject parcel is depicted graphically on the attached Proposed Exploration Plan. While the WDOE has apparently offered to perform on-site explorations on the Lenci Parcel, it is our understanding that the Client desired to independently conduct its own evaluation of the area of interest to the WDOE. This letter report presents a summary of the approach, methods, and findings of the Phase II recently performed by Environmental Associates, Inc. (EAI) in general accordance with its proposal of March 9, 2017.

Unable to comment in earlier times as to what specific impacts (if any) may have resulted from the presence of the landfill, certain scope elements of the current Phase II were previously recommended in EAI's May 10, 1993 Phase I report.

Subsurface Explorations

On March 31, 2017, EAI observed the completion of three (3) direct-push soil borings at the approximate locations depicted as B1 through B3 on Plate 2 Exploration Plan. Boring B1 was positioned within the inferred centroid of the area of interest to the WDOE, which the agency postulated as including a "lobe" of landfill deposits associated with the north-adjacent South Park landfill site. Borings B2 and B3 were positioned in an effort to assess localities to the west and east lateral limits of the inferred "lobe."

Soil Sampling

At each boring location, soil cores were collected in 4 to 5-foot sections from the ground surface to varying depths between 12 and 22 feet below the ground surface. Upon recovery, each core was opened and examined. Representative soil samples were collected from each core following EPA methodology 5035-A, a protocol that is intended to minimize the potential loss of volatile organic compounds (VOCs).

Groundwater Sampling - Existing Monitoring Well

Shallow groundwater was encountered at all three (3) push-probe borings at an approximate depth of 5 feet below the ground surface. Additionally, while on site EAI observed a previously existing monitoring well, located approximately 12 to 14 feet off the northwest corner of subject building on the subject property. The monitoring well was 3/4-inch in diameter and appeared to extend to a depth of 10 feet below the ground surface. At the time of EAI's field work, no markings were found on the well monument to identify the name/designation of this monitoring well, therefore for the purposes of this current study it was simply designated MW-NW.

Subsequent research utilizing a partial WDOE well-tag ID lead to identification of this well as WDOE Well-ID# BCM-827. A log for this monitoring well on file at the WDOE suggests that it was installed on December 29, 2010 by the City of Seattle. The purpose and intent by the City for the installation of this well is unknown to EAI, nor has the Client expressed to EAI any knowledge of this well or any findings that may have historically been derived at the time of / or following its installation.

Since this monitoring well was located within the inferred boundaries of the area of interest to the WDOE, and groundwater samples from permanent monitoring wells tend to be more representative of groundwater environmental conditions than "grab samples" from temporary borings, a groundwater sample was collected from MW-NW. Prior to sampling the well was first micro-purged with a peristaltic pump utilizing a low-flow technique. A representative groundwater sample was then transferred directly to laboratory-prepared containers. Groundwater samples intended to be analyzed for dissolved metals were field filtered with a disposable 0.45-micron filter cartridge.

Subsurface Conditions and Soil Sample Selection

Logs for each soil boring, along with a copy of the monitoring well log for MW-NW are provided Appendix-A, and the general subsurface conditions encountered are further described below.

The near surface soils consisted of 3 to 6 feet of fine to medium sand, interpreted to represent fill likely used during development of the current property building in the late 1960s. Under this more recent fill, a layer of wood chips with minor amounts of glass and brick debris was encountered. At B1 this lower fill layer was approximately 2.5 feet thick, whereas at B2 it was approximately 7 feet thick and was somewhat intermixed with organic silts. At B3 the layer of wood chips was less than one (1) foot in thickness. Plate 3 (Photographs) includes photos of the wood-chip fill layers encountered at both B1 and B2. At all three (3) boring locations, soils below the wood-chip layer appeared to be native tideland deposits consisting of organic silt and peat, which extended to the maximum depths of exploration that varied between 12 and 22 feet below the ground surface. As noted earlier, shallow groundwater was present at a depth of approximately 5 feet below the ground surface.

During soil sample collection, a portion of each sample was temporarily sealed in plastic zip-lock bags. After a brief period, a photo ionization detector (PID) was used to sample the "headspace" within each sealed bag. The concentration of any volatile organic compounds VOCs detected in the headspace by the PID is also included in the boring logs in Appendix-A. For this particular study the PID did not detect any significantly elevated concentrations of VOCs during the field screening procedure.

Two (2) soil samples from the current borings along with the groundwater sample from MW-NW were initially selected for laboratory analysis. At B1, the fill layer appeared to be mostly comprised of wood-chips and therefore a soil sample was selected from the deeper native soils below the wood chip fill (sample B1-8). At B2, the wood-chip and brick fill appeared to also be partially intermixed with soil, so a composite of this fill was collected for laboratory analysis as B2-4.

Laboratory Analysis

The two (2) selected soil samples and one (1) selected groundwater sample were initially analyzed for the following compounds:

- Petroleum hydrocarbons, including gasoline, diesel, and oil range petroleum by Washington State test methods NWTPH-G (gasoline) and NWTPH-Dx (diesel and oil).
- Volatile organic compounds (VOCs) by EPA Method 8260.
- Semi-volatile organic compounds (SVOCS) including polycyclic aromatic hydrocarbons (PAHs) by EPA-8270.
- RCRA-8 metals, including arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver, by EPA Method 6020. The groundwater sample from MW-NW was analyzed for dissolved metals only.
- Following EAI's review of initial laboratory results and of soil layering relationships (soil stratigraphy) between the various borings as documented on the boring logs, soil samples designated as B1-8 (sample obtained from 8 foot depth in boring B1 and B2-4 (sample from 4 foot depth in boring B2) were subsequently selected for additional testing for arsenic following EPA Method 1311/Toxicity Characteristic Leaching Procedure or "TCLP" (173-340-747) (7)(b)(ii).

A copy of the laboratory report is provided in Appendix-B and the results are discussed in the remaining subsections of this report.

Analytical Results - Soil Samples

Petroleum Hydrocarbons & VOCs

As presented in Table 1, traces of gasoline range petroleum were detected in both selected soil samples, however no associated BTEX compounds (benzene, toluene, ethylbenzene, xylenes) were detected. Both detected concentrations of gasoline were well below (i.e. **compliant** with) the WDOE's target compliance level of 100 parts per million (ppm), which applies when BTEX compounds are not present.

Referencing the laboratory report in Appendix-B, traces of other petroleum-related volatile compounds were also detected, including 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, naphthalene, and isopropyltoluene. Of these compounds only 1,3,5-trimethylbenzene and naphthalene have individual target compliance levels. As noted in Table 1, the concentrations of these compounds were well below (i.e. **compliant** with) their corresponding target MTCA compliance levels.

Semi Volatile Organic Compounds / PAH Compounds

Of the numerous semi-volatile organic compounds (SVOCs) tested for, only a select few carcinogenic PAH compounds were detected in sample B2-4. These concentrations are presented in Table 2. Additionally, Table 2 includes a summation of total carcinogenic PAHs which are calculated by summing the product of each cPAH compound multiplied by its toxicity equivalency fraction following the procedure outlined in WAC 173-340-708(8). This toxicity summation yielded a total cPAH concentration of 0.26 ppm for sample B2-4. This concentration is well below (i.e. **compliant** with) the MTCA target compliance level of 2.0 ppm for industrial property. For reader reference, the subject property is zoned industrial therefore the 2.0 ppm compliance level for PAHs is applicable.

Metals

Referencing Table 3, several heavy metals were detected in the selected soil samples, including arsenic, barium, cadmium, chromium, and lead. Of the detected concentrations, only the sample B1-8 which was obtained from boring B1 at a depth of 8 feet within the native organic silt/peat deposit underlying fills within the area explored contained arsenic at a concentration (21 ppm), slightly exceeding the WDOE target compliance level (20 ppm). Armed with the relatively common understanding that peat is known to concentrate arsenic under anoxic/reducing environments such as this (Langner, P., 2011), we suspect such naturally occurring bio-concentration/bio-sequestration as a process which may account for the finding in this case.

As discussed earlier in the report, in an effort to validate to some extent the stability of the bio-sequestration postulated above, and to confirm the non-hazardous nature of materials underlying the property, certain samples were selected for additional testing for arsenic following EPA Method 1311/Toxicity Characteristic Leaching Procedure or "**TCLP**" (173-340-747) (7)(b)(ii). Results of the TCLP evaluation of samples B1-8 and B2-4 show that for arsenic, neither the native organic silt/peat nor the mixed fill sample would be classified as "dangerous" in terms of leaching risk under the TCLP guidelines.

Analytical Results - Groundwater

Referencing the laboratory report in Appendix-B, neither petroleum hydrocarbons (gasoline, diesel, or oil TPH), nor VOCs, or SVOCs were detected in the groundwater sample at concentrations above the laboratory's minimum detection limits. As presented in Table 4, the only detections in the groundwater were dissolved concentrations of metals. Arsenic, barium, and chromium were present in the groundwater sample, however all three concentrations were below (i.e. **in compliance** with) the WDOE's target levels for unrestricted land use.

Summary Discussion Of Findings / Conclusions

As discussed in the Background section of this report, the WDOE's interpretation of historical aerial images has inferred that historic South Park Landfill operations, may have extended further south than the current west to east alignment of South Sullivan Street. This approximate area of interest is depicted by brown-tinting on Plate 2, Exploration Plan.

A Seattle-King County Department of Public Health - Abandoned Landfill Study (1984), suggests that the South Park landfill was used in the 1950s by area sawmills for disposal of waste sawdust, and in later years it was used as "burning dump" from municipal refuse disposal.

The thin lenses of wood chips (sawdust) intermixed with minor occurrences of glass and brick as depicted in the sampler photographs presented on Plate 3 and as described in the boring logs contained in Appendix A are similar to some types of materials which have been described by others in association with landfills. As the thickness of the fill was more pronounced at B2, the "lobe" area described by WDOE may have been centered further west than was projected by WDOE in their interpretive review of aerial photographs.

Although fill was encountered, the sampling and laboratory testing performed as part of this current study suggests a very low risk to the public / environment by these materials at the subject. As previously discussed, of the analytes evaluated, only arsenic exceeded an applicable WDOE target compliance level (by 1 ppm). As discussed earlier in this report, that sample was obtained from a depth of approximately 8 feet at boring location B-1. The geologic unit from which the sample was obtained from several feet below the water table and was described as a native organic silt with peat as a substantial component. With respect to soils, that finding is consistent with many low lying and/or marshy areas which historically occupied a substantial portion of the Duwamish locality. In such organic-rich environments where fluctuations in water levels and shifts in biological activity result in anoxic/reducing conditions common to such native marsh areas, many workers have shown that nearly complete sequestration/bio-concentration of naturally occurring arsenic often results. (Langner, P., 2011; Wang, S., et al, 2006).

Without benefit of additional information, the principles illuminated by the cited works would appear to preclude a unique or incontrovertible finding that the arsenic at 8 feet in B-1 is somehow related to the landfill. Finally, regardless of genesis, the results of supplemental TCLP evaluation of the material in question has confirmed that with respect to arsenic the native organic silt/peat appears to be stable and would not be classified as dangerous under MTCA or under other applicable State or Federal laws or regulations.

Taking the totality of the findings developed/discovered to date including but not limited to laboratory testing of soils, compliant groundwater conditions along with the inferred direction of groundwater movement (north to northeast, i.e. away from the subject site), we (EAI) would have no basis upon which to predicate a recommendation for further action or additional evaluation at this time.

Limitations

This report has been prepared for the exclusive use of Frank Lenci Corporation, along with their several representatives for specific application to this site. Our work for this project was conducted in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area, and in accordance with the terms and conditions set forth in our proposal dated March 9, 2017. The opinions expressed in this report are based upon interpretations, observations and testing made at a separated locations and conditions may vary between those sampling localities or at other locations, depths, and/or media. EAI makes no warranty as to the accuracy or reliability of data / opinions provided/rendered by other parties. EAI makes no warranty with respect to opinions, or comments, or acceptance of this report by any regulatory agency or other review entity. No other warranty, expressed or implied, is made. If new information is developed in future site work which may include excavations, borings, studies, etc., Environmental Associates, Inc., must be retained to reevaluate the conclusions of this document and to provide amendments as required.

We appreciate the opportunity to be of service on this assignment. If you have any questions or if we may be of additional service, please do not hesitate to contact us.

Respectfully submitted,
ENVIRONMENTAL ASSOCIATES, INC.

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REFERENCES

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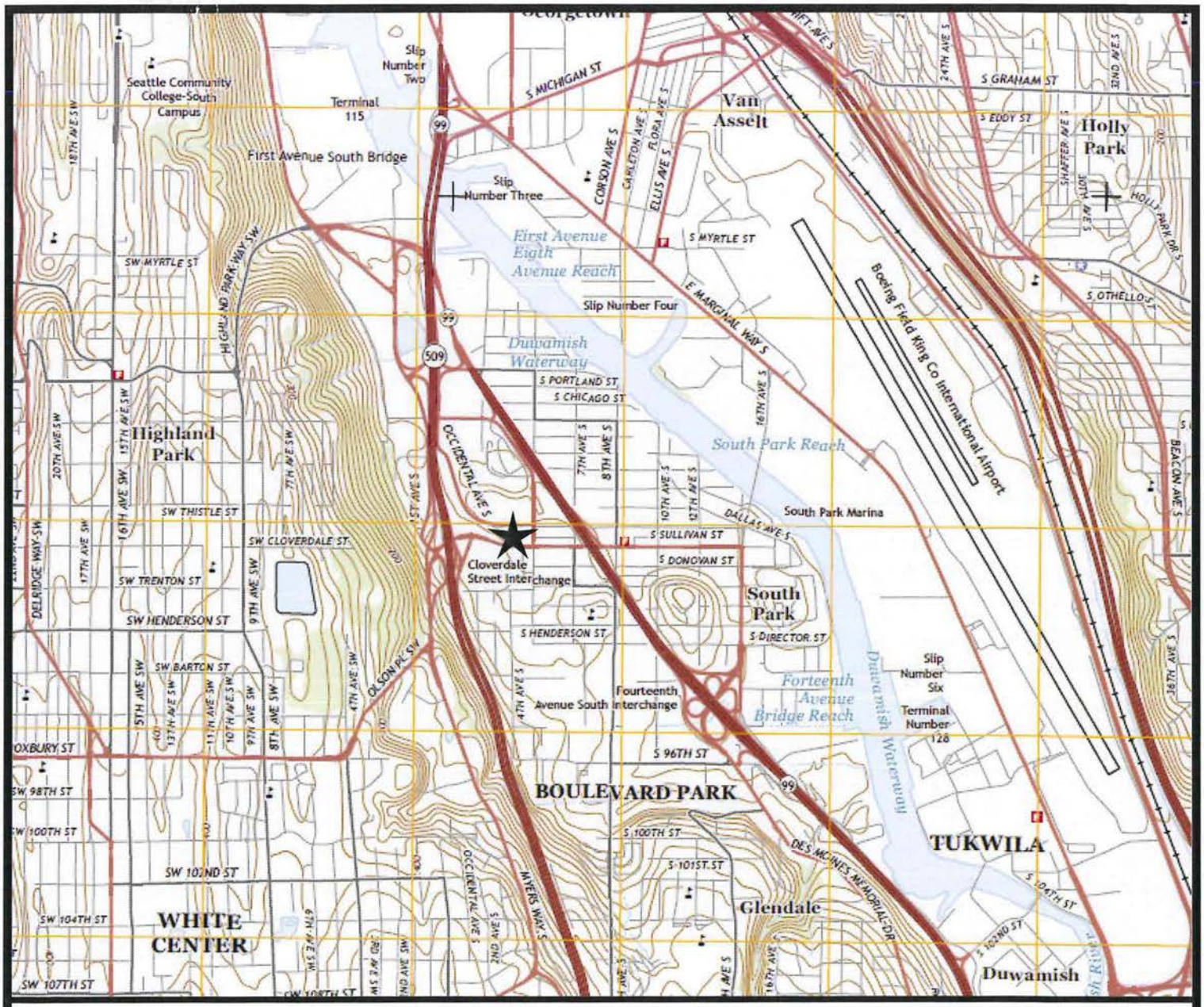
Wang, S., Mulligan, C.N. 2006. Effect Of Natural Organic Matter On Arsenic Release From Soils And Sediments Into Groundwater. Environmental Geochem. Health Vol. 28, 197-214.



★ Approximate location of the subject property.

Inferred direction of groundwater flow in vicinity of the subject site, based upon local topographic gradient.

N

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VICINITY / TOPOGRAPHIC MAP

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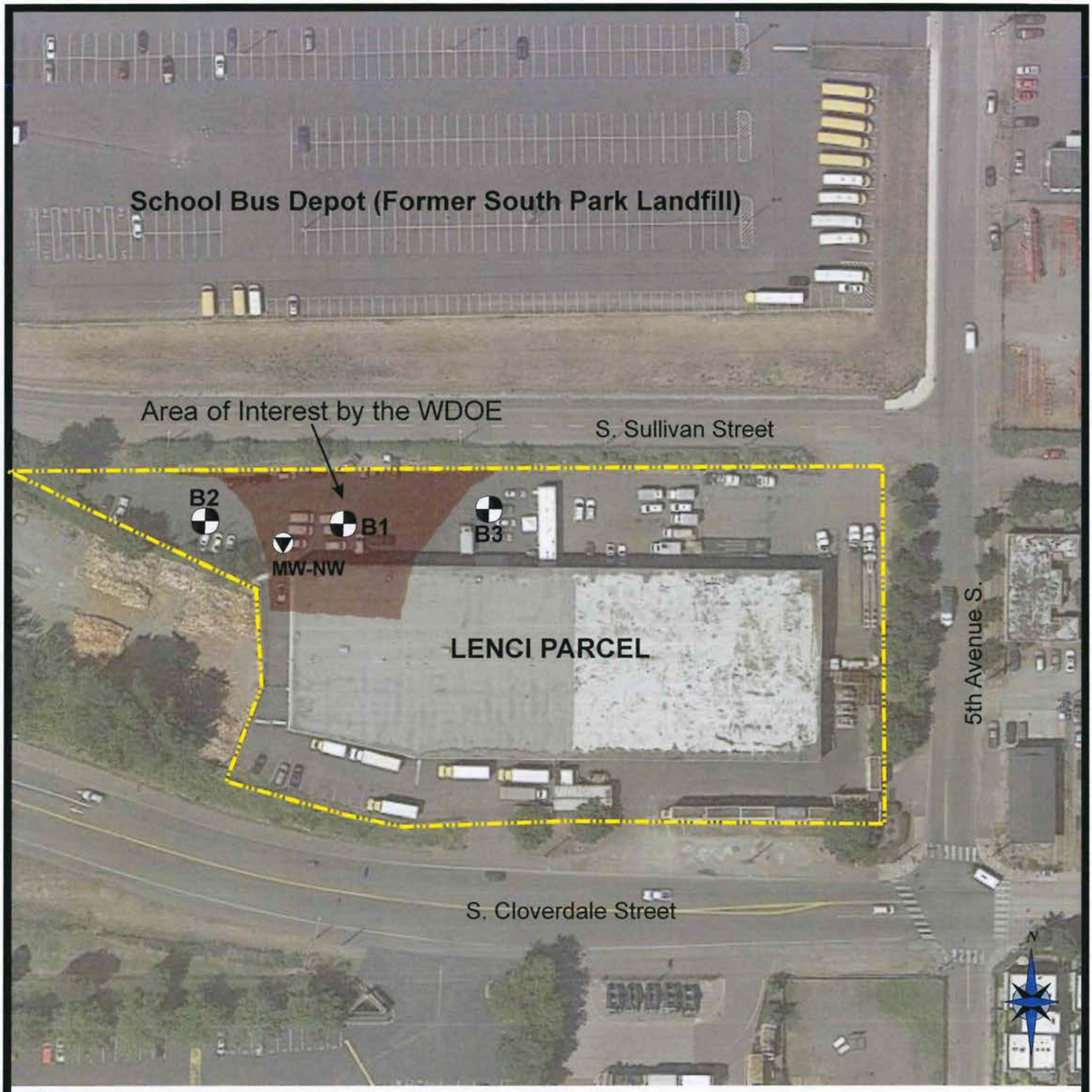
Job Number:	*Date:*		*Plate:*
JN-3156-2	March 2017		1



Approximate location of borings made by EAI in March 2017.

Approximate location of an existing monitoring well located off the northwest corner of the building.

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EXPLORATION PLAN

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Job Number:	Date:	Scale:	Plate:
JN-3156-2	March 2017		2

Boring B1 soil core depicting wood-chip fill layer encountered between 4 and 6 feet below the ground surface.

Boring B2 soil core depicting a mixture of wood-chips, brick debris, and organic silts.

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SITE PHOTOGRAPHS

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Job Number:	*Date:*		*Plate:*
JN-3156-2	March 2017		3

TABLE 1 - Petroleum Hydrocarbons & VOCs - Soil Sampling Results
All results and limits in parts per million (ppm)

Boring / Sample Name	Gasoline (TPH)	Diesel (TPH)	Heavy Oil (TPH)	Benzene	Toluene	Ethylbenzene	Total Xylenes	1,3,5-Trimethylbenzene	Naphthalene
B1-8	15	<50	<100	<0.02	<0.05	<0.05	<0.15	<0.05	<0.05
B2-4	49	<50	<100	<0.02	<0.05	<0.05	<0.15	0.051	0.066
Reporting Limit [3]	10	50	100	0.02	0.05	0.05	0.15	0.05	0.05
WDOE Compliance Levels [4]	**100** [5]	**2000**	**2000**	**0.03**	7	6	9	**800**	5

Notes:
1 - "ND" denotes analyte not detected at or above listed Reporting Limit.
2- "---" denotes sample not analyzed for specific analyte.
3- "Reporting Limit" represents the laboratory lower quantitation limit.
4- Method A soil cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC.
5- The MTCA gasoline TPH cleanup level is 100 ppm for soils with no benzene and less than 20% aromatic hydrocarbons between C8 and C16. Otherwise, the cleanup level is 30 ppm.

Bold and Italics denotes concentrations above MTCA Method A soil cleanup levels.

TABLE 2 - Carcinogenic PAHs - Soil Sampling Results
All results and limits in parts per million (ppm)

Boring / Sample Name	Benzo(a)pyrene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3,-cd)pyrene	Benzo(k)fluoranthene	Benzo(a)anthracene	Benzo(b)fluoranthene	Total Carcinogenic PAHs[5]
B1-8	0	0	0	0	0	0	0	0.00
B2-4	0	0.05	0.0	1.2	0.00	1.40	0.0	0.26
cPAH Toxicity Equivilant Fraction [5]	1.0	0.01	0.1	0.1	0.1	0.1	0.1	
Reporting Limit [3]	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
MTCA-Method-A Residential [4]	---	---	---	---	---	---	---	0.1
MTCA-Method-A Industrial [4]	---	---	---	---	---	---	---	2

Notes:
1 - "0.00" denotes analyte not detected at or above listed Reporting Limit.
2- "NA" denotes sample not analyzed for specific analyte.
3- "Reporting Limit" represents the laboratory lower quantitation limit.
4- Method A soil cleanup level for total carcinogenic PAHs as published in the Model Toxics Control Act (MTCA) 173-340-WAC.
5- Total carcinogenic PAHs are calculated by suming the product of each cPAH mulitplied by its toxicity equivalency fraction per WAC 173-340-708(8).

TABLE 3 - RCRA-8 Metals - Soil Sampling Results
All results and limits in parts per million (ppm)

Boring/ Sample Name	Arsenic	TCLP Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
B1-8	***21***	<0.2	120	<1	51	4.1	<0.5	<20	<20
B2-4	7.5	<0.2	210	1.4	42	140	<0.5	<20	<20
Reporting Limit [3]	1	0.2	1	1	1	1	0.2	1	1
Existing Cleanup Level[4]	20 (A)	5 [(6)]	16,000 (B)	2 (A)	2000 (A)[5]	250 (A)	2 (A)	400 (B)	400 (B)

Notes:
1 - "ND" denotes analyte not detected at or above listed Reporting Limit.
2- "NA" denotes sample not analyzed for specific analyte.
3- "Reporting Limit" represents the laboratory lower quantitation limit.
4- Method A or B cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC.
5- The Method A target compliance level for for the more common form of chromium (chromium III) is 2,000 ppm.
The target compliance level for the less common chromium VI is 19 ppm. Chromium VI is not generally suspected at this type of facility.
6- TCLP maximum concentration of contaminants for the Toxicity Characteristic as presented in WAC 173-303-090.

Bold and Italics denotes concentrations above existing MTCA Method A soil cleanup levels.

TABLE 4 - RCRA 8 Dissolved Metals - Groundwater Sampling Results
All results and limits in parts per billion (ppb)

Monitoring Well / Sample Name	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
MW-NW	4.8	370	<2	12	<2	<1	<10	<10
Reporting Limit [3]	2	20	2	10	2	1	10	10
Existing Cleanup Level[4]	5 (A)	3,200 (B)	5 (A)	50 (A)	15 (A)	2 (A)	80 (B)	80 (B)

Notes:
1 - "ND" denotes analyte not detected at or above listed Reporting Limit.
2- "NA" denotes sample not analyzed for specific analyte.
3- "Reporting Limit" represents the laboratory lower quantitation limit.
4- Method A or B cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC.

Bold and Italics denotes concentrations above existing MTCA Method A soil cleanup levels.

APPENDIX-A

Boring Logs

WDOE Well Tag:
Lat:
Long:

BORING B1

Ground Surface Elevation: ~7 ft

Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION	Soil Sample	PID
0		Moist		(F)	Sand, fine to medium sand, minor silt, gray, no odors. Interpreted to be fill.	B1-4	0.0
5		Wet		(F)	Fill, wood-chips with minor glass debris. "rotting-wood odor"		6.2
		Wet		OL/ Pt	Organic-Silt / Peat, silt, organic, peaty, with lenses of peat & natural woody material, and occasional lenses of sand.	B1-8	0.0
10					*sand-lense at @13-feet*		
15						B1-14	0.0
20							
25					Boring terminated at 22 feet. Groundwater encountered at ~5 feet		
30							
35							
40							

Sampler: Continuous Strataprobe Macro-Core.
Driller: ESN - Geoprobe

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BORING B1

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Seattle, Washington

Job Number:	Date:	Logged by:	Plate:
JN-3156-2	3/31/2017	RBR	A-1

WDOE Well Tag:
Lat:
Long:

BORING B2

Ground Surface Elevation: ~7 ft

Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION	Soil Sample	PID
0		Moist		(F)	Sand, fine to medium sand, minor silt, gray, no odors. Interpreted to be fill.		
						B1-4	7.1
5		Wet		(F)	Fill, wood-chips with minor glass debris, intermixed with organic-silts. Thin gray-green clay layer at 7-feet. "rotting-wood odor"		
		Wet				B2-9	0.3
10		Wet		OL/ Pt	Organic-Silt / Peat, silt, organic, peaty, with lenses of peat with native woody material, and occasional lenses of sand.		
						B2-14	0.0
15					Boring terminated at 16 feet. Groundwater encountered at ~5 feet		
20							
25							
30							
35							
40							

Sampler: Continuous Strataprobe Macro-Core.
Driller: ESN - Geoprobe

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BORING B2

LENCI PROPERTY
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Seattle, Washington

Job Number:	Date:	Logged by:	Plate:
JN-3156-2	3/31/2017	RBR	A-2

WDOE Well Tag:
Lat:
Long:

BORING B3

Ground Surface Elevation: ~7 ft

Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION	Soil Sample	PID
0		Moist		(F)	Sand, fine to medium sand, minor silt, gray, no odors. Interpreted to be fill.	B3-3	0.1
				(F)	Fill, wood-chips with minor glass debris.		
5		Wet		OL/ Pt	Organic-Silt / Peat, silt, organic, peaty, with lenses of peat with native woody material, and occasional lenses of sand.	B3-8	0.1
10						B3-12	0.5
					Boring terminated at 12 feet. Groundwater encountered at ~5 feet		
15							
20							
25							
30							
35							
40							

Sampler: Continuous Strataprobe Macro-Core.
Driller: ESN - Geoprobe

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BORING B3

LENCI PROPERTY
424 South Cloverdale Street
Seattle, Washington

Job Number:	Date:	Logged by:	Plate:
JN-3156-2	3/31/2017	RBR	A-3

24-4E-32D

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT Notice of Intent No. RE05279

403975

Construction/Decommission

[X] Construction

[ ] Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well

[X] Resource Protection

[ ] Geotechnical Soil Boring

Property Owner: City of Seattle

Site Address: 8105 5th Ave. S.

Consulting Firm: Aspect Consulting LLC

City: Seattle County: 17-King

Unique Ecology Well ID Tag No.: BCM-827

Location: 1/4 NW 1/4 NW Sec 32 Twn 24N R 4E [EWM] or WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s,t,r still Required) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

[X] Driller [ ] Trainee Name (Print): Elijah Floyd

Driller/Trainee Signature: Elijah Floyd

Driller/Trainee License No.: 2842

Tax Parcel No.: 732840-0005

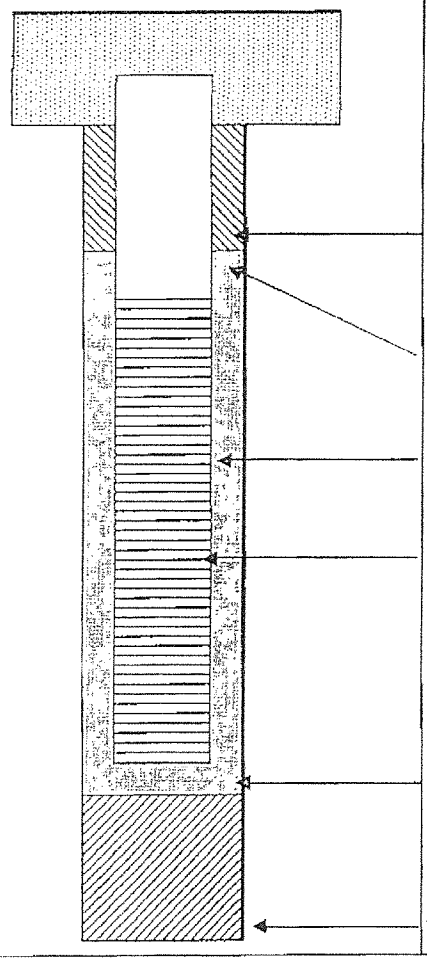
Cased or Uncased Diameter: 2 1/4 Static Level: 5'

Work/Decommission Start Date: 12-29-2010

If trainee, licensed driller's Signature and License No.: _____

Work/Decommission End Date: 12-29-2010

Construction/Design — **Well Data** W10-680



Concrete Surface Seal Depth	2' FT
Blank Casing (dia x dep)	3/4" x 5'
Material	PVC
Backfill	N/A FT
Type	N/A
Seal	1'
Material	Bentonite chips
Gravel Pack	7' FT
Material	2/12 + Pre Pack
Screen (dia x dep)	3/4" x 5'
Slot Size	.010
Material	PVC Pre Pack
Well Depth	10 FT
Backfill	N/A
Material	N/A
Total Hole Depth	10' FT

Formation Description

0 - 10' FT: small gravels, Fine sands silts, Damp @ 5', loose light green, to Dark brown organics mixed in.

0 - FT

0 - FT

Scale 1" = _____ Page _____ of _____

RECEIVED FEB 02 2011 WATER RESOURCES - NWRO

ECY 050-12 (Rev. 2/2011)

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

APPENDIX-B

Laboratory Reports

ESN NORTHWEST CHEMISTRY LABORATORY

Environmental Associates, Inc.
PROJECT LENCI PROPERTY
PROJECT #EAI-3156-2
Seattle, Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	4/3/2017	4/3/2017	126	nd	nd
LCS	4/3/2017	4/3/2017	115	139%	---
B1-8	4/3/2017	4/3/2017	132	nd	nd
B1-8 Duplicate	4/3/2017	4/3/2017	119	nd	nd
B2-4	4/3/2017	4/3/2017	110	nd	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

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Seattle, Washington

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1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Diesel Range Organics & Lube Oil Range Organics in Water by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (ug/L)	Lube Oil Range Organics (ug/L)
Method Blank	4/3/2017	4/3/2017	124	nd	nd
LCS	4/3/2017	4/3/2017	119	113%	---
MW-NW	4/3/2017	4/3/2017	154*	nd	nd
Reporting Limits				250	500

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

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Analysis of Gasoline Range Organics in Soil
by Method NWTPH-Gx

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Gasoline Range Organics (mg/kg)
Method Blank	4/5/2017	4/5/2017	107	nd
LCS	4/5/2017	4/5/2017	105	134%
B1-8	3/31/2017	4/5/2017	106	**15**
B2-4	3/31/2017	4/5/2017	106	**49**
Reporting Limits				10

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

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lab@esnnw.com

Analysis of Gasoline Range Organics in Water
by Method NWTPH-Gx

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline Range Organics (ug/L)
Method Blank	4/4/2017	107	nd
LCS	4/4/2017	108	106%
MW-NW	4/4/2017	105	nd
Reporting Limits			100

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

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Analysis of Volatile Organic Compounds in Soil by Method 8260C/5035

	RL	MB	LCS	LCSD	B1-8	B2-4
Date extracted		04/05/17	04/05/17	04/05/17	03/31/17	03/31/17
Date analyzed	(mg/Kg)	04/05/17	04/05/17	04/05/17	04/05/17	04/05/17
% Moisture					59%	12%
Dichlorodifluoromethane	0.05	nd			nd	nd
Chloromethane	0.05	nd			nd	nd
Vinyl chloride	0.02	nd	119%	121%	nd	nd
Bromomethane	0.05	nd			nd	nd
Chloroethane	0.05	nd			nd	nd
Trichlorofluoromethane	0.05	nd			nd	nd
Acetone	0.25	nd			nd	nd
1,1-Dichloroethene	0.05	nd	87%	87%	nd	nd
Methylene chloride	0.05	nd			nd	nd
Methyl-t-butyl ether (MTBE)	0.05	nd			nd	nd
trans-1,2-Dichloroethene	0.05	nd			nd	nd
1,1-Dichloroethane	0.05	nd			nd	nd
2-Butanone (MEK)	0.25	nd			nd	nd
cis-1,2-Dichloroethene	0.05	nd			nd	nd
2,2-Dichloropropane	0.05	nd			nd	nd
Chloroform	0.05	nd	123%	114%	nd	nd
Bromochloromethane	0.05	nd			nd	nd
1,1,1-Trichloroethane	0.05	nd			nd	nd
1,2-Dichloroethane (EDC)	0.05	nd			nd	nd
1,1-Dichloropropene	0.05	nd			nd	nd
Carbon tetrachloride	0.05	nd			nd	nd
Benzene	0.02	nd	88%	91%	nd	nd
Trichloroethene (TCE)	0.02	nd	109%	111%	nd	nd
1,2-Dichloropropane	0.05	nd	99%	103%	nd	nd
Dibromomethane	0.05	nd			nd	nd
Bromodichloromethane	0.05	nd			nd	nd
4-Methyl-2-pentanone (MIBK)	0.25	nd			nd	nd
cis-1,3-Dichloropropene	0.05	nd			nd	nd
Toluene	0.05	nd	104%	111%	nd	nd
trans-1,3-Dichloropropene	0.05	nd			nd	nd
1,1,2-Trichloroethane	0.05	nd			nd	nd
2-Hexanone	0.25	nd			nd	nd
1,3-Dichloropropane	0.05	nd			nd	nd
Dibromochloromethane	0.05	nd			nd	nd
Tetrachloroethene (PCE)	0.02	nd	116%	122%	nd	nd
1,2-Dibromoethane (EDB)	0.05	nd			nd	nd
Chlorobenzene	0.05	nd	114%	118%	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd			nd	nd
Ethylbenzene	0.05	nd	112%	114%	nd	nd
Xylenes	0.15	nd	107%	111%	nd	nd
Styrene	0.05	nd			nd	nd
Bromoform	0.05	nd			nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd			nd	nd
Isopropylbenzene	0.05	nd			nd	nd
1,2,3-Trichloropropane	0.05	nd			nd	nd
Bromobenzene	0.05	nd			nd	nd

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lab@esnnw.com

Analysis of Volatile Organic Compounds in Soil by Method 8260C/5035

	RL	MB	LCS	LCSD	B1-8	B2-4
Date extracted		04/05/17	04/05/17	04/05/17	03/31/17	03/31/17
Date analyzed	(mg/Kg)	04/05/17	04/05/17	04/05/17	04/05/17	04/05/17
% Moisture					59%	12%
n-Propylbenzene	0.05	nd			nd	nd
2-Chlorotoluene	0.05	nd			nd	nd
4-Chlorotoluene	0.05	nd			nd	nd
1,3,5-Trimethylbenzene	0.05	nd			nd	**0.051**
tert-Butylbenzene	0.05	nd			nd	nd
1,2,4-Trimethylbenzene	0.05	nd			nd	**0.10**
sec-Butylbenzene	0.05	nd			nd	nd
1,3-Dichlorobenzene	0.05	nd			nd	nd
1,4-Dichlorobenzene	0.05	nd			nd	nd
Isopropyltoluene	0.05	nd			nd	**0.11**
1,2-Dichlorobenzene	0.05	nd			nd	nd
n-Butylbenzene	0.05	nd			nd	nd
1,2-Dibromo-3-Chloropropane	0.05	nd			nd	nd
1,2,4-Trichlorobenzene	0.05	nd			nd	nd
Naphthalene	0.05	nd			nd	**0.066**
Hexachloro-1,3-butadiene	0.05	nd			nd	nd
1,2,3-Trichlorobenzene	0.05	nd			nd	nd
Surrogate recoveries						
Dibromofluoromethane		117%	99%	99%	112%	113%
Toluene-d8		99%	92%	93%	100%	102%
4-Bromofluorobenzene		107%	102%	103%	106%	106%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

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PROJECT #EAI-3156-2
Seattle, Washington

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Olympia, WA 98501
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lab@esnnw.com

Analysis of Volatile Organic Compounds in Water by Method 8260C/5030C

Analytical Results

	RL	MB	LCS	LCSD	MW-NW
Date analyzed	(ug/L)	04/04/17	04/04/17	04/04/17	
Dichlorodifluoromethane	1.0	nd			nd
Chloromethane	1.0	nd			nd
Vinyl chloride	0.2	nd	117%	124%	nd
Bromomethane	1.0	nd			nd
Chloroethane	1.0	nd			nd
Trichlorofluoromethane	1.0	nd			nd
Acetone	10.0	nd			nd
1,1-Dichloroethene	1.0	nd	88%	87%	nd
Methylene chloride	1.0	nd			nd
Methyl-t-butyl ether (MTBE)	1.0	nd			nd
trans-1,2-Dichloroethene	1.0	nd			nd
1,1-Dichloroethane	1.0	nd			nd
2-Butanone (MEK)	10.0	nd			nd
cis-1,2-Dichloroethene	1.0	nd			nd
2,2-Dichloropropane	1.0	nd			nd
Chloroform	1.0	nd	125%	119%	nd
Bromochloromethane	1.0	nd			nd
1,1,1-Trichloroethane	1.0	nd			nd
1,2-Dichloroethane (EDC)	1.0	nd			nd
1,1-Dichloropropene	1.0	nd			nd
Carbon tetrachloride	1.0	nd			nd
Benzene	1.0	nd	81%	79%	nd
Trichloroethene (TCE)	1.0	nd			nd
1,2-Dichloropropane	1.0	nd	88%	87%	nd
Dibromomethane	1.0	nd			nd
Bromodichloromethane	1.0	nd			nd
4-Methyl-2-pentanone (MIBK)	1.0	nd			nd
cis-1,3-Dichloropropene	1.0	nd			nd
Toluene	1.0	nd	93%	94%	nd
trans-1,3-Dichloropropene	1.0	nd			nd
1,1,2-Trichloroethane	1.0	nd			nd
2-Hexanone	1.0	nd			nd
1,3-Dichloropropane	1.0	nd			nd
Dibromochloromethane	1.0	nd			nd
Tetrachloroethene (PCE)	1.0	nd	99%	99%	nd
1,2-Dibromoethane (EDB)	1.0	nd			nd
Chlorobenzene	1.0	nd	101%	101%	nd
1,1,1,2-Tetrachloroethane	1.0	nd			nd
Ethylbenzene	1.0	nd	97%	99%	nd
Xylenes	3.0	nd	98%	118%	nd
Styrene	1.0	nd			nd
Bromoform	1.0	nd			nd
1,1,2,2-Tetrachloroethane	1.0	nd			nd
Isopropylbenzene	1.0	nd			nd
1,2,3-Trichloropropane	1.0	nd			nd
Bromobenzene	1.0	nd			nd

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Analysis of Volatile Organic Compounds in Water by Method 8260C/5030C

Analytical Results

	RL	MB	LCS	LCSD	MW-NW
Date analyzed	(ug/L)	04/04/17	04/04/17	04/04/17	
n-Propylbenzene	1.0	nd			nd
2-Chlorotoluene	1.0	nd			nd
4-Chlorotoluene	1.0	nd			nd
1,3,5-Trimethylbenzene	1.0	nd			nd
tert-Butylbenzene	1.0	nd			nd
1,2,4-Trimethylbenzene	1.0	nd			nd
sec-Butylbenzene	1.0	nd			nd
1,3-Dichlorobenzene	1.0	nd			nd
1,4-Dichlorobenzene	1.0	nd			nd
Isopropyltoluene	1.0	nd			nd
1,2-Dichlorobenzene	1.0	nd			nd
n-Butylbenzene	1.0	nd			nd
1,2-Dibromo-3-Chloropropane	1.0	nd			nd
1,2,4-Trichlorobenzene	1.0	nd			nd
Naphthalene	1.0	nd			nd
Hexachloro-1,3-butadiene	1.0	nd			nd
1,2,3-Trichlorobenzene	1.0	nd			nd
Surrogate recoveries					
Dibromofluoromethane		118%	113%	114%	116%
Toluene-d8		97%	91%	90%	98%
4-Bromofluorobenzene		107%	97%	101%	105%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

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Analysis of Semivolatile Organic Compounds in Soil by Method 8270

Analytical Results

		MTH BLK	LCS	B1-8	B2-4
Date extracted	Reporting	04/03/17	04/03/17	04/03/17	04/03/17
Date analyzed	Limits	04/03/17	04/03/17	04/03/17	04/03/17
Moisture, %	(mg/kg)			0%	12%
Pyridine	1.0	nd		nd	nd
Aniline	1.0	nd		nd	nd
Phenol	1.0	nd	83%	nd	nd
2-Chlorophenol	1.0	nd		nd	nd
Bis (2-chloroethyl) ether	1.0	nd		nd	nd
1,3-Dichlorobenzene	1.0	nd		nd	nd
1,4-Dichlorobenzene	1.0	nd	90%	nd	nd
1,2-Dichlorobenzene	1.0	nd		nd	nd
Benzyl alcohol	1.0	nd		nd	nd
Hexacholorethane	1.0	nd		nd	nd
N-Nitroso-di-n-propylamine	1.0	nd	102%	nd	nd
3,4-Methylphenol (m,p-cresol)	1.0	nd		nd	nd
2-Methylphenol (o-cresol)	1.0	nd		nd	nd
Bis (2-chloroisopropyl) ether	5.0	nd		nd	nd
Nitrobenzene	1.0	nd		nd	nd
Isophorone	1.0	nd		nd	nd
2-Nitrophenol	5.0	nd	101%	nd	nd
2,4-Dimethylphenol	1.0	nd		nd	nd
Bis (2-chloroethoxy) methane	1.0	nd		nd	nd
2,4-Dichlorophenol	5.0	nd		nd	nd
1,2,4-Trichlorobenzene	1.0	nd	104%	nd	nd
Naphthalene	1.0	nd		nd	nd
4-Chloroaniline	5.0	nd		nd	nd
Hexachlorobutadiene	1.0	nd	128%	nd	nd
4-Chloro-3-methylphenol	5.0	nd	114%	nd	nd
2-Methylnapthalene	1.0	nd		nd	nd
1-Methylnapthalene	1.0	nd		nd	nd
Hexachlorocyclopentadiene	1.0	nd	143%	nd	nd
2,4,6-Trichlorophenol	5.0	nd	79%	nd	nd
2,4,5-Trichlorophenol	5.0	nd		nd	nd
2-Chloronaphthalene	1.0	nd		nd	nd
2-Nitroaniline	5.0	nd		nd	nd
1,4-Dinitrobenzene	5.0	nd		nd	nd
Acenaphthylene	0.1	nd		nd	nd
1,3-Dinotrobenzene	5.0	nd		nd	nd
Dimethylphthalate	1.0	nd		nd	nd
2,6-Dinitrotoluene	1.0	nd		nd	nd
1,2-Dinitrobenzene	1.0	nd		nd	nd
Acenaphthene	0.1	nd	102%	nd	nd
2,4-Dinitrophenol	5.0	nd	95%	nd	nd

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Analysis of Semivolatile Organic Compounds in Soil by Method 8270

Analytical Results

		MTH BLK	LCS	B1-8	B2-4
Date extracted	Reporting	04/03/17	04/03/17	04/03/17	04/03/17
Date analyzed	Limits	04/03/17	04/03/17	04/03/17	04/03/17
Moisture, %	(mg/kg)			0%	12%
2,4-Dinitrotoluene	1.0	nd	102%	nd	nd
4-Nitrophenol	5.0	nd	127%	nd	nd
Dibenzofuran	1.0	nd		nd	nd
2,3,4,6-Tetrachlorophenol	1.0	nd		nd	nd
2,3,5,6-Tetrachlorophenol	1.0	nd		nd	nd
Fluorene	0.1	nd		nd	nd
4-Chlorophenylphenylether	1.0	nd		nd	nd
Diethylphthalate	1.0	nd		nd	nd
4-Nitroaniline	5.0	nd		nd	nd
4,6-Dinitro-2-methylphenol	5.0	nd		nd	nd
N-nitrosodiphenylamine	1.0	nd		nd	nd
Azobenzene	1.0	nd		nd	nd
4-Bromophenylphenylether	1.0	nd		nd	nd
Hexachlorobenzene	1.0	nd		nd	nd
Pentachlorophenol	5.0	nd	145%	nd	nd
Phenanthrene	0.1	nd		nd	nd
Anthracene	0.1	nd		nd	nd
Carbazole	1.0	nd		nd	nd
Di-n-butylphthalate	1.0	nd		nd	nd
Fluoranthene	0.1	nd	106%	nd	**0.77**
Pyrene	0.1	nd	106%	nd	**0.89**
Butylbenzylphthalate	1.0	nd		nd	nd
Bis(2-ethylhexyl) adipate	1.0	nd		nd	nd
Benzo(a)anthracene	0.1	nd	103%	nd	**1.4**
Chrysene	0.1	nd	99%	nd	**0.05**
Bis (2-ethylhexyl) phthalate	1.0	nd		nd	nd
Di-n-octyl phthalate	1.0	nd	86%	nd	nd
Benzo(b)fluoranthene	0.1	nd		nd	nd
Benzo(k)fluoranthene	0.1	nd		nd	nd
Benzo(a)pyrene	0.1	nd	122%	nd	nd
Dibenzo(a,h)anthracene	0.1	nd		nd	nd
Benzo(ghi)perylene	0.1	nd	118%	nd	**1.0**
Indeno(1,2,3-cd)pyrene	0.1	nd	105%	nd	**1.2**

Surrogate recoveries				
2-Fluorophenol	71%	76%	80%	66%
Phenol-d6	77%	86%	77%	70%
Nitrobenzene-d5	92%	114%	106%	82%
2-Fluorobiphenyl	98%	98%	116%	88%
2,4,6-Tribromophenol	98%	119%	114%	98%
4-Terphenyl-d14	102%	100%	107%	89%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

Acceptable Recovery limits:

2-Flurophenol: 10-135 %
Phenol - d5: 10-135 %
2,4,6- tribromophenol: 29-159%
Nitrobenzene - d5: 20-120 %
2-Flurobiphenyl: 50-150%
p-Terphenyl-d14: 50-150%
Acceptable RPD limit: 35%

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Analysis of Semivolatile Organic Compounds in Water by Method 8270

Analytical Results

	Reporting	MTH BLK	LCS	MW-NW
Date extracted	Limits	04/03/17	04/03/17	04/03/17
Date analyzed	(µg/L)	04/03/17	04/03/17	04/03/17
Pyridine	2.0	nd		nd
Aniline	2.0	nd		nd
Phenol	2.0	nd	88%	nd
2-Chlorophenol	2.0	nd		nd
Bis (2-chloroethyl) ether	2.0	nd		nd
1,3-Dichlorobenzene	2.0	nd		nd
1,4-Dichlorobenzene	2.0	nd	86%	nd
1,2-Dichlorobenzene	2.0	nd		nd
Benzyl alcohol	2.0	nd		nd
2-Methylphenol (o-cresol)	2.0	nd		nd
Bis (2-chloroisopropyl) ether	10.0	nd		nd
3,4-Methylphenol (m,p-cresol)	2.0	nd		nd
Hexacholorethane	2.0	nd		nd
N-Nitroso-di-n-propylamine	2.0	nd	96%	nd
Nitrobenzene	2.0	nd		nd
Isophorone	2.0	nd		nd
2-Nitrophenol	10.0	nd		nd
4-Nitrophenol	10.0	nd		nd
2,4-Dimethylphenol	2.0	nd		nd
Bis (2-chloroethoxy) methane	2.0	nd		nd
2,4-Dichlorophenol	10.0	nd		nd
1,2,4-Trichlorobenzene	2.0	nd	96%	nd
Naphthalene	2.0	nd		nd
4-Chloroaniline	10.0	nd		nd
Hexachlorobutadiene	2.0	nd	128%	nd
4-Chloro-3-methylphenol	10.0	nd	115%	nd
2-Methylnapthalene	2.0	nd		nd
1-Methylnapthalene	2.0	nd		nd
Hexachlorocyclopentadiene	2.0	nd	149%	nd
2,4,6-Trichlorophenol	10.0	nd	78%	nd
2,4,5-Trichlorophenol	10.0	nd		nd
2-Chloronaphthalene	2.0	nd		nd
2-Nitroaniline	10.0	nd		nd
1,4-Dinitrobenzene	10.0	nd		nd
Dimethylphthalate	2.0	nd		nd
Acenaphthylene	0.2	nd		nd
1,3-Dinotrobenzene	10.0	nd		nd
2,6-Dinitrotoluene	2.0	nd		nd
1,2-Dinitrobenzene	2.0	nd		nd
Acenaphthene	0.2	nd	99%	nd
2,4-Dinitrophenol	2.0	nd	130%	nd
2,4-Dinitrotoluene	2.0	nd	99%	nd
4-Nitrophenol	10.0	nd	109%	nd
Dibenzofuran	2.0	nd		nd
2,3,4,6-Tetrachlorophenol	2.0	nd		nd
2,3,5,6-Tetrachlorophenol	2.0	nd		nd
2,4-Dinitrophenol	10.0	nd		nd
Fluorene	0.2	nd		nd

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Analysis of Semivolatile Organic Compounds in Water by Method 8270

Analytical Results

	Reporting	MTH BLK	LCS	MW-NW
Date extracted	Limits	04/03/17	04/03/17	04/03/17
Date analyzed	(µg/L)	04/03/17	04/03/17	04/03/17
4-Chlorophenylphenylether	2.0	nd		nd
Diethylphthalate	2.0	nd		nd
4-Nitroaniline	10.0	nd		nd
4,6-Dinitro-2-methylphenol	10.0	nd		nd
N-nitrosodiphenylamine	2.0	nd		nd
Azobenzene	2.0	nd		nd
4-Bromophenylphenylether	2.0	nd		nd
Hexachlorobenzene	2.0	nd		nd
Pentachlorophenol	10.0	nd	142%	nd
Phenanthrene	0.2	nd		nd
Anthracene	0.2	nd		nd
Carbazole	2.0	nd		nd
Di-n-butylphthalate	2.0	nd		nd
Fluoranthene	0.2	nd		nd
Pyrene	0.2	nd	104%	nd
Butylbenzylphthalate	2.0	nd		nd
Bis(2-ethylhexyl) adipate	2.0	nd		nd
Benzo(a)anthracene	0.2	nd		nd
Chrysene	0.2	nd		nd
Bis (2-ethylhexyl) phthalate	2.0	nd		nd
Di-n-octyl phthalate	2.0	nd	89%	nd
Benzo(b)fluoranthene	0.2	nd		nd
Benzo(k)fluoranthene	0.2	nd		nd
Benzo(a)pyrene	0.2	nd	122%	nd
Dibenzo(a,h)anthracene	0.2	nd		nd
Benzo(ghi)perylene	0.2	nd		nd
Indeno(1,2,3-cd)pyrene	0.2	nd		nd

Surrogate recoveries			
2-Fluorophenol	78%	83%	68%
Phenol-d6	88%	91%	75%
Nitrobenzene-d5	103%	108%	24%
2-Fluorobiphenyl	93%	98%	131%
2,4,6-Tribromophenol	104%	117%	106%
4-Terphenyl-d14	100%	99%	146%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

Acceptable Recovery limits:

2-Flurophenol: 10-135 %
Phenol - d5: 10-135 %
2,4,6- tribromophenol: 29-159%
Nitrobenzene - d5: 20-120 %
2-Flurobiphenyl: 50-150%
p-Terphenyl-d14: 50-150%
Acceptable RPD limit: 35%

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Total Metals in Soil by EPA-6020 Series

Sample Number	Date Analyzed	Lead (Pb) (mg/kg)	Cadmium (Cd) (mg/kg)	Chromium (Cr) (mg/kg)	Arsenic (As) (mg/kg)	Silver (Ag) (mg/kg)	Barium (Ba) (mg/kg)	Selenium (Se) (mg/kg)	Mercury (Hg) (mg/kg)
Method Blank	4/6/2017	nd	nd	nd	nd	nd	nd	nd	nd
B1-8	4/6/2017	**4.1**	nd	**51**	**21**	nd	**120**	nd	nd
B2-4	4/6/2017	**140**	**1.4**	**42**	**7.5**	nd	**210**	nd	nd
Reporting Limits		5.0	1.0	5.0	5.0	20	50	20	0.5

"nd" Indicates not detected at listed detection limits.

QA/QC Data - Total Metals EPA-6020

Sample Number: QC Batch

	Matrix Spike			Matrix Spike Duplicate			RPD
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	(%)
Lead	73.5	78.1	106	75.2	79.8	106	0.13
Cadmium	73.5	73.4	99.9	75.2	75.7	101	0.80
Chromium	73.5	95.4	130	75.2	96.4	128	1.24
Arsenic	73.5	86.3	117	75.2	86.7	115	1.82
Silver	73.5	72.6	98.8	75.2	73.0	97.1	1.74
Barium	73.5	112.0	152M	75.2	80.3	107	35.2M
Selenium	73.5	79.1	108	75.2	79.7	106	1.53
Mercury	7.35	7.61	104	7.52	7.76	103	0.33

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%
M - Matrix Spike recovery failed due to matrix interference.

	Laboratory Control Sample		
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)
Lead	100	106	106
Cadmium	100	103	103
Chromium	100	116	116
Arsenic	100	115	115
Silver	100	101	101
Barium	100	103	103
Selenium	100	114	114
Mercury	10.0	10.3	103

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 80%-120%

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Dissolved Metals in Water by EPA-6020 Method

Sample Number	Date Analyzed	Lead (Pb) (ug/L)	Cadmium (Cd) (ug/L)	Chromium (Cr) (ug/L)	Arsenic (As) (ug/L)	Silver (Ag) (ug/L)	Barium (Ba) (ug/L)	Selenium (Se) (ug/L)	Mercury (Hg) (ug/L)
Method Blank	4/6/2017	nd	nd	nd	nd	nd	nd	nd	nd
MW-NW	4/6/2017	nd	nd	**12**	**4.8**	nd	**370**	nd	nd
MW-NW Duplicate	4/6/2017	nd	nd	**12**	**4.8**	nd	**340**	nd	nd
Reporting Limits		2.0	2.0	10	2.0	10	20	10	1.0

"nd" Indicates not detected at listed detection limits.

QA/QC Data - Total Metals EPA-6020

	Laboratory Control Sample			Laboratory Control Sample Duplicate			RPD
	Spiked Conc. (ug/L)	Measured Conc. (ug/L)	Spike Recovery (%)	Spiked Conc. (ug/L)	Measured Conc. (ug/L)	Spike Recovery (%)	(%)
Lead	20	21.8	109	20	21.3	107	2.32
Cadmium	20	19.9	99.5	20	20.1	101	1.00
Chromium	20	20.9	105	20	20.7	104	0.96
Arsenic	20	21.5	108	20	21.7	109	0.93
Silver	20	23.5	118	20	21.9	110	7.05
Barium	20	21.1	106	20	20.9	105	0.95
Selenium	20	21.7	109	20	22.6	113	4.06
Mercury	2.0	2.26	113	2.0	2.15	108	4.99

ACCEPTABLE RECOVERY LIMITS FOR LABORATORY CONTROL SAMPLES: 80%-120%
ACCEPTABLE RPD IS 20%

ESN NORTHWEST, INC. | Environmental Services Network

Send lab report to Environmental Associates, Inc.

CHAIN-OF-CUSTODY RECORD

CLIENT: Frank Lenci Corporation % Portomarco Properties
ADDRESS: 7900 SE 28th St Suite 400 Mercer Island WA 98040
PHONE: (206) 232-7502 FAX: John@portoprop.com
CLIENT PROJECT #: EAI-3156-2 PROJECT MANAGER: Chet Roe

DATE: 3/21/17 PAGE 1 OF 1
PROJECT NAME: Lenci Property
LOCATION: Seattle - WA
COLLECTOR: EAI / Chet Roe DATE OF COLLECTION: 3/1/17

Sample Number	Depth	Time	Sample Type	Container Type	TPH - HCID	TPH - Diesel & Oil	TPH - Gasoline	BTEX	VOC 8260CL	VOC 8260	SemiVol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	RCRA 8 Metals	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite			NOTES	Total Number of Containers	Laboratory Note Number
1. B1-4			Soil	4oz Glass																					2	
2. B1-7						X	X			X	X			X											3	
3. B1-14																									3	
4. B2-4						X	X			X	X			X											3	
5. B2-9																									3	
6. B2-14																									3	
7. B3-3																									3	
8. B3-7																									3	
9. B3-12			↓	↓																					3	
10. B1			H_2O	Amber																					6	
11. B2			↓	↓																					6	
12. MW-NW			↓	1		X	X			X	X			X										dissolved	6	
13. B1-F11			Soil	4oz Glass																					4/1	
14.																									1	
15.																										
16.																										
17.																										
18.																										

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
[signature]	3/21/17		
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

Turn Around Time: 24 HR 48 HR 5 DAY

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E-Mail: info@esnnw.com

ESN NORTHWEST, INC. | Environmental Services Network

Send lab report to Environmental Associates, Inc.

CHAIN-OF-CUSTODY RECORD

CLIENT: Frank Lenci Corporation % Pietromonaco Properties
ADDRESS: 7900 SE 28th St, Suite 400 Mercer Island, WA 98040
PHONE: (206) 232-7502 FAX: JohnCpietroprop.com
CLIENT PROJECT #: EAI-3156-2 PROJECT MANAGER: Robert Roe

DATE: 3/31/17 PAGE 1 OF 1
PROJECT NAME: Lenci Property
LOCATION: Seattle - WA
COLLECTOR: EAI / Robert Roe DATE OF COLLECTION: 3/31/17

Sample Number	Depth	Time	Sample Type	Container Type	TPH - HCID	TPH - Diesel & Oil	TPH - Gasoline	BTEX	VOC 8260CL	VOC 8260	SemiVol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	RCRA 8 Metals	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite	NOTES	Total Number of Containers	Laboratory Note Number
1. B1-4			Soil	multiple																			3	
2. B1-8					X	X			X	X				X									3	
3. B1-14																							3	
4. B2-4					X	X			X	X				X									3	
5. B2-9																							3	
6. B2-14																							3	
7. B3-3																							3	
8. B3-8																							3	
9. B3-12																							3	
10. B1			H_2O	Multiple																			6	
11. B2																							6	
12. MW-NW					X	X			X	X				X								Dissolved	6	
13. B1-Fill			Soil	4oz Jar																			#1	
14.																							#	
15.																								
16.																								
17.																								
18.																								

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
[signature]	3/31/17	[signature]	3/31/17
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

Turn Around Time: 24 HR 48 HR (5 DAY)

1210 Eastside Street SE, Suite 200
Olympia, Washington 98501
Phone: 360-459-4670
Fax: 360-459-3432
Website: www.esnnw.com
E-Mail: info@esnnw.com

ESN NORTHWEST CHEMISTRY LABORATORY

Environmental Associates, Inc.
PROJECT LENCI PROPERTY
PROJECT #EAI-3156-2
Seattle, Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Sample Preparation Information for Toxicity Characteristic Leaching Procedure (TCLP) by EPA Method 1311

Sample Number:	B1-4
No. of Extractions:	1
Type of Extraction:	Rotary
Extraction Fluid:	#1
Date Extracted:	4/20/2017

Sample Preparation Information for Toxicity Characteristic Leaching Procedure (TCLP) by EPA Method 1311

Sample Number:	B1-8
No. of Extractions:	1
Type of Extraction:	Rotary
Extraction Fluid:	#1
Date Extracted:	4/20/2017

ESN NORTHWEST CHEMISTRY LABORATORY

Environmental Associates, Inc.
PROJECT LENCI PROPERTY
PROJECT #EAI-3156-2
Seattle, Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

TCLP Metals in Soil by EPA-Method 1311/6020

Sample Number	Date Analyzed	Arsenic (As) (mg/L)
Method Blank	4/24/2017	nd
B1-4	4/24/2017	nd
B1-8	4/24/2017	nd
Method Detection Limits		0.2

QA/QC Data - TCLP Metals EPA-Method 1311/6020

Sample Number:TCLP	Date Analyzed	Arsenic (As) (mg/L)
Laboratory Control Sample Spike		1.00
Laboratory Control Sample Result	4/24/2017	1.23
Percent Recovery (%)		123
Method Detection Limits		0.2

"nd" Indicates not detected at listed detection limits.

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ESN NORTHWEST, INC. | Environmental Services Network

Send lab report to Environmental Associates, Inc.

CHAIN-OF-CUSTODY RECORD

CLIENT: Frank Lenci Corporation % Pietromonaco Properties
ADDRESS: 7900 SE 28th St, Suite 400 Mercer Island, WA 98040
PHONE: (206) 232-7502 FAX: JohnC@pietroprop.com
CLIENT PROJECT #: EAI-3156-2 PROJECT MANAGER: Robert Roe

DATE: 3/31/17 PAGE 1 OF 1
PROJECT NAME: Lenci Property
LOCATION: Seattle - WA
COLLECTOR: EAI / Robert Roe DATE OF COLLECTION: 3/31/17

Sample Number	Depth	Time	Sample Type	Container Type	TPH - HCID	TPH - Diesel & Oil	TPH - Gasoline	BTEX	VOC 8260CL	VOC 8260	SemiVol 8270	PAH's 8270	PCB's 8082	Cl Pesticides 8081	RCRA 8 Metals	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite	TCLP AS	NOTES	Total Number of Containers	Laboratory Note Number
1. B1-4			Soil	multiple																		(X)		3	
2. B1-8					X	X			X	X				X								(X)		3	
3. B1-14																								3	
4. B2-4					X	X			X	X				X										3	
5. B2-9																								3	
6. B2-14																								3	
7. B3-3																								3	
8. B3-8																								3	
9. B3-12			↓	↓																				3	
10. B1			H_2O	multiple																				6	
11. B2																								6	
12. MW-NW			↓	↓	X	X			X	X				X									Dissolved	6	
13. B1-Fill			Soil	4oz Jar																				#1	
14.																								#	
15.																									
16.																									
17.																									
18.																									

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
[signature]	3/31/17	[signature]	3/31/17
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:
(X) Add-on

Turn Around Time: 24 HR 48 HR (5 DAY)

1210 Eastside Street SE, Suite 200
Olympia, Washington 98501
Phone: 360-459-4670
Fax: 360-459-3432
Website: www.esnnw.com
E-Mail: info@esnnw.com

South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix L
Supplemental Investigations

Attachment L.4
South Park Landfill – Indoor Air Monitoring at WG Clark (Herrera 2016)

Date: October 20, 2016

To: Teri Floyd, Floyd | Snider

From: Bruce Carpenter and Michael Spillane

Subject: South Park Landfill - Indoor Air Monitoring at WG Clark

---

INDOOR AIR MONITORING – WG CLARK PROPERTY

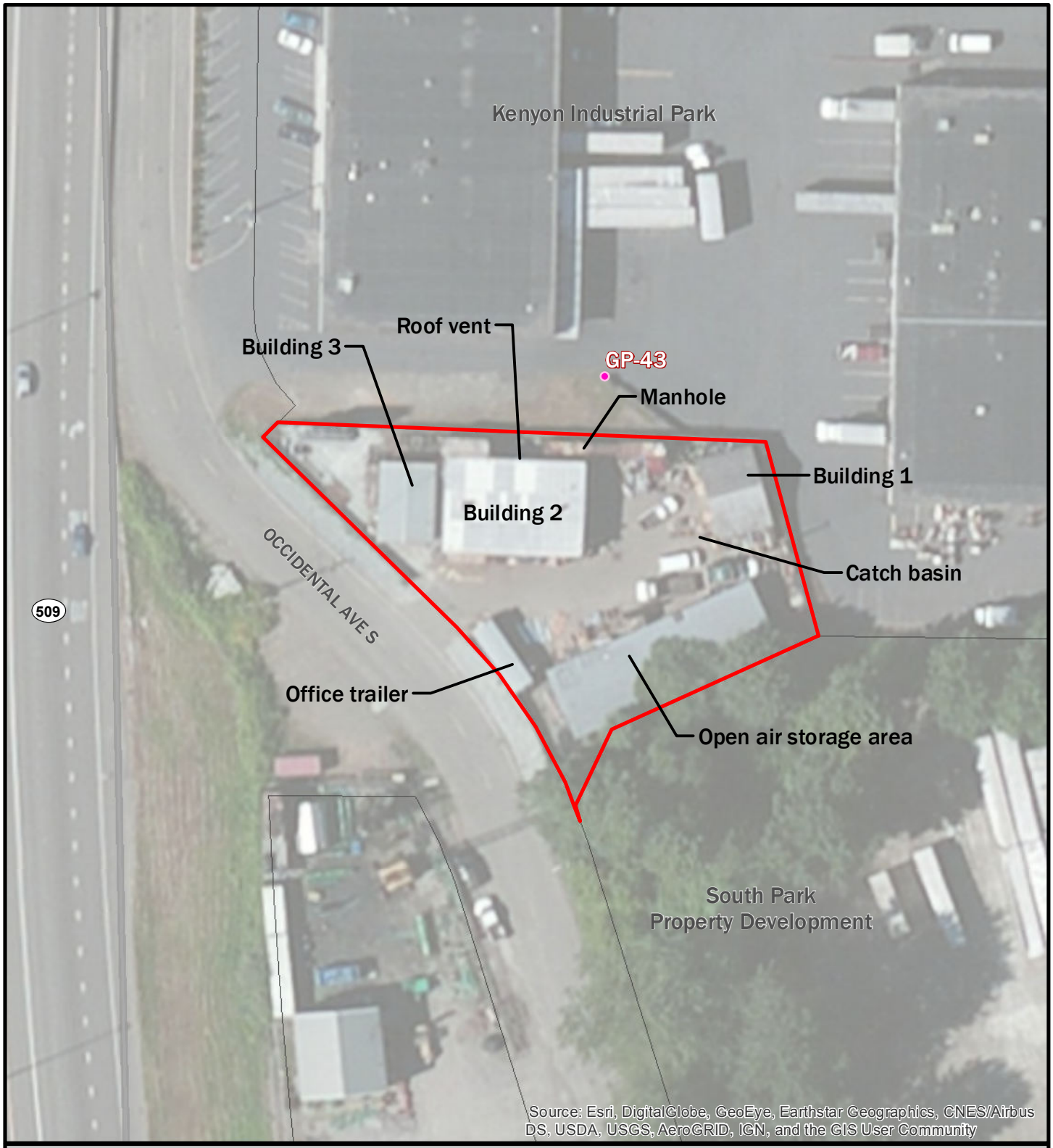
Elevated concentrations of methane were detected in perimeter probe GP-43 on September 26 and October 3, 2016 (Figure 1). The concentrations ranged from 32.5 to 32.7 percent by volume methane, exceeding the lower explosion level of 5.1 percent at 20° Centigrade, which triggered indoor air monitoring for buildings located within 100 feet of the probe.

The City of Seattle, Seattle Public Utilities completed an access agreement with WG Clark and requested Herrera Environmental Consultants (Herrera) conduct air monitoring at the WG Clark buildings located at 7958 Occidental Avenue South. At 12:50 PM on October 17, 2016, Herrera staff began monitoring the interior of the WG Clark buildings. A Landtec GEM-2000 Plus and RAE – MiniRAE 3000 Photoionization Detector (PID) were used to monitor the indoor air. The GEM and PID were calibrated by Field Environmental Instruments, Inc. on October 16 and October 17, 2016, respectively, prior to delivery to Herrera.

Buildings 1, 2, and 3 have been constructed with a concrete slab on grade. A methane mitigation system has been constructed in Building 2, including a series of perforated pipe installed in gravel beneath the concrete slab and vented to the roof on the north side of the building. The concrete is in good condition in all three of the buildings, although, several minor cracks were observed in each building. There were no floor drains observed in any of the buildings, including the restroom in Building 2. A new office trailer was moved onto the property several months ago. It is located on gravel and raised above the ground, surrounded by a skirt siding with vents located on each side. There are several metal shipping containers with wooden floors located on the property and used for equipment storage. A large open air building is located in the southern part of the property, it is constructed on gravel with a steel roof, but no walls. Much of the property is paved with asphalt.

Both instruments remained on while walking throughout all of the buildings. It was held adjacent to cracks in the floor, vents on the office trailer, and other monitoring points. A Storm drain catchment, roof vent for the methane mitigation system in Building 2, and manhole, also were monitored outside of the buildings.

The GEM had a detection limit 0.1 percent by volume methane and the PID had a detection limit of 0.1 parts per million (ppm), no methane or volatile organic compounds (VOCs) were observed above the detection limits during the air monitoring.



Legend

- WGClark property
- Gas probe
- Parcel

Figure 1.
WGClark Property, Seattle, Washington.

N

0 30 60 120 Feet

HERRERA

Bing, Aerial (2014)

K:\Projects\Y2010\10-04850-000\Project\201610_Updates\vicinity_map2.mxd (10/19/2016)

South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix L
Supplemental Investigations

Attachment L.5
Ecology's 7901 Investigation

From: Cruz, Jerome (ECY) <JCRU461@ECY.WA.GOV>
Sent: Friday, July 7, 2017 8:29 AM
To: Teri A. Floyd; [redacted]
Cc: Flynn, James (Seattle); Wang, Ching-Pi (ECY); Dube, Tom E.; Neuner, Jeff
Subject: FW: Validated Data and Field Documents for the 7901 Parcel Environmental Investigation at SPLF
Attachments: 7901_SPLF_Soil_Detected Chemicals_063017.pdf; 7901_SPLF_GW_Detected Chemicals_063017.pdf

Hi Teri and Gretchen,

I am forwarding to you the soil and groundwater results from the recently completed 7901 investigation. Based on the flagged exceedances, I would like to include a discussion of these in relation to the Landfill property, RI/FS, and cleanup plan.

I'd like to include this as a discussion topic for our July 13 meeting.

Thanks,

Jerome

DEPARTMENT OF ECOLOGY
State of Washington

Jerome B. Cruz, Ph.D.
Toxics Cleanup Program, Northwest Regional Office
3190 - 160th SE Bellevue, WA 98008
Tel: (425) 649-7094 Fax: (425) 649-7098
Jerome.Cruz@ecy.wa.gov
http://www.ecy.wa.gov/programs/tcp/cleanup.html

From: Dube, Tom E. [redacted]
Sent: Friday, July 07, 2017 12:17 AM
To: Cruz, Jerome (ECY) ; 'Gretchen Hill' ; 'Kim Johannessen' ; [redacted] ; Anderson, Ivy (ATG)
Subject: RE: Validated Data and Field Documents for the 7901 Parcel Environmental Investigation at SPLF

Attached are two summary tables of analytical data from this 7901 environmental investigation. Environmental sample results that exceed the listed screening levels are shown in bold font.

In producing these tables, we used screening levels that follow the general approach applied in the South Park Landfill draft final Remedial Investigation Report (June 2016). This includes applying MTCA Method C soil cleanup levels, and Method B groundwater cleanup levels, the latter including evaluation of pertinent ARARs (which include Maximum Contaminant Levels). There are a few cases where Method A or background values are utilized.

The screening levels in these tables were taken from the most recent values listed in Ecology's CLARC database, and applying MCLs for groundwater where applicable. In the case of TPH-diesel and heavy oil in soil, the calculated Method C TPH value in the RI Report (7,000 mg/kg) was applied. For TPH-gasoline in soil, the MTCA Method A value was applied

because gasoline was not a chemical of concern in the SPLF samples utilized for calculating the diesel/heavy oil cleanup level.

The screening levels in the attached files are not intended to be applied at this time as cleanup levels, but only for initial screening of the data in the 7901 investigation. Ecology reserves the option of modifying these screening levels at a future date.

Tom

Thomas Dubé | **Leidos**
office: 425.482.3325 | [redacted]

From: Dube, Tom E.
Sent: Friday, June 30, 2017 10:50 PM
To: 'Cruz, Jerome (ECY)' <JCRU461@ECY.WA.GOV>; 'Gretchen Hill' [redacted]; 'Kim Johannessen' [redacted]; [redacted]; [redacted]; 'ivya@atg.wa.gov' <ivya@atg.wa.gov>
Subject: Validated Data and Field Documents for the 7901 Parcel Environmental Investigation at SPLF

7901 SPLF Team:

The data validation for this environmental investigation was completed on Monday, June 26, 2017. Attached you will find five documents, including those requested in the site access agreement. These files include:

- An Excel file with the validation adjustments to the original EIM-format file from the lab, TestAmerica. You have previously received the original lab files, so those are not included here.
- The analytical validation summary report, completed by Leidos.
- Scans of our field logbook and the groundwater purging forms.
- An aerial photo map of the site, showing the four borings (you have previously received this same figure), along with a listing of their geographic coordinates.
- The four boring logs.

The last item, the summary data table, is currently in Jerome's inbox and will be reviewed and finalized after the holiday.

Let us know if you have any questions.

Thanks,
Tom

Thomas Dubé, R.G. | **Leidos**
Sr. Hydrogeologist | Environmental Planning & Restoration Group
office: 425.482.3325 | [redacted] | [redacted]

Leidos
18912 North Creek Parkway, #101
Bothell, WA 98011-8016
www.leidos.com

Table 1. Soil Analytical Data for Detected Chemicals
7901 Parcel -- South Park Landfill

Location ID:			7901-SB-01			7901-SB-02		7901-SB-03			7901-SB-04		
Sample ID:			7901-SB-01-9.5	7901-SB-01-14.5	7901-SB-01-17.5	7901-SB-02-14.5	7901-SB-02-17.5	7901-SB-03-8	7901-SB-03-9	7901-SB-03-17	7901-SB-04-9	7901-SB-04-14	7901-SB-04-18.5
Sample Depth (ft):			9.3 - 10	14 - 14.7	17.5 - 18.5	14.5 - 15	17.5 - 18	8 - 8.5	9 - 10	17 - 18	9.3 - 10	14 - 15	18.5 - 20
Sample Date & Time:			5/25/17 15:35	5/25/17 15:40	5/25/17 15:45	5/25/17 09:30	5/25/17 09:35	5/25/17 14:05	5/25/17 14:10	5/25/17 14:15	5/25/17 12:05	5/25/17 12:10	5/25/17 12:15
Chemical Name (mg/kg)	Screening Level	Screening Reference	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual
Metals													
Antimony	1,400	MTCA C	99	3.5	0.36	8.0	10	62	77	0.85	49	0.79	6.2
Arsenic	88	MTCA C	35	14	5.7	19	22	11	42	6.0	49	1.8	13
Beryllium	7,000	MTCA C	0.25	0.53	0.36	0.22 U	0.26 U	0.23	0.21	0.33	0.74	0.21 U	0.23 U
Cadmium	3,500	MTCA C	2.8	4.9	0.54 U	42	0.97	1.3	22	0.37	17	1.1	0.97
Chromium	1.0E+06	MTCA C	170	66	19	54	42	44	110	17	40	10	27
Copper	140,000	MTCA C	1,100	44	30	660	350	150	2,400	35	570	22	99 J
Lead	1,000	MTCA A	**6,100**	**1,100**	48	**2,300**	48	320	**5,100**	37	**22,000**	63	210 J
Mercury	1,050	MTCA C	0.24	0.078	0.061	0.43	0.041 U	0.056	0.34	0.048	0.66	0.032 U	0.042 U
Nickel	70,000	MTCA C	31	32	15	110	65	48	130	14	63	21	20 J
Selenium	17,500	MTCA C	1.3 U	1.1 U	1.3 U	1.1 U	1.3 U	1 U	0.82 U	0.86 U	1.4	1 U	1.1 U
Silver	17,500	MTCA C	3.4	0.22 U	0.27 U	0.47	0.26 U	0.33	2.2	0.17 U	1.0	0.21 U	0.23 U
Zinc	1.0E+06	MTCA C	1,200	1,800	110	12,000	360	1,400	4,800	180	8,600	480	1,400
TPH													
Gasoline	100	MTCA A	21 J	32	15 U	24	12 U	7.3 U	**220 J**	12 U	31	43	12 UJ
Diesel (#2)	7,000	MTCA calc	3,800	1,300	74 U	330	69 U	52 U	2,200	67 U	1,300	1,500	490 J
Motor Oil	7,000	MTCA calc	**9,000**	4,000	230	970	240	110	3,800	67 U	3,000	**22,000**	800 J
SVOCs													
Acenaphthene	210,000	MTCA C	35	0.14 U	0.036 U	0.66	0.035 U	0.028 U	0.15 U	0.035 U	0.33	1.4 U	0.036 U
Acenaphthylene	--	--	4.1	0.14 U	0.036 U	0.29 U	0.035 U	0.028 U	0.15 U	0.035 U	0.034	1.4 U	0.036 U
Anthracene	1.0E+06	MTCA C	56	0.14 U	0.036 U	1.7	0.053	0.028 U	3.7	0.035 U	0.21	1.4 U	0.036 U
Benzo(a)anthracene	180	MTCA C	82	0.25	0.036 U	2.8	0.14	0.028 U	29	0.035 U	0.54	1.4 U	0.036 U
Benzo(a)pyrene	18	MTCA C	**63**	0.33 U	0.087 U	2.5	0.11	0.067 U	16	0.084 U	0.52	3.3 U	0.085 U
Benzo(b)fluoranthene	180	MTCA C	56	0.14 U	0.036 U	2.6	0.13	0.028 U	19	0.035 U	0.71	1.4 U	0.036 U
Benzo(k)fluoranthene	1,800	MTCA C	22	0.33 U	0.087 U	0.95	0.084 U	0.067 U	8.4	0.084 U	0.18	3.3 U	0.085 U
Benzo(ghi)perylene	--	--	25 J	0.33 UJ	0.087 UJ	1.6 J	0.084 UJ	0.067 UJ	7.6 J	0.084 UJ	0.23 J	3.3 UJ	0.085 UJ
Carbazole	--	--	18	0.83 U	0.22 U	1.7 U	0.21 U	0.17 U	1.4	0.21 U	0.19 U	8.2 U	0.21 U
Chrysene	18,000	MTCA C	77	0.33 U	0.087 U	3.0	0.14	0.067 U	27	0.084 U	0.76	3.3 U	0.085 U
Dibenz(a,h)anthracene	18	MTCA C	6.2	0.28 U	0.073 U	0.58 U	0.07 U	0.056 U	2.2	0.07 U	0.11	2.7 U	0.071 UJ
Dibenzofuran	3,500	MTCA C	10	0.83 U	0.22 U	1.7 U	0.21 U	0.17 U	0.88 U	0.21 U	0.19	8.2 U	0.21 U
Fluoranthene	140,000	MTCA C	190	0.53	0.088	7.1	0.31	0.028 U	99	0.035 U	1.2	1.4 U	0.036 U
Fluorene	140,000	MTCA C	31	0.14 U	0.036 U	0.99	0.035 U	0.028 U	0.68	0.035 U	0.4	1.4 U	0.036 U
Indeno(1,2,3-cd)pyrene	180	MTCA C	31	0.22 U	0.058 U	1.9	0.093	0.045 U	9.9	0.056 U	0.32	2.2 U	0.057 UJ
Naphthalene	70,000	MTCA C	15	0.14 U	0.036 U	0.59	0.035 U	0.028 U	0.23	0.035 U	0.21	1.4 U	0.036 U
1-Methylnaphthalene	4,500	MTCA C	13	0.17 U	0.044 U	0.35 U	0.042 U	0.033 U	0.34	0.042 U	0.14	1.6 U	0.043 U
2-Methylnaphthalene	14,000	MTCA C	14	0.28 U	0.073 U	0.58 U	0.07 U	0.056 U	0.57	0.07 U	0.18	2.7 U	0.071 U
Phenanthrene	--	--	250	0.54	0.087 U	7.9	0.26	0.067 U	12	0.084 U	1.6	3.3 U	0.085 U
Pyrene	105,000	MTCA C	240	0.58	0.11	6.9	0.31	0.067 U	95	0.084 U	1.4	3.3 U	0.085 U
Total cPAHs (TEQ, NDx0.5)	18	MTCA C	**83**	0.24	0.058 U	3.4	0.16	0.045 U	**23**	0.056 U	0.71	2.2 U	0.057 UJ

Notes:

Results and screening levels presented in mg/kg. Bold values exceed the respective screening levels. Qual = Qualifier flag.

Metals were analyzed by SW6020A or SW7471A (mercury). SVOCs were analyzed by SW8270D.

Gasoline was analyzed by NWTPH-Gx. Diesel and motor oil were analyzed by NWTPH-Dx.

PCB Aroclors were analyzed by SW8082A, but without any detections.

Soil screening levels were primarily developed under MTCA Method C, with TPH-gasoline and lead SLs under Method A; TPH-diesel and motor oil SLs were calculated under Method C (SPLF RI Report, June 2016).

Table 2. Groundwater Analytical Data for Detected Chemicals
7901 Parcel -- South Park Landfill

Location ID:			7901-SB-01		7901-SB-02		7901-SB-04		GW Trip Blank	
Sample ID:			7901-SB-01-GW		7901-SB-02-GW		7901-SB-04-GW		7901-TB-GW	
Sample Inlet Depth (ft):			17.5		19.5		17.5		--	
Sample Date & Time:			5/25/17 16:00		5/25/17 10:35		5/25/17 12:50		5/25/17 12:00	
Chemical Name (ug/L)	Screening Level	Screening Reference	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Metals										
Antimony	6.0	MCL	2	U	2	U	**7.0**			
Arsenic	5.0	MTCA A / BG	5	U	5	U	**6.8**			
Chromium	100	MCL	2	U	2	U	5.2			
Copper	640	MTCA B	10	U	10	U	52			
Iron	27,000	Local BG	11,000		6,300		18,000			
Lead	15	MCL	**27**		4	U	**250**			
Manganese	2,200	MTCA B	60		300		130			
Zinc	4,800	MTCA B	93		35	U	610			
TPH										
Diesel (#2)	500	MTCA A	**670**		**1,100**		**1,200**			
Motor Oil	500	MTCA A	380		**660**		**1,000**			
PAHs										
Acenaphthene	960	MTCA B	0.12	J	0.63	J	0.26			
Acenaphthylene	--	--	0.021	U	0.056		0.026			
Anthracene	4,800	MTCA B	0.023		0.089		0.029			
Fluoranthene	640	MTCA B	0.032		0.02	U	0.023			
Fluorene	640	MTCA B	0.021	U	0.045		0.02	U		
Naphthalene	160	MTCA B	0.041	UJ	0.062	J	0.041	UJ		
1-Methylnaphthalene	1.5	MTCA B	0.021	UJ	0.19	J	0.02	UJ		
Phenanthrene	--	--	0.068		0.034		0.029			
Pyrene	480	MTCA B	0.037		0.021		0.047			
VOCs										
Chlorobenzene	100	MCL	0.2	U	1.3		0.96		0.2	U
cis-1,2-Dichloroethene	16	MTCA B	0.2	U	0.2	U	2.1		0.2	U
Vinyl Chloride	0.29	MTCA B / MCL	**0.30**		0.16		**0.97**		0.02	U

Notes:

Results and screening levels presented in ug/L. Bold values exceed the respective screening levels.

Metals were analyzed by SW6020A.

Diesel and motor oil were analyzed by NWTPH-Dx. Gasoline was analyzed by NWTPH-Gx, but without any detections.

PAHs were analyzed by SW8270D-SIM. VOCs were analyzed by SW8260C.

PCB Aroclors were analyzed by SW8082A, but without any detections.

BG = Background concentration

MCL = Maximum Contaminant Level

Qual = Qualifier flag

Groundwater screening levels were primarily developed under MTCA Method B, which requires evauation of ARARs such as MCLs; TPH SLs were under Method A; arsenic and iron SLs used background values (from SPLF RI Report, June 2016).

From: Cruz, Jerome (ECY) <JCRU461@ECY.WA.GOV>
Sent: Tuesday, July 11, 2017 1:57 PM
To: Teri A. Floyd; [redacted]
Cc: Flynn, James (Seattle); Wang, Ching-Pi (ECY); Dube, Tom E.; Neuner, Jeff
Subject: RE: Validated Data and Field Documents for the 7901 Parcel Environmental Investigation at SPLF
Attachments: 7901 Parcel Environmental Investigation SAP/QAPP Document; FW: EXTERNAL: TestAmerica report files from 580-68649-1 7901 Parcel-South Park Landfill; RE: Validated Data and Field Documents for the 7901 Parcel Environmental Investigation at SPLF

Hi Teri,

I've attached all the requested information. RE: request #3, the tables seems to already have the footnote on NWTPH-Gx indicating nondetect. Are you requesting to see the nondetect data for TPH-Gx?

Thanks,

Jerome

DEPARTMENT OF ECOLOGY
State of Washington

Jerome B. Cruz, Ph.D.
Toxics Cleanup Program, Northwest Regional Office
3190 - 160th SE Bellevue, WA 98008
Tel: (425) 649-7094 Fax: (425) 649-7098
Jerome.Cruz@ecy.wa.gov
http://www.ecy.wa.gov/programs/tcp/cleanup.html

From: Teri A. Floyd [redacted]
Sent: Monday, July 10, 2017 11:02 AM
To: Cruz, Jerome (ECY) ; [redacted]
Cc: Flynn, James (Seattle) ; Wang, Ching-Pi (ECY) ; Dube, Tom E. ; Neuner, Jeff
Subject: RE: Validated Data and Field Documents for the 7901 Parcel Environmental Investigation at SPLF

Jerome, Good Morning!
Thanks for sending over the data. We will need the following additional information from you:

(1) A copy of the Work Plan under which the sampling was performed, and any deviations that occurred in the field (these could be in an email).
(2) A figure showing the final location of the geoborings, their coordinates and its datum.
(3) If the NWTPH-G measurement in groundwater included BTEX and they were not detected or if other VOCs (such as BTEX) were analyzed by 8260 and not detected, we would like that data and recommend that the footnote on the groundwater table be modified to say that.

We can talk further about the data at our meeting on Thursday. Thanks, Teri

Teri A. Floyd, Ph.D.
FLOYD|SNIDER
601 Union Street, Suite 600, Seattle, WA 98101-2341
T: 206.292.2078 |F: 206.682.7867 | [redacted]
[redacted] **| www.floydsnider.com**

From: Cruz, Jerome (ECY) [mailto:JCRU461@ECY.WA.GOV]
Sent: Friday, July 07, 2017 8:29 AM
To: Teri A. Floyd [redacted];
Cc: Flynn, James (Seattle) [redacted]; Wang, Ching-Pi (ECY) <CWAN461@ECY.WA.GOV>; Dube, Tom E. [redacted]; Neuner, Jeff <Jeff.Neuner@seattle.gov>
Subject: FW: Validated Data and Field Documents for the 7901 Parcel Environmental Investigation at SPLF

Hi Teri and Gretchen,

I am forwarding to you the soil and groundwater results from the recently completed 7901 investigation. Based on the flagged exceedances, I would like to include a discussion of these in relation to the Landfill property, RI/FS, and cleanup plan.

I'd like to include this as a discussion topic for our July 13 meeting.

Thanks,

Jerome

DEPARTMENT OF ECOLOGY State of Washington

Jerome B. Cruz, Ph.D.
Toxics Cleanup Program, Northwest Regional Office
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Tel: (425) 649-7094 Fax: (425) 649-7098
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From: Dube, Tom E. [redacted]
Sent: Friday, July 07, 2017 12:17 AM
To: Cruz, Jerome (ECY) <JCRU461@ECY.WA.GOV>; 'Gretchen Hill' [redacted]; 'Kim Johannessen' [redacted]; [redacted]; [redacted]; Anderson, Ivy (ATG) <IvyA@ATG.WA.GOV>
Subject: RE: Validated Data and Field Documents for the 7901 Parcel Environmental Investigation at SPLF

Attached are two summary tables of analytical data from this 7901 environmental investigation. Environmental sample results that exceed the listed screening levels are shown in bold font.

In producing these tables, we used screening levels that follow the general approach applied in the South Park Landfill draft final Remedial Investigation Report (June 2016). This includes applying MTCA Method C soil cleanup levels, and Method B groundwater cleanup levels, the latter including evaluation of pertinent ARARs (which include Maximum Contaminant Levels). There are a few cases where Method A or background values are utilized.

The screening levels in these tables were taken from the most recent values listed in Ecology's CLARC database, and applying MCLs for groundwater where applicable. In the case of TPH-diesel and heavy oil in soil, the calculated Method C TPH value in the RI Report (7,000 mg/kg) was applied. For TPH-gasoline in soil, the MTCA Method A value was applied because gasoline was not a chemical of concern in the SPLF samples utilized for calculating the diesel/heavy oil cleanup level.

The screening levels in the attached files are not intended to be applied at this time as cleanup levels, but only for initial screening of the data in the 7901 investigation. Ecology reserves the option of modifying these screening levels at a future date.

Tom

Thomas Dubé | **Leidos**
office: 425.482.3325 | [redacted]

From: Dube, Tom E.
Sent: Friday, June 30, 2017 10:50 PM
To: 'Cruz, Jerome (ECY)' <JCRU461@ECY.WA.GOV>; 'Gretchen Hill' [redacted]; 'Kim Johannessen' [redacted]; [redacted]; 'ivya@atg.wa.gov' <ivya@atg.wa.gov>
Subject: Validated Data and Field Documents for the 7901 Parcel Environmental Investigation at SPLF

7901 SPLF Team:

The data validation for this environmental investigation was completed on Monday, June 26, 2017. Attached you will find five documents, including those requested in the site access agreement. These files include:

- An Excel file with the validation adjustments to the original EIM-format file from the lab, TestAmerica. You have previously received the original lab files, so those are not included here.
- The analytical validation summary report, completed by Leidos.
- Scans of our field logbook and the groundwater purging forms.
- An aerial photo map of the site, showing the four borings (you have previously received this same figure), along with a listing of their geographic coordinates.
- The four boring logs.

The last item, the summary data table, is currently in Jerome's inbox and will be reviewed and finalized after the holiday.

Let us know if you have any questions.

Thanks,
Tom

Thomas Dubé, R.G. | **Leidos**
Sr. Hydrogeologist | Environmental Planning & Restoration Group
office: 425.482.3325 | [redacted] | [redacted]

Leidos

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Bothell, WA 98011-8016
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From: Dube, Tom E. [redacted]
Sent: Wednesday, May 17, 2017 11:31 PM
To: Cruz, Jerome (ECY); 'Gretchen Hill'; 'Kim Johannessen'; [redacted]; Anderson, Ivy (ATG)
Subject: 7901 Parcel Environmental Investigation SAP/QAPP Document
Attachments: 7901 Parcel Investigation SAP-QAPP_Final_051717.pdf

7901 Parcel Team:

Attached is the Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP) for the environmental investigation at the 7901 Parcel. The two map figures are located at the very end of the document.

The drilling activity for this investigation is scheduled to take place on May 25th.
If you have any questions, please let me know.

Thank you,
Tom

Thomas Dubé, R.G. | **Leidos**
Sr. Hydrogeologist | Environmental Planning & Restoration Group
office: 425.482.3325 | [redacted] | [redacted]

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South Park Landfill

7901 Parcel Environmental Investigation

Sampling and Analysis Plan and Quality Assurance Project Plan

FINAL

Prepared for

DEPARTMENT OF ECOLOGY
State of Washington

Toxics Cleanup Program
Northwest Regional Office
Washington State Department of Ecology
Bellevue, Washington

Prepared by

leidos

Leidos, Inc.
18912 North Creek Parkway, Suite 101
Bothell, WA 98011

May 2017

Limitation of Use: Project activities performed by Leidos were restricted to analysis of records made available by the Washington State Department of Ecology (Ecology) or third parties during the project. In preparing this report, Leidos has relied on verbal and written information provided by secondary sources and interviews, including information provided by the customer. Leidos has made no independent investigations concerning the accuracy or completeness of the information relied upon. Because the project activities consisted of evaluating a limited supply of information, Leidos may not have identified all potential items of concern and, therefore, Leidos warrants only that the project activities under this contract have been performed within the parameters and scope communicated by Ecology and reflected in the contract. Data and information presented in this report were accurate based on the information available to Leidos.

This report is intended to be used in its entirety. Taking or using in any way excerpts from this report is not permitted, and any party doing so does so at its own risk.

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Appendices

Tables

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Acronyms and Abbreviations

bgs	below ground surface
CCV	continuing calibration verification
CLP	Contract Laboratory Program
CoC	chain of custody
DQO	data quality objective
DRO	diesel range organics
Ecology	Washington State Department of Ecology
EDD	electronic data deliverable
EIM	Environmental Information Management
EPA	U.S. Environmental Protection Agency
FM	Field Manager
GRO	gasoline range organics
HSM	Health and Safety Manager
ICPMS	inductively coupled plasma/mass spectrometry
ICS	interference check solution
IDW	investigation-derived waste
IPR	initial precision and recovery
IS	internal standard
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LDW	Lower Duwamish Waterway
MDL	method detection limit
MS	matrix spike
MSD	matrix spike duplicate
MTCA	Model Toxics Control Act
NFG	National Functional Guidelines
NWTPH	Northwest Total Petroleum Hydrocarbons
OPR	ongoing precision and recovery
PCB	polychlorinated biphenyl
PID	photoionization detector
PP	priority pollutant
PPE	personal protective equipment
QA	quality assurance
QAPP	quality assurance project plan
QC	quality control
RL	reporting limit
RPD	relative percent difference
RSD	relative standard deviation
SAP	sampling and analysis plan
SRDS	South Recycle and Disposal Station
SVOC	semivolatile organic compound

1.0 Introduction

The South Park Landfill is a closed solid waste landfill in the South Park neighborhood of Seattle, Washington. It is located on the western side of the Lower Duwamish Valley between State Routes 509 and 99. The landfill operated from the 1930s until 1966. By 1970, the City of Seattle South Recycling and Disposal Station (SRDS), Kenyon Business Park (also referred to as the Kenyon Industrial Park), and several other facilities were in operation on top of the former landfill.

The 7901 2nd Avenue South property lies just beyond the northeastern end of the Kenyon Industrial parcel (Figure 1). The two properties both included initial active landfill dumping, followed by use as an auto-wrecking yard. Following this, in 1965, a 17,000-square foot building was constructed on the 7901 parcel, which still stands today. Previous operators at the 7901 parcel include the former Formula Corporation, followed by T.H. Seafood (SAIC 2012; Floyd|Snider 2016).

In February 2007, the South Park Landfill site was added to Washington State's Hazardous Sites List. Soil, groundwater, surface water, and landfill gas monitoring began in the late 1980s and has continued to the present day (Floyd|Snider 2016).

Leidos reviewed existing data, specific sampling and analysis protocols, and other supporting data collected to date at this portion of the South Park Landfill. Based on this review, a total of four locations have been selected at the 7901 parcel to be sampled for the presence of polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), and metals in soil and groundwater. Further information on the selected locations is provided in Sections 2.1 and 2.2.

This Sampling and Analysis Plan (SAP), together with the Quality Assurance Project Plan (QAPP), was prepared in accordance with the requirements outlined in Washington Administrative Code (WAC) 173-340-820. Analytical procedures are identified in the SAP/ QAPP in accordance with WAC 173-340-830.

1.1 Purpose and Objectives

The primary purpose of this sampling and analysis effort is to collect soil and groundwater samples from several locations within the 7901 parcel and analyze them for PCBs, VOCs, SVOCs, TPH, and metals. Sample analytical results may be used for the following purposes:

- Fill data gaps for PCBs, VOCs, SVOCs, TPH, and metals in soil and groundwater, as identified during data compilation efforts for the *South Park Landfill Remedial Investigation/Feasibility Study* (Floyd/Snider 2016).
- Allow more accurate use and evaluation of data to determine the presence of chemical contamination at levels above the Model Toxics Control Act (MTCA) cleanup levels.

Leidos and its subcontractors will implement this SAP/QAPP under the direction of Ecology. The following sections describe the key roles and responsibilities of the project team.

1.2 Project Planning and Coordination

Jerome Cruz of Ecology will serve as the Ecology Project Manager who will conduct overall project coordination, supply Ecology-furnished services, review reports, and coordinate with contractors. Tom Dubé of Leidos will serve as the Leidos Project Manager for this work assignment; he is responsible for executing this SAP/QAPP, overseeing the collection and analysis of field samples, and reporting the field and analytical results to Ecology.

1.3 Sample Collection

Ruth Otteman of Leidos will serve as the Field Manager (FM) responsible for collecting and processing samples in accordance with this SAP/QAPP and transporting samples to the analytical laboratories for analysis. The FM, or delegate appointed by the PM, will oversee field preparation to ensure all sampling equipment meets sampling guidelines.

1.4 Laboratory Coordination and Quality Assurance/Quality Control Management

Joseph Peters of Leidos will serve as the laboratory coordinator responsible for subcontracting with state-certified laboratories and ensuring use of established protocols for chemical analysis and data management. He will also serve as the project chemist and project quality assurance (QA)/quality control (QC) coordinator. Mr. Peters will provide QA oversight for the laboratory programs, including laboratory reporting and holding times, and oversight of the Leidos data validation process to ensure that the laboratory analytical and QA/QC data are considered valid and that procedures meet the analytical requirements.

1.5 Health and Safety Manager

Randy Hansen of Leidos will serve as the designated Leidos Health and Safety Manager (HSM). The HSM is responsible for ensuring that all personnel are properly trained and fully aware of potential site hazards. Under Mr. Hansen's direction, a delegate Site Safety and Health Officer is responsible for ensuring that personnel conduct all work in a safe manner, wear appropriate personal protective equipment (PPE), and abide by the conditions set forth in the site-specific Health and Safety Plan.

1.6 Data Manager

Megan Gay of Leidos will serve as the data manager for this project. Ms. Gay is responsible for following data management procedures described in Appendix A, reporting data to the project team as scheduled, managing the project database, and submitting data to Ecology's Environmental Information Management (EIM) database.

1.7 Subcontractor Support

The Leidos project team will consist of the following subcontractors for utility locating services, drilling services, laboratory analytical services, and investigation-derived waste (IDW) disposal:

- Subsurface utility location services:
  ULS Services Corporation / Geomarkout
  Mike Benedict
  15151 52nd Ave S, Ste. 2
  Tukwila, WA 98188
  Phone: (206) 384-2857
  Email: mwb@geomarkout.com

- Direct-push drilling activities:
  Holt Drilling
  Steve Rasmussen
  10621 Todd Rd E
  Puyallup, WA 98372
  Phone: (253) 604-4878
  E-mail: srasmussen@holtservicesinc.com

- All analyses:
  Test America Laboratories
  Kathy Kreps
  5755 8th Street E
  Fife, WA 98424
  Phone: (253) 248-4964
  Email: Kathy.Kreps@testamericainc.com

- IDW disposal:
  Clean Harbors
  John Bige
  26328 79th Avenue South
  Kent, WA 98032
  Phone: (206) 549-1597
  Email: bige.john@cleanharbors.com

1.8 Schedule

Mobilization, utility-locating, and sampling will take place in May 2017 following approval of this SAP/QAPP and will last approximately 2 days. During this time period, soil and groundwater samples will be collected from the 7901 parcel using direct-push drilling techniques ("geoprobe"). Utility location will take place on a day prior to geoprobe activities. All project analytical results will be validated when the data become available from the laboratory.

Sample analysis will require 15 days for all analyses. Data will be validated within 5 days of receipt of final laboratory reports from the analytical laboratories.

2.0 Field Sampling Plan

The purpose of the Field Sampling Plan is to describe the procedures and methodologies utilized in soil and groundwater sample collection at the 7901 parcel site. Soil samples will be collected at a rate of approximately three samples per boring. One groundwater sample will be collected from each soil boring.

Prior to the sampling event:

- A private utility locator will be employed for marking utilities in or near areas to be drilled. Planned sample locations will be approved for clearance by the property owner or manager. A sufficiently large area will be identified for the clearing of utilities to accommodate the potential need for the adjustment of one or more sample locations.
- Assess the feasibility of collecting soil samples near each corner of the exterior of the building using geoprobe, and relocate boring as necessary.
- Identify an area to store drum(s) containing soil cuts, decontamination water, and purge water.

2.1 Sampling Locations

Up to four soil borings will be advanced via direct-push technique, one near each exterior corner of the 7901 building. The maximum number of soil borings will be determined by the schedule, which will be limited to one day of geoprobe activities. One groundwater sample will be collected from each soil boring in the interval below the water table. Depth to water is expected to be at approximately 10 to 12 feet below ground surface (bgs).

2.2 Sample Collection and Handling Methods

This section describes the methodology for geoprobe drilling, equipment decontamination, sample collection, identification, processing, and waste handling during sampling events.

Prior to direct-push activities, each of the four sampling locations will have a small amount of surface asphalt removed. The boring will then be hand-cleared to a depth of 5 feet bgs. This will serve to evaluate the presence of subsurface utilities or other obstacles to geoprobing. If obstacles are encountered, the boring will be shifted laterally, typically several feet away. This clearing will be done either by hand augering, or with use of air-knife techniques using a vacuum truck. The drilling subcontractor will perform the asphalt removal and hand-clearing activity. It is anticipated that up to one soil sample will be collected in this interval (e.g., at 4 feet bgs), which will be performed using a hand auger.

During geoprobing activities, soil will be continuously logged in the boring and recorded on the boring log. Soil samples will also be collected and selected for analysis. Determination of where to collect the samples will depend on field indications of contamination (odor, sheen, photo-ionization detection [PID], discoloration), the depth of the water table, and via evaluation of the depths of contamination identified in previous sampling of surrounding portions of the landfill. It is anticipated that soil for analysis will be collected in each boring at or near the water table, with one sample above the water table (such as at 4 feet bgs, where previous borings identified

petroleum odors), and one below the water table. Soil samples will be collected from all four borings and will be analyzed for PCBs, polycyclic aromatic hydrocarbons (PAHs), TPH, and metals. A silt overbank deposit underlies much of the site (at about 12 to 18 feet bgs) and the base of this unit would comprise the target depth. The maximum total depth for each boring will be approximately 20 feet bgs.

One groundwater sample will be collected from each soil boring, within the uppermost water zone encountered. This would represent either the shallow perched water, or groundwater at the regional water table in the A-zone unit in the alluvial aquifer. An attempt will be made to collect the sample from a depth with a relatively coarse material, which may be in the alluvial aquifer below the silt overbank deposit.

To collect the groundwater grab samples, the direct-push drill rod will be advanced to the desired depth. A temporary slotted well screen will be placed inside the drill rod to the desired screened interval. The rod will then be extracted sufficiently to allow groundwater to infiltrate the screen. The groundwater will be purged using a peristaltic pump until field parameters stabilize and turbidity minimizes. The following water-quality parameter will be measured: pH, turbidity, specific conductance, and temperature. Once parameters have stabilized, a groundwater sample will be collected and submitted to the analytical laboratory for analysis of PCBs, VOCs, SVOCs, TPH, and total (unfiltered) metals.

A PID will be used to monitor for VOCs in the soil material during geoprobe activities. Upon opening the geoprobe core, a small portion of the soil from each layer (approximately every foot) will be removed and placed in a freezer Ziploc bag. These will be allowed to reach ambient temperatures and then the PID will be inserted into the bag to determine the approximate concentration of organic volatile constituents in the headspace of the bag. This PID reading (in parts per million) will be recorded on the boring log and used in the process of determining the more contaminated zones in each boring, for selection of soil samples for analysis. The PID will also be used to monitor the breathing zone during geoprobe activities. The PID will be calibrated daily with a gas of known concentration (e.g., isobutylene). All daily calibration information will be recorded in the field logbook.

To ensure that chemical analysis results reflect the actual concentrations at sampling locations, equipment used in survey and sampling activities (including drill rig equipment) must be properly cleaned and decontaminated. Therefore, equipment used to conduct survey and sampling activities will be decontaminated before sampling activities begin, between sampling activities, and after sampling activities have been completed.

Decontaminated equipment will be used to collect each sample. All sampling equipment, including stainless steel bowls and spoons, will be initially washed with laboratory-grade, non-phosphate detergent (i.e., Liquinox®), scrubbed, and rinsed with potable water. Deionized or distilled water will be used for final rinsing. Table 2-1 lists the target parameters and the analytical method by which each parameter will be analyzed. Analytes for investigation of soil and groundwater were identified based on previous investigations and project scoping requirements.

Table 2-1. Chemical Analyses and Maximum Sample Numbers

Analysis	Analytical Method	Estimated Maximum Number of Soil Samples	Estimated Maximum Number of Groundwater Samples
PCBs	EPA 8082	12	4
VOCs	EPA 8260C	0	4
SVOCs (full suite)	EPA 8270D	0	4
PAHs	EPA 8270D	12	0
Metals	EPA 6020B/7040A	12	4
Total Petroleum Hydrocarbons	NWTPH-Gx, -Dx	12	4

The list of target parameters, the analytical method by which each parameter will be analyzed, the method holding times, the containers, and the preservatives are included in Section 3.2.2.

2.2.1 Sample Identification, Containers, and Labels

Samples will be identified by facility abbreviation, location identifier, depth (soil top depth), and groundwater matrix (Table 2-2). For example, a soil sample may be designated 7901-SB-02-15 (boring #2 at 15 feet bgs), and a groundwater sample may be designated 7901-SB-03-GW (groundwater grab sample collected from boring #3). All samples collected during the investigation will be labeled clearly and legibly.

Table 2-2. Sample Identification Examples

Sample Type	Facility Abbreviation	Location Identifier	Soil Depth	Groundwater Matrix
Soil	7901	SB-02	15	--
Groundwater	7901	SB-03	--	GW

7901 = 7901 2nd Ave S parcel

Sample labels will be self-adhering, waterproof material. Indelible ink will be used to complete each sample label, which will contain the project name, sample identification, date and time of collection, analysis and method to be conducted (or a reference to a priority of analysis list on the chain of custody [CoC] form), preservation, and the initials of the person preparing the sample. Labels will be affixed to sample jars and bottles. Modifications to the sampling containers may be made during sample collection based on available sample volume.

2.2.2 Sample Storage and Delivery

All samples will be stored in sturdy, insulated coolers and preserved by cooling with ice or frozen gel-packs to a temperature between 0ºC and 6ºC. Maximum sample holding and extraction times will be strictly adhered to by field personnel for sample delivery and by the analytical laboratory (see Section 3.0).

Leidos field personnel will be responsible for packaging the samples, signing the CoC forms, and notifying the laboratory and project chemist of the estimated delivery time. Upon receipt of samples at the laboratory, the condition of the samples will be recorded by the receiver.

2.2.3 Waste Disposal and Handling Procedures

IDW generated during the field activities may include soil, investigation-derived debris (asphalt and/or concrete), purge water, decontamination fluids, PPE, and expendable solid waste associated with general field operations. Potentially contaminated soil, groundwater and decontamination fluids will be stored at the site in a steel drum.

The following waste handling procedures will be used during implementation of the SAP:

- Containers of IDW generated during field activities will be labeled and dated with information appropriate for accurate tracking and identification of the containers and their contents. IDW containers will be labeled as "Pending Analysis" until the results of analytical testing are received.
- Non-hazardous solid wastes that may be generated during field sampling activities, including gloves, foil, paper, plastic bags, disposable sampling equipment and other miscellaneous types of debris, will be disposed as sanitary waste by the drilling subcontractor or Leidos personnel in approved municipal waste receptacles.
- Final waste determinations will be based on knowledge of where and how the waste was generated and analytical results from the sampling locations. Wherever possible, testing results from analytical samples collected as part of the sampling program will be used to make waste determinations. None of the IDW is expected to be hazardous waste.
- If onsite disposal is allowed by the individual facility (e.g., into existing groundwater waste drums), this option will be followed.

2.3 Field Documentation

A complete record of field activities will be maintained. Documentation necessary to meet QA objectives for this project include field notes and field forms, sample container labels, and CoC forms. The field documentation will provide descriptions of all sampling activities, sampling personnel, and weather conditions, and will record all modifications, decisions, and/or corrective actions to the study design and procedures identified in this SAP.

A field logbook(s) will be kept onsite during field operations. Daily activities will be recorded in a bound field logbook with water-resistant numbered pages. All entries will be made legibly, in indelible ink, and will be signed and dated daily. Information recorded will include the following:

- Date, time, place, and location of sampling;
- Onsite personnel and visitors;
- Daily safety discussion and any safety issues;
- QA/QC samples collected (i.e., duplicate samples and rinse blanks);
- Field measurements (depth to water, etc.) and their units; and
- Observations about the site, location, and samples (weather, odor, appearance, etc.).

Field logbooks are intended to provide sufficient data and observations to enable participants to reconstruct events that occur during project field activities. Entries will be factual, detailed, and objective. Unless restricted by weather conditions, all original data recorded in field logbooks and on sample identification tags, CoC records, and field forms will be written in waterproof ink. If an error is made, the individual responsible may make corrections simply by crossing out the error with a single line and recording the correct information next to it. The erroneous information must not be obliterated. All corrections must be initialed and dated. All documentation, including voided entries, must be maintained within project files.

The field crew will retain samples at all times until samples are relinquished to be delivered to the laboratory. CoC forms will be initiated at the time of sample collection to ensure that all collected samples are properly documented and traceable through storage, transport, and analysis. When all line items on the form are completed or when the samples are relinquished, the sample collection custodian will sign and date the form, list the time, and confirm the completeness of all descriptive information contained on the form. Each individual who subsequently assumes responsibility for the sample will sign the CoC form and provide the reason for assuming custody. The field custody terminates when the laboratory receives the samples. The FM will retain a copy of the completed, signed, form(s) for project files.

2.4 Laboratory Analyses

Analytical laboratory reports will be accompanied by sufficient raw data and QC results to enable independent reviewers to evaluate the quality of the data, to validate the data, and to recalculate the results, as appropriate. The analytical laboratory deliverables are listed in Section 3.0.

3.0 Quality Assurance Project Plan

The purpose of the QAPP is to provide confidence in the analytical results through a system of QA/QC performance checks with respect to data collection methods, laboratory analysis, data reporting, and appropriate corrective actions to achieve compliance with established performance and data quality criteria. This section presents the QA/QC protocols used to ensure that the data obtained during the investigation are legally defensible and usable for their intended purpose.

3.1 Measurements of Data Quality

The quality of the data reported by the laboratories will be evaluated for accuracy, precision, representativeness, completeness, and comparability as described below.

Accuracy is the degree to which an observed measurement agrees with an accepted reference or true value. Accuracy is a measure of the bias in the system and is expressed as the percent recoveries of spiked analytes in matrix spike/matrix spike duplicate (MS/MSD) and laboratory control sample/laboratory control sample duplicate (LCS/LCSD) samples. LCSD analysis is only required for analytical batches that don't have an associated MS/MSD. Accuracy will also be evaluated through the surrogate spikes in each sample for organic analysis. The performance-based laboratory control limits for accuracy will be used for the project.

Precision is a measure of mutual agreement among individual measurements of the same property under prescribed conditions. Precision will be assessed by the analysis of MS/MSD samples, and LCS/LCSD samples. The calculated relative percent differences (RPDs) for laboratory duplicates or MS/MSD pairs will provide information on the precision of sampling and analytical procedures, and the RPDs for LCS/LCSD pairs will provide information on precision of the analytical procedures. LCSD analysis is only required for analytical batches that don't have an associated MS/MSD.The performance-based laboratory control limits for precision will be used for the project.

Representativeness expresses the degree to which data accurately and precisely represent an actual condition or characteristic at a particular sampling point. Representativeness is achieved by collecting samples representative of the matrix at the time of collection. Representativeness is also achieved by ensuring that standard sample handling and analytical methodology are followed.

Completeness refers to the amount of acceptable data points collected relative to the amount needed to achieve the project's technical objectives. Completeness is calculated as the number of valid data points achieved divided by the total number of data points expected for all requested analyses. For this project, the overall completeness objective is 95 percent.

Comparability is based on the use of established U.S. Environmental Protection Agency (EPA)-approved methods for the analysis of the selected parameters. The quantification of the analytical parameters is based on published methods, supplemented with well-documented procedures used in the laboratory to ensure reproducibility of the data.

3.2 Quality Assurance and Quality Control

Field and laboratory QA/QC samples will be used to evaluate the data precision, accuracy, representativeness, and comparability of the analytical results. The field QA samples to be collected are described in Section 3.2.1. The laboratory QA samples are discussed in Section 3.2.2.

3.2.1 Field Quality Assurance/Quality Control Samples

Field duplicate, equipment rinse blank, and source blank collection and analysis are not part of the scope for this project. Field sample accuracy and precision will be assessed through the collection and analysis of MS/MSD samples. MS and MSD samples are a form of laboratory QA/QC for determining matrix effects and the reliability of the analytical processes and equipment. The matrix effect is a condition in which sample composition interferes with the analysis of the desired analyte(s). To meet analytical EPA frequency requirements, extra volume will be collected for the analysis of one soil MS/MSD pair and one aqueous MS/MSD pair for each analytical parameter. The sampling locations chosen for MS/MSD analysis will require enough sample volume to perform the analysis in triplicate (i.e., primary analysis, MS analysis, and MSD analysis).

3.2.2 Laboratory Quality Assurance/Quality Control Samples

Instrument calibration and laboratory QA/QC sample requirements are defined in the test methods and the laboratory's written standard operating procedures. An LCSD should be analyzed if the laboratory does not have sufficient sample volume to prepare a project-specific MS/MSD for organic test methods. The results of these samples will provide information on the accuracy and precision of the chemical analysis and will be used to qualify data, as necessary, during data validation using EPA functional guidelines modified as necessary to accommodate non-Contract Laboratory Program (i.e., EPA SW-846 methodology) (EPA 1986) analytical methods (EPA 2008, 2016).

Analytical methods, sample container, and minimum sample volumes are summarized in Table 3-1. The sample volumes provided in Table 3-1 are the amount necessary to perform field sample analysis. Additional sample volume is required for MS/MSDs and will be addressed during the field sampling planning process and placement of the sample container order with TestAmerica.

Table 3-1. Analytical Methods, Sample Container, and Absolute Minimum Sample Volume Requirements

Laboratory	Analyte Group	Analytical Method	Sample Container[1]	Minimum/Preferred Sample Volume
Soil Samples				
TestAmerica	PCB Aroclors	SW 8082A	One 4 oz. amber glass w/ Teflon-lined cap	10 g
TestAmerica	GRO	NWTPH-Gx	Two 40 ml glass vials w/ Teflon-lined septa caps	5 g
TestAmerica	DRO	NWTPH-Dx	One 4 oz. amber glass w/ Teflon-lined cap	20 g
TestAmerica	SVOCs	SW 8270D		20 g
TestAmerica	PP Metals[2]	SW 6020B	One 4 oz. amber glass w/ Teflon-lined cap	20 g
TestAmerica	Mercury	SW 7471A		10 g
Groundwater Samples				
TestAmerica	PCB Aroclors	SW 8082A	Two 500 ml glass amber bottles with Teflon-lined lid	500 mL
TestAmerica	GRO	NWTPH-Gx	Three 40 ml glass vials w/ Teflon-lined septa caps	5 mL
TestAmerica	DRO	NWTPH-Dx	Two 500 ml glass jars w/Teflon-lined lid.	500 mL
TestAmerica	PAHs	SW 8270D	Two 500 ml glass amber bottles with Teflon-lined lid	500 mL
TestAmerica	VOCs	SW 8260B/C	Three 40 ml glass vials w/ Teflon-lined septa caps	5 mL
TestAmerica	Total[3] PP Metals + Iron, Manganese	SW 6020B	One 250 ml plastic bottle	75 mL
TestAmerica	Mercury	SW 7470A		50 mL

SW = SW-846; EPA Test Methods for Evaluating Solid Waste: Physical/Chemical Methods Compendium.
NWTPH = Ecology 1997; Analytical Methods for Petroleum Hydrocarbons.

[1] Multiple analyses may be consolidated into fewer containers. Leidos will work with the TestAmerica Project Manager for clarification when requesting sample containers for this project. The table above includes the collection of extra volume in cases where extra sample may be required in case of container breakage during sample shipment and/or back-up sample may be necessary if re-analysis is required.

[2] PP (priority pollutant) metals include silver, arsenic, beryllium, cadmium, chromium, copper, mercury, nickel, lead, antimony, selenium, thallium and zinc.

[3] Metals analyses for groundwater will be total (unfiltered) and preserved in the field.

Table 3-2 lists the analytical methods, holding times, and preservation requirements for all targeted analyses. The frequency requirements for the analysis of laboratory QA/QC samples are summarized in Table 3-3. Acceptance criteria for laboratory QA/QC samples are summarized in Table 3-4, and method detection limits (MDLs) and reporting limits for each analytical method are provided in Appendix B.

Table 3-2. Analytical Methods, Holding Times, and Preservation Requirements

Analyte Group	Analytical Method	Holding Time	Preservation
Soil Samples			
PCB Aroclors	SW 8082A	1 year[1]	Cool (2 – 6°C)
GRO	NWTPH-Gx	14 days	Cool (2 – 6°C)
DRO	NWTPH-Dx	14 days	Cool (2 – 6°C)
SVOCs	SW 8270D	14 days extraction; 40 days analysis	Cool (2 – 6°C)
PP Metals	SW 6020A	180 days	Cool (2 – 6°C)
Mercury	SW 7471A	28 days	Cool (2 – 6°C)
Groundwater Samples			
PCB Aroclors	SW 8082A	1 year	Cool (2 – 6°C)
GRO	NWTPH-Gx	14 days extraction; 40 days analysis	Cool (2 – 6°C), HCL pH ≤ 2
DRO	NWTPH-Dx	14 days extraction; 40 days analysis	Cool (2 – 6°C), HCL pH ≤ 2
PAHs	SW 8270D	7 days extraction; 40 days analysis	Cool (2 – 6°C)
VOCs	SW 8260C	14 days	Cool (2 – 6°C), HCL pH ≤ 2
Total PP Metals + Iron, Manganese	SW 6020A	180 days	Cool (2 – 6°C), HNO_3 preserved
Mercury	SW 7470A	28 days	Cool (2 – 6°C), HNO_3 preserved

[1] Holding time based on 40 CFR 136.

Table 3-3. Laboratory QA/QC Sample Frequency Requirements

Analysis	Initial Calibration	CCV	LCS/LCSD	Method Blank	MS/MSD	Surrogates
PCB Aroclors	Prior to analysis; when ICV/CCV fails	Start of batch, every 10 field samples, and end of batch	One per prep batch. LCSD required if no MSD	One per prep batch	Rate of 5% for all field samples analyzed.	Every sample
GRO	Prior to analysis; when CCV fails	Daily, before and after samples are analyzed	One per prep batch. LCSD required if no MSD	One per prep batch	Rate of 5% for all field samples analyzed.	Every sample
DRO	Prior to analysis; when CCV fails	Daily, before and after samples are analyzed.	One per prep batch. LCSD required if no MSD	One per prep batch	Rate of 5% for all field samples analyzed.	Every sample
SVOCs	Prior to analysis; when ICV/CCV fails	Daily; before sample analysis; every 12 hours and end of analytical batch	One per prep batch. LCSD required if no MSD	One per prep batch	Rate of 5% for all field samples analyzed.	Every sample
PP Metals (including mercury)	Daily; prior to sample analysis;	After every 10 field samples analyzed	One per prep batch. LCSD	One per prep batch	Rate of 5% for all field samples analyzed.	NA

Analysis	Initial Calibration	CCV	LCS/LCSD	Method Blank	MS/MSD	Surrogates
	when ICV/CCV fails		required if no MSD			
PAHs	Prior to analysis; when ICV/CCV fails	Daily; before sample analysis; every 12 hours and end of analytical batch	One per prep batch. LCSD required if no MSD	One per prep batch	Rate of 5% for all field samples analyzed.	Every sample
VOCs	Prior to analysis; when ICV/CCV fails	Daily; before sample analysis; every 12 hours and end of analytical batch	One per prep batch. LCSD required if no MSD	One per prep batch	Rate of 5% for all field samples analyzed.	Every sample

See listing of Acronyms and Abbreviations for definition of acronyms in this table.

Table 3-4. Laboratory QA/QC Sample Acceptance Criteria – DQOs

Analytical Group	Data Quality Indicator	Measurement Performance Criterion	QC Sample and/or Activity Used to Assess Measurement Performance
All Analytical groups	Completeness	≥95 percent; determined by the number of valid data points achieved divided by the total number of data points expected for all requested analyses (not rejected during validation)	All usable sample data points collected
All Analytical Groups	Accuracy/Bias contamination	< Laboratory reporting limit	Method blank
SW-846 8000 Series Organic Methods	Analytical instrument accuracy	Within ± 20% of true value	CCV
SW-846 8000 Series Organic Methods	Accuracy and precision	See Appendix E for Laboratory In-house precision and accuracy limits.	MS/MSD LCS/LCSD
SW-846 8000 Series Organic Methods	Accuracy	See Appendix E for Laboratory In-house precision and accuracy limits.	Surrogate
SW-846 8000 Series Organic Methods	Accuracy/Bias	Area within -50% to + 100% of ICAL midpoint standard	Internal Standard (IS) (for GC/MS methods: PAHs, SVOCs, VOCs)
SW-846 8000 Series Organic Methods	Accuracy/Bias	RPD ≤ 40%	Second column confirmation (For GC methods: PCB Aroclors)
NWTPH-Gx	Analytical instrument accuracy	Within ± 20% of true value	CCV
NWTPH-Gx	Accuracy	Within ± 50% of true value	Surrogate
NWTPH-Gx	Precision	See Appendix E for Laboratory In-house precision and accuracy limits.	Laboratory duplicate
NWTPH-Gx	Accuracy/Precision	See Appendix E for Laboratory In-house precision and accuracy limits.	LCS/LCSD MS/MSD

Analytical Group	Data Quality Indicator	Measurement Performance Criterion	QC Sample and/or Activity Used to Assess Measurement Performance
NWTPH-Dx	Analytical instrument accuracy	Within ± 15% of true value	CCV
NWTPH-Dx	Accuracy	Within ± 50% of true value	Surrogate
NWTPH-Dx	Precision	See Appendix E for Laboratory In-house precision and accuracy limits.	Laboratory duplicate
NWTPH-Dx	Accuracy/Precision	See Appendix E for Laboratory In-house precision and accuracy limits.	LCS/LCSD MS/MSD
ICPMS Metals + mercury	Analytical instrument accuracy	Within ± 10% of true value	CCV
ICPMS Metals	Accuracy/Bias	IS intensity in the samples within 30-120% of intensity of the IS in the ICAL blank	Internal Standard (IS)
ICPMS Metals	Analytical instrument accuracy at the RL	Within ± 20% of true value	Low-level Calibration check (Low Level ICV)
ICPMS Metals	Accuracy/Bias	ICS-A; Absolute value of non-spiked metals < RL; ICS-AB: Within ± 20% of true value	Interference Check Solutions
ICPMS Metals + Mercury	Accuracy/Precision	See Appendix E for Laboratory In-house precision and accuracy limits.	LCS/LCSD MS/MSD/Lab Duplicate
ICPMS Metals + Mercury	Accuracy/matrix interference	% D ≤ 10% for original sample values > 50 x MDL	Serial Dilution

See listing of Acronyms and Abbreviations for definition of acronyms in this table.

3.2.3 Data Validation

All analytical results obtained during this investigation will undergo data validation by qualified Leidos chemists. All results will undergo data verification and validation according to EPA Stage 2B data validation (EPA 2009). Guidance from this QAPP and EPA's *National Functional Guidelines for Organic Data Review* (EPA 2008) and EPA's *National Functional Guidelines for Inorganic Data Review* (EPA 2004) will be used to validate the analytical results. The National Functional Guidelines (NFGs) referenced provide a general approach to data validation since the NFGs were designed to evaluate data from EPA's Contract Laboratory Program (CLP) and these data are being generated using SW-846 methods. If data quality concerns are noted that renders the data unusable, the laboratory will be contacted, as necessary, and the samples will be reanalyzed if sufficient volume exist, and the holding times have not been grossly exceeded. If required, field mobilization and re-sampling will occur to achieve project data quality objectives for completeness. The results of the data validation will be summarized in a Data Quality Assessment report, which will be included as an appendix to the data report described in Section 4.3.

The data validation report will include a sample index that provides field sample IDs and the associated analytical groups; a data verification and validation checklist for each sample delivery group validated for any given analysis, and a summary of qualified data points and

corresponding reason codes associated with the data validation qualifiers that are provided on annotated Form I's and summarized in tabular format for each sample and analysis. The data validation process will examine all components listed in Section 3.2.4 for each analytical method, if applicable.

3.2.4 Analytical Laboratory Reports

Analytical data packages will contain sufficient information to allow for the EPA Stage 2B and review of all sample and laboratory QC sample results (e.g., calibration, method blanks, LCS/LCSD, interference check samples, serial dilutions surrogates, internals, and MS/MSD), including all raw data needed to recalculate reported results as required to meet EPA Stage 2B validation on all hazardous substance analytical results. The analytical laboratory deliverables will include, but are not limited to, the following:

- MDLs and reporting limits for each sample.
- Laboratory qualifiers reported with analyte concentrations and a summary of qualifier definitions.
- Case narrative, including any problems encountered, protocol modifications, and/or corrective actions taken.
- Sample analytical and QA/QC results with units and control limits.
- All method references used during analyses.
- Any protocol deviations from the approved QAPP.
- Instrument tuning results.
- Surrogate recovery results and control limits.
- Internal standard recovery results and control limits.
- MS/MSD results and control limits.
- Laboratory duplicate results and control limits.
- Method blank results.
- Interference check sample results.
- Serial Dilution Results
- LCS/LCSD results and control limits.
- Initial and continuing calibration results and control limits.
- Sample custody records (including original CoC forms and sample receipt information).
- Sample and QC results in the EDD format specified in Appendix F.

The analytical laboratories will provide electronic copies of the data packages to Leidos (hardcopies are not required).

4.0 Data Analysis, Recordkeeping, and Reporting Requirements

4.1 Analysis of Chemistry Data

The chemical results for groundwater and surface water samples will be processed using the data management rules presented in Appendix A. Data tables will indicate sample locations, unique sample identifiers, sample date, chemical concentrations, final data qualifiers, and chemistry results will be compared to cleanup levels, as identified in the South Park Landfill RI/FS report (Floyd|Snider 2016).

4.2 Recordkeeping

At the conclusion of the study, all records including laboratory data reports, data validation reports, and other relevant documentation will be provided to Ecology for archive.

4.3 Data Report

Due to the expedited schedule and limited budget on this project, a minimal data report will be presented. This will include primarily a data summary table comparing results to MTCA Cleanup Levels, and a sample location figure showing locations of soil borings. Electronic copies of supporting information will also be provided. At a minimum, the following will be included in the deliverable package:

- Copies of field data collection forms and borehole logs.
- CoC records.
- Electronic copies of laboratory reports and the data validation reports.

The validated chemistry data, recorded in the EDDs, will be uploaded into Ecology's EIM database following completion of the final data report, but no later than June 30, 2017. Information for entering environmental data into EIM can be found on Ecology's website: http://www.ecy.wa.gov/eim/.

5.0 References

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Science Applications International Corporation (SAIC). 2012. Summary of Existing Information and Identification of Data Gaps; Lower Duwamish Waterway, RM2.1 West, 1st Avenue South Storm Drain. Prepared for Toxics Cleanup Program, Northwest Regional Office, Washington State Department of Ecology. September.

Appendix A

Data Management Procedures

A1. Reporting and Calculating Procedures

Data qualifiers will be reported by the laboratories, as defined in the data packages. Additional data qualifiers may be applied during data validation using U.S. Environmental Protection Agency functional guidelines. Leidos will review the combination of both laboratory and validation qualifiers and will report final results with a single set of interpreted qualifiers, listed in Table C-2. All data qualifiers will be maintained in the project database. Results rejected for quality assurance/quality control reasons will be reported as rejected, without quantitative values.

Table A-1. Final Data Qualifiers

Final Data Qualifier	Qualifier Definition
J	Estimated concentration
U	Non-detect at the given reporting limit
UJ	Non-detect at the given reporting limit, which is estimated
C	Result is a coelution
CJ	Result is a coelution with an estimated concentration
CU	Non-detected result is a coelution
CUJ	Non-detected result is a coelution with an estimated concentration
R	Rejected

A2. Best Result Selection

When multiple results for a single chemical are available for a sample, analyte, and fraction, one single result must be selected for reporting purposes. Chemicals analyzed by the same analytical method will be qualified by Leidos validation personnel.. However, if multiple analyses are involved, then the final result is selected by Leidos. Results not selected as the final result are qualified with a "DNR" to indicate "Do Not Report" in the project database. Results selected as the final result are reported without additional data qualification. The rationale used for best result selection is summarized below.

Detected Results

When all results are detected, the result with the highest concentration is selected as the final result. If, however, the results are from diluted and non-diluted analyses by the same analytical method, the result from the analysis with the lowest dilution factor is selected. If more than one result with the same concentration and dilution factor is available, then the result with the most certainty is selected; for example, a non-qualified result would be given preference over a result qualified as estimated (J-qualified).

Non-Detected Results

When all results are non-detected, the result with the lowest reporting limit is selected as the final result. If more than one result with the same reporting limit is available, then the result with the most certainty is selected, if known; for example, a non-qualified result (U-qualified) would be given preference over a result qualified as estimated (UJ-qualified).

Mixture of Detected and Non-Detected Results

If both detected and non-detected results are available, the detected result will be selected as the final result.

A3. Reporting and Calculating Procedures

Significant Figures

Results will be reported by Leidos using the same number of significant figures reported by the laboratory. Calculated values, including averages and calculated totals, will be reported by Leidos to two significant figures, with the exception of toxic equivalency quotients (TEQs).

Calculated Totals

Calculated analyte totals will be calculated as described below:

- **Total PCBs Aroclors** are calculated in accordance with the procedures described in the Washington State Sediment Management Standards (SMS) using only detected values for seven Aroclor mixtures (Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260). However, if detected concentrations are found for additional Aroclors, they will also be included in calculated total and will be noted accordingly in the technical memorandum and its data tables. For samples in which none of the Aroclor mixtures are detected, the total PCB Aroclor results will be given a value equal to the highest RL of the individual Aroclor mixtures and assigned a U-qualifier.

- **Total polycyclic aromatic hydrocarbons (PAHs), low molecular weight PAHs (LPAHs), high molecular weight PAHs (HPAHs), and total benzofluoranthenes** are calculated in accordance with the procedures described in SMS. Total LPAHs are the sum of detected concentrations of naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, and anthracene. Total HPAHs are the sum of detected concentrations of fluoranthene, pyrene, benzo(a)anthracene, chrysene, total benzofluoranthenes, benzo(a)pyrene, indeno(1,2,3,-c,d)pyrene, dibenz(a,h)anthracene, and benzo(g,h,i)perylene. Total PAHs include all chemicals listed above for LPAH and HPAH. Total benzofluoranthenes are the sum of the b (i.e., benzo(b)fluoranthene), j, and k isomers when data for these individual isomers are available. Alternately, a total benzofluoranthenes result may be reported by the laboratory, depending on the analytical conditions. For samples in which all individual compounds within the groups described above are undetected, the single highest RL for the component chemical in that sample represents the associated total result.

Weighted Totals

Weighted calculated analyte totals will be calculated as described below:

Carcinogenic PAH (cPAH) values will be calculated using toxicity equivalency factor (TEF) values (MTCA 2001) based on an individual compound's relative toxicity to benzo(a)pyrene.

Final cPAH concentrations are equivalent to the sum of the concentrations of the seven individual cPAH compounds multiplied by their associated TEF. Non-detected values will be half of the reporting limit for data evaluation purposes.

Table A-2. cPAH TEFs

Analyte	TEF Value
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.1
Chrysene	0.01
Dibenz(a,h)anthracene	0.1
Indeno(1,2,3-cd)pyrene	0.1

Appendix B

Standard Laboratory Reporting Limits

Laboratory Reporting Limits and Method Detection Limits – Soil				
Analyte Description	**CAS Number**	**RL**	**MDL**	**Units**
PCB Aroclors				
PCB-1016	12674-11-2	0.025	0.0074	mg/kg
PCB-1221	11104-28-2	0.011	0.0042	mg/kg
PCB-1232	11141-16-5	0.011	0.0049	mg/kg
PCB-1242	53469-21-9	0.01	0.0016	mg/kg
PCB-1248	12672-29-6	0.011	0.0029	mg/kg
PCB-1254	11097-69-1	0.01	0.0015	mg/kg
PCB-1260	11096-82-5	0.01	0.0019	mg/kg
GRO				
TPH-Gasoline	STL00228	4	2.09	mg/kg
DRO				
TPH-Diesel (C10-C24)	STL00163	30	10.9	mg/kg
TPH-Heavy Oil (>C24-C36)	STL00299	100	24.9	mg/kg
SVOCs				
1,2,4-Trichlorobenzene	120-82-1	50	6	ug/kg
1,2-Dichlorobenzene	95-50-1	50	12	ug/kg
1,3-Dichlorobenzene	541-73-1	50	4.8	ug/kg
1,4-Dichlorobenzene	106-46-7	50	8.3	ug/kg
1-Methylnaphthalene	90-12-0	30	5	ug/kg
2,4,5-Trichlorophenol	95-95-4	200	45	ug/kg
2,4,6-Trichlorophenol	88-06-2	150	36	ug/kg
2,4-Dichlorophenol	120-83-2	100	15	ug/kg
2,4-Dimethylphenol	105-67-9	100	15	ug/kg
2,4-Dinitrophenol	51-28-5	1000	200	ug/kg
2,4-Dinitrotoluene	121-14-2	200	43	ug/kg
2,6-Dinitrotoluene	606-20-2	150	34	ug/kg
2-Chloronaphthalene	91-58-7	25	5	ug/kg
2-Chlorophenol	95-57-8	200	42	ug/kg
2-Methylnaphthalene	91-57-6	50	8.8	ug/kg
2-Methylphenol	95-48-7	150	37	ug/kg
2-Nitroaniline	88-74-4	100	15	ug/kg
2-Nitrophenol	88-75-5	200	46	ug/kg
3 & 4 Methylphenol	15831-10-4	200	15	ug/kg
3,3'-Dichlorobenzidine	91-94-1	400	100	ug/kg
3-Nitroaniline	99-09-2	200	40	ug/kg
4,6-Dinitro-2-methylphenol	534-52-1	1000	100	ug/kg
4-Bromophenyl phenyl ether	101-55-3	200	41	ug/kg
4-Chloro-3-methylphenol	59-50-7	150	33	ug/kg
4-Chloroaniline	106-47-8	1500	400	ug/kg
4-Chlorophenyl phenyl ether	7005-72-3	200	41	ug/kg
4-Nitroaniline	100-01-6	100	20	ug/kg

Laboratory Reporting Limits and Method Detection Limits – Soil				
Analyte Description	**CAS Number**	**RL**	**MDL**	**Units**
4-Nitrophenol	100-02-7	1500	368	ug/kg
Acenaphthene	83-32-9	25	5	ug/kg
Acenaphthylene	208-96-8	25	5	ug/kg
Anthracene	120-12-7	25	5	ug/kg
Benzo[a]anthracene	56-55-3	25	5	ug/kg
Benzo[a]pyrene	50-32-8	60	13	ug/kg
Benzo[b]fluoranthene	205-99-2	25	5	ug/kg
Benzo[g,h,i]perylene	191-24-2	60	15	ug/kg
Benzo[k]fluoranthene	207-08-9	60	14	ug/kg
Benzoic acid	65-85-0	2500	1060	ug/kg
Benzyl alcohol	100-51-6	4000	37	ug/kg
Bis(2-chloroethoxy)methane	111-91-1	200	41	ug/kg
Bis(2-chloroethyl)ether	111-44-4	200	40	ug/kg
Bis(2-ethylhexyl) phthalate	117-81-7	600	136	ug/kg
bis(chloroisopropyl) ether	108-60-1	250	37	ug/kg
Butyl benzyl phthalate	85-68-7	200	50	ug/kg
Carbazole	86-74-8	150	31	ug/kg
Chrysene	218-01-9	60	13	ug/kg
Dibenz(a,h)anthracene	53-70-3	50	12	ug/kg
Dibenzofuran	132-64-9	150	36	ug/kg
Diethyl phthalate	84-66-2	550	132	ug/kg
Dimethyl phthalate	131-11-3	150	33	ug/kg
Di-n-butyl phthalate	84-74-2	500	57	ug/kg
Di-n-octyl phthalate	117-84-0	1000	222	ug/kg
Fluoranthene	206-44-0	25	5	ug/kg
Fluorene	86-73-7	25	5	ug/kg
Hexachlorobenzene	118-74-1	50	5	ug/kg
Hexachlorobutadiene	87-68-3	50	15	ug/kg
Hexachlorocyclopentadiene	77-47-4	100	26	ug/kg
Hexachloroethane	67-72-1	150	38	ug/kg
Indeno[1,2,3-cd]pyrene	193-39-5	40	5	ug/kg
Isophorone	78-59-1	150	37	ug/kg
Naphthalene	91-20-3	25	5	ug/kg
Nitrobenzene	98-95-3	200	42	ug/kg
N-Nitrosodi-n-propylamine	621-64-7	200	44	ug/kg
N-Nitrosodiphenylamine	86-30-6	60	15	ug/kg
Pentachlorophenol	87-86-5	400	91	ug/kg
Phenanthrene	85-01-8	60	12	ug/kg
Phenol	108-95-2	150	38	ug/kg
Pyrene	129-00-0	60	15	ug/kg
Metals				
Antimony	7440-36-0	0.2	0.068	mg/kg

Laboratory Reporting Limits and Method Detection Limits – Soil				
Analyte Description	**CAS Number**	**RL**	**MDL**	**Units**
Arsenic	7440-38-2	0.5	0.1	mg/kg
Beryllium	7440-41-7	0.2	0.015	mg/kg
Cadmium	7440-43-9	0.2	0.077	mg/kg
Chromium	7440-47-3	0.5	0.063	mg/kg
Copper	7440-50-8	1	0.22	mg/kg
Lead	7439-92-1	0.5	0.048	mg/kg
Nickel	7440-02-0	0.5	0.193	mg/kg
Selenium	7782-49-2	1	0.218	mg/kg
Silver	7440-22-4	0.2	0.02	mg/kg
Thallium	7440-28-0	0.4	0.055	mg/kg
Zinc	7440-66-6	5	1.61	mg/kg
Mercury	7439-97-6	0.03	0.009	mg/kg

Laboratory Reporting Limits and Method Detection Limits – Water				
Analyte Description	**CAS Number**	**RL**	**MDL**	**Units**
PCB Aroclors				
PCB-1016	12674-11-2	0.5	0.021	ug/L
PCB-1221	11104-28-2	0.5	0.03	ug/L
PCB-1232	11141-16-5	0.5	0.027	ug/L
PCB-1242	53469-21-9	0.5	0.028	ug/L
PCB-1248	12672-29-6	0.5	0.021	ug/L
PCB-1254	11097-69-1	0.5	0.02	ug/L
PCB-1260	11096-82-5	0.5	0.026	ug/L
GRO				
TPH-Gasoline	STL00228	0.5	0.05	mg/L
DRO				
TPH-Diesel (C10-C24)	STL00163	0.25	0.09	mg/L
TPH-Heavy Oil (>C24-C36)	STL00299	0.5	0.166	mg/L
PAHs				
1-Methylnaphthalene	90-12-0	0.02	0.006	ug/L
2-Methylnaphthalene	91-57-6	0.03	0.009	ug/L
Acenaphthene	83-32-9	0.02	0.002	ug/L
Acenaphthylene	208-96-8	0.02	0.002	ug/L
Anthracene	120-12-7	0.02	0.003	ug/L
Benzo[a]anthracene	56-55-3	0.02	0.002	ug/L
Benzo[a]pyrene	50-32-8	0.02	0.003	ug/L
Benzo[b]fluoranthene	205-99-2	0.02	0.008	ug/L
Benzo[g,h,i]perylene	191-24-2	0.02	0.003	ug/L
Benzo[k]fluoranthene	207-08-9	0.03	0.009	ug/L
Chrysene	218-01-9	0.02	0.006	ug/L
Dibenz(a,h)anthracene	53-70-3	0.02	0.002	ug/L
Fluoranthene	206-44-0	0.02	0.002	ug/L

Laboratory Reporting Limits and Method Detection Limits – Water				
Analyte Description	**CAS Number**	**RL**	**MDL**	**Units**
Fluorene	86-73-7	0.02	0.003	ug/L
Indeno[1,2,3-cd]pyrene	193-39-5	0.02	0.007	ug/L
Naphthalene	91-20-3	0.04	0.013	ug/L
Phenanthrene	85-01-8	0.02	0.004	ug/L
Pyrene	129-00-0	0.02	0.004	ug/L
VOCs				
1,1,1,2-Tetrachloroethane	630-20-6	0.2	0.025	ug/L
1,1,1-Trichloroethane	71-55-6	0.2	0.025	ug/L
1,1,2,2-Tetrachloroethane	79-34-5	0.2	0.025	ug/L
1,1,2-Trichloroethane	79-00-5	0.2	0.025	ug/L
1,1-Dichloroethane	75-34-3	0.2	0.025	ug/L
1,1-Dichloroethene	75-35-4	0.1	0.018	ug/L
1,1-Dichloropropene	563-58-6	0.1	0.015	ug/L
1,2,3-Trichlorobenzene	87-61-6	0.5	0.1	ug/L
1,2,3-Trichloropropane	96-18-4	0.2	0.05	ug/L
1,2,4-Trichlorobenzene	120-82-1	0.2	0.04	ug/L
1,2,4-Trimethylbenzene	95-63-6	0.2	0.03	ug/L
1,2-Dibromo-3-Chloropropane	96-12-8	2	0.44	ug/L
1,2-Dichlorobenzene	95-50-1	0.3	0.05	ug/L
1,2-Dichloroethane	107-06-2	0.2	0.025	ug/L
1,2-Dichloropropane	78-87-5	0.2	0.025	ug/L
1,3,5-Trimethylbenzene	108-67-8	0.5	0.083	ug/L
1,3-Dichlorobenzene	541-73-1	0.3	0.05	ug/L
1,3-Dichloropropane	142-28-9	0.2	0.025	ug/L
1,4-Dichlorobenzene	106-46-7	0.3	0.05	ug/L
2,2-Dichloropropane	594-20-7	0.5	0.06	ug/L
2-Chlorotoluene	95-49-8	0.5	0.07	ug/L
4-Chlorotoluene	106-43-4	0.3	0.05	ug/L
4-Isopropyltoluene	99-87-6	0.3	0.05	ug/L
Benzene	71-43-2	0.2	0.025	ug/L
Bromobenzene	108-86-1	0.2	0.035	ug/L
Bromoform	75-25-2	0.5	0.08	ug/L
Bromomethane	74-83-9	1	0.16	ug/L
Carbon tetrachloride	56-23-5	0.2	0.025	ug/L
Chlorobenzene	108-90-7	0.2	0.025	ug/L
Chlorobromomethane	74-97-5	0.2	0.025	ug/L
Chlorodibromomethane	124-48-1	0.2	0.025	ug/L
Chloroethane	75-00-3	0.5	0.075	ug/L
Chloroform	67-66-3	0.2	0.03	ug/L
Chloromethane	74-87-3	0.3	0.05	ug/L
cis-1,2-Dichloroethene	156-59-2	0.2	0.025	ug/L
cis-1,3-Dichloropropene	10061-01-5	0.5	0.09	ug/L

Laboratory Reporting Limits and Method Detection Limits – Water				
Analyte Description	**CAS Number**	**RL**	**MDL**	**Units**
Dibromomethane	74-95-3	0.2	0.025	ug/L
Dichlorobromomethane	75-27-4	0.2	0.025	ug/L
Dichlorodifluoromethane	75-71-8	0.4	0.05	ug/L
Ethylbenzene	100-41-4	0.2	0.03	ug/L
Ethylene Dibromide	106-93-4	0.1	0.025	ug/L
Hexachlorobutadiene	87-68-3	0.5	0.075	ug/L
Isopropylbenzene	98-82-8	0.5	0.06	ug/L
Methyl tert-butyl ether	1634-04-4	0.2	0.025	ug/L
Methylene Chloride	75-09-2	0.5	0.11	ug/L
m-Xylene & p-Xylene	179601-23-1	0.5	0.05	ug/L
Naphthalene	91-20-3	0.5	0.1	ug/L
n-Butylbenzene	104-51-8	0.5	0.08	ug/L
N-Propylbenzene	103-65-1	0.2	0.025	ug/L
o-Xylene	95-47-6	0.5	0.06	ug/L
sec-Butylbenzene	135-98-8	0.5	0.07	ug/L
Styrene	100-42-5	0.5	0.1	ug/L
tert-Butylbenzene	98-06-6	0.5	0.1	ug/L
Tetrachloroethene	127-18-4	0.5	0.07	ug/L
Toluene	108-88-3	0.2	0.025	ug/L
trans-1,2-Dichloroethene	156-60-5	0.2	0.025	ug/L
trans-1,3-Dichloropropene	10061-02-6	0.2	0.025	ug/L
Trichloroethene	79-01-6	0.2	0.025	ug/L
Trichlorofluoromethane	75-69-4	0.5	0.025	ug/L
Vinyl chloride	75-01-4	0.02	0.013	ug/L
Metals				
Antimony	7440-36-0	0.002	0.00055	mg/L
Arsenic	7440-38-2	0.005	0.00135	mg/L
Beryllium	7440-41-7	0.002	0.000215	mg/L
Cadmium	7440-43-9	0.002	0.0005	mg/L
Chromium	7440-47-3	0.002	0.000705	mg/L
Copper	7440-50-8	0.01	0.00302	mg/L
Iron	7439-89-6	1	0.178	mg/L
Lead	7439-92-1	0.004	0.000995	mg/L
Manganese	7439-96-5	0.01	0.0023	mg/L
Nickel	7440-02-0	0.015	0.00054	mg/L
Selenium	7782-49-2	0.04	0.0103	mg/L
Silver	7440-22-4	0.002	0.000215	mg/L
Thallium	7440-28-0	0.005	0.000325	mg/L
Zinc	7440-66-6	0.035	0.0095	mg/L
Mercury	7439-97-6	0.0003	0.00015	mg/L

Appendix C

Laboratory In-house Quality Control Limits

Laboratory In-House Quality Control Criteria				
Analyte Description	**LCL % Recovery**	**UCL % Recovery**	**LCS/LCSD % RPD**	**MS/MSD % RPD**
PCB Aroclors - Soil				
PCB-1016	51	129	25	25
PCB-1260	45	130	40	40
DCB Decachlorobiphenyl (Surr)	37	140	NA	NA
Tetrachloro-m-xylene (Surr)	45	135	NA	NA
GRO - Soil				
TPH-Gasoline	68	120	25	35
4-Bromofluorobenzene (Surr)	50	150	NA	NA
Trifluorotoluene (Surr)	50	150	NA	NA
DRO - Soil				
TPH-Diesel (C10-C24)	70	125	16	16
TPH-Heavy Oil (>C24-C36)	64	127	17	17
o-Terphenyl (Surr)	50	150	NA	NA
SVOCs - Soil				
1,2,4-Trichlorobenzene	66	115	18	40
1,2-Dichlorobenzene	64	112	20	40
1,3-Dichlorobenzene	64	111	19	40
1,4-Dichlorobenzene	64	110	19	40
1-Methylnaphthalene	73	118	19	40
2,4,5-Trichlorophenol	63	117	23	40
2,4,6-Trichlorophenol	62	124	22	40
2,4-Dichlorophenol	68	125	19	40
2,4-Dimethylphenol	32	145	40	40
2,4-Dinitrophenol	20	141	40	40
2,4-Dinitrotoluene	68	121	18	40
2,6-Dinitrotoluene	74	115	19	40
2-Chloronaphthalene	68	112	19	40
2-Chlorophenol	68	117	20	40
2-Methylnaphthalene	71	119	18	40
2-Methylphenol	64	124	25	40
2-Nitroaniline	64	121	22	40
2-Nitrophenol	67	127	19	40
3 & 4 Methylphenol	70	116	27	40
3,3'-Dichlorobenzidine	30	103	29	40
3-Nitroaniline	21	103	25	40
4,6-Dinitro-2-methylphenol	34	140	34	40
4-Bromophenyl phenyl ether	68	122	17	40
4-Chloro-3-methylphenol	69	121	27	40

Laboratory In-House Quality Control Criteria				
Analyte Description	**LCL % Recovery**	**UCL % Recovery**	**LCS/LCSD % RPD**	**MS/MSD % RPD**
4-Chloroaniline	20	103	40	40
4-Chlorophenyl phenyl ether	75	117	17	40
4-Nitroaniline	46	118	32	40
4-Nitrophenol	20	150	20	40
Acenaphthene	68	116	17	40
Acenaphthylene	68	120	17	40
Anthracene	73	123	16	40
Benzo[a]anthracene	68	125	17	40
Benzo[a]pyrene	66	117	18	40
Benzo[b]fluoranthene	63	132	20	40
Benzo[g,h,i]perylene	60	130	22	40
Benzo[k]fluoranthene	63	130	19	40
Benzoic acid	20	150	40	40
Benzyl alcohol	36	137	26	40
Bis(2-chloroethoxy)methane	69	119	20	40
Bis(2-chloroethyl)ether	62	110	22	40
Bis(2-ethylhexyl) phthalate	55	144	19	40
bis(chloroisopropyl) ether	57	112	20	40
Butyl benzyl phthalate	62	142	18	40
Carbazole	76	135	16	40
Chrysene	75	114	17	40
Dibenz(a,h)anthracene	56	134	21	40
Dibenzofuran	72	119	19	40
Diethyl phthalate	66	122	13	40
Dimethyl phthalate	78	117	18	40
Di-n-butyl phthalate	66	129	18	40
Di-n-octyl phthalate	47	150	18	40
Fluoranthene	73	125	15	40
Fluorene	70	121	17	40
Hexachlorobenzene	66	117	17	40
Hexachlorobutadiene	65	116	21	40
Hexachlorocyclopentadiene	46	131	23	40
Hexachloroethane	62	120	21	40
Indeno[1,2,3-cd]pyrene	56	145	21	40
Isophorone	67	119	18	40
Naphthalene	62	112	18	40
Nitrobenzene	64	118	23	40
N-Nitrosodi-n-propylamine	62	116	21	40

Laboratory In-House Quality Control Criteria				
Analyte Description	**LCL % Recovery**	**UCL % Recovery**	**LCS/LCSD % RPD**	**MS/MSD % RPD**
N-Nitrosodiphenylamine	73	127	16	40
Pentachlorophenol	20	128	40	40
Phenanthrene	73	112	15	40
Phenol	63	120	19	40
Pyrene	70	120	18	40
2,4,6-Tribromophenol (Surr)	59	128	NA	NA
2-Fluorobiphenyl	67	115	NA	NA
2-Fluorophenol (Surr)	65	125	NA	NA
Nitrobenzene-d5 (Surr)	66	120	NA	NA
Phenol-d5 (Surr)	69	118	NA	NA
Terphenyl-d14 (Surr)	78	136	NA	NA
Metals - Soil				
Antimony	80	120	20	20
Arsenic	80	120	20	20
Beryllium	80	120	20	20
Cadmium	80	120	20	20
Chromium	80	120	20	20
Copper	80	120	20	20
Lead	80	120	20	20
Nickel	80	120	20	20
Selenium	80	120	20	20
Silver	80	120	20	20
Thallium	80	120	20	20
Zinc	80	120	20	20
Mercury	80	120	20	20
PCB Aroclors - Groundwater				
PCB-1016	25	145	27	27
PCB-1260	30	145	22	22
DCB Decachlorobiphenyl (Surr)	38	121	NA	NA
Tetrachloro-m-xylene (Surr)	26	124	NA	NA
GRO – Groundwater				
TPH-Gasoline	79	110	20	35
4-Bromofluorobenzene (Surr)	50	150	NA	NA
Trifluorotoluene (Surr)	50	150	NA	NA
DRO – Groundwater				
TPH-Diesel (C10-C24)	59	120	27	27
TPH-Heavy Oil (>C24-C36)	53	129	19	19
o-Terphenyl (Surr)	50	150	NA	NA

Laboratory In-House Quality Control Criteria				
Analyte Description	**LCL % Recovery**	**UCL % Recovery**	**LCS/LCSD % RPD**	**MS/MSD % RPD**
PAHs – Groundwater				
1-Methylnaphthalene	57	120	20	20
2-Methylnaphthalene	54	114	20	20
Acenaphthene	54	109	20	20
Acenaphthylene	30	127	20	20
Anthracene	30	130	20	20
Benzo[a]anthracene	35	125	20	20
Benzo[a]pyrene	30	127	20	20
Benzo[b]fluoranthene	59	126	20	20
Benzo[g,h,i]perylene	51	128	20	20
Benzo[k]fluoranthene	49	136	20	20
Chrysene	57	120	20	20
Dibenz(a,h)anthracene	60	136	20	20
Fluoranthene	58	128	20	20
Fluorene	50	130	20	20
Indeno[1,2,3-cd]pyrene	53	131	20	20
Naphthalene	54	115	20	20
Phenanthrene	53	158	20	20
Pyrene	53	121	20	20
Terphenyl-d14 (Surr)	64	150	NA	NA
VOCs – Groundwater				
1,1,1,2-Tetrachloroethane	68	139	20	35
1,1,1-Trichloroethane	56	150	29	35
1,1,2,2-Tetrachloroethane	60	134	25	35
1,1,2-Trichloroethane	62	137	30	35
1,1-Dichloroethane	68	135	27	35
1,1-Dichloroethene	64	125	28	35
1,1-Dichloropropene	64	146	20	35
1,2,3-Trichlorobenzene	60	137	20	35
1,2,3-Trichloropropane	45	150	20	35
1,2,4-Trichlorobenzene	60	138	20	35
1,2,4-Trimethylbenzene	70	142	20	35
1,2-Dibromo-3-Chloropropane	34	150	20	35
1,2-Dichlorobenzene	73	120	14	35
1,2-Dichloroethane	63	150	29	35
1,2-Dichloropropane	72	120	20	35
1,3,5-Trimethylbenzene	70	145	20	35
1,3-Dichlorobenzene	76	120	12	35

Laboratory In-House Quality Control Criteria				
Analyte Description	**LCL % Recovery**	**UCL % Recovery**	**LCS/LCSD % RPD**	**MS/MSD % RPD**
1,3-Dichloropropane	61	130	29	35
1,4-Dichlorobenzene	77	120	11	35
2,2-Dichloropropane	60	150	29	35
2-Chlorotoluene	68	130	20	35
4-Chlorotoluene	75	130	20	35
4-Isopropyltoluene	72	127	14	35
Benzene	73	120	20	35
Bromobenzene	68	130	20	35
Bromoform	51	137	20	35
Bromomethane	61	135	31	35
Carbon tetrachloride	54	150	30	35
Chlorobenzene	74	114	12	35
Chlorobromomethane	71	131	20	35
Chlorodibromomethane	46	150	20	35
Chloroethane	58	130	35	35
Chloroform	71	130	20	35
Chloromethane	40	150	31	35
cis-1,2-Dichloroethene	73	130	20	35
cis-1,3-Dichloropropene	54	150	28	35
Dibromomethane	65	137	20	35
Dichlorobromomethane	62	150	20	35
Dichlorodifluoromethane	45	150	29	35
Ethylbenzene	74	125	20	35
Ethylene Dibromide	56	146	20	35
Hexachlorobutadiene	38	150	20	35
Isopropylbenzene	75	137	20	35
Methyl tert-butyl ether	56	150	26	35
Methylene Chloride	58	134	29	35
m-Xylene & p-Xylene	73	130	20	35
Naphthalene	26	150	20	35
n-Butylbenzene	66	125	20	35
N-Propylbenzene	61	142	20	35
o-Xylene	80	139	20	35
sec-Butylbenzene	62	140	20	35
Styrene	68	136	20	35
tert-Butylbenzene	55	150	20	35
Tetrachloroethene	67	123	20	35
Toluene	70	126	20	35

Laboratory In-House Quality Control Criteria				
Analyte Description	**LCL % Recovery**	**UCL % Recovery**	**LCS/LCSD % RPD**	**MS/MSD % RPD**
trans-1,2-Dichloroethene	69	124	27	35
trans-1,3-Dichloropropene	40	150	30	35
Trichloroethene	72	123	20	35
Trichlorofluoromethane	60	150	31	35
Vinyl chloride	59	140	30	35
1,2-Dichloroethane-d4 (Surr)	46	150	NA	NA
4-Bromofluorobenzene (Surr)	81	120	NA	NA
Dibromofluoromethane (Surr)	42	132	NA	NA
Toluene-d8 (Surr)	75	125	NA	NA
Trifluorotoluene (Surr)	74	118	NA	NA
Metals – Groundwater				
Antimony	80	120	20	20
Arsenic	80	120	20	20
Beryllium	80	120	20	20
Cadmium	80	120	20	20
Chromium	80	120	20	20
Copper	80	120	20	20
Iron	80	120	20	20
Lead	80	120	20	20
Manganese	80	120	20	20
Nickel	80	120	20	20
Selenium	80	120	20	20
Silver	80	120	20	20
Thallium	80	120	20	20
Zinc	80	120	20	20
Mercury	80	120	20	20

LCL = Lower control limit
LCS = Laboratory control sample
LCSD = Laboratory control sample duplicate
MS = Matrix spike
MSD = Matrix spike duplicate
RPD = Relative percent difference
Surr = Surrogate
UCL = Upper control limit

Appendix D

Electronic Data Deliverable Format

Laboratory electronic data deliverables (EDDs) will be submitted as tab-delimited text or csv files and will conform to the specifications listed below. This format provides all data required for an Environmental Information Management (EIM) submittal.

Field	Name	Type[1]	Data Required[2]
1	PROJID	T	No
2	STUDYID	T	No
3	FIELDID	T	No
4	LABID	T	Yes
5	LABBATCH	T	Yes
6	CAS NUMBER	T	Special
7	ANALYTE	T	Yes
8	VALUE	N	Yes
9	VALUESF	N	No
10	LABQUAL	T	Special
11	UNITS	T	Yes
12	MDL	N	Special
13	REPLIMIT	N	Yes
14	ANLGROUP	T	No
15	PREPMETHOD	T	No
16	ANLMETHOD	T	Yes
17	MATTYPE	T	Yes
18	BASIS	T	Yes
19	LEACHDATE	T	No
20	EXTRDATE	D	Special
21	ANLDATE	D	Yes
22	DILFACTOR	N	Yes
23	COLUMN	T	Yes
24	FRACTION	T	Yes
25	LABNAME	T	Yes
26	PARENTID	T	Special
27	SAMPLEQTY	N	No
28	QTYUNITS	T	No
29	MOISTURE	N	No
30	QCTYPE1	T	Special
31	QCTYPE2	T	Special
32	SURROGATE	N	Special
33	SPIKE	N	Special
34	RECOVERY	N	No
35	RPD	N	No
36	LOWLIMIT	N	No
37	UPPLIMIT	N	No
38	RPDLIMIT	N	No

Note: Table footnotes are on following pages.

[1] ***Type*** field refers to the following data types:

T Text, preferably left justified.

N Numeric, no decimal defined.

D Date/time, date must be eight characters long for the date with the format MM/DD/YY. Time must be six or eight characters long in the format of HH:MM (hours and minutes) or HH:MM:SS (hours, minutes, and seconds). The time must be presented in 24-hour clock (not 12-hour clock).

[2] ***Data required*** field indicates the following:

Yes The field must contain some information and a blank value is not acceptable.

No The field does not require information and, if left blank, is assumed to mean no information was supplied.

Special A special case where the field may be left blank if appropriate; however, a blank field does not represent a lack of information; rather, it indicates some meaning (i.e., a blank in LABQUAL indicates a detected result).

Field Descriptions:

1. **PROJID:** Project name, provided by the client at the beginning of the work assignment and is also listed on the chain of custody (CoC) forms, sample labels, and other project documentation.

2. **STUDYID:** Unique eight-character identifier (ID) to identify the study in the Washington Department of Ecology's EIM database.

3. **FIELDID:** The sample ID number as reported on the CoC form and on sample labels, or the laboratory quality control (QC) sample ID.

   QC samples created by the laboratory from field samples (e.g., laboratory duplicates) must contain the exact SAMPID of the field sample. Other laboratory QC samples (e.g., blanks, spikes, and duplicates) must have unique sample IDs that may be identical to the LABID below.

4. **LABID:** The laboratory internal ID number. The combination of the FIELDID and LABID fields should be sufficient to uniquely define either an environmental or QC sample but may not be sufficient to distinguish reanalyses and dilutions.

5. **LABBATCH:** The laboratory ID number used to associate laboratory generated QC samples.

6. **CAS NUMBER:** A unique identifying number assigned by the Chemical Abstracts Service (CAS) Division of the American Chemical Society to each distinct chemical substance recorded in the CAS Chemical Registry System. The CAS number is accepted nationally and internationally as an identifier for specific, definable chemical substances.

7. **ANALYTE:** Analyte or parameter reported. All compounds should be reported in upper case.

8. **VALUE:** Concentration, value, or result of the compound tested, reported to the correct number of significant figures. The reporting limit (RL) will be reported for non-detect values. Only numbers are acceptable for this field.

   In the case of spiked results, the VALUE will be the spiked sample result and will not be adjusted for the original sample results. If spiked compounds are diluted beyond detection, then the RL shall be reported in the VALUE field and a "U" added with other qualifiers in the LABQUAL field.

9. **VALUESF:** The number of significant figures that should be reported for the VALUE field.

10. **LABQUAL:** Laboratory flags or qualifiers are reported in this field.

    Qualifier codes may be used from the *Statement of Work for Organics Analysis, Multi-Media, Multi-Concentration,* and Document OLM01.0 through revision OLM01.8 (EPA, August 1991). More than one qualifier may be used per record. If other qualifiers are used, then the laboratory must include a list of the definitions of the codes with the electronics. The list may be present as a paper copy or an electronic text file.

    All non-detected results shall be reported with a "U" qualifier. The qualification "ND" for non-detected results is unacceptable. Blank values are acceptable and implied to mean a detected result. If a range will be reported (e.g., greater than 50) the symbol ">" shall be reported in this field.

11. **UNITS:** The units of measure for each record will be reported in this field.

12. **MDL:** Used to report the method detection limit (MDL); a value determined by MDL studies performed in accordance with 40 Code of Federal Regulations or sample-specific estimated detection limits (e.g., 2.5 times signal to noise ratio) for high resolution, isotope dilution test methods. This value is corrected for dilution, percent moisture, or related factors that affect the MDL and/or RL. MDLs are required for all results, as applicable (e.g., not applicable for total solids).

13. **REPLIMIT:** Used to report the RL (presented in REPLIMIT field). Non-detect results reported in the VALUE field should contain the RL corrected for dilution, percent moisture, or related factors that affect the RL.

14. **ANLGROUP:** Field used to group results from various methods. For instance, an entry of 'METALS' may be entered to report results from methods SW-846 6010, SW-846 7041, and SW-846 7470.

15. **PREPMETHOD:** Indicate the extraction or digestion method used (e.g., SW-846 3550B).

16. **ANLMETHOD:** Indicate the analytical method used (e.g., SW-846 8270). Dissolved metals must be clearly identified versus total metals results.

17. **MATTYPE:** Indicate one of the following for the matrix analyzed: SOIL, SEDIMENT, TISSUE, and WATER. If a sample or laboratory QC material does not match one of these, indicate with a code of "X" and explain in the cover letter.

18. **BASIS:** Indicate whether results are reported on a dry weight or wet weight basis, using the terms DRY or WET. If a sample or laboratory QC material does not match one of these, indicate with a code of "X" and explain in the cover letter.

19. **LEACHDATE:** Date the sample was extracted for Toxicity Characteristic Leaching Procedure or Synthetic Precipitation Leaching Procedure test methods. If leaching extraction is not applicable, then the field must be left blank.

20. **EXTRDATE:** Date the sample was extracted or prepared. If an extraction or preparation step is not applicable, then the field may be blank.

21. **ANLDATE:** Date the sample was analyzed.

22. **DILFACTOR:** The dilution factor. This should also reflect "effective" dilutions achieved by increasing or decreasing sample or extracting solvent volumes from standard amounts. That is, pre-concentration steps will result in a dilution factor of less than 1; this is okay.

23. **COLUMN:** This field is used to identify the analytical column from which the result was reported, if applicable.

Code	Definition
1	Primary column
2	Secondary column, also known as conformational column
N	Not applicable

24. **FRACTION:** This field identifies when an aqueous sample is filtered prior to analysis to determine the "dissolved" portion of the chemical of interest. Unfiltered aqueous samples are reported as the "total" fraction. This nomenclature is typically used for metals analysis.

Code	Definition
T	Total
D	Dissolved
N	Not applicable

25. **LABNAME**: The full name (and location if appropriate) or abbreviated name (and location) of the laboratory performing the analysis.

26. **PARENTID**: For duplicate samples only (i.e., laboratory duplicate, matrix spike duplicate, or laboratory control sample duplicate). List the parent sample ID.

27. **SAMPLEQTY:** Quantity or weight of the sample aliquot used for analysis.

28. **QTYUNITS:** The units of measure for the quantity or weight of the sample used for analysis.

29. **MOISTURE:** Moisture content of solid samples, expressed as percent moisture.

30. **QCTYPE1:** This field is used to identify laboratory QC samples. A blank value is acceptable, indicating the record is not one of the sample types below. One of the following codes must be used to identify the laboratory QC sample type:

Code	Definition
RM	Reference material
MB	Method blank
LCS	Laboratory control sample (blank spike or ongoing precision and recovery check)
MS/MSD	Matrix spike/matrix spike duplicate samples
DUP	Duplicate (laboratory duplicates only; field duplicates will have a unique SAMPID)

31. **QCTYPE2:** This field is used to identify analyte types, including tentatively identified compounds (TICs), surrogate compounds, internal standards, and labeled compounds. A blank value is acceptable, indicating the record is not one of the analyte types below. One of the following codes must be used to identify the analyte type:

Code	Definition
SUR	Surrogate or labeled compound result
TIC	Tentatively identified compound
IS	Internal standard

32. **SURROGATE:** If added, this refers to the surrogate or labeled compound concentration or amount expected (e.g., 100 for 100 µg/kg). Units of measure are implied from the UNITS field.

33. **SPIKE:** If added, this refers to the spike concentration or amount expected (e.g., 100 for 100 µg/kg). Units of measure are implied from the UNITS field.

34. **RECOVERY:** Percent recovery. A blank value is acceptable, indicating a non-spiked, non-reference material result. This field should be filled in for surrogates and labeled compounds as well as spiked QC samples and reference materials.

35. **RPD:** Relative percent difference. This field should be filled in for field and laboratory duplicate, matrix spike duplicates, and laboratory control sample duplicates.

36. **LOWLIMIT:** Lower recovery control limit. This field should be filled in for surrogates, QC samples, and reference materials.

37. **UPPLIMIT:** Upper recovery control limit. This field should be filled in for surrogates, QC samples, and reference materials.

38. **RPDLIMIT:** Relative percent difference control limit. This field should be filled in for laboratory duplicates and spiked sample duplicates.

The EDD used for data validation will include all of the fields noted above with data populated by the laboratory, and the following additional fields populated by the data validator.

Field	Name	Type[1]	Data Required[2]
39	val_name	T	Yes
40	val_date	D	Yes
41	val_qual	T	Special
42	val_level	T	Yes
43	val_reason	T	Special
44	val_notes	T	No

[1] ***Type*** field refers to the following data types:

T Text, preferably left justified.

D Date/time, date must be eight characters long for the date with the format MM/DD/YY. Time must be six or eight characters long in the format of HH:MM (hours and minutes) or HH:MM:SS (hours, minutes, and seconds). The time must be presented in 24 -clock (not 12-hour clock).

[2] ***Data required*** field indicates the following:

Yes The field must contain some information and a blank value is not acceptable.

No The field does not require information and, if left blank, is assumed to mean no information was supplied.

Special A special case where the field may be left blank if appropriate; however, a blank field does not represent a lack of information; rather, it indicates some meaning (i.e., a blank in LABQUAL indicates a detected result).

39. **val_name:** The full or abbreviated name of the data validation firm.

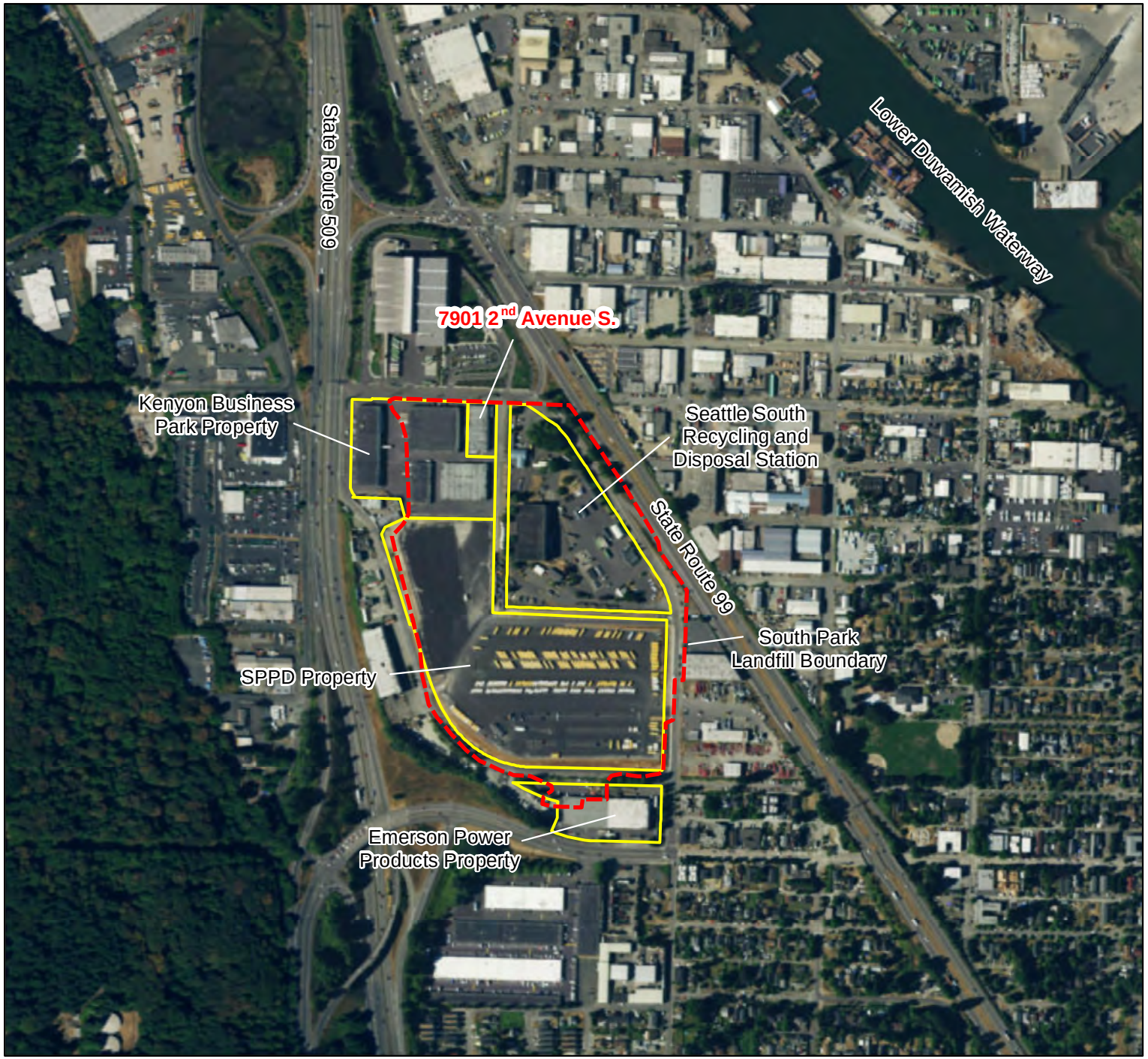
40. **val_date:** The date on which data validation was completed.

41. **val_qual:** Any data qualifiers added during data validation.

42. **val_level:** The level of data validation (e.g., full or summary, S2AVEM).

43. **val_reason:** The reason (or reason code) for data qualification. This field is required if validation qualifiers were added.

44. **val_notes:** Any additional notes. If numeric results changed during data validation, it must be noted here.



LEGEND:

- South Park Landfill Boundary
- Parcel Boundary

NOTES:

1. Background Source: ESRI World Imagery (USDA NAIP, 08/2015).

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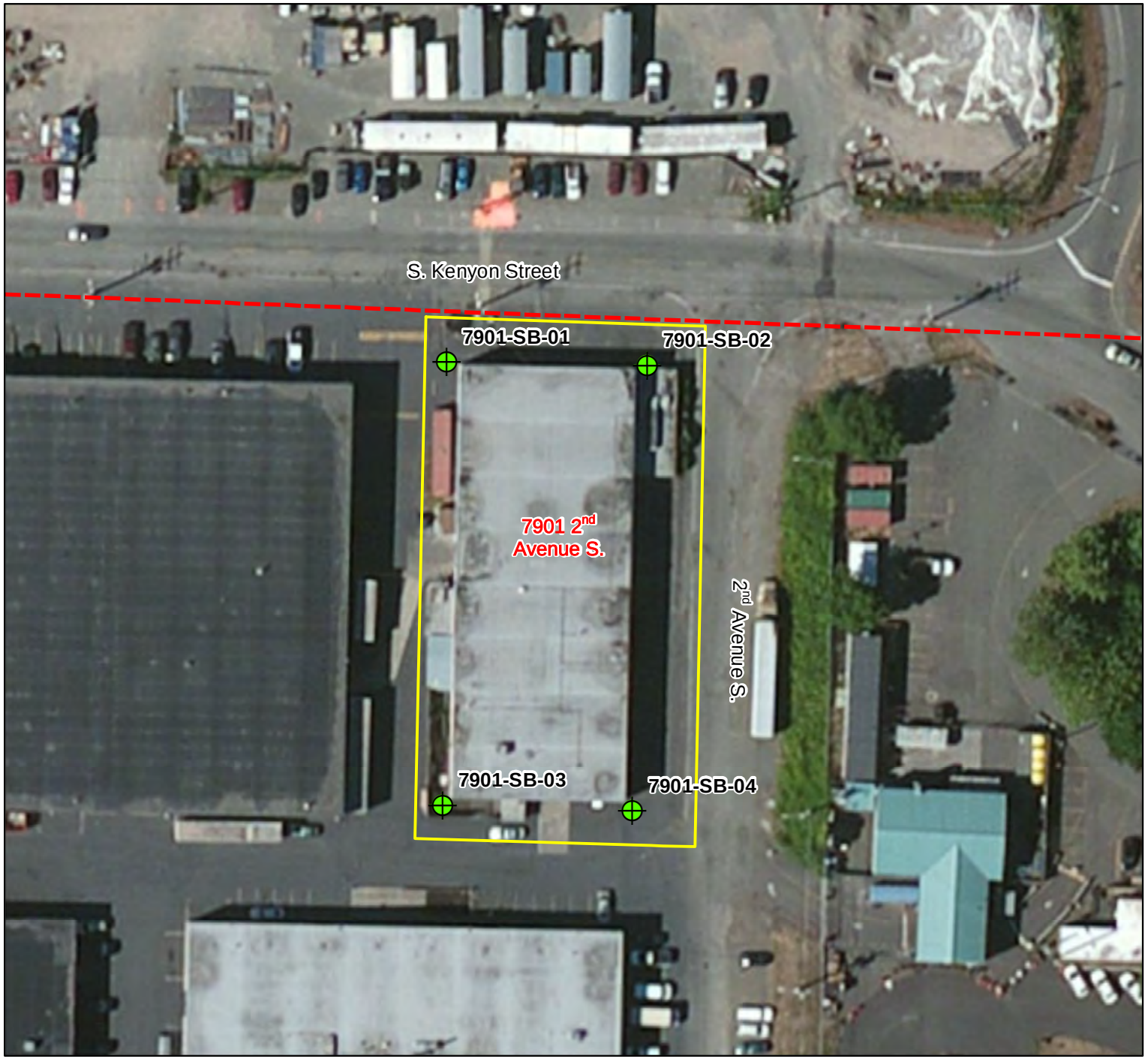
SOUTH PARK LANDFILL
SEATTLE, WA

SOUTH PARK LANDFILL SITE VICINITY

FIGURE: 1 | DATE: 4/25/2017

PROJECT: \SouthPark_LF\Projects\WP\SouthPark_LF_Vicinity.mxd



LEGEND:

- Proposed Boring
- South Park Landfill Boundary
- 7901 2nd Avenue S. Parcel Boundary

NOTES:

1. Background Source: ESRI World Imagery (USDA NAIP, 08/2015).

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SOUTH PARK LANDFILL
SEATTLE, WA

7901 2nd AVENUE S. PROPERTY AND BORING LOCATIONS

FIGURE: 2	DATE: 4/25/2017

PROJECT: \SouthPark_LF\Projects\WP\SouthPark_LF_BoringLocation.mxd

From: Dube, Tom E. [redacted]
Sent: Tuesday, June 13, 2017 7:00 PM
To: Cruz, Jerome (ECY); 'Gretchen Hill'; 'Kim Johannessen'; [redacted]; Anderson, Ivy (ATG)
Subject: FW: EXTERNAL: TestAmerica report files from 580-68649-1 7901 Parcel-South Park Landfill
Attachments: J68649-1 UDS Level 2 Report Final Report.pdf; 580-68649-1_EimWashington.csv; 7901 _Geoprobe Boring Locations.pdf

The laboratory submitted their analytical report today for soil and groundwater sampling at the 7901 property. The lab sent the EIM data file (Excel) to Kim LaDuca but forgot to send the laboratory report (pdf), which also includes the chain of custody form. So I am forwarding both files to the group now, along with a pdf map showing the boring locations.

Validation of this data will begin soon.

Let us know if you have any questions.
Thanks,
Tom

Thomas Dubé | Leidos
office: 425.482.3325 | [redacted]

From: Walker, Elaine [mailto:elaine.walker@testamericainc.com]
Sent: Tuesday, June 13, 2017 4:40 PM
To: Peters, Joe E. ; Dube, Tom E.
Subject: EXTERNAL: TestAmerica report files from 580-68649-1 7901 Parcel-South Park Landfill

Hello,

Attached please find the report files for job 580-68649-1; 7901 Parcel-South Park Landfill

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

Thank you.

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: Project Feedback

ELAINE M WALKER
Project Manager II

TestAmerica Seattle
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 253.248.4972
www.testamericainc.com

Reference: [201404]
Attachments: 1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-68649-1
Client Project/Site: 7901 Parcel-South Park Landfill

For:
Leidos, Inc.
18912 North Creek Parkway, Suite 101
Bothell, Washington 98011

Attn: Tom Dube

M. Elaine Walker

Authorized for release by:
6/13/2017 4:35:06 PM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

Table of Contents

Job ID: 580-68649-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE
Client: Leidos, Inc.
Project: 7901 Parcel-South Park Landfill
Report Number: 580-68649-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

Fifteen samples were received on 5/26/2017 4:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.3º C and 6.0º C.

The reference method requires samples to be preserved to a pH of 2 or less. The following sample was received with insufficient preservation at a pH of more than 2: 7901-SB-04-GW (580-68649-3). The sample was preserved to the appropriate pH in the laboratory.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

VOLATILE ORGANIC COMPOUNDS (GC-MS) - WATER

Samples 7901-SB-01-GW (580-68649-1), 7901-SB-02-GW (580-68649-2), 7901-SB-04-GW (580-68649-3) and 7901-TB-GW (580-68649-4) were analyzed for volatile organic compounds (GC-MS) in accordance with 8260C. The samples were analyzed on 05/31/2017 and 06/01/2017.

The continuing calibration verification (CCV) associated with batch 580-247301 recovered above the upper control limit for 2,2-Dichloropropane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: 7901-SB-01-GW (580-68649-1), 7901-SB-02-GW (580-68649-2), 7901-SB-04-GW (580-68649-3), 7901-TB-GW (580-68649-4) and (CCVIS 580-247301/2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

POLYCHLORINATED BIPHENYLS (PCBS) - WATER

Samples 7901-SB-01-GW (580-68649-1), 7901-SB-02-GW (580-68649-2) and 7901-SB-04-GW (580-68649-3) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082A. The samples were prepared on 06/07/2017 and analyzed on 06/08/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

POLYCHLORINATED BIPHENYLS (PCBS) - SOIL

Samples 7901-SB-01-9.5 (580-68649-5), 7901-SB-01-14.5 (580-68649-6), 7901-SB-01-17.5 (580-68649-7), 7901-SB-02-14.5 (580-68649-8), 7901-SB-02-17.5 (580-68649-9), 7901-SB-03-8 (580-68649-10), 7901-SB-03-9 (580-68649-11), 7901-SB-03-17

Job ID: 580-68649-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

(580-68649-12), 7901-SB-04-9 (580-68649-13), 7901-SB-04-14 (580-68649-14) and 7901-SB-04-18.5 (580-68649-15) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082. The samples were prepared on 06/02/2017 and analyzed on 06/04/2017.

The following samples required a copper clean-up to reduce matrix interferences caused by sulfur: 7901-SB-01-9.5 (580-68649-5), 7901-SB-01-14.5 (580-68649-6), 7901-SB-01-17.5 (580-68649-7), 7901-SB-02-14.5 (580-68649-8), 7901-SB-02-17.5 (580-68649-9), 7901-SB-03-8 (580-68649-10), 7901-SB-03-9 (580-68649-11), 7901-SB-03-17 (580-68649-12), 7901-SB-04-9 (580-68649-13), 7901-SB-04-14 (580-68649-14), 7901-SB-04-18.5 (580-68649-15), 7901-SB-04-18.5 (580-68649-15[MS]), 7901-SB-04-18.5 (580-68649-15[MSD]), (LCS 580-247425/2-A), (LCSD 580-247425/3-A) and (MB 580-247425/1-A).

The following sample contained non-target PCB-1268: 7901-SB-03-9 (580-68649-11).

The CCVs associated with batch580-247887 fell outside the control limits for surrogate DCB Decachlorobiphenyl. Since the associated samples had surrogate DCB Decachlorobiphenyl recoveries within the limits, the data has been reported.

The continuing calibration verification (CCV) associated with batch 580-247887 recovered above the upper control limit for PCB-1260 on the confirmation column. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported fro the primary column which met the control limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS) - SOIL

Samples 7901-SB-01-9.5 (580-68649-5), 7901-SB-01-14.5 (580-68649-6), 7901-SB-01-17.5 (580-68649-7), 7901-SB-02-14.5 (580-68649-8), 7901-SB-02-17.5 (580-68649-9), 7901-SB-03-8 (580-68649-10), 7901-SB-03-9 (580-68649-11), 7901-SB-03-17 (580-68649-12), 7901-SB-04-9 (580-68649-13), 7901-SB-04-14 (580-68649-14) and 7901-SB-04-18.5 (580-68649-15) were analyzed for semivolatile organic compounds (GC-MS) in accordance with 8270D. The samples were prepared on 06/05/2017 and analyzed on 06/06/2017 and 06/07/2017.

Phenol-d5 (Surr) failed the surrogate recovery criteria high for 7901-SB-03-9 (580-68649-11). 2,4,6-Tribromophenol (Surr) failed the surrogate recovery criteria low for 7901-SB-04-14 (580-68649-14). Phenol-d5 (Surr) failed the surrogate recovery criteria high for 7901-SB-01-14.5 (580-68649-6). Chromatographic evidence of matrix interference is present; therefore, re-extraction and/or re-analysis were not warranted.

Benzo[g,h,i]perylene failed the recovery criteria low for LCS 580-247561/3-A. This random marginal exceedance does not indicate a systematic control problem. Qualified results have been reported.

Several analytes failed the recovery criteria low for the MS of sample 7901-SB-04-18.5MS (580-68649-15) in batch 580-247639. 3 & 4 Methylphenol, Bis(2-chloroethyl)ether and bis(chloroisopropyl) ether failed the recovery criteria high. For the MSD of sample 7901-SB-04-18.5MSD (580-68649-15) in batch 580-247639, several analytes failed the recovery criteria low. bis(chloroisopropyl) ether failed the recovery criteria high. Also, several analytes exceeded the RPD limit. Sample matrix interference and/or non-homogeneity are suspected.

The minimum response factor (RF) criteria for the continuing calibration verification (CCV) analyzed in batch 580-247422 was outside criteria for the following analytes: N-Nitrosodi-n-propylamine and 2,4-Dimethylphenol. As indicated in the reference method, sample analysis may proceed; however, any detection or non-detection for the affected analytes is considered estimated.

The minimum response factor (RF) criteria for the continuing calibration verification (CCV) analyzed in batch 580-247639 was outside criteria for 2,4-Dimethylphenol and N-Nitrosodi-n-propylamine. As indicated in the reference method, sample analysis may proceed; however, any detection or non-detection for the affected analyte(s) is considered estimated.

The continuing calibration verification (CCV) associated with batch 580-247639 recovered above the upper control limit for 2,2'-oxybis[1-chloropropane], Di-n-butylphthalate, and Butylbenzyl phthalate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: 7901-SB-01-9.5 (580-68649-5), 7901-SB-01-14.5 (580-68649-6), 7901-SB-01-17.5 (580-68649-7), 7901-SB-02-14.5 (580-68649-8), 7901-SB-02-17.5 (580-68649-9), 7901-SB-03-8 (580-68649-10), 7901-SB-03-9 (580-68649-11), 7901-SB-03-17 (580-68649-12), 7901-SB-04-9 (580-68649-13),

Job ID: 580-68649-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

7901-SB-04-14 (580-68649-14), 7901-SB-04-18.5 (580-68649-15), 7901-SB-04-18.5 (580-68649-15[MS]), 7901-SB-04-18.5 (580-68649-15[MSD]), (CCVC 580-247639/31), (CCVIS 580-247639/3), (CCVL 580-247639/4), (LCS 580-247561/3-A) and (MB 580-247561/1-A).

Samples 7901-SB-01-9.5 (580-68649-5)[50X], 7901-SB-01-14.5 (580-68649-6)[5X], 7901-SB-02-14.5 (580-68649-8)[10X], 7901-SB-03-9 (580-68649-11)[5X], 7901-SB-03-9 (580-68649-11)[50X] and 7901-SB-04-14 (580-68649-14)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS - SELECTED ION MODE (SIM) - WATER

Samples 7901-SB-01-GW (580-68649-1), 7901-SB-02-GW (580-68649-2) and 7901-SB-04-GW (580-68649-3) were analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with EPA SW-846 Method 8270D SIM. The samples were prepared on 05/31/2017 and analyzed on 05/31/2017 and 06/03/2017.

1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthene and Naphthalene failed the recovery criteria low for LCS 580-247225/2-A. Acenaphthene and Naphthalene failed the recovery criteria low for LCSD 580-247225/3-A. These analytes were outside the Marginal Exceedance Limits; therefore, re-extraction and/or re-analysis were performed. Since the out-of-hold re-extraction yielded no improvement to the data, the original set is reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO) - WATER

Samples 7901-SB-01-GW (580-68649-1), 7901-SB-02-GW (580-68649-2) and 7901-SB-04-GW (580-68649-3) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were analyzed on 05/30/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO) - SOIL

Samples 7901-SB-01-9.5 (580-68649-5), 7901-SB-01-14.5 (580-68649-6), 7901-SB-01-17.5 (580-68649-7), 7901-SB-02-14.5 (580-68649-8), 7901-SB-02-17.5 (580-68649-9), 7901-SB-03-8 (580-68649-10), 7901-SB-03-9 (580-68649-11), 7901-SB-03-17 (580-68649-12), 7901-SB-04-9 (580-68649-13), 7901-SB-04-14 (580-68649-14) and 7901-SB-04-18.5 (580-68649-15) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were prepared and analyzed on 06/07/2017, 06/08/2017 and 06/10/2017.

Reanalysis of the following samples was performed outside of the analytical holding time due to failure of the instrument's QC : 7901-SB-04-18.5 (580-68649-15), 7901-SB-04-18.5 (580-68649-15[MS]) and 7901-SB-04-18.5 (580-68649-15[MSD]).

Gasoline exceeded the RPD limit for the MSD of sample 7901-SB-04-18.5MSD (580-68649-15) in batch 580-248155. Sample matrix interference and/or non-homogeneity are suspected because the MS/MSD and associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL AND MOTOR OIL RANGE ORGANICS - WATER

Samples 7901-SB-01-GW (580-68649-1), 7901-SB-02-GW (580-68649-2) and 7901-SB-04-GW (580-68649-3) were analyzed for diesel and motor oil range organics in accordance with Method NWTPH-Dx. The samples were prepared on 06/07/2017 and analyzed on 06/08/2017.

The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: 7901-SB-01-GW (580-68649-1), 7901-SB-02-GW (580-68649-2) and 7901-SB-04-GW (580-68649-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 580-68649-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

DIESEL AND EXTENDED RANGE ORGANICS - SOIL

Samples 7901-SB-01-9.5 (580-68649-5), 7901-SB-01-14.5 (580-68649-6), 7901-SB-01-17.5 (580-68649-7), 7901-SB-02-14.5 (580-68649-8), 7901-SB-02-17.5 (580-68649-9), 7901-SB-03-8 (580-68649-10), 7901-SB-03-9 (580-68649-11), 7901-SB-03-17 (580-68649-12), 7901-SB-04-9 (580-68649-13), 7901-SB-04-14 (580-68649-14) and 7901-SB-04-18.5 (580-68649-15) were analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared on 06/01/2017 and analyzed on 06/02/2017, 06/03/2017, 06/09/2017 and 06/10/2017.

o-Terphenyl failed the surrogate recovery criteria high for 7901-SB-03-9 (580-68649-11). o-Terphenyl failed the surrogate recovery criteria high for 7901-SB-01-9.5 (580-68649-5). Evidence of matrix interference due to high target analytes is present; therefore, re-extraction and/or re-analysis were not performed.

#2 Diesel (C10-C24) and Motor Oil (>C24-C36) failed the recovery criteria low for the MS of sample 7901-SB-04-18.5MS (580-68649-15) in batch 580-248128. #2 Diesel (C10-C24) and Motor Oil (>C24-C36) failed the recovery criteria low for the MSD of sample 7901-SB-04-18.5MSD (580-68649-15) in batch 580-248128. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: 7901-SB-01-9.5 (580-68649-5), 7901-SB-01-14.5 (580-68649-6), 7901-SB-02-14.5 (580-68649-8), 7901-SB-03-9 (580-68649-11), 7901-SB-04-9 (580-68649-13), 7901-SB-04-14 (580-68649-14) and 7901-SB-04-18.5 (580-68649-15).

Sample 7901-SB-04-14 (580-68649-14)[5X] required dilution prior to analysis to bring the concentration of target analytes within the calibration range. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL METALS (ICPMS) - WATER

Samples 7901-SB-01-GW (580-68649-1), 7901-SB-02-GW (580-68649-2) and 7901-SB-04-GW (580-68649-3) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 05/30/2017 and analyzed on 05/31/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL MERCURY - WATER

Samples 7901-SB-01-GW (580-68649-1), 7901-SB-02-GW (580-68649-2) and 7901-SB-04-GW (580-68649-3) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 05/30/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS) - SOIL

Samples 7901-SB-01-9.5 (580-68649-5), 7901-SB-01-14.5 (580-68649-6), 7901-SB-01-17.5 (580-68649-7), 7901-SB-02-14.5 (580-68649-8), 7901-SB-02-17.5 (580-68649-9), 7901-SB-03-8 (580-68649-10), 7901-SB-03-9 (580-68649-11), 7901-SB-03-17 (580-68649-12), 7901-SB-04-9 (580-68649-13), 7901-SB-04-14 (580-68649-14) and 7901-SB-04-18.5 (580-68649-15) were analyzed for metals (ICPMS) in accordance with SW846 6020A. The samples were prepared on 05/30/2017 and analyzed on 05/31/2017.

Copper failed the recovery criteria low for the MS of sample 7901-SB-04-18.5MS (580-68649-15) in batch 580-247306. Lead and Zinc failed the recovery criteria high. Copper, Lead and Zinc failed the recovery criteria high for the MSD of sample 7901-SB-04-18.5MSD (580-68649-15) in batch 580-247306. Copper and Lead exceeded the RPD limit.

Copper and Nickel exceeded the RPD limit for the duplicate of sample 7901-SB-04-18.5DU (580-68649-15).

Samples 7901-SB-02-14.5 (580-68649-8)[1000X], 7901-SB-03-9 (580-68649-11)[1000X] and 7901-SB-04-9 (580-68649-13)[1000X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 580-68649-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

TOTAL MERCURY - SOIL

Samples 7901-SB-01-9.5 (580-68649-5), 7901-SB-01-14.5 (580-68649-6), 7901-SB-01-17.5 (580-68649-7), 7901-SB-02-14.5 (580-68649-8), 7901-SB-02-17.5 (580-68649-9), 7901-SB-03-8 (580-68649-10), 7901-SB-03-9 (580-68649-11), 7901-SB-03-17 (580-68649-12), 7901-SB-04-9 (580-68649-13), 7901-SB-04-14 (580-68649-14) and 7901-SB-04-18.5 (580-68649-15) were analyzed for total mercury in accordance with EPA SW-846 Method 7471A. The samples were prepared and analyzed on 05/30/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples 7901-SB-01-9.5 (580-68649-5), 7901-SB-01-14.5 (580-68649-6), 7901-SB-01-17.5 (580-68649-7), 7901-SB-02-14.5 (580-68649-8), 7901-SB-02-17.5 (580-68649-9), 7901-SB-03-8 (580-68649-10), 7901-SB-03-9 (580-68649-11), 7901-SB-03-17 (580-68649-12), 7901-SB-04-9 (580-68649-13), 7901-SB-04-14 (580-68649-14) and 7901-SB-04-18.5 (580-68649-15) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 06/02/2017 and 06/05/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
X	Surrogate is outside control limits
F2	MS/MSD RPD exceeds control limits
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
H	Sample was prepped or analyzed beyond the specified holding time

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
F1	MS and/or MSD Recovery is outside acceptance limits.

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
F3	Duplicate RPD exceeds the control limit
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: Leidos, Inc.
Project/Site: 7901 Parcel-South Park Landfill

TestAmerica Job ID: 580-68649-1

Client Sample ID: 7901-SB-01-GW
Date Collected: 05/25/17 16:00
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		0.30	0.050	ug/L			05/31/17 23:24	1
2-Chlorotoluene	ND		0.50	0.070	ug/L			05/31/17 23:24	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			05/31/17 23:24	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			05/31/17 23:24	1
cis-1,3-Dichloropropene	ND		0.50	0.090	ug/L			05/31/17 23:24	1
Chlorobenzene	ND		0.20	0.025	ug/L			05/31/17 23:24	1
Vinyl chloride	**0.30**		0.020	0.013	ug/L			05/31/17 23:24	1
sec-Butylbenzene	ND		0.50	0.070	ug/L			05/31/17 23:24	1
Dibromomethane	ND		0.20	0.025	ug/L			05/31/17 23:24	1
m-Xylene & p-Xylene	ND		0.50	0.050	ug/L			05/31/17 23:24	1
o-Xylene	ND		0.50	0.060	ug/L			05/31/17 23:24	1
1,2,4-Trichlorobenzene	ND		0.20	0.040	ug/L			05/31/17 23:24	1
Styrene	ND		0.50	0.10	ug/L			05/31/17 23:24	1
Chlorobromomethane	ND		0.20	0.025	ug/L			05/31/17 23:24	1
Dichlorobromomethane	ND		0.20	0.025	ug/L			05/31/17 23:24	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			05/31/17 23:24	1
Benzene	ND		0.20	0.025	ug/L			05/31/17 23:24	1
Chloroethane	ND		0.50	0.075	ug/L			05/31/17 23:24	1
trans-1,3-Dichloropropene	ND		0.20	0.025	ug/L			05/31/17 23:24	1
1,2,3-Trichlorobenzene	ND		0.50	0.10	ug/L			05/31/17 23:24	1
N-Propylbenzene	ND		0.20	0.025	ug/L			05/31/17 23:24	1
4-Isopropyltoluene	ND		0.30	0.050	ug/L			05/31/17 23:24	1
n-Butylbenzene	ND		0.50	0.080	ug/L			05/31/17 23:24	1
1,1-Dichloropropene	ND		0.10	0.015	ug/L			05/31/17 23:24	1
cis-1,2-Dichloroethene	ND		0.20	0.025	ug/L			05/31/17 23:24	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.025	ug/L			05/31/17 23:24	1
1,2,4-Trimethylbenzene	ND		0.20	0.030	ug/L			05/31/17 23:24	1
Toluene	ND		0.20	0.025	ug/L			05/31/17 23:24	1
Naphthalene	ND		0.50	0.10	ug/L			05/31/17 23:24	1
1,3,5-Trimethylbenzene	ND		0.50	0.083	ug/L			05/31/17 23:24	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			05/31/17 23:24	1
Chloroform	ND		0.20	0.030	ug/L			05/31/17 23:24	1
4-Chlorotoluene	ND		0.30	0.050	ug/L			05/31/17 23:24	1
Chlorodibromomethane	ND		0.20	0.025	ug/L			05/31/17 23:24	1
Dichlorodifluoromethane	ND		0.40	0.050	ug/L			05/31/17 23:24	1
1,1,2-Trichloroethane	ND		0.20	0.025	ug/L			05/31/17 23:24	1
tert-Butylbenzene	ND		0.50	0.10	ug/L			05/31/17 23:24	1
Chloromethane	ND		0.30	0.050	ug/L			05/31/17 23:24	1
Methylene Chloride	ND		0.50	0.11	ug/L			05/31/17 23:24	1
1,1-Dichloroethene	ND		0.10	0.018	ug/L			05/31/17 23:24	1
Isopropylbenzene	ND		0.50	0.060	ug/L			05/31/17 23:24	1
1,2-Dichloroethane	ND		0.20	0.025	ug/L			05/31/17 23:24	1
Tetrachloroethene	ND		0.50	0.070	ug/L			05/31/17 23:24	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			05/31/17 23:24	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			05/31/17 23:24	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			05/31/17 23:24	1
Bromoform	ND		0.50	0.080	ug/L			05/31/17 23:24	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.44	ug/L			05/31/17 23:24	1
Trichlorofluoromethane	ND		0.50	0.025	ug/L			05/31/17 23:24	1

Client Sample ID: 7901-SB-01-GW
Date Collected: 05/25/17 16:00
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		0.20	0.025	ug/L			05/31/17 23:24	1
Bromobenzene	ND		0.20	0.035	ug/L			05/31/17 23:24	1
1,2-Dichloropropane	ND		0.20	0.025	ug/L			05/31/17 23:24	1
1,1,1,2-Tetrachloroethane	ND		0.20	0.025	ug/L			05/31/17 23:24	1
Ethylbenzene	ND		0.20	0.030	ug/L			05/31/17 23:24	1
trans-1,2-Dichloroethene	ND		0.20	0.025	ug/L			05/31/17 23:24	1
Hexachlorobutadiene	ND		0.50	0.075	ug/L			05/31/17 23:24	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			05/31/17 23:24	1
Bromomethane	ND		1.0	0.16	ug/L			05/31/17 23:24	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			05/31/17 23:24	1
Methyl tert-butyl ether	ND		0.20	0.025	ug/L			05/31/17 23:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*81 - 120*		*05/31/17 23:24*	*1*
Toluene-d8 (Surr)	*94*		*75 - 125*		*05/31/17 23:24*	*1*
Trifluorotoluene (Surr)	*95*		*74 - 118*		*05/31/17 23:24*	*1*
Dibromofluoromethane (Surr)	*98*		*42 - 132*		*05/31/17 23:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*46 - 150*		*05/31/17 23:24*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND	*	0.041	0.013	ug/L		05/31/17 08:24	06/03/17 14:50	1
2-Methylnaphthalene	ND	*	0.031	0.0093	ug/L		05/31/17 08:24	06/03/17 14:50	1
1-Methylnaphthalene	ND	*	0.021	0.0062	ug/L		05/31/17 08:24	06/03/17 14:50	1
Acenaphthylene	ND		0.021	0.0021	ug/L		05/31/17 08:24	06/03/17 14:50	1
Acenaphthene	**0.12**	*	0.021	0.0021	ug/L		05/31/17 08:24	06/03/17 14:50	1
Fluorene	ND		0.021	0.0031	ug/L		05/31/17 08:24	06/03/17 14:50	1
Phenanthrene	**0.068**		0.021	0.0041	ug/L		05/31/17 08:24	06/03/17 14:50	1
Anthracene	**0.023**		0.021	0.0031	ug/L		05/31/17 08:24	06/03/17 14:50	1
Fluoranthene	**0.032**		0.021	0.0021	ug/L		05/31/17 08:24	06/03/17 14:50	1
Pyrene	**0.037**		0.021	0.0041	ug/L		05/31/17 08:24	06/03/17 14:50	1
Benzo[a]anthracene	ND		0.021	0.0021	ug/L		05/31/17 08:24	06/03/17 14:50	1
Chrysene	ND		0.021	0.0062	ug/L		05/31/17 08:24	06/03/17 14:50	1
Benzo[b]fluoranthene	ND		0.021	0.0082	ug/L		05/31/17 08:24	06/03/17 14:50	1
Benzo[k]fluoranthene	ND		0.031	0.0093	ug/L		05/31/17 08:24	06/03/17 14:50	1
Benzo[a]pyrene	ND		0.021	0.0031	ug/L		05/31/17 08:24	06/03/17 14:50	1
Indeno[1,2,3-cd]pyrene	ND		0.021	0.0072	ug/L		05/31/17 08:24	06/03/17 14:50	1
Dibenz(a,h)anthracene	ND		0.021	0.0021	ug/L		05/31/17 08:24	06/03/17 14:50	1
Benzo[g,h,i]perylene	ND		0.021	0.0031	ug/L		05/31/17 08:24	06/03/17 14:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*75*		*53 - 112*	*05/31/17 08:24*	*06/03/17 14:50*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.50	0.050	mg/L			05/30/17 22:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*58 - 133*		*05/30/17 22:13*	*1*
Trifluorotoluene (Surr)	*107*		*77 - 128*		*05/30/17 22:13*	*1*

Client: Leidos, Inc.
Project/Site: 7901 Parcel-South Park Landfill

TestAmerica Job ID: 580-68649-1

Client Sample ID: 7901-SB-01-GW
Date Collected: 05/25/17 16:00
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-1
Matrix: Water

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.52	0.022	ug/L		06/07/17 08:57	06/08/17 03:16	1
PCB-1221	ND		0.52	0.031	ug/L		06/07/17 08:57	06/08/17 03:16	1
PCB-1232	ND		0.52	0.028	ug/L		06/07/17 08:57	06/08/17 03:16	1
PCB-1242	ND		0.52	0.029	ug/L		06/07/17 08:57	06/08/17 03:16	1
PCB-1248	ND		0.52	0.022	ug/L		06/07/17 08:57	06/08/17 03:16	1
PCB-1254	ND		0.52	0.021	ug/L		06/07/17 08:57	06/08/17 03:16	1
PCB-1260	ND		0.52	0.027	ug/L		06/07/17 08:57	06/08/17 03:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*101*		*38 - 134*	*06/07/17 08:57*	*06/08/17 03:16*	*1*
Tetrachloro-m-xylene	*83*		*54 - 115*	*06/07/17 08:57*	*06/08/17 03:16*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**0.67**		0.10	0.019	mg/L		06/07/17 14:31	06/08/17 15:47	1
Motor Oil (>C24-C36)	**0.38**		0.26	0.079	mg/L		06/07/17 14:31	06/08/17 15:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*89*		*43 - 119*	*06/07/17 14:31*	*06/08/17 15:47*	*1*

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.0014	mg/L		05/30/17 18:17	05/31/17 11:36	5
Antimony	ND		0.0020	0.00055	mg/L		05/30/17 18:17	05/31/17 11:36	5
Beryllium	ND		0.0020	0.00022	mg/L		05/30/17 18:17	05/31/17 11:36	5
Cadmium	ND		0.0020	0.00050	mg/L		05/30/17 18:17	05/31/17 11:36	5
Chromium	ND		0.0020	0.00071	mg/L		05/30/17 18:17	05/31/17 11:36	5
Copper	ND		0.010	0.0030	mg/L		05/30/17 18:17	05/31/17 11:36	5
Iron	**11**		1.0	0.18	mg/L		05/30/17 18:17	05/31/17 11:36	5
Lead	**0.027**		0.0040	0.0010	mg/L		05/30/17 18:17	05/31/17 11:36	5
Manganese	**0.060**		0.010	0.0023	mg/L		05/30/17 18:17	05/31/17 11:36	5
Nickel	ND		0.015	0.00054	mg/L		05/30/17 18:17	05/31/17 11:36	5
Selenium	ND		0.040	0.010	mg/L		05/30/17 18:17	05/31/17 11:36	5
Silver	ND		0.0020	0.00022	mg/L		05/30/17 18:17	05/31/17 11:36	5
Thallium	ND		0.0050	0.00033	mg/L		05/30/17 18:17	05/31/17 11:36	5
Zinc	**0.093**		0.035	0.0095	mg/L		05/30/17 18:17	05/31/17 11:36	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00030	0.00015	mg/L		05/30/17 10:12	05/30/17 13:26	1

Client Sample ID: 7901-SB-02-GW
Date Collected: 05/25/17 10:35
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-2
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		0.30	0.050	ug/L			05/31/17 23:53	1
2-Chlorotoluene	ND		0.50	0.070	ug/L			05/31/17 23:53	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			05/31/17 23:53	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			05/31/17 23:53	1
cis-1,3-Dichloropropene	ND		0.50	0.090	ug/L			05/31/17 23:53	1
Chlorobenzene	**1.3**		0.20	0.025	ug/L			05/31/17 23:53	1
Vinyl chloride	**0.16**		0.020	0.013	ug/L			05/31/17 23:53	1
sec-Butylbenzene	ND		0.50	0.070	ug/L			05/31/17 23:53	1
Dibromomethane	ND		0.20	0.025	ug/L			05/31/17 23:53	1
m-Xylene & p-Xylene	ND		0.50	0.050	ug/L			05/31/17 23:53	1
o-Xylene	ND		0.50	0.060	ug/L			05/31/17 23:53	1
1,2,4-Trichlorobenzene	ND		0.20	0.040	ug/L			05/31/17 23:53	1
Styrene	ND		0.50	0.10	ug/L			05/31/17 23:53	1
Chlorobromomethane	ND		0.20	0.025	ug/L			05/31/17 23:53	1
Dichlorobromomethane	ND		0.20	0.025	ug/L			05/31/17 23:53	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			05/31/17 23:53	1
Benzene	ND		0.20	0.025	ug/L			05/31/17 23:53	1
Chloroethane	ND		0.50	0.075	ug/L			05/31/17 23:53	1
trans-1,3-Dichloropropene	ND		0.20	0.025	ug/L			05/31/17 23:53	1
1,2,3-Trichlorobenzene	ND		0.50	0.10	ug/L			05/31/17 23:53	1
N-Propylbenzene	ND		0.20	0.025	ug/L			05/31/17 23:53	1
4-Isopropyltoluene	ND		0.30	0.050	ug/L			05/31/17 23:53	1
n-Butylbenzene	ND		0.50	0.080	ug/L			05/31/17 23:53	1
1,1-Dichloropropene	ND		0.10	0.015	ug/L			05/31/17 23:53	1
cis-1,2-Dichloroethene	ND		0.20	0.025	ug/L			05/31/17 23:53	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.025	ug/L			05/31/17 23:53	1
1,2,4-Trimethylbenzene	ND		0.20	0.030	ug/L			05/31/17 23:53	1
Toluene	ND		0.20	0.025	ug/L			05/31/17 23:53	1
Naphthalene	ND		0.50	0.10	ug/L			05/31/17 23:53	1
1,3,5-Trimethylbenzene	ND		0.50	0.083	ug/L			05/31/17 23:53	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			05/31/17 23:53	1
Chloroform	ND		0.20	0.030	ug/L			05/31/17 23:53	1
4-Chlorotoluene	ND		0.30	0.050	ug/L			05/31/17 23:53	1
Chlorodibromomethane	ND		0.20	0.025	ug/L			05/31/17 23:53	1
Dichlorodifluoromethane	ND		0.40	0.050	ug/L			05/31/17 23:53	1
1,1,2-Trichloroethane	ND		0.20	0.025	ug/L			05/31/17 23:53	1
tert-Butylbenzene	ND		0.50	0.10	ug/L			05/31/17 23:53	1
Chloromethane	ND		0.30	0.050	ug/L			05/31/17 23:53	1
Methylene Chloride	ND		0.50	0.11	ug/L			05/31/17 23:53	1
1,1-Dichloroethene	ND		0.10	0.018	ug/L			05/31/17 23:53	1
Isopropylbenzene	ND		0.50	0.060	ug/L			05/31/17 23:53	1
1,2-Dichloroethane	ND		0.20	0.025	ug/L			05/31/17 23:53	1
Tetrachloroethene	ND		0.50	0.070	ug/L			05/31/17 23:53	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			05/31/17 23:53	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			05/31/17 23:53	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			05/31/17 23:53	1
Bromoform	ND		0.50	0.080	ug/L			05/31/17 23:53	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.44	ug/L			05/31/17 23:53	1
Trichlorofluoromethane	ND		0.50	0.025	ug/L			05/31/17 23:53	1

Client Sample ID: 7901-SB-02-GW
Date Collected: 05/25/17 10:35
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-2
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		0.20	0.025	ug/L			05/31/17 23:53	1
Bromobenzene	ND		0.20	0.035	ug/L			05/31/17 23:53	1
1,2-Dichloropropane	ND		0.20	0.025	ug/L			05/31/17 23:53	1
1,1,1,2-Tetrachloroethane	ND		0.20	0.025	ug/L			05/31/17 23:53	1
Ethylbenzene	ND		0.20	0.030	ug/L			05/31/17 23:53	1
trans-1,2-Dichloroethene	ND		0.20	0.025	ug/L			05/31/17 23:53	1
Hexachlorobutadiene	ND		0.50	0.075	ug/L			05/31/17 23:53	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			05/31/17 23:53	1
Bromomethane	ND		1.0	0.16	ug/L			05/31/17 23:53	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			05/31/17 23:53	1
Methyl tert-butyl ether	ND		0.20	0.025	ug/L			05/31/17 23:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*115*		*81 - 120*		*05/31/17 23:53*	*1*
Toluene-d8 (Surr)	*92*		*75 - 125*		*05/31/17 23:53*	*1*
Trifluorotoluene (Surr)	*91*		*74 - 118*		*05/31/17 23:53*	*1*
Dibromofluoromethane (Surr)	*101*		*42 - 132*		*05/31/17 23:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*46 - 150*		*05/31/17 23:53*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**0.062**	*	0.041	0.013	ug/L		05/31/17 08:24	06/03/17 15:39	1
2-Methylnaphthalene	ND	*	0.031	0.0092	ug/L		05/31/17 08:24	06/03/17 15:39	1
1-Methylnaphthalene	**0.19**	*	0.020	0.0061	ug/L		05/31/17 08:24	06/03/17 15:39	1
Acenaphthylene	**0.056**		0.020	0.0020	ug/L		05/31/17 08:24	06/03/17 15:39	1
Acenaphthene	**0.63**	*	0.020	0.0020	ug/L		05/31/17 08:24	06/03/17 15:39	1
Fluorene	**0.045**		0.020	0.0031	ug/L		05/31/17 08:24	06/03/17 15:39	1
Phenanthrene	**0.034**		0.020	0.0041	ug/L		05/31/17 08:24	06/03/17 15:39	1
Anthracene	**0.089**		0.020	0.0031	ug/L		05/31/17 08:24	06/03/17 15:39	1
Fluoranthene	ND		0.020	0.0020	ug/L		05/31/17 08:24	06/03/17 15:39	1
Pyrene	**0.021**		0.020	0.0041	ug/L		05/31/17 08:24	06/03/17 15:39	1
Benzo[a]anthracene	ND		0.020	0.0020	ug/L		05/31/17 08:24	06/03/17 15:39	1
Chrysene	ND		0.020	0.0061	ug/L		05/31/17 08:24	06/03/17 15:39	1
Benzo[b]fluoranthene	ND		0.020	0.0082	ug/L		05/31/17 08:24	06/03/17 15:39	1
Benzo[k]fluoranthene	ND		0.031	0.0092	ug/L		05/31/17 08:24	06/03/17 15:39	1
Benzo[a]pyrene	ND		0.020	0.0031	ug/L		05/31/17 08:24	06/03/17 15:39	1
Indeno[1,2,3-cd]pyrene	ND		0.020	0.0071	ug/L		05/31/17 08:24	06/03/17 15:39	1
Dibenz(a,h)anthracene	ND		0.020	0.0020	ug/L		05/31/17 08:24	06/03/17 15:39	1
Benzo[g,h,i]perylene	ND		0.020	0.0031	ug/L		05/31/17 08:24	06/03/17 15:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*76*		*53 - 112*	*05/31/17 08:24*	*06/03/17 15:39*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.50	0.050	mg/L			05/30/17 22:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*58 - 133*		*05/30/17 22:45*	*1*
Trifluorotoluene (Surr)	*104*		*77 - 128*		*05/30/17 22:45*	*1*

Client Sample ID: 7901-SB-02-GW

Date Collected: 05/25/17 10:35
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-2

Matrix: Water

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.52	0.022	ug/L		06/07/17 08:57	06/08/17 03:33	1
PCB-1221	ND		0.52	0.031	ug/L		06/07/17 08:57	06/08/17 03:33	1
PCB-1232	ND		0.52	0.028	ug/L		06/07/17 08:57	06/08/17 03:33	1
PCB-1242	ND		0.52	0.029	ug/L		06/07/17 08:57	06/08/17 03:33	1
PCB-1248	ND		0.52	0.022	ug/L		06/07/17 08:57	06/08/17 03:33	1
PCB-1254	ND		0.52	0.021	ug/L		06/07/17 08:57	06/08/17 03:33	1
PCB-1260	ND		0.52	0.027	ug/L		06/07/17 08:57	06/08/17 03:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*92*		*38 - 134*	*06/07/17 08:57*	*06/08/17 03:33*	*1*
Tetrachloro-m-xylene	*79*		*54 - 115*	*06/07/17 08:57*	*06/08/17 03:33*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**1.1**		0.10	0.020	mg/L		06/07/17 14:31	06/08/17 16:09	1
Motor Oil (>C24-C36)	**0.66**		0.26	0.080	mg/L		06/07/17 14:31	06/08/17 16:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*92*		*43 - 119*	*06/07/17 14:31*	*06/08/17 16:09*	*1*

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.0014	mg/L		05/30/17 18:17	05/31/17 12:36	5
Antimony	ND		0.0020	0.00055	mg/L		05/30/17 18:17	05/31/17 12:36	5
Beryllium	ND		0.0020	0.00022	mg/L		05/30/17 18:17	05/31/17 12:36	5
Cadmium	ND		0.0020	0.00050	mg/L		05/30/17 18:17	05/31/17 12:36	5
Chromium	ND		0.0020	0.00071	mg/L		05/30/17 18:17	05/31/17 12:36	5
Copper	ND		0.010	0.0030	mg/L		05/30/17 18:17	05/31/17 12:36	5
Iron	**6.3**		1.0	0.18	mg/L		05/30/17 18:17	05/31/17 12:36	5
Lead	ND		0.0040	0.0010	mg/L		05/30/17 18:17	05/31/17 12:36	5
Manganese	**0.30**		0.010	0.0023	mg/L		05/30/17 18:17	05/31/17 12:36	5
Nickel	ND		0.015	0.00054	mg/L		05/30/17 18:17	05/31/17 12:36	5
Selenium	ND		0.040	0.010	mg/L		05/30/17 18:17	05/31/17 12:36	5
Silver	ND		0.0020	0.00022	mg/L		05/30/17 18:17	05/31/17 12:36	5
Thallium	ND		0.0050	0.00033	mg/L		05/30/17 18:17	05/31/17 12:36	5
Zinc	ND		0.035	0.0095	mg/L		05/30/17 18:17	05/31/17 12:36	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00030	0.00015	mg/L		05/30/17 10:12	05/30/17 13:51	1

Client Sample ID: 7901-SB-04-GW
Date Collected: 05/25/17 12:50
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		0.30	0.050	ug/L			06/01/17 00:22	1
2-Chlorotoluene	ND		0.50	0.070	ug/L			06/01/17 00:22	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			06/01/17 00:22	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			06/01/17 00:22	1
cis-1,3-Dichloropropene	ND		0.50	0.090	ug/L			06/01/17 00:22	1
Chlorobenzene	**0.96**		0.20	0.025	ug/L			06/01/17 00:22	1
Vinyl chloride	**0.97**		0.020	0.013	ug/L			06/01/17 00:22	1
sec-Butylbenzene	ND		0.50	0.070	ug/L			06/01/17 00:22	1
Dibromomethane	ND		0.20	0.025	ug/L			06/01/17 00:22	1
m-Xylene & p-Xylene	ND		0.50	0.050	ug/L			06/01/17 00:22	1
o-Xylene	ND		0.50	0.060	ug/L			06/01/17 00:22	1
1,2,4-Trichlorobenzene	ND		0.20	0.040	ug/L			06/01/17 00:22	1
Styrene	ND		0.50	0.10	ug/L			06/01/17 00:22	1
Chlorobromomethane	ND		0.20	0.025	ug/L			06/01/17 00:22	1
Dichlorobromomethane	ND		0.20	0.025	ug/L			06/01/17 00:22	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			06/01/17 00:22	1
Benzene	ND		0.20	0.025	ug/L			06/01/17 00:22	1
Chloroethane	ND		0.50	0.075	ug/L			06/01/17 00:22	1
trans-1,3-Dichloropropene	ND		0.20	0.025	ug/L			06/01/17 00:22	1
1,2,3-Trichlorobenzene	ND		0.50	0.10	ug/L			06/01/17 00:22	1
N-Propylbenzene	ND		0.20	0.025	ug/L			06/01/17 00:22	1
4-Isopropyltoluene	ND		0.30	0.050	ug/L			06/01/17 00:22	1
n-Butylbenzene	ND		0.50	0.080	ug/L			06/01/17 00:22	1
1,1-Dichloropropene	ND		0.10	0.015	ug/L			06/01/17 00:22	1
cis-1,2-Dichloroethene	**2.1**		0.20	0.025	ug/L			06/01/17 00:22	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.025	ug/L			06/01/17 00:22	1
1,2,4-Trimethylbenzene	ND		0.20	0.030	ug/L			06/01/17 00:22	1
Toluene	ND		0.20	0.025	ug/L			06/01/17 00:22	1
Naphthalene	ND		0.50	0.10	ug/L			06/01/17 00:22	1
1,3,5-Trimethylbenzene	ND		0.50	0.083	ug/L			06/01/17 00:22	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			06/01/17 00:22	1
Chloroform	ND		0.20	0.030	ug/L			06/01/17 00:22	1
4-Chlorotoluene	ND		0.30	0.050	ug/L			06/01/17 00:22	1
Chlorodibromomethane	ND		0.20	0.025	ug/L			06/01/17 00:22	1
Dichlorodifluoromethane	ND		0.40	0.050	ug/L			06/01/17 00:22	1
1,1,2-Trichloroethane	ND		0.20	0.025	ug/L			06/01/17 00:22	1
tert-Butylbenzene	ND		0.50	0.10	ug/L			06/01/17 00:22	1
Chloromethane	ND		0.30	0.050	ug/L			06/01/17 00:22	1
Methylene Chloride	ND		0.50	0.11	ug/L			06/01/17 00:22	1
1,1-Dichloroethene	ND		0.10	0.018	ug/L			06/01/17 00:22	1
Isopropylbenzene	ND		0.50	0.060	ug/L			06/01/17 00:22	1
1,2-Dichloroethane	ND		0.20	0.025	ug/L			06/01/17 00:22	1
Tetrachloroethene	ND		0.50	0.070	ug/L			06/01/17 00:22	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			06/01/17 00:22	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			06/01/17 00:22	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			06/01/17 00:22	1
Bromoform	ND		0.50	0.080	ug/L			06/01/17 00:22	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.44	ug/L			06/01/17 00:22	1
Trichlorofluoromethane	ND		0.50	0.025	ug/L			06/01/17 00:22	1

Client: Leidos, Inc.
Project/Site: 7901 Parcel-South Park Landfill

TestAmerica Job ID: 580-68649-1

Client Sample ID: 7901-SB-04-GW
Date Collected: 05/25/17 12:50
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		0.20	0.025	ug/L			06/01/17 00:22	1
Bromobenzene	ND		0.20	0.035	ug/L			06/01/17 00:22	1
1,2-Dichloropropane	ND		0.20	0.025	ug/L			06/01/17 00:22	1
1,1,1,2-Tetrachloroethane	ND		0.20	0.025	ug/L			06/01/17 00:22	1
Ethylbenzene	ND		0.20	0.030	ug/L			06/01/17 00:22	1
trans-1,2-Dichloroethene	ND		0.20	0.025	ug/L			06/01/17 00:22	1
Hexachlorobutadiene	ND		0.50	0.075	ug/L			06/01/17 00:22	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			06/01/17 00:22	1
Bromomethane	ND		1.0	0.16	ug/L			06/01/17 00:22	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			06/01/17 00:22	1
Methyl tert-butyl ether	ND		0.20	0.025	ug/L			06/01/17 00:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*81 - 120*		*06/01/17 00:22*	*1*
Toluene-d8 (Surr)	*93*		*75 - 125*		*06/01/17 00:22*	*1*
Trifluorotoluene (Surr)	*98*		*74 - 118*		*06/01/17 00:22*	*1*
Dibromofluoromethane (Surr)	*103*		*42 - 132*		*06/01/17 00:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*46 - 150*		*06/01/17 00:22*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND	*	0.041	0.013	ug/L		05/31/17 08:24	05/31/17 23:51	1
2-Methylnaphthalene	ND	*	0.031	0.0092	ug/L		05/31/17 08:24	05/31/17 23:51	1
1-Methylnaphthalene	ND	*	0.020	0.0061	ug/L		05/31/17 08:24	05/31/17 23:51	1
Acenaphthylene	**0.026**		0.020	0.0020	ug/L		05/31/17 08:24	05/31/17 23:51	1
Acenaphthene	**0.26**	*	0.020	0.0020	ug/L		05/31/17 08:24	05/31/17 23:51	1
Fluorene	ND		0.020	0.0031	ug/L		05/31/17 08:24	05/31/17 23:51	1
Phenanthrene	**0.029**		0.020	0.0041	ug/L		05/31/17 08:24	05/31/17 23:51	1
Anthracene	**0.029**		0.020	0.0031	ug/L		05/31/17 08:24	05/31/17 23:51	1
Fluoranthene	**0.023**		0.020	0.0020	ug/L		05/31/17 08:24	05/31/17 23:51	1
Pyrene	**0.047**		0.020	0.0041	ug/L		05/31/17 08:24	05/31/17 23:51	1
Benzo[a]anthracene	ND		0.020	0.0020	ug/L		05/31/17 08:24	05/31/17 23:51	1
Chrysene	ND		0.020	0.0061	ug/L		05/31/17 08:24	05/31/17 23:51	1
Benzo[b]fluoranthene	ND		0.020	0.0082	ug/L		05/31/17 08:24	05/31/17 23:51	1
Benzo[k]fluoranthene	ND		0.031	0.0092	ug/L		05/31/17 08:24	05/31/17 23:51	1
Benzo[a]pyrene	ND		0.020	0.0031	ug/L		05/31/17 08:24	05/31/17 23:51	1
Indeno[1,2,3-cd]pyrene	ND		0.020	0.0072	ug/L		05/31/17 08:24	05/31/17 23:51	1
Dibenz(a,h)anthracene	ND		0.020	0.0020	ug/L		05/31/17 08:24	05/31/17 23:51	1
Benzo[g,h,i]perylene	ND		0.020	0.0031	ug/L		05/31/17 08:24	05/31/17 23:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*68*		*53 - 112*	*05/31/17 08:24*	*05/31/17 23:51*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.50	0.050	mg/L			05/30/17 23:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*58 - 133*		*05/30/17 23:18*	*1*
Trifluorotoluene (Surr)	*105*		*77 - 128*		*05/30/17 23:18*	*1*

Client Sample ID: 7901-SB-04-GW

Date Collected: 05/25/17 12:50
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-3

Matrix: Water

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.51	0.022	ug/L		06/07/17 08:57	06/08/17 03:50	1
PCB-1221	ND		0.51	0.031	ug/L		06/07/17 08:57	06/08/17 03:50	1
PCB-1232	ND		0.51	0.028	ug/L		06/07/17 08:57	06/08/17 03:50	1
PCB-1242	ND		0.51	0.029	ug/L		06/07/17 08:57	06/08/17 03:50	1
PCB-1248	ND		0.51	0.022	ug/L		06/07/17 08:57	06/08/17 03:50	1
PCB-1254	ND		0.51	0.020	ug/L		06/07/17 08:57	06/08/17 03:50	1
PCB-1260	ND		0.51	0.027	ug/L		06/07/17 08:57	06/08/17 03:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*91*		*38 - 134*	*06/07/17 08:57*	*06/08/17 03:50*	*1*
Tetrachloro-m-xylene	*83*		*54 - 115*	*06/07/17 08:57*	*06/08/17 03:50*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**1.2**		0.10	0.019	mg/L		06/07/17 14:31	06/08/17 16:32	1
Motor Oil (>C24-C36)	**1.0**		0.26	0.079	mg/L		06/07/17 14:31	06/08/17 16:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*90*		*43 - 119*	*06/07/17 14:31*	*06/08/17 16:32*	*1*

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0068**		0.0050	0.0014	mg/L		05/30/17 18:17	05/31/17 11:40	5
Antimony	**0.0070**		0.0020	0.00055	mg/L		05/30/17 18:17	05/31/17 11:40	5
Beryllium	ND		0.0020	0.00022	mg/L		05/30/17 18:17	05/31/17 11:40	5
Cadmium	ND		0.0020	0.00050	mg/L		05/30/17 18:17	05/31/17 11:40	5
Chromium	**0.0052**		0.0020	0.00071	mg/L		05/30/17 18:17	05/31/17 11:40	5
Copper	**0.052**		0.010	0.0030	mg/L		05/30/17 18:17	05/31/17 11:40	5
Iron	**18**		1.0	0.18	mg/L		05/30/17 18:17	05/31/17 11:40	5
Lead	**0.25**		0.0040	0.0010	mg/L		05/30/17 18:17	05/31/17 11:40	5
Manganese	**0.13**		0.010	0.0023	mg/L		05/30/17 18:17	05/31/17 11:40	5
Nickel	ND		0.015	0.00054	mg/L		05/30/17 18:17	05/31/17 11:40	5
Selenium	ND		0.040	0.010	mg/L		05/30/17 18:17	05/31/17 11:40	5
Silver	ND		0.0020	0.00022	mg/L		05/30/17 18:17	05/31/17 11:40	5
Thallium	ND		0.0050	0.00033	mg/L		05/30/17 18:17	05/31/17 11:40	5
Zinc	**0.61**		0.035	0.0095	mg/L		05/30/17 18:17	05/31/17 11:40	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00030	0.00015	mg/L		05/30/17 10:12	05/30/17 13:55	1

Client: Leidos, Inc.
Project/Site: 7901 Parcel-South Park Landfill

TestAmerica Job ID: 580-68649-1

Client Sample ID: 7901-TB-GW
Date Collected: 05/25/17 12:00
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-4
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		0.30	0.050	ug/L			05/31/17 19:34	1
2-Chlorotoluene	ND		0.50	0.070	ug/L			05/31/17 19:34	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			05/31/17 19:34	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			05/31/17 19:34	1
cis-1,3-Dichloropropene	ND		0.50	0.090	ug/L			05/31/17 19:34	1
Chlorobenzene	ND		0.20	0.025	ug/L			05/31/17 19:34	1
Vinyl chloride	ND		0.020	0.013	ug/L			05/31/17 19:34	1
sec-Butylbenzene	ND		0.50	0.070	ug/L			05/31/17 19:34	1
Dibromomethane	ND		0.20	0.025	ug/L			05/31/17 19:34	1
m-Xylene & p-Xylene	ND		0.50	0.050	ug/L			05/31/17 19:34	1
o-Xylene	ND		0.50	0.060	ug/L			05/31/17 19:34	1
1,2,4-Trichlorobenzene	ND		0.20	0.040	ug/L			05/31/17 19:34	1
Styrene	ND		0.50	0.10	ug/L			05/31/17 19:34	1
Chlorobromomethane	ND		0.20	0.025	ug/L			05/31/17 19:34	1
Dichlorobromomethane	ND		0.20	0.025	ug/L			05/31/17 19:34	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			05/31/17 19:34	1
Benzene	ND		0.20	0.025	ug/L			05/31/17 19:34	1
Chloroethane	ND		0.50	0.075	ug/L			05/31/17 19:34	1
trans-1,3-Dichloropropene	ND		0.20	0.025	ug/L			05/31/17 19:34	1
1,2,3-Trichlorobenzene	ND		0.50	0.10	ug/L			05/31/17 19:34	1
N-Propylbenzene	ND		0.20	0.025	ug/L			05/31/17 19:34	1
4-Isopropyltoluene	ND		0.30	0.050	ug/L			05/31/17 19:34	1
n-Butylbenzene	ND		0.50	0.080	ug/L			05/31/17 19:34	1
1,1-Dichloropropene	ND		0.10	0.015	ug/L			05/31/17 19:34	1
cis-1,2-Dichloroethene	ND		0.20	0.025	ug/L			05/31/17 19:34	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.025	ug/L			05/31/17 19:34	1
1,2,4-Trimethylbenzene	ND		0.20	0.030	ug/L			05/31/17 19:34	1
Toluene	ND		0.20	0.025	ug/L			05/31/17 19:34	1
Naphthalene	ND		0.50	0.10	ug/L			05/31/17 19:34	1
1,3,5-Trimethylbenzene	ND		0.50	0.083	ug/L			05/31/17 19:34	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			05/31/17 19:34	1
Chloroform	ND		0.20	0.030	ug/L			05/31/17 19:34	1
4-Chlorotoluene	ND		0.30	0.050	ug/L			05/31/17 19:34	1
Chlorodibromomethane	ND		0.20	0.025	ug/L			05/31/17 19:34	1
Dichlorodifluoromethane	ND		0.40	0.050	ug/L			05/31/17 19:34	1
1,1,2-Trichloroethane	ND		0.20	0.025	ug/L			05/31/17 19:34	1
tert-Butylbenzene	ND		0.50	0.10	ug/L			05/31/17 19:34	1
Chloromethane	ND		0.30	0.050	ug/L			05/31/17 19:34	1
Methylene Chloride	ND		0.50	0.11	ug/L			05/31/17 19:34	1
1,1-Dichloroethene	ND		0.10	0.018	ug/L			05/31/17 19:34	1
Isopropylbenzene	ND		0.50	0.060	ug/L			05/31/17 19:34	1
1,2-Dichloroethane	ND		0.20	0.025	ug/L			05/31/17 19:34	1
Tetrachloroethene	ND		0.50	0.070	ug/L			05/31/17 19:34	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			05/31/17 19:34	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			05/31/17 19:34	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			05/31/17 19:34	1
Bromoform	ND		0.50	0.080	ug/L			05/31/17 19:34	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.44	ug/L			05/31/17 19:34	1
Trichlorofluoromethane	ND		0.50	0.025	ug/L			05/31/17 19:34	1

Client: Leidos, Inc.
Project/Site: 7901 Parcel-South Park Landfill

TestAmerica Job ID: 580-68649-1

Client Sample ID: 7901-TB-GW
Date Collected: 05/25/17 12:00
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-4
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		0.20	0.025	ug/L			05/31/17 19:34	1
Bromobenzene	ND		0.20	0.035	ug/L			05/31/17 19:34	1
1,2-Dichloropropane	ND		0.20	0.025	ug/L			05/31/17 19:34	1
1,1,1,2-Tetrachloroethane	ND		0.20	0.025	ug/L			05/31/17 19:34	1
Ethylbenzene	ND		0.20	0.030	ug/L			05/31/17 19:34	1
trans-1,2-Dichloroethene	ND		0.20	0.025	ug/L			05/31/17 19:34	1
Hexachlorobutadiene	ND		0.50	0.075	ug/L			05/31/17 19:34	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			05/31/17 19:34	1
Bromomethane	ND		1.0	0.16	ug/L			05/31/17 19:34	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			05/31/17 19:34	1
Methyl tert-butyl ether	ND		0.20	0.025	ug/L			05/31/17 19:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*81 - 120*		*05/31/17 19:34*	*1*
Toluene-d8 (Surr)	*97*		*75 - 125*		*05/31/17 19:34*	*1*
Trifluorotoluene (Surr)	*100*		*74 - 118*		*05/31/17 19:34*	*1*
Dibromofluoromethane (Surr)	*104*		*42 - 132*		*05/31/17 19:34*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*46 - 150*		*05/31/17 19:34*	*1*

Client Sample ID: 7901-SB-01-9.5
Date Collected: 05/25/17 15:35
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-5
Matrix: Solid
Percent Solids: 78.6

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		3000	370	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
1,2-Dichlorobenzene	ND		3000	730	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
1,3-Dichlorobenzene	ND		3000	290	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
1,4-Dichlorobenzene	ND		3000	510	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
1-Methylnaphthalene	**13000**		1800	300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
2,4,5-Trichlorophenol	ND		12000	2700	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
2,4,6-Trichlorophenol	ND		9100	2200	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
2,4-Dichlorophenol	ND		6100	910	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
2,4-Dimethylphenol	ND		6100	910	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
2,4-Dinitrophenol	ND		61000	12000	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
2,4-Dinitrotoluene	ND		12000	2600	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
2,6-Dinitrotoluene	ND		9100	2100	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
2-Chloronaphthalene	ND		1500	300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
2-Chlorophenol	ND		12000	2600	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
2-Methylnaphthalene	**14000**		3000	540	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
2-Methylphenol	ND		9100	2300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
2-Nitroaniline	ND		6100	910	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
2-Nitrophenol	ND		12000	2800	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
3 & 4 Methylphenol	ND		12000	910	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
3,3'-Dichlorobenzidine	ND		24000	6100	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
3-Nitroaniline	ND		12000	2400	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
4,6-Dinitro-2-methylphenol	ND		61000	6100	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
4-Bromophenyl phenyl ether	ND		12000	2500	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
4-Chloro-3-methylphenol	ND		9100	2000	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
4-Chloroaniline	ND		91000	24000	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
4-Chlorophenyl phenyl ether	ND		12000	2500	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
4-Nitroaniline	ND		6100	1200	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
4-Nitrophenol	ND		91000	22000	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Acenaphthene	**35000**		1500	300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Acenaphthylene	**4100**		1500	300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Anthracene	**56000**		1500	300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Benzo[a]anthracene	**82000**		1500	300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Benzo[a]pyrene	**63000**		3700	790	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Benzo[b]fluoranthene	**56000**		1500	300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Benzo[g,h,i]perylene	**25000**	*	3700	910	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Benzo[k]fluoranthene	**22000**		3700	850	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Benzoic acid	ND		150000	64000	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Benzyl alcohol	ND		240000	2300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Bis(2-chloroethoxy)methane	ND		12000	2500	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Bis(2-chloroethyl)ether	ND		12000	2400	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Bis(2-ethylhexyl) phthalate	ND		37000	8300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
bis(chloroisopropyl) ether	ND		15000	2300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Butyl benzyl phthalate	ND		12000	3000	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Carbazole	**18000**		9100	1900	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Chrysene	**77000**		3700	790	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Dibenz(a,h)anthracene	**6200**		3000	730	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Dibenzofuran	**10000**		9100	2200	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Diethyl phthalate	ND		33000	8000	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Dimethyl phthalate	ND		9100	2000	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50

Client Sample ID: 7901-SB-01-9.5
Date Collected: 05/25/17 15:35
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-5
Matrix: Solid
Percent Solids: 78.6

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	ND		30000	3500	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Di-n-octyl phthalate	ND		61000	14000	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Fluoranthene	**190000**		1500	300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Fluorene	**31000**		1500	300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Hexachlorobenzene	ND		3000	300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Hexachlorobutadiene	ND		3000	910	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Hexachlorocyclopentadiene	ND		6100	1600	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Hexachloroethane	ND		9100	2300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Indeno[1,2,3-cd]pyrene	**31000**		2400	300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Isophorone	ND		9100	2300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Naphthalene	**15000**		1500	300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Nitrobenzene	ND		12000	2600	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
N-Nitrosodi-n-propylamine	ND		12000	2700	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
N-Nitrosodiphenylamine	ND		3700	910	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Pentachlorophenol	ND		24000	5500	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Phenanthrene	**250000**		3700	730	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Phenol	ND		9100	2300	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50
Pyrene	**240000**		3700	910	ug/Kg	☼	06/05/17 09:38	06/06/17 19:47	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*31*		*10 - 126*	*06/05/17 09:38*	*06/06/17 19:47*	*50*
2-Fluorobiphenyl	*63*		*57 - 110*	*06/05/17 09:38*	*06/06/17 19:47*	*50*
2-Fluorophenol (Surr)	*85*		*36 - 125*	*06/05/17 09:38*	*06/06/17 19:47*	*50*
Nitrobenzene-d5 (Surr)	*96*		*54 - 113*	*06/05/17 09:38*	*06/06/17 19:47*	*50*
Phenol-d5 (Surr)	*90*		*59 - 113*	*06/05/17 09:38*	*06/06/17 19:47*	*50*
Terphenyl-d14 (Surr)	*87*		*68 - 120*	*06/05/17 09:38*	*06/06/17 19:47*	*50*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**21**		9.8	5.1	mg/Kg	☼	06/07/17 10:37	06/07/17 19:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*50 - 150*	*06/07/17 10:37*	*06/07/17 19:22*	*1*
Trifluorotoluene (Surr)				*06/07/17 10:37*	*06/07/17 19:22*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.031	0.0093	mg/Kg	☼	06/02/17 09:07	06/04/17 16:16	1
PCB-1221	ND		0.014	0.0053	mg/Kg	☼	06/02/17 09:07	06/04/17 16:16	1
PCB-1232	ND		0.014	0.0061	mg/Kg	☼	06/02/17 09:07	06/04/17 16:16	1
PCB-1242	ND		0.013	0.0020	mg/Kg	☼	06/02/17 09:07	06/04/17 16:16	1
PCB-1248	ND		0.014	0.0036	mg/Kg	☼	06/02/17 09:07	06/04/17 16:16	1
PCB-1254	ND		0.013	0.0019	mg/Kg	☼	06/02/17 09:07	06/04/17 16:16	1
PCB-1260	ND		0.013	0.0024	mg/Kg	☼	06/02/17 09:07	06/04/17 16:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*80*		*25 - 149*	*06/02/17 09:07*	*06/04/17 16:16*	*1*
Tetrachloro-m-xylene	*80*		*35 - 130*	*06/02/17 09:07*	*06/04/17 16:16*	*1*

Client Sample ID: 7901-SB-01-9.5
Date Collected: 05/25/17 15:35
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-5
Matrix: Solid
Percent Solids: 78.6

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	3800		59	14	mg/Kg	☼	06/01/17 11:07	06/09/17 22:26	1
Motor Oil (>C24-C36)	9000		59	11	mg/Kg	☼	06/01/17 11:07	06/09/17 22:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*702*	*X*	*54 - 118*	*06/01/17 11:07*	*06/09/17 22:26*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	99		0.25	0.086	mg/Kg	☼	05/30/17 16:00	05/31/17 14:51	10
Arsenic	35		0.63	0.13	mg/Kg	☼	05/30/17 16:00	05/31/17 14:51	10
Beryllium	0.25		0.25	0.019	mg/Kg	☼	05/30/17 16:00	05/31/17 14:51	10
Cadmium	2.8		0.50	0.097	mg/Kg	☼	05/30/17 16:00	05/31/17 14:51	10
Chromium	170		0.63	0.079	mg/Kg	☼	05/30/17 16:00	05/31/17 14:51	10
Copper	1100		1.3	0.28	mg/Kg	☼	05/30/17 16:00	05/31/17 14:51	10
Lead	6100		0.63	0.061	mg/Kg	☼	05/30/17 16:00	05/31/17 14:51	10
Nickel	31		0.63	0.24	mg/Kg	☼	05/30/17 16:00	05/31/17 14:51	10
Selenium	ND		1.3	0.28	mg/Kg	☼	05/30/17 16:00	05/31/17 14:51	10
Silver	3.4		0.25	0.025	mg/Kg	☼	05/30/17 16:00	05/31/17 14:51	10
Thallium	ND		0.50	0.069	mg/Kg	☼	05/30/17 16:00	05/31/17 14:51	10
Zinc	1200		6.3	2.0	mg/Kg	☼	05/30/17 16:00	05/31/17 14:51	10

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.24		0.037	0.011	mg/Kg	☼	05/30/17 12:06	05/30/17 15:21	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	78.6		0.1	0.1	%			06/05/17 15:52	1
Percent Moisture	21.4		0.1	0.1	%			06/05/17 15:52	1

Client Sample ID: 7901-SB-01-14.5
Date Collected: 05/25/17 15:40
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-6
Matrix: Solid
Percent Solids: 85.2

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		280	33	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
1,2-Dichlorobenzene	ND		280	67	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
1,3-Dichlorobenzene	ND		280	27	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
1,4-Dichlorobenzene	ND		280	46	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
1-Methylnaphthalene	ND		170	28	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
2,4,5-Trichlorophenol	ND		1100	250	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
2,4,6-Trichlorophenol	ND		830	200	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
2,4-Dichlorophenol	ND		550	83	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
2,4-Dimethylphenol	ND		550	83	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
2,4-Dinitrophenol	ND		5500	1100	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
2,4-Dinitrotoluene	ND		1100	240	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
2,6-Dinitrotoluene	ND		830	190	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
2-Chloronaphthalene	ND		140	28	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
2-Chlorophenol	ND		1100	230	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
2-Methylnaphthalene	ND		280	49	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
2-Methylphenol	ND		830	210	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
2-Nitroaniline	ND		550	83	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
2-Nitrophenol	ND		1100	260	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
3 & 4 Methylphenol	ND		1100	83	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
3,3'-Dichlorobenzidine	ND		2200	550	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
3-Nitroaniline	ND		1100	220	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
4,6-Dinitro-2-methylphenol	ND		5500	550	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
4-Bromophenyl phenyl ether	ND		1100	230	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
4-Chloro-3-methylphenol	ND		830	180	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
4-Chloroaniline	ND		8300	2200	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
4-Chlorophenyl phenyl ether	ND		1100	230	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
4-Nitroaniline	ND		550	110	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
4-Nitrophenol	ND		8300	2000	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Acenaphthene	ND		140	28	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Acenaphthylene	ND		140	28	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Anthracene	ND		140	28	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Benzo[a]anthracene	**250**		140	28	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Benzo[a]pyrene	ND		330	72	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Benzo[b]fluoranthene	ND		140	28	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Benzo[g,h,i]perylene	ND	*	330	83	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Benzo[k]fluoranthene	ND		330	78	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Benzoic acid	ND		14000	5900	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Benzyl alcohol	ND		22000	210	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Bis(2-chloroethoxy)methane	ND		1100	230	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Bis(2-chloroethyl)ether	ND		1100	220	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Bis(2-ethylhexyl) phthalate	ND		3300	750	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
bis(chloroisopropyl) ether	ND		1400	210	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Butyl benzyl phthalate	ND		1100	280	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Carbazole	ND		830	170	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Chrysene	ND		330	72	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Dibenz(a,h)anthracene	ND		280	67	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Dibenzofuran	ND		830	200	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Diethyl phthalate	ND		3100	730	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Dimethyl phthalate	ND		830	180	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5

Client Sample ID: 7901-SB-01-14.5
Date Collected: 05/25/17 15:40
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-6
Matrix: Solid
Percent Solids: 85.2

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	ND		2800	320	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Di-n-octyl phthalate	ND		5500	1200	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Fluoranthene	**530**		140	28	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Fluorene	ND		140	28	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Hexachlorobenzene	ND		280	28	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Hexachlorobutadiene	ND		280	83	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Hexachlorocyclopentadiene	ND		550	140	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Hexachloroethane	ND		830	210	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Indeno[1,2,3-cd]pyrene	ND		220	28	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Isophorone	ND		830	210	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Naphthalene	ND		140	28	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Nitrobenzene	ND		1100	230	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
N-Nitrosodi-n-propylamine	ND		1100	240	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
N-Nitrosodiphenylamine	ND		330	83	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Pentachlorophenol	ND		2200	500	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Phenanthrene	**540**		330	67	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Phenol	ND		830	210	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5
Pyrene	**580**		330	83	ug/Kg	☼	06/05/17 09:38	06/06/17 20:13	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*58*		*10 - 126*	*06/05/17 09:38*	*06/06/17 20:13*	*5*
2-Fluorobiphenyl	*81*		*57 - 110*	*06/05/17 09:38*	*06/06/17 20:13*	*5*
2-Fluorophenol (Surr)	*106*		*36 - 125*	*06/05/17 09:38*	*06/06/17 20:13*	*5*
Nitrobenzene-d5 (Surr)	*89*		*54 - 113*	*06/05/17 09:38*	*06/06/17 20:13*	*5*
Phenol-d5 (Surr)	*116*	*X*	*59 - 113*	*06/05/17 09:38*	*06/06/17 20:13*	*5*
Terphenyl-d14 (Surr)	*100*		*68 - 120*	*06/05/17 09:38*	*06/06/17 20:13*	*5*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**32**		12	6.0	mg/Kg	☼	06/07/17 10:37	06/07/17 19:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*50 - 150*	*06/07/17 10:37*	*06/07/17 19:52*	*1*
Trifluorotoluene (Surr)				*06/07/17 10:37*	*06/07/17 19:52*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.027	0.0081	mg/Kg	☼	06/02/17 09:07	06/04/17 16:32	1
PCB-1221	ND		0.012	0.0046	mg/Kg	☼	06/02/17 09:07	06/04/17 16:32	1
PCB-1232	ND		0.012	0.0054	mg/Kg	☼	06/02/17 09:07	06/04/17 16:32	1
PCB-1242	ND		0.011	0.0018	mg/Kg	☼	06/02/17 09:07	06/04/17 16:32	1
PCB-1248	ND		0.012	0.0032	mg/Kg	☼	06/02/17 09:07	06/04/17 16:32	1
PCB-1254	ND		0.011	0.0016	mg/Kg	☼	06/02/17 09:07	06/04/17 16:32	1
PCB-1260	ND		0.011	0.0021	mg/Kg	☼	06/02/17 09:07	06/04/17 16:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*75*		*25 - 149*	*06/02/17 09:07*	*06/04/17 16:32*	*1*
Tetrachloro-m-xylene	*72*		*35 - 130*	*06/02/17 09:07*	*06/04/17 16:32*	*1*

Client Sample ID: 7901-SB-01-14.5
Date Collected: 05/25/17 15:40
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-6
Matrix: Solid
Percent Solids: 85.2

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1300		53	13	mg/Kg	☼	06/01/17 11:07	06/09/17 22:48	1
Motor Oil (>C24-C36)	4000		53	9.7	mg/Kg	☼	06/01/17 11:07	06/09/17 22:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*102*		*54 - 118*	*06/01/17 11:07*	*06/09/17 22:48*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.5		0.22	0.076	mg/Kg	☼	05/30/17 16:00	05/31/17 14:55	10
Arsenic	14		0.56	0.11	mg/Kg	☼	05/30/17 16:00	05/31/17 14:55	10
Beryllium	0.53		0.22	0.017	mg/Kg	☼	05/30/17 16:00	05/31/17 14:55	10
Cadmium	4.9		0.45	0.086	mg/Kg	☼	05/30/17 16:00	05/31/17 14:55	10
Chromium	66		0.56	0.070	mg/Kg	☼	05/30/17 16:00	05/31/17 14:55	10
Copper	44		1.1	0.25	mg/Kg	☼	05/30/17 16:00	05/31/17 14:55	10
Lead	1100		0.56	0.054	mg/Kg	☼	05/30/17 16:00	05/31/17 14:55	10
Nickel	32		0.56	0.22	mg/Kg	☼	05/30/17 16:00	05/31/17 14:55	10
Selenium	ND		1.1	0.24	mg/Kg	☼	05/30/17 16:00	05/31/17 14:55	10
Silver	ND		0.22	0.022	mg/Kg	☼	05/30/17 16:00	05/31/17 14:55	10
Thallium	ND		0.45	0.061	mg/Kg	☼	05/30/17 16:00	05/31/17 14:55	10
Zinc	1800		5.6	1.8	mg/Kg	☼	05/30/17 16:00	05/31/17 14:55	10

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.078		0.033	0.0098	mg/Kg	☼	05/30/17 12:06	05/30/17 15:23	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	85.2		0.1	0.1	%			06/05/17 15:52	1
Percent Moisture	14.8		0.1	0.1	%			06/05/17 15:52	1

Client: Leidos, Inc.
Project/Site: 7901 Parcel-South Park Landfill

TestAmerica Job ID: 580-68649-1

Client Sample ID: 7901-SB-01-17.5
Date Collected: 05/25/17 15:45
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-7
Matrix: Solid
Percent Solids: 65.8

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		73	8.7	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
1,2-Dichlorobenzene	ND		73	17	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
1,3-Dichlorobenzene	ND		73	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
1,4-Dichlorobenzene	ND		73	12	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
1-Methylnaphthalene	ND		44	7.3	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
2,4,5-Trichlorophenol	ND		290	66	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
2,4,6-Trichlorophenol	ND		220	52	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
2,4-Dichlorophenol	ND		150	22	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
2,4-Dimethylphenol	ND		150	22	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
2,4-Dinitrophenol	ND		1500	290	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
2,4-Dinitrotoluene	ND		290	63	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
2,6-Dinitrotoluene	ND		220	50	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
2-Chloronaphthalene	ND		36	7.3	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
2-Chlorophenol	ND		290	61	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
2-Methylnaphthalene	ND		73	13	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
2-Methylphenol	ND		220	54	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
2-Nitroaniline	ND		150	22	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
2-Nitrophenol	ND		290	67	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
3 & 4 Methylphenol	ND		290	22	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
3,3'-Dichlorobenzidine	ND		580	150	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
3-Nitroaniline	ND		290	58	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
4,6-Dinitro-2-methylphenol	ND		1500	150	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
4-Bromophenyl phenyl ether	ND		290	60	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
4-Chloro-3-methylphenol	ND		220	48	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
4-Chloroaniline	ND		2200	580	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
4-Chlorophenyl phenyl ether	ND		290	60	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
4-Nitroaniline	ND		150	29	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
4-Nitrophenol	ND		2200	540	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Acenaphthene	ND		36	7.3	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Acenaphthylene	ND		36	7.3	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Anthracene	ND		36	7.3	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Benzo[a]anthracene	ND		36	7.3	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Benzo[a]pyrene	ND		87	19	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Benzo[b]fluoranthene	ND		36	7.3	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Benzo[g,h,i]perylene	ND	*	87	22	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Benzo[k]fluoranthene	ND		87	20	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Benzoic acid	ND		3600	1500	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Benzyl alcohol	ND		5800	54	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Bis(2-chloroethoxy)methane	ND		290	60	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Bis(2-chloroethyl)ether	ND		290	58	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Bis(2-ethylhexyl) phthalate	ND		870	200	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
bis(chloroisopropyl) ether	ND		360	54	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Butyl benzyl phthalate	ND		290	73	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Carbazole	ND		220	45	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Chrysene	ND		87	19	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Dibenz(a,h)anthracene	ND		73	17	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Dibenzofuran	ND		220	52	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Diethyl phthalate	ND		800	190	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Dimethyl phthalate	ND		220	48	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1

Client Sample ID: 7901-SB-01-17.5
Date Collected: 05/25/17 15:45
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-7
Matrix: Solid
Percent Solids: 65.8

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	ND		730	83	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Di-n-octyl phthalate	ND		1500	320	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Fluoranthene	**88**		36	7.3	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Fluorene	ND		36	7.3	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Hexachlorobenzene	ND		73	7.3	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Hexachlorobutadiene	ND		73	22	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Hexachlorocyclopentadiene	ND		150	38	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Hexachloroethane	ND		220	55	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Indeno[1,2,3-cd]pyrene	ND		58	7.3	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Isophorone	ND		220	54	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Naphthalene	ND		36	7.3	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Nitrobenzene	ND		290	61	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
N-Nitrosodi-n-propylamine	ND		290	64	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
N-Nitrosodiphenylamine	ND		87	22	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Pentachlorophenol	ND		580	130	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Phenanthrene	ND		87	17	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Phenol	ND		220	55	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1
Pyrene	**110**		87	22	ug/Kg	☼	06/05/17 09:38	06/06/17 15:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*66*		*10 - 126*	*06/05/17 09:38*	*06/06/17 15:05*	*1*
2-Fluorobiphenyl	*57*		*57 - 110*	*06/05/17 09:38*	*06/06/17 15:05*	*1*
2-Fluorophenol (Surr)	*82*		*36 - 125*	*06/05/17 09:38*	*06/06/17 15:05*	*1*
Nitrobenzene-d5 (Surr)	*66*		*54 - 113*	*06/05/17 09:38*	*06/06/17 15:05*	*1*
Phenol-d5 (Surr)	*84*		*59 - 113*	*06/05/17 09:38*	*06/06/17 15:05*	*1*
Terphenyl-d14 (Surr)	*70*		*68 - 120*	*06/05/17 09:38*	*06/06/17 15:05*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		15	7.8	mg/Kg	☼	06/07/17 10:37	06/07/17 20:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*50 - 150*	*06/07/17 10:37*	*06/07/17 20:23*	*1*
Trifluorotoluene (Surr)				*06/07/17 10:37*	*06/07/17 20:23*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.035	0.010	mg/Kg	☼	06/02/17 09:07	06/04/17 16:48	1
PCB-1221	ND		0.015	0.0059	mg/Kg	☼	06/02/17 09:07	06/04/17 16:48	1
PCB-1232	ND		0.015	0.0069	mg/Kg	☼	06/02/17 09:07	06/04/17 16:48	1
PCB-1242	ND		0.014	0.0022	mg/Kg	☼	06/02/17 09:07	06/04/17 16:48	1
PCB-1248	ND		0.015	0.0041	mg/Kg	☼	06/02/17 09:07	06/04/17 16:48	1
PCB-1254	ND		0.014	0.0021	mg/Kg	☼	06/02/17 09:07	06/04/17 16:48	1
PCB-1260	ND		0.014	0.0027	mg/Kg	☼	06/02/17 09:07	06/04/17 16:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*64*		*25 - 149*	*06/02/17 09:07*	*06/04/17 16:48*	*1*
Tetrachloro-m-xylene	*84*		*35 - 130*	*06/02/17 09:07*	*06/04/17 16:48*	*1*

Client Sample ID: 7901-SB-01-17.5
Date Collected: 05/25/17 15:45
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-7
Matrix: Solid
Percent Solids: 65.8

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		74	18	mg/Kg	☼	06/01/17 11:07	06/02/17 22:43	1
Motor Oil (>C24-C36)	**230**		74	13	mg/Kg	☼	06/01/17 11:07	06/02/17 22:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*71*		*54 - 118*	*06/01/17 11:07*	*06/02/17 22:43*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.36**		0.27	0.091	mg/Kg	☼	05/30/17 16:00	05/31/17 16:20	10
Arsenic	**5.7**		0.67	0.13	mg/Kg	☼	05/30/17 16:00	05/31/17 16:20	10
Beryllium	**0.36**		0.27	0.020	mg/Kg	☼	05/30/17 16:00	05/31/17 16:20	10
Cadmium	ND		0.54	0.10	mg/Kg	☼	05/30/17 16:00	05/31/17 16:20	10
Chromium	**19**		0.67	0.085	mg/Kg	☼	05/30/17 16:00	05/31/17 16:20	10
Copper	**30**		1.3	0.30	mg/Kg	☼	05/30/17 16:00	05/31/17 16:20	10
Lead	**48**		0.67	0.064	mg/Kg	☼	05/30/17 16:00	05/31/17 16:20	10
Nickel	**15**		0.67	0.26	mg/Kg	☼	05/30/17 16:00	05/31/17 16:20	10
Selenium	ND		1.3	0.29	mg/Kg	☼	05/30/17 16:00	05/31/17 16:20	10
Silver	ND		0.27	0.027	mg/Kg	☼	05/30/17 16:00	05/31/17 16:20	10
Thallium	ND		0.54	0.074	mg/Kg	☼	05/30/17 16:00	05/31/17 16:20	10
Zinc	**110**		6.7	2.2	mg/Kg	☼	05/30/17 16:00	05/31/17 16:20	10

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.061**		0.044	0.013	mg/Kg	☼	05/30/17 12:06	05/30/17 15:26	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**65.8**		0.1	0.1	%			06/02/17 14:42	1
Percent Moisture	**34.2**		0.1	0.1	%			06/02/17 14:42	1

Client Sample ID: 7901-SB-02-14.5
Date Collected: 05/25/17 09:30
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-8
Matrix: Solid
Percent Solids: 84.0

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		580	70	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
1,2-Dichlorobenzene	ND		580	140	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
1,3-Dichlorobenzene	ND		580	56	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
1,4-Dichlorobenzene	ND		580	96	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
1-Methylnaphthalene	ND		350	58	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
2,4,5-Trichlorophenol	ND		2300	520	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
2,4,6-Trichlorophenol	ND		1700	420	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
2,4-Dichlorophenol	ND		1200	170	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
2,4-Dimethylphenol	ND		1200	170	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
2,4-Dinitrophenol	ND		12000	2300	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
2,4-Dinitrotoluene	ND		2300	500	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
2,6-Dinitrotoluene	ND		1700	390	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
2-Chloronaphthalene	ND		290	58	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
2-Chlorophenol	ND		2300	490	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
2-Methylnaphthalene	ND		580	100	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
2-Methylphenol	ND		1700	430	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
2-Nitroaniline	ND		1200	170	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
2-Nitrophenol	ND		2300	530	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
3 & 4 Methylphenol	ND		2300	170	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
3,3'-Dichlorobenzidine	ND		4600	1200	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
3-Nitroaniline	ND		2300	460	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
4,6-Dinitro-2-methylphenol	ND		12000	1200	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
4-Bromophenyl phenyl ether	ND		2300	480	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
4-Chloro-3-methylphenol	ND		1700	380	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
4-Chloroaniline	ND		17000	4600	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
4-Chlorophenyl phenyl ether	ND		2300	480	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
4-Nitroaniline	ND		1200	230	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
4-Nitrophenol	ND		17000	4300	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Acenaphthene	**660**		290	58	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Acenaphthylene	ND		290	58	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Anthracene	**1700**		290	58	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Benzo[a]anthracene	**2800**		290	58	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Benzo[a]pyrene	**2500**		700	150	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Benzo[b]fluoranthene	**2600**		290	58	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Benzo[g,h,i]perylene	**1600**	*	700	170	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Benzo[k]fluoranthene	**950**		700	160	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Benzoic acid	ND		29000	12000	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Benzyl alcohol	ND		46000	430	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Bis(2-chloroethoxy)methane	ND		2300	480	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Bis(2-chloroethyl)ether	ND		2300	460	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Bis(2-ethylhexyl) phthalate	ND		7000	1600	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
bis(chloroisopropyl) ether	ND		2900	430	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Butyl benzyl phthalate	ND		2300	580	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Carbazole	ND		1700	360	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Chrysene	**3000**		700	150	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Dibenz(a,h)anthracene	ND		580	140	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Dibenzofuran	ND		1700	420	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Diethyl phthalate	ND		6400	1500	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Dimethyl phthalate	ND		1700	380	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10

Client Sample ID: 7901-SB-02-14.5
Date Collected: 05/25/17 09:30
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-8
Matrix: Solid
Percent Solids: 84.0

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	ND		5800	660	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Di-n-octyl phthalate	ND		12000	2600	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Fluoranthene	**7100**		290	58	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Fluorene	**990**		290	58	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Hexachlorobenzene	ND		580	58	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Hexachlorobutadiene	ND		580	170	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Hexachlorocyclopentadiene	ND		1200	300	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Hexachloroethane	ND		1700	440	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Indeno[1,2,3-cd]pyrene	**1900**		460	58	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Isophorone	ND		1700	430	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Naphthalene	**590**		290	58	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Nitrobenzene	ND		2300	490	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
N-Nitrosodi-n-propylamine	ND		2300	510	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
N-Nitrosodiphenylamine	ND		700	170	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Pentachlorophenol	ND		4600	1100	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Phenanthrene	**7900**		700	140	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Phenol	ND		1700	440	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10
Pyrene	**6900**		700	170	ug/Kg	☼	06/05/17 09:38	06/06/17 15:30	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*54*		*10 - 126*	*06/05/17 09:38*	*06/06/17 15:30*	*10*
2-Fluorobiphenyl	*74*		*57 - 110*	*06/05/17 09:38*	*06/06/17 15:30*	*10*
2-Fluorophenol (Surr)	*83*		*36 - 125*	*06/05/17 09:38*	*06/06/17 15:30*	*10*
Nitrobenzene-d5 (Surr)	*92*		*54 - 113*	*06/05/17 09:38*	*06/06/17 15:30*	*10*
Phenol-d5 (Surr)	*93*		*59 - 113*	*06/05/17 09:38*	*06/06/17 15:30*	*10*
Terphenyl-d14 (Surr)	*87*		*68 - 120*	*06/05/17 09:38*	*06/06/17 15:30*	*10*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**24**		9.4	4.9	mg/Kg	☼	06/07/17 10:37	06/07/17 20:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*50 - 150*	*06/07/17 10:37*	*06/07/17 20:53*	*1*
Trifluorotoluene (Surr)				*06/07/17 10:37*	*06/07/17 20:53*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.027	0.0081	mg/Kg	☼	06/02/17 09:07	06/04/17 17:04	1
PCB-1221	ND		0.012	0.0046	mg/Kg	☼	06/02/17 09:07	06/04/17 17:04	1
PCB-1232	ND		0.012	0.0054	mg/Kg	☼	06/02/17 09:07	06/04/17 17:04	1
PCB-1242	ND		0.011	0.0017	mg/Kg	☼	06/02/17 09:07	06/04/17 17:04	1
PCB-1248	ND		0.012	0.0032	mg/Kg	☼	06/02/17 09:07	06/04/17 17:04	1
PCB-1254	ND		0.011	0.0016	mg/Kg	☼	06/02/17 09:07	06/04/17 17:04	1
PCB-1260	ND		0.011	0.0021	mg/Kg	☼	06/02/17 09:07	06/04/17 17:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*81*		*25 - 149*	*06/02/17 09:07*	*06/04/17 17:04*	*1*
Tetrachloro-m-xylene	*88*		*35 - 130*	*06/02/17 09:07*	*06/04/17 17:04*	*1*

Client Sample ID: 7901-SB-02-14.5
Date Collected: 05/25/17 09:30
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-8
Matrix: Solid
Percent Solids: 84.0

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	330		59	14	mg/Kg	☼	06/01/17 11:07	06/02/17 23:14	1
Motor Oil (>C24-C36)	970		59	11	mg/Kg	☼	06/01/17 11:07	06/02/17 23:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*98*		*54 - 118*	*06/01/17 11:07*	*06/02/17 23:14*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	8.0		0.22	0.074	mg/Kg	☼	05/30/17 16:00	05/31/17 16:24	10
Arsenic	19		0.55	0.11	mg/Kg	☼	05/30/17 16:00	05/31/17 16:24	10
Beryllium	ND		0.22	0.016	mg/Kg	☼	05/30/17 16:00	05/31/17 16:24	10
Cadmium	42		0.44	0.084	mg/Kg	☼	05/30/17 16:00	05/31/17 16:24	10
Chromium	54		0.55	0.069	mg/Kg	☼	05/30/17 16:00	05/31/17 16:24	10
Copper	660		1.1	0.24	mg/Kg	☼	05/30/17 16:00	05/31/17 16:24	10
Lead	2300		0.55	0.053	mg/Kg	☼	05/30/17 16:00	05/31/17 16:24	10
Nickel	110		0.55	0.21	mg/Kg	☼	05/30/17 16:00	05/31/17 16:24	10
Selenium	ND		1.1	0.24	mg/Kg	☼	05/30/17 16:00	05/31/17 16:24	10
Silver	0.47		0.22	0.022	mg/Kg	☼	05/30/17 16:00	05/31/17 16:24	10
Thallium	ND		0.44	0.060	mg/Kg	☼	05/30/17 16:00	05/31/17 16:24	10
Zinc	12000		550	180	mg/Kg	☼	05/30/17 16:00	05/31/17 16:41	1000

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.43		0.034	0.010	mg/Kg	☼	05/30/17 12:06	05/30/17 15:32	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	84.0		0.1	0.1	%			06/02/17 14:42	1
Percent Moisture	16.0		0.1	0.1	%			06/02/17 14:42	1

Client Sample ID: 7901-SB-02-17.5
Date Collected: 05/25/17 09:35
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-9
Matrix: Solid
Percent Solids: 65.8

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		70	8.4	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
1,2-Dichlorobenzene	ND		70	17	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
1,3-Dichlorobenzene	ND		70	6.7	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
1,4-Dichlorobenzene	ND		70	12	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
1-Methylnaphthalene	ND		42	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
2,4,5-Trichlorophenol	ND		280	63	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
2,4,6-Trichlorophenol	ND		210	50	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
2,4-Dichlorophenol	ND		140	21	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
2,4-Dimethylphenol	ND		140	21	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
2,4-Dinitrophenol	ND		1400	280	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
2,4-Dinitrotoluene	ND		280	60	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
2,6-Dinitrotoluene	ND		210	48	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
2-Chloronaphthalene	ND		35	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
2-Chlorophenol	ND		280	59	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
2-Methylnaphthalene	ND		70	12	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
2-Methylphenol	ND		210	52	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
2-Nitroaniline	ND		140	21	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
2-Nitrophenol	ND		280	64	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
3 & 4 Methylphenol	ND		280	21	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
3,3'-Dichlorobenzidine	ND		560	140	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
3-Nitroaniline	ND		280	56	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
4,6-Dinitro-2-methylphenol	ND		1400	140	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
4-Bromophenyl phenyl ether	ND		280	57	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
4-Chloro-3-methylphenol	ND		210	46	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
4-Chloroaniline	ND		2100	560	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
4-Chlorophenyl phenyl ether	ND		280	57	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
4-Nitroaniline	ND		140	28	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
4-Nitrophenol	ND		2100	520	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Acenaphthene	ND		35	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Acenaphthylene	ND		35	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Anthracene	**53**		35	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Benzo[a]anthracene	**140**		35	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Benzo[a]pyrene	**110**		84	18	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Benzo[b]fluoranthene	**130**		35	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Benzo[g,h,i]perylene	ND	*	84	21	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Benzo[k]fluoranthene	ND		84	20	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Benzoic acid	ND		3500	1500	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Benzyl alcohol	ND		5600	52	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Bis(2-chloroethoxy)methane	ND		280	57	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Bis(2-chloroethyl)ether	ND		280	56	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Bis(2-ethylhexyl) phthalate	ND		840	190	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
bis(chloroisopropyl) ether	ND		350	52	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Butyl benzyl phthalate	ND		280	70	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Carbazole	ND		210	43	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Chrysene	**140**		84	18	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Dibenz(a,h)anthracene	ND		70	17	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Dibenzofuran	ND		210	50	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Diethyl phthalate	ND		770	180	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Dimethyl phthalate	ND		210	46	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1

Client Sample ID: 7901-SB-02-17.5
Date Collected: 05/25/17 09:35
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-9
Matrix: Solid
Percent Solids: 65.8

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	ND		700	80	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Di-n-octyl phthalate	ND		1400	310	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Fluoranthene	**310**		35	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Fluorene	ND		35	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Hexachlorobenzene	ND		70	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Hexachlorobutadiene	ND		70	21	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Hexachlorocyclopentadiene	ND		140	36	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Hexachloroethane	ND		210	53	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Indeno[1,2,3-cd]pyrene	**93**		56	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Isophorone	ND		210	52	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Naphthalene	ND		35	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Nitrobenzene	ND		280	59	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
N-Nitrosodi-n-propylamine	ND		280	62	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
N-Nitrosodiphenylamine	ND		84	21	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Pentachlorophenol	ND		560	130	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Phenanthrene	**260**		84	17	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Phenol	ND		210	53	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1
Pyrene	**310**		84	21	ug/Kg	☼	06/05/17 09:38	06/06/17 15:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*70*		*10 - 126*	*06/05/17 09:38*	*06/06/17 15:56*	*1*
2-Fluorobiphenyl	*61*		*57 - 110*	*06/05/17 09:38*	*06/06/17 15:56*	*1*
2-Fluorophenol (Surr)	*83*		*36 - 125*	*06/05/17 09:38*	*06/06/17 15:56*	*1*
Nitrobenzene-d5 (Surr)	*70*		*54 - 113*	*06/05/17 09:38*	*06/06/17 15:56*	*1*
Phenol-d5 (Surr)	*83*		*59 - 113*	*06/05/17 09:38*	*06/06/17 15:56*	*1*
Terphenyl-d14 (Surr)	*73*		*68 - 120*	*06/05/17 09:38*	*06/06/17 15:56*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		12	6.5	mg/Kg	☼	06/07/17 10:37	06/07/17 21:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*50 - 150*	*06/07/17 10:37*	*06/07/17 21:23*	*1*
Trifluorotoluene (Surr)				*06/07/17 10:37*	*06/07/17 21:23*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.036	0.011	mg/Kg	☼	06/02/17 09:07	06/04/17 17:20	1
PCB-1221	ND		0.016	0.0061	mg/Kg	☼	06/02/17 09:07	06/04/17 17:20	1
PCB-1232	ND		0.016	0.0071	mg/Kg	☼	06/02/17 09:07	06/04/17 17:20	1
PCB-1242	ND		0.015	0.0023	mg/Kg	☼	06/02/17 09:07	06/04/17 17:20	1
PCB-1248	ND		0.016	0.0042	mg/Kg	☼	06/02/17 09:07	06/04/17 17:20	1
PCB-1254	ND		0.015	0.0022	mg/Kg	☼	06/02/17 09:07	06/04/17 17:20	1
PCB-1260	ND		0.015	0.0028	mg/Kg	☼	06/02/17 09:07	06/04/17 17:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*69*		*25 - 149*	*06/02/17 09:07*	*06/04/17 17:20*	*1*
Tetrachloro-m-xylene	*86*		*35 - 130*	*06/02/17 09:07*	*06/04/17 17:20*	*1*

Client Sample ID: 7901-SB-02-17.5

Date Collected: 05/25/17 09:35
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-9

Matrix: Solid
Percent Solids: 65.8

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		69	17	mg/Kg	☼	06/01/17 11:07	06/02/17 23:44	1
Motor Oil (>C24-C36)	**240**		69	13	mg/Kg	☼	06/01/17 11:07	06/02/17 23:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*76*		*54 - 118*	*06/01/17 11:07*	*06/02/17 23:44*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**10**		0.26	0.087	mg/Kg	☼	05/30/17 16:00	05/31/17 16:29	10
Arsenic	**22**		0.64	0.13	mg/Kg	☼	05/30/17 16:00	05/31/17 16:29	10
Beryllium	ND		0.26	0.019	mg/Kg	☼	05/30/17 16:00	05/31/17 16:29	10
Cadmium	**0.97**		0.51	0.099	mg/Kg	☼	05/30/17 16:00	05/31/17 16:29	10
Chromium	**42**		0.64	0.081	mg/Kg	☼	05/30/17 16:00	05/31/17 16:29	10
Copper	**350**		1.3	0.28	mg/Kg	☼	05/30/17 16:00	05/31/17 16:29	10
Lead	**48**		0.64	0.062	mg/Kg	☼	05/30/17 16:00	05/31/17 16:29	10
Nickel	**65**		0.64	0.25	mg/Kg	☼	05/30/17 16:00	05/31/17 16:29	10
Selenium	ND		1.3	0.28	mg/Kg	☼	05/30/17 16:00	05/31/17 16:29	10
Silver	ND		0.26	0.026	mg/Kg	☼	05/30/17 16:00	05/31/17 16:29	10
Thallium	ND		0.51	0.071	mg/Kg	☼	05/30/17 16:00	05/31/17 16:29	10
Zinc	**360**		6.4	2.1	mg/Kg	☼	05/30/17 16:00	05/31/17 16:29	10

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.041	0.012	mg/Kg	☼	05/30/17 12:06	05/30/17 15:35	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**65.8**		0.1	0.1	%			06/02/17 14:42	1
Percent Moisture	**34.2**		0.1	0.1	%			06/02/17 14:42	1

Client Sample ID: 7901-SB-03-8
Date Collected: 05/25/17 14:05
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-10
Matrix: Solid
Percent Solids: 86.5

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		56	6.7	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
1,2-Dichlorobenzene	ND		56	13	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
1,3-Dichlorobenzene	ND		56	5.3	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
1,4-Dichlorobenzene	ND		56	9.2	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
1-Methylnaphthalene	ND		33	5.6	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
2,4,5-Trichlorophenol	ND		220	50	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
2,4,6-Trichlorophenol	ND		170	40	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
2,4-Dichlorophenol	ND		110	17	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
2,4-Dimethylphenol	ND		110	17	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
2,4-Dinitrophenol	ND		1100	220	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
2,4-Dinitrotoluene	ND		220	48	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
2,6-Dinitrotoluene	ND		170	38	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
2-Chloronaphthalene	ND		28	5.6	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
2-Chlorophenol	ND		220	47	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
2-Methylnaphthalene	ND		56	9.8	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
2-Methylphenol	ND		170	41	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
2-Nitroaniline	ND		110	17	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
2-Nitrophenol	ND		220	51	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
3 & 4 Methylphenol	ND		220	17	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
3,3'-Dichlorobenzidine	ND		450	110	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
3-Nitroaniline	ND		220	45	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
4,6-Dinitro-2-methylphenol	ND		1100	110	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
4-Bromophenyl phenyl ether	ND		220	46	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
4-Chloro-3-methylphenol	ND		170	37	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
4-Chloroaniline	ND		1700	450	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
4-Chlorophenyl phenyl ether	ND		220	46	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
4-Nitroaniline	ND		110	22	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
4-Nitrophenol	ND		1700	410	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Acenaphthene	ND		28	5.6	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Acenaphthylene	ND		28	5.6	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Anthracene	ND		28	5.6	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Benzo[a]anthracene	ND		28	5.6	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Benzo[a]pyrene	ND		67	14	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Benzo[b]fluoranthene	ND		28	5.6	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Benzo[g,h,i]perylene	ND	*	67	17	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Benzo[k]fluoranthene	ND		67	16	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Benzoic acid	ND		2800	1200	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Benzyl alcohol	ND		4500	41	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Bis(2-chloroethoxy)methane	ND		220	46	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Bis(2-chloroethyl)ether	ND		220	45	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Bis(2-ethylhexyl) phthalate	ND		670	150	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
bis(chloroisopropyl) ether	ND		280	41	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Butyl benzyl phthalate	ND		220	56	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Carbazole	ND		170	35	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Chrysene	ND		67	14	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Dibenz(a,h)anthracene	ND		56	13	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Dibenzofuran	ND		170	40	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Diethyl phthalate	ND		610	150	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Dimethyl phthalate	ND		170	37	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1

Client Sample ID: 7901-SB-03-8
Date Collected: 05/25/17 14:05
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-10
Matrix: Solid
Percent Solids: 86.5

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	ND		560	64	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Di-n-octyl phthalate	ND		1100	250	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Fluoranthene	ND		28	5.6	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Fluorene	ND		28	5.6	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Hexachlorobenzene	ND		56	5.6	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Hexachlorobutadiene	ND		56	17	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Hexachlorocyclopentadiene	ND		110	29	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Hexachloroethane	ND		170	42	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Indeno[1,2,3-cd]pyrene	ND		45	5.6	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Isophorone	ND		170	41	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Naphthalene	ND		28	5.6	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Nitrobenzene	ND		220	47	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
N-Nitrosodi-n-propylamine	ND		220	49	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
N-Nitrosodiphenylamine	ND		67	17	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Pentachlorophenol	ND		450	100	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Phenanthrene	ND		67	13	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Phenol	ND		170	42	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1
Pyrene	ND		67	17	ug/Kg	☼	06/05/17 09:38	06/06/17 16:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*76*		*10 - 126*	*06/05/17 09:38*	*06/06/17 16:22*	*1*
2-Fluorobiphenyl	*71*		*57 - 110*	*06/05/17 09:38*	*06/06/17 16:22*	*1*
2-Fluorophenol (Surr)	*101*		*36 - 125*	*06/05/17 09:38*	*06/06/17 16:22*	*1*
Nitrobenzene-d5 (Surr)	*81*		*54 - 113*	*06/05/17 09:38*	*06/06/17 16:22*	*1*
Phenol-d5 (Surr)	*102*		*59 - 113*	*06/05/17 09:38*	*06/06/17 16:22*	*1*
Terphenyl-d14 (Surr)	*88*		*68 - 120*	*06/05/17 09:38*	*06/06/17 16:22*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		7.3	3.8	mg/Kg	☼	06/08/17 11:43	06/08/17 18:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*50 - 150*	*06/08/17 11:43*	*06/08/17 18:20*	*1*
Trifluorotoluene (Surr)				*06/08/17 11:43*	*06/08/17 18:20*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.028	0.0082	mg/Kg	☼	06/02/17 09:07	06/04/17 17:37	1
PCB-1221	ND		0.012	0.0046	mg/Kg	☼	06/02/17 09:07	06/04/17 17:37	1
PCB-1232	ND		0.012	0.0054	mg/Kg	☼	06/02/17 09:07	06/04/17 17:37	1
PCB-1242	ND		0.011	0.0018	mg/Kg	☼	06/02/17 09:07	06/04/17 17:37	1
PCB-1248	ND		0.012	0.0032	mg/Kg	☼	06/02/17 09:07	06/04/17 17:37	1
PCB-1254	ND		0.011	0.0017	mg/Kg	☼	06/02/17 09:07	06/04/17 17:37	1
PCB-1260	ND		0.011	0.0021	mg/Kg	☼	06/02/17 09:07	06/04/17 17:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*92*		*25 - 149*	*06/02/17 09:07*	*06/04/17 17:37*	*1*
Tetrachloro-m-xylene	*97*		*35 - 130*	*06/02/17 09:07*	*06/04/17 17:37*	*1*

Client Sample ID: 7901-SB-03-8
Date Collected: 05/25/17 14:05
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-10
Matrix: Solid
Percent Solids: 86.5

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		52	13	mg/Kg	☼	06/01/17 11:07	06/03/17 00:14	1
Motor Oil (>C24-C36)	**110**		52	9.5	mg/Kg	☼	06/01/17 11:07	06/03/17 00:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*76*		*54 - 118*	*06/01/17 11:07*	*06/03/17 00:14*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**62**		0.20	0.070	mg/Kg	☼	05/30/17 16:00	05/31/17 13:52	10
Arsenic	**11**		0.51	0.10	mg/Kg	☼	05/30/17 16:00	05/31/17 13:52	10
Beryllium	**0.23**		0.20	0.015	mg/Kg	☼	05/30/17 16:00	05/31/17 13:52	10
Cadmium	**1.3**		0.41	0.079	mg/Kg	☼	05/30/17 16:00	05/31/17 13:52	10
Chromium	**44**		0.51	0.064	mg/Kg	☼	05/30/17 16:00	05/31/17 13:52	10
Copper	**150**		1.0	0.22	mg/Kg	☼	05/30/17 16:00	05/31/17 13:52	10
Lead	**320**		0.51	0.049	mg/Kg	☼	05/30/17 16:00	05/31/17 13:52	10
Nickel	**48**		0.51	0.20	mg/Kg	☼	05/30/17 16:00	05/31/17 13:52	10
Selenium	ND		1.0	0.22	mg/Kg	☼	05/30/17 16:00	05/31/17 13:52	10
Silver	**0.33**		0.20	0.020	mg/Kg	☼	05/30/17 16:00	05/31/17 13:52	10
Thallium	ND		0.41	0.056	mg/Kg	☼	05/30/17 16:00	05/31/17 13:52	10
Zinc	**1400**		5.1	1.6	mg/Kg	☼	05/30/17 16:00	05/31/17 13:52	10

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.056**		0.032	0.0097	mg/Kg	☼	05/30/17 12:06	05/30/17 15:37	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**86.5**		0.1	0.1	%			06/02/17 14:42	1
Percent Moisture	**13.5**		0.1	0.1	%			06/02/17 14:42	1

Client: Leidos, Inc.
Project/Site: 7901 Parcel-South Park Landfill

TestAmerica Job ID: 580-68649-1

Client Sample ID: 7901-SB-03-9
Date Collected: 05/25/17 14:10
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-11
Matrix: Solid
Percent Solids: 79.8

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		290	35	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
1,2-Dichlorobenzene	ND		290	70	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
1,3-Dichlorobenzene	ND		290	28	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
1,4-Dichlorobenzene	ND		290	49	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
1-Methylnaphthalene	**340**		180	29	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
2,4,5-Trichlorophenol	ND		1200	260	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
2,4,6-Trichlorophenol	ND		880	210	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
2,4-Dichlorophenol	ND		590	88	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
2,4-Dimethylphenol	ND		590	88	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
2,4-Dinitrophenol	ND		5900	1200	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
2,4-Dinitrotoluene	ND		1200	250	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
2,6-Dinitrotoluene	ND		880	200	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
2-Chloronaphthalene	ND		150	29	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
2-Chlorophenol	ND		1200	250	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
2-Methylnaphthalene	**570**		290	52	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
2-Methylphenol	ND		880	220	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
2-Nitroaniline	ND		590	88	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
2-Nitrophenol	ND		1200	270	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
3 & 4 Methylphenol	ND		1200	88	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
3,3'-Dichlorobenzidine	ND		2300	590	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
3-Nitroaniline	ND		1200	230	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
4,6-Dinitro-2-methylphenol	ND		5900	590	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
4-Bromophenyl phenyl ether	ND		1200	240	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
4-Chloro-3-methylphenol	ND		880	190	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
4-Chloroaniline	ND		8800	2300	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
4-Chlorophenyl phenyl ether	ND		1200	240	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
4-Nitroaniline	ND		590	120	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
4-Nitrophenol	ND		8800	2200	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Acenaphthene	ND		150	29	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Acenaphthylene	ND		150	29	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Anthracene	**3700**		150	29	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Benzo[a]anthracene	**29000**		150	29	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Benzo[a]pyrene	**16000**		350	76	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Benzo[b]fluoranthene	**19000**		150	29	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Benzo[g,h,i]perylene	**7600**	*	350	88	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Benzo[k]fluoranthene	**8400**		350	82	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Benzoic acid	ND		15000	6200	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Benzyl alcohol	ND		23000	220	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Bis(2-chloroethoxy)methane	ND		1200	240	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Bis(2-chloroethyl)ether	ND		1200	230	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Bis(2-ethylhexyl) phthalate	ND		3500	800	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
bis(chloroisopropyl) ether	ND		1500	220	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Butyl benzyl phthalate	ND		1200	290	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Carbazole	**1400**		880	180	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Chrysene	**27000**		350	76	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Dibenz(a,h)anthracene	**2200**		290	70	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Dibenzofuran	ND		880	210	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Diethyl phthalate	ND		3200	780	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Dimethyl phthalate	ND		880	190	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5

Client Sample ID: 7901-SB-03-9
Date Collected: 05/25/17 14:10
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-11
Matrix: Solid
Percent Solids: 79.8

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	ND		2900	330	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Di-n-octyl phthalate	ND		5900	1300	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Fluorene	**680**		150	29	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Hexachlorobenzene	ND		290	29	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Hexachlorobutadiene	ND		290	88	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Hexachlorocyclopentadiene	ND		590	150	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Hexachloroethane	ND		880	220	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Indeno[1,2,3-cd]pyrene	**9900**		230	29	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Isophorone	ND		880	220	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Naphthalene	**230**		150	29	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Nitrobenzene	ND		1200	250	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
N-Nitrosodi-n-propylamine	ND		1200	260	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
N-Nitrosodiphenylamine	ND		350	88	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Pentachlorophenol	ND		2300	530	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Phenanthrene	**12000**		350	70	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5
Phenol	ND		880	220	ug/Kg	☼	06/05/17 09:38	06/06/17 16:47	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*59*		*10 - 126*	*06/05/17 09:38*	*06/06/17 16:47*	*5*
2-Fluorobiphenyl	*81*		*57 - 110*	*06/05/17 09:38*	*06/06/17 16:47*	*5*
2-Fluorophenol (Surr)	*121*		*36 - 125*	*06/05/17 09:38*	*06/06/17 16:47*	*5*
Nitrobenzene-d5 (Surr)	*104*		*54 - 113*	*06/05/17 09:38*	*06/06/17 16:47*	*5*
Phenol-d5 (Surr)	*126*	*X*	*59 - 113*	*06/05/17 09:38*	*06/06/17 16:47*	*5*
Terphenyl-d14 (Surr)	*97*		*68 - 120*	*06/05/17 09:38*	*06/06/17 16:47*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	**99000**		1500	290	ug/Kg	☼	06/05/17 09:38	06/07/17 15:45	50
Pyrene	**95000**		3500	880	ug/Kg	☼	06/05/17 09:38	06/07/17 15:45	50

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**220**		9.4	4.9	mg/Kg	☼	06/08/17 11:43	06/08/17 18:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*119*		*50 - 150*	*06/08/17 11:43*	*06/08/17 18:50*	*1*
Trifluorotoluene (Surr)				*06/08/17 11:43*	*06/08/17 18:50*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.030	0.0088	mg/Kg	☼	06/02/17 09:07	06/04/17 17:53	1
PCB-1221	ND		0.013	0.0050	mg/Kg	☼	06/02/17 09:07	06/04/17 17:53	1
PCB-1232	ND		0.013	0.0059	mg/Kg	☼	06/02/17 09:07	06/04/17 17:53	1
PCB-1242	ND		0.012	0.0019	mg/Kg	☼	06/02/17 09:07	06/04/17 17:53	1
PCB-1248	ND		0.013	0.0035	mg/Kg	☼	06/02/17 09:07	06/04/17 17:53	1
PCB-1254	ND		0.012	0.0018	mg/Kg	☼	06/02/17 09:07	06/04/17 17:53	1
PCB-1260	ND		0.012	0.0023	mg/Kg	☼	06/02/17 09:07	06/04/17 17:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*99*		*25 - 149*	*06/02/17 09:07*	*06/04/17 17:53*	*1*
Tetrachloro-m-xylene	*84*		*35 - 130*	*06/02/17 09:07*	*06/04/17 17:53*	*1*

Client Sample Results

Client: Leidos, Inc.
Project/Site: 7901 Parcel-South Park Landfill

TestAmerica Job ID: 580-68649-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	2200		60	15	mg/Kg	☼	06/01/17 11:07	06/09/17 23:11	1
Motor Oil (>C24-C36)	3800		60	11	mg/Kg	☼	06/01/17 11:07	06/09/17 23:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*170*	*X*	*54 - 118*	*06/01/17 11:07*	*06/09/17 23:11*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	77		0.16	0.056	mg/Kg	☼	05/30/17 16:00	05/31/17 14:34	10
Arsenic	42		0.41	0.082	mg/Kg	☼	05/30/17 16:00	05/31/17 14:34	10
Beryllium	0.21		0.16	0.012	mg/Kg	☼	05/30/17 16:00	05/31/17 14:34	10
Cadmium	22		0.33	0.063	mg/Kg	☼	05/30/17 16:00	05/31/17 14:34	10
Chromium	110		0.41	0.052	mg/Kg	☼	05/30/17 16:00	05/31/17 14:34	10
Copper	2400		0.82	0.18	mg/Kg	☼	05/30/17 16:00	05/31/17 14:34	10
Lead	5100		41	3.9	mg/Kg	☼	05/30/17 16:00	05/31/17 15:04	1000
Nickel	130		0.41	0.16	mg/Kg	☼	05/30/17 16:00	05/31/17 14:34	10
Selenium	ND		0.82	0.18	mg/Kg	☼	05/30/17 16:00	05/31/17 14:34	10
Silver	2.2		0.16	0.016	mg/Kg	☼	05/30/17 16:00	05/31/17 14:34	10
Thallium	ND		0.33	0.045	mg/Kg	☼	05/30/17 16:00	05/31/17 14:34	10
Zinc	4800		410	130	mg/Kg	☼	05/30/17 16:00	05/31/17 15:04	1000

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.34		0.032	0.0095	mg/Kg	☼	05/30/17 12:06	05/30/17 15:39	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	79.8		0.1	0.1	%			06/02/17 14:42	1
Percent Moisture	20.2		0.1	0.1	%			06/02/17 14:42	1

Client Sample ID: 7901-SB-03-17
Date Collected: 05/25/17 14:15
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-12
Matrix: Solid
Percent Solids: 70.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		70	8.4	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
1,2-Dichlorobenzene	ND		70	17	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
1,3-Dichlorobenzene	ND		70	6.8	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
1,4-Dichlorobenzene	ND		70	12	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
1-Methylnaphthalene	ND		42	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
2,4,5-Trichlorophenol	ND		280	63	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
2,4,6-Trichlorophenol	ND		210	51	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
2,4-Dichlorophenol	ND		140	21	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
2,4-Dimethylphenol	ND		140	21	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
2,4-Dinitrophenol	ND		1400	280	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
2,4-Dinitrotoluene	ND		280	60	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
2,6-Dinitrotoluene	ND		210	48	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
2-Chloronaphthalene	ND		35	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
2-Chlorophenol	ND		280	59	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
2-Methylnaphthalene	ND		70	12	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
2-Methylphenol	ND		210	52	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
2-Nitroaniline	ND		140	21	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
2-Nitrophenol	ND		280	65	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
3 & 4 Methylphenol	ND		280	21	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
3,3'-Dichlorobenzidine	ND		560	140	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
3-Nitroaniline	ND		280	56	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
4,6-Dinitro-2-methylphenol	ND		1400	140	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
4-Bromophenyl phenyl ether	ND		280	58	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
4-Chloro-3-methylphenol	ND		210	46	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
4-Chloroaniline	ND		2100	560	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
4-Chlorophenyl phenyl ether	ND		280	58	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
4-Nitroaniline	ND		140	28	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
4-Nitrophenol	ND		2100	520	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Acenaphthene	ND		35	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Acenaphthylene	ND		35	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Anthracene	ND		35	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Benzo[a]anthracene	ND		35	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Benzo[a]pyrene	ND		84	18	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Benzo[b]fluoranthene	ND		35	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Benzo[g,h,i]perylene	ND	*	84	21	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Benzo[k]fluoranthene	ND		84	20	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Benzoic acid	ND		3500	1500	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Benzyl alcohol	ND		5600	52	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Bis(2-chloroethoxy)methane	ND		280	58	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Bis(2-chloroethyl)ether	ND		280	56	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Bis(2-ethylhexyl) phthalate	ND		840	190	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
bis(chloroisopropyl) ether	ND		350	52	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Butyl benzyl phthalate	ND		280	70	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Carbazole	ND		210	44	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Chrysene	ND		84	18	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Dibenz(a,h)anthracene	ND		70	17	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Dibenzofuran	ND		210	51	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Diethyl phthalate	ND		770	190	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Dimethyl phthalate	ND		210	46	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1

Client Sample ID: 7901-SB-03-17
Date Collected: 05/25/17 14:15
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-12
Matrix: Solid
Percent Solids: 70.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	ND		700	80	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Di-n-octyl phthalate	ND		1400	310	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Fluoranthene	ND		35	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Fluorene	ND		35	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Hexachlorobenzene	ND		70	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Hexachlorobutadiene	ND		70	21	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Hexachlorocyclopentadiene	ND		140	37	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Hexachloroethane	ND		210	53	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Indeno[1,2,3-cd]pyrene	ND		56	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Isophorone	ND		210	52	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Naphthalene	ND		35	7.0	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Nitrobenzene	ND		280	59	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
N-Nitrosodi-n-propylamine	ND		280	62	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
N-Nitrosodiphenylamine	ND		84	21	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Pentachlorophenol	ND		560	130	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Phenanthrene	ND		84	17	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Phenol	ND		210	53	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1
Pyrene	ND		84	21	ug/Kg	☼	06/05/17 09:38	06/06/17 17:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*81*		*10 - 126*	*06/05/17 09:38*	*06/06/17 17:13*	*1*
2-Fluorobiphenyl	*70*		*57 - 110*	*06/05/17 09:38*	*06/06/17 17:13*	*1*
2-Fluorophenol (Surr)	*101*		*36 - 125*	*06/05/17 09:38*	*06/06/17 17:13*	*1*
Nitrobenzene-d5 (Surr)	*82*		*54 - 113*	*06/05/17 09:38*	*06/06/17 17:13*	*1*
Phenol-d5 (Surr)	*100*		*59 - 113*	*06/05/17 09:38*	*06/06/17 17:13*	*1*
Terphenyl-d14 (Surr)	*86*		*68 - 120*	*06/05/17 09:38*	*06/06/17 17:13*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		12	6.1	mg/Kg	☼	06/08/17 11:43	06/08/17 19:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*50 - 150*	*06/08/17 11:43*	*06/08/17 19:21*	*1*
Trifluorotoluene (Surr)				*06/08/17 11:43*	*06/08/17 19:21*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.033	0.0097	mg/Kg	☼	06/02/17 09:07	06/04/17 18:09	1
PCB-1221	ND		0.014	0.0055	mg/Kg	☼	06/02/17 09:07	06/04/17 18:09	1
PCB-1232	ND		0.014	0.0064	mg/Kg	☼	06/02/17 09:07	06/04/17 18:09	1
PCB-1242	ND		0.013	0.0021	mg/Kg	☼	06/02/17 09:07	06/04/17 18:09	1
PCB-1248	ND		0.014	0.0038	mg/Kg	☼	06/02/17 09:07	06/04/17 18:09	1
PCB-1254	ND		0.013	0.0020	mg/Kg	☼	06/02/17 09:07	06/04/17 18:09	1
PCB-1260	ND		0.013	0.0025	mg/Kg	☼	06/02/17 09:07	06/04/17 18:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*66*		*25 - 149*	*06/02/17 09:07*	*06/04/17 18:09*	*1*
Tetrachloro-m-xylene	*85*		*35 - 130*	*06/02/17 09:07*	*06/04/17 18:09*	*1*

Client Sample ID: 7901-SB-03-17
Date Collected: 05/25/17 14:15
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-12
Matrix: Solid
Percent Solids: 70.7

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		67	16	mg/Kg	☼	06/01/17 11:07	06/09/17 23:33	1
Motor Oil (>C24-C36)	ND		67	12	mg/Kg	☼	06/01/17 11:07	06/09/17 23:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*97*		*54 - 118*	*06/01/17 11:07*	*06/09/17 23:33*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.85**		0.17	0.059	mg/Kg	☼	05/30/17 16:00	05/31/17 14:39	10
Arsenic	**6.0**		0.43	0.086	mg/Kg	☼	05/30/17 16:00	05/31/17 14:39	10
Beryllium	**0.33**		0.17	0.013	mg/Kg	☼	05/30/17 16:00	05/31/17 14:39	10
Cadmium	**0.37**		0.34	0.066	mg/Kg	☼	05/30/17 16:00	05/31/17 14:39	10
Chromium	**17**		0.43	0.054	mg/Kg	☼	05/30/17 16:00	05/31/17 14:39	10
Copper	**35**		0.86	0.19	mg/Kg	☼	05/30/17 16:00	05/31/17 14:39	10
Lead	**37**		0.43	0.041	mg/Kg	☼	05/30/17 16:00	05/31/17 14:39	10
Nickel	**14**		0.43	0.17	mg/Kg	☼	05/30/17 16:00	05/31/17 14:39	10
Selenium	ND		0.86	0.19	mg/Kg	☼	05/30/17 16:00	05/31/17 14:39	10
Silver	ND		0.17	0.017	mg/Kg	☼	05/30/17 16:00	05/31/17 14:39	10
Thallium	ND		0.34	0.047	mg/Kg	☼	05/30/17 16:00	05/31/17 14:39	10
Zinc	**180**		4.3	1.4	mg/Kg	☼	05/30/17 16:00	05/31/17 14:39	10

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.048**		0.040	0.012	mg/Kg	☼	05/30/17 12:06	05/30/17 15:41	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**70.7**		0.1	0.1	%			06/05/17 15:52	1
Percent Moisture	**29.3**		0.1	0.1	%			06/05/17 15:52	1

Client Sample ID: 7901-SB-04-9
Date Collected: 05/25/17 12:05
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-13
Matrix: Solid
Percent Solids: 76.2

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		62	7.4	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
1,2-Dichlorobenzene	ND		62	15	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
1,3-Dichlorobenzene	ND		62	6.0	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
1,4-Dichlorobenzene	ND		62	10	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
1-Methylnaphthalene	**140**		37	6.2	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
2,4,5-Trichlorophenol	ND		250	56	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
2,4,6-Trichlorophenol	ND		190	45	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
2,4-Dichlorophenol	ND		120	19	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
2,4-Dimethylphenol	ND		120	19	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
2,4-Dinitrophenol	ND		1200	250	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
2,4-Dinitrotoluene	ND		250	53	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
2,6-Dinitrotoluene	ND		190	42	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
2-Chloronaphthalene	ND		31	6.2	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
2-Chlorophenol	ND		250	52	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
2-Methylnaphthalene	**180**		62	11	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
2-Methylphenol	ND		190	46	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
2-Nitroaniline	ND		120	19	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
2-Nitrophenol	ND		250	57	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
3 & 4 Methylphenol	ND		250	19	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
3,3'-Dichlorobenzidine	ND		500	120	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
3-Nitroaniline	ND		250	50	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
4,6-Dinitro-2-methylphenol	ND		1200	120	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
4-Bromophenyl phenyl ether	ND		250	51	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
4-Chloro-3-methylphenol	ND		190	41	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
4-Chloroaniline	ND		1900	500	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
4-Chlorophenyl phenyl ether	ND		250	51	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
4-Nitroaniline	ND		120	25	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
4-Nitrophenol	ND		1900	460	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Acenaphthene	**330**		31	6.2	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Acenaphthylene	**34**		31	6.2	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Anthracene	**210**		31	6.2	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Benzo[a]anthracene	**540**		31	6.2	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Benzo[a]pyrene	**520**		74	16	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Benzo[b]fluoranthene	**710**		31	6.2	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Benzo[g,h,i]perylene	**230**	*	74	19	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Benzo[k]fluoranthene	**180**		74	17	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Benzoic acid	ND		3100	1300	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Benzyl alcohol	ND		5000	46	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Bis(2-chloroethoxy)methane	ND		250	51	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Bis(2-chloroethyl)ether	ND		250	50	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Bis(2-ethylhexyl) phthalate	ND		740	170	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
bis(chloroisopropyl) ether	ND		310	46	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Butyl benzyl phthalate	ND		250	62	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Carbazole	ND		190	38	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Chrysene	**760**		74	16	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Dibenz(a,h)anthracene	**110**		62	15	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Dibenzofuran	**190**		190	45	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Diethyl phthalate	ND		680	160	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Dimethyl phthalate	ND		190	41	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1

Client Sample ID: 7901-SB-04-9
Date Collected: 05/25/17 12:05
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-13
Matrix: Solid
Percent Solids: 76.2

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	ND		620	71	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Di-n-octyl phthalate	ND		1200	280	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Fluoranthene	**1200**		31	6.2	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Fluorene	**400**		31	6.2	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Hexachlorobenzene	ND		62	6.2	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Hexachlorobutadiene	ND		62	19	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Hexachlorocyclopentadiene	ND		120	32	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Hexachloroethane	ND		190	47	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Indeno[1,2,3-cd]pyrene	**320**		50	6.2	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Isophorone	ND		190	46	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Naphthalene	**210**		31	6.2	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Nitrobenzene	ND		250	52	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
N-Nitrosodi-n-propylamine	ND		250	55	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
N-Nitrosodiphenylamine	ND		74	19	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Pentachlorophenol	ND		500	110	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Phenanthrene	**1600**		74	15	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Phenol	ND		190	47	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1
Pyrene	**1400**		74	19	ug/Kg	☼	06/05/17 09:38	06/06/17 17:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*67*		*10 - 126*	*06/05/17 09:38*	*06/06/17 17:39*	*1*
2-Fluorobiphenyl	*64*		*57 - 110*	*06/05/17 09:38*	*06/06/17 17:39*	*1*
2-Fluorophenol (Surr)	*105*		*36 - 125*	*06/05/17 09:38*	*06/06/17 17:39*	*1*
Nitrobenzene-d5 (Surr)	*82*		*54 - 113*	*06/05/17 09:38*	*06/06/17 17:39*	*1*
Phenol-d5 (Surr)	*108*		*59 - 113*	*06/05/17 09:38*	*06/06/17 17:39*	*1*
Terphenyl-d14 (Surr)	*89*		*68 - 120*	*06/05/17 09:38*	*06/06/17 17:39*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**31**		10	5.4	mg/Kg	☼	06/08/17 11:43	06/08/17 19:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*50 - 150*	*06/08/17 11:43*	*06/08/17 19:51*	*1*
Trifluorotoluene (Surr)				*06/08/17 11:43*	*06/08/17 19:51*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.032	0.0096	mg/Kg	☼	06/02/17 09:07	06/04/17 18:25	1
PCB-1221	ND		0.014	0.0054	mg/Kg	☼	06/02/17 09:07	06/04/17 18:25	1
PCB-1232	ND		0.014	0.0063	mg/Kg	☼	06/02/17 09:07	06/04/17 18:25	1
PCB-1242	ND		0.013	0.0021	mg/Kg	☼	06/02/17 09:07	06/04/17 18:25	1
PCB-1248	ND		0.014	0.0037	mg/Kg	☼	06/02/17 09:07	06/04/17 18:25	1
PCB-1254	ND		0.013	0.0019	mg/Kg	☼	06/02/17 09:07	06/04/17 18:25	1
PCB-1260	ND		0.013	0.0025	mg/Kg	☼	06/02/17 09:07	06/04/17 18:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*81*		*25 - 149*	*06/02/17 09:07*	*06/04/17 18:25*	*1*
Tetrachloro-m-xylene	*78*		*35 - 130*	*06/02/17 09:07*	*06/04/17 18:25*	*1*

Client Sample ID: 7901-SB-04-9
Date Collected: 05/25/17 12:05
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-13
Matrix: Solid
Percent Solids: 76.2

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1300		63	15	mg/Kg	☼	06/01/17 11:07	06/09/17 23:55	1
Motor Oil (>C24-C36)	3000		63	11	mg/Kg	☼	06/01/17 11:07	06/09/17 23:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*110*		*54 - 118*	*06/01/17 11:07*	*06/09/17 23:55*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	49		0.20	0.070	mg/Kg	☼	05/30/17 16:00	05/31/17 14:43	10
Arsenic	49		0.51	0.10	mg/Kg	☼	05/30/17 16:00	05/31/17 14:43	10
Beryllium	0.74		0.20	0.015	mg/Kg	☼	05/30/17 16:00	05/31/17 14:43	10
Cadmium	17		0.41	0.079	mg/Kg	☼	05/30/17 16:00	05/31/17 14:43	10
Chromium	40		0.51	0.064	mg/Kg	☼	05/30/17 16:00	05/31/17 14:43	10
Copper	570		1.0	0.22	mg/Kg	☼	05/30/17 16:00	05/31/17 14:43	10
Lead	22000		51	4.9	mg/Kg	☼	05/30/17 16:00	05/31/17 14:59	1000
Nickel	63		0.51	0.20	mg/Kg	☼	05/30/17 16:00	05/31/17 14:43	10
Selenium	1.4		1.0	0.22	mg/Kg	☼	05/30/17 16:00	05/31/17 14:43	10
Silver	1.0		0.20	0.020	mg/Kg	☼	05/30/17 16:00	05/31/17 14:43	10
Thallium	ND		0.41	0.056	mg/Kg	☼	05/30/17 16:00	05/31/17 14:43	10
Zinc	8600		510	160	mg/Kg	☼	05/30/17 16:00	05/31/17 14:59	1000

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.66		0.033	0.0099	mg/Kg	☼	05/30/17 12:06	05/30/17 15:44	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	76.2		0.1	0.1	%			06/05/17 15:52	1
Percent Moisture	23.8		0.1	0.1	%			06/05/17 15:52	1

Client Sample ID: 7901-SB-04-14
Date Collected: 05/25/17 12:10
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-14
Matrix: Solid
Percent Solids: 82.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		2700	330	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
1,2-Dichlorobenzene	ND		2700	650	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
1,3-Dichlorobenzene	ND		2700	260	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
1,4-Dichlorobenzene	ND		2700	450	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
1-Methylnaphthalene	ND		1600	270	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
2,4,5-Trichlorophenol	ND		11000	2500	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
2,4,6-Trichlorophenol	ND		8200	2000	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
2,4-Dichlorophenol	ND		5500	820	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
2,4-Dimethylphenol	ND		5500	820	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
2,4-Dinitrophenol	ND		55000	11000	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
2,4-Dinitrotoluene	ND		11000	2300	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
2,6-Dinitrotoluene	ND		8200	1900	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
2-Chloronaphthalene	ND		1400	270	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
2-Chlorophenol	ND		11000	2300	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
2-Methylnaphthalene	ND		2700	480	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
2-Methylphenol	ND		8200	2000	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
2-Nitroaniline	ND		5500	820	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
2-Nitrophenol	ND		11000	2500	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
3 & 4 Methylphenol	ND		11000	820	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
3,3'-Dichlorobenzidine	ND		22000	5500	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
3-Nitroaniline	ND		11000	2200	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
4,6-Dinitro-2-methylphenol	ND		55000	5500	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
4-Bromophenyl phenyl ether	ND		11000	2200	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
4-Chloro-3-methylphenol	ND		8200	1800	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
4-Chloroaniline	ND		82000	22000	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
4-Chlorophenyl phenyl ether	ND		11000	2200	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
4-Nitroaniline	ND		5500	1100	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
4-Nitrophenol	ND		82000	20000	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Acenaphthene	ND		1400	270	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Acenaphthylene	ND		1400	270	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Anthracene	ND		1400	270	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Benzo[a]anthracene	ND		1400	270	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Benzo[a]pyrene	ND		3300	710	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Benzo[b]fluoranthene	ND		1400	270	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Benzo[g,h,i]perylene	ND	*	3300	820	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Benzo[k]fluoranthene	ND		3300	760	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Benzoic acid	ND		140000	58000	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Benzyl alcohol	ND		220000	2000	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Bis(2-chloroethoxy)methane	ND		11000	2200	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Bis(2-chloroethyl)ether	ND		11000	2200	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Bis(2-ethylhexyl) phthalate	ND		33000	7400	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
bis(chloroisopropyl) ether	ND		14000	2000	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Butyl benzyl phthalate	ND		11000	2700	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Carbazole	ND		8200	1700	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Chrysene	ND		3300	710	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Dibenz(a,h)anthracene	ND		2700	650	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Dibenzofuran	ND		8200	2000	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Diethyl phthalate	ND		30000	7200	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Dimethyl phthalate	ND		8200	1800	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50

Client Sample ID: 7901-SB-04-14
Date Collected: 05/25/17 12:10
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-14
Matrix: Solid
Percent Solids: 82.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	ND		27000	3100	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Di-n-octyl phthalate	ND		55000	12000	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Fluoranthene	ND		1400	270	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Fluorene	ND		1400	270	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Hexachlorobenzene	ND		2700	270	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Hexachlorobutadiene	ND		2700	820	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Hexachlorocyclopentadiene	ND		5500	1400	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Hexachloroethane	ND		8200	2100	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Indeno[1,2,3-cd]pyrene	ND		2200	270	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Isophorone	ND		8200	2000	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Naphthalene	ND		1400	270	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Nitrobenzene	ND		11000	2300	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
N-Nitrosodi-n-propylamine	ND		11000	2400	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
N-Nitrosodiphenylamine	ND		3300	820	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Pentachlorophenol	ND		22000	5000	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Phenanthrene	ND		3300	650	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Phenol	ND		8200	2100	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50
Pyrene	ND		3300	820	ug/Kg	☼	06/05/17 09:38	06/06/17 18:04	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*0*	*X*	*10 - 126*	*06/05/17 09:38*	*06/06/17 18:04*	*50*
2-Fluorobiphenyl	*81*		*57 - 110*	*06/05/17 09:38*	*06/06/17 18:04*	*50*
2-Fluorophenol (Surr)	*114*		*36 - 125*	*06/05/17 09:38*	*06/06/17 18:04*	*50*
Nitrobenzene-d5 (Surr)	*111*		*54 - 113*	*06/05/17 09:38*	*06/06/17 18:04*	*50*
Phenol-d5 (Surr)	*104*		*59 - 113*	*06/05/17 09:38*	*06/06/17 18:04*	*50*
Terphenyl-d14 (Surr)	*74*		*68 - 120*	*06/05/17 09:38*	*06/06/17 18:04*	*50*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**43**		10	5.3	mg/Kg	☼	06/08/17 11:43	06/08/17 20:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*50 - 150*	*06/08/17 11:43*	*06/08/17 20:22*	*1*
Trifluorotoluene (Surr)				*06/08/17 11:43*	*06/08/17 20:22*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.028	0.0084	mg/Kg	☼	06/02/17 09:07	06/04/17 18:42	1
PCB-1221	ND		0.012	0.0048	mg/Kg	☼	06/02/17 09:07	06/04/17 18:42	1
PCB-1232	ND		0.012	0.0056	mg/Kg	☼	06/02/17 09:07	06/04/17 18:42	1
PCB-1242	ND		0.011	0.0018	mg/Kg	☼	06/02/17 09:07	06/04/17 18:42	1
PCB-1248	ND		0.012	0.0033	mg/Kg	☼	06/02/17 09:07	06/04/17 18:42	1
PCB-1254	ND		0.011	0.0017	mg/Kg	☼	06/02/17 09:07	06/04/17 18:42	1
PCB-1260	ND		0.011	0.0022	mg/Kg	☼	06/02/17 09:07	06/04/17 18:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*79*		*25 - 149*	*06/02/17 09:07*	*06/04/17 18:42*	*1*
Tetrachloro-m-xylene	*86*		*35 - 130*	*06/02/17 09:07*	*06/04/17 18:42*	*1*

Client Sample ID: 7901-SB-04-14
Date Collected: 05/25/17 12:10
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-14
Matrix: Solid
Percent Solids: 82.7

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1500		300	73	mg/Kg	☼	06/01/17 11:07	06/10/17 00:17	5
Motor Oil (>C24-C36)	22000		300	54	mg/Kg	☼	06/01/17 11:07	06/10/17 00:17	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*85*		*54 - 118*	*06/01/17 11:07*	*06/10/17 00:17*	*5*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.79		0.21	0.070	mg/Kg	☼	05/30/17 16:00	05/31/17 14:47	10
Arsenic	1.8		0.51	0.10	mg/Kg	☼	05/30/17 16:00	05/31/17 14:47	10
Beryllium	ND		0.21	0.015	mg/Kg	☼	05/30/17 16:00	05/31/17 14:47	10
Cadmium	1.1		0.41	0.079	mg/Kg	☼	05/30/17 16:00	05/31/17 14:47	10
Chromium	10		0.51	0.065	mg/Kg	☼	05/30/17 16:00	05/31/17 14:47	10
Copper	22		1.0	0.23	mg/Kg	☼	05/30/17 16:00	05/31/17 14:47	10
Lead	63		0.51	0.049	mg/Kg	☼	05/30/17 16:00	05/31/17 14:47	10
Nickel	21		0.51	0.20	mg/Kg	☼	05/30/17 16:00	05/31/17 14:47	10
Selenium	ND		1.0	0.22	mg/Kg	☼	05/30/17 16:00	05/31/17 14:47	10
Silver	ND		0.21	0.021	mg/Kg	☼	05/30/17 16:00	05/31/17 14:47	10
Thallium	ND		0.41	0.056	mg/Kg	☼	05/30/17 16:00	05/31/17 14:47	10
Zinc	480		5.1	1.7	mg/Kg	☼	05/30/17 16:00	05/31/17 14:47	10

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.032	0.0096	mg/Kg	☼	05/30/17 12:06	05/30/17 15:46	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	82.7		0.1	0.1	%			06/05/17 15:52	1
Percent Moisture	17.3		0.1	0.1	%			06/05/17 15:52	1

Client Sample ID: 7901-SB-04-18.5
Date Collected: 05/25/17 12:15
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-15
Matrix: Solid
Percent Solids: 69.1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		71	8.5	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
1,2-Dichlorobenzene	ND		71	17	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
1,3-Dichlorobenzene	ND		71	6.8	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
1,4-Dichlorobenzene	ND		71	12	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
1-Methylnaphthalene	ND		43	7.1	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
2,4,5-Trichlorophenol	ND		280	64	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
2,4,6-Trichlorophenol	ND		210	51	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
2,4-Dichlorophenol	ND		140	21	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
2,4-Dimethylphenol	ND		140	21	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
2,4-Dinitrophenol	ND		1400	280	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
2,4-Dinitrotoluene	ND	F2	280	61	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
2,6-Dinitrotoluene	ND	F2	210	48	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
2-Chloronaphthalene	ND	F2	36	7.1	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
2-Chlorophenol	ND		280	60	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
2-Methylnaphthalene	ND		71	13	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
2-Methylphenol	ND		210	53	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
2-Nitroaniline	ND	F2	140	21	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
2-Nitrophenol	ND		280	66	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
3 & 4 Methylphenol	ND	F1	280	21	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
3,3'-Dichlorobenzidine	ND		570	140	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
3-Nitroaniline	ND		280	57	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
4,6-Dinitro-2-methylphenol	ND		1400	140	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
4-Bromophenyl phenyl ether	ND		280	58	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
4-Chloro-3-methylphenol	ND	F2	210	47	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
4-Chloroaniline	ND	F1	2100	570	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
4-Chlorophenyl phenyl ether	ND	F2	280	58	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
4-Nitroaniline	ND		140	28	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
4-Nitrophenol	ND	F2	2100	520	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Acenaphthene	ND	F2	36	7.1	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Acenaphthylene	ND	F2	36	7.1	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Anthracene	ND		36	7.1	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Benzo[a]anthracene	ND	F2	36	7.1	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Benzo[a]pyrene	ND		85	19	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Benzo[b]fluoranthene	ND		36	7.1	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Benzo[g,h,i]perylene	ND	F1 *	85	21	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Benzo[k]fluoranthene	ND		85	20	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Benzoic acid	ND		3600	1500	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Benzyl alcohol	ND		5700	53	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Bis(2-chloroethoxy)methane	ND		280	58	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Bis(2-chloroethyl)ether	ND	F1	280	57	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Bis(2-ethylhexyl) phthalate	ND	F2	850	190	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
bis(chloroisopropyl) ether	ND	F1	360	53	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Butyl benzyl phthalate	ND		280	71	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Carbazole	ND		210	44	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Chrysene	ND	F2	85	19	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Dibenz(a,h)anthracene	ND	F1	71	17	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Dibenzofuran	ND	F1 F2	210	51	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Diethyl phthalate	ND	F2	780	190	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Dimethyl phthalate	ND	F2	210	47	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1

Client Sample ID: 7901-SB-04-18.5
Date Collected: 05/25/17 12:15
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-15
Matrix: Solid
Percent Solids: 69.1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	ND		710	81	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Di-n-octyl phthalate	ND		1400	320	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Fluoranthene	ND		36	7.1	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Fluorene	ND	F2	36	7.1	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Hexachlorobenzene	ND		71	7.1	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Hexachlorobutadiene	ND	F1	71	21	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Hexachlorocyclopentadiene	ND	F1 F2	140	37	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Hexachloroethane	ND		210	54	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Indeno[1,2,3-cd]pyrene	ND	F1	57	7.1	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Isophorone	ND		210	53	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Naphthalene	ND		36	7.1	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Nitrobenzene	ND		280	60	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
N-Nitrosodi-n-propylamine	ND		280	63	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
N-Nitrosodiphenylamine	ND		85	21	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Pentachlorophenol	ND		570	130	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Phenanthrene	ND		85	17	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Phenol	ND		210	54	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1
Pyrene	ND		85	21	ug/Kg	☼	06/05/17 09:38	06/06/17 18:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*80*		*10 - 126*	*06/05/17 09:38*	*06/06/17 18:30*	*1*
2-Fluorobiphenyl	*58*		*57 - 110*	*06/05/17 09:38*	*06/06/17 18:30*	*1*
2-Fluorophenol (Surr)	*103*		*36 - 125*	*06/05/17 09:38*	*06/06/17 18:30*	*1*
Nitrobenzene-d5 (Surr)	*70*		*54 - 113*	*06/05/17 09:38*	*06/06/17 18:30*	*1*
Phenol-d5 (Surr)	*113*		*59 - 113*	*06/05/17 09:38*	*06/06/17 18:30*	*1*
Terphenyl-d14 (Surr)	*83*		*68 - 120*	*06/05/17 09:38*	*06/06/17 18:30*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND	H F2	12	6.4	mg/Kg	☼	06/10/17 07:05	06/10/17 15:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*50 - 150*	*06/10/17 07:05*	*06/10/17 15:58*	*1*
Trifluorotoluene (Surr)				*06/10/17 07:05*	*06/10/17 15:58*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.033	0.0097	mg/Kg	☼	06/02/17 09:07	06/04/17 15:27	1
PCB-1221	ND		0.014	0.0055	mg/Kg	☼	06/02/17 09:07	06/04/17 15:27	1
PCB-1232	ND		0.014	0.0064	mg/Kg	☼	06/02/17 09:07	06/04/17 15:27	1
PCB-1242	ND		0.013	0.0021	mg/Kg	☼	06/02/17 09:07	06/04/17 15:27	1
PCB-1248	ND		0.014	0.0038	mg/Kg	☼	06/02/17 09:07	06/04/17 15:27	1
PCB-1254	ND		0.013	0.0020	mg/Kg	☼	06/02/17 09:07	06/04/17 15:27	1
PCB-1260	ND		0.013	0.0025	mg/Kg	☼	06/02/17 09:07	06/04/17 15:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*73*		*25 - 149*	*06/02/17 09:07*	*06/04/17 15:27*	*1*
Tetrachloro-m-xylene	*84*		*35 - 130*	*06/02/17 09:07*	*06/04/17 15:27*	*1*

Client Sample ID: 7901-SB-04-18.5
Date Collected: 05/25/17 12:15
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-15
Matrix: Solid
Percent Solids: 69.1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	490	F1	68	17	mg/Kg	☼	06/01/17 11:07	06/10/17 00:40	1
Motor Oil (>C24-C36)	800	F1	68	12	mg/Kg	☼	06/01/17 11:07	06/10/17 00:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*96*		*54 - 118*	*06/01/17 11:07*	*06/10/17 00:40*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	6.2		0.23	0.078	mg/Kg	☼	05/30/17 16:00	05/31/17 13:56	10
Arsenic	13		0.57	0.11	mg/Kg	☼	05/30/17 16:00	05/31/17 13:56	10
Beryllium	ND		0.23	0.017	mg/Kg	☼	05/30/17 16:00	05/31/17 13:56	10
Cadmium	0.97		0.46	0.088	mg/Kg	☼	05/30/17 16:00	05/31/17 13:56	10
Chromium	27		0.57	0.072	mg/Kg	☼	05/30/17 16:00	05/31/17 13:56	10
Copper	99	F1 F2	1.1	0.25	mg/Kg	☼	05/30/17 16:00	05/31/17 13:56	10
Lead	210	F1 F2	0.57	0.055	mg/Kg	☼	05/30/17 16:00	05/31/17 13:56	10
Nickel	20		0.57	0.22	mg/Kg	☼	05/30/17 16:00	05/31/17 13:56	10
Selenium	ND		1.1	0.25	mg/Kg	☼	05/30/17 16:00	05/31/17 13:56	10
Silver	ND		0.23	0.023	mg/Kg	☼	05/30/17 16:00	05/31/17 13:56	10
Thallium	ND		0.46	0.063	mg/Kg	☼	05/30/17 16:00	05/31/17 13:56	10
Zinc	1400		5.7	1.8	mg/Kg	☼	05/30/17 16:00	05/31/17 13:56	10

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.042	0.013	mg/Kg	☼	05/30/17 12:06	05/30/17 15:12	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	69.1		0.1	0.1	%			06/02/17 11:31	1
Percent Moisture	30.9		0.1	0.1	%			06/02/17 11:31	1

Method: 8260C - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-247301/6
Matrix: Water
Analysis Batch: 247301

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		0.30	0.050	ug/L			05/31/17 18:36	1
2-Chlorotoluene	ND		0.50	0.070	ug/L			05/31/17 18:36	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			05/31/17 18:36	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			05/31/17 18:36	1
cis-1,3-Dichloropropene	ND		0.50	0.090	ug/L			05/31/17 18:36	1
Chlorobenzene	ND		0.20	0.025	ug/L			05/31/17 18:36	1
Vinyl chloride	ND		0.020	0.013	ug/L			05/31/17 18:36	1
sec-Butylbenzene	ND		0.50	0.070	ug/L			05/31/17 18:36	1
Dibromomethane	ND		0.20	0.025	ug/L			05/31/17 18:36	1
m-Xylene & p-Xylene	ND		0.50	0.050	ug/L			05/31/17 18:36	1
o-Xylene	ND		0.50	0.060	ug/L			05/31/17 18:36	1
1,2,4-Trichlorobenzene	ND		0.20	0.040	ug/L			05/31/17 18:36	1
Styrene	ND		0.50	0.10	ug/L			05/31/17 18:36	1
Chlorobromomethane	ND		0.20	0.025	ug/L			05/31/17 18:36	1
Dichlorobromomethane	ND		0.20	0.025	ug/L			05/31/17 18:36	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			05/31/17 18:36	1
Benzene	ND		0.20	0.025	ug/L			05/31/17 18:36	1
Chloroethane	ND		0.50	0.075	ug/L			05/31/17 18:36	1
trans-1,3-Dichloropropene	ND		0.20	0.025	ug/L			05/31/17 18:36	1
1,2,3-Trichlorobenzene	ND		0.50	0.10	ug/L			05/31/17 18:36	1
N-Propylbenzene	ND		0.20	0.025	ug/L			05/31/17 18:36	1
4-Isopropyltoluene	ND		0.30	0.050	ug/L			05/31/17 18:36	1
n-Butylbenzene	ND		0.50	0.080	ug/L			05/31/17 18:36	1
1,1-Dichloropropene	ND		0.10	0.015	ug/L			05/31/17 18:36	1
cis-1,2-Dichloroethene	ND		0.20	0.025	ug/L			05/31/17 18:36	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.025	ug/L			05/31/17 18:36	1
1,2,4-Trimethylbenzene	ND		0.20	0.030	ug/L			05/31/17 18:36	1
Toluene	ND		0.20	0.025	ug/L			05/31/17 18:36	1
Naphthalene	ND		0.50	0.10	ug/L			05/31/17 18:36	1
1,3,5-Trimethylbenzene	ND		0.50	0.083	ug/L			05/31/17 18:36	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			05/31/17 18:36	1
Chloroform	ND		0.20	0.030	ug/L			05/31/17 18:36	1
4-Chlorotoluene	ND		0.30	0.050	ug/L			05/31/17 18:36	1
Chlorodibromomethane	ND		0.20	0.025	ug/L			05/31/17 18:36	1
Dichlorodifluoromethane	ND		0.40	0.050	ug/L			05/31/17 18:36	1
1,1,2-Trichloroethane	ND		0.20	0.025	ug/L			05/31/17 18:36	1
tert-Butylbenzene	ND		0.50	0.10	ug/L			05/31/17 18:36	1
Chloromethane	ND		0.30	0.050	ug/L			05/31/17 18:36	1
Methylene Chloride	ND		0.50	0.11	ug/L			05/31/17 18:36	1
1,1-Dichloroethene	ND		0.10	0.018	ug/L			05/31/17 18:36	1
Isopropylbenzene	ND		0.50	0.060	ug/L			05/31/17 18:36	1
1,2-Dichloroethane	ND		0.20	0.025	ug/L			05/31/17 18:36	1
Tetrachloroethene	ND		0.50	0.070	ug/L			05/31/17 18:36	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			05/31/17 18:36	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			05/31/17 18:36	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			05/31/17 18:36	1
Bromoform	ND		0.50	0.080	ug/L			05/31/17 18:36	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.44	ug/L			05/31/17 18:36	1

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 580-247301/6
Matrix: Water
Analysis Batch: 247301

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	ND		0.50	0.025	ug/L			05/31/17 18:36	1
Trichloroethene	ND		0.20	0.025	ug/L			05/31/17 18:36	1
Bromobenzene	ND		0.20	0.035	ug/L			05/31/17 18:36	1
1,2-Dichloropropane	ND		0.20	0.025	ug/L			05/31/17 18:36	1
1,1,1,2-Tetrachloroethane	ND		0.20	0.025	ug/L			05/31/17 18:36	1
Ethylbenzene	ND		0.20	0.030	ug/L			05/31/17 18:36	1
trans-1,2-Dichloroethene	ND		0.20	0.025	ug/L			05/31/17 18:36	1
Hexachlorobutadiene	ND		0.50	0.075	ug/L			05/31/17 18:36	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			05/31/17 18:36	1
Bromomethane	ND		1.0	0.16	ug/L			05/31/17 18:36	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			05/31/17 18:36	1
Methyl tert-butyl ether	ND		0.20	0.025	ug/L			05/31/17 18:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*81 - 120*		*05/31/17 18:36*	*1*
Toluene-d8 (Surr)	*97*		*75 - 125*		*05/31/17 18:36*	*1*
Trifluorotoluene (Surr)	*100*		*74 - 118*		*05/31/17 18:36*	*1*
Dibromofluoromethane (Surr)	*104*		*42 - 132*		*05/31/17 18:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*46 - 150*		*05/31/17 18:36*	*1*

Lab Sample ID: LCS 580-247301/3
Matrix: Water
Analysis Batch: 247301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichlorobenzene	5.00	5.25		ug/L		105	73 - 120
2-Chlorotoluene	5.00	5.10		ug/L		102	68 - 130
1,2,3-Trichloropropane	5.00	4.89		ug/L		98	45 - 150
Carbon tetrachloride	5.00	5.97		ug/L		119	54 - 150
cis-1,3-Dichloropropene	5.00	4.97		ug/L		99	54 - 150
Chlorobenzene	5.00	5.22		ug/L		104	74 - 114
Vinyl chloride	5.00	5.14		ug/L		103	59 - 140
sec-Butylbenzene	5.00	4.86		ug/L		97	62 - 140
Dibromomethane	5.00	6.09		ug/L		122	65 - 137
m-Xylene & p-Xylene	5.00	5.15		ug/L		103	73 - 130
o-Xylene	5.00	4.96		ug/L		99	80 - 139
1,2,4-Trichlorobenzene	5.00	5.42		ug/L		108	60 - 138
Styrene	5.00	5.35		ug/L		107	68 - 136
Chlorobromomethane	5.00	5.96		ug/L		119	71 - 131
Dichlorobromomethane	5.00	5.67		ug/L		113	62 - 150
1,3-Dichlorobenzene	5.00	5.31		ug/L		106	76 - 120
Benzene	5.00	5.52		ug/L		110	73 - 120
Chloroethane	5.00	5.30		ug/L		106	58 - 130
trans-1,3-Dichloropropene	5.00	4.92		ug/L		98	40 - 150
1,2,3-Trichlorobenzene	5.00	5.94		ug/L		119	60 - 137
N-Propylbenzene	5.00	4.81		ug/L		96	61 - 142
4-Isopropyltoluene	5.00	5.07		ug/L		101	72 - 127
n-Butylbenzene	5.00	5.43		ug/L		109	66 - 125

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 580-247301/3
Matrix: Water
Analysis Batch: 247301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloropropene	5.00	5.49		ug/L		110	64 - 146
cis-1,2-Dichloroethene	5.00	5.66		ug/L		113	73 - 130
1,1,2,2-Tetrachloroethane	5.00	5.09		ug/L		102	60 - 134
1,2,4-Trimethylbenzene	5.00	4.98		ug/L		100	70 - 142
Toluene	5.00	4.98		ug/L		100	70 - 126
Naphthalene	5.00	5.56		ug/L		111	26 - 150
1,3,5-Trimethylbenzene	5.00	4.88		ug/L		98	70 - 145
1,3-Dichloropropane	5.00	4.77		ug/L		95	61 - 130
Chloroform	5.00	5.71		ug/L		114	71 - 130
4-Chlorotoluene	5.00	5.13		ug/L		103	75 - 130
Chlorodibromomethane	5.00	5.26		ug/L		105	46 - 150
Dichlorodifluoromethane	5.00	5.40		ug/L		108	45 - 150
1,1,2-Trichloroethane	5.00	5.02		ug/L		100	62 - 137
tert-Butylbenzene	5.00	5.01		ug/L		100	55 - 150
Chloromethane	5.00	5.18		ug/L		104	40 - 150
Methylene Chloride	5.00	5.38		ug/L		108	58 - 134
1,1-Dichloroethene	5.00	5.74		ug/L		115	64 - 125
Isopropylbenzene	5.00	5.20		ug/L		104	75 - 137
1,2-Dichloroethane	5.00	5.52		ug/L		110	63 - 150
Tetrachloroethene	5.00	5.61		ug/L		112	67 - 123
1,1,1-Trichloroethane	5.00	5.57		ug/L		111	56 - 150
2,2-Dichloropropane	5.00	6.20		ug/L		124	60 - 150
Ethylene Dibromide	5.00	5.16		ug/L		103	56 - 146
Bromoform	5.00	5.42		ug/L		108	51 - 137
1,2-Dibromo-3-Chloropropane	5.00	5.47		ug/L		109	34 - 150
Trichlorofluoromethane	5.00	5.34		ug/L		107	60 - 150
Trichloroethene	5.00	5.74		ug/L		115	72 - 123
Bromobenzene	5.00	5.14		ug/L		103	68 - 130
1,2-Dichloropropane	5.00	5.27		ug/L		105	72 - 120
1,1,1,2-Tetrachloroethane	5.00	5.34		ug/L		107	68 - 139
Ethylbenzene	5.00	4.93		ug/L		99	74 - 125
trans-1,2-Dichloroethene	5.00	5.68		ug/L		114	69 - 124
Hexachlorobutadiene	5.00	5.57		ug/L		111	38 - 150
1,1-Dichloroethane	5.00	5.35		ug/L		107	68 - 135
Bromomethane	5.00	5.50		ug/L		110	61 - 135
1,4-Dichlorobenzene	5.00	5.35		ug/L		107	77 - 120
Methyl tert-butyl ether	5.00	5.44		ug/L		109	56 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*81 - 120*
Toluene-d8 (Surr)	*91*		*75 - 125*
Trifluorotoluene (Surr)	*93*		*74 - 118*
Dibromofluoromethane (Surr)	*106*		*42 - 132*
1,2-Dichloroethane-d4 (Surr)	*99*		*46 - 150*

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 580-247301/4
Matrix: Water
Analysis Batch: 247301

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichlorobenzene	5.00	5.16		ug/L		103	73 - 120	2	14
2-Chlorotoluene	5.00	5.02		ug/L		100	68 - 130	2	20
1,2,3-Trichloropropane	5.00	4.59		ug/L		92	45 - 150	6	20
Carbon tetrachloride	5.00	5.72		ug/L		114	54 - 150	4	30
cis-1,3-Dichloropropene	5.00	4.84		ug/L		97	54 - 150	3	28
Chlorobenzene	5.00	5.07		ug/L		101	74 - 114	3	12
Vinyl chloride	5.00	4.93		ug/L		99	59 - 140	4	30
sec-Butylbenzene	5.00	4.78		ug/L		96	62 - 140	2	20
Dibromomethane	5.00	5.77		ug/L		115	65 - 137	5	20
m-Xylene & p-Xylene	5.00	5.04		ug/L		101	73 - 130	2	20
o-Xylene	5.00	4.83		ug/L		97	80 - 139	3	20
1,2,4-Trichlorobenzene	5.00	5.41		ug/L		108	60 - 138	0	20
Styrene	5.00	5.18		ug/L		104	68 - 136	3	20
Chlorobromomethane	5.00	5.63		ug/L		113	71 - 131	6	20
Dichlorobromomethane	5.00	5.35		ug/L		107	62 - 150	6	20
1,3-Dichlorobenzene	5.00	5.20		ug/L		104	76 - 120	2	12
Benzene	5.00	5.42		ug/L		108	73 - 120	2	20
Chloroethane	5.00	4.89		ug/L		98	58 - 130	8	35
trans-1,3-Dichloropropene	5.00	4.73		ug/L		95	40 - 150	4	30
1,2,3-Trichlorobenzene	5.00	5.72		ug/L		114	60 - 137	4	20
N-Propylbenzene	5.00	4.75		ug/L		95	61 - 142	1	20
4-Isopropyltoluene	5.00	5.01		ug/L		100	72 - 127	1	14
n-Butylbenzene	5.00	5.44		ug/L		109	66 - 125	0	20
1,1-Dichloropropene	5.00	5.30		ug/L		106	64 - 146	3	20
cis-1,2-Dichloroethene	5.00	5.53		ug/L		111	73 - 130	2	20
1,1,2,2-Tetrachloroethane	5.00	4.70		ug/L		94	60 - 134	8	25
1,2,4-Trimethylbenzene	5.00	4.88		ug/L		98	70 - 142	2	20
Toluene	5.00	4.91		ug/L		98	70 - 126	1	20
Naphthalene	5.00	5.20		ug/L		104	26 - 150	7	20
1,3,5-Trimethylbenzene	5.00	4.79		ug/L		96	70 - 145	2	20
1,3-Dichloropropane	5.00	4.51		ug/L		90	61 - 130	6	29
Chloroform	5.00	5.60		ug/L		112	71 - 130	2	20
4-Chlorotoluene	5.00	5.03		ug/L		101	75 - 130	2	20
Chlorodibromomethane	5.00	4.95		ug/L		99	46 - 150	6	20
Dichlorodifluoromethane	5.00	5.71		ug/L		114	45 - 150	6	29
1,1,2-Trichloroethane	5.00	4.72		ug/L		94	62 - 137	6	30
tert-Butylbenzene	5.00	4.93		ug/L		99	55 - 150	1	20
Chloromethane	5.00	4.93		ug/L		99	40 - 150	5	31
Methylene Chloride	5.00	5.02		ug/L		100	58 - 134	7	29
1,1-Dichloroethene	5.00	5.21		ug/L		104	64 - 125	10	28
Isopropylbenzene	5.00	5.05		ug/L		101	75 - 137	3	20
1,2-Dichloroethane	5.00	5.22		ug/L		104	63 - 150	6	29
Tetrachloroethene	5.00	5.45		ug/L		109	67 - 123	3	20
1,1,1-Trichloroethane	5.00	5.62		ug/L		112	56 - 150	1	29
2,2-Dichloropropane	5.00	6.25		ug/L		125	60 - 150	1	29
Ethylene Dibromide	5.00	4.84		ug/L		97	56 - 146	6	20
Bromoform	5.00	5.00		ug/L		100	51 - 137	8	20
1,2-Dibromo-3-Chloropropane	5.00	5.13		ug/L		103	34 - 150	6	20

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 580-247301/4
Matrix: Water
Analysis Batch: 247301

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Trichlorofluoromethane			5.00	5.25		ug/L		105	60 - 150	2	31
Trichloroethene			5.00	5.61		ug/L		112	72 - 123	2	20
Bromobenzene			5.00	5.02		ug/L		100	68 - 130	2	20
1,2-Dichloropropane			5.00	5.10		ug/L		102	72 - 120	3	20
1,1,1,2-Tetrachloroethane			5.00	5.14		ug/L		103	68 - 139	4	20
Ethylbenzene			5.00	4.80		ug/L		96	74 - 125	3	20
trans-1,2-Dichloroethene			5.00	5.66		ug/L		113	69 - 124	0	27
Hexachlorobutadiene			5.00	5.77		ug/L		115	38 - 150	4	20
1,1-Dichloroethane			5.00	5.25		ug/L		105	68 - 135	2	27
Bromomethane			5.00	4.94		ug/L		99	61 - 135	11	31
1,4-Dichlorobenzene			5.00	5.28		ug/L		106	77 - 120	1	11
Methyl tert-butyl ether			5.00	4.96		ug/L		99	56 - 150	9	26

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*81 - 120*
Toluene-d8 (Surr)	*92*		*75 - 125*
Trifluorotoluene (Surr)	*95*		*74 - 118*
Dibromofluoromethane (Surr)	*106*		*42 - 132*
1,2-Dichloroethane-d4 (Surr)	*97*		*46 - 150*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-247561/1-A
Matrix: Solid
Analysis Batch: 247639

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 247561

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		25	3.0	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
1,2-Dichlorobenzene	ND		25	6.0	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
1,3-Dichlorobenzene	ND		25	2.4	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
1,4-Dichlorobenzene	ND		25	4.2	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
1-Methylnaphthalene	ND		15	2.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
2,4,5-Trichlorophenol	ND		100	23	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
2,4,6-Trichlorophenol	ND		75	18	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
2,4-Dichlorophenol	ND		50	7.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
2,4-Dimethylphenol	ND		50	7.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
2,4-Dinitrophenol	ND		500	100	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
2,4-Dinitrotoluene	ND		100	22	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
2,6-Dinitrotoluene	ND		75	17	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
2-Chloronaphthalene	ND		13	2.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
2-Chlorophenol	ND		100	21	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
2-Methylnaphthalene	ND		25	4.4	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
2-Methylphenol	ND		75	19	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
2-Nitroaniline	ND		50	7.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
2-Nitrophenol	ND		100	23	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
3 & 4 Methylphenol	ND		100	7.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
3,3'-Dichlorobenzidine	ND		200	50	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
3-Nitroaniline	ND		100	20	ug/Kg		06/05/17 09:38	06/06/17 09:58	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 580-247561/1-A
Matrix: Solid
Analysis Batch: 247639

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 247561

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
4,6-Dinitro-2-methylphenol	ND		500	50	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
4-Bromophenyl phenyl ether	ND		100	21	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
4-Chloro-3-methylphenol	ND		75	17	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
4-Chloroaniline	ND		750	200	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
4-Chlorophenyl phenyl ether	ND		100	21	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
4-Nitroaniline	ND		50	10	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
4-Nitrophenol	ND		750	180	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Acenaphthene	ND		13	2.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Acenaphthylene	ND		13	2.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Anthracene	ND		13	2.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Benzo[a]anthracene	ND		13	2.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Benzo[a]pyrene	ND		30	6.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Benzo[b]fluoranthene	ND		13	2.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Benzo[g,h,i]perylene	ND		30	7.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Benzo[k]fluoranthene	ND		30	7.0	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Benzoic acid	ND		1300	530	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Benzyl alcohol	ND		2000	19	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Bis(2-chloroethoxy)methane	ND		100	21	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Bis(2-chloroethyl)ether	ND		100	20	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Bis(2-ethylhexyl) phthalate	ND		300	68	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
bis(chloroisopropyl) ether	ND		130	19	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Butyl benzyl phthalate	ND		100	25	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Carbazole	ND		75	16	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Chrysene	ND		30	6.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Dibenz(a,h)anthracene	ND		25	6.0	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Dibenzofuran	ND		75	18	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Diethyl phthalate	ND		280	66	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Dimethyl phthalate	ND		75	17	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Di-n-butyl phthalate	ND		250	29	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Di-n-octyl phthalate	ND		500	110	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Fluoranthene	ND		13	2.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Fluorene	ND		13	2.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Hexachlorobenzene	ND		25	2.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Hexachlorobutadiene	ND		25	7.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Hexachlorocyclopentadiene	ND		50	13	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Hexachloroethane	ND		75	19	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Indeno[1,2,3-cd]pyrene	ND		20	2.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Isophorone	ND		75	19	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Naphthalene	ND		13	2.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Nitrobenzene	ND		100	21	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
N-Nitrosodi-n-propylamine	ND		100	22	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
N-Nitrosodiphenylamine	ND		30	7.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Pentachlorophenol	ND		200	46	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Phenanthrene	ND		30	6.0	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Phenol	ND		75	19	ug/Kg		06/05/17 09:38	06/06/17 09:58	1
Pyrene	ND		30	7.5	ug/Kg		06/05/17 09:38	06/06/17 09:58	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 580-247561/1-A
Matrix: Solid
Analysis Batch: 247639

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 247561

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	48		10 - 126	06/05/17 09:38	06/06/17 09:58	1
2-Fluorobiphenyl	74		57 - 110	06/05/17 09:38	06/06/17 09:58	1
2-Fluorophenol (Surr)	89		36 - 125	06/05/17 09:38	06/06/17 09:58	1
Nitrobenzene-d5 (Surr)	80		54 - 113	06/05/17 09:38	06/06/17 09:58	1
Phenol-d5 (Surr)	90		59 - 113	06/05/17 09:38	06/06/17 09:58	1
Terphenyl-d14 (Surr)	75		68 - 120	06/05/17 09:38	06/06/17 09:58	1

Lab Sample ID: LCS 580-247561/3-A
Matrix: Solid
Analysis Batch: 247639

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 247561

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trichlorobenzene	1000	780		ug/Kg		78	66 - 115
1,2-Dichlorobenzene	1000	825		ug/Kg		83	73 - 103
1,3-Dichlorobenzene	1000	804		ug/Kg		80	72 - 107
1,4-Dichlorobenzene	1000	803		ug/Kg		80	70 - 105
1-Methylnaphthalene	1000	833		ug/Kg		83	76 - 109
2,4,5-Trichlorophenol	1000	771		ug/Kg		77	64 - 110
2,4,6-Trichlorophenol	1000	854		ug/Kg		85	65 - 115
2,4-Dichlorophenol	1000	804		ug/Kg		80	69 - 121
2,4-Dimethylphenol	1000	1100		ug/Kg		110	64 - 119
2,4-Dinitrophenol	2000	563	J	ug/Kg		28	10 - 115
2,4-Dinitrotoluene	1000	846		ug/Kg		85	71 - 125
2,6-Dinitrotoluene	1000	880		ug/Kg		88	63 - 129
2-Chloronaphthalene	1000	853		ug/Kg		85	73 - 114
2-Chlorophenol	1000	863		ug/Kg		86	78 - 112
2-Methylnaphthalene	1000	885		ug/Kg		88	71 - 117
2-Methylphenol	1000	940		ug/Kg		94	70 - 111
2-Nitroaniline	1000	920		ug/Kg		92	63 - 122
2-Nitrophenol	1000	850		ug/Kg		85	67 - 119
3 & 4 Methylphenol	1000	973		ug/Kg		97	70 - 111
3,3'-Dichlorobenzidine	2000	1440		ug/Kg		72	35 - 135
3-Nitroaniline	1000	604		ug/Kg		60	21 - 103
4,6-Dinitro-2-methylphenol	2000	1190		ug/Kg		59	16 - 134
4-Bromophenyl phenyl ether	1000	839		ug/Kg		84	74 - 116
4-Chloro-3-methylphenol	1000	929		ug/Kg		93	69 - 114
4-Chloroaniline	1000	438	J	ug/Kg		44	10 - 110
4-Chlorophenyl phenyl ether	1000	861		ug/Kg		86	75 - 115
4-Nitroaniline	1000	825		ug/Kg		82	63 - 119
4-Nitrophenol	2000	1510		ug/Kg		76	21 - 134
Acenaphthene	1000	828		ug/Kg		83	71 - 111
Acenaphthylene	1000	884		ug/Kg		88	73 - 128
Anthracene	1000	957		ug/Kg		96	74 - 117
Benzo[a]anthracene	1000	867		ug/Kg		87	73 - 116
Benzo[a]pyrene	1000	800		ug/Kg		80	72 - 121
Benzo[b]fluoranthene	1000	774		ug/Kg		77	71 - 124
Benzo[g,h,i]perylene	1000	727	*	ug/Kg		73	75 - 122
Benzo[k]fluoranthene	1000	757		ug/Kg		76	68 - 123

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 580-247561/3-A
Matrix: Solid
Analysis Batch: 247639

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 247561

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzoic acid	2000	ND		ug/Kg		30	10 - 141
Benzyl alcohol	1000	805	J	ug/Kg		80	60 - 114
Bis(2-chloroethoxy)methane	1000	848		ug/Kg		85	74 - 114
Bis(2-chloroethyl)ether	1000	905		ug/Kg		90	70 - 111
Bis(2-ethylhexyl) phthalate	1000	820		ug/Kg		82	66 - 130
bis(chloroisopropyl) ether	1000	1190		ug/Kg		119	64 - 121
Butyl benzyl phthalate	1000	932		ug/Kg		93	67 - 135
Carbazole	1000	970		ug/Kg		97	80 - 131
Chrysene	1000	758		ug/Kg		76	71 - 116
Dibenz(a,h)anthracene	1000	777		ug/Kg		78	71 - 111
Dibenzofuran	1000	837		ug/Kg		84	77 - 114
Diethyl phthalate	1000	815		ug/Kg		81	71 - 114
Dimethyl phthalate	1000	838		ug/Kg		84	77 - 120
Di-n-butyl phthalate	1000	1020		ug/Kg		102	68 - 129
Di-n-octyl phthalate	1000	870	J	ug/Kg		87	68 - 124
Fluoranthene	1000	944		ug/Kg		94	75 - 116
Fluorene	1000	871		ug/Kg		87	68 - 121
Hexachlorobenzene	1000	767		ug/Kg		77	70 - 107
Hexachlorobutadiene	1000	759		ug/Kg		76	71 - 116
Hexachlorocyclopentadiene	1000	1040		ug/Kg		104	63 - 131
Hexachloroethane	1000	883		ug/Kg		88	72 - 111
Indeno[1,2,3-cd]pyrene	1000	851		ug/Kg		85	75 - 118
Isophorone	1000	933		ug/Kg		93	78 - 109
Naphthalene	1000	810		ug/Kg		81	75 - 106
Nitrobenzene	1000	901		ug/Kg		90	70 - 114
N-Nitrosodi-n-propylamine	1000	906		ug/Kg		91	62 - 116
N-Nitrosodiphenylamine	1000	906		ug/Kg		91	73 - 127
Pentachlorophenol	2000	1170		ug/Kg		58	36 - 109
Phenanthrene	1000	846		ug/Kg		85	73 - 107
Phenol	1000	951		ug/Kg		95	65 - 112
Pyrene	1000	918		ug/Kg		92	73 - 118

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*73*		*10 - 126*
2-Fluorobiphenyl	*76*		*57 - 110*
2-Fluorophenol (Surr)	*92*		*36 - 125*
Nitrobenzene-d5 (Surr)	*85*		*54 - 113*
Phenol-d5 (Surr)	*94*		*59 - 113*
Terphenyl-d14 (Surr)	*79*		*68 - 120*

Lab Sample ID: 580-68649-15 MS
Matrix: Solid
Analysis Batch: 247639

Client Sample ID: 7901-SB-04-18.5
Prep Type: Total/NA
Prep Batch: 247561

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trichlorobenzene	ND		1360	1030		ug/Kg	☼	76	66 - 115
1,2-Dichlorobenzene	ND		1360	1150		ug/Kg	☼	84	73 - 103
1,3-Dichlorobenzene	ND		1360	1130		ug/Kg	☼	83	72 - 107

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 580-68649-15 MS
Matrix: Solid
Analysis Batch: 247639

Client Sample ID: 7901-SB-04-18.5
Prep Type: Total/NA
Prep Batch: 247561

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	ND		1360	1090		ug/Kg	☼	81	70 - 105
1-Methylnaphthalene	ND		1360	1170		ug/Kg	☼	86	76 - 109
2,4,5-Trichlorophenol	ND		1360	1180		ug/Kg	☼	87	64 - 110
2,4,6-Trichlorophenol	ND		1360	1300		ug/Kg	☼	96	65 - 115
2,4-Dichlorophenol	ND		1360	1240		ug/Kg	☼	91	69 - 121
2,4-Dimethylphenol	ND		1360	1600		ug/Kg	☼	118	64 - 119
2,4-Dinitrophenol	ND		2710	ND		ug/Kg	☼	29	10 - 115
2,4-Dinitrotoluene	ND	F2	1360	1130		ug/Kg	☼	83	71 - 125
2,6-Dinitrotoluene	ND	F2	1360	1180		ug/Kg	☼	87	63 - 129
2-Chloronaphthalene	ND	F2	1360	1080		ug/Kg	☼	80	73 - 114
2-Chlorophenol	ND		1360	1400		ug/Kg	☼	103	78 - 112
2-Methylnaphthalene	ND		1360	1180		ug/Kg	☼	87	71 - 117
2-Methylphenol	ND		1360	1480		ug/Kg	☼	109	70 - 111
2-Nitroaniline	ND	F2	1360	1340		ug/Kg	☼	98	63 - 122
2-Nitrophenol	ND		1360	1330		ug/Kg	☼	98	67 - 119
3 & 4 Methylphenol	ND	F1	1360	1540	F1	ug/Kg	☼	114	70 - 111
3,3'-Dichlorobenzidine	ND		2710	2650		ug/Kg	☼	98	35 - 135
3-Nitroaniline	ND		1360	908		ug/Kg	☼	67	21 - 103
4,6-Dinitro-2-methylphenol	ND		2710	ND		ug/Kg	☼	48	16 - 134
4-Bromophenyl phenyl ether	ND		1360	1130		ug/Kg	☼	83	74 - 116
4-Chloro-3-methylphenol	ND	F2	1360	1260		ug/Kg	☼	93	69 - 114
4-Chloroaniline	ND	F1	1360	ND	F1	ug/Kg	☼	0	10 - 110
4-Chlorophenyl phenyl ether	ND	F2	1360	1050		ug/Kg	☼	78	75 - 115
4-Nitroaniline	ND		1360	1070		ug/Kg	☼	79	63 - 119
4-Nitrophenol	ND	F2	2710	2210		ug/Kg	☼	82	21 - 134
Acenaphthene	ND	F2	1360	1070		ug/Kg	☼	79	71 - 111
Acenaphthylene	ND	F2	1360	1160		ug/Kg	☼	86	73 - 128
Anthracene	ND		1360	1380		ug/Kg	☼	102	74 - 117
Benzo[a]anthracene	ND	F2	1360	1290		ug/Kg	☼	95	73 - 116
Benzo[a]pyrene	ND		1360	1170		ug/Kg	☼	86	72 - 121
Benzo[b]fluoranthene	ND		1360	1060		ug/Kg	☼	78	71 - 124
Benzo[g,h,i]perylene	ND	F1 *	1360	711	F1	ug/Kg	☼	52	75 - 122
Benzo[k]fluoranthene	ND		1360	990		ug/Kg	☼	73	68 - 123
Benzoic acid	ND		2710	ND		ug/Kg	☼	107	10 - 141
Benzyl alcohol	ND		1360	ND		ug/Kg	☼	89	60 - 114
Bis(2-chloroethoxy)methane	ND		1360	1290		ug/Kg	☼	95	74 - 114
Bis(2-chloroethyl)ether	ND	F1	1360	1560	F1	ug/Kg	☼	115	70 - 111
Bis(2-ethylhexyl) phthalate	ND	F2	1360	1480		ug/Kg	☼	109	66 - 130
bis(chloroisopropyl) ether	ND	F1	1360	1780	F1	ug/Kg	☼	131	64 - 121
Butyl benzyl phthalate	ND		1360	1660		ug/Kg	☼	122	67 - 135
Carbazole	ND		1360	1420		ug/Kg	☼	105	80 - 131
Chrysene	ND	F2	1360	1030		ug/Kg	☼	76	71 - 116
Dibenz(a,h)anthracene	ND	F1	1360	846	F1	ug/Kg	☼	62	71 - 111
Dibenzofuran	ND	F1 F2	1360	1010	F1	ug/Kg	☼	75	77 - 114
Diethyl phthalate	ND	F2	1360	1130		ug/Kg	☼	83	71 - 114
Dimethyl phthalate	ND	F2	1360	1150		ug/Kg	☼	85	77 - 120
Di-n-butyl phthalate	ND		1360	1690		ug/Kg	☼	125	68 - 129
Di-n-octyl phthalate	ND		1360	1590		ug/Kg	☼	117	68 - 124

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 580-68649-15 MS
Matrix: Solid
Analysis Batch: 247639

Client Sample ID: 7901-SB-04-18.5
Prep Type: Total/NA
Prep Batch: 247561

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoranthene	ND		1360	1330		ug/Kg	☼	98	75 - 116
Fluorene	ND	F2	1360	1100		ug/Kg	☼	81	68 - 121
Hexachlorobenzene	ND		1360	1040		ug/Kg	☼	76	70 - 107
Hexachlorobutadiene	ND	F1	1360	939	F1	ug/Kg	☼	69	71 - 116
Hexachlorocyclopentadiene	ND	F1 F2	1360	268	F1	ug/Kg	☼	20	63 - 131
Hexachloroethane	ND		1360	1050		ug/Kg	☼	77	72 - 111
Indeno[1,2,3-cd]pyrene	ND	F1	1360	950	F1	ug/Kg	☼	70	75 - 118
Isophorone	ND		1360	1460		ug/Kg	☼	108	78 - 109
Naphthalene	ND		1360	1140		ug/Kg	☼	84	75 - 106
Nitrobenzene	ND		1360	1310		ug/Kg	☼	96	70 - 114
N-Nitrosodi-n-propylamine	ND		1360	1380		ug/Kg	☼	101	62 - 116
N-Nitrosodiphenylamine	ND		1360	1370		ug/Kg	☼	101	73 - 127
Pentachlorophenol	ND		2710	1850		ug/Kg	☼	68	36 - 109
Phenanthrene	ND		1360	1190		ug/Kg	☼	88	73 - 107
Phenol	ND		1360	1390		ug/Kg	☼	102	65 - 112
Pyrene	ND		1360	1340		ug/Kg	☼	99	73 - 118

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*82*		*10 - 126*
2-Fluorobiphenyl	*68*		*57 - 110*
2-Fluorophenol (Surr)	*108*		*36 - 125*
Nitrobenzene-d5 (Surr)	*84*		*54 - 113*
Phenol-d5 (Surr)	*109*		*59 - 113*
Terphenyl-d14 (Surr)	*82*		*68 - 120*

Lab Sample ID: 580-68649-15 MSD
Matrix: Solid
Analysis Batch: 247639

Client Sample ID: 7901-SB-04-18.5
Prep Type: Total/NA
Prep Batch: 247561

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	ND		1410	1040		ug/Kg	☼	74	66 - 115	2	10
1,2-Dichlorobenzene	ND		1410	1150		ug/Kg	☼	82	73 - 103	0	10
1,3-Dichlorobenzene	ND		1410	1170		ug/Kg	☼	83	72 - 107	3	10
1,4-Dichlorobenzene	ND		1410	1130		ug/Kg	☼	80	70 - 105	3	10
1-Methylnaphthalene	ND		1410	1150		ug/Kg	☼	82	76 - 109	1	10
2,4,5-Trichlorophenol	ND		1410	1250		ug/Kg	☼	89	64 - 110	6	16
2,4,6-Trichlorophenol	ND		1410	1350		ug/Kg	☼	95	65 - 115	3	10
2,4-Dichlorophenol	ND		1410	1270		ug/Kg	☼	90	69 - 121	3	10
2,4-Dimethylphenol	ND		1410	1590		ug/Kg	☼	113	64 - 119	1	10
2,4-Dinitrophenol	ND		2820	ND		ug/Kg	☼	23	10 - 115	19	37
2,4-Dinitrotoluene	ND	F2	1410	1340	F2	ug/Kg	☼	95	71 - 125	17	10
2,6-Dinitrotoluene	ND	F2	1410	1450	F2	ug/Kg	☼	103	63 - 129	21	13
2-Chloronaphthalene	ND	F2	1410	1260	F2	ug/Kg	☼	90	73 - 114	16	10
2-Chlorophenol	ND		1410	1390		ug/Kg	☼	98	78 - 112	1	10
2-Methylnaphthalene	ND		1410	1230		ug/Kg	☼	87	71 - 117	4	10
2-Methylphenol	ND		1410	1450		ug/Kg	☼	103	70 - 111	2	15
2-Nitroaniline	ND	F2	1410	1550	F2	ug/Kg	☼	110	63 - 122	15	10
2-Nitrophenol	ND		1410	1330		ug/Kg	☼	94	67 - 119	0	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 580-68649-15 MSD
Matrix: Solid
Analysis Batch: 247639

Client Sample ID: 7901-SB-04-18.5
Prep Type: Total/NA
Prep Batch: 247561

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
3 & 4 Methylphenol	ND	F1	1410	1520		ug/Kg	☼	108	70 - 111	2	10
3,3'-Dichlorobenzidine	ND		2820	2810		ug/Kg	☼	100	35 - 135	6	15
3-Nitroaniline	ND		1410	960		ug/Kg	☼	68	21 - 103	6	11
4,6-Dinitro-2-methylphenol	ND		2820	ND		ug/Kg	☼	44	16 - 134	5	17
4-Bromophenyl phenyl ether	ND		1410	1180		ug/Kg	☼	83	74 - 116	4	10
4-Chloro-3-methylphenol	ND	F2	1410	1450	F2	ug/Kg	☼	103	69 - 114	15	10
4-Chloroaniline	ND	F1	1410	ND	F1	ug/Kg	☼	0	10 - 110	NC	40
4-Chlorophenyl phenyl ether	ND	F2	1410	1250	F2	ug/Kg	☼	89	75 - 115	18	10
4-Nitroaniline	ND		1410	1280		ug/Kg	☼	91	63 - 119	17	40
4-Nitrophenol	ND	F2	2820	2740	F2	ug/Kg	☼	97	21 - 134	21	10
Acenaphthene	ND	F2	1410	1280	F2	ug/Kg	☼	91	71 - 111	18	10
Acenaphthylene	ND	F2	1410	1380	F2	ug/Kg	☼	98	73 - 128	17	10
Anthracene	ND		1410	1420		ug/Kg	☼	101	74 - 117	3	10
Benzo[a]anthracene	ND	F2	1410	1470	F2	ug/Kg	☼	104	73 - 116	13	10
Benzo[a]pyrene	ND		1410	1270		ug/Kg	☼	90	72 - 121	8	10
Benzo[b]fluoranthene	ND		1410	1110		ug/Kg	☼	79	71 - 124	4	10
Benzo[g,h,i]perylene	ND	F1 *	1410	759	F1	ug/Kg	☼	54	75 - 122	7	10
Benzo[k]fluoranthene	ND		1410	1030		ug/Kg	☼	73	68 - 123	4	10
Benzoic acid	ND		2820	ND		ug/Kg	☼	98	10 - 141	5	10
Benzyl alcohol	ND		1410	ND		ug/Kg	☼	87	60 - 114	1	10
Bis(2-chloroethoxy)methane	ND		1410	1280		ug/Kg	☼	91	74 - 114	1	10
Bis(2-chloroethyl)ether	ND	F1	1410	1490		ug/Kg	☼	106	70 - 111	5	17
Bis(2-ethylhexyl) phthalate	ND	F2	1410	1650	F2	ug/Kg	☼	117	66 - 130	11	10
bis(chloroisopropyl) ether	ND	F1	1410	1800	F1	ug/Kg	☼	128	64 - 121	2	11
Butyl benzyl phthalate	ND		1410	1810		ug/Kg	☼	129	67 - 135	9	10
Carbazole	ND		1410	1490		ug/Kg	☼	105	80 - 131	4	10
Chrysene	ND	F2	1410	1180	F2	ug/Kg	☼	83	71 - 116	13	10
Dibenz(a,h)anthracene	ND	F1	1410	967	F1	ug/Kg	☼	69	71 - 111	13	40
Dibenzofuran	ND	F1 F2	1410	1250	F2	ug/Kg	☼	89	77 - 114	21	10
Diethyl phthalate	ND	F2	1410	1290	F2	ug/Kg	☼	91	71 - 114	13	10
Dimethyl phthalate	ND	F2	1410	1310	F2	ug/Kg	☼	93	77 - 120	12	10
Di-n-butyl phthalate	ND		1410	1680		ug/Kg	☼	119	68 - 129	0	10
Di-n-octyl phthalate	ND		1410	1600		ug/Kg	☼	113	68 - 124	0	10
Fluoranthene	ND		1410	1450		ug/Kg	☼	103	75 - 116	9	10
Fluorene	ND	F2	1410	1300	F2	ug/Kg	☼	92	68 - 121	17	10
Hexachlorobenzene	ND		1410	1040		ug/Kg	☼	74	70 - 107	1	10
Hexachlorobutadiene	ND	F1	1410	924	F1	ug/Kg	☼	66	71 - 116	2	11
Hexachlorocyclopentadiene	ND	F1 F2	1410	441	F1 F2	ug/Kg	☼	31	63 - 131	49	15
Hexachloroethane	ND		1410	1100		ug/Kg	☼	78	72 - 111	5	10
Indeno[1,2,3-cd]pyrene	ND	F1	1410	1040	F1	ug/Kg	☼	73	75 - 118	9	17
Isophorone	ND		1410	1520		ug/Kg	☼	108	78 - 109	4	10
Naphthalene	ND		1410	1150		ug/Kg	☼	81	75 - 106	1	10
Nitrobenzene	ND		1410	1300		ug/Kg	☼	92	70 - 114	1	10
N-Nitrosodi-n-propylamine	ND		1410	1390		ug/Kg	☼	99	62 - 116	1	10
N-Nitrosodiphenylamine	ND		1410	1340		ug/Kg	☼	95	73 - 127	3	10
Pentachlorophenol	ND		2820	1890		ug/Kg	☼	67	36 - 109	2	24
Phenanthrene	ND		1410	1210		ug/Kg	☼	86	73 - 107	2	11
Phenol	ND		1410	1450		ug/Kg	☼	103	65 - 112	5	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 580-68649-15 MSD
Matrix: Solid
Analysis Batch: 247639

Client Sample ID: 7901-SB-04-18.5
Prep Type: Total/NA
Prep Batch: 247561

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Pyrene	ND		1410	1410		ug/Kg	☼	100	73 - 118	5	10

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*79*		*10 - 126*
2-Fluorobiphenyl	*70*		*57 - 110*
2-Fluorophenol (Surr)	*103*		*36 - 125*
Nitrobenzene-d5 (Surr)	*83*		*54 - 113*
Phenol-d5 (Surr)	*104*		*59 - 113*
Terphenyl-d14 (Surr)	*79*		*68 - 120*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-247225/1-A
Matrix: Water
Analysis Batch: 247262

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 247225

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.040	0.013	ug/L		05/31/17 08:24	05/31/17 16:00	1
2-Methylnaphthalene	ND		0.030	0.0090	ug/L		05/31/17 08:24	05/31/17 16:00	1
1-Methylnaphthalene	ND		0.020	0.0060	ug/L		05/31/17 08:24	05/31/17 16:00	1
Acenaphthylene	ND		0.020	0.0020	ug/L		05/31/17 08:24	05/31/17 16:00	1
Acenaphthene	ND		0.020	0.0020	ug/L		05/31/17 08:24	05/31/17 16:00	1
Fluorene	ND		0.020	0.0030	ug/L		05/31/17 08:24	05/31/17 16:00	1
Phenanthrene	ND		0.020	0.0040	ug/L		05/31/17 08:24	05/31/17 16:00	1
Anthracene	ND		0.020	0.0030	ug/L		05/31/17 08:24	05/31/17 16:00	1
Fluoranthene	ND		0.020	0.0020	ug/L		05/31/17 08:24	05/31/17 16:00	1
Pyrene	ND		0.020	0.0040	ug/L		05/31/17 08:24	05/31/17 16:00	1
Benzo[a]anthracene	ND		0.020	0.0020	ug/L		05/31/17 08:24	05/31/17 16:00	1
Chrysene	ND		0.020	0.0060	ug/L		05/31/17 08:24	05/31/17 16:00	1
Benzo[b]fluoranthene	ND		0.020	0.0080	ug/L		05/31/17 08:24	05/31/17 16:00	1
Benzo[k]fluoranthene	ND		0.030	0.0090	ug/L		05/31/17 08:24	05/31/17 16:00	1
Benzo[a]pyrene	ND		0.020	0.0030	ug/L		05/31/17 08:24	05/31/17 16:00	1
Indeno[1,2,3-cd]pyrene	ND		0.020	0.0070	ug/L		05/31/17 08:24	05/31/17 16:00	1
Dibenz(a,h)anthracene	ND		0.020	0.0020	ug/L		05/31/17 08:24	05/31/17 16:00	1
Benzo[g,h,i]perylene	ND		0.020	0.0030	ug/L		05/31/17 08:24	05/31/17 16:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*83*		*53 - 112*	*05/31/17 08:24*	*05/31/17 16:00*	*1*

Lab Sample ID: LCS 580-247225/2-A
Matrix: Water
Analysis Batch: 247262

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 247225

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	4.00	2.09	*	ug/L		52	62 - 104
2-Methylnaphthalene	4.00	2.28	*	ug/L		57	61 - 118
1-Methylnaphthalene	4.00	2.20	*	ug/L		55	57 - 107

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS 580-247225/2-A
Matrix: Water
Analysis Batch: 247262

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 247225

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthylene	4.00	2.59		ug/L		65	63 - 118
Acenaphthene	4.00	2.33	*	ug/L		58	62 - 103
Fluorene	4.00	2.71		ug/L		68	68 - 108
Phenanthrene	4.00	2.99		ug/L		75	65 - 104
Anthracene	4.00	3.34		ug/L		84	69 - 112
Fluoranthene	4.00	3.45		ug/L		86	70 - 109
Pyrene	4.00	3.22		ug/L		81	69 - 105
Benzo[a]anthracene	4.00	3.43		ug/L		86	71 - 119
Chrysene	4.00	3.02		ug/L		75	64 - 107
Benzo[b]fluoranthene	4.00	3.14		ug/L		78	66 - 117
Benzo[k]fluoranthene	4.00	3.37		ug/L		84	68 - 114
Benzo[a]pyrene	4.00	3.65		ug/L		91	76 - 118
Indeno[1,2,3-cd]pyrene	4.00	3.21		ug/L		80	63 - 116
Dibenz(a,h)anthracene	4.00	3.25		ug/L		81	60 - 125
Benzo[g,h,i]perylene	4.00	3.35		ug/L		84	61 - 114

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Terphenyl-d14	*78*		*53 - 112*

Lab Sample ID: LCSD 580-247225/3-A
Matrix: Water
Analysis Batch: 247262

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 247225

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene	4.00	2.32	*	ug/L		58	62 - 104	10	15
2-Methylnaphthalene	4.00	2.43		ug/L		61	61 - 118	7	16
1-Methylnaphthalene	4.00	2.37		ug/L		59	57 - 107	8	17
Acenaphthylene	4.00	2.70		ug/L		67	63 - 118	4	13
Acenaphthene	4.00	2.41	*	ug/L		60	62 - 103	4	13
Fluorene	4.00	2.80		ug/L		70	68 - 108	3	12
Phenanthrene	4.00	3.17		ug/L		79	65 - 104	6	15
Anthracene	4.00	3.51		ug/L		88	69 - 112	5	17
Fluoranthene	4.00	3.73		ug/L		93	70 - 109	8	20
Pyrene	4.00	3.57		ug/L		89	69 - 105	10	17
Benzo[a]anthracene	4.00	3.70		ug/L		93	71 - 119	8	16
Chrysene	4.00	3.23		ug/L		81	64 - 107	7	16
Benzo[b]fluoranthene	4.00	3.42		ug/L		86	66 - 117	9	20
Benzo[k]fluoranthene	4.00	3.58		ug/L		90	68 - 114	6	20
Benzo[a]pyrene	4.00	3.90		ug/L		97	76 - 118	7	17
Indeno[1,2,3-cd]pyrene	4.00	3.43		ug/L		86	63 - 116	7	15
Dibenz(a,h)anthracene	4.00	3.45		ug/L		86	60 - 125	6	15
Benzo[g,h,i]perylene	4.00	3.60		ug/L		90	61 - 114	7	16

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Terphenyl-d14	*84*		*53 - 112*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-247167/6
Matrix: Water
Analysis Batch: 247167

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.50	0.050	mg/L			05/30/17 16:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*58 - 133*		*05/30/17 16:19*	*1*
Trifluorotoluene (Surr)	*107*		*77 - 128*		*05/30/17 16:19*	*1*

Lab Sample ID: LCS 580-247167/7
Matrix: Water
Analysis Batch: 247167

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			1.00	0.891		mg/L		89	79 - 110		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*58 - 133*
Trifluorotoluene (Surr)	*98*		*77 - 128*

Lab Sample ID: LCSD 580-247167/8
Matrix: Water
Analysis Batch: 247167

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			1.00	0.884		mg/L		88	79 - 110	1	10

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*58 - 133*
Trifluorotoluene (Surr)	*97*		*77 - 128*

Lab Sample ID: MB 580-247768/1-A
Matrix: Solid
Analysis Batch: 247806

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 247768

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		06/07/17 10:37	06/07/17 16:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*50 - 150*	*06/07/17 10:37*	*06/07/17 16:50*	*1*

Lab Sample ID: MB 580-247928/1-A
Matrix: Solid
Analysis Batch: 247937

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 247928

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		06/08/17 11:43	06/08/17 15:17	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-247928/1-A
Matrix: Solid
Analysis Batch: 247937

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 247928

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		50 - 150	06/08/17 11:43	06/08/17 15:17	1

Lab Sample ID: LCS 580-247928/2-A
Matrix: Solid
Analysis Batch: 247937

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 247928

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	40.0	36.9		mg/Kg		92	68 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		50 - 150

Lab Sample ID: LCSD 580-247928/3-A
Matrix: Solid
Analysis Batch: 247937

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 247928

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	40.0	36.9		mg/Kg		92	68 - 120	0	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		50 - 150

Lab Sample ID: MB 580-248145/1-A
Matrix: Solid
Analysis Batch: 248155

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 248145

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		06/10/17 07:05	06/10/17 14:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150	06/10/17 07:05	06/10/17 14:27	1
Trifluorotoluene (Surr)	98		50 - 150	06/10/17 07:05	06/10/17 14:27	1

Lab Sample ID: LCS 580-248145/2-A
Matrix: Solid
Analysis Batch: 248155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 248145

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	40.0	34.9		mg/Kg		87	68 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	90		50 - 150
Trifluorotoluene (Surr)	92		50 - 150

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 580-248145/3-A
Matrix: Solid
Analysis Batch: 248155

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 248145

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	36.3		mg/Kg		91	68 - 120	4	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*50 - 150*
Trifluorotoluene (Surr)	*95*		*50 - 150*

Lab Sample ID: 580-68649-15 MS
Matrix: Solid
Analysis Batch: 248155

Client Sample ID: 7901-SB-04-18.5
Prep Type: Total/NA
Prep Batch: 248145

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	ND	H F2	122	60.7	H	mg/Kg	☼	50	50 - 150

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*50 - 150*

Lab Sample ID: 580-68649-15 MSD
Matrix: Solid
Analysis Batch: 248155

Client Sample ID: 7901-SB-04-18.5
Prep Type: Total/NA
Prep Batch: 248145

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	ND	H F2	122	131	H F2	mg/Kg	☼	107	50 - 150	73	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*90*		*50 - 150*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 580-247425/1-A
Matrix: Solid
Analysis Batch: 247537

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 247425

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.025	0.0074	mg/Kg		06/02/17 09:07	06/04/17 13:49	1
PCB-1221	ND		0.011	0.0042	mg/Kg		06/02/17 09:07	06/04/17 13:49	1
PCB-1232	ND		0.011	0.0049	mg/Kg		06/02/17 09:07	06/04/17 13:49	1
PCB-1242	ND		0.010	0.0016	mg/Kg		06/02/17 09:07	06/04/17 13:49	1
PCB-1248	ND		0.011	0.0029	mg/Kg		06/02/17 09:07	06/04/17 13:49	1
PCB-1254	ND		0.010	0.0015	mg/Kg		06/02/17 09:07	06/04/17 13:49	1
PCB-1260	ND		0.010	0.0019	mg/Kg		06/02/17 09:07	06/04/17 13:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*89*		*25 - 149*	*06/02/17 09:07*	*06/04/17 13:49*	*1*
Tetrachloro-m-xylene	*92*		*35 - 130*	*06/02/17 09:07*	*06/04/17 13:49*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 580-247425/2-A
Matrix: Solid
Analysis Batch: 247537

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 247425

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1016			0.100	0.0935		mg/Kg		94	69 - 126		
PCB-1260			0.100	0.0870		mg/Kg		87	68 - 136		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*107*		*25 - 149*
Tetrachloro-m-xylene	*97*		*35 - 130*

Lab Sample ID: LCSD 580-247425/3-A
Matrix: Solid
Analysis Batch: 247537

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 247425

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016			0.100	0.0936		mg/Kg		94	69 - 126	0	17
PCB-1260			0.100	0.0886		mg/Kg		89	68 - 136	2	21

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*95*		*25 - 149*
Tetrachloro-m-xylene	*99*		*35 - 130*

Lab Sample ID: 580-68649-15 MS
Matrix: Solid
Analysis Batch: 247537

Client Sample ID: 7901-SB-04-18.5
Prep Type: Total/NA
Prep Batch: 247425

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1016	ND		0.136	0.111		mg/Kg	☼	82	69 - 126		
PCB-1260	ND		0.136	0.0984		mg/Kg	☼	73	68 - 136		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*70*		*25 - 149*
Tetrachloro-m-xylene	*87*		*35 - 130*

Lab Sample ID: 580-68649-15 MSD
Matrix: Solid
Analysis Batch: 247537

Client Sample ID: 7901-SB-04-18.5
Prep Type: Total/NA
Prep Batch: 247425

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	ND		0.133	0.102		mg/Kg	☼	77	69 - 126	8	17
PCB-1260	ND		0.133	0.0940		mg/Kg	☼	71	68 - 136	5	21

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*68*		*25 - 149*
Tetrachloro-m-xylene	*77*		*35 - 130*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 580-247749/1-A
Matrix: Water
Analysis Batch: 247887

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 247749

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.50	0.021	ug/L		06/07/17 08:57	06/08/17 02:25	1
PCB-1221	ND		0.50	0.030	ug/L		06/07/17 08:57	06/08/17 02:25	1
PCB-1232	ND		0.50	0.027	ug/L		06/07/17 08:57	06/08/17 02:25	1
PCB-1242	ND		0.50	0.028	ug/L		06/07/17 08:57	06/08/17 02:25	1
PCB-1248	ND		0.50	0.021	ug/L		06/07/17 08:57	06/08/17 02:25	1
PCB-1254	ND		0.50	0.020	ug/L		06/07/17 08:57	06/08/17 02:25	1
PCB-1260	ND		0.50	0.026	ug/L		06/07/17 08:57	06/08/17 02:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*121*		*38 - 134*	*06/07/17 08:57*	*06/08/17 02:25*	*1*
Tetrachloro-m-xylene	*82*		*54 - 115*	*06/07/17 08:57*	*06/08/17 02:25*	*1*

Lab Sample ID: LCS 580-247749/6-A
Matrix: Water
Analysis Batch: 247887

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 247749

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1016			1.00	0.862		ug/L		86	60 - 121		
PCB-1260			1.00	1.01		ug/L		101	55 - 132		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*127*		*38 - 134*
Tetrachloro-m-xylene	*84*		*54 - 115*

Lab Sample ID: LCSD 580-247749/7-A
Matrix: Water
Analysis Batch: 247887

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 247749

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016			1.00	0.899		ug/L		90	60 - 121	4	20
PCB-1260			1.00	1.07		ug/L		107	55 - 132	6	22

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*129*		*38 - 134*
Tetrachloro-m-xylene	*82*		*54 - 115*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-247362/1-A
Matrix: Solid
Analysis Batch: 247513

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 247362

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		06/01/17 11:07	06/02/17 20:07	1
Motor Oil (>C24-C36)	ND		50	9.1	mg/Kg		06/01/17 11:07	06/02/17 20:07	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-247362/1-A
Matrix: Solid
Analysis Batch: 247513

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 247362

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	77		54 - 118	06/01/17 11:07	06/02/17 20:07	1

Lab Sample ID: MB 580-247362/1-A
Matrix: Solid
Analysis Batch: 248128

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 247362

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		06/01/17 11:07	06/09/17 22:04	1
Motor Oil (>C24-C36)	ND		50	9.1	mg/Kg		06/01/17 11:07	06/09/17 22:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	95		54 - 118	06/01/17 11:07	06/09/17 22:04	1

Lab Sample ID: LCS 580-247362/2-A
Matrix: Solid
Analysis Batch: 247513

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 247362

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			500	432		mg/Kg		86	70 - 125		
Motor Oil (>C24-C36)			500	470		mg/Kg		94	70 - 119		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	90		54 - 118

Lab Sample ID: LCSD 580-247362/3-A
Matrix: Solid
Analysis Batch: 247513

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 247362

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			500	446		mg/Kg		89	70 - 125	3	16
Motor Oil (>C24-C36)			500	488		mg/Kg		98	70 - 119	4	16

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	87		54 - 118

Lab Sample ID: 580-68649-15 MS
Matrix: Solid
Analysis Batch: 248128

Client Sample ID: 7901-SB-04-18.5
Prep Type: Total/NA
Prep Batch: 247362

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)	490	F1	671	700	F1	mg/Kg	☼	31	70 - 125		
Motor Oil (>C24-C36)	800	F1	671	806	F1	mg/Kg	☼	0.3	70 - 119		

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	92		54 - 118

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 580-68649-15 MSD
Matrix: Solid
Analysis Batch: 248128

Client Sample ID: 7901-SB-04-18.5
Prep Type: Total/NA
Prep Batch: 247362

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	490	F1	670	689	F1	mg/Kg	☼	29	70 - 125	2	16
Motor Oil (>C24-C36)	800	F1	670	945	F1	mg/Kg	☼	21	70 - 119	16	16

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
o-Terphenyl	*89*		*54 - 118*

Lab Sample ID: MB 580-247820/1-A
Matrix: Water
Analysis Batch: 247934

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 247820

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.10	0.019	mg/L		06/07/17 14:31	06/08/17 14:39	1
Motor Oil (>C24-C36)	ND		0.25	0.077	mg/L		06/07/17 14:31	06/08/17 14:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*84*		*43 - 119*	*06/07/17 14:31*	*06/08/17 14:39*	*1*

Lab Sample ID: LCS 580-247820/2-A
Matrix: Water
Analysis Batch: 247934

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 247820

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			2.00	1.76		mg/L		88	59 - 112		
Motor Oil (>C24-C36)			2.00	1.92		mg/L		96	64 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*88*		*43 - 119*

Lab Sample ID: LCSD 580-247820/3-A
Matrix: Water
Analysis Batch: 247934

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 247820

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			2.00	1.81		mg/L		90	59 - 112	3	16
Motor Oil (>C24-C36)			2.00	1.99		mg/L		99	64 - 120	4	17

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*94*		*43 - 119*

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 580-247209/22-A
Matrix: Solid
Analysis Batch: 247306

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 247209

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.20	0.068	mg/Kg		05/30/17 16:00	05/31/17 13:39	10

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 580-247209/22-A
Matrix: Solid
Analysis Batch: 247306

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 247209

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.50	0.10	mg/Kg		05/30/17 16:00	05/31/17 13:39	10
Beryllium	ND		0.20	0.015	mg/Kg		05/30/17 16:00	05/31/17 13:39	10
Cadmium	ND		0.40	0.077	mg/Kg		05/30/17 16:00	05/31/17 13:39	10
Chromium	ND		0.50	0.063	mg/Kg		05/30/17 16:00	05/31/17 13:39	10
Copper	ND		1.0	0.22	mg/Kg		05/30/17 16:00	05/31/17 13:39	10
Lead	ND		0.50	0.048	mg/Kg		05/30/17 16:00	05/31/17 13:39	10
Nickel	ND		0.50	0.19	mg/Kg		05/30/17 16:00	05/31/17 13:39	10
Selenium	ND		1.0	0.22	mg/Kg		05/30/17 16:00	05/31/17 13:39	10
Silver	ND		0.20	0.020	mg/Kg		05/30/17 16:00	05/31/17 13:39	10
Thallium	ND		0.40	0.055	mg/Kg		05/30/17 16:00	05/31/17 13:39	10
Zinc	ND		5.0	1.6	mg/Kg		05/30/17 16:00	05/31/17 13:39	10

Lab Sample ID: LCS 580-247209/23-A
Matrix: Solid
Analysis Batch: 247306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 247209

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	150	148		mg/Kg		98	80 - 120
Arsenic	200	196		mg/Kg		98	80 - 120
Beryllium	5.00	4.85		mg/Kg		97	80 - 120
Cadmium	5.00	4.93		mg/Kg		99	80 - 120
Chromium	20.0	19.1		mg/Kg		95	80 - 120
Copper	25.0	24.7		mg/Kg		99	80 - 120
Lead	50.0	45.0		mg/Kg		90	80 - 120
Nickel	50.0	47.9		mg/Kg		96	80 - 120
Selenium	200	201		mg/Kg		100	80 - 120
Silver	30.0	29.5		mg/Kg		98	80 - 120
Thallium	200	178		mg/Kg		89	80 - 120
Zinc	200	192		mg/Kg		96	80 - 120

Lab Sample ID: LCSD 580-247209/24-A
Matrix: Solid
Analysis Batch: 247306

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 247209

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	150	146		mg/Kg		97	80 - 120	1	20
Arsenic	200	195		mg/Kg		98	80 - 120	1	20
Beryllium	5.00	4.86		mg/Kg		97	80 - 120	0	20
Cadmium	5.00	4.92		mg/Kg		98	80 - 120	0	20
Chromium	20.0	18.8		mg/Kg		94	80 - 120	1	20
Copper	25.0	24.5		mg/Kg		98	80 - 120	1	20
Lead	50.0	45.1		mg/Kg		90	80 - 120	0	20
Nickel	50.0	48.0		mg/Kg		96	80 - 120	0	20
Selenium	200	198		mg/Kg		99	80 - 120	1	20
Silver	30.0	29.0		mg/Kg		97	80 - 120	2	20
Thallium	200	179		mg/Kg		90	80 - 120	1	20
Zinc	200	189		mg/Kg		95	80 - 120	1	20

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 580-68649-15 MS
Matrix: Solid
Analysis Batch: 247306

Client Sample ID: 7901-SB-04-18.5
Prep Type: Total/NA
Prep Batch: 247209

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	6.2		194	189		mg/Kg	☼	94	80 - 120
Arsenic	13		258	256		mg/Kg	☼	94	80 - 120
Beryllium	ND		6.46	6.09		mg/Kg	☼	91	80 - 120
Cadmium	0.97		6.46	6.84		mg/Kg	☼	91	80 - 120
Chromium	27		25.8	49.6		mg/Kg	☼	86	80 - 120
Copper	99	F1 F2	32.3	118	F1	mg/Kg	☼	59	80 - 120
Lead	210	F1 F2	64.6	372	F1	mg/Kg	☼	258	80 - 120
Nickel	20		64.6	80.6		mg/Kg	☼	94	80 - 120
Selenium	ND		258	245		mg/Kg	☼	94	80 - 120
Silver	ND		38.7	35.6		mg/Kg	☼	92	80 - 120
Thallium	ND		258	227		mg/Kg	☼	88	80 - 120
Zinc	1400		258	1730	4	mg/Kg	☼	122	80 - 120

Lab Sample ID: 580-68649-15 MSD
Matrix: Solid
Analysis Batch: 247306

Client Sample ID: 7901-SB-04-18.5
Prep Type: Total/NA
Prep Batch: 247209

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	6.2		175	184		mg/Kg	☼	102	80 - 120	3	20
Arsenic	13		233	242		mg/Kg	☼	98	80 - 120	6	20
Beryllium	ND		5.82	5.76		mg/Kg	☼	95	80 - 120	6	20
Cadmium	0.97		5.82	6.42		mg/Kg	☼	94	80 - 120	6	20
Chromium	27		23.3	54.4		mg/Kg	☼	116	80 - 120	9	20
Copper	99	F1 F2	29.1	339	F1 F2	mg/Kg	☼	825	80 - 120	97	20
Lead	210	F1 F2	58.2	896	F1 F2	mg/Kg	☼	1187	80 - 120	83	20
Nickel	20		58.2	79.7		mg/Kg	☼	103	80 - 120	1	20
Selenium	ND		233	229		mg/Kg	☼	98	80 - 120	7	20
Silver	ND		34.9	32.9		mg/Kg	☼	94	80 - 120	8	20
Thallium	ND		233	212		mg/Kg	☼	91	80 - 120	7	20
Zinc	1400		233	2080	4	mg/Kg	☼	287	80 - 120	19	20

Lab Sample ID: 580-68649-15 DU
Matrix: Solid
Analysis Batch: 247306

Client Sample ID: 7901-SB-04-18.5
Prep Type: Total/NA
Prep Batch: 247209

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	6.2		7.35		mg/Kg	☼	17	20
Arsenic	13		15.6		mg/Kg	☼	19	20
Beryllium	ND		ND		mg/Kg	☼	NC	20
Cadmium	0.97		0.985		mg/Kg	☼	2	20
Chromium	27		30.5		mg/Kg	☼	11	20
Copper	99	F1 F2	150	F3	mg/Kg	☼	41	20
Lead	210	F1 F2	229		mg/Kg	☼	11	20
Nickel	20		24.3	F3	mg/Kg	☼	21	20
Selenium	ND		ND		mg/Kg	☼	NC	20
Silver	ND		ND		mg/Kg	☼	NC	20
Thallium	ND		ND		mg/Kg	☼	NC	20
Zinc	1400		1620		mg/Kg	☼	14	20

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 580-247222/9-A
Matrix: Water
Analysis Batch: 247267

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 247222

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00055	mg/L		05/30/17 18:17	05/31/17 12:23	5
Arsenic	ND		0.0050	0.0014	mg/L		05/30/17 18:17	05/31/17 12:23	5
Beryllium	ND		0.0020	0.00022	mg/L		05/30/17 18:17	05/31/17 12:23	5
Cadmium	ND		0.0020	0.00050	mg/L		05/30/17 18:17	05/31/17 12:23	5
Chromium	ND		0.0020	0.00071	mg/L		05/30/17 18:17	05/31/17 12:23	5
Copper	ND		0.010	0.0030	mg/L		05/30/17 18:17	05/31/17 12:23	5
Iron	ND		1.0	0.18	mg/L		05/30/17 18:17	05/31/17 12:23	5
Lead	ND		0.0040	0.0010	mg/L		05/30/17 18:17	05/31/17 12:23	5
Manganese	ND		0.010	0.0023	mg/L		05/30/17 18:17	05/31/17 12:23	5
Nickel	ND		0.015	0.00054	mg/L		05/30/17 18:17	05/31/17 12:23	5
Selenium	ND		0.040	0.010	mg/L		05/30/17 18:17	05/31/17 12:23	5
Silver	ND		0.0020	0.00022	mg/L		05/30/17 18:17	05/31/17 12:23	5
Thallium	ND		0.0050	0.00033	mg/L		05/30/17 18:17	05/31/17 12:23	5
Zinc	ND		0.035	0.0095	mg/L		05/30/17 18:17	05/31/17 12:23	5

Lab Sample ID: LCS 580-247222/10-A
Matrix: Water
Analysis Batch: 247267

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 247222

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	3.00	2.94		mg/L		98	80 - 120
Arsenic	4.00	3.86		mg/L		97	80 - 120
Beryllium	0.100	0.0953		mg/L		95	80 - 120
Cadmium	0.100	0.101		mg/L		101	80 - 120
Chromium	0.400	0.377		mg/L		94	80 - 120
Copper	0.500	0.495		mg/L		99	80 - 120
Iron	22.0	21.8		mg/L		99	80 - 120
Lead	1.00	0.920		mg/L		92	80 - 120
Manganese	1.00	0.937		mg/L		94	80 - 120
Nickel	1.00	0.954		mg/L		95	80 - 120
Selenium	4.00	3.94		mg/L		99	80 - 120
Silver	0.600	0.581		mg/L		97	80 - 120
Thallium	4.00	3.69		mg/L		92	80 - 120
Zinc	4.00	3.76		mg/L		94	80 - 120

Lab Sample ID: LCSD 580-247222/11-A
Matrix: Water
Analysis Batch: 247267

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 247222

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	3.00	2.97		mg/L		99	80 - 120	1	20
Arsenic	4.00	3.92		mg/L		98	80 - 120	2	20
Beryllium	0.100	0.0970		mg/L		97	80 - 120	2	20
Cadmium	0.100	0.101		mg/L		101	80 - 120	0	20
Chromium	0.400	0.383		mg/L		96	80 - 120	2	20
Copper	0.500	0.505		mg/L		101	80 - 120	2	20
Iron	22.0	22.0		mg/L		100	80 - 120	1	20
Lead	1.00	0.933		mg/L		93	80 - 120	1	20

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 580-247222/11-A
Matrix: Water
Analysis Batch: 247267

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 247222

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Manganese			1.00	0.950		mg/L		95	80 - 120	1	20
Nickel			1.00	0.955		mg/L		96	80 - 120	0	20
Selenium			4.00	4.01		mg/L		100	80 - 120	2	20
Silver			0.600	0.587		mg/L		98	80 - 120	1	20
Thallium			4.00	3.73		mg/L		93	80 - 120	1	20
Zinc			4.00	3.80		mg/L		95	80 - 120	1	20

Lab Sample ID: 580-68649-2 MS
Matrix: Water
Analysis Batch: 247267

Client Sample ID: 7901-SB-02-GW
Prep Type: Total Recoverable
Prep Batch: 247222

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		3.00	2.93		mg/L		98	80 - 120
Arsenic	ND		4.00	3.81		mg/L		95	80 - 120
Beryllium	ND		0.100	0.0927		mg/L		93	80 - 120
Cadmium	ND		0.100	0.100		mg/L		100	80 - 120
Chromium	ND		0.400	0.375		mg/L		94	80 - 120
Copper	ND		0.500	0.484		mg/L		97	80 - 120
Iron	6.3		22.0	27.0		mg/L		94	80 - 120
Lead	ND		1.00	0.920		mg/L		92	80 - 120
Manganese	0.30		1.00	1.22		mg/L		92	80 - 120
Nickel	ND		1.00	0.941		mg/L		94	80 - 120
Selenium	ND		4.00	3.91		mg/L		98	80 - 120
Silver	ND		0.600	0.555		mg/L		92	80 - 120
Thallium	ND		4.00	3.72		mg/L		93	80 - 120
Zinc	ND		4.00	3.72		mg/L		93	80 - 120

Lab Sample ID: 580-68649-2 MSD
Matrix: Water
Analysis Batch: 247267

Client Sample ID: 7901-SB-02-GW
Prep Type: Total Recoverable
Prep Batch: 247222

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND		3.00	2.88		mg/L		96	80 - 120	2	20
Arsenic	ND		4.00	3.84		mg/L		96	80 - 120	1	20
Beryllium	ND		0.100	0.0950		mg/L		95	80 - 120	2	20
Cadmium	ND		0.100	0.0983		mg/L		98	80 - 120	2	20
Chromium	ND		0.400	0.377		mg/L		94	80 - 120	1	20
Copper	ND		0.500	0.483		mg/L		97	80 - 120	0	20
Iron	6.3		22.0	26.9		mg/L		94	80 - 120	0	20
Lead	ND		1.00	0.902		mg/L		90	80 - 120	2	20
Manganese	0.30		1.00	1.23		mg/L		93	80 - 120	1	20
Nickel	ND		1.00	0.950		mg/L		95	80 - 120	1	20
Selenium	ND		4.00	3.95		mg/L		99	80 - 120	1	20
Silver	ND		0.600	0.556		mg/L		93	80 - 120	0	20
Thallium	ND		4.00	3.67		mg/L		92	80 - 120	1	20
Zinc	ND		4.00	3.73		mg/L		93	80 - 120	0	20

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 580-68649-2 DU
Matrix: Water
Analysis Batch: 247267

Client Sample ID: 7901-SB-02-GW
Prep Type: Total Recoverable
Prep Batch: 247222

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Antimony	ND			ND		mg/L				NC	20
Arsenic	ND			ND		mg/L				NC	20
Beryllium	ND			ND		mg/L				NC	20
Cadmium	ND			ND		mg/L				NC	20
Chromium	ND			ND		mg/L				NC	20
Copper	ND			ND		mg/L				NC	20
Iron	6.3			6.00		mg/L				4	20
Lead	ND			ND		mg/L				NC	20
Manganese	0.30			0.286		mg/L				4	20
Nickel	ND			ND		mg/L				NC	20
Selenium	ND			ND		mg/L				NC	20
Silver	ND			ND		mg/L				NC	20
Thallium	ND			ND		mg/L				NC	20
Zinc	ND			ND		mg/L				NC	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 580-247143/15-A
Matrix: Water
Analysis Batch: 247215

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 247143

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00030	0.00015	mg/L		05/30/17 10:13	05/30/17 13:11	1

Lab Sample ID: LCS 580-247143/16-A
Matrix: Water
Analysis Batch: 247215

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 247143

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.00200	0.00207		mg/L		103	80 - 120		

Lab Sample ID: LCSD 580-247143/17-A
Matrix: Water
Analysis Batch: 247215

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 247143

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury			0.00200	0.00199		mg/L		100	80 - 120	4	20

Lab Sample ID: 580-68649-1 MS
Matrix: Water
Analysis Batch: 247215

Client Sample ID: 7901-SB-01-GW
Prep Type: Total/NA
Prep Batch: 247143

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		0.00200	0.00203		mg/L		101	80 - 120		

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 580-68649-1 MSD — **Client Sample ID: 7901-SB-01-GW**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 247215 — **Prep Batch: 247143**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.00200	0.00200		mg/L		100	80 - 120	1	20

Lab Sample ID: 580-68649-1 DU — **Client Sample ID: 7901-SB-01-GW**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 247215 — **Prep Batch: 247143**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	ND		ND		mg/L		NC	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 580-247157/17-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 247213 — **Prep Batch: 247157**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.030	0.0090	mg/Kg		05/30/17 12:06	05/30/17 15:05	1

Lab Sample ID: LCS 580-247157/18-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 247213 — **Prep Batch: 247157**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.167	0.161		mg/Kg		97	80 - 120

Lab Sample ID: LCSD 580-247157/19-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 247213 — **Prep Batch: 247157**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.167	0.158		mg/Kg		95	80 - 120	2	20

Lab Sample ID: 580-68649-15 MS — **Client Sample ID: 7901-SB-04-18.5**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 247213 — **Prep Batch: 247157**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		0.225	0.262		mg/Kg	☼	107	80 - 120

Lab Sample ID: 580-68649-15 MSD — **Client Sample ID: 7901-SB-04-18.5**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 247213 — **Prep Batch: 247157**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.223	0.255		mg/Kg	☼	104	80 - 120	3	20

Method: 7471A - Mercury (CVAA) (Continued)

Lab Sample ID: 580-68649-15 DU
Matrix: Solid
Analysis Batch: 247213

Client Sample ID: 7901-SB-04-18.5
Prep Type: Total/NA
Prep Batch: 247157

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Mercury	ND			0.0895		mg/Kg	☼			NC	20

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-68649-5 DU
Matrix: Solid
Analysis Batch: 247614

Client Sample ID: 7901-SB-01-9.5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Solids	78.6			81.0		%				3	20
Percent Moisture	21.4			19.0		%				12	20

Lab Chronicle

Client: Leidos, Inc.
Project/Site: 7901 Parcel-South Park Landfill

TestAmerica Job ID: 580-68649-1

Client Sample ID: 7901-SB-01-GW
Date Collected: 05/25/17 16:00
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	247301	05/31/17 23:24	W1T	TAL SEA
Total/NA	Prep	3510C			247225	05/31/17 08:24	MRG	TAL SEA
Total/NA	Analysis	8270D SIM		1	247520	06/03/17 14:50	D1R	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	247167	05/30/17 22:13	RSB	TAL SEA
Total/NA	Prep	3510C			247749	06/07/17 08:57	MRG	TAL SEA
Total/NA	Analysis	8082A		1	247887	06/08/17 03:16	DCV	TAL SEA
Total/NA	Prep	3510C			247820	06/07/17 14:31	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	247934	06/08/17 15:47	W1T	TAL SEA
Total Recoverable	Prep	3005A			247222	05/30/17 18:17	PAB	TAL SEA
Total Recoverable	Analysis	6020A		5	247267	05/31/17 11:36	FCW	TAL SEA
Total/NA	Prep	7470A			247143	05/30/17 10:12	ADB	TAL SEA
Total/NA	Analysis	7470A		1	247215	05/30/17 13:26	FCW	TAL SEA

Client Sample ID: 7901-SB-02-GW
Date Collected: 05/25/17 10:35
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	247301	05/31/17 23:53	W1T	TAL SEA
Total/NA	Prep	3510C			247225	05/31/17 08:24	MRG	TAL SEA
Total/NA	Analysis	8270D SIM		1	247520	06/03/17 15:39	D1R	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	247167	05/30/17 22:45	RSB	TAL SEA
Total/NA	Prep	3510C			247749	06/07/17 08:57	MRG	TAL SEA
Total/NA	Analysis	8082A		1	247887	06/08/17 03:33	DCV	TAL SEA
Total/NA	Prep	3510C			247820	06/07/17 14:31	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	247934	06/08/17 16:09	W1T	TAL SEA
Total Recoverable	Prep	3005A			247222	05/30/17 18:17	PAB	TAL SEA
Total Recoverable	Analysis	6020A		5	247267	05/31/17 12:36	FCW	TAL SEA
Total/NA	Prep	7470A			247143	05/30/17 10:12	ADB	TAL SEA
Total/NA	Analysis	7470A		1	247215	05/30/17 13:51	FCW	TAL SEA

Client Sample ID: 7901-SB-04-GW
Date Collected: 05/25/17 12:50
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	247301	06/01/17 00:22	W1T	TAL SEA
Total/NA	Prep	3510C			247225	05/31/17 08:24	MRG	TAL SEA
Total/NA	Analysis	8270D SIM		1	247262	05/31/17 23:51	D1R	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	247167	05/30/17 23:18	RSB	TAL SEA
Total/NA	Prep	3510C			247749	06/07/17 08:57	MRG	TAL SEA
Total/NA	Analysis	8082A		1	247887	06/08/17 03:50	DCV	TAL SEA

Lab Chronicle

Client: Leidos, Inc.
Project/Site: 7901 Parcel-South Park Landfill

TestAmerica Job ID: 580-68649-1

Client Sample ID: 7901-SB-04-GW
Lab Sample ID: 580-68649-3
Date Collected: 05/25/17 12:50
Matrix: Water
Date Received: 05/26/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			247820	06/07/17 14:31	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	247934	06/08/17 16:32	W1T	TAL SEA
Total Recoverable	Prep	3005A			247222	05/30/17 18:17	PAB	TAL SEA
Total Recoverable	Analysis	6020A		5	247267	05/31/17 11:40	FCW	TAL SEA
Total/NA	Prep	7470A			247143	05/30/17 10:12	ADB	TAL SEA
Total/NA	Analysis	7470A		1	247215	05/30/17 13:55	FCW	TAL SEA

Client Sample ID: 7901-TB-GW
Lab Sample ID: 580-68649-4
Date Collected: 05/25/17 12:00
Matrix: Water
Date Received: 05/26/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	247301	05/31/17 19:34	W1T	TAL SEA

Client Sample ID: 7901-SB-01-9.5
Lab Sample ID: 580-68649-5
Date Collected: 05/25/17 15:35
Matrix: Solid
Date Received: 05/26/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	247614	06/05/17 15:52	Z1T	TAL SEA

Client Sample ID: 7901-SB-01-9.5
Lab Sample ID: 580-68649-5
Date Collected: 05/25/17 15:35
Matrix: Solid
Date Received: 05/26/17 16:30
Percent Solids: 78.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			247561	06/05/17 09:38	Y1W	TAL SEA
Total/NA	Analysis	8270D		50	247639	06/06/17 19:47	ERB	TAL SEA
Total/NA	Prep	5035			247768	06/07/17 10:37	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	247806	06/07/17 19:22	RSB	TAL SEA
Total/NA	Prep	3546			247425	06/02/17 09:07	APR	TAL SEA
Total/NA	Analysis	8082A		1	247537	06/04/17 16:16	DCV	TAL SEA
Total/NA	Prep	3546			247362	06/01/17 11:07	Y1W	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	248128	06/09/17 22:26	JCP	TAL SEA
Total/NA	Prep	3050B			247209	05/30/17 16:00	PAB	TAL SEA
Total/NA	Analysis	6020A		10	247306	05/31/17 14:51	FCW	TAL SEA
Total/NA	Prep	7471A			247157	05/30/17 12:06	ADB	TAL SEA
Total/NA	Analysis	7471A		1	247213	05/30/17 15:21	FCW	TAL SEA

Client Sample ID: 7901-SB-01-14.5
Date Collected: 05/25/17 15:40
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	247614	06/05/17 15:52	Z1T	TAL SEA

Client Sample ID: 7901-SB-01-14.5
Date Collected: 05/25/17 15:40
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-6
Matrix: Solid
Percent Solids: 85.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			247561	06/05/17 09:38	Y1W	TAL SEA
Total/NA	Analysis	8270D		5	247639	06/06/17 20:13	ERB	TAL SEA
Total/NA	Prep	5035			247768	06/07/17 10:37	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	247806	06/07/17 19:52	RSB	TAL SEA
Total/NA	Prep	3546			247425	06/02/17 09:07	APR	TAL SEA
Total/NA	Analysis	8082A		1	247537	06/04/17 16:32	DCV	TAL SEA
Total/NA	Prep	3546			247362	06/01/17 11:07	Y1W	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	248128	06/09/17 22:48	JCP	TAL SEA
Total/NA	Prep	3050B			247209	05/30/17 16:00	PAB	TAL SEA
Total/NA	Analysis	6020A		10	247306	05/31/17 14:55	FCW	TAL SEA
Total/NA	Prep	7471A			247157	05/30/17 12:06	ADB	TAL SEA
Total/NA	Analysis	7471A		1	247213	05/30/17 15:23	FCW	TAL SEA

Client Sample ID: 7901-SB-01-17.5
Date Collected: 05/25/17 15:45
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	247492	06/02/17 14:42	ADB	TAL SEA

Client Sample ID: 7901-SB-01-17.5
Date Collected: 05/25/17 15:45
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-7
Matrix: Solid
Percent Solids: 65.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			247561	06/05/17 09:38	Y1W	TAL SEA
Total/NA	Analysis	8270D		1	247639	06/06/17 15:05	ERB	TAL SEA
Total/NA	Prep	5035			247768	06/07/17 10:37	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	247806	06/07/17 20:23	RSB	TAL SEA
Total/NA	Prep	3546			247425	06/02/17 09:07	APR	TAL SEA
Total/NA	Analysis	8082A		1	247537	06/04/17 16:48	DCV	TAL SEA
Total/NA	Prep	3546			247362	06/01/17 11:07	Y1W	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	247513	06/02/17 22:43	TL1	TAL SEA
Total/NA	Prep	3050B			247209	05/30/17 16:00	PAB	TAL SEA
Total/NA	Analysis	6020A		10	247306	05/31/17 16:20	FCW	TAL SEA
Total/NA	Prep	7471A			247157	05/30/17 12:06	ADB	TAL SEA

Lab Chronicle

Client: Leidos, Inc.
Project/Site: 7901 Parcel-South Park Landfill

TestAmerica Job ID: 580-68649-1

Client Sample ID: 7901-SB-01-17.5
Lab Sample ID: 580-68649-7
Date Collected: 05/25/17 15:45
Matrix: Solid
Date Received: 05/26/17 16:30
Percent Solids: 65.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7471A		1	247213	05/30/17 15:26	FCW	TAL SEA

Client Sample ID: 7901-SB-02-14.5
Lab Sample ID: 580-68649-8
Date Collected: 05/25/17 09:30
Matrix: Solid
Date Received: 05/26/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	247492	06/02/17 14:42	ADB	TAL SEA

Client Sample ID: 7901-SB-02-14.5
Lab Sample ID: 580-68649-8
Date Collected: 05/25/17 09:30
Matrix: Solid
Date Received: 05/26/17 16:30
Percent Solids: 84.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			247561	06/05/17 09:38	Y1W	TAL SEA
Total/NA	Analysis	8270D		10	247639	06/06/17 15:30	ERB	TAL SEA
Total/NA	Prep	5035			247768	06/07/17 10:37	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	247806	06/07/17 20:53	RSB	TAL SEA
Total/NA	Prep	3546			247425	06/02/17 09:07	APR	TAL SEA
Total/NA	Analysis	8082A		1	247537	06/04/17 17:04	DCV	TAL SEA
Total/NA	Prep	3546			247362	06/01/17 11:07	Y1W	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	247513	06/02/17 23:14	TL1	TAL SEA
Total/NA	Prep	3050B			247209	05/30/17 16:00	PAB	TAL SEA
Total/NA	Analysis	6020A		10	247306	05/31/17 16:24	FCW	TAL SEA
Total/NA	Prep	3050B			247209	05/30/17 16:00	PAB	TAL SEA
Total/NA	Analysis	6020A		1000	247306	05/31/17 16:41	FCW	TAL SEA
Total/NA	Prep	7471A			247157	05/30/17 12:06	ADB	TAL SEA
Total/NA	Analysis	7471A		1	247213	05/30/17 15:32	FCW	TAL SEA

Client Sample ID: 7901-SB-02-17.5
Lab Sample ID: 580-68649-9
Date Collected: 05/25/17 09:35
Matrix: Solid
Date Received: 05/26/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	247492	06/02/17 14:42	ADB	TAL SEA

Client Sample ID: 7901-SB-02-17.5
Lab Sample ID: 580-68649-9
Date Collected: 05/25/17 09:35
Matrix: Solid
Date Received: 05/26/17 16:30
Percent Solids: 65.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			247561	06/05/17 09:38	Y1W	TAL SEA
Total/NA	Analysis	8270D		1	247639	06/06/17 15:56	ERB	TAL SEA

Lab Chronicle

Client: Leidos, Inc. TestAmerica Job ID: 580-68649-1
Project/Site: 7901 Parcel-South Park Landfill

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			247768	06/07/17 10:37	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	247806	06/07/17 21:23	RSB	TAL SEA
Total/NA	Prep	3546			247425	06/02/17 09:07	APR	TAL SEA
Total/NA	Analysis	8082A		1	247537	06/04/17 17:20	DCV	TAL SEA
Total/NA	Prep	3546			247362	06/01/17 11:07	Y1W	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	247513	06/02/17 23:44	TL1	TAL SEA
Total/NA	Prep	3050B			247209	05/30/17 16:00	PAB	TAL SEA
Total/NA	Analysis	6020A		10	247306	05/31/17 16:29	FCW	TAL SEA
Total/NA	Prep	7471A			247157	05/30/17 12:06	ADB	TAL SEA
Total/NA	Analysis	7471A		1	247213	05/30/17 15:35	FCW	TAL SEA

Client Sample ID: 7901-SB-03-8
Lab Sample ID: 580-68649-10
Date Collected: 05/25/17 14:05
Matrix: Solid
Date Received: 05/26/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	247492	06/02/17 14:42	ADB	TAL SEA

Client Sample ID: 7901-SB-03-8
Lab Sample ID: 580-68649-10
Date Collected: 05/25/17 14:05
Matrix: Solid
Date Received: 05/26/17 16:30
Percent Solids: 86.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			247561	06/05/17 09:38	Y1W	TAL SEA
Total/NA	Analysis	8270D		1	247639	06/06/17 16:22	ERB	TAL SEA
Total/NA	Prep	5035			247928	06/08/17 11:43	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	247937	06/08/17 18:20	RSB	TAL SEA
Total/NA	Prep	3546			247425	06/02/17 09:07	APR	TAL SEA
Total/NA	Analysis	8082A		1	247537	06/04/17 17:37	DCV	TAL SEA
Total/NA	Prep	3546			247362	06/01/17 11:07	Y1W	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	247513	06/03/17 00:14	TL1	TAL SEA
Total/NA	Prep	3050B			247209	05/30/17 16:00	PAB	TAL SEA
Total/NA	Analysis	6020A		10	247306	05/31/17 13:52	FCW	TAL SEA
Total/NA	Prep	7471A			247157	05/30/17 12:06	ADB	TAL SEA
Total/NA	Analysis	7471A		1	247213	05/30/17 15:37	FCW	TAL SEA

Client Sample ID: 7901-SB-03-9
Lab Sample ID: 580-68649-11
Date Collected: 05/25/17 14:10
Matrix: Solid
Date Received: 05/26/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	247492	06/02/17 14:42	ADB	TAL SEA

Client Sample ID: 7901-SB-03-9

Lab Sample ID: 580-68649-11
Date Collected: 05/25/17 14:10
Matrix: Solid
Date Received: 05/26/17 16:30
Percent Solids: 79.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			247561	06/05/17 09:38	Y1W	TAL SEA
Total/NA	Analysis	8270D		5	247639	06/06/17 16:47	ERB	TAL SEA
Total/NA	Prep	3550B	DL		247561	06/05/17 09:38	Y1W	TAL SEA
Total/NA	Analysis	8270D	DL	50	247757	06/07/17 15:45	D1R	TAL SEA
Total/NA	Prep	5035			247928	06/08/17 11:43	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	247937	06/08/17 18:50	RSB	TAL SEA
Total/NA	Prep	3546			247425	06/02/17 09:07	APR	TAL SEA
Total/NA	Analysis	8082A		1	247537	06/04/17 17:53	DCV	TAL SEA
Total/NA	Prep	3546			247362	06/01/17 11:07	Y1W	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	248128	06/09/17 23:11	JCP	TAL SEA
Total/NA	Prep	3050B			247209	05/30/17 16:00	PAB	TAL SEA
Total/NA	Analysis	6020A		10	247306	05/31/17 14:34	FCW	TAL SEA
Total/NA	Prep	3050B			247209	05/30/17 16:00	PAB	TAL SEA
Total/NA	Analysis	6020A		1000	247306	05/31/17 15:04	FCW	TAL SEA
Total/NA	Prep	7471A			247157	05/30/17 12:06	ADB	TAL SEA
Total/NA	Analysis	7471A		1	247213	05/30/17 15:39	FCW	TAL SEA

Client Sample ID: 7901-SB-03-17

Lab Sample ID: 580-68649-12
Date Collected: 05/25/17 14:15
Matrix: Solid
Date Received: 05/26/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	247614	06/05/17 15:52	Z1T	TAL SEA

Client Sample ID: 7901-SB-03-17

Lab Sample ID: 580-68649-12
Date Collected: 05/25/17 14:15
Matrix: Solid
Date Received: 05/26/17 16:30
Percent Solids: 70.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			247561	06/05/17 09:38	Y1W	TAL SEA
Total/NA	Analysis	8270D		1	247639	06/06/17 17:13	ERB	TAL SEA
Total/NA	Prep	5035			247928	06/08/17 11:43	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	247937	06/08/17 19:21	RSB	TAL SEA
Total/NA	Prep	3546			247425	06/02/17 09:07	APR	TAL SEA
Total/NA	Analysis	8082A		1	247537	06/04/17 18:09	DCV	TAL SEA
Total/NA	Prep	3546			247362	06/01/17 11:07	Y1W	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	248128	06/09/17 23:33	JCP	TAL SEA
Total/NA	Prep	3050B			247209	05/30/17 16:00	PAB	TAL SEA
Total/NA	Analysis	6020A		10	247306	05/31/17 14:39	FCW	TAL SEA
Total/NA	Prep	7471A			247157	05/30/17 12:06	ADB	TAL SEA
Total/NA	Analysis	7471A		1	247213	05/30/17 15:41	FCW	TAL SEA

Client Sample ID: 7901-SB-04-9
Date Collected: 05/25/17 12:05
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-13
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	247614	06/05/17 15:52	Z1T	TAL SEA

Client Sample ID: 7901-SB-04-9
Date Collected: 05/25/17 12:05
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-13
Matrix: Solid
Percent Solids: 76.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			247561	06/05/17 09:38	Y1W	TAL SEA
Total/NA	Analysis	8270D		1	247639	06/06/17 17:39	ERB	TAL SEA
Total/NA	Prep	5035			247928	06/08/17 11:43	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	247937	06/08/17 19:51	RSB	TAL SEA
Total/NA	Prep	3546			247425	06/02/17 09:07	APR	TAL SEA
Total/NA	Analysis	8082A		1	247537	06/04/17 18:25	DCV	TAL SEA
Total/NA	Prep	3546			247362	06/01/17 11:07	Y1W	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	248128	06/09/17 23:55	JCP	TAL SEA
Total/NA	Prep	3050B			247209	05/30/17 16:00	PAB	TAL SEA
Total/NA	Analysis	6020A		10	247306	05/31/17 14:43	FCW	TAL SEA
Total/NA	Prep	3050B			247209	05/30/17 16:00	PAB	TAL SEA
Total/NA	Analysis	6020A		1000	247306	05/31/17 14:59	FCW	TAL SEA
Total/NA	Prep	7471A			247157	05/30/17 12:06	ADB	TAL SEA
Total/NA	Analysis	7471A		1	247213	05/30/17 15:44	FCW	TAL SEA

Client Sample ID: 7901-SB-04-14
Date Collected: 05/25/17 12:10
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-14
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	247614	06/05/17 15:52	Z1T	TAL SEA

Client Sample ID: 7901-SB-04-14
Date Collected: 05/25/17 12:10
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-14
Matrix: Solid
Percent Solids: 82.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			247561	06/05/17 09:38	Y1W	TAL SEA
Total/NA	Analysis	8270D		50	247639	06/06/17 18:04	ERB	TAL SEA
Total/NA	Prep	5035			247928	06/08/17 11:43	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	247937	06/08/17 20:22	RSB	TAL SEA
Total/NA	Prep	3546			247425	06/02/17 09:07	APR	TAL SEA
Total/NA	Analysis	8082A		1	247537	06/04/17 18:42	DCV	TAL SEA
Total/NA	Prep	3546			247362	06/01/17 11:07	Y1W	TAL SEA
Total/NA	Analysis	NWTPH-Dx		5	248128	06/10/17 00:17	JCP	TAL SEA
Total/NA	Prep	3050B			247209	05/30/17 16:00	PAB	TAL SEA

Lab Chronicle

Client: Leidos, Inc.
Project/Site: 7901 Parcel-South Park Landfill

TestAmerica Job ID: 580-68649-1

Client Sample ID: 7901-SB-04-14

Date Collected: 05/25/17 12:10
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-14

Matrix: Solid
Percent Solids: 82.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6020A		10	247306	05/31/17 14:47	FCW	TAL SEA
Total/NA	Prep	7471A			247157	05/30/17 12:06	ADB	TAL SEA
Total/NA	Analysis	7471A		1	247213	05/30/17 15:46	FCW	TAL SEA

Client Sample ID: 7901-SB-04-18.5

Date Collected: 05/25/17 12:15
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-15

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	247442	06/02/17 11:31	Y1W	TAL SEA

Client Sample ID: 7901-SB-04-18.5

Date Collected: 05/25/17 12:15
Date Received: 05/26/17 16:30

Lab Sample ID: 580-68649-15

Matrix: Solid
Percent Solids: 69.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			247561	06/05/17 09:38	Y1W	TAL SEA
Total/NA	Analysis	8270D		1	247639	06/06/17 18:30	ERB	TAL SEA
Total/NA	Prep	5035			248145	06/10/17 07:05	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	248155	06/10/17 15:58	RSB	TAL SEA
Total/NA	Prep	3546			247425	06/02/17 09:07	APR	TAL SEA
Total/NA	Analysis	8082A		1	247537	06/04/17 15:27	DCV	TAL SEA
Total/NA	Prep	3546			247362	06/01/17 11:07	Y1W	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	248128	06/10/17 00:40	JCP	TAL SEA
Total/NA	Prep	3050B			247209	05/30/17 16:00	PAB	TAL SEA
Total/NA	Analysis	6020A		10	247306	05/31/17 13:56	FCW	TAL SEA
Total/NA	Prep	7471A			247157	05/30/17 12:06	ADB	TAL SEA
Total/NA	Analysis	7471A		1	247213	05/30/17 15:12	FCW	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Leidos, Inc. TestAmerica Job ID: 580-68649-1
Project/Site: 7901 Parcel-South Park Landfill

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-18

The following analytes are included in this report, but are not accredited/certified under this accreditation/certification:

Analysis Method	Prep Method	Matrix	Analyte
8270D	3550B	Solid	3 & 4 Methylphenol

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
6020A	3005A	Water	Antimony
6020A	3005A	Water	Arsenic
6020A	3005A	Water	Beryllium
6020A	3005A	Water	Cadmium
6020A	3005A	Water	Chromium
6020A	3005A	Water	Copper
6020A	3005A	Water	Iron
6020A	3005A	Water	Lead
6020A	3005A	Water	Manganese
6020A	3005A	Water	Nickel
6020A	3005A	Water	Selenium
6020A	3005A	Water	Silver
6020A	3005A	Water	Thallium
6020A	3005A	Water	Zinc
6020A	3050B	Solid	Antimony
6020A	3050B	Solid	Arsenic
6020A	3050B	Solid	Beryllium
6020A	3050B	Solid	Cadmium
6020A	3050B	Solid	Chromium
6020A	3050B	Solid	Copper
6020A	3050B	Solid	Lead
6020A	3050B	Solid	Nickel
6020A	3050B	Solid	Selenium
6020A	3050B	Solid	Silver
6020A	3050B	Solid	Thallium
6020A	3050B	Solid	Zinc
8270D	3550B	Solid	1,2,4-Trichlorobenzene
8270D	3550B	Solid	bis(chloroisopropyl) ether
D 2216		Solid	Percent Moisture
D 2216		Solid	Percent Solids

Sample Summary

Client: Leidos, Inc.
Project/Site: 7901 Parcel-South Park Landfill

TestAmerica Job ID: 580-68649-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-68649-1	7901-SB-01-GW	Water	05/25/17 16:00	05/26/17 16:30
580-68649-2	7901-SB-02-GW	Water	05/25/17 10:35	05/26/17 16:30
580-68649-3	7901-SB-04-GW	Water	05/25/17 12:50	05/26/17 16:30
580-68649-4	7901-TB-GW	Water	05/25/17 12:00	05/26/17 16:30
580-68649-5	7901-SB-01-9.5	Solid	05/25/17 15:35	05/26/17 16:30
580-68649-6	7901-SB-01-14.5	Solid	05/25/17 15:40	05/26/17 16:30
580-68649-7	7901-SB-01-17.5	Solid	05/25/17 15:45	05/26/17 16:30
580-68649-8	7901-SB-02-14.5	Solid	05/25/17 09:30	05/26/17 16:30
580-68649-9	7901-SB-02-17.5	Solid	05/25/17 09:35	05/26/17 16:30
580-68649-10	7901-SB-03-8	Solid	05/25/17 14:05	05/26/17 16:30
580-68649-11	7901-SB-03-9	Solid	05/25/17 14:10	05/26/17 16:30
580-68649-12	7901-SB-03-17	Solid	05/25/17 14:15	05/26/17 16:30
580-68649-13	7901-SB-04-9	Solid	05/25/17 12:05	05/26/17 16:30
580-68649-14	7901-SB-04-14	Solid	05/25/17 12:10	05/26/17 16:30
580-68649-15	7901-SB-04-18.5	Solid	05/25/17 12:15	05/26/17 16:30

TestAmerica
THE LEADER IN ENVIR[ONMENTAL TESTING]

580-68649 Chain of Custody

TestAmerica Seattle
5755 8th Street E.
Tacoma, WA 98424
253-922-2310
253-922-5047
testamericainc.com

Loc: 580
68649

☐ Rush
☐ Short Hold

Chain of Custody Record

Client: Leidos	Client Contact: Tom Dubé	Date: 5/25/2017	Chain of Custody Number: 31022
Address: 18912 North Creek pkwy, #101	Telephone Number (Area Code)/Fax Number: 425-482-3325	Lab Number:	Page 1 of 2
City: Bothell · State: WA · Zip Code: 98011	Sampler: TD, RO	Lab Contact: Elaine W.	Analysis (Attach list if more space is needed)
Project Name and Location (State): 7901 Parcel - South Park Landfill	Billing Contact:		
Contract/Purchase Order/Quote No.			

Matrix: Air, Aqueous, Sed., Soil. Containers & Preservatives: Unpres., H2SO4, HNO3, HCl, NaOH, ZnAc/NaOH, MeOH.

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	MeOH	PCBs 8082A	PAHs 8270	SVOCs 8270	VOCs 8260	Metals **	NWTPH-Gx	NWTPH-Dx **	Special Instructions/Conditions of Receipt
7901-SB-01-GW	5/25/17	1600		X			4		1	8				X	X		X	X	X	X	*Analyze LCS/LCSD for groundwater
7901-SB-02-GW	↓	1035		X			4		1	8				X	X		X	X	X	X	*GW Metals (PP+Fe, Mn)
7901-SB-04-GW	↓	1250		X			4		1	8				X	X		X	X	X	X	
7901-TB-GW	↓	1200		X						3							X				Trip Blank
~~7901~~																					
7901-SB-01-9.5	5/25/17	1535				X	1						1	X		X		X	X	X	TB___ Cooler IRS Cor 6.0° Unc 6.4°
7901-SB-01-14.5	↓	1540				X	1						1	X		X		X	X	X	Cooler Dsc Lg Blue/white @Lab —
7901-SB-01-17.5	↓	1545				X	1						1	X		X		X	X	X	Wet/Packs (circled) w/cs Packing____
7901-SB-02-14.5	↓	0930				X	1						1	X		X		X	X	X	TB___ Cooler IRS Cor 0.3° Unc 0.5°
7901-SB-02-17.5	↓	0935				X	1						1	X		X		X	X	X	Cooler Dsc Lg Blue/white @Lab — Wet/Packs (circled) w/cs Packing____

Cooler: ☒ Yes ☐ No Cooler Temp: ______

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ______ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days): ☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☒ 10 Days ☐ 15 Days ☐ Other Per SOW

QC Requirements (Specify)

	Sign/Print	Date	Time		Sign/Print	Date	Time
1. Relinquished By	Thomas Dube / Thomas Dube	5/26/17	1200	1. Received By	[signature] / Francisco Luna, Jr.	5/26/17	1630
2. Relinquished By				2. Received By			
3. Relinquished By				3. Received By			

Comments
Metals include priority pollutant (6020 & 7470), including Fe & Mn. NWTPH-Dx is for diesel & heavy oils. (and oil)

DISTRIBUTION: WHITE – Stays with the Sample; CANARY – Returned to Client with Report; PINK – Field Copy

TAL-8274-580 (0210)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.testamericainc.com

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Chain of Custody Record

Client	Client Contact	Date	Chain of Custody Number
Leidos			31023
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 2 **of** 2
18912 North Creek PKwy, #101			
City / **State** / **Zip Code**	**Sampler**	**Lab Contact**	
Bothell / WA / 98011			
Project Name and Location (State)	**Billing Contact**		
7901 Parcel - South Park Landfill			
Contract/Purchase Order/Quote No.			

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	MeOH	Analysis: PCBs 8082	PAHs 8270	SVOCs 8270	VOCs 8260	Metals	NWTPH-Gx	NWTPH-Dx+	Special Instructions/ Conditions of Receipt
7901-SB-03-8	5/25/17	1405				X	1						1	X		X		X	X	X	
7901-SB-03-9		1410				X	1						1	X		X		X	X	X	
7901-SB-03-17		1415				X	1						1	X		X		X	X	X	
7901-SB-04-9		1205				X	1						1	X		X		X	X	X	
7901-SB-04-14		1210				X	1						1	X		X		X	X	X	
7901-SB-04-18.5		1215				X	3						3	X		X		X	X	X	Also MS/MSD

Cooler	Possible Hazard Identification	Sample Disposal	
☐ Yes ☐ No Cooler Temp: _____	☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown	☐ Return To Client ☐ Archive For _____ Months	☐ Disposal By Lab (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days)
☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☒ 10 Days ☐ 15 Days ☐ Other Per SOW

QC Requirements (Specify)

1. Relinquished By Sign/Print	Date	Time	1. Received By Sign/Print	Date	Time
Thomas Dubé Thomas Dubé	5/26/17	1200	/ Francisco Luna, J.	5/26/17	1630
2. Relinquished By Sign/Print	Date	Time	2. Received By Sign/Print	Date	Time
3. Relinquished By Sign/Print	Date	Time	3. Received By Sign/Print	Date	Time

Comments
Metals include Priority Pollutant (6020 & 7471). NWTPH-Dx is for diesel & heavy oils.

DISTRIBUTION: WHITE – Stays with the Samples; CANARY – Returned to Client with Report; PINK – Field Copy

Login Sample Receipt Checklist

Client: Leidos, Inc.

Job Number: 580-68649-1

Login Number: 68649
List Number: 1
Creator: Ponce-McDermott, Monica

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	pH adjusted
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Study_ID	Location_ID	Study-Specific_ Location_ID	Field_ Collection_ Type	Field_ Collector	Field_ Collection_ Start_ Date	Field_ Collection_ Start_ Time	Sample_ID	Sample_ Replicate_ Flag	Sample_ Composite_ Flag	Sample_ Matrix	Sample_ Source	Result_Parameter_Name	Result_ Parameter_ CAS_ Number	Lab_ Analysis_ Date	Lab_ Analysis_ Date_ Accuracy	Lab_ Analysis_ Time	Result_ Value	Result_ Value_ Units	Result_ Reporting_ Limit	Result_ Reporting_ Limit_ Type	Result_ Detection_ Limit	Result_ Detection_ Limit_ Type	Result_ Data_ Qualifier	Fraction_ Analyzed	Result_ Basis	Digestion_ Method	Result_ Method	Result_ Lab Replicate_ ID	Result_Lab_Name
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,2-Dichlorobenzene	95-50-1	5/31/2017	D	23:24:00	0.3	ug/L	0.3	PQL	0.05	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	2-Chlorotoluene	95-49-8	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.07	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,2,3-Trichloropropane	96-18-4	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.05	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Carbon Tetrachloride	56-23-5	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Cis-1,3-Dichloropropene	10061-01-5	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.09	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Chlorobenzene	108-90-7	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Vinyl Chloride	75-01-4	5/31/2017	D	23:24:00	0.3	ug/L	0.02	PQL	0.013	MDL		Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Sec-Butylbenzene	135-98-8	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.07	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Dibromomethane	74-95-3	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	m, p-Xylene	179601-23-1	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.05	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	o-Xylene	95-47-6	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.06	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,2,4-Trichlorobenzene	120-82-1	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.04	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Styrene	100-42-5	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.1	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Bromochloromethane	74-97-5	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Dichlorobromomethane	75-27-4	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,3-Dichlorobenzene	541-73-1	5/31/2017	D	23:24:00	0.3	ug/L	0.3	PQL	0.05	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Benzene	71-43-2	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Chloroethane	75-00-3	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.075	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Trans-1,3-Dichloropropene	10061-02-6	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,2,3-Trichlorobenzene	87-61-6	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.1	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	n-Propylbenzene	103-65-1	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	p-Isopropyltoluene	99-87-6	5/31/2017	D	23:24:00	0.3	ug/L	0.3	PQL	0.05	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	n-Butylbenzene	104-51-8	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.08	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,1-Dichloropropene	563-58-6	5/31/2017	D	23:24:00	0.1	ug/L	0.1	PQL	0.015	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Cis-1,2-Dichloroethene	156-59-2	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,1,2,2-Tetrachloroethane	79-34-5	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,2,4-Trimethylbenzene	95-63-6	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.03	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Toluene	108-88-3	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Naphthalene	91-20-3	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.1	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,3,5-Trimethylbenzene	108-67-8	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.083	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,3-Dichloropropane	142-28-9	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Chloroform	67-66-3	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.03	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	4-Chlorotoluene	106-43-4	5/31/2017	D	23:24:00	0.3	ug/L	0.3	PQL	0.05	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Chlorodibromomethane	124-48-1	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	CFC-12	75-71-8	5/31/2017	D	23:24:00	0.4	ug/L	0.4	PQL	0.05	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,1,2-Trichloroethane	79-00-5	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Tert-Butylbenzene	98-06-6	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.1	MDL	U	Total			SW8260C		TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Chloromethane	74-87-3	5/31/2017	D	23:24:00	0.3	ug/L	0.3	PQL	0.05	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Methylene Chloride	75-09-2	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.11	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,1-Dichloroethene	75-35-4	5/31/2017	D	23:24:00	0.1	ug/L	0.1	PQL	0.018	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Cumene	98-82-8	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.06	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,2-Dichloroethane	107-06-2	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Tetrachloroethene	127-18-4	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.07	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,1,1-Trichloroethane	71-55-6	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	2,2-Dichloropropane	594-20-7	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.06	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Ethylene dibromide	106-93-4	5/31/2017	D	23:24:00	0.1	ug/L	0.1	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Bromoform	75-25-2	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.08	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,2-Dibromo-3-Chloropropane	96-12-8	5/31/2017	D	23:24:00	2	ug/L	2	PQL	0.44	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	CFC-11	75-69-4	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Trichloroethene	79-01-6	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Bromobenzene	108-86-1	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.035	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,2-Dichloropropane	78-87-5	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,1,1,2-Tetrachloroethane	630-20-6	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Ethylbenzene	100-41-4	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.03	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Trans-1,2-Dichloroethene	156-60-5	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Hexachlorobutadiene	87-68-3	5/31/2017	D	23:24:00	0.5	ug/L	0.5	PQL	0.075	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,1-Dichloroethane	75-34-3	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Bromomethane	74-83-9	5/31/2017	D	23:24:00	1	ug/L	1	PQL	0.16	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1,4-Dichlorobenzene	106-46-7	5/31/2017	D	23:24:00	0.3	ug/L	0.3	PQL	0.05	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Methyl t-butyl ether	1634-04-4	5/31/2017	D	23:24:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Naphthalene	91-20-3	6/3/2017	D	14:50:00	0.041	ug/L	0.041	PQL	0.013	MDL	U	Total		SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	2-Methylnaphthalene	91-57-6	6/3/2017	D	14:50:00	0.031	ug/L	0.031	PQL	0.0093	MDL	U	Total		SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	1-Methylnaphthalene	90-12-0	6/3/2017	D	14:50:00	0.021	ug/L	0.021	PQL	0.0062	MDL	U	Total		SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Acenaphthylene	208-96-8	6/3/2017	D	14:50:00	0.021	ug/L	0.021	PQL	0.0021	MDL	U	Total		SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Acenaphthene	83-32-9	6/3/2017	D	14:50:00	0.12	ug/L	0.021	PQL	0.0021	MDL		Total		SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Fluorene	86-73-7	6/3/2017	D	14:50:00	0.021	ug/L	0.021	PQL	0.0031	MDL	U	Total		SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Phenanthrene	85-01-8	6/3/2017	D	14:50:00	0.068	ug/L	0.021	PQL	0.0041	MDL		Total		SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Anthracene	120-12-7	6/3/2017	D	14:50:00	0.023	ug/L	0.021	PQL	0.0031	MDL		Total		SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Fluoranthene	206-44-0	6/3/2017	D	14:50:00	0.032	ug/L	0.021	PQL	0.0021	MDL		Total		SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Pyrene	129-00-0	6/3/2017	D	14:50:00	0.037	ug/L	0.021	PQL	0.0041	MDL		Total		SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Benz[a]anthracene	56-55-3	6/3/2017	D	14:50:00	0.021	ug/L	0.021	PQL	0.0021	MDL	U	Total		SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Chrysene	218-01-9	6/3/2017	D	14:50:00	0.021	ug/L	0.021	PQL	0.0062	MDL	U	Total		SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Benzo(b)fluoranthene	205-99-2	6/3/2017	D	14:50:00	0.021	ug/L	0.021	PQL	0.0082	MDL	U	Total		SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Benzo(k)fluoranthene	207-08-9	6/3/2017	D	14:50:00	0.031	ug/L	0.031	PQL	0.0093	MDL	U	Total		SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Benzo(a)pyrene	50-32-8	6/3/2017	D	14:50:00	0.021	ug/L	0.021	PQL	0.0031	MDL	U	Total		SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Indeno(1,2,3-cd)pyrene	193-39-5	6/3/2017	D	14:50:00	0.021	ug/L	0.021	PQL	0.0072	MDL	U	Total		SW8270DSIM	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Dibenzo(a,h)anthracene	53-70-3	6/3/2017	D	14:50:00	0.021 ug/L	0.021 PQL	0.0021 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Benzo(ghi)perylene	191-24-2	6/3/2017	D	14:50:00	0.021 ug/L	0.021 PQL	0.0031 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Gasoline	86290-81-5	5/30/2017	D	22:13:00	0.5 mg/L	0.5 PQL	0.05 MDL	U	Total	NWTPH-GX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	PCB-aroclor 1016	12674-11-2	6/8/2017	D	3:16:00	0.52 ug/L	0.52 PQL	0.022 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	PCB-aroclor 1221	11104-28-2	6/8/2017	D	3:16:00	0.52 ug/L	0.52 PQL	0.031 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	PCB-aroclor 1232	11141-16-5	6/8/2017	D	3:16:00	0.52 ug/L	0.52 PQL	0.028 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	PCB-aroclor 1242	53469-21-9	6/8/2017	D	3:16:00	0.52 ug/L	0.52 PQL	0.029 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	PCB-aroclor 1248	12672-29-6	6/8/2017	D	3:16:00	0.52 ug/L	0.52 PQL	0.022 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	PCB-aroclor 1254	11097-69-1	6/8/2017	D	3:16:00	0.52 ug/L	0.52 PQL	0.021 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	PCB-aroclor 1260	11096-82-5	6/8/2017	D	3:16:00	0.52 ug/L	0.52 PQL	0.027 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	#2 Diesel	68476-34-6	6/8/2017	D	15:47:00	0.67 mg/L	0.1 PQL	0.019 MDL		Total	NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Motor Oil		6/8/2017	D	15:47:00	0.38 mg/L	0.26 PQL	0.079 MDL		Total	NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Arsenic	7440-38-2	5/31/2017	D	11:36:00	0.005 mg/L	0.005 PQL	0.0014 MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Antimony	7440-36-0	5/31/2017	D	11:36:00	0.002 mg/L	0.002 PQL	0.00055 MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Beryllium	7440-41-7	5/31/2017	D	11:36:00	0.002 mg/L	0.002 PQL	0.00022 MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Cadmium	7440-43-9	5/31/2017	D	11:36:00	0.002 mg/L	0.002 PQL	0.0005 MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Chromium	7440-47-3	5/31/2017	D	11:36:00	0.002 mg/L	0.002 PQL	0.00071 MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Copper	7440-50-8	5/31/2017	D	11:36:00	0.01 mg/L	0.01 PQL	0.003 MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Iron	7439-89-6	5/31/2017	D	11:36:00	11 mg/L	1 PQL	0.18 MDL		Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Lead	7439-92-1	5/31/2017	D	11:36:00	0.027 mg/L	0.004 PQL	0.001 MDL		Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Manganese	7439-96-5	5/31/2017	D	11:36:00	0.06 mg/L	0.01 PQL	0.0023 MDL		Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Nickel	7440-02-0	5/31/2017	D	11:36:00	0.015 mg/L	0.015 PQL	0.00054 MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Selenium	7782-49-2	5/31/2017	D	11:36:00	0.04 mg/L	0.04 PQL	0.01 MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Silver	7440-22-4	5/31/2017	D	11:36:00	0.002 mg/L	0.002 PQL	0.00022 MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Thallium	7440-28-0	5/31/2017	D	11:36:00	0.005 mg/L	0.005 PQL	0.00033 MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Zinc	7440-66-6	5/31/2017	D	11:36:00	0.093 mg/L	0.035 PQL	0.0095 MDL		Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-GW	Sample	Consultant	5/25/2017	16:00:00	7901-SB-01-GW	N	N	Water	Source - Other	Mercury	7439-97-6	5/30/2017	D	13:26:24	0.0003 mg/L	0.0003 PQL	0.00015 MDL	U	Total	SW7470A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,2-Dichlorobenzene	95-50-1	5/31/2017	D	23:53:00	0.3 ug/L	0.3 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	2-Chlorotoluene	95-49-8	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.07 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,2,3-Trichloropropane	96-18-4	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Carbon Tetrachloride	56-23-5	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Cis-1,3-Dichloropropene	10061-01-5	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.09 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Chlorobenzene	108-90-7	5/31/2017	D	23:53:00	1.3 ug/L	0.2 PQL	0.025 MDL		Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Vinyl Chloride	75-01-4	5/31/2017	D	23:53:00	0.16 ug/L	0.02 PQL	0.013 MDL		Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Sec-Butylbenzene	135-98-8	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.07 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Dibromomethane	74-95-3	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	m, p-Xylene	179601-23-1	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	o-Xylene	95-47-6	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.06 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,2,4-Trichlorobenzene	120-82-1	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.04 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Styrene	100-42-5	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.1 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Bromochloromethane	74-97-5	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Dichlorobromomethane	75-27-4	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,3-Dichlorobenzene	541-73-1	5/31/2017	D	23:53:00	0.3 ug/L	0.3 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Benzene	71-43-2	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Chloroethane	75-00-3	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.075 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Trans-1,3-Dichloropropene	10061-02-6	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,2,3-Trichlorobenzene	87-61-6	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.1 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	n-Propylbenzene	103-65-1	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	p-Isopropyltoluene	99-87-6	5/31/2017	D	23:53:00	0.3 ug/L	0.3 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	n-Butylbenzene	104-51-8	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.08 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,1-Dichloropropene	563-58-6	5/31/2017	D	23:53:00	0.1 ug/L	0.1 PQL	0.015 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Cis-1,2-Dichloroethene	156-59-2	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,1,2,2-Tetrachloroethane	79-34-5	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,2,4-Trimethylbenzene	95-63-6	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.03 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Toluene	108-88-3	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Naphthalene	91-20-3	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.1 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,3,5-Trimethylbenzene	108-67-8	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.083 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,3-Dichloropropane	142-28-9	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Chloroform	67-66-3	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.03 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	4-Chlorotoluene	106-43-4	5/31/2017	D	23:53:00	0.3 ug/L	0.3 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Chlorodibromomethane	124-48-1	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	CFC-12	75-71-8	5/31/2017	D	23:53:00	0.4 ug/L	0.4 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,1,2-Trichloroethane	79-00-5	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Tert-Butylbenzene	98-06-6	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.1 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Chloromethane	74-87-3	5/31/2017	D	23:53:00	0.3 ug/L	0.3 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Methylene Chloride	75-09-2	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.11 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,1-Dichloroethene	75-35-4	5/31/2017	D	23:53:00	0.1 ug/L	0.1 PQL	0.018 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Cumene	98-82-8	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.06 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,2-Dichloroethane	107-06-2	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Tetrachloroethene	127-18-4	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.07 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,1,1-Trichloroethane	71-55-6	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	2,2-Dichloropropane	594-20-7	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.06 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Ethylene dibromide	106-93-4	5/31/2017	D	23:53:00	0.1 ug/L	0.1 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Bromoform	75-25-2	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.08 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,2-Dibromo-3-Chloropropane	96-12-8	5/31/2017	D	23:53:00	2 ug/L	2 PQL	0.44 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	CFC-11	75-69-4	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Trichloroethene	79-01-6	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Bromobenzene	108-86-1	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.035 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,2-Dichloropropane	78-87-5	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,1,1,2-Tetrachloroethane	630-20-6	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Ethylbenzene	100-41-4	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.03 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Trans-1,2-Dichloroethene	156-60-5	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Hexachlorobutadiene	87-68-3	5/31/2017	D	23:53:00	0.5 ug/L	0.5 PQL	0.075 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,1-Dichloroethane	75-34-3	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Bromomethane	74-83-9	5/31/2017	D	23:53:00	1 ug/L	1 PQL	0.16 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1,4-Dichlorobenzene	106-46-7	5/31/2017	D	23:53:00	0.3 ug/L	0.3 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Methyl t-butyl ether	1634-04-4	5/31/2017	D	23:53:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Naphthalene	91-20-3	6/3/2017	D	15:39:00	0.062 ug/L	0.041 PQL	0.013 MDL		Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	2-Methylnaphthalene	91-57-6	6/3/2017	D	15:39:00	0.031 ug/L	0.031 PQL	0.0092 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	1-Methylnaphthalene	90-12-0	6/3/2017	D	15:39:00	0.19 ug/L	0.02 PQL	0.0061 MDL		Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Acenaphthylene	208-96-8	6/3/2017	D	15:39:00	0.056 ug/L	0.02 PQL	0.002 MDL		Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Acenaphthene	83-32-9	6/3/2017	D	15:39:00	0.63 ug/L	0.02 PQL	0.002 MDL		Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Fluorene	86-73-7	6/3/2017	D	15:39:00	0.045 ug/L	0.02 PQL	0.0031 MDL		Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Phenanthrene	85-01-8	6/3/2017	D	15:39:00	0.034 ug/L	0.02 PQL	0.0041 MDL		Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Anthracene	120-12-7	6/3/2017	D	15:39:00	0.089 ug/L	0.02 PQL	0.0031 MDL		Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Fluoranthene	206-44-0	6/3/2017	D	15:39:00	0.02 ug/L	0.02 PQL	0.002 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Pyrene	129-00-0	6/3/2017	D	15:39:00	0.021 ug/L	0.02 PQL	0.0041 MDL		Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Benz[a]anthracene	56-55-3	6/3/2017	D	15:39:00	0.02 ug/L	0.02 PQL	0.002 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Chrysene	218-01-9	6/3/2017	D	15:39:00	0.02 ug/L	0.02 PQL	0.0061 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Benzo(b)fluoranthene	205-99-2	6/3/2017	D	15:39:00	0.02 ug/L	0.02 PQL	0.0082 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Benzo(k)fluoranthene	207-08-9	6/3/2017	D	15:39:00	0.031 ug/L	0.031 PQL	0.0092 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Benzo(a)pyrene	50-32-8	6/3/2017	D	15:39:00	0.02 ug/L	0.02 PQL	0.0031 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Indeno(1,2,3-cd)pyrene	193-39-5	6/3/2017	D	15:39:00	0.02 ug/L	0.02 PQL	0.0071 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Dibenzo(a,h)anthracene	53-70-3	6/3/2017	D	15:39:00	0.02 ug/L	0.02 PQL	0.002 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Benzo(ghi)perylene	191-24-2	6/3/2017	D	15:39:00	0.02 ug/L	0.02 PQL	0.0031 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Gasoline	86290-81-5	5/30/2017	D	22:45:00	0.5 mg/L	0.5 PQL	0.05 MDL	U	Total	NWTPH-GX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	PCB-aroclor 1016	12674-11-2	6/8/2017	D	3:33:00	0.52 ug/L	0.52 PQL	0.022 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	PCB-aroclor 1221	11104-28-2	6/8/2017	D	3:33:00	0.52 ug/L	0.52 PQL	0.031 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	PCB-aroclor 1232	11141-16-5	6/8/2017	D	3:33:00	0.52 ug/L	0.52 PQL	0.028 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	PCB-aroclor 1242	53469-21-9	6/8/2017	D	3:33:00	0.52 ug/L	0.52 PQL	0.029 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	PCB-aroclor 1248	12672-29-6	6/8/2017	D	3:33:00	0.52 ug/L	0.52 PQL	0.022 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	PCB-aroclor 1254	11097-69-1	6/8/2017	D	3:33:00	0.52 ug/L	0.52 PQL	0.021 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	PCB-aroclor 1260	11096-82-5	6/8/2017	D	3:33:00	0.52 ug/L	0.52 PQL	0.027 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	#2 Diesel	68476-34-6	6/8/2017	D	16:09:00	1.1 mg/L	0.1 PQL	0.02 MDL		Total	NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Motor Oil		6/8/2017	D	16:09:00	0.66 mg/L	0.26 PQL	0.08 MDL		Total	NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Arsenic	7440-38-2	5/31/2017	D	12:36:00	0.005 mg/L	0.005 PQL	0.0014 MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Antimony	7440-36-0	5/31/2017	D	12:36:00	0.002 mg/L	0.002 PQL	0.00055 MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Beryllium	7440-41-7	5/31/2017	D	12:36:00	0.002	mg/L	0.002	PQL	0.00022	MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Cadmium	7440-43-9	5/31/2017	D	12:36:00	0.002	mg/L	0.002	PQL	0.0005	MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Chromium	7440-47-3	5/31/2017	D	12:36:00	0.002	mg/L	0.002	PQL	0.00071	MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Copper	7440-50-8	5/31/2017	D	12:36:00	0.01	mg/L	0.01	PQL	0.003	MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Iron	7439-89-6	5/31/2017	D	12:36:00	6.3	mg/L	1	PQL	0.18	MDL		Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Lead	7439-92-1	5/31/2017	D	12:36:00	0.004	mg/L	0.004	PQL	0.001	MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Manganese	7439-96-5	5/31/2017	D	12:36:00	0.3	mg/L	0.01	PQL	0.0023	MDL		Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Nickel	7440-02-0	5/31/2017	D	12:36:00	0.015	mg/L	0.015	PQL	0.00054	MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Selenium	7782-49-2	5/31/2017	D	12:36:00	0.04	mg/L	0.04	PQL	0.01	MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Silver	7440-22-4	5/31/2017	D	12:36:00	0.002	mg/L	0.002	PQL	0.00022	MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Thallium	7440-28-0	5/31/2017	D	12:36:00	0.005	mg/L	0.005	PQL	0.00033	MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Zinc	7440-66-6	5/31/2017	D	12:36:00	0.035	mg/L	0.035	PQL	0.0095	MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-GW	Sample	Consultant	5/25/2017	10:35:00	7901-SB-02-GW	N	N	Water	Source - Other	Mercury	7439-97-6	5/30/2017	D	13:51:07	0.0003	mg/L	0.0003	PQL	0.00015	MDL	U	Total	SW7470A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,2-Dichlorobenzene	95-50-1	6/1/2017	D	0:22:00	0.3	ug/L	0.3	PQL	0.05	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	2-Chlorotoluene	95-49-8	6/1/2017	D	0:22:00	0.5	ug/L	0.5	PQL	0.07	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,2,3-Trichloropropane	96-18-4	6/1/2017	D	0:22:00	0.2	ug/L	0.2	PQL	0.05	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Carbon Tetrachloride	56-23-5	6/1/2017	D	0:22:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Cis-1,3-Dichloropropene	10061-01-5	6/1/2017	D	0:22:00	0.5	ug/L	0.5	PQL	0.09	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Chlorobenzene	108-90-7	6/1/2017	D	0:22:00	0.96	ug/L	0.2	PQL	0.025	MDL		Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Vinyl Chloride	75-01-4	6/1/2017	D	0:22:00	0.97	ug/L	0.02	PQL	0.013	MDL		Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Sec-Butylbenzene	135-98-8	6/1/2017	D	0:22:00	0.5	ug/L	0.5	PQL	0.07	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Dibromomethane	74-95-3	6/1/2017	D	0:22:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	m, p-Xylene	179601-23-1	6/1/2017	D	0:22:00	0.5	ug/L	0.5	PQL	0.05	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	o-Xylene	95-47-6	6/1/2017	D	0:22:00	0.5	ug/L	0.5	PQL	0.06	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,2,4-Trichlorobenzene	120-82-1	6/1/2017	D	0:22:00	0.2	ug/L	0.2	PQL	0.04	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Styrene	100-42-5	6/1/2017	D	0:22:00	0.5	ug/L	0.5	PQL	0.1	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Bromochloromethane	74-97-5	6/1/2017	D	0:22:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Dichlorobromomethane	75-27-4	6/1/2017	D	0:22:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,3-Dichlorobenzene	541-73-1	6/1/2017	D	0:22:00	0.3	ug/L	0.3	PQL	0.05	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Benzene	71-43-2	6/1/2017	D	0:22:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Chloroethane	75-00-3	6/1/2017	D	0:22:00	0.5	ug/L	0.5	PQL	0.075	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Trans-1,3-Dichloropropene	10061-02-6	6/1/2017	D	0:22:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,2,3-Trichlorobenzene	87-61-6	6/1/2017	D	0:22:00	0.5	ug/L	0.5	PQL	0.1	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	n-Propylbenzene	103-65-1	6/1/2017	D	0:22:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	p-Isopropyltoluene	99-87-6	6/1/2017	D	0:22:00	0.3	ug/L	0.3	PQL	0.05	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	n-Butylbenzene	104-51-8	6/1/2017	D	0:22:00	0.5	ug/L	0.5	PQL	0.08	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,1-Dichloropropene	563-58-6	6/1/2017	D	0:22:00	0.1	ug/L	0.1	PQL	0.015	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Cis-1,2-Dichloroethene	156-59-2	6/1/2017	D	0:22:00	2.1	ug/L	0.2	PQL	0.025	MDL		Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,1,2,2-Tetrachloroethane	79-34-5	6/1/2017	D	0:22:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,2,4-Trimethylbenzene	95-63-6	6/1/2017	D	0:22:00	0.2 ug/L	0.2 PQL	0.03 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Toluene	108-88-3	6/1/2017	D	0:22:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Naphthalene	91-20-3	6/1/2017	D	0:22:00	0.5 ug/L	0.5 PQL	0.1 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,3,5-Trimethylbenzene	108-67-8	6/1/2017	D	0:22:00	0.5 ug/L	0.5 PQL	0.083 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,3-Dichloropropane	142-28-9	6/1/2017	D	0:22:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Chloroform	67-66-3	6/1/2017	D	0:22:00	0.2 ug/L	0.2 PQL	0.03 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	4-Chlorotoluene	106-43-4	6/1/2017	D	0:22:00	0.3 ug/L	0.3 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Chlorodibromomethane	124-48-1	6/1/2017	D	0:22:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	CFC-12	75-71-8	6/1/2017	D	0:22:00	0.4 ug/L	0.4 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,1,2-Trichloroethane	79-00-5	6/1/2017	D	0:22:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Tert-Butylbenzene	98-06-6	6/1/2017	D	0:22:00	0.5 ug/L	0.5 PQL	0.1 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Chloromethane	74-87-3	6/1/2017	D	0:22:00	0.3 ug/L	0.3 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Methylene Chloride	75-09-2	6/1/2017	D	0:22:00	0.5 ug/L	0.5 PQL	0.11 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,1-Dichloroethene	75-35-4	6/1/2017	D	0:22:00	0.1 ug/L	0.1 PQL	0.018 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Cumene	98-82-8	6/1/2017	D	0:22:00	0.5 ug/L	0.5 PQL	0.06 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,2-Dichloroethane	107-06-2	6/1/2017	D	0:22:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Tetrachloroethene	127-18-4	6/1/2017	D	0:22:00	0.5 ug/L	0.5 PQL	0.07 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,1,1-Trichloroethane	71-55-6	6/1/2017	D	0:22:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	2,2-Dichloropropane	594-20-7	6/1/2017	D	0:22:00	0.5 ug/L	0.5 PQL	0.06 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Ethylene dibromide	106-93-4	6/1/2017	D	0:22:00	0.1 ug/L	0.1 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Bromoform	75-25-2	6/1/2017	D	0:22:00	0.5 ug/L	0.5 PQL	0.08 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,2-Dibromo-3-Chloropropane	96-12-8	6/1/2017	D	0:22:00	2 ug/L	2 PQL	0.44 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	CFC-11	75-69-4	6/1/2017	D	0:22:00	0.5 ug/L	0.5 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Trichloroethene	79-01-6	6/1/2017	D	0:22:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Bromobenzene	108-86-1	6/1/2017	D	0:22:00	0.2 ug/L	0.2 PQL	0.035 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,2-Dichloropropane	78-87-5	6/1/2017	D	0:22:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,1,1,2-Tetrachloroethane	630-20-6	6/1/2017	D	0:22:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Ethylbenzene	100-41-4	6/1/2017	D	0:22:00	0.2 ug/L	0.2 PQL	0.03 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Trans-1,2-Dichloroethene	156-60-5	6/1/2017	D	0:22:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Hexachlorobutadiene	87-68-3	6/1/2017	D	0:22:00	0.5 ug/L	0.5 PQL	0.075 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,1-Dichloroethane	75-34-3	6/1/2017	D	0:22:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Bromomethane	74-83-9	6/1/2017	D	0:22:00	1 ug/L	1 PQL	0.16 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1,4-Dichlorobenzene	106-46-7	6/1/2017	D	0:22:00	0.3 ug/L	0.3 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Methyl t-butyl ether	1634-04-4	6/1/2017	D	0:22:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Naphthalene	91-20-3	5/31/2017	D	23:51:00	0.041 ug/L	0.041 PQL	0.013 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	2-Methylnaphthalene	91-57-6	5/31/2017	D	23:51:00	0.031 ug/L	0.031 PQL	0.0092 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	1-Methylnaphthalene	90-12-0	5/31/2017	D	23:51:00	0.02 ug/L	0.02 PQL	0.0061 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Acenaphthylene	208-96-8	5/31/2017	D	23:51:00	0.026 ug/L	0.02 PQL	0.002 MDL		Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Acenaphthene	83-32-9	5/31/2017	D	23:51:00	0.26 ug/L	0.02 PQL	0.002 MDL		Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Fluorene	86-73-7	5/31/2017	D	23:51:00	0.02 ug/L	0.02 PQL	0.0031 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Phenanthrene	85-01-8	5/31/2017	D	23:51:00	0.029 ug/L	0.02 PQL	0.0041 MDL		Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Anthracene	120-12-7	5/31/2017	D	23:51:00	0.029 ug/L	0.02 PQL	0.0031 MDL		Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Fluoranthene	206-44-0	5/31/2017	D	23:51:00	0.023 ug/L	0.02 PQL	0.002 MDL		Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Pyrene	129-00-0	5/31/2017	D	23:51:00	0.047 ug/L	0.02 PQL	0.0041 MDL		Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Benz[a]anthracene	56-55-3	5/31/2017	D	23:51:00	0.02 ug/L	0.02 PQL	0.002 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Chrysene	218-01-9	5/31/2017	D	23:51:00	0.02 ug/L	0.02 PQL	0.0061 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Benzo(b)fluoranthene	205-99-2	5/31/2017	D	23:51:00	0.02 ug/L	0.02 PQL	0.0082 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Benzo(k)fluoranthene	207-08-9	5/31/2017	D	23:51:00	0.031 ug/L	0.031 PQL	0.0092 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Benzo(a)pyrene	50-32-8	5/31/2017	D	23:51:00	0.02 ug/L	0.02 PQL	0.0031 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Indeno(1,2,3-cd)pyrene	193-39-5	5/31/2017	D	23:51:00	0.02 ug/L	0.02 PQL	0.0072 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Dibenzo(a,h)anthracene	53-70-3	5/31/2017	D	23:51:00	0.02 ug/L	0.02 PQL	0.002 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Benzo(ghi)perylene	191-24-2	5/31/2017	D	23:51:00	0.02 ug/L	0.02 PQL	0.0031 MDL	U	Total	SW8270DSIM	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Gasoline	86290-81-5	5/30/2017	D	23:18:00	0.5 mg/L	0.5 PQL	0.05 MDL	U	Total	NWTPH-GX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	PCB-aroclor 1016	12674-11-2	6/8/2017	D	3:50:00	0.51 ug/L	0.51 PQL	0.022 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	PCB-aroclor 1221	11104-28-2	6/8/2017	D	3:50:00	0.51 ug/L	0.51 PQL	0.031 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	PCB-aroclor 1232	11141-16-5	6/8/2017	D	3:50:00	0.51 ug/L	0.51 PQL	0.028 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	PCB-aroclor 1242	53469-21-9	6/8/2017	D	3:50:00	0.51 ug/L	0.51 PQL	0.029 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	PCB-aroclor 1248	12672-29-6	6/8/2017	D	3:50:00	0.51 ug/L	0.51 PQL	0.022 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	PCB-aroclor 1254	11097-69-1	6/8/2017	D	3:50:00	0.51 ug/L	0.51 PQL	0.02 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	PCB-aroclor 1260	11096-82-5	6/8/2017	D	3:50:00	0.51 ug/L	0.51 PQL	0.027 MDL	U	Total	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	#2 Diesel	68476-34-6	6/8/2017	D	16:32:00	1.2 mg/L	0.1 PQL	0.019 MDL		Total	NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Motor Oil		6/8/2017	D	16:32:00	1 mg/L	0.26 PQL	0.079 MDL		Total	NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Arsenic	7440-38-2	5/31/2017	D	11:40:00	0.0068 mg/L	0.005 PQL	0.0014 MDL		Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Antimony	7440-36-0	5/31/2017	D	11:40:00	0.007 mg/L	0.002 PQL	0.00055 MDL		Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Beryllium	7440-41-7	5/31/2017	D	11:40:00	0.002 mg/L	0.002 PQL	0.00022 MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Cadmium	7440-43-9	5/31/2017	D	11:40:00	0.002 mg/L	0.002 PQL	0.0005 MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Chromium	7440-47-3	5/31/2017	D	11:40:00	0.0052 mg/L	0.002 PQL	0.00071 MDL		Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Copper	7440-50-8	5/31/2017	D	11:40:00	0.052 mg/L	0.01 PQL	0.003 MDL		Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Iron	7439-89-6	5/31/2017	D	11:40:00	18 mg/L	1 PQL	0.18 MDL		Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Lead	7439-92-1	5/31/2017	D	11:40:00	0.25 mg/L	0.004 PQL	0.001 MDL		Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Manganese	7439-96-5	5/31/2017	D	11:40:00	0.13 mg/L	0.01 PQL	0.0023 MDL		Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Nickel	7440-02-0	5/31/2017	D	11:40:00	0.015 mg/L	0.015 PQL	0.00054 MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Selenium	7782-49-2	5/31/2017	D	11:40:00	0.04 mg/L	0.04 PQL	0.01 MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Silver	7440-22-4	5/31/2017	D	11:40:00	0.002 mg/L	0.002 PQL	0.00022 MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Thallium	7440-28-0	5/31/2017	D	11:40:00	0.005 mg/L	0.005 PQL	0.00033 MDL	U	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Zinc	7440-66-6	5/31/2017	D	11:40:00	0.61 mg/L	0.035 PQL	0.0095 MDL		Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-GW	Sample	Consultant	5/25/2017	12:50:00	7901-SB-04-GW	N	N	Water	Source - Other	Mercury	7439-97-6	5/30/2017	D	13:55:36	0.0003 mg/L	0.0003 PQL	0.00015 MDL	U	Total	SW7470A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,2-Dichlorobenzene	95-50-1	5/31/2017	D	19:34:00	0.3 ug/L	0.3 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	2-Chlorotoluene	95-49-8	5/31/2017	D	19:34:00	0.5 ug/L	0.5 PQL	0.07 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,2,3-Trichloropropane	96-18-4	5/31/2017	D	19:34:00	0.2 ug/L	0.2 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Carbon Tetrachloride	56-23-5	5/31/2017	D	19:34:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Cis-1,3-Dichloropropene	10061-01-5	5/31/2017	D	19:34:00	0.5 ug/L	0.5 PQL	0.09 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Chlorobenzene	108-90-7	5/31/2017	D	19:34:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Vinyl Chloride	75-01-4	5/31/2017	D	19:34:00	0.02 ug/L	0.02 PQL	0.013 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Sec-Butylbenzene	135-98-8	5/31/2017	D	19:34:00	0.5 ug/L	0.5 PQL	0.07 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Dibromomethane	74-95-3	5/31/2017	D	19:34:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	m, p-Xylene	179601-23-1	5/31/2017	D	19:34:00	0.5 ug/L	0.5 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	o-Xylene	95-47-6	5/31/2017	D	19:34:00	0.5 ug/L	0.5 PQL	0.06 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,2,4-Trichlorobenzene	120-82-1	5/31/2017	D	19:34:00	0.2 ug/L	0.2 PQL	0.04 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Styrene	100-42-5	5/31/2017	D	19:34:00	0.5 ug/L	0.5 PQL	0.1 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Bromochloromethane	74-97-5	5/31/2017	D	19:34:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Dichlorobromomethane	75-27-4	5/31/2017	D	19:34:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,3-Dichlorobenzene	541-73-1	5/31/2017	D	19:34:00	0.3 ug/L	0.3 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Benzene	71-43-2	5/31/2017	D	19:34:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Chloroethane	75-00-3	5/31/2017	D	19:34:00	0.5 ug/L	0.5 PQL	0.075 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Trans-1,3-Dichloropropene	10061-02-6	5/31/2017	D	19:34:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,2,3-Trichlorobenzene	87-61-6	5/31/2017	D	19:34:00	0.5 ug/L	0.5 PQL	0.1 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	n-Propylbenzene	103-65-1	5/31/2017	D	19:34:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	p-Isopropyltoluene	99-87-6	5/31/2017	D	19:34:00	0.3 ug/L	0.3 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	n-Butylbenzene	104-51-8	5/31/2017	D	19:34:00	0.5 ug/L	0.5 PQL	0.08 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,1-Dichloropropene	563-58-6	5/31/2017	D	19:34:00	0.1 ug/L	0.1 PQL	0.015 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Cis-1,2-Dichloroethene	156-59-2	5/31/2017	D	19:34:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,1,2,2-Tetrachloroethane	79-34-5	5/31/2017	D	19:34:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,2,4-Trimethylbenzene	95-63-6	5/31/2017	D	19:34:00	0.2 ug/L	0.2 PQL	0.03 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Toluene	108-88-3	5/31/2017	D	19:34:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Naphthalene	91-20-3	5/31/2017	D	19:34:00	0.5 ug/L	0.5 PQL	0.1 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,3,5-Trimethylbenzene	108-67-8	5/31/2017	D	19:34:00	0.5 ug/L	0.5 PQL	0.083 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,3-Dichloropropane	142-28-9	5/31/2017	D	19:34:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Chloroform	67-66-3	5/31/2017	D	19:34:00	0.2 ug/L	0.2 PQL	0.03 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	4-Chlorotoluene	106-43-4	5/31/2017	D	19:34:00	0.3 ug/L	0.3 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Chlorodibromomethane	124-48-1	5/31/2017	D	19:34:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	CFC-12	75-71-8	5/31/2017	D	19:34:00	0.4 ug/L	0.4 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,1,2-Trichloroethane	79-00-5	5/31/2017	D	19:34:00	0.2 ug/L	0.2 PQL	0.025 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Tert-Butylbenzene	98-06-6	5/31/2017	D	19:34:00	0.5 ug/L	0.5 PQL	0.1 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Chloromethane	74-87-3	5/31/2017	D	19:34:00	0.3 ug/L	0.3 PQL	0.05 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Methylene Chloride	75-09-2	5/31/2017	D	19:34:00	0.5 ug/L	0.5 PQL	0.11 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,1-Dichloroethene	75-35-4	5/31/2017	D	19:34:00	0.1 ug/L	0.1 PQL	0.018 MDL	U	Total	SW8260C	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Cumene	98-82-8	5/31/2017	D	19:34:00	0.5	ug/L	0.5	PQL	0.06	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,2-Dichloroethane	107-06-2	5/31/2017	D	19:34:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Tetrachloroethene	127-18-4	5/31/2017	D	19:34:00	0.5	ug/L	0.5	PQL	0.07	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,1,1-Trichloroethane	71-55-6	5/31/2017	D	19:34:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	2,2-Dichloropropane	594-20-7	5/31/2017	D	19:34:00	0.5	ug/L	0.5	PQL	0.06	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Ethylene dibromide	106-93-4	5/31/2017	D	19:34:00	0.1	ug/L	0.1	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Bromoform	75-25-2	5/31/2017	D	19:34:00	0.5	ug/L	0.5	PQL	0.08	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,2-Dibromo-3-Chloropropane	96-12-8	5/31/2017	D	19:34:00	2	ug/L	2	PQL	0.44	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	CFC-11	75-69-4	5/31/2017	D	19:34:00	0.5	ug/L	0.5	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Trichloroethene	79-01-6	5/31/2017	D	19:34:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Bromobenzene	108-86-1	5/31/2017	D	19:34:00	0.2	ug/L	0.2	PQL	0.035	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,2-Dichloropropane	78-87-5	5/31/2017	D	19:34:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,1,1,2-Tetrachloroethane	630-20-6	5/31/2017	D	19:34:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Ethylbenzene	100-41-4	5/31/2017	D	19:34:00	0.2	ug/L	0.2	PQL	0.03	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Trans-1,2-Dichloroethene	156-60-5	5/31/2017	D	19:34:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Hexachlorobutadiene	87-68-3	5/31/2017	D	19:34:00	0.5	ug/L	0.5	PQL	0.075	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,1-Dichloroethane	75-34-3	5/31/2017	D	19:34:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Bromomethane	74-83-9	5/31/2017	D	19:34:00	1	ug/L	1	PQL	0.16	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	1,4-Dichlorobenzene	106-46-7	5/31/2017	D	19:34:00	0.3	ug/L	0.3	PQL	0.05	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-TB-GW	Sample	Consultant	5/25/2017	12:00:00	7901-TB-GW	N	N	Water	Source - Other	Methyl t-butyl ether	1634-04-4	5/31/2017	D	19:34:00	0.2	ug/L	0.2	PQL	0.025	MDL	U	Total		SW8260C	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	1,2,4-Trichlorobenzene	120-82-1	6/6/2017	D	19:47:00	3000	ug/Kg	3000	PQL	370	MDL	U		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	1,2-Dichlorobenzene	95-50-1	6/6/2017	D	19:47:00	3000	ug/Kg	3000	PQL	730	MDL	U		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	1,3-Dichlorobenzene	541-73-1	6/6/2017	D	19:47:00	3000	ug/Kg	3000	PQL	290	MDL	U		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	1,4-Dichlorobenzene	106-46-7	6/6/2017	D	19:47:00	3000	ug/Kg	3000	PQL	510	MDL	U		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	1-Methylnaphthalene	90-12-0	6/6/2017	D	19:47:00	13000	ug/Kg	1800	PQL	300	MDL			Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	2,4,5-Trichlorophenol	95-95-4	6/6/2017	D	19:47:00	12000	ug/Kg	12000	PQL	2700	MDL	U		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	2,4,6-Trichlorophenol	88-06-2	6/6/2017	D	19:47:00	9100	ug/Kg	9100	PQL	2200	MDL	U		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	2,4-Dichlorophenol	120-83-2	6/6/2017	D	19:47:00	6100	ug/Kg	6100	PQL	910	MDL	U		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	2,4-Dimethylphenol	105-67-9	6/6/2017	D	19:47:00	6100	ug/Kg	6100	PQL	910	MDL	U		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	2,4-Dinitrophenol	51-28-5	6/6/2017	D	19:47:00	61000	ug/Kg	61000	PQL	12000	MDL	U		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	2,4-Dinitrotoluene	121-14-2	6/6/2017	D	19:47:00	12000	ug/Kg	12000	PQL	2600	MDL	U		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	2,6-Dinitrotoluene	606-20-2	6/6/2017	D	19:47:00	9100	ug/Kg	9100	PQL	2100	MDL	U		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	PCN-002	91-58-7	6/6/2017	D	19:47:00	1500	ug/Kg	1500	PQL	300	MDL	U		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	2-Chlorophenol	95-57-8	6/6/2017	D	19:47:00	12000	ug/Kg	12000	PQL	2600	MDL	U		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	2-Methylnaphthalene	91-57-6	6/6/2017	D	19:47:00	14000	ug/Kg	3000	PQL	540	MDL			Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	o-Cresol	95-48-7	6/6/2017	D	19:47:00	9100	ug/Kg	9100	PQL	2300	MDL	U		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	2-Nitroaniline	88-74-4	6/6/2017	D	19:47:00	6100	ug/Kg	6100	PQL	910	MDL	U		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	2-Nitrophenol	88-75-5	6/6/2017	D	19:47:00	12000	ug/Kg	12000	PQL	2800	MDL	U		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	m,p-Cresol (2:1 ratio)	15831-10-4	6/6/2017	D	19:47:00	12000	ug/Kg	12000	PQL	910	MDL	U		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	3,3'-Dichlorobenzidine	91-94-1	6/6/2017	D	19:47:00	24000	ug/Kg	24000	PQL	6100 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	m-Nitroaniline	99-09-2	6/6/2017	D	19:47:00	12000	ug/Kg	12000	PQL	2400 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	4,6-Dinitro-2-Methylphenol	534-52-1	6/6/2017	D	19:47:00	61000	ug/Kg	61000	PQL	6100 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	PBDE-003	101-55-3	6/6/2017	D	19:47:00	12000	ug/Kg	12000	PQL	2500 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	4-Chloro-3-Methylphenol	59-50-7	6/6/2017	D	19:47:00	9100	ug/Kg	9100	PQL	2000 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	4-Chloroaniline	106-47-8	6/6/2017	D	19:47:00	91000	ug/Kg	91000	PQL	24000 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	4-Chlorophenyl-Phenylether	7005-72-3	6/6/2017	D	19:47:00	12000	ug/Kg	12000	PQL	2500 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	4-Nitroaniline	100-01-6	6/6/2017	D	19:47:00	6100	ug/Kg	6100	PQL	1200 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	4-Nitrophenol	100-02-7	6/6/2017	D	19:47:00	91000	ug/Kg	91000	PQL	22000 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Acenaphthene	83-32-9	6/6/2017	D	19:47:00	35000	ug/Kg	1500	PQL	300 MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Acenaphthylene	208-96-8	6/6/2017	D	19:47:00	4100	ug/Kg	1500	PQL	300 MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Anthracene	120-12-7	6/6/2017	D	19:47:00	56000	ug/Kg	1500	PQL	300 MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Benz[a]anthracene	56-55-3	6/6/2017	D	19:47:00	82000	ug/Kg	1500	PQL	300 MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Benzo(a)pyrene	50-32-8	6/6/2017	D	19:47:00	63000	ug/Kg	3700	PQL	790 MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Benzo(b)fluoranthene	205-99-2	6/6/2017	D	19:47:00	56000	ug/Kg	1500	PQL	300 MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Benzo(ghi)perylene	191-24-2	6/6/2017	D	19:47:00	25000	ug/Kg	3700	PQL	910 MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Benzo(k)fluoranthene	207-08-9	6/6/2017	D	19:47:00	22000	ug/Kg	3700	PQL	850 MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Benzoic Acid	65-85-0	6/6/2017	D	19:47:00	150000	ug/Kg	150000	PQL	64000 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Benzyl Alcohol	100-51-6	6/6/2017	D	19:47:00	240000	ug/Kg	240000	PQL	2300 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethoxy)Methane	111-91-1	6/6/2017	D	19:47:00	12000	ug/Kg	12000	PQL	2500 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethyl)Ether	111-44-4	6/6/2017	D	19:47:00	12000	ug/Kg	12000	PQL	2400 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Di(2-ethylhexyl) phthalate	117-81-7	6/6/2017	D	19:47:00	37000	ug/Kg	37000	PQL	8300 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Bis(2-chloro-1-methylethyl) ether	108-60-1	6/6/2017	D	19:47:00	15000	ug/Kg	15000	PQL	2300 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Butyl benzyl phthalate	85-68-7	6/6/2017	D	19:47:00	12000	ug/Kg	12000	PQL	3000 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Carbazole	86-74-8	6/6/2017	D	19:47:00	18000	ug/Kg	9100	PQL	1900 MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Chrysene	218-01-9	6/6/2017	D	19:47:00	77000	ug/Kg	3700	PQL	790 MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Dibenzo(a,h)anthracene	53-70-3	6/6/2017	D	19:47:00	6200	ug/Kg	3000	PQL	730 MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Dibenzofuran	132-64-9	6/6/2017	D	19:47:00	10000	ug/Kg	9100	PQL	2200 MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Diethyl phthalate	84-66-2	6/6/2017	D	19:47:00	33000	ug/Kg	33000	PQL	8000 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Dimethyl phthalate	131-11-3	6/6/2017	D	19:47:00	9100	ug/Kg	9100	PQL	2000 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Dibutyl phthalate	84-74-2	6/6/2017	D	19:47:00	30000	ug/Kg	30000	PQL	3500 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Di-n-octyl phthalate	117-84-0	6/6/2017	D	19:47:00	61000	ug/Kg	61000	PQL	14000 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Fluoranthene	206-44-0	6/6/2017	D	19:47:00	190000	ug/Kg	1500	PQL	300 MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Fluorene	86-73-7	6/6/2017	D	19:47:00	31000	ug/Kg	1500	PQL	300 MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Hexachlorobenzene	118-74-1	6/6/2017	D	19:47:00	3000	ug/Kg	3000	PQL	300 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Hexachlorobutadiene	87-68-3	6/6/2017	D	19:47:00	3000	ug/Kg	3000	PQL	910 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Hexachlorocyclopentadiene	77-47-4	6/6/2017	D	19:47:00	6100	ug/Kg	6100	PQL	1600 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Hexachloroethane	67-72-1	6/6/2017	D	19:47:00	9100	ug/Kg	9100	PQL	2300 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Indeno(1,2,3-cd)pyrene	193-39-5	6/6/2017	D	19:47:00	31000	ug/Kg	2400	PQL	300 MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Isophorone	78-59-1	6/6/2017	D	19:47:00	9100	ug/Kg	9100	PQL	2300	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Naphthalene	91-20-3	6/6/2017	D	19:47:00	15000	ug/Kg	1500	PQL	300	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Nitrobenzene	98-95-3	6/6/2017	D	19:47:00	12000	ug/Kg	12000	PQL	2600	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	N-Nitrosodi-n-propylamine	621-64-7	6/6/2017	D	19:47:00	12000	ug/Kg	12000	PQL	2700	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	N-Nitrosodiphenylamine	86-30-6	6/6/2017	D	19:47:00	3700	ug/Kg	3700	PQL	910	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Pentachlorophenol	87-86-5	6/6/2017	D	19:47:00	24000	ug/Kg	24000	PQL	5500	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Phenanthrene	85-01-8	6/6/2017	D	19:47:00	250000	ug/Kg	3700	PQL	730	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Phenol	108-95-2	6/6/2017	D	19:47:00	9100	ug/Kg	9100	PQL	2300	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Pyrene	129-00-0	6/6/2017	D	19:47:00	240000	ug/Kg	3700	PQL	910	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Gasoline	86290-81-5	6/7/2017	D	19:22:00	21	mg/Kg	9.8	PQL	5.1	MDL		Dry		NWTPH-GX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1016	12674-11-2	6/4/2017	D	16:16:00	0.031	mg/Kg	0.031	PQL	0.0093	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1221	11104-28-2	6/4/2017	D	16:16:00	0.014	mg/Kg	0.014	PQL	0.0053	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1232	11141-16-5	6/4/2017	D	16:16:00	0.014	mg/Kg	0.014	PQL	0.0061	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1242	53469-21-9	6/4/2017	D	16:16:00	0.013	mg/Kg	0.013	PQL	0.002	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1248	12672-29-6	6/4/2017	D	16:16:00	0.014	mg/Kg	0.014	PQL	0.0036	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1254	11097-69-1	6/4/2017	D	16:16:00	0.013	mg/Kg	0.013	PQL	0.0019	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1260	11096-82-5	6/4/2017	D	16:16:00	0.013	mg/Kg	0.013	PQL	0.0024	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	#2 Diesel	68476-34-6	6/9/2017	D	22:26:00	3800	mg/Kg	59	PQL	14	MDL		Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Motor Oil		6/9/2017	D	22:26:00	9000	mg/Kg	59	PQL	11	MDL		Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Antimony	7440-36-0	5/31/2017	D	14:51:00	99	mg/Kg	0.25	PQL	0.086	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Arsenic	7440-38-2	5/31/2017	D	14:51:00	35	mg/Kg	0.63	PQL	0.13	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Beryllium	7440-41-7	5/31/2017	D	14:51:00	0.25	mg/Kg	0.25	PQL	0.019	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Cadmium	7440-43-9	5/31/2017	D	14:51:00	2.8	mg/Kg	0.5	PQL	0.097	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Chromium	7440-47-3	5/31/2017	D	14:51:00	170	mg/Kg	0.63	PQL	0.079	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Copper	7440-50-8	5/31/2017	D	14:51:00	1100	mg/Kg	1.3	PQL	0.28	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Lead	7439-92-1	5/31/2017	D	14:51:00	6100	mg/Kg	0.63	PQL	0.061	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Nickel	7440-02-0	5/31/2017	D	14:51:00	31	mg/Kg	0.63	PQL	0.24	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Selenium	7782-49-2	5/31/2017	D	14:51:00	1.3	mg/Kg	1.3	PQL	0.28	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Silver	7440-22-4	5/31/2017	D	14:51:00	3.4	mg/Kg	0.25	PQL	0.025	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Thallium	7440-28-0	5/31/2017	D	14:51:00	0.5	mg/Kg	0.5	PQL	0.069	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Zinc	7440-66-6	5/31/2017	D	14:51:00	1200	mg/Kg	6.3	PQL	2	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-9.5	Sample	Consultant	5/25/2017	15:35:00	7901-SB-01-9.5	N	N	Solid/Sediment	Source - Other	Mercury	7439-97-6	5/30/2017	D	15:21:20	0.24	mg/Kg	0.037	PQL	0.011	MDL		Dry	Total	SW7471A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	1,2,4-Trichlorobenzene	120-82-1	6/6/2017	D	20:13:00	280	ug/Kg	280	PQL	33	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	1,2-Dichlorobenzene	95-50-1	6/6/2017	D	20:13:00	280	ug/Kg	280	PQL	67	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	1,3-Dichlorobenzene	541-73-1	6/6/2017	D	20:13:00	280	ug/Kg	280	PQL	27	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	1,4-Dichlorobenzene	106-46-7	6/6/2017	D	20:13:00	280	ug/Kg	280	PQL	46	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	1-Methylnaphthalene	90-12-0	6/6/2017	D	20:13:00	170	ug/Kg	170	PQL	28	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	2,4,5-Trichlorophenol	95-95-4	6/6/2017	D	20:13:00	1100	ug/Kg	1100	PQL	250	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	2,4,6-Trichlorophenol	88-06-2	6/6/2017	D	20:13:00	830	ug/Kg	830	PQL	200	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	2,4-Dichlorophenol	120-83-2	6/6/2017	D	20:13:00	550	ug/Kg	550	PQL	83	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	2,4-Dimethylphenol	105-67-9	6/6/2017	D	20:13:00	550	ug/Kg	550	PQL	83	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	2,4-Dinitrophenol	51-28-5	6/6/2017	D	20:13:00	5500	ug/Kg	5500	PQL	1100	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	2,4-Dinitrotoluene	121-14-2	6/6/2017	D	20:13:00	1100	ug/Kg	1100	PQL	240	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	2,6-Dinitrotoluene	606-20-2	6/6/2017	D	20:13:00	830	ug/Kg	830	PQL	190	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	PCN-002	91-58-7	6/6/2017	D	20:13:00	140	ug/Kg	140	PQL	28	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	2-Chlorophenol	95-57-8	6/6/2017	D	20:13:00	1100	ug/Kg	1100	PQL	230	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	2-Methylnaphthalene	91-57-6	6/6/2017	D	20:13:00	280	ug/Kg	280	PQL	49	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	o-Cresol	95-48-7	6/6/2017	D	20:13:00	830	ug/Kg	830	PQL	210	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	2-Nitroaniline	88-74-4	6/6/2017	D	20:13:00	550	ug/Kg	550	PQL	83	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	2-Nitrophenol	88-75-5	6/6/2017	D	20:13:00	1100	ug/Kg	1100	PQL	260	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	m,p-Cresol (2:1 ratio)	15831-10-4	6/6/2017	D	20:13:00	1100	ug/Kg	1100	PQL	83	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	3,3'-Dichlorobenzidine	91-94-1	6/6/2017	D	20:13:00	2200	ug/Kg	2200	PQL	550	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	m-Nitroaniline	99-09-2	6/6/2017	D	20:13:00	1100	ug/Kg	1100	PQL	220	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	4,6-Dinitro-2-Methylphenol	534-52-1	6/6/2017	D	20:13:00	5500	ug/Kg	5500	PQL	550	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	PBDE-003	101-55-3	6/6/2017	D	20:13:00	1100	ug/Kg	1100	PQL	230	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	4-Chloro-3-Methylphenol	59-50-7	6/6/2017	D	20:13:00	830	ug/Kg	830	PQL	180	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	4-Chloroaniline	106-47-8	6/6/2017	D	20:13:00	8300	ug/Kg	8300	PQL	2200	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	4-Chlorophenyl-Phenylether	7005-72-3	6/6/2017	D	20:13:00	1100	ug/Kg	1100	PQL	230	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	4-Nitroaniline	100-01-6	6/6/2017	D	20:13:00	550	ug/Kg	550	PQL	110	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	4-Nitrophenol	100-02-7	6/6/2017	D	20:13:00	8300	ug/Kg	8300	PQL	2000	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Acenaphthene	83-32-9	6/6/2017	D	20:13:00	140	ug/Kg	140	PQL	28	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Acenaphthylene	208-96-8	6/6/2017	D	20:13:00	140	ug/Kg	140	PQL	28	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Anthracene	120-12-7	6/6/2017	D	20:13:00	140	ug/Kg	140	PQL	28	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Benz[a]anthracene	56-55-3	6/6/2017	D	20:13:00	250	ug/Kg	140	PQL	28	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Benzo(a)pyrene	50-32-8	6/6/2017	D	20:13:00	330	ug/Kg	330	PQL	72	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Benzo(b)fluoranthene	205-99-2	6/6/2017	D	20:13:00	140	ug/Kg	140	PQL	28	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Benzo(ghi)perylene	191-24-2	6/6/2017	D	20:13:00	330	ug/Kg	330	PQL	83	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Benzo(k)fluoranthene	207-08-9	6/6/2017	D	20:13:00	330	ug/Kg	330	PQL	78	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Benzoic Acid	65-85-0	6/6/2017	D	20:13:00	14000	ug/Kg	14000	PQL	5900	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Benzyl Alcohol	100-51-6	6/6/2017	D	20:13:00	22000	ug/Kg	22000	PQL	210	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethoxy)Methane	111-91-1	6/6/2017	D	20:13:00	1100	ug/Kg	1100	PQL	230	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethyl)Ether	111-44-4	6/6/2017	D	20:13:00	1100	ug/Kg	1100	PQL	220	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Di(2-ethylhexyl) phthalate	117-81-7	6/6/2017	D	20:13:00	3300	ug/Kg	3300	PQL	750	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Bis(2-chloro-1-methylethyl) ether	108-60-1	6/6/2017	D	20:13:00	1400	ug/Kg	1400	PQL	210	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Butyl benzyl phthalate	85-68-7	6/6/2017	D	20:13:00	1100	ug/Kg	1100	PQL	280	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Carbazole	86-74-8	6/6/2017	D	20:13:00	830	ug/Kg	830	PQL	170	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Chrysene	218-01-9	6/6/2017	D	20:13:00	330	ug/Kg	330	PQL	72	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Dibenzo(a,h)anthracene	53-70-3	6/6/2017	D	20:13:00	280	ug/Kg	280	PQL	67	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Dibenzofuran	132-64-9	6/6/2017	D	20:13:00	830	ug/Kg	830	PQL	200	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Diethyl phthalate	84-66-2	6/6/2017	D	20:13:00	3100	ug/Kg	3100	PQL	730	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Dimethyl phthalate	131-11-3	6/6/2017	D	20:13:00	830	ug/Kg	830	PQL	180	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Dibutyl phthalate	84-74-2	6/6/2017	D	20:13:00	2800	ug/Kg	2800	PQL	320	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Di-n-octyl phthalate	117-84-0	6/6/2017	D	20:13:00	5500	ug/Kg	5500	PQL	1200	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Fluoranthene	206-44-0	6/6/2017	D	20:13:00	530	ug/Kg	140	PQL	28	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Fluorene	86-73-7	6/6/2017	D	20:13:00	140	ug/Kg	140	PQL	28	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Hexachlorobenzene	118-74-1	6/6/2017	D	20:13:00	280	ug/Kg	280	PQL	28	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Hexachlorobutadiene	87-68-3	6/6/2017	D	20:13:00	280	ug/Kg	280	PQL	83	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Hexachlorocyclopentadiene	77-47-4	6/6/2017	D	20:13:00	550	ug/Kg	550	PQL	140	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Hexachloroethane	67-72-1	6/6/2017	D	20:13:00	830	ug/Kg	830	PQL	210	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Indeno(1,2,3-cd)pyrene	193-39-5	6/6/2017	D	20:13:00	220	ug/Kg	220	PQL	28	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Isophorone	78-59-1	6/6/2017	D	20:13:00	830	ug/Kg	830	PQL	210	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Naphthalene	91-20-3	6/6/2017	D	20:13:00	140	ug/Kg	140	PQL	28	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Nitrobenzene	98-95-3	6/6/2017	D	20:13:00	1100	ug/Kg	1100	PQL	230	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	N-Nitrosodi-n-propylamine	621-64-7	6/6/2017	D	20:13:00	1100	ug/Kg	1100	PQL	240	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	N-Nitrosodiphenylamine	86-30-6	6/6/2017	D	20:13:00	330	ug/Kg	330	PQL	83	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Pentachlorophenol	87-86-5	6/6/2017	D	20:13:00	2200	ug/Kg	2200	PQL	500	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Phenanthrene	85-01-8	6/6/2017	D	20:13:00	540	ug/Kg	330	PQL	67	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Phenol	108-95-2	6/6/2017	D	20:13:00	830	ug/Kg	830	PQL	210	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Pyrene	129-00-0	6/6/2017	D	20:13:00	580	ug/Kg	330	PQL	83	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Gasoline	86290-81-5	6/7/2017	D	19:52:00	32	mg/Kg	12	PQL	6	MDL		Dry		NWTPH-GX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1016	12674-11-2	6/4/2017	D	16:32:00	0.027	mg/Kg	0.027	PQL	0.0081	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1221	11104-28-2	6/4/2017	D	16:32:00	0.012	mg/Kg	0.012	PQL	0.0046	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1232	11141-16-5	6/4/2017	D	16:32:00	0.012	mg/Kg	0.012	PQL	0.0054	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1242	53469-21-9	6/4/2017	D	16:32:00	0.011	mg/Kg	0.011	PQL	0.0018	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1248	12672-29-6	6/4/2017	D	16:32:00	0.012	mg/Kg	0.012	PQL	0.0032	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1254	11097-69-1	6/4/2017	D	16:32:00	0.011	mg/Kg	0.011	PQL	0.0016	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1260	11096-82-5	6/4/2017	D	16:32:00	0.011	mg/Kg	0.011	PQL	0.0021	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	#2 Diesel	68476-34-6	6/9/2017	D	22:48:00	1300	mg/Kg	53	PQL	13	MDL		Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Motor Oil		6/9/2017	D	22:48:00	4000	mg/Kg	53	PQL	9.7	MDL		Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Antimony	7440-36-0	5/31/2017	D	14:55:00	3.5	mg/Kg	0.22	PQL	0.076	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Arsenic	7440-38-2	5/31/2017	D	14:55:00	14	mg/Kg	0.56	PQL	0.11	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Beryllium	7440-41-7	5/31/2017	D	14:55:00	0.53	mg/Kg	0.22	PQL	0.017	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Cadmium	7440-43-9	5/31/2017	D	14:55:00	4.9	mg/Kg	0.45	PQL	0.086	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Chromium	7440-47-3	5/31/2017	D	14:55:00	66	mg/Kg	0.56	PQL	0.07	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Copper	7440-50-8	5/31/2017	D	14:55:00	44	mg/Kg	1.1	PQL	0.25	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Lead	7439-92-1	5/31/2017	D	14:55:00	1100	mg/Kg	0.56	PQL	0.054	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Nickel	7440-02-0	5/31/2017	D	14:55:00	32	mg/Kg	0.56	PQL	0.22	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Selenium	7782-49-2	5/31/2017	D	14:55:00	1.1	mg/Kg	1.1	PQL	0.24	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Silver	7440-22-4	5/31/2017	D	14:55:00	0.22	mg/Kg	0.22	PQL	0.022	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Thallium	7440-28-0	5/31/2017	D	14:55:00	0.45	mg/Kg	0.45	PQL	0.061	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Zinc	7440-66-6	5/31/2017	D	14:55:00	1800	mg/Kg	5.6	PQL	1.8	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-14.5	Sample	Consultant	5/25/2017	15:40:00	7901-SB-01-14.5	N	N	Solid/Sediment	Source - Other	Mercury	7439-97-6	5/30/2017	D	15:23:43	0.078	mg/Kg	0.033	PQL	0.0098	MDL		Dry	Total	SW7471A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	1,2,4-Trichlorobenzene	120-82-1	6/6/2017	D	15:05:00	73	ug/Kg	73	PQL	8.7	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	1,2-Dichlorobenzene	95-50-1	6/6/2017	D	15:05:00	73	ug/Kg	73	PQL	17	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	1,3-Dichlorobenzene	541-73-1	6/6/2017	D	15:05:00	73	ug/Kg	73	PQL	7	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	1,4-Dichlorobenzene	106-46-7	6/6/2017	D	15:05:00	73	ug/Kg	73	PQL	12	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	1-Methylnaphthalene	90-12-0	6/6/2017	D	15:05:00	44	ug/Kg	44	PQL	7.3	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	2,4,5-Trichlorophenol	95-95-4	6/6/2017	D	15:05:00	290	ug/Kg	290	PQL	66	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	2,4,6-Trichlorophenol	88-06-2	6/6/2017	D	15:05:00	220	ug/Kg	220	PQL	52	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	2,4-Dichlorophenol	120-83-2	6/6/2017	D	15:05:00	150	ug/Kg	150	PQL	22	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	2,4-Dimethylphenol	105-67-9	6/6/2017	D	15:05:00	150	ug/Kg	150	PQL	22	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	2,4-Dinitrophenol	51-28-5	6/6/2017	D	15:05:00	1500	ug/Kg	1500	PQL	290	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	2,4-Dinitrotoluene	121-14-2	6/6/2017	D	15:05:00	290	ug/Kg	290	PQL	63	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	2,6-Dinitrotoluene	606-20-2	6/6/2017	D	15:05:00	220	ug/Kg	220	PQL	50	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	PCN-002	91-58-7	6/6/2017	D	15:05:00	36	ug/Kg	36	PQL	7.3	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	2-Chlorophenol	95-57-8	6/6/2017	D	15:05:00	290	ug/Kg	290	PQL	61	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	2-Methylnaphthalene	91-57-6	6/6/2017	D	15:05:00	73	ug/Kg	73	PQL	13	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	o-Cresol	95-48-7	6/6/2017	D	15:05:00	220	ug/Kg	220	PQL	54	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	2-Nitroaniline	88-74-4	6/6/2017	D	15:05:00	150	ug/Kg	150	PQL	22	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	2-Nitrophenol	88-75-5	6/6/2017	D	15:05:00	290	ug/Kg	290	PQL	67	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	m,p-Cresol (2:1 ratio)	15831-10-4	6/6/2017	D	15:05:00	290	ug/Kg	290	PQL	22	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	3,3'-Dichlorobenzidine	91-94-1	6/6/2017	D	15:05:00	580	ug/Kg	580	PQL	150	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	m-Nitroaniline	99-09-2	6/6/2017	D	15:05:00	290	ug/Kg	290	PQL	58	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	4,6-Dinitro-2-Methylphenol	534-52-1	6/6/2017	D	15:05:00	1500	ug/Kg	1500	PQL	150	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	PBDE-003	101-55-3	6/6/2017	D	15:05:00	290	ug/Kg	290	PQL	60	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	4-Chloro-3-Methylphenol	59-50-7	6/6/2017	D	15:05:00	220	ug/Kg	220	PQL	48	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	4-Chloroaniline	106-47-8	6/6/2017	D	15:05:00	2200	ug/Kg	2200	PQL	580	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	4-Chlorophenyl-Phenylether	7005-72-3	6/6/2017	D	15:05:00	290	ug/Kg	290	PQL	60	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	4-Nitroaniline	100-01-6	6/6/2017	D	15:05:00	150	ug/Kg	150	PQL	29	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	4-Nitrophenol	100-02-7	6/6/2017	D	15:05:00	2200	ug/Kg	2200	PQL	540	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Acenaphthene	83-32-9	6/6/2017	D	15:05:00	36	ug/Kg	36	PQL	7.3	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Acenaphthylene	208-96-8	6/6/2017	D	15:05:00	36	ug/Kg	36	PQL	7.3	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Anthracene	120-12-7	6/6/2017	D	15:05:00	36	ug/Kg	36	PQL	7.3	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Benz[a]anthracene	56-55-3	6/6/2017	D	15:05:00	36	ug/Kg	36	PQL	7.3	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Benzo(a)pyrene	50-32-8	6/6/2017	D	15:05:00	87	ug/Kg	87	PQL	19	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Benzo(b)fluoranthene	205-99-2	6/6/2017	D	15:05:00	36	ug/Kg	36	PQL	7.3	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Benzo(ghi)perylene	191-24-2	6/6/2017	D	15:05:00	87	ug/Kg	87	PQL	22	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Benzo(k)fluoranthene	207-08-9	6/6/2017	D	15:05:00	87	ug/Kg	87	PQL	20	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Benzoic Acid	65-85-0	6/6/2017	D	15:05:00	3600	ug/Kg	3600	PQL	1500	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Benzyl Alcohol	100-51-6	6/6/2017	D	15:05:00	5800	ug/Kg	5800	PQL	54	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethoxy)Methane	111-91-1	6/6/2017	D	15:05:00	290	ug/Kg	290	PQL	60	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethyl)Ether	111-44-4	6/6/2017	D	15:05:00	290	ug/Kg	290	PQL	58	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Di(2-ethylhexyl) phthalate	117-81-7	6/6/2017	D	15:05:00	870	ug/Kg	870	PQL	200	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Bis(2-chloro-1-methylethyl) ether	108-60-1	6/6/2017	D	15:05:00	360	ug/Kg	360	PQL	54	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Butyl benzyl phthalate	85-68-7	6/6/2017	D	15:05:00	290	ug/Kg	290	PQL	73	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Carbazole	86-74-8	6/6/2017	D	15:05:00	220	ug/Kg	220	PQL	45	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Chrysene	218-01-9	6/6/2017	D	15:05:00	87	ug/Kg	87	PQL	19	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Dibenzo(a,h)anthracene	53-70-3	6/6/2017	D	15:05:00	73	ug/Kg	73	PQL	17	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Dibenzofuran	132-64-9	6/6/2017	D	15:05:00	220	ug/Kg	220	PQL	52	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Diethyl phthalate	84-66-2	6/6/2017	D	15:05:00	800	ug/Kg	800	PQL	190	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Dimethyl phthalate	131-11-3	6/6/2017	D	15:05:00	220	ug/Kg	220	PQL	48	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Dibutyl phthalate	84-74-2	6/6/2017	D	15:05:00	730	ug/Kg	730	PQL	83	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Di-n-octyl phthalate	117-84-0	6/6/2017	D	15:05:00	1500	ug/Kg	1500	PQL	320	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Fluoranthene	206-44-0	6/6/2017	D	15:05:00	88	ug/Kg	36	PQL	7.3	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Fluorene	86-73-7	6/6/2017	D	15:05:00	36	ug/Kg	36	PQL	7.3	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Hexachlorobenzene	118-74-1	6/6/2017	D	15:05:00	73	ug/Kg	73	PQL	7.3	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Hexachlorobutadiene	87-68-3	6/6/2017	D	15:05:00	73	ug/Kg	73	PQL	22	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Hexachlorocyclopentadiene	77-47-4	6/6/2017	D	15:05:00	150	ug/Kg	150	PQL	38	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Hexachloroethane	67-72-1	6/6/2017	D	15:05:00	220	ug/Kg	220	PQL	55	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Indeno(1,2,3-cd)pyrene	193-39-5	6/6/2017	D	15:05:00	58	ug/Kg	58	PQL	7.3	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Isophorone	78-59-1	6/6/2017	D	15:05:00	220	ug/Kg	220	PQL	54	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Naphthalene	91-20-3	6/6/2017	D	15:05:00	36	ug/Kg	36	PQL	7.3	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Nitrobenzene	98-95-3	6/6/2017	D	15:05:00	290	ug/Kg	290	PQL	61	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	N-Nitrosodi-n-propylamine	621-64-7	6/6/2017	D	15:05:00	290	ug/Kg	290	PQL	64	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	N-Nitrosodiphenylamine	86-30-6	6/6/2017	D	15:05:00	87	ug/Kg	87	PQL	22	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Pentachlorophenol	87-86-5	6/6/2017	D	15:05:00	580	ug/Kg	580	PQL	130	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Phenanthrene	85-01-8	6/6/2017	D	15:05:00	87	ug/Kg	87	PQL	17	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Phenol	108-95-2	6/6/2017	D	15:05:00	220	ug/Kg	220	PQL	55	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Pyrene	129-00-0	6/6/2017	D	15:05:00	110	ug/Kg	87	PQL	22	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Gasoline	86290-81-5	6/7/2017	D	20:23:00	15	mg/Kg	15	PQL	7.8	MDL	U	Dry	NWTPH-GX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1016	12674-11-2	6/4/2017	D	16:48:00	0.035	mg/Kg	0.035	PQL	0.01	MDL	U	Dry	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1221	11104-28-2	6/4/2017	D	16:48:00	0.015	mg/Kg	0.015	PQL	0.0059	MDL	U	Dry	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1232	11141-16-5	6/4/2017	D	16:48:00	0.015	mg/Kg	0.015	PQL	0.0069	MDL	U	Dry	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1242	53469-21-9	6/4/2017	D	16:48:00	0.014	mg/Kg	0.014	PQL	0.0022	MDL	U	Dry	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1248	12672-29-6	6/4/2017	D	16:48:00	0.015	mg/Kg	0.015	PQL	0.0041	MDL	U	Dry	SW8082A	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1254	11097-69-1	6/4/2017	D	16:48:00	0.014	mg/Kg	0.014	PQL	0.0021	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1260	11096-82-5	6/4/2017	D	16:48:00	0.014	mg/Kg	0.014	PQL	0.0027	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	#2 Diesel	68476-34-6	6/2/2017	D	22:43:00	74	mg/Kg	74	PQL	18	MDL	U	Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Motor Oil		6/2/2017	D	22:43:00	230	mg/Kg	74	PQL	13	MDL		Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Antimony	7440-36-0	5/31/2017	D	16:20:00	0.36	mg/Kg	0.27	PQL	0.091	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Arsenic	7440-38-2	5/31/2017	D	16:20:00	5.7	mg/Kg	0.67	PQL	0.13	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Beryllium	7440-41-7	5/31/2017	D	16:20:00	0.36	mg/Kg	0.27	PQL	0.02	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Cadmium	7440-43-9	5/31/2017	D	16:20:00	0.54	mg/Kg	0.54	PQL	0.1	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Chromium	7440-47-3	5/31/2017	D	16:20:00	19	mg/Kg	0.67	PQL	0.085	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Copper	7440-50-8	5/31/2017	D	16:20:00	30	mg/Kg	1.3	PQL	0.3	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Lead	7439-92-1	5/31/2017	D	16:20:00	48	mg/Kg	0.67	PQL	0.064	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Nickel	7440-02-0	5/31/2017	D	16:20:00	15	mg/Kg	0.67	PQL	0.26	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Selenium	7782-49-2	5/31/2017	D	16:20:00	1.3	mg/Kg	1.3	PQL	0.29	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Silver	7440-22-4	5/31/2017	D	16:20:00	0.27	mg/Kg	0.27	PQL	0.027	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Thallium	7440-28-0	5/31/2017	D	16:20:00	0.54	mg/Kg	0.54	PQL	0.074	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Zinc	7440-66-6	5/31/2017	D	16:20:00	110	mg/Kg	6.7	PQL	2.2	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-01-17.5	Sample	Consultant	5/25/2017	15:45:00	7901-SB-01-17.5	N	N	Solid/Sediment	Source - Other	Mercury	7439-97-6	5/30/2017	D	15:26:00	0.061	mg/Kg	0.044	PQL	0.013	MDL		Dry	Total	SW7471A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	1,2,4-Trichlorobenzene	120-82-1	6/6/2017	D	15:30:00	580	ug/Kg	580	PQL	70	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	1,2-Dichlorobenzene	95-50-1	6/6/2017	D	15:30:00	580	ug/Kg	580	PQL	140	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	1,3-Dichlorobenzene	541-73-1	6/6/2017	D	15:30:00	580	ug/Kg	580	PQL	56	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	1,4-Dichlorobenzene	106-46-7	6/6/2017	D	15:30:00	580	ug/Kg	580	PQL	96	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	1-Methylnaphthalene	90-12-0	6/6/2017	D	15:30:00	350	ug/Kg	350	PQL	58	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	2,4,5-Trichlorophenol	95-95-4	6/6/2017	D	15:30:00	2300	ug/Kg	2300	PQL	520	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	2,4,6-Trichlorophenol	88-06-2	6/6/2017	D	15:30:00	1700	ug/Kg	1700	PQL	420	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	2,4-Dichlorophenol	120-83-2	6/6/2017	D	15:30:00	1200	ug/Kg	1200	PQL	170	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	2,4-Dimethylphenol	105-67-9	6/6/2017	D	15:30:00	1200	ug/Kg	1200	PQL	170	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	2,4-Dinitrophenol	51-28-5	6/6/2017	D	15:30:00	12000	ug/Kg	12000	PQL	2300	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	2,4-Dinitrotoluene	121-14-2	6/6/2017	D	15:30:00	2300	ug/Kg	2300	PQL	500	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	2,6-Dinitrotoluene	606-20-2	6/6/2017	D	15:30:00	1700	ug/Kg	1700	PQL	390	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	PCN-002	91-58-7	6/6/2017	D	15:30:00	290	ug/Kg	290	PQL	58	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	2-Chlorophenol	95-57-8	6/6/2017	D	15:30:00	2300	ug/Kg	2300	PQL	490	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	2-Methylnaphthalene	91-57-6	6/6/2017	D	15:30:00	580	ug/Kg	580	PQL	100	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	o-Cresol	95-48-7	6/6/2017	D	15:30:00	1700	ug/Kg	1700	PQL	430	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	2-Nitroaniline	88-74-4	6/6/2017	D	15:30:00	1200	ug/Kg	1200	PQL	170	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	2-Nitrophenol	88-75-5	6/6/2017	D	15:30:00	2300	ug/Kg	2300	PQL	530	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	m,p-Cresol (2:1 ratio)	15831-10-4	6/6/2017	D	15:30:00	2300	ug/Kg	2300	PQL	170	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	3,3'-Dichlorobenzidine	91-94-1	6/6/2017	D	15:30:00	4600	ug/Kg	4600	PQL	1200	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	m-Nitroaniline	99-09-2	6/6/2017	D	15:30:00	2300	ug/Kg	2300	PQL	460	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	4,6-Dinitro-2-Methylphenol	534-52-1	6/6/2017	D	15:30:00	12000	ug/Kg	12000	PQL	1200	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	PBDE-003	101-55-3	6/6/2017	D	15:30:00	2300	ug/Kg	2300	PQL	480	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	4-Chloro-3-Methylphenol	59-50-7	6/6/2017	D	15:30:00	1700	ug/Kg	1700	PQL	380	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	4-Chloroaniline	106-47-8	6/6/2017	D	15:30:00	17000	ug/Kg	17000	PQL	4600	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	4-Chlorophenyl-Phenylether	7005-72-3	6/6/2017	D	15:30:00	2300	ug/Kg	2300	PQL	480	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	4-Nitroaniline	100-01-6	6/6/2017	D	15:30:00	1200	ug/Kg	1200	PQL	230	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	4-Nitrophenol	100-02-7	6/6/2017	D	15:30:00	17000	ug/Kg	17000	PQL	4300	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Acenaphthene	83-32-9	6/6/2017	D	15:30:00	660	ug/Kg	290	PQL	58	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Acenaphthylene	208-96-8	6/6/2017	D	15:30:00	290	ug/Kg	290	PQL	58	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Anthracene	120-12-7	6/6/2017	D	15:30:00	1700	ug/Kg	290	PQL	58	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Benz[a]anthracene	56-55-3	6/6/2017	D	15:30:00	2800	ug/Kg	290	PQL	58	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Benzo(a)pyrene	50-32-8	6/6/2017	D	15:30:00	2500	ug/Kg	700	PQL	150	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Benzo(b)fluoranthene	205-99-2	6/6/2017	D	15:30:00	2600	ug/Kg	290	PQL	58	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Benzo(ghi)perylene	191-24-2	6/6/2017	D	15:30:00	1600	ug/Kg	700	PQL	170	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Benzo(k)fluoranthene	207-08-9	6/6/2017	D	15:30:00	950	ug/Kg	700	PQL	160	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Benzoic Acid	65-85-0	6/6/2017	D	15:30:00	29000	ug/Kg	29000	PQL	12000	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Benzyl Alcohol	100-51-6	6/6/2017	D	15:30:00	46000	ug/Kg	46000	PQL	430	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethoxy)Methane	111-91-1	6/6/2017	D	15:30:00	2300	ug/Kg	2300	PQL	480	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethyl)Ether	111-44-4	6/6/2017	D	15:30:00	2300	ug/Kg	2300	PQL	460	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Di(2-ethylhexyl) phthalate	117-81-7	6/6/2017	D	15:30:00	7000	ug/Kg	7000	PQL	1600	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Bis(2-chloro-1-methylethyl) ether	108-60-1	6/6/2017	D	15:30:00	2900	ug/Kg	2900	PQL	430	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Butyl benzyl phthalate	85-68-7	6/6/2017	D	15:30:00	2300	ug/Kg	2300	PQL	580	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Carbazole	86-74-8	6/6/2017	D	15:30:00	1700	ug/Kg	1700	PQL	360	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Chrysene	218-01-9	6/6/2017	D	15:30:00	3000	ug/Kg	700	PQL	150	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Dibenzo(a,h)anthracene	53-70-3	6/6/2017	D	15:30:00	580	ug/Kg	580	PQL	140	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Dibenzofuran	132-64-9	6/6/2017	D	15:30:00	1700	ug/Kg	1700	PQL	420	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Diethyl phthalate	84-66-2	6/6/2017	D	15:30:00	6400	ug/Kg	6400	PQL	1500	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Dimethyl phthalate	131-11-3	6/6/2017	D	15:30:00	1700	ug/Kg	1700	PQL	380	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Dibutyl phthalate	84-74-2	6/6/2017	D	15:30:00	5800	ug/Kg	5800	PQL	660	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Di-n-octyl phthalate	117-84-0	6/6/2017	D	15:30:00	12000	ug/Kg	12000	PQL	2600	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Fluoranthene	206-44-0	6/6/2017	D	15:30:00	7100	ug/Kg	290	PQL	58	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Fluorene	86-73-7	6/6/2017	D	15:30:00	990	ug/Kg	290	PQL	58	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Hexachlorobenzene	118-74-1	6/6/2017	D	15:30:00	580	ug/Kg	580	PQL	58	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Hexachlorobutadiene	87-68-3	6/6/2017	D	15:30:00	580	ug/Kg	580	PQL	170	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Hexachlorocyclopentadiene	77-47-4	6/6/2017	D	15:30:00	1200	ug/Kg	1200	PQL	300	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Hexachloroethane	67-72-1	6/6/2017	D	15:30:00	1700	ug/Kg	1700	PQL	440	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Indeno(1,2,3-cd)pyrene	193-39-5	6/6/2017	D	15:30:00	1900	ug/Kg	460	PQL	58	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Isophorone	78-59-1	6/6/2017	D	15:30:00	1700	ug/Kg	1700	PQL	430	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Naphthalene	91-20-3	6/6/2017	D	15:30:00	590	ug/Kg	290	PQL	58	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Nitrobenzene	98-95-3	6/6/2017	D	15:30:00	2300	ug/Kg	2300	PQL	490	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	N-Nitrosodi-n-propylamine	621-64-7	6/6/2017	D	15:30:00	2300	ug/Kg	2300	PQL	510	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	N-Nitrosodiphenylamine	86-30-6	6/6/2017	D	15:30:00	700	ug/Kg	700	PQL	170	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Pentachlorophenol	87-86-5	6/6/2017	D	15:30:00	4600	ug/Kg	4600	PQL	1100	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Phenanthrene	85-01-8	6/6/2017	D	15:30:00	7900	ug/Kg	700	PQL	140	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Phenol	108-95-2	6/6/2017	D	15:30:00	1700	ug/Kg	1700	PQL	440	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Pyrene	129-00-0	6/6/2017	D	15:30:00	6900	ug/Kg	700	PQL	170	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Gasoline	86290-81-5	6/7/2017	D	20:53:00	24	mg/Kg	9.4	PQL	4.9	MDL		Dry		NWTPH-GX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1016	12674-11-2	6/4/2017	D	17:04:00	0.027	mg/Kg	0.027	PQL	0.0081	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1221	11104-28-2	6/4/2017	D	17:04:00	0.012	mg/Kg	0.012	PQL	0.0046	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1232	11141-16-5	6/4/2017	D	17:04:00	0.012	mg/Kg	0.012	PQL	0.0054	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1242	53469-21-9	6/4/2017	D	17:04:00	0.011	mg/Kg	0.011	PQL	0.0017	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1248	12672-29-6	6/4/2017	D	17:04:00	0.012	mg/Kg	0.012	PQL	0.0032	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1254	11097-69-1	6/4/2017	D	17:04:00	0.011	mg/Kg	0.011	PQL	0.0016	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1260	11096-82-5	6/4/2017	D	17:04:00	0.011	mg/Kg	0.011	PQL	0.0021	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	#2 Diesel	68476-34-6	6/2/2017	D	23:14:00	330	mg/Kg	59	PQL	14	MDL		Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Motor Oil		6/2/2017	D	23:14:00	970	mg/Kg	59	PQL	11	MDL		Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Antimony	7440-36-0	5/31/2017	D	16:24:00	8	mg/Kg	0.22	PQL	0.074	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Arsenic	7440-38-2	5/31/2017	D	16:24:00	19	mg/Kg	0.55	PQL	0.11	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Beryllium	7440-41-7	5/31/2017	D	16:24:00	0.22	mg/Kg	0.22	PQL	0.016	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Cadmium	7440-43-9	5/31/2017	D	16:24:00	42	mg/Kg	0.44	PQL	0.084	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Chromium	7440-47-3	5/31/2017	D	16:24:00	54	mg/Kg	0.55	PQL	0.069	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Copper	7440-50-8	5/31/2017	D	16:24:00	660	mg/Kg	1.1	PQL	0.24	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Lead	7439-92-1	5/31/2017	D	16:24:00	2300	mg/Kg	0.55	PQL	0.053	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Nickel	7440-02-0	5/31/2017	D	16:24:00	110	mg/Kg	0.55	PQL	0.21	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Selenium	7782-49-2	5/31/2017	D	16:24:00	1.1	mg/Kg	1.1	PQL	0.24	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Silver	7440-22-4	5/31/2017	D	16:24:00	0.47	mg/Kg	0.22	PQL	0.022	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Thallium	7440-28-0	5/31/2017	D	16:24:00	0.44	mg/Kg	0.44	PQL	0.06	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Zinc	7440-66-6	5/31/2017	D	16:41:00	12000	mg/Kg	550	PQL	180	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-14.5	Sample	Consultant	5/25/2017	9:30:00	7901-SB-02-14.5	N	N	Solid/Sediment	Source - Other	Mercury	7439-97-6	5/30/2017	D	15:32:54	0.43	mg/Kg	0.034	PQL	0.01	MDL		Dry	Total	SW7471A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	1,2,4-Trichlorobenzene	120-82-1	6/6/2017	D	15:56:00	70	ug/Kg	70	PQL	8.4	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	1,2-Dichlorobenzene	95-50-1	6/6/2017	D	15:56:00	70	ug/Kg	70	PQL	17	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	1,3-Dichlorobenzene	541-73-1	6/6/2017	D	15:56:00	70	ug/Kg	70	PQL	6.7	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	1,4-Dichlorobenzene	106-46-7	6/6/2017	D	15:56:00	70	ug/Kg	70	PQL	12	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	1-Methylnaphthalene	90-12-0	6/6/2017	D	15:56:00	42	ug/Kg	42	PQL	7	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	2,4,5-Trichlorophenol	95-95-4	6/6/2017	D	15:56:00	280	ug/Kg	280	PQL	63	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	2,4,6-Trichlorophenol	88-06-2	6/6/2017	D	15:56:00	210	ug/Kg	210	PQL	50	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	2,4-Dichlorophenol	120-83-2	6/6/2017	D	15:56:00	140	ug/Kg	140	PQL	21	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	2,4-Dimethylphenol	105-67-9	6/6/2017	D	15:56:00	140	ug/Kg	140	PQL	21	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	2,4-Dinitrophenol	51-28-5	6/6/2017	D	15:56:00	1400	ug/Kg	1400	PQL	280	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	2,4-Dinitrotoluene	121-14-2	6/6/2017	D	15:56:00	280	ug/Kg	280	PQL	60	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	2,6-Dinitrotoluene	606-20-2	6/6/2017	D	15:56:00	210	ug/Kg	210	PQL	48	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	PCN-002	91-58-7	6/6/2017	D	15:56:00	35	ug/Kg	35	PQL	7	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	2-Chlorophenol	95-57-8	6/6/2017	D	15:56:00	280	ug/Kg	280	PQL	59	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	2-Methylnaphthalene	91-57-6	6/6/2017	D	15:56:00	70	ug/Kg	70	PQL	12	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	o-Cresol	95-48-7	6/6/2017	D	15:56:00	210	ug/Kg	210	PQL	52	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	2-Nitroaniline	88-74-4	6/6/2017	D	15:56:00	140	ug/Kg	140	PQL	21	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	2-Nitrophenol	88-75-5	6/6/2017	D	15:56:00	280	ug/Kg	280	PQL	64	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	m,p-Cresol (2:1 ratio)	15831-10-4	6/6/2017	D	15:56:00	280	ug/Kg	280	PQL	21	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	3,3'-Dichlorobenzidine	91-94-1	6/6/2017	D	15:56:00	560	ug/Kg	560	PQL	140	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	m-Nitroaniline	99-09-2	6/6/2017	D	15:56:00	280	ug/Kg	280	PQL	56	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	4,6-Dinitro-2-Methylphenol	534-52-1	6/6/2017	D	15:56:00	1400	ug/Kg	1400	PQL	140	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	PBDE-003	101-55-3	6/6/2017	D	15:56:00	280	ug/Kg	280	PQL	57	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	4-Chloro-3-Methylphenol	59-50-7	6/6/2017	D	15:56:00	210	ug/Kg	210	PQL	46	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	4-Chloroaniline	106-47-8	6/6/2017	D	15:56:00	2100	ug/Kg	2100	PQL	560	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	4-Chlorophenyl-Phenylether	7005-72-3	6/6/2017	D	15:56:00	280	ug/Kg	280	PQL	57	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	4-Nitroaniline	100-01-6	6/6/2017	D	15:56:00	140	ug/Kg	140	PQL	28	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	4-Nitrophenol	100-02-7	6/6/2017	D	15:56:00	2100	ug/Kg	2100	PQL	520	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Acenaphthene	83-32-9	6/6/2017	D	15:56:00	35	ug/Kg	35	PQL	7	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Acenaphthylene	208-96-8	6/6/2017	D	15:56:00	35	ug/Kg	35	PQL	7	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Anthracene	120-12-7	6/6/2017	D	15:56:00	53	ug/Kg	35	PQL	7	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Benz[a]anthracene	56-55-3	6/6/2017	D	15:56:00	140	ug/Kg	35	PQL	7	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Benzo(a)pyrene	50-32-8	6/6/2017	D	15:56:00	110	ug/Kg	84	PQL	18	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Benzo(b)fluoranthene	205-99-2	6/6/2017	D	15:56:00	130	ug/Kg	35	PQL	7	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Benzo(ghi)perylene	191-24-2	6/6/2017	D	15:56:00	84	ug/Kg	84	PQL	21	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Benzo(k)fluoranthene	207-08-9	6/6/2017	D	15:56:00	84	ug/Kg	84	PQL	20	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Benzoic Acid	65-85-0	6/6/2017	D	15:56:00	3500	ug/Kg	3500	PQL	1500	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Benzyl Alcohol	100-51-6	6/6/2017	D	15:56:00	5600	ug/Kg	5600	PQL	52	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethoxy)Methane	111-91-1	6/6/2017	D	15:56:00	280	ug/Kg	280	PQL	57	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethyl)Ether	111-44-4	6/6/2017	D	15:56:00	280	ug/Kg	280	PQL	56	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Di(2-ethylhexyl) phthalate	117-81-7	6/6/2017	D	15:56:00	840	ug/Kg	840	PQL	190	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Bis(2-chloro-1-methylethyl) ether	108-60-1	6/6/2017	D	15:56:00	350	ug/Kg	350	PQL	52	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Butyl benzyl phthalate	85-68-7	6/6/2017	D	15:56:00	280	ug/Kg	280	PQL	70	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Carbazole	86-74-8	6/6/2017	D	15:56:00	210	ug/Kg	210	PQL	43	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Chrysene	218-01-9	6/6/2017	D	15:56:00	140	ug/Kg	84	PQL	18	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Dibenzo(a,h)anthracene	53-70-3	6/6/2017	D	15:56:00	70	ug/Kg	70	PQL	17	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Dibenzofuran	132-64-9	6/6/2017	D	15:56:00	210	ug/Kg	210	PQL	50	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Diethyl phthalate	84-66-2	6/6/2017	D	15:56:00	770	ug/Kg	770	PQL	180	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Dimethyl phthalate	131-11-3	6/6/2017	D	15:56:00	210	ug/Kg	210	PQL	46	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Dibutyl phthalate	84-74-2	6/6/2017	D	15:56:00	700	ug/Kg	700	PQL	80	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Di-n-octyl phthalate	117-84-0	6/6/2017	D	15:56:00	1400	ug/Kg	1400	PQL	310	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Fluoranthene	206-44-0	6/6/2017	D	15:56:00	310	ug/Kg	35	PQL	7	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Fluorene	86-73-7	6/6/2017	D	15:56:00	35	ug/Kg	35	PQL	7	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Hexachlorobenzene	118-74-1	6/6/2017	D	15:56:00	70	ug/Kg	70	PQL	7	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Hexachlorobutadiene	87-68-3	6/6/2017	D	15:56:00	70	ug/Kg	70	PQL	21	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Hexachlorocyclopentadiene	77-47-4	6/6/2017	D	15:56:00	140	ug/Kg	140	PQL	36	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Hexachloroethane	67-72-1	6/6/2017	D	15:56:00	210	ug/Kg	210	PQL	53	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Indeno(1,2,3-cd)pyrene	193-39-5	6/6/2017	D	15:56:00	93	ug/Kg	56	PQL	7	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Isophorone	78-59-1	6/6/2017	D	15:56:00	210	ug/Kg	210	PQL	52	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Naphthalene	91-20-3	6/6/2017	D	15:56:00	35	ug/Kg	35	PQL	7	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Nitrobenzene	98-95-3	6/6/2017	D	15:56:00	280	ug/Kg	280	PQL	59	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	N-Nitrosodi-n-propylamine	621-64-7	6/6/2017	D	15:56:00	280	ug/Kg	280	PQL	62	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	N-Nitrosodiphenylamine	86-30-6	6/6/2017	D	15:56:00	84	ug/Kg	84	PQL	21	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Pentachlorophenol	87-86-5	6/6/2017	D	15:56:00	560	ug/Kg	560	PQL	130	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Phenanthrene	85-01-8	6/6/2017	D	15:56:00	260	ug/Kg	84	PQL	17	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Phenol	108-95-2	6/6/2017	D	15:56:00	210	ug/Kg	210	PQL	53	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Pyrene	129-00-0	6/6/2017	D	15:56:00	310	ug/Kg	84	PQL	21	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Gasoline	86290-81-5	6/7/2017	D	21:23:00	12	mg/Kg	12	PQL	6.5	MDL	U	Dry		NWTPH-GX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1016	12674-11-2	6/4/2017	D	17:20:00	0.036	mg/Kg	0.036	PQL	0.011	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1221	11104-28-2	6/4/2017	D	17:20:00	0.016	mg/Kg	0.016	PQL	0.0061	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1232	11141-16-5	6/4/2017	D	17:20:00	0.016	mg/Kg	0.016	PQL	0.0071	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1242	53469-21-9	6/4/2017	D	17:20:00	0.015	mg/Kg	0.015	PQL	0.0023	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1248	12672-29-6	6/4/2017	D	17:20:00	0.016	mg/Kg	0.016	PQL	0.0042	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1254	11097-69-1	6/4/2017	D	17:20:00	0.015	mg/Kg	0.015	PQL	0.0022	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1260	11096-82-5	6/4/2017	D	17:20:00	0.015	mg/Kg	0.015	PQL	0.0028	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	#2 Diesel	68476-34-6	6/2/2017	D	23:44:00	69	mg/Kg	69	PQL	17	MDL	U	Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Motor Oil		6/2/2017	D	23:44:00	240	mg/Kg	69	PQL	13	MDL		Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Antimony	7440-36-0	5/31/2017	D	16:29:00	10	mg/Kg	0.26	PQL	0.087	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Arsenic	7440-38-2	5/31/2017	D	16:29:00	22	mg/Kg	0.64	PQL	0.13	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Beryllium	7440-41-7	5/31/2017	D	16:29:00	0.26	mg/Kg	0.26	PQL	0.019	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Cadmium	7440-43-9	5/31/2017	D	16:29:00	0.97	mg/Kg	0.51	PQL	0.099	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Chromium	7440-47-3	5/31/2017	D	16:29:00	42	mg/Kg	0.64	PQL	0.081	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Copper	7440-50-8	5/31/2017	D	16:29:00	350	mg/Kg	1.3	PQL	0.28	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Lead	7439-92-1	5/31/2017	D	16:29:00	48	mg/Kg	0.64	PQL	0.062	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Nickel	7440-02-0	5/31/2017	D	16:29:00	65	mg/Kg	0.64	PQL	0.25	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Selenium	7782-49-2	5/31/2017	D	16:29:00	1.3	mg/Kg	1.3	PQL	0.28	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Silver	7440-22-4	5/31/2017	D	16:29:00	0.26	mg/Kg	0.26	PQL	0.026	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Thallium	7440-28-0	5/31/2017	D	16:29:00	0.51	mg/Kg	0.51	PQL	0.071	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Zinc	7440-66-6	5/31/2017	D	16:29:00	360	mg/Kg	6.4	PQL	2.1	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-02-17.5	Sample	Consultant	5/25/2017	9:35:00	7901-SB-02-17.5	N	N	Solid/Sediment	Source - Other	Mercury	7439-97-6	5/30/2017	D	15:35:09	0.041	mg/Kg	0.041	PQL	0.012	MDL	U	Dry	Total	SW7471A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	1,2,4-Trichlorobenzene	120-82-1	6/6/2017	D	16:22:00	56	ug/Kg	56	PQL	6.7	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	1,2-Dichlorobenzene	95-50-1	6/6/2017	D	16:22:00	56	ug/Kg	56	PQL	13	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	1,3-Dichlorobenzene	541-73-1	6/6/2017	D	16:22:00	56	ug/Kg	56	PQL	5.3	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	1,4-Dichlorobenzene	106-46-7	6/6/2017	D	16:22:00	56	ug/Kg	56	PQL	9.2	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	1-Methylnaphthalene	90-12-0	6/6/2017	D	16:22:00	33	ug/Kg	33	PQL	5.6	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	2,4,5-Trichlorophenol	95-95-4	6/6/2017	D	16:22:00	220	ug/Kg	220	PQL	50	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	2,4,6-Trichlorophenol	88-06-2	6/6/2017	D	16:22:00	170	ug/Kg	170	PQL	40	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	2,4-Dichlorophenol	120-83-2	6/6/2017	D	16:22:00	110	ug/Kg	110	PQL	17	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	2,4-Dimethylphenol	105-67-9	6/6/2017	D	16:22:00	110	ug/Kg	110	PQL	17	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	2,4-Dinitrophenol	51-28-5	6/6/2017	D	16:22:00	1100	ug/Kg	1100	PQL	220	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	2,4-Dinitrotoluene	121-14-2	6/6/2017	D	16:22:00	220	ug/Kg	220	PQL	48	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	2,6-Dinitrotoluene	606-20-2	6/6/2017	D	16:22:00	170	ug/Kg	170	PQL	38	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	PCN-002	91-58-7	6/6/2017	D	16:22:00	28	ug/Kg	28	PQL	5.6	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	2-Chlorophenol	95-57-8	6/6/2017	D	16:22:00	220	ug/Kg	220	PQL	47	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	2-Methylnaphthalene	91-57-6	6/6/2017	D	16:22:00	56	ug/Kg	56	PQL	9.8	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	o-Cresol	95-48-7	6/6/2017	D	16:22:00	170	ug/Kg	170	PQL	41	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	2-Nitroaniline	88-74-4	6/6/2017	D	16:22:00	110	ug/Kg	110	PQL	17	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	2-Nitrophenol	88-75-5	6/6/2017	D	16:22:00	220	ug/Kg	220	PQL	51	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	m,p-Cresol (2:1 ratio)	15831-10-4	6/6/2017	D	16:22:00	220	ug/Kg	220	PQL	17	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	3,3'-Dichlorobenzidine	91-94-1	6/6/2017	D	16:22:00	450	ug/Kg	450	PQL	110	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	m-Nitroaniline	99-09-2	6/6/2017	D	16:22:00	220	ug/Kg	220	PQL	45	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	4,6-Dinitro-2-Methylphenol	534-52-1	6/6/2017	D	16:22:00	1100	ug/Kg	1100	PQL	110	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	PBDE-003	101-55-3	6/6/2017	D	16:22:00	220	ug/Kg	220	PQL	46	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	4-Chloro-3-Methylphenol	59-50-7	6/6/2017	D	16:22:00	170	ug/Kg	170	PQL	37	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	4-Chloroaniline	106-47-8	6/6/2017	D	16:22:00	1700	ug/Kg	1700	PQL	450	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	4-Chlorophenyl-Phenylether	7005-72-3	6/6/2017	D	16:22:00	220	ug/Kg	220	PQL	46	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	4-Nitroaniline	100-01-6	6/6/2017	D	16:22:00	110	ug/Kg	110	PQL	22	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	4-Nitrophenol	100-02-7	6/6/2017	D	16:22:00	1700	ug/Kg	1700	PQL	410	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Acenaphthene	83-32-9	6/6/2017	D	16:22:00	28	ug/Kg	28	PQL	5.6	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Acenaphthylene	208-96-8	6/6/2017	D	16:22:00	28	ug/Kg	28	PQL	5.6	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Anthracene	120-12-7	6/6/2017	D	16:22:00	28	ug/Kg	28	PQL	5.6	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Benz[a]anthracene	56-55-3	6/6/2017	D	16:22:00	28	ug/Kg	28	PQL	5.6	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Benzo(a)pyrene	50-32-8	6/6/2017	D	16:22:00	67	ug/Kg	67	PQL	14	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Benzo(b)fluoranthene	205-99-2	6/6/2017	D	16:22:00	28	ug/Kg	28	PQL	5.6	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Benzo(ghi)perylene	191-24-2	6/6/2017	D	16:22:00	67	ug/Kg	67	PQL	17	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Benzo(k)fluoranthene	207-08-9	6/6/2017	D	16:22:00	67	ug/Kg	67	PQL	16	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Benzoic Acid	65-85-0	6/6/2017	D	16:22:00	2800	ug/Kg	2800	PQL	1200	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Benzyl Alcohol	100-51-6	6/6/2017	D	16:22:00	4500 ug/Kg	4500 PQL	41 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethoxy)Methane	111-91-1	6/6/2017	D	16:22:00	220 ug/Kg	220 PQL	46 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethyl)Ether	111-44-4	6/6/2017	D	16:22:00	220 ug/Kg	220 PQL	45 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Di(2-ethylhexyl) phthalate	117-81-7	6/6/2017	D	16:22:00	670 ug/Kg	670 PQL	150 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Bis(2-chloro-1-methylethyl) ether	108-60-1	6/6/2017	D	16:22:00	280 ug/Kg	280 PQL	41 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Butyl benzyl phthalate	85-68-7	6/6/2017	D	16:22:00	220 ug/Kg	220 PQL	56 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Carbazole	86-74-8	6/6/2017	D	16:22:00	170 ug/Kg	170 PQL	35 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Chrysene	218-01-9	6/6/2017	D	16:22:00	67 ug/Kg	67 PQL	14 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Dibenzo(a,h)anthracene	53-70-3	6/6/2017	D	16:22:00	56 ug/Kg	56 PQL	13 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Dibenzofuran	132-64-9	6/6/2017	D	16:22:00	170 ug/Kg	170 PQL	40 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Diethyl phthalate	84-66-2	6/6/2017	D	16:22:00	610 ug/Kg	610 PQL	150 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Dimethyl phthalate	131-11-3	6/6/2017	D	16:22:00	170 ug/Kg	170 PQL	37 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Dibutyl phthalate	84-74-2	6/6/2017	D	16:22:00	560 ug/Kg	560 PQL	64 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Di-n-octyl phthalate	117-84-0	6/6/2017	D	16:22:00	1100 ug/Kg	1100 PQL	250 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Fluoranthene	206-44-0	6/6/2017	D	16:22:00	28 ug/Kg	28 PQL	5.6 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Fluorene	86-73-7	6/6/2017	D	16:22:00	28 ug/Kg	28 PQL	5.6 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Hexachlorobenzene	118-74-1	6/6/2017	D	16:22:00	56 ug/Kg	56 PQL	5.6 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Hexachlorobutadiene	87-68-3	6/6/2017	D	16:22:00	56 ug/Kg	56 PQL	17 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Hexachlorocyclopentadiene	77-47-4	6/6/2017	D	16:22:00	110 ug/Kg	110 PQL	29 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Hexachloroethane	67-72-1	6/6/2017	D	16:22:00	170 ug/Kg	170 PQL	42 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Indeno(1,2,3-cd)pyrene	193-39-5	6/6/2017	D	16:22:00	45 ug/Kg	45 PQL	5.6 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Isophorone	78-59-1	6/6/2017	D	16:22:00	170 ug/Kg	170 PQL	41 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Naphthalene	91-20-3	6/6/2017	D	16:22:00	28 ug/Kg	28 PQL	5.6 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Nitrobenzene	98-95-3	6/6/2017	D	16:22:00	220 ug/Kg	220 PQL	47 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	N-Nitrosodi-n-propylamine	621-64-7	6/6/2017	D	16:22:00	220 ug/Kg	220 PQL	49 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	N-Nitrosodiphenylamine	86-30-6	6/6/2017	D	16:22:00	67 ug/Kg	67 PQL	17 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Pentachlorophenol	87-86-5	6/6/2017	D	16:22:00	450 ug/Kg	450 PQL	100 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Phenanthrene	85-01-8	6/6/2017	D	16:22:00	67 ug/Kg	67 PQL	13 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Phenol	108-95-2	6/6/2017	D	16:22:00	170 ug/Kg	170 PQL	42 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Pyrene	129-00-0	6/6/2017	D	16:22:00	67 ug/Kg	67 PQL	17 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Gasoline	86290-81-5	6/8/2017	D	18:20:00	7.3 mg/Kg	7.3 PQL	3.8 MDL	U	Dry	NWTPH-GX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1016	12674-11-2	6/4/2017	D	17:37:00	0.028 mg/Kg	0.028 PQL	0.0082 MDL	U	Dry	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1221	11104-28-2	6/4/2017	D	17:37:00	0.012 mg/Kg	0.012 PQL	0.0046 MDL	U	Dry	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1232	11141-16-5	6/4/2017	D	17:37:00	0.012 mg/Kg	0.012 PQL	0.0054 MDL	U	Dry	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1242	53469-21-9	6/4/2017	D	17:37:00	0.011 mg/Kg	0.011 PQL	0.0018 MDL	U	Dry	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1248	12672-29-6	6/4/2017	D	17:37:00	0.012 mg/Kg	0.012 PQL	0.0032 MDL	U	Dry	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1254	11097-69-1	6/4/2017	D	17:37:00	0.011 mg/Kg	0.011 PQL	0.0017 MDL	U	Dry	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1260	11096-82-5	6/4/2017	D	17:37:00	0.011 mg/Kg	0.011 PQL	0.0021 MDL	U	Dry	SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	#2 Diesel	68476-34-6	6/3/2017	D	0:14:00	52 mg/Kg	52 PQL	13 MDL	U	Dry	NWTPH-DX	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Motor Oil		6/3/2017	D	0:14:00	110	mg/Kg	52	PQL	9.5	MDL			Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Antimony	7440-36-0	5/31/2017	D	13:52:00	62	mg/Kg	0.2	PQL	0.07	MDL			Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Arsenic	7440-38-2	5/31/2017	D	13:52:00	11	mg/Kg	0.51	PQL	0.1	MDL			Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Beryllium	7440-41-7	5/31/2017	D	13:52:00	0.23	mg/Kg	0.2	PQL	0.015	MDL			Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Cadmium	7440-43-9	5/31/2017	D	13:52:00	1.3	mg/Kg	0.41	PQL	0.079	MDL			Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Chromium	7440-47-3	5/31/2017	D	13:52:00	44	mg/Kg	0.51	PQL	0.064	MDL			Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Copper	7440-50-8	5/31/2017	D	13:52:00	150	mg/Kg	1	PQL	0.22	MDL			Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Lead	7439-92-1	5/31/2017	D	13:52:00	320	mg/Kg	0.51	PQL	0.049	MDL			Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Nickel	7440-02-0	5/31/2017	D	13:52:00	48	mg/Kg	0.51	PQL	0.2	MDL			Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Selenium	7782-49-2	5/31/2017	D	13:52:00	1	mg/Kg	1	PQL	0.22	MDL	U		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Silver	7440-22-4	5/31/2017	D	13:52:00	0.33	mg/Kg	0.2	PQL	0.02	MDL			Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Thallium	7440-28-0	5/31/2017	D	13:52:00	0.41	mg/Kg	0.41	PQL	0.056	MDL	U		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Zinc	7440-66-6	5/31/2017	D	13:52:00	1400	mg/Kg	5.1	PQL	1.6	MDL			Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-8	Sample	Consultant	5/25/2017	14:05:00	7901-SB-03-8	N	N	Solid/Sediment	Source - Other	Mercury	7439-97-6	5/30/2017	D	15:37:29	0.056	mg/Kg	0.032	PQL	0.0097	MDL			Dry	Total	SW7471A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	1,2,4-Trichlorobenzene	120-82-1	6/6/2017	D	16:47:00	290	ug/Kg	290	PQL	35	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	1,2-Dichlorobenzene	95-50-1	6/6/2017	D	16:47:00	290	ug/Kg	290	PQL	70	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	1,3-Dichlorobenzene	541-73-1	6/6/2017	D	16:47:00	290	ug/Kg	290	PQL	28	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	1,4-Dichlorobenzene	106-46-7	6/6/2017	D	16:47:00	290	ug/Kg	290	PQL	49	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	1-Methylnaphthalene	90-12-0	6/6/2017	D	16:47:00	340	ug/Kg	180	PQL	29	MDL			Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	2,4,5-Trichlorophenol	95-95-4	6/6/2017	D	16:47:00	1200	ug/Kg	1200	PQL	260	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	2,4,6-Trichlorophenol	88-06-2	6/6/2017	D	16:47:00	880	ug/Kg	880	PQL	210	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	2,4-Dichlorophenol	120-83-2	6/6/2017	D	16:47:00	590	ug/Kg	590	PQL	88	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	2,4-Dimethylphenol	105-67-9	6/6/2017	D	16:47:00	590	ug/Kg	590	PQL	88	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	2,4-Dinitrophenol	51-28-5	6/6/2017	D	16:47:00	5900	ug/Kg	5900	PQL	1200	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	2,4-Dinitrotoluene	121-14-2	6/6/2017	D	16:47:00	1200	ug/Kg	1200	PQL	250	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	2,6-Dinitrotoluene	606-20-2	6/6/2017	D	16:47:00	880	ug/Kg	880	PQL	200	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	PCN-002	91-58-7	6/6/2017	D	16:47:00	150	ug/Kg	150	PQL	29	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	2-Chlorophenol	95-57-8	6/6/2017	D	16:47:00	1200	ug/Kg	1200	PQL	250	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	2-Methylnaphthalene	91-57-6	6/6/2017	D	16:47:00	570	ug/Kg	290	PQL	52	MDL			Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	o-Cresol	95-48-7	6/6/2017	D	16:47:00	880	ug/Kg	880	PQL	220	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	2-Nitroaniline	88-74-4	6/6/2017	D	16:47:00	590	ug/Kg	590	PQL	88	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	2-Nitrophenol	88-75-5	6/6/2017	D	16:47:00	1200	ug/Kg	1200	PQL	270	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	m,p-Cresol (2:1 ratio)	15831-10-4	6/6/2017	D	16:47:00	1200	ug/Kg	1200	PQL	88	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	3,3'-Dichlorobenzidine	91-94-1	6/6/2017	D	16:47:00	2300	ug/Kg	2300	PQL	590	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	m-Nitroaniline	99-09-2	6/6/2017	D	16:47:00	1200	ug/Kg	1200	PQL	230	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	4,6-Dinitro-2-Methylphenol	534-52-1	6/6/2017	D	16:47:00	5900	ug/Kg	5900	PQL	590	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	PBDE-003	101-55-3	6/6/2017	D	16:47:00	1200	ug/Kg	1200	PQL	240	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	4-Chloro-3-Methylphenol	59-50-7	6/6/2017	D	16:47:00	880	ug/Kg	880	PQL	190	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	4-Chloroaniline	106-47-8	6/6/2017	D	16:47:00	8800	ug/Kg	8800	PQL	2300	MDL	U		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	4-Chlorophenyl-Phenylether	7005-72-3	6/6/2017	D	16:47:00	1200	ug/Kg	1200	PQL	240	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	4-Nitroaniline	100-01-6	6/6/2017	D	16:47:00	590	ug/Kg	590	PQL	120	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	4-Nitrophenol	100-02-7	6/6/2017	D	16:47:00	8800	ug/Kg	8800	PQL	2200	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Acenaphthene	83-32-9	6/6/2017	D	16:47:00	150	ug/Kg	150	PQL	29	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Acenaphthylene	208-96-8	6/6/2017	D	16:47:00	150	ug/Kg	150	PQL	29	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Anthracene	120-12-7	6/6/2017	D	16:47:00	3700	ug/Kg	150	PQL	29	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Benz[a]anthracene	56-55-3	6/6/2017	D	16:47:00	29000	ug/Kg	150	PQL	29	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Benzo(a)pyrene	50-32-8	6/6/2017	D	16:47:00	16000	ug/Kg	350	PQL	76	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Benzo(b)fluoranthene	205-99-2	6/6/2017	D	16:47:00	19000	ug/Kg	150	PQL	29	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Benzo(ghi)perylene	191-24-2	6/6/2017	D	16:47:00	7600	ug/Kg	350	PQL	88	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Benzo(k)fluoranthene	207-08-9	6/6/2017	D	16:47:00	8400	ug/Kg	350	PQL	82	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Benzoic Acid	65-85-0	6/6/2017	D	16:47:00	15000	ug/Kg	15000	PQL	6200	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Benzyl Alcohol	100-51-6	6/6/2017	D	16:47:00	23000	ug/Kg	23000	PQL	220	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethoxy)Methane	111-91-1	6/6/2017	D	16:47:00	1200	ug/Kg	1200	PQL	240	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethyl)Ether	111-44-4	6/6/2017	D	16:47:00	1200	ug/Kg	1200	PQL	230	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Di(2-ethylhexyl) phthalate	117-81-7	6/6/2017	D	16:47:00	3500	ug/Kg	3500	PQL	800	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Bis(2-chloro-1-methylethyl) ether	108-60-1	6/6/2017	D	16:47:00	1500	ug/Kg	1500	PQL	220	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Butyl benzyl phthalate	85-68-7	6/6/2017	D	16:47:00	1200	ug/Kg	1200	PQL	290	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Carbazole	86-74-8	6/6/2017	D	16:47:00	1400	ug/Kg	880	PQL	180	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Chrysene	218-01-9	6/6/2017	D	16:47:00	27000	ug/Kg	350	PQL	76	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Dibenzo(a,h)anthracene	53-70-3	6/6/2017	D	16:47:00	2200	ug/Kg	290	PQL	70	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Dibenzofuran	132-64-9	6/6/2017	D	16:47:00	880	ug/Kg	880	PQL	210	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Diethyl phthalate	84-66-2	6/6/2017	D	16:47:00	3200	ug/Kg	3200	PQL	780	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Dimethyl phthalate	131-11-3	6/6/2017	D	16:47:00	880	ug/Kg	880	PQL	190	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Dibutyl phthalate	84-74-2	6/6/2017	D	16:47:00	2900	ug/Kg	2900	PQL	330	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Di-n-octyl phthalate	117-84-0	6/6/2017	D	16:47:00	5900	ug/Kg	5900	PQL	1300	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Fluorene	86-73-7	6/6/2017	D	16:47:00	680	ug/Kg	150	PQL	29	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Hexachlorobenzene	118-74-1	6/6/2017	D	16:47:00	290	ug/Kg	290	PQL	29	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Hexachlorobutadiene	87-68-3	6/6/2017	D	16:47:00	290	ug/Kg	290	PQL	88	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Hexachlorocyclopentadiene	77-47-4	6/6/2017	D	16:47:00	590	ug/Kg	590	PQL	150	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Hexachloroethane	67-72-1	6/6/2017	D	16:47:00	880	ug/Kg	880	PQL	220	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Indeno(1,2,3-cd)pyrene	193-39-5	6/6/2017	D	16:47:00	9900	ug/Kg	230	PQL	29	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Isophorone	78-59-1	6/6/2017	D	16:47:00	880	ug/Kg	880	PQL	220	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Naphthalene	91-20-3	6/6/2017	D	16:47:00	230	ug/Kg	150	PQL	29	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Nitrobenzene	98-95-3	6/6/2017	D	16:47:00	1200	ug/Kg	1200	PQL	250	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	N-Nitrosodi-n-propylamine	621-64-7	6/6/2017	D	16:47:00	1200	ug/Kg	1200	PQL	260	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	N-Nitrosodiphenylamine	86-30-6	6/6/2017	D	16:47:00	350	ug/Kg	350	PQL	88	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Pentachlorophenol	87-86-5	6/6/2017	D	16:47:00	2300	ug/Kg	2300	PQL	530	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Phenanthrene	85-01-8	6/6/2017	D	16:47:00	12000	ug/Kg	350	PQL	70	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Phenol	108-95-2	6/6/2017	D	16:47:00	880	ug/Kg	880	PQL	220	MDL	U	Dry		SW8270D		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Fluoranthene	206-44-0	6/7/2017	D	15:45:00	99000	ug/Kg	1500	PQL	290	MDL		Dry		SW8270D	DIL1	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Pyrene	129-00-0	6/7/2017	D	15:45:00	95000	ug/Kg	3500	PQL	880	MDL		Dry		SW8270D	DIL1	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Gasoline	86290-81-5	6/8/2017	D	18:50:00	220	mg/Kg	9.4	PQL	4.9	MDL		Dry		NWTPH-GX		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1016	12674-11-2	6/4/2017	D	17:53:00	0.03	mg/Kg	0.03	PQL	0.0088	MDL	U	Dry		SW8082A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1221	11104-28-2	6/4/2017	D	17:53:00	0.013	mg/Kg	0.013	PQL	0.005	MDL	U	Dry		SW8082A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1232	11141-16-5	6/4/2017	D	17:53:00	0.013	mg/Kg	0.013	PQL	0.0059	MDL	U	Dry		SW8082A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1242	53469-21-9	6/4/2017	D	17:53:00	0.012	mg/Kg	0.012	PQL	0.0019	MDL	U	Dry		SW8082A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1248	12672-29-6	6/4/2017	D	17:53:00	0.013	mg/Kg	0.013	PQL	0.0035	MDL	U	Dry		SW8082A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1254	11097-69-1	6/4/2017	D	17:53:00	0.012	mg/Kg	0.012	PQL	0.0018	MDL	U	Dry		SW8082A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1260	11096-82-5	6/4/2017	D	17:53:00	0.012	mg/Kg	0.012	PQL	0.0023	MDL	U	Dry		SW8082A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	#2 Diesel	68476-34-6	6/9/2017	D	23:11:00	2200	mg/Kg	60	PQL	15	MDL		Dry		NWTPH-DX		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Motor Oil		6/9/2017	D	23:11:00	3800	mg/Kg	60	PQL	11	MDL		Dry		NWTPH-DX		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Antimony	7440-36-0	5/31/2017	D	14:34:00	77	mg/Kg	0.16	PQL	0.056	MDL		Dry	Total	SW6020A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Arsenic	7440-38-2	5/31/2017	D	14:34:00	42	mg/Kg	0.41	PQL	0.082	MDL		Dry	Total	SW6020A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Beryllium	7440-41-7	5/31/2017	D	14:34:00	0.21	mg/Kg	0.16	PQL	0.012	MDL		Dry	Total	SW6020A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Cadmium	7440-43-9	5/31/2017	D	14:34:00	22	mg/Kg	0.33	PQL	0.063	MDL		Dry	Total	SW6020A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Chromium	7440-47-3	5/31/2017	D	14:34:00	110	mg/Kg	0.41	PQL	0.052	MDL		Dry	Total	SW6020A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Copper	7440-50-8	5/31/2017	D	14:34:00	2400	mg/Kg	0.82	PQL	0.18	MDL		Dry	Total	SW6020A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Lead	7439-92-1	5/31/2017	D	15:04:00	5100	mg/Kg	41	PQL	3.9	MDL		Dry	Total	SW6020A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Nickel	7440-02-0	5/31/2017	D	14:34:00	130	mg/Kg	0.41	PQL	0.16	MDL		Dry	Total	SW6020A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Selenium	7782-49-2	5/31/2017	D	14:34:00	0.82	mg/Kg	0.82	PQL	0.18	MDL	U	Dry	Total	SW6020A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Silver	7440-22-4	5/31/2017	D	14:34:00	2.2	mg/Kg	0.16	PQL	0.016	MDL		Dry	Total	SW6020A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Thallium	7440-28-0	5/31/2017	D	14:34:00	0.33	mg/Kg	0.33	PQL	0.045	MDL	U	Dry	Total	SW6020A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Zinc	7440-66-6	5/31/2017	D	15:04:00	4800	mg/Kg	410	PQL	130	MDL		Dry	Total	SW6020A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-9	Sample	Consultant	5/25/2017	14:10:00	7901-SB-03-9	N	N	Solid/Sediment	Source - Other	Mercury	7439-97-6	5/30/2017	D	15:39:43	0.34	mg/Kg	0.032	PQL	0.0095	MDL		Dry	Total	SW7471A		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	1,2,4-Trichlorobenzene	120-82-1	6/6/2017	D	17:13:00	70	ug/Kg	70	PQL	8.4	MDL	U	Dry		SW8270D		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	1,2-Dichlorobenzene	95-50-1	6/6/2017	D	17:13:00	70	ug/Kg	70	PQL	17	MDL	U	Dry		SW8270D		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	1,3-Dichlorobenzene	541-73-1	6/6/2017	D	17:13:00	70	ug/Kg	70	PQL	6.8	MDL	U	Dry		SW8270D		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	1,4-Dichlorobenzene	106-46-7	6/6/2017	D	17:13:00	70	ug/Kg	70	PQL	12	MDL	U	Dry		SW8270D		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	1-Methylnaphthalene	90-12-0	6/6/2017	D	17:13:00	42	ug/Kg	42	PQL	7	MDL	U	Dry		SW8270D		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	2,4,5-Trichlorophenol	95-95-4	6/6/2017	D	17:13:00	280	ug/Kg	280	PQL	63	MDL	U	Dry		SW8270D		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	2,4,6-Trichlorophenol	88-06-2	6/6/2017	D	17:13:00	210	ug/Kg	210	PQL	51	MDL	U	Dry		SW8270D		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	2,4-Dichlorophenol	120-83-2	6/6/2017	D	17:13:00	140	ug/Kg	140	PQL	21	MDL	U	Dry		SW8270D		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	2,4-Dimethylphenol	105-67-9	6/6/2017	D	17:13:00	140	ug/Kg	140	PQL	21	MDL	U	Dry		SW8270D		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	2,4-Dinitrophenol	51-28-5	6/6/2017	D	17:13:00	1400	ug/Kg	1400	PQL	280	MDL	U	Dry		SW8270D		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	2,4-Dinitrotoluene	121-14-2	6/6/2017	D	17:13:00	280	ug/Kg	280	PQL	60	MDL	U	Dry		SW8270D		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	2,6-Dinitrotoluene	606-20-2	6/6/2017	D	17:13:00	210	ug/Kg	210	PQL	48	MDL	U	Dry		SW8270D		TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	PCN-002	91-58-7	6/6/2017	D	17:13:00	35	ug/Kg	35	PQL	7	MDL	U	Dry		SW8270D		TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	2-Chlorophenol	95-57-8	6/6/2017	D	17:13:00	280 ug/Kg	280	PQL	59	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	2-Methylnaphthalene	91-57-6	6/6/2017	D	17:13:00	70 ug/Kg	70	PQL	12	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	o-Cresol	95-48-7	6/6/2017	D	17:13:00	210 ug/Kg	210	PQL	52	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	2-Nitroaniline	88-74-4	6/6/2017	D	17:13:00	140 ug/Kg	140	PQL	21	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	2-Nitrophenol	88-75-5	6/6/2017	D	17:13:00	280 ug/Kg	280	PQL	65	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	m,p-Cresol (2:1 ratio)	15831-10-4	6/6/2017	D	17:13:00	280 ug/Kg	280	PQL	21	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	3,3'-Dichlorobenzidine	91-94-1	6/6/2017	D	17:13:00	560 ug/Kg	560	PQL	140	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	m-Nitroaniline	99-09-2	6/6/2017	D	17:13:00	280 ug/Kg	280	PQL	56	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	4,6-Dinitro-2-Methylphenol	534-52-1	6/6/2017	D	17:13:00	1400 ug/Kg	1400	PQL	140	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	PBDE-003	101-55-3	6/6/2017	D	17:13:00	280 ug/Kg	280	PQL	58	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	4-Chloro-3-Methylphenol	59-50-7	6/6/2017	D	17:13:00	210 ug/Kg	210	PQL	46	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	4-Chloroaniline	106-47-8	6/6/2017	D	17:13:00	2100 ug/Kg	2100	PQL	560	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	4-Chlorophenyl-Phenylether	7005-72-3	6/6/2017	D	17:13:00	280 ug/Kg	280	PQL	58	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	4-Nitroaniline	100-01-6	6/6/2017	D	17:13:00	140 ug/Kg	140	PQL	28	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	4-Nitrophenol	100-02-7	6/6/2017	D	17:13:00	2100 ug/Kg	2100	PQL	520	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Acenaphthene	83-32-9	6/6/2017	D	17:13:00	35 ug/Kg	35	PQL	7	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Acenaphthylene	208-96-8	6/6/2017	D	17:13:00	35 ug/Kg	35	PQL	7	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Anthracene	120-12-7	6/6/2017	D	17:13:00	35 ug/Kg	35	PQL	7	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Benz[a]anthracene	56-55-3	6/6/2017	D	17:13:00	35 ug/Kg	35	PQL	7	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Benzo(a)pyrene	50-32-8	6/6/2017	D	17:13:00	84 ug/Kg	84	PQL	18	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Benzo(b)fluoranthene	205-99-2	6/6/2017	D	17:13:00	35 ug/Kg	35	PQL	7	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Benzo(ghi)perylene	191-24-2	6/6/2017	D	17:13:00	84 ug/Kg	84	PQL	21	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Benzo(k)fluoranthene	207-08-9	6/6/2017	D	17:13:00	84 ug/Kg	84	PQL	20	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Benzoic Acid	65-85-0	6/6/2017	D	17:13:00	3500 ug/Kg	3500	PQL	1500	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Benzyl Alcohol	100-51-6	6/6/2017	D	17:13:00	5600 ug/Kg	5600	PQL	52	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethoxy)Methane	111-91-1	6/6/2017	D	17:13:00	280 ug/Kg	280	PQL	58	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethyl)Ether	111-44-4	6/6/2017	D	17:13:00	280 ug/Kg	280	PQL	56	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Di(2-ethylhexyl) phthalate	117-81-7	6/6/2017	D	17:13:00	840 ug/Kg	840	PQL	190	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Bis(2-chloro-1-methylethyl) ether	108-60-1	6/6/2017	D	17:13:00	350 ug/Kg	350	PQL	52	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Butyl benzyl phthalate	85-68-7	6/6/2017	D	17:13:00	280 ug/Kg	280	PQL	70	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Carbazole	86-74-8	6/6/2017	D	17:13:00	210 ug/Kg	210	PQL	44	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Chrysene	218-01-9	6/6/2017	D	17:13:00	84 ug/Kg	84	PQL	18	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Dibenzo(a,h)anthracene	53-70-3	6/6/2017	D	17:13:00	70 ug/Kg	70	PQL	17	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Dibenzofuran	132-64-9	6/6/2017	D	17:13:00	210 ug/Kg	210	PQL	51	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Diethyl phthalate	84-66-2	6/6/2017	D	17:13:00	770 ug/Kg	770	PQL	190	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Dimethyl phthalate	131-11-3	6/6/2017	D	17:13:00	210 ug/Kg	210	PQL	46	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Dibutyl phthalate	84-74-2	6/6/2017	D	17:13:00	700 ug/Kg	700	PQL	80	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Di-n-octyl phthalate	117-84-0	6/6/2017	D	17:13:00	1400 ug/Kg	1400	PQL	310	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Fluoranthene	206-44-0	6/6/2017	D	17:13:00	35 ug/Kg	35	PQL	7	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Fluorene	86-73-7	6/6/2017	D	17:13:00	35	ug/Kg	35	PQL	7	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Hexachlorobenzene	118-74-1	6/6/2017	D	17:13:00	70	ug/Kg	70	PQL	7	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Hexachlorobutadiene	87-68-3	6/6/2017	D	17:13:00	70	ug/Kg	70	PQL	21	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Hexachlorocyclopentadiene	77-47-4	6/6/2017	D	17:13:00	140	ug/Kg	140	PQL	37	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Hexachloroethane	67-72-1	6/6/2017	D	17:13:00	210	ug/Kg	210	PQL	53	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Indeno(1,2,3-cd)pyrene	193-39-5	6/6/2017	D	17:13:00	56	ug/Kg	56	PQL	7	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Isophorone	78-59-1	6/6/2017	D	17:13:00	210	ug/Kg	210	PQL	52	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Naphthalene	91-20-3	6/6/2017	D	17:13:00	35	ug/Kg	35	PQL	7	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Nitrobenzene	98-95-3	6/6/2017	D	17:13:00	280	ug/Kg	280	PQL	59	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	N-Nitrosodi-n-propylamine	621-64-7	6/6/2017	D	17:13:00	280	ug/Kg	280	PQL	62	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	N-Nitrosodiphenylamine	86-30-6	6/6/2017	D	17:13:00	84	ug/Kg	84	PQL	21	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Pentachlorophenol	87-86-5	6/6/2017	D	17:13:00	560	ug/Kg	560	PQL	130	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Phenanthrene	85-01-8	6/6/2017	D	17:13:00	84	ug/Kg	84	PQL	17	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Phenol	108-95-2	6/6/2017	D	17:13:00	210	ug/Kg	210	PQL	53	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Pyrene	129-00-0	6/6/2017	D	17:13:00	84	ug/Kg	84	PQL	21	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Gasoline	86290-81-5	6/8/2017	D	19:21:00	12	mg/Kg	12	PQL	6.1	MDL	U	Dry		NWTPH-GX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1016	12674-11-2	6/4/2017	D	18:09:00	0.033	mg/Kg	0.033	PQL	0.0097	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1221	11104-28-2	6/4/2017	D	18:09:00	0.014	mg/Kg	0.014	PQL	0.0055	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1232	11141-16-5	6/4/2017	D	18:09:00	0.014	mg/Kg	0.014	PQL	0.0064	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1242	53469-21-9	6/4/2017	D	18:09:00	0.013	mg/Kg	0.013	PQL	0.0021	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1248	12672-29-6	6/4/2017	D	18:09:00	0.014	mg/Kg	0.014	PQL	0.0038	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1254	11097-69-1	6/4/2017	D	18:09:00	0.013	mg/Kg	0.013	PQL	0.002	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1260	11096-82-5	6/4/2017	D	18:09:00	0.013	mg/Kg	0.013	PQL	0.0025	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	#2 Diesel	68476-34-6	6/9/2017	D	23:33:00	67	mg/Kg	67	PQL	16	MDL	U	Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Motor Oil		6/9/2017	D	23:33:00	67	mg/Kg	67	PQL	12	MDL	U	Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Antimony	7440-36-0	5/31/2017	D	14:39:00	0.85	mg/Kg	0.17	PQL	0.059	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Arsenic	7440-38-2	5/31/2017	D	14:39:00	6	mg/Kg	0.43	PQL	0.086	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Beryllium	7440-41-7	5/31/2017	D	14:39:00	0.33	mg/Kg	0.17	PQL	0.013	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Cadmium	7440-43-9	5/31/2017	D	14:39:00	0.37	mg/Kg	0.34	PQL	0.066	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Chromium	7440-47-3	5/31/2017	D	14:39:00	17	mg/Kg	0.43	PQL	0.054	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Copper	7440-50-8	5/31/2017	D	14:39:00	35	mg/Kg	0.86	PQL	0.19	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Lead	7439-92-1	5/31/2017	D	14:39:00	37	mg/Kg	0.43	PQL	0.041	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Nickel	7440-02-0	5/31/2017	D	14:39:00	14	mg/Kg	0.43	PQL	0.17	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Selenium	7782-49-2	5/31/2017	D	14:39:00	0.86	mg/Kg	0.86	PQL	0.19	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Silver	7440-22-4	5/31/2017	D	14:39:00	0.17	mg/Kg	0.17	PQL	0.017	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Thallium	7440-28-0	5/31/2017	D	14:39:00	0.34	mg/Kg	0.34	PQL	0.047	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Zinc	7440-66-6	5/31/2017	D	14:39:00	180	mg/Kg	4.3	PQL	1.4	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-03-17	Sample	Consultant	5/25/2017	14:15:00	7901-SB-03-17	N	N	Solid/Sediment	Source - Other	Mercury	7439-97-6	5/30/2017	D	15:41:58	0.048	mg/Kg	0.04	PQL	0.012	MDL		Dry	Total	SW7471A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	1,2,4-Trichlorobenzene	120-82-1	6/6/2017	D	17:39:00	62	ug/Kg	62	PQL	7.4	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	1,2-Dichlorobenzene	95-50-1	6/6/2017	D	17:39:00	62	ug/Kg	62	PQL	15	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	1,3-Dichlorobenzene	541-73-1	6/6/2017	D	17:39:00	62	ug/Kg	62	PQL	6	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	1,4-Dichlorobenzene	106-46-7	6/6/2017	D	17:39:00	62	ug/Kg	62	PQL	10	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	1-Methylnaphthalene	90-12-0	6/6/2017	D	17:39:00	140	ug/Kg	37	PQL	6.2	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	2,4,5-Trichlorophenol	95-95-4	6/6/2017	D	17:39:00	250	ug/Kg	250	PQL	56	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	2,4,6-Trichlorophenol	88-06-2	6/6/2017	D	17:39:00	190	ug/Kg	190	PQL	45	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	2,4-Dichlorophenol	120-83-2	6/6/2017	D	17:39:00	120	ug/Kg	120	PQL	19	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	2,4-Dimethylphenol	105-67-9	6/6/2017	D	17:39:00	120	ug/Kg	120	PQL	19	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	2,4-Dinitrophenol	51-28-5	6/6/2017	D	17:39:00	1200	ug/Kg	1200	PQL	250	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	2,4-Dinitrotoluene	121-14-2	6/6/2017	D	17:39:00	250	ug/Kg	250	PQL	53	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	2,6-Dinitrotoluene	606-20-2	6/6/2017	D	17:39:00	190	ug/Kg	190	PQL	42	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	PCN-002	91-58-7	6/6/2017	D	17:39:00	31	ug/Kg	31	PQL	6.2	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	2-Chlorophenol	95-57-8	6/6/2017	D	17:39:00	250	ug/Kg	250	PQL	52	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	2-Methylnaphthalene	91-57-6	6/6/2017	D	17:39:00	180	ug/Kg	62	PQL	11	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	o-Cresol	95-48-7	6/6/2017	D	17:39:00	190	ug/Kg	190	PQL	46	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	2-Nitroaniline	88-74-4	6/6/2017	D	17:39:00	120	ug/Kg	120	PQL	19	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	2-Nitrophenol	88-75-5	6/6/2017	D	17:39:00	250	ug/Kg	250	PQL	57	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	m,p-Cresol (2:1 ratio)	15831-10-4	6/6/2017	D	17:39:00	250	ug/Kg	250	PQL	19	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	3,3'-Dichlorobenzidine	91-94-1	6/6/2017	D	17:39:00	500	ug/Kg	500	PQL	120	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	m-Nitroaniline	99-09-2	6/6/2017	D	17:39:00	250	ug/Kg	250	PQL	50	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	4,6-Dinitro-2-Methylphenol	534-52-1	6/6/2017	D	17:39:00	1200	ug/Kg	1200	PQL	120	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	PBDE-003	101-55-3	6/6/2017	D	17:39:00	250	ug/Kg	250	PQL	51	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	4-Chloro-3-Methylphenol	59-50-7	6/6/2017	D	17:39:00	190	ug/Kg	190	PQL	41	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	4-Chloroaniline	106-47-8	6/6/2017	D	17:39:00	1900	ug/Kg	1900	PQL	500	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	4-Chlorophenyl-Phenylether	7005-72-3	6/6/2017	D	17:39:00	250	ug/Kg	250	PQL	51	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	4-Nitroaniline	100-01-6	6/6/2017	D	17:39:00	120	ug/Kg	120	PQL	25	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	4-Nitrophenol	100-02-7	6/6/2017	D	17:39:00	1900	ug/Kg	1900	PQL	460	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Acenaphthene	83-32-9	6/6/2017	D	17:39:00	330	ug/Kg	31	PQL	6.2	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Acenaphthylene	208-96-8	6/6/2017	D	17:39:00	34	ug/Kg	31	PQL	6.2	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Anthracene	120-12-7	6/6/2017	D	17:39:00	210	ug/Kg	31	PQL	6.2	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Benz[a]anthracene	56-55-3	6/6/2017	D	17:39:00	540	ug/Kg	31	PQL	6.2	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Benzo(a)pyrene	50-32-8	6/6/2017	D	17:39:00	520	ug/Kg	74	PQL	16	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Benzo(b)fluoranthene	205-99-2	6/6/2017	D	17:39:00	710	ug/Kg	31	PQL	6.2	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Benzo(ghi)perylene	191-24-2	6/6/2017	D	17:39:00	230	ug/Kg	74	PQL	19	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Benzo(k)fluoranthene	207-08-9	6/6/2017	D	17:39:00	180	ug/Kg	74	PQL	17	MDL		Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Benzoic Acid	65-85-0	6/6/2017	D	17:39:00	3100	ug/Kg	3100	PQL	1300	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Benzyl Alcohol	100-51-6	6/6/2017	D	17:39:00	5000	ug/Kg	5000	PQL	46	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethoxy)Methane	111-91-1	6/6/2017	D	17:39:00	250	ug/Kg	250	PQL	51	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethyl)Ether	111-44-4	6/6/2017	D	17:39:00	250	ug/Kg	250	PQL	50	MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Di(2-ethylhexyl) phthalate	117-81-7	6/6/2017	D	17:39:00	740	ug/Kg	740	PQL	170	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Bis(2-chloro-1-methylethyl) ether	108-60-1	6/6/2017	D	17:39:00	310	ug/Kg	310	PQL	46	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Butyl benzyl phthalate	85-68-7	6/6/2017	D	17:39:00	250	ug/Kg	250	PQL	62	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Carbazole	86-74-8	6/6/2017	D	17:39:00	190	ug/Kg	190	PQL	38	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Chrysene	218-01-9	6/6/2017	D	17:39:00	760	ug/Kg	74	PQL	16	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Dibenzo(a,h)anthracene	53-70-3	6/6/2017	D	17:39:00	110	ug/Kg	62	PQL	15	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Dibenzofuran	132-64-9	6/6/2017	D	17:39:00	190	ug/Kg	190	PQL	45	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Diethyl phthalate	84-66-2	6/6/2017	D	17:39:00	680	ug/Kg	680	PQL	160	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Dimethyl phthalate	131-11-3	6/6/2017	D	17:39:00	190	ug/Kg	190	PQL	41	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Dibutyl phthalate	84-74-2	6/6/2017	D	17:39:00	620	ug/Kg	620	PQL	71	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Di-n-octyl phthalate	117-84-0	6/6/2017	D	17:39:00	1200	ug/Kg	1200	PQL	280	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Fluoranthene	206-44-0	6/6/2017	D	17:39:00	1200	ug/Kg	31	PQL	6.2	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Fluorene	86-73-7	6/6/2017	D	17:39:00	400	ug/Kg	31	PQL	6.2	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Hexachlorobenzene	118-74-1	6/6/2017	D	17:39:00	62	ug/Kg	62	PQL	6.2	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Hexachlorobutadiene	87-68-3	6/6/2017	D	17:39:00	62	ug/Kg	62	PQL	19	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Hexachlorocyclopentadiene	77-47-4	6/6/2017	D	17:39:00	120	ug/Kg	120	PQL	32	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Hexachloroethane	67-72-1	6/6/2017	D	17:39:00	190	ug/Kg	190	PQL	47	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Indeno(1,2,3-cd)pyrene	193-39-5	6/6/2017	D	17:39:00	320	ug/Kg	50	PQL	6.2	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Isophorone	78-59-1	6/6/2017	D	17:39:00	190	ug/Kg	190	PQL	46	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Naphthalene	91-20-3	6/6/2017	D	17:39:00	210	ug/Kg	31	PQL	6.2	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Nitrobenzene	98-95-3	6/6/2017	D	17:39:00	250	ug/Kg	250	PQL	52	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	N-Nitrosodi-n-propylamine	621-64-7	6/6/2017	D	17:39:00	250	ug/Kg	250	PQL	55	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	N-Nitrosodiphenylamine	86-30-6	6/6/2017	D	17:39:00	74	ug/Kg	74	PQL	19	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Pentachlorophenol	87-86-5	6/6/2017	D	17:39:00	500	ug/Kg	500	PQL	110	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Phenanthrene	85-01-8	6/6/2017	D	17:39:00	1600	ug/Kg	74	PQL	15	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Phenol	108-95-2	6/6/2017	D	17:39:00	190	ug/Kg	190	PQL	47	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Pyrene	129-00-0	6/6/2017	D	17:39:00	1400	ug/Kg	74	PQL	19	MDL		Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Gasoline	86290-81-5	6/8/2017	D	19:51:00	31	mg/Kg	10	PQL	5.4	MDL		Dry		NWTPH-GX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1016	12674-11-2	6/4/2017	D	18:25:00	0.032	mg/Kg	0.032	PQL	0.0096	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1221	11104-28-2	6/4/2017	D	18:25:00	0.014	mg/Kg	0.014	PQL	0.0054	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1232	11141-16-5	6/4/2017	D	18:25:00	0.014	mg/Kg	0.014	PQL	0.0063	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1242	53469-21-9	6/4/2017	D	18:25:00	0.013	mg/Kg	0.013	PQL	0.0021	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1248	12672-29-6	6/4/2017	D	18:25:00	0.014	mg/Kg	0.014	PQL	0.0037	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1254	11097-69-1	6/4/2017	D	18:25:00	0.013	mg/Kg	0.013	PQL	0.0019	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1260	11096-82-5	6/4/2017	D	18:25:00	0.013	mg/Kg	0.013	PQL	0.0025	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	#2 Diesel	68476-34-6	6/9/2017	D	23:55:00	1300	mg/Kg	63	PQL	15	MDL		Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Motor Oil		6/9/2017	D	23:55:00	3000	mg/Kg	63	PQL	11	MDL		Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Antimony	7440-36-0	5/31/2017	D	14:43:00	49	mg/Kg	0.2	PQL	0.07	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Arsenic	7440-38-2	5/31/2017	D	14:43:00	49	mg/Kg	0.51	PQL	0.1	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA

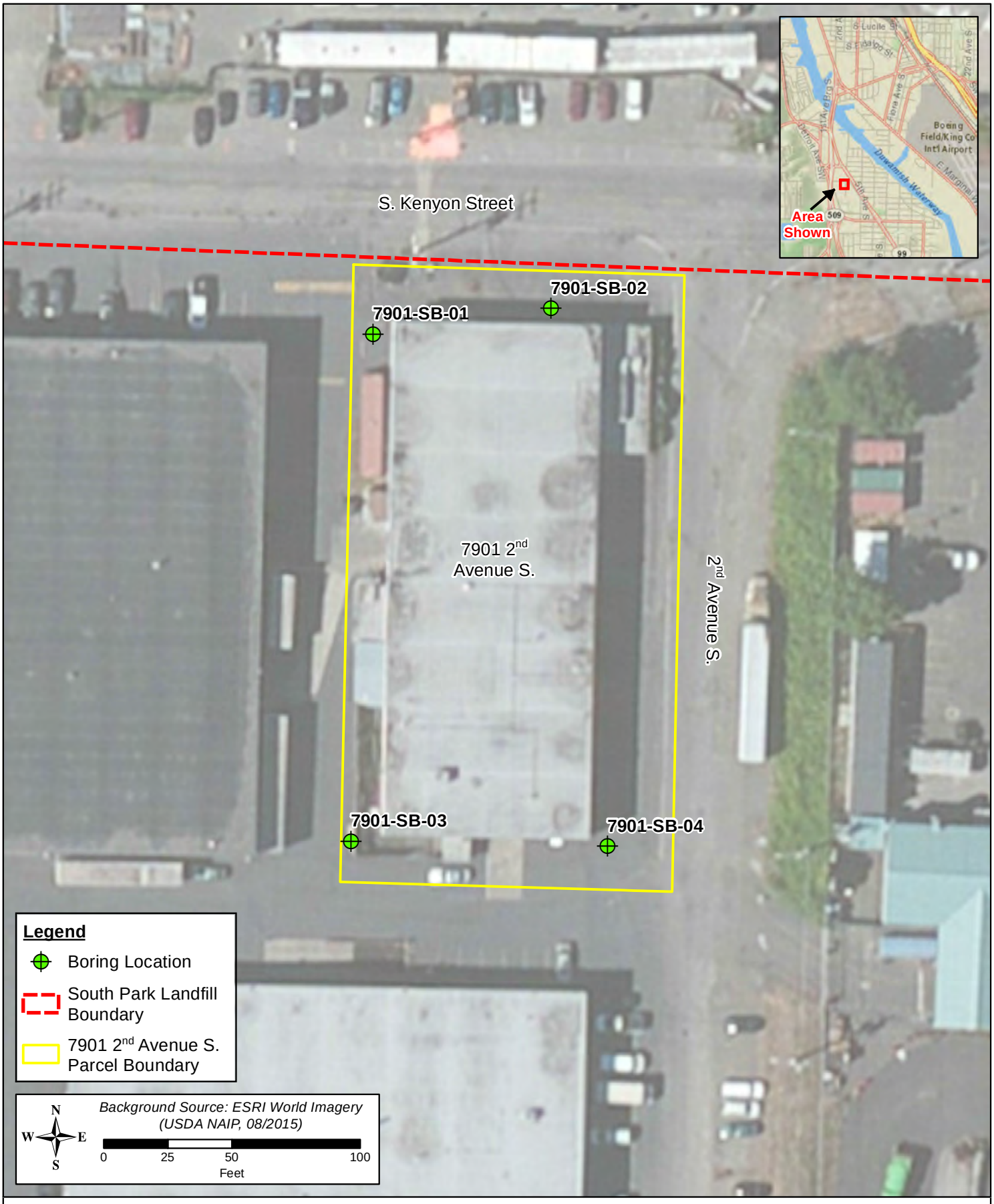
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Beryllium	7440-41-7	5/31/2017	D	14:43:00	0.74	mg/Kg	0.2	PQL	0.015	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Cadmium	7440-43-9	5/31/2017	D	14:43:00	17	mg/Kg	0.41	PQL	0.079	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Chromium	7440-47-3	5/31/2017	D	14:43:00	40	mg/Kg	0.51	PQL	0.064	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Copper	7440-50-8	5/31/2017	D	14:43:00	570	mg/Kg	1	PQL	0.22	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Lead	7439-92-1	5/31/2017	D	14:59:00	22000	mg/Kg	51	PQL	4.9	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Nickel	7440-02-0	5/31/2017	D	14:43:00	63	mg/Kg	0.51	PQL	0.2	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Selenium	7782-49-2	5/31/2017	D	14:43:00	1.4	mg/Kg	1	PQL	0.22	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Silver	7440-22-4	5/31/2017	D	14:43:00	1	mg/Kg	0.2	PQL	0.02	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Thallium	7440-28-0	5/31/2017	D	14:43:00	0.41	mg/Kg	0.41	PQL	0.056	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Zinc	7440-66-6	5/31/2017	D	14:59:00	8600	mg/Kg	510	PQL	160	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-9	Sample	Consultant	5/25/2017	12:05:00	7901-SB-04-9	N	N	Solid/Sediment	Source - Other	Mercury	7439-97-6	5/30/2017	D	15:44:16	0.66	mg/Kg	0.033	PQL	0.0099	MDL		Dry	Total	SW7471A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	1,2,4-Trichlorobenzene	120-82-1	6/6/2017	D	18:04:00	2700	ug/Kg	2700	PQL	330	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	1,2-Dichlorobenzene	95-50-1	6/6/2017	D	18:04:00	2700	ug/Kg	2700	PQL	650	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	1,3-Dichlorobenzene	541-73-1	6/6/2017	D	18:04:00	2700	ug/Kg	2700	PQL	260	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	1,4-Dichlorobenzene	106-46-7	6/6/2017	D	18:04:00	2700	ug/Kg	2700	PQL	450	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	1-Methylnaphthalene	90-12-0	6/6/2017	D	18:04:00	1600	ug/Kg	1600	PQL	270	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	2,4,5-Trichlorophenol	95-95-4	6/6/2017	D	18:04:00	11000	ug/Kg	11000	PQL	2500	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	2,4,6-Trichlorophenol	88-06-2	6/6/2017	D	18:04:00	8200	ug/Kg	8200	PQL	2000	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	2,4-Dichlorophenol	120-83-2	6/6/2017	D	18:04:00	5500	ug/Kg	5500	PQL	820	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	2,4-Dimethylphenol	105-67-9	6/6/2017	D	18:04:00	5500	ug/Kg	5500	PQL	820	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	2,4-Dinitrophenol	51-28-5	6/6/2017	D	18:04:00	55000	ug/Kg	55000	PQL	11000	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	2,4-Dinitrotoluene	121-14-2	6/6/2017	D	18:04:00	11000	ug/Kg	11000	PQL	2300	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	2,6-Dinitrotoluene	606-20-2	6/6/2017	D	18:04:00	8200	ug/Kg	8200	PQL	1900	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	PCN-002	91-58-7	6/6/2017	D	18:04:00	1400	ug/Kg	1400	PQL	270	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	2-Chlorophenol	95-57-8	6/6/2017	D	18:04:00	11000	ug/Kg	11000	PQL	2300	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	2-Methylnaphthalene	91-57-6	6/6/2017	D	18:04:00	2700	ug/Kg	2700	PQL	480	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	o-Cresol	95-48-7	6/6/2017	D	18:04:00	8200	ug/Kg	8200	PQL	2000	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	2-Nitroaniline	88-74-4	6/6/2017	D	18:04:00	5500	ug/Kg	5500	PQL	820	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	2-Nitrophenol	88-75-5	6/6/2017	D	18:04:00	11000	ug/Kg	11000	PQL	2500	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	m,p-Cresol (2:1 ratio)	15831-10-4	6/6/2017	D	18:04:00	11000	ug/Kg	11000	PQL	820	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	3,3'-Dichlorobenzidine	91-94-1	6/6/2017	D	18:04:00	22000	ug/Kg	22000	PQL	5500	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	m-Nitroaniline	99-09-2	6/6/2017	D	18:04:00	11000	ug/Kg	11000	PQL	2200	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	4,6-Dinitro-2-Methylphenol	534-52-1	6/6/2017	D	18:04:00	55000	ug/Kg	55000	PQL	5500	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	PBDE-003	101-55-3	6/6/2017	D	18:04:00	11000	ug/Kg	11000	PQL	2200	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	4-Chloro-3-Methylphenol	59-50-7	6/6/2017	D	18:04:00	8200	ug/Kg	8200	PQL	1800	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	4-Chloroaniline	106-47-8	6/6/2017	D	18:04:00	82000	ug/Kg	82000	PQL	22000	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	4-Chlorophenyl-Phenylether	7005-72-3	6/6/2017	D	18:04:00	11000	ug/Kg	11000	PQL	2200	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	4-Nitroaniline	100-01-6	6/6/2017	D	18:04:00	5500	ug/Kg	5500	PQL	1100	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	4-Nitrophenol	100-02-7	6/6/2017	D	18:04:00	82000	ug/Kg	82000	PQL	20000	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Acenaphthene	83-32-9	6/6/2017	D	18:04:00	1400 ug/Kg	1400 PQL	270 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Acenaphthylene	208-96-8	6/6/2017	D	18:04:00	1400 ug/Kg	1400 PQL	270 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Anthracene	120-12-7	6/6/2017	D	18:04:00	1400 ug/Kg	1400 PQL	270 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Benz[a]anthracene	56-55-3	6/6/2017	D	18:04:00	1400 ug/Kg	1400 PQL	270 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Benzo(a)pyrene	50-32-8	6/6/2017	D	18:04:00	3300 ug/Kg	3300 PQL	710 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Benzo(b)fluoranthene	205-99-2	6/6/2017	D	18:04:00	1400 ug/Kg	1400 PQL	270 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Benzo(ghi)perylene	191-24-2	6/6/2017	D	18:04:00	3300 ug/Kg	3300 PQL	820 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Benzo(k)fluoranthene	207-08-9	6/6/2017	D	18:04:00	3300 ug/Kg	3300 PQL	760 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Benzoic Acid	65-85-0	6/6/2017	D	18:04:00	140000 ug/Kg	140000 PQL	58000 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Benzyl Alcohol	100-51-6	6/6/2017	D	18:04:00	220000 ug/Kg	220000 PQL	2000 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethoxy)Methane	111-91-1	6/6/2017	D	18:04:00	11000 ug/Kg	11000 PQL	2200 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethyl)Ether	111-44-4	6/6/2017	D	18:04:00	11000 ug/Kg	11000 PQL	2200 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Di(2-ethylhexyl) phthalate	117-81-7	6/6/2017	D	18:04:00	33000 ug/Kg	33000 PQL	7400 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Bis(2-chloro-1-methylethyl) ether	108-60-1	6/6/2017	D	18:04:00	14000 ug/Kg	14000 PQL	2000 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Butyl benzyl phthalate	85-68-7	6/6/2017	D	18:04:00	11000 ug/Kg	11000 PQL	2700 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Carbazole	86-74-8	6/6/2017	D	18:04:00	8200 ug/Kg	8200 PQL	1700 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Chrysene	218-01-9	6/6/2017	D	18:04:00	3300 ug/Kg	3300 PQL	710 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Dibenzo(a,h)anthracene	53-70-3	6/6/2017	D	18:04:00	2700 ug/Kg	2700 PQL	650 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Dibenzofuran	132-64-9	6/6/2017	D	18:04:00	8200 ug/Kg	8200 PQL	2000 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Diethyl phthalate	84-66-2	6/6/2017	D	18:04:00	30000 ug/Kg	30000 PQL	7200 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Dimethyl phthalate	131-11-3	6/6/2017	D	18:04:00	8200 ug/Kg	8200 PQL	1800 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Dibutyl phthalate	84-74-2	6/6/2017	D	18:04:00	27000 ug/Kg	27000 PQL	3100 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Di-n-octyl phthalate	117-84-0	6/6/2017	D	18:04:00	55000 ug/Kg	55000 PQL	12000 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Fluoranthene	206-44-0	6/6/2017	D	18:04:00	1400 ug/Kg	1400 PQL	270 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Fluorene	86-73-7	6/6/2017	D	18:04:00	1400 ug/Kg	1400 PQL	270 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Hexachlorobenzene	118-74-1	6/6/2017	D	18:04:00	2700 ug/Kg	2700 PQL	270 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Hexachlorobutadiene	87-68-3	6/6/2017	D	18:04:00	2700 ug/Kg	2700 PQL	820 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Hexachlorocyclopentadiene	77-47-4	6/6/2017	D	18:04:00	5500 ug/Kg	5500 PQL	1400 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Hexachloroethane	67-72-1	6/6/2017	D	18:04:00	8200 ug/Kg	8200 PQL	2100 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Indeno(1,2,3-cd)pyrene	193-39-5	6/6/2017	D	18:04:00	2200 ug/Kg	2200 PQL	270 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Isophorone	78-59-1	6/6/2017	D	18:04:00	8200 ug/Kg	8200 PQL	2000 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Naphthalene	91-20-3	6/6/2017	D	18:04:00	1400 ug/Kg	1400 PQL	270 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Nitrobenzene	98-95-3	6/6/2017	D	18:04:00	11000 ug/Kg	11000 PQL	2300 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	N-Nitrosodi-n-propylamine	621-64-7	6/6/2017	D	18:04:00	11000 ug/Kg	11000 PQL	2400 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	N-Nitrosodiphenylamine	86-30-6	6/6/2017	D	18:04:00	3300 ug/Kg	3300 PQL	820 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Pentachlorophenol	87-86-5	6/6/2017	D	18:04:00	22000 ug/Kg	22000 PQL	5000 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Phenanthrene	85-01-8	6/6/2017	D	18:04:00	3300 ug/Kg	3300 PQL	650 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Phenol	108-95-2	6/6/2017	D	18:04:00	8200 ug/Kg	8200 PQL	2100 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Pyrene	129-00-0	6/6/2017	D	18:04:00	3300 ug/Kg	3300 PQL	820 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Gasoline	86290-81-5	6/8/2017	D	20:22:00	43	mg/Kg	10	PQL	5.3	MDL		Dry		NWTPH-GX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1016	12674-11-2	6/4/2017	D	18:42:00	0.028	mg/Kg	0.028	PQL	0.0084	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1221	11104-28-2	6/4/2017	D	18:42:00	0.012	mg/Kg	0.012	PQL	0.0048	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1232	11141-16-5	6/4/2017	D	18:42:00	0.012	mg/Kg	0.012	PQL	0.0056	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1242	53469-21-9	6/4/2017	D	18:42:00	0.011	mg/Kg	0.011	PQL	0.0018	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1248	12672-29-6	6/4/2017	D	18:42:00	0.012	mg/Kg	0.012	PQL	0.0033	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1254	11097-69-1	6/4/2017	D	18:42:00	0.011	mg/Kg	0.011	PQL	0.0017	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1260	11096-82-5	6/4/2017	D	18:42:00	0.011	mg/Kg	0.011	PQL	0.0022	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	#2 Diesel	68476-34-6	6/10/2017	D	0:17:00	1500	mg/Kg	300	PQL	73	MDL		Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Motor Oil		6/10/2017	D	0:17:00	22000	mg/Kg	300	PQL	54	MDL		Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Antimony	7440-36-0	5/31/2017	D	14:47:00	0.79	mg/Kg	0.21	PQL	0.07	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Arsenic	7440-38-2	5/31/2017	D	14:47:00	1.8	mg/Kg	0.51	PQL	0.1	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Beryllium	7440-41-7	5/31/2017	D	14:47:00	0.21	mg/Kg	0.21	PQL	0.015	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Cadmium	7440-43-9	5/31/2017	D	14:47:00	1.1	mg/Kg	0.41	PQL	0.079	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Chromium	7440-47-3	5/31/2017	D	14:47:00	10	mg/Kg	0.51	PQL	0.065	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Copper	7440-50-8	5/31/2017	D	14:47:00	22	mg/Kg	1	PQL	0.23	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Lead	7439-92-1	5/31/2017	D	14:47:00	63	mg/Kg	0.51	PQL	0.049	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Nickel	7440-02-0	5/31/2017	D	14:47:00	21	mg/Kg	0.51	PQL	0.2	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Selenium	7782-49-2	5/31/2017	D	14:47:00	1	mg/Kg	1	PQL	0.22	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Silver	7440-22-4	5/31/2017	D	14:47:00	0.21	mg/Kg	0.21	PQL	0.021	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Thallium	7440-28-0	5/31/2017	D	14:47:00	0.41	mg/Kg	0.41	PQL	0.056	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Zinc	7440-66-6	5/31/2017	D	14:47:00	480	mg/Kg	5.1	PQL	1.7	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-14	Sample	Consultant	5/25/2017	12:10:00	7901-SB-04-14	N	N	Solid/Sediment	Source - Other	Mercury	7439-97-6	5/30/2017	D	15:46:31	0.032	mg/Kg	0.032	PQL	0.0096	MDL	U	Dry	Total	SW7471A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	1,2,4-Trichlorobenzene	120-82-1	6/6/2017	D	18:30:00	71	ug/Kg	71	PQL	8.5	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	1,2-Dichlorobenzene	95-50-1	6/6/2017	D	18:30:00	71	ug/Kg	71	PQL	17	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	1,3-Dichlorobenzene	541-73-1	6/6/2017	D	18:30:00	71	ug/Kg	71	PQL	6.8	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	1,4-Dichlorobenzene	106-46-7	6/6/2017	D	18:30:00	71	ug/Kg	71	PQL	12	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	1-Methylnaphthalene	90-12-0	6/6/2017	D	18:30:00	43	ug/Kg	43	PQL	7.1	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	2,4,5-Trichlorophenol	95-95-4	6/6/2017	D	18:30:00	280	ug/Kg	280	PQL	64	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	2,4,6-Trichlorophenol	88-06-2	6/6/2017	D	18:30:00	210	ug/Kg	210	PQL	51	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	2,4-Dichlorophenol	120-83-2	6/6/2017	D	18:30:00	140	ug/Kg	140	PQL	21	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	2,4-Dimethylphenol	105-67-9	6/6/2017	D	18:30:00	140	ug/Kg	140	PQL	21	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	2,4-Dinitrophenol	51-28-5	6/6/2017	D	18:30:00	1400	ug/Kg	1400	PQL	280	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	2,4-Dinitrotoluene	121-14-2	6/6/2017	D	18:30:00	280	ug/Kg	280	PQL	61	MDL	U F2	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	2,6-Dinitrotoluene	606-20-2	6/6/2017	D	18:30:00	210	ug/Kg	210	PQL	48	MDL	U F2	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	PCN-002	91-58-7	6/6/2017	D	18:30:00	36	ug/Kg	36	PQL	7.1	MDL	U F2	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	2-Chlorophenol	95-57-8	6/6/2017	D	18:30:00	280	ug/Kg	280	PQL	60	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	2-Methylnaphthalene	91-57-6	6/6/2017	D	18:30:00	71	ug/Kg	71	PQL	13	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	o-Cresol	95-48-7	6/6/2017	D	18:30:00	210	ug/Kg	210	PQL	53	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	2-Nitroaniline	88-74-4	6/6/2017	D	18:30:00	140 ug/Kg	140 PQL	21 MDL	U F2	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	2-Nitrophenol	88-75-5	6/6/2017	D	18:30:00	280 ug/Kg	280 PQL	66 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	m,p-Cresol (2:1 ratio)	15831-10-4	6/6/2017	D	18:30:00	280 ug/Kg	280 PQL	21 MDL	U F1	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	3,3'-Dichlorobenzidine	91-94-1	6/6/2017	D	18:30:00	570 ug/Kg	570 PQL	140 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	m-Nitroaniline	99-09-2	6/6/2017	D	18:30:00	280 ug/Kg	280 PQL	57 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	4,6-Dinitro-2-Methylphenol	534-52-1	6/6/2017	D	18:30:00	1400 ug/Kg	1400 PQL	140 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	PBDE-003	101-55-3	6/6/2017	D	18:30:00	280 ug/Kg	280 PQL	58 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	4-Chloro-3-Methylphenol	59-50-7	6/6/2017	D	18:30:00	210 ug/Kg	210 PQL	47 MDL	U F2	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	4-Chloroaniline	106-47-8	6/6/2017	D	18:30:00	2100 ug/Kg	2100 PQL	570 MDL	U F1	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	4-Chlorophenyl-Phenylether	7005-72-3	6/6/2017	D	18:30:00	280 ug/Kg	280 PQL	58 MDL	U F2	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	4-Nitroaniline	100-01-6	6/6/2017	D	18:30:00	140 ug/Kg	140 PQL	28 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	4-Nitrophenol	100-02-7	6/6/2017	D	18:30:00	2100 ug/Kg	2100 PQL	520 MDL	U F2	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Acenaphthene	83-32-9	6/6/2017	D	18:30:00	36 ug/Kg	36 PQL	7.1 MDL	U F2	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Acenaphthylene	208-96-8	6/6/2017	D	18:30:00	36 ug/Kg	36 PQL	7.1 MDL	U F2	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Anthracene	120-12-7	6/6/2017	D	18:30:00	36 ug/Kg	36 PQL	7.1 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Benz[a]anthracene	56-55-3	6/6/2017	D	18:30:00	36 ug/Kg	36 PQL	7.1 MDL	U F2	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Benzo(a)pyrene	50-32-8	6/6/2017	D	18:30:00	85 ug/Kg	85 PQL	19 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Benzo(b)fluoranthene	205-99-2	6/6/2017	D	18:30:00	36 ug/Kg	36 PQL	7.1 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Benzo(ghi)perylene	191-24-2	6/6/2017	D	18:30:00	85 ug/Kg	85 PQL	21 MDL	U F1	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Benzo(k)fluoranthene	207-08-9	6/6/2017	D	18:30:00	85 ug/Kg	85 PQL	20 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Benzoic Acid	65-85-0	6/6/2017	D	18:30:00	3600 ug/Kg	3600 PQL	1500 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Benzyl Alcohol	100-51-6	6/6/2017	D	18:30:00	5700 ug/Kg	5700 PQL	53 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethoxy)Methane	111-91-1	6/6/2017	D	18:30:00	280 ug/Kg	280 PQL	58 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Bis(2-Chloroethyl)Ether	111-44-4	6/6/2017	D	18:30:00	280 ug/Kg	280 PQL	57 MDL	U F1	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Di(2-ethylhexyl) phthalate	117-81-7	6/6/2017	D	18:30:00	850 ug/Kg	850 PQL	190 MDL	U F2	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Bis(2-chloro-1-methylethyl) ether	108-60-1	6/6/2017	D	18:30:00	360 ug/Kg	360 PQL	53 MDL	U F1	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Butyl benzyl phthalate	85-68-7	6/6/2017	D	18:30:00	280 ug/Kg	280 PQL	71 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Carbazole	86-74-8	6/6/2017	D	18:30:00	210 ug/Kg	210 PQL	44 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Chrysene	218-01-9	6/6/2017	D	18:30:00	85 ug/Kg	85 PQL	19 MDL	U F2	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Dibenzo(a,h)anthracene	53-70-3	6/6/2017	D	18:30:00	71 ug/Kg	71 PQL	17 MDL	U F1	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Dibenzofuran	132-64-9	6/6/2017	D	18:30:00	210 ug/Kg	210 PQL	51 MDL	U F1 F2	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Diethyl phthalate	84-66-2	6/6/2017	D	18:30:00	780 ug/Kg	780 PQL	190 MDL	U F2	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Dimethyl phthalate	131-11-3	6/6/2017	D	18:30:00	210 ug/Kg	210 PQL	47 MDL	U F2	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Dibutyl phthalate	84-74-2	6/6/2017	D	18:30:00	710 ug/Kg	710 PQL	81 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Di-n-octyl phthalate	117-84-0	6/6/2017	D	18:30:00	1400 ug/Kg	1400 PQL	320 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Fluoranthene	206-44-0	6/6/2017	D	18:30:00	36 ug/Kg	36 PQL	7.1 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Fluorene	86-73-7	6/6/2017	D	18:30:00	36 ug/Kg	36 PQL	7.1 MDL	U F2	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Hexachlorobenzene	118-74-1	6/6/2017	D	18:30:00	71 ug/Kg	71 PQL	7.1 MDL	U	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Hexachlorobutadiene	87-68-3	6/6/2017	D	18:30:00	71 ug/Kg	71 PQL	21 MDL	U F1	Dry	SW8270D	TestAmerica, Seattle-Tacoma WA

NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Hexachlorocyclopentadiene	77-47-4	6/6/2017	D	18:30:00	140	ug/Kg	140	PQL	37	MDL	U F1 F2	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Hexachloroethane	67-72-1	6/6/2017	D	18:30:00	210	ug/Kg	210	PQL	54	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Indeno(1,2,3-cd)pyrene	193-39-5	6/6/2017	D	18:30:00	57	ug/Kg	57	PQL	7.1	MDL	U F1	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Isophorone	78-59-1	6/6/2017	D	18:30:00	210	ug/Kg	210	PQL	53	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Naphthalene	91-20-3	6/6/2017	D	18:30:00	36	ug/Kg	36	PQL	7.1	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Nitrobenzene	98-95-3	6/6/2017	D	18:30:00	280	ug/Kg	280	PQL	60	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	N-Nitrosodi-n-propylamine	621-64-7	6/6/2017	D	18:30:00	280	ug/Kg	280	PQL	63	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	N-Nitrosodiphenylamine	86-30-6	6/6/2017	D	18:30:00	85	ug/Kg	85	PQL	21	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Pentachlorophenol	87-86-5	6/6/2017	D	18:30:00	570	ug/Kg	570	PQL	130	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Phenanthrene	85-01-8	6/6/2017	D	18:30:00	85	ug/Kg	85	PQL	17	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Phenol	108-95-2	6/6/2017	D	18:30:00	210	ug/Kg	210	PQL	54	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Pyrene	129-00-0	6/6/2017	D	18:30:00	85	ug/Kg	85	PQL	21	MDL	U	Dry		SW8270D	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Gasoline	86290-81-5	6/10/2017	D	15:58:00	12	mg/Kg	12	PQL	6.4	MDL	U H F2	Dry		NWTPH-GX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1016	12674-11-2	6/4/2017	D	15:27:00	0.033	mg/Kg	0.033	PQL	0.0097	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1221	11104-28-2	6/4/2017	D	15:27:00	0.014	mg/Kg	0.014	PQL	0.0055	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1232	11141-16-5	6/4/2017	D	15:27:00	0.014	mg/Kg	0.014	PQL	0.0064	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1242	53469-21-9	6/4/2017	D	15:27:00	0.013	mg/Kg	0.013	PQL	0.0021	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1248	12672-29-6	6/4/2017	D	15:27:00	0.014	mg/Kg	0.014	PQL	0.0038	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1254	11097-69-1	6/4/2017	D	15:27:00	0.013	mg/Kg	0.013	PQL	0.002	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	PCB-aroclor 1260	11096-82-5	6/4/2017	D	15:27:00	0.013	mg/Kg	0.013	PQL	0.0025	MDL	U	Dry		SW8082A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	#2 Diesel	68476-34-6	6/10/2017	D	0:40:00	490	mg/Kg	68	PQL	17	MDL	F1	Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Motor Oil		6/10/2017	D	0:40:00	800	mg/Kg	68	PQL	12	MDL	F1	Dry		NWTPH-DX	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Antimony	7440-36-0	5/31/2017	D	13:56:00	6.2	mg/Kg	0.23	PQL	0.078	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Arsenic	7440-38-2	5/31/2017	D	13:56:00	13	mg/Kg	0.57	PQL	0.11	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Beryllium	7440-41-7	5/31/2017	D	13:56:00	0.23	mg/Kg	0.23	PQL	0.017	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Cadmium	7440-43-9	5/31/2017	D	13:56:00	0.97	mg/Kg	0.46	PQL	0.088	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Chromium	7440-47-3	5/31/2017	D	13:56:00	27	mg/Kg	0.57	PQL	0.072	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Copper	7440-50-8	5/31/2017	D	13:56:00	99	mg/Kg	1.1	PQL	0.25	MDL	F1 F2	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Lead	7439-92-1	5/31/2017	D	13:56:00	210	mg/Kg	0.57	PQL	0.055	MDL	F1 F2	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Nickel	7440-02-0	5/31/2017	D	13:56:00	20	mg/Kg	0.57	PQL	0.22	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Selenium	7782-49-2	5/31/2017	D	13:56:00	1.1	mg/Kg	1.1	PQL	0.25	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Silver	7440-22-4	5/31/2017	D	13:56:00	0.23	mg/Kg	0.23	PQL	0.023	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Thallium	7440-28-0	5/31/2017	D	13:56:00	0.46	mg/Kg	0.46	PQL	0.063	MDL	U	Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Zinc	7440-66-6	5/31/2017	D	13:56:00	1400	mg/Kg	5.7	PQL	1.8	MDL		Dry	Total	SW6020A	TestAmerica, Seattle-Tacoma WA
NA	NA	7901-SB-04-18.5	Sample	Consultant	5/25/2017	12:15:00	7901-SB-04-18.5	N	N	Solid/Sediment	Source - Other	Mercury	7439-97-6	5/30/2017	D	15:12:18	0.042	mg/Kg	0.042	PQL	0.013	MDL	U	Dry	Total	SW7471A	TestAmerica, Seattle-Tacoma WA



DEPARTMENT OF ECOLOGY
State of Washington

Figure 1
7901 2nd Avenue S. Property and Boring Locations

leidos

Coordinate System:
NAD 1983 StatePlane Washington North FIPS 4601 Feet
Prepared By: cjc
File: SouthParkLandfill_Boring_Locations.mxd
Illustrative purposes only.

From: Dube, Tom E. [redacted]
Sent: Friday, July 7, 2017 12:17 AM
To: Cruz, Jerome (ECY); 'Gretchen Hill'; 'Kim Johannessen'; [redacted]; Anderson, Ivy (ATG)
Subject: RE: Validated Data and Field Documents for the 7901 Parcel Environmental Investigation at SPLF
Attachments: 7901_SPLF_Soil_Detected Chemicals_063017.pdf; 7901_SPLF_GW_Detected Chemicals_063017.pdf

Attached are two summary tables of analytical data from this 7901 environmental investigation. Environmental sample results that exceed the listed screening levels are shown in bold font.

In producing these tables, we used screening levels that follow the general approach applied in the South Park Landfill draft final Remedial Investigation Report (June 2016). This includes applying MTCA Method C soil cleanup levels, and Method B groundwater cleanup levels, the latter including evaluation of pertinent ARARs (which include Maximum Contaminant Levels). There are a few cases where Method A or background values are utilized.

The screening levels in these tables were taken from the most recent values listed in Ecology's CLARC database, and applying MCLs for groundwater where applicable. In the case of TPH-diesel and heavy oil in soil, the calculated Method C TPH value in the RI Report (7,000 mg/kg) was applied. For TPH-gasoline in soil, the MTCA Method A value was applied because gasoline was not a chemical of concern in the SPLF samples utilized for calculating the diesel/heavy oil cleanup level.

The screening levels in the attached files are not intended to be applied at this time as cleanup levels, but only for initial screening of the data in the 7901 investigation. Ecology reserves the option of modifying these screening levels at a future date.

Tom

Thomas Dubé | **Leidos**
office: 425.482.3325 | [redacted]

From: Dube, Tom E.
Sent: Friday, June 30, 2017 10:50 PM
To: 'Cruz, Jerome (ECY)' ; 'Gretchen Hill' ; 'Kim Johannessen' ; [redacted]; 'ivya@atg.wa.gov'
Subject: Validated Data and Field Documents for the 7901 Parcel Environmental Investigation at SPLF

7901 SPLF Team:

The data validation for this environmental investigation was completed on Monday, June 26, 2017. Attached you will find five documents, including those requested in the site access agreement. These files include:

- An Excel file with the validation adjustments to the original EIM-format file from the lab, TestAmerica. You have previously received the original lab files, so those are not included here.
- The analytical validation summary report, completed by Leidos.
- Scans of our field logbook and the groundwater purging forms.
- An aerial photo map of the site, showing the four borings (you have previously received this same figure), along with a listing of their geographic coordinates.

- The four boring logs.

The last item, the summary data table, is currently in Jerome's inbox and will be reviewed and finalized after the holiday.

Let us know if you have any questions.

Thanks,
Tom

Thomas Dubé, R.G. | **Leidos**
Sr. Hydrogeologist | Environmental Planning & Restoration Group
office: 425.482.3325 | [redacted] | [redacted]

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Table 1. Soil Analytical Data for Detected Chemicals
7901 Parcel -- South Park Landfill

Location ID:			7901-SB-01			7901-SB-02		7901-SB-03			7901-SB-04		
Sample ID:			7901-SB-01-9.5	7901-SB-01-14.5	7901-SB-01-17.5	7901-SB-02-14.5	7901-SB-02-17.5	7901-SB-03-8	7901-SB-03-9	7901-SB-03-17	7901-SB-04-9	7901-SB-04-14	7901-SB-04-18.5
Sample Depth (ft):			9.3 - 10	14 - 14.7	17.5 - 18.5	14.5 - 15	17.5 - 18	8 - 8.5	9 - 10	17 - 18	9.3 - 10	14 - 15	18.5 - 20
Sample Date & Time:			5/25/17 15:35	5/25/17 15:40	5/25/17 15:45	5/25/17 09:30	5/25/17 09:35	5/25/17 14:05	5/25/17 14:10	5/25/17 14:15	5/25/17 12:05	5/25/17 12:10	5/25/17 12:15
Chemical Name (mg/kg)	Screening Level	Screening Reference	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual
Metals													
Antimony	1,400	MTCA C	99	3.5	0.36	8.0	10	62	77	0.85	49	0.79	6.2
Arsenic	88	MTCA C	35	14	5.7	19	22	11	42	6.0	49	1.8	13
Beryllium	7,000	MTCA C	0.25	0.53	0.36	0.22 U	0.26 U	0.23	0.21	0.33	0.74	0.21 U	0.23 U
Cadmium	3,500	MTCA C	2.8	4.9	0.54 U	42	0.97	1.3	22	0.37	17	1.1	0.97
Chromium	1.0E+06	MTCA C	170	66	19	54	42	44	110	17	40	10	27
Copper	140,000	MTCA C	1,100	44	30	660	350	150	2,400	35	570	22	99 J
Lead	1,000	MTCA A	**6,100**	**1,100**	48	**2,300**	48	320	**5,100**	37	**22,000**	63	210 J
Mercury	1,050	MTCA C	0.24	0.078	0.061	0.43	0.041 U	0.056	0.34	0.048	0.66	0.032 U	0.042 U
Nickel	70,000	MTCA C	31	32	15	110	65	48	130	14	63	21	20 J
Selenium	17,500	MTCA C	1.3 U	1.1 U	1.3 U	1.1 U	1.3 U	1 U	0.82 U	0.86 U	1.4	1 U	1.1 U
Silver	17,500	MTCA C	3.4	0.22 U	0.27 U	0.47	0.26 U	0.33	2.2	0.17 U	1.0	0.21 U	0.23 U
Zinc	1.0E+06	MTCA C	1,200	1,800	110	12,000	360	1,400	4,800	180	8,600	480	1,400
TPH													
Gasoline	100	MTCA A	21 J	32	15 U	24	12 U	7.3 U	**220 J**	12 U	31	43	12 UJ
Diesel (#2)	7,000	MTCA calc	3,800	1,300	74 U	330	69 U	52 U	2,200	67 U	1,300	1,500	490 J
Motor Oil	7,000	MTCA calc	**9,000**	4,000	230	970	240	110	3,800	67 U	3,000	**22,000**	800 J
SVOCs													
Acenaphthene	210,000	MTCA C	35	0.14 U	0.036 U	0.66	0.035 U	0.028 U	0.15 U	0.035 U	0.33	1.4 U	0.036 U
Acenaphthylene	--	--	4.1	0.14 U	0.036 U	0.29 U	0.035 U	0.028 U	0.15 U	0.035 U	0.034	1.4 U	0.036 U
Anthracene	1.0E+06	MTCA C	56	0.14 U	0.036 U	1.7	0.053	0.028 U	3.7	0.035 U	0.21	1.4 U	0.036 U
Benzo(a)anthracene	180	MTCA C	82	0.25	0.036 U	2.8	0.14	0.028 U	29	0.035 U	0.54	1.4 U	0.036 U
Benzo(a)pyrene	18	MTCA C	**63**	0.33 U	0.087 U	2.5	0.11	0.067 U	16	0.084 U	0.52	3.3 U	0.085 U
Benzo(b)fluoranthene	180	MTCA C	56	0.14 U	0.036 U	2.6	0.13	0.028 U	19	0.035 U	0.71	1.4 U	0.036 U
Benzo(k)fluoranthene	1,800	MTCA C	22	0.33 U	0.087 U	0.95	0.084 U	0.067 U	8.4	0.084 U	0.18	3.3 U	0.085 U
Benzo(ghi)perylene	--	--	25 J	0.33 UJ	0.087 UJ	1.6 J	0.084 UJ	0.067 UJ	7.6 J	0.084 UJ	0.23 J	3.3 UJ	0.085 UJ
Carbazole	--	--	18	0.83 U	0.22 U	1.7 U	0.21 U	0.17 U	1.4	0.21 U	0.19 U	8.2 U	0.21 U
Chrysene	18,000	MTCA C	77	0.33 U	0.087 U	3.0	0.14	0.067 U	27	0.084 U	0.76	3.3 U	0.085 U
Dibenz(a,h)anthracene	18	MTCA C	6.2	0.28 U	0.073 U	0.58 U	0.07 U	0.056 U	2.2	0.07 U	0.11	2.7 U	0.071 UJ
Dibenzofuran	3,500	MTCA C	10	0.83 U	0.22 U	1.7 U	0.21 U	0.17 U	0.88 U	0.21 U	0.19	8.2 U	0.21 U
Fluoranthene	140,000	MTCA C	190	0.53	0.088	7.1	0.31	0.028 U	99	0.035 U	1.2	1.4 U	0.036 U
Fluorene	140,000	MTCA C	31	0.14 U	0.036 U	0.99	0.035 U	0.028 U	0.68	0.035 U	0.4	1.4 U	0.036 U
Indeno(1,2,3-cd)pyrene	180	MTCA C	31	0.22 U	0.058 U	1.9	0.093	0.045 U	9.9	0.056 U	0.32	2.2 U	0.057 UJ
Naphthalene	70,000	MTCA C	15	0.14 U	0.036 U	0.59	0.035 U	0.028 U	0.23	0.035 U	0.21	1.4 U	0.036 U
1-Methylnaphthalene	4,500	MTCA C	13	0.17 U	0.044 U	0.35 U	0.042 U	0.033 U	0.34	0.042 U	0.14	1.6 U	0.043 U
2-Methylnaphthalene	14,000	MTCA C	14	0.28 U	0.073 U	0.58 U	0.07 U	0.056 U	0.57	0.07 U	0.18	2.7 U	0.071 U
Phenanthrene	--	--	250	0.54	0.087 U	7.9	0.26	0.067 U	12	0.084 U	1.6	3.3 U	0.085 U
Pyrene	105,000	MTCA C	240	0.58	0.11	6.9	0.31	0.067 U	95	0.084 U	1.4	3.3 U	0.085 U
Total cPAHs (TEQ, NDx0.5)	18	MTCA C	**83**	0.24	0.058 U	3.4	0.16	0.045 U	**23**	0.056 U	0.71	2.2 U	0.057 UJ

Notes:

Results and screening levels presented in mg/kg. Bold values exceed the respective screening levels. Qual = Qualifier flag.

Metals were analyzed by SW6020A or SW7471A (mercury). SVOCs were analyzed by SW8270D.

Gasoline was analyzed by NWTPH-Gx. Diesel and motor oil were analyzed by NWTPH-Dx.

PCB Aroclors were analyzed by SW8082A, but without any detections.

Soil screening levels were primarily developed under MTCA Method C, with TPH-gasoline and lead SLs under Method A; TPH-diesel and motor oil SLs were calculated under Method C (SPLF RI Report, June 2016).

Table 2. Groundwater Analytical Data for Detected Chemicals
7901 Parcel -- South Park Landfill

Location ID:			7901-SB-01		7901-SB-02		7901-SB-04		GW Trip Blank	
Sample ID:			7901-SB-01-GW		7901-SB-02-GW		7901-SB-04-GW		7901-TB-GW	
Sample Inlet Depth (ft):			17.5		19.5		17.5		--	
Sample Date & Time:			5/25/17 16:00		5/25/17 10:35		5/25/17 12:50		5/25/17 12:00	
Chemical Name (ug/L)	Screening Level	Screening Reference	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Metals										
Antimony	6.0	MCL	2	U	2	U	**7.0**			
Arsenic	5.0	MTCA A / BG	5	U	5	U	**6.8**			
Chromium	100	MCL	2	U	2	U	5.2			
Copper	640	MTCA B	10	U	10	U	52			
Iron	27,000	Local BG	11,000		6,300		18,000			
Lead	15	MCL	**27**		4	U	**250**			
Manganese	2,200	MTCA B	60		300		130			
Zinc	4,800	MTCA B	93		35	U	610			
TPH										
Diesel (#2)	500	MTCA A	**670**		**1,100**		**1,200**			
Motor Oil	500	MTCA A	380		**660**		**1,000**			
PAHs										
Acenaphthene	960	MTCA B	0.12	J	0.63	J	0.26			
Acenaphthylene	--	--	0.021	U	0.056		0.026			
Anthracene	4,800	MTCA B	0.023		0.089		0.029			
Fluoranthene	640	MTCA B	0.032		0.02	U	0.023			
Fluorene	640	MTCA B	0.021	U	0.045		0.02	U		
Naphthalene	160	MTCA B	0.041	UJ	0.062	J	0.041	UJ		
1-Methylnaphthalene	1.5	MTCA B	0.021	UJ	0.19	J	0.02	UJ		
Phenanthrene	--	--	0.068		0.034		0.029			
Pyrene	480	MTCA B	0.037		0.021		0.047			
VOCs										
Chlorobenzene	100	MCL	0.2	U	1.3		0.96		0.2	U
cis-1,2-Dichloroethene	16	MTCA B	0.2	U	0.2	U	2.1		0.2	U
Vinyl Chloride	0.29	MTCA B / MCL	**0.30**		0.16		**0.97**		0.02	U

Notes:

Results and screening levels presented in ug/L. Bold values exceed the respective screening levels.

Metals were analyzed by SW6020A.

Diesel and motor oil were analyzed by NWTPH-Dx. Gasoline was analyzed by NWTPH-Gx, but without any detections.

PAHs were analyzed by SW8270D-SIM. VOCs were analyzed by SW8260C.

PCB Aroclors were analyzed by SW8082A, but without any detections.

BG = Background concentration

MCL = Maximum Contaminant Level

Qual = Qualifier flag

Groundwater screening levels were primarily developed under MTCA Method B, which requires evauation of ARARs such as MCLs; TPH SLs were under Method A; arsenic and iron SLs used background values (from SPLF RI Report, June 2016).

From: Cruz, Jerome (ECY) <JCRU461@ECY.WA.GOV>
Sent: Tuesday, August 1, 2017 3:24 PM
To: [redacted] Teri A. Floyd
Cc: Neuner, Jeff; Wang, Ching-Pi (ECY); Anderson, Ivy (ATG); Dube, Tom E.
Subject: FW: Proposed Revisions to SPLF Cleanup Levels
Attachments: SPLF-7901_Soil Revised CULs_072017.pdf; SPLF-7901_GW Revised CULs_072017.pdf

Hi Gretchen and Teri,

I spoke to you before about how some cleanup levels may need revisions because the RI/FS did not use the most stringent standard (MCL vs. Method B). I have forwarded below an explanation from Tom Dube of Leidos and the tables he created flagging these items.

I compared the attached tables to site data in the RI/FS tables (Appendix C, tables C.5, C.6) and concluded that no changes were needed on our COCs because these cleanup levels were not exceeded except for antimony in groundwater (the 7901 data exceeds the 6 ppb CUL, the data for the rest of the site does not). It might be attributable to the auto wrecking yard contamination. In any case, since the downgradient wells do not appear to exceed the CUL, the situation is no different from the other detections or exceedances that are in the interior of the site but which appear to attenuate before it leaves the landfill boundary. Likewise, I saw no soil exceedances when compared the revised cleanup levels (some were even higher than what was in the RI/FS). Let me know if you agree with these conclusions from the data.

I propose proceeding in the following manner:

As we discussed in our meeting today, please examine the tables and Tom's email. Ecology will assess your comments and/or refutations.

As it is now, I don't think drastic revisions to the RI/FS are needed. I suggest revising the cleanup level tables in the RI to reflect the appropriate revised numbers from Tom's tables. Other changes are not needed in the RI except maybe for a short description of antimony in 7901 in the RI text and also including this metal in the EC for 7901. The CAP remains unchanged.

Thanks,

Jerome

DEPARTMENT OF ECOLOGY
State of Washington

Jerome B. Cruz, Ph.D.
Toxics Cleanup Program, Northwest Regional Office
3190 - 160th SE Bellevue, WA 98008
Tel: (425) 649-7094 Fax: (425) 649-7098
Jerome.Cruz@ecy.wa.gov
http://www.ecy.wa.gov/programs/tcp/cleanup.html

From: Dube, Tom E. [redacted]
Sent: Tuesday, August 01, 2017 10:15 AM
To: Cruz, Jerome (ECY)
Subject: RE: Proposed Revisions to SPLF Cleanup Levels

Jerome,

The two attached tables are the same as those that I previously sent you. I just added them on to package everything so that if you wanted to forward the whole e-mail to others, then it would be easy for you.

Tom

Thomas Dubé | **Leidos**
office: 425.482.3325 | [redacted]

From: Dube, Tom E.
Sent: Tuesday, August 01, 2017 10:13 AM
To: Cruz, Jerome (ECY) <JCRU461@ECY.WA.GOV>
Subject: Proposed Revisions to SPLF Cleanup Levels

Jerome,

As part of developing screening levels in the 7901 parcel investigation, I have reviewed the CULs used in the SPLF RI/FS report (June 2016) and made some adjustments. The CULs presented in tables in the RI/FS report are incorporated into the two attached tables, along with the revised CULs that are based on using the latest CLARC tables and following directions in MTCA, and checking the values against Priscilla Tomlinson's LDW PCUL spreadsheet. There are some differences between what is presented in the RI/FS report and what I came up with, as shown in the two tables.

The list of chemicals in these tables is based on combining the list in the RI/FS tables (as stated in footnotes in the attached tables) and those detected in the 7901 parcel investigation.

There are a number of reasons for the differences in CULs presented in the attached tables. The reasons for these differences are stated in the right column. Regarding the differences in groundwater CULs for VOCs, the RI/FS report states that they adjusted the MCL as the applicable standard. It is not clear how this took place because you cannot adjust a federal ARAR value (MCLs), and MTCA requires that the final CUL be at least as stringent as federal law. The RI/FS report did properly take into account the ARAR rule in MTCA under Method B for vinyl chloride and benzene. However, for the first four VOCs listed as "incorrect application," the MCL is more stringent than the Method B value, and thus must be considered as the lower value for the final CUL. For the case of TCE, the RI/FS report did not consider the non-cancer Method B value of 4.0 ug/L, which becomes the most stringent number after application of the ARAR rule.

For the groundwater background numbers in Table 2, I only used the aquifer A-zone values for Fe and Mn, because that is the depth zone we sampled at the 7901 parcel. The B-zone values could also be added to this table.

Let me know if you have any questions.
Thanks,
Tom

Thomas Dubé, R.G. | **Leidos**
Sr. Hydrogeologist | Environmental Planning & Restoration Group
office: 425.482.3325 | [redacted] | [redacted]

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Table 1. Revisions to Soil Cleanup Levels -- South Park Landfill

Chemical Name	SPLF RI/FS CUL (mg/kg)	SPLF RI/FS CUL Reference	SPLF + 7901 Revised CUL (mg/kg)	SPLF + 7901 Revised CUL Reference	Reason for Difference from RI/FS Report to Revised CUL
Metals					
Aluminum	--	--	1,000,000	MTCA C	CUL was not previously listed in RI/FS; rounded down to 1.0M ppm
Antimony	1,400	MTCA C	1,400	MTCA C	
Arsenic	88	MTCA C	88	MTCA C	
Barium	700,000	MTCA C	700,000	MTCA C	
Beryllium	--	--	7,000	MTCA C	Included due to detection in 7901 investigation
Cadmium	3,500	MTCA C	3,500	MTCA C	
Chromium	5,250,000	MTCA C	1,000,000	MTCA C	Rounded down to 1.0M ppm
Copper	130,000	MTCA C	140,000	MTCA C	Modification in toxicity (CLARC)
Iron	--	--	1,000,000	MTCA C	CUL was not previously listed in RI/FS; rounded down to 1.0M ppm
Lead	1,000	MTCA A	1,000	MTCA A	
Manganese	490,000	MTCA C	490,000	MTCA C	
Mercury	1,050	MTCA C	1,050	MTCA C	
Nickel	70,000	MTCA C	70,000	MTCA C	
Selenium	--	--	17,500	MTCA C	Included due to detection in 7901 investigation
Silver	17,500	MTCA C	17,500	MTCA C	
Zinc	1,100,000	MTCA C	1,000,000	MTCA C	Rounded down to 1.0M ppm
TPH					
Gasoline	--	--	100	MTCA A	Included due to detection in 7901 investigation; Method A value used
Diesel (#2)	7,000	MTCA C calc	7,000	MTCA C calc	
Motor Oil	7,000	MTCA C calc	7,000	MTCA C calc	
PAHs/SVOCs					
Acenaphthene	210,000	MTCA C	210,000	MTCA C	
Acenaphthylene	210,000	MTCA C	--	--	Removed because CUL is not listed in CLARC
Anthracene	1,100,000	MTCA C	1,000,000	MTCA C	Rounded down to 1.0M ppm
Benzo(a)anthracene	--	--	--	--	
Benzo(a)pyrene	--	--	18*	MTCA C	Included because BaP applies the same as Total cPAH-TEQ
Benzo(b)fluoranthene	--	--	--	--	
Benzo(k)fluoranthene	--	--	--	--	
Benzo(ghi)perylene	--	--	--	--	
Total cPAHs (TEQ, NDx0.5)	18	MTCA C	18*	MTCA C	
Carbazole	--	--	--	--	
Chrysene	--	--	--	--	
Dibenz(a,h)anthracene	--	--	--	--	
Dibenzofuran	3,500	MTCA C	3,500	MTCA C	
Fluoranthene	140,000	MTCA C	140,000	MTCA C	
Fluorene	140,000	MTCA C	140,000	MTCA C	
Indeno(1,2,3-cd)pyrene	--	--	--	--	
Naphthalene	70,000	MTCA C	70,000	MTCA C	
1-Methylnaphthalene	--	--	4,500	MTCA C	CUL was not previously listed in RI/FS
2-Methylnaphthalene	14,000	MTCA C	14,000	MTCA C	
Phenanthrene	--	--	--	--	
Pyrene	110,000	MTCA C	110,000	MTCA C	
bis(2-ethylhexyl)phthalate	9,400	MTCA C	9,400	MTCA C	
Di-n-octyl phthalate	--	--	35,000	MTCA C	CUL was not previously listed in RI/FS
Butyl benzyl phthalate	69,000	MTCA C	69,000	MTCA C	
Diethylphthalate	--	--	1,000,000	MTCA C	CUL was not previously listed in RI/FS; rounded down to 1.0M ppm
Dimethyl phthalate	--	--	--	--	
Di-n-butyl phthalate	--	--	350,000	MTCA C	CUL was not previously listed in RI/FS
1,4-Dichlorobenzene	--	--	24,000	MTCA C	CUL was not previously listed in RI/FS
4-Methylphenol	18,000	MTCA C	350,000	MTCA C	Modification in toxicity (CLARC)
Pentachlorophenol	330	MTCA C	330	MTCA C	
VOCs					
Acetone	Not Toxic	MTCA C	1,000,000	MTCA C	CUL was not previously listed in RI/FS; rounded down to 1.0M ppm
Methylene Chloride	18,000	MTCA C	21,000	MTCA C	Modification in toxicity (CLARC)
PCBs					
PCB Aroclor 1242	10	MTCA C	--	--	RI/FS listed Method A industrial CUL
PCB Aroclor 1248	10	MTCA C	--	--	RI/FS listed Method A industrial CUL
PCB Aroclor 1254	10	MTCA C	66	MTCA C	RI/FS listed Method A industrial CUL, not Method C
PCB Aroclor 1260	10	MTCA C	66	MTCA C	RI/FS listed Method A industrial CUL, not Method C
Total PCBs	10	MTCA C	66	MTCA C	RI/FS listed Method A industrial CUL, not Method C
Herbicides and Pesticides					
alpha-Chlordane	350	MTCA C	375	MTCA C	Uncertain source of CUL in RI/FS; CUL is for general Chlordane
gamma-Chlordane	350	MTCA C	375	MTCA C	Uncertain source of CUL in RI/FS; CUL is for general Chlordane
Dieldrin	380	MTCA C	8.2	MTCA C	Uncertain source of CUL in RI/FS
p,p'-DDD	550	MTCA C	550	MTCA C	
p,p'-DDE	390	MTCA C	390	MTCA C	
p,p'-DDT	390	MTCA C	390	MTCA C	

Notes:

* With updated EPA toxicity values, the Method C CUL for BaP/Total cPAHs will be raised to 130 mg/kg.

SPLF RI/FS CULs for soil/landfill/solids were taken from Tables 4.2 and 4.4 (SPLF RI/FS Report, June 2016).

Soil revised CULs were primarily developed under MTCA Method C (CLARC July 2017), with TPH-gas and lead CULs using Method A;
TPH-diesel and motor oil CULs were calculated under Method C (from SPLF RI Report, June 2016).

Chemicals in this list are a combination of those in the SPLF RI/FS report tables and those detected in the 7901 Parcel environmental investigation;
for the 7901 investigation, the CULs in this table are only intended as preliminary screening levels at this time.

Table 2. Revisions to Groundwater Cleanup Levels -- South Park Landfill

Chemical Name	SPLF RI/FS CUL (ug/L)	SPLF RI/FS CUL Reference	SPLF + 7901 Revised CUL (ug/L)	SPLF + 7901 Revised CUL Reference	Reason for Difference from RI/FS Report to Revised CUL
Metals					
Aluminum	1,600	MTCA B	16,000	MTCA B	Uncertain source of CUL in RI/FS
Antimony	--	--	6.0	MTCA B / MCL	Included due to detection in 7901 investigation
Arsenic	5.0	MTCA A / BG	5.0	MTCA A / BG	
Barium	2,000	MCL/MTCA	2,000	MTCA B / MCL	
Cadmium	5.0	MCL/MTCA	5.0	MTCA B / MCL	
Chromium	--	--	100	MTCA B / MCL	Included due to detection in 7901 investigation
Copper	640	MTCA B	640	MTCA B	
Iron	27,000	Local BG	27,000	Local BG	
Lead	15	MCL/MTCA	15	MTCA B / MCL	
Manganese	2,100	Local BG	2,200	MTCA B	MTCA B CUL is greater than local background value
Selenium	50	MCL/MTCA	50	MTCA B / MCL	
Vanadium	140	MTCA B	80	MTCA B	Modification in toxicity (CLARC)
Zinc	5,000	MCL/MTCA	4,800	MTCA B	Modification in toxicity (CLARC)
TPH					
Gasoline	800	MTCA A	800	MTCA A	
Diesel (#2)	500	MTCA A	500	MTCA A	
Motor Oil	500	MTCA A	500	MTCA A	
PAHs/SVOCs					
Acenaphthene	--	--	960	MTCA B	Included due to detection in 7901 investigation
Acenaphthylene	--	--	--	--	
Anthracene	--	--	4,800	MTCA B	Included due to detection in 7901 investigation
Fluoranthene	--	--	640	MTCA B	Included due to detection in 7901 investigation
Fluorene	--	--	640	MTCA B	Included due to detection in 7901 investigation
Naphthalene	160	MTCA B	160	MTCA B	
1-Methylnaphthalene	--	--	1.5	MTCA B	Included due to detection in 7901 investigation
Phenanthrene	--	--	--	--	
Pyrene	--	--	480	MTCA B	Included due to detection in 7901 investigation
VOCs					
1,1-Dichloroethane	1,600	MTCA B	7.7	MTCA B	Modification in toxicity, addition of cancer risk (CLARC)
1,2-Dichlorobenzene	720	MTCA B	600	MTCA B / MCL	Incorrect application of ARAR
1,2-Dichloropropane	NA	MTCA B	5.0	MTCA B / MCL	Incorrect application of ARAR
Benzene	5.0	MCL/MTCA	5.0	MTCA B / MCL	
Chlorobenzene	160	MTCA B	100	MTCA B / MCL	Incorrect application of ARAR
cis-1,2-Dichloroethene	16	MTCA B	16	MTCA B	
trans-1,2-Dichloroethene	160	MTCA B	100	MTCA B / MCL	Incorrect application of ARAR
Trichloroethene	5.0	MCL/MTCA	4.0	MTCA B / MCL	Incorrect application of ARAR/MTCA B noncancer value
Vinyl Chloride	0.29	MCL/MTCA	0.29	MTCA B / MCL	

Notes:

BG = Background concentration

MCL = Maximum Contaminant Level

SPLF RI/FS CULs for groundwater were taken from Table 5.5, and Fe and Mn background values from table on p. 5-17 (SPLF RI/FS Report, June 2016).

Groundwater revised CULs were primarily developed under MTCA Method B (CLARC July 2017), including evaluation of ARAR (MCLs);
TPH CULs were developed using Method A; arsenic and iron CULs used background values (from SPLF RI/FS Report, June 2016).

Chemicals in this list are a combination of those in the SPLF RI/FS report tables and those detected in the 7901 Parcel environmental investigation;
for the 7901 investigation, the CULs in this table are only intended as preliminary screening levels at this time.

South Park Landfill

Remedial Investigation/ Feasibility Study

Appendix M
Pavement at KIP and 7901 Parcels Memorandum

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Seattle, WA 98101
tel: 206.292.2078 fax: 206.682.7867

Memorandum

To: Jerome Cruz, Washington State Department of Ecology

Copies: South Park Landfill PLP Group and Consultant Team

From: Teri Floyd, PhD

Date: May 25, 2016

Project No: COS-SPARK

Re: **Pavement at KIP and 7901 Parcels**

Washington State Department of Ecology (Ecology) is concerned that they do not have enough information about the pavement section at the Kenyon Industrial Park (KIP) and 7901 2nd Ave., LLC (7901) Parcels in order to determine that it is sufficiently functionally equivalent to the pavement section in the Cleanup Action Plan (CAP) for the South Park Landfill Site.

The Feasibility Study concludes that the pavement section at the KIP and 7901 Parcels is performing adequately to meet the requirements of, and is functionally equivalent to what is required in, the CAP.

DEFINITION OF FUNCTIONALLY EQUIVALENT

Under the Model Toxics Control Act (MTCA; Washington Administrative Code [WAC] 173-340-710), solid waste landfill closure requirements shall be per the regulations set forth in WAC 173-304. The Minimum Functional Standards (MFS) for a landfill cap, per WAC 173-304, are intended to perform two functions:

1. Provide protection to mitigate the direct contact exposure pathway to humans and the environment.
2. Minimize infiltration of stormwater into the solid waste, which creates additional leachate.

As discussed in the South Park Draft Final Remedial Investigation and Feasibility Study (RI/FS) and CAP, leachate production from infiltrating rainwater is not measurably impacting groundwater quality and does not influence the design requirements of the landfill cap for the following reasons:

- The South Park Landfill was an unlined solid waste facility that operated from the late 1930s to the mid-1960s and was closed in 1966.
  - The landfill wastes are now more than 60 years old.

  - From 1966 to 2015, approximately 60 percent of the landfill (the SPPD Parcel and part of the SRDS Parcel) was unpaved and rainwater falling on the unpaved sections infiltrated through the landfill contents.
  - The base of the waste is in direct contact with groundwater under water table conditions.

- Leachate quality is barely distinguishable from groundwater, as measured in the KIP "KMW" wells, which are screened across the waste layer in a section that has been paved since the late 1960s. This comparison can be found in Section 5.6 of the RI/FS.

Based on these goals, the functional equivalent was assessed by considering the following criteria:

1. The pavement acts as a barrier to separate the contained wastes from contact with humans, terrestrial plants, and animals.
2. The pavement acts to direct stormwater that falls on the site into a stormwater collection system such that
   a. Stormwater leaving the site has not contacted contained wastes; and
   b. Conditions are similar to those during the RI, allowing the RI data to be used to predict that current infiltration rates have little-to-no impact on leachate and groundwater quality.
3. The pavement is of sufficient quality that it does not require constant or frequent repairs in order to meet items 1 and 2, above.

EXISTING PAVEMENT DESCRIPTION AT KIP AND 7901

The existing pavement at the KIP and7901 Parcels was originally placed between 1967 and 1972 when these parcels were developed. The parcels have been in continuous use since then for warehousing and light industrial use, including truck traffic. No as-builts have been located of the pavement section.

At landfill closure in 1966, a soil cap of at least 1 foot was added to the parcels consistent with landfill closure requirements in force at the time. When the parcels were redeveloped into their current use, the site was regraded prior to the construction of the slab on grade buildings and the surrounding pavement. Based on aerials, this regrading may have occurred in two events, one around 1966 to 1968, after which much of the KIP and 7901 Parcels were used for auto salvage yards, and the other 1 to 4 years later as the current buildings and pavements were being placed.

Pavement Section

Since then, at least 50 investigative borings have been advanced through the pavement section; borings have been included in Appendix B of the RI/FS. Their locations are shown in Figure 1 on

a high-resolution aerial base map (note that Figure 1 is a large format figure). A review of the boring logs indicates that the asphalt section is 1 to 4 inches in thickness. Underlying the asphalt is a thin gravel layer that was sometimes called out by the geologist and sometimes not, but is generally 4 to 9 inches in the "TGP" borings (Oct 2015 LFG Investigation at KIP) where the geologist was specifically asked to determine its thickness. The next layer down is labeled as fill on most borings—fill would include both the cover soil and underlying waste contents, which also includes soil.

To get an estimate of where the waste layer actually starts, the logs were reviewed for terms indicating non-soil materials. When an interval on the logs was referred to as soil, sand, silt, etc. with incidental identification of wood fragments, brick fragments, glass shards, and/or nails, the interval was considered to be soil; the soil was not assumed to be clean. When the interval was identified as including refuse, waste, solid waste, ash, or similar term, the interval was considered to be waste. Based on this review of the logs, waste was present within 7 inches of the groundwater surface in at least one boring and waste was capped by 10 feet of soil in another boring. In the majority of the borings, the waste layer begins within 1 to 3 feet of the surface.

Figure 1, a high resolution aerial that shows conditions in 2015 at the KIP and 7901 Parcels, also includes the locations of all soil borings analyzed; some of the borings date to the 1990s. The "TGP" borings are from 2015. All boring logs used have previously been made available to Ecology.

Pavement Occurrence and Quality

As can be seen on the high-resolution aerial in Figure 1, the KIP and 7901 Parcels are covered by either pavement or buildings, except for a small landscaped strip along Occidental Ave S. and a gravel area along the W.G. Clarke facility. Both of the unpaved areas are outside of the Landfill Boundary. As can be seen by zooming the figure, the pavement remains in good repair. Photographs taken during the October 2015 LFG Investigation at KIP are shown in Attachment A, Photographs 1 through 6 and show additional views of the pavement. A key item to note is the overall quality of the pavement after several decades of use; the absence of major areas of cracking and failure indicate that the subsurface has not substantially subsided and is capable of supporting the truck traffic at the site. Signs of good maintenance practices are also visible in the photographs. For example, the pavement is clean and free of debris in all photographs; sealed cracks and patched pavement areas where subsurface utilities were repaired are visible in Photograph 4. Photograph 8 shows a new crack that formed in the last year and is less than 0.5 inches wide and does not expose pavement; it is adjacent to an older crack that has been sealed. The less than 0.5-inch crack would be identified in the Annual Pavement Inspection, which is part of the proposed Operation, Maintenance, and Monitoring Plan (OMMP) and would need to be sealed if it expanded further. One area of "alligator" cracked pavement was identified at the KIP Parcel and is shown in Photograph 7. This is another example of a section of pavement that would be identified under the proposed OMMP as needing additional inspection and potential repair if the cracks grew. Specific language is in Section 3.2 of Section A.1 of the OMMP.

SUMMARY

The existing pavement at the KIP and 7901 Parcels is in good repair and is functioning to separate the underlying wastes from humans, terrestrial plants, and animals, and from stormwater entering the stormwater system and leaving the site. The pavement is also directing the majority of the stormwater that falls on the site into the existing stormwater system. Because the pavement conditions today are very similar to those during the RI field work (2011 to 2013), the amount of stormwater that infiltrates is believed to be similar. RI found that infiltrating stormwater under current conditions had a negligible impact on groundwater quality; therefore, the pavement's current function as stormwater infiltration is consistent with the requirements in the CAP.

The facility is active and pavement ages; therefore, the pavement will need to be inspected and maintained. This requirement is discussed in the CAP, the Environmental Covenant, and the OMMP. The pavement does not need to be replaced until such time as it fails to perform.

The FS envisioned a time when the site would be redeveloped or undergo major repairs; at that time the landfill cap would be brought into alignment with landfill regulations for a standard cap. If the owners at that time wanted to use a different cap, then they would need to seek Ecology approval for a waiver at that time.

ATTACHMENTS

Figure 1 KIP and 7901 Parcels Pavement Review

Attachment 1 Site Pavement Photographs

Figure

Legend

- TGP Probe
- Gas Probe Location
- Temporary LFG Probe
- Monitoring Well: Upper Zone
- Decommissioned Monitoring Well
- Piezometer
- Decommissioned Piezometer
- Reconnaissance Groundwater Probe
- Soil Boring
- Surface Water Sample
- Revised Landfill Boundary (based on RI/FS)
- Landfill Parcel
- Adjacent Parcel

PHOTO 1

Orientation of Photograph

Notes:
- Tax parcels provided by King County Geographic Information Systems Center.
- Orthoimagery provided by NearMap, September 27, 2015.

0 25 50 100
Scale in Feet

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KIP/7901 Pavement Memorandum
South Park Landfill
Seattle, Washington

Figure 1
KIP and 7901 Parcels Pavement Review

I:\GIS\Projects\COS-SPARK\MXD\KIP 7901 Pavement Memo\Figure 1 KIP and 7901 Pavement Review with Monitoring Locations.mxd
5/25/2016

Attachment 1
Site Pavement Photographs

Photograph 1. North side of the KIP parcel facing north-northeast. White powder is bentonite and/or concrete residual from filling temporary soil boring.

Photograph 2. North central portion of the KIP parcel facing south, during installation of temporary gas probes.

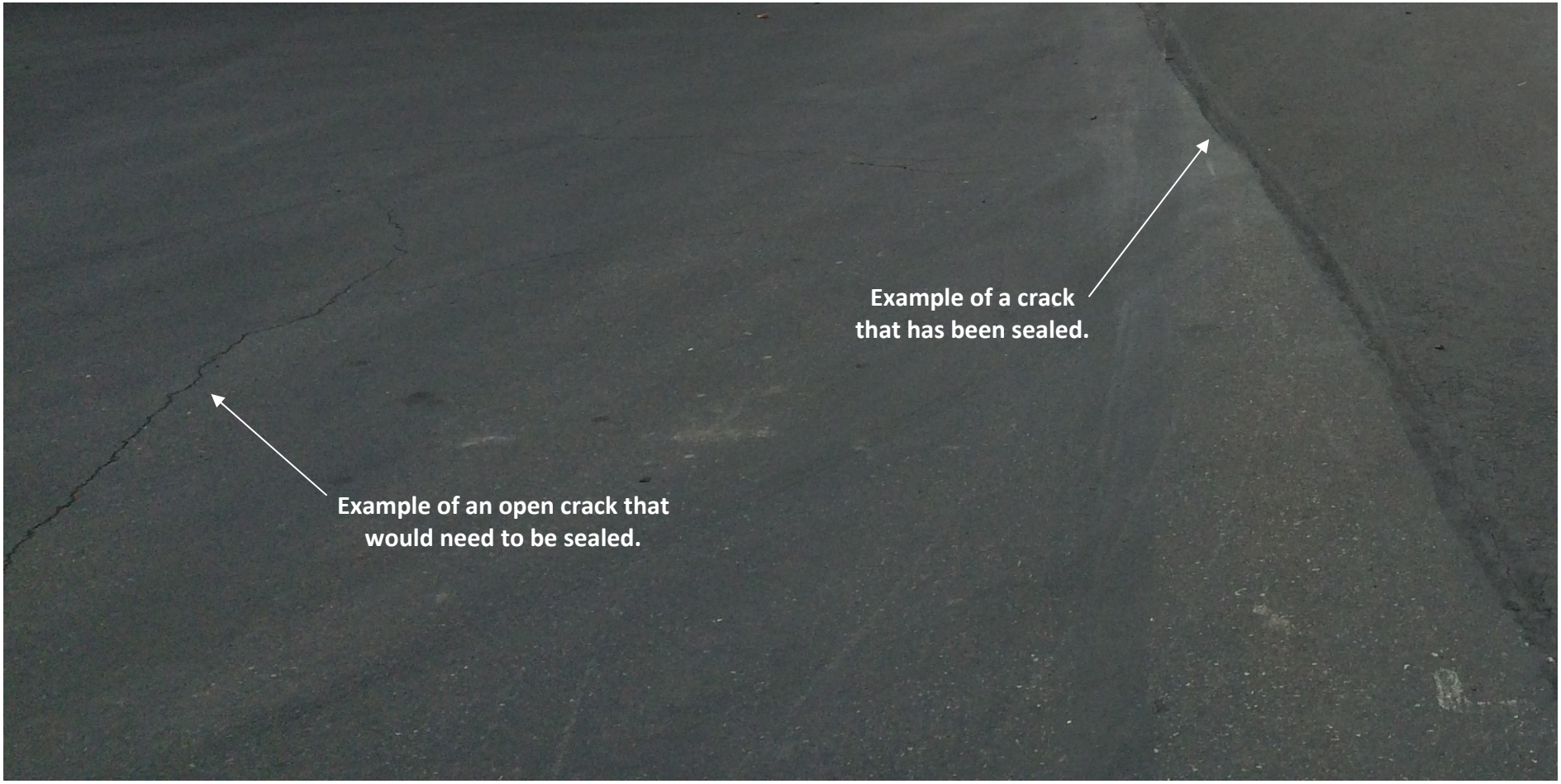
Photograph 3. Central portion of the KIP parcel facing east. White powder is bentonite and/or concrete residual from filling temporary soil boring.

Photograph 4. Central portion of the KIP parcel facing north. Historical pavement patch and sealed crack visible in figure.

Photograph 5. Central portion of the KIP parcel facing west-northwest. Sealed crack visible in foreground.

Photograph 6. Central portion of the KIP parcel facing south toward the higher SPPD Parcel.

Photograph 7. Example of pavement “spider” or “alligator” cracks that would warrant additional inspection and repair under the proposed OMMP.



Photograph 8. Crack examples. These are addressed in the OMMP.