

APPENDIX G

Imported Soils Characteristics and Volumes



CalPortland - Aggregate Submittal



Date: July 24, 2017

Product Number: 8111

Product Description: Vadose Zone Fill

Specification Number: Attached

Source: Pioneer Aggregates

Location: DuPont WA

WSDOT Pit Number: B-335

Specification:

3/8" square	95-100% Pass	% Fracture	-
U.S. No. 4	90-100	Sand Equivalent	-
U.S. No. 200	3-12	L.A. Wear	-
		Degradation:	-
		Dust Ratio	-

Specific Gravity: 2.701

% Fracture: -

Absorption: 1.34

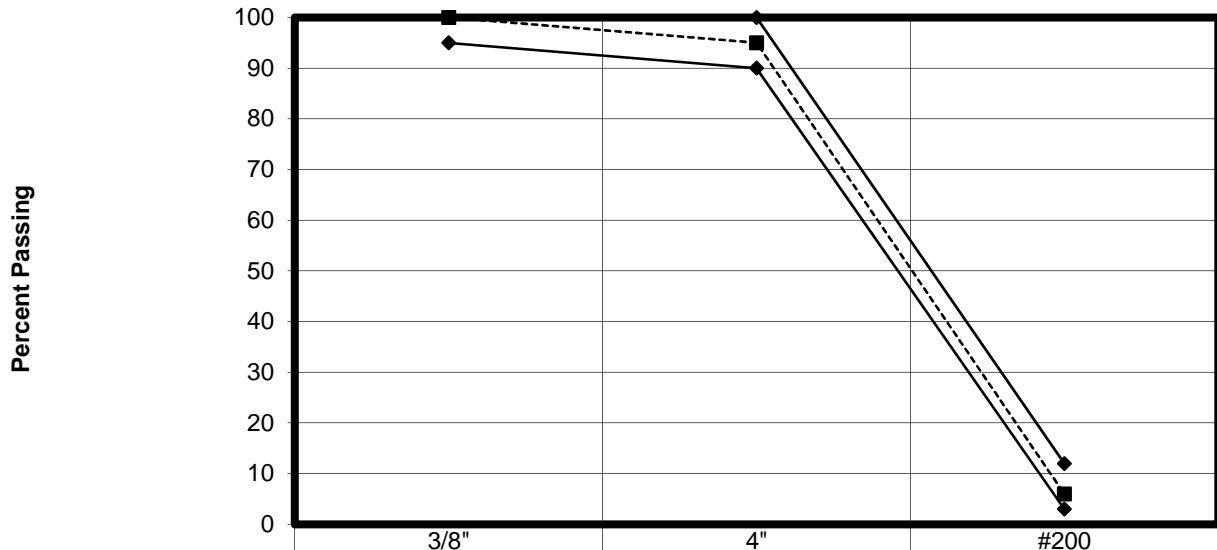
Sand Equivalent: -

L.A. Abrasion: 12.0%

Dust Ratio: -

Degradation: 76

Notes: Tested in accordance to ASTM C117, C136, C702, D75



—◆— Upper Limit	100	100	12
--■-- 8111	100	95	6
—◆— Lower Limit	95	90	3

Sieve Size

CalPortland - Aggregate Submittal



Date: July 24, 2017

Product Number: 8126
 Product Description: Berm Imported Fill
 Specification Number: Attached

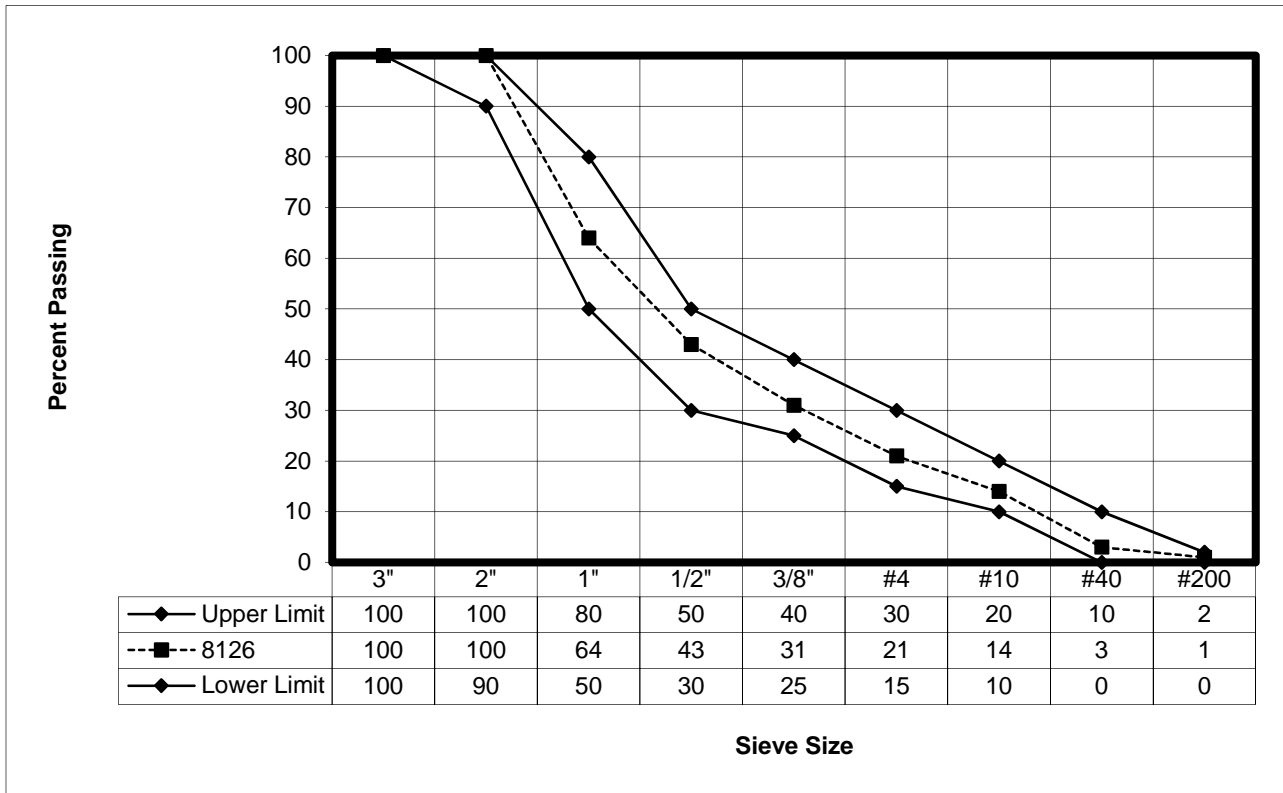
Source: Pioneer Aggregates Location: DuPont WA
 WSDOT Pit Number: B-335

Specification:

3" square	100% Pass	% Fracture	-
2" square	90-100	Sand Equivalent	-
1" square	50-80	L.A. Wear	-
1/2" square	30-50		
3/8" square	25-40		
U.S. No. 4	15-30		
U.S. No. 10	10-20	Degradation:	-
U.S. No. 40	0-10	Dust Ratio	-
U.S. No. 200	0-2		

Specific Gravity:	2.701	% Fracture:	-
Absorption:	1.34	Sand Equivalent:	-
L.A. Abrasion:	12.0%	Dust Ratio:	-
Degradation:	76		

Notes: Tested in accordance to ASTM C117, C136, C702, D75



CalPortland - Aggregate Submittal



Date: July 24, 2017

Product Number: 8129

Product Description: Saturated Zone Backfill

Specification Number: Attached

Source: Pioneer Aggregates

Location: DuPont WA

WSDOT Pit Number: B-335

Specification:

2 1/2" square	99-100% Pass	% Fracture	-
2" square	65-100	Sand Equivalent	-
1" square	50-80	L.A. Wear	-
U.S. No. 4	26-44	Degradation:	-
U.S. No. 40	0-16	Dust Ratio	-
U.S. No. 200	0-9		

Specific Gravity: 2.701

% Fracture: -

Absorption: 1.34

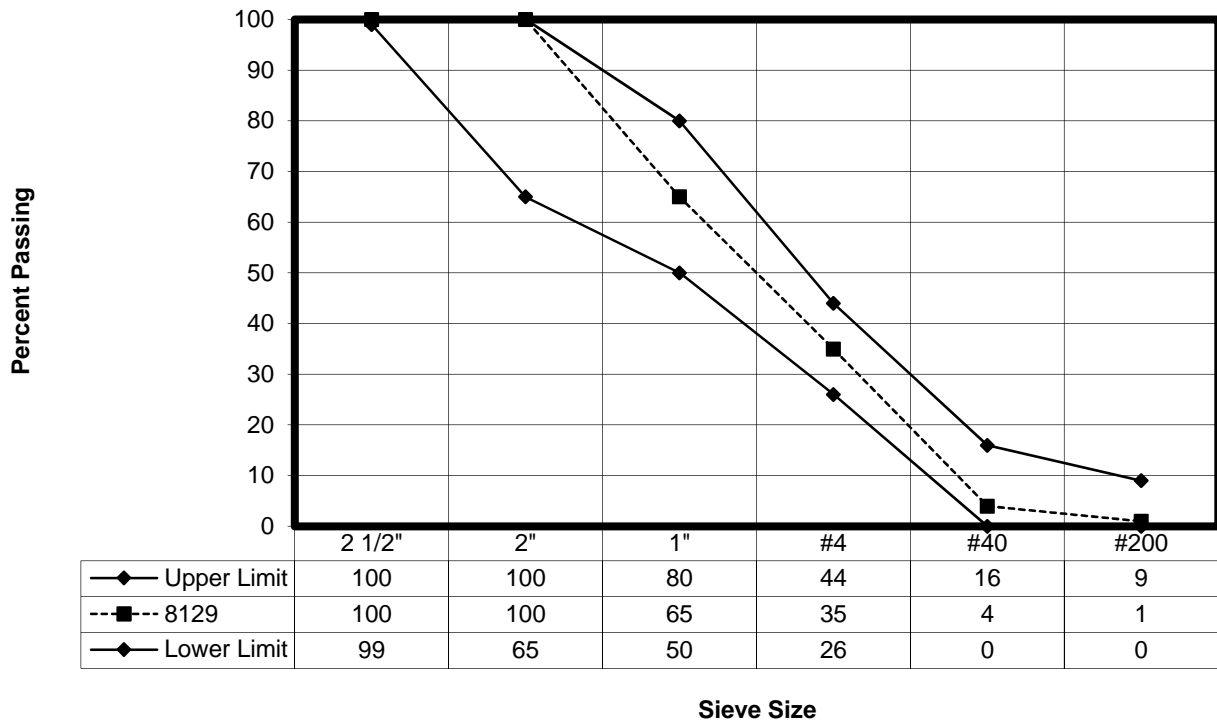
Sand Equivalent: -

L.A. Abrasion: 12.0%

Dust Ratio: -

Degradation: 76

Notes: Tested in accordance to ASTM C117, C136, C702, D75



February 25, 2013

Mr. Louie Bayless
Quality Control Manager – Aggregate Division
CalPortland Company
4301 Pioneer Avenue
DuPont, WA 98327

PSI Project Number: 0742803-5

**SUBJECT: Feed Stock Sample - Laboratory Analytical Results
CalPortland Pioneer Avenue, DuPont, WA**

Dear Mr. Bayless,

Professional Service Industries, Inc. (PSI) has received and reviewed the laboratory results of a sample collected from the feed stock material at the CalPortland DuPont facility located in DuPont, WA. The sample was collected from the feed stock material to ensure that petroleum hydrocarbons and other contaminants were not encountered during excavation. One discreet grab sample was collected from aggregate feed stock at the CalPortland DuPont facility.

The sample was collected by Steven Padilla of Professional Service Industries, Inc. (PSI). The sample was put in a cooler with ice, and hand delivered directly to Fremont Analytical of Fremont, Washington. A chain of custody for the sample was established from the time of receipt of the sample at the CalPortland DuPont facility until delivery to the laboratory representative. Laboratory results and a chain of custody are attached to this letter report.

The sample obtained by PSI was analyzed by Fremont Analytical using the following methods:

1. Total Petroleum Hydrocarbons – Gasoline - NWTPH-G, EPA Method 8260B. Quality Control Results are contained in the laboratory report.
2. Total Petroleum Hydrocarbons- Diesel- NWTPH-Dx, EPA Method 3550B.
3. Volatile Organic Compounds (VOC), EPA Method 8260.
4. Semi Volatile Compounds, EPA Method 8270.
5. Polychlorinated Biphenyls (PCB), EPA Method 8082.
6. Chlorinated Pesticides, EPA Method 8081.
7. Metals – Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Selenium, EPA Method 6020 / 200.8.

Based on laboratory results, PSI concludes the following about the sample supplied by CalPortland Company:

- The sample collected from the feed stock material at the CalPortland DuPont facility was reported as not having detectable amounts of gasoline, diesel, heavy oils, volatile and semi-volatile organic compounds, PCBs, and pesticides.
- The sample collected from the feed stock material at the CalPortland DuPont facility was reported as containing trace amounts of the regulated heavy metals: chromium, copper, lead, zinc, and arsenic. These trace amounts could be interpreted as background levels for the location in which it was extracted. The trace amounts are significantly below EPA and DOE cleanup levels.

In summary, with the exception of trace amounts of regulated heavy metals (interpreted as background levels) the sample obtained at the CalPortland DuPont facility came back with non-detectable levels on all analytes. We appreciate the opportunity to provide CalPortland with this information, and it is our wish that the information provided is of maximum use and benefit. Please feel free to call with any questions you may have regarding this report.

Respectfully submitted,



Steven Padilla
Environmental Project Manager



Frank Poss
Principal Consultant

Attachments: Fremont Analytical Laboratory Report and Chains of Custody



1311 N. 35th St.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Professional Service Industries, Inc.
Steven Padilla
24113 56th Avenue W
Mountlake Terrace, Washington 98043

RE: Cal Portland Plant Feed
Lab ID: 1301152

February 11, 2013

Attention Steven Padilla:

Fremont Analytical, Inc. received 1 sample(s) on 1/31/2013 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Gasoline by NWTPH-Gx
Mercury by EPA Method 7471
Organochlorine Pesticides by EPA Method 8081
Polychlorinated Biphenyls (PCB) by EPA 8082
Sample Moisture (Percent Moisture)
Semi-Volatile Organic Compounds by EPA Method 8270
Total Metals by EPA Method 6020
Volatile Organic Compounds by EPA Method 8260

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

A handwritten signature in black ink, appearing to read "M. Dee".

Michael Dee
Sr. Chemist / Principal



Date: 02/11/2013

CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed
Lab Order: 1301152

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1301152-001	CP-D	01/30/2013 11:30 AM	01/31/2013 10:56 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

CLIENT: Professional Service Industries, Inc.**Project:** Cal Portland Plant Feed

I. SAMPLE RECEIPT:

All samples were received intact. The internal ice chest temperatures were measured on receipt and are recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.



Analytical Report

WO#: 1301152

Date Reported: 2/11/2013

Client: Professional Service Industries, Inc.

Collection Date: 1/30/2013 11:30:00 AM

Project: Cal Portland Plant Feed

Lab ID: 1301152-001

Matrix: Soil

Client Sample ID: CP-D

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 4023

Analyst: BR

Diesel (Fuel Oil)	ND	18.3		mg/Kg-dry	1	1/31/2013 7:12:00 PM
Heavy Oil	ND	45.8		mg/Kg-dry	1	1/31/2013 7:12:00 PM
Surr: 2-Fluorobiphenyl	100	50-150		%REC	1	1/31/2013 7:12:00 PM
Surr: o-Terphenyl	98.8	50-150		%REC	1	1/31/2013 7:12:00 PM

Polychlorinated Biphenyls (PCB) by EPA 8082

Batch ID: 4038

Analyst: PH

Aroclor 1016	ND	0.102		mg/Kg-dry	1	2/6/2013 5:12:00 PM
Aroclor 1221	ND	0.102		mg/Kg-dry	1	2/6/2013 5:12:00 PM
Aroclor 1232	ND	0.102		mg/Kg-dry	1	2/6/2013 5:12:00 PM
Aroclor 1242	ND	0.102		mg/Kg-dry	1	2/6/2013 5:12:00 PM
Aroclor 1248	ND	0.102		mg/Kg-dry	1	2/6/2013 5:12:00 PM
Aroclor 1254	ND	0.102		mg/Kg-dry	1	2/6/2013 5:12:00 PM
Aroclor 1260	ND	0.102		mg/Kg-dry	1	2/6/2013 5:12:00 PM
Aroclor 1262	ND	0.102		mg/Kg-dry	1	2/6/2013 5:12:00 PM
Aroclor 1268	ND	0.102		mg/Kg-dry	1	2/6/2013 5:12:00 PM
Total PCBs	ND	0.102		mg/Kg-dry	1	2/6/2013 5:12:00 PM
Surr: Decachlorobiphenyl	131	66.1-145		%REC	1	2/6/2013 5:12:00 PM
Surr: Tetrachloro-m-xylene	121	67.2-132		%REC	1	2/6/2013 5:12:00 PM

Organochlorine Pesticides by EPA Method 8081

Batch ID: 4040

Analyst: PH

Alpha BHC	ND	0.0100		mg/Kg-dry	1	2/6/2013 3:33:00 PM
Beta BHC	ND	0.0100		mg/Kg-dry	1	2/6/2013 3:33:00 PM
Gamma BHC (Lindane)	ND	0.0100		mg/Kg-dry	1	2/6/2013 3:33:00 PM
Delta BHC	ND	0.0100		mg/Kg-dry	1	2/6/2013 3:33:00 PM
Heptachlor	ND	0.0100		mg/Kg-dry	1	2/6/2013 3:33:00 PM
Aldrin	ND	0.0100		mg/Kg-dry	1	2/6/2013 3:33:00 PM
Heptachlor epoxide	ND	0.0100		mg/Kg-dry	1	2/6/2013 3:33:00 PM
gamma-Chlordane	ND	0.0100		mg/Kg-dry	1	2/6/2013 3:33:00 PM
Endosulfan I	ND	0.0100		mg/Kg-dry	1	2/6/2013 3:33:00 PM
alpha-Chlordane	ND	0.0100		mg/Kg-dry	1	2/6/2013 3:33:00 PM
Dieldrin	ND	0.0100		mg/Kg-dry	1	2/6/2013 3:33:00 PM
4,4'-DDE	ND	0.0200		mg/Kg-dry	1	2/6/2013 3:33:00 PM
Endrin	ND	0.0200		mg/Kg-dry	1	2/6/2013 3:33:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	D	Dilution was required
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits



Analytical Report

WO#: 1301152

Date Reported: 2/11/2013

Client: Professional Service Industries, Inc.

Collection Date: 1/30/2013 11:30:00 AM

Project: Cal Portland Plant Feed

Lab ID: 1301152-001

Matrix: Soil

Client Sample ID: CP-D

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Organochlorine Pesticides by EPA Method 8081

Batch ID: 4040

Analyst: PH

Endosulfan II	ND	0.0200		mg/Kg-dry	1	2/6/2013 3:33:00 PM
4,4'-DDD	ND	0.0200		mg/Kg-dry	1	2/6/2013 3:33:00 PM
Endrin aldehyde	ND	0.0200		mg/Kg-dry	1	2/6/2013 3:33:00 PM
Endosulfan sulfate	ND	0.0200		mg/Kg-dry	1	2/6/2013 3:33:00 PM
4,4'-DDT	ND	0.0200		mg/Kg-dry	1	2/6/2013 3:33:00 PM
Endrin ketone	ND	0.0200		mg/Kg-dry	1	2/6/2013 3:33:00 PM
Methoxychlor	ND	0.0501		mg/Kg-dry	1	2/6/2013 3:33:00 PM
Surr: Decachlorobiphenyl	90.5	54.6-157		%REC	1	2/6/2013 3:33:00 PM
Surr: Tetrachloro-m-xylene	91.9	59.3-135		%REC	1	2/6/2013 3:33:00 PM

Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 4041

Analyst: PH

Phenol	ND	201		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Bis(2-chloroethyl) ether	ND	201		µg/Kg-dry	1	2/7/2013 9:33:00 PM
2-Chlorophenol	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
1,3-Dichlorobenzene	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
1,4-Dichlorobenzene	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
1,2-Dichlorobenzene	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Benzyl alcohol	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
2-Methylphenol (o-cresol)	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Hexachloroethane	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
N-Nitrosodi-n-propylamine	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Nitrobenzene	ND	201		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Isophorone	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
4-Methylphenol (p-cresol)	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
2-Nitrophenol	ND	201		µg/Kg-dry	1	2/7/2013 9:33:00 PM
2,4-Dimethylphenol	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Bis(2-chloroethoxy)methane	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
2,4-Dichlorophenol	ND	201		µg/Kg-dry	1	2/7/2013 9:33:00 PM
1,2,4-Trichlorobenzene	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Naphthalene	ND	80.2		µg/Kg-dry	1	2/7/2013 9:33:00 PM
4-Chloroaniline	ND	501		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Hexachlorobutadiene	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
4-Chloro-3-methylphenol	ND	501		µg/Kg-dry	1	2/7/2013 9:33:00 PM
2-Methylnaphthalene	ND	80.2		µg/Kg-dry	1	2/7/2013 9:33:00 PM

Qualifiers: B Analyte detected in the associated Method Blank
 E Value above quantitation range
 J Analyte detected below quantitation limits
 RL Reporting Limit

D Dilution was required
 H Holding times for preparation or analysis exceeded
 ND Not detected at the Reporting Limit
 S Spike recovery outside accepted recovery limits



Analytical Report

WO#: 1301152

Date Reported: 2/11/2013

Client: Professional Service Industries, Inc.

Collection Date: 1/30/2013 11:30:00 AM

Project: Cal Portland Plant Feed

Lab ID: 1301152-001

Matrix: Soil

Client Sample ID: CP-D

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 4041

Analyst: PH

1-Methylnaphthalene	ND	80.2		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Hexachlorocyclopentadiene	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
2,4,6-Trichlorophenol	ND	201		µg/Kg-dry	1	2/7/2013 9:33:00 PM
2,4,5-Trichlorophenol	ND	201		µg/Kg-dry	1	2/7/2013 9:33:00 PM
2-Chloronaphthalene	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
2-Nitroaniline	ND	501		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Acenaphthene	ND	80.2		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Dimethylphthalate	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
2,6-Dinitrotoluene	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Acenaphthylene	ND	80.2		µg/Kg-dry	1	2/7/2013 9:33:00 PM
2,4-Dinitrophenol	ND	201		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Dibenzofuran	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
2,4-Dinitrotoluene	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
4-Nitrophenol	ND	501		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Fluorene	ND	80.2		µg/Kg-dry	1	2/7/2013 9:33:00 PM
4-Chlorophenyl phenyl ether	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Diethylphthalate	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
4,6-Dinitro-2-methylphenol	ND	201		µg/Kg-dry	1	2/7/2013 9:33:00 PM
4-Bromophenyl phenyl ether	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Hexachlorobenzene	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Pentachlorophenol	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Phenanthrene	ND	80.2		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Anthracene	ND	80.2		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Carbazole	ND	501		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Di-n-butylphthalate	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Fluoranthene	ND	80.2		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Pyrene	ND	80.2		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Butyl Benzylphthalate	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
bis(2-Ethylhexyl)adipate	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Benz (a) anthracene	ND	80.2		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Chrysene	ND	80.2		µg/Kg-dry	1	2/7/2013 9:33:00 PM
bis (2-Ethylhexyl) phthalate	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Di-n-octyl phthalate	ND	100		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Benzo (b) fluoranthene	ND	80.2		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Benzo (k) fluoranthene	ND	80.2		µg/Kg-dry	1	2/7/2013 9:33:00 PM

Qualifiers: B Analyte detected in the associated Method Blank
 E Value above quantitation range
 J Analyte detected below quantitation limits
 RL Reporting Limit

D Dilution was required
 H Holding times for preparation or analysis exceeded
 ND Not detected at the Reporting Limit
 S Spike recovery outside accepted recovery limits



Analytical Report

WO#: 1301152

Date Reported: 2/11/2013

Client: Professional Service Industries, Inc.

Collection Date: 1/30/2013 11:30:00 AM

Project: Cal Portland Plant Feed

Lab ID: 1301152-001

Matrix: Soil

Client Sample ID: CP-D

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Semi-Volatile Organic Compounds by EPA Method 8270

Batch ID: 4041

Analyst: PH

Benzo (a) pyrene	ND	80.2		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Indeno (1,2,3-cd) pyrene	ND	80.2		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Dibenz (a,h) anthracene	ND	80.2		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Benzo (g,h,i) perylene	ND	80.2		µg/Kg-dry	1	2/7/2013 9:33:00 PM
Surr: 2,4,6-Tribromophenol	72.1	28.5-154		%REC	1	2/7/2013 9:33:00 PM
Surr: 2-Fluorobiphenyl	87.2	42.6-139		%REC	1	2/7/2013 9:33:00 PM
Surr: Nitrobenzene-d5	91.0	45.1-149		%REC	1	2/7/2013 9:33:00 PM
Surr: Phenol-d6	89.9	48.2-143		%REC	1	2/7/2013 9:33:00 PM
Surr: p-Terphenyl	95.0	33.3-149		%REC	1	2/7/2013 9:33:00 PM

Gasoline by NWTPH-Gx

Batch ID: R7373

Analyst: EM

Gasoline	ND	1.43		mg/Kg-dry	1	2/5/2013 6:58:00 AM
Surr: 1,2-Dichloroethane-d4	92.2	65-135		%REC	1	2/5/2013 6:58:00 AM
Surr: Fluorobenzene	130	65-135		%REC	1	2/5/2013 6:58:00 AM

Volatile Organic Compounds by EPA Method 8260

Batch ID: 4033

Analyst: EM

Dichlorodifluoromethane (CFC-12)	ND	0.0172		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Chloromethane	ND	0.0172		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Vinyl chloride	ND	0.000573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Bromomethane	ND	0.0258		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Trichlorofluoromethane (CFC-11)	ND	0.0143		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Chloroethane	ND	0.0172		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,1-Dichloroethene	ND	0.0143		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Methylene chloride	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
trans-1,2-Dichloroethene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Methyl tert-butyl ether (MTBE)	ND	0.0143		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,1-Dichloroethane	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
2,2-Dichloropropane	ND	0.0143		mg/Kg-dry	1	2/7/2013 6:31:00 AM
cis-1,2-Dichloroethene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Chloroform	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,1,1-Trichloroethane (TCA)	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,1-Dichloropropene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Carbon tetrachloride	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM

Qualifiers: B Analyte detected in the associated Method Blank
 E Value above quantitation range
 J Analyte detected below quantitation limits
 RL Reporting Limit

D Dilution was required
 H Holding times for preparation or analysis exceeded
 ND Not detected at the Reporting Limit
 S Spike recovery outside accepted recovery limits



Analytical Report

WO#: 1301152

Date Reported: 2/11/2013

Client: Professional Service Industries, Inc.

Collection Date: 1/30/2013 11:30:00 AM

Project: Cal Portland Plant Feed

Lab ID: 1301152-001

Matrix: Soil

Client Sample ID: CP-D

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260

Batch ID: 4033

Analyst: EM

1,2-Dichloroethane (EDC)	ND	0.00860		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Benzene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Trichloroethene (TCE)	ND	0.00860		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,2-Dichloropropane	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Bromodichloromethane	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Dibromomethane	ND	0.0115		mg/Kg-dry	1	2/7/2013 6:31:00 AM
cis-1,3-Dichloropropene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Toluene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
trans-1,3-Dichloropropylene	ND	0.00860		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,1,2-Trichloroethane	ND	0.00860		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,3-Dichloropropane	ND	0.0143		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Tetrachloroethene (PCE)	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Dibromochloromethane	ND	0.00860		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,2-Dibromoethane (EDB)	ND	0.00143		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Chlorobenzene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,1,1,2-Tetrachloroethane	ND	0.00860		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Ethylbenzene	ND	0.00860		mg/Kg-dry	1	2/7/2013 6:31:00 AM
m,p-Xylene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
o-Xylene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Styrene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Isopropylbenzene	ND	0.0229		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Bromoform	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,1,2,2-Tetrachloroethane	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
n-Propylbenzene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Bromobenzene	ND	0.00860		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,3,5-Trimethylbenzene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
2-Chlorotoluene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
4-Chlorotoluene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
tert-Butylbenzene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,2,3-Trichloropropane	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,2,4-Trichlorobenzene	ND	0.0143		mg/Kg-dry	1	2/7/2013 6:31:00 AM
sec-Butylbenzene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
4-Isopropyltoluene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,3-Dichlorobenzene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,4-Dichlorobenzene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM

Qualifiers: B Analyte detected in the associated Method Blank
 E Value above quantitation range
 J Analyte detected below quantitation limits
 RL Reporting Limit

D Dilution was required
 H Holding times for preparation or analysis exceeded
 ND Not detected at the Reporting Limit
 S Spike recovery outside accepted recovery limits



Analytical Report

WO#: 1301152

Date Reported: 2/11/2013

Client: Professional Service Industries, Inc.

Collection Date: 1/30/2013 11:30:00 AM

Project: Cal Portland Plant Feed

Lab ID: 1301152-001

Matrix: Soil

Client Sample ID: CP-D

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260

Batch ID: 4033

Analyst: EM

n-Butylbenzene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,2-Dichlorobenzene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,2-Dibromo-3-chloropropane	ND	0.00860		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,2,4-Trimethylbenzene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Hexachlorobutadiene	ND	0.0287		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Naphthalene	ND	0.00860		mg/Kg-dry	1	2/7/2013 6:31:00 AM
1,2,3-Trichlorobenzene	ND	0.00573		mg/Kg-dry	1	2/7/2013 6:31:00 AM
Surr: 1-Bromo-4-fluorobenzene	104	63.1-141		%REC	1	2/7/2013 6:31:00 AM
Surr: Dibromofluoromethane	102	67.6-119		%REC	1	2/7/2013 6:31:00 AM
Surr: Toluene-d8	91.8	78.5-126		%REC	1	2/7/2013 6:31:00 AM

Total Metals by EPA Method 6020

Batch ID: 4028

Analyst: MC

Antimony	ND	0.167		mg/Kg-dry	1	2/4/2013 10:30:24 AM
Arsenic	1.82	0.0836		mg/Kg-dry	1	2/4/2013 10:30:24 AM
Beryllium	ND	0.167		mg/Kg-dry	1	2/4/2013 10:30:24 AM
Cadmium	ND	0.167		mg/Kg-dry	1	2/4/2013 10:30:24 AM
Chromium	15.5	0.0836		mg/Kg-dry	1	2/4/2013 10:30:24 AM
Copper	11.8	0.167		mg/Kg-dry	1	2/4/2013 10:30:24 AM
Lead	1.54	0.167		mg/Kg-dry	1	2/4/2013 10:30:24 AM
Selenium	ND	0.418		mg/Kg-dry	1	2/4/2013 10:30:24 AM
Silver	ND	0.0836		mg/Kg-dry	1	2/4/2013 10:30:24 AM
Thallium	ND	0.167		mg/Kg-dry	1	2/4/2013 10:30:24 AM
Zinc	22.4	0.334		mg/Kg-dry	1	2/4/2013 10:30:24 AM

Mercury by EPA Method 7471

Batch ID: 4029

Analyst: SG

Mercury	ND	0.0166		mg/Kg-dry	1	2/4/2013 12:02:59 PM
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Sample Moisture (Percent Moisture)

Batch ID: R7347

Analyst: AO

Percent Moisture	7.22			wt%	1	2/4/2013 4:29:50 PM
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Qualifiers: B Analyte detected in the associated Method Blank
 E Value above quantitation range
 J Analyte detected below quantitation limits
 RL Reporting Limit

D Dilution was required
 H Holding times for preparation or analysis exceeded
 ND Not detected at the Reporting Limit
 S Spike recovery outside accepted recovery limits

Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Total Metals by EPA Method 6020

Sample ID: MB-4028	SampType: MBLK	Units: mg/Kg	Prep Date: 2/1/2013	RunNo: 7332							
Client ID: MBLKS	Batch ID: 4028		Analysis Date: 2/2/2013	SeqNo: 144610							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.200									
Arsenic	ND	0.100									
Beryllium	ND	0.200									
Cadmium	ND	0.200									
Chromium	ND	0.100									
Copper	ND	0.200									
Lead	ND	0.200									
Selenium	ND	0.500									
Silver	ND	0.100									
Thallium	ND	0.200									
Zinc	ND	0.400									

Sample ID: LCS-4028	SampType: LCS	Units: mg/Kg	Prep Date: 2/1/2013	RunNo: 7332							
Client ID: LCSS	Batch ID: 4028		Analysis Date: 2/2/2013	SeqNo: 144611							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	91.7	0.200	60.80	0	151	20.1	271.8				
Arsenic	110	0.100	102.0	0	107	83.43	115.7				
Beryllium	75.6	0.200	80.00	0	94.5	86.88	112.5				
Cadmium	92.7	0.200	86.30	0	107	84.24	115.8				
Chromium	234	0.100	208.0	0	113	86.54	113.5				
Copper	276	0.200	249.0	0	111	85.14	114.5				
Lead	77.0	0.200	71.80	0	107	84.26	115.7				
Selenium	173	0.500	165.0	0	105	78.79	120.6				
Silver	34.5	0.100	31.30	0	110	79.87	120.4				
Thallium	53.7	0.200	50.80	0	106	75.59	124.6				
Zinc	884	0.400	829.0	0	107	83.59	116.4				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits



Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Total Metals by EPA Method 6020

Sample ID: 1301127-022BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 2/1/2013	RunNo: 7332							
Client ID: BATCH	Batch ID: 4028	Analysis Date: 2/2/2013	SeqNo: 144614								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.177						0	0	30	R
Arsenic	4.24	0.0886						3.986	6.23	30	
Beryllium	0.204	0.177						0.1948	4.70	30	
Cadmium	ND	0.177						0	0	30	R
Chromium	38.8	0.0886						36.54	5.94	30	
Copper	25.9	0.177						25.64	1.06	30	
Lead	5.73	0.177						6.445	11.8	30	
Selenium	ND	0.443						0	200	30	R
Silver	ND	0.0886						0	0	30	
Thallium	ND	0.177						0	0	30	
Zinc	52.9	0.354						53.40	0.963	30	

NOTES:

R - High RPD due to low analyte concentration. In this range, high RPD's may be expected.

Sample ID: 1301127-022BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 2/1/2013	RunNo: 7332							
Client ID: BATCH	Batch ID: 4028	Analysis Date: 2/2/2013	SeqNo: 144616								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.88	0.175	2.182	0.1511	79.4	75	125				
Arsenic	49.8	0.0873	43.63	3.986	105	75	125				
Beryllium	2.08	0.175	2.182	0.1948	86.4	75	125				
Cadmium	2.33	0.175	2.182	0.08621	103	75	125				
Chromium	89.9	0.0873	43.63	36.54	122	75	125				
Copper	71.4	0.175	43.63	25.64	105	75	125				
Lead	27.7	0.175	21.82	6.445	97.3	75	125				
Selenium	5.11	0.436	4.363	0.1179	114	75	125				
Silver	13.5	0.0873	10.91	0.08387	123	75	125				
Thallium	1.23	0.175	1.091	0.1022	104	75	125				
Zinc	97.1	0.349	43.63	53.40	100	75	125				

Qualifiers: B Analyte detected in the associated Method Blank
D Dilution was required
E Value above quantitation range
H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits
ND Not detected at the Reporting Limit
R RPD outside accepted recovery limits
RL Reporting Limit
S Spike recovery outside accepted recovery limits



Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Total Metals by EPA Method 6020

Sample ID: 1301127-022BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 2/1/2013	RunNo: 7332							
Client ID: BATCH	Batch ID: 4028	Analysis Date: 2/2/2013	SeqNo: 144616								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 1301127-022BMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 2/1/2013	RunNo: 7332							
Client ID: BATCH	Batch ID: 4028	Analysis Date: 2/2/2013	SeqNo: 144617								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	1.80	0.173	2.165	0.1511	76.2	75	125	1.883	4.45	30
Arsenic	52.7	0.0866	43.30	3.986	112	75	125	49.78	5.60	30
Beryllium	2.23	0.173	2.165	0.1948	93.9	75	125	2.081	6.81	30
Cadmium	2.50	0.173	2.165	0.08621	111	75	125	2.330	6.85	30
Chromium	87.7	0.0866	43.30	36.54	118	75	125	89.93	2.47	30
Copper	74.4	0.173	43.30	25.64	113	75	125	71.42	4.14	30
Lead	29.0	0.173	21.65	6.445	104	75	125	27.67	4.53	30
Selenium	5.28	0.433	4.330	0.1179	119	75	125	5.114	3.17	30
Silver	13.1	0.0866	10.83	0.08387	120	75	125	13.47	2.97	30
Thallium	1.30	0.173	1.083	0.1022	111	75	125	1.235	5.49	30
Zinc	100	0.346	43.30	53.40	108	75	125	97.11	2.95	30

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits



Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Mercury by EPA Method 7471

Sample ID: MB-4029	SampType: MBLK	Units: mg/Kg	Prep Date: 2/1/2013	RunNo: 7337							
Client ID: MBLKS	Batch ID: 4029	Analysis Date: 2/4/2013	SeqNo: 144720								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury ND 0.0160

Sample ID: LCS-4029	SampType: LCS	Units: mg/Kg	Prep Date: 2/1/2013	RunNo: 7337							
Client ID: LCSS	Batch ID: 4029	Analysis Date: 2/4/2013	SeqNo: 144721								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.516 0.0160 0.5000 0 103 80 120

Sample ID: 1301127-022BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 2/1/2013	RunNo: 7337							
Client ID: BATCH	Batch ID: 4029	Analysis Date: 2/4/2013	SeqNo: 144723								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.0248 0.0155 0.02451 1.17 20

Sample ID: 1301127-022BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 2/1/2013	RunNo: 7337							
Client ID: BATCH	Batch ID: 4029	Analysis Date: 2/4/2013	SeqNo: 144724								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.497 0.0152 0.4763 0.02451 99.3 70 130

Sample ID: 1301127-022BMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 2/1/2013	RunNo: 7337							
Client ID: BATCH	Batch ID: 4029	Analysis Date: 2/4/2013	SeqNo: 144725								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.499 0.0155 0.4844 0.02451 97.9 70 130 0.4973 0.331 20

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
D Dilution was required
J Analyte detected below quantitation limits
RL Reporting Limit
E Value above quantitation range
ND Not detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: 1301157-001ADUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 1/31/2013	RunNo: 7320							
Client ID: BATCH	Batch ID: 4023		Analysis Date: 1/31/2013	SeqNo: 144423							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	20.4						0	0	30	
Heavy Oil	ND	50.9						0	0	30	
Surr: 2-Fluorobiphenyl	22.3		20.35		110	50	150		0		
Surr: o-Terphenyl	22.5		20.35		111	50	150		0		

Sample ID: LCS-4023	SampType: LCS	Units: mg/Kg	Prep Date: 1/31/2013	RunNo: 7320							
Client ID: LCSS	Batch ID: 4023		Analysis Date: 1/31/2013	SeqNo: 144427							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	473	20.0	500.0	0	94.6	65	135				
Surr: 2-Fluorobiphenyl	20.0		20.00		100	50	150				
Surr: o-Terphenyl	19.9		20.00		99.5	50	150				

Sample ID: MB-4023	SampType: MBLK	Units: mg/Kg	Prep Date: 1/31/2013	RunNo: 7320							
Client ID: MBLKS	Batch ID: 4023		Analysis Date: 1/31/2013	SeqNo: 144428							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	21.0		20.00		105	50	150				
Surr: o-Terphenyl	21.2		20.00		106	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Polychlorinated Biphenyls (PCB) by EPA 8082

Sample ID: MB-4038	SampType: MBLK	Units: mg/Kg	Prep Date: 2/5/2013	RunNo: 7364							
Client ID: MBLKS	Batch ID: 4038		Analysis Date: 2/6/2013	SeqNo: 145278							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.0950									
Aroclor 1221	ND	0.0950									
Aroclor 1232	ND	0.0950									
Aroclor 1242	ND	0.0950									
Aroclor 1248	ND	0.0950									
Aroclor 1254	ND	0.0950									
Aroclor 1260	ND	0.0950									
Aroclor 1262	ND	0.0950									
Aroclor 1268	ND	0.0950									
Total PCBs	ND	0.0950									
Surr: Decachlorobiphenyl	63.1		50.00		126	66.1	145				
Surr: Tetrachloro-m-xylene	59.7		50.00		119	67.2	132				

Sample ID: LCS-4038	SampType: LCS	Units: mg/Kg	Prep Date: 2/5/2013	RunNo: 7364							
Client ID: LCSS	Batch ID: 4038		Analysis Date: 2/6/2013	SeqNo: 145279							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1260	0.873	0.0950	1.000	0	87.3	70.7	117				
Surr: Decachlorobiphenyl	62.4		50.00		125	66.1	145				
Surr: Tetrachloro-m-xylene	60.2		50.00		120	67.2	132				

Sample ID: 1301152-001BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 2/5/2013	RunNo: 7364							
Client ID: CP-D	Batch ID: 4038		Analysis Date: 2/6/2013	SeqNo: 145281							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.0964						0	0	30	
Aroclor 1221	ND	0.0964						0	0	30	
Aroclor 1232	ND	0.0964						0	0	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits



Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Polychlorinated Biphenyls (PCB) by EPA 8082

Sample ID: 1301152-001BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 2/5/2013	RunNo: 7364							
Client ID: CP-D	Batch ID: 4038		Analysis Date: 2/6/2013	SeqNo: 145281							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1242	ND	0.0964						0	0	30	
Aroclor 1248	ND	0.0964						0	0	30	
Aroclor 1254	ND	0.0964						0	0	30	
Aroclor 1260	ND	0.0964						0	0	30	
Aroclor 1262	ND	0.0964						0	0	30	
Aroclor 1268	ND	0.0964						0	0	30	
Total PCBs	ND	0.0964						0	0	30	
Surr: Decachlorobiphenyl	65.1		50.75		128	66.1	145		0		
Surr: Tetrachloro-m-xylene	64.0		50.75		126	67.2	132		0		

Sample ID: 1301152-001BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 2/5/2013	RunNo: 7364							
Client ID: CP-D	Batch ID: 4038		Analysis Date: 2/6/2013	SeqNo: 145282							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1260	0.939	0.0987	1.039	0	90.4	66.4	126				
Surr: Decachlorobiphenyl	66.2		51.97		127	66.1	145				
Surr: Tetrachloro-m-xylene	64.3		51.97		124	67.2	132				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits



Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Organochlorine Pesticides by EPA Method 8081

Sample ID: MB-4040	SampType: MBLK	Units: mg/Kg	Prep Date: 2/5/2013	RunNo: 7366							
Client ID: MBLKS	Batch ID: 4040		Analysis Date: 2/6/2013	SeqNo: 145295							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alpha BHC	ND	0.0100									
Beta BHC	ND	0.0100									
Gamma BHC (Lindane)	ND	0.0100									
Delta BHC	ND	0.0100									
Heptachlor	ND	0.0100									
Aldrin	ND	0.0100									
Heptachlor epoxide	ND	0.0100									
gamma-Chlordane	ND	0.0100									
Endosulfan I	ND	0.0100									
alpha-Chlordane	ND	0.0100									
Dieldrin	ND	0.0100									
4,4'-DDE	ND	0.0200									
Endrin	ND	0.0200									
Endosulfan II	ND	0.0200									
4,4'-DDD	ND	0.0200									
Endrin aldehyde	ND	0.0200									
Endosulfan sulfate	ND	0.0200									
4,4'-DDT	ND	0.0200									
Endrin ketone	ND	0.0200									
Methoxychlor	ND	0.0500									
Surr: Decachlorobiphenyl	0.0448		0.05000		89.7	54.6	157				
Surr: Tetrachloro-m-xylene	0.0440		0.05000		88.1	59.3	135				

Sample ID: LCS-4040	SampType: LCS	Units: mg/Kg	Prep Date: 2/5/2013	RunNo: 7366							
Client ID: LCSS	Batch ID: 4040		Analysis Date: 2/6/2013	SeqNo: 145296							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alpha BHC	0.480	0.0100	0.5000	0	95.9	60.8	145				
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Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Organochlorine Pesticides by EPA Method 8081

Sample ID: LCS-4040	SampType: LCS	Units: mg/Kg				Prep Date: 2/5/2013	RunNo: 7366				
Client ID: LCSS	Batch ID: 4040					Analysis Date: 2/6/2013	SeqNo: 145296				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beta BHC	0.445	0.0100	0.5000	0	88.9	56.5	142				
Gamma BHC (Lindane)	0.489	0.0100	0.5000	0	97.8	59.2	146				
Delta BHC	0.515	0.0100	0.5000	0	103	47.4	157				
Heptachlor	0.491	0.0100	0.5000	0	98.3	60.1	147				
Aldrin	0.468	0.0100	0.5000	0	93.6	66.8	133				
Heptachlor epoxide	0.456	0.0100	0.5000	0	91.1	64.6	139				
gamma-Chlordane	0.465	0.0100	0.5000	0	92.9	67	132				
Endosulfan I	0.463	0.0100	0.5000	0	92.7	70.8	131				
alpha-Chlordane	0.460	0.0100	0.5000	0	92.1	72.4	138				
Dieldrin	0.465	0.0100	0.5000	0	93.0	66.6	133				
4,4'-DDE	0.470	0.0200	0.5000	0	94.1	55.4	142				
Endrin	0.451	0.0200	0.5000	0	90.2	56.5	143				
Endosulfan II	0.452	0.0200	0.5000	0	90.4	62	143				
4,4'-DDD	0.500	0.0200	0.5000	0	100	53.3	145				
Endrin aldehyde	0.463	0.0200	0.5000	0	92.6	39.5	153				
Endosulfan sulfate	0.487	0.0200	0.5000	0	97.4	53.8	148				
4,4'-DDT	0.460	0.0200	0.5000	0	92.0	51.8	150				
Endrin ketone	0.510	0.0200	0.5000	0	102	58.9	147				
Methoxychlor	0.474	0.0500	0.5000	0	94.8	50.5	162				
Surr: Decachlorobiphenyl	0.0465		0.05000		93.0	54.6	157				
Surr: Tetrachloro-m-xylene	0.0485		0.05000		97.0	59.3	135				

Sample ID: 1301152-001BDUP	SampType: DUP	Units: mg/Kg-dry				Prep Date: 2/5/2013	RunNo: 7366				
Client ID: CP-D	Batch ID: 4040					Analysis Date: 2/6/2013	SeqNo: 145298				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alpha BHC	ND	0.0102						0	0	30	
Beta BHC	ND	0.0102						0	0	30	

Qualifiers:
B Analyte detected in the associated Method Blank
D Dilution was required
E Value above quantitation range
H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits
ND Not detected at the Reporting Limit
R RPD outside accepted recovery limits
RL Reporting Limit
S Spike recovery outside accepted recovery limits

Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Organochlorine Pesticides by EPA Method 8081

Sample ID: 1301152-001BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 2/5/2013	RunNo: 7366
Client ID: CP-D	Batch ID: 4040		Analysis Date: 2/6/2013	SeqNo: 145298

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gamma BHC (Lindane)	ND	0.0102						0	0	30	
Delta BHC	ND	0.0102						0	0	30	
Heptachlor	ND	0.0102						0	0	30	
Aldrin	ND	0.0102						0	0	30	
Heptachlor epoxide	ND	0.0102						0	0	30	
gamma-Chlordane	ND	0.0102						0	0	30	
Endosulfan I	ND	0.0102						0	0	30	
alpha-Chlordane	ND	0.0102						0	0	30	
Dieldrin	ND	0.0102						0	0	30	
4,4'-DDE	ND	0.0203						0	0	30	
Endrin	ND	0.0203						0	0	30	
Endosulfan II	ND	0.0203						0	0	30	
4,4'-DDD	ND	0.0203						0	0	30	
Endrin aldehyde	ND	0.0203						0	0	30	
Endosulfan sulfate	ND	0.0203						0	0	30	
4,4'-DDT	ND	0.0203						0	0	30	
Endrin ketone	ND	0.0203						0	0	30	
Methoxychlor	ND	0.0508						0	0	30	
Surr: Decachlorobiphenyl	0.0481		0.05084		94.7	54.6	157		0		
Surr: Tetrachloro-m-xylene	0.0483		0.05084		94.9	59.3	135		0		

Sample ID: 1301152-001BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 2/5/2013	RunNo: 7366
Client ID: CP-D	Batch ID: 4040		Analysis Date: 2/6/2013	SeqNo: 145298

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alpha BHC	0.435	0.00998	0.4990	0	87.2	67.3	157				
Beta BHC	0.403	0.00998	0.4990	0	80.7	68.3	161				
Gamma BHC (Lindane)	0.446	0.00998	0.4990	0	89.3	64.8	156				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Organochlorine Pesticides by EPA Method 8081

Sample ID: 1301152-001BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 2/5/2013	RunNo: 7366							
Client ID: CP-D	Batch ID: 4040		Analysis Date: 2/6/2013	SeqNo: 145299							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Delta BHC	0.478	0.00998	0.4990	0	95.8	70.9	158				
Heptachlor	0.474	0.00998	0.4990	0	94.9	67.1	149				
Aldrin	0.433	0.00998	0.4990	0	86.8	54.9	143				
Heptachlor epoxide	0.419	0.00998	0.4990	0	84.0	62.6	152				
gamma-Chlordane	0.427	0.00998	0.4990	0	85.5	57.7	150				
Endosulfan I	0.425	0.00998	0.4990	0	85.3	59.4	155				
alpha-Chlordane	0.422	0.00998	0.4990	0	84.6	67.6	149				
Dieldrin	0.425	0.00998	0.4990	0	85.3	59.3	147				
4,4'-DDE	0.435	0.0200	0.4990	0	87.1	43.1	170				
Endrin	0.423	0.0200	0.4990	0	84.8	64	149				
Endosulfan II	0.411	0.0200	0.4990	0	82.3	68.8	150				
4,4'-DDD	0.465	0.0200	0.4990	0	93.1	75.9	153				
Endrin aldehyde	0.406	0.0200	0.4990	0	81.4	38.2	164				
Endosulfan sulfate	0.458	0.0200	0.4990	0	91.9	71.2	153				
4,4'-DDT	0.467	0.0200	0.4990	0	93.6	45.7	168				
Endrin ketone	0.487	0.0200	0.4990	0	97.6	74.7	152				
Methoxychlor	0.512	0.0499	0.4990	0	103	91.2	150				
Surr: Decachlorobiphenyl	0.0493		0.04990		98.8	54.6	157				
Surr: Tetrachloro-m-xylene	0.0510		0.04990		102	59.3	135				

Qualifiers:	B Analyte detected in the associated Method Blank	D Dilution was required	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	ND Not detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit	S Spike recovery outside accepted recovery limits

Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: MB-4041	SampType: MBLK	Units: µg/Kg	Prep Date: 2/5/2013	RunNo: 7396							
Client ID: MBLKS	Batch ID: 4041		Analysis Date: 2/7/2013	SeqNo: 145800							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Phenol	ND	200									
Bis(2-chloroethyl) ether	ND	200									
2-Chlorophenol	ND	100									
1,3-Dichlorobenzene	ND	100									
1,4-Dichlorobenzene	ND	100									
1,2-Dichlorobenzene	ND	100									
Benzyl alcohol	ND	100									
2-Methylphenol (o-cresol)	ND	100									
Hexachloroethane	ND	100									
N-Nitrosodi-n-propylamine	ND	100									
Nitrobenzene	ND	200									
Isophorone	ND	100									
4-Methylphenol (p-cresol)	ND	100									
2-Nitrophenol	ND	200									
2,4-Dimethylphenol	ND	100									
Bis(2-chloroethoxy)methane	ND	100									
2,4-Dichlorophenol	ND	200									
1,2,4-Trichlorobenzene	ND	100									
Naphthalene	ND	80.0									
4-Chloroaniline	ND	500									
Hexachlorobutadiene	ND	100									
4-Chloro-3-methylphenol	ND	500									
2-Methylnaphthalene	ND	80.0									
1-Methylnaphthalene	ND	80.0									
Hexachlorocyclopentadiene	ND	100									
2,4,6-Trichlorophenol	ND	200									
2,4,5-Trichlorophenol	ND	200									
2-Chloronaphthalene	ND	100									
2-Nitroaniline	ND	500									

Qualifiers:	B Analyte detected in the associated Method Blank	D Dilution was required	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	ND Not detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit	S Spike recovery outside accepted recovery limits



Date: 2/11/2013

Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: MB-4041	SampType: MBLK	Units: µg/Kg	Prep Date: 2/5/2013	RunNo: 7396							
Client ID: MBLKS	Batch ID: 4041		Analysis Date: 2/7/2013	SeqNo: 145800							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Acenaphthene	ND	80.0									
Dimethylphthalate	ND	100									
2,6-Dinitrotoluene	ND	100									
Acenaphthylene	ND	80.0									
2,4-Dinitrophenol	ND	200									
Dibenzofuran	ND	100									
2,4-Dinitrotoluene	ND	100									
4-Nitrophenol	ND	500									
Fluorene	ND	80.0									
4-Chlorophenyl phenyl ether	ND	100									
Diethylphthalate	ND	100									
4,6-Dinitro-2-methylphenol	ND	200									
4-Bromophenyl phenyl ether	ND	100									
Hexachlorobenzene	ND	100									
Pentachlorophenol	ND	100									
Phenanthrene	ND	80.0									
Anthracene	ND	80.0									
Carbazole	ND	500									
Di-n-butylphthalate	ND	100									
Fluoranthene	ND	80.0									
Pyrene	ND	80.0									
Butyl Benzylphthalate	ND	100									
bis(2-Ethylhexyl)adipate	ND	100									
Benz (a) anthracene	ND	80.0									
Chrysene	ND	80.0									
bis (2-Ethylhexyl) phthalate	ND	100									
Di-n-octyl phthalate	ND	100									
Benzo (b) fluoranthene	ND	80.0									
Benzo (k) fluoranthene	ND	80.0									

Qualifiers:	B Analyte detected in the associated Method Blank	D Dilution was required	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	ND Not detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit	S Spike recovery outside accepted recovery limits

Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: MB-4041	SampType: MBLK	Units: µg/Kg	Prep Date: 2/5/2013	RunNo: 7396							
Client ID: MBLKS	Batch ID: 4041		Analysis Date: 2/7/2013	SeqNo: 145800							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo (a) pyrene	ND	80.0									
Indeno (1,2,3-cd) pyrene	ND	80.0									
Dibenz (a,h) anthracene	ND	80.0									
Benzo (g,h,i) perylene	ND	80.0									
Surr: 2,4,6-Tribromophenol	405		1,000		40.5	28.5	154				
Surr: 2-Fluorobiphenyl	494		500.0		98.8	42.6	139				
Surr: Nitrobenzene-d5	479		500.0		95.8	45.1	149				
Surr: Phenol-d6	961		1,000		96.1	48.2	143				
Surr: p-Terphenyl	501		500.0		100	33.3	149				

Sample ID: LCS-4041	SampType: LCS	Units: µg/Kg	Prep Date: 2/5/2013	RunNo: 7396							
Client ID: LCSS	Batch ID: 4041		Analysis Date: 2/7/2013	SeqNo: 145801							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Phenol	964	200	1,000	0	96.4	41.8	138				
Bis(2-chloroethyl) ether	969	200	1,000	0	96.9	65	116				
2-Chlorophenol	966	100	1,000	0	96.6	49.3	132				
1,3-Dichlorobenzene	975	100	1,000	0	97.5	69.8	116				
1,4-Dichlorobenzene	966	100	1,000	0	96.6	51.3	133				
1,2-Dichlorobenzene	973	100	1,000	0	97.3	69	117				
Benzyl alcohol	861	100	1,000	0	86.1	42.4	131				
2-Methylphenol (o-cresol)	1,000	100	1,000	0	100	71.4	113				
Hexachloroethane	979	100	1,000	0	97.9	67.8	117				
N-Nitrosodi-n-propylamine	951	100	1,000	0	95.1	39.8	135				
Nitrobenzene	935	200	1,000	0	93.5	67.9	118				
Isophorone	998	100	1,000	0	99.8	62.7	131				
4-Methylphenol (p-cresol)	928	100	1,000	0	92.8	66.1	126				
2-Nitrophenol	902	200	1,000	0	90.2	46.1	117				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded R RPD outside accepted recovery limits	D Dilution was required J Analyte detected below quantitation limits RL Reporting Limit	E Value above quantitation range ND Not detected at the Reporting Limit S Spike recovery outside accepted recovery limits
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Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: LCS-4041	SampType: LCS	Units: µg/Kg	Prep Date: 2/5/2013	RunNo: 7396							
Client ID: LCSS	Batch ID: 4041		Analysis Date: 2/7/2013	SeqNo: 145801							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

2,4-Dimethylphenol	956	100	1,000	0	95.6	57.8	121				
Bis(2-chloroethoxy)methane	986	100	1,000	0	98.6	67.5	124				
2,4-Dichlorophenol	937	200	1,000	0	93.7	57.1	128				
1,2,4-Trichlorobenzene	958	100	1,000	0	95.8	36.2	140				
Naphthalene	977	80.0	1,000	0	97.7	74.9	117				
4-Chloroaniline	992	500	1,000	0	99.2	56.1	128				
Hexachlorobutadiene	989	100	1,000	0	98.9	73.7	121				
4-Chloro-3-methylphenol	928	500	1,000	0	92.8	49.4	138				
2-Methylnaphthalene	991	80.0	1,000	0	99.1	68.3	121				
1-Methylnaphthalene	1,020	80.0	1,000	0	102	73	120				
Hexachlorocyclopentadiene	849	100	1,000	0	84.9	36.7	128				
2,4,6-Trichlorophenol	917	200	1,000	0	91.7	63.2	121				
2,4,5-Trichlorophenol	880	200	1,000	0	88.0	55.7	126				
2-Chloronaphthalene	1,000	100	1,000	0	100	67.1	123				
2-Nitroaniline	1,030	500	1,000	0	103	43.9	135				
Acenaphthene	959	80.0	1,000	0	95.9	49.2	127				
Dimethylphthalate	976	100	1,000	0	97.6	62.4	130				
2,6-Dinitrotoluene	920	100	1,000	0	92.0	54.6	127				
Acenaphthylene	997	80.0	1,000	0	99.7	64.8	127				
2,4-Dinitrophenol	317	200	1,000	0	31.7	28.8	146				
Dibenzofuran	999	100	1,000	0	99.9	67.5	123				
2,4-Dinitrotoluene	852	100	1,000	0	85.2	21.9	136				
4-Nitrophenol	720	500	1,000	0	72.0	46.8	136				
Fluorene	1,010	80.0	1,000	0	101	64.8	126				
4-Chlorophenyl phenyl ether	1,000	100	1,000	0	100	66.6	124				
Diethylphthalate	1,020	100	1,000	0	102	62.6	128				
4,6-Dinitro-2-methylphenol	436	200	1,000	0	43.6	17.3	144				
4-Bromophenyl phenyl ether	979	100	1,000	0	97.9	61.8	128				
Hexachlorobenzene	967	100	1,000	0	96.7	66.8	124				

Qualifiers:	B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1301152

CLIENT: Professional Service Industries, Inc.

Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: LCS-4041	SampType: LCS	Units: µg/Kg				Prep Date: 2/5/2013	RunNo: 7396				
Client ID: LCSS	Batch ID: 4041					Analysis Date: 2/7/2013	SeqNo: 145801				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pentachlorophenol	533	100	1,000	0	53.3	21.4	135				
Phenanthrene	987	80.0	1,000	0	98.7	72.2	118				
Anthracene	981	80.0	1,000	0	98.1	68.9	122				
Carbazole	1,050	500	1,000	0	105	64.5	135				
Di-n-butylphthalate	1,030	100	1,000	0	103	50.6	130				
Fluoranthene	1,000	80.0	1,000	0	100	66	129				
Pyrene	1,000	80.0	1,000	0	100	45.4	140				
Butyl Benzylphthalate	821	100	1,000	0	82.1	30.4	138				
bis(2-Ethylhexyl)adipate	812	100	1,000	0	81.2	20.4	140				
Benz (a) anthracene	930	80.0	1,000	0	93.0	44	150				
Chrysene	976	80.0	1,000	0	97.6	71.3	127				
bis (2-Ethylhexyl) phthalate	846	100	1,000	0	84.6	40.1	127				
Di-n-octyl phthalate	797	100	1,000	0	79.7	37.2	135				
Benzo (b) fluoranthene	1,090	80.0	1,000	0	109	50.9	136				
Benzo (k) fluoranthene	1,060	80.0	1,000	0	106	65.2	134				
Benzo (a) pyrene	905	80.0	1,000	0	90.5	49.2	137				
Indeno (1,2,3-cd) pyrene	1,010	80.0	1,000	0	101	44.2	146				
Dibenz (a,h) anthracene	922	80.0	1,000	0	92.2	37.5	152				
Benzo (g,h,i) perylene	1,000	80.0	1,000	0	100	58.2	138				
Surr: 2,4,6-Tribromophenol	998		1,000		99.8	28.5	154				
Surr: 2-Fluorobiphenyl	490		500.0		97.9	42.6	139				
Surr: Nitrobenzene-d5	493		500.0		98.5	45.1	149				
Surr: Phenol-d6	1,030		1,000		103	48.2	143				
Surr: p-Terphenyl	495		500.0		99.0	33.3	149				

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits

D Dilution was required
 J Analyte detected below quantitation limits
 RL Reporting Limit

E Value above quantitation range
 ND Not detected at the Reporting Limit
 S Spike recovery outside accepted recovery limits



Date: 2/11/2013

Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: 1301152-001BDUP	SampType: DUP	Units: µg/Kg-dry	Prep Date: 2/5/2013	RunNo: 7396							
Client ID: CP-D	Batch ID: 4041		Analysis Date: 2/7/2013	SeqNo: 145803							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Phenol	ND	207						0	0	50	
Bis(2-chloroethyl) ether	ND	207						0	0	50	
2-Chlorophenol	ND	104						0	0	50	
1,3-Dichlorobenzene	ND	104						0	0	50	
1,4-Dichlorobenzene	ND	104						0	0	50	
1,2-Dichlorobenzene	ND	104						0	0	50	
Benzyl alcohol	ND	104						0	0	50	
2-Methylphenol (o-cresol)	ND	104						0	0	50	
Hexachloroethane	ND	104						0	0	50	
N-Nitrosodi-n-propylamine	ND	104						0	0	50	
Nitrobenzene	ND	207						0	0	50	
Isophorone	ND	104						0	0	50	
4-Methylphenol (p-cresol)	ND	104						0	0	50	
2-Nitrophenol	ND	207						0	0	50	
2,4-Dimethylphenol	ND	104						0	0	50	
Bis(2-chloroethoxy)methane	ND	104						0	0	50	
2,4-Dichlorophenol	ND	207						0	0	50	
1,2,4-Trichlorobenzene	ND	104						0	0	50	
Naphthalene	ND	82.9						0	0	50	
4-Chloroaniline	ND	518						0	0	50	
Hexachlorobutadiene	ND	104						0	0	50	
4-Chloro-3-methylphenol	ND	518						0	0	50	
2-Methylnaphthalene	ND	82.9						0	0	50	
1-Methylnaphthalene	ND	82.9						0	0	50	
Hexachlorocyclopentadiene	ND	104						0	0	50	
2,4,6-Trichlorophenol	ND	207						0	0	50	
2,4,5-Trichlorophenol	ND	207						0	0	50	
2-Chloronaphthalene	ND	104						0	0	50	
2-Nitroaniline	ND	518						0	0	50	

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits



Date: 2/11/2013

Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: 1301152-001BDUP	SampType: DUP	Units: µg/Kg-dry	Prep Date: 2/5/2013	RunNo: 7396							
Client ID: CP-D	Batch ID: 4041		Analysis Date: 2/7/2013	SeqNo: 145803							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Acenaphthene	ND	82.9						0	0	50	
Dimethylphthalate	ND	104						0	0	50	
2,6-Dinitrotoluene	ND	104						0	0	50	
Acenaphthylene	ND	82.9						0	0	50	
2,4-Dinitrophenol	ND	207						0	0	50	
Dibenzofuran	ND	104						0	0	50	
2,4-Dinitrotoluene	ND	104						0	0	50	
4-Nitrophenol	ND	518						0	0	50	
Fluorene	ND	82.9						0	0	50	
4-Chlorophenyl phenyl ether	ND	104						0	0	50	
Diethylphthalate	ND	104						0	0	50	
4,6-Dinitro-2-methylphenol	ND	207						0	0	50	
4-Bromophenyl phenyl ether	ND	104						0	0	50	
Hexachlorobenzene	ND	104						0	0	50	
Pentachlorophenol	ND	104						0	0	50	
Phenanthrene	ND	82.9						0	0	50	
Anthracene	ND	82.9						0	0	50	
Carbazole	ND	518						0	0	50	
Di-n-butylphthalate	ND	104						0	0	50	
Fluoranthene	ND	82.9						0	0	50	
Pyrene	ND	82.9						0	0	50	
Butyl Benzylphthalate	ND	104						0	200	50	R
bis(2-Ethylhexyl)adipate	ND	104						0	0	50	
Benz (a) anthracene	ND	82.9						0	0	50	
Chrysene	ND	82.9						0	0	50	
bis (2-Ethylhexyl) phthalate	ND	104						0	0	50	
Di-n-octyl phthalate	ND	104						0	0	50	
Benzo (b) fluoranthene	ND	82.9						0	0	50	
Benzo (k) fluoranthene	ND	82.9						0	0	50	

Qualifiers:	B Analyte detected in the associated Method Blank	D Dilution was required	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	ND Not detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit	S Spike recovery outside accepted recovery limits



Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: 1301152-001BDUP	SampType: DUP	Units: µg/Kg-dry	Prep Date: 2/5/2013	RunNo: 7396							
Client ID: CP-D	Batch ID: 4041		Analysis Date: 2/7/2013	SeqNo: 145803							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo (a) pyrene	ND	82.9						0	0	50	
Indeno (1,2,3-cd) pyrene	ND	82.9						0	0	50	
Dibenz (a,h) anthracene	ND	82.9						0	0	50	
Benzo (g,h,i) perylene	ND	82.9						0	0	50	
Surr: 2,4,6-Tribromophenol	509		1,036		49.1	28.5	154		0		
Surr: 2-Fluorobiphenyl	482		518.2		93.1	42.6	139		0		
Surr: Nitrobenzene-d5	468		518.2		90.3	45.1	149		0		
Surr: Phenol-d6	919		1,036		88.7	48.2	143		0		
Surr: p-Terphenyl	498		518.2		96.2	33.3	149		0		

NOTES:

R - High RPD due to low analyte concentration. In this range, high RPD's may be expected.

Sample ID: 1301152-001BMS	SampType: MS	Units: µg/Kg-dry	Prep Date: 2/5/2013	RunNo: 7396							
Client ID: CP-D	Batch ID: 4041		Analysis Date: 2/7/2013	SeqNo: 145804							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Phenol	829	199	995.2	0	83.3	29.2	146				
Bis(2-chloroethyl) ether	889	199	995.2	0	89.3	65.4	115				
2-Chlorophenol	849	99.5	995.2	0	85.3	44	134				
1,3-Dichlorobenzene	889	99.5	995.2	0	89.4	69.1	117				
1,4-Dichlorobenzene	866	99.5	995.2	0	87.0	44.5	134				
1,2-Dichlorobenzene	898	99.5	995.2	0	90.2	68.3	117				
Benzyl alcohol	ND	99.5	995.2	0	4.31	30.8	159				S
2-Methylphenol (o-cresol)	866	99.5	995.2	0	87.0	70.9	113				
Hexachloroethane	868	99.5	995.2	0	87.3	67.1	118				
N-Nitrosodi-n-propylamine	960	99.5	995.2	0	96.5	26.4	151				
Nitrobenzene	841	199	995.2	0	84.5	61.4	130				
Isophorone	901	99.5	995.2	0	90.5	61.8	132				
4-Methylphenol (p-cresol)	926	99.5	995.2	0	93.0	65.5	127				

Qualifiers:	B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits



Date: 2/11/2013

Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: 1301152-001BMS	SampType: MS	Units: µg/Kg-dry	Prep Date: 2/5/2013	RunNo: 7396							
Client ID: CP-D	Batch ID: 4041		Analysis Date: 2/7/2013	SeqNo: 145804							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Nitrophenol	839	199	995.2	0	84.3	46.3	118				
2,4-Dimethylphenol	1,090	99.5	995.2	0	109	46	158				
Bis(2-chloroethoxy)methane	880	99.5	995.2	0	88.4	66.8	124				
2,4-Dichlorophenol	888	199	995.2	0	89.2	56.2	128				
1,2,4-Trichlorobenzene	852	99.5	995.2	0	85.6	29.2	140				
Naphthalene	901	79.6	995.2	0	90.6	74.3	118				
4-Chloroaniline	771	498	995.2	0	77.5	27	126				
Hexachlorobutadiene	927	99.5	995.2	0	93.1	72.5	116				
4-Chloro-3-methylphenol	1,050	498	995.2	0	106	36.8	159				
2-Methylnaphthalene	1,000	79.6	995.2	0	100	64.5	129				
1-Methylnaphthalene	953	79.6	995.2	0	95.8	70.4	124				
Hexachlorocyclopentadiene	816	99.5	995.2	0	82.0	37.5	129				
2,4,6-Trichlorophenol	720	199	995.2	0	72.4	62.7	122				
2,4,5-Trichlorophenol	1,040	199	995.2	0	105	54.7	127				
2-Chloronaphthalene	915	99.5	995.2	0	92.0	69.8	126				
2-Nitroaniline	922	498	995.2	0	92.6	39.3	145				
Acenaphthene	929	79.6	995.2	0	93.4	49.6	129				
Dimethylphthalate	930	99.5	995.2	0	93.5	61.5	131				
2,6-Dinitrotoluene	892	99.5	995.2	0	89.6	56.8	137				
Acenaphthylene	950	79.6	995.2	0	95.5	64	128				
2,4-Dinitrophenol	864	199	995.2	0	86.8	35.3	144				
Dibenzofuran	927	99.5	995.2	0	93.1	64.7	131				
2,4-Dinitrotoluene	849	99.5	995.2	0	85.3	30.9	139				
4-Nitrophenol	ND	498	995.2	0	15.7	48.6	137				S
Fluorene	924	79.6	995.2	0	92.8	64.2	127				
4-Chlorophenyl phenyl ether	936	99.5	995.2	0	94.0	70.9	128				
Diethylphthalate	932	99.5	995.2	28.85	90.7	61.7	129				
4,6-Dinitro-2-methylphenol	749	199	995.2	0	75.2	21.9	143				
4-Bromophenyl phenyl ether	918	99.5	995.2	0	92.2	69.6	136				

Qualifiers:	B Analyte detected in the associated Method Blank	D Dilution was required	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	ND Not detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit	S Spike recovery outside accepted recovery limits

Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Semi-Volatile Organic Compounds by EPA Method 8270

Sample ID: 1301152-001BMS	SampType: MS	Units: µg/Kg-dry	Prep Date: 2/5/2013	RunNo: 7396							
Client ID: CP-D	Batch ID: 4041		Analysis Date: 2/7/2013	SeqNo: 145804							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexachlorobenzene	895	99.5	995.2	0	89.9	66.5	123				
Pentachlorophenol	499	99.5	995.2	0	50.2	28.2	156				
Phenanthrene	935	79.6	995.2	0	93.9	57	134				
Anthracene	948	79.6	995.2	0	95.2	68.2	123				
Carbazole	1,060	498	995.2	0	107	64.1	152				
Di-n-butylphthalate	1,030	99.5	995.2	0	103	52.4	130				
Fluoranthene	975	79.6	995.2	0	98.0	65.6	130				
Pyrene	968	79.6	995.2	0	97.2	31.4	151				
Butyl Benzylphthalate	847	99.5	995.2	20.48	83.0	30.4	138				
bis(2-Ethylhexyl)adipate	827	99.5	995.2	0	83.1	32	136				
Benz (a) anthracene	930	79.6	995.2	0	93.5	43.9	151				
Chrysene	917	79.6	995.2	0	92.1	71.1	126				
bis (2-Ethylhexyl) phthalate	849	99.5	995.2	0	85.3	38.8	128				
Di-n-octyl phthalate	806	99.5	995.2	0	81.0	34.6	142				
Benzo (b) fluoranthene	912	79.6	995.2	0	91.6	52.1	136				
Benzo (k) fluoranthene	971	79.6	995.2	0	97.6	64.5	135				
Benzo (a) pyrene	971	79.6	995.2	0	97.6	50.5	137				
Indeno (1,2,3-cd) pyrene	976	79.6	995.2	0	98.1	49.7	143				
Dibenz (a,h) anthracene	892	79.6	995.2	0	89.6	40.7	152				
Benzo (g,h,i) perylene	971	79.6	995.2	0	97.5	60.9	137				
Surr: 2,4,6-Tribromophenol	765		995.2		76.8	28.5	154				
Surr: 2-Fluorobiphenyl	458		497.6		92.1	42.6	139				
Surr: Nitrobenzene-d5	447		497.6		89.9	45.1	149				
Surr: Phenol-d6	888		995.2		89.2	48.2	143				
Surr: p-Terphenyl	480		497.6		96.4	33.3	149				

NOTES:

S - Outlying spike recoveries for 4-nitrophenol and Benzyl Alcohol were observed. The method is in control as indicated by the laboratory control sample (LCS).

Qualifiers:	B Analyte detected in the associated Method Blank	D Dilution was required	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	ND Not detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit	S Spike recovery outside accepted recovery limits

Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Gasoline by NWTPH-Gx

Sample ID: LCS-R7373	SampType: LCS	Units: mg/Kg	Prep Date: 2/4/2013	RunNo: 7373							
Client ID: LCSS	Batch ID: R7373		Analysis Date: 2/5/2013	SeqNo: 145426							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	20.5	5.00	25.00	0	82.1	65	135				
Surr: 1,2-Dichloroethane-d4	0.412		0.5000		82.3	65	135				
Surr: Fluorobenzene	0.589		0.5000		118	65	135				

Sample ID: 1301152-001ADUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 2/4/2013	RunNo: 7373							
Client ID: CP-D	Batch ID: R7373		Analysis Date: 2/5/2013	SeqNo: 145431							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	1.43						0	0	30	
Surr: 1,2-Dichloroethane-d4	0.118		0.1434		82.5	65	135		0		
Surr: Fluorobenzene	0.187		0.1434		130	65	135		0		

Sample ID: MB-R7373	SampType: MBLK	Units: mg/Kg	Prep Date: 2/4/2013	RunNo: 7373							
Client ID: MBLKS	Batch ID: R7373		Analysis Date: 2/5/2013	SeqNo: 145433							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	5.00									
Surr: 1,2-Dichloroethane-d4	0.420		0.5000		84.0	65	135				
Surr: Fluorobenzene	0.622		0.5000		125	65	135				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits



Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260

Sample ID: 1302013-001ADUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 2/4/2013	RunNo: 7374							
Client ID: BATCH	Batch ID: 4033		Analysis Date: 2/7/2013	SeqNo: 145437							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	ND	0.0582						0	0	30	
Chloromethane	ND	0.0582						0	0	30	
Vinyl chloride	ND	0.00194						0	0	30	
Bromomethane	ND	0.0873						0	0	30	
Trichlorofluoromethane (CFC-11)	ND	0.0485						0	0	30	
Chloroethane	ND	0.0582						0	0	30	
1,1-Dichloroethene	ND	0.0485						0	0	30	
Methylene chloride	ND	0.0194						0	0	30	
trans-1,2-Dichloroethene	ND	0.0194						0	0	30	
Methyl tert-butyl ether (MTBE)	ND	0.0485						0	0	30	
1,1-Dichloroethane	ND	0.0194						0	0	30	
2,2-Dichloropropane	ND	0.0485						0	0	30	
cis-1,2-Dichloroethene	ND	0.0194						0	0	30	
Chloroform	ND	0.0194						0	0	30	
1,1,1-Trichloroethane (TCA)	ND	0.0194						0	0	30	
1,1-Dichloropropene	ND	0.0194						0	0	30	
Carbon tetrachloride	ND	0.0194						0	0	30	
1,2-Dichloroethane (EDC)	ND	0.0291						0	0	30	
Benzene	ND	0.0194						0	0	30	
Trichloroethene (TCE)	ND	0.0291						0	0	30	
1,2-Dichloropropane	ND	0.0194						0	0	30	
Bromodichloromethane	ND	0.0194						0	0	30	
Dibromomethane	ND	0.0388						0	0	30	
cis-1,3-Dichloropropene	ND	0.0194						0	0	30	
Toluene	ND	0.0194						0	0	30	
trans-1,3-Dichloropropylene	ND	0.0291						0	0	30	
1,1,2-Trichloroethane	ND	0.0291						0	0	30	
1,3-Dichloropropane	ND	0.0485						0	0	30	
Tetrachloroethene (PCE)	ND	0.0194						0	0	30	

Qualifiers:	B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits



Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260

Sample ID: 1302013-001ADUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 2/4/2013	RunNo: 7374							
Client ID: BATCH	Batch ID: 4033		Analysis Date: 2/7/2013	SeqNo: 145437							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dibromochloromethane	ND	0.0291						0	0	30	
1,2-Dibromoethane (EDB)	ND	0.00485						0	0	30	
Chlorobenzene	ND	0.0194						0	0	30	
1,1,1,2-Tetrachloroethane	ND	0.0291						0	0	30	
Ethylbenzene	ND	0.0291						0	0	30	
m,p-Xylene	ND	0.0194						0	0	30	
o-Xylene	ND	0.0194						0	0	30	
Styrene	ND	0.0194						0	0	30	
Isopropylbenzene	ND	0.0776						0	0	30	
Bromoform	ND	0.0194						0	0	30	
1,1,2,2-Tetrachloroethane	ND	0.0194						0	0	30	
n-Propylbenzene	ND	0.0194						0	0	30	
Bromobenzene	ND	0.0291						0	0	30	
1,3,5-Trimethylbenzene	ND	0.0194						0	0	30	
2-Chlorotoluene	ND	0.0194						0	0	30	
4-Chlorotoluene	ND	0.0194						0	0	30	
tert-Butylbenzene	ND	0.0194						0	0	30	
1,2,3-Trichloropropane	ND	0.0194						0	0	30	
1,2,4-Trichlorobenzene	ND	0.0485						0	0	30	
sec-Butylbenzene	ND	0.0194						0	0	30	
4-Isopropyltoluene	ND	0.0194						0	0	30	
1,3-Dichlorobenzene	ND	0.0194						0	0	30	
1,4-Dichlorobenzene	ND	0.0194						0	0	30	
n-Butylbenzene	ND	0.0194						0	0	30	
1,2-Dichlorobenzene	ND	0.0194						0	0	30	
1,2-Dibromo-3-chloropropane	ND	0.0291						0	0	30	
1,2,4-Trimethylbenzene	ND	0.0194						0	0	30	
Hexachlorobutadiene	ND	0.0970						0	0	30	
Naphthalene	ND	0.0291						0	0	30	

Qualifiers:	B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits



Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260

Sample ID: 1302013-001ADUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 2/4/2013	RunNo: 7374							
Client ID: BATCH	Batch ID: 4033		Analysis Date: 2/7/2013	SeqNo: 145437							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,3-Trichlorobenzene	ND	0.0194						0	0	30	
Surr: 1-Bromo-4-fluorobenzene	0.510		0.4849		105	63.1	141		0		
Surr: Dibromofluoromethane	0.488		0.4849		101	67.6	119		0		
Surr: Toluene-d8	0.439		0.4849		90.5	78.5	126		0		

Sample ID: 1302013-003AMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 2/4/2013	RunNo: 7374							
Client ID: BATCH	Batch ID: 4033		Analysis Date: 2/7/2013	SeqNo: 145439							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	0.966	0.0696	1.160	0	83.3	43.5	121				
Chloromethane	1.10	0.0696	1.160	0	94.8	45	130				
Vinyl chloride	1.08	0.00232	1.160	0	93.5	51.2	146				
Bromomethane	0.241	0.104	1.160	0	20.8	21.3	120				S
Trichlorofluoromethane (CFC-11)	0.286	0.0580	1.160	0	24.7	52.2	132				S
Chloroethane	0.216	0.0696	1.160	0	18.6	43.8	117				S
1,1-Dichloroethene	0.502	0.0580	1.160	0	43.3	61.9	141				S
Methylene chloride	1.13	0.0232	1.160	0	97.6	54.7	142				
trans-1,2-Dichloroethene	1.30	0.0232	1.160	0	112	52	136				
Methyl tert-butyl ether (MTBE)	1.18	0.0580	1.160	0	102	54.4	132				
1,1-Dichloroethane	1.34	0.0232	1.160	0	115	51.8	141				
2,2-Dichloropropane	1.17	0.0580	1.160	0	101	36	123				
cis-1,2-Dichloroethene	1.29	0.0232	1.160	0	111	58.6	136				
Chloroform	1.26	0.0232	1.160	0	108	53.2	129				
1,1,1-Trichloroethane (TCA)	1.28	0.0232	1.160	0	110	58.3	145				
1,1-Dichloropropene	1.23	0.0232	1.160	0	106	55.1	138				
Carbon tetrachloride	1.29	0.0232	1.160	0	111	53.3	144				
1,2-Dichloroethane (EDC)	1.14	0.0348	1.160	0	98.2	51.3	139				
Benzene	1.17	0.0232	1.160	0	101	63.5	133				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260

Sample ID: 1302013-003AMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 2/4/2013	RunNo: 7374							
Client ID: BATCH	Batch ID: 4033		Analysis Date: 2/7/2013	SeqNo: 145439							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Trichloroethene (TCE)	1.18	0.0348	1.160	0	102	68.6	132				
1,2-Dichloropropane	1.16	0.0232	1.160	0	99.7	59	136				
Bromodichloromethane	1.14	0.0232	1.160	0	98.6	50.7	141				
Dibromomethane	1.08	0.0464	1.160	0	92.7	50.6	137				
cis-1,3-Dichloropropene	1.06	0.0232	1.160	0	91.5	52.3	129				
Toluene	1.13	0.0232	1.160	0	97.4	67.8	129				
trans-1,3-Dichloropropylene	1.06	0.0348	1.160	0	91.7	52.2	138				
1,1,2-Trichloroethane	1.01	0.0348	1.160	0	87.2	51.6	137				
1,3-Dichloropropane	1.06	0.0580	1.160	0	91.5	53.1	134				
Tetrachloroethene (PCE)	1.14	0.0232	1.160	0	98.7	44.1	141				
Dibromochloromethane	1.03	0.0348	1.160	0	89.1	55.3	140				
1,2-Dibromoethane (EDB)	1.02	0.00580	1.160	0	87.8	50.4	136				
Chlorobenzene	1.20	0.0232	1.160	0	104	60	133				
1,1,1,2-Tetrachloroethane	1.17	0.0348	1.160	0	101	53.1	142				
Ethylbenzene	1.21	0.0348	1.160	0	104	54.5	134				
m,p-Xylene	2.35	0.0232	2.320	0	101	53.1	132				
o-Xylene	1.21	0.0232	1.160	0	104	53.3	139				
Styrene	1.45	0.0232	1.160	0	125	51.1	132				
Isopropylbenzene	1.19	0.0928	1.160	0	103	58.9	138				
Bromoform	1.02	0.0232	1.160	0	88.3	57.9	130				
1,1,1,2,2-Tetrachloroethane	0.995	0.0232	1.160	0	85.8	51.9	131				
n-Propylbenzene	1.17	0.0232	1.160	0	101	53.6	140				
Bromobenzene	1.12	0.0348	1.160	0	96.4	54.2	140				
1,3,5-Trimethylbenzene	1.14	0.0232	1.160	0	98.7	51.8	136				
2-Chlorotoluene	1.18	0.0232	1.160	0	102	51.6	136				
4-Chlorotoluene	1.14	0.0232	1.160	0	98.1	50.1	139				
tert-Butylbenzene	1.17	0.0232	1.160	0	101	50.5	135				
1,2,3-Trichloropropane	0.994	0.0232	1.160	0	85.7	50.5	131				
1,2,4-Trichlorobenzene	1.34	0.0580	1.160	0	116	50.8	130				

Qualifiers:	B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260

Sample ID: 1302013-003AMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 2/4/2013	RunNo: 7374							
Client ID: BATCH	Batch ID: 4033		Analysis Date: 2/7/2013	SeqNo: 145439							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

sec-Butylbenzene	1.13	0.0232	1.160	0	97.6	52.6	141				
4-Isopropyltoluene	1.10	0.0232	1.160	0	94.9	52.9	134				
1,3-Dichlorobenzene	1.30	0.0232	1.160	0	112	52.6	131				
1,4-Dichlorobenzene	1.18	0.0232	1.160	0	101	52.9	129				
n-Butylbenzene	1.29	0.0232	1.160	0	111	52.6	130				
1,2-Dichlorobenzene	1.28	0.0232	1.160	0	110	55.8	129				
1,2-Dibromo-3-chloropropane	1.19	0.0348	1.160	0	103	53	129				
1,2,4-Trimethylbenzene	1.09	0.0232	1.160	0	93.8	50.6	137				
Hexachlorobutadiene	1.48	0.116	1.160	0	127	40.6	158				
Naphthalene	1.34	0.0348	1.160	0	115	52.3	124				
1,2,3-Trichlorobenzene	1.38	0.0232	1.160	0	119	54.4	124				
Surr: 1-Bromo-4-fluorobenzene	0.596		0.5800		103	63.1	141				
Surr: Dibromofluoromethane	0.575		0.5800		99.2	67.6	119				
Surr: Toluene-d8	0.534		0.5800		92.0	78.5	126				

NOTES:

S - Outlying QC recoveries were observed. The method is in control as indicated by the LCS.

Sample ID: ICV-4033	SampType: ICV	Units: mg/Kg	Prep Date: 2/4/2013	RunNo: 7374							
Client ID: ICV	Batch ID: 4033		Analysis Date: 2/7/2013	SeqNo: 145441							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

o-Xylene	19.0	0.0200	20.00	0	95.0	70	130				
Styrene	18.5	0.0200	20.00	0	92.5	70	130				
Surr: 1-Bromo-4-fluorobenzene	9.82		10.00		98.2	63.1	141				
Surr: Dibromofluoromethane	9.67		10.00		96.7	67.6	119				
Surr: Toluene-d8	9.76		10.00		97.6	78.5	126				

Qualifiers:	B Analyte detected in the associated Method Blank	D Dilution was required	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	ND Not detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit	S Spike recovery outside accepted recovery limits



Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260

Sample ID: LCS-4033	SampType: LCS	Units: mg/Kg	Prep Date: 2/4/2013	RunNo: 7374							
Client ID: LCSS	Batch ID: 4033		Analysis Date: 2/7/2013	SeqNo: 145442							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.892	0.0600	1.000	0	89.2	37.7	136				
Chloromethane	0.964	0.0600	1.000	0	96.4	38.8	132				
Vinyl chloride	0.943	0.00200	1.000	0	94.3	56.1	130				
Bromomethane	0.885	0.0900	1.000	0	88.4	44.3	149				
Trichlorofluoromethane (CFC-11)	0.880	0.0500	1.000	0	88.0	61.8	130				
Chloroethane	0.854	0.0600	1.000	0	85.4	52.2	131				
1,1-Dichloroethene	0.907	0.0500	1.000	0	90.7	64.6	134				
Methylene chloride	0.903	0.0200	1.000	0	90.3	60.6	140				
trans-1,2-Dichloroethene	0.946	0.0200	1.000	0	94.6	68.7	127				
Methyl tert-butyl ether (MTBE)	0.912	0.0500	1.000	0	91.2	73.4	128				
1,1-Dichloroethane	0.946	0.0200	1.000	0	94.6	65.5	132				
2,2-Dichloropropane	0.887	0.0500	1.000	0	88.7	28.1	149				
cis-1,2-Dichloroethene	0.987	0.0200	1.000	0	98.7	71.6	123				
Chloroform	0.967	0.0200	1.000	0	96.7	67.5	129				
1,1,1-Trichloroethane (TCA)	0.953	0.0200	1.000	0	95.3	74.4	130				
1,1-Dichloropropene	0.974	0.0200	1.000	0	97.4	72.7	131				
Carbon tetrachloride	0.943	0.0200	1.000	0	94.3	73	136				
1,2-Dichloroethane (EDC)	0.932	0.0300	1.000	0	93.2	68.7	133				
Benzene	0.951	0.0200	1.000	0	95.1	74.6	124				
Trichloroethene (TCE)	0.946	0.0300	1.000	0	94.6	71.5	134				
1,2-Dichloropropane	0.945	0.0200	1.000	0	94.5	72.7	133				
Bromodichloromethane	0.952	0.0200	1.000	0	95.2	76.1	136				
Dibromomethane	0.935	0.0400	1.000	0	93.5	70	130				
cis-1,3-Dichloropropene	0.937	0.0200	1.000	0	93.6	59.1	143				
Toluene	0.938	0.0200	1.000	0	93.8	81.1	123				
trans-1,3-Dichloropropylene	0.888	0.0300	1.000	0	88.8	49.2	149				
1,1,2-Trichloroethane	0.911	0.0300	1.000	0	91.1	74.5	129				
1,3-Dichloropropane	0.940	0.0500	1.000	0	94.0	70	130				
Tetrachloroethene (PCE)	0.906	0.0200	1.000	0	90.7	64.4	150				

Qualifiers:	B Analyte detected in the associated Method Blank	D Dilution was required	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	ND Not detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit	S Spike recovery outside accepted recovery limits

Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260

Sample ID: LCS-4033	SampType: LCS	Units: mg/Kg	Prep Date: 2/4/2013	RunNo: 7374
Client ID: LCSS	Batch ID: 4033		Analysis Date: 2/7/2013	SeqNo: 145442

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibromochloromethane	0.935	0.0300	1.000	0	93.5	70.6	144				
1,2-Dibromoethane (EDB)	0.952	0.00500	1.000	0	95.2	70	130				
Chlorobenzene	1.00	0.0200	1.000	0	100	76.1	123				
1,1,1,2-Tetrachloroethane	0.970	0.0300	1.000	0	97.0	74.8	131				
Ethylbenzene	0.948	0.0300	1.000	0	94.8	74	129				
m,p-Xylene	1.96	0.0200	2.000	0	98.0	79.8	128				
o-Xylene	1.43	0.0200	1.000	0	143	77.3	128				S
Styrene	1.43	0.0200	1.000	0	143	76.8	130				S
Isopropylbenzene	0.969	0.0800	1.000	0	96.9	70	130				
Bromoform	0.936	0.0200	1.000	0	93.6	67	154				
1,1,1,2,2-Tetrachloroethane	1.01	0.0200	1.000	0	101	61.9	139				
n-Propylbenzene	0.937	0.0200	1.000	0	93.6	78	130				
Bromobenzene	0.931	0.0300	1.000	0	93.1	49.2	144				
1,3,5-Trimethylbenzene	0.948	0.0200	1.000	0	94.8	79.7	128				
2-Chlorotoluene	0.929	0.0200	1.000	0	92.9	76.7	129				
4-Chlorotoluene	0.972	0.0200	1.000	0	97.2	77.5	125				
tert-Butylbenzene	0.978	0.0200	1.000	0	97.9	74.2	128				
1,2,3-Trichloropropane	0.930	0.0200	1.000	0	93.0	67.9	136				
1,2,4-Trichlorobenzene	1.03	0.0500	1.000	0	103	65.6	137				
sec-Butylbenzene	0.961	0.0200	1.000	0	96.1	75.6	133				
4-Isopropyltoluene	0.942	0.0200	1.000	0	94.2	76.8	131				
1,3-Dichlorobenzene	0.977	0.0200	1.000	0	97.7	72.8	128				
1,4-Dichlorobenzene	0.742	0.0200	1.000	0	74.2	72.6	126				
n-Butylbenzene	0.986	0.0200	1.000	0	98.6	65.3	136				
1,2-Dichlorobenzene	1.04	0.0200	1.000	0	104	72.8	126				
1,2-Dibromo-3-chloropropane	0.894	0.0300	1.000	0	89.4	64.3	135				
1,2,4-Trimethylbenzene	0.937	0.0200	1.000	0	93.7	77.5	129				
Hexachlorobutadiene	1.00	0.100	1.000	0	100	42	151				
Naphthalene	1.04	0.0300	1.000	0	104	64	130				

Qualifiers:	B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260

Sample ID: LCS-4033	SampType: LCS	Units: mg/Kg	Prep Date: 2/4/2013	RunNo: 7374							
Client ID: LCSS	Batch ID: 4033		Analysis Date: 2/7/2013	SeqNo: 145442							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,3-Trichlorobenzene	1.03	0.0200	1.000	0	103	62.1	140				
Surr: 1-Bromo-4-fluorobenzene	0.506		0.5000		101	63.1	141				
Surr: Dibromofluoromethane	0.487		0.5000		97.3	67.6	119				
Surr: Toluene-d8	0.480		0.5000		96.0	78.5	126				

NOTES:

S - Outlying QC recoveries were observed (o-Xylene, Styrene; high bias). There were no detections in the sample. The method is in control as indicated by the second source ICV.

Sample ID: MB-4033	SampType: MBLK	Units: mg/Kg	Prep Date: 2/4/2013	RunNo: 7374							
Client ID: MBLKS	Batch ID: 4033		Analysis Date: 2/7/2013	SeqNo: 145443							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0600									
Chloromethane	ND	0.0600									
Vinyl chloride	ND	0.00200									
Bromomethane	ND	0.0900									
Trichlorofluoromethane (CFC-11)	ND	0.0500									
Chloroethane	ND	0.0600									
1,1-Dichloroethene	ND	0.0500									
Methylene chloride	ND	0.0200									
trans-1,2-Dichloroethene	ND	0.0200									
Methyl tert-butyl ether (MTBE)	ND	0.0500									
1,1-Dichloroethane	ND	0.0200									
2,2-Dichloropropane	ND	0.0500									
cis-1,2-Dichloroethene	ND	0.0200									
Chloroform	ND	0.0200									
1,1,1-Trichloroethane (TCA)	ND	0.0200									
1,1-Dichloropropene	ND	0.0200									
Carbon tetrachloride	ND	0.0200									
1,2-Dichloroethane (EDC)	ND	0.0300									

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits



Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260

Sample ID: MB-4033	SampType: MBLK	Units: mg/Kg	Prep Date: 2/4/2013	RunNo: 7374							
Client ID: MBLKS	Batch ID: 4033		Analysis Date: 2/7/2013	SeqNo: 145443							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0300									
1,2-Dichloropropane	ND	0.0200									
Bromodichloromethane	ND	0.0200									
Dibromomethane	ND	0.0400									
cis-1,3-Dichloropropene	ND	0.0200									
Toluene	ND	0.0200									
trans-1,3-Dichloropropylene	ND	0.0300									
1,1,2-Trichloroethane	ND	0.0300									
1,3-Dichloropropane	ND	0.0500									
Tetrachloroethene (PCE)	ND	0.0200									
Dibromochloromethane	ND	0.0300									
1,2-Dibromoethane (EDB)	ND	0.00500									
Chlorobenzene	ND	0.0200									
1,1,1,2-Tetrachloroethane	ND	0.0300									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Styrene	ND	0.0200									
Isopropylbenzene	ND	0.0800									
Bromoform	ND	0.0200									
1,1,1,2,2-Tetrachloroethane	ND	0.0200									
n-Propylbenzene	ND	0.0200									
Bromobenzene	ND	0.0300									
1,3,5-Trimethylbenzene	ND	0.0200									
2-Chlorotoluene	ND	0.0200									
4-Chlorotoluene	ND	0.0200									
tert-Butylbenzene	ND	0.0200									
1,2,3-Trichloropropane	ND	0.0200									

Qualifiers:	B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits



Work Order: 1301152
CLIENT: Professional Service Industries, Inc.
Project: Cal Portland Plant Feed

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260

Sample ID: MB-4033	SampType: MBLK	Units: mg/Kg	Prep Date: 2/4/2013	RunNo: 7374							
Client ID: MBLKS	Batch ID: 4033		Analysis Date: 2/7/2013	SeqNo: 145443							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,4-Trichlorobenzene	ND	0.0500									
sec-Butylbenzene	ND	0.0200									
4-Isopropyltoluene	ND	0.0200									
1,3-Dichlorobenzene	ND	0.0200									
1,4-Dichlorobenzene	ND	0.0200									
n-Butylbenzene	ND	0.0200									
1,2-Dichlorobenzene	ND	0.0200									
1,2-Dibromo-3-chloropropane	ND	0.0300									
1,2,4-Trimethylbenzene	ND	0.0200									
Hexachlorobutadiene	ND	0.100									
Naphthalene	ND	0.0300									
1,2,3-Trichlorobenzene	ND	0.0200									
Surr: 1-Bromo-4-fluorobenzene	0.477		0.5000		95.4	63.1	141				
Surr: Dibromofluoromethane	0.476		0.5000		95.3	67.6	119				
Surr: Toluene-d8	0.482		0.5000		96.3	78.5	126				

Qualifiers:	B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Client Name: **PSI**

 Work Order Number: **1301152**

 Logged by: **Clare Griggs**

 Date Received: **1/31/2013 10:56:00 AM**
Chain of Custody

1. Were custodial seals present? Yes No Not Required
2. Is Chain of Custody complete? Yes No Not Present
3. How was the sample delivered? Client

Log In

4. Coolers are present? Yes No NA
5. Was an attempt made to cool the samples? Yes No NA
6. Were all coolers received at a temperature of >0° C to 10.0°C Yes No NA
7. Sample(s) in proper container(s)? Yes No
8. Sufficient sample volume for indicated test(s)? Yes No
9. Are samples properly preserved? Yes No
10. Was preservative added to bottles? Yes No NA
11. Is there headspace present in VOA vials? Yes No NA
12. Did all sample containers arrive in good condition?(unbroken) Yes No
13. Does paperwork match bottle labels? Yes No
14. Are matrices correctly identified on Chain of Custody? Yes No
15. Is it clear what analyses were requested? Yes No
16. Were all holding times able to be met? Yes No

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks/Discrepancies

Item Information

Item #	Temp °C	Condition
Cooler	9.6	Good
Sample	8.9	Good



Fremont
LABORATORY

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Client: **PSI**

Address: **2413 56TH AVE WEST**

City, State, Zip: **NOVATAGE TERRACE WA 98524-2400**

Reports To (P/M): **STEVEN PANICHA 98043**

Project Name:

CAL PORTLAND PLANT FEED

Location:

BUCHAN WA

Collected by:

STEVEN PANICHA

Email: **STEVEN.PANICHA@PSIUSA.COM** Project No: **0742803-5**

Laboratory Project No (Internal): **1301152**
Page: **1** of **1**

Date: **1/30/13**

Chain of Custody Record

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)	Preparation Method	Analysis Method	Analysis Date	Analysis Time	Analysis Location	Analysis By	Analysis Instrument	Analysis Status
1 CP-D-01A	1/30/13	11:30 AM		GC/MS (GC/MS)	GC/MS (GC/MS)	1/30/13	11:30 AM	GC/MS (GC/MS)	STEVEN PANICHA	GC/MS (GC/MS)	GC/MS (GC/MS)
2 CP-D-01B	1/30/13	11:30 AM		GC/MS (GC/MS)	GC/MS (GC/MS)	1/30/13	11:30 AM	GC/MS (GC/MS)	STEVEN PANICHA	GC/MS (GC/MS)	GC/MS (GC/MS)
3 CP-D-02A	1/30/13	11:30 AM		GC/MS (GC/MS)	GC/MS (GC/MS)	1/30/13	11:30 AM	GC/MS (GC/MS)	STEVEN PANICHA	GC/MS (GC/MS)	GC/MS (GC/MS)
4 CP-D-02B	1/30/13	11:30 AM		GC/MS (GC/MS)	GC/MS (GC/MS)	1/30/13	11:30 AM	GC/MS (GC/MS)	STEVEN PANICHA	GC/MS (GC/MS)	GC/MS (GC/MS)
5 CP-D-02C	1/30/13	11:30 AM		GC/MS (GC/MS)	GC/MS (GC/MS)	1/30/13	11:30 AM	GC/MS (GC/MS)	STEVEN PANICHA	GC/MS (GC/MS)	GC/MS (GC/MS)

*** Metals Analysis (Circle):** Mn, Ni, Pb, Cd, Cr, Co, V, Cu, Ba, Be, Ag, As, Se, Sb, Bi, Mo, Fe, Ni, Mn, Zn, Pb, Sn, S, Hg, Tl, U, V, Cr

**** Anions (Circle):** Nitrate, Nitrite, Chloride, Sulfate, Bromide, Phosphate, Fluoride, Nitrate-chloride

Sample Disposal: Return to Client Disposal by Lab (Lab must be advised) Other (see remarks for details)

Reference: Date/Time: **1/31/13**

Reference: Date/Time: **1/31/13 10:50**

TAT: Next Day 2 Day 3 Day STD

Appendix G
Imported Soil Summary
Former Unocal Terminal
11720 Unoco Road
Edmonds, Washington

8/7/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8129 Saturated Zone Fill								
	CUR3	25.81	29.56	30.45	28.99	28.64	30.31	-
	BRI3T	30.05	28.71	29.43	28.11	29.54	29.23	-
	RED46TT	30.28	30.87	29.77	30.28	28.81	29.48	-
	SANI36T	29.78	29.45	29.15	28.95	30.10	-	-
	GRE2T	28.39	28.83	27.78	27.97	28.41	28.93	-
	JJW2TT	30.36	29.40	29.65	29.43	29.34	30.46	-
	SANI14	30.89	30.56	29.51	30.39	28.87	-	-
Total Daily Tonnage 8/7/2017				8129 Saturated Zone Fill				1174.9

8/8/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8129 Saturated Zone Fill								
	RED46TT	30.71	30.11	30.52	31.11	31.44	31.04	30.16
	GRE2T	28.02	29.66	29.49	29.42	29.70	29.37	30.17
	SANI36T	31.28	30.37	29.55	30.10	31.40	31.22	30.87
	SANI14	31.36	-	-	-	-	-	-
	BRI3T	29.32	28.14	29.10	30.14	29.31	28.74	-
	JJW2TT	31.07	32.20	31.16	32.07	32.20	31.37	-
	CUR3	29.45	30.02	30.85	29.58	-	-	-
Total Daily Tonnage 8/8/2017				8129 Saturated Zone Fill				1151.8

8/10/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
#8 x #30 Fill Sand								
	CUR3	29.96	29.19	29.55	-	-	-	-
AASHTO #8 Gravel								
	CUR3	28.7	-	-	-	-	-	-
Total Daily Tonnage 8/10/2017				#8 x #30 Fill Sand				88.7
				AASHTO #8 Gravel				28.7

8/15/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
4" x 8" Quarry Spalls								
	BRI3T	28.33	28.29	-	-	-	-	-
	GRE2T	28.50	-	-	-	-	-	-
	SANI36T	28.43	-	-	-	-	-	-
	SANI14	31.17	-	-	-	-	-	-
8129 Saturated Zone Fill								
	GRE2T	26.14	26.30	26.23	26.78	-	-	-
	SANI36T	28.78	26.19	28.32	28.83	-	-	-
	SANI14	27.73	30.00	29.35	29.09	29.08	28.91	-
	BRI3T	28.10	28.02	30.08	27.49	-	-	-
Total Daily Tonnage 8/15/2017				4" x 8" Quarry Spalls				144.72
				8129 Saturated Zone Fill				505.42

Appendix G
 Imported Soil Summary
 Former Unocal Terminal
 11720 Unoco Road
 Edmonds, Washington

8/16/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7	
8129 Saturated Zone Fill									
	SANI14	30.29	27.83	27.98	28.34	30.54	29.66	-	
	SANI36T	28.93	27.13	27.35	28.18	28.62	26.98	-	
	GRE2T	27.86	26.38	26.22	26.85	-	-	-	
	BRI3T	29.20	28.41	28.54	29.22	27.96	-	-	
Total Daily Tonnage 8/16/2017				8129 Saturated Zone Fill				592.47	
8/17/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7	
8126 Berm Fill									
	SANI14	30.44	29.93	29.09	28.73	31.02	30.43	-	
	SANI36T	29.57	28.27	27.61	28.46	27.36	27.5	-	
	GRE2T	27.9	27.04	26.76	26.75	27.82	27.27	-	
	CUR3	29.25	28.19	30.44	29.58	29.35	28.49	-	
Total Daily Tonnage 8/17/2017				8126 Berm Fill				687.25	
9/13/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7	
8129 Saturated Zone Fill									
	BRA2	31.31	31.29	31.83	31.64	31.40	30.20	30.44	
Total Daily Tonnage 9/13/2017				8129 Saturated Zone Fill				218.11	
9/14/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7	
8129 Saturated Zone Fill									
	BRA2	32.15	32.25	30.61	31.36	30.54	30.16	30.32	
	CP6500	34.01	33.06	-	-	-	-	-	
Total Daily Tonnage 9/14/2017				8129 Saturated Zone Fill				284.46	
9/15/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7	
8129 Saturated Zone Fill									
	BRA2	31.42	31.91	30.68	31.72	31.48	30.43	31.80	
	RRJI05T	31.24	30.88	30.97	29.4	30.82	31.85	-	
	CP6500	32.12	33.31	31.87	-	-	-	-	
Total Daily Tonnage 9/15/2017				8129 Saturated Zone Fill				501.90	
9/18/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7	Trip 8
8129 Saturated Zone Fill									
	BRA2	30.89	31.23	31.70	30.70	30.70	30.70	32.05	31.39
	SANI04T	31.21	30.12	32.10	31.92	30.98	32.26	31.47	-
	RRJI05T	30.70	30.67	29.69	32.51	30.42	30.88	29.82	-
Total Daily Tonnage 9/18/2017				8129 Saturated Zone Fill				684.11	

Appendix G
 Imported Soil Summary
 Former Unocal Terminal
 11720 Unoco Road
 Edmonds, Washington

9/19/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8126 Berm Fill								
	BRA2	32.40	30.62	31.11	31.50	-	-	-
	RRJI05T	29.77	29.16	29.31	29.63	-	-	-
8129 Saturated Zone Fill								
	BRA2	31.15	31.13	-	-	-	-	-
	RRJI05T	30.49	30.07	-	-	-	-	-

Total Daily Tonnage 9/19/2017				8126 Berm Fill				243.50
				8129 Saturated Zone Fill				122.84

9/20/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8129 Saturated Zone Fill								
	BRA2	31.93	31.02	31.15	30.88	30.33	31.01	30.14
	RRJI05T	31.01	29.62	30.57	29.92	30.07	30.98	-

Total Daily Tonnage 9/20/2017				8129 Saturated Zone Fill				398.63
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9/21/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8129 Saturated Zone Fill								
	BRA2	30.87	31.22	31.92	32.56	30.50	31.67	30.82
	HAR88TT	31.87	31.37	31.50	31.35	31.88	30.40	31.64
	RRJI05T	31.31	30.68	31.90	30.54	31.04	30.66	-

Total Daily Tonnage 9/21/2017				8129 Saturated Zone Fill				625.70
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9/22/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8129 Saturated Zone Fill								
	BRA2	30.98	31.12	29.87	30.12	31.85	30.87	29.99
	RRJI05T	31.30	30.77	29.92	29.37	30.51	30.58	31.16
	SANI36T	31.54	30.70	31.15	30.20	31.28	29.84	-
	SANI14T	31.26	32.30	31.12	31.31	31.85	30.66	-

Total Daily Tonnage 9/22/2017				8129 Saturated Zone Fill				801.62
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Appendix G
Imported Soil Summary
Former Unocal Terminal
11720 Unoco Road
Edmonds, Washington

9/23/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8126 Berm Fill								
	RRJI05T	31.05	-	-	-	-	-	-
8129 Saturated Zone Fill								
	HAR88TT	32.86	32.86	31.99	-	-	-	-
	JJW2TT	30.65	29.52	30.22	-	-	-	-
	RED38T	33.14	32.53	32.24	-	-	-	-
	RRJI05T	30.66	30.99	-	-	-	-	-
8111 Vadose Zone Fill								
	RRJI05T	30.40	30.47	32.34	-	-	-	-
	HAR88TT	32.41	32.04	29.58	-	-	-	-
	JJW2TT	29.77	31.01	30.12	-	-	-	-
	RED38T	32.42	33.36	-	-	-	-	-

Total Daily Tonnage 9/23/2017		8126 Berm Fill	31.05
		8129 Saturated Zone Fill	347.66
		8111 Vadose Zone Fill	343.92

9/27/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7	Trip 8
8111 Vadose Zone Fill									
	HAR88TT	32.68	32.43	32.26	31.86	30.9	30.76	32.86	31.06
Total Daily Tonnage 9/27/2017		8111 Vadose Zone Fill							254.81

9/28/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7	
8111 Vadose Zone Fill									
	RRJ1075	28.88	28.24	28.77	28.49	26.94	29.57	29.53	
Total Daily Tonnage 9/28/2017		8111 Vadose Zone Fill							200.42

9/29/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7	
8111 Vadose Zone Fill									
	RRJ1075	29.28	28.21	28.24	28.31	25.53	-	-	
Total Daily Tonnage 9/29/2017		8111 Vadose Zone Fill							139.57

10/2/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7	
8111 Vadose Zone Fill									
	BRA2	32.60	31.39	30.38	31.72	30.52	29.69	-	
	SANI36T	29.04	31.44	30.39	-	-	-	-	
	SANI14T	30.41	30.23	30.64	-	-	-	-	
Total Daily Tonnage 10/2/2017		8111 Vadose Zone Fill							368.45

Appendix G
 Imported Soil Summary
 Former Unocal Terminal
 11720 Unoco Road
 Edmonds, Washington

10/3/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8111 Vadose Zone Fill								
	BRA2	31.77	31.02	31.23	31.72	30.57	31.45	32.06
	FIT755	28.27	29.30	28.44	27.94	28.15	27.52	28.04
	RED45TT	31.38	31.18	30.93	30.34	31	-	-
Total Daily Tonnage 10/3/2017				8111 Vadose Zone Fill				572.31

10/4/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8111 Vadose Zone Fill								
	BRA2	31.94	30.39	-	-	-	-	-
	FIT755	29.52	28.72	-	-	-	-	-
	HAR88TT	32.82	32.20	-	-	-	-	-
8129 Saturated Zone Fill								
	BRA2	31.75	31.24	31.66	30.10	32.22	31.31	-
	FIT755	29.48	29.15	29.25	28.40	28.86	29.26	-
	HAR88TT	30.20	31.74	32.28	-	-	-	-
Total Daily Tonnage 10/4/2017				8111 Vadose Zone Fill				185.59
				8129 Saturated Zone Fill				456.90

10/5/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8129 Saturated Zone Fill								
	BRA2	32.22	32.03	31.62	29.66	31.46	31.77	31.38
	FIT755	29.73	29.21	29.07	29.83	28.67	28.99	28.66
	RRJI05T	32.17	32.34	31.88	30.80	30.53	30.30	30.78
Total Daily Tonnage 10/5/2017				8129 Saturated Zone Fill				643.10

10/6/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8129 Saturated Zone Fill								
	BRA2	31.25	31.43	31.74	30.48	31.76	30.43	-
	FIT755	29.86	28.80	29.63	29.13	29.43	29.23	-
Total Daily Tonnage 10/6/2017				8129 Saturated Zone Fill				363.17

Appendix G
 Imported Soil Summary
 Former Unocal Terminal
 11720 Unoco Road
 Edmonds, Washington

10/9/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8129 Saturated Zone Fill								
	BRA2	32.55	31.64	30.83	31.86	-	-	-
	FIT755	29.38	29.82	28.34	29.39	-	-	-
	JJW2TT	30.51	31.38	-	-	-	-	-
	SANI14T	30.23	29.79	30.80	-	-	-	-
	SANI36T	30.07	-	-	-	-	-	-
	JJW3TT	31.90	-	-	-	-	-	-
8111 Vadose Zone Fill								
	SANI36T	28.70	29.97	29.63	30.23	-	-	-
	JJW3TT	29.04	29.88	31.14	30.51	30.93	-	-
	BRA2	29.59	31.42	31.76	-	-	-	-
	FIT755	27.15	28.67	29.21	-	-	-	-
	HAR77	30.73	-	-	-	-	-	-
	SANI14T	30.34	-	-	-	-	-	-
Total Daily Tonnage 10/9/2017				8129 Saturated Zone Fill				458.49
				8111 Vadose Zone Fill				508.90

10/10/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8111 Vadose Zone Fill								
	BRA2	32.55	32.08	32.03	31.37	31.06	30.83	31.19
	FIT755	29.74	29.86	29.75	29.52	28.7	29.72	-
	SANI38T	31.31	30.77	31.64	31.64	29.42	-	-
Total Daily Tonnage 10/10/2017				8111 Vadose Zone Fill				553.18

10/11/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8129 Saturated Zone Fill								
	BRA2	30.47	31.64	30.47	30.56	30.99	-	-
	FIT755	29.56	29.20	28.00	28.82	29.32	-	-
Total Daily Tonnage 10/11/2017				8129 Saturated Zone Fill				299.03

Appendix G
 Imported Soil Summary
 Former Unocal Terminal
 11720 Unoco Road
 Edmonds, Washington

10/12/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8129 Saturated Zone Fill								
	FIT755	30.33	29.93	29.62	29.68	28.95	-	-
	BRA2	32.13	31.14	32.22	29.47	32.11	-	-
	JJW3TT	31.75	30.60	29.26	29.79	29.84	-	-
	RRJ106	31.51	31.99	29.67	30.23	-	-	-
8111 Vadose Zone Fill								
	RRJ106	31.04	30.15	-	-	-	-	-
	FIT755	29.03	28.26	28.52	-	-	-	-
	BRA2	31.59	30.65	-	-	-	-	-
	JJW3TT	29.97	30.18	-	-	-	-	-
Total Daily Tonnage 10/12/2017				8129 Saturated Zone Fill				580.22
				8111 Vadose Zone Fill				269.39

10/13/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7
8111 Vadose Zone Fill								
	BRA2	31.84	32.41	-	-	-	-	-
	FIT755	27.70	29.16	31.78	-	-	-	-
8128 Gravel Borrow								
	BRA2	32.39	32.02	31.60	31.36	31.39	-	-
8129 Saturated Zone Fill								
	FIT755	30.14	29.76	-	-	-	-	-
Total Daily Tonnage 10/13/2017				8111 Vadose Zone Fill				152.89
				8128 Gravel Borrow				158.76
				8129 Saturated Zone Fill				59.90

10/17/2017	Truck #	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6	Trip 7	Trip 8	Trip 9	Trip 10	
8128 Gravel Borrow												
	FIT755	29.90	28.84	29.64	29.88	27.93	28.78	28.40	29.25	28.86	29.44	
	SANI06T	31.91	31.91	31.43	32.16	31.78	31.02	31.33	31.56	31.06	-	
Total Daily Tonnage 10/17/2017				8128 Gravel Borrow								575.08

APPENDIX H

Soil Laboratory Analytical Reports and Chain of Custody Documents



Appendix H
 Laboratory Reports Index
 Former Unocal Terminal
 11720 Unoco Road
 Edmonds, Washington

Laboratory Report ID	Sample Date	Data Validation Memorandum	Sample Matrix	Analyzes performed	Samples Description				
					Sample	Rinsate Blank	Trip Blank	MS/MSD	Duplicate
Test America Laboratories, Inc. (TA) in Tacoma, Washington									
Soil Laboratory Analytical Reports and Chain of Custody Documents (Appendix H)									
580-71085-1	09/06/17 & 09/07/17	Available in Appendix P	Soil	GRO, DRO, HO, Benzene	6	2	1	-	-
580-71120-1	09/07/17 & 09/08/17	Available in Appendix P	Soil	GRO, DRO, HO, cPAHs, Benzene	6	1	1	-	1
580-71216-1	09/12/17	Available in Appendix P	Soil	GRO, DRO, HO, Benzene	6	1	1	-	-
580-71255-1	09/13/17	Available in Appendix P	Soil	GRO, DRO, HO, Benzene	1	1	1	-	-
580-71291-1	09/14/17	Available in Appendix P	Soil	GRO, DRO, HO, Benzene	2	1	1	1	-
580-71327-1	09/15/17	Available in Appendix P	Soil	GRO, DRO, HO, cPAHs, Benzene	3	1	1	1	-
580-71376-1	09/18/17	Available in Appendix P	Soil	GRO, DRO, HO, cPAHs, Benzene	4	1	1	-	-
580-71419-1	09/19/17	Available in Appendix P	Soil	GRO, DRO, HO, Benzene	2	1	1	-	1
580-71458-1	09/20/17	Available in Appendix P	Soil	GRO, DRO, HO, cPAHs, Benzene	3	1	1	-	-
580-71539-1	09/21/17 & 09/21/17	Available in Appendix P	Soil	GRO, DRO, HO, cPAHs, Benzene	8	2	1	1	-
580-71582-1	09/25/17	Available in Appendix P	Soil	GRO, DRO, HO, Benzene	1	1	1	-	-
580-71607-1	09/26/17	Available in Appendix P	Soil	GRO, DRO, HO, Benzene	1	1	1	-	-
580-71638-1	09/27/17	Available in Appendix P	Soil	GRO, DRO, HO, Benzene	5	1	1	-	-
580-71704-1	09/29/17	Available in Appendix P	Soil	GRO, DRO, HO, Benzene	4	1	1	-	1
580-71754-1	10/02/17	Available in Appendix P	Soil	GRO, DRO, HO, cPAHs, Benzene	8	1	-	-	-
580-71754-2	10/02/17	Available in Appendix P	Soil	GRO, Benzene	-	-	1	-	-
Total					60	17	15	3	3
Eurofins Lancaster Laboratories Environmental (Eurofins) in Lancaster, Pennsylvania									
Soil Laboratory Analytical Reports and Chain of Custody Documents (Appendix H)									
1851306	09/15/17	Available in Appendix P	Soil	GRO, DRO, HO, cPAHs, Benzene	1	-	-	-	-

Notes:

GRO = Gasoline by Washington State Department of Ecology (Ecology) Method NWTPH-Gx

DRO = diesel range organics by Ecology Method NWTPH-Dx (after silica gel cleanup)

HO = heavy oil range organics by Ecology Method NWTPH-Dx (after silica gel cleanup)

Benzene by Method United States Environmental Protection Agency (USEPA) 8260C for TA results and 8260B for Eurofins results.

Carcinogenic Polynuclear Aromatic Hydrocarbons (cPAHs) analyzed by USEPA 8270D SIM for TA results and 8270C SIM for Eurofins results: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Samples with detectable DRO and/or HO concentrations were also analyzed for cPAHs.

Quality Assurance Samples:

A total of three duplicate soil samples were collected for a total ratio of 1 duplicate per 20 samples.

A total of three matrix spike/matrix spike duplicate (MS/MSD) were collected for soil samples for a total ratio of 1 MS/MSD per 20 samples.

A total of 17 rinsate blanks were collected (one per day on decontaminated, non-dedicated sampling equipment).

A total of 15 soil trip blanks were collected for soil samples (one per cooler containing samples that will be analyzed for volatile compounds).

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: 580-71085-1

Client Project/Site: Chevron Edmonds Terminal

For:

ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
9/15/2017 5:27:11 PM

Elaine Walker, Project Manager II
(253)248-4972

elaine.walker@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Job ID: 580-71085-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE **Client: ARCADIS U.S. Inc** **Project: Chevron Edmonds Terminal** **Report Number: 580-71085-1**

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

Nine samples were received on 9/7/2017 1:03 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.9° C.

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)

Samples EX-DB2-A3-10 (580-71085-1), EX-DB2-A4-10 (580-71085-2), EX-DB2-A5-10 (580-71085-3), EX-DB2-A6-10 (580-71085-4), EX-DB2-A7-10 (580-71085-5), EX-DB2-A8-10 (580-71085-6) and TB-09062017 (580-71085-9) were analyzed for volatile organic compounds (GC) in accordance with 8260. The samples were prepared on 09/07/2017 and 09/08/2017 and analyzed on 09/08/2017.

The following sample was provided to the laboratory with a significantly different initial weight than the required (10g): EX-DB2-A3-10 (580-71085-1), EX-DB2-A4-10 (580-71085-2), and EX-DB2-A7-10 (580-71085-5). The weight should not deviate by more than 20%. The amount provided was above this amount.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO) - SOIL

Samples EX-DB2-A3-10 (580-71085-1), EX-DB2-A4-10 (580-71085-2), EX-DB2-A5-10 (580-71085-3), EX-DB2-A6-10 (580-71085-4), EX-DB2-A7-10 (580-71085-5), EX-DB2-A8-10 (580-71085-6) and TB-09062017 (580-71085-9) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were prepared on 09/07/2017 and analyzed on 09/08/2017.

Gasoline was detected in method blank MB 580-255574/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

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 RB-09062017 (580-71085-7) and RB-09072017 (580-71085-8) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were analyzed on 09/07/2017.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Job ID: 580-71085-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL AND EXTENDED RANGE ORGANICS

Samples EX-DB2-A3-10 (580-71085-1), EX-DB2-A4-10 (580-71085-2), EX-DB2-A5-10 (580-71085-3), EX-DB2-A6-10 (580-71085-4), EX-DB2-A7-10 (580-71085-5) and EX-DB2-A8-10 (580-71085-6) were analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared and analyzed on 09/07/2017.

Please note - the laboratory is unable to process the reverse surrogate used in the Silica Gel Cleanup for NWTPH-Dx as it contains a 1-point calibration and the associated samples are run with a 5-point calibration. This surrogate will not be present in the forms for the Level IV report; however this surrogate is reported in the raw data section for this analysis.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples EX-DB2-A3-10 (580-71085-1), EX-DB2-A4-10 (580-71085-2), EX-DB2-A5-10 (580-71085-3), EX-DB2-A6-10 (580-71085-4), EX-DB2-A7-10 (580-71085-5) and EX-DB2-A8-10 (580-71085-6) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 09/07/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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 Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Client Sample ID: EX-DB2-A3-10

Lab Sample ID: 580-71085-1

Date Collected: 09/06/17 16:45

Matrix: Solid

Date Received: 09/07/17 13:03

Percent Solids: 78.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		25	11	ug/Kg	☼	09/07/17 15:08	09/08/17 11:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		75 - 120				09/07/17 15:08	09/08/17 11:33	1
Trifluorotoluene (Surr)	102		60 - 150				09/07/17 15:08	09/08/17 11:33	1
4-Bromofluorobenzene (Surr)	102		47 - 150				09/07/17 15:08	09/08/17 11:33	1
Dibromofluoromethane (Surr)	102		80 - 118				09/07/17 15:08	09/08/17 11:33	1
1,2-Dichloroethane-d4 (Surr)	114		80 - 121				09/07/17 15:08	09/08/17 11:33	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	14	B	5.0	2.6	mg/Kg	☼	09/07/17 15:08	09/08/17 13:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		50 - 150				09/07/17 15:08	09/08/17 13:38	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		53	13	mg/Kg	☼	09/07/17 13:43	09/07/17 21:10	1
Motor Oil (>C24-C36)	16	J	53	9.6	mg/Kg	☼	09/07/17 13:43	09/07/17 21:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	69		50 - 150				09/07/17 13:43	09/07/17 21:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	78.6		0.1	0.1	%			09/07/17 19:10	1
Percent Moisture	21.4		0.1	0.1	%			09/07/17 19:10	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Client Sample ID: EX-DB2-A4-10

Lab Sample ID: 580-71085-2

Date Collected: 09/07/17 11:25

Matrix: Solid

Date Received: 09/07/17 13:03

Percent Solids: 80.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		24	10	ug/Kg	☼	09/07/17 15:08	09/08/17 11:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		75 - 120				09/07/17 15:08	09/08/17 11:58	1
Trifluorotoluene (Surr)	99		60 - 150				09/07/17 15:08	09/08/17 11:58	1
4-Bromofluorobenzene (Surr)	101		47 - 150				09/07/17 15:08	09/08/17 11:58	1
Dibromofluoromethane (Surr)	104		80 - 118				09/07/17 15:08	09/08/17 11:58	1
1,2-Dichloroethane-d4 (Surr)	107		80 - 121				09/07/17 15:08	09/08/17 11:58	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.7	2.5	mg/Kg	☼	09/07/17 15:08	09/08/17 14:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150				09/07/17 15:08	09/08/17 14:09	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		53	13	mg/Kg	☼	09/07/17 13:43	09/07/17 21:33	1
Motor Oil (>C24-C36)	16	J	53	9.7	mg/Kg	☼	09/07/17 13:43	09/07/17 21:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	66		50 - 150				09/07/17 13:43	09/07/17 21:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	80.8		0.1	0.1	%			09/07/17 19:10	1
Percent Moisture	19.2		0.1	0.1	%			09/07/17 19:10	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Client Sample ID: EX-DB2-A5-10

Lab Sample ID: 580-71085-3

Date Collected: 09/07/17 11:00

Matrix: Solid

Date Received: 09/07/17 13:03

Percent Solids: 77.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		27	12	ug/Kg	☼	09/07/17 15:08	09/08/17 12:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		75 - 120				09/07/17 15:08	09/08/17 12:24	1
Trifluorotoluene (Surr)	99		60 - 150				09/07/17 15:08	09/08/17 12:24	1
4-Bromofluorobenzene (Surr)	98		47 - 150				09/07/17 15:08	09/08/17 12:24	1
Dibromofluoromethane (Surr)	102		80 - 118				09/07/17 15:08	09/08/17 12:24	1
1,2-Dichloroethane-d4 (Surr)	109		80 - 121				09/07/17 15:08	09/08/17 12:24	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.5	2.9	mg/Kg	☼	09/07/17 15:08	09/08/17 14:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		50 - 150				09/07/17 15:08	09/08/17 14:39	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		54	13	mg/Kg	☼	09/07/17 13:43	09/07/17 21:56	1
Motor Oil (>C24-C36)	15	J	54	9.8	mg/Kg	☼	09/07/17 13:43	09/07/17 21:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	60		50 - 150				09/07/17 13:43	09/07/17 21:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	77.8		0.1	0.1	%			09/07/17 19:10	1
Percent Moisture	22.2		0.1	0.1	%			09/07/17 19:10	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Client Sample ID: EX-DB2-A6-10

Lab Sample ID: 580-71085-4

Date Collected: 09/07/17 10:50

Matrix: Solid

Date Received: 09/07/17 13:03

Percent Solids: 75.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		29	13	ug/Kg	☼	09/07/17 15:08	09/08/17 12:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		75 - 120				09/07/17 15:08	09/08/17 12:50	1
Trifluorotoluene (Surr)	98		60 - 150				09/07/17 15:08	09/08/17 12:50	1
4-Bromofluorobenzene (Surr)	98		47 - 150				09/07/17 15:08	09/08/17 12:50	1
Dibromofluoromethane (Surr)	101		80 - 118				09/07/17 15:08	09/08/17 12:50	1
1,2-Dichloroethane-d4 (Surr)	110		80 - 121				09/07/17 15:08	09/08/17 12:50	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.68	0.35	mg/Kg	☼	09/07/17 15:08	09/08/17 15:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150				09/07/17 15:08	09/08/17 15:10	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		64	16	mg/Kg	☼	09/07/17 13:43	09/07/17 22:18	1
Motor Oil (>C24-C36)	15	J	64	12	mg/Kg	☼	09/07/17 13:43	09/07/17 22:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	61		50 - 150				09/07/17 13:43	09/07/17 22:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	75.8		0.1	0.1	%			09/07/17 19:10	1
Percent Moisture	24.2		0.1	0.1	%			09/07/17 19:10	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Client Sample ID: EX-DB2-A7-10

Lab Sample ID: 580-71085-5

Date Collected: 09/07/17 10:55

Matrix: Solid

Date Received: 09/07/17 13:03

Percent Solids: 70.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		59	26	ug/Kg	☼	09/07/17 15:08	09/08/17 13:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		75 - 120				09/07/17 15:08	09/08/17 13:16	1
Trifluorotoluene (Surr)	98		60 - 150				09/07/17 15:08	09/08/17 13:16	1
4-Bromofluorobenzene (Surr)	98		47 - 150				09/07/17 15:08	09/08/17 13:16	1
Dibromofluoromethane (Surr)	102		80 - 118				09/07/17 15:08	09/08/17 13:16	1
1,2-Dichloroethane-d4 (Surr)	107		80 - 121				09/07/17 15:08	09/08/17 13:16	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		12	6.2	mg/Kg	☼	09/07/17 15:08	09/08/17 15:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		50 - 150				09/07/17 15:08	09/08/17 15:41	1
Trifluorotoluene (Surr)							09/07/17 15:08	09/08/17 15:41	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		59	14	mg/Kg	☼	09/07/17 13:43	09/07/17 22:40	1
Motor Oil (>C24-C36)	13	J	59	11	mg/Kg	☼	09/07/17 13:43	09/07/17 22:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	63		50 - 150				09/07/17 13:43	09/07/17 22:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	70.5		0.1	0.1	%			09/07/17 19:10	1
Percent Moisture	29.5		0.1	0.1	%			09/07/17 19:10	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Client Sample ID: EX-DB2-A8-10

Lab Sample ID: 580-71085-6

Date Collected: 09/07/17 11:10

Matrix: Solid

Date Received: 09/07/17 13:03

Percent Solids: 81.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		35	15	ug/Kg	☼	09/07/17 15:08	09/08/17 13:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		75 - 120				09/07/17 15:08	09/08/17 13:42	1
Trifluorotoluene (Surr)	97		60 - 150				09/07/17 15:08	09/08/17 13:42	1
4-Bromofluorobenzene (Surr)	99		47 - 150				09/07/17 15:08	09/08/17 13:42	1
Dibromofluoromethane (Surr)	102		80 - 118				09/07/17 15:08	09/08/17 13:42	1
1,2-Dichloroethane-d4 (Surr)	108		80 - 121				09/07/17 15:08	09/08/17 13:42	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		6.9	3.6	mg/Kg	☼	09/07/17 15:08	09/08/17 16:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150				09/07/17 15:08	09/08/17 16:12	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		47	12	mg/Kg	☼	09/07/17 13:43	09/07/17 23:03	1
Motor Oil (>C24-C36)	15	J	47	8.5	mg/Kg	☼	09/07/17 13:43	09/07/17 23:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	68		50 - 150				09/07/17 13:43	09/07/17 23:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	81.8		0.1	0.1	%			09/07/17 19:10	1
Percent Moisture	18.2		0.1	0.1	%			09/07/17 19:10	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Client Sample ID: RB-09062017

Lab Sample ID: 580-71085-7

Date Collected: 09/06/17 17:00

Matrix: Water

Date Received: 09/07/17 13:03

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/07/17 21:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		58 - 133					09/07/17 21:05	1
Trifluorotoluene (Surr)	111		77 - 128					09/07/17 21:05	1



Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Client Sample ID: RB-09072017

Lab Sample ID: 580-71085-8

Date Collected: 09/07/17 10:00

Matrix: Water

Date Received: 09/07/17 13:03

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/07/17 21:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		58 - 133					09/07/17 21:37	1
Trifluorotoluene (Surr)	112		77 - 128					09/07/17 21:37	1



Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Client Sample ID: TB-09062017

Lab Sample ID: 580-71085-9

Date Collected: 09/06/17 00:00

Matrix: Solid

Date Received: 09/07/17 13:03

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50	0.22	ug/Kg		09/08/17 09:38	09/08/17 11:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		75 - 120				09/08/17 09:38	09/08/17 11:07	1
Trifluorotoluene (Surr)	99		60 - 150				09/08/17 09:38	09/08/17 11:07	1
4-Bromofluorobenzene (Surr)	98		47 - 150				09/08/17 09:38	09/08/17 11:07	1
Dibromofluoromethane (Surr)	102		80 - 118				09/08/17 09:38	09/08/17 11:07	1
1,2-Dichloroethane-d4 (Surr)	105		80 - 121				09/08/17 09:38	09/08/17 11:07	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		3.9	2.0	mg/Kg		09/07/17 15:08	09/08/17 13:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		50 - 150				09/07/17 15:08	09/08/17 13:08	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-255582/1-A

Matrix: Solid

Analysis Batch: 255593

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 255582

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/07/17 15:03	09/08/17 08:58	1

Surrogate	%Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		75 - 120	09/07/17 15:03	09/08/17 08:58	1
Trifluorotoluene (Surr)	98		60 - 150	09/07/17 15:03	09/08/17 08:58	1
4-Bromofluorobenzene (Surr)	99		47 - 150	09/07/17 15:03	09/08/17 08:58	1
Dibromofluoromethane (Surr)	102		80 - 118	09/07/17 15:03	09/08/17 08:58	1
1,2-Dichloroethane-d4 (Surr)	104		80 - 121	09/07/17 15:03	09/08/17 08:58	1

Lab Sample ID: LCS 580-255582/2-A

Matrix: Solid

Analysis Batch: 255593

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 255582

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	800	851		ug/Kg		106	79 - 135

Surrogate	%Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	97		75 - 120
Trifluorotoluene (Surr)	100		60 - 150
4-Bromofluorobenzene (Surr)	100		47 - 150
Dibromofluoromethane (Surr)	103		80 - 118
1,2-Dichloroethane-d4 (Surr)	107		80 - 121

Lab Sample ID: LCSD 580-255582/3-A

Matrix: Solid

Analysis Batch: 255593

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 255582

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	800	851		ug/Kg		106	79 - 135	0	10

Surrogate	%Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	98		75 - 120
Trifluorotoluene (Surr)	98		60 - 150
4-Bromofluorobenzene (Surr)	100		47 - 150
Dibromofluoromethane (Surr)	102		80 - 118
1,2-Dichloroethane-d4 (Surr)	100		80 - 121

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-255559/6

Matrix: Water

Analysis Batch: 255559

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/07/17 17:20	1

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-255559/6

Matrix: Water

Analysis Batch: 255559

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	90		58 - 133		09/07/17 17:20	1
Trifluorotoluene (Surr)	113		77 - 128		09/07/17 17:20	1

Lab Sample ID: LCS 580-255559/7

Matrix: Water

Analysis Batch: 255559

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	97		58 - 133
Trifluorotoluene (Surr)	98		77 - 128

Lab Sample ID: LCSD 580-255559/8

Matrix: Water

Analysis Batch: 255559

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

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	97		58 - 133
Trifluorotoluene (Surr)	95		77 - 128

Lab Sample ID: MB 580-255574/1-A

Matrix: Solid

Analysis Batch: 255587

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 255574

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Gasoline	2.31	J	4.0	2.1	mg/Kg		09/07/17 15:03	09/08/17 11:33	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	91		50 - 150	09/07/17 15:03	09/08/17 11:33	1

Lab Sample ID: LCS 580-255574/2-A

Matrix: Solid

Analysis Batch: 255587

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 255574

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	92		50 - 150

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 580-255574/3-A
Matrix: Solid
Analysis Batch: 255587

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 255574

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	40.0	39.0		mg/Kg		98	68 - 120	2	25
Surrogate	%Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	98		50 - 150						

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-255553/1-B
Matrix: Solid
Analysis Batch: 255612

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 255553

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		09/07/17 13:43	09/07/17 20:02	1
Motor Oil (>C24-C36)	ND		50	9.1	mg/Kg		09/07/17 13:43	09/07/17 20:02	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	81		50 - 150				09/07/17 13:43	09/07/17 20:02	1

Lab Sample ID: LCS 580-255553/2-B
Matrix: Solid
Analysis Batch: 255612

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 255553

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	500	368		mg/Kg		74	64 - 127		
Motor Oil (>C24-C36)	500	396		mg/Kg		79	70 - 125		
Surrogate	%Recovery	LCS Qualifier	Limits						
o-Terphenyl	87		50 - 150						

Lab Sample ID: LCSD 580-255553/3-B
Matrix: Solid
Analysis Batch: 255612

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 255553

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	500	360		mg/Kg		72	64 - 127	2	16
Motor Oil (>C24-C36)	500	402		mg/Kg		80	70 - 125	1	17
Surrogate	%Recovery	LCSD Qualifier	Limits						
o-Terphenyl	82		50 - 150						

Lab Sample ID: 580-71085-6 DU
Matrix: Solid
Analysis Batch: 255612

Client Sample ID: EX-DB2-A8-10
Prep Type: Total/NA
Prep Batch: 255553

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
#2 Diesel (C10-C24)	ND		ND		mg/Kg	☼	NC	35
Motor Oil (>C24-C36)	15	J	19.2	J	mg/Kg	☼	22	35

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

<i>Surrogate</i>	<i>%Recovery</i>	<i>DU DU</i> <i>Qualifier</i>	<i>Limits</i>
<i>o-Terphenyl</i>	67		50 - 150

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Lab Chronicle

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Client Sample ID: EX-DB2-A3-10

Lab Sample ID: 580-71085-1

Date Collected: 09/06/17 16:45

Matrix: Solid

Date Received: 09/07/17 13:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	255630	09/07/17 19:10	JWL	TAL SEA

Client Sample ID: EX-DB2-A3-10

Lab Sample ID: 580-71085-1

Date Collected: 09/06/17 16:45

Matrix: Solid

Date Received: 09/07/17 13:03

Percent Solids: 78.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			255582	09/07/17 15:08	JSM	TAL SEA
Total/NA	Analysis	8260C		1	255593	09/08/17 11:33	JSM	TAL SEA
Total/NA	Prep	5035			255574	09/07/17 15:08	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	255587	09/08/17 13:38	IWH	TAL SEA
Total/NA	Prep	3546			255553	09/07/17 13:43	DSO	TAL SEA
Total/NA	Cleanup	3630C			255607	09/07/17 17:34	REY	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	255612	09/07/17 21:10	ADB	TAL SEA

Client Sample ID: EX-DB2-A4-10

Lab Sample ID: 580-71085-2

Date Collected: 09/07/17 11:25

Matrix: Solid

Date Received: 09/07/17 13:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	255630	09/07/17 19:10	JWL	TAL SEA

Client Sample ID: EX-DB2-A4-10

Lab Sample ID: 580-71085-2

Date Collected: 09/07/17 11:25

Matrix: Solid

Date Received: 09/07/17 13:03

Percent Solids: 80.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			255582	09/07/17 15:08	JSM	TAL SEA
Total/NA	Analysis	8260C		1	255593	09/08/17 11:58	JSM	TAL SEA
Total/NA	Prep	5035			255574	09/07/17 15:08	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	255587	09/08/17 14:09	IWH	TAL SEA
Total/NA	Prep	3546			255553	09/07/17 13:43	DSO	TAL SEA
Total/NA	Cleanup	3630C			255607	09/07/17 17:34	REY	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	255612	09/07/17 21:33	ADB	TAL SEA

Client Sample ID: EX-DB2-A5-10

Lab Sample ID: 580-71085-3

Date Collected: 09/07/17 11:00

Matrix: Solid

Date Received: 09/07/17 13:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	255630	09/07/17 19:10	JWL	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Client Sample ID: EX-DB2-A5-10

Lab Sample ID: 580-71085-3

Date Collected: 09/07/17 11:00

Matrix: Solid

Date Received: 09/07/17 13:03

Percent Solids: 77.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			255582	09/07/17 15:08	JSM	TAL SEA
Total/NA	Analysis	8260C		1	255593	09/08/17 12:24	JSM	TAL SEA
Total/NA	Prep	5035			255574	09/07/17 15:08	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	255587	09/08/17 14:39	IWH	TAL SEA
Total/NA	Prep	3546			255553	09/07/17 13:43	DSO	TAL SEA
Total/NA	Cleanup	3630C			255607	09/07/17 17:34	REY	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	255612	09/07/17 21:56	ADB	TAL SEA

Client Sample ID: EX-DB2-A6-10

Lab Sample ID: 580-71085-4

Date Collected: 09/07/17 10:50

Matrix: Solid

Date Received: 09/07/17 13:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	255630	09/07/17 19:10	JWL	TAL SEA

Client Sample ID: EX-DB2-A6-10

Lab Sample ID: 580-71085-4

Date Collected: 09/07/17 10:50

Matrix: Solid

Date Received: 09/07/17 13:03

Percent Solids: 75.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			255582	09/07/17 15:08	JSM	TAL SEA
Total/NA	Analysis	8260C		1	255593	09/08/17 12:50	JSM	TAL SEA
Total/NA	Prep	5035			255574	09/07/17 15:08	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	255587	09/08/17 15:10	IWH	TAL SEA
Total/NA	Prep	3546			255553	09/07/17 13:43	DSO	TAL SEA
Total/NA	Cleanup	3630C			255607	09/07/17 17:34	REY	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	255612	09/07/17 22:18	ADB	TAL SEA

Client Sample ID: EX-DB2-A7-10

Lab Sample ID: 580-71085-5

Date Collected: 09/07/17 10:55

Matrix: Solid

Date Received: 09/07/17 13:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	255630	09/07/17 19:10	JWL	TAL SEA

Client Sample ID: EX-DB2-A7-10

Lab Sample ID: 580-71085-5

Date Collected: 09/07/17 10:55

Matrix: Solid

Date Received: 09/07/17 13:03

Percent Solids: 70.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			255582	09/07/17 15:08	JSM	TAL SEA
Total/NA	Analysis	8260C		1	255593	09/08/17 13:16	JSM	TAL SEA
Total/NA	Prep	5035			255574	09/07/17 15:08	JCV	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Client Sample ID: EX-DB2-A7-10

Lab Sample ID: 580-71085-5

Date Collected: 09/07/17 10:55

Matrix: Solid

Date Received: 09/07/17 13:03

Percent Solids: 70.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	255587	09/08/17 15:41	IWH	TAL SEA
Total/NA	Prep	3546			255553	09/07/17 13:43	DSO	TAL SEA
Total/NA	Cleanup	3630C			255607	09/07/17 17:34	REY	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	255612	09/07/17 22:40	ADB	TAL SEA

Client Sample ID: EX-DB2-A8-10

Lab Sample ID: 580-71085-6

Date Collected: 09/07/17 11:10

Matrix: Solid

Date Received: 09/07/17 13:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	255630	09/07/17 19:10	JWL	TAL SEA

Client Sample ID: EX-DB2-A8-10

Lab Sample ID: 580-71085-6

Date Collected: 09/07/17 11:10

Matrix: Solid

Date Received: 09/07/17 13:03

Percent Solids: 81.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			255582	09/07/17 15:08	JSM	TAL SEA
Total/NA	Analysis	8260C		1	255593	09/08/17 13:42	JSM	TAL SEA
Total/NA	Prep	5035			255574	09/07/17 15:08	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	255587	09/08/17 16:12	IWH	TAL SEA
Total/NA	Prep	3546			255553	09/07/17 13:43	DSO	TAL SEA
Total/NA	Cleanup	3630C			255607	09/07/17 17:34	REY	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	255612	09/07/17 23:03	ADB	TAL SEA

Client Sample ID: RB-09062017

Lab Sample ID: 580-71085-7

Date Collected: 09/06/17 17:00

Matrix: Water

Date Received: 09/07/17 13:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	255559	09/07/17 21:05	RSB	TAL SEA

Client Sample ID: RB-09072017

Lab Sample ID: 580-71085-8

Date Collected: 09/07/17 10:00

Matrix: Water

Date Received: 09/07/17 13:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	255559	09/07/17 21:37	RSB	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Client Sample ID: TB-09062017

Lab Sample ID: 580-71085-9

Date Collected: 09/06/17 00:00

Matrix: Solid

Date Received: 09/07/17 13:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			255582	09/08/17 09:38	JSM	TAL SEA
Total/NA	Analysis	8260C		1	255593	09/08/17 11:07	JSM	TAL SEA
Total/NA	Prep	5035			255574	09/07/17 15:08	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	255587	09/08/17 13:08	IWH	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310



Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
California	State Program	9	2901	01-31-18
L-A-B	DoD ELAP		L2236	01-19-19
L-A-B	ISO/IEC 17025		L2236	01-19-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-17
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71085-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-71085-1	EX-DB2-A3-10	Solid	09/06/17 16:45	09/07/17 13:03
580-71085-2	EX-DB2-A4-10	Solid	09/07/17 11:25	09/07/17 13:03
580-71085-3	EX-DB2-A5-10	Solid	09/07/17 11:00	09/07/17 13:03
580-71085-4	EX-DB2-A6-10	Solid	09/07/17 10:50	09/07/17 13:03
580-71085-5	EX-DB2-A7-10	Solid	09/07/17 10:55	09/07/17 13:03
580-71085-6	EX-DB2-A8-10	Solid	09/07/17 11:10	09/07/17 13:03
580-71085-7	RB-09062017	Water	09/06/17 17:00	09/07/17 13:03
580-71085-8	RB-09072017	Water	09/07/17 10:00	09/07/17 13:03
580-71085-9	TB-09062017	Solid	09/06/17 00:00	09/07/17 13:03



Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-71085-1

Login Number: 71085

List Source: TestAmerica Seattle

List Number: 1

Creator: Ponce-McDermott, Monica

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.	N/A	
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	



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: 580-71120-1

Client Project/Site: Chevron Edmonds Terminal
Revision: 2

For:

ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
9/19/2017 1:16:28 PM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Job ID: 580-71120-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE **Client: ARCADIS U.S. Inc** **Project: Chevron Edmonds Terminal** **Report Number: 580-71120-1**

REVISION 2: SEPTEMBER 19, 2017

This second revision was needed because the NWTPH-Dx surrogates were incorrect in the first revision.

REVISION 1: SEPTEMBER 19, 2017

This revision was required to remove the SIM PAH results for samples EX-DB2-A3-5-SW (580-71120-1) and EX-DB2-A4-5-SW (580-71120-2) as these samples did not contain diesel or heavy oil hydrocarbons above the reporting limit and should not be reported.

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

Nine samples were received on 9/8/2017 2:25 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.9° C.

The IDs on the labels of the bulk jars of the following sample lack the unique Identifiers "...5-SW". The date and time matches. The sample is logged in per chain of custody. EX-DB2-A5-5-SW (580-71120-3).

The following samples were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results. EX-DB2-A3-5-SW (580-71120-1), EX-DB2-A4-5-SW (580-71120-2), EX-DB2-A5-5-SW (580-71120-3), EX-DB2-A6-5-SW (580-71120-4), EX-DB2-A7-5-SW (580-71120-5), EX-DB2-A8-5-SW (580-71120-6), DUP01-SO-09082017 (580-71120-7) and TB-09082017 (580-71120-9).

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)

Samples EX-DB2-A3-5-SW (580-71120-1), EX-DB2-A4-5-SW (580-71120-2), EX-DB2-A5-5-SW (580-71120-3), EX-DB2-A6-5-SW (580-71120-4), EX-DB2-A7-5-SW (580-71120-5), EX-DB2-A8-5-SW (580-71120-6), DUP01-SO-09082017 (580-71120-7) and TB-09082017 (580-71120-9) were analyzed for volatile organic compounds (GC) in accordance with 8260. The samples were prepared on 09/08/2017 and analyzed on 09/08/2017, 09/09/2017 and 09/10/2017.

The following sample was provided to the laboratory with a significantly different initial weight than the required (10g): The weight should not deviate by more than 20%. The amount provided was above this amount. EX-DB2-A3-5-SW (580-71120-1), EX-DB2-A4-5-SW (580-71120-2), EX-DB2-A5-5-SW (580-71120-3), EX-DB2-A6-5-SW (580-71120-4), EX-DB2-A7-5-SW (580-71120-5), EX-DB2-A8-5-SW (580-71120-6) and DUP01-SO-09082017 (580-71120-7).

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Job ID: 580-71120-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

1,2-Dichloroethane-d4 (Surr) and Dibromofluoromethane (Surr) failed the surrogate recovery criteria low for LCSD 580-255688/3-A. All associated sample surrogates fell within acceptance criteria; therefore, the data have been reported.

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)

Samples EX-DB2-A5-5-SW (580-71120-3), EX-DB2-A6-5-SW (580-71120-4), EX-DB2-A7-5-SW (580-71120-5), EX-DB2-A8-5-SW (580-71120-6) and DUP01-SO-09082017 (580-71120-7) were analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with SW846 8270D_SIM. The samples were prepared on 09/08/2017 and analyzed on 09/09/2017.

Benzo[a]anthracene was detected in method blank MB 580-255689/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. This target analyte concentration was less than half the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples were not warranted.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO) - SOIL

Samples EX-DB2-A3-5-SW (580-71120-1), EX-DB2-A4-5-SW (580-71120-2), EX-DB2-A5-5-SW (580-71120-3), EX-DB2-A6-5-SW (580-71120-4), EX-DB2-A7-5-SW (580-71120-5), EX-DB2-A8-5-SW (580-71120-6), DUP01-SO-09082017 (580-71120-7) and TB-09082017 (580-71120-9) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were prepared and analyzed on 09/09/2017.

Gasoline was detected in method blank MB 580-255758/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples were not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO) - WATER

Sample RB-09082017 (580-71120-8) was analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The sample was analyzed on 09/09/2017.

Gasoline was detected in method blank MB 580-255785/5 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL AND EXTENDED RANGE ORGANICS

Samples EX-DB2-A3-5-SW (580-71120-1), EX-DB2-A4-5-SW (580-71120-2), EX-DB2-A5-5-SW (580-71120-3), EX-DB2-A6-5-SW (580-71120-4), EX-DB2-A7-5-SW (580-71120-5), EX-DB2-A8-5-SW (580-71120-6) and DUP01-SO-09082017 (580-71120-7) were analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared on 09/11/2017 and analyzed on 09/11/2017 and 09/12/2017.

Please note - the laboratory is unable to process the reverse surrogate used in the Silica Gel Cleanup for NWTPH-Dx as it contains a 1-point calibration and the associated samples are run with a 5-point calibration. This surrogate will not be present in the forms for the Level IV report; however this surrogate is reported in the raw data section for this analysis.

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: EX-DB2-A4-5-SW (580-71120-2), EX-DB2-A5-5-SW (580-71120-3), EX-DB2-A6-5-SW (580-71120-4), EX-DB2-A7-5-SW (580-71120-5) and DUP01-SO-09082017 (580-71120-7).

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Job ID: 580-71120-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples EX-DB2-A3-5-SW (580-71120-1), EX-DB2-A4-5-SW (580-71120-2), EX-DB2-A5-5-SW (580-71120-3), EX-DB2-A6-5-SW (580-71120-4), EX-DB2-A7-5-SW (580-71120-5), EX-DB2-A8-5-SW (580-71120-6) and DUP01-SO-09082017 (580-71120-7) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 09/09/2017.

Percent Moisture exceeded the RPD limit for the duplicate of sample EX-DB2-A4-5-SW (580-71120-2). Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
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
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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 Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Client Sample ID: EX-DB2-A3-5-SW

Lab Sample ID: 580-71120-1

Date Collected: 09/08/17 10:50

Matrix: Solid

Date Received: 09/08/17 14:25

Percent Solids: 81.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		23	9.9	ug/Kg	☼	09/08/17 15:34	09/09/17 23:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		75 - 120				09/08/17 15:34	09/09/17 23:34	1
Trifluorotoluene (Surr)	99		60 - 150				09/08/17 15:34	09/09/17 23:34	1
4-Bromofluorobenzene (Surr)	99		47 - 150				09/08/17 15:34	09/09/17 23:34	1
Dibromofluoromethane (Surr)	104		80 - 118				09/08/17 15:34	09/09/17 23:34	1
1,2-Dichloroethane-d4 (Surr)	112		80 - 121				09/08/17 15:34	09/09/17 23:34	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.6	2.4	mg/Kg	☼	09/09/17 10:41	09/09/17 15:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		50 - 150				09/09/17 10:41	09/09/17 15:33	1
Trifluorotoluene (Surr)							09/09/17 10:41	09/09/17 15:33	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		47	11	mg/Kg	☼	09/11/17 07:53	09/11/17 21:59	1
Motor Oil (>C24-C36)	18	J	47	8.5	mg/Kg	☼	09/11/17 07:53	09/11/17 21:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	86		50 - 150				09/11/17 07:53	09/11/17 21:59	1
n-Decanoic Acid (Surr)	0.0001		0 - 1				09/11/17 07:53	09/11/17 21:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	81.8		0.1	0.1	%			09/09/17 09:41	1
Percent Moisture	18.2		0.1	0.1	%			09/09/17 09:41	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Client Sample ID: EX-DB2-A4-5-SW

Lab Sample ID: 580-71120-2

Date Collected: 09/08/17 10:00

Matrix: Solid

Date Received: 09/08/17 14:25

Percent Solids: 86.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.5	ug/Kg	☼	09/08/17 15:34	09/10/17 00:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		75 - 120				09/08/17 15:34	09/10/17 00:00	1
Trifluorotoluene (Surr)	98		60 - 150				09/08/17 15:34	09/10/17 00:00	1
4-Bromofluorobenzene (Surr)	97		47 - 150				09/08/17 15:34	09/10/17 00:00	1
Dibromofluoromethane (Surr)	104		80 - 118				09/08/17 15:34	09/10/17 00:00	1
1,2-Dichloroethane-d4 (Surr)	111		80 - 121				09/08/17 15:34	09/10/17 00:00	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg	☼	09/09/17 10:41	09/09/17 16:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		50 - 150				09/09/17 10:41	09/09/17 16:04	1
Trifluorotoluene (Surr)							09/09/17 10:41	09/09/17 16:04	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	13	J	54	13	mg/Kg	☼	09/11/17 07:53	09/11/17 22:44	1
Motor Oil (>C24-C36)	47	J	54	9.8	mg/Kg	☼	09/11/17 07:53	09/11/17 22:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	83		50 - 150				09/11/17 07:53	09/11/17 22:44	1
n-Decanoic Acid (Surr)	0.00008		0 - 1				09/11/17 07:53	09/11/17 22:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	86.6		0.1	0.1	%			09/09/17 09:41	1
Percent Moisture	13.4		0.1	0.1	%			09/09/17 09:41	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Client Sample ID: EX-DB2-A5-5-SW

Lab Sample ID: 580-71120-3

Date Collected: 09/08/17 08:30

Matrix: Solid

Date Received: 09/08/17 14:25

Percent Solids: 86.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		22	9.3	ug/Kg	☼	09/08/17 15:34	09/10/17 00:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		75 - 120				09/08/17 15:34	09/10/17 00:26	1
Trifluorotoluene (Surr)	102		60 - 150				09/08/17 15:34	09/10/17 00:26	1
4-Bromofluorobenzene (Surr)	100		47 - 150				09/08/17 15:34	09/10/17 00:26	1
Dibromofluoromethane (Surr)	106		80 - 118				09/08/17 15:34	09/10/17 00:26	1
1,2-Dichloroethane-d4 (Surr)	119		80 - 121				09/08/17 15:34	09/10/17 00:26	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	1.0	J B	5.7	0.87	ug/Kg	☼	09/08/17 15:41	09/09/17 16:32	1
Benzo[a]pyrene	0.61	J	5.7	0.46	ug/Kg	☼	09/08/17 15:41	09/09/17 16:32	1
Benzo[b]fluoranthene	0.93	J	5.7	0.67	ug/Kg	☼	09/08/17 15:41	09/09/17 16:32	1
Benzo[k]fluoranthene	ND		5.7	0.68	ug/Kg	☼	09/08/17 15:41	09/09/17 16:32	1
Chrysene	ND		5.7	1.7	ug/Kg	☼	09/08/17 15:41	09/09/17 16:32	1
Dibenz(a,h)anthracene	ND		5.7	0.82	ug/Kg	☼	09/08/17 15:41	09/09/17 16:32	1
Indeno[1,2,3-cd]pyrene	ND		5.7	0.68	ug/Kg	☼	09/08/17 15:41	09/09/17 16:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	89		68 - 138				09/08/17 15:41	09/09/17 16:32	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.3	2.3	mg/Kg	☼	09/09/17 10:41	09/09/17 16:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150				09/09/17 10:41	09/09/17 16:34	1
Trifluorotoluene (Surr)							09/09/17 10:41	09/09/17 16:34	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	34	J	55	14	mg/Kg	☼	09/11/17 07:53	09/11/17 23:07	1
Motor Oil (>C24-C36)	120		55	10	mg/Kg	☼	09/11/17 07:53	09/11/17 23:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	93		50 - 150				09/11/17 07:53	09/11/17 23:07	1
n-Decanoic Acid (Surr)	0.0006		0 - 1				09/11/17 07:53	09/11/17 23:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	86.1		0.1	0.1	%			09/09/17 09:41	1
Percent Moisture	13.9		0.1	0.1	%			09/09/17 09:41	1

TestAmerica Seattle

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Client Sample ID: EX-DB2-A6-5-SW

Lab Sample ID: 580-71120-4

Date Collected: 09/07/17 16:10

Matrix: Solid

Date Received: 09/08/17 14:25

Percent Solids: 87.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		21	9.1	ug/Kg	☼	09/08/17 15:34	09/10/17 00:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		75 - 120				09/08/17 15:34	09/10/17 00:51	1
Trifluorotoluene (Surr)	100		60 - 150				09/08/17 15:34	09/10/17 00:51	1
4-Bromofluorobenzene (Surr)	98		47 - 150				09/08/17 15:34	09/10/17 00:51	1
Dibromofluoromethane (Surr)	104		80 - 118				09/08/17 15:34	09/10/17 00:51	1
1,2-Dichloroethane-d4 (Surr)	112		80 - 121				09/08/17 15:34	09/10/17 00:51	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	1.0	J B	5.0	0.76	ug/Kg	☼	09/08/17 15:41	09/09/17 16:56	1
Benzo[a]pyrene	0.76	J	5.0	0.40	ug/Kg	☼	09/08/17 15:41	09/09/17 16:56	1
Benzo[b]fluoranthene	2.2	J	5.0	0.59	ug/Kg	☼	09/08/17 15:41	09/09/17 16:56	1
Benzo[k]fluoranthene	ND		5.0	0.60	ug/Kg	☼	09/08/17 15:41	09/09/17 16:56	1
Chrysene	3.7	J	5.0	1.5	ug/Kg	☼	09/08/17 15:41	09/09/17 16:56	1
Dibenz(a,h)anthracene	ND		5.0	0.72	ug/Kg	☼	09/08/17 15:41	09/09/17 16:56	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.60	ug/Kg	☼	09/08/17 15:41	09/09/17 16:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	79		68 - 138				09/08/17 15:41	09/09/17 16:56	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.49	0.26	mg/Kg	☼	09/09/17 10:41	09/09/17 17:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		50 - 150				09/09/17 10:41	09/09/17 17:05	1
Trifluorotoluene (Surr)							09/09/17 10:41	09/09/17 17:05	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	41	J	42	10	mg/Kg	☼	09/11/17 07:53	09/11/17 23:29	1
Motor Oil (>C24-C36)	80		42	7.6	mg/Kg	☼	09/11/17 07:53	09/11/17 23:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	94		50 - 150				09/11/17 07:53	09/11/17 23:29	1
n-Decanoic Acid (Surr)	0.0002		0 - 1				09/11/17 07:53	09/11/17 23:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	87.0		0.1	0.1	%			09/09/17 09:41	1
Percent Moisture	13.0		0.1	0.1	%			09/09/17 09:41	1

TestAmerica Seattle

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Client Sample ID: EX-DB2-A7-5-SW

Lab Sample ID: 580-71120-5

Date Collected: 09/07/17 15:45

Matrix: Solid

Date Received: 09/08/17 14:25

Percent Solids: 88.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		18	7.8	ug/Kg	☼	09/08/17 15:34	09/10/17 01:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		75 - 120				09/08/17 15:34	09/10/17 01:17	1
Trifluorotoluene (Surr)	98		60 - 150				09/08/17 15:34	09/10/17 01:17	1
4-Bromofluorobenzene (Surr)	99		47 - 150				09/08/17 15:34	09/10/17 01:17	1
Dibromofluoromethane (Surr)	103		80 - 118				09/08/17 15:34	09/10/17 01:17	1
1,2-Dichloroethane-d4 (Surr)	113		80 - 121				09/08/17 15:34	09/10/17 01:17	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	1.2	J B	4.6	0.71	ug/Kg	☼	09/08/17 15:41	09/09/17 17:21	1
Benzo[a]pyrene	0.77	J	4.6	0.37	ug/Kg	☼	09/08/17 15:41	09/09/17 17:21	1
Benzo[b]fluoranthene	2.8	J	4.6	0.55	ug/Kg	☼	09/08/17 15:41	09/09/17 17:21	1
Benzo[k]fluoranthene	0.59	J	4.6	0.56	ug/Kg	☼	09/08/17 15:41	09/09/17 17:21	1
Chrysene	3.1	J	4.6	1.4	ug/Kg	☼	09/08/17 15:41	09/09/17 17:21	1
Dibenz(a,h)anthracene	ND		4.6	0.67	ug/Kg	☼	09/08/17 15:41	09/09/17 17:21	1
Indeno[1,2,3-cd]pyrene	1.1	J	4.6	0.56	ug/Kg	☼	09/08/17 15:41	09/09/17 17:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	88		68 - 138				09/08/17 15:41	09/09/17 17:21	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		3.6	1.9	mg/Kg	☼	09/09/17 10:41	09/09/17 17:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150				09/09/17 10:41	09/09/17 17:35	1
Trifluorotoluene (Surr)							09/09/17 10:41	09/09/17 17:35	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	20	J	53	13	mg/Kg	☼	09/11/17 07:53	09/11/17 23:51	1
Motor Oil (>C24-C36)	64		53	9.6	mg/Kg	☼	09/11/17 07:53	09/11/17 23:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	75		50 - 150				09/11/17 07:53	09/11/17 23:51	1
n-Decanoic Acid (Surr)	0.0002		0 - 1				09/11/17 07:53	09/11/17 23:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	88.8		0.1	0.1	%			09/09/17 09:41	1
Percent Moisture	11.2		0.1	0.1	%			09/09/17 09:41	1

TestAmerica Seattle

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Client Sample ID: EX-DB2-A8-5-SW

Lab Sample ID: 580-71120-6

Date Collected: 09/07/17 15:35

Matrix: Solid

Date Received: 09/08/17 14:25

Percent Solids: 85.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		21	9.1	ug/Kg	☼	09/08/17 15:34	09/10/17 01:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		75 - 120				09/08/17 15:34	09/10/17 01:43	1
Trifluorotoluene (Surr)	99		60 - 150				09/08/17 15:34	09/10/17 01:43	1
4-Bromofluorobenzene (Surr)	98		47 - 150				09/08/17 15:34	09/10/17 01:43	1
Dibromofluoromethane (Surr)	104		80 - 118				09/08/17 15:34	09/10/17 01:43	1
1,2-Dichloroethane-d4 (Surr)	115		80 - 121				09/08/17 15:34	09/10/17 01:43	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		5.5	0.83	ug/Kg	☼	09/08/17 15:41	09/09/17 17:45	1
Benzo[a]pyrene	ND		5.5	0.44	ug/Kg	☼	09/08/17 15:41	09/09/17 17:45	1
Benzo[b]fluoranthene	0.99	J	5.5	0.65	ug/Kg	☼	09/08/17 15:41	09/09/17 17:45	1
Benzo[k]fluoranthene	ND		5.5	0.66	ug/Kg	☼	09/08/17 15:41	09/09/17 17:45	1
Chrysene	ND		5.5	1.6	ug/Kg	☼	09/08/17 15:41	09/09/17 17:45	1
Dibenz(a,h)anthracene	1.9	J	5.5	0.79	ug/Kg	☼	09/08/17 15:41	09/09/17 17:45	1
Indeno[1,2,3-cd]pyrene	ND		5.5	0.66	ug/Kg	☼	09/08/17 15:41	09/09/17 17:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	87		68 - 138				09/08/17 15:41	09/09/17 17:45	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.2	2.2	mg/Kg	☼	09/09/17 10:41	09/09/17 18:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150				09/09/17 10:41	09/09/17 18:06	1
Trifluorotoluene (Surr)							09/09/17 10:41	09/09/17 18:06	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	30	J	44	11	mg/Kg	☼	09/11/17 07:53	09/12/17 00:14	1
Motor Oil (>C24-C36)	99		44	8.1	mg/Kg	☼	09/11/17 07:53	09/12/17 00:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	95		50 - 150				09/11/17 07:53	09/12/17 00:14	1
n-Decanoic Acid (Surr)	0.001		0 - 1				09/11/17 07:53	09/12/17 00:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	85.8		0.1	0.1	%			09/09/17 09:41	1
Percent Moisture	14.2		0.1	0.1	%			09/09/17 09:41	1

TestAmerica Seattle

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Client Sample ID: DUP01-SO-09082017

Lab Sample ID: 580-71120-7

Date Collected: 09/08/17 00:01

Matrix: Solid

Date Received: 09/08/17 14:25

Percent Solids: 89.9

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		19	8.3	ug/Kg	☼	09/08/17 15:34	09/10/17 02:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		75 - 120				09/08/17 15:34	09/10/17 02:09	1
Trifluorotoluene (Surr)	99		60 - 150				09/08/17 15:34	09/10/17 02:09	1
4-Bromofluorobenzene (Surr)	99		47 - 150				09/08/17 15:34	09/10/17 02:09	1
Dibromofluoromethane (Surr)	104		80 - 118				09/08/17 15:34	09/10/17 02:09	1
1,2-Dichloroethane-d4 (Surr)	113		80 - 121				09/08/17 15:34	09/10/17 02:09	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.84	J B	5.2	0.79	ug/Kg	☼	09/08/17 15:41	09/09/17 18:10	1
Benzo[a]pyrene	ND		5.2	0.42	ug/Kg	☼	09/08/17 15:41	09/09/17 18:10	1
Benzo[b]fluoranthene	1.1	J	5.2	0.61	ug/Kg	☼	09/08/17 15:41	09/09/17 18:10	1
Benzo[k]fluoranthene	ND		5.2	0.62	ug/Kg	☼	09/08/17 15:41	09/09/17 18:10	1
Chrysene	2.1	J	5.2	1.6	ug/Kg	☼	09/08/17 15:41	09/09/17 18:10	1
Dibenz(a,h)anthracene	ND		5.2	0.75	ug/Kg	☼	09/08/17 15:41	09/09/17 18:10	1
Indeno[1,2,3-cd]pyrene	ND		5.2	0.62	ug/Kg	☼	09/08/17 15:41	09/09/17 18:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	85		68 - 138				09/08/17 15:41	09/09/17 18:10	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		3.9	2.0	mg/Kg	☼	09/09/17 10:41	09/09/17 19:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		50 - 150				09/09/17 10:41	09/09/17 19:08	1
Trifluorotoluene (Surr)							09/09/17 10:41	09/09/17 19:08	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	19	J	55	14	mg/Kg	☼	09/11/17 07:53	09/12/17 00:58	1
Motor Oil (>C24-C36)	56		55	10	mg/Kg	☼	09/11/17 07:53	09/12/17 00:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	80		50 - 150				09/11/17 07:53	09/12/17 00:58	1
n-Decanoic Acid (Surr)	0.0001		0 - 1				09/11/17 07:53	09/12/17 00:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	89.9		0.1	0.1	%			09/09/17 09:41	1
Percent Moisture	10.1		0.1	0.1	%			09/09/17 09:41	1

TestAmerica Seattle

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Client Sample ID: RB-09082017

Lab Sample ID: 580-71120-8

Date Collected: 09/08/17 09:00

Matrix: Water

Date Received: 09/08/17 14:25

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/09/17 20:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		58 - 133					09/09/17 20:50	1
Trifluorotoluene (Surr)	95		77 - 128					09/09/17 20:50	1



Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Client Sample ID: TB-09082017

Lab Sample ID: 580-71120-9

Date Collected: 09/08/17 00:01

Matrix: Solid

Date Received: 09/08/17 14:25

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/08/17 15:34	09/08/17 22:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	98		75 - 120				09/08/17 15:34	09/08/17 22:20	1
<i>Trifluorotoluene (Surr)</i>	98		60 - 150				09/08/17 15:34	09/08/17 22:20	1
<i>4-Bromofluorobenzene (Surr)</i>	99		47 - 150				09/08/17 15:34	09/08/17 22:20	1
<i>Dibromofluoromethane (Surr)</i>	103		80 - 118				09/08/17 15:34	09/08/17 22:20	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	105		80 - 121				09/08/17 15:34	09/08/17 22:20	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		09/09/17 10:41	09/09/17 15:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>4-Bromofluorobenzene (Surr)</i>	90		50 - 150				09/09/17 10:41	09/09/17 15:02	1
<i>Trifluorotoluene (Surr)</i>							09/09/17 10:41	09/09/17 15:02	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-255688/1-A
Matrix: Solid
Analysis Batch: 255708

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 255688

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/08/17 15:34	09/08/17 21:03	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		75 - 120	09/08/17 15:34	09/08/17 21:03	1
Trifluorotoluene (Surr)	98		60 - 150	09/08/17 15:34	09/08/17 21:03	1
4-Bromofluorobenzene (Surr)	99		47 - 150	09/08/17 15:34	09/08/17 21:03	1
Dibromofluoromethane (Surr)	103		80 - 118	09/08/17 15:34	09/08/17 21:03	1
1,2-Dichloroethane-d4 (Surr)	109		80 - 121	09/08/17 15:34	09/08/17 21:03	1

Lab Sample ID: LCS 580-255688/2-A
Matrix: Solid
Analysis Batch: 255708

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 255688

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzene	800	862		ug/Kg		108	79 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	97		75 - 120
Trifluorotoluene (Surr)	98		60 - 150
4-Bromofluorobenzene (Surr)	99		47 - 150
Dibromofluoromethane (Surr)	104		80 - 118
1,2-Dichloroethane-d4 (Surr)	110		80 - 121

Lab Sample ID: LCSD 580-255688/3-A
Matrix: Solid
Analysis Batch: 255708

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 255688

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Benzene	800	866		ug/Kg		108	79 - 135	0	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	97		75 - 120
Trifluorotoluene (Surr)	98		60 - 150
4-Bromofluorobenzene (Surr)	100		47 - 150
Dibromofluoromethane (Surr)	71	X	80 - 118
1,2-Dichloroethane-d4 (Surr)	73	X	80 - 121

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-255689/1-A
Matrix: Solid
Analysis Batch: 255749

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 255689

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.900	J	5.0	0.76	ug/Kg		09/08/17 15:41	09/09/17 14:53	1
Benzo[a]pyrene	ND		5.0	0.40	ug/Kg		09/08/17 15:41	09/09/17 14:53	1
Benzo[b]fluoranthene	ND		5.0	0.59	ug/Kg		09/08/17 15:41	09/09/17 14:53	1

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: MB 580-255689/1-A
Matrix: Solid
Analysis Batch: 255749

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 255689

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	ND		5.0	0.60	ug/Kg		09/08/17 15:41	09/09/17 14:53	1
Chrysene	ND		5.0	1.5	ug/Kg		09/08/17 15:41	09/09/17 14:53	1
Dibenz(a,h)anthracene	ND		5.0	0.72	ug/Kg		09/08/17 15:41	09/09/17 14:53	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.60	ug/Kg		09/08/17 15:41	09/09/17 14:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	99		68 - 138	09/08/17 15:41	09/09/17 14:53	1

Lab Sample ID: LCS 580-255689/2-A
Matrix: Solid
Analysis Batch: 255749

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 255689

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	1000	1040		ug/Kg		104	66 - 120
Benzo[a]pyrene	1000	1050		ug/Kg		105	72 - 124
Benzo[b]fluoranthene	1000	1010		ug/Kg		101	63 - 121
Benzo[k]fluoranthene	1000	991		ug/Kg		99	63 - 129
Chrysene	1000	927		ug/Kg		93	69 - 120
Dibenz(a,h)anthracene	1000	1050		ug/Kg		105	70 - 125
Indeno[1,2,3-cd]pyrene	1000	965		ug/Kg		96	65 - 121

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	90		68 - 138

Lab Sample ID: 580-71120-C-1-B MS
Matrix: Solid
Analysis Batch: 255749

Client Sample ID: 580-71120-C-1-B MS
Prep Type: Total/NA
Prep Batch: 255689

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	1.5	J B	1220	1250		ug/Kg	☼	102	66 - 120
Benzo[a]pyrene	0.84	J	1220	1190		ug/Kg	☼	97	72 - 124
Benzo[b]fluoranthene	1.2	J	1220	1060		ug/Kg	☼	87	63 - 121
Benzo[k]fluoranthene	1.1	J	1220	1100		ug/Kg	☼	90	63 - 129
Chrysene	ND		1220	1050		ug/Kg	☼	86	69 - 120
Dibenz(a,h)anthracene	0.84	J	1220	1200		ug/Kg	☼	98	70 - 125
Indeno[1,2,3-cd]pyrene	0.92	J	1220	1160		ug/Kg	☼	95	65 - 121

Surrogate	MS %Recovery	MS Qualifier	Limits
Terphenyl-d14	83		68 - 138

Lab Sample ID: 580-71120-C-1-C MSD
Matrix: Solid
Analysis Batch: 255749

Client Sample ID: 580-71120-C-1-C MSD
Prep Type: Total/NA
Prep Batch: 255689

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[a]anthracene	1.5	J B	1160	1170		ug/Kg	☼	101	66 - 120	7	40
Benzo[a]pyrene	0.84	J	1160	1130		ug/Kg	☼	97	72 - 124	5	40

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: 580-71120-C-1-C MSD

Matrix: Solid

Analysis Batch: 255749

Client Sample ID: 580-71120-C-1-C MSD

Prep Type: Total/NA

Prep Batch: 255689

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzo[b]fluoranthene	1.2	J	1160	1010		ug/Kg	☼	87	63 - 121	5	40
Benzo[k]fluoranthene	1.1	J	1160	1040		ug/Kg	☼	90	63 - 129	5	40
Chrysene	ND		1160	980		ug/Kg	☼	85	69 - 120	7	40
Dibenz(a,h)anthracene	0.84	J	1160	1150		ug/Kg	☼	99	70 - 125	5	40
Indeno[1,2,3-cd]pyrene	0.92	J	1160	1100		ug/Kg	☼	95	65 - 121	5	40

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Terphenyl-d14	81		68 - 138

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-255758/1-A

Matrix: Solid

Analysis Batch: 255767

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 255758

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2.23	J	4.0	2.1	mg/Kg		09/09/17 10:41	09/09/17 13:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		50 - 150	09/09/17 10:41	09/09/17 13:30	1
Trifluorotoluene (Surr)	123		50 - 150	09/09/17 10:41	09/09/17 13:30	1

Lab Sample ID: LCS 580-255758/2-A

Matrix: Solid

Analysis Batch: 255767

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 255758

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Gasoline	40.0	39.1		mg/Kg		98	68 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		50 - 150
Trifluorotoluene (Surr)	121		50 - 150

Lab Sample ID: LCSD 580-255758/3-A

Matrix: Solid

Analysis Batch: 255767

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 255758

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline	40.0	39.8		mg/Kg		99	68 - 120	2	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	91		50 - 150
Trifluorotoluene (Surr)	122		50 - 150

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-255785/5
Matrix: Water
Analysis Batch: 255785

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.0500	J	0.25	0.050	mg/L			09/09/17 19:13	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		58 - 133					09/09/17 19:13	1
Trifluorotoluene (Surr)	97		77 - 128					09/09/17 19:13	1

Lab Sample ID: LCS 580-255785/6
Matrix: Water
Analysis Batch: 255785

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	0.857		mg/L		86	79 - 110
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	99		58 - 133				
Trifluorotoluene (Surr)	98		77 - 128				

Lab Sample ID: LCSD 580-255785/7
Matrix: Water
Analysis Batch: 255785

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	0.836		mg/L		84	79 - 110	3	10
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	98		58 - 133						
Trifluorotoluene (Surr)	94		77 - 128						

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-255792/1-B
Matrix: Solid
Analysis Batch: 255880

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 255792

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		09/11/17 07:53	09/11/17 20:52	1
Motor Oil (>C24-C36)	ND		50	9.1	mg/Kg		09/11/17 07:53	09/11/17 20:52	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	94		50 - 150				09/11/17 07:53	09/11/17 20:52	1
n-Decanoic Acid (Surr)	0.00003		0 - 1				09/11/17 07:53	09/11/17 20:52	1

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 580-255792/2-B
Matrix: Solid
Analysis Batch: 255880

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 255792

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	500	448		mg/Kg		90	64 - 127
Motor Oil (>C24-C36)	500	448		mg/Kg		90	70 - 125
		LCS %Recovery	LCS Qualifier	Limits			
<i>o-Terphenyl</i>		91		50 - 150			

Lab Sample ID: LCSD 580-255792/3-B
Matrix: Solid
Analysis Batch: 255880

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 255792

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	500	493		mg/Kg		99	64 - 127	10	16
Motor Oil (>C24-C36)	500	494		mg/Kg		99	70 - 125	10	17
		LCSD %Recovery	LCSD Qualifier	Limits					
<i>o-Terphenyl</i>		96		50 - 150					

Lab Sample ID: 580-71120-1 DU
Matrix: Solid
Analysis Batch: 255880

Client Sample ID: EX-DB2-A3-5-SW
Prep Type: Total/NA
Prep Batch: 255792

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
#2 Diesel (C10-C24)	ND		ND		mg/Kg	☼	NC	35
Motor Oil (>C24-C36)	18	J	14.1	J	mg/Kg	☼	24	35
		DU %Recovery	DU Qualifier	Limits				
<i>o-Terphenyl</i>		96		50 - 150				
<i>n-Decanoic Acid (Surr)</i>		0.0001		0 - 1				

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71120-2 DU
Matrix: Solid
Analysis Batch: 255756

Client Sample ID: EX-DB2-A4-5-SW
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	86.6		92.1		%		6	20
Percent Moisture	13.4		7.9	F3	%		52	20

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Client Sample ID: EX-DB2-A3-5-SW

Date Collected: 09/08/17 10:50

Date Received: 09/08/17 14:25

Lab Sample ID: 580-71120-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	255756	09/09/17 09:41	TTN	TAL SEA

Client Sample ID: EX-DB2-A3-5-SW

Date Collected: 09/08/17 10:50

Date Received: 09/08/17 14:25

Lab Sample ID: 580-71120-1

Matrix: Solid

Percent Solids: 81.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			255688	09/08/17 15:34	JSM	TAL SEA
Total/NA	Analysis	8260C		1	255791	09/09/17 23:34	T1W	TAL SEA
Total/NA	Prep	5035			255758	09/09/17 10:41	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	255767	09/09/17 15:33	JCV	TAL SEA
Total/NA	Prep	3546			255792	09/11/17 07:53	REY	TAL SEA
Total/NA	Cleanup	3630C			255813	09/11/17 12:28	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	255880	09/11/17 21:59	ADB	TAL SEA

Client Sample ID: EX-DB2-A4-5-SW

Date Collected: 09/08/17 10:00

Date Received: 09/08/17 14:25

Lab Sample ID: 580-71120-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	255756	09/09/17 09:41	TTN	TAL SEA

Client Sample ID: EX-DB2-A4-5-SW

Date Collected: 09/08/17 10:00

Date Received: 09/08/17 14:25

Lab Sample ID: 580-71120-2

Matrix: Solid

Percent Solids: 86.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			255688	09/08/17 15:34	JSM	TAL SEA
Total/NA	Analysis	8260C		1	255791	09/10/17 00:00	T1W	TAL SEA
Total/NA	Prep	5035			255758	09/09/17 10:41	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	255767	09/09/17 16:04	JCV	TAL SEA
Total/NA	Prep	3546			255792	09/11/17 07:53	REY	TAL SEA
Total/NA	Cleanup	3630C			255813	09/11/17 12:28	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	255880	09/11/17 22:44	ADB	TAL SEA

Client Sample ID: EX-DB2-A5-5-SW

Date Collected: 09/08/17 08:30

Date Received: 09/08/17 14:25

Lab Sample ID: 580-71120-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	255756	09/09/17 09:41	TTN	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Client Sample ID: EX-DB2-A5-5-SW

Lab Sample ID: 580-71120-3

Date Collected: 09/08/17 08:30

Matrix: Solid

Date Received: 09/08/17 14:25

Percent Solids: 86.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			255688	09/08/17 15:34	JSM	TAL SEA
Total/NA	Analysis	8260C		1	255791	09/10/17 00:26	T1W	TAL SEA
Total/NA	Prep	3546			255689	09/08/17 15:41	JWL	TAL SEA
Total/NA	Analysis	8270D SIM		1	255749	09/09/17 16:32	CJ	TAL SEA
Total/NA	Prep	5035			255758	09/09/17 10:41	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	255767	09/09/17 16:34	JCV	TAL SEA
Total/NA	Prep	3546			255792	09/11/17 07:53	REY	TAL SEA
Total/NA	Cleanup	3630C			255813	09/11/17 12:28	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	255880	09/11/17 23:07	ADB	TAL SEA

Client Sample ID: EX-DB2-A6-5-SW

Lab Sample ID: 580-71120-4

Date Collected: 09/07/17 16:10

Matrix: Solid

Date Received: 09/08/17 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	255756	09/09/17 09:41	TTN	TAL SEA

Client Sample ID: EX-DB2-A6-5-SW

Lab Sample ID: 580-71120-4

Date Collected: 09/07/17 16:10

Matrix: Solid

Date Received: 09/08/17 14:25

Percent Solids: 87.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			255688	09/08/17 15:34	JSM	TAL SEA
Total/NA	Analysis	8260C		1	255791	09/10/17 00:51	T1W	TAL SEA
Total/NA	Prep	3546			255689	09/08/17 15:41	JWL	TAL SEA
Total/NA	Analysis	8270D SIM		1	255749	09/09/17 16:56	CJ	TAL SEA
Total/NA	Prep	5035			255758	09/09/17 10:41	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	255767	09/09/17 17:05	JCV	TAL SEA
Total/NA	Prep	3546			255792	09/11/17 07:53	REY	TAL SEA
Total/NA	Cleanup	3630C			255813	09/11/17 12:28	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	255880	09/11/17 23:29	ADB	TAL SEA

Client Sample ID: EX-DB2-A7-5-SW

Lab Sample ID: 580-71120-5

Date Collected: 09/07/17 15:45

Matrix: Solid

Date Received: 09/08/17 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	255756	09/09/17 09:41	TTN	TAL SEA

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Client Sample ID: EX-DB2-A7-5-SW

Lab Sample ID: 580-71120-5

Date Collected: 09/07/17 15:45

Matrix: Solid

Date Received: 09/08/17 14:25

Percent Solids: 88.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			255688	09/08/17 15:34	JSM	TAL SEA
Total/NA	Analysis	8260C		1	255791	09/10/17 01:17	T1W	TAL SEA
Total/NA	Prep	3546			255689	09/08/17 15:41	JWL	TAL SEA
Total/NA	Analysis	8270D SIM		1	255749	09/09/17 17:21	CJ	TAL SEA
Total/NA	Prep	5035			255758	09/09/17 10:41	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	255767	09/09/17 17:35	JCV	TAL SEA
Total/NA	Prep	3546			255792	09/11/17 07:53	REY	TAL SEA
Total/NA	Cleanup	3630C			255813	09/11/17 12:28	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	255880	09/11/17 23:51	ADB	TAL SEA

Client Sample ID: EX-DB2-A8-5-SW

Lab Sample ID: 580-71120-6

Date Collected: 09/07/17 15:35

Matrix: Solid

Date Received: 09/08/17 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	255756	09/09/17 09:41	TTN	TAL SEA

Client Sample ID: EX-DB2-A8-5-SW

Lab Sample ID: 580-71120-6

Date Collected: 09/07/17 15:35

Matrix: Solid

Date Received: 09/08/17 14:25

Percent Solids: 85.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			255688	09/08/17 15:34	JSM	TAL SEA
Total/NA	Analysis	8260C		1	255791	09/10/17 01:43	T1W	TAL SEA
Total/NA	Prep	3546			255689	09/08/17 15:41	JWL	TAL SEA
Total/NA	Analysis	8270D SIM		1	255749	09/09/17 17:45	CJ	TAL SEA
Total/NA	Prep	5035			255758	09/09/17 10:41	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	255767	09/09/17 18:06	JCV	TAL SEA
Total/NA	Prep	3546			255792	09/11/17 07:53	REY	TAL SEA
Total/NA	Cleanup	3630C			255813	09/11/17 12:28	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	255880	09/12/17 00:14	ADB	TAL SEA

Client Sample ID: DUP01-SO-09082017

Lab Sample ID: 580-71120-7

Date Collected: 09/08/17 00:01

Matrix: Solid

Date Received: 09/08/17 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	255756	09/09/17 09:41	TTN	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Client Sample ID: DUP01-SO-09082017

Lab Sample ID: 580-71120-7

Date Collected: 09/08/17 00:01

Matrix: Solid

Date Received: 09/08/17 14:25

Percent Solids: 89.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			255688	09/08/17 15:34	JSM	TAL SEA
Total/NA	Analysis	8260C		1	255791	09/10/17 02:09	T1W	TAL SEA
Total/NA	Prep	3546			255689	09/08/17 15:41	JWL	TAL SEA
Total/NA	Analysis	8270D SIM		1	255749	09/09/17 18:10	CJ	TAL SEA
Total/NA	Prep	5035			255758	09/09/17 10:41	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	255767	09/09/17 19:08	JCV	TAL SEA
Total/NA	Prep	3546			255792	09/11/17 07:53	REY	TAL SEA
Total/NA	Cleanup	3630C			255813	09/11/17 12:28	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	255880	09/12/17 00:58	ADB	TAL SEA

Client Sample ID: RB-09082017

Lab Sample ID: 580-71120-8

Date Collected: 09/08/17 09:00

Matrix: Water

Date Received: 09/08/17 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	255785	09/09/17 20:50	JCV	TAL SEA

Client Sample ID: TB-09082017

Lab Sample ID: 580-71120-9

Date Collected: 09/08/17 00:01

Matrix: Solid

Date Received: 09/08/17 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			255688	09/08/17 15:34	JSM	TAL SEA
Total/NA	Analysis	8260C		1	255708	09/08/17 22:20	TL1	TAL SEA
Total/NA	Prep	5035			255758	09/09/17 10:41	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	255767	09/09/17 15:02	JCV	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
California	State Program	9	2901	01-31-18
L-A-B	DoD ELAP		L2236	01-19-19
L-A-B	ISO/IEC 17025		L2236	01-19-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-17
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71120-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-71120-1	EX-DB2-A3-5-SW	Solid	09/08/17 10:50	09/08/17 14:25
580-71120-2	EX-DB2-A4-5-SW	Solid	09/08/17 10:00	09/08/17 14:25
580-71120-3	EX-DB2-A5-5-SW	Solid	09/08/17 08:30	09/08/17 14:25
580-71120-4	EX-DB2-A6-5-SW	Solid	09/07/17 16:10	09/08/17 14:25
580-71120-5	EX-DB2-A7-5-SW	Solid	09/07/17 15:45	09/08/17 14:25
580-71120-6	EX-DB2-A8-5-SW	Solid	09/07/17 15:35	09/08/17 14:25
580-71120-7	DUP01-SO-09082017	Solid	09/08/17 00:01	09/08/17 14:25
580-71120-8	RB-09082017	Water	09/08/17 09:00	09/08/17 14:25
580-71120-9	TB-09082017	Solid	09/08/17 00:01	09/08/17 14:25

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-71120-1

Login Number: 71120

List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	Refer to Job Narrative for details.
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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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: 580-71216-1

Client Project/Site: Edmonds Terminal
Revision: 1

For:

ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
11/8/2017 4:16:28 PM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Job ID: 580-71216-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE

**Client: ARCADIS U.S. Inc
Project: Edmonds Terminal
Report Number: 580-71216-1**

REVISION 1: NOVEMBER 8, 2017

This revision was to correct the sample collection time for EX-DB2-B7-10 (580-71216-5) from 1245 to 1345 per the COC. In addition, the Trifluorotoluene surrogate was removed from the NWTPH-G soil samples as this surrogate is not reported with soils as they are collected in field methanol preserved containers.

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

The samples were received on 09/13/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was -0.3 C.

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)

Samples EX-DB2-B3-10 (580-71216-1), EX-DB2-B4-10 (580-71216-2), EX-DB2-B5-10 (580-71216-3), EX-DB2-B6-10 (580-71216-4), EX-DB2-B7-10 (580-71216-5), EX-DB2-B8-10 (580-71216-6) and TB-091217 (580-71216-8) were analyzed for volatile organic compounds (GC) in accordance with 8260. The samples were prepared on 09/13/2017 and analyzed on 09/14/2017.

Method(s) 5035: The following sample was provided to the laboratory with a significantly different initial weight than the required (10g): The weight should not deviate by more than 20%. The amount provided was above this amount: EX-DB2-B3-10 (580-71216-1), EX-DB2-B4-10 (580-71216-2), EX-DB2-B5-10 (580-71216-3), EX-DB2-B6-10 (580-71216-4), EX-DB2-B7-10 (580-71216-5), EX-DB2-B8-10 (580-71216-6) and TB-091217 (580-71216-8).

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO)

Samples EX-DB2-B3-10 (580-71216-1), EX-DB2-B4-10 (580-71216-2), EX-DB2-B5-10 (580-71216-3), EX-DB2-B6-10 (580-71216-4), EX-DB2-B7-10 (580-71216-5), EX-DB2-B8-10 (580-71216-6) and TB-091217 (580-71216-8) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were prepared on 09/13/2017 and analyzed on 09/14/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Job ID: 580-71216-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

GASOLINE RANGE ORGANICS (GRO)

Sample RB-091217 (580-71216-7) was analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were analyzed on 09/13/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL AND EXTENDED RANGE ORGANICS

Samples EX-DB2-B3-10 (580-71216-1), EX-DB2-B4-10 (580-71216-2), EX-DB2-B5-10 (580-71216-3), EX-DB2-B6-10 (580-71216-4), EX-DB2-B7-10 (580-71216-5) and EX-DB2-B8-10 (580-71216-6) were analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared and analyzed on 09/13/2017.

Method(s) 3630C: Silica gel clean-up was performed in burettes using 10g of silica gel. Burettes/silica gel were cleaned with DCM, silica gel was conditioned with Hexane, samples were eluted with 3:2 DCM:Pentane. 580-256036 and 580-256094. EX-DB2-B3-10 (580-71216-1), EX-DB2-B4-10 (580-71216-2), EX-DB2-B5-10 (580-71216-3), EX-DB2-B6-10 (580-71216-4), EX-DB2-B7-10 (580-71216-5), EX-DB2-B8-10 (580-71216-6) and (580-71216-A-1-B DU)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples EX-DB2-B3-10 (580-71216-1), EX-DB2-B4-10 (580-71216-2), EX-DB2-B5-10 (580-71216-3), EX-DB2-B6-10 (580-71216-4), EX-DB2-B7-10 (580-71216-5) and EX-DB2-B8-10 (580-71216-6) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 09/13/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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 Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Client Sample ID: EX-DB2-B3-10

Lab Sample ID: 580-71216-1

Date Collected: 09/12/17 14:15

Matrix: Solid

Date Received: 09/13/17 08:30

Percent Solids: 77.9

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		24	10	ug/Kg	☼	09/13/17 14:33	09/14/17 10:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		75 - 120				09/13/17 14:33	09/14/17 10:53	1
Trifluorotoluene (Surr)	102		60 - 150				09/13/17 14:33	09/14/17 10:53	1
4-Bromofluorobenzene (Surr)	102		47 - 150				09/13/17 14:33	09/14/17 10:53	1
Dibromofluoromethane (Surr)	100		80 - 118				09/13/17 14:33	09/14/17 10:53	1
1,2-Dichloroethane-d4 (Surr)	111		80 - 121				09/13/17 14:33	09/14/17 10:53	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.8	2.5	mg/Kg	☼	09/13/17 13:37	09/14/17 12:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		50 - 150				09/13/17 13:37	09/14/17 12:49	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		49	12	mg/Kg	☼	09/13/17 11:04	09/13/17 19:46	1
Motor Oil (>C24-C36)	19	J	49	8.9	mg/Kg	☼	09/13/17 11:04	09/13/17 19:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	71		50 - 150				09/13/17 11:04	09/13/17 19:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	77.9		0.1	0.1	%			09/13/17 16:05	1
Percent Moisture	22.1		0.1	0.1	%			09/13/17 16:05	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Client Sample ID: EX-DB2-B4-10

Lab Sample ID: 580-71216-2

Date Collected: 09/12/17 14:05

Matrix: Solid

Date Received: 09/13/17 08:30

Percent Solids: 81.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		23	9.7	ug/Kg	☼	09/13/17 14:33	09/14/17 11:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		75 - 120				09/13/17 14:33	09/14/17 11:19	1
Trifluorotoluene (Surr)	98		60 - 150				09/13/17 14:33	09/14/17 11:19	1
4-Bromofluorobenzene (Surr)	103		47 - 150				09/13/17 14:33	09/14/17 11:19	1
Dibromofluoromethane (Surr)	106		80 - 118				09/13/17 14:33	09/14/17 11:19	1
1,2-Dichloroethane-d4 (Surr)	111		80 - 121				09/13/17 14:33	09/14/17 11:19	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.5	2.4	mg/Kg	☼	09/13/17 13:37	09/14/17 13:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		50 - 150				09/13/17 13:37	09/14/17 13:20	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		51	13	mg/Kg	☼	09/13/17 11:04	09/13/17 20:31	1
Motor Oil (>C24-C36)	19	J	51	9.3	mg/Kg	☼	09/13/17 11:04	09/13/17 20:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	76		50 - 150				09/13/17 11:04	09/13/17 20:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	81.5		0.1	0.1	%			09/13/17 16:05	1
Percent Moisture	18.5		0.1	0.1	%			09/13/17 16:05	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Client Sample ID: EX-DB2-B5-10

Lab Sample ID: 580-71216-3

Date Collected: 09/12/17 14:00

Matrix: Solid

Date Received: 09/13/17 08:30

Percent Solids: 77.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		27	11	ug/Kg	☼	09/13/17 14:33	09/14/17 11:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		75 - 120				09/13/17 14:33	09/14/17 11:45	1
Trifluorotoluene (Surr)	101		60 - 150				09/13/17 14:33	09/14/17 11:45	1
4-Bromofluorobenzene (Surr)	100		47 - 150				09/13/17 14:33	09/14/17 11:45	1
Dibromofluoromethane (Surr)	103		80 - 118				09/13/17 14:33	09/14/17 11:45	1
1,2-Dichloroethane-d4 (Surr)	113		80 - 121				09/13/17 14:33	09/14/17 11:45	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.3	2.8	mg/Kg	☼	09/13/17 13:37	09/14/17 13:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		50 - 150				09/13/17 13:37	09/14/17 13:50	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		56	14	mg/Kg	☼	09/13/17 11:04	09/13/17 20:54	1
Motor Oil (>C24-C36)	28	J	56	10	mg/Kg	☼	09/13/17 11:04	09/13/17 20:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	77		50 - 150				09/13/17 11:04	09/13/17 20:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	77.0		0.1	0.1	%			09/13/17 16:05	1
Percent Moisture	23.0		0.1	0.1	%			09/13/17 16:05	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Client Sample ID: EX-DB2-B6-10

Lab Sample ID: 580-71216-4

Date Collected: 09/12/17 13:55

Matrix: Solid

Date Received: 09/13/17 08:30

Percent Solids: 73.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		27	12	ug/Kg	☼	09/13/17 14:33	09/14/17 12:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		75 - 120				09/13/17 14:33	09/14/17 12:11	1
Trifluorotoluene (Surr)	101		60 - 150				09/13/17 14:33	09/14/17 12:11	1
4-Bromofluorobenzene (Surr)	104		47 - 150				09/13/17 14:33	09/14/17 12:11	1
Dibromofluoromethane (Surr)	105		80 - 118				09/13/17 14:33	09/14/17 12:11	1
1,2-Dichloroethane-d4 (Surr)	111		80 - 121				09/13/17 14:33	09/14/17 12:11	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.4	2.8	mg/Kg	☼	09/13/17 13:37	09/14/17 14:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		50 - 150				09/13/17 13:37	09/14/17 14:51	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		57	14	mg/Kg	☼	09/13/17 11:04	09/13/17 21:17	1
Motor Oil (>C24-C36)	32	J	57	10	mg/Kg	☼	09/13/17 11:04	09/13/17 21:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	66		50 - 150				09/13/17 11:04	09/13/17 21:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	73.1		0.1	0.1	%			09/13/17 16:05	1
Percent Moisture	26.9		0.1	0.1	%			09/13/17 16:05	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Client Sample ID: EX-DB2-B7-10

Lab Sample ID: 580-71216-5

Date Collected: 09/12/17 13:45

Matrix: Solid

Date Received: 09/13/17 08:30

Percent Solids: 80.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		24	10	ug/Kg	☼	09/13/17 14:33	09/14/17 12:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		75 - 120				09/13/17 14:33	09/14/17 12:36	1
Trifluorotoluene (Surr)	100		60 - 150				09/13/17 14:33	09/14/17 12:36	1
4-Bromofluorobenzene (Surr)	103		47 - 150				09/13/17 14:33	09/14/17 12:36	1
Dibromofluoromethane (Surr)	105		80 - 118				09/13/17 14:33	09/14/17 12:36	1
1,2-Dichloroethane-d4 (Surr)	113		80 - 121				09/13/17 14:33	09/14/17 12:36	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.9	2.5	mg/Kg	☼	09/13/17 13:37	09/14/17 15:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		50 - 150				09/13/17 13:37	09/14/17 15:22	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg	☼	09/13/17 11:04	09/13/17 21:39	1
Motor Oil (>C24-C36)	15	J	50	9.2	mg/Kg	☼	09/13/17 11:04	09/13/17 21:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	69		50 - 150				09/13/17 11:04	09/13/17 21:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	80.1		0.1	0.1	%			09/13/17 16:05	1
Percent Moisture	19.9		0.1	0.1	%			09/13/17 16:05	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Client Sample ID: EX-DB2-B8-10

Lab Sample ID: 580-71216-6

Date Collected: 09/12/17 13:40

Matrix: Solid

Date Received: 09/13/17 08:30

Percent Solids: 79.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		23	10	ug/Kg	☼	09/13/17 14:33	09/14/17 13:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		75 - 120				09/13/17 14:33	09/14/17 13:02	1
Trifluorotoluene (Surr)	103		60 - 150				09/13/17 14:33	09/14/17 13:02	1
4-Bromofluorobenzene (Surr)	100		47 - 150				09/13/17 14:33	09/14/17 13:02	1
Dibromofluoromethane (Surr)	107		80 - 118				09/13/17 14:33	09/14/17 13:02	1
1,2-Dichloroethane-d4 (Surr)	111		80 - 121				09/13/17 14:33	09/14/17 13:02	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.7	2.4	mg/Kg	☼	09/13/17 13:37	09/14/17 15:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		50 - 150				09/13/17 13:37	09/14/17 15:52	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		49	12	mg/Kg	☼	09/13/17 11:04	09/13/17 22:02	1
Motor Oil (>C24-C36)	22	J	49	8.9	mg/Kg	☼	09/13/17 11:04	09/13/17 22:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	71		50 - 150				09/13/17 11:04	09/13/17 22:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	79.3		0.1	0.1	%			09/13/17 16:05	1
Percent Moisture	20.7		0.1	0.1	%			09/13/17 16:05	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Client Sample ID: RB-091217

Lab Sample ID: 580-71216-7

Date Collected: 09/12/17 15:30

Matrix: Water

Date Received: 09/13/17 08:30

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/13/17 18:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		58 - 133					09/13/17 18:26	1
Trifluorotoluene (Surr)	107		77 - 128					09/13/17 18:26	1



Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Client Sample ID: TB-091217

Lab Sample ID: 580-71216-8

Date Collected: 09/12/17 00:01

Matrix: Solid

Date Received: 09/13/17 08:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/13/17 14:33	09/14/17 10:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		75 - 120	09/13/17 14:33	09/14/17 10:28	1
Trifluorotoluene (Surr)	99		60 - 150	09/13/17 14:33	09/14/17 10:28	1
4-Bromofluorobenzene (Surr)	105		47 - 150	09/13/17 14:33	09/14/17 10:28	1
Dibromofluoromethane (Surr)	112		80 - 118	09/13/17 14:33	09/14/17 10:28	1
1,2-Dichloroethane-d4 (Surr)	115		80 - 121	09/13/17 14:33	09/14/17 10:28	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		09/13/17 13:37	09/14/17 12:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		50 - 150	09/13/17 13:37	09/14/17 12:19	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-256089/1-A
Matrix: Solid
Analysis Batch: 256100

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256089

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/13/17 14:33	09/14/17 09:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		75 - 120	09/13/17 14:33	09/14/17 09:10	1
Trifluorotoluene (Surr)	103		60 - 150	09/13/17 14:33	09/14/17 09:10	1
4-Bromofluorobenzene (Surr)	107		47 - 150	09/13/17 14:33	09/14/17 09:10	1
Dibromofluoromethane (Surr)	106		80 - 118	09/13/17 14:33	09/14/17 09:10	1
1,2-Dichloroethane-d4 (Surr)	117		80 - 121	09/13/17 14:33	09/14/17 09:10	1

Lab Sample ID: LCS 580-256089/2-A
Matrix: Solid
Analysis Batch: 256100

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256089

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzene	800	866		ug/Kg		108	79 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	95		75 - 120
Trifluorotoluene (Surr)	98		60 - 150
4-Bromofluorobenzene (Surr)	97		47 - 150
Dibromofluoromethane (Surr)	105		80 - 118
1,2-Dichloroethane-d4 (Surr)	115		80 - 121

Lab Sample ID: LCSD 580-256089/3-A
Matrix: Solid
Analysis Batch: 256100

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256089

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Benzene	800	896		ug/Kg		112	79 - 135	3	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	101		75 - 120
Trifluorotoluene (Surr)	105		60 - 150
4-Bromofluorobenzene (Surr)	97		47 - 150
Dibromofluoromethane (Surr)	99		80 - 118
1,2-Dichloroethane-d4 (Surr)	110		80 - 121

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-256071/6
Matrix: Water
Analysis Batch: 256071

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/13/17 15:14	1

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-256071/6
Matrix: Water
Analysis Batch: 256071

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	90		58 - 133		09/13/17 15:14	1
Trifluorotoluene (Surr)	105		77 - 128		09/13/17 15:14	1

Lab Sample ID: LCS 580-256071/7
Matrix: Water
Analysis Batch: 256071

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	0.894		mg/L		89	79 - 110

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	96		58 - 133
Trifluorotoluene (Surr)	100		77 - 128

Lab Sample ID: MB 580-256074/1-A
Matrix: Solid
Analysis Batch: 256098

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256074

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		09/13/17 13:30	09/14/17 10:47	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	83		50 - 150	09/13/17 13:30	09/14/17 10:47	1

Lab Sample ID: LCS 580-256074/2-A
Matrix: Solid
Analysis Batch: 256098

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256074

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	40.0	40.1		mg/Kg		100	68 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	90		50 - 150

Lab Sample ID: LCSD 580-256074/3-A
Matrix: Solid
Analysis Batch: 256098

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256074

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	40.0	40.9		mg/Kg		102	68 - 120	2	25

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	92		50 - 150

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-256036/1-B

Matrix: Solid

Analysis Batch: 256106

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 256036

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		09/13/17 11:04	09/13/17 18:39	1
Motor Oil (>C24-C36)	ND		50	9.1	mg/Kg		09/13/17 11:04	09/13/17 18:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	71		50 - 150	09/13/17 11:04	09/13/17 18:39	1

Lab Sample ID: LCS 580-256036/2-B

Matrix: Solid

Analysis Batch: 256106

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 256036

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	500	355		mg/Kg		71	64 - 127
Motor Oil (>C24-C36)	500	372		mg/Kg		74	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	74		50 - 150

Lab Sample ID: LCSD 580-256036/3-B

Matrix: Solid

Analysis Batch: 256106

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 256036

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	500	369		mg/Kg		74	64 - 127	4	16
Motor Oil (>C24-C36)	500	385		mg/Kg		77	70 - 125	4	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	77		50 - 150

Lab Sample ID: 580-71216-1 DU

Matrix: Solid

Analysis Batch: 256106

Client Sample ID: EX-DB2-B3-10

Prep Type: Total/NA

Prep Batch: 256036

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
#2 Diesel (C10-C24)	ND		ND		mg/Kg	☼	NC	35
Motor Oil (>C24-C36)	19	J	14.7	J	mg/Kg	☼	27	35

Surrogate	DU %Recovery	DU Qualifier	Limits
<i>o</i> -Terphenyl	71		50 - 150

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71216-2 DU

Matrix: Solid

Analysis Batch: 256101

Client Sample ID: EX-DB2-B4-10

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Percent Solids	81.5		80.5		%		1	20

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Method: D 2216 - Percent Moisture (Continued)

Lab Sample ID: 580-71216-2 DU
Matrix: Solid
Analysis Batch: 256101

Client Sample ID: EX-DB2-B4-10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	18.5		19.5		%		5	20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Client Sample ID: EX-DB2-B3-10

Date Collected: 09/12/17 14:15

Date Received: 09/13/17 08:30

Lab Sample ID: 580-71216-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256101	09/13/17 16:05	JWL	TAL SEA

Client Sample ID: EX-DB2-B3-10

Date Collected: 09/12/17 14:15

Date Received: 09/13/17 08:30

Lab Sample ID: 580-71216-1

Matrix: Solid

Percent Solids: 77.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256089	09/13/17 14:33	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256100	09/14/17 10:53	JSM	TAL SEA
Total/NA	Prep	5035			256074	09/13/17 13:37	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256098	09/14/17 12:49	RSB	TAL SEA
Total/NA	Prep	3546			256036	09/13/17 11:04	MRG	TAL SEA
Total/NA	Cleanup	3630C			256094	09/13/17 15:27	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256106	09/13/17 19:46	ERZ	TAL SEA

Client Sample ID: EX-DB2-B4-10

Date Collected: 09/12/17 14:05

Date Received: 09/13/17 08:30

Lab Sample ID: 580-71216-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256101	09/13/17 16:05	JWL	TAL SEA

Client Sample ID: EX-DB2-B4-10

Date Collected: 09/12/17 14:05

Date Received: 09/13/17 08:30

Lab Sample ID: 580-71216-2

Matrix: Solid

Percent Solids: 81.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256089	09/13/17 14:33	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256100	09/14/17 11:19	JSM	TAL SEA
Total/NA	Prep	5035			256074	09/13/17 13:37	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256098	09/14/17 13:20	RSB	TAL SEA
Total/NA	Prep	3546			256036	09/13/17 11:04	MRG	TAL SEA
Total/NA	Cleanup	3630C			256094	09/13/17 15:27	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256106	09/13/17 20:31	ERZ	TAL SEA

Client Sample ID: EX-DB2-B5-10

Date Collected: 09/12/17 14:00

Date Received: 09/13/17 08:30

Lab Sample ID: 580-71216-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256101	09/13/17 16:05	JWL	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Client Sample ID: EX-DB2-B5-10

Lab Sample ID: 580-71216-3

Date Collected: 09/12/17 14:00

Matrix: Solid

Date Received: 09/13/17 08:30

Percent Solids: 77.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256089	09/13/17 14:33	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256100	09/14/17 11:45	JSM	TAL SEA
Total/NA	Prep	5035			256074	09/13/17 13:37	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256098	09/14/17 13:50	RSB	TAL SEA
Total/NA	Prep	3546			256036	09/13/17 11:04	MRG	TAL SEA
Total/NA	Cleanup	3630C			256094	09/13/17 15:27	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256106	09/13/17 20:54	ERZ	TAL SEA

Client Sample ID: EX-DB2-B6-10

Lab Sample ID: 580-71216-4

Date Collected: 09/12/17 13:55

Matrix: Solid

Date Received: 09/13/17 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256101	09/13/17 16:05	JWL	TAL SEA

Client Sample ID: EX-DB2-B6-10

Lab Sample ID: 580-71216-4

Date Collected: 09/12/17 13:55

Matrix: Solid

Date Received: 09/13/17 08:30

Percent Solids: 73.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256089	09/13/17 14:33	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256100	09/14/17 12:11	JSM	TAL SEA
Total/NA	Prep	5035			256074	09/13/17 13:37	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256098	09/14/17 14:51	RSB	TAL SEA
Total/NA	Prep	3546			256036	09/13/17 11:04	MRG	TAL SEA
Total/NA	Cleanup	3630C			256094	09/13/17 15:27	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256106	09/13/17 21:17	ERZ	TAL SEA

Client Sample ID: EX-DB2-B7-10

Lab Sample ID: 580-71216-5

Date Collected: 09/12/17 13:45

Matrix: Solid

Date Received: 09/13/17 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256101	09/13/17 16:05	JWL	TAL SEA

Client Sample ID: EX-DB2-B7-10

Lab Sample ID: 580-71216-5

Date Collected: 09/12/17 13:45

Matrix: Solid

Date Received: 09/13/17 08:30

Percent Solids: 80.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256089	09/13/17 14:33	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256100	09/14/17 12:36	JSM	TAL SEA
Total/NA	Prep	5035			256074	09/13/17 13:37	JCV	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Client Sample ID: EX-DB2-B7-10

Lab Sample ID: 580-71216-5

Date Collected: 09/12/17 13:45

Matrix: Solid

Date Received: 09/13/17 08:30

Percent Solids: 80.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	256098	09/14/17 15:22	RSB	TAL SEA
Total/NA	Prep	3546			256036	09/13/17 11:04	MRG	TAL SEA
Total/NA	Cleanup	3630C			256094	09/13/17 15:27	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256106	09/13/17 21:39	ERZ	TAL SEA

Client Sample ID: EX-DB2-B8-10

Lab Sample ID: 580-71216-6

Date Collected: 09/12/17 13:40

Matrix: Solid

Date Received: 09/13/17 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256101	09/13/17 16:05	JWL	TAL SEA

Client Sample ID: EX-DB2-B8-10

Lab Sample ID: 580-71216-6

Date Collected: 09/12/17 13:40

Matrix: Solid

Date Received: 09/13/17 08:30

Percent Solids: 79.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256089	09/13/17 14:33	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256100	09/14/17 13:02	JSM	TAL SEA
Total/NA	Prep	5035			256074	09/13/17 13:37	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256098	09/14/17 15:52	RSB	TAL SEA
Total/NA	Prep	3546			256036	09/13/17 11:04	MRG	TAL SEA
Total/NA	Cleanup	3630C			256094	09/13/17 15:27	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256106	09/13/17 22:02	ERZ	TAL SEA

Client Sample ID: RB-091217

Lab Sample ID: 580-71216-7

Date Collected: 09/12/17 15:30

Matrix: Water

Date Received: 09/13/17 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	256071	09/13/17 18:26	RSB	TAL SEA

Client Sample ID: TB-091217

Lab Sample ID: 580-71216-8

Date Collected: 09/12/17 00:01

Matrix: Solid

Date Received: 09/13/17 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256089	09/13/17 14:33	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256100	09/14/17 10:28	JSM	TAL SEA
Total/NA	Prep	5035			256074	09/13/17 13:37	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256098	09/14/17 12:19	RSB	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

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Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
California	State Program	9	2901	01-31-18
L-A-B	DoD ELAP		L2236	01-19-19
L-A-B	ISO/IEC 17025		L2236	01-19-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-18
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71216-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-71216-1	EX-DB2-B3-10	Solid	09/12/17 14:15	09/13/17 08:30
580-71216-2	EX-DB2-B4-10	Solid	09/12/17 14:05	09/13/17 08:30
580-71216-3	EX-DB2-B5-10	Solid	09/12/17 14:00	09/13/17 08:30
580-71216-4	EX-DB2-B6-10	Solid	09/12/17 13:55	09/13/17 08:30
580-71216-5	EX-DB2-B7-10	Solid	09/12/17 13:45	09/13/17 08:30
580-71216-6	EX-DB2-B8-10	Solid	09/12/17 13:40	09/13/17 08:30
580-71216-7	RB-091217	Water	09/12/17 15:30	09/13/17 08:30
580-71216-8	TB-091217	Solid	09/12/17 00:01	09/13/17 08:30



Loc: 580
71216

TestAmerica Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.testamericainc.com

Rush

Short Hold

Chain of Custody Record

Client Arcadis	Client Contact Ryan Brauchla	Date 9-12-2017	Chain of Custody Number 29424
Address 1100 Olive Way, Suite 800	Telephone Number (Area Code)/Fax Number 509-438-9828	Lab Number 253-922-2310	Page 1 of 1
City Seattle	State WA	Zip Code 98101	

Project Name and Location (State) Edmonds Terminal Edmonds, WA	Sampler Ryan Brauchla (RB)	Lab Contact Elaine Walker	Analysis (Attach list if more space is needed)
Contract/Purchase Order/Quote No. B0045362.0010	Billing Contact		

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix				Containers & Preservatives										Special Instructions/ Conditions of Receipt
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	MeOH	10:1 MeOH	NMPH-Gx	NMPH-Dx (SGL)	

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	10:1 MeOH	NMPH-Gx	NMPH-Dx (SGL)	8260C (Benzene)	8270D SIM (PMT)	Special Instructions/ Conditions of Receipt
EX-DB2-B3-10	9-12-17	1415				X	2						2		X	X	X	X	Email report to: ryan.brauchla@arcadis.com ophelie.encele@arcadis.com samuel.miles@arcadis.com eric.krueger@arcadis.com scott.zorn@arcadis.com
EX-DB2-B4-10	9-12-17	1405				X	2						2		X	X	X	X	
EX-DB2-B5-10	9-12-17	1400				X	2						2		X	X	X	X	
EX-DB2-B6-10	9-12-17	1355				X	2						2		X	X	X	X	
EX-DB2-B7-10	9-12-17	1345				X	2						2		X	X	X	X	
EX-DB2-B8-10	9-12-17	1340				X	2						2		X	X	X	X	
RB-091217	9-12-17	1530	X							2					X	X	X	X	
TB-091217	9-12-17	-				X							2		X	X	X	X	

580-71216 Chain of Custody

TB#2 Cooler Cor -0.3 Unc 0.5
Cooler Desc L-s Blue @Lab 1040
Vet/Packs Packing Bubble
Lab cov- Custody Seal: Yes No

WBS Codes:
NWENUPM6001430804-Soil
NWENUPM6001430803-surf.Water

* only analyze if DRO/HD detected in sample - extraction OK

Cooler <input type="checkbox"/> Yes <input type="checkbox"/> No Cooler Temp: _____	Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown	Sample Disposal <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	(A fee may be assessed if samples are retained longer than 1 month)
---	--	---	---

Turn Around Time Required (business days) <input checked="" type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 5 Days <input type="checkbox"/> 10 Days <input type="checkbox"/> 15 Days <input type="checkbox"/> Other	QC Requirements (Specify)
--	---------------------------

1. Relinquished By Sign/Print <i>Ryan W. B...</i>	Date 9-13-17	Time 0830	1. Received By Sign/Print <i>Francisco Lung Jr</i>	Date 9/13/17	Time 0830
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

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-71216-1

Login Number: 71216

List Source: TestAmerica Seattle

List Number: 1

Creator: Gall, Brandon A

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	Not present
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.	N/A	Preservation labels on samples match COC
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	

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: 580-71255-1

Client Project/Site: Chevron Edmonds Terminal
Revision: 1

For:

ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
11/22/2017 3:10:04 PM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

LINKS

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results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71255-1

Job ID: 580-71255-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE

Client: ARCADIS U.S. Inc
Project: Chevron Edmonds Terminal
Report Number: 580-71255-1

REVISION 1: NOVEMBER 22, 2017

This revision was to remove the Trifluorotoluene surrogate from the NWTPH-G soil samples because this surrogate is not reported with soils as they are collected in field methanol preserved containers.

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

The samples were received on 09/14/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.7 C.

The following sample were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results. EX-DB2-A2-10 (580-71255-1).

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)

Samples EX-DB2-A2-10 (580-71255-1) and TB-091317 (580-71255-3) were analyzed for volatile organic compounds (GC) in accordance with 8260. The samples were prepared and analyzed on 09/14/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO)

Samples EX-DB2-A2-10 (580-71255-1) and TB-091317 (580-71255-3) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were prepared and analyzed on 09/14/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO)

Sample RB-091317 (580-71255-2) was analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were analyzed on 09/14/2017.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71255-1

Job ID: 580-71255-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL AND EXTENDED RANGE ORGANICS

Sample EX-DB2-A2-10 (580-71255-1) was analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared on 09/14/2017 and analyzed on 09/15/2017.

Please note - the laboratory is unable to process the reverse surrogate used in the Silica Gel Cleanup for NWTPH-Dx as it contains a 1-point calibration and the associated samples are run with a 5-point calibration. This surrogate will not be present in the forms for the Level IV report; however this surrogate is reported in the raw data section for this analysis.

Method(s) 3630C: A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows: the silica gel columns were conditioned with hexane instead of pentane, due to laboratory shortage of pentane.

Method(s) 3630C: Two layers were present in the sample during concentration on the n-evap. One of the layers was removed with sulfate after concentration.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Sample EX-DB2-A2-10 (580-71255-1) was analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 09/14/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71255-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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 Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71255-1

Client Sample ID: EX-DB2-A2-10

Lab Sample ID: 580-71255-1

Date Collected: 09/13/17 12:10

Matrix: Solid

Date Received: 09/14/17 10:30

Percent Solids: 77.9

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		24	11	ug/Kg	☼	09/14/17 15:32	09/14/17 22:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		75 - 120				09/14/17 15:32	09/14/17 22:54	1
Trifluorotoluene (Surr)	100		60 - 150				09/14/17 15:32	09/14/17 22:54	1
4-Bromofluorobenzene (Surr)	102		47 - 150				09/14/17 15:32	09/14/17 22:54	1
Dibromofluoromethane (Surr)	103		80 - 118				09/14/17 15:32	09/14/17 22:54	1
1,2-Dichloroethane-d4 (Surr)	110		80 - 121				09/14/17 15:32	09/14/17 22:54	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.9	2.6	mg/Kg	☼	09/14/17 14:36	09/14/17 22:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150				09/14/17 14:36	09/14/17 22:20	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		62	15	mg/Kg	☼	09/14/17 10:59	09/15/17 19:06	1
Motor Oil (>C24-C36)	12	J	62	11	mg/Kg	☼	09/14/17 10:59	09/15/17 19:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	75		50 - 150				09/14/17 10:59	09/15/17 19:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	77.9		0.1	0.1	%			09/14/17 17:23	1
Percent Moisture	22.1		0.1	0.1	%			09/14/17 17:23	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71255-1

Client Sample ID: RB-091317

Date Collected: 09/13/17 15:45

Date Received: 09/14/17 10:30

Lab Sample ID: 580-71255-2

Matrix: Water

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/14/17 16:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		58 - 133					09/14/17 16:25	1
Trifluorotoluene (Surr)	106		77 - 128					09/14/17 16:25	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71255-1

Client Sample ID: TB-091317

Lab Sample ID: 580-71255-3

Date Collected: 09/13/17 00:01

Matrix: Solid

Date Received: 09/14/17 10:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/14/17 15:32	09/14/17 22:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	104		75 - 120				09/14/17 15:32	09/14/17 22:29	1
<i>Trifluorotoluene (Surr)</i>	131		60 - 150				09/14/17 15:32	09/14/17 22:29	1
<i>4-Bromofluorobenzene (Surr)</i>	102		47 - 150				09/14/17 15:32	09/14/17 22:29	1
<i>Dibromofluoromethane (Surr)</i>	110		80 - 118				09/14/17 15:32	09/14/17 22:29	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	111		80 - 121				09/14/17 15:32	09/14/17 22:29	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		09/14/17 14:36	09/14/17 21:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>4-Bromofluorobenzene (Surr)</i>	92		50 - 150				09/14/17 14:36	09/14/17 21:47	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71255-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-256189/1-A
Matrix: Solid
Analysis Batch: 256211

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256189

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/14/17 15:32	09/14/17 20:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		75 - 120	09/14/17 15:32	09/14/17 20:46	1
Trifluorotoluene (Surr)	99		60 - 150	09/14/17 15:32	09/14/17 20:46	1
4-Bromofluorobenzene (Surr)	102		47 - 150	09/14/17 15:32	09/14/17 20:46	1
Dibromofluoromethane (Surr)	100		80 - 118	09/14/17 15:32	09/14/17 20:46	1
1,2-Dichloroethane-d4 (Surr)	112		80 - 121	09/14/17 15:32	09/14/17 20:46	1

Lab Sample ID: LCS 580-256189/2-A
Matrix: Solid
Analysis Batch: 256211

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256189

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzene	800	909		ug/Kg		114	79 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		75 - 120
Trifluorotoluene (Surr)	104		60 - 150
4-Bromofluorobenzene (Surr)	100		47 - 150
Dibromofluoromethane (Surr)	106		80 - 118
1,2-Dichloroethane-d4 (Surr)	109		80 - 121

Lab Sample ID: LCSD 580-256189/3-A
Matrix: Solid
Analysis Batch: 256211

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256189

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Benzene	800	895		ug/Kg		112	79 - 135	2	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	101		75 - 120
Trifluorotoluene (Surr)	103		60 - 150
4-Bromofluorobenzene (Surr)	96		47 - 150
Dibromofluoromethane (Surr)	104		80 - 118
1,2-Dichloroethane-d4 (Surr)	109		80 - 121

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-256157/6
Matrix: Water
Analysis Batch: 256157

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/14/17 14:49	1

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71255-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-256157/6
Matrix: Water
Analysis Batch: 256157

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		58 - 133		09/14/17 14:49	1
Trifluorotoluene (Surr)	104		77 - 128		09/14/17 14:49	1

Lab Sample ID: LCS 580-256157/7
Matrix: Water
Analysis Batch: 256157

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	0.872		mg/L		87	79 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		58 - 133
Trifluorotoluene (Surr)	97		77 - 128

Lab Sample ID: LCSD 580-256157/8
Matrix: Water
Analysis Batch: 256157

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	0.856		mg/L		86	79 - 110	2	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		58 - 133
Trifluorotoluene (Surr)	95		77 - 128

Lab Sample ID: MB 580-256181/16-A
Matrix: Solid
Analysis Batch: 256190

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256181

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		09/14/17 14:36	09/14/17 20:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150	09/14/17 14:36	09/14/17 20:11	1

Lab Sample ID: LCS 580-256181/17-A
Matrix: Solid
Analysis Batch: 256190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256181

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	40.0	36.8		mg/Kg		92	68 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		50 - 150

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71255-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 580-256181/18-A

Matrix: Solid
Analysis Batch: 256190

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA
Prep Batch: 256181

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline	40.0	38.0		mg/Kg		95	68 - 120	3	25
		LCS	LCS						
Surrogate	%Recovery	Qualifier	Limits						
4-Bromofluorobenzene (Surr)	97		50 - 150						

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-256151/1-C

Matrix: Solid
Analysis Batch: 256352

Client Sample ID: Method Blank

Prep Type: Total/NA
Prep Batch: 256151

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		09/14/17 10:59	09/15/17 17:59	1
Motor Oil (>C24-C36)	ND		50	9.1	mg/Kg		09/14/17 10:59	09/15/17 17:59	1
		MB	MB						
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
o-Terphenyl	72		50 - 150	09/14/17 10:59	09/15/17 17:59	1			

Lab Sample ID: LCS 580-256151/2-C

Matrix: Solid
Analysis Batch: 256352

Client Sample ID: Lab Control Sample

Prep Type: Total/NA
Prep Batch: 256151

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	500	382		mg/Kg		76	64 - 127		
Motor Oil (>C24-C36)	500	410		mg/Kg		82	70 - 125		
		LCS	LCS						
Surrogate	%Recovery	Qualifier	Limits						
o-Terphenyl	79		50 - 150						

Lab Sample ID: LCSD 580-256151/3-C

Matrix: Solid
Analysis Batch: 256352

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA
Prep Batch: 256151

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	500	387		mg/Kg		77	64 - 127	1	16
Motor Oil (>C24-C36)	500	419		mg/Kg		84	70 - 125	2	17
		LCS	LCS						
Surrogate	%Recovery	Qualifier	Limits						
o-Terphenyl	78		50 - 150						

Lab Sample ID: 580-71255-1 DU

Matrix: Solid
Analysis Batch: 256352

Client Sample ID: EX-DB2-A2-10

Prep Type: Total/NA
Prep Batch: 256151

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
#2 Diesel (C10-C24)	ND		ND		mg/Kg	☼	NC	35
Motor Oil (>C24-C36)	12	J	15.0	J	mg/Kg	☼	26	35

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71255-1

Surrogate	%Recovery	DU Qualifier	DU Limits
<i>o</i> -Terphenyl	86		50 - 150

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71255-1 DU
 Matrix: Solid
 Analysis Batch: 256218

Client Sample ID: EX-DB2-A2-10
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	77.9		78.2		%		0.5	20
Percent Moisture	22.1		21.8		%		2	20



Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71255-1

Client Sample ID: EX-DB2-A2-10

Date Collected: 09/13/17 12:10

Date Received: 09/14/17 10:30

Lab Sample ID: 580-71255-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256218	09/14/17 17:23	APR	TAL SEA

Client Sample ID: EX-DB2-A2-10

Date Collected: 09/13/17 12:10

Date Received: 09/14/17 10:30

Lab Sample ID: 580-71255-1

Matrix: Solid

Percent Solids: 77.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256189	09/14/17 15:32	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256211	09/14/17 22:54	JSM	TAL SEA
Total/NA	Prep	5035			256181	09/14/17 14:36	SHK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256190	09/14/17 22:20	RSB	TAL SEA
Total/NA	Prep	3546			256151	09/14/17 10:59	JWL	TAL SEA
Total/NA	Cleanup	3630C			256305	09/15/17 12:36	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256352	09/15/17 19:06	ADB	TAL SEA

Client Sample ID: RB-091317

Date Collected: 09/13/17 15:45

Date Received: 09/14/17 10:30

Lab Sample ID: 580-71255-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	256157	09/14/17 16:25	RSB	TAL SEA

Client Sample ID: TB-091317

Date Collected: 09/13/17 00:01

Date Received: 09/14/17 10:30

Lab Sample ID: 580-71255-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256189	09/14/17 15:32	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256211	09/14/17 22:29	JSM	TAL SEA
Total/NA	Prep	5035			256181	09/14/17 14:36	SHK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256190	09/14/17 21:47	RSB	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71255-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
ANAB	DoD ELAP		L2236	01-19-19
ANAB	ISO/IEC 17025		L2236	01-19-19
California	State Program	9	2901	01-31-18
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-18
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71255-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-71255-1	EX-DB2-A2-10	Solid	09/13/17 12:10	09/14/17 10:30
580-71255-2	RB-091317	Water	09/13/17 15:45	09/14/17 10:30
580-71255-3	TB-091317	Solid	09/13/17 00:01	09/14/17 10:30

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Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-71255-1

Login Number: 71255

List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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	Additional labels on tared vials.
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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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: 580-71291-1

Client Project/Site: Chevron Edmonds Terminal
Revision: 1

For:

ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
11/22/2017 3:17:24 PM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

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results through
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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Job ID: 580-71291-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE
Client: ARCADIS U.S. Inc
Project: Chevron Edmonds Terminal
Report Number: 580-71291-1

REVISION 1: NOVEMBER 22, 2017

This revision was to remove the Trifluorotoluene surrogate from the NWTPH-G soil samples because this surrogate is not reported with soils as they are collected in field methanol preserved containers.

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

The samples were received on 09/15/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.1 C.

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)

Samples EX-DB2-B2-10 (580-71291-1), EX-DB2-C2-10 (580-71291-2) and TB-091417 (solid) (580-71291-6) were analyzed for volatile organic compounds (GC) in accordance with 8260. The samples were prepared and analyzed on 09/15/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO)

Samples EX-DB2-B2-10 (580-71291-1), EX-DB2-C2-10 (580-71291-2) and TB-091417 (solid) (580-71291-6) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were prepared and analyzed on 09/15/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO)

Sample RB-091417 (580-71291-4) was analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were analyzed on 09/16/2017.

4-Bromofluorobenzene (Surr) recovered outside acceptable drift limits for the batch opening CCV. All other surrogates and analytes passed in the CCV, and all surrogates and analytes met limits for the MB, LCS, LCSD, and samples. The data has been reported. (CCVRT 580-256386/4)

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Job ID: 580-71291-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL AND EXTENDED RANGE ORGANICS

Samples EX-DB2-B2-10 (580-71291-1) and EX-DB2-C2-10 (580-71291-2) were analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared on 09/15/2017 and analyzed on 09/18/2017.

Please note - the laboratory is unable to process the reverse surrogate used in the Silica Gel Cleanup for NWTPH-Dx as it contains a 1-point calibration and the associated samples are run with a 5-point calibration. This surrogate will not be present in the forms for the Level IV report; however this surrogate is reported in the raw data section for this analysis.

Motor Oil (>C24-C36) was detected in method blank MB 580-256277/1-B at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

#2 Diesel (C10-C24) failed the recovery criteria low for the MSD of sample EX-DB2-B2-10MSD (580-71291-1) in batch 580-256424. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample and laboratory control sample duplicate (LCS/LCSD) recoveries were within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples EX-DB2-B2-10 (580-71291-1) and EX-DB2-C2-10 (580-71291-2) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 09/15/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
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.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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 Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Client Sample ID: EX-DB2-B2-10

Lab Sample ID: 580-71291-1

Date Collected: 09/14/17 08:40

Matrix: Solid

Date Received: 09/15/17 10:25

Percent Solids: 83.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		23	9.9	ug/Kg	☼	09/15/17 12:18	09/15/17 15:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		75 - 120				09/15/17 12:18	09/15/17 15:53	1
Trifluorotoluene (Surr)	101		60 - 150				09/15/17 12:18	09/15/17 15:53	1
4-Bromofluorobenzene (Surr)	102		47 - 150				09/15/17 12:18	09/15/17 15:53	1
Dibromofluoromethane (Surr)	107		80 - 118				09/15/17 12:18	09/15/17 15:53	1
1,2-Dichloroethane-d4 (Surr)	110		80 - 121				09/15/17 12:18	09/15/17 15:53	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.6	2.4	mg/Kg	☼	09/15/17 11:45	09/15/17 14:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		50 - 150				09/15/17 11:45	09/15/17 14:50	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	14	J F1	54	13	mg/Kg	☼	09/15/17 10:35	09/18/17 12:28	1
Motor Oil (>C24-C36)	22	J B	54	9.8	mg/Kg	☼	09/15/17 10:35	09/18/17 12:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	78		50 - 150				09/15/17 10:35	09/18/17 12:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	83.5		0.1	0.1	%			09/15/17 13:27	1
Percent Moisture	16.5		0.1	0.1	%			09/15/17 13:27	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Client Sample ID: EX-DB2-C2-10

Lab Sample ID: 580-71291-2

Date Collected: 09/14/17 11:55

Matrix: Solid

Date Received: 09/15/17 10:25

Percent Solids: 80.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		24	10	ug/Kg	☼	09/15/17 12:18	09/15/17 17:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		75 - 120				09/15/17 12:18	09/15/17 17:10	1
Trifluorotoluene (Surr)	98		60 - 150				09/15/17 12:18	09/15/17 17:10	1
4-Bromofluorobenzene (Surr)	103		47 - 150				09/15/17 12:18	09/15/17 17:10	1
Dibromofluoromethane (Surr)	101		80 - 118				09/15/17 12:18	09/15/17 17:10	1
1,2-Dichloroethane-d4 (Surr)	113		80 - 121				09/15/17 12:18	09/15/17 17:10	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.8	2.5	mg/Kg	☼	09/15/17 11:45	09/15/17 16:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		50 - 150				09/15/17 11:45	09/15/17 16:22	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		57	14	mg/Kg	☼	09/15/17 10:35	09/18/17 13:58	1
Motor Oil (>C24-C36)	13	J B	57	10	mg/Kg	☼	09/15/17 10:35	09/18/17 13:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	85		50 - 150				09/15/17 10:35	09/18/17 13:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	80.0		0.1	0.1	%			09/15/17 13:27	1
Percent Moisture	20.0		0.1	0.1	%			09/15/17 13:27	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Client Sample ID: RB-091417

Lab Sample ID: 580-71291-4

Date Collected: 09/14/17 10:30

Matrix: Water

Date Received: 09/15/17 10:25

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/16/17 18:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	80		58 - 133					09/16/17 18:39	1
Trifluorotoluene (Surr)	114		77 - 128					09/16/17 18:39	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Client Sample ID: TB-091417 (solid)

Lab Sample ID: 580-71291-6

Date Collected: 09/14/17 00:01

Matrix: Solid

Date Received: 09/15/17 10:25

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		19	8.3	ug/Kg		09/15/17 12:18	09/15/17 15:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		75 - 120	09/15/17 12:18	09/15/17 15:27	1
Trifluorotoluene (Surr)	100		60 - 150	09/15/17 12:18	09/15/17 15:27	1
4-Bromofluorobenzene (Surr)	104		47 - 150	09/15/17 12:18	09/15/17 15:27	1
Dibromofluoromethane (Surr)	103		80 - 118	09/15/17 12:18	09/15/17 15:27	1
1,2-Dichloroethane-d4 (Surr)	111		80 - 121	09/15/17 12:18	09/15/17 15:27	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		3.9	2.0	mg/Kg		09/15/17 11:46	09/15/17 14:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		50 - 150	09/15/17 11:46	09/15/17 14:20	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-256290/1-A
Matrix: Solid
Analysis Batch: 256308

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256290

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/15/17 12:18	09/15/17 14:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		75 - 120	09/15/17 12:18	09/15/17 14:11	1
Trifluorotoluene (Surr)	100		60 - 150	09/15/17 12:18	09/15/17 14:11	1
4-Bromofluorobenzene (Surr)	99		47 - 150	09/15/17 12:18	09/15/17 14:11	1
Dibromofluoromethane (Surr)	101		80 - 118	09/15/17 12:18	09/15/17 14:11	1
1,2-Dichloroethane-d4 (Surr)	111		80 - 121	09/15/17 12:18	09/15/17 14:11	1

Lab Sample ID: LCS 580-256290/2-A
Matrix: Solid
Analysis Batch: 256308

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256290

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzene	800	898		ug/Kg		112	79 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		75 - 120
Trifluorotoluene (Surr)	105		60 - 150
4-Bromofluorobenzene (Surr)	95		47 - 150
Dibromofluoromethane (Surr)	108		80 - 118
1,2-Dichloroethane-d4 (Surr)	114		80 - 121

Lab Sample ID: LCSD 580-256290/8-A
Matrix: Solid
Analysis Batch: 256308

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256290

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	800	866		ug/Kg		108	79 - 135	4	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	101		75 - 120
Trifluorotoluene (Surr)	96		60 - 150
4-Bromofluorobenzene (Surr)	98		47 - 150
Dibromofluoromethane (Surr)	101		80 - 118
1,2-Dichloroethane-d4 (Surr)	111		80 - 121

Lab Sample ID: 580-71291-1 MS
Matrix: Solid
Analysis Batch: 256308

Client Sample ID: EX-DB2-B2-10
Prep Type: Total/NA
Prep Batch: 256290

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Benzene	ND		537	637		ug/Kg	☼	119	79 - 135

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	101		75 - 120
Trifluorotoluene (Surr)	99		60 - 150

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 580-71291-1 MS
Matrix: Solid
Analysis Batch: 256308

Client Sample ID: EX-DB2-B2-10
Prep Type: Total/NA
Prep Batch: 256290

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		47 - 150
Dibromofluoromethane (Surr)	103		80 - 118
1,2-Dichloroethane-d4 (Surr)	115		80 - 121

Lab Sample ID: 580-71291-1 MSD
Matrix: Solid
Analysis Batch: 256308

Client Sample ID: EX-DB2-B2-10
Prep Type: Total/NA
Prep Batch: 256290

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		537	641		ug/Kg	☼	119	79 - 135	1	10

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	102		75 - 120
Trifluorotoluene (Surr)	99		60 - 150
4-Bromofluorobenzene (Surr)	101		47 - 150
Dibromofluoromethane (Surr)	103		80 - 118
1,2-Dichloroethane-d4 (Surr)	106		80 - 121

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-256282/1-A
Matrix: Solid
Analysis Batch: 256288

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256282

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		09/15/17 11:45	09/15/17 13:19	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		50 - 150	09/15/17 11:45	09/15/17 13:19	1

Lab Sample ID: LCS 580-256282/2-A
Matrix: Solid
Analysis Batch: 256288

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256282

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	40.0	40.0		mg/Kg		100	68 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	90		50 - 150

Lab Sample ID: 580-71291-1 MS
Matrix: Solid
Analysis Batch: 256288

Client Sample ID: EX-DB2-B2-10
Prep Type: Total/NA
Prep Batch: 256282

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	ND		46.2	42.9		mg/Kg	☼	93	50 - 150

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 580-71291-1 MS
Matrix: Solid
Analysis Batch: 256288

Client Sample ID: EX-DB2-B2-10
Prep Type: Total/NA
Prep Batch: 256282

Surrogate	<i>MS</i> %Recovery	<i>MS</i> Qualifier	Limits
4-Bromofluorobenzene (Surr)	89		50 - 150

Lab Sample ID: 580-71291-1 MSD
Matrix: Solid
Analysis Batch: 256288

Client Sample ID: EX-DB2-B2-10
Prep Type: Total/NA
Prep Batch: 256282

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	ND		46.2	44.2		mg/Kg	☼	96	50 - 150	3	35

Surrogate	<i>MSD</i> %Recovery	<i>MSD</i> Qualifier	Limits
4-Bromofluorobenzene (Surr)	90		50 - 150

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-256277/1-B
Matrix: Solid
Analysis Batch: 256424

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256277

Analyte	<i>MB</i> Result	<i>MB</i> Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		09/15/17 10:35	09/18/17 11:21	1
Motor Oil (>C24-C36)	9.72	J	50	9.1	mg/Kg		09/15/17 10:35	09/18/17 11:21	1

Surrogate	<i>MB</i> %Recovery	<i>MB</i> Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	82		50 - 150	09/15/17 10:35	09/18/17 11:21	1

Lab Sample ID: LCS 580-256277/2-B
Matrix: Solid
Analysis Batch: 256424

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256277

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	500	405		mg/Kg		81	64 - 127
Motor Oil (>C24-C36)	500	428		mg/Kg		86	70 - 125

Surrogate	<i>LCS</i> %Recovery	<i>LCS</i> Qualifier	Limits
o-Terphenyl	78		50 - 150

Lab Sample ID: LCSD 580-256277/3-B
Matrix: Solid
Analysis Batch: 256424

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256277

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	500	416		mg/Kg		83	64 - 127	3	16
Motor Oil (>C24-C36)	500	442		mg/Kg		88	70 - 125	3	17

Surrogate	<i>LCSD</i> %Recovery	<i>LCSD</i> Qualifier	Limits
o-Terphenyl	80		50 - 150

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 580-71291-1 MS

Matrix: Solid
Analysis Batch: 256424

Client Sample ID: EX-DB2-B2-10

Prep Type: Total/NA
Prep Batch: 256277

Analyte	Sample	Sample	Spike	MS MS		Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
#2 Diesel (C10-C24)	14	J F1	474	352		mg/Kg	☼	71	70 - 125		
Motor Oil (>C24-C36)	22	J B	474	378		mg/Kg	☼	75	64 - 127		
MS MS											
Surrogate	%Recovery	Qualifier	Limits								
<i>o-Terphenyl</i>	69		50 - 150								

Lab Sample ID: 580-71291-1 MSD

Matrix: Solid
Analysis Batch: 256424

Client Sample ID: EX-DB2-B2-10

Prep Type: Total/NA
Prep Batch: 256277

Analyte	Sample	Sample	Spike	MSD MSD		Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
#2 Diesel (C10-C24)	14	J F1	520	372	F1	mg/Kg	☼	69	70 - 125	5	16
Motor Oil (>C24-C36)	22	J B	520	399		mg/Kg	☼	73	64 - 127	6	17
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
<i>o-Terphenyl</i>	70		50 - 150								

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71291-2 DU

Matrix: Solid
Analysis Batch: 256325

Client Sample ID: EX-DB2-C2-10

Prep Type: Total/NA

Analyte	Sample	Sample	DU DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	80.0		83.2		%		4	20
Percent Moisture	20.0		16.8		%		17	20

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Client Sample ID: EX-DB2-B2-10

Date Collected: 09/14/17 08:40

Date Received: 09/15/17 10:25

Lab Sample ID: 580-71291-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256325	09/15/17 13:27	APR	TAL SEA

Client Sample ID: EX-DB2-B2-10

Date Collected: 09/14/17 08:40

Date Received: 09/15/17 10:25

Lab Sample ID: 580-71291-1

Matrix: Solid

Percent Solids: 83.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256290	09/15/17 12:18	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256308	09/15/17 15:53	CJ	TAL SEA
Total/NA	Prep	5035			256282	09/15/17 11:45	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256288	09/15/17 14:50	JCV	TAL SEA
Total/NA	Prep	3546			256277	09/15/17 10:35	REY	TAL SEA
Total/NA	Cleanup	3630C			256374	09/16/17 08:26	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256424	09/18/17 12:28	ADB	TAL SEA

Client Sample ID: EX-DB2-C2-10

Date Collected: 09/14/17 11:55

Date Received: 09/15/17 10:25

Lab Sample ID: 580-71291-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256325	09/15/17 13:27	APR	TAL SEA

Client Sample ID: EX-DB2-C2-10

Date Collected: 09/14/17 11:55

Date Received: 09/15/17 10:25

Lab Sample ID: 580-71291-2

Matrix: Solid

Percent Solids: 80.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256290	09/15/17 12:18	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256308	09/15/17 17:10	CJ	TAL SEA
Total/NA	Prep	5035			256282	09/15/17 11:45	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256288	09/15/17 16:22	JCV	TAL SEA
Total/NA	Prep	3546			256277	09/15/17 10:35	REY	TAL SEA
Total/NA	Cleanup	3630C			256374	09/16/17 08:26	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256424	09/18/17 13:58	ADB	TAL SEA

Client Sample ID: RB-091417

Date Collected: 09/14/17 10:30

Date Received: 09/15/17 10:25

Lab Sample ID: 580-71291-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	256386	09/16/17 18:39	JCV	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Client Sample ID: TB-091417 (solid)

Lab Sample ID: 580-71291-6

Date Collected: 09/14/17 00:01

Matrix: Solid

Date Received: 09/15/17 10:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256290	09/15/17 12:18	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256308	09/15/17 15:27	CJ	TAL SEA
Total/NA	Prep	5035			256282	09/15/17 11:46	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256288	09/15/17 14:20	JCV	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
ANAB	DoD ELAP		L2236	01-19-19
ANAB	ISO/IEC 17025		L2236	01-19-19
California	State Program	9	2901	01-31-18
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-18
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71291-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-71291-1	EX-DB2-B2-10	Solid	09/14/17 08:40	09/15/17 10:25
580-71291-2	EX-DB2-C2-10	Solid	09/14/17 11:55	09/15/17 10:25
580-71291-4	RB-091417	Water	09/14/17 10:30	09/15/17 10:25
580-71291-6	TB-091417 (solid)	Solid	09/14/17 00:01	09/15/17 10:25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-71291-1

Login Number: 71291

List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

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	additional labels on pretared vial.
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	
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.	True	

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: 580-71327-1

Client Project/Site: Edmonds Terminal

For:

ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles



Authorized for release by:
9/19/2017 1:35:37 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.com

Designee for

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71327-1

Job ID: 580-71327-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE

**Client: ARCADIS U.S. Inc
Project: Edmonds Terminal
Report Number: 580-71327-1**

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

The samples were received on 09/16/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.0 C.

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)

Samples EX-DB2-A1-8-SW (580-71327-1), EX-DB2-A2-5-SW (580-71327-2), EX-DB2-B1-8-SW (580-71327-3) and TB-091517 (580-71327-5) were analyzed for volatile organic compounds (GC) in accordance with 8260. The samples were prepared and analyzed on 09/18/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS - SELECTED ION MODE (SIM)

Sample EX-DB2-A2-5-SW (580-71327-2) was analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with SW846 8270D_SIM. The samples were prepared on 09/16/2017 and analyzed on 09/18/2017.

Sample EX-DB2-A2-5-SW (580-71327-2)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Terphenyl-d14 failed the surrogate recovery criteria low for EX-DB2-A2-5-SWMSD (580-71327-2MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed. It is also worth noting that this is a Matrix Spike Duplicate and all the target analytes met acceptance criteria and the surrogate was within control in the parent sample and Matrix Spike, therefore the data is qualified and reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO)

Samples EX-DB2-A1-8-SW (580-71327-1), EX-DB2-A2-5-SW (580-71327-2), EX-DB2-B1-8-SW (580-71327-3) and TB-091517 (580-71327-5) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were prepared and analyzed on 09/17/2017.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71327-1

Job ID: 580-71327-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

4-Bromofluorobenzene (Surr) recovered outside acceptable drift limits for the batch opening CCV. All other surrogates and analytes passed in the CCV, and all surrogates and analytes met limits for the MB, LCS, LCSD, and samples. The data has been reported. (CCV 580-256406/14), (CCV 580-256406/18), (CCV 580-256406/28) and (CCVRT 580-256406/6)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO)

Sample RB-091517 (580-71327-4) was analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were analyzed on 09/17/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL AND EXTENDED RANGE ORGANICS

Samples EX-DB2-A1-8-SW (580-71327-1), EX-DB2-A2-5-SW (580-71327-2) and EX-DB2-B1-8-SW (580-71327-3) were analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared on 09/16/2017 and analyzed on 09/18/2017.

Motor Oil (>C24-C36) exceeded the RPD limit for the duplicate of sample EX-DB2-B1-8-SW (580-71327-3).
Sample non-homogeneity is suspected.

The following sample 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: EX-DB2-A2-5-SW (580-71327-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples EX-DB2-A1-8-SW (580-71327-1), EX-DB2-A2-5-SW (580-71327-2) and EX-DB2-B1-8-SW (580-71327-3) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 09/16/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71327-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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 Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71327-1

Client Sample ID: EX-DB2-A1-8-SW

Lab Sample ID: 580-71327-1

Date Collected: 09/15/17 11:50

Matrix: Solid

Date Received: 09/16/17 11:05

Percent Solids: 76.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		27	11	ug/Kg	☼	09/18/17 11:05	09/18/17 17:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		75 - 120				09/18/17 11:05	09/18/17 17:55	1
Trifluorotoluene (Surr)	103		60 - 150				09/18/17 11:05	09/18/17 17:55	1
4-Bromofluorobenzene (Surr)	97		47 - 150				09/18/17 11:05	09/18/17 17:55	1
Dibromofluoromethane (Surr)	103		80 - 118				09/18/17 11:05	09/18/17 17:55	1
1,2-Dichloroethane-d4 (Surr)	115		80 - 121				09/18/17 11:05	09/18/17 17:55	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.3	2.8	mg/Kg	☼	09/17/17 08:17	09/17/17 17:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81		50 - 150				09/17/17 08:17	09/17/17 17:33	1
Trifluorotoluene (Surr)							09/17/17 08:17	09/17/17 17:33	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		64	16	mg/Kg	☼	09/16/17 12:05	09/18/17 22:31	1
Motor Oil (>C24-C36)	27	J	64	12	mg/Kg	☼	09/16/17 12:05	09/18/17 22:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	77		50 - 150				09/16/17 12:05	09/18/17 22:31	1
n-Decanoic Acid (Surr)	0.0001		0 - 1				09/16/17 12:05	09/18/17 22:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	76.4		0.1	0.1	%			09/16/17 12:16	1
Percent Moisture	23.6		0.1	0.1	%			09/16/17 12:16	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71327-1

Client Sample ID: EX-DB2-A2-5-SW

Lab Sample ID: 580-71327-2

Date Collected: 09/15/17 10:35

Matrix: Solid

Date Received: 09/16/17 11:05

Percent Solids: 68.2

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		37	16	ug/Kg	☼	09/18/17 11:05	09/18/17 18:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		75 - 120				09/18/17 11:05	09/18/17 18:21	1
Trifluorotoluene (Surr)	98		60 - 150				09/18/17 11:05	09/18/17 18:21	1
4-Bromofluorobenzene (Surr)	95		47 - 150				09/18/17 11:05	09/18/17 18:21	1
Dibromofluoromethane (Surr)	101		80 - 118				09/18/17 11:05	09/18/17 18:21	1
1,2-Dichloroethane-d4 (Surr)	114		80 - 121				09/18/17 11:05	09/18/17 18:21	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	160		69	11	ug/Kg	☼	09/16/17 12:06	09/18/17 15:36	10
Benzo[a]pyrene	10	J	69	5.5	ug/Kg	☼	09/16/17 12:06	09/18/17 15:36	10
Benzo[b]fluoranthene	18	J	69	8.2	ug/Kg	☼	09/16/17 12:06	09/18/17 15:36	10
Benzo[k]fluoranthene	11	J	69	8.3	ug/Kg	☼	09/16/17 12:06	09/18/17 15:36	10
Chrysene	ND		69	21	ug/Kg	☼	09/16/17 12:06	09/18/17 15:36	10
Dibenz(a,h)anthracene	20	J	69	10	ug/Kg	☼	09/16/17 12:06	09/18/17 15:36	10
Indeno[1,2,3-cd]pyrene	77		69	8.3	ug/Kg	☼	09/16/17 12:06	09/18/17 15:36	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	79		68 - 138				09/16/17 12:06	09/18/17 15:36	10

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		7.5	3.9	mg/Kg	☼	09/17/17 08:17	09/17/17 18:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		50 - 150				09/17/17 08:17	09/17/17 18:03	1
Trifluorotoluene (Surr)							09/17/17 08:17	09/17/17 18:03	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1500		68	17	mg/Kg	☼	09/16/17 12:05	09/18/17 22:52	1
Motor Oil (>C24-C36)	1500		68	12	mg/Kg	☼	09/16/17 12:05	09/18/17 22:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	64		50 - 150				09/16/17 12:05	09/18/17 22:52	1
n-Decanoic Acid (Surr)	0.002		0 - 1				09/16/17 12:05	09/18/17 22:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	68.2		0.1	0.1	%			09/16/17 12:16	1
Percent Moisture	31.8		0.1	0.1	%			09/16/17 12:16	1

TestAmerica Seattle

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71327-1

Client Sample ID: EX-DB2-B1-8-SW

Lab Sample ID: 580-71327-3

Date Collected: 09/15/17 14:30

Matrix: Solid

Date Received: 09/16/17 11:05

Percent Solids: 78.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		25	11	ug/Kg	☼	09/18/17 11:05	09/18/17 18:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		75 - 120				09/18/17 11:05	09/18/17 18:46	1
Trifluorotoluene (Surr)	99		60 - 150				09/18/17 11:05	09/18/17 18:46	1
4-Bromofluorobenzene (Surr)	99		47 - 150				09/18/17 11:05	09/18/17 18:46	1
Dibromofluoromethane (Surr)	105		80 - 118				09/18/17 11:05	09/18/17 18:46	1
1,2-Dichloroethane-d4 (Surr)	116		80 - 121				09/18/17 11:05	09/18/17 18:46	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	2.6	mg/Kg	☼	09/17/17 08:17	09/17/17 18:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	72		50 - 150				09/17/17 08:17	09/17/17 18:34	1
Trifluorotoluene (Surr)							09/17/17 08:17	09/17/17 18:34	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		62	15	mg/Kg	☼	09/16/17 12:05	09/18/17 23:12	1
Motor Oil (>C24-C36)	18	J	62	11	mg/Kg	☼	09/16/17 12:05	09/18/17 23:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	74		50 - 150				09/16/17 12:05	09/18/17 23:12	1
n-Decanoic Acid (Surr)	0.00003		0 - 1				09/16/17 12:05	09/18/17 23:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	78.7		0.1	0.1	%			09/16/17 12:16	1
Percent Moisture	21.3		0.1	0.1	%			09/16/17 12:16	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71327-1

Client Sample ID: RB-091517

Lab Sample ID: 580-71327-4

Date Collected: 09/15/17 11:25

Matrix: Water

Date Received: 09/16/17 11:05

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/17/17 17:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		58 - 133					09/17/17 17:09	1
Trifluorotoluene (Surr)	104		77 - 128					09/17/17 17:09	1



Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71327-1

Client Sample ID: TB-091517

Lab Sample ID: 580-71327-5

Date Collected: 09/15/17 00:01

Matrix: Solid

Date Received: 09/16/17 11:05

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/18/17 11:05	09/18/17 14:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		75 - 120	09/18/17 11:05	09/18/17 14:54	1
Trifluorotoluene (Surr)	106		60 - 150	09/18/17 11:05	09/18/17 14:54	1
4-Bromofluorobenzene (Surr)	102		47 - 150	09/18/17 11:05	09/18/17 14:54	1
Dibromofluoromethane (Surr)	100		80 - 118	09/18/17 11:05	09/18/17 14:54	1
1,2-Dichloroethane-d4 (Surr)	112		80 - 121	09/18/17 11:05	09/18/17 14:54	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		3.6	1.9	mg/Kg		09/17/17 08:17	09/17/17 15:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		50 - 150	09/17/17 08:17	09/17/17 15:00	1
Trifluorotoluene (Surr)				09/17/17 08:17	09/17/17 15:00	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71327-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-256448/1-A
Matrix: Solid
Analysis Batch: 256476

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256448

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/18/17 11:05	09/18/17 13:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		75 - 120	09/18/17 11:05	09/18/17 13:37	1
Trifluorotoluene (Surr)	98		60 - 150	09/18/17 11:05	09/18/17 13:37	1
4-Bromofluorobenzene (Surr)	101		47 - 150	09/18/17 11:05	09/18/17 13:37	1
Dibromofluoromethane (Surr)	98		80 - 118	09/18/17 11:05	09/18/17 13:37	1
1,2-Dichloroethane-d4 (Surr)	111		80 - 121	09/18/17 11:05	09/18/17 13:37	1

Lab Sample ID: LCS 580-256448/2-A
Matrix: Solid
Analysis Batch: 256476

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256448

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzene	800	920		ug/Kg		115	79 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	100		75 - 120
Trifluorotoluene (Surr)	101		60 - 150
4-Bromofluorobenzene (Surr)	102		47 - 150
Dibromofluoromethane (Surr)	107		80 - 118
1,2-Dichloroethane-d4 (Surr)	111		80 - 121

Lab Sample ID: LCSD 580-256448/3-A
Matrix: Solid
Analysis Batch: 256476

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256448

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Benzene	800	925		ug/Kg		116	79 - 135	1	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	102		75 - 120
Trifluorotoluene (Surr)	103		60 - 150
4-Bromofluorobenzene (Surr)	96		47 - 150
Dibromofluoromethane (Surr)	106		80 - 118
1,2-Dichloroethane-d4 (Surr)	109		80 - 121

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-256380/1-A
Matrix: Solid
Analysis Batch: 256451

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256380

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		5.0	0.76	ug/Kg		09/16/17 12:06	09/18/17 13:09	1
Benzo[a]pyrene	ND		5.0	0.40	ug/Kg		09/16/17 12:06	09/18/17 13:09	1
Benzo[b]fluoranthene	ND		5.0	0.59	ug/Kg		09/16/17 12:06	09/18/17 13:09	1

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71327-1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: MB 580-256380/1-A
Matrix: Solid
Analysis Batch: 256451

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256380

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	ND		5.0	0.60	ug/Kg		09/16/17 12:06	09/18/17 13:09	1
Chrysene	ND		5.0	1.5	ug/Kg		09/16/17 12:06	09/18/17 13:09	1
Dibenz(a,h)anthracene	ND		5.0	0.72	ug/Kg		09/16/17 12:06	09/18/17 13:09	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.60	ug/Kg		09/16/17 12:06	09/18/17 13:09	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	96		68 - 138	09/16/17 12:06	09/18/17 13:09	1

Lab Sample ID: LCS 580-256380/2-A
Matrix: Solid
Analysis Batch: 256451

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256380

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	1000	953		ug/Kg		95	66 - 120
Benzo[a]pyrene	1000	1010		ug/Kg		101	72 - 124
Benzo[b]fluoranthene	1000	983		ug/Kg		98	63 - 121
Benzo[k]fluoranthene	1000	939		ug/Kg		94	63 - 129
Chrysene	1000	834		ug/Kg		83	69 - 120
Dibenz(a,h)anthracene	1000	1000		ug/Kg		100	70 - 125
Indeno[1,2,3-cd]pyrene	1000	916		ug/Kg		92	65 - 121

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	82		68 - 138

Lab Sample ID: 580-71327-2 MS
Matrix: Solid
Analysis Batch: 256451

Client Sample ID: EX-DB2-A2-5-SW
Prep Type: Total/NA
Prep Batch: 256380

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	160		1420	1420		ug/Kg	☼	89	66 - 120
Benzo[a]pyrene	10	J	1420	1230		ug/Kg	☼	86	72 - 124
Benzo[b]fluoranthene	18	J	1420	1180		ug/Kg	☼	82	63 - 121
Benzo[k]fluoranthene	11	J	1420	1140		ug/Kg	☼	80	63 - 129
Chrysene	ND		1420	1240		ug/Kg	☼	87	69 - 120
Dibenz(a,h)anthracene	20	J	1420	1210		ug/Kg	☼	84	70 - 125
Indeno[1,2,3-cd]pyrene	77		1420	1410		ug/Kg	☼	94	65 - 121

Surrogate	MS %Recovery	MS Qualifier	Limits
Terphenyl-d14	73		68 - 138

Lab Sample ID: 580-71327-2 MSD
Matrix: Solid
Analysis Batch: 256451

Client Sample ID: EX-DB2-A2-5-SW
Prep Type: Total/NA
Prep Batch: 256380

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[a]anthracene	160		1410	1300		ug/Kg	☼	81	66 - 120	8	40
Benzo[a]pyrene	10	J	1410	1190		ug/Kg	☼	83	72 - 124	3	40

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71327-1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: 580-71327-2 MSD
Matrix: Solid
Analysis Batch: 256451

Client Sample ID: EX-DB2-A2-5-SW
Prep Type: Total/NA
Prep Batch: 256380

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier		Result	Qualifier						
Benzo[b]fluoranthene	18	J	1410	1140		ug/Kg	☼	79	63 - 121	4	40
Benzo[k]fluoranthene	11	J	1410	1050		ug/Kg	☼	73	63 - 129	9	40
Chrysene	ND		1410	1110		ug/Kg	☼	78	69 - 120	11	40
Dibenz(a,h)anthracene	20	J	1410	1210		ug/Kg	☼	84	70 - 125	0	40
Indeno[1,2,3-cd]pyrene	77		1410	1340		ug/Kg	☼	89	65 - 121	5	40
Surrogate	%Recovery	MSD Qualifier	Limits								
Terphenyl-d14	66	X	68 - 138								

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-256403/1-A
Matrix: Solid
Analysis Batch: 256406

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256403

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
	Result	Qualifier								
Gasoline	ND		4.0	2.1	mg/Kg		09/17/17 08:04	09/17/17 13:28	1	
Surrogate	%Recovery	MB Qualifier	Limits							
4-Bromofluorobenzene (Surr)	79		50 - 150							
Trifluorotoluene (Surr)	121		50 - 150							
				Prepared	Analyzed	Dil Fac				
				09/17/17 08:04	09/17/17 13:28	1				
				09/17/17 08:04	09/17/17 13:28	1				

Lab Sample ID: LCS 580-256403/2-A
Matrix: Solid
Analysis Batch: 256406

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256403

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.	Limits
		Result	Qualifier					
Gasoline	40.0	39.7		mg/Kg		99	68 - 120	
Surrogate	%Recovery	LCS Qualifier	Limits					
4-Bromofluorobenzene (Surr)	80		50 - 150					
Trifluorotoluene (Surr)	118		50 - 150					

Lab Sample ID: LCSD 580-256403/3-A
Matrix: Solid
Analysis Batch: 256406

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256403

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
		Result	Qualifier							
Gasoline	40.0	39.8		mg/Kg		100	68 - 120	0	25	
Surrogate	%Recovery	LCSD Qualifier	Limits							
4-Bromofluorobenzene (Surr)	82		50 - 150							
Trifluorotoluene (Surr)	118		50 - 150							

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71327-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-256407/6
Matrix: Water
Analysis Batch: 256407

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/17/17 14:29	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		58 - 133					09/17/17 14:29	1
Trifluorotoluene (Surr)	93		77 - 128					09/17/17 14:29	1

Lab Sample ID: LCS 580-256407/7
Matrix: Water
Analysis Batch: 256407

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	0.864		mg/L		86	79 - 110
Surrogate	%Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	95		58 - 133				
Trifluorotoluene (Surr)	92		77 - 128				

Lab Sample ID: LCSD 580-256407/8
Matrix: Water
Analysis Batch: 256407

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	0.882		mg/L		88	79 - 110	2	10
Surrogate	%Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	96		58 - 133						
Trifluorotoluene (Surr)	96		77 - 128						

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-256379/1-B
Matrix: Solid
Analysis Batch: 256507

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256379

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		09/16/17 12:05	09/18/17 21:29	1
Motor Oil (>C24-C36)	ND		50	9.1	mg/Kg		09/16/17 12:05	09/18/17 21:29	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	78		50 - 150				09/16/17 12:05	09/18/17 21:29	1
n-Decanoic Acid (Surr)	0.0001		0 - 1				09/16/17 12:05	09/18/17 21:29	1

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71327-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 580-256379/2-B
Matrix: Solid
Analysis Batch: 256507

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256379

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	500	377		mg/Kg		75	64 - 127
Motor Oil (>C24-C36)	500	415		mg/Kg		83	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	72		50 - 150
<i>n</i> -Decanoic Acid (Surr)	0.07		0 - 1

Lab Sample ID: LCSD 580-256379/3-B
Matrix: Solid
Analysis Batch: 256507

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256379

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	500	360		mg/Kg		72	64 - 127	5	16
Motor Oil (>C24-C36)	500	393		mg/Kg		79	70 - 125	5	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	67		50 - 150
<i>n</i> -Decanoic Acid (Surr)	0.05		0 - 1

Lab Sample ID: 580-71327-3 DU
Matrix: Solid
Analysis Batch: 256507

Client Sample ID: EX-DB2-B1-8-SW
Prep Type: Total/NA
Prep Batch: 256379

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
#2 Diesel (C10-C24)	ND		ND		mg/Kg	☼	NC	35
Motor Oil (>C24-C36)	18	J	27.7	J F5	mg/Kg	☼	40	35

Surrogate	DU %Recovery	DU Qualifier	Limits
<i>o</i> -Terphenyl	74		50 - 150
<i>n</i> -Decanoic Acid (Surr)	0.00003		0 - 1

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71327-3 DU
Matrix: Solid
Analysis Batch: 256381

Client Sample ID: EX-DB2-B1-8-SW
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Percent Solids	78.7		79.4		%		1	20
Percent Moisture	21.3		20.6		%		4	20

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71327-1

Client Sample ID: EX-DB2-A1-8-SW
Date Collected: 09/15/17 11:50
Date Received: 09/16/17 11:05

Lab Sample ID: 580-71327-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256381	09/16/17 12:16	APR	TAL SEA

Client Sample ID: EX-DB2-A1-8-SW
Date Collected: 09/15/17 11:50
Date Received: 09/16/17 11:05

Lab Sample ID: 580-71327-1
Matrix: Solid
Percent Solids: 76.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256448	09/18/17 11:05	SHK	TAL SEA
Total/NA	Analysis	8260C		1	256476	09/18/17 17:55	CJ	TAL SEA
Total/NA	Prep	5035			256403	09/17/17 08:17	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256406	09/17/17 17:33	JCV	TAL SEA
Total/NA	Prep	3546			256379	09/16/17 12:05	JWL	TAL SEA
Total/NA	Cleanup	3630C			256478	09/18/17 13:13	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256507	09/18/17 22:31	ADB	TAL SEA

Client Sample ID: EX-DB2-A2-5-SW
Date Collected: 09/15/17 10:35
Date Received: 09/16/17 11:05

Lab Sample ID: 580-71327-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256381	09/16/17 12:16	APR	TAL SEA

Client Sample ID: EX-DB2-A2-5-SW
Date Collected: 09/15/17 10:35
Date Received: 09/16/17 11:05

Lab Sample ID: 580-71327-2
Matrix: Solid
Percent Solids: 68.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256448	09/18/17 11:05	SHK	TAL SEA
Total/NA	Analysis	8260C		1	256476	09/18/17 18:21	CJ	TAL SEA
Total/NA	Prep	3546			256380	09/16/17 12:06	APR	TAL SEA
Total/NA	Analysis	8270D SIM		10	256451	09/18/17 15:36	CJ	TAL SEA
Total/NA	Prep	5035			256403	09/17/17 08:17	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256406	09/17/17 18:03	JCV	TAL SEA
Total/NA	Prep	3546			256379	09/16/17 12:05	JWL	TAL SEA
Total/NA	Cleanup	3630C			256478	09/18/17 13:13	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256507	09/18/17 22:52	ADB	TAL SEA

Client Sample ID: EX-DB2-B1-8-SW
Date Collected: 09/15/17 14:30
Date Received: 09/16/17 11:05

Lab Sample ID: 580-71327-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256381	09/16/17 12:16	APR	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71327-1

Client Sample ID: EX-DB2-B1-8-SW

Date Collected: 09/15/17 14:30

Date Received: 09/16/17 11:05

Lab Sample ID: 580-71327-3

Matrix: Solid

Percent Solids: 78.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256448	09/18/17 11:05	SHK	TAL SEA
Total/NA	Analysis	8260C		1	256476	09/18/17 18:46	CJ	TAL SEA
Total/NA	Prep	5035			256403	09/17/17 08:17	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256406	09/17/17 18:34	JCV	TAL SEA
Total/NA	Prep	3546			256379	09/16/17 12:05	JWL	TAL SEA
Total/NA	Cleanup	3630C			256478	09/18/17 13:13	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256507	09/18/17 23:12	ADB	TAL SEA

Client Sample ID: RB-091517

Date Collected: 09/15/17 11:25

Date Received: 09/16/17 11:05

Lab Sample ID: 580-71327-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	256407	09/17/17 17:09	RSB	TAL SEA

Client Sample ID: TB-091517

Date Collected: 09/15/17 00:01

Date Received: 09/16/17 11:05

Lab Sample ID: 580-71327-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256448	09/18/17 11:05	SHK	TAL SEA
Total/NA	Analysis	8260C		1	256476	09/18/17 14:54	CJ	TAL SEA
Total/NA	Prep	5035			256403	09/17/17 08:17	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256406	09/17/17 15:00	JCV	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71327-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
California	State Program	9	2901	01-31-18
L-A-B	DoD ELAP		L2236	01-19-19
L-A-B	ISO/IEC 17025		L2236	01-19-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-17
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71327-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-71327-1	EX-DB2-A1-8-SW	Solid	09/15/17 11:50	09/16/17 11:05
580-71327-2	EX-DB2-A2-5-SW	Solid	09/15/17 10:35	09/16/17 11:05
580-71327-3	EX-DB2-B1-8-SW	Solid	09/15/17 14:30	09/16/17 11:05
580-71327-4	RB-091517	Water	09/15/17 11:25	09/16/17 11:05
580-71327-5	TB-091517	Solid	09/15/17 00:01	09/16/17 11:05

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-71327-1

Login Number: 71327

List Source: TestAmerica Seattle

List Number: 1

Creator: Gall, Brandon A

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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: 580-71376-1

Client Project/Site: Edmonds Terminal
Revision: 1

For:

ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
11/22/2017 3:28:44 PM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71376-1

Job ID: 580-71376-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE
Client: ARCADIS U.S. Inc
Project: Edmonds Terminal
Report Number: 580-71376-1

REVISION 1: NOVEMBER 22, 2017

This revision was to remove the Trifluorotoluene surrogate from the NWTPH-G soil samples because this surrogate is not reported with soils as they are collected in field methanol preserved containers.

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

Six samples were received on 9/19/2017 11:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was -0.8° C.

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)

Samples EX-DB2-C1-8-SW (580-71376-1), EX-DB2-D1-8-SW (580-71376-2), EX-DB2-D2-10 (580-71376-3), EX-DB2-E0-1 (580-71376-4) and TB-091817 (580-71376-6) were analyzed for volatile organic compounds (GC) in accordance with 8260. The samples were prepared and analyzed on 09/19/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS - SELECTED ION MODE (SIM)

Samples EX-DB2-C1-8-SW (580-71376-1) and EX-DB2-E0-1 (580-71376-4) were analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with SW846 8270D_SIM. The samples were prepared and analyzed on 09/19/2017.

Sample EX-DB2-E0-1 (580-71376-4)[5X] required dilution prior to analysis due to the nature of the sample matrix. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO)

Samples EX-DB2-C1-8-SW (580-71376-1), EX-DB2-D1-8-SW (580-71376-2), EX-DB2-D2-10 (580-71376-3), EX-DB2-E0-1 (580-71376-4) and TB-091817 (580-71376-6) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were prepared on 09/19/2017 and analyzed on 09/20/2017.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71376-1

Job ID: 580-71376-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO) - WATER

Sample RB-091817 (580-71376-5) was analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were analyzed on 09/19/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL AND EXTENDED RANGE ORGANICS

Samples EX-DB2-C1-8-SW (580-71376-1), EX-DB2-D1-8-SW (580-71376-2), EX-DB2-D2-10 (580-71376-3) and EX-DB2-E0-1 (580-71376-4) were analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared and analyzed on 09/19/2017.

Please note - the laboratory is unable to process the reverse surrogate used in the Silica Gel Cleanup for NWTPH-Dx as it contains a 1-point calibration and the associated samples are run with a 5-point calibration. This surrogate will not be present in the forms for the Level IV report; however this surrogate is reported in the raw data section for this analysis.

The following sample 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: EX-DB2-E0-1 (580-71376-4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples EX-DB2-C1-8-SW (580-71376-1), EX-DB2-D1-8-SW (580-71376-2), EX-DB2-D2-10 (580-71376-3) and EX-DB2-E0-1 (580-71376-4) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 09/19/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71376-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
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
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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 Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71376-1

Client Sample ID: EX-DB2-C1-8-SW

Lab Sample ID: 580-71376-1

Date Collected: 09/18/17 09:50

Matrix: Solid

Date Received: 09/19/17 11:15

Percent Solids: 77.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		26	11	ug/Kg	☼	09/19/17 14:50	09/19/17 22:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		75 - 120				09/19/17 14:50	09/19/17 22:20	1
Trifluorotoluene (Surr)	102		60 - 150				09/19/17 14:50	09/19/17 22:20	1
4-Bromofluorobenzene (Surr)	102		47 - 150				09/19/17 14:50	09/19/17 22:20	1
Dibromofluoromethane (Surr)	107		80 - 118				09/19/17 14:50	09/19/17 22:20	1
1,2-Dichloroethane-d4 (Surr)	114		80 - 121				09/19/17 14:50	09/19/17 22:20	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.2	2.7	mg/Kg	☼	09/19/17 12:34	09/20/17 06:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150				09/19/17 12:34	09/20/17 06:11	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		60	15	mg/Kg	☼	09/19/17 12:06	09/19/17 21:37	1
Motor Oil (>C24-C36)	ND		60	11	mg/Kg	☼	09/19/17 12:06	09/19/17 21:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	70		50 - 150				09/19/17 12:06	09/19/17 21:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	77.8		0.1	0.1	%			09/19/17 12:19	1
Percent Moisture	22.2		0.1	0.1	%			09/19/17 12:19	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71376-1

Client Sample ID: EX-DB2-D1-8-SW

Lab Sample ID: 580-71376-2

Date Collected: 09/18/17 14:30

Matrix: Solid

Date Received: 09/19/17 11:15

Percent Solids: 74.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		27	12	ug/Kg	☼	09/19/17 14:50	09/19/17 22:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		75 - 120				09/19/17 14:50	09/19/17 22:46	1
Trifluorotoluene (Surr)	104		60 - 150				09/19/17 14:50	09/19/17 22:46	1
4-Bromofluorobenzene (Surr)	96		47 - 150				09/19/17 14:50	09/19/17 22:46	1
Dibromofluoromethane (Surr)	104		80 - 118				09/19/17 14:50	09/19/17 22:46	1
1,2-Dichloroethane-d4 (Surr)	121		80 - 121				09/19/17 14:50	09/19/17 22:46	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.4	2.8	mg/Kg	☼	09/19/17 12:34	09/20/17 06:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		50 - 150				09/19/17 12:34	09/20/17 06:43	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		65	16	mg/Kg	☼	09/19/17 12:06	09/19/17 22:21	1
Motor Oil (>C24-C36)	ND		65	12	mg/Kg	☼	09/19/17 12:06	09/19/17 22:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	81		50 - 150				09/19/17 12:06	09/19/17 22:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	74.3		0.1	0.1	%			09/19/17 12:19	1
Percent Moisture	25.7		0.1	0.1	%			09/19/17 12:19	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71376-1

Client Sample ID: EX-DB2-D2-10

Lab Sample ID: 580-71376-3

Date Collected: 09/18/17 16:00

Matrix: Solid

Date Received: 09/19/17 11:15

Percent Solids: 75.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		28	12	ug/Kg	☼	09/19/17 14:50	09/19/17 23:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		75 - 120				09/19/17 14:50	09/19/17 23:12	1
Trifluorotoluene (Surr)	104		60 - 150				09/19/17 14:50	09/19/17 23:12	1
4-Bromofluorobenzene (Surr)	98		47 - 150				09/19/17 14:50	09/19/17 23:12	1
Dibromofluoromethane (Surr)	110		80 - 118				09/19/17 14:50	09/19/17 23:12	1
1,2-Dichloroethane-d4 (Surr)	119		80 - 121				09/19/17 14:50	09/19/17 23:12	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.6	2.9	mg/Kg	☼	09/19/17 12:34	09/20/17 07:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150				09/19/17 12:34	09/20/17 07:15	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		62	15	mg/Kg	☼	09/19/17 12:06	09/19/17 22:43	1
Motor Oil (>C24-C36)	ND		62	11	mg/Kg	☼	09/19/17 12:06	09/19/17 22:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	73		50 - 150				09/19/17 12:06	09/19/17 22:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	75.8		0.1	0.1	%			09/19/17 12:19	1
Percent Moisture	24.2		0.1	0.1	%			09/19/17 12:19	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71376-1

Client Sample ID: EX-DB2-E0-1

Lab Sample ID: 580-71376-4

Date Collected: 09/18/17 16:15

Matrix: Solid

Date Received: 09/19/17 11:15

Percent Solids: 75.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		29	12	ug/Kg	☼	09/19/17 14:50	09/19/17 23:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		75 - 120				09/19/17 14:50	09/19/17 23:37	1
Trifluorotoluene (Surr)	102		60 - 150				09/19/17 14:50	09/19/17 23:37	1
4-Bromofluorobenzene (Surr)	99		47 - 150				09/19/17 14:50	09/19/17 23:37	1
Dibromofluoromethane (Surr)	106		80 - 118				09/19/17 14:50	09/19/17 23:37	1
1,2-Dichloroethane-d4 (Surr)	117		80 - 121				09/19/17 14:50	09/19/17 23:37	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	72		32	4.9	ug/Kg	☼	09/19/17 12:04	09/19/17 22:04	5
Benzo[a]pyrene	50		32	2.6	ug/Kg	☼	09/19/17 12:04	09/19/17 22:04	5
Benzo[b]fluoranthene	61		32	3.8	ug/Kg	☼	09/19/17 12:04	09/19/17 22:04	5
Benzo[k]fluoranthene	22 J		32	3.9	ug/Kg	☼	09/19/17 12:04	09/19/17 22:04	5
Chrysene	130		32	9.7	ug/Kg	☼	09/19/17 12:04	09/19/17 22:04	5
Dibenz(a,h)anthracene	10 J		32	4.7	ug/Kg	☼	09/19/17 12:04	09/19/17 22:04	5
Indeno[1,2,3-cd]pyrene	28 J		32	3.9	ug/Kg	☼	09/19/17 12:04	09/19/17 22:04	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	92		68 - 138				09/19/17 12:04	09/19/17 22:04	5

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	22		5.8	3.0	mg/Kg	☼	09/19/17 12:34	09/20/17 07:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150				09/19/17 12:34	09/20/17 07:47	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	640		62	15	mg/Kg	☼	09/19/17 12:06	09/19/17 23:05	1
Motor Oil (>C24-C36)	800		62	11	mg/Kg	☼	09/19/17 12:06	09/19/17 23:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	72		50 - 150				09/19/17 12:06	09/19/17 23:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	75.6		0.1	0.1	%	-		09/19/17 12:19	1
Percent Moisture	24.4		0.1	0.1	%	-		09/19/17 12:19	1

TestAmerica Seattle

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71376-1

Client Sample ID: RB-091817

Date Collected: 09/18/17 10:20

Date Received: 09/19/17 11:15

Lab Sample ID: 580-71376-5

Matrix: Water

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/19/17 13:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		58 - 133					09/19/17 13:09	1
Trifluorotoluene (Surr)	98		77 - 128					09/19/17 13:09	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71376-1

Client Sample ID: TB-091817

Lab Sample ID: 580-71376-6

Date Collected: 09/18/17 00:01

Matrix: Solid

Date Received: 09/19/17 11:15

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/19/17 14:50	09/19/17 21:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		75 - 120	09/19/17 14:50	09/19/17 21:54	1
Trifluorotoluene (Surr)	99		60 - 150	09/19/17 14:50	09/19/17 21:54	1
4-Bromofluorobenzene (Surr)	100		47 - 150	09/19/17 14:50	09/19/17 21:54	1
Dibromofluoromethane (Surr)	102		80 - 118	09/19/17 14:50	09/19/17 21:54	1
1,2-Dichloroethane-d4 (Surr)	107		80 - 121	09/19/17 14:50	09/19/17 21:54	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	3.2	J	4.0	2.1	mg/Kg		09/19/17 12:34	09/20/17 08:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150	09/19/17 12:34	09/20/17 08:19	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71376-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-256615/1-A
Matrix: Solid
Analysis Batch: 256645

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256615

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/19/17 14:50	09/19/17 20:36	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		75 - 120	09/19/17 14:50	09/19/17 20:36	1
Trifluorotoluene (Surr)	100		60 - 150	09/19/17 14:50	09/19/17 20:36	1
4-Bromofluorobenzene (Surr)	96		47 - 150	09/19/17 14:50	09/19/17 20:36	1
Dibromofluoromethane (Surr)	102		80 - 118	09/19/17 14:50	09/19/17 20:36	1
1,2-Dichloroethane-d4 (Surr)	110		80 - 121	09/19/17 14:50	09/19/17 20:36	1

Lab Sample ID: LCS 580-256615/2-A
Matrix: Solid
Analysis Batch: 256645

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256615

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzene	800	937		ug/Kg		117	79 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	105		75 - 120
Trifluorotoluene (Surr)	99		60 - 150
4-Bromofluorobenzene (Surr)	97		47 - 150
Dibromofluoromethane (Surr)	107		80 - 118
1,2-Dichloroethane-d4 (Surr)	112		80 - 121

Lab Sample ID: LCSD 580-256615/3-A
Matrix: Solid
Analysis Batch: 256645

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256615

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Benzene	800	909		ug/Kg		114	79 - 135	3	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	102		75 - 120
Trifluorotoluene (Surr)	105		60 - 150
4-Bromofluorobenzene (Surr)	96		47 - 150
Dibromofluoromethane (Surr)	103		80 - 118
1,2-Dichloroethane-d4 (Surr)	109		80 - 121

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-256580/1-A
Matrix: Solid
Analysis Batch: 256654

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256580

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		5.0	0.76	ug/Kg		09/19/17 12:04	09/19/17 17:15	1
Benzo[a]pyrene	ND		5.0	0.40	ug/Kg		09/19/17 12:04	09/19/17 17:15	1
Benzo[b]fluoranthene	ND		5.0	0.59	ug/Kg		09/19/17 12:04	09/19/17 17:15	1

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71376-1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: MB 580-256580/1-A
Matrix: Solid
Analysis Batch: 256654

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256580

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	ND		5.0	0.60	ug/Kg		09/19/17 12:04	09/19/17 17:15	1
Chrysene	ND		5.0	1.5	ug/Kg		09/19/17 12:04	09/19/17 17:15	1
Dibenz(a,h)anthracene	ND		5.0	0.72	ug/Kg		09/19/17 12:04	09/19/17 17:15	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.60	ug/Kg		09/19/17 12:04	09/19/17 17:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	83		68 - 138	09/19/17 12:04	09/19/17 17:15	1

Lab Sample ID: LCS 580-256580/2-A
Matrix: Solid
Analysis Batch: 256654

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256580

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	1000	746		ug/Kg		75	66 - 120
Benzo[a]pyrene	1000	874		ug/Kg		87	72 - 124
Benzo[b]fluoranthene	1000	807		ug/Kg		81	63 - 121
Benzo[k]fluoranthene	1000	885		ug/Kg		89	63 - 129
Chrysene	1000	811		ug/Kg		81	69 - 120
Dibenz(a,h)anthracene	1000	828		ug/Kg		83	70 - 125
Indeno[1,2,3-cd]pyrene	1000	756		ug/Kg		76	65 - 121

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	77		68 - 138

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-256576/6
Matrix: Water
Analysis Batch: 256576

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/19/17 11:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		58 - 133		09/19/17 11:21	1
Trifluorotoluene (Surr)	104		77 - 128		09/19/17 11:21	1

Lab Sample ID: LCS 580-256576/7
Matrix: Water
Analysis Batch: 256576

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	0.847		mg/L		85	79 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		58 - 133
Trifluorotoluene (Surr)	93		77 - 128

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71376-1

Lab Sample ID: LCSD 580-256576/8
Matrix: Water
Analysis Batch: 256576

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	0.848		mg/L		85	79 - 110	0	10
Surrogate	%Recovery	Qualifier	Limits						
4-Bromofluorobenzene (Surr)	95		58 - 133						
Trifluorotoluene (Surr)	92		77 - 128						

Lab Sample ID: MB 580-256586/1-A
Matrix: Solid
Analysis Batch: 256602

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256586

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		09/19/17 12:34	09/20/17 04:35	1
Surrogate	%Recovery	Qualifier	Limits						
4-Bromofluorobenzene (Surr)	91		50 - 150						
				Prepared	Analyzed	Dil Fac			
				09/19/17 12:34	09/20/17 04:35	1			

Lab Sample ID: LCS 580-256586/2-A
Matrix: Solid
Analysis Batch: 256602

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256586

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline	40.0	35.3		mg/Kg		88	68 - 120		
Surrogate	%Recovery	Qualifier	Limits						
4-Bromofluorobenzene (Surr)	96		50 - 150						

Lab Sample ID: LCSD 580-256586/3-A
Matrix: Solid
Analysis Batch: 256602

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256586

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	40.0	36.5		mg/Kg		91	68 - 120	3	25
Surrogate	%Recovery	Qualifier	Limits						
4-Bromofluorobenzene (Surr)	97		50 - 150						

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-256581/1-B
Matrix: Solid
Analysis Batch: 256605

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256581

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		09/19/17 12:06	09/19/17 20:30	1
Motor Oil (>C24-C36)	ND		50	9.1	mg/Kg		09/19/17 12:06	09/19/17 20:30	1
Surrogate	%Recovery	Qualifier	Limits						
o-Terphenyl	72		50 - 150						
				Prepared	Analyzed	Dil Fac			
				09/19/17 12:06	09/19/17 20:30	1			

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71376-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 580-256581/2-B
Matrix: Solid
Analysis Batch: 256605

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256581

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	500	359		mg/Kg		72	64 - 127
Motor Oil (>C24-C36)	500	387		mg/Kg		77	70 - 125
		LCS	LCS				
Surrogate	%Recovery	Qualifier	Limits				
<i>o</i> -Terphenyl	73		50 - 150				

Lab Sample ID: LCSD 580-256581/3-B
Matrix: Solid
Analysis Batch: 256605

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256581

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	500	368		mg/Kg		74	64 - 127	3	16
Motor Oil (>C24-C36)	500	400		mg/Kg		80	70 - 125	3	17
		LCSD	LCSD						
Surrogate	%Recovery	Qualifier	Limits						
<i>o</i> -Terphenyl	75		50 - 150						

Lab Sample ID: 580-71376-1 DU
Matrix: Solid
Analysis Batch: 256605

Client Sample ID: EX-DB2-C1-8-SW
Prep Type: Total/NA
Prep Batch: 256581

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
#2 Diesel (C10-C24)	ND		ND		mg/Kg	☼	NC	35
Motor Oil (>C24-C36)	ND		27.4	J	mg/Kg	☼	NC	35
		DU	DU					
Surrogate	%Recovery	Qualifier	Limits					
<i>o</i> -Terphenyl	72		50 - 150					

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71376-2 DU
Matrix: Solid
Analysis Batch: 256583

Client Sample ID: EX-DB2-D1-8-SW
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	74.3		75.3		%		1	20
Percent Moisture	25.7		24.7		%		4	20

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71376-1

Client Sample ID: EX-DB2-C1-8-SW

Date Collected: 09/18/17 09:50

Date Received: 09/19/17 11:15

Lab Sample ID: 580-71376-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256583	09/19/17 12:19	REY	TAL SEA

Client Sample ID: EX-DB2-C1-8-SW

Date Collected: 09/18/17 09:50

Date Received: 09/19/17 11:15

Lab Sample ID: 580-71376-1

Matrix: Solid

Percent Solids: 77.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256615	09/19/17 14:50	SHK	TAL SEA
Total/NA	Analysis	8260C		1	256645	09/19/17 22:20	JSM	TAL SEA
Total/NA	Prep	5035			256586	09/19/17 12:34	SHK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256602	09/20/17 06:11	RSB	TAL SEA
Total/NA	Prep	3546			256581	09/19/17 12:06	APR	TAL SEA
Total/NA	Cleanup	3630C			256625	09/19/17 15:03	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256605	09/19/17 21:37	ERZ	TAL SEA

Client Sample ID: EX-DB2-D1-8-SW

Date Collected: 09/18/17 14:30

Date Received: 09/19/17 11:15

Lab Sample ID: 580-71376-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256583	09/19/17 12:19	REY	TAL SEA

Client Sample ID: EX-DB2-D1-8-SW

Date Collected: 09/18/17 14:30

Date Received: 09/19/17 11:15

Lab Sample ID: 580-71376-2

Matrix: Solid

Percent Solids: 74.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256615	09/19/17 14:50	SHK	TAL SEA
Total/NA	Analysis	8260C		1	256645	09/19/17 22:46	JSM	TAL SEA
Total/NA	Prep	5035			256586	09/19/17 12:34	SHK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256602	09/20/17 06:43	RSB	TAL SEA
Total/NA	Prep	3546			256581	09/19/17 12:06	APR	TAL SEA
Total/NA	Cleanup	3630C			256625	09/19/17 15:03	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256605	09/19/17 22:21	ERZ	TAL SEA

Client Sample ID: EX-DB2-D2-10

Date Collected: 09/18/17 16:00

Date Received: 09/19/17 11:15

Lab Sample ID: 580-71376-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256583	09/19/17 12:19	REY	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71376-1

Client Sample ID: EX-DB2-D2-10

Lab Sample ID: 580-71376-3

Date Collected: 09/18/17 16:00

Matrix: Solid

Date Received: 09/19/17 11:15

Percent Solids: 75.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256615	09/19/17 14:50	SHK	TAL SEA
Total/NA	Analysis	8260C		1	256645	09/19/17 23:12	JSM	TAL SEA
Total/NA	Prep	5035			256586	09/19/17 12:34	SHK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256602	09/20/17 07:15	RSB	TAL SEA
Total/NA	Prep	3546			256581	09/19/17 12:06	APR	TAL SEA
Total/NA	Cleanup	3630C			256625	09/19/17 15:03	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256605	09/19/17 22:43	ERZ	TAL SEA

Client Sample ID: EX-DB2-E0-1

Lab Sample ID: 580-71376-4

Date Collected: 09/18/17 16:15

Matrix: Solid

Date Received: 09/19/17 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256583	09/19/17 12:19	REY	TAL SEA

Client Sample ID: EX-DB2-E0-1

Lab Sample ID: 580-71376-4

Date Collected: 09/18/17 16:15

Matrix: Solid

Date Received: 09/19/17 11:15

Percent Solids: 75.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256615	09/19/17 14:50	SHK	TAL SEA
Total/NA	Analysis	8260C		1	256645	09/19/17 23:37	JSM	TAL SEA
Total/NA	Prep	3546			256580	09/19/17 12:04	JWL	TAL SEA
Total/NA	Analysis	8270D SIM		5	256654	09/19/17 22:04	ERZ	TAL SEA
Total/NA	Prep	5035			256586	09/19/17 12:34	SHK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256602	09/20/17 07:47	RSB	TAL SEA
Total/NA	Prep	3546			256581	09/19/17 12:06	APR	TAL SEA
Total/NA	Cleanup	3630C			256625	09/19/17 15:03	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256605	09/19/17 23:05	ERZ	TAL SEA

Client Sample ID: RB-091817

Lab Sample ID: 580-71376-5

Date Collected: 09/18/17 10:20

Matrix: Water

Date Received: 09/19/17 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	256576	09/19/17 13:09	RSB	TAL SEA

Client Sample ID: TB-091817

Lab Sample ID: 580-71376-6

Date Collected: 09/18/17 00:01

Matrix: Solid

Date Received: 09/19/17 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256615	09/19/17 14:50	SHK	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71376-1

Client Sample ID: TB-091817

Lab Sample ID: 580-71376-6

Date Collected: 09/18/17 00:01

Matrix: Solid

Date Received: 09/19/17 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	256645	09/19/17 21:54	JSM	TAL SEA
Total/NA	Prep	5035			256586	09/19/17 12:34	SHK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256602	09/20/17 08:19	RSB	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310



Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71376-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
ANAB	DoD ELAP		L2236	01-19-19
ANAB	ISO/IEC 17025		L2236	01-19-19
California	State Program	9	2901	01-31-18
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-18
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71376-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-71376-1	EX-DB2-C1-8-SW	Solid	09/18/17 09:50	09/19/17 11:15
580-71376-2	EX-DB2-D1-8-SW	Solid	09/18/17 14:30	09/19/17 11:15
580-71376-3	EX-DB2-D2-10	Solid	09/18/17 16:00	09/19/17 11:15
580-71376-4	EX-DB2-E0-1	Solid	09/18/17 16:15	09/19/17 11:15
580-71376-5	RB-091817	Water	09/18/17 10:20	09/19/17 11:15
580-71376-6	TB-091817	Solid	09/18/17 00:01	09/19/17 11:15

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 Short Hold

Chain of Custody Record

Client Arcadis	Client Contact Ryan Brauchle	Date 9-18-2017	Chain of Custody Number 29435
Address 1100 Olive Way, Suite 800	Telephone Number (Area Code)/Fax Number 509-438-9828	Lab Number 253-922-230	Page <u>1</u> of <u>1</u>

City Seattle	State WA	Zip Code 98101	Sampler Ryan Brauchle	Lab Contact Elaine Walker	Analysis (Attach list if more space is needed)	Special Instructions/ Conditions of Receipt
Project Name and Location (State) Edmonds Terminal Edmonds, WA		Billing Contact				

Contract/Purchase Order/Quote No.
BO045362.0010

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix				Containers & Preservatives								Special Instructions/ Conditions of Receipt			
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	10mL NaOH	NW/PH-GX		NW/PH-Dx (SGO)	8260C (Benzene)	8270D SIM (PAHs)
EX-DB2-C1-8-SW	9-18-17	0950				X							2	X	X	X	*	Email results to ryan.brauchle@arcadis.com samuel.miles@arcadis.com ophelie.encele@arcadis.com scott.zorn@arcadis.com
EX-DB2-D1-8-SW	9-18-17	1430				X							2	X	X	X	*	
EX-DB2-D2-10	9-18-17	1600				X							2	X	X	X	*	
EX-DB2-E0-1	9-18-17	1615				X							2	X	X	X	*	
RB-091817	9-18-17	1020		X										X				
TB-091817	9-18-17	-				X							1	X	X			* Analyze for cPAHs if DRO/HO detected



580-71376 Chain of Custody

TB A2 Cooler Cor 0.8 Unc 0.0
Cooler Disclog Blue @ Lab 115
Wa/Packs Packing Double
Lab covr Custody Seal: Yes No WBS Codes:
NW ENV PM6001430804 - Soil
NW ENV PM6001430803 - surface water

Cooler <input type="checkbox"/> Yes <input type="checkbox"/> No Cooler Temp: _____	Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown	Sample Disposal <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> 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 _____

QC Requirements (Specify)

1. Relinquished By Sign/Print Ryan W Brauchle	Date 9-19-17	Time 0930	1. Received By Sign/Print Francisco Lung, Jr	Date 9/19/17	Time 0930
2. Relinquished By Sign/Print Francisco Lung, Jr.	Date 9/19/17	Time 1115	2. Received By Sign/Print B. Zorn / B. Zorn	Date 9/19/17	Time 1115
3. Relinquished By Sign/Print	Date	Time	3. Received By Sign/Print	Date	Time

Comments

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-71376-1

Login Number: 71376

List Source: TestAmerica Seattle

List Number: 1

Creator: Gall, Brandon A

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	Not present
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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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: 580-71419-1

Client Project/Site: Chevron Edmonds Terminal

For:

ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
9/21/2017 12:29:16 PM

Elaine Walker, Project Manager II
(253)248-4972

elaine.walker@testamericainc.com

LINKS

Review your project
results through
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Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Job ID: 580-71419-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE **Client: ARCADIS U.S. Inc** **Project: Chevron Edmonds Terminal** **Report Number: 580-71419-1**

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

Five samples were received on 9/20/2017 11:05 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.6° C.

The following samples were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results. EX-DB2-E1-8-SW (580-71419-1), EX-DB2-E1-10 (580-71419-2) and DUP02-SO-091917 (580-71419-3).

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)

Samples EX-DB2-E1-8-SW (580-71419-1), EX-DB2-E1-10 (580-71419-2), DUP02-SO-091917 (580-71419-3) and TB-091917 (580-71419-5) were analyzed for volatile organic compounds (GC) in accordance with 8260. The samples were prepared on 09/20/2017 and analyzed on 09/21/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO)

Samples EX-DB2-E1-8-SW (580-71419-1), EX-DB2-E1-10 (580-71419-2), DUP02-SO-091917 (580-71419-3) and TB-091917 (580-71419-5) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were prepared on 09/20/2017 and analyzed on 09/20/2017 and 09/21/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO)

Sample RB-091917 (580-71419-4) was analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were analyzed on 09/20/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL AND EXTENDED RANGE ORGANICS

Samples EX-DB2-E1-8-SW (580-71419-1), EX-DB2-E1-10 (580-71419-2) and DUP02-SO-091917 (580-71419-3) were analyzed for diesel

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Job ID: 580-71419-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared on 09/20/2017 and analyzed on 09/20/2017 and 09/21/2017.

Please note - the laboratory is unable to process the reverse surrogate used in the Silica Gel Cleanup for NWTPH-Dx as it contains a 1-point calibration and the associated samples are run with a 5-point calibration. This surrogate will not be present in the forms for the Level IV report; however this surrogate is reported in the raw data section for this analysis.

CCV recoveries were below %D control limits for o-Terphenyl surrogate, but within %R limits. Therefore, the data were reported. The following samples are affected: EX-DB2-E1-8-SW (580-71419-1), EX-DB2-E1-10 (580-71419-2), DUP02-SO-091917 (580-71419-3), (CCV 580-256786/15), (CCV 580-256786/17), (CCV 580-256786/19), (CCV 580-256786/21), (CCVRT 580-256786/4), (LCS 580-256715/2-B), (LCSD 580-256715/3-B), (MB 580-256715/1-B) and (580-71419-B-1-G DU).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples EX-DB2-E1-8-SW (580-71419-1), EX-DB2-E1-10 (580-71419-2) and DUP02-SO-091917 (580-71419-3) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 09/20/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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 Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Client Sample ID: EX-DB2-E1-8-SW

Lab Sample ID: 580-71419-1

Date Collected: 09/19/17 09:55

Matrix: Solid

Date Received: 09/20/17 11:05

Percent Solids: 80.2

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		23	10	ug/Kg	☼	09/20/17 15:46	09/21/17 10:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		75 - 120				09/20/17 15:46	09/21/17 10:15	1
Trifluorotoluene (Surr)	100		60 - 150				09/20/17 15:46	09/21/17 10:15	1
4-Bromofluorobenzene (Surr)	97		47 - 150				09/20/17 15:46	09/21/17 10:15	1
Dibromofluoromethane (Surr)	106		80 - 118				09/20/17 15:46	09/21/17 10:15	1
1,2-Dichloroethane-d4 (Surr)	116		80 - 121				09/20/17 15:46	09/21/17 10:15	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.7	2.4	mg/Kg	☼	09/20/17 13:41	09/21/17 01:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150				09/20/17 13:41	09/21/17 01:12	1
Trifluorotoluene (Surr)							09/20/17 13:41	09/21/17 01:12	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		56	14	mg/Kg	☼	09/20/17 12:02	09/20/17 22:20	1
Motor Oil (>C24-C36)	ND		56	10	mg/Kg	☼	09/20/17 12:02	09/20/17 22:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	75		50 - 150				09/20/17 12:02	09/20/17 22:20	1
n-Decanoic Acid (Surr)	0.0001		0 - 1				09/20/17 12:02	09/20/17 22:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	80.2		0.1	0.1	%			09/20/17 12:43	1
Percent Moisture	19.8		0.1	0.1	%			09/20/17 12:43	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Client Sample ID: EX-DB2-E1-10

Lab Sample ID: 580-71419-2

Date Collected: 09/19/17 09:50

Matrix: Solid

Date Received: 09/20/17 11:05

Percent Solids: 73.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		29	12	ug/Kg	☼	09/20/17 15:46	09/21/17 10:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		75 - 120				09/20/17 15:46	09/21/17 10:41	1
Trifluorotoluene (Surr)	101		60 - 150				09/20/17 15:46	09/21/17 10:41	1
4-Bromofluorobenzene (Surr)	104		47 - 150				09/20/17 15:46	09/21/17 10:41	1
Dibromofluoromethane (Surr)	103		80 - 118				09/20/17 15:46	09/21/17 10:41	1
1,2-Dichloroethane-d4 (Surr)	118		80 - 121				09/20/17 15:46	09/21/17 10:41	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.7	3.0	mg/Kg	☼	09/20/17 13:41	09/21/17 00:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150				09/20/17 13:41	09/21/17 00:40	1
Trifluorotoluene (Surr)							09/20/17 13:41	09/21/17 00:40	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	20	J	65	16	mg/Kg	☼	09/20/17 12:02	09/20/17 23:05	1
Motor Oil (>C24-C36)	29	J	65	12	mg/Kg	☼	09/20/17 12:02	09/20/17 23:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	72		50 - 150				09/20/17 12:02	09/20/17 23:05	1
n-Decanoic Acid (Surr)	0.0001		0 - 1				09/20/17 12:02	09/20/17 23:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	73.4		0.1	0.1	%			09/20/17 12:43	1
Percent Moisture	26.6		0.1	0.1	%			09/20/17 12:43	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Client Sample ID: DUP02-SO-091917

Lab Sample ID: 580-71419-3

Date Collected: 09/19/17 00:01

Matrix: Solid

Date Received: 09/20/17 11:05

Percent Solids: 78.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		27	12	ug/Kg	☼	09/20/17 15:46	09/21/17 11:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		75 - 120				09/20/17 15:46	09/21/17 11:07	1
Trifluorotoluene (Surr)	100		60 - 150				09/20/17 15:46	09/21/17 11:07	1
4-Bromofluorobenzene (Surr)	95		47 - 150				09/20/17 15:46	09/21/17 11:07	1
Dibromofluoromethane (Surr)	103		80 - 118				09/20/17 15:46	09/21/17 11:07	1
1,2-Dichloroethane-d4 (Surr)	108		80 - 121				09/20/17 15:46	09/21/17 11:07	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.4	2.8	mg/Kg	☼	09/20/17 13:41	09/21/17 00:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		50 - 150				09/20/17 13:41	09/21/17 00:08	1
Trifluorotoluene (Surr)							09/20/17 13:41	09/21/17 00:08	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		62	15	mg/Kg	☼	09/20/17 12:02	09/21/17 08:20	1
Motor Oil (>C24-C36)	27	J	62	11	mg/Kg	☼	09/20/17 12:02	09/21/17 08:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	65		50 - 150				09/20/17 12:02	09/21/17 08:20	1
n-Decanoic Acid (Surr)	0.0003		0 - 1				09/20/17 12:02	09/21/17 08:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	78.9		0.1	0.1	%			09/20/17 12:43	1
Percent Moisture	21.1		0.1	0.1	%			09/20/17 12:43	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Client Sample ID: RB-091917

Lab Sample ID: 580-71419-4

Date Collected: 09/19/17 10:00

Matrix: Water

Date Received: 09/20/17 11:05

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/20/17 17:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		58 - 133					09/20/17 17:12	1
Trifluorotoluene (Surr)	106		77 - 128					09/20/17 17:12	1



Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Client Sample ID: TB-091917

Lab Sample ID: 580-71419-5

Date Collected: 09/19/17 00:01

Matrix: Solid

Date Received: 09/20/17 11:05

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		18	7.8	ug/Kg		09/20/17 15:46	09/21/17 09:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	99		75 - 120				09/20/17 15:46	09/21/17 09:50	1
<i>Trifluorotoluene (Surr)</i>	100		60 - 150				09/20/17 15:46	09/21/17 09:50	1
<i>4-Bromofluorobenzene (Surr)</i>	96		47 - 150				09/20/17 15:46	09/21/17 09:50	1
<i>Dibromofluoromethane (Surr)</i>	102		80 - 118				09/20/17 15:46	09/21/17 09:50	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	112		80 - 121				09/20/17 15:46	09/21/17 09:50	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		3.6	1.9	mg/Kg		09/20/17 13:41	09/20/17 23:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>4-Bromofluorobenzene (Surr)</i>	91		50 - 150				09/20/17 13:41	09/20/17 23:36	1
<i>Trifluorotoluene (Surr)</i>							09/20/17 13:41	09/20/17 23:36	1

QC Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-256773/1-A
Matrix: Solid
Analysis Batch: 256780

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256773

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/20/17 15:46	09/21/17 08:32	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		75 - 120	09/20/17 15:46	09/21/17 08:32	1
Trifluorotoluene (Surr)	101		60 - 150	09/20/17 15:46	09/21/17 08:32	1
4-Bromofluorobenzene (Surr)	100		47 - 150	09/20/17 15:46	09/21/17 08:32	1
Dibromofluoromethane (Surr)	104		80 - 118	09/20/17 15:46	09/21/17 08:32	1
1,2-Dichloroethane-d4 (Surr)	112		80 - 121	09/20/17 15:46	09/21/17 08:32	1

Lab Sample ID: LCS 580-256773/2-A
Matrix: Solid
Analysis Batch: 256780

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256773

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzene	800	889		ug/Kg		111	79 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		75 - 120
Trifluorotoluene (Surr)	102		60 - 150
4-Bromofluorobenzene (Surr)	98		47 - 150
Dibromofluoromethane (Surr)	107		80 - 118
1,2-Dichloroethane-d4 (Surr)	117		80 - 121

Lab Sample ID: LCSD 580-256773/3-A
Matrix: Solid
Analysis Batch: 256780

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256773

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	800	860		ug/Kg		107	79 - 135	3	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	101		75 - 120
Trifluorotoluene (Surr)	98		60 - 150
4-Bromofluorobenzene (Surr)	95		47 - 150
Dibromofluoromethane (Surr)	104		80 - 118
1,2-Dichloroethane-d4 (Surr)	114		80 - 121

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-256728/6
Matrix: Water
Analysis Batch: 256728

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/20/17 15:36	1

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-256728/6
Matrix: Water
Analysis Batch: 256728

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		58 - 133		09/20/17 15:36	1
Trifluorotoluene (Surr)	105		77 - 128		09/20/17 15:36	1

Lab Sample ID: LCS 580-256728/7
Matrix: Water
Analysis Batch: 256728

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	0.871		mg/L		87	79 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		58 - 133
Trifluorotoluene (Surr)	96		77 - 128

Lab Sample ID: LCSD 580-256728/8
Matrix: Water
Analysis Batch: 256728

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	0.865		mg/L		86	79 - 110	1	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		58 - 133
Trifluorotoluene (Surr)	93		77 - 128

Lab Sample ID: MB 580-256737/1-A
Matrix: Solid
Analysis Batch: 256764

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256737

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		09/20/17 13:38	09/20/17 22:00	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		50 - 150	09/20/17 13:38	09/20/17 22:00	1
Trifluorotoluene (Surr)	104		50 - 150	09/20/17 13:38	09/20/17 22:00	1

Lab Sample ID: LCS 580-256737/2-A
Matrix: Solid
Analysis Batch: 256764

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256737

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	40.0	35.7		mg/Kg		89	68 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		50 - 150
Trifluorotoluene (Surr)	102		50 - 150

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 580-256737/3-A
Matrix: Solid
Analysis Batch: 256764

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256737

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Gasoline	40.0	33.2		mg/Kg		83	68 - 120	7	25
Surrogate		%Recovery	Qualifier						Limits
4-Bromofluorobenzene (Surr)		88							50 - 150
Trifluorotoluene (Surr)		83							50 - 150

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-256715/1-B
Matrix: Solid
Analysis Batch: 256786

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256715

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		09/20/17 12:02	09/20/17 21:14	1
Motor Oil (>C24-C36)	ND		50	9.1	mg/Kg		09/20/17 12:02	09/20/17 21:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	77		50 - 150				09/20/17 12:02	09/20/17 21:14	1
n-Decanoic Acid (Surr)	0.00001		0 - 1				09/20/17 12:02	09/20/17 21:14	1

Lab Sample ID: LCS 580-256715/2-B
Matrix: Solid
Analysis Batch: 256786

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256715

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	500	354		mg/Kg		71	64 - 127
Motor Oil (>C24-C36)	500	356		mg/Kg		71	70 - 125
Surrogate		%Recovery	Qualifier				Limits
o-Terphenyl		69					50 - 150

Lab Sample ID: LCSD 580-256715/3-B
Matrix: Solid
Analysis Batch: 256786

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256715

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
#2 Diesel (C10-C24)	500	364		mg/Kg		73	64 - 127	3	16
Motor Oil (>C24-C36)	500	356		mg/Kg		71	70 - 125	0	17
Surrogate		%Recovery	Qualifier				Limits		
o-Terphenyl		67					50 - 150		
n-Decanoic Acid (Surr)		0					0 - 1		

QC Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 580-71419-1 DU

Matrix: Solid

Analysis Batch: 256786

Client Sample ID: EX-DB2-E1-8-SW

Prep Type: Total/NA

Prep Batch: 256715

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD	Limit
	Result	Qualifier	Result	Qualifier					
#2 Diesel (C10-C24)	ND		ND		mg/Kg	☼		NC	35
Motor Oil (>C24-C36)	ND		11.2	J	mg/Kg	☼		NC	35

Surrogate	DU	DU	Limits
	%Recovery	Qualifier	
<i>o</i> -Terphenyl	73		50 - 150
<i>n</i> -Decanoic Acid (Surr)	0.0008		0 - 1

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71419-1 DU

Matrix: Solid

Analysis Batch: 256727

Client Sample ID: EX-DB2-E1-8-SW

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD	Limit
	Result	Qualifier	Result	Qualifier					
Percent Solids	80.2		78.8		%			2	20
Percent Moisture	19.8		21.2		%			7	20

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Client Sample ID: EX-DB2-E1-8-SW

Date Collected: 09/19/17 09:55

Date Received: 09/20/17 11:05

Lab Sample ID: 580-71419-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256727	09/20/17 12:43	JWL	TAL SEA

Client Sample ID: EX-DB2-E1-8-SW

Date Collected: 09/19/17 09:55

Date Received: 09/20/17 11:05

Lab Sample ID: 580-71419-1

Matrix: Solid

Percent Solids: 80.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256773	09/20/17 15:46	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256780	09/21/17 10:15	JSM	TAL SEA
Total/NA	Prep	5035			256737	09/20/17 13:41	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256764	09/21/17 01:12	RSB	TAL SEA
Total/NA	Prep	3546			256715	09/20/17 12:02	JWL	TAL SEA
Total/NA	Cleanup	3630C			256770	09/20/17 15:20	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256786	09/20/17 22:20	ERZ	TAL SEA

Client Sample ID: EX-DB2-E1-10

Date Collected: 09/19/17 09:50

Date Received: 09/20/17 11:05

Lab Sample ID: 580-71419-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256727	09/20/17 12:43	JWL	TAL SEA

Client Sample ID: EX-DB2-E1-10

Date Collected: 09/19/17 09:50

Date Received: 09/20/17 11:05

Lab Sample ID: 580-71419-2

Matrix: Solid

Percent Solids: 73.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256773	09/20/17 15:46	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256780	09/21/17 10:41	JSM	TAL SEA
Total/NA	Prep	5035			256737	09/20/17 13:41	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256764	09/21/17 00:40	RSB	TAL SEA
Total/NA	Prep	3546			256715	09/20/17 12:02	JWL	TAL SEA
Total/NA	Cleanup	3630C			256770	09/20/17 15:20	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256786	09/20/17 23:05	ERZ	TAL SEA

Client Sample ID: DUP02-SO-091917

Date Collected: 09/19/17 00:01

Date Received: 09/20/17 11:05

Lab Sample ID: 580-71419-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256727	09/20/17 12:43	JWL	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Client Sample ID: DUP02-SO-091917

Lab Sample ID: 580-71419-3

Date Collected: 09/19/17 00:01

Matrix: Solid

Date Received: 09/20/17 11:05

Percent Solids: 78.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256773	09/20/17 15:46	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256780	09/21/17 11:07	JSM	TAL SEA
Total/NA	Prep	5035			256737	09/20/17 13:41	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256764	09/21/17 00:08	RSB	TAL SEA
Total/NA	Prep	3546			256715	09/20/17 12:02	JWL	TAL SEA
Total/NA	Cleanup	3630C			256770	09/20/17 15:20	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256786	09/21/17 08:20	ERZ	TAL SEA

Client Sample ID: RB-091917

Lab Sample ID: 580-71419-4

Date Collected: 09/19/17 10:00

Matrix: Water

Date Received: 09/20/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	256728	09/20/17 17:12	RSB	TAL SEA

Client Sample ID: TB-091917

Lab Sample ID: 580-71419-5

Date Collected: 09/19/17 00:01

Matrix: Solid

Date Received: 09/20/17 11:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256773	09/20/17 15:46	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256780	09/21/17 09:50	JSM	TAL SEA
Total/NA	Prep	5035			256737	09/20/17 13:41	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256764	09/20/17 23:36	RSB	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
California	State Program	9	2901	01-31-18
L-A-B	DoD ELAP		L2236	01-19-19
L-A-B	ISO/IEC 17025		L2236	01-19-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-17
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71419-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-71419-1	EX-DB2-E1-8-SW	Solid	09/19/17 09:55	09/20/17 11:05
580-71419-2	EX-DB2-E1-10	Solid	09/19/17 09:50	09/20/17 11:05
580-71419-3	DUP02-SO-091917	Solid	09/19/17 00:01	09/20/17 11:05
580-71419-4	RB-091917	Water	09/19/17 10:00	09/20/17 11:05
580-71419-5	TB-091917	Solid	09/19/17 00:01	09/20/17 11:05

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Rush

Short Hold

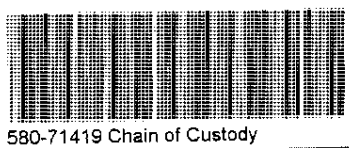
Chain of Custody Record

Client Arcadis		Client Contact Ryan Brauchla		Date 9-19-2017	Chain of Custody Number 29434
Address 1100 Olive Way, Suite 800		Telephone Number (Area Code)/Fax Number 509-438-9828		Lab Number 255-922-2310	Page 1 of 1

City Seattle	State WA	Zip Code 98101	Sampler Ryan Brauchla (RB)	Lab Contact Elaine Walker	Analysis (Attach list if more space is needed)	71419
Project Name and Location (State) Edmonds Terminal Edmonds, WA		Billing Contact				

Contract/Purchase Order/Quote No.
BOO45362.0010

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix										Containers & Preservatives				Special Instructions/ Conditions of Receipt			
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Misc	10 mL	NWTPH-Gx	NWTPH-Dx (SGC)		8260C (Benzene)	8270D SIM (PAHs)	
EX-DB2-E1-8-SW	9-19-17	0955			X		1									X	X	X	*	Email results to ryan.brauchla@arcadis.com samuel.miles@arcadis.com aphelic.emella@arcadis.com scott.zorn@arcadis.com * Analyze for cPAHs IF DRO/HO detected (extraction)
EX-DB2-E1-10	9-19-17	0950			X		1								X	X	X	*		
EX-DB2-DUPOZ-50-091917	9-19-17	-			X		1								X	X	X	*		
RB-091917	9-19-17	1000			X										X					
TB-091917	9-19-17	-			X		1								X		X			



TB#2 Cooler Cor 0.6 Unc 1.4
Cooler Desc Lo Green @ Lab
Wet/Packs Packing bob
lab cov

WBS Codes:
NWENVPM6001430804 - Soil surface
NWENVPM6001430803 - water

Cooler <input type="checkbox"/> Yes <input type="checkbox"/> No Cooler Temp: _____	Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown	Sample Disposal <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> 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 _____

QC Requirements (Specify): _____

1. Relinquished By Sign/Print Ryan W Brauchla	Date 9-20-17	Time 0950	1. Received By Sign/Print Francisco Luna, Jr	Date 9/20/17	Time 0950
2. Relinquished By Sign/Print Francisco Luna, Jr	Date 9/20/17	Time 1105	2. Received By Sign/Print Tom Blankinship	Date 9/20/17	Time 1105
3. Relinquished By Sign/Print	Date	Time	3. Received By Sign/Print	Date	Time

Comments

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-71419-1

Login Number: 71419

List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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: 580-71458-1

Client Project/Site: Edmonds Terminal

For:

ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
9/22/2017 12:44:53 PM

Elaine Walker, Project Manager II
(253)248-4972

elaine.walker@testamericainc.com

LINKS

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results through
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www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71458-1

Job ID: 580-71458-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE **Client: ARCADIS U.S. Inc** **Project: Edmonds Terminal** **Report Number: 580-71458-1**

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

Five samples were received on 9/21/2017 10:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was -0.2° C.

The following samples were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results. EX-DB2-A2-4-SW (580-71458-1), EX-DB2-F0-1 (580-71458-2), EX-DB2-F1-10 (580-71458-3) and TB-092017 (580-71458-5).

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)

Samples EX-DB2-A2-4-SW (580-71458-1), EX-DB2-F0-1 (580-71458-2), EX-DB2-F1-10 (580-71458-3) and TB-092017 (580-71458-5) were analyzed for volatile organic compounds (GC) in accordance with 8260. The samples were prepared and analyzed on 09/21/2017.

The following sample was provided to the laboratory with a significantly different initial weight than the required (10g): The weight should not deviate by more than 20%. The amount provided was below this amount.: EX-DB2-A2-4-SW (580-71458-1), EX-DB2-F0-1 (580-71458-2), and EX-DB2-F1-10 (580-71458-3).

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)

Samples EX-DB2-A2-4-SW (580-71458-1) and EX-DB2-F0-1 (580-71458-2) were analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with SW846 8270D_SIM. The samples were prepared and analyzed on 09/21/2017.

Several analytes were detected in method blank MB 580-256861/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Terphenyl-d14 failed the surrogate recovery criteria low for EX-DB2-F0-1 (580-71458-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71458-1

Job ID: 580-71458-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

Dibenz(a,h)anthracene and Indeno[1,2,3-cd]pyrene failed the recovery criteria low for the MS of sample 580-71458-3 in batch 580-256923. Dibenz(a,h)anthracene and Indeno[1,2,3-cd]pyrene failed the recovery criteria low for the MSD of sample 580-71458-3 in batch 580-256923. The associated LCS met acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO)

Samples EX-DB2-A2-4-SW (580-71458-1), EX-DB2-F0-1 (580-71458-2), EX-DB2-F1-10 (580-71458-3) and TB-092017 (580-71458-5) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were prepared on 09/21/2017 and analyzed on 09/22/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO)

Sample RB-092017 (580-71458-4) was analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were analyzed on 09/21/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL AND EXTENDED RANGE ORGANICS

Samples EX-DB2-A2-4-SW (580-71458-1), EX-DB2-F0-1 (580-71458-2) and EX-DB2-F1-10 (580-71458-3) were analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared on 09/21/2017 and analyzed on 09/22/2017.

Please note - the laboratory is unable to process the reverse surrogate used in the Silica Gel Cleanup for NWTPH-Dx as it contains a 1-point calibration and the associated samples are run with a 5-point calibration. This surrogate will not be present in the forms for the Level IV report; however this surrogate is reported in the raw data section for this analysis.

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: EX-DB2-A2-4-SW (580-71458-1), EX-DB2-F0-1 (580-71458-2) and (580-71458-A-1-E DU).

Sample EX-DB2-A2-4-SW (580-71458-1)[5X] required dilution prior to analysis due to the nature of the sample matrix. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples EX-DB2-A2-4-SW (580-71458-1), EX-DB2-F0-1 (580-71458-2) and EX-DB2-F1-10 (580-71458-3) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 09/21/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71458-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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 Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71458-1

Client Sample ID: EX-DB2-A2-4-SW

Lab Sample ID: 580-71458-1

Date Collected: 09/20/17 16:15

Matrix: Solid

Date Received: 09/21/17 10:50

Percent Solids: 48.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		76	33	ug/Kg	☼	09/21/17 13:40	09/21/17 16:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		75 - 120				09/21/17 13:40	09/21/17 16:20	1
Trifluorotoluene (Surr)	97		60 - 150				09/21/17 13:40	09/21/17 16:20	1
4-Bromofluorobenzene (Surr)	96		47 - 150				09/21/17 13:40	09/21/17 16:20	1
Dibromofluoromethane (Surr)	102		80 - 118				09/21/17 13:40	09/21/17 16:20	1
1,2-Dichloroethane-d4 (Surr)	113		80 - 121				09/21/17 13:40	09/21/17 16:20	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	65	B	10	1.5	ug/Kg	☼	09/21/17 11:23	09/21/17 19:38	1
Benzo[a]pyrene	84	B	10	0.80	ug/Kg	☼	09/21/17 11:23	09/21/17 19:38	1
Benzo[b]fluoranthene	130	B	10	1.2	ug/Kg	☼	09/21/17 11:23	09/21/17 19:38	1
Benzo[k]fluoranthene	41	B	10	1.2	ug/Kg	☼	09/21/17 11:23	09/21/17 19:38	1
Chrysene	210		10	3.0	ug/Kg	☼	09/21/17 11:23	09/21/17 19:38	1
Dibenz(a,h)anthracene	16	B	10	1.4	ug/Kg	☼	09/21/17 11:23	09/21/17 19:38	1
Indeno[1,2,3-cd]pyrene	120	B	10	1.2	ug/Kg	☼	09/21/17 11:23	09/21/17 19:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	101		68 - 138				09/21/17 11:23	09/21/17 19:38	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		15	7.9	mg/Kg	☼	09/21/17 12:52	09/22/17 02:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		50 - 150				09/21/17 12:52	09/22/17 02:39	1
Trifluorotoluene (Surr)							09/21/17 12:52	09/22/17 02:39	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1600		500	120	mg/Kg	☼	09/21/17 11:29	09/22/17 09:48	5
Motor Oil (>C24-C36)	2200		500	92	mg/Kg	☼	09/21/17 11:29	09/22/17 09:48	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	68		50 - 150				09/21/17 11:29	09/22/17 09:48	5
n-Decanoic Acid (Surr)	0.009		0 - 1				09/21/17 11:29	09/22/17 09:48	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	48.0		0.1	0.1	%			09/21/17 11:35	1
Percent Moisture	52.0		0.1	0.1	%			09/21/17 11:35	1

TestAmerica Seattle

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71458-1

Client Sample ID: EX-DB2-F0-1

Lab Sample ID: 580-71458-2

Date Collected: 09/20/17 13:20

Matrix: Solid

Date Received: 09/21/17 10:50

Percent Solids: 30.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		130	56	ug/Kg	☼	09/21/17 13:40	09/21/17 16:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		75 - 120				09/21/17 13:40	09/21/17 16:46	1
Trifluorotoluene (Surr)	100		60 - 150				09/21/17 13:40	09/21/17 16:46	1
4-Bromofluorobenzene (Surr)	103		47 - 150				09/21/17 13:40	09/21/17 16:46	1
Dibromofluoromethane (Surr)	106		80 - 118				09/21/17 13:40	09/21/17 16:46	1
1,2-Dichloroethane-d4 (Surr)	117		80 - 121				09/21/17 13:40	09/21/17 16:46	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	51	B	16	2.4	ug/Kg	☼	09/21/17 11:23	09/21/17 20:28	1
Benzo[a]pyrene	49	B	16	1.3	ug/Kg	☼	09/21/17 11:23	09/21/17 20:28	1
Benzo[b]fluoranthene	110	B	16	1.9	ug/Kg	☼	09/21/17 11:23	09/21/17 20:28	1
Benzo[k]fluoranthene	30	B	16	1.9	ug/Kg	☼	09/21/17 11:23	09/21/17 20:28	1
Chrysene	100		16	4.7	ug/Kg	☼	09/21/17 11:23	09/21/17 20:28	1
Dibenz(a,h)anthracene	6.6	J B	16	2.3	ug/Kg	☼	09/21/17 11:23	09/21/17 20:28	1
Indeno[1,2,3-cd]pyrene	60	B	16	1.9	ug/Kg	☼	09/21/17 11:23	09/21/17 20:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	53	X	68 - 138				09/21/17 11:23	09/21/17 20:28	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		26	14	mg/Kg	☼	09/21/17 12:52	09/22/17 02:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150				09/21/17 12:52	09/22/17 02:07	1
Trifluorotoluene (Surr)							09/21/17 12:52	09/22/17 02:07	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	180		160	38	mg/Kg	☼	09/21/17 11:29	09/22/17 10:29	1
Motor Oil (>C24-C36)	470		160	28	mg/Kg	☼	09/21/17 11:29	09/22/17 10:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	66		50 - 150				09/21/17 11:29	09/22/17 10:29	1
n-Decanoic Acid (Surr)	0.003		0 - 1				09/21/17 11:29	09/22/17 10:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	30.3		0.1	0.1	%			09/21/17 11:35	1
Percent Moisture	69.7		0.1	0.1	%			09/21/17 11:35	1

TestAmerica Seattle

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71458-1

Client Sample ID: EX-DB2-F1-10

Lab Sample ID: 580-71458-3

Date Collected: 09/20/17 11:15

Matrix: Solid

Date Received: 09/21/17 10:50

Percent Solids: 78.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		24	10	ug/Kg	☼	09/21/17 13:40	09/21/17 17:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		75 - 120				09/21/17 13:40	09/21/17 17:11	1
Trifluorotoluene (Surr)	95		60 - 150				09/21/17 13:40	09/21/17 17:11	1
4-Bromofluorobenzene (Surr)	101		47 - 150				09/21/17 13:40	09/21/17 17:11	1
Dibromofluoromethane (Surr)	109		80 - 118				09/21/17 13:40	09/21/17 17:11	1
1,2-Dichloroethane-d4 (Surr)	117		80 - 121				09/21/17 13:40	09/21/17 17:11	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.9	2.5	mg/Kg	☼	09/21/17 12:52	09/22/17 01:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		50 - 150				09/21/17 12:52	09/22/17 01:34	1
Trifluorotoluene (Surr)							09/21/17 12:52	09/22/17 01:34	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		62	15	mg/Kg	☼	09/21/17 11:29	09/22/17 10:50	1
Motor Oil (>C24-C36)	ND		62	11	mg/Kg	☼	09/21/17 11:29	09/22/17 10:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150				09/21/17 11:29	09/22/17 10:50	1
n-Decanoic Acid (Surr)	0.00002		0 - 1				09/21/17 11:29	09/22/17 10:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	78.1		0.1	0.1	%			09/21/17 11:35	1
Percent Moisture	21.9		0.1	0.1	%			09/21/17 11:35	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71458-1

Client Sample ID: RB-092017

Date Collected: 09/20/17 12:40

Date Received: 09/21/17 10:50

Lab Sample ID: 580-71458-4

Matrix: Water

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/21/17 16:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		58 - 133					09/21/17 16:31	1
Trifluorotoluene (Surr)	108		77 - 128					09/21/17 16:31	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71458-1

Client Sample ID: TB-092017

Lab Sample ID: 580-71458-5

Date Collected: 09/20/17 00:01

Matrix: Solid

Date Received: 09/21/17 10:50

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/21/17 13:40	09/21/17 15:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		75 - 120	09/21/17 13:40	09/21/17 15:54	1
Trifluorotoluene (Surr)	96		60 - 150	09/21/17 13:40	09/21/17 15:54	1
4-Bromofluorobenzene (Surr)	101		47 - 150	09/21/17 13:40	09/21/17 15:54	1
Dibromofluoromethane (Surr)	106		80 - 118	09/21/17 13:40	09/21/17 15:54	1
1,2-Dichloroethane-d4 (Surr)	110		80 - 121	09/21/17 13:40	09/21/17 15:54	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		09/21/17 12:52	09/22/17 01:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150	09/21/17 12:52	09/22/17 01:03	1
Trifluorotoluene (Surr)				09/21/17 12:52	09/22/17 01:03	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71458-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-256890/1-A
Matrix: Solid
Analysis Batch: 256883

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256890

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/21/17 13:40	09/21/17 14:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		75 - 120	09/21/17 13:40	09/21/17 14:37	1
Trifluorotoluene (Surr)	101		60 - 150	09/21/17 13:40	09/21/17 14:37	1
4-Bromofluorobenzene (Surr)	99		47 - 150	09/21/17 13:40	09/21/17 14:37	1
Dibromofluoromethane (Surr)	109		80 - 118	09/21/17 13:40	09/21/17 14:37	1
1,2-Dichloroethane-d4 (Surr)	116		80 - 121	09/21/17 13:40	09/21/17 14:37	1

Lab Sample ID: LCS 580-256890/2-A
Matrix: Solid
Analysis Batch: 256883

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256890

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	800	867		ug/Kg		108	79 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	102		75 - 120
Trifluorotoluene (Surr)	99		60 - 150
4-Bromofluorobenzene (Surr)	101		47 - 150
Dibromofluoromethane (Surr)	104		80 - 118
1,2-Dichloroethane-d4 (Surr)	109		80 - 121

Lab Sample ID: LCSD 580-256890/3-A
Matrix: Solid
Analysis Batch: 256883

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256890

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	800	918		ug/Kg		115	79 - 135	6	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	102		75 - 120
Trifluorotoluene (Surr)	102		60 - 150
4-Bromofluorobenzene (Surr)	98		47 - 150
Dibromofluoromethane (Surr)	107		80 - 118
1,2-Dichloroethane-d4 (Surr)	111		80 - 121

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-256861/1-A
Matrix: Solid
Analysis Batch: 256923

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256861

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	1.07	J	5.0	0.76	ug/Kg		09/21/17 11:23	09/21/17 17:30	1
Benzo[a]pyrene	0.815	J	5.0	0.40	ug/Kg		09/21/17 11:23	09/21/17 17:30	1
Benzo[b]fluoranthene	1.32	J	5.0	0.59	ug/Kg		09/21/17 11:23	09/21/17 17:30	1

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71458-1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: MB 580-256861/1-A
Matrix: Solid
Analysis Batch: 256923

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256861

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzo[k]fluoranthene	1.42	J	5.0	0.60	ug/Kg		09/21/17 11:23	09/21/17 17:30	1
Chrysene	ND		5.0	1.5	ug/Kg		09/21/17 11:23	09/21/17 17:30	1
Dibenz(a,h)anthracene	1.41	J	5.0	0.72	ug/Kg		09/21/17 11:23	09/21/17 17:30	1
Indeno[1,2,3-cd]pyrene	1.02	J	5.0	0.60	ug/Kg		09/21/17 11:23	09/21/17 17:30	1
Surrogate	MB MB		Limits			D	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
Terphenyl-d14	106		68 - 138				09/21/17 11:23	09/21/17 17:30	1

Lab Sample ID: LCS 580-256861/2-A
Matrix: Solid
Analysis Batch: 256923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256861

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
								Benzo[a]anthracene
Benzo[a]pyrene	1000	977		ug/Kg		98	72 - 124	
Benzo[b]fluoranthene	1000	827		ug/Kg		83	63 - 121	
Benzo[k]fluoranthene	1000	1040		ug/Kg		104	63 - 129	
Chrysene	1000	876		ug/Kg		88	69 - 120	
Dibenz(a,h)anthracene	1000	861		ug/Kg		86	70 - 125	
Indeno[1,2,3-cd]pyrene	1000	806		ug/Kg		81	65 - 121	
Surrogate	LCS LCS		Limits			D	%Rec	%Rec. Limits
	%Recovery	Qualifier						
Terphenyl-d14	104		68 - 138					

Lab Sample ID: 580-71458-A-3-B MS
Matrix: Solid
Analysis Batch: 256923

Client Sample ID: 580-71458-A-3-B MS
Prep Type: Total/NA
Prep Batch: 256861

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]pyrene	ND		1260	1100		ug/Kg	☼	88	72 - 124
Benzo[b]fluoranthene	ND		1260	984		ug/Kg	☼	78	63 - 121
Benzo[k]fluoranthene	ND		1260	1110		ug/Kg	☼	89	63 - 129
Chrysene	ND		1260	980		ug/Kg	☼	78	69 - 120
Dibenz(a,h)anthracene	ND	F1	1260	803	F1	ug/Kg	☼	64	70 - 125
Indeno[1,2,3-cd]pyrene	ND	F1	1260	801	F1	ug/Kg	☼	64	65 - 121
Surrogate	MS MS		Limits			D	%Rec	%Rec. Limits	
	%Recovery	Qualifier							
Terphenyl-d14	99		68 - 138						

Lab Sample ID: 580-71458-A-3-C MSD
Matrix: Solid
Analysis Batch: 256923

Client Sample ID: 580-71458-A-3-C MSD
Prep Type: Total/NA
Prep Batch: 256861

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
										RPD	Limit
Benzo[a]anthracene	ND		1200	1020		ug/Kg	☼	85	66 - 120	4	40
Benzo[a]pyrene	ND		1200	1040		ug/Kg	☼	86	72 - 124	6	40

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71458-1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: 580-71458-A-3-C MSD

Matrix: Solid

Analysis Batch: 256923

Client Sample ID: 580-71458-A-3-C MSD

Prep Type: Total/NA

Prep Batch: 256861

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzo[b]fluoranthene	ND		1200	939		ug/Kg	☼	78	63 - 121	5	40
Benzo[k]fluoranthene	ND		1200	1090		ug/Kg	☼	90	63 - 129	2	40
Chrysene	ND		1200	949		ug/Kg	☼	79	69 - 120	3	40
Dibenz(a,h)anthracene	ND	F1	1200	782	F1	ug/Kg	☼	65	70 - 125	3	40
Indeno[1,2,3-cd]pyrene	ND	F1	1200	773	F1	ug/Kg	☼	64	65 - 121	3	40

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Terphenyl-d14	106		68 - 138

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-256866/3-A

Matrix: Solid

Analysis Batch: 256897

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 256866

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		09/21/17 12:04	09/21/17 23:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150	09/21/17 12:04	09/21/17 23:26	1
Trifluorotoluene (Surr)	104		50 - 150	09/21/17 12:04	09/21/17 23:26	1

Lab Sample ID: LCS 580-256866/4-A

Matrix: Solid

Analysis Batch: 256897

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 256866

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Gasoline	40.0	36.7		mg/Kg		92	68 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		50 - 150
Trifluorotoluene (Surr)	102		50 - 150

Lab Sample ID: LCSD 580-256866/5-A

Matrix: Solid

Analysis Batch: 256897

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 256866

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline	40.0	38.2		mg/Kg		95	68 - 120	4	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		50 - 150
Trifluorotoluene (Surr)	102		50 - 150

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71458-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-256885/6
Matrix: Water
Analysis Batch: 256885

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/21/17 14:55	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		58 - 133					09/21/17 14:55	1
Trifluorotoluene (Surr)	106		77 - 128					09/21/17 14:55	1

Lab Sample ID: LCS 580-256885/7
Matrix: Water
Analysis Batch: 256885

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	0.854		mg/L		85	79 - 110
Surrogate	%Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	96		58 - 133				
Trifluorotoluene (Surr)	93		77 - 128				

Lab Sample ID: LCSD 580-256885/8
Matrix: Water
Analysis Batch: 256885

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	0.844		mg/L		84	79 - 110	1	10
Surrogate	%Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	96		58 - 133						
Trifluorotoluene (Surr)	92		77 - 128						

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-256862/1-B
Matrix: Solid
Analysis Batch: 256959

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 256862

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		09/21/17 11:29	09/22/17 08:47	1
Motor Oil (>C24-C36)	ND		50	9.1	mg/Kg		09/21/17 11:29	09/22/17 08:47	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	84		50 - 150				09/21/17 11:29	09/22/17 08:47	1
n-Decanoic Acid (Surr)	0.00003		0 - 1				09/21/17 11:29	09/22/17 08:47	1

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71458-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 580-256862/2-B

Matrix: Solid

Analysis Batch: 256959

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 256862

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	500	403		mg/Kg		81	64 - 127
Motor Oil (>C24-C36)	500	454		mg/Kg		91	70 - 125
		LCS %Recovery	LCS Qualifier	Limits			
<i>o</i> -Terphenyl		81		50 - 150			
<i>n</i> -Decanoic Acid (Surr)		0		0 - 1			

Lab Sample ID: LCSD 580-256862/3-B

Matrix: Solid

Analysis Batch: 256959

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 256862

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	500	381		mg/Kg		76	64 - 127	6	16
Motor Oil (>C24-C36)	500	439		mg/Kg		88	70 - 125	3	17
		LCSD %Recovery	LCSD Qualifier	Limits					
<i>o</i> -Terphenyl		72		50 - 150					
<i>n</i> -Decanoic Acid (Surr)		0		0 - 1					

Lab Sample ID: 580-71458-1 DU

Matrix: Solid

Analysis Batch: 256959

Client Sample ID: EX-DB2-A2-4-SW

Prep Type: Total/NA

Prep Batch: 256862

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
#2 Diesel (C10-C24)	1600		1820		mg/Kg	☼	16	35
Motor Oil (>C24-C36)	2200		2330		mg/Kg	☼	5	35
		DU %Recovery	DU Qualifier	Limits				
<i>o</i> -Terphenyl		55		50 - 150				
<i>n</i> -Decanoic Acid (Surr)		0.004		0 - 1				

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71458-2 DU

Matrix: Solid

Analysis Batch: 256863

Client Sample ID: EX-DB2-F0-1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Percent Solids	30.3		31.0		%		2	20
Percent Moisture	69.7		69.0		%		1	20

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71458-1

Client Sample ID: EX-DB2-A2-4-SW

Lab Sample ID: 580-71458-1

Date Collected: 09/20/17 16:15

Matrix: Solid

Date Received: 09/21/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256863	09/21/17 11:35	APR	TAL SEA

Client Sample ID: EX-DB2-A2-4-SW

Lab Sample ID: 580-71458-1

Date Collected: 09/20/17 16:15

Matrix: Solid

Date Received: 09/21/17 10:50

Percent Solids: 48.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256890	09/21/17 13:40	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256883	09/21/17 16:20	JSM	TAL SEA
Total/NA	Prep	3546			256861	09/21/17 11:23	APR	TAL SEA
Total/NA	Analysis	8270D SIM		1	256923	09/21/17 19:38	ERZ	TAL SEA
Total/NA	Prep	5035			256866	09/21/17 12:52	SHK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256897	09/22/17 02:39	RSB	TAL SEA
Total/NA	Prep	3546			256862	09/21/17 11:29	APR	TAL SEA
Total/NA	Cleanup	3630C			256921	09/21/17 16:14	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		5	256959	09/22/17 09:48	ADB	TAL SEA

Client Sample ID: EX-DB2-F0-1

Lab Sample ID: 580-71458-2

Date Collected: 09/20/17 13:20

Matrix: Solid

Date Received: 09/21/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256863	09/21/17 11:35	APR	TAL SEA

Client Sample ID: EX-DB2-F0-1

Lab Sample ID: 580-71458-2

Date Collected: 09/20/17 13:20

Matrix: Solid

Date Received: 09/21/17 10:50

Percent Solids: 30.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256890	09/21/17 13:40	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256883	09/21/17 16:46	JSM	TAL SEA
Total/NA	Prep	3546			256861	09/21/17 11:23	APR	TAL SEA
Total/NA	Analysis	8270D SIM		1	256923	09/21/17 20:28	ERZ	TAL SEA
Total/NA	Prep	5035			256866	09/21/17 12:52	SHK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256897	09/22/17 02:07	RSB	TAL SEA
Total/NA	Prep	3546			256862	09/21/17 11:29	APR	TAL SEA
Total/NA	Cleanup	3630C			256921	09/21/17 16:14	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256959	09/22/17 10:29	ADB	TAL SEA

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71458-1

Client Sample ID: EX-DB2-F1-10

Lab Sample ID: 580-71458-3

Date Collected: 09/20/17 11:15

Matrix: Solid

Date Received: 09/21/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	256863	09/21/17 11:35	APR	TAL SEA

Client Sample ID: EX-DB2-F1-10

Lab Sample ID: 580-71458-3

Date Collected: 09/20/17 11:15

Matrix: Solid

Date Received: 09/21/17 10:50

Percent Solids: 78.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256890	09/21/17 13:40	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256883	09/21/17 17:11	JSM	TAL SEA
Total/NA	Prep	5035			256866	09/21/17 12:52	SHK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256897	09/22/17 01:34	RSB	TAL SEA
Total/NA	Prep	3546			256862	09/21/17 11:29	APR	TAL SEA
Total/NA	Cleanup	3630C			256921	09/21/17 16:14	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	256959	09/22/17 10:50	ADB	TAL SEA

Client Sample ID: RB-092017

Lab Sample ID: 580-71458-4

Date Collected: 09/20/17 12:40

Matrix: Water

Date Received: 09/21/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	256885	09/21/17 16:31	RSB	TAL SEA

Client Sample ID: TB-092017

Lab Sample ID: 580-71458-5

Date Collected: 09/20/17 00:01

Matrix: Solid

Date Received: 09/21/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			256890	09/21/17 13:40	JSM	TAL SEA
Total/NA	Analysis	8260C		1	256883	09/21/17 15:54	JSM	TAL SEA
Total/NA	Prep	5035			256866	09/21/17 12:52	SHK	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	256897	09/22/17 01:03	RSB	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71458-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
California	State Program	9	2901	01-31-18
L-A-B	DoD ELAP		L2236	01-19-19
L-A-B	ISO/IEC 17025		L2236	01-19-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-17
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71458-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-71458-1	EX-DB2-A2-4-SW	Solid	09/20/17 16:15	09/21/17 10:50
580-71458-2	EX-DB2-F0-1	Solid	09/20/17 13:20	09/21/17 10:50
580-71458-3	EX-DB2-F1-10	Solid	09/20/17 11:15	09/21/17 10:50
580-71458-4	RB-092017	Water	09/20/17 12:40	09/21/17 10:50
580-71458-5	TB-092017	Solid	09/20/17 00:01	09/21/17 10:50

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Rush

Short Hold

Chain of Custody Record

Client Arcadis		Client Contact Ryan Brauchla		Date 9-20-2017	Chain of Custody Number 29437
Address 1100 Olive Way, Suite 800		Telephone Number (Area Code)/Fax Number 509-438-9828		Lab Number 253-922-2310	Page 1 of 1

City Seattle	State WA	Zip Code 98101	Sampler Ryan Brauchla (RB)	Lab Contact Elaine Walker	Analysis (Attach list if more space is needed)	Special Instructions/ Conditions of Receipt
Project Name and Location (State) Edmonds Terminal Edmonds, WA		Billing Contact				

Contract/Purchase Order/Quote No.
BO045362.0010

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix				Containers & Preservatives										Special Instructions/Conditions of Receipt			
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	MeOH	Me2S	NWTPH-Gx	NWTPH-Dx w/6CL		826X (Benzene)	8270D SIM (PAHs)	
EX-DB2-A2-4-SW	9-20-17	1615			X		2								2	X	X	X	*	Email results to ryan.brauchla@arcadis.com samuel.miles@arcadis.com ophelie.encele@arcadis.com scott.zorn@arcadis.com * Analyze for cPAHs only if DRD/HO detected (extraction okay) WBS CODES: NWENV PMG 001430404-Soil NWENV PMG 001430403-surface water
EX-DB2-FO-1	9-20-17	1320			X		2							2	X	X	X	*		
EX-DB2-F1-10	9-20-17	1115			X		2								X	X	X	*		
RB-092017	9-20-17	1240	X							2					X					
TB-092017	9-20-17	-			X									1	X		X			



TBAZ Cooler Cor: 0.2 Uncal
Cooler Desc: Big Blue @ Lab 1050
Wet Packs Packing Blue
Lab covr Custody Seal: Yes No X

Cooler <input type="checkbox"/> Yes <input type="checkbox"/> No Cooler Temp: _____	Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown	Sample Disposal <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> 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 _____

QC Requirements (Specify)

1. Relinquished By Sign/Print Ryan W Brauchla Ryan W Brauchla	Date 9-21-2017	Time 0915	1. Received By Sign/Print Francisco Lang, Jr	Date 9/21/17	Time 0915
2. Relinquished By Sign/Print Francisco Lang, Jr	Date 9/21/17	Time 1050	2. Received By Sign/Print B. Hall B. Hall SEA TA	Date 9/21/17	Time 1050
3. Relinquished By Sign/Print	Date	Time	3. Received By Sign/Print	Date	Time

Comments

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-71458-1

Login Number: 71458

List Source: TestAmerica Seattle

List Number: 1

Creator: Gall, Brandon A

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	Not present
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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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: 580-71539-1

Client Project/Site: Edmonds Terminal
Revision: 2

For:

ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
11/22/2017 3:23:37 PM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

LINKS

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results through
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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Job ID: 580-71539-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE Client: ARCADIS U.S. Inc Project: Edmonds Terminal Report Number: 580-71539-1

REVISION 1: September 27, 2017

This revision was required because the NWTPH-Dx sample results were only preliminary and were waiting on reanalysis due to failing CCV.

REVISION 2: NOVEMBER 22, 2017

This revision was to remove the Trifluorotoluene surrogate from the NWTPH-G soil samples because this surrogate is not reported with soils as they are collected in field methanol preserved containers. In addition, the collection date for sample RB-092217 (580-71539-10) was logged as 09/21/17, but should be 09/22/17.

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

Eleven samples were received on 9/23/2017 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was -0.2° C.

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)

Samples EX-DB2-C3-10 (580-71539-1), EX-DB2-C4-10 (580-71539-2), EX-DB2-C5-10 (580-71539-3), EX-DB2-C6-10 (580-71539-4), EX-DB2-C7-11 (580-71539-5), EX-DB2-C8-10 (580-71539-6), EX-DB2-D3-10 (580-71539-7), EX-DB2-F2-12 (580-71539-8) and Trip Blank (580-71539-11) were analyzed for volatile organic compounds (GC) in accordance with 8260. The samples were prepared and analyzed on 09/25/2017.

The following sample was provided to the laboratory with a significantly different initial weight than the required (10g): EX-DB2-C3-10 (580-71539-1), EX-DB2-C6-10 (580-71539-4), EX-DB2-C7-11 (580-71539-5), EX-DB2-C8-10 (580-71539-6), EX-DB2-C8-10 (580-71539-6[MS]), EX-DB2-C8-10 (580-71539-6[MSD]), EX-DB2-D3-10 (580-71539-7) and EX-DB2-F2-12 (580-71539-8). The weight should not deviate by more than 20%. The amount provided was above this amount.

1,2-Dichloroethane-d4 (Surr) failed the surrogate recovery criteria high for Trip Blank (580-71539-11). 1,2-Dichloroethane-d4 (Surr) failed the surrogate recovery criteria high for EX-DB2-C4-10 (580-71539-2). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis were not performed.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Job ID: 580-71539-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

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)

Sample EX-DB2-F2-12 (580-71539-8) was analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with SW846 8270D_SIM. The samples were prepared on 09/23/2017 and analyzed on 09/26/2017.

Chrysene failed the recovery criteria low for the MSD of sample 580-71538-2 in batch 580-257232. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO) - SOIL

Samples EX-DB2-C3-10 (580-71539-1), EX-DB2-C4-10 (580-71539-2), EX-DB2-C5-10 (580-71539-3), EX-DB2-C6-10 (580-71539-4), EX-DB2-C7-11 (580-71539-5), EX-DB2-C8-10 (580-71539-6), EX-DB2-D3-10 (580-71539-7), EX-DB2-F2-12 (580-71539-8) and Trip Blank (580-71539-11) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were prepared on 09/24/2017 and analyzed on 09/25/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO) - WATER

Samples RB-092117 (580-71539-9) and RB-092217 (580-71539-10) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were analyzed on 09/25/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL AND EXTENDED RANGE ORGANICS

Samples EX-DB2-C3-10 (580-71539-1), EX-DB2-C4-10 (580-71539-2), EX-DB2-C5-10 (580-71539-3), EX-DB2-C6-10 (580-71539-4), EX-DB2-C7-11 (580-71539-5), EX-DB2-C8-10 (580-71539-6), EX-DB2-D3-10 (580-71539-7) and EX-DB2-F2-12 (580-71539-8) were analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared on 09/23/2017 and analyzed on 09/25/2017 and 09/26/2017.

#2 Diesel (C10-C24) failed the recovery criteria low for the MS of sample EX-DB2-C8-10MS (580-71539-6) in batch 580-257182. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample and laboratory control samples duplicate (LCS/LCSD) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples EX-DB2-C3-10 (580-71539-1), EX-DB2-C4-10 (580-71539-2), EX-DB2-C5-10 (580-71539-3), EX-DB2-C6-10 (580-71539-4), EX-DB2-C7-11 (580-71539-5), EX-DB2-C8-10 (580-71539-6), EX-DB2-D3-10 (580-71539-7) and EX-DB2-F2-12 (580-71539-8) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 09/23/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
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
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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 Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Client Sample ID: EX-DB2-C3-10

Lab Sample ID: 580-71539-1

Date Collected: 09/22/17 07:55

Matrix: Solid

Date Received: 09/23/17 09:50

Percent Solids: 81.2

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		23	9.7	ug/Kg	☼	09/25/17 08:34	09/25/17 13:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		75 - 120				09/25/17 08:34	09/25/17 13:27	1
Trifluorotoluene (Surr)	102		60 - 150				09/25/17 08:34	09/25/17 13:27	1
4-Bromofluorobenzene (Surr)	102		47 - 150				09/25/17 08:34	09/25/17 13:27	1
Dibromofluoromethane (Surr)	101		80 - 118				09/25/17 08:34	09/25/17 13:27	1
1,2-Dichloroethane-d4 (Surr)	116		80 - 121				09/25/17 08:34	09/25/17 13:27	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.5	2.4	mg/Kg	☼	09/24/17 09:13	09/25/17 17:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		50 - 150				09/24/17 09:13	09/25/17 17:34	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		60	15	mg/Kg	☼	09/23/17 11:59	09/27/17 02:07	1
Motor Oil (>C24-C36)	ND		60	11	mg/Kg	☼	09/23/17 11:59	09/27/17 02:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	97		50 - 150				09/23/17 11:59	09/27/17 02:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	81.2		0.1	0.1	%			09/23/17 11:39	1
Percent Moisture	18.8		0.1	0.1	%			09/23/17 11:39	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Client Sample ID: EX-DB2-C4-10

Lab Sample ID: 580-71539-2

Date Collected: 09/22/17 08:10

Matrix: Solid

Date Received: 09/23/17 09:50

Percent Solids: 70.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		37	16	ug/Kg	☼	09/25/17 08:34	09/25/17 13:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		75 - 120				09/25/17 08:34	09/25/17 13:53	1
Trifluorotoluene (Surr)	101		60 - 150				09/25/17 08:34	09/25/17 13:53	1
4-Bromofluorobenzene (Surr)	100		47 - 150				09/25/17 08:34	09/25/17 13:53	1
Dibromofluoromethane (Surr)	108		80 - 118				09/25/17 08:34	09/25/17 13:53	1
1,2-Dichloroethane-d4 (Surr)	124	X	80 - 121				09/25/17 08:34	09/25/17 13:53	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		7.4	3.9	mg/Kg	☼	09/24/17 09:13	09/25/17 18:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		50 - 150				09/24/17 09:13	09/25/17 18:05	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		69	17	mg/Kg	☼	09/23/17 11:59	09/27/17 02:27	1
Motor Oil (>C24-C36)	20	J	69	12	mg/Kg	☼	09/23/17 11:59	09/27/17 02:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150				09/23/17 11:59	09/27/17 02:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	70.3		0.1	0.1	%			09/23/17 11:39	1
Percent Moisture	29.7		0.1	0.1	%			09/23/17 11:39	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Client Sample ID: EX-DB2-C5-10

Lab Sample ID: 580-71539-3

Date Collected: 09/22/17 08:30

Matrix: Solid

Date Received: 09/23/17 09:50

Percent Solids: 75.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		27	12	ug/Kg	☼	09/25/17 08:34	09/25/17 14:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		75 - 120				09/25/17 08:34	09/25/17 14:19	1
Trifluorotoluene (Surr)	100		60 - 150				09/25/17 08:34	09/25/17 14:19	1
4-Bromofluorobenzene (Surr)	104		47 - 150				09/25/17 08:34	09/25/17 14:19	1
Dibromofluoromethane (Surr)	107		80 - 118				09/25/17 08:34	09/25/17 14:19	1
1,2-Dichloroethane-d4 (Surr)	116		80 - 121				09/25/17 08:34	09/25/17 14:19	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.5	2.8	mg/Kg	☼	09/24/17 09:13	09/25/17 18:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150				09/24/17 09:13	09/25/17 18:35	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		61	15	mg/Kg	☼	09/23/17 11:59	09/27/17 02:47	1
Motor Oil (>C24-C36)	ND		61	11	mg/Kg	☼	09/23/17 11:59	09/27/17 02:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	94		50 - 150				09/23/17 11:59	09/27/17 02:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	75.6		0.1	0.1	%			09/23/17 11:39	1
Percent Moisture	24.4		0.1	0.1	%			09/23/17 11:39	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Client Sample ID: EX-DB2-C6-10

Lab Sample ID: 580-71539-4

Date Collected: 09/22/17 08:45

Matrix: Solid

Date Received: 09/23/17 09:50

Percent Solids: 82.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		21	9.2	ug/Kg	☼	09/25/17 08:34	09/25/17 14:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		75 - 120				09/25/17 08:34	09/25/17 14:44	1
Trifluorotoluene (Surr)	100		60 - 150				09/25/17 08:34	09/25/17 14:44	1
4-Bromofluorobenzene (Surr)	99		47 - 150				09/25/17 08:34	09/25/17 14:44	1
Dibromofluoromethane (Surr)	109		80 - 118				09/25/17 08:34	09/25/17 14:44	1
1,2-Dichloroethane-d4 (Surr)	115		80 - 121				09/25/17 08:34	09/25/17 14:44	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.3	2.2	mg/Kg	☼	09/24/17 09:13	09/25/17 19:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150				09/24/17 09:13	09/25/17 19:06	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		60	15	mg/Kg	☼	09/23/17 11:59	09/27/17 03:07	1
Motor Oil (>C24-C36)	11	J	60	11	mg/Kg	☼	09/23/17 11:59	09/27/17 03:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	98		50 - 150				09/23/17 11:59	09/27/17 03:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	82.5		0.1	0.1	%			09/23/17 11:39	1
Percent Moisture	17.5		0.1	0.1	%			09/23/17 11:39	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Client Sample ID: EX-DB2-C7-11

Lab Sample ID: 580-71539-5

Date Collected: 09/22/17 13:10

Matrix: Solid

Date Received: 09/23/17 09:50

Percent Solids: 78.2

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		25	11	ug/Kg	☼	09/25/17 08:34	09/25/17 15:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		75 - 120				09/25/17 08:34	09/25/17 15:10	1
Trifluorotoluene (Surr)	98		60 - 150				09/25/17 08:34	09/25/17 15:10	1
4-Bromofluorobenzene (Surr)	97		47 - 150				09/25/17 08:34	09/25/17 15:10	1
Dibromofluoromethane (Surr)	103		80 - 118				09/25/17 08:34	09/25/17 15:10	1
1,2-Dichloroethane-d4 (Surr)	114		80 - 121				09/25/17 08:34	09/25/17 15:10	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.9	2.6	mg/Kg	☼	09/24/17 09:13	09/25/17 20:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		50 - 150				09/24/17 09:13	09/25/17 20:06	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		61	15	mg/Kg	☼	09/23/17 11:59	09/27/17 03:27	1
Motor Oil (>C24-C36)	12	J	61	11	mg/Kg	☼	09/23/17 11:59	09/27/17 03:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	97		50 - 150				09/23/17 11:59	09/27/17 03:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	78.3		0.1	0.1	%			09/23/17 11:39	1
Percent Moisture	21.7		0.1	0.1	%			09/23/17 11:39	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Client Sample ID: EX-DB2-C8-10

Lab Sample ID: 580-71539-6

Date Collected: 09/22/17 10:05

Matrix: Solid

Date Received: 09/23/17 09:50

Percent Solids: 78.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		25	11	ug/Kg	☼	09/25/17 08:34	09/25/17 15:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		75 - 120				09/25/17 08:34	09/25/17 15:36	1
Trifluorotoluene (Surr)	103		60 - 150				09/25/17 08:34	09/25/17 15:36	1
4-Bromofluorobenzene (Surr)	100		47 - 150				09/25/17 08:34	09/25/17 15:36	1
Dibromofluoromethane (Surr)	101		80 - 118				09/25/17 08:34	09/25/17 15:36	1
1,2-Dichloroethane-d4 (Surr)	116		80 - 121				09/25/17 08:34	09/25/17 15:36	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	2.6	mg/Kg	☼	09/24/17 09:13	09/25/17 20:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		50 - 150				09/24/17 09:13	09/25/17 20:37	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		60	15	mg/Kg	☼	09/23/17 11:59	09/27/17 03:46	1
Motor Oil (>C24-C36)	ND		60	11	mg/Kg	☼	09/23/17 11:59	09/27/17 03:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	99		50 - 150				09/23/17 11:59	09/27/17 03:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	78.4		0.1	0.1	%			09/23/17 11:39	1
Percent Moisture	21.6		0.1	0.1	%			09/23/17 11:39	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Client Sample ID: EX-DB2-D3-10

Lab Sample ID: 580-71539-7

Date Collected: 09/22/17 07:45

Matrix: Solid

Date Received: 09/23/17 09:50

Percent Solids: 77.9

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		25	11	ug/Kg	☼	09/25/17 08:34	09/25/17 16:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		75 - 120				09/25/17 08:34	09/25/17 16:54	1
Trifluorotoluene (Surr)	105		60 - 150				09/25/17 08:34	09/25/17 16:54	1
4-Bromofluorobenzene (Surr)	100		47 - 150				09/25/17 08:34	09/25/17 16:54	1
Dibromofluoromethane (Surr)	106		80 - 118				09/25/17 08:34	09/25/17 16:54	1
1,2-Dichloroethane-d4 (Surr)	117		80 - 121				09/25/17 08:34	09/25/17 16:54	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	2.6	mg/Kg	☼	09/24/17 09:13	09/25/17 22:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		50 - 150				09/24/17 09:13	09/25/17 22:08	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		61	15	mg/Kg	☼	09/23/17 11:59	09/27/17 04:45	1
Motor Oil (>C24-C36)	ND		61	11	mg/Kg	☼	09/23/17 11:59	09/27/17 04:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	91		50 - 150				09/23/17 11:59	09/27/17 04:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	77.9		0.1	0.1	%			09/23/17 11:39	1
Percent Moisture	22.1		0.1	0.1	%			09/23/17 11:39	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Client Sample ID: EX-DB2-F2-12

Lab Sample ID: 580-71539-8

Date Collected: 09/21/17 11:20

Matrix: Solid

Date Received: 09/23/17 09:50

Percent Solids: 92.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		18	7.7	ug/Kg	☼	09/25/17 08:34	09/25/17 17:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		75 - 120				09/25/17 08:34	09/25/17 17:20	1
Trifluorotoluene (Surr)	104		60 - 150				09/25/17 08:34	09/25/17 17:20	1
4-Bromofluorobenzene (Surr)	94		47 - 150				09/25/17 08:34	09/25/17 17:20	1
Dibromofluoromethane (Surr)	103		80 - 118				09/25/17 08:34	09/25/17 17:20	1
1,2-Dichloroethane-d4 (Surr)	120		80 - 121				09/25/17 08:34	09/25/17 17:20	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		5.3	0.80	ug/Kg	☼	09/23/17 11:59	09/26/17 01:52	1
Benzo[a]pyrene	1.1	J	5.3	0.42	ug/Kg	☼	09/23/17 11:59	09/26/17 01:52	1
Benzo[b]fluoranthene	1.6	J	5.3	0.62	ug/Kg	☼	09/23/17 11:59	09/26/17 01:52	1
Benzo[k]fluoranthene	ND		5.3	0.64	ug/Kg	☼	09/23/17 11:59	09/26/17 01:52	1
Chrysene	2.1	J	5.3	1.6	ug/Kg	☼	09/23/17 11:59	09/26/17 01:52	1
Dibenz(a,h)anthracene	ND		5.3	0.76	ug/Kg	☼	09/23/17 11:59	09/26/17 01:52	1
Indeno[1,2,3-cd]pyrene	0.87	J	5.3	0.64	ug/Kg	☼	09/23/17 11:59	09/26/17 01:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	101		68 - 138				09/23/17 11:59	09/26/17 01:52	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2.1	J	3.6	1.9	mg/Kg	☼	09/24/17 09:13	09/25/17 22:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		50 - 150				09/24/17 09:13	09/25/17 22:39	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	16	J	54	13	mg/Kg	☼	09/23/17 11:59	09/27/17 05:05	1
Motor Oil (>C24-C36)	150		54	9.8	mg/Kg	☼	09/23/17 11:59	09/27/17 05:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	94		50 - 150				09/23/17 11:59	09/27/17 05:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	92.0		0.1	0.1	%	-		09/23/17 11:39	1
Percent Moisture	8.0		0.1	0.1	%	-		09/23/17 11:39	1

TestAmerica Seattle

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Client Sample ID: RB-092117

Lab Sample ID: 580-71539-9

Date Collected: 09/21/17 12:40

Matrix: Water

Date Received: 09/23/17 09:50

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/25/17 12:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		58 - 133					09/25/17 12:51	1
Trifluorotoluene (Surr)	112		77 - 128					09/25/17 12:51	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Client Sample ID: RB-092217

Lab Sample ID: 580-71539-10

Date Collected: 09/22/17 09:00

Matrix: Water

Date Received: 09/23/17 09:50

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/25/17 13:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		58 - 133					09/25/17 13:23	1
Trifluorotoluene (Surr)	112		77 - 128					09/25/17 13:23	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Client Sample ID: Trip Blank

Lab Sample ID: 580-71539-11

Date Collected: 09/21/17 00:01

Matrix: Solid

Date Received: 09/23/17 09:50

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/25/17 08:34	09/25/17 11:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		75 - 120	09/25/17 08:34	09/25/17 11:44	1
Trifluorotoluene (Surr)	106		60 - 150	09/25/17 08:34	09/25/17 11:44	1
4-Bromofluorobenzene (Surr)	100		47 - 150	09/25/17 08:34	09/25/17 11:44	1
Dibromofluoromethane (Surr)	109		80 - 118	09/25/17 08:34	09/25/17 11:44	1
1,2-Dichloroethane-d4 (Surr)	122	X	80 - 121	09/25/17 08:34	09/25/17 11:44	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		3.6	1.9	mg/Kg		09/24/17 09:13	09/25/17 15:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		50 - 150	09/24/17 09:13	09/25/17 15:32	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-257144/1-A
Matrix: Solid
Analysis Batch: 257151

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257144

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/25/17 08:34	09/25/17 10:27	1

Surrogate	%Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		75 - 120	09/25/17 08:34	09/25/17 10:27	1
Trifluorotoluene (Surr)	101		60 - 150	09/25/17 08:34	09/25/17 10:27	1
4-Bromofluorobenzene (Surr)	100		47 - 150	09/25/17 08:34	09/25/17 10:27	1
Dibromofluoromethane (Surr)	111		80 - 118	09/25/17 08:34	09/25/17 10:27	1
1,2-Dichloroethane-d4 (Surr)	118		80 - 121	09/25/17 08:34	09/25/17 10:27	1

Lab Sample ID: LCS 580-257144/2-A
Matrix: Solid
Analysis Batch: 257151

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257144

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzene	800	900		ug/Kg		113	79 - 135

Surrogate	%Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	104		75 - 120
Trifluorotoluene (Surr)	100		60 - 150
4-Bromofluorobenzene (Surr)	99		47 - 150
Dibromofluoromethane (Surr)	104		80 - 118
1,2-Dichloroethane-d4 (Surr)	115		80 - 121

Lab Sample ID: LCSD 580-257144/17-A
Matrix: Solid
Analysis Batch: 257151

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 257144

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	800	988		ug/Kg		123	79 - 135	9	10

Surrogate	%Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	101		75 - 120
Trifluorotoluene (Surr)	105		60 - 150
4-Bromofluorobenzene (Surr)	99		47 - 150
Dibromofluoromethane (Surr)	108		80 - 118
1,2-Dichloroethane-d4 (Surr)	117		80 - 121

Lab Sample ID: 580-71539-6 MS
Matrix: Solid
Analysis Batch: 257151

Client Sample ID: EX-DB2-C8-10
Prep Type: Total/NA
Prep Batch: 257144

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Benzene	ND		582	702		ug/Kg	☼	120	79 - 135

Surrogate	%Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	105		75 - 120
Trifluorotoluene (Surr)	102		60 - 150

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 580-71539-6 MS
Matrix: Solid
Analysis Batch: 257151

Client Sample ID: EX-DB2-C8-10
Prep Type: Total/NA
Prep Batch: 257144

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		47 - 150
Dibromofluoromethane (Surr)	106		80 - 118
1,2-Dichloroethane-d4 (Surr)	119		80 - 121

Lab Sample ID: 580-71539-6 MSD
Matrix: Solid
Analysis Batch: 257151

Client Sample ID: EX-DB2-C8-10
Prep Type: Total/NA
Prep Batch: 257144

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	ND		582	677		ug/Kg	☼	116	79 - 135	4	10

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	97		75 - 120
Trifluorotoluene (Surr)	101		60 - 150
4-Bromofluorobenzene (Surr)	95		47 - 150
Dibromofluoromethane (Surr)	105		80 - 118
1,2-Dichloroethane-d4 (Surr)	113		80 - 121

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-257103/1-A
Matrix: Solid
Analysis Batch: 257232

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		5.0	0.76	ug/Kg		09/23/17 10:33	09/25/17 18:05	1
Benzo[a]pyrene	ND		5.0	0.40	ug/Kg		09/23/17 10:33	09/25/17 18:05	1
Benzo[b]fluoranthene	ND		5.0	0.59	ug/Kg		09/23/17 10:33	09/25/17 18:05	1
Benzo[k]fluoranthene	ND		5.0	0.60	ug/Kg		09/23/17 10:33	09/25/17 18:05	1
Chrysene	ND		5.0	1.5	ug/Kg		09/23/17 10:33	09/25/17 18:05	1
Dibenz(a,h)anthracene	ND		5.0	0.72	ug/Kg		09/23/17 10:33	09/25/17 18:05	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.60	ug/Kg		09/23/17 10:33	09/25/17 18:05	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	104		68 - 138	09/23/17 10:33	09/25/17 18:05	1

Lab Sample ID: LCS 580-257103/2-A
Matrix: Solid
Analysis Batch: 257232

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzo[a]anthracene	1000	806		ug/Kg		81	66 - 120
Benzo[a]pyrene	1000	868		ug/Kg		87	72 - 124
Benzo[b]fluoranthene	1000	783		ug/Kg		78	63 - 121
Benzo[k]fluoranthene	1000	841		ug/Kg		84	63 - 129
Chrysene	1000	739		ug/Kg		74	69 - 120
Dibenz(a,h)anthracene	1000	900		ug/Kg		90	70 - 125

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS 580-257103/2-A
Matrix: Solid
Analysis Batch: 257232

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Indeno[1,2,3-cd]pyrene	1000	822		ug/Kg		82	65 - 121
Surrogate	%Recovery	LCS Qualifier	Limits				
Terphenyl-d14	91		68 - 138				

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-257123/1-A
Matrix: Solid
Analysis Batch: 257198

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257123

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		09/24/17 09:12	09/25/17 14:32	1
Surrogate	%Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac			
4-Bromofluorobenzene (Surr)	88		50 - 150	09/24/17 09:12	09/25/17 14:32	1			

Lab Sample ID: LCS 580-257123/2-A
Matrix: Solid
Analysis Batch: 257198

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257123

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Gasoline	40.0	40.5		mg/Kg		101	68 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	93		50 - 150				

Lab Sample ID: 580-71539-6 MS
Matrix: Solid
Analysis Batch: 257198

Client Sample ID: EX-DB2-C8-10
Prep Type: Total/NA
Prep Batch: 257123

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Gasoline	ND		50.1	45.3		mg/Kg	☒	90	50 - 150
Surrogate	%Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	94		50 - 150						

Lab Sample ID: 580-71539-6 MSD
Matrix: Solid
Analysis Batch: 257198

Client Sample ID: EX-DB2-C8-10
Prep Type: Total/NA
Prep Batch: 257123

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline	ND		50.1	49.9		mg/Kg	☒	100	50 - 150	10	35
Surrogate	%Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	92		50 - 150								

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-257188/6
Matrix: Water
Analysis Batch: 257188

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/25/17 10:29	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		58 - 133					09/25/17 10:29	1
Trifluorotoluene (Surr)	113		77 - 128					09/25/17 10:29	1

Lab Sample ID: LCS 580-257188/7
Matrix: Water
Analysis Batch: 257188

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	0.895		mg/L		90	79 - 110
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	100		58 - 133				
Trifluorotoluene (Surr)	97		77 - 128				

Lab Sample ID: LCSD 580-257188/8
Matrix: Water
Analysis Batch: 257188

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	0.880		mg/L		88	79 - 110	2	10
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	99		58 - 133						
Trifluorotoluene (Surr)	94		77 - 128						

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-257102/1-B
Matrix: Solid
Analysis Batch: 257364

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257102

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		09/23/17 10:32	09/27/17 00:49	1
Motor Oil (>C24-C36)	ND		50	9.1	mg/Kg		09/23/17 10:32	09/27/17 00:49	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	102		50 - 150				09/23/17 10:32	09/27/17 00:49	1

Lab Sample ID: LCS 580-257102/2-B
Matrix: Solid
Analysis Batch: 257364

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257102

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	500	462		mg/Kg		92	64 - 127

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 580-257102/2-B
Matrix: Solid
Analysis Batch: 257364

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257102

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Motor Oil (>C24-C36)	500	524		mg/Kg		105	70 - 125
Surrogate	%Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	97		50 - 150				

Lab Sample ID: LCSD 580-257102/3-B
Matrix: Solid
Analysis Batch: 257364

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 257102

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
#2 Diesel (C10-C24)	500	447		mg/Kg		89	64 - 127	3	16
Motor Oil (>C24-C36)	500	503		mg/Kg		101	70 - 125	4	17
Surrogate	%Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	88		50 - 150						

Lab Sample ID: 580-71539-6 MS
Matrix: Solid
Analysis Batch: 257364

Client Sample ID: EX-DB2-C8-10
Prep Type: Total/NA
Prep Batch: 257102

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	ND		557	413		mg/Kg	☼	74	70 - 125
Motor Oil (>C24-C36)	ND		557	465		mg/Kg	☼	83	64 - 127
Surrogate	%Recovery	MS Qualifier	Limits						
<i>o</i> -Terphenyl	78		50 - 150						

Lab Sample ID: 580-71539-6 MSD
Matrix: Solid
Analysis Batch: 257364

Client Sample ID: EX-DB2-C8-10
Prep Type: Total/NA
Prep Batch: 257102

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
#2 Diesel (C10-C24)	ND		568	478		mg/Kg	☼	84	70 - 125	15	16
Motor Oil (>C24-C36)	ND		568	549		mg/Kg	☼	97	64 - 127	17	17
Surrogate	%Recovery	MSD Qualifier	Limits								
<i>o</i> -Terphenyl	87		50 - 150								

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Client Sample ID: EX-DB2-C3-10

Date Collected: 09/22/17 07:55

Date Received: 09/23/17 09:50

Lab Sample ID: 580-71539-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257107	09/23/17 11:39	JWL	TAL SEA

Client Sample ID: EX-DB2-C3-10

Date Collected: 09/22/17 07:55

Date Received: 09/23/17 09:50

Lab Sample ID: 580-71539-1

Matrix: Solid

Percent Solids: 81.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257144	09/25/17 08:34	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257151	09/25/17 13:27	P1P	TAL SEA
Total/NA	Prep	5035			257123	09/24/17 09:13	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257198	09/25/17 17:34	RSB	TAL SEA
Total/NA	Prep	3546			257102	09/23/17 11:59	JWL	TAL SEA
Total/NA	Cleanup	3630C			257178	09/25/17 11:49	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257364	09/27/17 02:07	ADB	TAL SEA

Client Sample ID: EX-DB2-C4-10

Date Collected: 09/22/17 08:10

Date Received: 09/23/17 09:50

Lab Sample ID: 580-71539-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257107	09/23/17 11:39	JWL	TAL SEA

Client Sample ID: EX-DB2-C4-10

Date Collected: 09/22/17 08:10

Date Received: 09/23/17 09:50

Lab Sample ID: 580-71539-2

Matrix: Solid

Percent Solids: 70.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257144	09/25/17 08:34	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257151	09/25/17 13:53	P1P	TAL SEA
Total/NA	Prep	5035			257123	09/24/17 09:13	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257198	09/25/17 18:05	RSB	TAL SEA
Total/NA	Prep	3546			257102	09/23/17 11:59	JWL	TAL SEA
Total/NA	Cleanup	3630C			257178	09/25/17 11:49	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257364	09/27/17 02:27	ADB	TAL SEA

Client Sample ID: EX-DB2-C5-10

Date Collected: 09/22/17 08:30

Date Received: 09/23/17 09:50

Lab Sample ID: 580-71539-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257107	09/23/17 11:39	JWL	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Client Sample ID: EX-DB2-C5-10

Lab Sample ID: 580-71539-3

Date Collected: 09/22/17 08:30

Matrix: Solid

Date Received: 09/23/17 09:50

Percent Solids: 75.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257144	09/25/17 08:34	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257151	09/25/17 14:19	P1P	TAL SEA
Total/NA	Prep	5035			257123	09/24/17 09:13	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257198	09/25/17 18:35	RSB	TAL SEA
Total/NA	Prep	3546			257102	09/23/17 11:59	JWL	TAL SEA
Total/NA	Cleanup	3630C			257178	09/25/17 11:49	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257364	09/27/17 02:47	ADB	TAL SEA

Client Sample ID: EX-DB2-C6-10

Lab Sample ID: 580-71539-4

Date Collected: 09/22/17 08:45

Matrix: Solid

Date Received: 09/23/17 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257107	09/23/17 11:39	JWL	TAL SEA

Client Sample ID: EX-DB2-C6-10

Lab Sample ID: 580-71539-4

Date Collected: 09/22/17 08:45

Matrix: Solid

Date Received: 09/23/17 09:50

Percent Solids: 82.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257144	09/25/17 08:34	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257151	09/25/17 14:44	P1P	TAL SEA
Total/NA	Prep	5035			257123	09/24/17 09:13	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257198	09/25/17 19:06	RSB	TAL SEA
Total/NA	Prep	3546			257102	09/23/17 11:59	JWL	TAL SEA
Total/NA	Cleanup	3630C			257178	09/25/17 11:49	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257364	09/27/17 03:07	ADB	TAL SEA

Client Sample ID: EX-DB2-C7-11

Lab Sample ID: 580-71539-5

Date Collected: 09/22/17 13:10

Matrix: Solid

Date Received: 09/23/17 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257107	09/23/17 11:39	JWL	TAL SEA

Client Sample ID: EX-DB2-C7-11

Lab Sample ID: 580-71539-5

Date Collected: 09/22/17 13:10

Matrix: Solid

Date Received: 09/23/17 09:50

Percent Solids: 78.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257144	09/25/17 08:34	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257151	09/25/17 15:10	P1P	TAL SEA
Total/NA	Prep	5035			257123	09/24/17 09:13	JCV	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Client Sample ID: EX-DB2-C7-11

Lab Sample ID: 580-71539-5

Date Collected: 09/22/17 13:10

Matrix: Solid

Date Received: 09/23/17 09:50

Percent Solids: 78.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	257198	09/25/17 20:06	RSB	TAL SEA
Total/NA	Prep	3546			257102	09/23/17 11:59	JWL	TAL SEA
Total/NA	Cleanup	3630C			257178	09/25/17 11:49	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257364	09/27/17 03:27	ADB	TAL SEA

Client Sample ID: EX-DB2-C8-10

Lab Sample ID: 580-71539-6

Date Collected: 09/22/17 10:05

Matrix: Solid

Date Received: 09/23/17 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257107	09/23/17 11:39	JWL	TAL SEA

Client Sample ID: EX-DB2-C8-10

Lab Sample ID: 580-71539-6

Date Collected: 09/22/17 10:05

Matrix: Solid

Date Received: 09/23/17 09:50

Percent Solids: 78.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257144	09/25/17 08:34	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257151	09/25/17 15:36	P1P	TAL SEA
Total/NA	Prep	5035			257123	09/24/17 09:13	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257198	09/25/17 20:37	RSB	TAL SEA
Total/NA	Prep	3546			257102	09/23/17 11:59	JWL	TAL SEA
Total/NA	Cleanup	3630C			257178	09/25/17 11:49	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257364	09/27/17 03:46	ADB	TAL SEA

Client Sample ID: EX-DB2-D3-10

Lab Sample ID: 580-71539-7

Date Collected: 09/22/17 07:45

Matrix: Solid

Date Received: 09/23/17 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257107	09/23/17 11:39	JWL	TAL SEA

Client Sample ID: EX-DB2-D3-10

Lab Sample ID: 580-71539-7

Date Collected: 09/22/17 07:45

Matrix: Solid

Date Received: 09/23/17 09:50

Percent Solids: 77.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257144	09/25/17 08:34	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257151	09/25/17 16:54	P1P	TAL SEA
Total/NA	Prep	5035			257123	09/24/17 09:13	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257198	09/25/17 22:08	RSB	TAL SEA
Total/NA	Prep	3546			257102	09/23/17 11:59	JWL	TAL SEA
Total/NA	Cleanup	3630C			257178	09/25/17 11:49	MRG	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Client Sample ID: EX-DB2-D3-10

Lab Sample ID: 580-71539-7

Date Collected: 09/22/17 07:45

Matrix: Solid

Date Received: 09/23/17 09:50

Percent Solids: 77.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Dx		1	257364	09/27/17 04:45	ADB	TAL SEA

Client Sample ID: EX-DB2-F2-12

Lab Sample ID: 580-71539-8

Date Collected: 09/21/17 11:20

Matrix: Solid

Date Received: 09/23/17 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257107	09/23/17 11:39	JWL	TAL SEA

Client Sample ID: EX-DB2-F2-12

Lab Sample ID: 580-71539-8

Date Collected: 09/21/17 11:20

Matrix: Solid

Date Received: 09/23/17 09:50

Percent Solids: 92.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257144	09/25/17 08:34	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257151	09/25/17 17:20	P1P	TAL SEA
Total/NA	Prep	3546			257103	09/23/17 11:59	JWL	TAL SEA
Total/NA	Analysis	8270D SIM		1	257232	09/26/17 01:52	ERZ	TAL SEA
Total/NA	Prep	5035			257123	09/24/17 09:13	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257198	09/25/17 22:39	RSB	TAL SEA
Total/NA	Prep	3546			257102	09/23/17 11:59	JWL	TAL SEA
Total/NA	Cleanup	3630C			257178	09/25/17 11:49	MRG	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257364	09/27/17 05:05	ADB	TAL SEA

Client Sample ID: RB-092117

Lab Sample ID: 580-71539-9

Date Collected: 09/21/17 12:40

Matrix: Water

Date Received: 09/23/17 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	257188	09/25/17 12:51	RSB	TAL SEA

Client Sample ID: RB-092217

Lab Sample ID: 580-71539-10

Date Collected: 09/22/17 09:00

Matrix: Water

Date Received: 09/23/17 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	257188	09/25/17 13:23	RSB	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Client Sample ID: Trip Blank

Lab Sample ID: 580-71539-11

Date Collected: 09/21/17 00:01

Matrix: Solid

Date Received: 09/23/17 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257144	09/25/17 08:34	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257151	09/25/17 11:44	P1P	TAL SEA
Total/NA	Prep	5035			257123	09/24/17 09:13	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257198	09/25/17 15:32	RSB	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310



Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
ANAB	DoD ELAP		L2236	01-19-19
ANAB	ISO/IEC 17025		L2236	01-19-19
California	State Program	9	2901	01-31-18
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-18
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71539-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-71539-1	EX-DB2-C3-10	Solid	09/22/17 07:55	09/23/17 09:50
580-71539-2	EX-DB2-C4-10	Solid	09/22/17 08:10	09/23/17 09:50
580-71539-3	EX-DB2-C5-10	Solid	09/22/17 08:30	09/23/17 09:50
580-71539-4	EX-DB2-C6-10	Solid	09/22/17 08:45	09/23/17 09:50
580-71539-5	EX-DB2-C7-11	Solid	09/22/17 13:10	09/23/17 09:50
580-71539-6	EX-DB2-C8-10	Solid	09/22/17 10:05	09/23/17 09:50
580-71539-7	EX-DB2-D3-10	Solid	09/22/17 07:45	09/23/17 09:50
580-71539-8	EX-DB2-F2-12	Solid	09/21/17 11:20	09/23/17 09:50
580-71539-9	RB-092117	Water	09/21/17 12:40	09/23/17 09:50
580-71539-10	RB-092217	Water	09/22/17 09:00	09/23/17 09:50
580-71539-11	Trip Blank	Solid	09/21/17 00:01	09/23/17 09:50

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Loc: 580
71539

TestAmerica Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.testamericainc.com

Rush

Short Hold

Chain of Custody Record

Client Arcadis	Client Contact Ryan Brauchla	Date 9-22-2017	Chain of Custody Number 29433
Address 1100 Olive Way, Suite 800	Telephone Number (Area Code)/Fax Number 509-438-9828	Lab Number 253-922-2310	Page 1 of 1

City Seattle	State WA	Zip Code 98101	Sampler Ryan Brauchla (AB)	Lab Contact Elaine Walker	Analysis (Attach list if more space is needed)
Project Name and Location (State) Edmonds Terminal			Billing Contact		

Contract/Purchase Order/Quote No.
BC0045362.0010

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix				Containers & Preservatives										Special Instructions/ Conditions of Receipt					
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	MeOH	10%AL	NWTPH-GX	NWTPH-Dx w/SL		8260C (Benzene)	8270D (cPAHs)			
EX-DB2-C3-10	9-22-17	0755			X		2										2	X	X	X	*	Email results to: ryan.brauchla@arcadis.com samuel.miles@arcadis.com ophelie.encelle@arcadis.com scott.zorn@arcadis.com
EX-DB2-C4-10	9-22-17	0810			X		2										2	X	X	X	*	
EX-DB2-C5-10	9-22-17	0830			X		2										2	X	X	X	*	
EX-DB2-C6-10	9-22-17	0845			X		2										2	X	X	X	*	
EX-DB2-C7-11	9-22-17	1310			X		2										2	X	X	X	*	
EX-DB2-C8-10	9-22-17	1005			X		2										2	X	X	X	*	
EX-DB2-C8-10-MS	9-22-17	1005			X		2										2	X	X	X	*	
EX-DB2-C8-10-MSD	9-22-17	1005			X		2										2	X	X	X	*	
EX-DB2-D3-10	9-22-17	0745			X		2										2	X	X	X	*	* Analyze for cPAHs only if DRD/HD detected (extraction okay)
EX-DB2-F2-12	9-21-17	1120			X		2										2	X	X	X	*	
RB-092117	9-21-17	1240		X														X				NWENVPMG001430804 - Soil NWENVPMG001430803 - Surface water
RB-092217	9-22-17	0900		X														X				

Cooler <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Cooler Temp: _____	Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown	Sample Disposal <input type="checkbox"/> Return To Client <input type="checkbox"/> Archive For _____ Months	<input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Disposal For _____ Months (A fee may be assessed if samples are retained longer than 1 month)
--	--	--	---

Turn Around Time Required (business days) <input checked="" type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 5 Days <input type="checkbox"/> 10 Days <input type="checkbox"/> 15 Days <input type="checkbox"/> Other _____	QC Requirements (Specify) Analyze trip blank for NWTPH-GX/8260C (Benzene)
--	---

1. Relinquished By Sign/Print Ryan Brauchla / Ryan Brauchla	Date 9-22-17	Time 1600	1. Received By Sign/Print FedEx	Date 9-22-17	Time 1600
2. Relinquished By Sign/Print _____	Date _____	Time _____	2. Received By Sign/Print B. Stahl B. Gall SEA-ITA	Date 9/23/17	Time 0950
3. Relinquished By Sign/Print _____	Date _____	Time _____	3. Received By Sign/Print _____	Date _____	Time _____

Comments: **TB ^{M2} Cooler Cor - 0.2 Unc 0.5 Cooler Disc by Green @ Lab 6950 Wet Packs Packing (small) Fed set Custody Seal Page 29 of 30**

DISTRIBUTION: WHITE - Stays with the Samples; CANARY - Returned to _____

TAL-8274-580 (0210)
11/22/2017 (Rev. 2)

580-71539 Chain of Custody

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-71539-1

Login Number: 71539
List Number: 1
Creator: Gall, Brandon A

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
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	Received Trip Blank(s) not listed on COC.
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	Refer to Job Narrative for details.
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	Preservation labels on samples match COC
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-71582-1
Client Project/Site: Edmonds Terminal

For:
ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
9/27/2017 3:51:48 PM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71582-1

Job ID: 580-71582-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE **Client: ARCADIS U.S. Inc** **Project: Edmonds Terminal** **Report Number: 580-71582-1**

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

Three samples were received on 9/26/2017 12:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.5° C.

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)

Samples EX-DB2-A2-6-SW (580-71582-1) and TB-092517 (soil) (580-71582-3) were analyzed for volatile organic compounds (GC) in accordance with 8260. The samples were prepared and analyzed on 09/26/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO) - SOIL

Samples EX-DB2-A2-6-SW (580-71582-1) and TB-092517 (soil) (580-71582-3) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were prepared on 09/26/2017 and analyzed on 09/26/2017 and 09/27/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO) - WATER

Sample RB-092517 (580-71582-2) was analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were analyzed on 09/26/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL AND EXTENDED RANGE ORGANICS

Sample EX-DB2-A2-6-SW (580-71582-1) was analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared and analyzed on 09/26/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71582-1

Job ID: 580-71582-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

Sample EX-DB2-A2-6-SW (580-71582-1) was analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 09/26/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

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Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71582-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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 Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71582-1

Client Sample ID: EX-DB2-A2-6-SW

Lab Sample ID: 580-71582-1

Date Collected: 09/25/17 16:00

Matrix: Solid

Date Received: 09/26/17 12:00

Percent Solids: 68.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		36	15	ug/Kg	☼	09/26/17 13:25	09/26/17 17:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		75 - 120				09/26/17 13:25	09/26/17 17:07	1
Trifluorotoluene (Surr)	97		60 - 150				09/26/17 13:25	09/26/17 17:07	1
4-Bromofluorobenzene (Surr)	101		47 - 150				09/26/17 13:25	09/26/17 17:07	1
Dibromofluoromethane (Surr)	111		80 - 118				09/26/17 13:25	09/26/17 17:07	1
1,2-Dichloroethane-d4 (Surr)	114		80 - 121				09/26/17 13:25	09/26/17 17:07	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		7.2	3.8	mg/Kg	☼	09/26/17 12:58	09/27/17 00:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		50 - 150				09/26/17 12:58	09/27/17 00:25	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		67	16	mg/Kg	☼	09/26/17 12:40	09/26/17 21:29	1
Motor Oil (>C24-C36)	22	J	67	12	mg/Kg	☼	09/26/17 12:40	09/26/17 21:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	82		50 - 150				09/26/17 12:40	09/26/17 21:29	1
n-Decanoic Acid (Surr)	0.0008		0 - 1				09/26/17 12:40	09/26/17 21:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	68.7		0.1	0.1	%			09/26/17 13:04	1
Percent Moisture	31.3		0.1	0.1	%			09/26/17 13:04	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71582-1

Client Sample ID: RB-092517

Lab Sample ID: 580-71582-2

Date Collected: 09/25/17 16:30

Matrix: Water

Date Received: 09/26/17 12:00

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/26/17 14:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		58 - 133					09/26/17 14:20	1
Trifluorotoluene (Surr)	94		77 - 128					09/26/17 14:20	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71582-1

Client Sample ID: TB-092517 (soil)

Lab Sample ID: 580-71582-3

Date Collected: 09/25/17 00:01

Matrix: Solid

Date Received: 09/26/17 12:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/26/17 13:25	09/26/17 16:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		75 - 120				09/26/17 13:25	09/26/17 16:41	1
Trifluorotoluene (Surr)	102		60 - 150				09/26/17 13:25	09/26/17 16:41	1
4-Bromofluorobenzene (Surr)	99		47 - 150				09/26/17 13:25	09/26/17 16:41	1
Dibromofluoromethane (Surr)	107		80 - 118				09/26/17 13:25	09/26/17 16:41	1
1,2-Dichloroethane-d4 (Surr)	118		80 - 121				09/26/17 13:25	09/26/17 16:41	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		3.9	2.0	mg/Kg		09/26/17 12:58	09/26/17 23:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		50 - 150				09/26/17 12:58	09/26/17 23:53	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71582-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-257309/1-A
Matrix: Solid
Analysis Batch: 257319

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257309

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/26/17 13:25	09/26/17 15:24	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		75 - 120	09/26/17 13:25	09/26/17 15:24	1
Trifluorotoluene (Surr)	105		60 - 150	09/26/17 13:25	09/26/17 15:24	1
4-Bromofluorobenzene (Surr)	101		47 - 150	09/26/17 13:25	09/26/17 15:24	1
Dibromofluoromethane (Surr)	113		80 - 118	09/26/17 13:25	09/26/17 15:24	1
1,2-Dichloroethane-d4 (Surr)	119		80 - 121	09/26/17 13:25	09/26/17 15:24	1

Lab Sample ID: LCS 580-257309/2-A
Matrix: Solid
Analysis Batch: 257319

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257309

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzene	800	922		ug/Kg		115	79 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	105		75 - 120
Trifluorotoluene (Surr)	101		60 - 150
4-Bromofluorobenzene (Surr)	98		47 - 150
Dibromofluoromethane (Surr)	107		80 - 118
1,2-Dichloroethane-d4 (Surr)	110		80 - 121

Lab Sample ID: LCSD 580-257309/3-A
Matrix: Solid
Analysis Batch: 257319

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 257309

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	800	916		ug/Kg		115	79 - 135	1	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	100		75 - 120
Trifluorotoluene (Surr)	103		60 - 150
4-Bromofluorobenzene (Surr)	100		47 - 150
Dibromofluoromethane (Surr)	110		80 - 118
1,2-Dichloroethane-d4 (Surr)	116		80 - 121

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-257293/6
Matrix: Water
Analysis Batch: 257293

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/26/17 11:02	1

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71582-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-257293/6
Matrix: Water
Analysis Batch: 257293

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		58 - 133		09/26/17 11:02	1
Trifluorotoluene (Surr)	104		77 - 128		09/26/17 11:02	1

Lab Sample ID: LCS 580-257293/7
Matrix: Water
Analysis Batch: 257293

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	0.901		mg/L		90	79 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		58 - 133
Trifluorotoluene (Surr)	99		77 - 128

Lab Sample ID: LCSD 580-257293/8
Matrix: Water
Analysis Batch: 257293

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	0.895		mg/L		90	79 - 110	1	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		58 - 133
Trifluorotoluene (Surr)	98		77 - 128

Lab Sample ID: MB 580-257301/1-A
Matrix: Solid
Analysis Batch: 257315

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257301

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		09/26/17 12:58	09/26/17 22:17	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		50 - 150	09/26/17 12:58	09/26/17 22:17	1

Lab Sample ID: LCS 580-257301/2-A
Matrix: Solid
Analysis Batch: 257315

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257301

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	40.0	37.9		mg/Kg		95	68 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		50 - 150

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71582-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 580-257301/3-A
Matrix: Solid
Analysis Batch: 257315

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 257301

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline	40.0	37.9		mg/Kg		95	68 - 120	0	25
		LCS	LCS						
Surrogate	%Recovery	Qualifier	Limits						
4-Bromofluorobenzene (Surr)	98		50 - 150						

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-257298/1-B
Matrix: Solid
Analysis Batch: 257364

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257298

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		09/26/17 12:40	09/26/17 20:30	1
Motor Oil (>C24-C36)	ND		50	9.1	mg/Kg		09/26/17 12:40	09/26/17 20:30	1
		MB	MB						
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	89		50 - 150				09/26/17 12:40	09/26/17 20:30	1
n-Decanoic Acid (Surr)	0.00006		0 - 1				09/26/17 12:40	09/26/17 20:30	1

Lab Sample ID: LCS 580-257298/2-B
Matrix: Solid
Analysis Batch: 257364

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257298

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	500	425		mg/Kg		85	64 - 127
Motor Oil (>C24-C36)	500	481		mg/Kg		96	70 - 125
		LCS	LCS				
Surrogate	%Recovery	Qualifier	Limits				
o-Terphenyl	80		50 - 150				
n-Decanoic Acid (Surr)	0.09		0 - 1				

Lab Sample ID: LCSD 580-257298/3-B
Matrix: Solid
Analysis Batch: 257364

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 257298

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	500	396		mg/Kg		79	64 - 127	7	16
Motor Oil (>C24-C36)	500	448		mg/Kg		90	70 - 125	7	17
		LCS	LCS						
Surrogate	%Recovery	Qualifier	Limits						
o-Terphenyl	77		50 - 150						
n-Decanoic Acid (Surr)	0.08		0 - 1						

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71582-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 580-71582-1 DU

Matrix: Solid

Analysis Batch: 257364

Client Sample ID: EX-DB2-A2-6-SW

Prep Type: Total/NA

Prep Batch: 257298

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD	Limit
	Result	Qualifier	Result	Qualifier					
#2 Diesel (C10-C24)	ND		ND		mg/Kg	☼		NC	35
Motor Oil (>C24-C36)	22	J	ND		mg/Kg	☼		NC	35

Surrogate	DU	DU	Limits
	%Recovery	Qualifier	
<i>o</i> -Terphenyl	76		50 - 150
<i>n</i> -Decanoic Acid (Surr)	0.0003		0 - 1

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71582-1 DU

Matrix: Solid

Analysis Batch: 257304

Client Sample ID: EX-DB2-A2-6-SW

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD	Limit
	Result	Qualifier	Result	Qualifier					
Percent Solids	68.7		64.5		%			6	20
Percent Moisture	31.3		35.5		%			13	20

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71582-1

Client Sample ID: EX-DB2-A2-6-SW

Date Collected: 09/25/17 16:00

Date Received: 09/26/17 12:00

Lab Sample ID: 580-71582-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257304	09/26/17 13:04	REY	TAL SEA

Client Sample ID: EX-DB2-A2-6-SW

Date Collected: 09/25/17 16:00

Date Received: 09/26/17 12:00

Lab Sample ID: 580-71582-1

Matrix: Solid

Percent Solids: 68.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257309	09/26/17 13:25	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257319	09/26/17 17:07	TL1	TAL SEA
Total/NA	Prep	5035			257301	09/26/17 12:58	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257315	09/27/17 00:25	CJ	TAL SEA
Total/NA	Prep	3546			257298	09/26/17 12:40	REY	TAL SEA
Total/NA	Cleanup	3630C			257356	09/26/17 16:15	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257364	09/26/17 21:29	ADB	TAL SEA

Client Sample ID: RB-092517

Date Collected: 09/25/17 16:30

Date Received: 09/26/17 12:00

Lab Sample ID: 580-71582-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	257293	09/26/17 14:20	TL1	TAL SEA

Client Sample ID: TB-092517 (soil)

Date Collected: 09/25/17 00:01

Date Received: 09/26/17 12:00

Lab Sample ID: 580-71582-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257309	09/26/17 13:25	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257319	09/26/17 16:41	TL1	TAL SEA
Total/NA	Prep	5035			257301	09/26/17 12:58	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257315	09/26/17 23:53	CJ	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71582-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
California	State Program	9	2901	01-31-18
L-A-B	DoD ELAP		L2236	01-19-19
L-A-B	ISO/IEC 17025		L2236	01-19-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-17
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71582-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-71582-1	EX-DB2-A2-6-SW	Solid	09/25/17 16:00	09/26/17 12:00
580-71582-2	RB-092517	Water	09/25/17 16:30	09/26/17 12:00
580-71582-3	TB-092517 (soil)	Solid	09/25/17 00:01	09/26/17 12:00

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Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-71582-1

Login Number: 71582

List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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	Additional labels placed on tared vials.
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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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: 580-71607-1

Client Project/Site: Edmonds Terminal

For:

ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
9/29/2017 10:08:22 AM

Elaine Walker, Project Manager II
(253)248-4972

elaine.walker@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71607-1

Job ID: 580-71607-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE **Client: ARCADIS U.S. Inc** **Project: Edmonds Terminal** **Report Number: 580-71607-1**

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

Three samples were received on 9/27/2017 11:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.1° C.

The following sample was received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results. EX-DB2-E2-10 (580-71607-1).

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)

Samples EX-DB2-E2-10 (580-71607-1) and TB-092617 (580-71607-3) were analyzed for volatile organic compounds (GC) in accordance with 8260. The samples were prepared and analyzed on 09/27/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO) - SOIL

Samples EX-DB2-E2-10 (580-71607-1) and TB-092617 (580-71607-3) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were prepared on 09/27/2017 and analyzed on 09/28/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO) - WATER

Sample RB-092617 (580-71607-2) was analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were analyzed on 09/27/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL AND EXTENDED RANGE ORGANICS

Sample EX-DB2-E2-10 (580-71607-1) was analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared on 09/27/2017 and analyzed on 09/28/2017.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71607-1

Job ID: 580-71607-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

#2 Diesel (C10-C24) failed the recovery criteria low for LCSD 580-257428/3-C. #2 Diesel (C10-C24) and Motor Oil (>C24-C36) exceeded the RPD limit. The LCSD recovered below %R acceptance limits for DRO (nC10-nC24, 1% low) and above %RPD control limits. Previous analysis was performed with a passing LCSD for these criteria, therefore the data is reported per client approval.

The continuing calibration verification (CCV) associated with batch 580-257523 recovered above the upper control limit for Motor Oil. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Sample EX-DB2-E2-10 (580-71607-1) was analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 09/27/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71607-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
*	RPD of the LCS and LCSD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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 Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71607-1

Client Sample ID: EX-DB2-E2-10

Lab Sample ID: 580-71607-1

Date Collected: 09/26/17 16:10

Matrix: Solid

Date Received: 09/27/17 11:00

Percent Solids: 79.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		27	12	ug/Kg	☼	09/27/17 12:15	09/27/17 14:43	1
Surrogate									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		75 - 120				09/27/17 12:15	09/27/17 14:43	1
Trifluorotoluene (Surr)	102		60 - 150				09/27/17 12:15	09/27/17 14:43	1
4-Bromofluorobenzene (Surr)	100		47 - 150				09/27/17 12:15	09/27/17 14:43	1
Dibromofluoromethane (Surr)	109		80 - 118				09/27/17 12:15	09/27/17 14:43	1
1,2-Dichloroethane-d4 (Surr)	115		80 - 121				09/27/17 12:15	09/27/17 14:43	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.4	2.8	mg/Kg	☼	09/27/17 12:52	09/28/17 03:22	1
Surrogate									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		50 - 150				09/27/17 12:52	09/28/17 03:22	1
Trifluorotoluene (Surr)							09/27/17 12:52	09/28/17 03:22	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND	*	63	16	mg/Kg	☼	09/27/17 11:35	09/28/17 16:02	1
Motor Oil (>C24-C36)	ND	*	63	11	mg/Kg	☼	09/27/17 11:35	09/28/17 16:02	1
Surrogate									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	74		50 - 150				09/27/17 11:35	09/28/17 16:02	1
n-Decanoic Acid (Surr)	0.0001		0 - 1				09/27/17 11:35	09/28/17 16:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	79.1		0.1	0.1	%			09/27/17 12:15	1
Percent Moisture	20.9		0.1	0.1	%			09/27/17 12:15	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71607-1

Client Sample ID: RB-092617

Lab Sample ID: 580-71607-2

Date Collected: 09/26/17 16:30

Matrix: Water

Date Received: 09/27/17 11:00

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/27/17 15:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		58 - 133					09/27/17 15:43	1
Trifluorotoluene (Surr)	111		77 - 128					09/27/17 15:43	1

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Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71607-1

Client Sample ID: TB-092617

Lab Sample ID: 580-71607-3

Date Collected: 09/26/17 00:01

Matrix: Solid

Date Received: 09/27/17 11:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/27/17 12:15	09/27/17 14:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		75 - 120	09/27/17 12:15	09/27/17 14:17	1
Trifluorotoluene (Surr)	100		60 - 150	09/27/17 12:15	09/27/17 14:17	1
4-Bromofluorobenzene (Surr)	101		47 - 150	09/27/17 12:15	09/27/17 14:17	1
Dibromofluoromethane (Surr)	109		80 - 118	09/27/17 12:15	09/27/17 14:17	1
1,2-Dichloroethane-d4 (Surr)	115		80 - 121	09/27/17 12:15	09/27/17 14:17	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		09/27/17 12:52	09/28/17 02:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		50 - 150	09/27/17 12:52	09/28/17 02:51	1
Trifluorotoluene (Surr)				09/27/17 12:52	09/28/17 02:51	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71607-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-257436/1-A
Matrix: Solid
Analysis Batch: 257443

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257436

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/27/17 12:15	09/27/17 13:01	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		75 - 120	09/27/17 12:15	09/27/17 13:01	1
Trifluorotoluene (Surr)	101		60 - 150	09/27/17 12:15	09/27/17 13:01	1
4-Bromofluorobenzene (Surr)	96		47 - 150	09/27/17 12:15	09/27/17 13:01	1
Dibromofluoromethane (Surr)	105		80 - 118	09/27/17 12:15	09/27/17 13:01	1
1,2-Dichloroethane-d4 (Surr)	117		80 - 121	09/27/17 12:15	09/27/17 13:01	1

Lab Sample ID: LCS 580-257436/2-A
Matrix: Solid
Analysis Batch: 257443

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257436

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzene	800	916		ug/Kg		115	79 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	100		75 - 120
Trifluorotoluene (Surr)	103		60 - 150
4-Bromofluorobenzene (Surr)	98		47 - 150
Dibromofluoromethane (Surr)	109		80 - 118
1,2-Dichloroethane-d4 (Surr)	109		80 - 121

Lab Sample ID: LCSD 580-257436/3-A
Matrix: Solid
Analysis Batch: 257443

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 257436

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	800	942		ug/Kg		118	79 - 135	3	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	99		75 - 120
Trifluorotoluene (Surr)	105		60 - 150
4-Bromofluorobenzene (Surr)	98		47 - 150
Dibromofluoromethane (Surr)	108		80 - 118
1,2-Dichloroethane-d4 (Surr)	117		80 - 121

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-257440/6
Matrix: Water
Analysis Batch: 257440

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/27/17 14:08	1

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71607-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-257440/6
Matrix: Water
Analysis Batch: 257440

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		58 - 133		09/27/17 14:08	1
Trifluorotoluene (Surr)	110		77 - 128		09/27/17 14:08	1

Lab Sample ID: LCS 580-257440/7
Matrix: Water
Analysis Batch: 257440

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	0.886		mg/L		89	79 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		58 - 133
Trifluorotoluene (Surr)	98		77 - 128

Lab Sample ID: LCSD 580-257440/8
Matrix: Water
Analysis Batch: 257440

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	0.887		mg/L		89	79 - 110	0	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		58 - 133
Trifluorotoluene (Surr)	96		77 - 128

Lab Sample ID: MB 580-257446/1-A
Matrix: Solid
Analysis Batch: 257452

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257446

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		09/27/17 12:52	09/28/17 01:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		50 - 150	09/27/17 12:52	09/28/17 01:15	1
Trifluorotoluene (Surr)	107		50 - 150	09/27/17 12:52	09/28/17 01:15	1

Lab Sample ID: LCS 580-257446/2-A
Matrix: Solid
Analysis Batch: 257452

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257446

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	40.0	36.5		mg/Kg		91	68 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		50 - 150
Trifluorotoluene (Surr)	104		50 - 150

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71607-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 580-257446/3-A

Matrix: Solid

Analysis Batch: 257452

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 257446

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Gasoline	40.0	37.7		mg/Kg		94	68 - 120	3	25
Surrogate	%Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	96		50 - 150						
Trifluorotoluene (Surr)	106		50 - 150						

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-257428/1-C

Matrix: Solid

Analysis Batch: 257523

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 257428

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		09/27/17 11:35	09/28/17 14:58	1
Motor Oil (>C24-C36)	ND		50	9.1	mg/Kg		09/27/17 11:35	09/28/17 14:58	1
Surrogate	%Recovery	MB Qualifier	Limits						
o-Terphenyl	82		50 - 150						
n-Decanoic Acid (Surr)	0.00008		0 - 1						

Lab Sample ID: LCS 580-257428/2-C

Matrix: Solid

Analysis Batch: 257523

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 257428

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)	500	385		mg/Kg		77	64 - 127		
Motor Oil (>C24-C36)	500	440		mg/Kg		88	70 - 125		
Surrogate	%Recovery	LCS Qualifier	Limits						
o-Terphenyl	66		50 - 150						
n-Decanoic Acid (Surr)	0.08		0 - 1						

Lab Sample ID: LCSD 580-257428/3-C

Matrix: Solid

Analysis Batch: 257523

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 257428

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
#2 Diesel (C10-C24)	500	317	*	mg/Kg		63	64 - 127	19	16
Motor Oil (>C24-C36)	500	364	*	mg/Kg		73	70 - 125	19	17
Surrogate	%Recovery	LCSD Qualifier	Limits						
o-Terphenyl	61		50 - 150						
n-Decanoic Acid (Surr)	0.07		0 - 1						

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71607-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 580-71607-1 DU
 Matrix: Solid
 Analysis Batch: 257523

Client Sample ID: EX-DB2-E2-10
 Prep Type: Total/NA
 Prep Batch: 257428

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD	Limit
	Result	Qualifier	Result	Qualifier					
#2 Diesel (C10-C24)	ND	*	ND	*	mg/Kg	☼	NC	35	
Motor Oil (>C24-C36)	ND	*	ND	*	mg/Kg	☼	NC	35	

Surrogate	DU	DU	Limits
	%Recovery	Qualifier	
<i>o</i> -Terphenyl	79		50 - 150
<i>n</i> -Decanoic Acid (Surr)	0.0008		0 - 1

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71607-1 DU
 Matrix: Solid
 Analysis Batch: 257435

Client Sample ID: EX-DB2-E2-10
 Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD	Limit
	Result	Qualifier	Result	Qualifier					
Percent Solids	79.1		76.0		%		4	20	
Percent Moisture	20.9		24.0		%		14	20	

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71607-1

Client Sample ID: EX-DB2-E2-10

Date Collected: 09/26/17 16:10

Date Received: 09/27/17 11:00

Lab Sample ID: 580-71607-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257435	09/27/17 12:15	REY	TAL SEA

Client Sample ID: EX-DB2-E2-10

Date Collected: 09/26/17 16:10

Date Received: 09/27/17 11:00

Lab Sample ID: 580-71607-1

Matrix: Solid

Percent Solids: 79.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257436	09/27/17 12:15	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257443	09/27/17 14:43	JSM	TAL SEA
Total/NA	Prep	5035			257446	09/27/17 12:52	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257452	09/28/17 03:22	RSB	TAL SEA
Total/NA	Prep	3546			257428	09/27/17 11:35	REY	TAL SEA
Total/NA	Cleanup	3630C			257528	09/28/17 11:49	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257523	09/28/17 16:02	ADB	TAL SEA

Client Sample ID: RB-092617

Date Collected: 09/26/17 16:30

Date Received: 09/27/17 11:00

Lab Sample ID: 580-71607-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	257440	09/27/17 15:43	CJ	TAL SEA

Client Sample ID: TB-092617

Date Collected: 09/26/17 00:01

Date Received: 09/27/17 11:00

Lab Sample ID: 580-71607-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257436	09/27/17 12:15	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257443	09/27/17 14:17	JSM	TAL SEA
Total/NA	Prep	5035			257446	09/27/17 12:52	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257452	09/28/17 02:51	RSB	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71607-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
California	State Program	9	2901	01-31-18
L-A-B	DoD ELAP		L2236	01-19-19
L-A-B	ISO/IEC 17025		L2236	01-19-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-17
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71607-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-71607-1	EX-DB2-E2-10	Solid	09/26/17 16:10	09/27/17 11:00
580-71607-2	RB-092617	Water	09/26/17 16:30	09/27/17 11:00
580-71607-3	TB-092617	Solid	09/26/17 00:01	09/27/17 11:00

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Rush

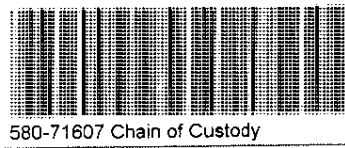
Short Hold

Chain of Custody Record

Client Arcadis			Client Contact Ryan Brauchle			Date 9-27-2017		Chain of Custody Number 29427	
Address 1100 Olive Way, Suite 800			Telephone Number (Area Code)/Fax Number 509-438-9828			Lab Number 253-922-2310		Page 1 of 1	

City Seattle		State WA	Zip Code 98101	Sampler Ryan Brauchle (RB)	Lab Contact Elaine Walker	Analysis (Attach list if more space is needed)				Special Instructions/ Conditions of Receipt
Project Name and Location (State) Edmonds Terminal			Billing Contact							
Contract/Purchase Order/Quote No. B0045362.0010										

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix				Containers & Preservatives											Special Instructions/ Conditions of Receipt						
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	MeOH	MeOH 10:1	NWPT-Gr	NWTPH-Dr w/SK	BZOC (Benzene)		BZPOP SIM (PAHs)					
EX-DB2-E2-10	9-26-17	1610			X		2																	Email results to: ophelie.exelle@arcadis.com ryan.brauchle@arcadis.com samuel.miles@arcadis.com scott.zorn@arcadis.com
RB-092617	9-26-17	1630		X						2														
TB-092617	9-26-17	-			X									1		X								



TB A2 Cooler Cor 1.1 Unc 1.8
 Cooler Dsc Ly Blue @ Lab
 Wet/Packs Packing 6ub
 lab Cov

WBS Codes:
 NWENVPM6001430804-Soil
 NWENVPM6001430803-Surface water

Cooler <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Cooler Temp: _____		Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown				Sample Disposal <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab		<input type="checkbox"/> Archive For _____ Months		(A fee may be assessed if samples are retained longer than 1 month)	
--	--	---	--	--	--	--	--	---	--	---	--

Turn Around Time Required (business days) <input checked="" type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 5 Days <input type="checkbox"/> 10 Days <input type="checkbox"/> 15 Days <input type="checkbox"/> Other _____					QC Requirements (Specify)				
--	--	--	--	--	---------------------------	--	--	--	--

1. Relinquished By Sign/Print Ryan Brauchle / Ryan W Brauchle	Date 9-27-2017	Time 0945	1. Received By Sign/Print Francisco Luna, Jr	Date 9/27/17	Time 0945
2. Relinquished By Sign/Print Francisco Luna, Jr	Date 9/27/17	Time 1120	2. Received By Sign/Print Tom Blanton	Date 9/27/17	Time 1120
3. Relinquished By Sign/Print	Date	Time	3. Received By Sign/Print	Date	Time

Comments

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-71607-1

Login Number: 71607

List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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	Additional labels applied to tared vials.
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	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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: 580-71638-1

Client Project/Site: Edmonds Terminal

For:

ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
9/29/2017 5:44:36 PM

Elaine Walker, Project Manager II
(253)248-4972

elaine.walker@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Job ID: 580-71638-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE Client: ARCADIS U.S. Inc Project: Edmonds Terminal Report Number: 580-71638-1

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

Seven samples were received on 9/28/2017 11:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.4° C.

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)

Samples EX-DB2-D4-10 (580-71638-1), EX-DB2-D5-10 (580-71638-2), EX-DB2-D6-10 (580-71638-3), EX-DB2-D7-11 (580-71638-4), EX-DB2-D8-10 (580-71638-5) and TB-092717 (580-71638-7) were analyzed for volatile organic compounds (GC) in accordance with 8260. The samples were prepared and analyzed on 09/28/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO)

Samples EX-DB2-D4-10 (580-71638-1), EX-DB2-D5-10 (580-71638-2), EX-DB2-D6-10 (580-71638-3), EX-DB2-D7-11 (580-71638-4), EX-DB2-D8-10 (580-71638-5) and TB-092717 (580-71638-7) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were prepared and analyzed on 09/29/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO)

Sample RB-092717 (580-71638-6) was analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were analyzed on 09/28/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL AND EXTENDED RANGE ORGANICS

Samples EX-DB2-D4-10 (580-71638-1), EX-DB2-D5-10 (580-71638-2), EX-DB2-D6-10 (580-71638-3), EX-DB2-D7-11 (580-71638-4) and EX-DB2-D8-10 (580-71638-5) were analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared on 09/28/2017 and analyzed on 09/29/2017.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Job ID: 580-71638-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

The continuing calibration verification (CCV) associated with batch 580-257523 recovered above the upper control limit for Motor Oil. The samples associated with this CCV were non-detects for the affected analytes above the reporting limit; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples EX-DB2-D4-10 (580-71638-1), EX-DB2-D5-10 (580-71638-2), EX-DB2-D6-10 (580-71638-3), EX-DB2-D7-11 (580-71638-4) and EX-DB2-D8-10 (580-71638-5) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 09/28/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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 Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Client Sample ID: EX-DB2-D4-10

Lab Sample ID: 580-71638-1

Date Collected: 09/27/17 10:15

Matrix: Solid

Date Received: 09/28/17 11:45

Percent Solids: 74.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		29	12	ug/Kg	☼	09/28/17 14:36	09/28/17 21:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		75 - 120				09/28/17 14:36	09/28/17 21:44	1
Trifluorotoluene (Surr)	104		60 - 150				09/28/17 14:36	09/28/17 21:44	1
4-Bromofluorobenzene (Surr)	101		47 - 150				09/28/17 14:36	09/28/17 21:44	1
Dibromofluoromethane (Surr)	110		80 - 118				09/28/17 14:36	09/28/17 21:44	1
1,2-Dichloroethane-d4 (Surr)	116		80 - 121				09/28/17 14:36	09/28/17 21:44	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.8	3.0	mg/Kg	☼	09/29/17 09:16	09/29/17 13:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		50 - 150				09/29/17 09:16	09/29/17 13:00	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		60	15	mg/Kg	☼	09/28/17 11:48	09/29/17 04:03	1
Motor Oil (>C24-C36)	ND		60	11	mg/Kg	☼	09/28/17 11:48	09/29/17 04:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150				09/28/17 11:48	09/29/17 04:03	1
n-Decanoic Acid (Surr)	0		0 - 1				09/28/17 11:48	09/29/17 04:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	74.3		0.1	0.1	%			09/28/17 11:59	1
Percent Moisture	25.7		0.1	0.1	%			09/28/17 11:59	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Client Sample ID: EX-DB2-D5-10

Lab Sample ID: 580-71638-2

Date Collected: 09/27/17 11:15

Matrix: Solid

Date Received: 09/28/17 11:45

Percent Solids: 79.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		25	11	ug/Kg	☼	09/28/17 14:36	09/28/17 22:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		75 - 120				09/28/17 14:36	09/28/17 22:10	1
Trifluorotoluene (Surr)	102		60 - 150				09/28/17 14:36	09/28/17 22:10	1
4-Bromofluorobenzene (Surr)	100		47 - 150				09/28/17 14:36	09/28/17 22:10	1
Dibromofluoromethane (Surr)	106		80 - 118				09/28/17 14:36	09/28/17 22:10	1
1,2-Dichloroethane-d4 (Surr)	116		80 - 121				09/28/17 14:36	09/28/17 22:10	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	2.6	mg/Kg	☼	09/29/17 09:16	09/29/17 13:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150				09/29/17 09:16	09/29/17 13:31	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	20	J	46	11	mg/Kg	☼	09/28/17 11:48	09/29/17 04:24	1
Motor Oil (>C24-C36)	15	J	46	8.4	mg/Kg	☼	09/28/17 11:48	09/29/17 04:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	94		50 - 150				09/28/17 11:48	09/29/17 04:24	1
n-Decanoic Acid (Surr)	0.002		0 - 1				09/28/17 11:48	09/29/17 04:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	79.1		0.1	0.1	%			09/28/17 11:59	1
Percent Moisture	20.9		0.1	0.1	%			09/28/17 11:59	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Client Sample ID: EX-DB2-D6-10

Lab Sample ID: 580-71638-3

Date Collected: 09/27/17 14:30

Matrix: Solid

Date Received: 09/28/17 11:45

Percent Solids: 76.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		26	11	ug/Kg	☼	09/28/17 14:36	09/28/17 22:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		75 - 120				09/28/17 14:36	09/28/17 22:35	1
Trifluorotoluene (Surr)	107		60 - 150				09/28/17 14:36	09/28/17 22:35	1
4-Bromofluorobenzene (Surr)	100		47 - 150				09/28/17 14:36	09/28/17 22:35	1
Dibromofluoromethane (Surr)	112		80 - 118				09/28/17 14:36	09/28/17 22:35	1
1,2-Dichloroethane-d4 (Surr)	120		80 - 121				09/28/17 14:36	09/28/17 22:35	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.2	2.7	mg/Kg	☼	09/29/17 09:16	09/29/17 14:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		50 - 150				09/29/17 09:16	09/29/17 14:03	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		44	11	mg/Kg	☼	09/28/17 11:48	09/29/17 04:45	1
Motor Oil (>C24-C36)	ND		44	7.9	mg/Kg	☼	09/28/17 11:48	09/29/17 04:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	93		50 - 150				09/28/17 11:48	09/29/17 04:45	1
n-Decanoic Acid (Surr)	0.0001		0 - 1				09/28/17 11:48	09/29/17 04:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	76.6		0.1	0.1	%			09/28/17 11:59	1
Percent Moisture	23.4		0.1	0.1	%			09/28/17 11:59	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Client Sample ID: EX-DB2-D7-11

Lab Sample ID: 580-71638-4

Date Collected: 09/27/17 15:10

Matrix: Solid

Date Received: 09/28/17 11:45

Percent Solids: 76.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		26	11	ug/Kg	☼	09/28/17 14:36	09/28/17 23:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		75 - 120				09/28/17 14:36	09/28/17 23:01	1
Trifluorotoluene (Surr)	102		60 - 150				09/28/17 14:36	09/28/17 23:01	1
4-Bromofluorobenzene (Surr)	101		47 - 150				09/28/17 14:36	09/28/17 23:01	1
Dibromofluoromethane (Surr)	105		80 - 118				09/28/17 14:36	09/28/17 23:01	1
1,2-Dichloroethane-d4 (Surr)	120		80 - 121				09/28/17 14:36	09/28/17 23:01	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.2	2.7	mg/Kg	☼	09/29/17 09:16	09/29/17 14:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150				09/29/17 09:16	09/29/17 14:35	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		58	14	mg/Kg	☼	09/28/17 11:48	09/29/17 05:05	1
Motor Oil (>C24-C36)	ND		58	11	mg/Kg	☼	09/28/17 11:48	09/29/17 05:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	78		50 - 150				09/28/17 11:48	09/29/17 05:05	1
n-Decanoic Acid (Surr)	0.0001		0 - 1				09/28/17 11:48	09/29/17 05:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	76.1		0.1	0.1	%			09/28/17 11:59	1
Percent Moisture	23.9		0.1	0.1	%			09/28/17 11:59	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Client Sample ID: EX-DB2-D8-10

Lab Sample ID: 580-71638-5

Date Collected: 09/27/17 16:20

Matrix: Solid

Date Received: 09/28/17 11:45

Percent Solids: 79.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		25	11	ug/Kg	☼	09/28/17 14:36	09/28/17 23:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		75 - 120				09/28/17 14:36	09/28/17 23:27	1
Trifluorotoluene (Surr)	102		60 - 150				09/28/17 14:36	09/28/17 23:27	1
4-Bromofluorobenzene (Surr)	98		47 - 150				09/28/17 14:36	09/28/17 23:27	1
Dibromofluoromethane (Surr)	109		80 - 118				09/28/17 14:36	09/28/17 23:27	1
1,2-Dichloroethane-d4 (Surr)	121		80 - 121				09/28/17 14:36	09/28/17 23:27	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	2.6	mg/Kg	☼	09/29/17 09:16	09/29/17 15:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		50 - 150				09/29/17 09:16	09/29/17 15:07	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		58	14	mg/Kg	☼	09/28/17 11:48	09/29/17 05:26	1
Motor Oil (>C24-C36)	ND		58	11	mg/Kg	☼	09/28/17 11:48	09/29/17 05:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	82		50 - 150				09/28/17 11:48	09/29/17 05:26	1
n-Decanoic Acid (Surr)	0.00004		0 - 1				09/28/17 11:48	09/29/17 05:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	79.0		0.1	0.1	%			09/28/17 11:59	1
Percent Moisture	21.0		0.1	0.1	%			09/28/17 11:59	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Client Sample ID: RB-092717

Lab Sample ID: 580-71638-6

Date Collected: 09/27/17 10:50

Matrix: Water

Date Received: 09/28/17 11:45

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/28/17 14:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		58 - 133					09/28/17 14:40	1
Trifluorotoluene (Surr)	108		77 - 128					09/28/17 14:40	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Client Sample ID: TB-092717

Lab Sample ID: 580-71638-7

Date Collected: 09/27/17 00:01

Matrix: Solid

Date Received: 09/28/17 11:45

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/28/17 14:36	09/28/17 21:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		75 - 120	09/28/17 14:36	09/28/17 21:18	1
Trifluorotoluene (Surr)	103		60 - 150	09/28/17 14:36	09/28/17 21:18	1
4-Bromofluorobenzene (Surr)	101		47 - 150	09/28/17 14:36	09/28/17 21:18	1
Dibromofluoromethane (Surr)	108		80 - 118	09/28/17 14:36	09/28/17 21:18	1
1,2-Dichloroethane-d4 (Surr)	118		80 - 121	09/28/17 14:36	09/28/17 21:18	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		3.7	1.9	mg/Kg		09/29/17 09:16	09/29/17 12:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150	09/29/17 09:16	09/29/17 12:28	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-257566/1-A
Matrix: Solid
Analysis Batch: 257575

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257566

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		09/28/17 14:36	09/28/17 20:01	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		75 - 120	09/28/17 14:36	09/28/17 20:01	1
Trifluorotoluene (Surr)	105		60 - 150	09/28/17 14:36	09/28/17 20:01	1
4-Bromofluorobenzene (Surr)	99		47 - 150	09/28/17 14:36	09/28/17 20:01	1
Dibromofluoromethane (Surr)	108		80 - 118	09/28/17 14:36	09/28/17 20:01	1
1,2-Dichloroethane-d4 (Surr)	120		80 - 121	09/28/17 14:36	09/28/17 20:01	1

Lab Sample ID: LCS 580-257566/2-A
Matrix: Solid
Analysis Batch: 257575

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257566

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzene	800	906		ug/Kg		113	79 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		75 - 120
Trifluorotoluene (Surr)	106		60 - 150
4-Bromofluorobenzene (Surr)	96		47 - 150
Dibromofluoromethane (Surr)	110		80 - 118
1,2-Dichloroethane-d4 (Surr)	117		80 - 121

Lab Sample ID: LCSD 580-257566/3-A
Matrix: Solid
Analysis Batch: 257575

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 257566

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	800	930		ug/Kg		116	79 - 135	3	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	102		75 - 120
Trifluorotoluene (Surr)	102		60 - 150
4-Bromofluorobenzene (Surr)	96		47 - 150
Dibromofluoromethane (Surr)	106		80 - 118
1,2-Dichloroethane-d4 (Surr)	111		80 - 121

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-257531/6
Matrix: Water
Analysis Batch: 257531

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			09/28/17 13:05	1

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-257531/6
Matrix: Water
Analysis Batch: 257531

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		58 - 133		09/28/17 13:05	1
Trifluorotoluene (Surr)	109		77 - 128		09/28/17 13:05	1

Lab Sample ID: LCS 580-257531/7
Matrix: Water
Analysis Batch: 257531

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	0.895		mg/L		90	79 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		58 - 133
Trifluorotoluene (Surr)	101		77 - 128

Lab Sample ID: LCSD 580-257531/8
Matrix: Water
Analysis Batch: 257531

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	0.857		mg/L		86	79 - 110	4	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		58 - 133
Trifluorotoluene (Surr)	95		77 - 128

Lab Sample ID: MB 580-257636/1-A
Matrix: Solid
Analysis Batch: 257643

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257636

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		09/29/17 09:16	09/29/17 10:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150	09/29/17 09:16	09/29/17 10:52	1

Lab Sample ID: LCS 580-257636/2-A
Matrix: Solid
Analysis Batch: 257643

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257636

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	40.0	37.9		mg/Kg		95	68 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		50 - 150

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 580-257636/3-A
Matrix: Solid
Analysis Batch: 257643

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 257636

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline	40.0	40.0		mg/Kg		100	68 - 120	5	25
		LCSD	LCSD						
Surrogate	%Recovery	Qualifier	Limits						
4-Bromofluorobenzene (Surr)	98		50 - 150						

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-257527/1-B
Matrix: Solid
Analysis Batch: 257523

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257527

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		09/28/17 11:48	09/29/17 03:01	1
Motor Oil (>C24-C36)	ND		50	9.1	mg/Kg		09/28/17 11:48	09/29/17 03:01	1
		MB	MB						
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	95		50 - 150				09/28/17 11:48	09/29/17 03:01	1
n-Decanoic Acid (Surr)	0.00004		0 - 1				09/28/17 11:48	09/29/17 03:01	1

Lab Sample ID: LCS 580-257527/2-B
Matrix: Solid
Analysis Batch: 257523

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257527

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	500	391		mg/Kg		78	64 - 127		
Motor Oil (>C24-C36)	500	434		mg/Kg		87	70 - 125		
		LCS	LCS						
Surrogate	%Recovery	Qualifier	Limits						
o-Terphenyl	78		50 - 150						
n-Decanoic Acid (Surr)	0		0 - 1						

Lab Sample ID: LCSD 580-257527/3-B
Matrix: Solid
Analysis Batch: 257523

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 257527

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	500	392		mg/Kg		78	64 - 127	0	16
Motor Oil (>C24-C36)	500	451		mg/Kg		90	70 - 125	4	17
		LCSD	LCSD						
Surrogate	%Recovery	Qualifier	Limits						
o-Terphenyl	83		50 - 150						
n-Decanoic Acid (Surr)	0		0 - 1						

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 580-71638-5 DU
 Matrix: Solid
 Analysis Batch: 257523

Client Sample ID: EX-DB2-D8-10
 Prep Type: Total/NA
 Prep Batch: 257527

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
#2 Diesel (C10-C24)	ND		ND		mg/Kg	☼	NC	35
Motor Oil (>C24-C36)	ND		ND		mg/Kg	☼	NC	35

Surrogate	%Recovery	DU Qualifier	DU Limits
<i>o</i> -Terphenyl	87		50 - 150
<i>n</i> -Decanoic Acid (Surr)	0.00004		0 - 1

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71638-C-5 DU
 Matrix: Solid
 Analysis Batch: 257529

Client Sample ID: 580-71638-C-5 DU
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Percent Solids			79.7		%			
Percent Moisture			20.3		%			

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Client Sample ID: EX-DB2-D4-10

Date Collected: 09/27/17 10:15

Date Received: 09/28/17 11:45

Lab Sample ID: 580-71638-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257529	09/28/17 11:59	REY	TAL SEA

Client Sample ID: EX-DB2-D4-10

Date Collected: 09/27/17 10:15

Date Received: 09/28/17 11:45

Lab Sample ID: 580-71638-1

Matrix: Solid

Percent Solids: 74.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257566	09/28/17 14:36	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257575	09/28/17 21:44	JSM	TAL SEA
Total/NA	Prep	5035			257636	09/29/17 09:16	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257643	09/29/17 13:00	JCV	TAL SEA
Total/NA	Prep	3546			257527	09/28/17 11:48	REY	TAL SEA
Total/NA	Cleanup	3630C			257576	09/28/17 15:29	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257523	09/29/17 04:03	ADB	TAL SEA

Client Sample ID: EX-DB2-D5-10

Date Collected: 09/27/17 11:15

Date Received: 09/28/17 11:45

Lab Sample ID: 580-71638-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257529	09/28/17 11:59	REY	TAL SEA

Client Sample ID: EX-DB2-D5-10

Date Collected: 09/27/17 11:15

Date Received: 09/28/17 11:45

Lab Sample ID: 580-71638-2

Matrix: Solid

Percent Solids: 79.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257566	09/28/17 14:36	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257575	09/28/17 22:10	JSM	TAL SEA
Total/NA	Prep	5035			257636	09/29/17 09:16	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257643	09/29/17 13:31	JCV	TAL SEA
Total/NA	Prep	3546			257527	09/28/17 11:48	REY	TAL SEA
Total/NA	Cleanup	3630C			257576	09/28/17 15:29	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257523	09/29/17 04:24	ADB	TAL SEA

Client Sample ID: EX-DB2-D6-10

Date Collected: 09/27/17 14:30

Date Received: 09/28/17 11:45

Lab Sample ID: 580-71638-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257529	09/28/17 11:59	REY	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Client Sample ID: EX-DB2-D6-10

Lab Sample ID: 580-71638-3

Date Collected: 09/27/17 14:30

Matrix: Solid

Date Received: 09/28/17 11:45

Percent Solids: 76.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257566	09/28/17 14:36	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257575	09/28/17 22:35	JSM	TAL SEA
Total/NA	Prep	5035			257636	09/29/17 09:16	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257643	09/29/17 14:03	JCV	TAL SEA
Total/NA	Prep	3546			257527	09/28/17 11:48	REY	TAL SEA
Total/NA	Cleanup	3630C			257576	09/28/17 15:29	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257523	09/29/17 04:45	ADB	TAL SEA

Client Sample ID: EX-DB2-D7-11

Lab Sample ID: 580-71638-4

Date Collected: 09/27/17 15:10

Matrix: Solid

Date Received: 09/28/17 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257529	09/28/17 11:59	REY	TAL SEA

Client Sample ID: EX-DB2-D7-11

Lab Sample ID: 580-71638-4

Date Collected: 09/27/17 15:10

Matrix: Solid

Date Received: 09/28/17 11:45

Percent Solids: 76.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257566	09/28/17 14:36	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257575	09/28/17 23:01	JSM	TAL SEA
Total/NA	Prep	5035			257636	09/29/17 09:16	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257643	09/29/17 14:35	JCV	TAL SEA
Total/NA	Prep	3546			257527	09/28/17 11:48	REY	TAL SEA
Total/NA	Cleanup	3630C			257576	09/28/17 15:29	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257523	09/29/17 05:05	ADB	TAL SEA

Client Sample ID: EX-DB2-D8-10

Lab Sample ID: 580-71638-5

Date Collected: 09/27/17 16:20

Matrix: Solid

Date Received: 09/28/17 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257529	09/28/17 11:59	REY	TAL SEA

Client Sample ID: EX-DB2-D8-10

Lab Sample ID: 580-71638-5

Date Collected: 09/27/17 16:20

Matrix: Solid

Date Received: 09/28/17 11:45

Percent Solids: 79.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257566	09/28/17 14:36	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257575	09/28/17 23:27	JSM	TAL SEA
Total/NA	Prep	5035			257636	09/29/17 09:16	RSB	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Client Sample ID: EX-DB2-D8-10

Lab Sample ID: 580-71638-5

Date Collected: 09/27/17 16:20

Matrix: Solid

Date Received: 09/28/17 11:45

Percent Solids: 79.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	257643	09/29/17 15:07	JCV	TAL SEA
Total/NA	Prep	3546			257527	09/28/17 11:48	REY	TAL SEA
Total/NA	Cleanup	3630C			257576	09/28/17 15:29	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257523	09/29/17 05:26	ADB	TAL SEA

Client Sample ID: RB-092717

Lab Sample ID: 580-71638-6

Date Collected: 09/27/17 10:50

Matrix: Water

Date Received: 09/28/17 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	257531	09/28/17 14:40	RSB	TAL SEA

Client Sample ID: TB-092717

Lab Sample ID: 580-71638-7

Date Collected: 09/27/17 00:01

Matrix: Solid

Date Received: 09/28/17 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257566	09/28/17 14:36	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257575	09/28/17 21:18	JSM	TAL SEA
Total/NA	Prep	5035			257636	09/29/17 09:16	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257643	09/29/17 12:28	JCV	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
California	State Program	9	2901	01-31-18
L-A-B	DoD ELAP		L2236	01-19-19
L-A-B	ISO/IEC 17025		L2236	01-19-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-17
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-71638-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-71638-1	EX-DB2-D4-10	Solid	09/27/17 10:15	09/28/17 11:45
580-71638-2	EX-DB2-D5-10	Solid	09/27/17 11:15	09/28/17 11:45
580-71638-3	EX-DB2-D6-10	Solid	09/27/17 14:30	09/28/17 11:45
580-71638-4	EX-DB2-D7-11	Solid	09/27/17 15:10	09/28/17 11:45
580-71638-5	EX-DB2-D8-10	Solid	09/27/17 16:20	09/28/17 11:45
580-71638-6	RB-092717	Water	09/27/17 10:50	09/28/17 11:45
580-71638-7	TB-092717	Solid	09/27/17 00:01	09/28/17 11:45



Client: Arcadis Client Contact: Ryan Brauchle Date: 9-27-2017 Chain of Custody Number: 29428
 Address: 1100 Olive Way, Suite 800 Telephone Number (Area Code)/Fax Number: 509-438-9828 Lab Number: 253-922-2310 Page 1 of 1

City: Seattle State: WA Zip Code: 98101 Sampler: Ryan Brauchle (RB) Lab Contact: Elaine Walker
 Project Name and Location (State): Edwards Terminal Billing Contact: _____ Analysis (Attach list if more space is needed)

Contract/Purchase Order/Quote No.: B0045362.0010 Matrix: _____ Containers & Preservatives: _____
 Sample I.D. and Location/Description (Containers for each sample may be combined on one line)

Sample I.D. and Location/Description	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	MgOH	10 ⁻⁴ H	NWTPH-GK	NWTPH-DK w/Std	8260C (Benzene)	8270D SIM (PAHs)
EX-DB2-D4-10	9-27-17	1015				X	2							2	X	X	X	*
EX-DB2-D5-10	9-27-17	1115				X	2							2	X	X	X	*
EX-DB2-D6-10	9-27-17	1430				X	2							2	X	X	X	*
EX-DB2-D7-11	9-27-17	1510				X	2							2	X	X	X	*
EX-DB2-D8-10	9-27-17	1620				X	2							2	X	X	X	*
RTS-092717	9-27-17	1050				X	2			2				2	X	X		
TB-092717	9-27-17	-				X	2							2	X	X		

Special Instructions/Conditions of Receipt

Email results to:
 ophelie.riuelle@arcadis.com
 ryan.brauchle@arcadis.com
 samuel.miles@arcadis.com
 scott.zorn@arcadis.com

WBS Codes:
 NWENVPMG001430804-Soil
 NWENVPMG001430805-Surface water



580-71638 Chain of Custody

TB A2 Cooler A Cor 1.4^W Unc 2.1
 Cooler Dsc Ly Blue @ Lab
 Wet/Packs Packing bub
 Lab Cov

*Analyze for cPAHs
 if PRO/HO detected (extraction)

Cooler: Yes No Cooler Temp: _____ Possible Hazard Identification: Non-Hazard Flammable Skin Irritant Poison B Unknown
 Sample Disposal: Disposal By Lab Return To Client 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 _____ QC Requirements (Specify)

1. Relinquished By Sign/Print <u>Ryan W Brauchle / Ryan W Brauchle</u>	Date <u>9-28-2017</u>	Time <u>1015</u>	1. Received By Sign/Print <u>Francisco Luna, Jr</u>	Date <u>9/28/17</u>	Time <u>1015</u>
2. Relinquished By Sign/Print <u>Francisco Luna, Jr</u>	Date <u>9/28/17</u>	Time <u>1130</u>	2. Received By Sign/Print	Date	Time
3. Relinquished By Sign/Print	Date	Time	3. Received By Sign/Print	Date	Time

Comments: _____

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-71638-1

Login Number: 71638

List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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	Extra labels added to tared vials.
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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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: 580-71704-1

Client Project/Site: Chevron Edmonds Terminal

For:

ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
10/3/2017 5:02:29 PM

Elaine Walker, Project Manager II
(253)248-4972

elaine.walker@testamericainc.com

LINKS

Review your project
results through
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Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Job ID: 580-71704-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE Client: ARCADIS U.S. Inc Project: Chevron Edmonds Terminal Report Number: 580-71704-1

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

The samples were received on 09/30/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.0 C.

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)

Samples EX-DB2-E3-11 (580-71704-1), EX-DB2-E4-10 (580-71704-2), EX-DB2-E5-10 (580-71704-3), EX-DB2-E6-11 (580-71704-4), DUP03-SO-092917 (580-71704-5) and TB-092917 (580-71704-7) were analyzed for volatile organic compounds (GC) in accordance with 8260. The samples were prepared and analyzed on 10/02/2017.

1,2-Dichloroethane-d4 (Surr) failed the surrogate recovery criteria high for EX-DB2-E5-10 (580-71704-3). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis were not performed.

The continuing calibration verification (CCV) associated with batch 580-257828 recovered above the upper control limit for Benzene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO) - SOIL

Samples EX-DB2-E3-11 (580-71704-1), EX-DB2-E4-10 (580-71704-2), EX-DB2-E5-10 (580-71704-3), EX-DB2-E6-11 (580-71704-4), DUP03-SO-092917 (580-71704-5) and TB-092917 (580-71704-7) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were prepared and analyzed on 10/03/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO) - WATER

Sample RB-092917 (580-71704-6) was analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were analyzed on 10/03/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Job ID: 580-71704-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

DIESEL AND EXTENDED RANGE ORGANICS

Samples EX-DB2-E3-11 (580-71704-1), EX-DB2-E4-10 (580-71704-2), EX-DB2-E5-10 (580-71704-3), EX-DB2-E6-11 (580-71704-4) and DUP03-SO-092917 (580-71704-5) were analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared and analyzed on 10/02/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples EX-DB2-E3-11 (580-71704-1), EX-DB2-E4-10 (580-71704-2), EX-DB2-E5-10 (580-71704-3), EX-DB2-E6-11 (580-71704-4) and DUP03-SO-092917 (580-71704-5) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 10/02/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

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 Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Client Sample ID: EX-DB2-E3-11

Lab Sample ID: 580-71704-1

Date Collected: 09/29/17 11:10

Matrix: Solid

Date Received: 09/30/17 09:15

Percent Solids: 77.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		24	10	ug/Kg	☼	10/02/17 13:14	10/02/17 16:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		75 - 120				10/02/17 13:14	10/02/17 16:54	1
Trifluorotoluene (Surr)	99		60 - 150				10/02/17 13:14	10/02/17 16:54	1
4-Bromofluorobenzene (Surr)	96		47 - 150				10/02/17 13:14	10/02/17 16:54	1
Dibromofluoromethane (Surr)	102		80 - 118				10/02/17 13:14	10/02/17 16:54	1
1,2-Dichloroethane-d4 (Surr)	115		80 - 121				10/02/17 13:14	10/02/17 16:54	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.9	2.5	mg/Kg	☼	10/03/17 09:57	10/03/17 12:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150				10/03/17 09:57	10/03/17 12:39	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		56	14	mg/Kg	☼	10/02/17 08:40	10/02/17 19:40	1
Motor Oil (>C24-C36)	ND		56	10	mg/Kg	☼	10/02/17 08:40	10/02/17 19:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	90		50 - 150				10/02/17 08:40	10/02/17 19:40	1
n-Decanoic Acid (Surr)	0.0003		0 - 1				10/02/17 08:40	10/02/17 19:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	77.6		0.1	0.1	%			10/02/17 09:23	1
Percent Moisture	22.4		0.1	0.1	%			10/02/17 09:23	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Client Sample ID: EX-DB2-E4-10

Lab Sample ID: 580-71704-2

Date Collected: 09/29/17 14:20

Matrix: Solid

Date Received: 09/30/17 09:15

Percent Solids: 80.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		24	10	ug/Kg	☼	10/02/17 13:14	10/02/17 17:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		75 - 120				10/02/17 13:14	10/02/17 17:20	1
Trifluorotoluene (Surr)	102		60 - 150				10/02/17 13:14	10/02/17 17:20	1
4-Bromofluorobenzene (Surr)	96		47 - 150				10/02/17 13:14	10/02/17 17:20	1
Dibromofluoromethane (Surr)	104		80 - 118				10/02/17 13:14	10/02/17 17:20	1
1,2-Dichloroethane-d4 (Surr)	120		80 - 121				10/02/17 13:14	10/02/17 17:20	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.9	2.5	mg/Kg	☼	10/03/17 09:57	10/03/17 13:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150				10/03/17 09:57	10/03/17 13:10	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		59	14	mg/Kg	☼	10/02/17 08:40	10/02/17 20:00	1
Motor Oil (>C24-C36)	ND		59	11	mg/Kg	☼	10/02/17 08:40	10/02/17 20:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	91		50 - 150				10/02/17 08:40	10/02/17 20:00	1
n-Decanoic Acid (Surr)	0.0002		0 - 1				10/02/17 08:40	10/02/17 20:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	80.7		0.1	0.1	%			10/02/17 09:23	1
Percent Moisture	19.3		0.1	0.1	%			10/02/17 09:23	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Client Sample ID: EX-DB2-E5-10

Lab Sample ID: 580-71704-3

Date Collected: 09/29/17 15:15

Matrix: Solid

Date Received: 09/30/17 09:15

Percent Solids: 76.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		26	11	ug/Kg	☼	10/02/17 13:14	10/02/17 17:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		75 - 120				10/02/17 13:14	10/02/17 17:46	1
Trifluorotoluene (Surr)	105		60 - 150				10/02/17 13:14	10/02/17 17:46	1
4-Bromofluorobenzene (Surr)	98		47 - 150				10/02/17 13:14	10/02/17 17:46	1
Dibromofluoromethane (Surr)	112		80 - 118				10/02/17 13:14	10/02/17 17:46	1
1,2-Dichloroethane-d4 (Surr)	122	X	80 - 121				10/02/17 13:14	10/02/17 17:46	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.2	2.7	mg/Kg	☼	10/03/17 09:57	10/03/17 13:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		50 - 150				10/03/17 09:57	10/03/17 13:41	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		64	16	mg/Kg	☼	10/02/17 08:40	10/02/17 20:21	1
Motor Oil (>C24-C36)	ND		64	12	mg/Kg	☼	10/02/17 08:40	10/02/17 20:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	89		50 - 150				10/02/17 08:40	10/02/17 20:21	1
n-Decanoic Acid (Surr)	0.00005		0 - 1				10/02/17 08:40	10/02/17 20:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	76.0		0.1	0.1	%			10/02/17 09:23	1
Percent Moisture	24.0		0.1	0.1	%			10/02/17 09:23	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Client Sample ID: EX-DB2-E6-11

Lab Sample ID: 580-71704-4

Date Collected: 09/29/17 16:25

Matrix: Solid

Date Received: 09/30/17 09:15

Percent Solids: 76.9

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		28	12	ug/Kg	☼	10/02/17 13:14	10/02/17 18:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		75 - 120				10/02/17 13:14	10/02/17 18:11	1
Trifluorotoluene (Surr)	103		60 - 150				10/02/17 13:14	10/02/17 18:11	1
4-Bromofluorobenzene (Surr)	97		47 - 150				10/02/17 13:14	10/02/17 18:11	1
Dibromofluoromethane (Surr)	100		80 - 118				10/02/17 13:14	10/02/17 18:11	1
1,2-Dichloroethane-d4 (Surr)	120		80 - 121				10/02/17 13:14	10/02/17 18:11	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.6	2.9	mg/Kg	☼	10/03/17 09:57	10/03/17 14:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		50 - 150				10/03/17 09:57	10/03/17 14:11	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		63	16	mg/Kg	☼	10/02/17 08:40	10/02/17 21:02	1
Motor Oil (>C24-C36)	ND		63	11	mg/Kg	☼	10/02/17 08:40	10/02/17 21:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	87		50 - 150				10/02/17 08:40	10/02/17 21:02	1
n-Decanoic Acid (Surr)	0.0002		0 - 1				10/02/17 08:40	10/02/17 21:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	76.9		0.1	0.1	%			10/02/17 09:23	1
Percent Moisture	23.1		0.1	0.1	%			10/02/17 09:23	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Client Sample ID: DUP03-SO-092917

Lab Sample ID: 580-71704-5

Date Collected: 09/29/17 00:00

Matrix: Solid

Date Received: 09/30/17 09:15

Percent Solids: 79.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		24	10	ug/Kg	☼	10/02/17 13:14	10/02/17 18:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		75 - 120				10/02/17 13:14	10/02/17 18:37	1
Trifluorotoluene (Surr)	96		60 - 150				10/02/17 13:14	10/02/17 18:37	1
4-Bromofluorobenzene (Surr)	98		47 - 150				10/02/17 13:14	10/02/17 18:37	1
Dibromofluoromethane (Surr)	105		80 - 118				10/02/17 13:14	10/02/17 18:37	1
1,2-Dichloroethane-d4 (Surr)	114		80 - 121				10/02/17 13:14	10/02/17 18:37	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.8	2.5	mg/Kg	☼	10/03/17 09:57	10/03/17 14:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150				10/03/17 09:57	10/03/17 14:42	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		61	15	mg/Kg	☼	10/02/17 08:40	10/02/17 21:23	1
Motor Oil (>C24-C36)	ND		61	11	mg/Kg	☼	10/02/17 08:40	10/02/17 21:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	89		50 - 150				10/02/17 08:40	10/02/17 21:23	1
n-Decanoic Acid (Surr)	0		0 - 1				10/02/17 08:40	10/02/17 21:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	79.4		0.1	0.1	%			10/02/17 09:23	1
Percent Moisture	20.6		0.1	0.1	%			10/02/17 09:23	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Client Sample ID: RB-092917

Lab Sample ID: 580-71704-6

Date Collected: 09/29/17 11:50

Matrix: Water

Date Received: 09/30/17 09:15

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			10/03/17 11:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		58 - 133					10/03/17 11:47	1
Trifluorotoluene (Surr)	110		77 - 128					10/03/17 11:47	1



Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Client Sample ID: TB-092917

Lab Sample ID: 580-71704-7

Date Collected: 09/29/17 00:00

Matrix: Solid

Date Received: 09/30/17 09:15

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		10/02/17 13:14	10/02/17 16:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		75 - 120	10/02/17 13:14	10/02/17 16:28	1
Trifluorotoluene (Surr)	98		60 - 150	10/02/17 13:14	10/02/17 16:28	1
4-Bromofluorobenzene (Surr)	100		47 - 150	10/02/17 13:14	10/02/17 16:28	1
Dibromofluoromethane (Surr)	106		80 - 118	10/02/17 13:14	10/02/17 16:28	1
1,2-Dichloroethane-d4 (Surr)	118		80 - 121	10/02/17 13:14	10/02/17 16:28	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		10/03/17 09:57	10/03/17 11:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		50 - 150	10/03/17 09:57	10/03/17 11:38	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-257819/1-A
Matrix: Solid
Analysis Batch: 257828

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257819

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		10/02/17 13:14	10/02/17 15:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		75 - 120	10/02/17 13:14	10/02/17 15:12	1
Trifluorotoluene (Surr)	101		60 - 150	10/02/17 13:14	10/02/17 15:12	1
4-Bromofluorobenzene (Surr)	99		47 - 150	10/02/17 13:14	10/02/17 15:12	1
Dibromofluoromethane (Surr)	112		80 - 118	10/02/17 13:14	10/02/17 15:12	1
1,2-Dichloroethane-d4 (Surr)	119		80 - 121	10/02/17 13:14	10/02/17 15:12	1

Lab Sample ID: LCS 580-257819/2-A
Matrix: Solid
Analysis Batch: 257828

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257819

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzene	800	910		ug/Kg		114	79 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		75 - 120
Trifluorotoluene (Surr)	102		60 - 150
4-Bromofluorobenzene (Surr)	98		47 - 150
Dibromofluoromethane (Surr)	101		80 - 118
1,2-Dichloroethane-d4 (Surr)	112		80 - 121

Lab Sample ID: LCSD 580-257819/3-A
Matrix: Solid
Analysis Batch: 257828

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 257819

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Benzene	800	936		ug/Kg		117	79 - 135	3	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	102		75 - 120
Trifluorotoluene (Surr)	100		60 - 150
4-Bromofluorobenzene (Surr)	95		47 - 150
Dibromofluoromethane (Surr)	106		80 - 118
1,2-Dichloroethane-d4 (Surr)	115		80 - 121

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-257883/1-A
Matrix: Solid
Analysis Batch: 257893

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257883

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		10/03/17 09:57	10/03/17 10:07	1

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-257883/1-A
Matrix: Solid
Analysis Batch: 257893

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257883

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		50 - 150	10/03/17 09:57	10/03/17 10:07	1

Lab Sample ID: LCS 580-257883/2-A
Matrix: Solid
Analysis Batch: 257893

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257883

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	40.0	38.7		mg/Kg		97	68 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		50 - 150

Lab Sample ID: LCSD 580-257883/3-A
Matrix: Solid
Analysis Batch: 257893

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 257883

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	40.0	41.3		mg/Kg		103	68 - 120	7	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		50 - 150

Lab Sample ID: MB 580-257895/6
Matrix: Water
Analysis Batch: 257895

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			10/03/17 10:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		58 - 133		10/03/17 10:12	1
Trifluorotoluene (Surr)	104		77 - 128		10/03/17 10:12	1

Lab Sample ID: LCS 580-257895/7
Matrix: Water
Analysis Batch: 257895

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	0.892		mg/L		89	79 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		58 - 133
Trifluorotoluene (Surr)	101		77 - 128

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 580-257895/8
Matrix: Water
Analysis Batch: 257895

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	0.879		mg/L		88	79 - 110	2	10
Surrogate	%Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	99		58 - 133						
Trifluorotoluene (Surr)	98		77 - 128						

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-257768/1-B
Matrix: Solid
Analysis Batch: 257849

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257768

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		10/02/17 08:40	10/02/17 18:38	1
Motor Oil (>C24-C36)	ND		50	9.1	mg/Kg		10/02/17 08:40	10/02/17 18:38	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	96		50 - 150				10/02/17 08:40	10/02/17 18:38	1
n-Decanoic Acid (Surr)	0.0001		0 - 1				10/02/17 08:40	10/02/17 18:38	1

Lab Sample ID: LCS 580-257768/2-B
Matrix: Solid
Analysis Batch: 257849

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257768

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	500	479		mg/Kg		96	64 - 127
Motor Oil (>C24-C36)	500	540		mg/Kg		108	70 - 125
Surrogate	%Recovery	LCS Qualifier	Limits				
o-Terphenyl	90		50 - 150				
n-Decanoic Acid (Surr)	0		0 - 1				

Lab Sample ID: LCSD 580-257768/3-B
Matrix: Solid
Analysis Batch: 257849

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 257768

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	500	439		mg/Kg		88	64 - 127	9	16
Motor Oil (>C24-C36)	500	500		mg/Kg		100	70 - 125	8	17
Surrogate	%Recovery	LCSD Qualifier	Limits						
o-Terphenyl	78		50 - 150						
n-Decanoic Acid (Surr)	0		0 - 1						

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 580-71704-3 DU
Matrix: Solid
Analysis Batch: 257849

Client Sample ID: EX-DB2-E5-10
Prep Type: Total/NA
Prep Batch: 257768

Analyte	Sample Result	Sample Qualifier	DU	DU	Unit	D	RPD	RPD Limit
			Result	Qualifier				
#2 Diesel (C10-C24)	ND		ND		mg/Kg	☼	NC	35
Motor Oil (>C24-C36)	ND		ND		mg/Kg	☼	NC	35

Surrogate	DU	DU	Limits
	%Recovery	Qualifier	
<i>o</i> -Terphenyl	90		50 - 150
<i>n</i> -Decanoic Acid (Surr)	0		0 - 1

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71704-1 DU
Matrix: Solid
Analysis Batch: 257773

Client Sample ID: EX-DB2-E3-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU	DU	Unit	D	RPD	RPD Limit
			Result	Qualifier				
Percent Solids	77.6		75.9		%		2	20
Percent Moisture	22.4		24.1		%		7	20

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Client Sample ID: EX-DB2-E3-11

Date Collected: 09/29/17 11:10

Date Received: 09/30/17 09:15

Lab Sample ID: 580-71704-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257773	10/02/17 09:23	JWL	TAL SEA

Client Sample ID: EX-DB2-E3-11

Date Collected: 09/29/17 11:10

Date Received: 09/30/17 09:15

Lab Sample ID: 580-71704-1

Matrix: Solid

Percent Solids: 77.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257819	10/02/17 13:14	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257828	10/02/17 16:54	P1P	TAL SEA
Total/NA	Prep	5035			257883	10/03/17 09:57	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257893	10/03/17 12:39	JCV	TAL SEA
Total/NA	Prep	3546			257768	10/02/17 08:40	JWL	TAL SEA
Total/NA	Cleanup	3630C			257820	10/02/17 13:16	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257849	10/02/17 19:40	ERZ	TAL SEA

Client Sample ID: EX-DB2-E4-10

Date Collected: 09/29/17 14:20

Date Received: 09/30/17 09:15

Lab Sample ID: 580-71704-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257773	10/02/17 09:23	JWL	TAL SEA

Client Sample ID: EX-DB2-E4-10

Date Collected: 09/29/17 14:20

Date Received: 09/30/17 09:15

Lab Sample ID: 580-71704-2

Matrix: Solid

Percent Solids: 80.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257819	10/02/17 13:14	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257828	10/02/17 17:20	P1P	TAL SEA
Total/NA	Prep	5035			257883	10/03/17 09:57	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257893	10/03/17 13:10	JCV	TAL SEA
Total/NA	Prep	3546			257768	10/02/17 08:40	JWL	TAL SEA
Total/NA	Cleanup	3630C			257820	10/02/17 13:16	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257849	10/02/17 20:00	ERZ	TAL SEA

Client Sample ID: EX-DB2-E5-10

Date Collected: 09/29/17 15:15

Date Received: 09/30/17 09:15

Lab Sample ID: 580-71704-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257773	10/02/17 09:23	JWL	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Client Sample ID: EX-DB2-E5-10

Lab Sample ID: 580-71704-3

Date Collected: 09/29/17 15:15

Matrix: Solid

Date Received: 09/30/17 09:15

Percent Solids: 76.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257819	10/02/17 13:14	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257828	10/02/17 17:46	P1P	TAL SEA
Total/NA	Prep	5035			257883	10/03/17 09:57	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257893	10/03/17 13:41	JCV	TAL SEA
Total/NA	Prep	3546			257768	10/02/17 08:40	JWL	TAL SEA
Total/NA	Cleanup	3630C			257820	10/02/17 13:16	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257849	10/02/17 20:21	ERZ	TAL SEA

Client Sample ID: EX-DB2-E6-11

Lab Sample ID: 580-71704-4

Date Collected: 09/29/17 16:25

Matrix: Solid

Date Received: 09/30/17 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257773	10/02/17 09:23	JWL	TAL SEA

Client Sample ID: EX-DB2-E6-11

Lab Sample ID: 580-71704-4

Date Collected: 09/29/17 16:25

Matrix: Solid

Date Received: 09/30/17 09:15

Percent Solids: 76.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257819	10/02/17 13:14	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257828	10/02/17 18:11	P1P	TAL SEA
Total/NA	Prep	5035			257883	10/03/17 09:57	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257893	10/03/17 14:11	JCV	TAL SEA
Total/NA	Prep	3546			257768	10/02/17 08:40	JWL	TAL SEA
Total/NA	Cleanup	3630C			257820	10/02/17 13:16	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257849	10/02/17 21:02	ERZ	TAL SEA

Client Sample ID: DUP03-SO-092917

Lab Sample ID: 580-71704-5

Date Collected: 09/29/17 00:00

Matrix: Solid

Date Received: 09/30/17 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257773	10/02/17 09:23	JWL	TAL SEA

Client Sample ID: DUP03-SO-092917

Lab Sample ID: 580-71704-5

Date Collected: 09/29/17 00:00

Matrix: Solid

Date Received: 09/30/17 09:15

Percent Solids: 79.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257819	10/02/17 13:14	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257828	10/02/17 18:37	P1P	TAL SEA
Total/NA	Prep	5035			257883	10/03/17 09:57	JCV	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Client Sample ID: DUP03-SO-092917

Lab Sample ID: 580-71704-5

Date Collected: 09/29/17 00:00

Matrix: Solid

Date Received: 09/30/17 09:15

Percent Solids: 79.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	257893	10/03/17 14:42	JCV	TAL SEA
Total/NA	Prep	3546			257768	10/02/17 08:40	JWL	TAL SEA
Total/NA	Cleanup	3630C			257820	10/02/17 13:16	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257849	10/02/17 21:23	ERZ	TAL SEA

Client Sample ID: RB-092917

Lab Sample ID: 580-71704-6

Date Collected: 09/29/17 11:50

Matrix: Water

Date Received: 09/30/17 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	257895	10/03/17 11:47	RSB	TAL SEA

Client Sample ID: TB-092917

Lab Sample ID: 580-71704-7

Date Collected: 09/29/17 00:00

Matrix: Solid

Date Received: 09/30/17 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257819	10/02/17 13:14	JSM	TAL SEA
Total/NA	Analysis	8260C		1	257828	10/02/17 16:28	P1P	TAL SEA
Total/NA	Prep	5035			257883	10/03/17 09:57	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257893	10/03/17 11:38	JCV	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
California	State Program	9	2901	01-31-18
L-A-B	DoD ELAP		L2236	01-19-19
L-A-B	ISO/IEC 17025		L2236	01-19-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-17
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71704-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-71704-1	EX-DB2-E3-11	Solid	09/29/17 11:10	09/30/17 09:15
580-71704-2	EX-DB2-E4-10	Solid	09/29/17 14:20	09/30/17 09:15
580-71704-3	EX-DB2-E5-10	Solid	09/29/17 15:15	09/30/17 09:15
580-71704-4	EX-DB2-E6-11	Solid	09/29/17 16:25	09/30/17 09:15
580-71704-5	DUP03-SO-092917	Solid	09/29/17 00:00	09/30/17 09:15
580-71704-6	RB-092917	Water	09/29/17 11:50	09/30/17 09:15
580-71704-7	TB-092917	Solid	09/29/17 00:00	09/30/17 09:15

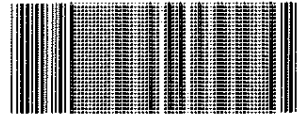


Rush

Short Hold

Chain of Custody Record

Client Arcadis		Client Contact Ryan Brauchle		Date 9/29/17	Chain of Custody Number 29430
Address 100 Olive Way, Suite 800		Telephone Number (Area Code)/Fax Number 509-438-9228		Lab Number 253-922-2310	Page 1 of 1
City Seattle	State WA	Zip Code 98101	Sampler Ryan Brauchle	Lab Contact Elaine Walker	
Project Name and Location (State) Former Unocal Edwards Terminal, WA			Billing Contact		
Analysis (Attach list if more space is needed)					

Contract/Purchase Order/Quote No. BO045362.0010				Matrix		Containers & Preservatives												Special Instructions/Conditions of Receipt
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/ MeOH	MeOH 10:1v/v	NWTH-Gx	NWTH-Dx w/SGC	8260C (Benzene)	8270D SIN (PAHs)	
EX-DB2-E3-11	9-29-17	1110				X	2							X	X	X	X	*
EX-DB2-E4-10	9-29-17	1420				X	2							X	X	X	X	*
EX-DB2-E5-10	9-29-17	1515				X	2							X	X	X	X	*
EX-DB2-E6-11	9-29-17	1625				X	2							X	X	X	X	*
DUP03-SO-092917	9-29-17	-				X	2							X	X	X	X	*
RB-092917	9-29-17	1150		X						2				X	X			
TB-092917	9-29-17	-				X							1	X	X			
TB A2 Cooler ^{by Hwy} Cor 0.0 Unc 97 Cooler Disc @ Lab Wet Packs Packing Bubble PO Sat.																		
 580-71704 Chain of Custody																		
*Analyze for CPAHs if DEP/AD are detected (extraction okay)																		
WBS Codes NWENVPMG001430804 - Soil NWENVPMG001430803 - Surface Water																		

Email results to
 ryan.brauchle@arcadis.com
 samuel.miles@arcadis.com
 sophie.pacelle@arcadis.com
 scott.zorn@arcadis.com

Cooler <input checked="checked" type="checkbox"/> Yes <input type="checkbox"/> No Cooler Temp: _____	Possible Hazard Identification <input checked="checked" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown	Sample Disposal <input checked="checked" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Return To Client <input type="checkbox"/> Archive For _____ Months	(A fee may be assessed if samples are retained longer than 1 month)
Turn Around Time Required (business days) <input checked="checked" type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 5 Days <input type="checkbox"/> 10 Days <input type="checkbox"/> 15 Days <input type="checkbox"/> Other _____		QC Requirements (Specify)	
1. Relinquished By Sign/Print <i>Ryan W. Brauchle / Ryan W. Brauchle</i>		1. Received By Sign/Print <i>Dennis L. Brown / (Baud 7. Brown)</i>	
2. Relinquished By Sign/Print		2. Received By Sign/Print	
3. Relinquished By Sign/Print		3. Received By Sign/Print	

Comments

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-71704-1

Login Number: 71704
List Number: 1
Creator: Bean, Dennis L

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	
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	



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: 580-71754-1

Client Project/Site: Chevron Edmonds Terminal

For:

ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
10/4/2017 1:23:14 PM

Elaine Walker, Project Manager II
(253)248-4972

elaine.walker@testamericainc.com

LINKS

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Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Job ID: 580-71754-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE **Client: ARCADIS U.S. Inc** **Project: Chevron Edmonds Terminal** **Report Number: 580-71754-1**

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

Ten samples were received on 10/3/2017 8:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was -0.5° C.

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)

Samples SP-B1-B6-1 (580-71754-1), SP-B1-B4-4 (580-71754-2), SP-B1-I8-1 (580-71754-3), SP-B1-C6-13 (580-71754-4), SP-B1-H4-4 (580-71754-5), SP-B1-B5-7 (580-71754-6), SP-B1-D8-2 (580-71754-7) and EX-DB2-E7-10 (580-71754-10) were analyzed for volatile organic compounds (GC) in accordance with 8260. The samples were prepared and analyzed on 10/03/2017.

1,2-Dichloroethane-d4 (Surr) failed the surrogate recovery criteria high for SP-B1-B6-1 (580-71754-1). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

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)

Sample SP-B1-D8-2 (580-71754-7) was analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with SW846 8270D_SIM. The samples were prepared and analyzed on 10/03/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO) - SOIL

Samples SP-B1-B6-1 (580-71754-1), SP-B1-B4-4 (580-71754-2), SP-B1-I8-1 (580-71754-3), SP-B1-C6-13 (580-71754-4), SP-B1-H4-4 (580-71754-5), SP-B1-B5-7 (580-71754-6), SP-B1-D8-2 (580-71754-7) and EX-DB2-E7-10 (580-71754-10) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The samples were prepared and analyzed on 10/03/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO) - WATER

Sample RB-100217 (580-71754-9) was analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Job ID: 580-71754-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

samples were analyzed on 10/03/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL AND EXTENDED RANGE ORGANICS

Samples SP-B1-B6-1 (580-71754-1), SP-B1-B4-4 (580-71754-2), SP-B1-I8-1 (580-71754-3), SP-B1-C6-13 (580-71754-4), SP-B1-H4-4 (580-71754-5), SP-B1-B5-7 (580-71754-6), SP-B1-D8-2 (580-71754-7) and EX-DB2-E7-10 (580-71754-10) were analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared on 10/03/2017 and analyzed on 10/04/2017.

Continuing calibration verification (CCV) recovered below %D control limits for o-Terphenyl surrogate. However, the CCV and all associated samples recovered within %R control limits; therefore, the data are qualified and reported.

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: SP-B1-B4-4 (580-71754-2), SP-B1-C6-13 (580-71754-4), SP-B1-H4-4 (580-71754-5) and (580-71754-A-2-E DU).

A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows: The time between CCVs exceeded the 12 hour limit required by the SOP. However, this CCV window and the number of injections between CCVs (10) meet the NWTPH-DX method requirements.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples SP-B1-B6-1 (580-71754-1), SP-B1-B4-4 (580-71754-2), SP-B1-I8-1 (580-71754-3), SP-B1-C6-13 (580-71754-4), SP-B1-H4-4 (580-71754-5), SP-B1-B5-7 (580-71754-6), SP-B1-D8-2 (580-71754-7) and EX-DB2-E7-10 (580-71754-10) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 10/03/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
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
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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 Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Client Sample ID: SP-B1-B6-1

Lab Sample ID: 580-71754-1

Date Collected: 10/02/17 18:00

Matrix: Solid

Date Received: 10/03/17 08:45

Percent Solids: 93.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg	☼	10/03/17 10:40	10/03/17 14:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		75 - 120				10/03/17 10:40	10/03/17 14:51	1
Trifluorotoluene (Surr)	101		60 - 150				10/03/17 10:40	10/03/17 14:51	1
4-Bromofluorobenzene (Surr)	100		47 - 150				10/03/17 10:40	10/03/17 14:51	1
Dibromofluoromethane (Surr)	107		80 - 118				10/03/17 10:40	10/03/17 14:51	1
1,2-Dichloroethane-d4 (Surr)	122	X	80 - 121				10/03/17 10:40	10/03/17 14:51	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg	☼	10/03/17 10:09	10/03/17 15:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		50 - 150				10/03/17 10:09	10/03/17 15:43	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		49	12	mg/Kg	☼	10/03/17 10:01	10/04/17 08:02	1
Motor Oil (>C24-C36)	ND		49	8.9	mg/Kg	☼	10/03/17 10:01	10/04/17 08:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	90		50 - 150				10/03/17 10:01	10/04/17 08:02	1
n-Decanoic Acid (Surr)	0.0003		0 - 1				10/03/17 10:01	10/04/17 08:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93.5		0.1	0.1	%			10/03/17 11:18	1
Percent Moisture	6.5		0.1	0.1	%			10/03/17 11:18	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Client Sample ID: SP-B1-B4-4

Lab Sample ID: 580-71754-2

Date Collected: 10/02/17 18:05

Matrix: Solid

Date Received: 10/03/17 08:45

Percent Solids: 93.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg	☼	10/03/17 10:40	10/03/17 15:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		75 - 120				10/03/17 10:40	10/03/17 15:17	1
Trifluorotoluene (Surr)	100		60 - 150				10/03/17 10:40	10/03/17 15:17	1
4-Bromofluorobenzene (Surr)	102		47 - 150				10/03/17 10:40	10/03/17 15:17	1
Dibromofluoromethane (Surr)	102		80 - 118				10/03/17 10:40	10/03/17 15:17	1
1,2-Dichloroethane-d4 (Surr)	115		80 - 121				10/03/17 10:40	10/03/17 15:17	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg	☼	10/03/17 10:09	10/03/17 16:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		50 - 150				10/03/17 10:09	10/03/17 16:14	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	23	J	50	12	mg/Kg	☼	10/03/17 10:01	10/04/17 08:22	1
Motor Oil (>C24-C36)	25	J	50	9.2	mg/Kg	☼	10/03/17 10:01	10/04/17 08:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	84		50 - 150				10/03/17 10:01	10/04/17 08:22	1
n-Decanoic Acid (Surr)	0.003		0 - 1				10/03/17 10:01	10/04/17 08:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93.0		0.1	0.1	%			10/03/17 11:18	1
Percent Moisture	7.0		0.1	0.1	%			10/03/17 11:18	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Client Sample ID: SP-B1-I8-1

Lab Sample ID: 580-71754-3

Date Collected: 10/02/17 18:10

Matrix: Solid

Date Received: 10/03/17 08:45

Percent Solids: 94.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.5	ug/Kg	☼	10/03/17 10:40	10/03/17 15:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		75 - 120				10/03/17 10:40	10/03/17 15:43	1
Trifluorotoluene (Surr)	98		60 - 150				10/03/17 10:40	10/03/17 15:43	1
4-Bromofluorobenzene (Surr)	94		47 - 150				10/03/17 10:40	10/03/17 15:43	1
Dibromofluoromethane (Surr)	107		80 - 118				10/03/17 10:40	10/03/17 15:43	1
1,2-Dichloroethane-d4 (Surr)	118		80 - 121				10/03/17 10:40	10/03/17 15:43	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		3.9	2.1	mg/Kg	☼	10/03/17 10:09	10/03/17 16:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150				10/03/17 10:09	10/03/17 16:44	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		52	13	mg/Kg	☼	10/03/17 10:01	10/04/17 09:24	1
Motor Oil (>C24-C36)	ND		52	9.5	mg/Kg	☼	10/03/17 10:01	10/04/17 09:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	85		50 - 150				10/03/17 10:01	10/04/17 09:24	1
n-Decanoic Acid (Surr)	0.0007		0 - 1				10/03/17 10:01	10/04/17 09:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	94.0		0.1	0.1	%			10/03/17 11:18	1
Percent Moisture	6.0		0.1	0.1	%			10/03/17 11:18	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Client Sample ID: SP-B1-C6-13

Lab Sample ID: 580-71754-4

Date Collected: 10/02/17 18:15

Matrix: Solid

Date Received: 10/03/17 08:45

Percent Solids: 93.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		19	8.3	ug/Kg	☼	10/03/17 10:40	10/03/17 16:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		75 - 120				10/03/17 10:40	10/03/17 16:09	1
Trifluorotoluene (Surr)	101		60 - 150				10/03/17 10:40	10/03/17 16:09	1
4-Bromofluorobenzene (Surr)	100		47 - 150				10/03/17 10:40	10/03/17 16:09	1
Dibromofluoromethane (Surr)	111		80 - 118				10/03/17 10:40	10/03/17 16:09	1
1,2-Dichloroethane-d4 (Surr)	118		80 - 121				10/03/17 10:40	10/03/17 16:09	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		3.9	2.0	mg/Kg	☼	10/03/17 10:09	10/03/17 17:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		50 - 150				10/03/17 10:09	10/03/17 17:15	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	19	J	51	12	mg/Kg	☼	10/03/17 10:01	10/04/17 09:44	1
Motor Oil (>C24-C36)	18	J	51	9.2	mg/Kg	☼	10/03/17 10:01	10/04/17 09:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	91		50 - 150				10/03/17 10:01	10/04/17 09:44	1
n-Decanoic Acid (Surr)	0.00007		0 - 1				10/03/17 10:01	10/04/17 09:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93.0		0.1	0.1	%			10/03/17 11:18	1
Percent Moisture	7.0		0.1	0.1	%			10/03/17 11:18	1

Client Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Client Sample ID: SP-B1-H4-4

Lab Sample ID: 580-71754-5

Date Collected: 10/02/17 18:20

Matrix: Solid

Date Received: 10/03/17 08:45

Percent Solids: 93.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		13	5.7	ug/Kg	☼	10/03/17 10:40	10/03/17 16:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		75 - 120				10/03/17 10:40	10/03/17 16:34	1
Trifluorotoluene (Surr)	106		60 - 150				10/03/17 10:40	10/03/17 16:34	1
4-Bromofluorobenzene (Surr)	94		47 - 150				10/03/17 10:40	10/03/17 16:34	1
Dibromofluoromethane (Surr)	106		80 - 118				10/03/17 10:40	10/03/17 16:34	1
1,2-Dichloroethane-d4 (Surr)	120		80 - 121				10/03/17 10:40	10/03/17 16:34	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1.7	J	2.7	1.4	mg/Kg	☼	10/03/17 10:09	10/03/17 17:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		50 - 150				10/03/17 10:09	10/03/17 17:45	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	33	J	47	12	mg/Kg	☼	10/03/17 10:01	10/04/17 10:05	1
Motor Oil (>C24-C36)	30	J	47	8.6	mg/Kg	☼	10/03/17 10:01	10/04/17 10:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	87		50 - 150				10/03/17 10:01	10/04/17 10:05	1
n-Decanoic Acid (Surr)	0.001		0 - 1				10/03/17 10:01	10/04/17 10:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93.4		0.1	0.1	%			10/03/17 11:18	1
Percent Moisture	6.6		0.1	0.1	%			10/03/17 11:18	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Client Sample ID: SP-B1-B5-7

Lab Sample ID: 580-71754-6

Date Collected: 10/02/17 18:25

Matrix: Solid

Date Received: 10/03/17 08:45

Percent Solids: 94.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		19	8.3	ug/Kg	☼	10/03/17 10:40	10/03/17 17:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		75 - 120				10/03/17 10:40	10/03/17 17:00	1
Trifluorotoluene (Surr)	96		60 - 150				10/03/17 10:40	10/03/17 17:00	1
4-Bromofluorobenzene (Surr)	97		47 - 150				10/03/17 10:40	10/03/17 17:00	1
Dibromofluoromethane (Surr)	100		80 - 118				10/03/17 10:40	10/03/17 17:00	1
1,2-Dichloroethane-d4 (Surr)	108		80 - 121				10/03/17 10:40	10/03/17 17:00	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		3.8	2.0	mg/Kg	☼	10/03/17 10:09	10/03/17 18:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		50 - 150				10/03/17 10:09	10/03/17 18:16	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg	☼	10/03/17 10:01	10/04/17 10:25	1
Motor Oil (>C24-C36)	14	J	50	9.1	mg/Kg	☼	10/03/17 10:01	10/04/17 10:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150				10/03/17 10:01	10/04/17 10:25	1
n-Decanoic Acid (Surr)	0.0001		0 - 1				10/03/17 10:01	10/04/17 10:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	94.0		0.1	0.1	%			10/03/17 11:18	1
Percent Moisture	6.0		0.1	0.1	%			10/03/17 11:18	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Client Sample ID: SP-B1-D8-2

Lab Sample ID: 580-71754-7

Date Collected: 10/02/17 18:30

Matrix: Solid

Date Received: 10/03/17 08:45

Percent Solids: 93.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		18	7.8	ug/Kg	☼	10/03/17 10:40	10/03/17 17:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		75 - 120				10/03/17 10:40	10/03/17 17:26	1
Trifluorotoluene (Surr)	100		60 - 150				10/03/17 10:40	10/03/17 17:26	1
4-Bromofluorobenzene (Surr)	95		47 - 150				10/03/17 10:40	10/03/17 17:26	1
Dibromofluoromethane (Surr)	108		80 - 118				10/03/17 10:40	10/03/17 17:26	1
1,2-Dichloroethane-d4 (Surr)	121		80 - 121				10/03/17 10:40	10/03/17 17:26	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.79	J	4.9	0.75	ug/Kg	☼	10/03/17 09:59	10/03/17 22:46	1
Benzo[a]pyrene	0.54	J	4.9	0.39	ug/Kg	☼	10/03/17 09:59	10/03/17 22:46	1
Benzo[b]fluoranthene	0.96	J	4.9	0.58	ug/Kg	☼	10/03/17 09:59	10/03/17 22:46	1
Benzo[k]fluoranthene	ND		4.9	0.59	ug/Kg	☼	10/03/17 09:59	10/03/17 22:46	1
Chrysene	3.3	J	4.9	1.5	ug/Kg	☼	10/03/17 09:59	10/03/17 22:46	1
Dibenz(a,h)anthracene	ND		4.9	0.71	ug/Kg	☼	10/03/17 09:59	10/03/17 22:46	1
Indeno[1,2,3-cd]pyrene	0.63	J	4.9	0.59	ug/Kg	☼	10/03/17 09:59	10/03/17 22:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	89		68 - 138				10/03/17 09:59	10/03/17 22:46	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	43		3.6	1.9	mg/Kg	☼	10/03/17 10:09	10/03/17 18:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		50 - 150				10/03/17 10:09	10/03/17 18:47	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	130		50	12	mg/Kg	☼	10/03/17 10:01	10/04/17 10:46	1
Motor Oil (>C24-C36)	17	J	50	9.2	mg/Kg	☼	10/03/17 10:01	10/04/17 10:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	89		50 - 150				10/03/17 10:01	10/04/17 10:46	1
n-Decanoic Acid (Surr)	0.04		0 - 1				10/03/17 10:01	10/04/17 10:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93.3		0.1	0.1	%			10/03/17 11:18	1
Percent Moisture	6.7		0.1	0.1	%			10/03/17 11:18	1

TestAmerica Seattle

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Client Sample ID: RB-100217

Date Collected: 10/02/17 19:10

Date Received: 10/03/17 08:45

Lab Sample ID: 580-71754-9

Matrix: Water

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			10/03/17 12:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		58 - 133					10/03/17 12:51	1
Trifluorotoluene (Surr)	113		77 - 128					10/03/17 12:51	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Client Sample ID: EX-DB2-E7-10

Lab Sample ID: 580-71754-10

Date Collected: 10/02/17 15:30

Matrix: Solid

Date Received: 10/03/17 08:45

Percent Solids: 75.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		27	11	ug/Kg	☼	10/03/17 10:40	10/03/17 17:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		75 - 120				10/03/17 10:40	10/03/17 17:52	1
Trifluorotoluene (Surr)	104		60 - 150				10/03/17 10:40	10/03/17 17:52	1
4-Bromofluorobenzene (Surr)	98		47 - 150				10/03/17 10:40	10/03/17 17:52	1
Dibromofluoromethane (Surr)	107		80 - 118				10/03/17 10:40	10/03/17 17:52	1
1,2-Dichloroethane-d4 (Surr)	113		80 - 121				10/03/17 10:40	10/03/17 17:52	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	4.6	J	5.3	2.8	mg/Kg	☼	10/03/17 10:09	10/03/17 19:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150				10/03/17 10:09	10/03/17 19:17	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		62	15	mg/Kg	☼	10/03/17 10:01	10/04/17 11:06	1
Motor Oil (>C24-C36)	ND		62	11	mg/Kg	☼	10/03/17 10:01	10/04/17 11:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	87		50 - 150				10/03/17 10:01	10/04/17 11:06	1
n-Decanoic Acid (Surr)	0.0003		0 - 1				10/03/17 10:01	10/04/17 11:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	75.3		0.1	0.1	%			10/03/17 11:18	1
Percent Moisture	24.7		0.1	0.1	%			10/03/17 11:18	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-257894/10-A
Matrix: Solid
Analysis Batch: 257902

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257894

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		10/03/17 10:41	10/03/17 13:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		75 - 120	10/03/17 10:41	10/03/17 13:08	1
Trifluorotoluene (Surr)	103		60 - 150	10/03/17 10:41	10/03/17 13:08	1
4-Bromofluorobenzene (Surr)	96		47 - 150	10/03/17 10:41	10/03/17 13:08	1
Dibromofluoromethane (Surr)	103		80 - 118	10/03/17 10:41	10/03/17 13:08	1
1,2-Dichloroethane-d4 (Surr)	115		80 - 121	10/03/17 10:41	10/03/17 13:08	1

Lab Sample ID: LCS 580-257894/11-A
Matrix: Solid
Analysis Batch: 257902

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257894

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzene	800	938		ug/Kg		117	79 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	102		75 - 120
Trifluorotoluene (Surr)	106		60 - 150
4-Bromofluorobenzene (Surr)	97		47 - 150
Dibromofluoromethane (Surr)	104		80 - 118
1,2-Dichloroethane-d4 (Surr)	119		80 - 121

Lab Sample ID: LCSD 580-257894/12-A
Matrix: Solid
Analysis Batch: 257902

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 257894

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Benzene	800	892		ug/Kg		111	79 - 135	5	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	102		75 - 120
Trifluorotoluene (Surr)	99		60 - 150
4-Bromofluorobenzene (Surr)	98		47 - 150
Dibromofluoromethane (Surr)	105		80 - 118
1,2-Dichloroethane-d4 (Surr)	108		80 - 121

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-257884/1-A
Matrix: Solid
Analysis Batch: 257992

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257884

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		5.0	0.76	ug/Kg		10/03/17 09:59	10/03/17 18:43	1
Benzo[a]pyrene	ND		5.0	0.40	ug/Kg		10/03/17 09:59	10/03/17 18:43	1
Benzo[b]fluoranthene	ND		5.0	0.59	ug/Kg		10/03/17 09:59	10/03/17 18:43	1

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: MB 580-257884/1-A
Matrix: Solid
Analysis Batch: 257992

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257884

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	ND		5.0	0.60	ug/Kg		10/03/17 09:59	10/03/17 18:43	1
Chrysene	ND		5.0	1.5	ug/Kg		10/03/17 09:59	10/03/17 18:43	1
Dibenz(a,h)anthracene	ND		5.0	0.72	ug/Kg		10/03/17 09:59	10/03/17 18:43	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.60	ug/Kg		10/03/17 09:59	10/03/17 18:43	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	95		68 - 138	10/03/17 09:59	10/03/17 18:43	1

Lab Sample ID: LCS 580-257884/2-A
Matrix: Solid
Analysis Batch: 257992

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257884

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzo[a]anthracene	1000	985		ug/Kg		98	66 - 120
Benzo[a]pyrene	1000	1050		ug/Kg		105	72 - 124
Benzo[b]fluoranthene	1000	1000		ug/Kg		100	63 - 121
Benzo[k]fluoranthene	1000	970		ug/Kg		97	63 - 129
Chrysene	1000	892		ug/Kg		89	69 - 120
Dibenz(a,h)anthracene	1000	1090		ug/Kg		109	70 - 125
Indeno[1,2,3-cd]pyrene	1000	1020		ug/Kg		102	65 - 121

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	91		68 - 138

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-257883/1-A
Matrix: Solid
Analysis Batch: 257893

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257883

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		10/03/17 09:57	10/03/17 10:07	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		50 - 150	10/03/17 09:57	10/03/17 10:07	1

Lab Sample ID: LCS 580-257883/2-A
Matrix: Solid
Analysis Batch: 257893

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257883

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Gasoline	40.0	38.7		mg/Kg		97	68 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		50 - 150

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 580-257883/3-A
Matrix: Solid
Analysis Batch: 257893

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 257883

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	40.0	41.3		mg/Kg		103	68 - 120	7	25
Surrogate	%Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	97		50 - 150						

Lab Sample ID: MB 580-257895/6
Matrix: Water
Analysis Batch: 257895

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25	0.050	mg/L			10/03/17 10:12	1
Surrogate	%Recovery	MB Qualifier	Limits						
4-Bromofluorobenzene (Surr)	93		58 - 133						
Trifluorotoluene (Surr)	104		77 - 128						

Lab Sample ID: LCS 580-257895/7
Matrix: Water
Analysis Batch: 257895

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	0.892		mg/L		89	79 - 110		
Surrogate	%Recovery	LCS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	99		58 - 133						
Trifluorotoluene (Surr)	101		77 - 128						

Lab Sample ID: LCSD 580-257895/8
Matrix: Water
Analysis Batch: 257895

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	0.879		mg/L		88	79 - 110	2	10
Surrogate	%Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	99		58 - 133						
Trifluorotoluene (Surr)	98		77 - 128						

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-257885/1-B
Matrix: Solid
Analysis Batch: 257985

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257885

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		10/03/17 10:01	10/03/17 20:46	1
Motor Oil (>C24-C36)	ND		50	9.1	mg/Kg		10/03/17 10:01	10/03/17 20:46	1

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
<i>o</i> -Terphenyl	88		50 - 150	10/03/17 10:01	10/03/17 20:46	1
<i>n</i> -Decanoic Acid (Surr)	0.0001		0 - 1	10/03/17 10:01	10/03/17 20:46	1

Lab Sample ID: LCS 580-257885/2-B
Matrix: Solid
Analysis Batch: 257985

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257885

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Motor Oil (>C24-C36)	500	469		mg/Kg		94	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
<i>o</i> -Terphenyl	84		50 - 150
<i>n</i> -Decanoic Acid (Surr)	0		0 - 1

Lab Sample ID: LCSD 580-257885/3-B
Matrix: Solid
Analysis Batch: 257985

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 257885

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Motor Oil (>C24-C36)	500	421		mg/Kg		84	70 - 125	11	17

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
<i>o</i> -Terphenyl	76		50 - 150
<i>n</i> -Decanoic Acid (Surr)	0		0 - 1

Lab Sample ID: 580-71754-2 DU
Matrix: Solid
Analysis Batch: 257985

Client Sample ID: SP-B1-B4-4
Prep Type: Total/NA
Prep Batch: 257885

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Motor Oil (>C24-C36)	25	J	25.6	J	mg/Kg	☼	3	35

Surrogate	DU DU		Limits
	%Recovery	Qualifier	
<i>o</i> -Terphenyl	86		50 - 150
<i>n</i> -Decanoic Acid (Surr)	0.0003		0 - 1

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-71754-3 DU
Matrix: Solid
Analysis Batch: 257901

Client Sample ID: SP-B1-I8-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Percent Moisture	6.0		5.9		%		1	20

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Client Sample ID: SP-B1-B6-1

Date Collected: 10/02/17 18:00

Date Received: 10/03/17 08:45

Lab Sample ID: 580-71754-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257901	10/03/17 11:18	JWL	TAL SEA

Client Sample ID: SP-B1-B6-1

Date Collected: 10/02/17 18:00

Date Received: 10/03/17 08:45

Lab Sample ID: 580-71754-1

Matrix: Solid

Percent Solids: 93.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257894	10/03/17 10:40	SHK	TAL SEA
Total/NA	Analysis	8260C		1	257902	10/03/17 14:51	P1P	TAL SEA
Total/NA	Prep	5035			257883	10/03/17 10:09	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257893	10/03/17 15:43	JCV	TAL SEA
Total/NA	Prep	3546			257885	10/03/17 10:01	JWL	TAL SEA
Total/NA	Cleanup	3630C			257959	10/03/17 15:38	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257985	10/04/17 08:02	ADB	TAL SEA

Client Sample ID: SP-B1-B4-4

Date Collected: 10/02/17 18:05

Date Received: 10/03/17 08:45

Lab Sample ID: 580-71754-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257901	10/03/17 11:18	JWL	TAL SEA

Client Sample ID: SP-B1-B4-4

Date Collected: 10/02/17 18:05

Date Received: 10/03/17 08:45

Lab Sample ID: 580-71754-2

Matrix: Solid

Percent Solids: 93.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257894	10/03/17 10:40	SHK	TAL SEA
Total/NA	Analysis	8260C		1	257902	10/03/17 15:17	P1P	TAL SEA
Total/NA	Prep	5035			257883	10/03/17 10:09	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257893	10/03/17 16:14	JCV	TAL SEA
Total/NA	Prep	3546			257885	10/03/17 10:01	JWL	TAL SEA
Total/NA	Cleanup	3630C			257959	10/03/17 15:38	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257985	10/04/17 08:22	ADB	TAL SEA

Client Sample ID: SP-B1-I8-1

Date Collected: 10/02/17 18:10

Date Received: 10/03/17 08:45

Lab Sample ID: 580-71754-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257901	10/03/17 11:18	JWL	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Client Sample ID: SP-B1-I8-1

Date Collected: 10/02/17 18:10

Date Received: 10/03/17 08:45

Lab Sample ID: 580-71754-3

Matrix: Solid

Percent Solids: 94.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257894	10/03/17 10:40	SHK	TAL SEA
Total/NA	Analysis	8260C		1	257902	10/03/17 15:43	P1P	TAL SEA
Total/NA	Prep	5035			257883	10/03/17 10:09	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257893	10/03/17 16:44	JCV	TAL SEA
Total/NA	Prep	3546			257885	10/03/17 10:01	JWL	TAL SEA
Total/NA	Cleanup	3630C			257959	10/03/17 15:38	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257985	10/04/17 09:24	ADB	TAL SEA

Client Sample ID: SP-B1-C6-13

Date Collected: 10/02/17 18:15

Date Received: 10/03/17 08:45

Lab Sample ID: 580-71754-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257901	10/03/17 11:18	JWL	TAL SEA

Client Sample ID: SP-B1-C6-13

Date Collected: 10/02/17 18:15

Date Received: 10/03/17 08:45

Lab Sample ID: 580-71754-4

Matrix: Solid

Percent Solids: 93.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257894	10/03/17 10:40	SHK	TAL SEA
Total/NA	Analysis	8260C		1	257902	10/03/17 16:09	P1P	TAL SEA
Total/NA	Prep	5035			257883	10/03/17 10:09	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257893	10/03/17 17:15	JCV	TAL SEA
Total/NA	Prep	3546			257885	10/03/17 10:01	JWL	TAL SEA
Total/NA	Cleanup	3630C			257959	10/03/17 15:38	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257985	10/04/17 09:44	ADB	TAL SEA

Client Sample ID: SP-B1-H4-4

Date Collected: 10/02/17 18:20

Date Received: 10/03/17 08:45

Lab Sample ID: 580-71754-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257901	10/03/17 11:18	JWL	TAL SEA

Client Sample ID: SP-B1-H4-4

Date Collected: 10/02/17 18:20

Date Received: 10/03/17 08:45

Lab Sample ID: 580-71754-5

Matrix: Solid

Percent Solids: 93.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257894	10/03/17 10:40	SHK	TAL SEA
Total/NA	Analysis	8260C		1	257902	10/03/17 16:34	P1P	TAL SEA
Total/NA	Prep	5035			257883	10/03/17 10:09	JCV	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Client Sample ID: SP-B1-H4-4

Lab Sample ID: 580-71754-5

Date Collected: 10/02/17 18:20

Matrix: Solid

Date Received: 10/03/17 08:45

Percent Solids: 93.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	257893	10/03/17 17:45	JCV	TAL SEA
Total/NA	Prep	3546			257885	10/03/17 10:01	JWL	TAL SEA
Total/NA	Cleanup	3630C			257959	10/03/17 15:38	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257985	10/04/17 10:05	ADB	TAL SEA

Client Sample ID: SP-B1-B5-7

Lab Sample ID: 580-71754-6

Date Collected: 10/02/17 18:25

Matrix: Solid

Date Received: 10/03/17 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257901	10/03/17 11:18	JWL	TAL SEA

Client Sample ID: SP-B1-B5-7

Lab Sample ID: 580-71754-6

Date Collected: 10/02/17 18:25

Matrix: Solid

Date Received: 10/03/17 08:45

Percent Solids: 94.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257894	10/03/17 10:40	SHK	TAL SEA
Total/NA	Analysis	8260C		1	257902	10/03/17 17:00	P1P	TAL SEA
Total/NA	Prep	5035			257883	10/03/17 10:09	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257893	10/03/17 18:16	JCV	TAL SEA
Total/NA	Prep	3546			257885	10/03/17 10:01	JWL	TAL SEA
Total/NA	Cleanup	3630C			257959	10/03/17 15:38	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257985	10/04/17 10:25	ADB	TAL SEA

Client Sample ID: SP-B1-D8-2

Lab Sample ID: 580-71754-7

Date Collected: 10/02/17 18:30

Matrix: Solid

Date Received: 10/03/17 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257901	10/03/17 11:18	JWL	TAL SEA

Client Sample ID: SP-B1-D8-2

Lab Sample ID: 580-71754-7

Date Collected: 10/02/17 18:30

Matrix: Solid

Date Received: 10/03/17 08:45

Percent Solids: 93.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257894	10/03/17 10:40	SHK	TAL SEA
Total/NA	Analysis	8260C		1	257902	10/03/17 17:26	P1P	TAL SEA
Total/NA	Prep	3546			257884	10/03/17 09:59	JWL	TAL SEA
Total/NA	Analysis	8270D SIM		1	257992	10/03/17 22:46	CJ	TAL SEA
Total/NA	Prep	5035			257883	10/03/17 10:09	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257893	10/03/17 18:47	JCV	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Client Sample ID: SP-B1-D8-2

Date Collected: 10/02/17 18:30

Date Received: 10/03/17 08:45

Lab Sample ID: 580-71754-7

Matrix: Solid

Percent Solids: 93.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			257885	10/03/17 10:01	JWL	TAL SEA
Total/NA	Cleanup	3630C			257959	10/03/17 15:38	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257985	10/04/17 10:46	ADB	TAL SEA

Client Sample ID: RB-100217

Date Collected: 10/02/17 19:10

Date Received: 10/03/17 08:45

Lab Sample ID: 580-71754-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	257895	10/03/17 12:51	RSB	TAL SEA

Client Sample ID: EX-DB2-E7-10

Date Collected: 10/02/17 15:30

Date Received: 10/03/17 08:45

Lab Sample ID: 580-71754-10

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	257901	10/03/17 11:18	JWL	TAL SEA

Client Sample ID: EX-DB2-E7-10

Date Collected: 10/02/17 15:30

Date Received: 10/03/17 08:45

Lab Sample ID: 580-71754-10

Matrix: Solid

Percent Solids: 75.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257894	10/03/17 10:40	SHK	TAL SEA
Total/NA	Analysis	8260C		1	257902	10/03/17 17:52	P1P	TAL SEA
Total/NA	Prep	5035			257883	10/03/17 10:09	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257893	10/03/17 19:17	JCV	TAL SEA
Total/NA	Prep	3546			257885	10/03/17 10:01	JWL	TAL SEA
Total/NA	Cleanup	3630C			257959	10/03/17 15:38	JWL	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	257985	10/04/17 11:06	ADB	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
California	State Program	9	2901	01-31-18
L-A-B	DoD ELAP		L2236	01-19-19
L-A-B	ISO/IEC 17025		L2236	01-19-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-17
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-71754-1	SP-B1-B6-1	Solid	10/02/17 18:00	10/03/17 08:45
580-71754-2	SP-B1-B4-4	Solid	10/02/17 18:05	10/03/17 08:45
580-71754-3	SP-B1-I8-1	Solid	10/02/17 18:10	10/03/17 08:45
580-71754-4	SP-B1-C6-13	Solid	10/02/17 18:15	10/03/17 08:45
580-71754-5	SP-B1-H4-4	Solid	10/02/17 18:20	10/03/17 08:45
580-71754-6	SP-B1-B5-7	Solid	10/02/17 18:25	10/03/17 08:45
580-71754-7	SP-B1-D8-2	Solid	10/02/17 18:30	10/03/17 08:45
580-71754-9	RB-100217	Water	10/02/17 19:10	10/03/17 08:45
580-71754-10	EX-DB2-E7-10	Solid	10/02/17 15:30	10/03/17 08:45

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

Loc: 580
71754

Rush
 Short Hold

Chain of Custody Record

Client Arcoadis	Client Contact Jason Little	Date 10/2/17	Chain of Custody Number 31849
Address 1100 Olive Way Suite 890	Telephone Number (Area Code)/Fax Number 206-992-7735	Lab Number 253-922-2310	Page _____ of _____

City Seattle	State WA	Zip Code 98101	Sampler Jason Little	Lab Contact Elaine Walker	Analysis (Attach list if more space is needed)
Project Name and Location (State) Edmonds Terminal (WA)			Billing Contact		

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix				Containers & Preservatives										Special Instructions/ Conditions of Receipt			
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	MeOH	DPH/HO (NMPH-DX) (WV SEC)	CPAH(S0700 S.M)	GRAD (NMPH-6X)		Benzene		
SP-B1-B6-1	10/2/17	1800				X	2							2	✓	✓	✓	✓	✓	Email results to: ophelie.pacelle@arcoadis.com ryan.brackla@arcoadis.com samuel.miles@arcoadis.com Scott.zorn@arcoadis.com WBC Code NWENVPM6001430804-Sil NW ENVPM6001430803-Sil wot,
SP-B1-B4-4	10/2/17	1805				X	2							2	✓	✓	✓	✓	✓	
SP-B1-I8-1	10/2/17	1810				X	2							2	✓	✓	✓	✓	✓	
SP-B1-C6-13	10/2/17	1815				X	2							2	✓	✓	✓	✓	✓	
SP-B1-H4-4	10/2/17	1820				X	2							2	✓	✓	✓	✓	✓	
SP-B1-B6-7	10/2/17	1825				X	2							2	✓	✓	✓	✓	✓	
SP-B1-D8-2	10/2/17	1830				X	2							2	✓	✓	✓	✓	✓	
JAMP TB-100217	10/2/17	---				X								1	✓	✓	✓	✓	✓	
RB-100217	10/2/17	1910	X			X								1	✓	✓	✓	✓	✓	
EX-DB2-E7-10	10/2/17	1530				X	2							2	✓	✓	✓	✓	✓	

Cooler Yes No Cooler Temp: _____ Possible Hazard Identification Non-Hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal Disposal By Lab Return To Client 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 _____ QC Requirements (Specify)

1. Relinquished By Sign/Print <i>JL</i> Jason Little	Date 10/3/17	Time	1. Received By Sign/Print McForceille Derwatt	Date 10/3/17	Time 0845
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 _____

580-71754 Chain of Custody

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-71754-1

Login Number: 71754

List Source: TestAmerica Seattle

List Number: 1

Creator: Ponce-McDermott, Monica

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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: 580-71754-2

Client Project/Site: Chevron Edmonds Terminal

For:

ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
10/4/2017 11:09:17 AM

Elaine Walker, Project Manager II
(253)248-4972

elaine.walker@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-2

Job ID: 580-71754-2

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE **Client: ARCADIS U.S. Inc** **Project: Chevron Edmonds Terminal** **Report Number: 580-71754-2**

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

The samples were received on 10/03/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was -0.5° C.

This job contains results of the trip blank sample only. Because the soil and water samples arrived in one cooler, and there was only a soil trip blank, the client requested that the trip blank be reported in a stand alone report. The soil samples and water samples are reported under separate covers.

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)

Sample TB-100217 (580-71754-8) was analyzed for volatile organic compounds (GC) in accordance with 8260. The sample was prepared and analyzed on 10/03/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO)

Sample TB-100217 (580-71754-8) was analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx. The sample was prepared and analyzed on 10/03/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-2

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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 Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-2

Client Sample ID: TB-100217

Lab Sample ID: 580-71754-8

Date Collected: 10/02/17 00:00

Matrix: Solid

Date Received: 10/03/17 08:45

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		10/03/17 10:40	10/03/17 14:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		75 - 120	10/03/17 10:40	10/03/17 14:26	1
Trifluorotoluene (Surr)	103		60 - 150	10/03/17 10:40	10/03/17 14:26	1
4-Bromofluorobenzene (Surr)	98		47 - 150	10/03/17 10:40	10/03/17 14:26	1
Dibromofluoromethane (Surr)	105		80 - 118	10/03/17 10:40	10/03/17 14:26	1
1,2-Dichloroethane-d4 (Surr)	114		80 - 121	10/03/17 10:40	10/03/17 14:26	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		10/03/17 10:09	10/03/17 12:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		50 - 150	10/03/17 10:09	10/03/17 12:09	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-2

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-257894/10-A
Matrix: Solid
Analysis Batch: 257902

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257894

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		20	8.6	ug/Kg		10/03/17 10:41	10/03/17 13:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		75 - 120	10/03/17 10:41	10/03/17 13:08	1
Trifluorotoluene (Surr)	103		60 - 150	10/03/17 10:41	10/03/17 13:08	1
4-Bromofluorobenzene (Surr)	96		47 - 150	10/03/17 10:41	10/03/17 13:08	1
Dibromofluoromethane (Surr)	103		80 - 118	10/03/17 10:41	10/03/17 13:08	1
1,2-Dichloroethane-d4 (Surr)	115		80 - 121	10/03/17 10:41	10/03/17 13:08	1

Lab Sample ID: LCS 580-257894/11-A
Matrix: Solid
Analysis Batch: 257902

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257894

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzene	800	938		ug/Kg		117	79 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	102		75 - 120
Trifluorotoluene (Surr)	106		60 - 150
4-Bromofluorobenzene (Surr)	97		47 - 150
Dibromofluoromethane (Surr)	104		80 - 118
1,2-Dichloroethane-d4 (Surr)	119		80 - 121

Lab Sample ID: LCSD 580-257894/12-A
Matrix: Solid
Analysis Batch: 257902

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 257894

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	800	892		ug/Kg		111	79 - 135	5	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	102		75 - 120
Trifluorotoluene (Surr)	99		60 - 150
4-Bromofluorobenzene (Surr)	98		47 - 150
Dibromofluoromethane (Surr)	105		80 - 118
1,2-Dichloroethane-d4 (Surr)	108		80 - 121

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-257883/1-A
Matrix: Solid
Analysis Batch: 257893

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257883

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	2.1	mg/Kg		10/03/17 09:57	10/03/17 10:07	1

TestAmerica Seattle

QC Sample Results

Client: ARCADIS U.S. Inc
 Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-2

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-257883/1-A
Matrix: Solid
Analysis Batch: 257893

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 257883

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	87		50 - 150	10/03/17 09:57	10/03/17 10:07	1
Trifluorotoluene (Surr)	127		50 - 150	10/03/17 09:57	10/03/17 10:07	1

Lab Sample ID: LCS 580-257883/2-A
Matrix: Solid
Analysis Batch: 257893

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 257883

Analyte	Spike Added	LCS LCS	Limits	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	40.0		68 - 120	38.7		mg/Kg		97	
Surrogate	LCS LCS		Limits	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
%Recovery	Qualifier								
4-Bromofluorobenzene (Surr)	96		50 - 150						
Trifluorotoluene (Surr)	118		50 - 150						

Lab Sample ID: LCSD 580-257883/3-A
Matrix: Solid
Analysis Batch: 257893

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 257883

Analyte	Spike Added	LCSD LCSD	Limits	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Gasoline	40.0		68 - 120	41.3		mg/Kg		103		7	25
Surrogate	LCSD LCSD		Limits	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
%Recovery	Qualifier										
4-Bromofluorobenzene (Surr)	97		50 - 150								
Trifluorotoluene (Surr)	120		50 - 150								

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-2

Client Sample ID: TB-100217

Lab Sample ID: 580-71754-8

Date Collected: 10/02/17 00:00

Matrix: Solid

Date Received: 10/03/17 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			257894	10/03/17 10:40	SHK	TAL SEA
Total/NA	Analysis	8260C		1	257902	10/03/17 14:26	P1P	TAL SEA
Total/NA	Prep	5035			257883	10/03/17 10:09	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	257893	10/03/17 12:09	JCV	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-2

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-18
California	State Program	9	2901	01-31-18
L-A-B	DoD ELAP		L2236	01-19-19
L-A-B	ISO/IEC 17025		L2236	01-19-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-17
US Fish & Wildlife	Federal		LE058448-0	10-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-18

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-71754-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-71754-8	TB-100217	Solid	10/02/17 00:00	10/03/17 08:45

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

Client **Arccadis** Client Contact **JASON LITTLE** Date **10/2/17** Chain of Custody Number **31849**
 Address **1100 Olive Way Suite 890** Telephone Number (Area Code)/Fax Number **206-992-7735** Lab Number **253-922-2310** Page of

City **Seattle** State **WA** Zip Code **98101** Sampler **JASON LITTLE** Lab Contact **CLAIRE WALKER** Analysis (Attach list if more space is needed)

Project Name and Location (State) **Edmonds Terminal (WA)** Billing Contact
 Contract/Purchase Order/Quote No. **00045362.0010**

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix				Containers & Preservatives										Special Instructions/Conditions of Receipt					
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	MeOH	DP9/HO (NMT-H-Dx) (M/S/Sec)	CPAH (SOTAD 5m)	Gravel (6x)		Benzene				
SP-B1-B6-1	10/2/17	1800				X	2									2	✓	✓	✓	✓	✓	Email results to: ophelie.pacelle@arccadis.com ryan.brackla@arccadis.com samuel.miles@arccadis.com scott.zorn@arccadis.com WBC Code NWENVPM6001430804-SIL NWENVPM6001430803-SIL not
SP-B1-B4-4	10/2/17	1805				X	2									2	✓	✓	✓	✓	✓	
SP-B1-I8-1	10/2/17	1810				X	2									2	✓	✓	✓	✓	✓	
SP-B1-C6-13	10/2/17	1815				X	2									2	✓	✓	✓	✓	✓	
SP-B1-H4-4	10/2/17	1820				X	2									2	✓	✓	✓	✓	✓	
SP-B1-B6-7	10/2/17	1825				X	2									2	✓	✓	✓	✓	✓	
SP-B1-B8-2	10/2/17	1830				X	2									2	✓	✓	✓	✓	✓	
JAMP TB-100217	10/2/17	—				X	2									1	✓	✓	✓	✓	✓	
RB-100217	10/2/17	1910	X			X	2									1	✓	✓	✓	✓	✓	
EY-082-E7-10	10/2/17	1530				X	2									2	✓	✓	✓	✓	✓	

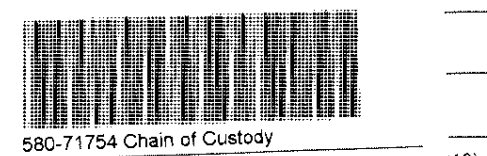
Cooler Yes No Cooler Temp: Possible Hazard Identification Non-Hazard Flammable Skin Irritant Poison B Unknown Return To Client Disposal By Lab Archive For Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days) 24 Hours 48 Hours 5 Days 10 Days 15 Days Other

QC Requirements (Specify)

1. Relinquished By Sign/Print JASON LITTLE Date 10/3/17 Time 	1. Received By Sign/Print McForceille Perreault Date 10/3/17 Time 0845
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



Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-71754-2

Login Number: 71754

List Source: TestAmerica Seattle

List Number: 1

Creator: Ponce-McDermott, Monica

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.	N/A	
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	





ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Chevron Environmental Mgmt Co
BR1 X5139C
6101 Bollinger Canyon Road
San Ramon CA 94583

Report Date: November 01, 2017 14:54

Project: Edmonds Terminal

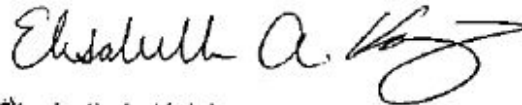
Account #: 11964
Group Number: 1851306
PO Number: 0015255876
Release Number: JOLITZ
State of Sample Origin: WA

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>. To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Chevron
Electronic Copy To Arcadis
Electronic Copy To ARCADIS U.S., Inc.
Electronic Copy To Arcadis

Attn: Ophelie Encelle
Attn: Ryan Brauchla
Attn: Sam Miles
Attn: Scott Zorn

Respectfully Submitted,



Elisabeth A. Knisley
Project Manager

(717) 556-7262



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
EX-DB2-A2-5-SW-S-170915 Grab Soil	09/15/2017 10:35	9212720

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Sample Description: EX-DB2-A2-5-SW-S-170915 Grab Soil
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

Chevron Environmental Mgmt Co
ELLE Sample #: SW 9212720
ELLE Group #: 1851306
Matrix: Soil

Project Name: Edmonds Terminal

Submission Date/Time: 09/16/2017 09:15
Collection Date/Time: 09/15/2017 10:35

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.031	42.74
GC/MS Semivolatiles			SW-846 8270C SIM	ug/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	4.7	5
10725	Benzo(a)pyrene	50-32-8	N.D.	4.7	5
10725	Benzo(b)fluoranthene	205-99-2	N.D.	4.7	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	4.7	5
10725	Chrysene	218-01-9	89	2.4	5
10725	Dibenz(a,h)anthracene	53-70-3	5.6	4.7	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	14	4.7	5

The recovery for the sample internal standard is outside the QC acceptance limits. The following corrective action was taken:

The sample was re-analyzed and internal standard areas are again outside of the QC acceptance limits, indicating a matrix effect. The reported data is from the initial analysis of the sample.

GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	64	1124.07
Reporting limits were raised due to sample foaming.					

GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	970	21	5
12006	HRO C24-C40 w/Si Gel	n.a.	750	71	5

Wet Chemistry			%Moisture- Dry Wt Calculation	%	
02111	Moisture	n.a.	30.0	1.0	1
"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs Benzene only - Soil	SW-846 8260B	1	Q172621AA	09/19/2017 16:03	Jennifer K Howe	42.74
00405	GC/MS-10g Field Preserv. MeOH	SW-846 5035A	1	201725947094	09/15/2017 10:35	Client Supplied	n.a.
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	17264SLA026	09/21/2017 21:53	William H Saadeh	5

Sample Description: EX-DB2-A2-5-SW-S-170915 Grab Soil
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

Chevron Environmental Mgmt Co
ELLE Sample #: SW 9212720
ELLE Group #: 1851306
Matrix: Soil

Project Name: Edmonds Terminal

Submittal Date/Time: 09/16/2017 09:15
Collection Date/Time: 09/15/2017 10:35

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10811	BNA Soil Microwave SIM	SW-846 3546	1	17264SLA026	09/18/2017 18:15	Ashley R Transue	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	17260A34A	09/18/2017 01:57	Marie D Beamenderfer	1124.07
06169	GC-10g Field Preserved MeOH	SW-846 5035A	1	201725947094	09/15/2017 10:35	Client Supplied	n.a.
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	172590022A	09/21/2017 10:36	Thomas C Wildermuth	5
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx modified	1	172590022A	09/18/2017 17:15	Elizabeth E Donovan	1
02111	Moisture	%Moisture- Dry Wt Calculation	1	17261912201A	09/18/2017 07:21	Sandra J Miller	1

Quality Control Summary

Client Name: Chevron Environmental Mgmt Co
Reported: 11/01/2017 14:54

Group Number: 1851306

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL
Batch number: Q172621AA	Sample number(s): 9212720	
Benzene	N.D.	0.025
	ug/kg	ug/kg
Batch number: 17264SLA026	Sample number(s): 9212720	
Benzo(a)anthracene	N.D.	0.67
Benzo(a)pyrene	N.D.	0.67
Benzo(b)fluoranthene	N.D.	0.67
Benzo(k)fluoranthene	N.D.	0.67
Chrysene	N.D.	0.33
Dibenz(a,h)anthracene	N.D.	0.67
Indeno(1,2,3-cd)pyrene	N.D.	0.67
	mg/kg	mg/kg
Batch number: 17260A34A	Sample number(s): 9212720	
NWTPH-GX Soil C7-C12	N.D.	1.0
Batch number: 172590022A	Sample number(s): 9212720	
DRO C12-C24 w/Si Gel	N.D.	3.0
HRO C24-C40 w/Si Gel	N.D.	10

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: Q172621AA	Sample number(s): 9212720								
Benzene	1.00	0.999	1.00	1.01	100	101	80-120	1	30
	ug/kg	ug/kg	ug/kg	ug/kg					
Batch number: 17264SLA026	Sample number(s): 9212720								
Benzo(a)anthracene	33.33	30.25	33.33	29.9	91	90	83-112	1	30
Benzo(a)pyrene	33.33	29.95	33.33	29.52	90	89	78-108	1	30
Benzo(b)fluoranthene	33.33	30.91	33.33	30.77	93	92	75-120	0	30
Benzo(k)fluoranthene	33.33	31.4	33.33	30.07	94	90	78-113	4	30
Chrysene	33.33	29.23	33.33	28.93	88	87	79-111	1	30
Dibenz(a,h)anthracene	33.33	30.43	33.33	29.82	91	89	66-119	2	30

*- Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron Environmental Mgmt Co
Reported: 11/01/2017 14:54

Group Number: 1851306

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/kg	LCS Conc ug/kg	LCSD Spike Added ug/kg	LCSD Conc ug/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Indeno(1,2,3-cd)pyrene	33.33	29.48	33.33	28.84	88	87	65-114	2	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 17260A34A NWTPH-GX Soil C7-C12	Sample number(s): 9212720								
	11	9.16	11	9.85	83	90	71-120	7	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 172590022A DRO C12-C24 w/Si Gel	Sample number(s): 9212720								
	133	105.22			79		50-133		
	%	%	%	%					
Batch number: 17261912201A Moisture	Sample number(s): 9212720								
	100	99.43			99		98-101		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 172590022A DRO C12-C24 w/Si Gel	Sample number(s): 9212720		UNSPK: P211276							
	5.02	133	98.45			70		50-133		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Batch number: 172590022A DRO C12-C24 w/Si Gel	Sample number(s): 9212720 BKG: P211276			
	5.02	5.76	14 (1)	20
HRO C24-C40 w/Si Gel	N.D.	N.D.	0 (1)	20
	%	%		
Batch number: 17261912201A Moisture	Sample number(s): 9212720 BKG: P211602			
	5.33	5.33	0	3

*- Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron Environmental Mgmt Co
Reported: 11/01/2017 14:54

Group Number: 1851306

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report. For dual column analyses, the surrogate (at least one surrogate for multi-surrogate tests) must be within the acceptance limits on at least one of the two columns.

Analysis Name: VOCs Benzene only - Soil

Batch number: Q172621AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9212720	76	78	74	73
Blank	94	94	92	90
LCS	96	95	93	92
LCSD	97	96	93	93
Limits:	50-141	54-135	52-141	50-131

Analysis Name: SIM SVOA (microwave)

Batch number: 17264SLA026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
9212720	80	77	100
Blank	89	98	114
LCS	85	100	93
LCSD	85	98	94
Limits:	47-120	51-117	53-116

Analysis Name: NWTPH-GX Soil C7-C12

Batch number: 17260A34A

	Trifluorotoluene-F
9212720	122
Blank	91
LCS	96
LCSD	95
Limits:	50-142

Analysis Name: NWTPH-Dx soil w/ 10g Si Gel

Batch number: 172590022A

	Orthoterphenyl
9212720	132
Blank	98
DUP	98
LCS	105
MS	98
Limits:	50-150

*- Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories
Environmental

Acct. # 11964

For Eurofins Lancaster Laboratories Environmental use only
Group # 1851306 Sample # 9212720
Instructions on reverse side correspond with circled numbers.

SCR #: _____

(1) Client Information			(4) Matrix			(5) Analyses Requested										(6) Remarks		
Facility #			Sediment			BTEX + MTBE												
WBS			Ground			8260 full scan										<input type="checkbox"/> Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run ____ oxy's on highest hit <input type="checkbox"/> Run ____ oxy's on all hits		
Edmond's Terminal MWENVPMGD001430804			Surface			Naphth <input type="checkbox"/>												
Site Address			Potable			Oxygenates												
100 Olive Way, 11720 Unoco Rd, Edmonds WA			NPDES			NWTPH-Dx with Silica Gel Cleanup <input checked="" type="checkbox"/>												
Chevron PM			Oil			NWTPH-Dx without Silica Gel Cleanup <input type="checkbox"/>												
Julie Lee Lead Consultant			Total Number of Containers			WA VPH <input type="checkbox"/> WA EPH <input type="checkbox"/>												
Arcadis Seattle / 1100 Olive Way Suite 800, Seattle						Lead <input type="checkbox"/> Total <input type="checkbox"/> Diss. <input type="checkbox"/> Method												
Consultant Project Mgr.						8260C (Benzene only) 8270P SIM (PAHs)												
Scott Zorn																		
Consultant Phone #																		
509-438-9828																		
(2) Sample Identification			(3) Grab	(3) Composite														
EX-DB2-A2-5-SW			X		4													Run sample for CPAHs only if PRO/HO are detected. Email results to samuel.wild@arcadis.com ryan.bravchka@arcadis.com scott.zorn@arcadis.com ophelia.encelle@arcadis.com
9-15-17																		
1035																		
(7) Turnaround Time Requested (TAT) (please circle)						Relinquished by			Date		Time		Received by			Date		(9)
Standard 5 day 4 day						Ryan Bravchka			9-15-17		1600		UPS			9-15-17		
72 hour 48 hour 24 hour																		
(8) Data Package (circle if required)						Relinquished by Commercial Carrier:			Date		Time		Received by			Date		
Type I - Full						UPS <input checked="" type="checkbox"/> FedEx _____ Other _____							[Signature]			9/16/17		
Type VI (Raw Data)						Temperature Upon Receipt			1.3		°C		Custody Seals Intact?			Yes		No



Client: Arcadis

Delivery and Receipt Information

Delivery Method:	<u>UPS</u>	Arrival Timestamp:	<u>09/16/2017 9:15</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>WA</u>		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace \geq 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	0
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Simon Nies (25112) at 09:33 on 09/16/2017

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

<u>Cooler #</u>	<u>Thermometer ID</u>	<u>Corrected Temp</u>	<u>Therm. Type</u>	<u>Ice Type</u>	<u>Ice Present?</u>	<u>Ice Container</u>	<u>Elevated Temp?</u>
1	DT42-01	1.3	DT	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mg	milligram(s)
C	degrees Celsius	mL	milliliter(s)
cfu	colony forming units	MPN	Most Probable Number
CP Units	cobalt-chloroplatinate units	N.D.	non-detect
F	degrees Fahrenheit	ng	nanogram(s)
g	gram(s)	NTU	nephelometric turbidity units
IU	International Units	pg/L	picogram/liter
kg	kilogram(s)	RL	Reporting Limit
L	liter(s)	TNTC	Too Numerous To Count
lb.	pound(s)	µg	microgram(s)
m3	cubic meter(s)	µL	microliter(s)
meq	milliequivalents	umhos/cm	micromhos/cm
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.